

PDI Phase	Location ID	Field Sample ID	Depth (ft)	Average Depth (ft)	Water Content (ASTM D2216)	Atterberg Limits (ASTM D4318)			Grain Size (ASTM D422)					Specific Gravity (ASTM D854)
						Liquid Limit (%)	Plastic Limit (%)	Plasticity Index (%)	Percent Gravel (%)	Percent Sand (%)	Percent Fines (clay & silt) (%)	Clay-sized Particle Content (0.005 mm) (%)	Clay-sized Particle Content (0.002 mm) (%)	
I	OL-STA-10015-VC	OL-0119-05	9.9-13.2	11.55	233									
I	OL-STA-10016-VC	OL-0119-02	0-3.3	1.65	108.3	45	31	23	0	1.5	98.5	32	12	
I	OL-STA-10017-VC	OL-0119-06	0-3.3	1.65	152									
I	OL-STA-10017-VC	OL-0119-07	9.9-12.6	11.25	126.6	66	40	26	0.5	4.7	94.8	35	14	
I	OL-STA-10018-VC	OL-0119-04	6.6-9.9	8.25	217.6	115	74	41	0.4	8.6	91	33	11	2.54
I	OL-STA-10022-VC	OL-0119-01	9.9-13.2	11.55	171.8									
I	OL-STA-10024-VC	OL-0119-08	6.6-9.9	8.25	120.2	99	68	31	0	25.3	74.7	32	17	
I	OL-STA-10026-VC	OL-0119-03	3.3-6.6	4.95	54.7	69	45	24	0	55.3	44.7	18	11	
I	OL-STA-40001	OL-0113-01	6.6-9.9	8.25	58.3	36	26	10	0	23.2	76.8	14	10	2.65
I	OL-STA-40002	OL-0113-02	9.9-13.2	11.55	73.5									
I	OL-STA-40003	OL-0113-03	9.9-13.2	11.55	72.3	59	35	24	0	16.3	83.7	32	19	2.58
I	OL-STA-60016	OL-0112-01	14-16	15	73.1									
I	OL-STA-60017	OL-0112-03	8-10	9	86.9	53	34	19	0	11.2	88.8	22	14	2.61
I	OL-STA-60019	OL-0112-02	16-18	17	84.7									
I	OL-STA-70006	OL-0112-04	2-4	3	61.1	58	33	25	0.3	26.2	73.5	26	16	2.52
I	OL-STA-70006	OL-0112-05	10-12	11	106									
I	OL-STA-70007	OL-0112-06	10-12	11	80.1	62	37	25	0	20.6	79.4	27	21	2.57
I	OL-STA-70007	OL-0112-07	18-20	19	91.6									
II	OL-STA-10108	OL-0298-05	47- 49	48	86.43	92	44	48	0	3.6	96.4	34	27	2.57
II	OL-STA-30033	OL-0298-01	35 - 37	36	74.18	63	36	27	0	0.4	99.6	58	14	2.74
II	OL-VC-10037	OL-0296-01	9.9-13.2	11.55	191.3	96	48	48	0	4.8	95.2	55	28	2.52
II	OL-VC-10038	OL-0296-02	9.9-13.2	11.55	223.4									
II	OL-VC-10062A	OL-0296-03	3.3- 6.6	4.95	194.8	113	60	53	0	4.3	95.7	43	22	2.54
II	OL-VC-10080	OL-0296-04	9.9-13.2	11.55	224.3									
II	OL-VC-10081A	OL-0296-05	13.2-16.5	14.85	206.3	117	82	35	4.8	7.1	88.1	40	22	2.58
II	OL-VC-10105	OL-0296-06	0-3.3	1.65	215.3	89	55	34	0	11.7	88.3	35	20	2.60
II	OL-VC-20070	OL-0302-01	9.9-13.2	11.55	44.7	42	26	16	0.5	16.8	82.7	38	24	
II	OL-VC-20074	OL-0297-01	13.2-16.5	14.85	69.8	77	36	41	0	1	99	70	45	2.69
II	OL-VC-20079	OL-0297-02	0-3.3	1.65	123.3	55	36	19	0	70	99.3	11	7	2.58
II	OL-VC-30036	OL-0302-02	6.6-9.9	8.25	150.3									
II	OL-VC-30038	OL-0302-03	3.3- 6.6	4.95	261.5	110	60	50	0	6	94	45	22	
II	OL-VC-30040	OL-0302-04	0-3.3	1.65	221.1	90	52	38	0	1.6	98.4	12	6	2.18
II	OL-VC-30043	OL-0302-05	13.2-16.5	14.85	90.5	62	38	24	0	25.5	74.5	12	10	2.45
II	OL-VC-40016	OL-0302-06	13.2-16.5	14.85	75.61	86	39	47	0	0.6	99.4	72	48	
II	OL-VC-40021	OL-0302-07	3.3-6.6	4.95	77	53	29	24	0	1.2	98.8	45	24	2.67
II	OL-VC-40025	OL-0302-08	3.3-6.6	4.95	123.8	57	36	21	0	0.5	99.5	18	11	
II	OL-VC-40032	OL-0302-09	13.2-16.5	14.85	69.49				0	17.3	82.7	28	23	2.53
II	OL-VC-40034	OL-0302-10	16.5-17.8	17.15	70.11	44	28	16	0	24.3	75.7	44	33	
II	OL-VC-60054	OL-0298-04	3.3 - 6.6	4.95	137.9	90	40	50	0	4.2	95.8	22	18	
II	OL-VC-60056	OL-0298-02	0.5 - 3.3	1.9	158.9	95	36	59	0	1.3	98.7	29	19	
II	OL-VC-60061	OL-0298-03	13.2 - 16.5	14.85	75.51	75	41	34	0	15.5	84.5	29	19	
II	OL-VC-60064	OL-0298-06	0 - 3.3	1.65	112.3	74	37	37	0	8.9	91.1	28	20	2.53
II	OL-VC-70022	OL-0297-04	13.2-16.5	14.85	83.2	71	36	35	0	3	97	20	16	2.58
II	OL-VC-70031	OL-0297-03	0- 3.3	1.65	163.3	103	45	58	0	2.2	97.8	29	19	
II	OL-VC-80028	OL-0303-06	3.3-6.6	4.95	109	64	37	27	0	0.8	99.2	17	11	
II	OL-VC-80030	OL-0303-04	9.9-13.2	11.55	176	95	61	34	0.1	1.3	98.6	41	17	2.60
II	OL-VC-80031	OL-0303-05	3.3-6.6	4.95	179.4	80	45	35	0.4	1.3	98.3	34	13	2.55
II	OL-VC-80037	OL-0303-02	0-3.3	1.65	166	100	43	57	0	1	99	19	14	2.52
II	OL-VC-80041	OL-0303-03	0- 3.3	1.65	219.6	143	45	98	0	0.9	99.1	12	9	2.49
II	OL-VC-80047	OL-0303-01	0-3.3	1.65	141									

GeoTesting express

a subsidiary of Geocomp Corporation

1145 Massachusetts Avenue
Boxborough, MA 01719
978 635 0424 Tel
978 635 0266 Fax

Transmittal

TO:

Ms. Laura Brussel

Parsons Engineering Science

290 Elwood Davis Road

Suite 312

Liverpool, NY 13088

DATE: 6/27/07

GTX NO: 7143

RE: Onondaga Project

Project No. 38292.40495

COPIES	DATE	DESCRIPTION
	6/27/07	2006 and 2007 SICT Sample Laboratory Test Reports

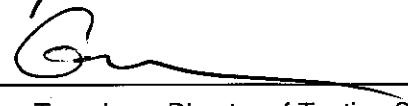
REMARKS:

CC:

SIGNED:


Joe Torner – Laboratory Manager

APPROVED BY:


Gary Torosian – Director of Testing Services

GeoTesting express

a subsidiary of Geocomp Corporation

June 27, 2007

Ms. Laura Brussel
Parsons Engineering Science, Inc.
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088

Re: Onondaga Project (GTX-7143)

Dear Ms. Brussel:

Enclosed are the test results you requested for the above referenced project. GeoTesting Express, Inc. (GTX) received 50 soil samples from the University of Colorado for the above listed project on May 9, 2007. The attached table provided by Parsons list the samples received and tests requested.

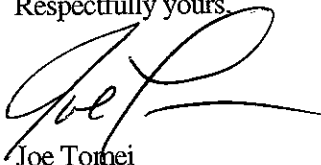
GTX performed the following tests on these samples:

38 Grain Size Analyses (ASTM D 422) with Hydrometer
37 Atterberg Limits (ASTM D 4318)
24 Specific Gravity (ASTM D 854)

Please note that GTX was unable to perform the Atterberg Limits test on sample OL-0302-09 because we did not received enough sample.

The results presented in this report apply only to the items tested. This report shall not be reproduced except in full, without written approval from GeoTesting Express. The remainder of these samples will be retained for a period of sixty (60) days and will then be discarded unless otherwise notified by you. Please call me if you have any questions or require additional information. Thank you for allowing GeoTesting Express the opportunity of providing you with testing of soil. We look forward to working with you again in the future.

Respectfully yours,



Joe Tomei
Laboratory Manager

GeoTesting Express, Inc.
1145 Massachusetts Avenue
Boroborough, MA 01719
800 434 1062 Toll Free
978 635 0266 Fax

www.geotesting.com
2662 Holcomb Bridge Road, Suite 310
Alpharetta, GA 30022
770 645 6575 Tel
770 645 6570 Fax

Sample Location	Field Sample ID	Sample Depth (ft)	Grain-size with Hydrometer (ASTM D422)	Atterberg Limits (ASTM D4318)	Specific Gravity (ASTM D854)
2006 SICT Samples					
OL-STA-10015-VC	OL-0119-05	9.9-13.2			
OL-STA-10016-VC	OL-0119-02	0-3.3	1	1	
OL-STA-10017-VC	OL-0119-06	0-3.3			
OL-STA-10017-VC	OL-0119-07	9.9-12.6	1	1	
OL-STA-10018-VC	OL-0119-04	6.6-9.9	1	1	1
OL-STA-10022-VC	OL-0119-01	9.9-13.2			
OL-STA-10024-VC	OL-0119-08	6.6-9.9	1	1	
OL-STA-10026-VC	OL-0119-03	3.3-6.6	1	1	
OL-STA-40001	OL-0113-01	6.6-9.9	1	1	1
OL-STA-40002	OL-0113-02	9.9-13.2			
OL-STA-40003	OL-0113-03	9.9-13.2	1	1	1
OL-STA-60016	OL-0112-01	14-16			
OL-STA-60017	OL-0112-03	8-10	1	1	1
OL-STA-60019	OL-0112-02	16-18			
OL-STA-70006	OL-0112-04	2-4	1	1	1
OL-STA-70006	OL-0112-05	10-12			
OL-STA-70007	OL-0112-06	10-12	1	1	1
OL-STA-70007	OL-0112-07	18-20			
2007 SICT Samples					
OL-VC-10037	OL-0296-01	9.9-13.2	1	1	1
OL-VC-10038	OL-0296-02	9.9-13.2			
OL-VC-10062A	OL-0296-03	3.3-6.6	1	1	1
OL-VC-10080	OL-0296-04	9.9-13.2			
OL-VC-10081A	OL-0296-05	13.2-16.5	1	1	1
OL-VC-10105	OL-0296-06	0-3.3	1	1	1
OL-VC-10108	OL-0298-05	47-49	1	1	1
OL-VC-20070	OL-0302-01	9.9-13.2	1	1	
OL-VC-20074	OL-0297-01	13.2-16.5	1	1	1
OL-VC-20079	OL-0297-02	0-3.3	1	1	1
OL-VC-30033	OL-0298-01	35-37	1	1	1
OL-VC-30036	OL-0302-02	13.2-16.4			
OL-VC-30038	OL-0302-03	3.3-6.6	1	1	
OL-VC-30040	OL-0302-04	0-3.3	1	1	1
OL-VC-30043	OL-0302-05	13.2-16.4	1	1	1
OL-VC-40016	OL-0302-06	13.2-16.4	1	1	
OL-VC-40021	OL-0302-07	3.3-6.6	1	1	1
OL-VC-40025	OL-0302-08	3.3-6.6	1	1	
OL-VC-40032	OL-0302-09	13.2-16.4	1	1	1
OL-VC-40034	OL-0302-10	16.4-19.7	1	1	
OL-VC-60054	OL-0298-04	3.3-6.6	1	1	
OL-VC-60056	OL-0298-02	0.5-3.3	1	1	
OL-VC-60061	OL-0298-03	13.2-16.5	1	1	
OL-VC-60064	OL-0298-06	0-3.3	1	1	1
OL-VC-70022	OL-0297-04	13.2-16.5	1	1	1
OL-VC-70031	OL-0297-03	0-3.3	1	1	
OL-VC-80028	OL-0303-06	3.3-6.6	1	1	
OL-VC-80030	OL-0303-04	9.9-13.2	1	1	1

OL-VC-80031	OL-0303-05	3.3-6.6	1	1	1
OL-VC-80037	OL-0303-02	0-3.3	1	1	1
OL-VC-80041	OL-0303-03	0-3.3	1	1	1
OL-VC-80047	OL-0303-01	0-0.7			
Total			38	38	24



a subsidiary of Geocomp Corporation

1145 Massachusetts Avenue
Boxborough, MA 01719
978 635 0424 Tel
978 635 0266 Fax

Geotechnical Test Report

June 28, 2007

GTX-7143 Onondaga Project

Syracuse, NY

2006 and 2007 SICT Sample Test Results

Prepared for:

The Parsons logo, featuring the word "PARSONS" in a bold, white, sans-serif font, centered within a black rectangular box.

PARSONS

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-0119-02

Sample Type: jar

Tested By: mll

Sample ID: OL-STA-10016-VC

Test Date: 06/11/07

Checked By: jdt

Depth: 0-.3.3 ft

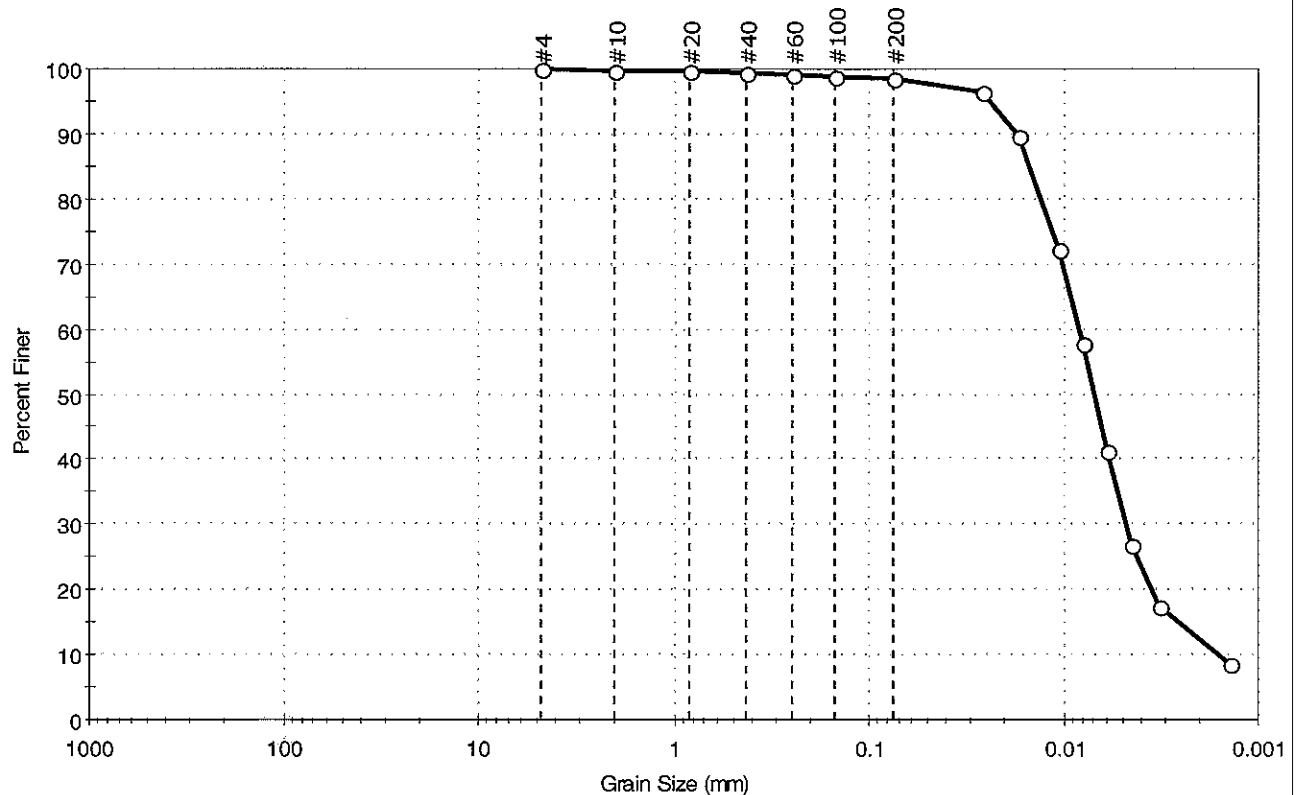
Test Id: 111415

Test Comment: ---

Sample Description: Wet, dark gray silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.5	98.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.075	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0260	97		
---	0.0172	90		
---	0.0107	72		
---	0.0080	58		
---	0.0060	41		
---	0.0045	27		
---	0.0032	17		
---	0.0014	9		

Coefficients

$D_{85} = 0.0151$ mm $D_{30} = 0.0048$ mm
 $D_{60} = 0.0084$ mm $D_{15} = 0.0025$ mm
 $D_{50} = 0.0070$ mm $D_{10} = 0.0016$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (29))

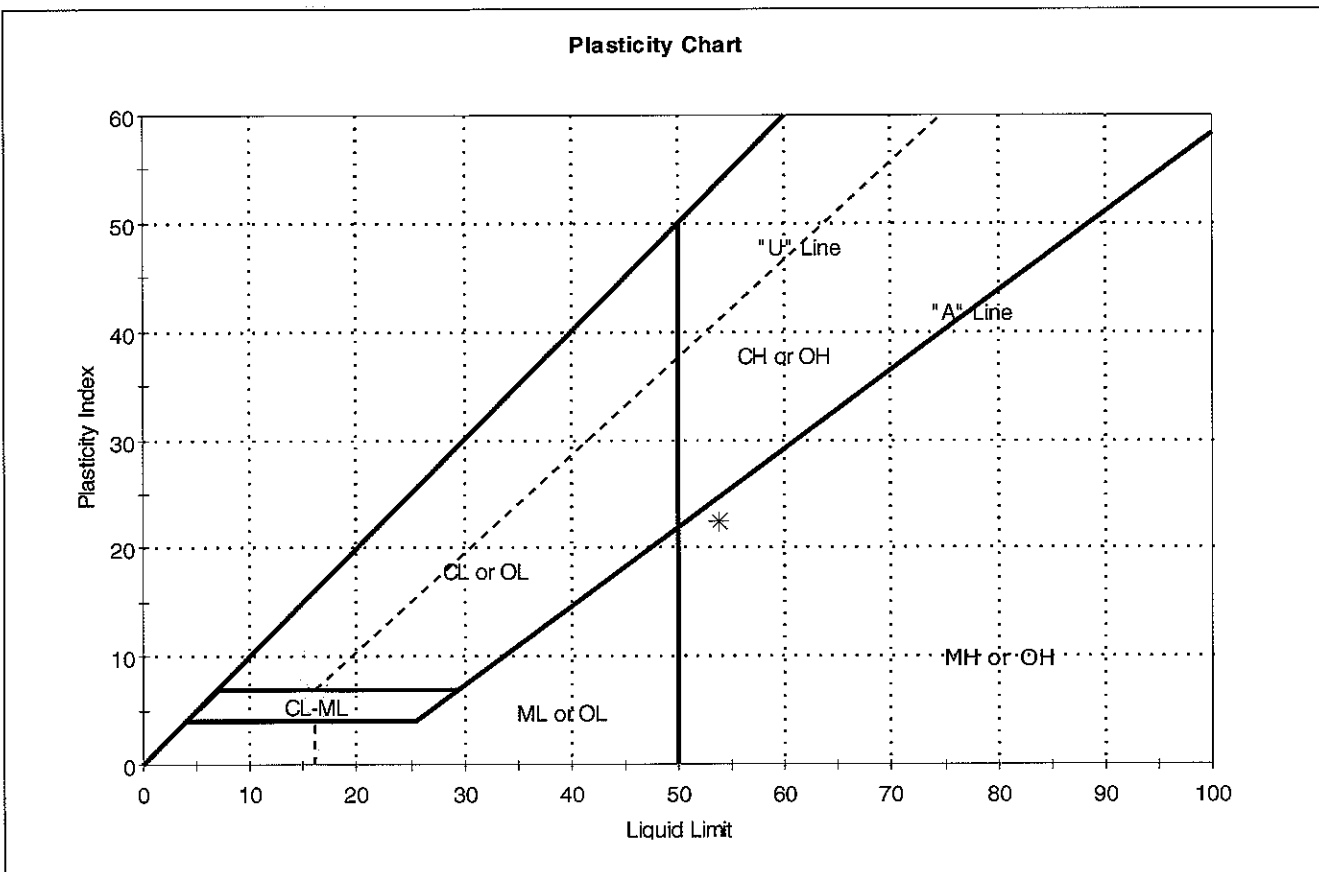
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-0119-02	Sample Type: jar
Sample ID: OL-STA-10016-VC	Test Date: 06/19/07	Tested By: ap
Depth: 0-.3.3 ft	Test Id: 111453	Checked By: jdt
Test Comment: ---		
Sample Description: Wet, dark gray silt		
Sample Comment: ---		

Atterberg Limits - ASTM D 4318-05

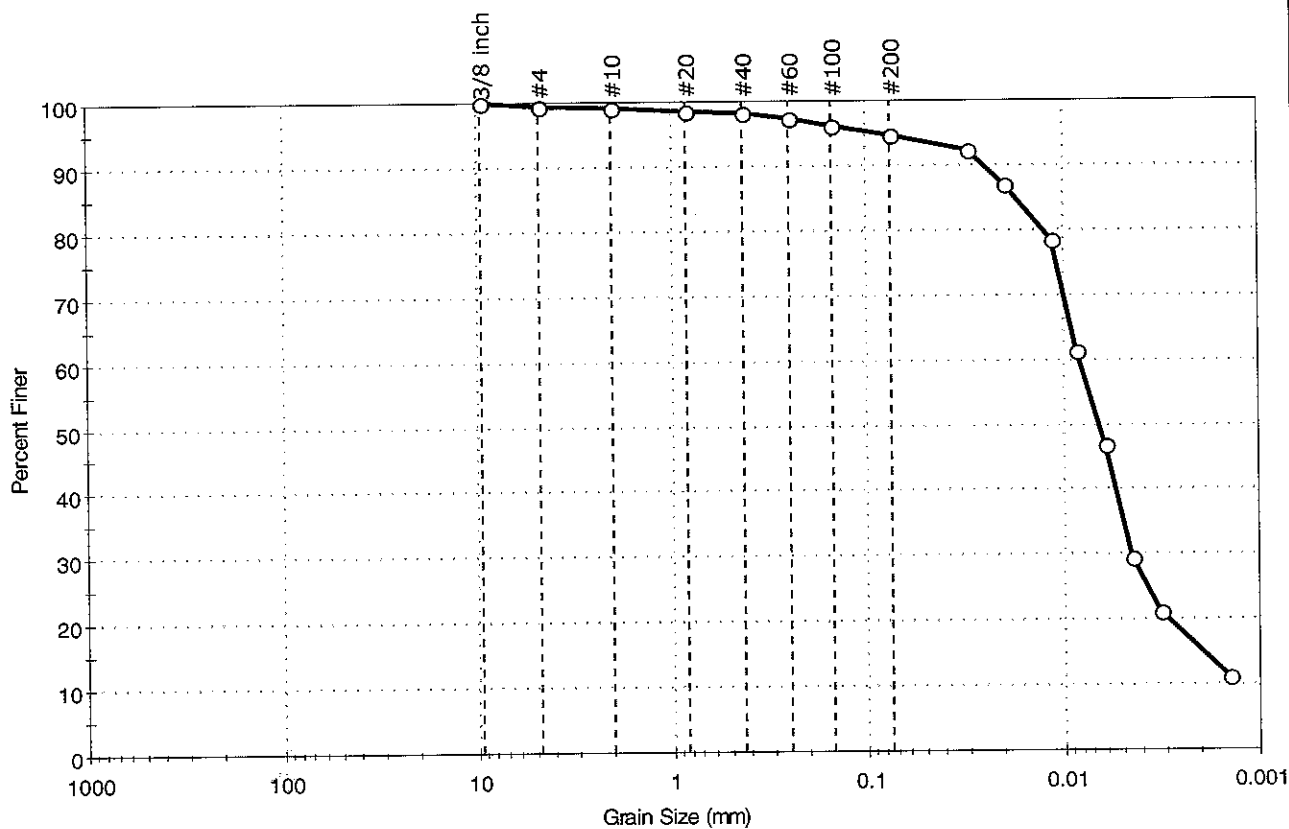


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-10016-VC	L-0119-0	0-.3.3 ft	90	54	31	23	3	elastic silt (MH)

Sample Prepared using the WET method
1% Retained on #40 Sieve
Dry Strength: MEDIUM
Dilatancy: SLOW
Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-0119-07	Sample Type: jar
Sample ID: OL-STA-10017-VC	Test Date: 06/12/07
Depth: 9-9-12.6 ft	Test Id: 111416
Test Comment: ---	
Sample Description: Wet, white silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.5	4.7	94.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	99		
#20	0.84	98		
#40	0.42	98		
#60	0.25	97		
#100	0.15	96		
#200	0.075	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0306	92		
---	0.0195	87		
---	0.0115	78		
---	0.0085	61		
---	0.0062	47		
---	0.0045	30		
---	0.0033	21		
---	0.0014	11		

Coefficients

D ₈₅ = 0.0173 mm	D ₃₀ = 0.0046 mm
D ₆₀ = 0.0083 mm	D ₁₅ = 0.0020 mm
D ₅₀ = 0.0066 mm	D ₁₀ = 0.0013 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

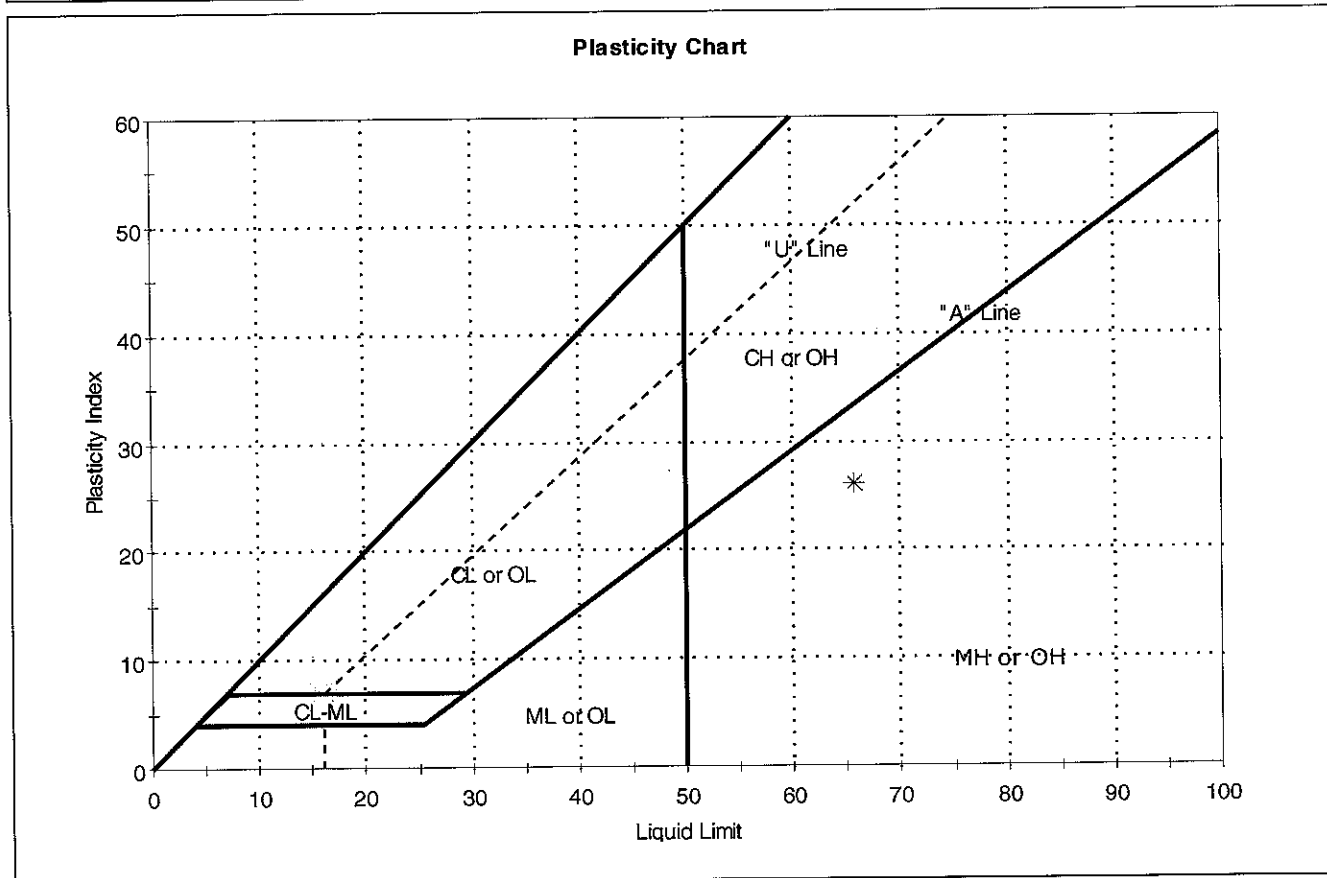
AASHTO Clayey Soils (A-7-5 (35))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0119-07	Sample Type:	jar
Sample ID:	OL-STA-10017-VC	Test Date:	06/18/07
Depth :	9-9-12.6 ft	Test Id:	111454
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

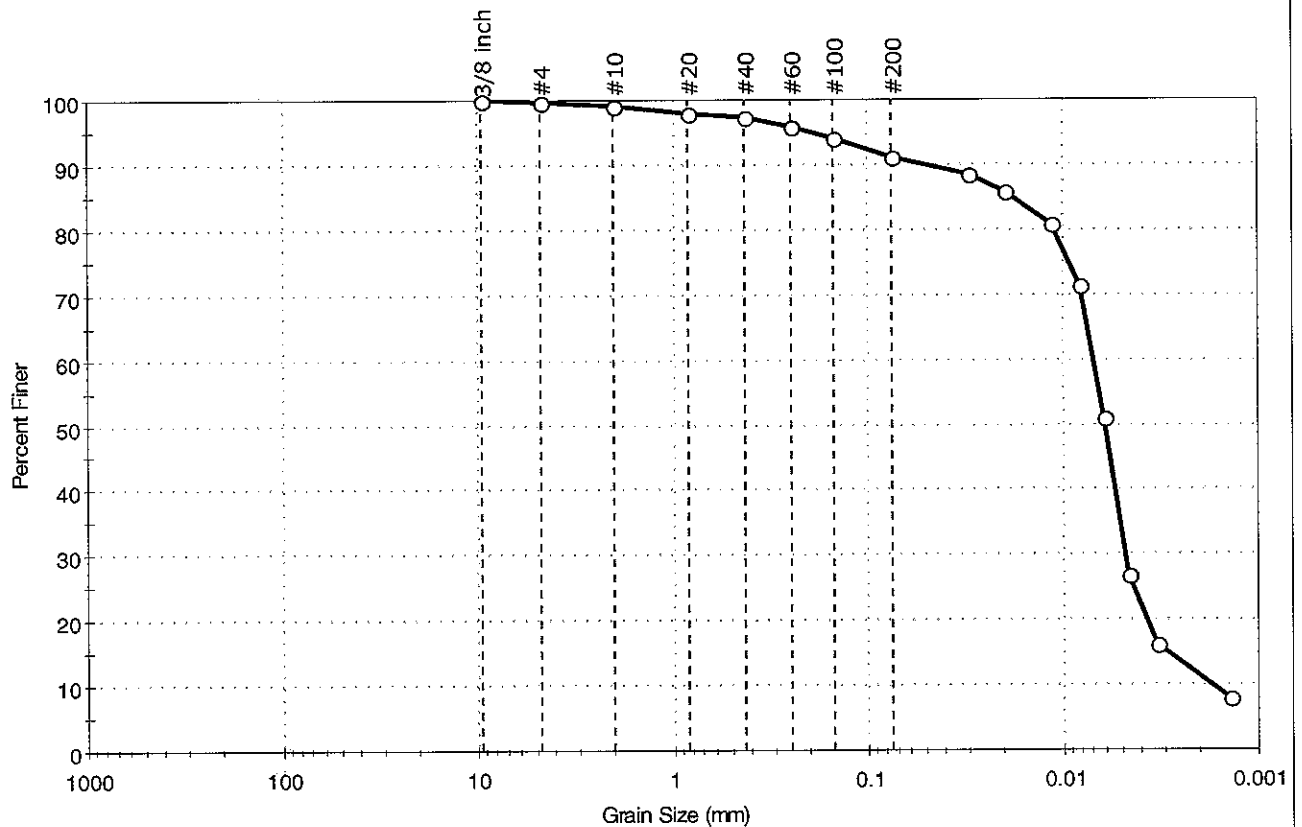


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-10017-VC	L-0119-09	9-9-12.6 ft	95	66	40	26	2	elastic silt (MH)

Sample Prepared using the WET method
2% Retained on #40 Sieve
Dry Strength: MEDIUM
Dilatancy: RAPID
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0119-04	Sample Type:	jar
Sample ID:	OL-STA-10018-VC	Test Date:	06/11/07
Depth:	6.6-9.9 ft	Test Id:	111417
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	8.6	91.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	97		
#60	0.25	96		
#100	0.15	94		
#200	0.075	91		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0306	89		
---	0.0197	86		
---	0.0114	81		
---	0.0082	71		
---	0.0061	51		
---	0.0046	27		
---	0.0033	16		
---	0.0014	8		

Coefficients

D ₈₅ = 0.0178 mm	D ₃₀ = 0.0047 mm
D ₆₀ = 0.0070 mm	D ₁₅ = 0.0029 mm
D ₅₀ = 0.0060 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

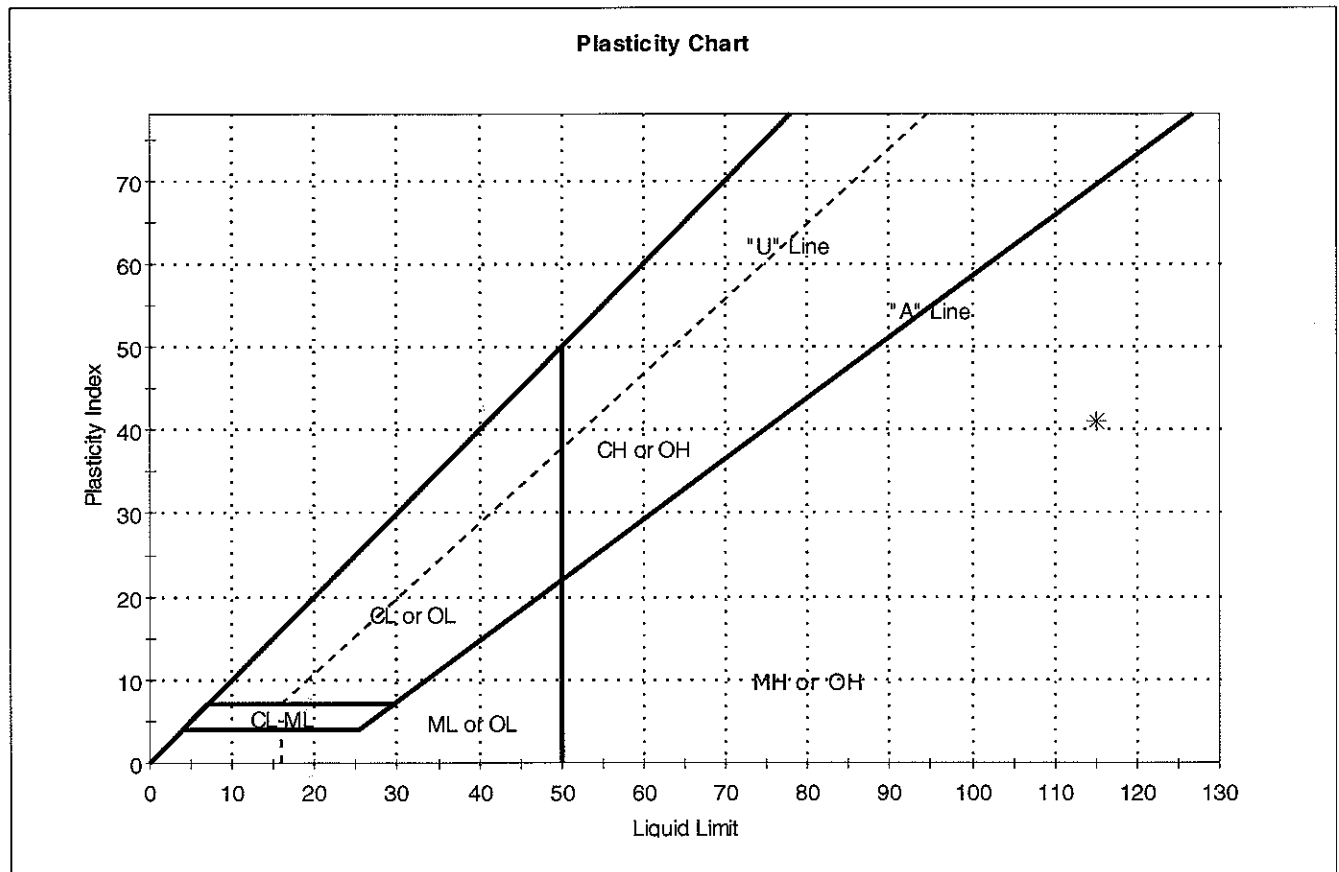
AASHTO Clayey Soils (A-7-5 (60))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0119-04	Sample Type:	jar
Sample ID:	OL-STA-10018-VC	Test Date:	06/18/07
Depth :	6.6-9.9 ft	Test Id:	111455
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-10018-VC	L-0119-0	6.6-9.9 ft	165	115	74	41	2	elastic silt (MH)

Sample Prepared using the WET method
 3% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0119-04	Sample Type:	jar
Sample ID:	OL-STA-10018-VC	Test Date:	06/13/07
Depth :	6.6-9.9 ft	Test Id:	111391
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

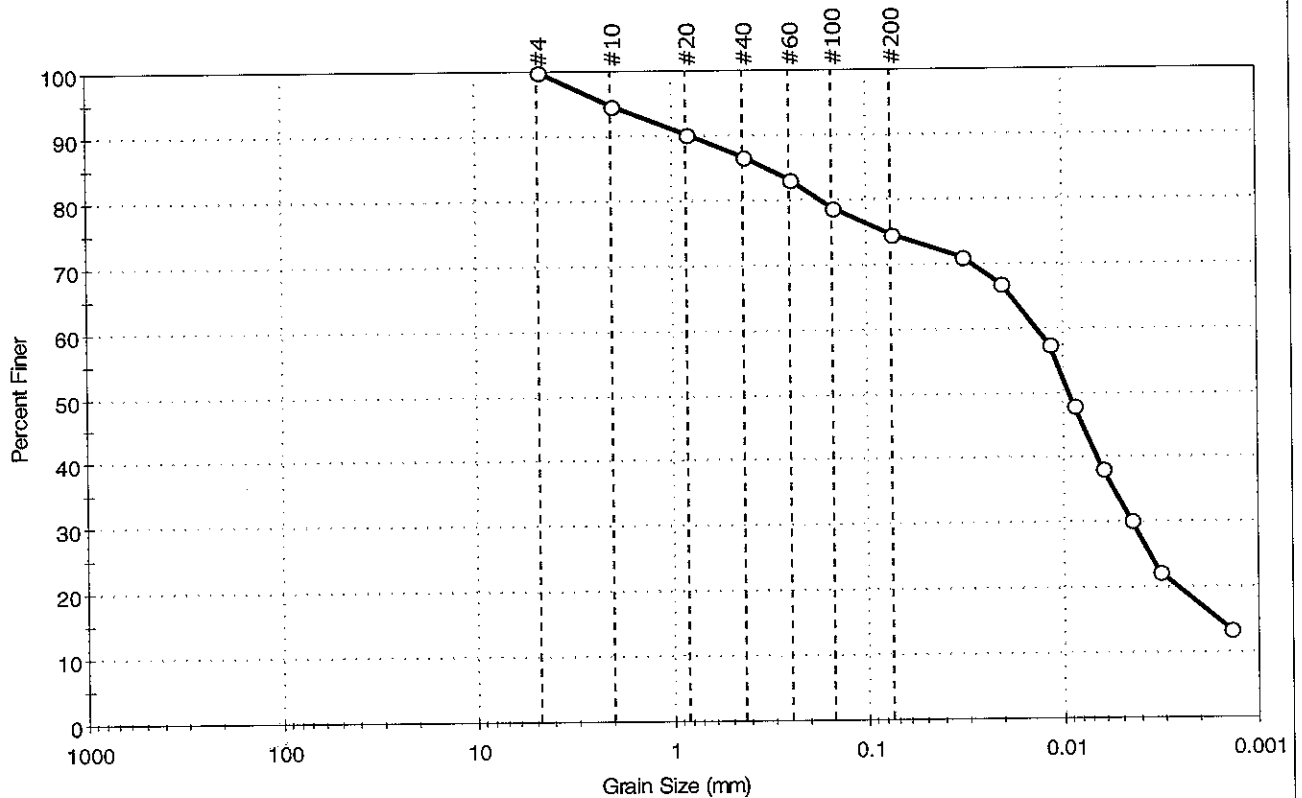
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0119-04	L-STA-10018-V	6.6-9.9 ft	Wet, white silt	2.54

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0119-08	Sample Type:	jar
Sample ID:	OL-STA-10024-VC	Test Date:	06/12/07
Depth :	6.6-9.9 ft	Test Id:	111418
Test Comment:	---		
Sample Description:	Wet, white silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	25.3	74.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	95		
#20	0.84	90		
#40	0.42	87		
#60	0.25	83		
#100	0.15	79		
#200	0.075	75		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0329	71		
---	0.0207	67		
---	0.0118	58		
---	0.0087	48		
---	0.0063	38		
---	0.0045	30		
---	0.0033	22		
---	0.0014	14		

Coefficients

D ₈₅ = 0.3241 mm	D ₃₀ = 0.0045 mm
D ₆₀ = 0.0136 mm	D ₁₅ = 0.0016 mm
D ₅₀ = 0.0093 mm	D ₁₀ = 0.0010 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

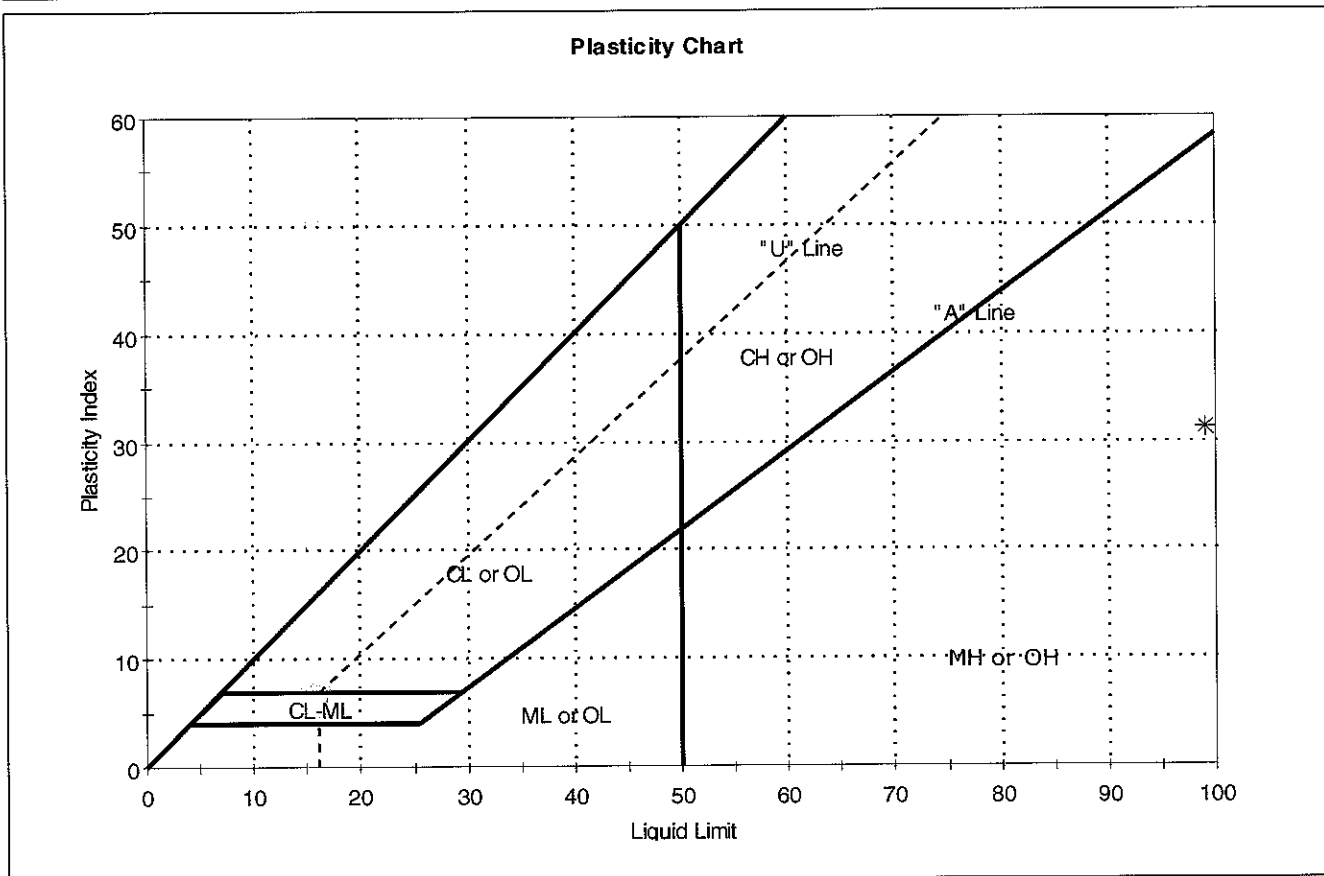
AASHTO Clayey Soils (A-7-5 (35))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0119-08	Sample Type:	jar
Sample ID:	OL-STA-10024-VC	Test Date:	06/21/07
Depth:	6.6-9.9 ft	Test Id:	111456
Test Comment:	---		
Sample Description:	Wet, white silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

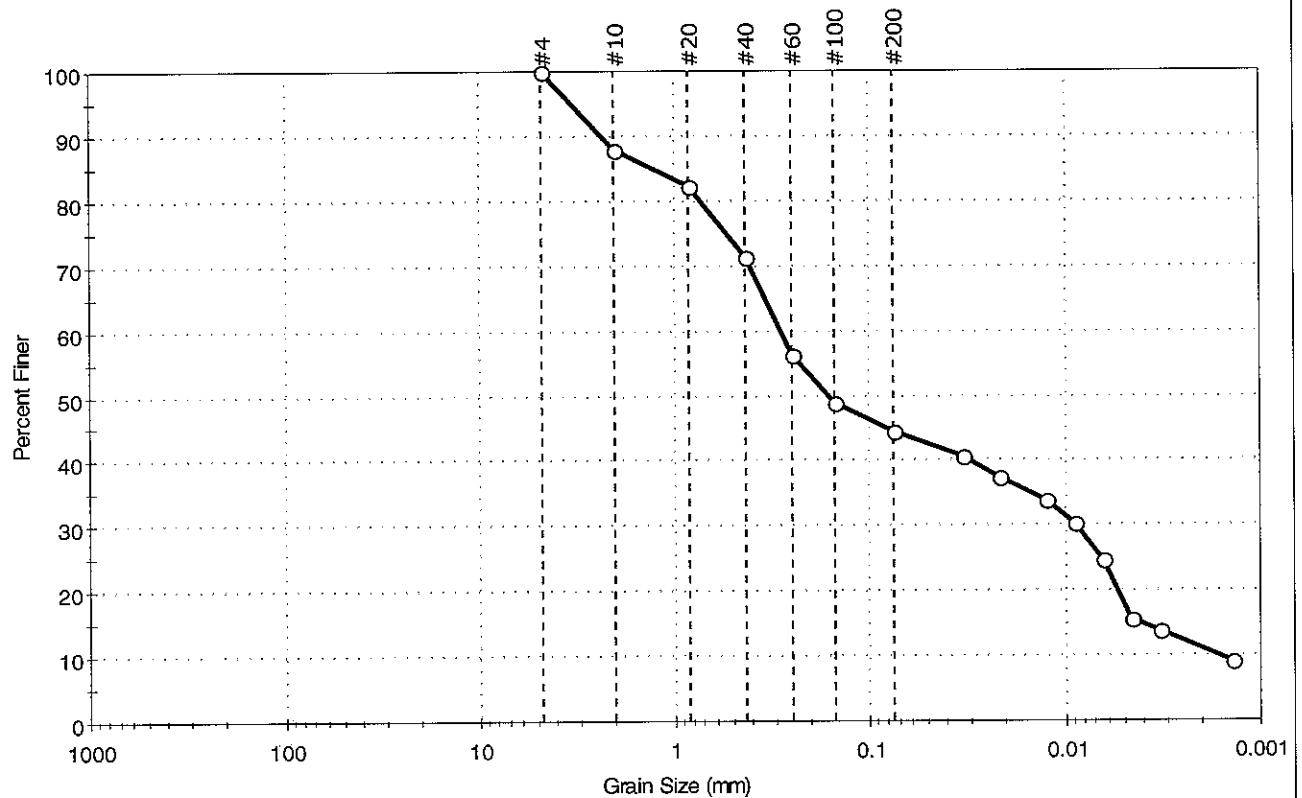


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-10024-VC	L-0119-0	6.6-9.9 ft	139	99	68	31	2	elastic silt with sand (MH)

Sample Prepared using the WET method
 13% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0119-03	Sample Type:	jar
Sample ID:	OL-STA-10026-VC	Test Date:	06/11/07
Depth:	3.3-6.6 ft	Test Id:	111419
Test Comment:	---		
Sample Description:	Wet, white silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	55.3	44.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	88		
#20	0.84	82		
#40	0.42	71		
#60	0.25	56		
#100	0.15	49		
#200	0.075	45		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.037	41		
---	0.025	37		
---	0.018	34		
---	0.012	30		
---	0.008	25		
---	0.006	16		
---	0.004	14		
---	0.002	9		

Coefficients

D ₈₅ = 1.2622 mm	D ₃₀ = 0.0087 mm
D ₆₀ = 0.2839 mm	D ₁₅ = 0.0041 mm
D ₅₀ = 0.1610 mm	D ₁₀ = 0.0016 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

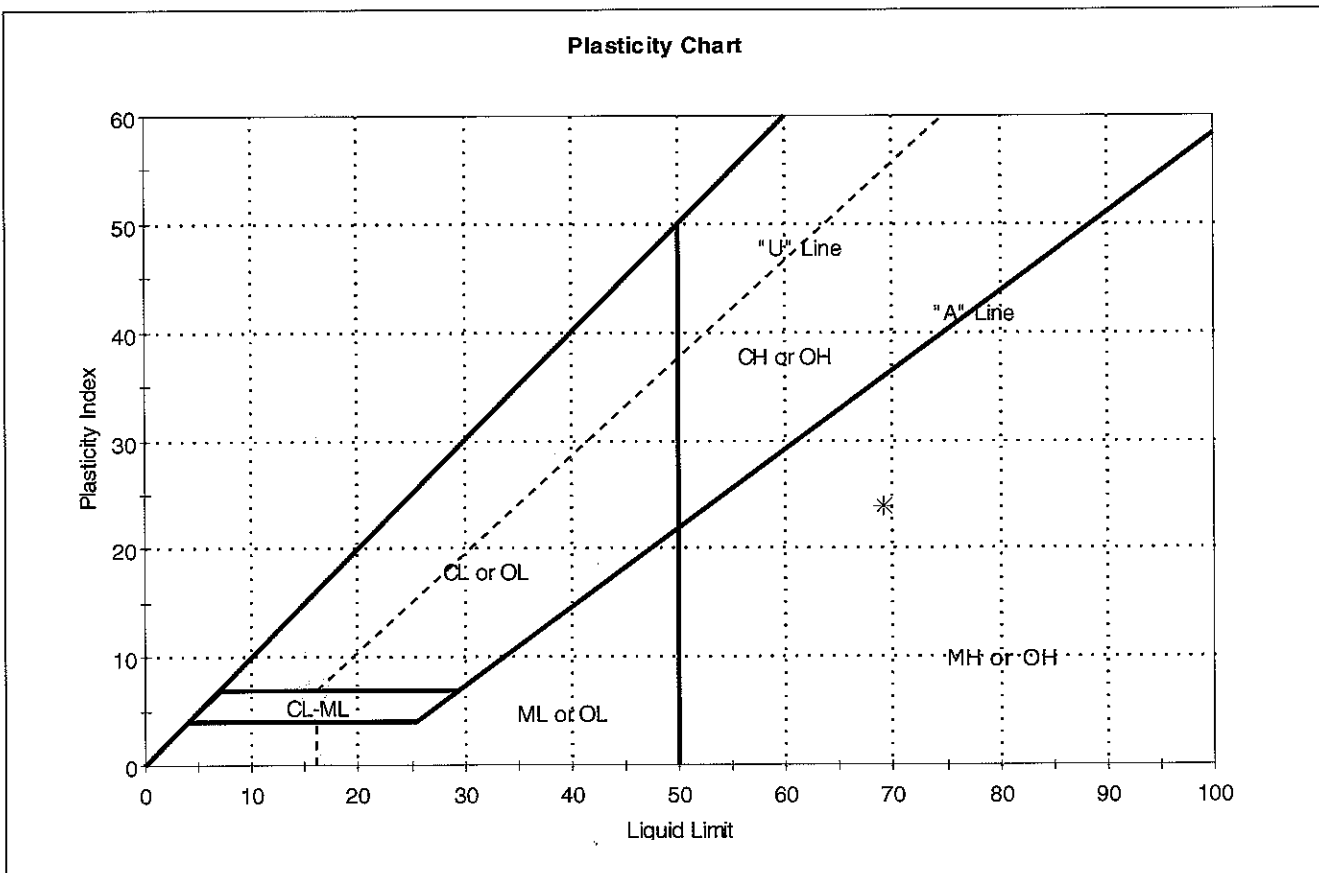
AASHTO Clayey Soils (A-7-5 (10))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	n/a
Boring ID:	OL-0119-03	Sample Type:	jar
Sample ID:	OL-STA-10026-VC	Test Date:	06/25/07
Depth:	3.3-6.6 ft	Test Id:	111457
Test Comment:	---		
Sample Description:	Wet, white silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

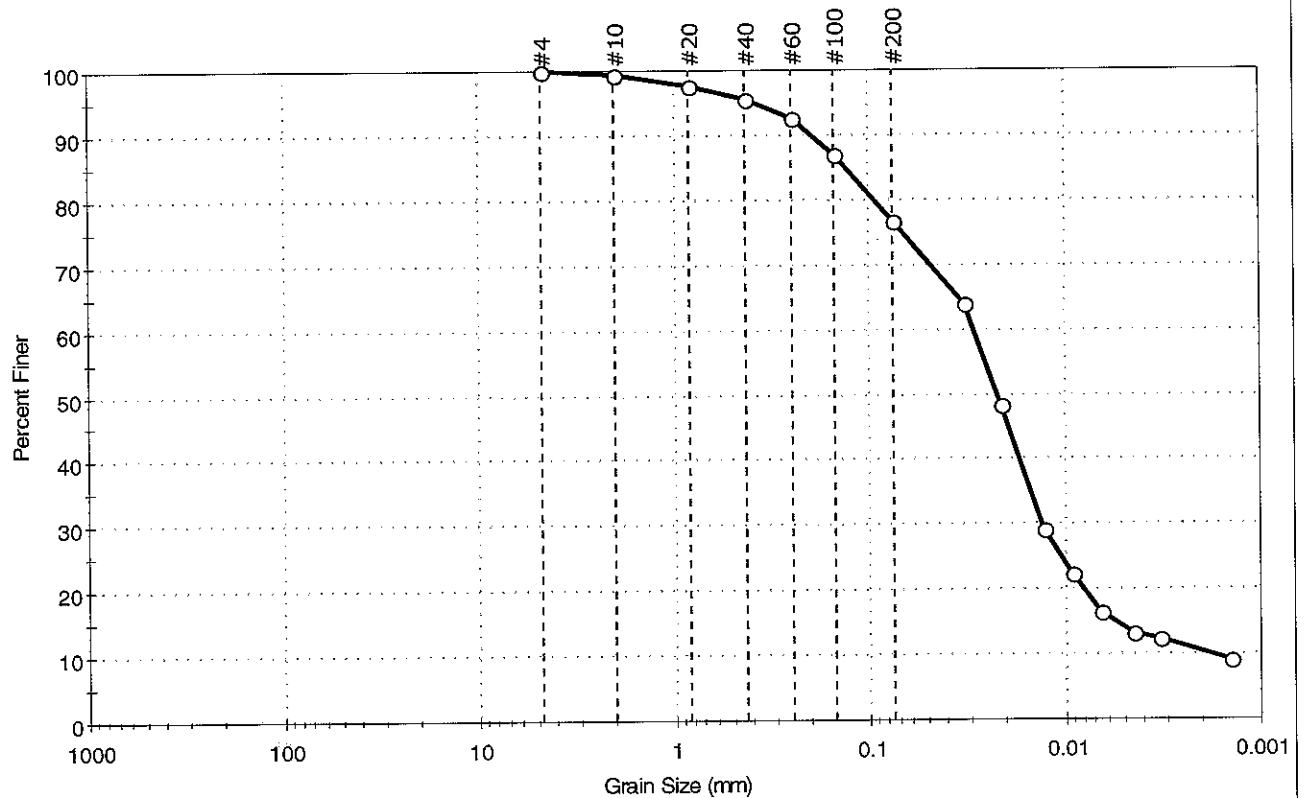


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-10026-VC	L-0119-0	3.3-6.6 ft	89	69	45	24	2	Silty sand (SM)

Sample Prepared using the WET method
 29% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0113-01	Sample Type:	jar
Sample ID:	OL-STA-40001	Test Date:	06/12/07
Depth :	6.6-9.9 ft	Test Id:	111420
Test Comment:	---		
Sample Description:	Moist, gray silt with sand		
Sample Comment:	----		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	23.2	76.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	96		
#60	0.25	93		
#100	0.15	87		
#200	0.075	77		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0328	64		
---	0.0213	48		
---	0.0128	29		
---	0.0091	22		
---	0.0066	16		
---	0.0045	13		
---	0.0033	12		
---	0.0014	9		

Coefficients

D ₈₅ = 0.1304 mm	D ₃₀ = 0.0131 mm
D ₆₀ = 0.0294 mm	D ₁₅ = 0.0056 mm
D ₅₀ = 0.0222 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

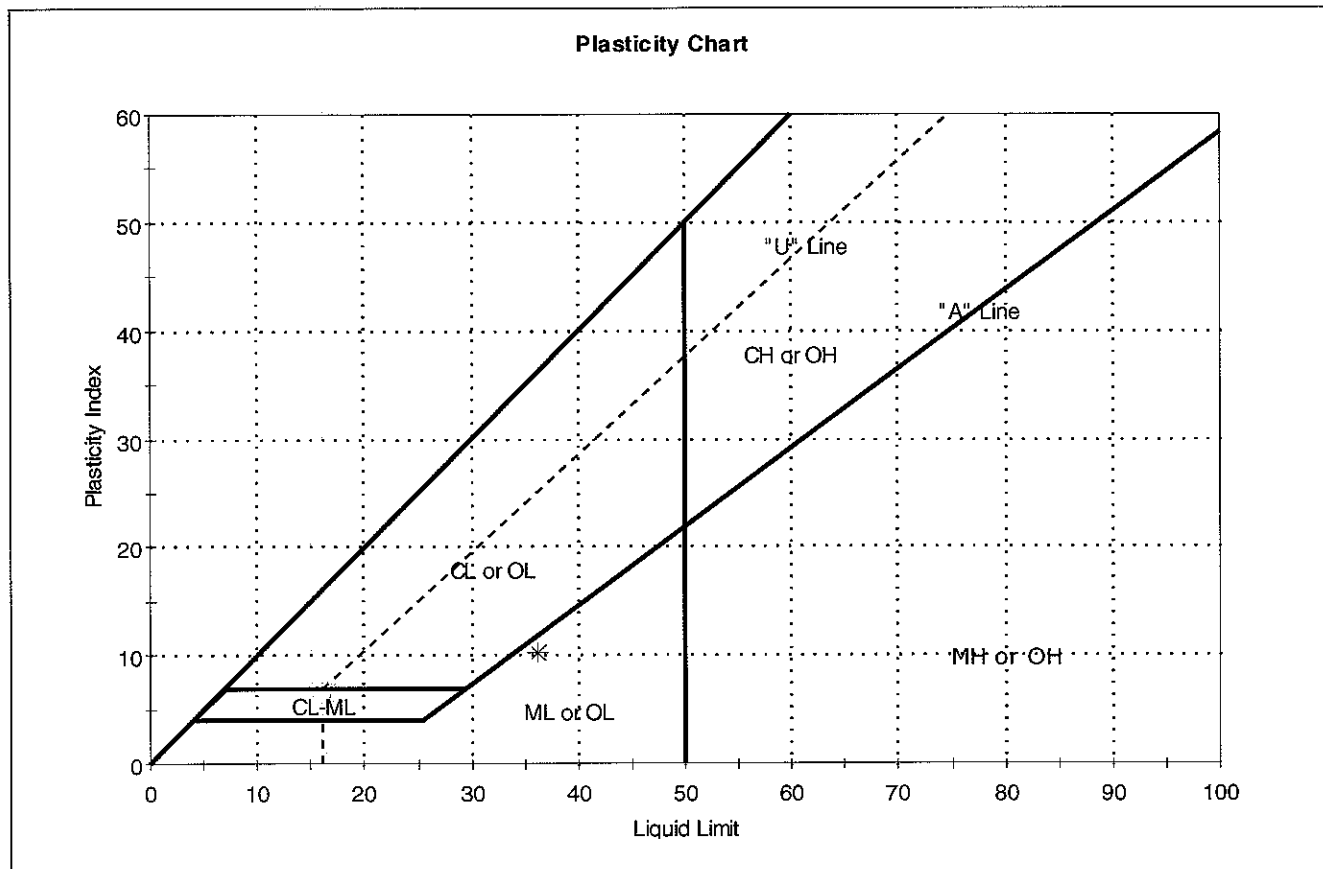
AASHTO Clayey Soils (A-6 (8))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0113-01	Sample Type:	jar
Sample ID:	OL-STA-40001	Test Date:	06/19/07
Depth :	6.6-9.9 ft	Test Id:	111458
Test Comment:	---		
Sample Description:	Moist, gray silt with sand		
Sample Comment:	----		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-40001	L-0113-0	6.6-9.9 ft	53	36	26	10	3	silt with sand (ML)

Sample Prepared using the WET method

4% Retained on #40 Sieve

Dry Strength: HIGH

Dilancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0113-01	Sample Type:	jar
Sample ID:	OL-STA-40001	Test Date:	06/13/07
Depth :	6.6-9.9 ft	Test Id:	111392
Test Comment:	---		
Sample Description:	Moist, gray silt with sand		
Sample Comment:	----		

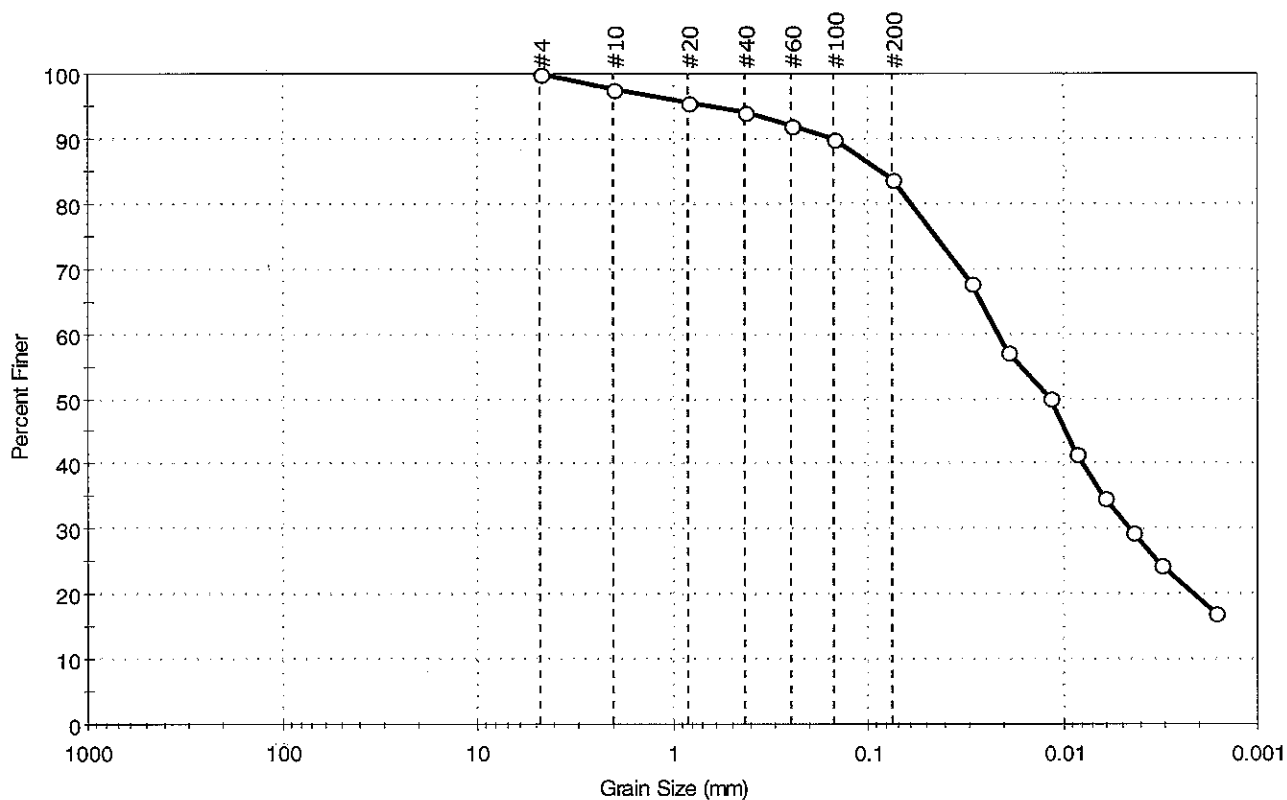
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0113-01	OL-STA-40001	6.6-9.9 ft	Moist, gray silt with sand	2.65

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0113-03	Sample Type:	jar
Sample ID:	OL-STA-40003	Test Date:	06/08/07
Depth:	9.9-13.2 ft	Test Id:	111421
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
—	0.0	16.3	83.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	96		
#40	0.42	94		
#60	0.25	92		
#100	0.15	90		
#200	0.075	84		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0294	68		
---	0.0194	57		
---	0.0116	50		
---	0.0085	42		
---	0.0061	35		
---	0.0044	30		
---	0.0031	25		
---	0.0016	17		

Coefficients

D ₈₅ = 0.0863 mm	D ₃₀ = 0.0045 mm
D ₆₀ = 0.0216 mm	D ₁₅ = N/A
D ₅₀ = 0.0115 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

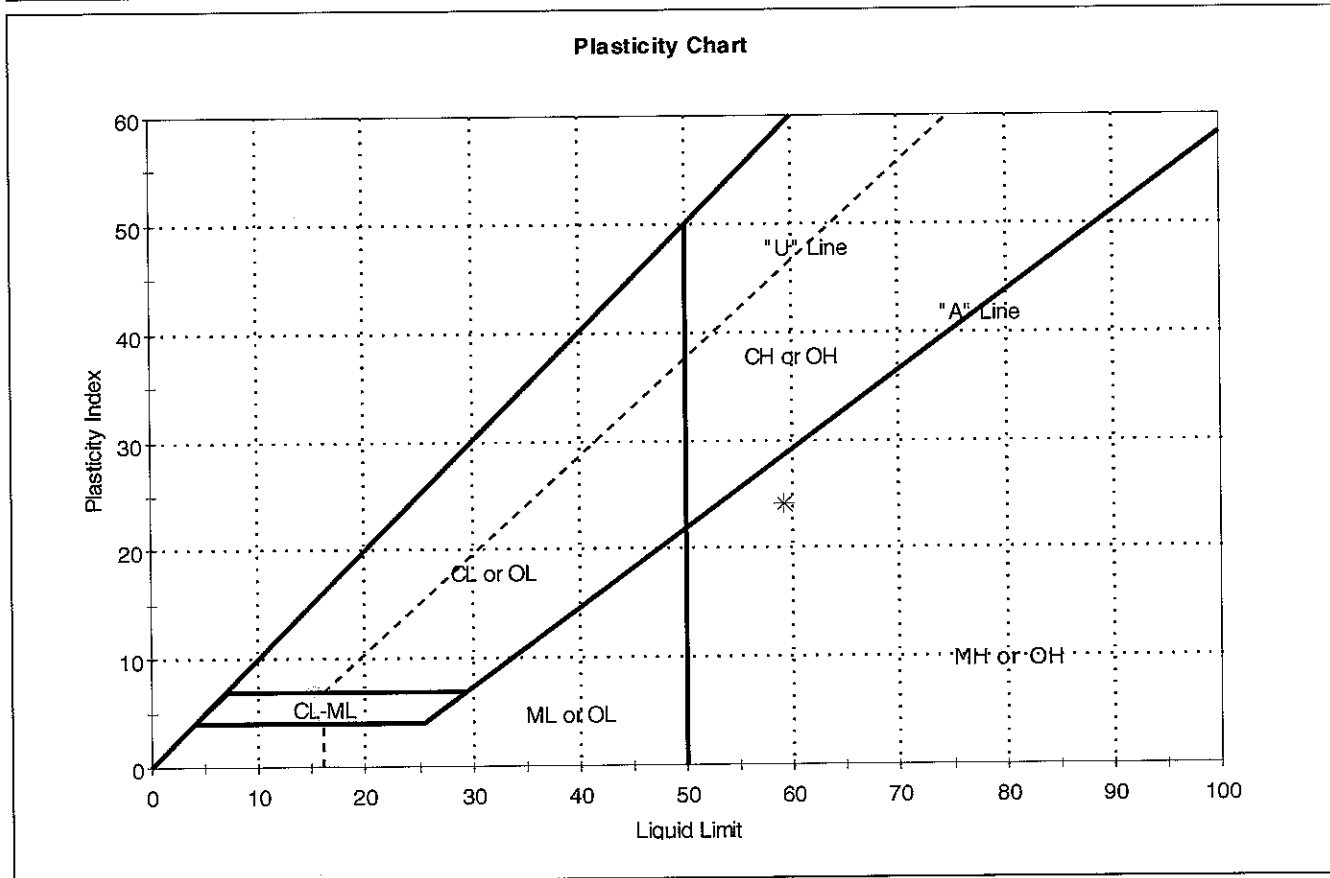
AASHTO Clayey Soils (A-7-5 (26))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0113-03	Sample Type:	jar
Sample ID:	OL-STA-40003	Test Date:	06/15/07
Depth:	9.9-13.2 ft	Test Id:	111459
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-40003	L-0113-0	9.9-13.2 ft	65	59	35	24	1	elastic silt with sand (MH)

Sample Prepared using the WET method
 6% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0113-03	Sample Type:	jar
Sample ID:	OL-STA-40003	Test Date:	06/13/07
Depth :	9.9-13.2 ft	Test Id:	111393
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silt with sand		
Sample Comment:	---		

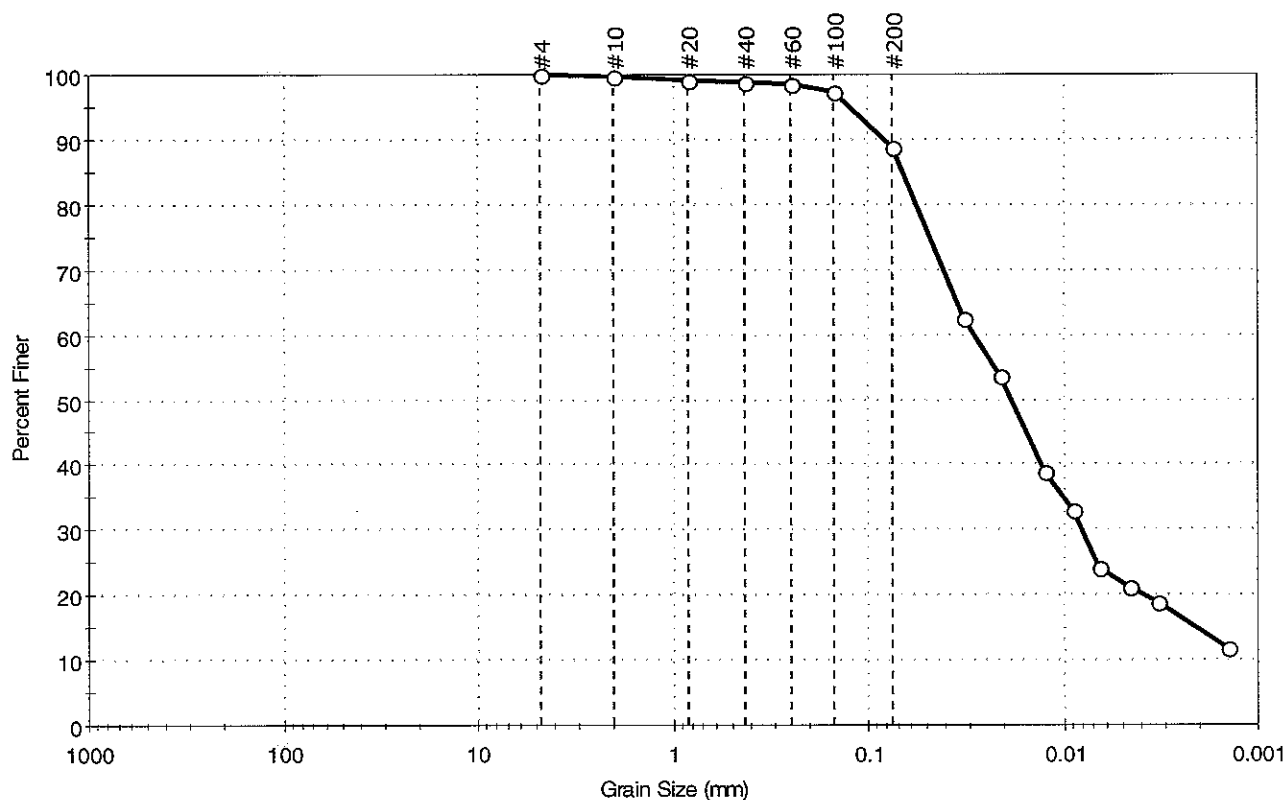
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0113-03	OL-STA-40003	9.9-13.2 ft	Moist, very dark grayish brown silt with sand	2.58

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-0112-03	Sample Type: jar
Sample ID: OL-STA-60017	Test Date: 06/12/07	Tested By: mll
Depth: 8-10 ft	Test Id: 111422	Checked By: jdt
Test Comment: ---		
Sample Description: Wet, grayish brown silt		
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	11.2	88.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	97		
#200	0.075	89		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0328	62		
---	0.0212	54		
---	0.0126	39		
---	0.0090	33		
---	0.0065	24		
---	0.0046	21		
---	0.0033	19		
---	0.0014	12		

Coefficients

D ₈₅ = 0.0666 mm	D ₃₀ = 0.0081 mm
D ₆₀ = 0.0290 mm	D ₁₅ = 0.0021 mm
D ₅₀ = 0.0186 mm	D ₁₀ = 0.0012 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

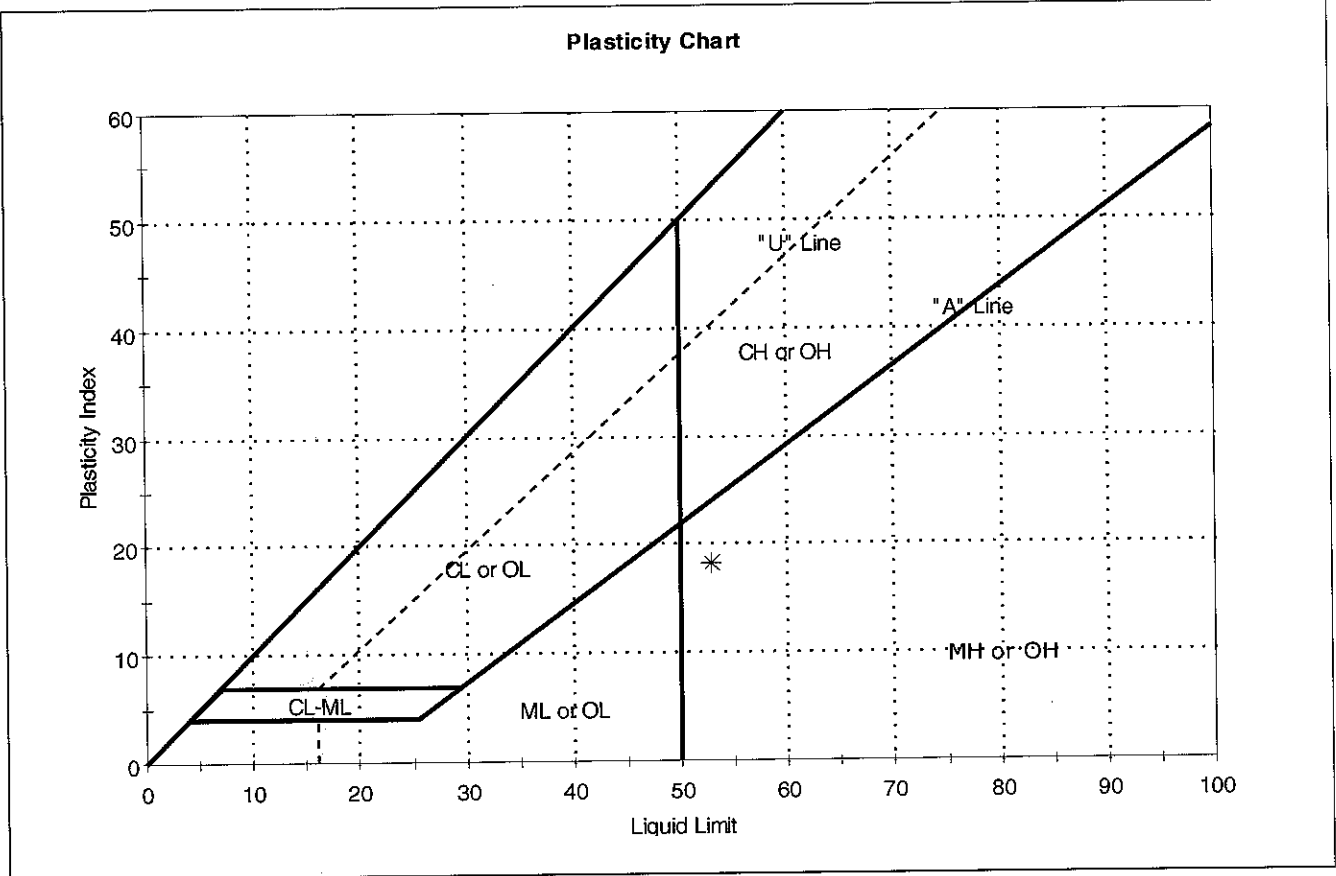
AASHTO Clayey Soils (A-7-5 (22))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0112-03	Sample Type:	jar
Sample ID:	OL-STA-60017	Test Date:	06/19/07
Depth:	8-10 ft	Test Id:	111460
Test Comment:	---		
Sample Description:	Wet, grayish brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-60017	L-0112-0	8-10 ft	74	53	34	19	2	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0112-03	Sample Type:	jar
Sample ID:	OL-STA-60017	Test Date:	06/13/07
Depth :	8-10 ft	Test Id:	111394
Test Comment:	---		
Sample Description:	Wet, grayish brown silt		
Sample Comment:	---		

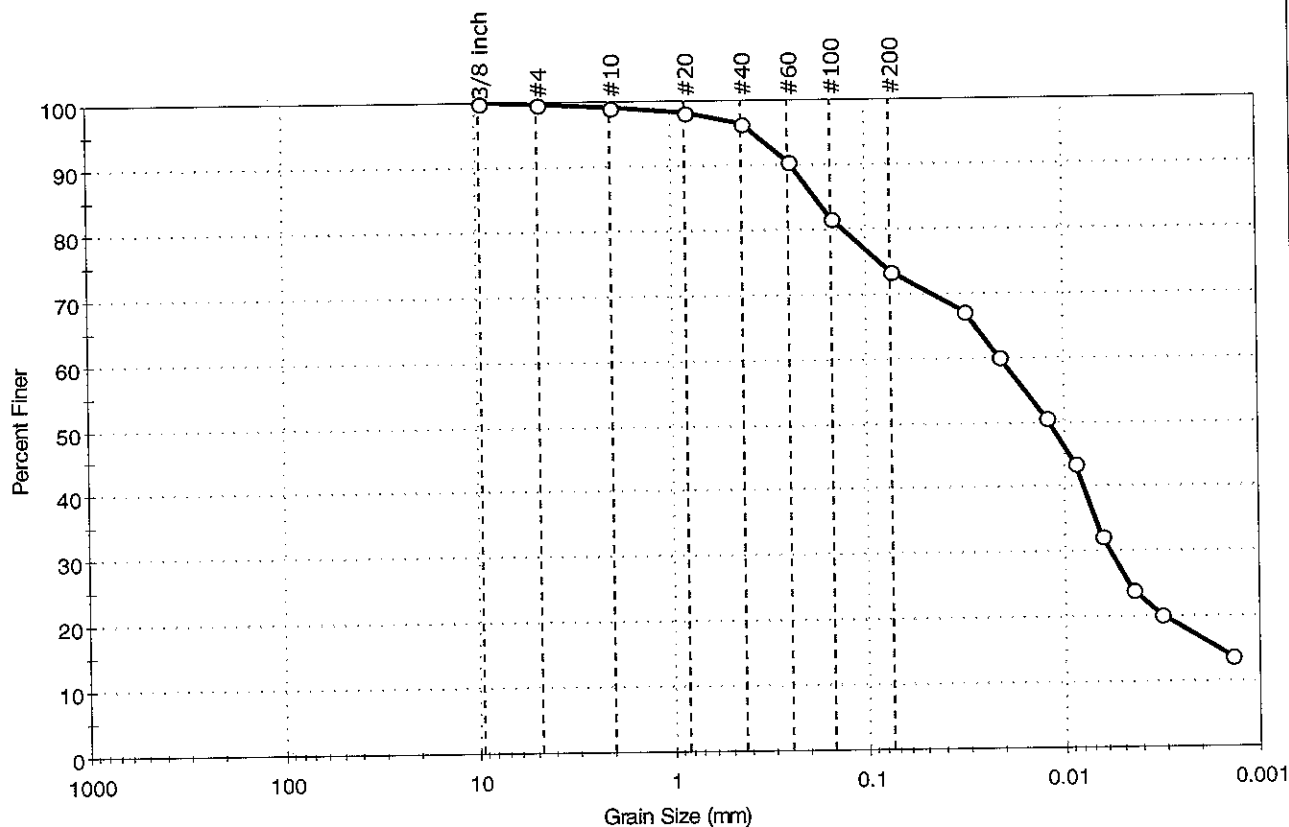
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0112-03	OL-STA-60017	8-10 ft	Wet, grayish brown silt	2.61

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-0112-04	Sample Type: jar
Sample ID: OL-STA-70006	Test Date: 06/12/07
Depth: 2-4 ft	Test Id: 111423
Test Comment: ---	
Sample Description: Moist, brown silt with sand	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.3	26.2	73.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	96		
#60	0.25	91		
#100	0.15	82		
#200	0.075	73		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0316	67		
---	0.0213	60		
---	0.0124	51		
---	0.0089	44		
---	0.0064	32		
---	0.0045	24		
---	0.0032	20		
---	0.0014	14		

Coefficients

D ₈₅ = 0.1806 mm	D ₃₀ = 0.0057 mm
D ₆₀ = 0.0211 mm	D ₁₅ = 0.0016 mm
D ₅₀ = 0.0120 mm	D ₁₀ = 0.0008 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

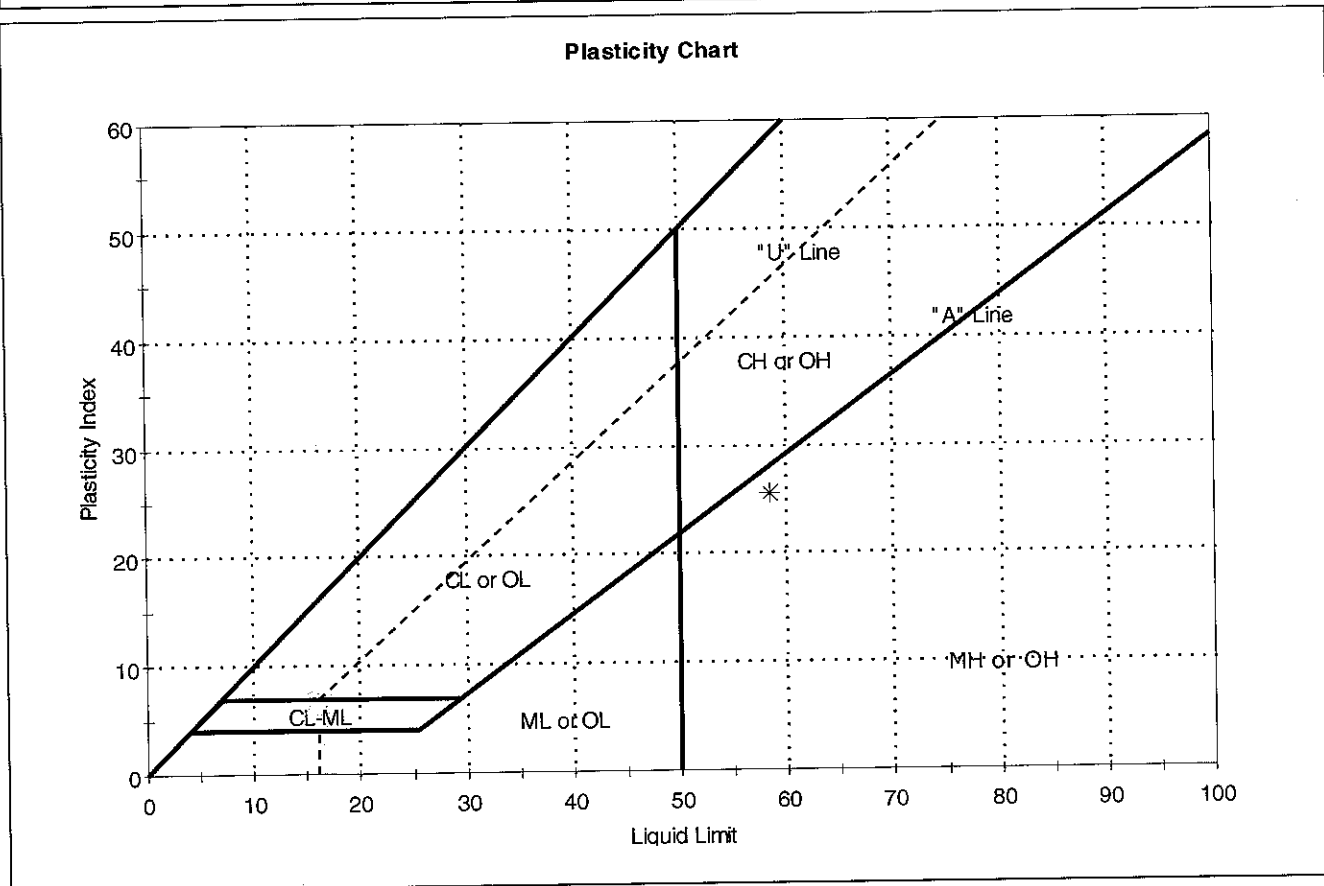
AASHTO Clayey Soils (A-7-5 (23))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: ap
Location: Syracuse	Checked By: jdt
Boring ID: OL-0112-04	Sample Type: jar
Sample ID: OL-STA-70006	Test Date: 06/15/07
Depth: 2-4 ft	Test Id: 111461
Test Comment: ---	
Sample Description: Moist, brown silt with sand	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-70006	L-0112-0	2-4 ft	61	58	33	25	1	elastic silt with sand (MH)

Sample Prepared using the WET method
 4% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0112-04	Sample Type:	jar
Sample ID:	OL-STA-70006	Test Date:	06/15/07
Depth :	2-4 ft	Test Id:	111395
Test Comment:	---		
Sample Description:	Moist, brown silt with sand		
Sample Comment:	---		

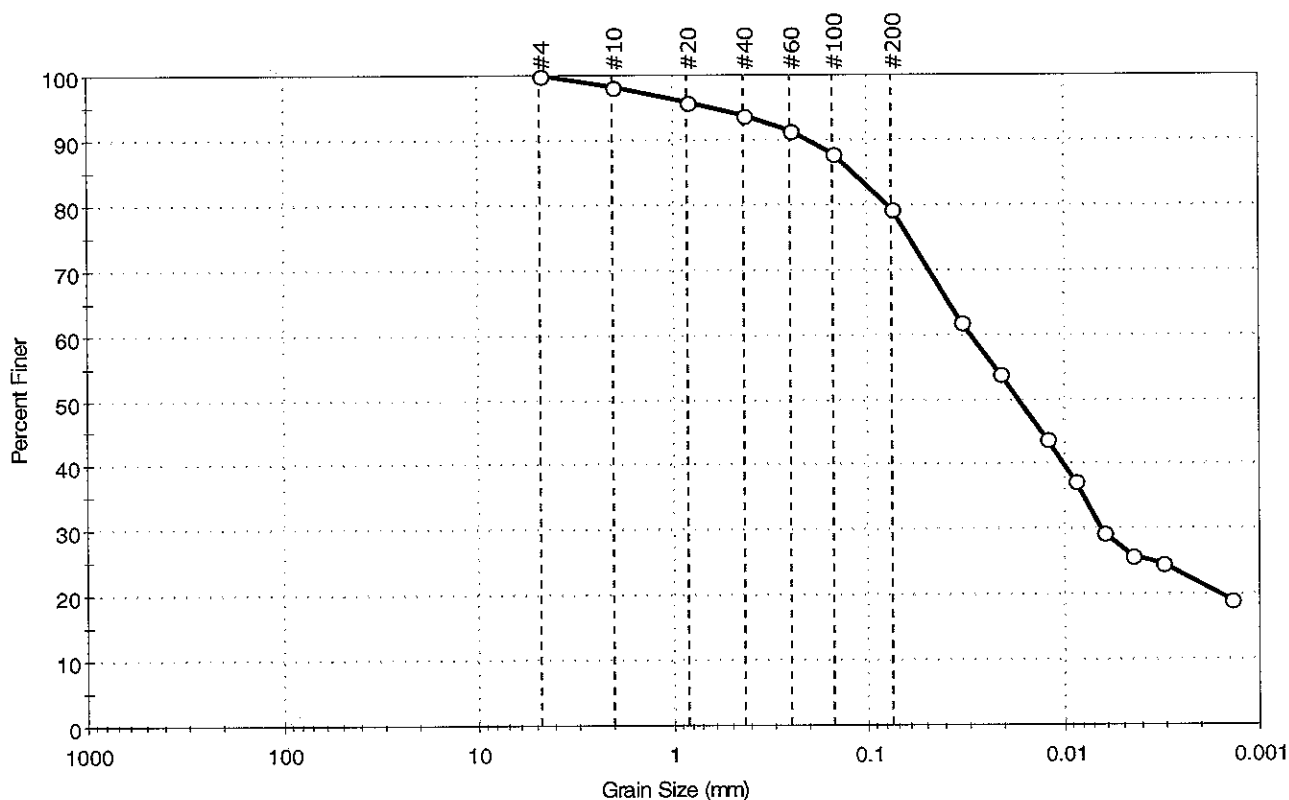
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0112-04	OL-STA-70006	2-4 ft	Moist, brown silt with sand	2.52

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-0112-06	Sample Type: jar
Sample ID: OL-STA-70007	Test Date: 06/12/07
Depth: 10-12 ft	Test Id: 111424
Test Comment: ---	
Sample Description: Moist, olive silt with sand	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	20.6	79.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	96		
#40	0.42	94		
#60	0.25	91		
#100	0.15	88		
#200	0.075	79		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0334	62		
---	0.0212	54		
---	0.0124	44		
---	0.0089	37		
---	0.0064	30		
---	0.0045	26		
---	0.0031	25		
---	0.0014	19		

Coefficients

D ₈₅ = 0.1183 mm	D ₃₀ = 0.0064 mm
D ₆₀ = 0.0300 mm	D ₁₅ = N/A
D ₅₀ = 0.0171 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

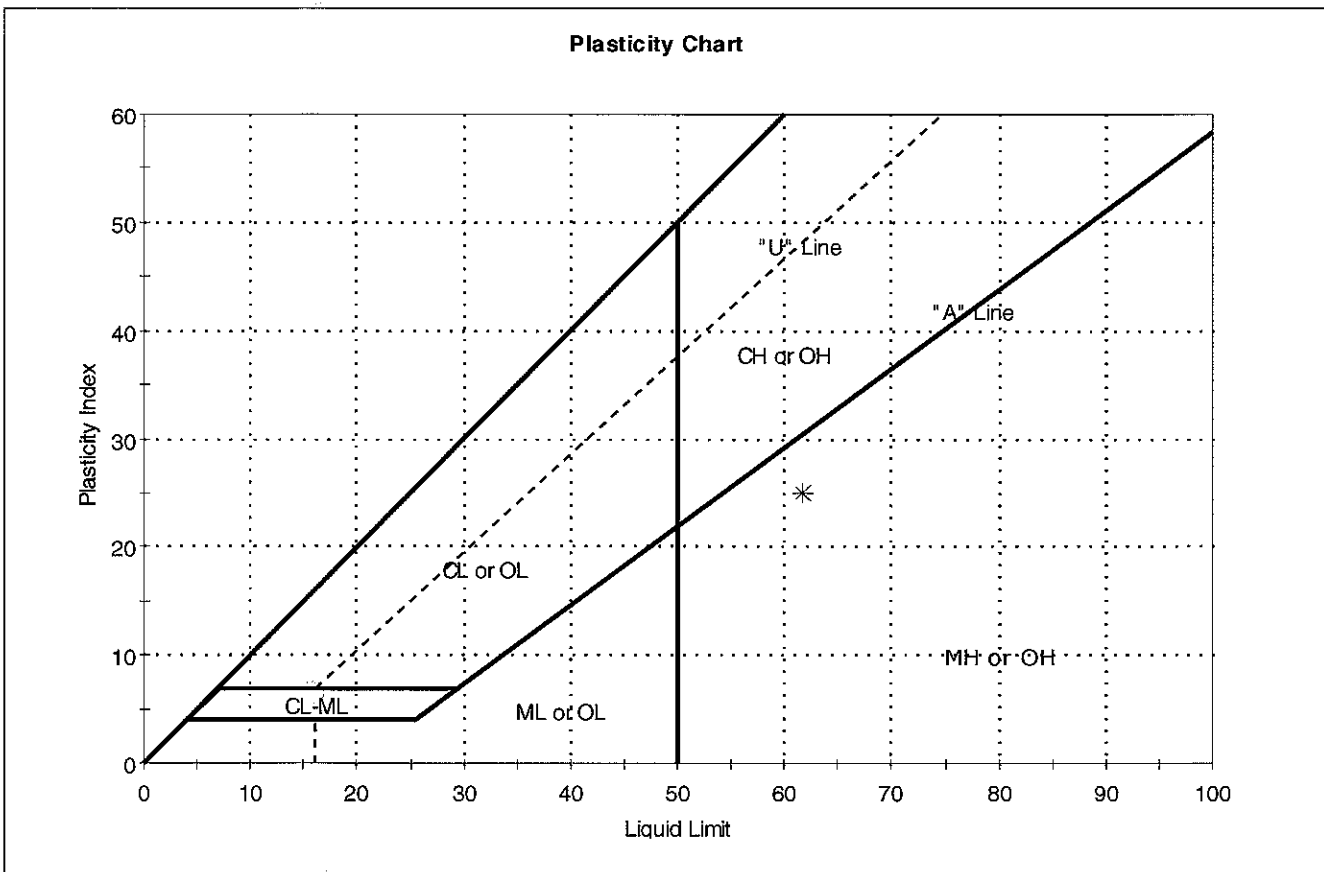
AASHTO Clayey Soils (A-7-5 (26))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0112-06	Sample Type:	jar
Sample ID:	OL-STA-70007	Test Date:	06/19/07
Depth:	10-12 ft	Test Id:	111462
Test Comment:	---		
Sample Description:	Moist, olive silt with sand		
Sample Comment:	----		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-STA-70007	L-0112-0	10-12 ft	76	62	37	25	2	elastic silt with sand (MH)

Sample Prepared using the WET method
 6% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0112-06	Sample Type:	jar
Sample ID:	OL-STA-70007	Test Date:	06/15/07
Depth :	10-12 ft	Test Id:	111396
Test Comment:	---		
Sample Description:	Moist, olive silt with sand		
Sample Comment:	----		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0112-06	OL-STA-70007	10-12 ft	Moist, olive silt with sand	2.57

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-0296-01

Sample Type: jar

Tested By: mll

Sample ID: OL-VC-10037

Test Date: 06/12/07

Checked By: jdt

Depth: 9.9-13.2 ft

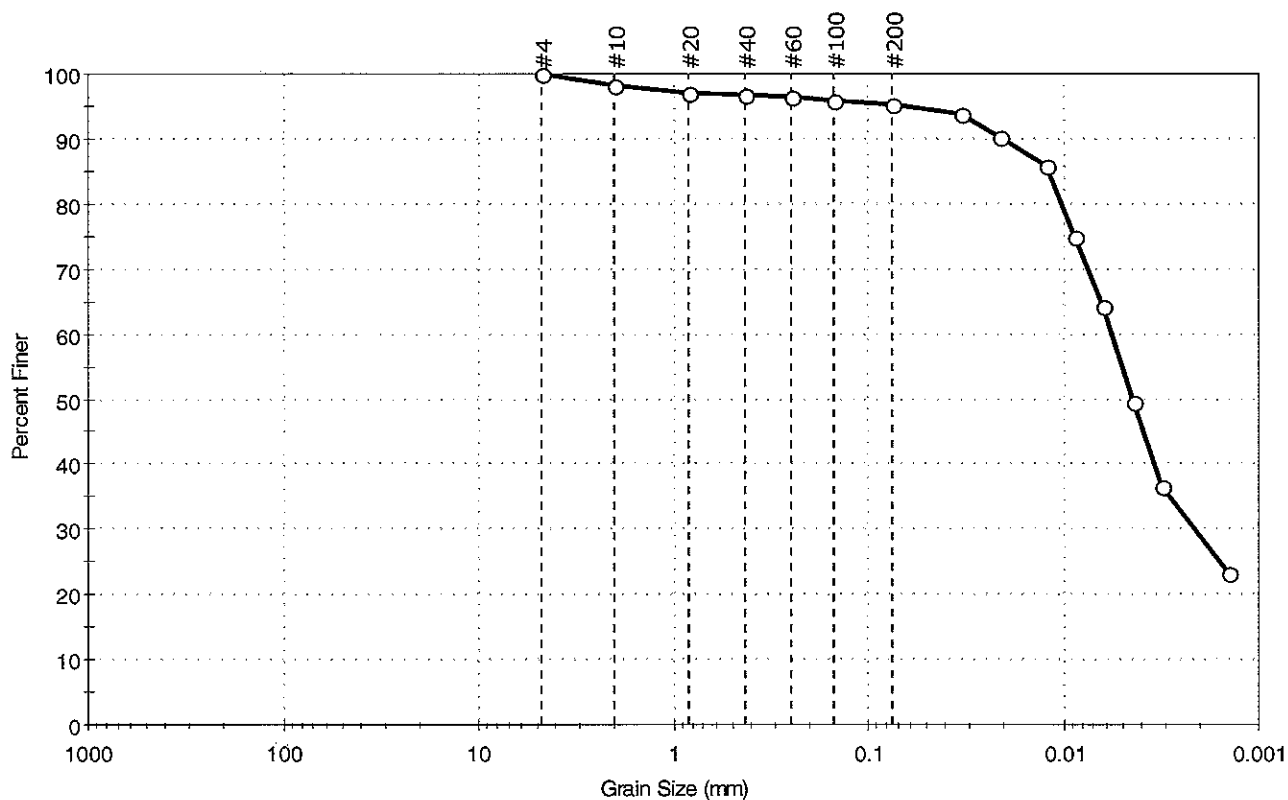
Test Id: 111425

Test Comment: ---

Sample Description: Wet, white silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	4.8	95.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	97		
#40	0.42	97		
#60	0.25	96		
#100	0.15	96		
#200	0.075	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.037	94		
---	0.0211	90		
---	0.0121	86		
---	0.0087	75		
---	0.0062	64		
---	0.0044	50		
---	0.0032	37		
---	0.0014	23		

Coefficients

D₈₅ = 0.0118 mm D₃₀ = 0.0021 mm

D₆₀ = 0.0056 mm D₁₅ = N/A

D₅₀ = 0.0045 mm D₁₀ = N/A

C_u = N/A C_c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (66))

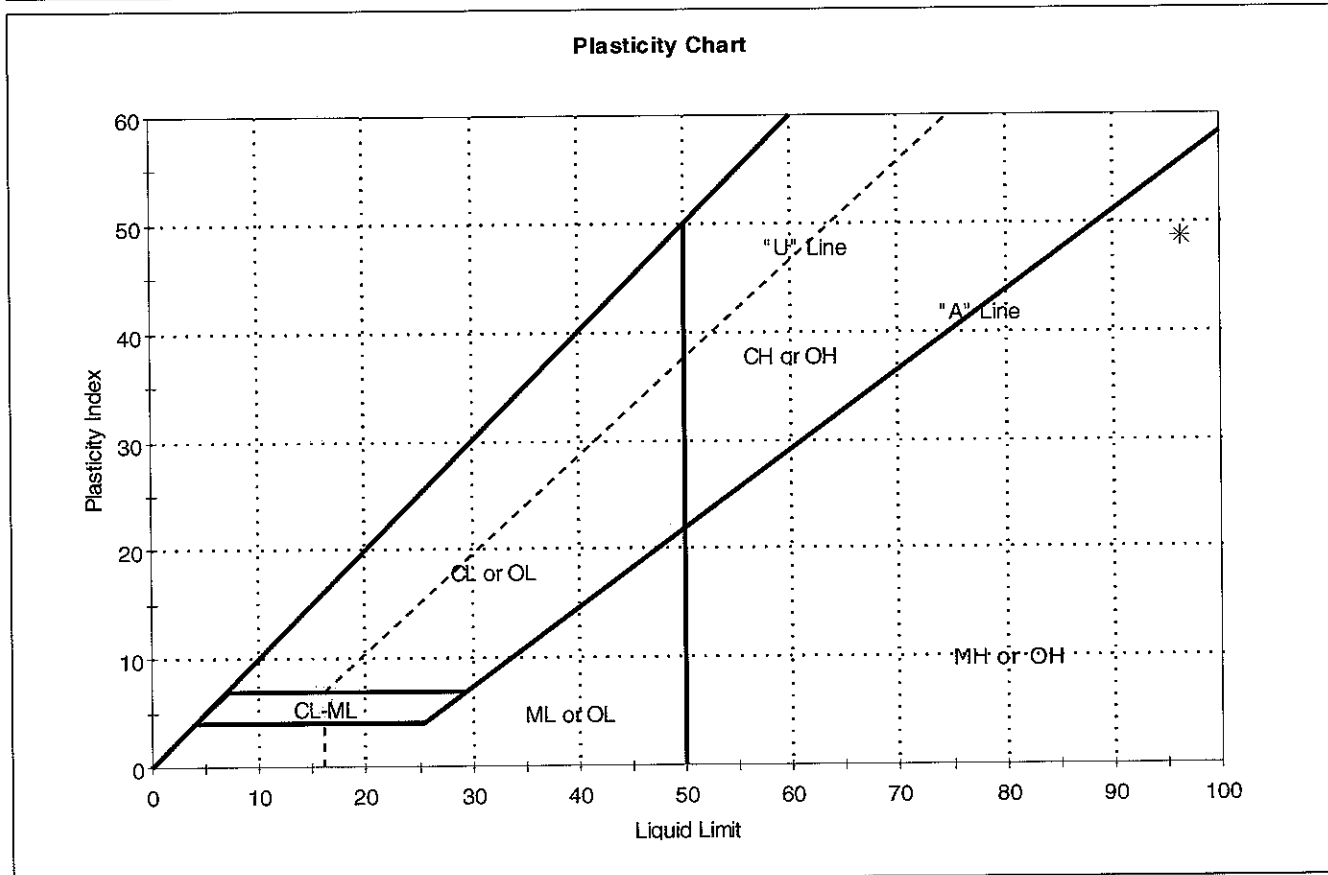
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0296-01	Sample Type:	jar
Sample ID:	OL-VC-10037	Test Date:	06/20/07
Depth:	9.9-13.2 ft	Test Id:	111463
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-10037	L-0296-0	9.9-13.2 ft	160	96	48	48	2	elastic silt (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0296-01	Sample Type:	jar
Sample ID:	OL-VC-10037	Test Date:	06/15/07
Depth :	9.9-13.2 ft	Test Id:	111397
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

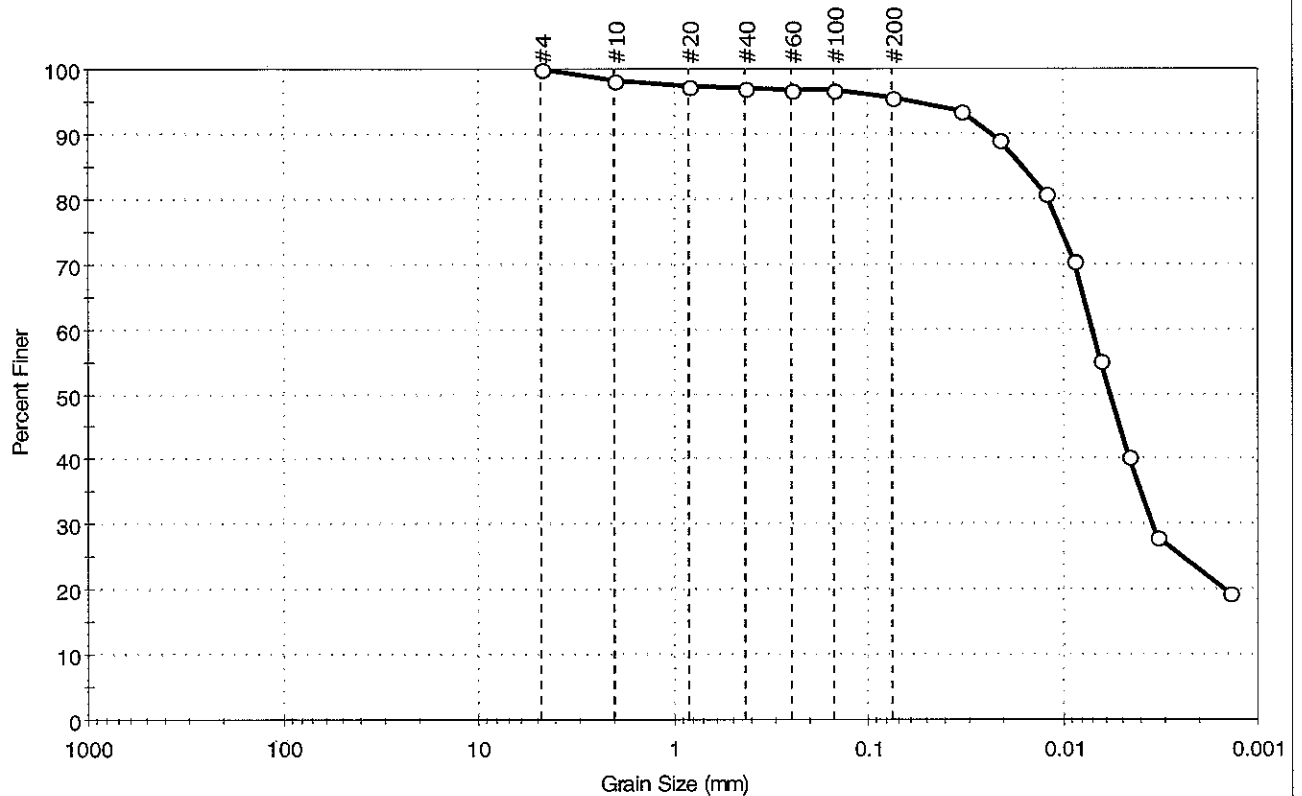
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0296-01	OL-VC-10037	9.9-13.2 ft	Wet, white silt	2.52

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-0296-03	Sample Type: jar
Sample ID: OL-VC-10062A	Test Date: 06/11/07	Tested By: mll
Depth: 3.3-6.6 ft	Test Id: 111426	Checked By: jdt
Test Comment: ---		
Sample Description: Wet, white silt		
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	4.3	95.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	97		
#40	0.42	97		
#60	0.25	97		
#100	0.15	97		
#200	0.075	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.036	93		
---	0.025	89		
---	0.018	81		
---	0.0085	70		
---	0.006	55		
---	0.00425	40		
---	0.003	28		
---	0.002	19		

Coefficients

D ₈₅ = 0.0162 mm	D ₃₀ = 0.0034 mm
D ₆₀ = 0.0070 mm	D ₁₅ = N/A
D ₅₀ = 0.0057 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

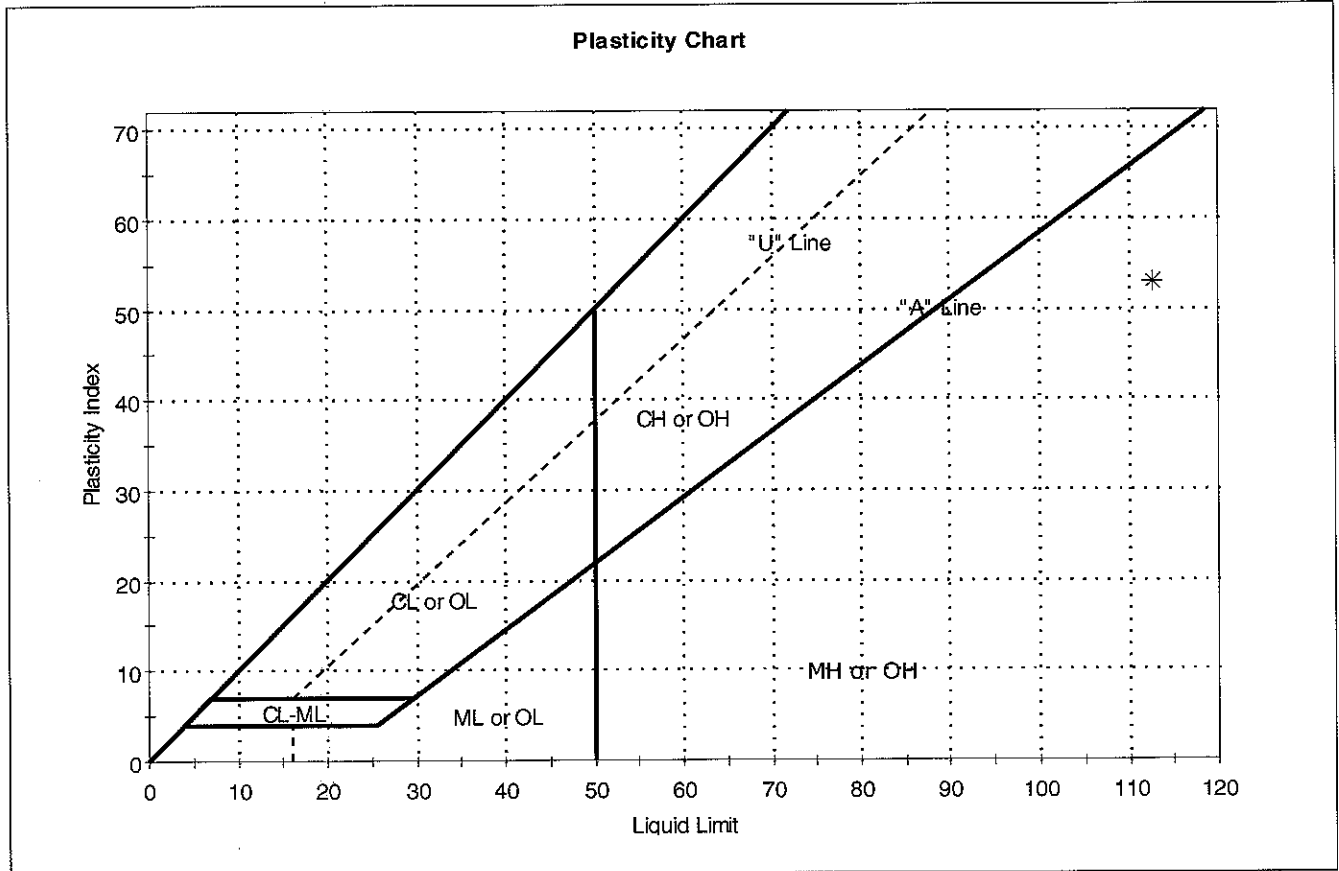
AASHTO Clayey Soils (A-7-5 (75))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-0296-03	Sample Type:	jar
Sample ID:	OL-VC-10062A	Test Date:	06/20/07
Depth :	3.3-6.6 ft	Test Id:	111464
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-10062A	L-0296-0	3.3-6.6 ft	162	113	60	53	2	elastic silt (MH)

Sample Prepared using the WET method
 3% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0296-03	Sample Type:	jar
Sample ID:	OL-VC-10062A	Test Date:	06/13/07
Depth :	3.3-6.6 ft	Test Id:	111398
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

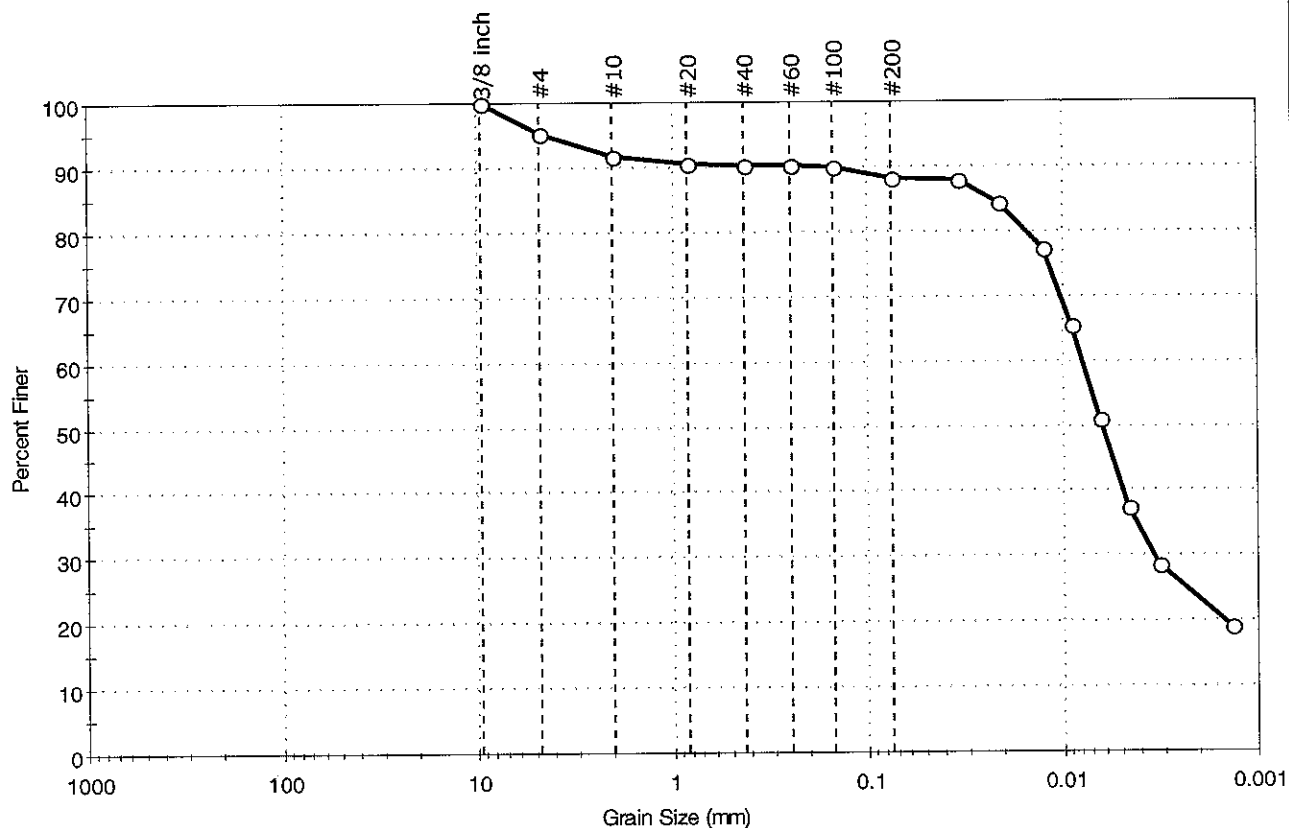
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0296-03	OL-VC-10062A	3.3-6.6 ft	Wet, white silt	2.54

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0296-05	Sample Type:	jar
Sample ID:	OL-VC-10081A	Test Date:	06/20/07
Depth:	13.2-16.5 ft	Test Id:	111427
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	4.8	7.1	88.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	95		
#10	2.00	92		
#20	0.84	91		
#40	0.42	90		
#60	0.25	90		
#100	0.15	90		
#200	0.075	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0343	88		
---	0.0213	84		
---	0.0125	77		
---	0.0089	65		
---	0.0064	51		
---	0.0046	37		
---	0.0033	29		
---	0.0014	19		

Coefficients

D ₈₅ = 0.0230 mm	D ₃₀ = 0.0034 mm
D ₆₀ = 0.0078 mm	D ₁₅ = N/A
D ₅₀ = 0.0062 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (53))

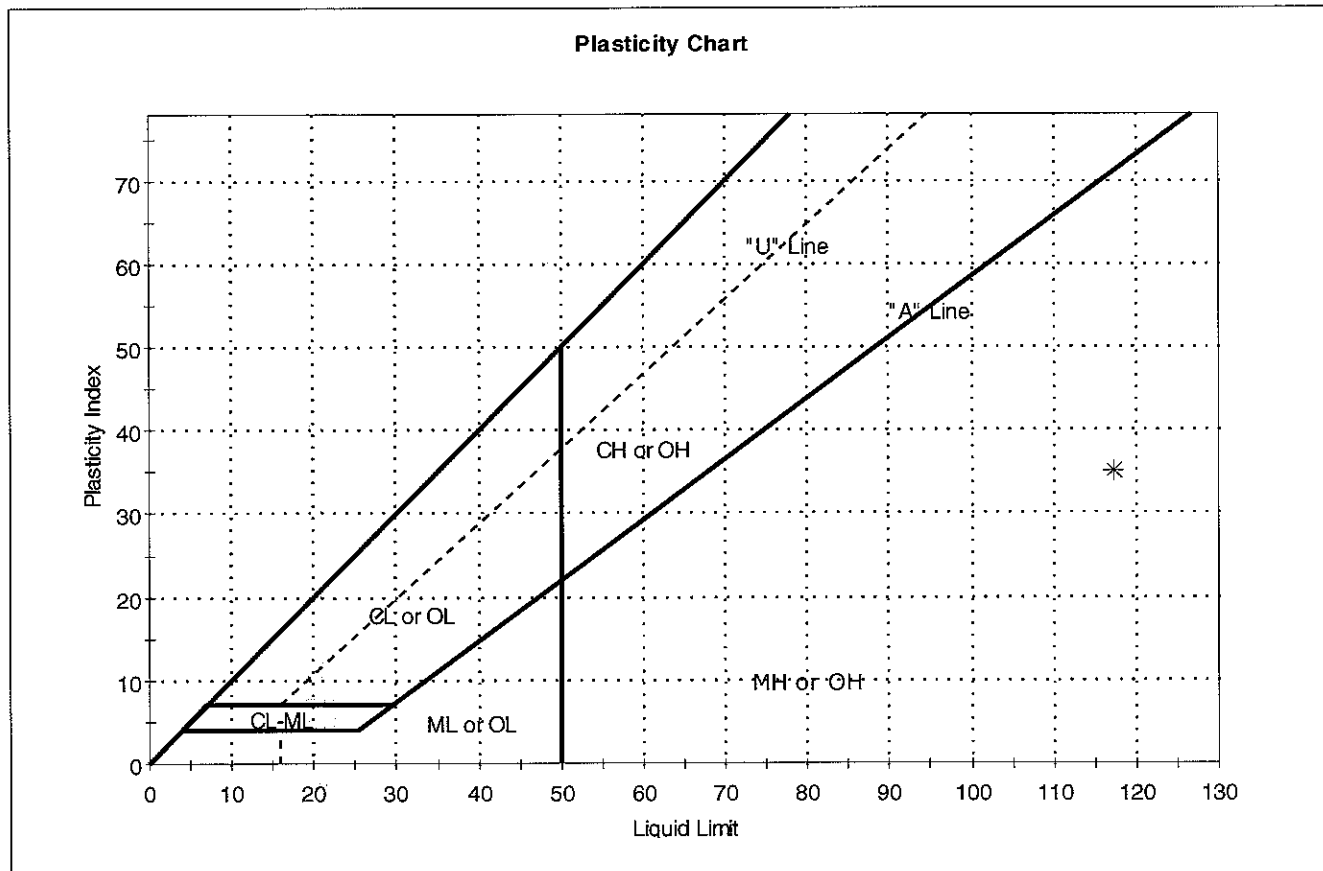
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0296-05	Sample Type:	jar
Sample ID:	OL-VC-10081A	Test Date:	06/20/07
Depth:	13.2-16.5 ft	Test Id:	111465
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-10081A	L-0296-01	13.2-16.5 ft	166	117	82	35	2	elastic silt (MH)

Sample Prepared using the WET method
 10% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0296-05	Sample Type:	jar
Sample ID:	OL-VC-10081A	Test Date:	06/20/07
Depth :	13.2-16.5 ft	Test Id:	111399
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

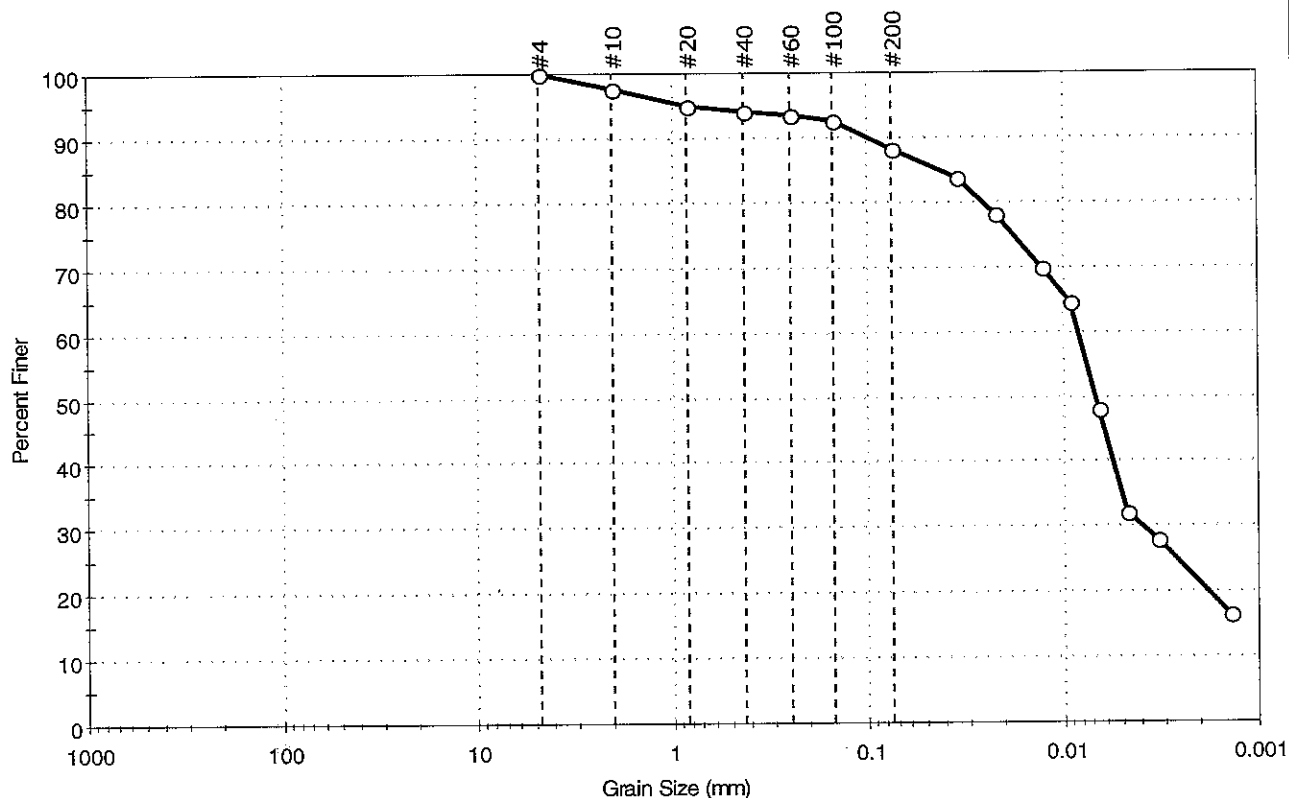
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0296-05	OL-VC-10081A	13.2-16.5 ft	Wet, light gray silt	2.58

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0296-06	Sample Type:	jar
Sample ID:	OL-VC-10105	Test Date:	06/20/07
Depth :	0-3.3 ft	Test Id:	111428
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	11.7	88.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	95		
#40	0.42	94		
#60	0.25	94		
#100	0.15	93		
#200	0.075	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0347	84		
---	0.0221	78		
---	0.0129	70		
---	0.0092	65		
---	0.0066	48		
---	0.0047	32		
---	0.0033	28		
---	0.0014	16		

Coefficients

D ₈₅ = 0.0427 mm	D ₃₀ = 0.0039 mm
D ₆₀ = 0.0084 mm	D ₁₅ = N/A
D ₅₀ = 0.0068 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

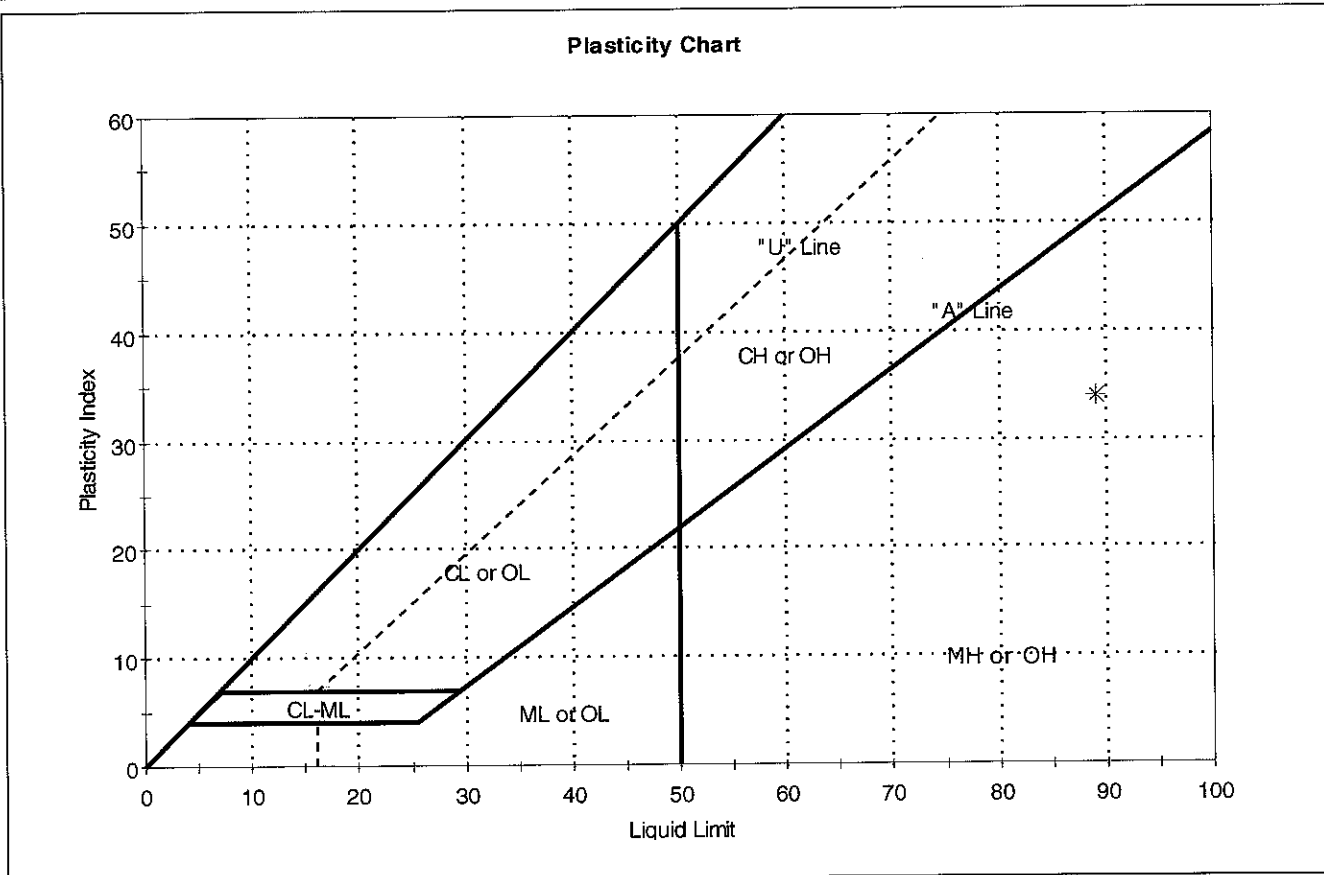
AASHTO Clayey Soils (A-7-5 (45))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0296-06	Sample Type:	jar
Sample ID:	OL-VC-10105	Test Date:	06/21/07
Depth:	0-3.3 ft	Test Id:	111466
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-10105	L-0296-0	0-3.3 ft	162	89	55	34	3	elastic silt (MH)

Sample Prepared using the WET method
 6% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0296-06	Sample Type:	jar
Sample ID:	OL-VC-10105	Test Date:	06/20/07
Depth :	0-3.3 ft	Test Id:	111400
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

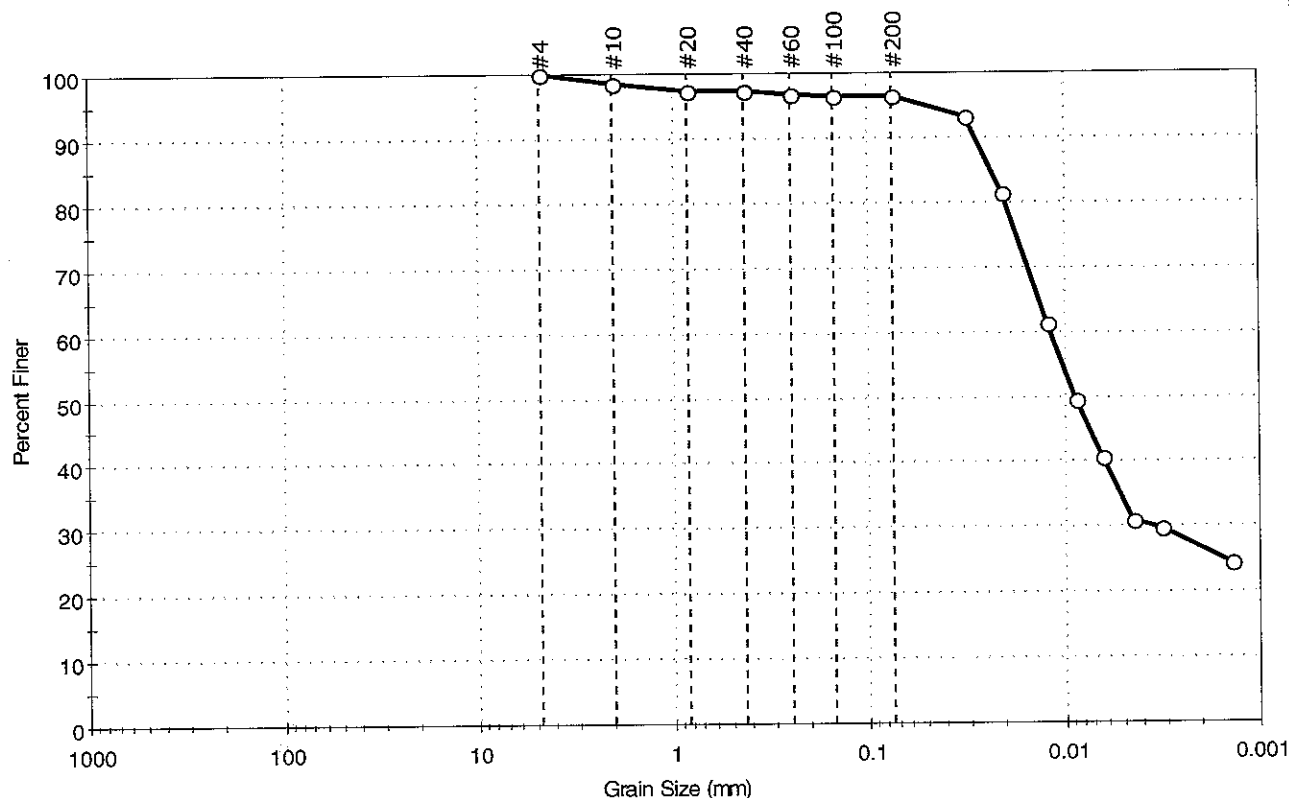
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0296-06	OL-VC-10105	0-3.3 ft	Wet, light gray silt	2.6

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-05	Sample Type:	jar
Sample ID:	OL-VC-10108	Test Date:	06/12/07
Depth:	47-49 ft	Test Id:	111429
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.6	96.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	97		
#40	0.42	97		
#60	0.25	97		
#100	0.15	97		
#200	0.075	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	93		
---	0.0205	82		
---	0.0125	61		
---	0.0089	50		
---	0.0064	41		
---	0.0045	31		
---	0.0032	30		
---	0.0014	25		

Coefficients

D ₈₅ = 0.0234 mm	D ₃₀ = 0.0035 mm
D ₆₀ = 0.0118 mm	D ₁₅ = N/A
D ₅₀ = 0.0090 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

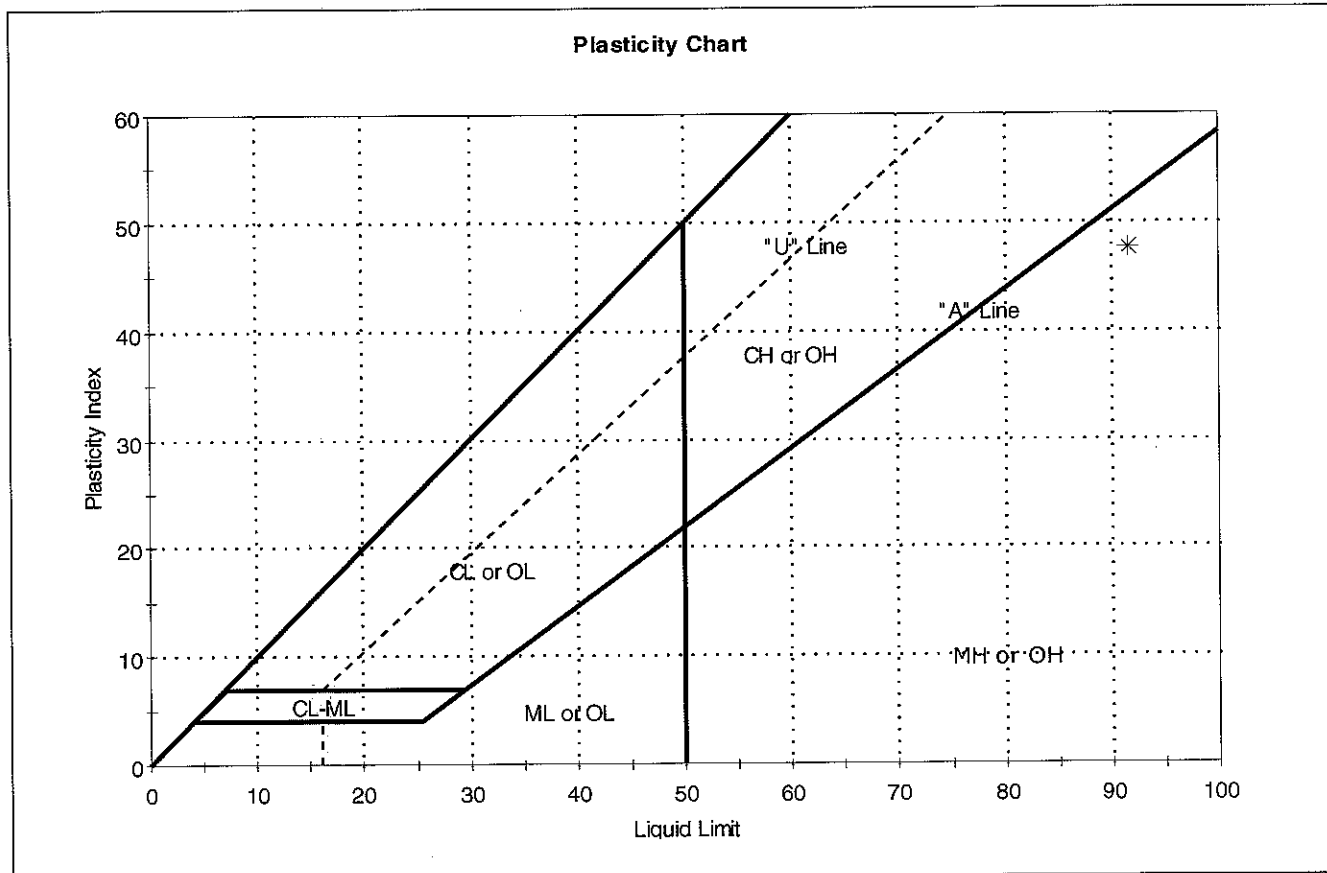
AASHTO Clayey Soils (A-7-5 (64))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-05	Sample Type:	jar
Sample ID:	OL-VC-10108	Test Date:	06/08/07
Depth:	47-49 ft	Test Id:	111467
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-10108	L-0298-0	47-49 ft	78	92	44	48	1	elastic silt (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0298-05	Sample Type:	jar
Sample ID:	OL-VC-10108	Test Date:	06/13/07
Depth :	47-49 ft	Test Id:	111401
Test Comment:	---		
Sample Description:	Moist, dark yellowish brown silt		
Sample Comment:	---		

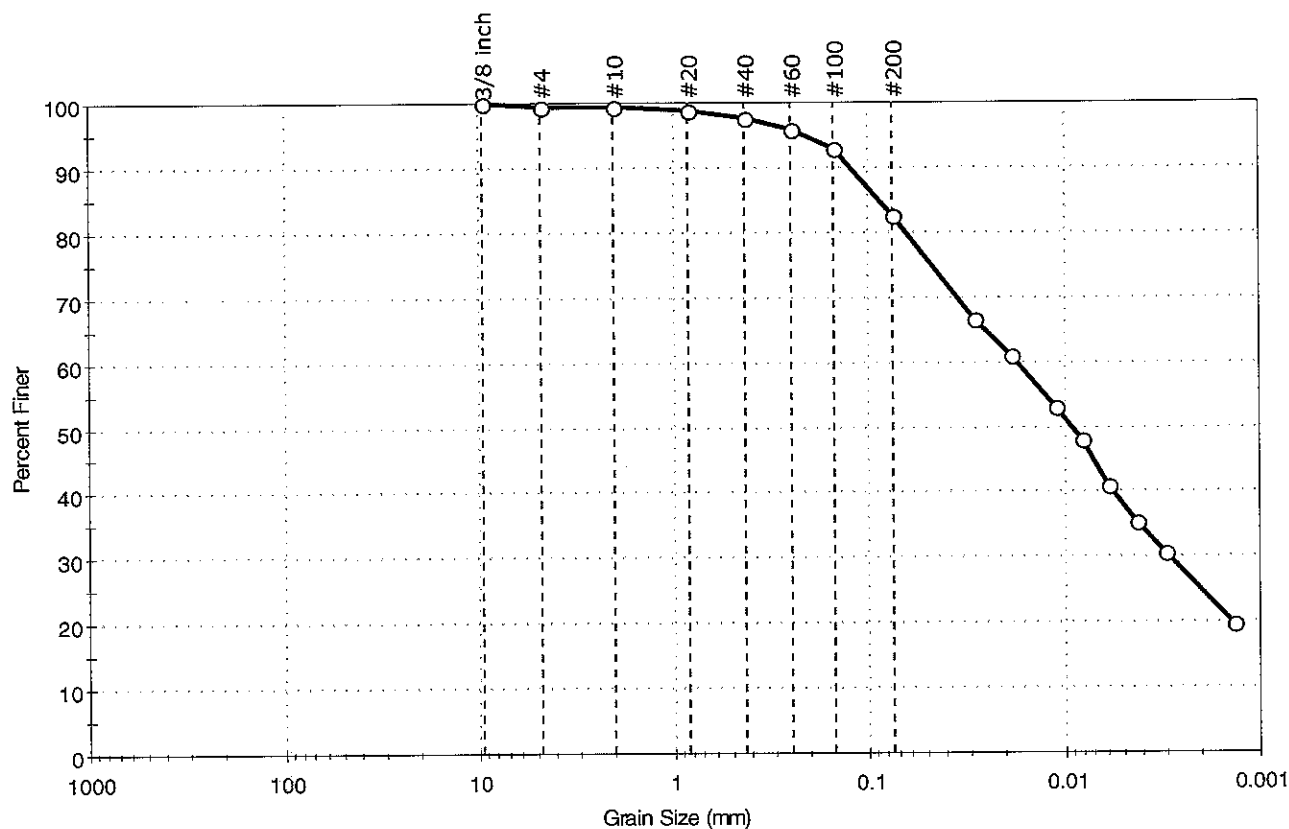
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0298-05	OL-VC-10108	47-49 ft	Moist, dark yellowish brown silt	2.57

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-01	Sample Type:	jar
Sample ID:	OL-VC-20070	Test Date:	06/20/07
Depth:	9.9-13.2 ft	Test Id:	111430
Test Comment:	---		
Sample Description:	Moist, gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.5	16.8	82.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	99		
#20	0.84	99		
#40	0.42	98		
#60	0.25	96		
#100	0.15	93		
#200	0.075	83		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0286	67		
---	0.0187	61		
---	0.0112	53		
---	0.0081	48		
---	0.0059	41		
---	0.0043	35		
---	0.0031	31		
---	0.0014	20		

Coefficients

D ₈₅ = 0.0877 mm	D ₃₀ = 0.0029 mm
D ₆₀ = 0.0175 mm	D ₁₅ = N/A
D ₅₀ = 0.0092 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

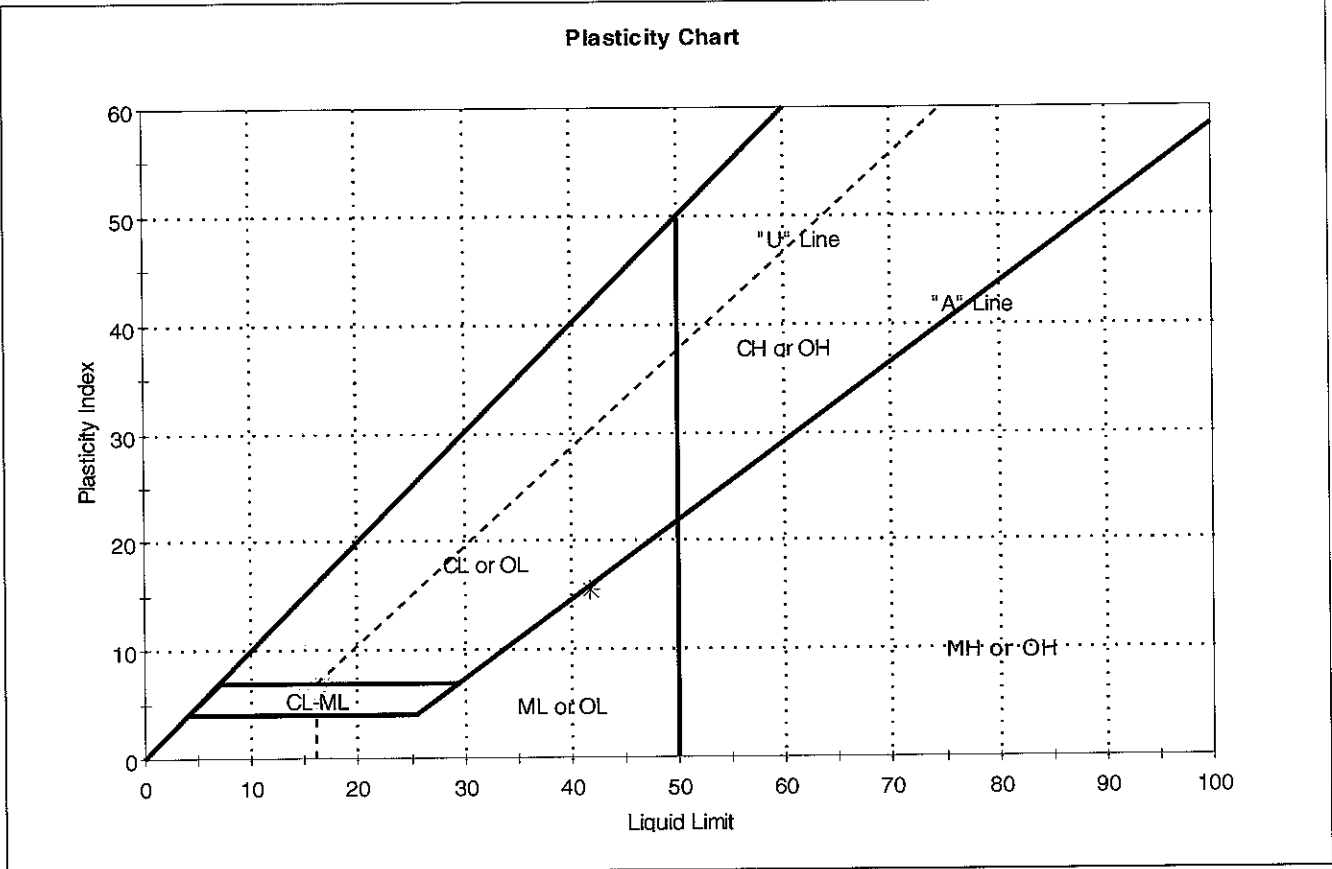
AASHTO Clayey Soils (A-7-6 (15))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-01	Sample Type:	jar
Sample ID:	OL-VC-20070	Test Date:	06/21/07
Depth :	9.9-13.2 ft	Test Id:	111468
Test Comment:	---		
Sample Description:	Moist, gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

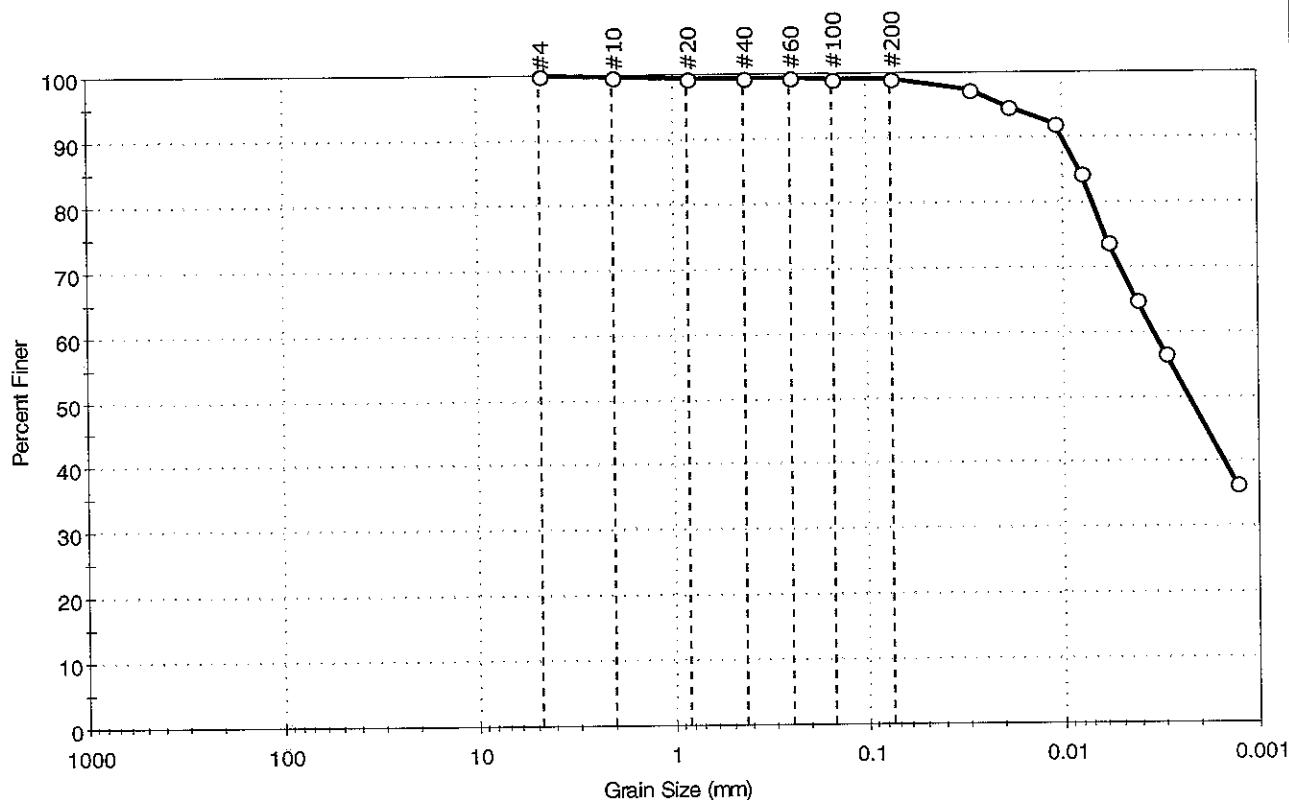


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-20070	L-0302-0	9.9-13.2 ft	48	42	26	16	1	silt with sand (ML)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0297-01	Sample Type:	jar
Sample ID:	OL-VC-20074	Test Date:	06/20/07
Depth :	13.2-16.5 ft	Test Id:	111431
Test Comment:	---		
Sample Description:	Moist, dark olive gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0295	97		
---	0.0188	95		
---	0.0109	92		
---	0.0079	84		
---	0.0058	74		
---	0.0042	65		
---	0.0030	57		
---	0.0013	37		

Coefficients

D ₈₅ = 0.0082 mm	D ₃₀ = N/A
D ₆₀ = 0.0034 mm	D ₁₅ = N/A
D ₅₀ = 0.0023 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

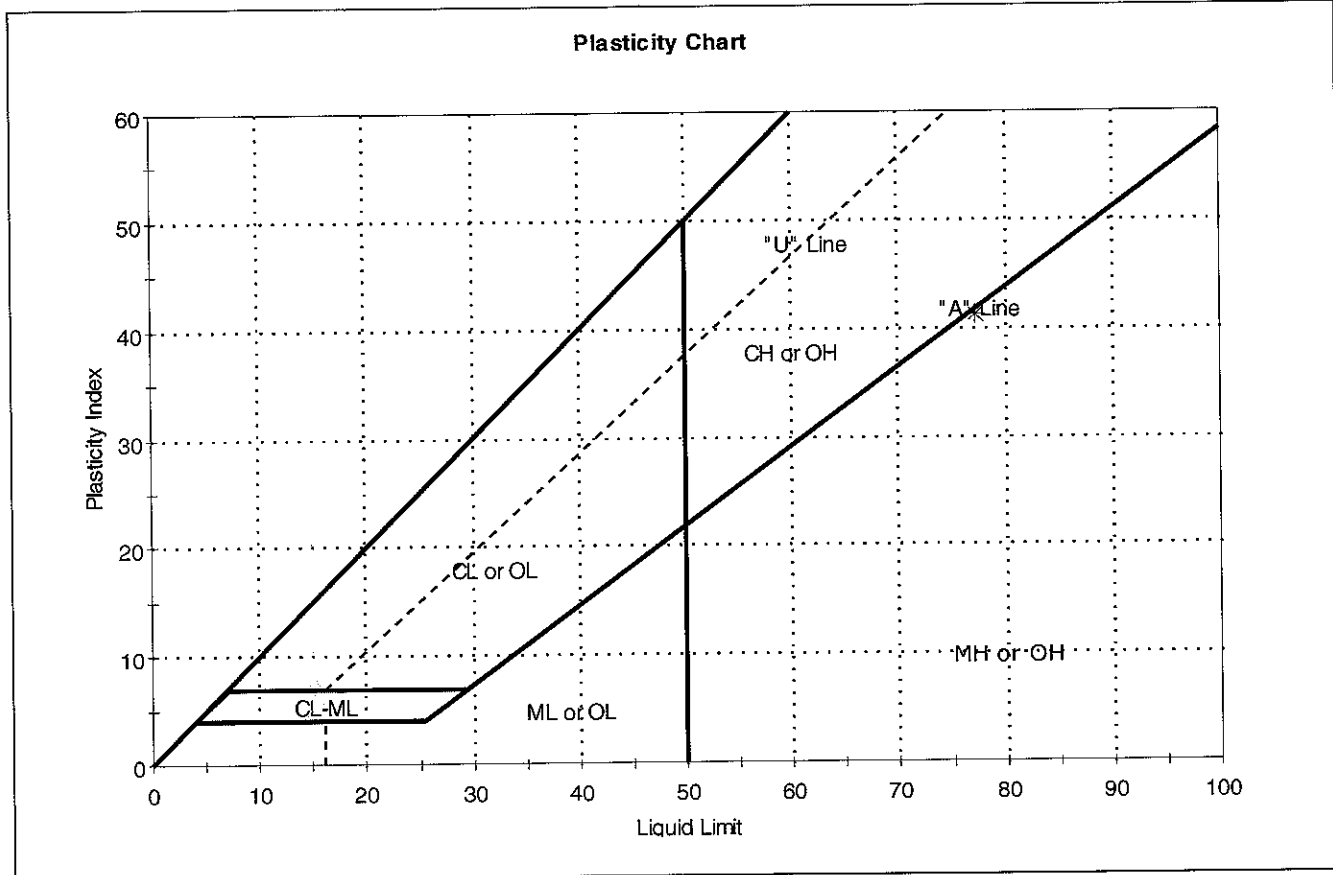
AASHTO Clayey Soils (A-7-5 (56))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0297-01	Sample Type:	jar
Sample ID:	OL-VC-20074	Test Date:	06/21/07
Depth :	13.2-16.5 ft	Test Id:	111469
Test Comment:	---		
Sample Description:	Moist, dark olive gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-20074	L-0297-01	13.2-16.5 ft	71	77	36	41	1	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0297-01	Sample Type:	jar
Sample ID:	OL-VC-20074	Test Date:	06/20/07
Depth :	13.2-16.5 ft	Test Id:	111402
Test Comment:	---		
Sample Description:	Moist, dark olive gray silt		
Sample Comment:	---		

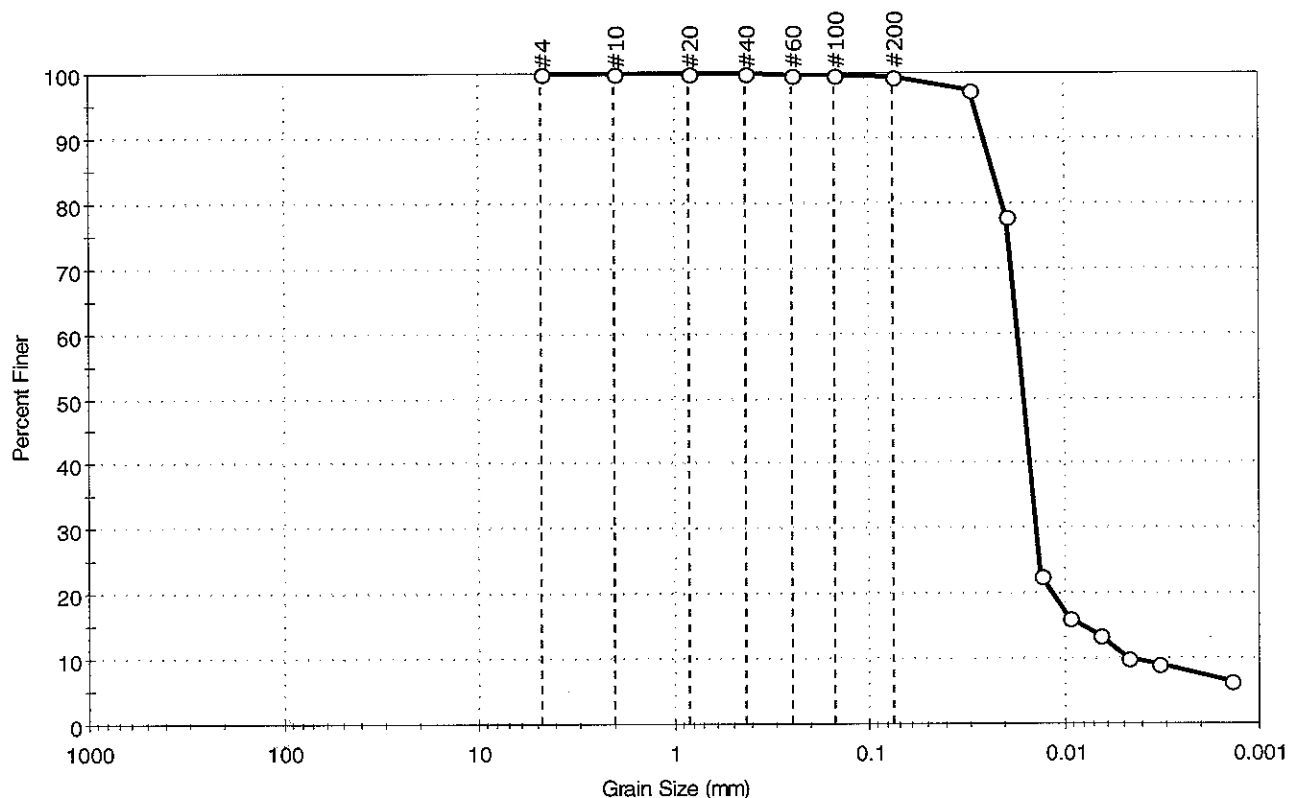
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0297-01	OL-VC-20074	13.2-16.5 ft	Moist, dark olive gray silt	2.69

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0297-02	Sample Type:	jar
Sample ID:	OL-VC-20079	Test Date:	06/11/07
Depth:	0-3.3 ft	Test Id:	111432
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.7	99.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0302	97		
---	0.0198	78		
---	0.0130	23		
---	0.0094	16		
---	0.0066	14		
---	0.0047	10		
---	0.0033	9		
---	0.0014	6		

Coefficients

D ₈₅ = 0.0230 mm	D ₃₀ = 0.0138 mm
D ₆₀ = 0.0173 mm	D ₁₅ = 0.0081 mm
D ₅₀ = 0.0160 mm	D ₁₀ = 0.0047 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

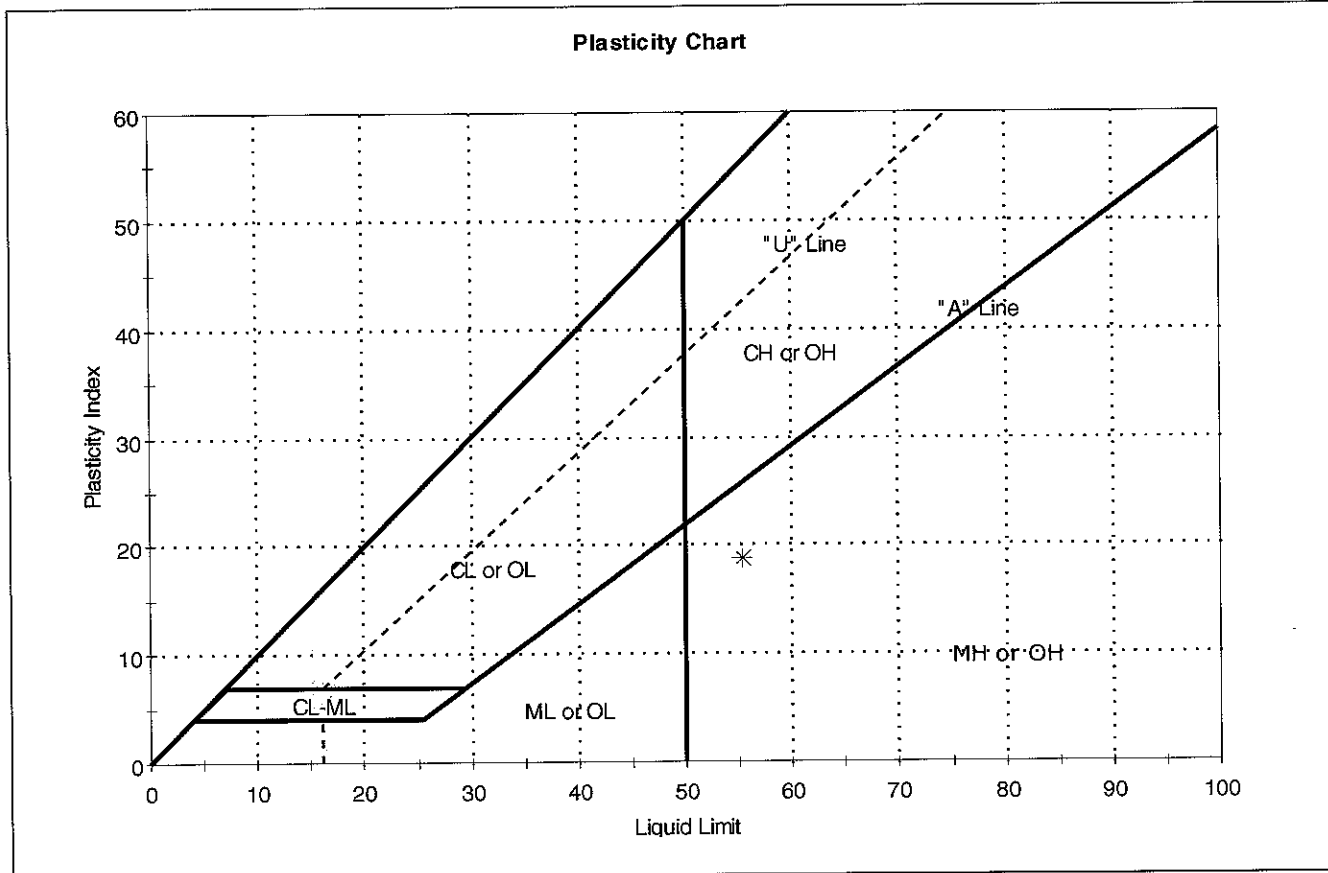
AASHTO Clayey Soils (A-7-5 (27))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Test Date:	06/18/07
Boring ID:	OL-0297-02	Test Id:	111470
Sample ID:	OL-VC-20079	Tested By:	ap
Depth :	0-3.3 ft	Checked By:	jdt
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-20079	L-0297-0	0-3.3 ft	105	55	36	19	4	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0297-02	Sample Type:	jar
Sample ID:	OL-VC-20079	Test Date:	06/13/07
Depth :	0-3.3 ft	Test Id:	111403
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

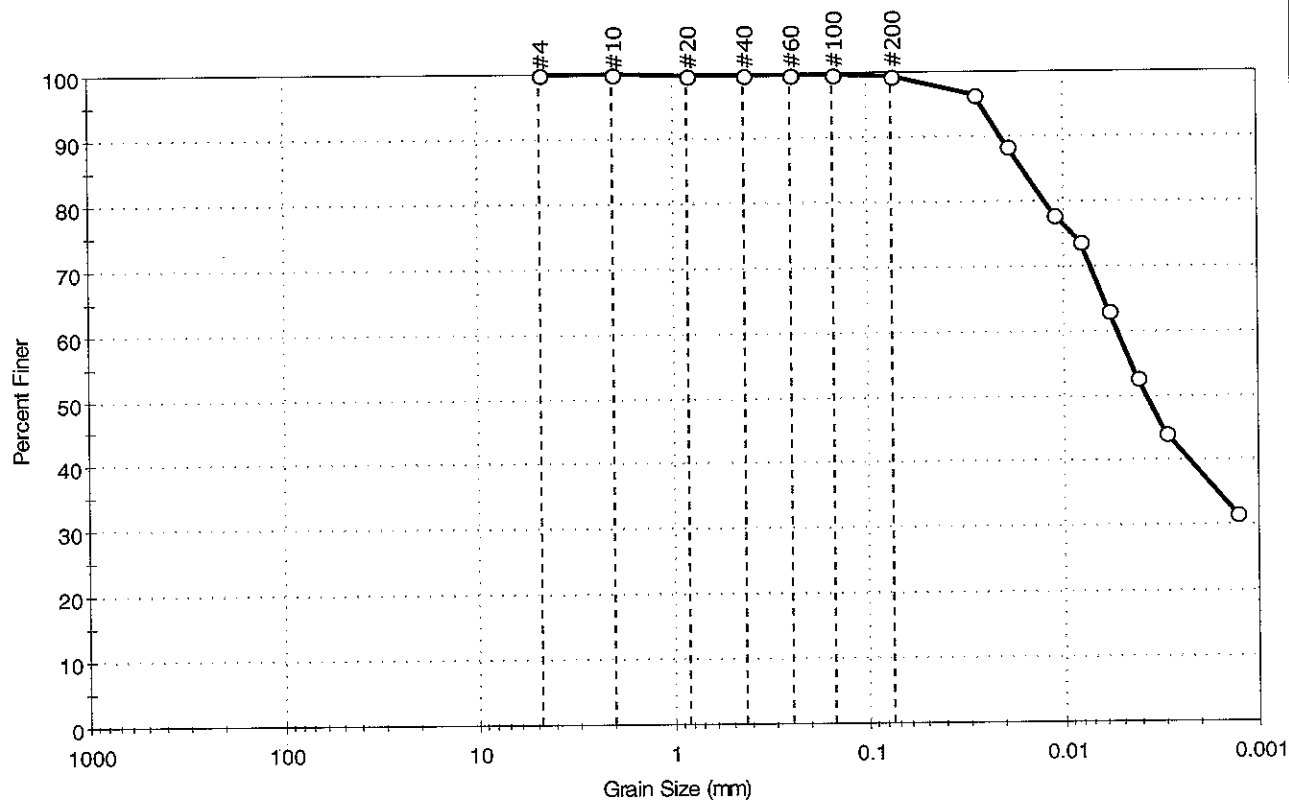
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0297-02	OL-VC-20079	0-3.3 ft	Wet, black silt	2.58

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-01	Sample Type:	jar
Sample ID:	OL-VC-30033	Test Date:	06/20/07
Depth:	35-37 ft	Test Id:	111433
Test Comment:	---		
Sample Description:	Moist, greenish black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.4	99.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0286	96		
---	0.0192	88		
---	0.0110	78		
---	0.0081	74		
---	0.0058	63		
---	0.0042	53		
---	0.0030	44		
---	0.0013	32		

Coefficients

D ₈₅ = 0.0160 mm	D ₃₀ = N/A
D ₆₀ = 0.0053 mm	D ₁₅ = N/A
D ₅₀ = 0.0038 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (37))

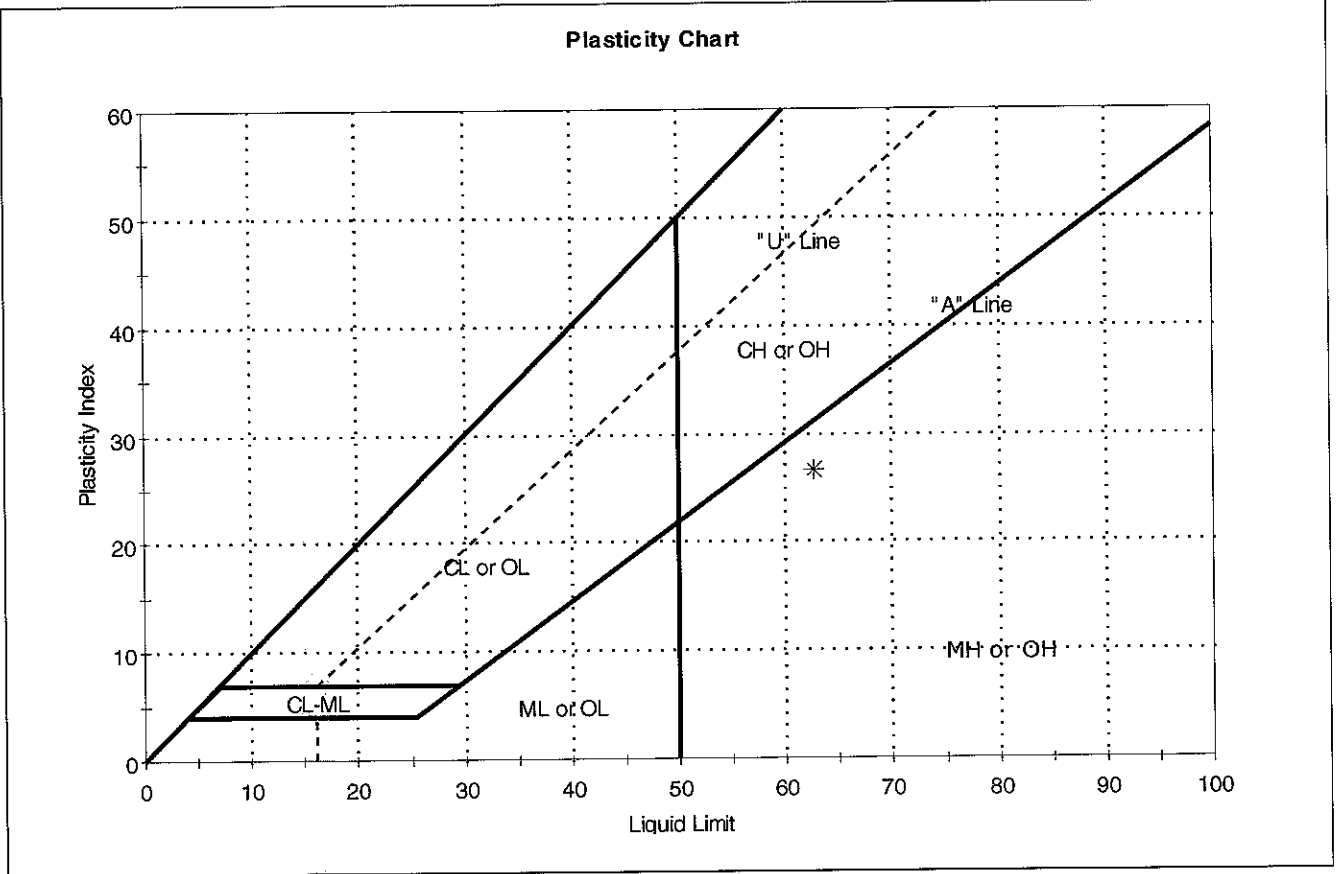
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-01	Sample Type:	jar
Sample ID:	OL-VC-30033	Test Date:	06/20/07
Depth :	35-37 ft	Test Id:	111471
Test Comment:	---		
Sample Description:	Moist, greenish black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-30033	L-0298-0	35-37 ft	73	63	36	27	1	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0298-01	Sample Type:	jar
Sample ID:	OL-VC-30033	Test Date:	06/20/07
Depth :	35-37 ft	Test Id:	111404
Test Comment:	---		
Sample Description:	Moist, greenish black silt		
Sample Comment:	---		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0298-01	OL-VC-30033	35-37 ft	Moist, greenish black silt	2.74

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854

Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-0302-03

Sample Type: jar

Tested By: mll

Sample ID: OL-VC-30038

Test Date: 06/20/07

Checked By: jdt

Depth: 3.3-6.6 ft

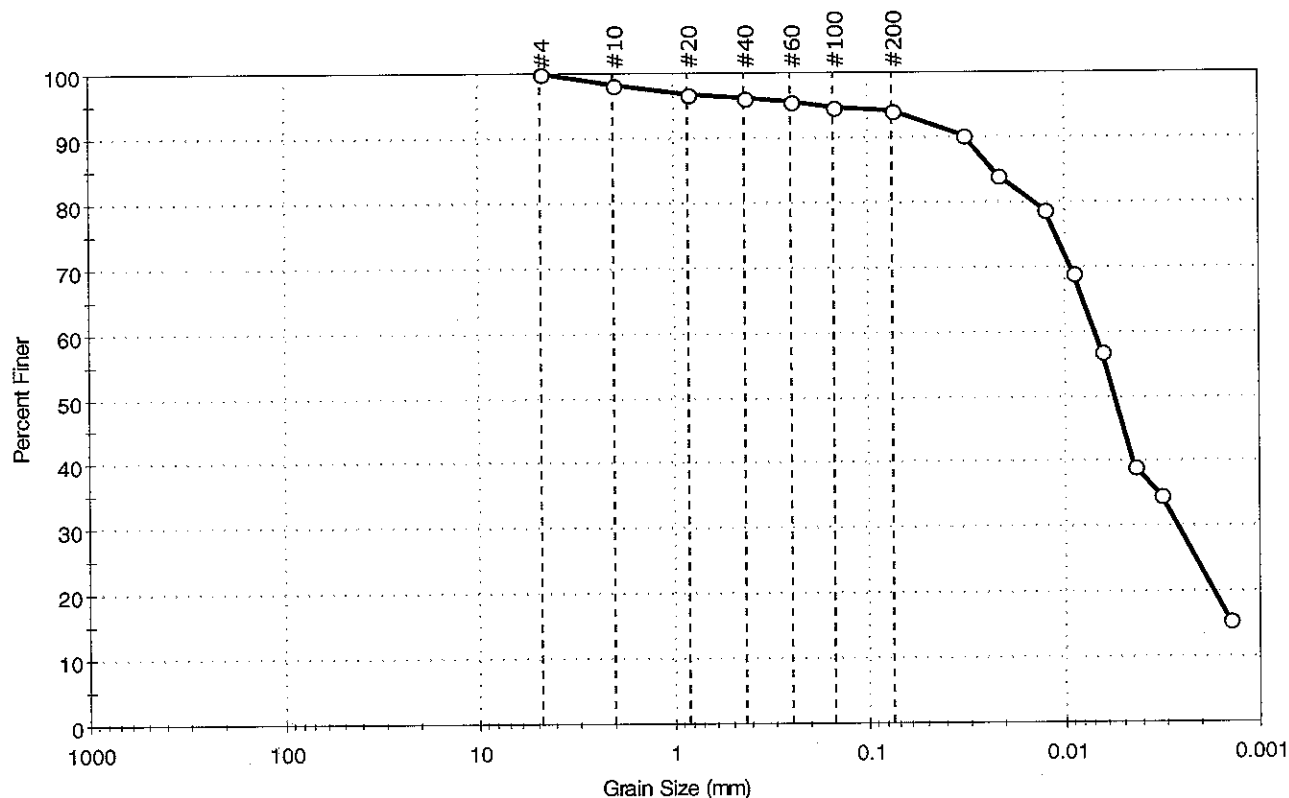
Test Id: 111434

Test Comment: ---

Sample Description: Wet, white silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	0.0	6.0	94.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.85	97		
#40	0.425	96		
#60	0.25	96		
#100	0.15	95		
#200	0.075	94		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0322	90		
---	0.0218	84		
---	0.0126	79		
---	0.0090	69		
---	0.0064	57		
---	0.0043	39		
---	0.0032	35		
---	0.0014	16		

Coefficients

$D_{85} = 0.0233$ mm $D_{30} = 0.0026$ mm
 $D_{60} = 0.0070$ mm $D_{15} = N/A$
 $D_{50} = 0.0055$ mm $D_{10} = N/A$
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

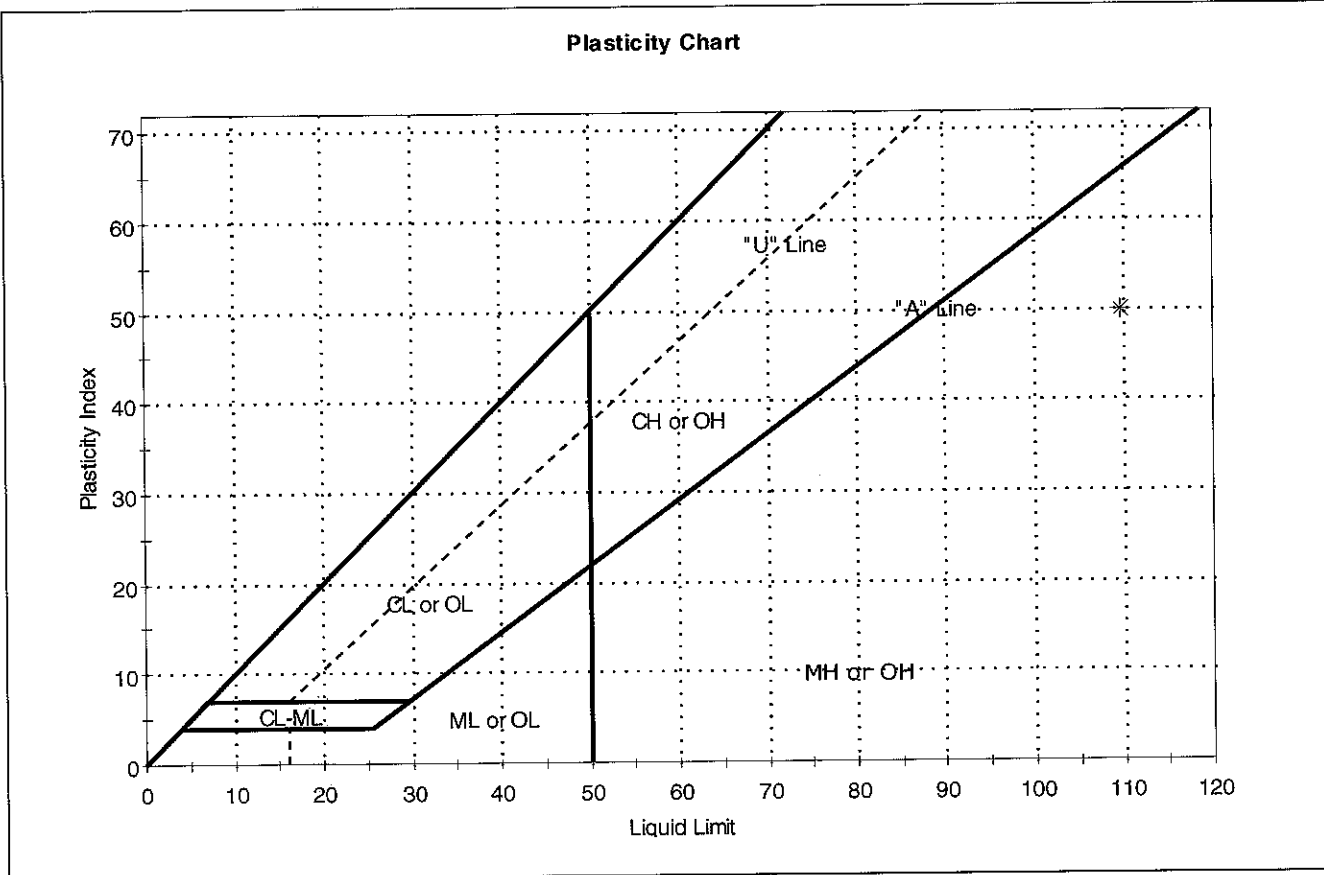
AASHTO Clayey Soils (A-7-5 (69))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
 Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-03	Sample Type:	jar
Sample ID:	OL-VC-30038	Test Date:	06/21/07
Depth :	3.3-6.6 ft	Test Id:	111472
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-30038	L-0302-0	3.3-6.6 ft	267	110	60	50	4	elastic silt (MH)

Sample Prepared using the WET method

4% Retained on #40 Sieve

Dry Strength: HIGH

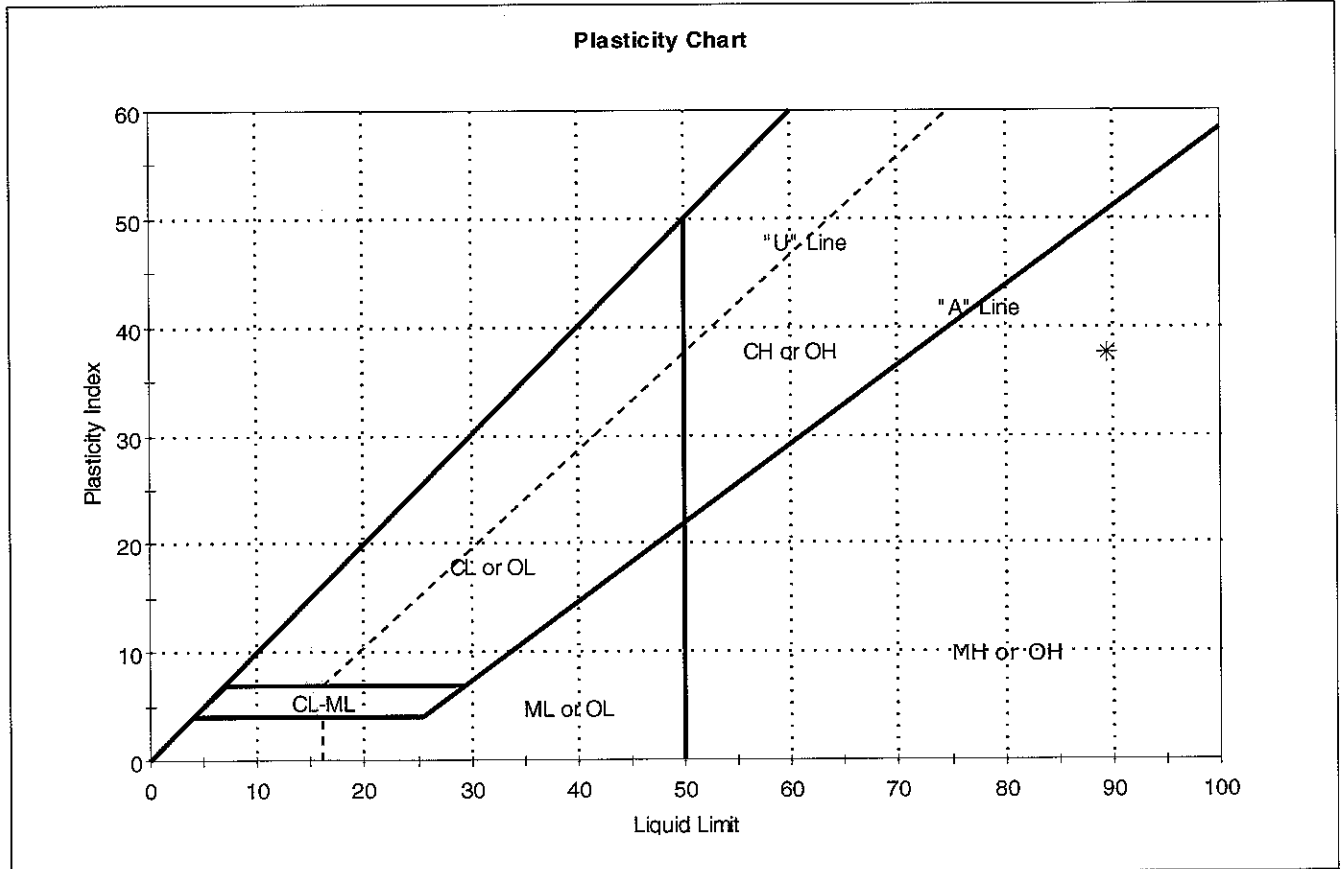
Dilutancy: SLOW

Toughness: LOW

printed 6/27/2007 8:24:40 AM

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-04	Sample Type:	jar
Sample ID:	OL-VC-30040	Test Date:	06/21/07
Depth:	0-3.3 ft	Test Id:	111473
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	----		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-30040	L-0302-0	0-3.3 ft	127	90	52	38	2	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: n/a
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0302-04	Sample Type:	jar
Sample ID:	OL-VC-30040	Test Date:	06/20/07
Depth :	0-3.3 ft	Test Id:	111405
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	----		

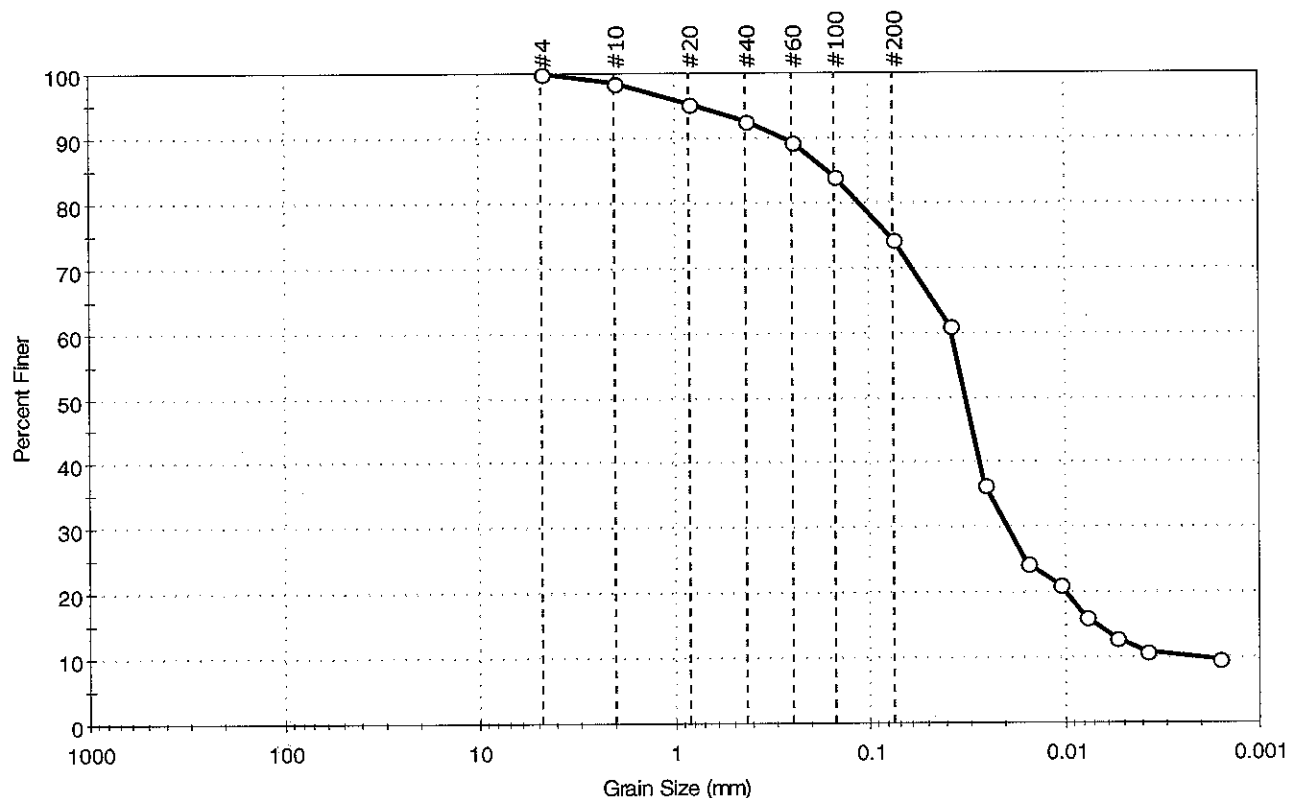
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0302-04	OL-VC-30040	0-3.3 ft	Wet, white silt	2.18

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-05	Sample Type:	jar
Sample ID:	OL-VC-30043	Test Date:	06/20/07
Depth :	13.2-16.4 ft	Test Id:	111436
Test Comment:	---		
Sample Description:	Moist, olive gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	25.5	74.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	95		
#40	0.42	93		
#60	0.25	89		
#100	0.15	84		
#200	0.075	74		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0389	61		
---	0.0258	37		
---	0.0154	24		
---	0.0107	21		
---	0.0078	16		
---	0.0055	13		
---	0.0038	11		
---	0.0016	10		

Coefficients

D ₈₅ = 0.1649 mm	D ₃₀ = 0.0195 mm
D ₆₀ = 0.0383 mm	D ₁₅ = 0.0068 mm
D ₅₀ = 0.0323 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

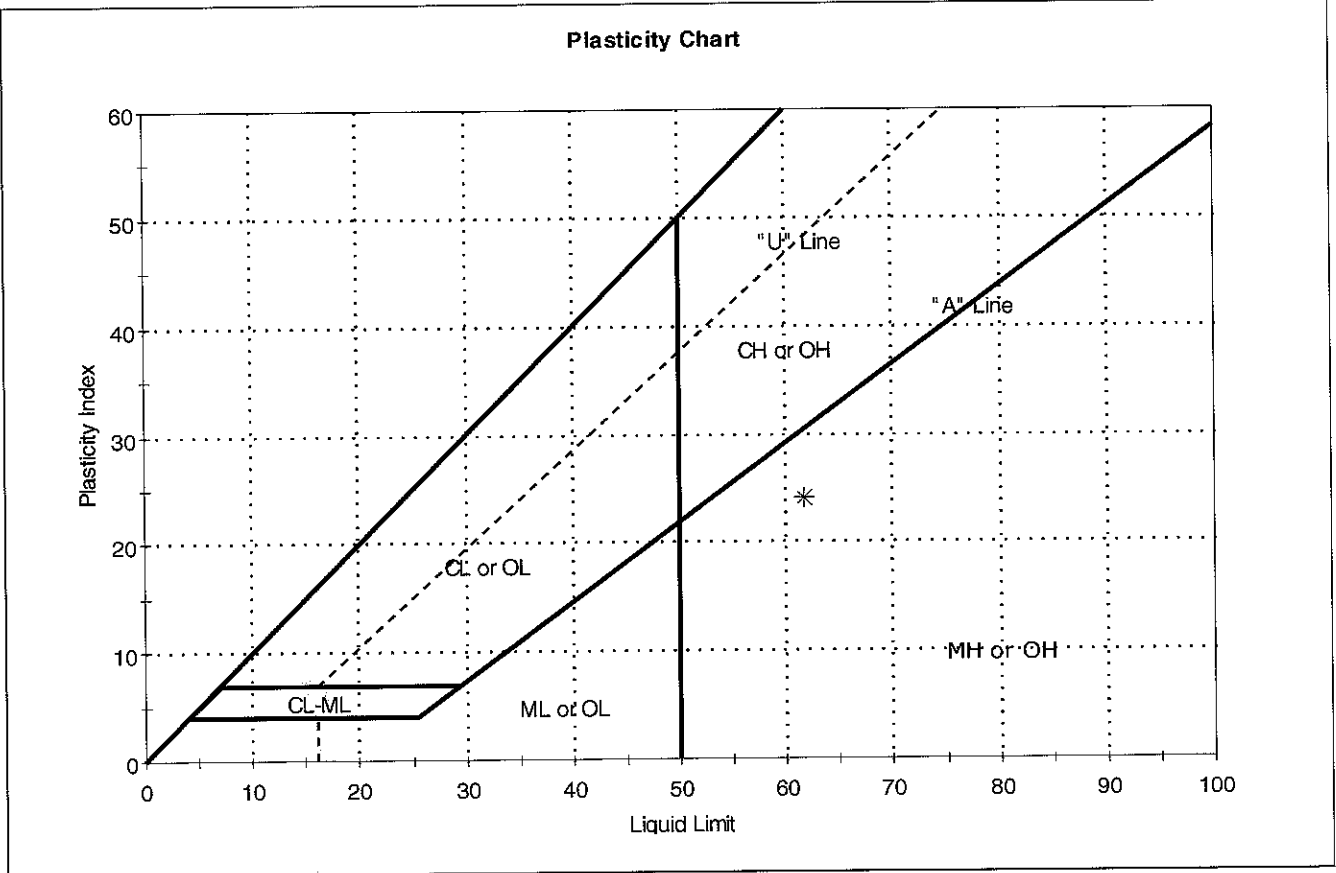
AASHTO Clayey Soils (A-7-5 (23))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-05	Sample Type:	jar
Sample ID:	OL-VC-30043	Test Date:	06/21/07
Depth:	13.2-16.4 ft	Test Id:	111474
Test Comment:	---		
Sample Description:	Moist, olive gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-30043	L-0302-01	13.2-16.4 ft	76	62	38	24	2	elastic silt with sand (MH)

Sample Prepared using the WET method

7% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0302-05	Sample Type:	jar
Sample ID:	OL-VC-30043	Test Date:	06/20/07
Depth :	13.2-16.4 ft	Test Id:	111406
Test Comment:	---		
Sample Description:	Moist, olive gray silt with sand		
Sample Comment:	---		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0302-05	OL-VC-30043	13.2-16.4 ft	Moist, olive gray silt with sand	2.45

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-0302-06

Sample Type: jar

Tested By: mll

Sample ID: OL-VC-40016

Test Date: 06/08/07

Checked By: jdt

Depth: 13.2-16.4 ft

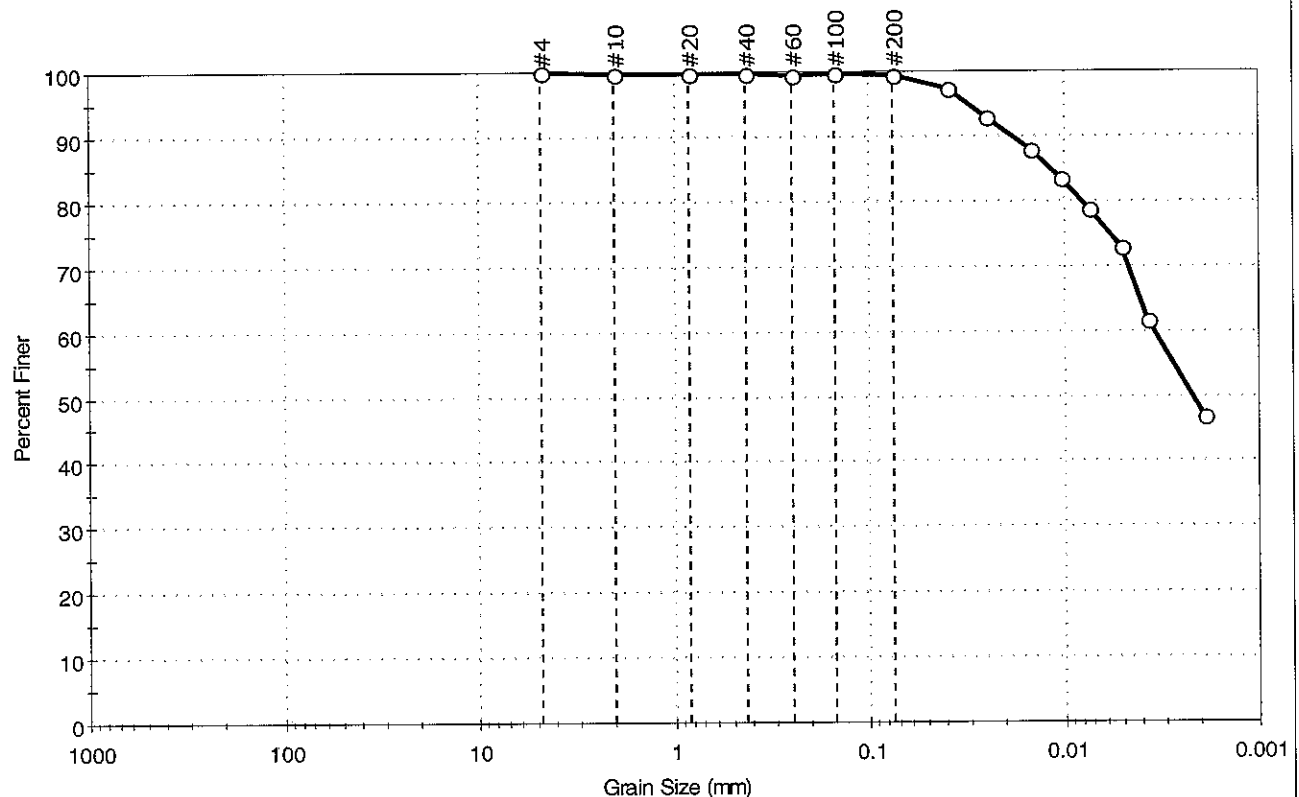
Test Id: 111437

Test Comment: ---

Sample Description: Wet, dark gray silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.6	99.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0397	97		
---	0.0253	93		
---	0.0147	88		
---	0.0104	83		
---	0.0074	79		
---	0.0051	73		
---	0.0037	62		
---	0.0019	47		

Coefficients

D₈₅ = 0.0117 mm D₃₀ = N/A

D₆₀ = 0.0034 mm D₁₅ = N/A

D₅₀ = 0.0022 mm D₁₀ = N/A

C_u = N/A C_c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (64))

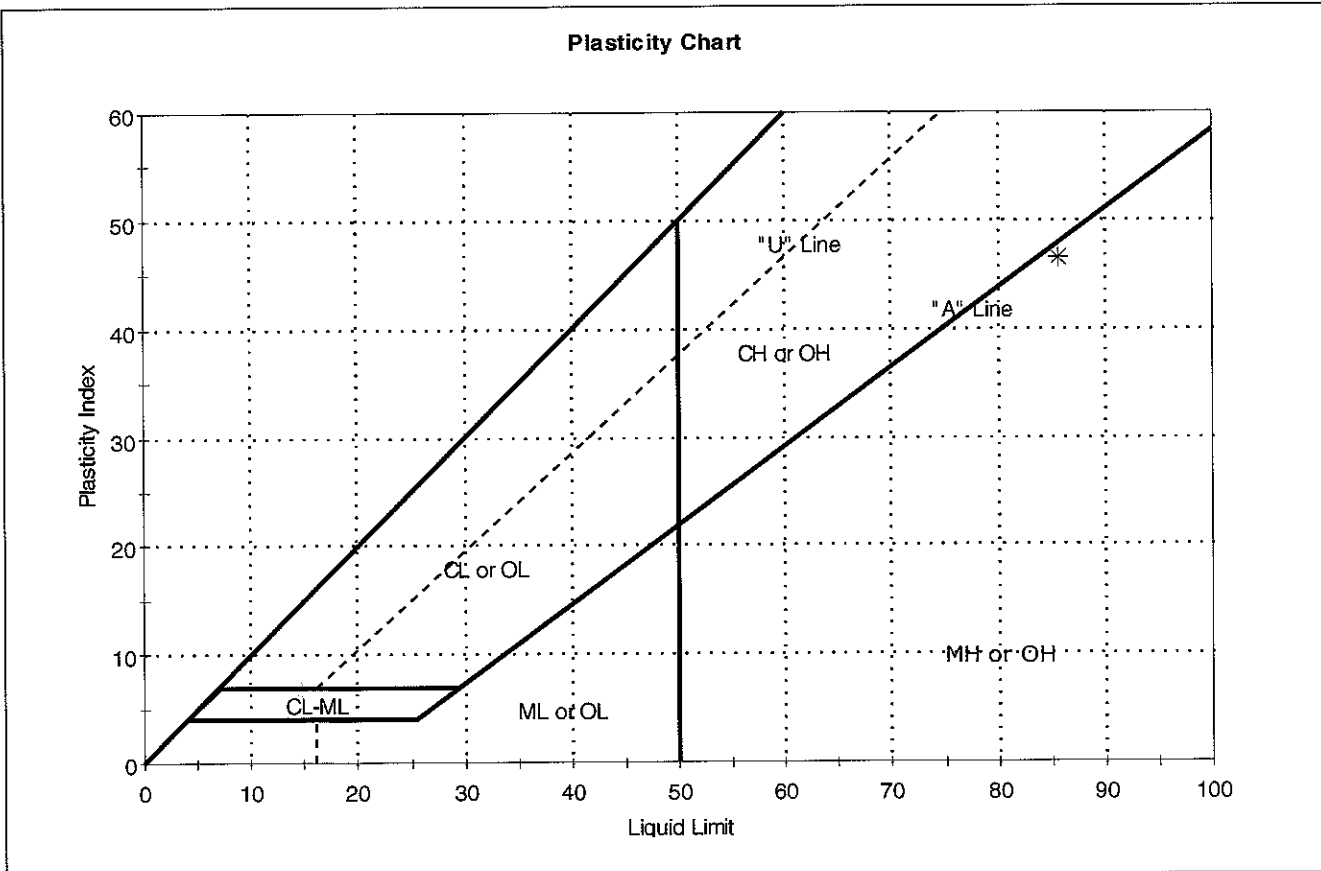
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-06	Sample Type:	jar
Sample ID:	OL-VC-40016	Test Date:	06/12/07
Depth:	13.2-16.4 ft	Test Id:	111475
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

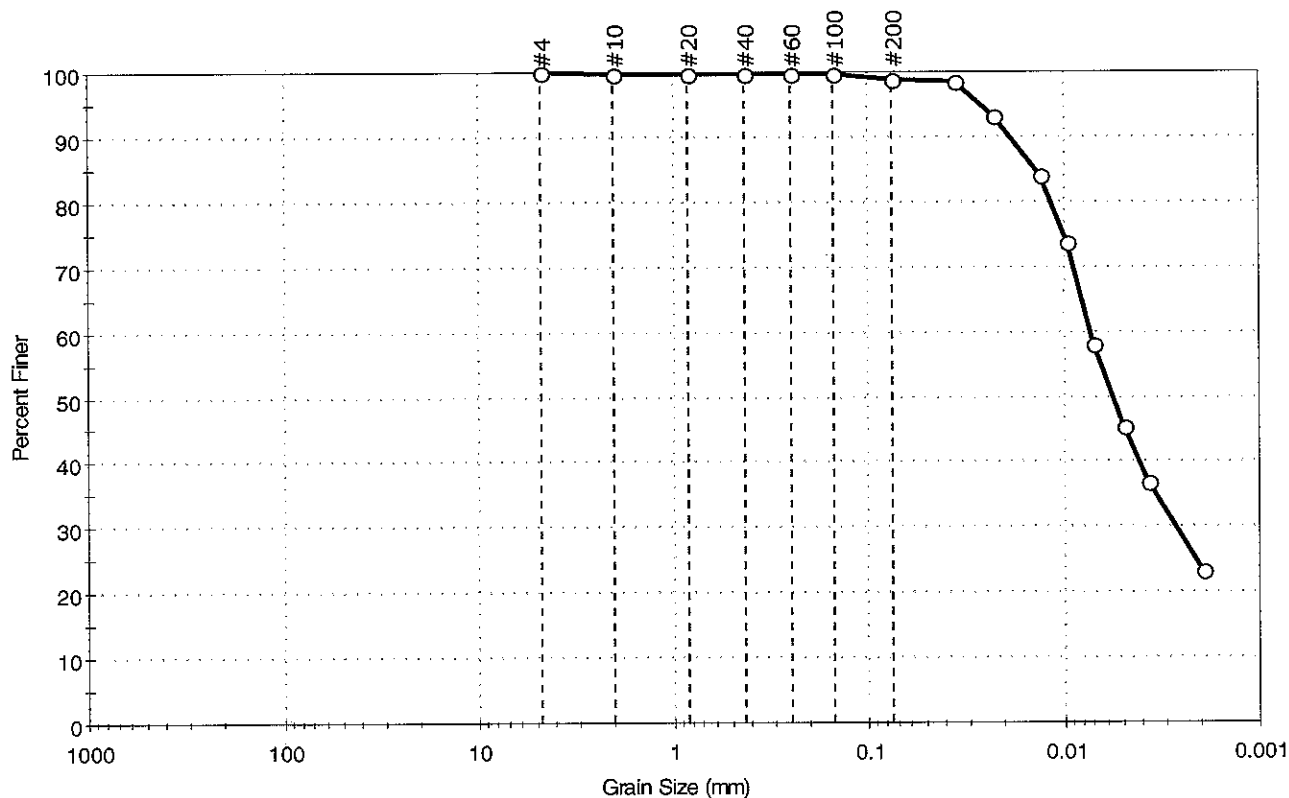


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-40016	L-0302-01	13.2-16.4 ft	80	86	39	47	1	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-07	Sample Type:	jar
Sample ID:	OL-VC-40021	Test Date:	06/08/07
Depth:	3.3-6.6 ft	Test Id:	111438
Test Comment:	---		
Sample Description:	Wet, mottled yellowish brown and very dark gray clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.2	98.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0360	98		
---	0.0226	93		
---	0.0130	84		
---	0.0096	74		
---	0.0071	58		
---	0.0050	45		
---	0.0037	37		
---	0.0019	23		

Coefficients

D ₈₅ = 0.0138 mm	D ₃₀ = 0.0027 mm
D ₆₀ = 0.0074 mm	D ₁₅ = N/A
D ₅₀ = 0.0056 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM fat clay (CH)

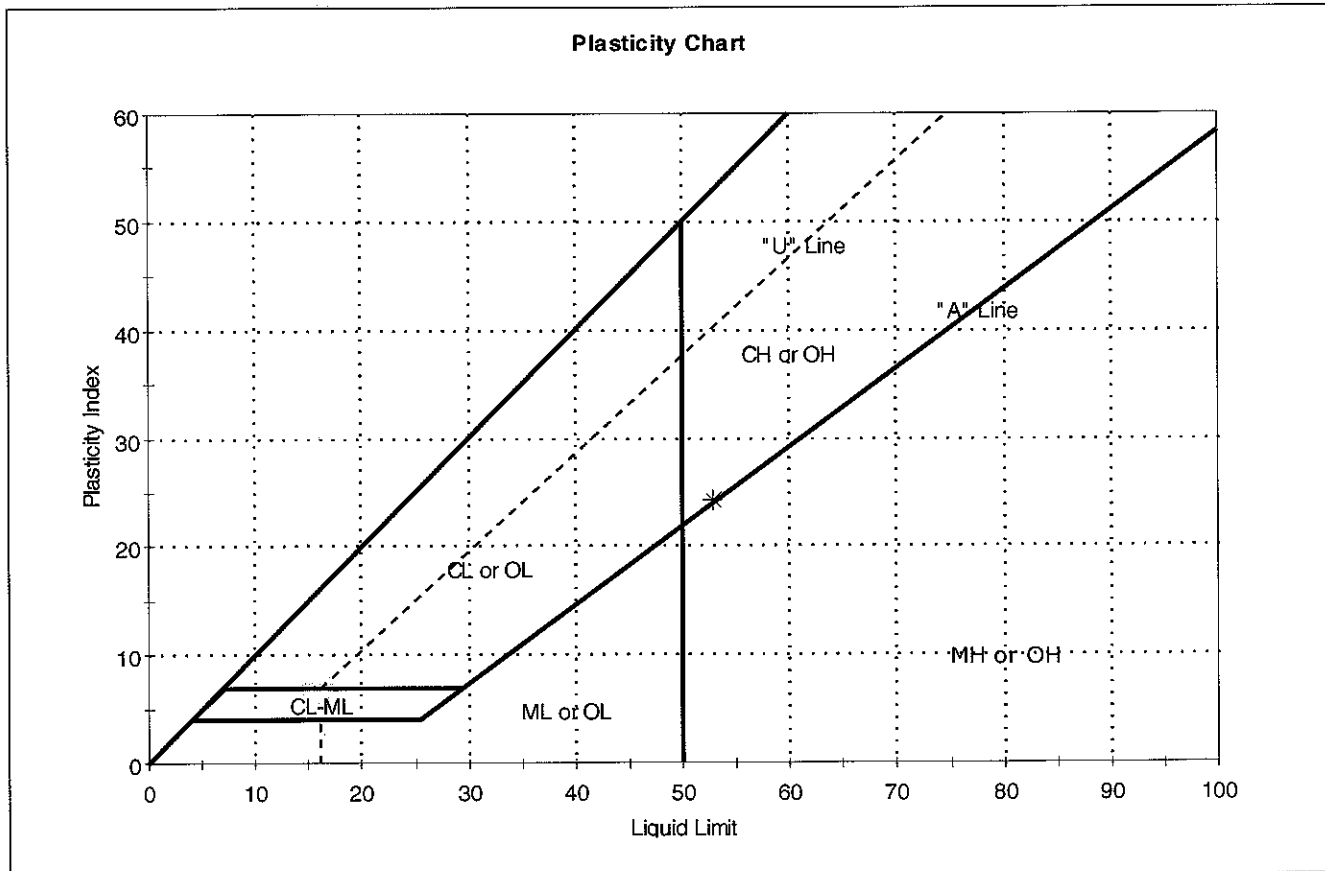
AASHTO Clayey Soils (A-7-6 (31))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Test Date:	06/06/07
Boring ID:	OL-0302-07	Tested By:	ap
Sample ID:	OL-VC-40021	Checked By:	jdt
Depth :	3.3-6.6 ft	Test Id:	111476
Test Comment:	---		
Sample Description:	Wet, mottled yellowish brown and very dark gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-40021	L-0302-0	3.3-6.6 ft	73	53	29	24	2	fat clay (CH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0302-07	Sample Type:	jar
Sample ID:	OL-VC-40021	Test Date:	06/20/07
Depth :	3.3-6.6 ft	Test Id:	111407
Test Comment:	---		
Sample Description:	Wet, mottled yellowish brown and very dark gray clay		
Sample Comment:	---		

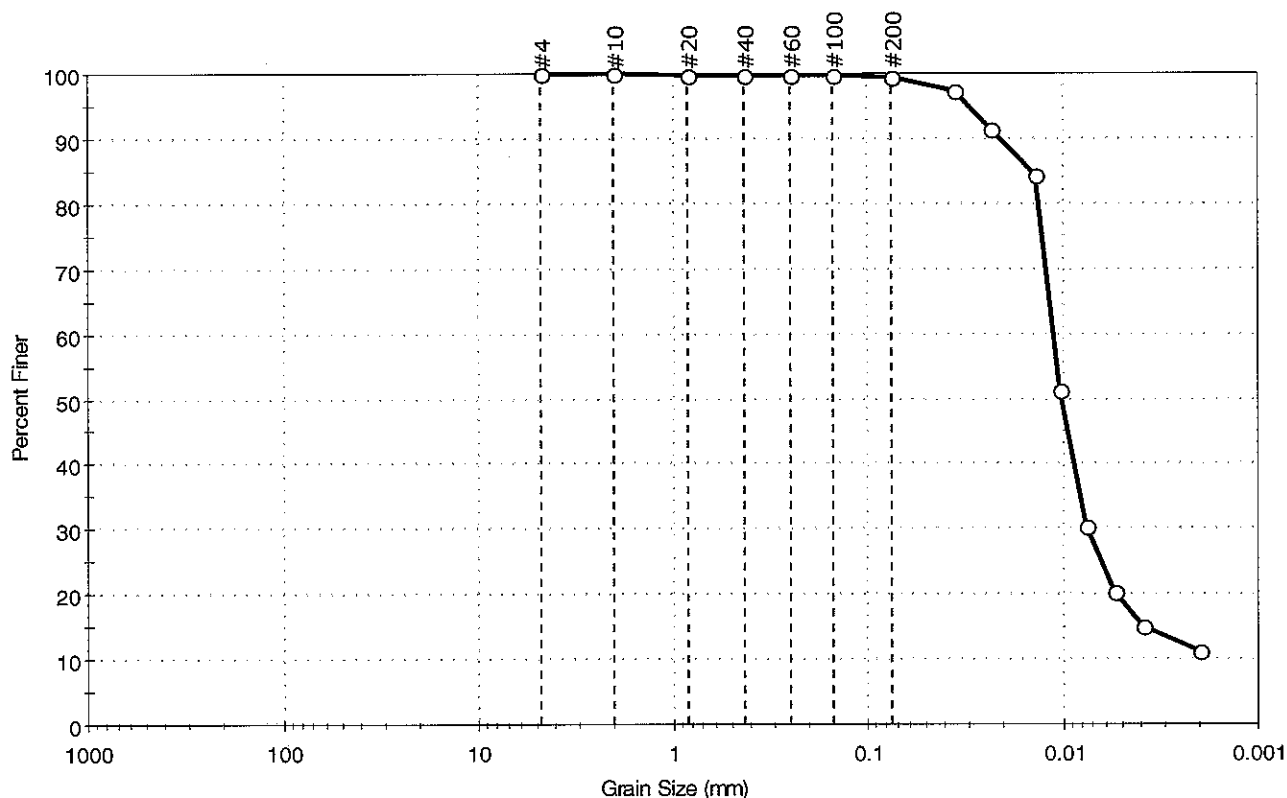
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0302-07	OL-VC-40021	3.3-6.6 ft	Wet, mottled yellowish brown and very dark gray clay	2.67

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-08	Sample Type:	jar
Sample ID:	OL-VC-40025	Test Date:	06/08/07
Depth :	3.3-6.6 ft	Test Id:	111439
Test Comment:	---		
Sample Description:	Wet, dark greenish gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.5	99.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0361	97		
---	0.0232	91		
---	0.0137	84		
---	0.0104	51		
---	0.0077	30		
---	0.0055	20		
---	0.0039	15		
---	0.0020	11		

Coefficients

D ₈₅ = 0.0145 mm	D ₃₀ = 0.0075 mm
D ₆₀ = 0.0112 mm	D ₁₅ = 0.0039 mm
D ₅₀ = 0.0102 mm	D ₁₀ = 0.0016 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

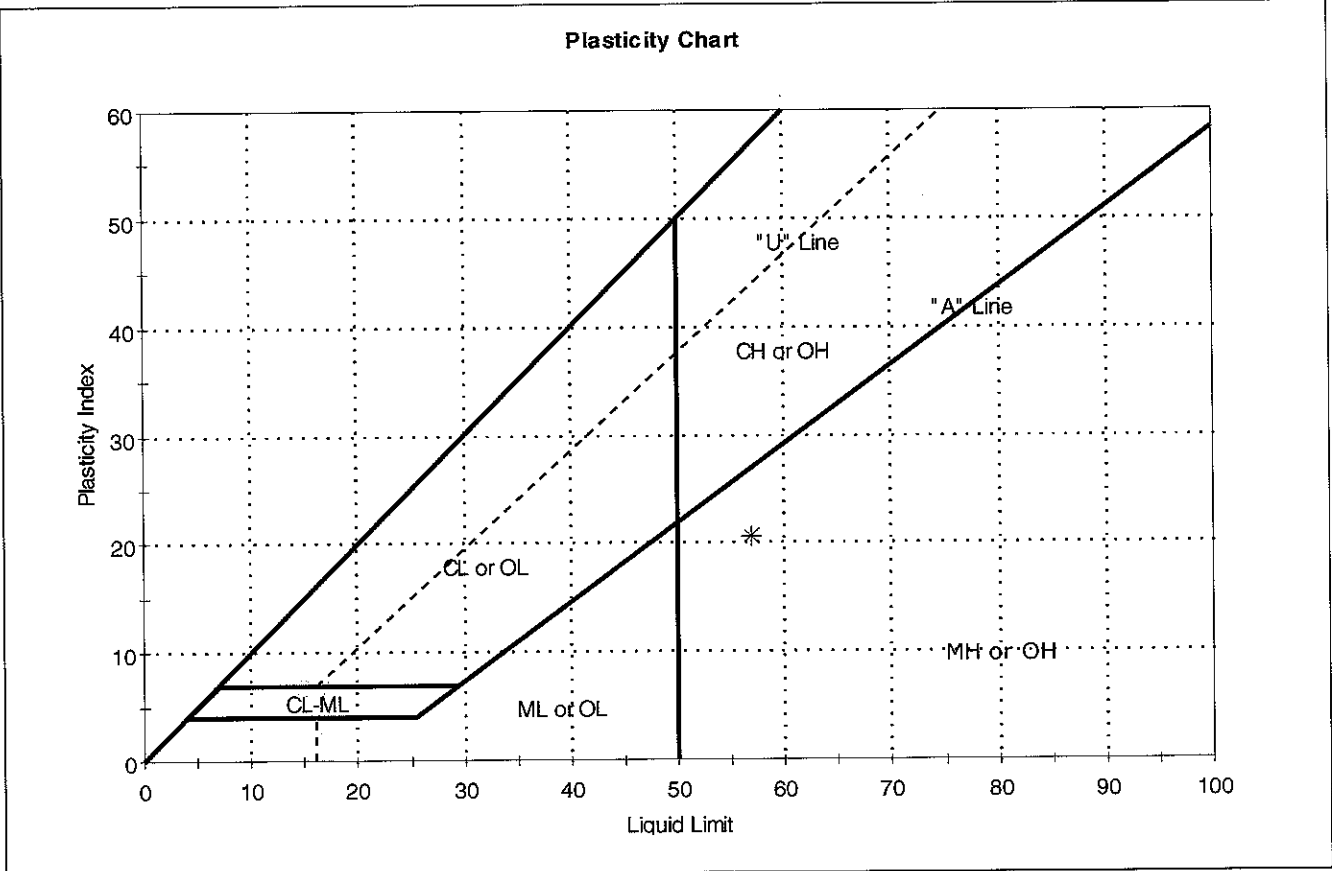
AASHTO Clayey Soils (A-7-5 (29))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-08	Sample Type:	jar
Sample ID:	OL-VC-40025	Test Date:	06/13/07
Depth:	3.3-6.6 ft	Test Id:	111477
Test Comment:	---		
Sample Description:	Wet, dark greenish gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

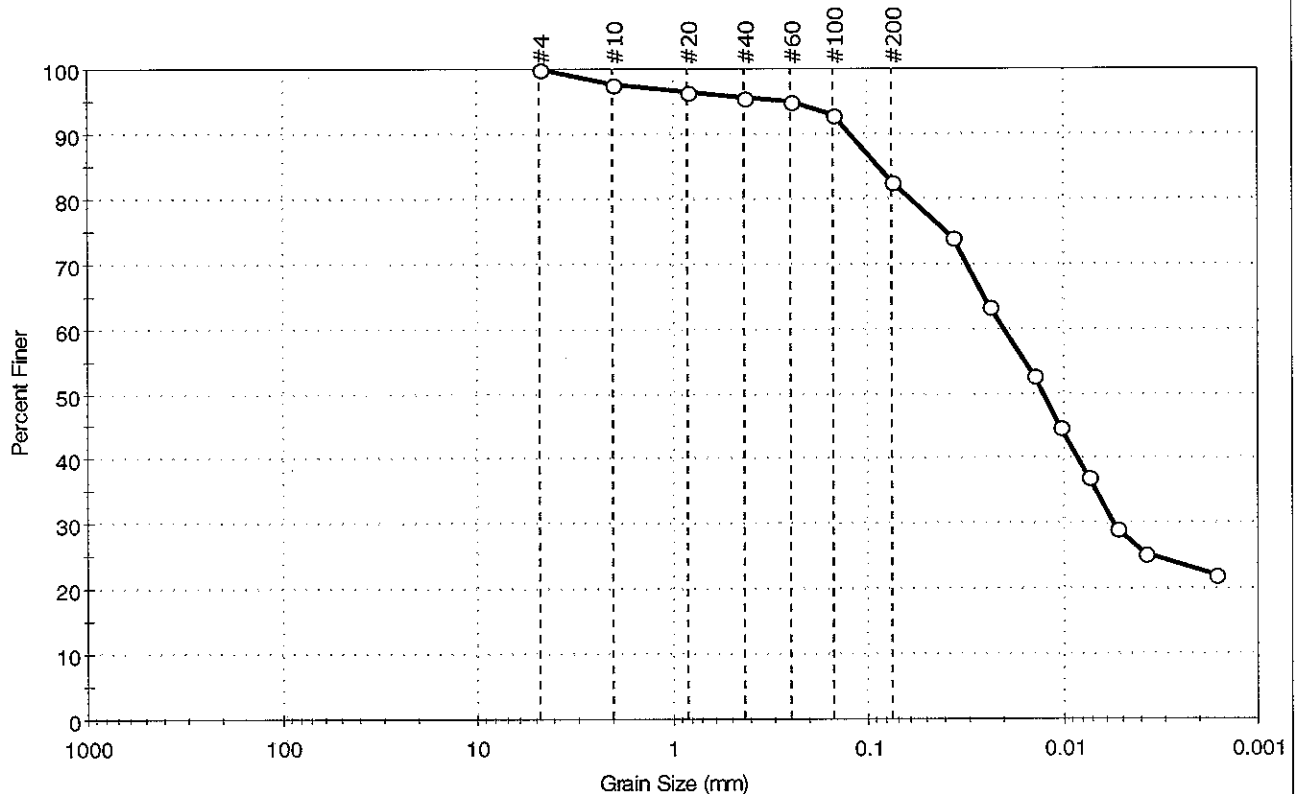


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-40025	L-0302-0	3.3-6.6 ft	103	57	36	21	3	elastic silt (MH)

Sample Prepared using the WET method
0% Retained on #40 Sieve
Dry Strength: HIGH
Dilatancy: RAPID
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-09	Sample Type:	jar
Sample ID:	OL-VC-40032	Test Date:	06/12/07
Depth :	13.2-16.4 ft	Test Id:	111440
Test Comment:	---		
Sample Description:	Moist, dark olive brown clay		
Sample Comment:	Not enough sample provided for atterberg limits to be performed		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	17.3	82.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	96		
#40	0.42	95		
#60	0.25	93		
#100	0.15	83		
#200	0.075	74		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0370	63		
---	0.0241	53		
---	0.0143	45		
---	0.0103	37		
---	0.0074	29		
---	0.0053	25		
---	0.0038	22		
---	0.0016			

Coefficients

D ₈₅ = 0.0875 mm	D ₃₀ = 0.0055 mm
D ₆₀ = 0.0203 mm	D ₁₅ = N/A
D ₅₀ = 0.0127 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0302-09	Sample Type:	jar
Sample ID:	OL-VC-40032	Test Date:	06/20/07
Depth :	13.2-16.4 ft	Test Id:	111408
Test Comment:	---		
Sample Description:	Moist, dark olive brown clay		
Sample Comment:	Not enough sample provided for atterberg limits to be performed		

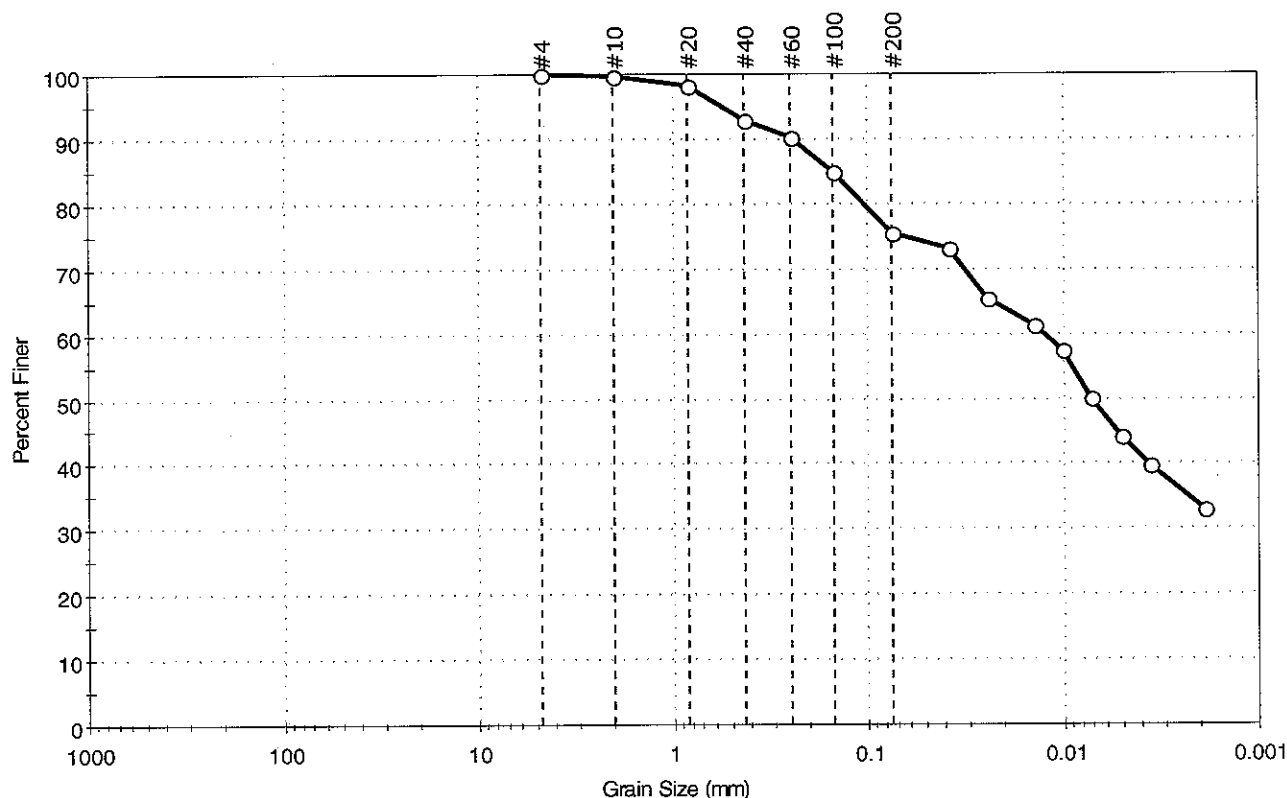
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0302-09	OL-VC-40032	13.2-16.4 ft	Moist, dark olive brown clay	2.53

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-10	Sample Type:	jar
Sample ID:	OL-VC-40034	Test Date:	06/08/07
Depth :	16.4-19.7 ft	Test Id:	111441
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	24.3	75.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	98		
#40	0.42	93		
#60	0.25	90		
#100	0.15	85		
#200	0.075	76		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0386	73		
---	0.0243	65		
---	0.0141	61		
---	0.0100	58		
---	0.0072	50		
---	0.0051	44		
---	0.0037	40		
---	0.0019	33		

Coefficients

D ₈₅ = 0.1480 mm	D ₃₀ = N/A
D ₆₀ = 0.0125 mm	D ₁₅ = N/A
D ₅₀ = 0.0072 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

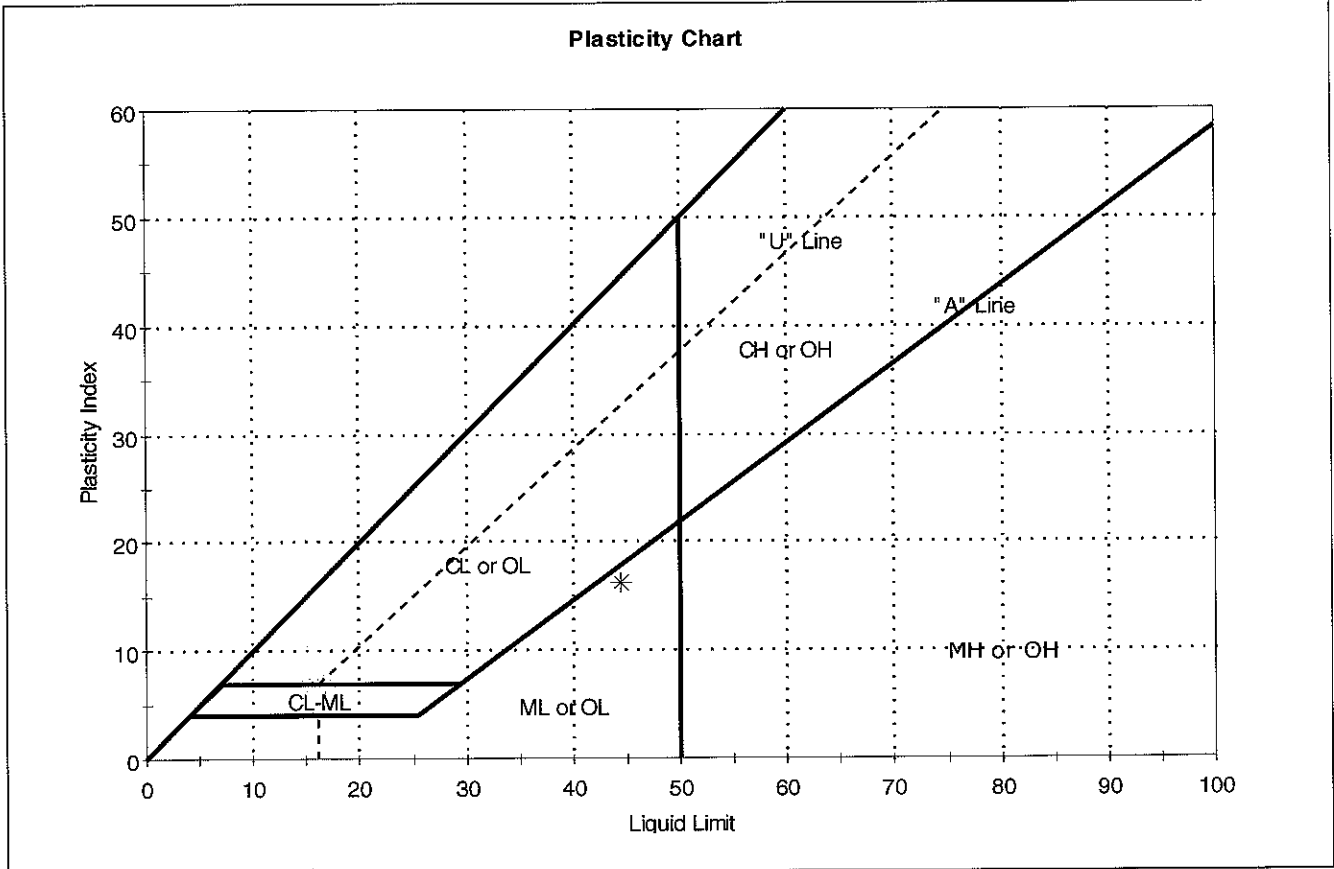
ASTM	silt with sand (ML)
AASHTO	Clayey Soils (A-7-6 (14))

Sample/Test Description

Sand/Gravel Particle Shape :	ROUNDED
Sand/Gravel Hardness :	HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0302-10	Sample Type:	jar
Sample ID:	OL-VC-40034	Test Date:	06/12/07
Depth :	16.4-19.7 ft	Test Id:	111479
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

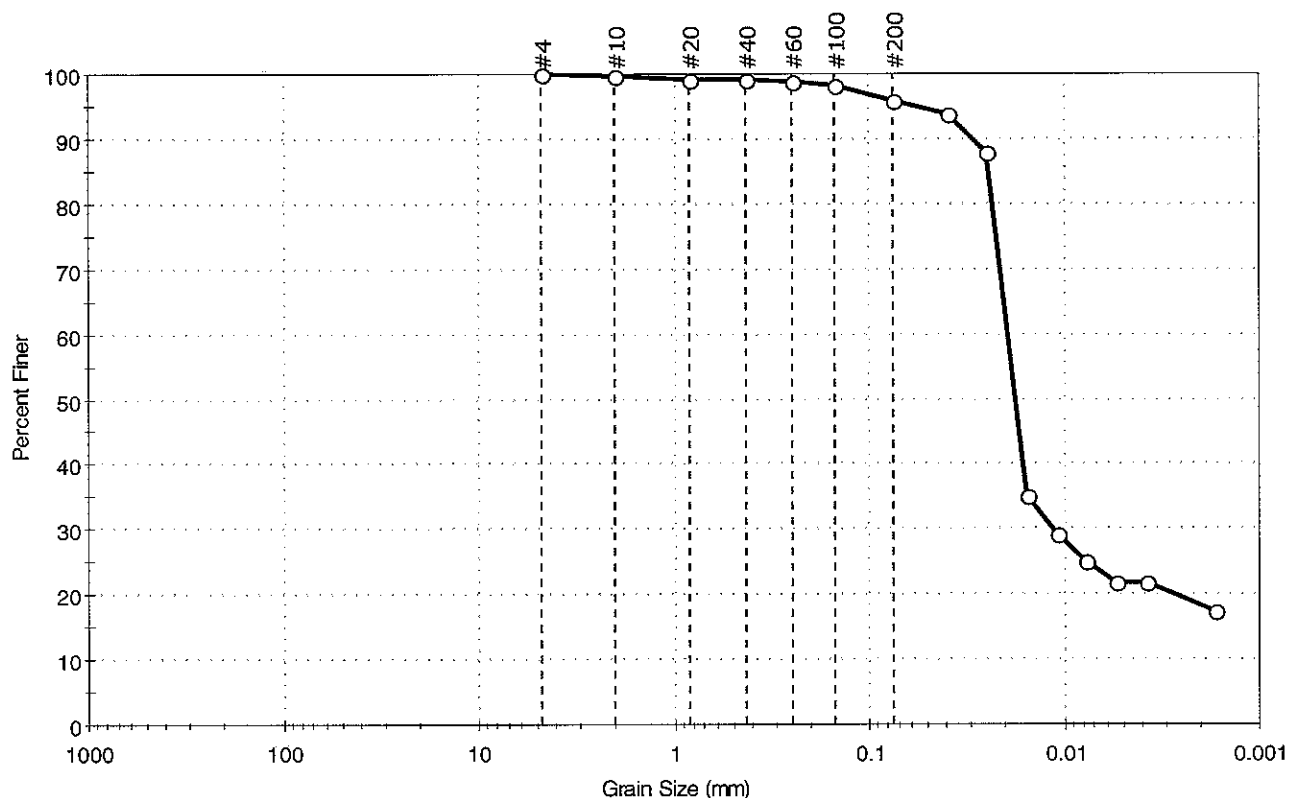


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-40034	L-0302-11	16.4-19.7 ft	69	44	28	16	3	silt with sand (ML)

Sample Prepared using the WET method
 7% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-04	Sample Type:	jar
Sample ID:	OL-VC-60054	Test Date:	06/12/07
Depth:	3.3-6.6 ft	Test Id:	111442
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	4.2	95.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.075	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0396	94		
---	0.0248	88		
---	0.0154	35		
---	0.0109	29		
---	0.0078	25		
---	0.0054	22		
---	0.0038	22		
---	0.0017	17		

Coefficients

D ₈₅ = 0.0241 mm	D ₃₀ = 0.0115 mm
D ₆₀ = 0.0193 mm	D ₁₅ = N/A
D ₅₀ = 0.0176 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

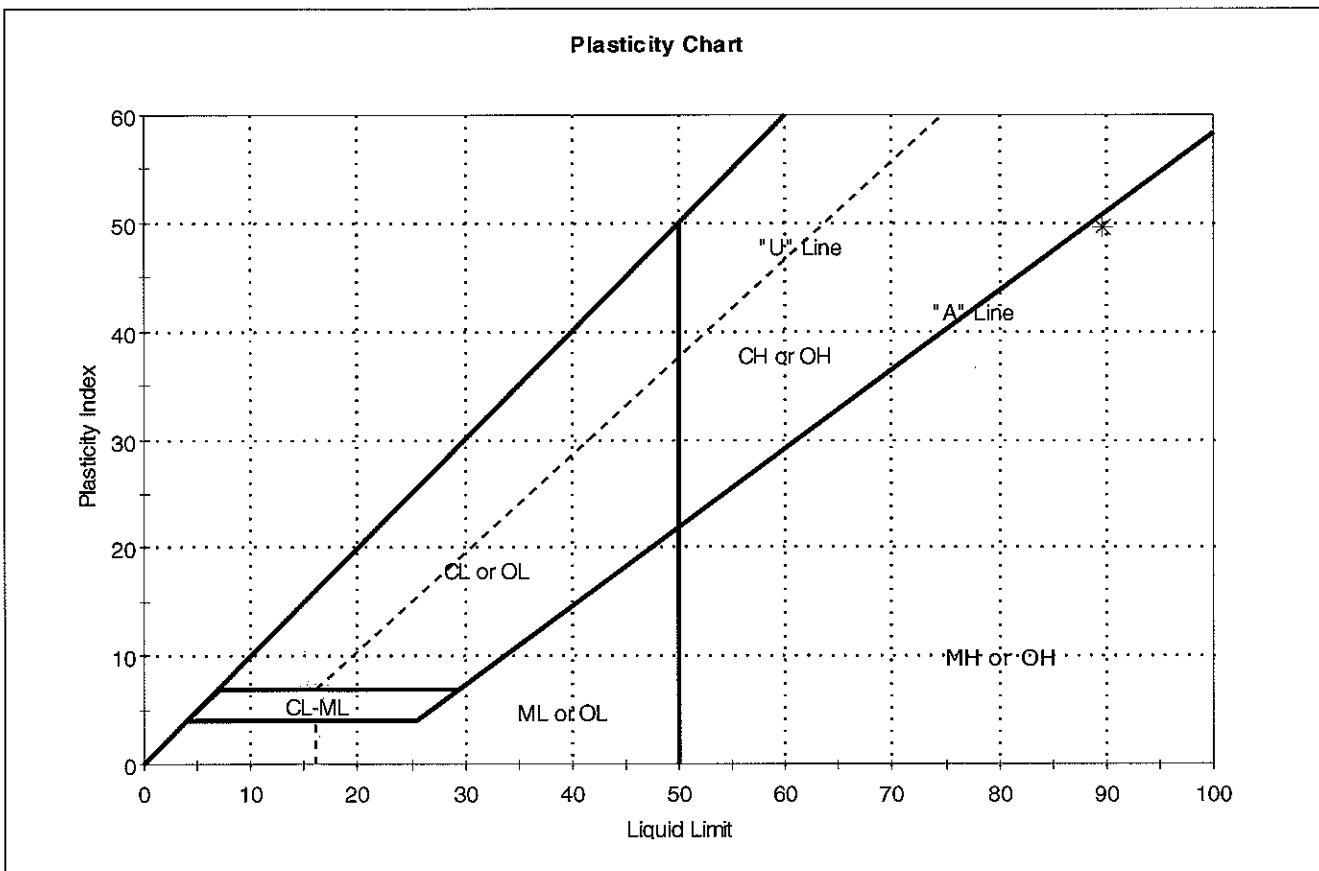
AASHTO Clayey Soils (A-7-5 (65))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-04	Sample Type:	jar
Sample ID:	OL-VC-60054	Test Date:	06/19/07
Depth :	3.3-6.6 ft	Test Id:	111480
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-60054	L-0298-0	3.3-6.6 ft	135	90	40	50	2	elastic silt (MH)

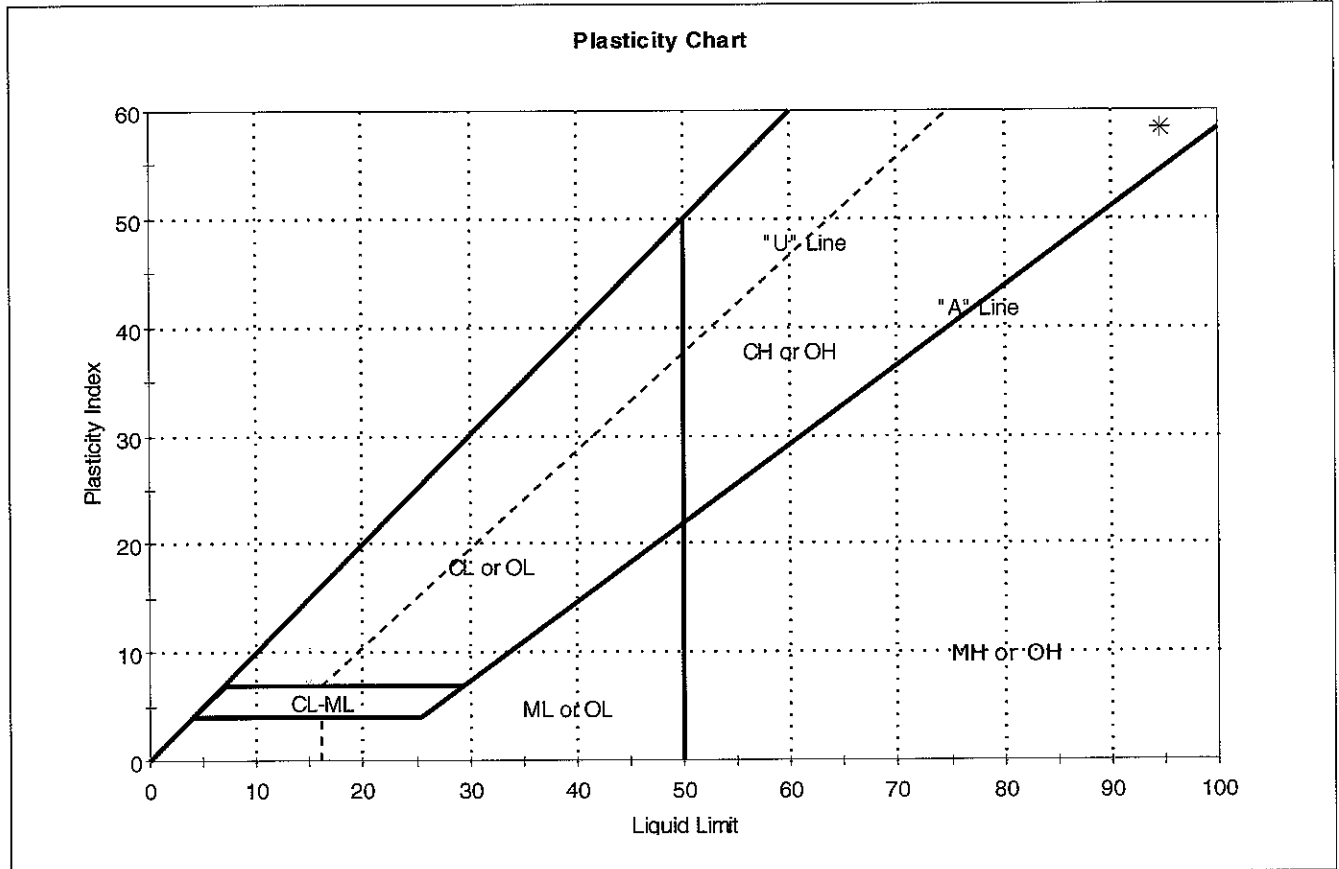
Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Sample Comment: ---

printed 6/27/2007 8:46:55 AM

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-02	Sample Type:	jar
Sample ID:	OL-VC-60056	Test Date:	06/22/07
Depth:	0.5-3.3 ft	Test Id:	111481
Test Comment:	---		
Sample Description:	Wet, dark bluish gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-60056	L-0298-0	0.5-3.3 ft	143	95	36	59	2	fat clay (CH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

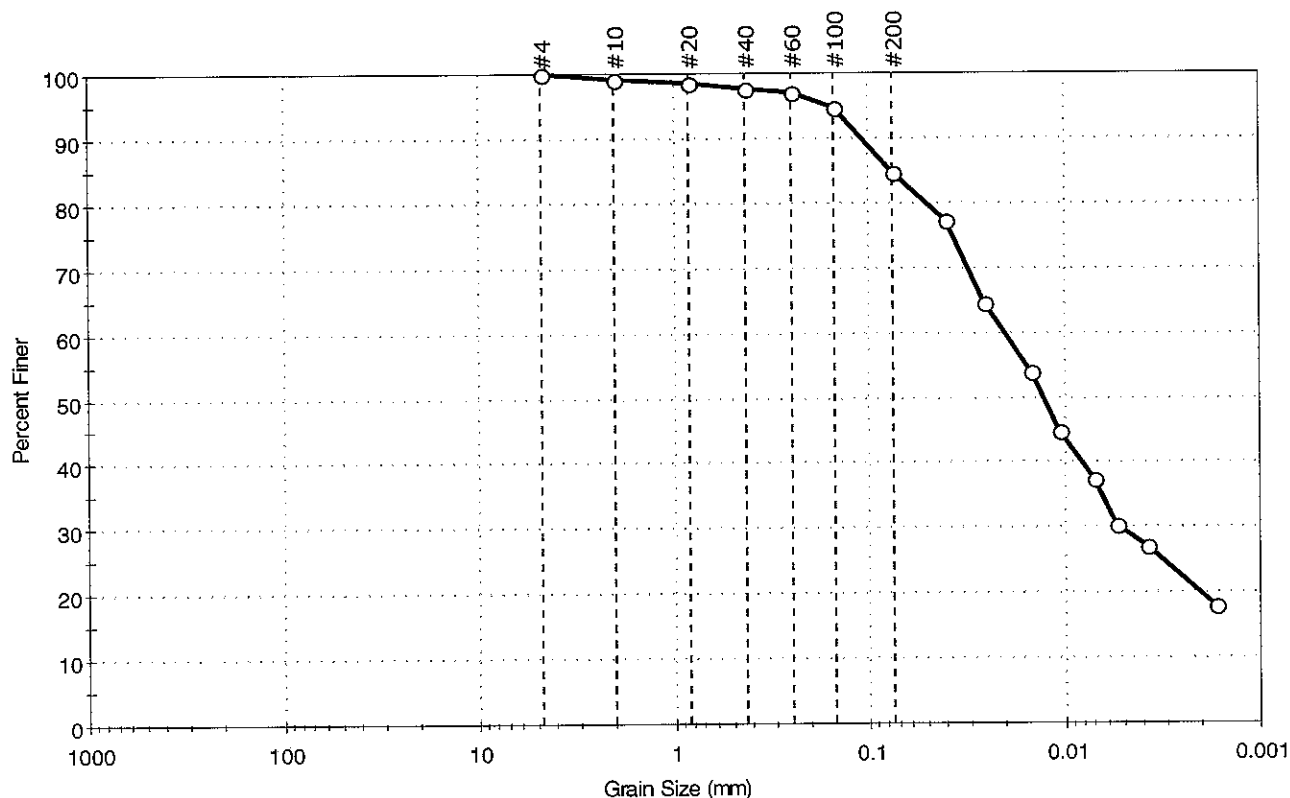
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-03	Sample Type:	jar
Sample ID:	OL-VC-60061	Test Date:	06/21/07
Depth :	13.2-16.5 ft	Test Id:	111444
Test Comment:	---		
Sample Description:	Moist, dark brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	15.5	84.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	98		
#60	0.25	97		
#100	0.15	95		
#200	0.075	85		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0403	77		
---	0.0255	65		
---	0.0148	54		
---	0.0106	45		
---	0.0071	38		
---	0.0054	30		
---	0.0038	27		
---	0.0017	18		

Coefficients

D ₈₅ = 0.0774 mm	D ₃₀ = 0.0052 mm
D ₆₀ = 0.0202 mm	D ₁₅ = N/A
D ₅₀ = 0.0128 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

