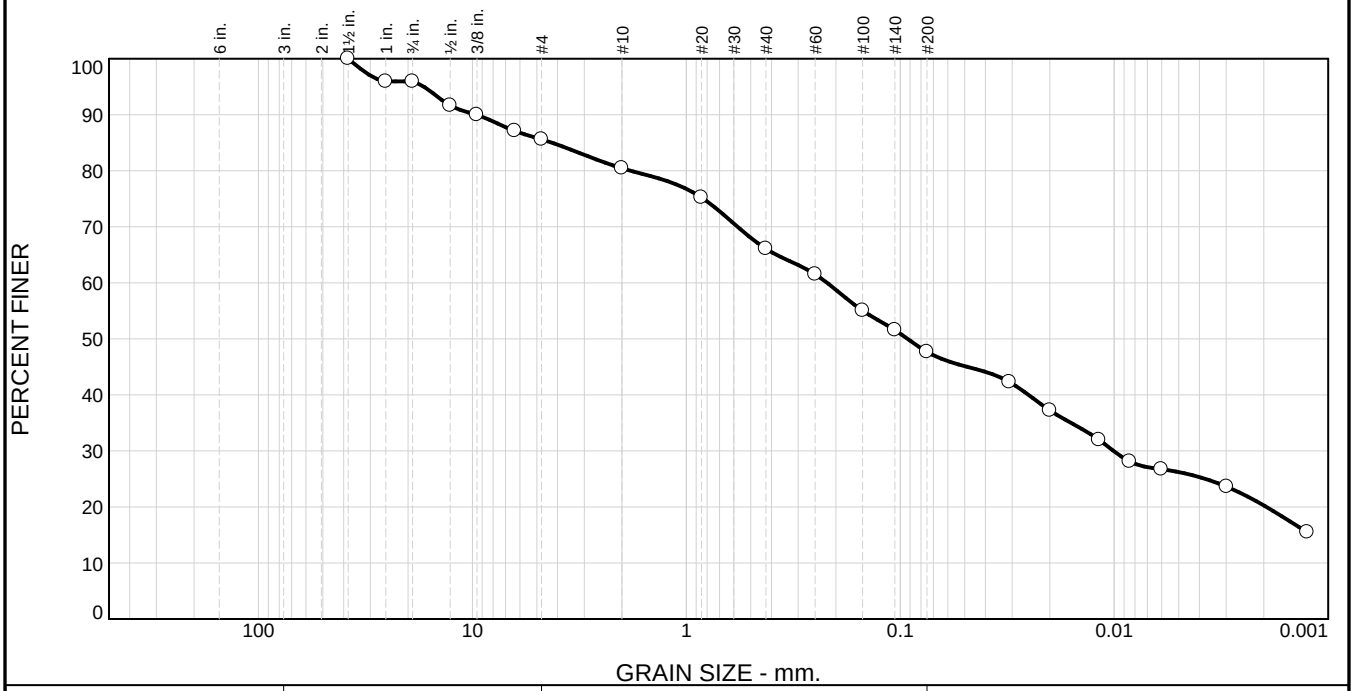
Appendix C

Soil Physical Testing Summary- 3rd Rock LLC

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	4.1	10.3	5.2	14.3	18.4	21.5	26.2

TEST RESULTS (ASTM D 422)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0		
1	95.9		
.75	95.9		
.5	91.6		
.375	90.0		
.25	87.1		
#4	85.6		
#10	80.4		
#20	75.2		
#40	66.1		
#60	61.5		
#100	55.0		
#140	51.6		
#200	47.7		
0.0309 mm.	42.3		
0.0200 mm.	37.2		
0.0118 mm.	32.0		
0.0085 mm.	28.1		
0.0060 mm.	26.7		
0.0030 mm.	23.6		
0.0013 mm.	15.5		

* (no specification provided)

Material Description

ID#13-578
Silty, clayey sand

Atterberg Limits (ASTM D 4318)

PL= 13 **LL=** 18 **PI=** 5

Classification

USCS (D 2487)= SC-SM **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 9.5868 D_{85}= 4.2481 D_{60}= 0.2198
D_{50}= 0.0925 D_{30}= 0.0101 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 10/23/13 **Date Tested:** 10/30/13

Tested By: JS

Checked By: JMA

Title: LM

Source of Sample: Millseat Landfill, 2013 **Depth:** 4-16' **Date Sampled:**
Sample Number: B-SEA-1

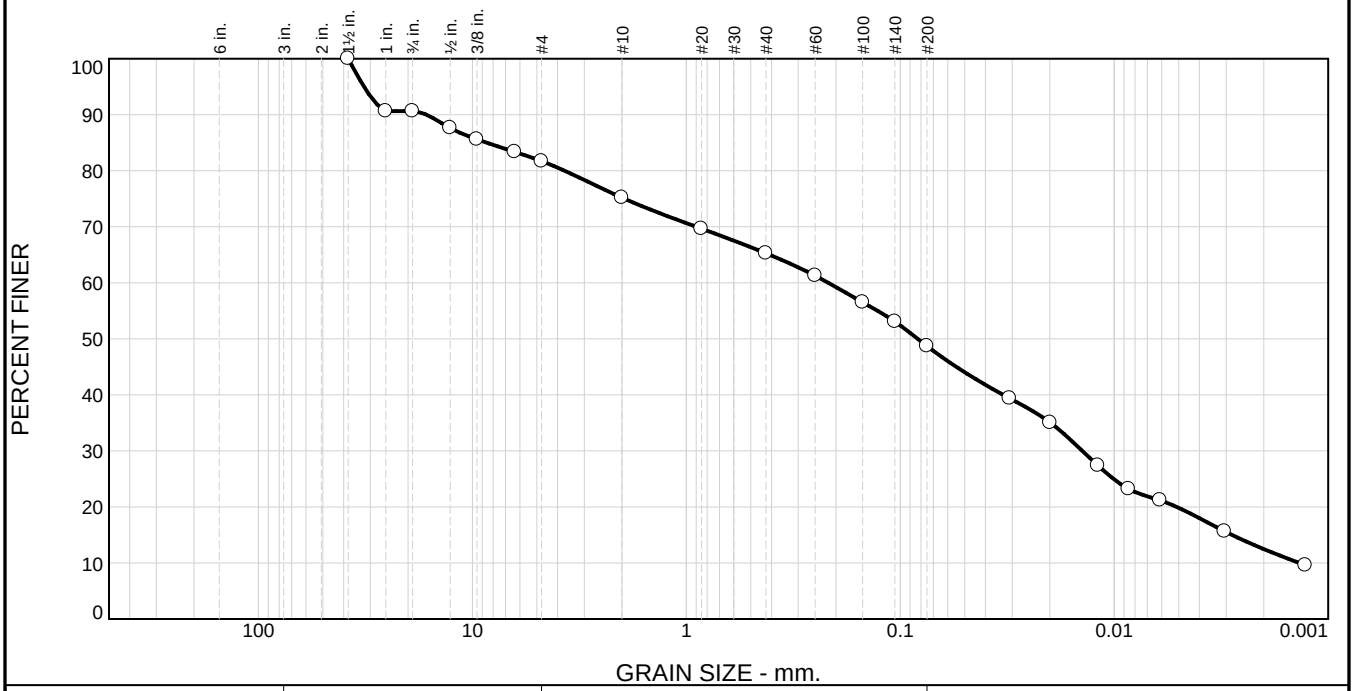
3rd Rock, LLC

East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No: 12-038 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	9.4	8.9	6.5	9.9	16.6	28.9	19.8

