



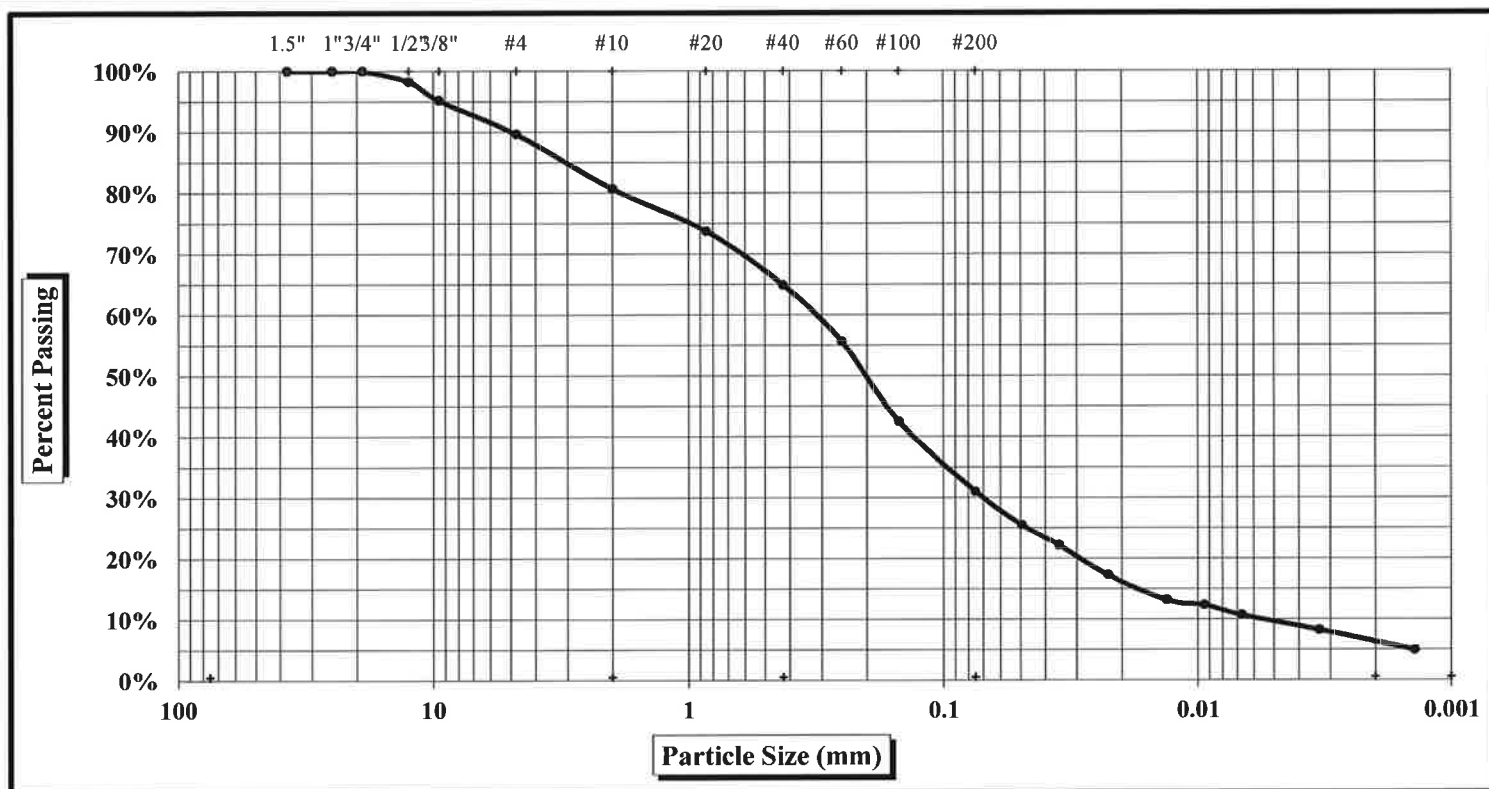
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/18/14**
 Test Date(s): **3/3-10/14**

Boring #:	PSB14	Sample #:	7039	Sample Date:	2/21-26/14
Location:	On Site	Offset:	NA	Depth:	1-7'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	19.3%	Coarse Sand	15.8%	Silt	25%
Maximum Particle Size	1/2"	Fine Sand	33.9%	Clay	6%
Apparent Relative Density(Assumed)	2.650	Moisture Content	17.8%	Silt & Clay (% Passing #200)	31.0%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility:

Ron Harris

[Signature]
Signature

3/18/2014
Signature

Liquid Limit, Plastic Limit, and Plastic Index



S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 3/18/14

Project Name: Ecusta Mill Site **Test Date(s):** 3/3-18/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

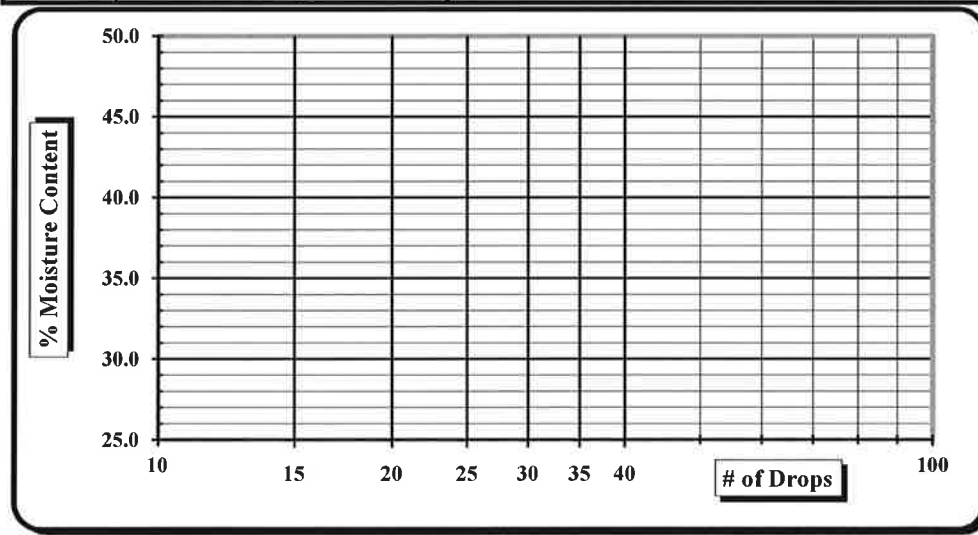
Boring #: PSB14 **Sample #:** 7039 **Sample Date:** 2/21-26/14

Location: On Site **Offset:** NA **Elevation:** 1-7'

Sample Description: A-2-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit		
A	Tare Weight							
B	Wet Soil Weight + A							
C	Dry Soil Weight + A							
D	Water Weight (B-C)							
E	Dry Soil Weight (C-A)							
F	% Moisture (D/E)*100							
N	# OF DROPS					Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR							
Ave.	Average							



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic
 Liquid Limit
 Plastic Limit
 Plastic Index
 Group Symbol **A-2-4**
 Multipoint Method
 One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
 Technician Name

3/18/14
 Date

Ron Harris
 Technical Responsibility

3/18/2014
 Date

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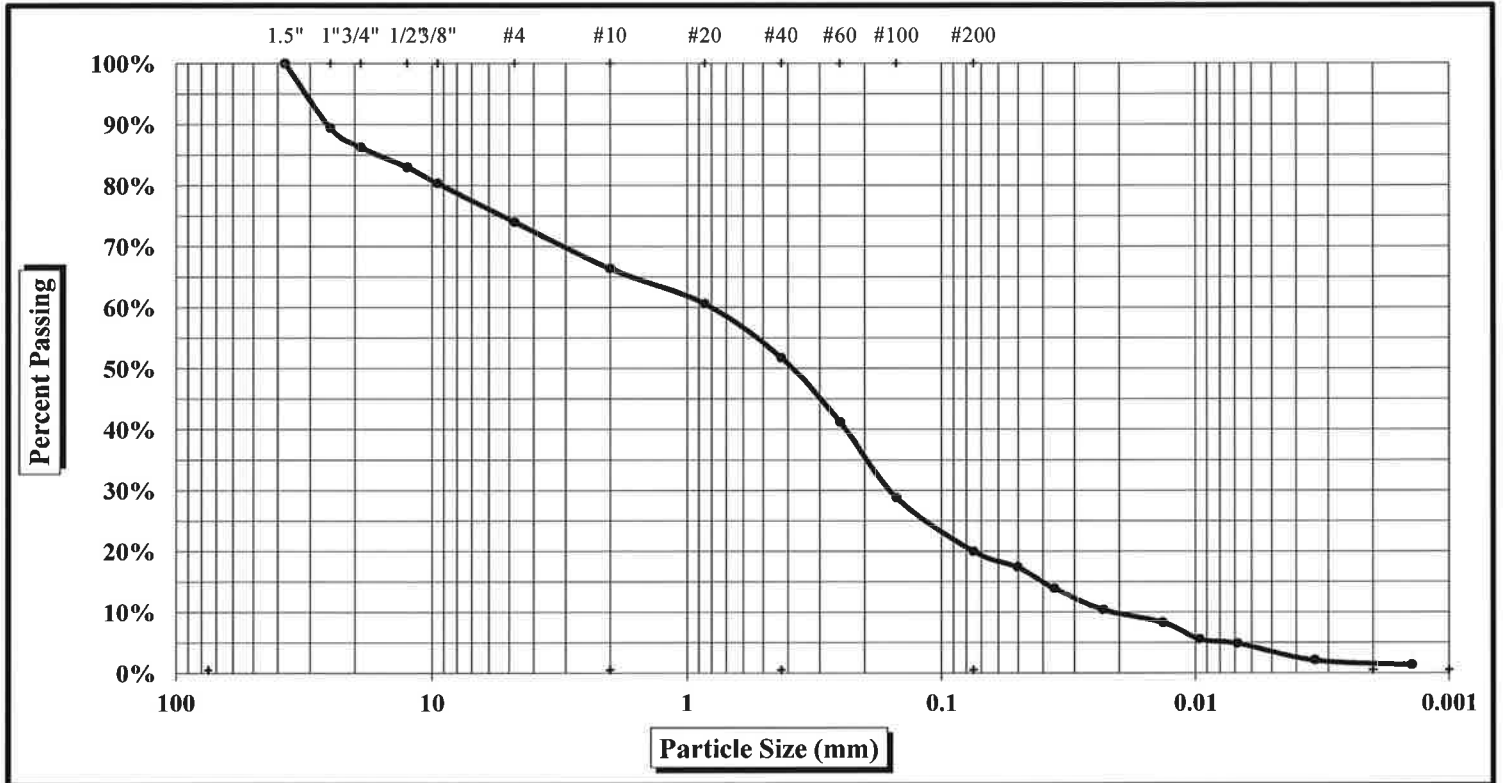
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/18/14**
 Test Date(s): **3/3-10/14**

Boring #:	PSB14	Sample #:	7039	Sample Date:	2/21-26/14
Location:	On Site	Offset:	NA	Depth:	7-18'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	33.6%	Coarse Sand	14.6%	Silt	18%
Maximum Particle Size	1"	Fine Sand	31.8%	Clay	2%
Apparent Relative Density(Assumed)	2.650	Moisture Content	20.4%	Silt & Clay (% Passing #200)	20.0%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g / Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3/18/2014
Signature Signature



Liquid Limit, Plastic Limit, and Plastic Index

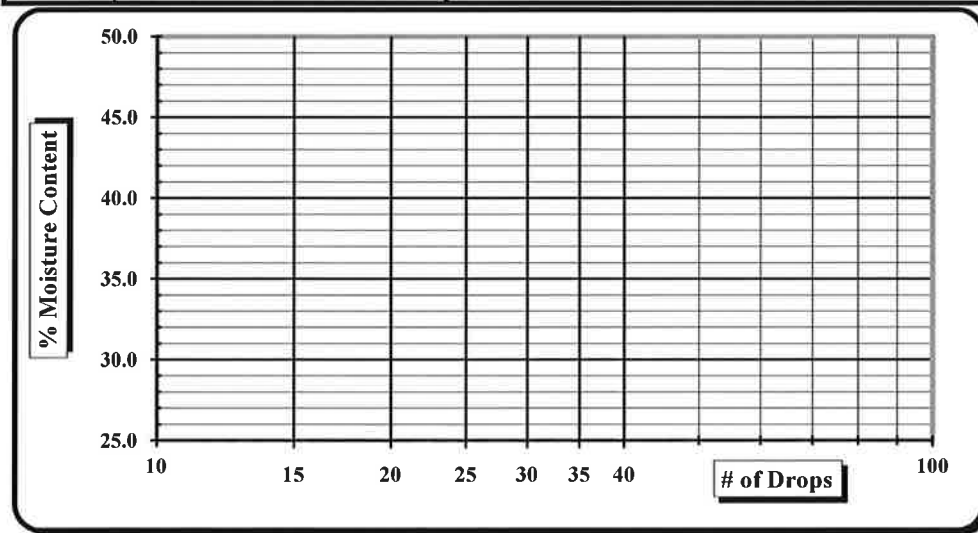
S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 3/18/14
Project Name: Ecusta Mill Site **Test Date(s):** 3/3-18/14
Client Name: Shaw Environmental & Infrastructure, Inc.
Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA
Boring #: PSB14 **Sample #:** 7039 **Sample Date:** 2/21-26/14
Location: On Site **Offset:** NA **Elevation:** 7-18'

Sample Description: A-2-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit		
A	Tare Weight							
B	Wet Soil Weight + A							
C	Dry Soil Weight + A							
D	Water Weight (B-C)							
E	Dry Soil Weight (C-A)							
F	% Moisture (D/E)*100							
N	# OF DROPS					Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR							
Ave.	Average							



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic
 Liquid Limit
 Plastic Limit
 Plastic Index
 Group Symbol **A-2-4**
 Multipoint Method
 One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner 3/18/14 Ron Harris 3/18/2014
 Technician Name Date Technical Responsibility Date

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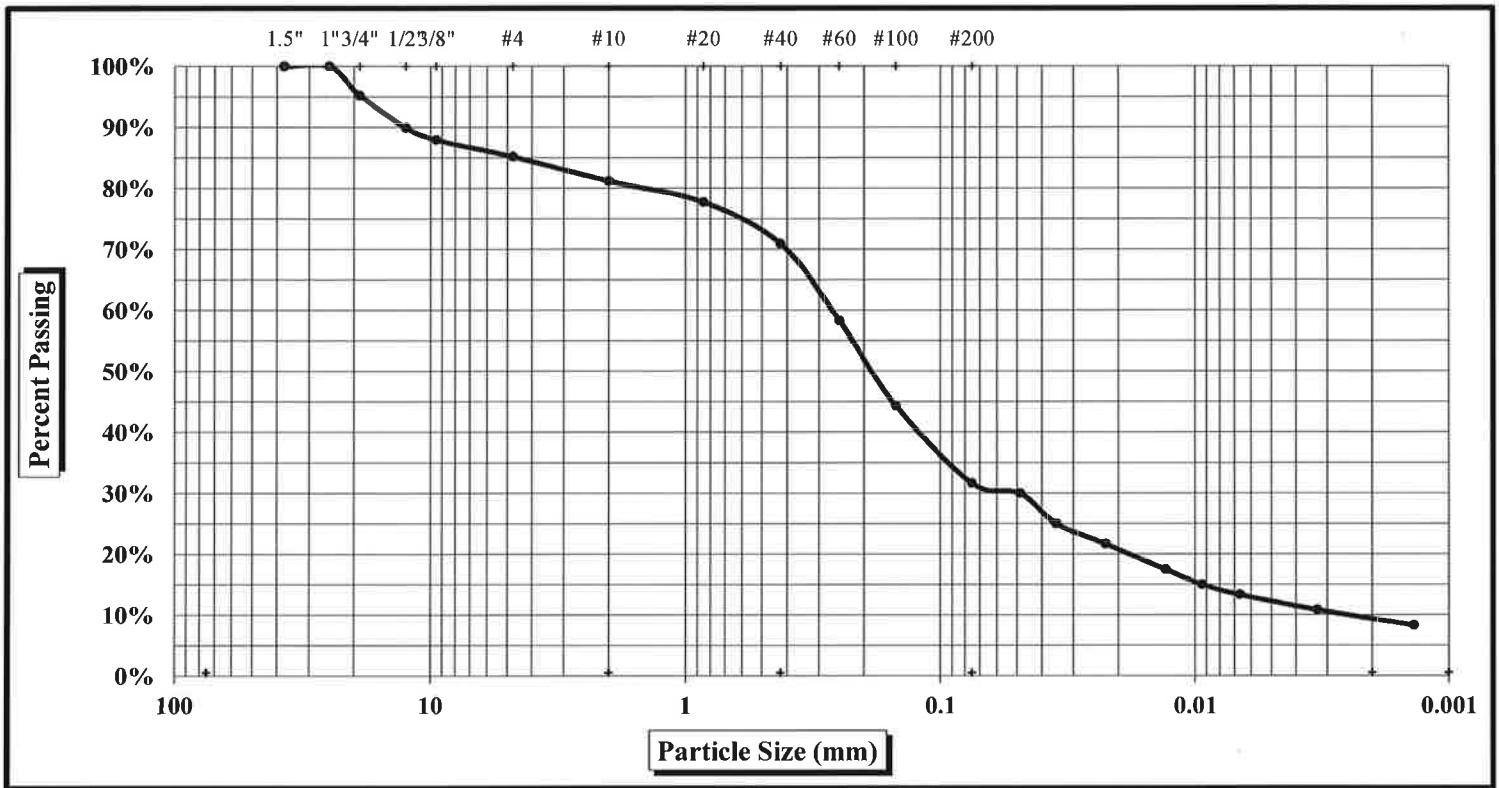
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **3/18/14**
 Test Date(s): **3/3-10/14**

Boring #: PBS15	Sample #: 7038	Sample Date: 2/21-26/14
Location: On Site	Offset: NA	Depth: 1-5'
Sample Description: A-2-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	18.8%	Coarse Sand	10.3%	Silt	22%
Maximum Particle Size	3/4"	Fine Sand	39.3%	Clay	10%
Apparent Relative Density(Assumed)	2.650	Moisture Content	18.5%	Silt & Clay (% Passing #200)	31.6%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g / Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3/18/2014
 Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index



Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

Quality Assurance

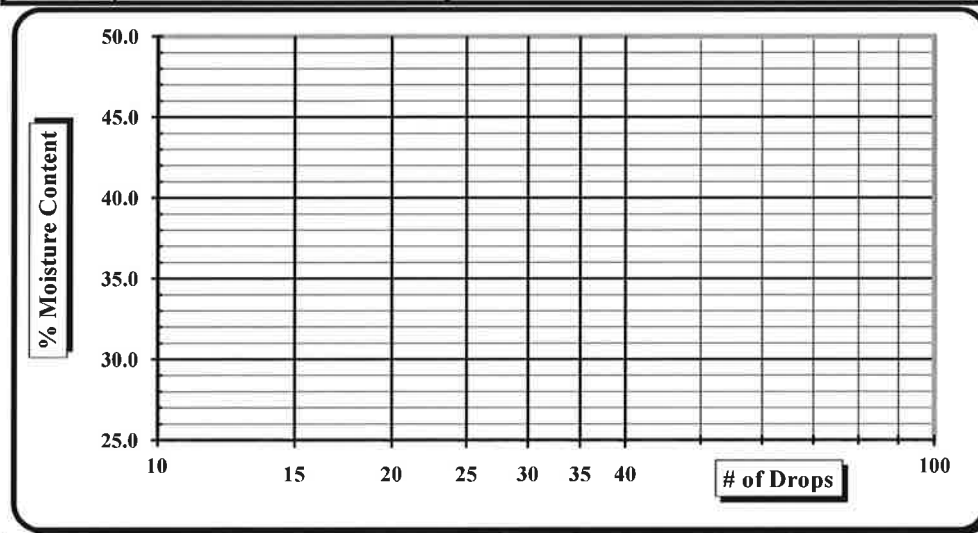
S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 3/18/14
Project Name: Ecusta Mill Site **Test Date(s):** 3/3-18/14
Client Name: Shaw Environmental & Infrastructure, Inc.
Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

Boring #: PSB15 **Sample #:** 7038 **Sample Date:** 2/21-26/14
Location: On Site **Offset:** NA **Elevation:** 1-5'

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit		
A	Tare Weight							
B	Wet Soil Weight + A							
C	Dry Soil Weight + A							
D	Water Weight (B-C)							
E	Dry Soil Weight (C-A)							
F	% Moisture (D/E)*100							
N	# OF DROPS					Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR							
Ave.	Average							



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic
 Liquid Limit
 Plastic Limit
 Plastic Index
 Group Symbol **A-2-4**
 Multipoint Method
 One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
 Technician Name

3/18/14
 Date

[Signature]
 Technical Responsibility **Routham's**

3/18/2014
 Date

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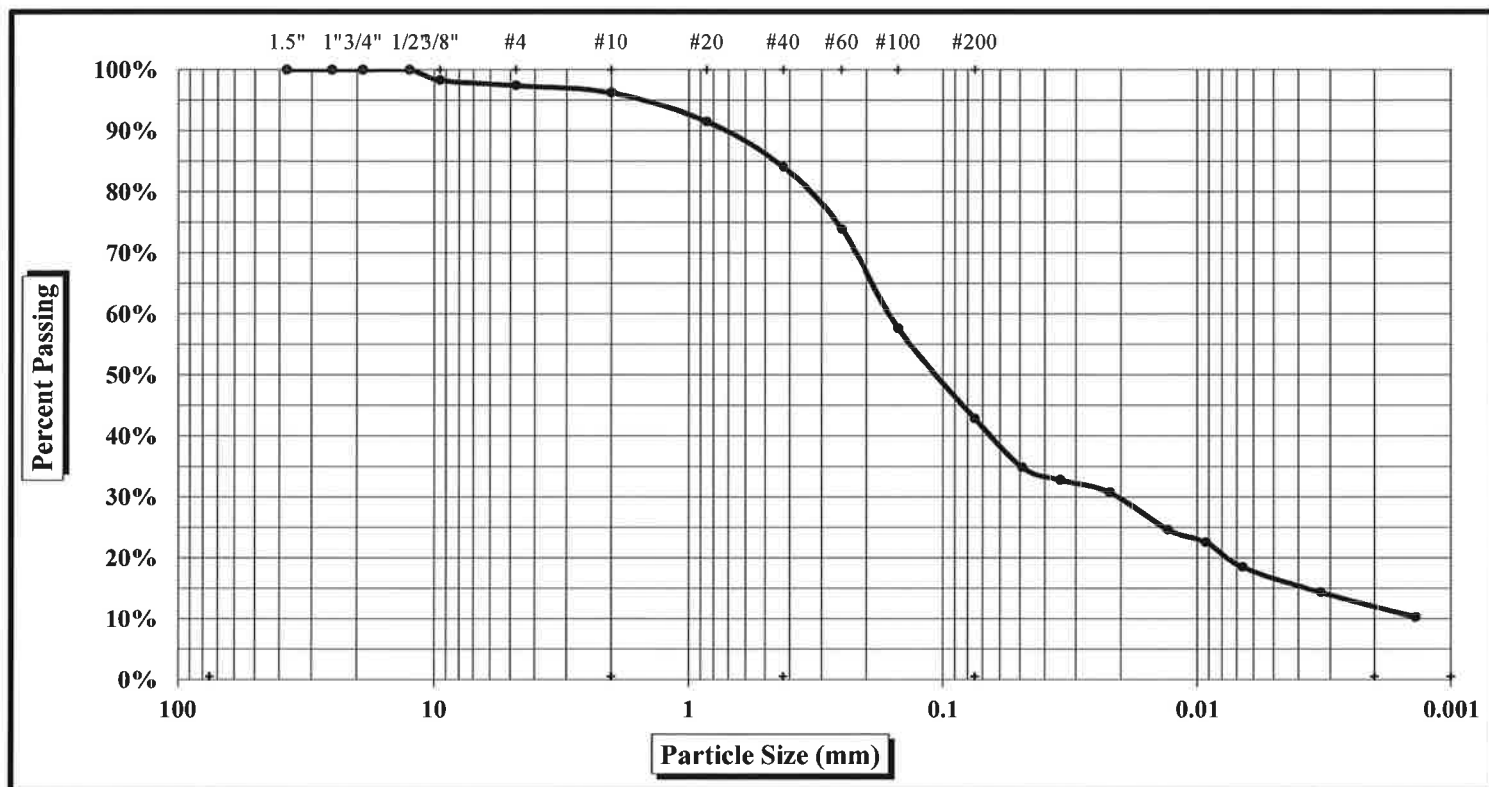
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/18/14**
 Test Date(s): **3/3-10/14**

Boring #:	PSB15	Sample #:	7038	Sample Date:	2/21-26/14
Location:	On Site	Offset:	NA	Depth:	5-10'
Sample Description:	A-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	3.8%	Coarse Sand	12.1%	Silt	31%
Maximum Particle Size	3/8"	Fine Sand	41.3%	Clay	12%
Apparent Relative Density(Assumed)	2.650	Moisture Content	30.8%	Silt & Clay (% Passing #200)	42.8%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g / Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3/18/2014
 Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index



S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 3/18/14

Project Name: Ecusta Mill Site **Test Date(s):** 3/3-18/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

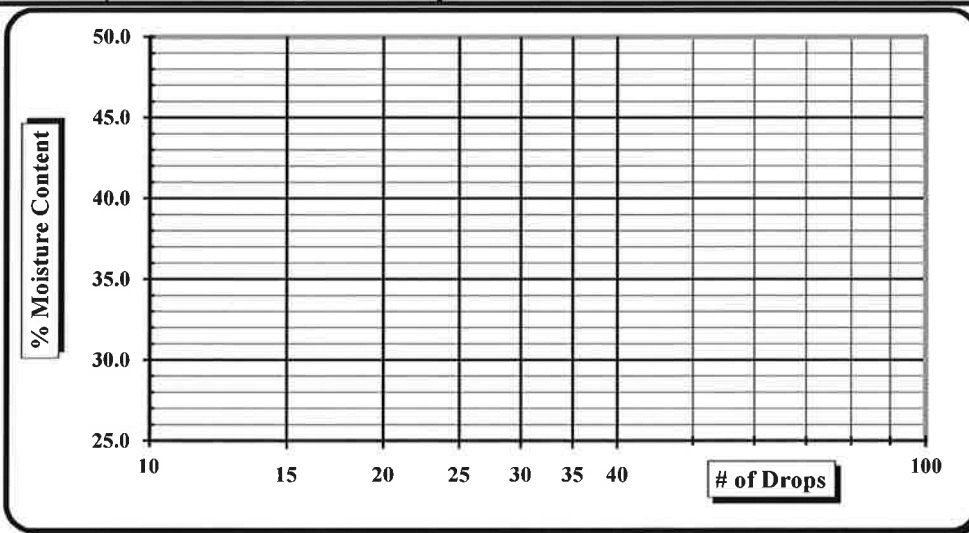
Boring #: PSB15 **Sample #:** 7038 **Sample Date:** 2/21-26/14

Location: On Site **Offset:** NA **Elevation:** 5-10'