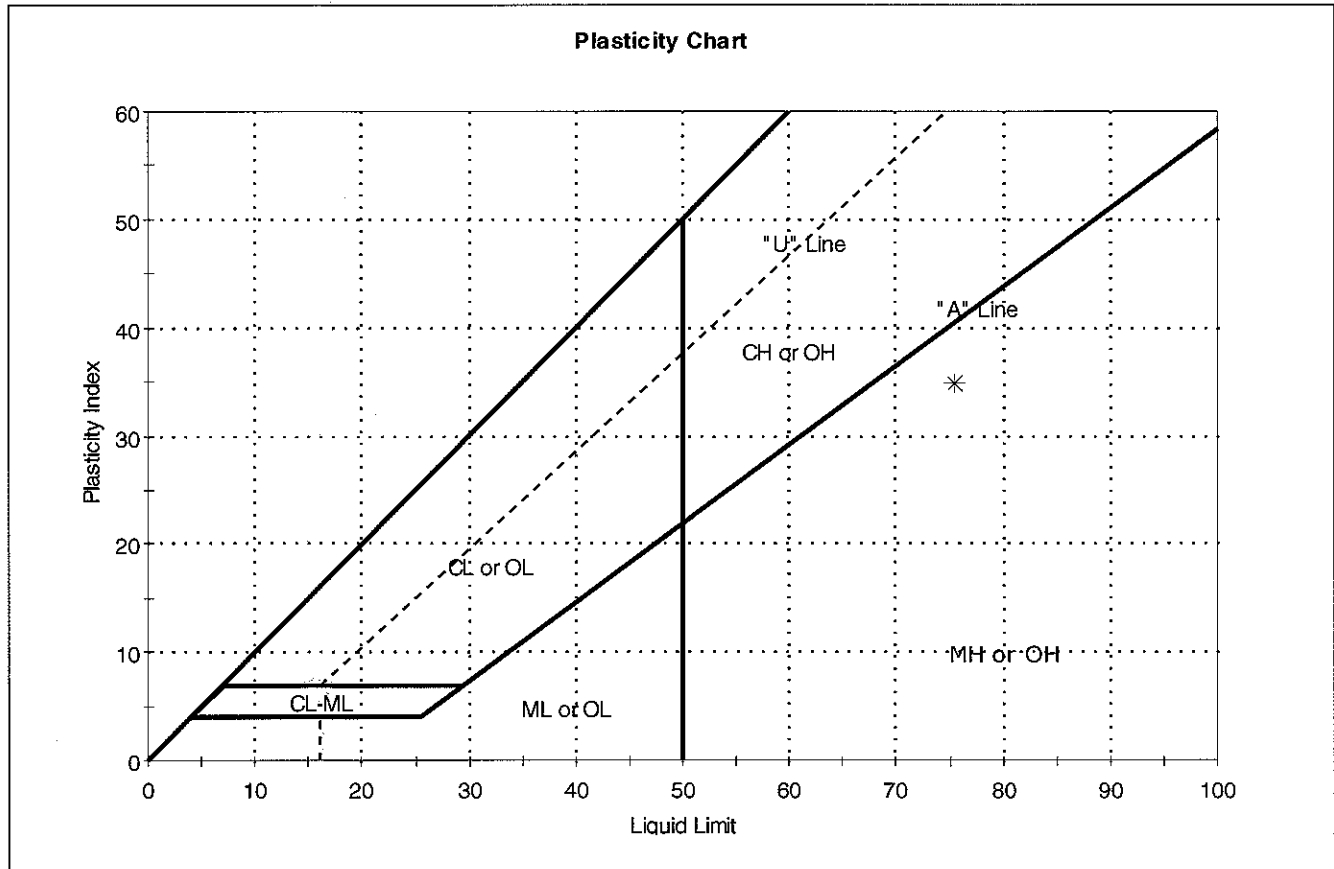
AASHTO Clayey Soils (A-7-5 (40))

Sample/Test Description

Sand/Gravel Particle Shape : **ROUNDED**
Sand/Gravel Hardness : **HARD**

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0298-03	Sample Type:	jar
Sample ID:	OL-VC-60061	Test Date:	06/21/07
Depth :	13.2-16.5 ft	Test Id:	111482
Test Comment:	---		
Sample Description:	Moist, dark brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

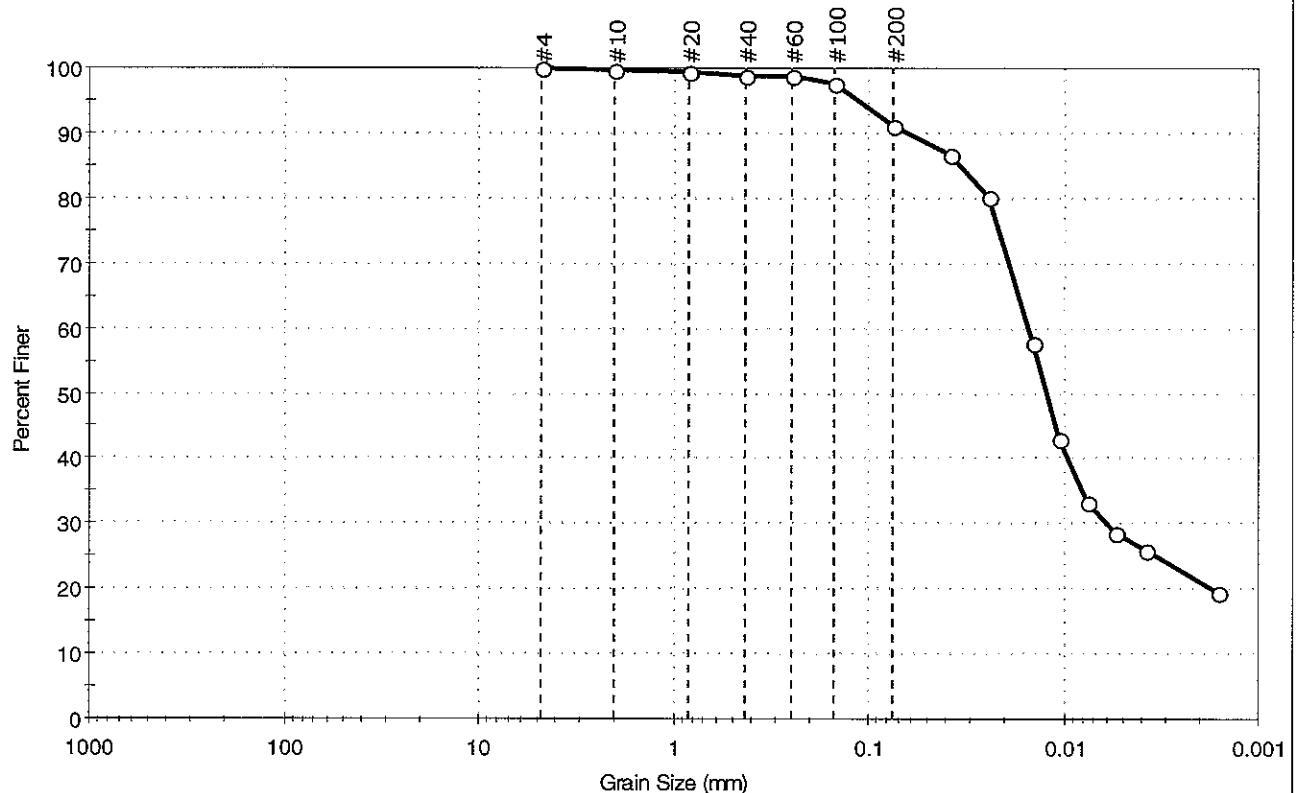


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-60061	L-0298-03	13.2-16.5 ft	80	75	41	34	1	elastic silt with sand (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-0298-06	Sample Type: jar
Sample ID: OL-VC-60064	Test Date: 06/11/07
Depth: 0-3.3 ft	Test Id: 111445
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	8.9	91.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.075	91		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0386	87		
---	0.0245	80		
---	0.0146	58		
---	0.0106	43		
---	0.0076	33		
---	0.0054	29		
---	0.0038	26		
---	0.0016	19		

Coefficients

D ₈₅ = 0.0343 mm	D ₃₀ = 0.0060 mm
D ₆₀ = 0.0154 mm	D ₁₅ = N/A
D ₅₀ = 0.0124 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (45))

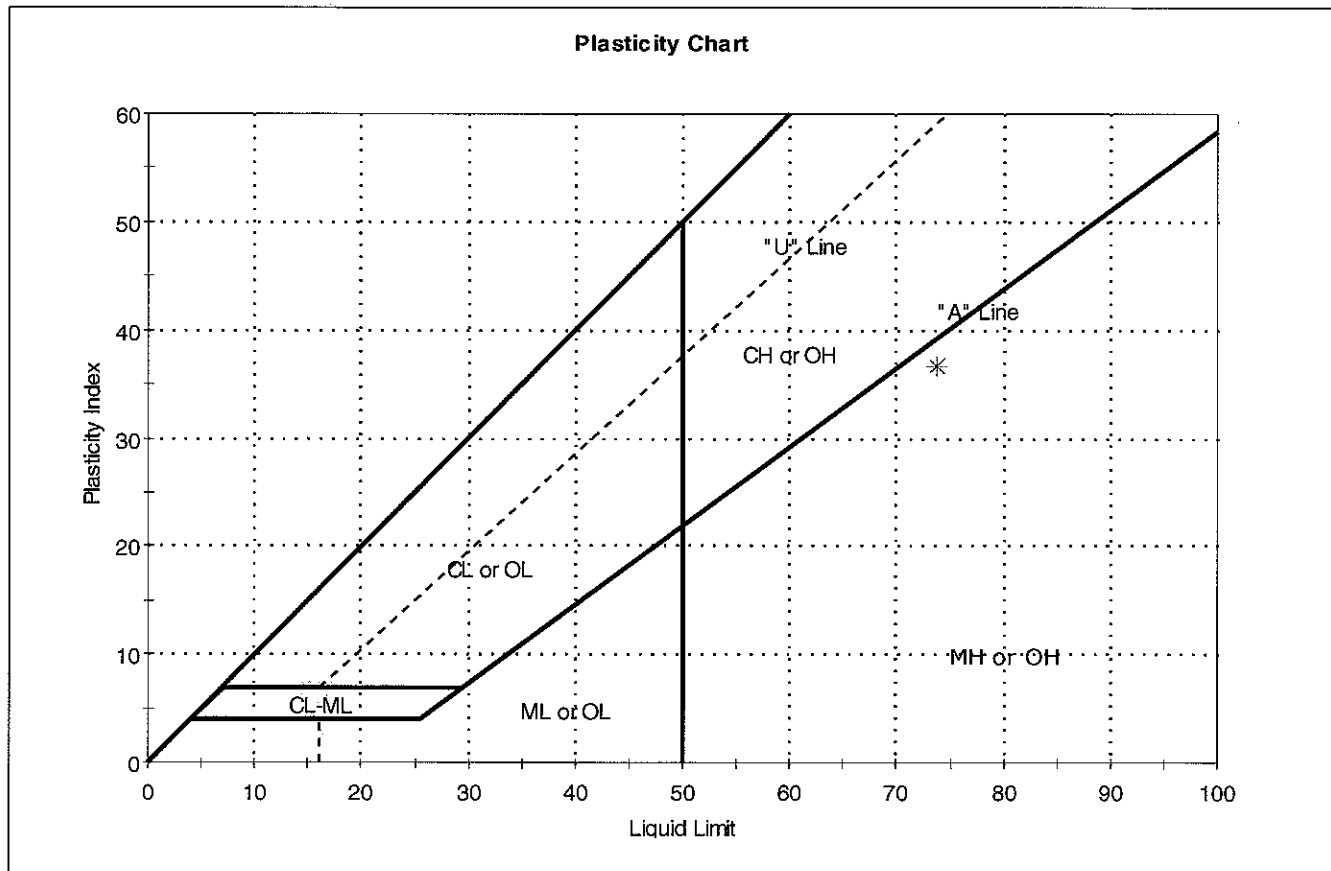
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0298-06	Sample Type:	jar
Sample ID:	OL-VC-60064	Test Date:	06/12/07
Depth :	0-3.3 ft	Test Id:	111483
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-60064	L-0298-0	0-3.3 ft	94	74	37	37	2	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0298-06	Sample Type:	jar
Sample ID:	OL-VC-60064	Test Date:	06/13/07
Depth :	0-3.3 ft	Test Id:	111409
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

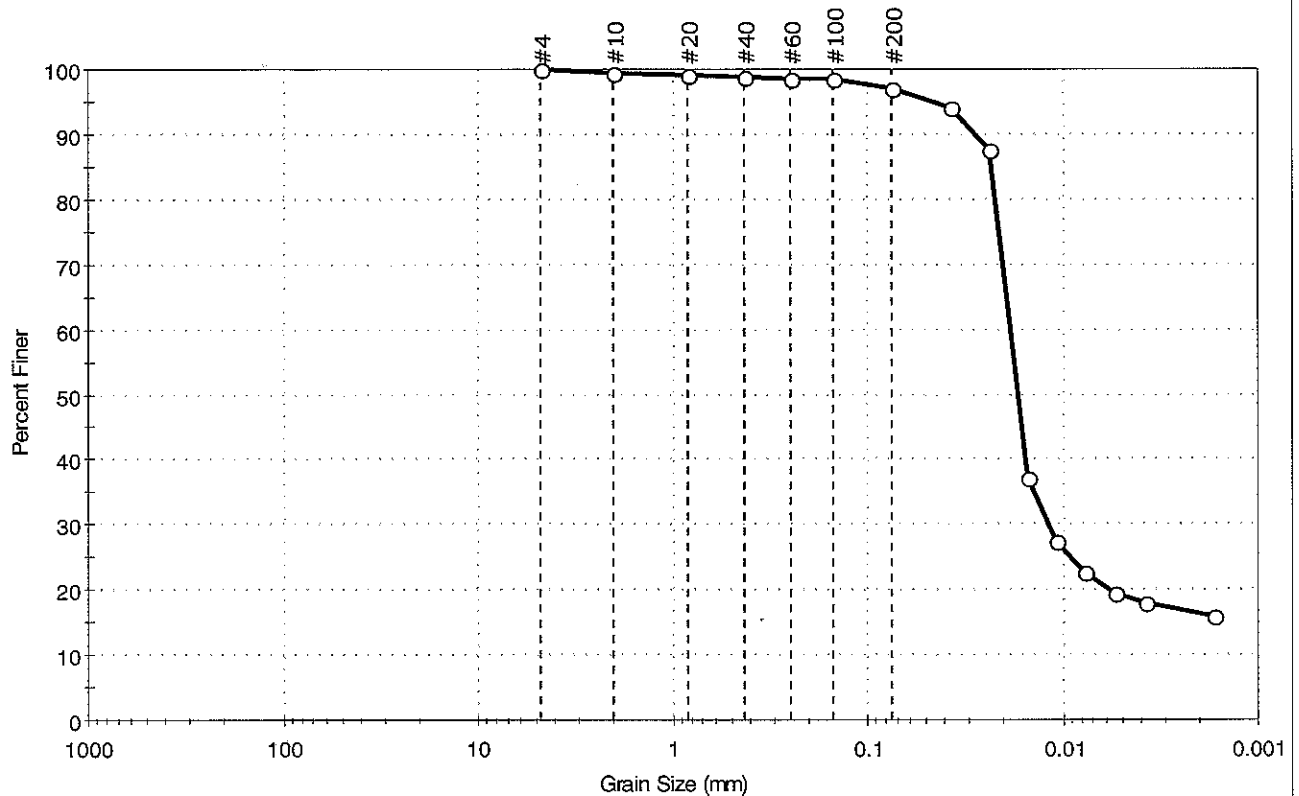
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0298-06	OL-VC-60064	0-3.3 ft	Wet, black silt	2.53

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0297-04	Sample Type:	jar
Sample ID:	OL-VC-70022	Test Date:	06/12/07
Depth :	13.2-16.5 ft	Test Id:	111446
Test Comment:	---		
Sample Description:	Wet, mottled dark yellowish brown and black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.0	97.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.075	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0374	94		
---	0.0239	88		
---	0.0151	37		
---	0.0109	27		
---	0.0077	23		
---	0.0054	20		
---	0.0038	18		
---	0.0017	16		

Coefficients

D ₈₅ = 0.0234 mm	D ₃₀ = 0.0119 mm
D ₆₀ = 0.0186 mm	D ₁₅ = N/A
D ₅₀ = 0.0170 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (47))

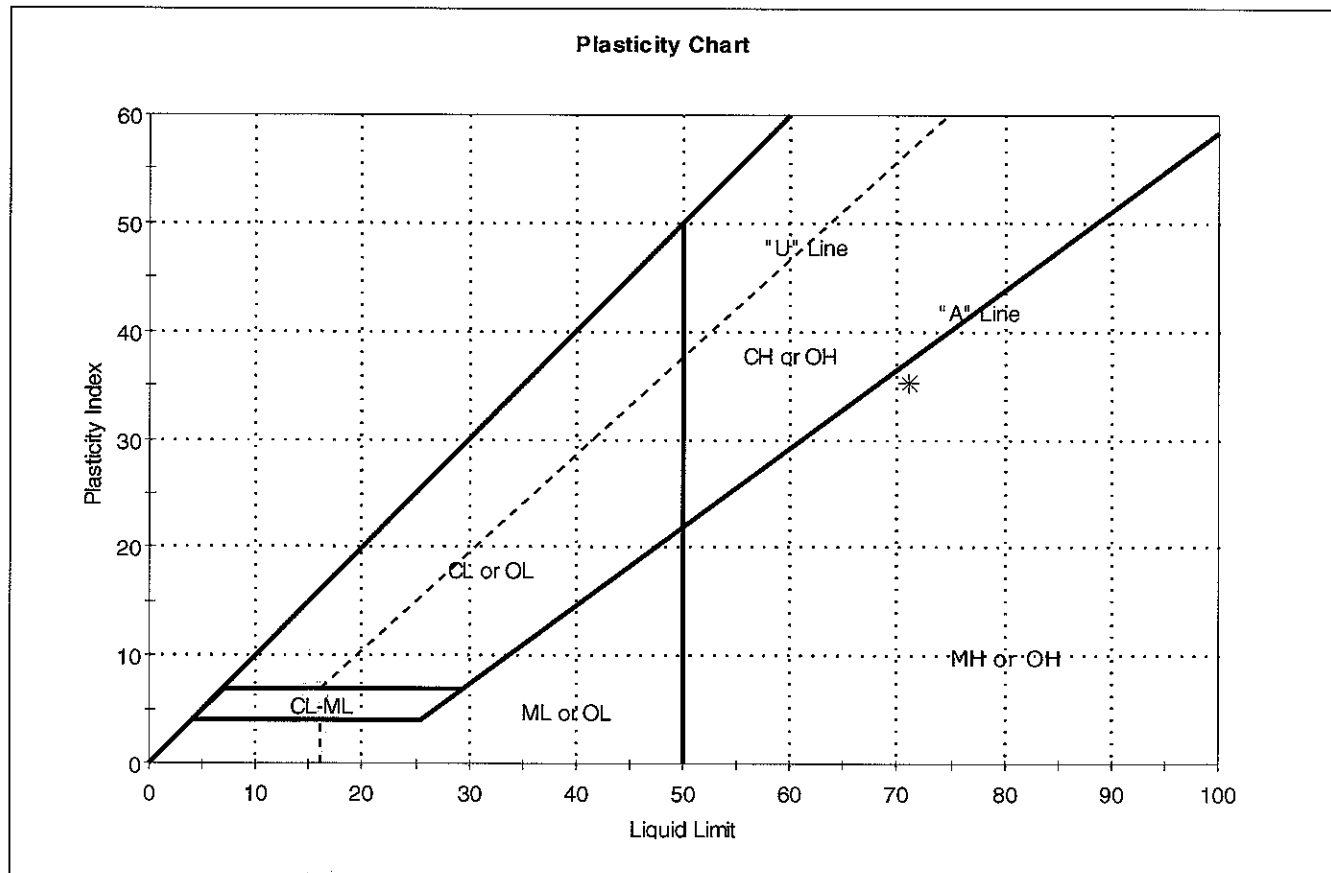
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0297-04	Sample Type:	jar
Sample ID:	OL-VC-70022	Test Date:	06/12/07
Depth :	13.2-16.5 ft	Test Id:	111484
Test Comment:	---		
Sample Description:	Wet, mottled dark yellowish brown and black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-70022	L-0297-04	13.2-16.5 ft	84	71	36	35	1	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0297-04	Sample Type:	jar
Sample ID:	OL-VC-70022	Test Date:	06/13/07
Depth :	13.2-16.5 ft	Test Id:	111410
Test Comment:	---		
Sample Description:	Wet, mottled dark yellowish brown and black silt		
Sample Comment:	---		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0297-04	OL-VC-70022	13.2-16.5 ft	Wet, mottled dark yellowish brown and black silt	2.58

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-0297-03

Sample Type: jar

Tested By: mll

Sample ID: OL-VC-70031

Test Date: 06/18/07

Checked By: jdt

Depth: 0-3.3 ft

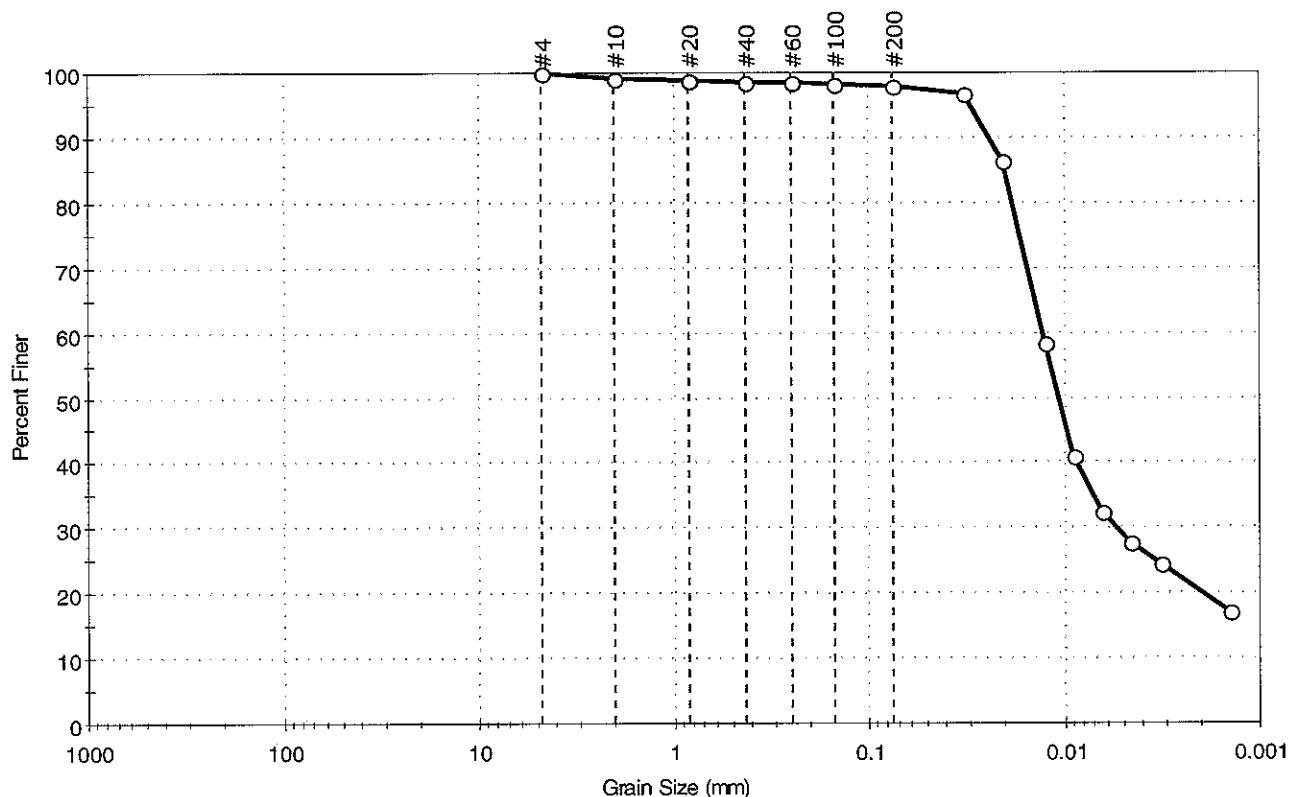
Test Id: 111447

Test Comment: ---

Sample Description: Wet, greenish black silt

Sample Comment: Jar was broken inside cooler

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.2	97.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	98		
#200	0.075	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0326	97		
---	0.0206	86		
---	0.0124	58		
---	0.0090	41		
---	0.0065	32		
---	0.0046	28		
---	0.0032	24		
---	0.0014	17		

Coefficients

D₈₅ = 0.0201 mm D₃₀ = 0.0054 mm

D₆₀ = 0.0128 mm D₁₅ = N/A

D₅₀ = 0.0107 mm D₁₀ = N/A

C_u = N/A C_c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (79))

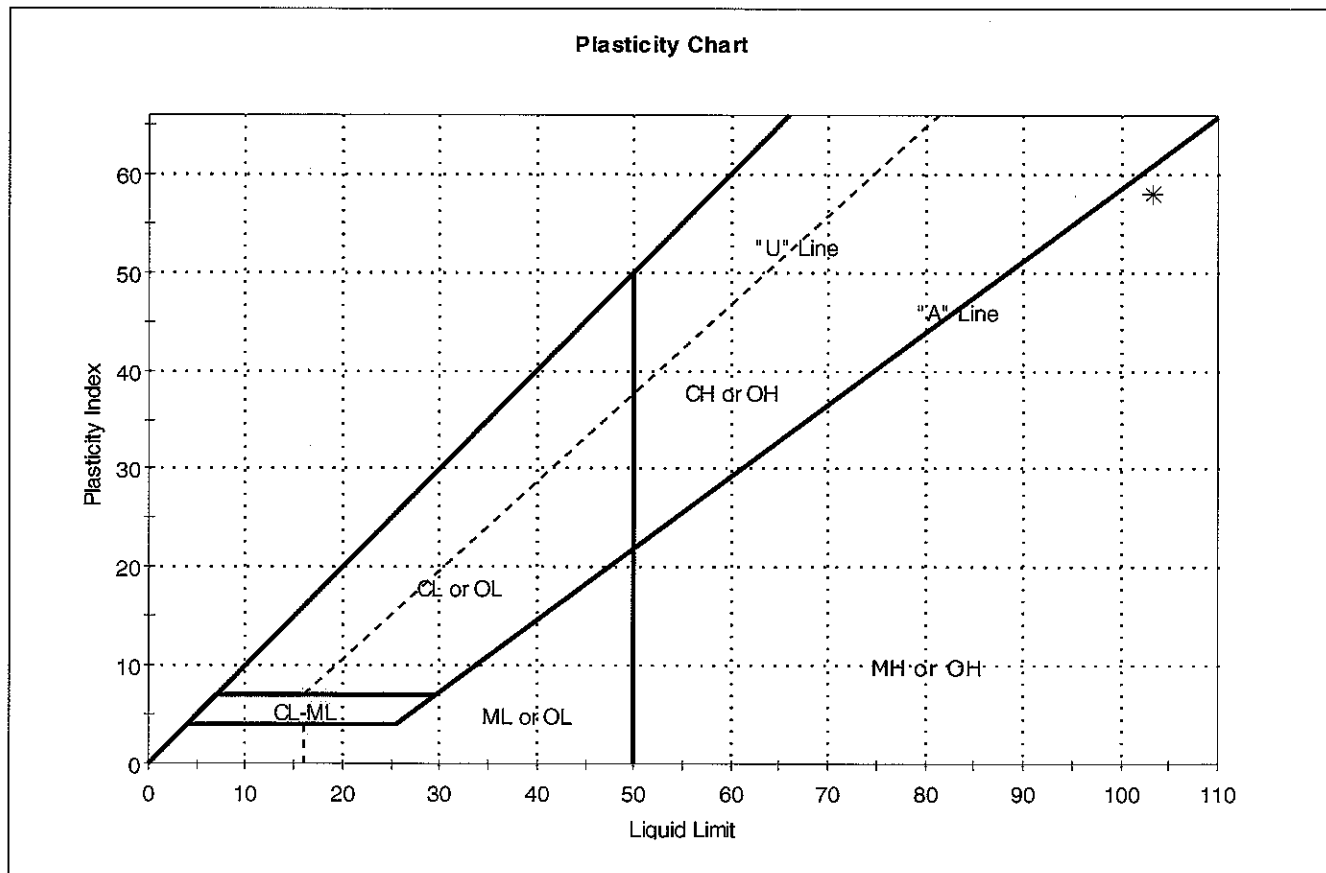
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0297-03	Sample Type:	jar
Sample ID:	OL-VC-70031	Test Date:	06/15/07
Depth :	0-3.3 ft	Test Id:	111485
Test Comment:	---		
Sample Description:	Wet, greenish black silt		
Sample Comment:	Jar was broken inside cooler		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-70031	L-0297-0	0-3.3 ft	131	103	45	58	1	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

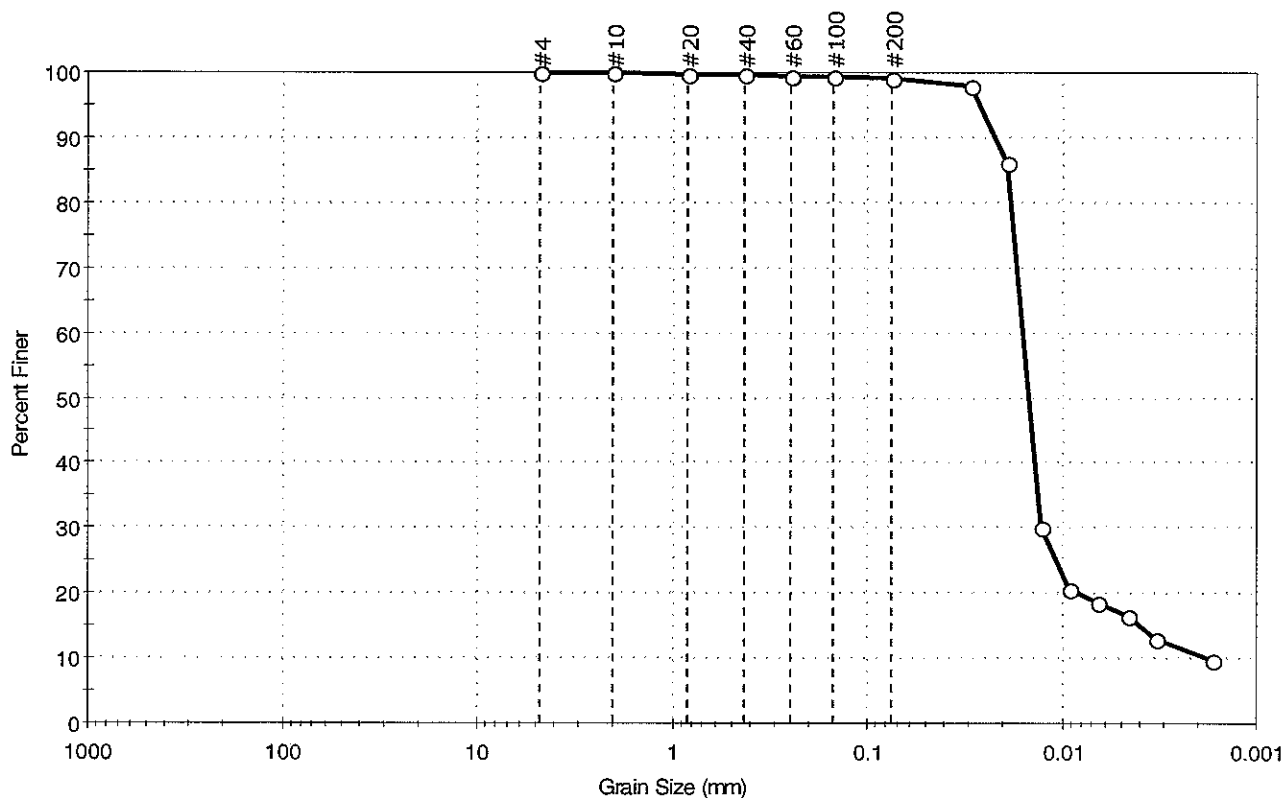
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0303-06	Sample Type:	jar
Sample ID:	OL-VC-80028	Test Date:	06/08/07
Depth :	3.3-6.6 ft	Test Id:	111448
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0298	98		
---	0.0194	86		
---	0.0129	30		
---	0.0093	21		
---	0.0066	19		
---	0.0046	16		
---	0.0033	13		
---	0.0017	10		

Coefficients

D ₈₅ = 0.0192 mm	D ₃₀ = 0.0129 mm
D ₆₀ = 0.0161 mm	D ₁₅ = 0.0040 mm
D ₅₀ = 0.0149 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

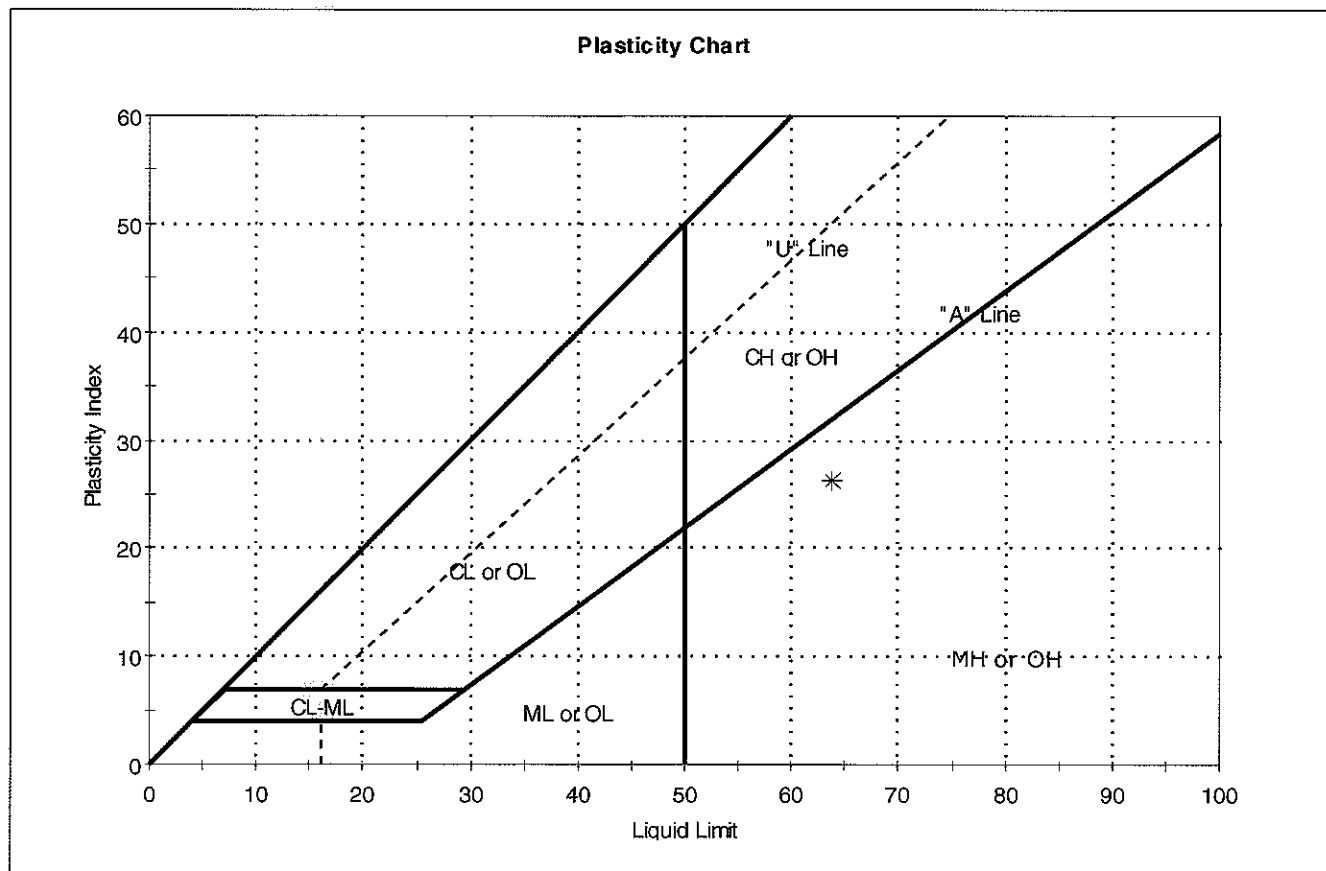
AASHTO Clayey Soils (A-7-5 (37))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: ap
Location: Syracuse	Checked By: jdt
Boring ID: OL-0303-06	Sample Type: jar
Sample ID: OL-VC-80028	Test Date: 06/07/07
Depth: 3.3-6.6 ft	Test Id: 111486
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-80028	L-0303-0	3.3-6.6 ft	94	64	37	27	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: HIGH

Dilancy: RAPID

Toughness: LOW

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-0303-04

Sample Type: jar

Tested By: mll

Sample ID: OL-VC-80030

Test Date: 06/08/07

Checked By: jdt

Depth: 9.9-13.2 ft

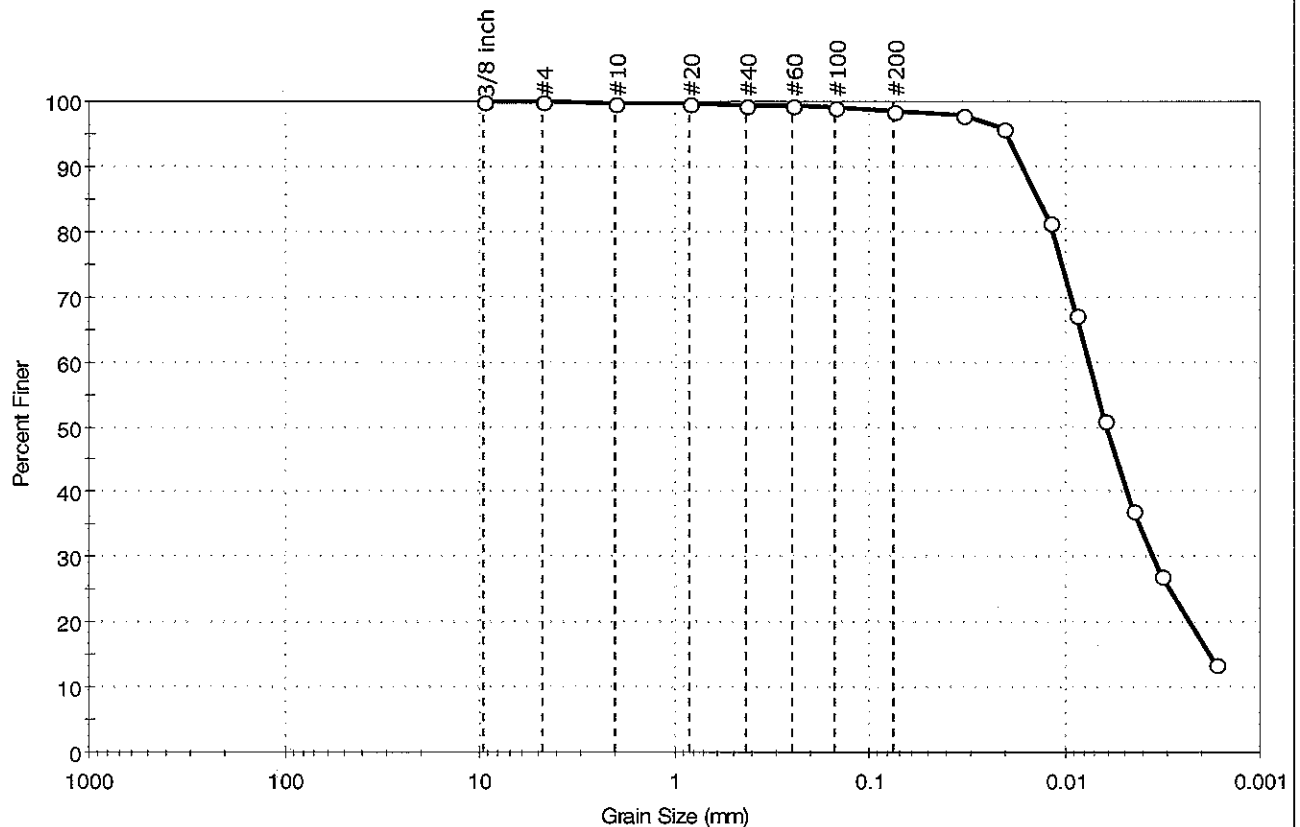
Test Id: 111449

Test Comment: ---

Sample Description: Wet, white silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	1.3	98.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0331	98		
---	0.0205	96		
---	0.0119	81		
---	0.0087	67		
---	0.0063	51		
---	0.0045	37		
---	0.0032	27		
---	0.0017	14		

Coefficients

D₈₅ = 0.0135 mm D₃₀ = 0.0036 mm

D₆₀ = 0.0076 mm D₁₅ = 0.0018 mm

D₅₀ = 0.0062 mm D₁₀ = 0.0014 mm

C_u = N/A C_c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (54))

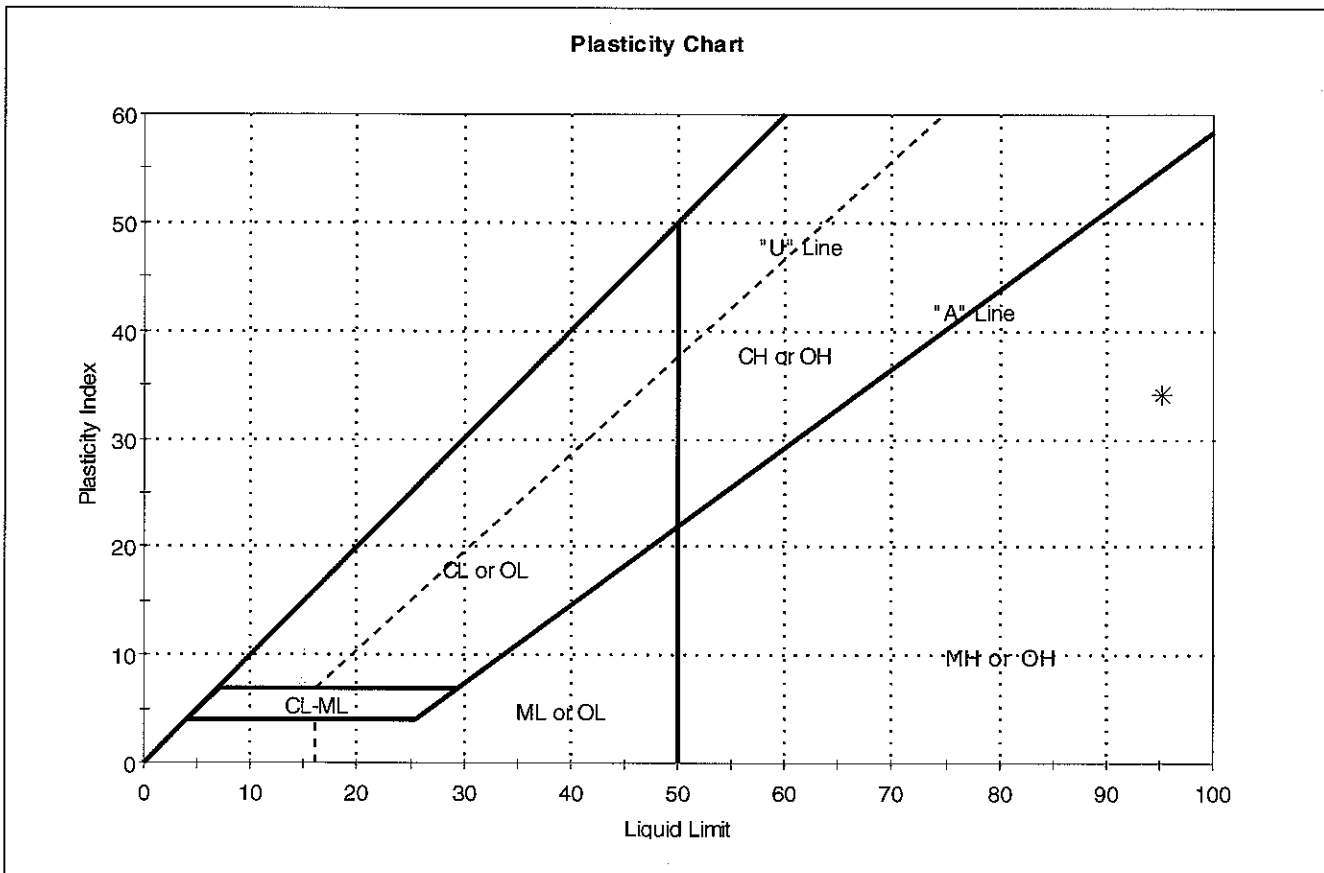
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Test Date:	06/12/07
Boring ID:	OL-0303-04	Tested By:	ap
Sample ID:	OL-VC-80030	Checked By:	jdt
Depth:	9.9-13.2 ft	Test Id:	111487
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-80030	L-0303-04	9.9-13.2 ft	168	95	61	34	3	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0303-04	Sample Type:	jar
Sample ID:	OL-VC-80030	Test Date:	06/07/07
Depth :	9.9-13.2 ft	Test Id:	111411
Test Comment:	---		
Sample Description:	Wet, white silt		
Sample Comment:	---		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0303-04	OL-VC-80030	9.9-13.2 ft	Wet, white silt	2.6

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-0303-05

Sample Type: jar

Tested By: mll

Sample ID: OL-VC-80031

Test Date: 06/08/07

Checked By: jdt

Depth: 3.3-6.6 ft

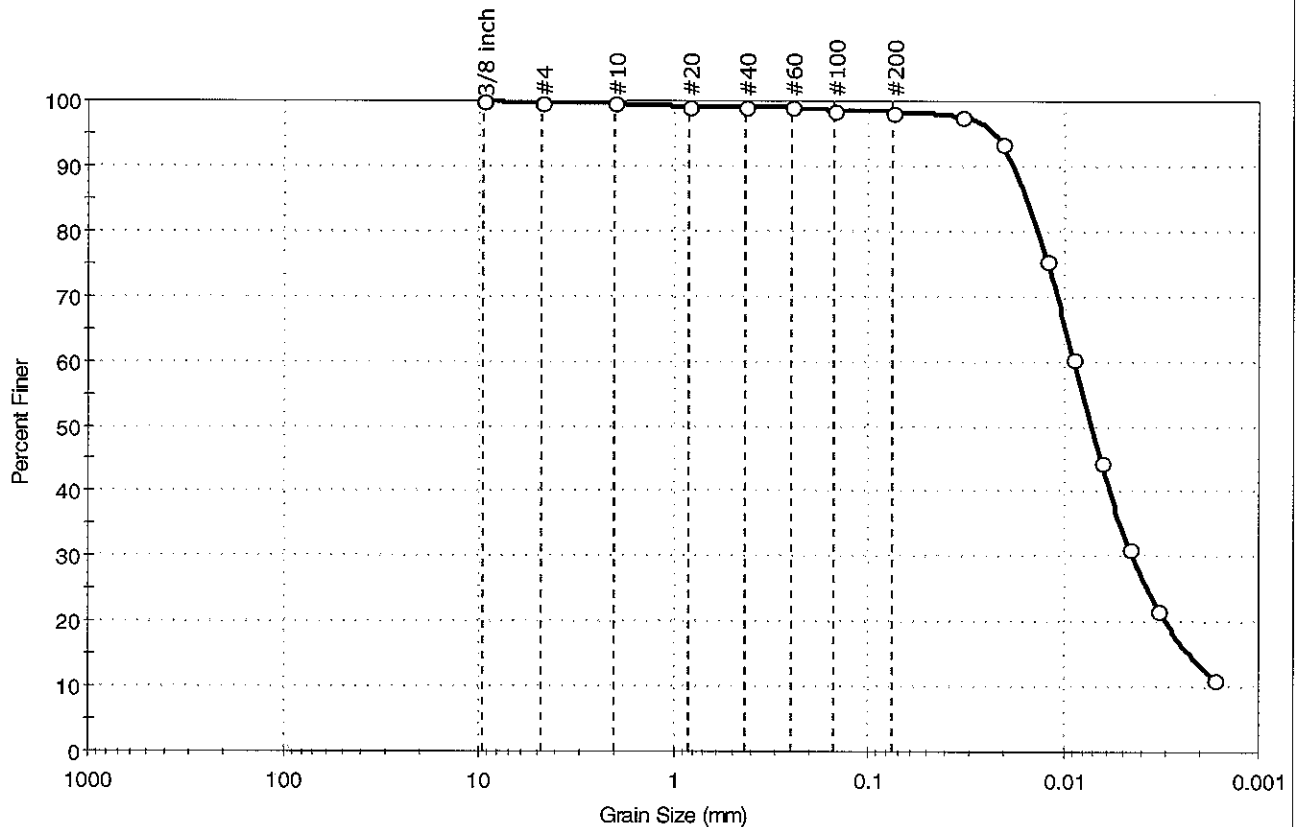
Test Id: 111450

Test Comment: ---

Sample Description: Wet, light gray silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	1.3	98.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.075	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0336	98		
---	0.0209	94		
---	0.0123	76		
---	0.0089	60		
---	0.0064	44		
---	0.0046	31		
---	0.0033	22		
---	0.0017	11		

Coefficients

D₈₅ = 0.0162 mm D₃₀ = 0.0044 mm

D₆₀ = 0.0088 mm D₁₅ = 0.0022 mm

D₅₀ = 0.0072 mm D₁₀ = 0.0016 mm

C_u = N/A C_c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (50))

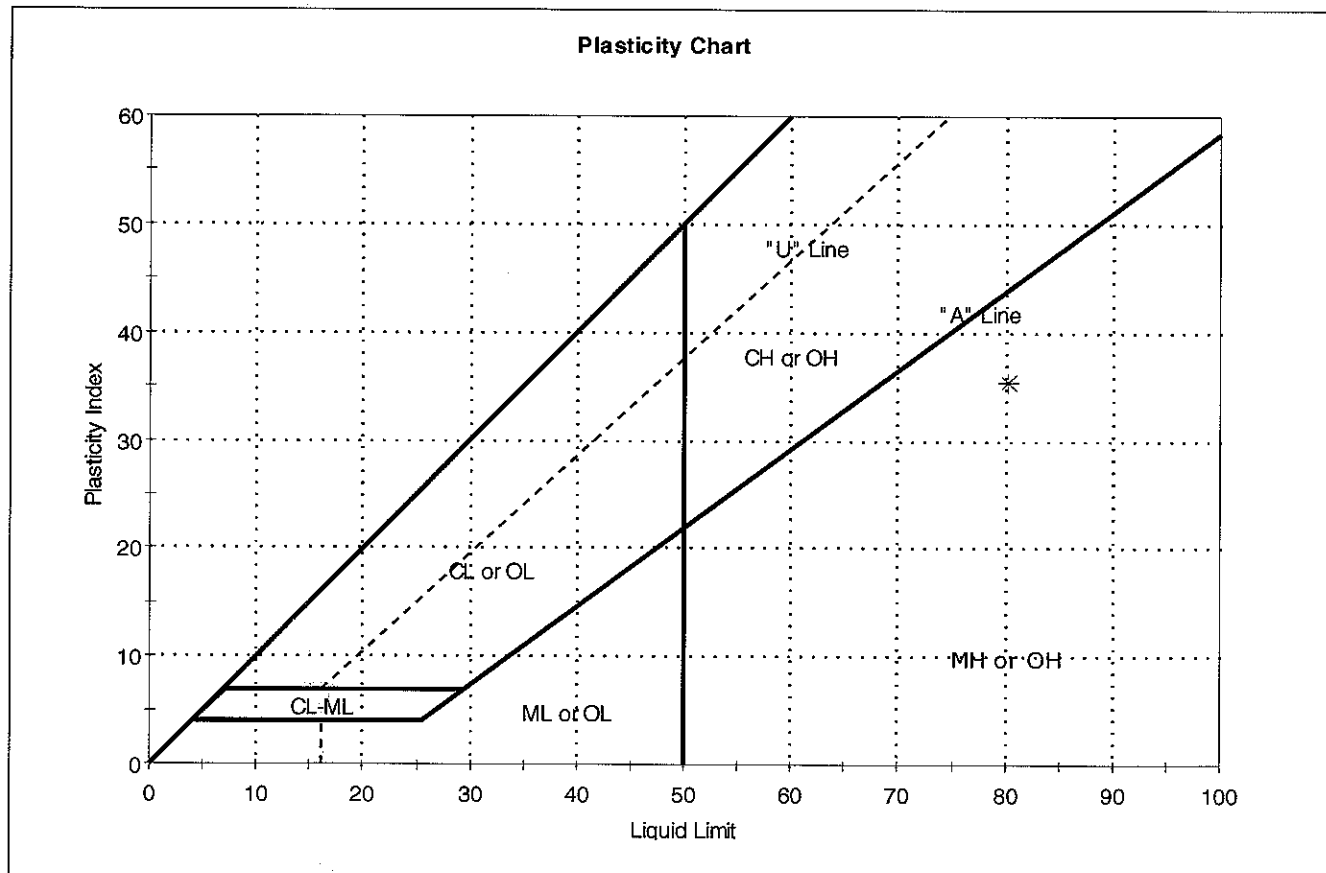
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0303-05	Sample Type:	jar
Sample ID:	OL-VC-80031	Test Date:	06/19/07
Depth :	3.3-6.6 ft	Test Id:	111488
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-80031	L-0303-0	3.3-6.6 ft	158	80	45	35	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0303-05	Sample Type:	jar
Sample ID:	OL-VC-80031	Test Date:	06/07/07
Depth :	3.3-6.6 ft	Test Id:	111412
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

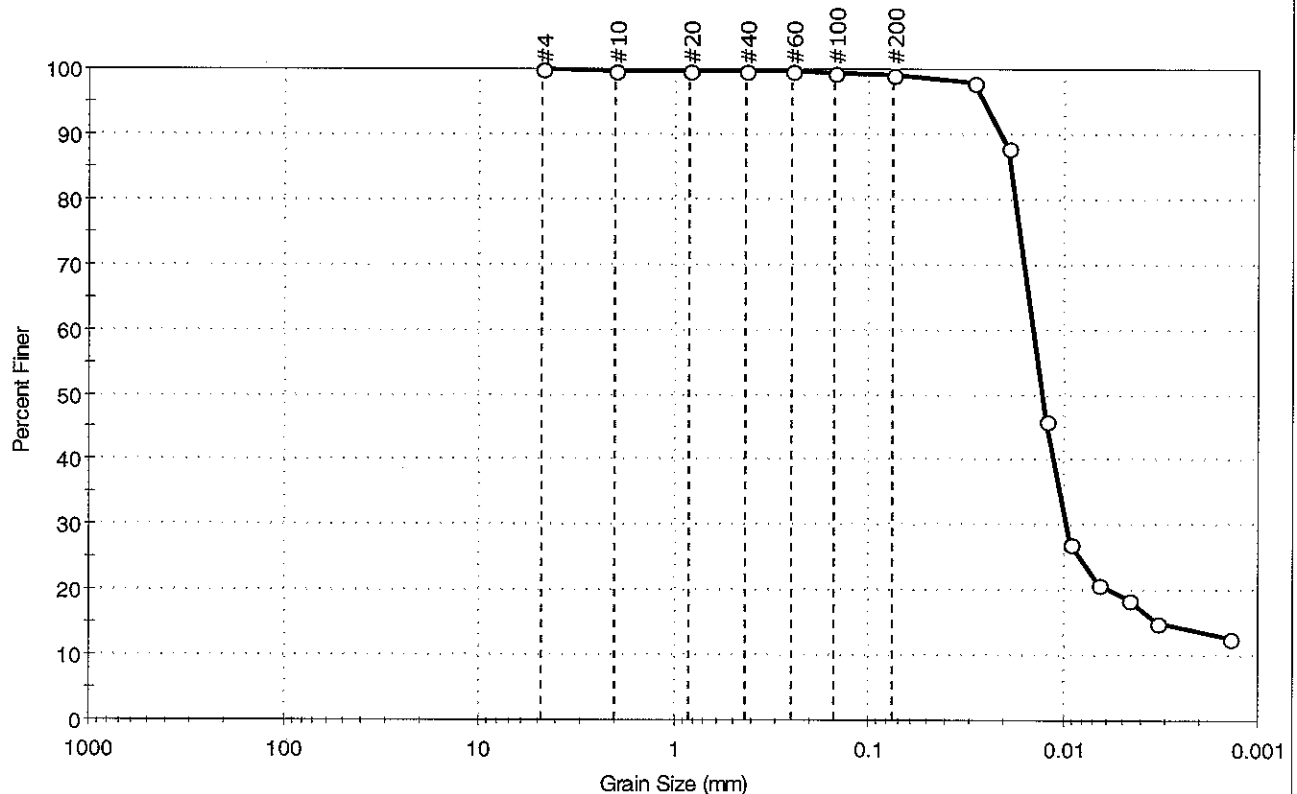
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0303-05	OL-VC-80031	3.3-6.6 ft	Wet, light gray silt	2.55

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-0303-02	Sample Type: jar
Sample ID: OL-VC-80037	Test Date: 06/11/07
Depth: 0-3.3 ft	Test Id: 111451
Test Comment: ---	
Sample Description: Wet, dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0288	98		
---	0.0191	88		
---	0.0123	46		
---	0.0091	27		
---	0.0065	21		
---	0.0046	18		
---	0.0033	15		
---	0.0014	13		

Coefficients

D ₈₅ = 0.0185 mm	D ₃₀ = 0.0095 mm
D ₆₀ = 0.0142 mm	D ₁₅ = 0.0031 mm
D ₅₀ = 0.0128 mm	D ₁₀ = 0.0006 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (78))

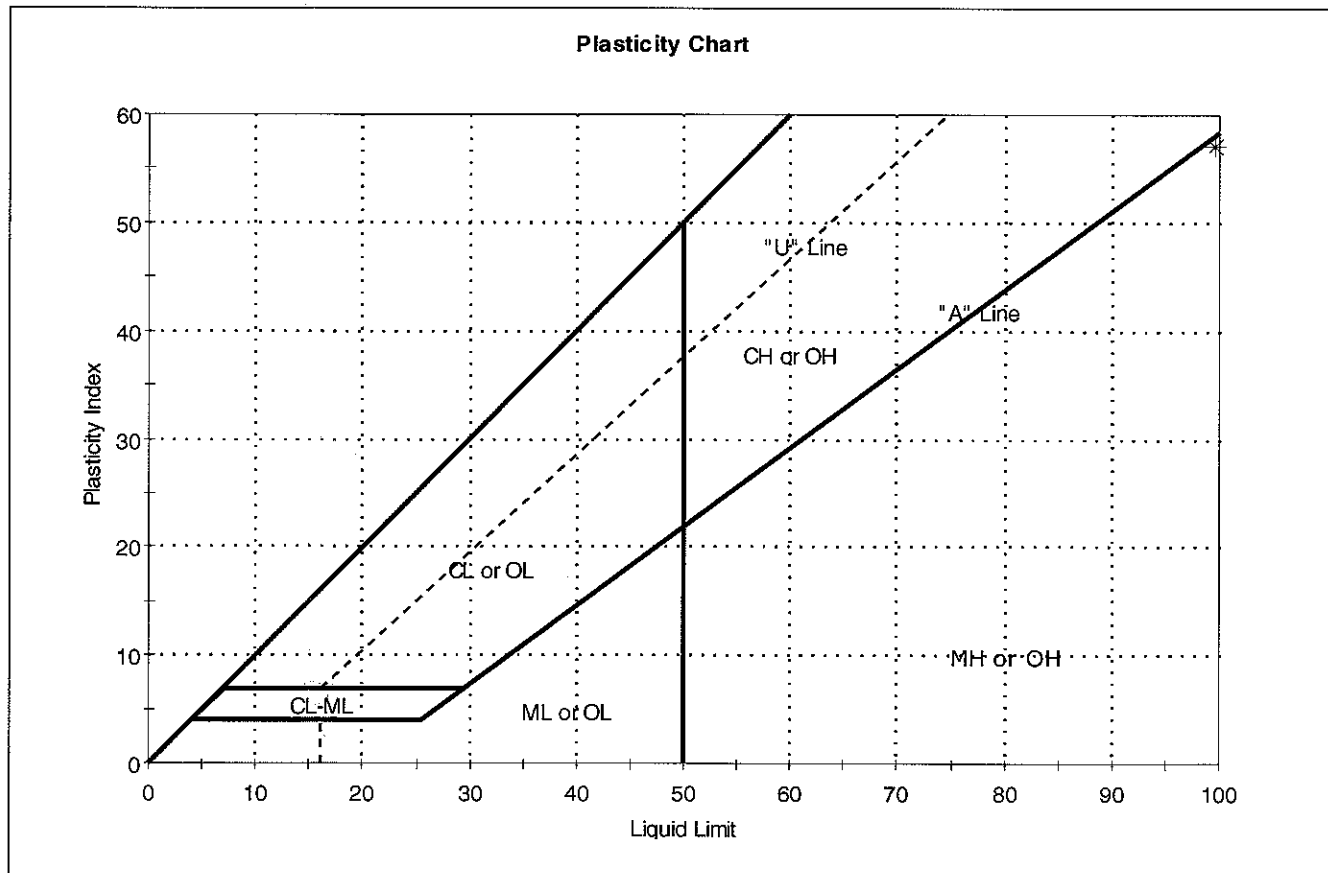
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0303-02	Sample Type:	jar
Sample ID:	OL-VC-80037	Test Date:	06/21/07
Depth :	0-3.3 ft	Test Id:	111489
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-80037	L-0303-0	0-3.3 ft	131	100	43	57	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0303-02	Sample Type:	jar
Sample ID:	OL-VC-80037	Test Date:	06/13/07
Depth :	0-3.3 ft	Test Id:	111413
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

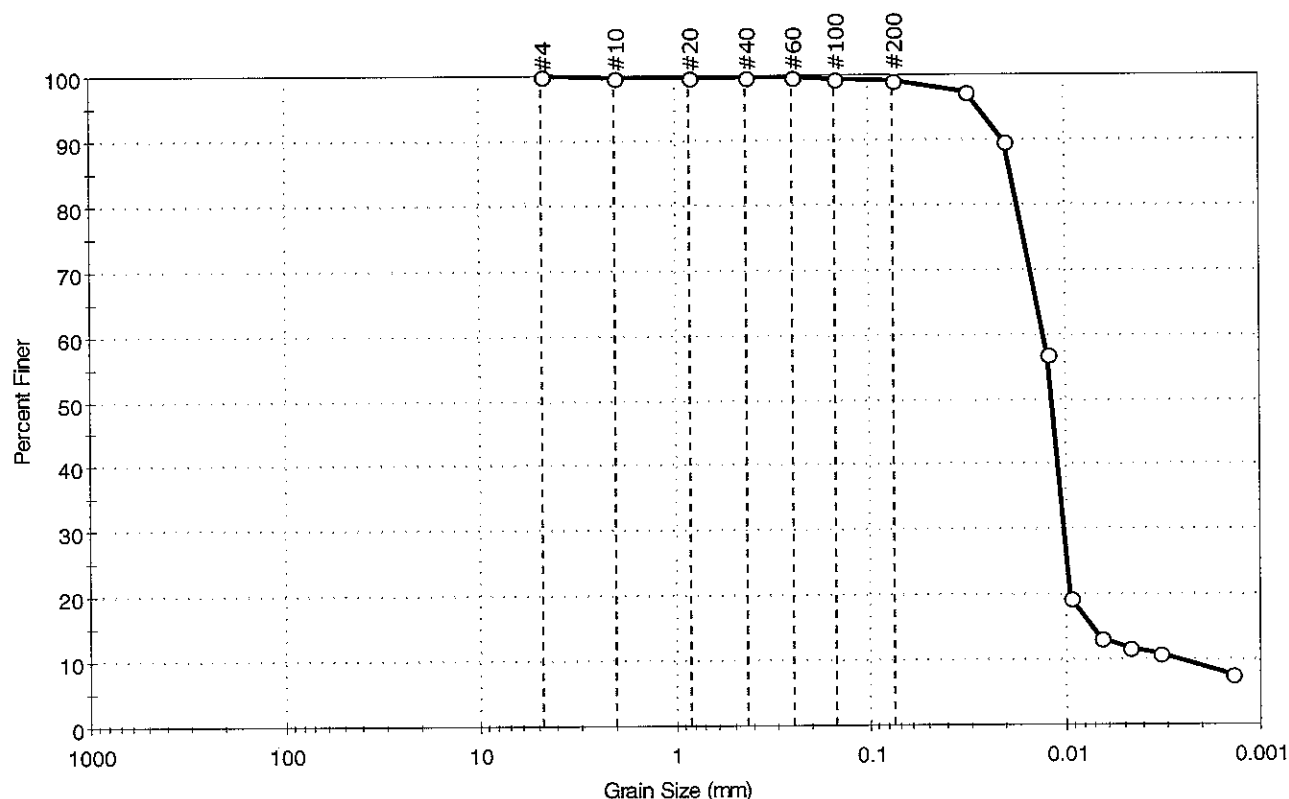
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0303-02	OL-VC-80037	0-3.3 ft	Wet, dark gray silt	2.52

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0303-03	Sample Type:	jar
Sample ID:	OL-VC-80041	Test Date:	06/11/07
Depth :	0-3.3 ft	Test Id:	111452
Test Comment:	---		
Sample Description:	Wet, black clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.9	99.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0315	97		
---	0.0201	90		
---	0.0123	57		
---	0.0093	20		
---	0.0066	13		
---	0.0047	12		
---	0.0033	11		
---	0.0014	8		

Coefficients

D ₈₅ = 0.0187 mm	D ₃₀ = 0.0101 mm
D ₆₀ = 0.0129 mm	D ₁₅ = 0.0073 mm
D ₅₀ = 0.0117 mm	D ₁₀ = 0.0026 mm
C _u = N/A	C _c = N/A

Classification

ASTM fat clay (CH)

AASHTO Clayey Soils (A-7-5 (134))

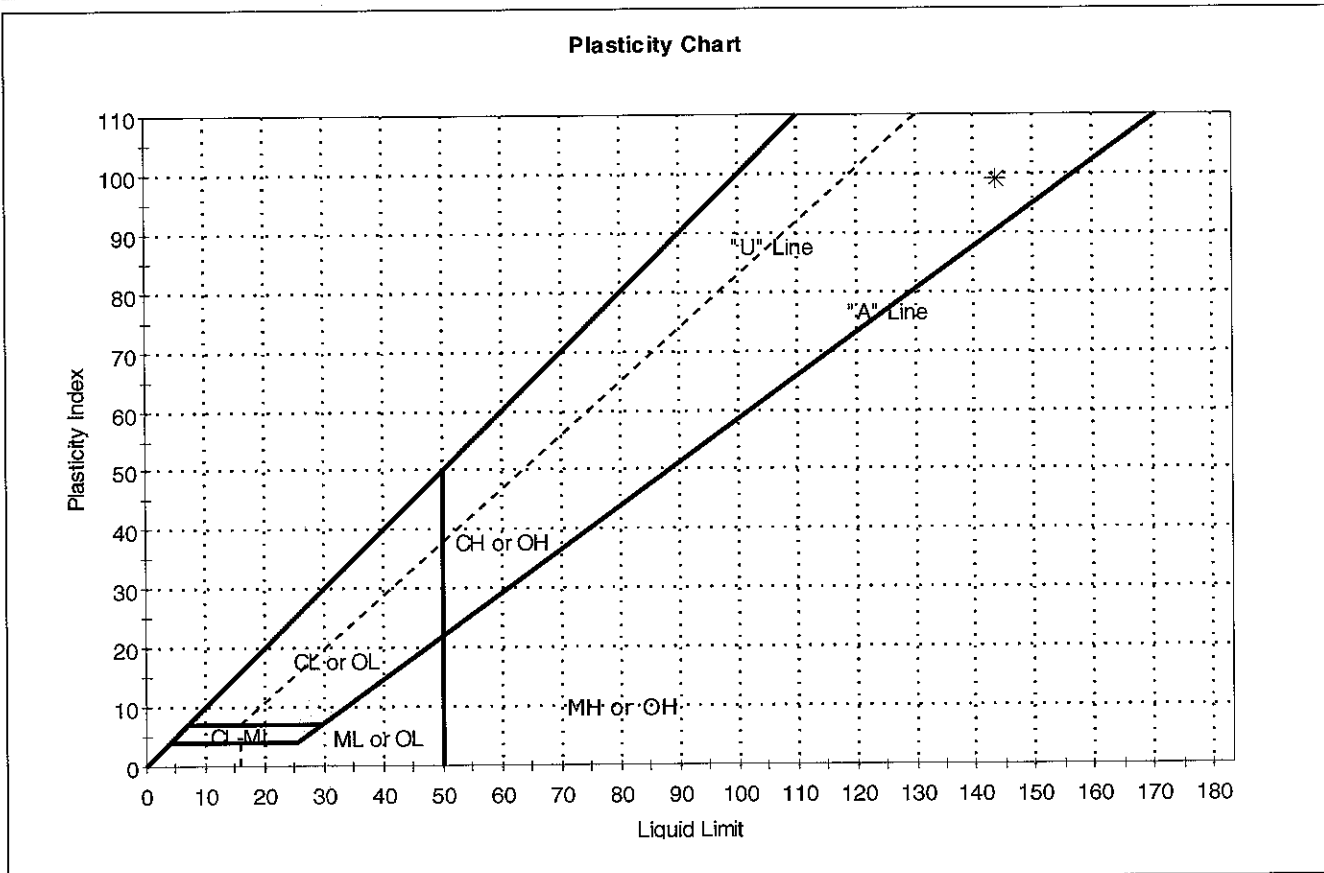
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-0303-03	Sample Type:	jar
Sample ID:	OL-VC-80041	Test Date:	06/14/07
Depth:	0-3.3 ft	Test Id:	111490
Test Comment:	---		
Sample Description:	Wet, black clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-VC-80041	L-0303-0	0-3.3 ft	202	143	45	98	2	fat clay (CH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: VERY HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-0303-03	Sample Type:	jar
Sample ID:	OL-VC-80041	Test Date:	06/13/07
Depth :	0-3.3 ft	Test Id:	111414
Test Comment:	---		
Sample Description:	Wet, black clay		
Sample Comment:	---		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-0303-03	OL-VC-80041	0-3.3 ft	Wet, black clay	2.49

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

WARRANTY and LIABILITY

GeoTesting Express (GTX) warrants that all tests it performs are run in general accordance with the specified test procedures and accepted industry practice. GTX will correct or repeat any test that does not comply with this warranty. GTX has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

GTX may report engineering parameters that require us to interpret the test data. Such parameters are determined using accepted engineering procedures. However, GTX does not warrant that these parameters accurately reflect the true engineering properties of the *in situ* material. Responsibility for interpretation and use of the test data and these parameters for engineering and/or construction purposes rests solely with the user and not with GTX or any of its employees.

GTX's liability will be limited to correcting or repeating a test which fails our warranty. GTX's liability for damages to the Purchaser of testing services for any cause whatsoever shall be limited to the amount GTX received for the testing services. GTX will not be liable for any damages, or for any lost benefits or other consequential damages resulting from the use of these test results, even if GTX has been advised of the possibility of such damages. GTX will not be responsible for any liability of the Purchaser to any third party.

Commonly Used Symbols

A	pore pressure parameter for $\Delta\sigma_1 - \Delta\sigma_3$	T	temperature
B	pore pressure parameter for $\Delta\sigma_3$	t	time
CIU	isotropically consolidated undrained triaxial shear test	U, UC	unconfined compression test
CR	compression ratio for one dimensional consolidation	UU, Q	unconsolidated undrained triaxial test
C_c	coefficient of curvature, $(D_{30})^2 / (D_{10} \times D_{60})$	u_a	pore gas pressure
C_u	coefficient of uniformity, D_{60}/D_{10}	u_e	excess pore water pressure
C_c	compression index for one dimensional consolidation	u, u_w	pore water pressure
C_α	coefficient of secondary compression	V	total volume
c_v	coefficient of consolidation	V_g	volume of gas
c	cohesion intercept for total stresses	V_s	volume of solids
c'	cohesion intercept for effective stresses	V_v	volume of voids
D	diameter of specimen	V_w	volume of water
D_{10}	diameter at which 10% of soil is finer	V_o	initial volume
D_{15}	diameter at which 15% of soil is finer	v	velocity
D_{30}	diameter at which 30% of soil is finer	W	total weight
D_{50}	diameter at which 50% of soil is finer	W_s	weight of solids
D_{60}	diameter at which 60% of soil is finer	W_w	weight of water
D_{85}	diameter at which 85% of soil is finer	w	water content
d_{50}	displacement for 50% consolidation	w_c	water content at consolidation
d_{90}	displacement for 90% consolidation	w_f	final water content
d_{100}	displacement for 100% consolidation	w_l	liquid limit
E	Young's modulus	w_n	natural water content
e	void ratio	w_p	plastic limit
e_c	void ratio after consolidation	w_s	shrinkage limit
e_o	initial void ratio	w_o, w_i	initial water content
G	shear modulus	α	slope of q_f versus p_f
G_s	specific gravity of soil particles	α'	slope of q_c versus p_f'
H	height of specimen	γ_t	total unit weight
PI	plasticity index	γ_d	dry unit weight
i	gradient	γ_s	unit weight of solids
K_o	lateral stress ratio for one dimensional strain	γ_w	unit weight of water
k	permeability	ϵ	strain
LI	Liquidity Index	ϵ_{vol}	volume strain
m_v	coefficient of volume change	ϵ_h, ϵ_v	horizontal strain, vertical strain
n	porosity	μ	Poisson's ratio, also viscosity
PI	plasticity index	σ	normal stress
p_c	preconsolidation pressure	σ'	effective normal stress
p	$(\sigma_1 + \sigma_3) / 2, (\sigma_v + \sigma_h) / 2$	σ_o, σ'_c	consolidation stress in isotropic stress system
p'	$(\sigma'_1 + \sigma'_3) / 2, (\sigma'_v + \sigma'_h) / 2$	σ_h, σ'_h	horizontal normal stress
p'_c	p' at consolidation	σ_v, σ'_v	vertical normal stress
Q	quantity of flow	σ_1	major principal stress
q	$(\sigma_1 - \sigma_3) / 2$	σ_2	intermediate principal stress
q_f	q at failure	σ_3	minor principal stress
q_o, q_i	initial q	τ	shear stress
q_c	q at consolidation	ϕ	friction angle based on total stresses
S	degree of saturation	ϕ'	friction angle based on effective stresses
SL	shrinkage limit	ϕ'_r	residual friction angle
s_u	undrained shear strength	ϕ_{ult}	ϕ for ultimate strength
T	time factor for consolidation		

GeoTesting express

a subsidiary of Geocomp Corporation

1145 Massachusetts Avenue

Boxborough, MA 01719

978 635 0424 Tel

978 635 0266 Fax

Transmittal

TO:

Ms. Laura Brussel

Parsons Engineering Science

290 Elwood Davis Road

Suite 312

Liverpool, NY 13088

DATE: 6/23/07

GTX NO: 7143

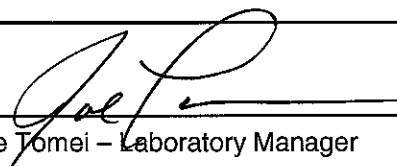
RE: Onondaga Project

Project No. 38292.40495

COPIES	DATE	DESCRIPTION
	6/23/07	Phase 2 - Bulk Sample Laboratory Test Reports

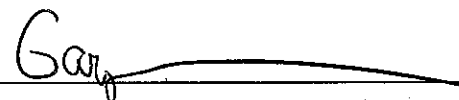
REMARKS:

SIGNED:


Joe Tomei - Laboratory Manager

CC:

APPROVED BY:


Gary Torosian - Director of Testing Services

GeoTesting express

a subsidiary of Geocomp Corporation

June 23, 2007

Ms. Laura Brussel
Parsons Engineering Science, Inc.
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088

Re: Onondaga Project (GTX-7143)

Dear Ms. Brussel:

Enclosed are the test results you requested for the above referenced project. GeoTesting Express, Inc. (GTX) picked-up 482 bulk soil samples from the above listed project site on December 12, 2006. These samples were associated with the following list of Parson's Chain of Custody (COC) Numbers:

COC #'s: 0271, 0272, 0273, 0274, 0275, 0276, 0277, 0278, 0279, 0280, 0281, 0282, 0283, 0284, 0285, 0286, 0287, 0288, 0289, 0290, 0291, 0292, 0293, 0294, 0301, and 0302

In addition, GTX received 65 bulk soil samples from you on March 14, 2007. These samples were associated with the following list of Parson's Chain of Custody (COC) Numbers:

COC #'s: 0299, 0300, 0301, 0304

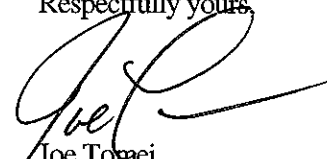
GTX performed the following tests on these samples:

544 Moisture Contents (ASTM D 2216)
222 Grain Size Analyses (ASTM D 422) with Hydrometer
202 Atterberg Limits (ASTM D 4318)
73 Specific Gravity (ASTM D 854)

Copies of these COC's are attached.

The results presented in this report apply only to the items tested. This report shall not be reproduced except in full, without written approval from GeoTesting Express. The remainder of these samples will be retained for a period of sixty (60) days and will then be discarded unless otherwise notified by you. Please call me if you have any questions or require additional information. Thank you for allowing GeoTesting Express the opportunity of providing you with testing of soil. We look forward to working with you again in the future.

Respectfully yours,



Joe Tomei
Laboratory Manager

GeoTesting Express, Inc.
1145 Massachusetts Avenue
Boxborough, MA 01719
800 434 1062 Toll Free
978 635 0266 Fax

www.geotesting.com
2662 Holcomb Bridge Road, Suite 310
Alpharetta, GA 30022
770 645 6575 Tel
770 645 6570 Fax

1145 Massachusetts Avenue

Boxborough, MA 01719

978 635 0424 Tel

978 635 0266 Fax

Geotechnical Test Report

June 28, 2007

GTX-7143

Onondaga Project

Syracuse, NY

Bulk Soil Sample Test Results

Prepared for:



AESI Ref: 38292.40495

Special Instructions:			
Relinquished by: <i>Shara M. Chomura</i>	Company	PARSONS	Received by: <i>ADH</i>
	Date/Time		
Relinquished by:	Company		Received by:
	Date/Time		
	Company	Greentesting	Condition
	Date/Time		
	Company	12/13/06 12:25	Cooler Temp.
	Date/Time		
	Company		Condition
	Date/Time		
	Company		Cooler Temp.
	Date/Time		
	Company		Custody Seals Intact
	Date/Time		
	Company		Custody Seals Intact
	Date/Time		

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/01/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80033	OL-0271-01	3.3-6.6 ft	Moist, black silt	147.9
OL-VC-80033	OL-0271-02	6.6-9.9 ft	Moist, very dark gray silt	49.1
OL-VC-80033	OL-0271-03	9.9-13.2 ft	Wet, gray silt	199.2
OL-VC-80033	OL-0271-04	13.2-16.5 ft	Moist, black silt	115.4
OL-VC-80033	OL-0271-05	16.5-19.7 ft	Wet, very dark gray silt	139.1
OL-VC-80034	OL-0271-06	3.3-6.6 ft	Wet, very dark gray silt	181.4
OL-VC-80034	OL-0271-07	6.6-9.9 ft	Moist, dark gray silt	174.4
OL-VC-80034	OL-0271-08	9.9-13.2 ft	Moist, very dark gray silt	113.1
OL-VC-80034	OL-0271-09	13.2-16.5 ft	Wet, gray silt with sand	198.4
OL-VC-80034	OL-0271-10	16.5-19.6 ft	Moist, black silt	9.1

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/01/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80029	OL-0271-11	6.6-9.9 ft	Moist, light gray clay with sand	227.9
OL-VC-80029	OL-0271-12	9.9-13.2 ft	Moist, gray sand with clay	103.4
OL-VC-80029	OL-0271-13	13.2-16.5 ft	Wet, dark olive gray clay	134
OL-VC-80029	OL-0271-14	16.5-20 ft	Moist, light gray clay with sand	171.3
OL-VC-80028	OL-0271-15	3.3-6.6 ft	Wet, black silt	143.1
OL-VC-80028	OL-0271-16	9.9-13.2 ft	Moist, very dark gray silt	93.4
OL-VC-80028	OL-0271-17	13.2-16.5 ft	Moist, dark olive gray silt	85.2
OL-VC-80028	OL-0271-18	16.5-17.2 ft	Moist, olive gray silt	80.1
OL-VC-80037	OL-0271-19	0.5-3.3 ft	Moist, black clay	186.2
OL-VC-80041	OL-0271-20	0.5-3.3 ft	Moist, black clay	210

Notes: Temperature of Drying : 110° Celsius

[illegible]

Relinquished by:	Company	Received by:	Company	Condition	Custody Seals Intact
<i>John M. Chomura</i>	Date/Time	<i>PARSONS</i>	<i>12/12/06 @ 1205</i>	<i>12/12/06</i>	
				Condition	Custody Seals Intact
Relinquished by:	Company	Received by:	Company	Condition	Custody Seals Intact
	Date/Time			Cooler Temp.	

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: ml	
Sample ID:---	Test Date: 02/01/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80049	OL-0272-01	0-0.5 ft	Moist, dark olive gray clay	248.1
OL-VC-80049	OL-0272-02	0.5-3.3 ft	Moist, black clay	234.5
OL-VC-80030	OL-0272-03	6.6-9.9 ft	Moist, light gray silt	172
OL-VC-80030	OL-0272-04	9.9-13.2 ft	Moist, light gray	176.8
OL-VC-80030	OL-0272-05	13.2-16.5 ft	Moist, light gray, clay	159.3
OL-VC-80030	OL-0272-06	16.5-20 ft	Moist, light gray silt	150.1
OL-VC-80031	OL-0272-07	0-0.5 ft	Moist, dark gray silt	161.3
OL-VC-80031	OL-0272-08	0.5-3.3 ft	Moist, light gray silt	238.1
OL-VC-80031	OL-0272-09	3.3-6.6 ft	Moist, light gray, clay with sand	185.6
OL-VC-80031	OL-0272-10	6.6-9.9 ft	Moist, light gray, silt	141.2

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/01/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80031	OL-0272-11	9.9-13.2 ft	Moist, pale yellow clay with sand	168.4
OL-VC-80031	OL-0272-12	13.2-16.5 ft	Moist, light gray silt	140.1
OL-VC-80031	OL-0272-13	16.5-20 ft	Moist, light gray silt	148.5
OL-VC-80032	OL-0272-14	6.6-9.9 ft	Wet, very dark gray silt	163.4
OL-VC-80032	OL-0272-15	9.9-13.2 ft	Moist, dark gray silt	143.4
OL-VC-80032	OL-0272-16	13.2-16.5 ft	Moist, very dark gray silt	99.3
OL-VC-80032	OL-0272-17	16.5-18.4 ft	Moist, black silt	106
OL-VC-80025	OL-0272-18	0-0.5 ft	Moist, black clay	281.6
OL-VC-80048	OL-0272-19	0-0.5 ft	Wet, very dark gray silt	110.8
OL-VC-80048	OL-0272-20	0.5-3.3 ft	Moist, very dark gray silt	143.2

Notes: Temperature of Drying : 110° Celsius

Chain of Custody / Analysis Request														
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088					Privileged and Confidential Lorraine Weber					Site Name: Onondaga Lake Syracuse, New York				
Hardcopy Report To: Lorraine Weber					PO #: 1					Preservative: 0				
Invoice To: Pete Petrone					Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -					Lab Use Only Lab Proj # Lab ID Job No GTE				
Sample Identification			Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	Sample Cont.	Field Filtered Sample?	Grab/Composite	Units
OL-VC-80047	0	0.5	OL-0273-01	10/9/2006	10:31	SEDIMENT	SOIL	REG	1					
OL-VC-80027	0	0.5	OL-0273-02	10/9/2006	10:24	SEDIMENT	SOIL	REG	1					
OL-VC-80023	0	0.5	OL-0273-03	10/9/2006	09:50	SEDIMENT	SOIL	REG	1					
OL-VC-80050	0	0.5	OL-0273-04	10/10/2006	14:26	SEDIMENT	SOIL	REG	1					
OL-VC-80050	0.5	3.3	OL-0273-05	10/10/2006	14:26	SEDIMENT	SOIL	REG	1					
OL-VC-80050	6.6	9.9	OL-0273-06	10/10/2006	14:28	SEDIMENT	SOIL	REG	1					
OL-VC-80036	3.3	6.6	OL-0273-07	10/10/2006	12:57	SEDIMENT	SOIL	REG	1					
OL-VC-80036	9.9	13.2	OL-0273-08	10/10/2006	12:59	SEDIMENT	SOIL	REG	1					
OL-VC-80036	13.2	16.5	OL-0273-09	10/10/2006	13:00	SEDIMENT	SOIL	REG	1					

Special Instructions:				
Relinquished by:	Company	Received by:	Company	Custody Seals Intact
<i>Chen M. Chomura</i>	PARSONS	<i>H M. M. M.</i>		
Relinquished by:	Date/Time	Received by:	Date/Time	Custody Seals Intact
	12/12/06 @ 1205		12/12/06 12:25	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 12/11/2006

Chain of Custody / Analysis Request																
Privileged and Confidential			Site Name:		Location of Site:		Preservative:								Lab Use Only	
EDD To: Lorraine Weber			Onondaga Lake		Syracuse, New York										Lab Proj #	
Sampler: 1															Lab ID	
PO #:															Job No.	
Analysis Turnaround Time:																
Standard -																
Rush Charges Authorized for -																
2 weeks -																
1 week -																
Next Day -																
Sample Date			Sample Time		Sample Type		Sample Matrix		Sample Purpose		# of Cont.					
10/10/2006			13:01		SEDIMENT		SOIL		REG		1					
10/10/2006			12:42		SEDIMENT		SOIL		REG		1					
10/10/2006			12:42		SEDIMENT		SOIL		REG		1					
10/10/2006			12:43		SEDIMENT		SOIL		REG		1					
10/10/2006			12:45		SEDIMENT		SOIL		REG		1					
10/10/2006			12:47		SEDIMENT		SOIL		REG		1					
10/6/2006			11:03		SEDIMENT		SOIL		REG		1					
10/6/2006			08:55		SEDIMENT		SOIL		REG		1					
10/6/2006			09:04		SEDIMENT		SOIL		REG		1					
Special Instructions:																
Relinquished by:			Company		Received by:		Company		Condition		Custody Seals Intact					
Date/Time			Date/Time		Date/Time		Date/Time		Cooler Temp.		Custody Seals Intact					
Company			Company		Company		Company		Condition		Custody Seals Intact					
Date/Time			Date/Time		Date/Time		Date/Time		Cooler Temp.		Custody Seals Intact					

Preservatives: 0 = None; [1 = HCl]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn, Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID: ---	Test Date: 02/05/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80047	OL-0273-01	0-0.5 ft	Wet, very dark gray silt	193.4
OL-VC-80027	OL-0273-02	0-0.5 ft	Wet, black silt	265.7
OL-VC-80023	OL-0273-03	0-0.5 ft	Moist, very dark gray, clay	260.6
OL-VC-80050	OL-0273-04	0-0.5 ft	Wet, black silt	176.9
OL-VC-80050	OL-0273-05	0.5-3.3 ft	Wet, dark gray silt	167.8
OL-VC-80050	OL-0273-06	6.6-9.9 ft	Moist, very dark gray silt	131.4
OL-VC-80036	OL-0273-07	3.3-6.6 ft	Moist, gray silt	140.7
OL-VC-80036	OL-0273-08	9.9-13.2 ft	Moist, dark gray silt	101.8
OL-VC-80036	OL-0273-09	13.2-16.5 ft	Moist, dark gray silt	89.4
OL-VC-80036	OL-0273-10	16.5-18.5 ft	Moist, olive brown silt	104.4

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	n/a
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/05/07
Depth :	---	Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80035	OL-0273-11	3.3-6.6 ft	Moist, gray silt with sand	186.6
OL-VC-80035	OL-0273-12	6.6-9.9 ft	Moist, light gray silt with sand	179.7
OL-VC-80035	OL-0273-13	9.9-13.2 ft	Moist, gray clay	122.5
OL-VC-80035	OL-0273-14	13.2-16.5 ft	Moist, very dark gray silt	102.4
OL-VC-80035	OL-0273-15	16.5-19 ft	Moist, very dark gray silt	88.5
OL-VC-50002	OL-0273-16	0-0.5 ft	Moist, olive brown sand	59.7
OL-VC-50003	OL-0273-17	0-0.5 ft	Moist, olive brown sand	72.9
OL-VC-50006	OL-0273-18	0-0.5 ft	Moist, olive brown sand	70.9
OL-VC-50010	OL-0273-19	0-0.5 ft	Moist, olive brown sand	17.5
OL-VC-50011	OL-0273-20	0-0.5 ft	Moist, olive gray silt	94.3

Notes: Temperature of Drying : 110° Celsius

AEISI Ref:	38292.40495
COC #:	0274
Lab Use Only	

Special Instructions:									
Relinquished by:	Sgt. M. Chinnura	Company	PARSON'S	Received by:	J. McPherson	Company	Condition		Custody Seals Intact
		Date/Time	12-11-10 @ 1205						
Relinquished by:		Company		Received by:		Company	Condition		Custody Seals Intact
		Date/Time							

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mli
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-50013	OL-0274-01	0-0.5 ft	Moist, olive gray silt	152.4
OL-VC-50015	OL-0274-02	0-0.5 ft	Moist, olive gray clay	173.1
OL-VC-60067	OL-0274-03	0-3.3 ft	Moist, light brownish gray	91.6
OL-VC-60067	OL-0274-04	6.6-9.9 ft	Moist, gray silt with sand	97.9
OL-VC-60067	OL-0274-05	9.9-13.2 ft	Moist, light olive gray silt	85
OL-VC-60067	OL-0274-06	16.5-20 ft	Moist, grayish brown silt	66
OL-VC-60058	OL-0274-07	0.5-3.3 ft	Wet, very dark gray clay	144.6
OL-VC-60058	OL-0274-08	6.6-9.9 ft	Moist, black silt	117.9
OL-VC-60058	OL-0274-09	13.2-16.5 ft	Moist, very dark gray silt	88.2
OL-VC-60063	OL-0274-10	0-3.3 ft	Moist, black clay	126.4

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	mll
Sample ID:---	Test Date: 06/23/07	Checked By:	n/a
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60063	OL-0274-11	3.3-6.6 ft	Moist, black silt	100.8
OL-VC-60063	OL-0274-12	9.9-13.2 ft	Moist, very dark gray silt	92.9
OL-VC-60063	OL-0274-13	16.5-19.8 ft	Moist, dark olive brown silty sand	88.6
OL-VC-60062	OL-0274-14	0-3.3 ft	Moist, very dark gray silt	91.3
OL-VC-60062	OL-0274-15	6.6-9.9 ft	Moist, very dark grayish brown, clay	72.2
OL-VC-60062	OL-0274-16	9.9-13.2 ft	Moist, dark grayish brown silt	83.8
OL-VC-60062	OL-0274-17	16.5-17.8 ft	Moist, dark olive brown silt	65
OL-VC-60057	OL-0274-18	3.3-6.6 ft	Moist, black, clay	133.4
OL-VC-60057	OL-0274-19	6.6-9.9 ft	Moist, black silt	111.5
OL-VC-60057	OL-0274-20	13.2-16.5 ft	Wet, black silt	88.9

Notes: Temperature of Drying : 110° Celsius

AESI Ref: 38292.40495
COC #: 0275

Special Instructions:									
Relinquished by:	Company	PARSONS	Received by:	Company	Condition	Custody Seals Intact			
<i>Shera M. Chomura</i>	Date/Time	12-12-10 @ 1205	<i>AM: [Signature]</i>	Date/Time	Cooler Temp.				
Relinquished by:	Company		Received by:	Company	Condition	Custody Seals Intact			
	Date/Time			Date/Time	Cooler Temp.				

Date Printed: 12/11/2006

Chain of Custody/Analysis Request

Chain of Custody / Analysis Request														
AESI Ref: 38292.40495			COC #: 0275			Lab Use Only			Lab Proj #			Lab ID		
Privileged and Confidential			Site Name: Onondaga Lake			Location of Site: Syracuse, New York			Preservative:			Job No.		
EDB To: Lorraine Weber			1			0			0			0		
Sampler:			PO #:			Analysis Turnaround Time:			Field Filtered Sample?			Grab/Composite		
Standard -			Rush Charges Authorized for -			2 weeks -			1 week -			Next Day -		
Sample Date			Sample Time			Sample Type			Sample Matrix			Sample Purpose		
# of Cont.			# of Cont.			# of Cont.			# of Cont.			# of Cont.		
Client Contact:			PARSONS			290 Elwood Davis Road, Suite 312			Liverpool, NY 13088			Lorraine Weber		
Hardcopy Report To:			Invoice To:			Lorraine Weber			Pete Petrone			Lab Sample Numbers		
Sample Identification			Field Sample ID			Start Depth (ft)			End Depth (ft)			Lab Sample Numbers		
Location ID			Field Sample ID			Start Depth (ft)			End Depth (ft)			Lab Sample Numbers		
OL-VC-60061			OL-0275-10			13.2			16.5			Consolidation		
OL-VC-60060			OL-0275-11			0			3.3			UUT		
OL-VC-60060			OL-0275-12			6.6			9.9			CUT		
OL-VC-60060			OL-0275-13			13.2			16.5			Porosity		
OL-VC-60069			OL-0275-14			3.3			6.6			SIC		
OL-VC-60069			OL-0275-15			6.6			9.9			Grain Size		
OL-VC-60069			OL-0275-16			13.2			16.5			Specific Gravity		
OL-VC-60068			OL-0275-17			3.3			6.6			Moisture Content		
OL-VC-60068			OL-0275-18			9.9			13.2			Organic Content		
												Carbonate Content		
												Bulk Density		
												Atterberg Limits		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		
												Grab/Composite		
												Field Filtered Sample?		
												Units		

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60065	OL-0275-01	3.3-6.6 ft	Wet, black silt	120.5
OL-VC-60065	OL-0275-02	9.9-13.2 ft	Moist, dark gray silt	86.4
OL-VC-60065	OL-0275-03	13.2-16.5 ft	Moist, dark gray silt	78.2
OL-VC-60064	OL-0275-04	0-3.3 ft	Wet, dark gray silt	104.5
OL-VC-60064	OL-0275-05	6.6-9.9 ft	Moist, dark gray silt	95.4
OL-VC-60064	OL-0275-06	13.2-16.5 ft	Moist, dark olive brown	92.3
OL-VC-60064	OL-0275-07	16.5-19 ft	Moist, dark olive brown silt	86.9
OL-VC-60061	OL-0275-08	3.3-6.6 ft	Moist, dark gray clay	82.8
OL-VC-60061	OL-0275-09	6.6-9.9 ft	Moist, black clay	87.9
OL-VC-60061	OL-0275-10	13.2-16.5 ft	Moist, dark olive brown clay with sand	82

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60060	OL-0275-11	0-3.3 ft	Moist, black clay	102.6
OL-VC-60060	OL-0275-12	6.6-9.9 ft	Moist, grayish brown clay with sand	98.6
OL-VC-60060	OL-0275-13	13.2-16.5 ft	Moist, dark olive brown clay	80.6
OL-VC-60069	OL-0275-14	3.3-6.6 ft	Moist, dark olive brown sand with clay	52.6
OL-VC-60069	OL-0275-15	6.6-9.9 ft	Moist, olive clay with sand	54.9
OL-VC-60069	OL-0275-16	13.2-16.5 ft	Moist, grayish brown clay with sand	64
OL-VC-60068	OL-0275-17	3.3-6.6 ft	Moist, grayish brown clay with sand	53.6
OL-VC-60068	OL-0275-18	9.9-13.2 ft	Moist, grayish brown clay sand	60.8
OL-VC-60068	OL-0275-19	13.2-16.5 ft	Moist, very dark grayish brown clay	66.2
OL-VC-60059	OL-0275-20	3.3-6.6 ft	Moist, olive brown clay with sand	97.6

Notes: Temperature of Drying : 110° Celsius

AESI Ref: 38292.40495
COC #: 0276

Special Instructions:									
Relinquished by:	Company	PARSON'S	Received by:	Company	Condition	Custody Seals Intact			
Relinquished by:	Company	12/12/06 @ 1705	H. H. H.	Date/Time	Cooler Temp.	Custody Seals Intact			
Relinquished by:	Company		Received by:	Company	Condition	Custody Seals Intact			
Relinquished by:	Company		Received by:	Date/Time	Cooler Temp.	Custody Seals Intact			

Date Printed: 12/11/2006

Chain of Custody/Analysis Request

Chain of Custody / Analysis Request															
AEST Ref: 38292.40495		COC #: 0276		Lab Use Only		Lab Proj #		Lab ID		Job No.					
Privileged and Confidential				Site Name: Onondaga Lake		Location of Site: Syracuse, New York									
EDD To: Lorraine Weber		Sampler: 1		PO #:		Analysis Turnaround Time: Standard - Rush Charges Authorized for -		Preservative:							
Sample Date		Sample Time		Sample Type		Sample Matrix		Sample Purpose		# of Cont.					
Sample Date		Sample Time		Sample Type		Sample Matrix		Sample Purpose		# of Cont.					
PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088		Lorraine Weber		Pete Petrone		Hardcopy Report To:		Invoice To:		Sample Identification					
Location ID		Start Depth (ft)		End Depth (ft)		Field Sample ID									
OL-VC-60070		6.6		9.9		OL-0276-10									
OL-VC-60070		13.2		16.5		OL-0276-11									
OL-VC-60070		16.5		20		OL-0276-12									
OL-VC-60055		6.6		9.9		OL-0276-13									
OL-VC-60055		9.9		13.2		OL-0276-14									
OL-VC-60055		13.2		16.5		OL-0276-15									
OL-VC-60054		3.3		6.6		OL-0276-16									
OL-VC-60054		9.9		13.2		OL-0276-17									
OL-VC-60054		13.2		16.5		OL-0276-18									
Special Instructions:															
Relinquished by: <i>John M. Chomura</i>															
Relinquished by: <i>John M. Chomura</i>															

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify):

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mli
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60059	OL-0276-01	9.9-13.2 ft	Moist, dark olive gray clay	74.2
OL-VC-60059	OL-0276-02	16.5-19.4 ft	Moist, olive gray clay	56.9
OL-VC-60056	OL-0276-03	0.5-3.3 ft	Moist, very dark brown clay	156.5
OL-VC-60056	OL-0276-04	6.6-9.9 ft	Moist, dark gray clay with sand	74
OL-VC-60066	OL-0276-05	3.3-6.6 ft	Moist, gray clay with sand	74.8
OL-VC-60066	OL-0276-06	9.9-13.2 ft	Moist, gray sand with clay	71.5
OL-VC-60066	OL-0276-07	13.2-16.5 ft	Moist, gray clay with sand	43.5
OL-VC-60066	OL-0276-08	16.5-19.9 ft	Moist, grayish brown clay	45.3
OL-VC-60070	OL-0276-09	3.3-6.6 ft	Moist, grayish brown silty sand	74.5
OL-VC-60070	OL-0276-10	6.6-9.9 ft	Moist, grayish brown silty sand	84.8

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60070	OL-0276-11	13.2-16.5 ft	Moist, olive gray silt	80.7
OL-VC-60070	OL-0276-12	16.5-20 ft	Moist, olive brown silt	48.7
OL-VC-60055	OL-0276-13	6.6-9.9 ft	Moist, very dark grayish brown silt	96.8
OL-VC-60055	OL-0276-14	9.9-13.2 ft	Moist, dark gray silt	93.1
OL-VC-60055	OL-0276-15	13.2-16.5 ft	Moist, very dark grayish brown clay	96.8
OL-VC-60054	OL-0276-16	3.3-6.6 ft	Moist, very dark gray silt	122.7
OL-VC-60054	OL-0276-17	9.9-13.2 ft	Moist, dark olive gray silt	86.6
OL-VC-60054	OL-0276-18	13.2-16.5 ft	Moist, dark olive gray silt	81.1
OL-VC-30040	OL-0276-19	0-3.3 ft	Moist, light gray silty sand	223.8
OL-VC-30040	OL-0276-20	6.6-9.9 ft	Moist, light gray silt	194.3

Notes: Temperature of Drying : 110° Celsius

Chain of Custody/Analysis Request

Chain of Custody / Analysis Request										AEST Ref: 38292.40495											
Privileged and Confidential To: Lorraine Weber				Site Name:		Onondaga Lake		Lab Use Only		COC #: 0277											
				Location of Site:		Syracuse, New York		Lab Proj #													
Sampler:		1		Preservative:								Lab ID		GTE							
PO #:												Job No.									
Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -				Sample Date		Sample Time		Sample Type		Sample Matrix		Sample Purpose		Sample # of Cont.							
Hardcopy Report To:		Lorraine Weber																			
Invoice To:		Pete Petrone																			
Sample Identification				Start Depth (ft)		End Depth (ft)		Field Sample ID													
		Location ID		16.5		20.1		OL-0277-01		SOIL		REG		1							
				3.3		6.6		OL-0277-02		SOIL		REG		1							
				9.9		13.2		OL-0277-03		SOIL		REG		1							
				13.2		16.5		OL-0277-04		SOIL		REG		1							
				16.5		19.8		OL-0277-05		SOIL		REG		1							
				0.5		3.3		OL-0277-06		SOIL		REG		1							
				3.3		6.6		OL-0277-07		SOIL		REG		1							
				9.9		13.2		OL-0277-08		SOIL		REG		1							
				13.2		16.5		OL-0277-09		SOIL		REG		1							

Special Instructions:

Relinquished by:	Company	Received by:	Company	Condition	Custody Seals Intact
<i>John M. Chomura</i>	Date/Time	<i>PARSONS</i>			
		<i>12/12/06 @ 1205</i>			
Relinquished by:	Company	Received by:	Company	Condition	Custody Seals Intact
	Date/Time				

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-30040	OL-0277-01	16.5-20.1 ft	Moist, dark grayish brown silt	66
OL-VC-30042	OL-0277-02	3.3-6.6 ft	Moist, light greenish gray silt	240.1
OL-VC-30042	OL-0277-03	9.9-13.2 ft	Moist, light gray silt	248.9
OL-VC-30042	OL-0277-04	13.2-16.5 ft	Moist, white silty sand	174.9
OL-VC-30042	OL-0277-05	16.5-19.8 ft	Moist, pale yellow silty sand	179
OL-VC-30035	OL-0277-06	0.5-3.3 ft	Moist, gray silty sand	313.7
OL-VC-30035	OL-0277-07	3.3-6.6 ft	Moist, dark gray silty sand	166.4
OL-VC-30035	OL-0277-08	9.9-13.2 ft	Moist, gray silty sand	170.1
OL-VC-30035	OL-0277-09	13.2-16.5 ft	Moist, gray silt	166.2
OL-VC-30034	OL-0277-10	3.3-6.6 ft	Moist, white silt	211.1

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 06/23/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-30034	OL-0277-11	6.6-9.9 ft	Moist, white silt	204.3
OL-VC-30034	OL-0277-12	13.2-16.5 ft	Moist, white silt	209.5
OL-VC-30034	OL-0277-13	16.5-19.8 ft	Moist, dark grayish brown silt	111.4
OL-VC-30039	OL-0277-14	0-3.3 ft	wet, gray silt	184.8
OL-VC-30039	OL-0277-15	6.6-9.9 ft	Moist, wet, silt	247.4
OL-VC-30039	OL-0277-16	13.2-16.5 ft	Moist, white silt	230.3
OL-VC-30039	OL-0277-17	16.5-20 ft	Moist, white, silt	197.9
OL-VC-30036	OL-0277-18	3.3-6.6 ft	Moist, light gray, clay with sand	195.5
OL-VC-30036	OL-0277-19	6.6-9.9 ft	Moist, grayish brown silt	128.8
OL-VC-30036	OL-0277-20	13.2-16.5 ft	Moist, olive brown silt	74.6

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-30037	OL-0278-01	6.6-9.9 ft	Moist, white silt	144.4
OL-VC-30037	OL-0278-02	3.3-6.6 ft	Moist, white silt	152.7
OL-VC-30038	OL-0278-03	3.3-6.6 ft	Moist, pale yellow, clay with sand	286.6
OL-VC-30038	OL-0278-04	9.9-13.2 ft	Moist, light gray, clay with sand	162.5
OL-VC-30038	OL-0278-05	13.2-16.5 ft	Moist, very dark gray, silt	126.8
OL-VC-30041	OL-0278-06	3.3-6.6 ft	Moist, white silt	230.9
OL-VC-30041	OL-0278-07	6.6-9.9 ft	Moist, white silt	247
OL-VC-30041	OL-0278-08	13.2-16.5 ft	Moist, white, clay with sand	196.1
OL-VC-30041	OL-0278-09	16.5-19.8 ft	Moist, white, clay with sand	194
OL-VC-30043	OL-0278-10	3.3-6.6 ft	Moist, white silt	257

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	ml
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-30043	OL-0278-11	6.6-9.9 ft	Moist, light gray silt	167.1
OL-VC-30043	OL-0278-12	13.2-16.5 ft	Moist, olive gray, clay with sand	82.6
OL-VC-40030	OL-0278-13	0-3.3 ft	Moist, very dark gray silt	85.9
OL-VC-40030	OL-0278-14	3.3-6.6 ft	Moist, gray clay	91.4
OL-VC-40030	OL-0278-15	6.6-9.9 ft	Moist, very dark grayish brown, mulch	218.6
OL-VC-40030	OL-0278-16	13.2-14.3 ft	Moist, gray clay with sand	85.3
OL-VC-40041	OL-0278-17	3.3-6.6 ft	Moist, light gray clay with sand	68.2
OL-VC-40041	OL-0278-18	9.9-13.2 ft	Moist, dark olive gray silt	42.4
OL-VC-40032	OL-0278-19	3.3-6.6 ft	Moist, greenish gray clay with sand	278.2
OL-VC-40032	OL-0278-20	6.6-9.9 ft	Moist, very dark grayish brown silt	103.2

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40032	OL-0279-01	13.2-16.5 ft	Moist, black silt	70.4
OL-VC-40032	OL-0279-02	16.5-18.7 ft	Moist, very dark gray silt	66.3
OL-VC-40037	OL-0279-03	3.3-6.6 ft	Moist, light gray clay with sand	85.5
OL-VC-40037	OL-0279-04	13.2-16.5 ft	Moist, dark gray clay	142.1
OL-VC-40019	OL-0279-05	3.3-6.6 ft	Moist, dark gray clay	97.6
OL-VC-40019	OL-0279-06	6.6-9.9 ft	Moist, dark gray clay	126.1
OL-VC-40019	OL-0279-07	13.2-16.5 ft	Wet, gray silt	115.6
OL-VC-40039	OL-0279-08	0-3.3 ft	Moist, dark gray, silt	56.3
OL-VC-40039	OL-0279-09	6.6-9.9 ft	Moist, dark gray, silt	83.3
OL-VC-40039	OL-0279-10	13.2-16.5 ft	Wet, gray, silt	100.6

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40039	OL-0279-11	16.5-19.8 ft	Wet, gray, silt	93.6
OL-VC-40042	OL-0279-12	0-3.3 ft	Moist, dark brown, silt	59.7
OL-VC-40042	OL-0279-13	6.6-9.9 ft	Moist, brown, silty sand	93.2
OL-VC-40042	OL-0279-14	9.9-13.2 ft	Moist, grayish brown, silt	83.5
OL-VC-40042	OL-0279-15	16.5-19.8 ft	Moist, gray silt	83.3
OL-VC-40023	OL-0279-16	0.5-3.3 ft	Wet, dark gray, silt	99.9
OL-VC-40023	OL-0279-17	6.6-9.9 ft	Moist, grayish brown, silt	86.6
OL-VC-40023	OL-0279-18	9.9-13.2 ft	Moist, very dark grayish brown, silt	102.9
OL-VC-40023	OL-0279-19	16.5-19 ft	Moist, very dark grayish brown, silt	81.6
OL-VC-40025	OL-0279-20	3.3-6.6 ft	Moist, very dark gray clay	139.8

Notes: Temperature of Drying : 110° Celsius

[illegible]

Special Instructions:						
Relinquished by: <i>Shirley M. Chmura</i>	Company	PARSONS	Received by: <i>H. M. S. [Signature]</i>	Company	Condition	Custody Seals Intact
	Date/Time	12/12/06 @ 1205				
Relinquished by:	Company		Received by:	Company	Condition	Custody Seals Intact
	Date/Time					

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mill
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40025	OL-0280-01	6.6-9.9 ft	Moist, dark gray clay	96.5
OL-VC-40025	OL-0280-02	13.2-16.5 ft	Moist, very dark gray clay	178
OL-VC-40036	OL-0280-03	0-3.3 ft	Moist, gray clay with sand	78.7
OL-VC-40036	OL-0280-04	6.6-9.9 ft	Moist, dark gray silt	74.2
OL-VC-40036	OL-0280-05	9.9-13.2 ft	Moist, dark gray silt with sand	90.3
OL-VC-40028	OL-0280-06	16.5-19.8 ft	Wet, gray silt	93.5
OL-VC-40021	OL-0280-07	6.6-9.9 ft	Wet, dark gray silt	102.2
OL-VC-40021	OL-0280-08	3.3-6.6 ft	Wet, dark gray silt	89.7
OL-VC-40021	OL-0280-09	9.9-13.2 ft	Moist, very dark silt	101.7
OL-VC-40021	OL-0280-10	16.5-19.4 ft	Moist, brown silt	76.3

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	ml
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40035	OL-0280-11	0-3.3 ft	Moist, olive brown clay	86.6
OL-VC-40035	OL-0280-12	3.3-6.6 ft	Moist, gray clay with sand	89.9
OL-VC-40035	OL-0280-13	9.9-13.2 ft	Moist, light olive gray clay with sand	78.9
OL-VC-40035	OL-0280-14	13.2-16.5 ft	Moist, light olive gray clay with sand	86.8
OL-VC-40035	OL-0280-15	16.5-19.8 ft	Moist, pale olive silt with sand	74.1
OL-VC-40038	OL-0280-16	3.3-6.6 ft	Wet, light gray sand with silt	73.8
OL-VC-40038	OL-0280-17	9.9-13.2 ft	Wet, light gray silt with sand	76.2
OL-VC-40038	OL-0280-18	13.2-16.5 ft	Moist, light gray silt	81

Notes: Temperature of Drying : 110° Celsius

Chain of Custody / Analysis Request										AES Ref: 38292.40495		
Privileged and Confidential										COC #: 0281		
Site Name: Onondaga Lake										Lab Use Only		
Location of Site: Syracuse, New York										Lab Proj #		
Sampler: 1										Lab ID		
PO #: 1										Job No.		
Analysis Turnaround Time:										GTE		
Standard - Rush Charges Authorized for -												
2 weeks -												
1 week -												
Next Day -												
Hardcopy Report to: Lorraine Weber												
Invoice to: Pete Petrone												
Sample Identification										Lab Sample Numbers		
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	Sample # of Cont.	Field Filtered Sample?	Grab/Composite	Units
OL-VC-80042	0.5	3.3	OL-0281-01	10/8/2006	14:37	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80038	0.5	3.3	OL-0281-02	10/7/2006	08:47	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80037	0	0.5	OL-0281-03	10/7/2006	08:34	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80032	0.5	3.3	OL-0281-04	10/10/2006	08:13	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80026	0	0.5	OL-0281-05	10/9/2006	10:05	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80024	0	0.5	OL-0281-06	10/9/2006	10:01	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80028	0.5	3.3	OL-0281-07	10/9/2006	11:43	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80029	3.3	6.6	OL-0281-08	10/9/2006	13:22	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		
OL-VC-80033	0	0.5	OL-0281-09	10/10/2006	09:04	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>		

Special Instructions:			
Relinquished by: <i>Shara M. Chomura</i>	Company: PARSONS	Received by: <i>Shara M. Chomura</i>	Company: PARSONS
Date/Time: 12/12/06 @ 12:05	Date/Time: 12/12/06 12:30	Condition: Cooler Temp.	Custody Seals Intact
Relinquished by:	Company:	Condition: Cooler Temp.	Custody Seals Intact
Date/Time:	Date/Time:	Condition: Cooler Temp.	Custody Seals Intact

Chain of Custody / Analysis Request										AEST Ref: 38292.40495													
Privileged and Confidential										COC #: 0281													
Site Name: Onondaga Lake										Lab Use Only													
Location of Site: Syracuse, New York										Lab Proj #													
Preservative: 1										Lab ID													
Sampler: PO #:										Job No.													
Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -										GTE													
Hardcopy Report To: Lorraine Weber																							
Invoice To: Pete Petrone																							
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088																							
Sample Identification										Lab Sample Numbers													
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Grab/Composite	Field Filtered Sample?	Atterberg Limits	Bulk Density	Carbonate Content	Organic Content	Moisture Content	Specific Gravity	Grain Size	SIC	Porosity	CUT	UUT	Consolidation
OL-VC-80034	0	0.5	OL-0281-10	10/10/2006	10:24	SEDIMENT	SOIL	REG	1														
OL-VC-80039	0	0.5	OL-0281-11	10/7/2006	08:55	SEDIMENT	SOIL	REG	1														
OL-VC-80040	0.5	3.3	OL-0281-12	10/7/2006	08:15	SEDIMENT	SOIL	REG	1														
OL-VC-80044	0.5	3.3	OL-0281-13	10/6/2006	11:34	SEDIMENT	SOIL	REG	1														
OL-VC-80045	0	0.5	OL-0281-14	10/6/2006	11:22	SEDIMENT	SOIL	REG	1														
OL-VC-80046	0	0.5	OL-0281-15	10/7/2006	09:27	SEDIMENT	SOIL	REG	1														
OL-VC-80047	0.5	3.3	OL-0281-16	10/9/2006	10:33	SEDIMENT	SOIL	REG	1														
OL-VC-80030	3.3	6.6	OL-0281-17	10/9/2006	13:55	SEDIMENT	SOIL	REG	1														
OL-VC-80035	0	0.5	OL-0281-18	10/10/2006	12:40	SEDIMENT	SOIL	REG	1														

Special Instructions:			
Relinquished by: <i>Lorraine M. Chomura</i>	Company: PARSONS	Received by: <i>St. M. L.</i>	Company: []
Date/Time: 12/12/06 @ 12:05	Date/Time: 12/12/06 12:35	Condition: Cooler Temp.	Custody Seals Intact: []
Relinquished by: []	Company: []	Condition: Cooler Temp.	Custody Seals Intact: []
Date/Time: []	Date/Time: []	Cooler Temp.:	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify):]

Date Printed: 12/11/2006

Chain of Custody/Analysis Request									
AESI Ref: 38292.40495		COC #: 0281		Lab Use Only		Lab Proj #		Lab ID	
GTE		Job No.							
Client Contact:		PARSONS		290 Elwood Davis Road, Suite 312		Liverpool, NY 13088			
Hardcopy Report To:		Lorraine Weber							
Invoice To:		Pete Petrone							
Sample Identification		Location ID		Start Depth (ft)		End Depth (ft)		Field Sample ID	
		OL-VC-80036		0		0.5		OL-0281-19	
		OL-VC-80036		6.6		9.9		OL-0281-20	
Sample Date		Sample Time		Sample Type		Sample Matrix		Sample Purpose	
10/10/2006		12:53		SEDIMENT		SOIL		REG 1	
10/10/2006		12:59		SEDIMENT		SOIL		REG 1	
Analysis Turnaround Time:		Standard -		Rush Charges Authorized for -		2 weeks -		1 week -	
								Next Day -	
Preservative:		0		0		0		0	
Atterberg Limits		0		0		0		0	
Bulk Density		0		0		0		0	
Carbonate Content		0		0		0		0	
Organic Content		0		0		0		0	
Moisture Content		0		0		0		0	
Specific Gravity		0		0		0		0	
Grain Size		0		0		0		0	
SIC		0		0		0		0	
Porosity		0		0		0		0	
CUT		0		0		0		0	
UUT		0		0		0		0	
Consolidation		0		0		0		0	
Field Filtered Sample?		0		0		0		0	
Grab/Composite		0		0		0		0	
Units		0		0		0		0	
Lab Sample Numbers		0		0		0		0	

Special Instructions:			
Relinquished by:	Company	Received by:	Company
<i>Extra M. Chmura</i>	PARSONS	<i>H M S L</i>	
Date/Time	Date/Time	Date/Time	Date/Time
12/12/06 @ 12:05	12/12/06 @ 12:30	12/12/06	12/12/06
Relinquished by:	Company	Received by:	Company
Date/Time	Date/Time	Date/Time	Date/Time

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = MeOH]; [8 = Other (specify):

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80042	OL-0281-01	0.5-3.3 ft	Wet, black silt	176.7
OL-VC-80038	OL-0281-02	0.5-3.3 ft	Wet, black silt	172.6
OL-VC-80037	OL-0281-03	0-0.5 ft	Wet, very dark gray silt	228.6
OL-VC-80032	OL-0281-04	0.5-3.3 ft	Moist, black clay	186.2
OL-VC-80026	OL-0281-05	0-0.5 ft	Wet, black silt	548.4
OL-VC-80024	OL-0281-06	0-0.5 ft	Wet, black silt	309.5
OL-VC-80028	OL-0281-07	0.5-3.3 ft	Wet, black silt	206.4
OL-VC-80029	OL-0281-08	3.3-6.6 ft	Wet, gray silt	123.3
OL-VC-80033	OL-0281-09	0-0.5 ft	Wet, black silt	211.2

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mill	
Sample ID:---	Test Date: 06/23/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80039	OL-0281-11	0-0.5 ft	Moist, very dark gray silt	192.7
OL-VC-80040	OL-0281-12	0.5-3.3 ft	Wet, black silt	154.4
OL-VC-80044	OL-0281-13	0.5-3.3 ft	Wet, black silt	192.3
OL-VC-80045	OL-0281-14	0-0.5 ft	Wet, black silt	210
OL-VC-80046	OL-0281-15	0-0.5 ft	Wet, black silt	152.1
OL-VC-80047	OL-0281-16	0.5-3.3 ft	Wet, very dark gray silt	122.2
OL-VC-80030	OL-0281-17	3.3-6.6 ft	Wet, light gray silt	232
OL-VC-80035	OL-0281-18	0-0.5 ft	Wet, black silt	219.2
OL-VC-80036	OL-0281-19	0-0.5 ft	Wet, dark gray silt	269.4
OL-VC-80036	OL-0281-20	6.6-9.9 ft	Moist, very dark gray silt	137

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	01/23/07
Depth :	---	Test Id:	105608
		Tested By:	yf
		Checked By:	jdt

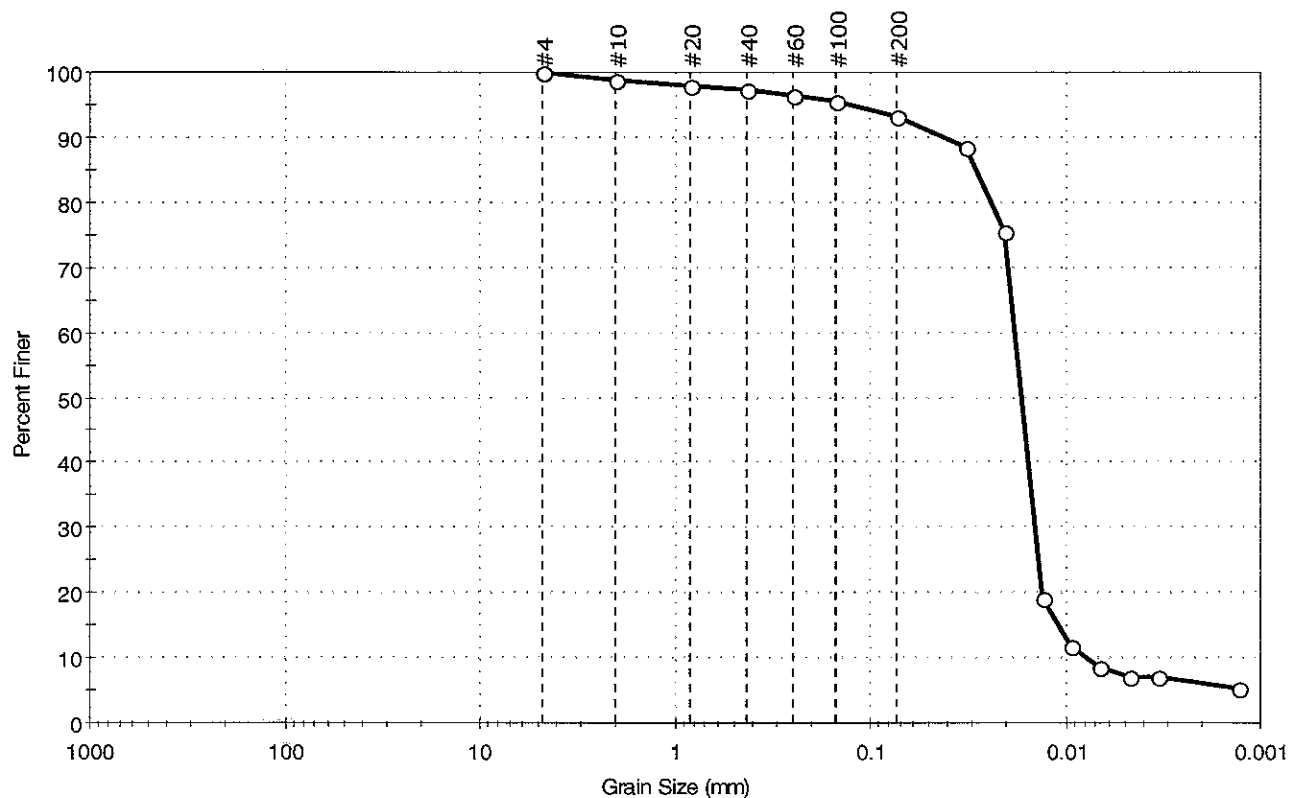
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-80038	OL-0281-02	0.5-3.3 ft	Wet, black silt	2.72
OL-VC-80032	OL-0281-04	0.5-3.3 ft	Moist, black clay	2.5
OL-VC-80024	OL-0281-06	0-0.5 ft	Wet, black silt	2.68
OL-VC-80028	OL-0281-07	0.5-3.3 ft	Wet, black silt	2.65
OL-VC-80029	OL-0281-08	3.3-6.6 ft	Wet, gray silt	2.57
OL-VC-80033	OL-0281-09	0-0.5 ft	Wet, black silt	2.62
OL-VC-80040	OL-0281-12	0.5-3.3 ft	Wet, black silt	2.66
OL-VC-80035	OL-0281-18	0-0.5 ft	Wet, black silt	2.73

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80042	Sample Type:	jar
Sample ID:	OL-0281-01	Test Date:	01/26/07
Depth :	0.5-3.3 ft	Test Id:	105585
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	6.8	93.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	97		
#60	0.25	96		
#100	0.15	95		
#200	0.074	93		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0325	89		
---	0.0208	75		
---	0.0132	19		
---	0.0094	12		
---	0.0067	9		
---	0.0047	7		
---	0.0033	7		
---	0.0013	5		

Coefficients

D ₈₅ = 0.0288 mm	D ₃₀ = 0.0144 mm
D ₆₀ = 0.0184 mm	D ₁₅ = 0.0109 mm
D ₅₀ = 0.0169 mm	D ₁₀ = 0.0078 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

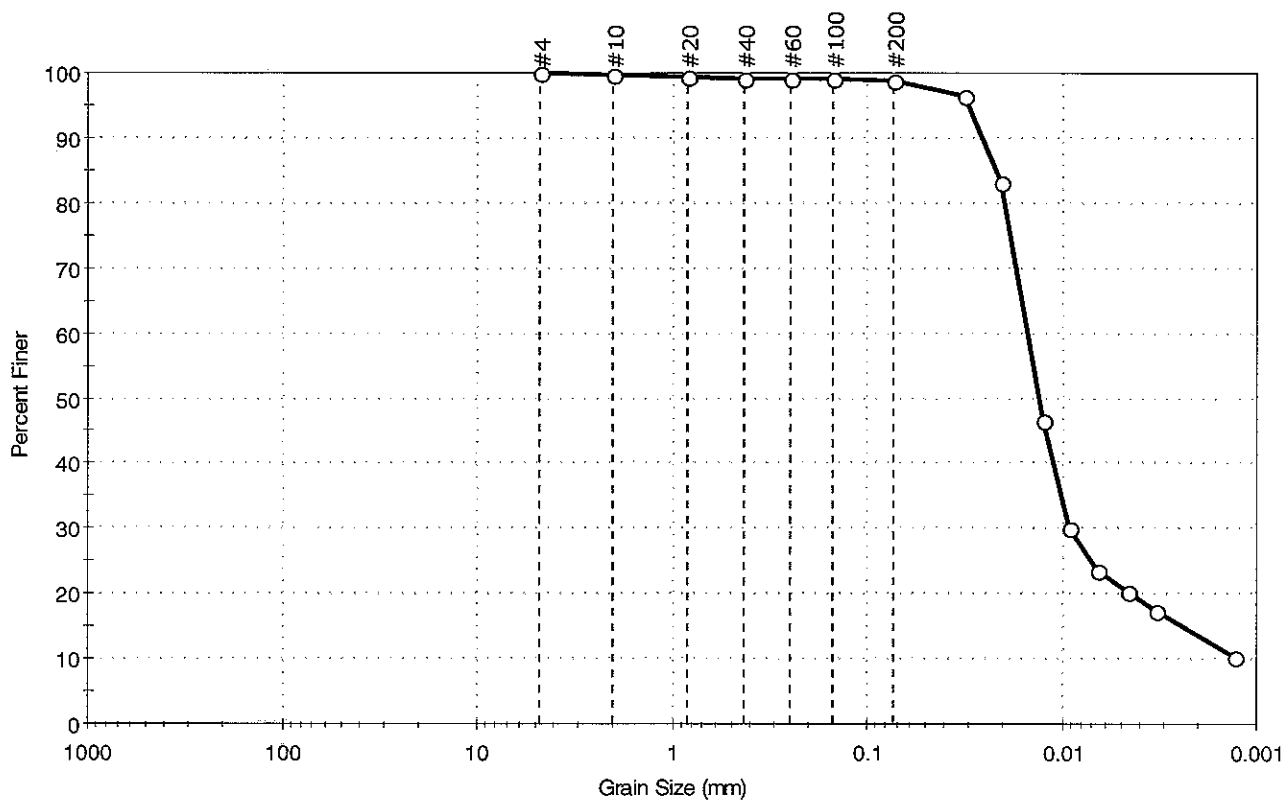
AASHTO Clayey Soils (A-7-5 (63))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80038	Sample Type: jar
Sample ID: OL-0281-02	Test Date: 01/26/07
Depth: 0.5-3.3 ft	Test Id: 105586
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	1.2	98.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	96		
---	0.0205	83		
---	0.0126	47		
---	0.0092	30		
---	0.0065	24		
---	0.0046	20		
---	0.0033	17		
---	0.0013	10		

Coefficients

D ₈₅ = 0.0218 mm	D ₃₀ = 0.0092 mm
D ₆₀ = 0.0151 mm	D ₁₅ = 0.0024 mm
D ₅₀ = 0.0132 mm	D ₁₀ = 0.0012 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

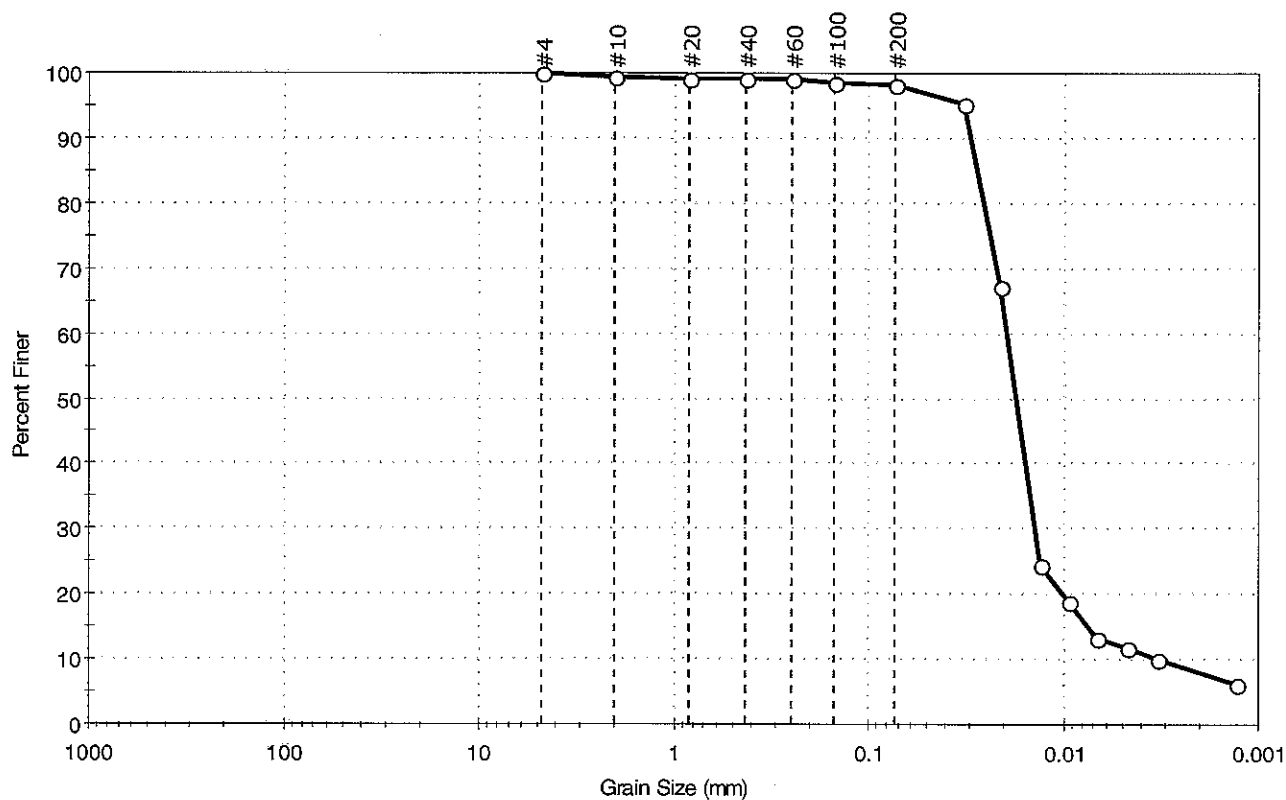
AASHTO Clayey Soils (A-7-5 (95))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80037	Sample Type: jar
Sample ID: OL-0281-03	Test Date: 01/26/07
Depth: 0-0.5 ft	Test Id: 105587
Test Comment: ---	
Sample Description: Wet, very dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.7	98.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0329	95		
---	0.0215	67		
---	0.0132	25		
---	0.0094	19		
---	0.0067	13		
---	0.0047	12		
---	0.0033	10		
---	0.0013	6		

Coefficients

D ₈₅ = 0.0282 mm	D ₃₀ = 0.0140 mm
D ₆₀ = 0.0198 mm	D ₁₅ = 0.0073 mm
D ₅₀ = 0.0176 mm	D ₁₀ = 0.0033 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

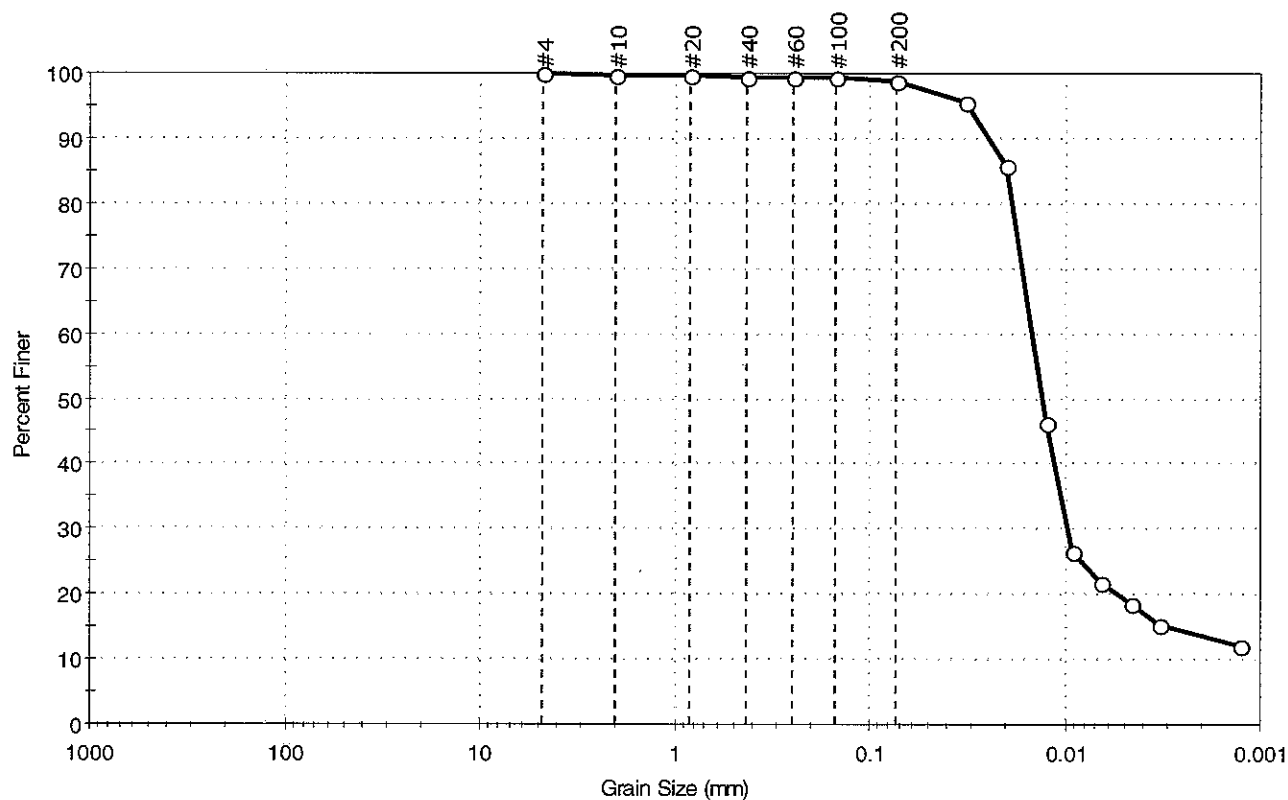
AASHTO Clayey Soils (A-7-5 (84))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Location: Syracuse	Project No: GTX-7143
Boring ID: OL-VC-80032	Sample Type: jar	Tested By: mll	Sample ID: OL-0281-04
Test Date: 01/26/07	Checked By: jdt	Depth: 0.5-3.3 ft	Test Id: 105588
Test Comment: ---			
Sample Description: Moist, black clay			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.2	98.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0322	96		
---	0.0204	86		
---	0.0126	46		
---	0.0092	27		
---	0.0066	22		
---	0.0046	19		
---	0.0033	15		
---	0.0013	12		

Coefficients

D ₈₅ = 0.0202 mm	D ₃₀ = 0.0098 mm
D ₆₀ = 0.0149 mm	D ₁₅ = 0.0029 mm
D ₅₀ = 0.0132 mm	D ₁₀ = 0.0007 mm
C _u = N/A	C _c = N/A

Classification

ASTM fat clay (CH)

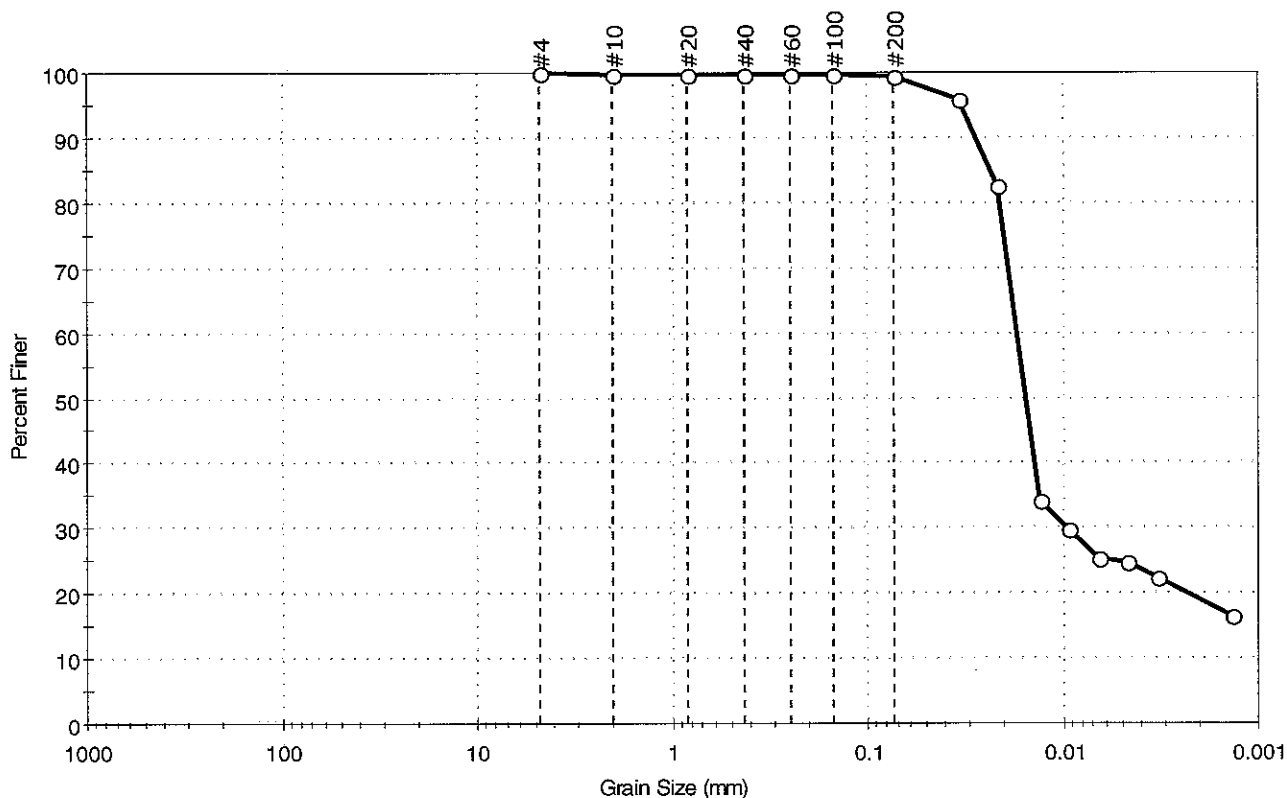
AASHTO Clayey Soils (A-7-5 (102))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-80026	Sample Type: jar
Sample ID: OL-0281-05	Test Date: 01/26/07	Tested By: mll
Depth: 0-0.5 ft	Test Id: 105589	Checked By: jdt
Test Comment: ---	Sample Description: Wet, black silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	0.6	99.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0343	96		
---	0.0215	83		
---	0.0132	34		
---	0.0094	30		
---	0.0066	25		
---	0.0047	25		
---	0.0033	22		
---	0.0014	17		

Coefficients

D ₈₅ = 0.0233 mm	D ₃₀ = 0.0095 mm
D ₆₀ = 0.0171 mm	D ₁₅ = N/A
D ₅₀ = 0.0155 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

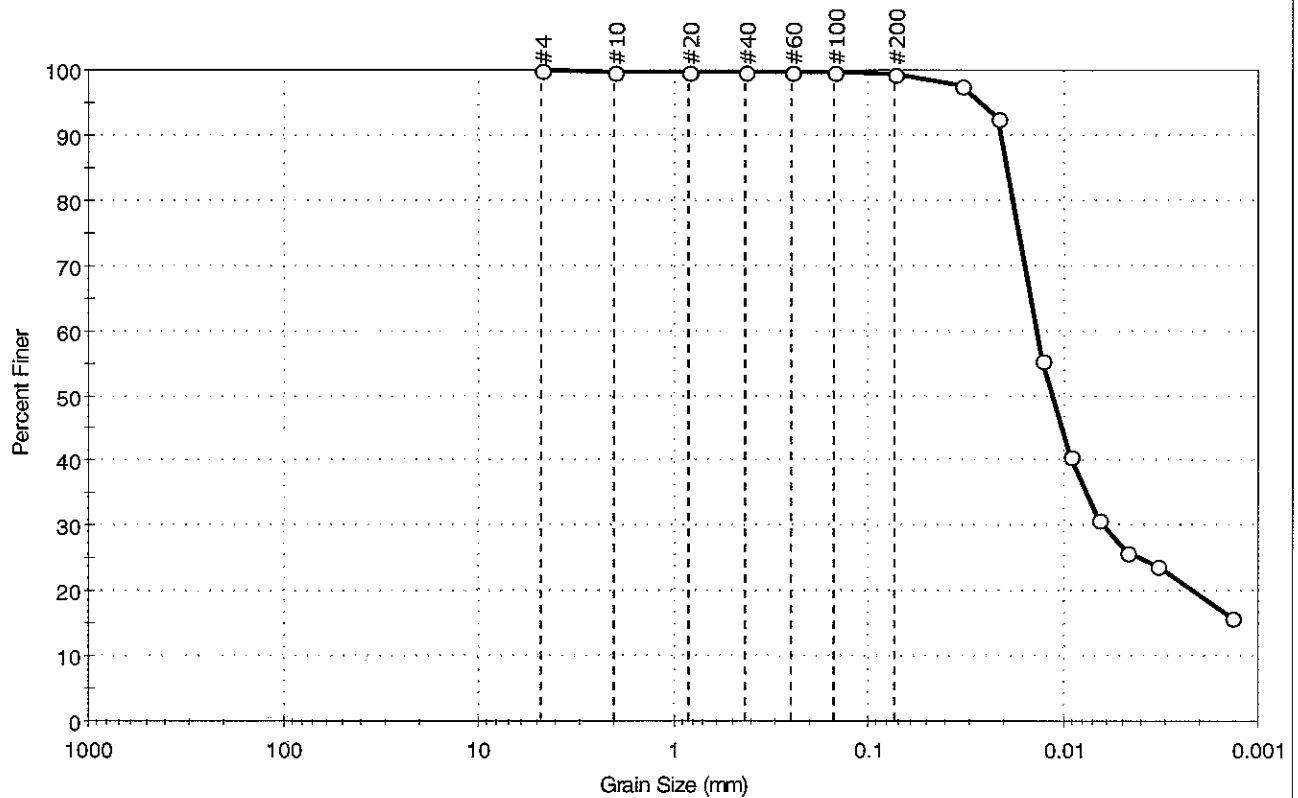
AASHTO Clayey Soils (A-7-5 (84))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80024	Sample Type: jar
Sample ID: OL-0281-06	Test Date: 01/26/07
Depth: 0-0.5 ft	Test Id: 105590
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.5	99.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0337	98		
---	0.0216	93		
---	0.0129	56		
---	0.0093	41		
---	0.0066	31		
---	0.0047	26		
---	0.0033	24		
---	0.0014	16		

Coefficients

D ₈₅ = 0.0194 mm	D ₃₀ = 0.0062 mm
D ₆₀ = 0.0137 mm	D ₁₅ = N/A
D ₅₀ = 0.0114 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

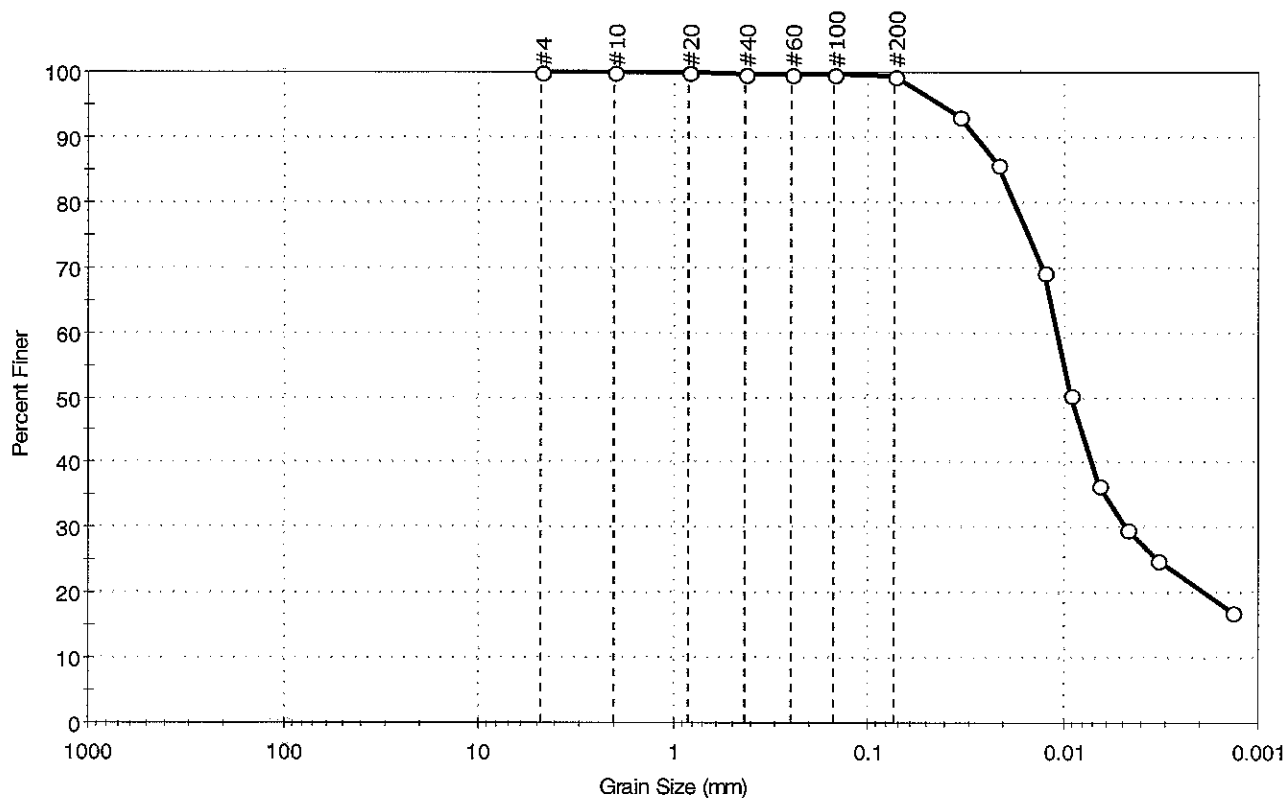
AASHTO Clayey Soils (A-7-5 (105))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: n/a
Boring ID: OL-VC-80028	Sample Type: jar
Sample ID: OL-0281-07	Test Date: 01/26/07
Depth: 0.5-3.3 ft	Test Id: 105591
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.5	99.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0342	93		
---	0.0216	86		
---	0.0127	69		
---	0.0091	51		
---	0.0066	36		
---	0.0047	30		
---	0.0033	25		
---	0.0014	17		

Coefficients

D ₈₅ = 0.0210 mm	D ₃₀ = 0.0047 mm
D ₆₀ = 0.0107 mm	D ₁₅ = N/A
D ₅₀ = 0.0090 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

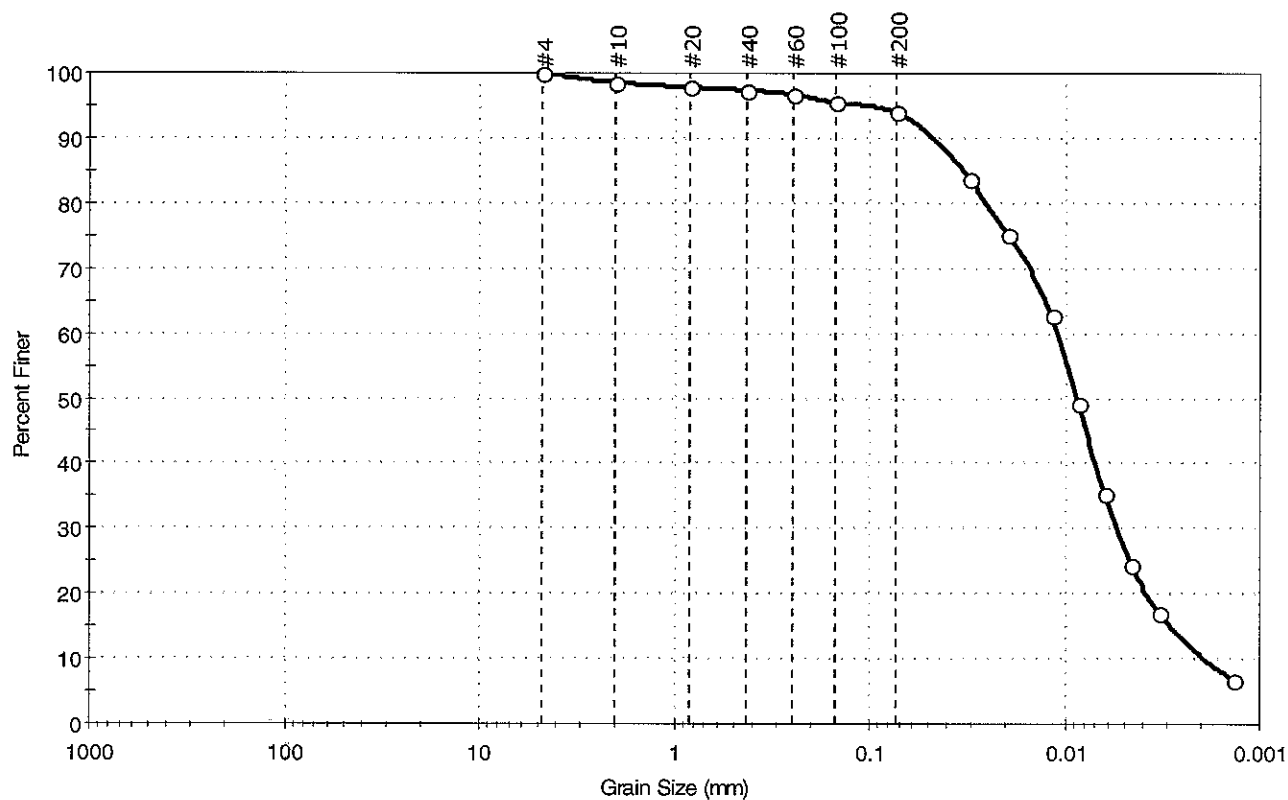
AASHTO Clayey Soils (A-7-5 (81))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Location: Syracuse	Project No: GTX-7143
Boring ID: OL-VC-80029	Sample Type: jar	Tested By: mll	Sample ID: OL-0281-08
Depth: 3.3-6.6 ft	Test Date: 01/26/07	Checked By: jdt	Test Id: 105592
Test Comment: ---			
Sample Description: Wet, gray silt			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	6.0	94.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	97		
#60	0.25	97		
#100	0.15	96		
#200	0.074	94		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0313	84		
---	0.0197	75		
---	0.0118	63		
---	0.0086	49		
---	0.0063	35		
---	0.0046	24		
---	0.0033	17		
---	0.0014	7		

Coefficients

D ₈₅ = 0.0346 mm	D ₃₀ = 0.0054 mm
D ₆₀ = 0.0111 mm	D ₁₅ = 0.0027 mm
D ₅₀ = 0.0088 mm	D ₁₀ = 0.0018 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

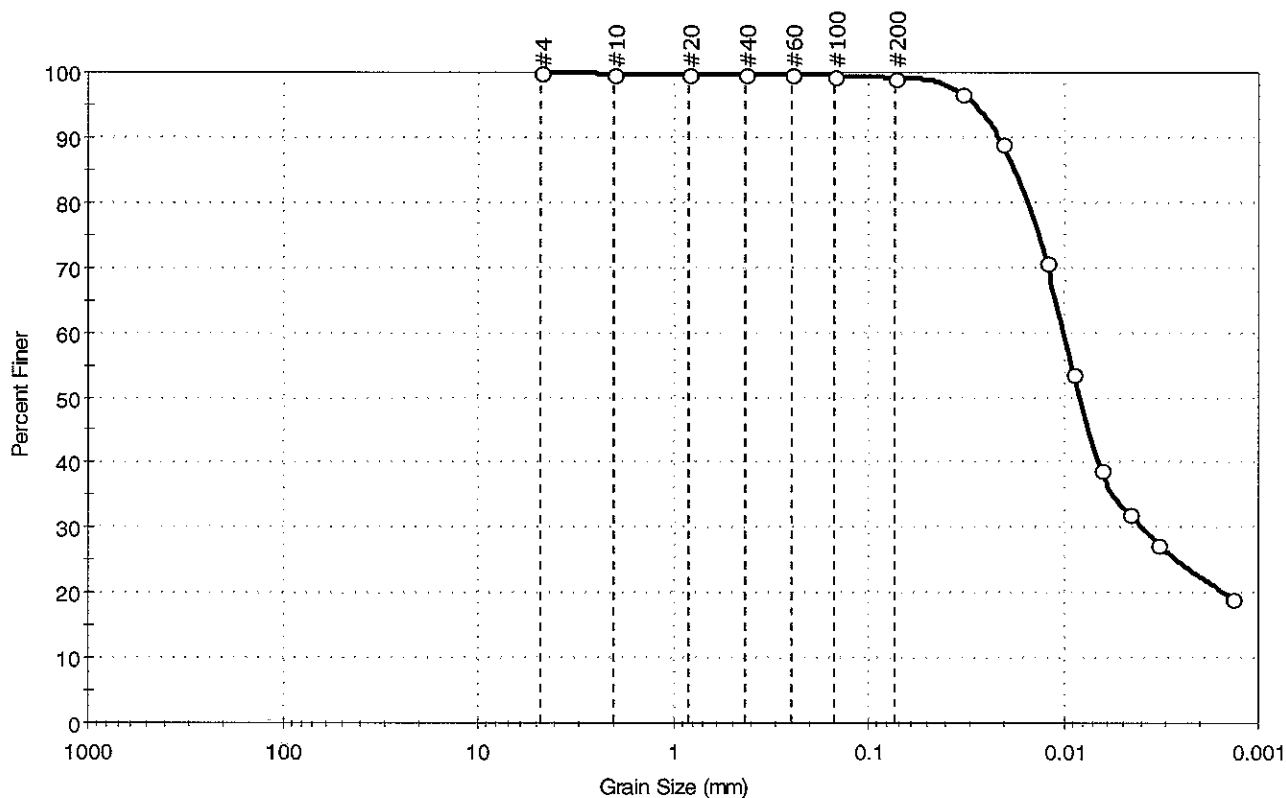
AASHTO Clayey Soils (A-7-5 (36))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80033	Sample Type:	jar
Sample ID:	OL-0281-09	Test Date:	01/26/07
Depth :	0-0.5 ft	Test Id:	105593
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0332	97		
---	0.0209	89		
---	0.0123	71		
---	0.0089	54		
---	0.0065	39		
---	0.0046	32		
---	0.0033	28		
---	0.0014	19		

Coefficients

$D_{85} = 0.0185$ mm	$D_{30} = 0.0039$ mm
$D_{60} = 0.0100$ mm	$D_{15} = N/A$
$D_{50} = 0.0082$ mm	$D_{10} = N/A$
$C_u = N/A$	$C_c = N/A$

Classification

ASTM elastic silt (MH)

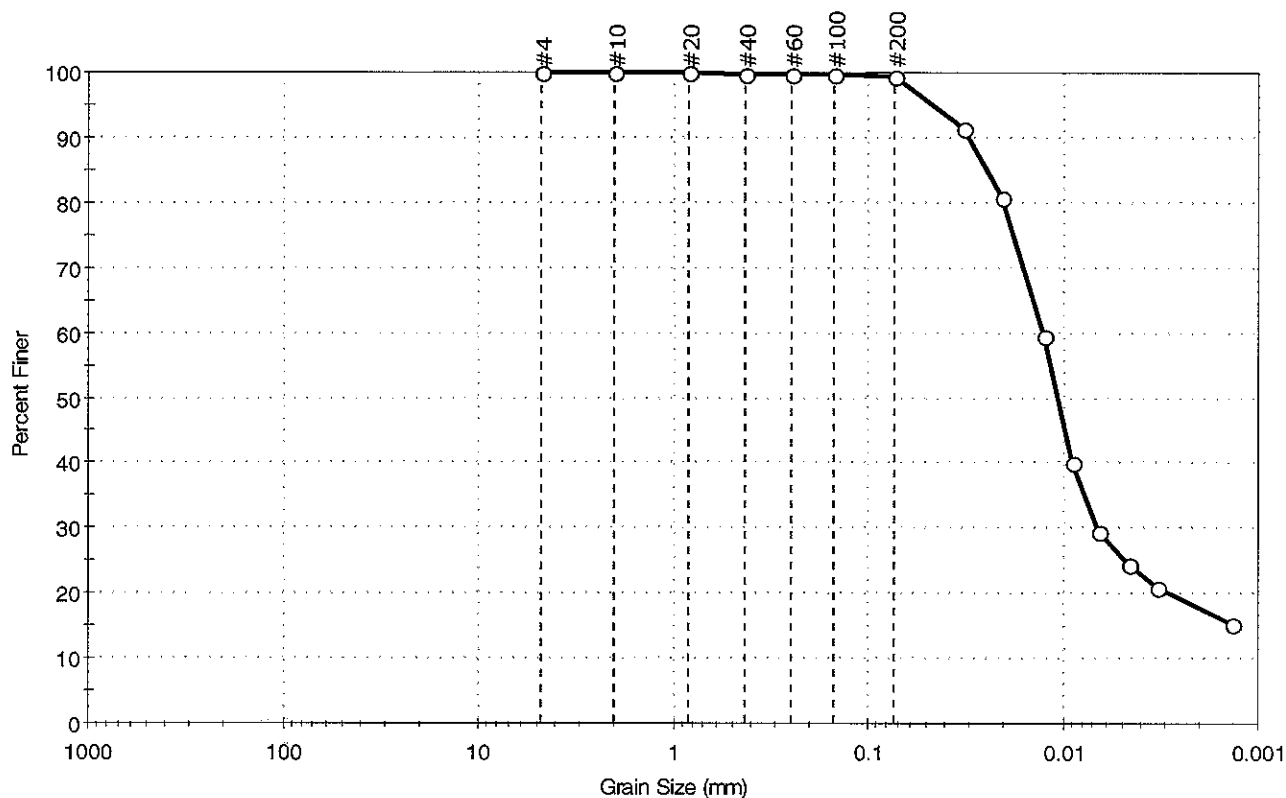
AASHTO Clayey Soils (A-7-5 (94))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-80034	Sample Type: jar
Sample ID: OL-0281-10	Test Date: 01/26/07
Depth: 0-0.5 ft	Test Id: 105594
Test Comment: ---	Tested By: mll
Sample Description: Wet, black silt	Checked By: jdt
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.7	99.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0328	91		
---	0.0209	81		
---	0.0125	59		
---	0.0091	40		
---	0.0065	29		
---	0.0046	24		
---	0.0033	21		
---	0.0014	15		

Coefficients

D ₈₅ = 0.0251 mm	D ₃₀ = 0.0066 mm
D ₆₀ = 0.0126 mm	D ₁₅ = N/A
D ₅₀ = 0.0107 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

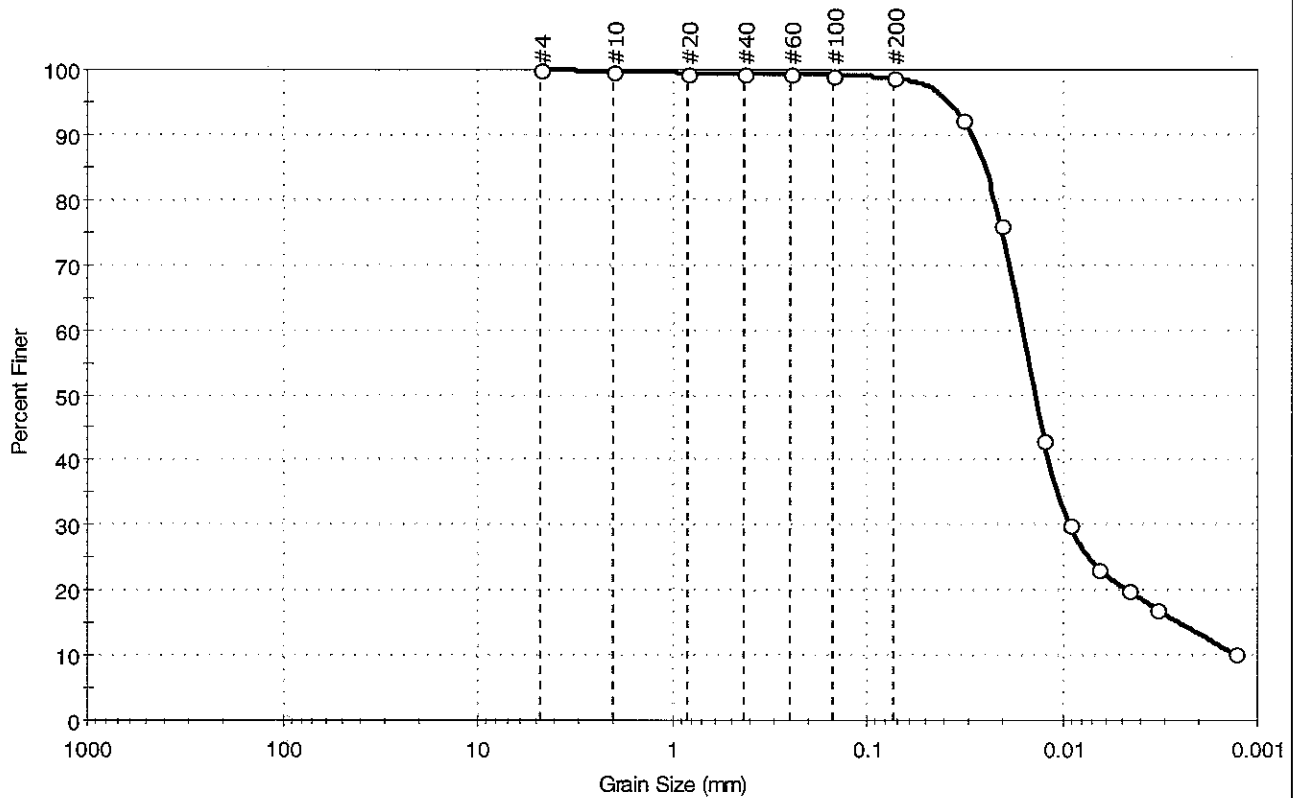
AASHTO Clayey Soils (A-7-5 (90))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80039	Sample Type: jar
Sample ID: OL-0281-11	Test Date: 01/26/07
Depth: 0-0.5 ft	Test Id: 105595
Test Comment: ---	
Sample Description: Moist, very dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.3	98.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0325	92		
---	0.0207	76		
---	0.0125	43		
---	0.0091	30		
---	0.0065	23		
---	0.0046	20		
---	0.0033	17		
---	0.0013	10		

Coefficients

$D_{85} = 0.0265$ mm	$D_{30} = 0.0092$ mm
$D_{60} = 0.0162$ mm	$D_{15} = 0.0025$ mm
$D_{50} = 0.0139$ mm	$D_{10} = 0.0013$ mm
$C_u = N/A$	$C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (81))

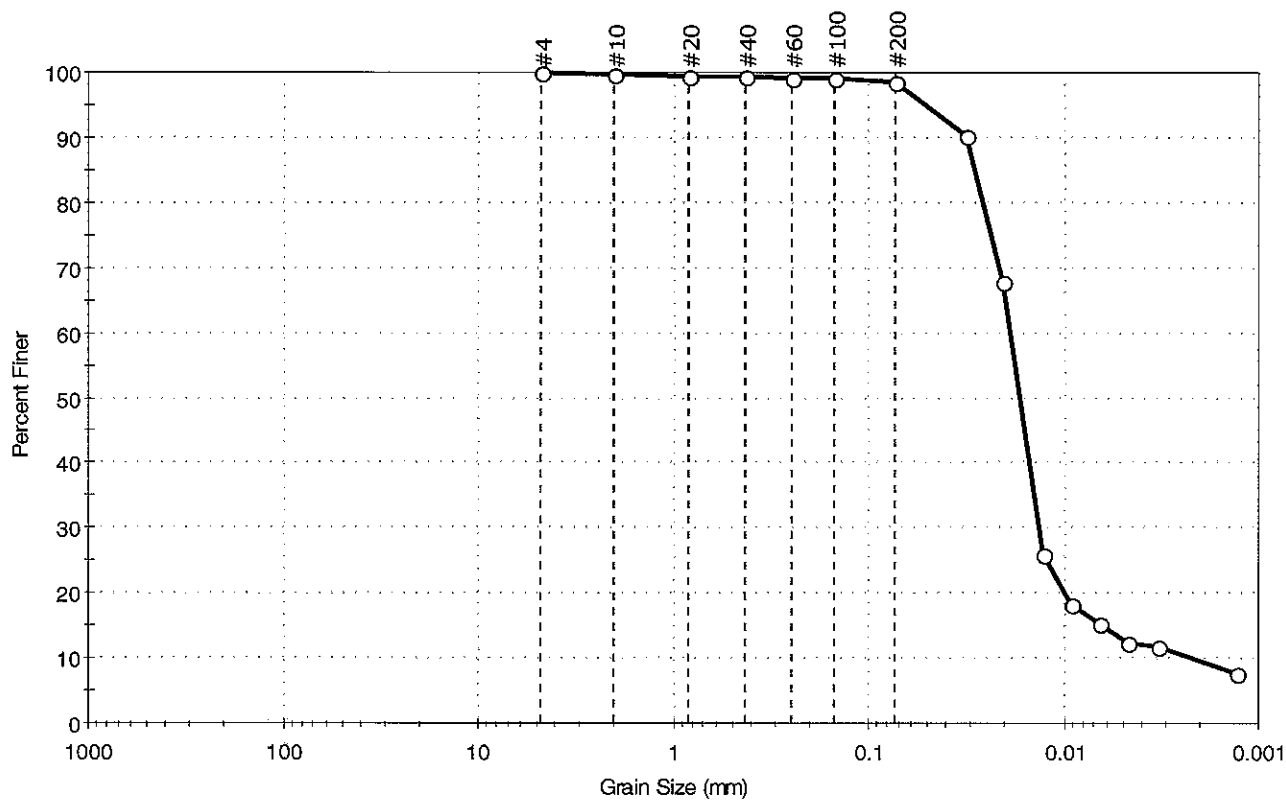
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Location: Syracuse	Project No: GTX-7143
Boring ID: OL-VC-80040	Sample Type: jar	Tested By: mll	Sample ID: OL-0281-12
Test Date: 01/26/07	Checked By: jdt	Depth : 0.5-3.3 ft	Test Id: 105596
Test Comment: ---			
Sample Description: Wet, black silt			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.5	98.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	90		
---	0.0208	68		
---	0.0128	26		
---	0.0093	18		
---	0.0066	15		
---	0.0047	12		
---	0.0033	12		
---	0.0013	8		

Coefficients

D ₈₅ = 0.0289 mm	D ₃₀ = 0.0135 mm
D ₆₀ = 0.0190 mm	D ₁₅ = 0.0064 mm
D ₅₀ = 0.0169 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

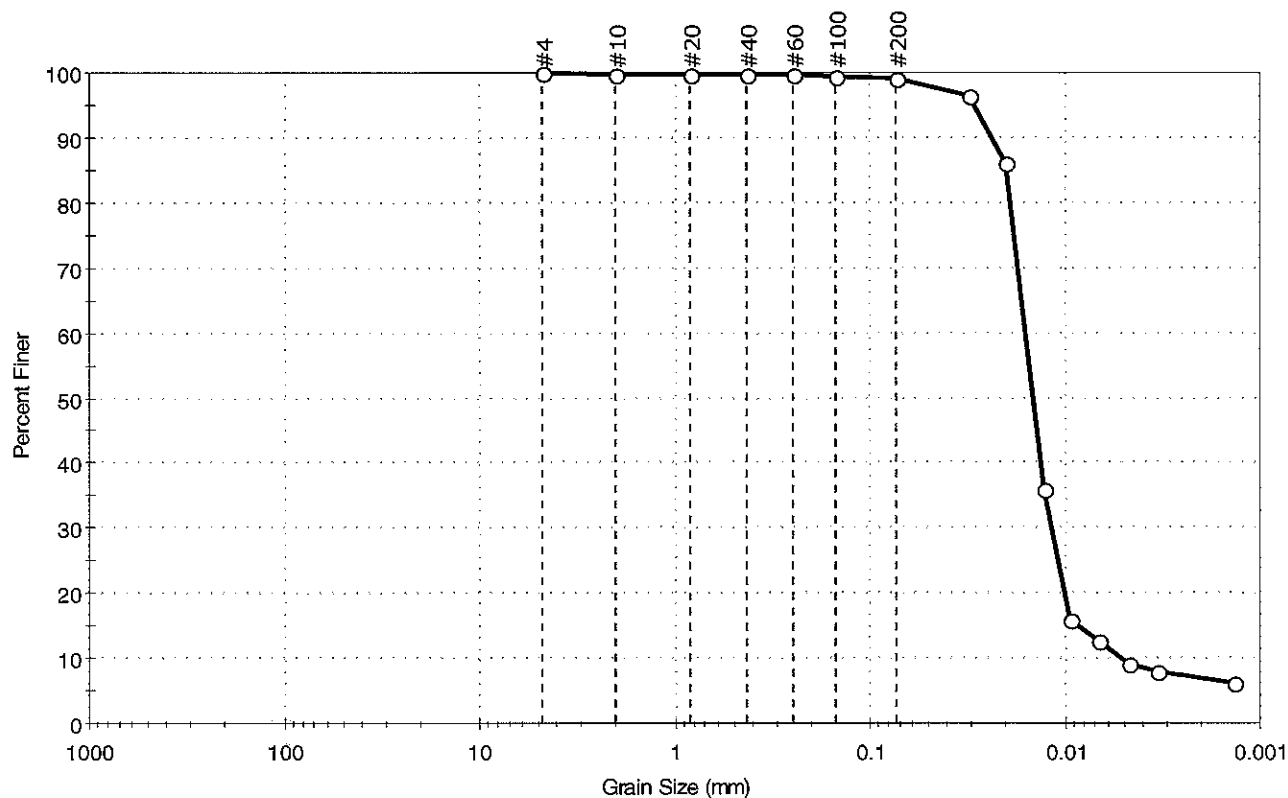
AASHTO Clayey Soils (A-7-5 (54))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mil
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80044	Sample Type:	jar
Sample ID:	OL-0281-13	Test Date:	01/29/07
Depth :	0.5-3.3 ft	Test Id:	105597
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.9	99.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0314	96		
---	0.0203	86		
---	0.0130	36		
---	0.0094	16		
---	0.0067	13		
---	0.0048	9		
---	0.0034	8		
---	0.0014	6		

Coefficients

D ₈₅ = 0.0201 mm	D ₃₀ = 0.0118 mm
D ₆₀ = 0.0161 mm	D ₁₅ = 0.0086 mm
D ₅₀ = 0.0147 mm	D ₁₀ = 0.0052 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

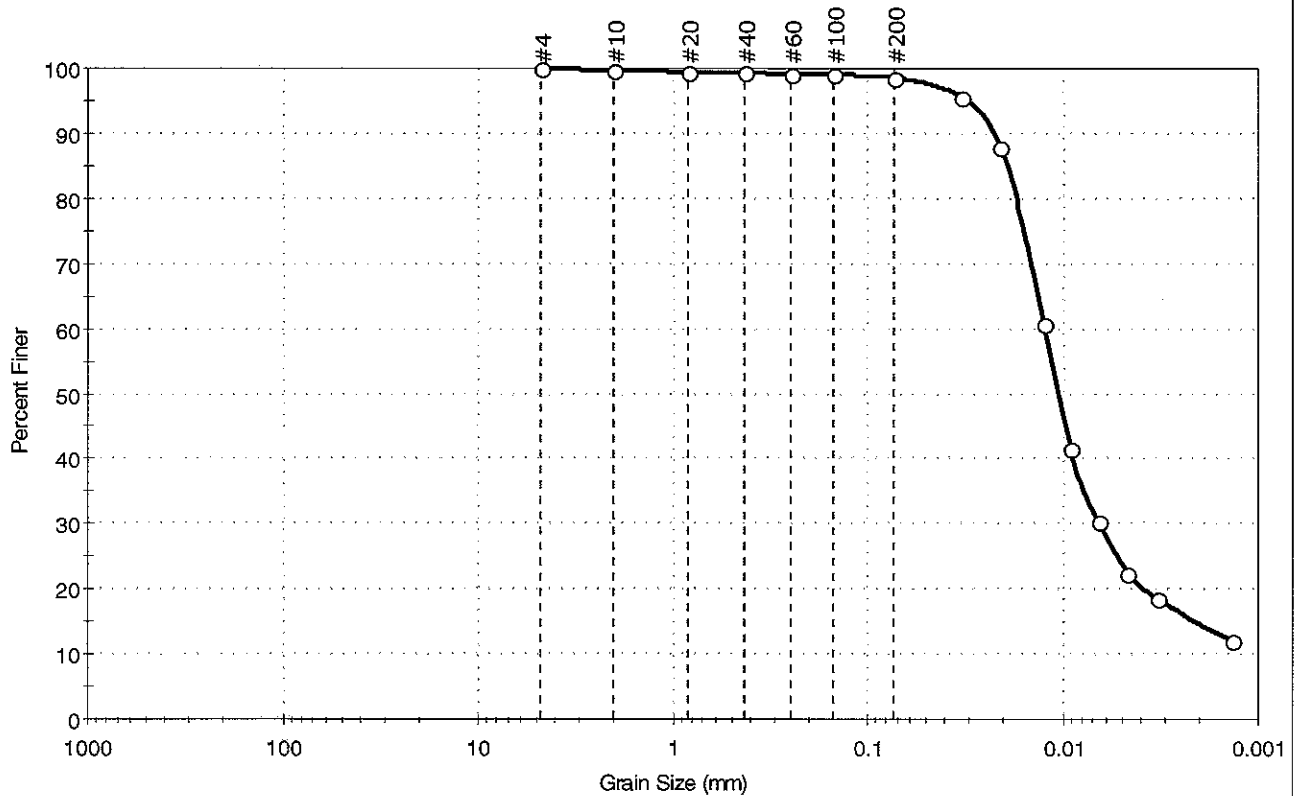
AASHTO Clayey Soils (A-7-5 (104))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80045	Sample Type: jar
Sample ID: OL-0281-14	Test Date: 01/26/07
Depth: 0-0.5 ft	Test Id: 105598
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.4	98.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0334	96		
---	0.0210	88		
---	0.0125	61		
---	0.0091	42		
---	0.0066	30		
---	0.0047	23		
---	0.0033	19		
---	0.0014	12		

Coefficients

D ₈₅ = 0.0198 mm	D ₃₀ = 0.0065 mm
D ₆₀ = 0.0124 mm	D ₁₅ = 0.0020 mm
D ₅₀ = 0.0105 mm	D ₁₀ = 0.0010 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

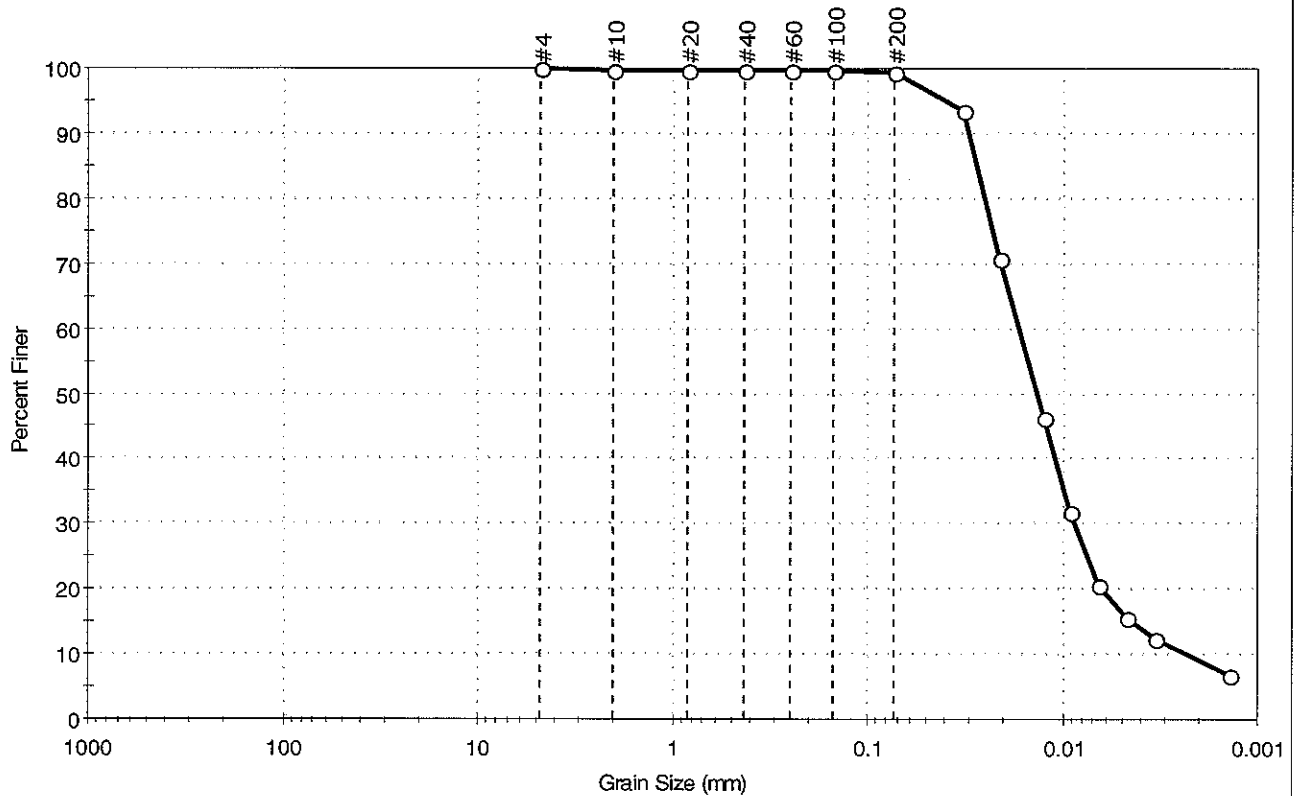
AASHTO Clayey Soils (A-7-5 (101))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80046	Sample Type: jar
Sample ID: OL-0281-15	Test Date: 01/26/07
Depth: 0-0.5 ft	Test Id: 105599
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.6	99.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0326	93		
---	0.0212	71		
---	0.0126	46		
---	0.0092	32		
---	0.0066	21		
---	0.0047	16		
---	0.0033	12		
---	0.0014	7		

Coefficients

D ₈₅ = 0.0278 mm	D ₃₀ = 0.0087 mm
D ₆₀ = 0.0169 mm	D ₁₅ = 0.0044 mm
D ₅₀ = 0.0136 mm	D ₁₀ = 0.0023 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

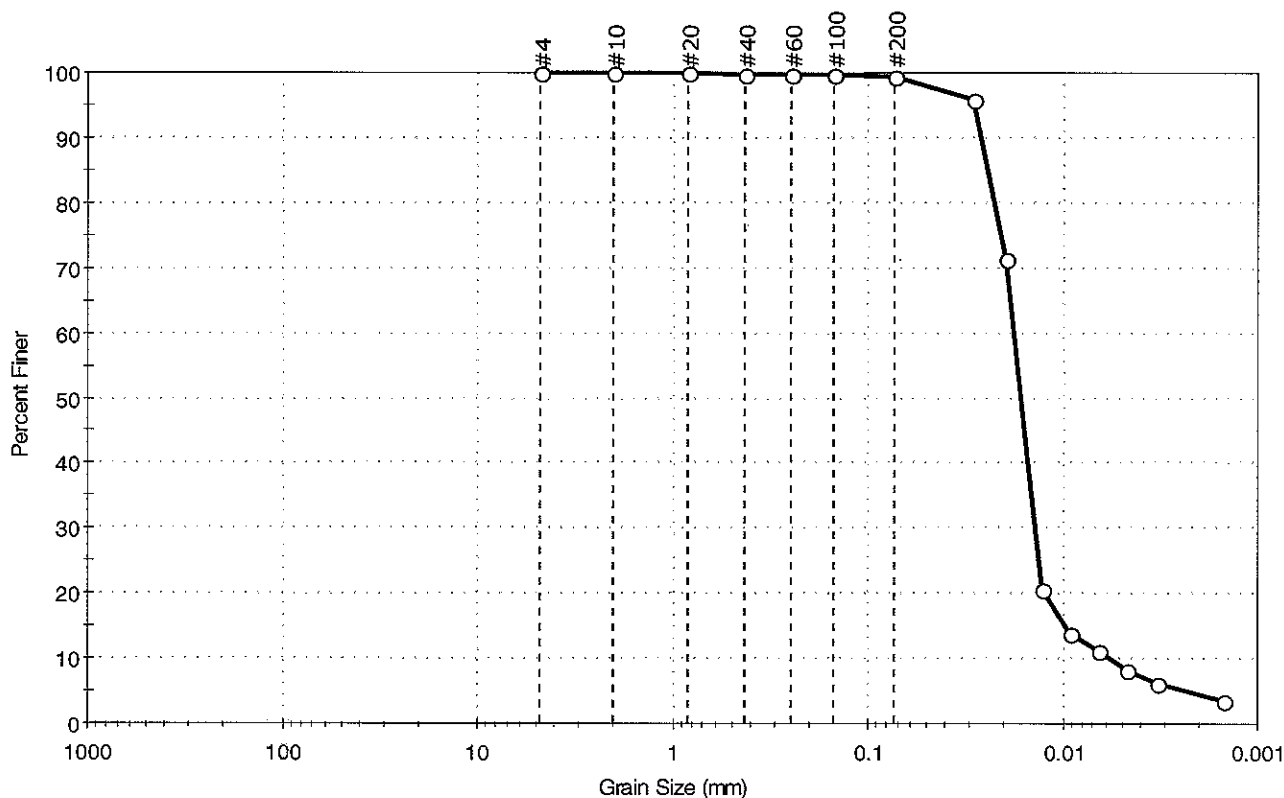
AASHTO Clayey Soils (A-7-5 (57))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80047	Sample Type: jar
Sample ID: OL-0281-16	Test Date: 01/29/07
Depth: 0.5-3.3 ft	Test Id: 105600
Test Comment: ---	
Sample Description: Wet, very dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.5	99.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0288	96		
---	0.0195	71		
---	0.0130	21		
---	0.0093	14		
---	0.0066	11		
---	0.0047	8		
---	0.0033	6		
---	0.0015	4		

Coefficients

D ₈₅ = 0.0242 mm	D ₃₀ = 0.0140 mm
D ₆₀ = 0.0178 mm	D ₁₅ = 0.0098 mm
D ₅₀ = 0.0164 mm	D ₁₀ = 0.0058 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

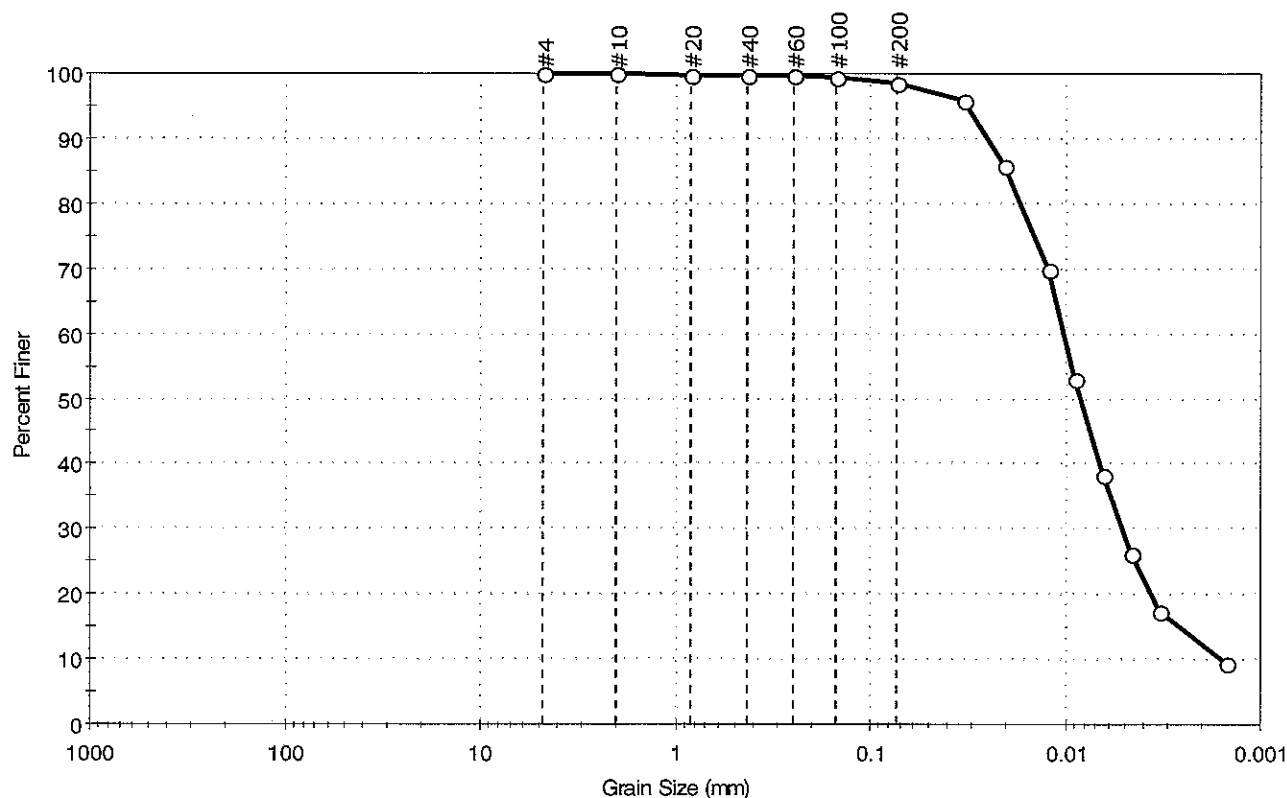
AASHTO Clayey Soils (A-7-5 (37))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80030	Sample Type:	jar
Sample ID:	OL-0281-17	Test Date:	01/29/07
Depth :	3.3-6.6 ft	Test Id:	105601
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.5	98.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0332	96		
---	0.0209	86		
---	0.0123	70		
---	0.0089	53		
---	0.0064	38		
---	0.0046	26		
---	0.0033	17		
---	0.0015	9		

Coefficients

D ₈₅ = 0.0203 mm	D ₃₀ = 0.0051 mm
D ₆₀ = 0.0101 mm	D ₁₅ = 0.0026 mm
D ₅₀ = 0.0083 mm	D ₁₀ = 0.0016 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

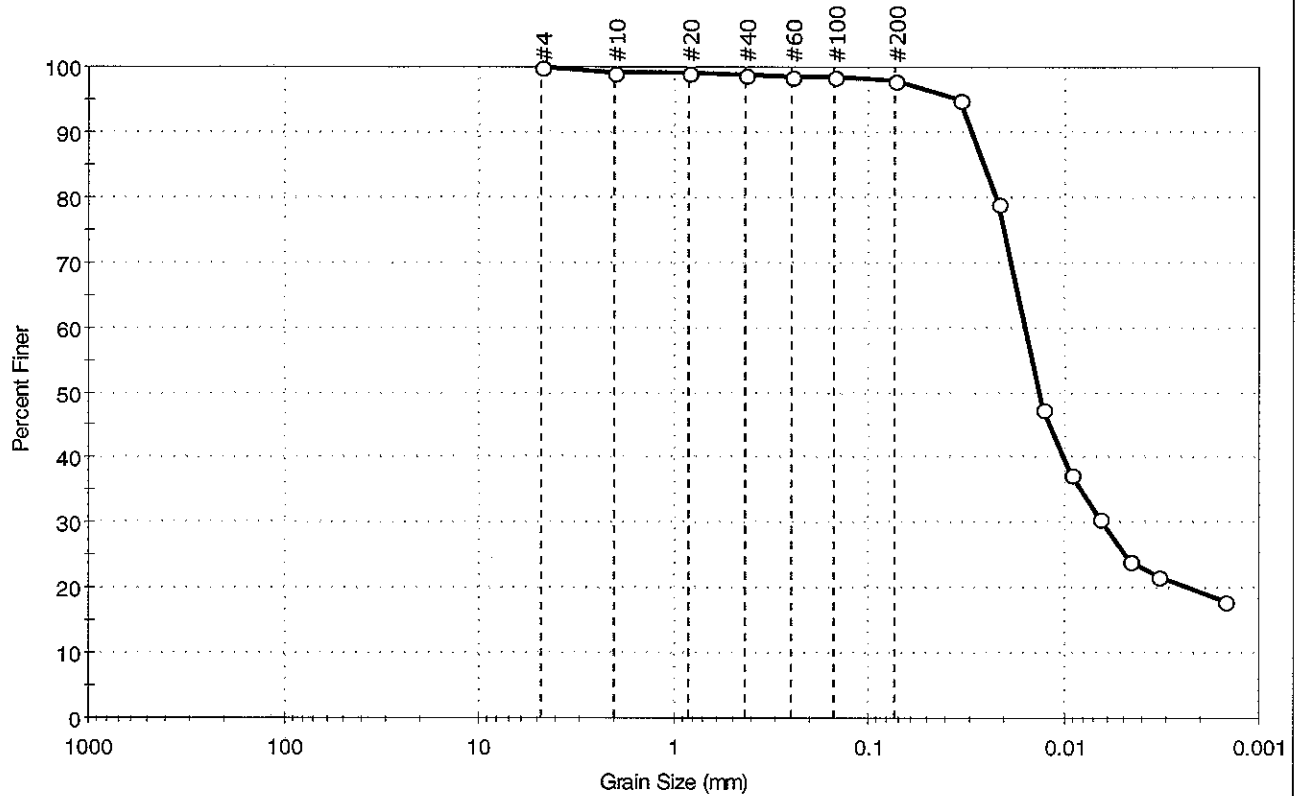
AASHTO Clayey Soils (A-7-5 (59))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80035	Sample Type: jar
Sample ID: OL-0281-18	Test Date: 01/29/07
Depth: 0-0.5 ft	Test Id: 105602
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	2.1	97.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0345	95		
---	0.0218	79		
---	0.0130	48		
---	0.0092	37		
---	0.0066	31		
---	0.0046	24		
---	0.0033	22		
---	0.0015	18		

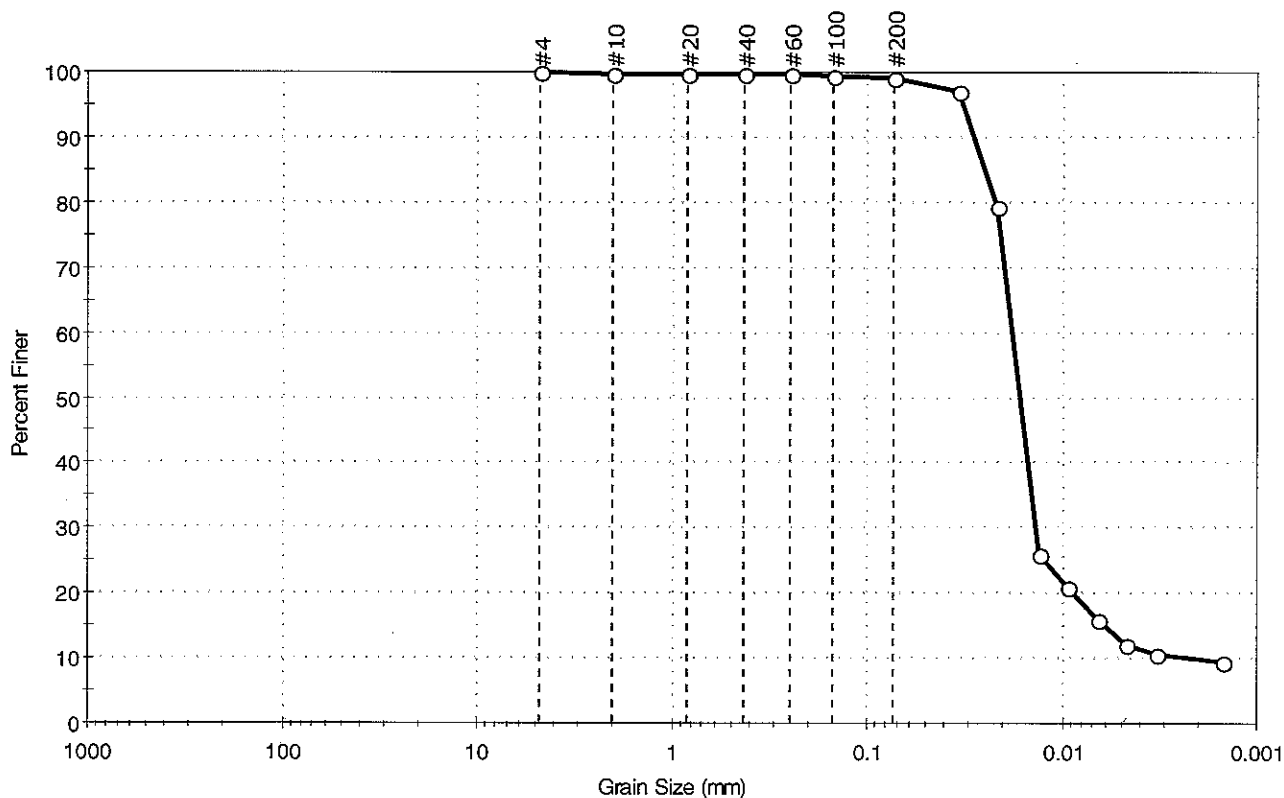
Coefficients	
D ₈₅ = 0.0258 mm	D ₃₀ = 0.0063 mm
D ₆₀ = 0.0159 mm	D ₁₅ = N/A
D ₅₀ = 0.0135 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification	
ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (76))

Sample/Test Description	
Sand/Gravel Particle Shape	: ANGULAR
Sand/Gravel Hardness	: HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-80036	Sample Type: jar
Sample ID: OL-0281-19	Test Date: 01/29/07
Depth: 0-0.5 ft	Test Id: 105603
Test Comment: ---	Tested By: mll
Sample Description: Wet, dark gray silt	Checked By: jdt
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0344	97		
---	0.0218	79		
---	0.0132	26		
---	0.0094	21		
---	0.0067	16		
---	0.0047	12		
---	0.0033	11		
---	0.0015	9		

Coefficients

$D_{85} = 0.0252$ mm $D_{30} = 0.0137$ mm
 $D_{60} = 0.0182$ mm $D_{15} = 0.0062$ mm
 $D_{50} = 0.0166$ mm $D_{10} = 0.0022$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

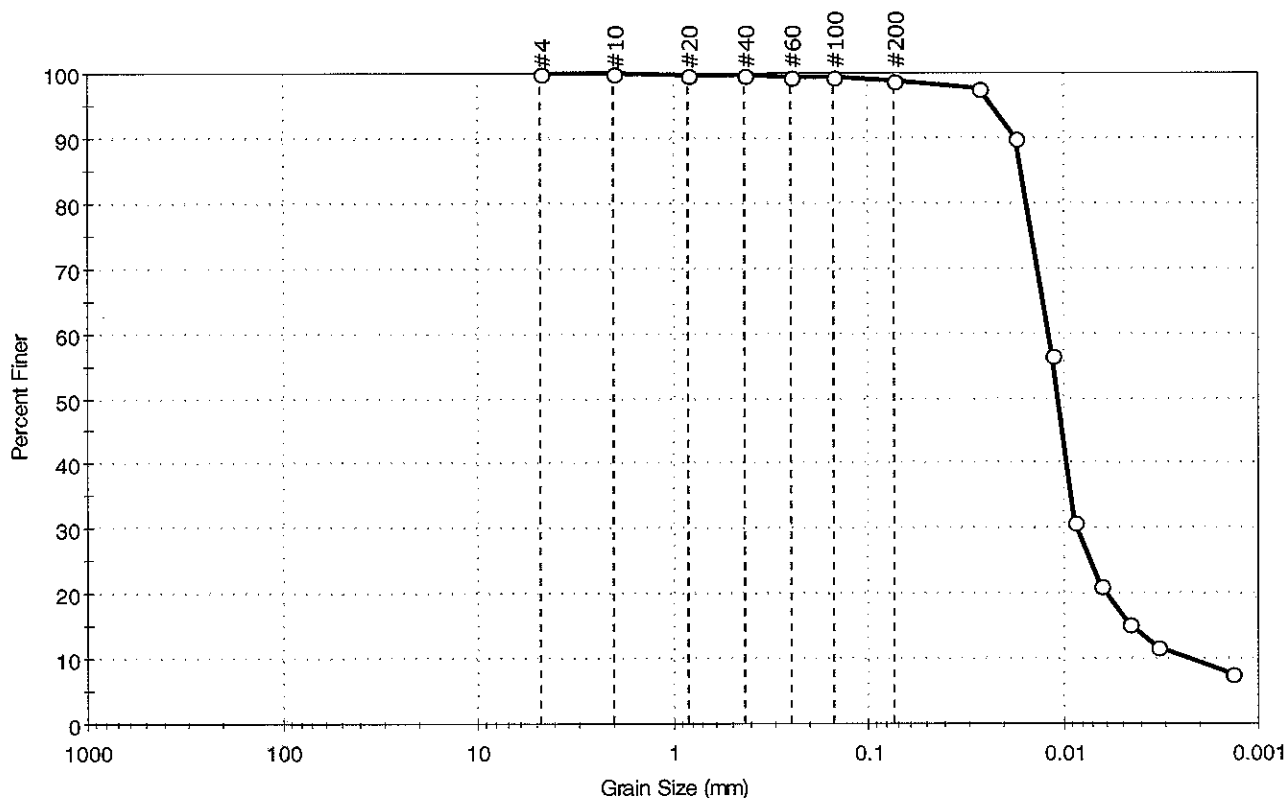
AASHTO Clayey Soils (A-7-5 (88))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
 Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80036	Sample Type:	jar
Sample ID:	OL-0281-20	Test Date:	01/29/07
Depth :	6.6-9.9 ft	Test Id:	105604
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
—	0.0	1.1	98.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0268	98		
---	0.0173	90		
---	0.0115	57		
---	0.0088	31		
---	0.0064	21		
---	0.0046	15		
---	0.0033	12		
---	0.0014	8		

Coefficients

D ₈₅ = 0.0163 mm	D ₃₀ = 0.0085 mm
D ₆₀ = 0.0120 mm	D ₁₅ = 0.0045 mm
D ₅₀ = 0.0107 mm	D ₁₀ = 0.0022 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (37))

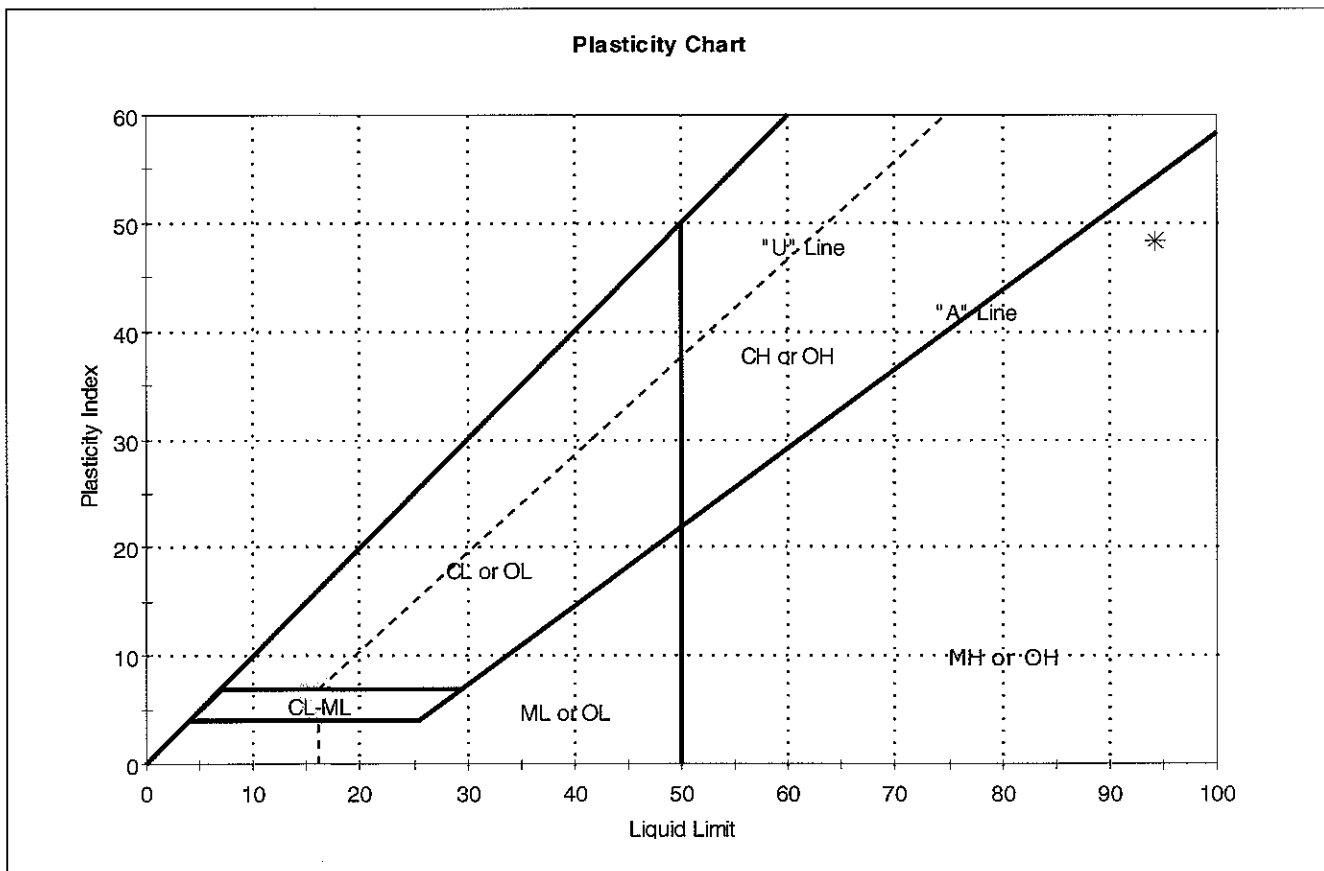
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80042	Sample Type:	jar
Sample ID:	OL-0281-01	Test Date:	06/23/07
Depth :	0.5-3.3 ft	Test Id:	105545
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-01	-VC-800	0.5-3.3 ft	177	94	46	48	3	elastic silt (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

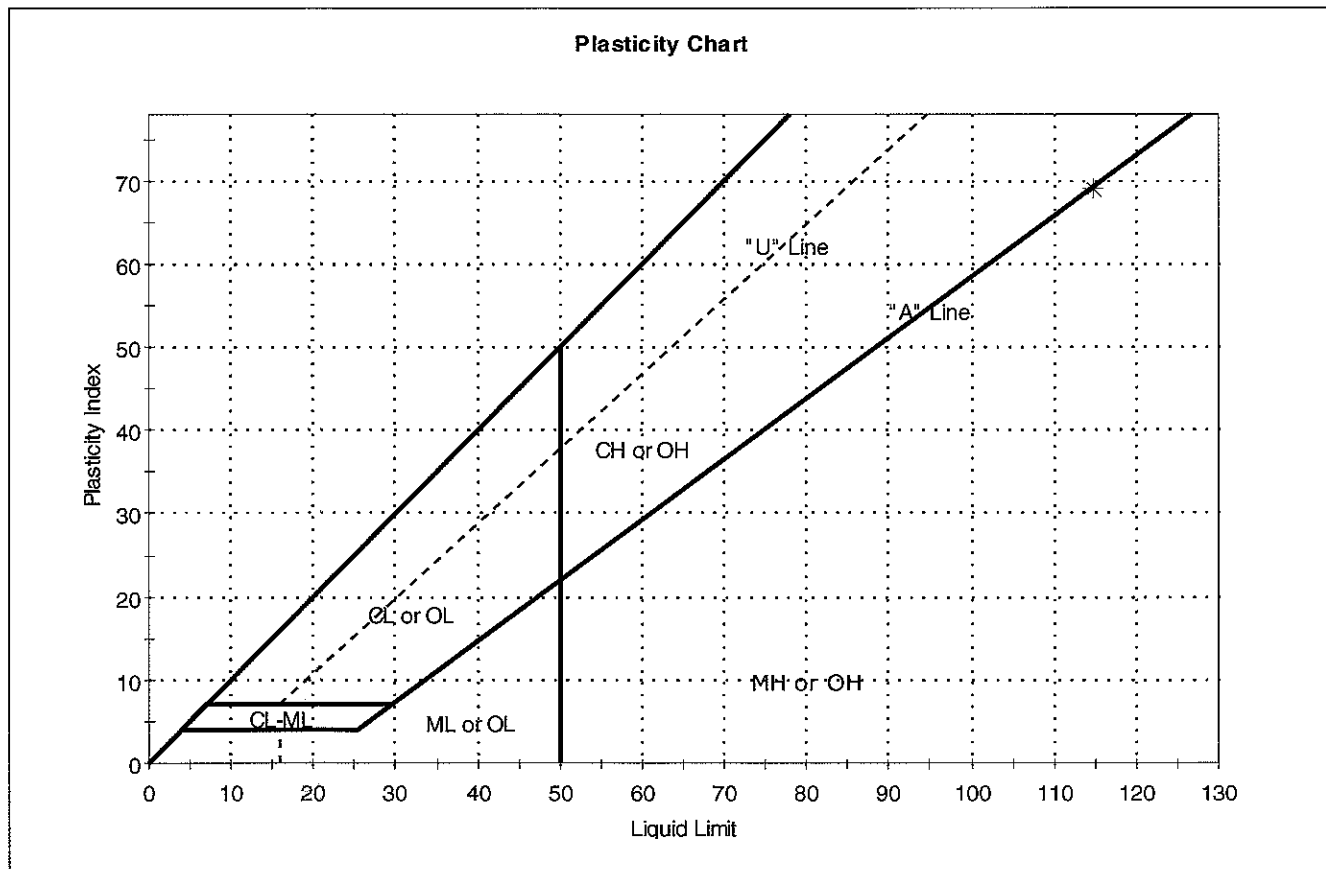
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80038	Sample Type:	jar
Sample ID:	OL-0281-02	Test Date:	01/18/07
Depth :	0.5-3.3 ft	Test Id:	105546
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-02	VC-800	0.5-3.3 ft	173	115	46	69	2	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

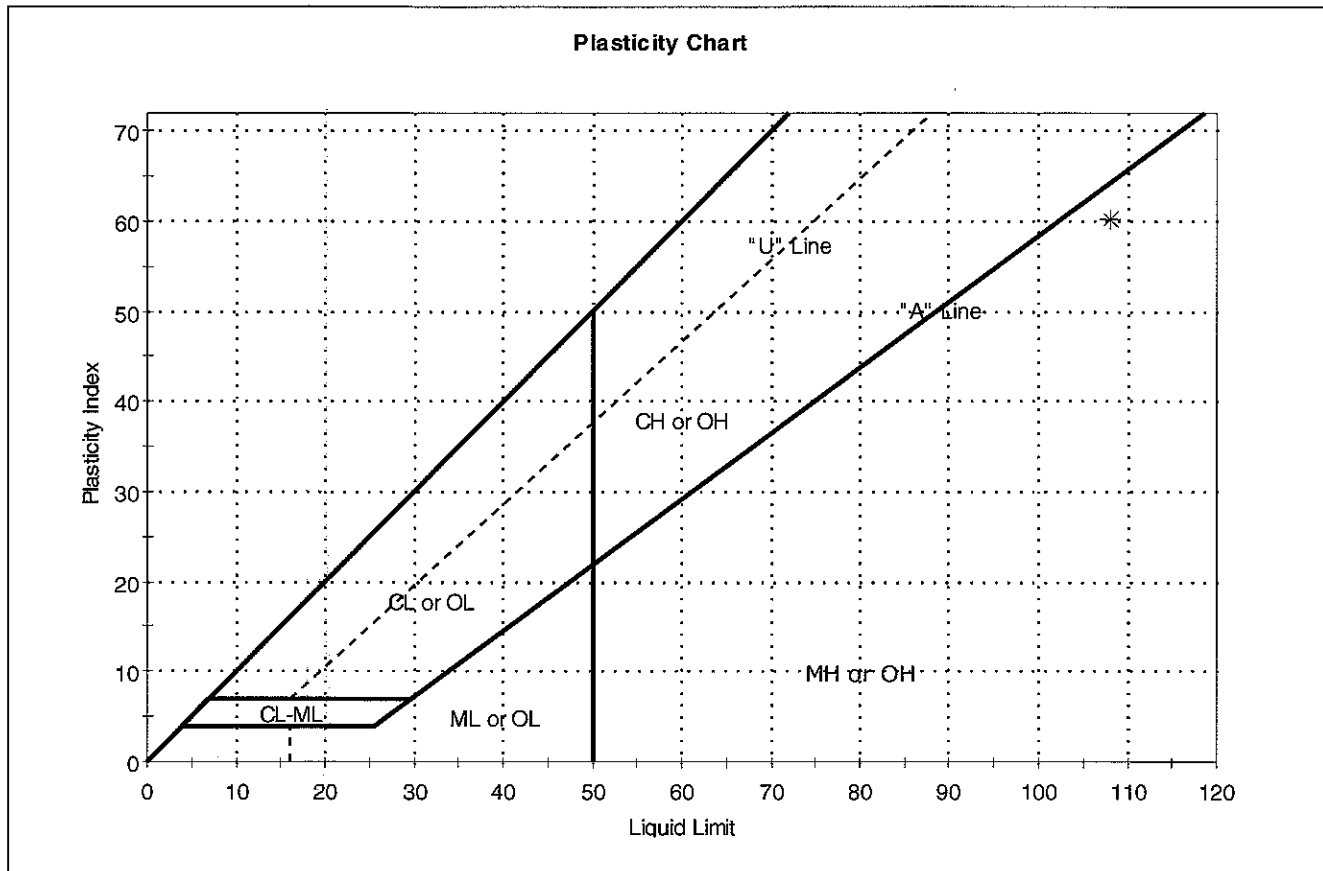
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80037	Sample Type:	jar
Sample ID:	OL-0281-03	Test Date:	01/17/07
Depth :	0-0.5 ft	Test Id:	105547
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-03	VC-800	0-0.5 ft	229	108	48	60	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

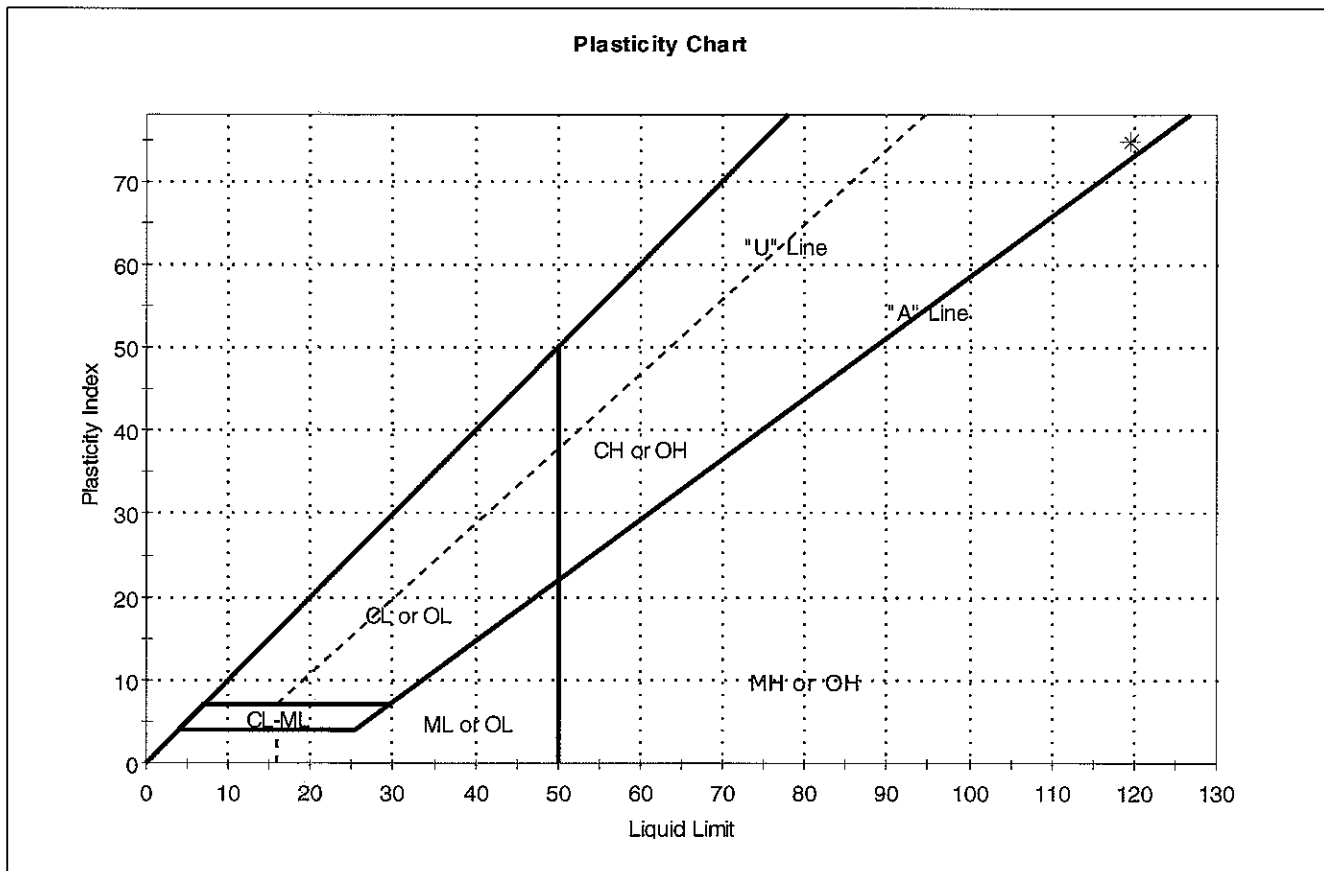
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80032	Sample Type:	jar
Sample ID:	OL-0281-04	Test Date:	01/17/07
Depth :	0.5-3.3 ft	Test Id:	105548
Test Comment:	---		
Sample Description:	Moist, black clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-04	VC-800	0.5-3.3 ft	186	120	45	75	2	fat clay (CH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

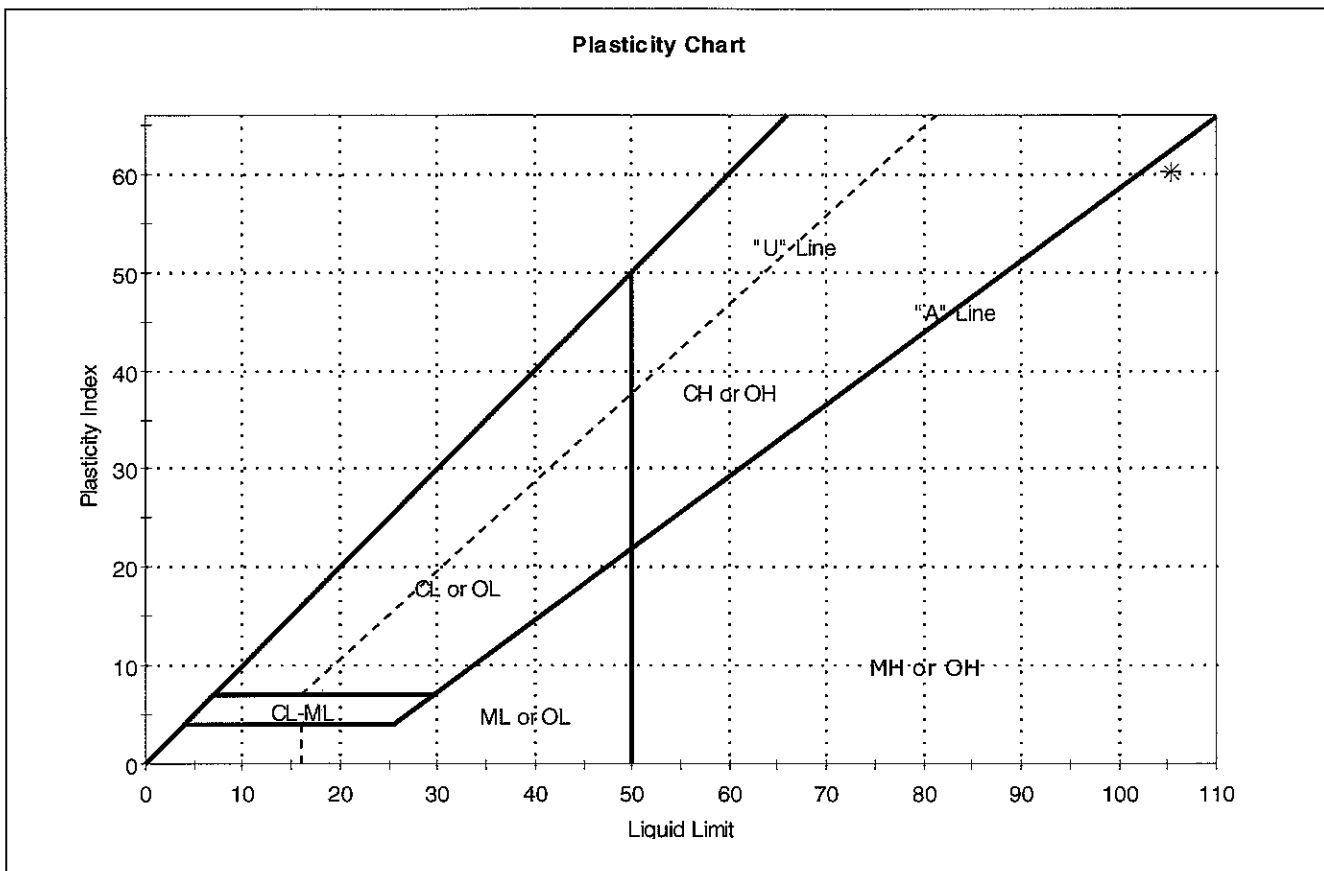
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80026	Sample Type:	jar
Sample ID:	OL-0281-05	Test Date:	01/10/07
Depth :	0-0.5 ft	Test Id:	105549
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-05	-VC-800	0-0.5 ft	548	105	45	60	8	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

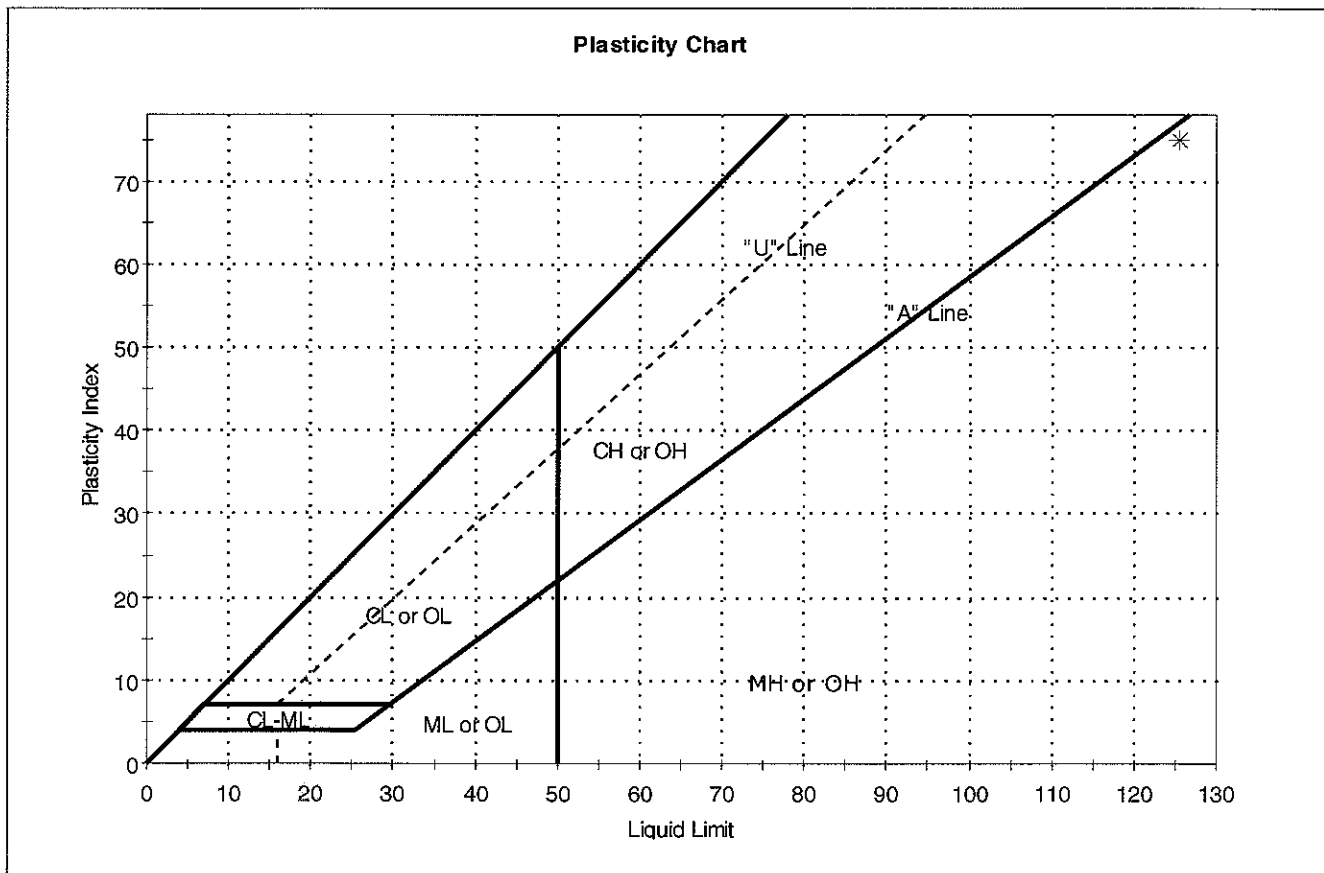
Dry Strength: VERY HIGH

Dilutancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: ap
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80024	Sample Type: jar
Sample ID: OL-0281-06	Test Date: 01/18/07
Depth: 0-0.5 ft	Test Id: 105550
Test Comment: ---	
Sample Description: Wet, black silt	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05

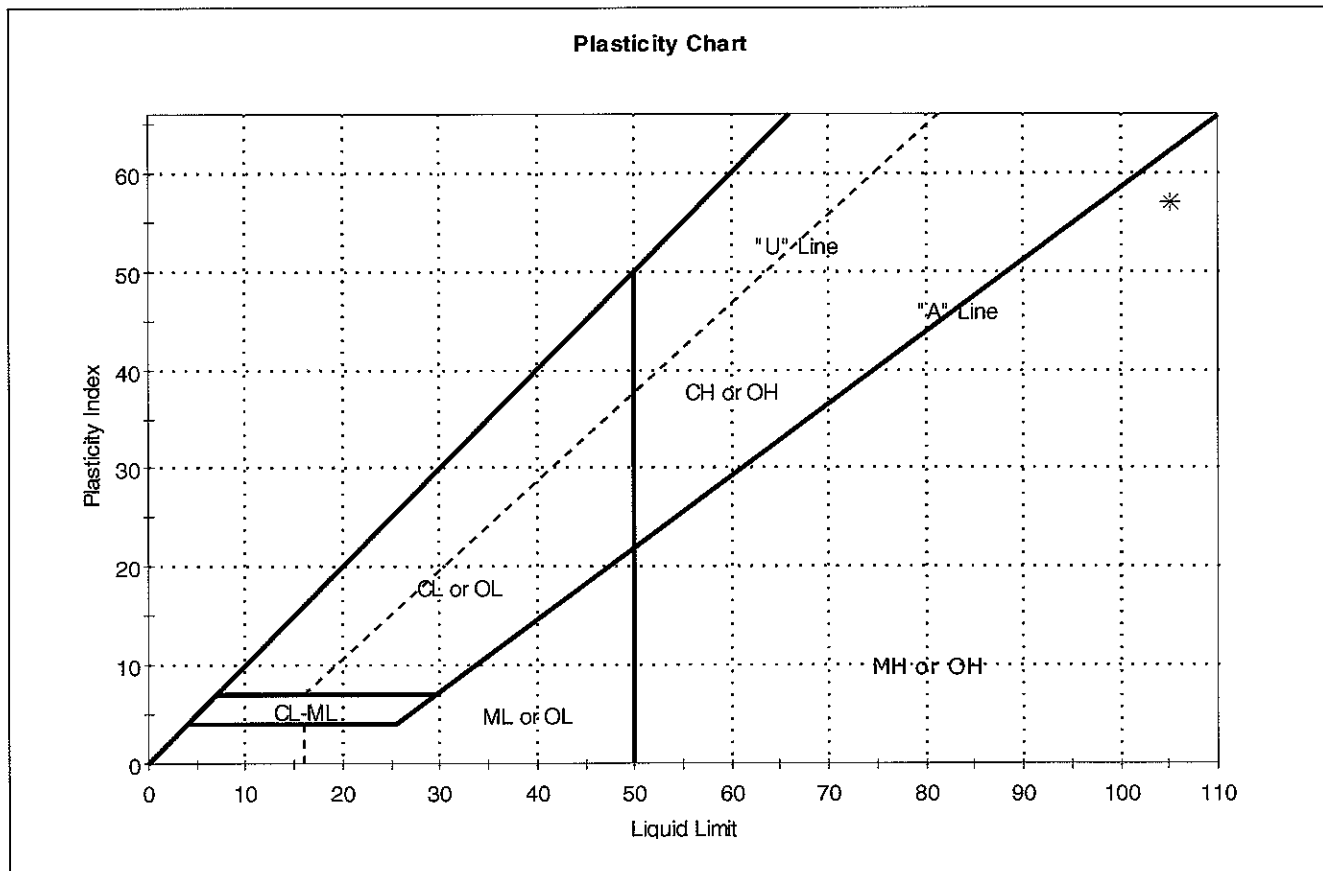


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-06	VC-800	0-0.5 ft	310	125	51	74	3	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80028	Sample Type:	jar
Sample ID:	OL-0281-07	Test Date:	01/22/07
Depth :	0.5-3.3 ft	Test Id:	105551
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-07	VC-800	0.5-3.3 ft	206	105	48	57	3	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

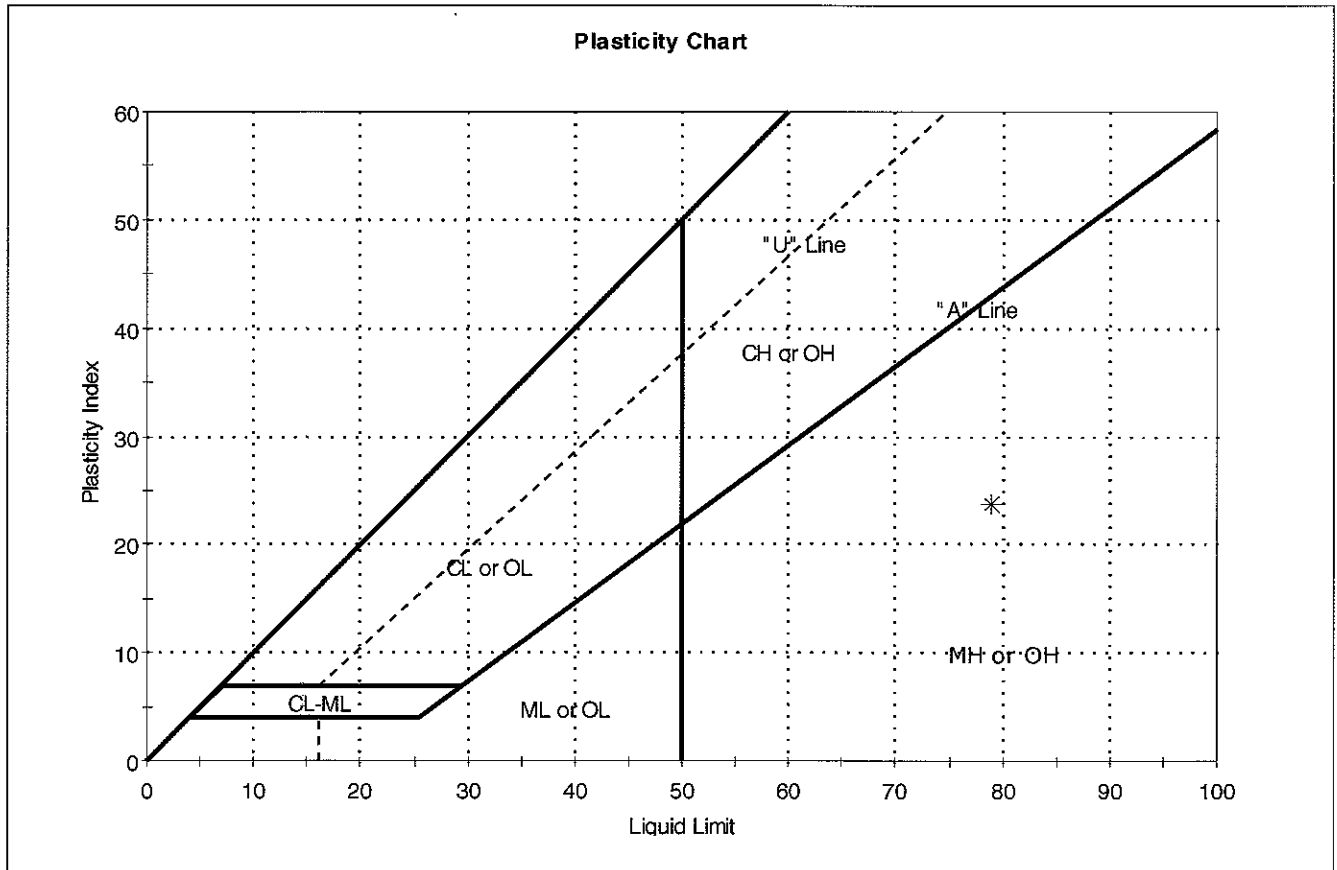
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80029	Sample Type:	jar
Sample ID:	OL-0281-08	Test Date:	01/19/07
Depth :	3.3-6.6 ft	Test Id:	105552
Test Comment:	---		
Sample Description:	Wet, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

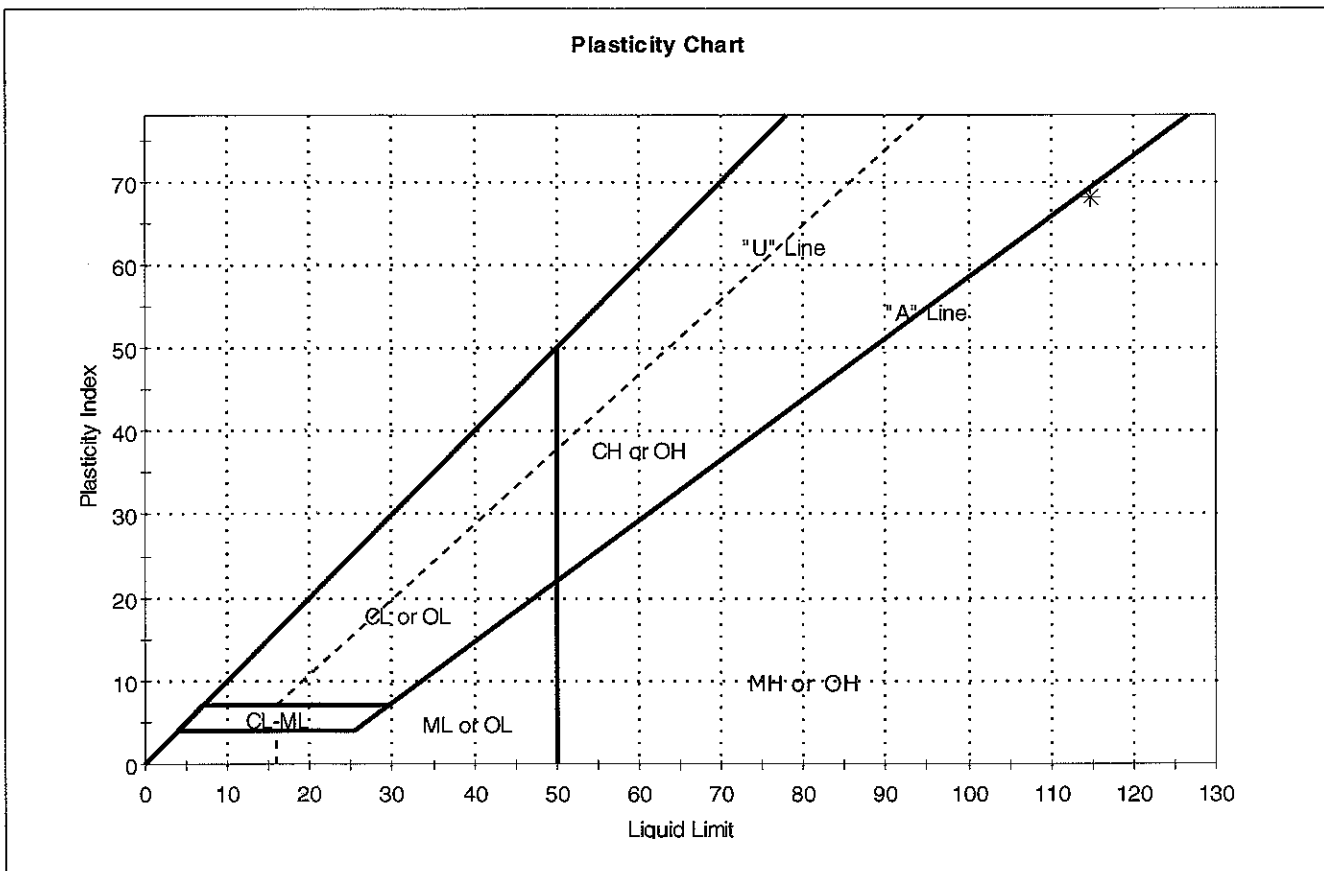


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-08	-VC-800	3.3-6.6 ft	123	79	55	24	3	elastic silt (MH)

Sample Prepared using the WET method
 3% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80033	Sample Type:	jar
Sample ID:	OL-0281-09	Test Date:	01/19/07
Depth :	0-0.5 ft	Test Id:	105553
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-09	-VC-800	0-0.5 ft	211	115	47	68	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

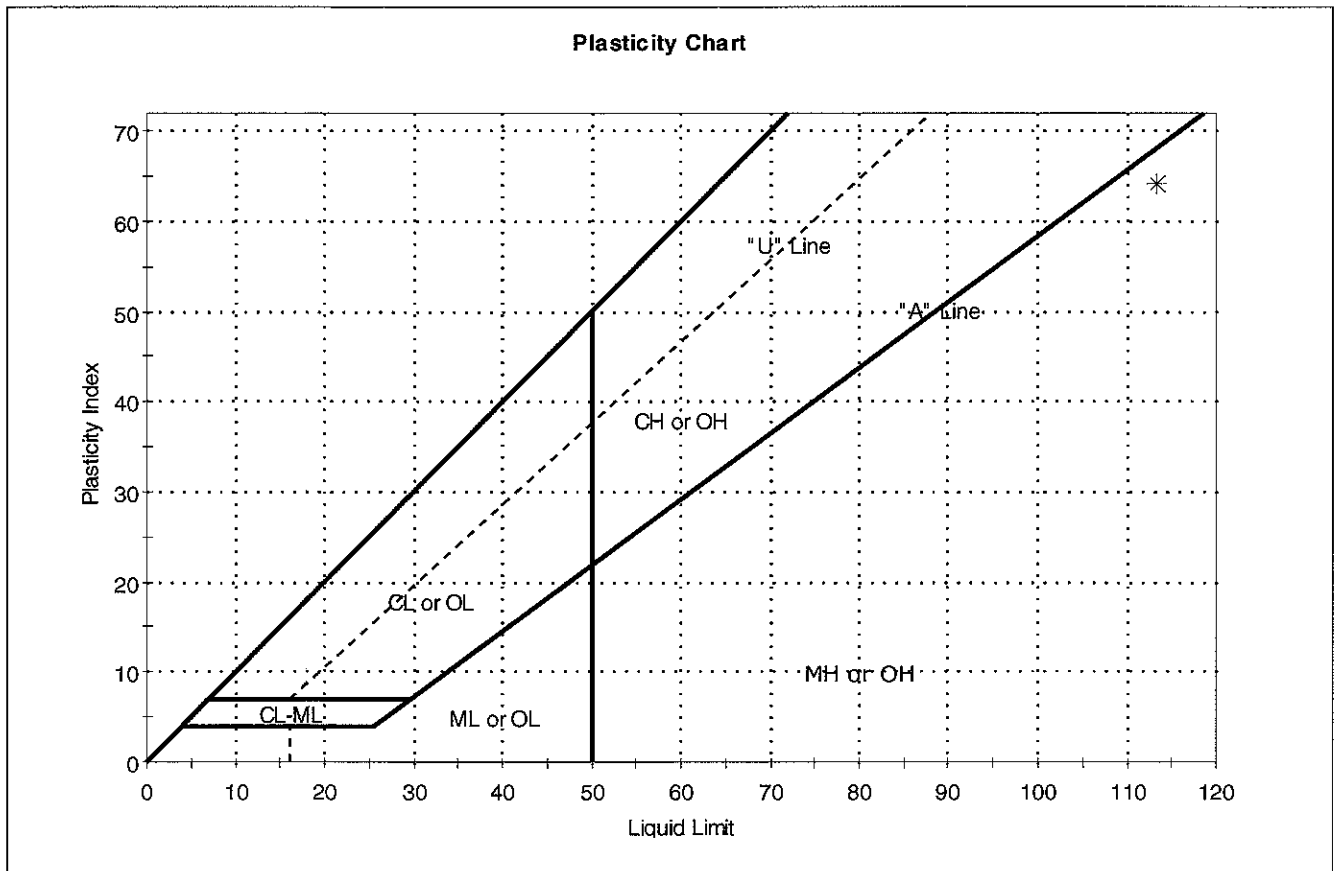
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80034	Sample Type:	jar
Sample ID:	OL-0281-10	Test Date:	01/22/07
Depth :	0-0.5 ft	Test Id:	105554
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-10	-VC-800	0-0.5 ft	216	113	49	64	3	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

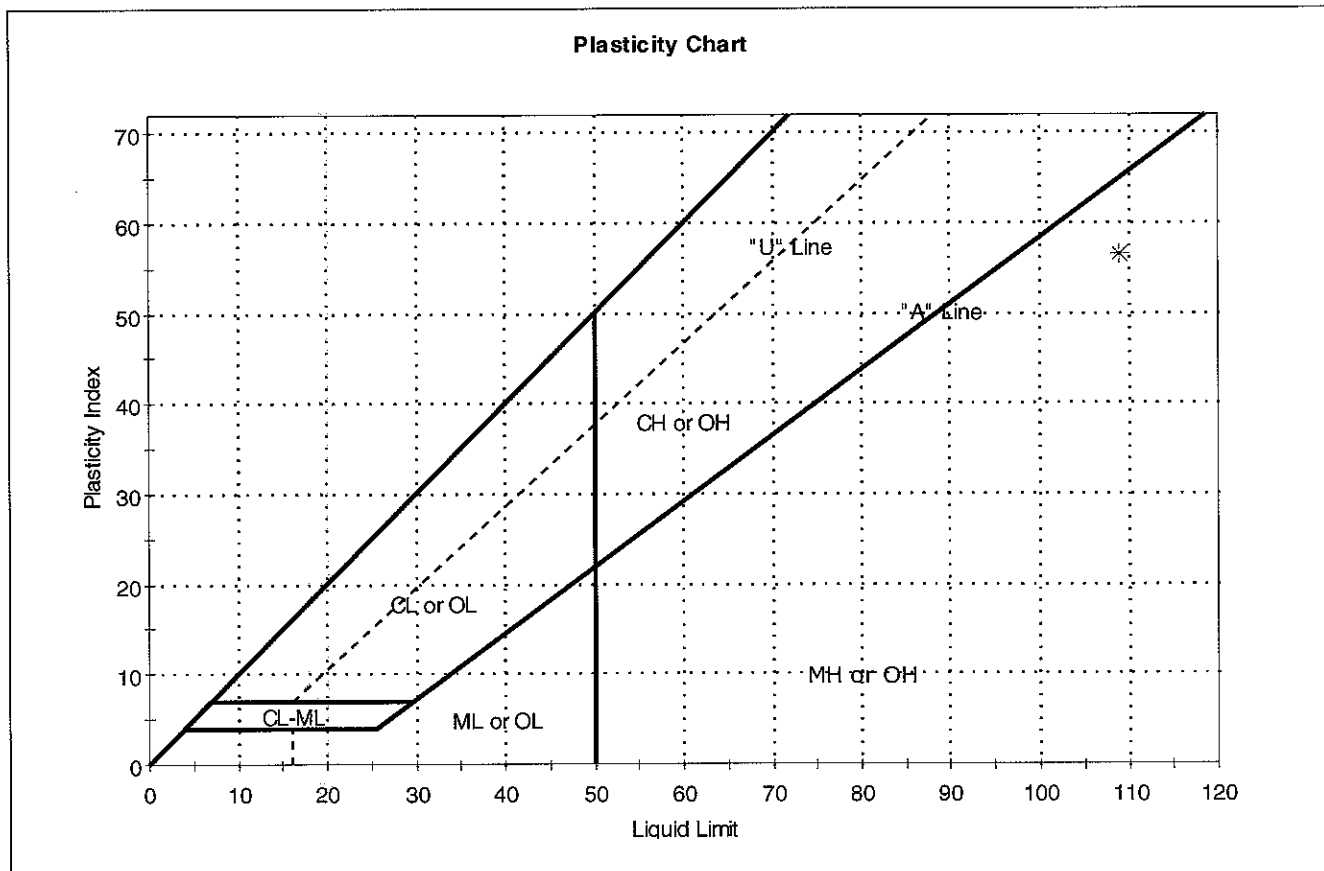
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80039	Sample Type:	jar
Sample ID:	OL-0281-11	Test Date:	01/22/07
Depth :	0-0.5 ft	Test Id:	105555
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

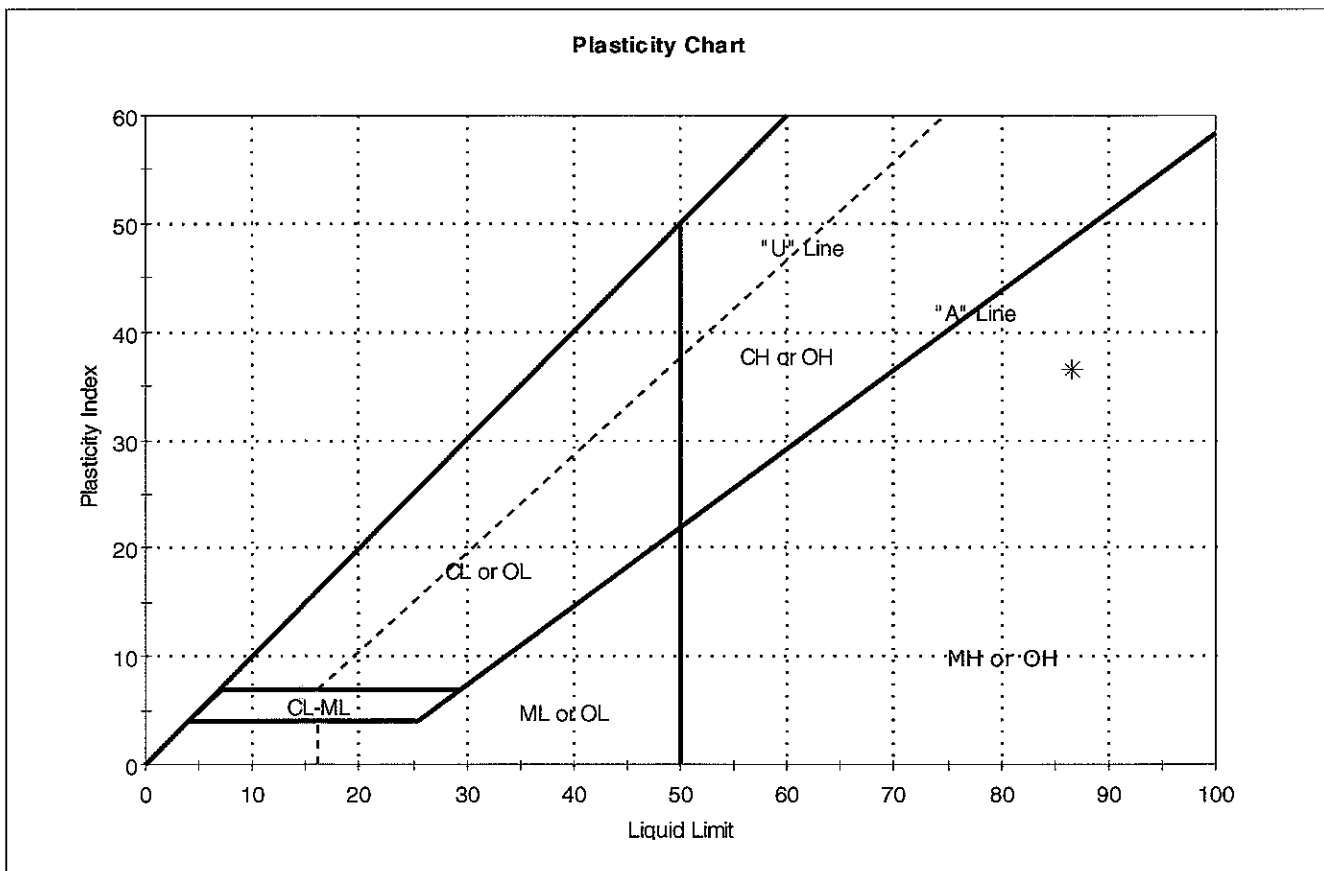


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-11	VC-800	0-0.5 ft	193	109	52	57	2	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80040	Sample Type:	jar
Sample ID:	OL-0281-12	Test Date:	01/22/07
Depth :	0.5-3.3 ft	Test Id:	105556
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-12	-VC-800	0.5-3.3 ft	154	87	50	37	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

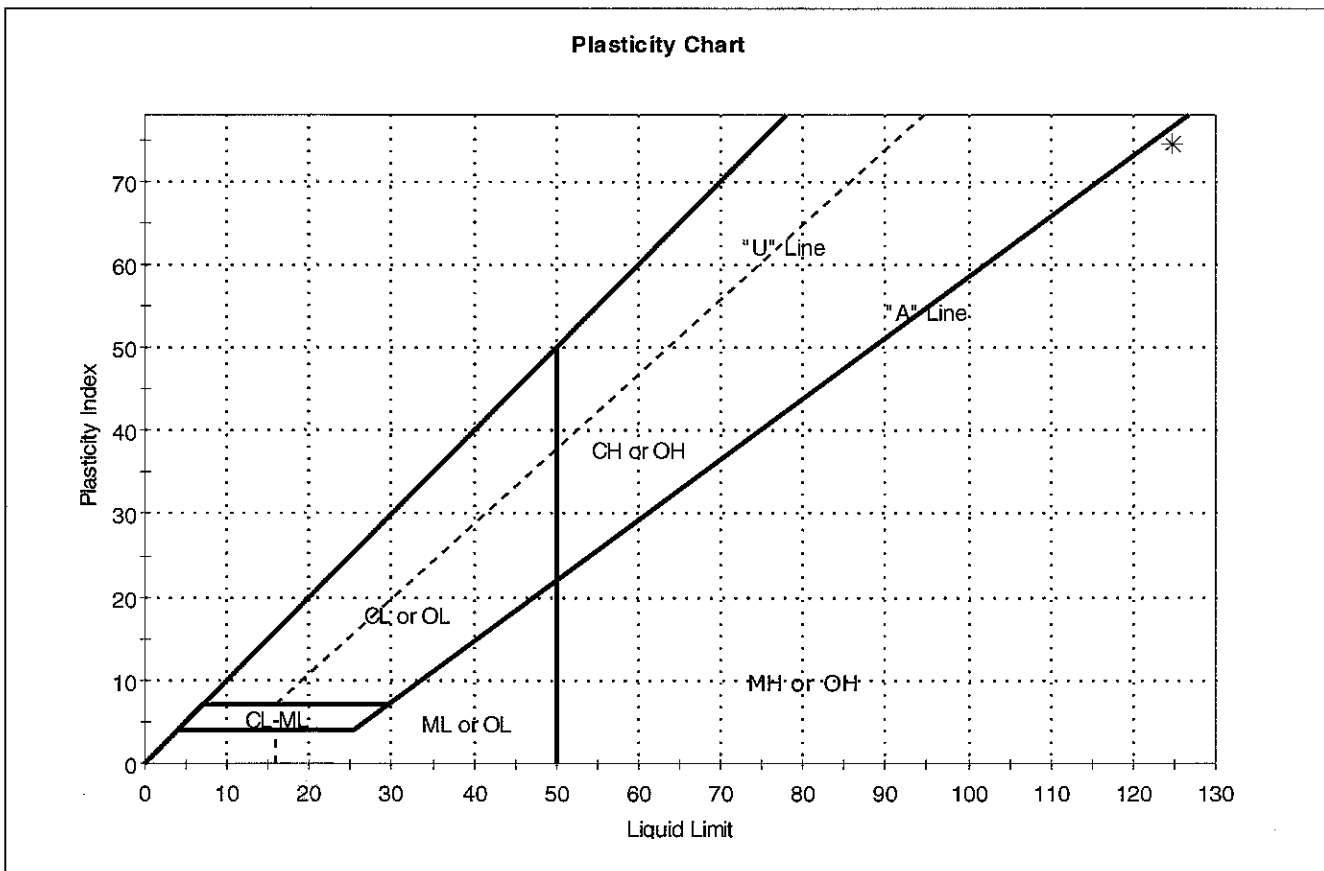
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80044	Sample Type:	jar
Sample ID:	OL-0281-13	Test Date:	01/18/07
Depth :	0.5-3.3 ft	Test Id:	105557
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