TEST RESULTS (ASTM D 422)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0		
1	90.6		
.75	90.6		
.5	87.6		
.375	85.6		
.25	83.4		
#4	81.7		
#10	75.2		
#20	69.7		
#40	65.3		
#60	61.3		
#100	56.5		
#140	53.1		
#200	48.7		
0.0308 mm.	39.4		
0.0199 mm.	35.0		
0.0119 mm.	27.4		
0.0086 mm.	23.2		
0.0061 mm.	21.2		
0.0031 mm.	15.7		
0.0013 mm.	9.6		

* (no specification provided)

Material Description

ID#13-579
Silty, clayey sand with gravel

Atterberg Limits (ASTM D 4318)

PL= 16 **LL=** 22 **PI=** 6

Classification

USCS (D 2487)= SC-SM **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 16.4052 D_{85}= 8.5727 D_{60}= 0.2169
D_{50}= 0.0829 D_{30}= 0.0141 D_{15}= 0.0028
D_{10}= 0.0014 C_u= 158.91 C_c= 0.67

Remarks

Date Received: 10/23/13 **Date Tested:** 10/30/13
Tested By: JS
Checked By: JMA
Title: LM

Source of Sample: Millseat Landfill, 2013 **Depth:** 0-14' **Date Sampled:**
Sample Number: B-SEA-2

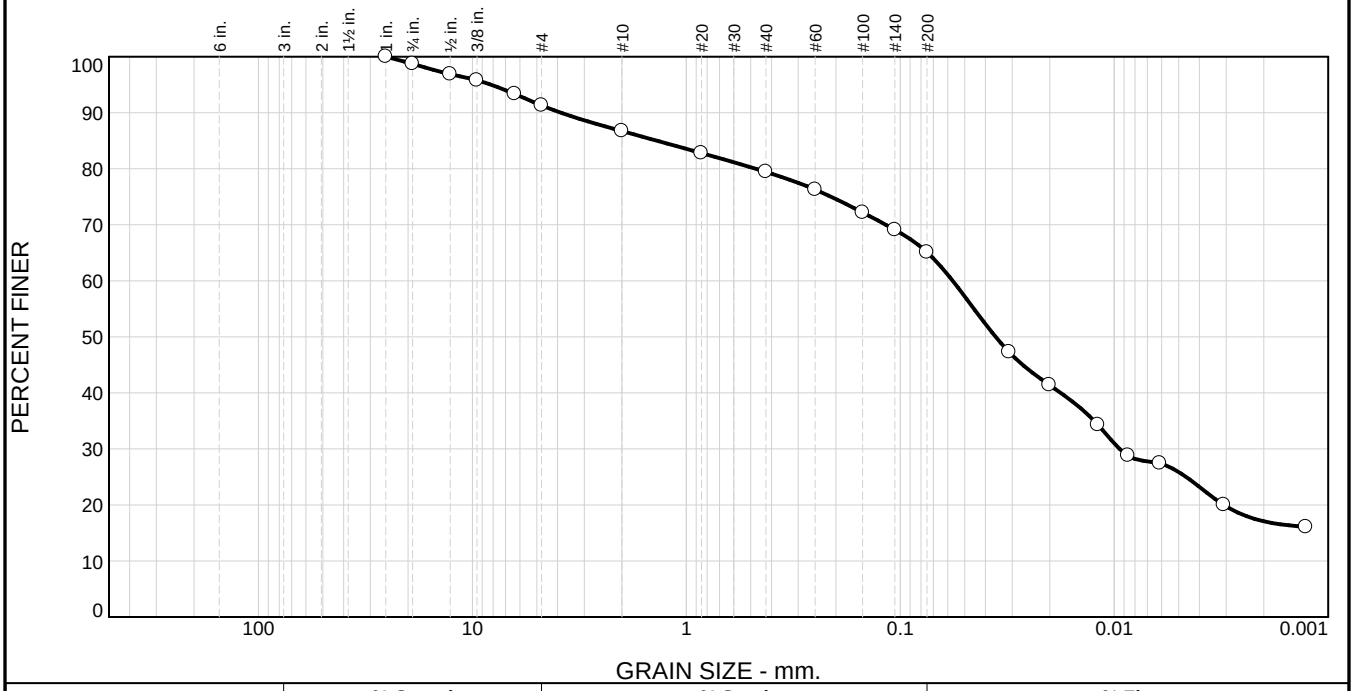
3rd Rock, LLC

East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No: 12-038 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	1.3	7.4	4.6	7.3	14.3	39.2	25.9

TEST RESULTS (ASTM D 422)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1	100.0		
.75	98.7		
.5	96.9		
.375	95.8		
.25	93.4		
#4	91.3		
#10	86.7		
#20	82.8		
#40	79.4		
#60	76.3		
#100	72.2		
#140	69.1		
#200	65.1		
0.0310 mm.	47.3		
0.0201 mm.	41.4		
0.0119 mm.	34.3		
0.0086 mm.	28.8		
0.0061 mm.	27.4		
0.0031 mm.	20.0		
0.0013 mm.	16.1		

* (no specification provided)

Material Description

ID#13-580
Sandy lean clay

Atterberg Limits (ASTM D 4318)

PL= 12 **LL=** 20 **PI=** 8

Classification

USCS (D 2487)= CL **AASHTO (M 145)=** A-4(2)

Coefficients

D_{90}= 3.8574 D_{85}= 1.3724 D_{60}= 0.0569
D_{50}= 0.0358 D_{30}= 0.0094 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 10/23/13 **Date Tested:** 10/28/13
Tested By: JS
Checked By: JMA
Title: LM

Source of Sample: Millseat Landfill, 2013 **Depth:** 14-36' **Date Sampled:**
Sample Number: B-SEA-2