Sample Description: A-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit					Plastic Limit		
A	Tare Weight								
B	Wet Soil Weight + A								
C	Dry Soil Weight + A								
D	Water Weight (B-C)								
E	Dry Soil Weight (C-A)								
F	% Moisture (D/E)*100								
N	# OF DROPS								Moisture Contents determined by AASHTO T 245
LL	LL = F * FACTOR								
Ave.	Average								



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic
 Liquid Limit
 Plastic Limit
 Plastic Index
 Group Symbol **A-4**

Multipoint Method
 One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve:

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
 Technician Name

3/18/14
 Date

[Signature]
 Technical Responsibility *Pan Harris*

3/18/2014
 Date

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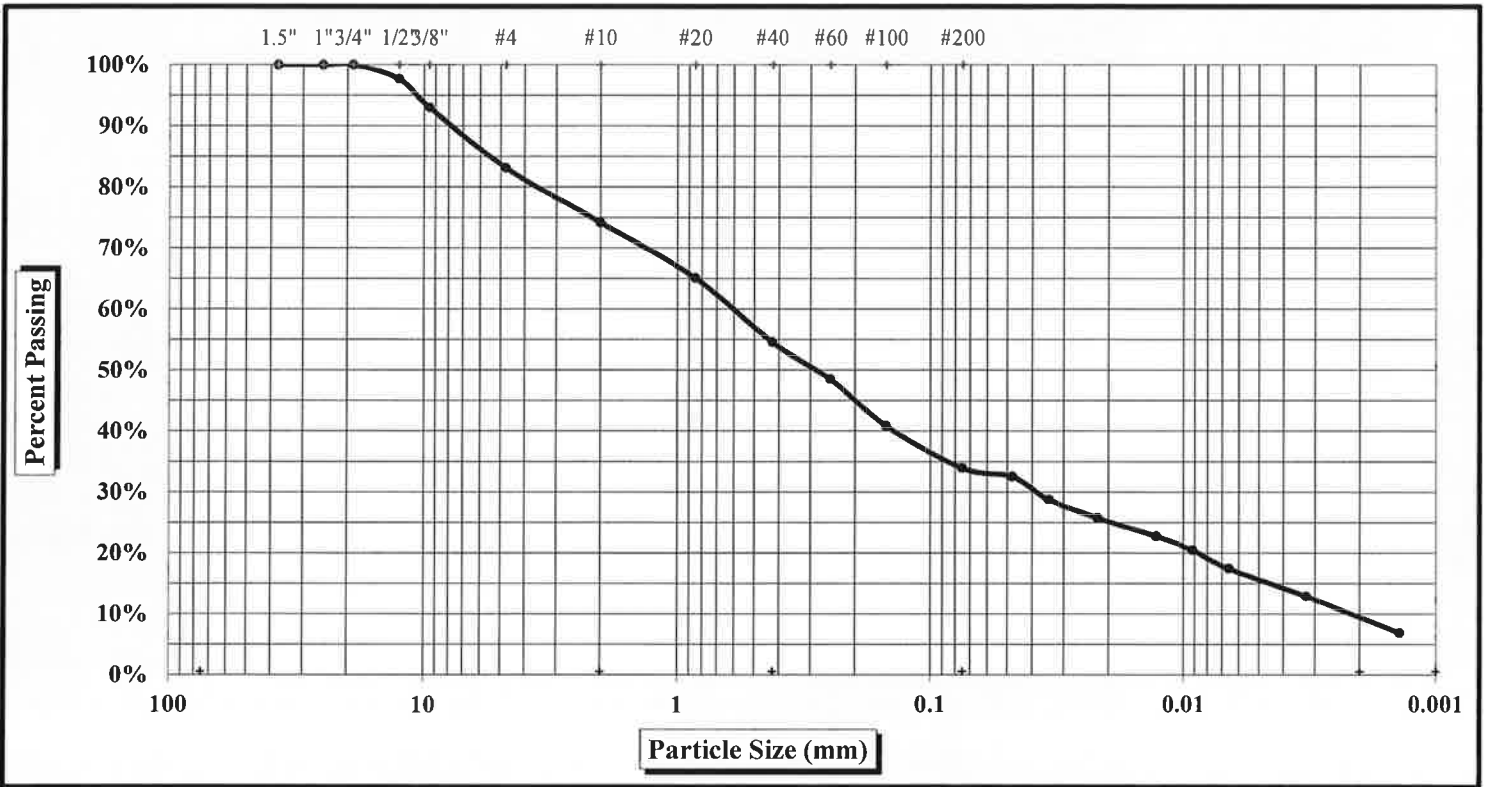
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #: PSB16	Sample #: 7040	Sample Date: 3/18-20/14
Location: On Site	Offset: NA	Depth: 1-8'
Sample Description: A-2-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	25.8%	Coarse Sand	19.6%	Silt	25%
Maximum Particle Size	1/2"	Fine Sand	20.6%	Clay	9%
Apparent Relative Density(Assumed)	2.650	Moisture Content	29.2%	Silt & Clay (% Passing #200)	33.9%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility:

Ren Harris

[Signature]
Signature

Staff Professional
Signature **3.27.2014**



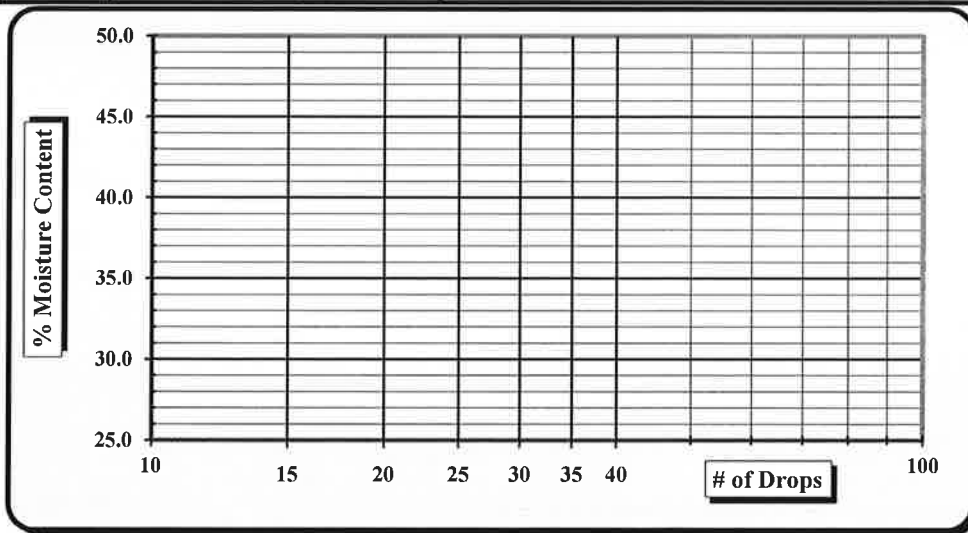
Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	3/27/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/21-27/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB16	Sample #:	7040
		Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA
		Elevation:	1-8'
Sample Description:	A-2-4		

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
A	Tare Weight						
B	Wet Soil Weight + A						
C	Dry Soil Weight + A						
D	Water Weight (B-C)						
E	Dry Soil Weight (C-A)						
F	% Moisture (D/E)*100						
N	# OF DROPS						Moisture Contents determined by AASHTO T 245
LL	LL = F * FACTOR						
Ave.	Average						



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit

Plastic Limit

Plastic Index

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve:

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/27/14
Date

Ron Hanes
Technical Responsibility

3.27.2014
Date

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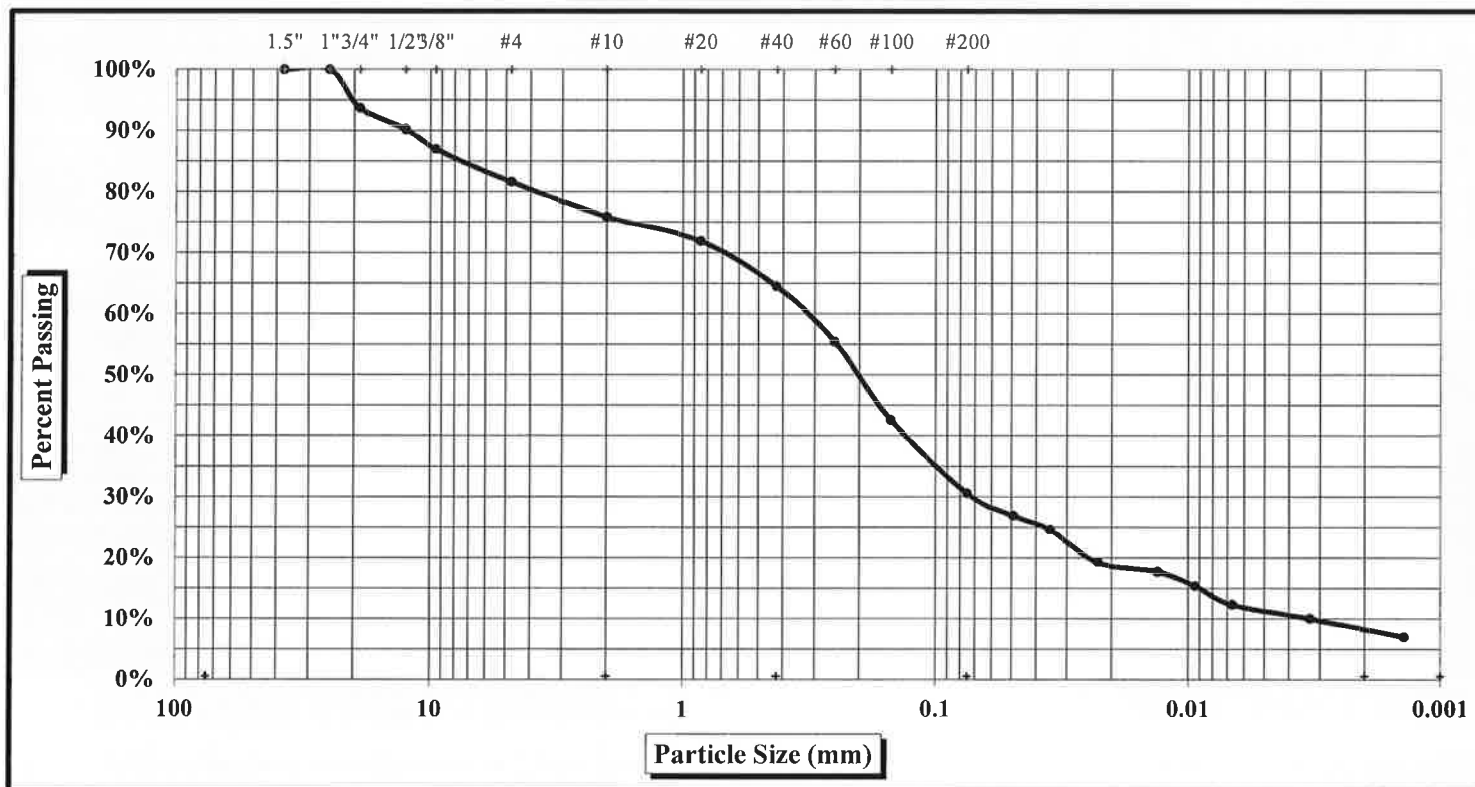
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #:	PSB16	Sample #:	7040	Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA	Depth:	8-19'
Sample Description:	A-2-5				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	24.1%	Coarse Sand	11.4%	Silt	23%
Maximum Particle Size	3/4"	Fine Sand	34.0%	Clay	8%
Apparent Relative Density(Assumed)	2.650	Moisture Content	21.7%	Silt & Clay (% Passing #200)	30.5%
Liquid Limit	41	Plastic Limit	34	Plastic Index	7

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3.27.2014
 Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index



S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 Report Date: 3/27/14

Project Name: Ecusta Mill Site Test Date(s) 3/21-27/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpharetta, GA

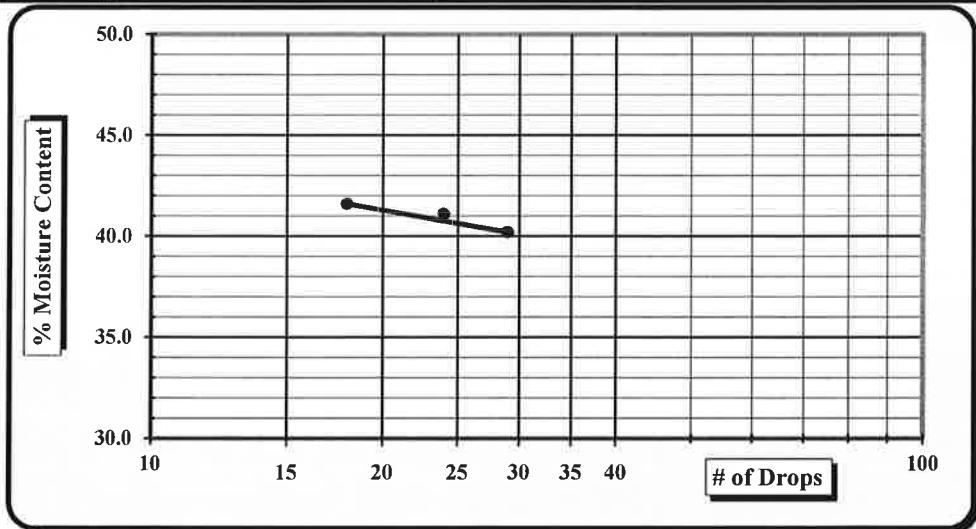
Boring #: PSB16 Sample #: 7040 Sample Date: 3/18-20/14

Location: On Site Offset: NA Elevation: 8-19'

Sample Description: A-2-5

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		39	41	II	36	49	
A	Tare Weight	13.99	15.80	16.98	15.67	15.64	
B	Wet Soil Weight + A	27.06	30.32	28.66	24.87	24.45	
C	Dry Soil Weight + A	23.31	26.09	25.23	22.52	22.22	
D	Water Weight (B-C)	3.75	4.23	3.43	2.35	2.23	
E	Dry Soil Weight (C-A)	9.32	10.29	8.25	6.85	6.58	
F	% Moisture (D/E)*100	40.2%	41.1%	41.6%	34.3%	33.9%	
N	# OF DROPS	29	24	18	Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR						
Ave.	Average				34.1%		



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **41**

Plastic Limit **34**

Plastic Index **7**

Group Symbol **A-2-5**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/27/14
Date

Ron Harris
Technical Responsibility

3.27.2014
Date

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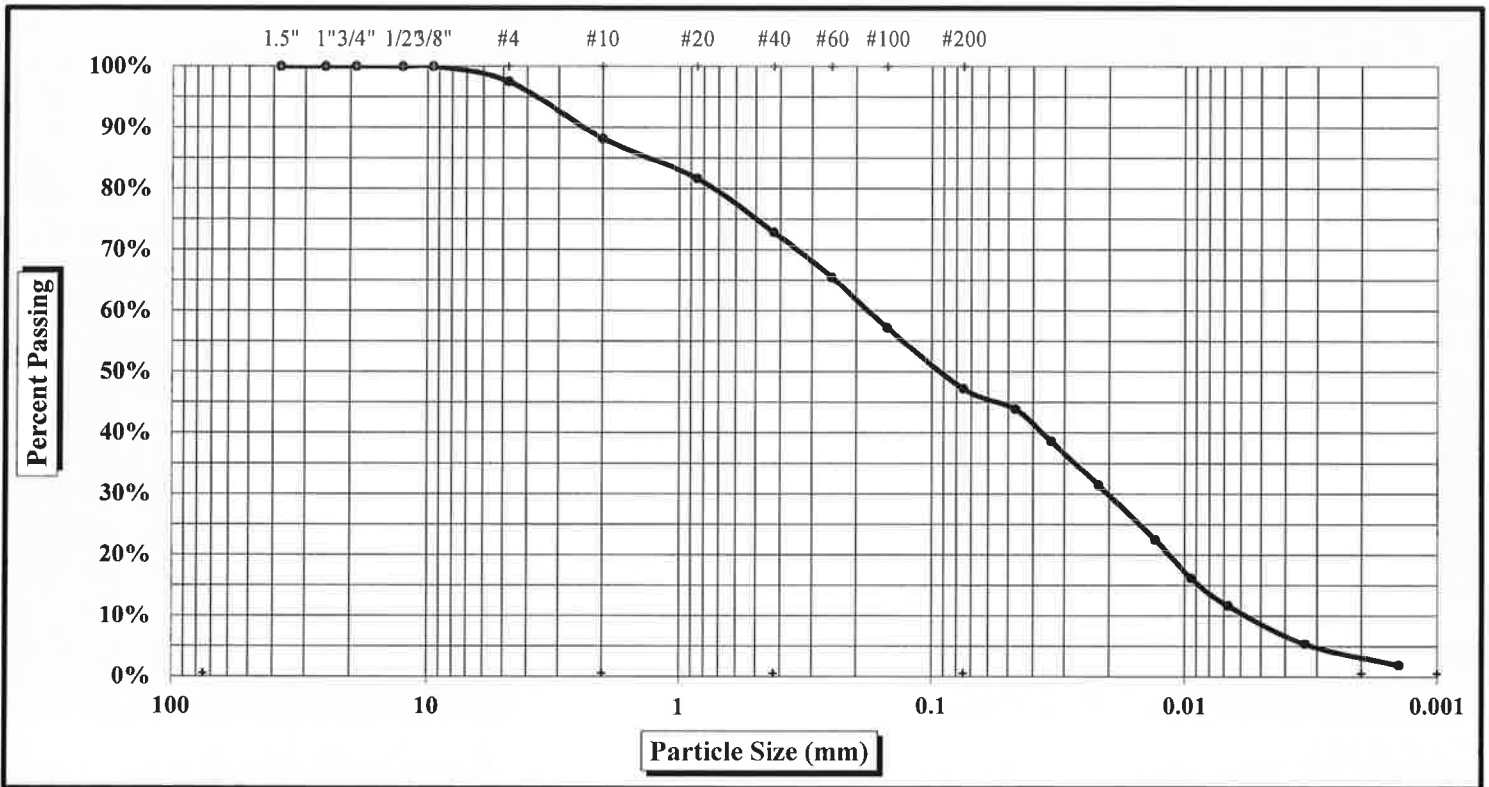
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #: PSB16	Sample #: 7040	Sample Date: 3/18-20/14
Location: On Site	Offset: NA	Depth: 19-38'
Sample Description: A-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	11.8%	Coarse Sand	15.3%	Silt	44%
Maximum Particle Size	#4	Fine Sand	25.6%	Clay	4%
Apparent Relative Density(Assumed)	2.650	Moisture Content	21.2%	Silt & Clay (% Passing #200)	47.2%
Liquid Limit	38	Plastic Limit	31	Plastic Index	7

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility:

Ron Harris

[Signature]
Signature

3.27.2014
Signature

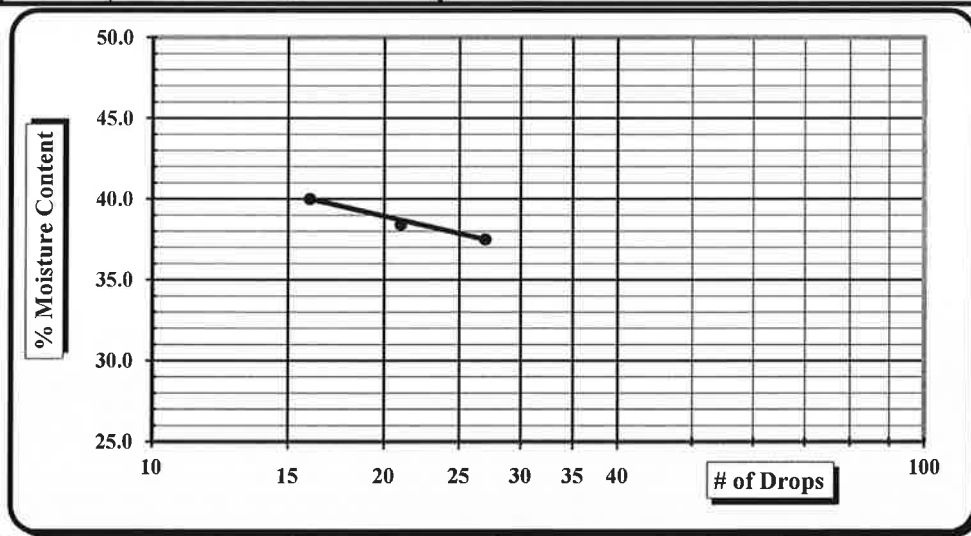
Liquid Limit, Plastic Limit, and Plastic Index



S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	3/27/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/21-27/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB16	Sample #:	7040
		Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA
		Elevation:	19-38'
Sample Description:	A-4		
<i>Type and Specification</i>	<i>S&ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>
Balance (0.01 g)	3222	6/18/2013	Grooving tool
LL Apparatus	3653	1/21/2014	Grooving tool
Oven	11702	1/21/2014	Grooving tool

Pan #	Tare #:	Liquid Limit					Plastic Limit	
		2	29	58			35	XX
A	Tare Weight	15.77	14.11	13.96			15.60	16.03
B	Wet Soil Weight + A	28.34	26.30	25.78			24.19	24.12
C	Dry Soil Weight + A	24.91	22.92	22.40			22.18	22.19
D	Water Weight (B-C)	3.43	3.38	3.38			2.01	1.93
E	Dry Soil Weight (C-A)	9.14	8.81	8.44			6.58	6.16
F	% Moisture (D/E)*100	37.5%	38.4%	40.0%			30.5%	31.3%
N	# OF DROPS	27	21	16			<i>Moisture Contents determined by AASHTO T 245</i>	
LL	LL = F * FACTOR							
Ave.	Average						30.9%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **38**

Plastic Limit **31**

Plastic Index **7**

Group Symbol **A-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/27/14
Date

Ron Harris
Technical Responsibility

3.27.2014
Date

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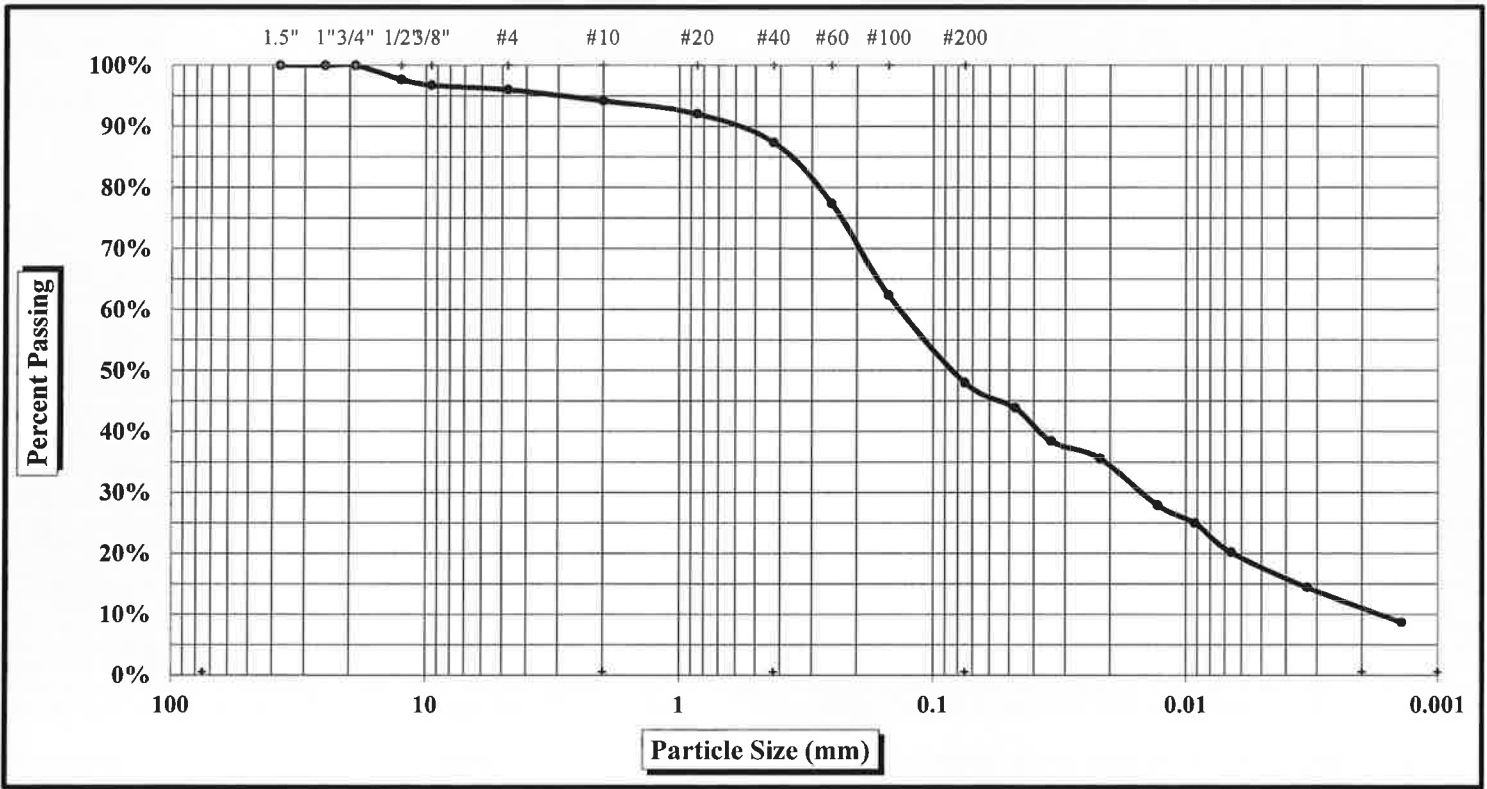
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #:	PSB17	Sample #:	7041	Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA	Depth:	1-11'
Sample Description:	A-5				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	5.8%	Coarse Sand	6.8%	Silt	37%
Maximum Particle Size	1/2"	Fine Sand	39.4%	Clay	11%
Apparent Relative Density(Assumed)	2.650	Moisture Content	51.1%	Silt & Clay (% Passing #200)	48.0%
Liquid Limit	48	Plastic Limit	44	Plastic Index	4

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3/27/2014
Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index

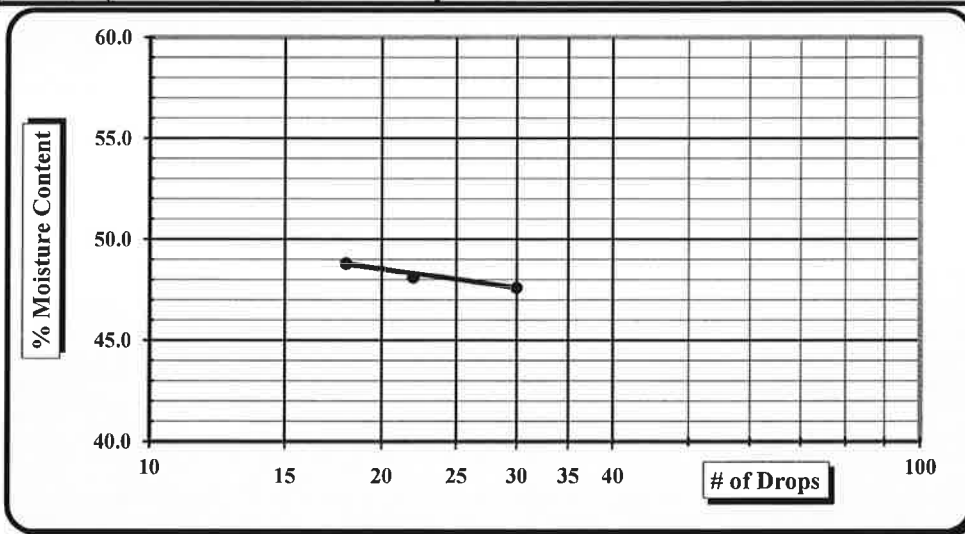


S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	3/27/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/21-27/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB17	Sample #:	7041
		Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA
		Elevation:	1-11'
Sample Description:	A-5		