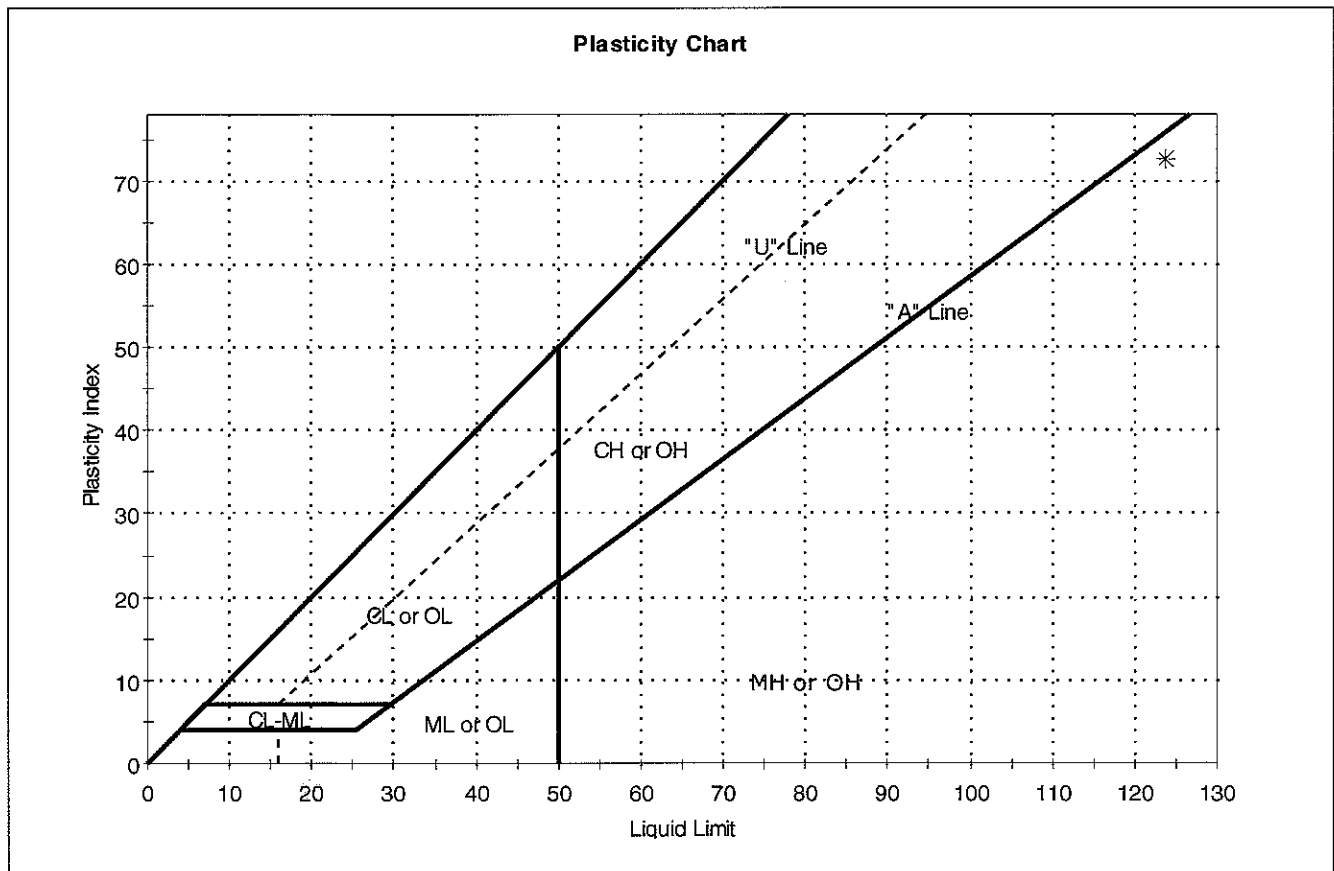


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-13	-VC-800	0.5-3.3 ft	192	125	50	75	2	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-80045	Sample Type: jar
Sample ID: OL-0281-14	Test Date: 01/17/07
Depth: 0-0.5 ft	Test Id: 105558
Test Comment: ---	Tested By: ap
Sample Description: Wet, black silt	Checked By: jdt
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05

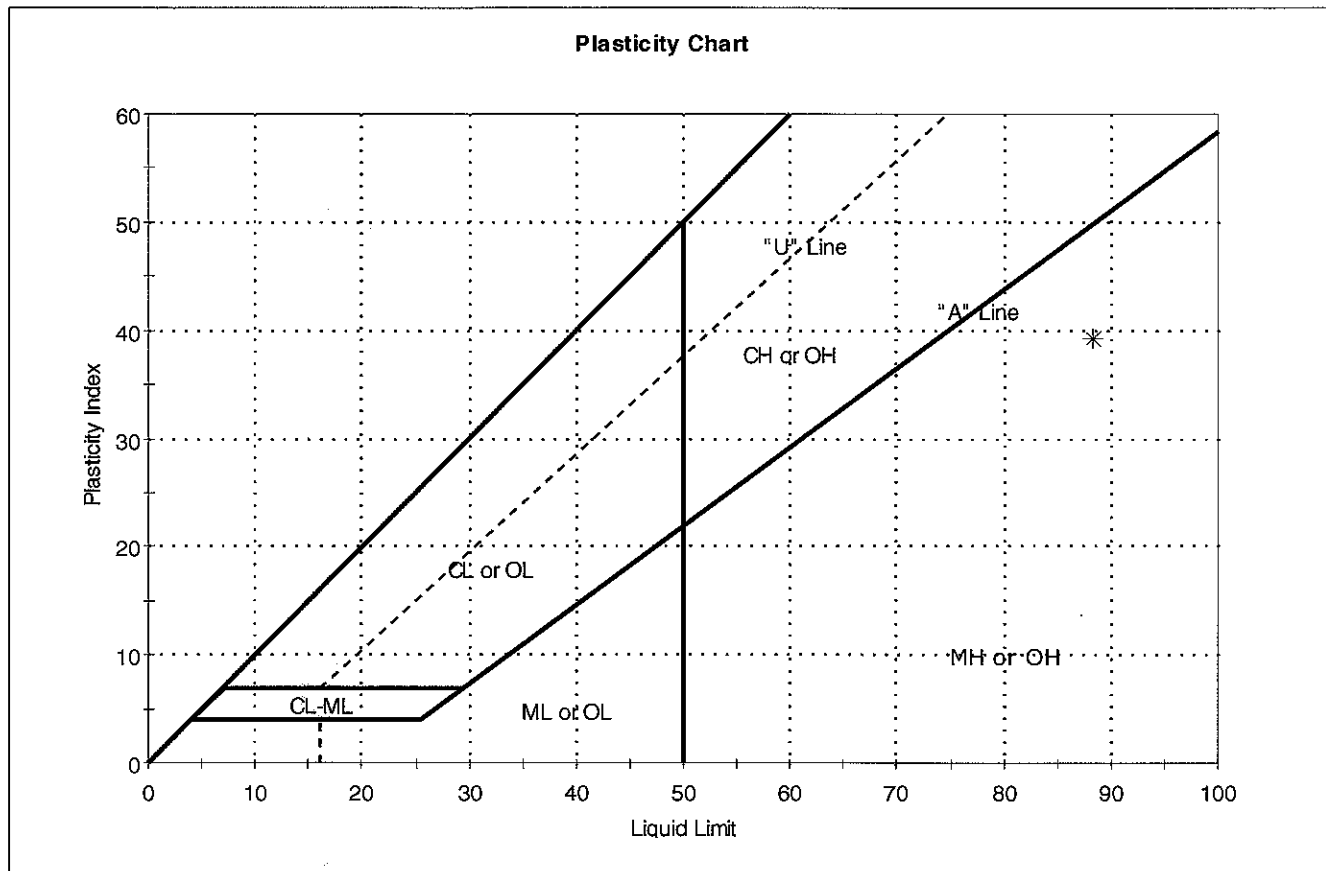


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-14	VC-800	0-0.5 ft	210	124	51	73	2	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-80046	Sample Type: jar
Sample ID: OL-0281-15	Test Date: 01/17/07
Depth: 0-0.5 ft	Test Id: 105559
Test Comment: ---	Tested By: ap
Sample Description: Wet, black silt	Checked By: jdt
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05

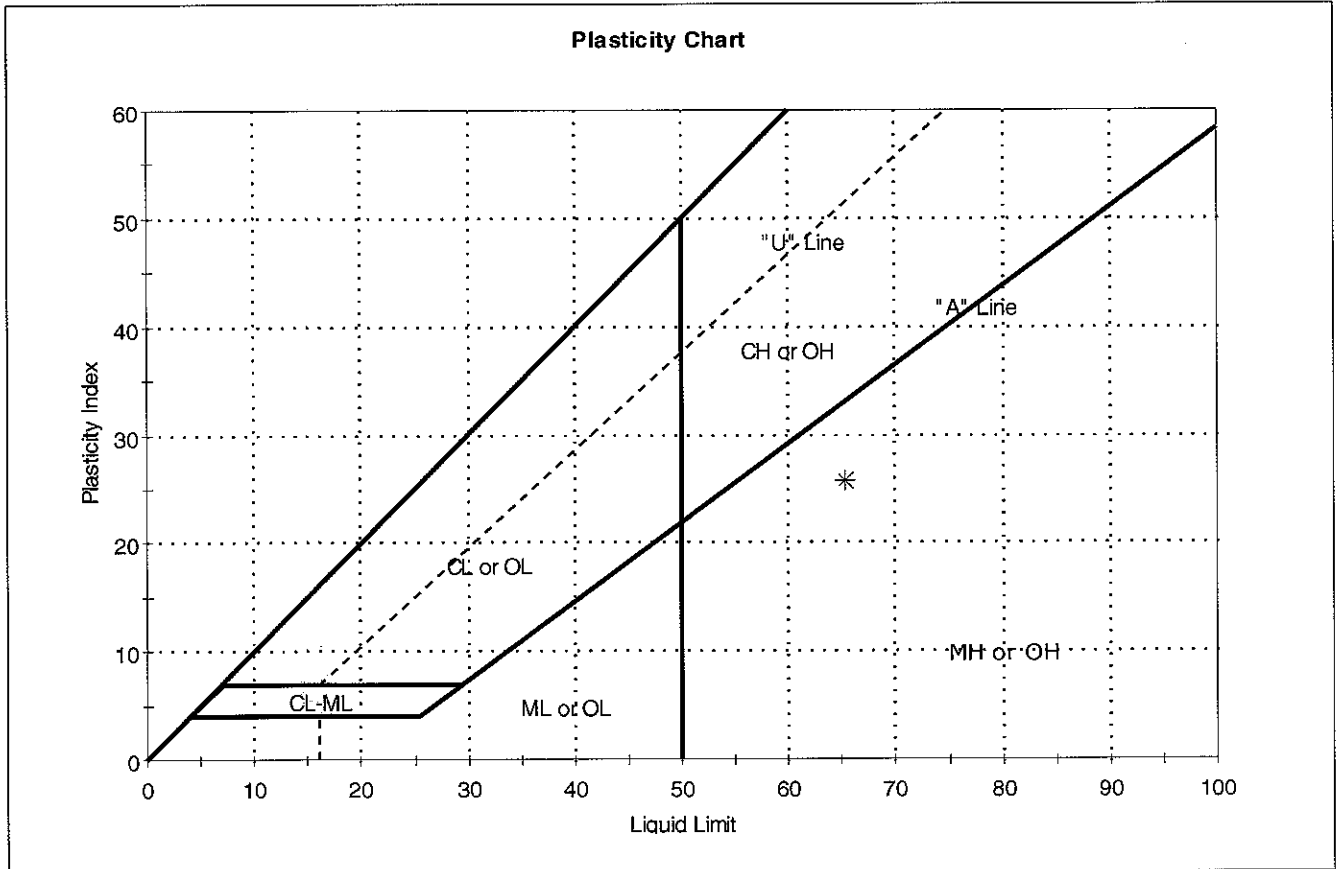


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-15	VC-800	0-0.5 ft	152	88	49	39	3	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80047	Sample Type:	jar
Sample ID:	OL-0281-16	Test Date:	01/18/07
Depth :	0.5-3.3 ft	Test Id:	105560
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

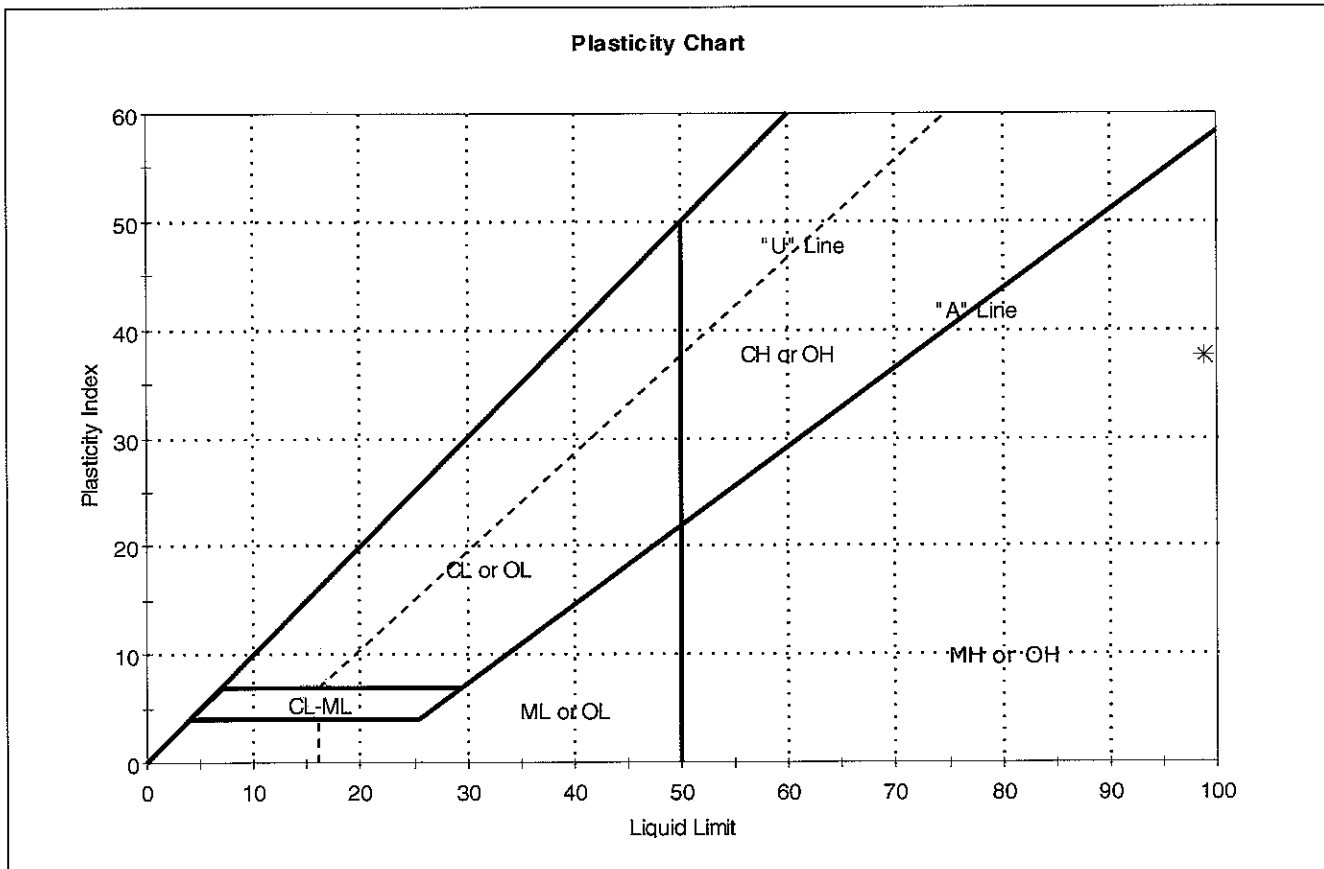


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-16	VC-800	0.5-3.3 ft	122	65	40	25	3	elastic silt (MH)

Sample Prepared using the WET method
0% Retained on #40 Sieve
Dry Strength: HIGH
Dilatancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80030	Sample Type:	jar
Sample ID:	OL-0281-17	Test Date:	01/22/07
Depth :	3.3-6.6 ft	Test Id:	105561
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-17	VC-800	3.3-6.6 ft	232	99	61	38	4	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

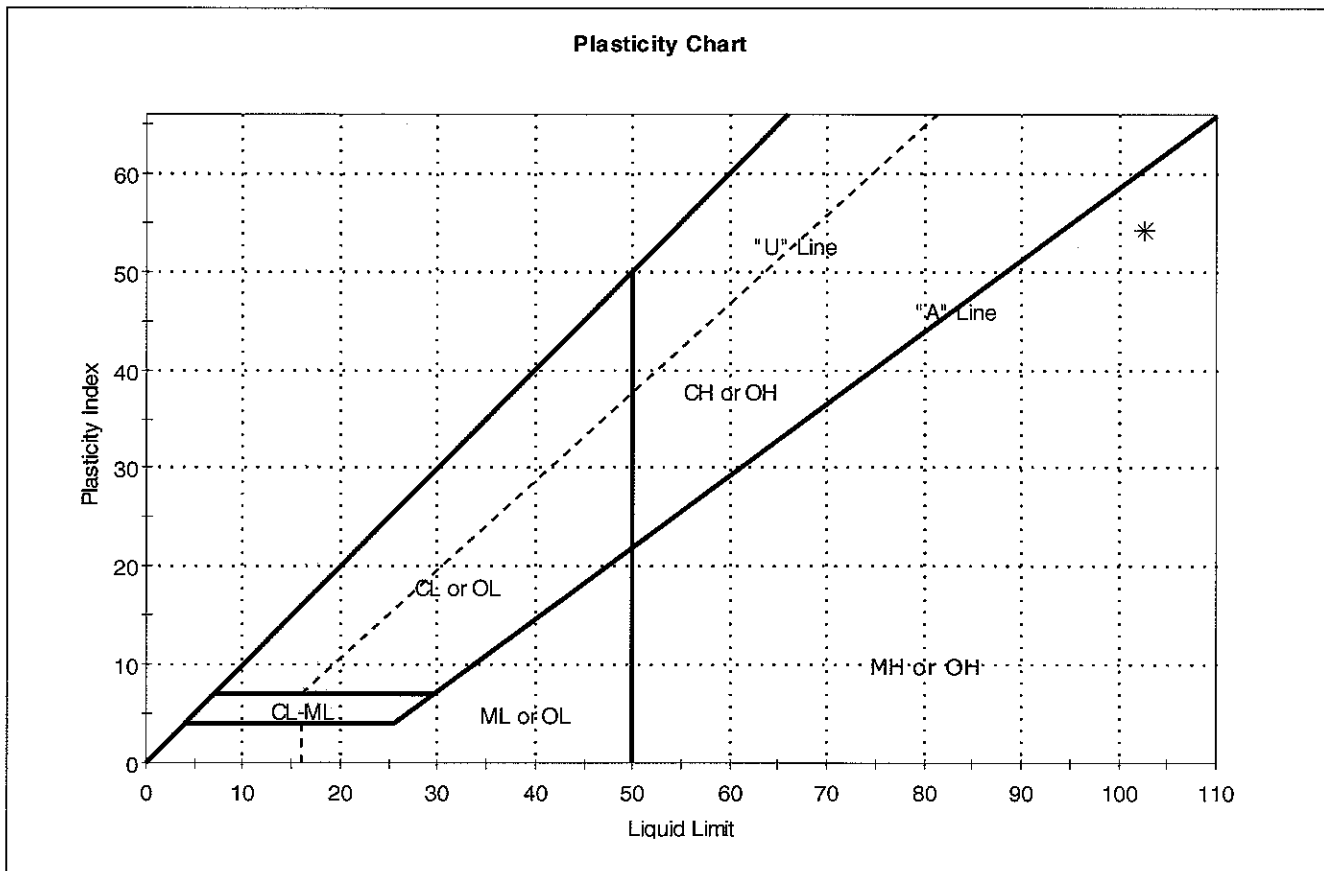
Dry Strength: MEDIUM

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80035	Sample Type:	jar
Sample ID:	OL-0281-18	Test Date:	01/18/07
Depth :	0-0.5 ft	Test Id:	105562
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-18	-VC-800	0-0.5 ft	219	103	48	55	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

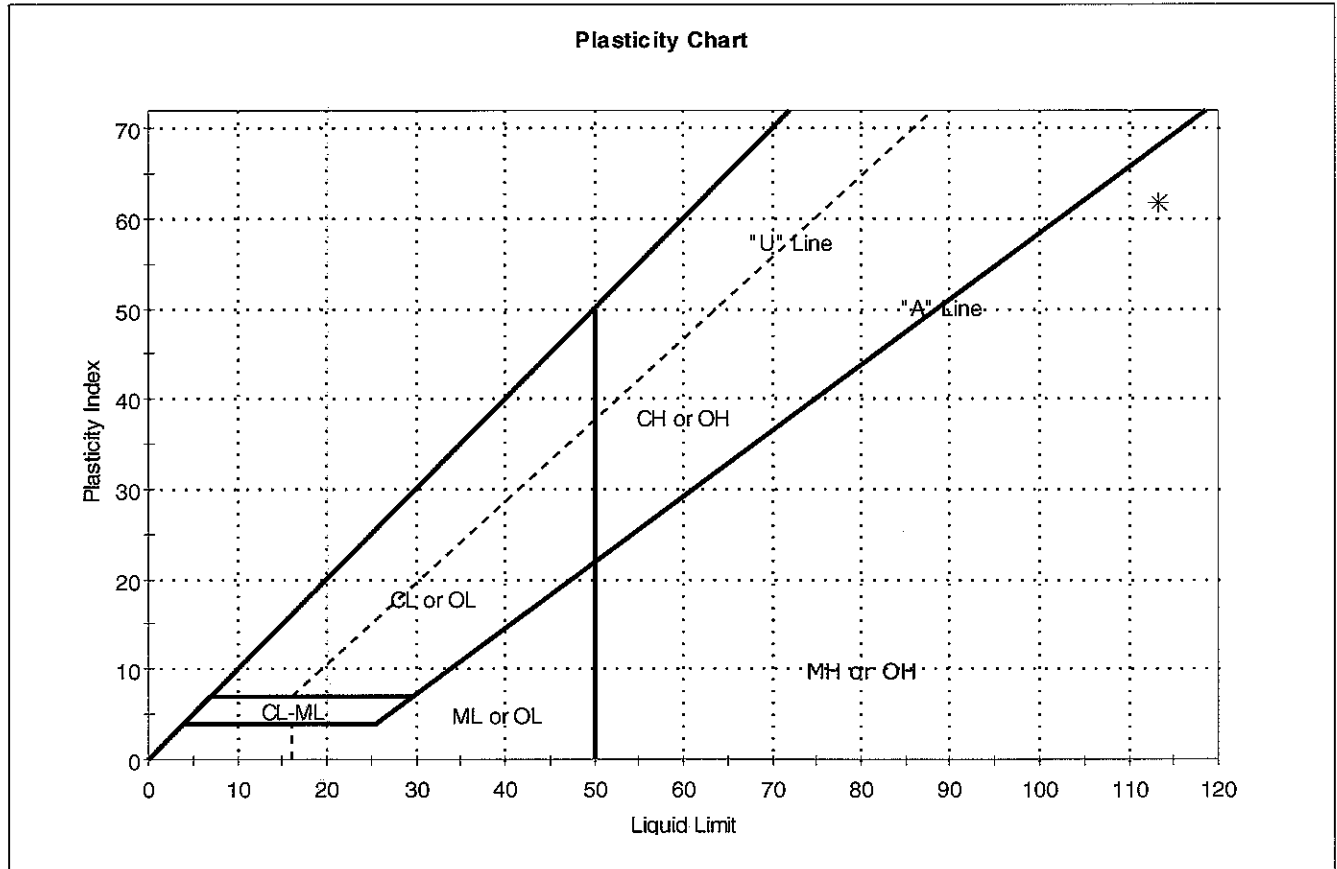
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80036	Sample Type:	jar
Sample ID:	OL-0281-19	Test Date:	01/17/07
Depth :	0-0.5 ft	Test Id:	105563
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

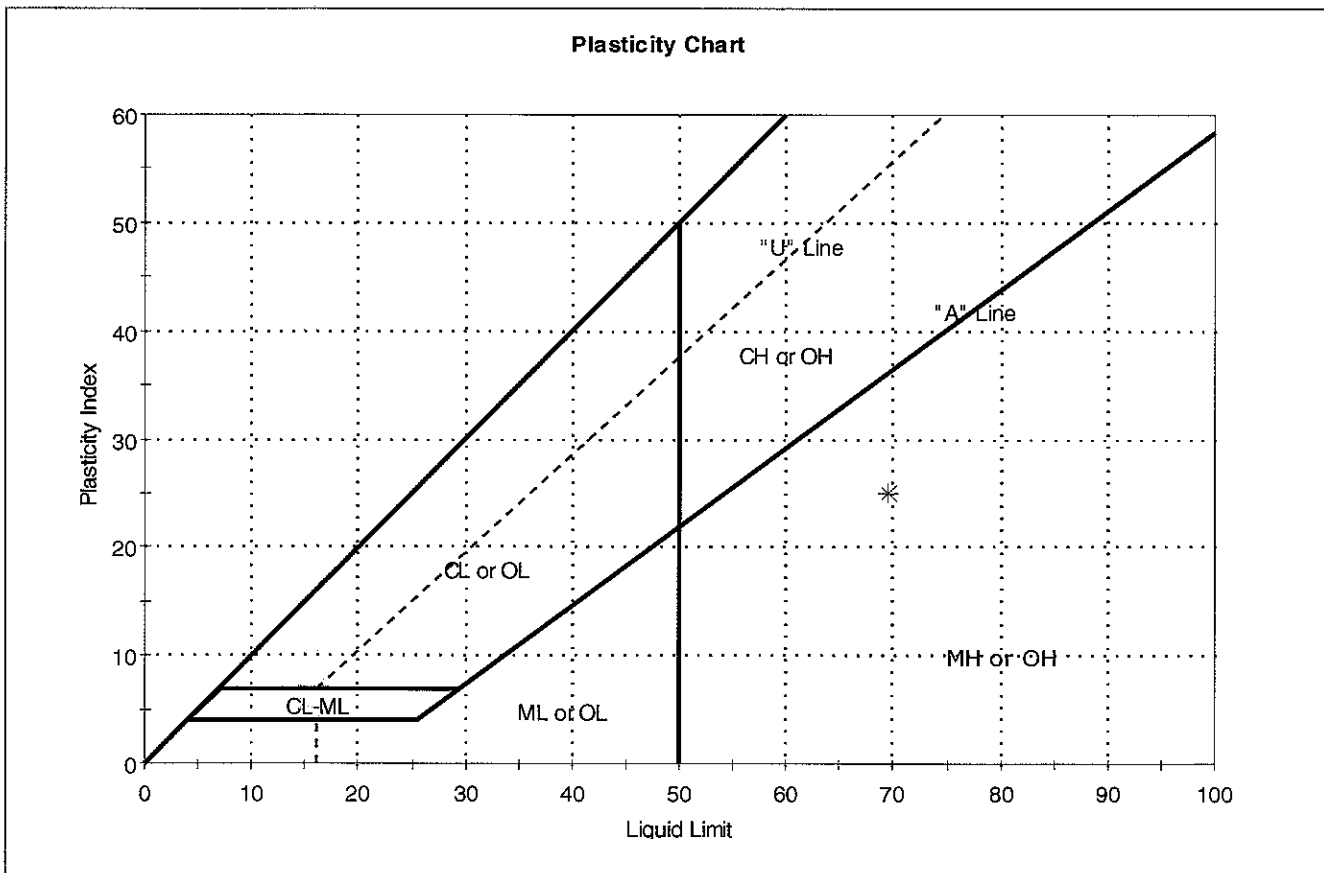


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-19	VC-800	0-0.5 ft	269	113	52	61	4	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80036	Sample Type:	jar
Sample ID:	OL-0281-20	Test Date:	01/18/07
Depth :	6.6-9.9 ft	Test Id:	105564
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0281-20	L-VC-800	6.6-9.9 ft	137	69	44	25	4	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Chain of Custody/Analysis Request										AESI Ref: 38292.40495			
Privileged and Confidential										COC #: 0282			
Site Name: Onondaga Lake										Lab Use Only			
Location of Site: Syracuse, New York										Lab Proj #			
Sampler: 1										Lab ID			
PO #:										Job No			
Analysis Turnaround Time:													
Standard -													
Rush Charges Authorized for -													
2 weeks -													
1 week -													
Next Day -													
Hardcopy Report To: Lorraine Weber													
Invoice To: Pete Petrone													
Sample Identification													
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	Sample # of Cont.	Field Filtered Sample?	Grab/Composite	Units	
OL-VC-80050	3.3	6.6	OL-0282-01	10/10/2006	14:27	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-80050	13.2	16.5	OL-0282-02	10/10/2006	14:30	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-50001	0	0.5	OL-0282-03	10/8/2006	11:00	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-50004	0	0.5	OL-0282-04	10/8/2006	08:59	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-50005	0	0.5	OL-0282-05	10/8/2006	09:00	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-50007	0	0.5	OL-0282-06	10/8/2006	09:05	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-50008	0	0.5	OL-0282-07	10/8/2006	09:07	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-50009	0	0.5	OL-0282-08	10/8/2006	09:46	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
OL-VC-50014	0	0.5	OL-0282-09	10/5/2006	13:25	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			
										Atterberg Limits	<input checked="" type="checkbox"/>		
										Bulk Density	<input type="checkbox"/>		
										Carbonate Content	<input type="checkbox"/>		
										Organic Content	<input type="checkbox"/>		
										Moisture Content	<input checked="" type="checkbox"/>		
										Specific Gravity	<input type="checkbox"/>		
										Grain Size	<input checked="" type="checkbox"/>		
										SIC	<input type="checkbox"/>		
										Porosity	<input type="checkbox"/>		
										CUT	<input type="checkbox"/>		
										UUT	<input type="checkbox"/>		
										Consolidation	<input type="checkbox"/>		
										Lab Sample Numbers			

Special Instructions:			
Relinquished by: <i>John M. Chmura</i>	Company: PARSONS	Received by: <i>John M. Chmura</i>	Company:
Date/Time: 12/12/06 @ 12:05	Date/Time:	Date/Time: 12/12/06 12:30	Date/Time:
Relinquished by:	Company:	Received by:	Company:
Date/Time:	Date/Time:	Date/Time:	Date/Time:
		Condition: Cooler Temp.	Custody Seals Intact
		Condition: Cooler Temp.	Custody Seals Intact

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify):

Chain of Custody/Analysis Request

[illegible]

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 12/11/2006

Chain of Custody / Analysis Request														
AESI Ref: 38292.40495					COC #: 0282					Lab Use Only				
Lab Proj #					Lab ID					GTE				
Job No.														
Site Name: Onondaga Lake					Location of Site: Syracuse, New York					Preservative:				
Sampler: 1					PO #:					Analysis Turnaround Time:				
Standard -					Rush Charges Authorized for -					2 weeks -				
1 week -					Next Day -									
Hardcopy Report To: Lorraine Weber					Invoice To: Pete Petrone									
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088					Sample Identification					Field Sample ID				
Location ID					Start Depth (ft)					End Depth (ft)				
OL-VC-30035					16.5					19.6				
OL-VC-30036					0.5					3.3				
Sample Date					Sample Time					Sample Type				
10/3/2006					10:03					SEDIMENT				
Sample Matrix					Sample Purpose					# of Cont.				
SOIL					REG					1				
Field Filtered Sample?					Grab/Composite					Units				
Atterberg Limits					Bulk Density					Carbonate Content				
Organic Content					Moisture Content					Specific Gravity				
Grain Size					SIC					Porosity				
CUT					UUT					Consolidation				
Lab Sample Numbers														

Special Instructions:			
Relinquished by: <i>Sandra M. Chmura</i>		Company: PARSONS	
Date/Time: 12/12/06 @ 12:05		Received by: <i>Hme</i>	
Relinquished by:		Company:	
Date/Time:		Received by:	
Condition: Cooler Temp.		Custody Seals Intact	
Condition: Cooler Temp.		Custody Seals Intact	
Condition: Cooler Temp.		Custody Seals Intact	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify)]:

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	mll
Sample ID:---	Test Date: 06/23/07	Checked By:	n/a
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80050	OL-0282-01	3.3-6.6 ft	Moist, black silt	56.7
OL-VC-80050	OL-0282-02	13.2-16.5 ft	Moist, very dark gray silt	119.9
OL-VC-50001	OL-0282-03	0-0.5 ft	Moist, olive brown silty sand	90.2
OL-VC-50004	OL-0282-04	0-0.5 ft	Moist, olive brown sand with silt	83.2
OL-VC-50005	OL-0282-05	0-0.5 ft	Moist, olive brown sand with silt	82
OL-VC-50007	OL-0282-06	0-0.5 ft	Moist, olive sand	81
OL-VC-50008	OL-0282-07	0-0.5 ft	Moist, olive silt with sand	81.5
OL-VC-50009	OL-0282-08	0-0.5 ft	Wet, olive brown sand with silt	67.5
OL-VC-50014	OL-0282-09	0-0.5 ft	Wet, olive silt	171.7
OL-VC-50016	OL-0282-10	0-0.5 ft	Moist, dark olive clayey silt	185.7

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mill	
Sample ID:---	Test Date: 06/23/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60054	OL-0282-11	6.6-9.9 ft	Moist, very dark gray silt	106.4
OL-VC-60054	OL-0282-12	16.5-18.5 ft	Moist, very dark grayish brown silt	83.6
OL-VC-60070	OL-0282-13	0-3.3 ft	Moist, olive brown silty sand	80.4
OL-VC-60070	OL-0282-14	9.9-13.2 ft	Wet, olive brown silt with sand	81.9
OL-VC-30037	OL-0282-15	9.9-13.2 ft	Wet, dark gray silt	143.5
OL-VC-30037	OL-0282-16	13.2-16.5 ft	Moist, olive brown silt	88.1
OL-VC-30037	OL-0282-17	0.5-3.3 ft	Wet, dark gray silt	178.1
OL-VC-30035	OL-0282-18	6.6-9.9 ft	Moist, white silt	236.6
OL-VC-30035	OL-0282-19	16.5-19.6 ft	Moist, grayish brown silt	109.8
OL-VC-30036	OL-0282-20	0.5-3.3 ft	Wet, very dark gray silt	175.2

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	01/16/07
Depth :	---	Test Id:	105668
		Tested By:	yf
		Checked By:	jdt

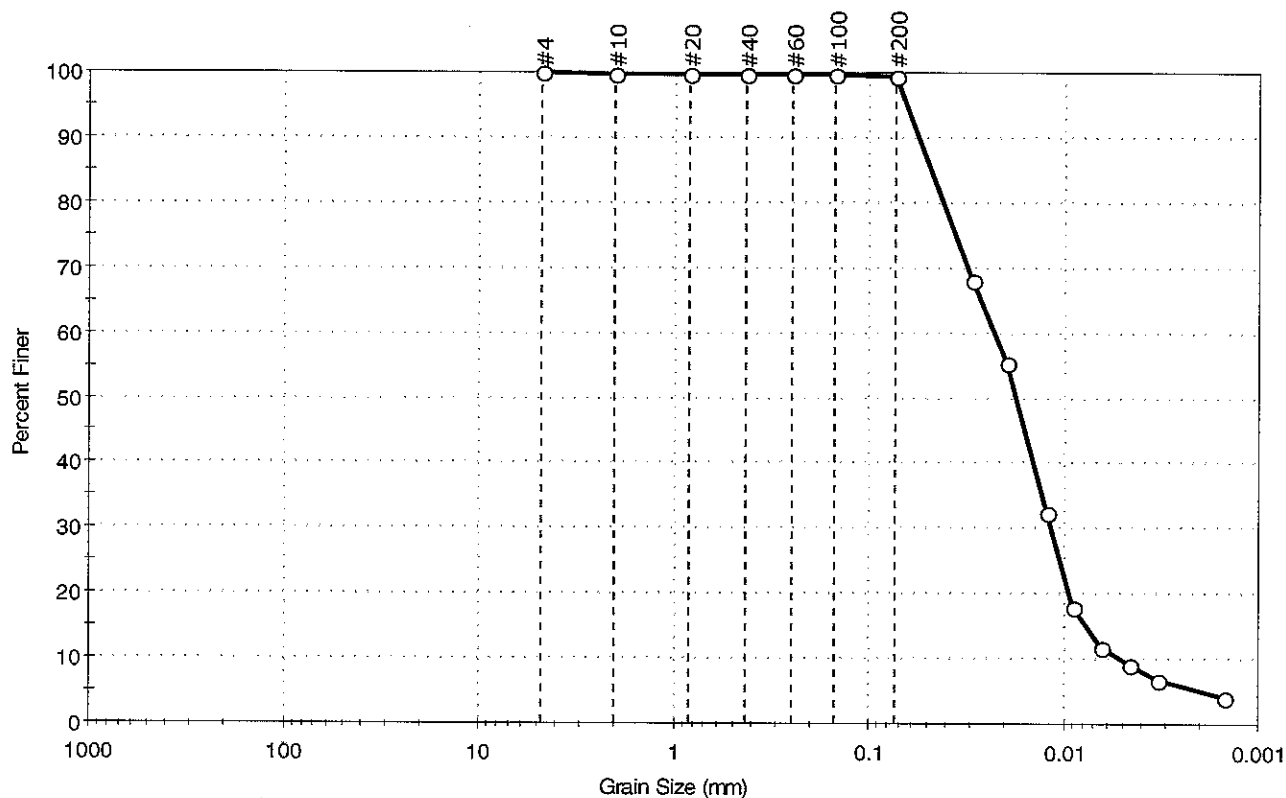
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-50005	OL-0282-05	0-0.5 ft	Moist, olive brown sand with silt	2.7
OL-VC-50009	OL-0282-08	0-0.5 ft	Wet, olive brown sand with silt	2.76
OL-VC-60054	OL-0282-11	6.6-9.9 ft	Moist, very dark gray silt	2.74
OL-VC-60054	OL-0282-12	16.5-18.5 ft	Moist, very dark grayish brown silt	2.8
OL-VC-30035	OL-0282-18	6.6-9.9 ft	Moist, white silt	2.62
OL-VC-30035	OL-0282-19	16.5-19.6 ft	Moist, grayish brown silt	2.74
OL-VC-30036	OL-0282-20	0.5-3.3 ft	Wet, very dark gray silt	2.68

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80050	Sample Type: jar
Sample ID: OL-0282-01	Test Date: 02/01/07
Depth: 3.3-6.6 ft	Test Id: 105646
Test Comment: ---	
Sample Description: Moist, black silt	
Sample Comment: --	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.6	99.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0299	68		
---	0.0195	56		
---	0.0122	32		
---	0.0091	18		
---	0.0065	12		
---	0.0047	9		
---	0.0033	7		
---	0.0015	4		

Coefficients

D ₈₅ = 0.0488 mm	D ₃₀ = 0.0116 mm
D ₆₀ = 0.0227 mm	D ₁₅ = 0.0077 mm
D ₅₀ = 0.0175 mm	D ₁₀ = 0.0052 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

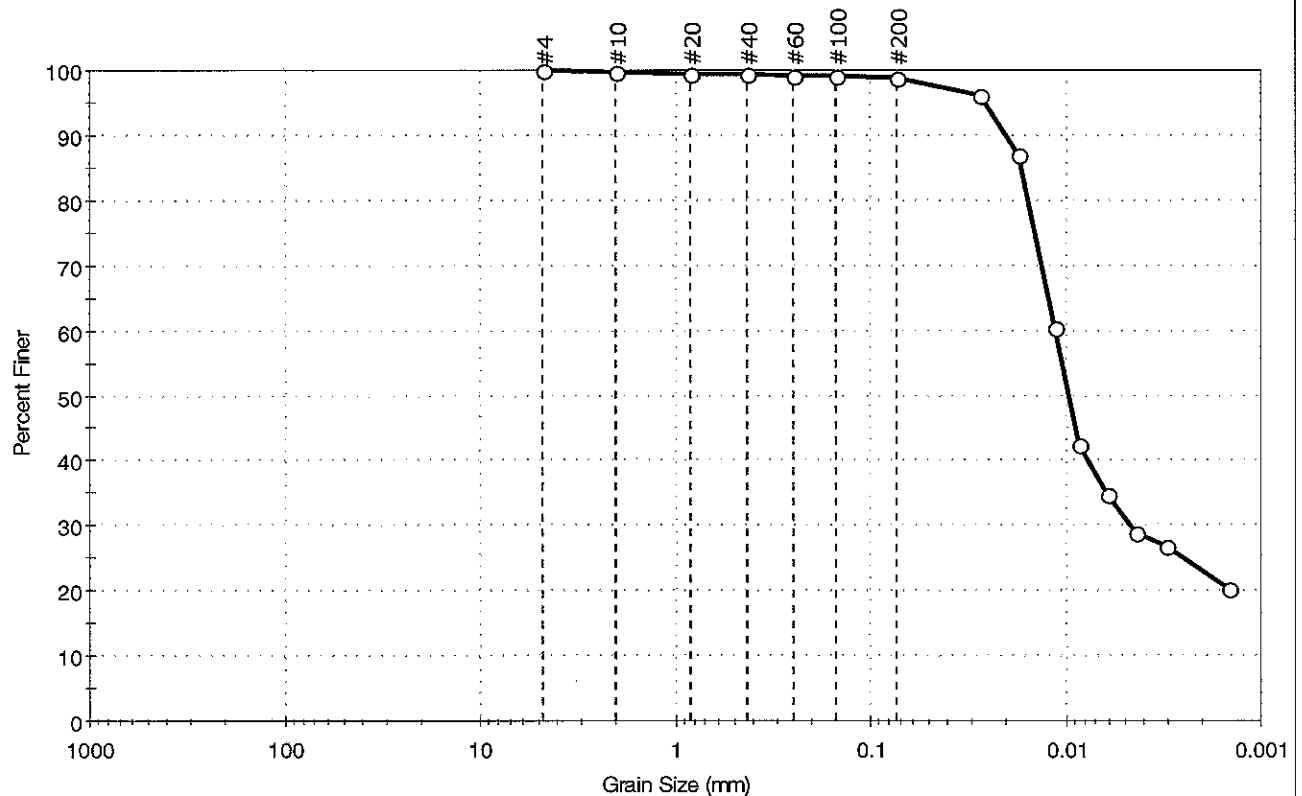
AASHTO Clayey Soils (A-7-5 (53))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	n/a
Boring ID:	OL-VC-80050	Sample Type:	jar
Sample ID:	OL-0282-02	Test Date:	01/31/07
Depth:	13.2-16.5 ft	Test Id:	105647
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
--	0.0	1.1	98.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0274	96		
---	0.0177	87		
---	0.0113	60		
---	0.0085	43		
---	0.0061	35		
---	0.0044	29		
---	0.0031	27		
---	0.0015	20		

Coefficients

D ₈₅ = 0.0171 mm	D ₃₀ = 0.0047 mm
D ₆₀ = 0.0113 mm	D ₁₅ = N/A
D ₅₀ = 0.0096 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

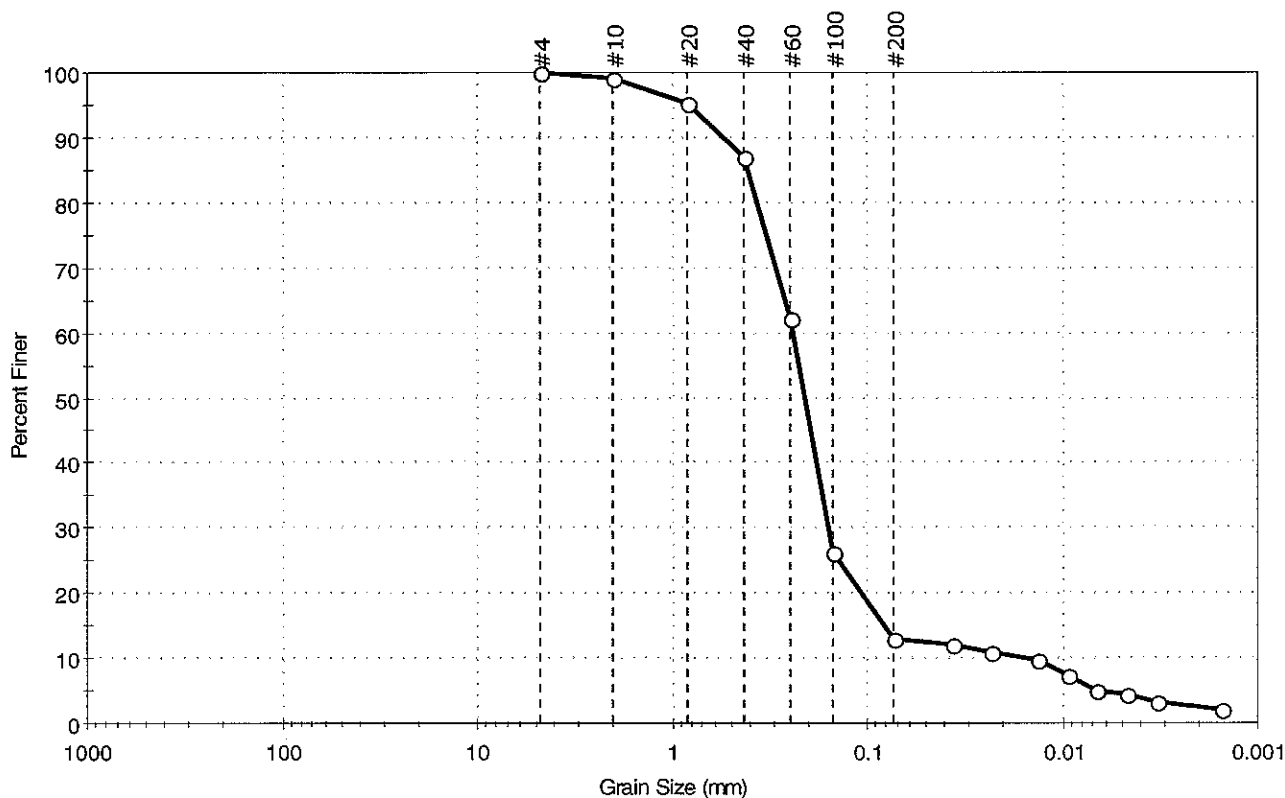
AASHTO Clayey Soils (A-7-5 (93))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-50001	Sample Type:	jar
Sample ID:	OL-0282-03	Test Date:	01/31/07
Depth :	0-0.5 ft	Test Id:	105648
Test Comment:	---		
Sample Description:	Moist, olive brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	87.0	13.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	95		
#40	0.42	87		
#60	0.25	62		
#100	0.15	26		
#200	0.074	13		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0364	12		
---	0.0232	11		
---	0.0133	10		
---	0.0094	7		
---	0.0067	5		
---	0.0047	4		
---	0.0033	3		
---	0.0015	2		

Coefficients

D ₈₅ = 0.4081 mm	D ₃₀ = 0.1581 mm
D ₆₀ = 0.2424 mm	D ₁₅ = 0.0823 mm
D ₅₀ = 0.2102 mm	D ₁₀ = 0.0157 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

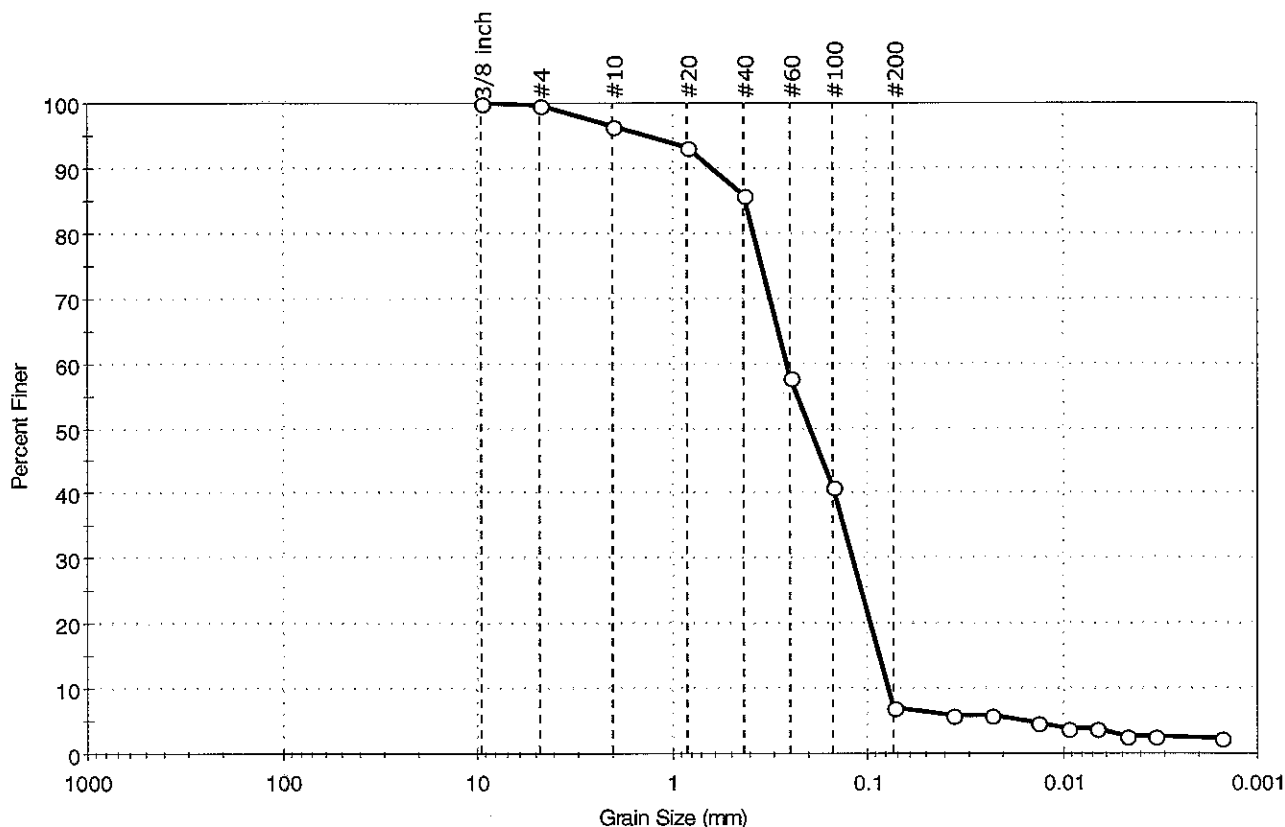
AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-50004	Sample Type: jar
Sample ID: OL-0282-04	Test Date: 01/31/07	Tested By: mll
Depth: 0-0.5 ft	Test Id: 105649	Checked By: jdt
Test Comment: ---	Sample Description: Moist, olive brown sand with silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	92.5	7.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	97		
#20	0.84	93		
#40	0.42	86		
#60	0.25	58		
#100	0.15	41		
#200	0.074	7		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0369	6		
---	0.0235	6		
---	0.0135	5		
---	0.0095	4		
---	0.0067	4		
---	0.0048	3		
---	0.0034	3		
---	0.0015	2		

Coefficients

D ₈₅ = 0.4172 mm	D ₃₀ = 0.1192 mm
D ₆₀ = 0.2611 mm	D ₁₅ = 0.0872 mm
D ₅₀ = 0.1976 mm	D ₁₀ = 0.0786 mm
C _u = 3.322	C _c = 0.692

Classification

ASTM N/A

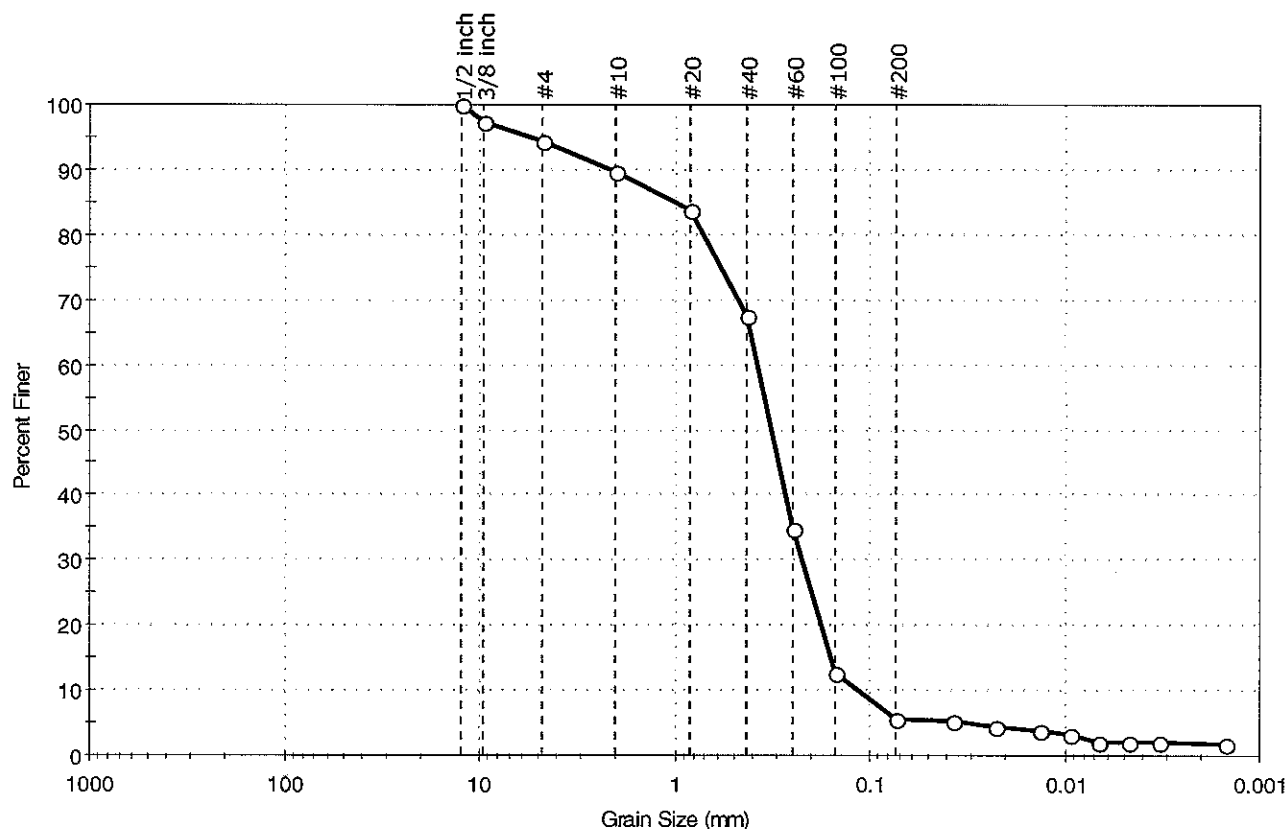
AASHTO Fine Sand (A-3 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-50009	Sample Type: jar
Sample ID: OL-0282-08	Test Date: 01/30/07
Depth: 0-0.5 ft	Test Id: 105650
Test Comment: ---	
Sample Description: Wet, olive brown sand with silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	5.6	88.8	5.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	97		
#4	4.75	94		
#10	2.00	90		
#20	0.84	84		
#40	0.42	68		
#60	0.25	35		
#100	0.15	13		
#200	0.074	6		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0380	5		
---	0.0229	5		
---	0.0134	4		
---	0.0095	3		
---	0.0067	2		
---	0.0047	2		
---	0.0033	2		
---	0.0015	2		

Coefficients

D ₈₅ = 1.0120 mm	D ₃₀ = 0.2233 mm
D ₆₀ = 0.3758 mm	D ₁₅ = 0.1582 mm
D ₅₀ = 0.3194 mm	D ₁₀ = 0.1146 mm
C _u = 3.279	C _c = 1.158

Classification

ASTM N/A

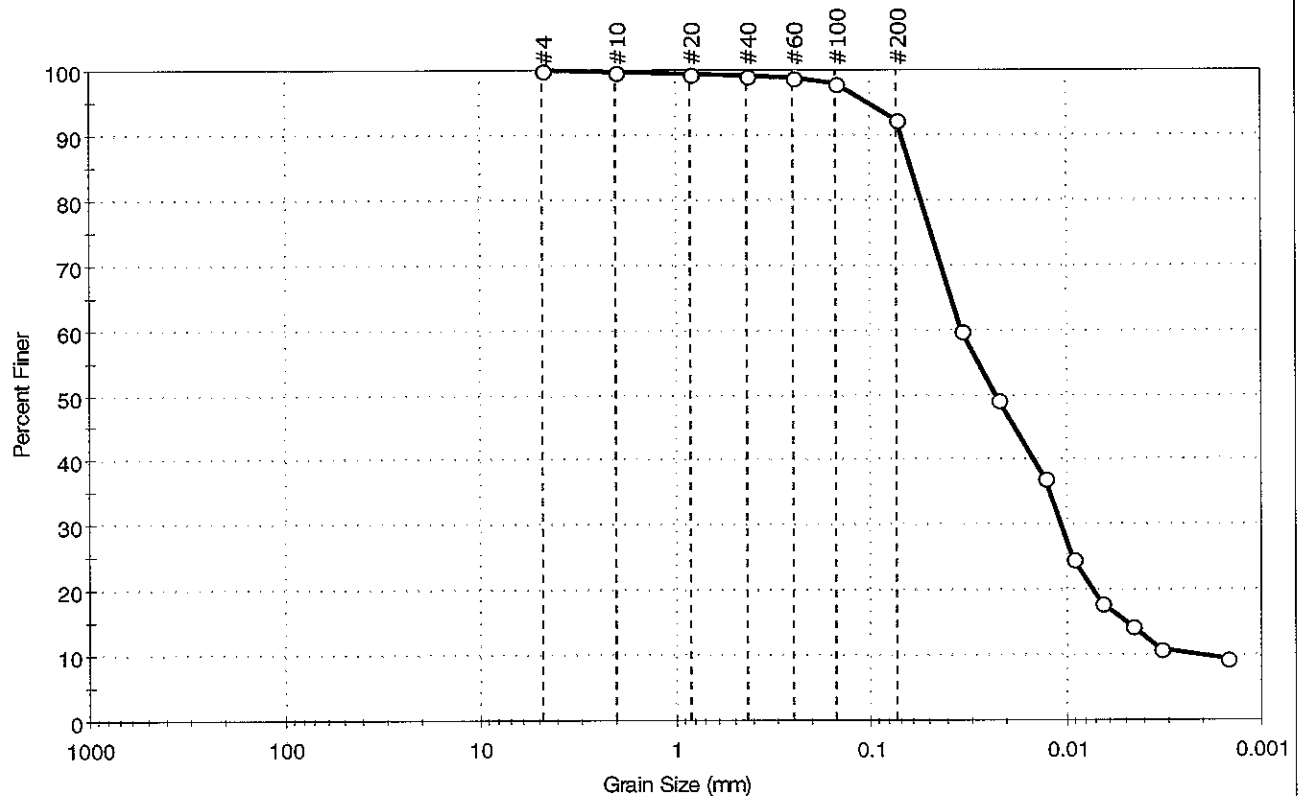
AASHTO Fine Sand (A-3 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-50014	Sample Type: jar
Sample ID: OL-0282-09	Test Date: 01/30/07	Tested By: mll
Depth: 0-0.5 ft	Test Id: 105651	Checked By: jdt
Test Comment: ---	Sample Description: Wet, olive silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	7.7	92.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0345	60		
---	0.0220	49		
---	0.0125	37		
---	0.0092	25		
---	0.0066	18		
---	0.0046	14		
---	0.0033	11		
---	0.0015	9		

Coefficients

D ₈₅ = 0.0624 mm	D ₃₀ = 0.0106 mm
D ₆₀ = 0.0347 mm	D ₁₅ = 0.0049 mm
D ₅₀ = 0.0227 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

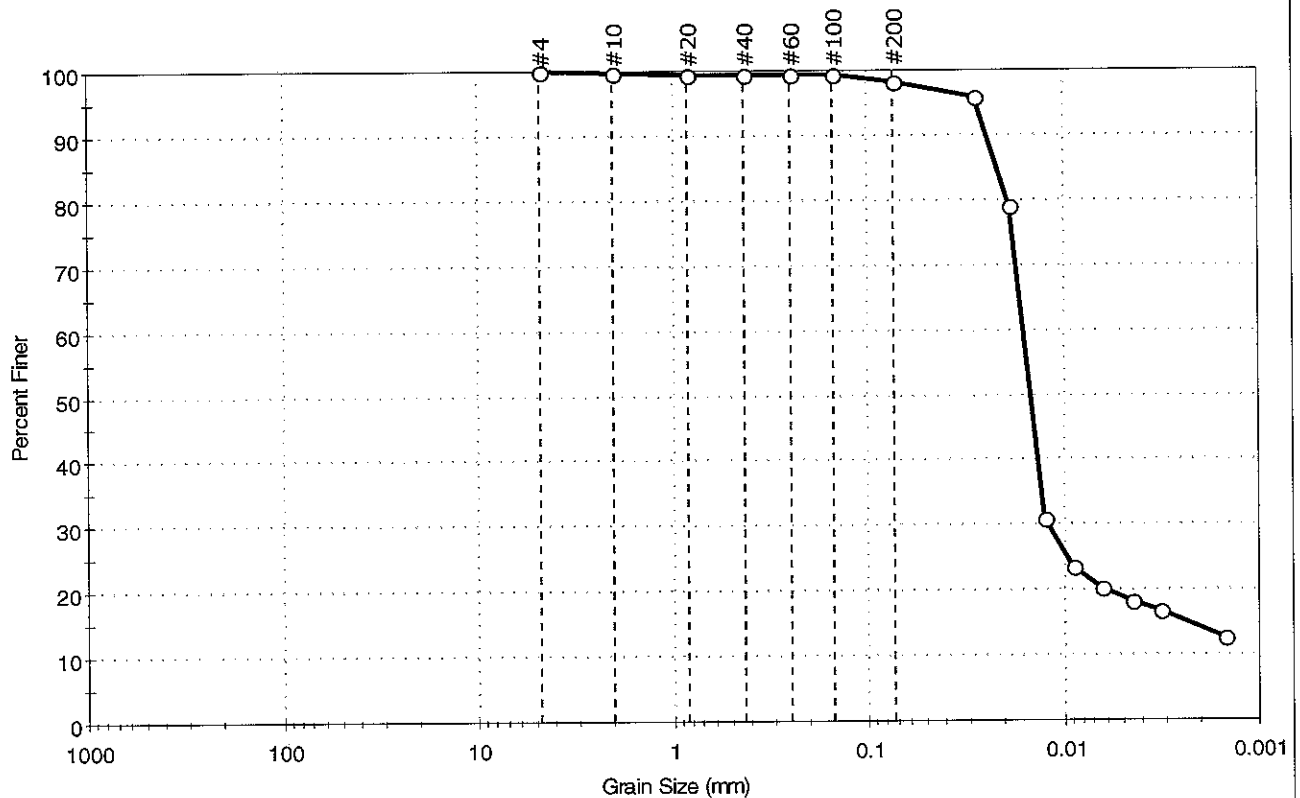
AASHTO Clayey Soils (A-7-5 (56))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-60054	Sample Type: jar
Sample ID: OL-0282-11	Test Date: 01/30/07
Depth: 6.6-9.9 ft	Test Id: 105652
Test Comment: ---	
Sample Description: Moist, very dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	1.7	98.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0281	96		
---	0.0186	79		
---	0.0125	31		
---	0.0090	24		
---	0.0064	20		
---	0.0045	18		
---	0.0032	17		
---	0.0015	13		

Coefficients

D ₈₅ = 0.0216 mm	D ₃₀ = 0.0120 mm
D ₆₀ = 0.0159 mm	D ₁₅ = 0.0023 mm
D ₅₀ = 0.0147 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

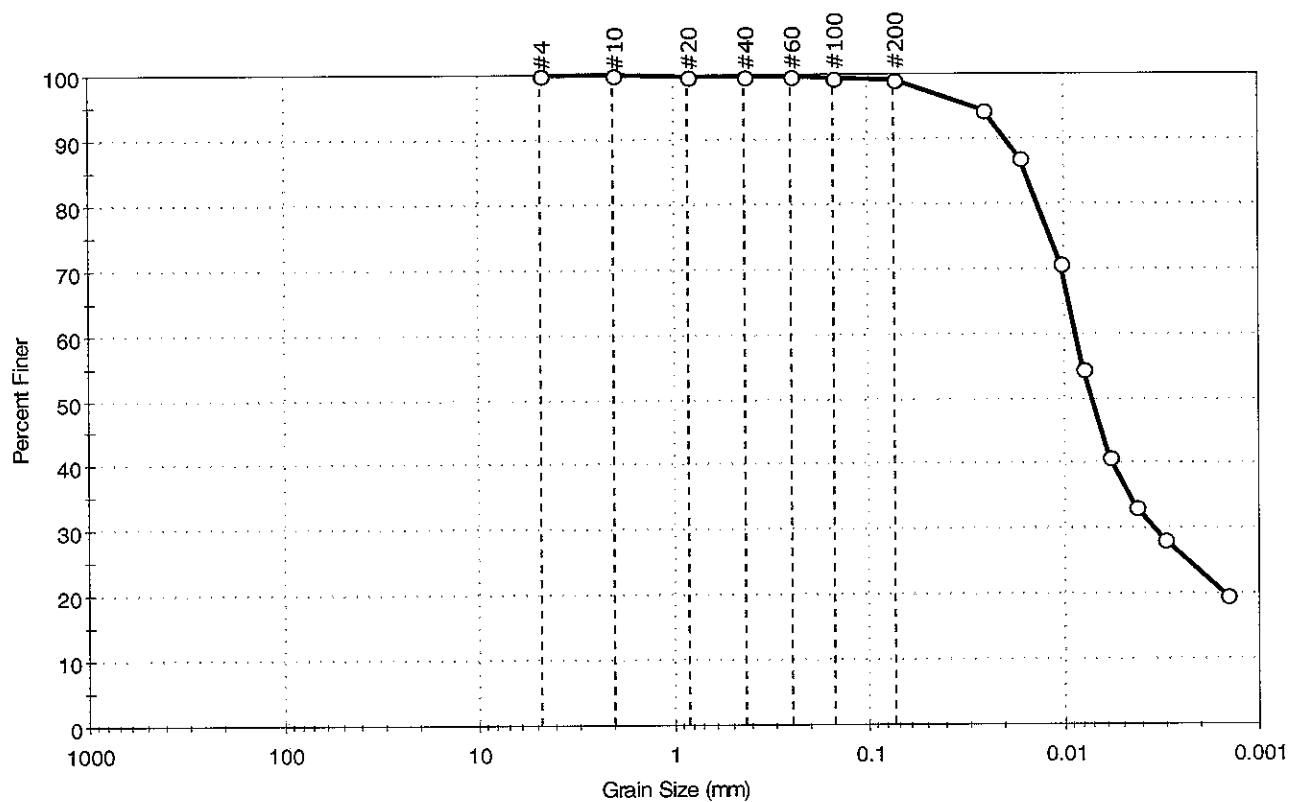
ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (53))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: ml
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-60054	Sample Type: jar
Sample ID: OL-0282-12	Test Date: 01/30/07
Depth: 16.5-18.5 ft	Test Id: 105653
Test Comment: ---	
Sample Description: Moist, very dark grayish brown silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0260	94		
---	0.0168	87		
---	0.0105	71		
---	0.0079	55		
---	0.0059	41		
---	0.0043	33		
---	0.0031	28		
---	0.0015	20		

Coefficients

D ₈₅ = 0.0158 mm	D ₃₀ = 0.0035 mm
D ₆₀ = 0.0087 mm	D ₁₅ = N/A
D ₅₀ = 0.0072 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (65))

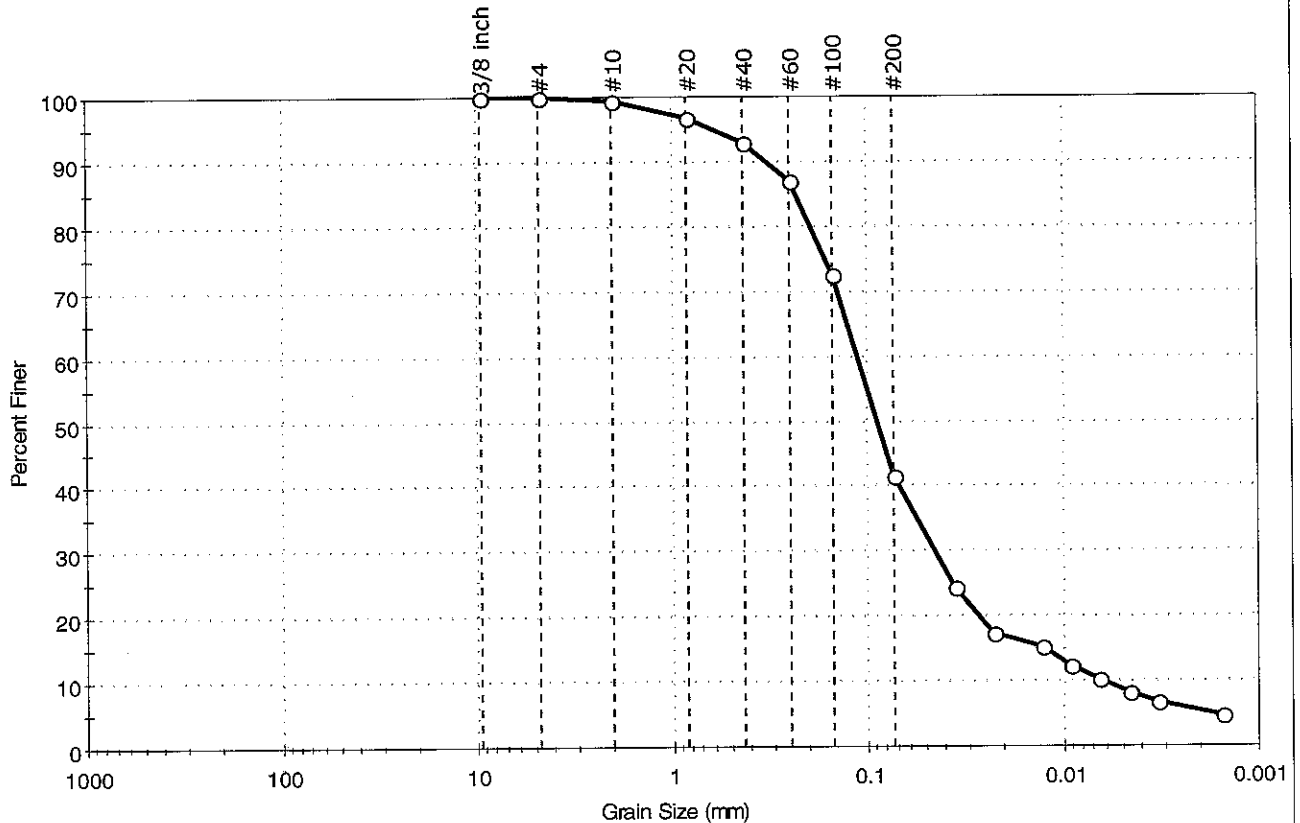
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-60070	Sample Type: jar
Sample ID: OL-0282-13	Test Date: 01/31/07	Tested By: mll
Depth: 0-3.3 ft	Test Id: 105654	Checked By: jdt
Test Comment: ---	Sample Description: Moist, olive brown silty sand	
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	58.2	41.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	97		
#40	0.42	93		
#60	0.25	87		
#100	0.15	73		
#200	0.074	42		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0359	25		
---	0.0228	17		
---	0.0130	15		
---	0.0093	12		
---	0.0066	10		
---	0.0046	8		
---	0.0033	7		
---	0.0015	5		

Coefficients

D ₈₅ = 0.2335 mm	D ₃₀ = 0.0452 mm
D ₆₀ = 0.1125 mm	D ₁₅ = 0.0124 mm
D ₅₀ = 0.0895 mm	D ₁₀ = 0.0061 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

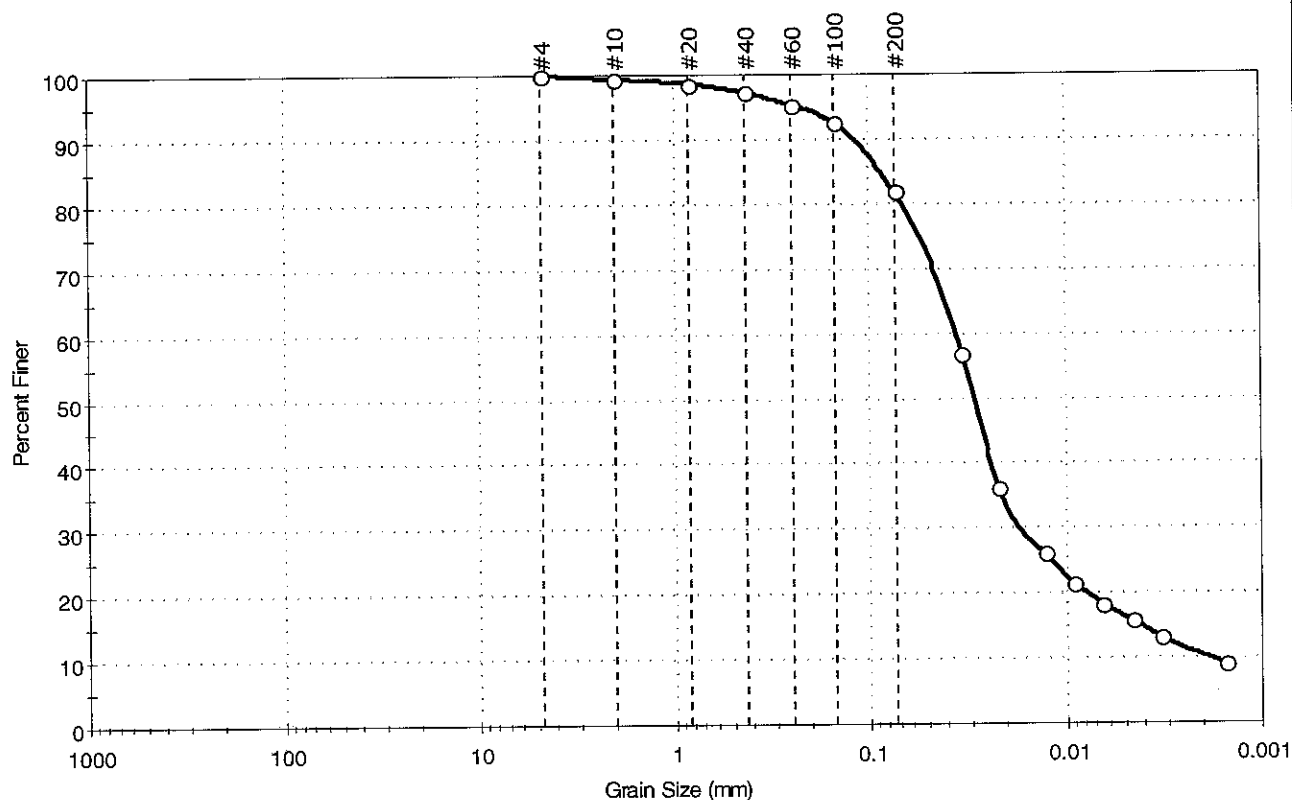
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-60070	Sample Type: jar
Sample ID: OL-0282-14	Test Date: 01/17/07	Tested By: mll
Depth: 9.9-13.2 ft	Test Id: 105655	Checked By: jdt
Test Comment: ---	Sample Description: Wet, olive brown silt with sand	
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	18.1	81.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	97		
#60	0.25	95		
#100	0.15	93		
#200	0.074	82		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.039	57		
---	0.0220	36		
---	0.0129	26		
---	0.0091	22		
---	0.0065	18		
---	0.0046	16		
---	0.0033	13		
---	0.0015	9		

Coefficients

D ₈₅ = 0.0910 mm	D ₃₀ = 0.0158 mm
D ₆₀ = 0.0372 mm	D ₁₅ = 0.0042 mm
D ₅₀ = 0.0292 mm	D ₁₀ = 0.0018 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

AASHTO Silty Soils (A-4 (0))

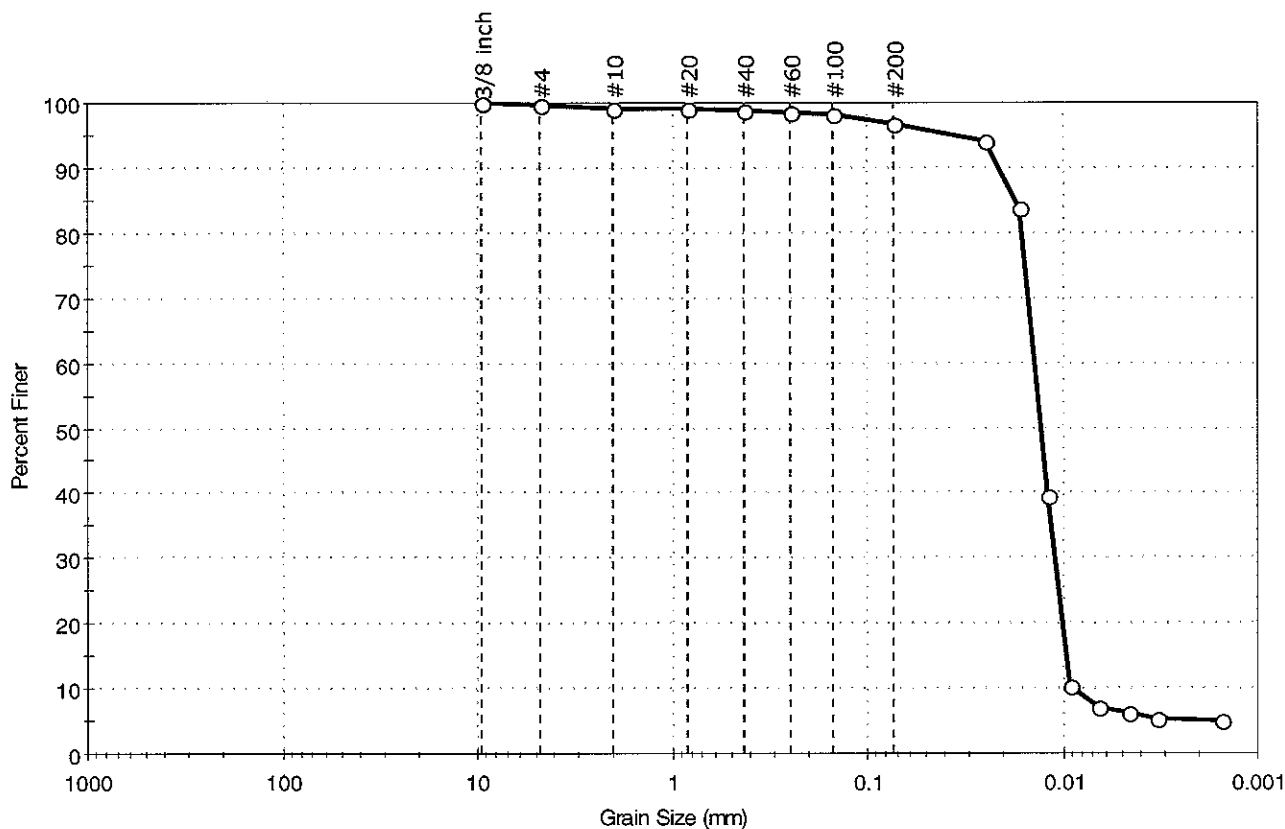
Sample / Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30037	Sample Type:	jar
Sample ID:	OL-0282-15	Test Date:	01/30/07
Depth:	9.9-13.2 ft	Test Id:	105656
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	2.7	96.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0251	94		
---	0.0165	84		
---	0.0118	39		
---	0.0093	10		
---	0.0066	7		
---	0.0046	6		
---	0.0033	5		
---	0.0015	5		

Coefficients

D ₈₅ = 0.0174 mm	D ₃₀ = 0.0109 mm
D ₆₀ = 0.0138 mm	D ₁₅ = 0.0096 mm
D ₅₀ = 0.0128 mm	D ₁₀ = 0.0089 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

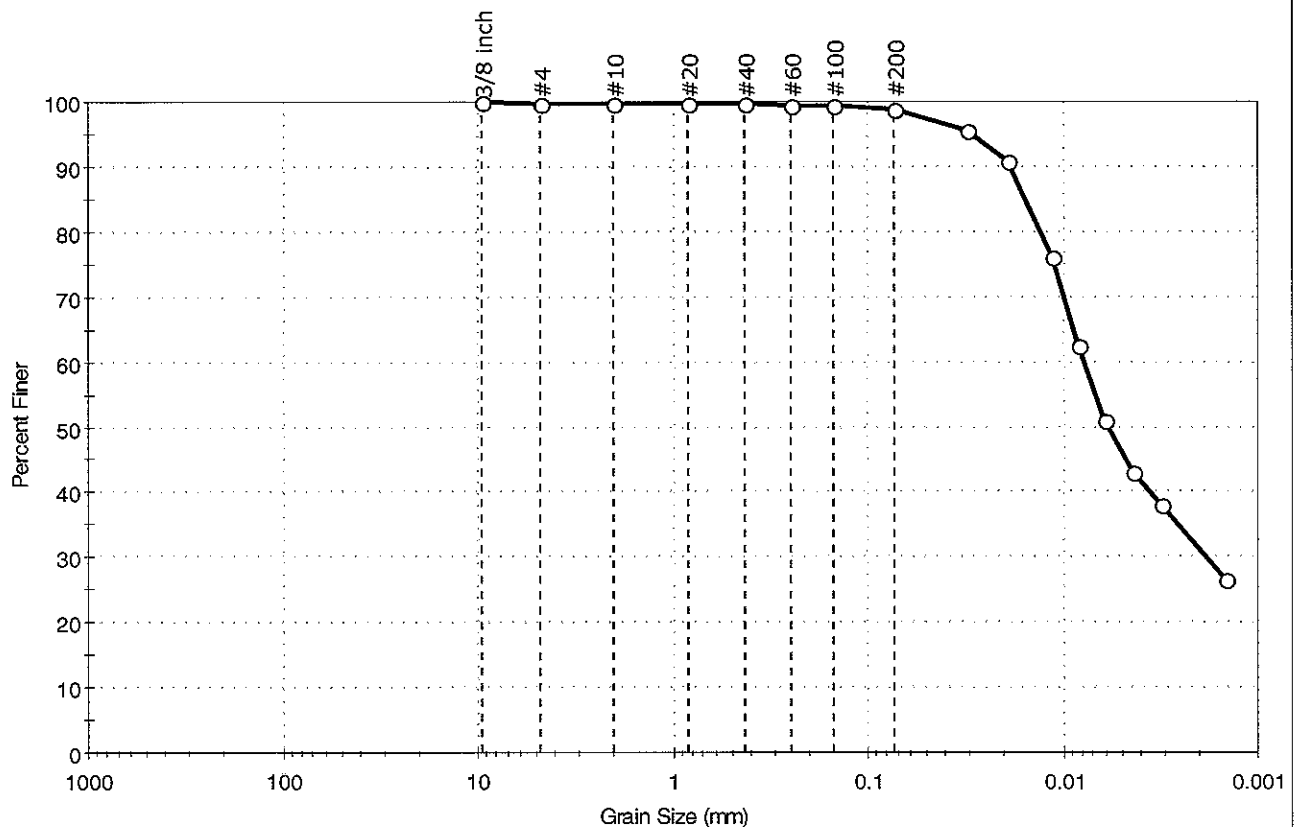
AASHTO Clayey Soils (A-7-5 (42))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-30037	Sample Type: jar
Sample ID: OL-0282-16	Test Date: 01/30/07	Tested By: mll
Depth: 13.2-16.5 ft	Test Id: 105657	Checked By: jdt
Test Comment: ---	Sample Description: Moist, olive brown silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.2	0.9	98.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0310	95		
---	0.0194	91		
---	0.0115	76		
---	0.0084	63		
---	0.0061	51		
---	0.0044	43		
---	0.0031	38		
---	0.0015	27		

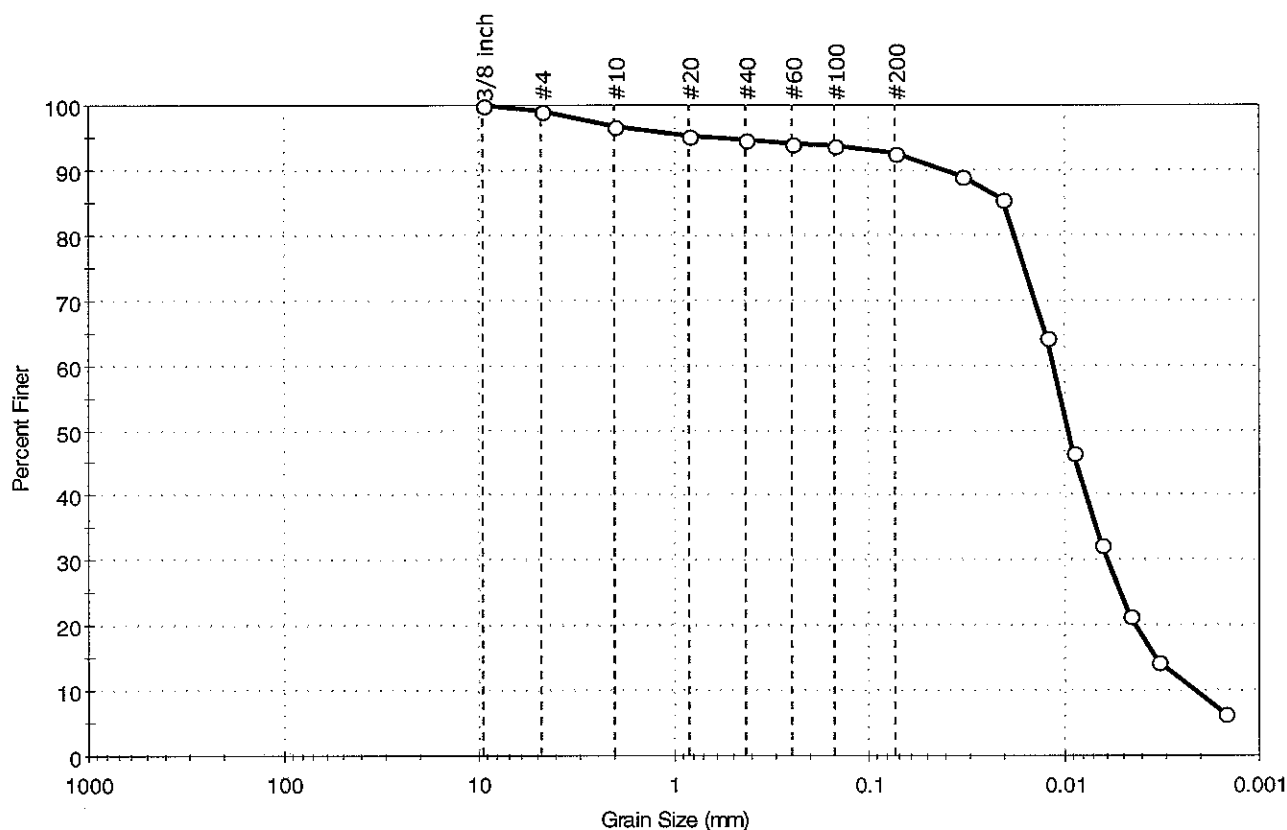
Coefficients	
D ₈₅ = 0.0158 mm	D ₃₀ = 0.0018 mm
D ₆₀ = 0.0078 mm	D ₁₅ = N/A
D ₅₀ = 0.0059 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification	
ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (66))

Sample/Test Description	
Sand/Gravel Particle Shape :	ANGULAR
Sand/Gravel Hardness :	HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-30037	Sample Type: jar
Sample ID: OL-0282-17	Test Date: 01/29/07	Tested By: mll
Depth: 0.5-3.3 ft	Test Id: 105658	Checked By: jdt
Test Comment: ---		
Sample Description: Wet, dark gray silt		
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.0	6.4	92.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	97		
#20	0.84	95		
#40	0.42	95		
#60	0.25	94		
#100	0.15	94		
#200	0.074	93		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0332	89		
---	0.0205	86		
---	0.0122	64		
---	0.0089	47		
---	0.0064	32		
---	0.0046	22		
---	0.0033	15		
---	0.0015	7		

Coefficients

D ₈₅ = 0.0202 mm	D ₃₀ = 0.0060 mm
D ₆₀ = 0.0113 mm	D ₁₅ = 0.0033 mm
D ₅₀ = 0.0095 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

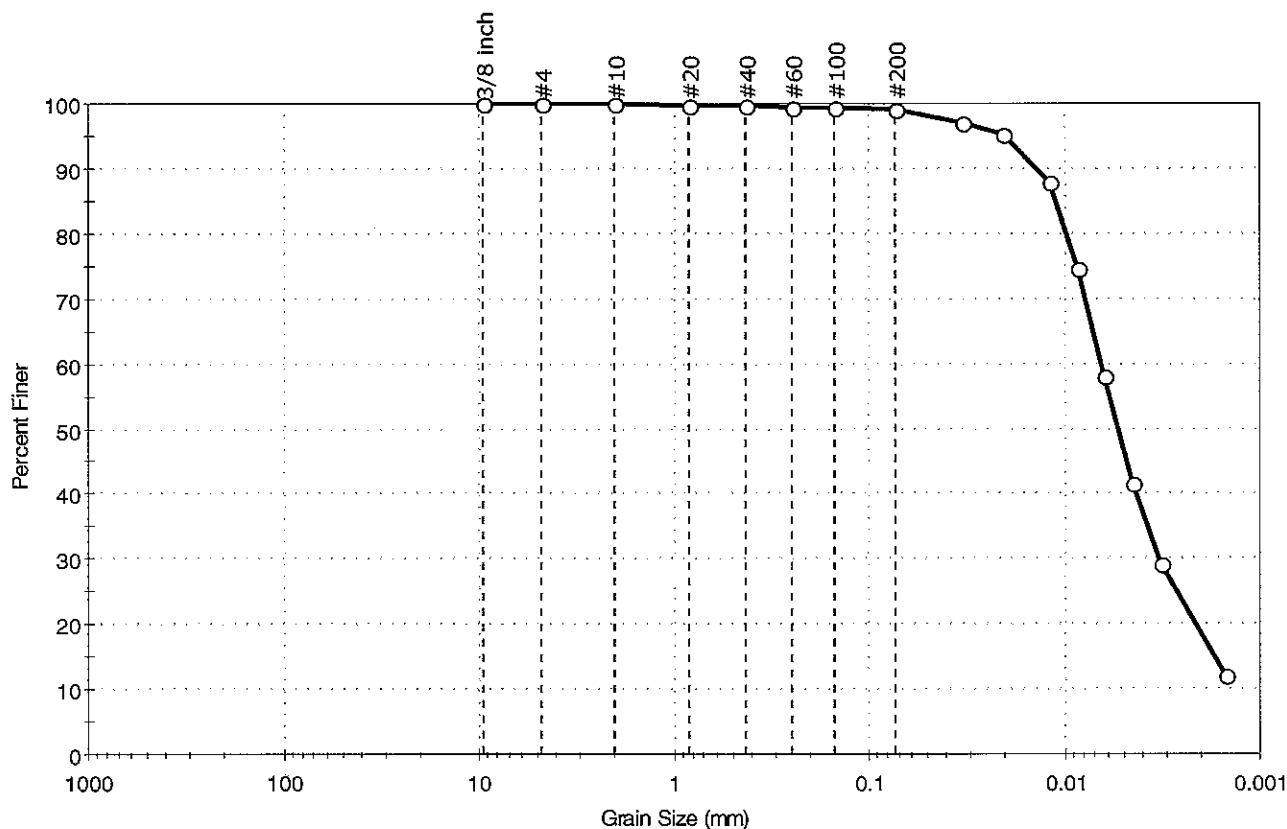
AASHTO Clayey Soils (A-7-5 (37))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-30035	Sample Type: jar
Sample ID: OL-0282-18	Test Date: 01/30/07	Tested By: mll
Depth: 6.6-9.9 ft	Test Id: 105659	Checked By: jdt
Test Comment: ---	Sample Description: Moist, white silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.9	99.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0334	97		
---	0.0207	95		
---	0.0120	88		
---	0.0086	75		
---	0.0063	58		
---	0.0045	42		
---	0.0032	29		
---	0.0015	12		

Coefficients

D ₈₅ = 0.0111 mm	D ₃₀ = 0.0033 mm
D ₆₀ = 0.0065 mm	D ₁₅ = 0.0017 mm
D ₅₀ = 0.0053 mm	D ₁₀ = 0.0014 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (63))

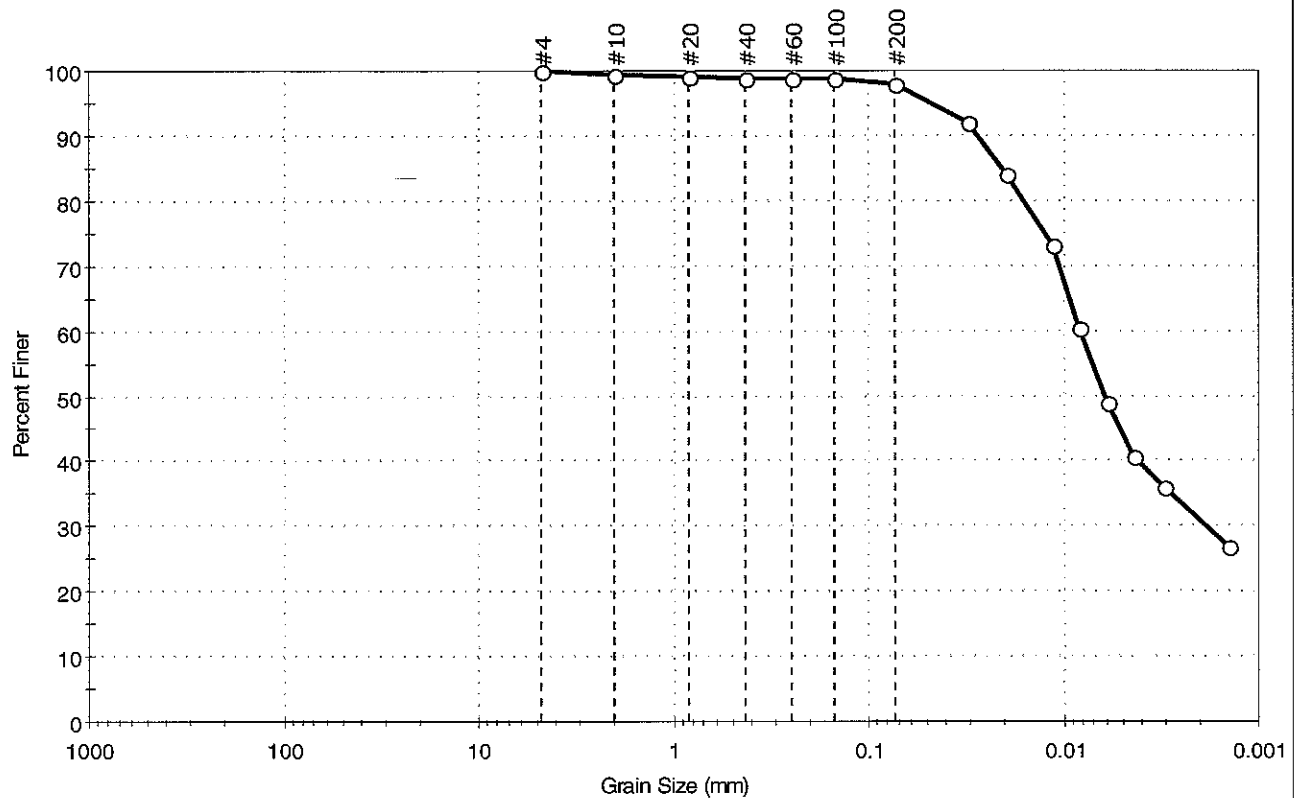
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: ml
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-30035	Sample Type: jar
Sample ID: OL-0282-19	Test Date: 01/30/07
Depth: 16.5-19.6 ft	Test Id: 105660
Test Comment: ---	
Sample Description: Moist, grayish brown silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.1	97.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0307	92		
---	0.0195	84		
---	0.0115	73		
---	0.0084	60		
---	0.0059	49		
---	0.0044	41		
---	0.0031	36		
---	0.0014	27		

Coefficients

D ₈₅ = 0.0207 mm	D ₃₀ = 0.0019 mm
D ₆₀ = 0.0083 mm	D ₁₅ = N/A
D ₅₀ = 0.0061 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

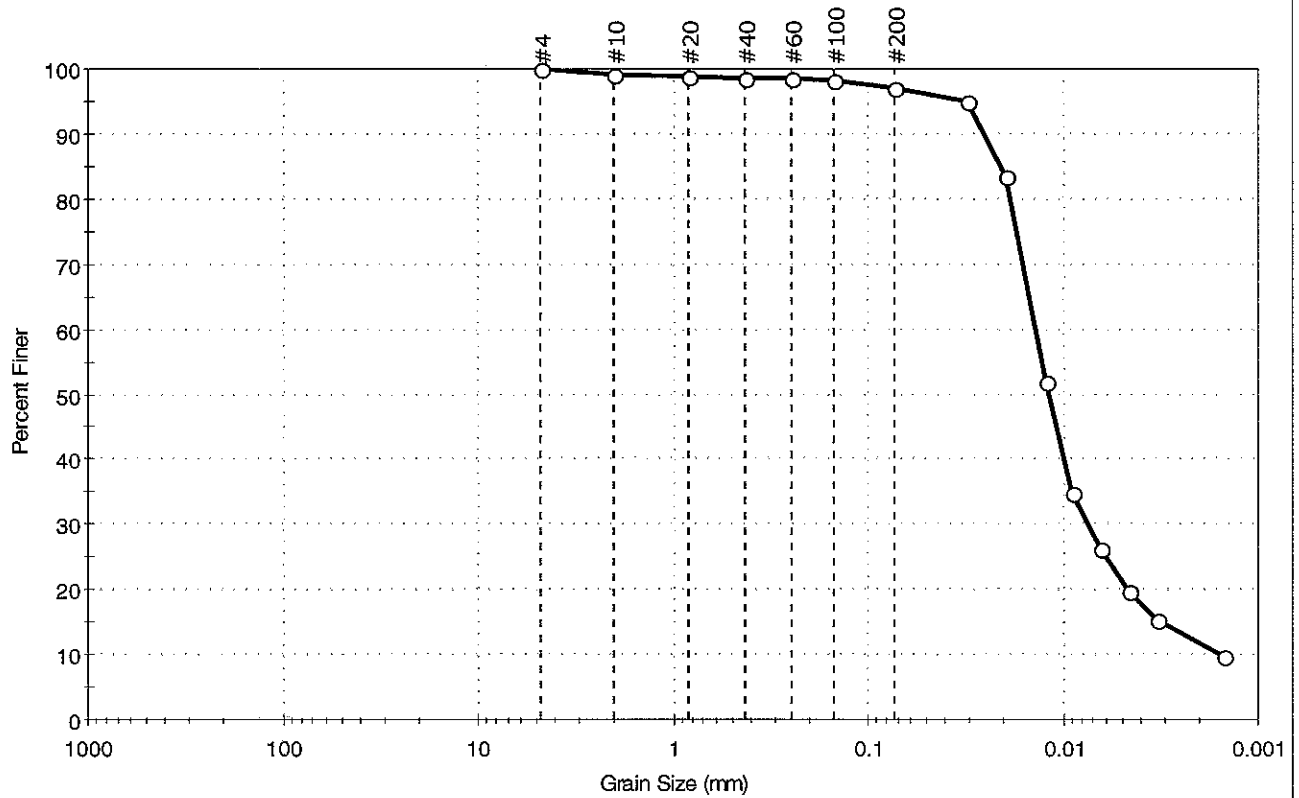
AASHTO Clayey Soils (A-7-5 (84))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-30036	Sample Type: jar
Sample ID: OL-0282-20	Test Date: 01/29/07
Depth: 0.5-3.3 ft	Test Id: 105661
Test Comment: ---	
Sample Description: Wet, very dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.9	97.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0310	95		
---	0.0198	84		
---	0.0122	52		
---	0.0090	35		
---	0.0064	26		
---	0.0046	20		
---	0.0033	15		
---	0.0015	10		

Coefficients

D ₈₅ = 0.0209 mm	D ₃₀ = 0.0075 mm
D ₆₀ = 0.0138 mm	D ₁₅ = 0.0031 mm
D ₅₀ = 0.0118 mm	D ₁₀ = 0.0015 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

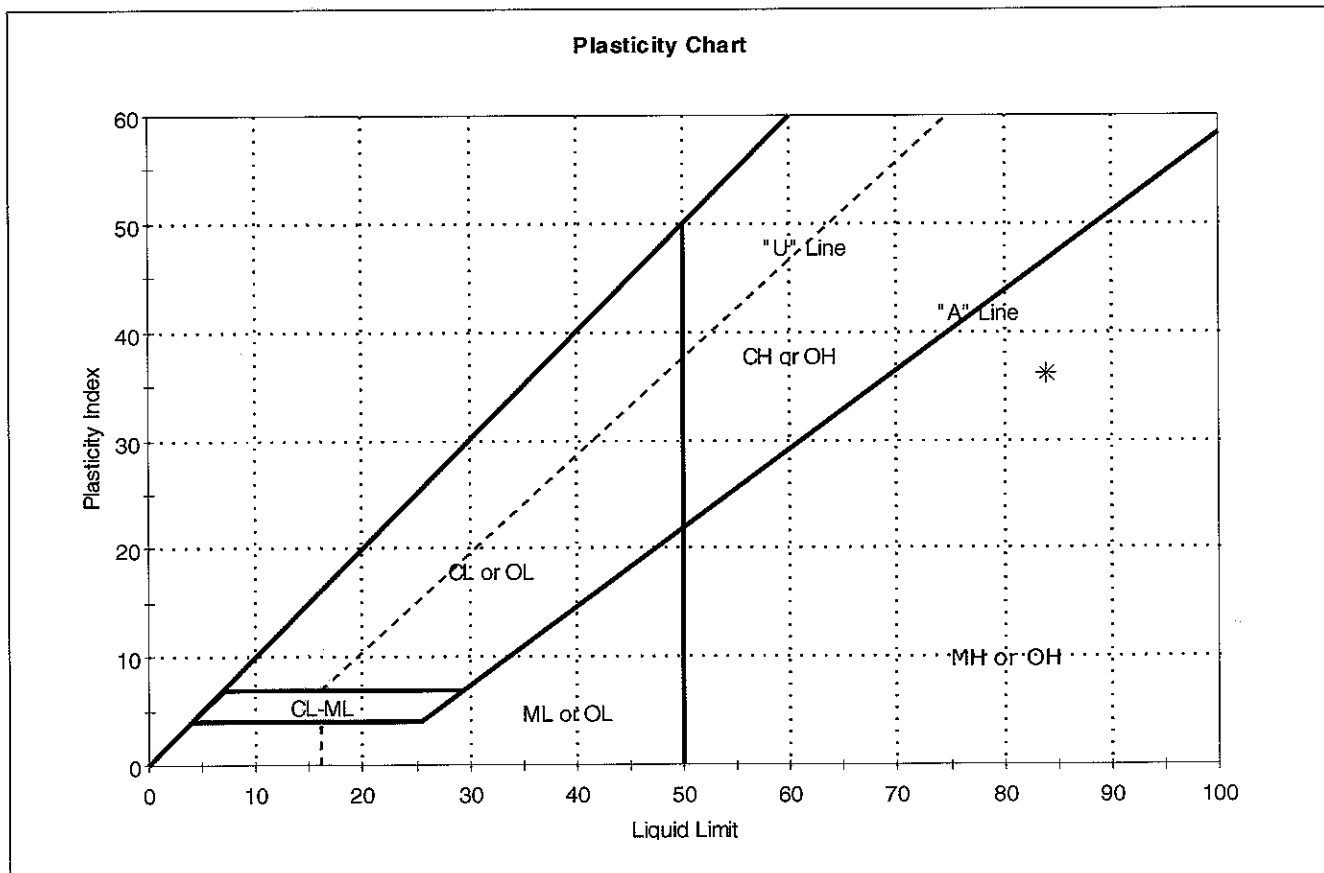
AASHTO Clayey Soils (A-7-5 (39))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80050	Sample Type:	jar
Sample ID:	OL-0282-01	Test Date:	01/22/07
Depth :	3.3-6.6 ft	Test Id:	105609
Test Comment:	---		
Sample Description:	Moist, black silt		
Sample Comment:	--		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-01	-VC-800	3.3-6.6 ft	57	84	48	36	0	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

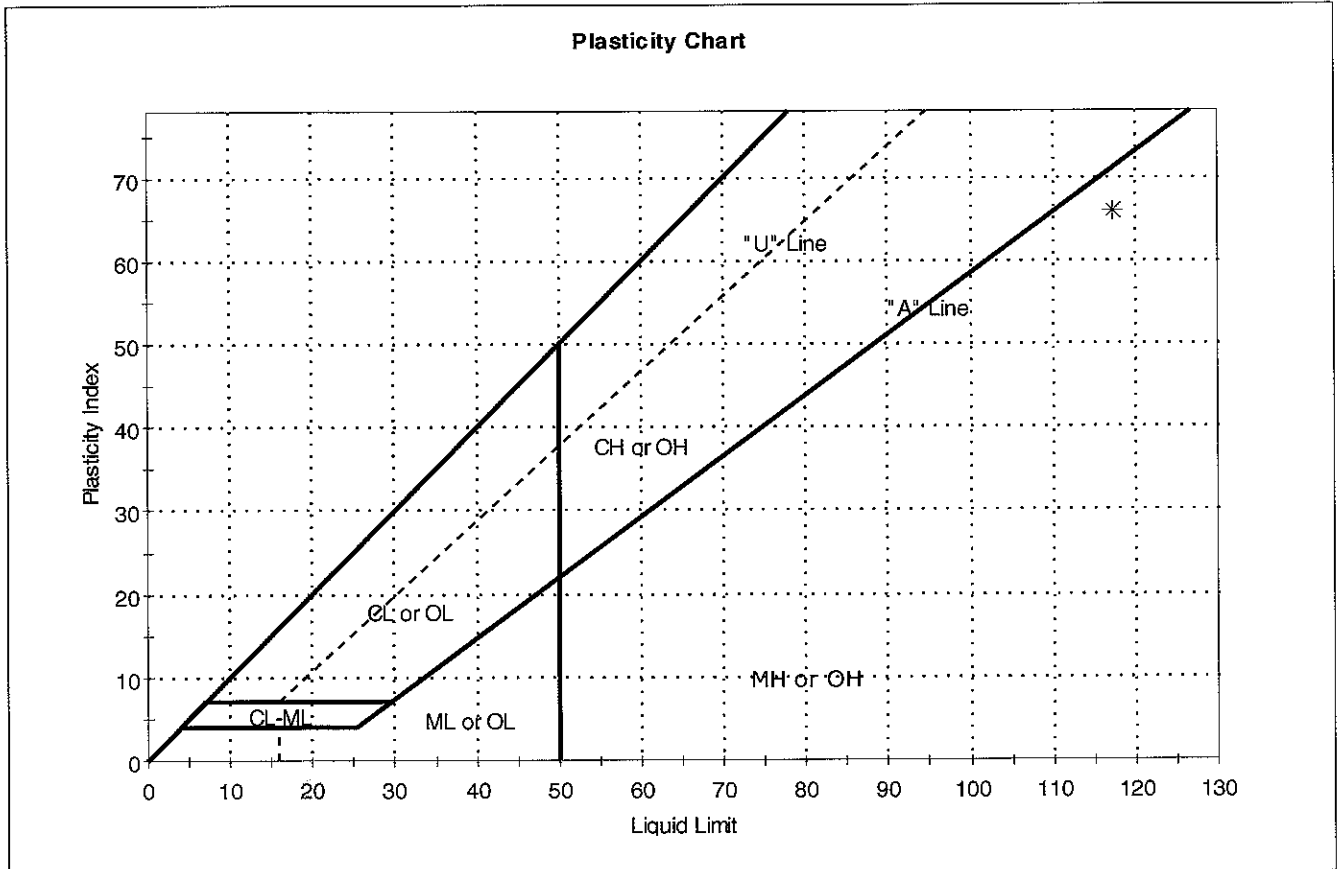
Dry Strength: MEDIUM

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80050	Sample Type:	jar
Sample ID:	OL-0282-02	Test Date:	01/22/07
Depth :	13.2-16.5 ft	Test Id:	105610
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-02	VC-800	13.2-16.5 ft	120	117	51	66	1	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-50005	Sample Type:	jar
Sample ID:	OL-0282-05	Test Date:	01/23/07
Depth :	0-0.5 ft	Test Id:	105611
Test Comment:	---		
Sample Description:	Moist, olive brown sand with silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-05	VC-500	0-0.5 ft	82	n/a	n/a	n/a	n/a	

Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-50007	Sample Type:	jar
Sample ID:	OL-0282-06	Test Date:	01/23/07
Depth :	0-0.5 ft	Test Id:	105612
Test Comment:	---		
Sample Description:	Moist, olive sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-06	VC-5000	0-0.5 ft	81	n/a	n/a	n/a	n/a	

Dry Strength: MEDIUM

Dilancy: SLOW

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-50008	Sample Type:	jar
Sample ID:	OL-0282-07	Test Date:	01/17/07
Depth :	0-0.5 ft	Test Id:	105613
Test Comment:	---		
Sample Description:	Moist, olive silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-07	-VC-500	0-0.5 ft	82	n/a	n/a	n/a	n/a	

Dry Strength: MEDIUM

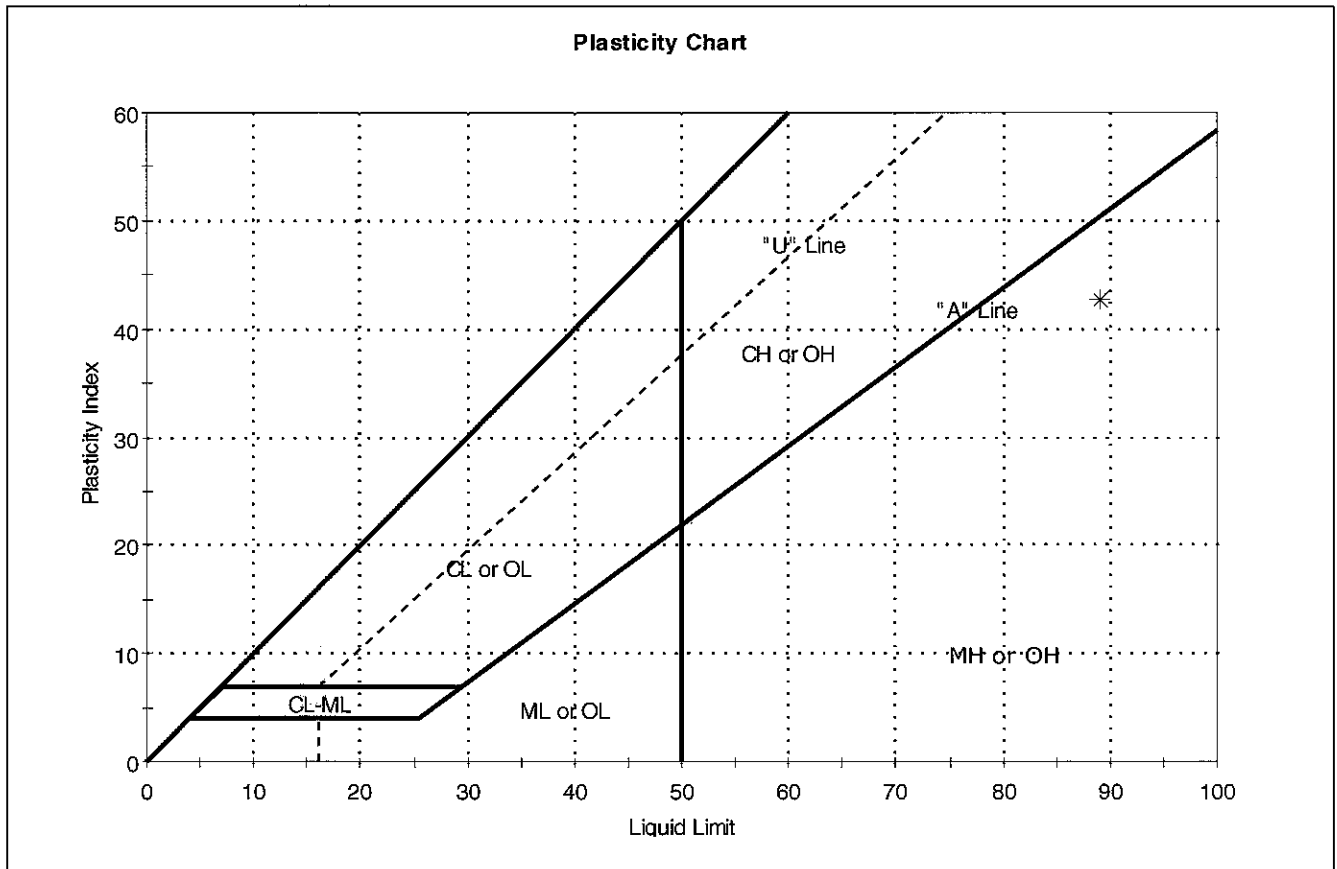
Dilatancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-50014	Sample Type:	jar
Sample ID:	OL-0282-09	Test Date:	01/23/07
Depth :	0-0.5 ft	Test Id:	105614
Test Comment:	---		
Sample Description:	Wet, olive silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

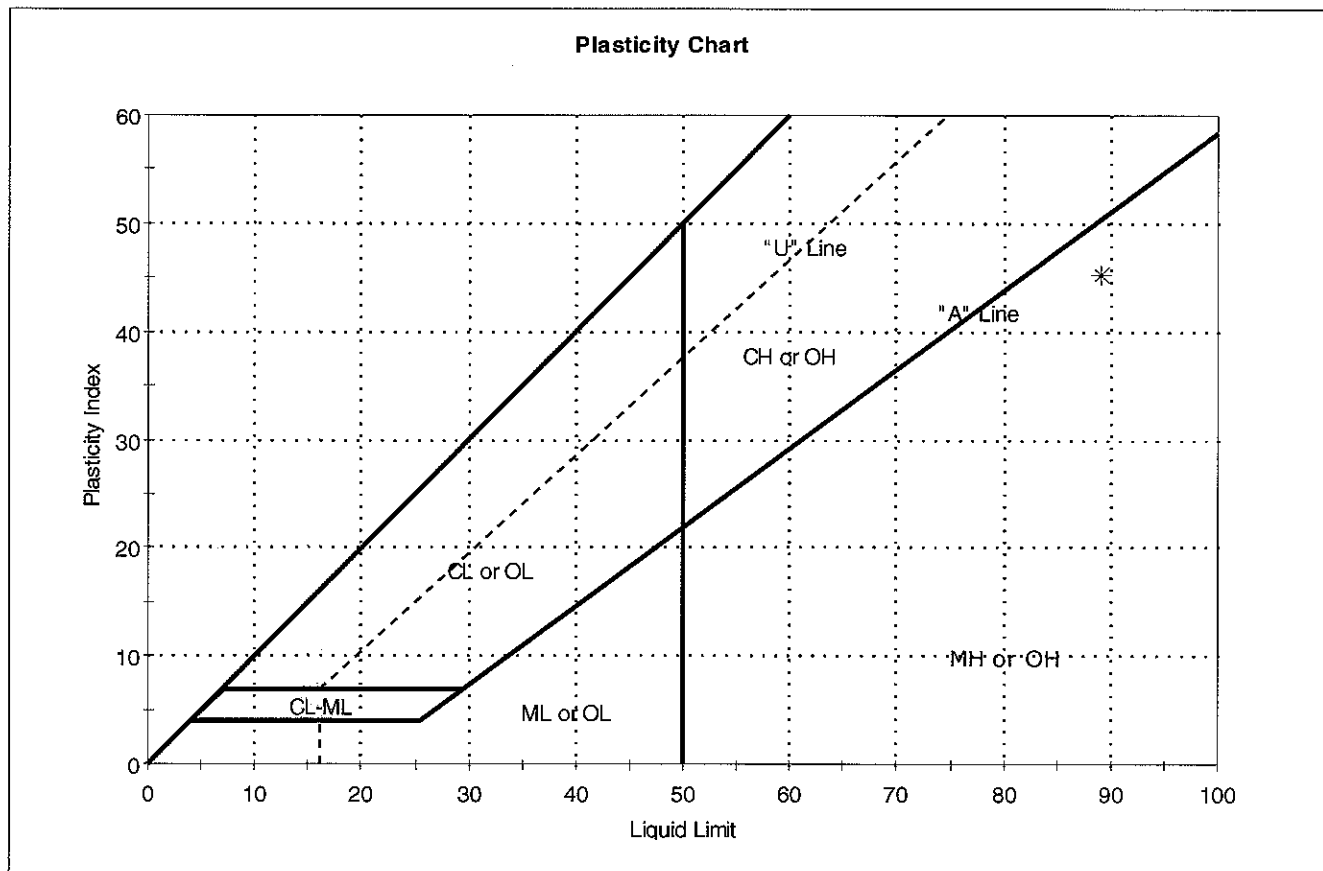


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-09	-VC-500	0-0.5 ft	172	89	46	43	3	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-50016	Sample Type:	jar
Sample ID:	OL-0282-10	Test Date:	01/23/07
Depth :	0-0.5 ft	Test Id:	105615
Test Comment:	---		
Sample Description:	Moist, dark olive clayey silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-10	L-VC-500	0-0.5 ft	186	89	44	45	3	

Sample Prepared using the WET method

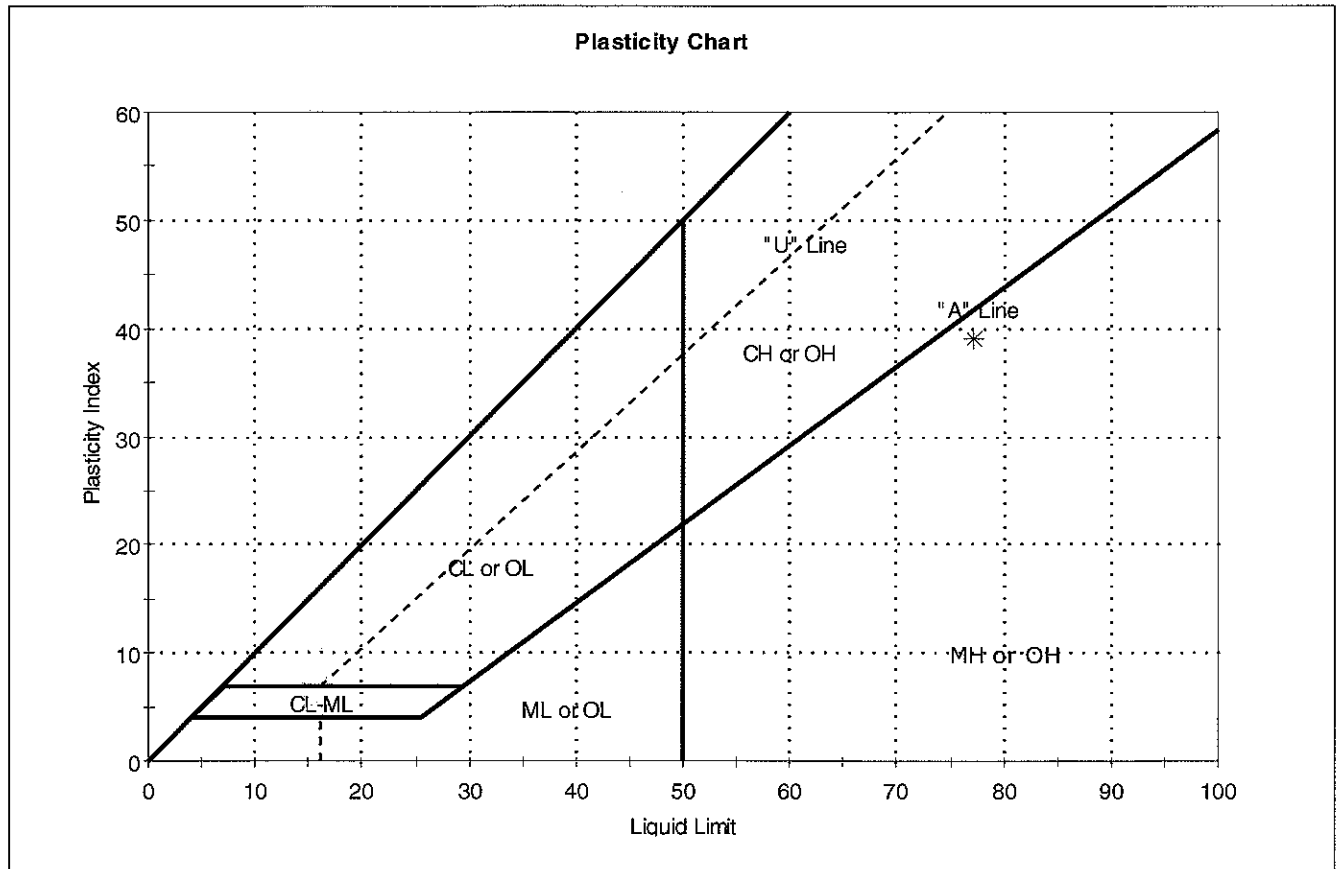
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-60054	Sample Type: jar
Sample ID: OL-0282-11	Test Date: 01/23/07	Tested By: ap
Depth: 6.6-9.9 ft	Test Id: 105616	Checked By: jdt
Test Comment: ---		
Sample Description: Moist, very dark gray silt		
Sample Comment: ---		

Atterberg Limits - ASTM D 4318-05

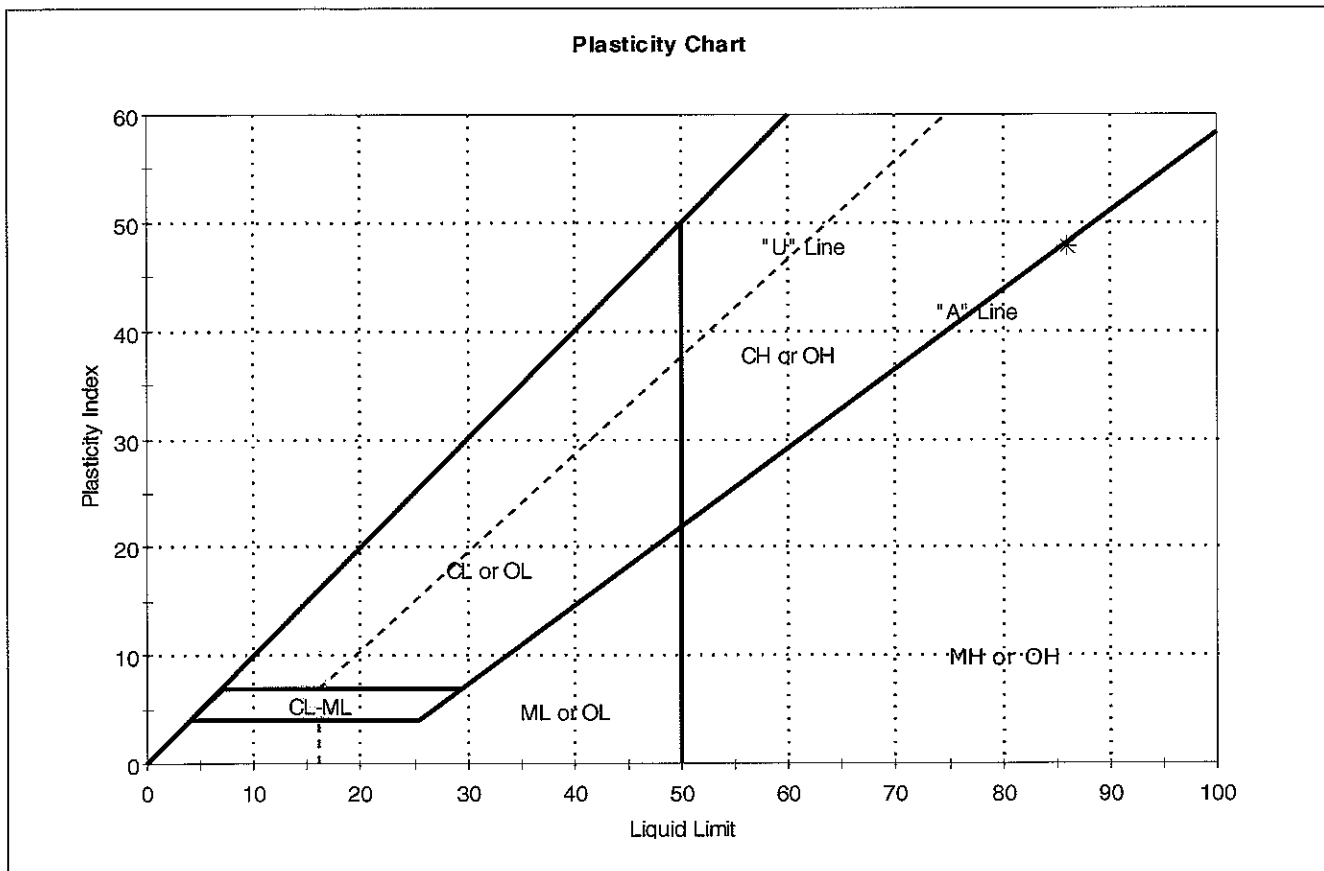


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-11	VC-600	6.6-9.9 ft	106	77	38	39	2	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60054	Sample Type:	jar
Sample ID:	OL-0282-12	Test Date:	01/22/07
Depth :	16.5-18.5 ft	Test Id:	105617
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-12	VC-600	16.5-18.5 ft	84	86	38	48	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-60070	Sample Type:	jar
Sample ID:	OL-0282-13	Test Date:	01/19/07
Depth :	0-3.3 ft	Test Id:	105618
Test Comment:	---		
Sample Description:	Moist, olive brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-13	-VC-600	0-3.3 ft	80	n/a	n/a	n/a	n/a	Silty sand (SM)

7% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-60070	Sample Type:	jar
Sample ID:	OL-0282-14	Test Date:	01/17/07
Depth :	9.9-13.2 ft	Test Id:	105619
Test Comment:	---		
Sample Description:	Wet, olive brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-14	-VC-600	9.9-13.2 ft	82	n/a	n/a	n/a	n/a	silt with sand (ML)

3% Retained on #40 Sieve

Dry Strength: MEDIUM

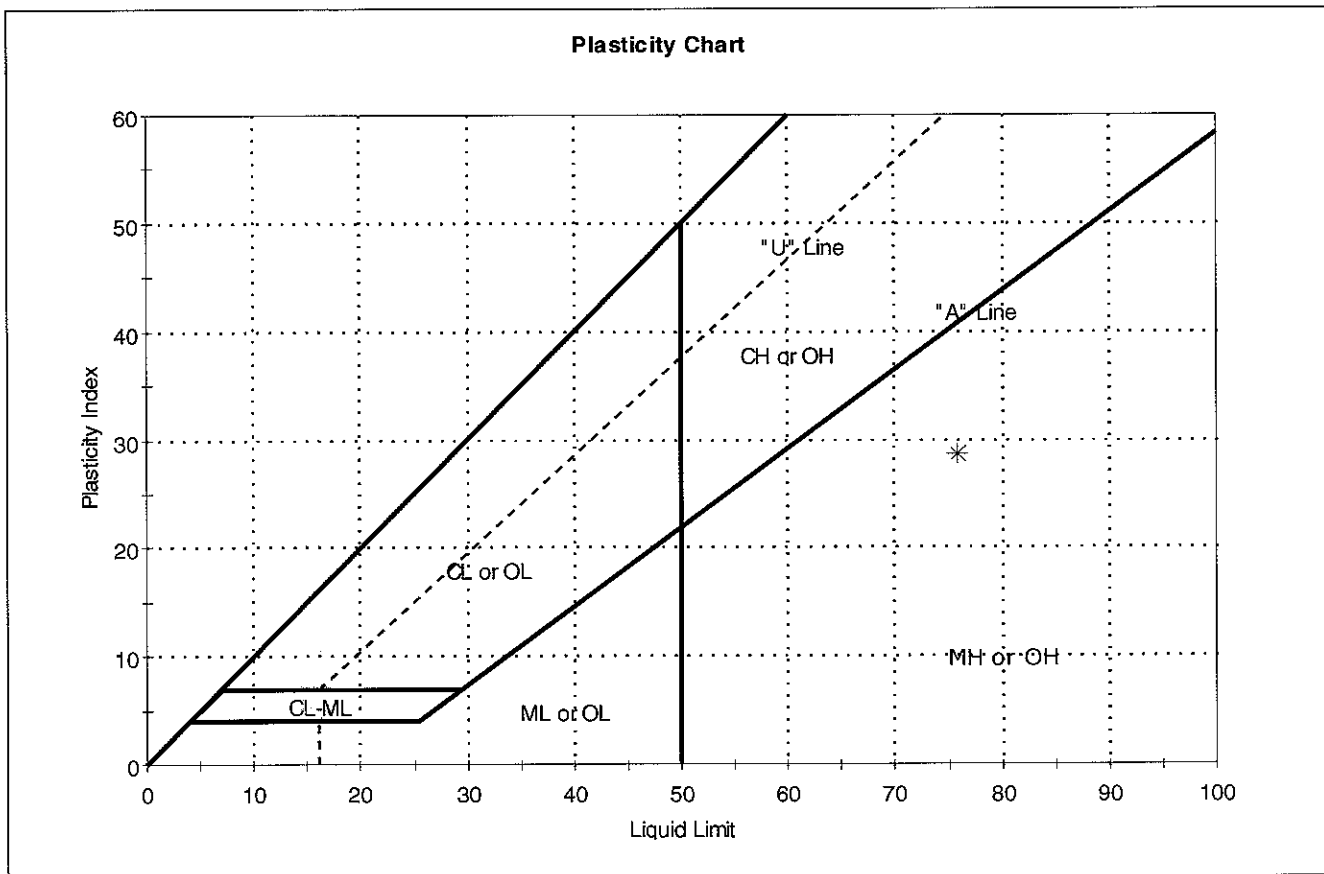
Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30037	Sample Type:	jar
Sample ID:	OL-0282-15	Test Date:	01/23/07
Depth :	9.9-13.2 ft	Test Id:	105620
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-15	VC-300	9.9-13.2 ft	143	76	47	29	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

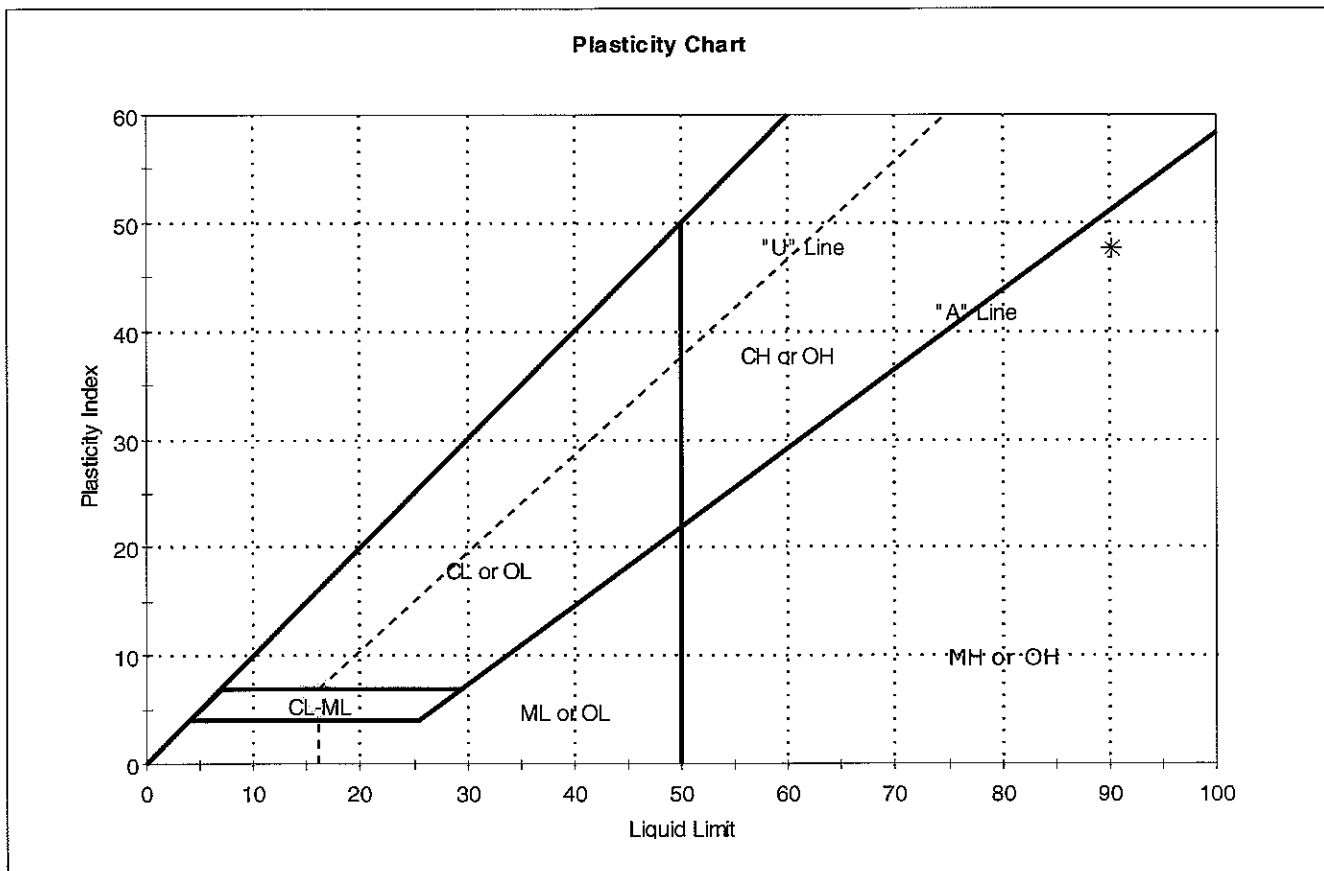
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30037	Sample Type:	jar
Sample ID:	OL-0282-16	Test Date:	01/19/07
Depth :	13.2-16.5 ft	Test Id:	105621
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-16	-VC-300	13.2-16.5 ft	88	90	43	47	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

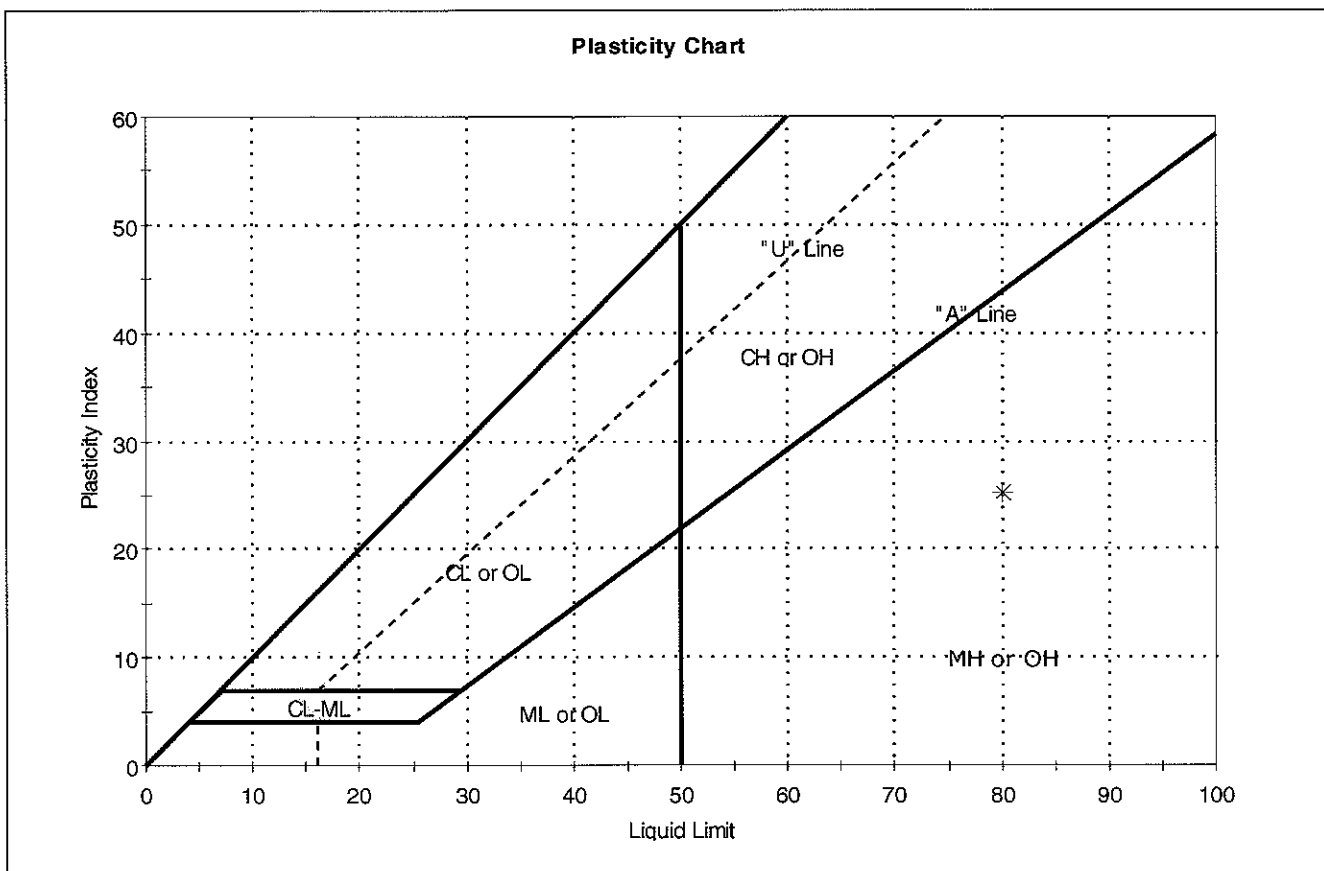
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30037	Sample Type:	jar
Sample ID:	OL-0282-17	Test Date:	01/22/07
Depth :	0.5-3.3 ft	Test Id:	105622
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-17	-VC-300	0.5-3.3 ft	178	80	55	25	5	elastic silt (MH)

Sample Prepared using the WET method

5% Retained on #40 Sieve

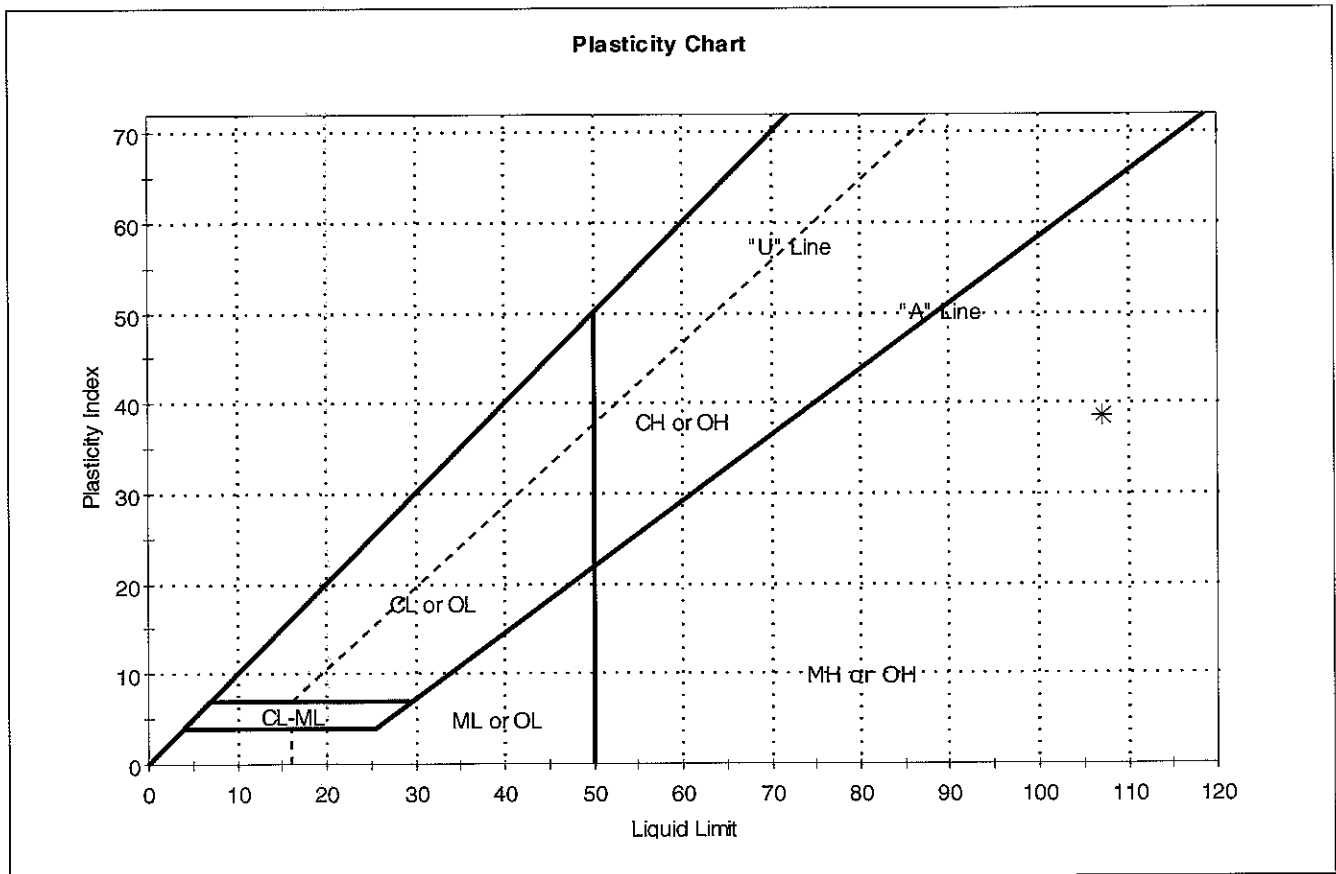
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-30035	Sample Type: jar
Sample ID: OL-0282-18	Test Date: 01/23/07
Depth: 6.6-9.9 ft	Test Id: 105623
Test Comment: ---	Tested By: ap
Sample Description: Moist, white silt	Checked By: jdt
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05

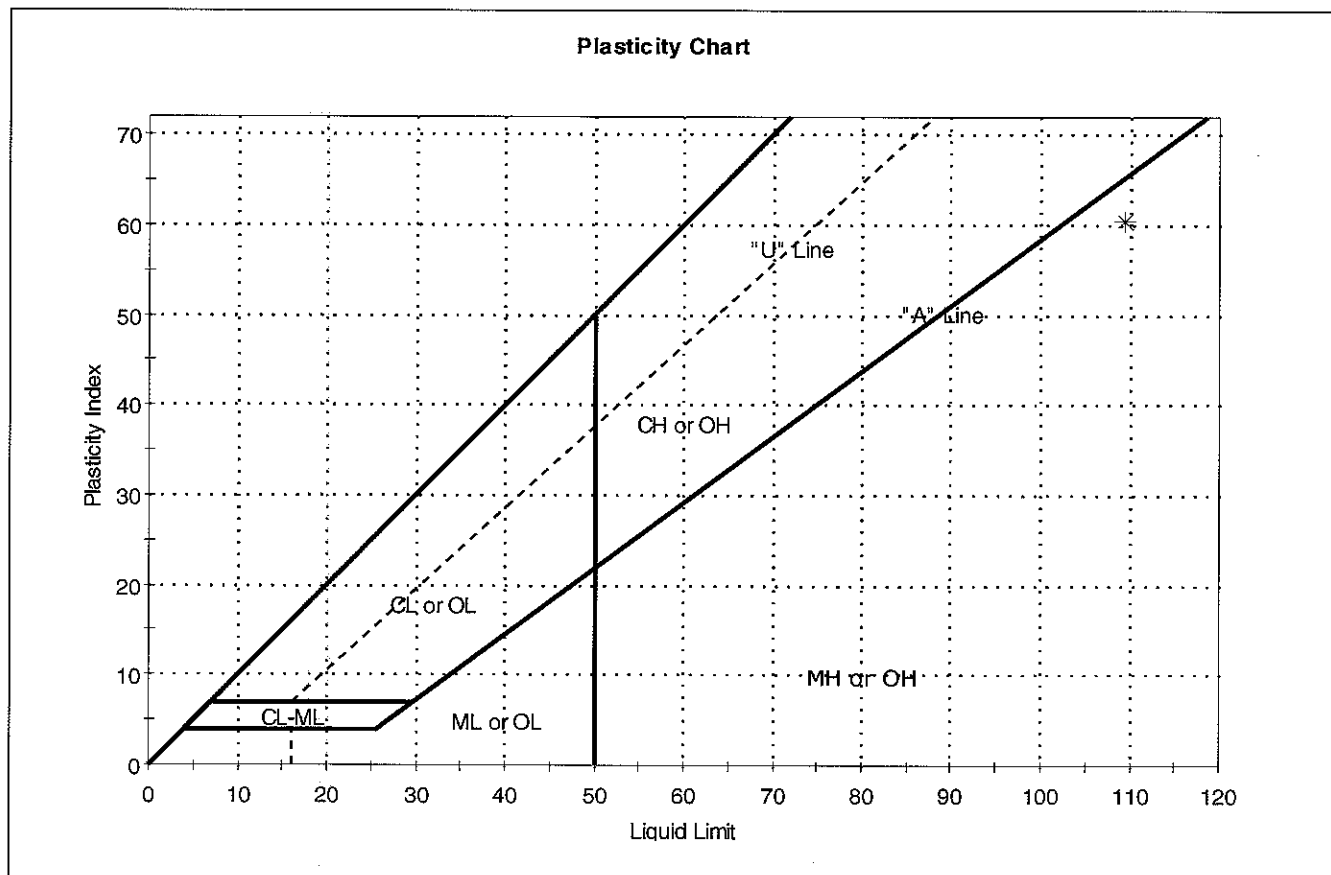


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-18	-VC-300	6.6-9.9 ft	237	107	68	39	4	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30035	Sample Type:	jar
Sample ID:	OL-0282-19	Test Date:	01/22/07
Depth :	16.5-19.6 ft	Test Id:	105624
Test Comment:	---		
Sample Description:	Moist, grayish brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-19	-VC-300	16.5-19.6 ft	110	109	49	60	1	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

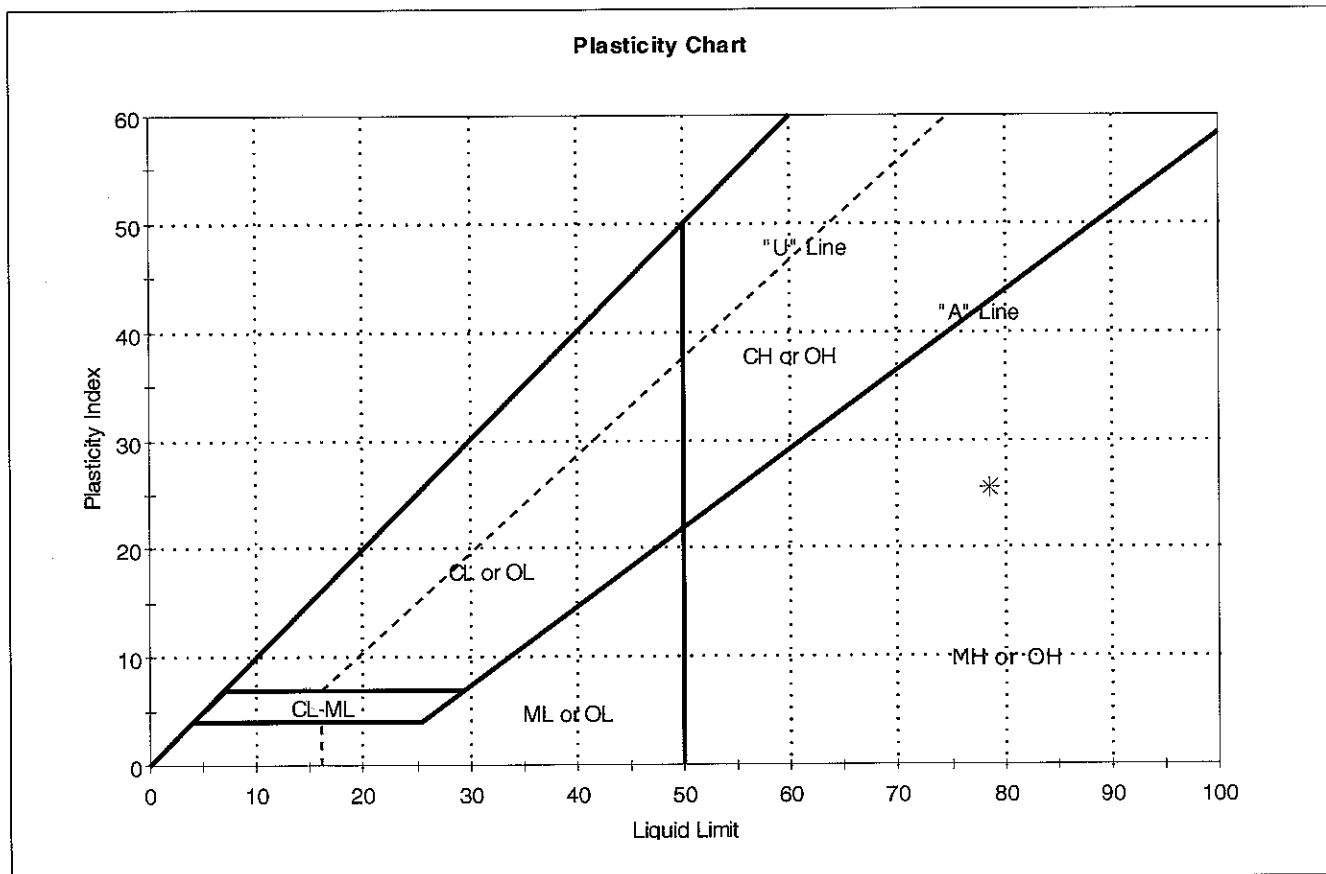
Dry Strength: HIGH

Dilancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-30036	Sample Type: jar
Sample ID: OL-0282-20	Test Date: 01/23/07	Tested By: ap
Depth: 0.5-3.3 ft	Test Id: 105625	Checked By: jdt
Test Comment: ---		
Sample Description: Wet, very dark gray silt		
Sample Comment: ---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0282-20	-VC-300	0.5-3.3 ft	175	79	53	26	5	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: HIGH

Dilutancy: SLOW

Toughness: LOW

Chain of Custody/Analysis Request

Chain of Custody / Analysis Request										AEST Ref: 38292.40495											
Privileged and Confidential										Site Name: Onondaga Lake		Lab Use Only									
										Location of Site: Syracuse, New York		Lab Proj #									
Sampler: 1										Preservative:		Lab ID		GTE							
PO #:										0		0		0							
Analysis Turnaround Time:										0		0		0							
Standard -										0		0		0							
Rush Charges Authorized for -										0		0		0							
2 weeks -										0		0		0							
1 week -										0		0		0							
Next Day -										0		0		0							
Sample Date										Sample Time		Sample Type		Sample Matrix		Sample Purpose		Sample # of Cont.			
Field Sample ID										14:45		SEDIMENT		SOIL		REG		1			
OL-VC-60056										10/4/2006		14:45		SEDIMENT		SOIL		REG		1	
OL-VC-60056										10/4/2006		14:47		SEDIMENT		SOIL		REG		1	
OL-VC-60056										10/4/2006		14:49		SEDIMENT		SOIL		REG		1	
OL-VC-60059										10/4/2006		15:29		SEDIMENT		SOIL		REG		1	
OL-VC-60059										10/4/2006		15:43		SEDIMENT		SOIL		REG		1	
OL-VC-60059										10/4/2006		15:45		SEDIMENT		SOIL		REG		1	
OL-VC-60066										10/4/2006		09:09		SEDIMENT		SOIL		REG		1	
OL-VC-60066										10/4/2006		09:24		SEDIMENT		SOIL		REG		1	
OL-VC-60068										10/4/2006		10:34		SEDIMENT		SOIL		REG		1	
Sample Identification										Start Depth (ft)		End Depth (ft)		Field Sample ID							
Hardcopy Report To:										3.3		6.6		OL-0283-01							
Invoice To:										9.9		13.2		OL-0283-02							
										16.5		18.3		OL-0283-03							
										0		3.3		OL-0283-04							
										6.6		9.9		OL-0283-05							
										13.2		16.5		OL-0283-06							
										0		3.3		OL-0283-07							
										6.6		9.9		OL-0283-08							
										0		3.3		OL-0283-09							

Special Instructions:

Relinquished by:	Company	PARSONS	Received by:	Company	Condition	Custody Seals Intact
<i>Shirley M. Chomura</i>	Date/Time	12/12/06 @ 12:05	<i>A. M. M. M.</i>	Date/Time	Cooler Temp.	
Relinquished by:	Company		Received by:	Company	Condition	Custody Seals Intact
	Date/Time			Date/Time	Cooler Temp.	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

[illegible]

Special Instructions:									
Relinquished by:	Company	PARSON'S	Received by:	Company	Condition	Custody Seals Intact			
<i>Sara M. Chmura</i>	Date/Time	12/12/06 @ 1205	<i>AME/K</i>	Date/Time	Cooler Temp.				
Relinquished by:	Company		Received by:	Company	Condition	Custody Seals Intact			
	Date/Time			Date/Time	Cooler Temp.				

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/07/07
Depth :	---	Tested By:	ml
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60056	OL-0283-01	3.3-6.6 ft	Wet, black clay	143.7
OL-VC-60056	OL-0283-02	9.9-13.2 ft	Moist, black sandy silt	60
OL-VC-60056	OL-0283-03	16.5-18.3 ft	Moist, brown silt	85.8
OL-VC-60059	OL-0283-04	0-3.3 ft	Wet, olive brown sandy silt	96.8
OL-VC-60059	OL-0283-05	6.6-9.9 ft	Moist, gray silt	15
OL-VC-60059	OL-0283-06	13.2-16.5 ft	Moist, dark greenish gray silt with organics	61.4
OL-VC-60066	OL-0283-07	0-3.3 ft	Wet, gray silty sand with gravel	81.6
OL-VC-60066	OL-0283-08	6.6-9.9 ft	Wet, light gray sandy silt	64.3
OL-VC-60068	OL-0283-09	0-3.3 ft	Moist, dark olive brown silty sand	50.4
OL-VC-60068	OL-0283-10	6.6-9.9 ft	Moist, dark gray silt with sand	98.8

Notes: Temperature of Drying : 60° Celsius

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mil
Location:	Syracuse	Checked By:	n/a
Boring ID: ---	Sample Type: ---	Test Date:	02/07/07
Sample ID:---	Test Date:	Sample Id:	---
Depth : ---			

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60068	OL-0283-11	16.5-18.7 ft	Moist, dark olive brown silt	69.7
OL-VC-60069	OL-0283-12	0-3.3 ft	Moist, olive brown silty sand	39.8
OL-VC-60069	OL-0283-13	9.9-13.2 ft	Moist, olive brown silt	64.1
OL-VC-60069	OL-0283-14	16.5-19.6 ft	Moist, olive brown silt	71.6
OL-VC-60067	OL-0283-15	3.3-6.6 ft	Wet, grayish brown sandy silt	98
OL-VC-60067	OL-0283-16	13.2-16.5 ft	Moist, gray silt	81.4
OL-VC-60062	OL-0283-17	3.3-6.6 ft	Moist, dark gray silt with sand	53.6
OL-VC-60062	OL-0283-18	13.2-16.5 ft	Moist, very dark gray silt	78.8
OL-VC-60058	OL-0283-19	3.3-6.6 ft	Wet, black silt	162.7
OL-VC-60058	OL-0283-20	9.9-13.2 ft	Moist, dark gray silt	111.6

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	yf
Location:	Syracuse	Checked By:	jdt
Boring ID: ---	Sample Type: ---	Test Date:	01/16/07
Sample ID:---	Test Id:	105733	
Depth : ---			

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-60056	OL-0283-01	3.3-6.6 ft	Wet, black clay	2.49
OL-VC-60059	OL-0283-04	0-3.3 ft	Wet, olive brown sandy silt	2.67
OL-VC-60059	OL-0283-06	13.2-16.5 ft	Moist, dark greenish gray silt with organics	2.78
OL-VC-60068	OL-0283-10	6.6-9.9 ft	Moist, dark gray silt with sand	2.72
OL-VC-60058	OL-0283-19	3.3-6.6 ft	Wet, black silt	2.46

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60056

Sample Type: jar

Tested By: mll

Sample ID: OL-0283-01

Test Date: 01/24/07

Checked By: jdt

Depth: 3.3-6.6 ft

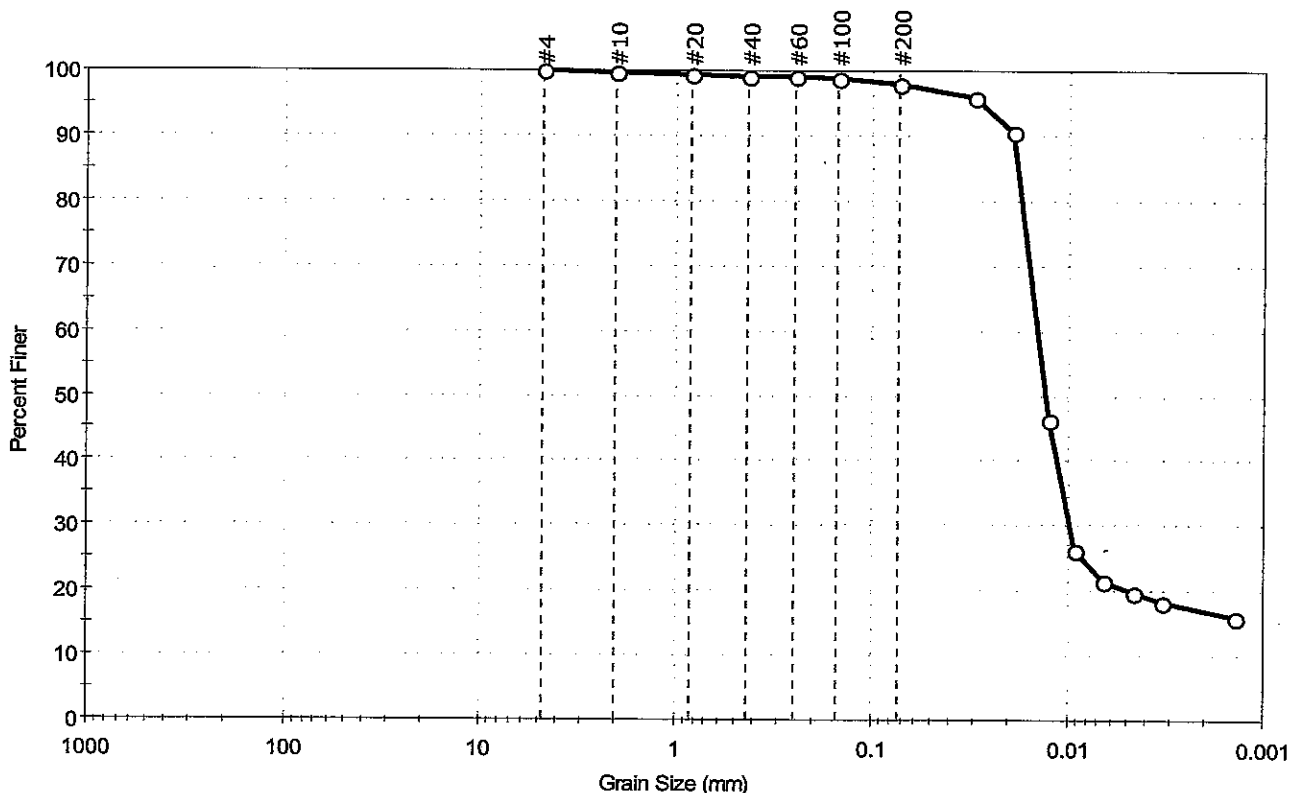
Test Id: 105709

Test Comment: ---

Sample Description: Wet, black clay

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
—	0.0	2.0	98.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0305	96		
---	0.0194	90		
---	0.0124	46		
---	0.0092	26		
---	0.0065	22		
---	0.0046	20		
---	0.0033	18		
---	0.0014	16		

Coefficients

$D_{85} = 0.0183$ mm $D_{30} = 0.0097$ mm
 $D_{60} = 0.0143$ mm $D_{15} = \text{N/A}$
 $D_{50} = 0.0129$ mm $D_{10} = \text{N/A}$
 $C_u = \text{N/A}$ $C_c = \text{N/A}$

Classification

ASTM fat clay (CH)

AASHTO Clayey Soils (A-7-5 (98))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
 Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60056

Sample Type: jar

Tested By: mll

Sample ID: OL-0283-02

Test Date: 01/23/07

Checked By: jdt

Depth: 9.9-13.2 ft

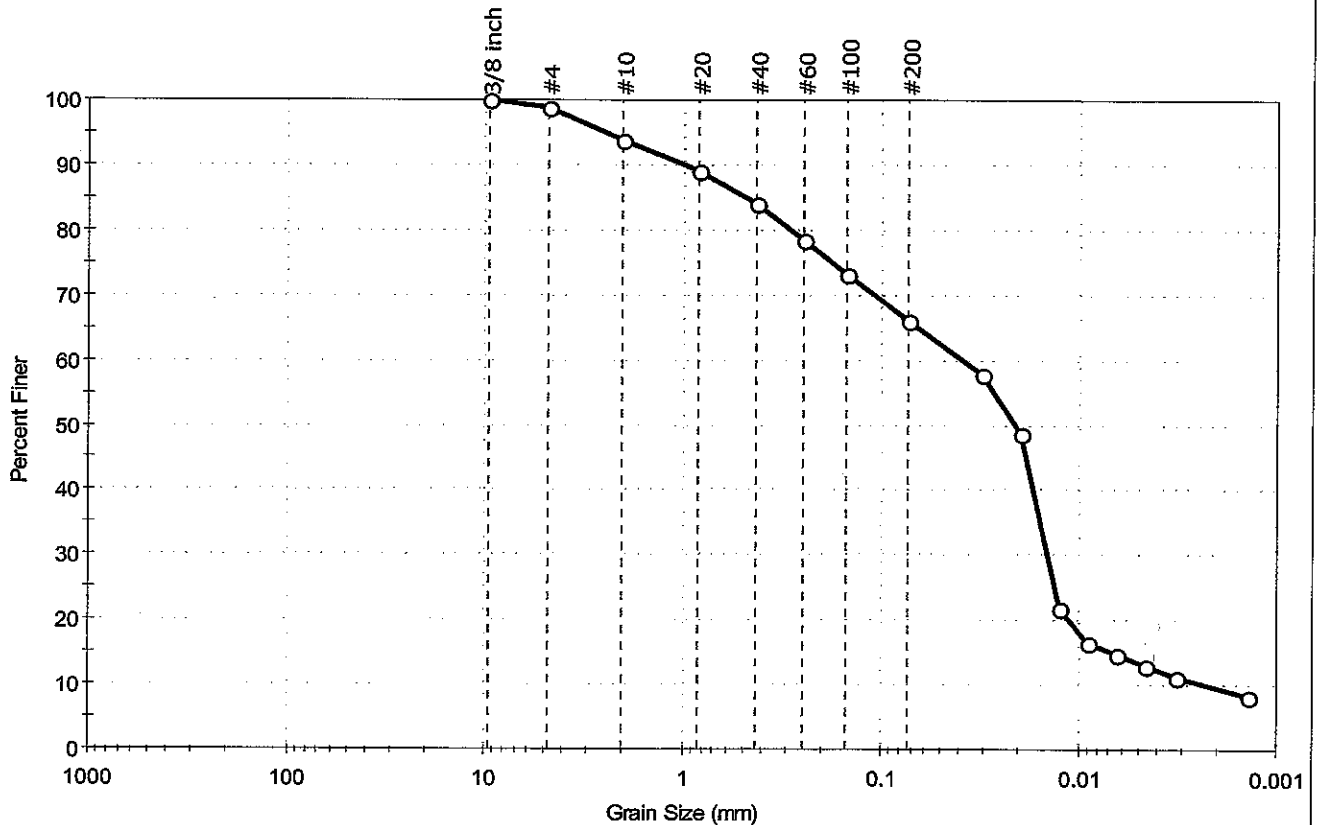
Test Id: 105710

Test Comment: ---

Sample Description: Moist, black sandy silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.3	32.6	66.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	94		
#20	0.84	89		
#40	0.42	84		
#60	0.25	79		
#100	0.15	73		
#200	0.074	66		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0314	58			
0.0199	49			
0.0126	22			
0.0091	16			
0.0065	15			
0.0046	13			
0.0033	11			
0.0014	8			

Coefficients

D₈₅ = 0.4892 mm D₃₀ = 0.0145 mm

D₆₀ = 0.0394 mm D₁₅ = 0.0069 mm

D₅₀ = 0.0212 mm D₁₀ = 0.0023 mm

C_u = N/A C_c = N/A

Classification

ASTM Sandy elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (18))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60056

Sample Type: jar

Tested By: mll

Sample ID: OL-0283-03

Test Date: 01/23/07

Checked By: jdt

Depth: 16.5-18.3 ft

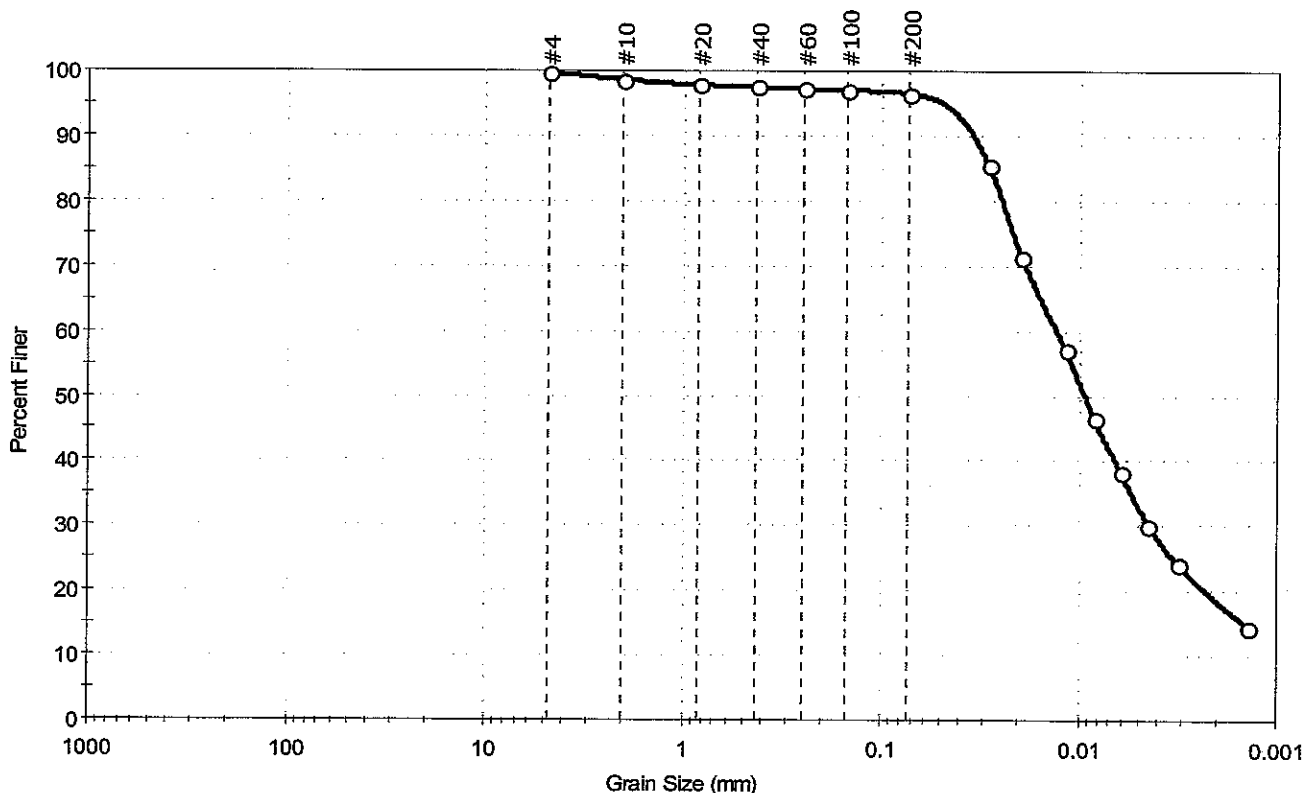
Test Id: 105711

Test Comment: ---

Sample Description: Moist, brown silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
—	0.2	3.3	96.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	98		
#60	0.25	97		
#100	0.15	97		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0292	86		
---	0.0196	71		
---	0.0118	57		
---	0.0084	47		
---	0.0062	38		
---	0.0044	30		
---	0.0032	24		
---	0.0014	14		

Coefficients

$D_{85} = 0.0287$ mm $D_{30} = 0.0044$ mm
 $D_{60} = 0.0130$ mm $D_{15} = 0.0014$ mm
 $D_{50} = 0.0094$ mm $D_{10} = 0.0009$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

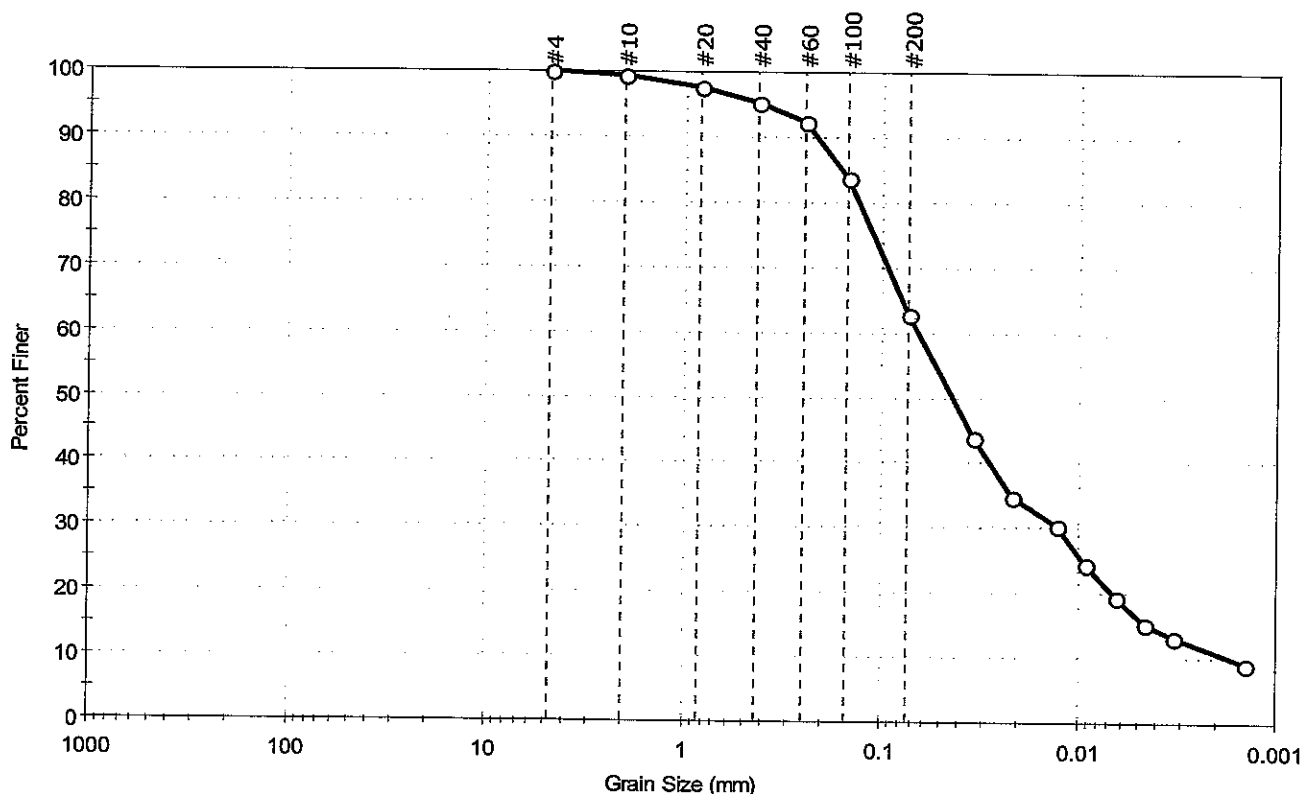
AASHTO Clayey Soils (A-7-5 (64))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
 Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60059	Sample Type:	jar
Sample ID:	OL-0283-04	Test Date:	01/09/07
Depth :	0-3.3 ft	Test Id:	105712
Test Comment:	---		
Sample Description:	Wet, olive brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	37.2	62.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	95		
#60	0.25	92		
#100	0.15	84		
#200	0.074	63		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0343	44		
---	0.0219	35		
---	0.0127	31		
---	0.0091	25		
---	0.0065	19		
---	0.0046	15		
---	0.0033	13		
---	0.0014	9		

Coefficients

D ₈₅ = 0.1604 mm	D ₃₀ = 0.0123 mm
D ₆₀ = 0.0659 mm	D ₁₅ = 0.0044 mm
D ₅₀ = 0.0438 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

AASHTO Silty Soils (A-5 (7))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60059

Sample Type: jar

Tested By: mli

Sample ID: OL-0283-05

Test Date: 01/25/07

Checked By: jdt

Depth: 6.6-9.9 ft

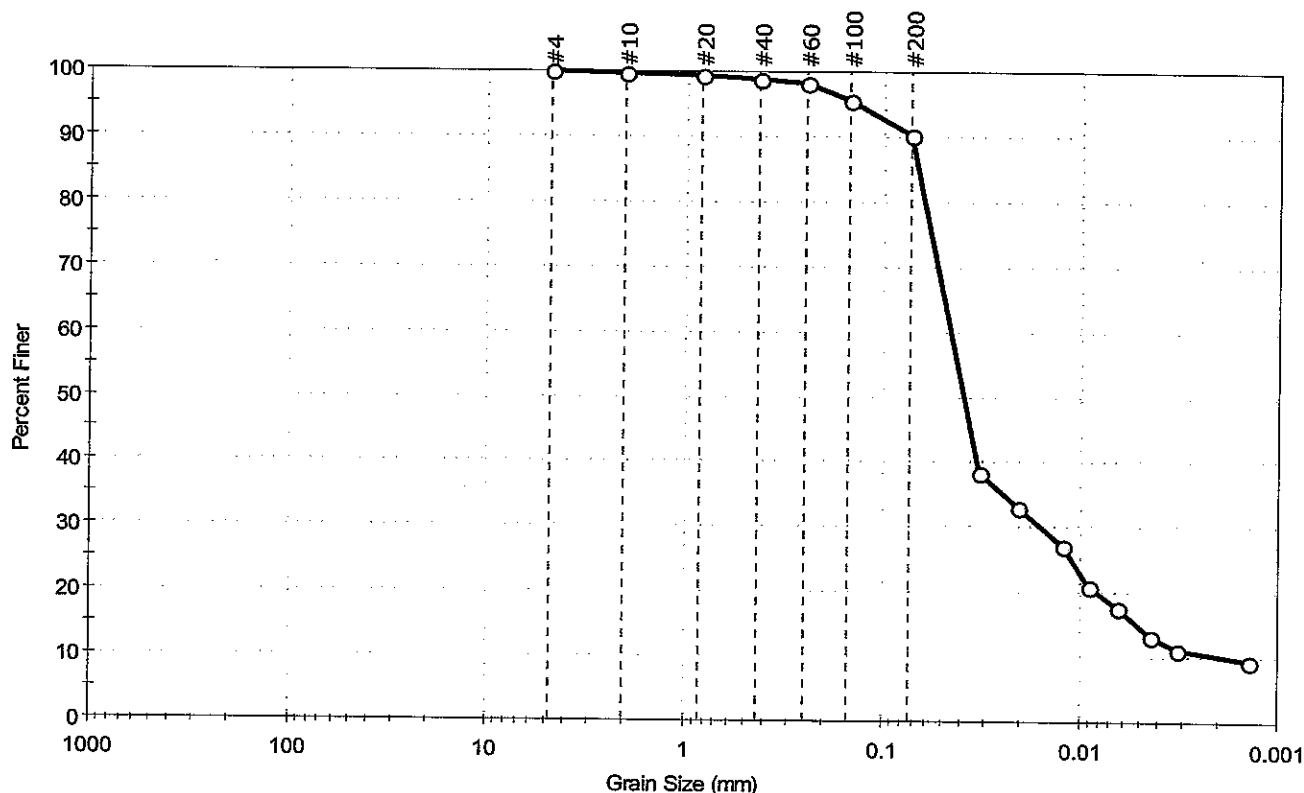
Test Id: 105713

Test Comment: ---

Sample Description: Moist, gray silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	9.6	90.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	96		
#200	0.074	90		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0323	38		
---	0.0209	33		
---	0.0123	27		
---	0.0089	21		
---	0.0064	18		
---	0.0044	13		
---	0.0033	11		
---	0.0014	9		

Coefficients

$D_{85} = 0.0679$ mm $D_{30} = 0.0160$ mm
 $D_{60} = 0.0455$ mm $D_{15} = 0.0051$ mm
 $D_{50} = 0.0388$ mm $D_{10} = 0.0019$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (35))

Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60059

Sample Type: jar

Tested By: mll

Sample ID: OL-0283-06

Test Date: 01/23/07

Checked By: jdt

Depth: 13.2-16.5 ft

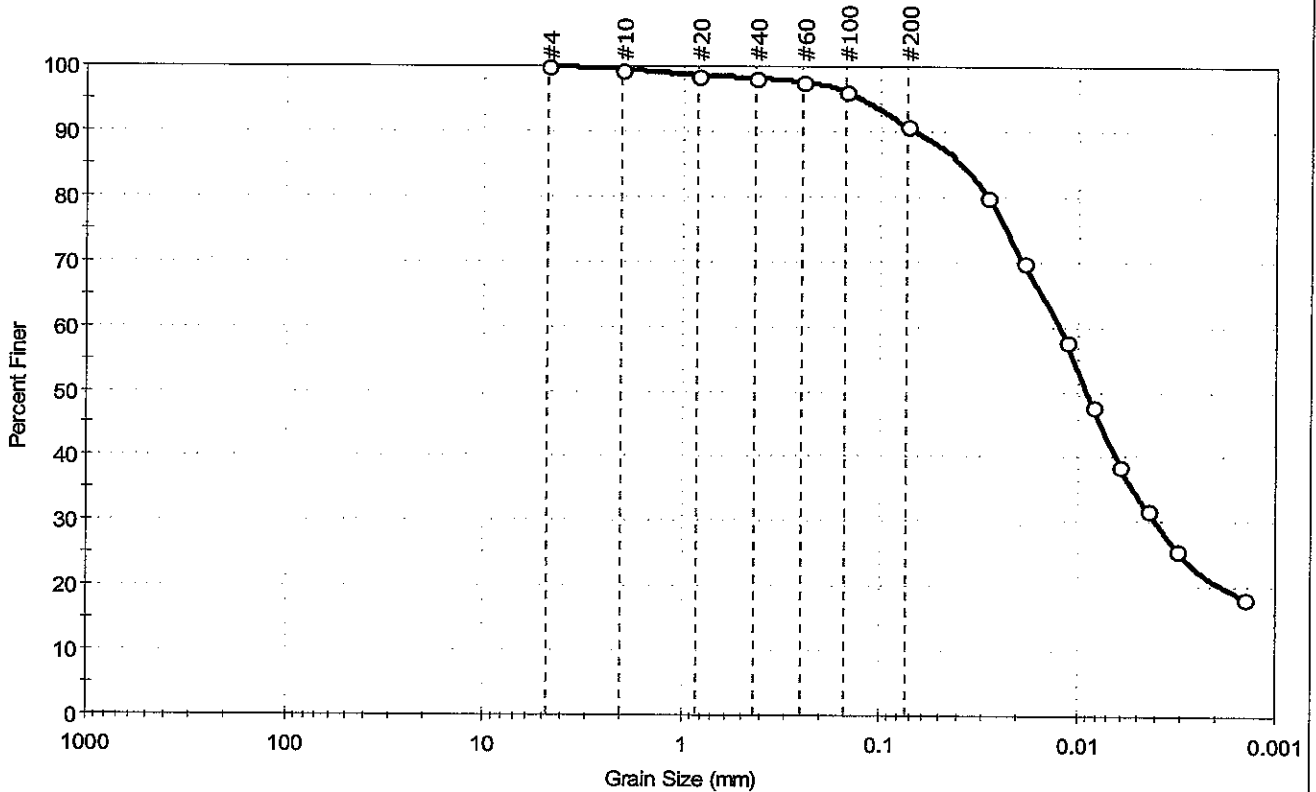
Test Id: 105714

Test Comment: ---

Sample Description: Moist, dark greenish gray silt with organics

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	9.2	90.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	98		
#60	0.25	98		
#100	0.15	96		
#200	0.074	91		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0286	80		
---	0.0189	70		
---	0.0114	58		
---	0.0084	48		
---	0.0061	39		
---	0.0044	32		
---	0.0032	26		
---	0.0014	18		

Coefficients

$D_{85} = 0.0448$ mm $D_{30} = 0.0040$ mm
 $D_{60} = 0.0125$ mm $D_{15} = \text{N/A}$
 $D_{50} = 0.0090$ mm $D_{10} = \text{N/A}$
 $C_u = \text{N/A}$ $C_c = \text{N/A}$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (40))

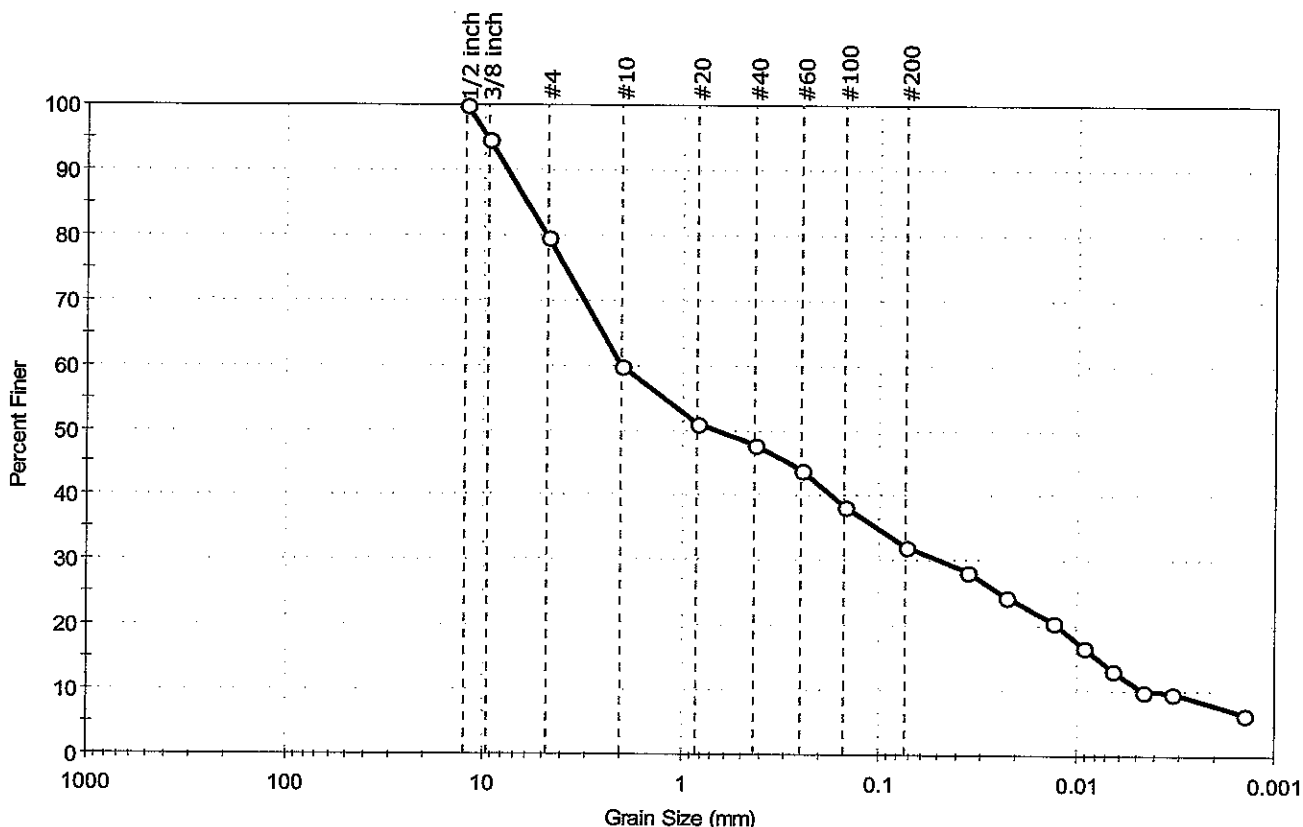
Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-60066	Sample Type: jar
Sample ID: OL-0283-07	Test Date: 01/25/07
Depth : 0-3.3 ft	Test Id: 105715
Test Comment: ---	
Sample Description: Wet, gray silty sand with gravel	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	20.3	47.5	32.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	95		
#4	4.75	80		
#10	2.00	60		
#20	0.84	51		
#40	0.42	48		
#60	0.25	44		
#100	0.15	38		
#200	0.074	32		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0359	28		
---	0.0226	24		
---	0.0130	21		
---	0.0093	17		
---	0.0066	13		
---	0.0046	10		
---	0.0033	10		
---	0.0014	7		

Coefficients

D ₈₅ = 6.0713 mm	D ₃₀ = 0.0488 mm
D ₆₀ = 2.0090 mm	D ₁₅ = 0.0078 mm
D ₅₀ = 0.6703 mm	D ₁₀ = 0.0046 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand with gravel (SM)

AASHTO Silty Gravel and Sand (A-2-4 (0))

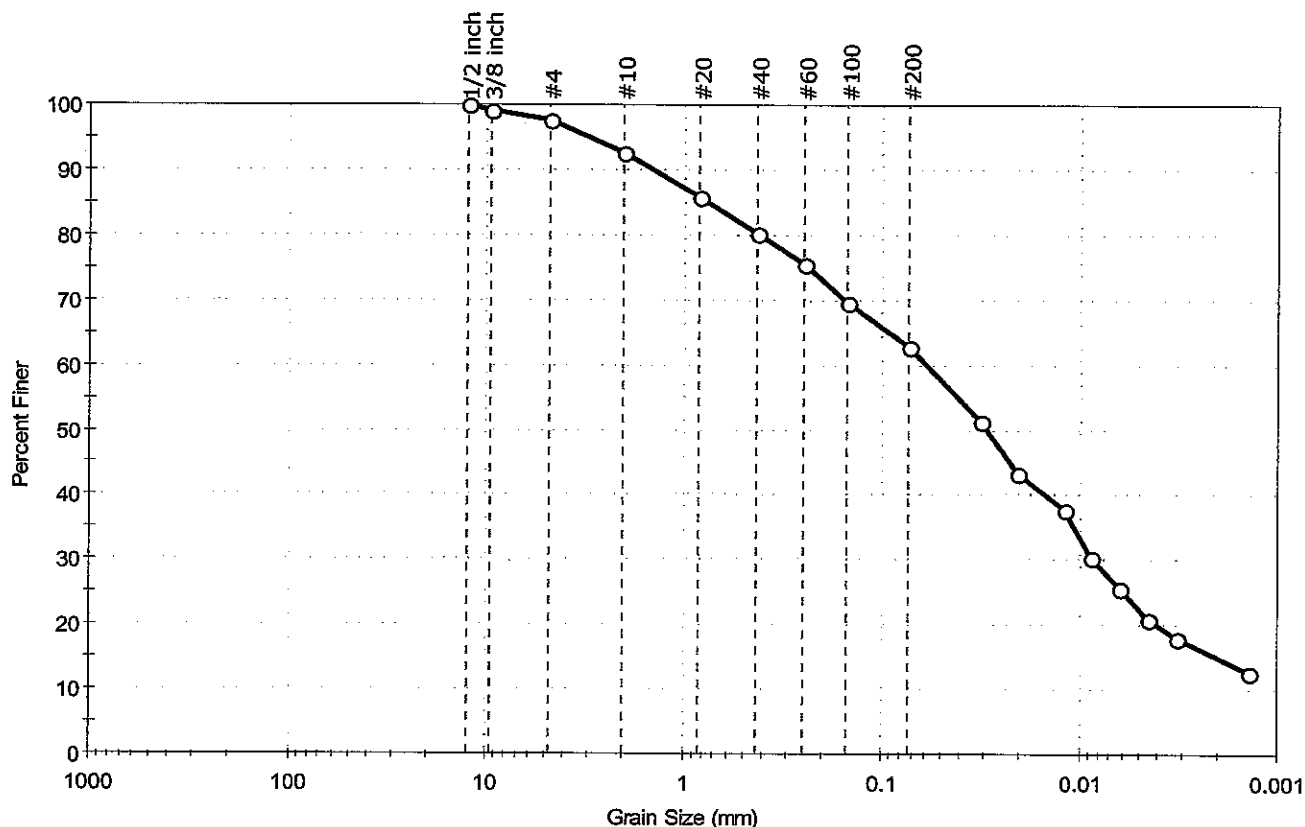
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60066	Sample Type:	jar
Sample ID:	OL-0283-08	Test Date:	01/24/07
Depth :	6.6-9.9 ft	Test Id:	105716
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	2.3	34.9	62.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	99		
#4	4.75	98		
#10	2.00	93		
#20	0.84	86		
#40	0.42	80		
#60	0.25	76		
#100	0.15	70		
#200	0.074	63		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0318	51		
---	0.0205	43		
---	0.0119	38		
---	0.0087	30		
---	0.0062	26		
---	0.0045	21		
---	0.0032	18		
---	0.0014	13		

Coefficients

D ₈₅ = 0.7586 mm	D ₃₀ = 0.0084 mm
D ₆₀ = 0.0602 mm	D ₁₅ = 0.0020 mm
D ₅₀ = 0.0296 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

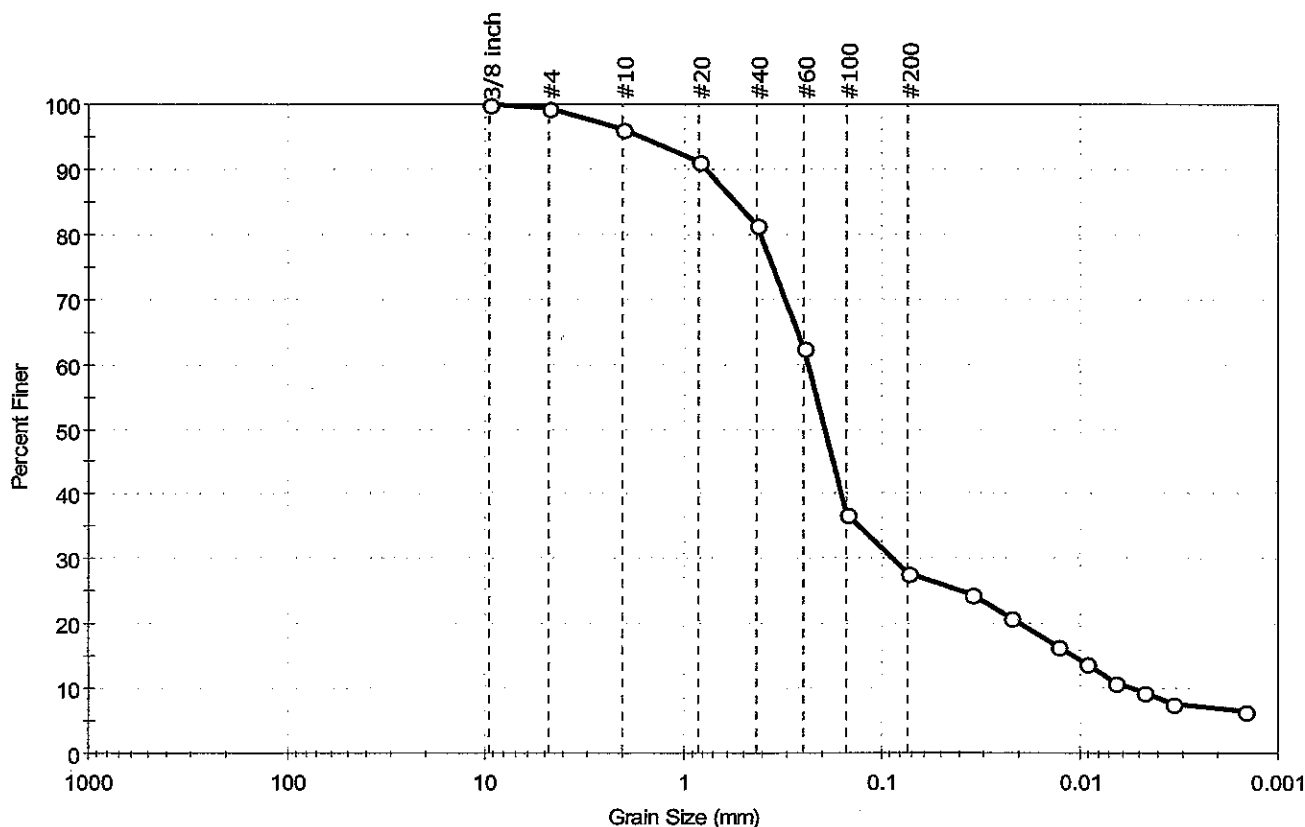
AASHTO Clayey Soils (A-7-5 (10))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60068	Sample Type:	jar
Sample ID:	OL-0283-09	Test Date:	01/23/07
Depth :	0-3.3 ft	Test Id:	105717
Test Comment:	---		
Sample Description:	Moist, dark olive brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.5	71.7	27.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	96		
#20	0.84	91		
#40	0.42	81		
#60	0.25	63		
#100	0.15	37		
#200	0.074	28		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0346	25		
---	0.0222	21		
---	0.0130	17		
---	0.0093	14		
---	0.0066	11		
---	0.0047	9		
---	0.0033	8		
---	0.0015	6		

Coefficients

D ₈₅ = 0.5454 mm	D ₃₀ = 0.0877 mm
D ₆₀ = 0.2378 mm	D ₁₅ = 0.0107 mm
D ₅₀ = 0.1947 mm	D ₁₀ = 0.0054 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

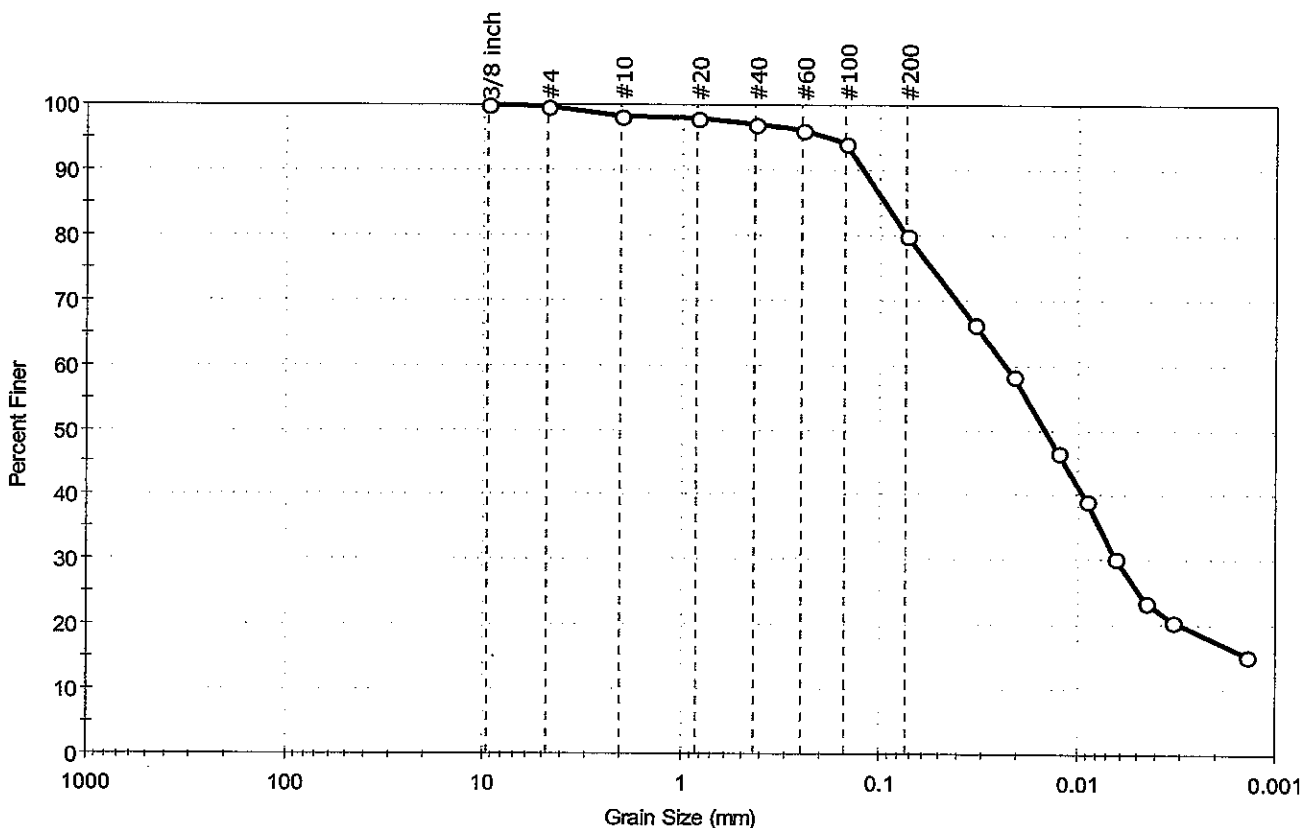
AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60068	Sample Type:	jar
Sample ID:	OL-0283-10	Test Date:	01/23/07
Depth :	6.6-9.9 ft	Test Id:	105718
Test Comment:	---		
Sample Description:	Moist, dark gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.3	19.8	79.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 Inch	9.50	100		
#4	4.75	100		
#10	2.00	98		
#20	0.84	98		
#40	0.42	97		
#60	0.25	96		
#100	0.15	94		
#200	0.074	80		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0335	66			
0.0212	59			
0.0124	47			
0.0089	39			
0.0064	30			
0.0045	24			
0.0033	21			
0.0014	15			

Coefficients

D ₈₅ = 0.0954 mm	D ₃₀ = 0.0064 mm
D ₆₀ = 0.0231 mm	D ₁₅ = N/A
D ₅₀ = 0.0145 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (23))

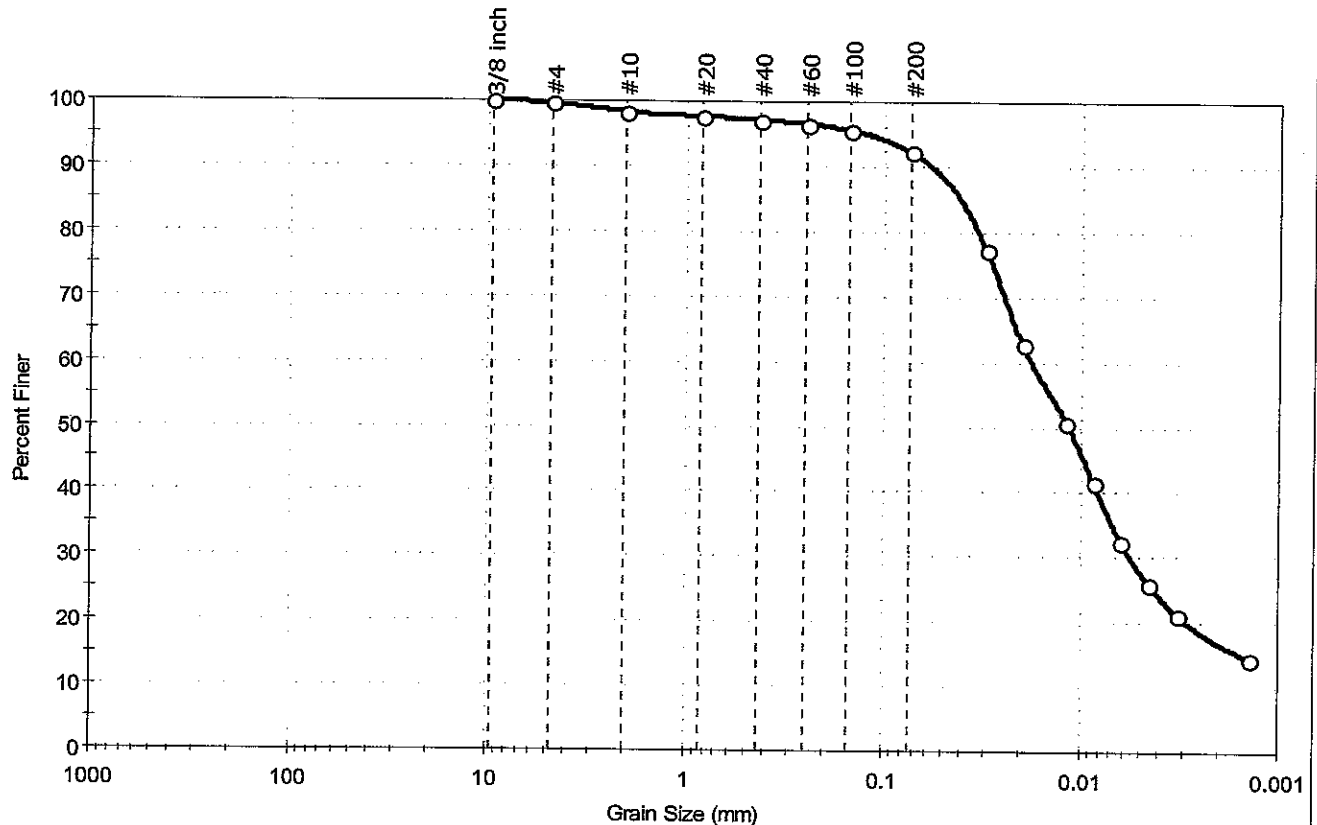
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Location: Syracuse	Project No: GTX-7143
Boring ID: OL-VC-60068	Sample Type: jar	Tested By: ml	Checked By: jdt
Sample ID: OL-0283-11	Test Date: 01/24/07	Test Id: 105719	
Depth: 16.5-18.7 ft			
Test Comment: ---			
Sample Description: Moist, dark olive brown silt			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	7.4	92.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	98		
#20	0.84	98		
#40	0.42	97		
#60	0.25	97		
#100	0.15	96		
#200	0.074	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0304	77		
---	0.0199	63		
---	0.0118	51		
---	0.0086	42		
---	0.0062	33		
---	0.0045	26		
---	0.0032	21		
---	0.0014	14		

Coefficients

D ₈₅ = 0.0481 mm	D ₃₀ = 0.0055 mm
D ₆₀ = 0.0176 mm	D ₁₅ = 0.0015 mm
D ₅₀ = 0.0115 mm	D ₁₀ = 0.0008 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (41))

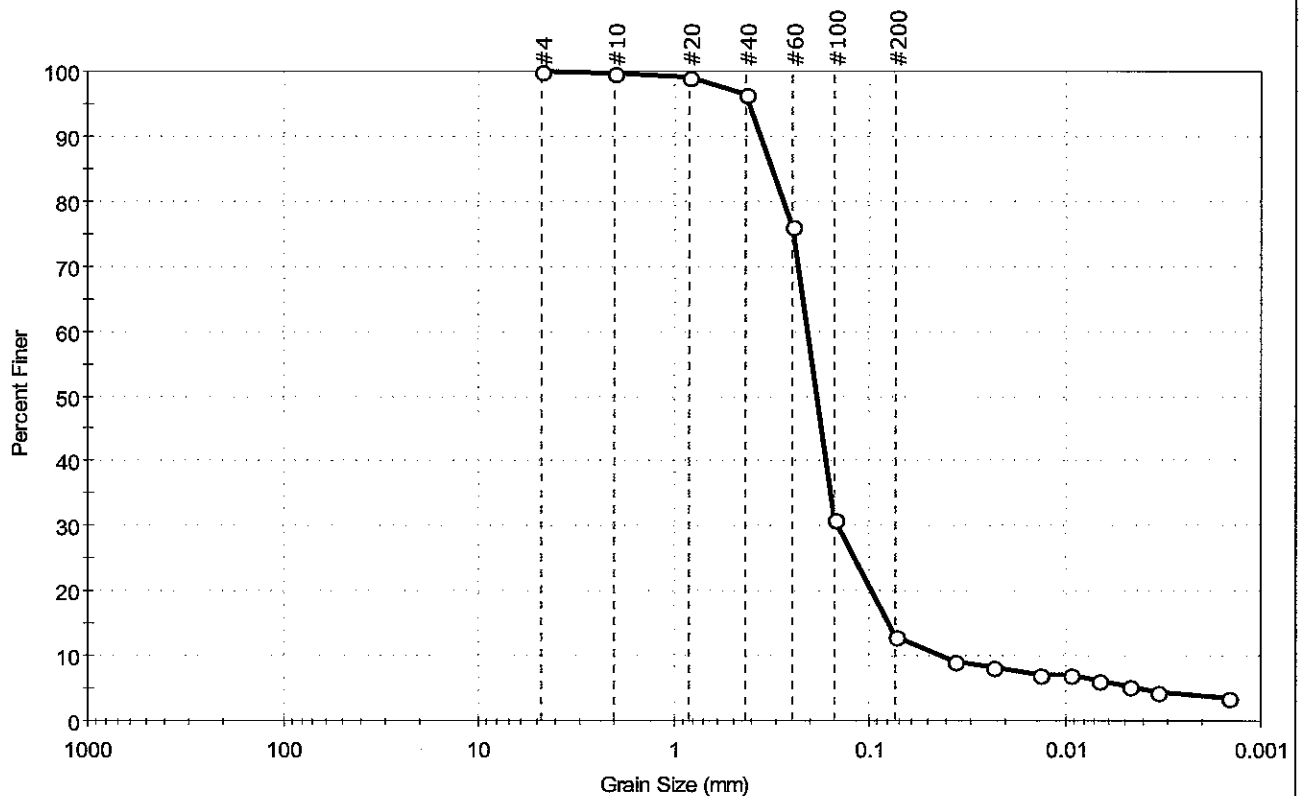
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60069	Sample Type:	jar
Sample ID:	OL-0283-12	Test Date:	01/09/07
Depth :	0-3.3 ft	Test Id:	105720
Test Comment:	---		
Sample Description:	Moist, olive brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	87.1	12.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	96		
#60	0.25	76		
#100	0.15	31		
#200	0.074	13		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0365	9		
---	0.0231	8		
---	0.0134	7		
---	0.0095	7		
---	0.0067	6		
---	0.0048	5		
---	0.0034	4		
---	0.0015	4		

Coefficients

D ₈₅ = 0.3158 mm	D ₃₀ = 0.1437 mm
D ₆₀ = 0.2083 mm	D ₁₅ = 0.0802 mm
D ₅₀ = 0.1860 mm	D ₁₀ = 0.0433 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

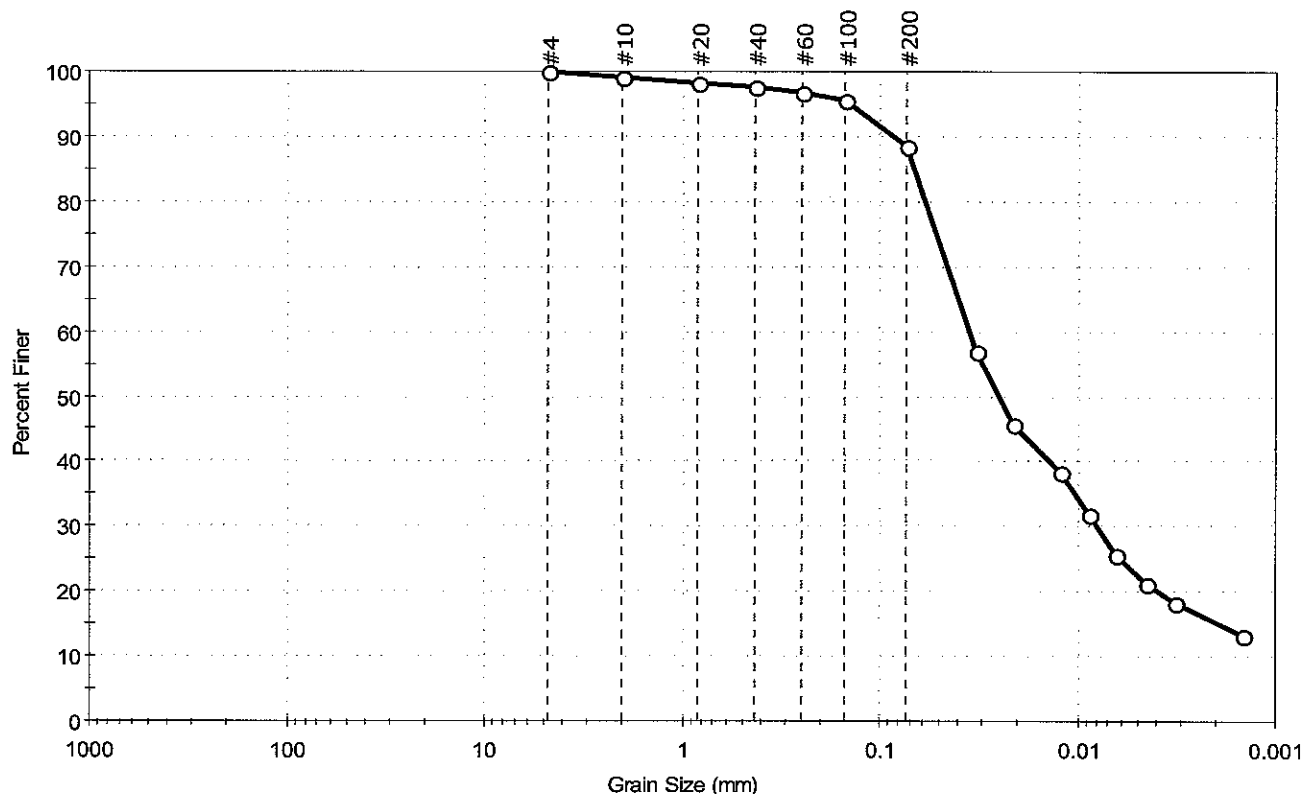
AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mil
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60069	Sample Type:	jar
Sample ID:	OL-0283-13	Test Date:	01/23/07
Depth :	9.9-13.2 ft	Test Id:	105721
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	11.6	88.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	98		
#60	0.25	97		
#100	0.15	96		
#200	0.074	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0326	57		
---	0.0211	46		
---	0.0123	38		
---	0.0088	32		
---	0.0064	26		
---	0.0045	21		
---	0.0032	18		
---	0.0015	13		

Coefficients

D ₈₅ = 0.0677 mm	D ₃₀ = 0.0079 mm
D ₆₀ = 0.0353 mm	D ₁₅ = 0.0019 mm
D ₅₀ = 0.0250 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (21))

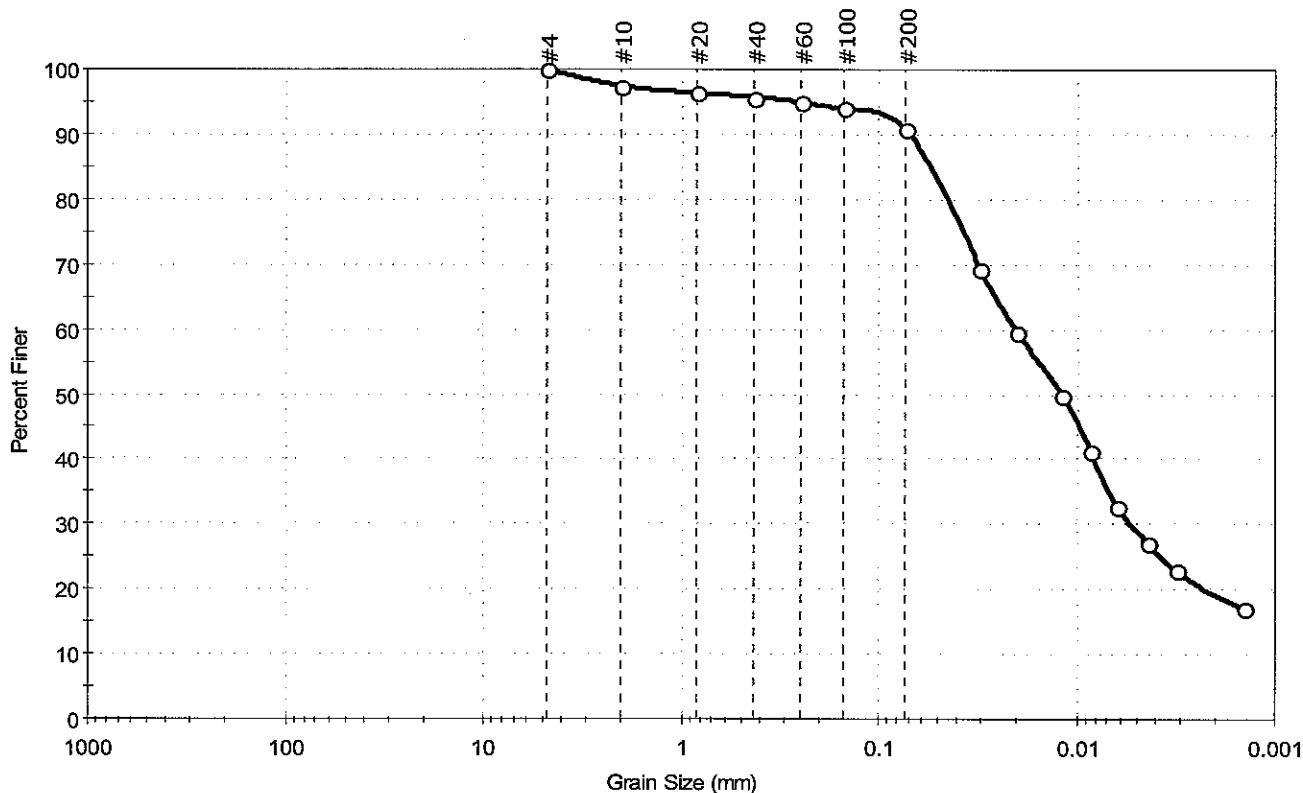
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-60069	Sample Type: jar
Sample ID: OL-0283-14	Test Date: 02/01/07
Depth: 16.5-19.6 ft	Test Id: 105722
Test Comment: ---	Tested By: mll
Sample Description: Moist, olive brown silt	Checked By: jdt
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	9.0	91.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	97		
#20	0.84	96		
#40	0.42	96		
#60	0.25	95		
#100	0.15	94		
#200	0.074	91		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0307	69		
---	0.0201	60		
---	0.0118	50		
---	0.0086	41		
---	0.0062	33		
---	0.0044	27		
---	0.0032	23		
---	0.0014	17		

Coefficients

$D_{85} = 0.0580$ mm $D_{30} = 0.0053$ mm
 $D_{60} = 0.0203$ mm $D_{15} = \text{N/A}$
 $D_{50} = 0.0119$ mm $D_{10} = \text{N/A}$
 $C_u = \text{N/A}$ $C_c = \text{N/A}$

Classification

ASTM elastic silt (MH)

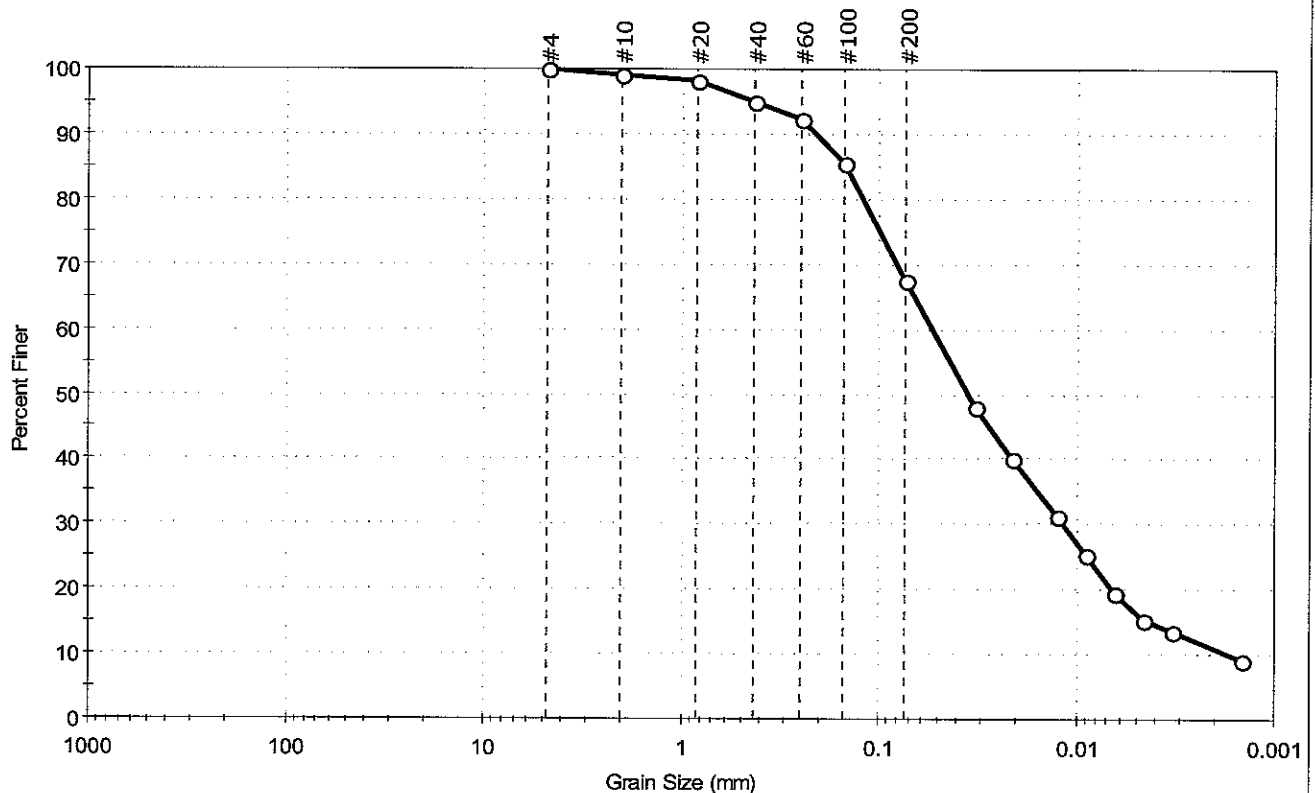
AASHTO Clayey Soils (A-7-5 (38))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
 Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-60067	Sample Type: jar
Sample ID: OL-0283-15	Test Date: 01/23/07
Depth: 3.3-6.6 ft	Test Id: 105723
Test Comment: ---	
Sample Description: Wet, grayish brown sandy silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	32.4	67.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	95		
#60	0.25	92		
#100	0.15	86		
#200	0.074	68		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
----	0.0323	48		
----	0.0210	40		
----	0.0125	31		
----	0.0090	25		
----	0.0065	19		
----	0.0046	15		
----	0.0033	13		
----	0.0014	9		

Coefficients

D ₈₅ = 0.1468 mm	D ₃₀ = 0.0117 mm
D ₆₀ = 0.0537 mm	D ₁₅ = 0.0043 mm
D ₅₀ = 0.0352 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

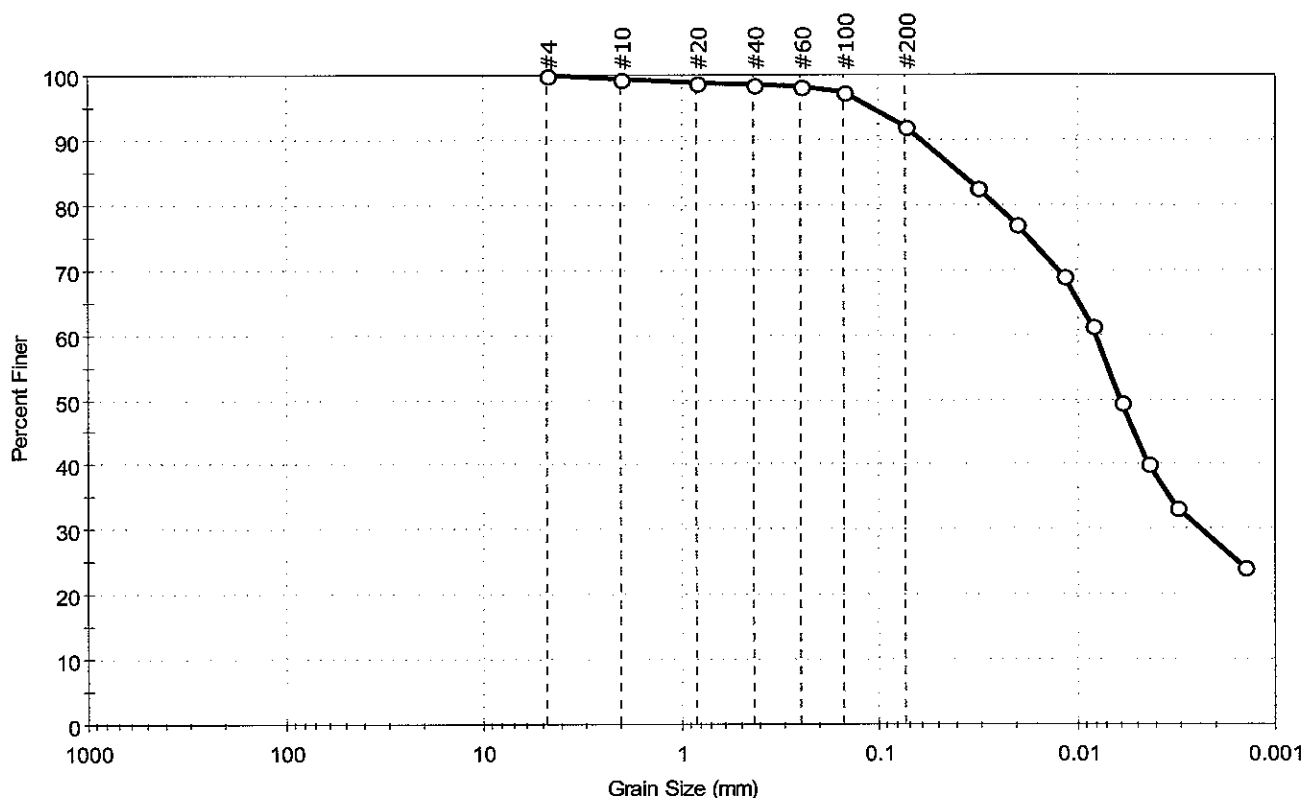
AASHTO Clayey Soils (A-7-5 (10))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60067	Sample Type:	jar
Sample ID:	OL-0283-16	Test Date:	02/01/07
Depth:	13.2-16.5 ft	Test Id:	105724
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	8.0	92.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	97		
#200	0.074	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0318	82		
---	0.0200	77		
---	0.0117	69		
---	0.0084	61		
---	0.0060	50		
---	0.0044	40		
---	0.0032	33		
---	0.0014	24		

Coefficients

D ₈₅ = 0.0397 mm	D ₃₀ = 0.0024 mm
D ₆₀ = 0.0081 mm	D ₁₅ = N/A
D ₅₀ = 0.0061 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (26))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60062

Sample Type: jar

Tested By: mll

Sample ID: OL-0283-17

Test Date: 01/24/07

Checked By: jdt

Depth: 3.3-6.6 ft

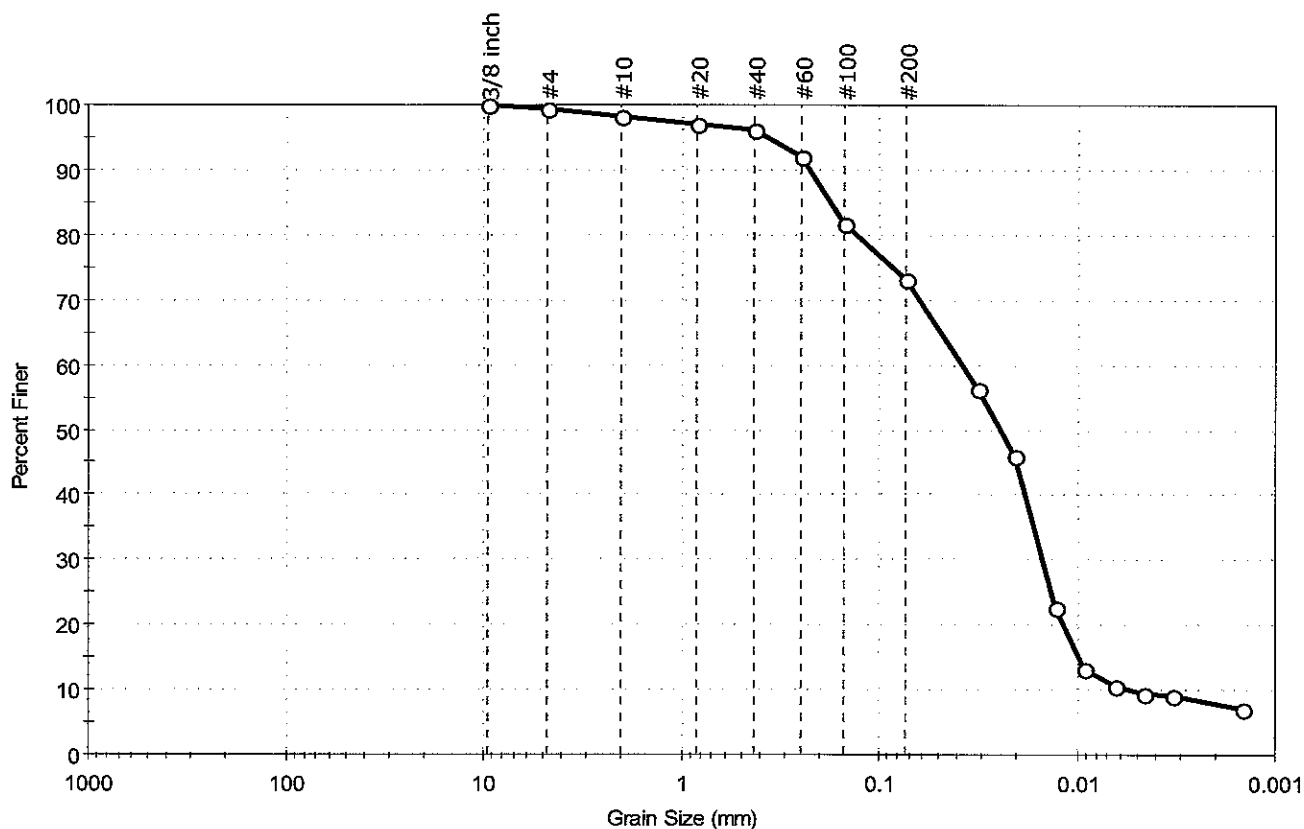
Test Id: 105725

Test Comment: ---

Sample Description: Moist, dark gray silt with sand

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.5	26.3	73.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	98		
#20	0.84	97		
#40	0.42	96		
#60	0.25	92		
#100	0.15	82		
#200	0.074	73		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0318	56		
---	0.0205	46		
---	0.0127	23		
---	0.0092	13		
---	0.0065	10		
---	0.0047	10		
---	0.0033	9		
---	0.0015	7		

Coefficients

$D_{85} = 0.1764$ mm $D_{30} = 0.0148$ mm
 $D_{60} = 0.0383$ mm $D_{15} = 0.0098$ mm
 $D_{50} = 0.0243$ mm $D_{10} = 0.0055$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM silt with sand (ML)

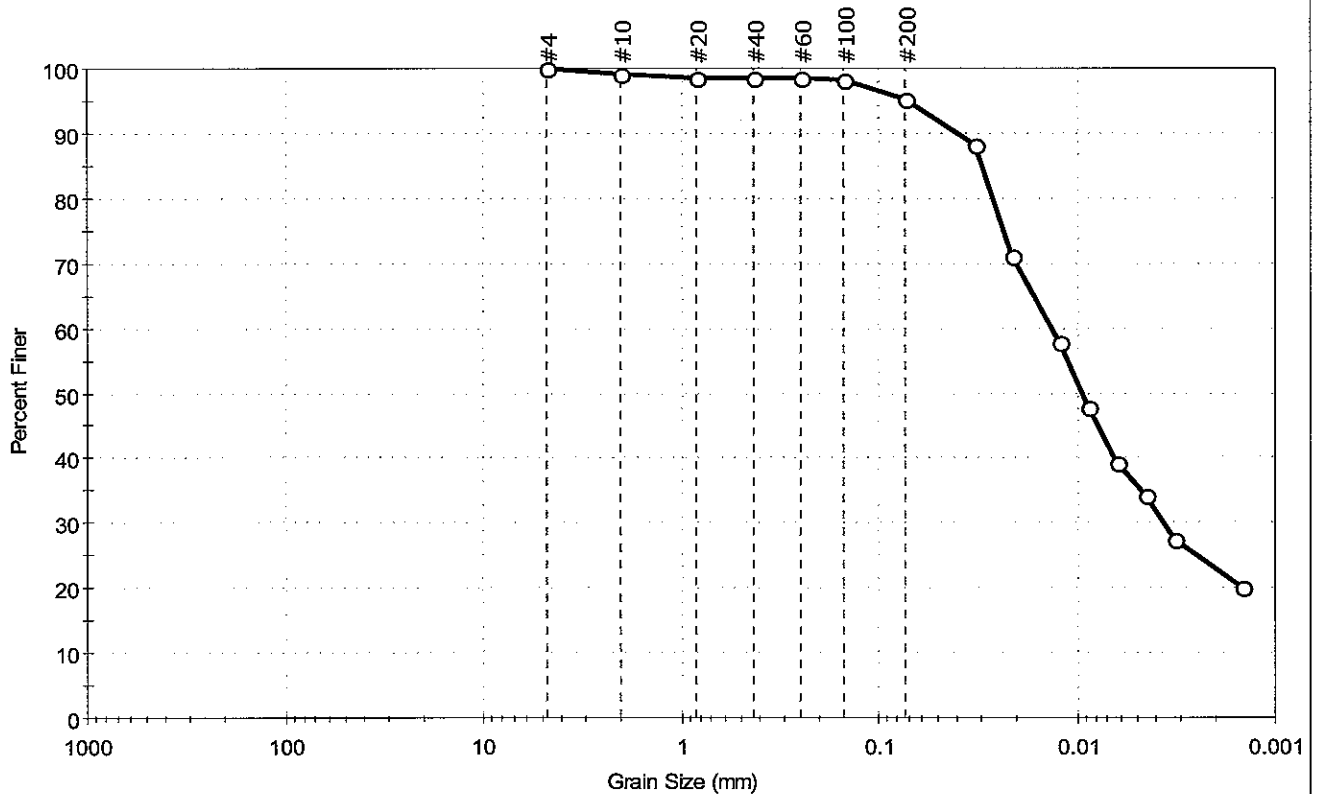
AASHTO Clayey Soils (A-7-6 (13))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
 Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60062	Sample Type:	jar
Sample ID:	OL-0283-18	Test Date:	02/01/07
Depth :	13.2-16.5 ft	Test Id:	105726
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	4.8	95.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	98		
#60	0.25	98		
#100	0.15	98		
#200	0.074	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0329	88		
---	0.0211	71		
---	0.0123	58		
---	0.0088	48		
---	0.0063	39		
---	0.0045	34		
---	0.0032	27		
---	0.0015	20		

Coefficients

D ₈₅ = 0.0304 mm	D ₃₀ = 0.0037 mm
D ₆₀ = 0.0134 mm	D ₁₅ = N/A
D ₅₀ = 0.0095 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

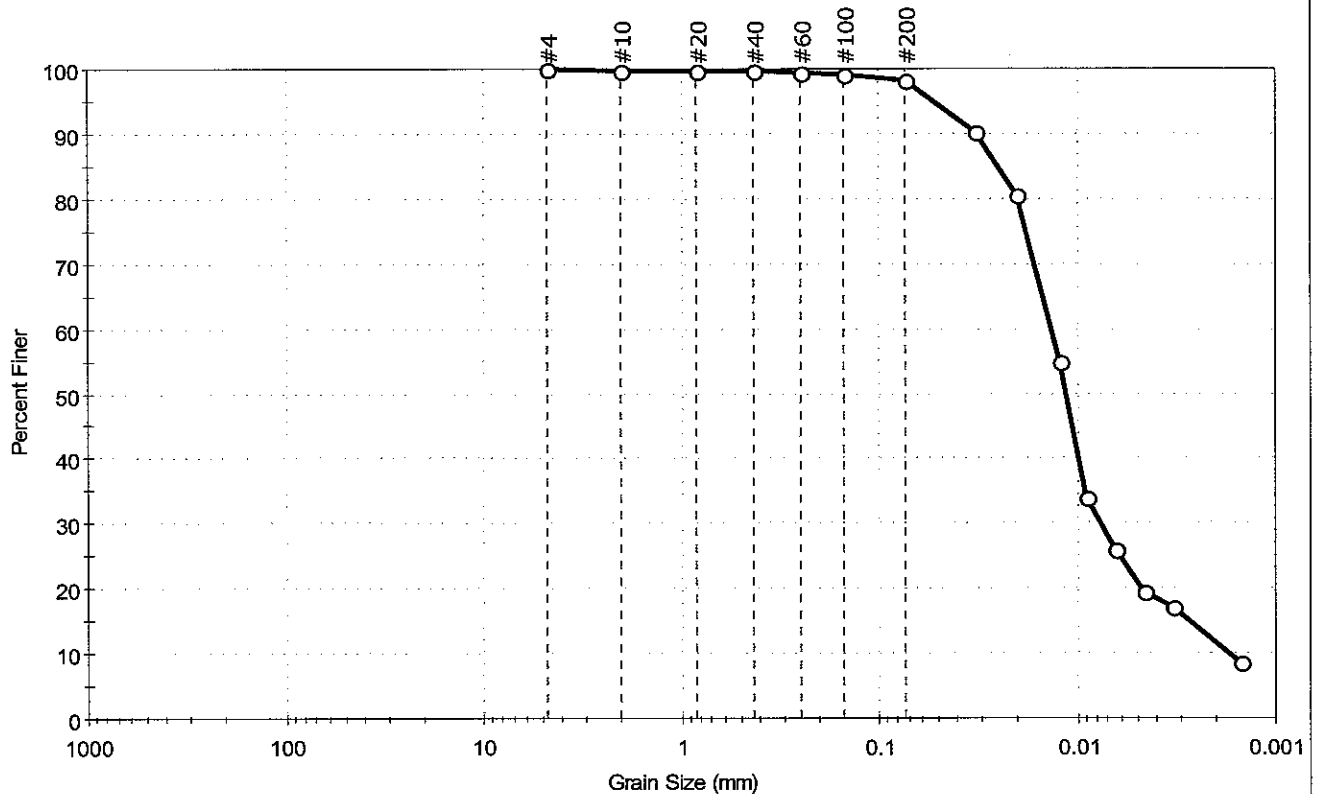
AASHTO Clayey Soils (A-7-5 (52))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60058	Sample Type:	jar
Sample ID:	OL-0283-19	Test Date:	02/01/07
Depth :	3.3-6.6 ft	Test Id:	105727
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.9	98.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.425	100		
#60	0.25	99		
#100	0.15	99		
#200	0.075	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0325	90		
---	0.0204	80		
---	0.0123	55		
---	0.0090	34		
---	0.0065	26		
---	0.0046	20		
---	0.0033	17		
---	0.0015	9		

Coefficients

D ₈₅ = 0.0254 mm	D ₃₀ = 0.0076 mm
D ₆₀ = 0.0136 mm	D ₁₅ = 0.0027 mm
D ₅₀ = 0.0114 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (99))

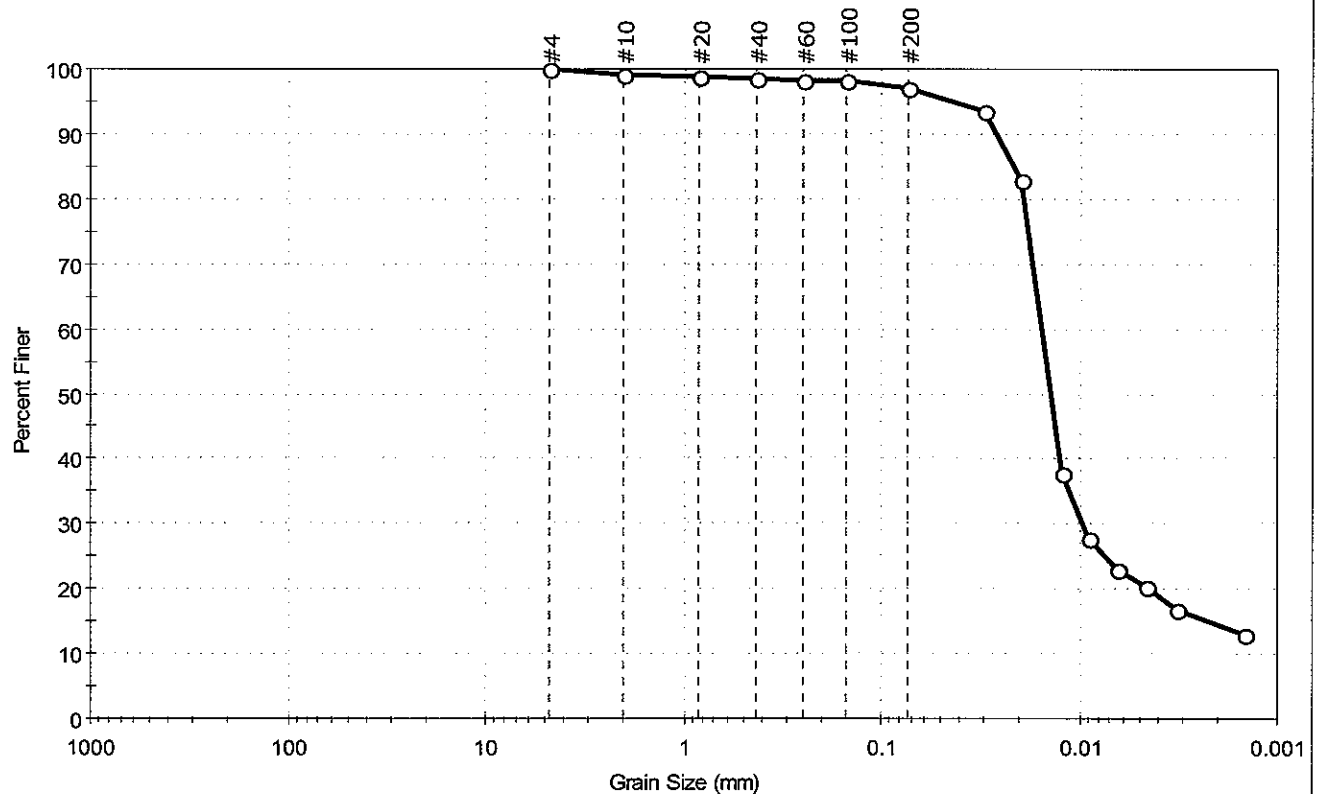
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60058	Sample Type:	jar
Sample ID:	OL-0283-20	Test Date:	02/01/07
Depth :	9.9-13.2 ft	Test Id:	105728
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.9	97.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	98		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0306	94		
---	0.0196	83		
---	0.0124	38		
---	0.0091	28		
---	0.0064	23		
---	0.0046	20		
---	0.0033	17		
---	0.0015	13		

Coefficients

D ₈₅ = 0.0214 mm	D ₃₀ = 0.0097 mm
D ₆₀ = 0.0155 mm	D ₁₅ = 0.0022 mm
D ₅₀ = 0.0140 mm	D ₁₀ = 0.0008 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (60))

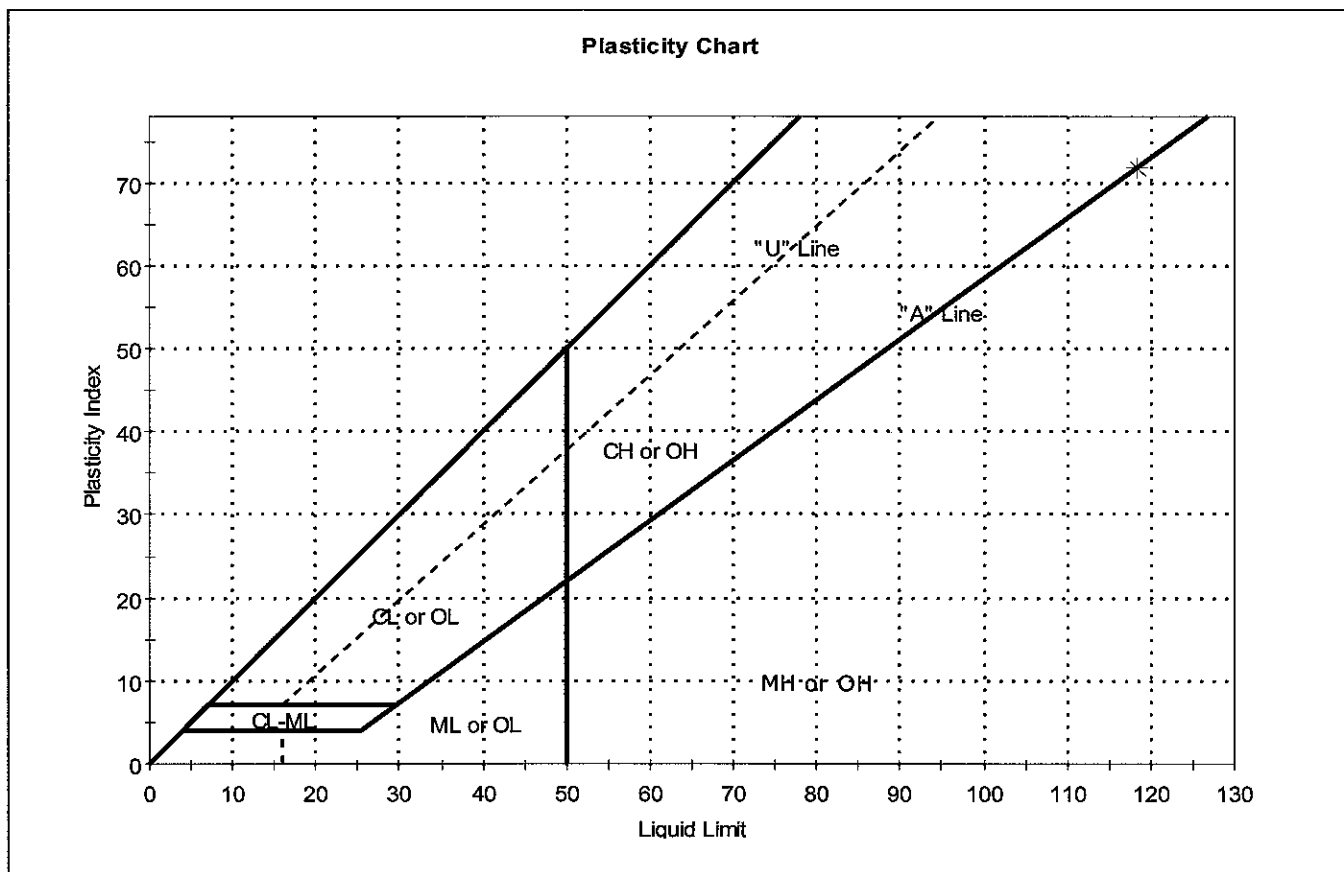
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-60056	Sample Type: jar
Sample ID: OL-0283-01	Test Date: 01/24/07
Depth: 3.3-6.6 ft	Test Id: 105669
Test Comment: ---	
Sample Description: Wet, black clay	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05

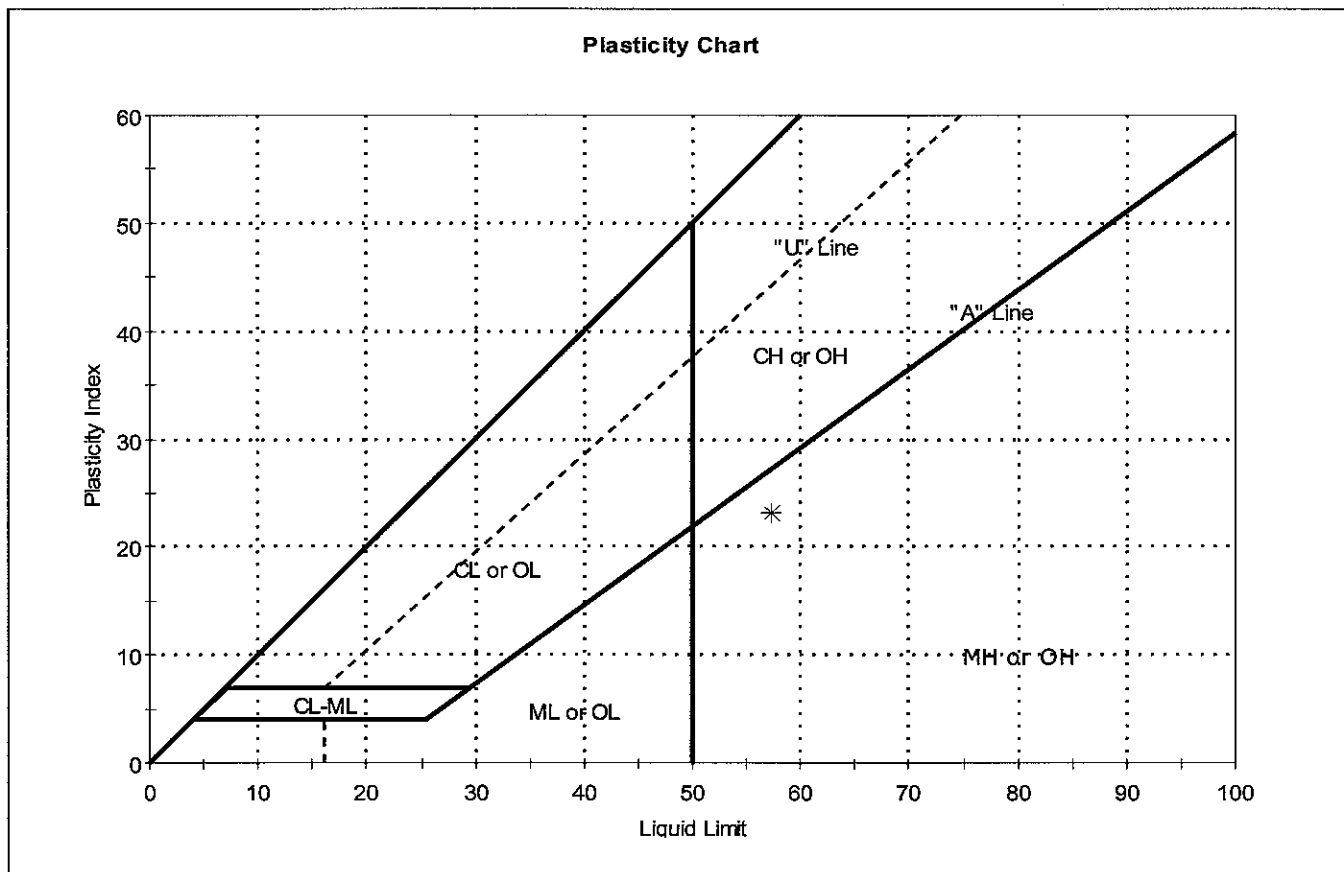


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-01	-VC-600	3.3-6.6 ft	144	118	46	72	1	fat clay (CH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-60056	Sample Type: jar
Sample ID: OL-0283-02	Test Date: 01/25/07
Depth: 9.9-13.2 ft	Test Id: 105670
Test Comment: ---	
Sample Description: Moist, black sandy silt	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05