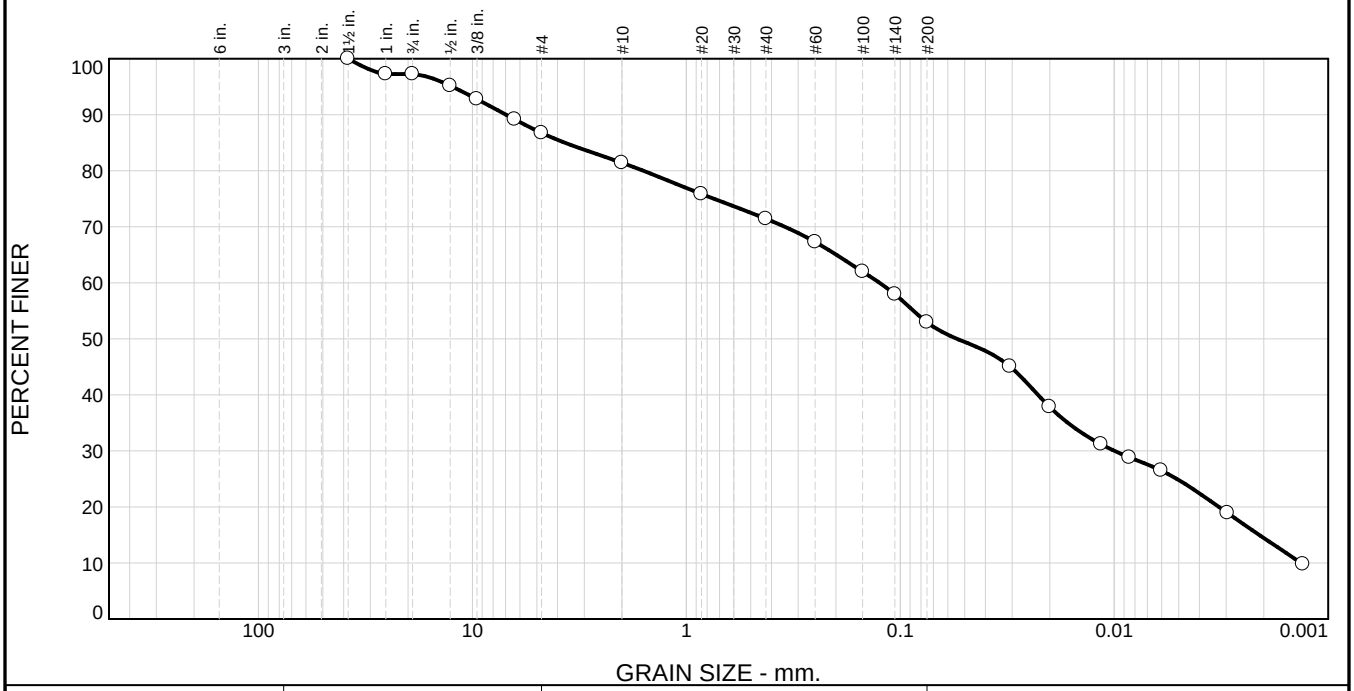
3rd Rock, LLC

East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No: 12-038 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.7	10.6	5.3	10.0	18.4	28.2	24.8

TEST RESULTS (ASTM D 422)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0		
1	97.3		
.75	97.3		
.5	95.2		
.375	92.8		
.25	89.2		
#4	86.7		
#10	81.4		
#20	75.9		
#40	71.4		
#60	67.3		
#100	62.0		
#140	58.0		
#200	53.0		
0.0308 mm.	45.1		
0.0201 mm.	37.9		
0.0115 mm.	31.2		
0.0085 mm.	28.8		
0.0060 mm.	26.5		
0.0030 mm.	18.9		
0.0013 mm.	9.8		

* (no specification provided)

Material Description

ID#13-581
Sandy silty clay

Atterberg Limits (ASTM D 4318)

PL= 11 **LL=** 18 **PI=** 7

Classification

USCS (D 2487)= CL-ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 6.9642 D_{85}= 3.6982 D_{60}= 0.1250
D_{50}= 0.0543 D_{30}= 0.0100 D_{15}= 0.0021
D_{10}= 0.0013 C_u= 93.49 C_c= 0.60

Remarks

Date Received: 10/23/13 **Date Tested:** 10/30/13

Tested By: JS

Checked By: JMA

Title: LM

Source of Sample: Millseat Landfill, 2013 **Depth:** 12-15' **Date Sampled:**
Sample Number: B-SEA-3

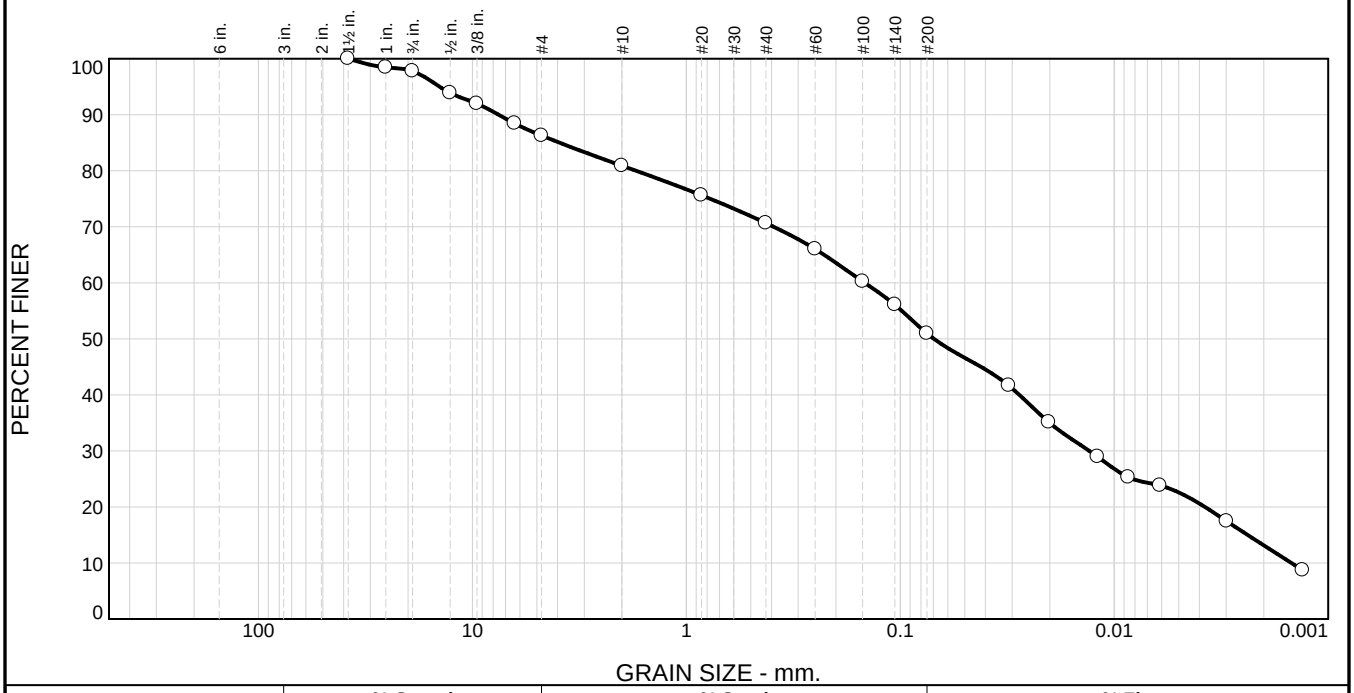
3rd Rock, LLC

East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No: 12-038 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	2.2	11.5	5.4	10.2	19.7	28.4	22.6

TEST RESULTS (ASTM D 422)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0		
1	98.4		
.75	97.8		
.5	93.9		
.375	92.0		
.25	88.4		
#4	86.3		
#10	80.9		
#20	75.6		
#40	70.7		
#60	66.0		
#100	60.2		
#140	56.1		
#200	51.0		
0.0311 mm.	41.7		
0.0202 mm.	35.1		
0.0120 mm.	29.0		
0.0086 mm.	25.3		
0.0061 mm.	23.8		
0.0030 mm.	17.5		
0.0013 mm.	8.7		

* (no specification provided)

Material Description

ID#13-582
Sandy silty clay

Atterberg Limits (ASTM D 4318)

PL= 13 **LL=** 18 **PI=** 5

Classification

USCS (D 2487)= CL-ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 7.5430 D_{85}= 3.9146 D_{60}= 0.1468
D_{50}= 0.0696 D_{30}= 0.0131 D_{15}= 0.0024
D_{10}= 0.0015 C_u= 98.90 C_c= 0.78

Remarks

Date Received: 10/23/13 **Date Tested:** 10/28/13

Tested By: JS

Checked By: JMA

Title: LM

Source of Sample: Millseat Landfill, 2013 **Depth:** 0-20' **Date Sampled:**
Sample Number: B-SEA-5