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		P-2	8	P-3		KK	MM
A	Tare Weight	12.62	13.93	12.62		16.05	16.56
B	Wet Soil Weight + A	24.16	26.47	23.57		24.66	24.81
C	Dry Soil Weight + A	20.44	22.40	19.98		22.07	22.29
D	Water Weight (B-C)	3.72	4.07	3.59		2.59	2.52
E	Dry Soil Weight (C-A)	7.82	8.47	7.36		6.02	5.73
F	% Moisture (D/E)*100	47.6%	48.1%	48.8%		43.0%	44.0%
N	# OF DROPS	30	22	18		Moisture Contents determined by AASHTO T 245	
LL	LL = F * FACTOR						
Ave.	Average					43.5%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **48**

Plastic Limit **44**

Plastic Index **4**

Group Symbol **A-5**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

[Signature]
Date

[Signature]
Technical Responsibility

3.27.2014
Date

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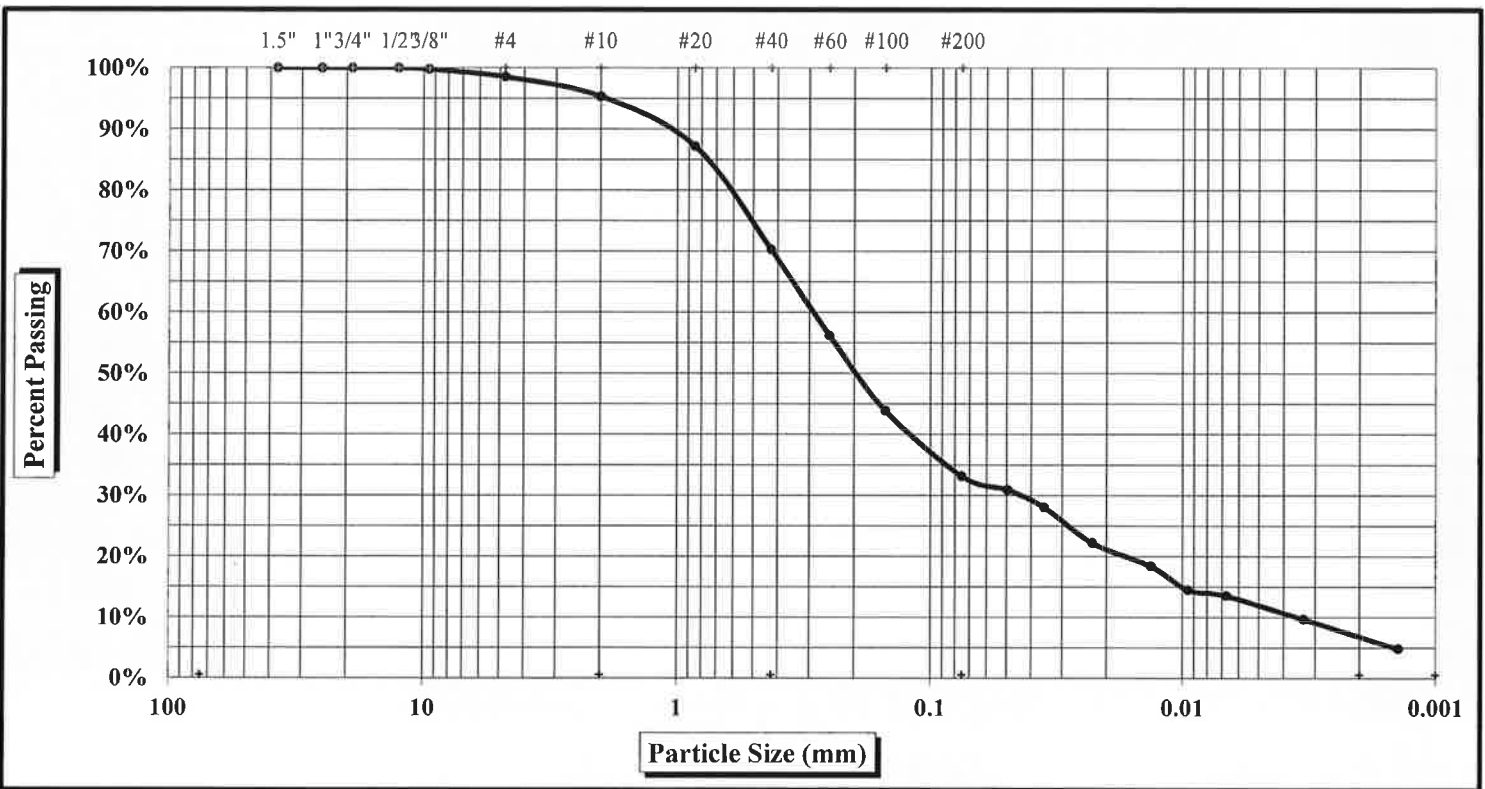
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #:	PSB17	Sample #:	7041	Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA	Depth:	11-18'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 mm and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	4.7%	Coarse Sand	25.0%	Silt	27%
Maximum Particle Size	3/8"	Fine Sand	37.2%	Clay	7%
Apparent Relative Density(Assumed)	2.650	Moisture Content	37.6%	Silt & Clay (% Passing #200)	33.1%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3.27.2014
Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index

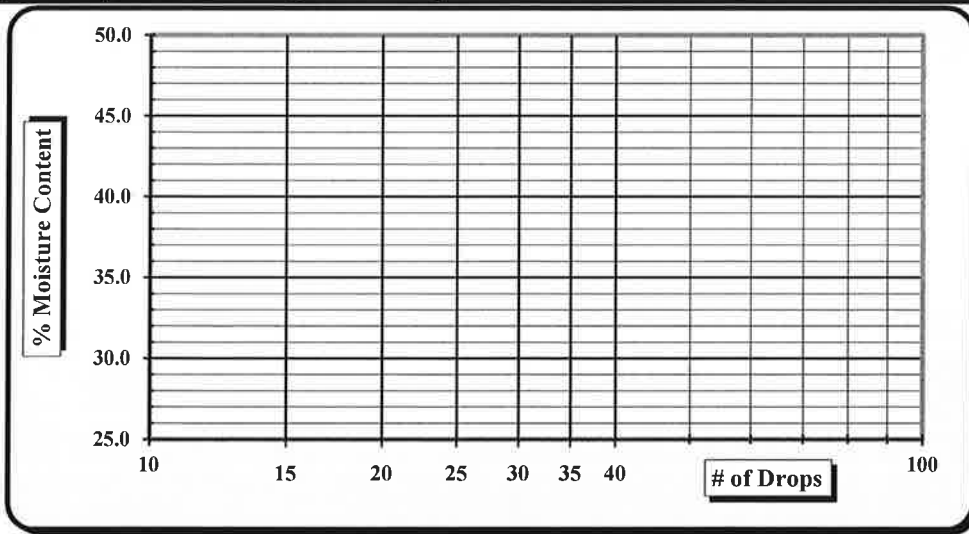


S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	3/27/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/21-27/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB17	Sample #:	7041
		Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA
		Elevation:	11-18'
Sample Description:	A-2-4		

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
A	Tare Weight						
B	Wet Soil Weight + A						
C	Dry Soil Weight + A						
D	Water Weight (B-C)						
E	Dry Soil Weight (C-A)						
F	% Moisture (D/E)*100						
N	# OF DROPS						Moisture Contents determined by AASHTO T 245
LL	LL = F * FACTOR						
Ave.	Average						



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit

Plastic Limit

Plastic Index

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/27/14
Date

Rouhanis
Technical Responsibility

3.27.2014
Date

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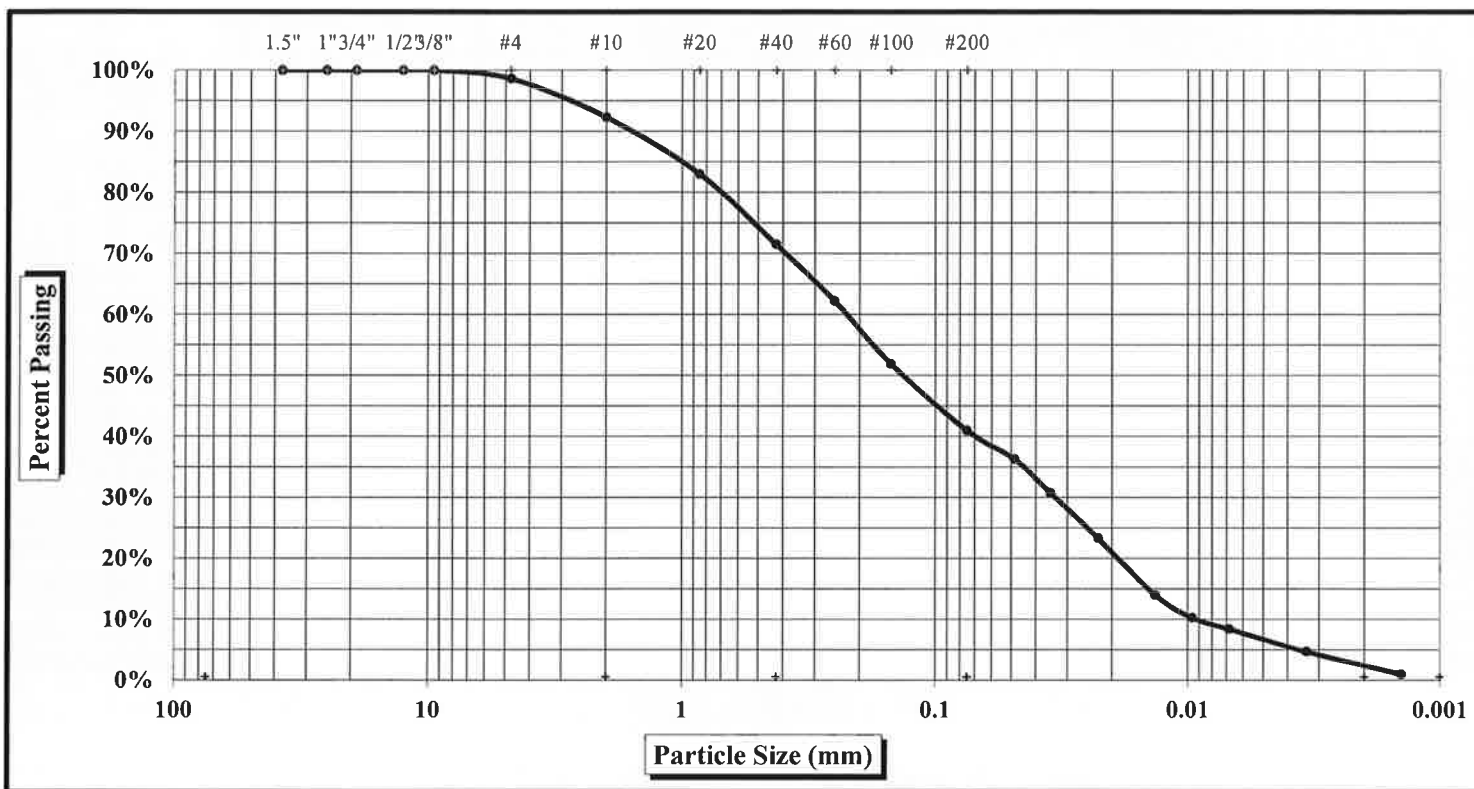
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #:	PSB17	Sample #:	7041	Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA	Depth:	18-38'
Sample Description:	A-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	7.7%	Coarse Sand	20.8%	Silt	38%
Maximum Particle Size	#4	Fine Sand	30.5%	Clay	3%
Apparent Relative Density(Assumed)	2.650	Moisture Content	16.5%	Silt & Clay (% Passing #200)	41.0%
Liquid Limit	35	Plastic Limit	30	Plastic Index	5

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

- References:** AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ken Harris [Signature] 3.27.2014
Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index



Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

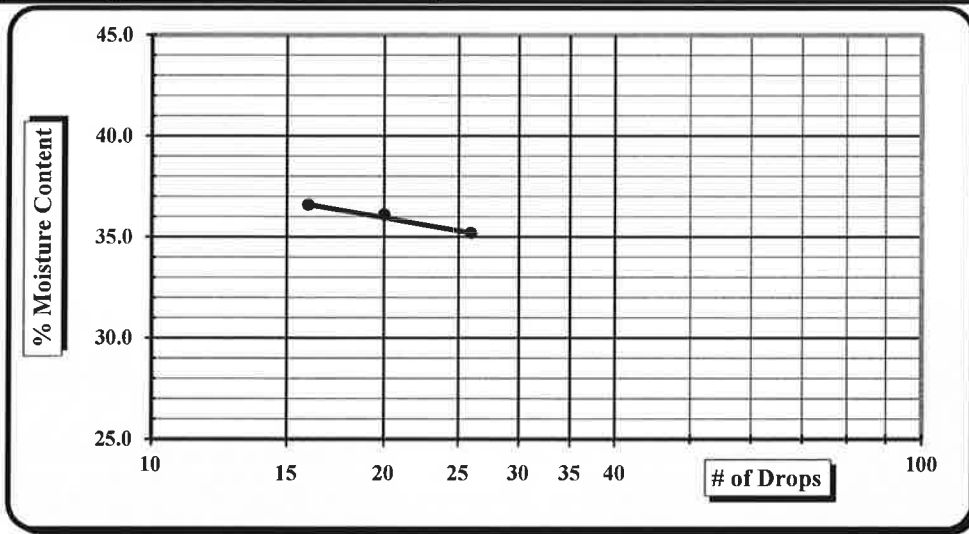
Quality Assurance

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	3/27/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/21-27/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB17	Sample #:	7041
		Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA
		Elevation:	18-38'
Sample Description:	A-4		

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		40	DC	P12	U	9	
A	Tare Weight	15.81	15.62	12.77	15.48	13.91	
B	Wet Soil Weight + A	28.44	28.30	27.07	24.29	21.92	
C	Dry Soil Weight + A	25.15	24.94	23.24	22.27	20.09	
D	Water Weight (B-C)	3.29	3.36	3.83	2.02	1.83	
E	Dry Soil Weight (C-A)	9.34	9.32	10.47	6.79	6.18	
F	% Moisture (D/E)*100	35.2%	36.1%	36.6%	29.7%	29.6%	
N	# OF DROPS	26	20	16	Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR						
Ave.	Average				29.7%		



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **35**

Plastic Limit **30**

Plastic Index **5**

Group Symbol **A-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/27/14
Date

Paul Harris
Technical Responsibility

3.27.2014
Date

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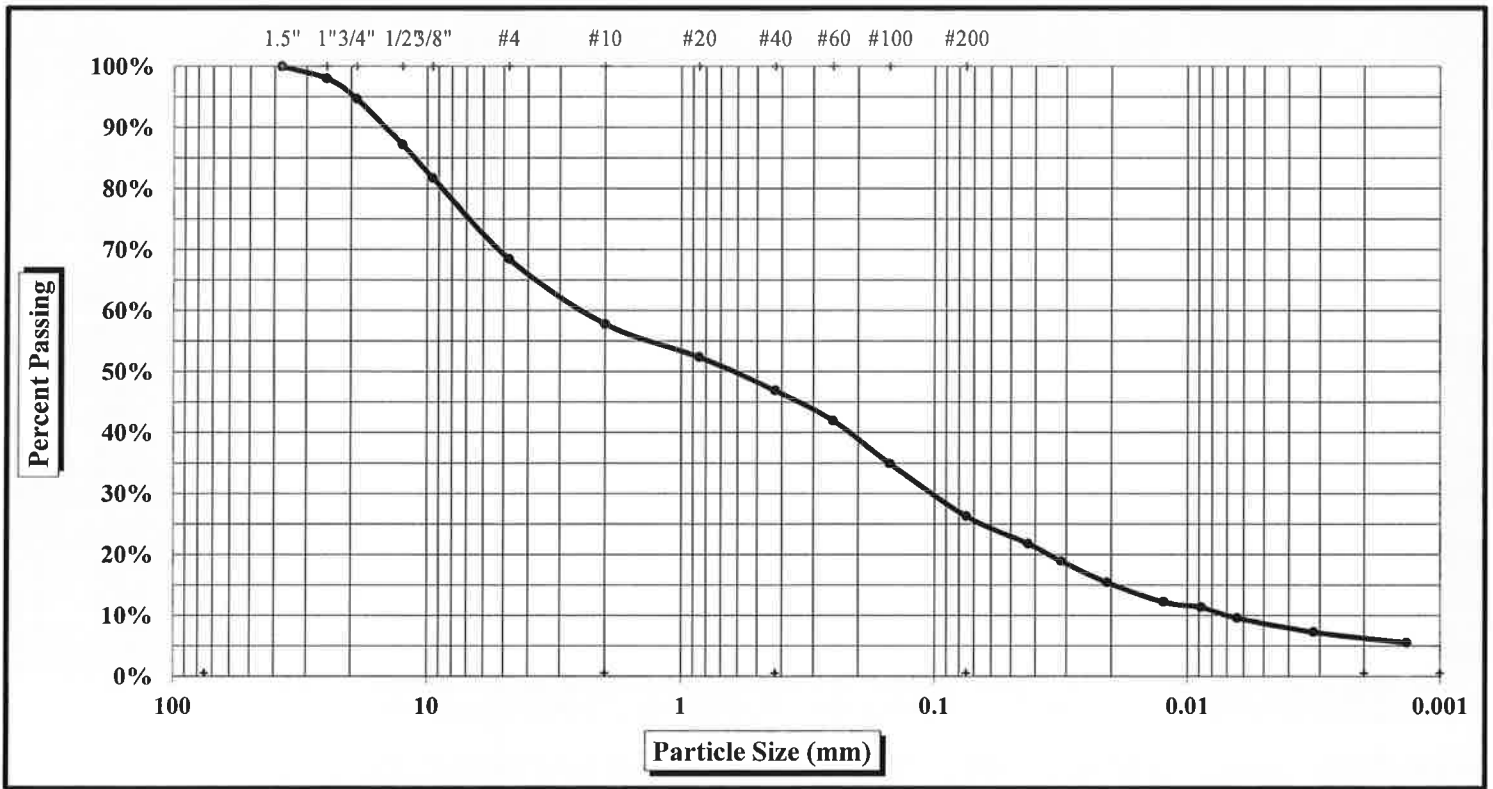
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #:	PSB18	Sample #:	7042	Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA	Depth:	1-10'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	42.2%	Coarse Sand	10.9%	Silt	20%
Maximum Particle Size	1.0"	Fine Sand	20.6%	Clay	6%
Apparent Relative Density(Assumed)	2.650	Moisture Content	17.9%	Silt & Clay (% Passing #200)	26.3%
Liquid Limit	30	Plastic Limit	29	Plastic Index	1

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility:

Ron Harris

[Signature]
Signature

3.27.2014
Signature

Liquid Limit, Plastic Limit, and Plastic Index



S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 3/27/14

Project Name: Ecusta Mill Site **Test Date(s)** 3/21-27/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpharetta, GA

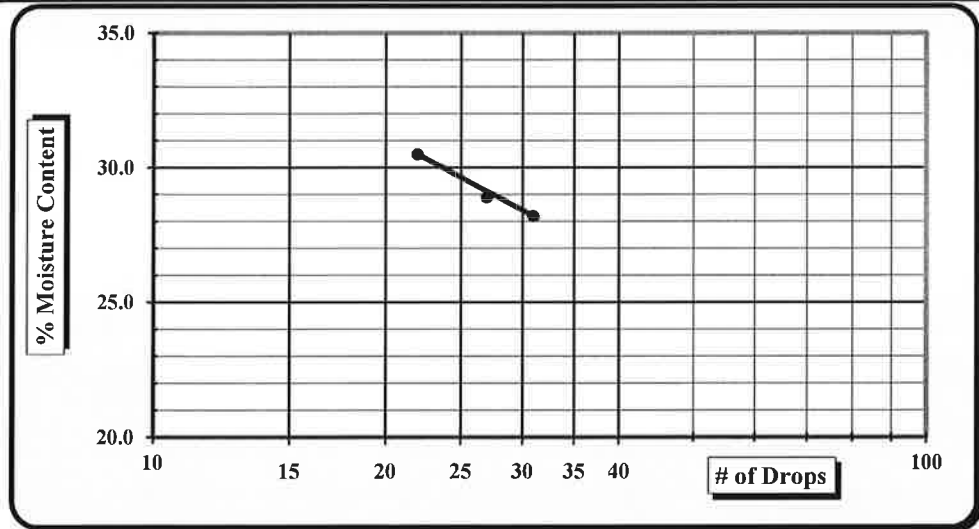
Boring #: PSB18 **Sample #:** 7042 **Sample Date:** 3/18-20/14

Location: On Site **Offset:** NA **Elevation:** 1-10'

Sample Description: A-2-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		52	60	1		278	Z
A	Tare Weight	15.70	13.86	13.85		13.93	16.89
B	Wet Soil Weight + A	29.15	27.68	26.83		21.46	23.21
C	Dry Soil Weight + A	26.19	24.58	23.80		19.77	21.81
D	Water Weight (B-C)	2.96	3.10	3.03		1.69	1.40
E	Dry Soil Weight (C-A)	10.49	10.72	9.95		5.84	4.92
F	% Moisture (D/E)*100	28.2%	28.9%	30.5%		28.9%	28.5%
N	# OF DROPS	31	27	22		Moisture Contents determined by AASHTO T 245	
LL	LL = F * FACTOR						
Ave.	Average					28.7%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **30**

Plastic Limit **29**

Plastic Index **1**

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/27/14
Date

Rouhani
Technical Responsibility

3.27.2014
Date

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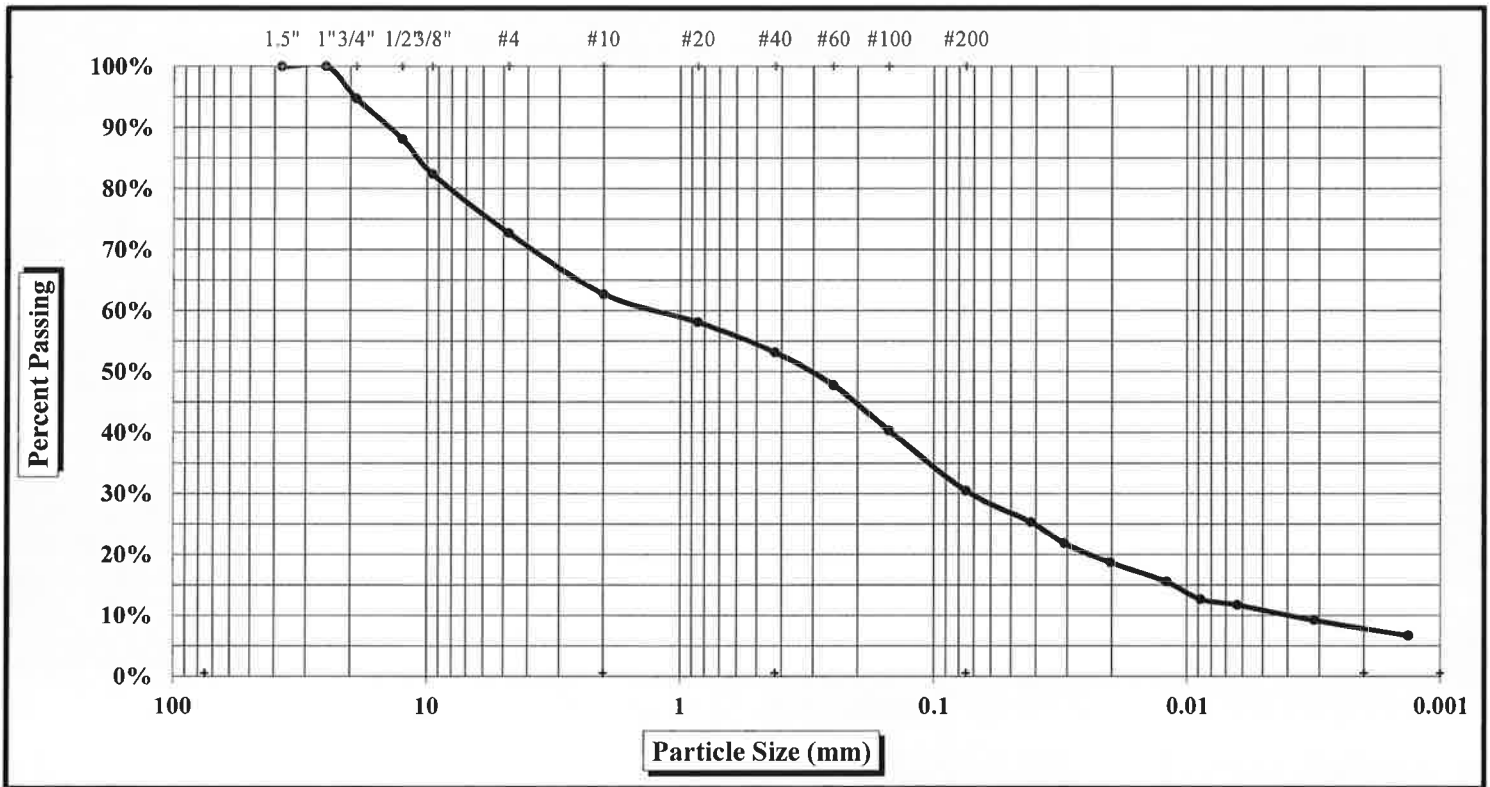
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/27/14**
 Test Date(s): **3/21-27/14**

Boring #:	PSB19	Sample #:	7043	Sample Date:	3/18-20/14
Location:	On Site	Offset:	NA	Depth:	1-7'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	37.3%	Coarse Sand	9.5%	Silt	23%
Maximum Particle Size	3/4"	Fine Sand	22.7%	Clay	8%
Apparent Relative Density(Assumed)	2.650	Moisture Content	21.4%	Silt & Clay (% Passing #200)	30.4%
Liquid Limit	36	Plastic Limit	31	Plastic Index	5

Sample contained pulp,cellophane

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility:
 Signature Signature Signature

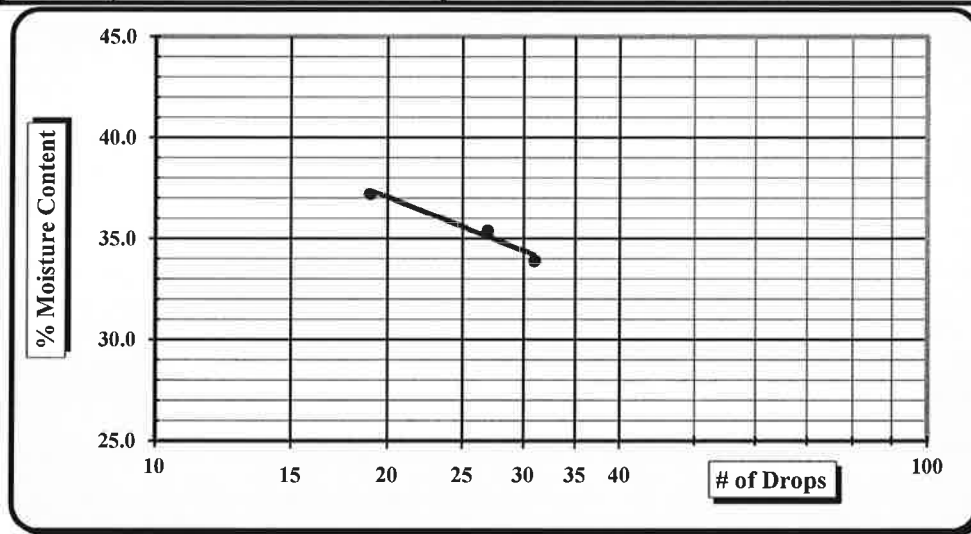
Liquid Limit, Plastic Limit, and Plastic Index