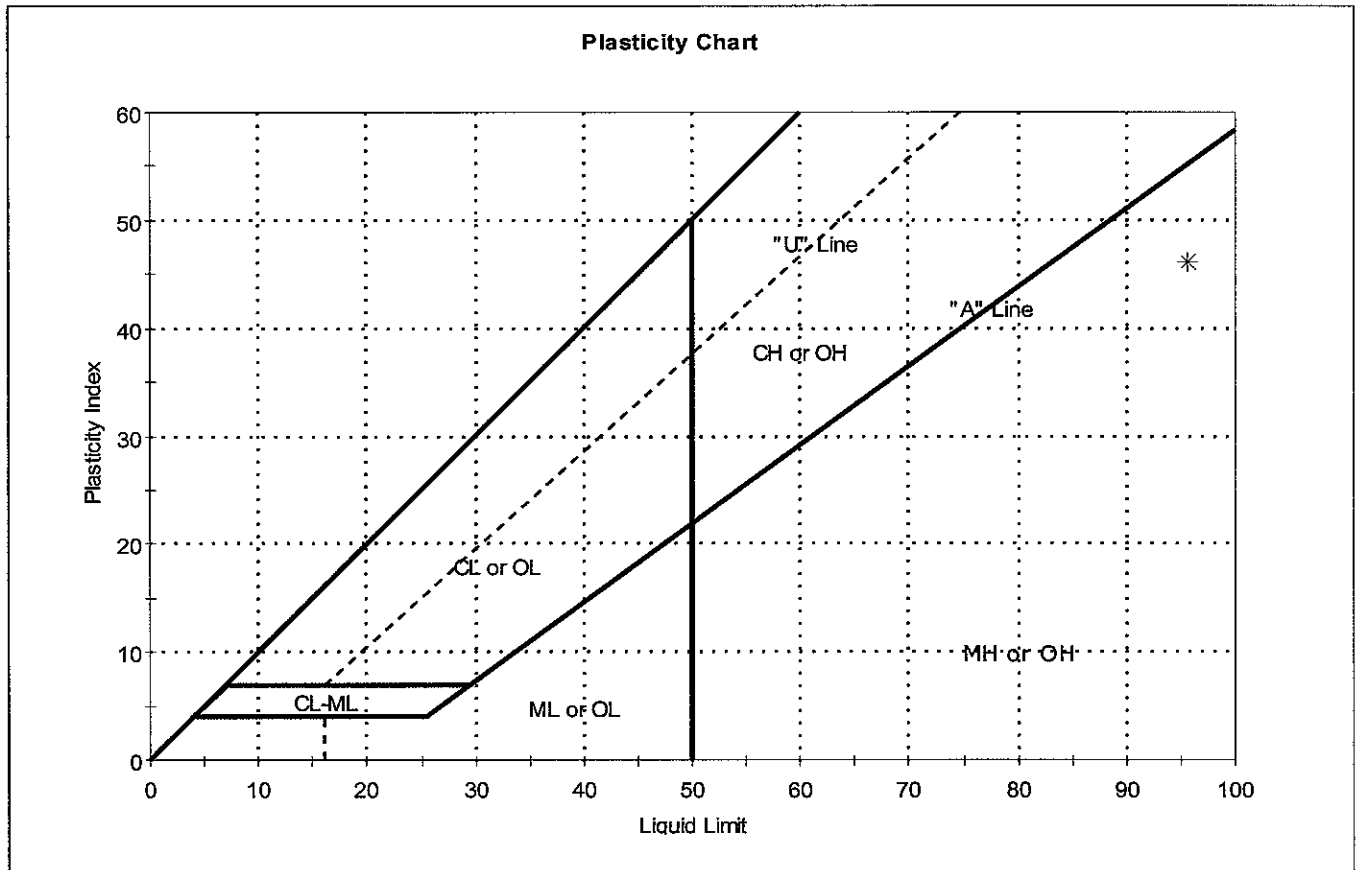


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-02	-VC-600	9.9-13.2 ft	60	57	34	23	1	Sandy elastic silt (MH)

Sample Prepared using the WET method
16% Retained on #40 Sieve
Dry Strength: HIGH
Dilutancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60056	Sample Type:	jar
Sample ID:	OL-0283-03	Test Date:	01/23/07
Depth:	16.5-18.3 ft	Test Id:	105671
Test Comment:	---		
Sample Description:	Moist, brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

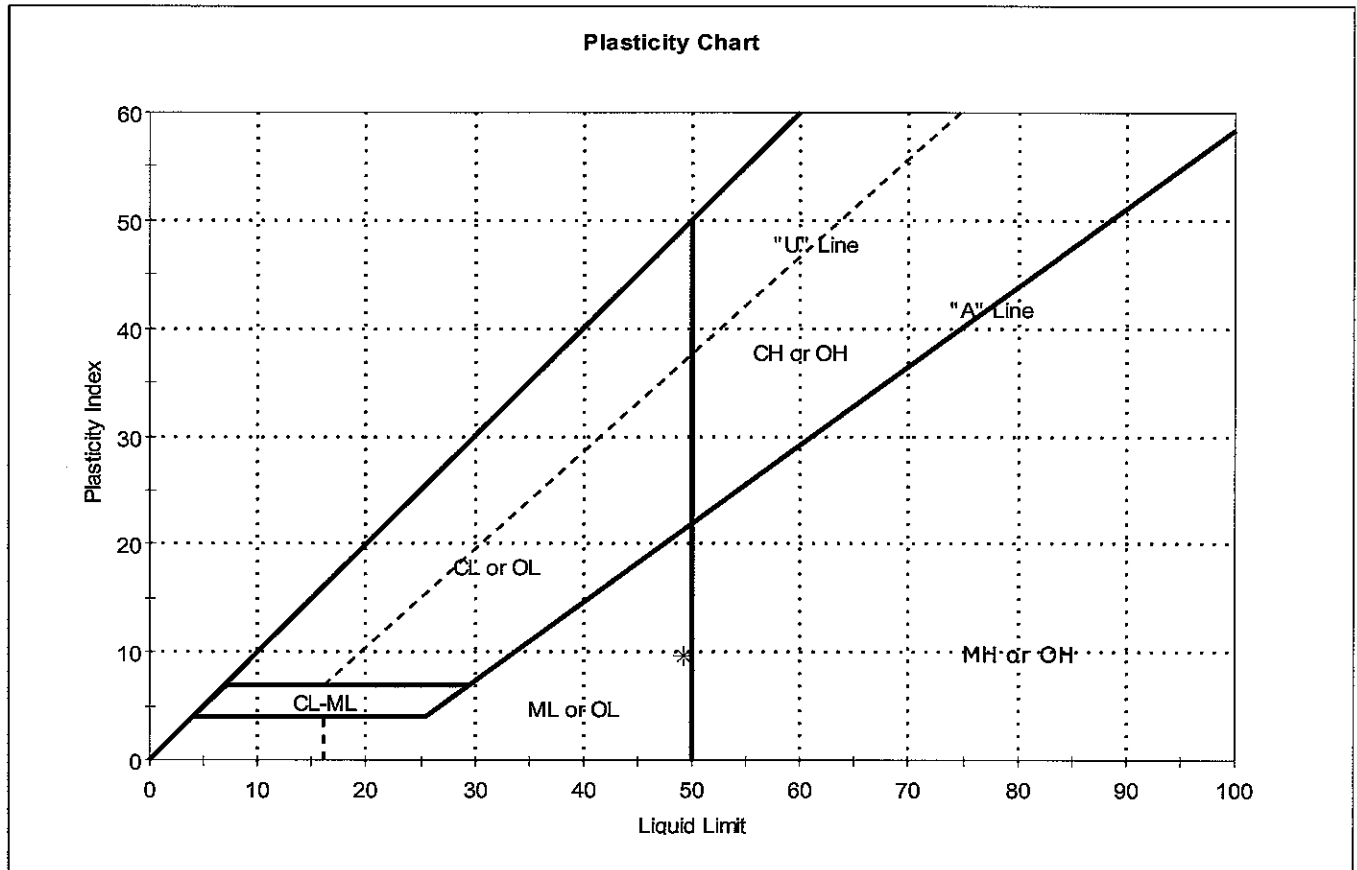


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-03	-VC-600	16.5-18.3 ft	86	96	50	46	1	elastic silt (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60059	Sample Type:	jar
Sample ID:	OL-0283-04	Test Date:	01/09/07
Depth:	0-3.3 ft	Test Id:	105672
Test Comment:	---		
Sample Description:	Wet, olive brown sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

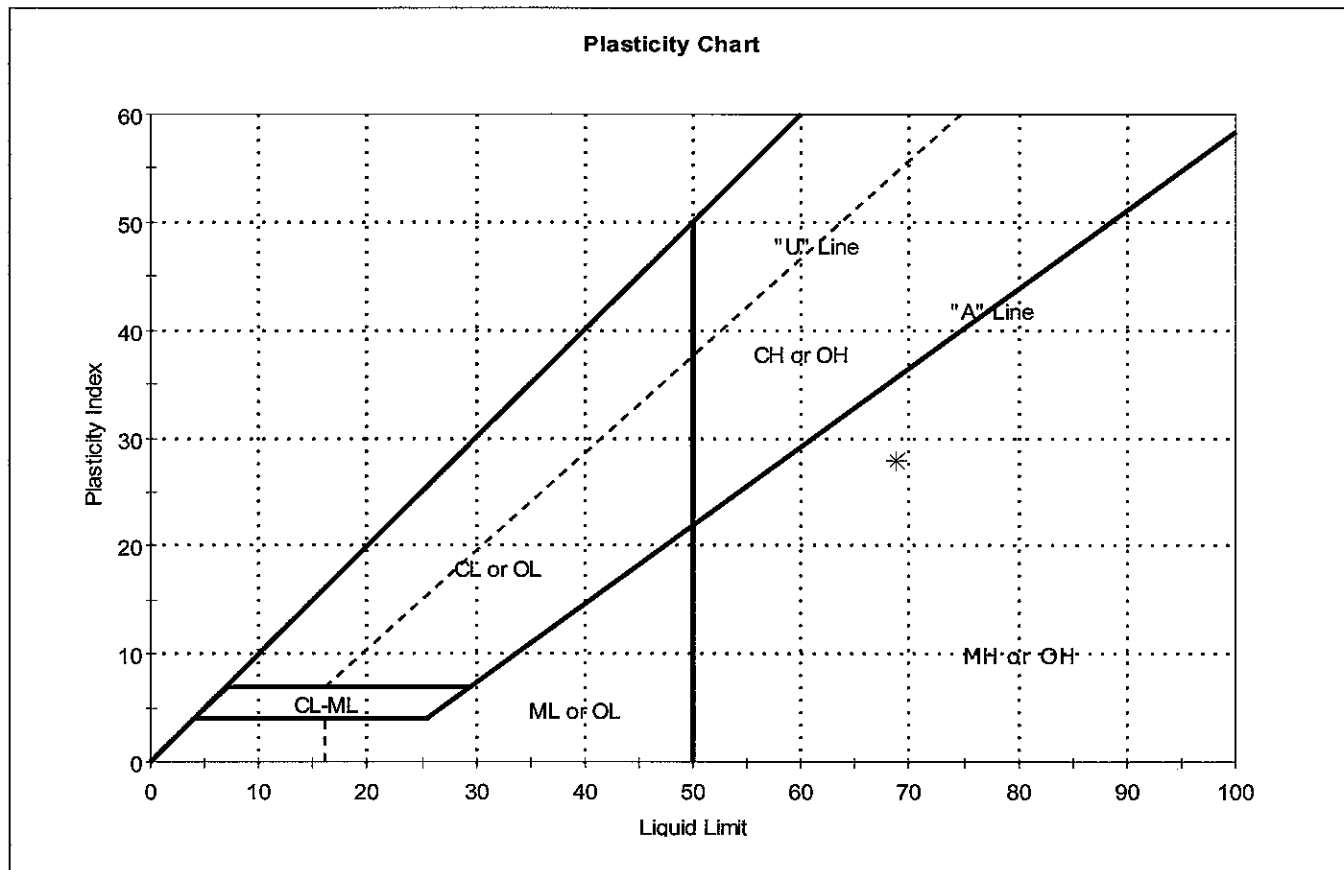


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-04	-VC-6005	0-3.3 ft	97	49	40	9	6	Sandy silt (ML)

Sample Prepared using the WET method
5% Retained on #40 Sieve
Dry Strength: HIGH
Dilatancy: SLOW
Toughness: LOW

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-60059	Sample Type: jar
Sample ID: OL-0283-05	Test Date: 01/23/07	Tested By: ap
Depth: 6.6-9.9 ft	Test Id: 105673	Checked By: jdt
Test Comment: ---		
Sample Description: Moist, gray silt		
Sample Comment: ---		

Atterberg Limits - ASTM D 4318-05

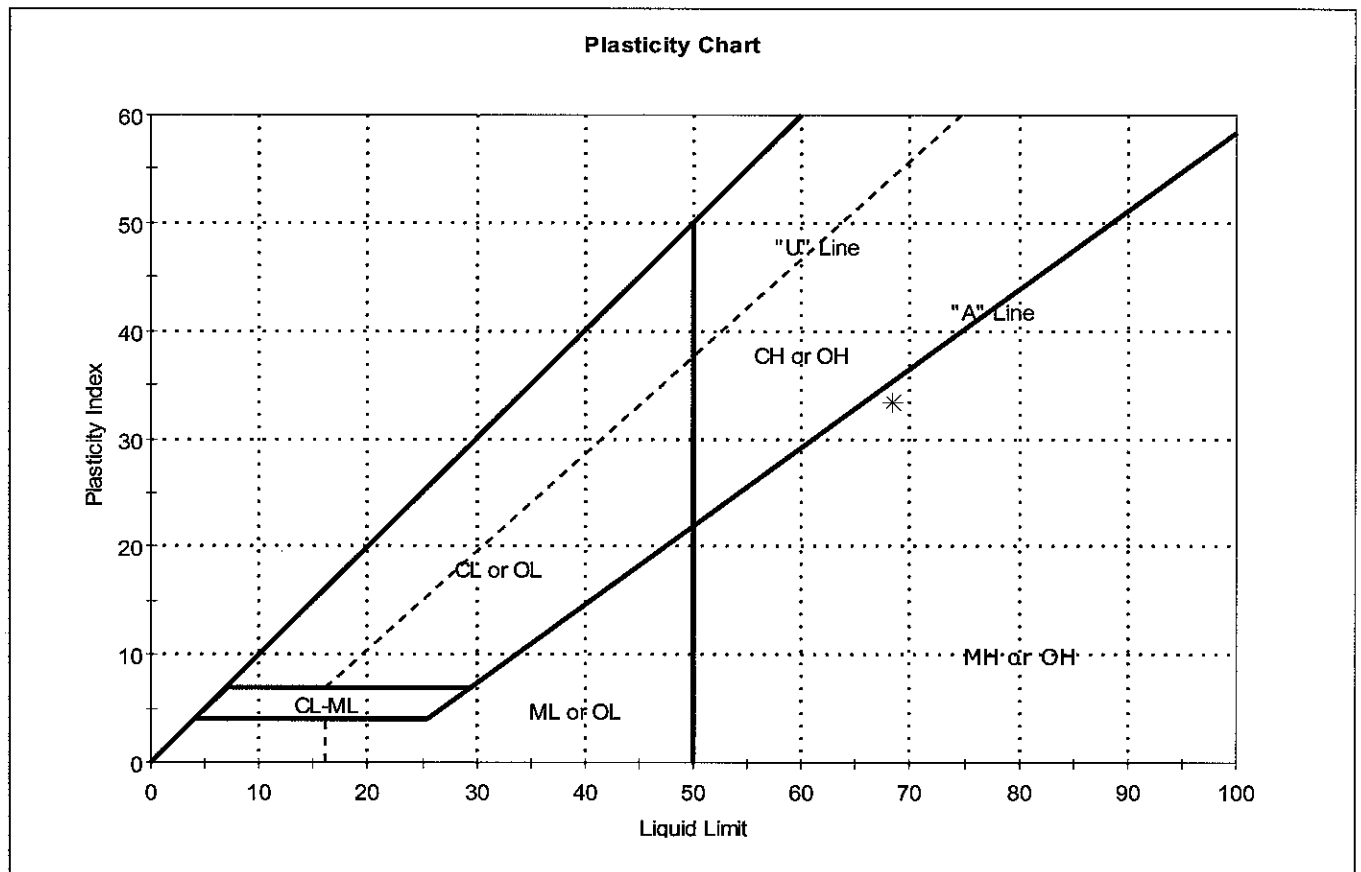


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-05	L-VC-600	6.6-9.9 ft	15	69	41	28	-1	elastic silt (MH)

Sample Prepared using the WET method
1% Retained on #40 Sieve
Dry Strength: VERY HIGH
Dilatancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-VC-60059	Sample Type:	jar
Sample ID:	OL-0283-06	Test Date:	01/23/07
Depth :	13.2-16.5 ft	Test Id:	105674
Test Comment:	---		
Sample Description:	Moist, dark greenish gray silt with organics		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

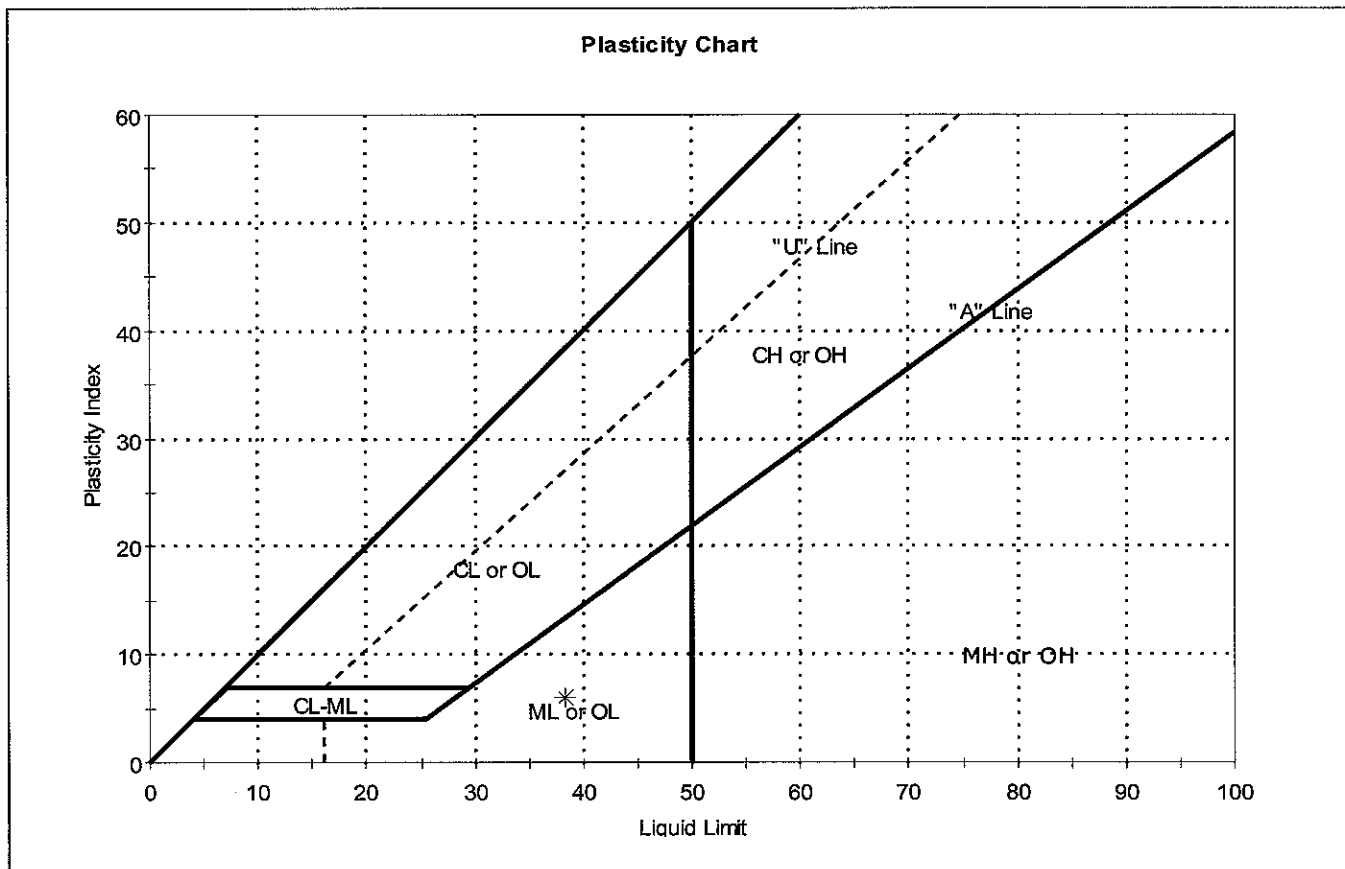


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-06	-VC-60059	13.2-16.5 ft	61	68	35	33	1	elastic silt (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60066	Sample Type:	jar
Sample ID:	OL-0283-07	Test Date:	01/25/07
Depth:	0-3.3 ft	Test Id:	105675
Test Comment:	---		
Sample Description:	Wet, gray silty sand with gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

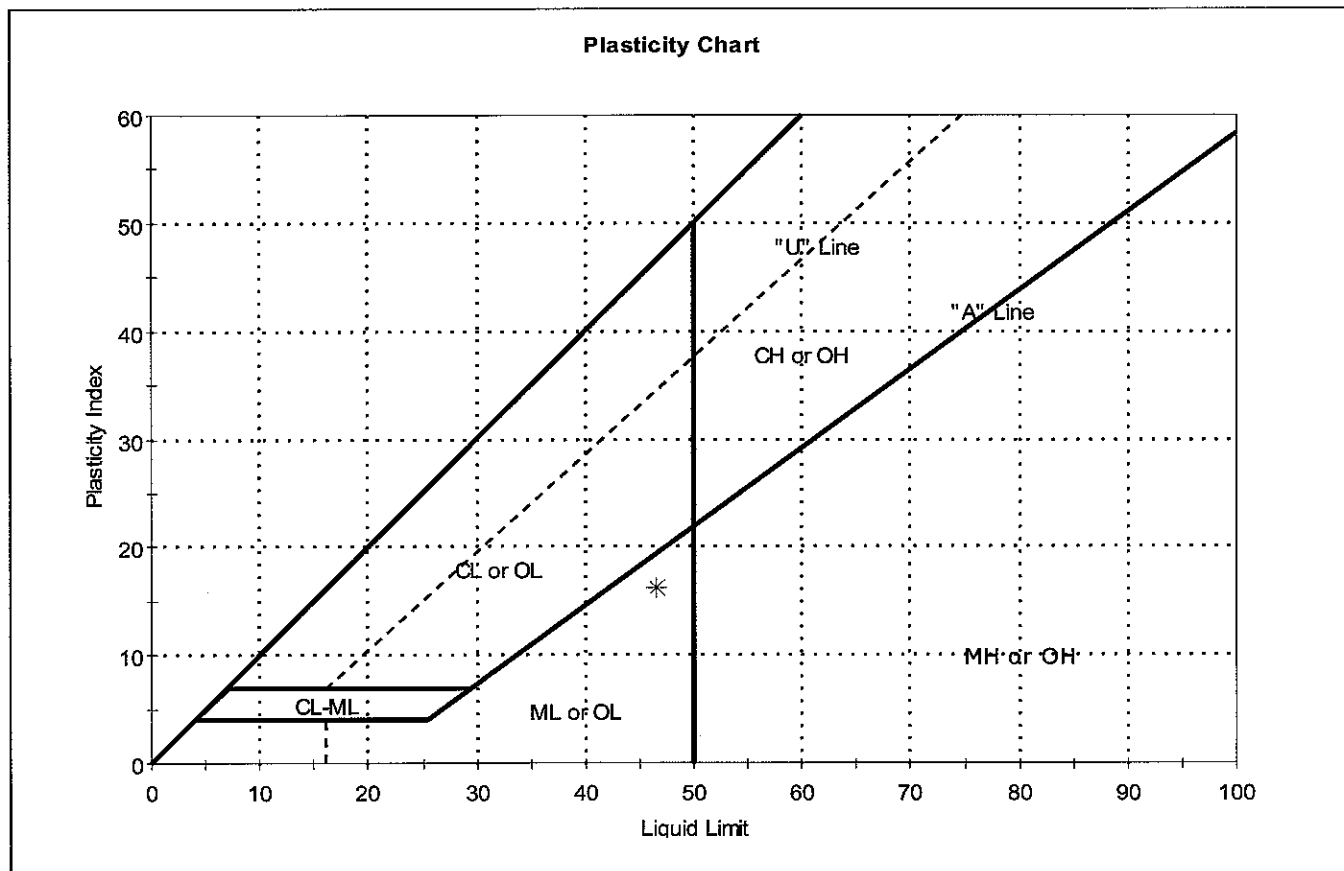


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-07	-VC-600	0-3.3 ft	82	38	32	6	8	Silty sand with gravel (SM)

Sample Prepared using the WET method
 52% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60066	Sample Type:	jar
Sample ID:	OL-0283-08	Test Date:	01/25/07
Depth :	6.6-9.9 ft	Test Id:	105676
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-08	L-VC-6006	6.6-9.9 ft	64	47	30	17	2	Sandy silt (ML)

Sample Prepared using the WET method

20% Retained on #40 Sieve

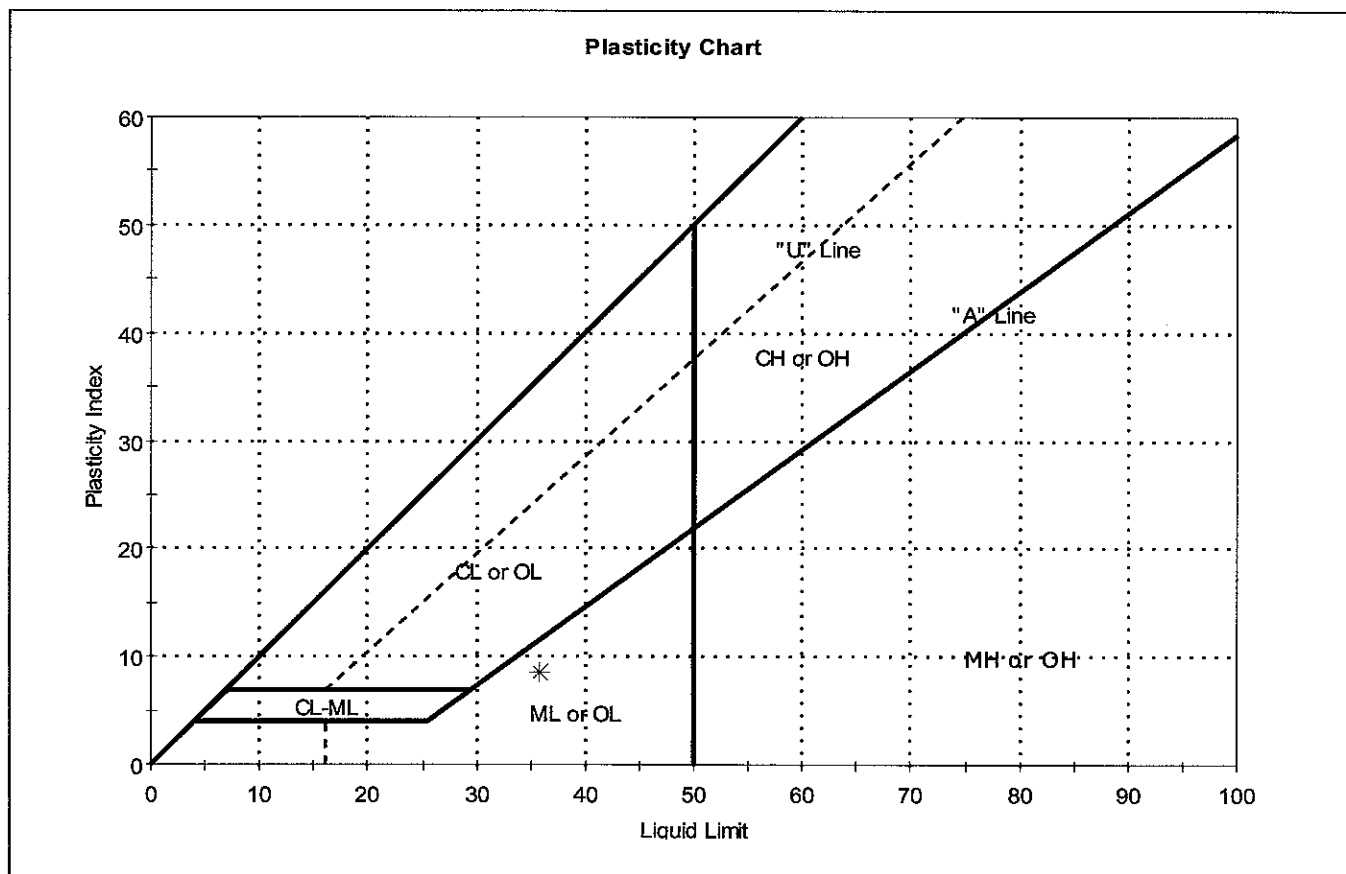
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60068	Sample Type:	jar
Sample ID:	OL-0283-09	Test Date:	01/25/07
Depth:	0-3.3 ft	Test Id:	105677
Test Comment:	---		
Sample Description:	Moist, dark olive brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

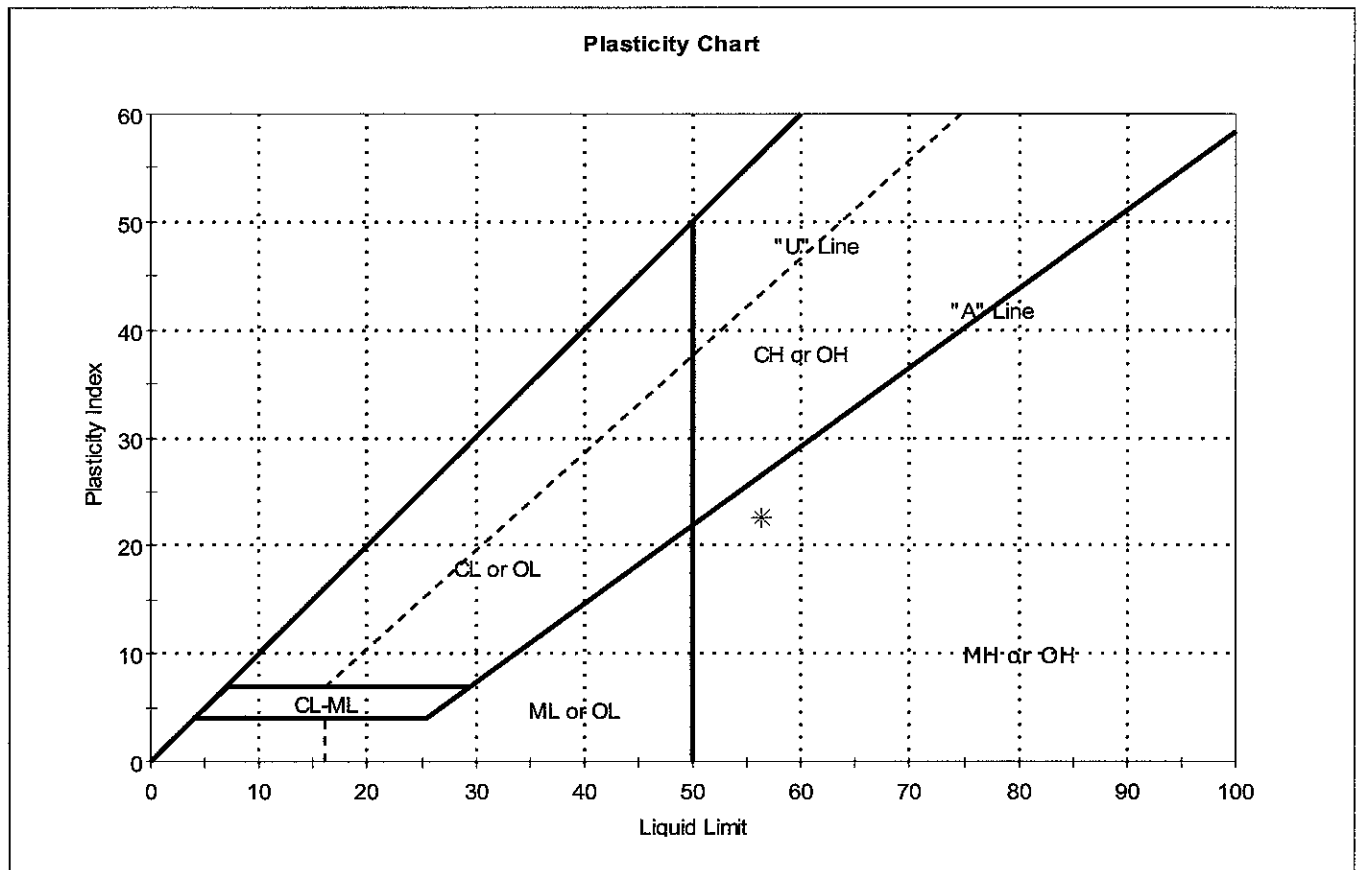


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-09	VC-600	0-3.3 ft	50	36	27	9	3	Silty sand (SM)

Sample Prepared using the WET method
 19% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60068	Sample Type:	jar
Sample ID:	OL-0283-10	Test Date:	01/23/07
Depth :	6.6-9.9 ft	Test Id:	105678
Test Comment:	---		
Sample Description:	Moist, dark gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

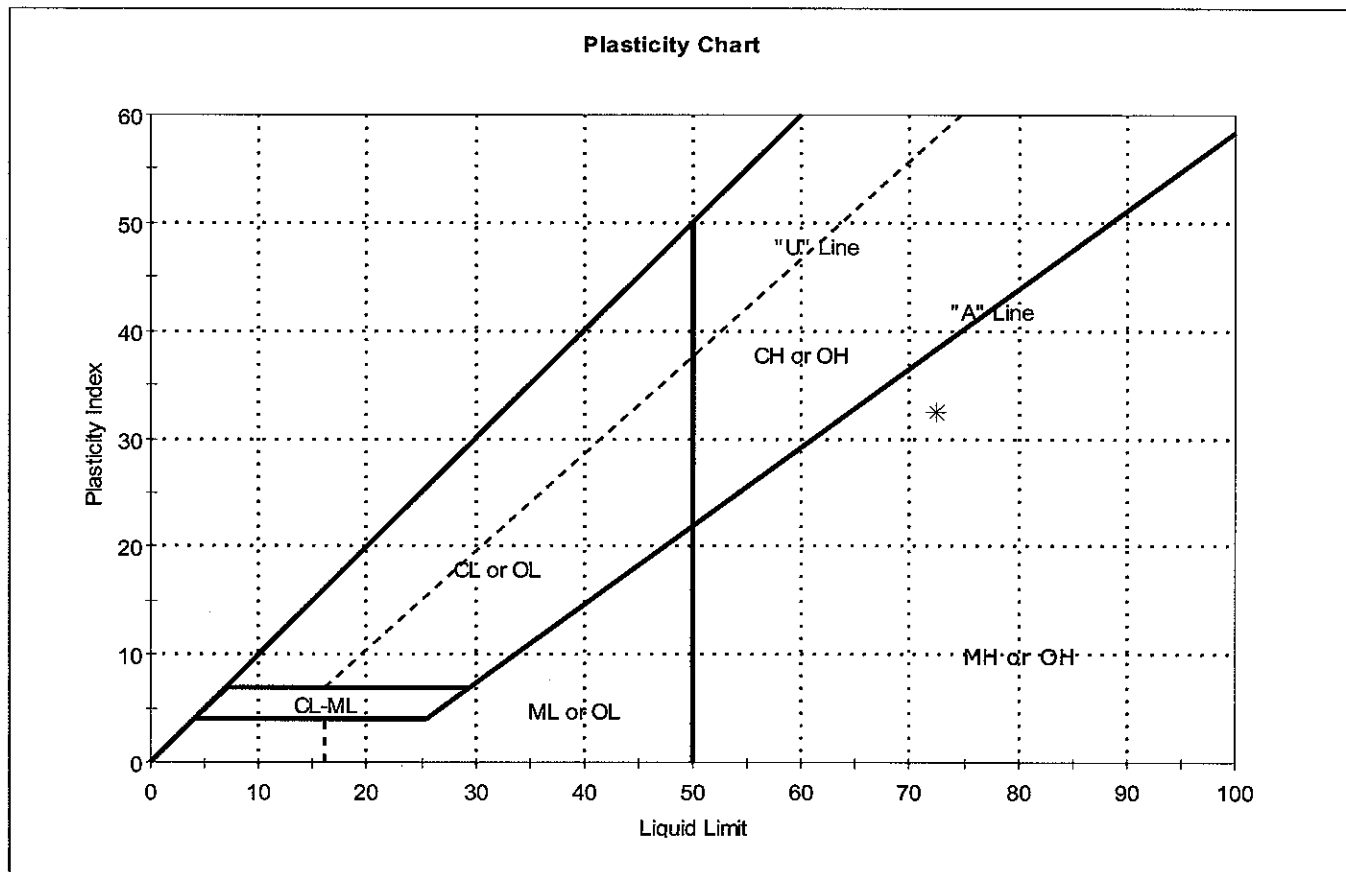


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-10	L-VC-6006	6.6-9.9 ft	99	56	34	22	3	elastic silt with sand (MH)

Sample Prepared using the WET method
 3% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60068	Sample Type:	jar
Sample ID:	OL-0283-11	Test Date:	01/23/07
Depth :	16.5-18.7 ft	Test Id:	105679
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-11	VC-60068	16.5-18.7 ft	70	72	40	32	1	elastic silt (MH)

Sample Prepared using the WET method
3% Retained on #40 Sieve
Dry Strength: HIGH
Dilatancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-60069	Sample Type:	jar
Sample ID:	OL-0283-12	Test Date:	01/15/07
Depth :	0-3.3 ft	Test Id:	105680
Test Comment:	---		
Sample Description:	Moist, olive brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-12	-VC-6006	0-3.3 ft	40	n/a	n/a	n/a	n/a	Silty sand (SM)

4% Retained on #40 Sieve

Dry Strength: MEDIUM

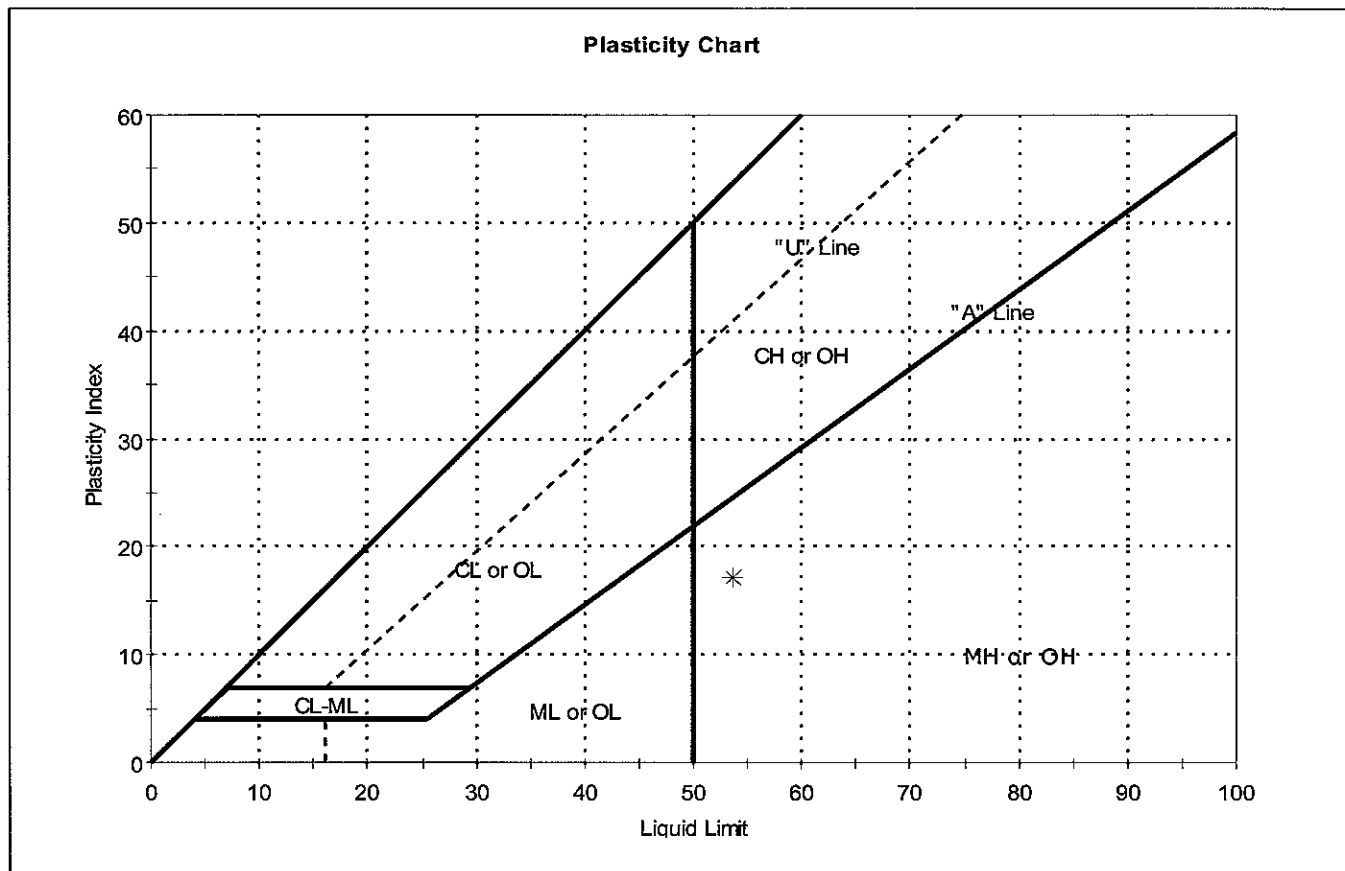
Dilatancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60069	Sample Type:	jar
Sample ID:	OL-0283-13	Test Date:	01/23/07
Depth :	9.9-13.2 ft	Test Id:	105681
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-13	L-VC-600	9.9-13.2 ft	64	54	37	17	2	elastic silt (MH)

Sample Prepared using the WET method

2% Retained on #40 Sieve

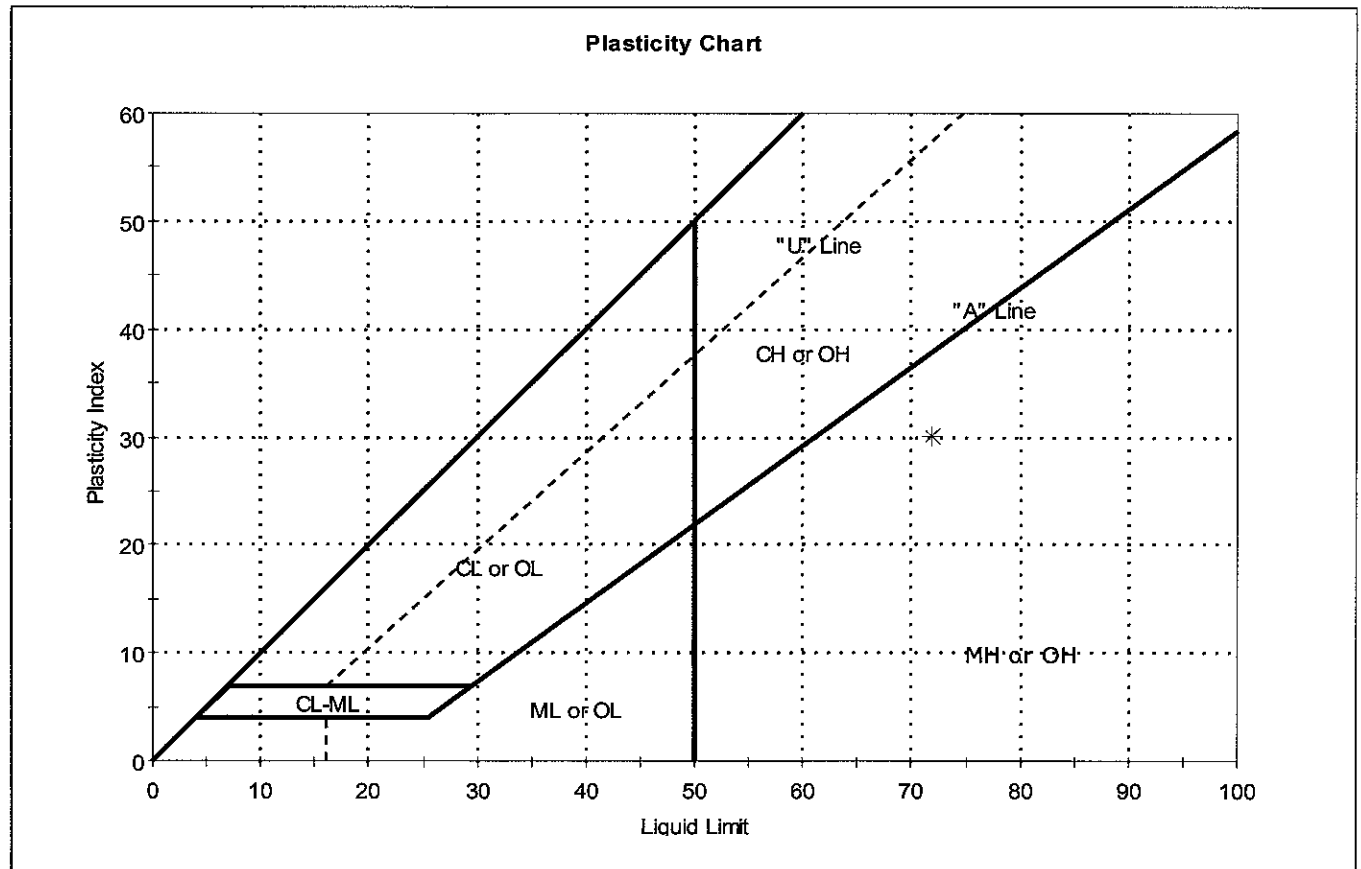
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60069	Sample Type:	jar
Sample ID:	OL-0283-14	Test Date:	01/22/07
Depth:	16.5-19.6 ft	Test Id:	105682
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

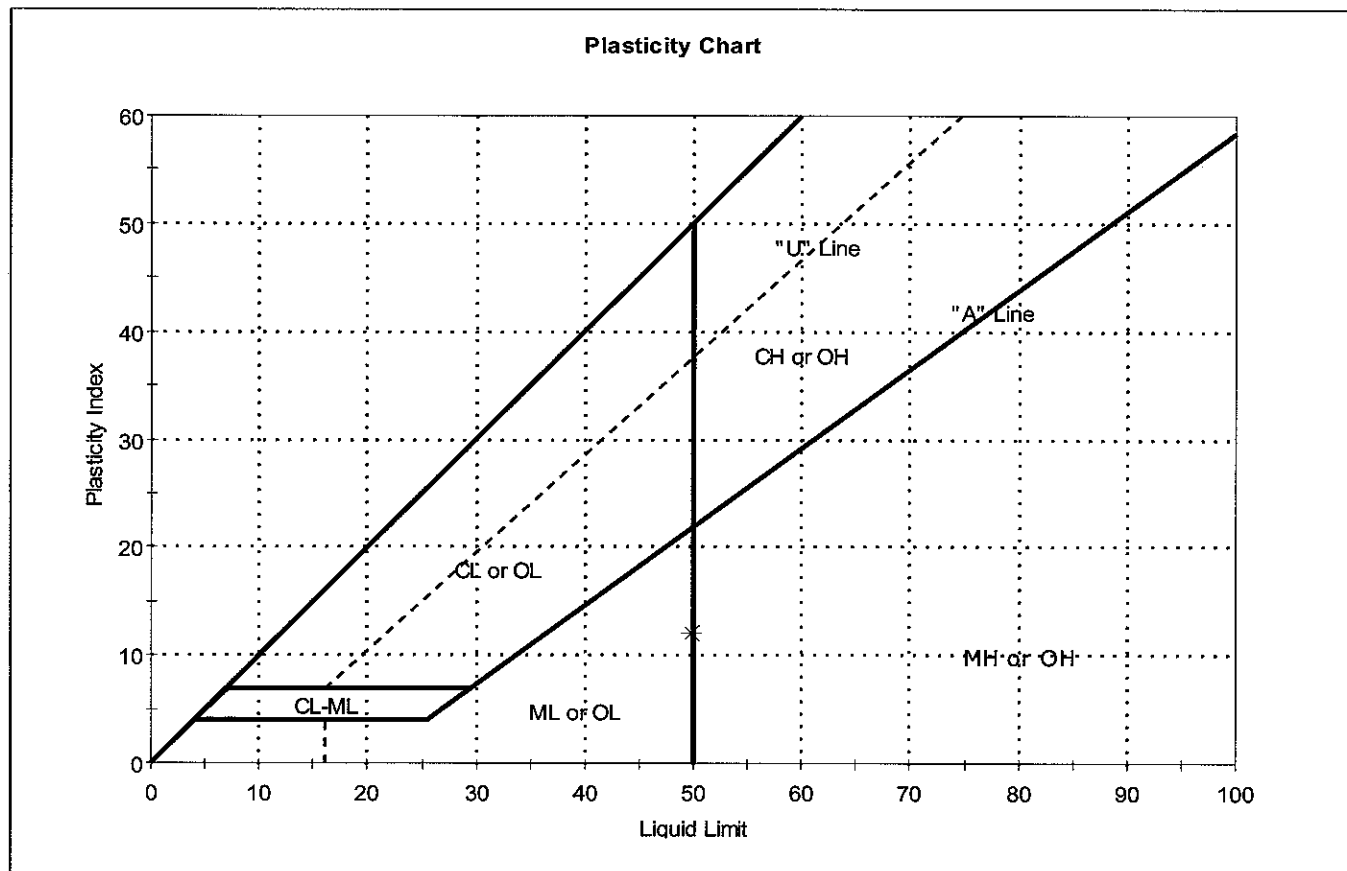


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-14	VC-60069	16.5-19.6 ft	72	72	42	30	1	elastic silt (MH)

Sample Prepared using the WET method
4% Retained on #40 Sieve
Dry Strength: HIGH
Dilatancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60067	Sample Type:	jar
Sample ID:	OL-0283-15	Test Date:	01/23/07
Depth:	3.3-6.6 ft	Test Id:	105683
Test Comment:	---		
Sample Description:	Wet, grayish brown sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-15	-VC-6006	3.3-6.6 ft	98	50	38	12	5	Sandy silt (ML)

Sample Prepared using the WET method

5% Retained on #40 Sieve

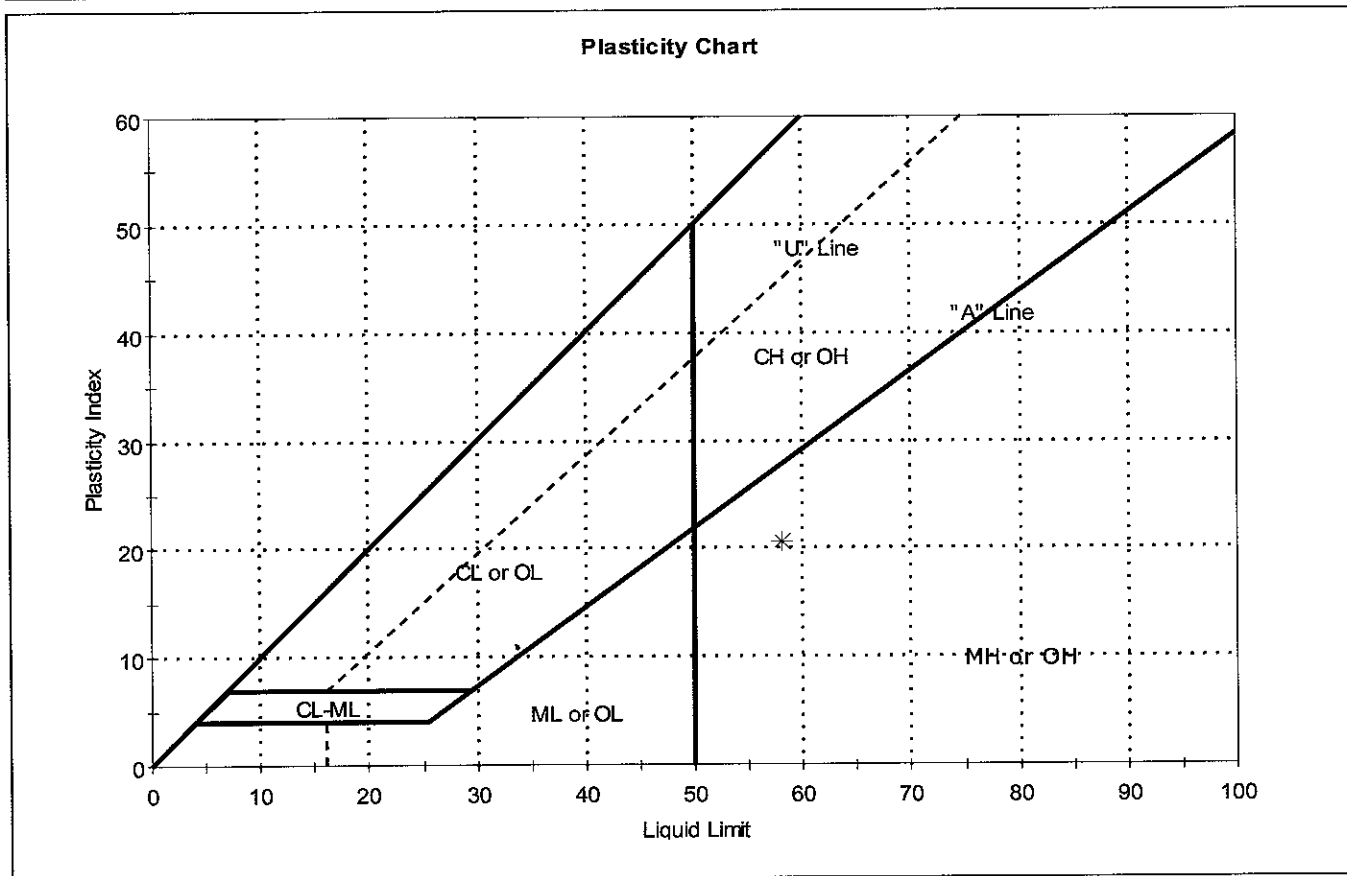
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60067	Sample Type:	jar
Sample ID:	OL-0283-16	Test Date:	01/24/07
Depth:	13.2-16.5 ft	Test Id:	105684
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-16	L-VC-600	13.2-16.5 ft	81	58	38	20	2	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

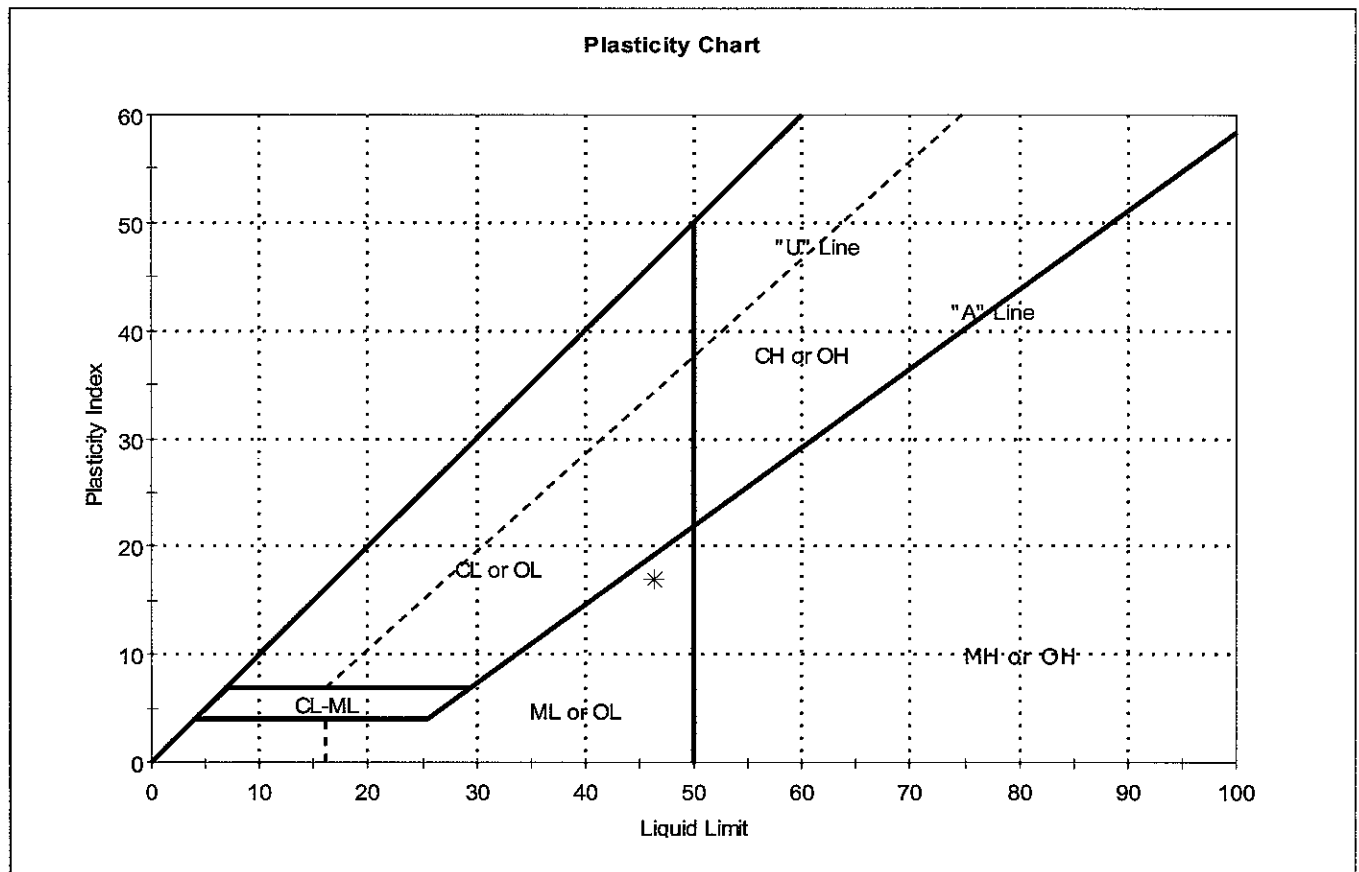
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60062	Sample Type:	jar
Sample ID:	OL-0283-17	Test Date:	01/24/07
Depth :	3.3-6.6 ft	Test Id:	105685
Test Comment:	---		
Sample Description:	Moist, dark gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

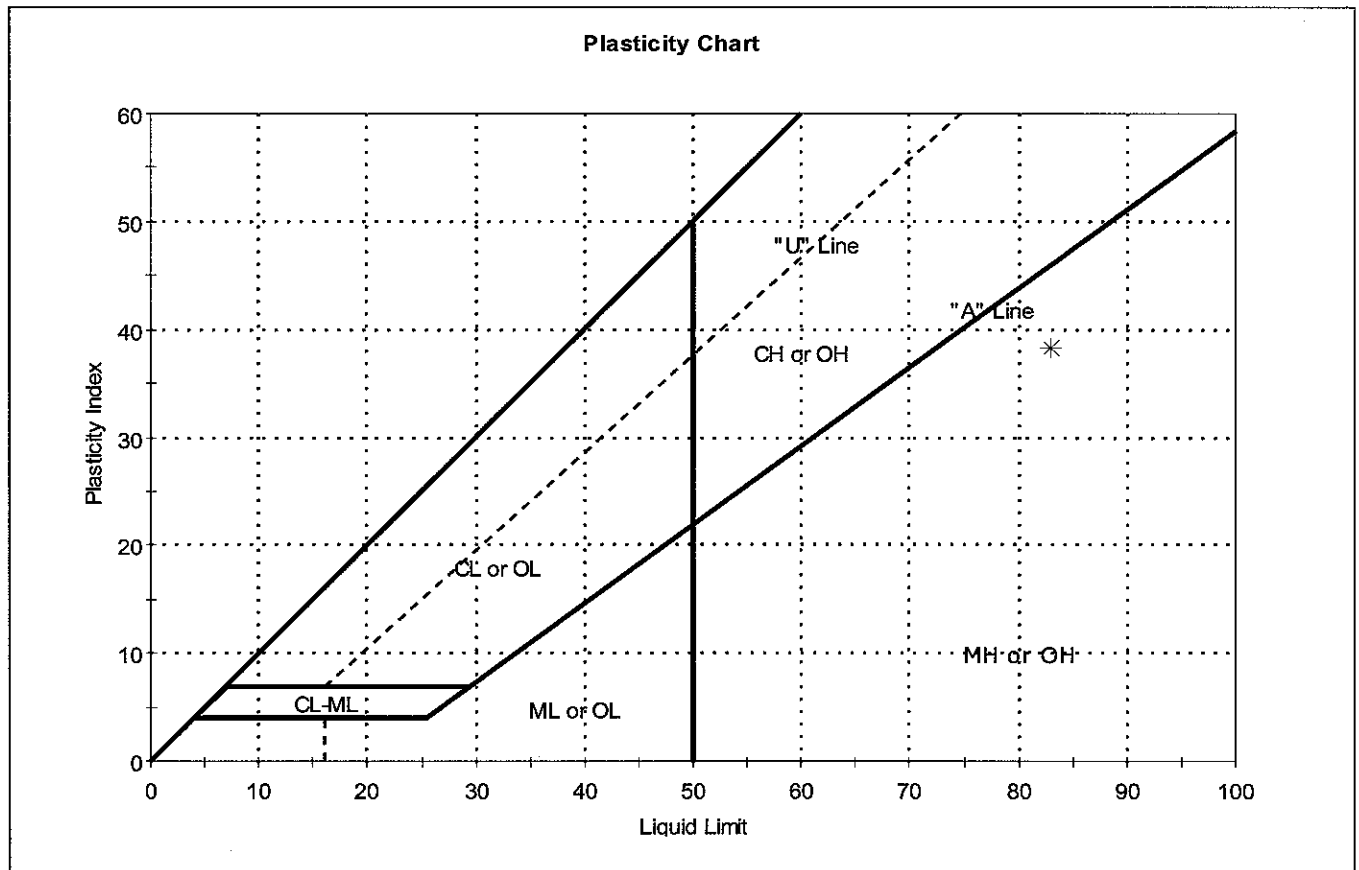


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-17	-VC-600	3.3-6.6 ft	54	46	29	17	1	silt with sand (ML)

Sample Prepared using the WET method
4% Retained on #40 Sieve
Dry Strength: VERY HIGH
Dilatancy: RAPID
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60062	Sample Type:	jar
Sample ID:	OL-0283-18	Test Date:	01/22/07
Depth :	13.2-16.5 ft	Test Id:	105686
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

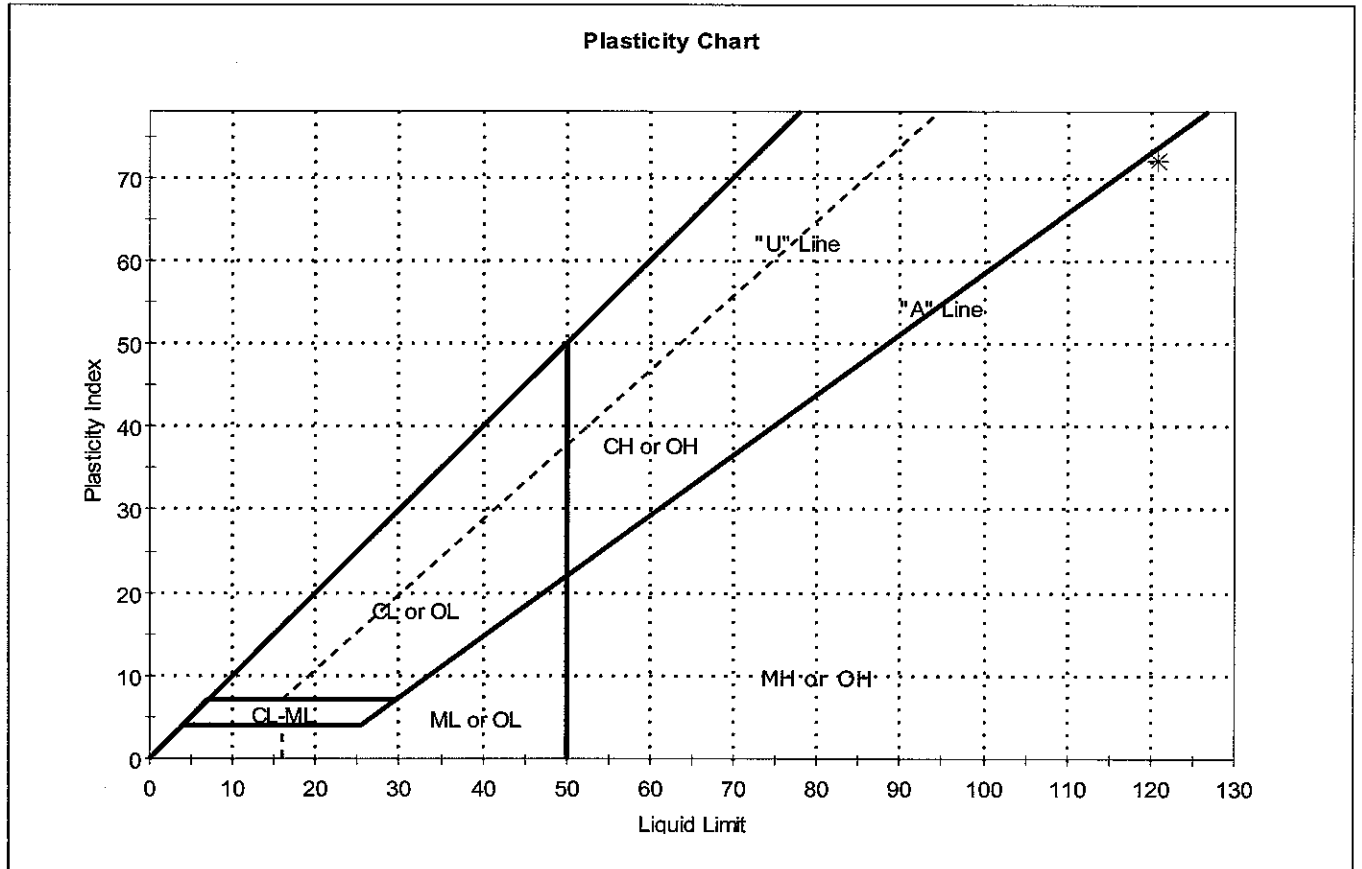


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-18	-VC-60062	13.2-16.5 ft	79	83	45	38	1	elastic silt (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60058	Sample Type:	jar
Sample ID:	OL-0283-19	Test Date:	01/24/07
Depth :	3.3-6.6 ft	Test Id:	105687
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-19	-VC-600	3.3-6.6 ft	163	121	49	72	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

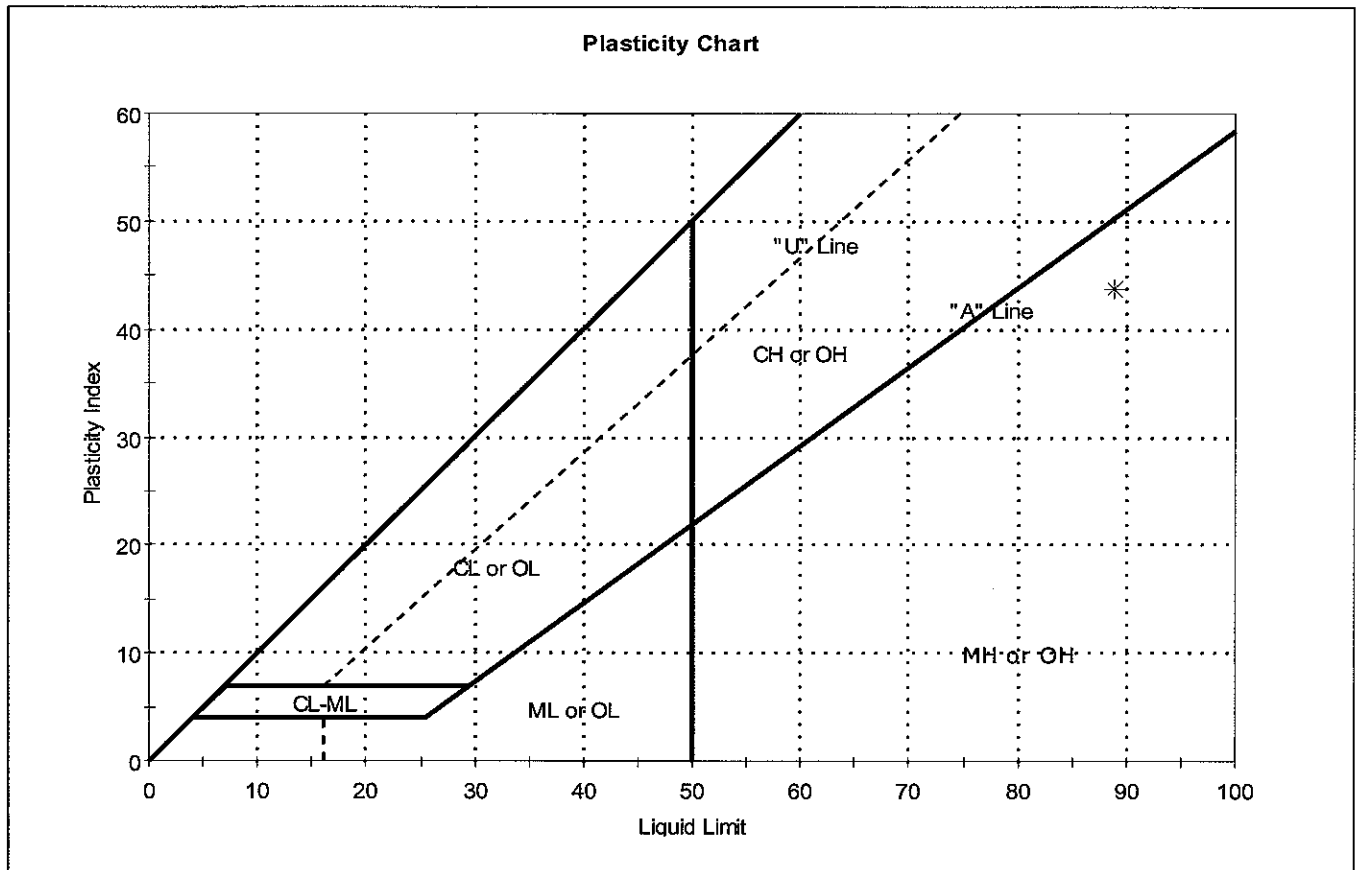
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60058	Sample Type:	jar
Sample ID:	OL-0283-20	Test Date:	01/24/07
Depth :	9.9-13.2 ft	Test Id:	105688
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0283-20	-VC-600	9.9-13.2 ft	112	89	45	44	2	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: RAPID
 Toughness: LOW

Chain of Custody/Analysis Request

Chain of Custody / Analysis Request														
Privileged and Confidential			Site Name:		Location of Site:		Preservative:							
EDD 10/1/06 Lorraine Weber			Onondaga Lake		Syracuse, New York									
Sampler: 1														
PO #:														
Analysis Turnaround Time:														
Standard -														
Rush Charges Authorized for -														
2 weeks -														
1 week -														
Next Day -														
Sample Date			Sample Time		Sample Type		Sample Matrix		Sample Purpose		# of Cont.			
10/4/2006			08:31		SEDIMENT		SOIL		REG		1			
10/4/2006			07:50		SEDIMENT		SOIL		REG		1			
10/4/2006			07:56		SEDIMENT		SOIL		REG		1			
10/4/2006			07:58		SEDIMENT		SOIL		REG		1			
10/4/2006			08:31		SEDIMENT		SOIL		REG		1			
10/4/2006			08:34		SEDIMENT		SOIL		REG		1			
10/4/2006			08:36		SEDIMENT		SOIL		REG		1			
10/4/2006			14:01		SEDIMENT		SOIL		REG		1			
10/4/2006			14:02		SEDIMENT		SOIL		REG		1			
Special Instructions:														
Relinquished by: <i>John M. Chomura</i>														
Relinquished by: <i>John M. Chomura</i>														

Company		Received by:		Company		Condition		Custody Seals Intact	
Date/Time	12/12/06	Date/Time	12/12/06	Date/Time	12/12/06	Date/Time	12/12/06	Date/Time	12/12/06
Company		Company		Company		Company		Company	
Date/Time		Date/Time		Date/Time		Date/Time		Date/Time	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:---		Test Date:	06/23/07
Depth :	---	Sample Id:	---
		Tested By:	mil
		Checked By:	n/a

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60063	OL-0284-01	6.6-9.9 ft	Moist, dark gray silt	89.2
OL-VC-60063	OL-0284-02	13.2-16.5 ft	Moist, very dark grayish brown silt	75.3
OL-VC-60064	OL-0284-03	3.3-6.6 ft	Wet, black silt	91
OL-VC-60064	OL-0284-04	9.9-13.2 ft	Moist, olive brown silt	98.8
OL-VC-60065	OL-0284-05	0-3.3 ft	Wet, black silt	127.7
OL-VC-60065	OL-0284-06	6.6-9.9 ft	Wet, dark gray silt	99
OL-VC-60057	OL-0284-07	0.5-3.3 ft	Wet, dark gray silt	132.5
OL-VC-60057	OL-0284-08	9.9-13.2 ft	Moist, black silt	100.9
OL-VC-60057	OL-0284-09	16.5-19.2 ft	Moist, dark olive brown silt with sand	144.6
OL-VC-60058	OL-0284-10	16.5-19.2 ft	Moist, dark gray silt	86.6

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	06/23/07
Depth :	---	Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-60060	OL-0284-11	3.3-6.6 ft	Moist, dark gray silt with sand	113.2
OL-VC-60060	OL-0284-12	9.9-13.2 ft	Moist, dark gray silt	85.7
OL-VC-60060	OL-0284-13	16.5-19.8 ft	Moist, dark olive brown silt	61.5
OL-VC-60061	OL-0284-14	0-3.3 ft	Moist, black silt with sand	107.3
OL-VC-60061	OL-0284-15	9.9-13.2 ft	Moist, dark gray silt with sand	84.8
OL-VC-60061	OL-0284-16	16.5-19.7 ft	Moist, dark brown silt	69.8
OL-VC-60055	OL-0284-17	0.5-3.3 ft	Wet, black silt	170.7
OL-VC-60055	OL-0284-18	3.3-6.6 ft	Wet, black silt	165.1
OL-VC-60055	OL-0284-19	16.5-19.3 ft	Moist, dark olive brown silt	85.2
OL-VC-60054	OL-0284-20	0.5-3.3 ft	Moist, black silt	45.9

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: yf	
Sample ID:---	Test Date: 01/16/07	Checked By: jdt	
Depth : ---	Test Id: 105795		

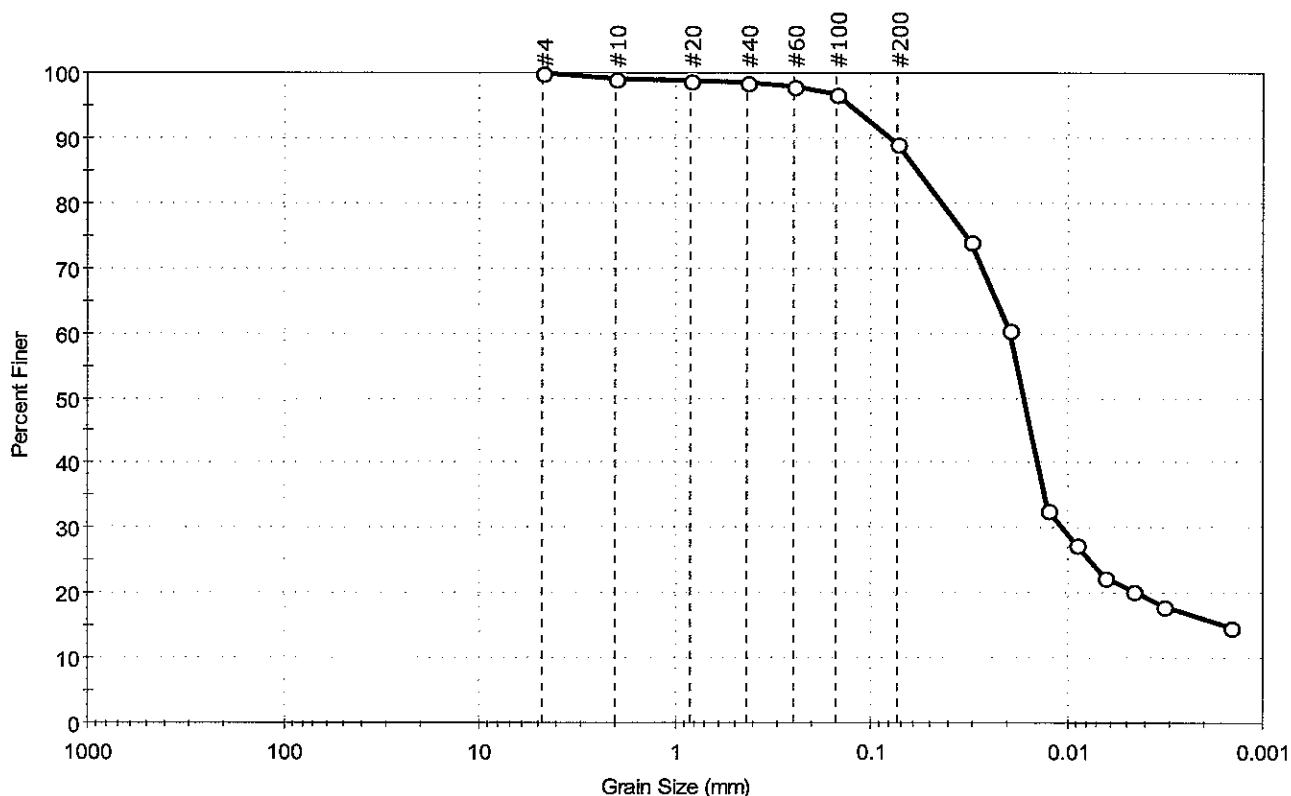
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-60061	OL-0284-15	9.9-13.2 ft	Moist, dark gray silt with sand	2.66
OL-VC-60055	OL-0284-18	3.3-6.6 ft	Wet, black silt	2.51

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60063	Sample Type:	jar
Sample ID:	OL-0284-01	Test Date:	02/02/07
Depth :	6.6-9.9 ft	Test Id:	105754
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	10.9	89.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	98		
#60	0.25	98		
#100	0.15	97		
#200	0.074	89		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0313	74		
---	0.0199	60		
---	0.0126	33		
---	0.0090	27		
---	0.0064	22		
---	0.0046	20		
---	0.0032	18		
---	0.0015	15		

Coefficients

D ₈₅ = 0.0584 mm	D ₃₀ = 0.0106 mm
D ₆₀ = 0.0198 mm	D ₁₅ = 0.0016 mm
D ₅₀ = 0.0168 mm	D ₁₀ = 0.0005 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (32))

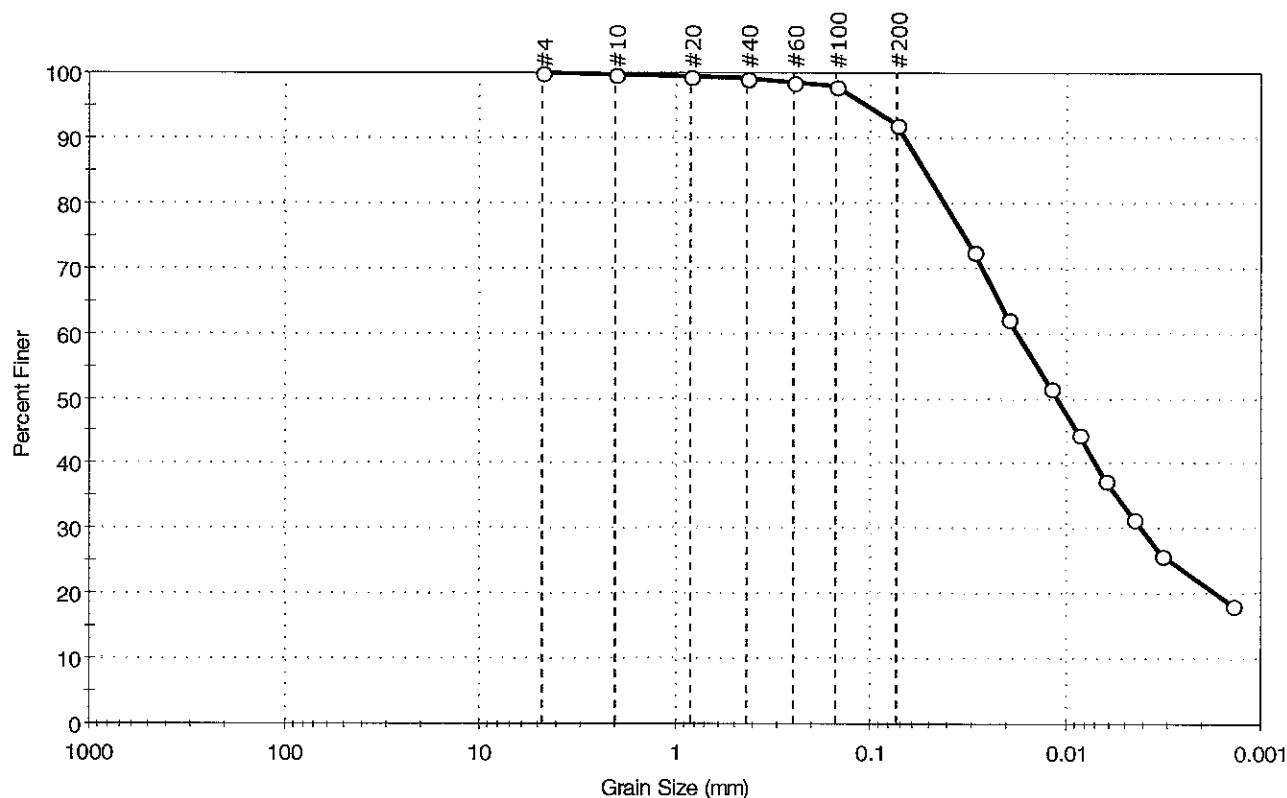
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60063	Sample Type:	jar
Sample ID:	OL-0284-02	Test Date:	02/08/07
Depth :	13.2-16.5 ft	Test Id:	105755
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	8.1	91.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0298	73		
---	0.0199	62		
---	0.0119	52		
---	0.0086	44		
---	0.0062	37		
---	0.0045	32		
---	0.0032	26		
---	0.0014	18		

Coefficients

D ₈₅ = 0.0533 mm	D ₃₀ = 0.0041 mm
D ₆₀ = 0.0180 mm	D ₁₅ = N/A
D ₅₀ = 0.0111 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (37))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60064

Sample Type: jar

Tested By: mll

Sample ID: OL-0284-03

Test Date: 01/25/07

Checked By: jdt

Depth: 3.3-6.6 ft

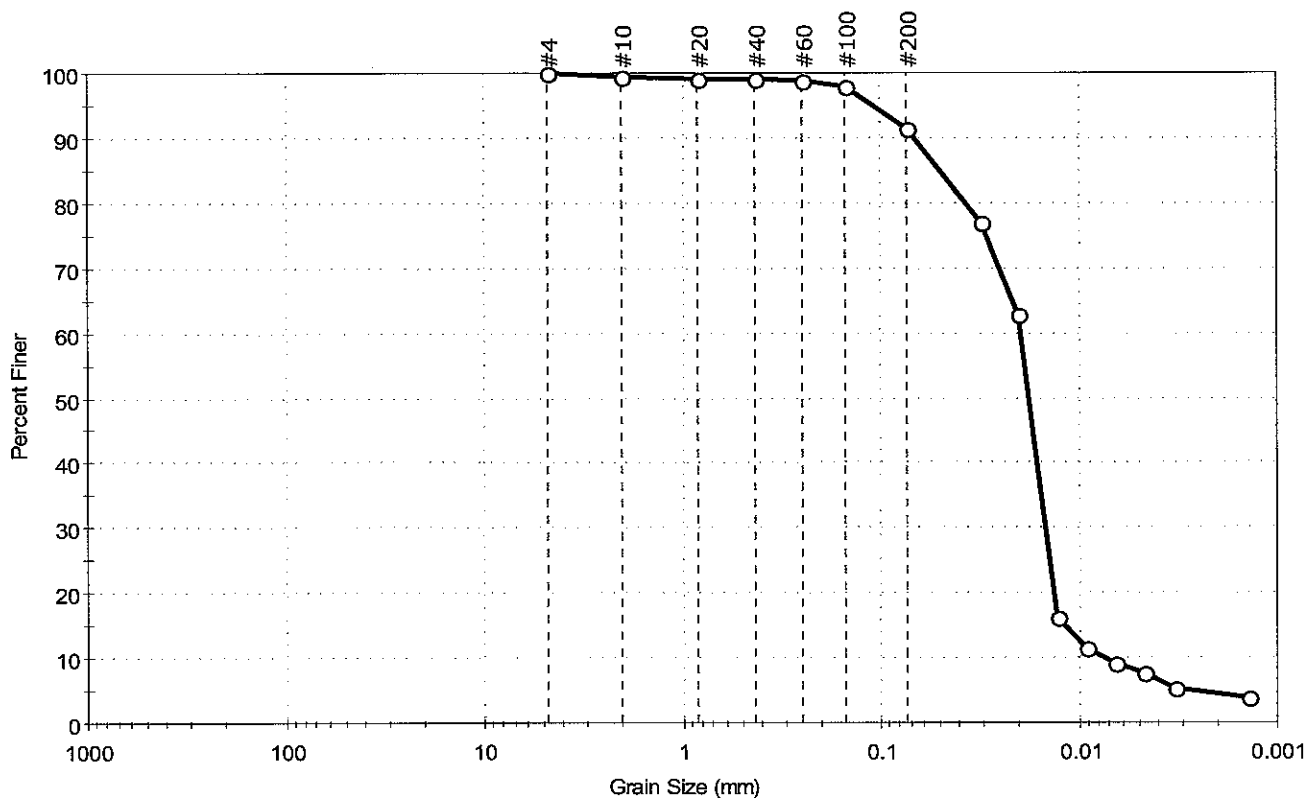
Test Id: 105756

Test Comment: ---

Sample Description: Wet, black silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	8.5	91.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0308	77		
---	0.0200	63		
---	0.0130	16		
---	0.0093	12		
---	0.0065	9		
---	0.0047	8		
---	0.0033	5		
---	0.0014	4		

Coefficients

$D_{85} = 0.0499$ mm $D_{30} = 0.0148$ mm
 $D_{60} = 0.0195$ mm $D_{15} = 0.0118$ mm
 $D_{50} = 0.0178$ mm $D_{10} = 0.0073$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (42))

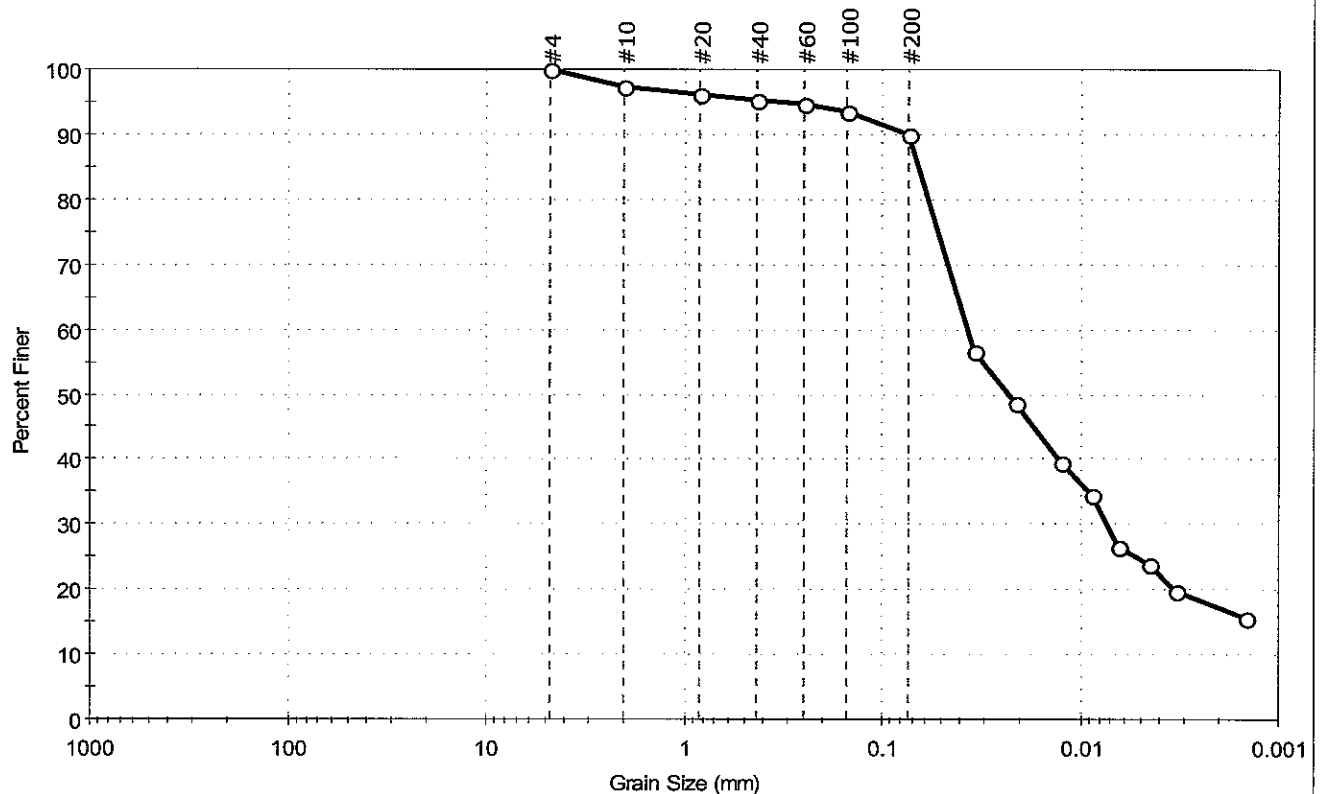
Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60064	Sample Type:	jar
Sample ID:	OL-0284-04	Test Date:	02/02/07
Depth :	9.9-13.2 ft	Test Id:	105757
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	10.2	89.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	97		
#20	0.84	96		
#40	0.42	95		
#60	0.25	95		
#100	0.15	93		
#200	0.074	90		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0340	57		
---	0.0214	49		
---	0.0125	40		
---	0.0088	35		
---	0.0064	27		
---	0.0045	24		
---	0.0033	20		
---	0.0015	16		

Coefficients

D ₈₅ = 0.0661 mm	D ₃₀ = 0.0073 mm
D ₆₀ = 0.0368 mm	D ₁₅ = N/A
D ₅₀ = 0.0231 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (51))

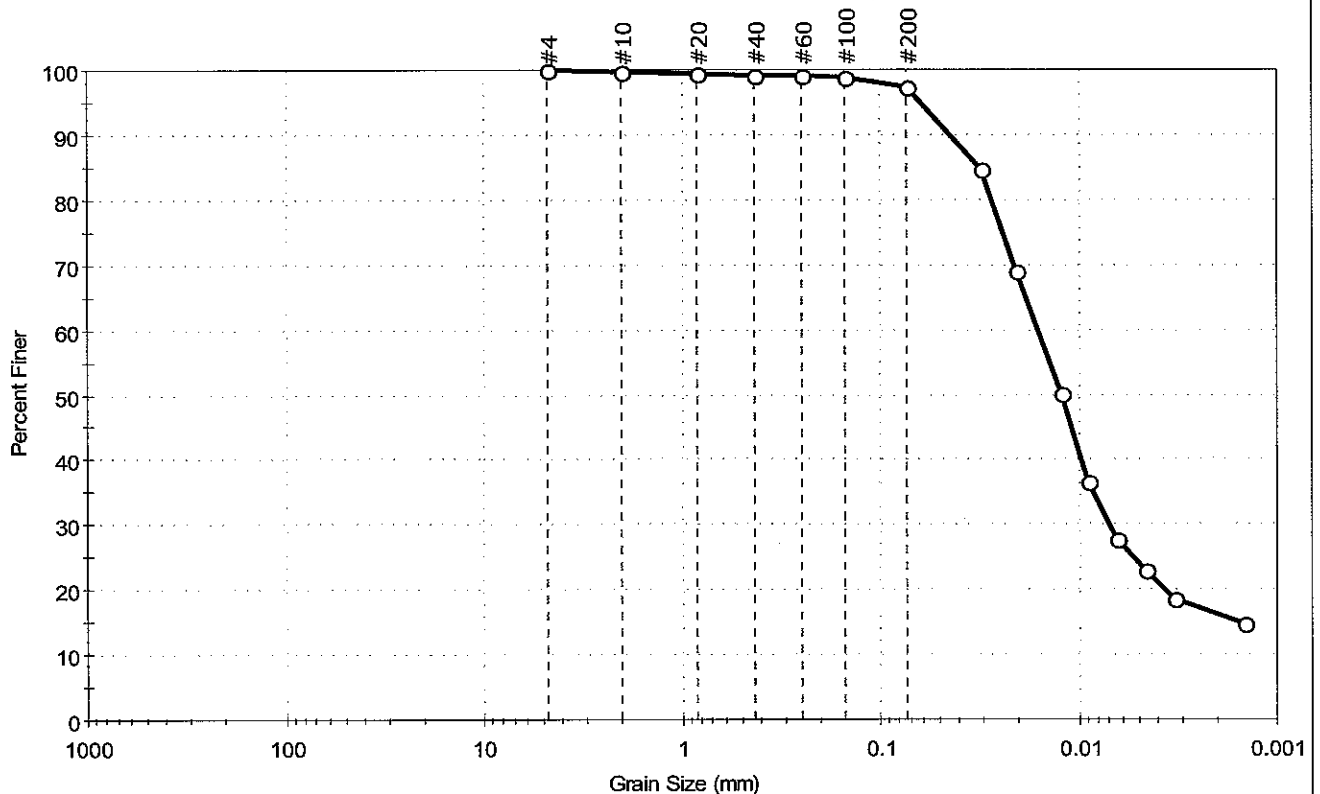
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60065	Sample Type:	jar
Sample ID:	OL-0284-05	Test Date:	02/01/07
Depth :	0-3.3 ft	Test Id:	105758
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.6	97.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0313	85		
---	0.0207	69		
---	0.0123	50		
---	0.0089	37		
---	0.0064	28		
---	0.0046	23		
---	0.0033	19		
---	0.0015	15		

Coefficients

D ₈₅ = 0.0319 mm	D ₃₀ = 0.0070 mm
D ₆₀ = 0.0162 mm	D ₁₅ = 0.0015 mm
D ₅₀ = 0.0123 mm	D ₁₀ = 0.0005 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (55))

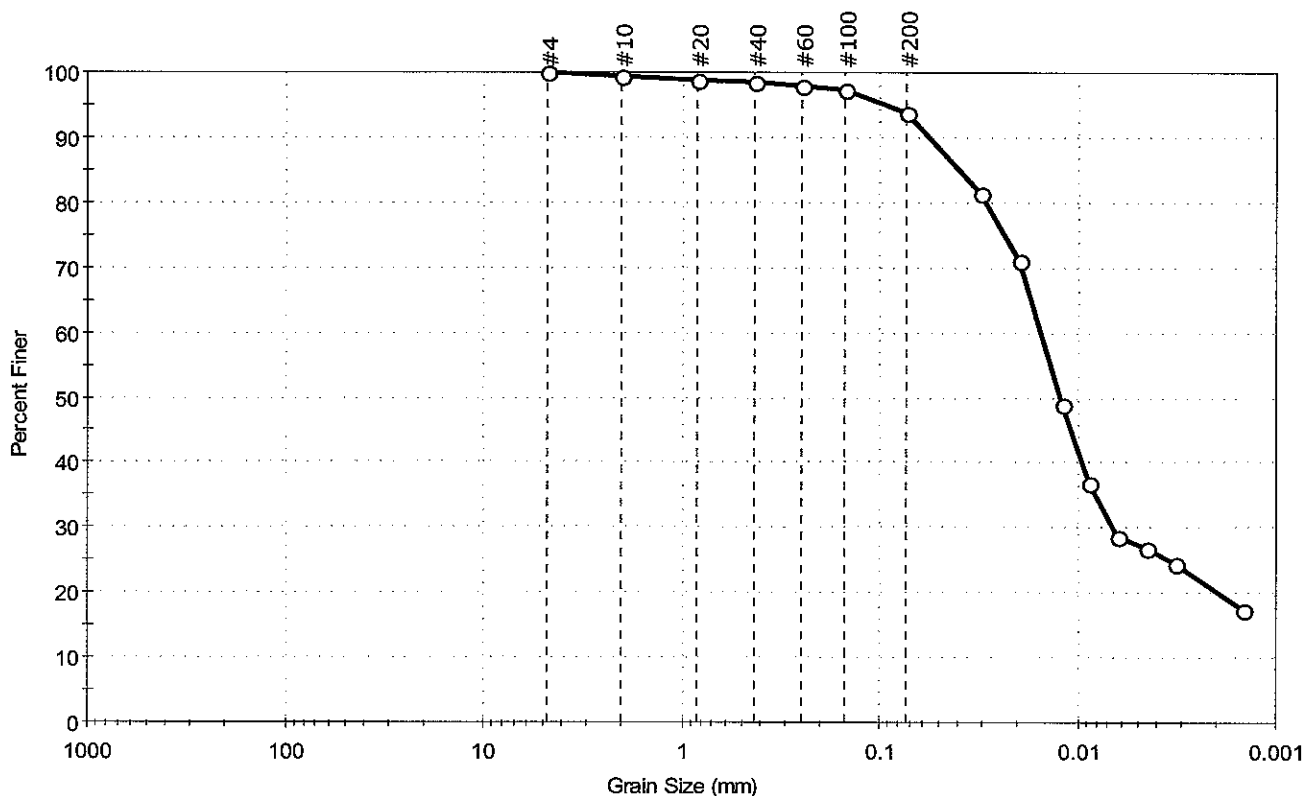
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60065	Sample Type:	jar
Sample ID:	OL-0284-06	Test Date:	02/05/07
Depth :	6.6-9.9 ft	Test Id:	105759
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	6.2	93.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	98		
#60	0.25	98		
#100	0.15	97		
#200	0.074	94		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0313	81		
---	0.0199	71		
---	0.0120	49		
---	0.0088	37		
---	0.0064	29		
---	0.0045	27		
---	0.0032	24		
---	0.0015	17		

Coefficients

D ₈₅ = 0.0404 mm	D ₃₀ = 0.0067 mm
D ₆₀ = 0.0154 mm	D ₁₅ = N/A
D ₅₀ = 0.0123 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (43))

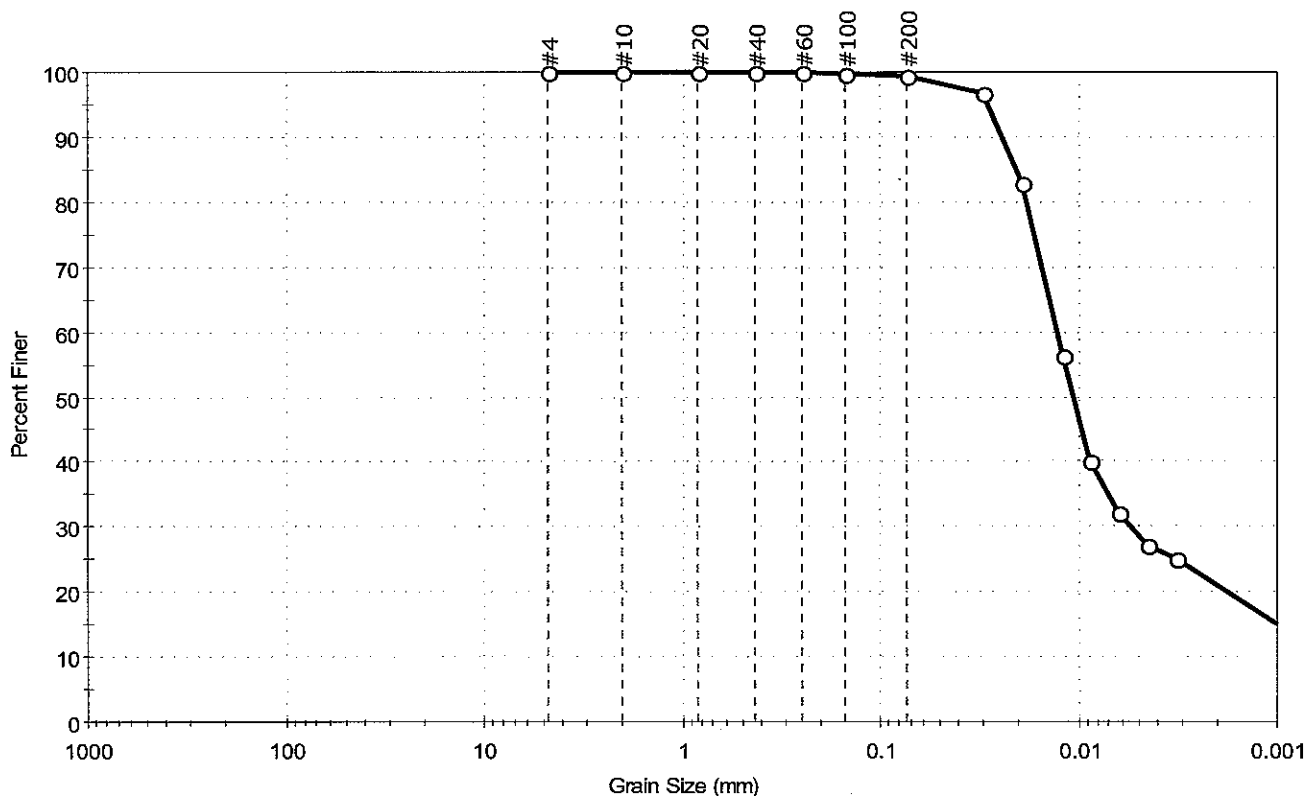
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60057	Sample Type:	jar
Sample ID:	OL-0284-07	Test Date:	02/05/07
Depth :	0.5-3.3 ft	Test Id:	105760
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.5	99.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0302	97		
---	0.0193	83		
---	0.0121	56		
---	0.0088	40		
---	0.0063	32		
---	0.0045	27		
---	0.0032	25		
---	0.0008	13		

Coefficients

D ₈₅ = 0.0206 mm	D ₃₀ = 0.0055 mm
D ₆₀ = 0.0129 mm	D ₁₅ = 0.0010 mm
D ₅₀ = 0.0107 mm	D ₁₀ = 0.0006 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (66))

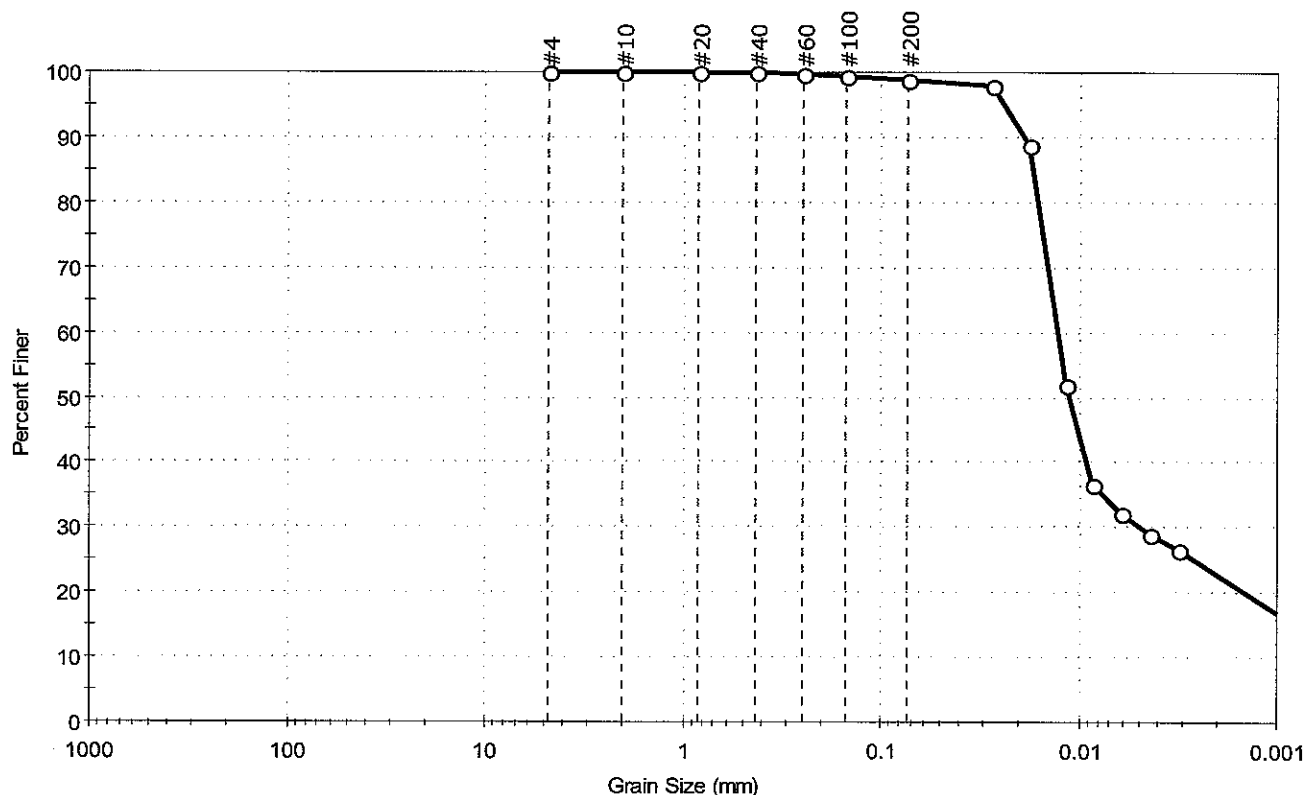
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mli
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60057	Sample Type:	jar
Sample ID:	OL-0284-08	Test Date:	02/05/07
Depth :	9.9-13.2 ft	Test Id:	105761
Test Comment:	---		
Sample Description:	Moist, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.1	98.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0279	98		
---	0.0178	89		
---	0.0117	52		
---	0.0087	37		
---	0.0062	32		
---	0.0044	29		
---	0.0032	27		
---	0.0008	15		

Coefficients

D ₈₅ = 0.0171 mm	D ₃₀ = 0.0050 mm
D ₆₀ = 0.0128 mm	D ₁₅ = 0.0008 mm
D ₅₀ = 0.0113 mm	D ₁₀ = 0.0005 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (58))

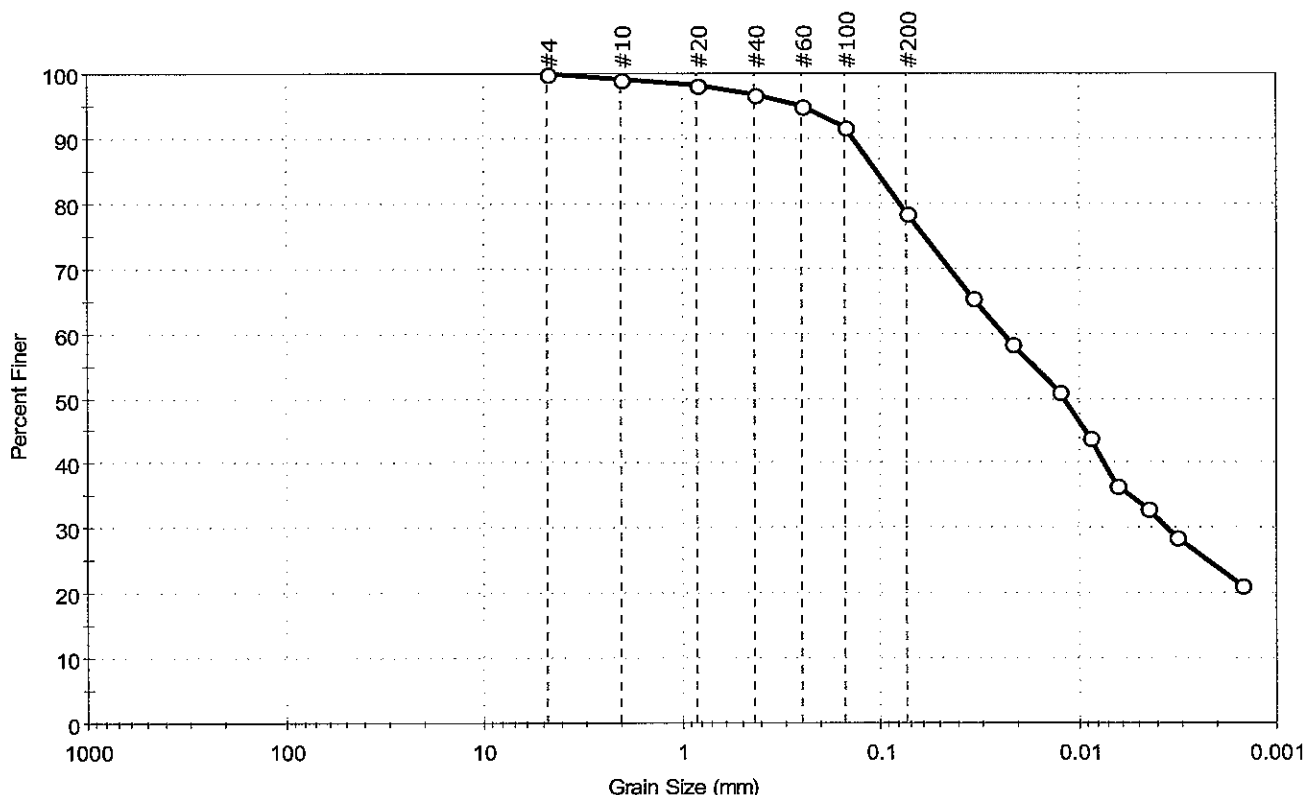
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60057	Sample Type:	jar
Sample ID:	OL-0284-09	Test Date:	02/02/07
Depth :	16.5-19.2 ft	Test Id:	105762
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	21.6	78.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	97		
#60	0.25	95		
#100	0.15	92		
#200	0.074	78		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0344	66		
---	0.0216	58		
---	0.0125	51		
---	0.0089	44		
---	0.0064	37		
---	0.0045	33		
---	0.0032	29		
---	0.0015	21		

Coefficients

D ₈₅ = 0.1049 mm	D ₃₀ = 0.0036 mm
D ₆₀ = 0.0240 mm	D ₁₅ = N/A
D ₅₀ = 0.0119 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (57))

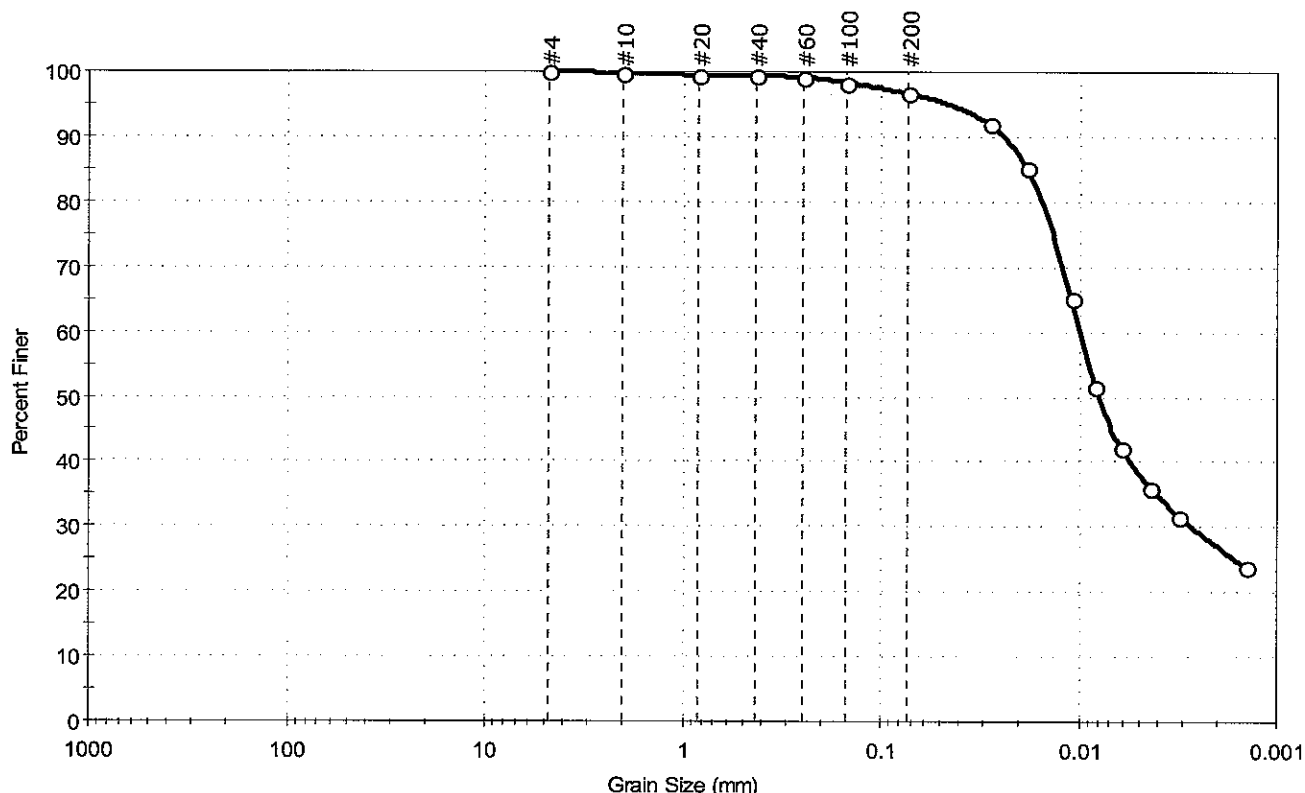
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60058	Sample Type:	jar
Sample ID:	OL-0284-10	Test Date:	02/01/07
Depth :	16.5-19.2 ft	Test Id:	105763
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.3	96.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0285	92		
---	0.0185	85		
---	0.0110	65		
---	0.0083	52		
---	0.0061	42		
---	0.0044	36		
---	0.0031	32		
---	0.0014	24		

Coefficients

D ₈₅ = 0.0184 mm	D ₃₀ = 0.0027 mm
D ₆₀ = 0.0099 mm	D ₁₅ = N/A
D ₅₀ = 0.0079 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (57))

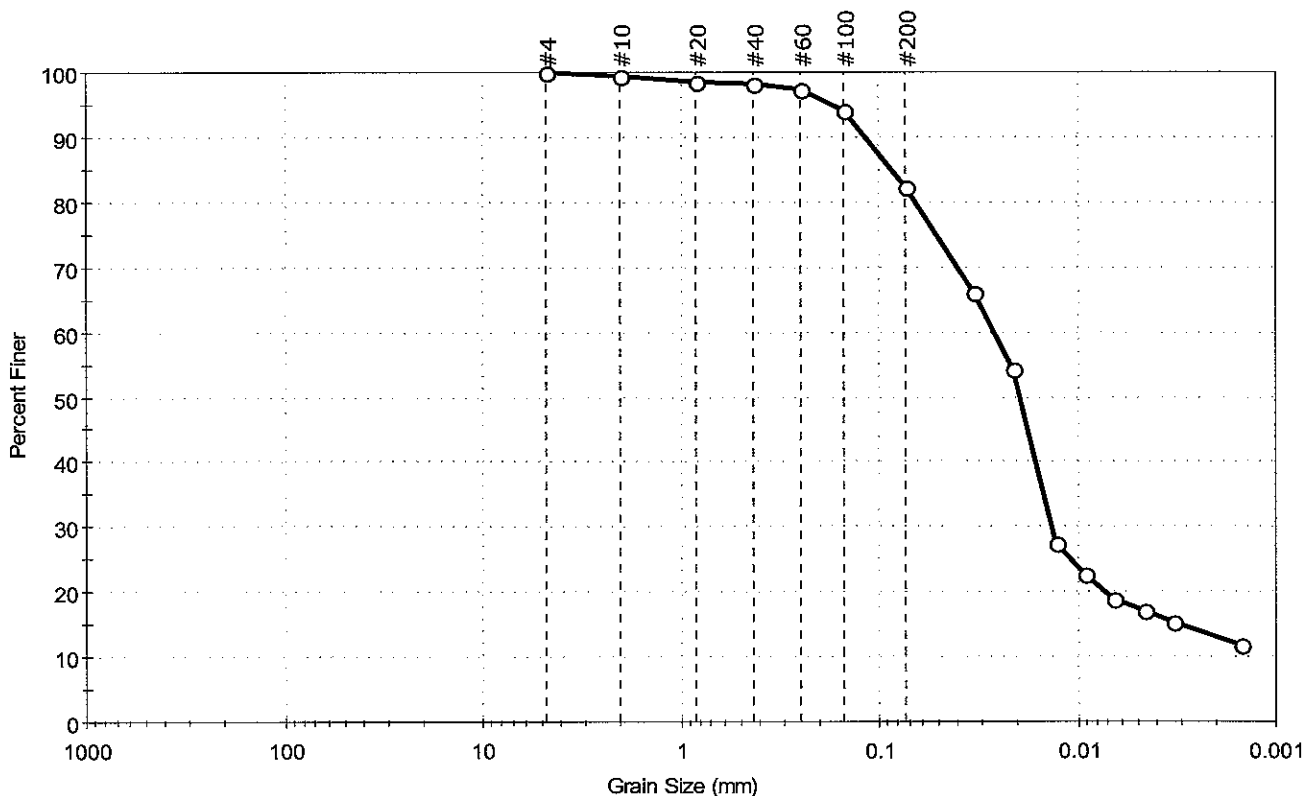
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60060	Sample Type:	jar
Sample ID:	OL-0284-11	Test Date:	02/05/07
Depth :	3.3-6.6 ft	Test Id:	105764
Test Comment:	---		
Sample Description:	Moist, dark gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	17.6	82.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.425	97		
#60	0.25	94		
#100	0.15	82		
#200	0.075	66		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0335	54		
---	0.0213	27		
---	0.0129	23		
---	0.0091	19		
---	0.0065	17		
---	0.0046	15		
---	0.0033	12		
---	0.0015			

Coefficients

D ₈₅ = 0.0863 mm	D ₃₀ = 0.0135 mm
D ₆₀ = 0.0266 mm	D ₁₅ = 0.0030 mm
D ₅₀ = 0.0197 mm	D ₁₀ = 0.0010 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (36))

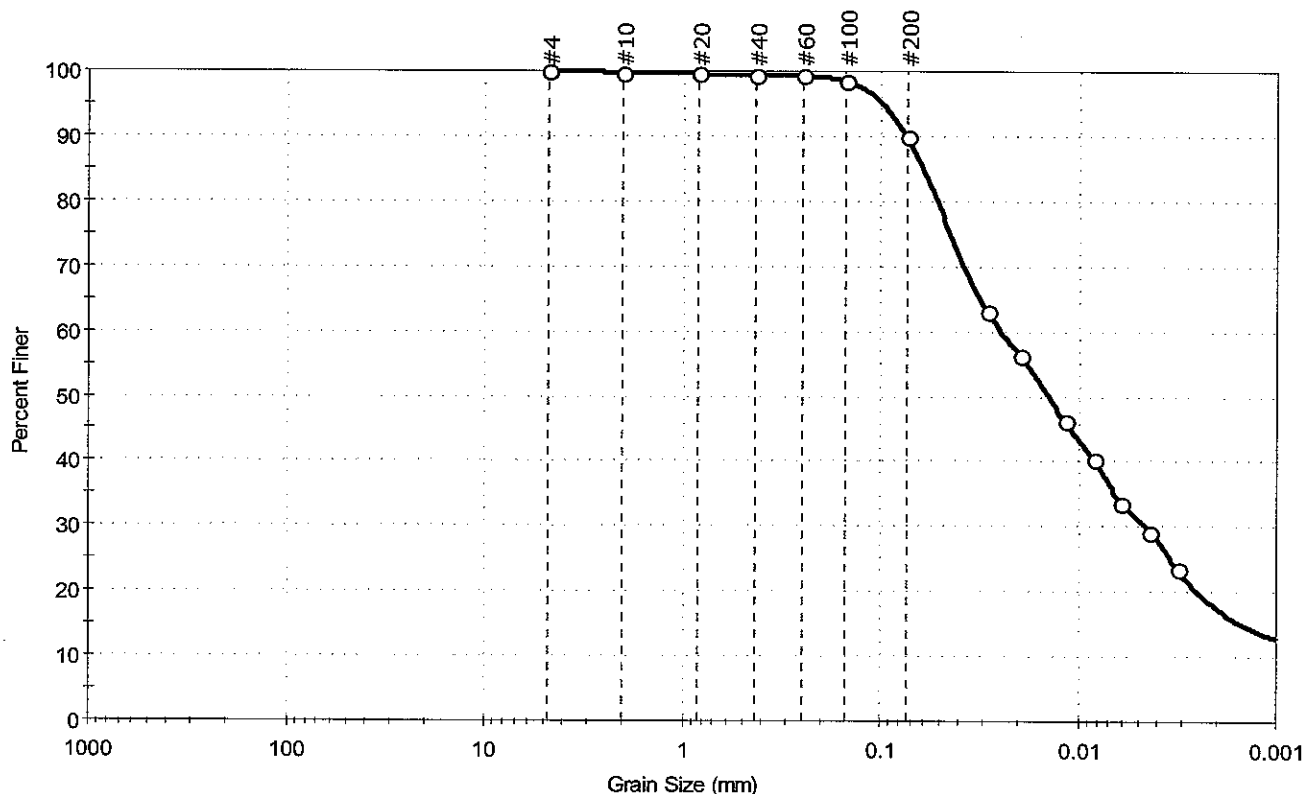
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60060	Sample Type:	jar
Sample ID:	OL-0284-12	Test Date:	02/05/07
Depth :	9.9-13.2 ft	Test Id:	105765
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	10.0	90.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	90		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0291	63		
---	0.0196	56		
---	0.0117	46		
---	0.0085	40		
---	0.0061	34		
---	0.0044	29		
---	0.0032	23		
---	0.0008	12		

Coefficients

$D_{85} = 0.0622$ mm	$D_{30} = 0.0046$ mm
$D_{60} = 0.0243$ mm	$D_{15} = 0.0012$ mm
$D_{50} = 0.0142$ mm	$D_{10} = 0.0007$ mm
$C_u = N/A$	$C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (39))

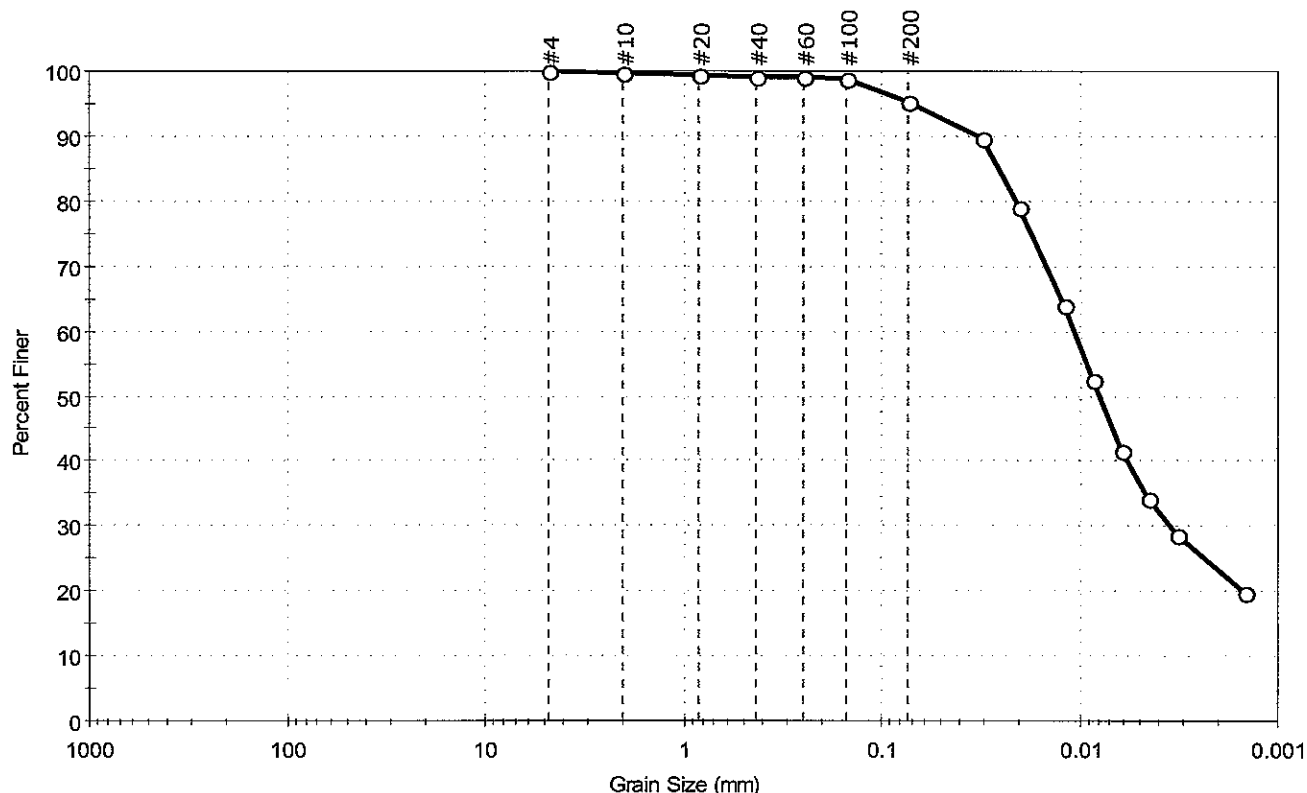
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60060	Sample Type:	jar
Sample ID:	OL-0284-13	Test Date:	02/02/07
Depth :	16.5-19.8 ft	Test Id:	105766
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	4.7	95.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0312	90		
---	0.0201	79		
---	0.0119	64		
---	0.0086	52		
---	0.0062	42		
---	0.0045	34		
---	0.0032	29		
---	0.0015	20		

Coefficients

D ₈₅ = 0.0257 mm	D ₃₀ = 0.0035 mm
D ₆₀ = 0.0106 mm	D ₁₅ = N/A
D ₅₀ = 0.0080 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (40))

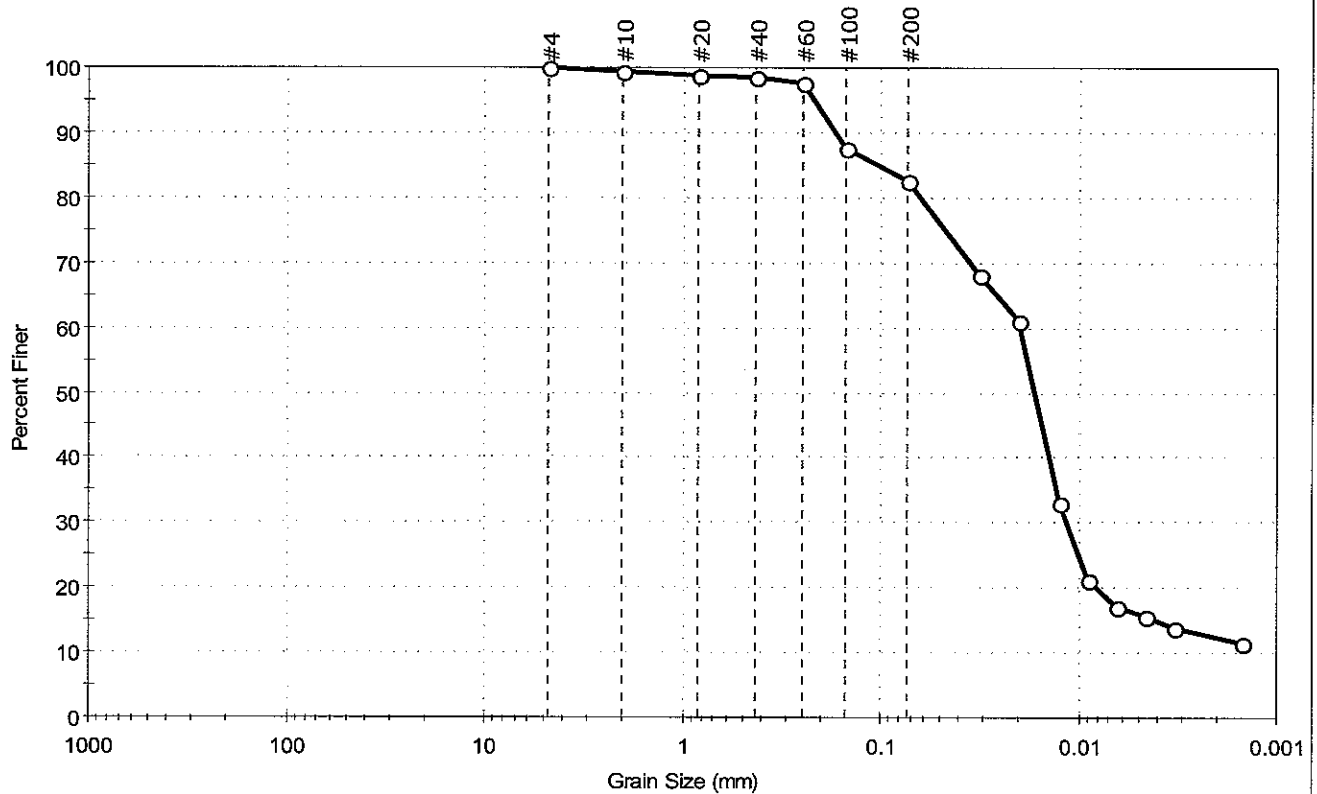
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60061	Sample Type:	jar
Sample ID:	OL-0284-14	Test Date:	02/02/07
Depth :	0-3.3 ft	Test Id:	105767
Test Comment:	---		
Sample Description:	Moist, black silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	17.3	82.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	98		
#60	0.25	98		
#100	0.15	88		
#200	0.074	83		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0315	68		
---	0.0202	61		
---	0.0125	33		
---	0.0090	21		
---	0.0065	17		
---	0.0046	16		
---	0.0033	14		
---	0.0015	12		

Coefficients

D ₈₅ = 0.1031 mm	D ₃₀ = 0.0115 mm
D ₆₀ = 0.0199 mm	D ₁₅ = 0.0041 mm
D ₅₀ = 0.0167 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (40))

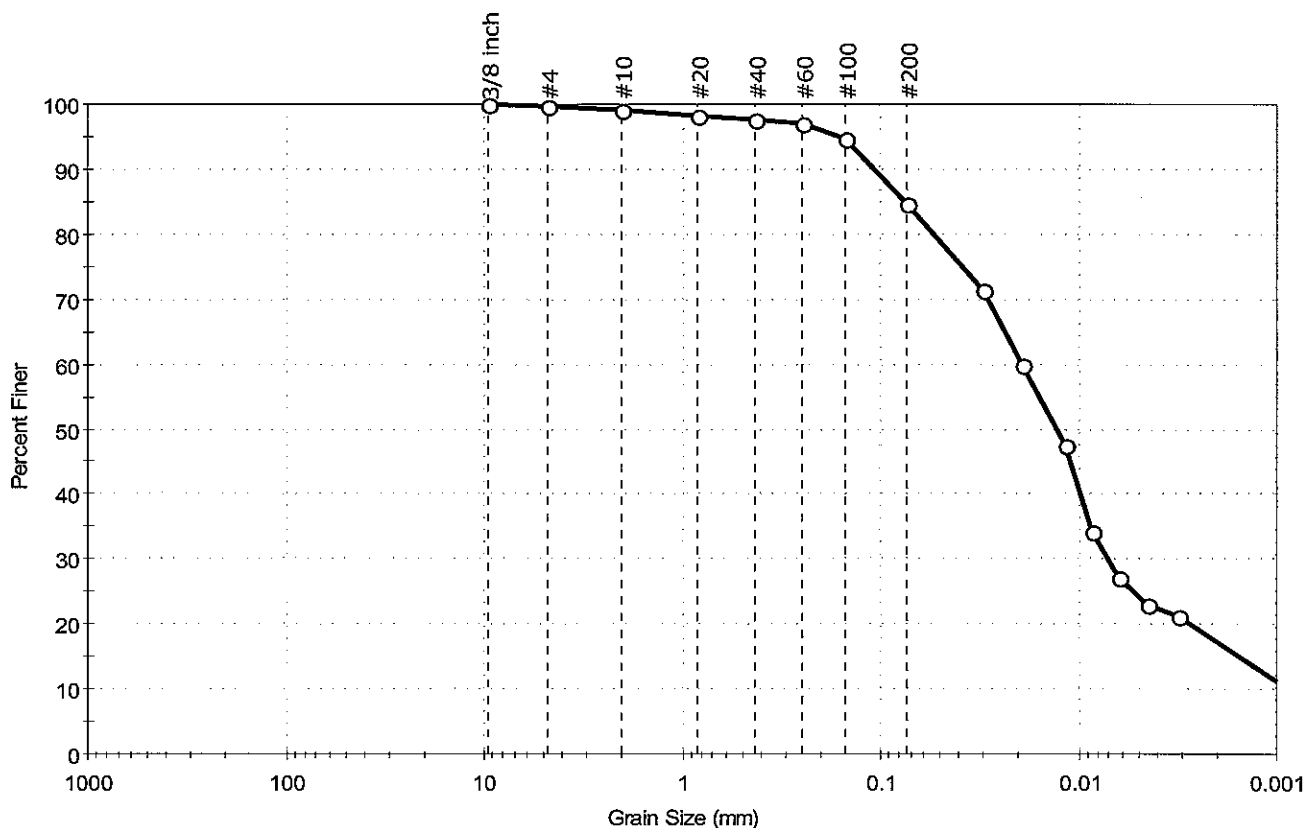
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60061	Sample Type:	jar
Sample ID:	OL-0284-15	Test Date:	02/05/07
Depth :	9.9-13.2 ft	Test Id:	105768
Test Comment:	---		
Sample Description:	Moist, dark gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.2	15.1	84.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	98		
#60	0.25	97		
#100	0.15	95		
#200	0.074	85		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0301	71		
---	0.0194	60		
---	0.0117	48		
---	0.0086	34		
---	0.0063	27		
---	0.0045	23		
---	0.0032	21		
---	0.0008	9		

Coefficients

D ₈₅ = 0.0755 mm	D ₃₀ = 0.0071 mm
D ₆₀ = 0.0195 mm	D ₁₅ = 0.0016 mm
D ₅₀ = 0.0129 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (43))

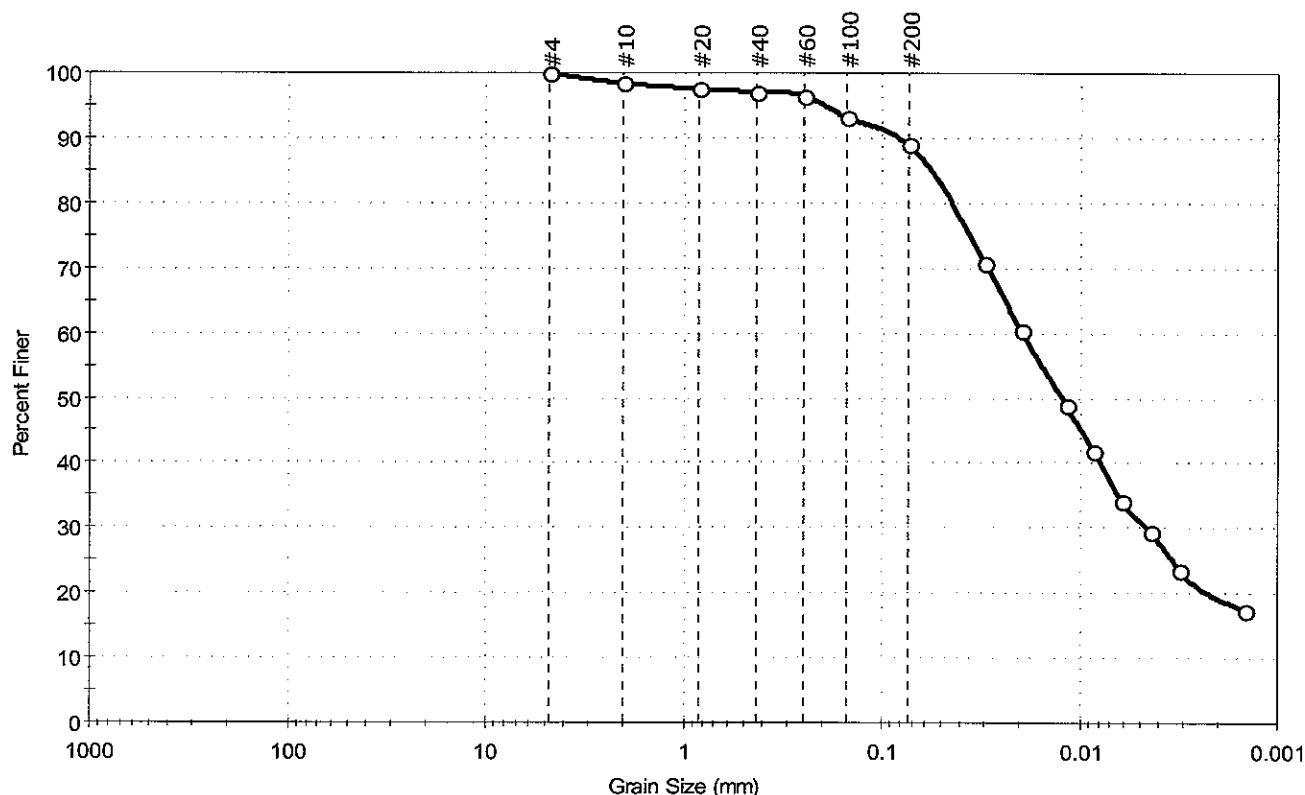
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60061	Sample Type:	jar
Sample ID:	OL-0284-16	Test Date:	02/02/07
Depth :	16.5-19.7 ft	Test Id:	105769
Test Comment:	---		
Sample Description:	Moist, dark brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	10.9	89.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	98		
#40	0.42	97		
#60	0.25	96		
#100	0.15	93		
#200	0.074	89		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0303	71		
---	0.0198	60		
---	0.0118	49		
---	0.0085	42		
---	0.0061	34		
---	0.0044	29		
---	0.0032	24		
---	0.0015	17		

Coefficients

D ₈₅ = 0.0607 mm	D ₃₀ = 0.0046 mm
D ₆₀ = 0.0194 mm	D ₁₅ = N/A
D ₅₀ = 0.0123 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Silts (A-7-5 (39))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60055

Sample Type: jar

Tested By: mll

Sample ID: OL-0284-17

Test Date: 02/05/07

Checked By: jdt

Depth: 0.5-3.3 ft

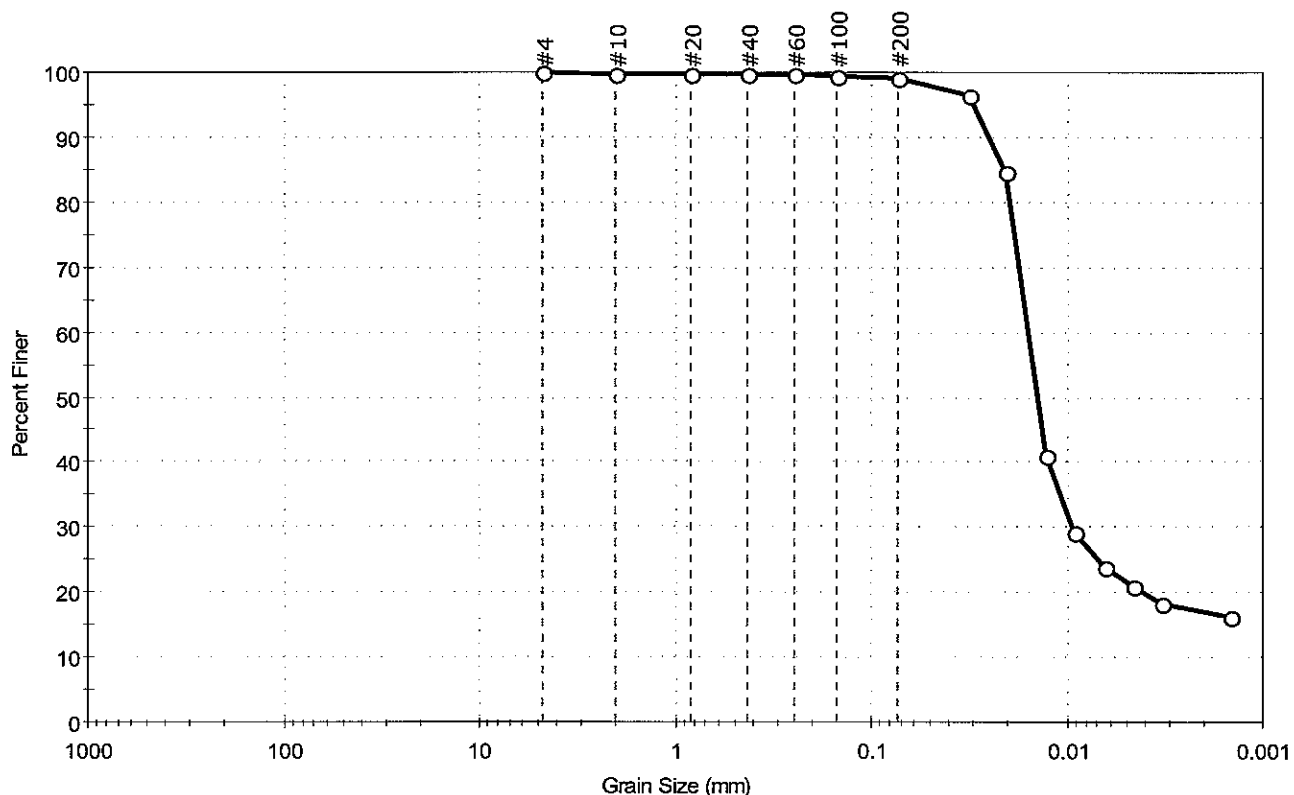
Test Id: 105770

Test Comment: ---

Sample Description: Wet, black silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0319	97		
---	0.0205	85		
---	0.0125	41		
---	0.0091	29		
---	0.0065	24		
---	0.0046	21		
---	0.0033	18		
---	0.0015	16		

Coefficients

$D_{85} = 0.0207$ mm $D_{30} = 0.0094$ mm
 $D_{60} = 0.0156$ mm $D_{15} = \text{N/A}$
 $D_{50} = 0.0140$ mm $D_{10} = \text{N/A}$
 $C_u = \text{N/A}$ $C_c = \text{N/A}$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Silts (A-7-5 (93))

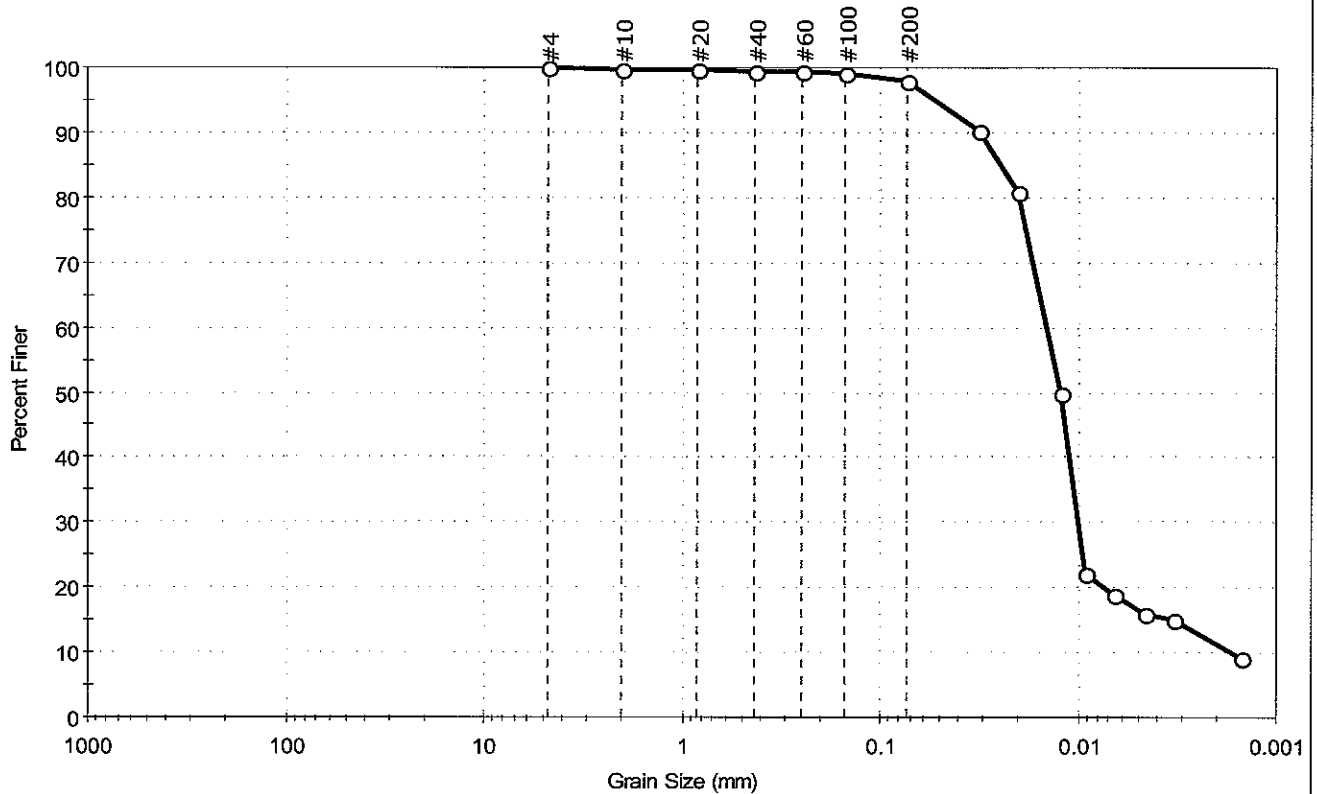
Sample/Test Description

Sand/Gravel Particle Shape: ---

Sand/Gravel Hardness: ---

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Tested By:	mll
Boring ID:	OL-VC-60055	Test Date:	02/01/07
Sample ID:	OL-0284-18	Checked By:	jdt
Depth :	3.3-6.6 ft	Test Id:	105771
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.9	98.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	90		
---	0.0202	81		
---	0.0124	50		
---	0.0092	22		
---	0.0066	19		
---	0.0046	16		
---	0.0033	15		
---	0.0015	9		

Coefficients

D ₈₅ = 0.0248 mm	D ₃₀ = 0.0100 mm
D ₆₀ = 0.0145 mm	D ₁₅ = 0.0033 mm
D ₅₀ = 0.0124 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (96))

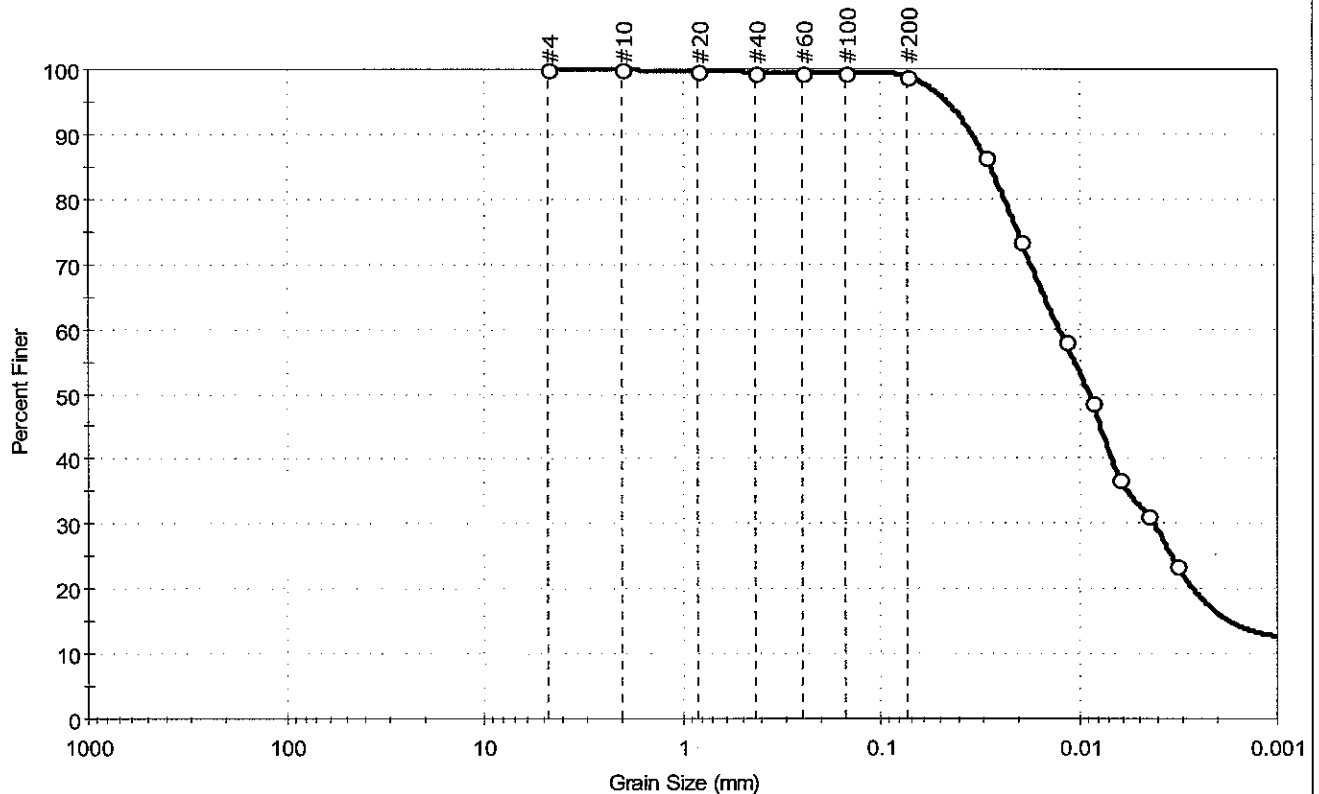
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60055	Sample Type:	jar
Sample ID:	OL-0284-19	Test Date:	02/05/07
Depth :	16.5-19.3 ft	Test Id:	105772
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.1	98.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0297	86		
---	0.0196	74		
---	0.0118	58		
---	0.0085	49		
---	0.0062	37		
---	0.0044	31		
---	0.0032	24		
---	0.0008	12		

Coefficients

D ₈₅ = 0.0284 mm	D ₃₀ = 0.0042 mm
D ₆₀ = 0.0126 mm	D ₁₅ = 0.0011 mm
D ₅₀ = 0.0090 mm	D ₁₀ = 0.0006 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (58))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-60054

Sample Type: jar

Tested By: mll

Sample ID: OL-0284-20

Test Date: 01/25/07

Checked By: jdt

Depth: 0.5-3.3 ft

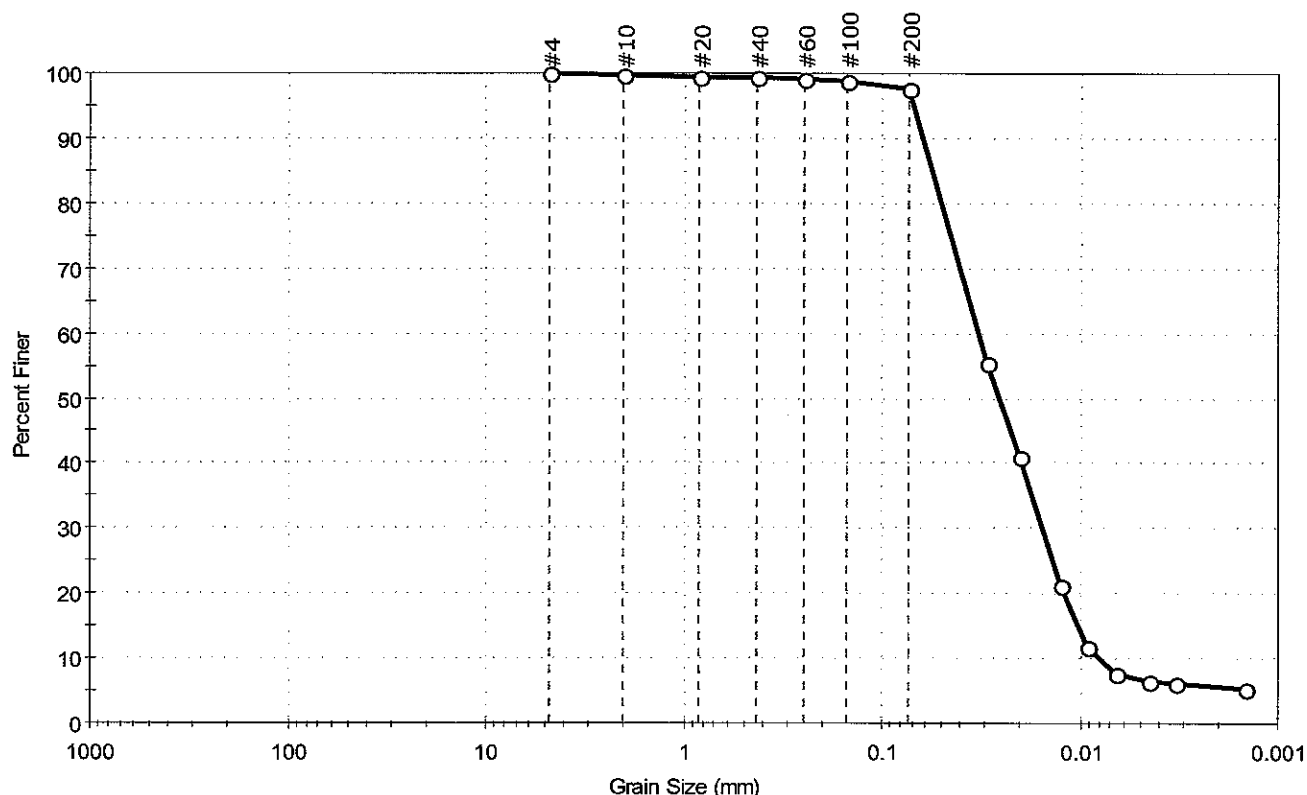
Test Id: 105773

Test Comment: ---

Sample Description: Moist, black silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.2	97.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0299	56		
---	0.0200	41		
---	0.0126	21		
---	0.0092	12		
---	0.0066	8		
---	0.0045	7		
---	0.0033	6		
---	0.0015	5		

Coefficients

$D_{85} = 0.0563$ mm $D_{30} = 0.0155$ mm
 $D_{60} = 0.0329$ mm $D_{15} = 0.0103$ mm
 $D_{50} = 0.0257$ mm $D_{10} = 0.0080$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (100))

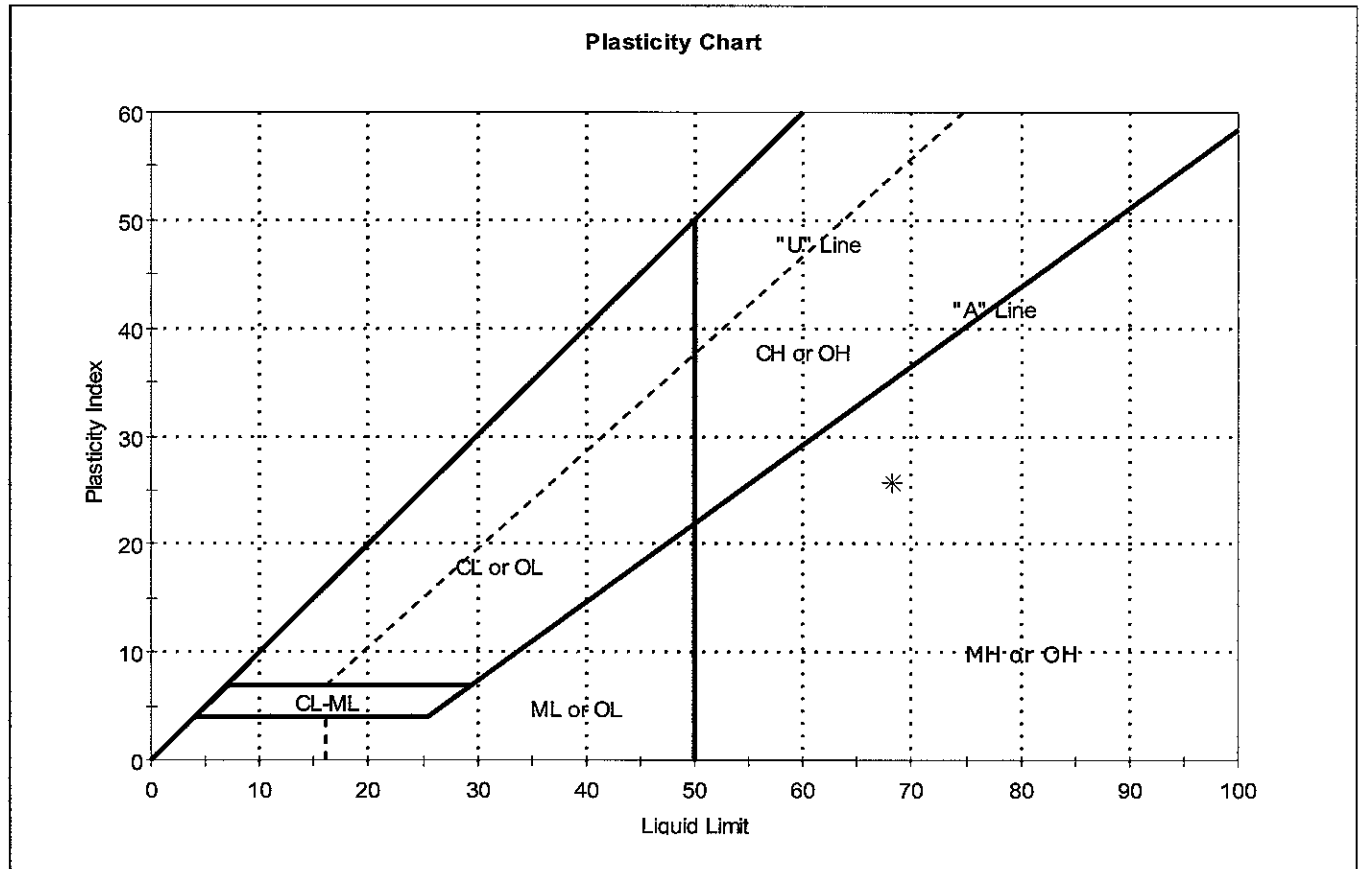
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60063	Sample Type:	jar
Sample ID:	OL-0284-01	Test Date:	01/11/07
Depth :	6.6-9.9 ft	Test Id:	105734
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

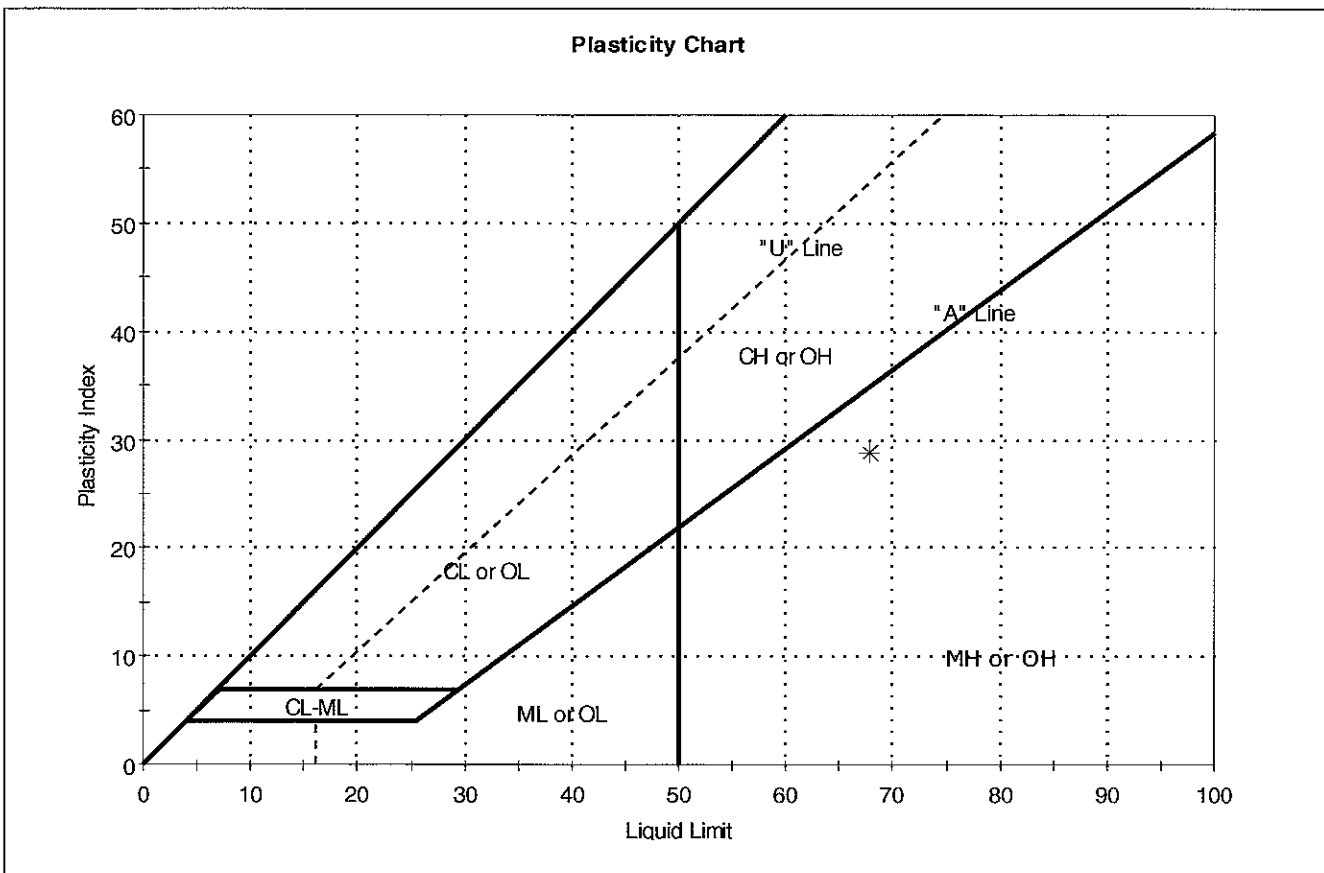


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-01	-VC-600	6.6-9.9 ft	89	68	43	25	2	elastic silt (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60063	Sample Type:	jar
Sample ID:	OL-0284-02	Test Date:	01/25/07
Depth :	13.2-16.5 ft	Test Id:	105735
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

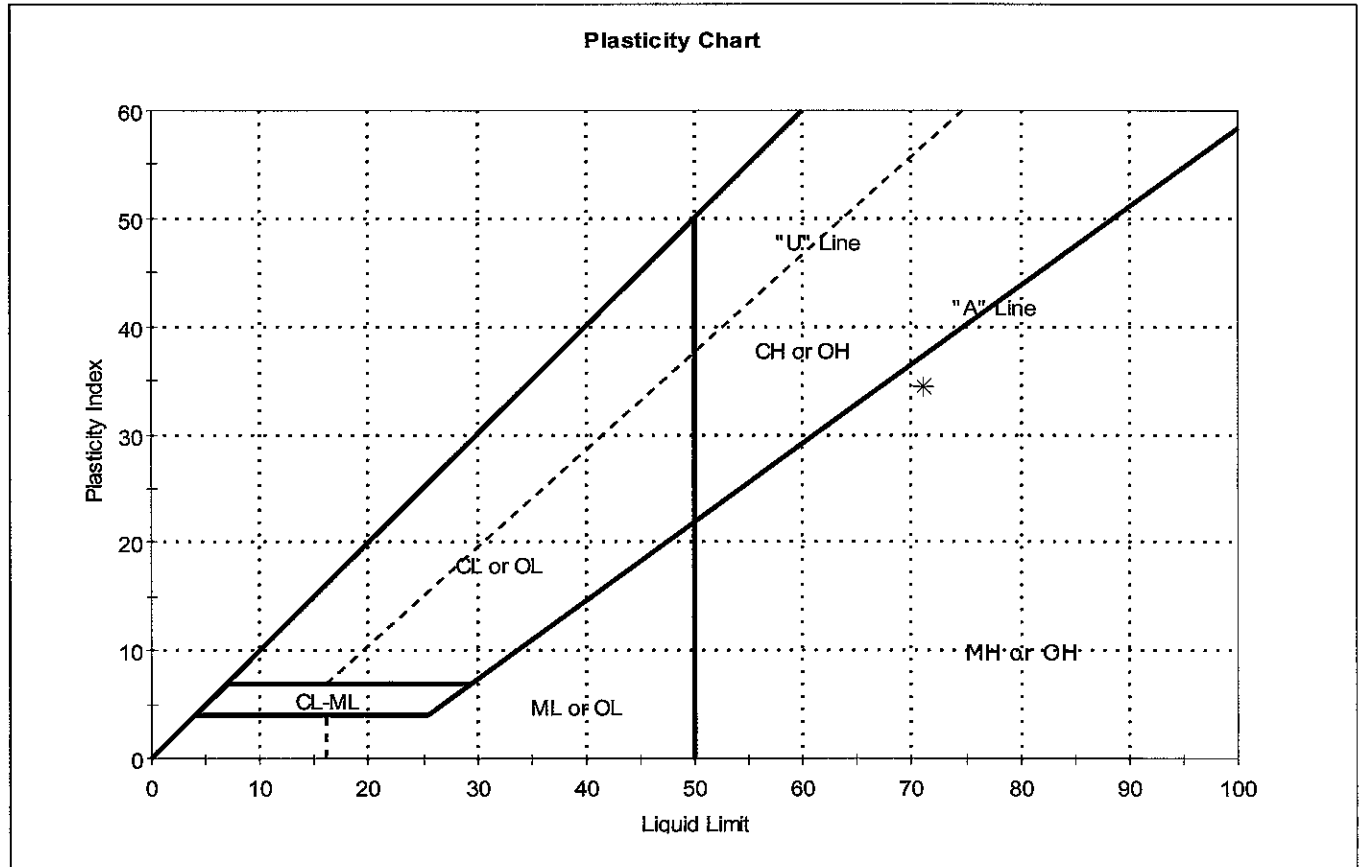


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-02	L-VC-60063	13.2-16.5 ft	75	68	39	29	1	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60064	Sample Type:	jar
Sample ID:	OL-0284-03	Test Date:	01/10/07
Depth :	3.3-6.6 ft	Test Id:	105736
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-03	-VC-600	3.3-6.6 ft	91	71	37	34	2	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

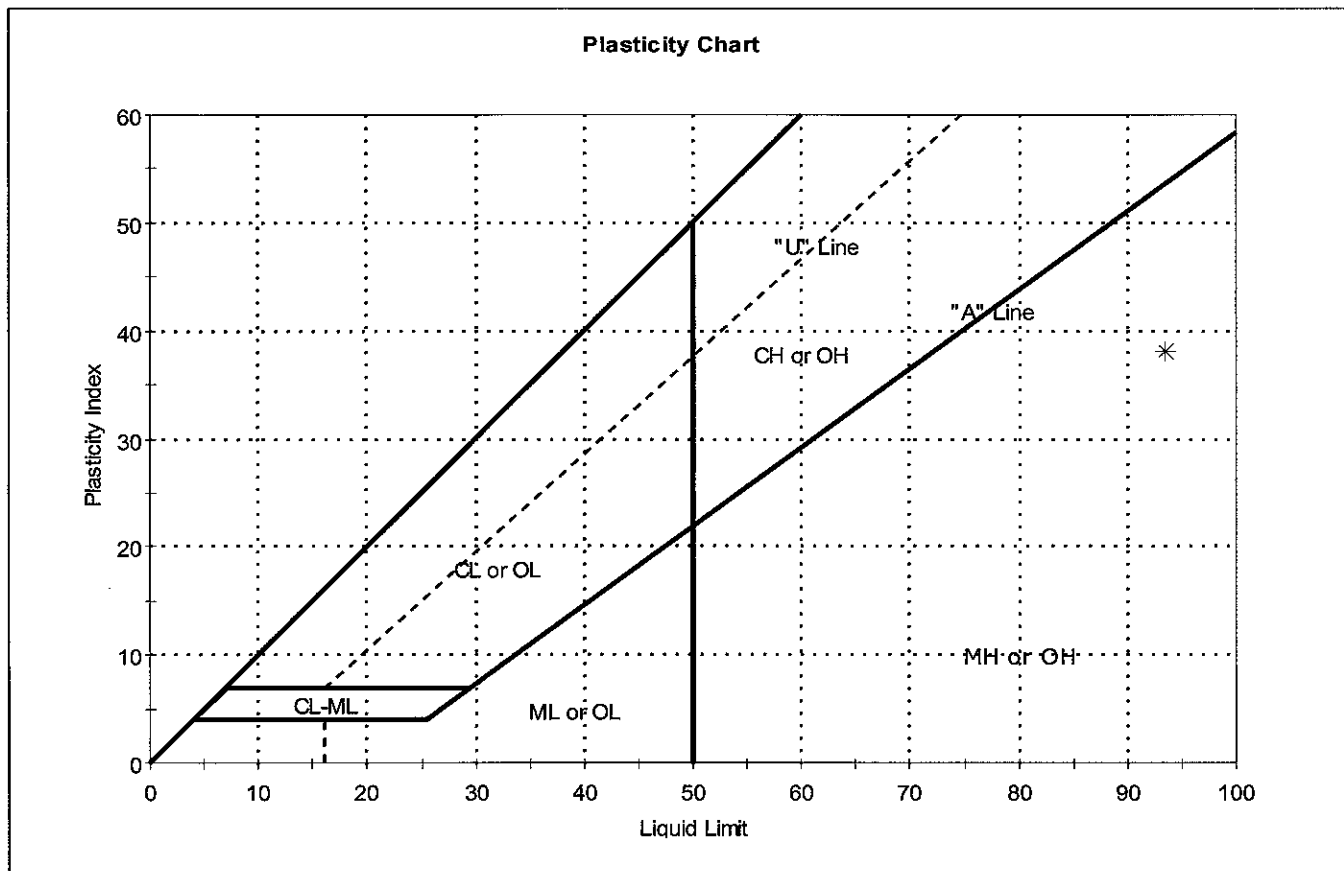
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60064	Sample Type:	jar
Sample ID:	OL-0284-04	Test Date:	01/11/07
Depth :	9.9-13.2 ft	Test Id:	105737
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-04	-VC-600	9.9-13.2 ft	99	94	55	39	1	elastic silt (MH)

Sample Prepared using the WET method

5% Retained on #40 Sieve

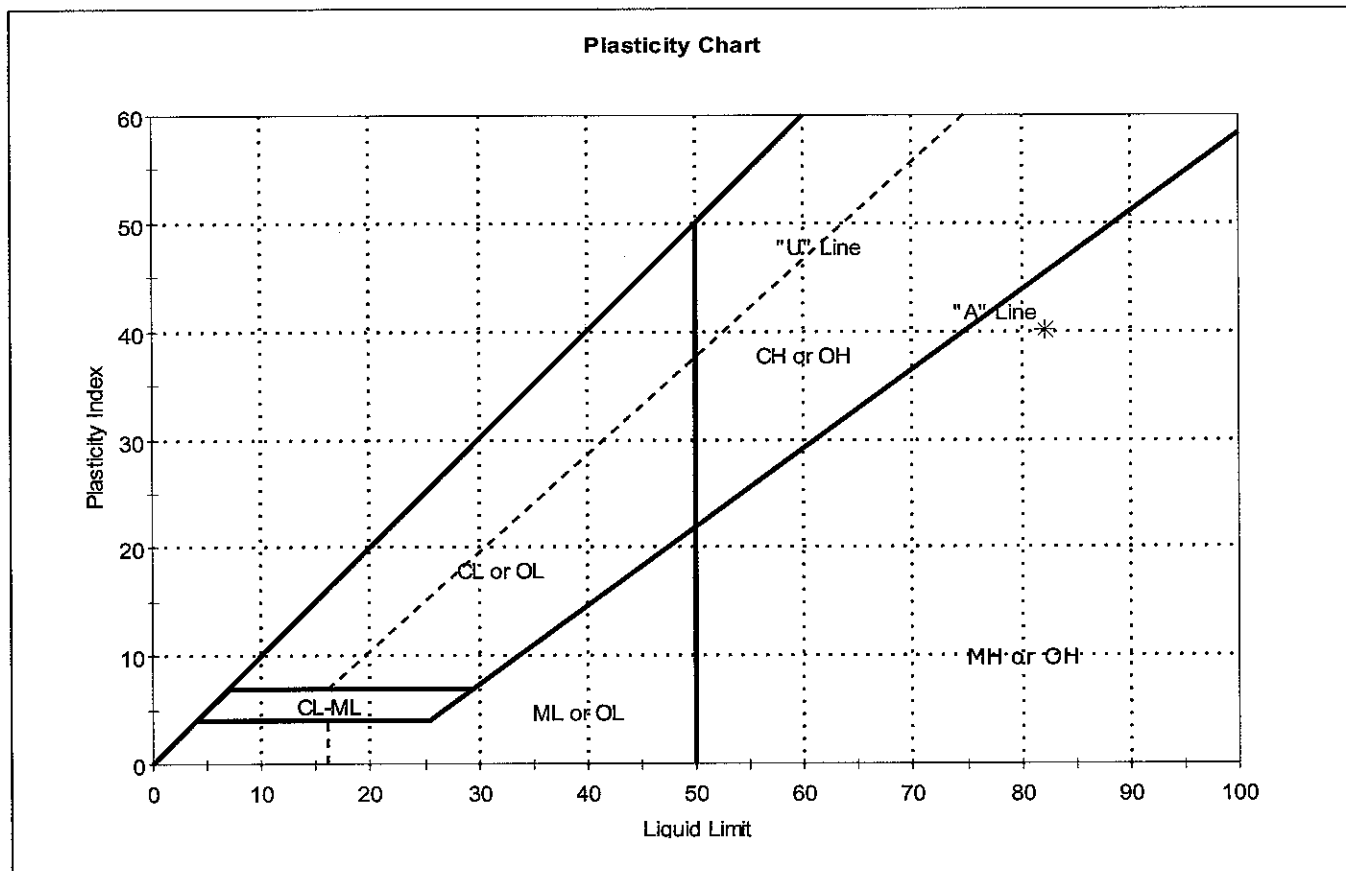
Dry Strength: HIGH

Dillectancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60065	Sample Type:	jar
Sample ID:	OL-0284-05	Test Date:	01/25/07
Depth :	0-3.3 ft	Test Id:	105738
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-05	-VC-60065	0-3.3 ft	128	82	42	40	2	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

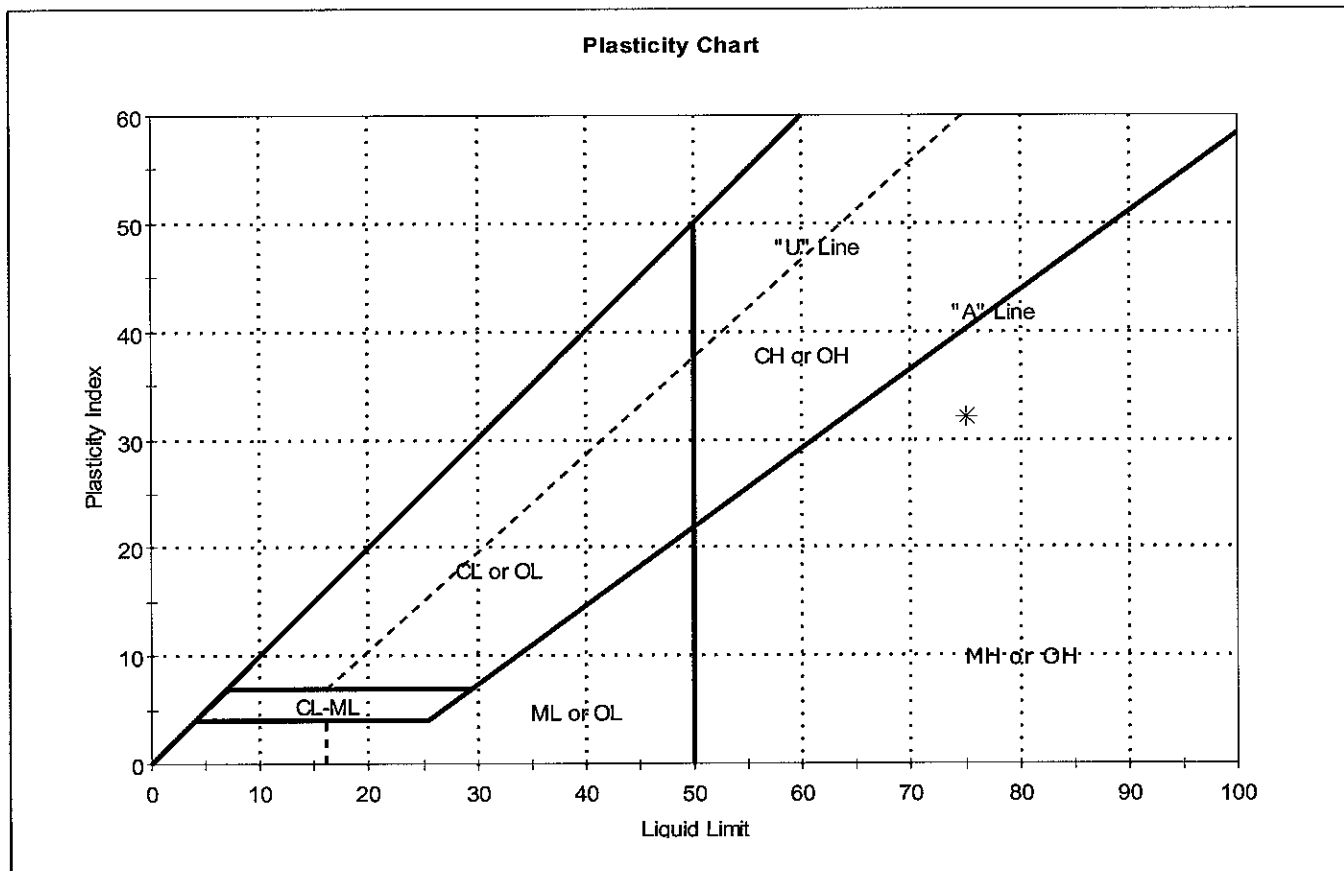
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60065	Sample Type:	jar
Sample ID:	OL-0284-06	Test Date:	01/24/07
Depth :	6.6-9.9 ft	Test Id:	105739
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

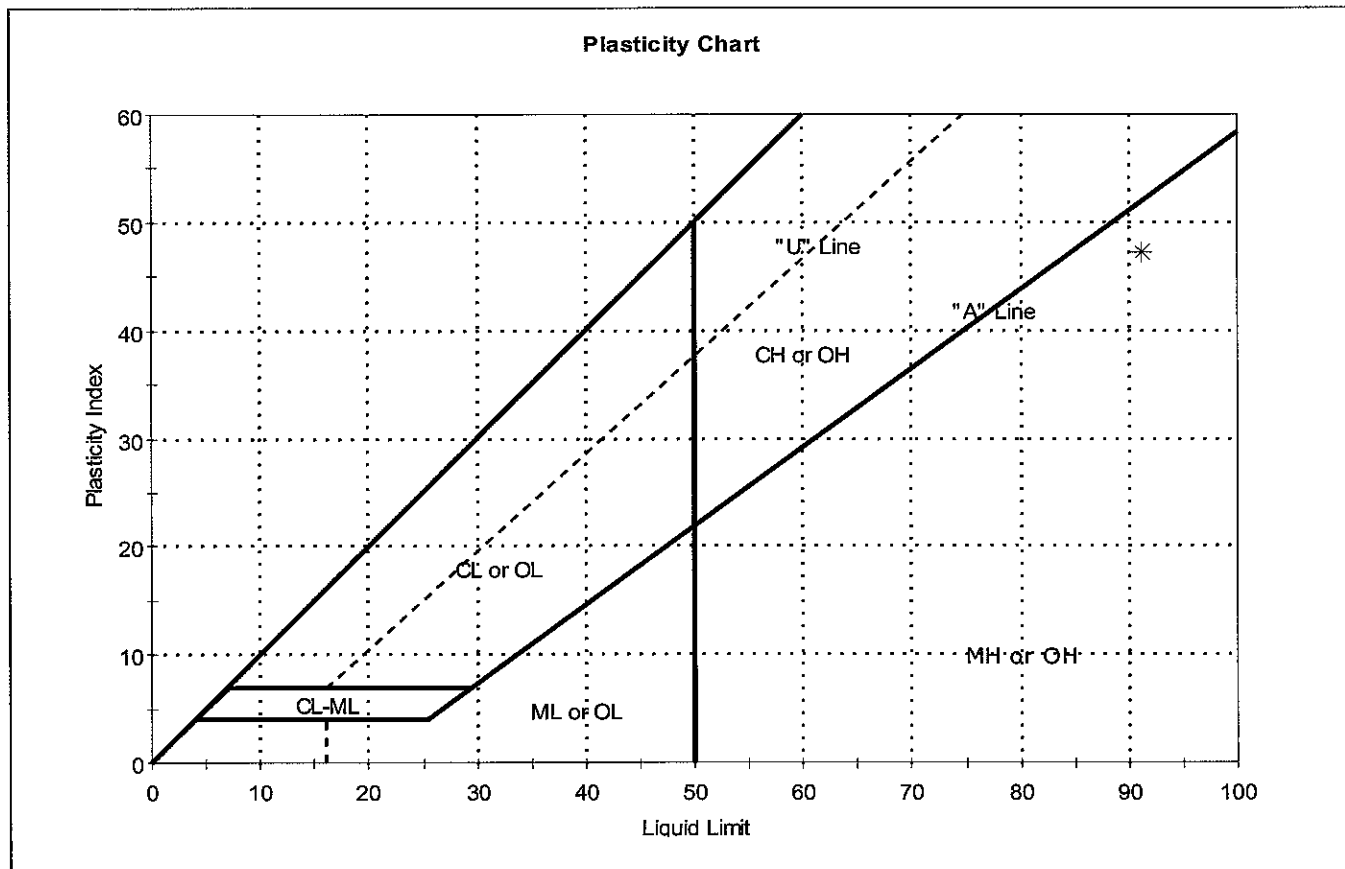


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-06	-VC-600	6.6-9.9 ft	99	75	43	32	2	elastic silt (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60057	Sample Type:	jar
Sample ID:	OL-0284-07	Test Date:	01/23/07
Depth :	0.5-3.3 ft	Test Id:	105740
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-07	L-VC-6001	0.5-3.3 ft	132	91	44	47	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

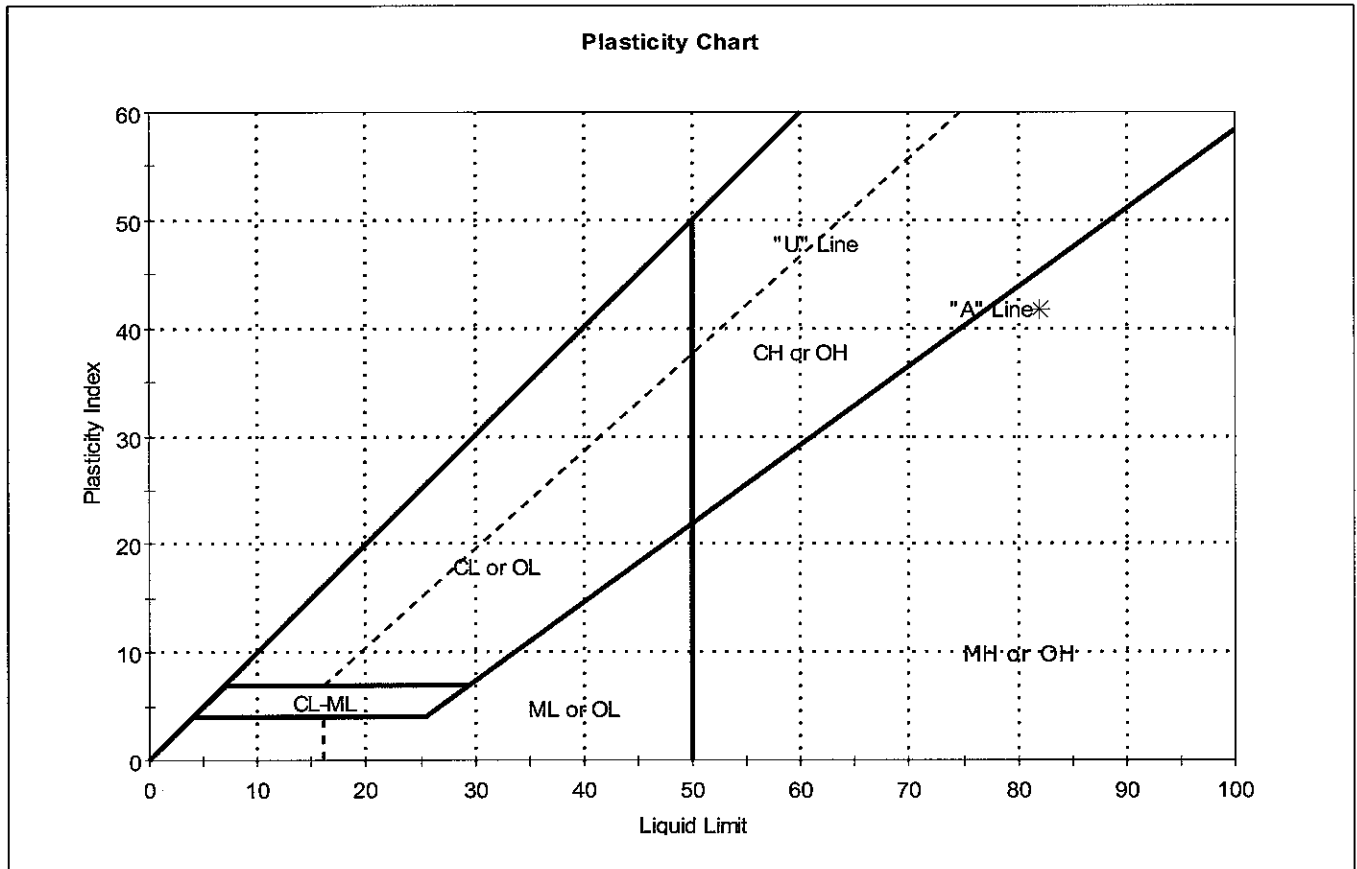
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60057	Sample Type:	jar
Sample ID:	OL-0284-08	Test Date:	01/24/07
Depth:	9.9-13.2 ft	Test Id:	105741
Test Comment:	---		
Sample Description:	Moist, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

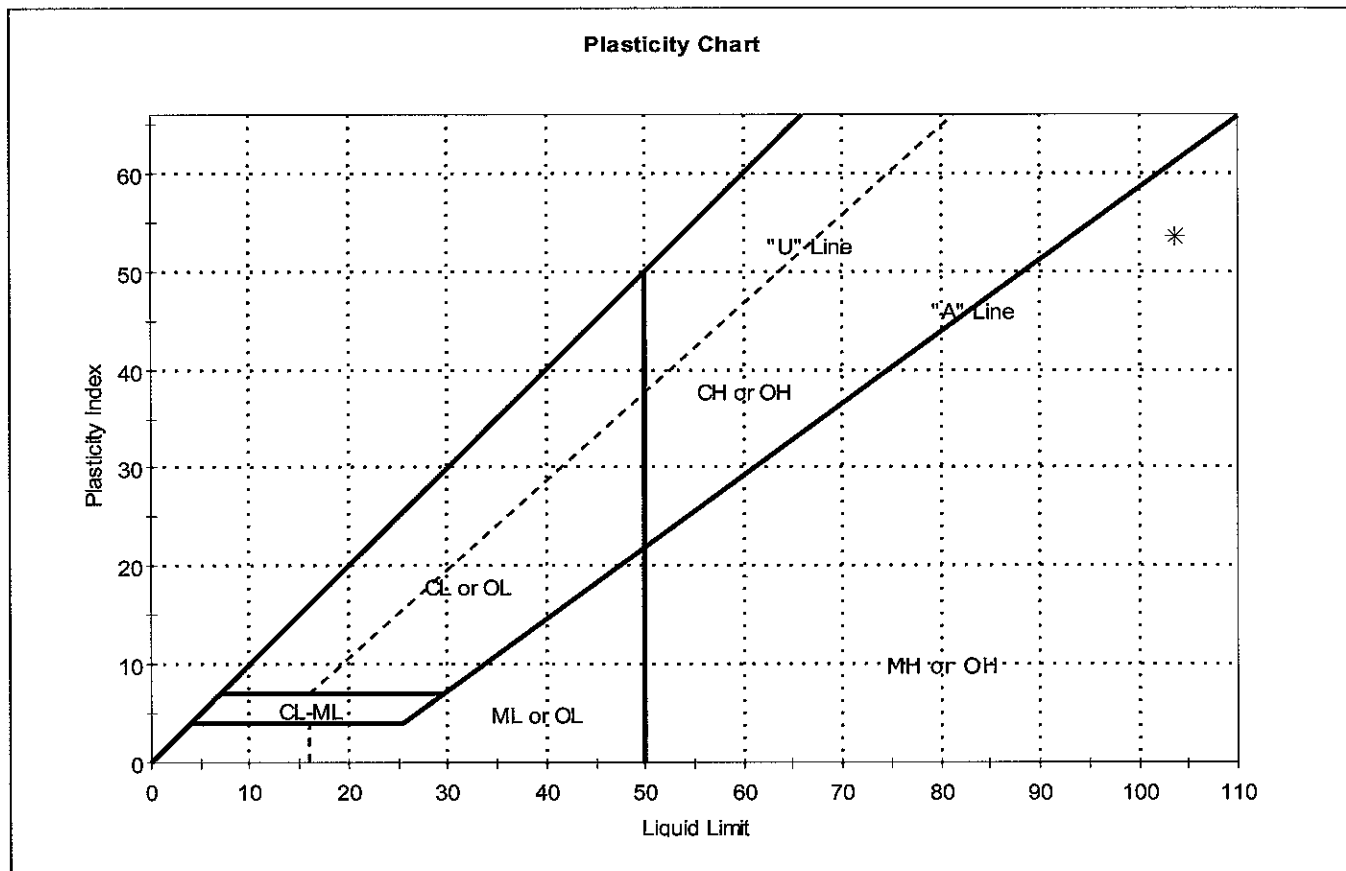


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-08	-VC-600	9.9-13.2 ft	101	82	40	42	1	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60057	Sample Type:	jar
Sample ID:	OL-0284-09	Test Date:	01/25/07
Depth :	16.5-19.2 ft	Test Id:	105742
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-09	-VC-600	16.5-19.2 ft	145	104	50	54	2	elastic silt with sand (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

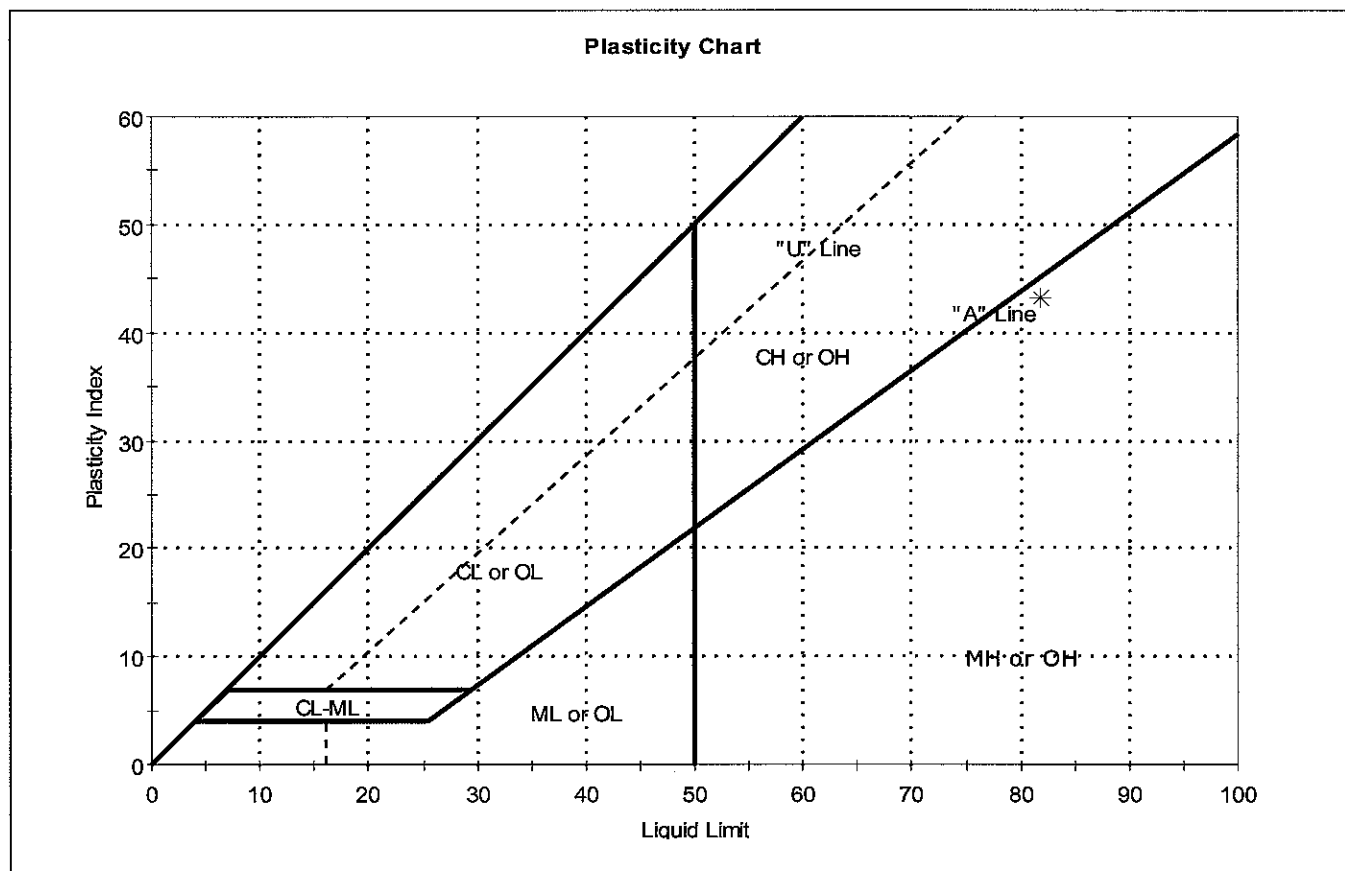
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-60058	Sample Type:	jar
Sample ID:	OL-0284-10	Test Date:	01/25/07
Depth :	16.5-19.2 ft	Test Id:	105743
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-10	L-VC-600	16.5-19.2 ft	87	82	39	43	1	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

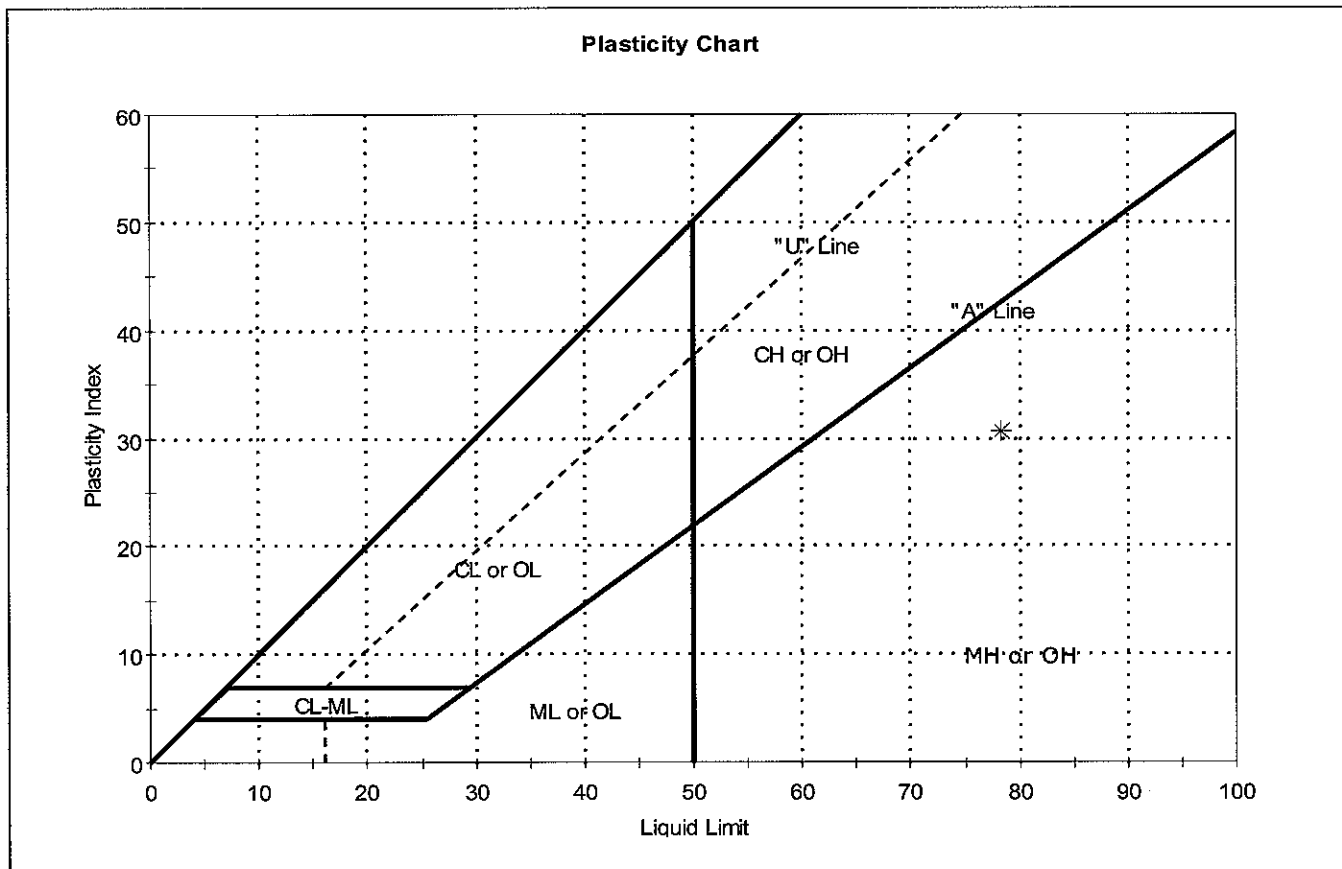
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Tested By:	ap
Boring ID:	OL-VC-60060	Test Date:	01/25/07
Sample ID:	OL-0284-11	Checked By:	jdt
Depth:	3.3-6.6 ft	Test Id:	105744
Test Comment:	---		
Sample Description:	Moist, dark gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-11	L-VC-6006	3.3-6.6 ft	113	78	48	30	2	elastic silt with sand (MH)

Sample Prepared using the WET method

2% Retained on #40 Sieve

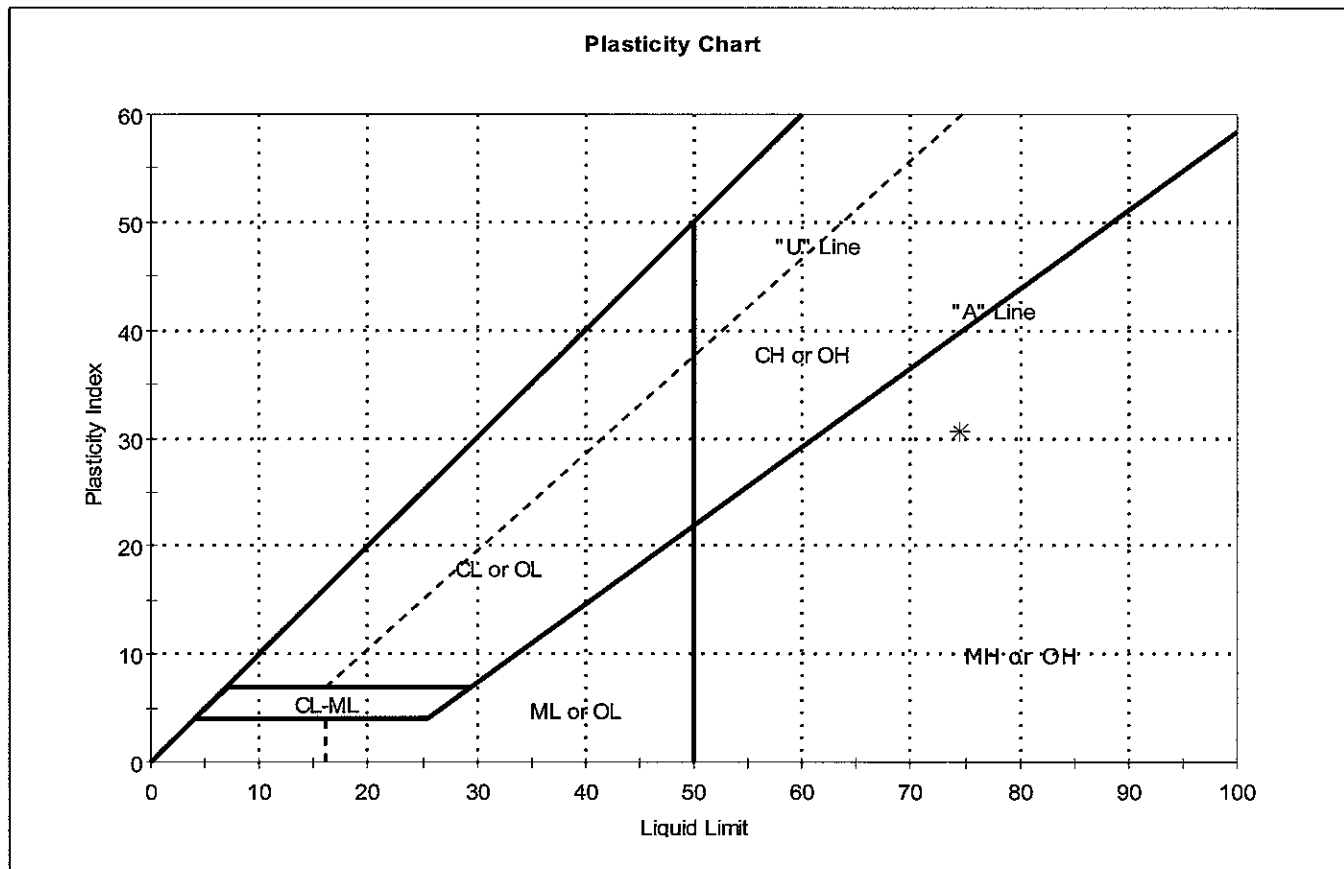
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60060	Sample Type:	jar
Sample ID:	OL-0284-12	Test Date:	01/23/07
Depth :	9.9-13.2 ft	Test Id:	105745
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-12	L-VC-600	9.9-13.2 ft	86	75	44	31	1	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

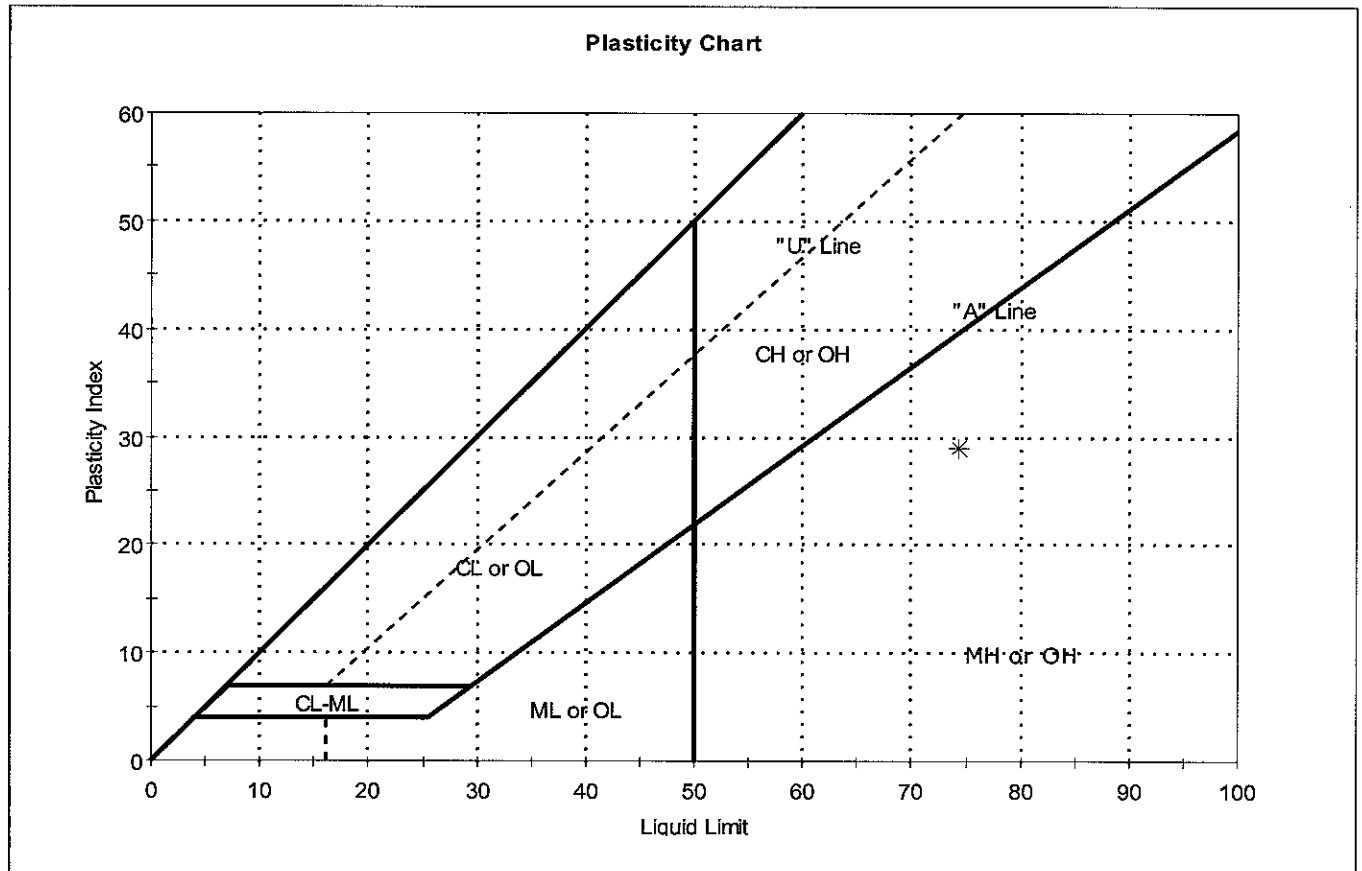
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60060	Sample Type:	jar
Sample ID:	OL-0284-13	Test Date:	01/24/07
Depth :	16.5-19.8 ft	Test Id:	105746
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-13	L-VC-600	16.5-19.8 ft	61	74	45	29	1	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

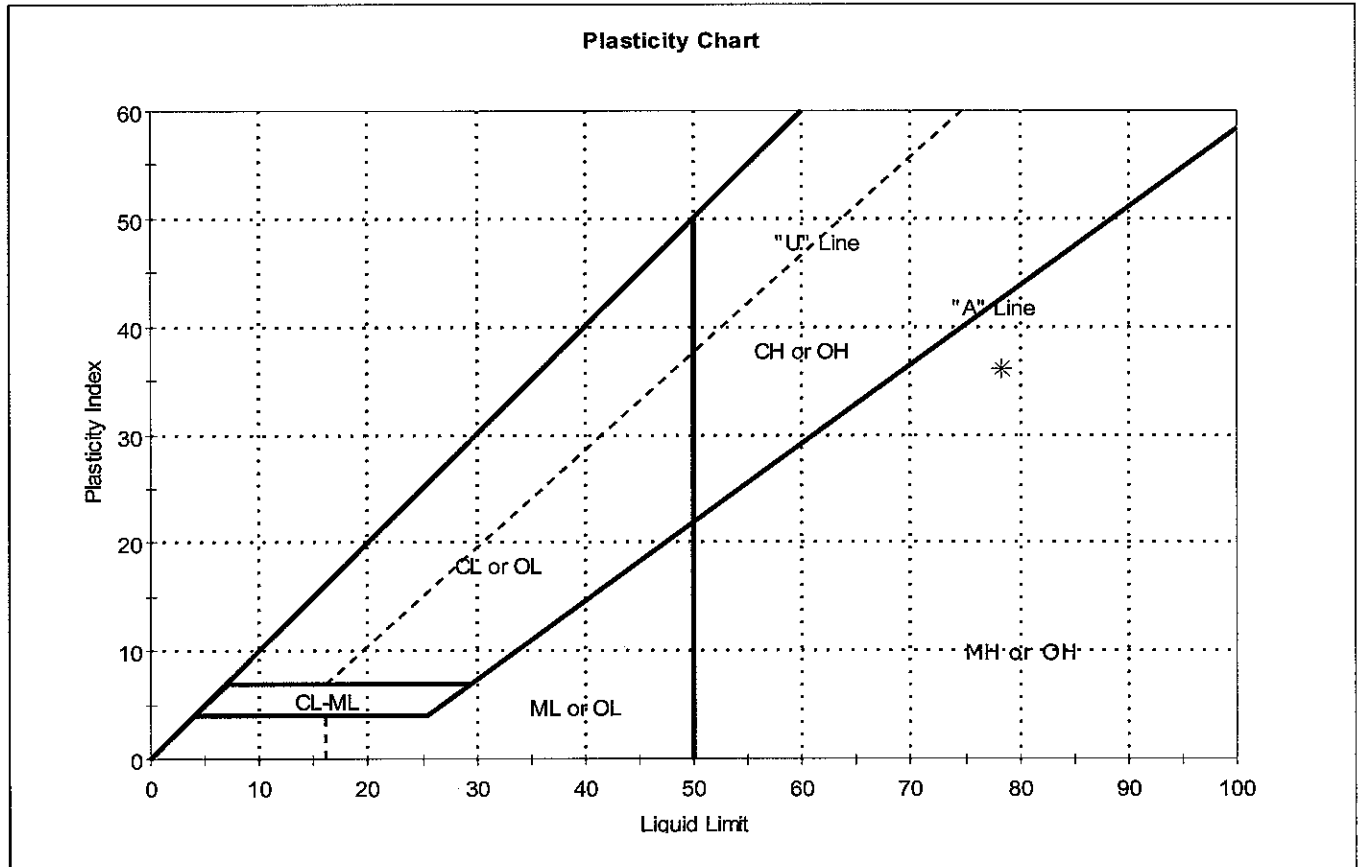
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-60061	Sample Type:	jar
Sample ID:	OL-0284-14	Test Date:	01/24/07
Depth :	0-3.3 ft	Test Id:	105747
Test Comment:	---		
Sample Description:	Moist, black silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-14	-VC-6006	0-3.3 ft	107	78	42	36	2	elastic silt with sand (MH)

Sample Prepared using the WET method

2% Retained on #40 Sieve

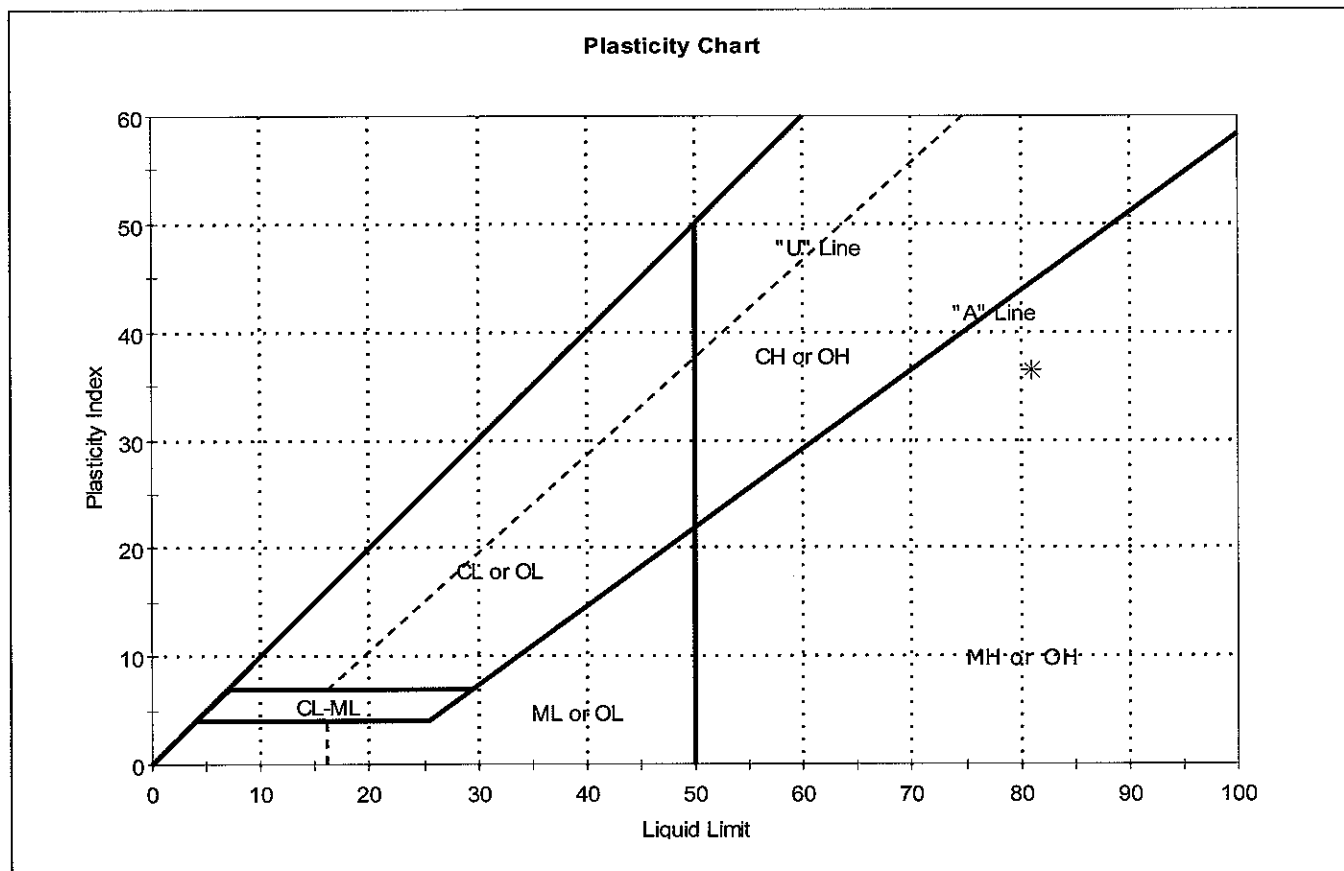
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Test Date:	01/23/07
Boring ID:	OL-VC-60061	Test Id:	105748
Sample ID:	OL-0284-15	Tested By:	ap
Depth :	9.9-13.2 ft	Checked By:	jdt
Test Comment:	---		
Sample Description:	Moist, dark gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-15	L-VC-600	9.9-13.2 ft	85	81	45	36	1	elastic silt with sand (MH)

Sample Prepared using the WET method

2% Retained on #40 Sieve

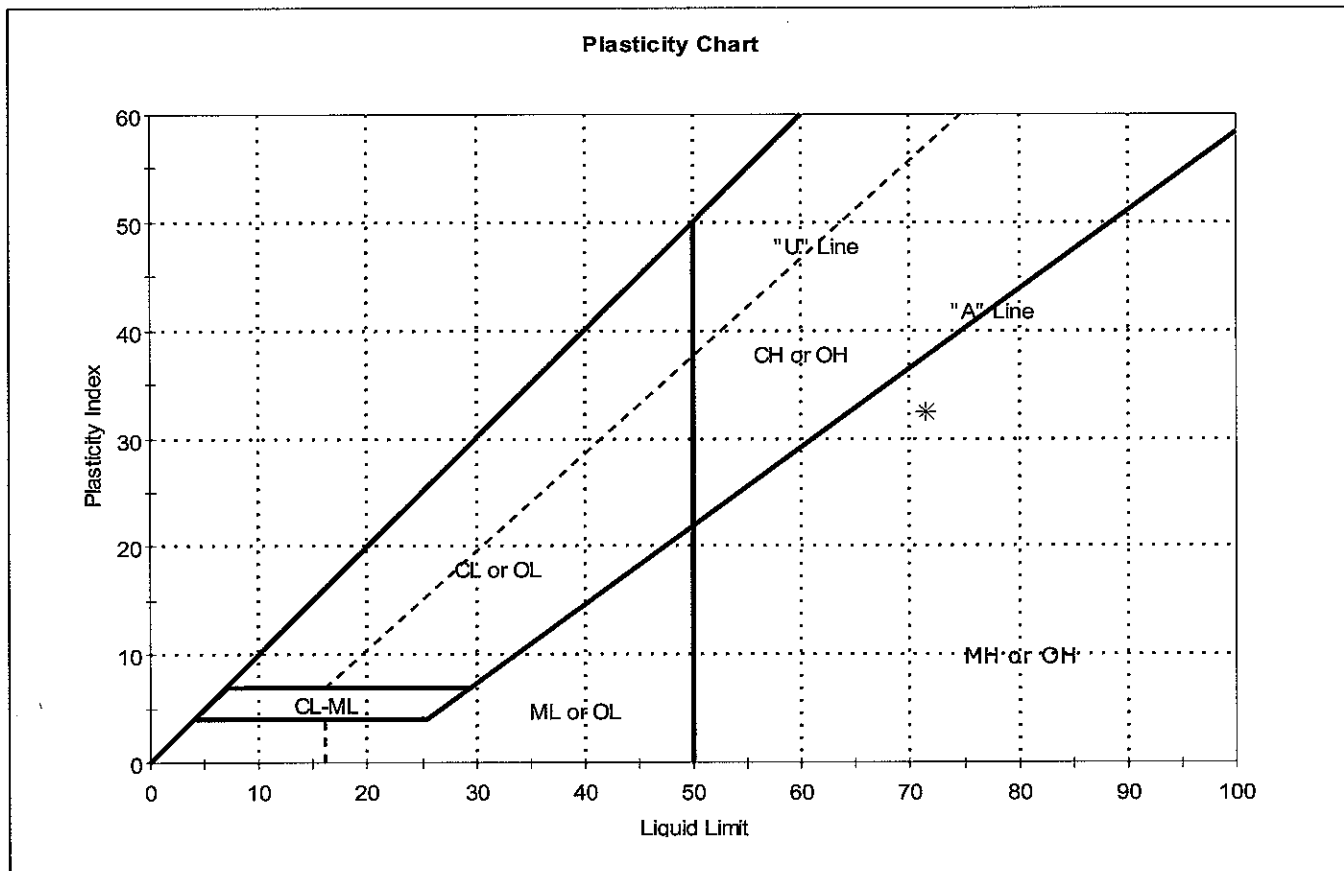
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60061	Sample Type:	jar
Sample ID:	OL-0284-16	Test Date:	01/24/07
Depth :	16.5-19.7 ft	Test Id:	105749
Test Comment:	---		
Sample Description:	Moist, dark brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-16	L-VC-60061	16.5-19.7 ft	70	72	39	33	1	elastic silt (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

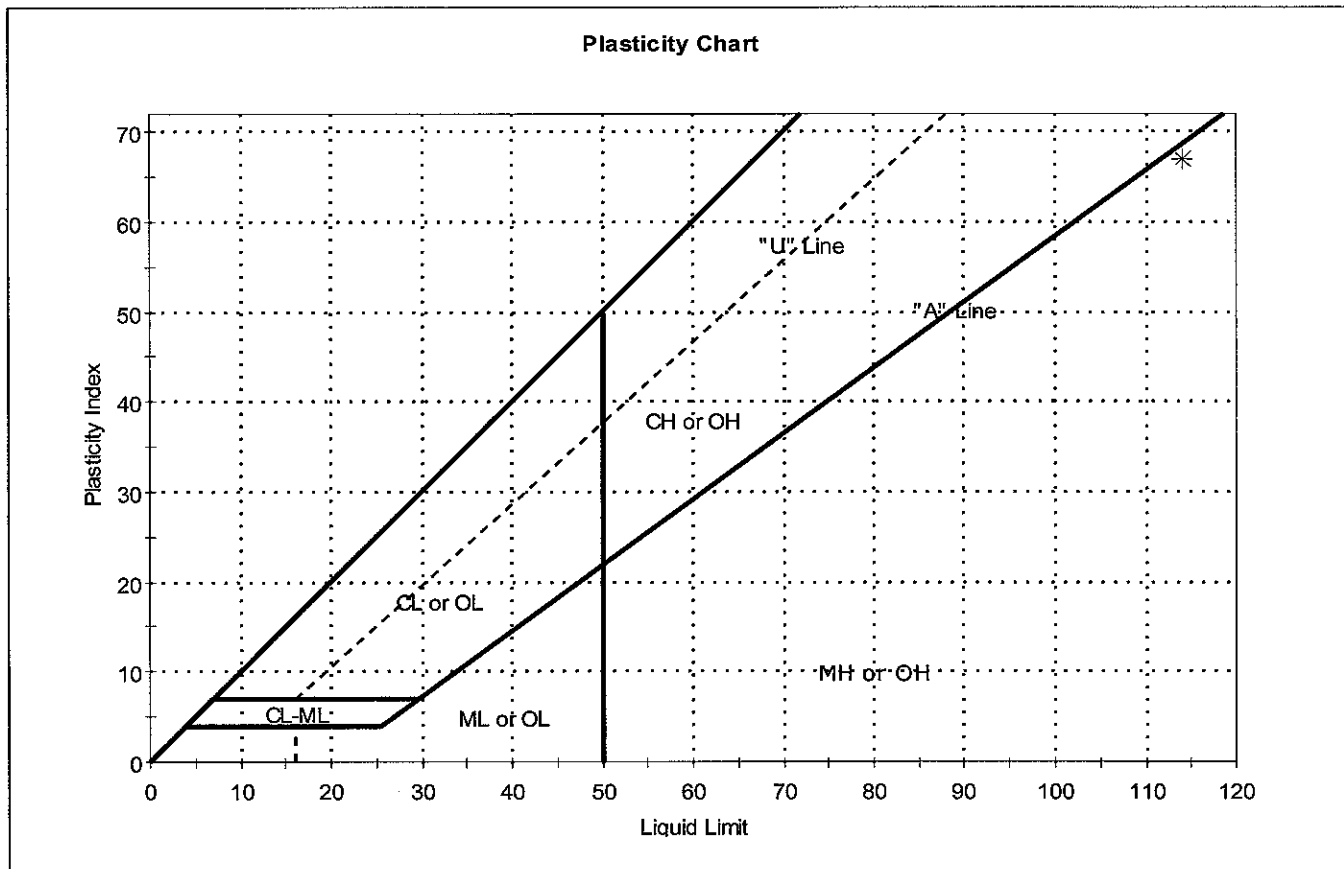
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-VC-60055	Sample Type:	jar
Sample ID:	OL-0284-17	Test Date:	01/24/07
Depth :	0.5-3.3 ft	Test Id:	105750
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-17	-VC-600	0.5-3.3 ft	171	114	47	67	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

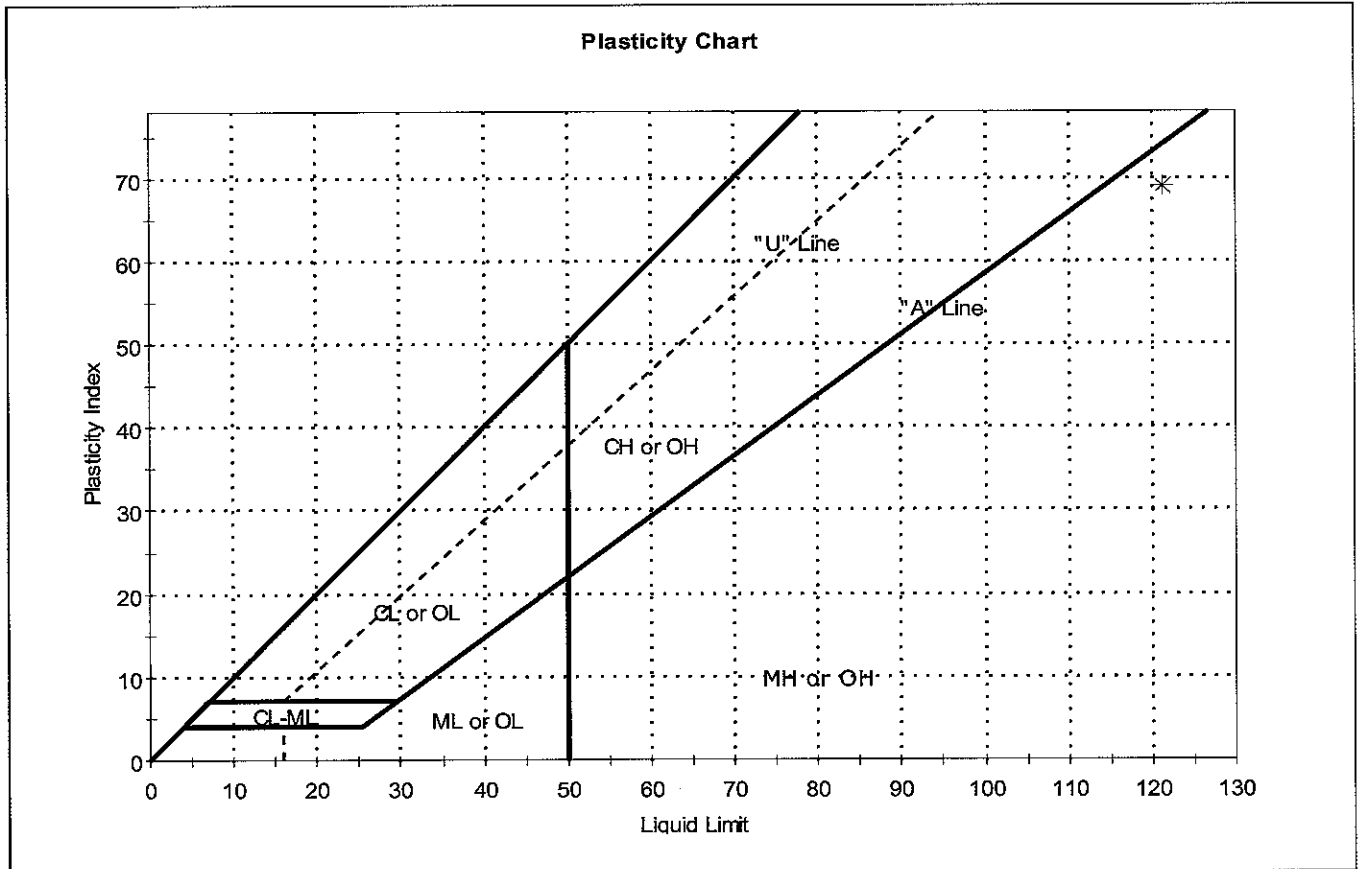
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60055	Sample Type:	jar
Sample ID:	OL-0284-18	Test Date:	01/25/07
Depth :	3.3-6.6 ft	Test Id:	105751
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-18	L-VC-600	3.3-6.6 ft	165	121	52	69	2	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

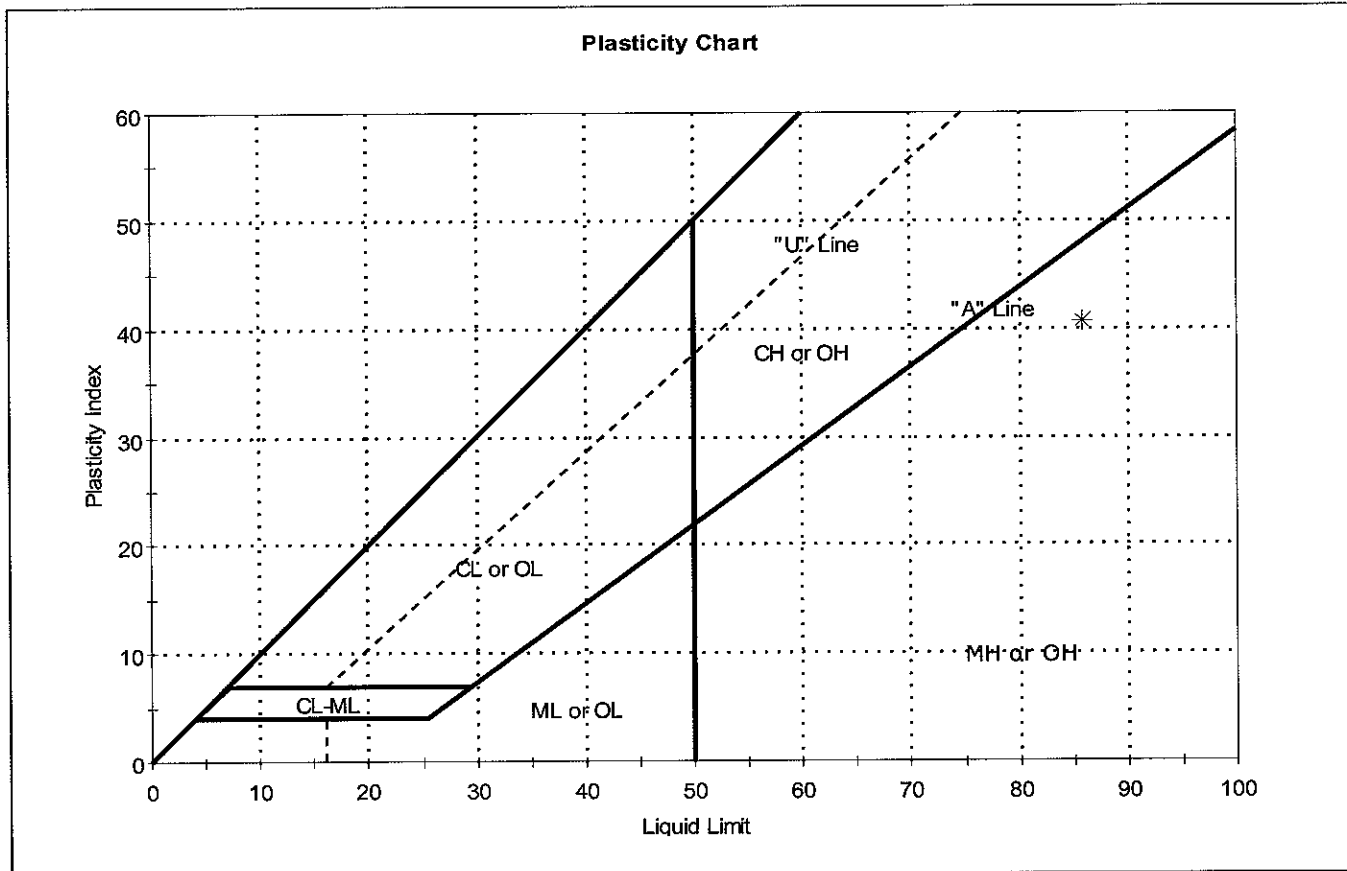
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60055	Sample Type:	jar
Sample ID:	OL-0284-19	Test Date:	01/24/07
Depth :	16.5-19.3 ft	Test Id:	105752
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-19	-VC-600	16.5-19.3 ft	85	86	45	41	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

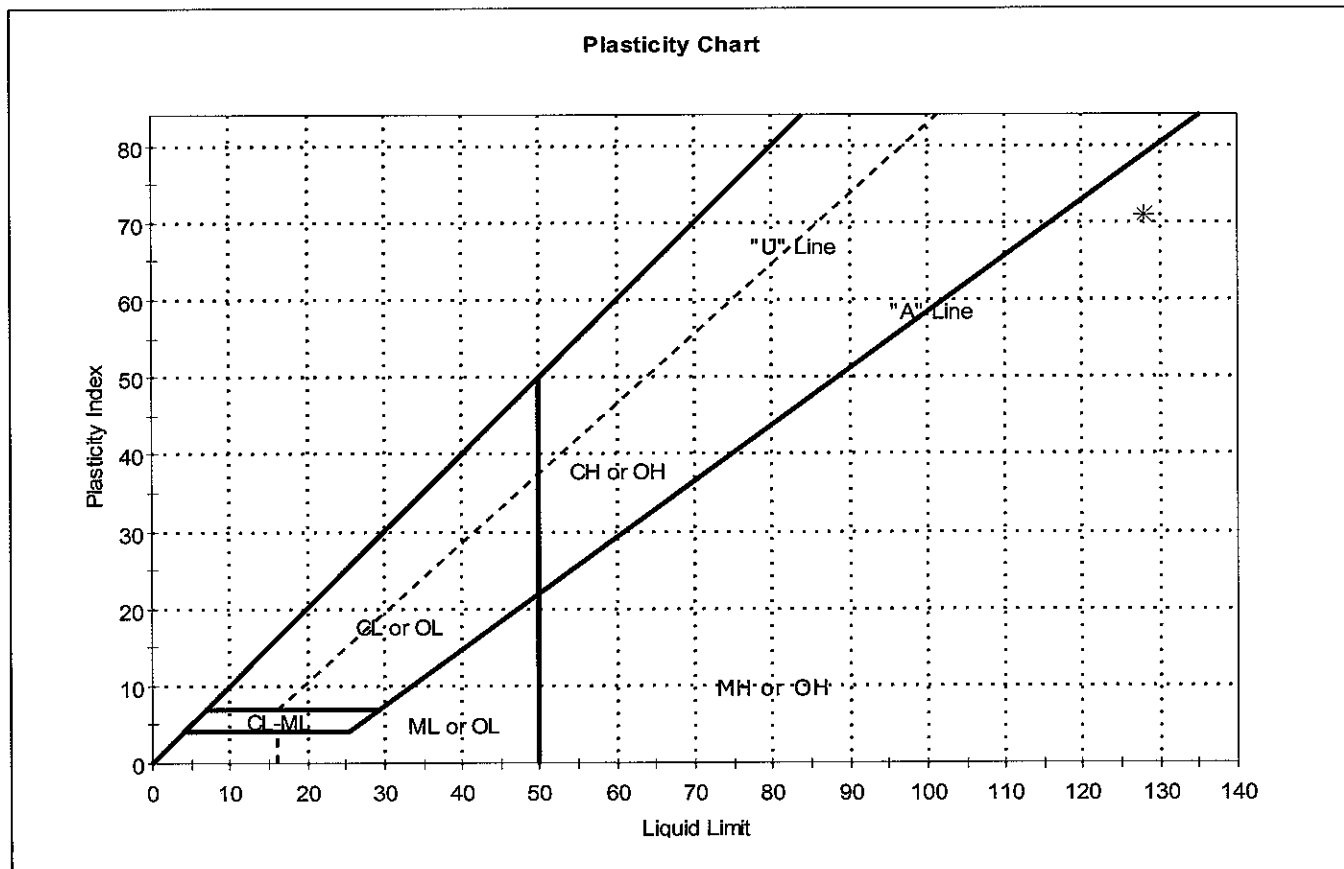
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-60054	Sample Type:	jar
Sample ID:	OL-0284-20	Test Date:	01/25/07
Depth :	0.5-3.3 ft	Test Id:	105753
Test Comment:	---		
Sample Description:	Moist, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0284-20	-VC-6005	0.5-3.3 ft	46	128	57	71	0	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Chain of Custody / Analysis Request										AES Ref: 38292.40495								
Privileged and Confidential										COC #: 0285								
Site Name: Onondaga Lake										Lab Use Only								
Location of Site: Syracuse, New York										Lab Proj #								
Sampler: 1										Lab ID								
PO #:										Job No.								
Analysis Turnaround Time:										GTE								
Standard -																		
Rush Charges Authorized for -																		
2 weeks -																		
1 week -																		
Next Day -																		
Hardcopy Report To: Lorraine Weber																		
Invoice to: Pete Petrone																		
Sample Identification																		
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Field Filtered Sample?	Grab/Composite	Units	SIC	Porosity	CUT	UUT	Consolidation	Lab Sample Numbers
OL-VC-30036	9.9	13.2	OL-0285-01	10/3/2008	14:23	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30036	16.5	17.3	OL-0285-02	10/3/2008	14:25	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30038	0.5	3.3	OL-0285-03	10/3/2008	13:04	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30038	6.6	9.9	OL-0285-04	10/3/2008	13:06	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30038	16.5	20.1	OL-0285-05	10/3/2008	13:09	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30039	3.3	6.6	OL-0285-06	10/3/2008	13:49	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30039	9.9	13.2	OL-0285-07	10/3/2008	13:51	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30040	3.3	6.6	OL-0285-08	10/3/2008	15:02	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-30040	9.9	13.2	OL-0285-09	10/3/2008	15:08	SEDIMENT	SOIL	REG	1	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Special Instructions:			
Relinquished by: <i>Sara M. Chmura</i>	Company: PARSONS	Received by: <i>MM</i>	Company: [blank]
Date/Time: 12/12/08 @ 12:05	Date/Time: [blank]	Date/Time: 12/12/08 12:30	Date/Time: [blank]
Relinquished by: [blank]	Company: [blank]	Received by: [blank]	Company: [blank]
Date/Time: [blank]	Date/Time: [blank]	Date/Time: [blank]	Date/Time: [blank]
Custody Seals Intact	Condition	Cooler Temp.	Custody Seals Intact
Condition	Condition	Cooler Temp.	Custody Seals Intact

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify)]:

Date Printed: 12/11/2008

AESI Ref: 38292.40495
COC #: 0285
Lab Use Only

Special Instructions:							
Relinquished by: <i>[Signature]</i>	Company	PARSONS 12/12/06 @ 1205	Received by: <i>[Signature]</i>	Company	Condition		Custody Seals Intact
	Date/Time						
Relinquished by:	Company		Received by:	Company	Condition		Custody Seals Intact
	Date/Time						

Date Printed: 12/11/2006

Chain of Custody/Analysis Request									
AESI Ref: 38292.40495		COC #: 0285		Lab Use Only		Lab Proj #		Lab ID	
GTE		Job No.							
Site Name: Onondaga Lake		Location of Site: Syracuse, New York		Preservative:		0		0	
Sampler: 1		PO #:		Analysis Turnaround Time:		Standard -		Rush Charges Authorized for -	
Hardcopy Report To: Lorraine Weber		Invoice To: Pete Petrone		Sample Identification		Start Depth (ft)		End Depth (ft)	
2 weeks -		1 week -		Next Day -		Location ID		Field Sample ID	
OL-VC-40023		13.2		16.5		OL-0285-19			
OL-VC-40032		0		3.3		OL-0285-20			
Sample Purpose		Sample Matrix		Sample Type		Sample Time		# of Cont.	
REG		SOIL		SEDIMENT		16:09		1	
REG		SOIL		SEDIMENT		14:43		1	
Atterberg Limits		Bulk Density		Carbonate Content		Organic Content		Moisture Content	
Field Filtered Sample?		Grab/Composite		Units		Grain Size		SIC	
Porosity		CUT		UUT		Consolidation			
Lab Sample Numbers									

Special Instructions:			
Relinquished by:	Company	Received by:	Company
<i>Lorraine M. Chmura</i>	PARSONS	<i>12/12/06 @ 12:05</i>	<i>12/12/06</i>
Relinquished by:	Company	Received by:	Company
Condition	Cooler Temp.	Condition	Cooler Temp.
Custody Seals Intact	Custody Seals Intact	Custody Seals Intact	Custody Seals Intact

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/13/07
Depth :	---	Sample Id:	---
		Tested By:	mll
		Checked By:	n/a

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-30036	OL-0285-01	9.9-13.2 ft	Moist, dark olive brown silt	76.5
OL-VC-30036	OL-0285-02	16.5-17.3 ft	Moist, gray silt	48.8
OL-VC-30038	OL-0285-03	0.5-3.3 ft	Moist, white silt	449.4
OL-VC-30038	OL-0285-04	6.6-9.9 ft	Moist, white silt	122.3
OL-VC-30038	OL-0285-05	16.5-20.1 ft	Moist, olive brown silt	73.5
OL-VC-30040	OL-0285-08	3.3-6.6 ft	Moist, pale gray silt	195.7
OL-VC-30040	OL-0285-09	9.9-13.2 ft	Moist, light greenish gray silt	190.6
OL-VC-30042	OL-0285-10	0-3.3 ft	Moist, greenish gray silt	138

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/13/07
Depth :	---	Sample Id:	---
		Tested By:	mll
		Checked By:	n/a

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-30041	OL-0285-11	0-3.3 ft	Moist, white silt	256.7
OL-VC-30041	OL-0285-12	9.9-13.2 ft	Moist, light gray silt	201.2
OL-VC-30034	OL-0285-13	0.5-3.3 ft	Moist, light gray silt with sand	239.7
OL-VC-30034	OL-0285-14	9.9-13.2 ft	Moist, white silt	168
OL-VC-30043	OL-0285-15	0-3.3 ft	Moist, white silt	195.8
OL-VC-30043	OL-0285-16	9.9-13.2 ft	Moist, greenish gray sandy silt	82.5
OL-VC-30043	OL-0285-17	16.5-19.4 ft	Moist, olive brown silt with sand	77.3
OL-VC-40023	OL-0285-18	3.3-6.6 ft	Wet, very dark gray silt	103.7
OL-VC-40023	OL-0285-19	13.2-16.5 ft	Moist, dark brown silt	95.6
OL-VC-40032	OL-0285-20	0-3.3 ft	Wet, very dark gray silt	139.1

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	yf
Sample ID:---	Test Date: 01/22/07	Checked By:	jdt
Depth : ---	Test Id: 105855		

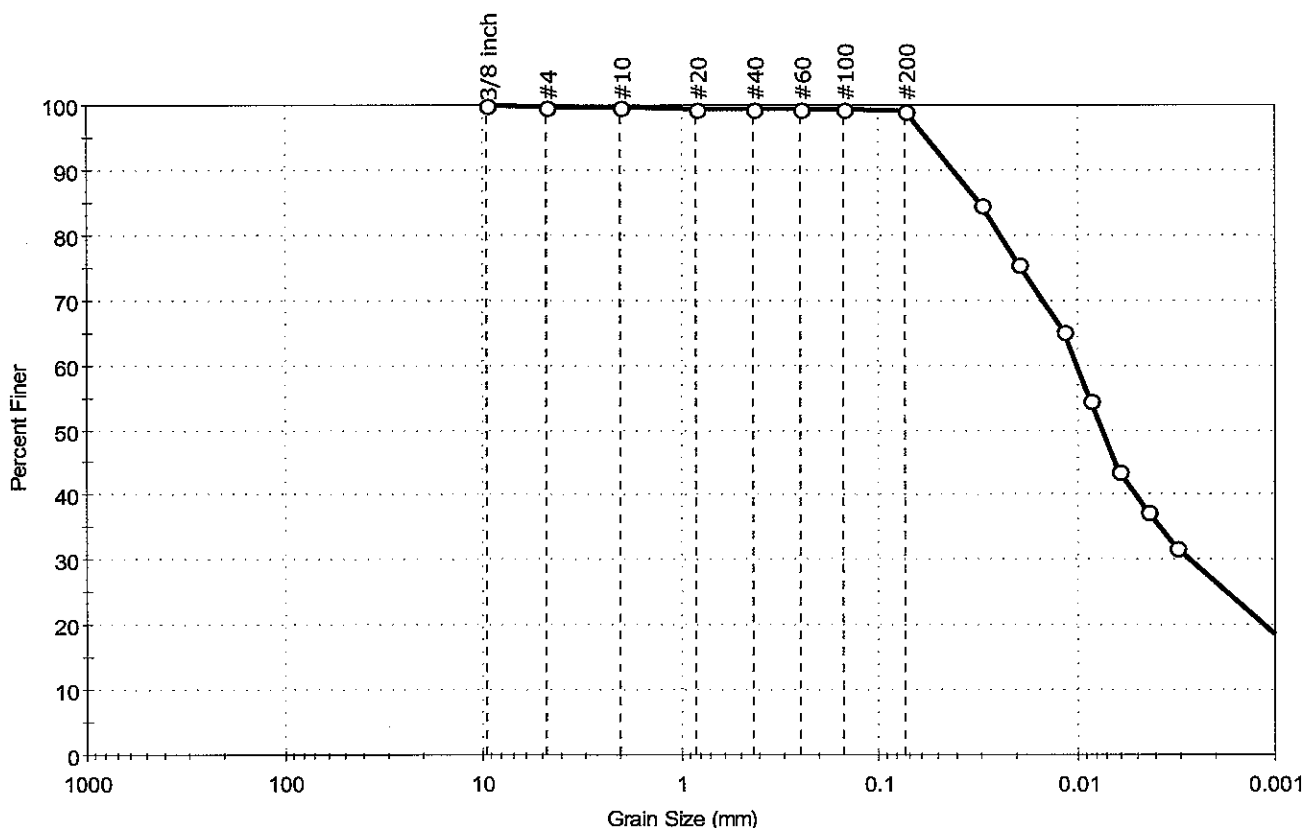
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-30036	OL-0285-01	9.9-13.2 ft	Moist, dark olive brown silt	2.71
OL-VC-30038	OL-0285-03	0.5-3.3 ft	Moist, white silt	2.65
OL-VC-30041	OL-0285-12	9.9-13.2 ft	Moist, light gray silt	2.67
OL-VC-30043	OL-0285-16	9.9-13.2 ft	Moist, greenish gray sandy silt	2.72
OL-VC-30043	OL-0285-17	16.5-19.4 ft	Moist, olive brown silt with sand	2.73

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30036	Sample Type:	jar
Sample ID:	OL-0285-01	Test Date:	02/05/07
Depth :	9.9-13.2 ft	Test Id:	105831
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.3	0.6	99.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0300	85		
---	0.0199	75		
---	0.0117	65		
---	0.0085	55		
---	0.0061	44		
---	0.0044	38		
---	0.0031	32		
---	0.0008	16		

Coefficients

D ₈₅ = 0.0309 mm	D ₃₀ = 0.0027 mm
D ₆₀ = 0.0100 mm	D ₁₅ = N/A
D ₅₀ = 0.0074 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (80))