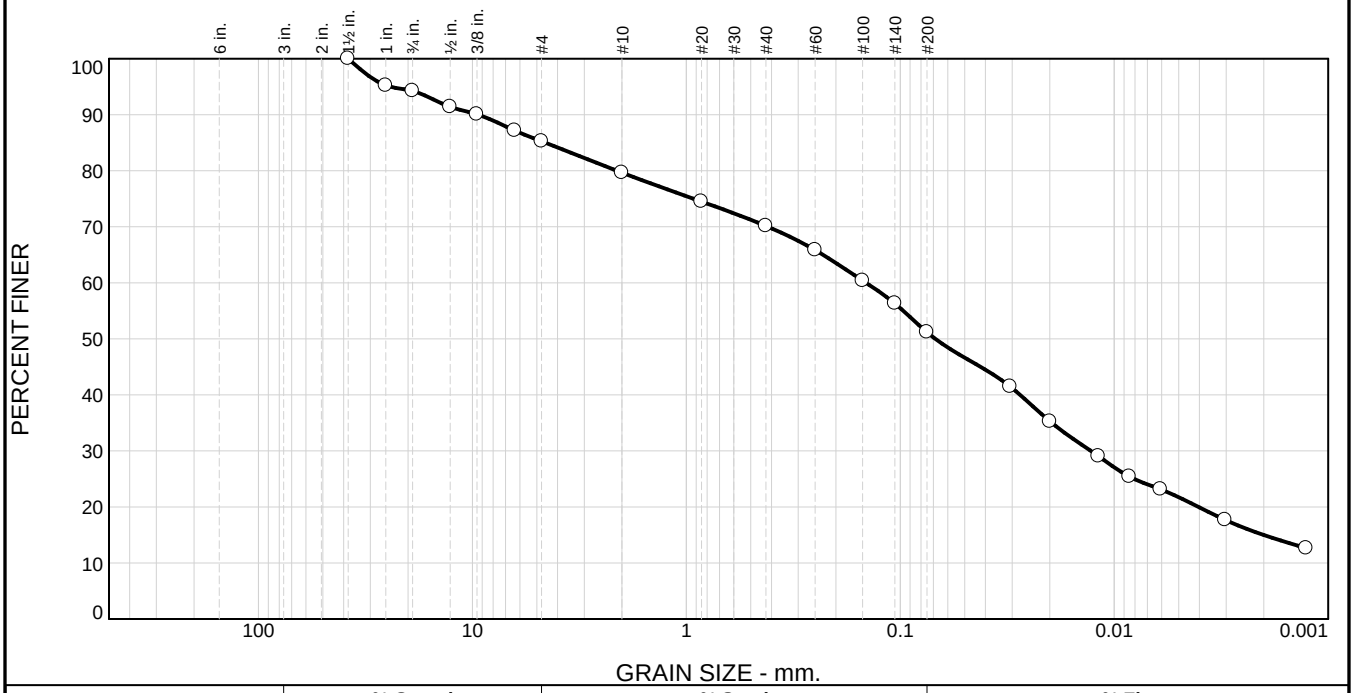
3rd Rock, LLC

East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No: 12-038 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	5.7	9.0	5.6	9.5	19.0	29.5	21.7

TEST RESULTS (ASTM D 422)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
1.5	100.0		
1	95.2		
.75	94.3		
.5	91.4		
.375	90.1		
.25	87.2		
#4	85.3		
#10	79.7		
#20	74.5		
#40	70.2		
#60	65.8		
#100	60.4		
#140	56.3		
#200	51.2		
0.0307 mm.	41.5		
0.0200 mm.	35.3		
0.0118 mm.	29.0		
0.0085 mm.	25.4		
0.0061 mm.	23.2		
0.0030 mm.	17.7		
0.0013 mm.	12.7		

* (no specification provided)

Material Description

ID#13-583
Sandy silty clay

Atterberg Limits (ASTM D 4318)

PL= 14 **LL=** 20 **PI=** 6

Classification

USCS (D 2487)= CL-ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 9.3914 D_{85}= 4.5639 D_{60}= 0.1448
D_{50}= 0.0686 D_{30}= 0.0129 D_{15}= 0.0020
D_{10}= C_u= C_c=

Remarks

Date Received: 12/23/13 **Date Tested:** 10/30/13

Tested By: JS

Checked By: JMA

Title: LM

Source of Sample: Millseat Landfill, 2013 **Depth:** 0-19' **Date Sampled:**
Sample Number: B-SEA-6

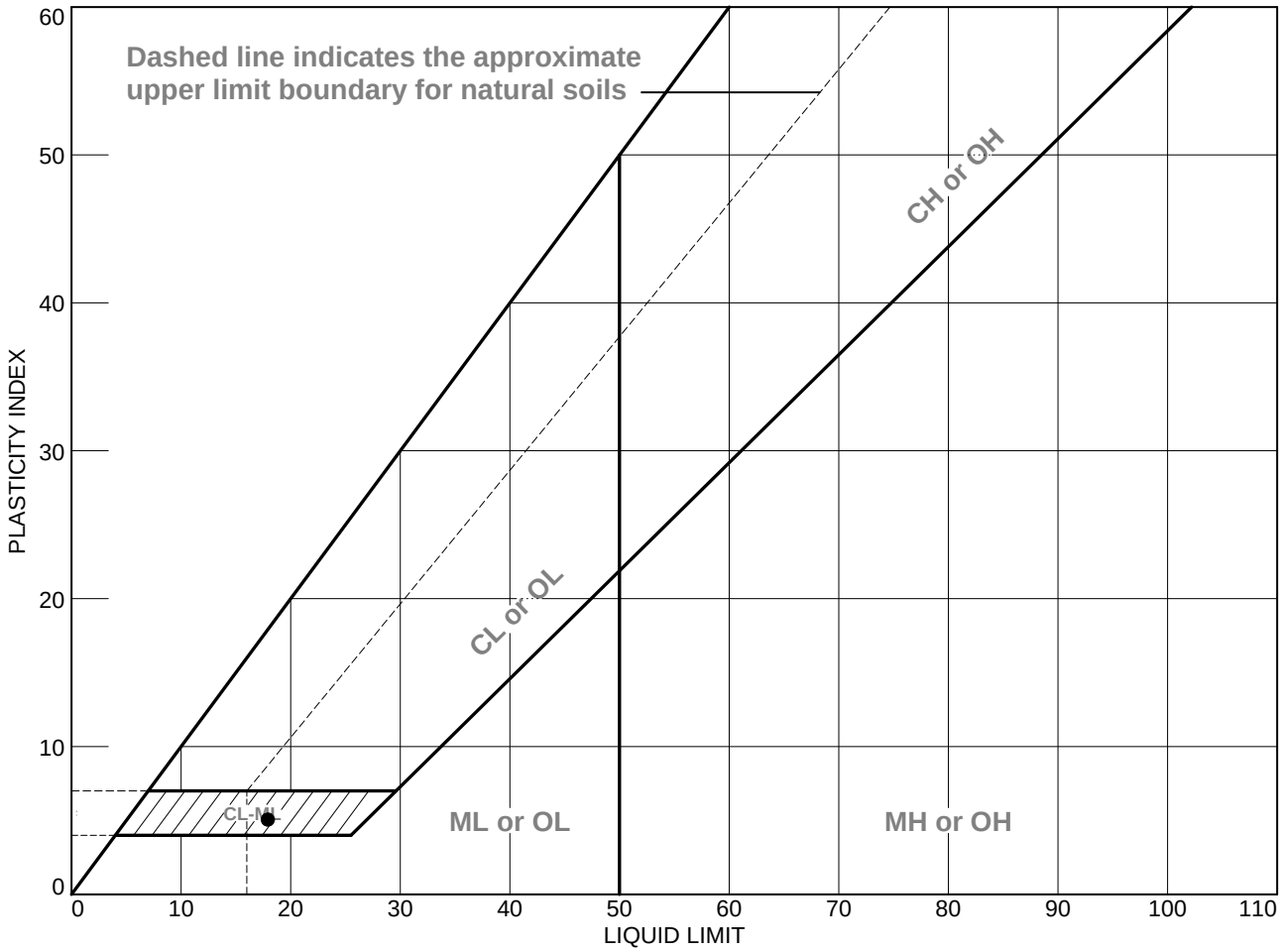
3rd Rock, LLC

East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No: 12-038 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Millseat Landfill, 2013	B-SEA-1	4-16'		13	18	5	SC-SM