S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001	Report Date: 3/27/14
Project Name: Ecusta Mill Site	Test Date(s): 3/21-27/14
Client Name: Shaw Environmental & Infrastructure, Inc.	
Client Address: 11560 Great Oaks Way, Suite 500, Alpharetta, GA	
Boring #: PSB19	Sample #: 7043
Sample Date: 3/18-20/14	
Location: On Site	Offset: NA
Elevation: 1-7'	
Sample Description: A-2-4	
<i>Type and Specification</i>	<i>S&ME ID #</i>
Balance (0.01 g)	3222
LL Apparatus	3653
Oven	11702
<i>Cal Date:</i>	<i>Cal Date:</i>
6/18/2013	7/16/2013
<i>Type and Specification</i>	<i>S&ME ID #</i>
Grooving tool	20835
Grooving tool	
Grooving tool	

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		RR	6	SMS	54	51	
A	Tare Weight	15.29	14.04	15.16	14.08	15.74	
B	Wet Soil Weight + A	28.63	24.90	28.15	23.06	24.36	
C	Dry Soil Weight + A	25.25	22.06	24.63	20.92	22.35	
D	Water Weight (B-C)	3.38	2.84	3.52	2.14	2.01	
E	Dry Soil Weight (C-A)	9.96	8.02	9.47	6.84	6.61	
F	% Moisture (D/E)*100	33.9%	35.4%	37.2%	31.3%	30.4%	
N	# OF DROPS	31	27	19	<i>Moisture Contents determined by AASHTO T 245</i>		
LL	LL = F * FACTOR						
Ave.	Average				30.9%		



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **36**

Plastic Limit **31**

Plastic Index **5**

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner 3/27/14 Ron Harris 3-22-2014
 Technician Name Date Technical Responsibility Date

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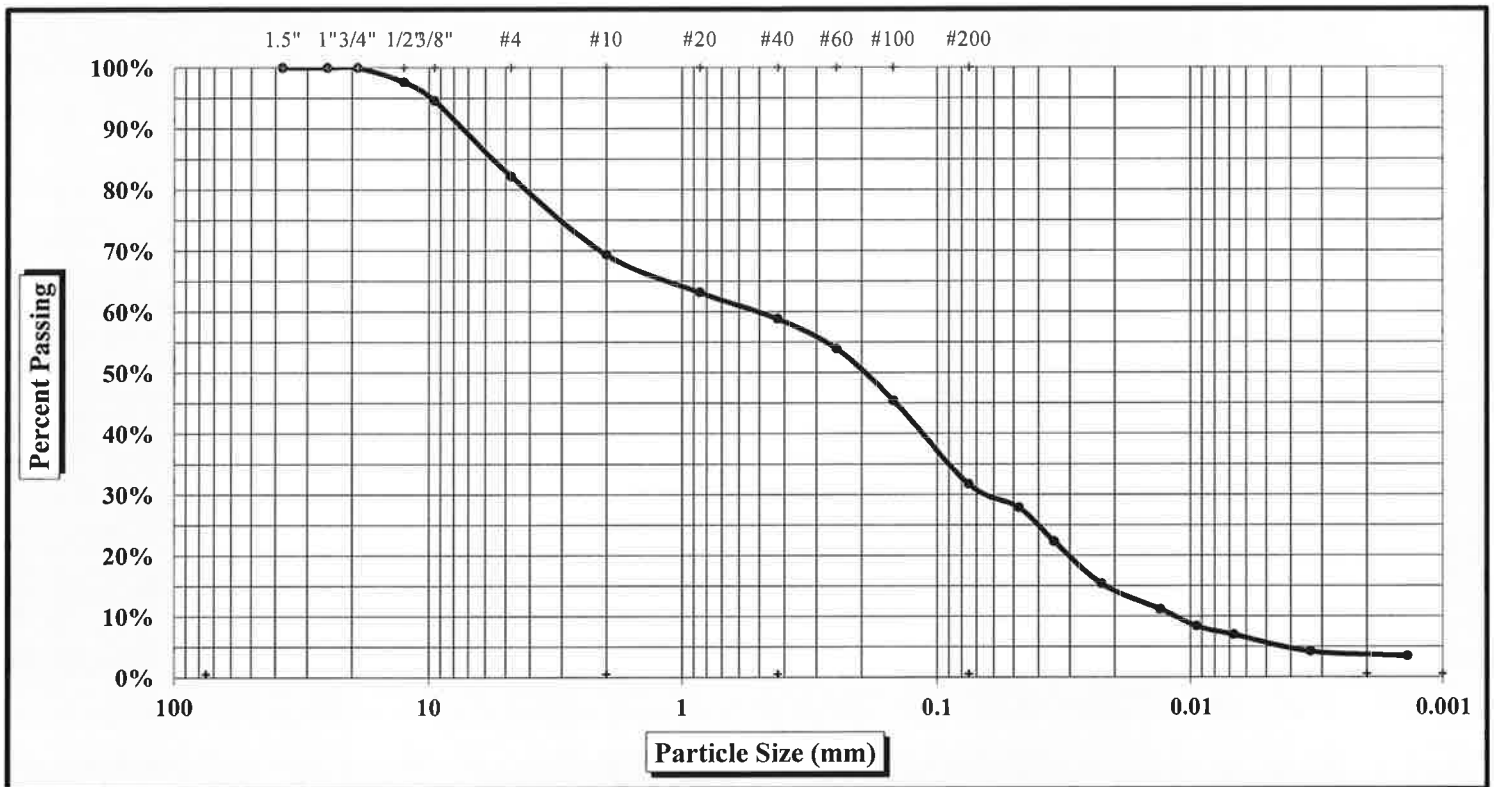
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **4/7/14**
 Test Date(s): **3/29-4/3/14**

Boring #: PSB20	Sample #: 7044	Sample Date: 3/18-27/14
Location: On Site	Offset: NA	Depth: 1-5'
Sample Description: A-2-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	30.7%	Coarse Sand	10.5%	Silt	28%
Maximum Particle Size	1/2"	Fine Sand	27.1%	Clay	4%
Apparent Relative Density(Assumed)	2.650	Moisture Content	13.1%	Silt & Clay (% Passing #200)	31.7%
Liquid Limit	34	Plastic Limit	30	Plastic Index	4

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

Signature

4.10.2014
Signature



Liquid Limit, Plastic Limit, and Plastic Index

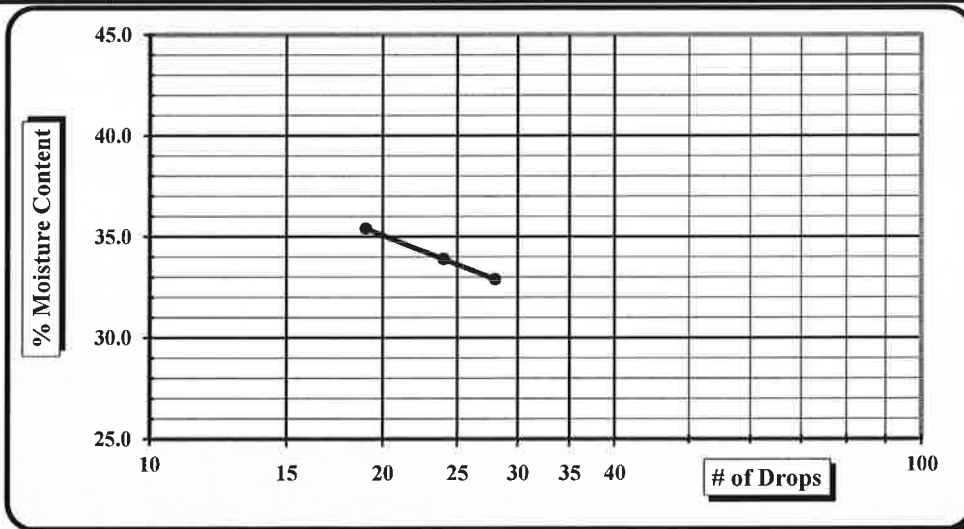
S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 Report Date: 4/7/14
 Project Name: Ecusta Mill Site Test Date(s): 3/29-4/5/14
 Client Name: Shaw Environmental & Infrastructure, Inc.
 Client Address: 11560 Great Oaks Way, Suite 500, Alpharetta, GA
 Boring #: PSB20 Sample #: 7044 Sample Date: 3/18-27/14
 Location: On Site Offset: NA Elevation: 1-5'

Sample Description: A-2-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		35	NN	58		L	EE
A	Tare Weight	15.71	15.29	13.98		16.94	16.88
B	Wet Soil Weight + A	28.10	28.89	24.53		24.31	25.91
C	Dry Soil Weight + A	25.03	25.45	21.77		22.62	23.79
D	Water Weight (B-C)	3.07	3.44	2.76		1.69	2.12
E	Dry Soil Weight (C-A)	9.32	10.16	7.79		5.68	6.91
F	% Moisture (D/E)*100	32.9%	33.9%	35.4%		29.8%	30.7%
N	# OF DROPS	28	24	19		Moisture Contents determined by AASHTO T 245	
LL	LL = F * FACTOR						
Ave.	Average					30.3%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **34**

Plastic Limit **30**

Plastic Index **4**

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/7/14
Date

[Signature]
Technical Responsibility

4.10.2014
Date

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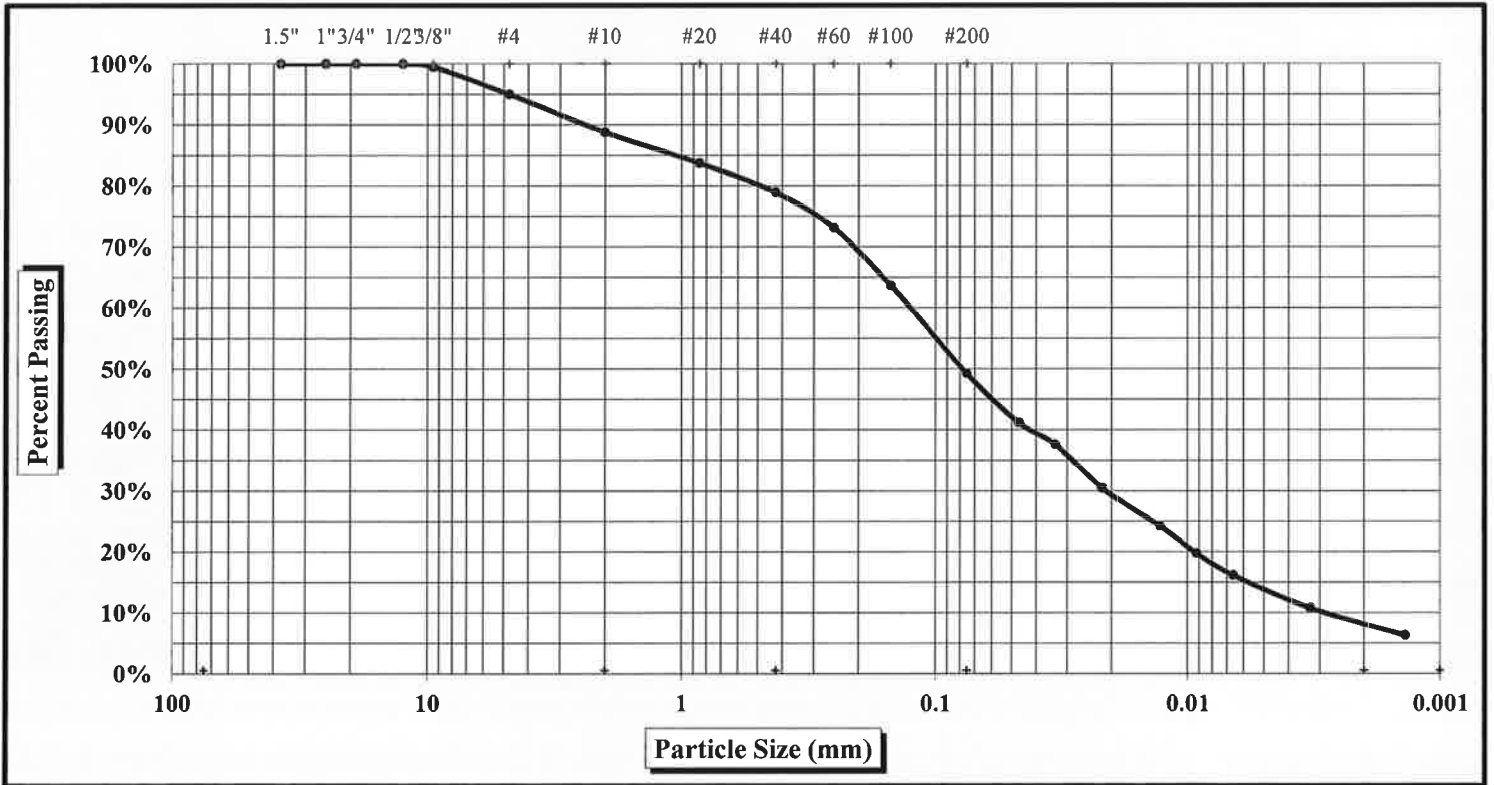
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **4/7/14**
 Test Date(s): **3/29-4/3/14**

Boring #: PSB21	Sample #: 7045	Sample Date: 3/18-27/14
Location: On Site	Offset: NA	Depth: 1-9'
Sample Description: A-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 mm and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	11.2%	Coarse Sand	9.8%	Silt	41%
Maximum Particle Size	3/8"	Fine Sand	29.7%	Clay	8%
Apparent Relative Density(Assumed)	2.650	Moisture Content	24.1%	Silt & Clay (% Passing #200)	49.2%
Liquid Limit	37	Plastic Limit	33	Plastic Index	4

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

[Handwritten Signature]

 Signature

4.10.2014

 Signature

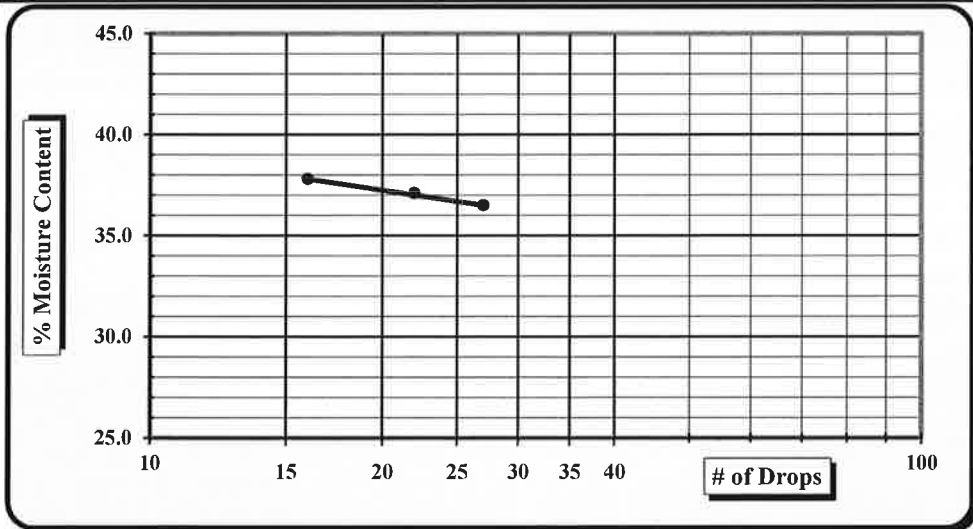
Liquid Limit, Plastic Limit, and Plastic Index



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Project #: 3735-14-001	Report Date: 4/7/14
Project Name: Ecusta Mill Site	Test Date(s): 3/29-4/5/14
Client Name: Shaw Environmental & Infrastructure, Inc.	
Client Address: 11560 Great Oaks Way, Suite 500, Alpharetta, GA	
Boring #: PSB21	Sample #: 7045
Sample Date: 3/18-27/14	
Location: On Site	Offset: NA
Elevation: 1-9'	
Sample Description: A-4	
<i>Type and Specification</i>	<i>S&ME ID #</i>
Balance (0.01 g)	3222
LL Apparatus	3653
Oven	11702
<i>Cal Date:</i>	<i>Cal Date:</i>
6/18/2013	7/16/2013
<i>Type and Specification</i>	<i>S&ME ID #</i>
Grooving tool	20835
Grooving tool	
Grooving tool	

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		P-2	6	MM		RR	P-3
A	Tare Weight	12.60	14.03	16.57		15.28	12.61
B	Wet Soil Weight + A	24.87	25.79	27.79		23.90	20.93
C	Dry Soil Weight + A	21.59	22.61	24.71		21.79	18.86
D	Water Weight (B-C)	3.28	3.18	3.08		2.11	2.07
E	Dry Soil Weight (C-A)	8.99	8.58	8.14		6.51	6.25
F	% Moisture (D/E)*100	36.5%	37.1%	37.8%		32.4%	33.1%
N	# OF DROPS	27	22	16		Moisture Contents determined by AASHTO T 245	
LL	LL = F * FACTOR						
Ave.	Average					32.8%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **37**

Plastic Limit **33**

Plastic Index **4**

Group Symbol **A-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/7/14
Date

[Signature]
Technical Responsibility

4/10/2014
Date

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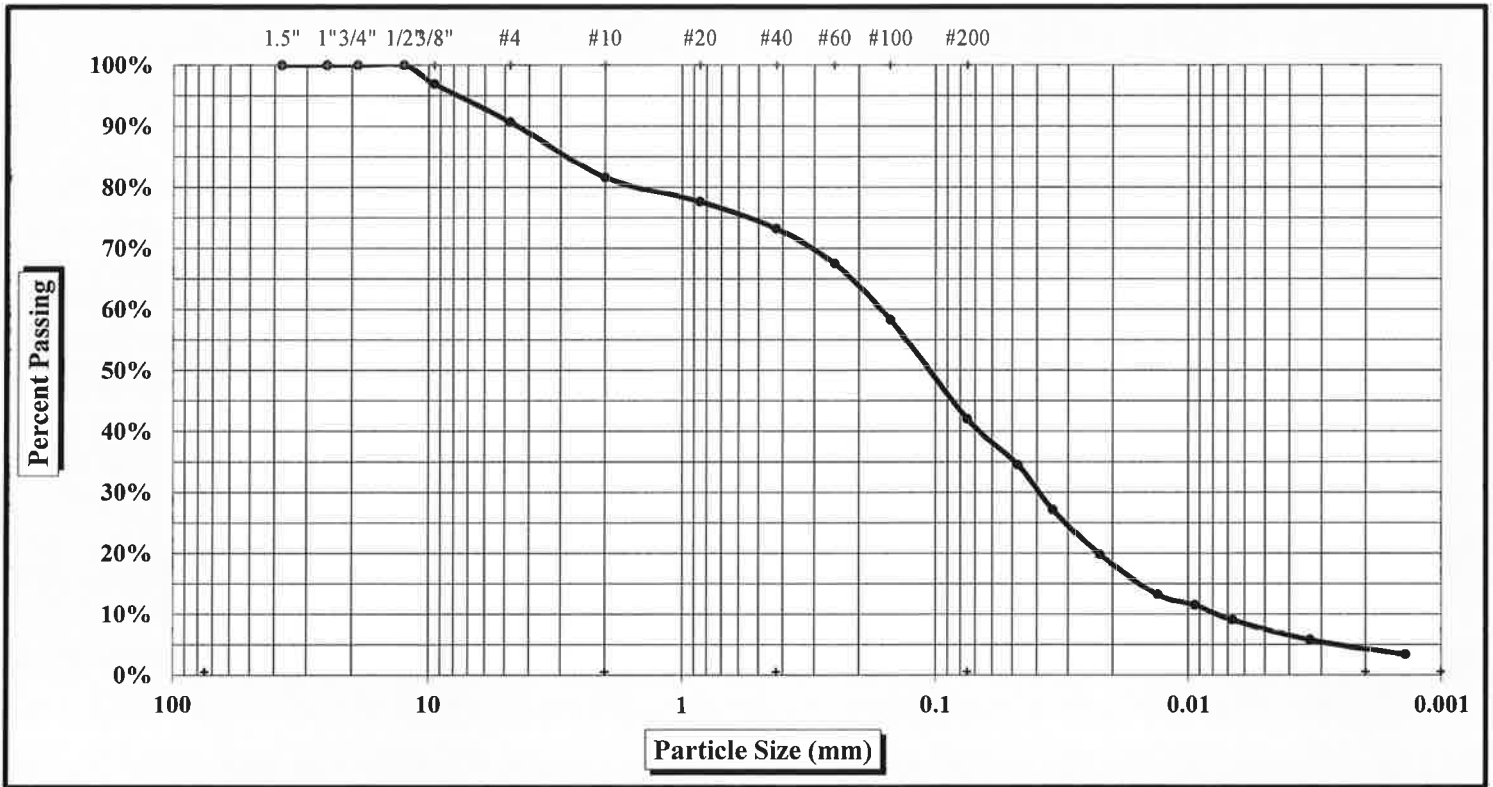
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **4/7/14**
 Test Date(s): **3/29-4/3/14**

Boring #:	PSB22	Sample #:	7046	Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA	Depth:	1-7'
Sample Description:	A-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	18.4%	Coarse Sand	8.4%	Silt	38%
Maximum Particle Size	3/8"	Fine Sand	31.2%	Clay	4%
Apparent Relative Density(Assumed)	2.650	Moisture Content	19.5%	Silt & Clay (% Passing #200)	42.0%
Liquid Limit	39	Plastic Limit	34	Plastic Index	5

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

Signature

4.10.2014
 Signature

Liquid Limit, Plastic Limit, and Plastic Index

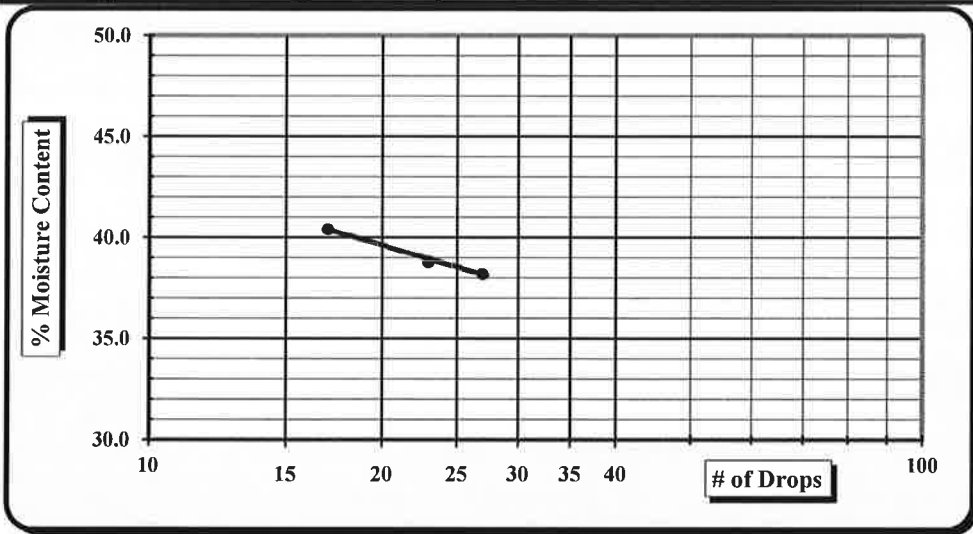


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Project #: 3735-14-001	Report Date: 4/7/14
Project Name: Ecusta Mill Site	Test Date(s): 3/29-4/5/14
Client Name: Shaw Environmental & Infrastructure, Inc.	
Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA	
Boring #: PSB22	Sample #: 7046
Sample Date: 3/18-27/14	
Location: On Site	Offset: NA
Elevation: 1-7'	
Sample Description: A-4	

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		2	52	39		P-15	P-12
A	Tare Weight	15.70	15.74	13.97		12.45	12.77
B	Wet Soil Weight + A	30.22	26.97	24.46		22.17	21.54
C	Dry Soil Weight + A	26.21	23.83	21.44		19.71	19.33
D	Water Weight (B-C)	4.01	3.14	3.02		2.46	2.21
E	Dry Soil Weight (C-A)	10.51	8.09	7.47		7.26	6.56
F	% Moisture (D/E)*100	38.2%	38.8%	40.4%		33.9%	33.7%
N	# OF DROPS	27	23	17		<i>Moisture Contents determined by AASHTO T 245</i>	
LL	LL = F * FACTOR						
Ave.	Average					33.8%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **39**

Plastic Limit **34**

Plastic Index **5**

Group Symbol **A-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/7/14
Date

[Signature]
Technical Responsibility

4.10.2014
Date

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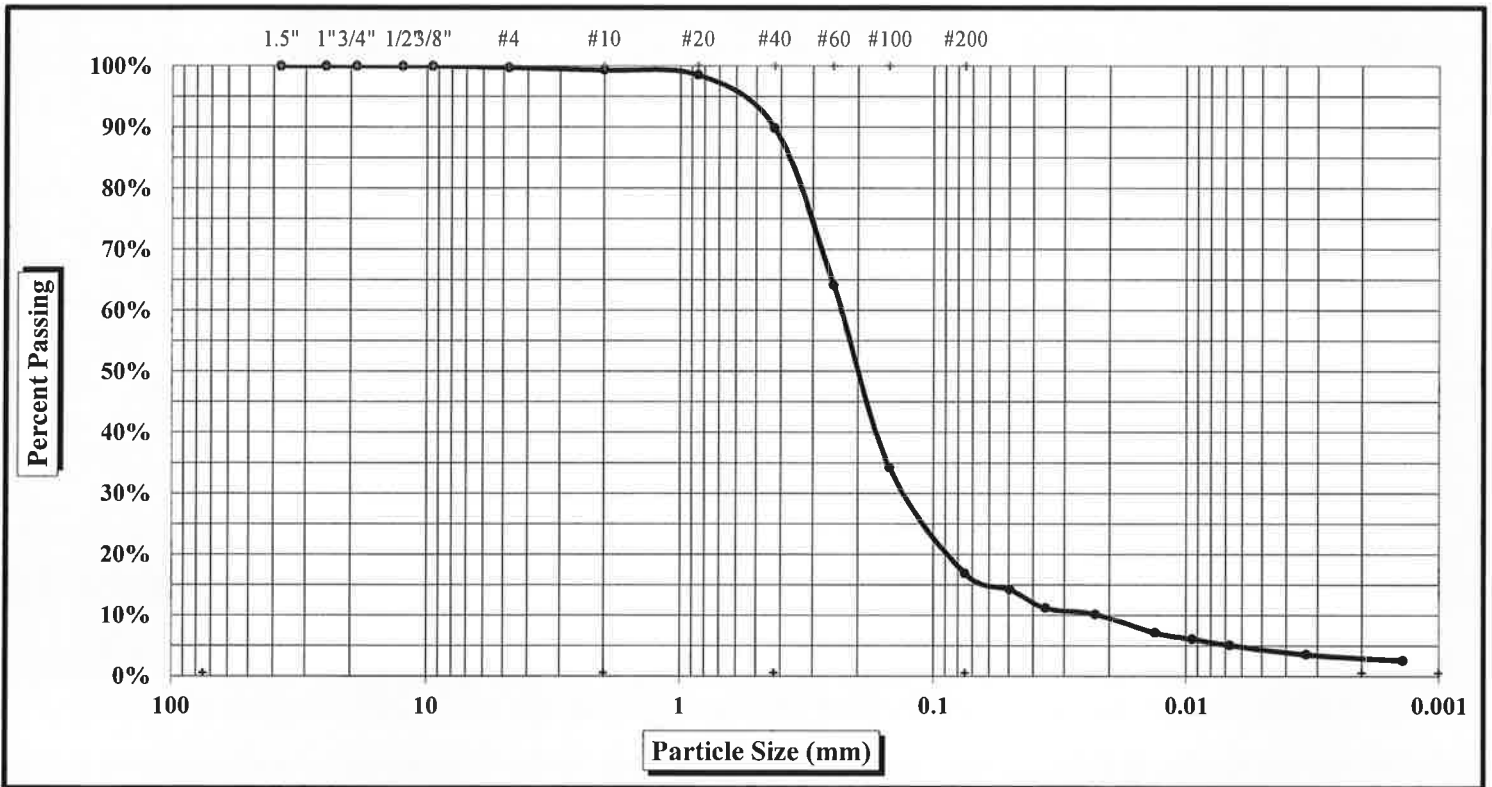
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **4/7/14**
 Test Date(s): **3/29-4/3/14**