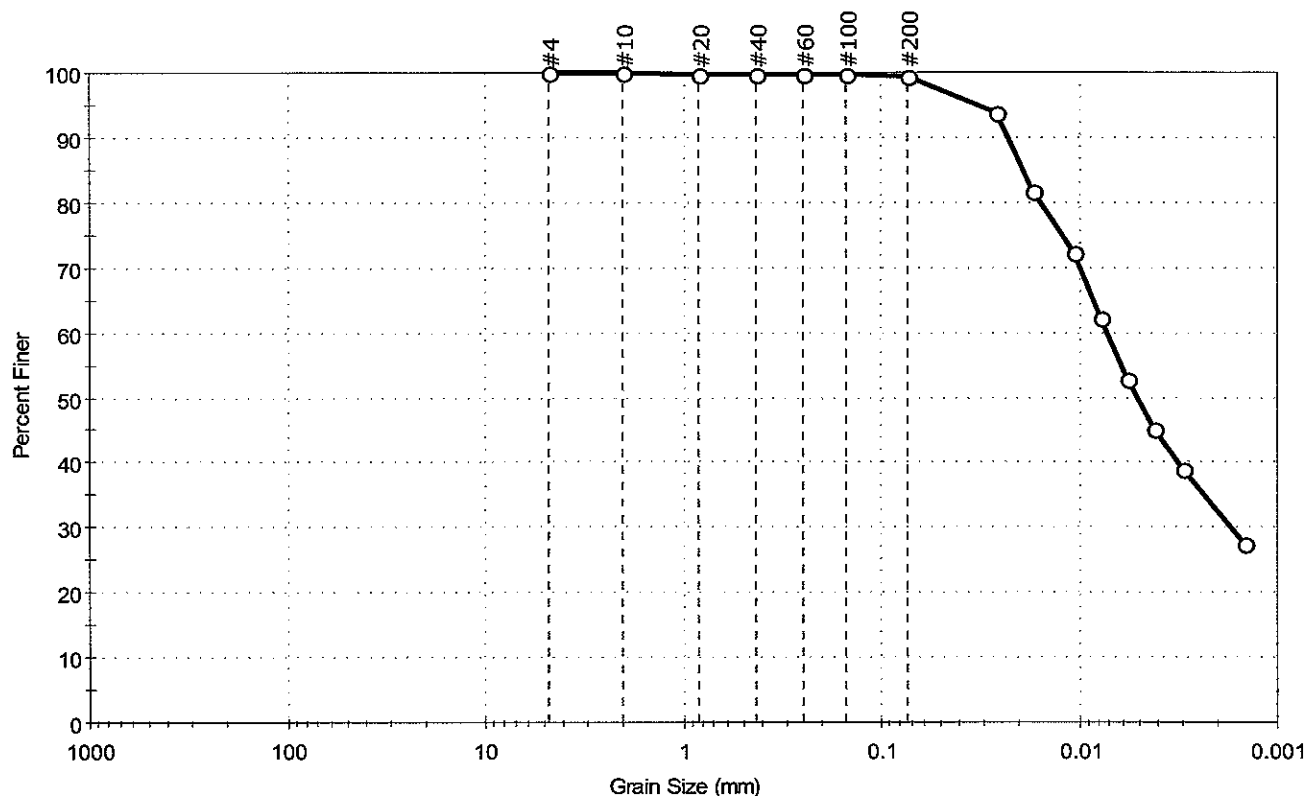
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30036	Sample Type:	jar
Sample ID:	OL-0285-02	Test Date:	02/06/07
Depth:	16.5-17.3 ft	Test Id:	105832
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.5	99.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0265	94		
---	0.0173	82		
---	0.0105	72		
---	0.0077	62		
---	0.0057	53		
---	0.0042	45		
---	0.0030	39		
---	0.0015	28		

Coefficients

D ₈₅ = 0.0194 mm	D ₃₀ = 0.0017 mm
D ₆₀ = 0.0072 mm	D ₁₅ = N/A
D ₅₀ = 0.0051 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

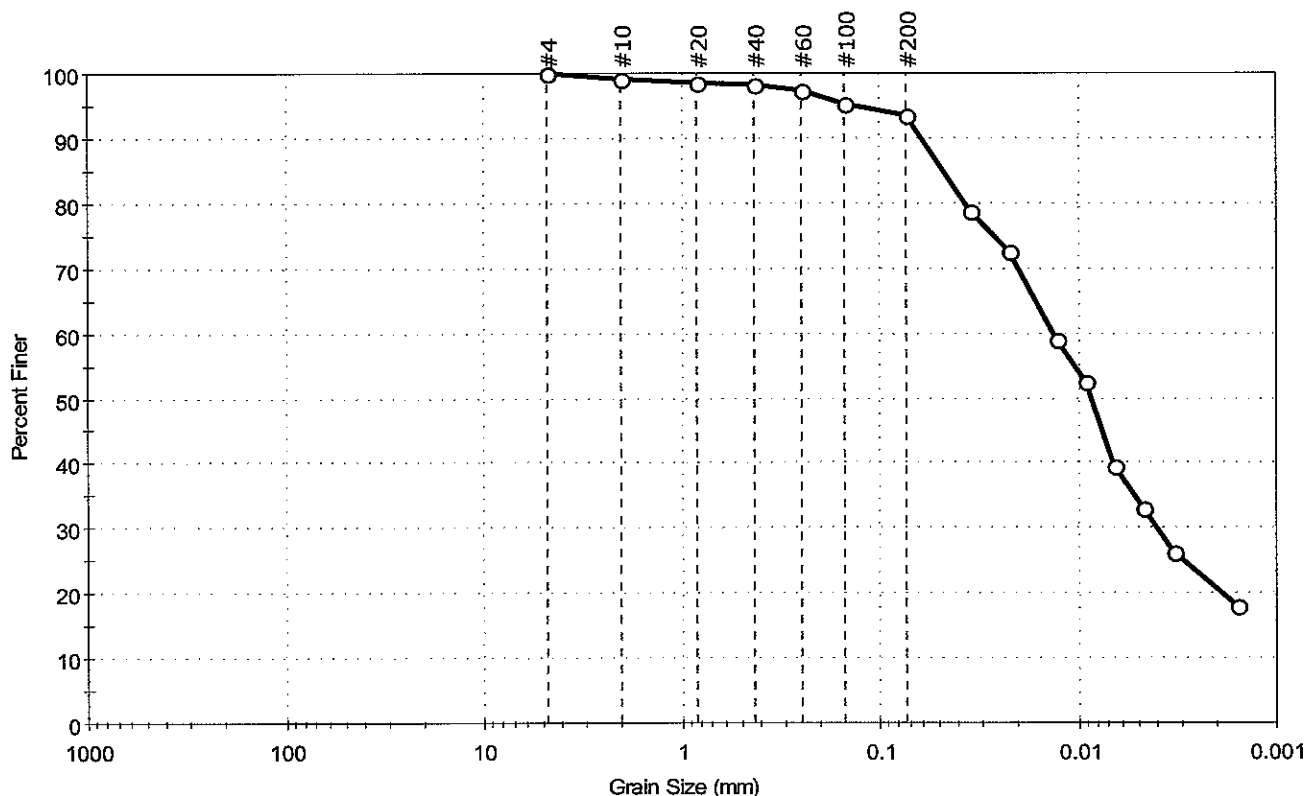
AASHTO Clayey Soils (A-7-5 (36))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30038	Sample Type:	jar
Sample ID:	OL-0285-03	Test Date:	02/06/07
Depth :	0.5-3.3 ft	Test Id:	105833
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	6.5	93.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	98		
#60	0.25	97		
#100	0.15	95		
#200	0.074	94		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0348	79		
---	0.0220	72		
---	0.0130	59		
---	0.0092	52		
---	0.0066	40		
---	0.0047	33		
---	0.0033	26		
---	0.0016	18		

Coefficients

D ₈₅ = 0.0480 mm	D ₃₀ = 0.0040 mm
D ₆₀ = 0.0135 mm	D ₁₅ = N/A
D ₅₀ = 0.0086 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

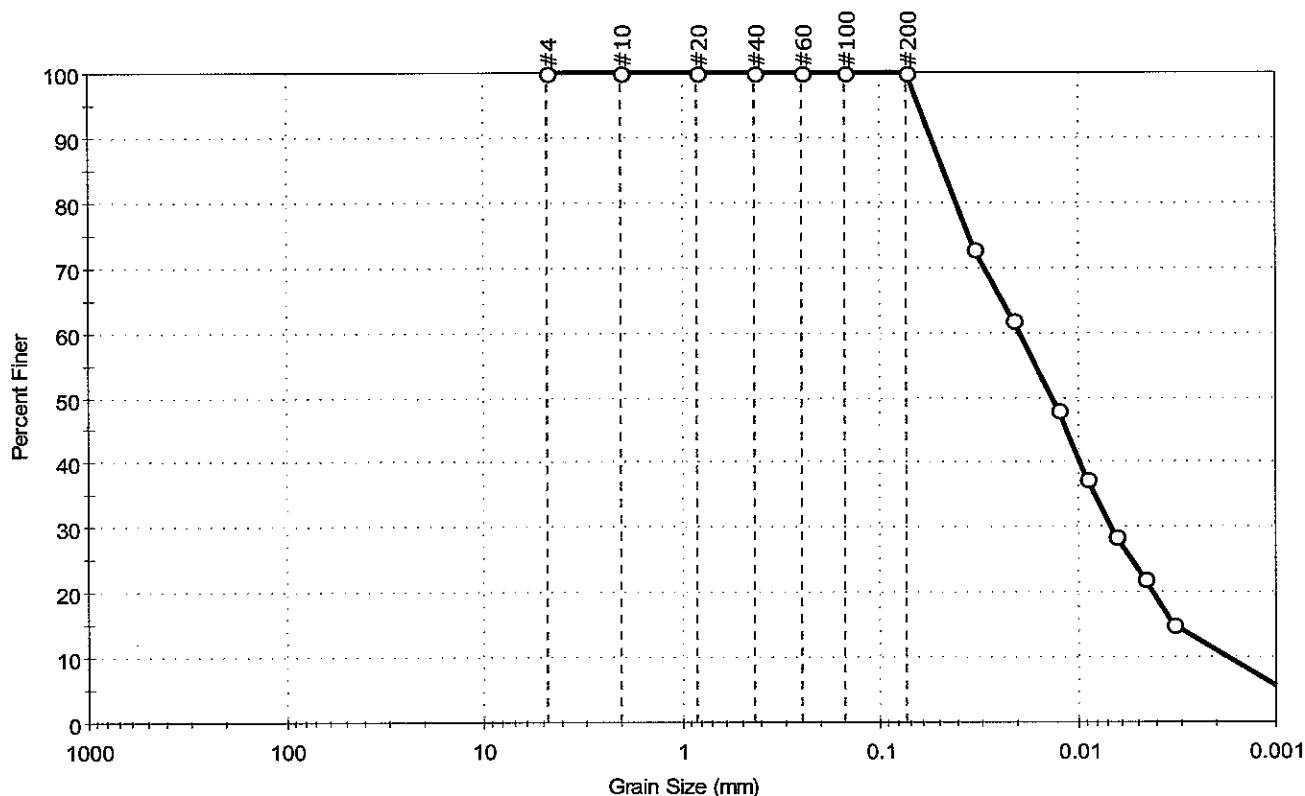
AASHTO Clayey Soils (A-7-5 (109))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30038	Sample Type:	jar
Sample ID:	OL-0285-04	Test Date:	02/05/07
Depth :	6.6-9.9 ft	Test Id:	105834
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.0	100.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
---	0.0331	73		
---	0.0210	62		
---	0.0125	48		
---	0.0089	38		
---	0.0064	29		
---	0.0046	22		
---	0.0033	15		
---	0.0008	4		

Coefficients

D ₈₅ = 0.0475 mm	D ₃₀ = 0.0067 mm
D ₆₀ = 0.0194 mm	D ₁₅ = 0.0032 mm
D ₅₀ = 0.0134 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (54))

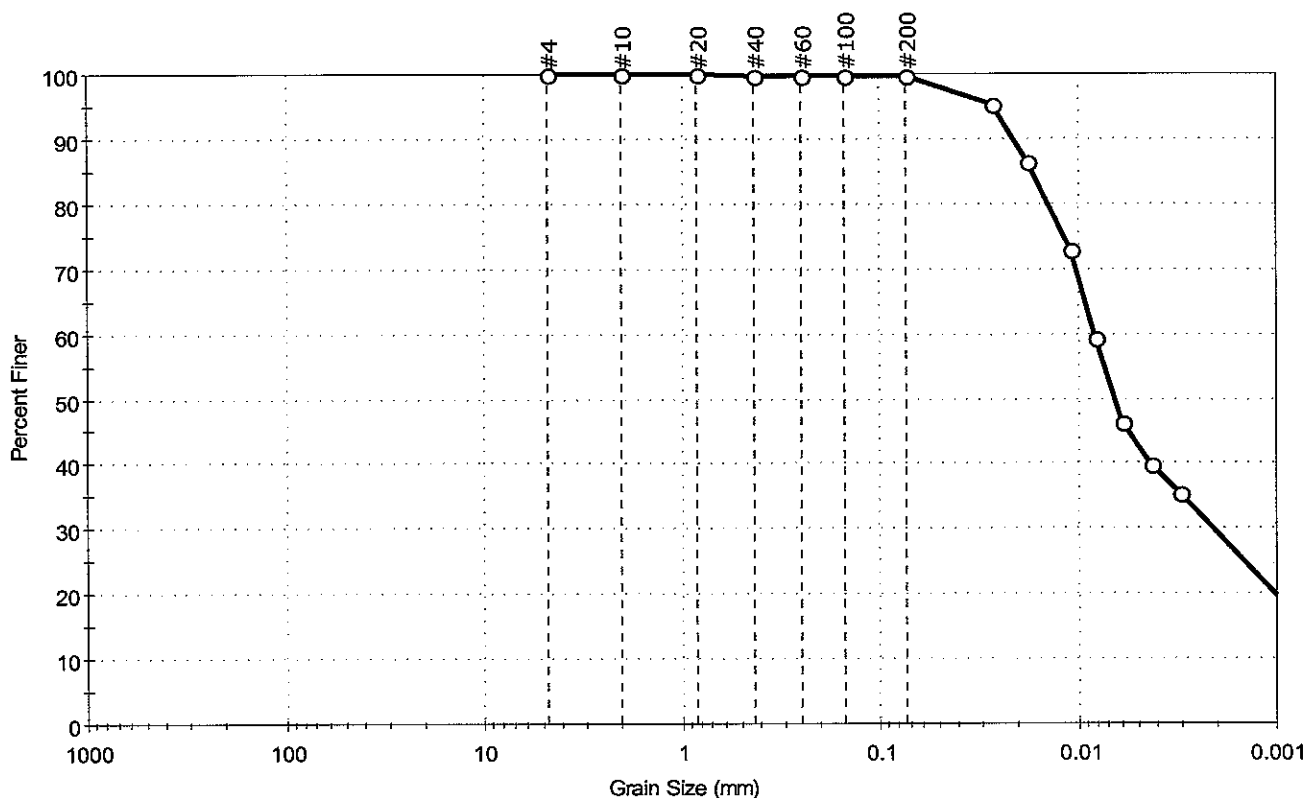
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30038	Sample Type:	jar
Sample ID:	OL-0285-05	Test Date:	02/05/07
Depth :	16.5-20.1 ft	Test Id:	105835
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.4	99.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0271	95		
---	0.0182	86		
---	0.0110	73		
---	0.0081	59		
---	0.0059	46		
---	0.0043	40		
---	0.0031	35		
---	0.0008	16		

Coefficients

D ₈₅ = 0.0172 mm	D ₃₀ = 0.0021 mm
D ₆₀ = 0.0082 mm	D ₁₅ = N/A
D ₅₀ = 0.0065 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

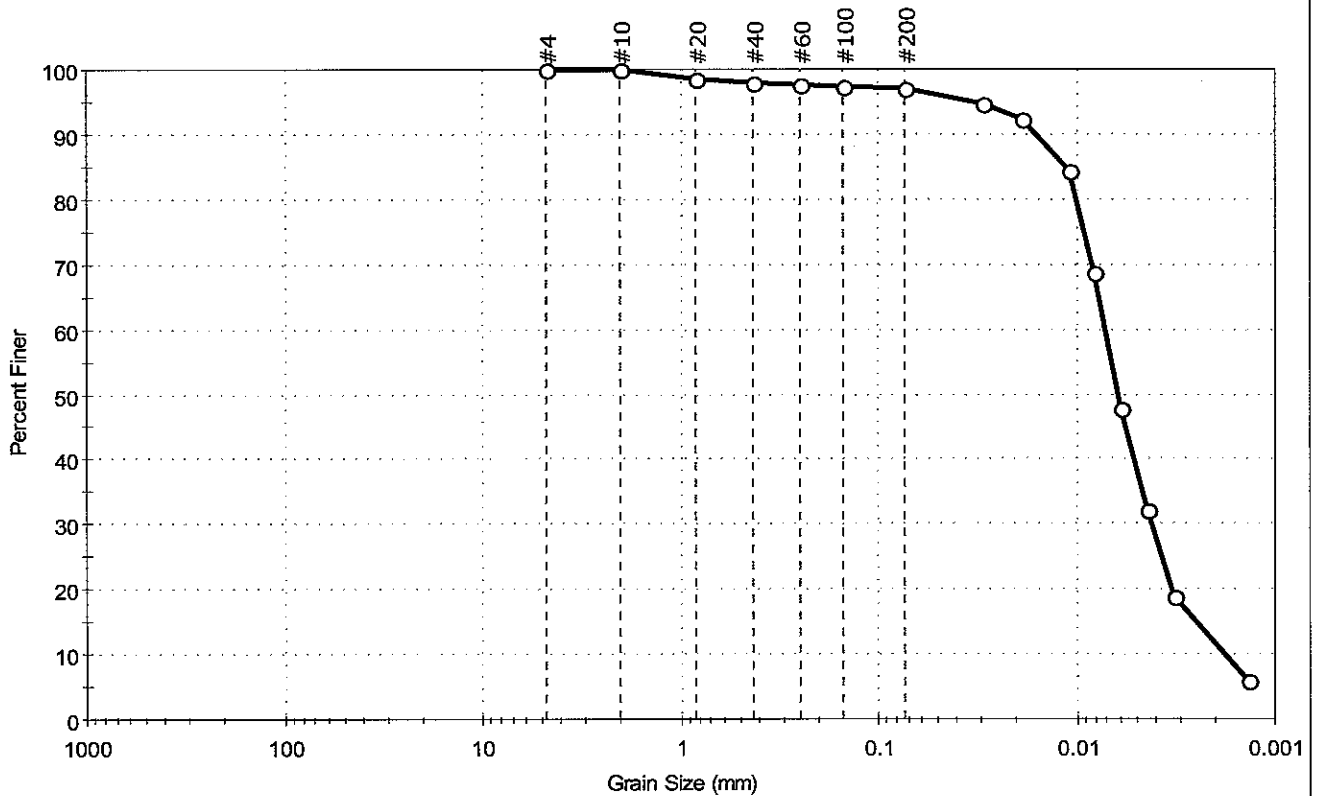
AASHTO Clayey Silts (A-7-5 (77))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30039	Sample Type:	jar
Sample ID:	OL-0285-06	Test Date:	02/06/07
Depth :	3.3-6.6 ft	Test Id:	105836
Test Comment:	---		
Sample Description:	Moist, light gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.1	96.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	98		
#60	0.25	98		
#100	0.15	97		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0295	95		
---	0.0187	92		
---	0.0109	84		
---	0.0081	69		
---	0.0061	48		
---	0.0044	32		
---	0.0032	19		
---	0.0014	6		

Coefficients

D ₈₅ = 0.0114 mm	D ₃₀ = 0.0042 mm
D ₆₀ = 0.0072 mm	D ₁₅ = 0.0025 mm
D ₅₀ = 0.0062 mm	D ₁₀ = 0.0018 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (44))

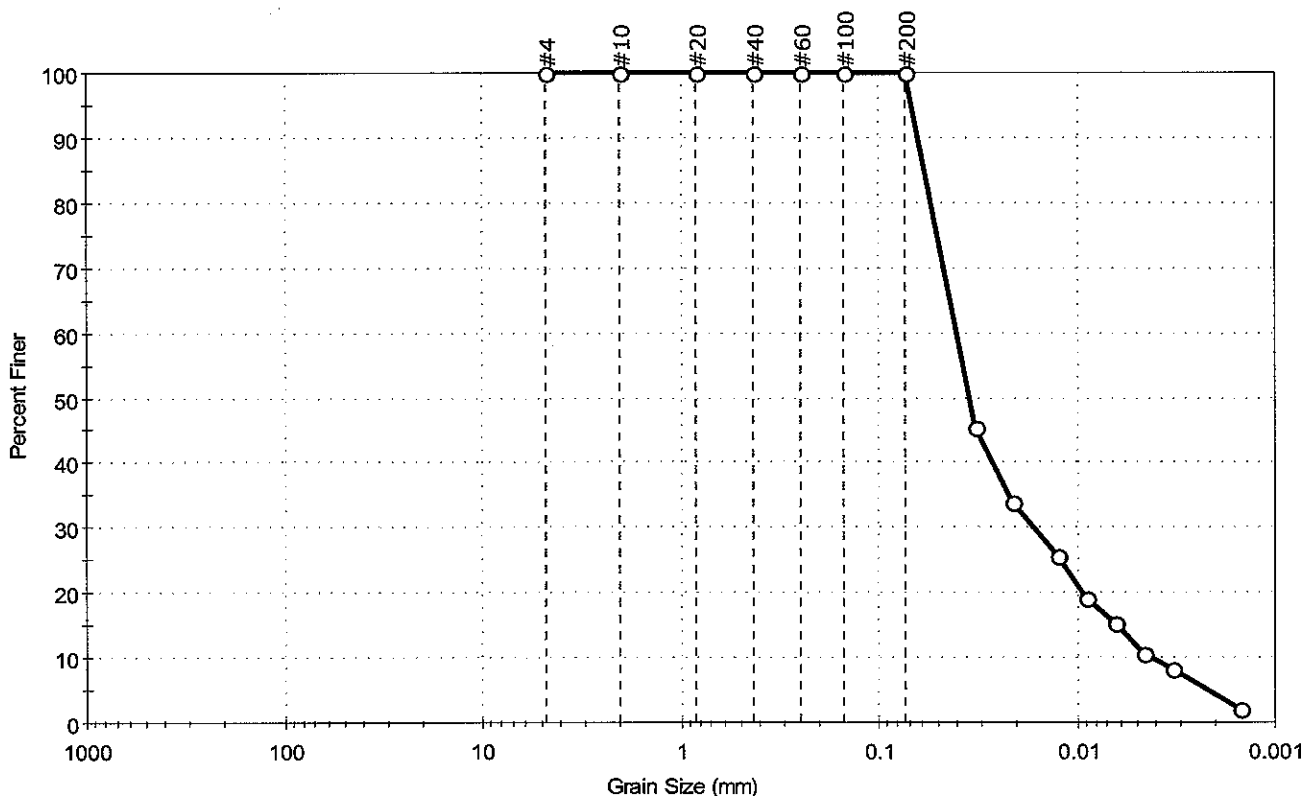
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30039	Sample Type:	jar
Sample ID:	OL-0285-07	Test Date:	02/06/07
Depth :	9.9-13.2 ft	Test Id:	105837
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.1	99.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0326	45		
---	0.0211	34		
---	0.0126	26		
---	0.0091	19		
---	0.0065	15		
---	0.0047	10		
---	0.0033	8		
---	0.0015	2		

Coefficients

D ₈₅ = 0.0592 mm	D ₃₀ = 0.0164 mm
D ₆₀ = 0.0406 mm	D ₁₅ = 0.0064 mm
D ₅₀ = 0.0349 mm	D ₁₀ = 0.0043 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (65))

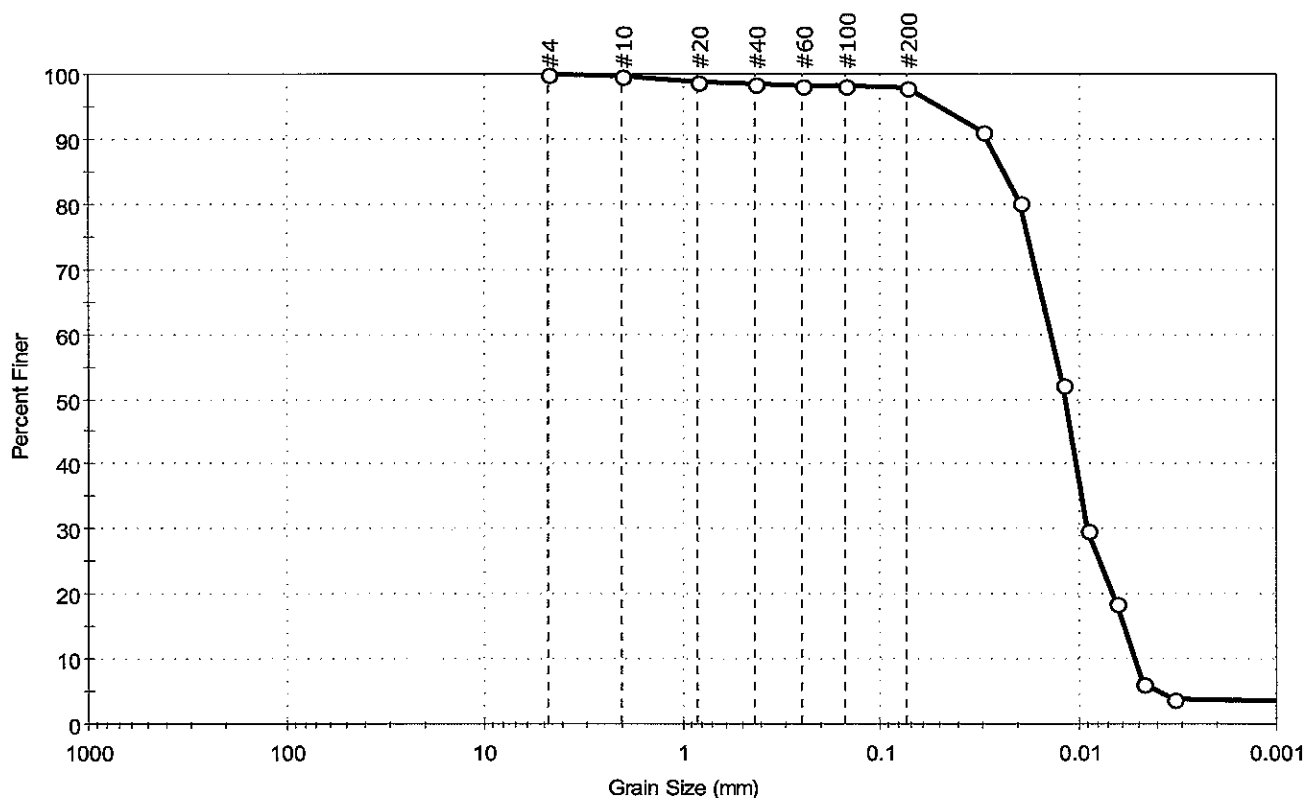
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30040	Sample Type:	jar
Sample ID:	OL-0285-08	Test Date:	02/05/07
Depth :	3.3-6.6 ft	Test Id:	105838
Test Comment:	---		
Sample Description:	Moist, pale gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.2	97.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	98		
#200	0.074	98		
	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0307	91		
---	0.0196	80		
---	0.0120	52		
---	0.0089	30		
---	0.0065	19		
---	0.0047	6		
---	0.0033	4		
---	0.0008	4		

Coefficients

D ₈₅ = 0.0237 mm	D ₃₀ = 0.0090 mm
D ₆₀ = 0.0137 mm	D ₁₅ = 0.0059 mm
D ₅₀ = 0.0117 mm	D ₁₀ = 0.0052 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (54))

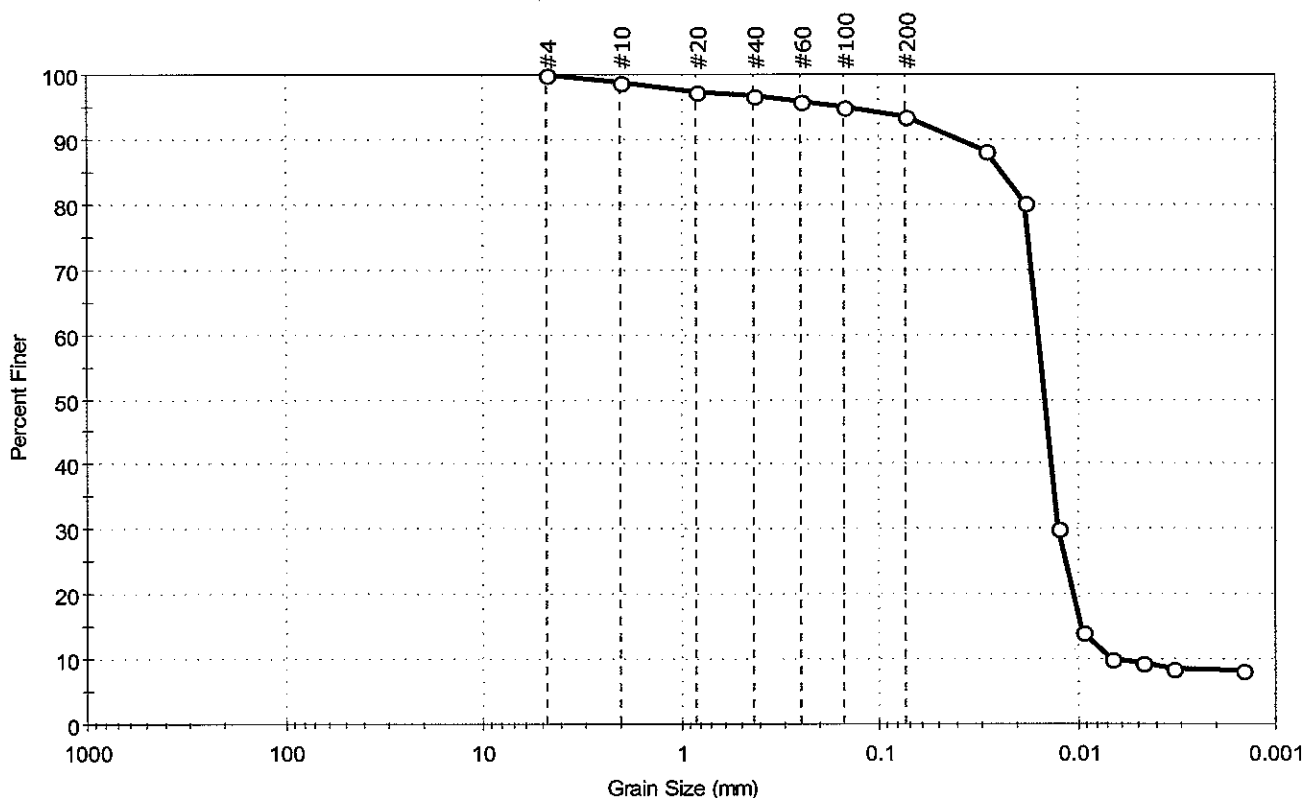
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30040	Sample Type:	jar
Sample ID:	OL-0285-09	Test Date:	02/06/07
Depth :	9.9-13.2 ft	Test Id:	105839
Test Comment:	---		
Sample Description:	Moist, light greenish gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	6.6	93.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	97		
#40	0.42	96		
#60	0.25	95		
#100	0.15	93		
#200	0.074	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0290	80		
---	0.0183	30		
---	0.0127	14		
---	0.0094	10		
---	0.0067	9		
---	0.0047	9		
---	0.0033	8		
---	0.0015			

Coefficients

D ₈₅ = 0.0241 mm	D ₃₀ = 0.0126 mm
D ₆₀ = 0.0158 mm	D ₁₅ = 0.0096 mm
D ₅₀ = 0.0147 mm	D ₁₀ = 0.0065 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

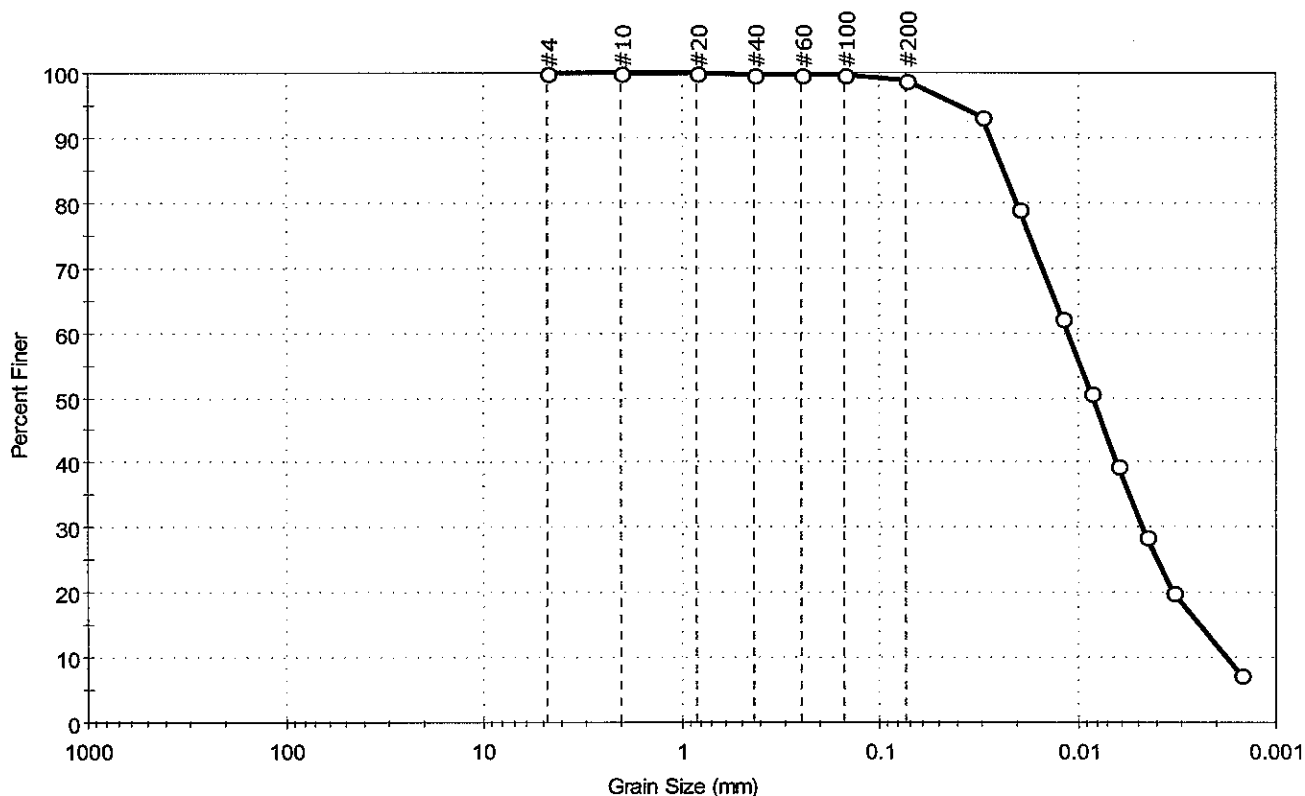
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30042	Sample Type:	jar
Sample ID:	OL-0285-10	Test Date:	02/06/07
Depth :	0-3.3 ft	Test Id:	105840
Test Comment:	---		
Sample Description:	Moist, greenish gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.1	98.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0302	93		
---	0.0197	79		
---	0.0119	62		
---	0.0086	51		
---	0.0063	39		
---	0.0045	29		
---	0.0033	20		
---	0.0015	7		

Coefficients

D ₈₅ = 0.0236 mm	D ₃₀ = 0.0047 mm
D ₆₀ = 0.0111 mm	D ₁₅ = 0.0024 mm
D ₅₀ = 0.0084 mm	D ₁₀ = 0.0018 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (39))

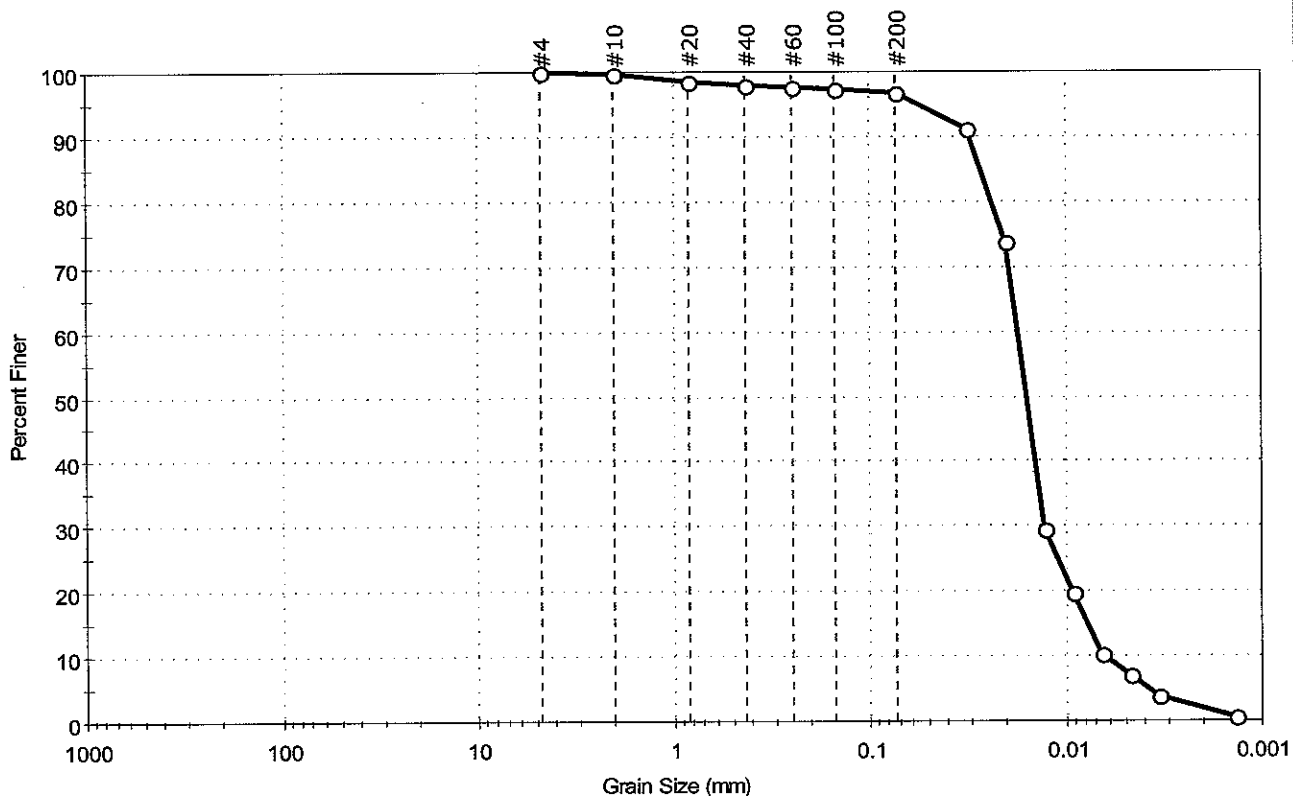
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30041	Sample Type:	jar
Sample ID:	OL-0285-11	Test Date:	02/06/07
Depth :	0-3.3 ft	Test Id:	105841
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.3	96.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	98		
#60	0.25	98		
#100	0.15	97		
#200	0.074	97		
	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0319	91		
---	0.0201	74		
---	0.0129	29		
---	0.0092	20		
---	0.0066	10		
---	0.0047	7		
---	0.0033	4		
---	0.0014	1		

Coefficients

D ₈₅ = 0.0271 mm	D ₃₀ = 0.0129 mm
D ₆₀ = 0.0175 mm	D ₁₅ = 0.0078 mm
D ₅₀ = 0.0158 mm	D ₁₀ = 0.0064 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

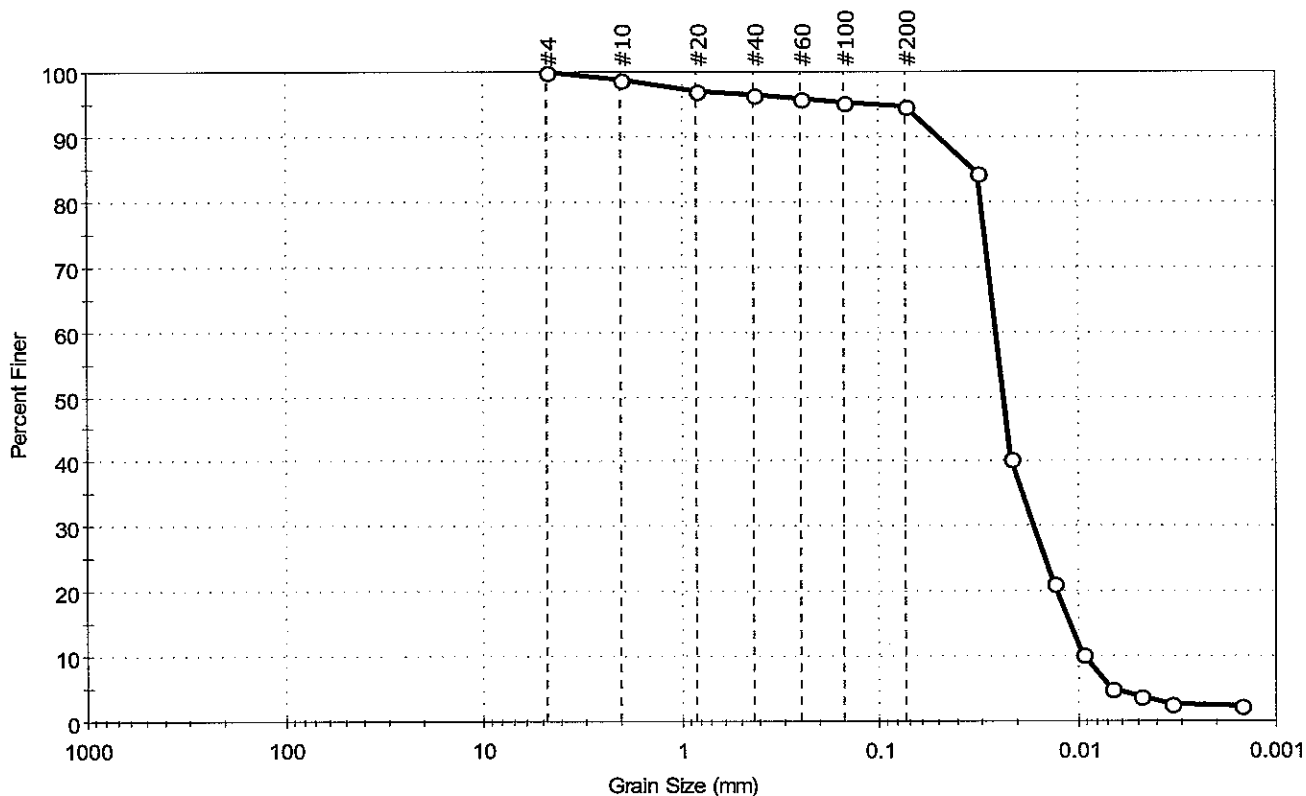
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30041	Sample Type:	jar
Sample ID:	OL-0285-12	Test Date:	02/06/07
Depth :	9.9-13.2 ft	Test Id:	105842
Test Comment:	---		
Sample Description:	Moist, light gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	5.3	94.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	97		
#40	0.42	96		
#60	0.25	96		
#100	0.15	95		
#200	0.074	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	84		
---	0.0217	40		
---	0.0131	21		
---	0.0095	10		
---	0.0068	5		
---	0.0048	4		
---	0.0034	3		
---	0.0015	2		

Coefficients

D ₈₅ = 0.0339 mm	D ₃₀ = 0.0165 mm
D ₆₀ = 0.0258 mm	D ₁₅ = 0.0109 mm
D ₅₀ = 0.0236 mm	D ₁₀ = 0.0093 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

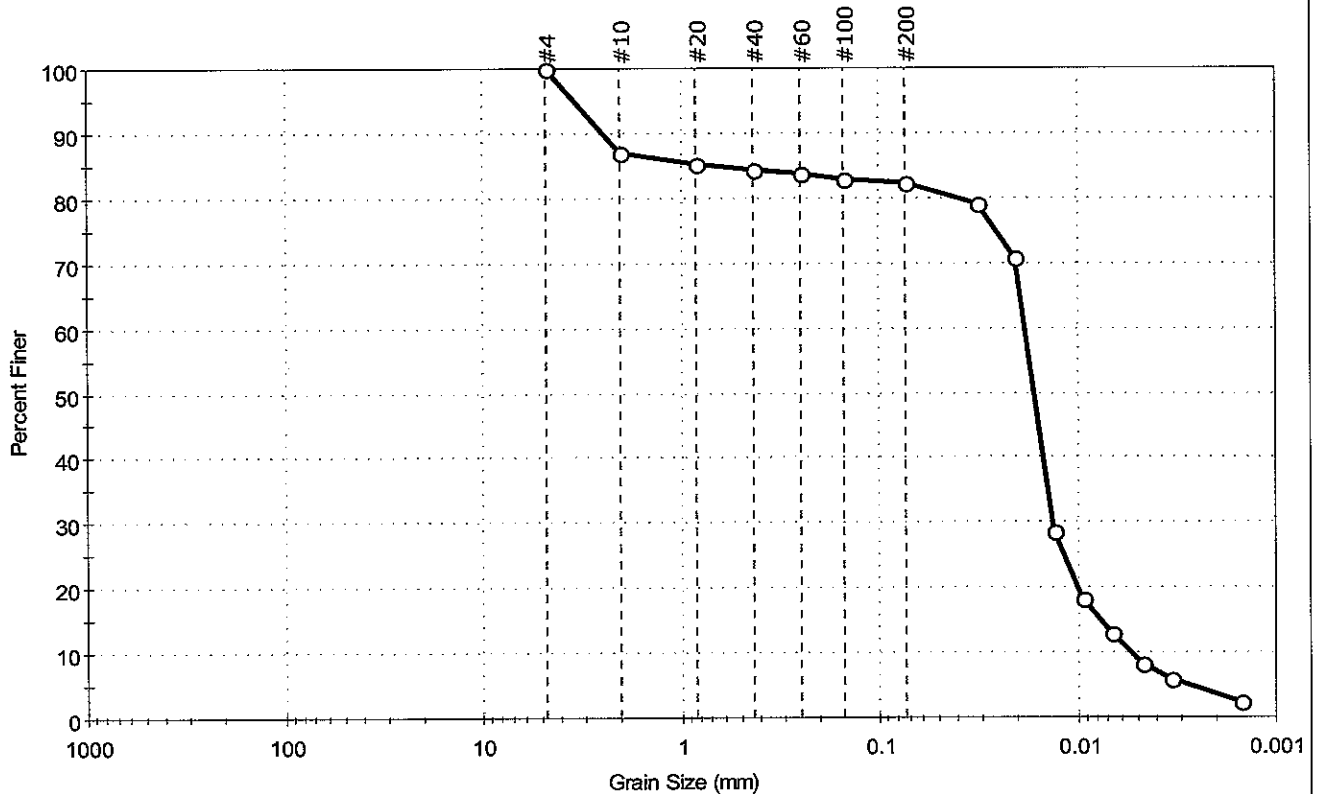
AASHTO Clayey Soils (A-7-5 (48))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30034	Sample Type:	jar
Sample ID:	OL-0285-13	Test Date:	02/06/07
Depth :	0.5-3.3 ft	Test Id:	105843
Test Comment:	---		
Sample Description:	Moist, light gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	17.8	82.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	87		
#20	0.84	85		
#40	0.42	84		
#60	0.25	84		
#100	0.15	83		
#200	0.074	82		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0321	79		
---	0.0209	71		
---	0.0131	29		
---	0.0094	18		
---	0.0067	13		
---	0.0048	8		
---	0.0034	6		
---	0.0015	2		

Coefficients

D ₈₅ = 0.7678 mm	D ₃₀ = 0.0133 mm
D ₆₀ = 0.0185 mm	D ₁₅ = 0.0077 mm
D ₅₀ = 0.0166 mm	D ₁₀ = 0.0054 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (59))

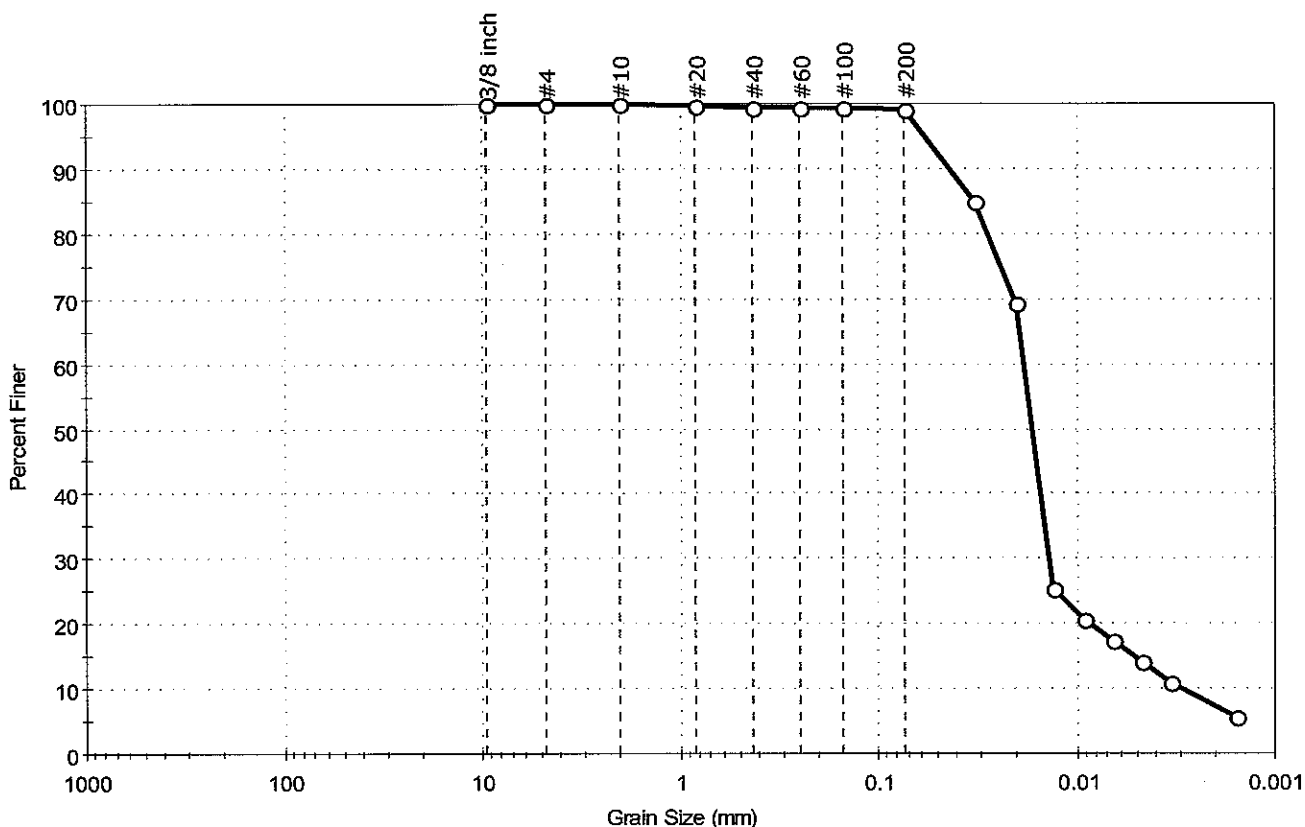
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30034	Sample Type:	jar
Sample ID:	OL-0285-14	Test Date:	02/06/07
Depth :	9.9-13.2 ft	Test Id:	105844
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.9	99.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0325	85		
---	0.0204	69		
---	0.0131	25		
---	0.0093	21		
---	0.0066	17		
---	0.0047	14		
---	0.0033	11		
---	0.0016	6		

Coefficients

D ₈₅ = 0.0327 mm	D ₃₀ = 0.0137 mm
D ₆₀ = 0.0186 mm	D ₁₅ = 0.0051 mm
D ₅₀ = 0.0168 mm	D ₁₀ = 0.0029 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

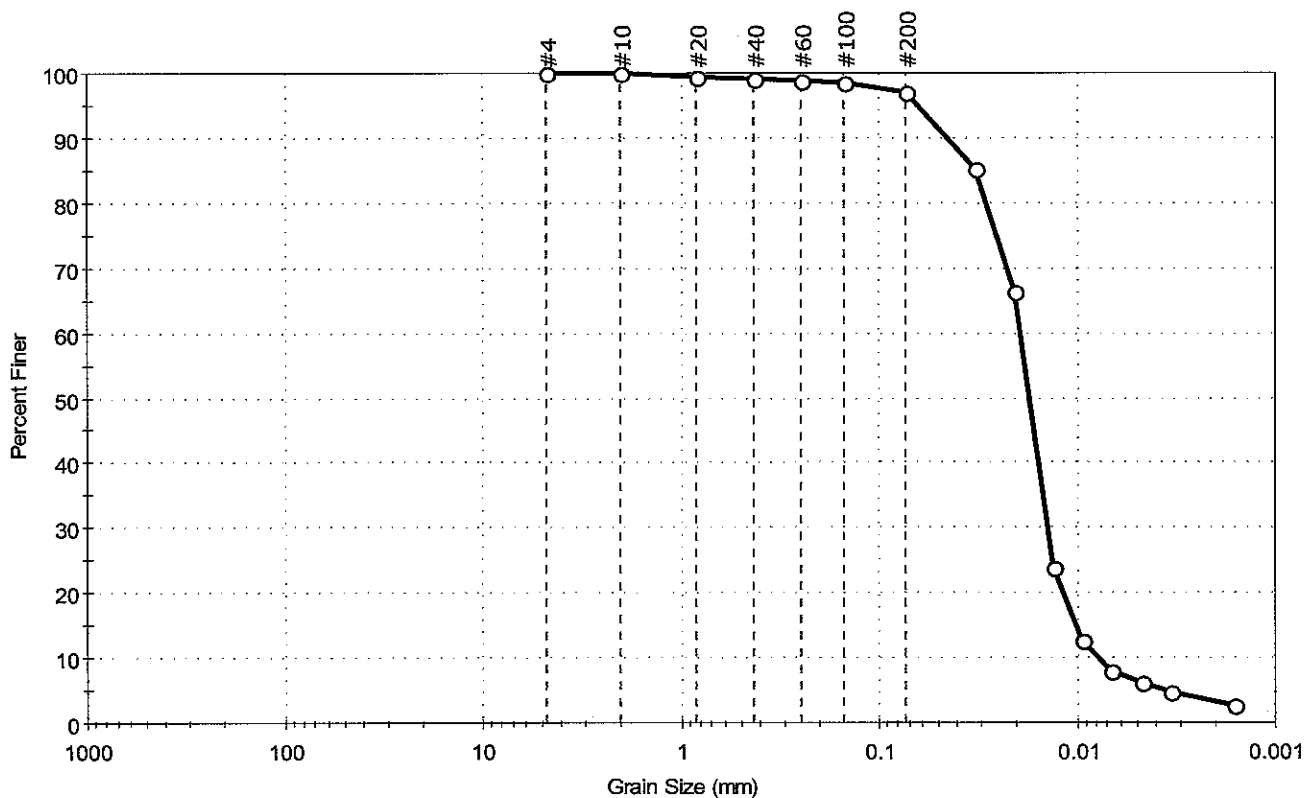
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30043	Sample Type:	jar
Sample ID:	OL-0285-15	Test Date:	02/06/07
Depth :	0-3.3 ft	Test Id:	105845
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.8	97.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0325	85		
---	0.0207	66		
---	0.0131	24		
---	0.0094	13		
---	0.0067	8		
---	0.0048	6		
---	0.0034	5		
---	0.0016	3		

Coefficients

D ₈₅ = 0.0323 mm	D ₃₀ = 0.0140 mm
D ₆₀ = 0.0193 mm	D ₁₅ = 0.0101 mm
D ₅₀ = 0.0173 mm	D ₁₀ = 0.0078 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

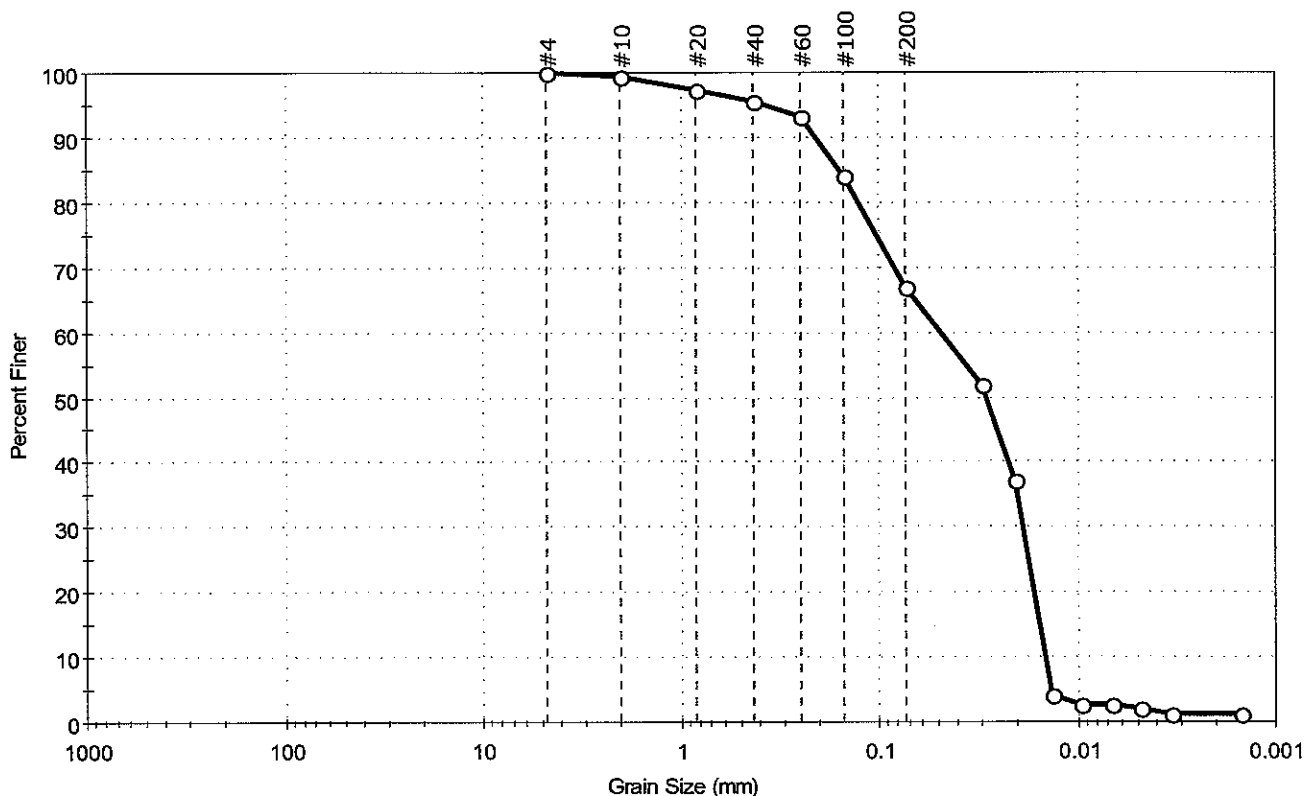
AASHTO Clayey Soils (A-7-5 (48))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30043	Sample Type:	jar
Sample ID:	OL-0285-16	Test Date:	02/07/07
Depth :	9.9-13.2 ft	Test Id:	105846
Test Comment:	---		
Sample Description:	Moist, greenish gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	32.9	67.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	97		
#40	0.42	96		
#60	0.25	93		
#100	0.15	84		
#200	0.074	67		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0304	52		
---	0.0206	37		
---	0.0135	4		
---	0.0096	3		
---	0.0068	3		
---	0.0048	2		
---	0.0034	1		
---	0.0015	1		

Coefficients

D ₈₅ = 0.1568 mm	D ₃₀ = 0.0188 mm
D ₆₀ = 0.0490 mm	D ₁₅ = 0.0155 mm
D ₅₀ = 0.0290 mm	D ₁₀ = 0.0146 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

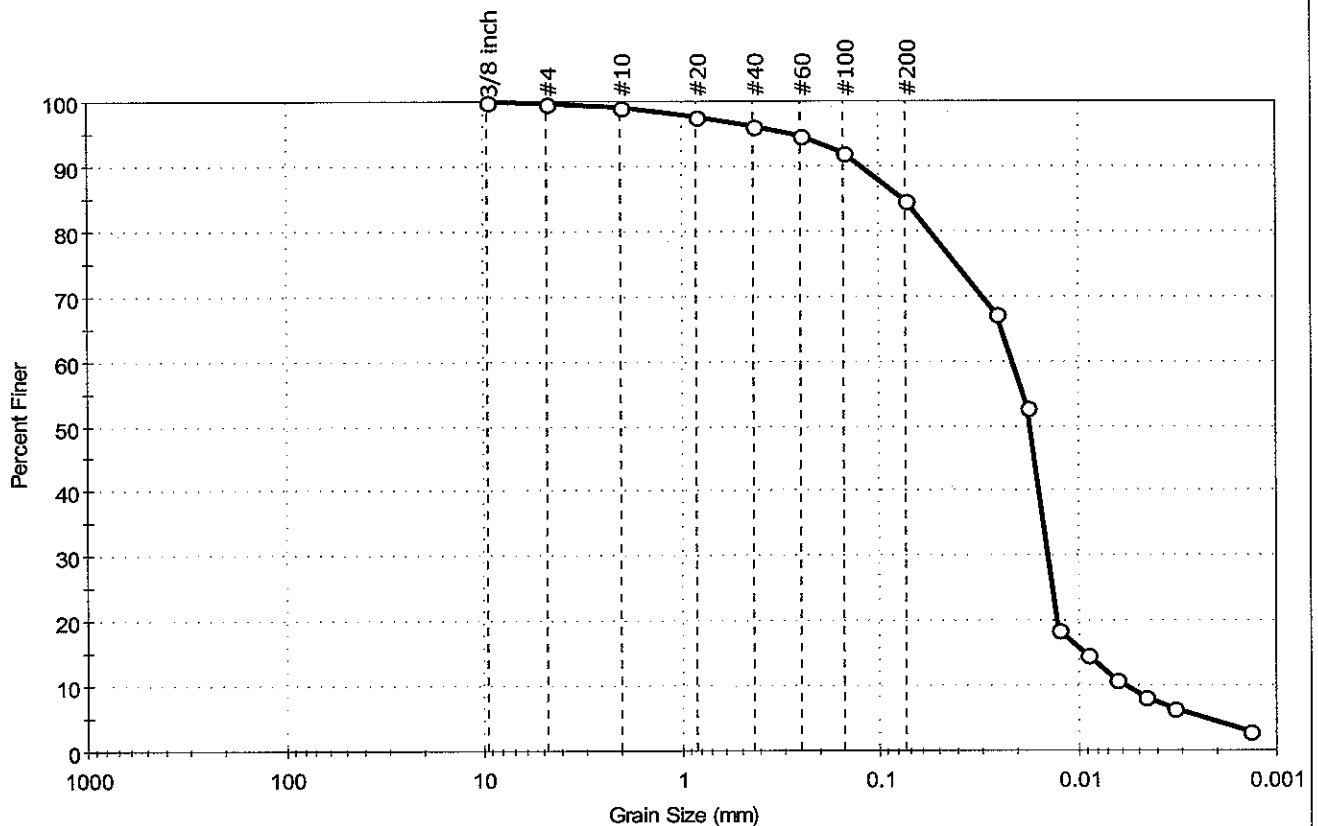
AASHTO Silty Soils (A-5 (7))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30043	Sample Type:	jar
Sample ID:	OL-0285-17	Test Date:	02/06/07
Depth :	16.5-19.4 ft	Test Id:	105847
Test Comment:	---		
Sample Description:	Moist, olive brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.2	15.2	84.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	96		
#60	0.25	95		
#100	0.15	92		
#200	0.074	85		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0258	67		
---	0.0179	53		
---	0.0125	19		
---	0.0089	15		
---	0.0064	11		
---	0.0046	8		
---	0.0033	6		
---	0.0014	3		

Coefficients

D ₈₅ = 0.0770 mm	D ₃₀ = 0.0141 mm
D ₆₀ = 0.0216 mm	D ₁₅ = 0.0091 mm
D ₅₀ = 0.0174 mm	D ₁₀ = 0.0058 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (33))

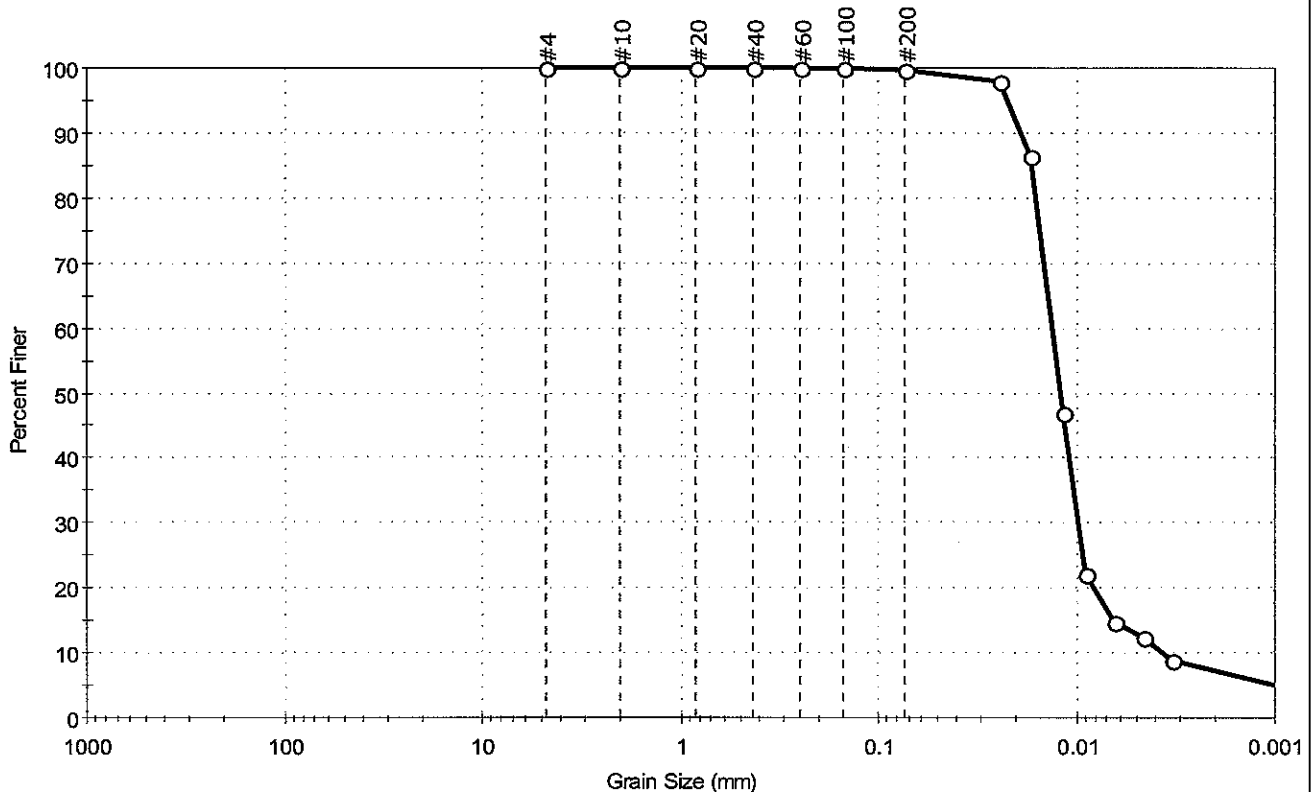
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40023	Sample Type:	jar
Sample ID:	OL-0285-18	Test Date:	02/05/07
Depth :	3.3-6.6 ft	Test Id:	105848
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	----		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.4	99.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0244	98		
---	0.0169	86		
---	0.0116	47		
---	0.0090	22		
---	0.0064	15		
---	0.0046	12		
---	0.0033	9		
---	0.0008	4		

Coefficients

D ₈₅ = 0.0167 mm	D ₃₀ = 0.0097 mm
D ₆₀ = 0.0131 mm	D ₁₅ = 0.0065 mm
D ₅₀ = 0.0119 mm	D ₁₀ = 0.0037 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (39))

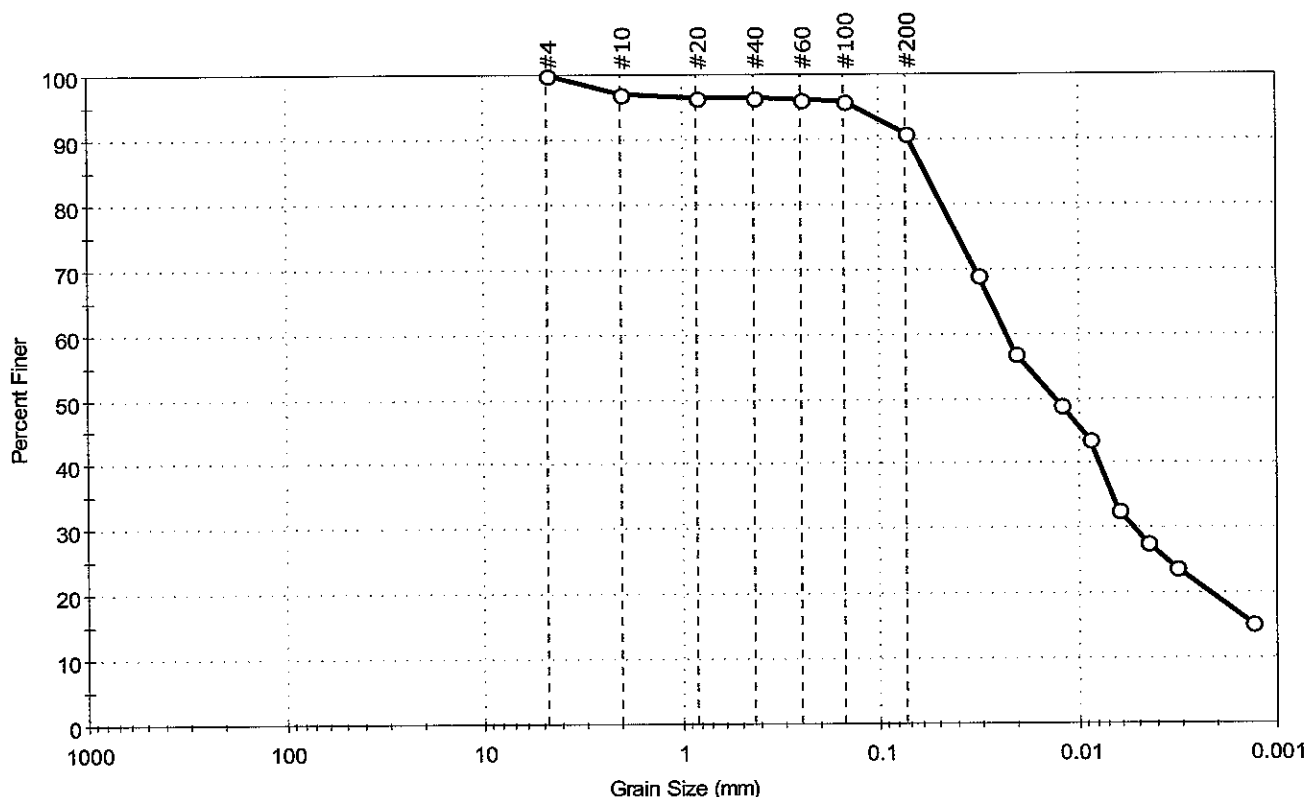
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40023	Sample Type:	jar
Sample ID:	OL-0285-19	Test Date:	02/07/07
Depth:	13.2-16.5 ft	Test Id:	105849
Test Comment:	---		
Sample Description:	Moist, dark brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	9.2	90.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	97		
#20	0.84	97		
#40	0.42	96		
#60	0.25	96		
#100	0.15	96		
#200	0.074	91		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0322	69		
---	0.0209	57		
---	0.0122	49		
---	0.0087	44		
---	0.0063	33		
---	0.0045	28		
---	0.0032	24		
---	0.0013	15		

Coefficients

D ₈₅ = 0.0593 mm	D ₃₀ = 0.0052 mm
D ₆₀ = 0.0233 mm	D ₁₅ = N/A
D ₅₀ = 0.0132 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

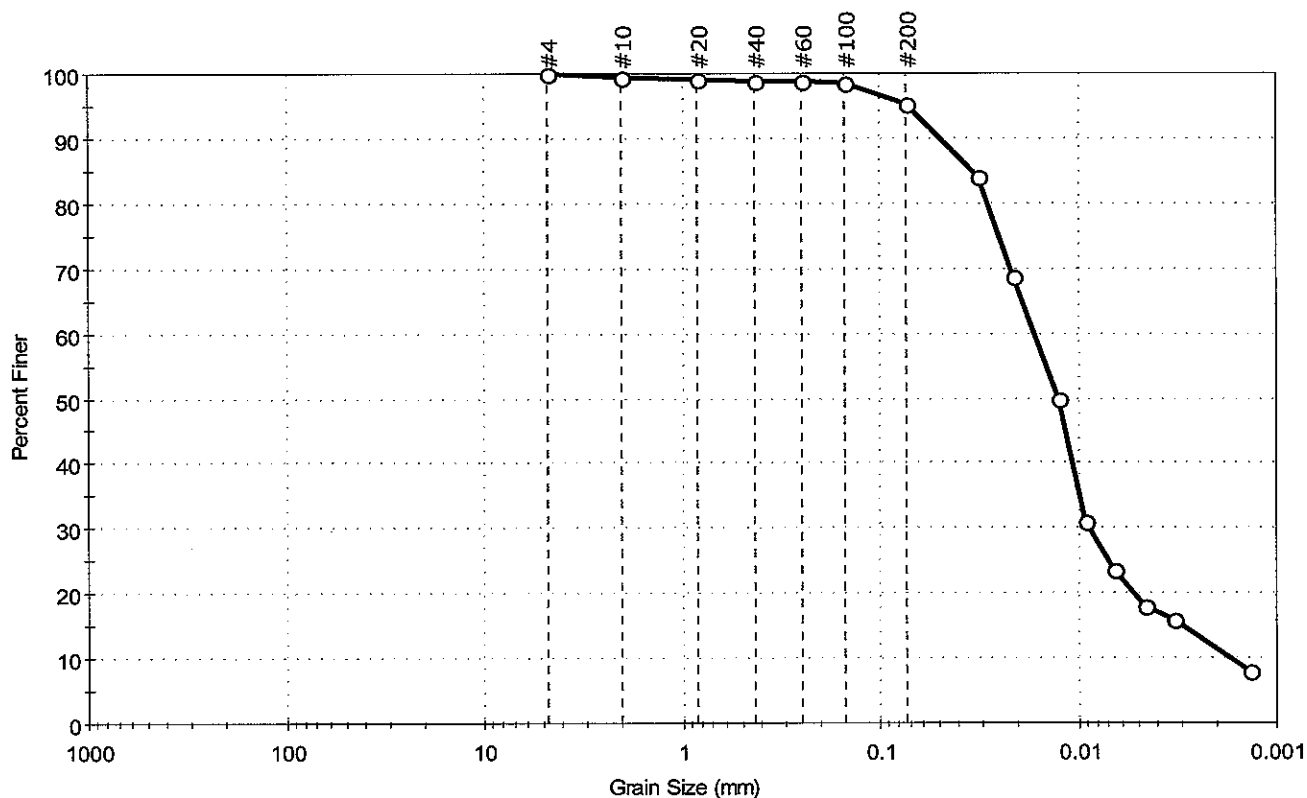
AASHTO Clayey Soils (A-7-5 (57))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40032	Sample Type:	jar
Sample ID:	OL-0285-20	Test Date:	02/06/07
Depth :	0-3.3 ft	Test Id:	105850
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	4.8	95.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0321	84		
---	0.0213	69		
---	0.0125	50		
---	0.0091	31		
---	0.0065	24		
---	0.0046	18		
---	0.0033	16		
---	0.0014	8		

Coefficients

D ₈₅ = 0.0347 mm	D ₃₀ = 0.0087 mm
D ₆₀ = 0.0166 mm	D ₁₅ = 0.0029 mm
D ₅₀ = 0.0126 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (25))

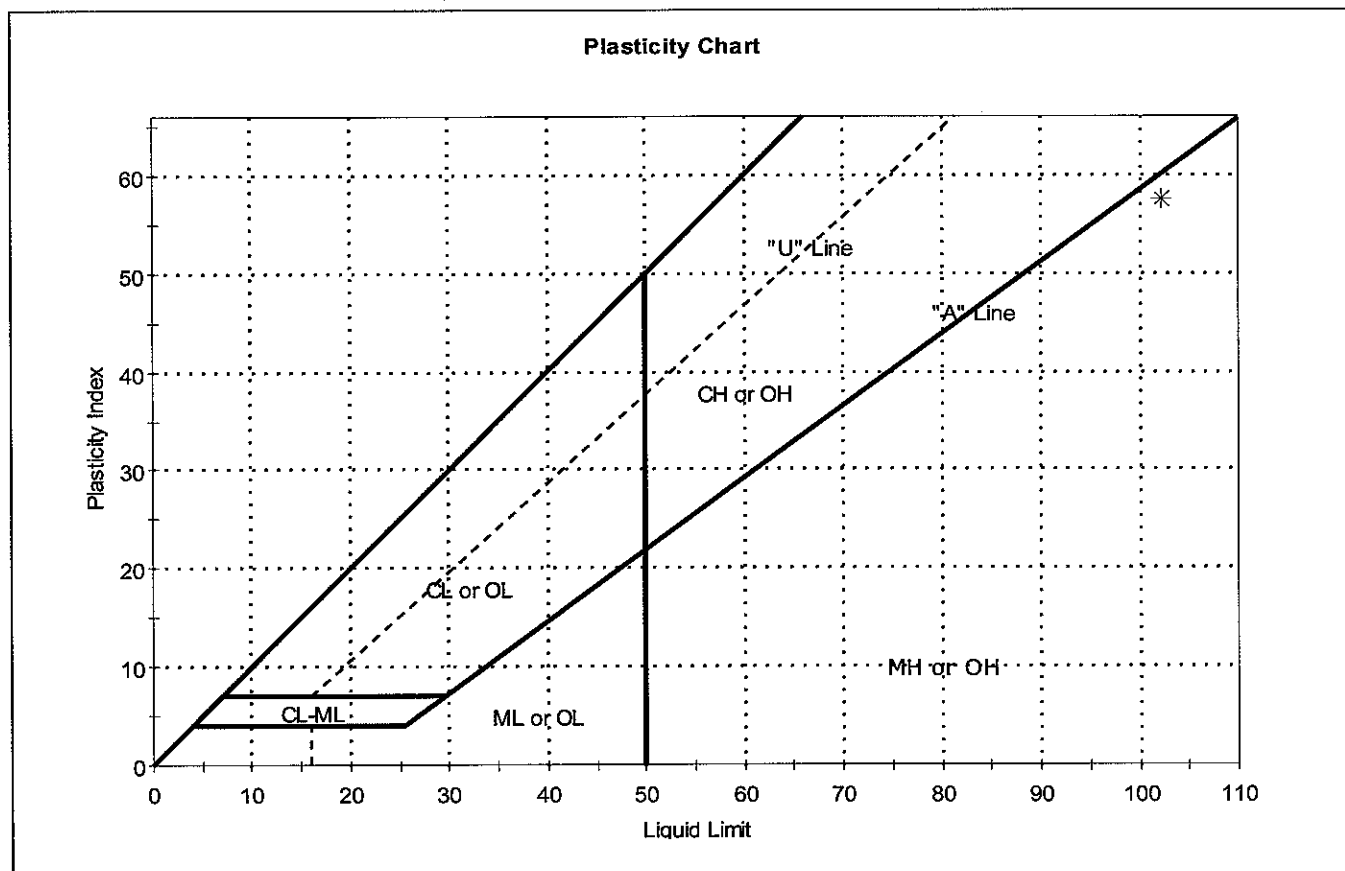
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30036	Sample Type:	jar
Sample ID:	OL-0285-01	Test Date:	01/26/07
Depth :	9.9-13.2 ft	Test Id:	105796
Test Comment:	---		
Sample Description:	Moist, dark olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-01	-VC-300	9.9-13.2 ft	77	102	45	57	1	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

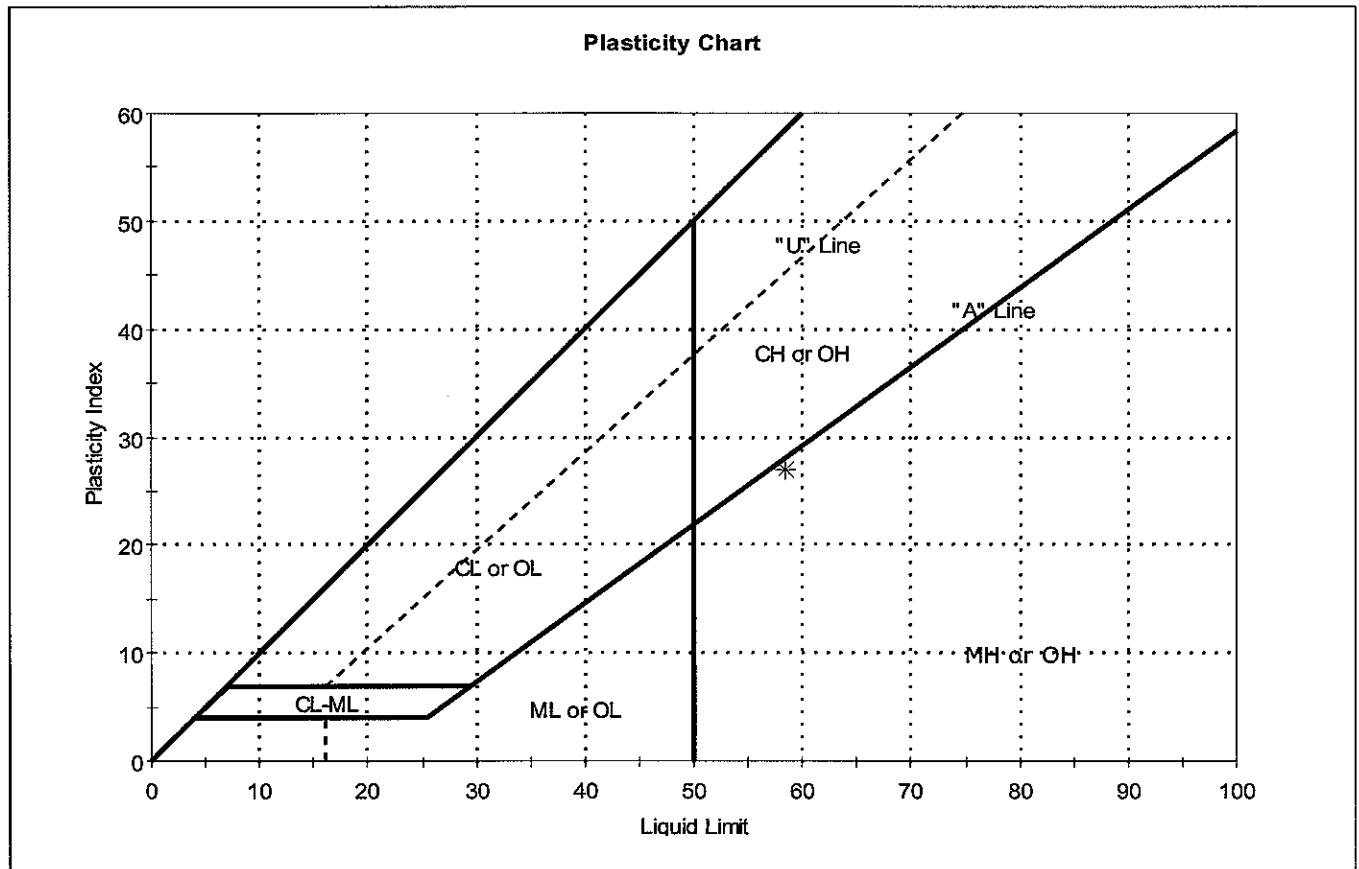
Dry Strength: VERY HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30036	Sample Type:	jar
Sample ID:	OL-0285-02	Test Date:	01/29/07
Depth :	16.5-17.3 ft	Test Id:	105797
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

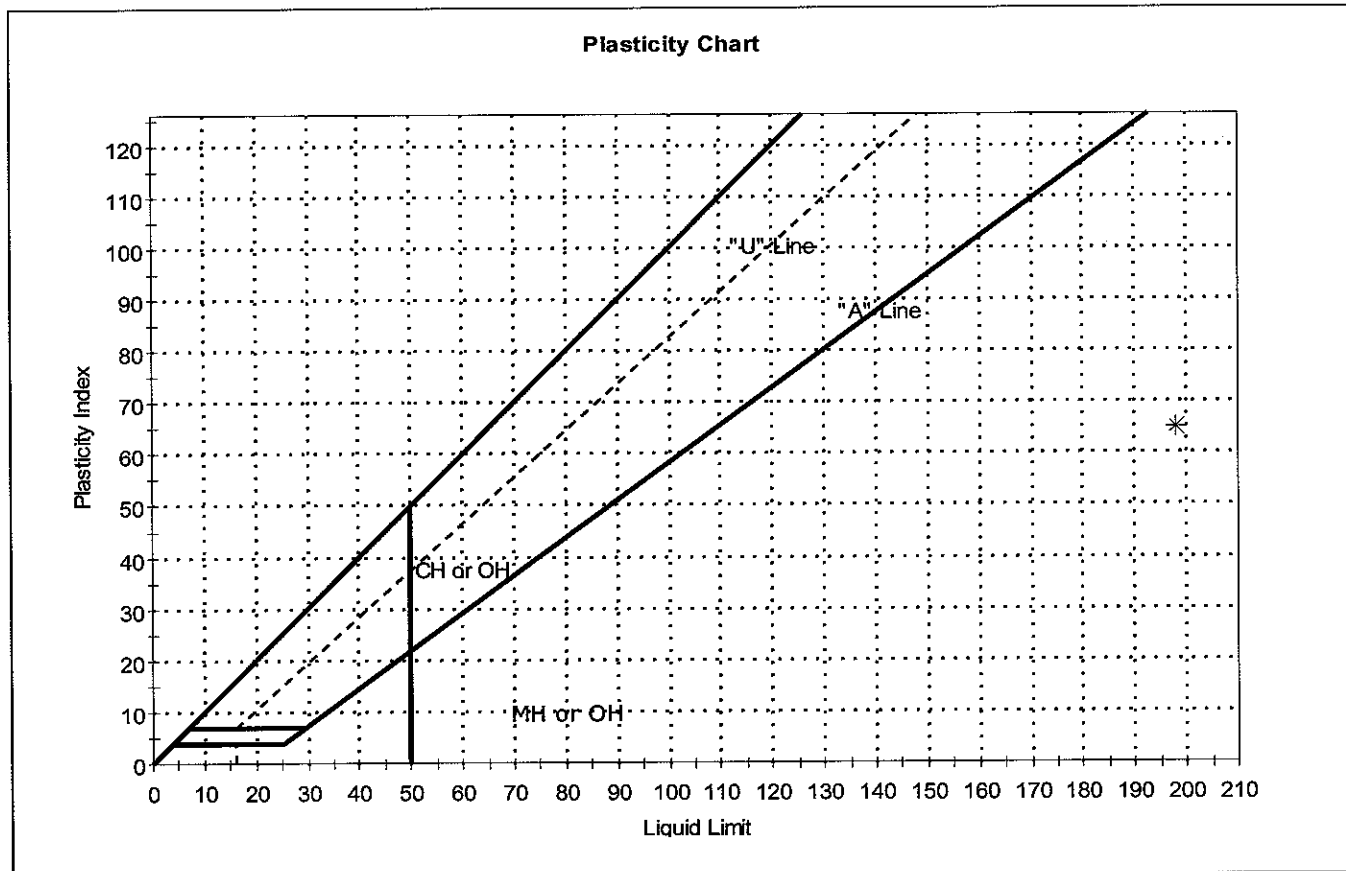


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-02	-VC-3001	16.5-17.3 ft	49	58	31	27	1	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30038	Sample Type:	jar
Sample ID:	OL-0285-03	Test Date:	01/29/07
Depth :	0.5-3.3 ft	Test Id:	105798
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-03	-VC-300	0.5-3.3 ft	449	198	133	65	5	elastic silt (MH)

Sample Prepared using the WET method

2% Retained on #40 Sieve

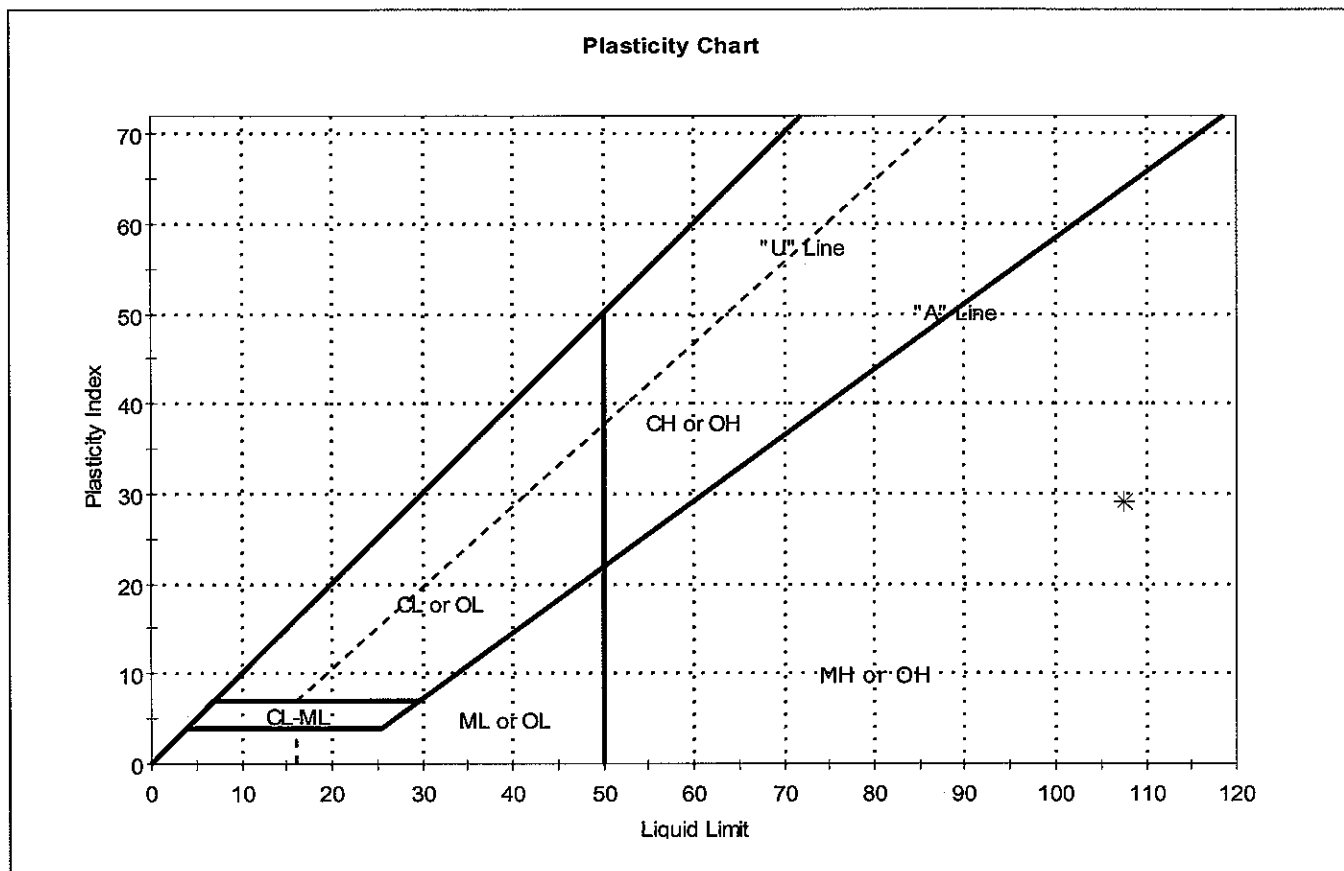
Dry Strength: HIGH

Dilutancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30038	Sample Type:	jar
Sample ID:	OL-0285-04	Test Date:	01/11/07
Depth :	6.6-9.9 ft	Test Id:	105799
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-04	-VC-3003	6.6-9.9 ft	122	108	78	30	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

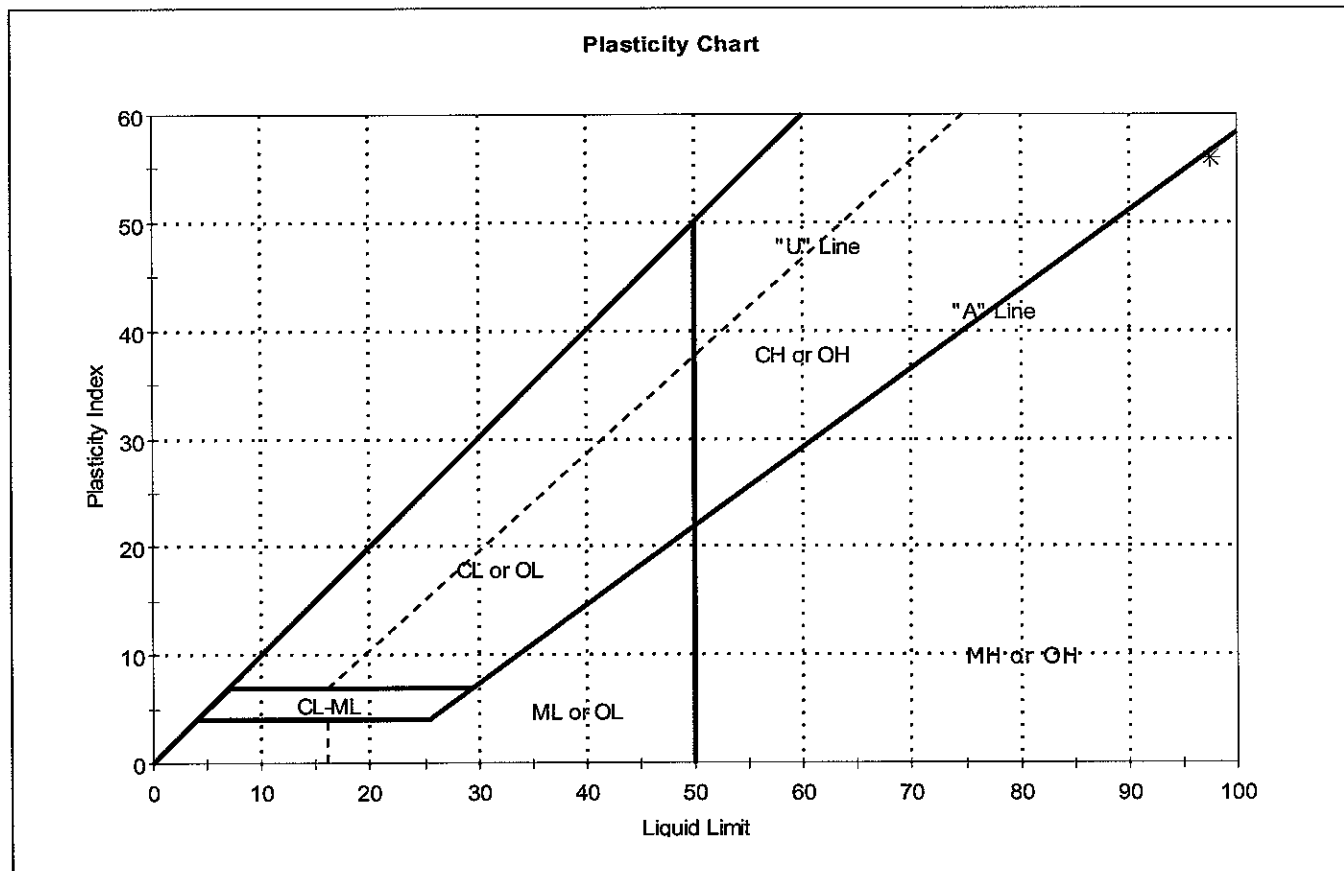
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30038	Sample Type:	jar
Sample ID:	OL-0285-05	Test Date:	01/25/07
Depth :	16.5-20.1 ft	Test Id:	105800
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-05	L-VC-300	16.5-20.1 ft	73	97	41	56	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

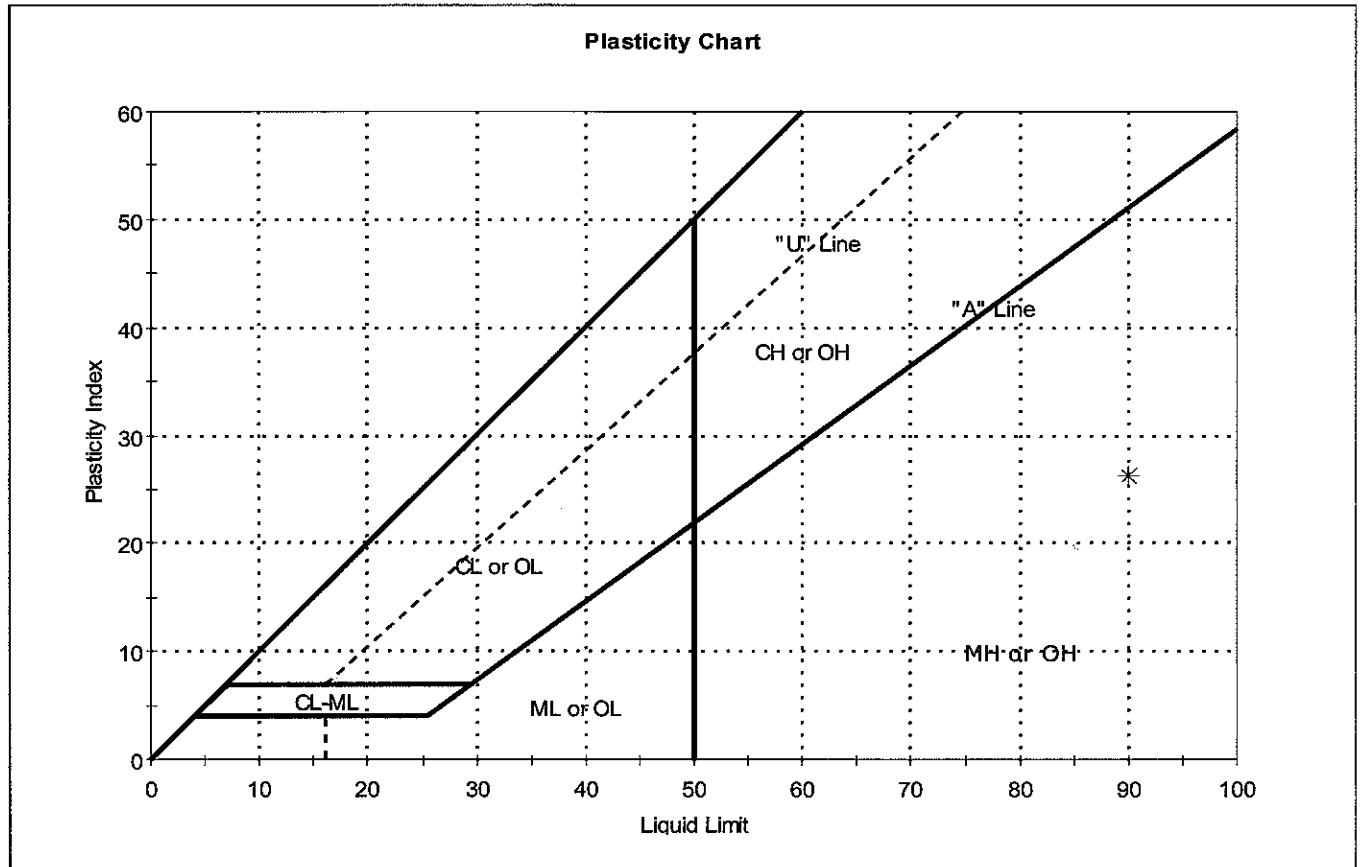
Dry Strength: HIGH

Dilancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30039	Sample Type:	jar
Sample ID:	OL-0285-06	Test Date:	01/29/07
Depth :	3.3-6.6 ft	Test Id:	105801
Test Comment:	---		
Sample Description:	Moist, light gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

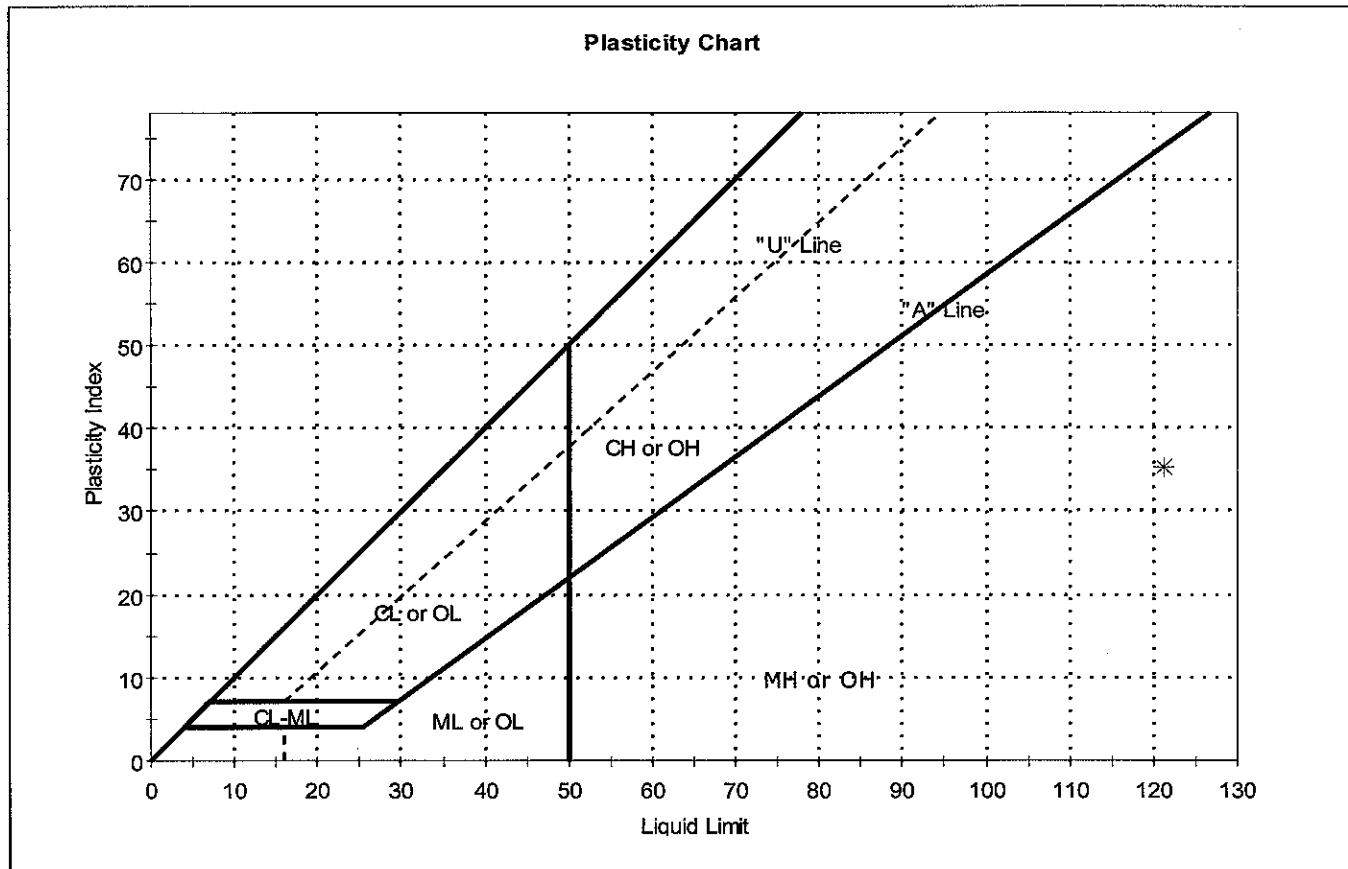


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-06	VC-3001	3.3-6.6 ft	635	90	64	26	22	elastic silt (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30039	Sample Type:	jar
Sample ID:	OL-0285-07	Test Date:	01/25/07
Depth :	9.9-13.2 ft	Test Id:	105802
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-07	VC-300	9.9-13.2 ft	17	121	86	35	-2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

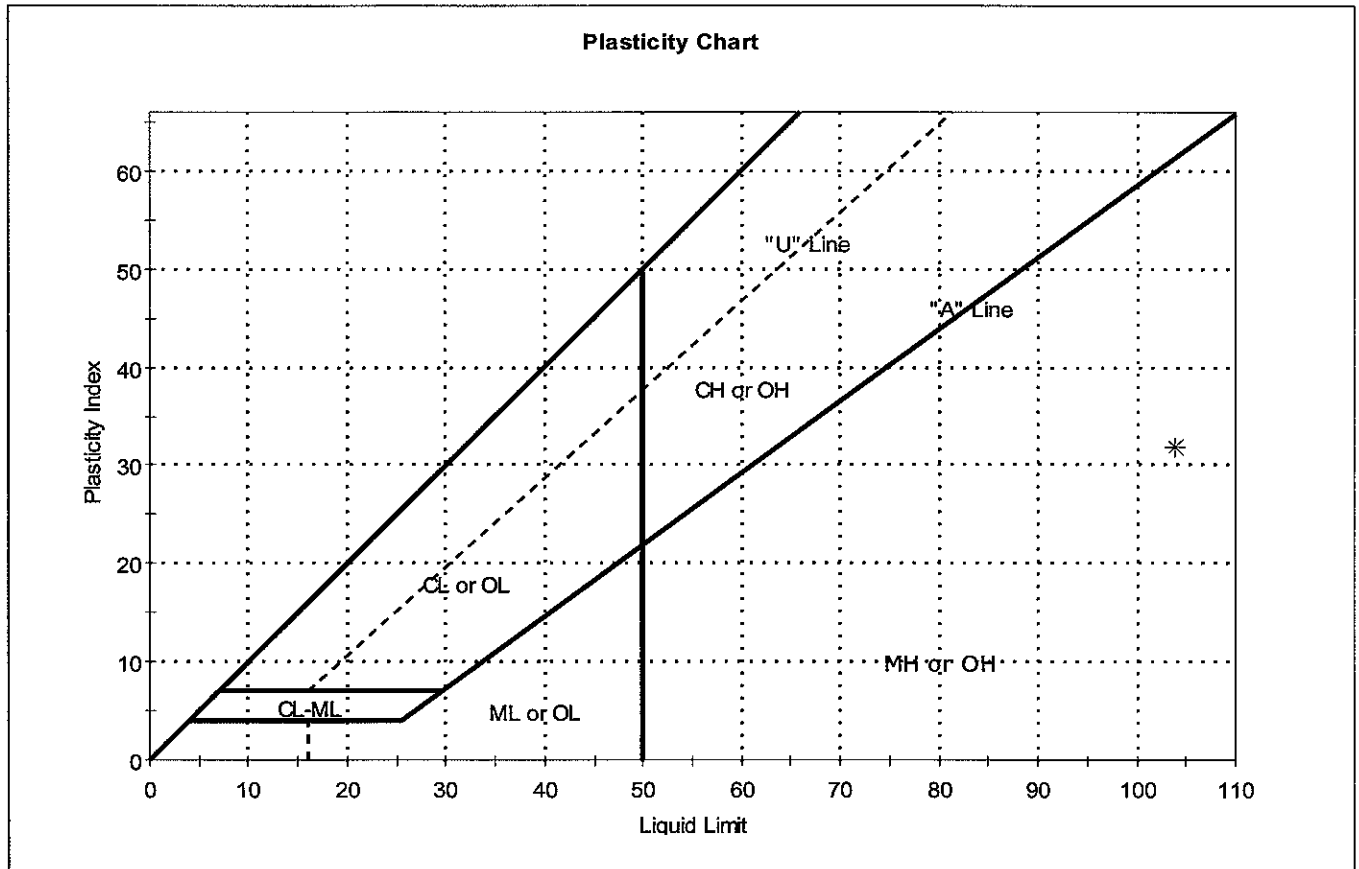
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-30040	Sample Type:	jar
Sample ID:	OL-0285-08	Test Date:	01/29/07
Depth :	3.3-6.6 ft	Test Id:	105803
Test Comment:	---		
Sample Description:	Moist, pale gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

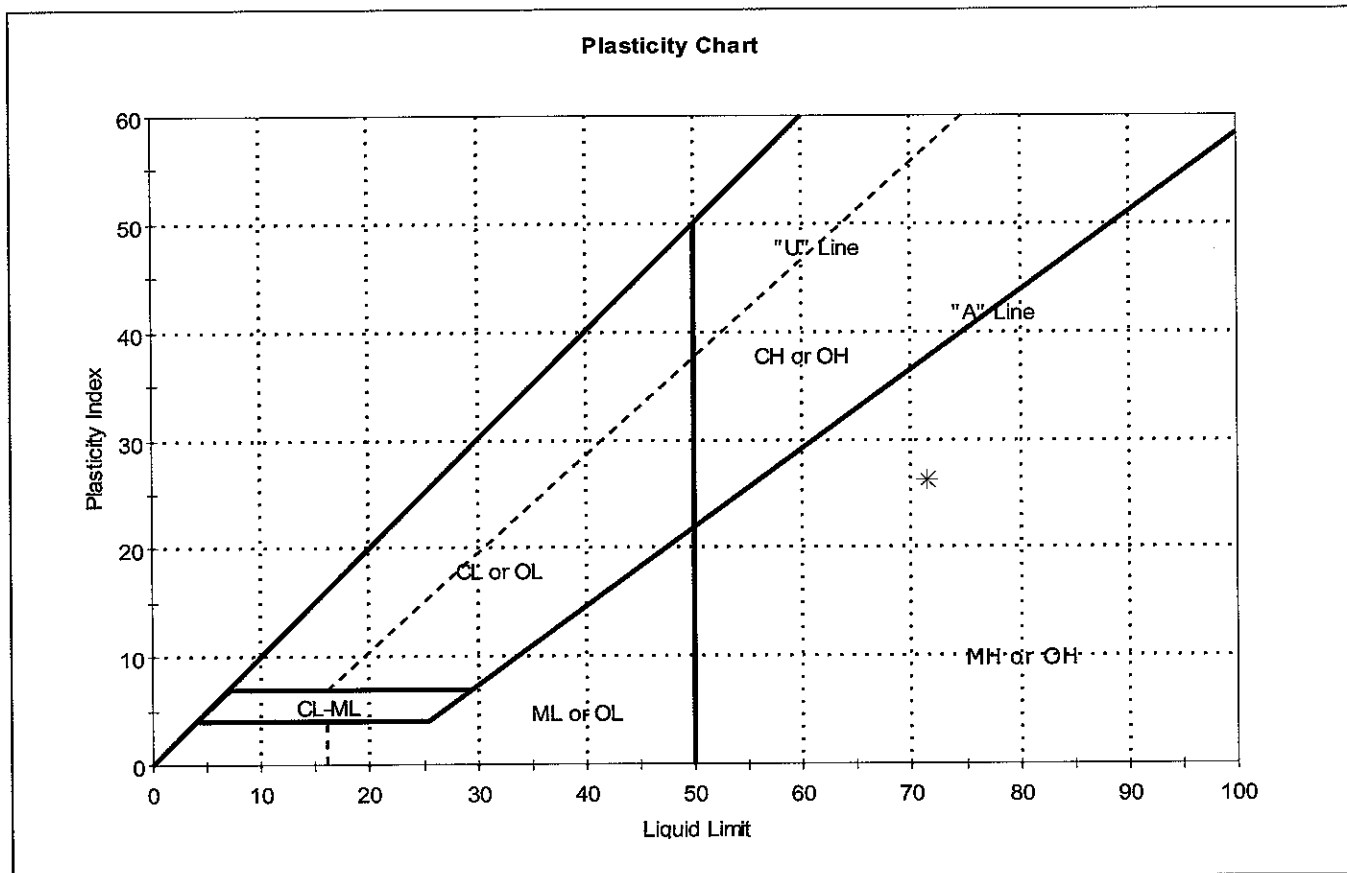


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-08	-VC-3004	3.3-6.6 ft	196	104	72	32	4	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30042	Sample Type:	jar
Sample ID:	OL-0285-10	Test Date:	01/25/07
Depth :	0-3.3 ft	Test Id:	105804
Test Comment:	---		
Sample Description:	Moist, greenish gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-10	-VC-300	0-3.3 ft	138	71	45	26	4	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

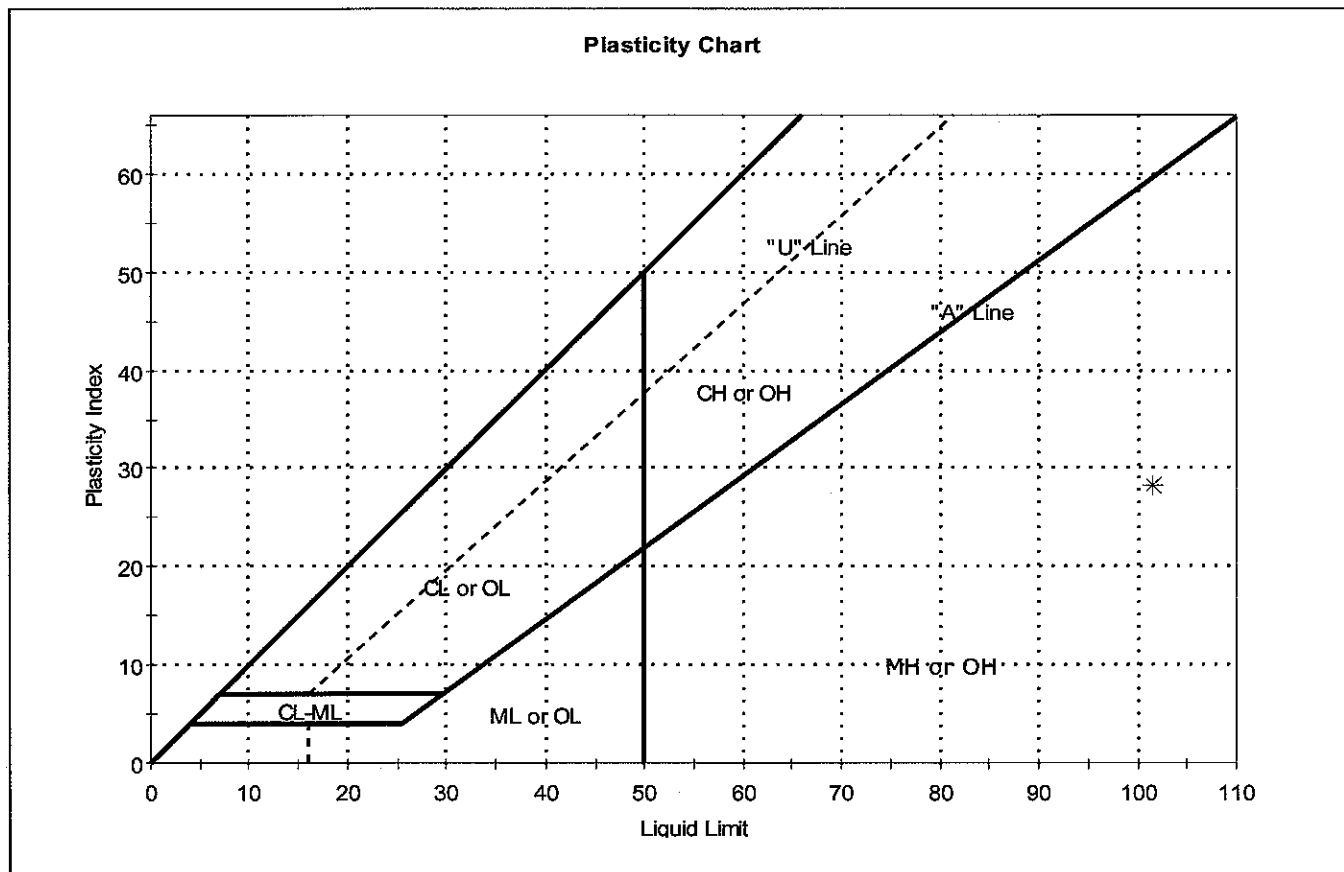
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-30041	Sample Type: jar
Sample ID: OL-0285-12	Test Date: 01/25/07
Depth: 9.9-13.2 ft	Test Id: 105805
Test Comment: ---	
Sample Description: Moist, light gray silt	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-12	-VC-3004	9.9-13.2 ft	201	102	73	29	4	elastic silt (MH)

Sample Prepared using the WET method

4% Retained on #40 Sieve

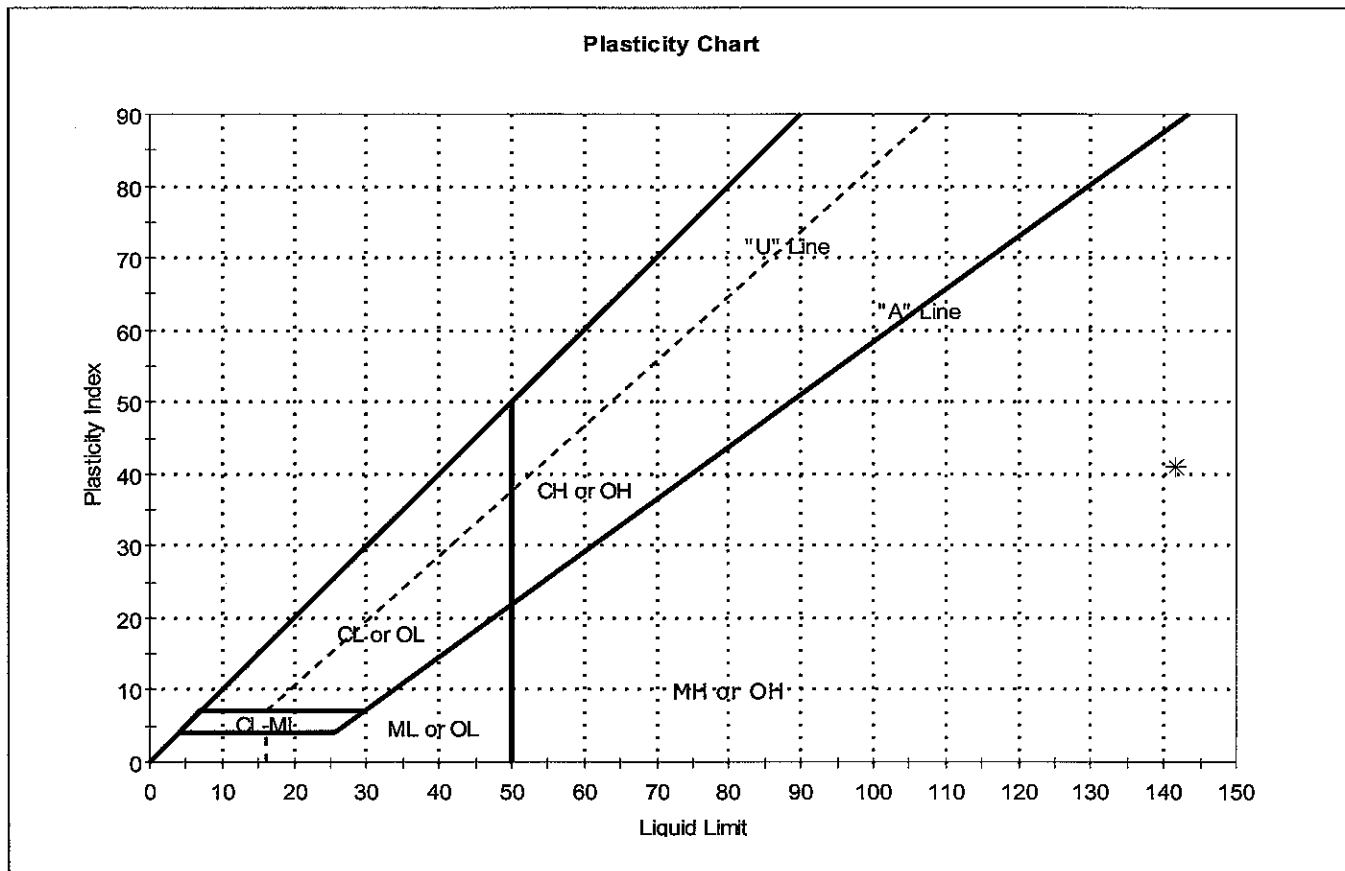
Dry Strength: MEDIUM

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-30034	Sample Type: jar
Sample ID: OL-0285-13	Test Date: 01/26/07
Depth: 0.5-3.3 ft	Test Id: 105806
Test Comment: ---	
Sample Description: Moist, light gray silt with sand	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-13	-VC-300	0.5-3.3 ft	240	142	101	41	3	elastic silt with sand (MH)

Sample Prepared using the WET method

16% Retained on #40 Sieve

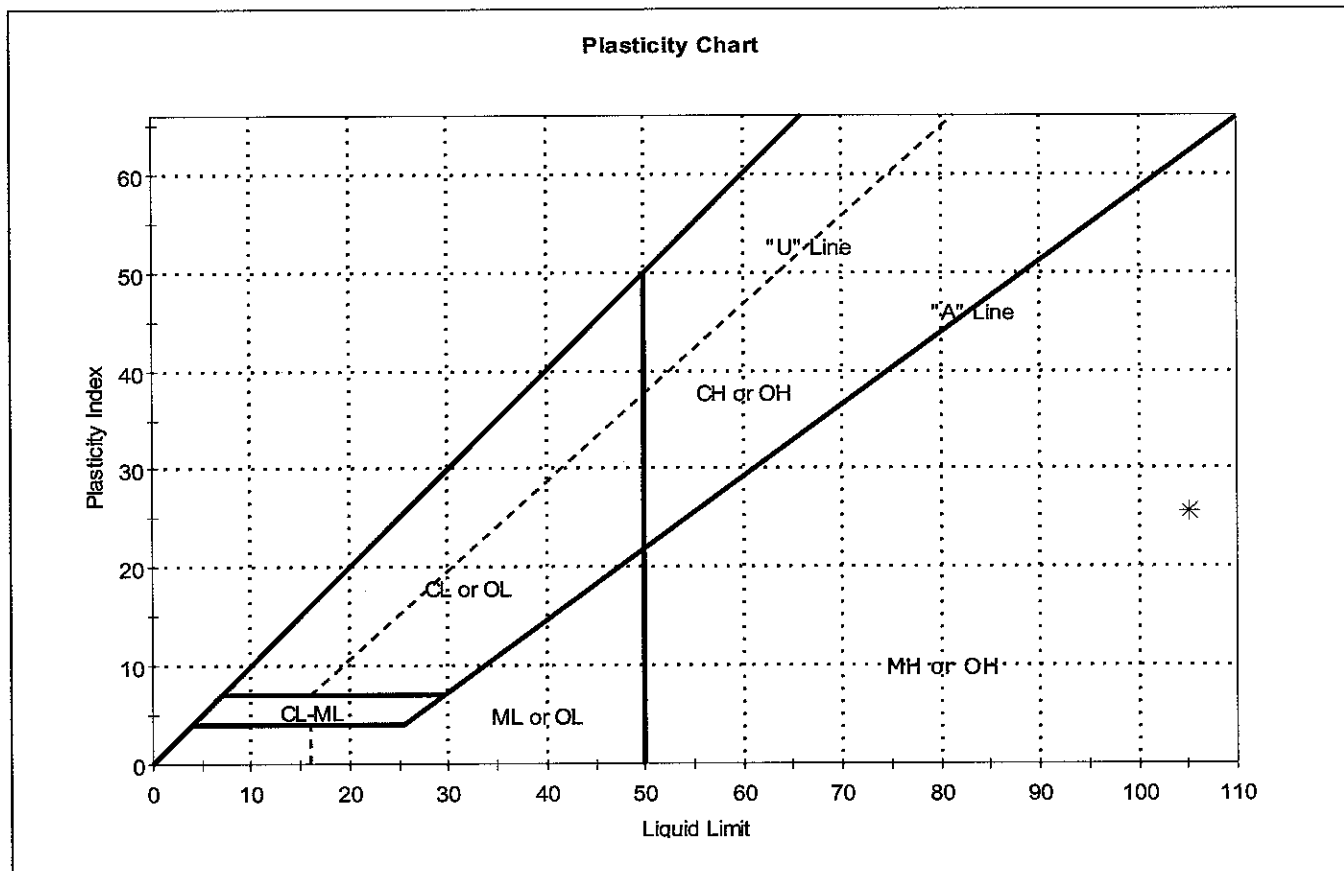
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30043	Sample Type:	jar
Sample ID:	OL-0285-15	Test Date:	01/25/07
Depth :	0-3.3 ft	Test Id:	105807
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-15	L-VC-300	0-3.3 ft	196	105	79	26	4	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

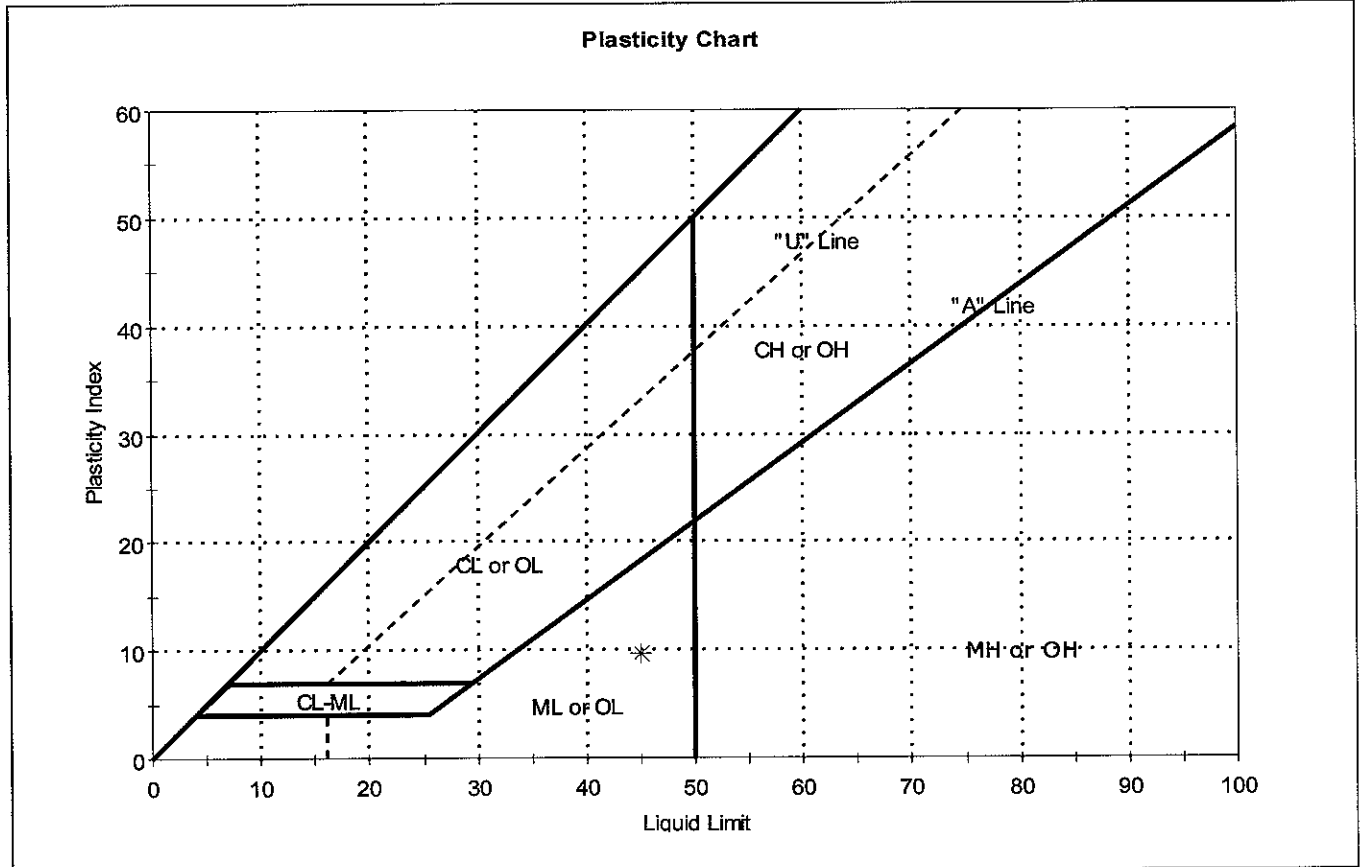
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30043	Sample Type:	jar
Sample ID:	OL-0285-16	Test Date:	01/25/07
Depth :	9.9-13.2 ft	Test Id:	105808
Test Comment:	---		
Sample Description:	Moist, greenish gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

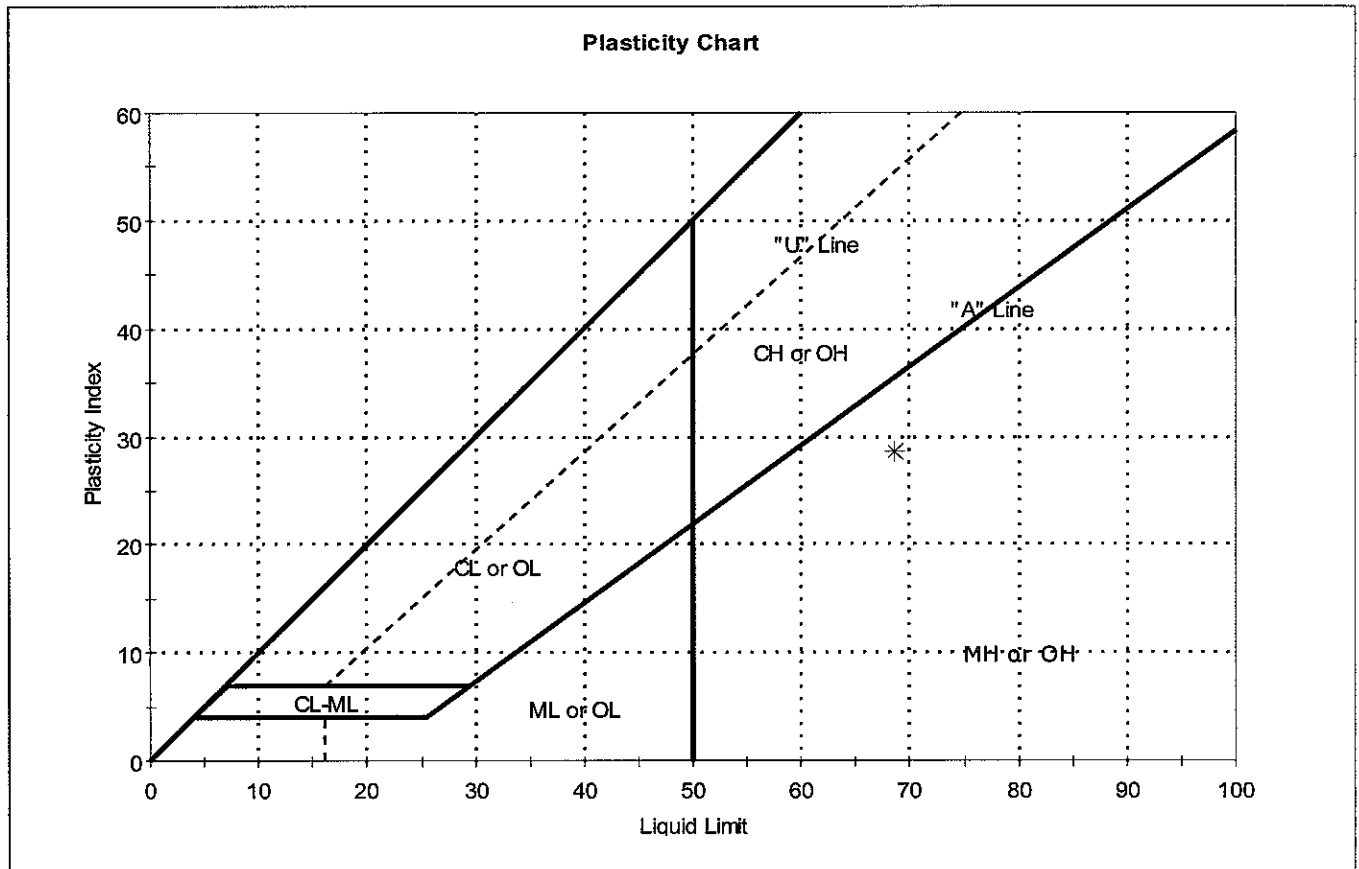


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-16	L-VC-300	9.9-13.2 ft	82	45	35	10	5	Sandy silt (ML)

Sample Prepared using the WET method
 4% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-30043	Sample Type:	jar
Sample ID:	OL-0285-17	Test Date:	01/24/07
Depth :	16.5-19.4 ft	Test Id:	105809
Test Comment:	---		
Sample Description:	Moist, olive brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

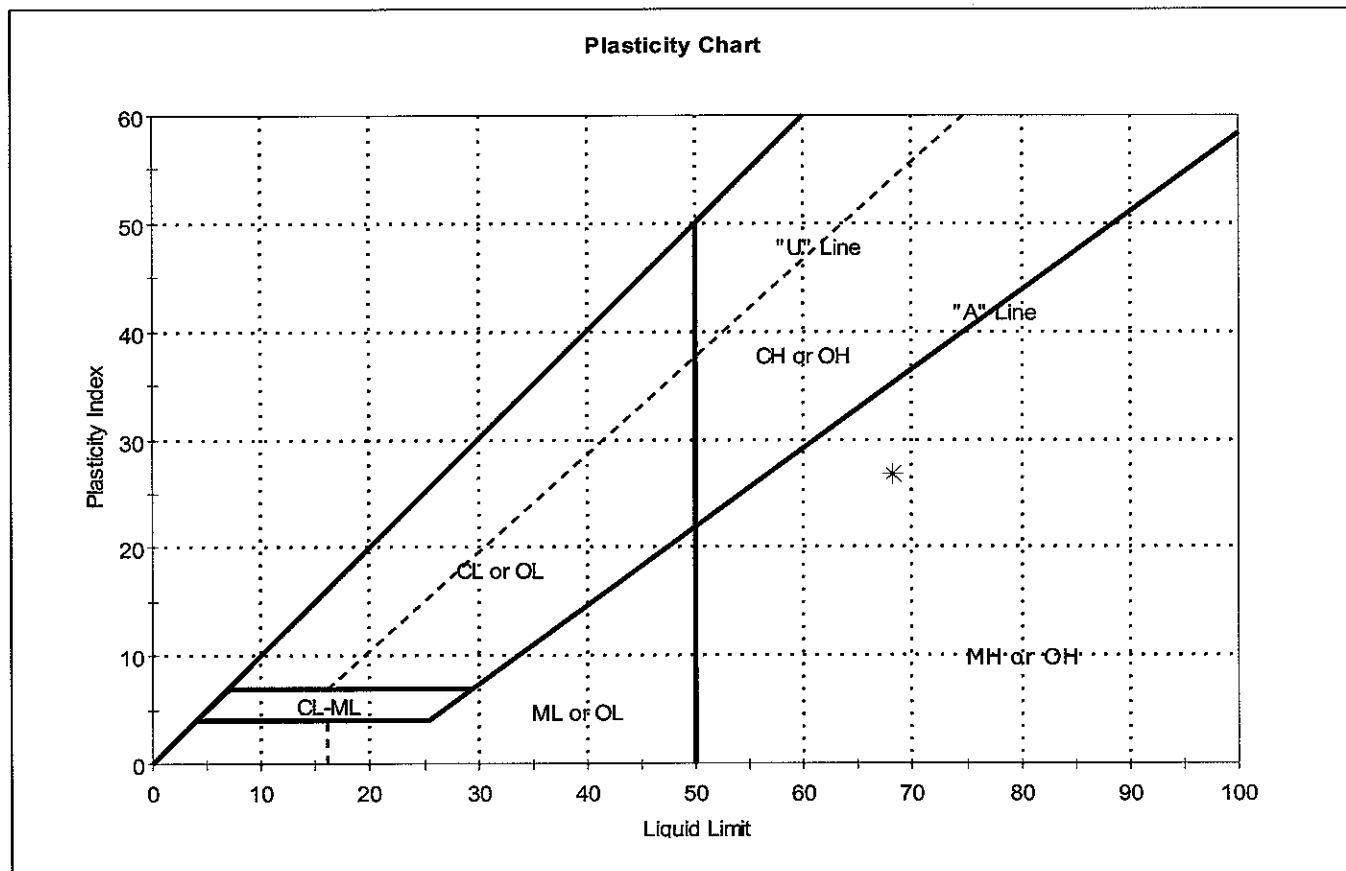


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-17	-VC-3004	16.5-19.4 ft	77	69	40	29	1	elastic silt with sand (MH)

Sample Prepared using the WET method
4% Retained on #40 Sieve
Dry Strength: VERY HIGH
Dilutancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40023	Sample Type:	jar
Sample ID:	OL-0285-18	Test Date:	01/26/07
Depth :	3.3-6.6 ft	Test Id:	105810
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	----		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-18	-VC-400	3.3-6.6 ft	104	68	41	27	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

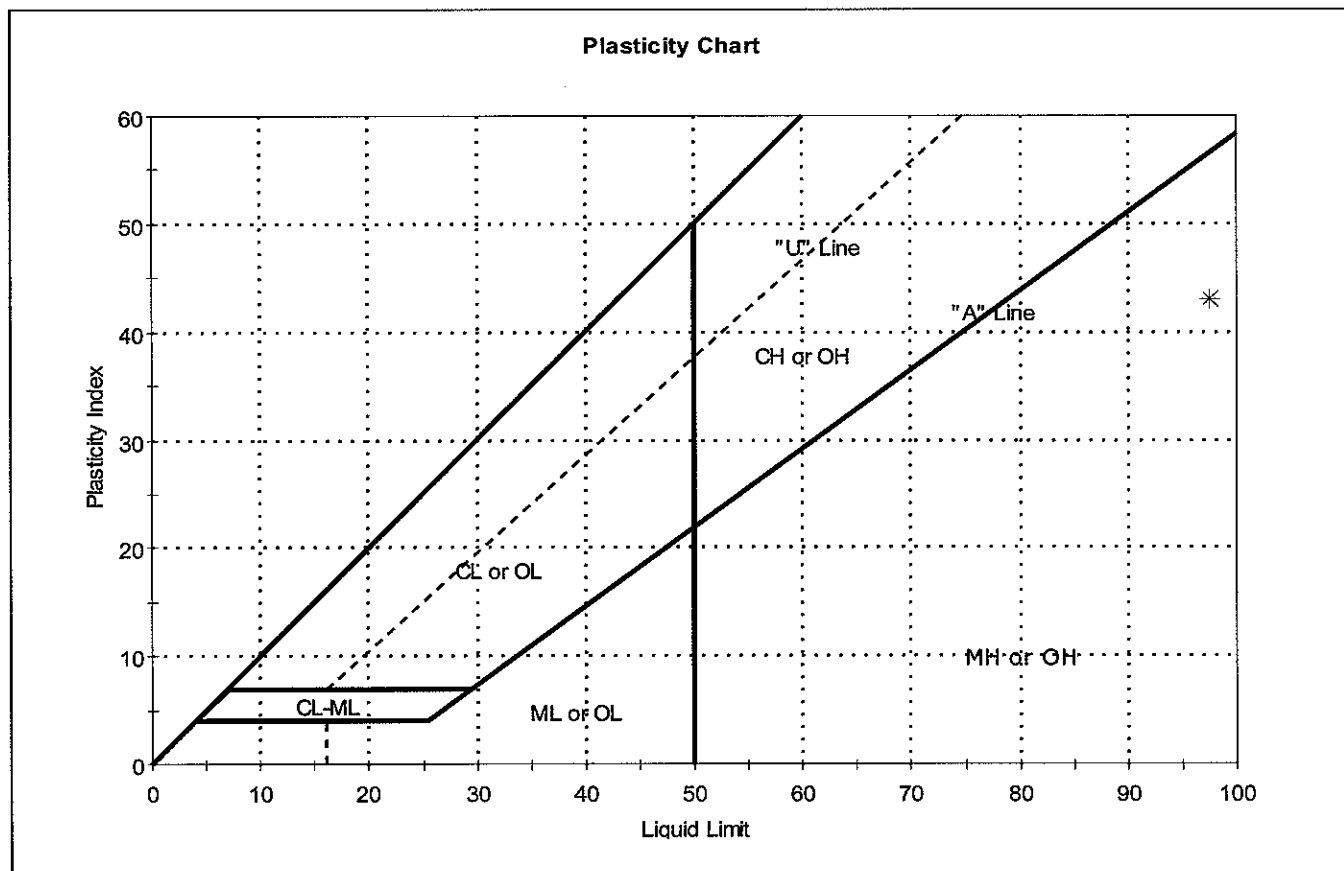
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40023	Sample Type:	jar
Sample ID:	OL-0285-19	Test Date:	01/26/07
Depth :	13.2-16.5 ft	Test Id:	105811
Test Comment:	---		
Sample Description:	Moist, dark brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-19	-VC-400	13.2-16.5 ft	96	98	54	44	1	elastic silt (MH)

Sample Prepared using the WET method

4% Retained on #40 Sieve

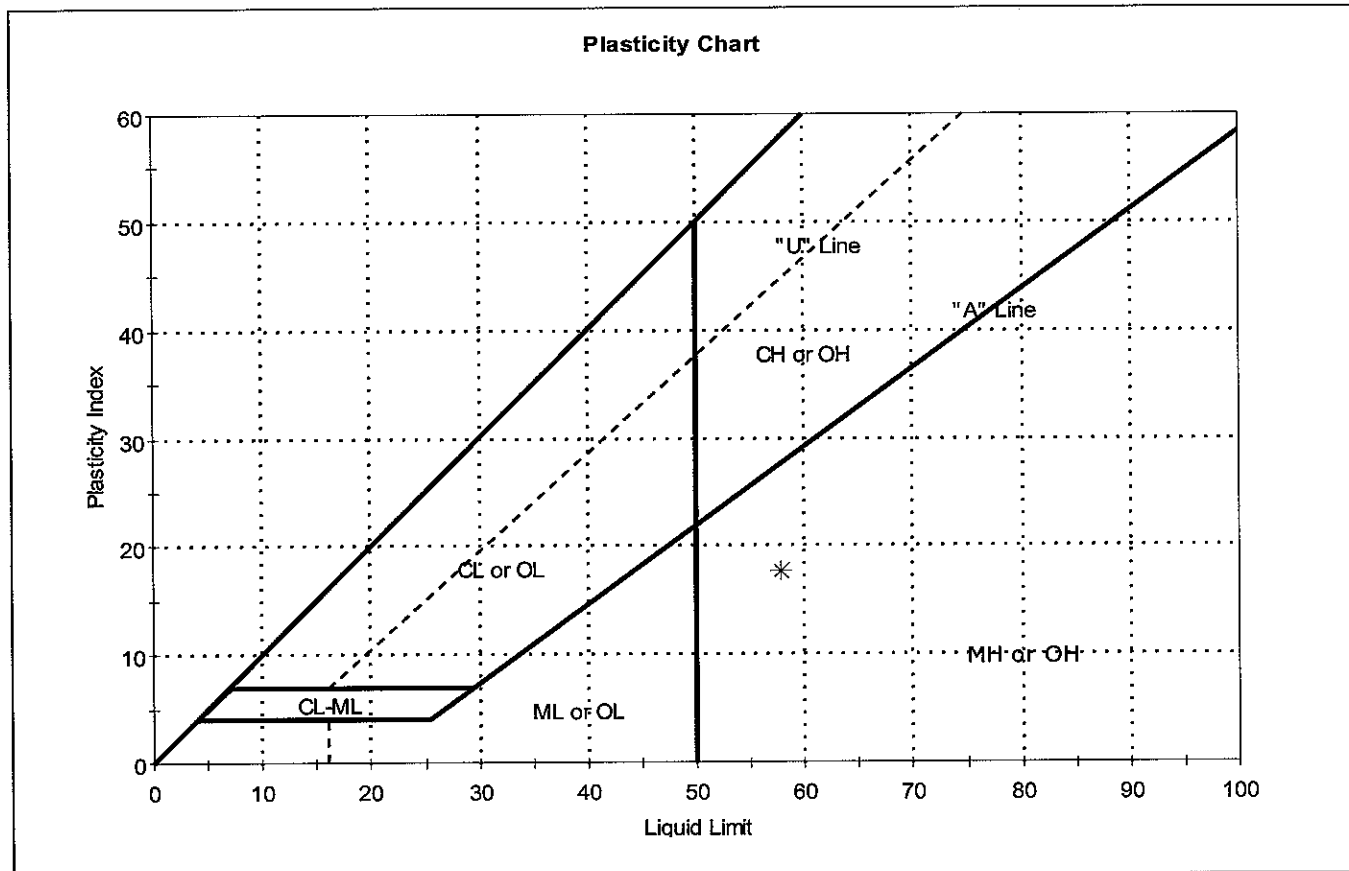
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40032	Sample Type:	jar
Sample ID:	OL-0285-20	Test Date:	01/26/07
Depth :	0-3.3 ft	Test Id:	105812
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0285-20	L-VC-400	0-3.3 ft	139	58	40	18	5	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Chain of Custody / Analysis Request									
Privileged and Confidential				Site Name: Onondaga Lake		AESI Ref: 38292.40495			
Lab Use Only				Location of Site: Syracuse, New York		COC #: 0286			
Lab Proj #				Lab ID		GTE			
Job No.				Preservative:		0 0 0 0 0 0 0 0 0 0			
Field Filtered Sample?				Grab/Composite		Units			
Atterberg Limits				Bulk Density		Carbonate Content			
Organic Content				Moisture Content		Specific Gravity			
Grain Size				SIC		Porosity			
CUT				UUT		Consolidation			
Lab Sample Numbers									
Sample Date				Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	
10/22/2006				14:51	SEDIMENT	SOIL	REG	1	
10/22/2006				11:08	SEDIMENT	SOIL	REG	1	
10/22/2006				11:12	SEDIMENT	SOIL	REG	1	
9/30/2006				08:43	SEDIMENT	SOIL	REG	1	
9/30/2006				08:43	SEDIMENT	SOIL	REG	1	
9/30/2006				08:48	SEDIMENT	SOIL	REG	1	
10/22/2006				15:16	SEDIMENT	SOIL	REG	1	
10/22/2006				15:38	SEDIMENT	SOIL	REG	1	
10/22/2006				15:53	SEDIMENT	SOIL	REG	1	

Special Instructions:			
Relinquished by:	Company	Received by:	Company
<i>Adra M. Chmura</i>	PARSONS	<i>12/12/06 @ 12:30</i>	<i>12/12/06</i>
Relinquished by:	Company	Received by:	Company

Chain of Custody / Analysis Request																																						
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088		Hardcopy Report To: Lorraine Weber		Invoice To: Pete Petrone		Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -		Site Name: Onondaga Lake																														
								Location of Site: Syracuse, New York																														
								Preservative:																														
								Job No.																														
ADD TO: Lorraine Weber		Sample: 1		PO #:		Lab Use Only COC #: 38292.40495 Lab Proj # 0286 Lab ID GTE		Lab Sample Numbers																														
Sample Identification		Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.																											
OL-VC-40036	3.3	6.6	OL-0286-19	9/29/2006	12:21	SEDIMENT	SOIL	REG	1																													
OL-VC-40036	13.2	16.5	OL-0286-20	9/29/2006	13:03	SEDIMENT	SOIL	REG	1																													
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Grain Size</th> <th>SIC</th> <th>Porosity</th> <th>CUT</th> <th>UUT</th> <th>Consolidation</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table>												Grain Size	SIC	Porosity	CUT	UUT	Consolidation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>									
Grain Size	SIC	Porosity	CUT	UUT	Consolidation																																	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																	
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Specific Gravity</th> <th>Moisture Content</th> <th>Organic Content</th> <th>Carbonate Content</th> <th>Bulk Density</th> <th>Atterberg Limits</th> <th>Field Filtered Sample?</th> <th>Grab/Composite</th> <th>Units</th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> <tr> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> <td><input type="checkbox"/></td> <td></td> </tr> </tbody> </table>												Specific Gravity	Moisture Content	Organic Content	Carbonate Content	Bulk Density	Atterberg Limits	Field Filtered Sample?	Grab/Composite	Units	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Specific Gravity	Moisture Content	Organic Content	Carbonate Content	Bulk Density	Atterberg Limits	Field Filtered Sample?	Grab/Composite	Units																														
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																															
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																															

Special Instructions:			
Relinquished by: <i>Edra M. Chmura</i>	Company PARSONS	Received by: <i>12/12/06 @ 12:05 PM MSL</i>	Company PARSONS
Relinquished by:	Date/Time 12/12/06 @ 12:05	Received by:	Date/Time 12/12/06 12:30
Condition		Custody Seals Intact	
Condition		Custody Seals Intact	
Condition		Cooler Temp.	
Condition		Cooler Temp.	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = MeOH]; [8 = Other (specify)]:

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	---	Sample Type: ---	Tested By: ml
Sample ID:---		Test Date: 02/13/07	Checked By: n/a
Depth :	---	Sample Id: ---	

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40032	OL-0286-01	9.9-13.2 ft	Moist, dark brown silt	82.3
OL-VC-40021	OL-0286-02	0.5-3.3 ft	Wet, very dark gray silt	92.7
OL-VC-40021	OL-0286-03	13.2-16.5 ft	Moist, dark olive gray silt with sand	76
OL-VC-40018	OL-0286-04	0-3.3 ft	Wet, dark gray silt	99.2
OL-VC-40018	OL-0286-05	6.6-9.9 ft	Wet, dark gray silt	102.6
OL-VC-40018	OL-0286-06	16.5-18.6 ft	Moist, olive brown silt	79.9
OL-VC-40037	OL-0286-07	0-3.3 ft	Wet, light gray silt	56.1
OL-VC-40037	OL-0286-08	6.6-9.9 ft	Wet, gray silt	90.5
OL-VC-40037	OL-0286-09	16.5-19.8 ft	Moist, gray silt	114.3
OL-VC-40038	OL-0286-10	0-3.3 ft	Moist, very dark gray silt with sand	90.5

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mill	
Sample ID:---	Test Date: 02/13/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40038	OL-0286-11	6.6-9.9 ft	Wet, light gray sandy silt	69.6
OL-VC-40038	OL-0286-12	16.5-19.8 ft	Wet, pale yellow silt with sand	109.6
OL-VC-40041	OL-0286-13	0-3.3 ft	Moist, dark gray, silt	81.7
OL-VC-40041	OL-0286-14	6.6-9.9 ft	Wet, gray silt with sand	67.5
OL-VC-40041	OL-0286-15	16.5-19.3 ft	Wet, dark olive brown silty clay with sand	34.3
OL-VC-40025	OL-0286-16	0-3.3 ft	Wet, gray silt	130.1
OL-VC-40025	OL-0286-17	9.9-13.2 ft	Wet, very dark gray silt	107.9
OL-VC-40025	OL-0286-18	16.5-19.8 ft	Moist, dark gray silt	48.9
OL-VC-40036	OL-0286-19	3.3-6.6 ft	Moist, very dark gray silt with sand	36
OL-VC-40036	OL-0286-20	13.2-16.5 ft	Wet, very dark gray sandy silt	35.9

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	yf
Sample ID:---	Test Date: 01/17/07	Checked By:	jdt
Depth : ---	Test Id: 105916		

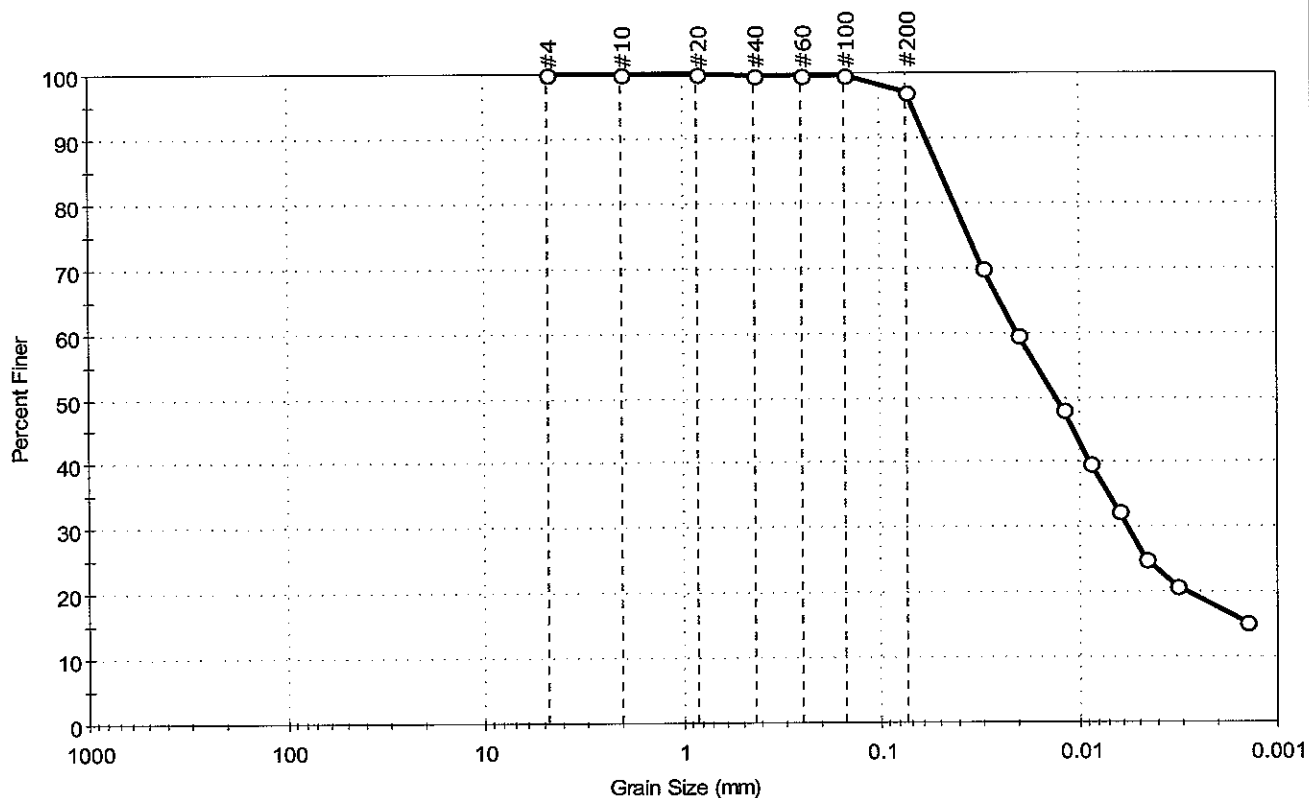
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-40021	OL-0286-03	13.2-16.5 ft	Moist, dark olive gray silt with sand	2.69
OL-VC-40018	OL-0286-05	6.6-9.9 ft	Wet, dark gray silt	2.69

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40032	Sample Type:	jar
Sample ID:	OL-0286-01	Test Date:	02/07/07
Depth :	9.9-13.2 ft	Test Id:	105896
Test Comment:	---		
Sample Description:	Moist, dark brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.9	97.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0303	70		
---	0.0201	59		
---	0.0121	48		
---	0.0088	40		
---	0.0063	32		
---	0.0046	25		
---	0.0032	21		
---	0.0014	15		

Coefficients

D ₈₅ = 0.0497 mm	D ₃₀ = 0.0057 mm
D ₆₀ = 0.0205 mm	D ₁₅ = N/A
D ₅₀ = 0.0131 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (51))

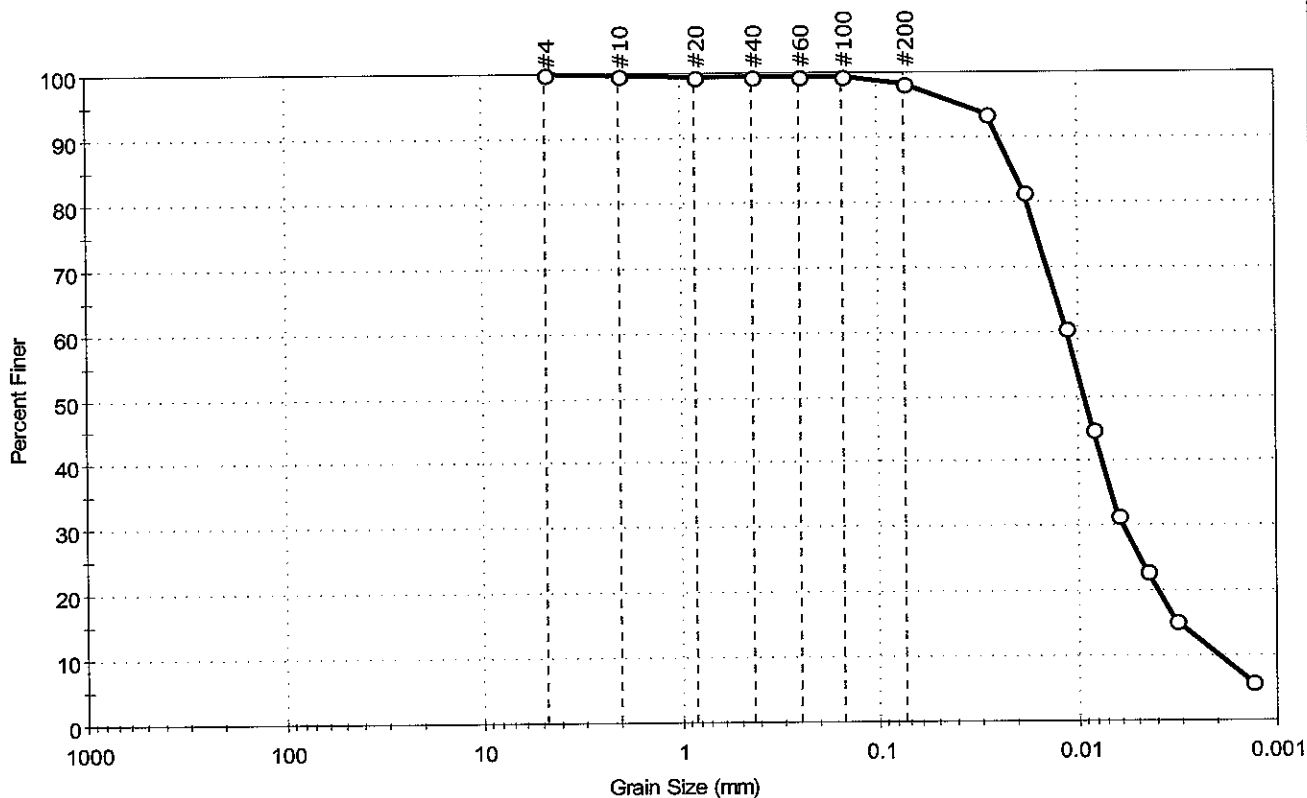
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40021	Sample Type:	jar
Sample ID:	OL-0286-02	Test Date:	02/07/07
Depth :	0.5-3.3 ft	Test Id:	105897
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.7	98.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
---	0.0284	94		
---	0.0185	81		
---	0.0114	60		
---	0.0084	45		
---	0.0062	32		
---	0.0045	23		
---	0.0032	15		
---	0.0013	6		

Coefficients

D ₈₅ = 0.0210 mm	D ₃₀ = 0.0058 mm
D ₆₀ = 0.0114 mm	D ₁₅ = 0.0032 mm
D ₅₀ = 0.0093 mm	D ₁₀ = 0.0020 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (29))

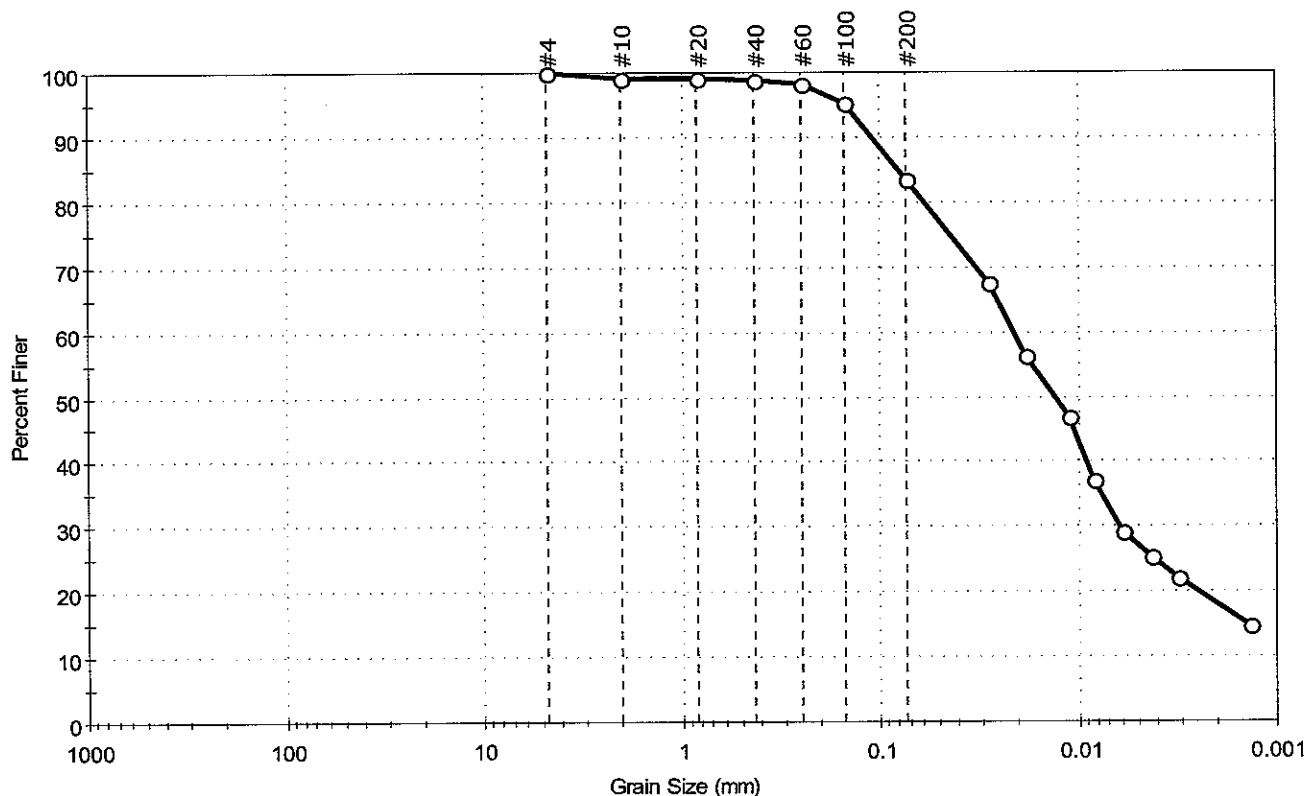
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40021	Sample Type:	jar
Sample ID:	OL-0286-03	Test Date:	02/08/07
Depth :	13.2-16.5 ft	Test Id:	105898
Test Comment:	---		
Sample Description:	Moist, dark olive gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	16.5	83.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	95		
#200	0.074	84		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0285	68		
---	0.0185	56		
---	0.0113	47		
---	0.0083	37		
---	0.0061	29		
---	0.0043	25		
---	0.0031	22		
---	0.0014	15		

Coefficients

D ₈₅ = 0.0808 mm	D ₃₀ = 0.0062 mm
D ₆₀ = 0.0213 mm	D ₁₅ = 0.0014 mm
D ₅₀ = 0.0133 mm	D ₁₀ = 0.0008 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (29))

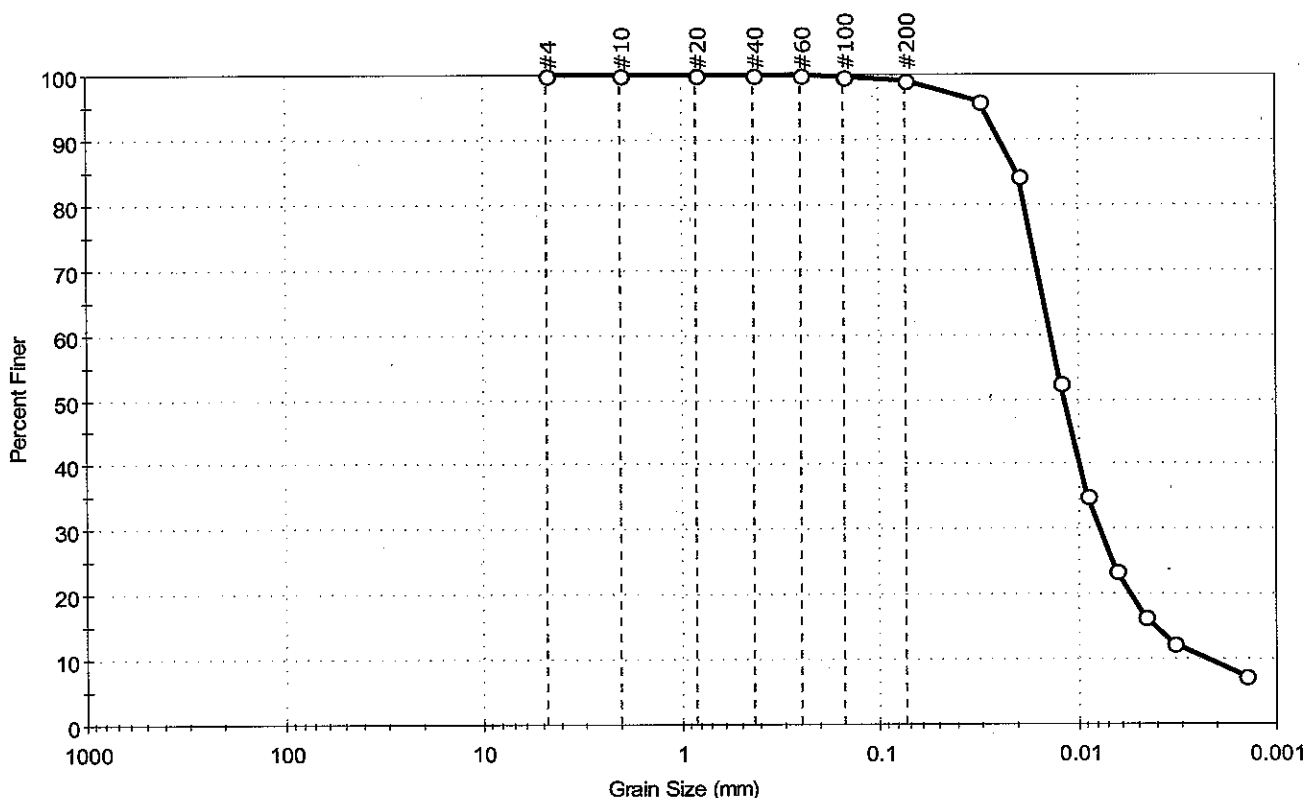
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-40018	Sample Type: jar
Sample ID: OL-0286-04	Test Date: 02/08/07
Depth: 0-3.3 ft	Test Id: 105899
Test Comment: ---	
Sample Description: Wet, dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0308	96		
---	0.0197	84		
---	0.0122	53		
---	0.0089	35		
---	0.0065	24		
---	0.0046	16		
---	0.0033	12		
---	0.0014	8		

Coefficients

D ₈₅ = 0.0202 mm	D ₃₀ = 0.0077 mm
D ₆₀ = 0.0136 mm	D ₁₅ = 0.0041 mm
D ₅₀ = 0.0116 mm	D ₁₀ = 0.0022 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

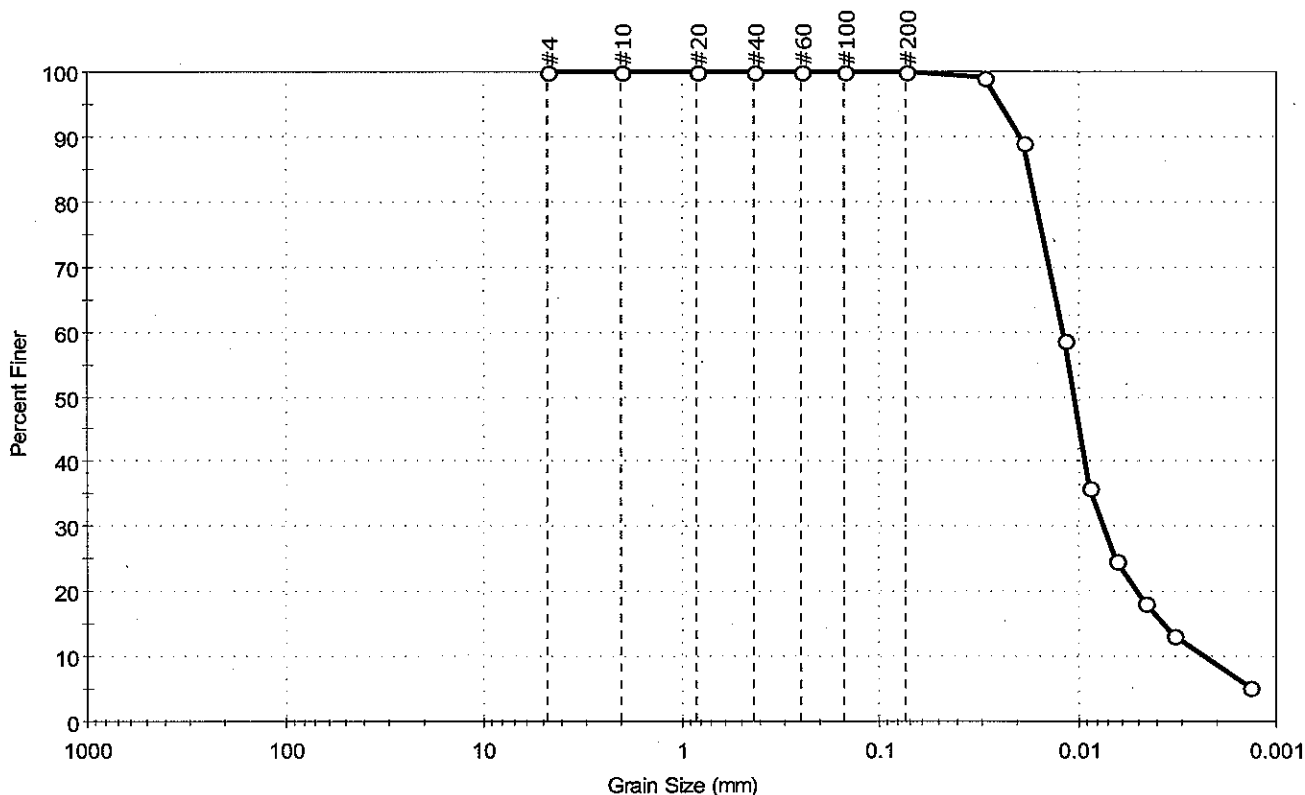
AASHTO Clayey Soils (A-7-5 (18))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-40018	Sample Type: jar
Sample ID: OL-0286-05	Test Date: 02/06/07
Depth : 6.6-9.9 ft	Test Id: 105900
Test Comment: ---	
Sample Description: Wet, dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.1	99.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0294	99		
---	0.0187	89		
---	0.0117	59		
---	0.0088	36		
---	0.0064	25		
---	0.0046	18		
---	0.0033	13		
---	0.0014	5		

Coefficients

D ₈₅ = 0.0176 mm	D ₃₀ = 0.0074 mm
D ₆₀ = 0.0120 mm	D ₁₅ = 0.0037 mm
D ₅₀ = 0.0105 mm	D ₁₀ = 0.0023 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (26))

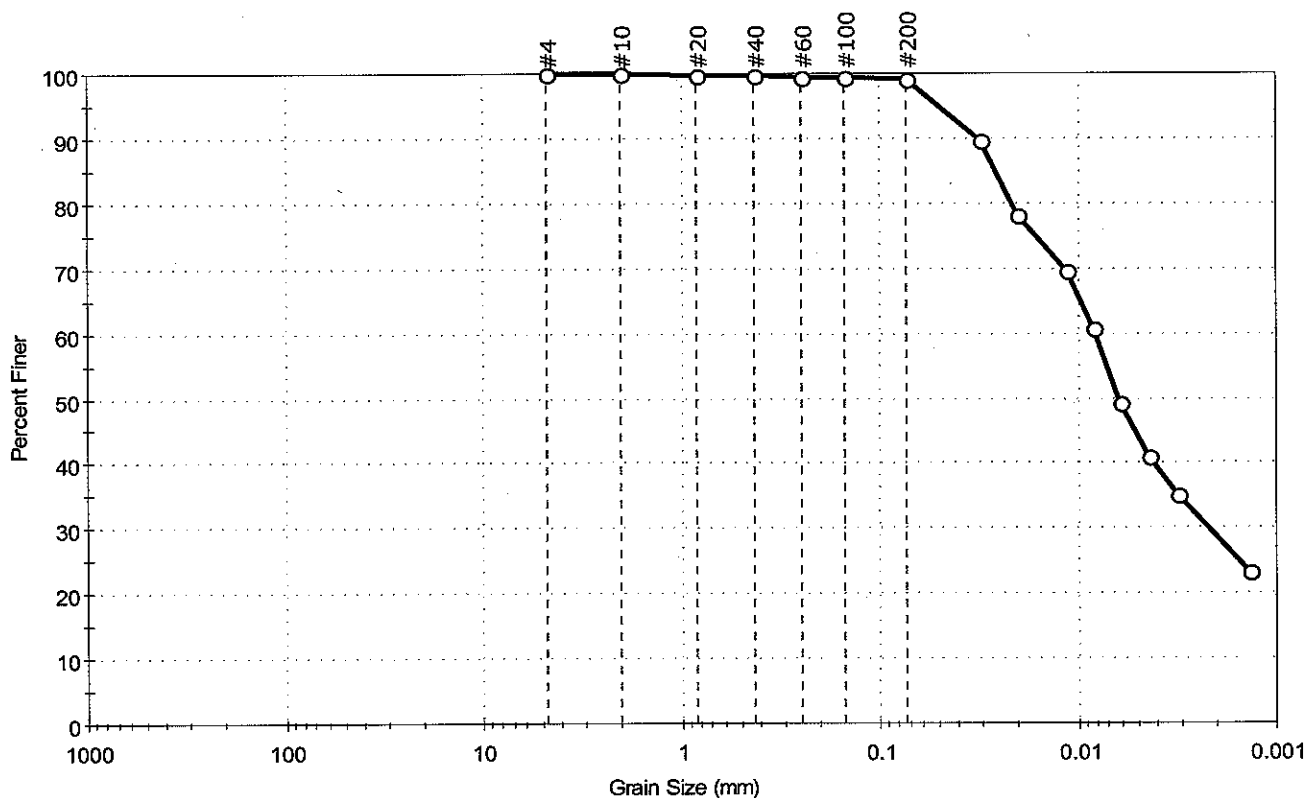
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40018	Sample Type:	jar
Sample ID:	OL-0286-06	Test Date:	02/08/07
Depth:	16.5-18.6 ft	Test Id:	105901
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0314	90		
---	0.0200	78		
---	0.0115	69		
---	0.0084	61		
---	0.0061	49		
---	0.0044	41		
---	0.0031	35		
---	0.0014	23		

Coefficients

D ₈₅ = 0.0263 mm	D ₃₀ = 0.0022 mm
D ₆₀ = 0.0082 mm	D ₁₅ = N/A
D ₅₀ = 0.0062 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (80))

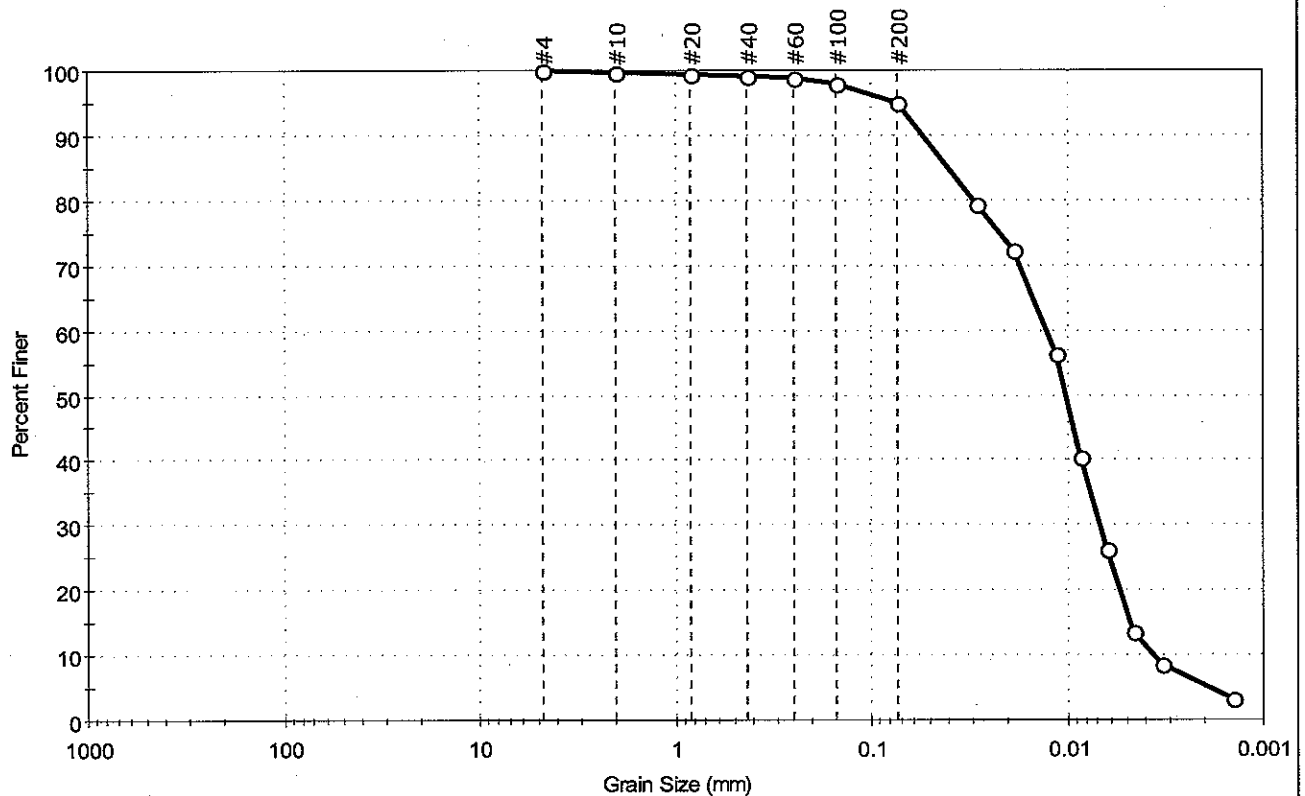
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-40037	Sample Type: jar
Sample ID: OL-0286-07	Test Date: 02/08/07
Depth: 0-3.3 ft	Test Id: 105902
Test Comment: ---	
Sample Description: Wet, light gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
—	0.0	5.1	94.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0291	79		
---	0.0186	72		
---	0.0113	56		
---	0.0085	40		
---	0.0063	26		
---	0.0046	13		
---	0.0033	8		
---	0.0014	3		

Coefficients

D ₈₅ = 0.0409 mm	D ₃₀ = 0.0068 mm
D ₆₀ = 0.0127 mm	D ₁₅ = 0.0048 mm
D ₅₀ = 0.0101 mm	D ₁₀ = 0.0036 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

AASHTO Silty Soils (A-5 (11))

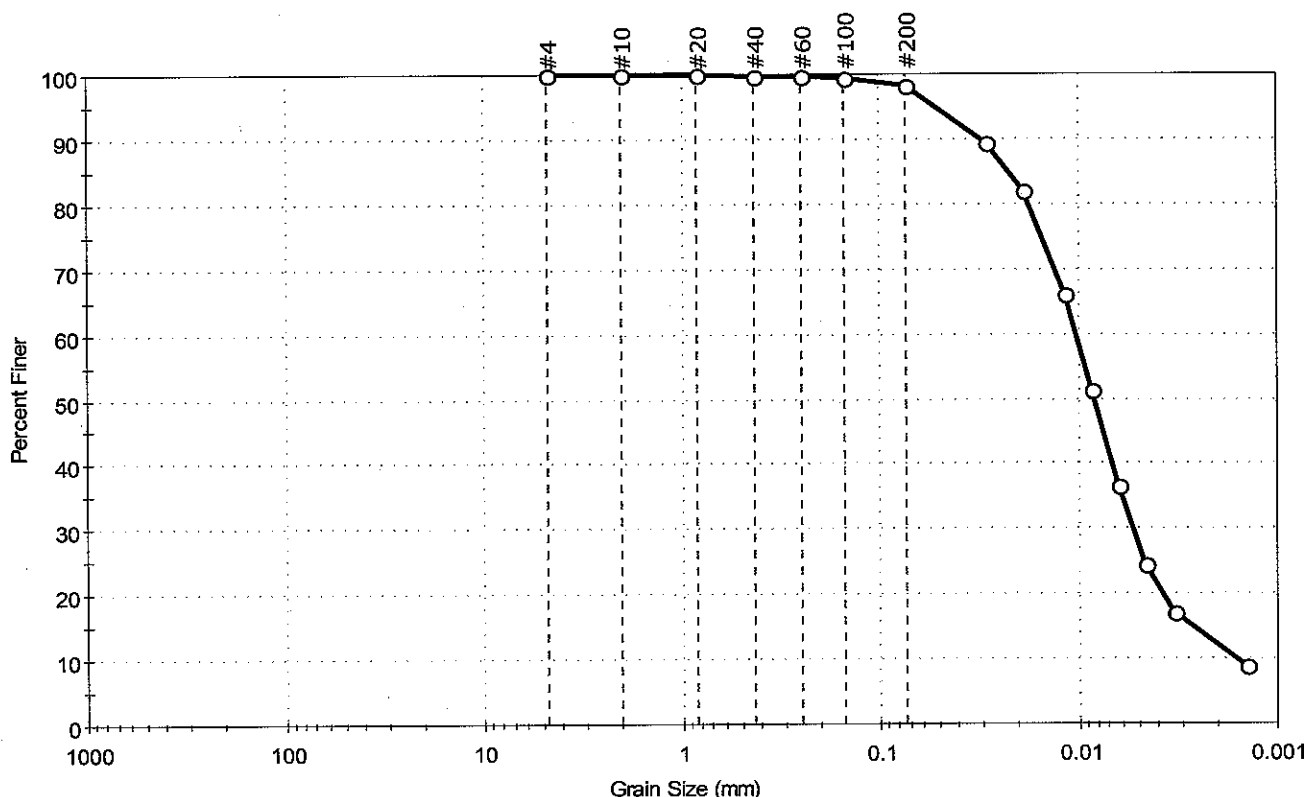
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40037	Sample Type:	jar
Sample ID:	OL-0286-08	Test Date:	02/08/07
Depth :	6.6-9.9 ft	Test Id:	105903
Test Comment:	---		
Sample Description:	Wet, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.7	98.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	98		
	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0288	89		
---	0.0188	82		
---	0.0116	66		
---	0.0086	51		
---	0.0063	37		
---	0.0046	24		
---	0.0033	17		
---	0.0014	9		

Coefficients

D ₈₅ = 0.0222 mm	D ₃₀ = 0.0053 mm
D ₆₀ = 0.0103 mm	D ₁₅ = 0.0027 mm
D ₅₀ = 0.0083 mm	D ₁₀ = 0.0016 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

AASHTO Silty Soils (A-5 (7))

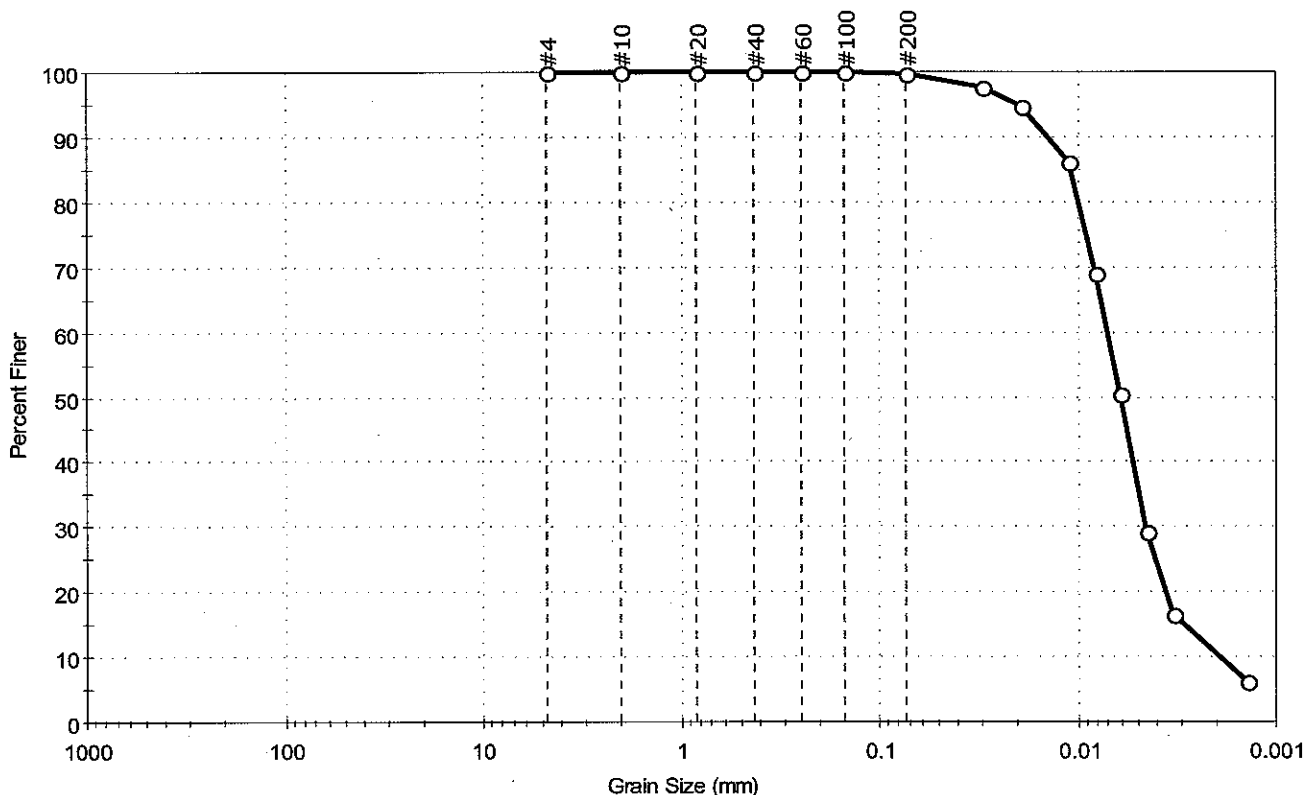
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40037	Sample Type:	jar
Sample ID:	OL-0286-09	Test Date:	02/08/07
Depth :	16.5-19.8 ft	Test Id:	105904
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.3	99.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0307	98		
---	0.0191	95		
---	0.0112	86		
---	0.0082	69		
---	0.0061	50		
---	0.0045	29		
---	0.0033	16		
---	0.0014	6		

Coefficients

D ₈₅ = 0.0110 mm	D ₃₀ = 0.0045 mm
D ₆₀ = 0.0071 mm	D ₁₅ = 0.0029 mm
D ₅₀ = 0.0060 mm	D ₁₀ = 0.0019 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (35))

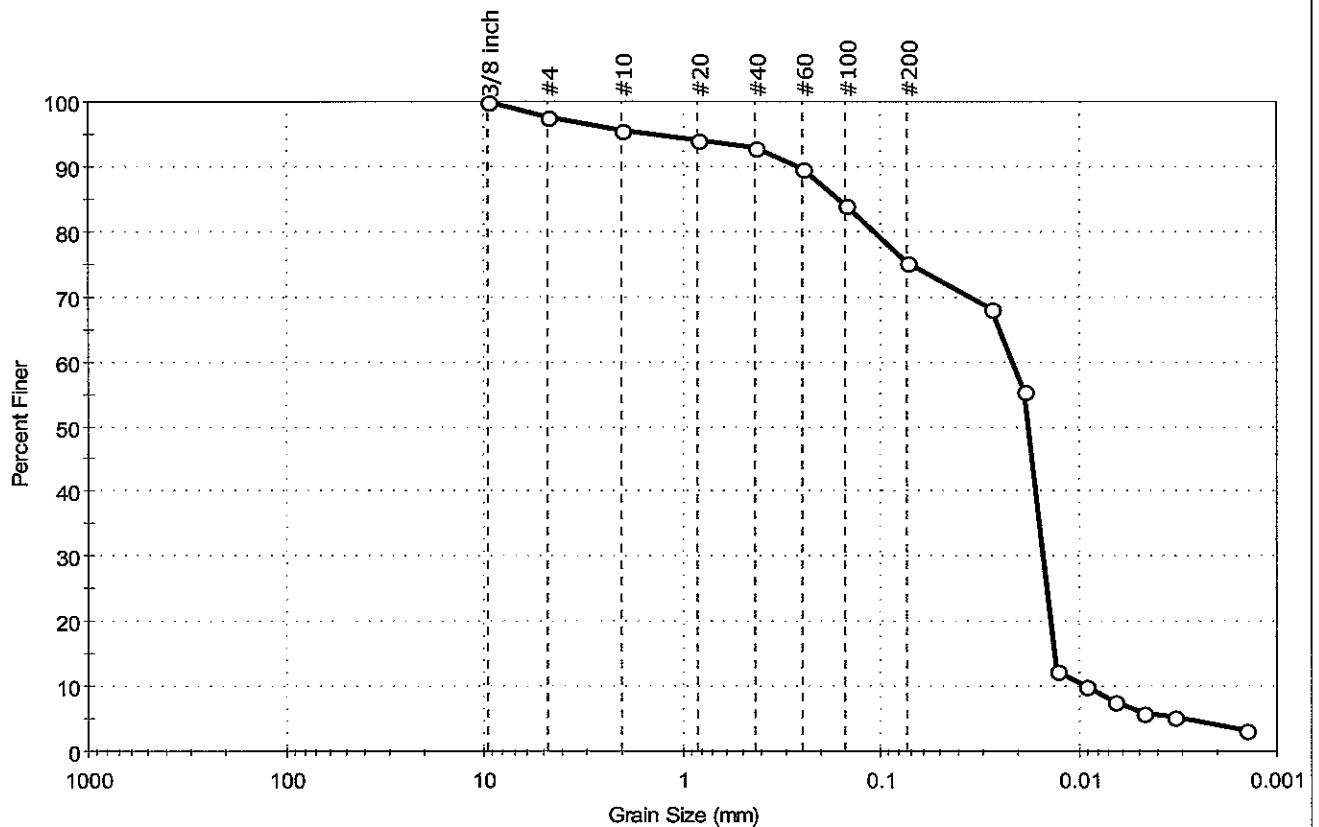
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40038	Sample Type:	jar
Sample ID:	OL-0286-10	Test Date:	01/30/07
Depth :	0-3.3 ft	Test Id:	105905
Test Comment:	---		
Sample Description:	Moist, very dark gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	2.3	22.6	75.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	98		
#10	2.00	96		
#20	0.84	94		
#40	0.42	93		
#60	0.25	90		
#100	0.15	84		
#200	0.075	75		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0273	68		
---	0.0187	55		
---	0.0130	12		
---	0.0093	10		
---	0.0066	8		
---	0.0047	6		
---	0.0033	5		
---	0.0014	3		

Coefficients

D ₈₅ = 0.1646 mm	D ₃₀ = 0.0151 mm
D ₆₀ = 0.0215 mm	D ₁₅ = 0.0133 mm
D ₅₀ = 0.0179 mm	D ₁₀ = 0.0092 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

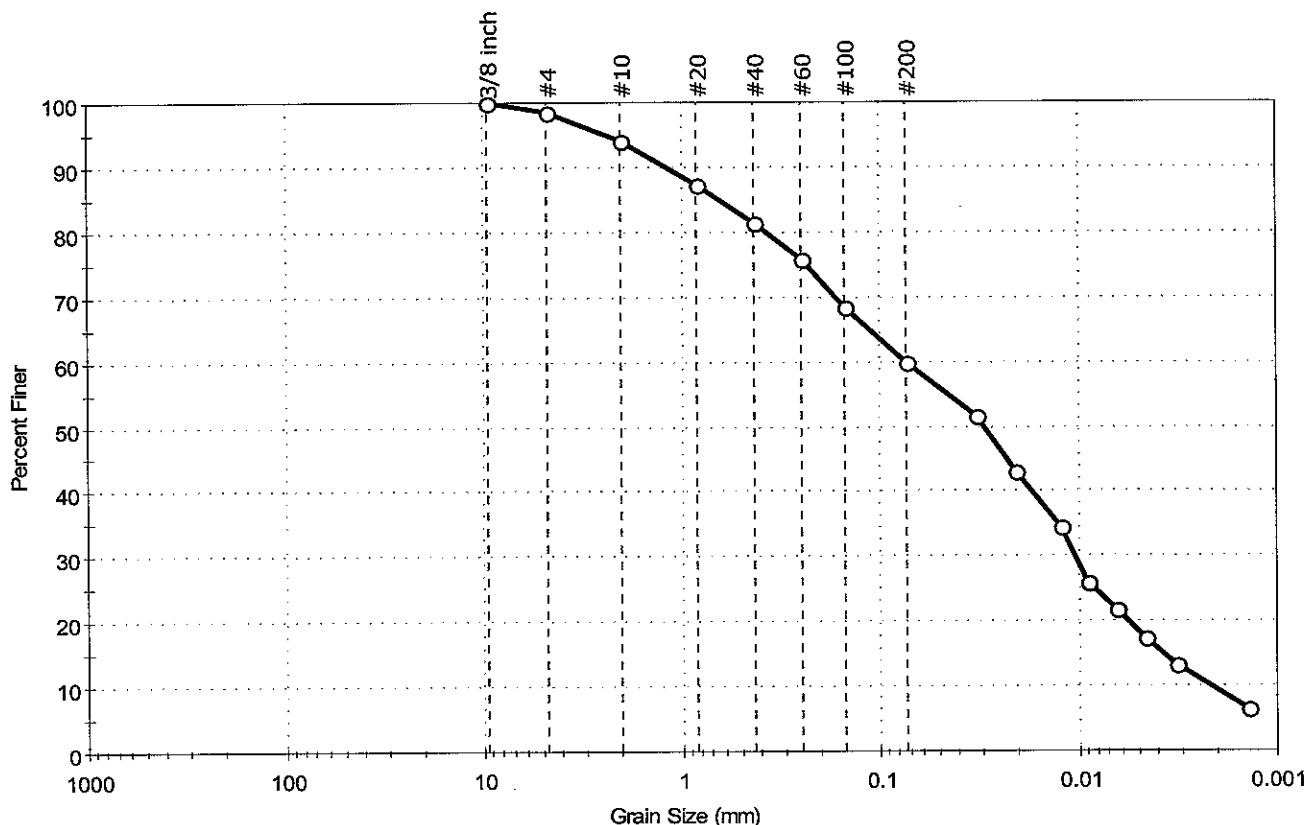
AASHTO Clayey Soils (A-7-5 (11))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40038	Sample Type:	jar
Sample ID:	OL-0286-11	Test Date:	02/08/07
Depth :	6.6-9.9 ft	Test Id:	105906
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.4	38.7	59.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	99		
#10	2.00	94		
#20	0.84	87		
#40	0.42	81		
#60	0.25	76		
#100	0.15	68		
#200	0.074	60		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
---	0.0324	52		
---	0.0208	43		
---	0.0123	35		
---	0.0089	26		
---	0.0064	22		
---	0.0046	17		
---	0.0033	13		
---	0.0014	7		

Coefficients

D ₈₅ = 0.6387 mm	D ₃₀ = 0.0104 mm
D ₆₀ = 0.0746 mm	D ₁₅ = 0.0037 mm
D ₅₀ = 0.0298 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

AASHTO Clayey Soils (A-7-6 (8))

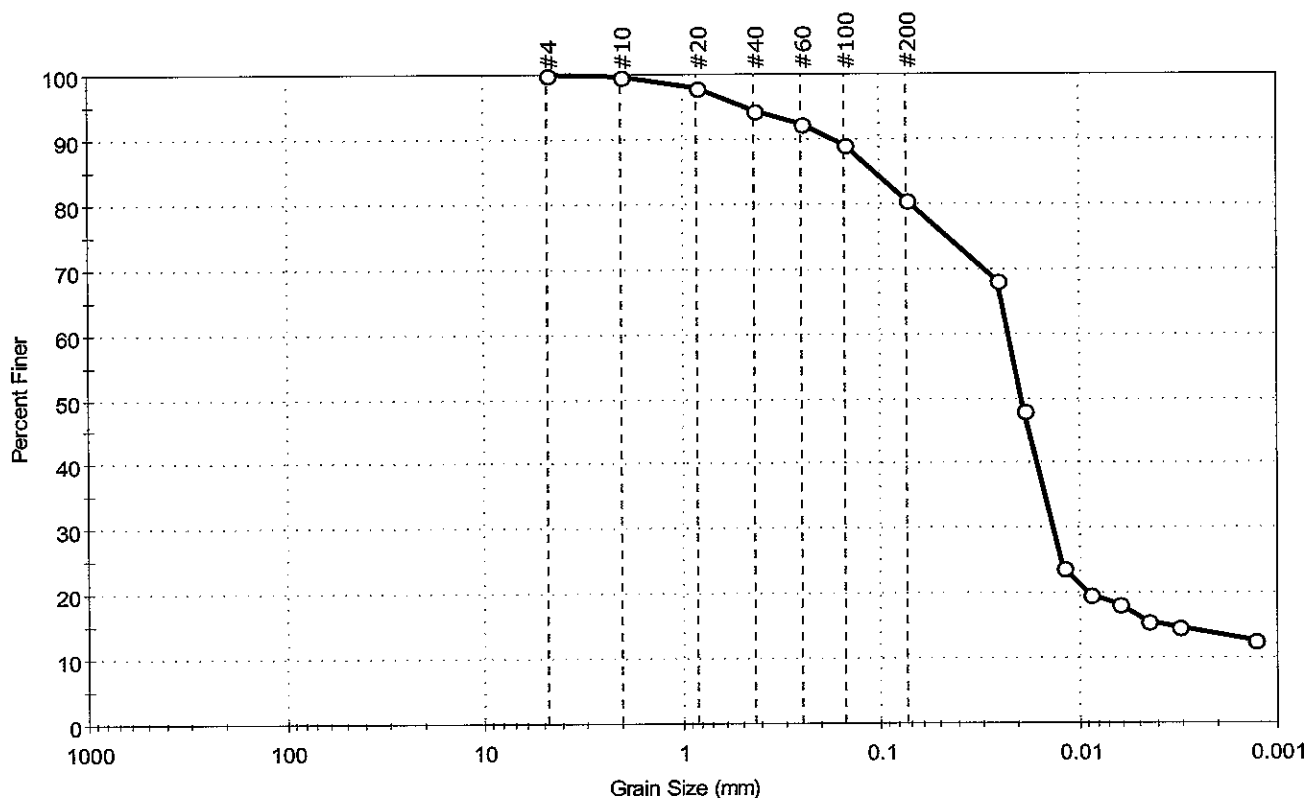
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40038	Sample Type:	jar
Sample ID:	OL-0286-12	Test Date:	02/06/07
Depth :	16.5-19.8 ft	Test Id:	105907
Test Comment:	---		
Sample Description:	Wet, pale yellow silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	19.6	80.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	98		
#40	0.42	94		
#60	0.25	92		
#100	0.15	89		
#200	0.074	80		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0257	68		
---	0.0188	48		
---	0.0121	24		
---	0.0088	20		
---	0.0063	18		
---	0.0045	16		
---	0.0032	15		
---	0.0013	13		

Coefficients

D ₈₅ = 0.1082 mm	D ₃₀ = 0.0135 mm
D ₆₀ = 0.0226 mm	D ₁₅ = 0.0033 mm
D ₅₀ = 0.0194 mm	D ₁₀ = 0.0004 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

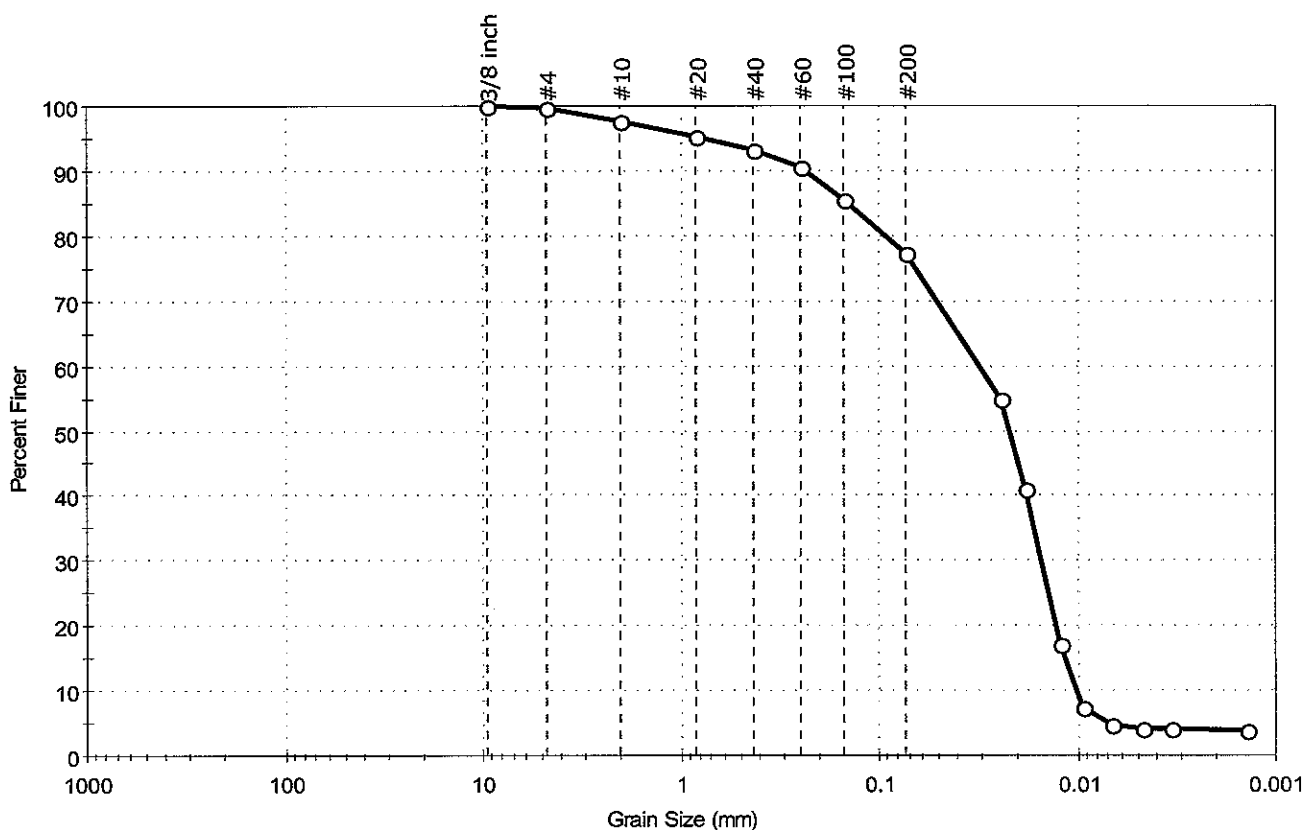
AASHTO Silty Soils (A-5 (8))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40041	Sample Type:	jar
Sample ID:	OL-0286-14	Test Date:	02/07/07
Depth :	6.6-9.9 ft	Test Id:	105908
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.4	22.5	77.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	98		
#20	0.84	95		
#40	0.42	93		
#60	0.25	91		
#100	0.15	85		
#200	0.074	77		
	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0243	55		
---	0.0186	41		
---	0.0123	17		
---	0.0093	7		
---	0.0067	5		
---	0.0047	4		
---	0.0033	4		
---	0.0014	4		

Coefficients

D ₈₅ = 0.1444 mm	D ₃₀ = 0.0154 mm
D ₆₀ = 0.0314 mm	D ₁₅ = 0.0116 mm
D ₅₀ = 0.0221 mm	D ₁₀ = 0.0100 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

AASHTO Clayey Soils (A-7-5 (10))

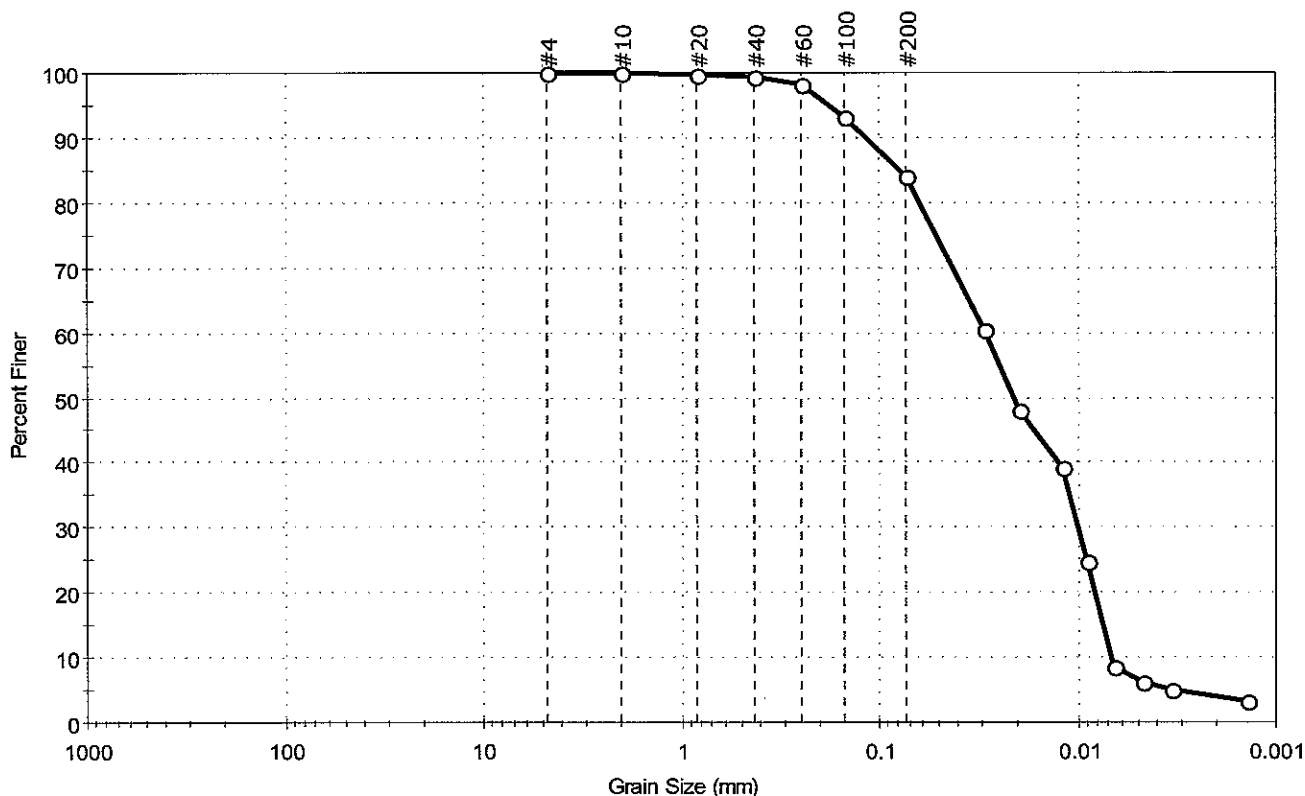
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40041	Sample Type:	jar
Sample ID:	OL-0286-15	Test Date:	02/07/07
Depth :	16.5-19.3 ft	Test Id:	105909
Test Comment:	---		
Sample Description:	Wet, dark olive brown silty clay with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	15.9	84.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	98		
#100	0.15	93		
#200	0.074	84		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0298	61		
---	0.0199	48		
---	0.0120	39		
---	0.0089	25		
---	0.0067	9		
---	0.0047	6		
---	0.0034	5		
---	0.0014	3		

Coefficients

D ₈₅ = 0.0793 mm	D ₃₀ = 0.0099 mm
D ₆₀ = 0.0293 mm	D ₁₅ = 0.0075 mm
D ₅₀ = 0.0212 mm	D ₁₀ = 0.0068 mm
C _u = N/A	C _c = N/A

Classification

ASTM silty clay with sand (CL-ML)

AASHTO Silty Soils (A-4 (4))

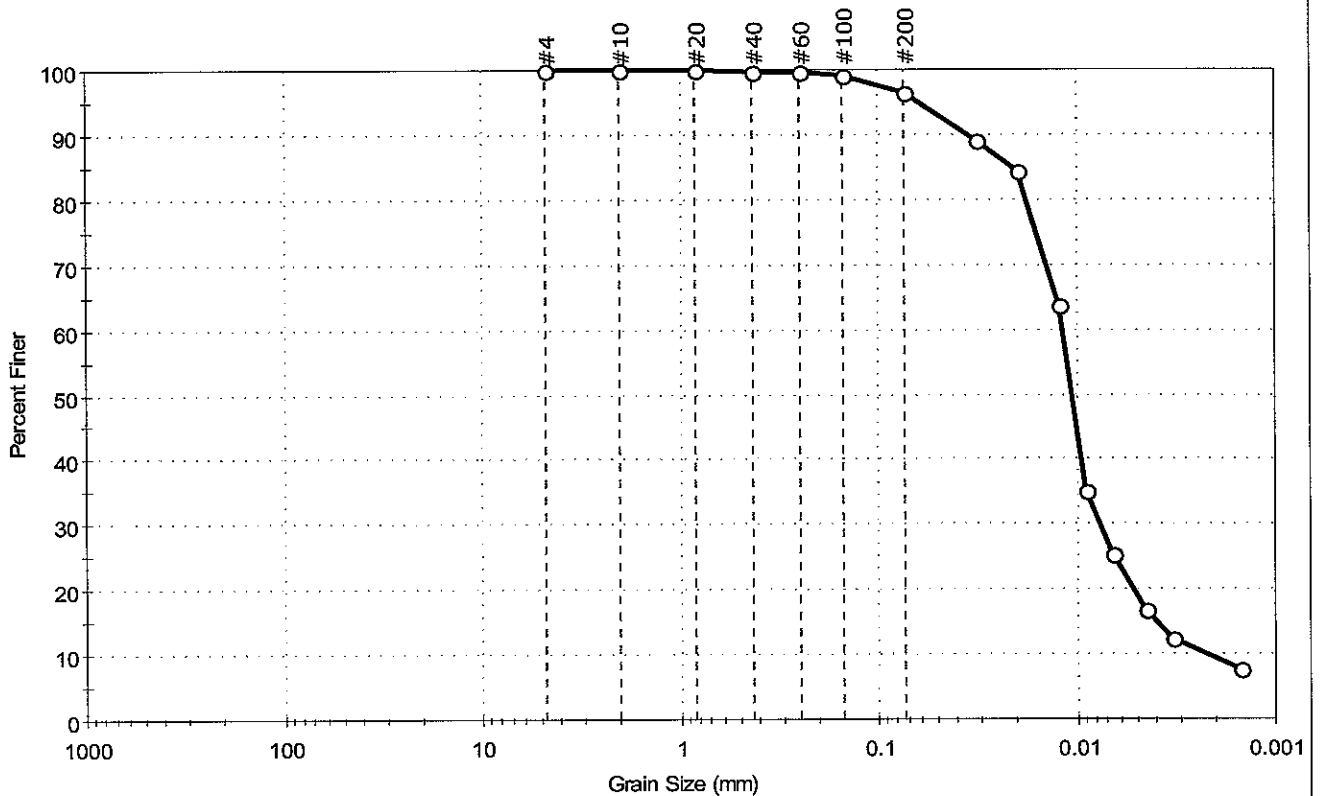
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40025	Sample Type:	jar
Sample ID:	OL-0286-16	Test Date:	01/25/07
Depth :	0-3.3 ft	Test Id:	105910
Test Comment:	---		
Sample Description:	Wet, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	3.6	96.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	89		
---	0.0199	84		
---	0.0122	64		
---	0.0089	35		
---	0.0065	25		
---	0.0045	17		
---	0.0033	12		
---	0.0015	8		

Coefficients

D ₈₅ = 0.0212 mm	D ₃₀ = 0.0076 mm
D ₆₀ = 0.0117 mm	D ₁₅ = 0.0040 mm
D ₅₀ = 0.0105 mm	D ₁₀ = 0.0022 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

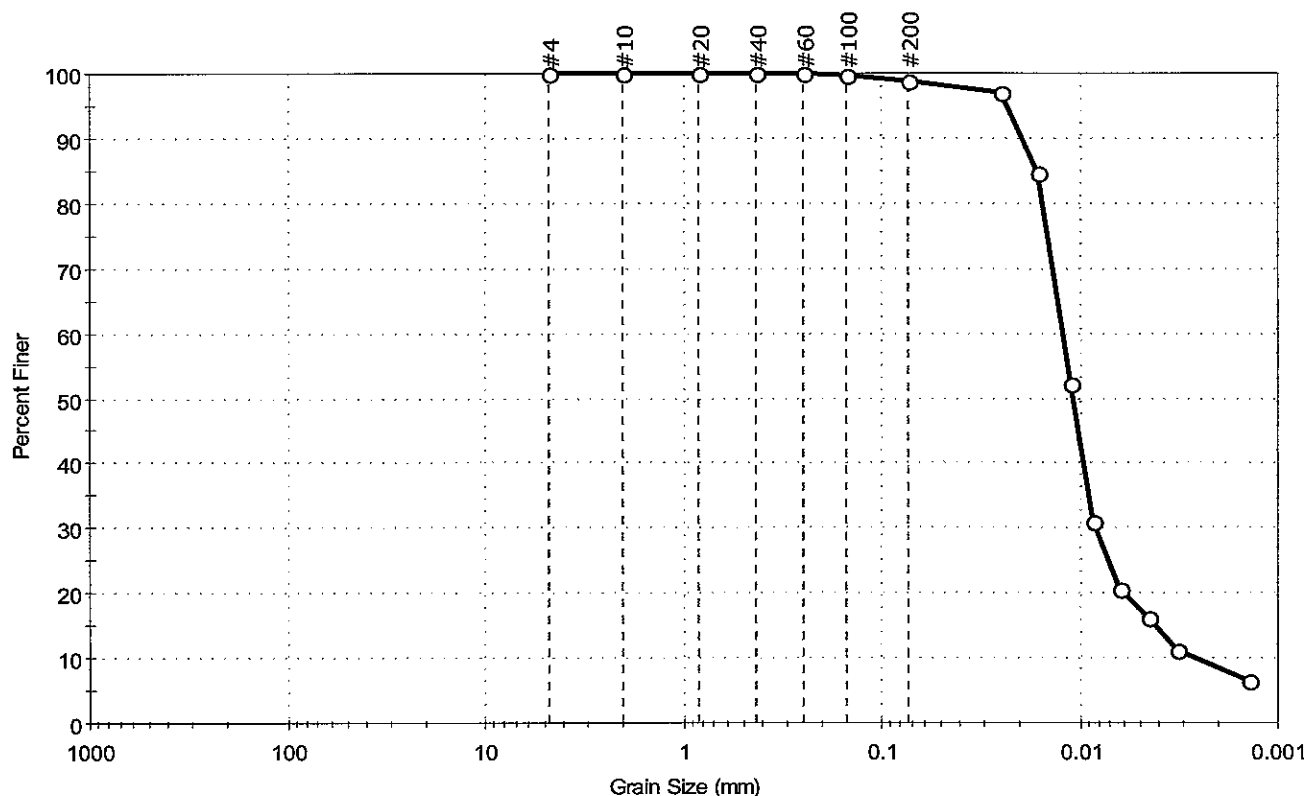
AASHTO Silty Soils (A-5 (11))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40025	Sample Type:	jar
Sample ID:	OL-0286-17	Test Date:	01/26/07
Depth :	9.9-13.2 ft	Test Id:	105911
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.2	98.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0250	97		
---	0.0165	85		
---	0.0112	52		
---	0.0086	31		
---	0.0063	21		
---	0.0045	16		
---	0.0033	11		
---	0.0014	6		

Coefficients

D ₈₅ = 0.0167 mm	D ₃₀ = 0.0084 mm
D ₆₀ = 0.0123 mm	D ₁₅ = 0.0042 mm
D ₅₀ = 0.0109 mm	D ₁₀ = 0.0026 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

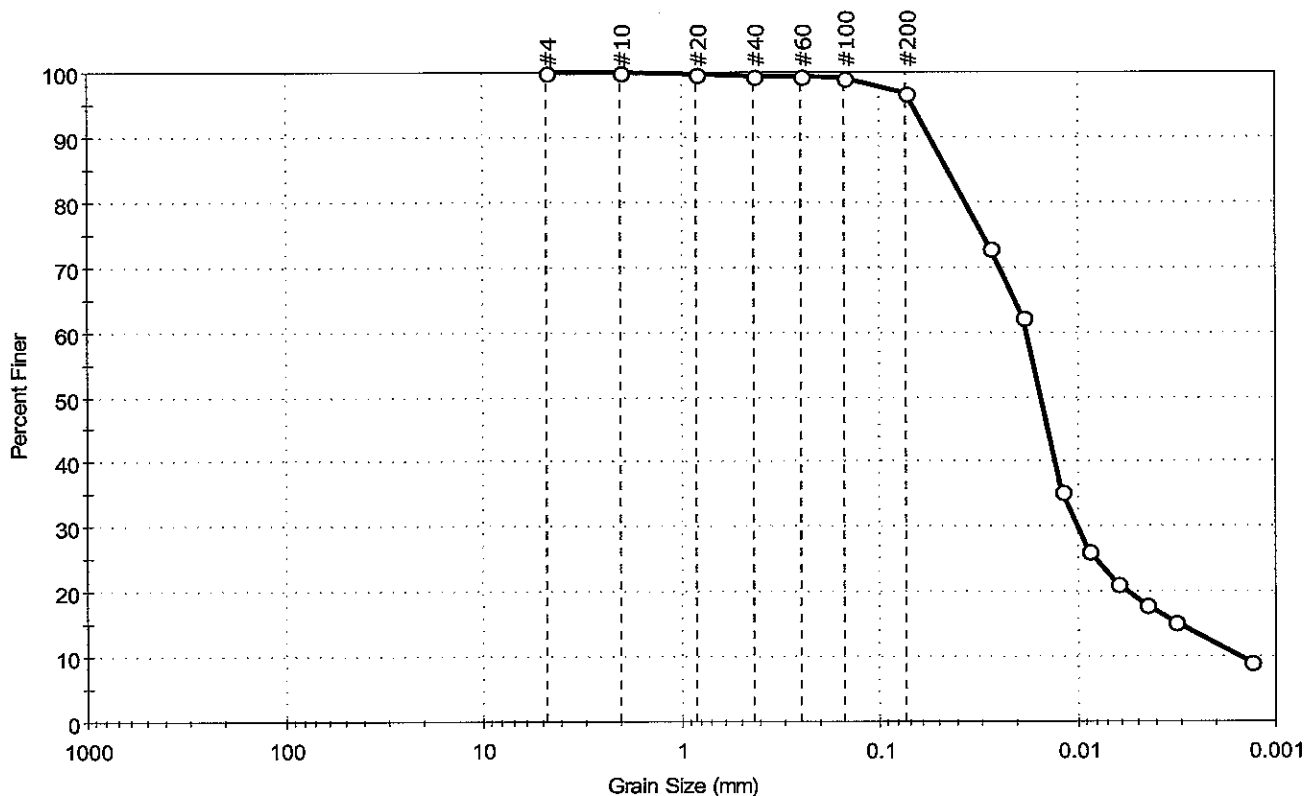
AASHTO Silty Soils (A-5 (10))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40025	Sample Type:	jar
Sample ID:	OL-0286-18	Test Date:	02/06/07
Depth :	16.5-19.8 ft	Test Id:	105912
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.2	96.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.074	97		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0275	73			
0.0187	62			
0.0120	35			
0.0087	26			
0.0063	21			
0.0045	18			
0.0032	15			
0.0013	9			

Coefficients

D ₈₅ = 0.0455 mm	D ₃₀ = 0.0099 mm
D ₆₀ = 0.0180 mm	D ₁₅ = 0.0031 mm
D ₅₀ = 0.0152 mm	D ₁₀ = 0.0015 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

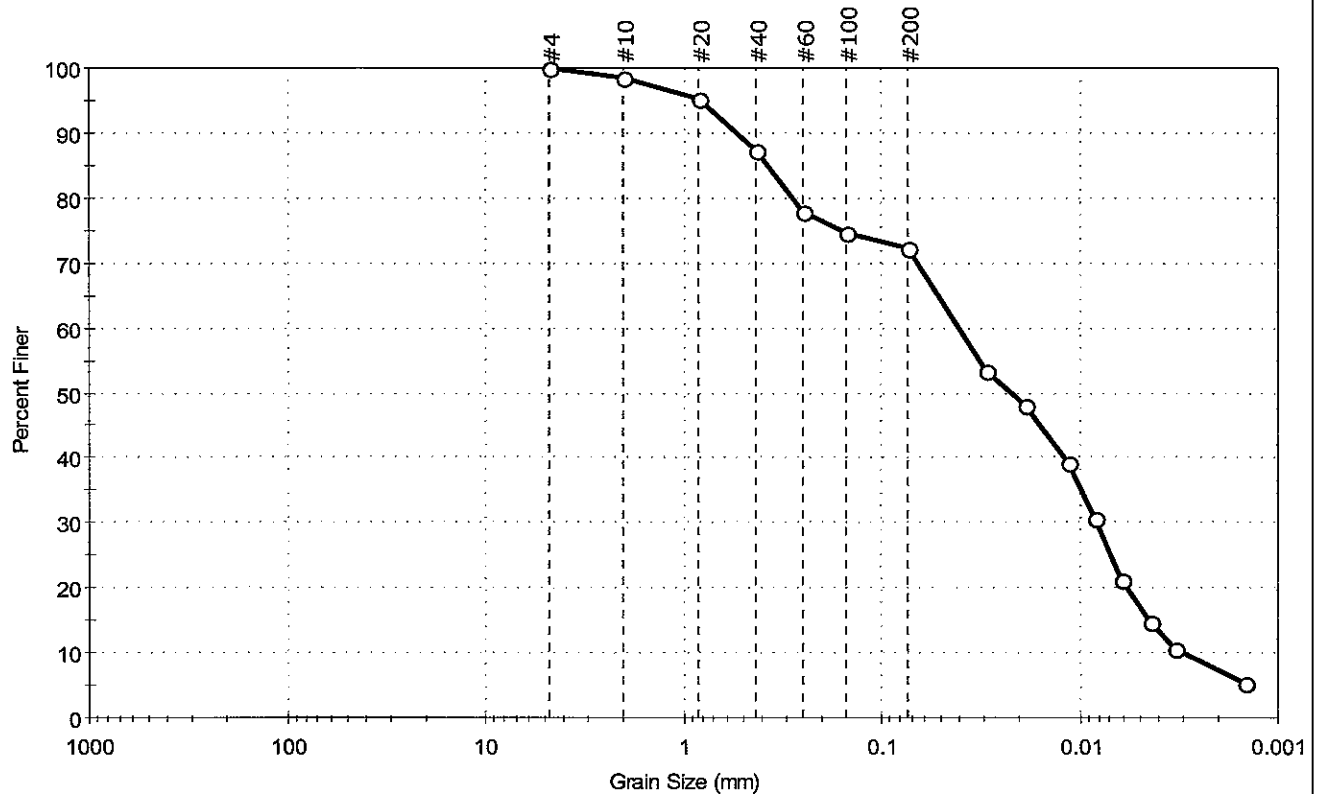
AASHTO Clayey Soils (A-7-5 (40))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40036	Sample Type:	jar
Sample ID:	OL-0286-19	Test Date:	01/25/07
Depth :	3.3-6.6 ft	Test Id:	105913
Test Comment:	---		
Sample Description:	Moist, very dark gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	27.8	72.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	95		
#40	0.42	87		
#60	0.25	78		
#100	0.15	74		
#200	0.074	72		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0295	53		
---	0.0189	48		
---	0.0114	39		
---	0.0084	31		
---	0.0062	21		
---	0.0044	15		
---	0.0033	11		
---	0.0015	5		

Coefficients

D ₈₅ = 0.3707 mm	D ₃₀ = 0.0082 mm
D ₆₀ = 0.0409 mm	D ₁₅ = 0.0045 mm
D ₅₀ = 0.0224 mm	D ₁₀ = 0.0030 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

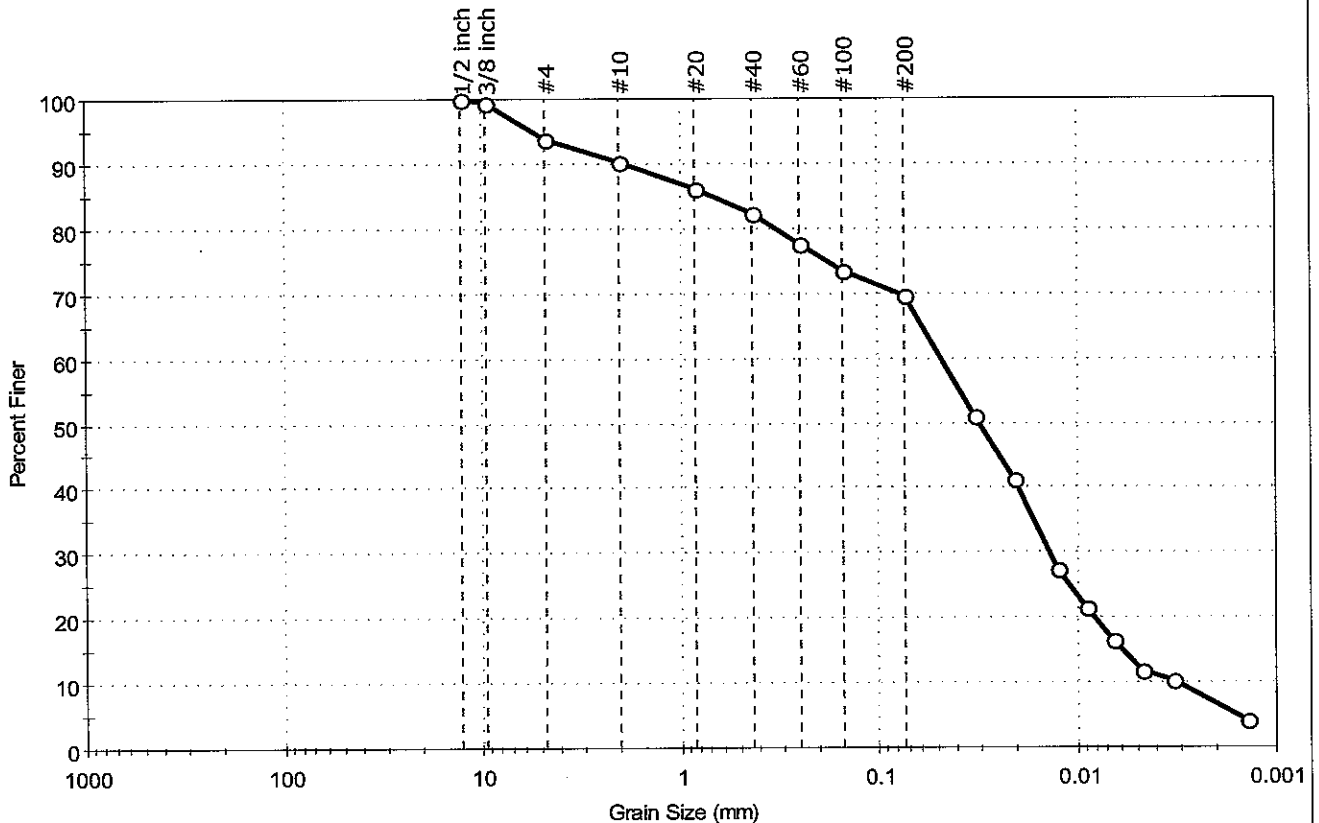
AASHTO Clayey Soils (A-7-6 (8))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-40036	Sample Type: jar
Sample ID: OL-0286-20	Test Date: 01/30/07	Tested By: mll
Depth : 13.2-16.5 ft	Test Id: 105914	Checked By: jdt
Test Comment: ---	Sample Description: Wet, very dark gray sandy silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	6.1	24.2	69.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.70	100		
3/8 Inch	9.51	99		
#4	4.75	94		
#10	2.00	90		
#20	0.84	86		
#40	0.42	82		
#60	0.25	78		
#100	0.15	73		
#200	0.074	70		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
---	0.0330	51		
---	0.0207	41		
---	0.0126	27		
---	0.0091	22		
---	0.0065	17		
---	0.0047	12		
---	0.0033	10		
---	0.0014	4		

Coefficients

D ₈₅ = 0.6887 mm	D ₃₀ = 0.0138 mm
D ₆₀ = 0.0486 mm	D ₁₅ = 0.0059 mm
D ₅₀ = 0.0314 mm	D ₁₀ = 0.0032 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy elastic silt (MH)

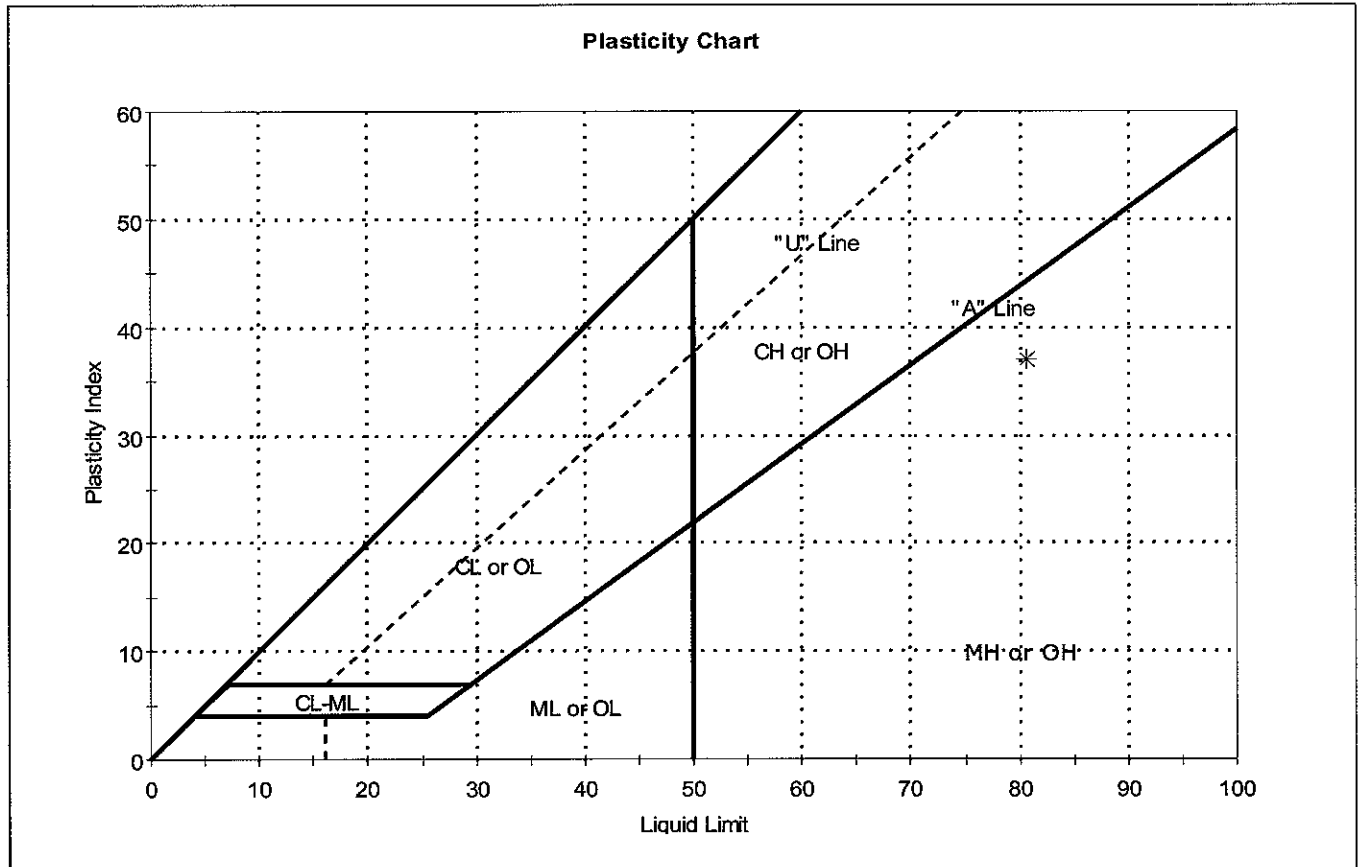
AASHTO Silty Soils (A-5 (9))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40032	Sample Type:	jar
Sample ID:	OL-0286-01	Test Date:	01/26/07
Depth :	9.9-13.2 ft	Test Id:	105856
Test Comment:	---		
Sample Description:	Moist, dark brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

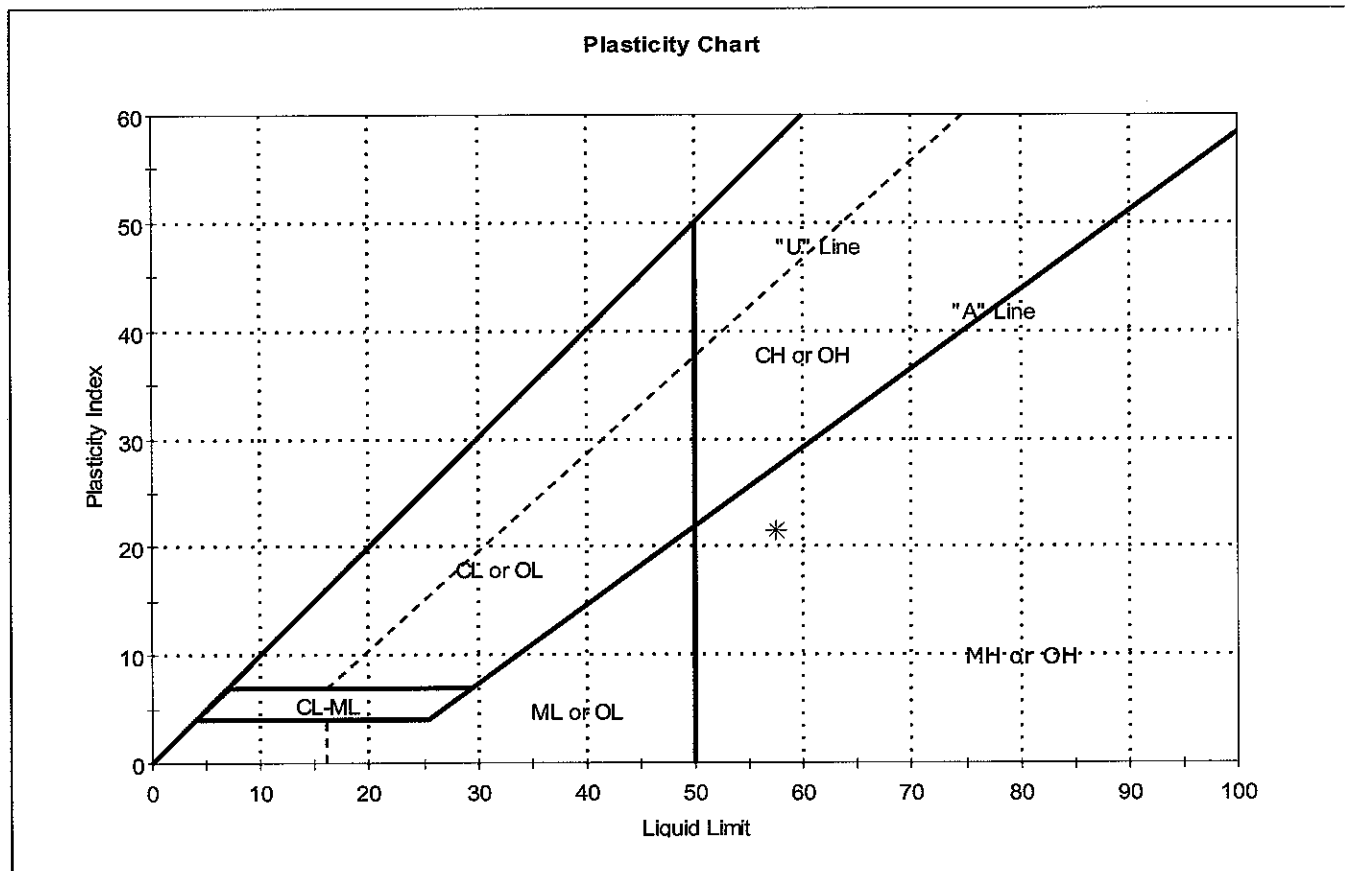


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-01	L-VC-400	9.9-13.2 ft	82	81	44	37	1	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40021	Sample Type:	jar
Sample ID:	OL-0286-02	Test Date:	01/29/07
Depth :	0.5-3.3 ft	Test Id:	105857
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-02	-VC-400	0.5-3.3 ft	93	57	36	21	3	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

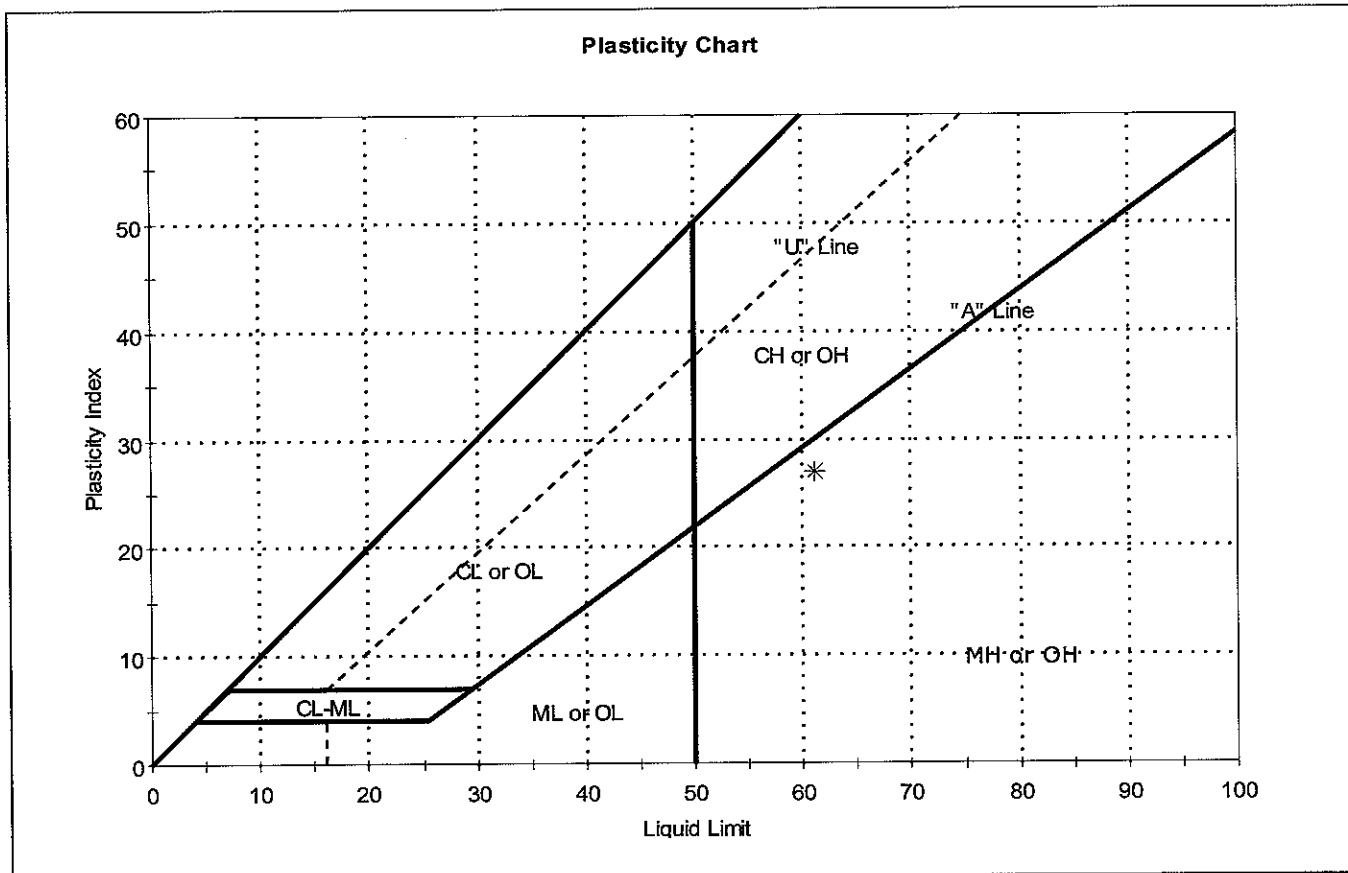
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40021	Sample Type:	jar
Sample ID:	OL-0286-03	Test Date:	01/26/07
Depth :	13.2-16.5 ft	Test Id:	105858
Test Comment:	---		
Sample Description:	Moist, dark olive gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-03	L-VC-400	13.2-16.5 ft	76	61	34	27	2	elastic silt with sand (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

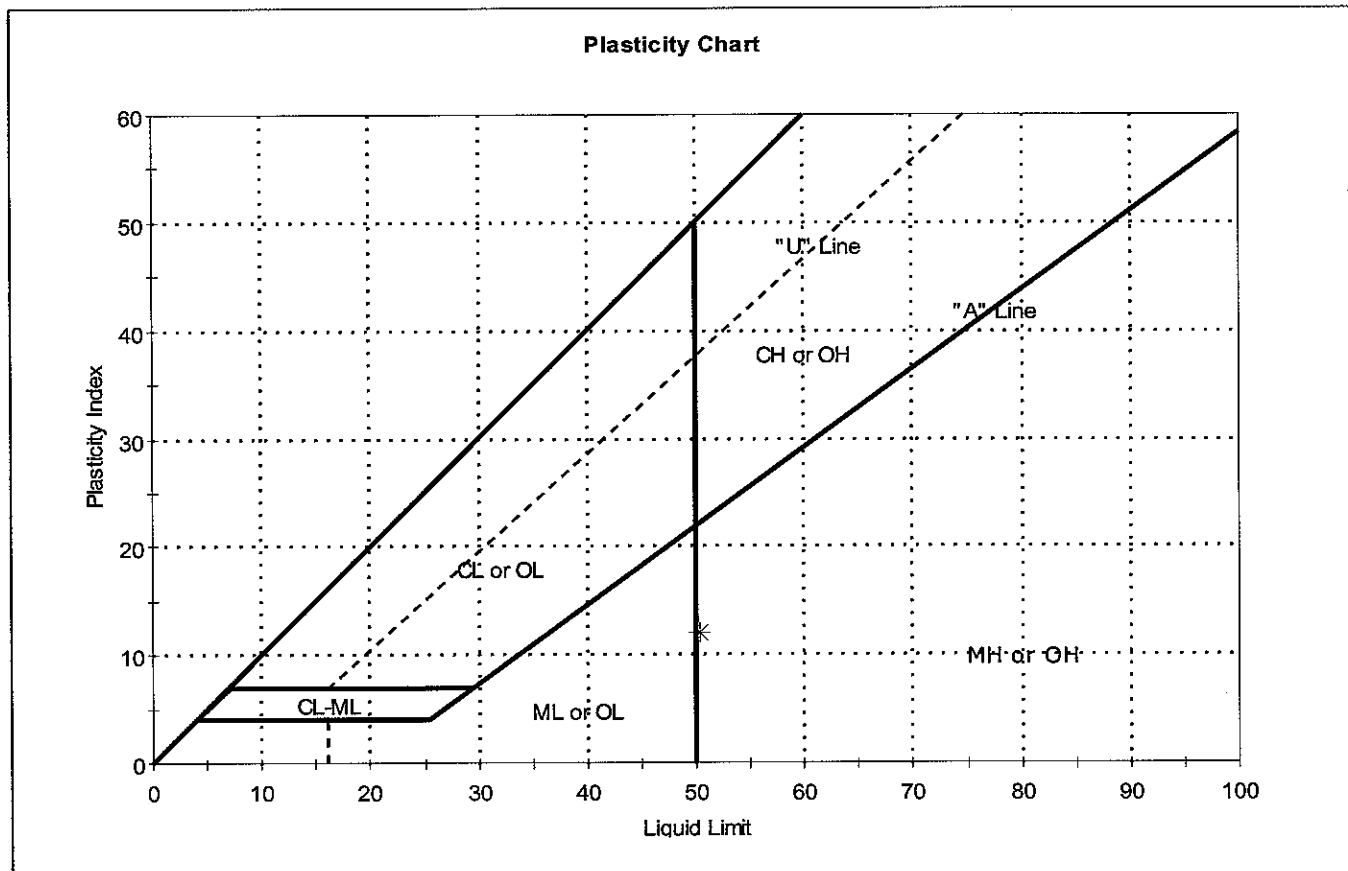
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40018	Sample Type:	jar
Sample ID:	OL-0286-04	Test Date:	01/29/07
Depth :	0-3.3 ft	Test Id:	105859
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-04	L-VC-400	0-3.3 ft	99	50	38	12	5	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

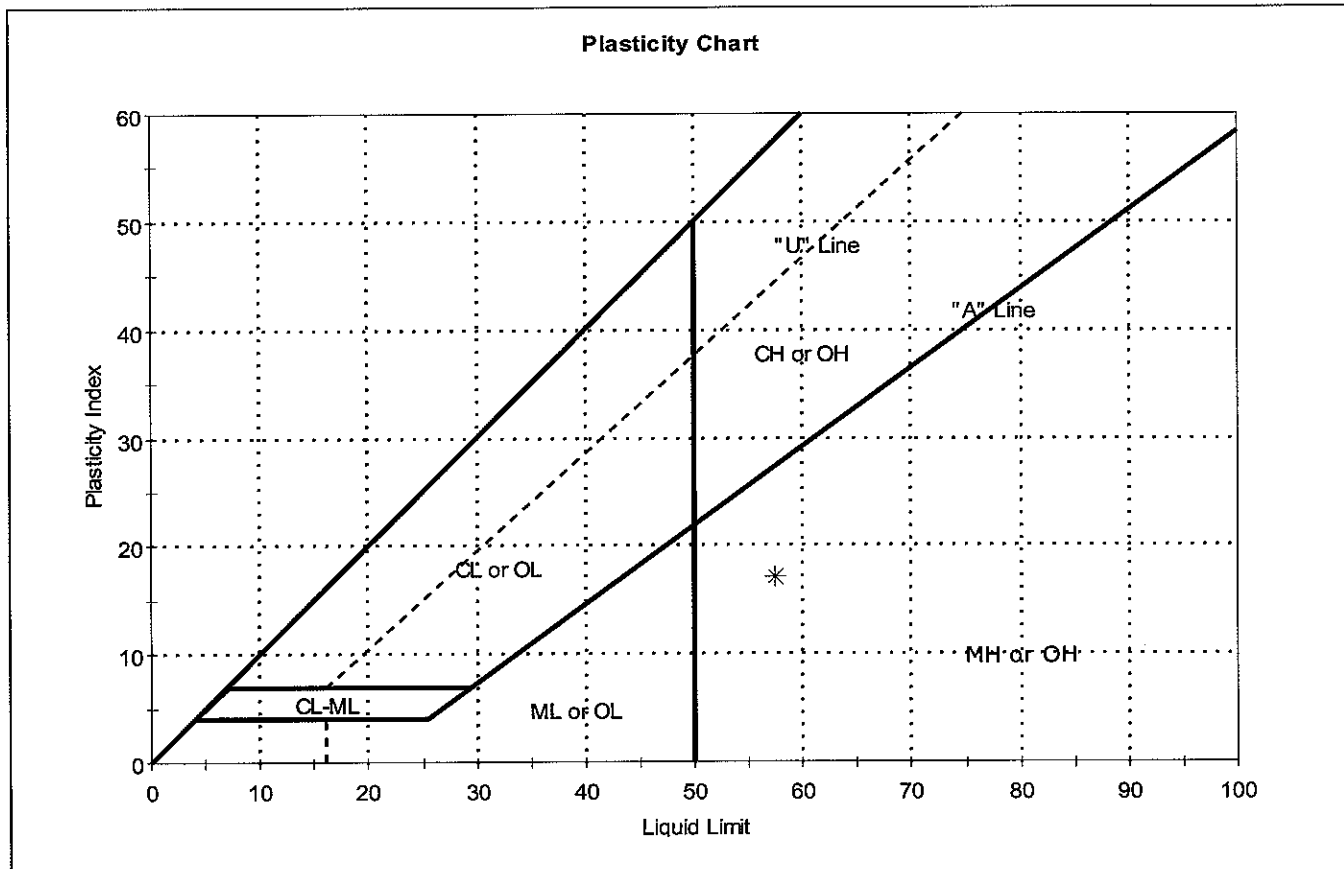
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40018	Sample Type:	jar
Sample ID:	OL-0286-05	Test Date:	01/31/07
Depth :	6.6-9.9 ft	Test Id:	105860
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-05	-VC-400	6.6-9.9 ft	103	57	40	17	4	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