3rd Rock, LLC

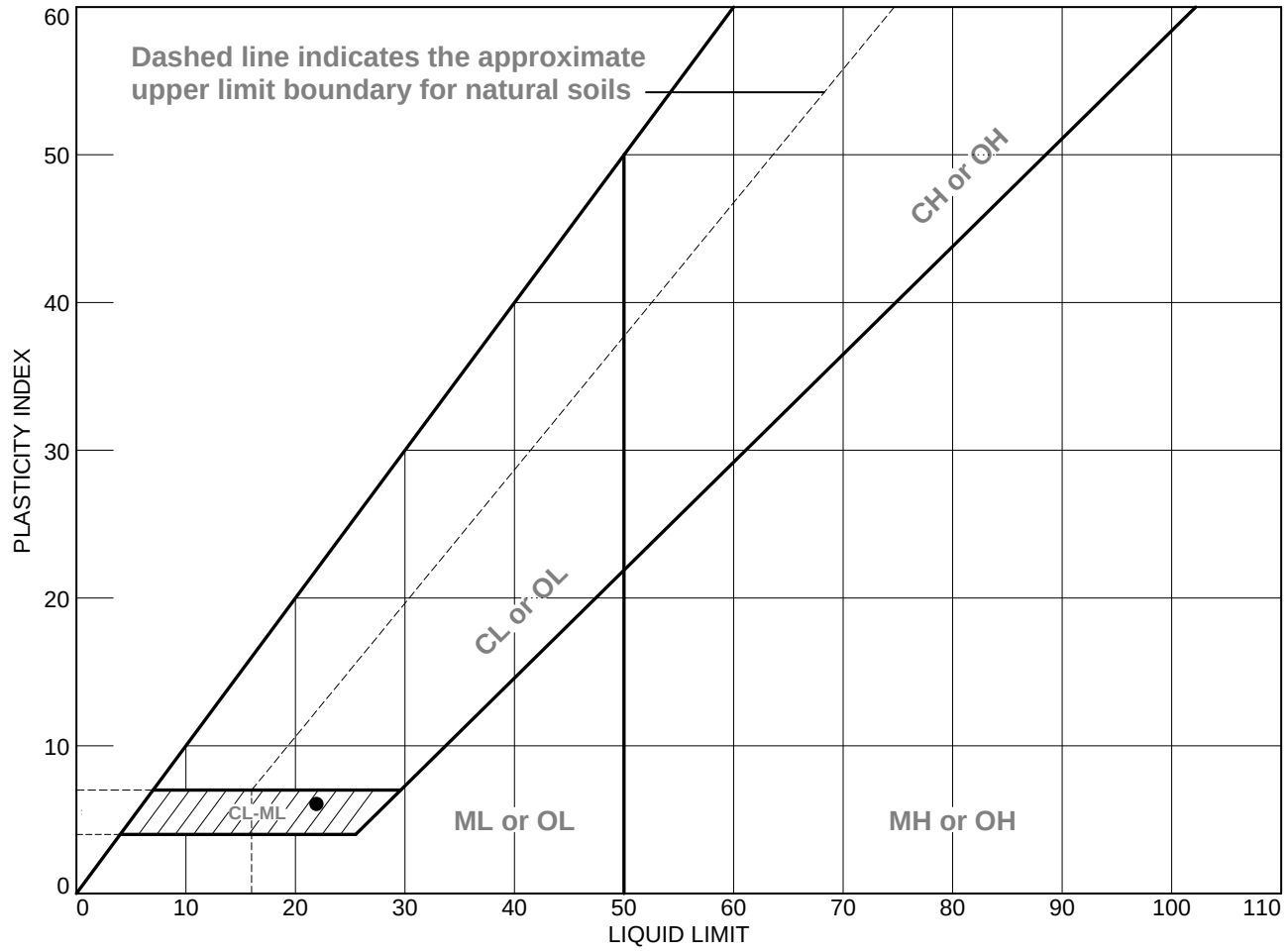
East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No.: 12-038 **Figure**

Tested By: JS 10/31/13 **Checked By:** JMA

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Millseat Landfill, 2013	B-SEA-2	0-14'		16	22	6	SC-SM

3rd Rock, LLC

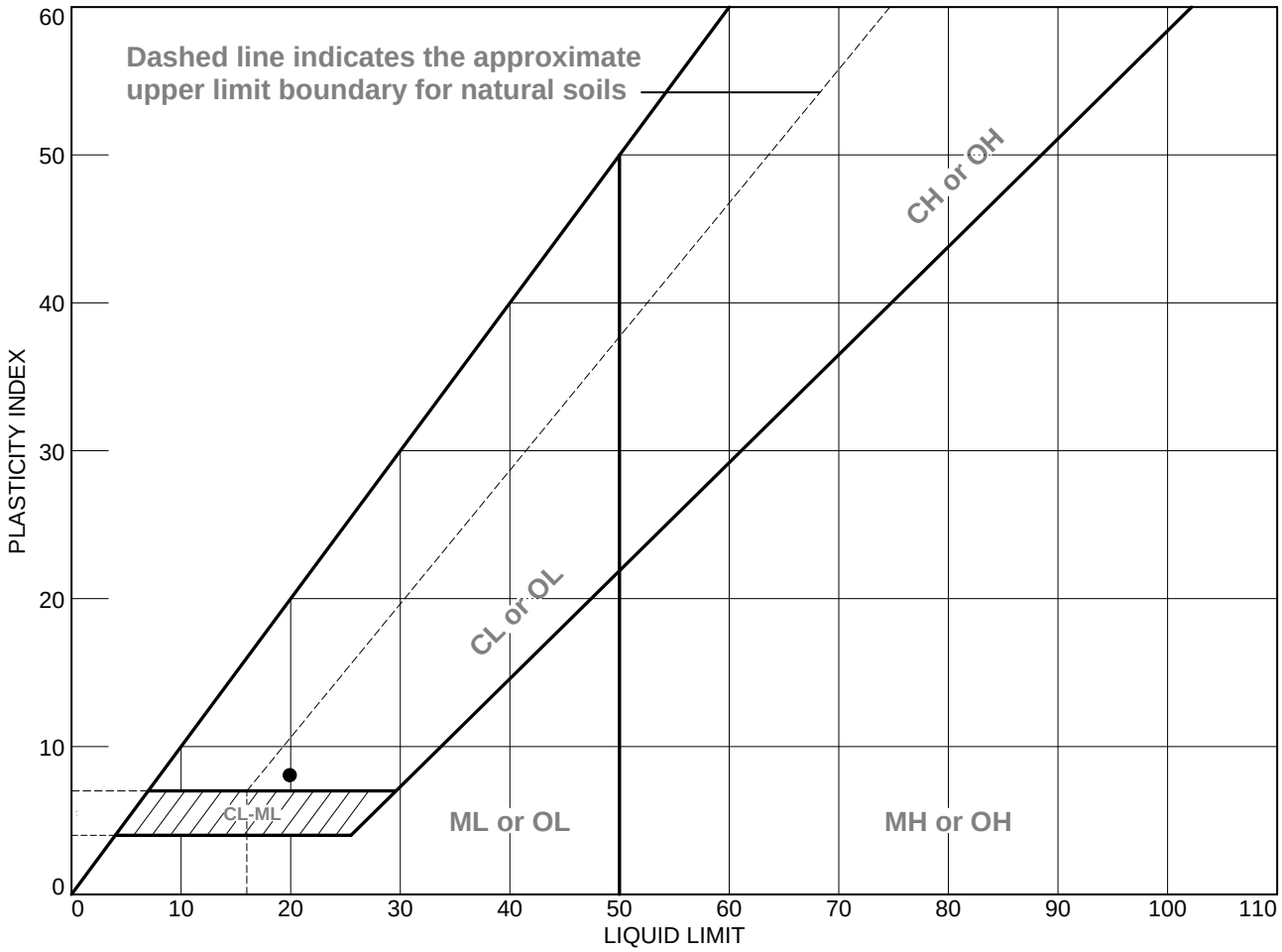
East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No.: 12-038 **Figure**