Boring #:	PSB23	Sample #:	7047	Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA	Depth:	1-11'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	0.7%	Coarse Sand	9.5%	Silt	14%
Maximum Particle Size	#4	Fine Sand	73.0%	Clay	3%
Apparent Relative Density(Assumed)	2.650	Moisture Content	17.4%	Silt & Clay (% Passing #200)	16.9%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

[Signature]
Signature

4.10.2014
Signature

Liquid Limit, Plastic Limit, and Plastic Index

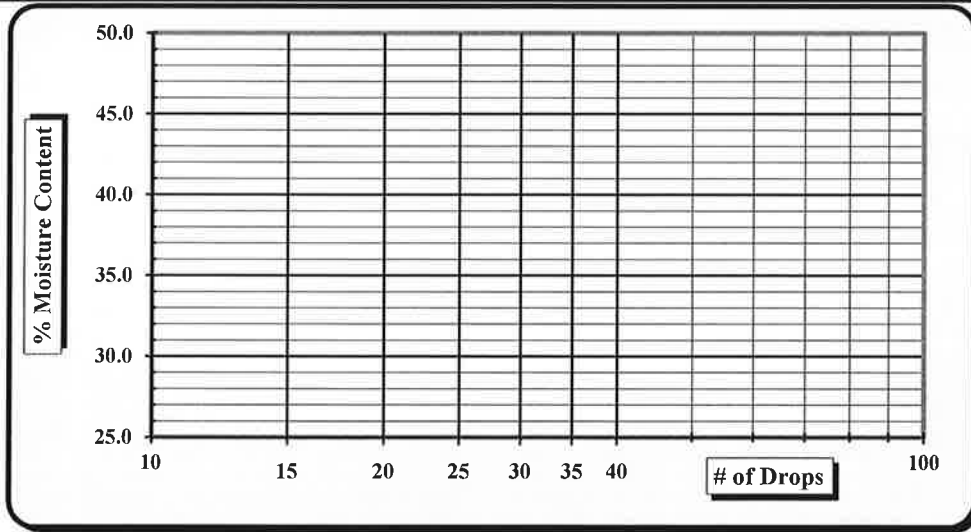


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Project #:	3735-14-001	Report Date:	4/7/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/29-4/5/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB23	Sample #:	7047
		Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA
		Elevation:	1-11'

Sample Description:		A-2-4			
<i>Type and Specification</i>	<i>S&ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
A	Tare Weight						
B	Wet Soil Weight + A						
C	Dry Soil Weight + A						
D	Water Weight (B-C)						
E	Dry Soil Weight (C-A)						
F	% Moisture (D/E)*100						
N	# OF DROPS					<i>Moisture Contents determined by AASHTO T 245</i>	
LL	LL = F * FACTOR						
Ave.	Average						



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit

Plastic Limit

Plastic Index

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve:

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/7/14
Date

Ron Harris
Technical Responsibility

4.10.2014
Date

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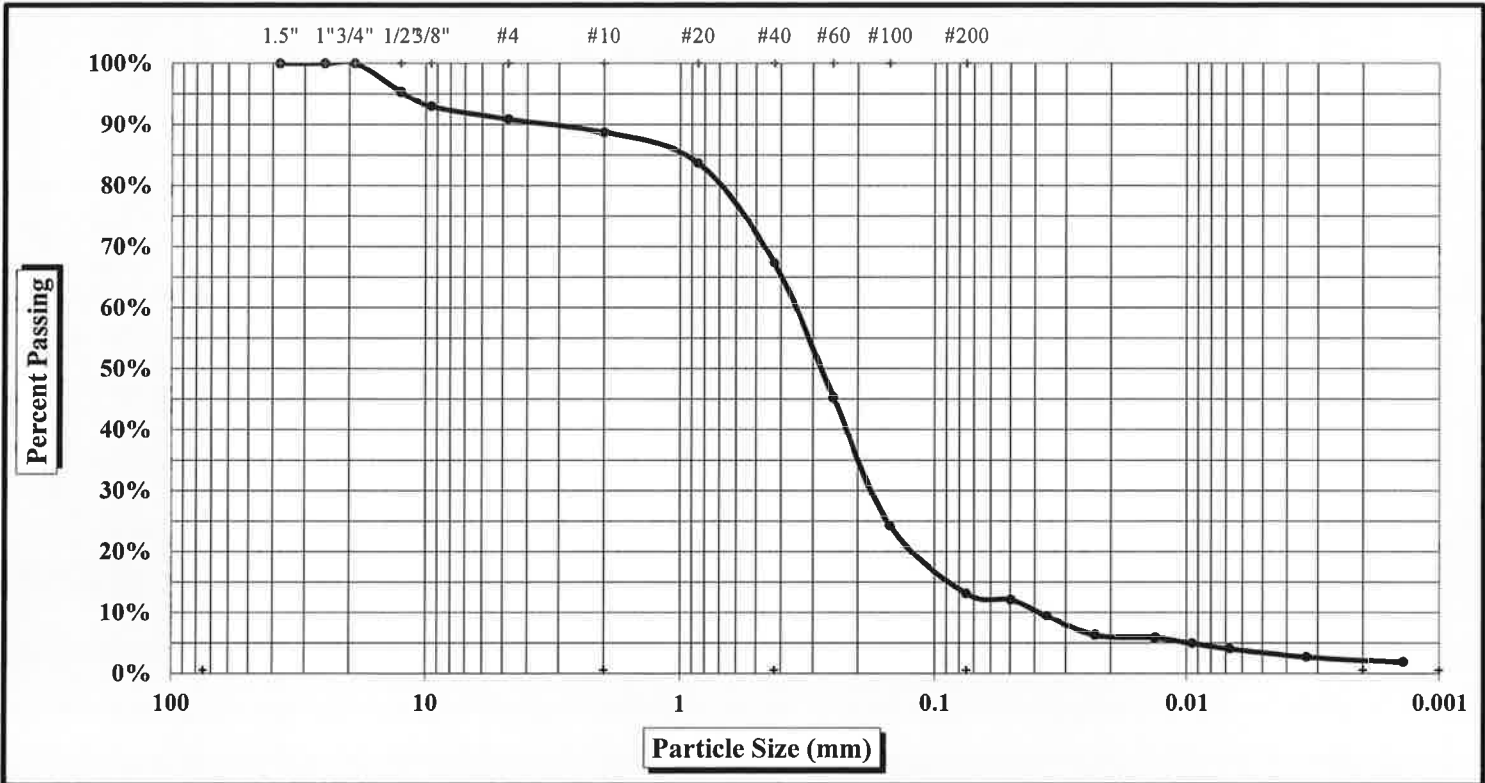
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **4/7/14**
 Test Date(s): **3/29-4/3/14**

Boring #:	PSB24	Sample #:	7049	Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA	Depth:	1-8'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 mm and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	11.3%	Coarse Sand	21.4%	Silt	11%
Maximum Particle Size	1/2"	Fine Sand	54.2%	Clay	2%
Apparent Relative Density(Assumed)	2.650	Moisture Content	13.9%	Silt & Clay (% Passing #200)	13.1%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

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4.10.2014
 Signature

Liquid Limit, Plastic Limit, and Plastic Index

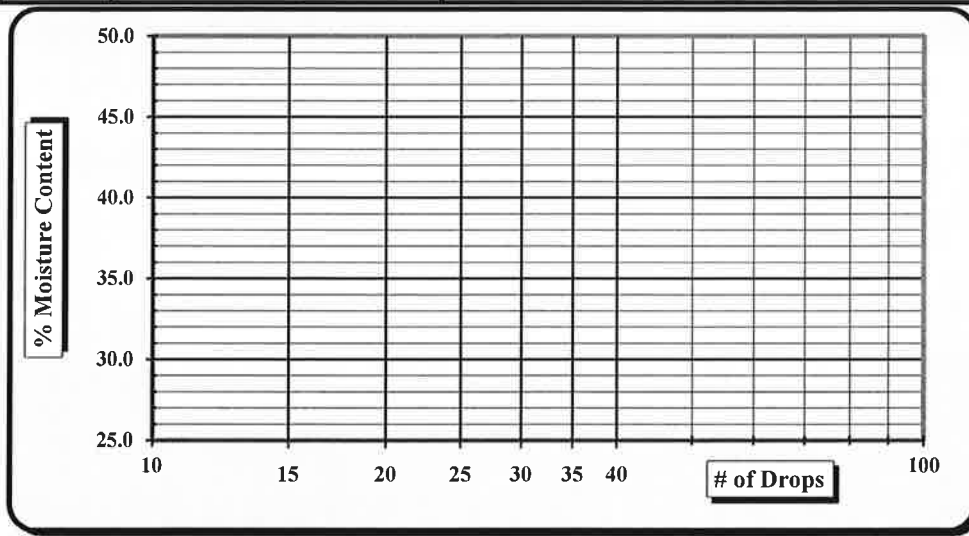


S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	4/7/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/29-4/5/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB24	Sample #:	7049
		Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA
		Elevation:	1-8'

Sample Description:		A-2-4			
Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
A	Tare Weight						
B	Wet Soil Weight + A						
C	Dry Soil Weight + A						
D	Water Weight (B-C)						
E	Dry Soil Weight (C-A)						
F	% Moisture (D/E)*100						
N	# OF DROPS						Moisture Contents determined by AASHTO T 245
LL	LL = F * FACTOR						
Ave.	Average						



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit

Plastic Limit

Plastic Index

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve:

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner 4/7/14 [Signature] 4.10.2014
 Technician Name Date Technical Responsibility Date

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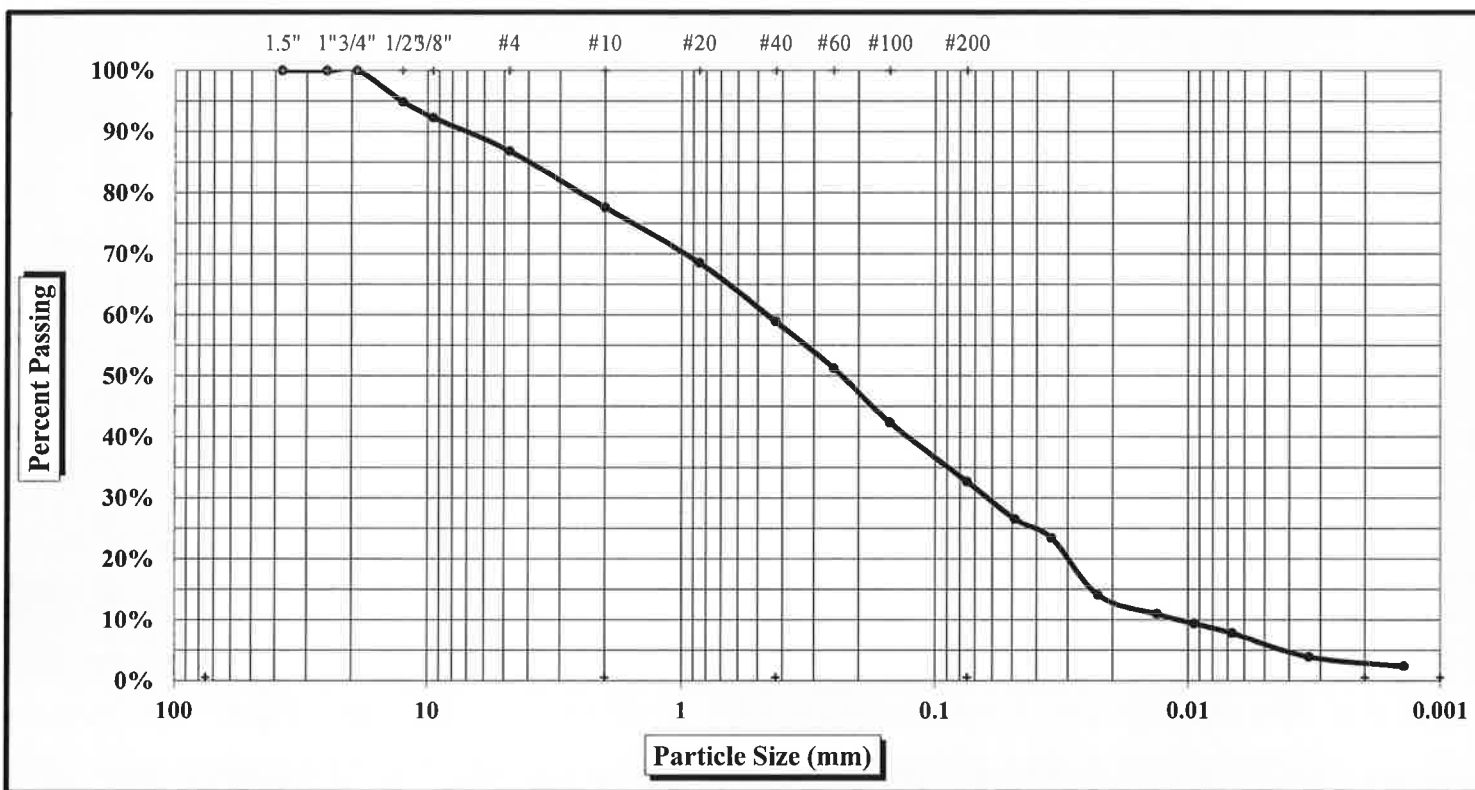
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **4/7/14**
 Test Date(s): **3/29-4/3/14**

Boring #: PSB24	Sample #: 7049	Sample Date: 3/18-27/14
Location: On Site	Offset: NA	Depth: 8-20'
Sample Description: A-2-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 mm and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	22.4%	Coarse Sand	18.7%	Silt	30%
Maximum Particle Size	1/2"	Fine Sand	26.2%	Clay	3%
Apparent Relative Density(Assumed)	2.650	Moisture Content	19.9%	Silt & Clay (% Passing #200)	32.6%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable
 Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

Signature

4.10.2014
 Signature



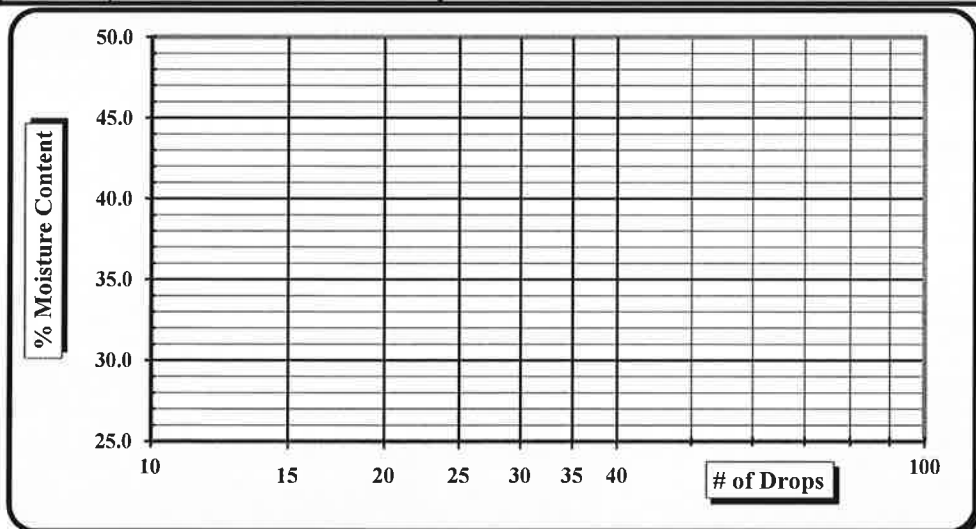
Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	4/7/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/29-4/5/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB24	Sample #:	7049
		Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA
		Elevation:	8-20'

Sample Description:	A-2-4				
Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
A	Tare Weight						
B	Wet Soil Weight + A						
C	Dry Soil Weight + A						
D	Water Weight (B-C)						
E	Dry Soil Weight (C-A)						
F	% Moisture (D/E)*100						
N	# OF DROPS						Moisture Contents determined by AASHTO T 245
LL	LL = F * FACTOR						
Ave.	Average						



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit

Plastic Limit

Plastic Index

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve:

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/7/14
Date

[Signature]
Technical Responsibility

4.10.2014
Date

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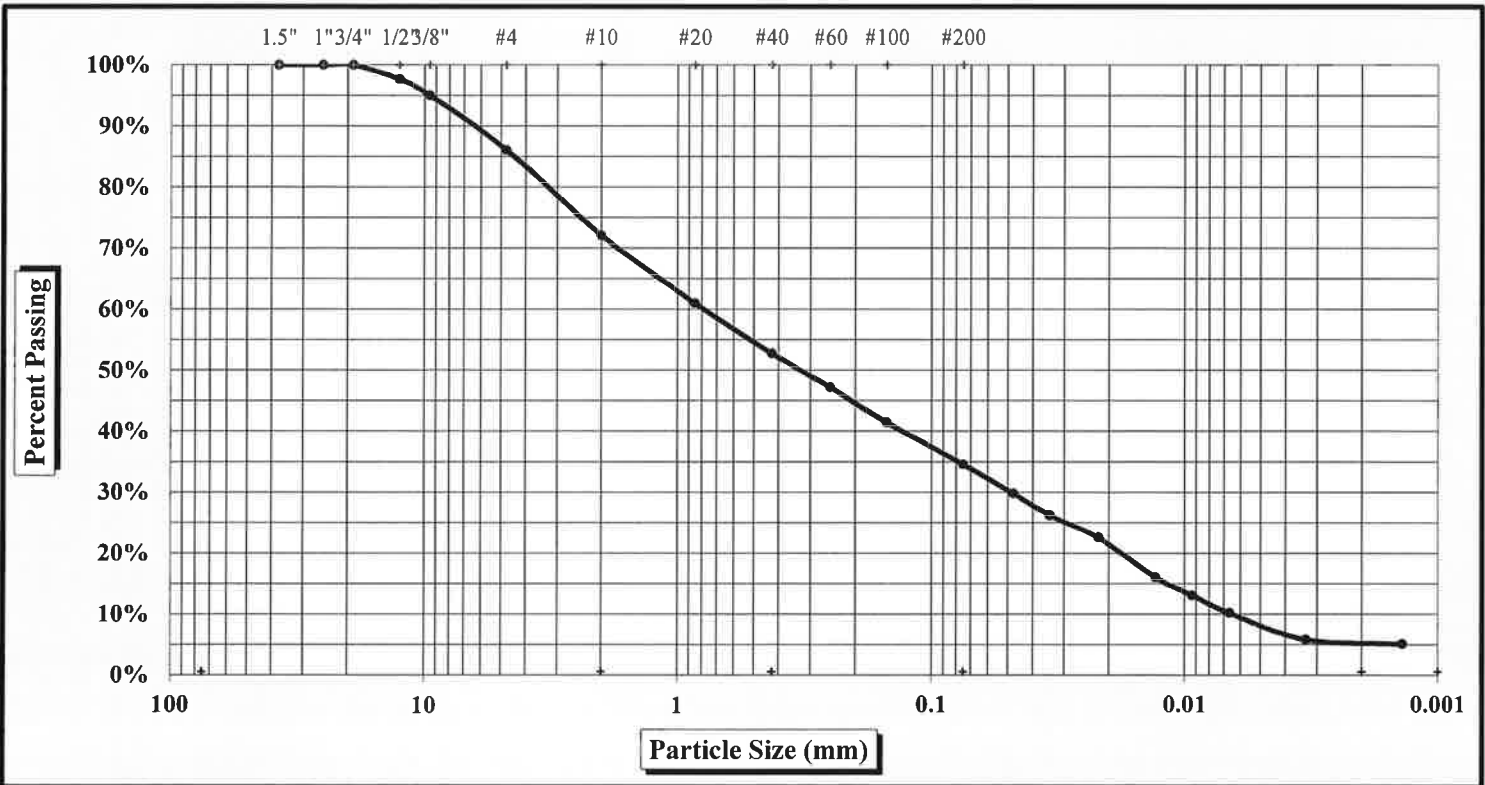
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **4/7/14**
 Test Date(s): **3/29-4/3/14**

Boring #:	PSB24	Sample #:	7049	Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA	Depth:	20-37'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	27.9%	Coarse Sand	19.3%	Silt	30%
Maximum Particle Size	1/2"	Fine Sand	18.2%	Clay	5%
Apparent Relative Density(Assumed)	2.650	Moisture Content	24.1%	Silt & Clay (% Passing #200)	34.6%
Liquid Limit	26	Plastic Limit	22	Plastic Index	4

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

[Signature]
 Signature

4.10.2014
 Signature

Liquid Limit, Plastic Limit, and Plastic Index

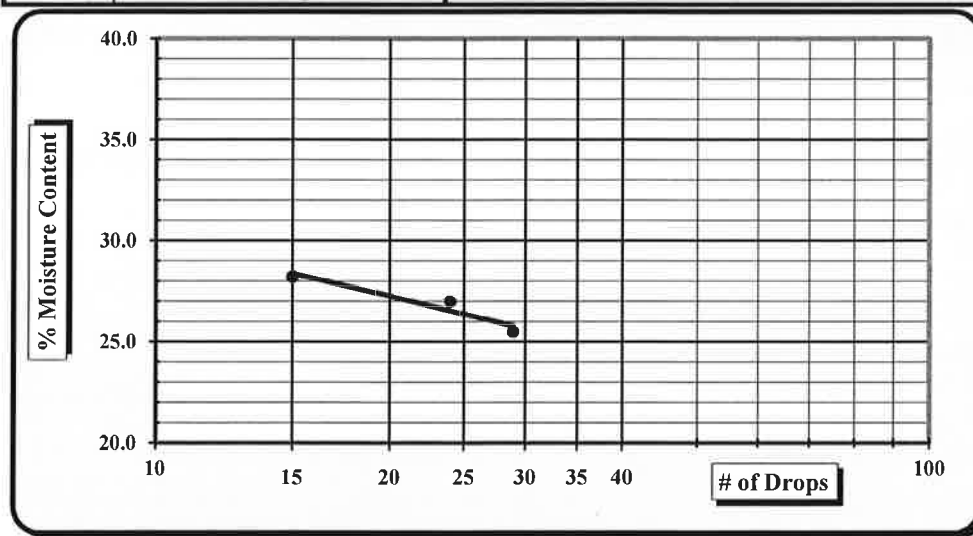


S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #:	3735-14-001	Report Date:	4/7/14
Project Name:	Ecusta Mill Site	Test Date(s)	3/29-4/5/14
Client Name:	Shaw Environmental & Infrastructure, Inc.		
Client Address:	11560 Great Oaks Way, Suite 500, Alpharetta, GA		
Boring #:	PSB24	Sample #:	7049
		Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA
		Elevation:	20-37'
Sample Description:	A-2-4		

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		XX	49	P-8		9	27
A	Tare Weight	16.05	15.65	12.42		13.92	13.91
B	Wet Soil Weight + A	32.71	29.90	25.48		23.42	22.28
C	Dry Soil Weight + A	29.32	26.87	22.61		21.66	20.78
D	Water Weight (B-C)	3.39	3.03	2.87		1.76	1.50
E	Dry Soil Weight (C-A)	13.27	11.22	10.19		7.74	6.87
F	% Moisture (D/E)*100	25.5%	27.0%	28.2%		22.7%	21.8%
N	# OF DROPS	29	24	15		<i>Moisture Contents determined by AASHTO T 245</i>	
LL	LL = F * FACTOR						
Ave.	Average					22.3%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **26**

Plastic Limit **22**

Plastic Index **4**

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/7/14
Date

[Signature]
Technical Responsibility **Ran Harris**

4/10/2014
Date

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Particle Size Analysis of Soils