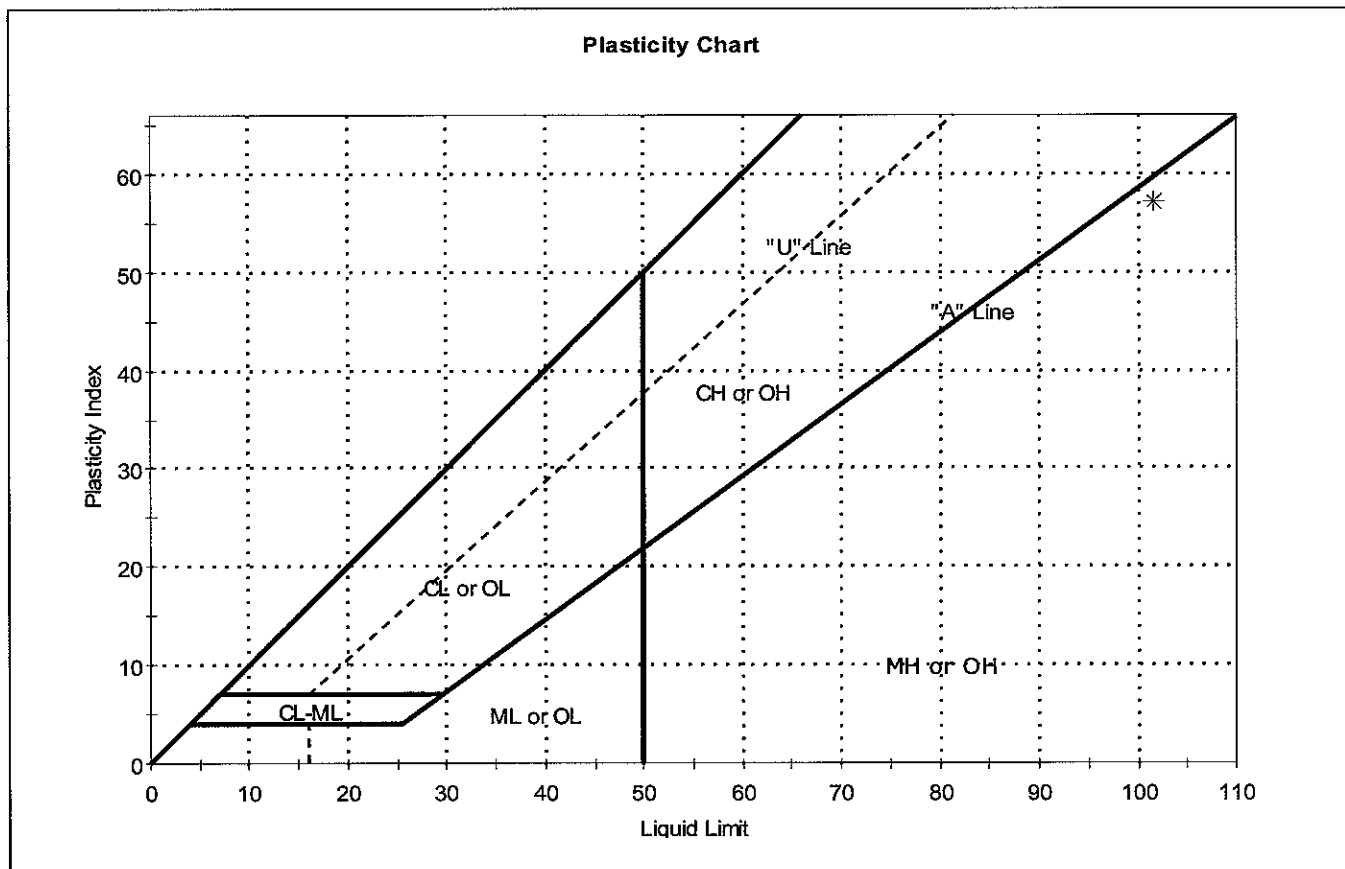
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40018	Sample Type:	jar
Sample ID:	OL-0286-06	Test Date:	01/26/07
Depth :	16.5-18.6 ft	Test Id:	105861
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-06	-VC-400	16.5-18.6 ft	80	102	44	58	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

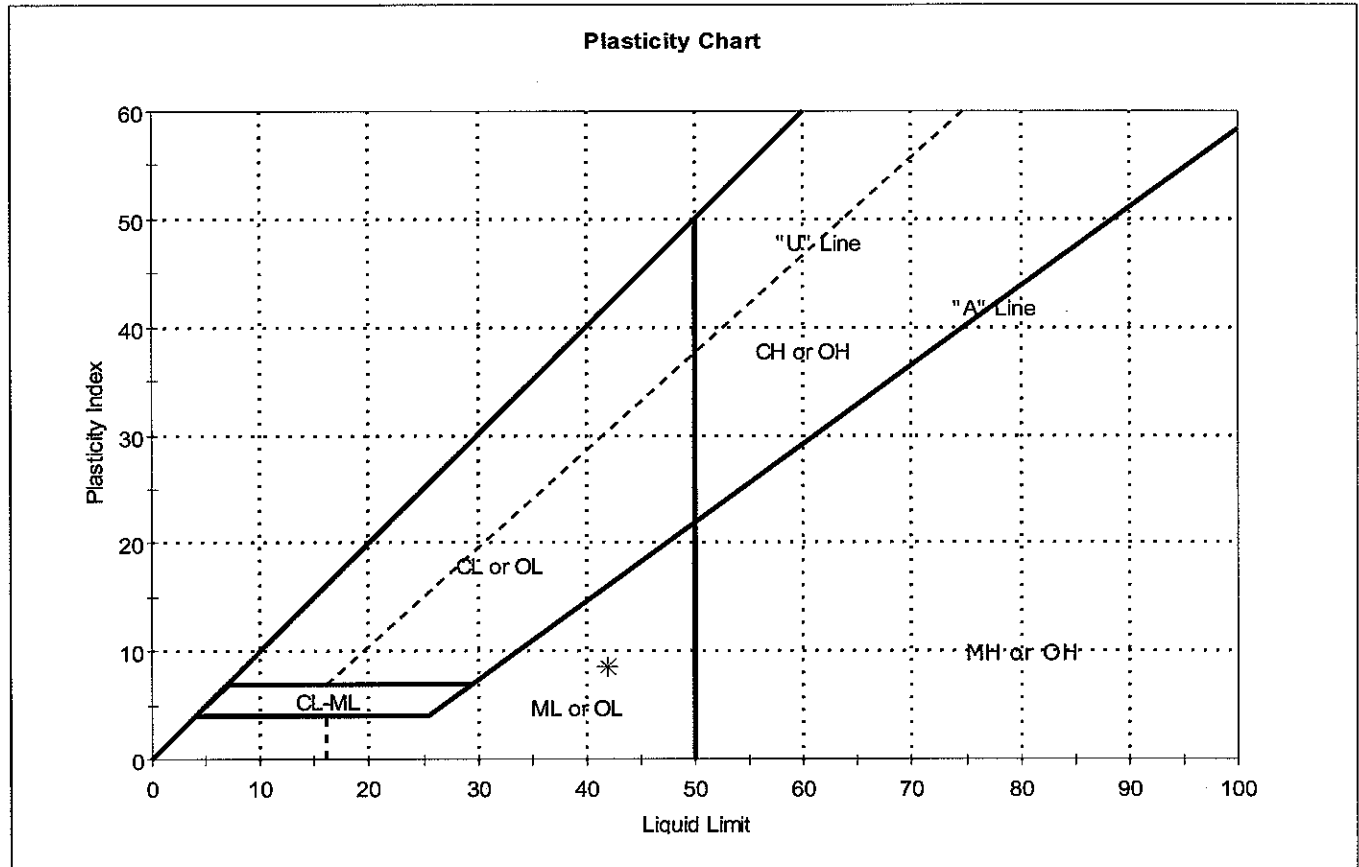
Dry Strength: VERY HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40037	Sample Type:	jar
Sample ID:	OL-0286-07	Test Date:	01/30/07
Depth :	0-3.3 ft	Test Id:	105862
Test Comment:	---		
Sample Description:	Wet, light gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-07	-VC-400	0-3.3 ft	56	42	33	9	3	silt (ML)

Sample Prepared using the WET method

1% Retained on #40 Sieve

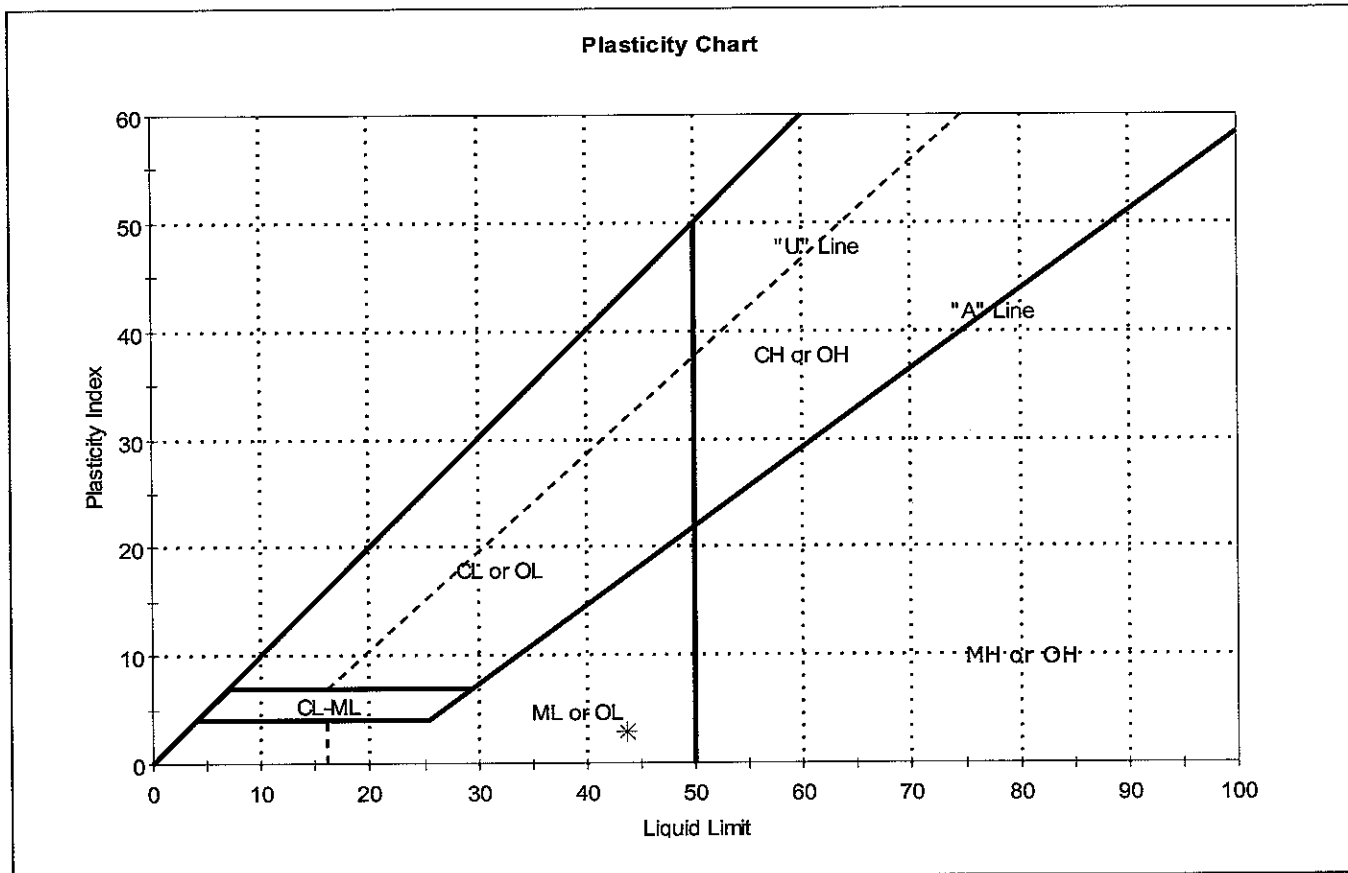
Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40037	Sample Type:	jar
Sample ID:	OL-0286-08	Test Date:	01/30/07
Depth :	6.6-9.9 ft	Test Id:	105863
Test Comment:	---		
Sample Description:	Wet, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-08	-VC-400	6.6-9.9 ft	91	44	41	3	17	silt (ML)

Sample Prepared using the WET method

0% Retained on #40 Sieve

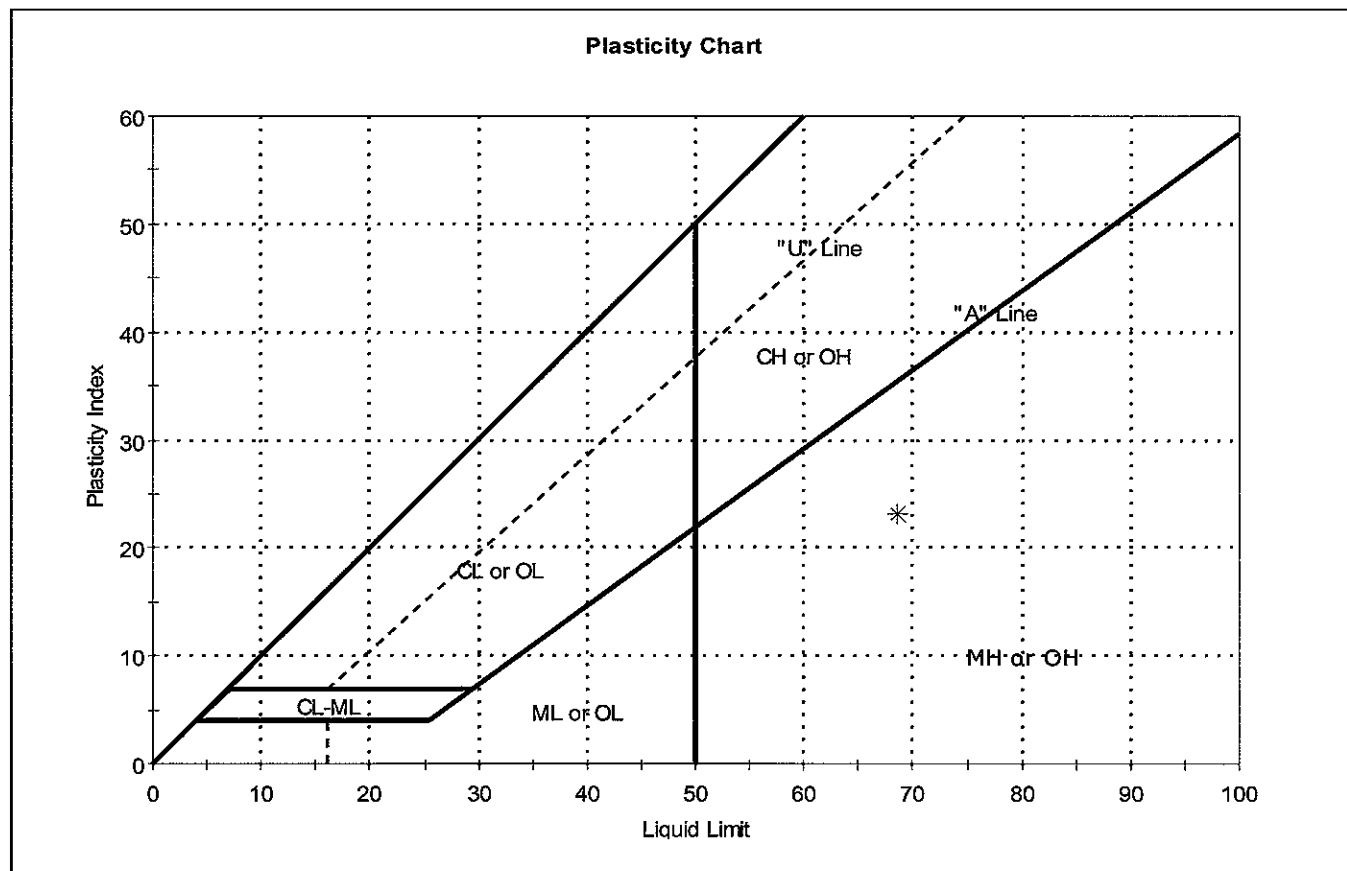
Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40037	Sample Type:	jar
Sample ID:	OL-0286-09	Test Date:	01/29/07
Depth :	16.5-19.8 ft	Test Id:	105864
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-09	VC-400	16.5-19.8 ft	114	69	45	24	3	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

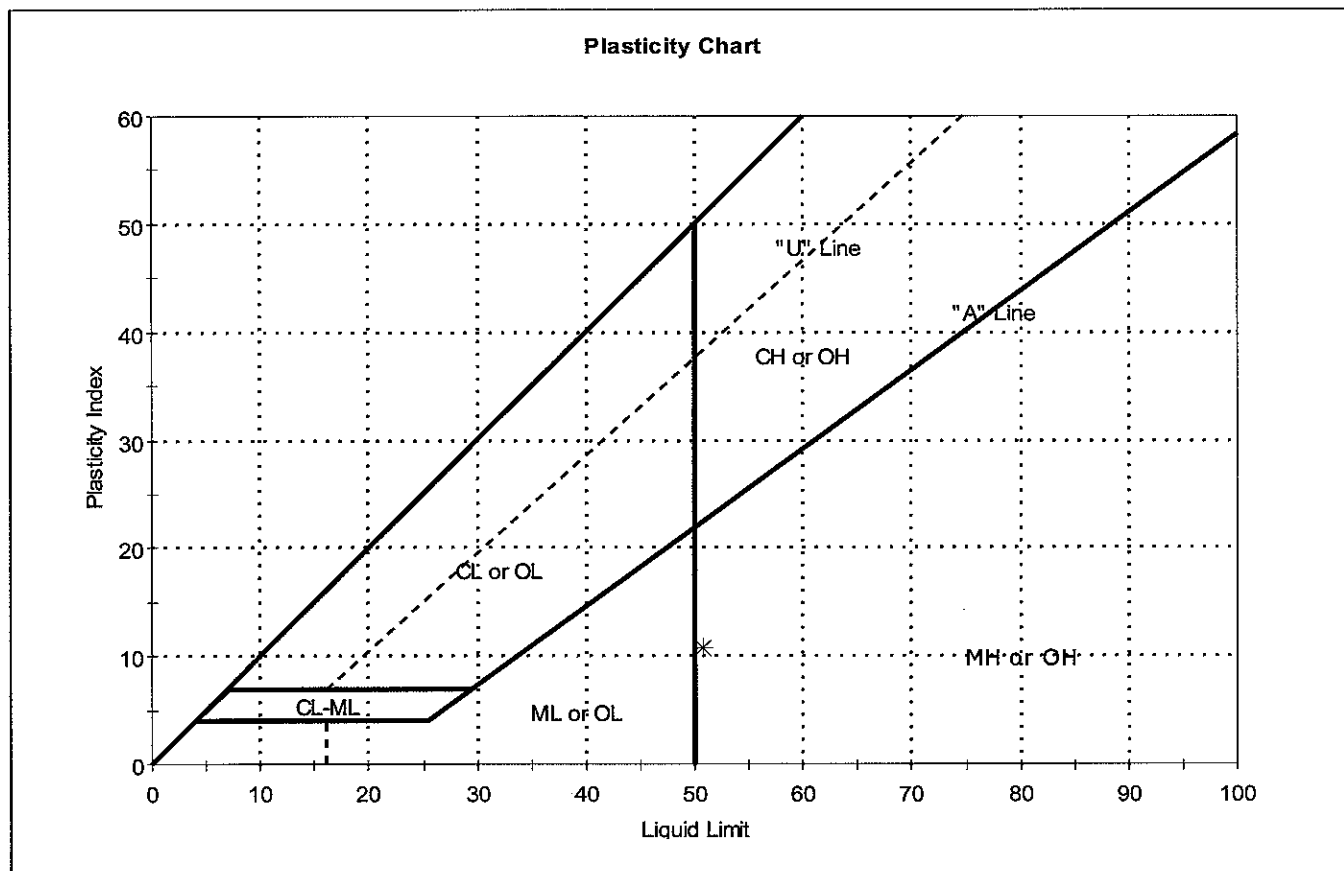
Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-40038	Sample Type:	jar
Sample ID:	OL-0286-10	Test Date:	01/30/07
Depth :	0-3.3 ft	Test Id:	105865
Test Comment:	---		
Sample Description:	Moist, very dark gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-10	-VC-4003	0-3.3 ft	90	51	40	11	5	elastic silt with sand (MH)

Sample Prepared using the WET method

7% Retained on #40 Sieve

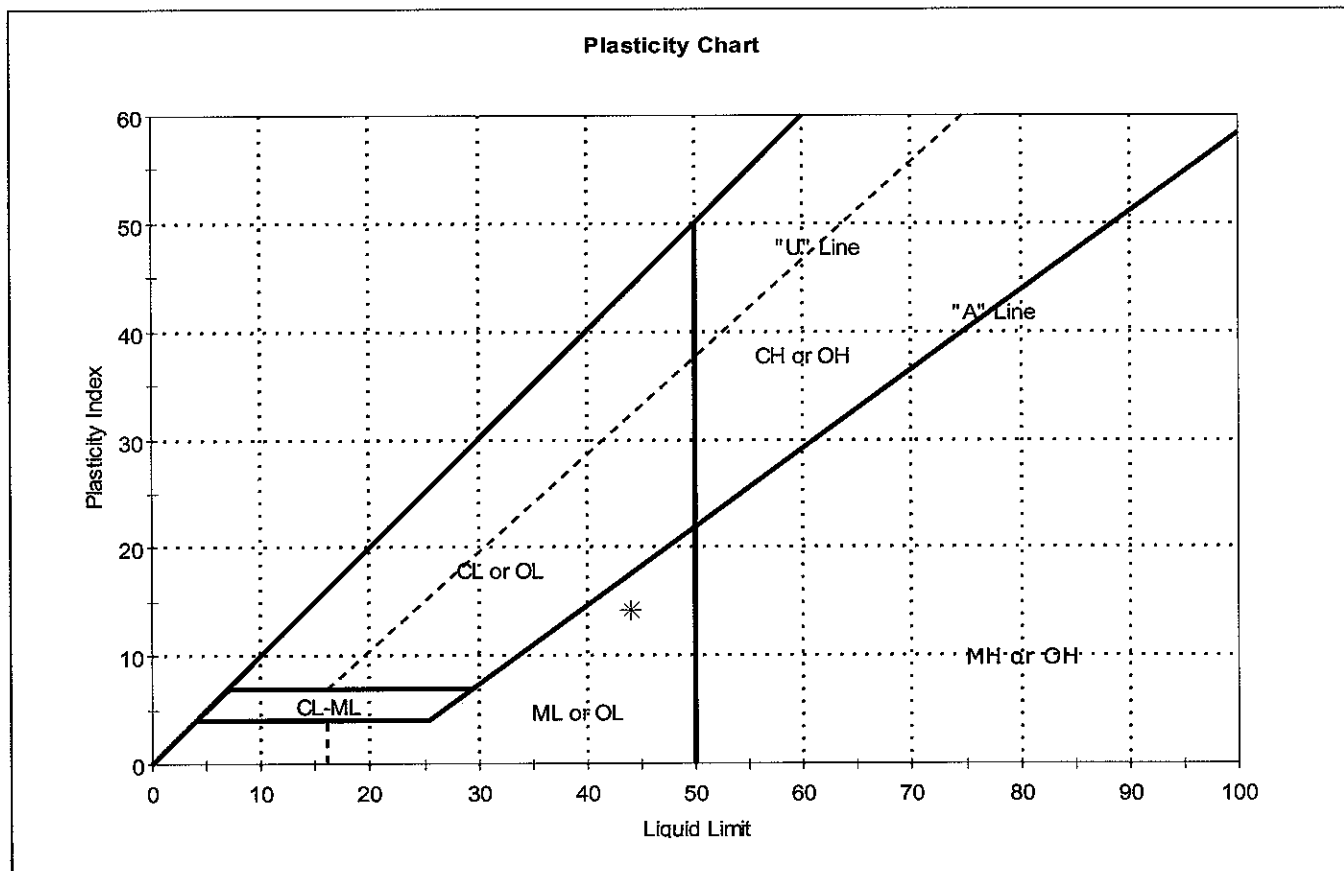
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40038	Sample Type:	jar
Sample ID:	OL-0286-11	Test Date:	02/01/07
Depth :	6.6-9.9 ft	Test Id:	105866
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-11	-VC-400	6.6-9.9 ft	70	44	30	14	3	Sandy silt (ML)

Sample Prepared using the WET method

19% Retained on #40 Sieve

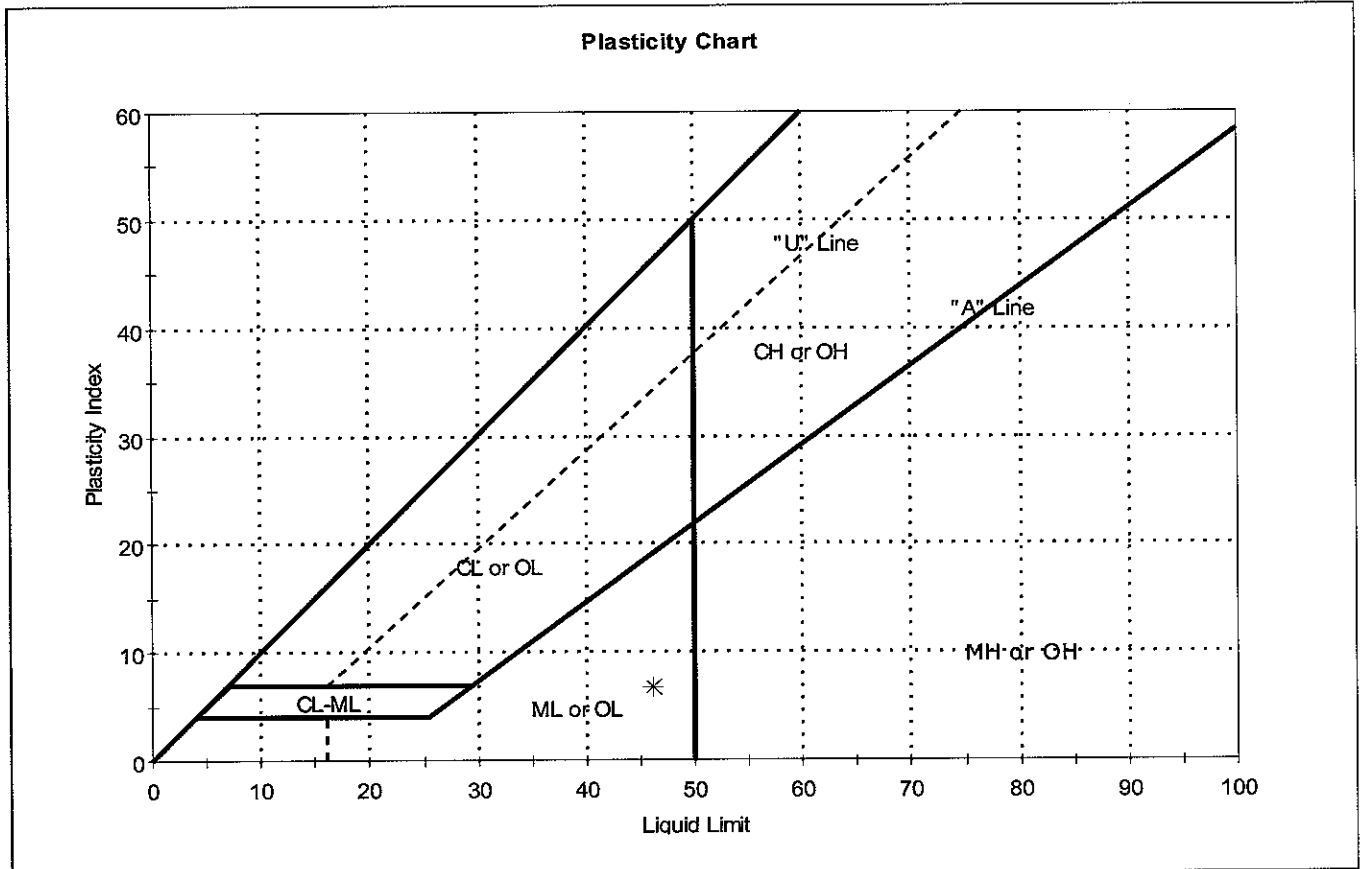
Dry Strength: HIGH

Dilutancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40038	Sample Type:	jar
Sample ID:	OL-0286-12	Test Date:	01/26/07
Depth :	16.5-19.8 ft	Test Id:	105867
Test Comment:	---		
Sample Description:	Wet, pale yellow silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

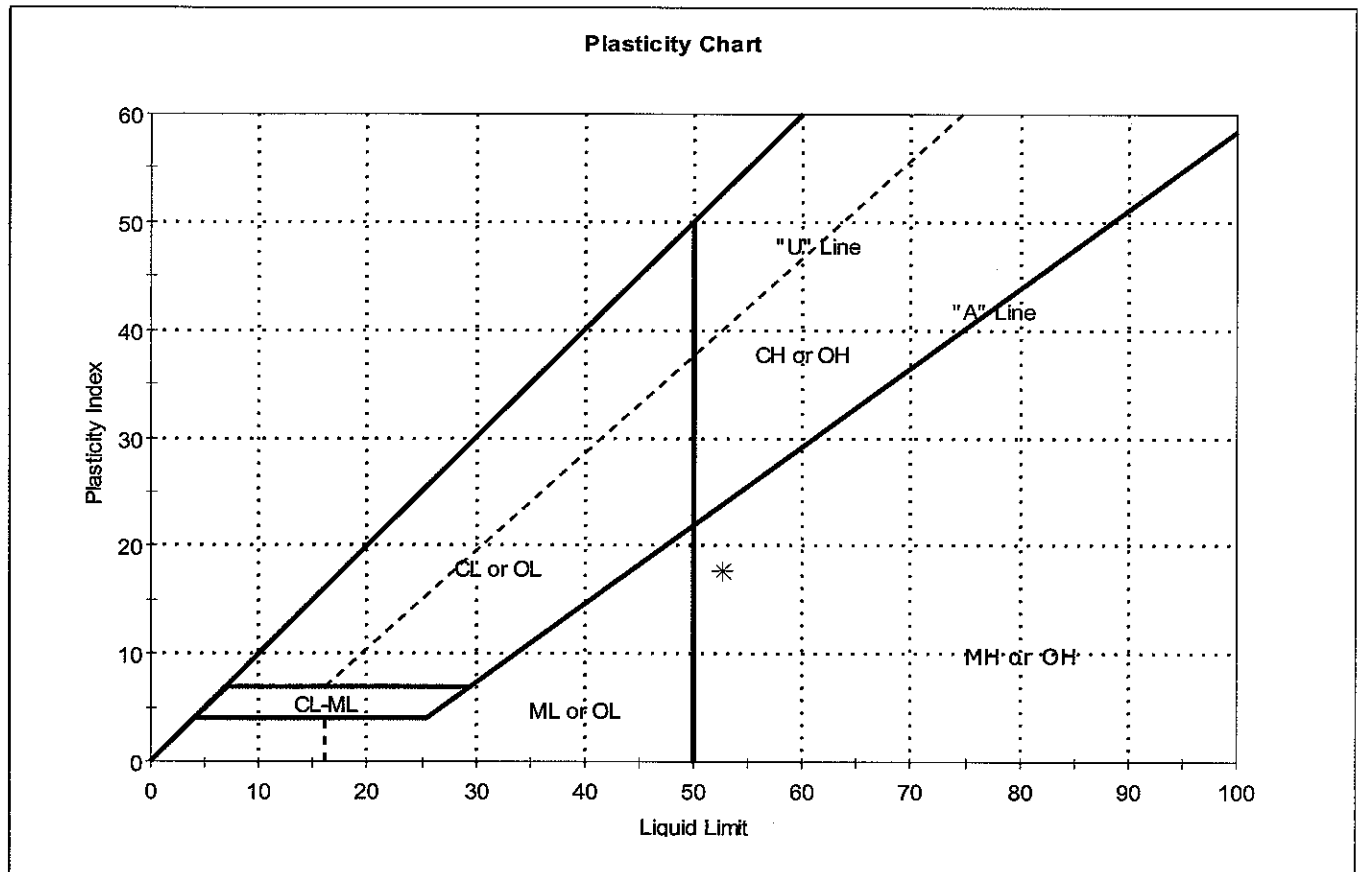


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-12	-VC-400	16.5-19.8 ft	110	46	39	7	10	silt with sand (ML)

Sample Prepared using the WET method
6% Retained on #40 Sieve
Dry Strength: MEDIUM
Dilutancy: RAPID
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40041	Sample Type:	jar
Sample ID:	OL-0286-13	Test Date:	01/31/07
Depth :	0-3.3 ft	Test Id:	105868
Test Comment:	---		
Sample Description:	Moist, dark gray, silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-13	-VC-4004	0-3.3 ft	82	53	35	18	3	

Sample Prepared using the WET method

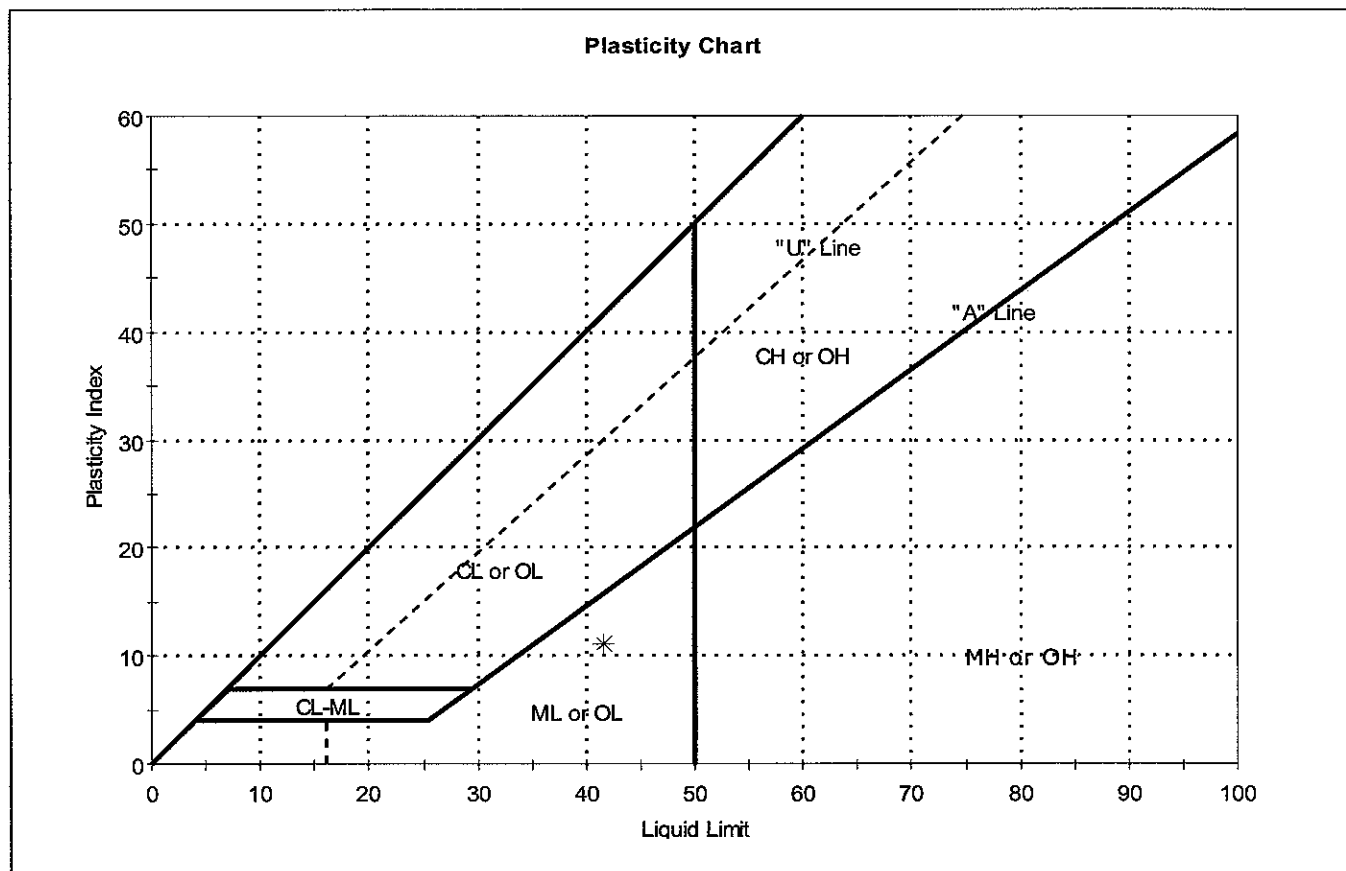
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40041	Sample Type:	jar
Sample ID:	OL-0286-14	Test Date:	01/29/07
Depth :	6.6-9.9 ft	Test Id:	105869
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-14	-VC-4004	6.6-9.9 ft	68	42	30	12	3	silt with sand (ML)

Sample Prepared using the WET method

7% Retained on #40 Sieve

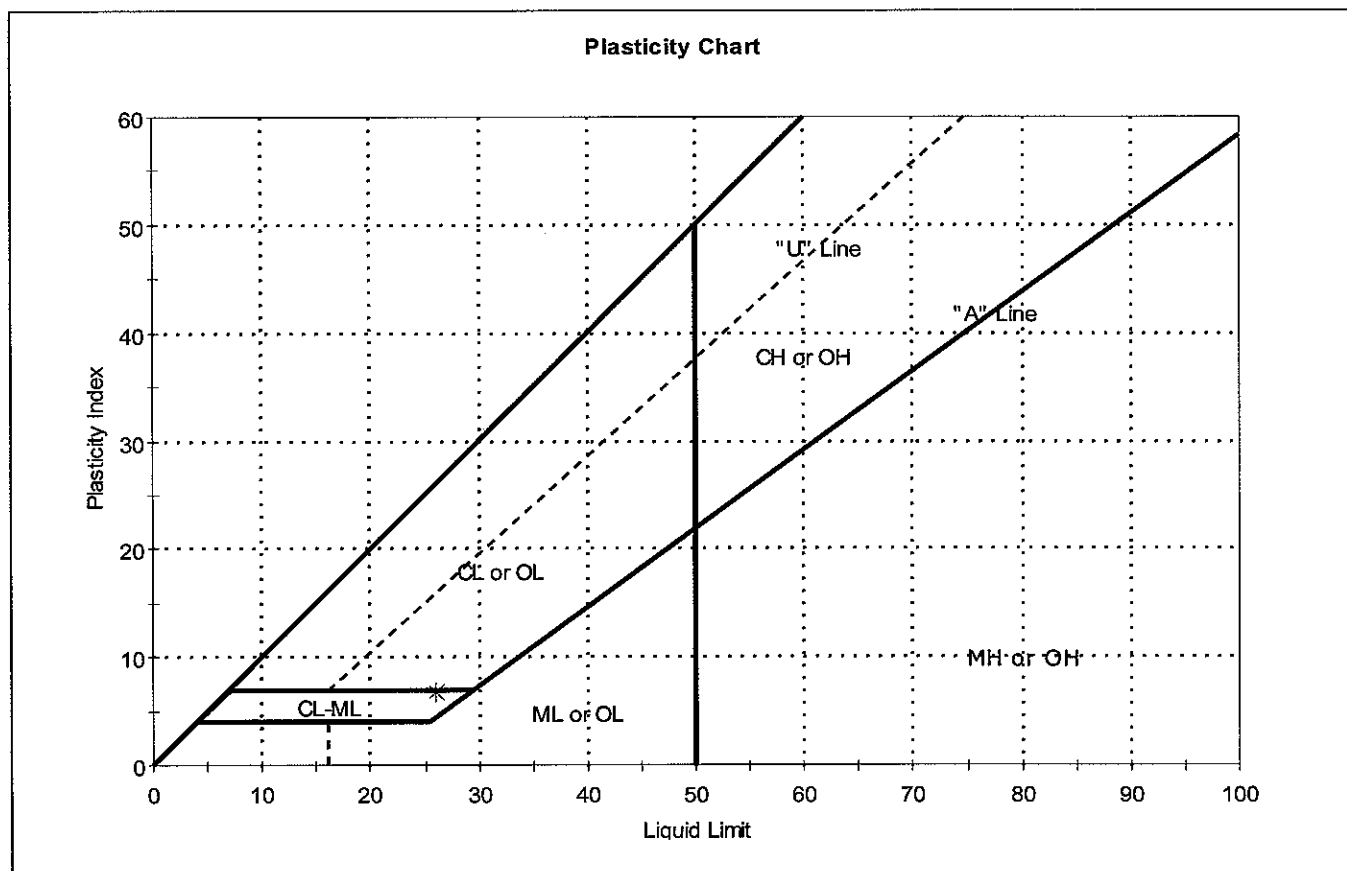
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40041	Sample Type:	jar
Sample ID:	OL-0286-15	Test Date:	01/30/07
Depth :	16.5-19.3 ft	Test Id:	105870
Test Comment:	---		
Sample Description:	Wet, dark olive brown silty clay with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-15	VC-40041	16.5-19.3 ft	34	26	19	7	2	silty clay with sand (CL-ML)

Sample Prepared using the WET method

1% Retained on #40 Sieve

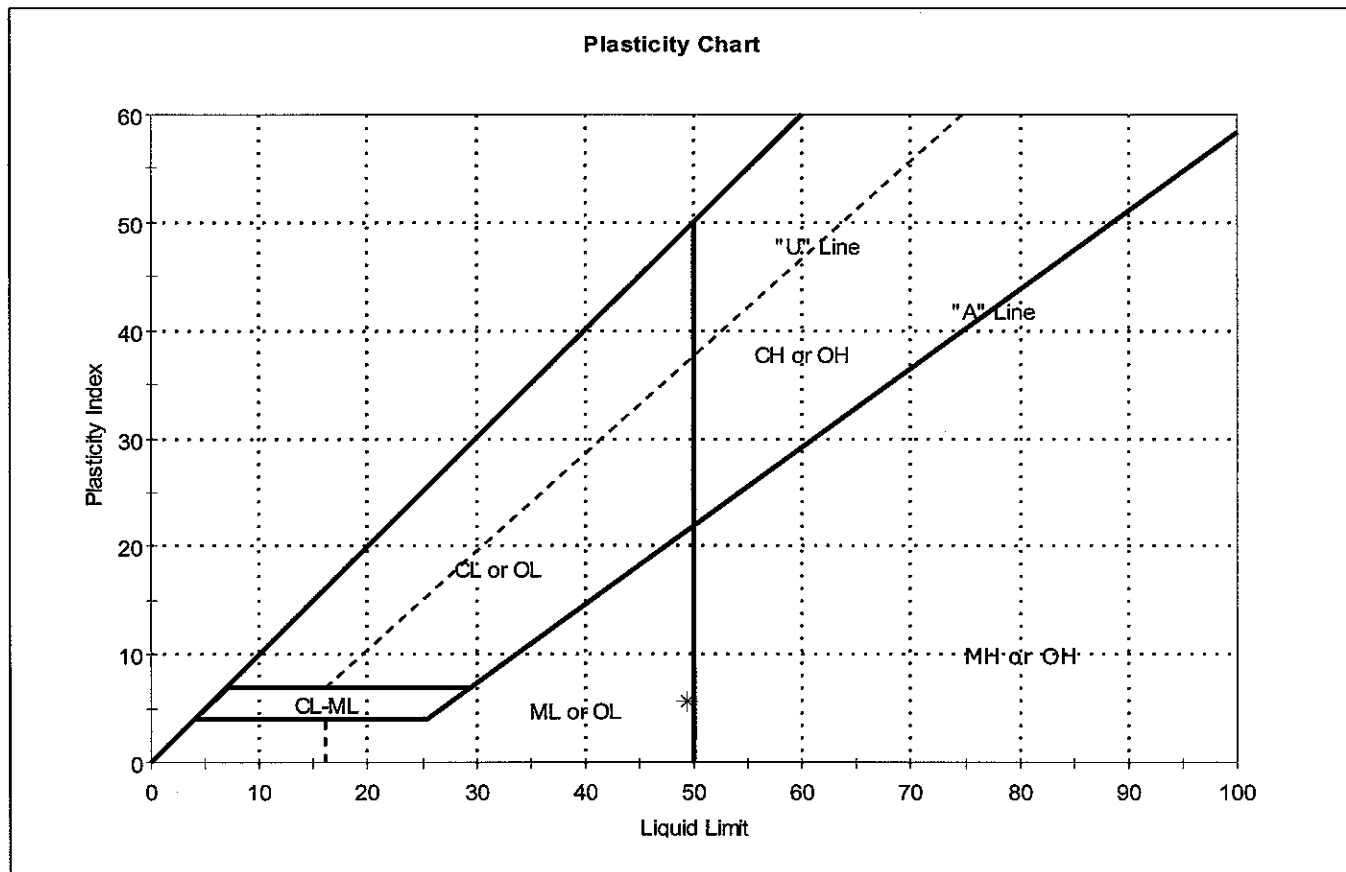
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40025	Sample Type:	jar
Sample ID:	OL-0286-16	Test Date:	01/29/07
Depth :	0-3.3 ft	Test Id:	105871
Test Comment:	---		
Sample Description:	Wet, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

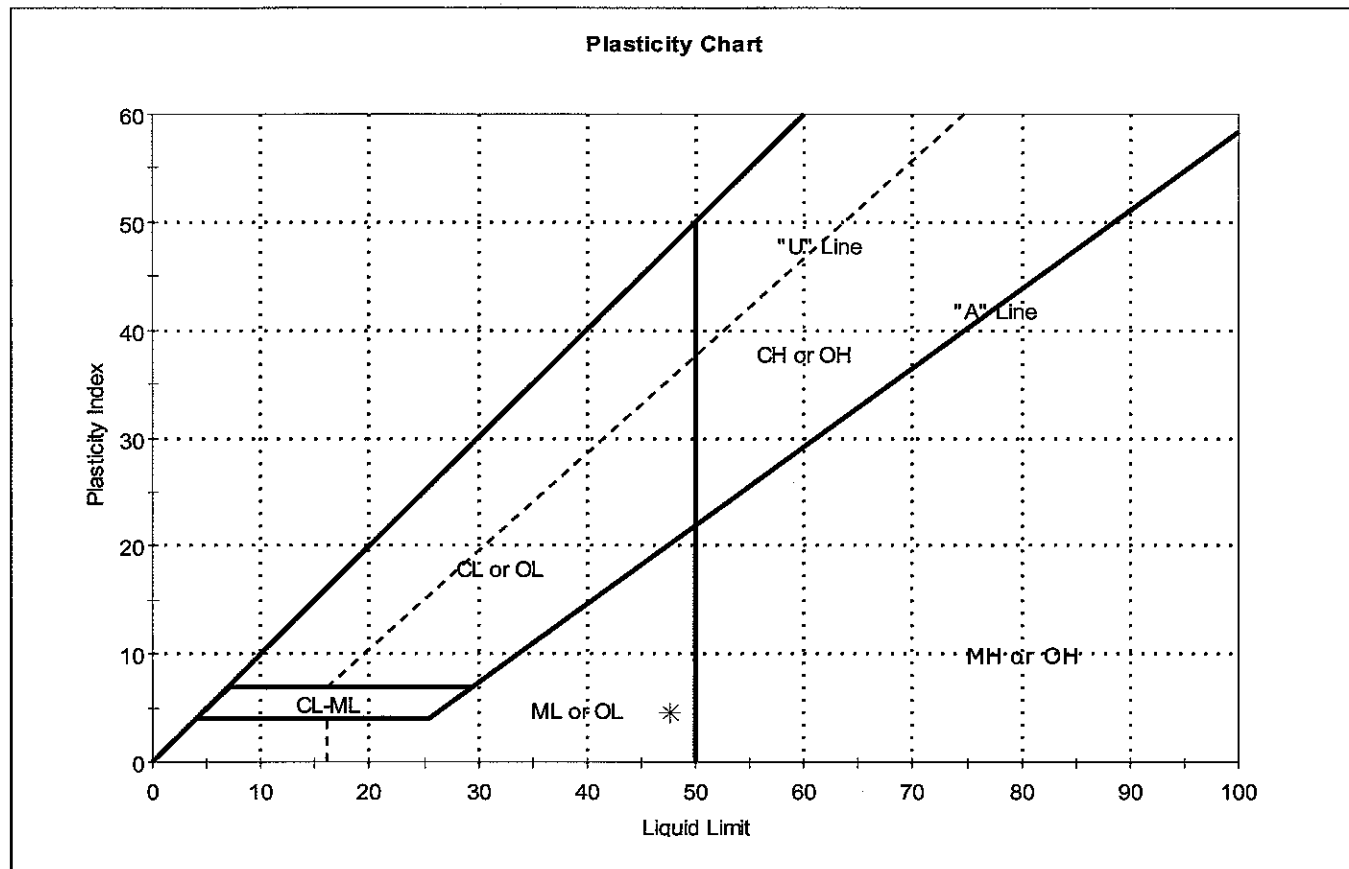


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-16	-VC-400	0-3.3 ft	130	49	44	5	17	silt (ML)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40025	Sample Type:	jar
Sample ID:	OL-0286-17	Test Date:	01/30/07
Depth:	9.9-13.2 ft	Test Id:	105872
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-17	-VC-400	9.9-13.2 ft	108	48	43	5	13	silt (ML)

Sample Prepared using the WET method

0% Retained on #40 Sieve

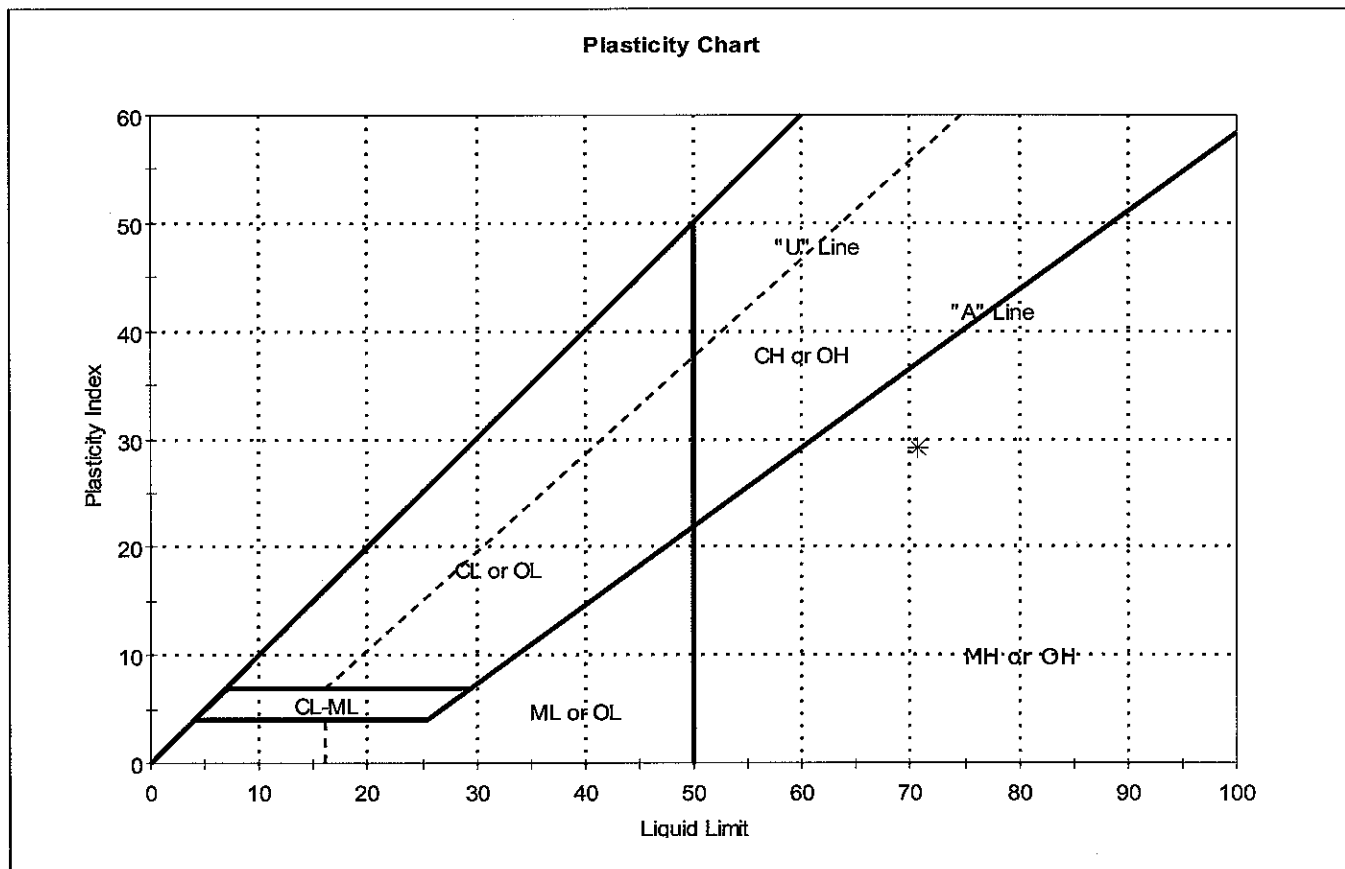
Dry Strength: MEDIUM

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40025	Sample Type:	jar
Sample ID:	OL-0286-18	Test Date:	01/30/07
Depth :	16.5-19.8 ft	Test Id:	105873
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-18	-VC-400	16.5-19.8 ft	49	71	42	29	0	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

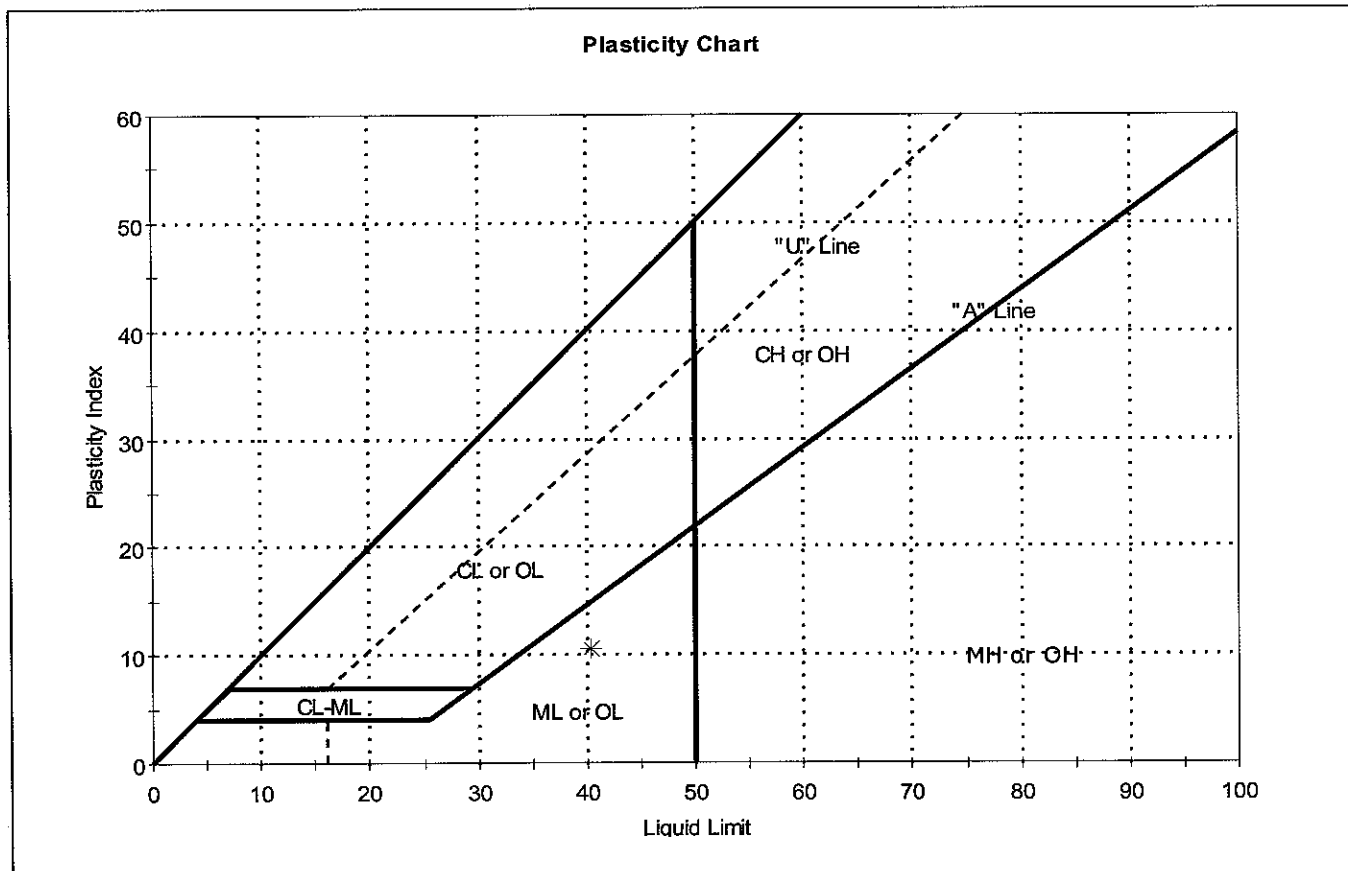
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40036	Sample Type:	jar
Sample ID:	OL-0286-19	Test Date:	01/30/07
Depth :	3.3-6.6 ft	Test Id:	105874
Test Comment:	---		
Sample Description:	Moist, very dark gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-19	-VC-400	3.3-6.6 ft	36	40	30	10	1	silt with sand (ML)

Sample Prepared using the WET method

13% Retained on #40 Sieve

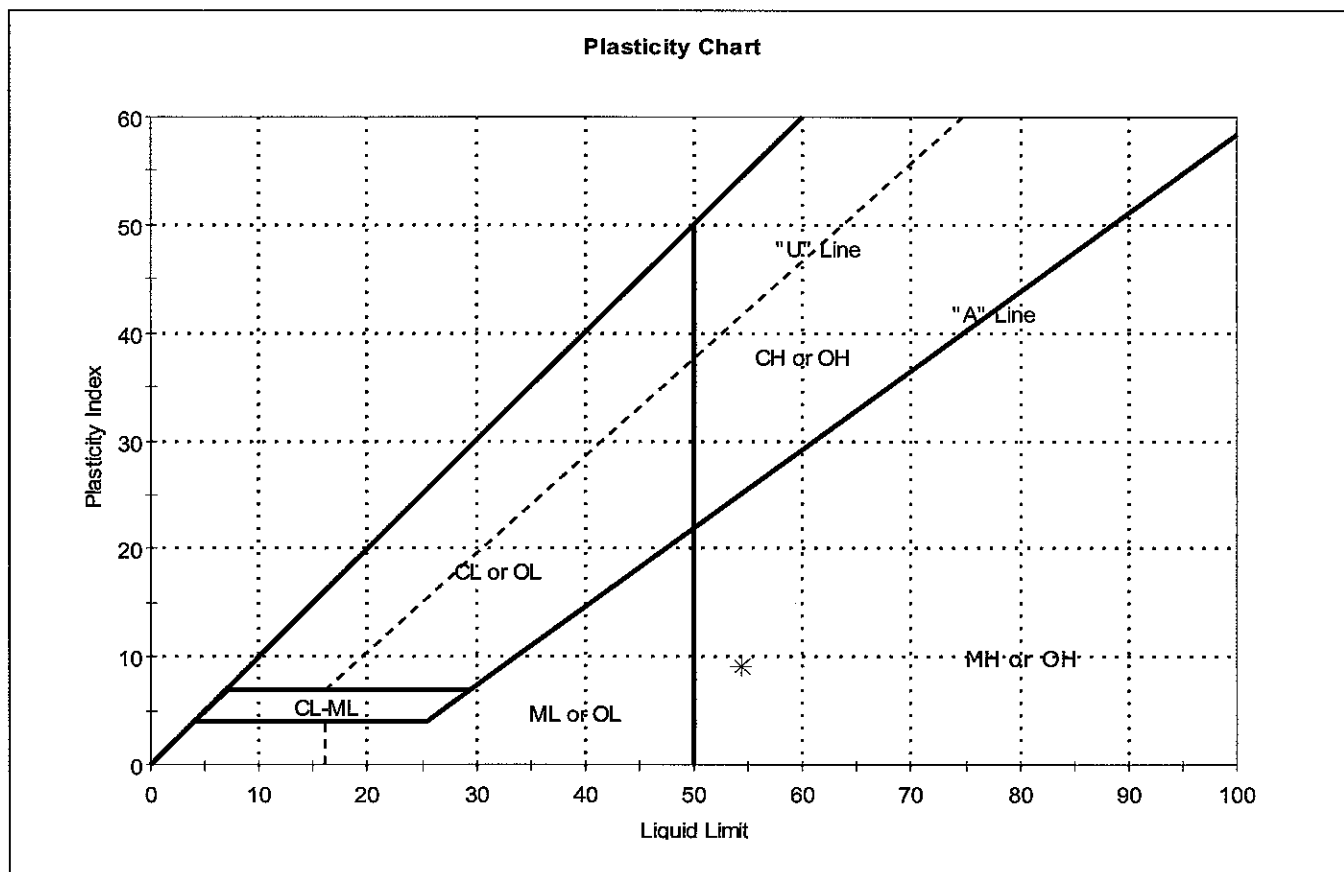
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-40036	Sample Type: jar
Sample ID: OL-0286-20	Test Date: 01/30/07
Depth: 13.2-16.5 ft	Test Id: 105875
Test Comment: ---	
Sample Description: Wet, very dark gray sandy silt	
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0286-20	-VC-4001	13.2-16.5 ft	36	54	45	9	-1	Sandy elastic silt (MH)

Sample Prepared using the WET method
 18% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Chain of Custody / Analysis Request									
AESI Ref: 38292.40495				COC #: 0287					
Lab Use Only				Lab Proj #					
Lab ID				GTE					
Job No.									
Site Name: Onondaga Lake				Location of Site: Syracuse, New York					
Preservative:				0 0 0 0 0 0 0 0 0 0					
Field Filtered Sample?				Grab/Composite					
Units									
Atterberg Limits				0 0 0 0 0 0 0 0 0 0					
Bulk Density				0 0 0 0 0 0 0 0 0 0					
Carbonate Content				0 0 0 0 0 0 0 0 0 0					
Organic Content				0 0 0 0 0 0 0 0 0 0					
Moisture Content				0 0 0 0 0 0 0 0 0 0					
Specific Gravity				0 0 0 0 0 0 0 0 0 0					
Grain Size				0 0 0 0 0 0 0 0 0 0					
SIC				0 0 0 0 0 0 0 0 0 0					
Porosity				0 0 0 0 0 0 0 0 0 0					
CUT				0 0 0 0 0 0 0 0 0 0					
UUT				0 0 0 0 0 0 0 0 0 0					
Consolidation				0 0 0 0 0 0 0 0 0 0					
Lab Sample Numbers									

Chain of Custody / Analysis Request									
Privileged and Confidential				Lorraine Weber					
Sampler: 1									
PO #:									
Analysis Turnaround Time:									
Standard -									
Rush Charges Authorized for -									
2 weeks -									
1 week -									
Next Day -									
Client Contact:				PARSONS					
290 Elwood Davis Road, Suite 312				Liverpool, NY 13088					
Hardcopy Report To:				Lorraine Weber					
Invoice To:				Pete Petrone					
Sample Identification									
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.
OL-VC-40042	3.3	6.6	OL-0287-10	9/29/2006	09:45	SEDIMENT	SOIL	REG	1
OL-VC-40042	13.2	16.5	OL-0287-11	9/29/2006	09:48	SEDIMENT	SOIL	REG	1
OL-VC-40027	0	3.3	OL-0287-12	9/30/2006	10:23	SEDIMENT	SOIL	REG	1
OL-VC-40027	6.6	9.9	OL-0287-13	9/30/2006	10:37	SEDIMENT	SOIL	REG	1
OL-VC-40027	16.5	19.7	OL-0287-14	9/30/2006	10:42	SEDIMENT	SOIL	REG	1
OL-VC-40026	3.3	6.6	OL-0287-15	9/30/2006	09:41	SEDIMENT	SOIL	REG	1
OL-VC-40026	9.9	13.2	OL-0287-16	9/30/2006	09:55	SEDIMENT	SOIL	REG	1
OL-VC-40033	3.3	6.6	OL-0287-17	9/29/2006	15:07	SEDIMENT	SOIL	REG	1
OL-VC-40033	9.9	13.2	OL-0287-18	9/29/2006	15:18	SEDIMENT	SOIL	REG	1

Special Instructions:			
Relinquished by:	Company	Received by:	Company
<i>Edra M. Chmura</i>	PARSONS	<i>Edra M. Chmura</i>	PARSONS
Date/Time	Date/Time	Date/Time	Date/Time
12/12/06 @ 12:05	12/12/06 @ 12:30	12/12/06	12:30
Relinquished by:	Company	Received by:	Company
Date/Time	Date/Time	Date/Time	Date/Time

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify):]

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	ml
Sample ID:---	Test Date: 02/13/07	Checked By:	n/a
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40036	OL-0287-01	16.5-17.3 ft	Moist, very dark gray sandy silt	114.8
OL-VC-40016	OL-0287-02	9.9-13.2 ft	Moist, olive brown silt	98.3
OL-VC-40016	OL-0287-03	16.5-19.8 ft	Moist, gray silt	69.5
OL-VC-40017	OL-0287-04	0.5-3.3 ft	Wet, black silt	102.5
OL-VC-40017	OL-0287-05	6.6-9.9 ft	Wet, very dark gray silt	110.2
OL-VC-40035	OL-0287-06	6.6-9.9 ft	Wet, light gray silt with sand	92.4
OL-VC-40030	OL-0287-07	9.9-13.2 ft	Moist, dark gray sandy silt	98.6
OL-VC-40034	OL-0287-08	3.3-6.6 ft	Wet, gray silt with sand	72.1
OL-VC-40034	OL-0287-09	13.2-16.5 ft	Moist, olive gray clay	56.7
OL-VC-40042	OL-0287-10	3.3-6.6 ft	Wet, dark olive brown silt with sand	70.5

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/13/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40042	OL-0287-11	13.2-16.5 ft	Moist, dark gray silt	77.4
OL-VC-40027	OL-0287-12	0-3.3 ft	Wet, dark gray silt	90.2
OL-VC-40027	OL-0287-13	6.6-9.9 ft	Wet, dark gray silt	142.7
OL-VC-40027	OL-0287-14	16.5-19.7 ft	Moist, dark gray silt	102.9
OL-VC-40026	OL-0287-15	3.3-6.6 ft	Wet, dark gray silt	99.4
OL-VC-40026	OL-0287-16	9.9-13.2 ft	Wet, gray silt	106.4
OL-VC-40033	OL-0287-17	3.3-6.6 ft	Wet, light gray sandy silt	76
OL-VC-40033	OL-0287-18	9.9-13.2 ft	Wet, gray silt with sand	53.1
OL-VC-40031	OL-0287-19	0-3.3 ft	Wet, dark gray silt	96.8
OL-VC-40031	OL-0287-20	6.6-9.9 ft	Moist, very dark grayish brown sandy silt	101.2

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	01/22/07
Depth :	---	Test Id:	105979
		Tested By:	yf
		Checked By:	jdt

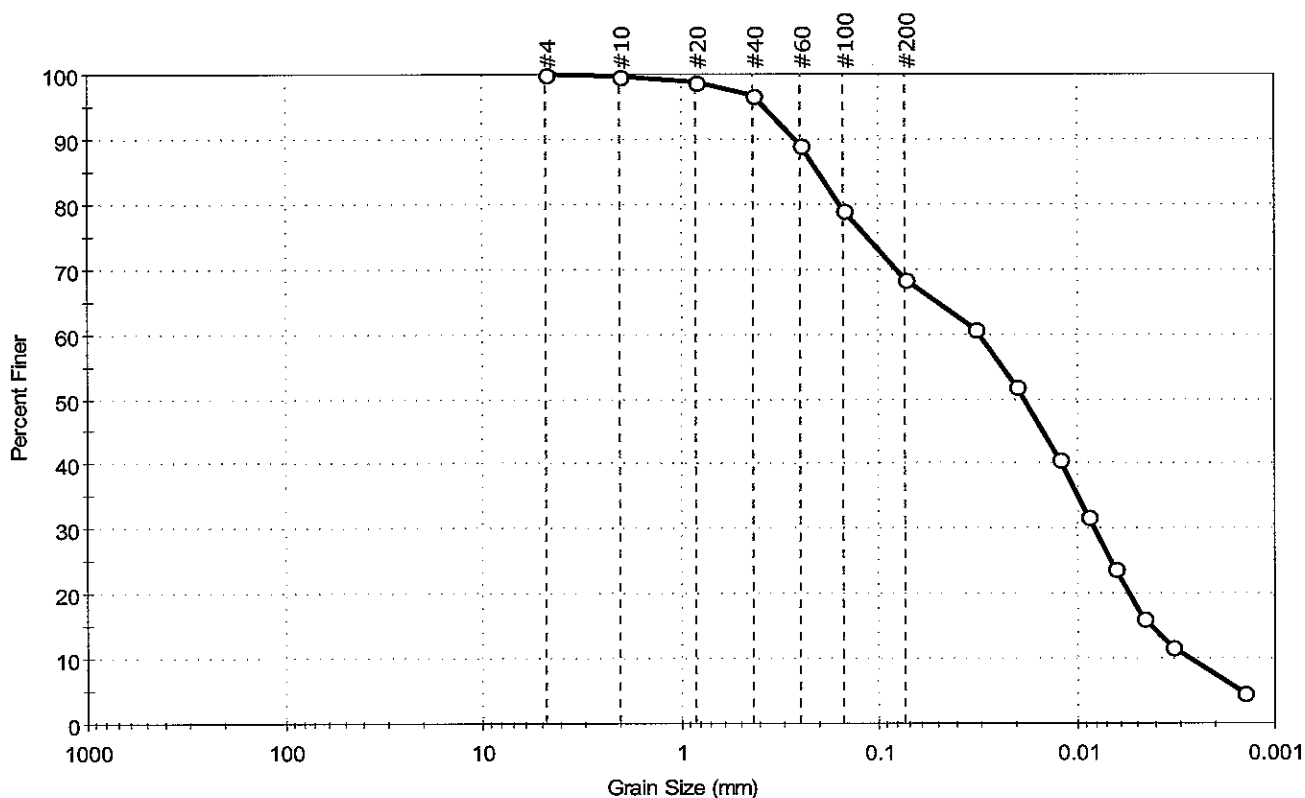
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-40016	OL-0287-02	9.9-13.2 ft	Moist, olive brown silt	2.75
OL-VC-40017	OL-0287-04	0.5-3.3 ft	Wet, black silt	2.78
OL-VC-40030	OL-0287-07	9.9-13.2 ft	Moist, dark gray sandy silt	2.57
OL-VC-40031	OL-0287-20	6.6-9.9 ft	Moist, very dark grayish brown sandy silt	2.51

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40036	Sample Type:	jar
Sample ID:	OL-0287-01	Test Date:	01/25/07
Depth:	16.5-17.3 ft	Test Id:	105917
Test Comment:	---		
Sample Description:	Moist, very dark gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	31.5	68.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	97		
#60	0.25	89		
#100	0.15	79		
#200	0.074	69		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0322	61		
---	0.0204	52		
---	0.0122	41		
---	0.0088	32		
---	0.0064	24		
---	0.0046	16		
---	0.0033	12		
---	0.0014	5		

Coefficients

D ₈₅ = 0.2043 mm	D ₃₀ = 0.0082 mm
D ₆₀ = 0.0308 mm	D ₁₅ = 0.0042 mm
D ₅₀ = 0.0187 mm	D ₁₀ = 0.0027 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

AASHTO Silty Soils (A-4 (0))

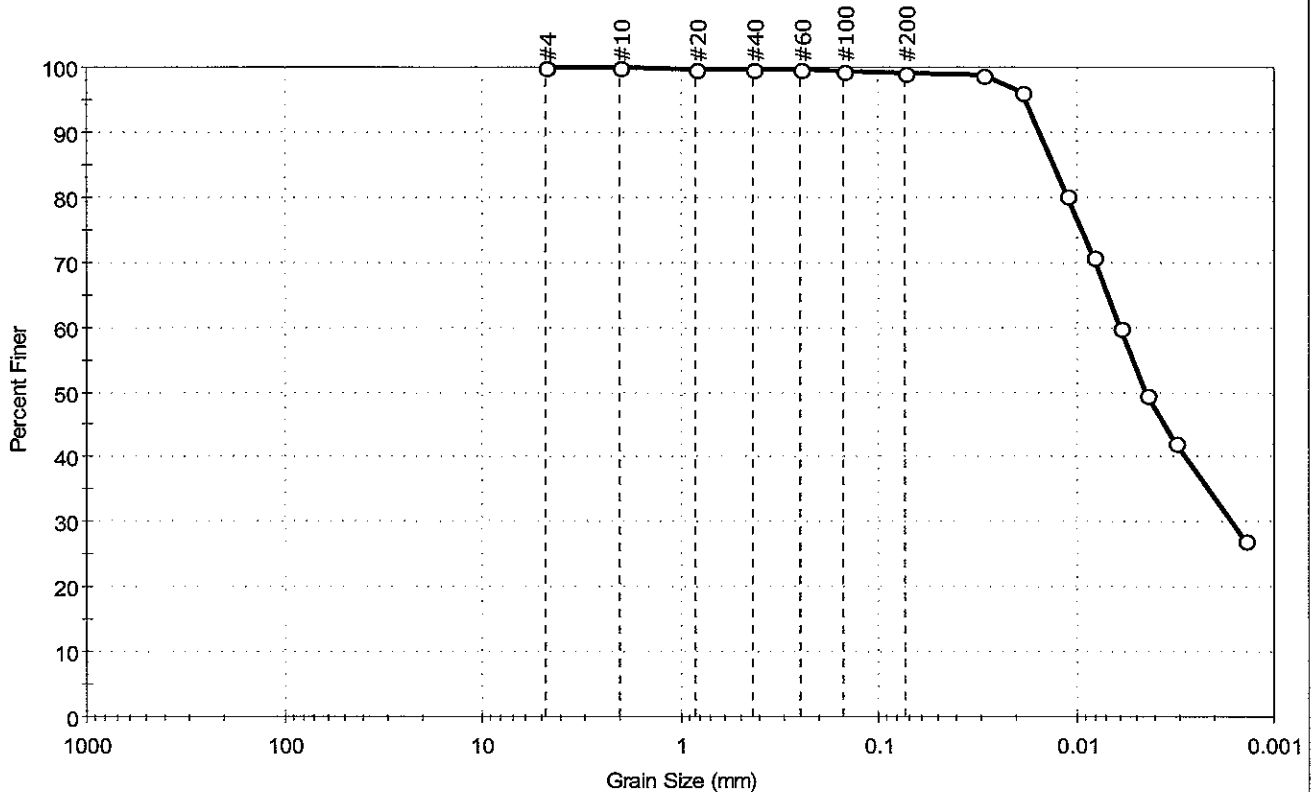
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-40016	Sample Type: jar
Sample ID: OL-0287-02	Test Date: 02/09/07
Depth: 9.9-13.2 ft	Test Id: 105918
Test Comment: ---	
Sample Description: Moist, olive brown silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0293	99			
0.0190	96			
0.0113	80			
0.0082	71			
0.0060	60			
0.0044	50			
0.0031	42			
0.0014	27			

Coefficients

D ₈₅ = 0.0132 mm	D ₃₀ = 0.0016 mm
D ₆₀ = 0.0060 mm	D ₁₅ = N/A
D ₅₀ = 0.0044 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

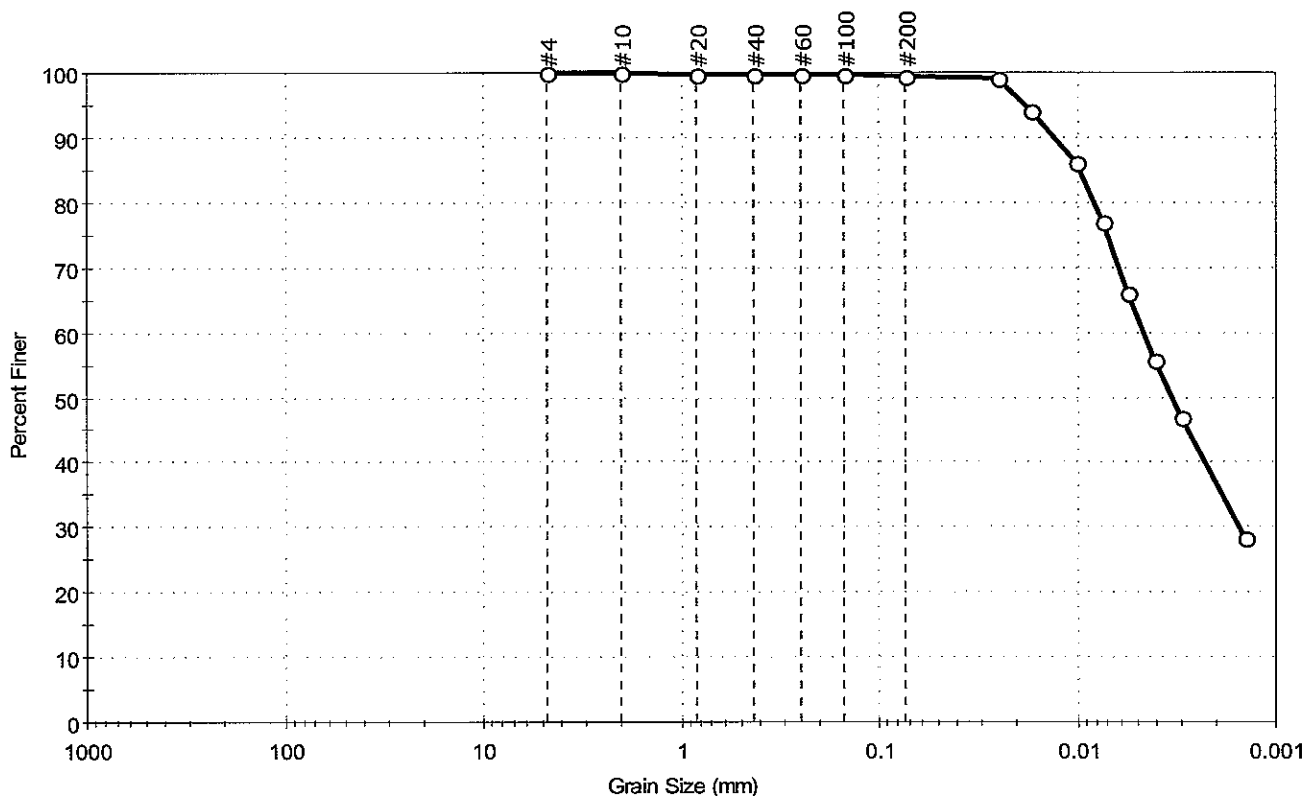
AASHTO Clayey Soils (A-7-5 (76))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40016	Sample Type:	jar
Sample ID:	OL-0287-03	Test Date:	02/08/07
Depth :	16.5-19.8 ft	Test Id:	105919
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.5	99.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0253	99		
---	0.0169	94		
---	0.0102	86		
---	0.0075	77		
---	0.0055	66		
---	0.0041	56		
---	0.0030	47		
---	0.0014	28		

Coefficients

D ₈₅ = 0.0098 mm	D ₃₀ = 0.0015 mm
D ₆₀ = 0.0046 mm	D ₁₅ = N/A
D ₅₀ = 0.0033 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

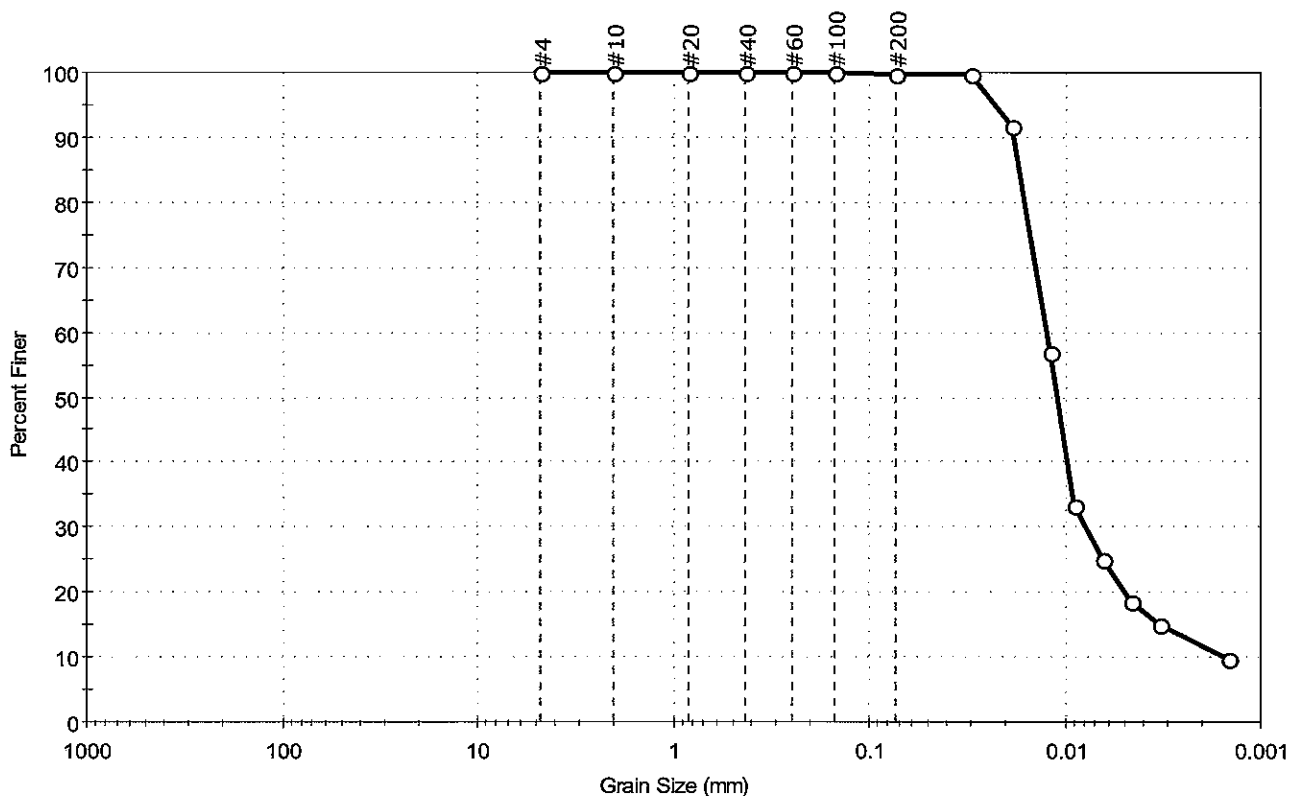
AASHTO Clayey Soils (A-7-5 (52))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40017	Sample Type:	jar
Sample ID:	OL-0287-04	Test Date:	02/07/07
Depth :	0.5-3.3 ft	Test Id:	105920
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.2	99.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
---	0.0300	100		
---	0.0190	92		
---	0.0121	57		
---	0.0090	33		
---	0.0065	25		
---	0.0047	19		
---	0.0033	15		
---	0.0015	10		

Coefficients

D ₈₅ = 0.0174 mm	D ₃₀ = 0.0079 mm
D ₆₀ = 0.0126 mm	D ₁₅ = 0.0033 mm
D ₅₀ = 0.0111 mm	D ₁₀ = 0.0015 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

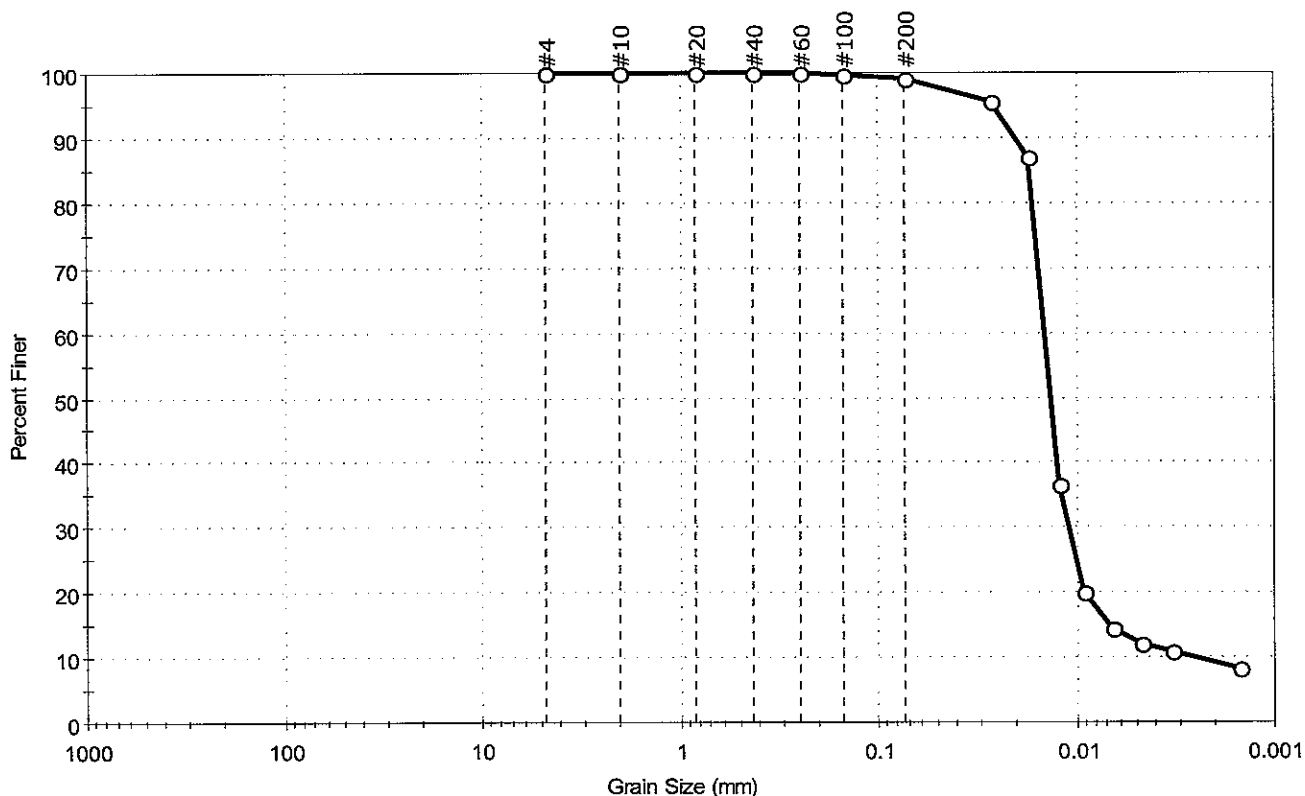
AASHTO Clayey Soils (A-7-5 (24))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40017	Sample Type:	jar
Sample ID:	OL-0287-05	Test Date:	02/08/07
Depth :	6.6-9.9 ft	Test Id:	105921
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.9	99.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0272	96			
0.0173	87			
0.0123	36			
0.0091	20			
0.0066	15			
0.0047	12			
0.0033	11			
0.0015	8			

Coefficients

D ₈₅ = 0.0171 mm	D ₃₀ = 0.0109 mm
D ₆₀ = 0.0145 mm	D ₁₅ = 0.0067 mm
D ₅₀ = 0.0135 mm	D ₁₀ = 0.0025 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (32))

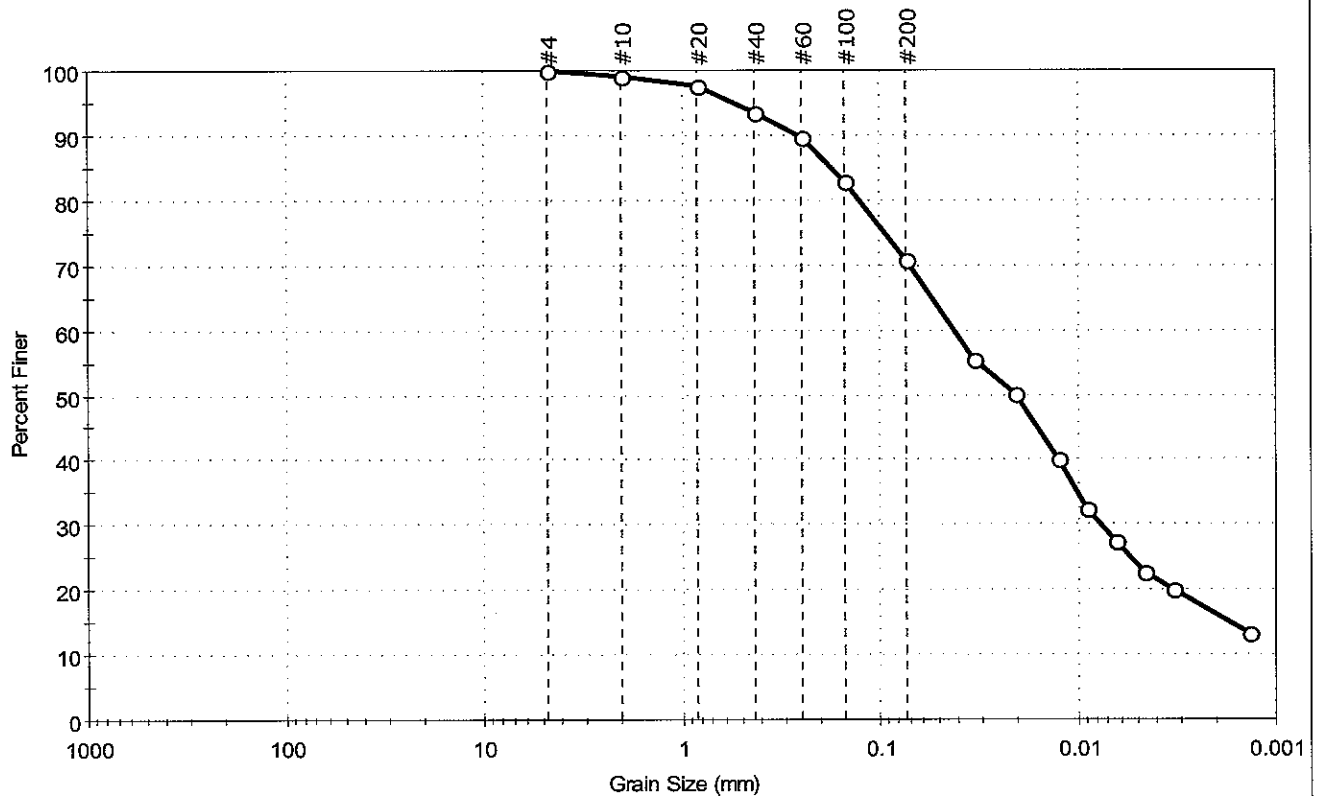
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40035	Sample Type:	jar
Sample ID:	OL-0287-06	Test Date:	01/25/07
Depth :	6.6-9.9 ft	Test Id:	105922
Test Comment:	---		
Sample Description:	Wet, light gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	29.3	70.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	93		
#60	0.25	90		
#100	0.15	83		
#200	0.074	71		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0337	56		
---	0.0208	50		
---	0.0125	40		
---	0.0090	32		
---	0.0054	28		
---	0.0046	23		
---	0.0033	20		
---	0.0014	13		

Coefficients

D ₈₅ = 0.1771 mm	D ₃₀ = 0.0076 mm
D ₆₀ = 0.0425 mm	D ₁₅ = 0.0017 mm
D ₅₀ = 0.0205 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (15))

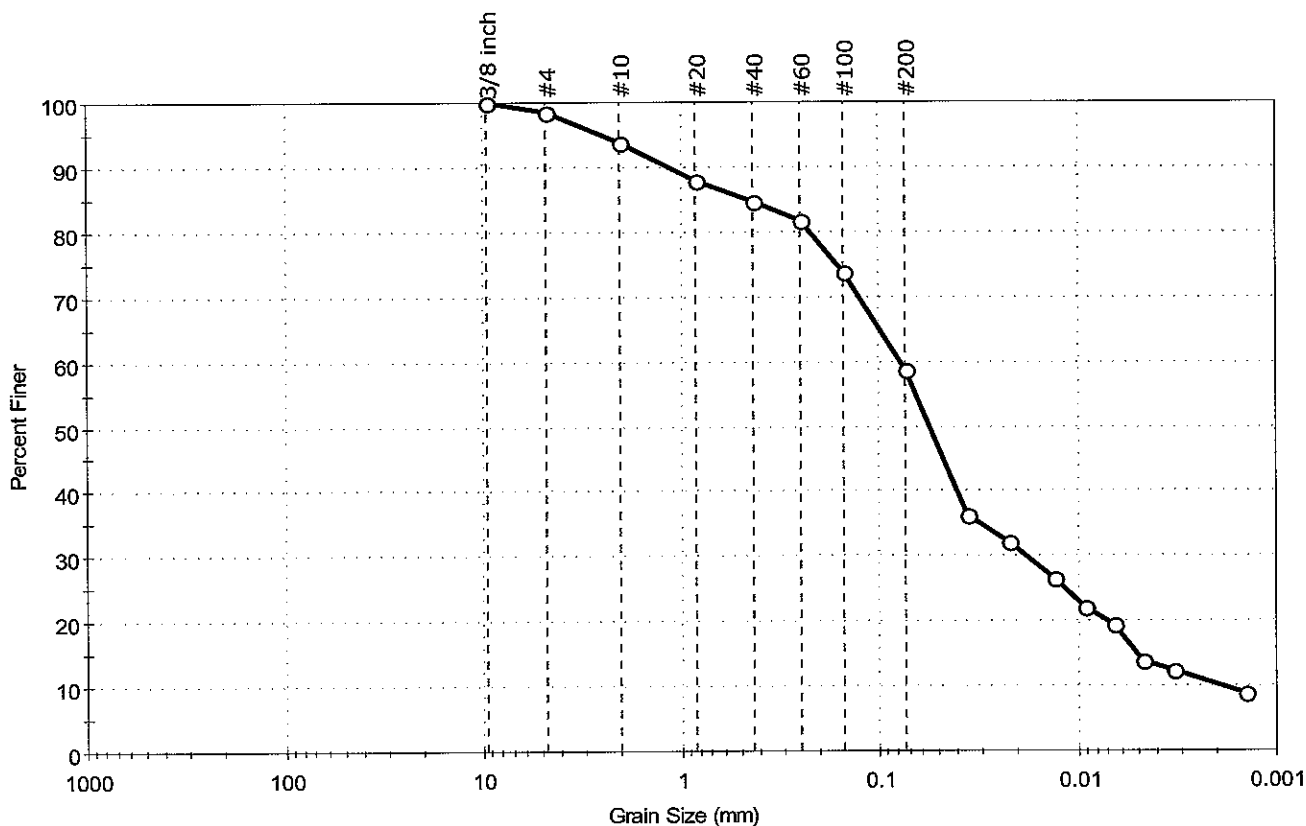
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40030	Sample Type:	jar
Sample ID:	OL-0287-07	Test Date:	02/08/07
Depth :	9.9-13.2 ft	Test Id:	105923
Test Comment:	---		
Sample Description:	Moist, dark gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.6	39.7	58.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	98		
#10	2.00	94		
#20	0.84	88		
#40	0.42	85		
#60	0.25	82		
#100	0.15	74		
#200	0.074	59		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0357	36		
---	0.0222	32		
---	0.0130	26		
---	0.0093	22		
---	0.0066	19		
---	0.0047	14		
---	0.0033	13		
---	0.0014	9		

Coefficients

D ₈₅ = 0.4662 mm	D ₃₀ = 0.0181 mm
D ₆₀ = 0.0786 mm	D ₁₅ = 0.0050 mm
D ₅₀ = 0.0557 mm	D ₁₀ = 0.0019 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (11))

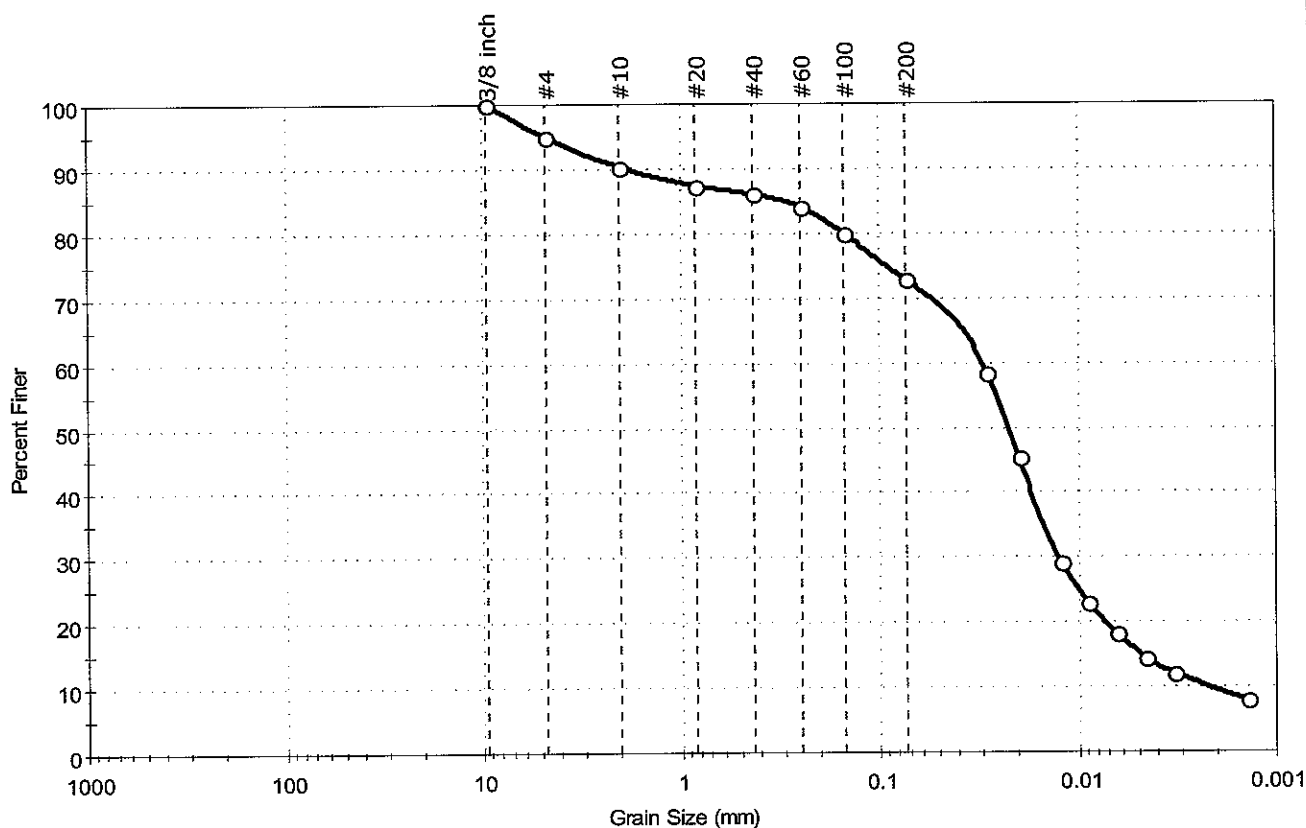
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40034	Sample Type:	jar
Sample ID:	OL-0287-08	Test Date:	02/08/07
Depth :	3.3-6.6 ft	Test Id:	105924
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.0	22.1	72.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 Inch	9.51	100		
#4	4.75	95		
#10	2.00	90		
#20	0.84	87		
#40	0.42	86		
#60	0.25	84		
#100	0.15	80		
#200	0.074	73		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0286	58		
---	0.0199	45		
---	0.0123	29		
---	0.0089	23		
---	0.0064	18		
---	0.0046	14		
---	0.0033	12		
---	0.0014	8		

Coefficients

D ₈₅ = 0.3155 mm	D ₃₀ = 0.0125 mm
D ₆₀ = 0.0316 mm	D ₁₅ = 0.0048 mm
D ₅₀ = 0.0227 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

AASHTO Clayey Soils (A-7-5 (11))

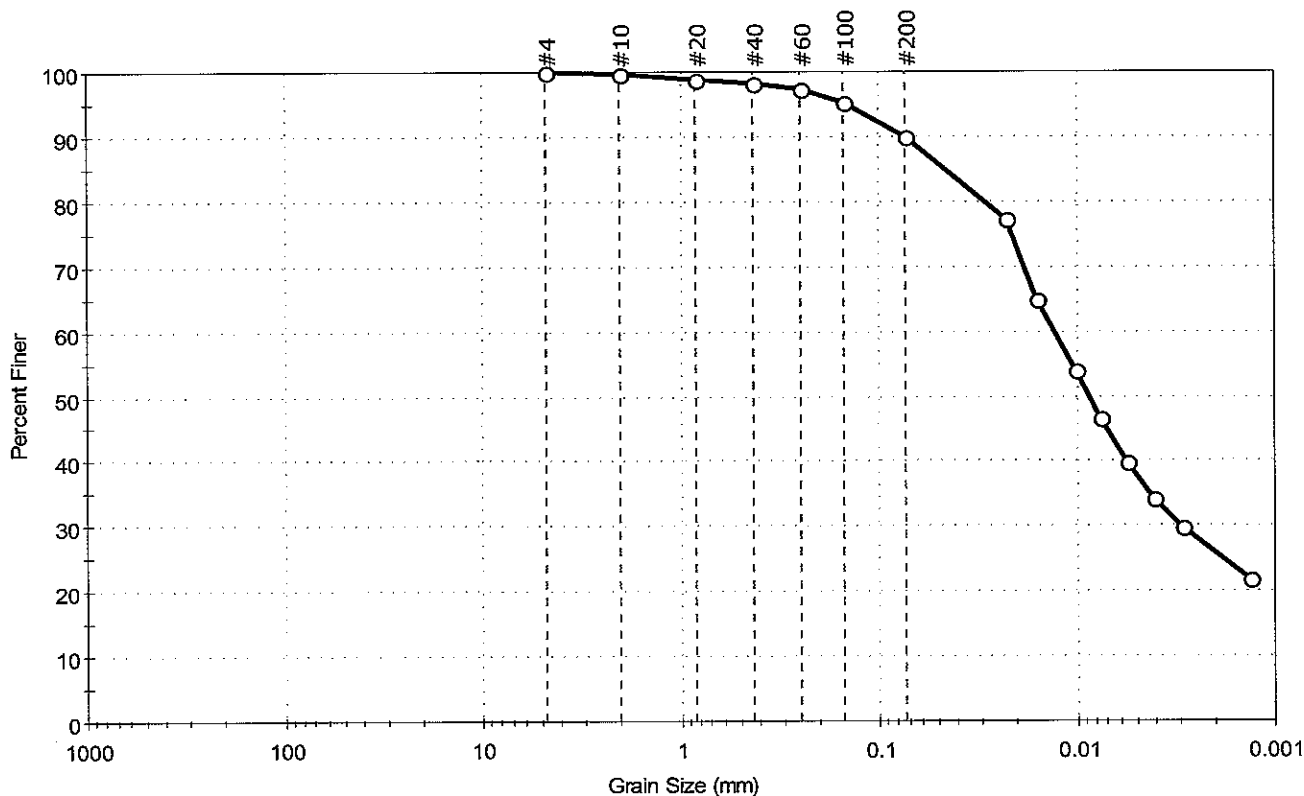
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40034	Sample Type:	jar
Sample ID:	OL-0287-09	Test Date:	02/09/07
Depth :	13.2-16.5 ft	Test Id:	105925
Test Comment:	---		
Sample Description:	Moist, olive gray clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	10.0	90.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	98		
#60	0.25	97		
#100	0.15	95		
#200	0.074	90		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0227	77		
---	0.0161	65		
---	0.0101	54		
---	0.0075	47		
---	0.0056	40		
---	0.0041	34		
---	0.0030	30		
---	0.0013	22		

Coefficients

D ₈₅ = 0.0466 mm	D ₃₀ = 0.0030 mm
D ₆₀ = 0.0131 mm	D ₁₅ = N/A
D ₅₀ = 0.0086 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM lean clay (CL)

AASHTO Clayey Soils (A-6 (12))

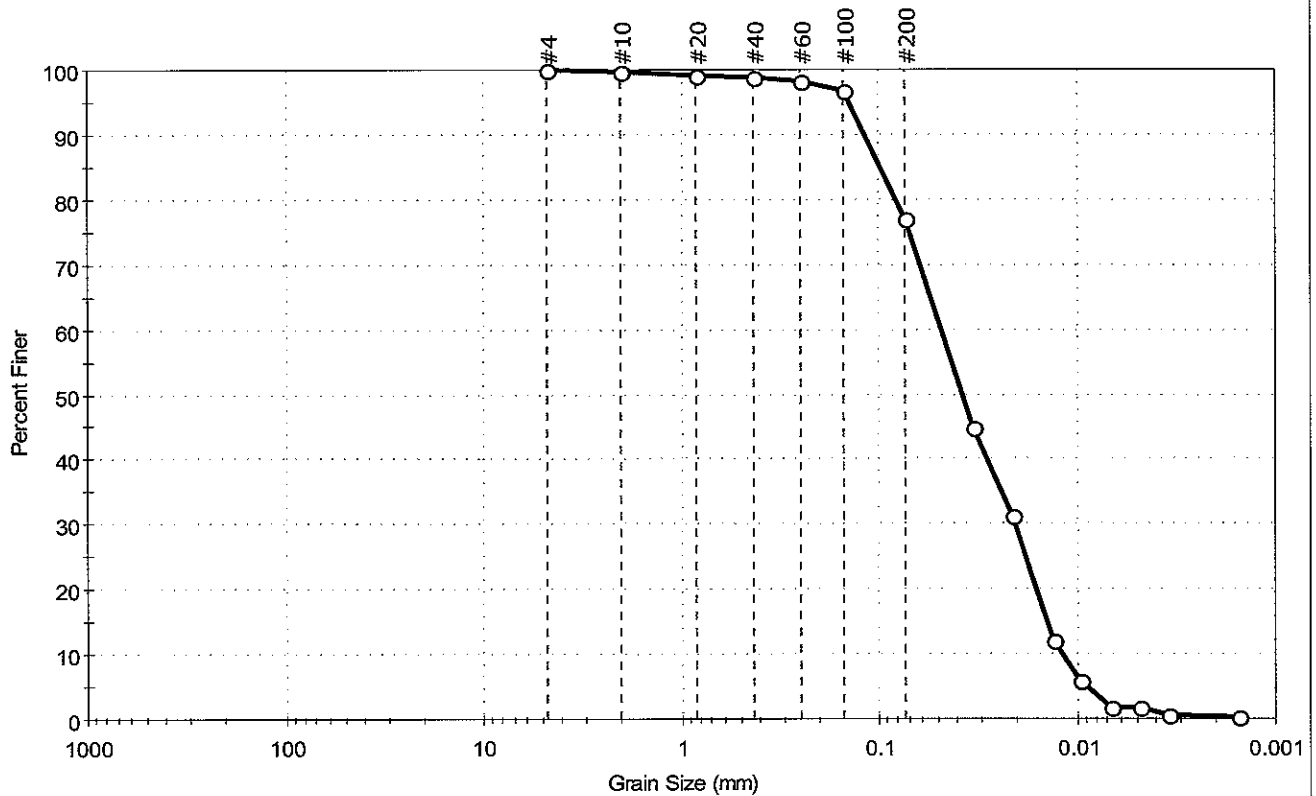
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40042	Sample Type:	jar
Sample ID:	OL-0287-10	Test Date:	02/09/07
Depth :	3.3-6.6 ft	Test Id:	105926
Test Comment:	---		
Sample Description:	Wet, dark olive brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	22.9	77.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	97		
#200	0.074	77		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0335	45		
---	0.0214	31		
---	0.0133	12		
---	0.0095	6		
---	0.0068	2		
---	0.0048	2		
---	0.0034	1		
---	0.0015	0		

Coefficients

D ₈₅ = 0.0981 mm	D ₃₀ = 0.0207 mm
D ₆₀ = 0.0486 mm	D ₁₅ = 0.0143 mm
D ₅₀ = 0.0380 mm	D ₁₀ = 0.0119 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

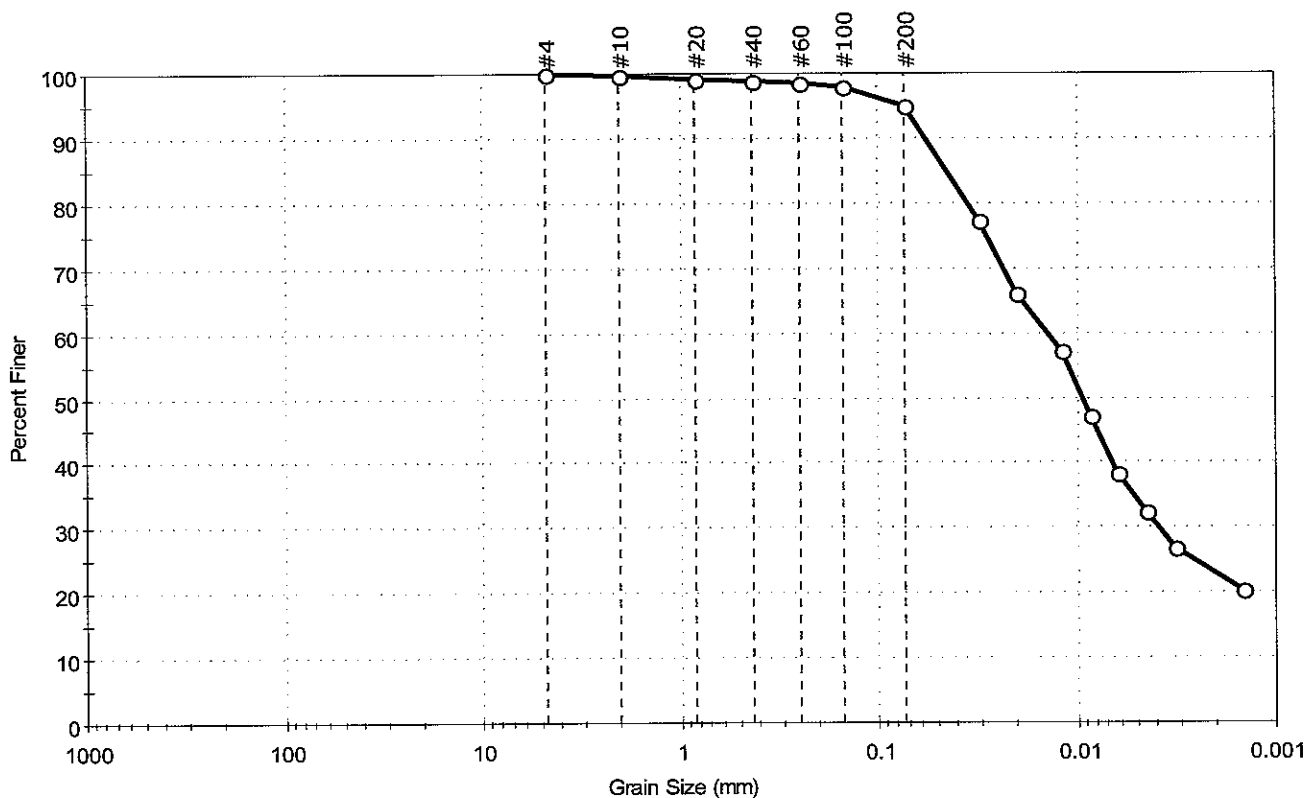
AASHTO Silty Soils (A-5 (6))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-40042	Sample Type: jar
Sample ID: OL-0287-11	Test Date: 02/08/07	Tested By: mll
Depth: 13.2-16.5 ft	Test Id: 105927	Checked By: jdt
Test Comment: ---	Sample Description: Moist, dark gray silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	5.1	94.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	95		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0309	77		
---	0.0201	66		
---	0.0119	57		
---	0.0087	47		
---	0.0063	38		
---	0.0045	32		
---	0.0032	27		
---	0.0015	20		

Coefficients

D ₈₅ = 0.0452 mm	D ₃₀ = 0.0039 mm
D ₆₀ = 0.0140 mm	D ₁₅ = N/A
D ₅₀ = 0.0095 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

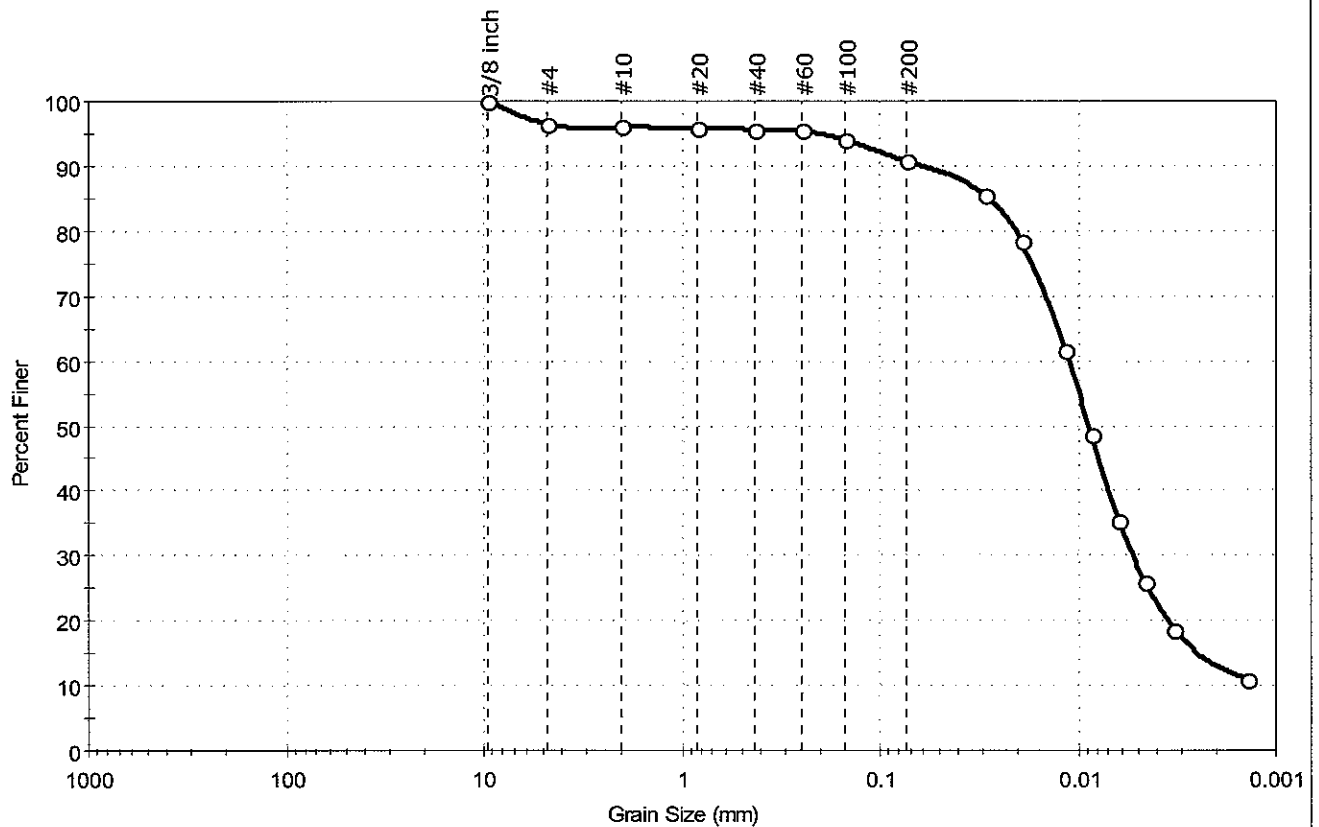
AASHTO Clayey Soils (A-7-5 (41))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-40027	Sample Type: jar
Sample ID: OL-0287-12	Test Date: 02/08/07
Depth: 0-3.3 ft	Test Id: 105928
Test Comment: ---	
Sample Description: Wet, dark gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	3.5	5.7	90.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	96		
#10	2.00	96		
#20	0.84	96		
#40	0.42	96		
#60	0.25	95		
#100	0.15	94		
#200	0.074	91		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0298	86		
---	0.0194	79		
---	0.0117	62		
---	0.0085	49		
---	0.0063	35		
---	0.0046	26		
---	0.0033	19		
---	0.0014	11		

Coefficients

D ₈₅ = 0.0286 mm	D ₃₀ = 0.0052 mm
D ₆₀ = 0.0112 mm	D ₁₅ = 0.0022 mm
D ₅₀ = 0.0088 mm	D ₁₀ = 0.0013 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

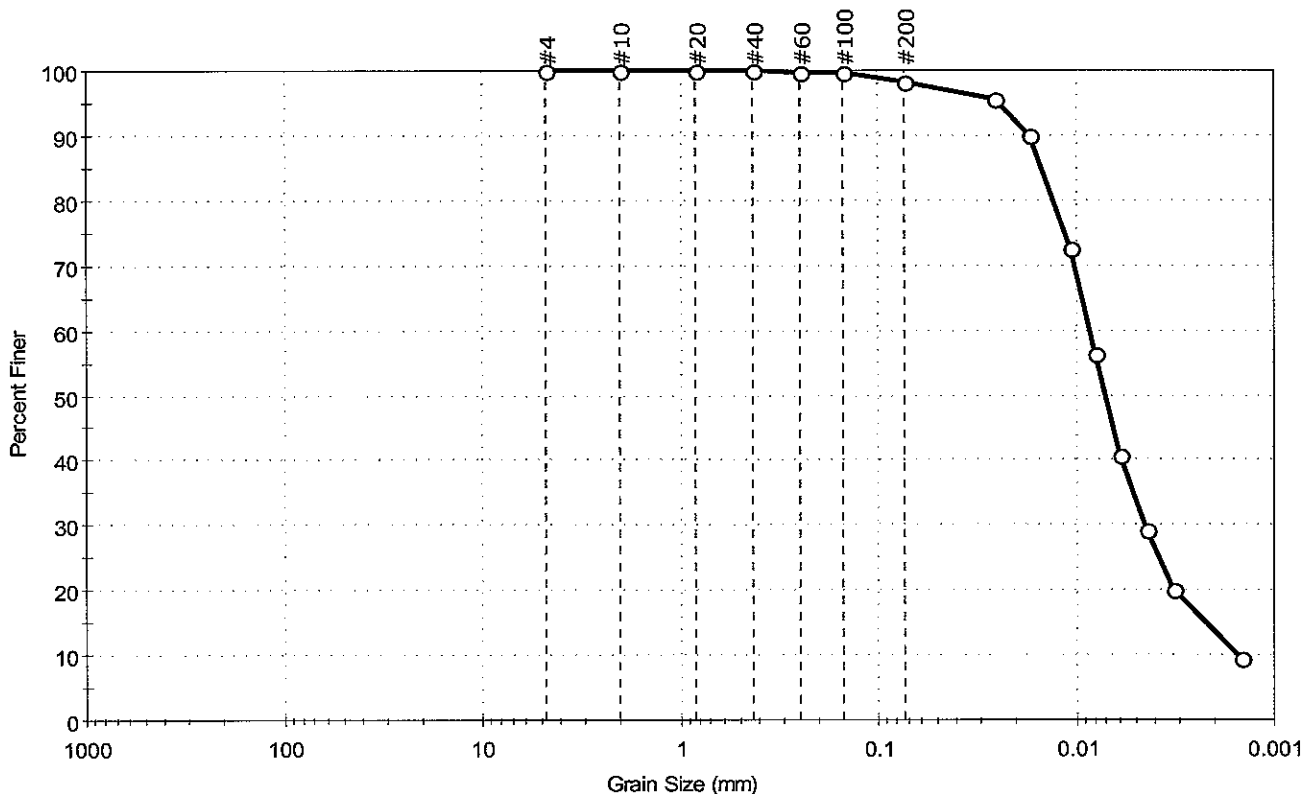
AASHTO Clayey Soils (A-7-5 (19))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mil
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40027	Sample Type:	jar
Sample ID:	OL-0287-13	Test Date:	02/08/07
Depth :	6.6-9.9 ft	Test Id:	105929
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.6	98.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0255	96		
---	0.0170	90		
---	0.0107	73		
---	0.0081	56		
---	0.0060	41		
---	0.0044	29		
---	0.0032	20		
---	0.0015	10		

Coefficients

D ₈₅ = 0.0149 mm	D ₃₀ = 0.0045 mm
D ₆₀ = 0.0086 mm	D ₁₅ = 0.0022 mm
D ₅₀ = 0.0071 mm	D ₁₀ = 0.0015 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (23))

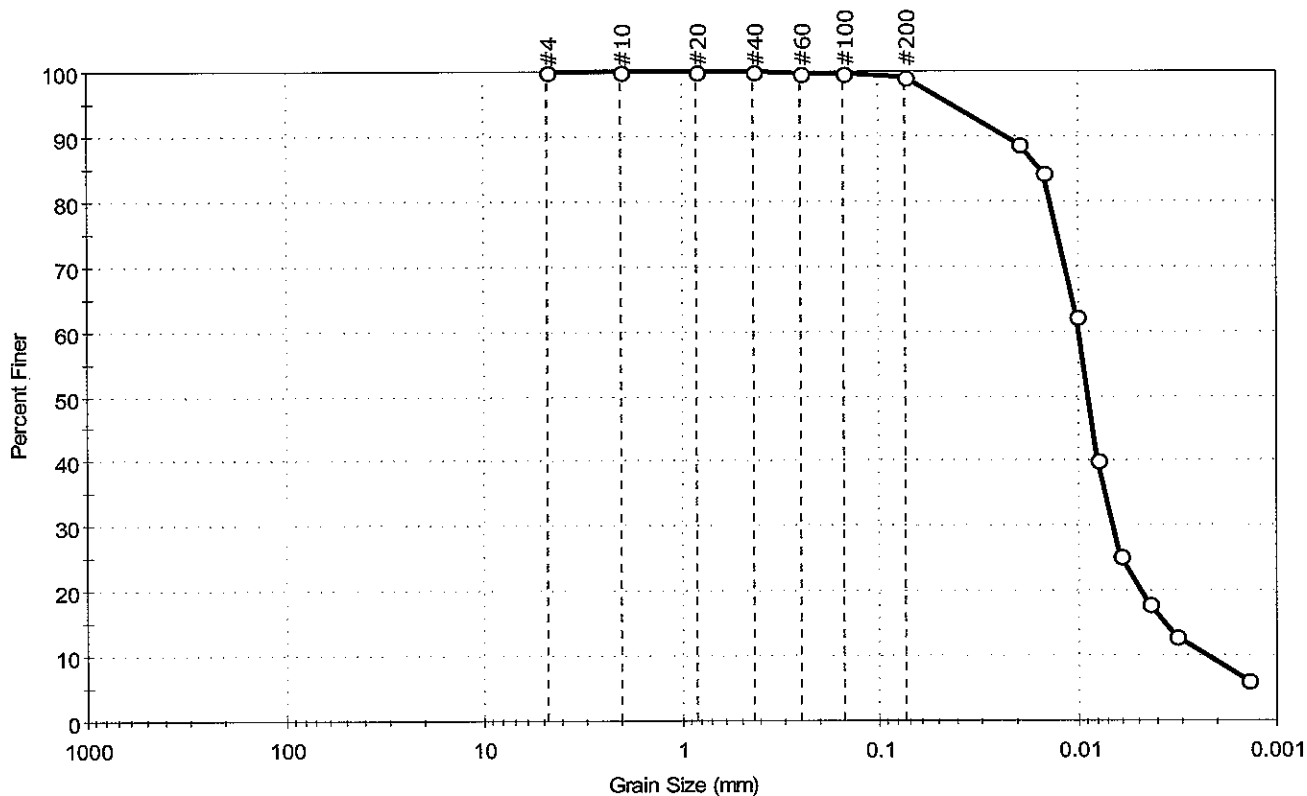
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40027	Sample Type:	jar
Sample ID:	OL-0287-14	Test Date:	02/09/07
Depth :	16.5-19.7 ft	Test Id:	105930
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0198	89		
---	0.0148	84		
---	0.0101	62		
---	0.0081	40		
---	0.0061	25		
---	0.0044	18		
---	0.0032	13		
---	0.0014	6		

Coefficients

D ₈₅ = 0.0155 mm	D ₃₀ = 0.0066 mm
D ₆₀ = 0.0099 mm	D ₁₅ = 0.0036 mm
D ₅₀ = 0.0089 mm	D ₁₀ = 0.0022 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (27))

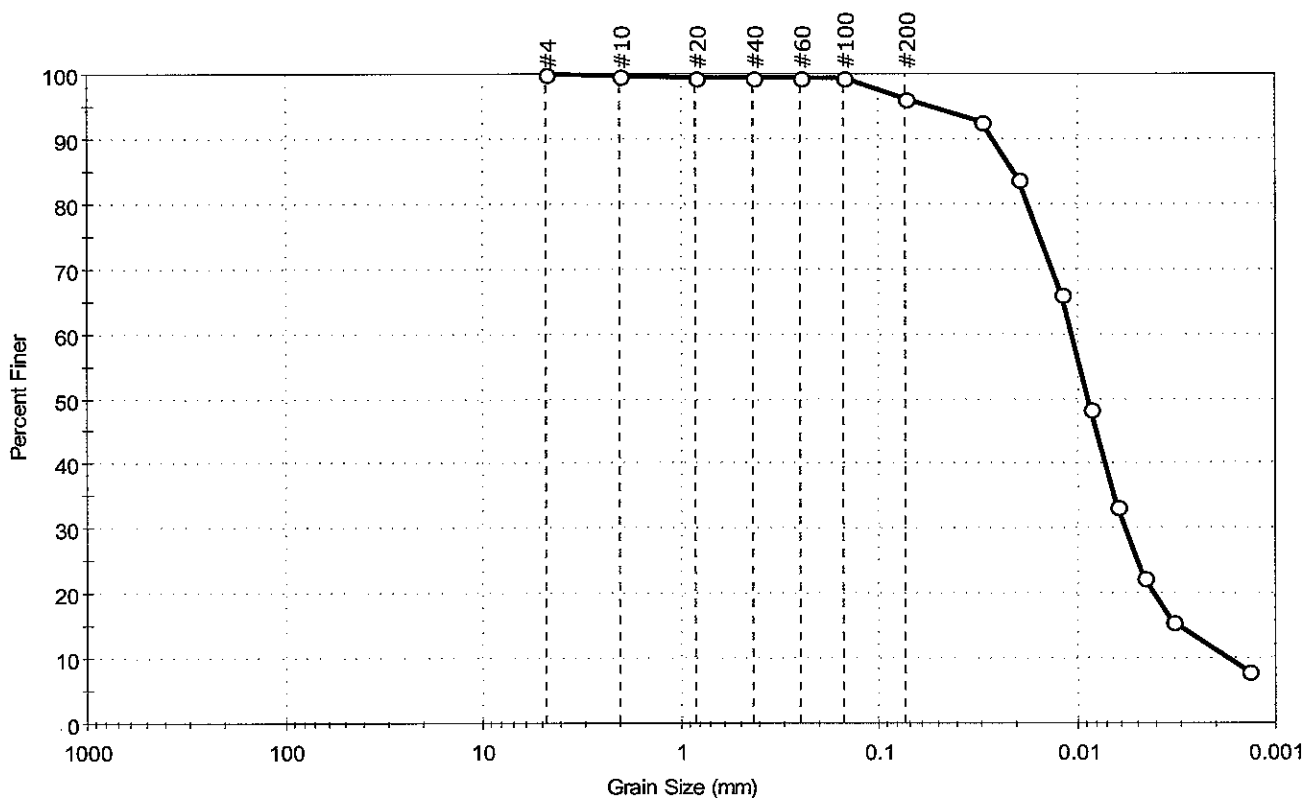
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40026	Sample Type:	jar
Sample ID:	OL-0287-15	Test Date:	02/02/07
Depth :	3.3-6.6 ft	Test Id:	105931
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.7	96.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0301	93		
---	0.0199	84		
---	0.0118	66		
---	0.0086	48		
---	0.0063	33		
---	0.0046	22		
---	0.0033	16		
---	0.0014	8		

Coefficients

D ₈₅ = 0.0210 mm	D ₃₀ = 0.0057 mm
D ₆₀ = 0.0106 mm	D ₁₅ = 0.0031 mm
D ₅₀ = 0.0089 mm	D ₁₀ = 0.0017 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

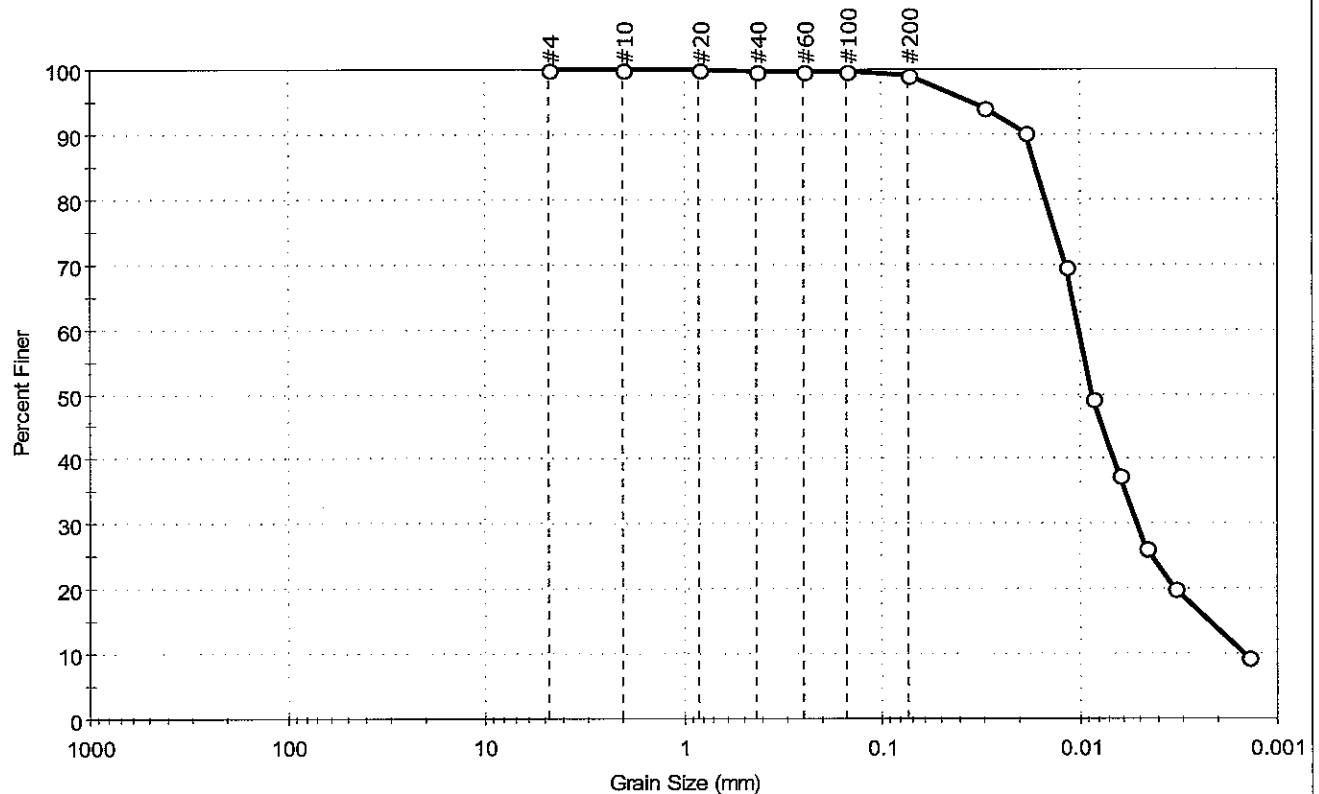
AASHTO Silty Soils (A-5 (7))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40026	Sample Type:	jar
Sample ID:	OL-0287-16	Test Date:	02/08/07
Depth :	9.9-13.2 ft	Test Id:	105932
Test Comment:	---		
Sample Description:	Wet, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.9	99.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0305	94			
0.0190	90			
0.0115	70			
0.0086	49			
0.0063	37			
0.0046	26			
0.0033	20			
0.0014	10			

Coefficients

D ₈₅ = 0.0167 mm	D ₃₀ = 0.0051 mm
D ₆₀ = 0.0100 mm	D ₁₅ = 0.0021 mm
D ₅₀ = 0.0087 mm	D ₁₀ = 0.0014 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (19))

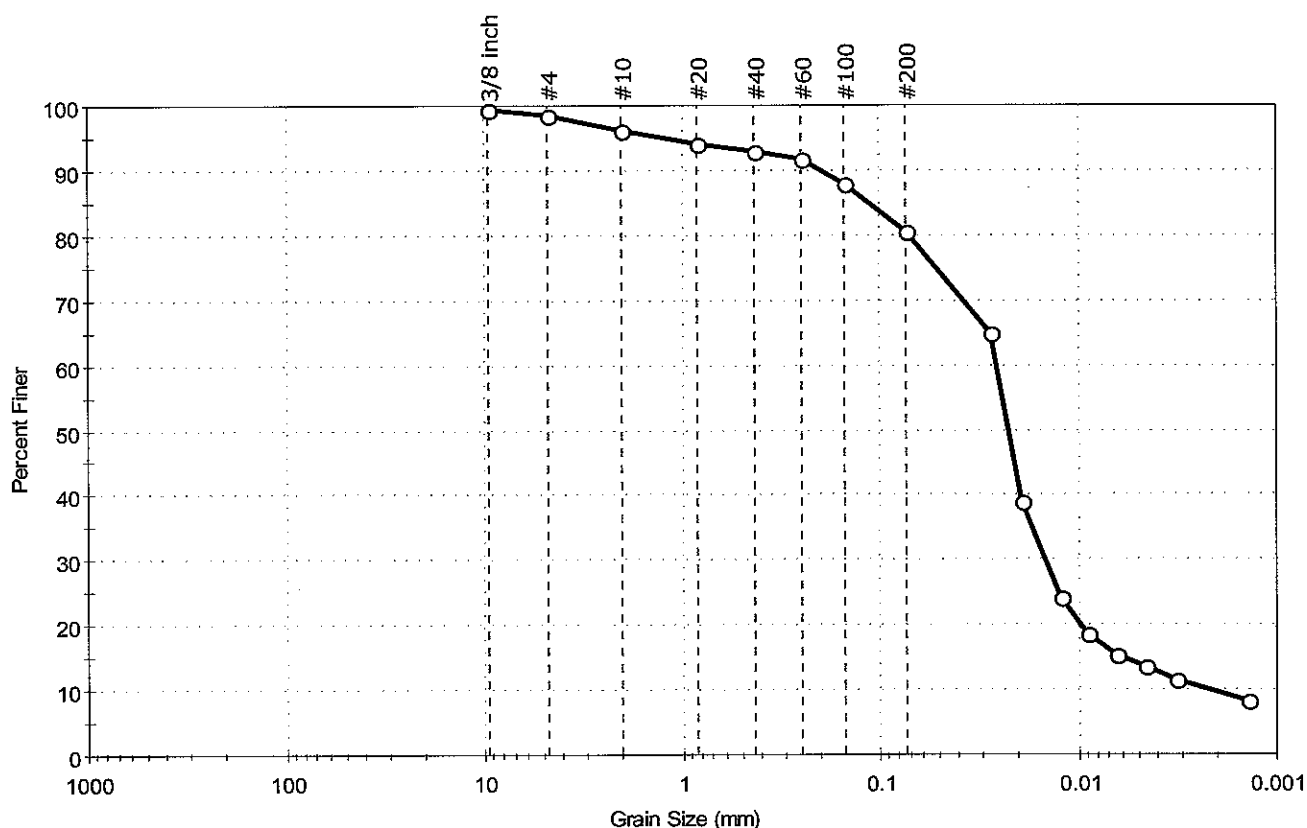
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40033	Sample Type:	jar
Sample ID:	OL-0287-17	Test Date:	02/08/07
Depth:	3.3-6.6 ft	Test Id:	105933
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.6	17.8	80.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 Inch	9.51	99		
#4	4.75	98		
#10	2.00	96		
#20	0.84	94		
#40	0.42	93		
#60	0.25	92		
#100	0.15	88		
#200	0.074	81		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0274	65		
---	0.0195	39		
---	0.0123	24		
---	0.0089	19		
---	0.0064	15		
---	0.0046	13		
---	0.0033	11		
---	0.0014	8		

Coefficients

D ₈₅ = 0.1125 mm	D ₃₀ = 0.0147 mm
D ₆₀ = 0.0257 mm	D ₁₅ = 0.0060 mm
D ₅₀ = 0.0225 mm	D ₁₀ = 0.0022 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

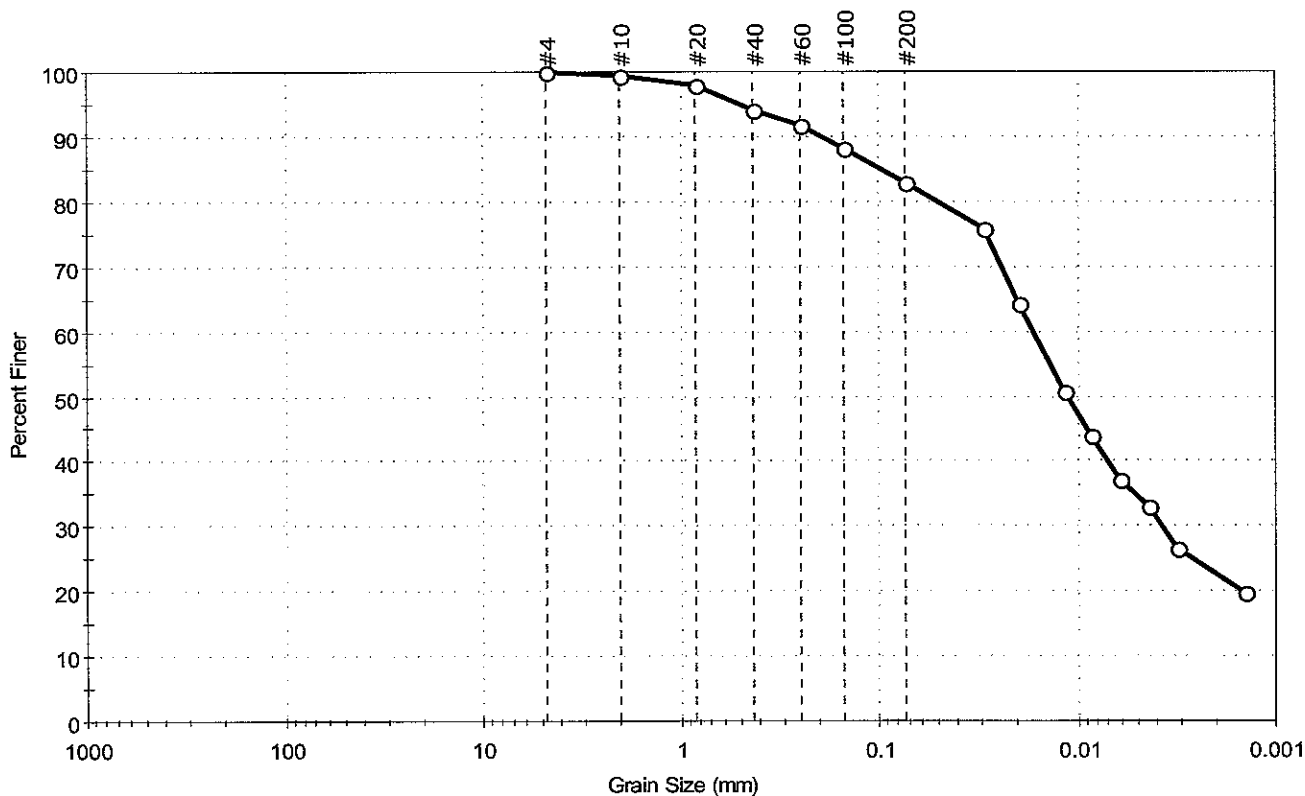
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40033	Sample Type:	jar
Sample ID:	OL-0287-18	Test Date:	02/07/07
Depth :	9.9-13.2 ft	Test Id:	105934
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	17.1	82.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	98		
#40	0.42	94		
#60	0.25	92		
#100	0.15	88		
#200	0.074	83		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0295	76		
---	0.0196	64		
---	0.0117	51		
---	0.0085	44		
---	0.0062	37		
---	0.0044	33		
---	0.0032	27		
---	0.0014	20		

Coefficients

D ₈₅ = 0.0987 mm	D ₃₀ = 0.0038 mm
D ₆₀ = 0.0166 mm	D ₁₅ = N/A
D ₅₀ = 0.0113 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

AASHTO Clayey Soils (A-6 (10))

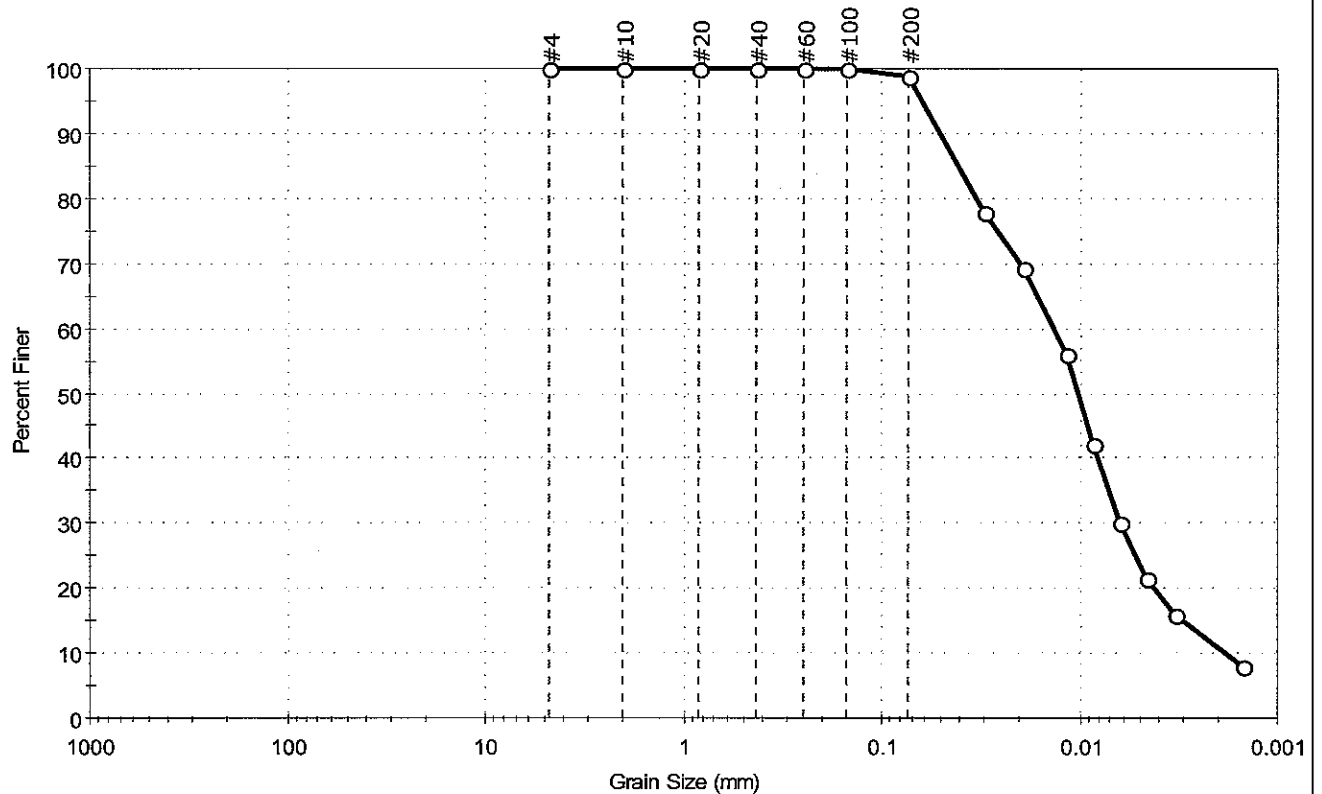
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40031	Sample Type:	jar
Sample ID:	OL-0287-19	Test Date:	02/08/07
Depth:	0-3.3 ft	Test Id:	105935
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.1	98.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0301	78		
---	0.0192	69		
---	0.0117	56		
---	0.0086	42		
---	0.0063	30		
---	0.0046	21		
---	0.0033	16		
---	0.0015	8		

Coefficients

D ₈₅ = 0.0409 mm	D ₃₀ = 0.0063 mm
D ₆₀ = 0.0135 mm	D ₁₅ = 0.0030 mm
D ₅₀ = 0.0102 mm	D ₁₀ = 0.0018 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (27))

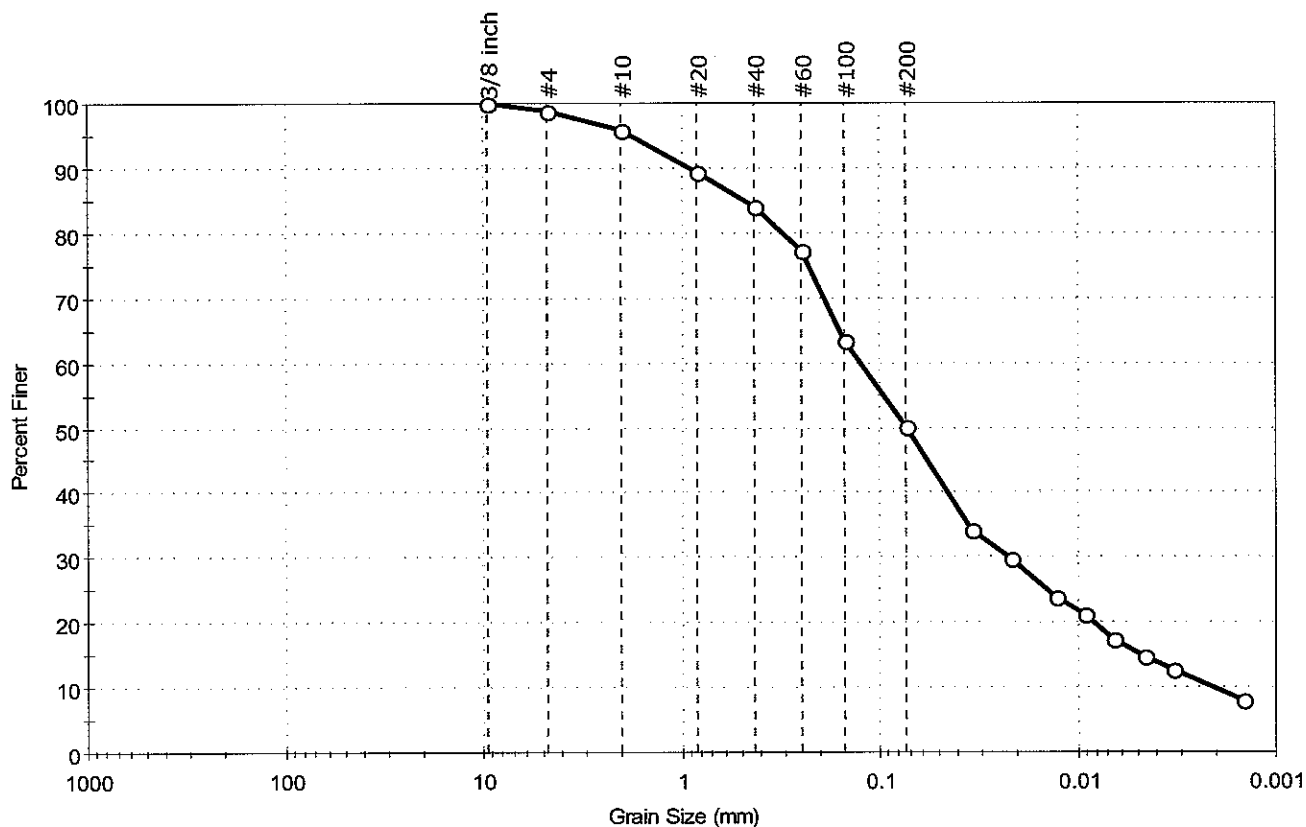
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40031	Sample Type:	jar
Sample ID:	OL-0287-20	Test Date:	02/07/07
Depth :	6.6-9.9 ft	Test Id:	105936
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.1	48.7	50.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	99		
#10	2.00	96		
#20	0.84	89		
#40	0.42	84		
#60	0.25	77		
#100	0.15	63		
#200	0.074	50		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0343	34		
---	0.0215	30		
---	0.0129	24		
---	0.0092	21		
---	0.0065	17		
---	0.0047	15		
---	0.0033	13		
---	0.0015	8		

Coefficients

D ₈₅ = 0.4785 mm	D ₃₀ = 0.0221 mm
D ₆₀ = 0.1256 mm	D ₁₅ = 0.0048 mm
D ₅₀ = 0.0735 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

AASHTO Clayey Soils (A-7-5 (5))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-40036	Sample Type:	jar
Sample ID:	OL-0287-01	Test Date:	02/02/07
Depth :	16.5-17.3 ft	Test Id:	105957
Test Comment:	---		
Sample Description:	Moist, very dark gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-01	-VC-400	16.5-17.3 ft	115	n/a	n/a	n/a	n/a	Sandy silt (ML)

3% Retained on #40 Sieve

Dry Strength: MEDIUM

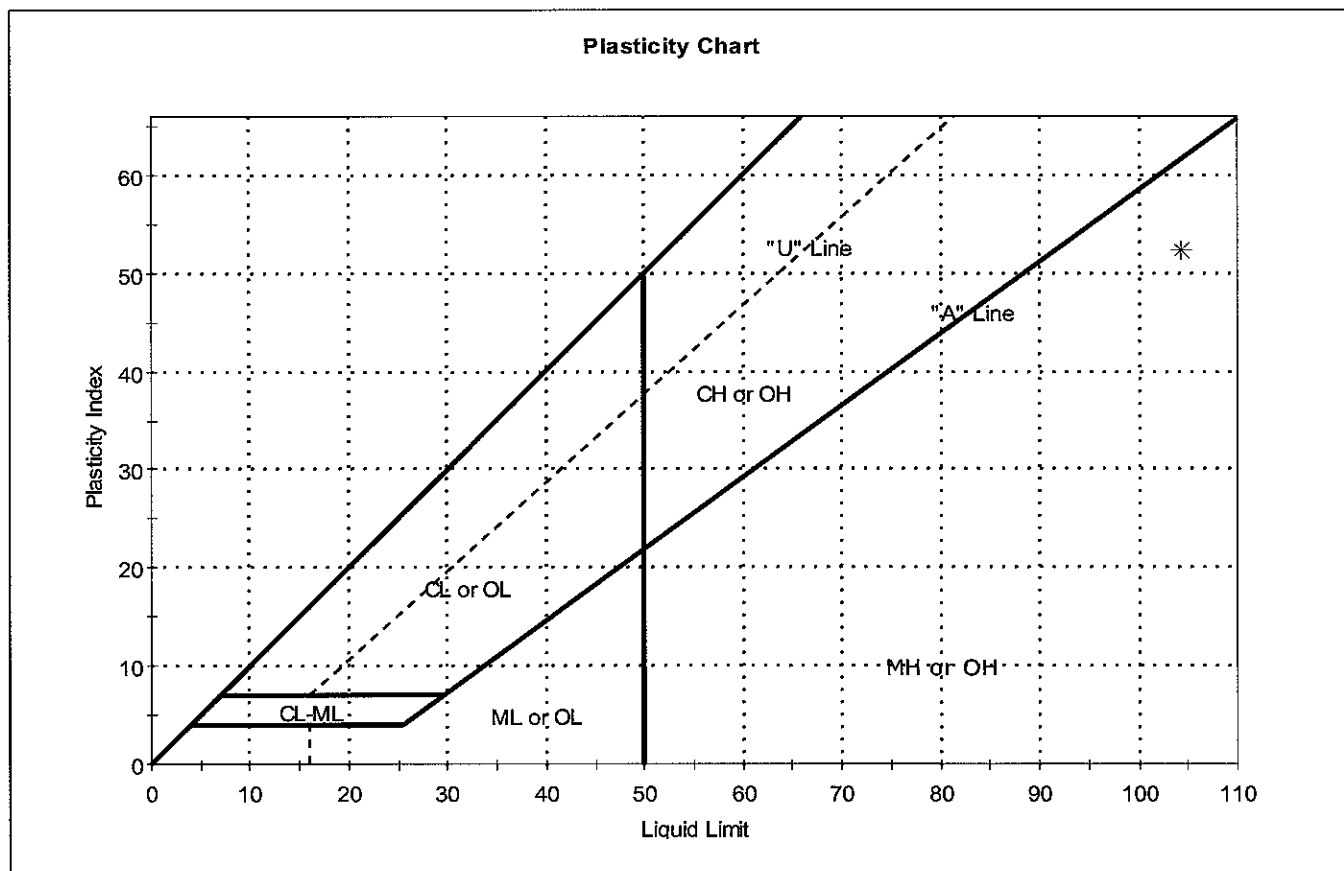
Dilutancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40016	Sample Type:	jar
Sample ID:	OL-0287-02	Test Date:	01/11/07
Depth :	9.9-13.2 ft	Test Id:	105958
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-02	L-VC-400	9.9-13.2 ft	98	104	52	52	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

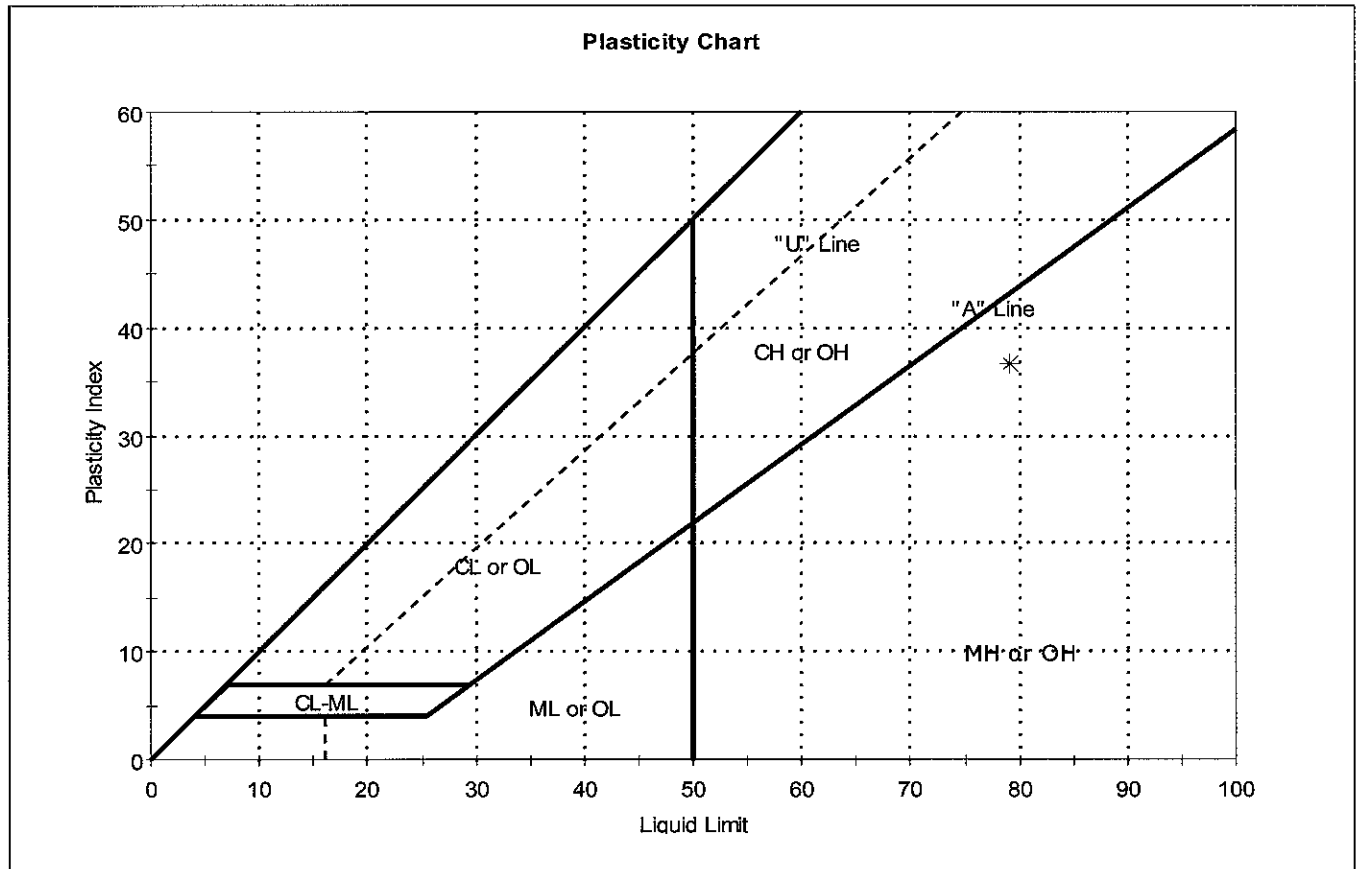
Dry Strength: VERY HIGH

Dilutancy: NONE

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40016	Sample Type:	jar
Sample ID:	OL-0287-03	Test Date:	01/31/07
Depth:	16.5-19.8 ft	Test Id:	105959
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

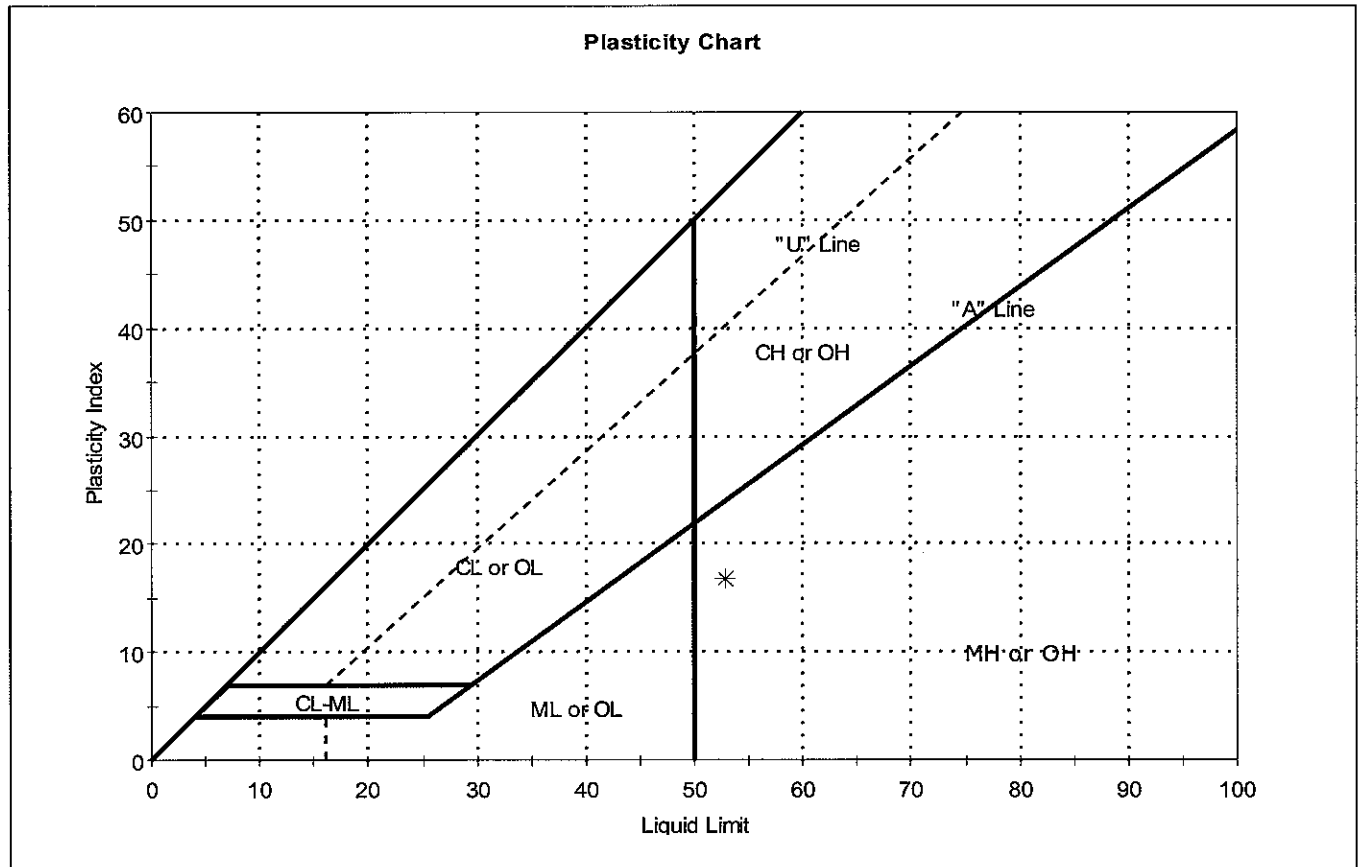


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-03	-VC-400	16.5-19.8 ft	69	79	43	36	1	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40017	Sample Type:	jar
Sample ID:	OL-0287-04	Test Date:	02/02/07
Depth :	0.5-3.3 ft	Test Id:	105960
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

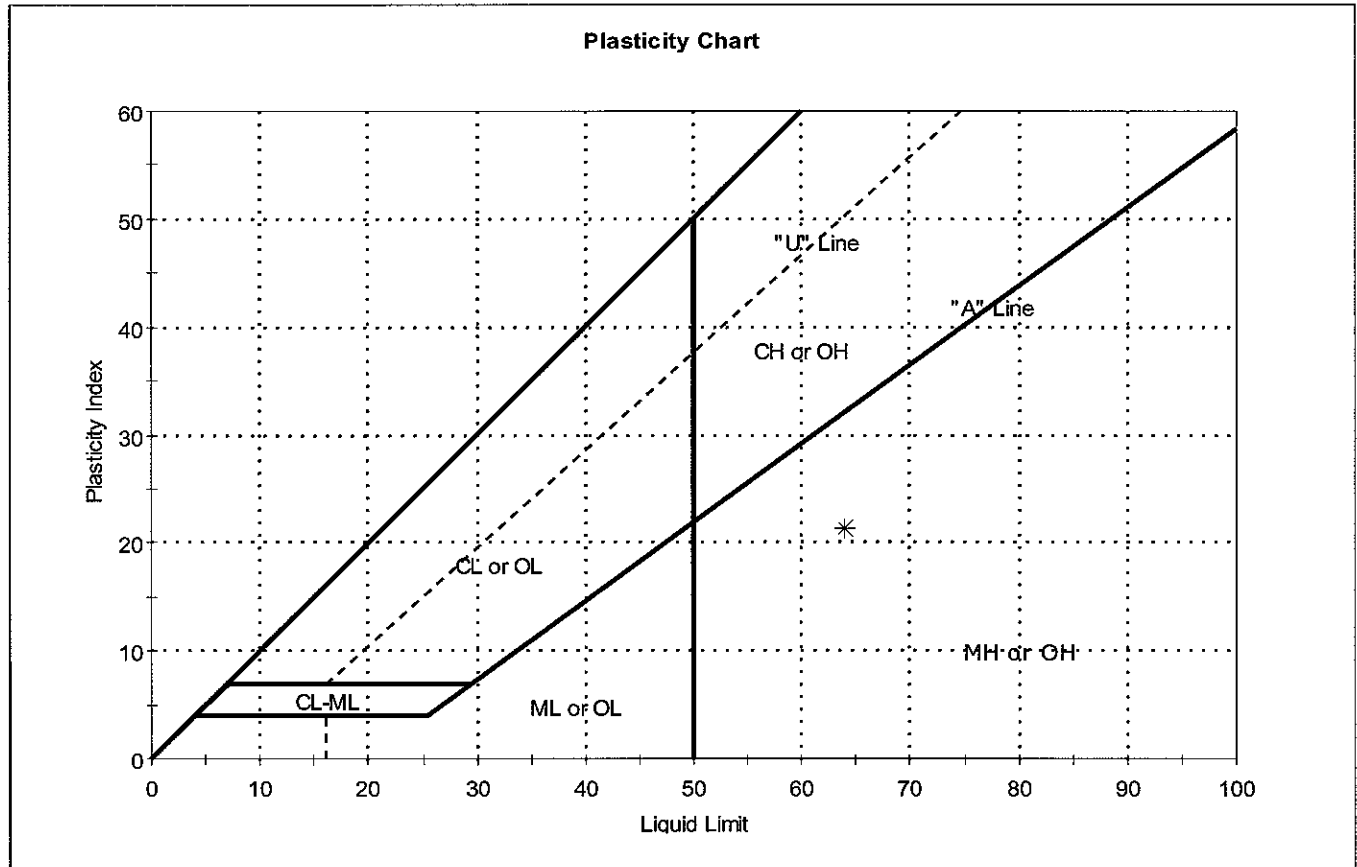


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-04	-VC-400	0.5-3.3 ft	103	53	36	17	4	elastic silt (MH)

Sample Prepared using the WET method
0% Retained on #40 Sieve
Dry Strength: HIGH
Dilutancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40017	Sample Type:	jar
Sample ID:	OL-0287-05	Test Date:	01/30/07
Depth :	6.6-9.9 ft	Test Id:	105961
Test Comment:	---		
Sample Description:	Wet, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

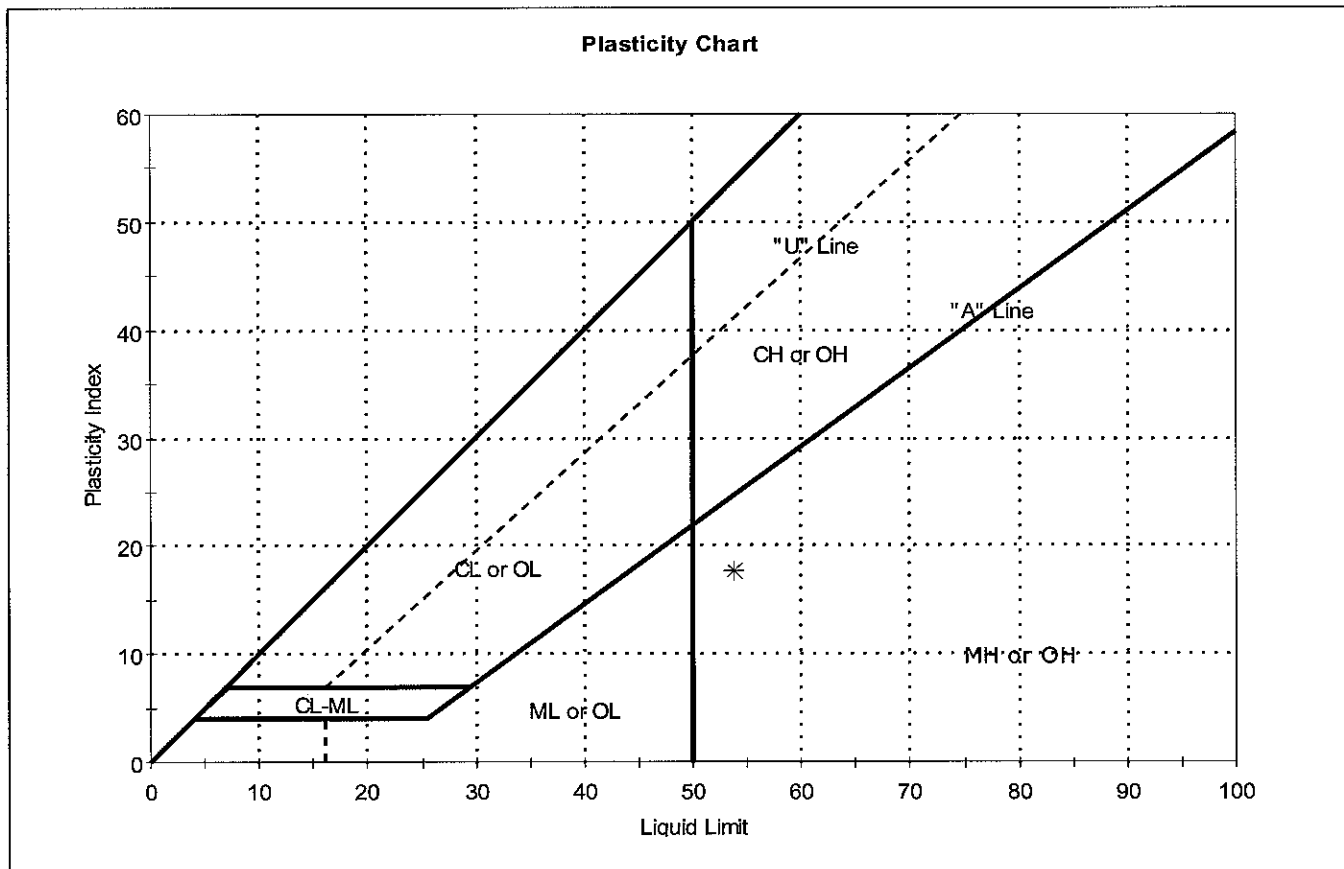


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-05	-VC-400	6.6-9.9 ft	110	64	43	21	3	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40035	Sample Type:	jar
Sample ID:	OL-0287-06	Test Date:	01/25/07
Depth :	6.6-9.9 ft	Test Id:	105962
Test Comment:	---		
Sample Description:	Wet, light gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-06	-VC-400	6.6-9.9 ft	92	54	36	18	3	elastic silt with sand (MH)

Sample Prepared using the WET method

7% Retained on #40 Sieve

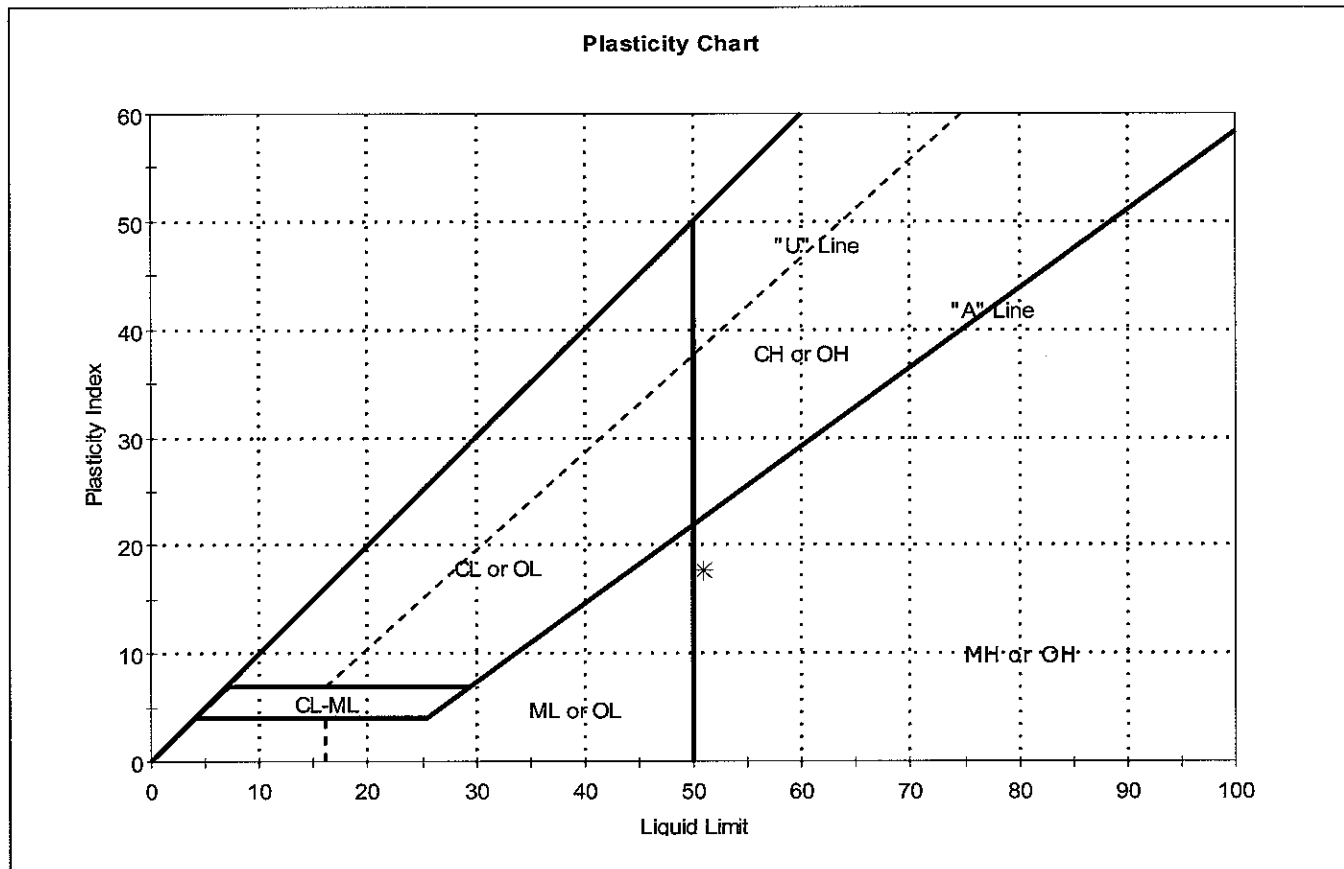
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40030	Sample Type:	jar
Sample ID:	OL-0287-07	Test Date:	02/01/07
Depth :	9.9-13.2 ft	Test Id:	105963
Test Comment:	---		
Sample Description:	Moist, dark gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-07	VC-400	9.9-13.2 ft	99	51	33	18	4	Sandy elastic silt (MH)

Sample Prepared using the WET method

15% Retained on #40 Sieve

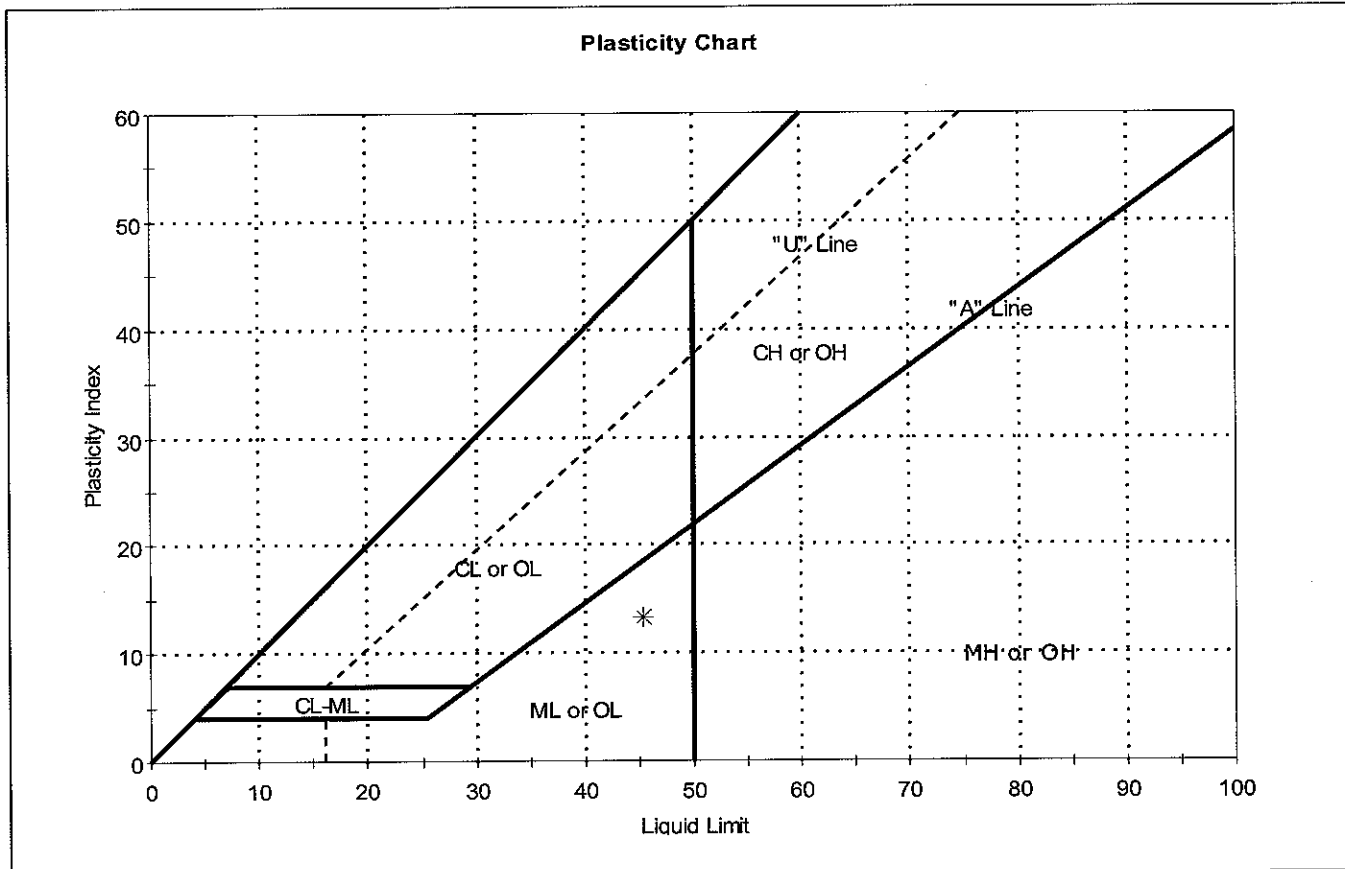
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40034	Sample Type:	jar
Sample ID:	OL-0287-08	Test Date:	02/01/07
Depth :	3.3-6.6 ft	Test Id:	105964
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-08	-VC-400	3.3-6.6 ft	72	45	32	13	3	silt with sand (ML)

Sample Prepared using the WET method

14% Retained on #40 Sieve

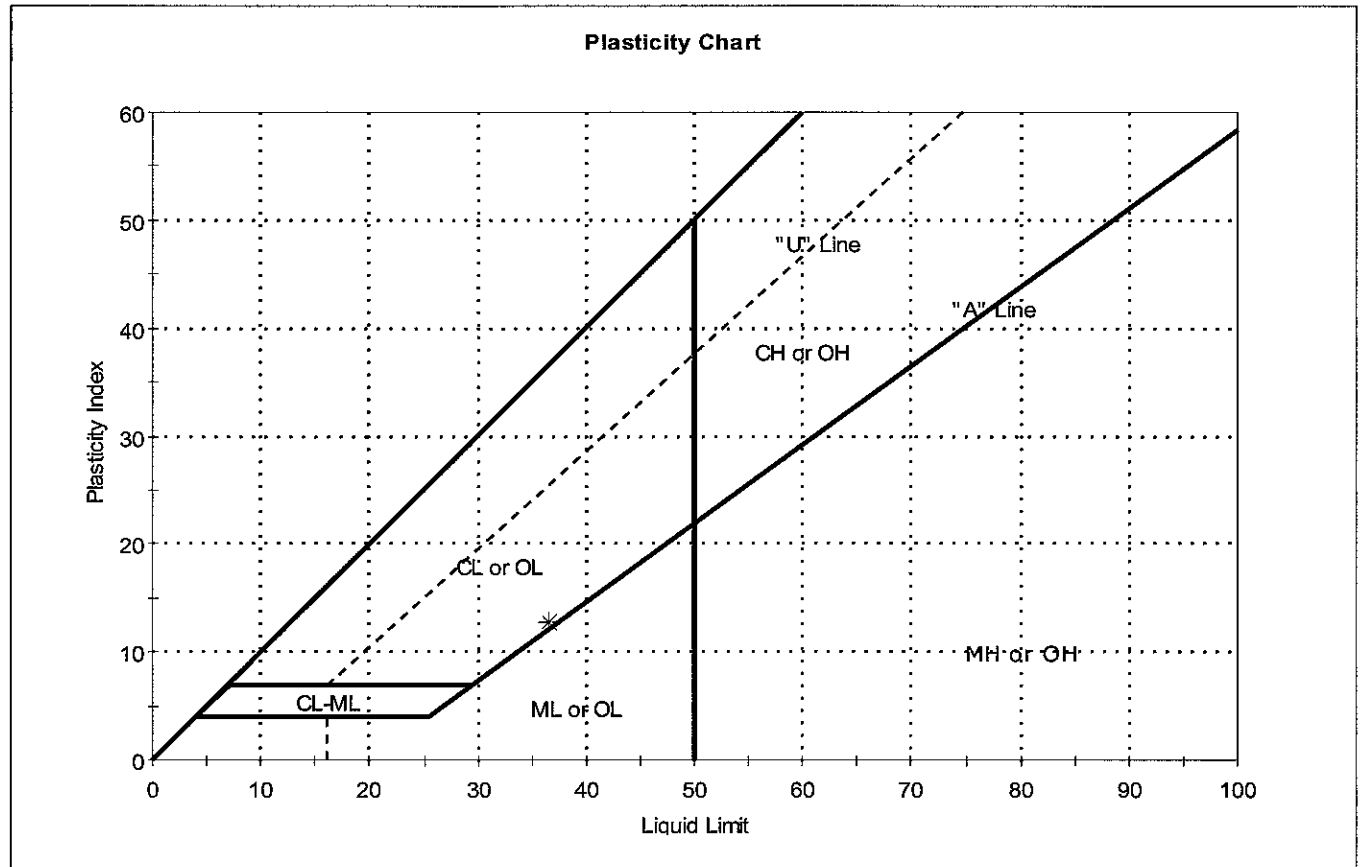
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40034	Sample Type:	jar
Sample ID:	OL-0287-09	Test Date:	01/30/07
Depth:	13.2-16.5 ft	Test Id:	105965
Test Comment:	---		
Sample Description:	Moist, olive gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

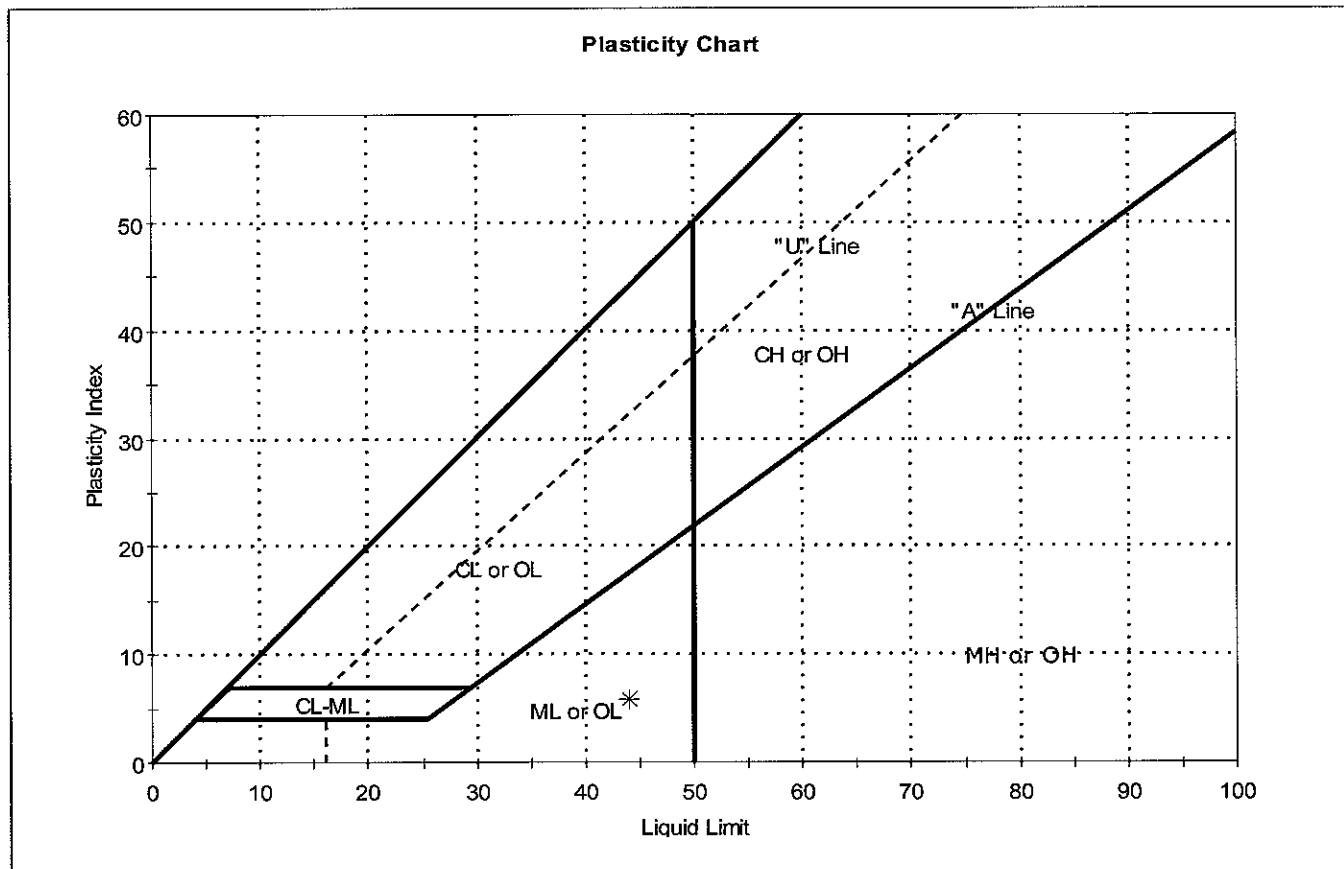


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-09	VC-400	13.2-16.5 ft	57	37	24	13	3	lean clay (CL)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40042	Sample Type:	jar
Sample ID:	OL-0287-10	Test Date:	02/01/07
Depth :	3.3-6.6 ft	Test Id:	105966
Test Comment:	---		
Sample Description:	Wet, dark olive brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

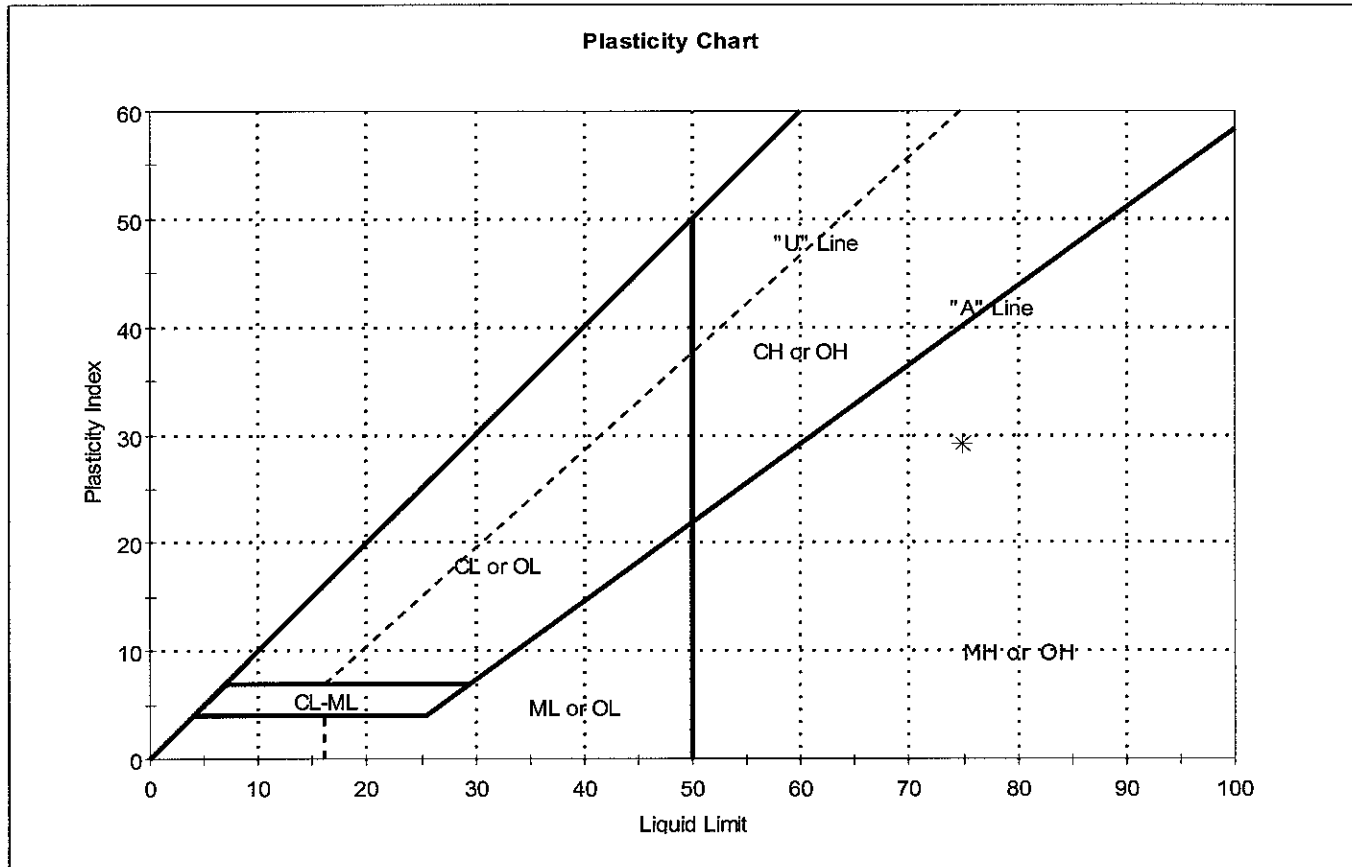


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-10	L-VC-400	3.3-6.6 ft	70	44	38	6	5	silt with sand (ML)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40042	Sample Type:	jar
Sample ID:	OL-0287-11	Test Date:	02/01/07
Depth :	13.2-16.5 ft	Test Id:	105967
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

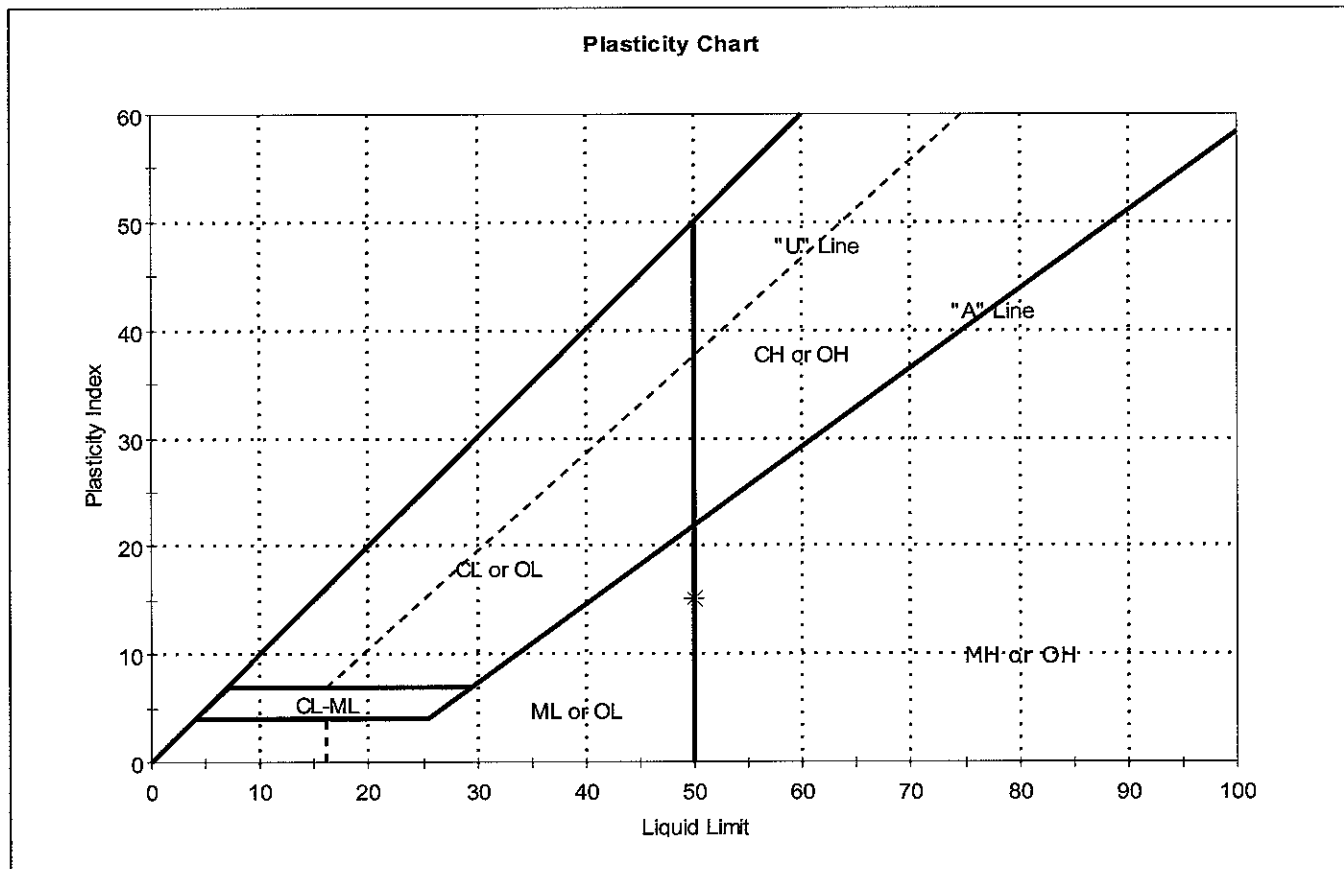


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-11	-VC-4004	13.2-16.5 ft	77	75	46	29	1	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40027	Sample Type:	jar
Sample ID:	OL-0287-12	Test Date:	02/01/07
Depth :	0-3.3 ft	Test Id:	105968
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

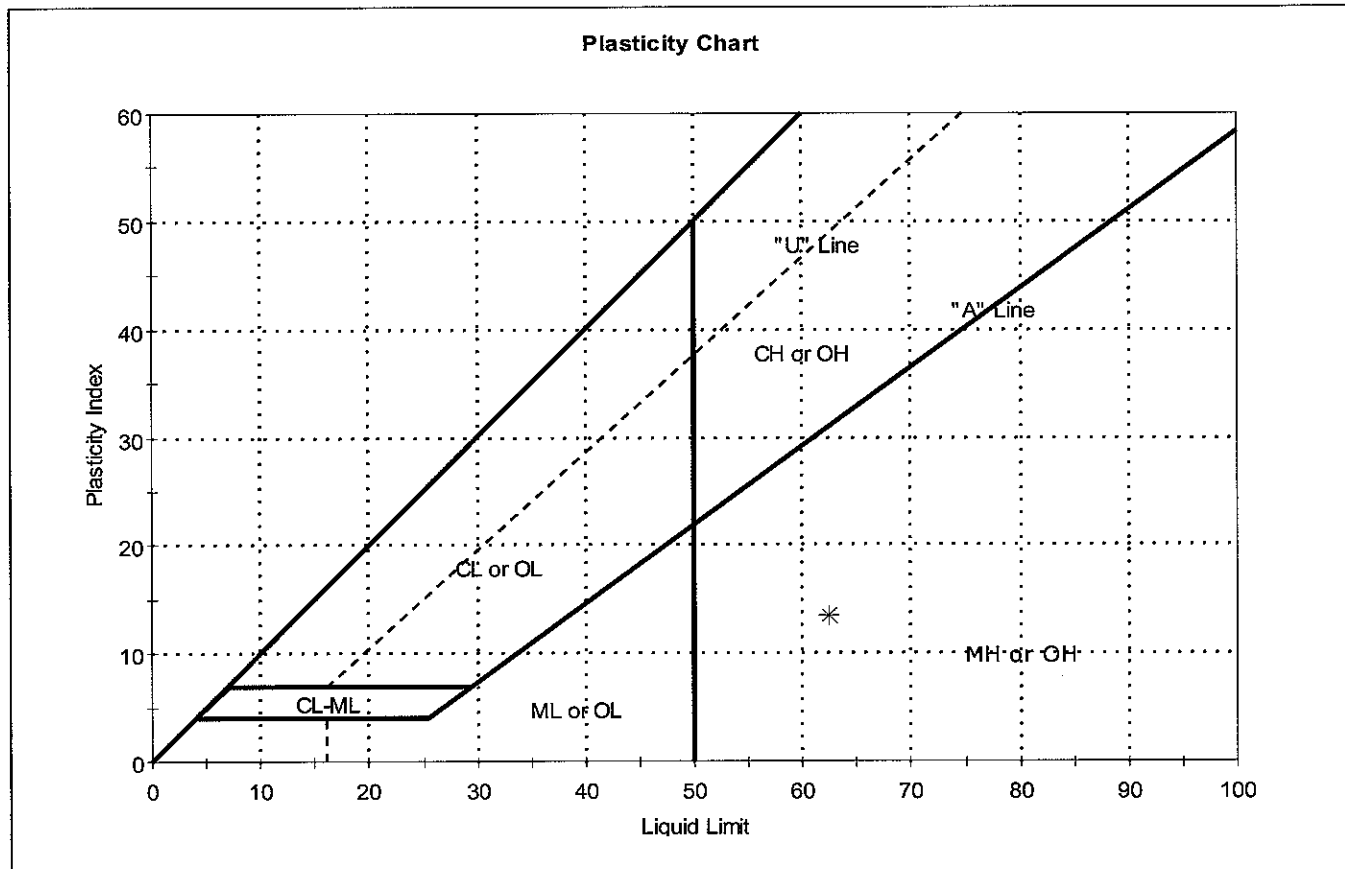


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-12	L-VC-400	0-3.3 ft	90	50	35	15	4	silt (ML)

Sample Prepared using the WET method
 4% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40027	Sample Type:	jar
Sample ID:	OL-0287-13	Test Date:	01/31/07
Depth :	6.6-9.9 ft	Test Id:	105969
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-13	-VC-400	6.6-9.9 ft	143	62	49	13	7	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

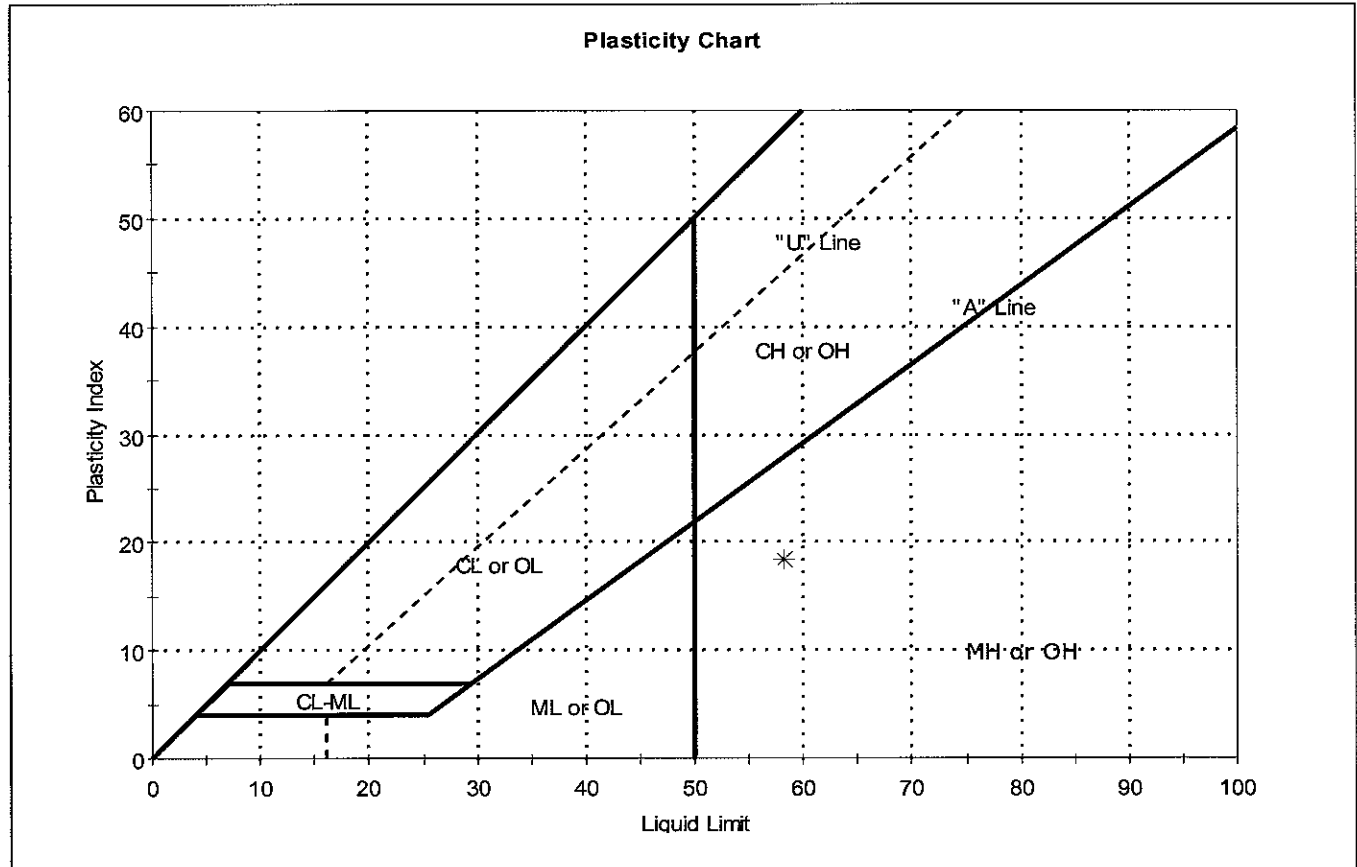
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40027	Sample Type:	jar
Sample ID:	OL-0287-14	Test Date:	01/31/07
Depth :	16.5-19.7 ft	Test Id:	105970
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

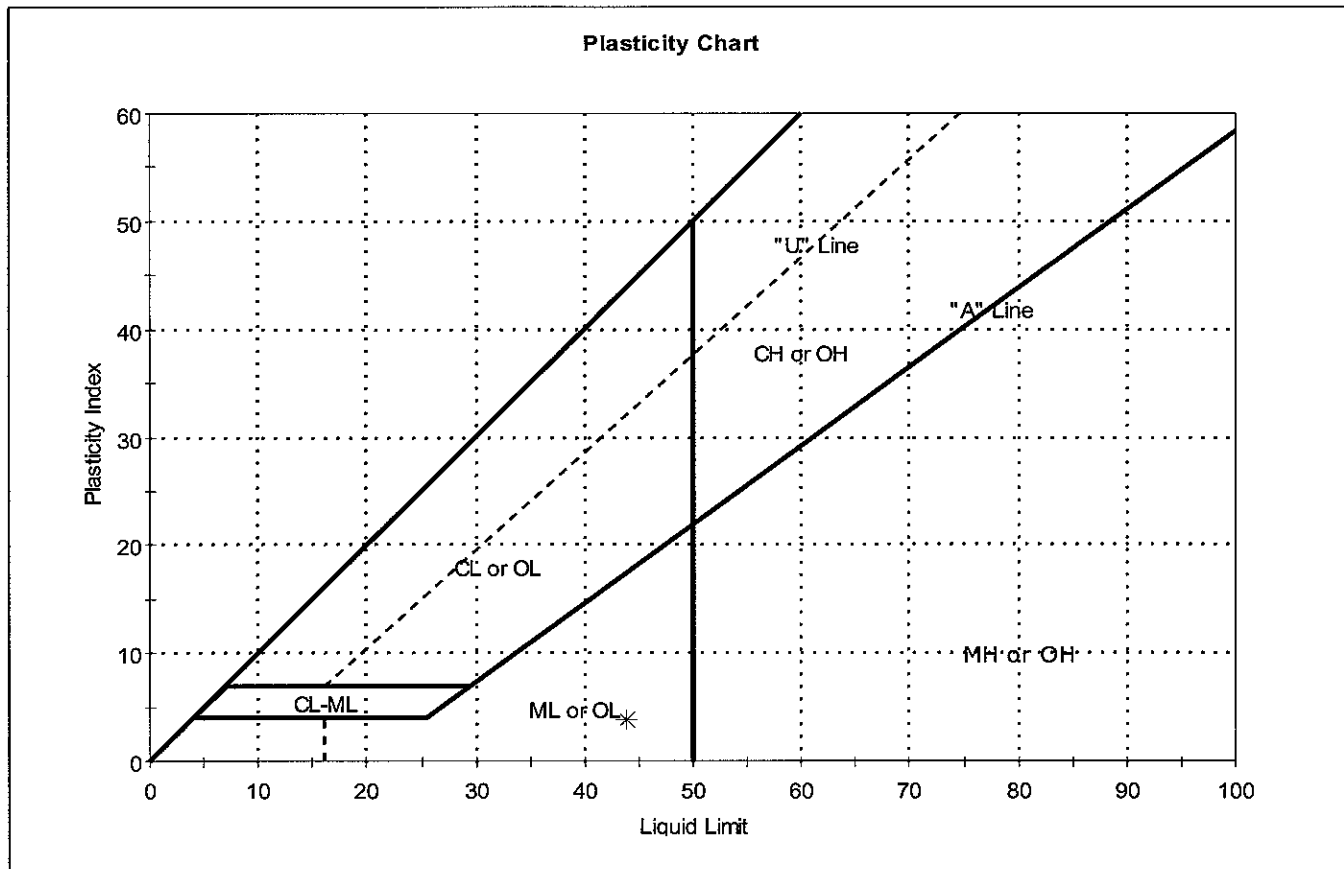


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-14	-VC-400	16.5-19.7 ft	103	58	40	18	4	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-40026	Sample Type:	jar
Sample ID:	OL-0287-15	Test Date:	02/02/07
Depth :	3.3-6.6 ft	Test Id:	105971
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

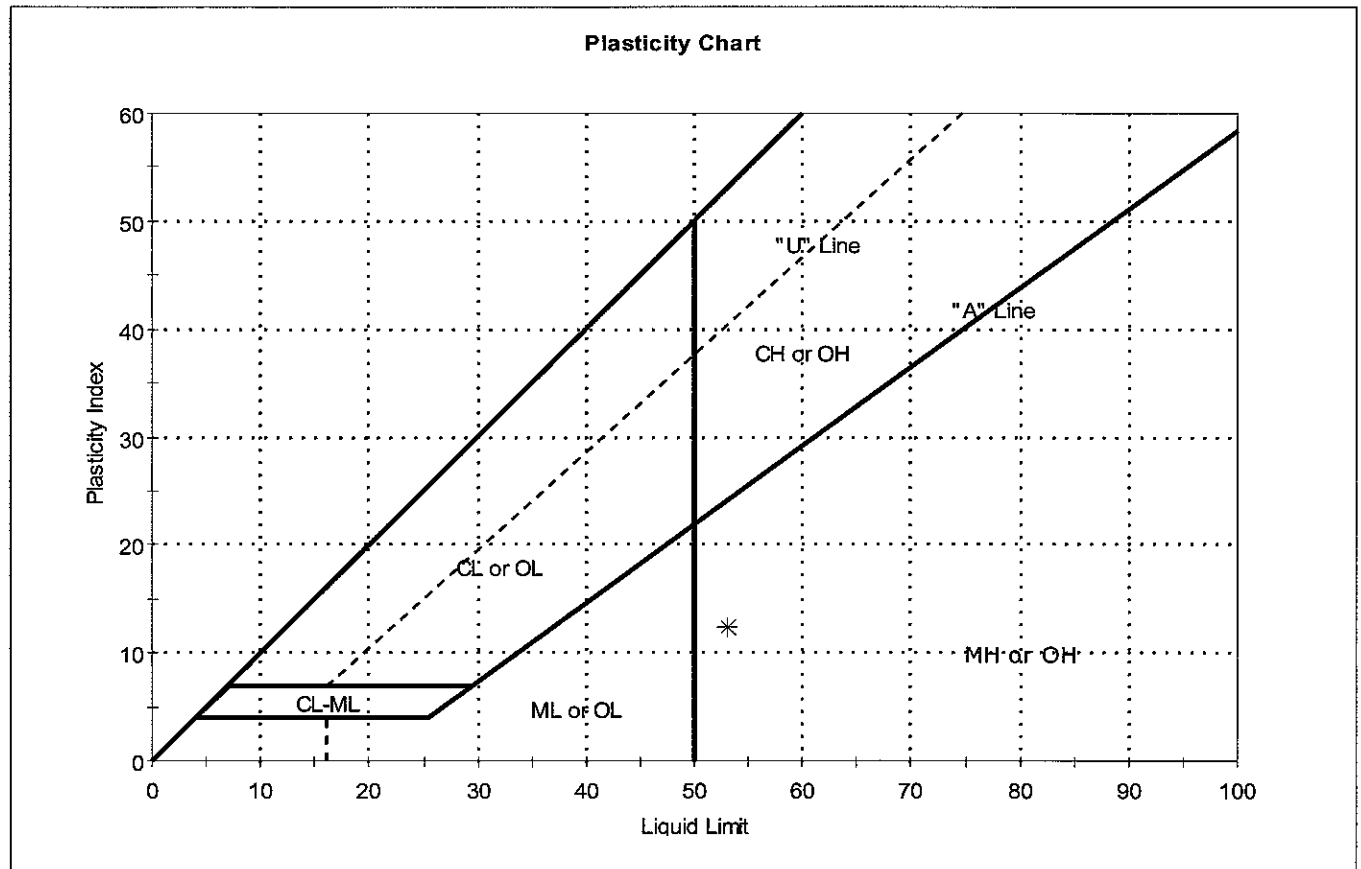


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-15	-VC-400	3.3-6.6 ft	99	44	40	4	15	silt (ML)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40026	Sample Type:	jar
Sample ID:	OL-0287-16	Test Date:	01/31/07
Depth :	9.9-13.2 ft	Test Id:	105972
Test Comment:	---		
Sample Description:	Wet, gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

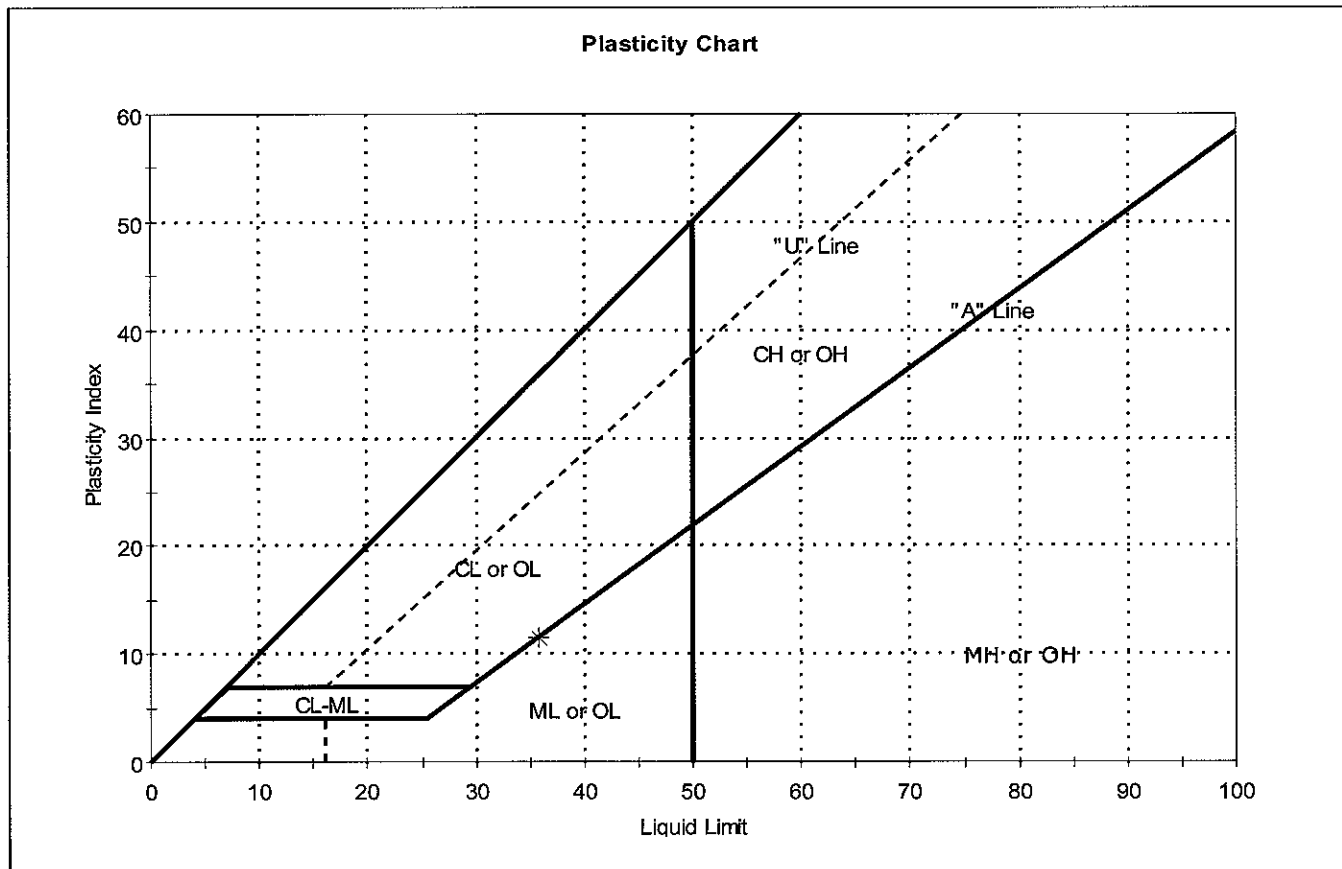


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-16	-VC-400	9.9-13.2 ft	106	53	41	12	5	elastic silt (MH)

Sample Prepared using the WET method
0% Retained on #40 Sieve
Dry Strength: HIGH
Dilutancy: SLOW
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40033	Sample Type:	jar
Sample ID:	OL-0287-18	Test Date:	01/31/07
Depth :	9.9-13.2 ft	Test Id:	105973
Test Comment:	---		
Sample Description:	Wet, gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-18	-VC-400	9.9-13.2 ft	53	36	24	12	2	silt with sand (ML)

Sample Prepared using the WET method

6% Retained on #40 Sieve

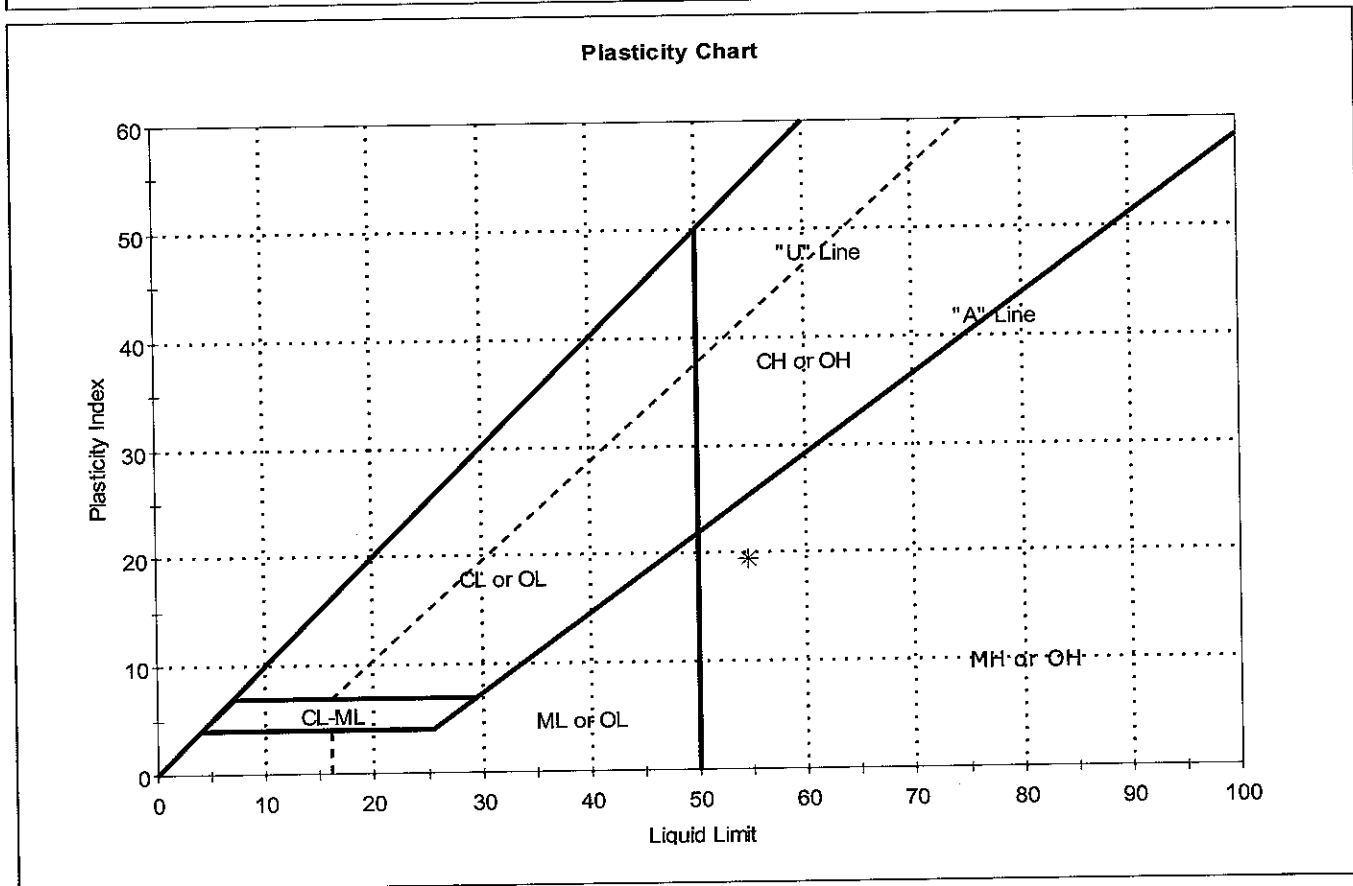
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40031	Sample Type:	jar
Sample ID:	OL-0287-19	Test Date:	01/30/07
Depth :	0-3.3 ft	Test Id:	105974
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

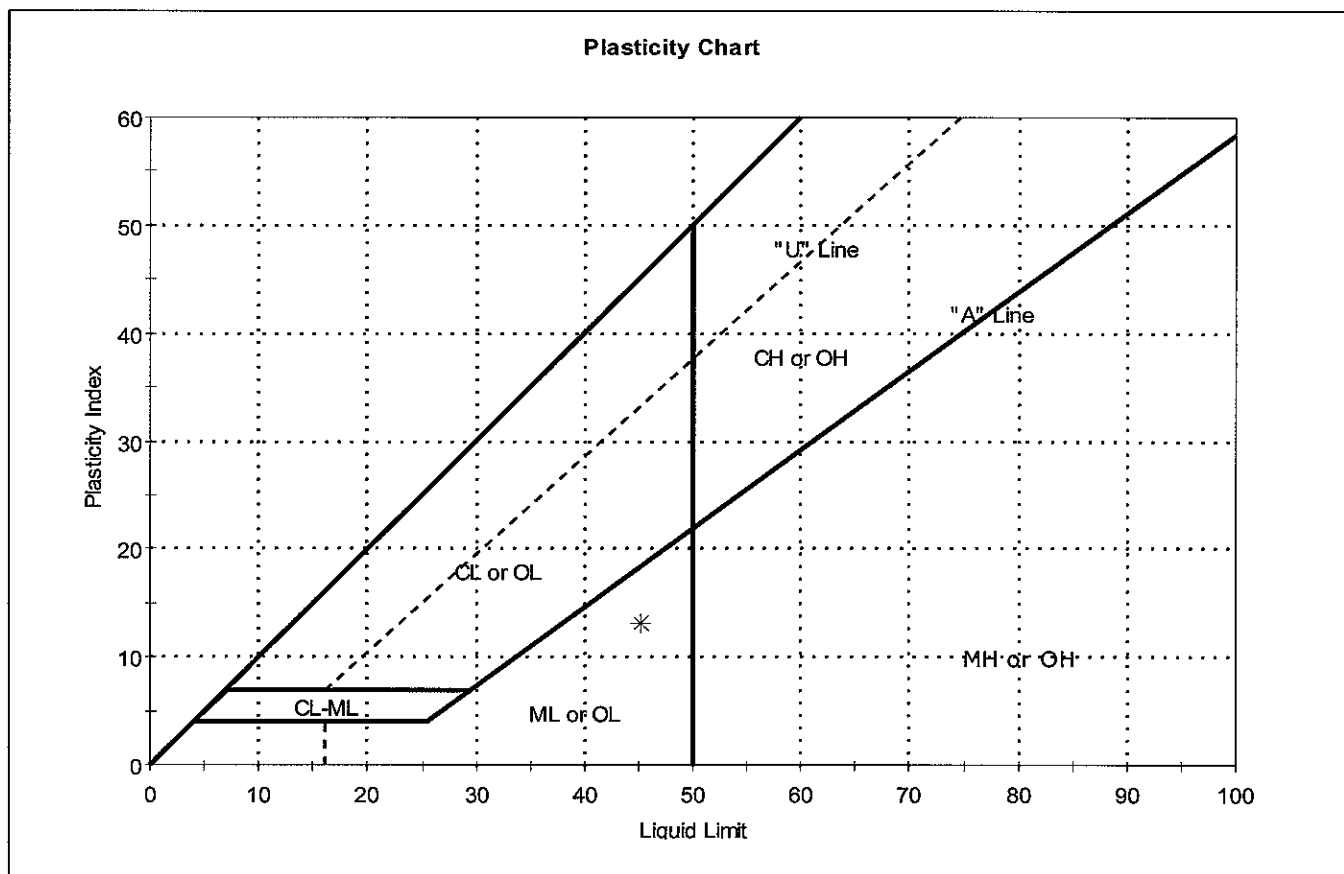


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-19	-VC-400	0-3.3 ft	97	55	35	20	3	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-VC-40031	Sample Type:	jar
Sample ID:	OL-0287-20	Test Date:	02/02/07
Depth :	6.6-9.9 ft	Test Id:	105975
Test Comment:	---		
Sample Description:	Moist, very dark grayish brown sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0287-20	-VC-400	6.6-9.9 ft	101	45	32	13	5	Sandy silt (ML)

Sample Prepared using the WET method
 16% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: NONE
 Toughness: LOW

Chain of Custody / Analysis Request																																																																																																																									
AESI Ref: 38297.40495		COC #: 0288		Lab Use Only		Lab Proj #		Lab ID																																																																																																																	
Privileged and Confidential		Site Name: Onondaga Lake		Location of Site: Syracuse, New York		Preservative:		GTE																																																																																																																	
Sampler: 1		PO #:		Analysis Turnaround Time:		Standard -		Rush Charges Authorized for -																																																																																																																	
2 weeks -		1 week -		Next Day -																																																																																																																					
Hardcopy Report To: Lorraine Weber		Invoice To: Pete Petrone																																																																																																																							
Client Contact:		PARSONS		290 Elwood Davis Road, Suite 312		Liverpool, NY 13088																																																																																																																			
Sample Identification		Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.																																																																																																														
	OL-VC-40039	3.3	6.6	OL-0288-01	9/29/2006	08:46	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40039	9.9	13.2	OL-0288-02	9/29/2006	08:53	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40029	9.9	13.2	OL-0288-03	10/2/2006	13:42	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40029	3.3	6.6	OL-0288-04	10/2/2006	13:39	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40022	0.5	3.3	OL-0288-05	10/2/2006	11:51	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40022	13.2	16.5	OL-0288-06	10/2/2006	11:53	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40019	0.5	3.3	OL-0288-07	9/30/2006	11:44	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40019	9.9	13.2	OL-0288-08	9/30/2006	11:47	SEDIMENT	SOIL	REG	1																																																																																																															
	OL-VC-40019	16.5	19.8	OL-0288-09	9/30/2006	11:49	SEDIMENT	SOIL	REG	1																																																																																																															
<table border="1"> <thead> <tr> <th>Field Sample ID</th> <th>Grain Size</th> <th>Specific Gravity</th> <th>Moisture Content</th> <th>Organic Content</th> <th>Carbonate Content</th> <th>Bulk Density</th> <th>Atterberg Limits</th> <th>Field Filtered Sample?</th> <th>Grab/Composite</th> <th>Units</th> </tr> </thead> <tbody> <tr><td>OL-0288-01</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-02</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-03</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-04</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-05</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-06</td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-07</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-08</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> <tr><td>OL-0288-09</td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td><input checked="" type="checkbox"/></td><td></td><td></td></tr> </tbody> </table>												Field Sample ID	Grain Size	Specific Gravity	Moisture Content	Organic Content	Carbonate Content	Bulk Density	Atterberg Limits	Field Filtered Sample?	Grab/Composite	Units	OL-0288-01	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-06	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-07	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-08	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			OL-0288-09	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Field Sample ID	Grain Size	Specific Gravity	Moisture Content	Organic Content	Carbonate Content	Bulk Density	Atterberg Limits	Field Filtered Sample?	Grab/Composite	Units																																																																																																															
OL-0288-01	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-02	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-03	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-04	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-05	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-06	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-07	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-08	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
OL-0288-09	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																																																																																																																	
<table border="1"> <thead> <tr> <th>Field Sample ID</th> <th>Porosity</th> <th>CUT</th> <th>UUT</th> <th>Consolidation</th> </tr> </thead> <tbody> <tr><td>OL-0288-01</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-02</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-03</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-04</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-05</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-06</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-07</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-08</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> <tr><td>OL-0288-09</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr> </tbody> </table>												Field Sample ID	Porosity	CUT	UUT	Consolidation	OL-0288-01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-02	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-03	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-04	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-06	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-07	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-08	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OL-0288-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																												
Field Sample ID	Porosity	CUT	UUT	Consolidation																																																																																																																					
OL-0288-01	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-02	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-03	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-04	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-05	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-06	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-07	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-08	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
OL-0288-09	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>																																																																																																																					
<table border="1"> <thead> <tr> <th>Field Sample ID</th> <th>Lab Sample Numbers</th> </tr> </thead> <tbody> <tr><td>OL-0288-01</td><td></td></tr> <tr><td>OL-0288-02</td><td></td></tr> <tr><td>OL-0288-03</td><td></td></tr> <tr><td>OL-0288-04</td><td></td></tr> <tr><td>OL-0288-05</td><td></td></tr> <tr><td>OL-0288-06</td><td></td></tr> <tr><td>OL-0288-07</td><td></td></tr> <tr><td>OL-0288-08</td><td></td></tr> <tr><td>OL-0288-09</td><td></td></tr> </tbody> </table>												Field Sample ID	Lab Sample Numbers	OL-0288-01		OL-0288-02		OL-0288-03		OL-0288-04		OL-0288-05		OL-0288-06		OL-0288-07		OL-0288-08		OL-0288-09																																																																																											
Field Sample ID	Lab Sample Numbers																																																																																																																								
OL-0288-01																																																																																																																									
OL-0288-02																																																																																																																									
OL-0288-03																																																																																																																									
OL-0288-04																																																																																																																									
OL-0288-05																																																																																																																									
OL-0288-06																																																																																																																									
OL-0288-07																																																																																																																									
OL-0288-08																																																																																																																									
OL-0288-09																																																																																																																									

Special Instructions:			
Relinquished by:	Company	Received by:	Company
<i>Lorraine M. Chomura</i>	PARSONS	<i>J. M. Weber</i>	PARSONS
Date/Time	Date/Time	Date/Time	Date/Time
12/12/06 @ 12:30	12/12/06 @ 12:30	12/12/06 @ 12:30	12/12/06 @ 12:30
Relinquished by:	Company	Received by:	Company
Date/Time	Date/Time	Date/Time	Date/Time

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify):

Date Printed: 12/11/2006

Page 1 of 3

Chain of Custody/Analysis Request										AESI Ref: 38292.40495	
Privileged and Confidential										COC #: 0288	
Site Name: Onondaga Lake										Lab Use Only	
Location of Site: Syracuse, New York										Lab Proj #	
Preservative:										Lab ID	
Sampler: 1										Job No.	
PO #:											
Analysis Turnaround Time:											
Standard -											
Rush Charges Authorized for -											
2 weeks -											
1 week -											
Next Day -											
Hardcopy Report To: Lorraine Weber											
Invoice To: Pete Petrone											
Sample Identification											
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	Sample # of Cont.	Grab/Composite	Units
OL-VC-70026	3.3	6.6	OL-0288-10	9/26/2006	11:14	SEDIMENT	SOIL	REG	1		
OL-VC-70026	9.9	13.2	OL-0288-11	9/26/2006	11:37	SEDIMENT	SOIL	REG	1		
OL-VC-70026	16.5	19.8	OL-0288-12	9/26/2006	11:19	SEDIMENT	SOIL	REG	1		
OL-VC-70027	3.3	6.6	OL-0288-13	9/26/2006	13:22	SEDIMENT	SOIL	REG	1		
OL-VC-70027	9.9	13.2	OL-0288-14	9/26/2006	13:37	SEDIMENT	SOIL	REG	1		
OL-VC-70027	16.5	19.8	OL-0288-15	9/26/2006	13:38	SEDIMENT	SOIL	REG	1		
OL-VC-70030	0	3.3	OL-0288-16	9/26/2006	09:06	SEDIMENT	SOIL	REG	1		
OL-VC-70030	6.6	9.9	OL-0288-17	9/26/2006	09:37	SEDIMENT	SOIL	REG	1		
OL-VC-70030	16.5	19.8	OL-0288-18	9/26/2006	09:05	SEDIMENT	SOIL	REG	1		

Special Instructions:			
Relinquished by: <i>John M. Chmura</i>	Company: PARSONS	Received by: <i>John M. Chmura</i>	Company: PARSONS
Date/Time: 12/12/06 @ 12:05	Date/Time: 12/12/06 @ 12:30	Date/Time: 12/12/06 @ 12:30	Date/Time: 12/12/06 @ 12:30
Relinquished by:	Company:	Received by:	Company:
Date/Time:	Date/Time:	Date/Time:	Date/Time:

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	mll
Sample ID:---	Test Date: 02/14/07	Checked By:	n/a
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40039	OL-0288-01	3.3-6.6 ft	Wet, dark gray silt with sand	80.9
OL-VC-40039	OL-0288-02	9.9-13.2 ft	Wet dark gray silt	99.6
OL-VC-40029	OL-0288-03	9.9-13.2 ft	Wet, dark gray silt	91.8
OL-VC-40029	OL-0288-04	3.3-6.6 ft	Wet, dark gray silt	66.3
OL-VC-40022	OL-0288-05	0.5-3.3 ft	Moist, dark gray silt	91.8
OL-VC-40022	OL-0288-06	13.2-16.5 ft	Wet, dark brown silt	83
OL-VC-40019	OL-0288-07	0.5-3.3 ft	Wet, dark gray silt	89.7
OL-VC-40019	OL-0288-08	9.9-13.2 ft	Wet, dark gray silt	103.2
OL-VC-40019	OL-0288-09	16.5-19.8 ft	Moist, gray silt	102.3
OL-VC-70026	OL-0288-10	3.3-6.6 ft	Wet, olive sandy silt	92.9

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: ml	
Sample ID:---	Test Date: 02/14/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content,%
OL-VC-70026	OL-0288-11	9.9-13.2 ft	Moist, olive brown silt with sand	78.3
OL-VC-70026	OL-0288-12	16.5-19.8 ft	Wet, olive brown silt	97.7
OL-VC-70027	OL-0288-13	3.3-6.6 ft	Wet, light olive brown sandy silt	83.6
OL-VC-70027	OL-0288-14	9.9-13.2 ft	Wet, olive brown sandy silt	52.4
OL-VC-70027	OL-0288-15	16.5-19.8 ft	Moist,olive brown silt with sand	102.8
OL-VC-70030	OL-0288-16	0-3.3 ft	Wet, dark gray sandy silt	84.8
OL-VC-70030	OL-0288-17	6.6-9.9 ft	Wet, olive brown silt with sand	77.3
OL-VC-70030	OL-0288-18	16.5-19.8 ft	Wet, grayish brown silt with sand	75
OL-VC-70025	OL-0288-19	3.3-6.6 ft	Moist, grayish brown silty sand	67.9
OL-VC-70025	OL-0288-20	6.6-9.9 ft	Moist, olive brown sandy silt	92.9

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: rmt	
Sample ID:---	Test Date: 02/14/07	Checked By: jdt	
Depth : ---	Test Id: 106033		

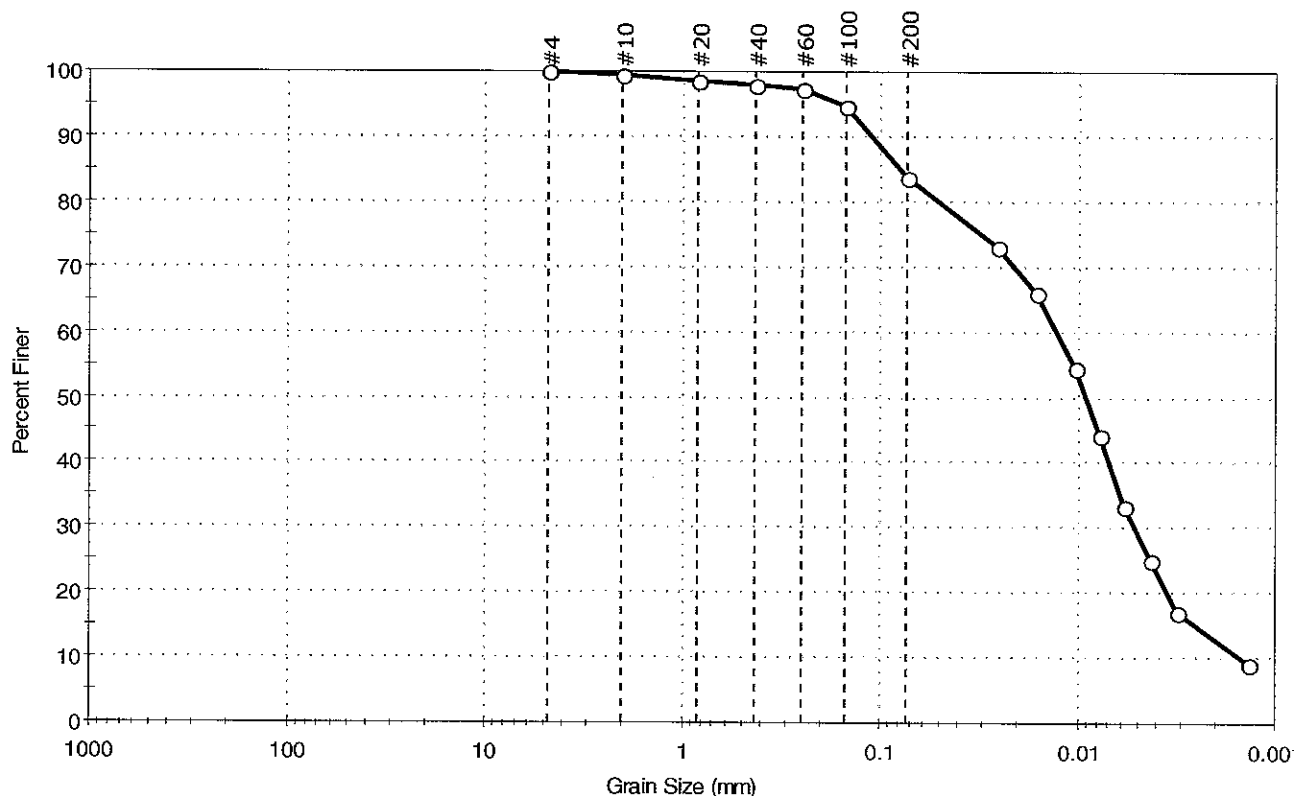
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-40022	OL-0288-06	13.2-16.5 ft	Wet, dark brown silt	2.7
OL-VC-70025	OL-0288-20	6.6-9.9 ft	Moist, olive brown sandy silt	2.64

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mil
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40039	Sample Type:	jar
Sample ID:	OL-0288-01	Test Date:	02/09/07
Depth :	3.3-6.6 ft	Test Id:	106000
Test Comment:	---		
Sample Description:	Wet, dark gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	16.2	83.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	98		
#60	0.25	97		
#100	0.15	95		
#200	0.074	84		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0254	73		
---	0.0164	66		
---	0.0103	55		
---	0.0077	44		
---	0.0058	33		
---	0.0043	25		
---	0.0031	17		
---	0.0014	9		

Coefficients

D ₈₅ =0.0801 mm	D ₃₀ =0.0051 mm
D ₆₀ =0.0128 mm	D ₁₅ =0.0025 mm
D ₅₀ =0.0091 mm	D ₁₀ =0.0015 mm
C _u =N/A	C _c =N/A

Classification

ASTM silt with sand (ML)

AASHTO Clayey Soils (A-7-5 (14))

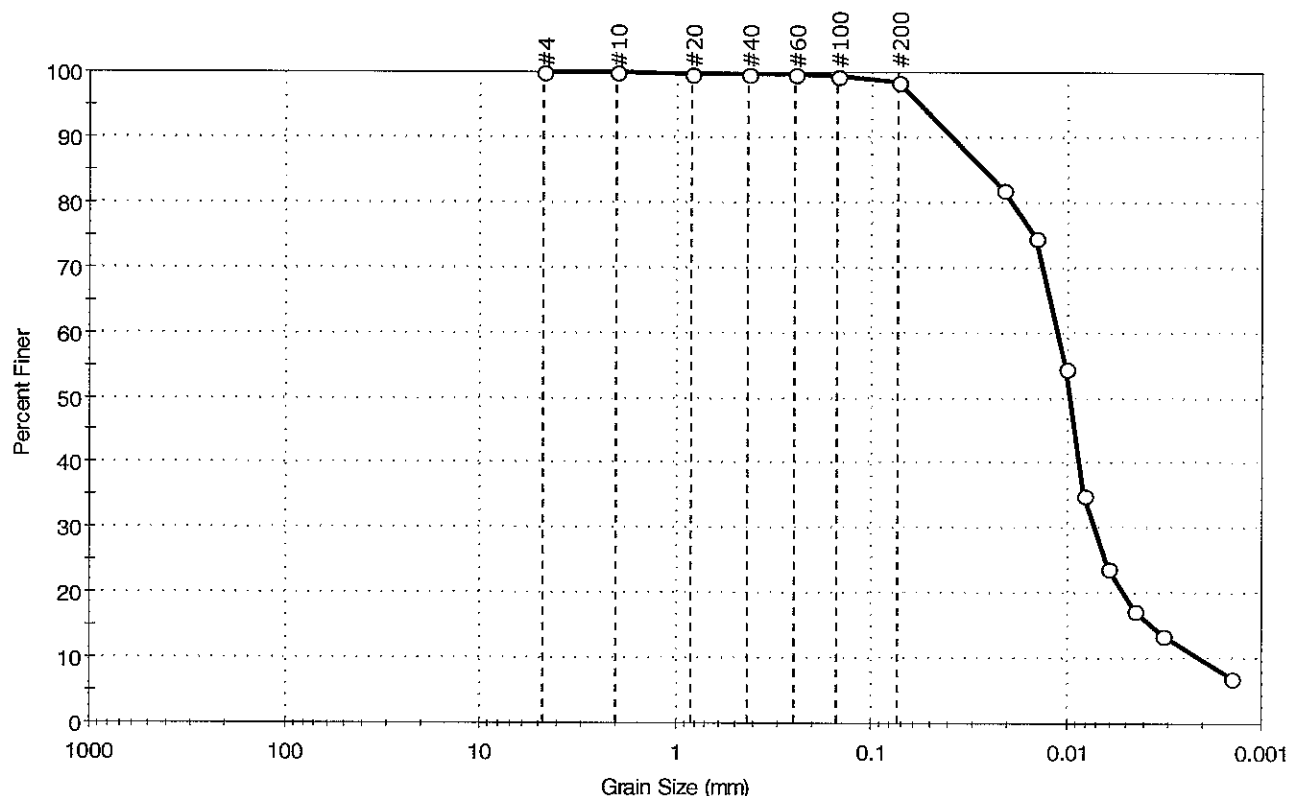
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40039	Sample Type:	jar
Sample ID:	OL-0288-02	Test Date:	02/09/07
Depth :	9.9-13.2 ft	Test Id:	106001
Test Comment:	---		
Sample Description:	Wet dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.6	98.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0212	82		
---	0.0145	75		
---	0.0101	55		
---	0.0081	35		
---	0.0061	24		
---	0.0045	17		
---	0.0032	14		
---	0.0014	7		

Coefficients

D ₈₅ = 0.0266 mm	D ₃₀ = 0.0072 mm
D ₆₀ = 0.0111 mm	D ₁₅ = 0.0037 mm
D ₅₀ = 0.0096 mm	D ₁₀ = 0.0020 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

AASHTO Silty Soils (A-5 (15))

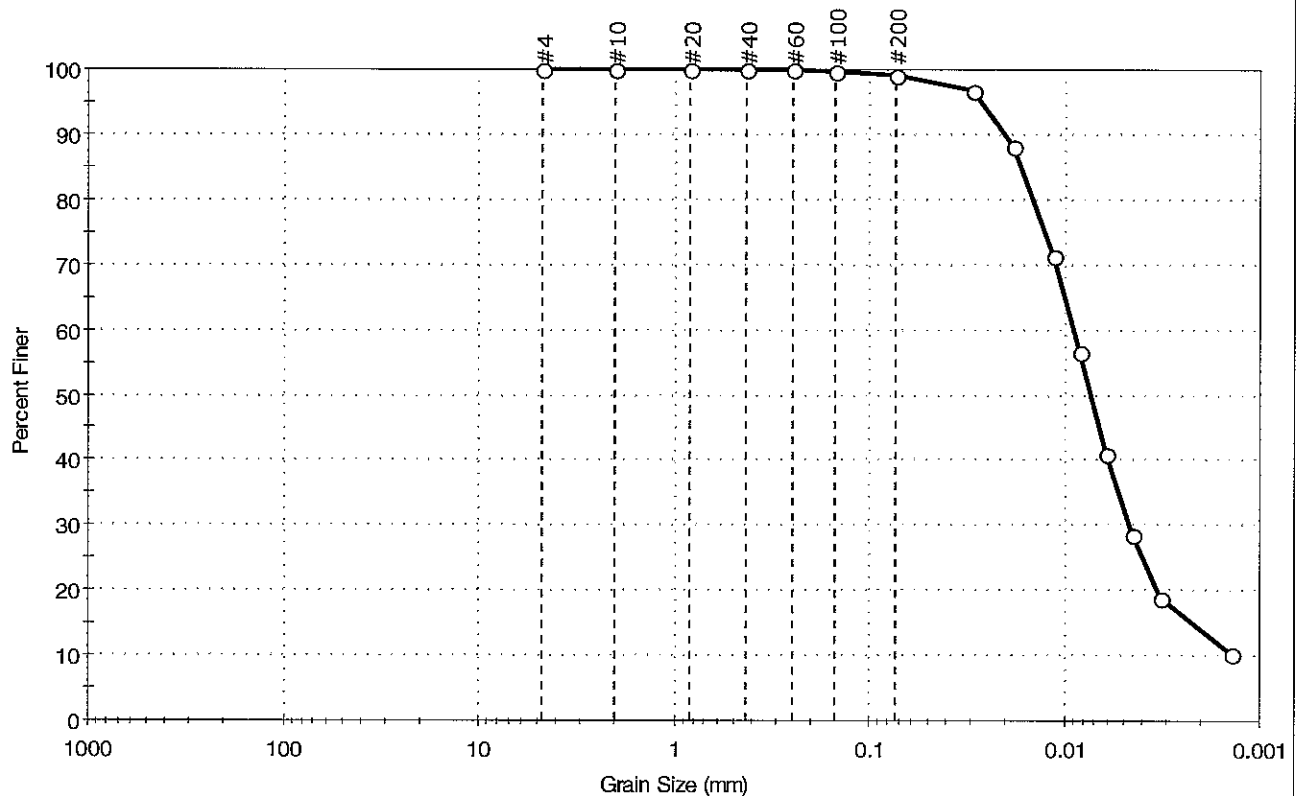
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40029	Sample Type:	jar
Sample ID:	OL-0288-03	Test Date:	02/09/07
Depth :	9.9-13.2 ft	Test Id:	106002
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0293	97		
---	0.0184	88		
---	0.0113	71		
---	0.0083	57		
---	0.0061	41		
---	0.0045	29		
---	0.0032	19		
---	0.0014	10		

Coefficients

D ₈₅ = 0.0168 mm	D ₃₀ = 0.0046 mm
D ₆₀ = 0.0089 mm	D ₁₅ = 0.0022 mm
D ₅₀ = 0.0073 mm	D ₁₀ = 0.0014 mm
C _u = N/A	C _c = N/A

Classification

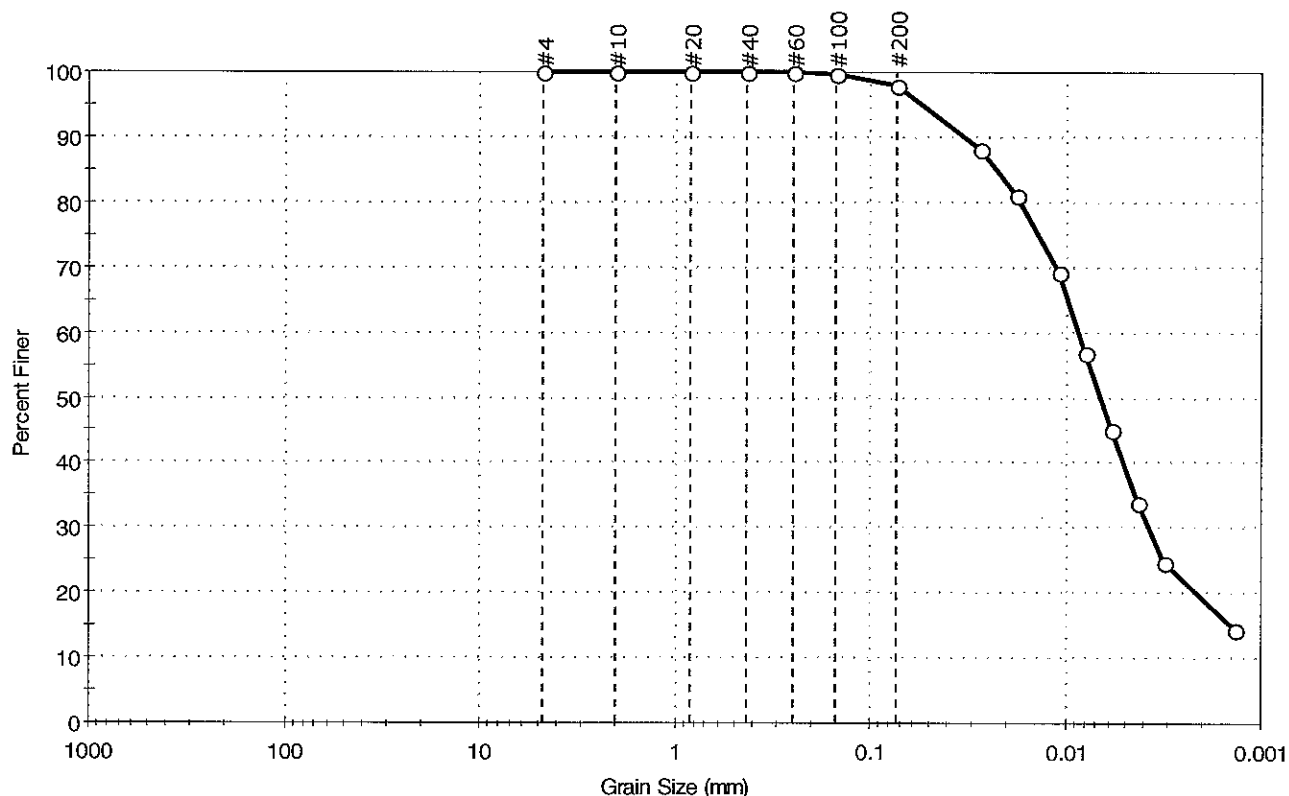
ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (19))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40029	Sample Type:	jar
Sample ID:	OL-0288-04	Test Date:	02/09/07
Depth :	3.3-6.6 ft	Test Id:	106003
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.0	98.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0275	88		
---	0.0178	81		
---	0.0108	69		
---	0.0080	57		
---	0.0059	45		
---	0.0043	34		
---	0.0031	25		
---	0.0014	15		

Coefficients

D ₈₅ = 0.0225 mm	D ₃₀ = 0.0038 mm
D ₆₀ = 0.0086 mm	D ₁₅ = 0.0014 mm
D ₅₀ = 0.0067 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (26))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-40022