Tested By: JS 10/31/13 **Checked By:** JMA

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Millseat Landfill, 2013	B-SEA-2	14-36'		12	20	8	CL

3rd Rock, LLC

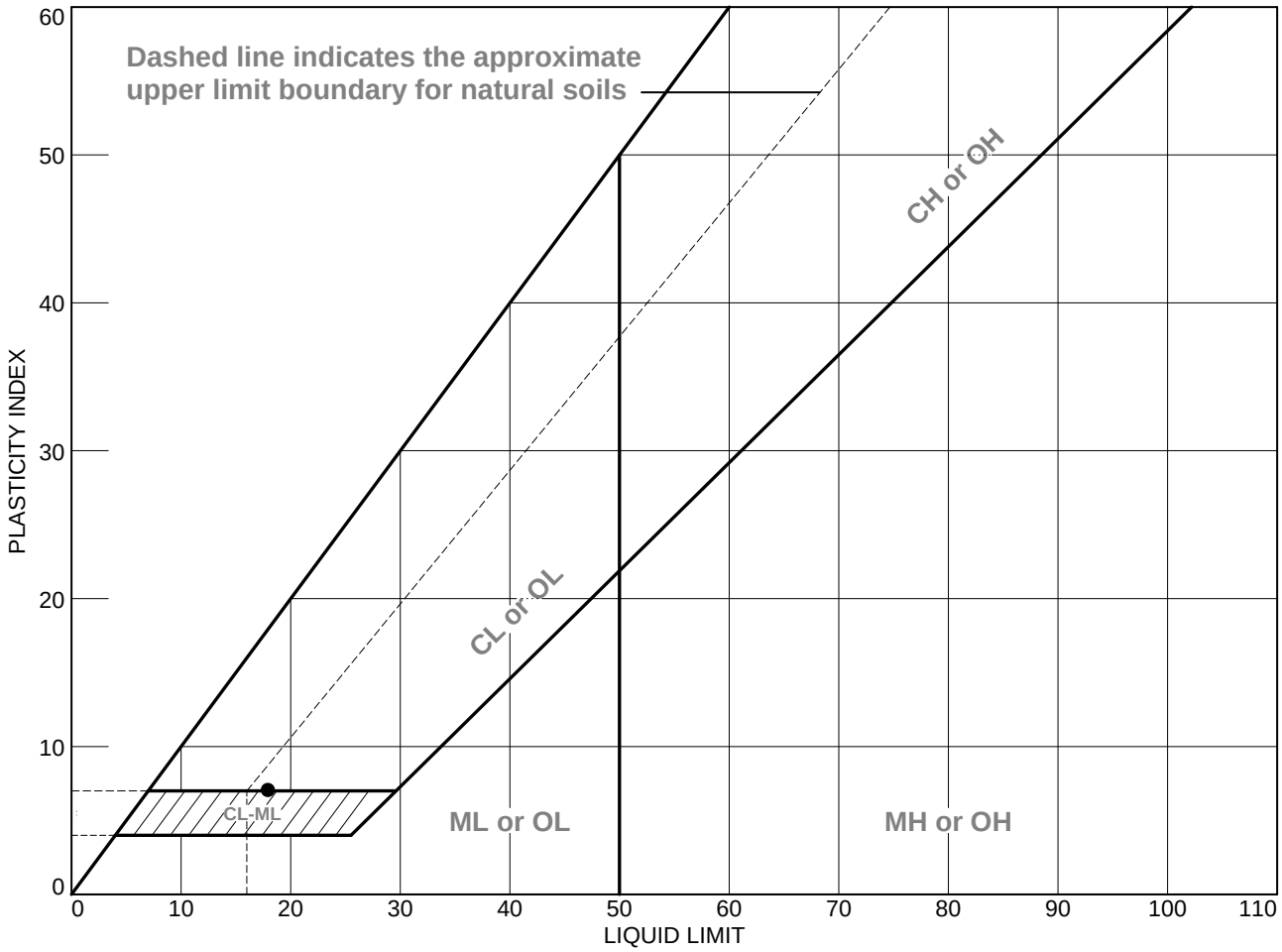
East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No.: 12-038 **Figure**

Tested By: JS 10/31/13 **Checked By:** JMA

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Millseat Landfill, 2013	B-SEA-3	12-15'		11	18	7	CL-ML