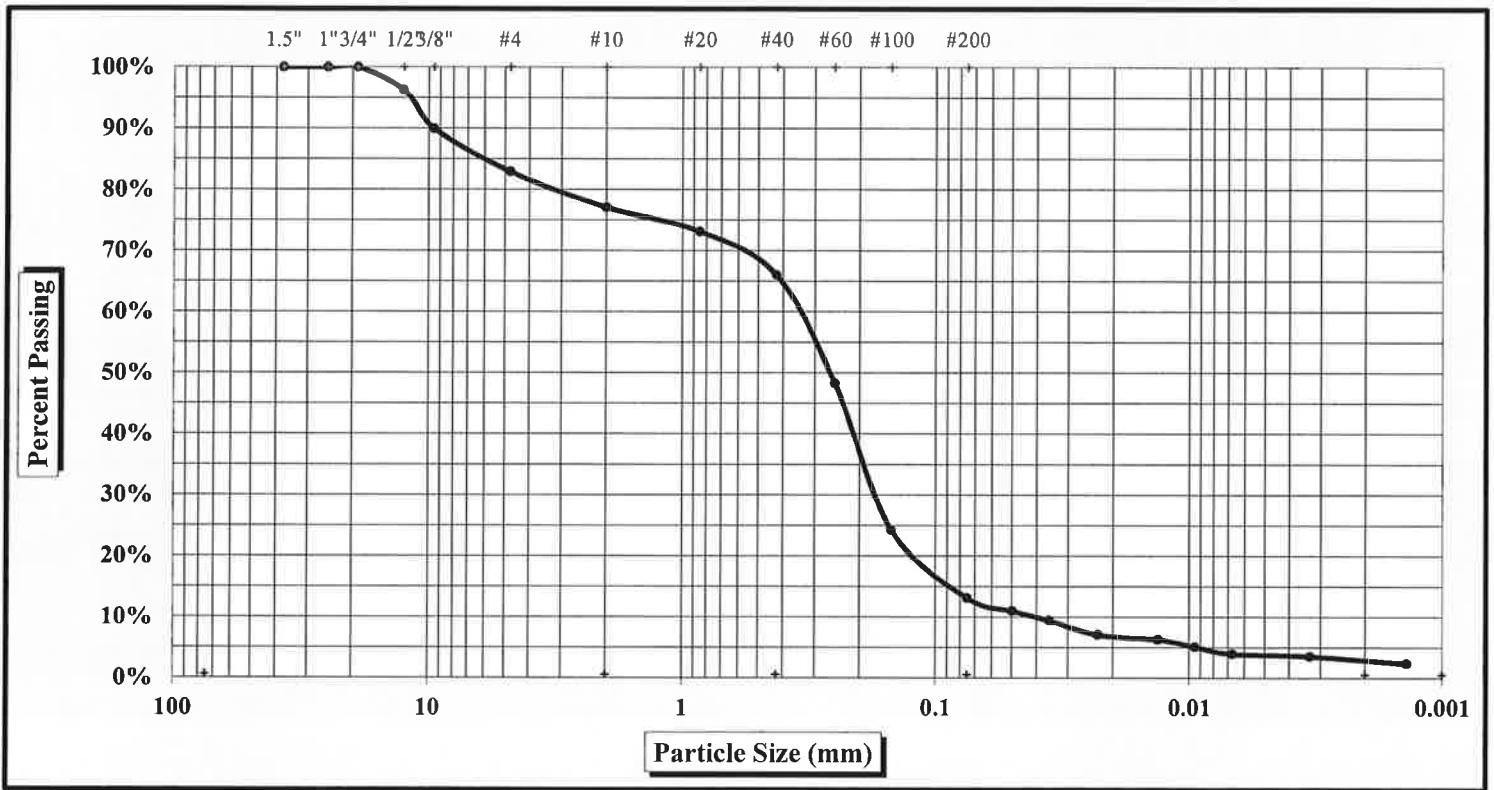


AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alperetta, GA**

Report Date: **4/3/14**
 Test Date(s): **3/29-4/3/14**

Boring #: PSB25	Sample #: 7048	Sample Date: 3/18-27/14
Location: On Site	Offset: NA	Depth: 1-9'
Sample Description: A-2-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	22.9%	Coarse Sand	11.1%	Silt	10%
Maximum Particle Size	1/2"	Fine Sand	52.9%	Clay	3%
Apparent Relative Density(Assumed)	2.650	Moisture Content	16.7%	Silt & Clay (% Passing #200)	13.1%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss  4.7.2014 

Liquid Limit, Plastic Limit, and Plastic Index



Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

Quality Assurance

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 Report Date: 4/3/14

Project Name: Ecusta Mill Site Test Date(s) 3/29-4/3/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

Boring #: PSB25 Sample #: 7048 Sample Date: 3/18-27/14

Location: On Site Offset: NA Elevation: 1-9'

Sample Description: A-2-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit			
A	Tare Weight								
B	Wet Soil Weight + A								
C	Dry Soil Weight + A								
D	Water Weight (B-C)								
E	Dry Soil Weight (C-A)								
F	% Moisture (D/E)*100								
N	# OF DROPS								
LL	LL = F * FACTOR								
Ave.	Average								

One Point Liquid Limit

N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit

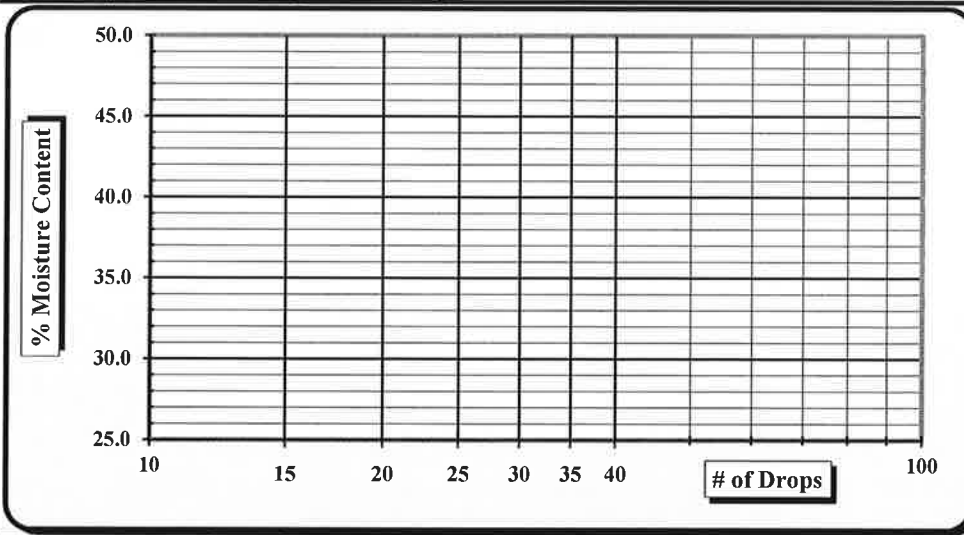
Plastic Limit

Plastic Index

Group Symbol A-2-4

Multipoint Method

One-point Method



Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve:

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/3/14
Date

[Signature]
Technical Responsibility

4.7.2014
Date

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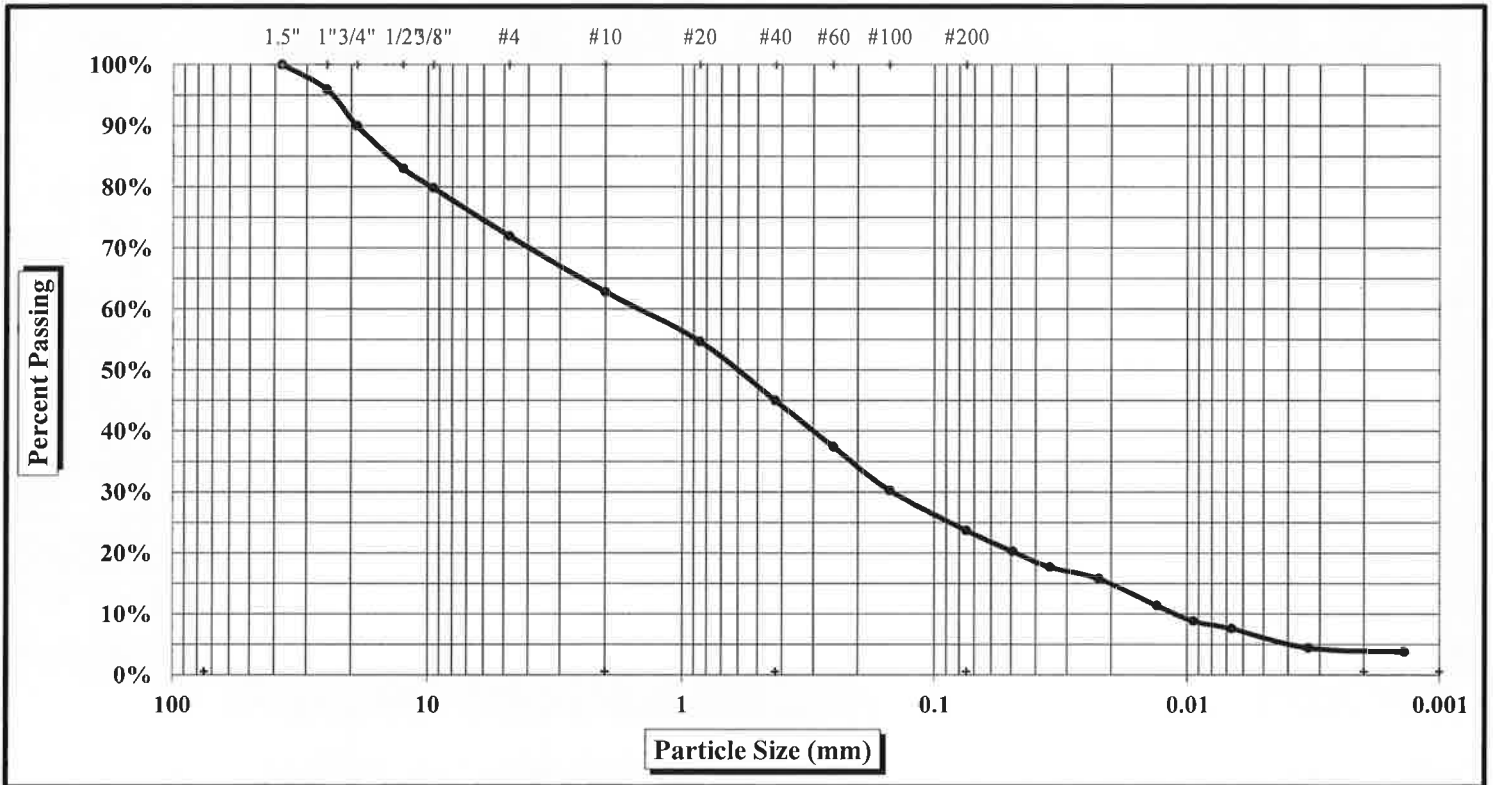
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **4/3/14**
 Test Date(s): **3/29-4/3/14**

Boring #:	PSB25	Sample #:	7048	Sample Date:	3/18-27/14
Location:	On Site	Offset:	NA	Depth:	9-21'
Sample Description:	A-1-b				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 mm and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	37.2%	Coarse Sand	17.8%	Silt	20%
Maximum Particle Size	1.0"	Fine Sand	21.3%	Clay	4%
Apparent Relative Density(Assumed)	2.650	Moisture Content	16.6%	Silt & Clay (% Passing #200)	23.7%
Liquid Limit	25	Plastic Limit	22	Plastic Index	3

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss

[Signature]
Signature

4.7.2014
Signature

Liquid Limit, Plastic Limit, and Plastic Index



Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

Quality Assurance

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 4/3/14

Project Name: Ecusta Mill Site **Test Date(s)** 3/29-4/3/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

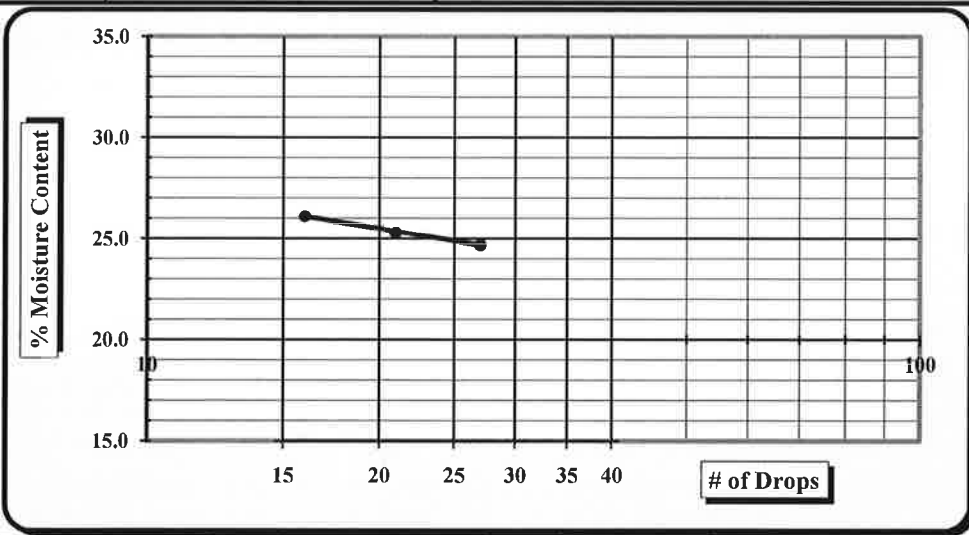
Boring #: PSB25 **Sample #:** 7048 **Sample Date:** 3/18-27/14

Location: On Site **Offset:** NA **Elevation:** 9-21'

Sample Description: A-1-b

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		XY	36	RR		40	P-6
A	Tare Weight	15.92	15.66	15.27		15.80	12.57
B	Wet Soil Weight + A	30.58	30.28	31.34		24.03	21.38
C	Dry Soil Weight + A	27.68	27.33	28.01		22.58	19.81
D	Water Weight (B-C)	2.90	2.95	3.33		1.45	1.57
E	Dry Soil Weight (C-A)	11.76	11.67	12.74		6.78	7.24
F	% Moisture (D/E)*100	24.7%	25.3%	26.1%		21.4%	21.7%
N	# OF DROPS	27	21	16		Moisture Contents determined by AASHTO T 245	
LL	LL = F * FACTOR						
Ave.	Average					21.6%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **25**

Plastic Limit **22**

Plastic Index **3**

Group Symbol **A-1-b**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/3/14
Date

[Signature]
Technical Responsibility

4/7/2014
Date

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Particle Size Analysis of Soils

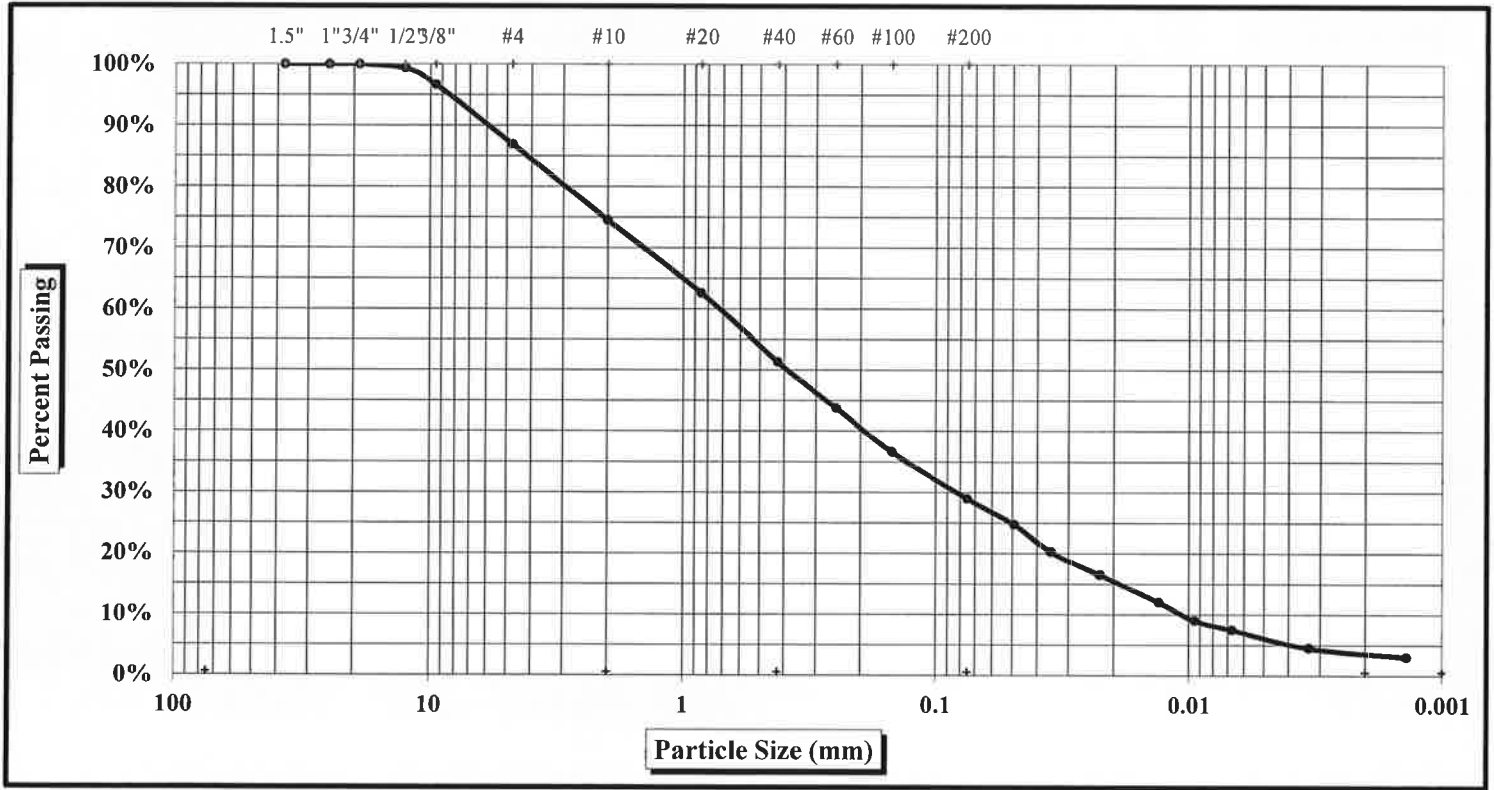


AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpharetta, GA**

Report Date: **4/3/14**
 Test Date(s): **3/29-4/3/14**

Boring #: PSB25	Sample #: 7048	Sample Date: 3/18-27/14
Location: On Site	Offset: NA	Depth: 21-38'
Sample Description: A-2-4		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

	Gravel	25.5%	Coarse Sand	23.2%	Silt	25%
	Maximum Particle Size	1/2"	Fine Sand	22.4%	Clay	4%
	Apparent Relative Density(Assumed)	2.650	Moisture Content	20.7%	Silt & Clay (% Passing #200)	29.0%
	Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris/Ron Rothfuss 4.7.2014

Liquid Limit, Plastic Limit, and Plastic Index



Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

Quality Assurance

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 4/3/14

Project Name: Ecusta Mill Site **Test Date(s)** 3/29-4/3/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

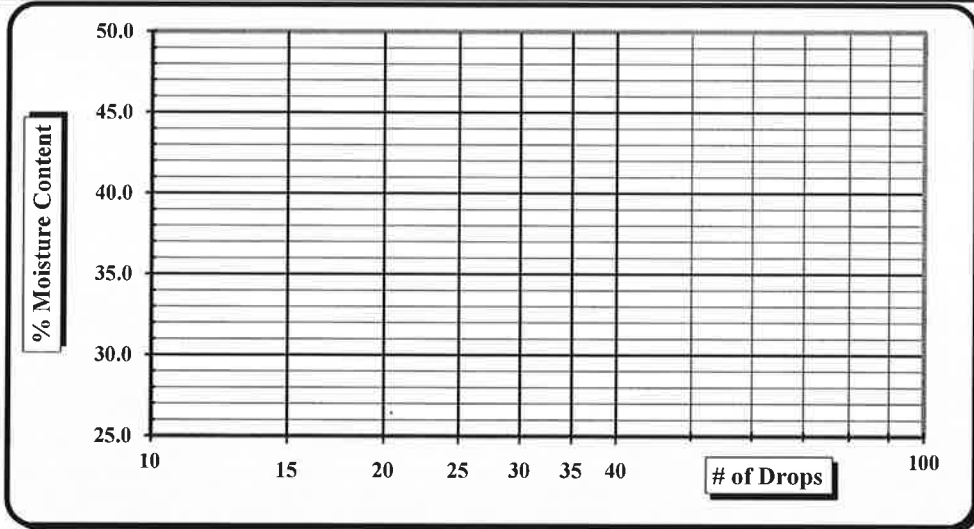
Boring #: PSB25 **Sample #:** 7048 **Sample Date:** 3/18-27/14

Location: On Site **Offset:** NA **Elevation:** 21-38'

Sample Description: A-2-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit			
A	Tare Weight								
B	Wet Soil Weight + A								
C	Dry Soil Weight + A								
D	Water Weight (B-C)								
E	Dry Soil Weight (C-A)								
F	% Moisture (D/E)*100								
N	# OF DROPS					Moisture Contents determined by AASHTO T 245			
LL	LL = F * FACTOR								
Ave.	Average								



N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit

Plastic Limit

Plastic Index

Group Symbol **A-2-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

4/3/14
Date

[Signature]
Technical Responsibility

4.7.2014
Date

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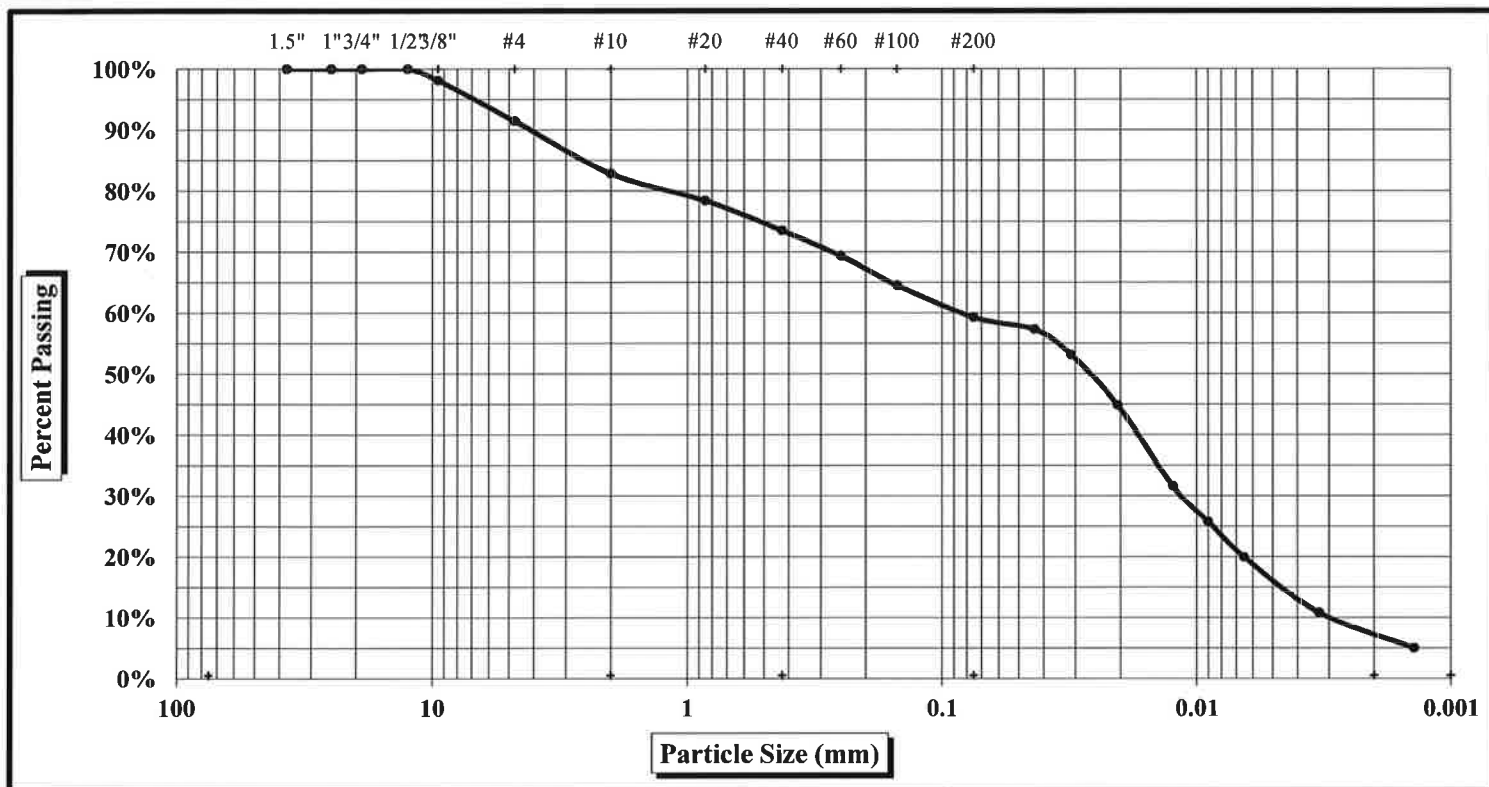
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/19/14**
 Test Date(s): **3/4-10/14**

Boring #:	PBS26	Sample #:	7050	Sample Date:	2/27-28/14
Location:	On Site	Offset:	NA	Depth:	1-11'
Sample Description:	A-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	17.2%	Coarse Sand	9.3%	Silt	52%
Maximum Particle Size	3/8"	Fine Sand	14.2%	Clay	8%
Apparent Relative Density(Assumed)	2.650	Moisture Content	22.6%	Silt & Clay (% Passing #200)	59.3%
Liquid Limit	39	Plastic Limit	31	Plastic Index	8

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g/ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Rou Harris [Signature] 3.19.2014
 Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index



Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

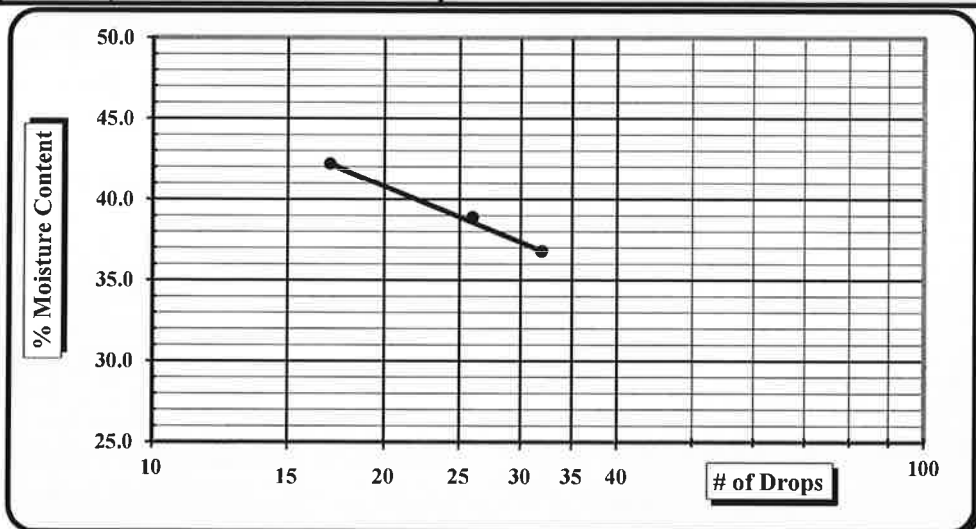
Quality Assurance

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001	Report Date: 3/19/14
Project Name: Ecusta Mill Site	Test Date(s): 3/4-19/14
Client Name: Shaw Environmental & Infrastructure, Inc.	
Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA	
Boring #: PSB26	Sample #: 7050
Sample Date: 2/27-28/14	
Location: On Site	Offset: NA
Elevation: 1-11'	

Sample Description: A-4
<i>Type and Specification</i> <i>S&ME ID #</i> <i>Cal Date:</i> <i>Type and Specification</i> <i>S&ME ID #</i> <i>Cal Date:</i>
Balance (0.01 g) 3222 6/18/2013 Grooving tool 20835 7/16/2013
LL Apparatus 3653 1/21/2014 Grooving tool
Oven 11702 1/21/2014 Grooving tool

Pan #	Tare #:	Liquid Limit					Plastic Limit	
		PP	13	P-15			P-2	5
A	Tare Weight	16.15	13.96	12.45			12.61	15.68
B	Wet Soil Weight + A	27.42	26.99	25.38			19.47	22.33
C	Dry Soil Weight + A	24.39	23.34	21.54			17.83	20.76
D	Water Weight (B-C)	3.03	3.65	3.84			1.64	1.57
E	Dry Soil Weight (C-A)	8.24	9.38	9.09			5.22	5.08
F	% Moisture (D/E)*100	36.8%	38.9%	42.2%			31.4%	30.9%
N	# OF DROPS	32	26	17			<i>Moisture Contents determined by AASHTO T 245</i>	
LL	LL = F * FACTOR							
Ave.	Average						31.2%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **39**

Plastic Limit **31**

Plastic Index **8**

Group Symbol **A-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/19/14
Date