Sample Type: jar

Tested By: mll

Sample ID: OL-0288-05

Test Date: 02/09/07

Checked By: jdt

Depth: 0.5-3.3 ft

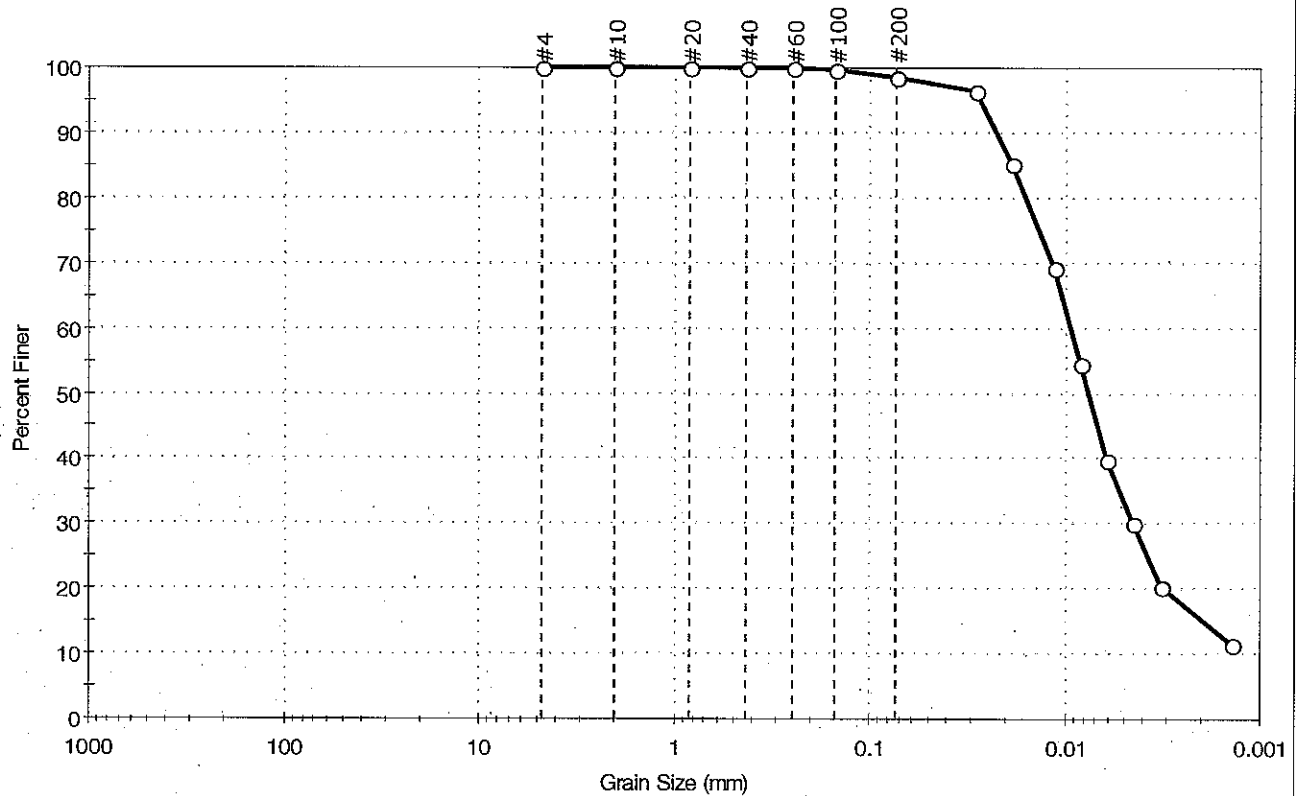
Test Id: 106004

Test Comment: ---

Sample Description: Moist, dark gray silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.6	98.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	98		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0290	96			
0.0189	85			
0.0114	69			
0.0084	55			
0.0061	40			
0.0044	30			
0.0032	20			
0.0014	12			

Coefficients

$D_{85} = 0.0187$ mm $D_{30} = 0.0044$ mm
 $D_{60} = 0.0094$ mm $D_{15} = 0.0019$ mm
 $D_{50} = 0.0076$ mm $D_{10} = 0.0012$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (28))

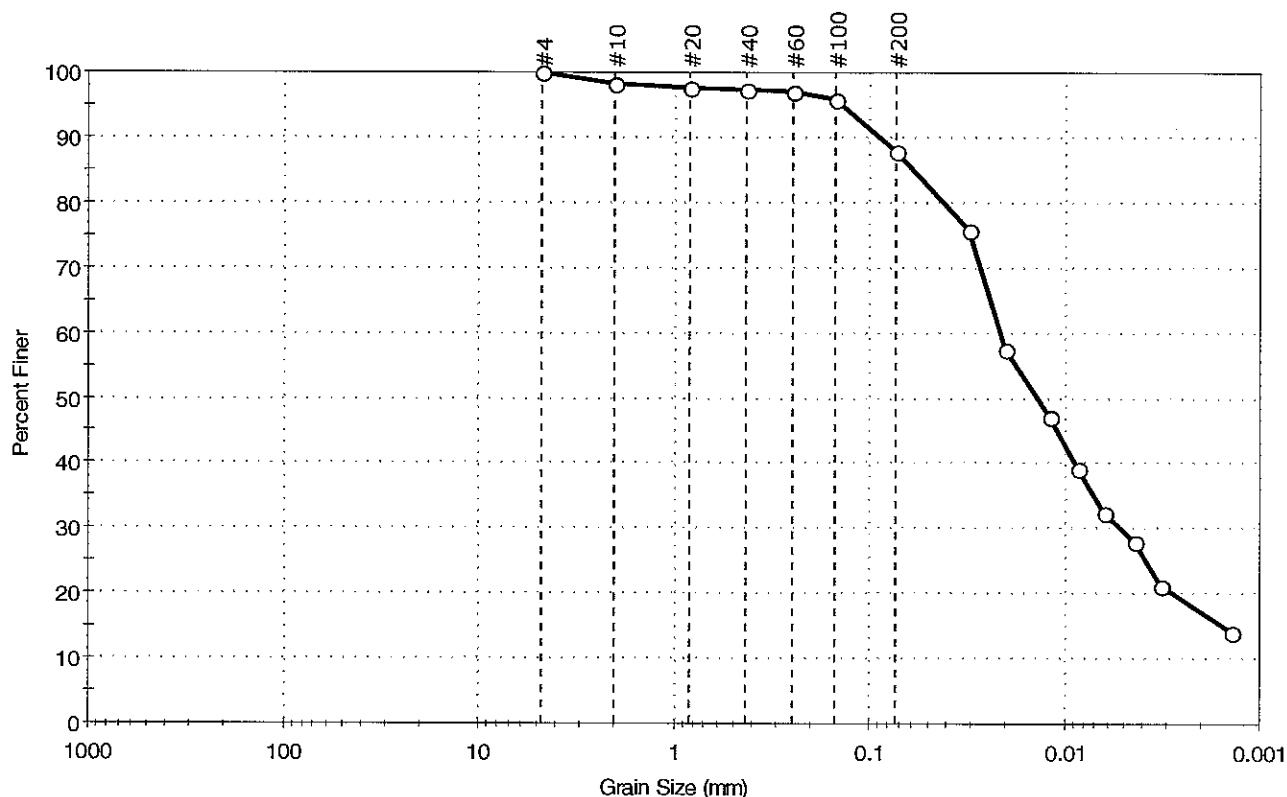
Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client: Parsons Engineering Science	Project: Onondaga	Location: Syracuse	Project No: GTX-7143
Boring ID: OL-VC-40022	Sample Type: jar	Tested By: mll	Sample ID: OL-0288-06
Test Date: 02/09/07	Checked By: jdt	Depth: 13.2-16.5 ft	Test Id: 106005
Test Comment: ---			
Sample Description: Wet, dark brown silt			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	12.1	87.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	98		
#40	0.42	97		
#60	0.25	97		
#100	0.15	96		
#200	0.074	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0308	76		
---	0.0203	58		
---	0.0119	47		
---	0.0086	39		
---	0.0062	33		
---	0.0044	28		
---	0.0032	21		
---	0.0014	14		

Coefficients

D ₈₅ = 0.0600 mm	D ₃₀ = 0.0051 mm
D ₆₀ = 0.0214 mm	D ₁₅ = 0.0015 mm
D ₅₀ = 0.0137 mm	D ₁₀ = 0.0008 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (46))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-40019

Sample Type: jar

Tested By: mll

Sample ID: OL-0288-07

Test Date: 02/09/07

Checked By: jdt

Depth: 0.5-3.3 ft

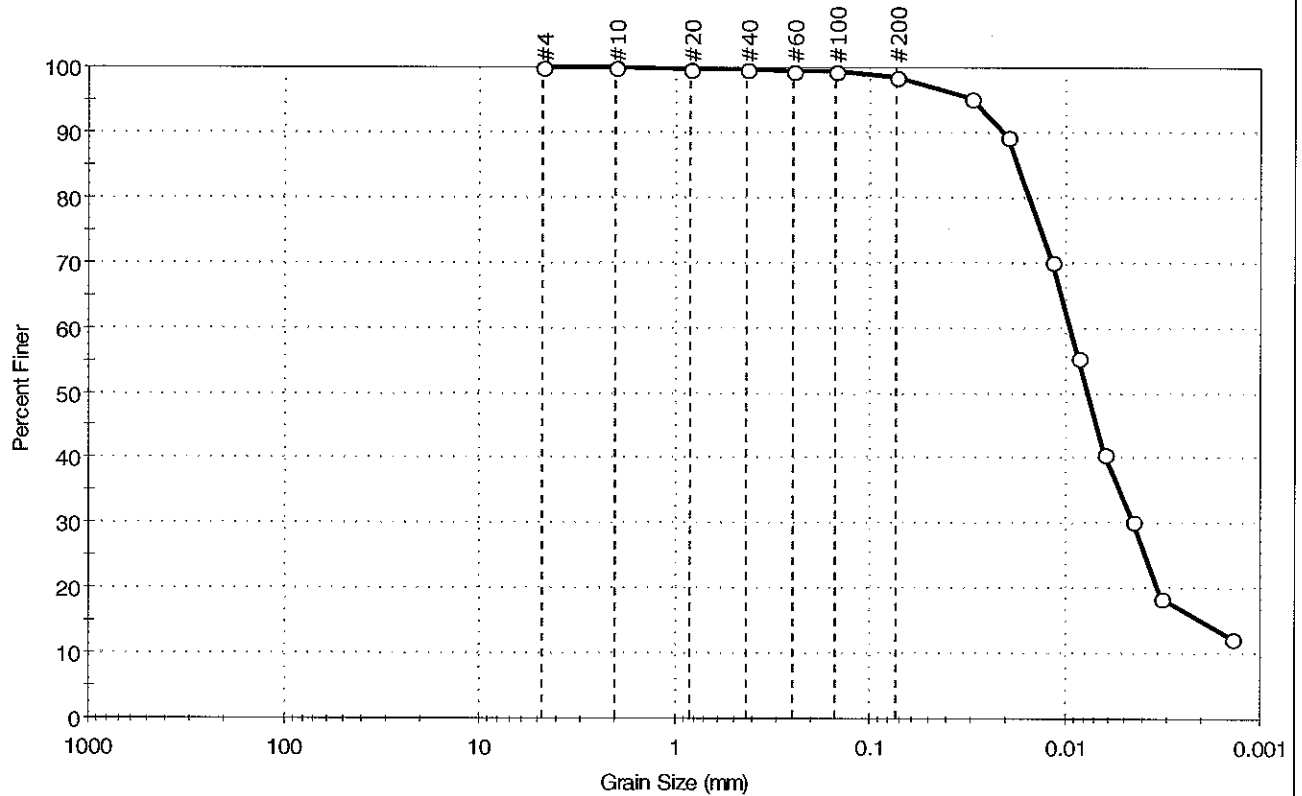
Test Id: 106006

Test Comment: ---

Sample Description: Wet, dark gray silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.5	98.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0306	95		
---	0.0195	89		
---	0.0117	70		
---	0.0085	55		
---	0.0062	41		
---	0.0045	30		
---	0.0033	18		
---	0.0014	12		

Coefficients

$D_{85} = 0.0174$ mm $D_{30} = 0.0045$ mm
 $D_{60} = 0.0094$ mm $D_{15} = 0.0020$ mm
 $D_{50} = 0.0076$ mm $D_{10} = 0.0010$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (25))

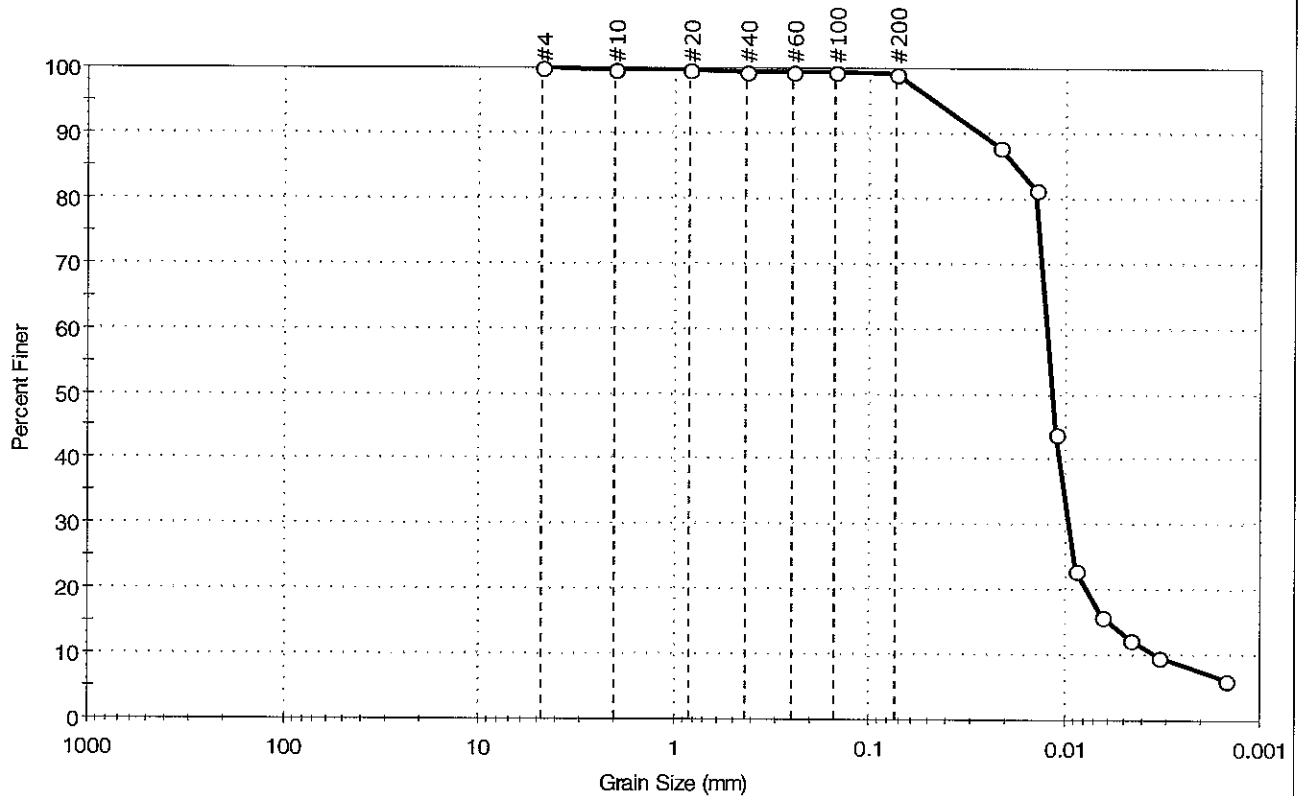
Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-40019	Sample Type: jar
Sample ID: OL-0288-08	Test Date: 02/09/07
Depth: 9.9-13.2 ft	Test Id: 106007
Test Comment: ---	Tested By: mll
Sample Description: Wet, dark gray silt	Checked By: jdt
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0215	88		
---	0.0142	81		
---	0.0111	44		
---	0.0088	23		
---	0.0064	16		
---	0.0046	12		
---	0.0033	10		
---	0.0015	6		

Coefficients

D ₈₅ = 0.0180 mm	D ₃₀ = 0.0095 mm
D ₆₀ = 0.0123 mm	D ₁₅ = 0.0059 mm
D ₅₀ = 0.0115 mm	D ₁₀ = 0.0034 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (23))

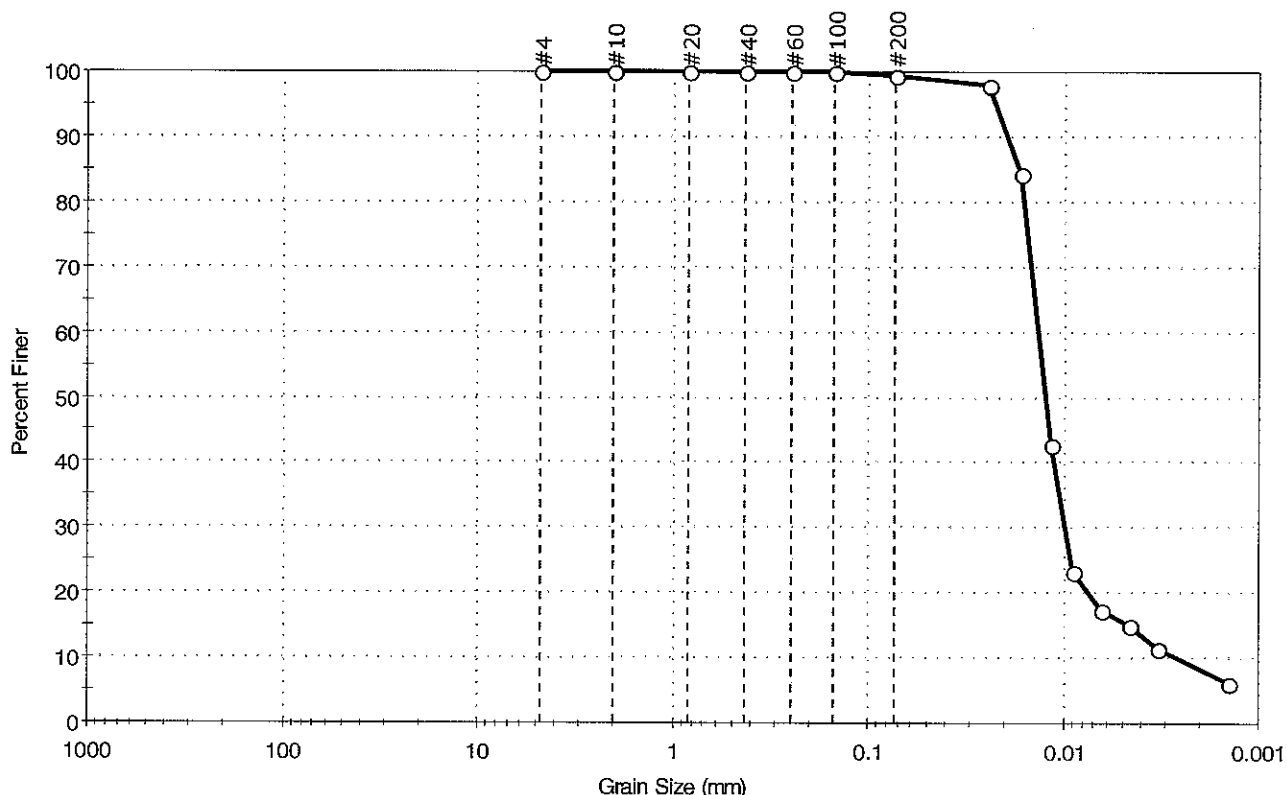
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40019	Sample Type:	jar
Sample ID:	OL-0288-09	Test Date:	02/09/07
Depth :	16.5-19.8 ft	Test Id:	106008
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.6	99.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0242	98		
---	0.0166	84		
---	0.0117	43		
---	0.0090	23		
---	0.0065	17		
---	0.0046	15		
---	0.0033	12		
---	0.0014	6		

Coefficients

D ₈₅ = 0.0170 mm	D ₃₀ = 0.0098 mm
D ₆₀ = 0.0136 mm	D ₁₅ = 0.0046 mm
D ₅₀ = 0.0125 mm	D ₁₀ = 0.0026 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

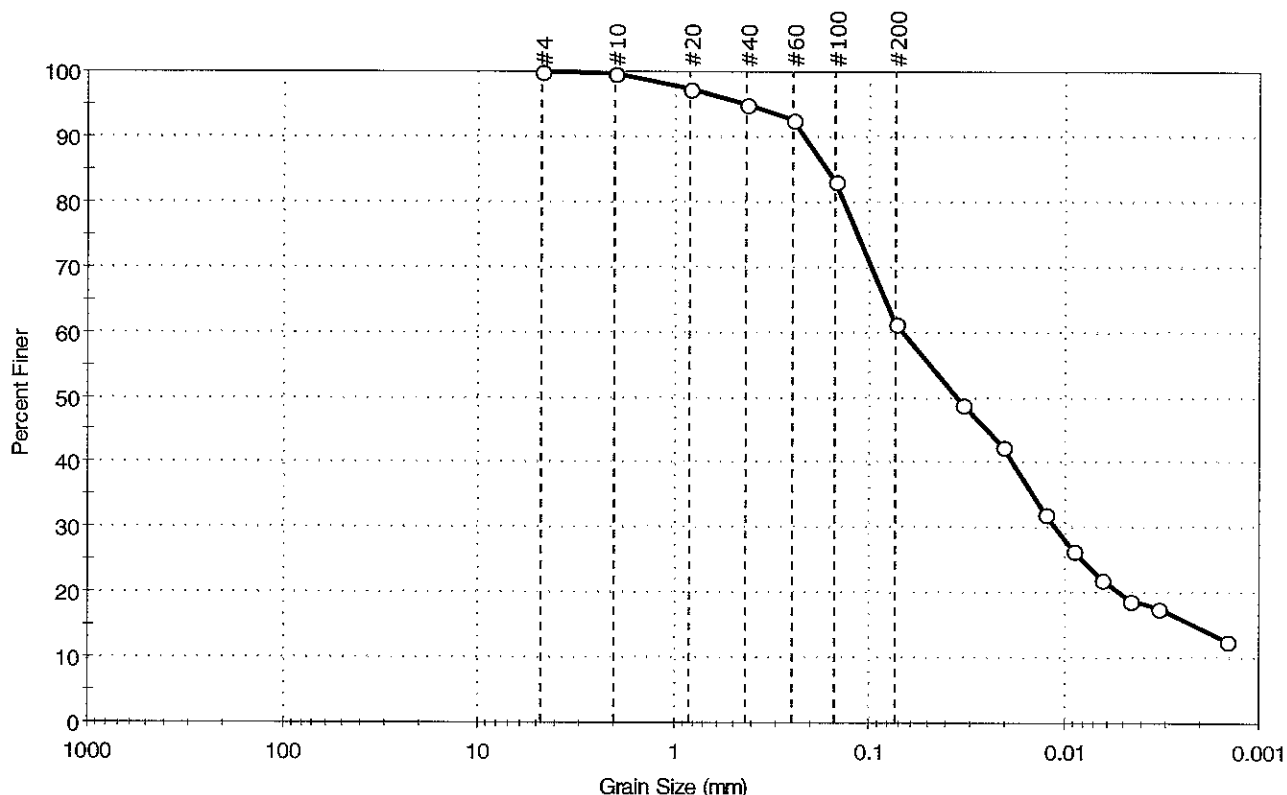
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70026	Sample Type:	jar
Sample ID:	OL-0288-10	Test Date:	02/09/07
Depth :	3.3-6.6 ft	Test Id:	106009
Test Comment:	---		
Sample Description:	Wet, olive sandy silt		
Sample Comment:	----		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	38.7	61.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	97		
#40	0.42	95		
#60	0.25	93		
#100	0.15	83		
#200	0.074	61		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0334	49		
---	0.0209	42		
---	0.0126	32		
---	0.0090	27		
---	0.0065	22		
---	0.0046	19		
---	0.0033	18		
---	0.0015	13		

Coefficients

D ₈₅ =0.1644 mm	D ₃₀ =0.0110 mm
D ₆₀ =0.0681 mm	D ₁₅ =0.0021 mm
D ₅₀ =0.0357 mm	D ₁₀ =0.0010 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

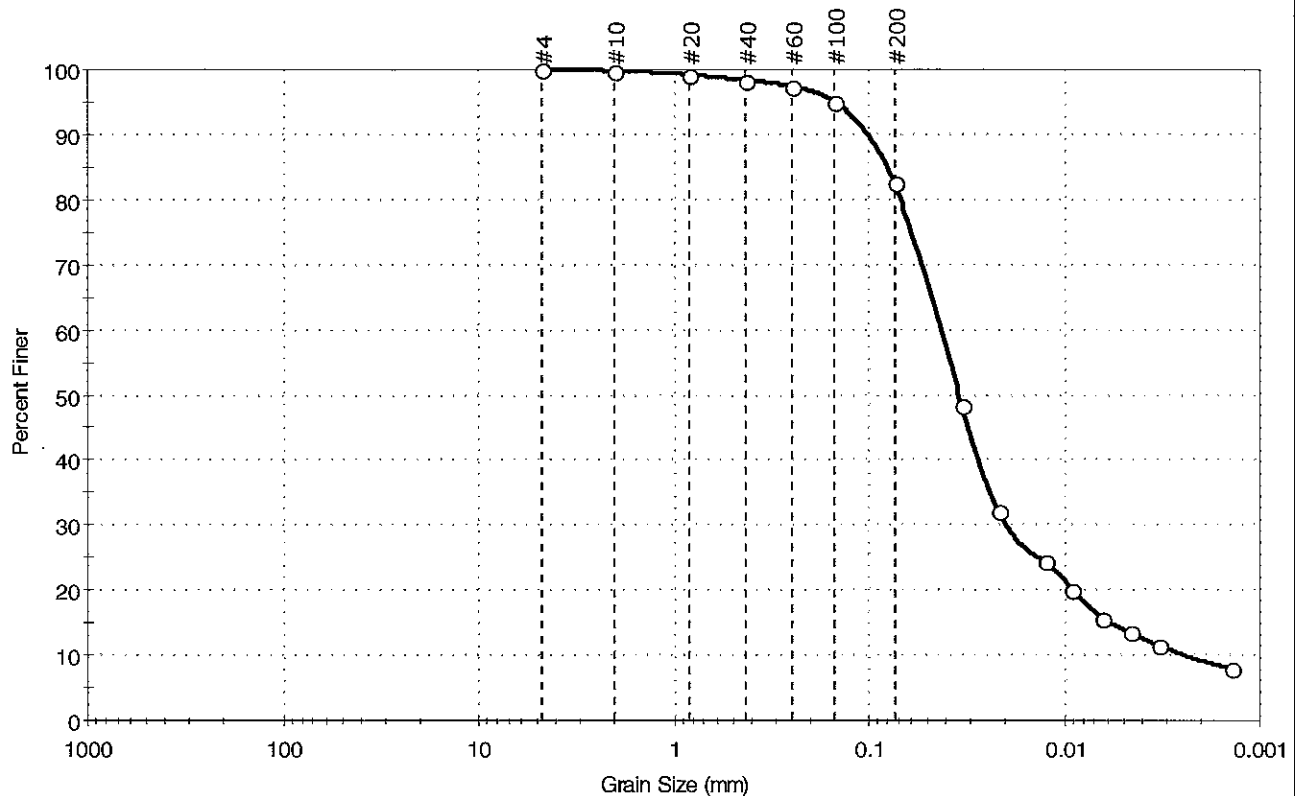
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70026	Sample Type:	jar
Sample ID:	OL-0288-11	Test Date:	02/09/07
Depth :	9.9-13.2 ft	Test Id:	106010
Test Comment:	---		
Sample Description:	Moist, olive brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	17.5	82.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	98		
#60	0.25	97		
#100	0.15	95		
#200	0.074	82		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0334	48		
---	0.0218	32		
---	0.0127	24		
---	0.0091	20		
---	0.0065	16		
---	0.0046	14		
---	0.0033	11		
---	0.0014	8		

Coefficients

D ₈₅ =0.0852 mm	D ₃₀ =0.0188 mm
D ₆₀ =0.0438 mm	D ₁₅ =0.0058 mm
D ₅₀ =0.0346 mm	D ₁₀ =0.0023 mm
C _u =N/A	C _c =N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-70026

Sample Type: jar

Tested By: mll

Sample ID: OL-0288-12

Test Date: 02/06/07

Checked By: jdt

Depth: 16.5-19.8 ft

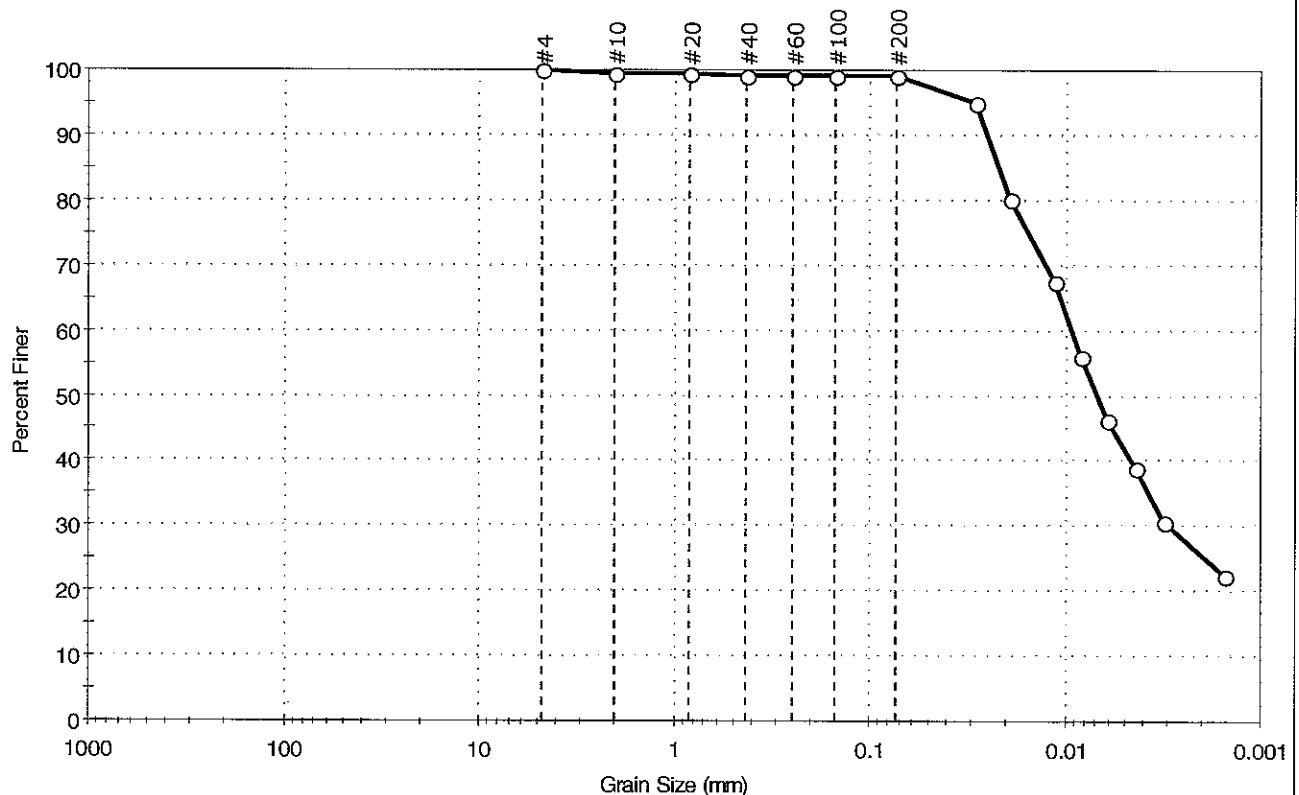
Test Id: 106011

Test Comment: ---

Sample Description: Wet, olive brown silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.0	99.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0291	95		
---	0.0193	80		
---	0.0114	68		
---	0.0084	56		
---	0.0061	46		
---	0.0044	39		
---	0.0032	31		
---	0.0015	23		

Coefficients

$D_{85} = 0.0220$ mm $D_{30} = 0.0030$ mm
 $D_{60} = 0.0093$ mm $D_{15} = N/A$
 $D_{50} = 0.0068$ mm $D_{10} = N/A$
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (28))

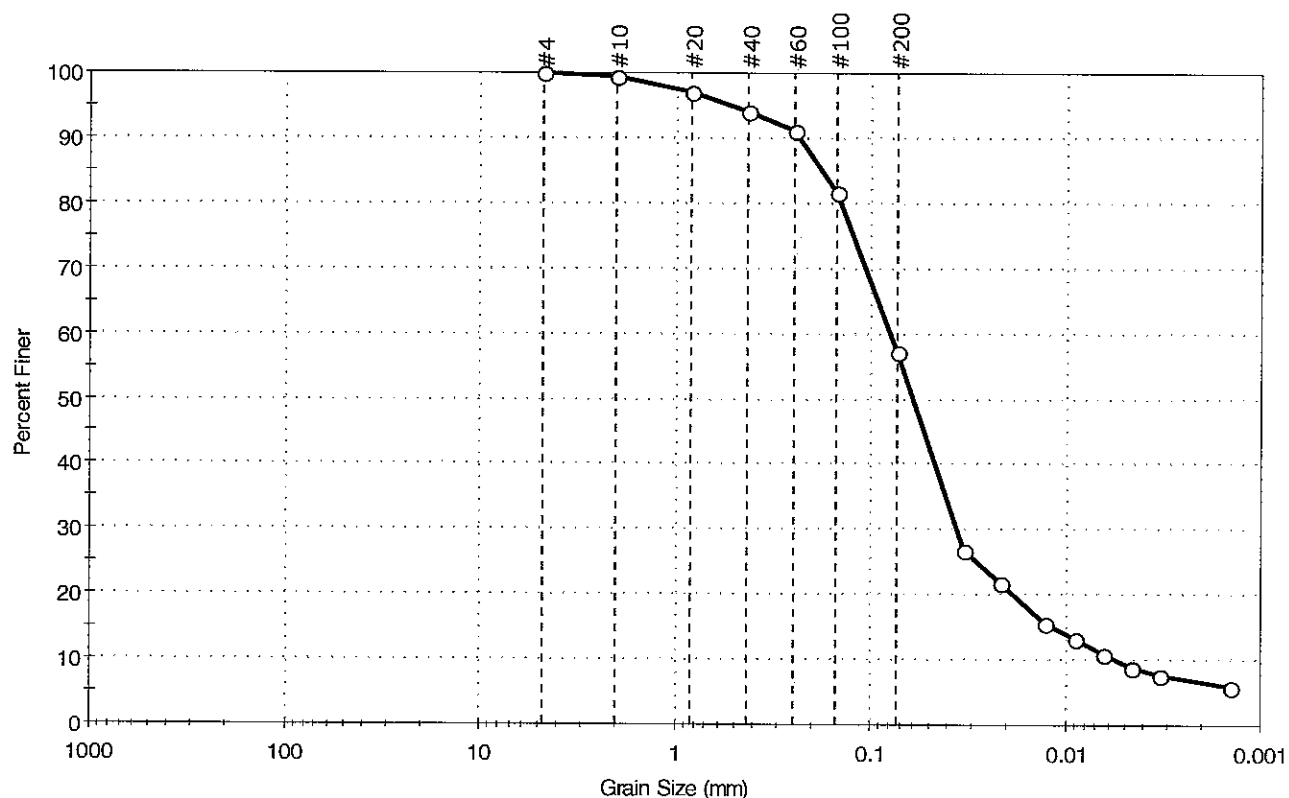
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70027	Sample Type:	jar
Sample ID:	OL-0288-13	Test Date:	02/09/07
Depth :	3.3-6.6 ft	Test Id:	106012
Test Comment:	---		
Sample Description:	Wet, light olive brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	42.7	57.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	97		
#40	0.42	94		
#60	0.25	91		
#100	0.15	82		
#200	0.074	57		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
---	0.0336	27		
---	0.0216	22		
---	0.0127	15		
---	0.0091	13		
---	0.0065	11		
---	0.0046	9		
---	0.0033	8		
---	0.0014	6		

Coefficients

D ₈₅ = 0.1802 mm	D ₃₀ = 0.0366 mm
D ₆₀ = 0.0801 mm	D ₁₅ = 0.0118 mm
D ₅₀ = 0.0613 mm	D ₁₀ = 0.0056 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

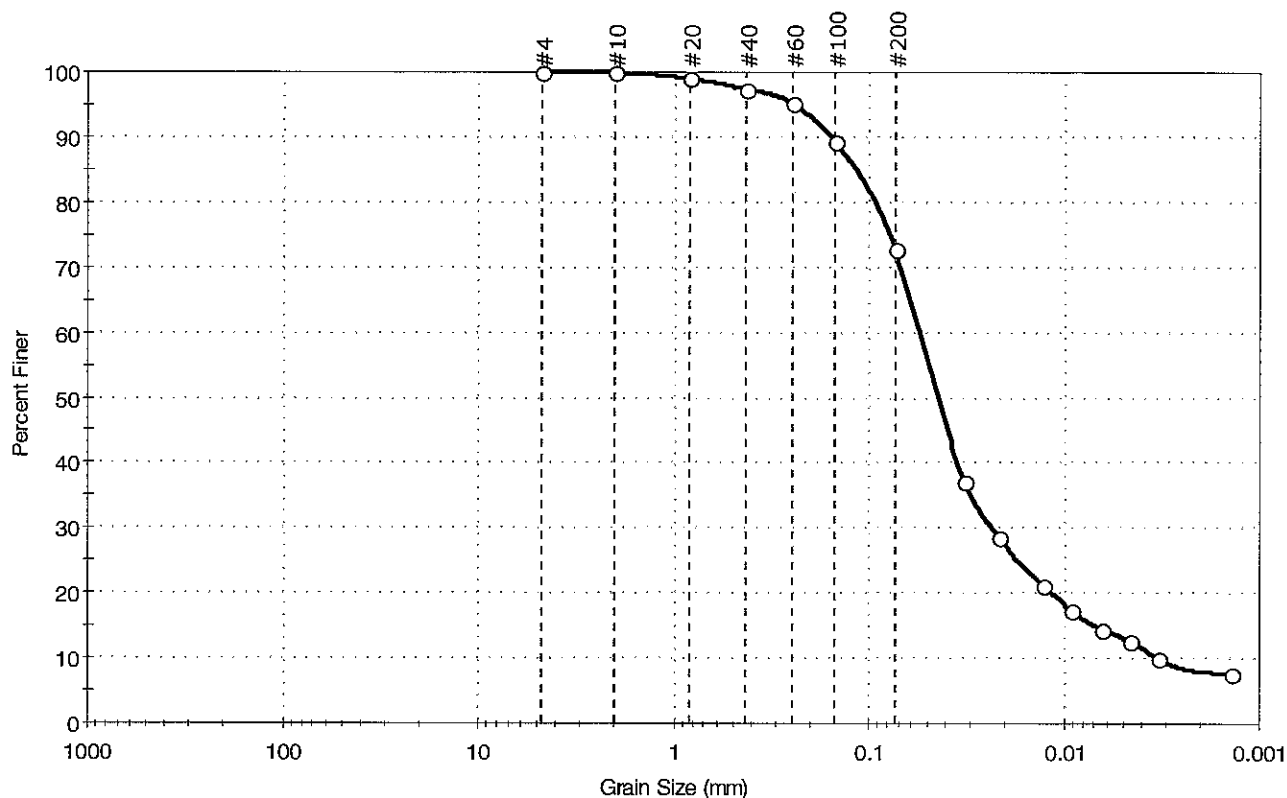
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70027	Sample Type:	jar
Sample ID:	OL-0288-14	Test Date:	02/09/07
Depth :	9.9-13.2 ft	Test Id:	106013
Test Comment:	---		
Sample Description:	Wet, olive brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	27.2	72.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	97		
#60	0.25	95		
#100	0.15	89		
#200	0.074	73		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0323	37		
---	0.0217	29		
---	0.0127	21		
---	0.0091	17		
---	0.0065	15		
---	0.0046	13		
---	0.0033	10		
---	0.0014	8		

Coefficients

D ₈₅ = 0.1245 mm	D ₃₀ = 0.0232 mm
D ₆₀ = 0.0550 mm	D ₁₅ = 0.0069 mm
D ₅₀ = 0.0436 mm	D ₁₀ = 0.0033 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-70027

Sample Type: jar

Tested By: mll

Sample ID: OL-0288-15

Test Date: 02/09/07

Checked By: jdt

Depth: 16.5-19.8 ft

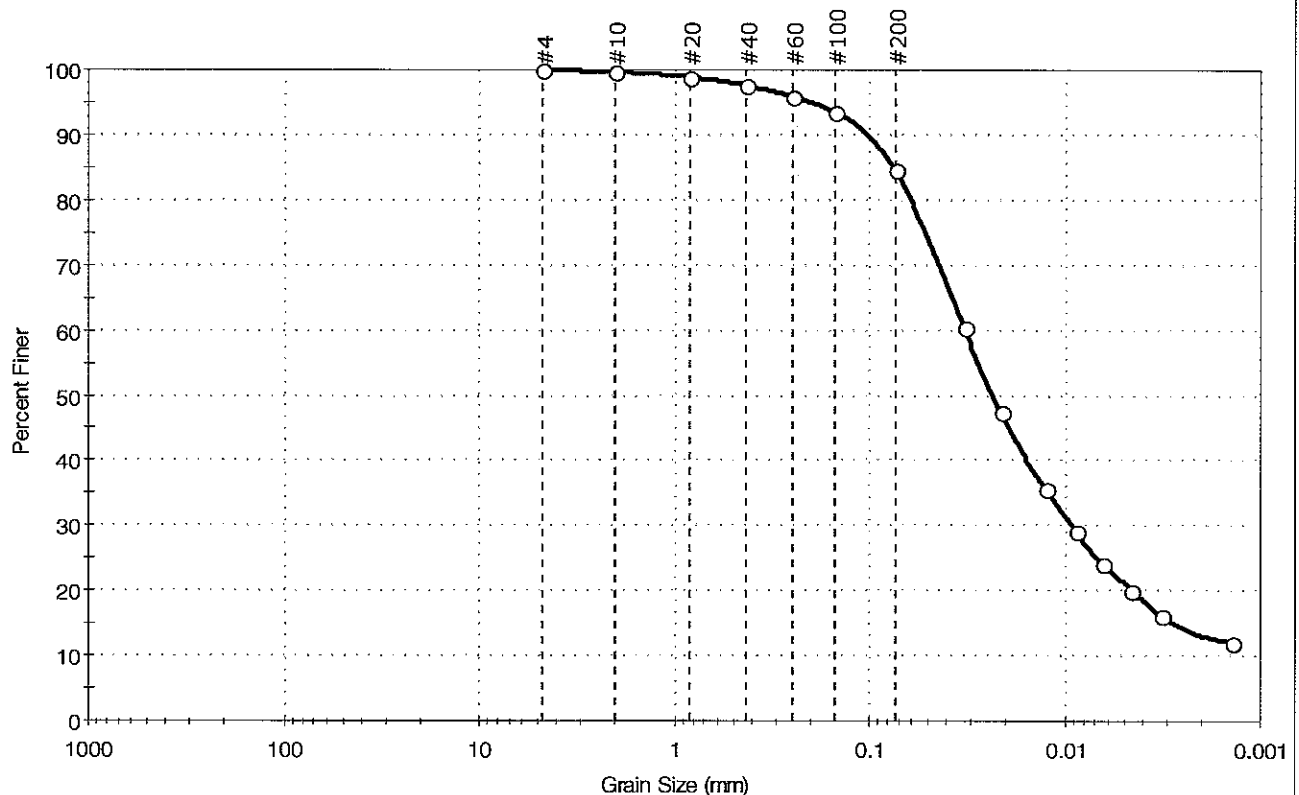
Test Id: 106014

Test Comment: ---

Sample Description: Moist, olive brown silt with sand

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	15.4	84.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	98		
#60	0.25	96		
#100	0.15	94		
#200	0.074	85		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0329	60		
---	0.0213	47		
---	0.0125	36		
---	0.0088	29		
---	0.0064	24		
---	0.0046	20		
---	0.0033	16		
---	0.0014	12		

Coefficients

D₈₅ = 0.0762 mm D₃₀ = 0.0092 mm

D₆₀ = 0.0325 mm D₁₅ = 0.0025 mm

D₅₀ = 0.0233 mm D₁₀ = 0.0009 mm

C_u = N/A C_c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (22))

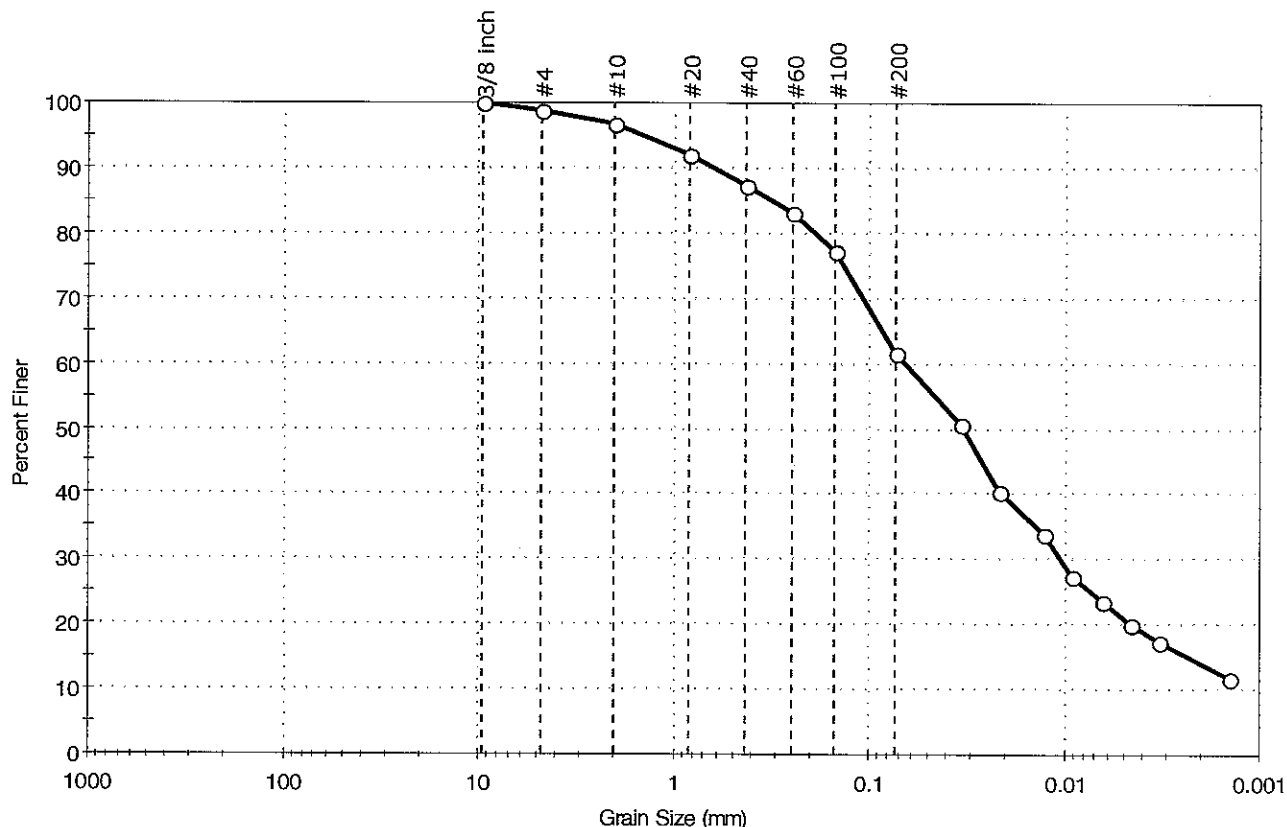
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-70030	Sample Type: jar
Sample ID: OL-0288-16	Test Date: 02/09/07	Tested By: mll
Depth: 0-3.3 ft	Test Id: 106015	Checked By: jdt
Test Comment: ---	Sample Description: Wet, dark gray sandy silt	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.2	37.3	61.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 Inch	9.50	100		
#4	4.75	99		
#10	2.00	97		
#20	0.84	92		
#40	0.42	87		
#60	0.25	83		
#100	0.15	77		
#200	0.074	62		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0345	51			
0.0219	41			
0.0127	34			
0.0091	28			
0.0065	24			
0.0046	20			
0.0033	17			
0.0014	12			

Coefficients

D ₈₅ = 0.3148 mm	D ₃₀ = 0.0104 mm
D ₆₀ = 0.0663 mm	D ₁₅ = 0.0023 mm
D ₅₀ = 0.0333 mm	D ₁₀ = 0.0011 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

AASHTO Clayey Soils (A-7-5 (9))

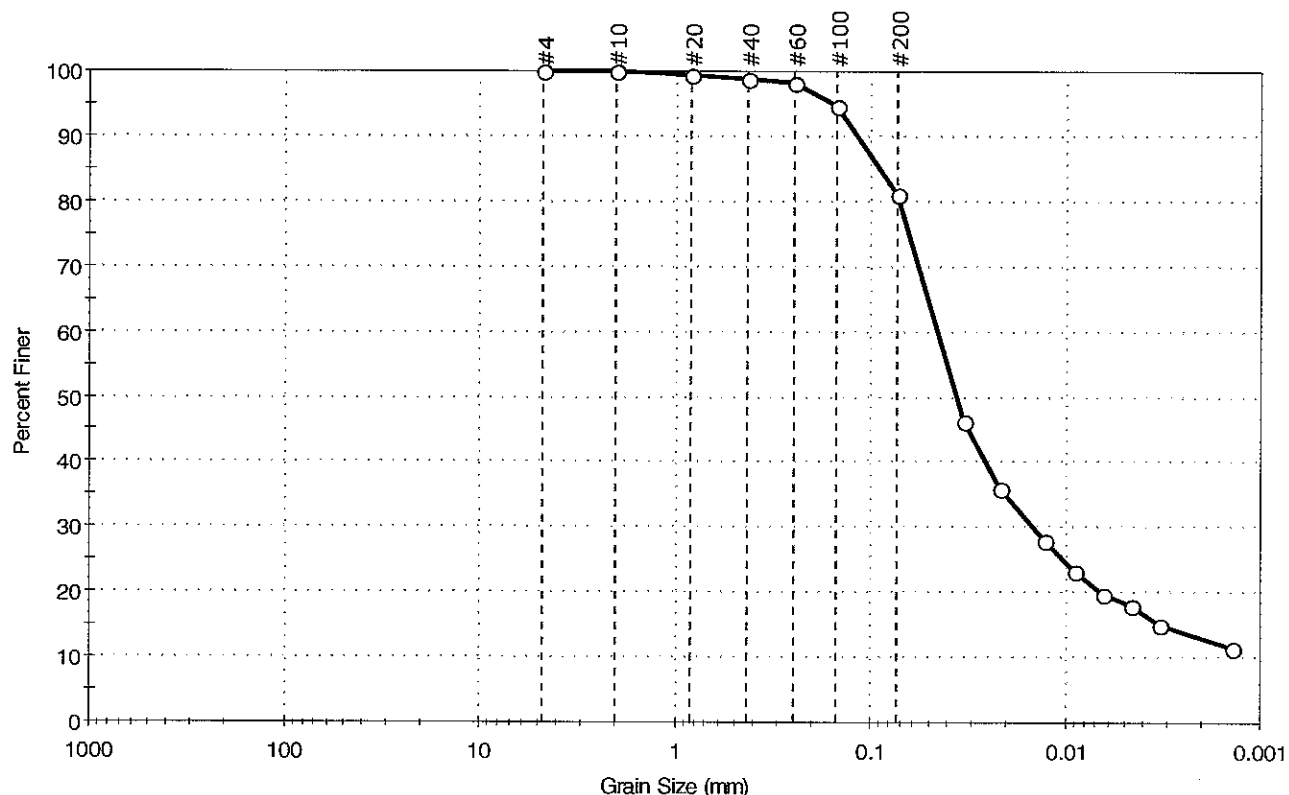
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70030	Sample Type:	jar
Sample ID:	OL-0288-17	Test Date:	02/09/07
Depth :	6.6-9.9 ft	Test Id:	106016
Test Comment:	---		
Sample Description:	Wet, olive brown silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	18.9	81.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	95		
#200	0.074	81		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0333	46		
---	0.0216	36		
---	0.0127	28		
---	0.0091	23		
---	0.0065	20		
---	0.0046	18		
---	0.0033	15		
---	0.0014	11		

Coefficients

D ₈₅ = 0.0907 mm	D ₃₀ = 0.0146 mm
D ₆₀ = 0.0457 mm	D ₁₅ = 0.0032 mm
D ₅₀ = 0.0363 mm	D ₁₀ = 0.0010 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

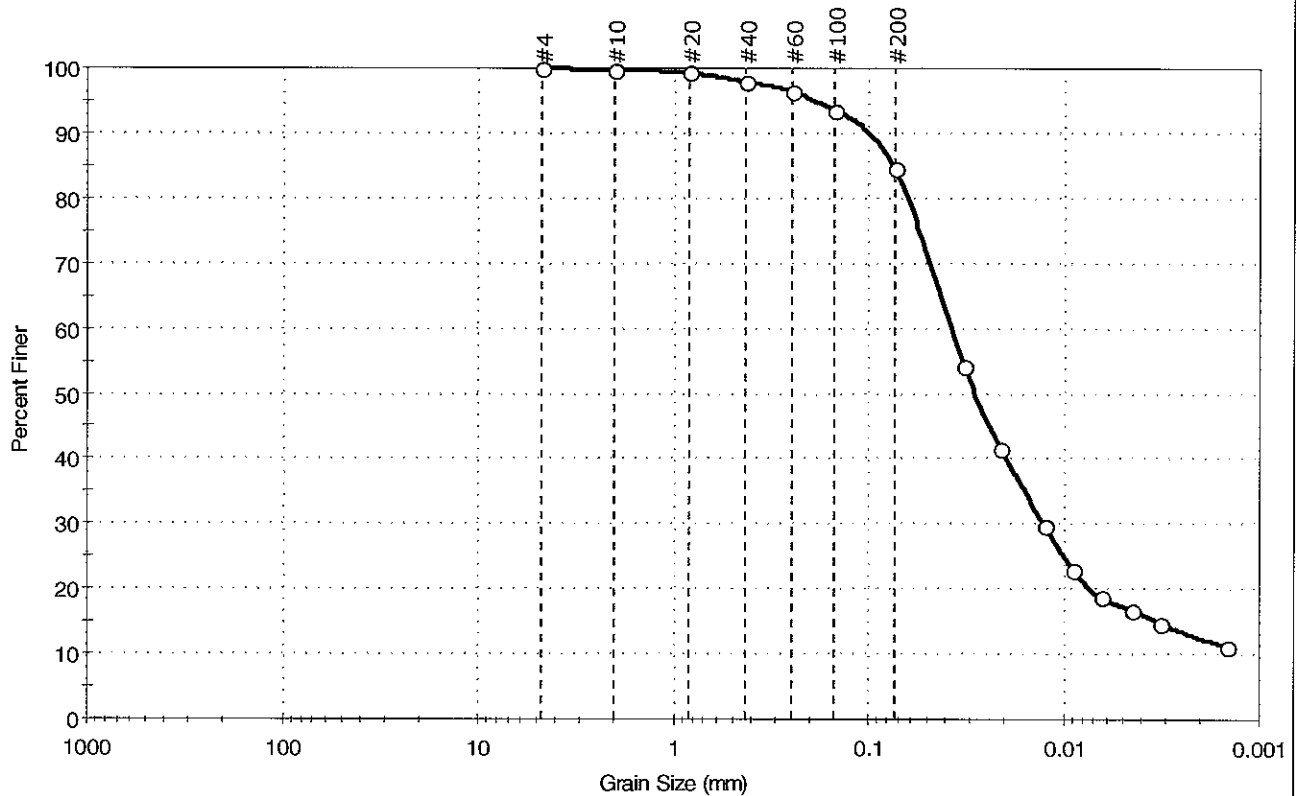
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-70030	Sample Type: jar
Sample ID: OL-0288-18	Test Date: 01/25/07
Depth: 16.5-19.8 ft	Test Id: 106017
Test Comment: ---	
Sample Description: Wet, grayish brown silt with sand	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	15.3	84.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	98		
#60	0.25	96		
#100	0.15	94		
#200	0.074	85		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0324	54		
---	0.0210	42		
---	0.0125	30		
---	0.0090	23		
---	0.0064	19		
---	0.0045	17		
---	0.0033	15		
---	0.0015	11		

Coefficients

D ₈₅ = 0.0756 mm	D ₃₀ = 0.0126 mm
D ₆₀ = 0.0379 mm	D ₁₅ = 0.0033 mm
D ₅₀ = 0.0281 mm	D ₁₀ = 0.0011 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (14))

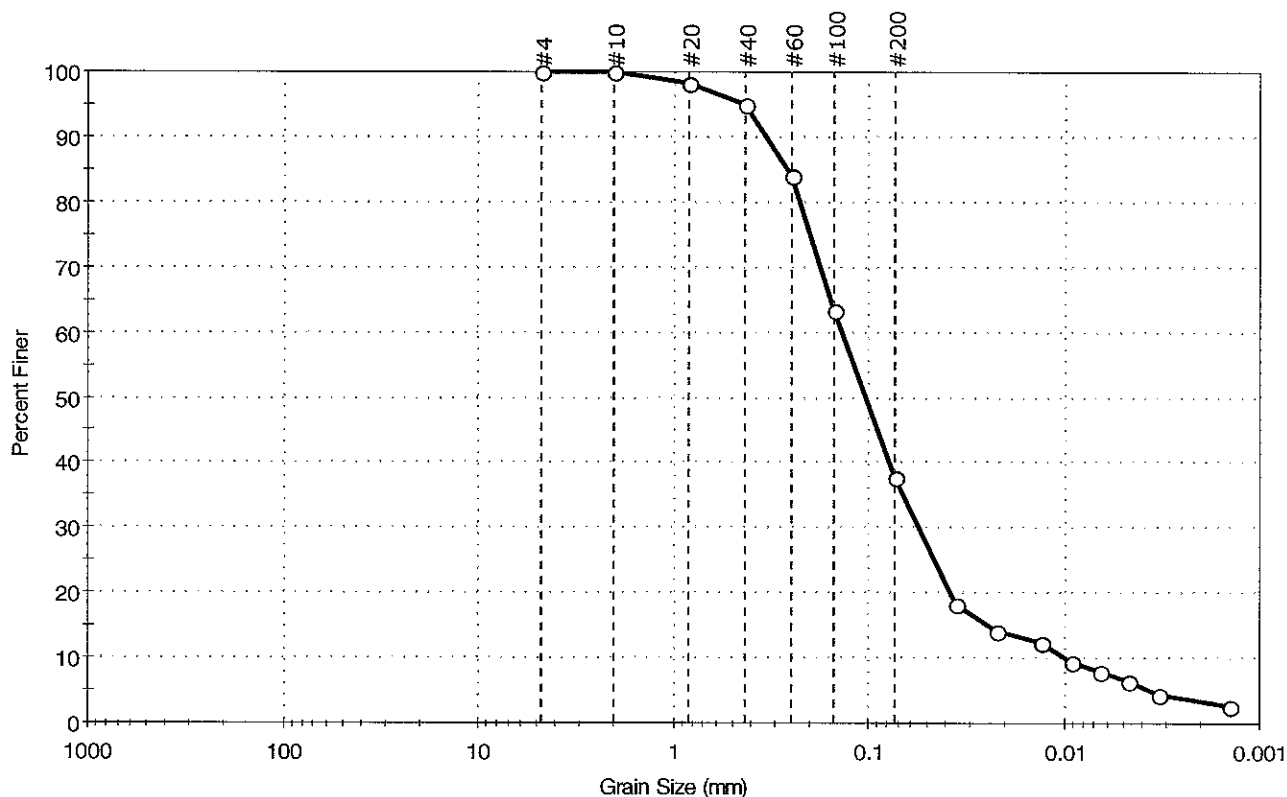
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70025	Sample Type:	jar
Sample ID:	OL-0288-19	Test Date:	01/26/07
Depth :	3.3-6.6 ft	Test Id:	106018
Test Comment:	---		
Sample Description:	Moist, grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	62.1	37.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	98		
#40	0.42	95		
#60	0.25	84		
#100	0.15	63		
#200	0.074	38		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0362	18		
---	0.0225	14		
---	0.0131	12		
---	0.0093	9		
---	0.0066	8		
---	0.0047	6		
---	0.0033	4		
---	0.0014	3		

Coefficients

D ₈₅ = 0.2600 mm	D ₃₀ = 0.0555 mm
D ₆₀ = 0.1362 mm	D ₁₅ = 0.0245 mm
D ₅₀ = 0.1034 mm	D ₁₀ = 0.0100 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

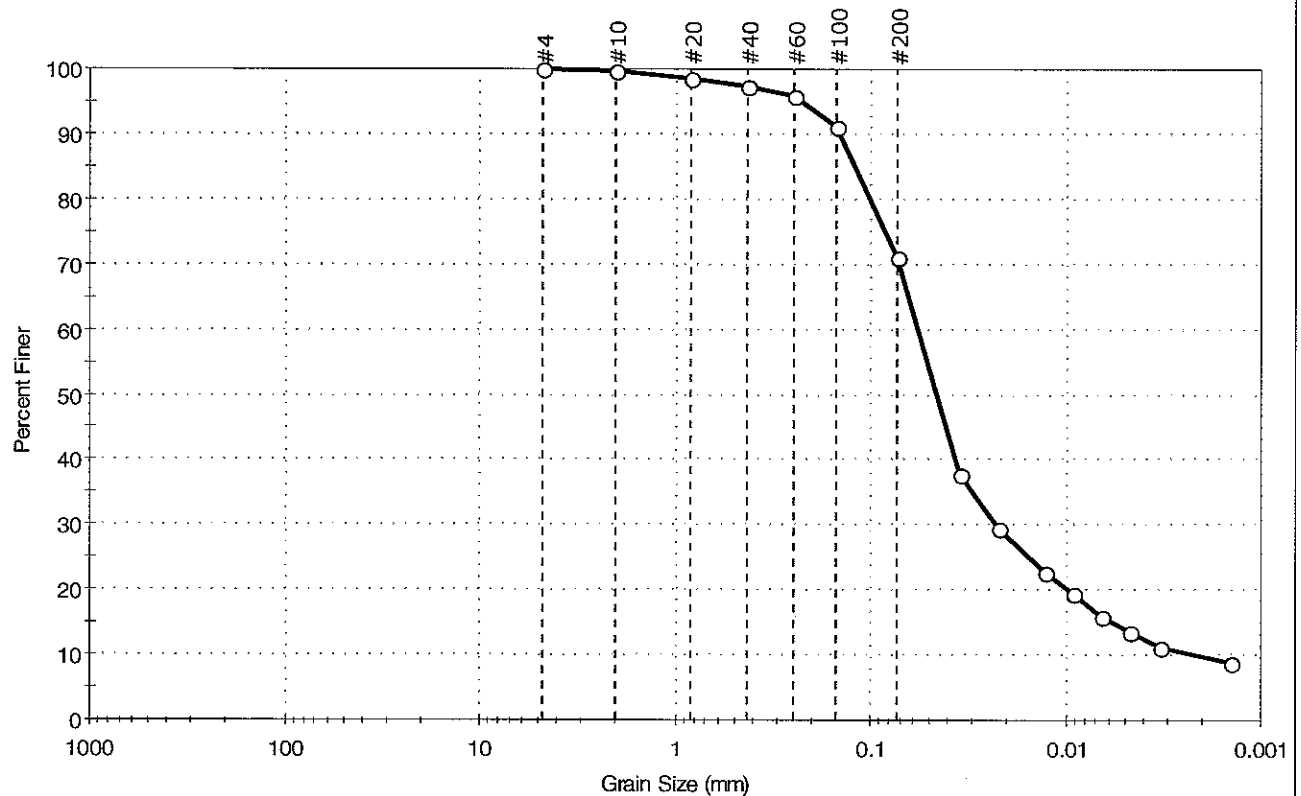
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70025	Sample Type:	jar
Sample ID:	OL-0288-20	Test Date:	01/24/07
Depth :	6.6-9.9 ft	Test Id:	106019
Test Comment:	---		
Sample Description:	Moist, olive brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	28.8	71.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	98		
#40	0.42	97		
#60	0.25	96		
#100	0.15	91		
#200	0.074	71		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0353	38		
---	0.0224	30		
---	0.0130	23		
---	0.0093	19		
---	0.0066	16		
---	0.0047	14		
---	0.0033	11		
---	0.0014	9		

Coefficients

D ₈₅ = 0.1203 mm	D ₃₀ = 0.0229 mm
D ₆₀ = 0.0578 mm	D ₁₅ = 0.0058 mm
D ₅₀ = 0.0463 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

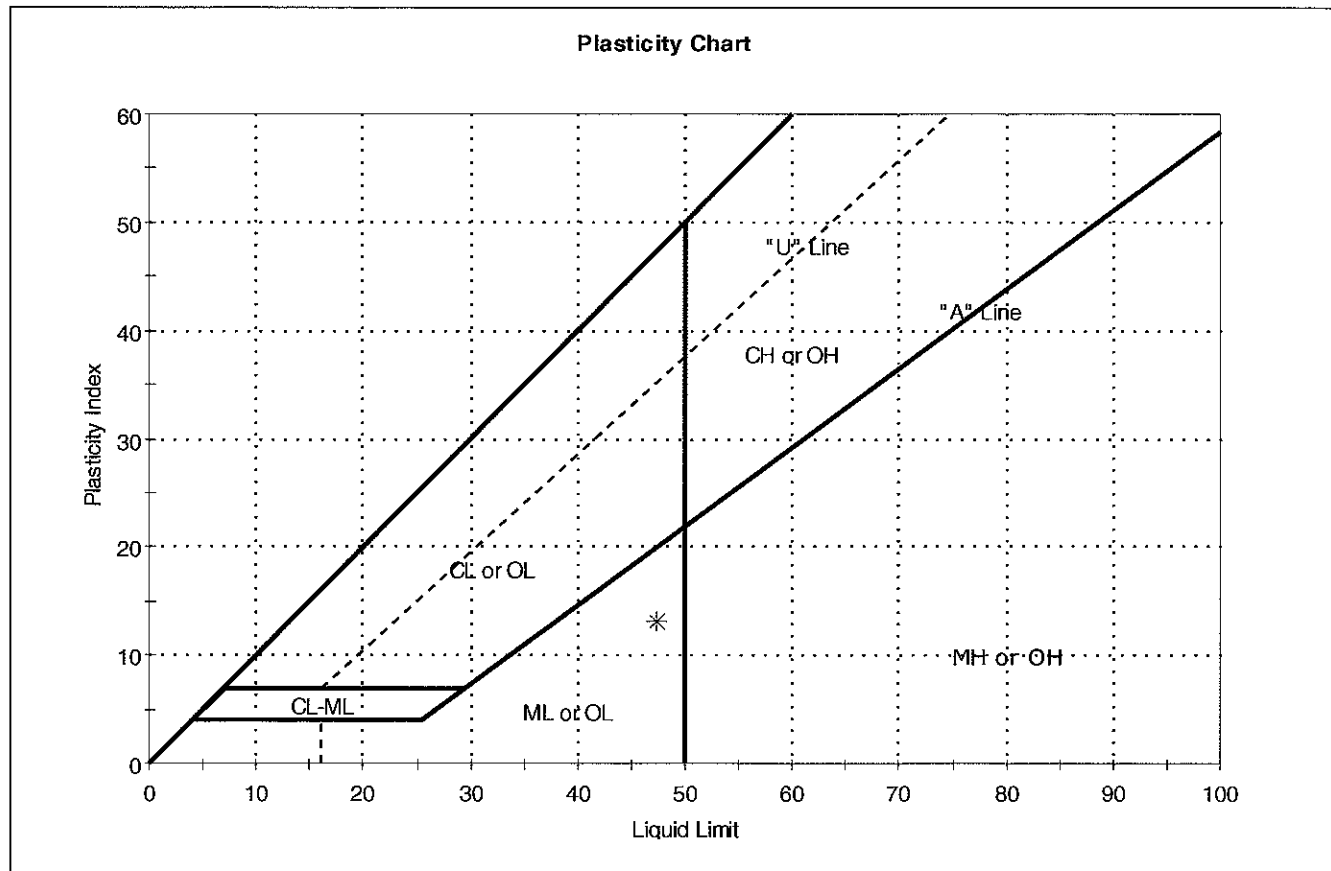
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40039	Sample Type:	jar
Sample ID:	OL-0288-01	Test Date:	01/31/07
Depth :	3.3-6.6 ft	Test Id:	106020
Test Comment:	---		
Sample Description:	Wet, dark gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-01	-VC-400	3.3-6.6 ft	81	47	34	13	4	silt with sand (ML)

Sample Prepared using the WET method

2% Retained on #40 Sieve

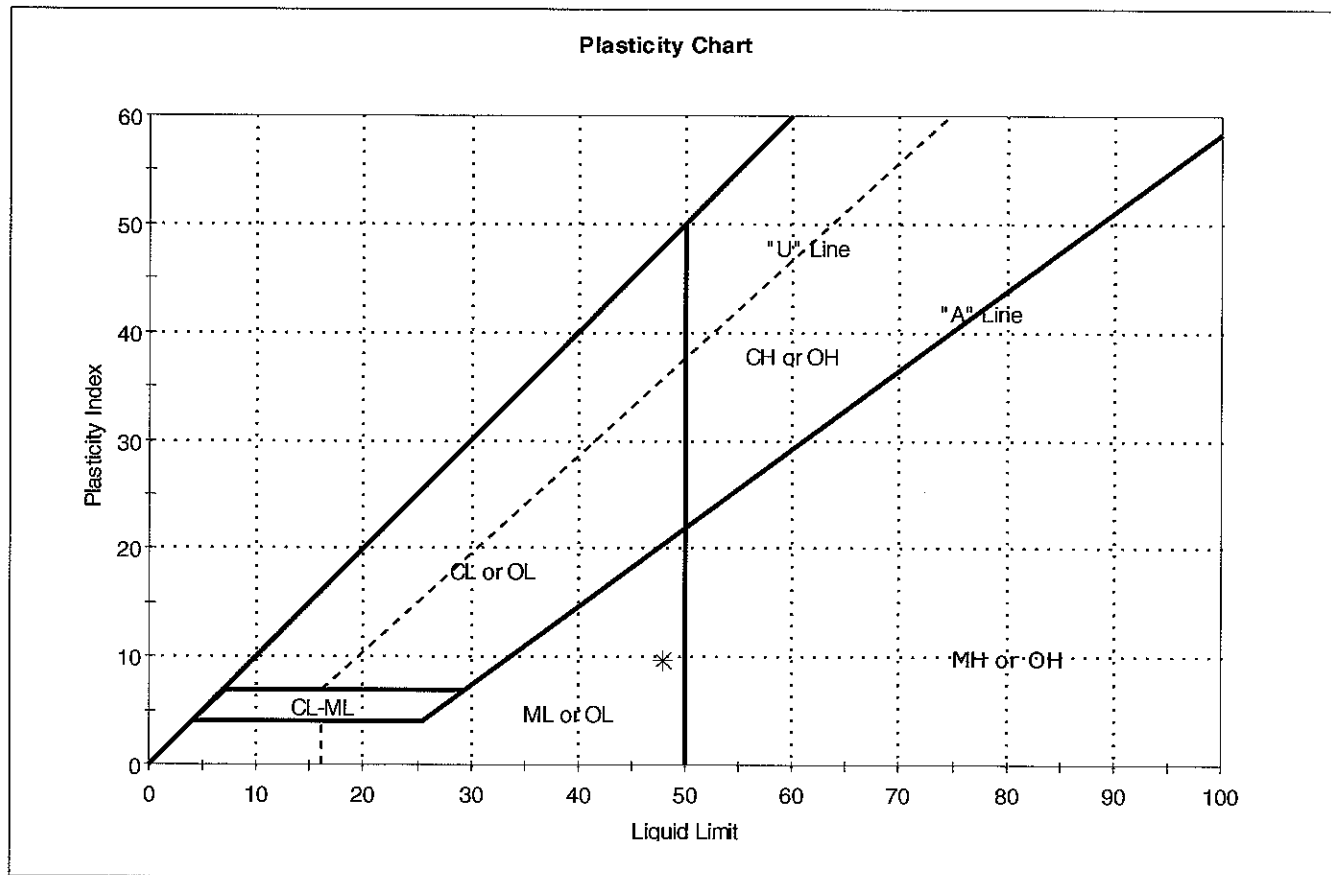
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Tested By:	ap
Boring ID:	OL-VC-40039	Test Date:	02/01/07
Sample ID:	OL-0288-02	Checked By:	jdt
Depth :	9.9-13.2 ft	Test Id:	106021
Test Comment:	---		
Sample Description:	Wet dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-02	-VC-400	9.9-13.2 ft	100	48	38	10	6	silt (ML)

Sample Prepared using the WET method

0% Retained on #40 Sieve

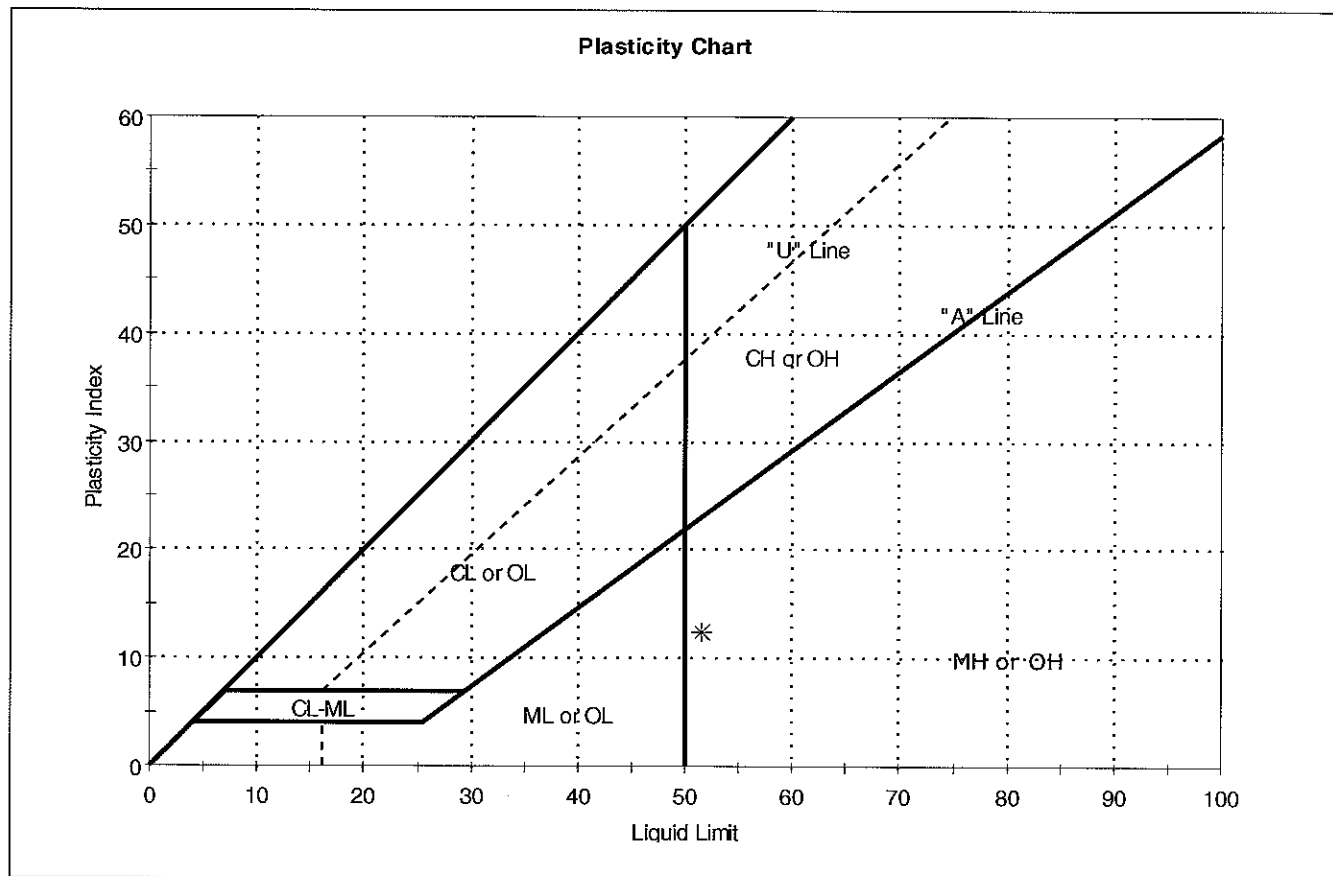
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-VC-40029	Sample Type:	jar
Sample ID:	OL-0288-03	Test Date:	02/02/07
Depth:	9.9-13.2 ft	Test Id:	106022
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-03	-VC-400	9.9-13.2 ft	92	52	39	13	4	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

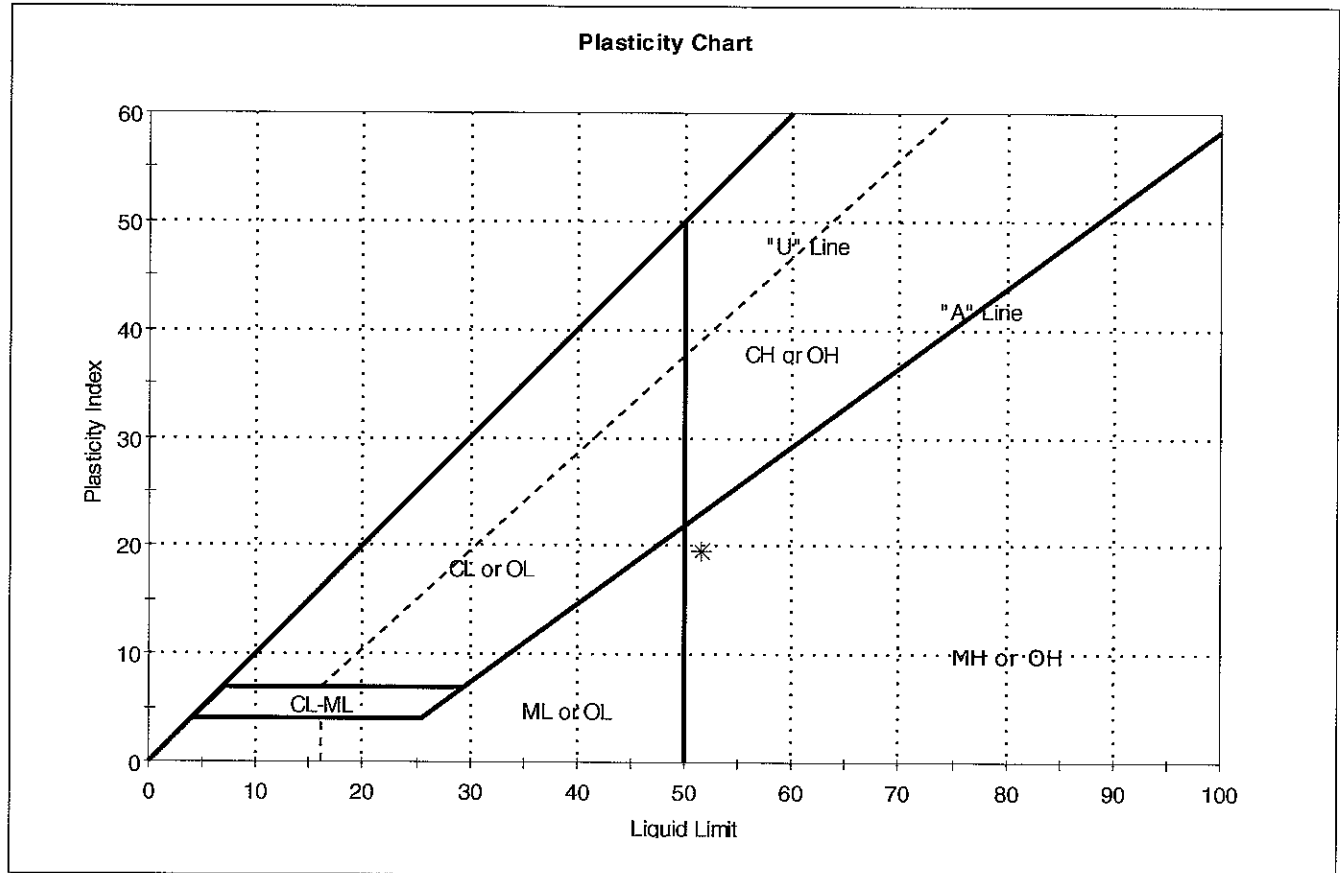
Dry Strength: HIGH

Dilutancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40029	Sample Type:	jar
Sample ID:	OL-0288-04	Test Date:	02/01/07
Depth :	3.3-6.6 ft	Test Id:	106023
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-04	L-VC-400	3.3-6.6 ft	66	52	32	20	2	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

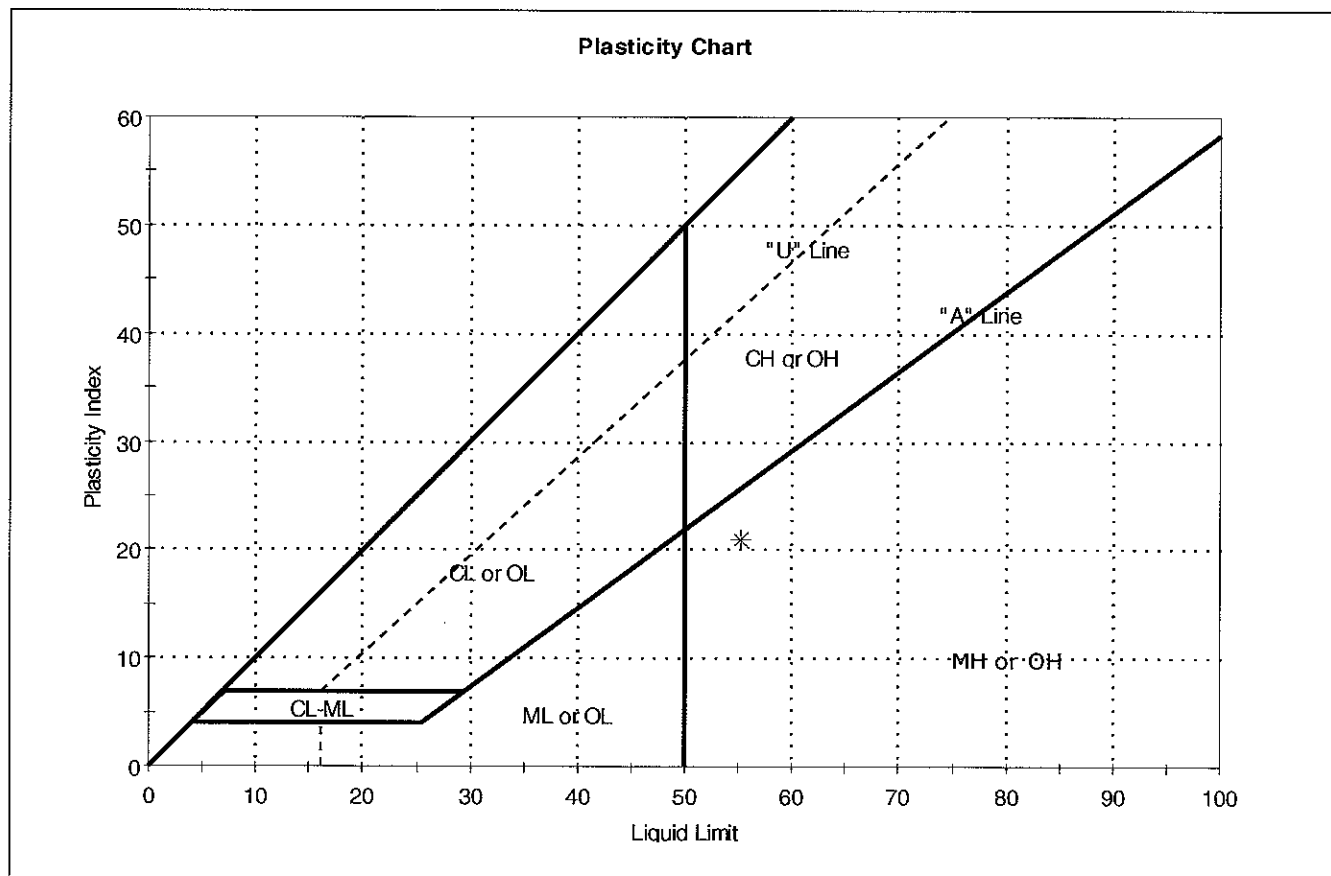
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-40022	Sample Type: jar
Sample ID: OL-0288-05	Test Date: 02/01/07	Tested By: ap
Depth: 0.5-3.3 ft	Test Id: 106024	Checked By: jdt
Test Comment: ---	Sample Description: Moist, dark gray silt	Sample Comment: ---

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-05	L-VC-400	0.5-3.3 ft	92	55	34	21	3	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

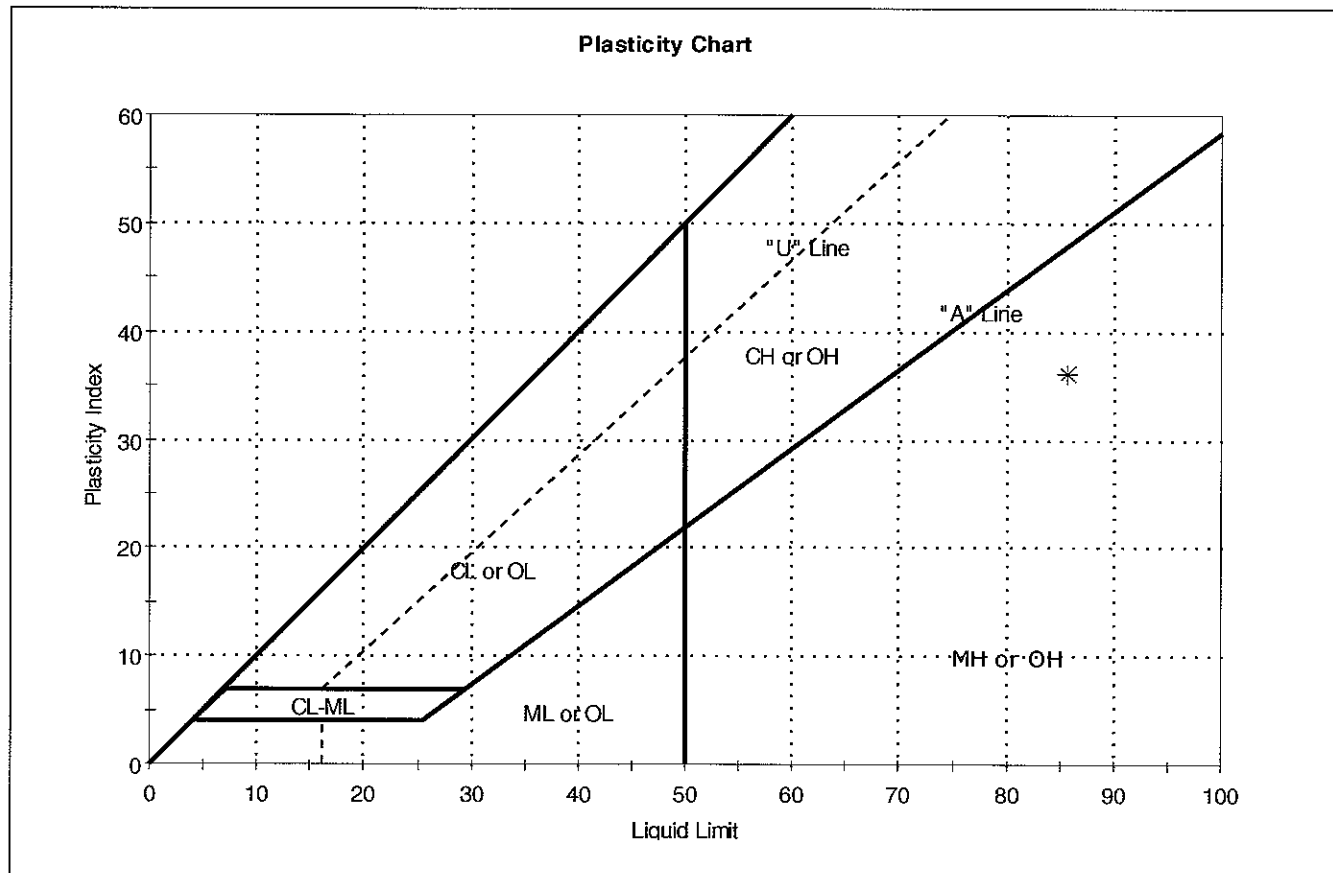
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-40022	Sample Type:	jar
Sample ID:	OL-0288-06	Test Date:	02/01/07
Depth :	13.2-16.5 ft	Test Id:	106025
Test Comment:	---		
Sample Description:	Wet, dark brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-06	L-VC-400	13.2-16.5 ft	83	86	50	36	1	elastic silt (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

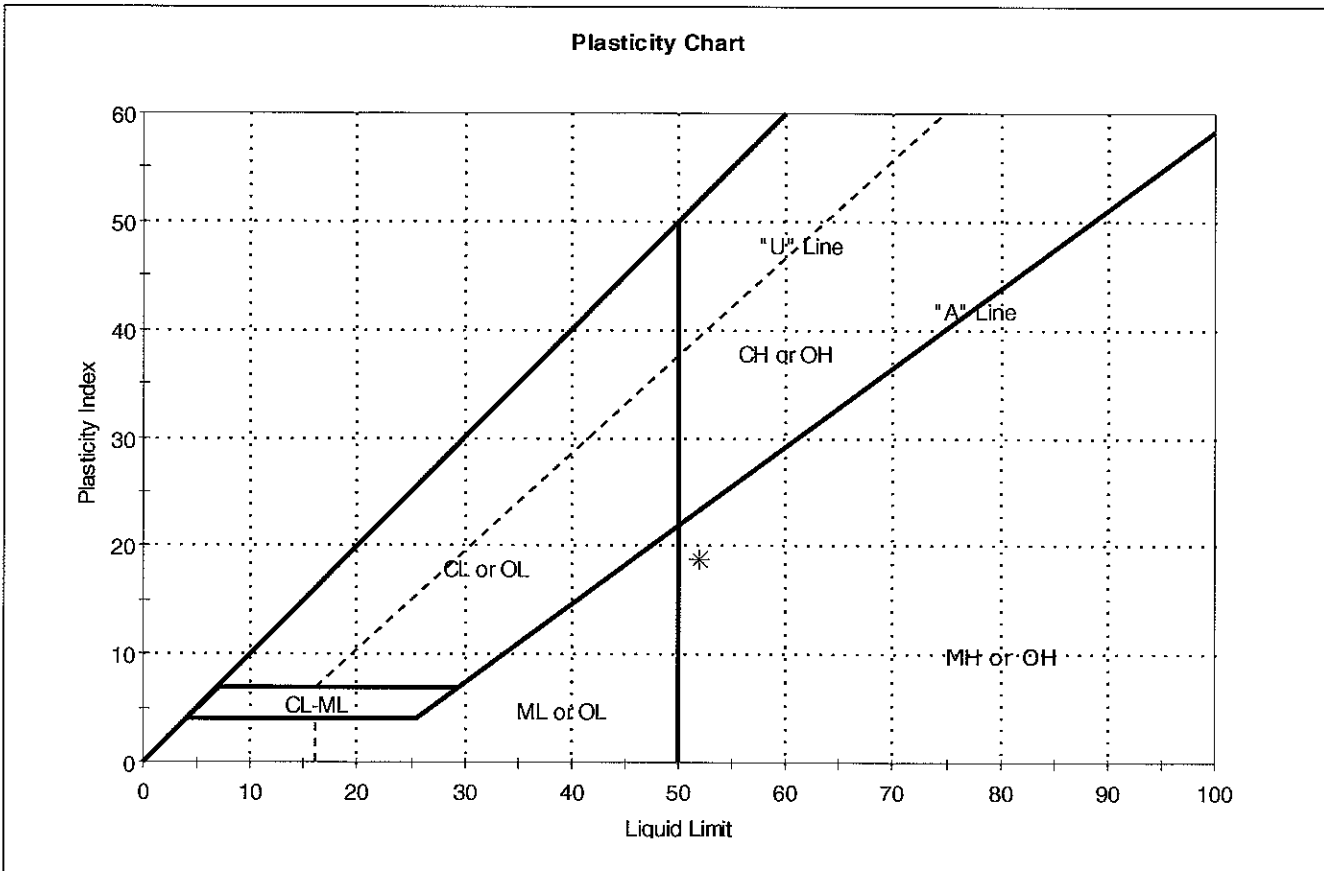
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-40019	Sample Type: jar
Sample ID: OL-0288-07	Test Date: 02/01/07
Depth: 0.5-3.3 ft	Test Id: 106026
Test Comment: ---	Tested By: ap
Sample Description: Wet, dark gray silt	Checked By: jdt
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-07	-VC-400	0.5-3.3 ft	90	52	33	19	3	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

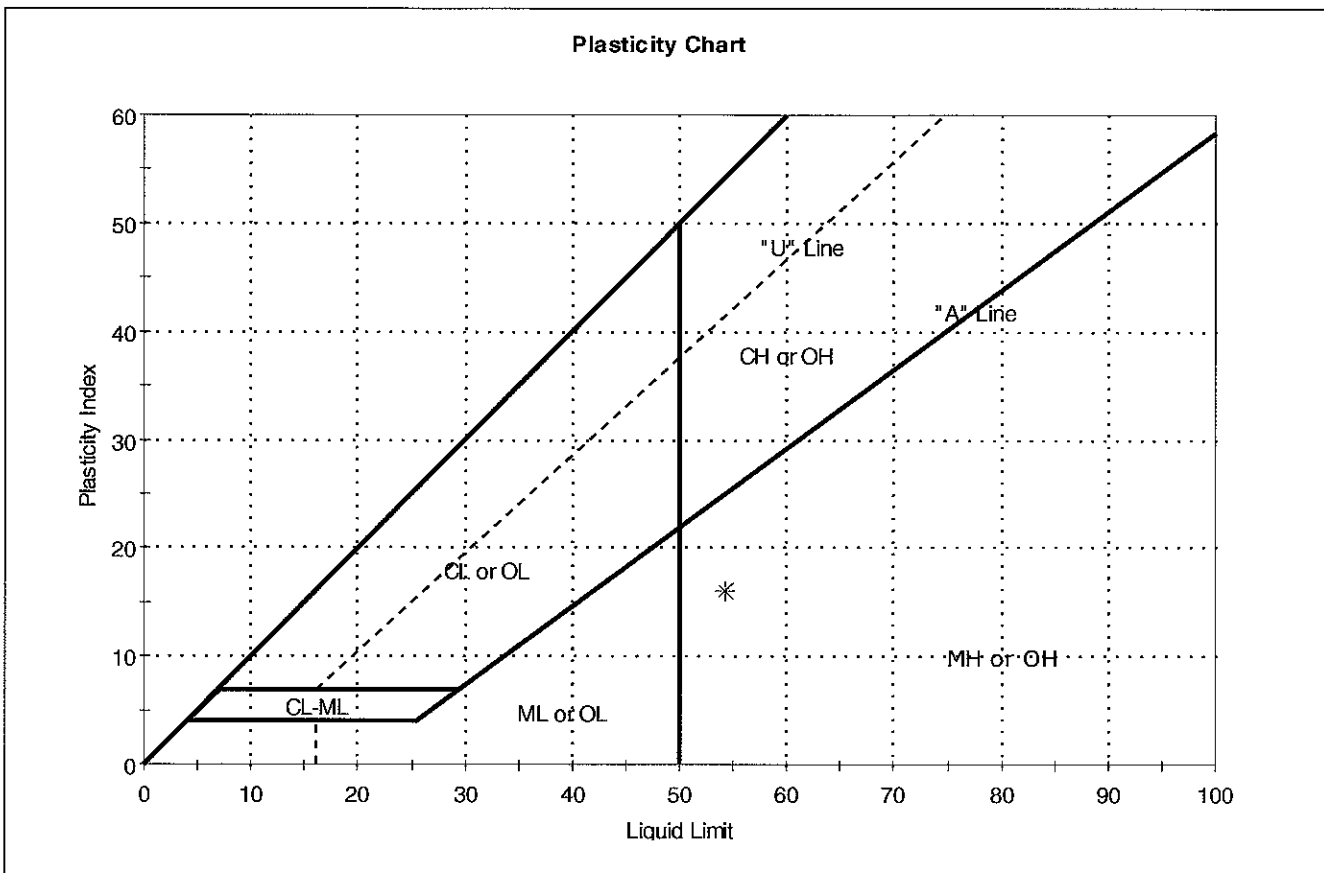
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga		
Location:	Syracuse		
Boring ID:	OL-VC-40019	Sample Type:	jar
Sample ID:	OL-0288-08	Test Date:	02/01/07
Depth:	9.9-13.2 ft	Test Id:	106027
Test Comment:	---		
Sample Description:	Wet, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-08	L-VC-400	9.9-13.2 ft	103	54	38	16	4	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

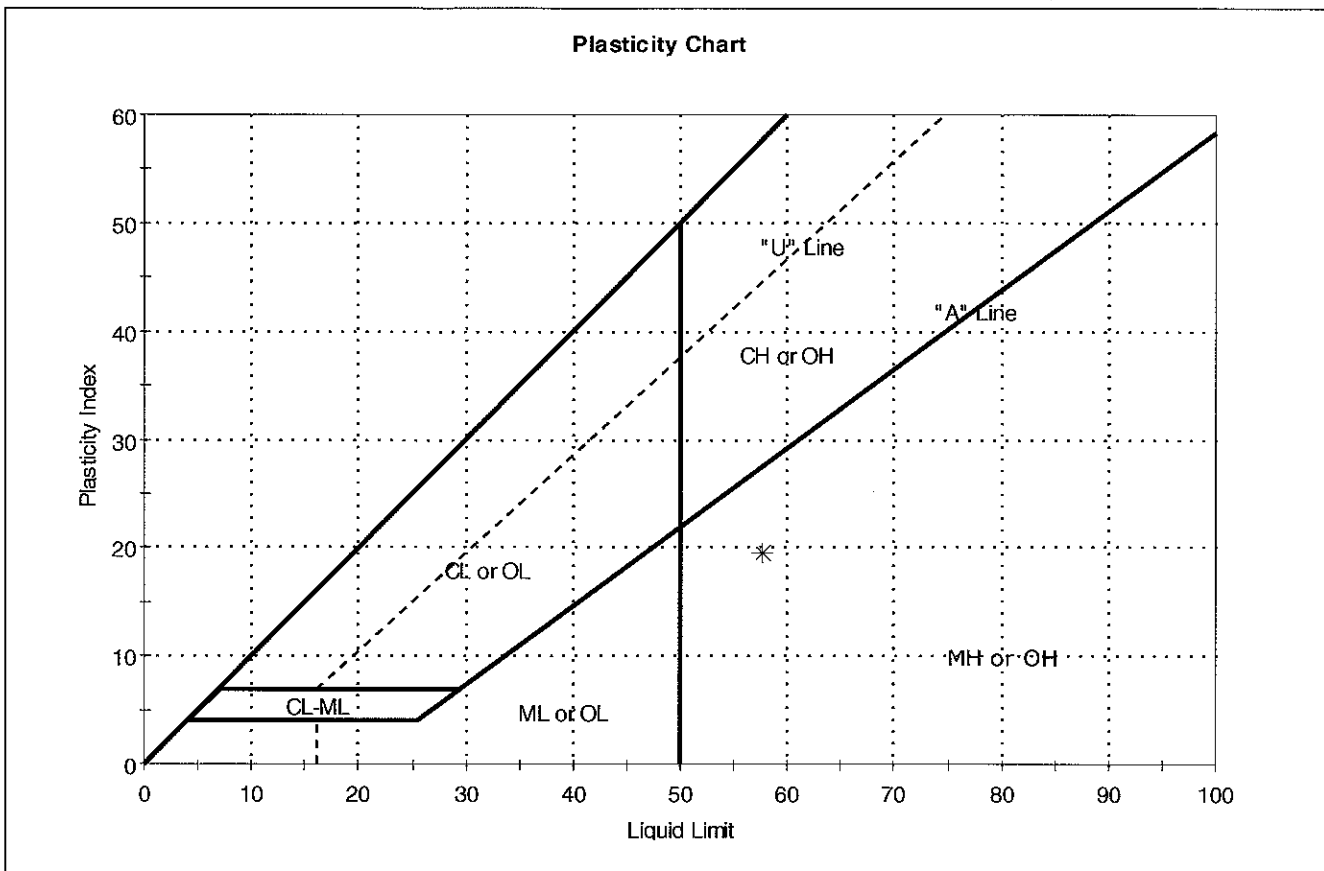
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70026	Sample Type:	jar
Sample ID:	OL-0288-12	Test Date:	01/24/07
Depth :	16.5-19.8 ft	Test Id:	106028
Test Comment:	---		
Sample Description:	Wet, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-12	-VC-700	16.5-19.8 ft	98	58	38	20	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

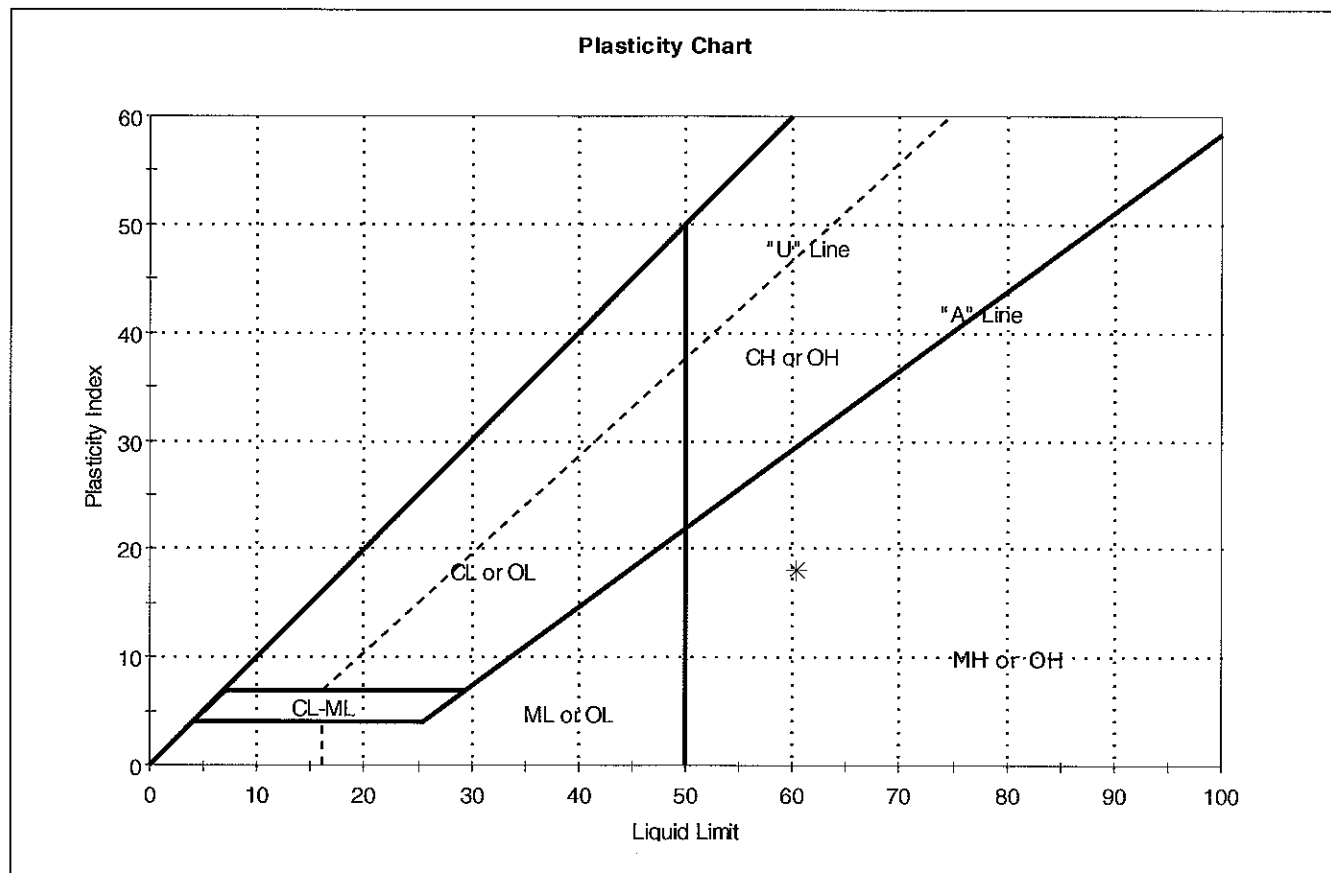
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-VC-70027	Sample Type:	jar
Sample ID:	OL-0288-15	Test Date:	01/25/07
Depth :	16.5-19.8 ft	Test Id:	106029
Test Comment:	---		
Sample Description:	Moist, olive brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

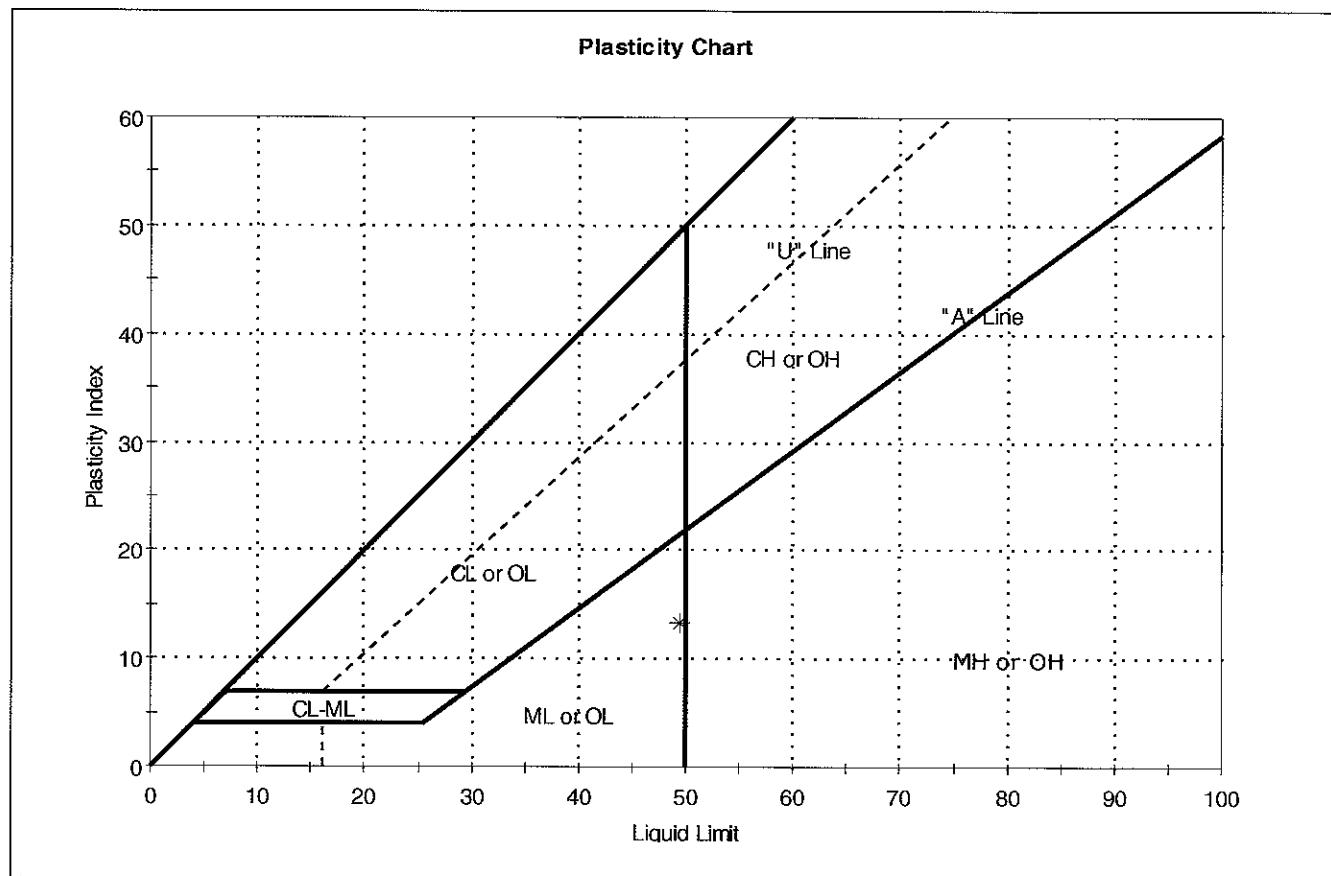


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-15	-VC-700	16.5-19.8 ft	103	60	42	18	3	elastic silt with sand (MH)

Sample Prepared using the WET method
 2% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Tested By:	ap
Boring ID:	OL-VC-70030	Test Date:	02/02/07
Sample ID:	OL-0288-16	Checked By:	jdt
Depth :	0-3.3 ft	Test Id:	106030
Test Comment:	---		
Sample Description:	Wet, dark gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-16	-VC-700	0-3.3 ft	85	50	36	14	3	Sandy silt (ML)

Sample Prepared using the WET method

13% Retained on #40 Sieve

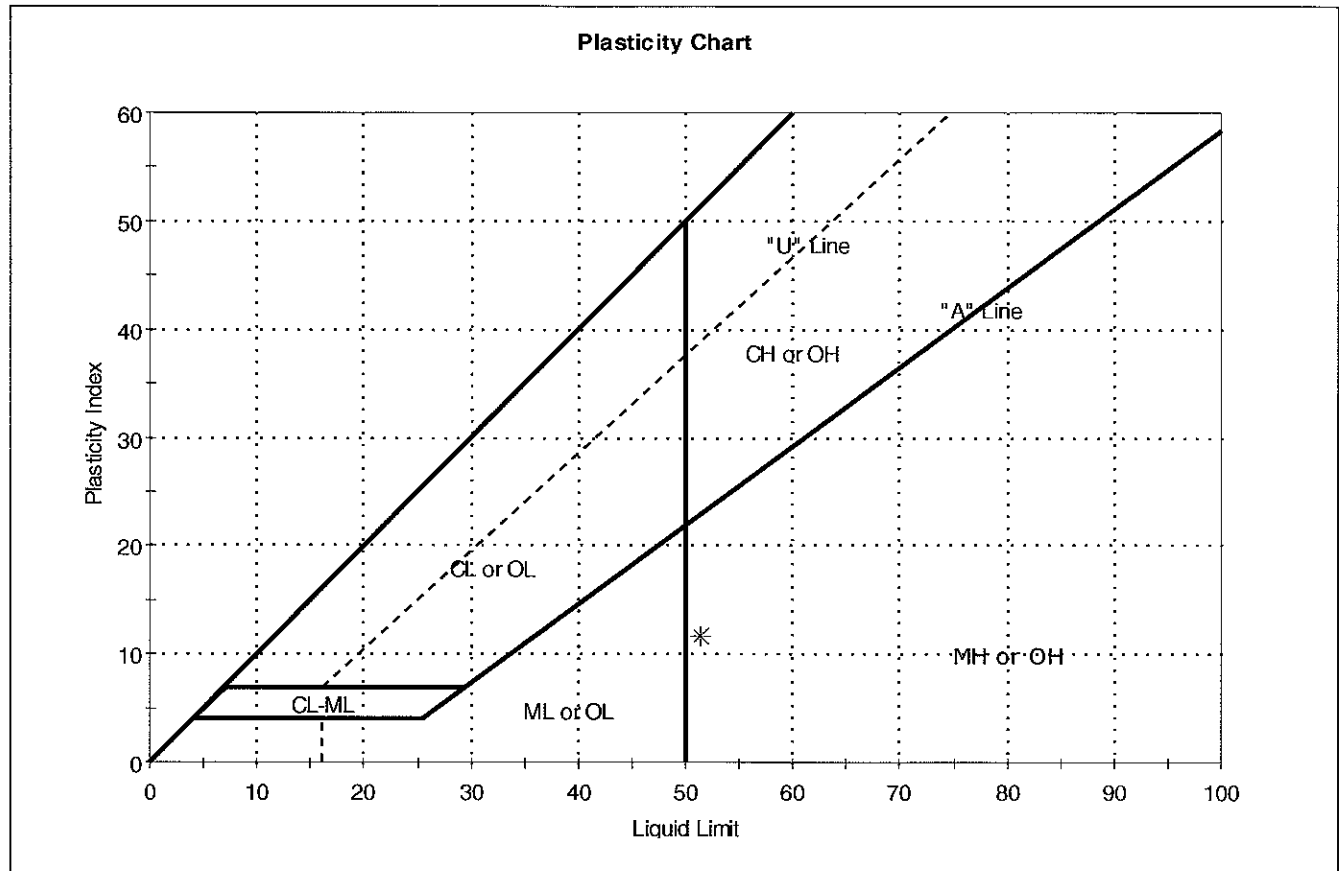
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70030	Sample Type:	jar
Sample ID:	OL-0288-18	Test Date:	02/02/07
Depth :	16.5-19.8 ft	Test Id:	106031
Test Comment:	---		
Sample Description:	Wet, grayish brown silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0288-18	-VC-700	16.5-19.8 ft	75	51	40	11	3	elastic silt with sand (MH)

Sample Prepared using the WET method

2% Retained on #40 Sieve

Dry Strength: HIGH

Dilutancy: SLOW

Toughness: LOW

Chain of Custody/Analysis Request

[illegible]

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Chain of Custody / Analysis Request										AEST Ref: 38292.40495	
Privileged and Confidential				Site Name: Onondaga Lake		Lab Use Only				COC #: 0289	
										Lab Proj #	
Syracuse, New York				Lab ID		GTE					
Sampler: 1				Preservative:		0		0		0	
PO #:				Analysis Turnaround Time:		0		0		0	
Standard -				Rush Charges Authorized for -		0		0		0	
2 weeks -						0		0		0	
1 week -						0		0		0	
Next Day -						0		0		0	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample # of Cont.				Sample # of Cont.		Sample # of Cont.		Sample # of Cont.		Sample # of Cont.	
Field Sample ID				Field Sample ID		Field Sample ID		Field Sample ID		Field Sample ID	
OL-VC-20067				OL-0289-10		OL-0289-10		OL-0289-10		OL-0289-10	
OL-VC-20068				OL-0289-11		OL-0289-11		OL-0289-11		OL-0289-11	
OL-VC-20068				OL-0289-12		OL-0289-12		OL-0289-12		OL-0289-12	
OL-VC-20069				OL-0289-13		OL-0289-13		OL-0289-13		OL-0289-13	
OL-VC-20069				OL-0289-14		OL-0289-14		OL-0289-14		OL-0289-14	
OL-VC-20070				OL-0289-15		OL-0289-15		OL-0289-15		OL-0289-15	
OL-VC-20070				OL-0289-16		OL-0289-16		OL-0289-16		OL-0289-16	
OL-VC-20070				OL-0289-17		OL-0289-17		OL-0289-17		OL-0289-17	
OL-VC-20071				OL-0289-18		OL-0289-18		OL-0289-18		OL-0289-18	

Special Instructions:									
Relinquished by:	Company	PARSONS	Received by:	Company	Condition	Custody Seals Intact			
Relinquished by:	Company	12-12-06 @ 1205	Received by:	Company	Cooler Temp.	Custody Seals Intact			
Relinquished by:	Company		Received by:	Company	Condition	Custody Seals Intact			
Relinquished by:	Company		Received by:	Company	Cooler Temp.	Custody Seals Intact			

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/14/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-70025	OL-0289-01	13.2-16.5 ft	Moist, olive brown silt	91.8
OL-VC-70025	OL-0289-02	16.5-18 ft	Moist, olive brown silt	82.5
OL-VC-70028	OL-0289-03	0-3.3 ft	Moist, very dark gray silty sand	50.8
OL-VC-70028	OL-0289-04	6.6-9.9 ft	Wet, olive gray sandy silt	41.9
OL-VC-70028	OL-0289-05	13.2-16.5 ft	Moist, grayish brown silt with sand	89.9
OL-VC-70029	OL-0289-06	3.3-6.6 ft	Moist, olive brown sandy silt	54.5
OL-VC-70029	OL-0289-07	9.9-13.2 ft	Moist, olive brown sandy silt	93.9
OL-VC-70029	OL-0289-08	16.5-19.8 ft	Moist, gray silt	93.9
OL-VC-20067	OL-0289-09	0-3.3 ft	Wet, black silt	162.4
OL-VC-20067	OL-0289-10	6.6-9.9 ft	Moist, very dark gray silt	77.9

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/14/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content,%
OL-VC-20068	OL-0289-11	13.2-16.5 ft	Moist, olive gray silt	63.1
OL-VC-20068	OL-0289-12	3.3-6.6 ft	Wet, light gray sandy silt	86.9
OL-VC-20069	OL-0289-13	3.3-6.6 ft	Wet, light gray silt with sand	68.7
OL-VC-20069	OL-0289-14	9.9-13.2 ft	Moist, gray sandy silt	67.7
OL-VC-20070	OL-0289-15	0-3.3 ft	Moist, light gray sandy silt with gravel	63.9
OL-VC-20070	OL-0289-16	6.6-9.9 ft	Wet, light gray sandy silt	74.2
OL-VC-20070	OL-0289-17	13.2-16.5 ft	Moist, dark grayish brown clay	30.6
OL-VC-20071	OL-0289-18	0-3.3 ft	Wet, light gray silty sand with gravel	65.2
OL-VC-20071	OL-0289-19	13.2-16.5 ft	Moist, gray clay silt	28.9
OL-VC-20080	OL-0289-20	0-3.3 ft	Wet, light gray silt with sand and gravel	67.8

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: yf	
Sample ID:---	Test Date: 01/22/07	Checked By: jdt	
Depth : ---	Test Id: 106087		

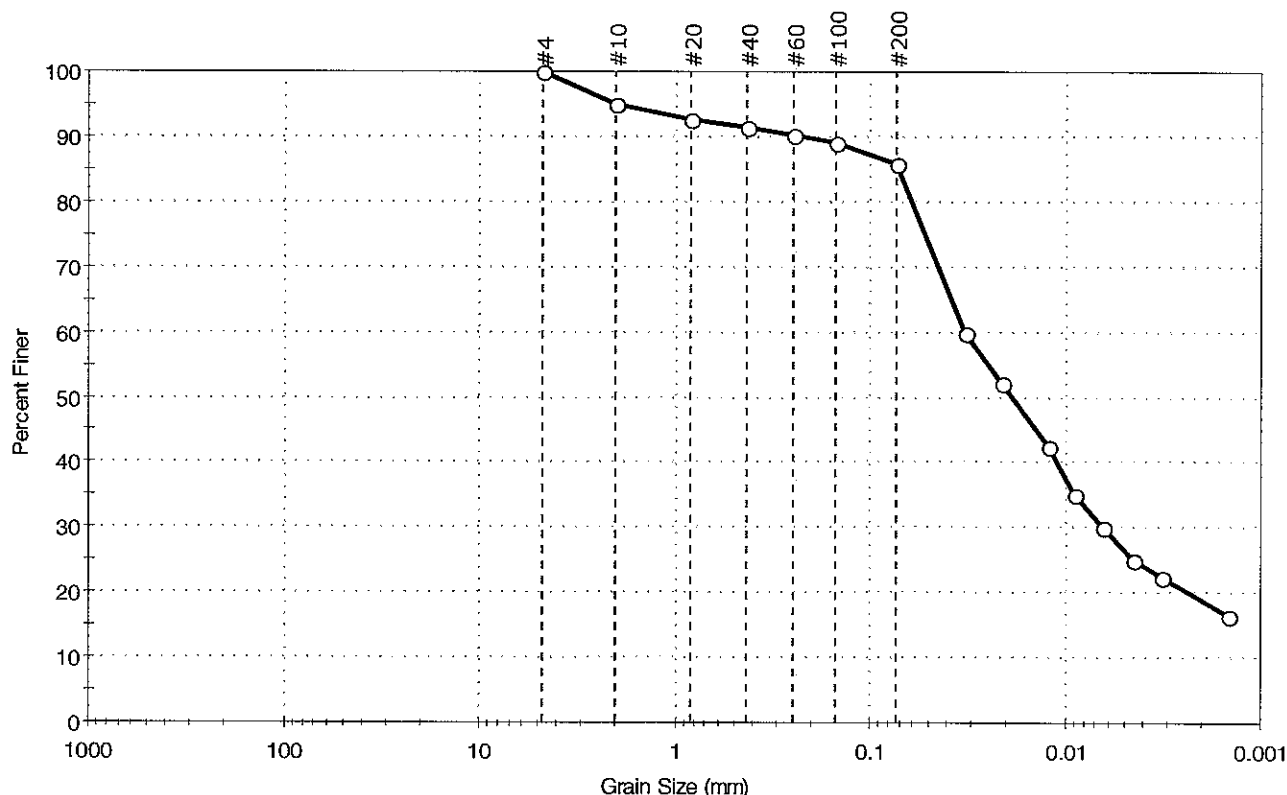
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-70029	OL-0289-06	3.3-6.6 ft	Moist, olive brown sandy silt	2.59
OL-VC-20067	OL-0289-09	0-3.3 ft	Wet, black silt	2.62
OL-VC-20070	OL-0289-15	0-3.3 ft	Moist, light gray sandy silt with gravel	2.76
OL-VC-20070	OL-0289-17	13.2-16.5 ft	Moist, dark grayish brown clay	2.79
OL-VC-20071	OL-0289-18	0-3.3 ft	Wet, light gray silty sand with gravel	2.72

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70025	Sample Type:	jar
Sample ID:	OL-0289-02	Test Date:	01/25/07
Depth :	16.5-18 ft	Test Id:	106054
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	14.2	85.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	95		
#20	0.84	93		
#40	0.42	91		
#60	0.25	90		
#100	0.15	89		
#200	0.074	86		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0329	60		
---	0.0212	52		
---	0.0124	42		
---	0.0089	35		
---	0.0064	30		
---	0.0045	25		
---	0.0032	22		
---	0.0015	17		

Coefficients

D ₈₅ = 0.0722 mm	D ₃₀ = 0.0064 mm
D ₆₀ = 0.0331 mm	D ₁₅ = N/A
D ₅₀ = 0.0187 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (40))

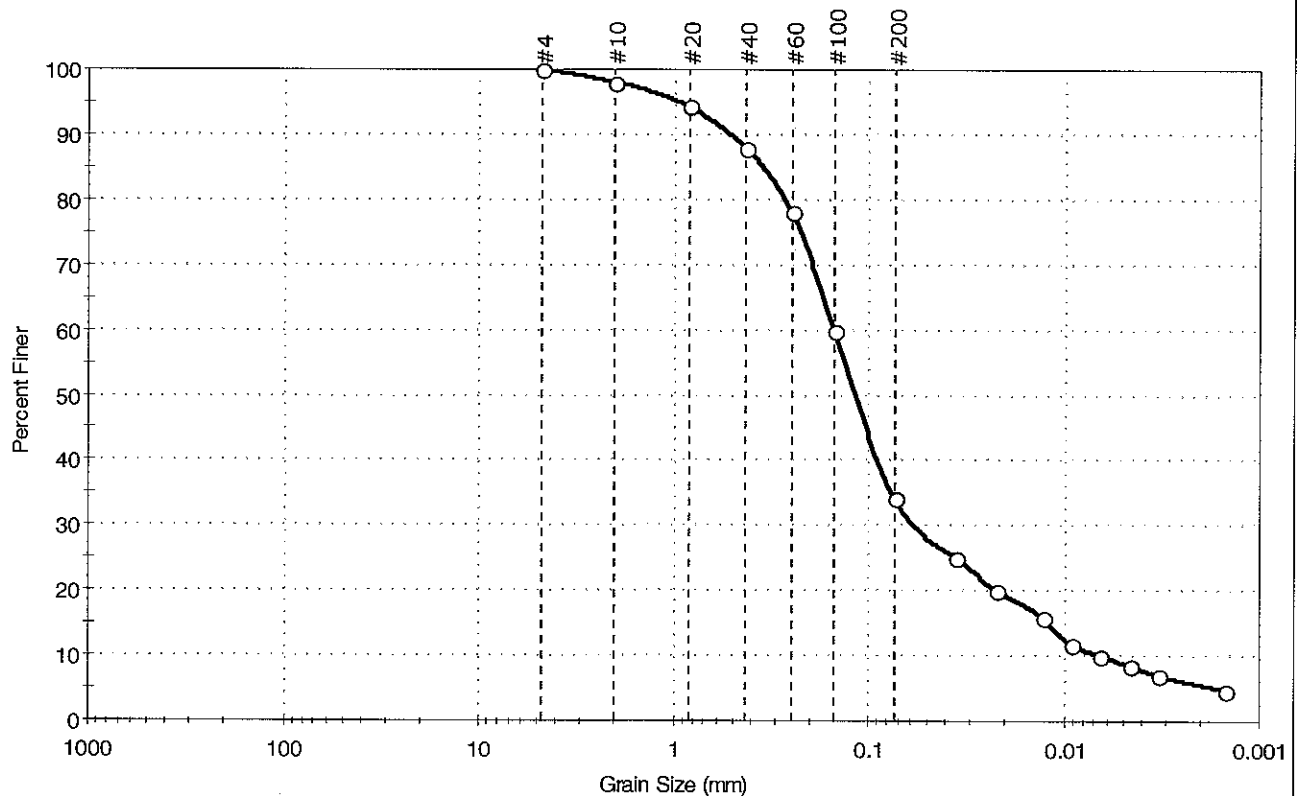
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70028	Sample Type:	jar
Sample ID:	OL-0289-03	Test Date:	01/25/07
Depth :	0-3.3 ft	Test Id:	106055
Test Comment:	---		
Sample Description:	Moist, very dark gray silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	65.8	34.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	98		
#20	0.84	94		
#40	0.42	88		
#60	0.25	78		
#100	0.15	60		
#200	0.074	34		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0357	25		
---	0.0224	20		
---	0.0130	16		
---	0.0093	12		
---	0.0066	10		
---	0.0047	8		
---	0.0033	7		
---	0.0015	5		

Coefficients

D ₈₅ = 0.3642 mm	D ₃₀ = 0.0528 mm
D ₆₀ = 0.1506 mm	D ₁₅ = 0.0121 mm
D ₅₀ = 0.1143 mm	D ₁₀ = 0.0064 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-70028

Sample Type: jar

Tested By: mll

Sample ID: OL-0289-04

Test Date: 01/25/07

Checked By: jdt

Depth: 6.6-9.9 ft

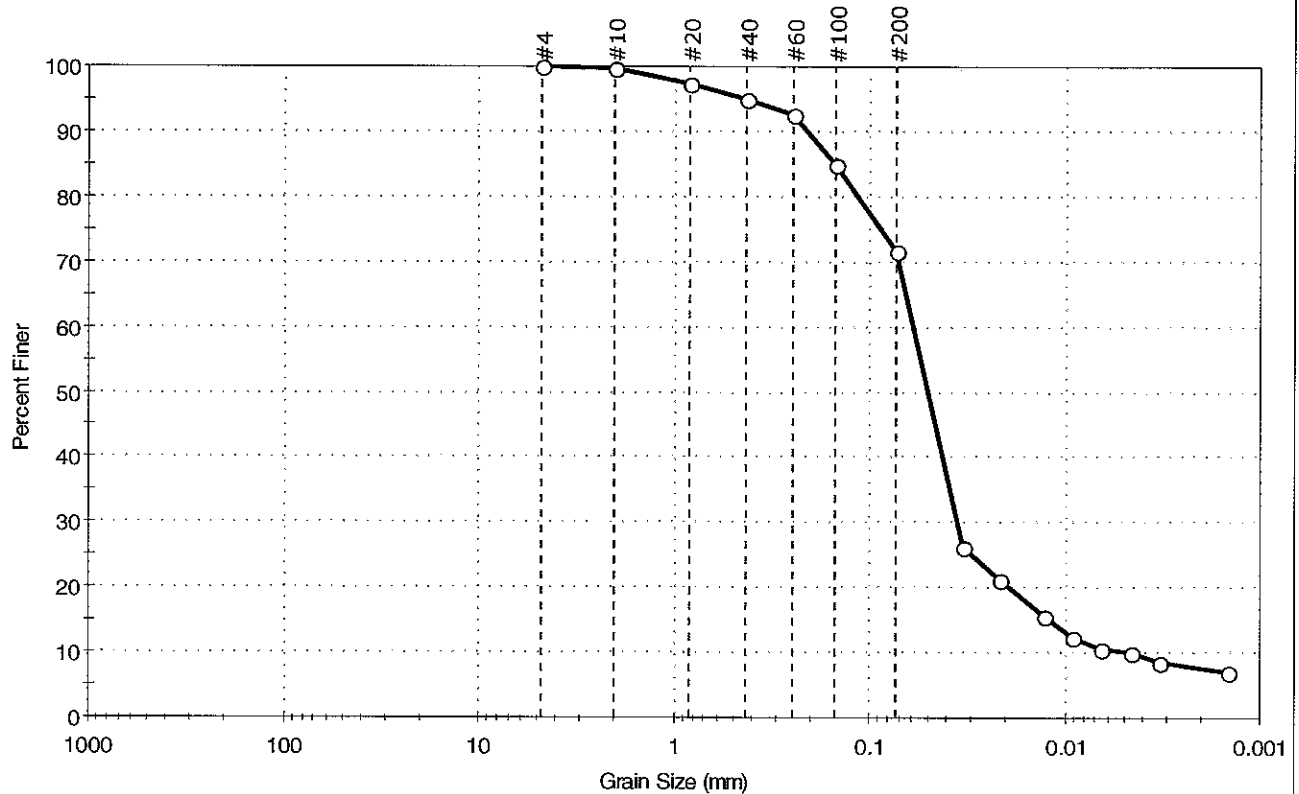
Test Id: 106056

Test Comment: ---

Sample Description: Wet, olive gray sandy silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	28.4	71.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	97		
#40	0.42	95		
#60	0.25	93		
#100	0.15	85		
#200	0.074	72		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0332	26		
---	0.0217	21		
---	0.0128	16		
---	0.0091	13		
---	0.0065	11		
---	0.0046	10		
---	0.0033	9		
---	0.0015	7		

Coefficients

$D_{85} = 0.1508$ mm $D_{30} = 0.0354$ mm
 $D_{60} = 0.0603$ mm $D_{15} = 0.0119$ mm
 $D_{50} = 0.0505$ mm $D_{10} = 0.0046$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

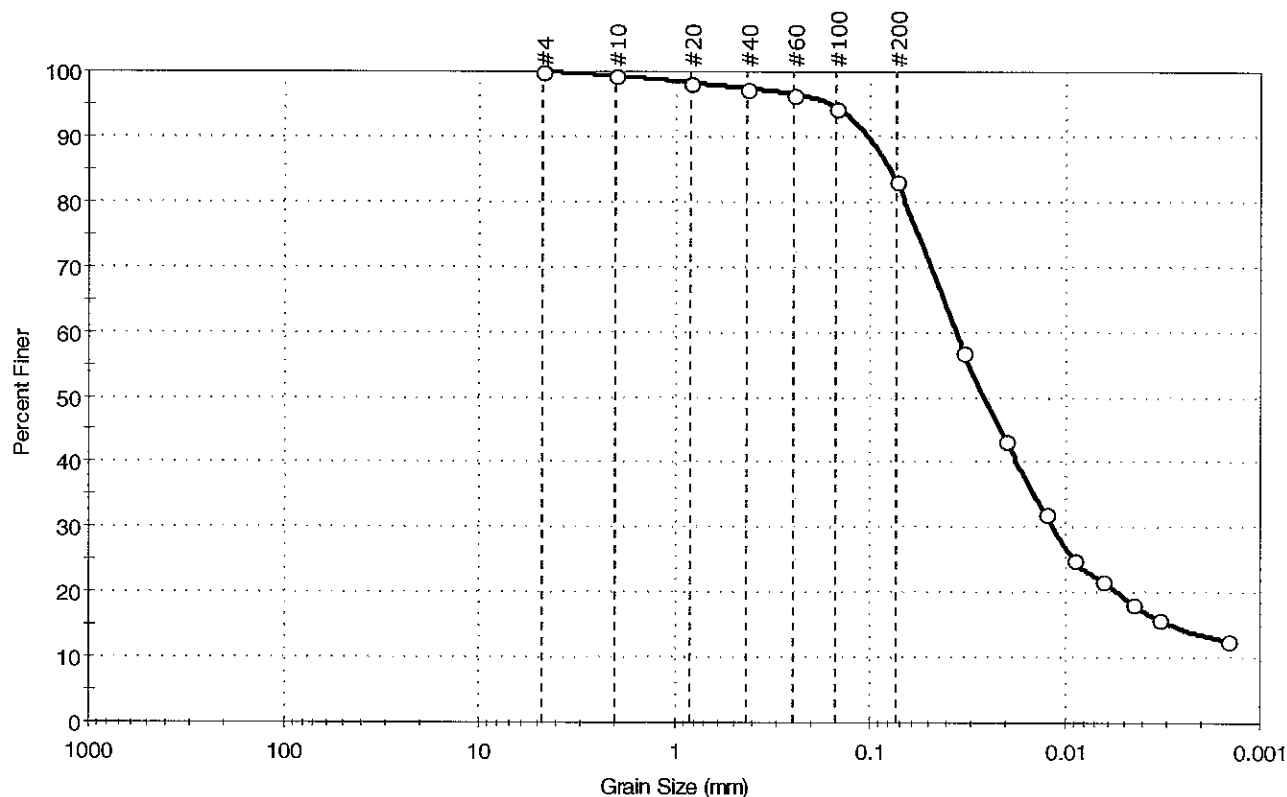
Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-70028	Sample Type: jar
Sample ID: OL-0289-05	Test Date: 01/25/07
Depth: 13.2-16.5 ft	Test Id: 106057
Test Comment: ---	Tested By: mll
Sample Description: Moist, grayish brown silt with sand	Checked By: jdt
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	16.8	83.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	97		
#60	0.25	97		
#100	0.15	95		
#200	0.074	83		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0332	57		
---	0.0201	43		
---	0.0126	32		
---	0.0091	25		
---	0.0065	22		
---	0.0045	18		
---	0.0033	16		
---	0.0015	13		

Coefficients

D ₈₅ = 0.0829 mm	D ₃₀ = 0.0114 mm
D ₆₀ = 0.0364 mm	D ₁₅ = 0.0027 mm
D ₅₀ = 0.0257 mm	D ₁₀ = 0.0008 mm
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt with sand (MH)

AASHTO Clayey Soils (A-7-5 (18))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-70029

Sample Type: jar

Tested By: mll

Sample ID: OL-0289-06

Test Date: 01/26/07

Checked By: jdt

Depth: 3.3-6.6 ft

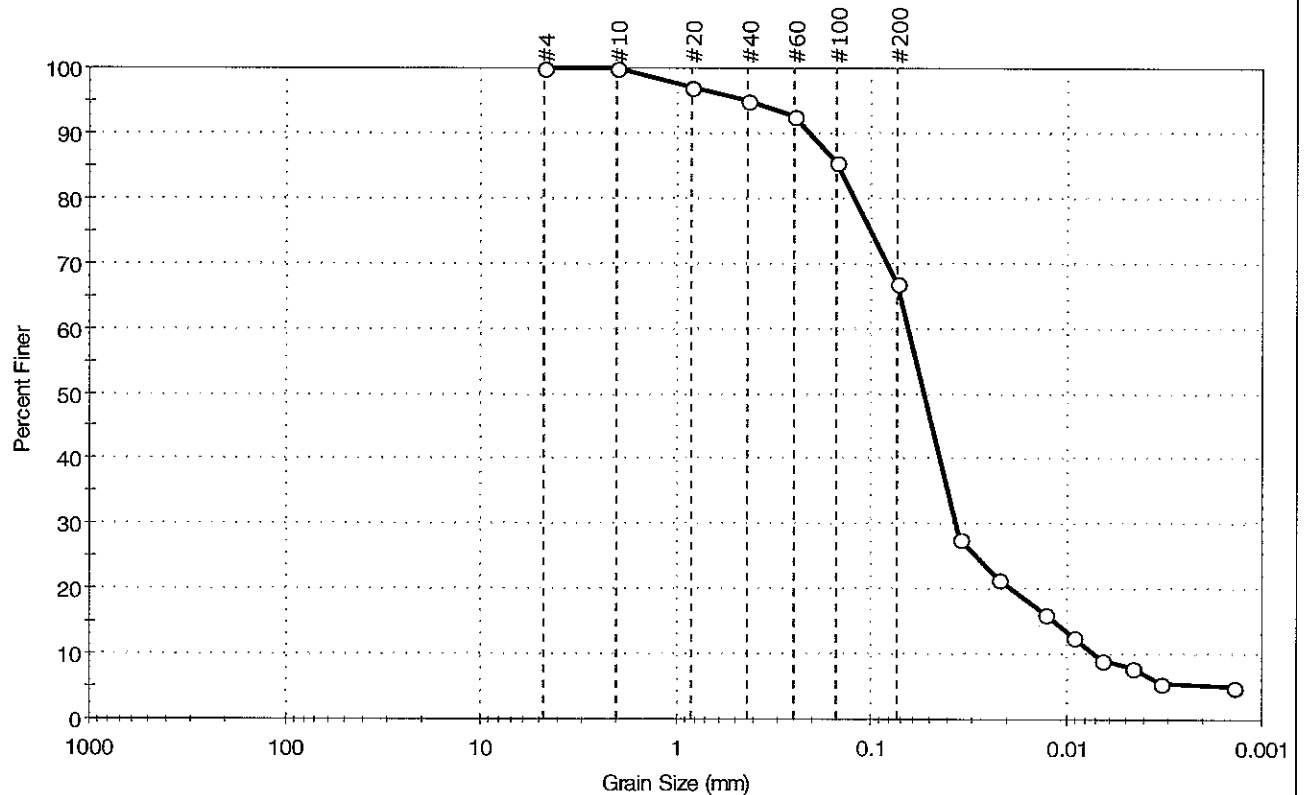
Test Id: 106058

Test Comment: ---

Sample Description: Moist, olive brown sandy silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	33.1	66.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	97		
#40	0.42	95		
#60	0.25	93		
#100	0.15	86		
#200	0.074	67		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0348	28		
---	0.0220	22		
---	0.0127	16		
---	0.0092	13		
---	0.0065	9		
---	0.0046	8		
---	0.0033	6		
---	0.0014	5		

Coefficients

D₈₅ = 0.1465 mm D₃₀ = 0.0363 mm

D₆₀ = 0.0648 mm D₁₅ = 0.0112 mm

D₅₀ = 0.0534 mm D₁₀ = 0.0070 mm

C_u = N/A C_c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

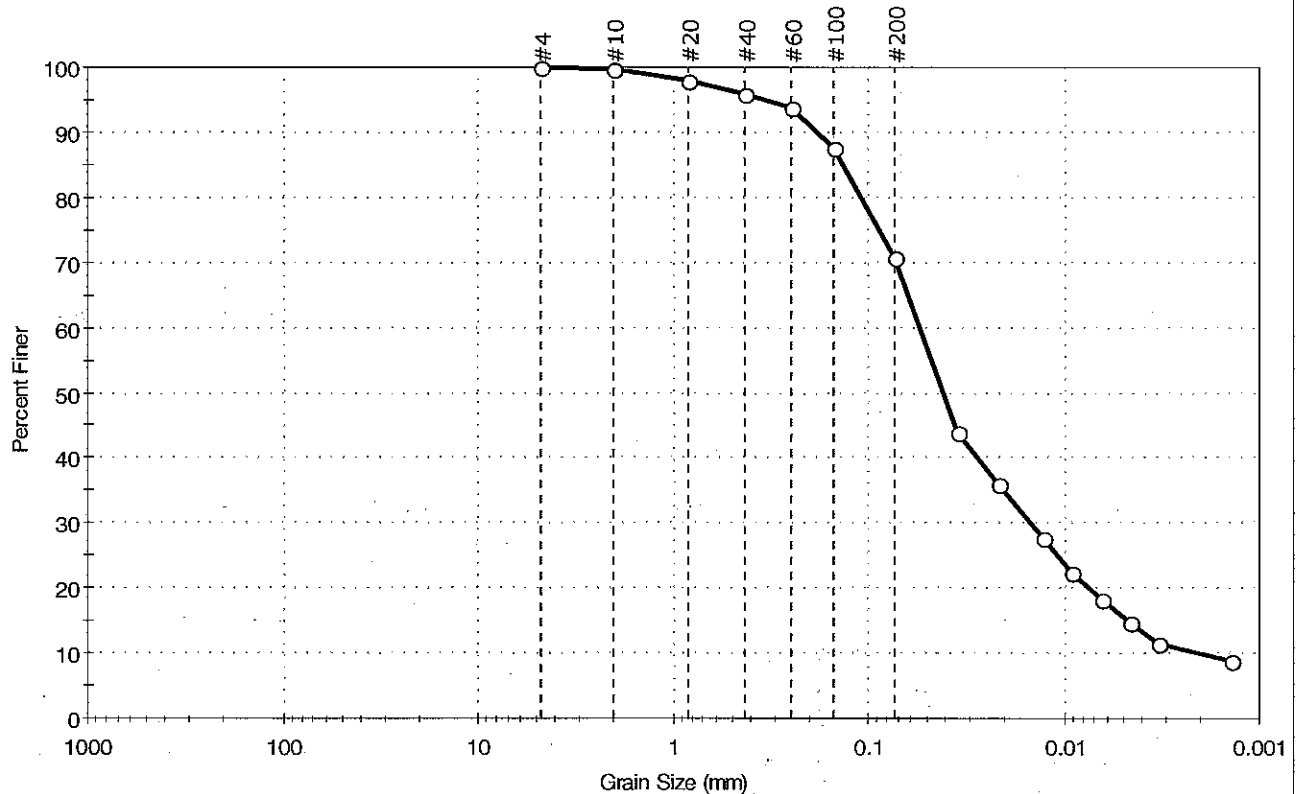
Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70029	Sample Type:	jar
Sample ID:	OL-0289-07	Test Date:	01/26/07
Depth :	9.9-13.2 ft	Test Id:	106059
Test Comment:	---		
Sample Description:	Moist, olive brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	29.2	70.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	98		
#40	0.42	96		
#60	0.25	94		
#100	0.15	88		
#200	0.074	71		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0347	44		
---	0.0219	36		
---	0.0128	28		
---	0.0091	22		
---	0.0065	18		
---	0.0046	15		
---	0.0033	12		
---	0.0014	9		

Coefficients

D ₈₅ =0.1344 mm	D ₃₀ =0.0148 mm
D ₆₀ =0.0546 mm	D ₁₅ =0.0047 mm
D ₅₀ =0.0411 mm	D ₁₀ =0.0020 mm
C _u =N/A	C _c =N/A

Classification

ASTM N/A

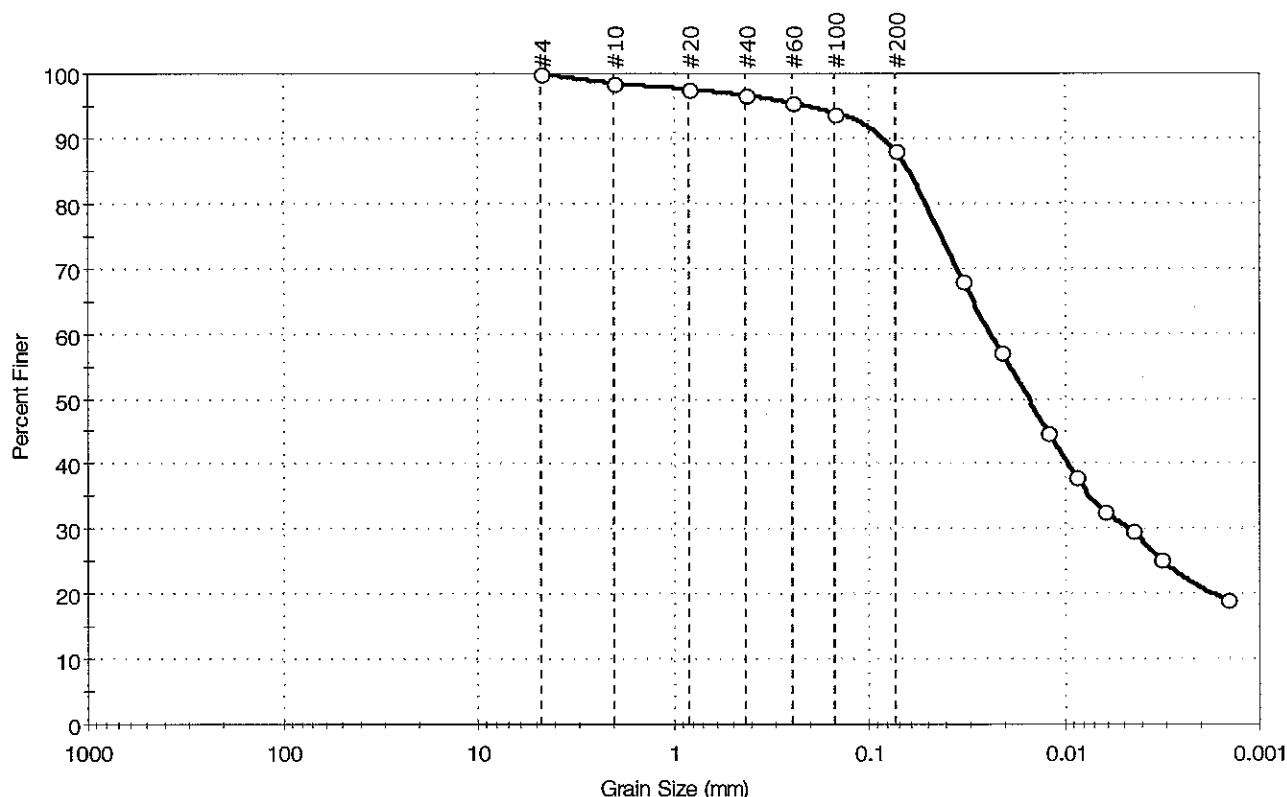
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mil
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70029	Sample Type:	jar
Sample ID:	OL-0289-08	Test Date:	01/25/07
Depth:	16.5-19.8 ft	Test Id:	106060
Test Comment:	---		
Sample Description:	Moist, gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	11.8	88.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	97		
#60	0.25	96		
#100	0.15	94		
#200	0.074	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0333	68		
---	0.0211	57		
---	0.0121	45		
---	0.0088	38		
---	0.0063	33		
---	0.0045	30		
---	0.0032	25		
---	0.0015	19		

Coefficients

D ₈₅ =0.0651 mm	D ₃₀ =0.0047 mm
D ₆₀ =0.0237 mm	D ₁₅ =N/A
D ₅₀ =0.0152 mm	D ₁₀ =N/A
C _u =N/A	C _c =N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (24))

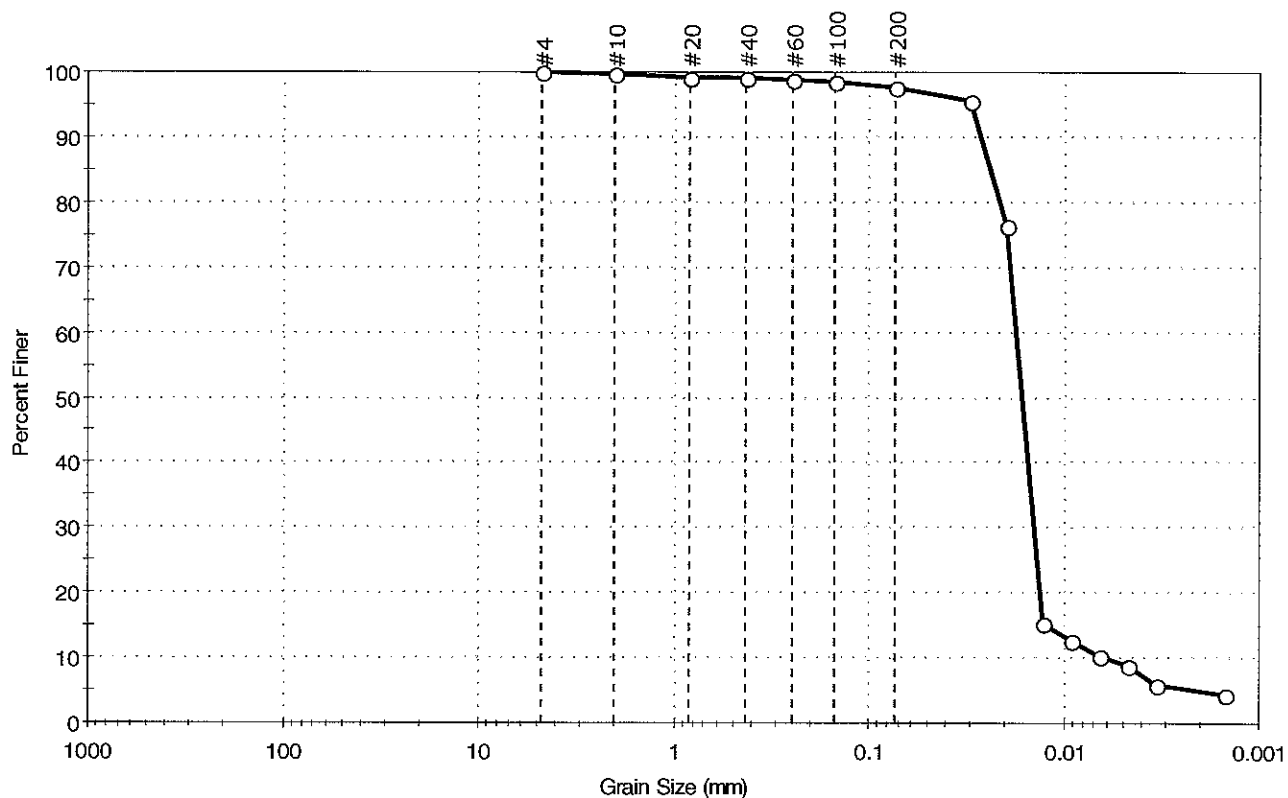
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20067	Sample Type:	jar
Sample ID:	OL-0289-09	Test Date:	01/25/07
Depth :	0-3.3 ft	Test Id:	106061
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	2.2	97.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0303	95		
---	0.0198	76		
---	0.0129	15		
---	0.0092	13		
---	0.0066	10		
---	0.0047	9		
---	0.0034	6		
---	0.0015	4		

Coefficients

D ₈₅ = 0.0240 mm	D ₃₀ = 0.0143 mm
D ₆₀ = 0.0177 mm	D ₁₅ = 0.0124 mm
D ₅₀ = 0.0165 mm	D ₁₀ = 0.0063 mm
C _u = N/A	C _c = N/A

Classification

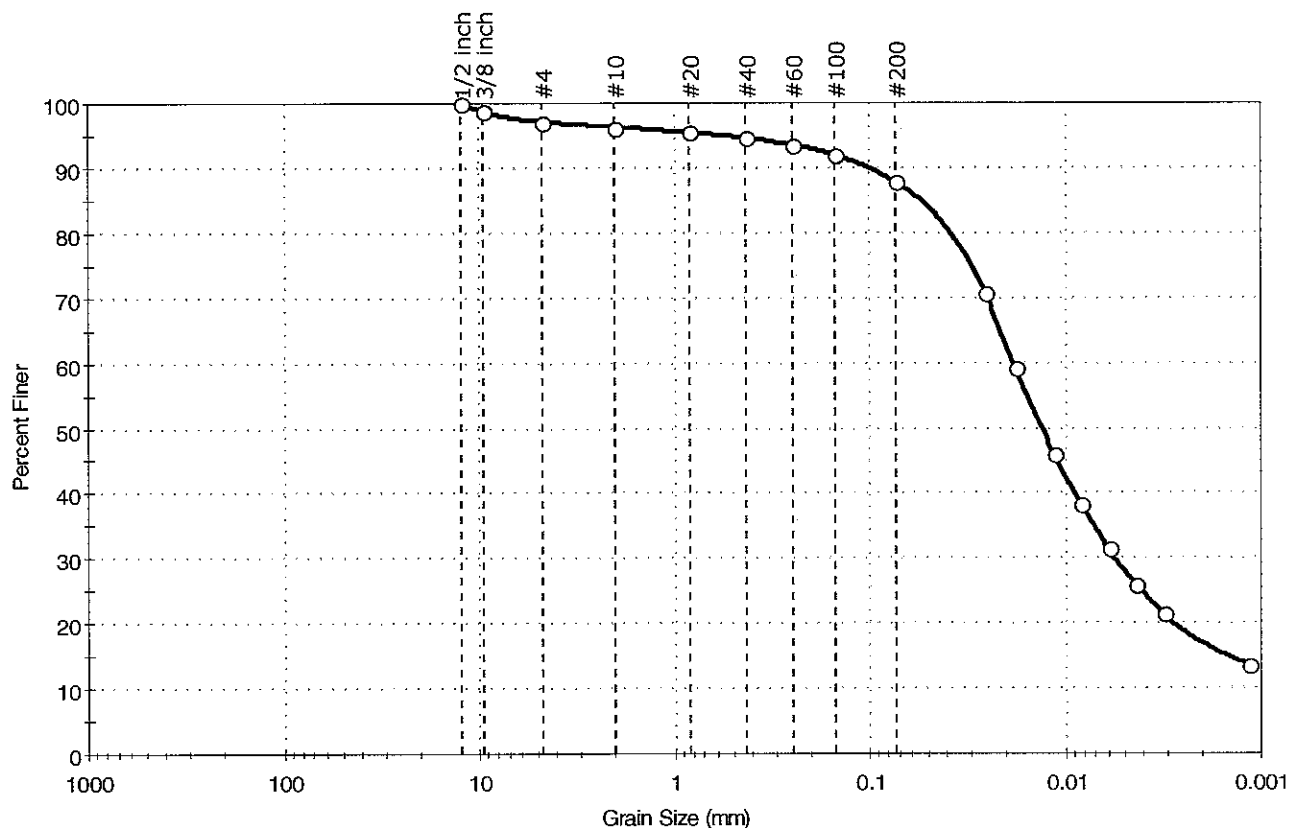
ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (62))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20067	Sample Type:	jar
Sample ID:	OL-0289-10	Test Date:	02/13/07
Depth:	6.6-9.9 ft	Test Id:	106062
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	2.8	9.3	87.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	99		
#4	4.75	97		
#10	2.00	96		
#20	0.84	95		
#40	0.42	95		
#60	0.25	94		
#100	0.15	92		
#200	0.074	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0257	71		
---	0.0180	59		
---	0.0114	46		
---	0.0083	38		
---	0.0061	31		
---	0.0044	26		
---	0.0032	21		
---	0.0012	14		

Coefficients

D ₈₅ = 0.0618 mm	D ₃₀ = 0.0056 mm
D ₆₀ = 0.0184 mm	D ₁₅ = 0.0014 mm
D ₅₀ = 0.0131 mm	D ₁₀ = 0.0007 mm
C _u = N/A	C _c = N/A

Classification

ASTM	elastic silt (MH)
AASHTO	Clayey Soils (A-7-5 (19))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-20068

Sample Type: jar

Tested By: mll

Sample ID: OL-0289-11

Test Date: 02/13/07

Checked By: jdt

Depth: 13.2-16.5 ft

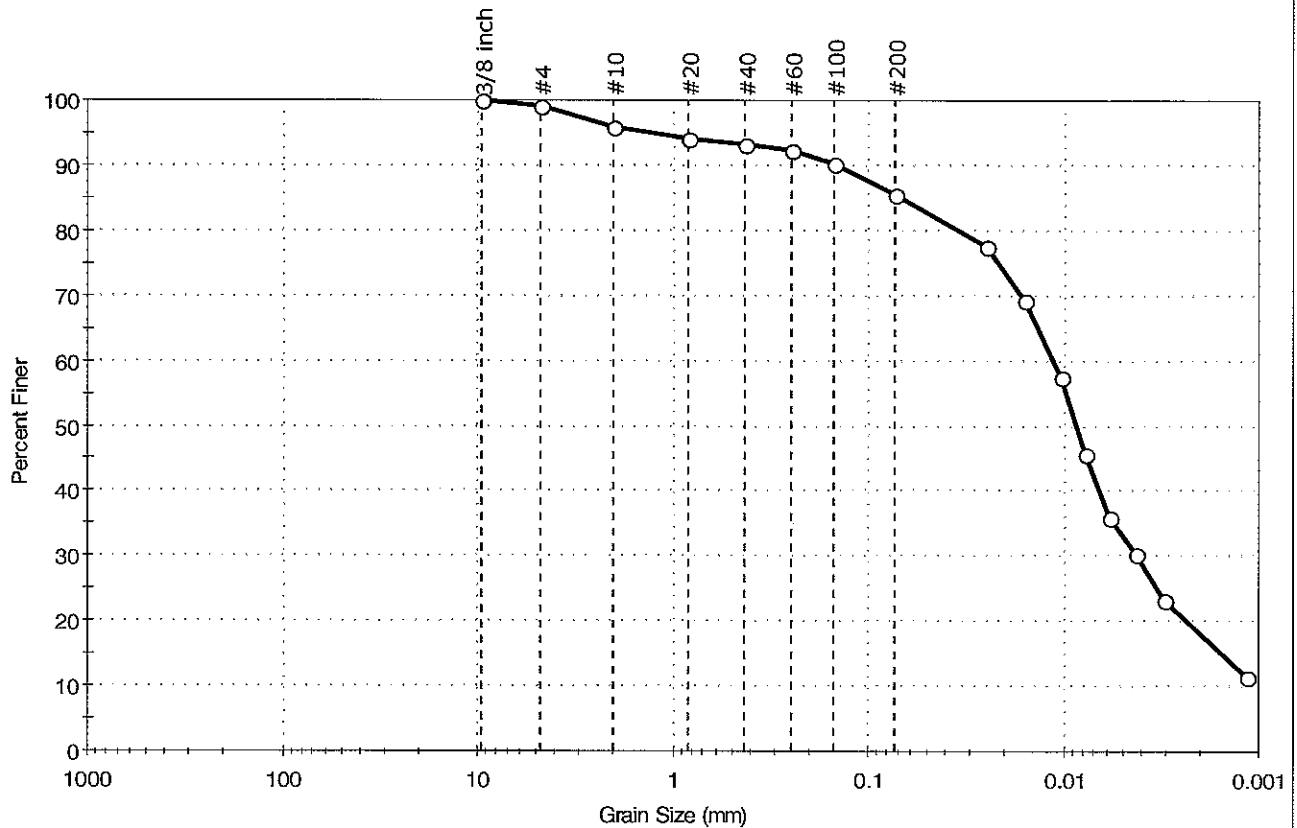
Test Id: 106063

Test Comment: ---

Sample Description: Moist, olive gray silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.9	13.6	85.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	96		
#20	0.84	94		
#40	0.42	93		
#60	0.25	92		
#100	0.15	90		
#200	0.074	86		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0251	78		
---	0.0161	69		
---	0.0103	57		
---	0.0078	46		
---	0.0058	36		
---	0.0042	30		
---	0.0031	23		
---	0.0012	12		

Coefficients

$D_{85} = 0.0691$ mm $D_{30} = 0.0042$ mm
 $D_{60} = 0.0114$ mm $D_{15} = 0.0015$ mm
 $D_{50} = 0.0087$ mm $D_{10} = 0.0010$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (19))

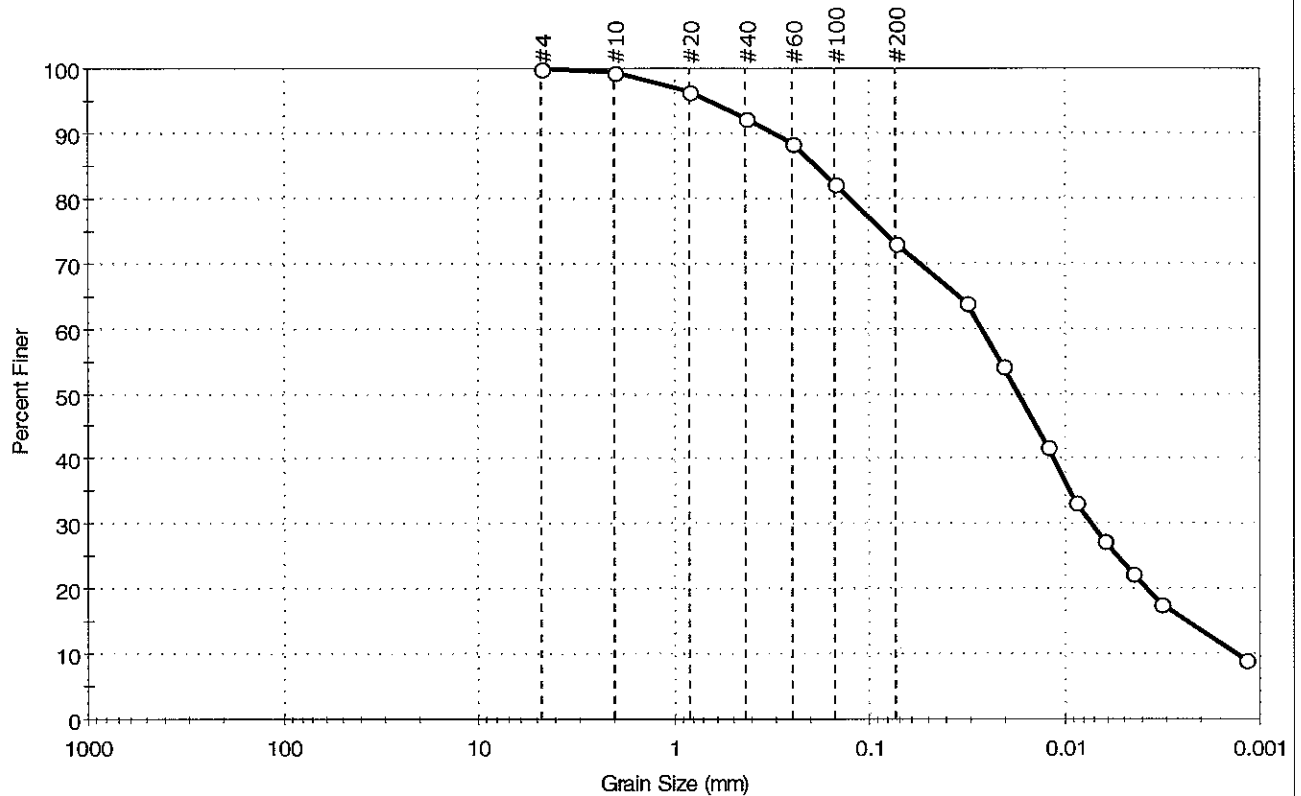
Sample/Test Description

Sand/Gravel Particle Shape: ANGULAR

Sand/Gravel Hardness: HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20068	Sample Type:	jar
Sample ID:	OL-0289-12	Test Date:	02/14/07
Depth :	3.3-6.6 ft	Test Id:	106064
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	26.9	73.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	99		
#20	0.84	97		
#40	0.42	92		
#60	0.25	88		
#100	0.15	82		
#200	0.074	73		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0315	64		
---	0.0208	54		
---	0.0125	42		
---	0.0085	33		
---	0.0063	27		
---	0.0045	23		
---	0.0032	18		
---	0.0012	9		

Coefficients

D ₈₅ = 0.1874 mm	D ₃₀ = 0.0073 mm
D ₆₀ = 0.0265 mm	D ₁₅ = 0.0023 mm
D ₅₀ = 0.0173 mm	D ₁₀ = 0.0013 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

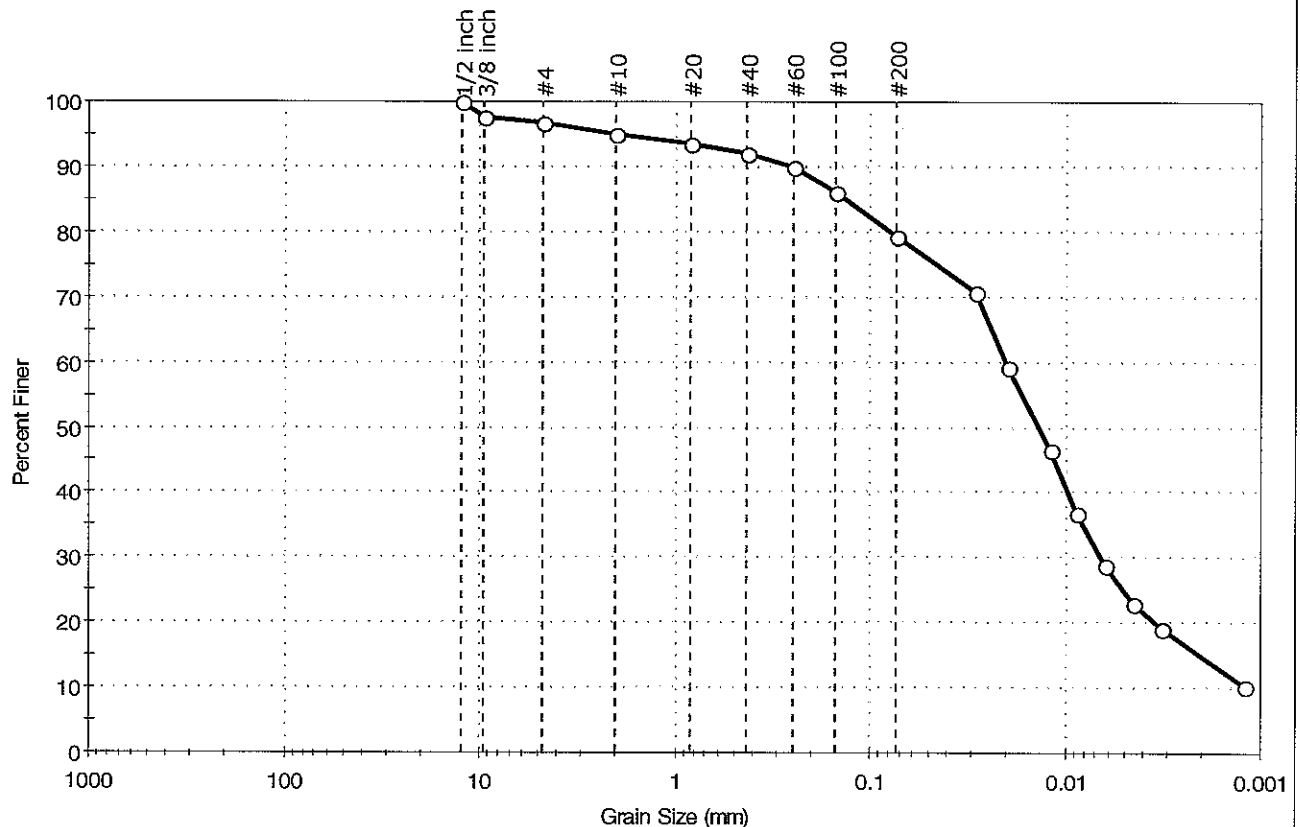
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-20069	Sample Type: jar
Sample ID: OL-0289-13	Test Date: 02/13/07
Depth: 3.3-6.6 ft	Test Id: 106065
Test Comment: ---	Tested By: mll
Sample Description: Wet, light gray silt with sand	Checked By: n/a
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	3.3	17.3	79.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	98		
#4	4.75	97		
#10	2.00	95		
#20	0.84	93		
#40	0.42	92		
#60	0.25	90		
#100	0.15	86		
#200	0.074	79		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0290	71		
---	0.0196	59		
---	0.0119	46		
---	0.0087	37		
---	0.0063	29		
---	0.0045	23		
---	0.0032	19		
---	0.0012	10		

Coefficients

D ₈₅ = 0.1334 mm	D ₃₀ = 0.0066 mm
D ₆₀ = 0.0201 mm	D ₁₅ = 0.0020 mm
D ₅₀ = 0.0137 mm	D ₁₀ = 0.0012 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

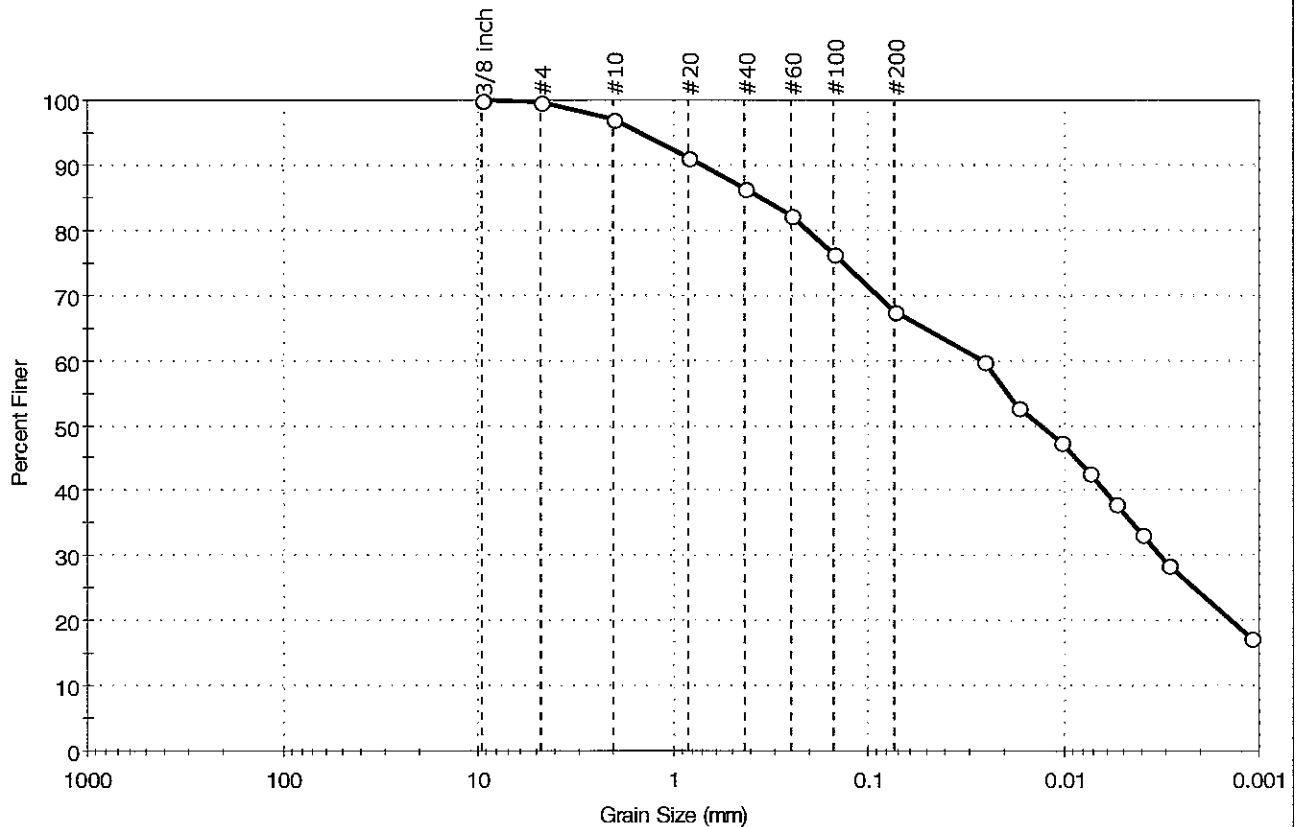
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-20069	Sample Type: jar
Sample ID: OL-0289-14	Test Date: 02/13/07
Depth: 9.9-13.2 ft	Test Id: 106066
Test Comment: ---	
Sample Description: Moist, gray sandy silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.2	32.4	67.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	100		
#10	2.00	97		
#20	0.84	91		
#40	0.42	87		
#60	0.25	82		
#100	0.15	76		
#200	0.074	67		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0260	60		
---	0.0172	53		
---	0.0103	47		
---	0.0075	43		
---	0.0055	38		
---	0.0040	33		
---	0.0029	29		
---	0.0011	17		

Coefficients

D ₈₅ = 0.3493 mm	D ₃₀ = 0.0032 mm
D ₆₀ = 0.0264 mm	D ₁₅ = N/A
D ₅₀ = 0.0131 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM N/A

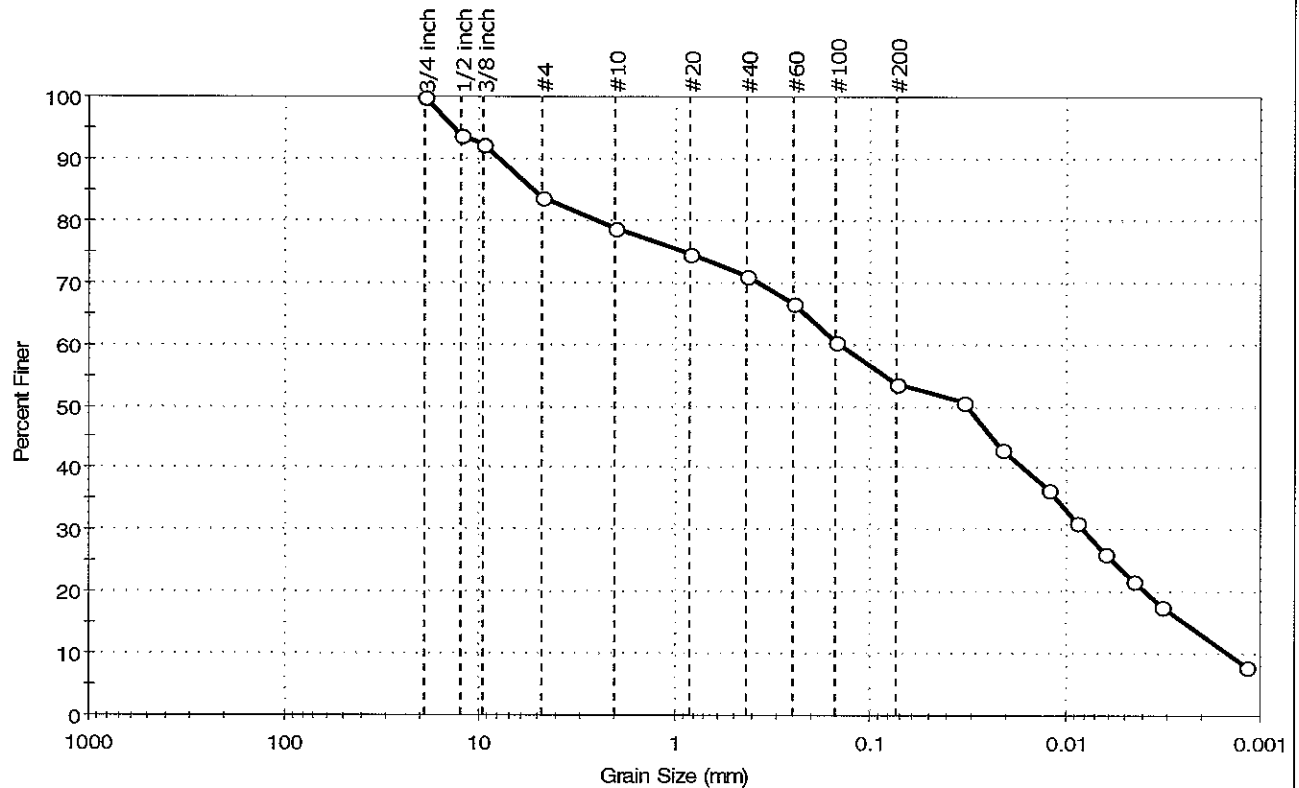
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-20070	Sample Type: jar
Sample ID: OL-0289-15	Test Date: 02/14/07
Depth: 0-3.3 ft	Test Id: 106067
Test Comment: ---	
Sample Description: Moist, light gray sandy silt with gravel	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	16.3	30.0	53.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	94		
3/8 inch	9.50	92		
#4	4.75	84		
#10	2.00	79		
#20	0.84	75		
#40	0.42	71		
#60	0.25	67		
#100	0.15	61		
#200	0.074	54		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0334	51		
---	0.0211	43		
---	0.0123	37		
---	0.0088	31		
---	0.0063	26		
---	0.0045	22		
---	0.0032	18		
---	0.0012	8		

Coefficients

D ₈₅ = 5.2960 mm	D ₃₀ = 0.0081 mm
D ₆₀ = 0.1410 mm	D ₁₅ = 0.0025 mm
D ₅₀ = 0.0321 mm	D ₁₀ = 0.0015 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

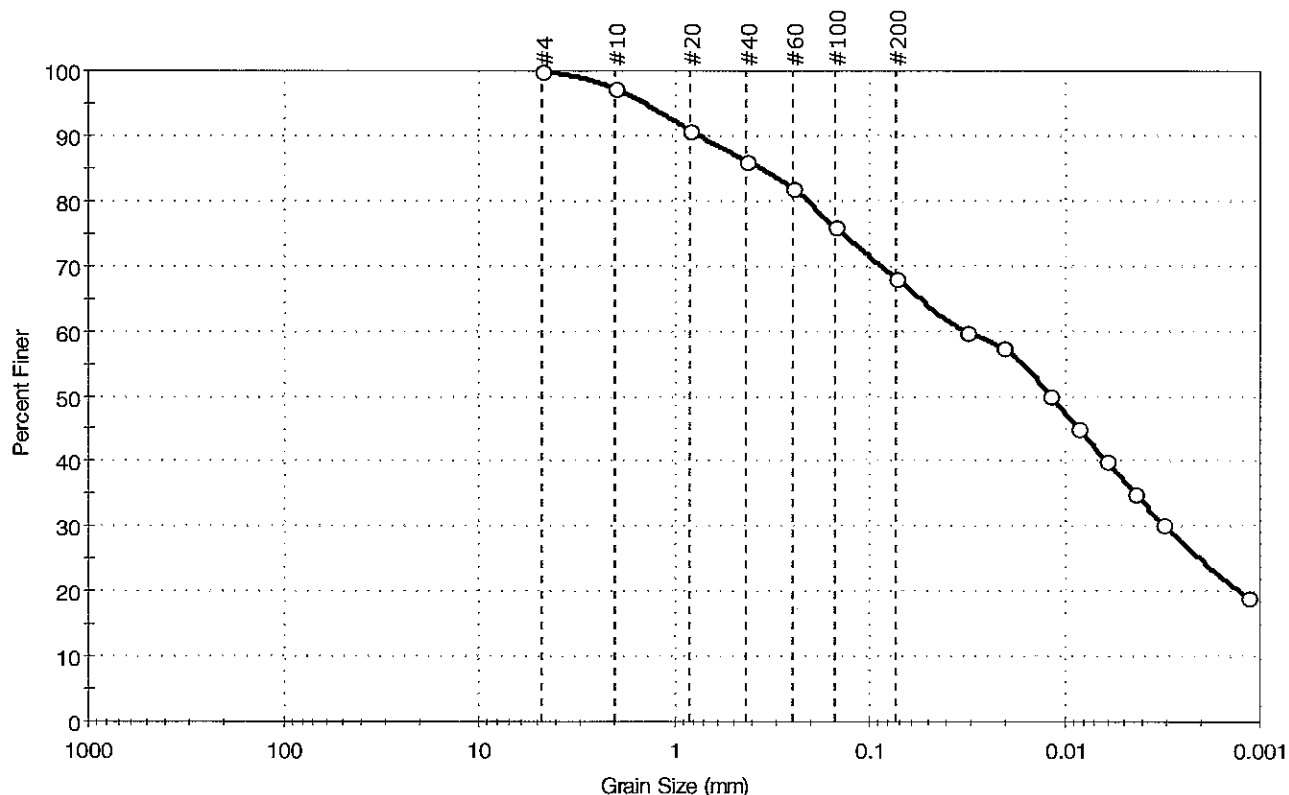
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20070	Sample Type:	jar
Sample ID:	OL-0289-16	Test Date:	02/12/07
Depth :	6.6-9.9 ft	Test Id:	106068
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	31.7	68.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	97		
#20	0.84	91		
#40	0.42	86		
#60	0.25	82		
#100	0.15	76		
#200	0.074	68		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	60		
---	0.0207	57		
---	0.0118	50		
---	0.0086	45		
---	0.0062	40		
---	0.0044	35		
---	0.0031	30		
---	0.0012	19		

Coefficients

D ₈₅ = 0.3666 mm	D ₃₀ = 0.0030 mm
D ₆₀ = 0.0322 mm	D ₁₅ = N/A
D ₅₀ = 0.0117 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

AASHTO Clayey Soils (A-7-5 (10))

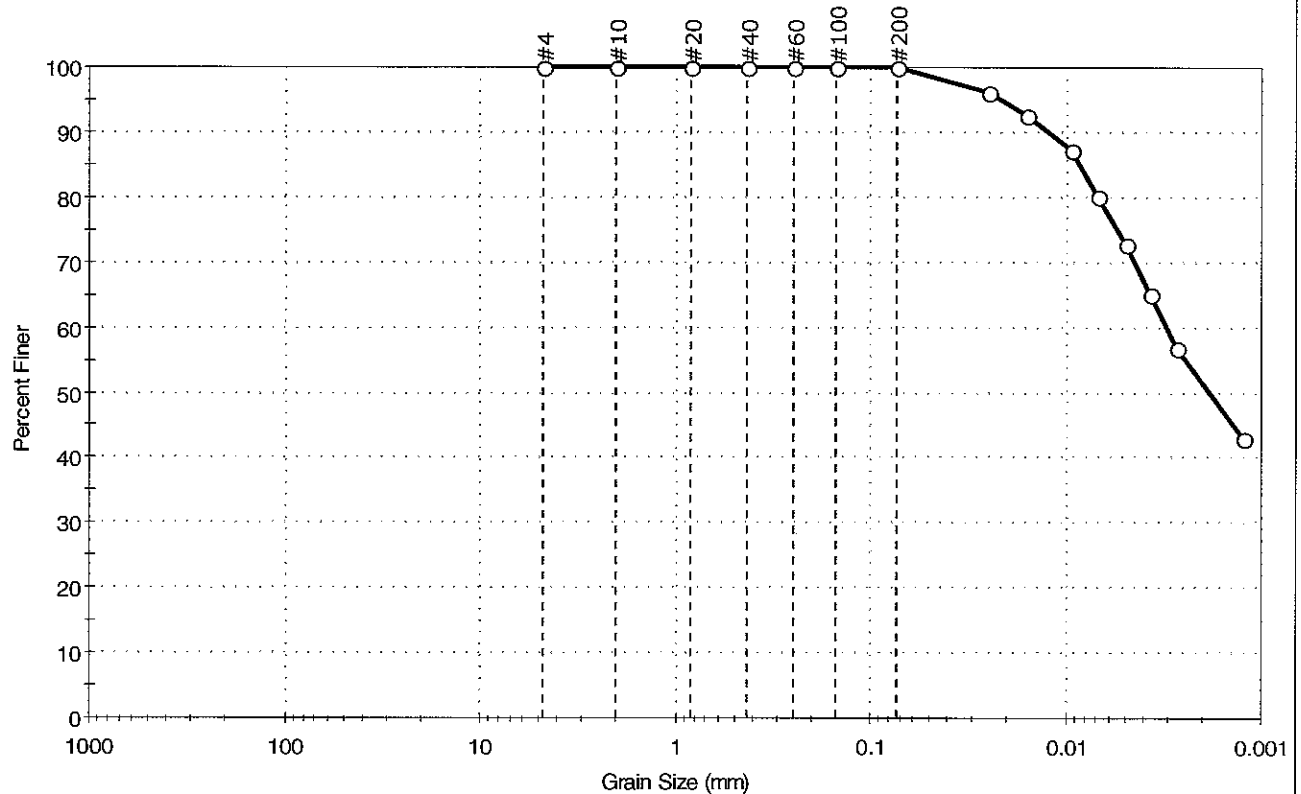
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20070	Sample Type:	jar
Sample ID:	OL-0289-17	Test Date:	02/13/07
Depth :	13.2-16.5 ft	Test Id:	106069
Test Comment:	---		
Sample Description:	Moist, dark grayish brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.1	99.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
0.0253	96			
0.0160	93			
0.0094	87			
0.0069	80			
0.0049	73			
0.0037	65			
0.0027	57			
0.0012	43			

Coefficients

D ₈₅ = 0.0086 mm	D ₃₀ = N/A
D ₆₀ = 0.0031 mm	D ₁₅ = N/A
D ₅₀ = 0.0019 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM lean clay (CL)

AASHTO Clayey Soils (A-6 (23))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-20071

Sample Type: jar

Tested By: mll

Sample ID: OL-0289-18

Test Date: 02/13/07

Checked By: jdt

Depth: 0-3.3 ft

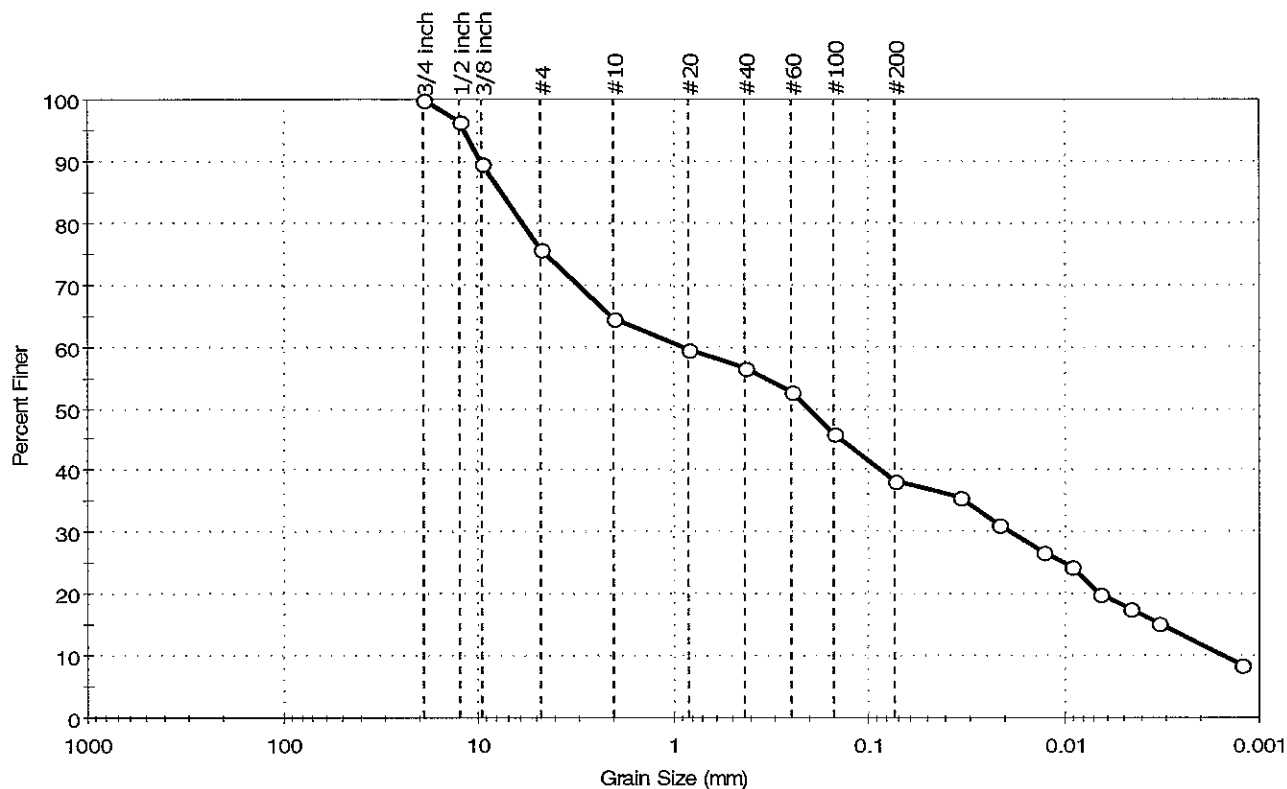
Test Id: 106070

Test Comment: ---

Sample Description: Wet, light gray silty sand with gravel

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	24.3	37.5	38.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	97		
3/8 inch	9.50	90		
#4	4.75	76		
#10	2.00	65		
#20	0.84	60		
#40	0.42	57		
#60	0.25	53		
#100	0.15	46		
#200	0.074	38		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0339	36		
---	0.0218	31		
---	0.0129	27		
---	0.0091	25		
---	0.0065	20		
---	0.0046	18		
---	0.0033	15		
---	0.0012	9		

Coefficients

D₈₅ = 7.5221 mm D₃₀ = 0.0188 mm

D₆₀ = 0.9092 mm D₁₅ = 0.0032 mm

D₅₀ = 0.2035 mm D₁₀ = 0.0015 mm

C_u = N/A C_c = N/A

Classification

ASTM Silty sand with gravel (SM)

AASHTO Silty Soils (A-4 (0))

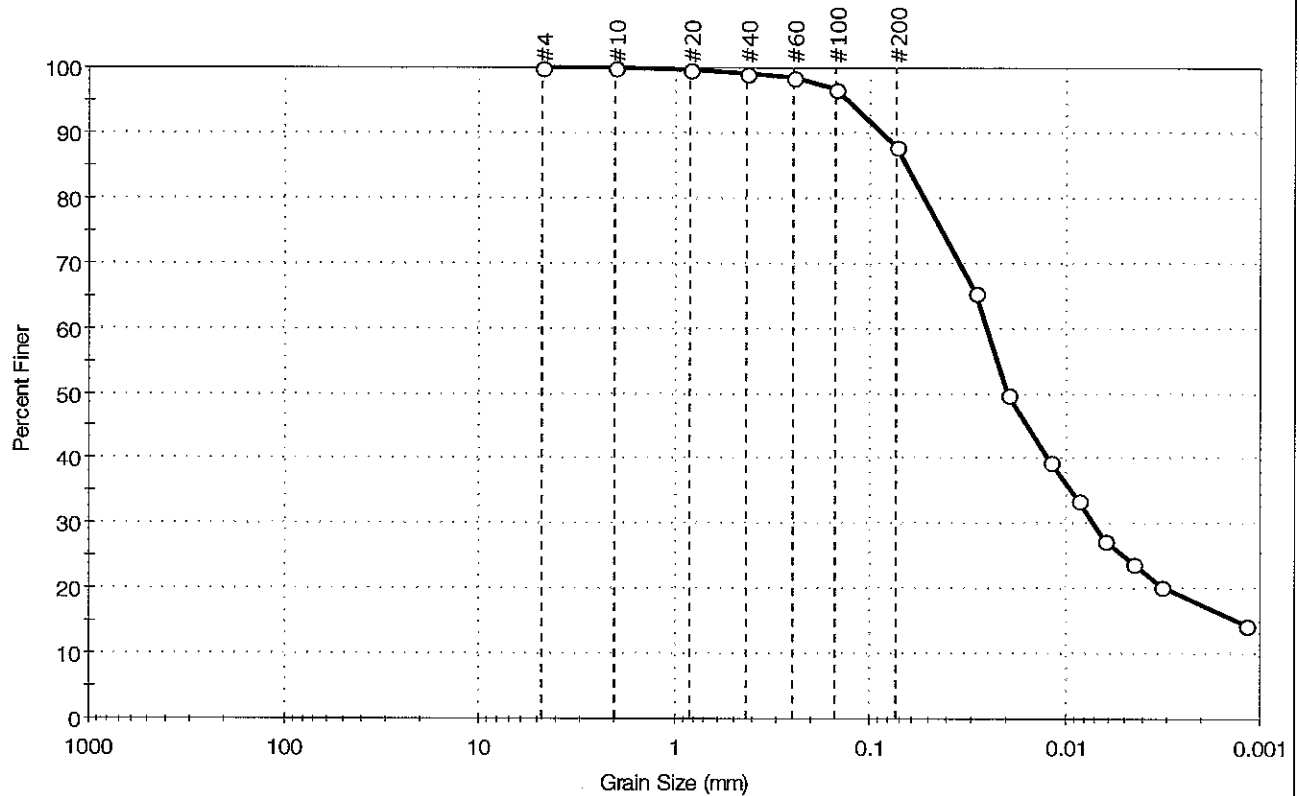
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-20071	Sample Type: jar
Sample ID: OL-0289-19	Test Date: 02/12/07
Depth: 13.2-16.5 ft	Test Id: 106071
Test Comment: ---	
Sample Description: Moist, gray clay silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	12.2	87.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.425	99		
#60	0.25	99		
#100	0.15	97		
#200	0.074	88		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0286	66		
---	0.0196	50		
---	0.0120	40		
---	0.0086	33		
---	0.0062	27		
---	0.0045	24		
---	0.0032	20		
---	0.0012	14		

Coefficients

D ₈₅ = 0.0657 mm	D ₃₀ = 0.0072 mm
D ₆₀ = 0.0250 mm	D ₁₅ = 0.0013 mm
D ₅₀ = 0.0196 mm	D ₁₀ = 0.0006 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

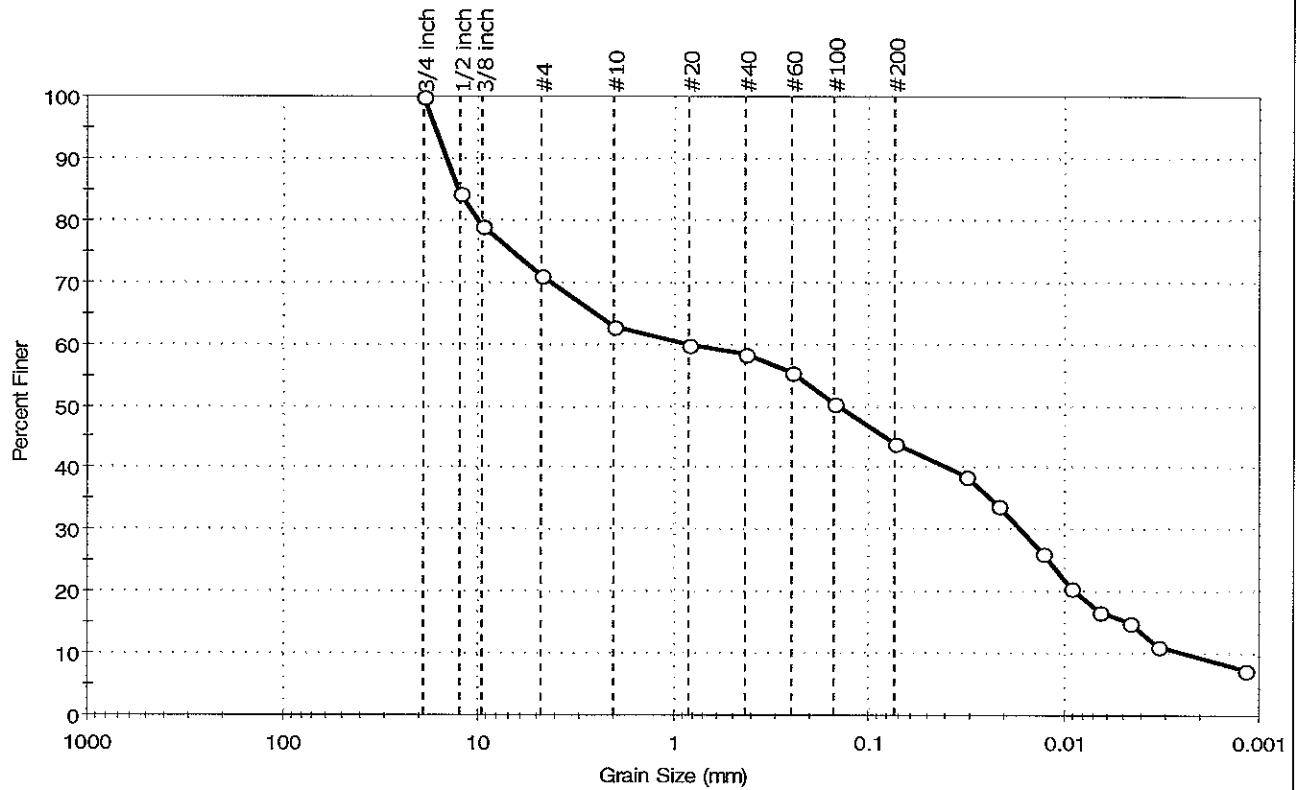
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-VC-20080	Sample Type: jar
Sample ID: OL-0289-20	Test Date: 02/13/07	Tested By: mll
Depth: 0-3.3 ft	Test Id: 106072	Checked By: jdt
Test Comment: ---	Sample Description: Wet, light gray silt with sand and gravel	Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	28.9	27.1	44.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	84		
3/8 inch	9.50	79		
#4	4.75	71		
#10	2.00	63		
#20	0.84	60		
#40	0.42	58		
#60	0.25	55		
#100	0.15	50		
#200	0.074	44		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0318	39		
---	0.0217	34		
---	0.0127	26		
---	0.0091	21		
---	0.0065	17		
---	0.0046	15		
---	0.0033	11		
---	0.0012	7		

Coefficients

D ₈₅ = 12.7332 mm	D ₃₀ = 0.0164 mm
D ₆₀ = 0.8429 mm	D ₁₅ = 0.0046 mm
D ₅₀ = 0.1442 mm	D ₁₀ = 0.0023 mm
C _u = N/A	C _c = N/A

Classification

ASTM N/A

AASHTO Silty Soils (A-4 (0))

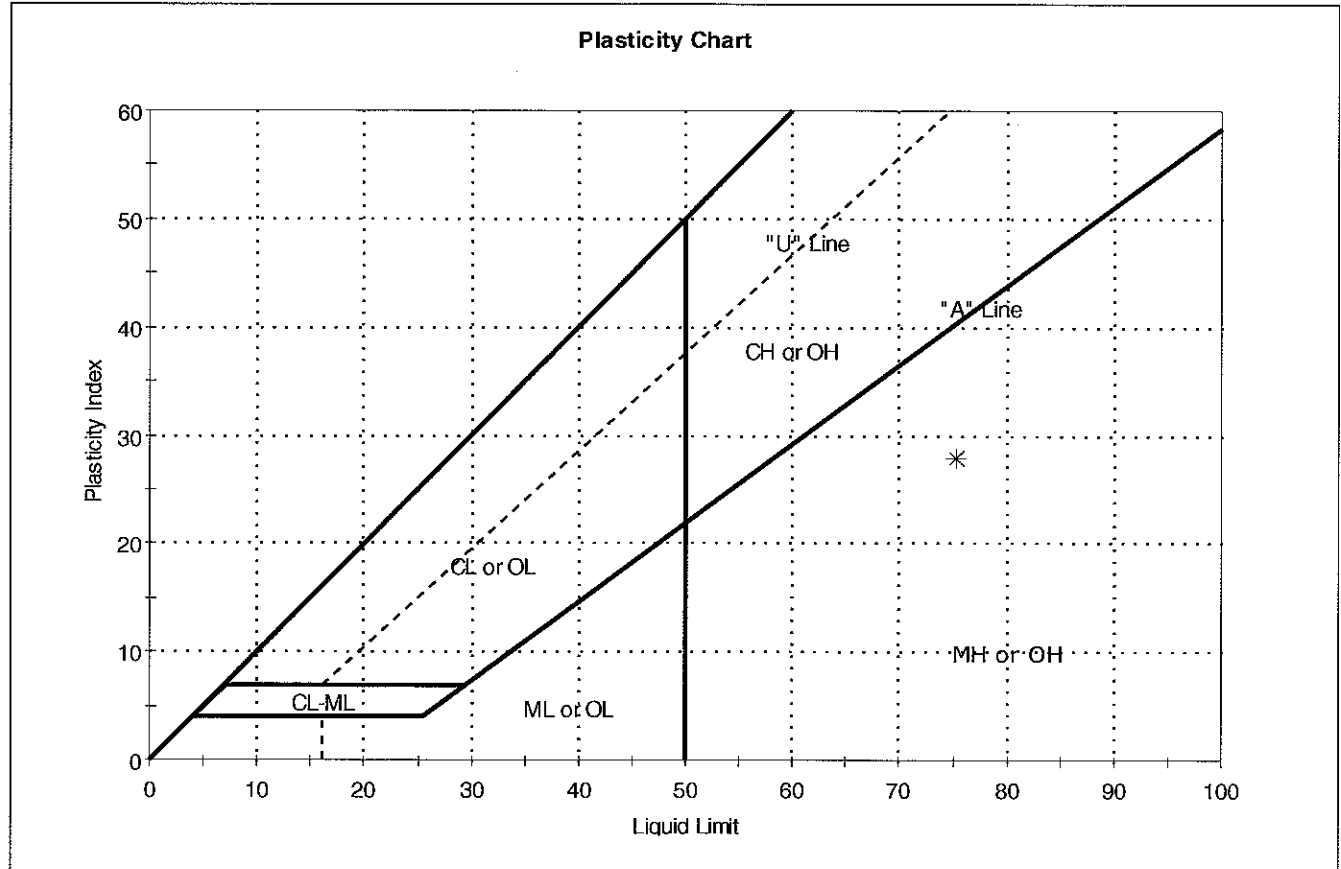
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70025	Sample Type:	jar
Sample ID:	OL-0289-01	Test Date:	01/25/07
Depth:	13.2-16.5 ft	Test Id:	106073
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-01	L-VC-700	13.2-16.5 ft	92	75	47	28	2	

Sample Prepared using the WET method

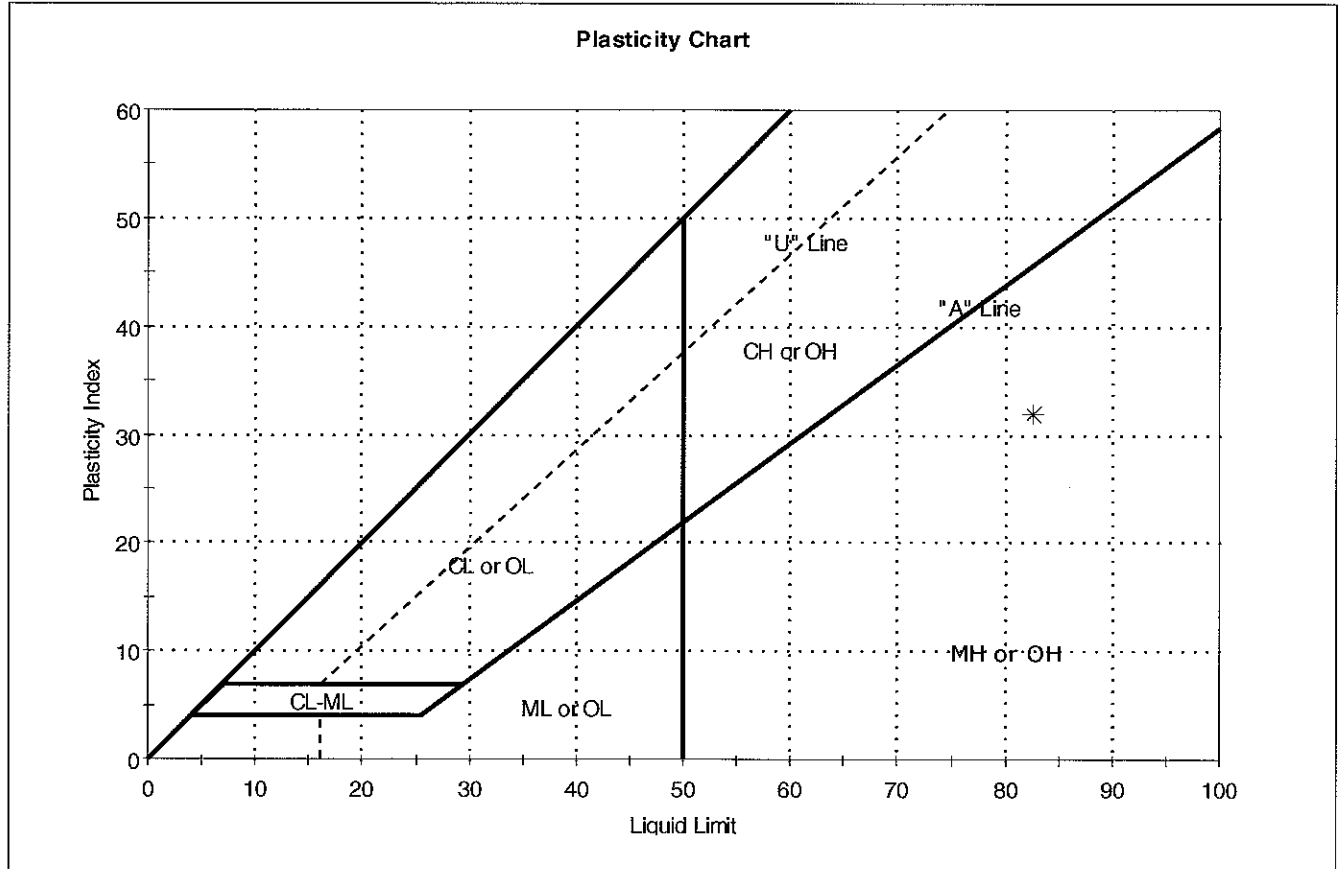
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-70025	Sample Type:	jar
Sample ID:	OL-0289-02	Test Date:	02/02/07
Depth :	16.5-18 ft	Test Id:	106074
Test Comment:	---		
Sample Description:	Moist, olive brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-02	-VC-7002	16.5-18 ft	82	83	51	32	1	elastic silt (MH)

Sample Prepared using the WET method

9% Retained on #40 Sieve

Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-70028

Sample Type: jar

Tested By: ap

Sample ID: OL-0289-05

Test Date: 02/02/07

Checked By: jdt

Depth: 13.2-16.5 ft

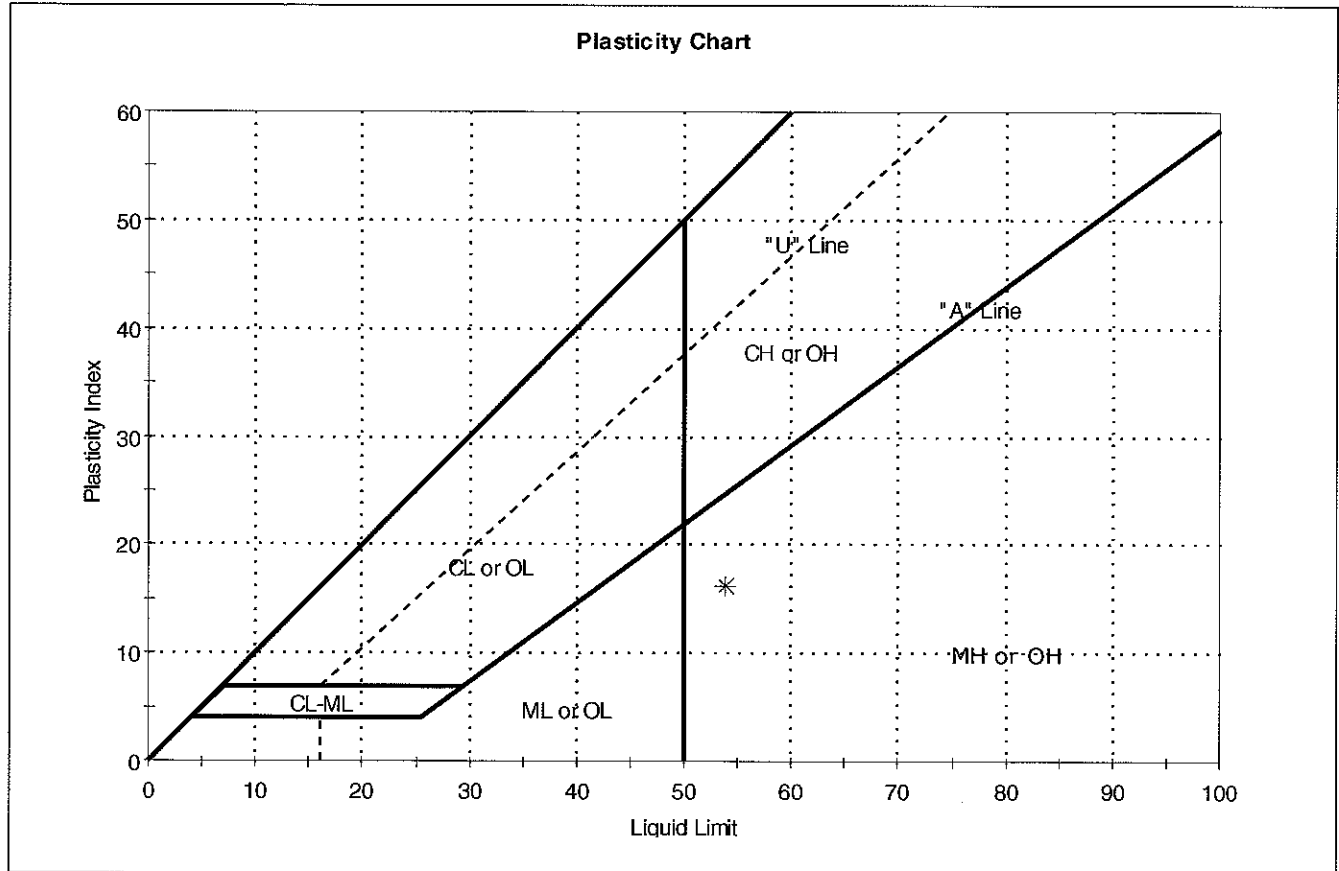
Test Id: 106075

Test Comment: ---

Sample Description: Moist, grayish brown silt with sand

Sample Comment: ---

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-05	-VC-700	13.2-16.5 ft	90	54	38	16	3	elastic silt with sand (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

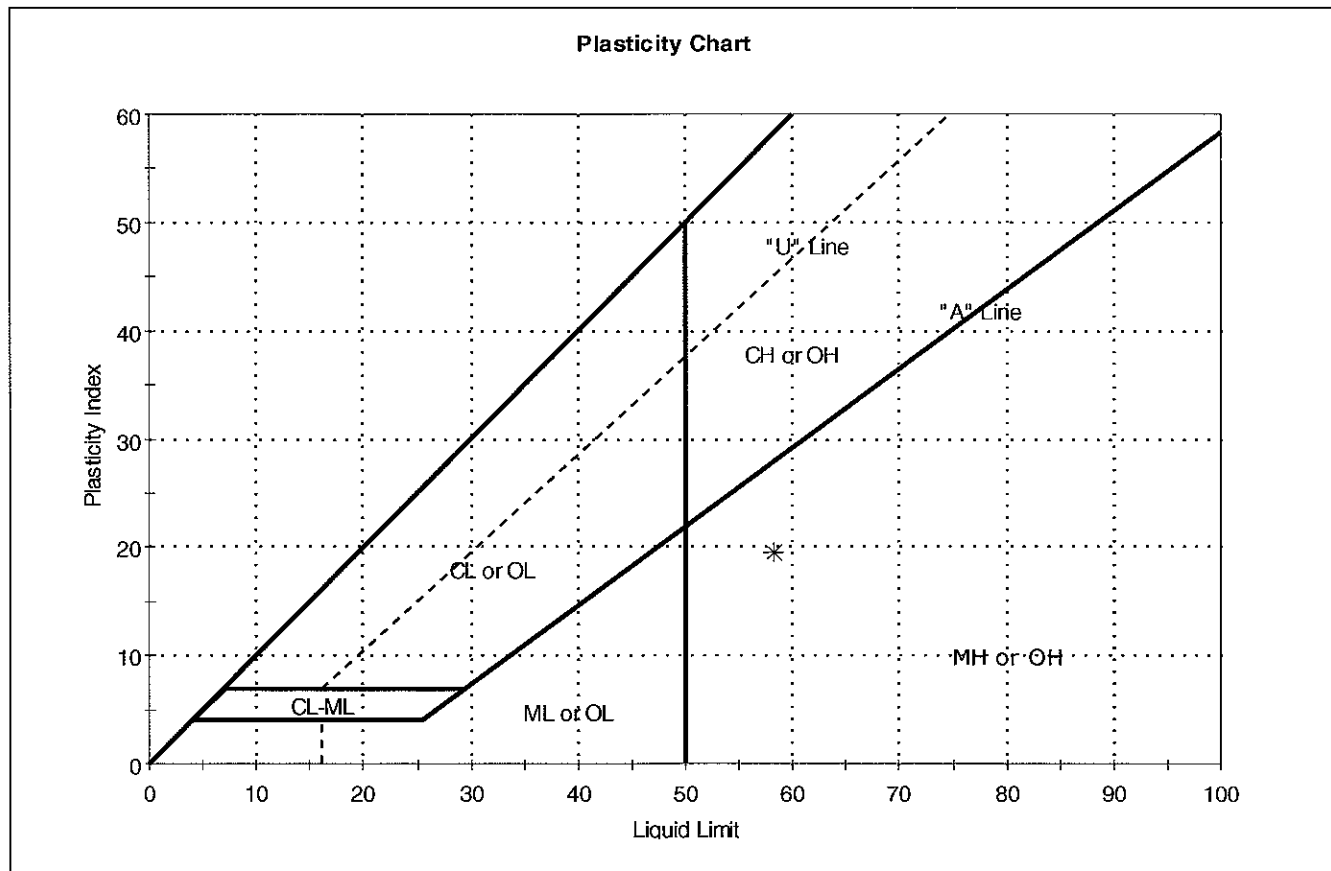
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-VC-70029	Sample Type: jar
Sample ID: OL-0289-08	Test Date: 02/02/07
Depth: 16.5-19.8 ft	Test Id: 106076
Test Comment: ---	Tested By: ap
Sample Description: Moist, gray silt	Checked By: jdt
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-08	-VC-700	16.5-19.8 ft	94	58	39	19	3	elastic silt (MH)

Sample Prepared using the WET method

3% Retained on #40 Sieve

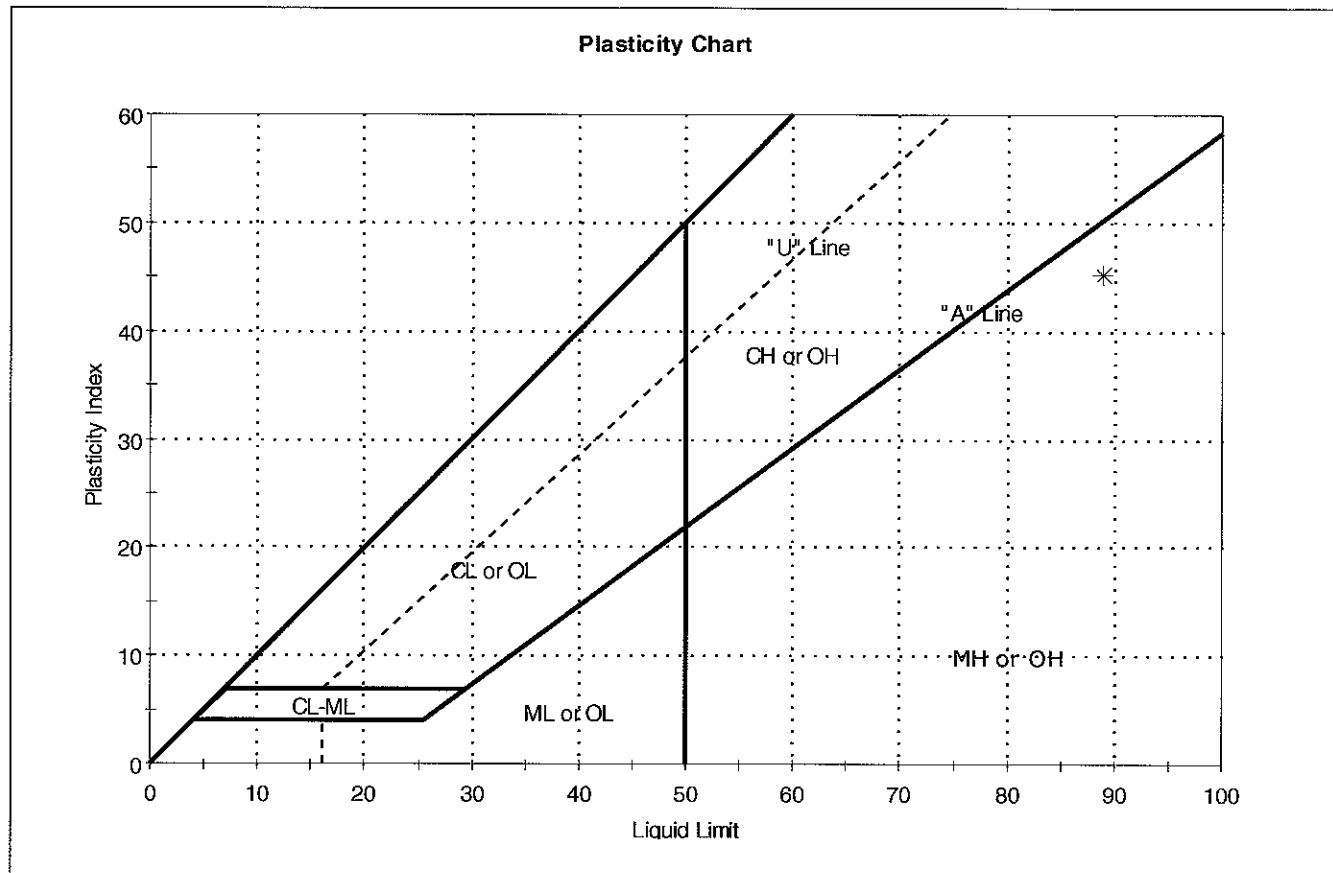
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-VC-20067	Sample Type:	jar
Sample ID:	OL-0289-09	Test Date:	02/05/07
Depth:	0-3.3 ft	Test Id:	106077
Test Comment:	---		
Sample Description:	Wet, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-09	-VC-2006	0-3.3 ft	162	89	44	45	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

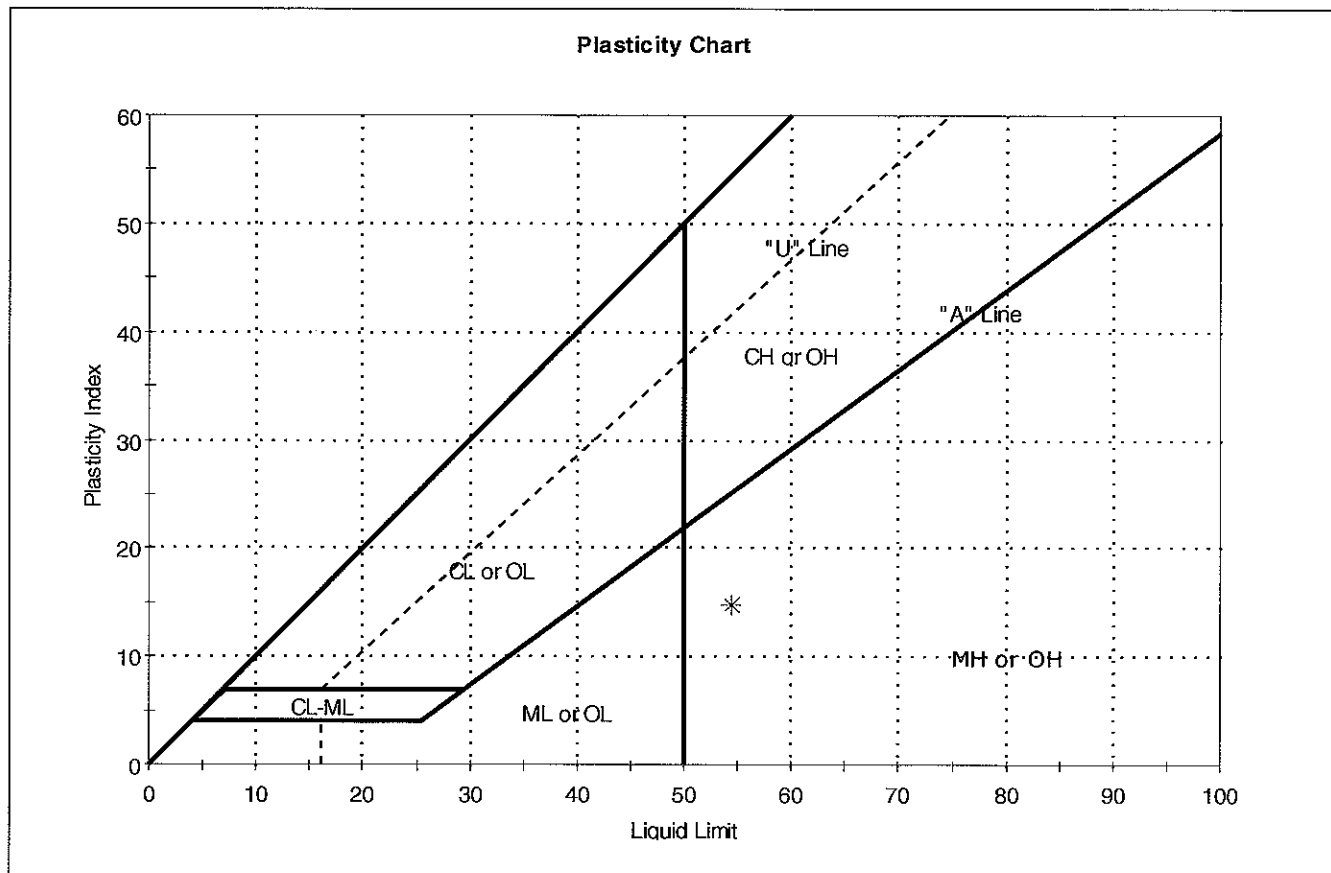
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Tested By:	ap
Boring ID:	OL-VC-20067	Test Date:	02/05/07
Sample ID:	OL-0289-10	Checked By:	jdt
Depth :	6.6-9.9 ft	Test Id:	106078
Test Comment:	---		
Sample Description:	Moist, very dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-10	-VC-2006	6.6-9.9 ft	78	54	40	14	3	elastic silt (MH)

Sample Prepared using the WET method

5% Retained on #40 Sieve

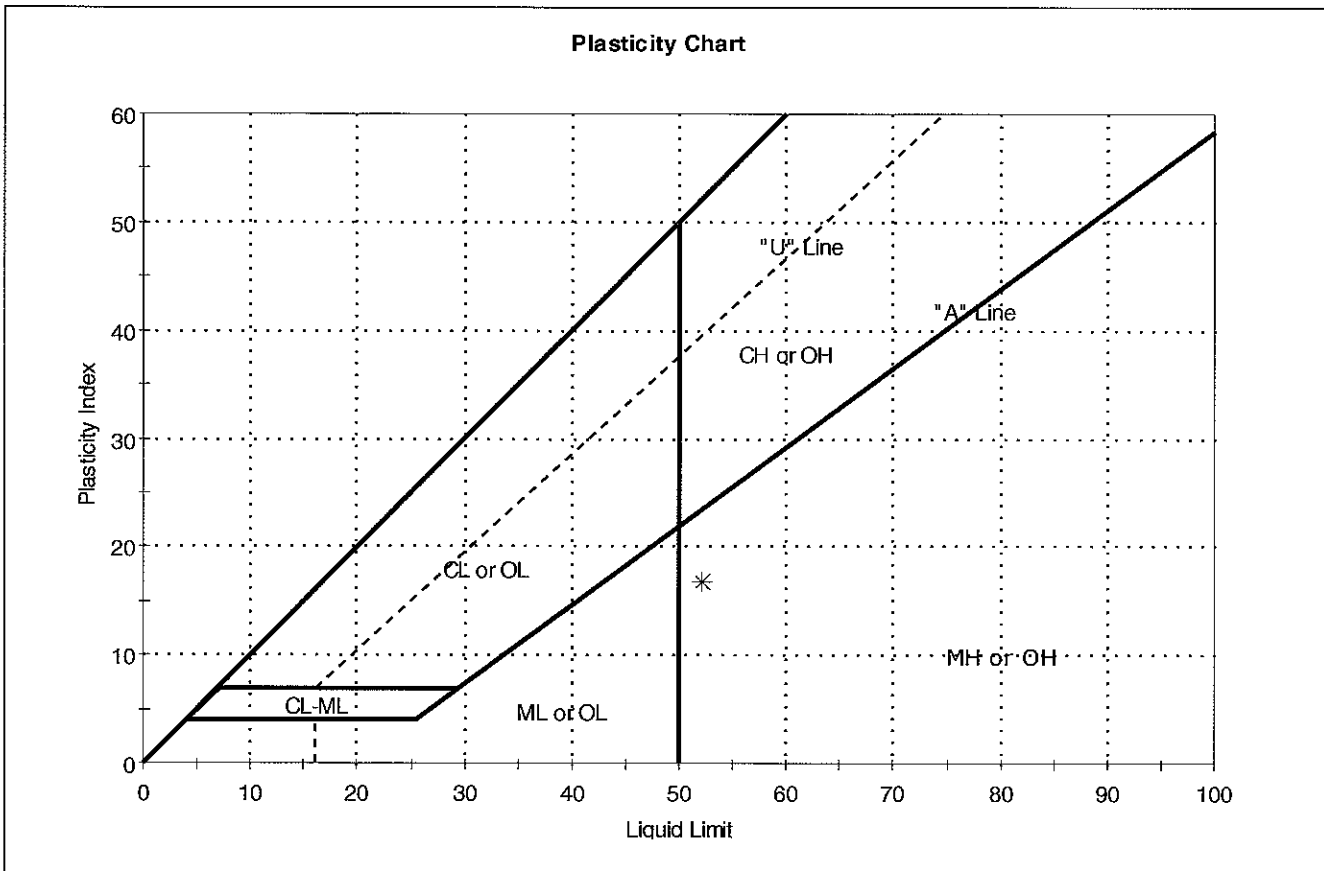
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20068	Sample Type:	jar
Sample ID:	OL-0289-11	Test Date:	02/05/07
Depth :	13.2-16.5 ft	Test Id:	106079
Test Comment:	---		
Sample Description:	Moist, olive gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-11	L-VC-2006	13.2-16.5 ft	63	52	35	17	2	elastic silt (MH)

Sample Prepared using the WET method

7% Retained on #40 Sieve

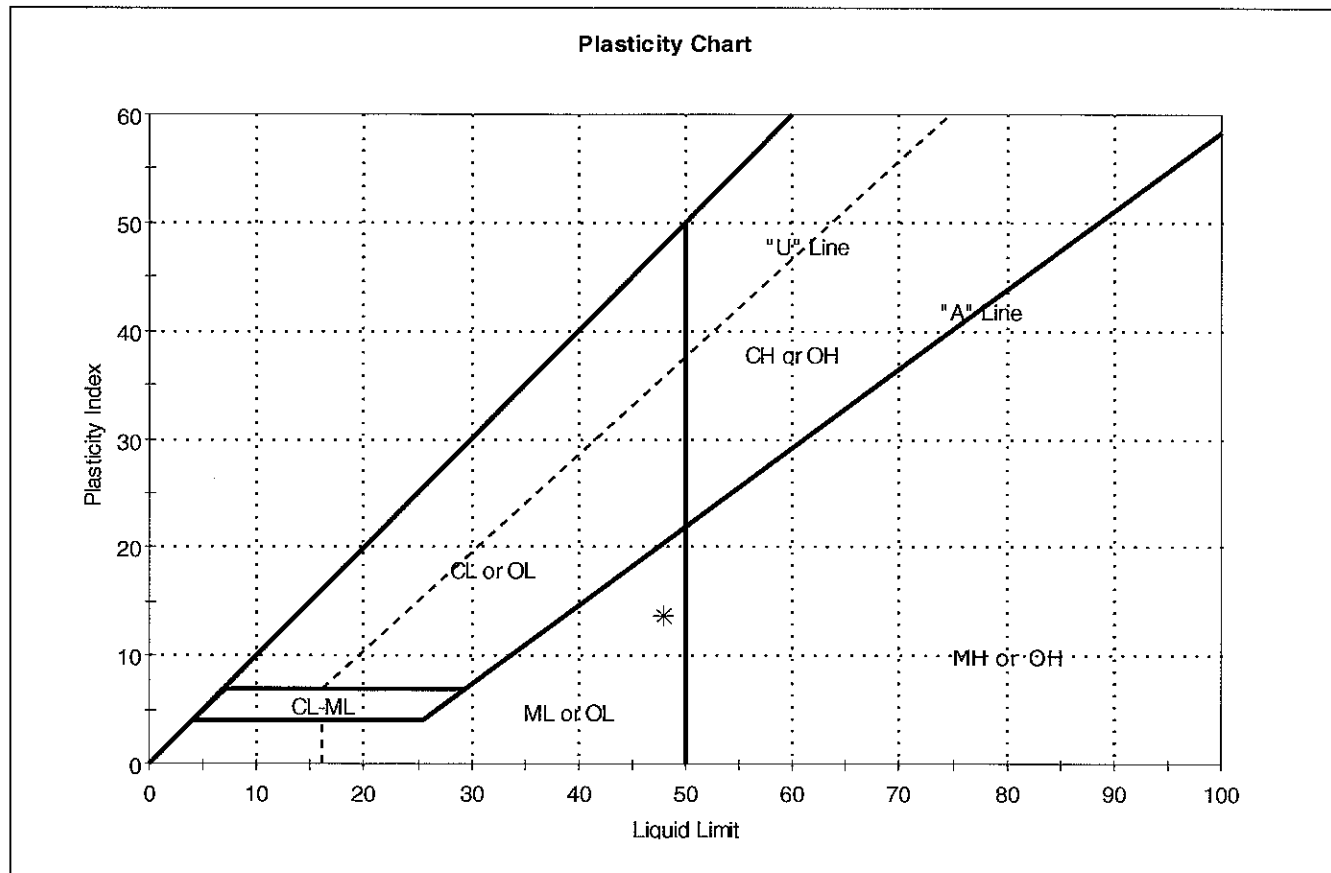
Dry Strength: VERY HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20070	Sample Type:	jar
Sample ID:	OL-0289-16	Test Date:	02/05/07
Depth :	6.6-9.9 ft	Test Id:	106080
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-16	VC-200	6.6-9.9 ft	74	48	34	14	3	Sandy silt (ML)

Sample Prepared using the WET method

14% Retained on #40 Sieve

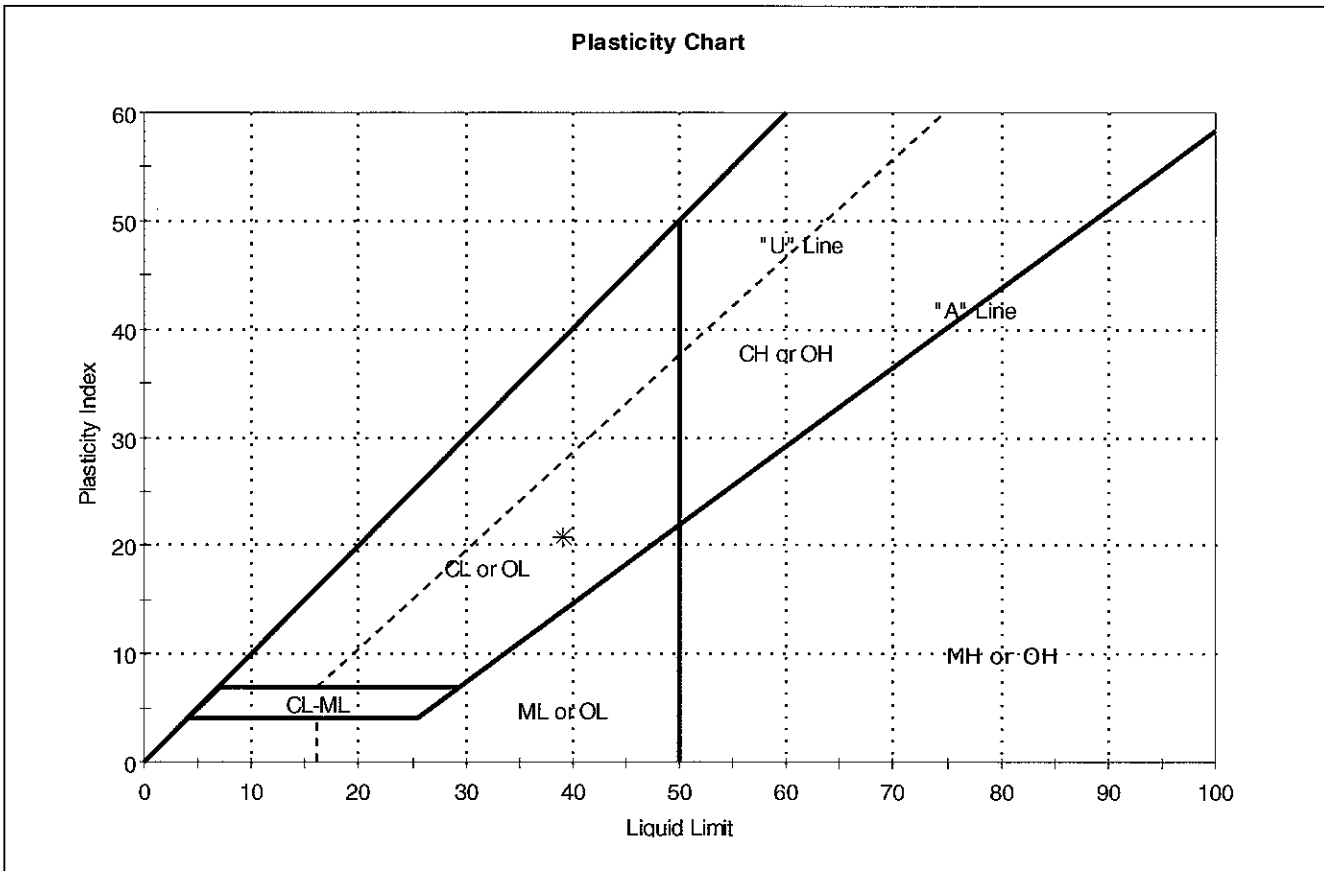
Dry Strength: VERY HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20070	Sample Type:	jar
Sample ID:	OL-0289-17	Test Date:	02/02/07
Depth :	13.2-16.5 ft	Test Id:	106081
Test Comment:	---		
Sample Description:	Moist, dark grayish brown clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-17	L-VC-2001	13.2-16.5 ft	31	39	18	21	1	lean clay (CL)

Sample Prepared using the WET method

0% Retained on #40 Sieve

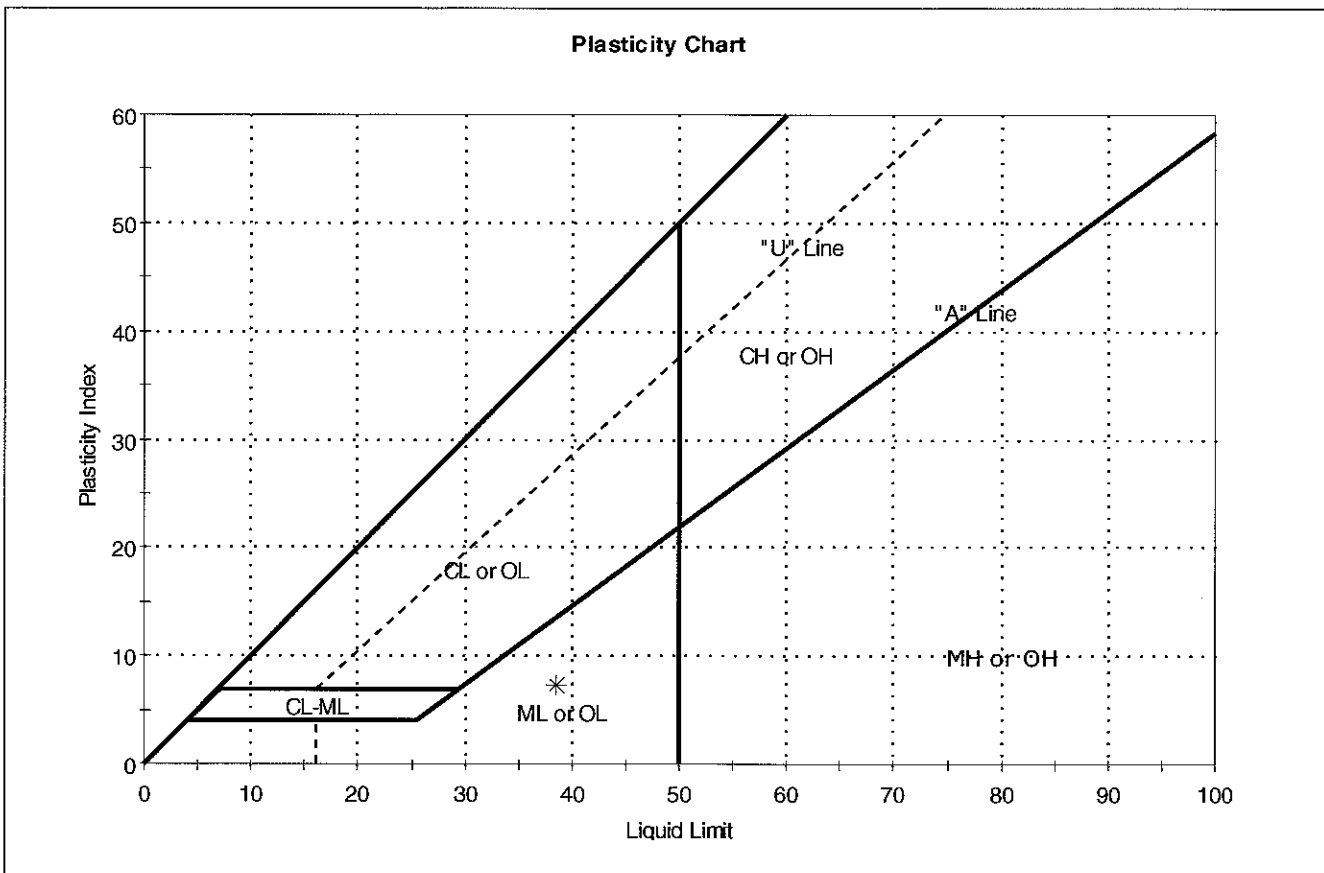
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Test Date:	02/02/07
Boring ID:	OL-VC-20071	Test Id:	106082
Sample ID:	OL-0289-18	Tested By:	ap
Depth :	0-3.3 ft	Checked By:	jdt
Test Comment:	---		
Sample Description:	Wet, light gray silty sand with gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0289-18	-VC-200	0-3.3 ft	65	39	31	8	4	Silty sand with gravel (SM)

Sample Prepared using the WET method
 43% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Chain of Custody/Analysis Request

[illegible]

Chain of Custody/Analysis Request										AESI Ref: 38292.40495	
Privileged and Confidential										COC #: 0290	
Site Name: Onondaga Lake										Lab Use Only	
Location of Site: Syracuse, New York										Lab Proj #	
Preservative:										Lab ID	
Sampler: 1										Job No.	
PO #:										GTE	
Analysis Turnaround Time:											
Standard -											
Rush Charges Authorized for -											
2 weeks -											
1 week -											
Next Day -											
Hardcopy Report To: Lorraine Weber											
Invoice To: Pete Petrone											
Sample Identification											
Location ID		Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	
OL-VC-70025		0	3.3	OL-0290-19	9/25/2006	10:09	SEDIMENT	SOIL	REG	1	
OL-VC-70025		9.9	13.2	OL-0290-20	9/25/2006	10:41	SEDIMENT	SOIL	REG	1	
Atterberg Limits											
Bulk Density											
Carbonate Content											
Organic Content											
Moisture Content											
Specific Gravity											
Grain Size											
SIC											
Porosity											
CUT											
UUT											
Consolidation											
Lab Sample Numbers											

Special Instructions:			
Relinquished by:	Company	Received by:	Company
<i>Sara M. Chomura</i>	PARSONS	<i>U. M. Petrone</i>	
Date/Time	Date/Time	Date/Time	Date/Time
12/12/06 @ 1205	12/12/06 @ 12:30		
Relinquished by:	Company	Received by:	Company
Date/Time	Date/Time	Date/Time	Date/Time

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify)]:

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/14/07
Depth :	---	Sample Id:	---
		Tested By:	mll
		Checked By:	n/a

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-20080	OL-0290-01	9.9-13.2 ft	Wet, gray sandy silt	63.3
OL-VC-20081	OL-0290-02	3.3-6.6 ft	Wet, light gray sandy silt	73.6
OL-VC-20082	OL-0290-03	6.6-9.9 ft	Moist, light gray silt with sand	63.9
OL-VC-20067	OL-0290-04	9.9-11.5 ft	Moist, very dark grayish brown silt	34.3
OL-VC-20068	OL-0290-05	0-3.3 ft	Moist, olive brown silty sand	104.5
OL-VC-20068	OL-0290-06	9.9-13.2 ft	Moist, light olive gray silty sand	82.6
OL-VC-20069	OL-0290-07	0-3.3 ft	Moist, dark gray silt	79.4
OL-VC-20069	OL-0290-08	13.2-16.5 ft	Moist, dark gray silt	23.2
OL-VC-20070	OL-0290-09	9.9-13.2 ft	Moist, gray silt	47.5
OL-VC-20070	OL-0290-10	16.5-18.2 ft	Moist, dark grayish brown silt	33

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/14/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-20071	OL-0290-11	6.6-9.9 ft	Moist, gray silt	73.7
OL-VC-20080	OL-0290-12	6.6-9.9 ft	Moist, light gray silt	86.6
OL-VC-20080	OL-0290-13	16.5-18.5 ft	Moist, dark grayish brown silt	40.3
OL-VC-20081	OL-0290-14	9.9-13.2 ft	Moist, gray silty sand	74
OL-VC-20081	OL-0290-15	13.2-16.5 ft	Moist, olive brown silt	17.8
OL-VC-20082	OL-0290-16	0-3.3 ft	Moist, gray silty sand	73.7
OL-VC-20082	OL-0290-17	13.2-16.5 ft	Moist, olive brown silty sand	15.5
OL-VC-20082	OL-0290-18	16.5-18.6 ft	Moist, dark grayish brown silt	33.3
OL-VC-70025	OL-0290-19	0-3.3 ft	Moist, dark gray silt	81.8
OL-VC-70025	OL-0290-20	9.9-13.2 ft	Moist, brown silty sand	81.9

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-20082	Sample Type:	jar
Sample ID:	OL-0290-03	Test Date:	01/10/07
Depth :	6.6-9.9 ft	Test Id:	106113
Test Comment:	Scale T131394, therm. 7652, vac. pump HYDAC08240001, Oven #1		
Sample Description:	Moist, light gray silt with sand		
Sample Comment:	---		

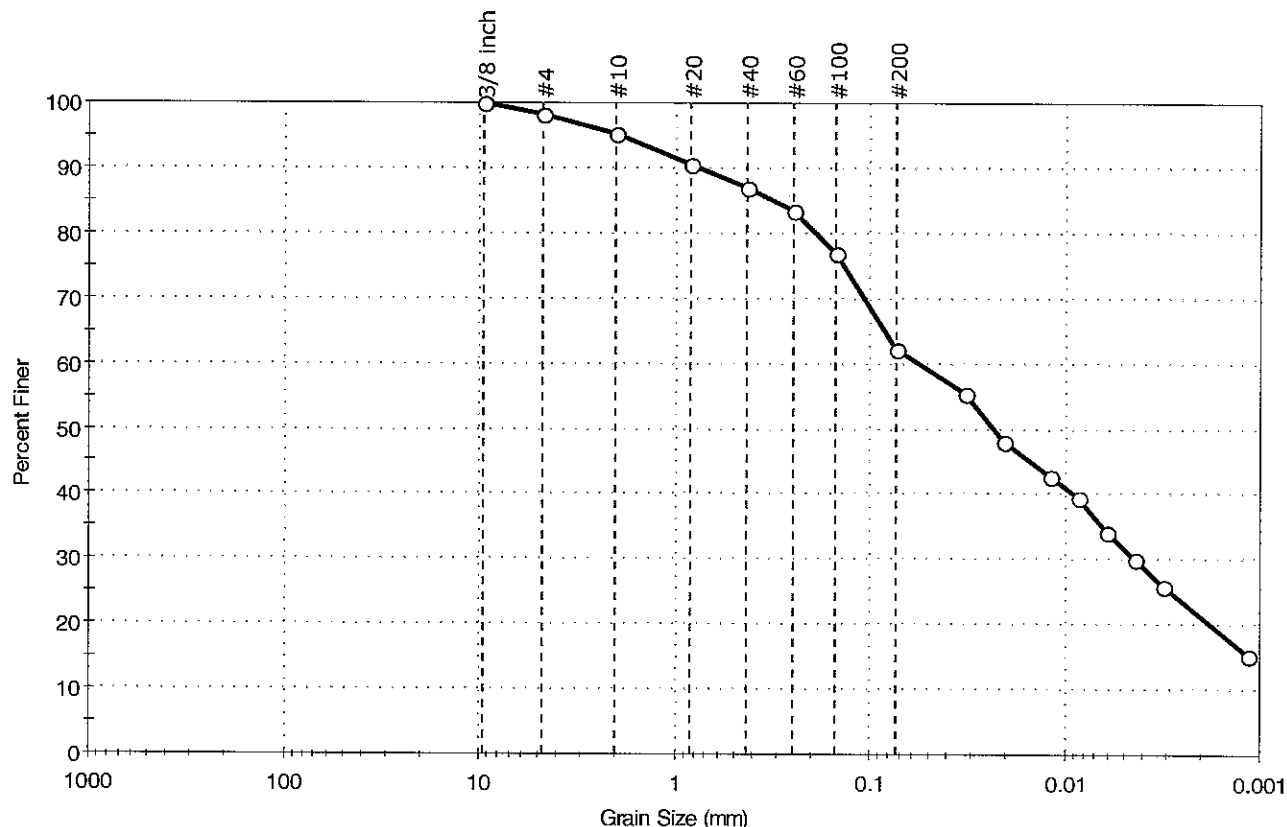
Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-VC-20082	OL-0290-03	6.6-9.9 ft	Moist, light gray silt with sand	2.72

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Sample Type:	jar
Location:	Syracuse	Tested By:	mll
Boring ID:	OL-VC-20080	Test Date:	02/12/07
Sample ID:	OL-0290-01	Checked By:	jdt
Depth :	9.9-13.2 ft	Test Id:	106110
Test Comment:	---		
Sample Description:	Wet, gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	1.9	35.9	62.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	98		
#10	2.00	95		
#20	0.84	91		
#40	0.42	87		
#60	0.25	83		
#100	0.15	77		
#200	0.074	62		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0328	55		
---	0.0207	48		
---	0.0121	43		
---	0.0086	39		
---	0.0061	34		
---	0.0044	30		
---	0.0031	26		
---	0.0012	15		

Coefficients

D ₈₅ = 0.3172 mm	D ₃₀ = 0.0044 mm
D ₆₀ = 0.0566 mm	D ₁₅ = N/A
D ₅₀ = 0.0235 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM N/A

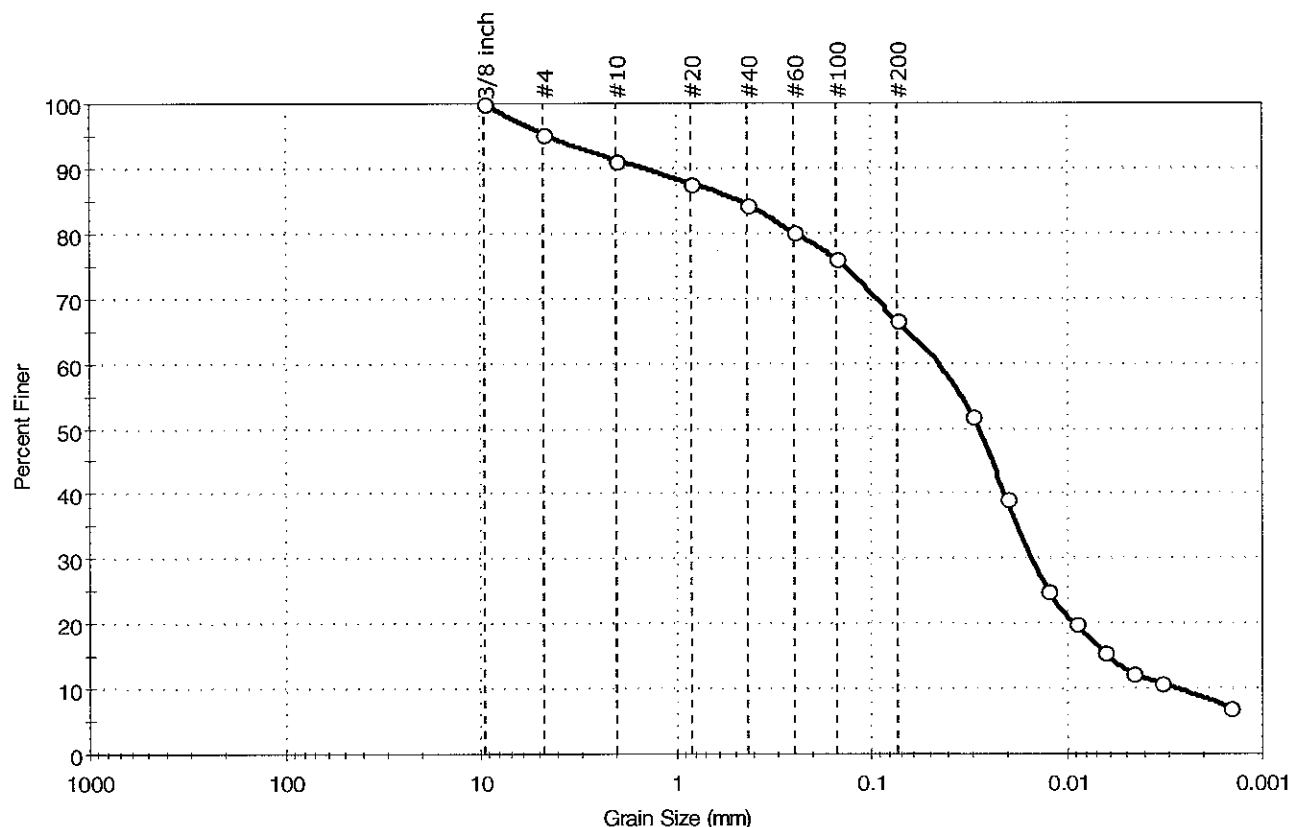
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20081	Sample Type:	jar
Sample ID:	OL-0290-02	Test Date:	01/23/07
Depth :	3.3-6.6 ft	Test Id:	106111
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	4.7	28.7	66.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	95		
#10	2.00	91		
#20	0.84	88		
#40	0.42	84		
#60	0.25	80		
#100	0.15	76		
#200	0.074	67		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0303	52		
---	0.0204	39		
---	0.0125	25		
---	0.0090	20		
---	0.0065	16		
---	0.0046	12		
---	0.0033	11		
---	0.0015	7		

Coefficients

D ₈₅ = 0.4849 mm	D ₃₀ = 0.0148 mm
D ₆₀ = 0.0495 mm	D ₁₅ = 0.0061 mm
D ₅₀ = 0.0285 mm	D ₁₀ = 0.0027 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy silt (ML)

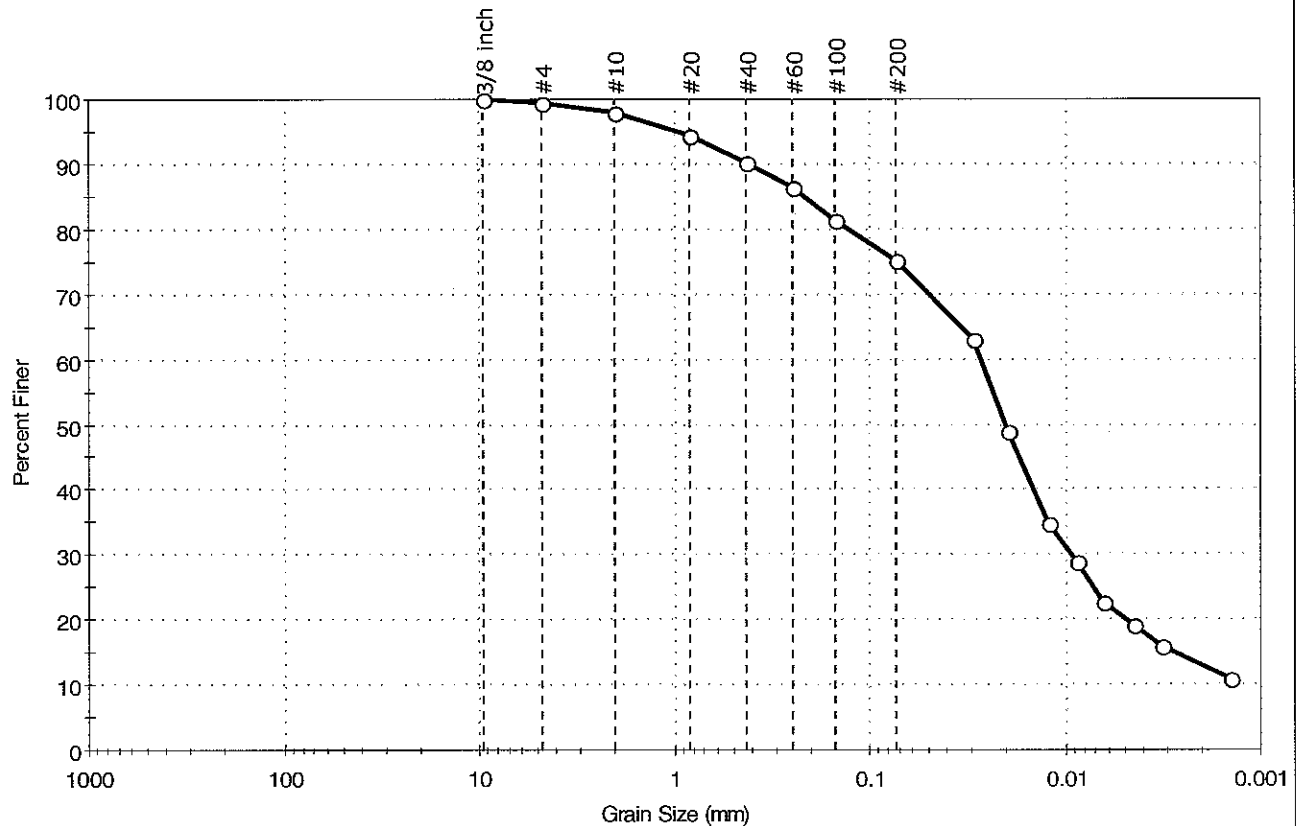
AASHTO Clayey Soils (A-7-5 (10))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20082	Sample Type:	jar
Sample ID:	OL-0290-03	Test Date:	01/23/07
Depth :	6.6-9.9 ft	Test Id:	106112
Test Comment:	---		
Sample Description:	Moist, light gray silt with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.6	24.3	75.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	98		
#20	0.84	94		
#40	0.42	90		
#60	0.25	86		
#100	0.15	82		
#200	0.074	75		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0296	63		
---	0.0199	49		
---	0.0122	35		
---	0.0088	29		
---	0.0064	23		
---	0.0045	19		
---	0.0032	16		
---	0.0014	11		

Coefficients

D ₈₅ = 0.2163 mm	D ₃₀ = 0.0094 mm
D ₆₀ = 0.0271 mm	D ₁₅ = 0.0028 mm
D ₅₀ = 0.0205 mm	D ₁₀ = 0.0013 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt with sand (ML)

AASHTO Clayey Soils (A-7-5 (11))

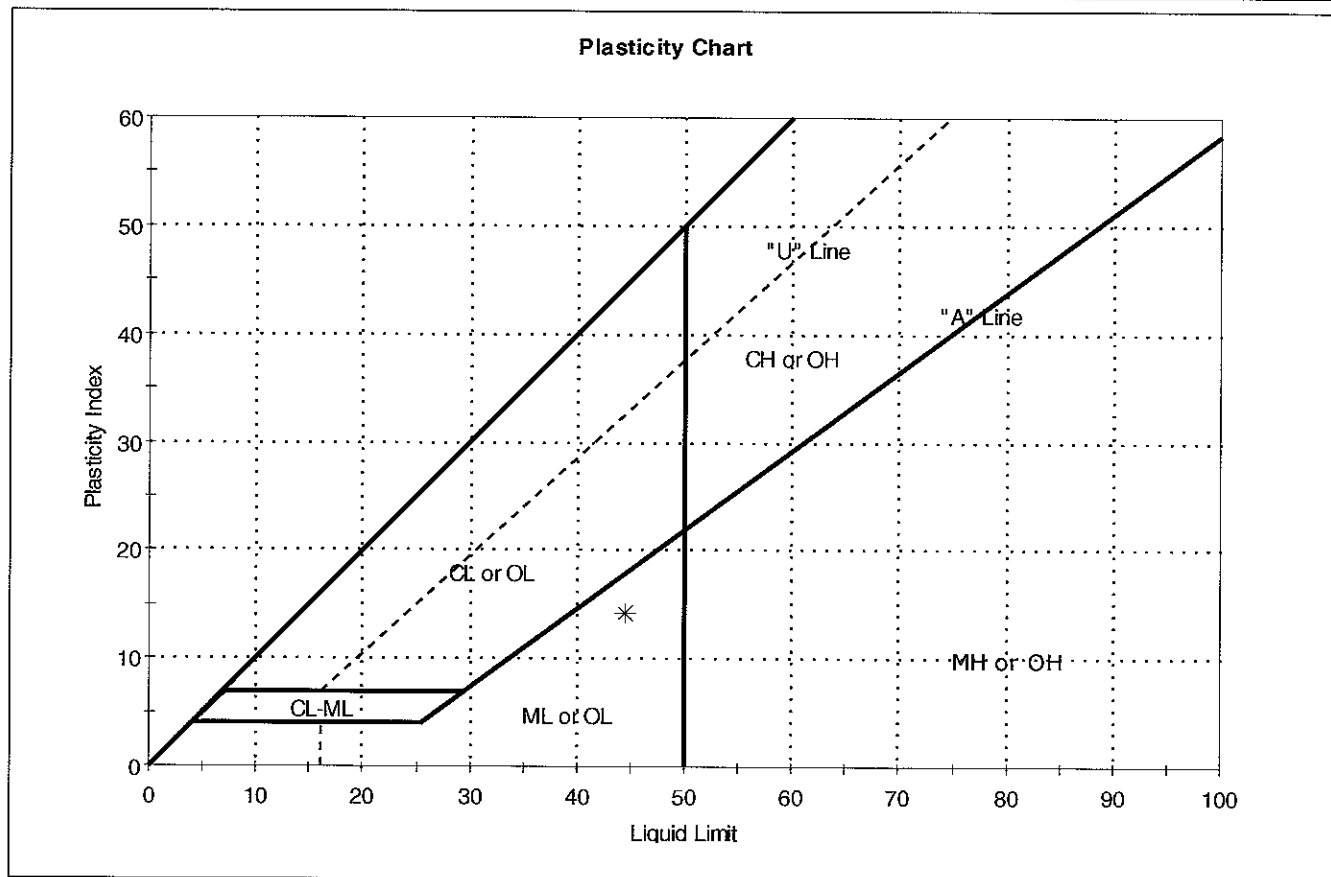
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20081	Sample Type:	jar
Sample ID:	OL-0290-02	Test Date:	02/06/07
Depth :	3.3-6.6 ft	Test Id:	106108
Test Comment:	---		
Sample Description:	Wet, light gray sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

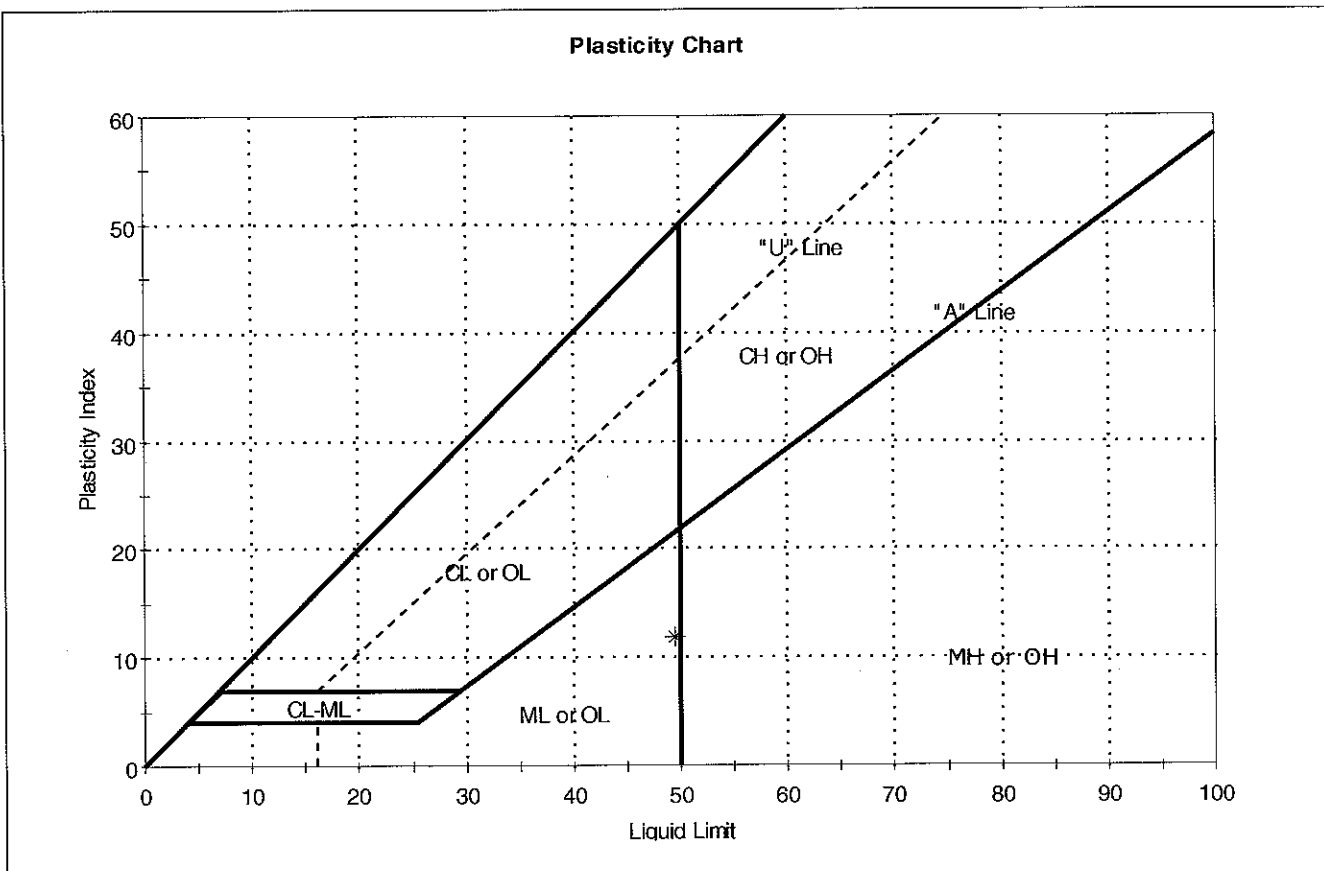


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0290-02	-VC-2008	3.3-6.6 ft	74	44	30	14	3	Sandy silt (ML)

Sample Prepared using the WET method
 16% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-20082	Sample Type:	jar
Sample ID:	OL-0290-03	Test Date:	02/07/07
Depth:	6.6-9.9 ft	Test Id:	106109
Test Comment:	---		
Sample Description:	Moist, light gray silt with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0290-03	-VC-2008	6.6-9.9 ft	64	49	38	11	2	silt with sand (ML)

Sample Prepared using the WET method
 10% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Chain of Custody / Analysis Request																						
AESI Ref: 38292.40495 COC #: 0291					Lab Use Only Lab Proj #: GTE Lab ID:					Job No.												
Privileged and Confidential					Site Name: Onondaga Lake Location of Site: Syracuse, New York					Preservative:												
Sampler: 1					Field Filtered Sample? <input type="checkbox"/>					Grab/Composite <input type="checkbox"/>												
PO #: 1					Units																	
Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -																						
Hardcopy Report To: Lorraine Weber																						
Invoice To: Pete Petrone																						
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088																						
Sample Identification																						
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	Atterberg Limits	Bulk Density	Carbonate Content	Organic Content	Moisture Content	Specific Gravity	Grain Size	SIC	Porosity	CUT	UUT	Consolidation	Lab Sample Numbers
OL-VC-70026	0	3.3	OL-0291-01	9/28/2006	11:08	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70026	6.6	9.9	OL-0291-02	9/28/2006	11:23	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70026	13.2	16.5	OL-0291-03	9/28/2006	11:19	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70027	0	3.3	OL-0291-04	9/28/2006	12:59	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70027	13.2	16.5	OL-0291-05	9/28/2006	13:40	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70028	3.3	6.6	OL-0291-06	9/28/2006	14:04	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70028	9.9	13.2	OL-0291-07	9/28/2006	14:18	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70028	16.5	19.6	OL-0291-08	9/28/2006	14:22	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
OL-VC-70029	0	3.3	OL-0291-09	9/28/2006	14:36	SEDIMENT	SOIL	REG	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Special Instructions:				
Relinquished by: <i>Shara M. Chimura</i>		Received by: <i>Sh M. Weber</i>		
Company	PARSONS	Company		
Date/Time	12/12/06 @ 1205	Date/Time	12/12/06	12:30
Relinquished by:		Received by:		
Company		Company		
Date/Time		Date/Time		
		Condition		
		Cooler Temp.		
		Condition		
		Cooler Temp.		
		Custody Seals Intact		
		Custody Seals Intact		

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 12/11/2006

Chain of Custody/Analysis Request																																																						
Privileged and Confidential										Site Name: Onondaga Lake																																												
Lab Use Only										Location of Site: Syracuse, New York																																												
Lab Prof #										Preservative:																																												
Lab ID										Job No.																																												
GTE																																																						
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088										Sample Identification <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Location ID</th> <th>Start Depth (ft)</th> <th>End Depth (ft)</th> <th>Field Sample ID</th> </tr> </thead> <tbody> <tr><td>OL-VC-70029</td><td>6.6</td><td>9.9</td><td>OL-0291-10</td></tr> <tr><td>OL-VC-70029</td><td>13.2</td><td>16.5</td><td>OL-0291-11</td></tr> <tr><td>OL-VC-70030</td><td>3.3</td><td>6.6</td><td>OL-0291-12</td></tr> <tr><td>OL-VC-70030</td><td>9.9</td><td>13.2</td><td>OL-0291-13</td></tr> <tr><td>OL-VC-70030</td><td>13.2</td><td>16.5</td><td>OL-0291-14</td></tr> <tr><td>OL-VC-70027</td><td>6.6</td><td>9.9</td><td>OL-0291-15</td></tr> <tr><td>OL-VC-40027</td><td>3.3</td><td>6.6</td><td>OL-0291-16</td></tr> <tr><td>OL-VC-40027</td><td>9.9</td><td>13.2</td><td>OL-0291-17</td></tr> <tr><td>OL-VC-40027</td><td>13.2</td><td>16.5</td><td>OL-0291-18</td></tr> </tbody> </table>					Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	OL-VC-70029	6.6	9.9	OL-0291-10	OL-VC-70029	13.2	16.5	OL-0291-11	OL-VC-70030	3.3	6.6	OL-0291-12	OL-VC-70030	9.9	13.2	OL-0291-13	OL-VC-70030	13.2	16.5	OL-0291-14	OL-VC-70027	6.6	9.9	OL-0291-15	OL-VC-40027	3.3	6.6	OL-0291-16	OL-VC-40027	9.9	13.2	OL-0291-17	OL-VC-40027	13.2	16.5	OL-0291-18
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID																																																			
OL-VC-70029	6.6	9.9	OL-0291-10																																																			
OL-VC-70029	13.2	16.5	OL-0291-11																																																			
OL-VC-70030	3.3	6.6	OL-0291-12																																																			
OL-VC-70030	9.9	13.2	OL-0291-13																																																			
OL-VC-70030	13.2	16.5	OL-0291-14																																																			
OL-VC-70027	6.6	9.9	OL-0291-15																																																			
OL-VC-40027	3.3	6.6	OL-0291-16																																																			
OL-VC-40027	9.9	13.2	OL-0291-17																																																			
OL-VC-40027	13.2	16.5	OL-0291-18																																																			
Hardcopy Report To: Lorraine Weber Invoice To: Pete Petrone										Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -																																												
Sample: PO #: 1										Grab/Composite Units																																												
Sample Date 9/28/2006										Sample Time 14:48																																												
Sample Type SEDIMENT										Sample Matrix SOIL																																												
Sample Purpose REG										# of Cont. 1																																												
Field Filtered Sample?										Atterberg Limits																																												
Bulk Density										Carbonate Content																																												
Organic Content										Moisture Content																																												
Specific Gravity										Grain Size																																												
SIC										Porosity																																												
CUT										UUT																																												
Consolidation										Lab Sample Numbers																																												

Special Instructions:			
Relinquished by: <i>Lorraine M. Chinn</i>		Received by: <i>PARSONS</i>	
Date/Time: 12/12/06 @ 1205		Date/Time: 12/12/06 12:30	
Company:		Company:	
Condition:		Condition:	
Cooler Temp.		Cooler Temp.	
Custody Seals Intact		Custody Seals Intact	

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:---		Test Date:	02/14/07
Depth :	---	Sample Id:	---
		Tested By:	ml
		Checked By:	n/a

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-70026	OL-0291-01	0-3.3 ft	Moist, dark gray silt	64.2
OL-VC-70026	OL-0291-02	6.6-9.9 ft	Moist, olive clay with sand	80.6
OL-VC-70026	OL-0291-03	13.2-16.5 ft	Moist, olive gray clay with sand	79.2
OL-VC-70027	OL-0291-04	0-3.3 ft	Moist, black clay with sand	61.7
OL-VC-70027	OL-0291-05	13.2-16.5 ft	Moist, brown silty sand	97.4
OL-VC-70028	OL-0291-06	3.3-6.6 ft	Moist, brown silty sand	77.7
OL-VC-70028	OL-0291-07	9.9-13.2 ft	Moist, dark olive clay	75.1
OL-VC-70028	OL-0291-08	16.5-19.6 ft	Moist, olive gray silt	88.1
OL-VC-70029	OL-0291-09	0-3.3 ft	Moist, black clay with sand	66
OL-VC-70029	OL-0291-10	6.6-9.9 ft	Moist, brown silty sand	79

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	ml
Sample ID:---	Test Date: 02/14/07	Checked By:	n/a
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-70029	OL-0291-11	13.2-16.5 ft	Moist, brown silty sand	82.4
OL-VC-70030	OL-0291-12	3.3-6.6 ft	Moist, olive gray silt	76.9
OL-VC-70030	OL-0291-13	9.9-13.2 ft	Moist, olive clay with sand	81.5
OL-VC-70030	OL-0291-14	13.2-16.5 ft	Wet, brown silty sand	92.5
OL-VC-70027	OL-0291-15	6.6-9.9 ft	Wet, brown silty sand	83.6
OL-VC-40027	OL-0291-16	3.3-6.6 ft	Moist, gray clay	110.4
OL-VC-40027	OL-0291-17	9.9-13.2 ft	Moist, dark gray clay	135.6
OL-VC-40027	OL-0291-18	13.2-16.5 ft	Moist, dark gray clay	107.5
OL-VC-40026	OL-0291-19	0-3.3 ft	Moist, gray clay with sand	79.8
OL-VC-40026	OL-0291-20	6.6-9.9 ft	Moist, gray clay	100

Notes: Temperature of Drying : 110° Celsius

Chain of Custody/Analysis Request

[illegible]

Special Instructions:

Relinquished by: <i>Sdra M. Chomura</i>	Company Date/Time	PARSON'S 12/12/06 @ 1205	Received by: <i>AK MTS/HR</i>	Company Date/Time	Condition Cooler Temp.	Custody Seals Intact
Relinquished by:	Company Date/Time		Received by:	Company Date/Time	Condition Cooler Temp.	Custody Seals Intact

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Chain of Custody/Analysis Request										AESI Ref: 38292.40495	
Privileged and Confidential										COC #: 0292	
Lab Use Only											
Lab Proj #											
Lab ID										GTE	
Job No.											
Client Contact:											
PARSONS											
290 Elwood Davis Road, Suite 312											
Liverpool, NY 13088											
Hardcopy Report To:											
Lorraine Weber											
Invoice To:											
Pete Petrone											
Sampler:											
PO #:											
Analysis Turnaround Time:											
Standard -											
Rush Charges Authorized for -											
2 weeks -											
1 week -											
Next Day -											
Sample Identification											
Location ID											
Start Depth (ft)											
End Depth (ft)											
Field Sample ID											
OL-VC-40022											
Sample Date											
Sample Time											
Sample Type											
Sample Matrix											
Sample Purpose											
Sample # of Cont.											
REG										1	
Field Filtered Sample?											
Grab/Composite											
Atterberg Limits											
Bulk Density											
Carbonate Content											
Organic Content											
Moisture Content										<input checked="" type="checkbox"/>	
Specific Gravity											
Grain Size											
SIC											
Porosity											
CUT											
UUT											
Consolidation											
Lab Sample Numbers											

Special Instructions:			
Relinquished by:		Received by:	
Shira M. Chomura		PARSONS	
Date/Time		Date/Time	
12/12/06 12:05		12/12/06 12:30	
Relinquished by:		Received by:	
Company		Company	
Date/Time		Date/Time	
Custody Seals Intact		Custody Seals Intact	
Condition		Cooler Temp.	
Cooler Temp.		Condition	
Cooler Temp.		Cooler Temp.	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify):

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By:	mll
Sample ID:---	Test Date: 02/14/07	Checked By:	n/a
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40026	OL-0292-01	13.2-16.5 ft	Moist, dark gray clay	110.2
OL-VC-40026	OL-0292-02	16.5-19.8 ft	Moist, dark gray clay	120.8
OL-VC-40016	OL-0292-03	0.5-3.3 ft	Moist, very dark gray clay	127.7
OL-VC-40016	OL-0292-04	3.3-6.6 ft	Moist, dark gray clay	125.1
OL-VC-40016	OL-0292-05	13.2-16.5 ft	Moist, grayish brown clay	77.3
OL-VC-40017	OL-0292-06	3.3-6.6 ft	Moist, dark gray clay	121.7
OL-VC-40017	OL-0292-07	9.9-13.2 ft	Moist, light olive brown sand with clay	89
OL-VC-40017	OL-0292-08	16.5-18.8 ft	Moist, light gray clay	62.4
OL-VC-40018	OL-0292-09	3.3-6.6 ft	Moist, dark gray clay	109
OL-VC-40018	OL-0292-10	9.9-13.2 ft	Moist, dark gray clay	112.2

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/14/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40018	OL-0292-11	13.2-16.5 ft	Moist, olive brown clay	85.6
OL-VC-40040	OL-0292-12	0-3.3 ft	Moist, gray clay	100.2
OL-VC-40040	OL-0292-13	3.3-6.6 ft	Moist, dark gray clay with sand	109.3
OL-VC-40040	OL-0292-14	6.6-9.9 ft	Moist, dark gray clay	114.5
OL-VC-40040	OL-0292-15	9.9-13.2 ft	Moist, dark gray clay	129.3
OL-VC-40040	OL-0292-16	13.2-16.5 ft	Moist, dark gray clay	113.3
OL-VC-40040	OL-0292-17	16.5-19.8 ft	Moist, gray clay	115.9
OL-VC-40022	OL-0292-18	3.3-6.6 ft	Moist, dark gray clay	87.8
OL-VC-40022	OL-0292-19	6.6-9.9 ft	Moist, dark gray clay	87.1

Notes: Temperature of Drying : 110° Celsius

Chain of Custody / Analysis Request									
Privileged and Confidential						Site Name:			
Lorraine Weber						Onondaga Lake Syracuse, New York			
Lab-Use Only									
COC #:						GTE			
Job No.									
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088						Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -			
Hardcopy Report To: Invoice To:						Lorraine Weber Pete Petrone			
Sample Identification							Preservative:		
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.
OL-VC-40029	13.2	16.5	OL-0293-10	10/2/2006	13:43	SEDIMENT	SOIL	REG	1
OL-VC-40029	16.5	18.9	OL-0293-11	10/2/2006	13:44	SEDIMENT	SOIL	REG	1
OL-VC-40031	3.3	6.6	OL-0293-12	10/2/2006	14:12	SEDIMENT	SOIL	REG	1
OL-VC-40031	9.9	13.1	OL-0293-13	10/2/2006	14:16	SEDIMENT	SOIL	REG	1
OL-VC-40033	0	3.3	OL-0293-14	9/29/2006	15:05	SEDIMENT	SOIL	REG	1
OL-VC-40033	6.6	9.9	OL-0293-15	9/29/2006	15:11	SEDIMENT	SOIL	REG	1
OL-VC-40033	13.2	16.5	OL-0293-16	9/29/2006	15:19	SEDIMENT	SOIL	REG	1
OL-VC-40033	16.5	19.8	OL-0293-17	9/29/2006	15:20	SEDIMENT	SOIL	REG	1
OL-VC-40034	0	3.3	OL-0293-18	9/30/2006	07:53	SEDIMENT	SOIL	REG	1
Special Instructions:									
Relinquished by: <i>Lorraine M. Chmura</i>						Received by: <i>JH msh</i>			
Date/Time						Date/Time			
Company						Company			
Relinquished by:						Received by:			
Date/Time						Date/Time			
Company						Company			
Condition						Cooler Temp.			
Custody Seals Intact						Custody Seals Intact			

Representatives: 0 = None; [1 = HCl]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 12/11/2006

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/14/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40022	OL-0293-01	9.9-13.2 ft	Moist, olive brown clay	79.1
OL-VC-40022	OL-0293-02	16.5-19.4 ft	Moist, dark olive brown clay	84.6
OL-VC-40024	OL-0293-03	0.5-3.3 ft	Moist, dark gray clay	98.5
OL-VC-40024	OL-0293-04	3.3-6.6 ft	Moist, dark gray clay	108.5
OL-VC-40024	OL-0293-05	6.6-9.9 ft	Moist, olive brown clay	40
OL-VC-40024	OL-0293-06	9.9-13.2 ft	Moist, olive brown clay	88.6
OL-VC-40024	OL-0293-07	13.2-16.5 ft	Moist, olive brown clay	70.6
OL-VC-40024	OL-0293-08	16.5-19.4 ft	Moist, olive brown clay	65.4
OL-VC-40029	OL-0293-09	0-3.3 ft	Moist, very dark gray clay	94.5
OL-VC-40029	OL-0293-10	13.2-16.5 ft	Moist, dark gray clay	89.8

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/14/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40029	OL-0293-11	16.5-18.9 ft	Moist, dark gray clay	85
OL-VC-40031	OL-0293-12	3.3-6.6 ft	Moist, dark grayish brown sand with clay	94.2
OL-VC-40031	OL-0293-13	9.9-13.1 ft	Moist, dark olive brown sand with clay	94.5
OL-VC-40033	OL-0293-14	0-3.3 ft	Moist, light gray clay with sand	71.6
OL-VC-40033	OL-0293-15	6.6-9.9 ft	Moist, gray clay with sand	65.6
OL-VC-40033	OL-0293-16	13.2-16.5 ft	Moist, grayish brown clay with sand	57.4
OL-VC-40033	OL-0293-17	16.5-19.8 ft	Moist, olive gray silt	57.4
OL-VC-40034	OL-0293-18	0-3.3 ft	Moist, olive gray clay with sand	77.9
OL-VC-40034	OL-0293-19	6.6-9.9 ft	Moist, light gray clay	68
OL-VC-40034	OL-0293-20	9.9-13.2 ft	Moist, olive brown clay with sand	50.8

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-VC-40034	Sample Type:	jar
Sample ID:	OL-0294-01	Test Date:	02/14/07
Depth :	16.5-17.8 ft	Sample Id:	49834
Test Comment:	---		
Sample Description:	Moist, olive brown clay with sand		
Sample Comment:	---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-40034	OL-0294-01	16.5-17.8 ft	Moist, olive brown clay with sand	64.4

Notes: Temperature of Drying : 110° Celsius

[illegible]

Chain of Custody / Analysis Request											
Privileged and Confidential		Site Name:		Onondaga Lake							
Lab ID		Location of Site:		Syracuse, New York							
Sampler:		MATT VETTER		Preservative:							
PO #:				0 0 0 0 0 0 0 0 0 0							
Analysis Turnaround Time:											
Standard -											
Rush Charges Authorized for -											
2 weeks -											
1 week -											
Next Day -											
Sample Identification		Field Sample ID									
Location ID		Start Depth (ft)		End Depth (ft)							
Lorraine Weber		62		64		OL-0299-10					
Pete Petrone		66		68		OL-0299-11					
		70		72		OL-0299-12					
		72		74		OL-0299-13					
OL-0299-14		82		84		OL-0299-14					
OL-0299-15		103		105		OL-0299-15					
OL-0299-16		123		125		OL-0299-16					
OL-0299-17		128		130		OL-0299-17					

Special Instructions: Please retain excess sample volume		Received by:		Condition		Custody Seals Intact	
Relinquished by: <i>Debra M. Chmura</i>	Company Date/Time	PARSONS 3/12/07 @ 1045		Company Date/Time	Cooler Temp.		
Relinquished by:	Company Date/Time		Received by:	Company Date/Time	Condition		Custody Seals Intact
					Cooler Temp.		