3rd Rock, LLC

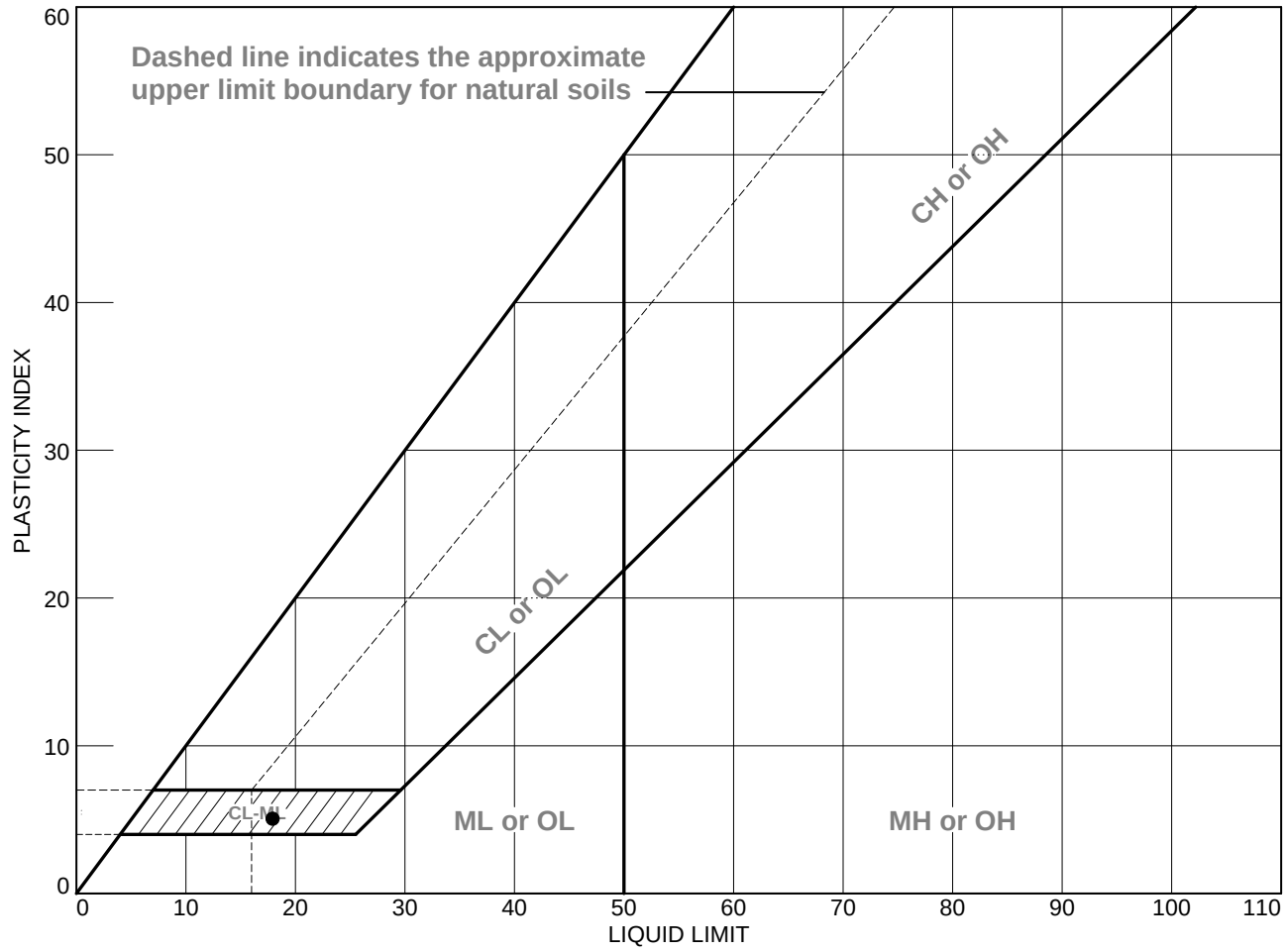
East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No.: 12-038 **Figure**

Tested By: JS 11/1/13 **Checked By:** JMA

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Millseat Landfill, 2013	B-SEA-5	0-20'		13	18	5	CL-ML

3rd Rock, LLC

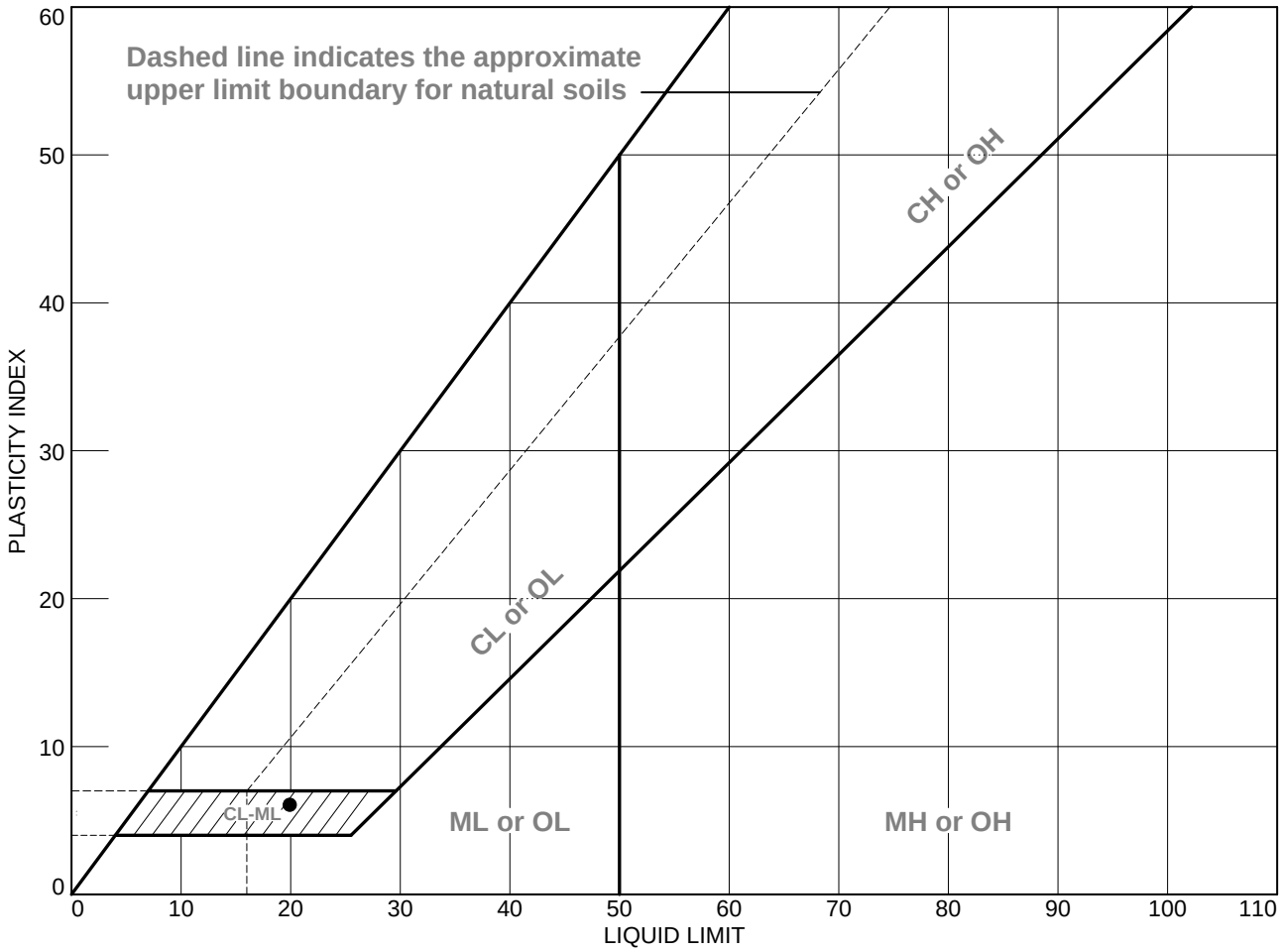
East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No.: 12-038 **Figure**

Tested By: JS 10/31/13 **Checked By:** JMA

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	Millseat Landfill, 2013	B-SEA-6	0-19'		14	20	6	CL-ML

3rd Rock, LLC

East Aurora, NY

Client: GEI Consultants, Inc.
Project: Millseat Landfill

Project No.: 12-038 **Figure**

Tested By: JS 10/31/13 **Checked By:** JMA

FINAL PERMEABILITY REPORT

Project Name:	GEI Millseat Landfill	Date:	11/08/13
Project No.:	13-037	Tested By:	JS
Sample No.:	B-SEA-2, 14-36'	Check By:	JMA
Sample I.D.:	13-580	Date of Test:	10/29/13
Laboratory Method:	ASTM D5084, Method C	Date Test Complete:	11/07/13
Remarks:	*Specimen remolded to approximate in place density*	CELL NO.:	3