Ron Harris
Technical Responsibility

3.19.2014
Date

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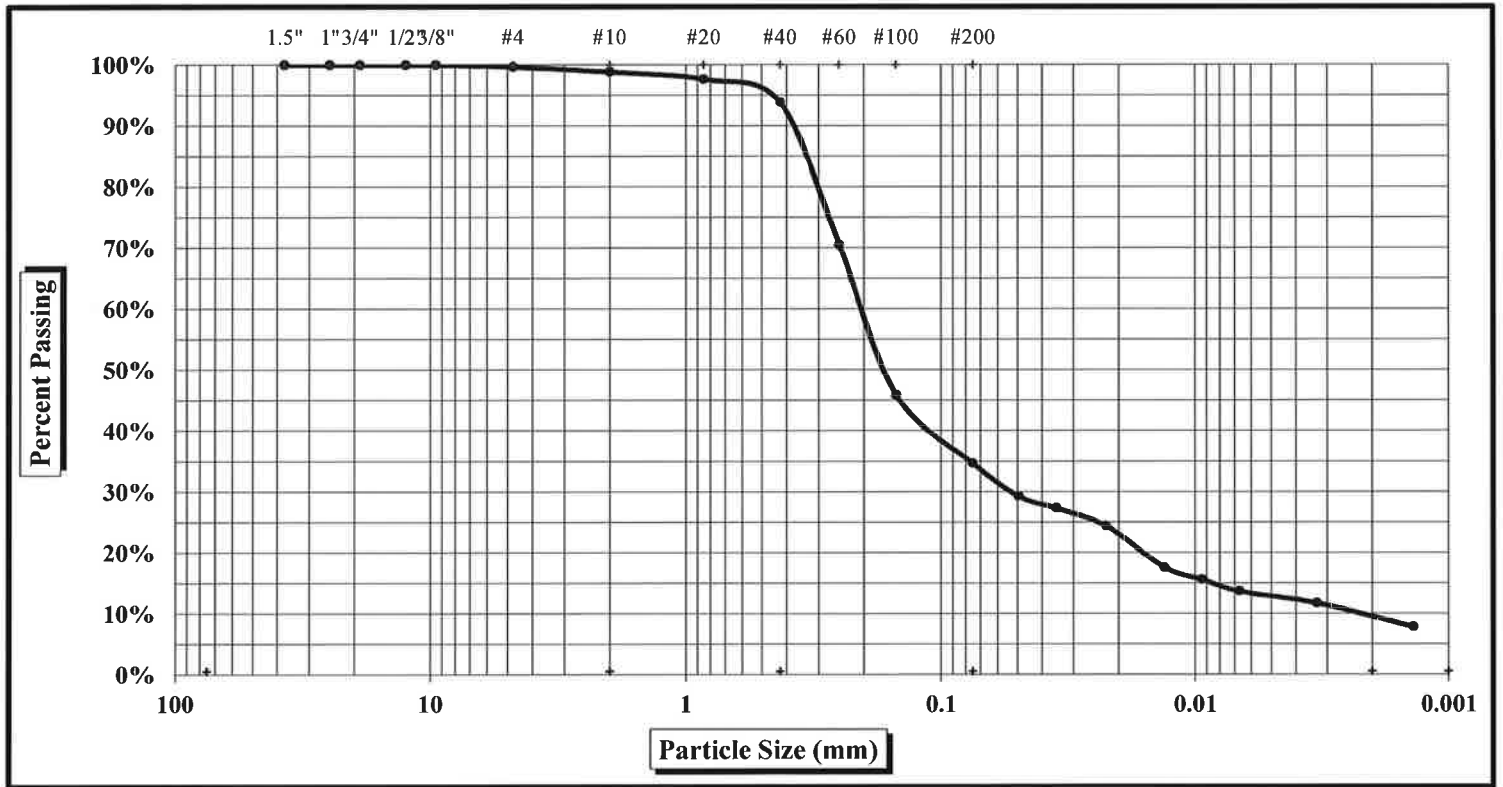
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/19/14**
 Test Date(s): **3/4-10/14**

Boring #:	PSB26	Sample #:	7050	Sample Date:	2/27-28/14
Location:	On Site	Offset:	NA	Depth:	11-17'
Sample Description:	A-2-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	1.2%	Coarse Sand	5.0%	Silt	25%
Maximum Particle Size	#4	Fine Sand	59.2%	Clay	10%
Apparent Relative Density (Assumed)	2.650	Moisture Content	34.7%	Silt & Clay (% Passing #200)	34.6%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g / Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3.19.2014
 Signature Signature



Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 Report Date: 3/19/14

Project Name: Ecusta Mill Site Test Date(s) 3/4-19/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

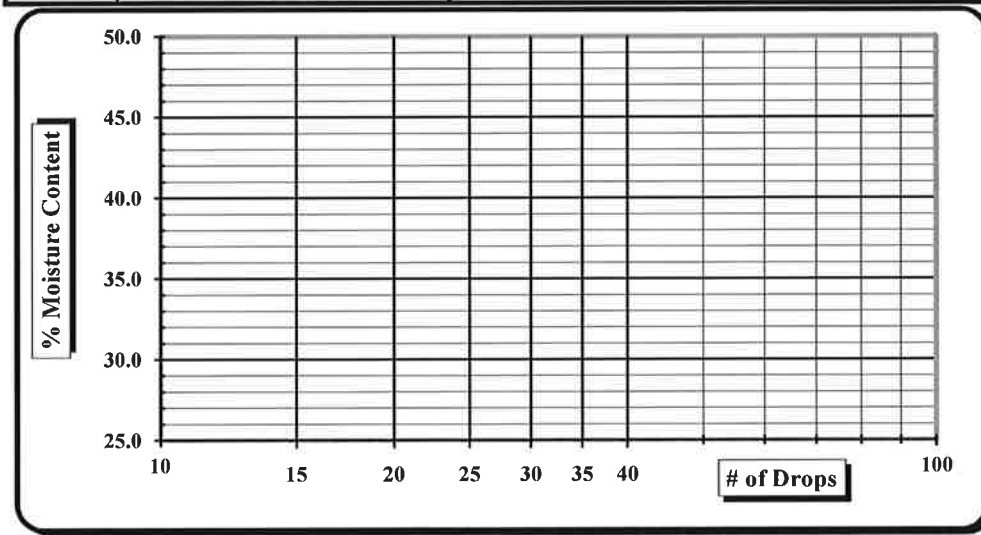
Boring #: PSB26 Sample #: 7050 Sample Date: 2/27-28/14

Location: On Site Offset: NA Elevation: 11-17'

Sample Description: A-2-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit		
A	Tare Weight							
B	Wet Soil Weight + A							
C	Dry Soil Weight + A							
D	Water Weight (B-C)							
E	Dry Soil Weight (C-A)							
F	% Moisture (D/E)*100							
N	# OF DROPS					Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR							
Ave.	Average							



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic
 Liquid Limit
 Plastic Limit
 Plastic Index
 Group Symbol A-2-4
 Multipoint Method
 One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
 Technician Name

3/19/14
 Date

Ron Harris
 Technical Responsibility

3.19.2014
 Date

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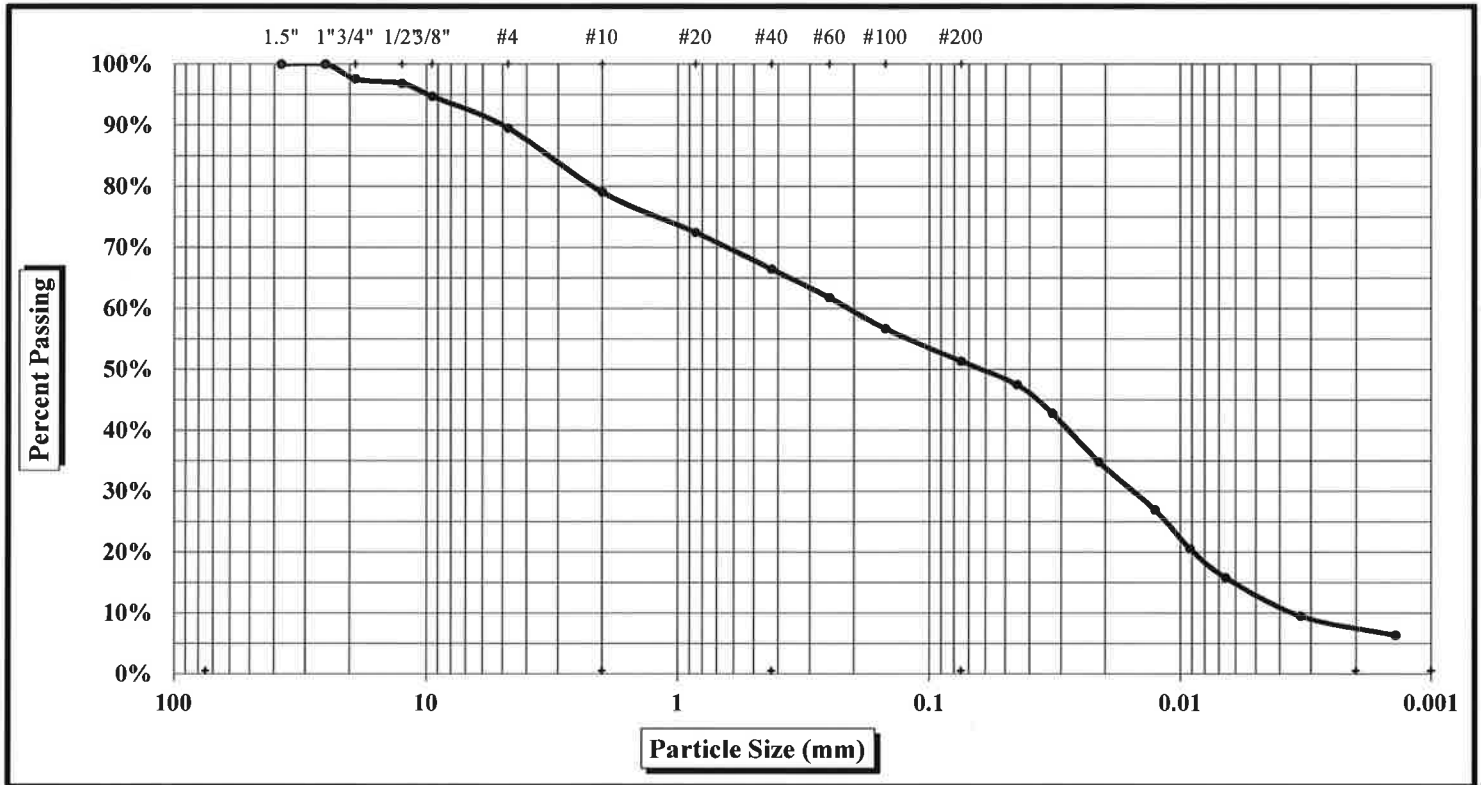
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/19/14**
 Test Date(s): **3/4-10/14**

Boring #:	PBS27	Sample #:	7051	Sample Date:	2/27-28/14
Location:	On Site	Offset:	NA	Depth:	1-12'
Sample Description:	A-4				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	20.9%	Coarse Sand	12.6%	Silt	44%
Maximum Particle Size	3/4"	Fine Sand	15.1%	Clay	7%
Apparent Relative Density(Assumed)	2.650	Moisture Content	22.3%	Silt & Clay (% Passing #200)	51.3%
Liquid Limit	38	Plastic Limit	29	Plastic Index	9

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

- References:** AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3.19.2014
 Signature Signature



Liquid Limit, Plastic Limit, and Plastic Index

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 3/19/14

Project Name: Ecusta Mill Site **Test Date(s):** 3/4-19/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

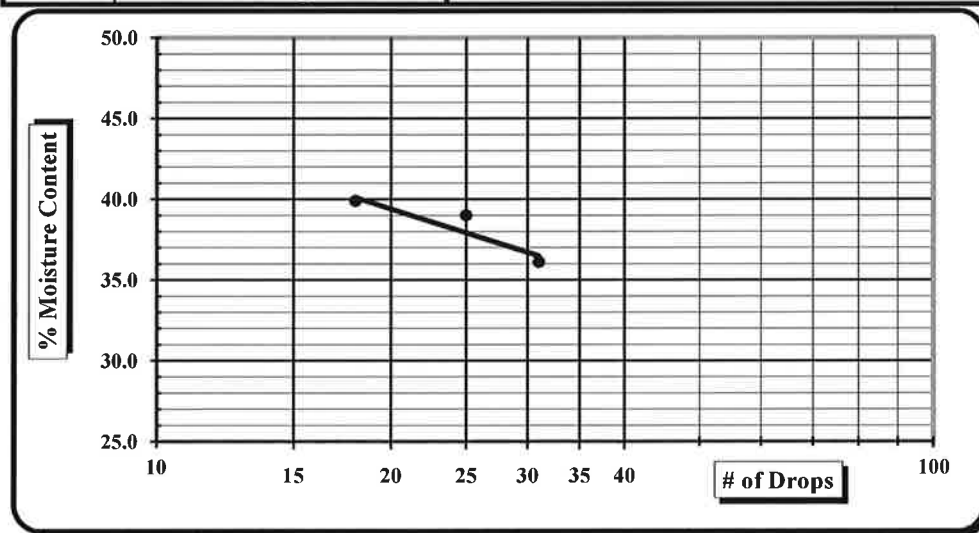
Boring #: PSB27 **Sample #:** 7051 **Sample Date:** 2/27-28/14

Location: On Site **Offset:** NA **Elevation:** 1-12'

Sample Description: A-4

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		LL	II	10	29	XY	
A	Tare Weight	16.93	16.88	13.98	14.12	15.92	
B	Wet Soil Weight + A	29.75	29.67	24.77	20.75	23.85	
C	Dry Soil Weight + A	26.35	26.08	21.69	19.23	22.07	
D	Water Weight (B-C)	3.40	3.59	3.08	1.52	1.78	
E	Dry Soil Weight (C-A)	9.42	9.20	7.71	5.11	6.15	
F	% Moisture (D/E)*100	36.1%	39.0%	39.9%	29.7%	28.9%	
N	# OF DROPS	31	25	18	Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR						
Ave.	Average				29.3%		



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **38**

Plastic Limit **29**

Plastic Index **9**

Group Symbol **A-4**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/19/14
Date

Ron Harris
Technical Responsibility

3.19.2014
Date

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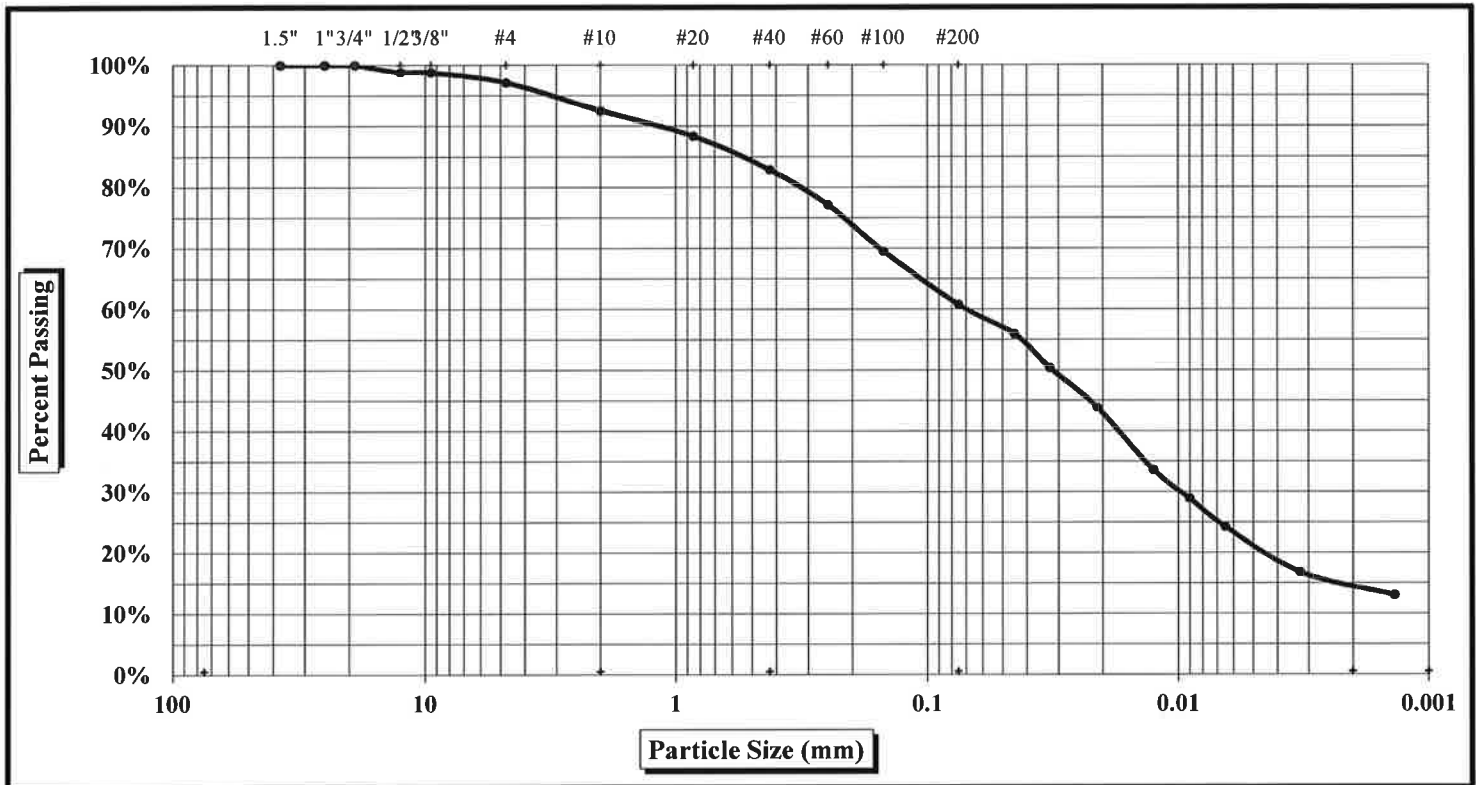
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/19/14**
 Test Date(s): **3/4-10/14**

Boring #:	PSB27	Sample #:	7051	Sample Date:	2/27-28/14
Location:	On Site	Offset:	NA	Depth:	12-20'
Sample Description:	A-5				



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	7.4%	Coarse Sand	9.7%	Silt	46%
Maximum Particle Size	1/2"	Fine Sand	22.1%	Clay	15%
Apparent Relative Density(Assumed)	2.650	Moisture Content	37.1%	Silt & Clay (% Passing #200)	60.7%
Liquid Limit	41	Plastic Limit	31	Plastic Index	10

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Ron Harris [Signature] 3.19.2014
Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index



Another code

ASTM D 4318

AASHTO T 89

AASHTO T 90

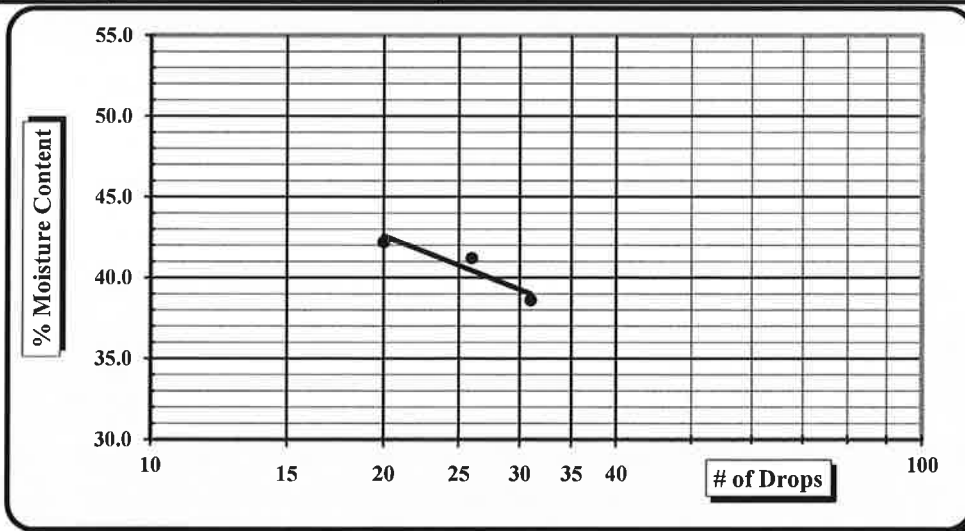
Quality Assurance

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001	Report Date: 3/19/14
Project Name: Ecusta Mill Site	Test Date(s): 3/4-19/14
Client Name: Shaw Environmental & Infrastructure, Inc.	
Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA	
Boring #: PSB27	Sample #: 7051
Sample Date: 2/27-28/14	
Location: On Site	Offset: NA
Elevation: 12-20'	
Sample Description: A-5	

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		1	Aa	P-46		40	EE
A	Tare Weight	13.84	15.94	12.57		15.80	16.86
B	Wet Soil Weight + A	26.22	28.21	25.67		21.99	23.22
C	Dry Soil Weight + A	22.77	24.63	21.78		20.51	21.71
D	Water Weight (B-C)	3.45	3.58	3.89		1.48	1.51
E	Dry Soil Weight (C-A)	8.93	8.69	9.21		4.71	4.85
F	% Moisture (D/E)*100	38.6%	41.2%	42.2%		31.4%	31.1%
N	# OF DROPS	31	26	20		<i>Moisture Contents determined by AASHTO T 245</i>	
LL	LL = F * FACTOR						
Ave.	Average					31.3%	



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic

Liquid Limit **41**

Plastic Limit **31**

Plastic Index **10**

Group Symbol **A-5**

Multipoint Method

One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils

AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
Technician Name

3/19/14
Date

Ron Harris
Technical Responsibility

3.19.2014
Date

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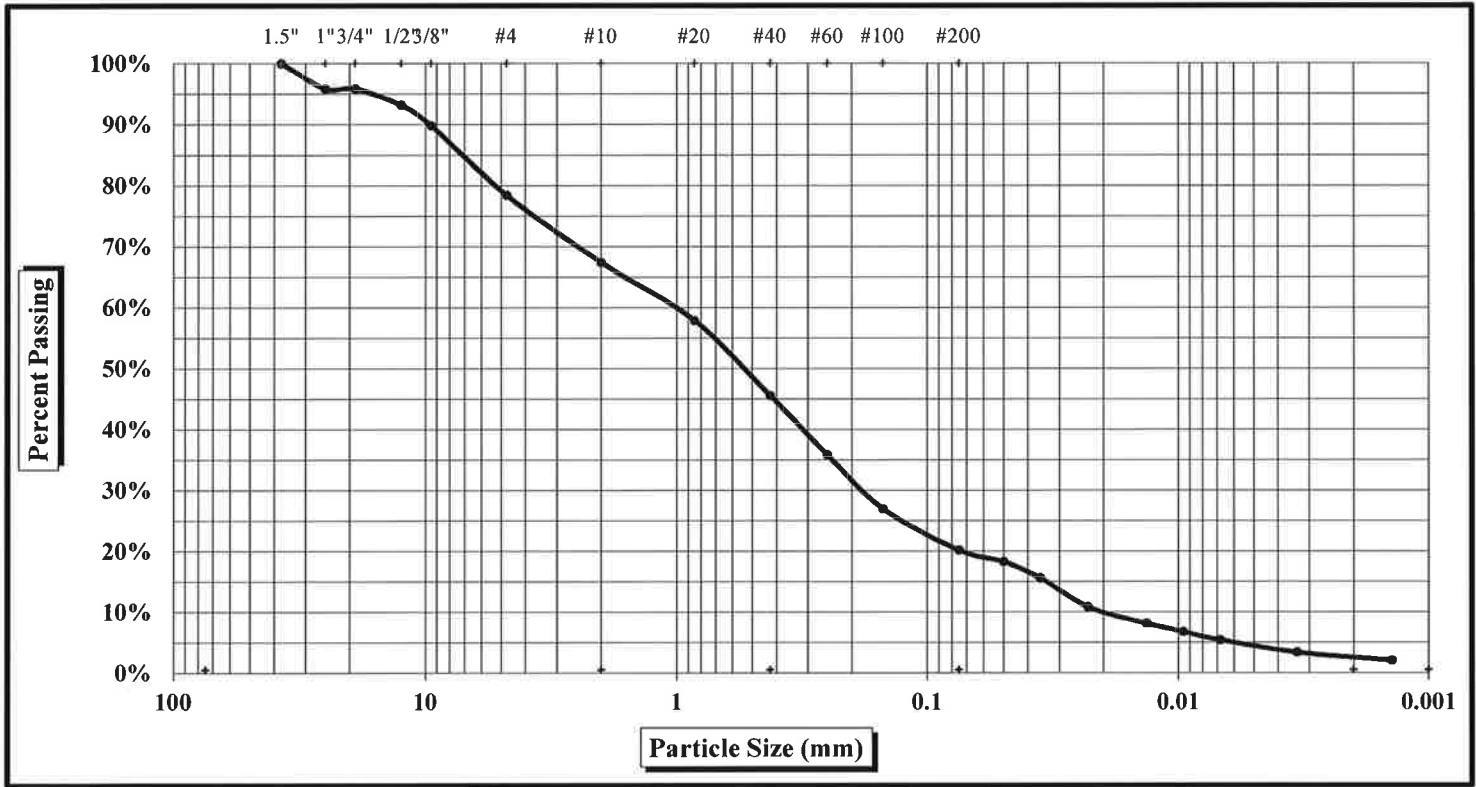
Particle Size Analysis of Soils

AASHTO T 88

S&ME Project #: **3735-14-001**
 Project Name: **Ecusta Mill Site**
 Client Name: **Shaw Environmental & Infrastructure, Inc.**
 Client Address: **11560 Great Oaks Way, Suite 500, Alpheretta, GA**

Report Date: **3/19/14**
 Test Date(s): **3/4-10/14**

Boring #: PSB27	Sample #: 7051	Sample Date: 2/27-28/14
Location: On Site	Offset: NA	Depth: 20-25'
Sample Description: A-1-b		



As Defined by AASHTO		Fine Sand	< 0.425 mm and > 0.075 mm
Gravel	< 75 mm and > 2.00 mm	Silt	< 0.075 and > 0.002 mm
Coarse Sand	< 2.00 mm and > 0.425 mm	Clay	< 0.002 mm

Gravel	32.6%	Coarse Sand	21.8%	Silt	17%
Maximum Particle Size	0	Fine Sand	25.4%	Clay	3%
Apparent Relative Density(Assumed)	2.650	Moisture Content	18.7%	Silt & Clay (% Passing #200)	20.2%
Liquid Limit	0	Plastic Limit	0	Plastic Index	0

Description of Sand & Gravel Particles: Rounded Angular Hard & Durable Soft Weathered & Friable

Mechanical Stirring Apparatus (A) Length of Dispersion Period: 1 min. Dispersing Agent: Sodium Hexametaphosphate: 40 g./ Liter

References: AASHTO T88: Particle Size Analysis of Soils AASHTO T87: Dry Preparation of Disturbed Soil and Soil Aggregate Samples for Test
 AASHTO T89: Determining the Liquid Limit of Soils AASHTO T90: Determining the Plastic Limit & Plasticity Index of Soils
 AASHTO M 145: The Classification of Soils and Soil Aggregate Mixtures for Highway Construction Purposes ASTM D 854: Specific Gravity of Soils
 AASHTO T265: Laboratory Determination of Moisture Content of Soils

Technical Responsibility: Paul Harris [Signature] 3.19.2014
Signature Signature

Liquid Limit, Plastic Limit, and Plastic Index



Another code ASTM D 4318 AASHTO T 89 AASHTO T 90 Quality Assurance

S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 Report Date: 3/19/14

Project Name: Ecusta Mill Site Test Date(s) 3/4-19/14

Client Name: Shaw Environmental & Infrastructure, Inc.

Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

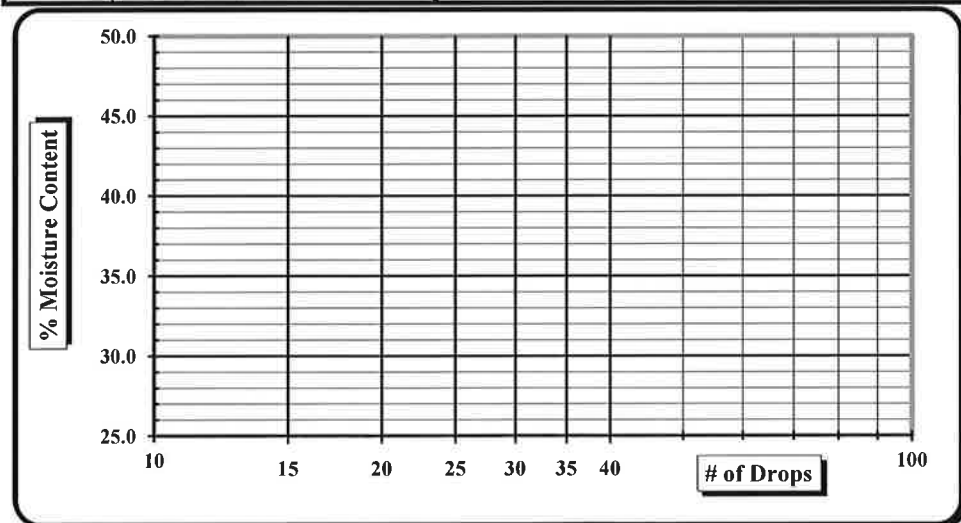
Boring #: PSB27 Sample #: 7051 Sample Date: 2/27-28/14

Location: On Site Offset: NA Elevation: 20-25'

Sample Description: A-1-b

Type and Specification	S&ME ID #	Cal Date:	Type and Specification	S&ME ID #	Cal Date:
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit			
A	Tare Weight								
B	Wet Soil Weight + A								
C	Dry Soil Weight + A								
D	Water Weight (B-C)								
E	Dry Soil Weight (C-A)								
F	% Moisture (D/E)*100								
N	# OF DROPS					Moisture Contents determined by AASHTO T 245			
LL	LL = F * FACTOR								
Ave.	Average								



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic
 Liquid Limit
 Plastic Limit
 Plastic Index
 Group Symbol A-1-b
 Multipoint Method
 One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve:

Notes / Deviations / References:

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner Technician Name Date: 3/19/14
 Ron Harris Technical Responsibility Date: 3.19.2014

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Liquid Limit, Plastic Limit, and Plastic Index

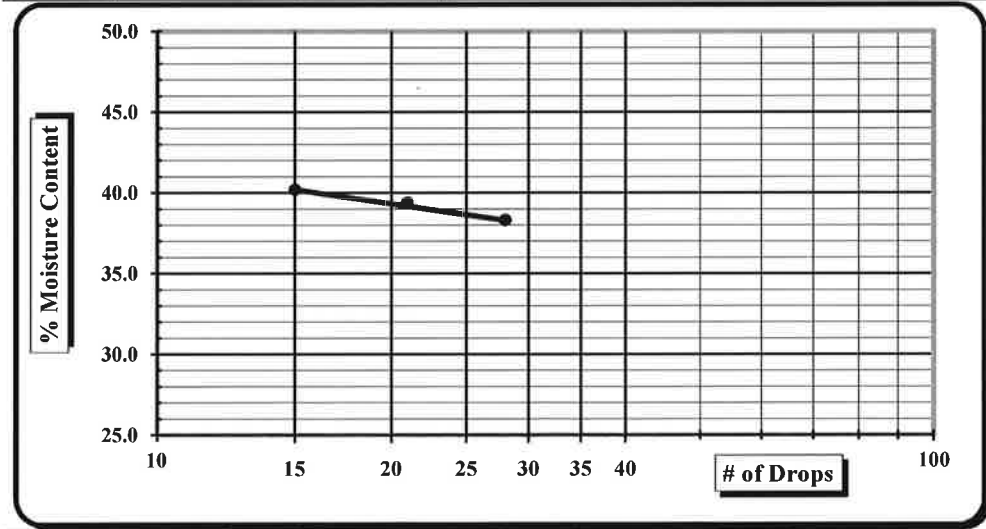
S&ME, Inc. ~9751 Southern Pine Boulevard, Charlotte, NC 28273

Project #: 3735-14-001 **Report Date:** 3/19/14
Project Name: Ecusta Mill Site **Test Date(s):** 3/4-19/14
Client Name: Shaw Environmental & Infrastructure, Inc.
Client Address: 11560 Great Oaks Way, Suite 500, Alpheretta, GA

Boring #: PBS27 **Sample #:** 7051 **Sample Date:** 2/27-28/14
Location: On Site **Offset:** NA **Elevation:** 25-35'

Sample Description:	A-4				
<i>Type and Specification</i>	<i>S&ME ID #</i>	<i>Cal Date:</i>	<i>Type and Specification</i>	<i>S&ME ID #</i>	<i>Cal Date:</i>
Balance (0.01 g)	3222	6/18/2013	Grooving tool	20835	7/16/2013
LL Apparatus	3653	1/21/2014	Grooving tool		
Oven	11702	1/21/2014	Grooving tool		

Pan #	Tare #:	Liquid Limit				Plastic Limit	
		FF	QQ	OO	54	27	
A	Tare Weight	16.86	16.86	16.31	14.07	13.90	
B	Wet Soil Weight + A	30.23	30.49	27.96	20.66	20.25	
C	Dry Soil Weight + A	26.53	26.64	24.62	19.06	18.72	
D	Water Weight (B-C)	3.70	3.85	3.34	1.60	1.53	
E	Dry Soil Weight (C-A)	9.67	9.78	8.31	4.99	4.82	
F	% Moisture (D/E)*100	38.3%	39.4%	40.2%	32.1%	31.7%	
N	# OF DROPS	28	21	15	Moisture Contents determined by AASHTO T 245		
LL	LL = F * FACTOR						
Ave.	Average				31.9%		



One Point Liquid Limit			
N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic
Liquid Limit 39
Plastic Limit 32
Plastic Index 7
Group Symbol A-4
 Multipoint Method
 One-point Method

Wet Preparation Dry Preparation Air Dried Estimate the % Retained on the #40 Sieve: _____

Notes / Deviations / References: _____

AASHTO T90: Determining the Plastic Limit & Plastic Index of Soils AASHTO T89: Determining the Liquid Limit of Soils

Karen Warner
 Technician Name

3/19/14
 Date

Ron Harris
 Technical Responsibility

3.19.2014
 Date

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Chain of Custody
 Ecusta Mill Site
 S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
P PSB-1 7025	0'-4' GRAIN SIZE	SILTY CLAY	2/19/14 09:00
PSB-1 7025	0-4' GRADATION/MOISTURE	SILTY CLAY	2/19/14 09:00
PSB-1 7025	0-4' MOISTURE	SILTY CLAY	2/19/14 09:00
PSB-1 7025	4'-10' GRAIN SIZE	SANDY GRAVELLY CLAY	2/19/14 09:30
PSB-1 7025	4'-10' GRADATION/MOISTURE	SANDY GRAVELLY CLAY	2/19/14 09:30
PSB-1 7025	4'-10' MOISTURE	SANDY GRAVELLY CLAY	2-19-14 09:30
PSB-8 7032	1-9' GRAIN SIZE	SILTY CLAY	2-19-14 11:00
PSB-8 7032	1-9' GRADATION/MOISTURE	SILTY CLAY	2-19-14 11:00
PSB-8 7032	1-9' MOISTURE	SILTY CLAY	2-19-14 11:00
* PSB-8 7032	9'-12' GRADATION/MOISTURE	SANDY CLAY	2-19-14 11:30
PSB-9 7033	1-5' GRAIN SIZE	GRAVELLY CLAY	2-19-14 13:00
PSB-9 7033	1-5' GRADATION/MOISTURE	GRAVELLY CLAY	2-19-14 13:00
PSB-9 7033	1-5' MOISTURE	GRAVELLY CLAY	2-19-14 13:00
PSB-9 7033	5-12' GRAIN SIZE	SAND	2-19-14 13:30
PSB-9 7033	5-12' GRADATION/MOISTURE	SAND	2-19-14 13:30
PSB-9 7033	5-12' MOISTURE	SAND	2-19-14 13:30

1-GALLON
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" ONLY BROKEN
FOR GRADATION
ATTACH

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Shaw Environmental: Jonathan Wilson
 Date: 2/21/14

S&ME: Dave Duff
 Date: 2-21-14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-10 7034	4-11' GRAIN SIZE	GRAVELLY SAND	2/19-14 14:30
PSB-10 7034	4-11' GRADATION/MATERIAL	GRAVELLY SAND	2-19-14 14:30
PSB-10 7034	4-11' MOISTURE	GRAVELLY SAND	2-19-14 14:30
PSB-11 7035	1-7' GRAIN SIZE	GRAVELLY SAND	2-20-14 08:00
PSB-11 7035	1-7' GRADATION/MATERIAL	GRAVELLY SAND	2-20-14 08:00
PSB-11 7035	1-7' MOISTURE	GRAVELLY SAND	2-20-14 08:00
PSB-12 7036	1-5' GRAIN SIZE	GRAVELLY CLAY	2-20-14 09:30
PSB-12 7036	1-5' GRADATION/MATERIAL	GRAVELLY CLAY	2-20-14 09:30
PSB-12 7036	1-5' MOISTURE	GRAVELLY CLAY	2-20-14 09:30
PSB-12 7036	5-11' GRAIN SIZE	GRAVELLY SAND	2-20-14 10:00
PSB-12 7036	5-11' GRADATION/MATERIAL	GRAVELLY SAND	2-20-14 10:00
PSB-12 7036	5-11' MOISTURE	GRAVELLY SAND	2-20-14 10:00
PSB-13 7037	1-7' GRAIN SIZE	GRAVELLY SAND	2-20-14 10:45
PSB-13 7037	1-7' GRADATION/MATERIAL	GRAVELLY SAND	2-20-14 10:45
PSB-13 7037	1-7' MOISTURE	GRAVELLY SAND	2-20-14 10:45
AREA 2	PROCTOR ASTM 99-81	PSB-8 7032, PSB-9 7033 PSB-10 7034, PSB-11 7035, PSB-12 7036	2/19-20/14
AREA 2	CBR ASTM T193-81	PSB-13 7037 FROM 6 BORINGS	2/19-20/14

1-6 GALLON
BAG

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3-5 GALLON
BUCKETS
FOR PROCTOR
+ CBR
SAMPLES

Shaw Environmental: Jonny A. ...
Date: 2/21/14

S&ME: Steve ...
Date: 2-21-14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-15 7038	1'-5' GRAIN SIZE	GRAVELLY CLAY	2-21-14 09:30
PSB-15 7038	1'-5" GRADATION/MOISTURE	GRAVELLY CLAY	2-21-14 09:30
PSB-15 7038	1'-5' MOISTURE	GRAVELLY CLAY	2-21-14 09:30
PSB-15 7038	5'-10' GRAIN SIZE	SILTY CLAY	2-21-14 10:00
PSB-15 7038	5'-10' GRADATION/MOISTURE	SILTY CLAY	2-21-14 10:00
PSB-15 7038	5'-10' MOISTURE	SILTY CLAY	2-21-14 10:00
PSB-15 7038	39'-40' ASTM D-3148	ROCK CORE UNCONFIRMED COMPRESSION	2-21-14 17:00
PSB-14 7039	1'-7' GRAIN SIZE	GRAVELLY CLAY	2-24-14 14:30
PSB-14 7039	1'-7' GRADATION/MOISTURE	GRAVELLY CLAY	2-24-14 14:30
PSB-14 7039	1'-7' MOISTURE	GRAVELLY CLAY	2-24-14 14:30
PSB-14 7039	7'-18' GRAIN SIZE	GRAVELLY SAND	2-24-14 15:00
PSB-14 7039	7'-18' GRADATION/MOISTURE	GRAVELLY SAND	2-24-14 15:00
PSB-14 7039	7'-18' MOISTURE	GRAVELLY SAND	2-24-14 15:00
PSB-14 7039	44.0'-44.8' ASTM D-3148	ROCK CORE UNCONFIRMED COMPRESSION	2-25-14 12:00
PSB-7 7031	1'-11' GRAIN SIZE	SILTY CLAY	2-25-14 15:00
PSB-7 7031	1'-11' GRADATION/MOISTURE	SILTY CLAY	2-25-14 15:00
PSB-7 7031	1'-11' MOISTURE	SILTY CLAY	2-25-14 15:00



Shaw Environmental: James Wilson
Date: 2-27-14

S&ME: Matthew Daulton
Date: 2/27/14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-6 7030	1'-11' GRAIN SIZE	SILTY CLAY	2-25-14 16:00
PSB-6 7030	1'-11' GRADATION/ATTACHING	SILTY CLAY	2-25-14 16:00
PSB-6 7030	1'-11' MOISTURE	SILTY CLAY	2-25-14 16:00
PSB-5 7029	1'-7' GRAIN SIZE	SILTY CLAY	2-26-14 09:30
PSB-5 7029	1'-7' GRADATION/ATTACHING	SILTY CLAY	2-26-14 09:30
PSB-5 7029	1'-7' MOISTURE	SILTY CLAY	2-26-14 09:30
PSB-5 7029	7'-11' GRAIN SIZE	CLAYEY SAND	2-26-14 10:30
PSB-5 7029	7'-11' GRADATION/ATTACHING	CLAYEY SAND	2-26-14 10:30
PSB-5 7029	7'-11' MOISTURE	CLAYEY SAND	2-26-14 10:30
PSB-4 7028	1'-7' GRAIN SIZE	SILTY CLAY	2-26-14 11:30
PSB-4 7028	1'-7' GRADATION/ATTACHING	SILTY CLAY	2-26-14 11:30
PSB-4 7028	1'-7' MOISTURE	SILTY CLAY	2-26-14 11:30
PSB-4 7028	7'-11' GRAIN SIZE	CLAYEY SAND	2-26-14 12:00
PSB-4 7028	7'-11' GRADATION/ATTACHING	CLAYEY SAND	2-26-14 12:00
PSB-4 7028	7'-11' MOISTURE	CLAYEY SAND	2-26-14 12:00

1 GALLON
BAG



Shaw Environmental: James Wilson
Date: 2-27-14

S&ME: Matthew O'Leary
Date: 2/27/14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-3 7027	1'-7' GRAIN SIZE	SILTY CLAY	2-26-14 13:30
PSB-3 7027	1'-7' GRAIN SIZE/MOISTURE	SILTY CLAY	2-26-14 13:30
PSB-3 7027	1'-7' MOISTURE	SILTY CLAY	2-26-14 13:30
PSB-3 7027	7'-11' GRAIN SIZE	CLAYEY SAND	2-26-14 14:00
PSB-3 7027	7'-11' GRAIN SIZE/MOISTURE	CLAYEY SAND	2-26-14 14:00
PSB-3 7027	7'-11' MOISTURE	CLAYEY SAND	2-26-14 14:00
PSB-2 7026	1'-7' GRAIN SIZE	SANDY TO GRAVELLY CLAY	2-26-14 15:00
PSB-2 7026	1'-7' GRAIN SIZE/MOISTURE	SANDY TO GRAVELLY CLAY	2-26-14 15:00
PSB-2 7026	1'-7' MOISTURE	SANDY TO GRAVELLY CLAY	2-26-14 15:00
PSB-2 7026	7'-13' GRAIN SIZE	SILTY CLAY	2-26-14 15:30
PSB-2 7026	7'-13' GRAIN SIZE/MOISTURE	SILTY CLAY	2-26-14 15:30
PSB-2 7026	7'-13' MOISTURE	SILTY CLAY	2-26-14 15:30
AREA 1	PROCTON AASTU 99-81	PSB-2 7026, PSB-3 7027 PSB-4 7028	2/25+26/14
AREA 1	CBR ASTU T183-81	PSB-5 7029, PSB-6 7030 + PSB-7 7031	2/25+26/14
AREA 1	SAND AS ABOVE	SAME AS 2 ABOVE	2/25+26/14

1 GALLON
BAG



ALL
TOGETHER
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SAMPLE

5 GALLON
BUCKET
5 GALLON
BUCKET
5 GALLON
BUCKET

FOR
PROCTON
+
CBR
SAMPLES

Shaw Environmental: James A. Wilson
Date: 2-27-14

S&ME: Matthew Carby
Date: 2/27/14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-26 7050	1'-11' GRABIN SIZE	SILTY CLAY	2-27-14 12:20
PSB-26 7050	1'-11' GRADATION/MATERIAL	SILTY CLAY	2-27-14 12:20
PSB-26 7050	1'-11' MOISTURE	SILTY CLAY	2-27-14 12:20
PSB-26 7050	11'-17' GRABIN SIZE	CLAYEY SAND	2-27-14 12:40
PSB-26 7050	11'-17' GRADATION/MATERIAL	CLAYEY SAND	2-27-14 12:40
PSB-26 7050	11'-17' MOISTURE	CLAYEY SAND	2-27-14 12:40
PSB-26 7050	ES-01-ES-81 ASTM D-3148	ROCK CORE UNCONFINED COMPRESSION	2-27-14 17:00
PSB-27 7051	1'-12' GRABIN SIZE	SILTY CLAY	2-28-14 09:00
PSB-27 7051	1'-12' GRADATION/MATERIAL	SILTY CLAY	2-28-14 09:00
PSB-27 7051	1'-12' MOISTURE	SILTY CLAY	2-28-14 09:00
PSB-27 7051	12'-20' GRABIN SIZE	CLAYEY SAND	2-28-14 09:30
PSB-27 7051	12'-20' GRADATION/MATERIAL	CLAYEY SAND	2-28-14 09:30
PSB-27 7051	12'-20' MOISTURE	CLAYEY SAND	2-28-14 09:30
PSB-27 7051	20'-25' GRABIN SIZE	GRAVELLY SAND	2-28-14 10:15
PSB-27 7051	20'-25' GRADATION/MATERIAL	GRAVELLY SAND	2-28-14 10:15
PSB-27 7051	20'-25' MOISTURE	GRAVELLY SAND	2-28-14 10:15

1-GALLON BAG

ROCK CORE

1-GALLON BAG

Shaw Environmental: Jonathan Wilson
Date: 2-28-14

S&ME: Jonathan Johnson
Date: 3-03-14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
DSB27 7051	25'-38' GAMPSITE	SEMISTOSE SAPPOLITE WEATHERED ROCK	2-28-14 11:00
P5B27 7051	25'-35' GADAPTION/MEASER	SAPPOLITE WEATHERED ROCK	2-28-14 11:00
P5B27 7051	25'-35' HOLTUNE	SAPPOLITE WEATHERED ROCK	2-28-14 11:00
DSB27 7051	25'-35' GAMPSITE	SEMISTOSE SAPPOLITE WEATHERED ROCK	2-28-14 11:00
P5B27 7051	80.7-81.3 ASTM D-3148	ROCK CONC UNCONFINED COMPRESSION	2-28-14 18:00

1 GALLON
 BAG
 ↓
 ROCK
 CONC

Shaw Environmental: *[Signature]*
 Date: 2-28-14

S&ME: *[Signature]*
 Date: 3-03-14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-16 7040	1' - 8' GRAINSIZE	SANDY CLAY	3/18/14 10:00
PSB-16 7040	1' - 8' GRAIN SIZE/MOISTURE	SANDY CLAY	3/18/14 10:00
PSB-16 7040	1' - 8' MOISTURE	SANDY CLAY	3/18/14 10:00
PSB-16 7040	8'-19' GRAINSIZE	CLAYEY SAND	3/18/14 10:30
PSB-16 7040	8'-19' GRAIN SIZE/MOISTURE	CLAYEY SAND	3/18/14 10:30
PSB-16 7040	8'-19' MOISTURE	CLAYEY SAND	3/18/14 10:30
PSB-16 7040	19'-38' GRAINSIZE/MOISTURE	SAPROLITE	3/18/14 11:30
PSB-16 7040	19'-38' GRAIN SIZE/MOISTURE	SAPROLITE	3/18/14 11:30
PSB-16 7040	45.5' - 46.1' ASTM D-3148	ROCK CORE UNCONFINED COMPRESSION	3/18/14 15:30
PSB-17 7041	1' - 11' GRAINSIZE	SANDY CLAY	3/19/14 08:30
PSB-17 7041	1' - 11' GRAIN SIZE/MOISTURE	SANDY CLAY	3/19/14 08:30
PSB-17 7041	1' - 11' MOISTURE	SANDY CLAY	3/19/14 08:30
PSB-17 7041	11' - 18' GRAINSIZE/MOISTURE	CLAYEY SAND	3/19/14 09:00
PSB-17 7041	11' - 18' GRAIN SIZE/MOISTURE	CLAYEY SAND	3/19/14 09:00
PSB-17 7041	18' - 38' GRAINSIZE	SAPROLITE	3/19/14 10:00
PSB-17 7041	18' - 38' GRAIN SIZE/MOISTURE	SAPROLITE	3/19/14 10:00
PSB-17 7041	18' - 38' MOISTURE	SAPROLITE	3/19/14 10:00

1-GALLEN
BAG



BOX

1-GALLEN
BAG



Shaw Environmental: Jane Anderson
Date: 3/21/14

S&ME: Matt Oakley
Date: 3/21/14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-17 7041	65.0' - 65.8' ASTM D-3148	ROCK CORE UNCOMPRESSED COMPRESSION	3/19/14 18:00
PSB-18 7042	1' - 2' GRAIN SIZE	SANDY GRAVELLY CLAY	3/20/14 10:30
PSB-18 7042	1' - 10' GRAIN SIZE / ATTRITION	SANDY GRAVELLY CLAY	3/20/14 10:30
PSB-18 7042	1' - 10' MOISTURE	SANDY GRAVELLY CLAY	3/20/14 10:30
PSB-19 7043	1' - 7' GRAIN SIZE	SANDY GRAVELLY CLAY	3/20/14 14:30
PSB-19 7043	1' - 7' GRAIN SIZE / ATTRITION	SANDY GRAVELLY CLAY	3/20/14 14:30
PSB-19 7043	1' - 7' MOISTURE	SANDY GRAVELLY CLAY	3/20/14 14:30

BOX
1 - GALLON
BAG
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Shaw Environmental: John Anderson
Date: 3/21/14

S&ME: Matt Parry
Date: 3/21/14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-25 7048	1'-9' GRAIN SIZE/MOISTURE	SANDY CLAY	3/21/14 09:00
PSB-25 7048	1'-9' GRADATION/ATTACH	SANDY CLAY	3/21/14 09:00
PSB-25 7048	9'-21' GRAIN SIZE	SANDY GRAVEL	3/21/14 09:30
PSB-25 7048	9'-21' GRADATION/ATTACH	SANDY GRAVEL	3/21/14 09:30
PSB-25 7048	9'-21' MOISTURE	SANDY GRAVEL	3/21/14 09:30
PSB-25 7048	21'-38' GRAIN SIZE	SANDY CLAY SAPROLITE	3/21/14 10:00
PSB-25 7048	21'-38' GRADATION/ATTACH	SANDY CLAY SAPROLITE	3/21/14 10:00
PSB-25 7048	21'-38' MOISTURE	SANDY CLAY SAPROLITE	3/21/14 10:00
PSB-25 7048	822'-830' ASTM D-3148	ROCK CORE UNCONFINED COMPRESSION	3/24/14 18:00
PSB-24 7049	1'-8' GRAIN SIZE	SANDY CLAY	3/25/14 09:00
PSB-24 7049	1'-8' GRADATION/ATTACH	SANDY CLAY	3/25/14 09:00
PSB-24 7049	1'-8' MOISTURE	SANDY CLAY	3/25/14 09:00
PSB-24 7049	8'-20' GRAIN SIZE	GRAVELLY SAND	3/25/14 09:30
PSB-24 7049	8'-20' GRADATION/ATTACH	GRAVELLY SAND	3/25/14 09:30
PSB-24 7049	8'-20' MOISTURE	GRAVELLY SAND	3/25/14 09:30

1-CALLON
BAC



BOX

1-CALLON
BAC



Shaw Environmental: Janet Kulisz
Date: 3/28/14

S&ME: Matthew Oakley
Date: 3/28/14



Chain of Custody
Ecusta Mill Site
S&ME Project Number 3435-14-001

Bore No.	Sample No.	Sample Description	Date/Time Sampled
PSB-24 7049	20'-37' GRAIN SIZE	SANDY CLAY SAPROLITE	3/25/14 10:30
PSB-24 7049	20'-37' GRADATION/ATTN	SANDY CLAY SAPROLITE	3/25/14 10:30
PSB-24 7049	20'-37' MOISTURE	SANDY CLAY SAPROLITE	3/25/14 10:30
PSB-24 7049	73.3'-74.0' ASTM D-3148	ROCK CORE UNCONFIRMED COMPRESSION	3/25/14 19:00
PSB-23 7047	1'-11' GRAIN SIZE	SANDY CLAY	3/26/14 13:30
PSB-23 7047	1'-11' GRADATION/ATTN	SANDY CLAY	3/26/14 13:30
PSB-23 7047	1'-11' MOISTURE	SANDY CLAY	3/26/14 13:30
PSB-20 7044	1'-5' GRAIN SIZE	GRAVELLY SANDY CLAY	3/26/14 15:00
PSB-20 7044	1'-5' GRADATION/ATTN	GRAVELLY SANDY CLAY	3/26/14 15:00
PSB-20 7044	1'-5' MOISTURE	GRAVELLY SANDY CLAY	3/26/14 15:00
PSB-21 7045	1-9' GRAIN SIZE	GRAVELLY SANDY CLAY	3/27/14 10:30
PSB-21 7045	1-9' GRADATION/ATTN	GRAVELLY SANDY CLAY	3/27/14 10:30
PSB-21 7045	1-9' MOISTURE	GRAVELLY SANDY CLAY	3/27/14 10:30
PSB-22 7046	1'-7' GRAIN SIZE	GRAVELLY SANDY CLAY	3/27/14 11:30
PSB-22 7046	1'-7' GRADATION/ATTN	GRAVELLY SANDY CLAY	3/27/14 11:30
PSB-22 7046	1'-7' MOISTURE	GRAVELLY SANDY CLAY	3/27/14 11:30
AREA 3	PROTON DASH 99-81	FROM PSB-16, 17, 18, 19, 20, 21, + 22	3/18-27/14
AREA 3	CBR DASH 193-81	FROM 6 BUMPERS AREA	3/18-27/14

1-GALLON
BAG

BOX

1-GALLON
BAG

1-5 GALLON
BUCKETS
FOR
CBR
+
PROTON
SAMPLES

Shaw Environmental: John Anderson S&ME: Matthew Cadogan
Date: 3/28/14 Date: 3/28/14