INITIAL SAMPLE DATA:

Height, in.:	3.011	Wet Density, pcf:	148.0
Diameter, in.:	2.805	Dry Density, pcf:	137.3
Moisture Content,%:	7.80	Compaction, %:	NA

FINAL SAMPLE DATA:

Height, in.:	3.005	Wet Density, pcf:	151.7
Diameter, in.:	2.794	Dry Density, pcf:	139.9
Moisture Content,%:	8.40		

SATURATION AND CONSOLIDATION DATA:

Consolidation Pressure: 85 psi

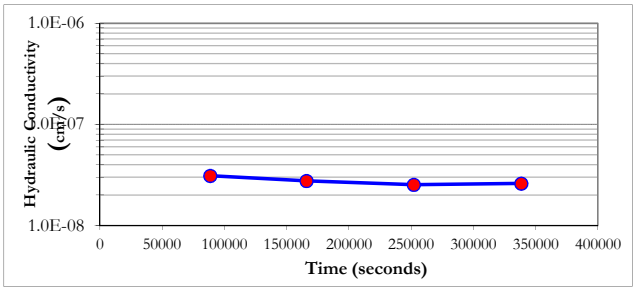
Backpressure: 80 psi

Saturation (B parameter): 95%

AVERAGE PERMEABILITY RESULT (average of last 4 readings, K, cm/s):

Trial #	Testing Pressures (psi)			Q (ml/sec)	Final K (cm/s)
	1	2	3		
1	85.1	80	79.7	4.35E-06	3.1E-08
2	85.1	80	79.7	3.75E-06	2.8E-08
3	85.1	80	79.7	3.36E-06	2.5E-08
4	85.1	80	79.7	3.36E-06	2.6E-08

Average K	2.7E-08
Average K , ft/day	7.8E-05



3rd Rock, LLC
580 Olean Road
East Aurora, NY 14052
(716)655-4933

FINAL PERMEABILITY REPORT

Project Name:	GEI Millseat Landfill	Date:	11/08/13
Project No.:	13-037	Tested By:	JS
Sample No.:	B-SEA-3, 12-15'	Check By:	JMA
Sample I.D.:	13-581	Date of Test:	10/30/13
Laboratory Method:	ASTM D5084, Method C	Date Test Complete:	11/08/13
Remarks:	*Specimen remolded to approximate in place density*	CELL NO.:	5B

INITIAL SAMPLE DATA:

Height, in.:	3.105	Wet Density, pcf:	145.5
Diameter, in.:	2.796	Dry Density, pcf:	135.1
Moisture Content,%:	7.70	Compaction, %:	NA

FINAL SAMPLE DATA:

Height, in.:	3.074	Wet Density, pcf:	148.7
Diameter, in.:	2.798	Dry Density, pcf:	136.1
Moisture Content,%:	9.30		

SATURATION AND CONSOLIDATION DATA:

Consolidation Pressure: 85 psi

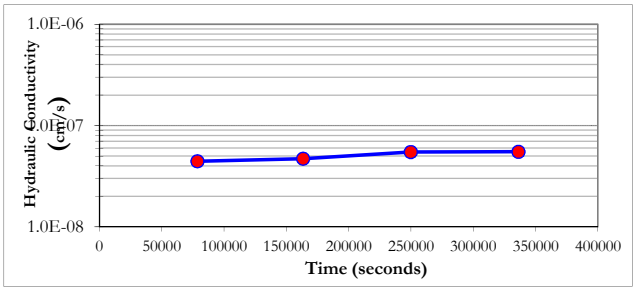
Backpressure: 80 psi

Saturation (B parameter): 99%

AVERAGE PERMEABILITY RESULT (average of last 4 readings, K, cm/s):

Trial #	Testing Pressures (psi)			Q (ml/sec)	Final K (cm/s)
	1	2	3		
1	85.1	80	79.7	5.73E-06	4.5E-08
2	85.1	80	79.7	5.78E-06	4.7E-08
3	85.1	80	79.7	6.37E-06	5.5E-08
4	85.1	80	79.7	6.07E-06	5.5E-08

Average K	5.0E-08
Average K , ft/day	1.4E-04



3rd Rock, LLC
580 Olean Road
East Aurora, NY 14052
(716)655-4933

FINAL PERMEABILITY REPORT

Project Name:	GEI Millseat Landfill	Date:	11/05/13
Project No.:	13-037	Tested By:	JS
Sample No.:	B-SEA-5, 0-20'	Check By:	JMA
Sample I.D.:	13-582	Date of Test:	10/28/13
Laboratory Method:	ASTM D5084, Method C	Date Test Complete:	11/05/13
Comments:	Specimen remolded to approximate in place density	CELL NO.:	5A

INITIAL SAMPLE DATA:

Height, in.:	3.047	Wet Density, pcf:	145.2
Diameter, in.:	2.804	Dry Density, pcf:	135.8
Moisture Content,%:	6.90	Target Density,pcf:	In place

FINAL SAMPLE DATA:

Height, in.:	3.021	Wet Density, pcf:	149.7
Diameter, in.:	2.808	Dry Density, pcf:	136.6
Moisture Content,%:	9.60		

SATURATION AND CONSOLIDATION DATA:

Consolidation Pressure: 85 psi

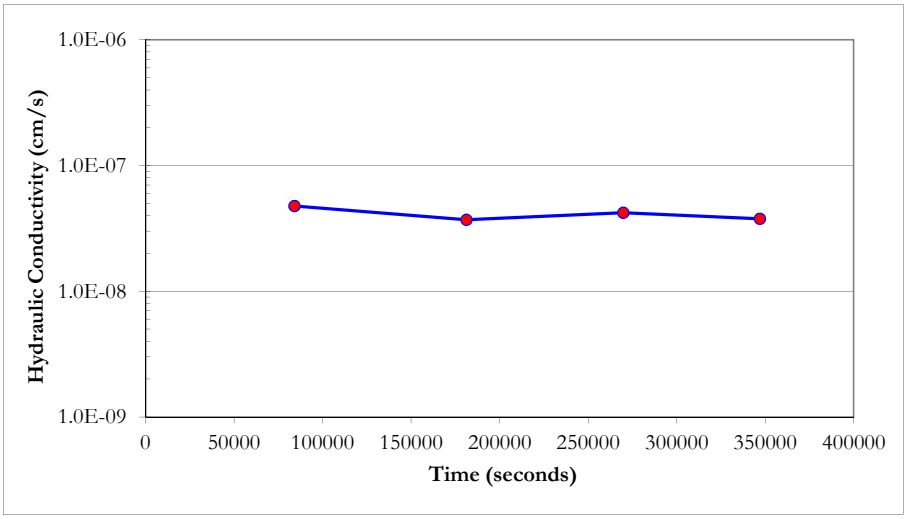
Backpressure: 80 psi

Saturation (B parameter): 100%

AVERAGE PERMEABILITY RESULT (average of last 4 readings, K, cm/s):

Trial #	Testing Pressures (psi)			Q (ml/sec)	Final K (cm/s)
	1	2	3		
1	85.1	80	79.7	5.24E-06	4.8E-08
2	85.1	80	79.7	4.07E-06	3.7E-08
3	85.1	80	79.7	4.63E-06	4.2E-08
4	85.1	80	79.7	4.15E-06	3.8E-08

Average K	4.1E-08
Average K , ft/day	1.2E-04



580 Olean Road
East Aurora, NY 14052
(716)655-4933