Page 2 of 3

Chain of Custody / Analysis Request										AEST Ref: 38292-40495	
Privileged and Confidential				Site Name:		Onondaga Lake		Lab Use Only		COC #: 0299	
				Location of Site:		Syracuse, New York		Lab Proj #			
Sampler:				JATT VETTER		Preservative:		Lab ID		GTE	
PO #:						0		0		0	
Analysis Turnaround Time:						0		0		0	
Standard -						0		0		0	
Rush Charges Authorized for -						0		0		0	
2 weeks -						0		0		0	
1 week -						0		0		0	
Next Day -						0		0		0	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #		Sample #		Sample #	
Sample Date				Sample Time		Sample Type		Sample Matrix		Sample Purpose	
Sample #				Sample #		Sample #					

Special Instructions: Please retain excess sample volume

Relinquished by: <i>Shra M. Chinn</i>	Company	PARSONS	Received by:	Company	Condition	Custody Seals Intact
	Date/Time					
Relinquished by:	Company		Received by:	Company	Condition	Custody Seals Intact
	Date/Time					
					Cooler Temp.	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: ml	
Sample ID:---	Test Date: 05/08/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-STA-10108	OL-0299-01	2-4 ft	Moist, white silt	243.6
OL-STA-10108	OL-0299-02	12-14 ft	Moist, white silt	226.1
OL-STA-10108	OL-0299-03	27-29 ft	Moist, light gray silt	124.2
OL-STA-10108	OL-0299-04	32-34 ft	Moist, light gray silt	112
OL-STA-10108	OL-0299-05	42-44 ft	Moist, white silt	270.5
OL-STA-10108	OL-0299-06	47-49 ft	Moist, dark gray silt	85.5
OL-STA-10108	OL-0299-07	57-59 ft	Moist, grayish brown silt	73.9
OL-STA-10108	OL-0299-08	37-39 ft	Moist, dark gray silt	82.6
OL-STA-10108	OL-0299-09	52-54 ft	Moist, dark olive gray silt	75.9
OL-STA-10108	OL-0299-10	62-64 ft	Moist, gray silt	68.5

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	n/a
Boring ID: ---	Sample Type: ---	Test Date:	05/08/07
Sample ID:---	Test Date:	Sample Id:	---
Depth : ---			

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-STA-10108	OL-0299-11	66-68 ft	Moist, light olive brown silt	70.3
OL-STA-10108	OL-0299-12	70-72 ft	Moist, black silt	60.2
OL-STA-10108	OL-0299-13	72-74 ft	Moist, brown silt	64.9
OL-STA-10108	OL-0299-14	82-84 ft	Moist, dark reddish gray silt	40.6
OL-STA-10108	OL-0299-15	103-105 ft	Moist, reddish gray silt	44.4
OL-STA-10108	OL-0299-16	123-125 ft	Moist, reddish brown silt	20.4
OL-STA-10108	OL-0299-17	128-130 ft	Moist, reddish brown silt	18.6
OL-STA-10108	OL-0299-18	141-143 ft	Moist, very dark brown sand	17.2
OL-STA-10108	OL-0299-19	149-151 ft	Moist, reddish brown sand w/ gravel	7.9
OL-STA-10108	OL-0299-20	165-167 ft	Moist, reddish brown silt w/ gravel	11.2

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: rmt	
Sample ID:---	Test Date: 03/21/07	Checked By: jdt	
Depth : ---	Test Id: 109031		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-STA-10108	OL-0299-02	12-14 ft	Moist, white silt	2.59
OL-STA-10108	OL-0299-08	37-39 ft	Moist, dark gray silt	2.52
OL-STA-10108	OL-0299-09	52-54 ft	Moist, dark olive gray silt	2.69

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-STA-10108

Sample Type: jar

Tested By: ml

Sample ID: OL-0299-02

Test Date: 03/20/07

Checked By: jdt

Depth: 12-14 ft

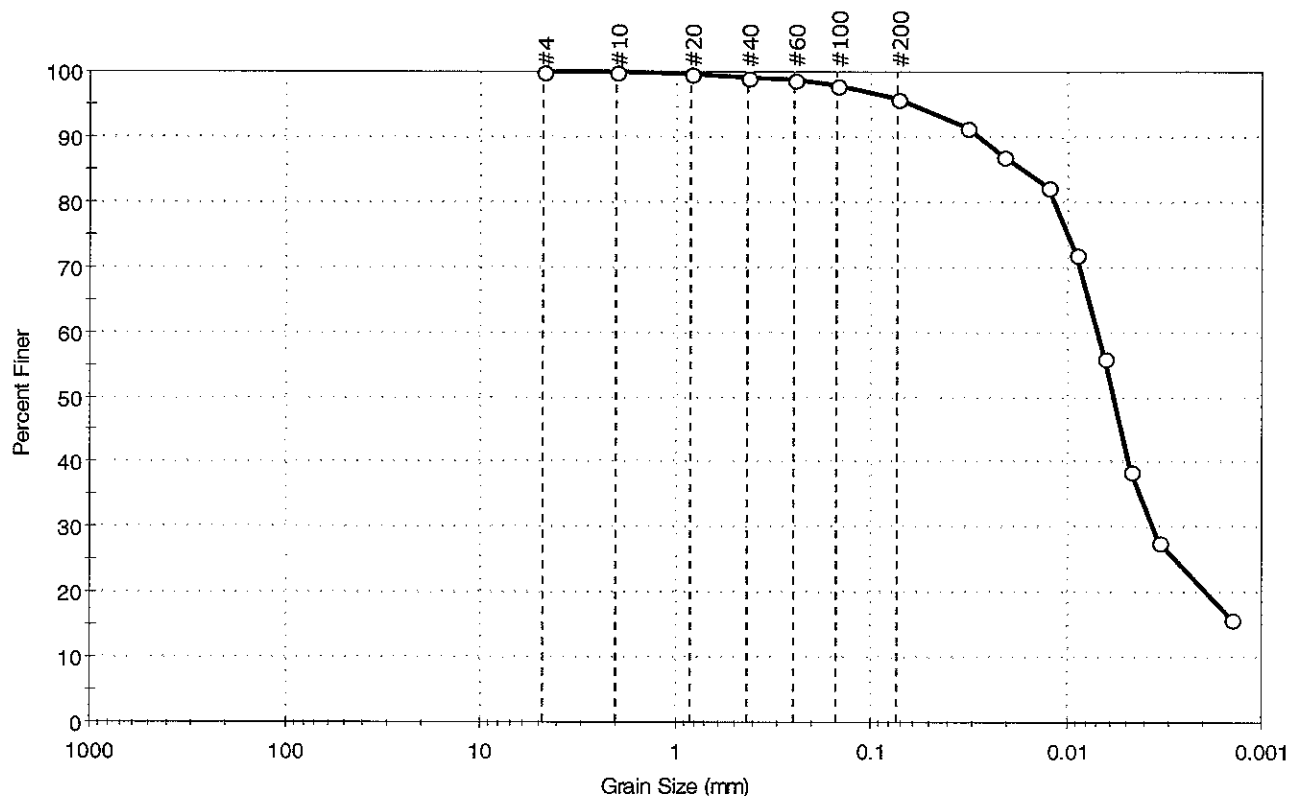
Test Id: 109012

Test Comment: ---

Sample Description: Moist, white silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	4.1	95.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	98		
#200	0.074	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0323	92		
---	0.0211	87		
---	0.0125	82		
---	0.0090	72		
---	0.0065	56		
---	0.0047	39		
---	0.0034	28		
---	0.0014	16		

Coefficients

$D_{85} = 0.0166$ mm $D_{30} = 0.0036$ mm
 $D_{60} = 0.0070$ mm $D_{15} = N/A$
 $D_{50} = 0.0058$ mm $D_{10} = N/A$
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (84))

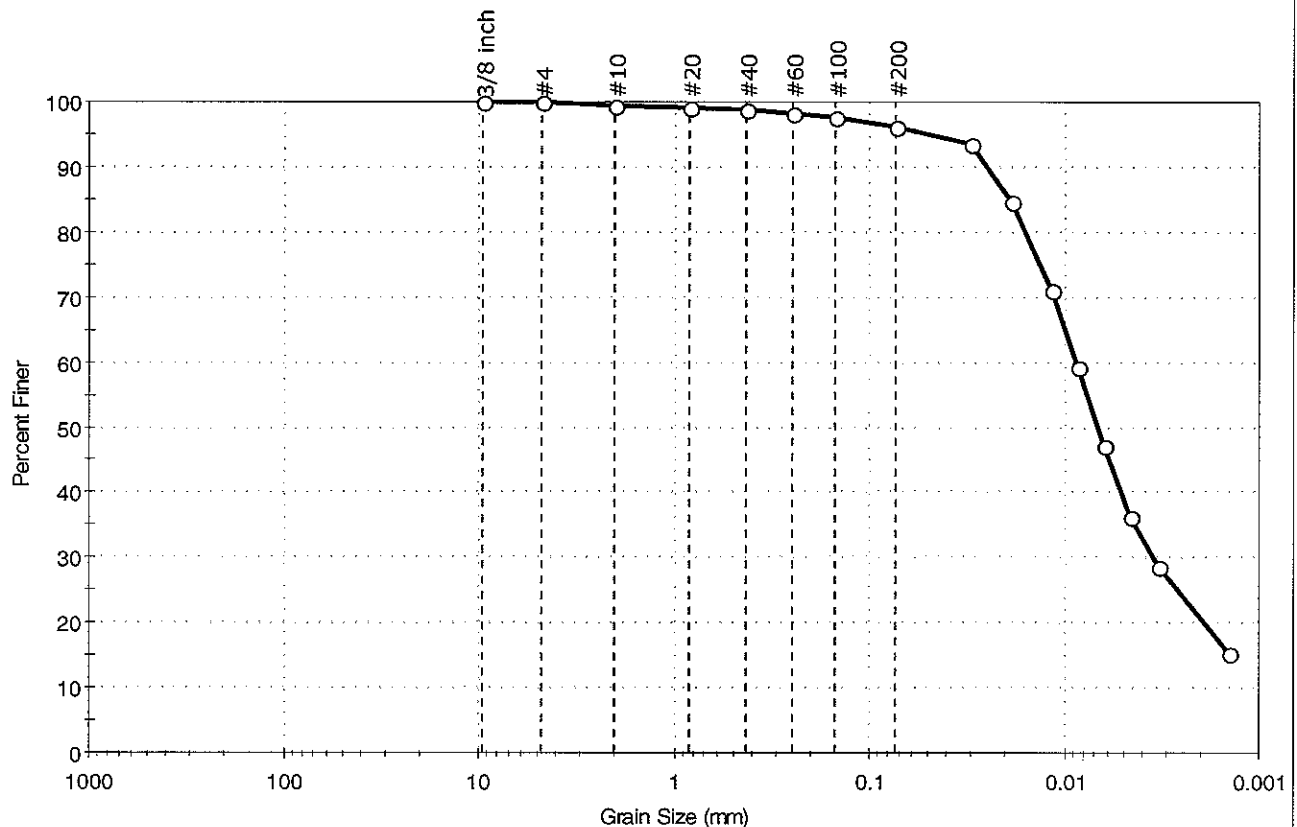
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : SOFT

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-STA-10108	Sample Type: jar
Sample ID: OL-0299-08	Test Date: 03/20/07	Tested By: mll
Depth: 37-39 ft	Test Id: 109013	Checked By: jdt
Test Comment: ---		
Sample Description: Moist, dark gray silt		
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.1	3.7	96.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	98		
#200	0.074	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0300	94		
---	0.0188	85		
---	0.0116	71		
---	0.0085	59		
---	0.0062	47		
---	0.0046	36		
---	0.0033	29		
---	0.0014	15		

Coefficients

D ₈₅ = 0.0191 mm	D ₃₀ = 0.0035 mm
D ₆₀ = 0.0086 mm	D ₁₅ = N/A
D ₅₀ = 0.0067 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (37))

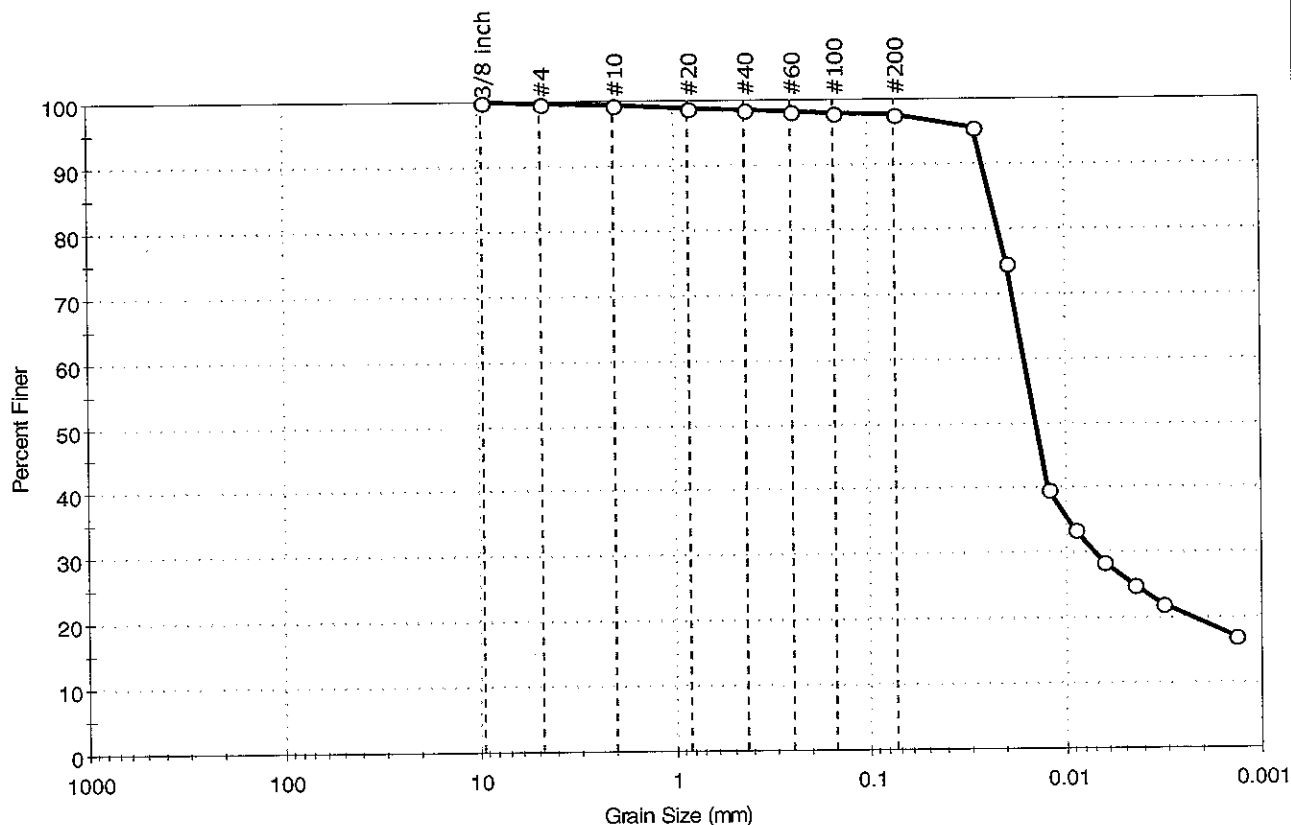
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : SOFT

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0299-09	Test Date:	03/22/07
Depth :	52-54 ft	Test Id:	109014
Test Comment:	---		
Sample Description:	Moist, dark olive gray silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
—	0.2	2.3	97.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	98		
#200	0.074	98		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0288	96		
---	0.0198	74		
---	0.0121	40		
---	0.0089	34		
---	0.0064	29		
---	0.0045	25		
---	0.0032	22		
---	0.0014	17		

Coefficients

D ₈₅ = 0.0238 mm	D ₃₀ = 0.0070 mm
D ₆₀ = 0.0161 mm	D ₁₅ = N/A
D ₅₀ = 0.0140 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (71))

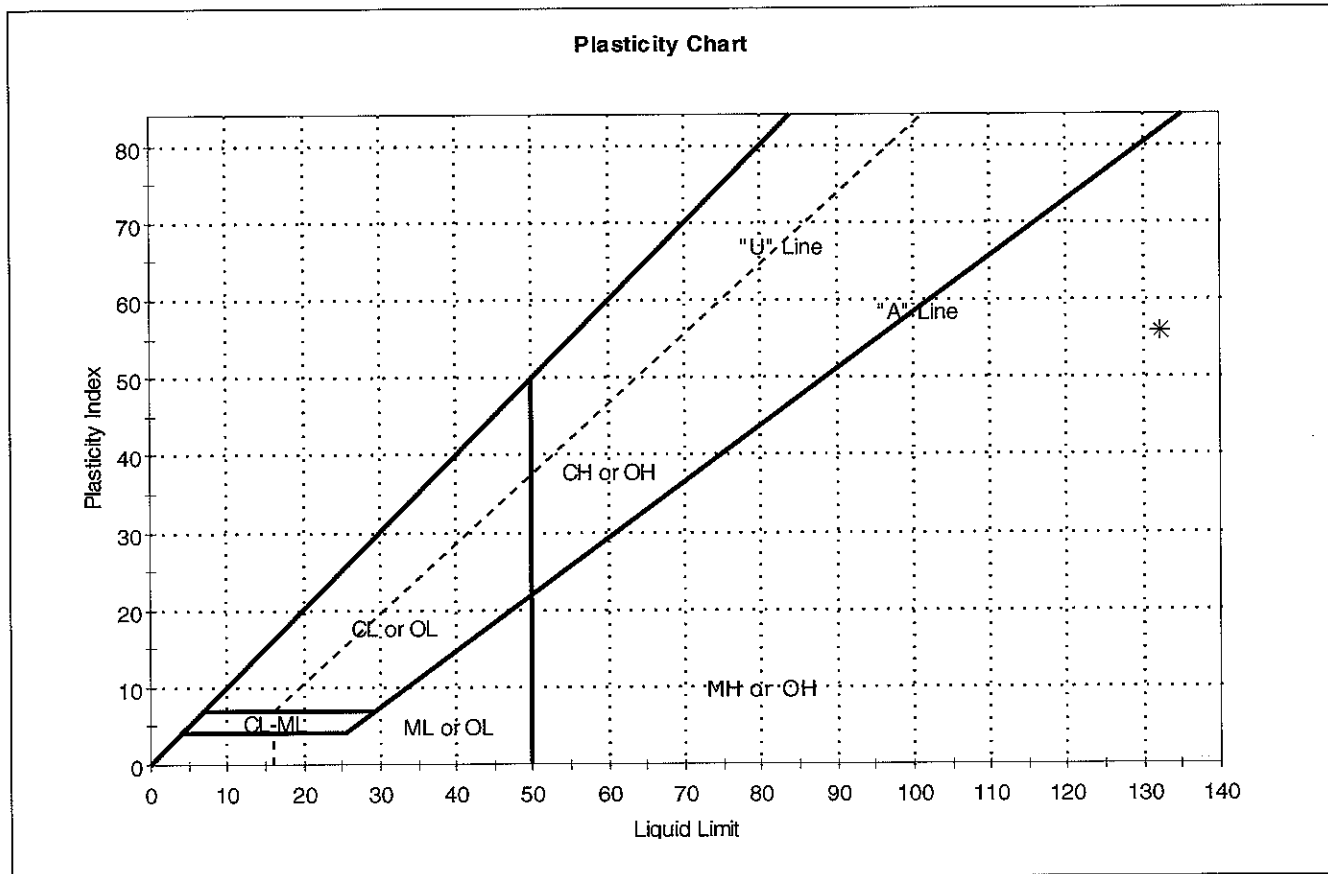
Sample/Test Description

Sand/Gravel Particle Shape :

Sand/Gravel Hardness :

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0299-02	Test Date:	03/20/07
Depth:	12-14 ft	Test Id:	108995
Test Comment:	---		
Sample Description:	Moist, white silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0299-02	STA-101	12-14 ft	226	132	76	56	3	elastic silt (MH)

Sample Prepared using the WET method

1% Retained on #40 Sieve

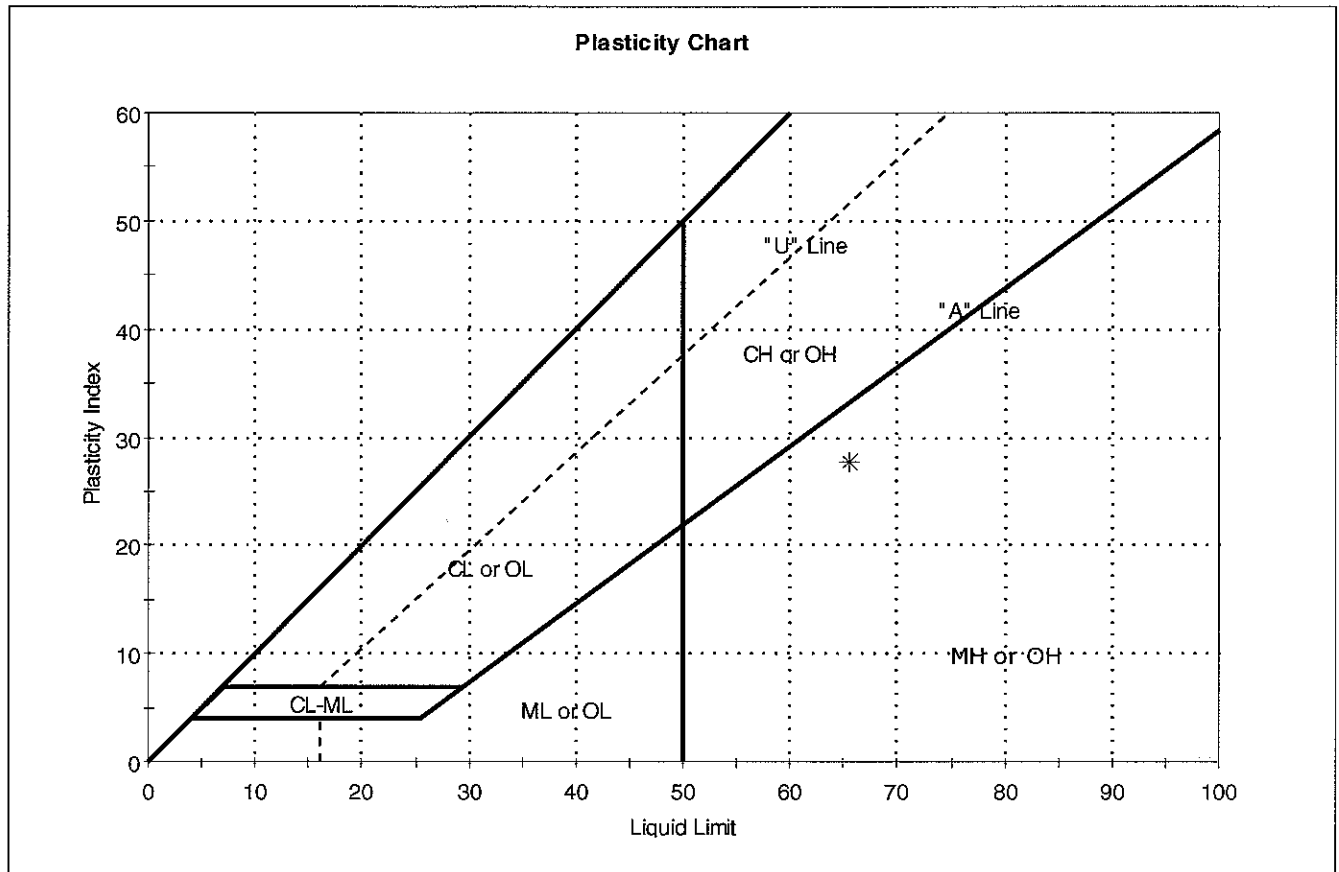
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0299-08	Test Date:	03/20/07
Depth :	37-39 ft	Test Id:	108996
Test Comment:	---		
Sample Description:	Moist, dark gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

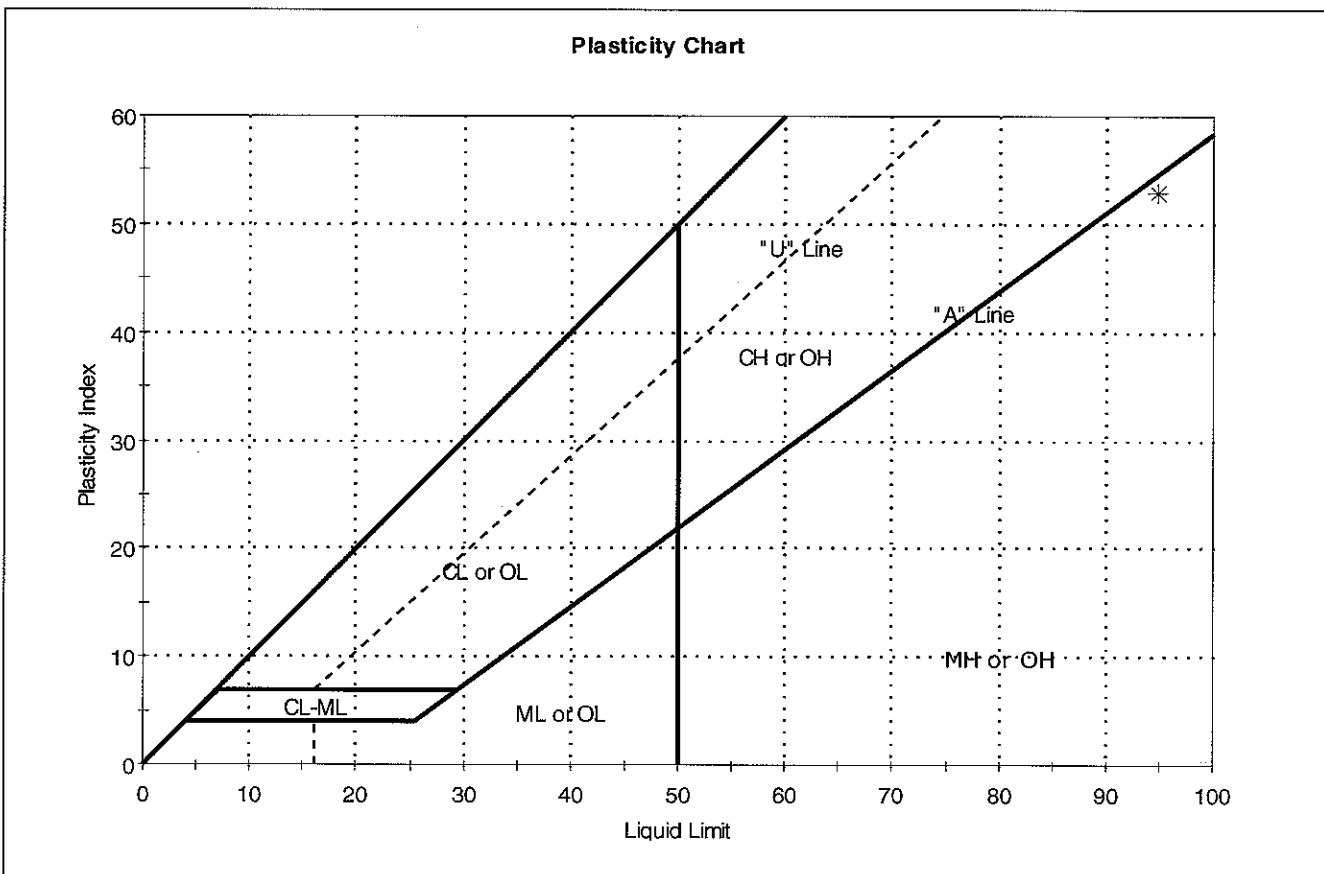


Symbol	Sample ID	Boring	Depth	Natural Moisture Content %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0299-08	STA-101	37-39 ft	83	66	38	28	2	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0299-09	Test Date:	03/20/07
Depth :	52-54 ft	Test Id:	108997
Test Comment:	---		
Sample Description:	Moist, dark olive gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0299-09	STA-101	52-54 ft	76	95	42	53	1	elastic silt (MH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

[illegible]

Special Instructions: Please retain excess sample volume

Preservatives: 0 = None; [1 = HCl]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Date Printed: 3/12/2007

Chain of Custody / Analysis Request										38292.40495
Privileged and Confidential										Site Name: Onondaga Lake
SOP 101 Lorraine Weber										Location of Site: Syracuse, New York
Sampler: MATT VETTER										Lab Use Only
PO #:										Lab Proj #
Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -										Lab ID
Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088										Job No
Grandcopy Reports For: Lorraine Weber										GTE
Requested To: Pete Petrone										
Sample Identification										Lab Sample Numbers
Location ID	Start Depth (ft)	End Depth (ft)	Field Sample ID	Sample Date	Sample Time	Sample Type	Sample Matrix	Sample Purpose	# of Cont.	
OL-STA-30033	63	65	OL-0300-10	3/12/2007	14:44	SEDIMENT	SOIL	REG	1	
OL-STA-30033	67	69	OL-0300-11	3/12/2007	14:46	SEDIMENT	SOIL	REG	1	
OL-STA-30033	71	73	OL-0300-12	3/12/2007	14:47	SEDIMENT	SOIL	REG	1	
OL-STA-30033	75	77	OL-0300-13	3/12/2007	14:49	SEDIMENT	SOIL	REG	1	
OL-STA-30033	81	83	OL-0300-14	3/12/2007	14:50	SEDIMENT	SOIL	REG	1	
OL-STA-30033	83	85	OL-0300-15	3/12/2007	14:50	SEDIMENT	SOIL	REG	1	
OL-STA-30033	87	89	OL-0300-16	3/12/2007	14:51	SEDIMENT	SOIL	REG	1	
OL-STA-30033	89	91	OL-0300-17	3/12/2007	14:53	SEDIMENT	SOIL	REG	1	
OL-STA-30033	93	95	OL-0300-18	3/12/2007	14:54	SEDIMENT	SOIL	REG	1	
Special Instructions: Please retain excess sample volume										
Relinquished by: <i>Debra M. Chomura</i>										Company
Date/Time: 3/12/07 @ 1045										Date/Time
Relinquished by:										Company
Date/Time:										Date/Time
Received by:										Company
Date/Time:										Date/Time
Condition:										Cooler Temp.
Custody Seals Intact:										Custody Seals Intact

Special Instructions: Please retain excess sample volume

Preservatives: 0 = None; [1 = HCL; [2 = HNO3; [3 = H2SO4; [4 = NaOH; [5 = Zn. Acetate]; [6 = MeOH; [7 = NaHSO4]; 8 = Other (specify):

Page 2 of 3

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	n/a
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	05/08/07
Depth :	---	Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-STA-30033	OL-0300-01	0-2 ft	Moist, white silt	185.6
OL-STA-30033	OL-0300-02	15-17 ft	Moist, white silt	215.3
OL-STA-30033	OL-0300-03	20-22 ft	Moist, gray silt	83.5
OL-STA-30033	OL-0300-04	25-27 ft	Moist, reddish gray silt	70.9
OL-STA-30033	OL-0300-05	35-37 ft	Moist, very dark gray silt	68.8
OL-STA-30033	OL-0300-06	40-42 ft	Moist, brown clay	44.2
OL-STA-30033	OL-0300-07	45-47 ft	Moist, reddish gray silt	58.3
OL-STA-30033	OL-0300-08	53-55 ft	Moist, weak red silt	29
OL-STA-30033	OL-0300-09	55-57 ft	Moist, reddish brown silt	24.7
OL-STA-30033	OL-0300-10	63-65 ft	Wet, weak red sandy silt	30.3

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	05/08/07
Depth :	---	Tested By:	mll
		Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-STA-30033	OL-0300-11	67-69 ft	Wet, weak red sandy silt	22.1
OL-STA-30033	OL-0300-12	71-73 ft	Wet, reddish gray sandy silt	34.8
OL-STA-30033	OL-0300-13	75-77 ft	Moist, reddish gray sand	11.3
OL-STA-30033	OL-0300-14	81-83 ft	Wet, pale red sand	20.4
OL-STA-30033	OL-0300-15	83-85 ft	Wet, weak red sand	21.9
OL-STA-30033	OL-0300-16	87-89 ft	Wet, reddish gray sand	18.7
OL-STA-30033	OL-0300-17	89-91 ft	Wet, reddish gray sand	15.2
OL-STA-30033	OL-0300-18	93-95 ft	Moist, dark reddish gray sand	19.1
OL-STA-30033	OL-0300-19	97-99 ft	Wet, dark reddish gray sand	25.7
OL-STA-30033	OL-0300-20	101-103 ft	Moist, reddish gray sand	14.9

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/15/07
Depth :	---	Checked By:	n/a
		Sample Id:	---

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
SB915- SB13-01	OL-0301-01	53-60 ft	Moist, light brownish gray silty, clayey sand with gravel	12.2
SB915- SB13-01	OL-0301-02	118-120 ft	Moist, brown silty, clayey sand	8.2
SB915- SB13-02	OL-0301-03	65-67 ft	Moist, brown gray gravel with silt and sand	8.2
SB915- SB13-06	OL-0301-04	103-105 ft	Moist, grayish brown silty, clayey sand with gravel	65.6
SB915- SB13-08	OL-0301-05	68-70 ft	Moist, brown silty sand	8.3
SB915- SB13-09	OL-0301-06	58-65 ft	Moist, olive brown sand with silt and gravel	12.8
SB915- PZ13-01	OL-0301-07	55-57 ft	Moist, olive brown sandy silt	54.5
SB915- PZ13-02	OL-0301-08	43-45 ft	Moist, olive gray silty gravel with sand	10.2
SB915- PZ13-03	OL-0301-09	68-75 ft	Wet, brown silty, clayey sand with gravel	12.6
SB915- PZ13-04	OL-0301-10	63-65 ft	Moist, very dark gray silty sand	13.1

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/15/07
Depth :	---	Sample Id:	---
		Tested By:	ml
		Checked By:	n/a

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
SB915- PZ13-04	OL-0301-11	108-110 ft	Moist, dark gray sand with silt	14.3
SB915- PZ13-05	OL-0301-12	48-50 ft	Moist, brown clayey sand with gravel	19.7
SB915- PZ13-06	OL-0301-13	55-65 ft	Moist, brown sand with silt and gravel	19.1
SB915- PZ13-13	OL-0301-14	40-42 ft	Moist, brown clay	24.4
SB915- PZ13-16	OL-0301-15	55-57 ft	Moist, olive brown clay	24.5
SB915- PZ13-07	OL-0301-16	25-27 ft	Moist, grayish brown silty sand	33.1
SB915- PZ13-08	OL-0301-17	15-17 ft	Moist, brown sandy clay with gravel	11
SB915- PZ13-09	OL-0301-18	10-17 ft	Moist, brown sandy clay	10.1
SB915- PZ13-11	OL-0301-19	25-27 ft	Moist, brown sandy clay	9.7
SB915- PZ13-12	OL-0301-20	35-37 ft	Moist, brown sandy clay	17.1

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: yf	
Sample ID:---	Test Date: 01/10/07	Checked By: jdt	
Depth : ---	Test Id: 106227		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Coarse %	Coarse SG	Fine %	Fine SG	Specific Gravity
SB915-SB13-01	OL-0301-01	53-60 ft	Moist, light brownish gray silty, clayey sand with gravel	28	2.61	72	2.58	2.59
SB915-SB13-01	OL-0301-02	118-120 ft	Moist, brown silty, clayey sand	9	2.49	91	2.76	2.73
SB915-SB13-02	OL-0301-03	65-67 ft	Moist, brown gray gravel with silt and sand	63	2.66	37	2.81	2.71
SB915-SB13-06	OL-0301-04	103-105 ft	Moist, grayish brown silty, clayey sand with gravel	20	2.67	80	2.71	2.7
SB915-SB13-08	OL-0301-05	68-70 ft	Moist, brown silty sand	13	2.54	87	2.78	2.75
SB915-SB13-09	OL-0301-06	58-65 ft	Moist, olive brown sand with silt and gravel	35	2.19	65	2.75	2.52

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854

Moisture Content determined by ASTM D 2216.

coarse fraction > #4 sieve

fine fraction < #4 sieve

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	05/25/07
Depth :	---	Test Id:	106241
		Tested By:	yf
		Checked By:	jdt

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
SB915-PZ13-01	OL-0301 -07	55-57 ft	Moist, olive brown sandy silt	2.68
SB915-PZ13-04	OL-0301 -10	63-65 ft	Moist, very dark gray silty sand	2.73
SB915-PZ13-13	OL-0301 -14	40-42 ft	Moist, brown clay	2.76
SB915-PZ13-16	OL-0301 -15	55-57 ft	Moist, olive brown clay	2.69
SB915-PZ13-12	OL-0301 -20	35-37 ft	Moist, brown sandy clay	2.78

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science		Project No:	GTX-7143
Project:	Onondaga		Tested By:	rmt
Location:	Syracuse		Checked By:	jdt
Boring ID:	---	Sample Type:	---	
Sample ID:	---	Test Date:	02/14/07	
Depth :	---	Test Id:	106240	

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Coarse %	Coarse SG	Fine %	Fine SG	Specific Gravity
SB915-PZ13-02	OL-0301-08	43-45 ft	Moist, olive gray silty gravel with sand	44	2.39	56	2.76	2.58
SB915-PZ13-03	OL-0301-09	68-75 ft	Wet, brown silty, clayey sand with gravel	34	2.42	66	2.81	2.66
SB915-PZ13-04	OL-0301-11	108-110 ft	Moist, dark gray sand with silt	11	2.19	89	2.81	2.72
SB915-PZ13-05	OL-0301-12	48-50 ft	Moist, brown clayey sand with gravel	17	2.35	83	2.7	2.63
SB915-PZ13-06	OL-0301-13	55-65 ft	Moist, brown sand with silt and gravel	44	2.21	56	2.88	2.54
SB915-PZ13-07	OL-0301-16	25-27 ft	Moist, grayish brown silty sand	11	2.08	89	2.72	2.63
SB915-PZ13-08	OL-0301-17	15-17 ft	Moist, brown sandy clay with gravel	19	2.19	81	2.75	2.62
SB915-PZ13-09	OL-0301-18	10-17 ft	Moist, brown sandy clay	6	2.56	94	2.8	2.78
SB915-PZ13-11	OL-0301-19	25-27 ft	Moist, brown sandy clay	9	2.58	91	2.82	2.79

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854

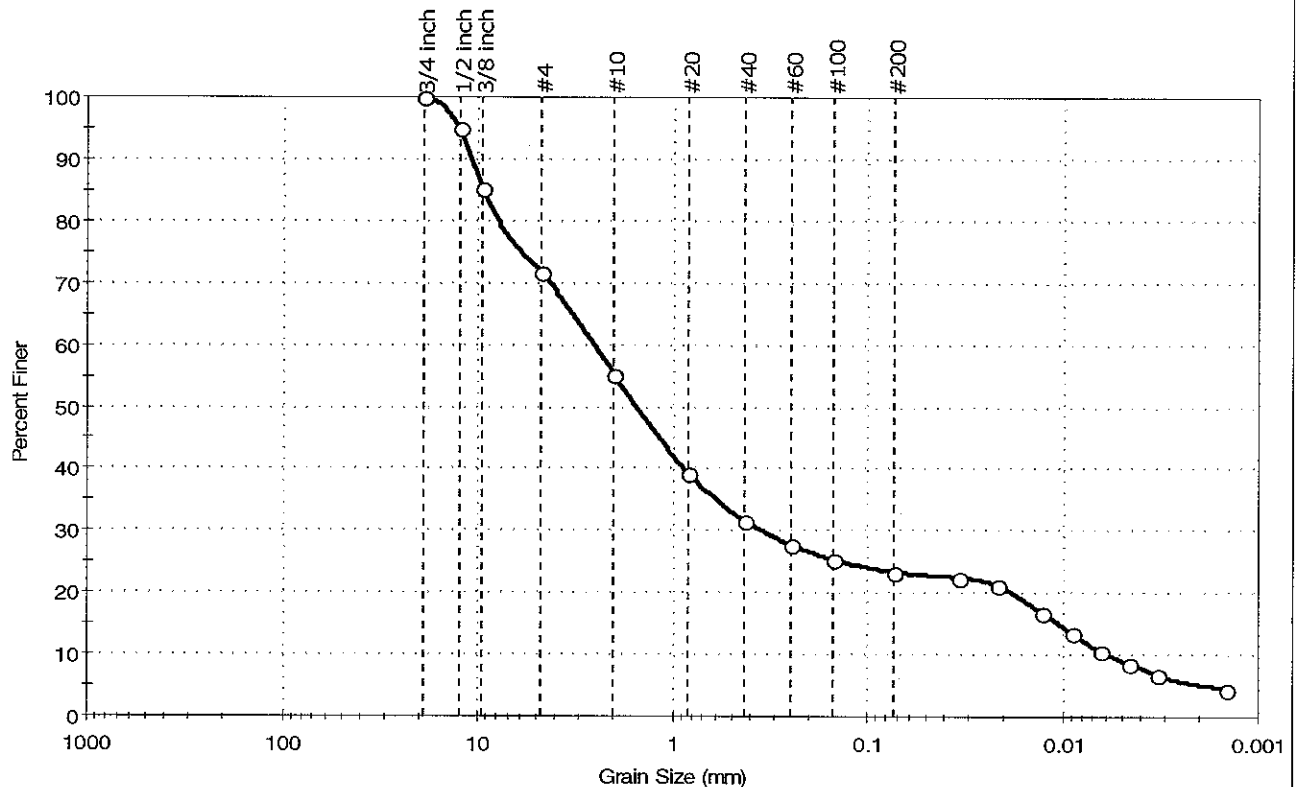
Moisture Content determined by ASTM D 2216.

coarse fraction > #4 sieve

fine fraction < #4 sieve

Client: Parsons Engineering Science	Project: Onondaga	Location: Syracuse	Project No: GTX-7143
Boring ID: SB915-SB13-01	Sample Type: jar	Tested By: mll	
Sample ID: OL-0301-01	Test Date: 01/25/07	Checked By: jdt	
Depth : 53-60 ft	Test Id: 106246		
Test Comment: ---			
Sample Description: Moist, light brownish gray silty, clayey sand with gravel			
Sample Comment: ---			

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	28.2	48.4	23.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	95		
3/8 inch	9.50	85		
#4	4.75	72		
#10	2.00	55		
#20	0.84	39		
#40	0.42	32		
#60	0.25	28		
#100	0.15	25		
#200	0.074	23		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0343	22		
---	0.0217	21		
---	0.0127	17		
---	0.0091	14		
---	0.0065	11		
---	0.0046	9		
---	0.0033	7		
---	0.0014	5		

Coefficients

D ₈₅ = 9.3802 mm	D ₃₀ = 0.3395 mm
D ₆₀ = 2.5816 mm	D ₁₅ = 0.0105 mm
D ₅₀ = 1.5120 mm	D ₁₀ = 0.0059 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty, clayey sand with gravel (SC-SM)

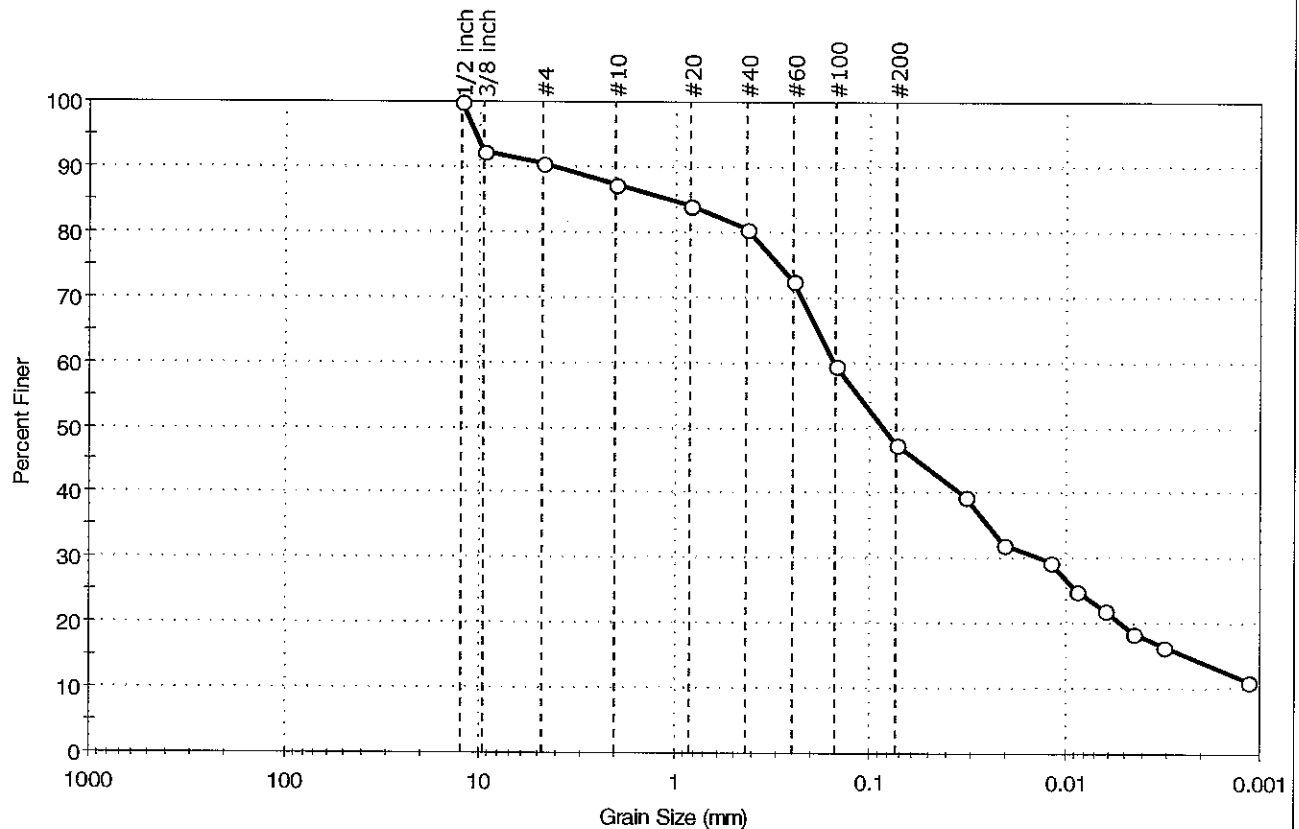
AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-01	Sample Type:	jar
Sample ID:	OL-0301-02	Test Date:	02/12/07
Depth :	118-120 ft	Test Id:	106247
Test Comment:	---		
Sample Description:	Moist, brown silty, clayey sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	9.4	43.2	47.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	92		
#4	4.75	87		
#10	2.00	84		
#20	0.84	80		
#40	0.42	73		
#60	0.25	60		
#100	0.15	47		
#200	0.074			
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0326	40		
---	0.0207	32		
---	0.0121	29		
---	0.0087	25		
---	0.0062	22		
---	0.0044	19		
---	0.0032	16		
---	0.0012	11		

Coefficients

D ₈₅ = 1.0624 mm	D ₃₀ = 0.0135 mm
D ₆₀ = 0.1517 mm	D ₁₅ = 0.0024 mm
D ₅₀ = 0.0860 mm	D ₁₀ = 0.0009 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty, clayey sand (SC-SM)

AASHTO Silty Soils (A-4 (0))

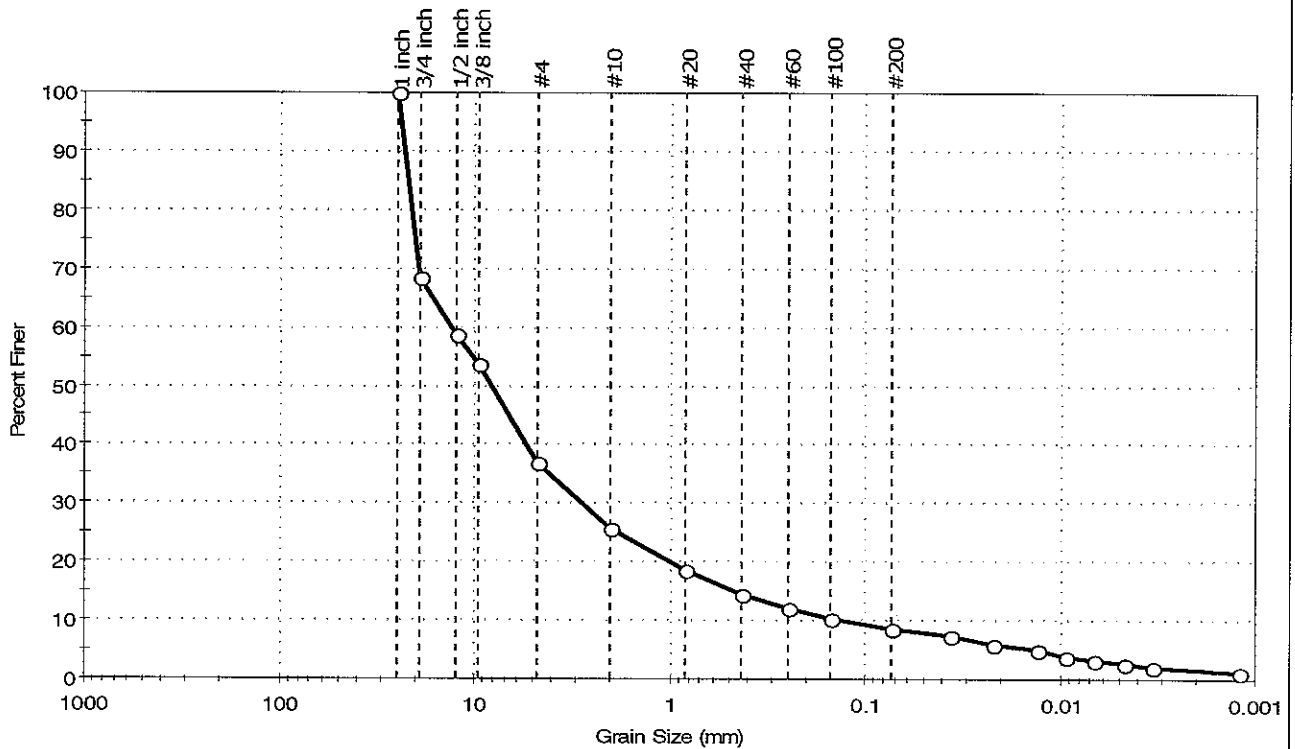
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mill
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-02	Sample Type:	jar
Sample ID:	OL-0301-03	Test Date:	01/12/07
Depth:	65-67 ft	Test Id:	106248
Test Comment:	---		
Sample Description:	Moist, brown gray gravel with silt and sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	63.1	28.3	8.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 inch	25.00	100		
3/4 inch	19.00	68		
1/2 inch	12.50	59		
3/8 inch	9.50	54		
#4	4.75	37		
#10	2.00	26		
#20	0.84	19		
#40	0.42	14		
#60	0.25	12		
#100	0.15	10		
#200	0.074	9		
Particle Size (mm)	Percent Finer	Spec. Percent	Complies	
---	0.0364	7		
---	0.0222	6		
---	0.0132	5		
---	0.0094	4		
---	0.0067	3		
---	0.0047	3		
---	0.0034	2		
---	0.0012	1		

Coefficients

D ₈₅ = 21.9462 mm	D ₃₀ = 2.8070 mm
D ₆₀ = 13.2268 mm	D ₁₅ = 0.4733 mm
D ₅₀ = 8.1567 mm	D ₁₀ = 0.1320 mm
C _u = 100.203	C _c = 4.513

Classification

ASTM Poorly graded gravel with silt and sand (GP-GM)

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

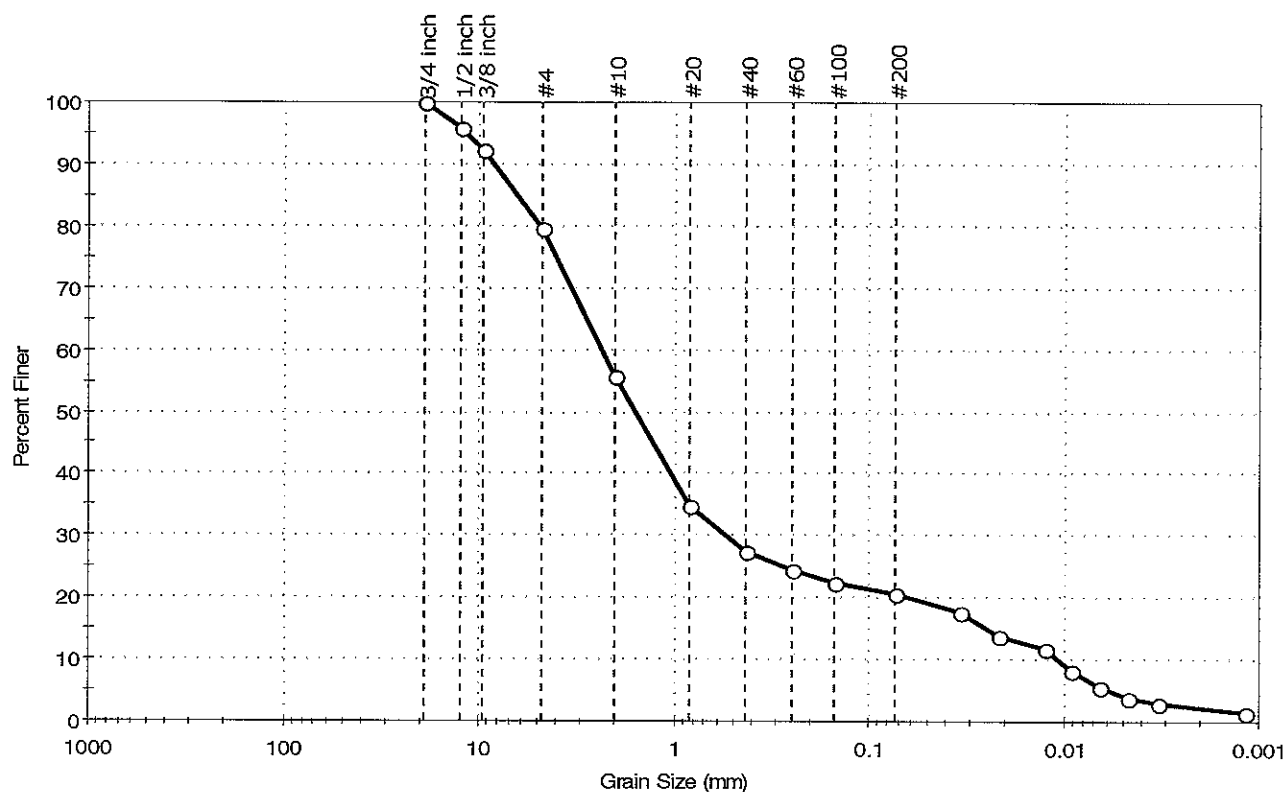
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-06	Sample Type:	jar
Sample ID:	OL-0301-04	Test Date:	01/25/07
Depth :	103-105 ft	Test Id:	106249
Test Comment:	---		
Sample Description:	Moist, grayish brown silty, clayey sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	20.3	59.2	20.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	96		
3/8 inch	9.50	92		
#4	4.75	80		
#10	2.00	56		
#20	0.84	35		
#40	0.42	27		
#60	0.25	24		
#100	0.15	22		
#200	0.074	21		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0342	18		
---	0.0218	14		
---	0.0125	12		
---	0.0091	8		
---	0.0066	6		
---	0.0047	4		
---	0.0033	3		
---	0.0012	2		

Coefficients

D ₈₅ = 6.3265 mm	D ₃₀ = 0.5375 mm
D ₆₀ = 2.3249 mm	D ₁₅ = 0.0248 mm
D ₅₀ = 1.5717 mm	D ₁₀ = 0.0107 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty, clayey sand with gravel (SC-SM)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

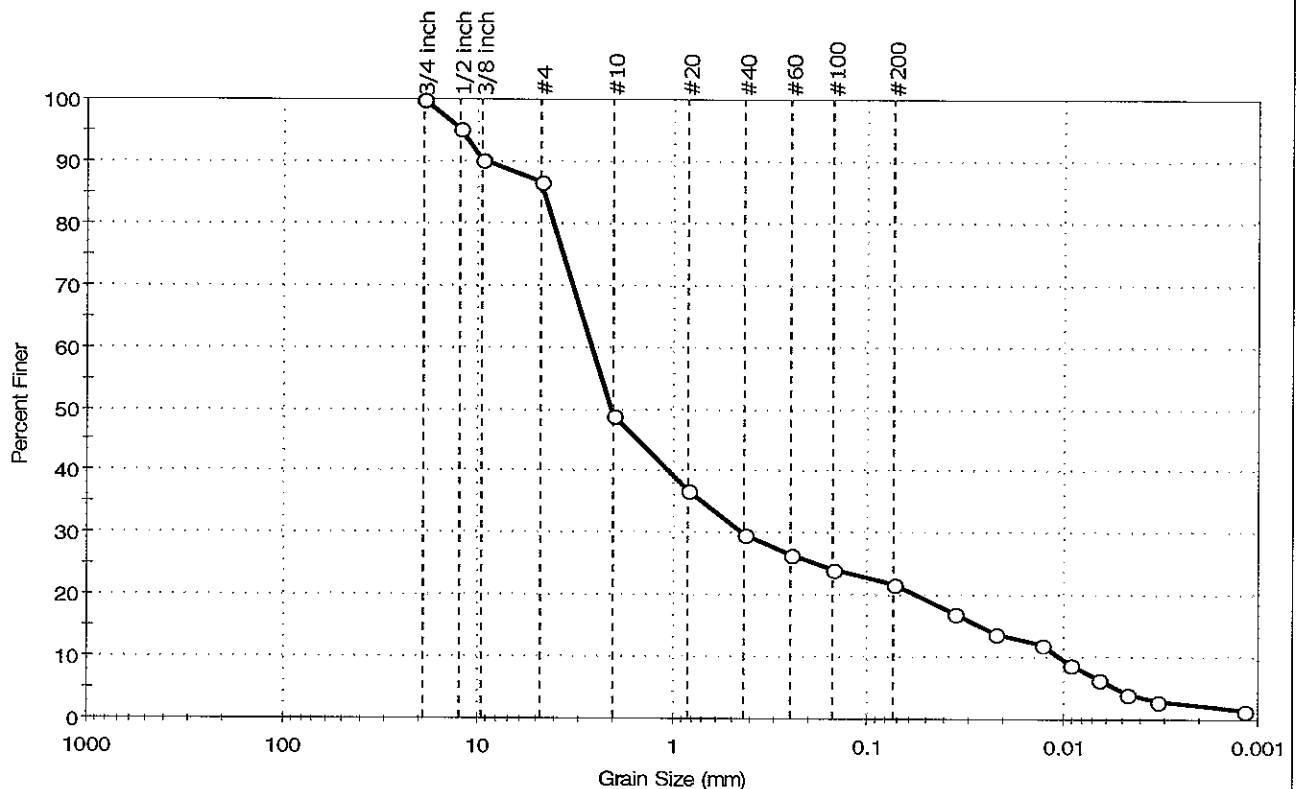
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-08	Sample Type:	jar
Sample ID:	OL-0301-05	Test Date:	01/25/07
Depth:	68-70 ft	Test Id:	106250
Test Comment:	---		
Sample Description:	Moist, brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	13.2	64.8	22.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	95		
3/8 inch	9.50	90		
#4	4.75	87		
#10	2.00	49		
#20	0.84	37		
#40	0.42	30		
#60	0.25	26		
#100	0.15	24		
#200	0.074	22		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0358	17		
---	0.0224	14		
---	0.0129	12		
---	0.0092	9		
---	0.0065	7		
---	0.0047	4		
---	0.0033	3		
---	0.0012	2		

Coefficients

D ₈₅ = 4.5673 mm	D ₃₀ = 0.4291 mm
D ₆₀ = 2.5794 mm	D ₁₅ = 0.0263 mm
D ₅₀ = 2.0524 mm	D ₁₀ = 0.0103 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

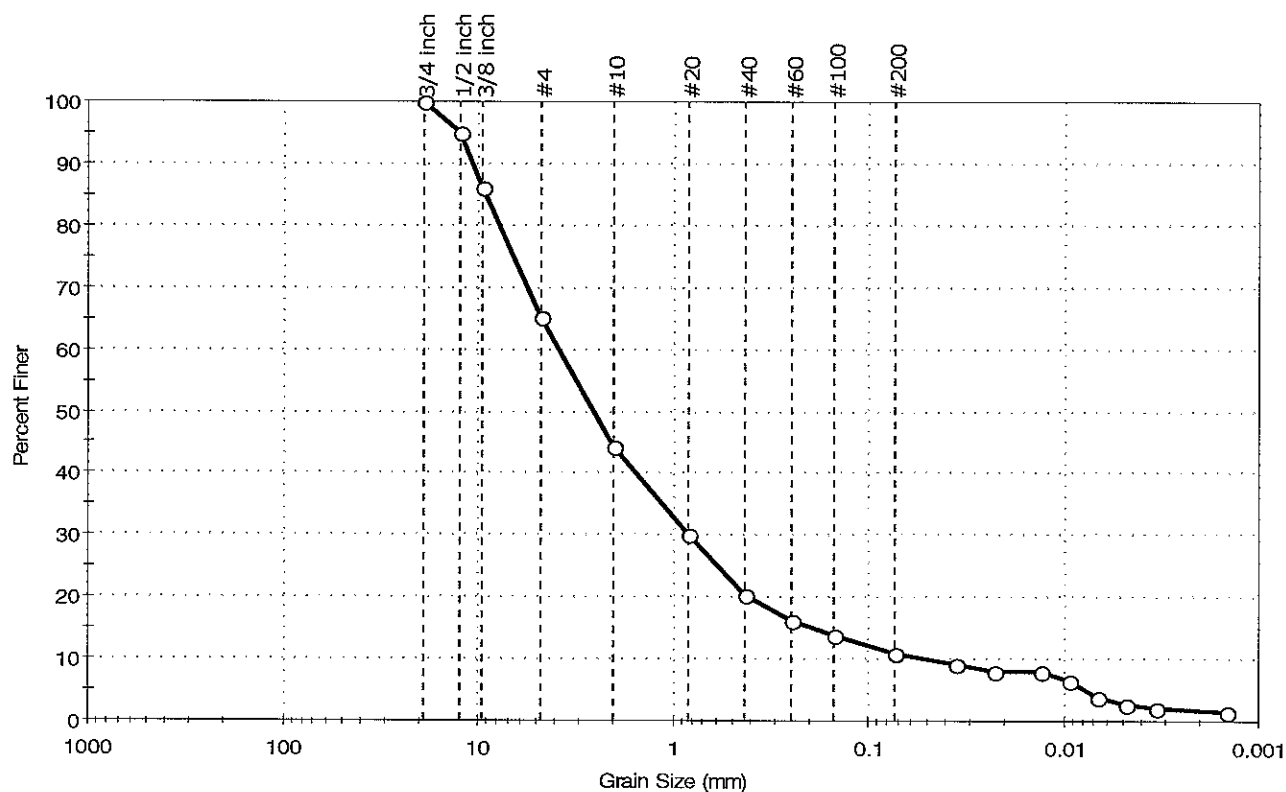
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mil
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-09	Sample Type:	jar
Sample ID:	OL-0301-06	Test Date:	01/09/07
Depth :	58-65 ft	Test Id:	106251
Test Comment:	---		
Sample Description:	Moist, olive brown sand with silt and gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	34.9	54.0	11.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	95		
3/8 inch	9.50	86		
#4	4.75	65		
#10	2.00	44		
#20	0.84	30		
#40	0.42	20		
#60	0.25	16		
#100	0.15	14		
#200	0.074	11		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0361	9		
---	0.0229	8		
---	0.0132	8		
---	0.0094	6		
---	0.0067	4		
---	0.0048	3		
---	0.0034	2		
---	0.0015	2		

Coefficients

D ₈₅ = 9.1909 mm	D ₃₀ = 0.8295 mm
D ₆₀ = 3.8478 mm	D ₁₅ = 0.1895 mm
D ₅₀ = 2.5404 mm	D ₁₀ = 0.0494 mm
C _u = 77.891	C _c = 3.620

Classification

ASTM Poorly graded sand with silt and gravel (SP-SM)

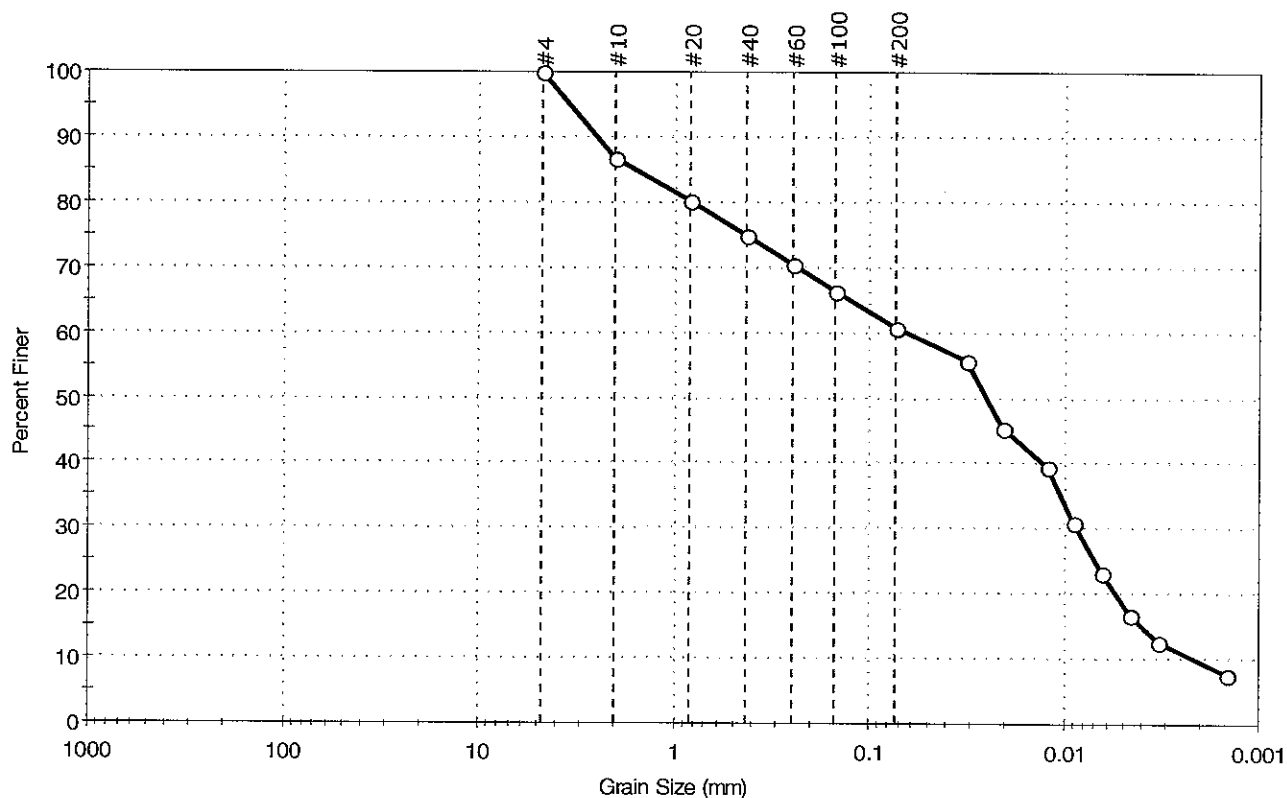
AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-01	Sample Type:	jar
Sample ID:	OL-0301-07	Test Date:	01/23/07
Depth:	55-57 ft	Test Id:	106252
Test Comment:	---		
Sample Description:	Moist, olive brown sandy silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	39.2	60.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	87		
#20	0.84	80		
#40	0.42	75		
#60	0.25	70		
#100	0.15	66		
#200	0.074	61		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0320	56		
---	0.0209	45		
---	0.0123	40		
---	0.0089	31		
---	0.0064	23		
---	0.0046	17		
---	0.0033	13		
---	0.0015	8		

Coefficients

D ₈₅ = 1.5772 mm	D ₃₀ = 0.0086 mm
D ₆₀ = 0.0653 mm	D ₁₅ = 0.0040 mm
D ₅₀ = 0.0252 mm	D ₁₀ = 0.0021 mm
C _u = N/A	C _c = N/A

Classification

ASTM Sandy elastic silt (MH)

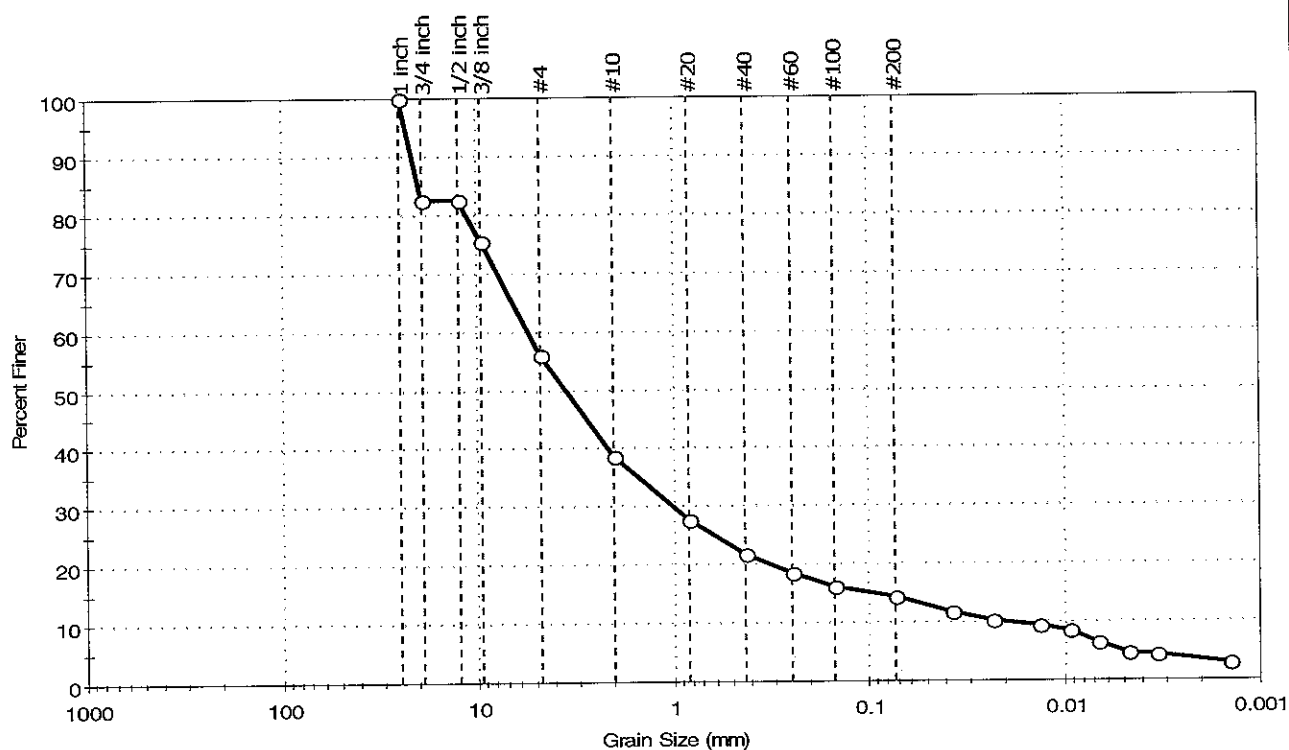
AASHTO Clayey Soils (A-7-5 (10))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-02	Sample Type:	jar
Sample ID:	OL-0301-08	Test Date:	01/25/07
Depth:	43-45 ft	Test Id:	106253
Test Comment:	---		
Sample Description:	Moist, olive gray silty gravel with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	43.9	41.8	14.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 inch	25.00	100		
3/4 inch	19.00	83		
1/2 inch	12.50	83		
3/8 inch	9.50	76		
#4	4.75	56		
#10	2.00	39		
#20	0.84	28		
#40	0.42	22		
#60	0.25	19		
#100	0.15	16		
#200	0.074	14		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0375	12		
---	0.0231	10		
---	0.0134	9		
---	0.0094	9		
---	0.0067	7		
---	0.0048	5		
---	0.0034	5		
---	0.0014	3		

Coefficients

D ₈₅ = 19.7469 mm	D ₃₀ = 0.9990 mm
D ₆₀ = 5.4464 mm	D ₁₅ = 0.0939 mm
D ₅₀ = 3.4967 mm	D ₁₀ = 0.0193 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty gravel with sand (GM)

AASHTO Stone Fragments, Gravel and Sand (A-1-a (0))

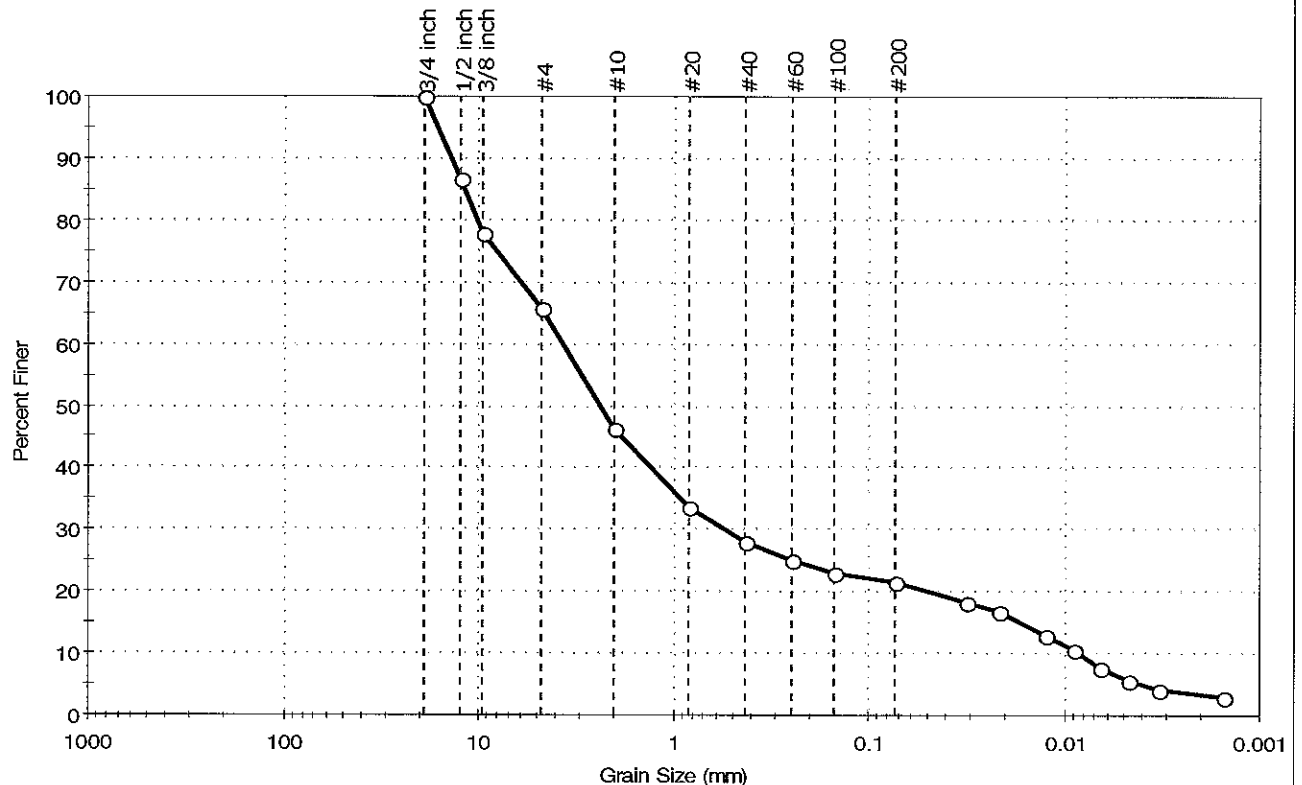
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: SB915-PZ13-03	Sample Type: jar
Sample ID: OL-0301-09	Test Date: 01/25/07
Depth: 68-75 ft	Test Id: 106254
Test Comment: ---	
Sample Description: Wet, brown silty, clayey sand with gravel	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	34.1	44.5	21.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	87		
3/8 inch	9.50	78		
#4	4.75	66		
#10	2.00	46		
#20	0.84	34		
#40	0.42	28		
#60	0.25	25		
#100	0.15	23		
#200	0.074	21		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0322	18		
---	0.0216	17		
---	0.0126	13		
---	0.0091	11		
---	0.0065	8		
---	0.0047	6		
---	0.0033	4		
---	0.0015	3		

Coefficients

D ₈₅ = 11.8504 mm	D ₃₀ = 0.5475 mm
D ₆₀ = 3.6629 mm	D ₁₅ = 0.0167 mm
D ₅₀ = 2.3588 mm	D ₁₀ = 0.0085 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty, clayey sand with gravel (SC-SM)

AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

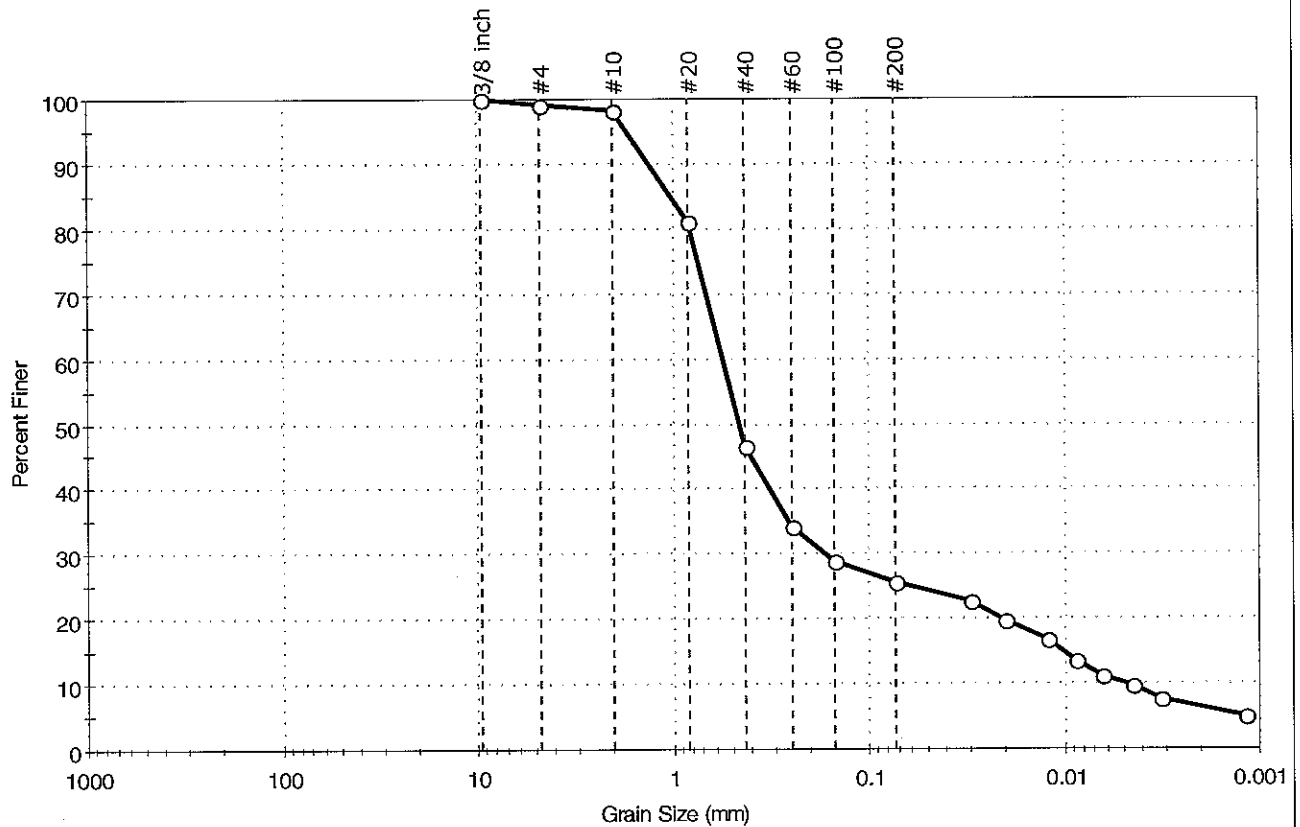
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: SB915-PZ13-04	Sample Type: jar
Sample ID: OL-0301-10	Test Date: 01/15/07	Tested By: mll
Depth: 63-65 ft	Test Id: 106255	Checked By: jdt
Test Comment: ---		
Sample Description: Moist, very dark gray silty sand		
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.8	73.4	25.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	99		
#10	2.00	98		
#20	0.84	81		
#40	0.42	46		
#60	0.25	34		
#100	0.15	29		
#200	0.074	26		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0307	23		
---	0.0203	20		
---	0.0123	17		
---	0.0088	14		
---	0.0064	11		
---	0.0045	10		
---	0.0033	8		
---	0.0012	5		

Coefficients

D ₈₅ = 1.0195 mm	D ₃₀ = 0.1673 mm
D ₆₀ = 0.5546 mm	D ₁₅ = 0.0101 mm
D ₅₀ = 0.4556 mm	D ₁₀ = 0.0048 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

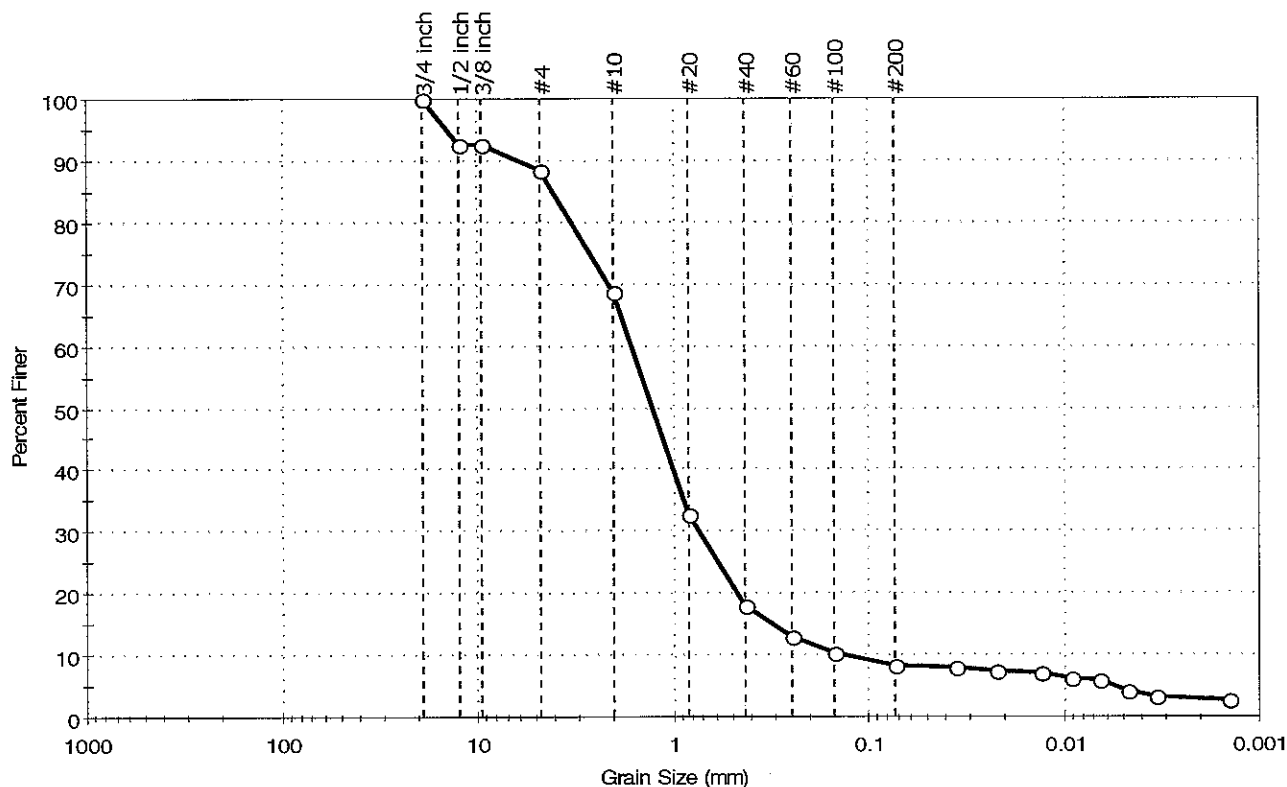
AASHTO Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-04	Sample Type:	jar
Sample ID:	OL-0301-11	Test Date:	02/13/07
Depth:	108-110 ft	Test Id:	106256
Test Comment:	---		
Sample Description:	Moist, dark gray sand with silt		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.4	80.4	8.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	93		
3/8 inch	9.50	93		
#4	4.75	89		
#10	2.00	69		
#20	0.84	33		
#40	0.42	18		
#60	0.25	13		
#100	0.15	10		
#200	0.074	8		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0359	8		
---	0.0223	8		
---	0.0130	7		
---	0.0093	6		
---	0.0066	6		
---	0.0047	4		
---	0.0033	3		
---	0.0014	3		

Coefficients

D ₈₅ = 4.0626 mm	D ₃₀ = 0.7437 mm
D ₆₀ = 1.6203 mm	D ₁₅ = 0.3118 mm
D ₅₀ = 1.2747 mm	D ₁₀ = 0.1387 mm
C _u = 11.682	C _c = 2.461

Classification

ASTM Well-graded sand with silt (SW-SM)

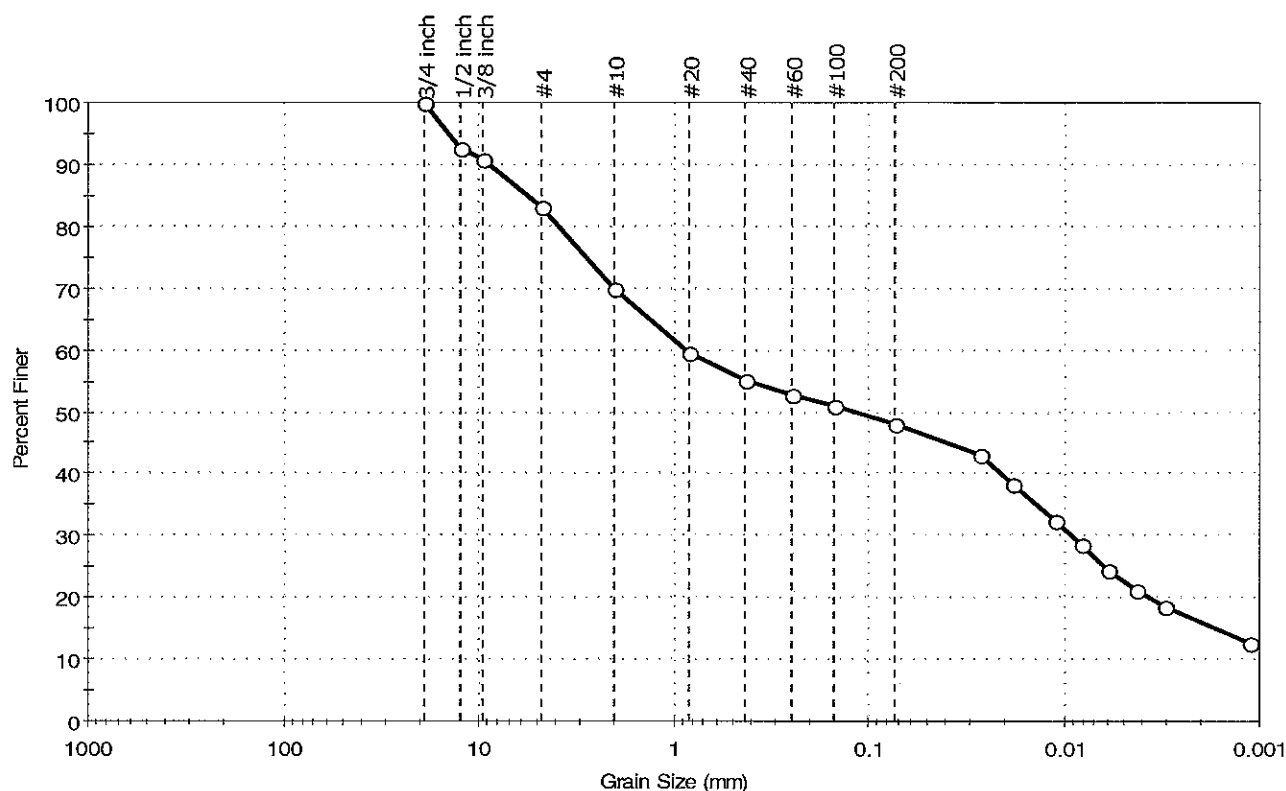
AASHTO Stone Fragments, Gravel and Sand (A-1-b (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-05	Sample Type:	jar
Sample ID:	OL-0301-12	Test Date:	02/12/07
Depth:	48-50 ft	Test Id:	106257
Test Comment:	---		
Sample Description:	Moist, brown clayey sand with gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	16.8	35.1	48.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 Inch	19.00	100		
1/2 Inch	12.50	93		
3/8 inch	9.50	91		
#4	4.75	83		
#10	2.00	70		
#20	0.84	60		
#40	0.42	55		
#60	0.25	53		
#100	0.15	51		
#200	0.074	48		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0267	43		
---	0.0186	38		
---	0.0112	32		
---	0.0082	29		
---	0.0060	24		
---	0.0043	21		
---	0.0031	19		
---	0.0011	13		

Coefficients

D ₈₅ = 5.5958 mm	D ₃₀ = 0.0092 mm
D ₆₀ = 0.8624 mm	D ₁₅ = 0.0017 mm
D ₅₀ = 0.1148 mm	D ₁₀ = 0.0007 mm
C _u = N/A	C _c = N/A

Classification

ASTM Clayey sand with gravel (SC)

AASHTO Clayey Soils (A-6 (5))

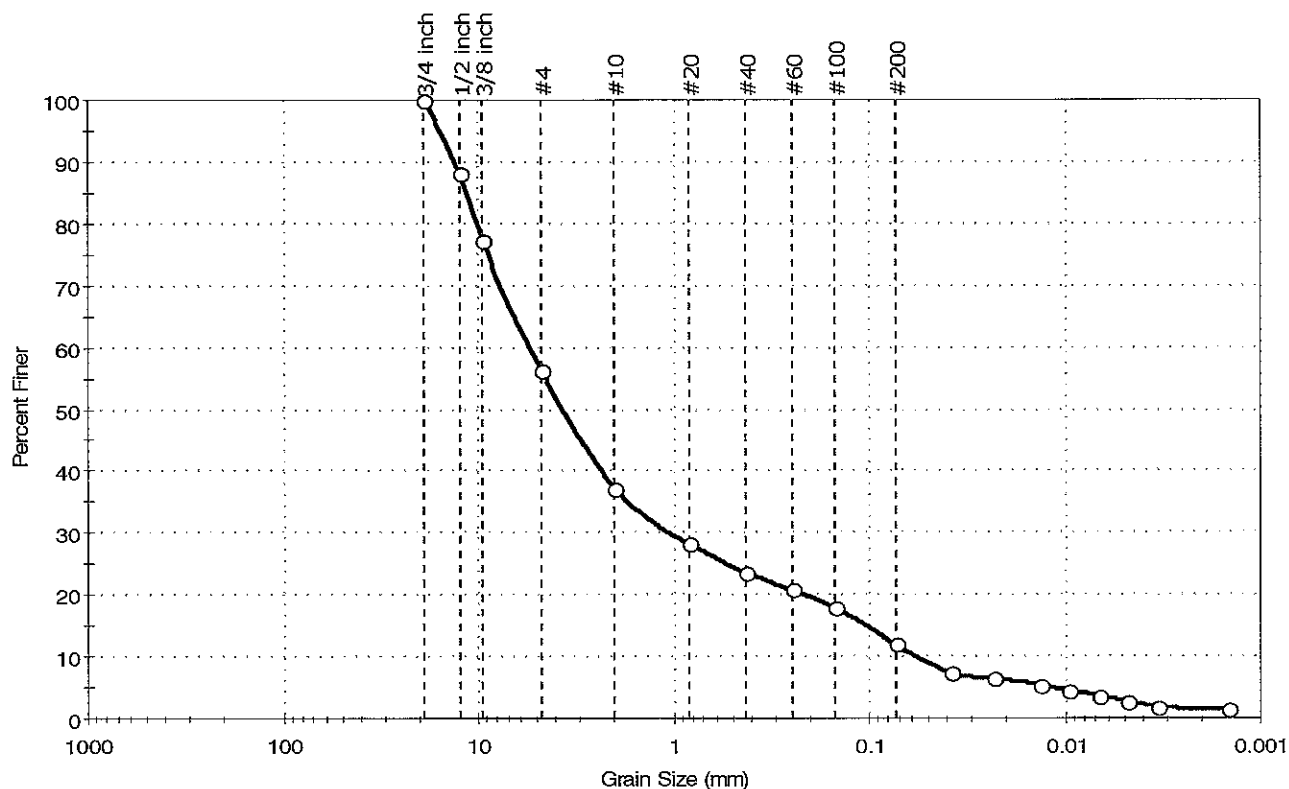
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915- PZ13-06	Sample Type:	jar
Sample ID:	OL-0301-13	Test Date:	02/12/07
Depth :	55-65 ft	Test Id:	106258
Test Comment:	---		
Sample Description:	Moist, brown sand with silt and gravel		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	43.6	44.4	12.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	88		
3/8 inch	9.50	77		
#4	4.75	56		
#10	2.00	37		
#20	0.84	28		
#40	0.42	24		
#60	0.25	21		
#100	0.15	18		
#200	0.074	12		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0381	7		
---	0.0234	6		
---	0.0135	5		
---	0.0095	4		
---	0.0067	4		
---	0.0048	3		
---	0.0034	2		
---	0.0015	2		

Coefficients

D ₈₅ = 11.5299 mm	D ₃₀ = 0.9938 mm
D ₆₀ = 5.3508 mm	D ₁₅ = 0.1062 mm
D ₅₀ = 3.5612 mm	D ₁₀ = 0.0559 mm
C _u = 95.721	C _c = 3.302

Classification

ASTM Poorly graded sand with silt and gravel (SP-SM)

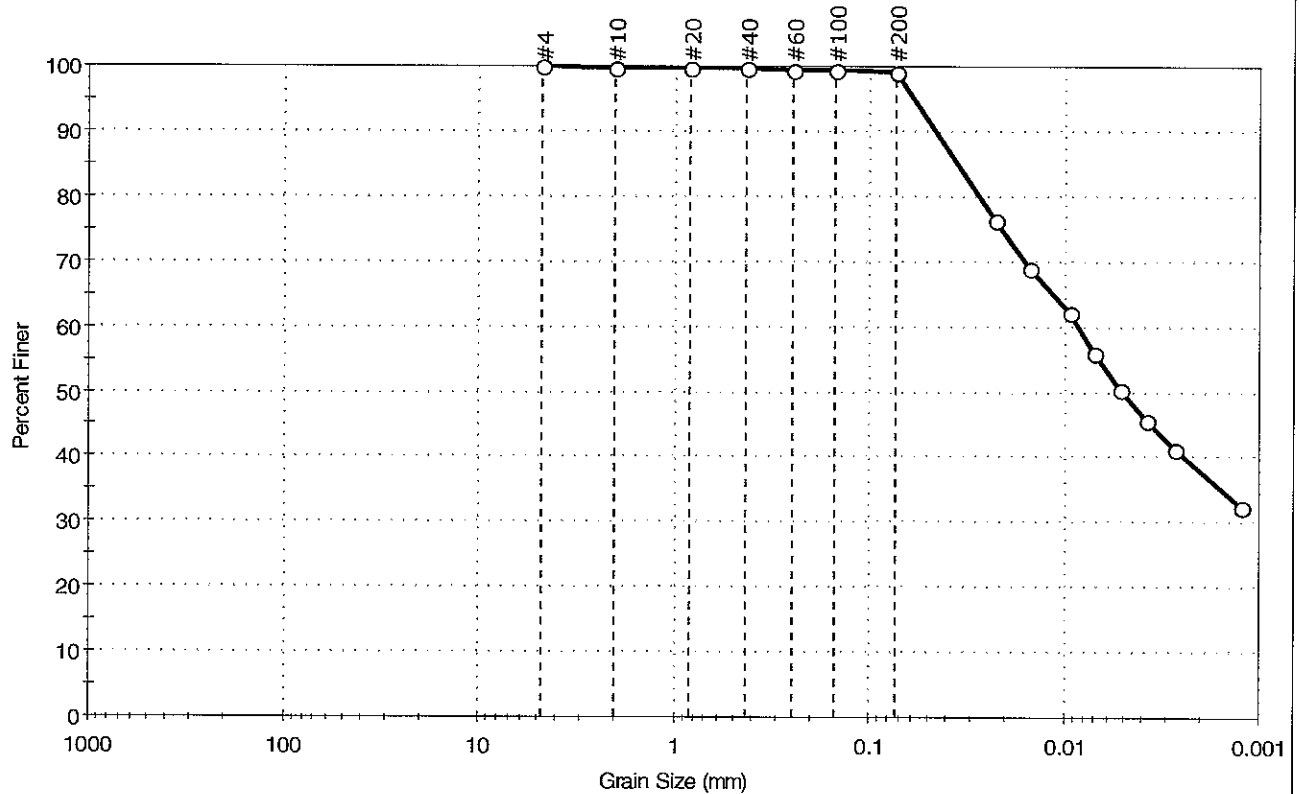
AASHTO Silty Gravel and Sand (A-2-5 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-13	Sample Type:	jar
Sample ID:	OL-0301-14	Test Date:	02/02/07
Depth :	40-42 ft	Test Id:	106259
Test Comment:	---		
Sample Description:	Moist, brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	99		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0228	77		
---	0.0150	69		
---	0.0094	62		
---	0.0070	56		
---	0.0051	51		
---	0.0038	46		
---	0.0027	41		
---	0.0012	33		

Coefficients

$D_{85} = 0.0354$ mm	$D_{30} = N/A$
$D_{60} = 0.0084$ mm	$D_{15} = N/A$
$D_{50} = 0.0050$ mm	$D_{10} = N/A$
$C_u = N/A$	$C_c = N/A$

Classification

ASTM lean clay (CL)

AASHTO Clayey Soils (A-7-6 (27))

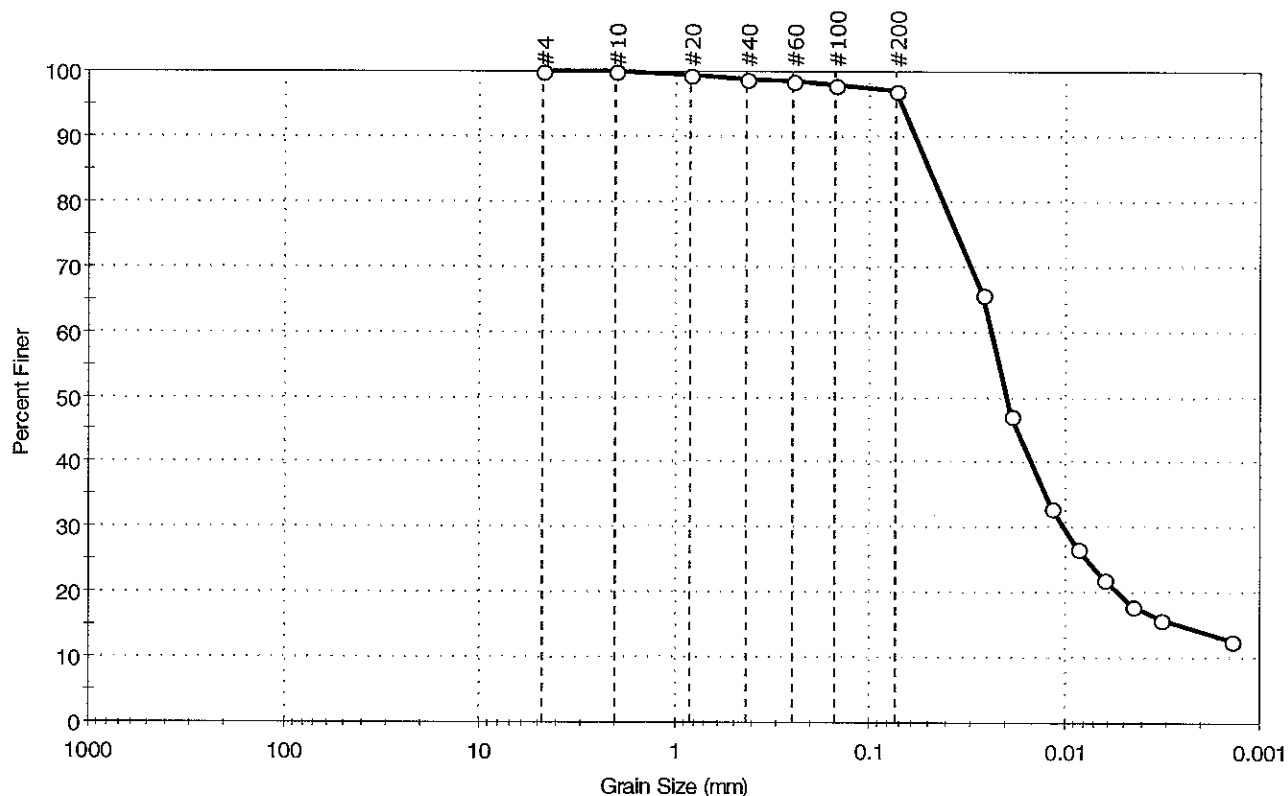
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-16	Sample Type:	jar
Sample ID:	OL-0301-15	Test Date:	01/09/07
Depth :	55-57 ft	Test Id:	106260
Test Comment:	---		
Sample Description:	Moist, olive brown clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.1	96.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	98		
#100	0.15	98		
#200	0.074	97		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0265	66		
---	0.0190	47		
---	0.0118	33		
---	0.0086	27		
---	0.0062	22		
---	0.0045	18		
---	0.0032	16		
---	0.0014	13		

Coefficients

D ₈₅ = 0.0499 mm	D ₃₀ = 0.0100 mm
D ₆₀ = 0.0239 mm	D ₁₅ = 0.0025 mm
D ₅₀ = 0.0200 mm	D ₁₀ = 0.0007 mm
C _u = N/A	C _c = N/A

Classification

ASTM lean clay (CL)

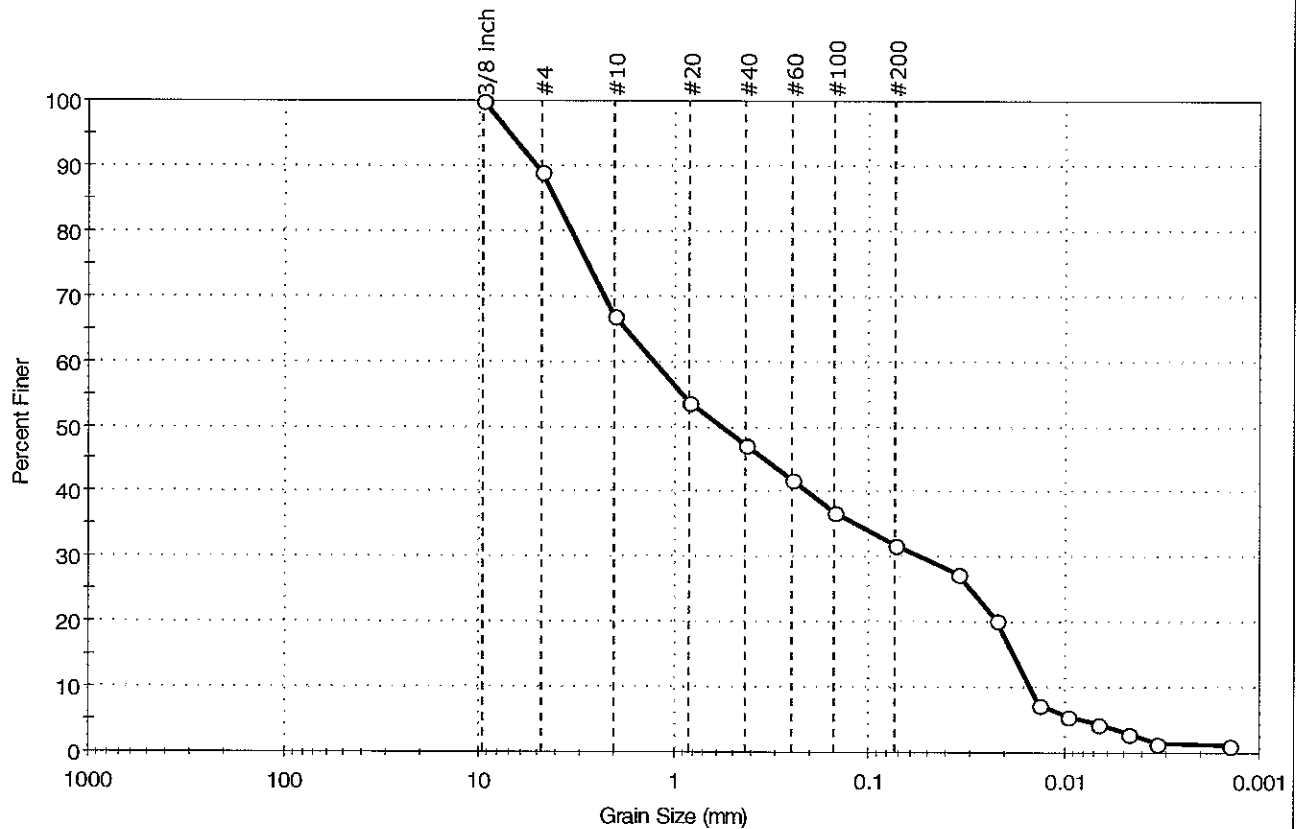
AASHTO Silty Soils (A-4 (5))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-07	Sample Type:	jar
Sample ID:	OL-0301-16	Test Date:	01/25/07
Depth :	25-27 ft	Test Id:	106261
Test Comment:	---		
Sample Description:	Moist, grayish brown silty sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	11.0	57.0	32.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.50	100		
#4	4.75	89		
#10	2.00	67		
#20	0.84	54		
#40	0.42	47		
#60	0.25	42		
#100	0.15	37		
#200	0.074	32		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0352	28		
---	0.0224	20		
---	0.0135	7		
---	0.0095	6		
---	0.0067	4		
---	0.0047	3		
---	0.0034	1		
---	0.0014	1		

Coefficients

D ₈₅ = 4.0672 mm	D ₃₀ = 0.0530 mm
D ₆₀ = 1.2709 mm	D ₁₅ = 0.0181 mm
D ₅₀ = 0.5723 mm	D ₁₀ = 0.0149 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

AASHTO Clayey Gravel and Sand (A-2-7 (2))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: SB915- PZ13-08

Sample Type: jar

Tested By: mll

Sample ID: OL-0301-17

Test Date: 01/25/07

Checked By: jdt

Depth: 15-17 ft

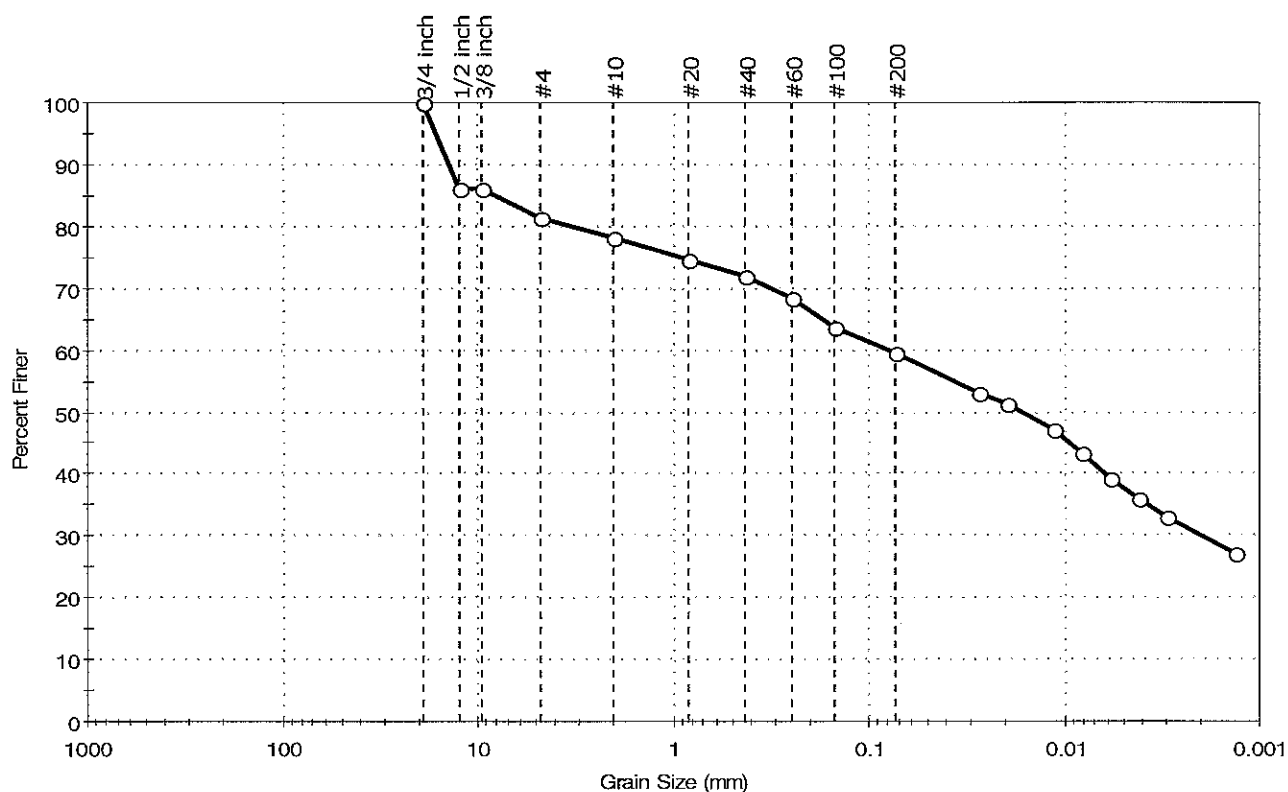
Test Id: 106262

Test Comment: ---

Sample Description: Moist, brown sandy clay with gravel

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	18.7	21.7	59.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	86		
3/8 inch	9.50	86		
#4	4.75	81		
#10	2.00	78		
#20	0.84	75		
#40	0.42	72		
#60	0.25	68		
#100	0.15	64		
#200	0.074	60		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0278	53		
---	0.0196	51		
---	0.0114	47		
---	0.0082	43		
---	0.0059	39		
---	0.0042	36		
---	0.0030	33		
---	0.0013	27		

Coefficients

$D_{85} = 8.0816$ mm $D_{30} = 0.0020$ mm
 $D_{60} = 0.0785$ mm $D_{15} = \text{N/A}$
 $D_{50} = 0.0164$ mm $D_{10} = \text{N/A}$
 $C_u = \text{N/A}$ $C_c = \text{N/A}$

Classification

ASTM Sandy lean clay with gravel (CL)

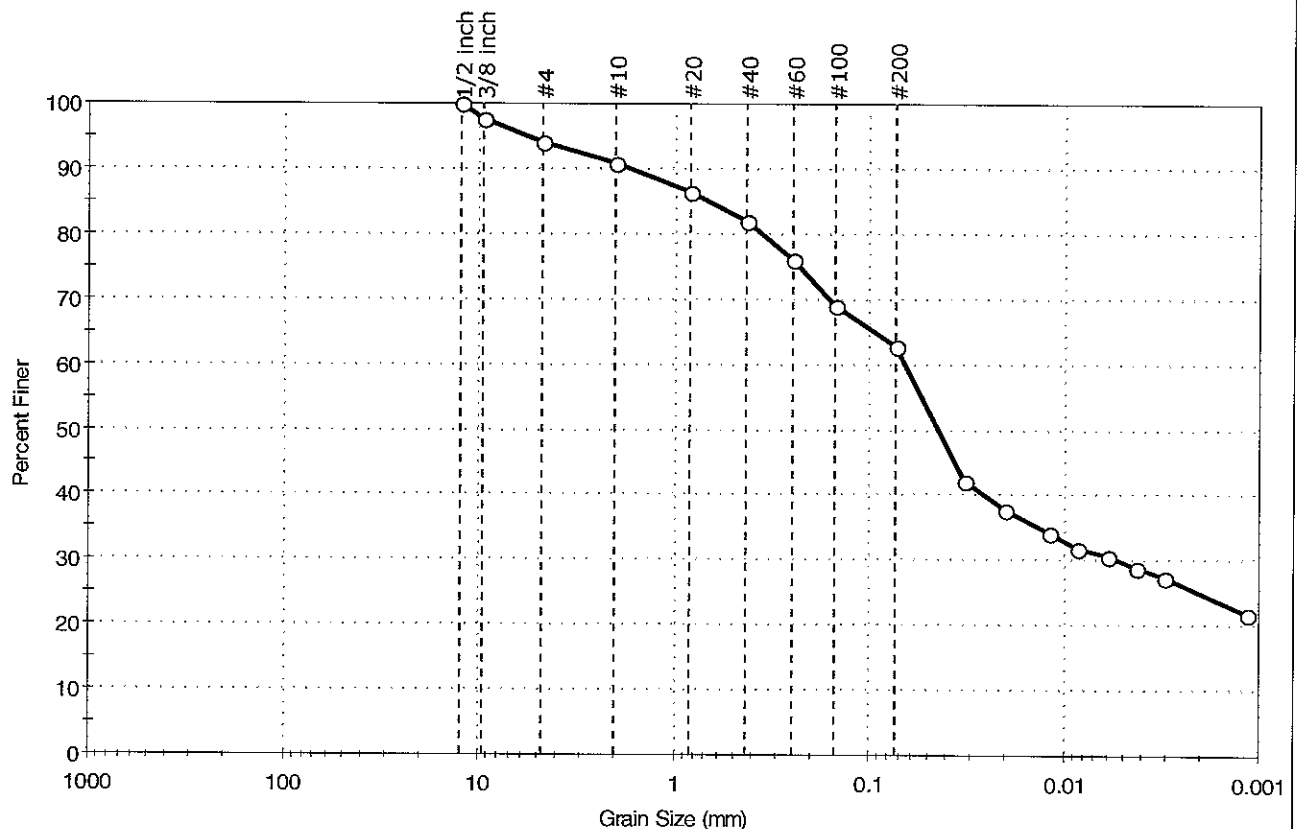
AASHTO Clayey Soils (A-6 (4))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
 Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	n/a
Boring ID:	SB915-PZ13-09	Sample Type:	jar
Sample ID:	OL-0301-18	Test Date:	01/25/07
Depth :	10-17 ft	Test Id:	106263
Test Comment:	---		
Sample Description:	Moist, brown sandy clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	5.8	31.4	62.8

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	98		
#4	4.75	94		
#10	2.00	91		
#20	0.84	87		
#40	0.42	82		
#60	0.25	76		
#100	0.15	69		
#200	0.074	63		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0323	42		
---	0.0202	38		
---	0.0119	34		
---	0.0085	32		
---	0.0060	31		
---	0.0043	29		
---	0.0031	27		
---	0.0011	22		

Coefficients

D ₈₅ = 0.6654 mm	D ₃₀ = 0.0054 mm
D ₆₀ = 0.0662 mm	D ₁₅ = N/A
D ₅₀ = 0.0444 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM Sandy lean clay (CL)

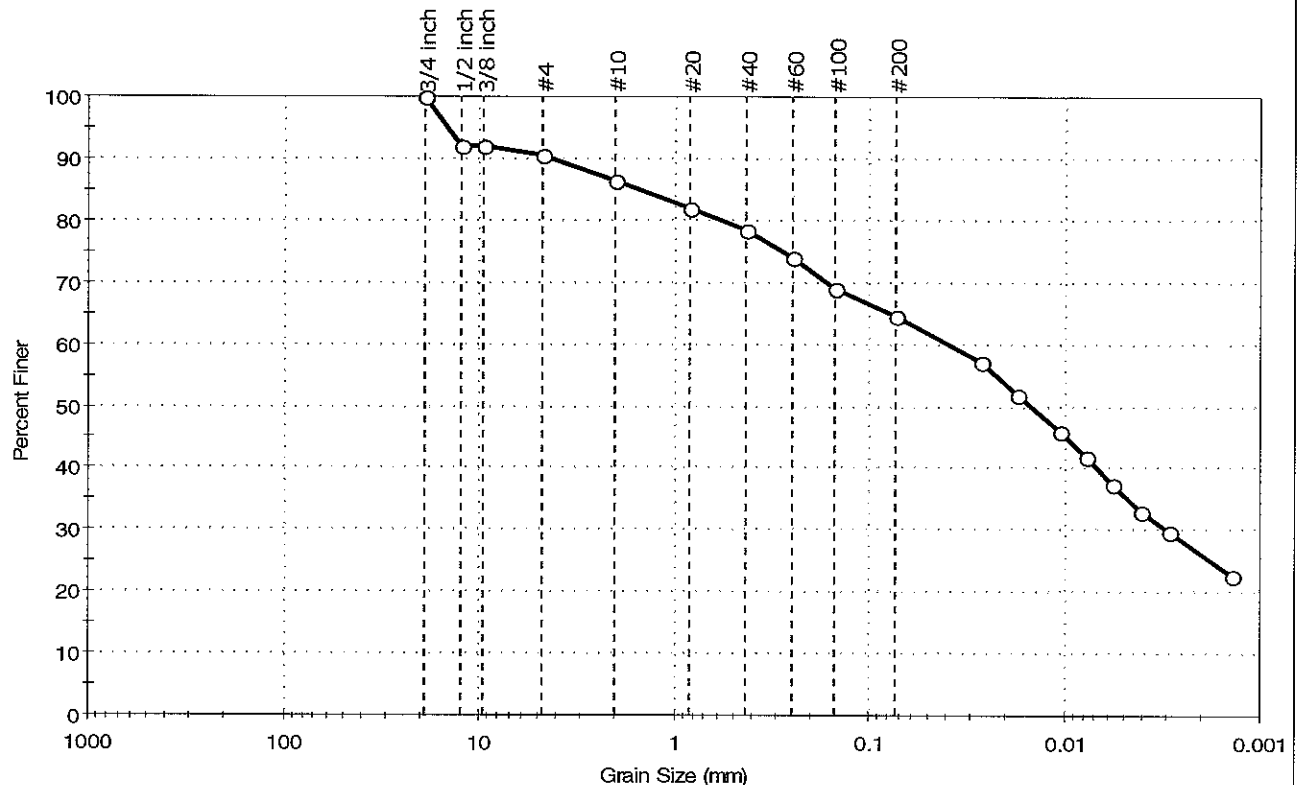
AASHTO Silty Soils (A-4 (2))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-11	Sample Type:	jar
Sample ID:	OL-0301-19	Test Date:	02/13/07
Depth :	25-27 ft	Test Id:	106264
Test Comment:	---		
Sample Description:	Moist, brown sandy clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	9.4	26.1	64.5

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/4 inch	19.00	100		
1/2 inch	12.50	92		
3/8 inch	9.50	92		
#4	4.75	91		
#10	2.00	86		
#20	0.84	82		
#40	0.42	78		
#60	0.25	74		
#100	0.15	69		
#200	0.074	64		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0268	57		
---	0.0176	52		
---	0.0106	46		
---	0.0078	42		
---	0.0056	37		
---	0.0041	33		
---	0.0029	30		
---	0.0014	23		

Coefficients

D ₈₅ = 1.5262 mm	D ₃₀ = 0.0030 mm
D ₆₀ = 0.0394 mm	D ₁₅ = N/A
D ₅₀ = 0.0150 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM Sandy lean clay (CL)

AASHTO Silty Soils (A-4 (3))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	yf
Location:	Syracuse	Checked By:	jdt
Boring ID: ---	Sample Type: ---	Test Date:	06/23/07
Sample ID:---	Test Id:	106241	
Depth : ---			

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
SB915-PZ13-01	OL-0301 -07	55-57 ft	Moist, olive brown sandy silt	2.68
SB915-PZ13-04	OL-0301 -10	63-65 ft	Moist, very dark gray silty sand	2.73
SB915-PZ13-13	OL-0301 -14	40-42 ft	Moist, brown clay	2.76
SB915-PZ13-16	OL-0301 -15	55-57 ft	Moist, olive brown clay	2.69
SB915-PZ13-12	OL-0301 -20	35-37 ft	Moist, brown sandy clay	2.78

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	yf
Location:	Syracuse	Checked By:	n/a
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/14/07
Depth :	---	Test Id:	106230

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Coarse %	Coarse SG	Fine %	Fine SG	Specific Gravity
SB915-SB13-01	OL-0301-01	53-60 ft	Moist, light brownish gray silty, clayey sand with gravel	28	2.61	72	2.58	2.59
SB915-SB13-01	OL-0301-02	118-120 ft	Moist, brown silty, clayey sand	9	2.49	91	2.76	2.73
SB915-SB13-02	OL-0301-03	65-67 ft	Moist, brown gray gravel with silt and sand	63	2.66	37	2.81	2.71
SB915-SB13-06	OL-0301-04	103-105 ft	Moist, grayish brown silty, clayey sand with gravel	20	2.67	80	2.71	2.7
SB915-SB13-08	OL-0301-05	68-70 ft	Moist, brown silty sand	13	2.54	87	2.78	2.75
SB915-SB13-09	OL-0301-06	58-65 ft	Moist, olive brown sand with silt and gravel	35	2.19	65	2.75	2.52
SB915-PZ13-02	OL-0301-08	43-45 ft	Moist, olive gray silty gravel with sand	44	2.39	56	2.76	2.58
SB915-PZ13-03	OL-0301-09	68-75 ft	Wet, brown silty, clayey sand with gravel	34	2.42	66	2.81	2.66

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854

Moisture Content determined by ASTM D 2216.

coarse fraction > #4 sieve

fine fraction < #4 sieve

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	rmt
Location:	Syracuse	Checked By:	jdt
Boring ID: ---	Sample Type: ---	Test Date:	02/14/07
Sample ID:---	Test Id:	106240	
Depth : ---			

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Coarse %	Coarse SG	Fine %	Fine SG	Specific Gravity
SB915-PZ13-04	OL-0301-11	108-110 ft	Moist, dark gray sand with silt	11	2.19	89	2.81	2.72
SB915-PZ13-05	OL-0301-12	48-50 ft	Moist, brown clayey sand with gravel	17	2.35	83	2.7	2.63
SB915-PZ13-06	OL-0301-13	55-65 ft	Moist, brown sand with silt and gravel	44	2.21	56	2.88	2.54
SB915-PZ13-07	OL-0301-16	25-27 ft	Moist, grayish brown silty sand	11	2.08	89	2.72	2.63
SB915-PZ13-08	OL-0301-17	15-17 ft	Moist, brown sandy clay with gravel	19	2.19	81	2.75	2.62
SB915-PZ13-09	OL-0301-18	10-17 ft	Moist, brown sandy clay	6	2.56	94	2.8	2.78
SB915-PZ13-11	OL-0301-19	25-27 ft	Moist, brown sandy clay	9	2.58	91	2.82	2.79

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854

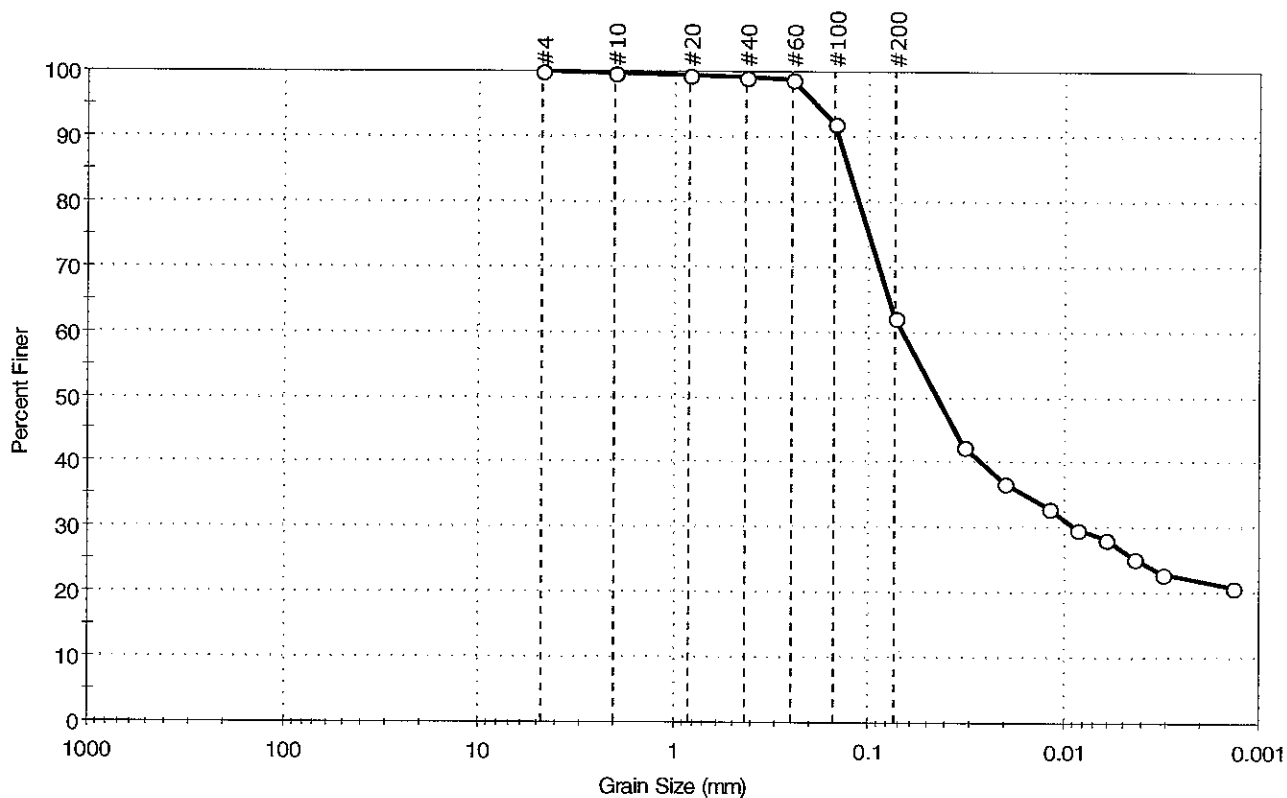
Moisture Content determined by ASTM D 2216.

coarse fraction > #4 sieve

fine fraction < #4 sieve

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-12	Sample Type:	jar
Sample ID:	OL-0301-20	Test Date:	02/13/07
Depth :	35-37 ft	Test Id:	106265
Test Comment:	---		
Sample Description:	Moist, brown sandy clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	37.9	62.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	99		
#60	0.25	99		
#100	0.15	92		
#200	0.074	62		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0327	43		
---	0.0202	37		
---	0.0119	33		
---	0.0086	30		
---	0.0062	28		
---	0.0044	25		
---	0.0031	23		
---	0.0014	21		

Coefficients

D ₈₅ = 0.1268 mm	D ₃₀ = 0.0087 mm
D ₆₀ = 0.0678 mm	D ₁₅ = N/A
D ₅₀ = 0.0447 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM Sandy lean clay (CL)

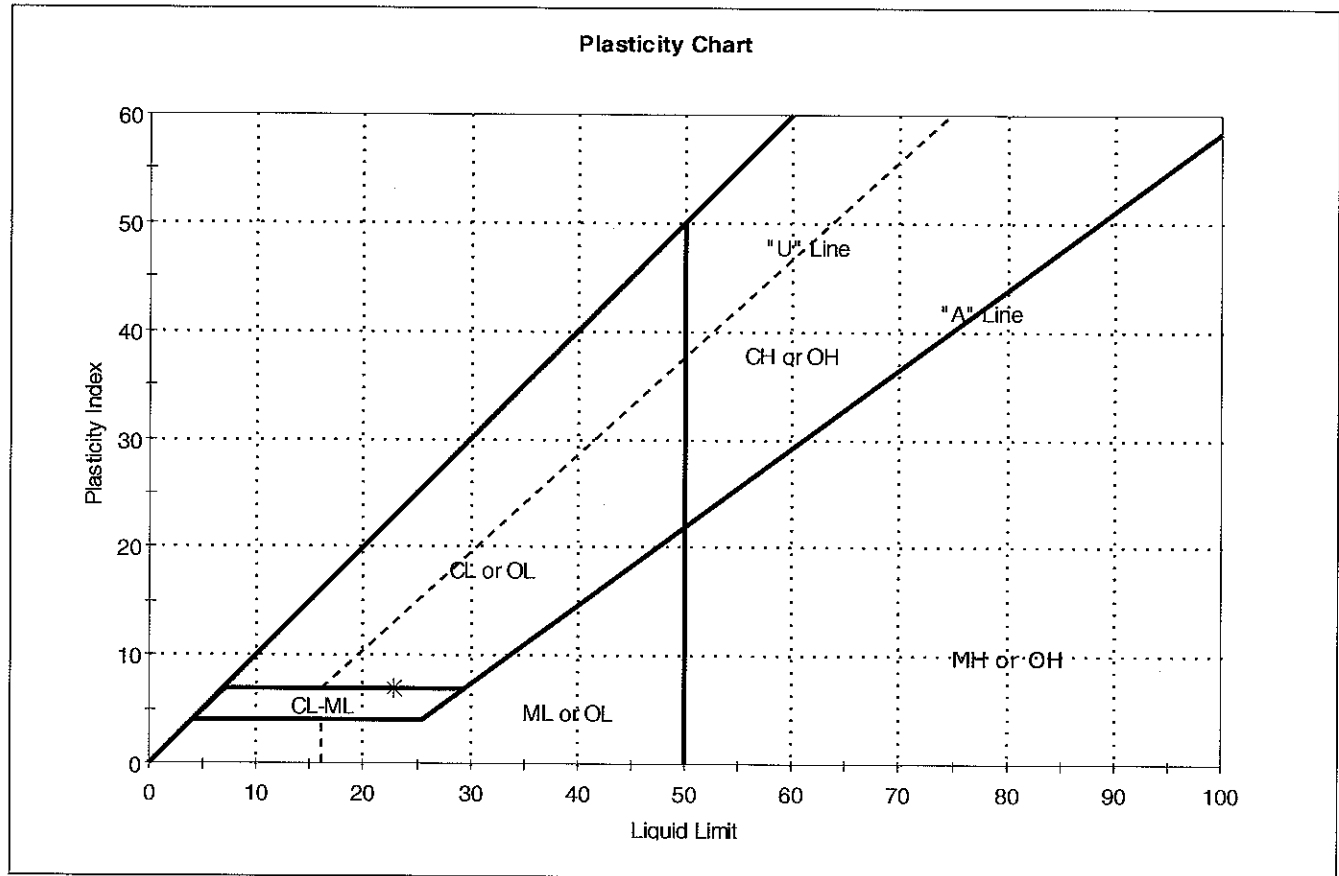
AASHTO Clayey Soils (A-6 (6))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-01	Sample Type:	jar
Sample ID:	OL-0301-01	Test Date:	02/06/07
Depth :	53-60 ft	Test Id:	106174
Test Comment:	---		
Sample Description:	Moist, light brownish gray silty, clayey sand with gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-01	915-SB13	53-60 ft	12	23	16	7	-1	Silty, clayey sand with gravel (SC-SM)

Sample Prepared using the WET method

68% Retained on #40 Sieve

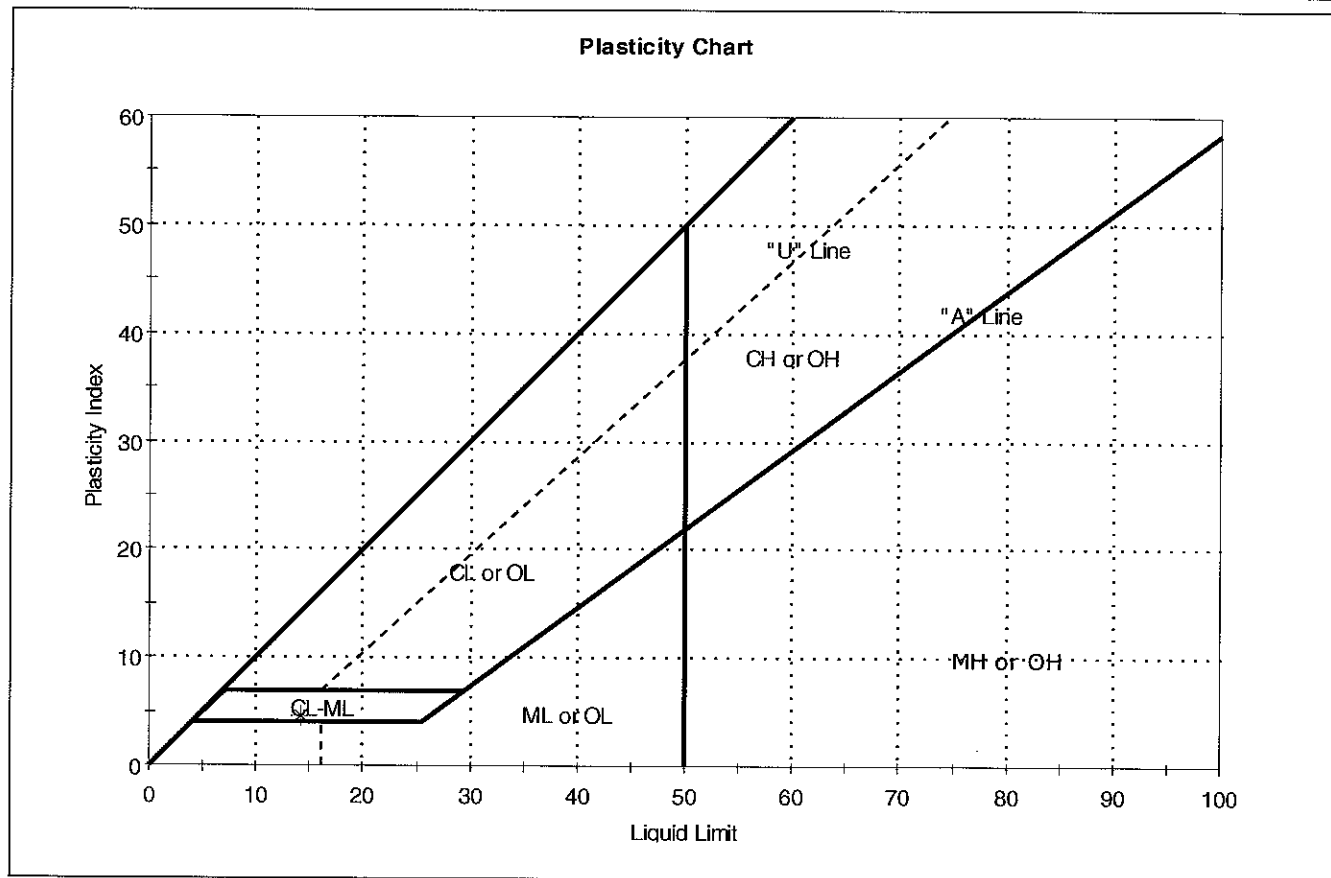
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-01	Sample Type:	jar
Sample ID:	OL-0301-02	Test Date:	02/07/07
Depth :	118-120 ft	Test Id:	106175
Test Comment:	---		
Sample Description:	Moist, brown silty, clayey sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-02	915-SB13	118-120 ft	8	14	10	4	0	Silty, clayey sand (SC-SM)

Sample Prepared using the WET method

20% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: NONE

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	SB915-SB13-02	Sample Type:	jar
Sample ID:	OL-0301-03	Test Date:	01/12/07
Depth :	65-67 ft	Test Id:	106176
Test Comment:	---		
Sample Description:	Moist, brown gray gravel with silt and sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-03	915-SB13	65-67 ft	8	n/a	n/a	n/a	n/a	Poorly graded gravel with silt and sand (GP-GM)

86% Retained on #40 Sieve

Dry Strength: NONE

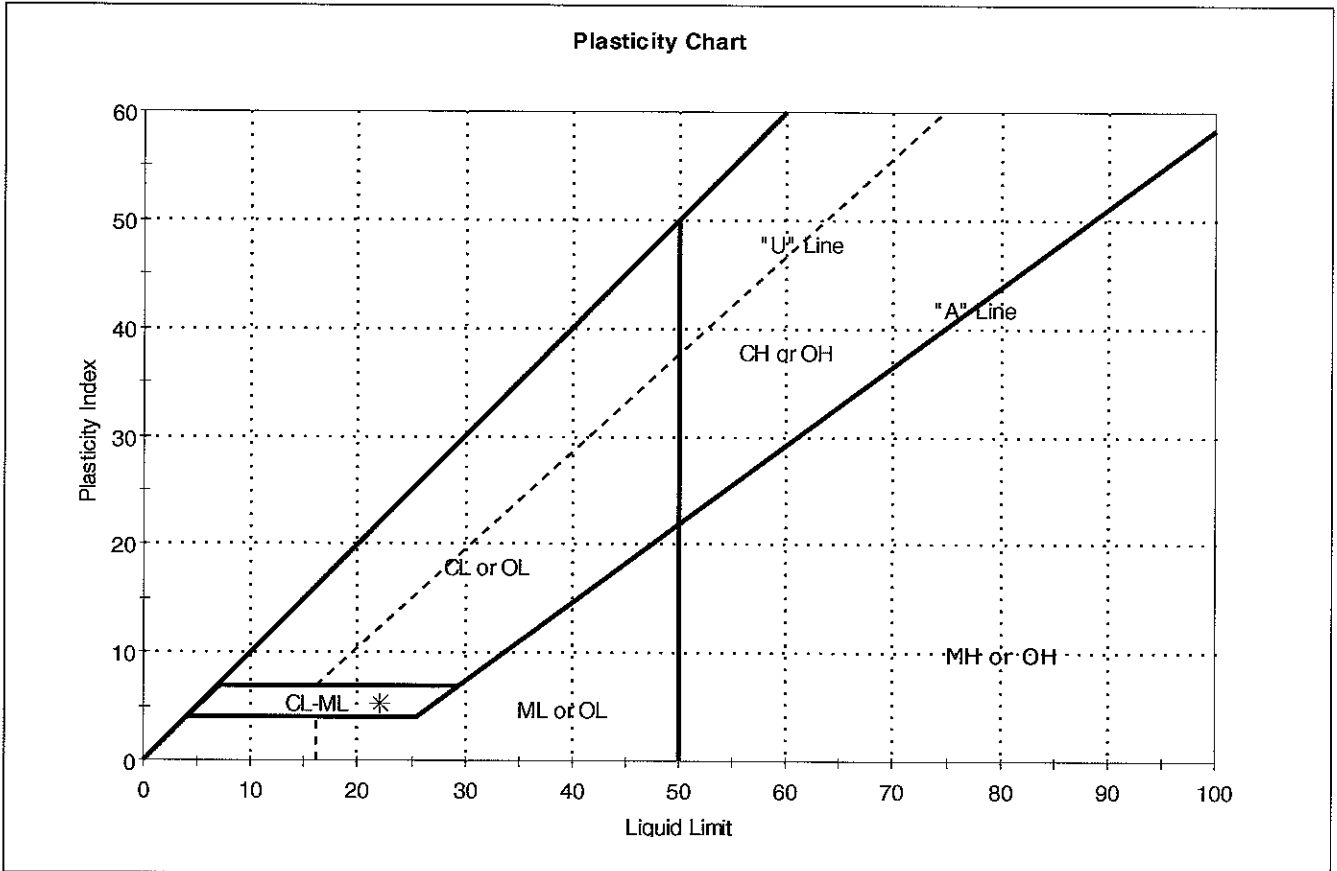
Dilatancy: SLOW

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-SB13-06	Sample Type:	jar
Sample ID:	OL-0301-04	Test Date:	02/01/07
Depth :	103-105 ft	Test Id:	106177
Test Comment:	---		
Sample Description:	Moist, grayish brown silty, clayey sand with gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-04	915-SB13	103-105 ft	66	22	17	5	10	Silty, clayey sand with gravel (SC-SM)

Sample Prepared using the WET method
 73% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	SB915-SB13-08	Sample Type:	jar
Sample ID:	OL-0301-05	Test Date:	01/25/07
Depth :	68-70 ft	Test Id:	106178
Test Comment:	---		
Sample Description:	Moist, brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-05	915-SB13	68-70 ft	8	n/a	n/a	n/a	n/a	Silty sand (SM)

70% Retained on #40 Sieve

Dry Strength: NONE

Dilatancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	SB915-SB13-09	Sample Type:	jar
Sample ID:	OL-0301-06	Test Date:	01/25/07
Depth :	58-65 ft	Test Id:	106179
Test Comment:	---		
Sample Description:	Moist, olive brown sand with silt and gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-06	15-SB13	58-65 ft	13	n/a	n/a	n/a	n/a	Poorly graded sand with silt and gravel (SP-SM)

80% Retained on #40 Sieve

Dry Strength: NONE

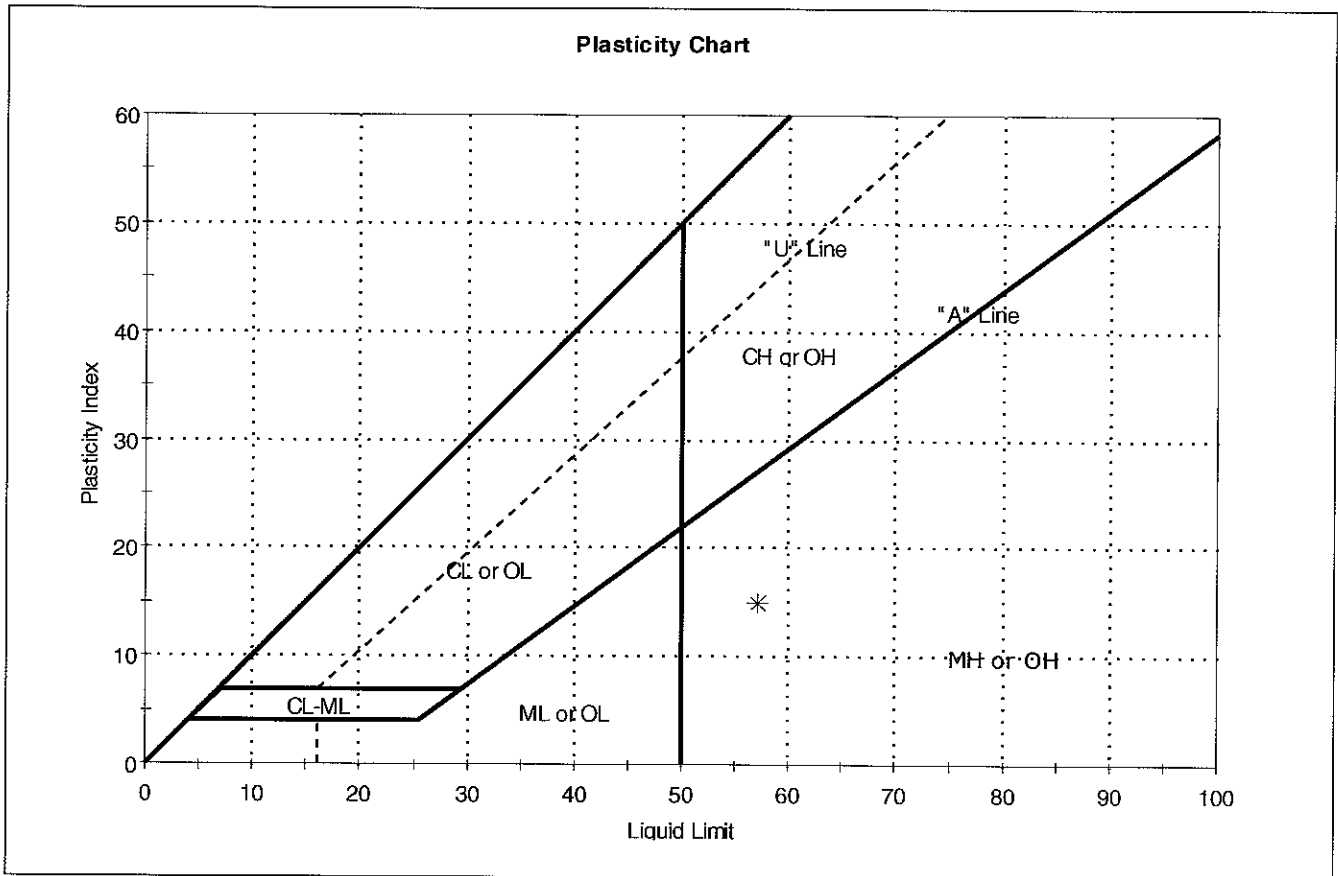
Dilutancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-01	Sample Type:	jar
Sample ID:	OL-0301-07	Test Date:	02/06/07
Depth :	55-57 ft	Test Id:	106180
Test Comment:	---		
Sample Description:	Moist, olive brown sandy silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-07	915-PZ13	55-57 ft	54	57	42	15	1	Sandy elastic silt (MH)

Sample Prepared using the WET method

25% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	SB915-PZ13-02	Sample Type:	jar
Sample ID:	OL-0301-08	Test Date:	01/25/07
Depth :	43-45 ft	Test Id:	106181
Test Comment:	---		
Sample Description:	Moist, olive gray silty gravel with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-08	915-PZ13	43-45 ft	10	n/a	n/a	n/a	n/a	Silty gravel with sand (GM)

78% Retained on #40 Sieve

Dry Strength: NONE

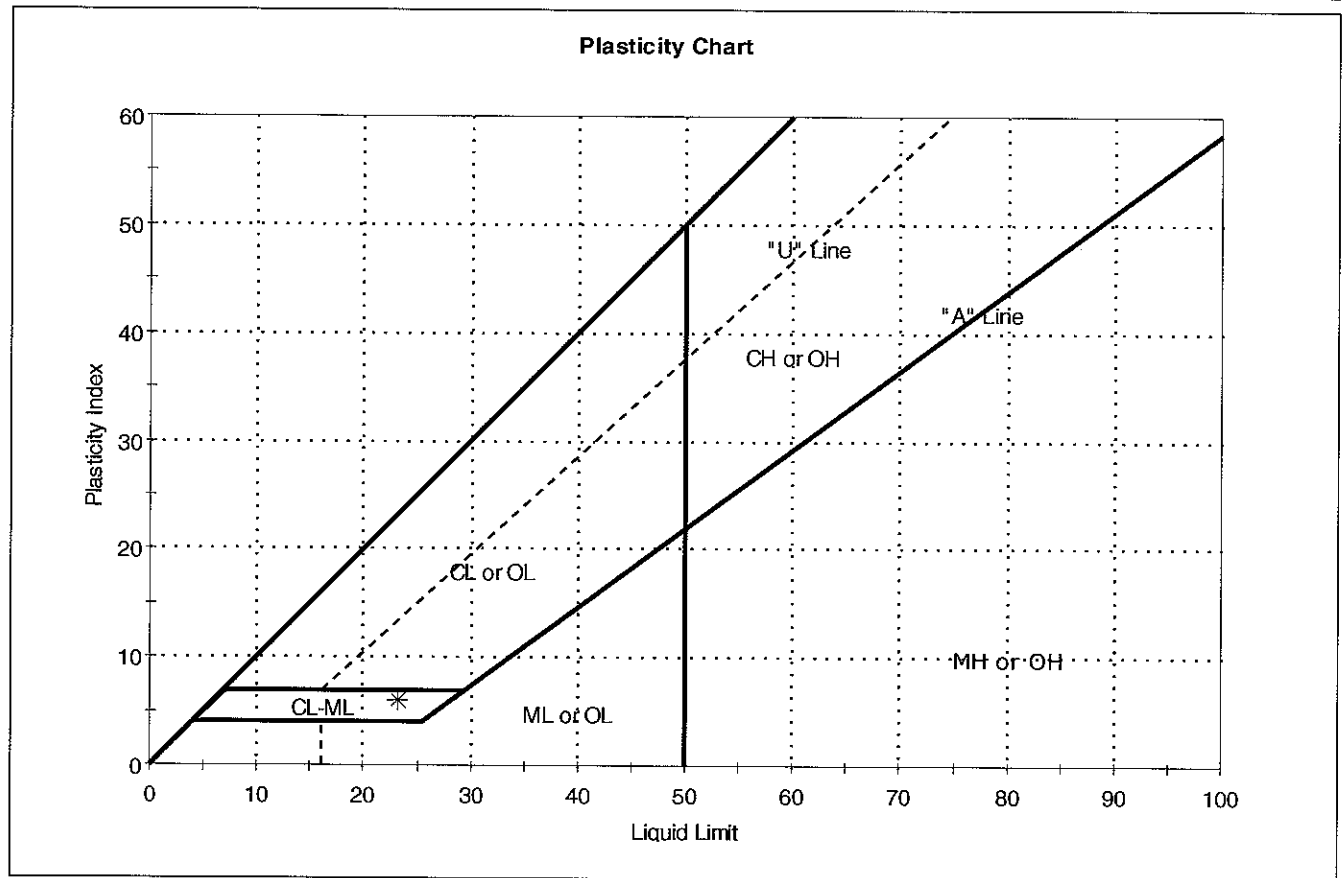
Dilancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-03	Sample Type:	jar
Sample ID:	OL-0301-09	Test Date:	02/06/07
Depth :	68-75 ft	Test Id:	106182
Test Comment:	---		
Sample Description:	Wet, brown silty, clayey sand with gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-09	915-PZ13	68-75 ft	13	23	17	6	-1	Silty, clayey sand with gravel (SC-SM)

Sample Prepared using the WET method

72% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	SB915-PZ13-04	Sample Type:	jar
Sample ID:	OL-0301-10	Test Date:	01/12/07
Depth :	63-65 ft	Test Id:	106183
Test Comment:	---		
Sample Description:	Moist, very dark gray silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-10	915-PZ13	63-65 ft	13	n/a	n/a	n/a	n/a	Silty sand (SM)

54% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilutancy: SLOW

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	SB915-PZ13-04	Sample Type:	jar
Sample ID:	OL-0301-11	Test Date:	01/12/07
Depth :	108-110 ft	Test Id:	106184
Test Comment:	---		
Sample Description:	Moist, dark gray sand with silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-11	915-PZ13	108-110 ft	14	n/a	n/a	n/a	n/a	Well-graded sand with silt (SW-SM)

82% Retained on #40 Sieve

Dry Strength: NONE

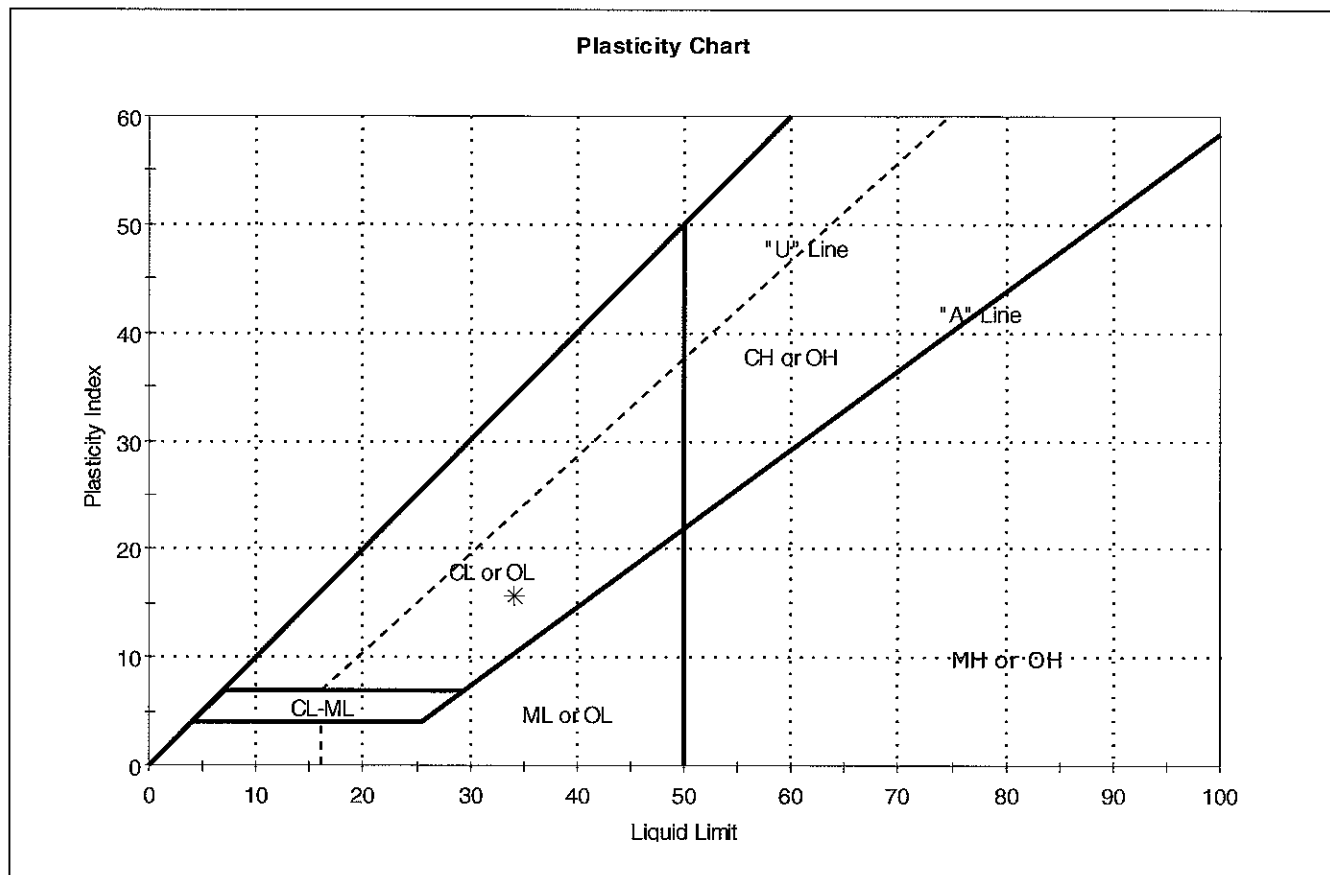
Dilancy: RAPID

Toughness: LOW

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-05	Sample Type:	jar
Sample ID:	OL-0301-12	Test Date:	02/08/07
Depth :	48-50 ft	Test Id:	106185
Test Comment:	---		
Sample Description:	Moist, brown clayey sand with gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-12	915-PZ13	48-50 ft	20	34	18	16	0	Clayey sand with gravel (SC)

Sample Prepared using the WET method

45% Retained on #40 Sieve

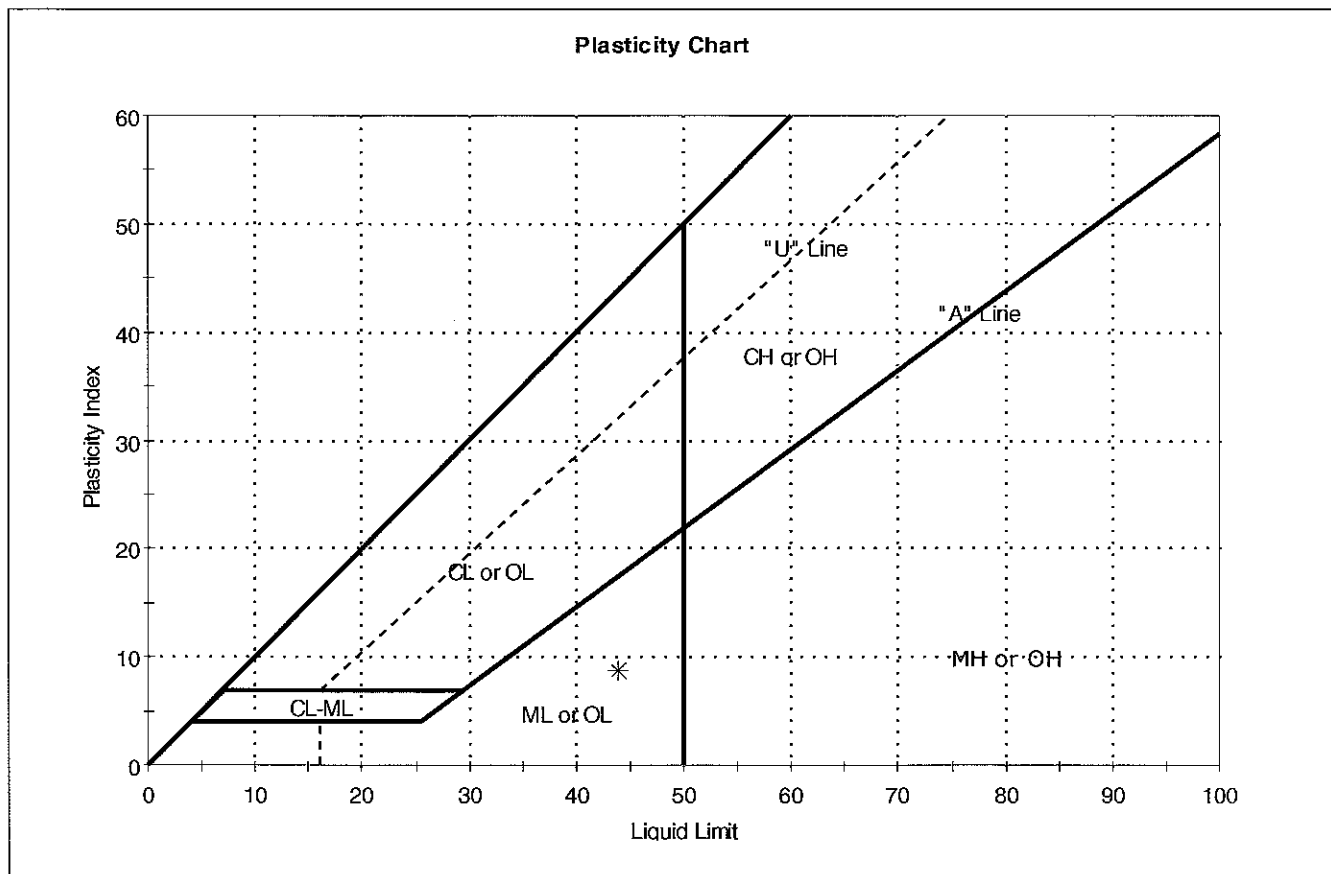
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915- PZ13-06	Sample Type:	jar
Sample ID:	OL-0301-13	Test Date:	02/01/07
Depth :	55-65 ft	Test Id:	106186
Test Comment:	---		
Sample Description:	Moist, brown sand with silt and gravel		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-13	SB915-PZ13-06	55-65 ft	19	44	35	9	-2	Poorly graded sand with silt and gravel (SP-SM)

Sample Prepared using the WET method

76% Retained on #40 Sieve

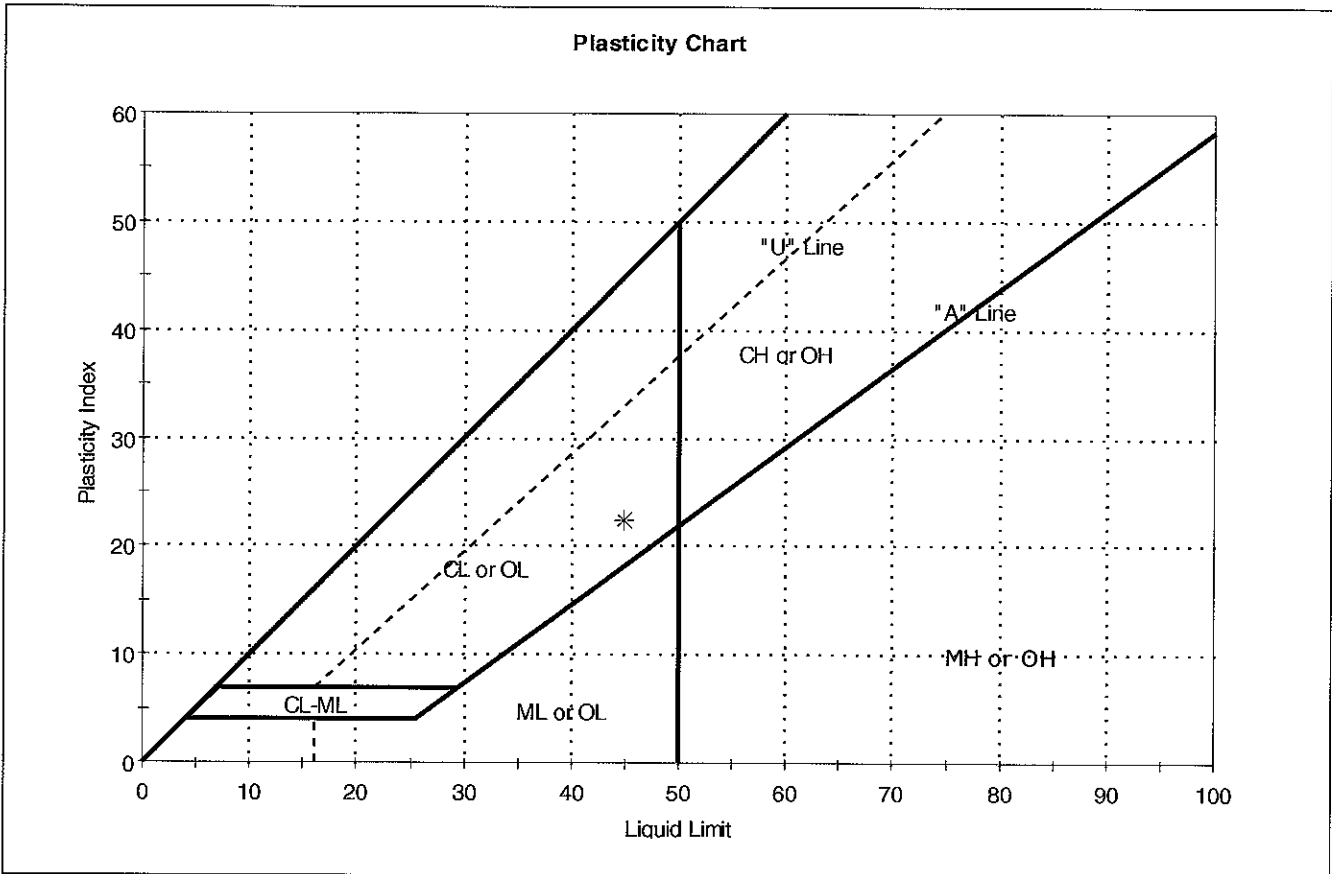
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga		
Location:	Syracuse		
Boring ID:	SB915-PZ13-13	Sample Type:	jar
Sample ID:	OL-0301-14	Test Date:	02/01/07
Depth :	40-42 ft	Test Id:	106187
Test Comment:	---		
Sample Description:	Moist, brown clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-14	915-PZ13	40-42 ft	24	45	22	23	0	lean clay (CL)

Sample Prepared using the WET method

0% Retained on #40 Sieve

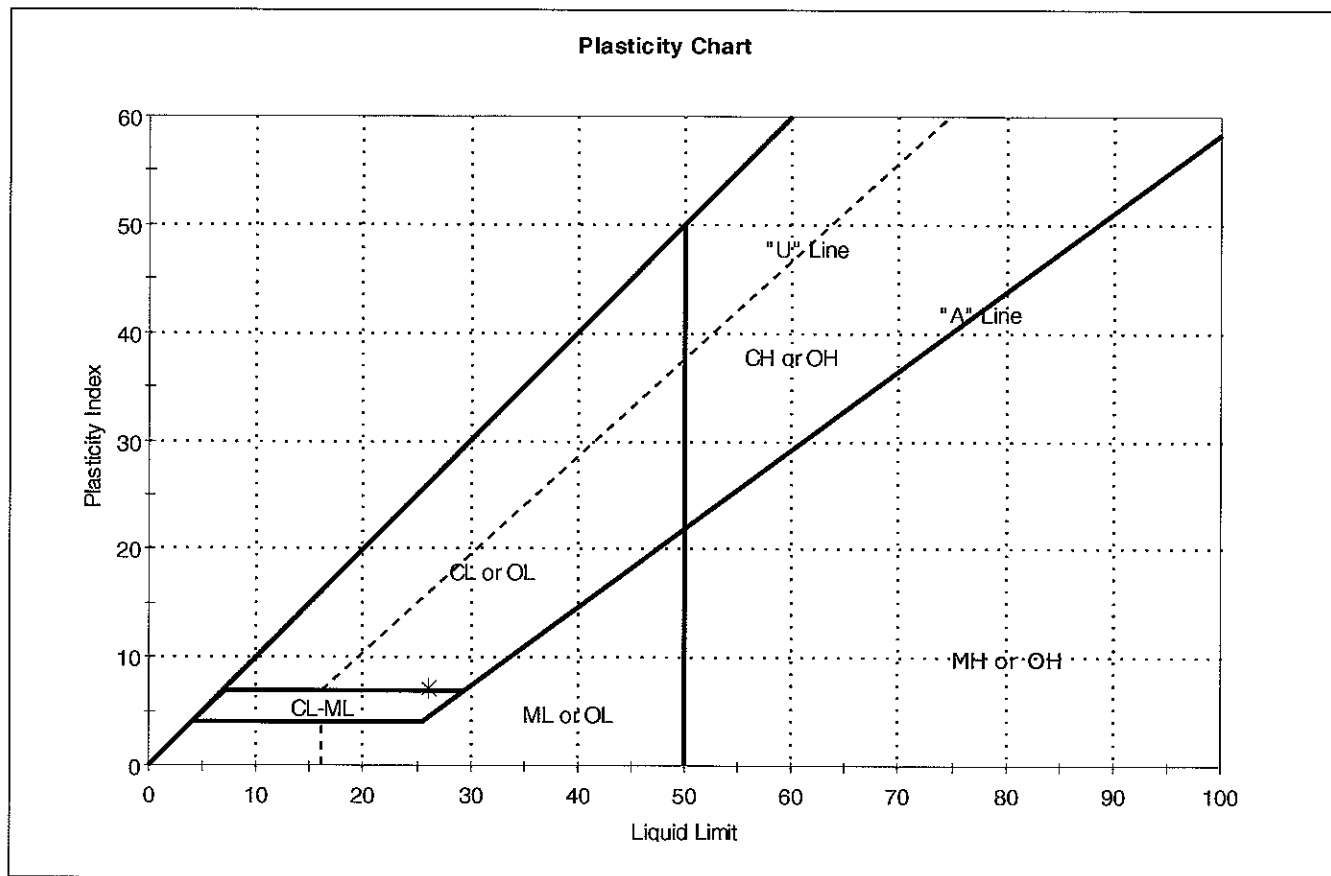
Dry Strength: HIGH

Dilatancy: NONE

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-16	Sample Type:	jar
Sample ID:	OL-0301-15	Test Date:	01/09/07
Depth:	55-57 ft	Test Id:	106188
Test Comment:	---		
Sample Description:	Moist, olive brown clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-15	915-PZ13	55-57 ft	25	26	19	7	1	lean clay (CL)

Sample Prepared using the WET method

1% Retained on #40 Sieve

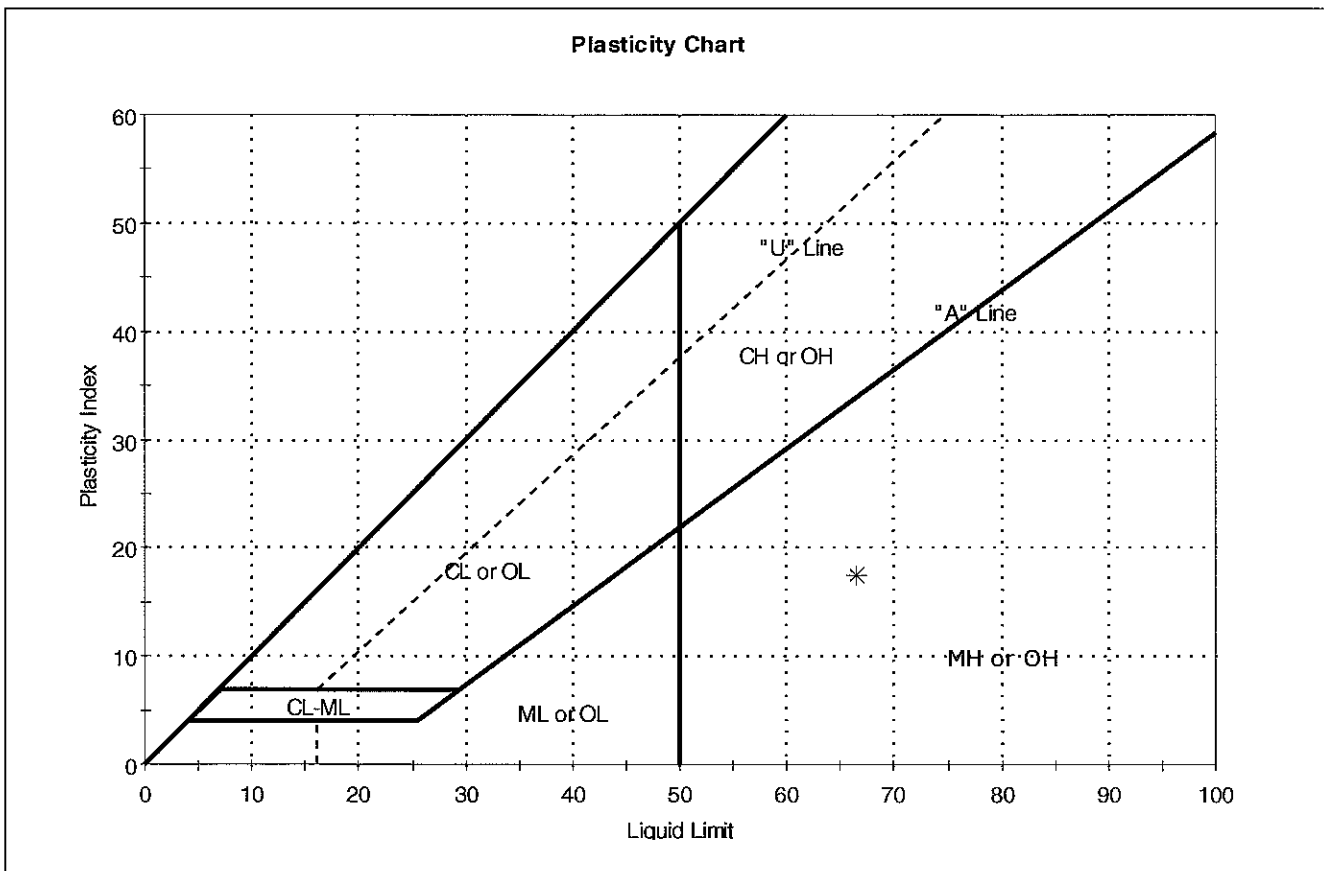
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-07	Sample Type:	jar
Sample ID:	OL-0301-16	Test Date:	02/08/07
Depth :	25-27 ft	Test Id:	106189
Test Comment:	---		
Sample Description:	Moist, grayish brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-16	915-PZ13	25-27 ft	33	66	49	17	-1	Silty sand (SM)

Sample Prepared using the WET method

53% Retained on #40 Sieve

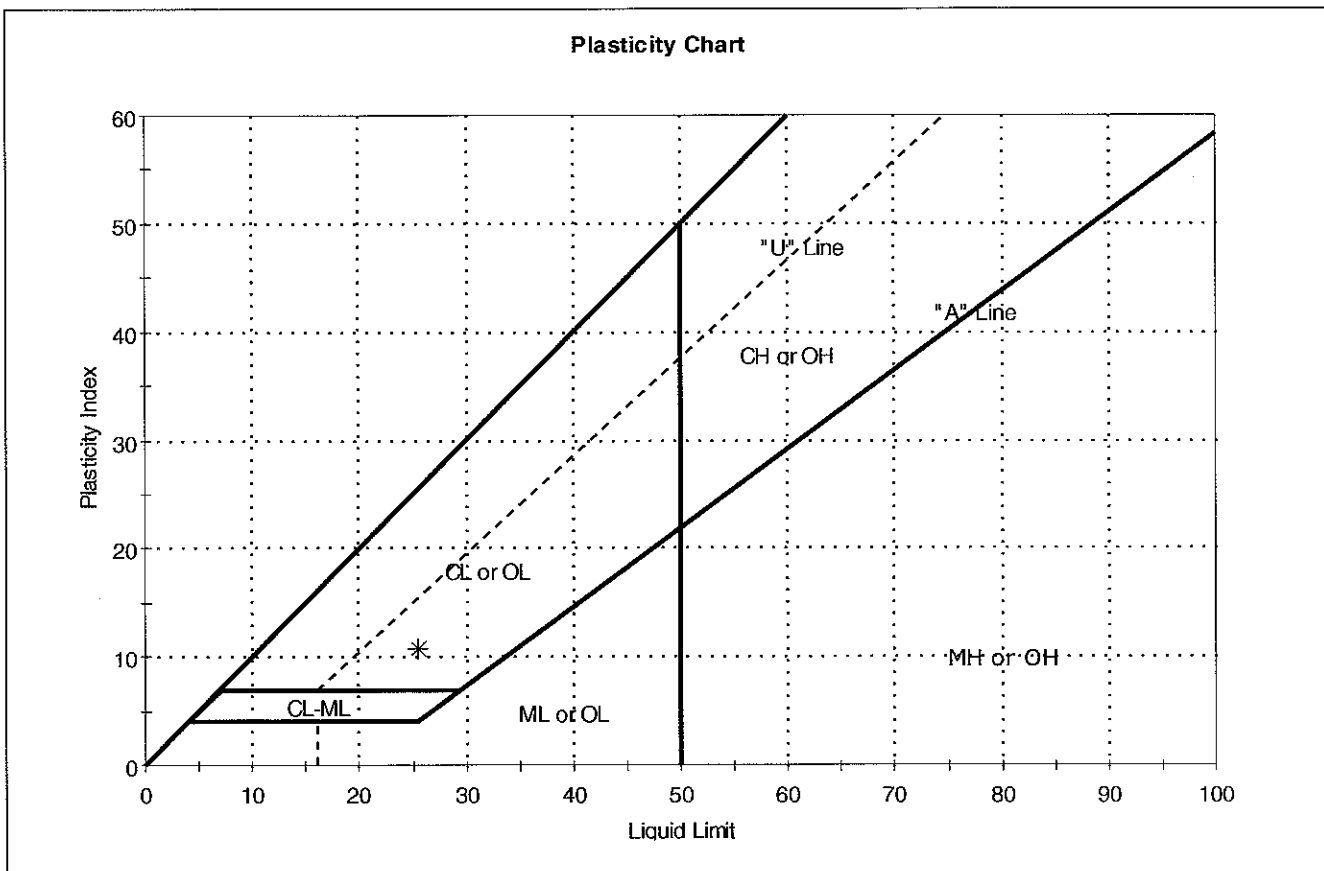
Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-08	Sample Type:	jar
Sample ID:	OL-0301-17	Test Date:	02/09/07
Depth :	15-17 ft	Test Id:	106190
Test Comment:	---		
Sample Description:	Moist, pretty brown clay w/ sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-17	915-PZ13	15-17 ft	11	26	15	11	0	Sandy lean clay with gravel (CL)

Sample Prepared using the WET method

28% Retained on #40 Sieve

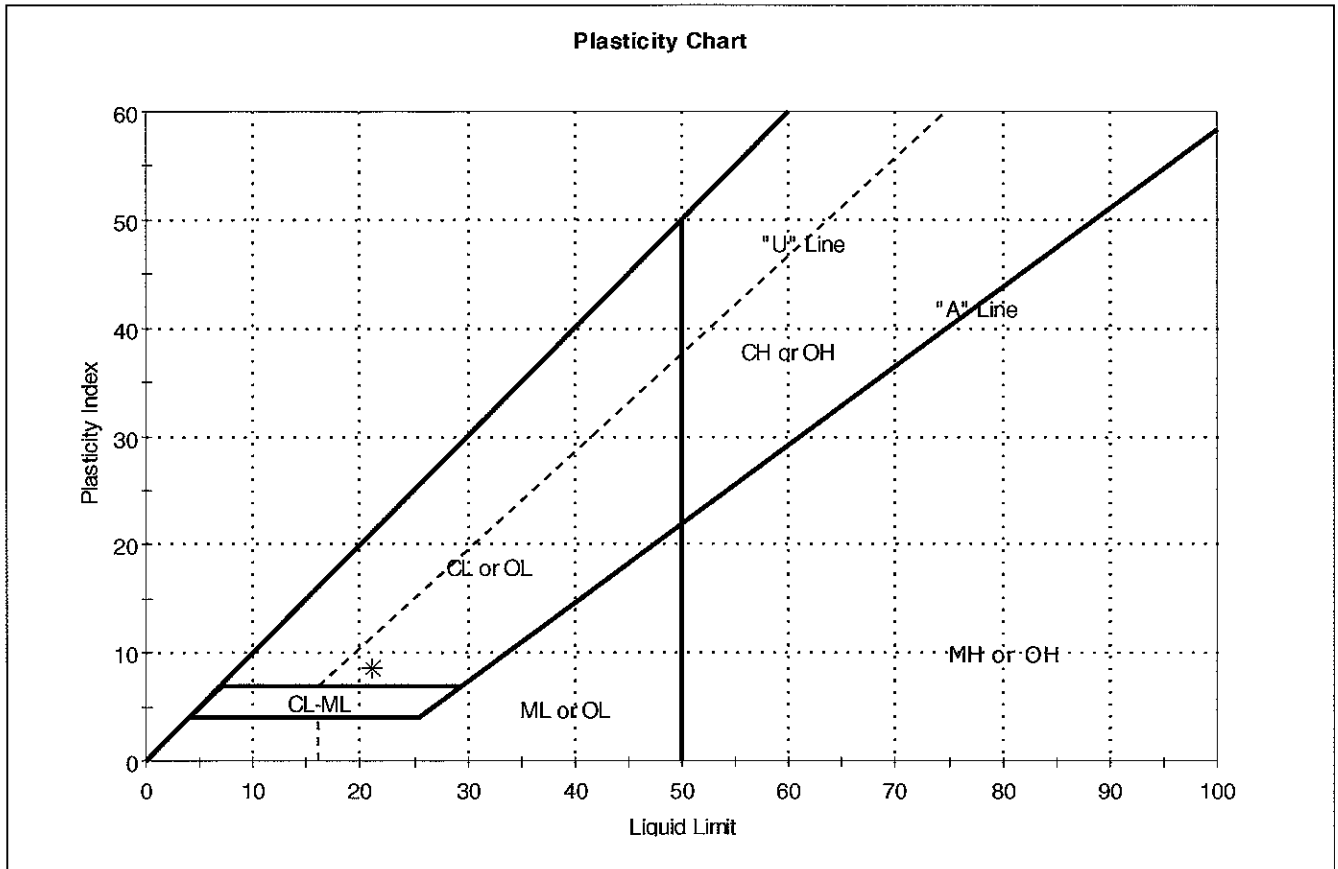
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-09	Sample Type:	jar
Sample ID:	OL-0301-18	Test Date:	02/08/07
Depth :	10-17 ft	Test Id:	106191
Test Comment:	---		
Sample Description:	Moist, brown sandy clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

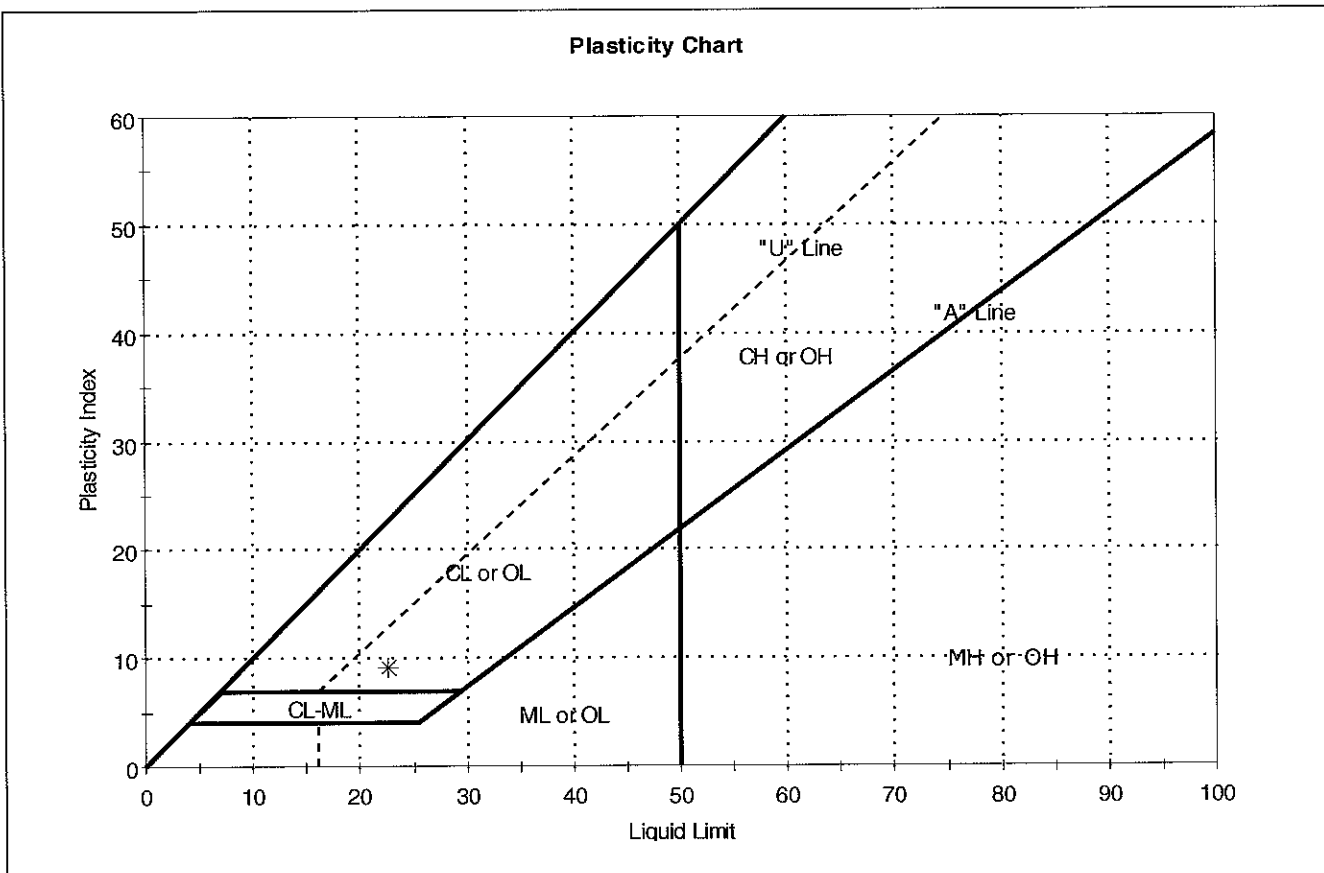


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-18	915-PZ13	10-17 ft	10	21	12	9	0	Sandy lean clay (CL)

Sample Prepared using the WET method
 18% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-11	Sample Type:	jar
Sample ID:	OL-0301-19	Test Date:	02/05/07
Depth:	25-27 ft	Test Id:	106192
Test Comment:	---		
Sample Description:	Moist, brown sandy clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-19	915-PZ13	25-27 ft	10	23	13	10	0	Sandy lean clay (CL)

Sample Prepared using the WET method

22% Retained on #40 Sieve

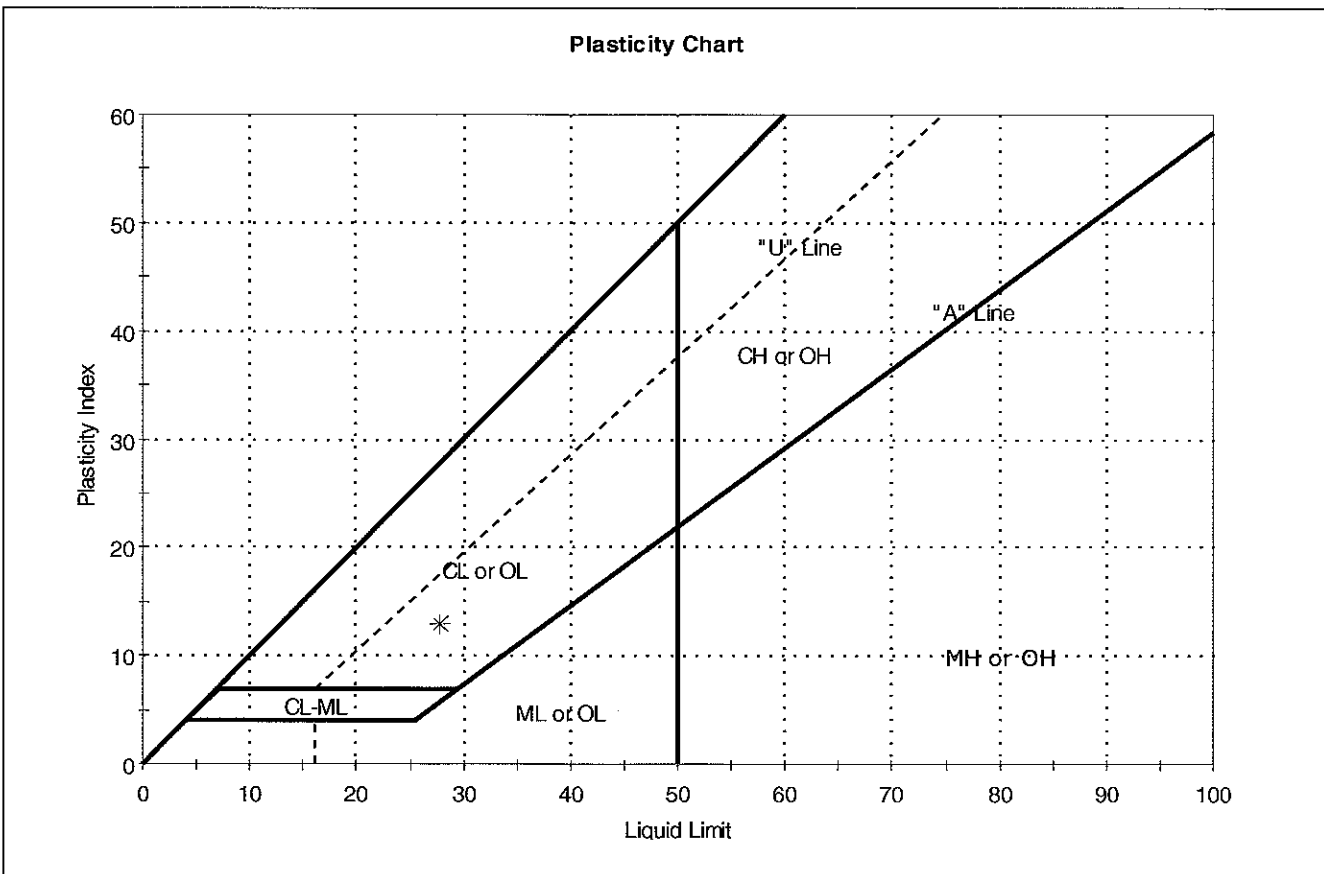
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-12	Sample Type:	jar
Sample ID:	OL-0301-20	Test Date:	01/24/07
Depth :	35-37 ft	Test Id:	106193
Test Comment:	---		
Sample Description:	Moist, brown sandy clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-20	915-PZ13	35-37 ft	17	28	15	13	0	Sandy lean clay (CL)

Sample Prepared using the WET method

1% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

Chain of Custody / Analysis Request												
Privileged and Confidential			Site Name:		Onondaga Lake							
Field ID:			Location of Site:		Syracuse, New York							
Sampler:			ATT VETTER		Preservative:							
PO #:					0 0 0 0 0 0 0 0 0 0							
Analysis Turnaround Time:												
Standard -												
Rush Charges Authorized for -												
2 weeks -												
1 week -												
Next Day -												
Sample Date			Sample Time		Sample Type		Sample Matrix		Sample Purpose Cont.		# of	
Field Sample ID			Start Depth (ft)		End Depth (ft)		Sample Identification					
OL-STA-30033	105	107	OL-0301-01	14:57	SEDIMENT	SOIL	REG	1				
OL-STA-30033	5	7	OL-0301-02	15:01	SEDIMENT	SOIL	REG	1				
OL-STA-30033	30	32	OL-0301-03	15:02	SEDIMENT	SOIL	REG	1				
OL-STA-30033	47	49	OL-0301-04	15:08	SEDIMENT	SOIL	REG	1				
OL-STA-30033	59	61	OL-0301-04	15:08	SEDIMENT	SOIL	REG	1				
OL-STA-30033	73	75	OL-0301-05	15:10	SEDIMENT	SOIL	REG	1				
OL-STA-30033	85	87	OL-0301-06	15:11	SEDIMENT	SOIL	REG	1				
OL-STA-30033	99	101	OL-0301-07	15:12	SEDIMENT	SOIL	REG	1				
OL-STA-30033	107	109	OL-0301-08	15:12	SEDIMENT	SOIL	REG	1				

Relinquished by: <i>Shara M. Chmura</i>	Company	PARSONS 3/12/67 @ 1045	Received by:	Company		Condition	Custody Seals Intact
	Date/Time			Date/Time			
Relinquished by:	Company		Received by:	Company		Condition	Custody Seals Intact
	Date/Time			Date/Time			

Page 1 of 2

AESI Ref: 38292.40495

Special Instructions: Please retain excess sample volume.

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; 8 = Other (specify):

Page 2 of 2

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: ml	
Sample ID:---	Test Date: 05/08/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-STA-30033	OL-0301-01	105-107 ft	Moist, reddish brown sand w/ gravel	7.6
OL-STA-30033	OL-0301-02	5-7 ft	Moist, white silt	198.2
OL-STA-30033	OL-0301-03	30-32 ft	Moist, olive gray silt	63.9
OL-STA-30033	OL-0301-04	59-61 ft	Wet, reddish gray silt	19.9
OL-STA-30033	OL-0301-05	73-75 ft	Moist, brown silty sand	18.5
OL-STA-30033	OL-0301-06	85-87 ft	Wet, reddish gray silty sand	24.6
OL-STA-30033	OL-0301-07	99-101 ft	Wet, reddish brown silty sand	20.8
OL-STA-30033	OL-0301-08	107-109 ft	Moist, brown silty sand	13.8

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	05/08/07
Depth :	---	Sample Id:	---
		Tested By:	ml
		Checked By:	n/a

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-STA-10108	OL-0301-10	76-78 ft	Wet, light olive brown silt	64.6
OL-STA-10108	OL-0301-11	88-90 ft	Moist, black clay	41.7
OL-STA-10108	OL-0301-12	118-120 ft	Moist, reddish gray clay	31.5
OL-STA-10108	OL-0301-13	113-115 ft	Moist, reddish brown silt	33.7
OL-STA-10108	OL-0301-14	134-136 ft	Moist, grayish brown silt	17.2
OL-STA-10108	OL-0301-15	147-149 ft	Wet, reddish brown clayey gravel with sand	10
OL-STA-10108	OL-0301-16	153-155 ft	Moist, reddish brown silty, clayey sand	7.6
OL-STA-10108	OL-0301-17	155-157 ft	Moist, reddish brown sandy clay	9.3

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: rmt	
Sample ID:---	Test Date: 03/21/07	Checked By: jdt	
Depth : ---	Test Id: 109036		

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
OL-STA-30033	OL-0301 -03	30-32 ft	Moist, olive gray silt	2.7
OL-STA-30033	OL-0301 -05	73-75 ft	Moist, brown silty sand	2.72
OL-STA-30033	OL-0301 -08	107-109 ft	Moist, brown silty sand	2.72
OL-STA-10108	OL-0301 -14	134-136 ft	Moist, grayish brown silt	2.79
OL-STA-10108	OL-0301 -17	155-157 ft	Moist, reddish brown sandy clay	2.8

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-STA-30033

Sample Type: jar

Tested By: mll

Sample ID: OL-0301-02

Test Date: 03/21/07

Checked By: jdt

Depth: 5-7 ft

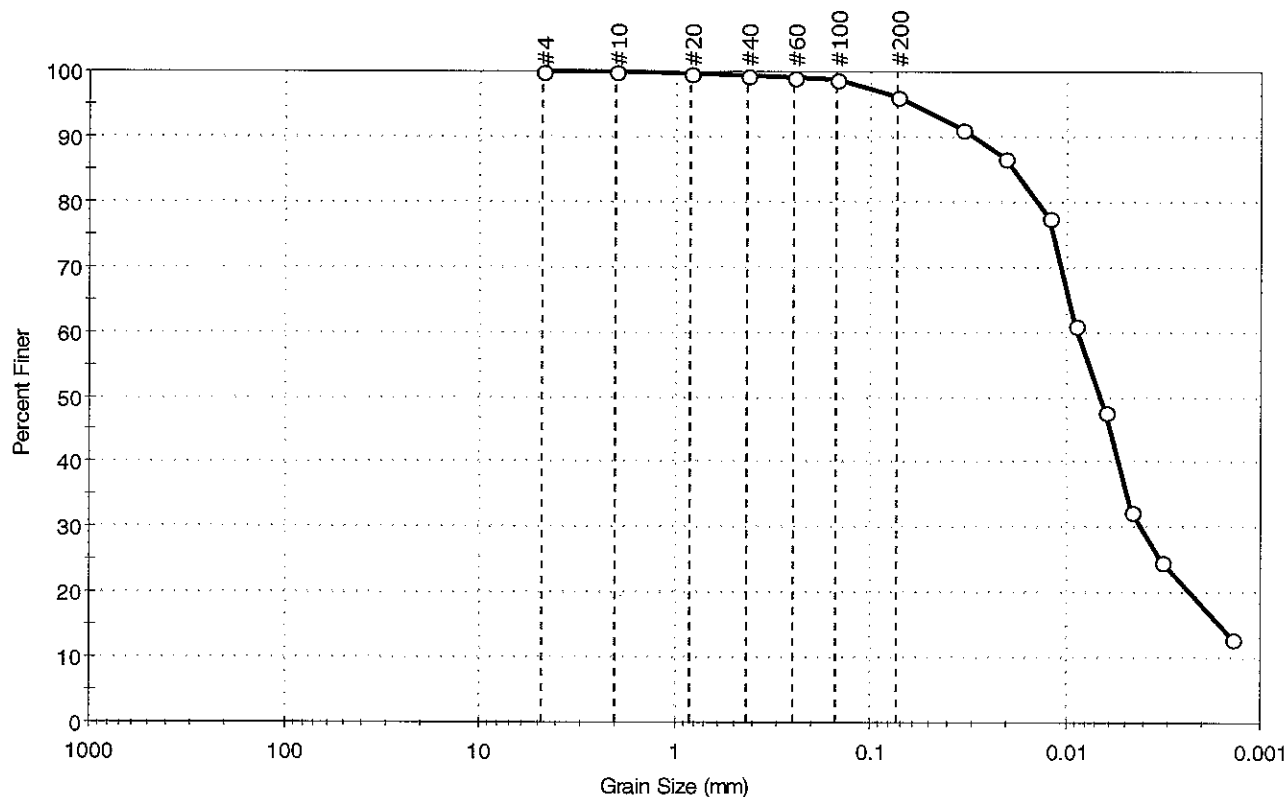
Test Id: 109015

Test Comment: ---

Sample Description: Moist, white silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	3.9	96.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.074	96		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0341	91		
---	0.0207	87		
---	0.0123	77		
---	0.0089	61		
---	0.0064	48		
---	0.0046	32		
---	0.0033	25		
---	0.0014	13		

Coefficients

$D_{85} = 0.0189$ mm $D_{30} = 0.0041$ mm
 $D_{60} = 0.0087$ mm $D_{15} = 0.0016$ mm
 $D_{50} = 0.0067$ mm $D_{10} = 0.0011$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (59))

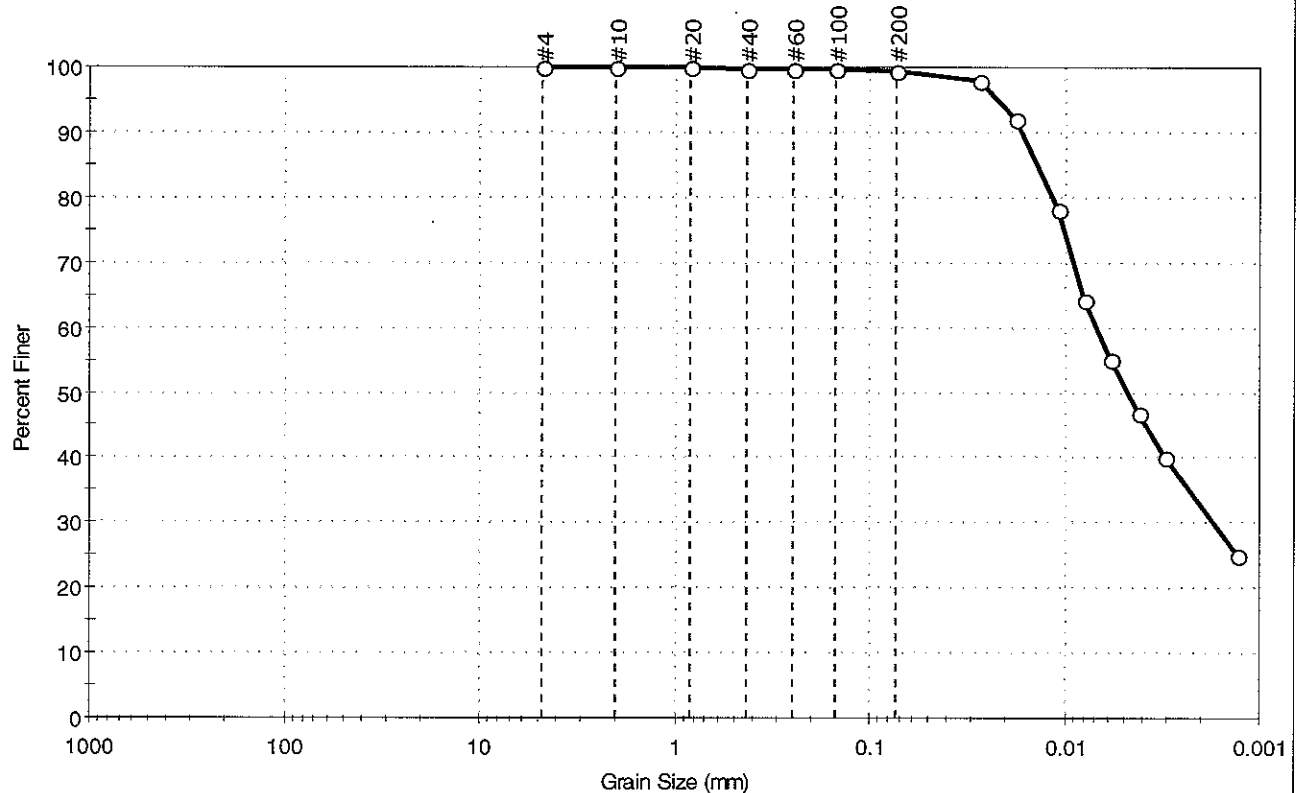
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-STA-30033	Sample Type: jar
Sample ID: OL-0301-03	Test Date: 03/21/07
Depth: 30-32 ft	Test Id: 109016
Test Comment: ---	Tested By: mll
Sample Description: Moist, olive gray silt	Checked By: jdt
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.6	99.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0278	98		
---	0.0178	92		
---	0.0108	78		
---	0.0080	64		
---	0.0058	55		
---	0.0042	47		
---	0.0030	40		
---	0.0013	25		

Coefficients

D ₈₅ = 0.0139 mm	D ₃₀ = 0.0017 mm
D ₆₀ = 0.0069 mm	D ₁₅ = N/A
D ₅₀ = 0.0047 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (52))

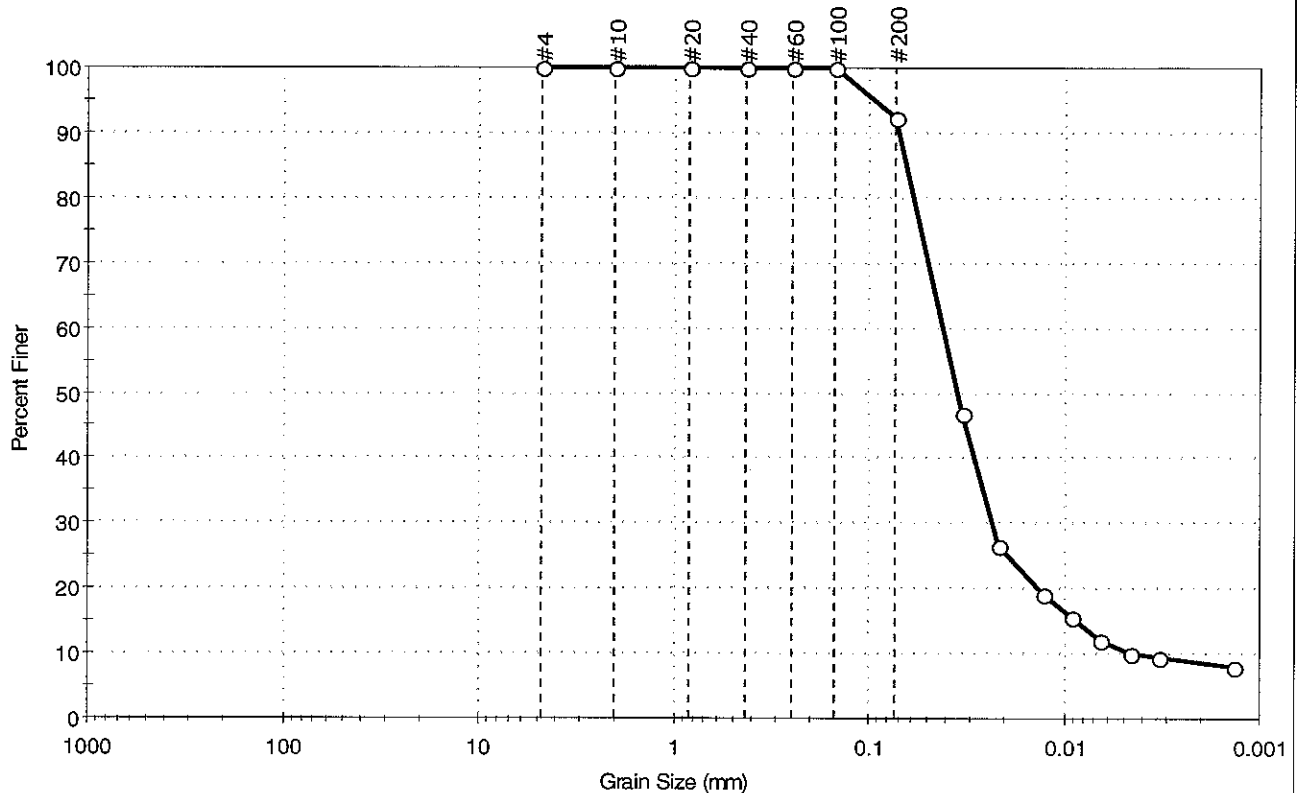
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-STA-30033	Sample Type: jar
Sample ID: OL-0301-04	Test Date: 03/22/07
Depth: 59-61 ft	Test Id: 109017
Test Comment: ---	
Sample Description: Wet, reddish gray silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	7.7	92.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0331	47		
---	0.0217	26		
---	0.0127	19		
---	0.0091	16		
---	0.0065	12		
---	0.0046	10		
---	0.0033	10		
---	0.0014	8		

Coefficients

D ₈₅ = 0.0649 mm	D ₃₀ = 0.0234 mm
D ₆₀ = 0.0417 mm	D ₁₅ = 0.0085 mm
D ₅₀ = 0.0349 mm	D ₁₀ = 0.0044 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

AASHTO Silty Soils (A-4 (0))

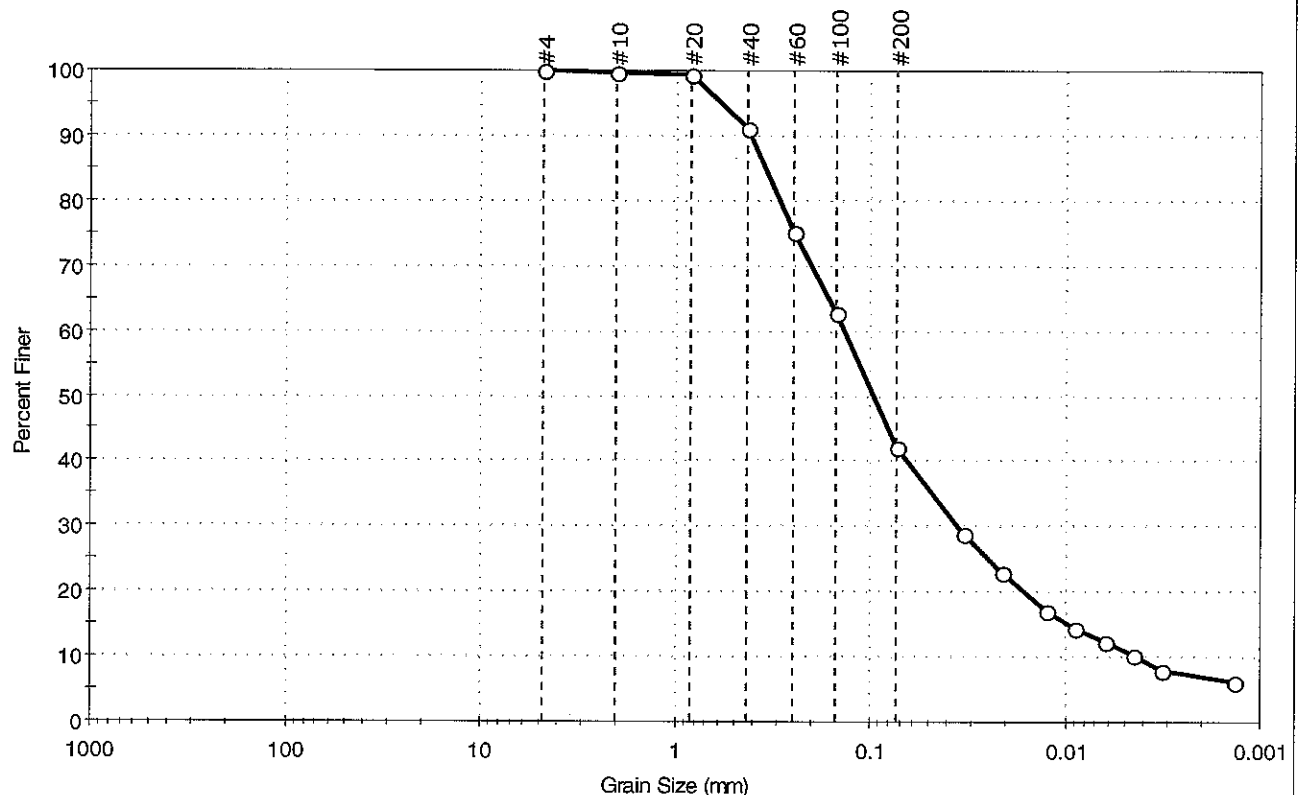
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-STA-30033	Sample Type: jar
Sample ID: OL-0301-05	Test Date: 03/20/07
Depth: 73-75 ft	Test Id: 109018
Test Comment: ---	Tested By: mll
Sample Description: Moist, brown silty sand	Checked By: jdt
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	57.8	42.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	91		
#60	0.25	75		
#100	0.15	63		
#200	0.074	42		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0335	29		
---	0.0210	23		
---	0.0125	17		
---	0.0089	14		
---	0.0063	12		
---	0.0045	10		
---	0.0032	8		
---	0.0014	6		

Coefficients

D ₈₅ = 0.3462 mm	D ₃₀ = 0.0357 mm
D ₆₀ = 0.1352 mm	D ₁₅ = 0.0096 mm
D ₅₀ = 0.0964 mm	D ₁₀ = 0.0043 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

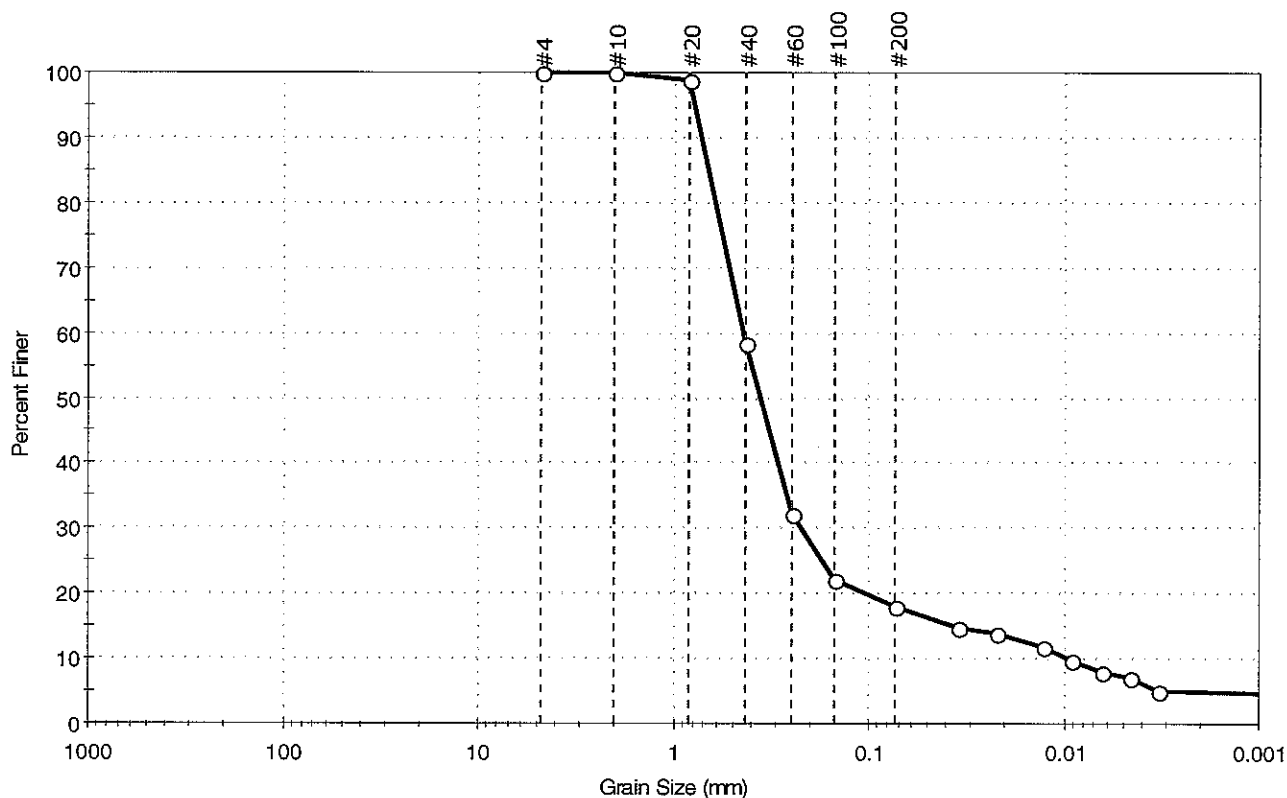
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : SOFT

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-STA-30033	Sample Type: jar
Sample ID: OL-0301-06	Test Date: 03/22/07	Tested By: mll
Depth: 85-87 ft	Test Id: 109019	Checked By: jdt
Test Comment: ---		
Sample Description: Wet, reddish gray silty sand		
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	---	81.9	18.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	99		
#40	0.42	58		
#60	0.25	32		
#100	0.15	22		
#200	0.074	18		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0350	15		
---	0.0222	14		
---	0.0129	12		
---	0.0092	10		
---	0.0065	8		
---	0.0046	7		
---	0.0033	5		
---	0.0008	5		

Coefficients

D ₈₅ = 0.6645 mm	D ₃₀ = 0.2256 mm
D ₆₀ = 0.4359 mm	D ₁₅ = 0.0372 mm
D ₅₀ = 0.3585 mm	D ₁₀ = 0.0095 mm
C _u = N/A	C _c = N/A

Classification

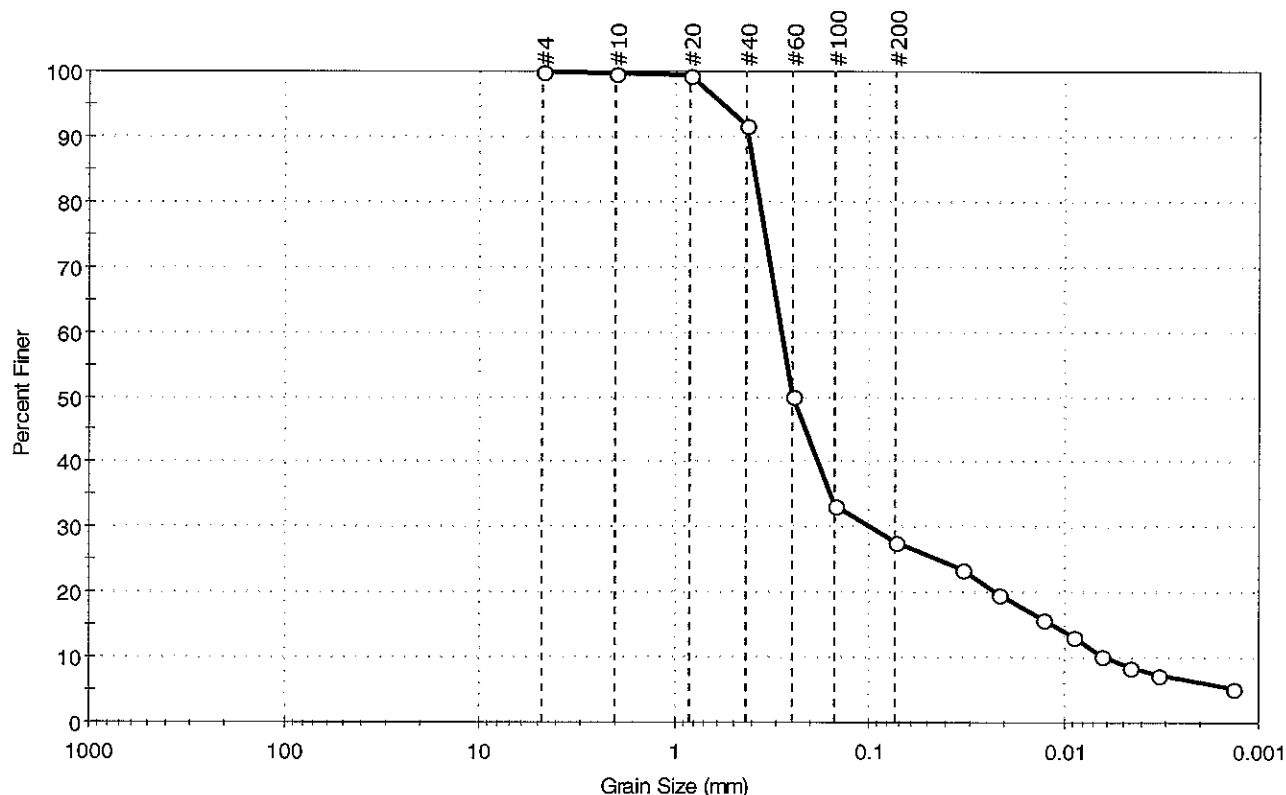
ASTM	Silty sand (SM)
AASHTO	Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : **ROUNDED**
Sand/Gravel Hardness : **HARD**

Client: Parsons Engineering Science	Project: Onondaga	Location: Syracuse	Project No: GTX-7143
Boring ID: OL-STA-30033	Sample Type: jar	Tested By: mll	Sample ID: OL-0301-07
Test Date: 03/22/07	Checked By: jdt	Test Id: 109020	Depth : 99-101 ft
Test Comment: ---	Sample Description: Wet, reddish brown silty sand	Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	72.3	27.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	92		
#60	0.25	50		
#100	0.15	33		
#200	0.074	28		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0335	24		
---	0.0218	20		
---	0.0128	16		
---	0.0091	13		
---	0.0065	10		
---	0.0046	8		
---	0.0033	7		
---	0.0014	5		

Coefficients

D ₈₅ = 0.3898 mm	D ₃₀ = 0.0990 mm
D ₆₀ = 0.2834 mm	D ₁₅ = 0.0112 mm
D ₅₀ = 0.2486 mm	D ₁₀ = 0.0061 mm
C _u = N/A	C _c = N/A

Classification

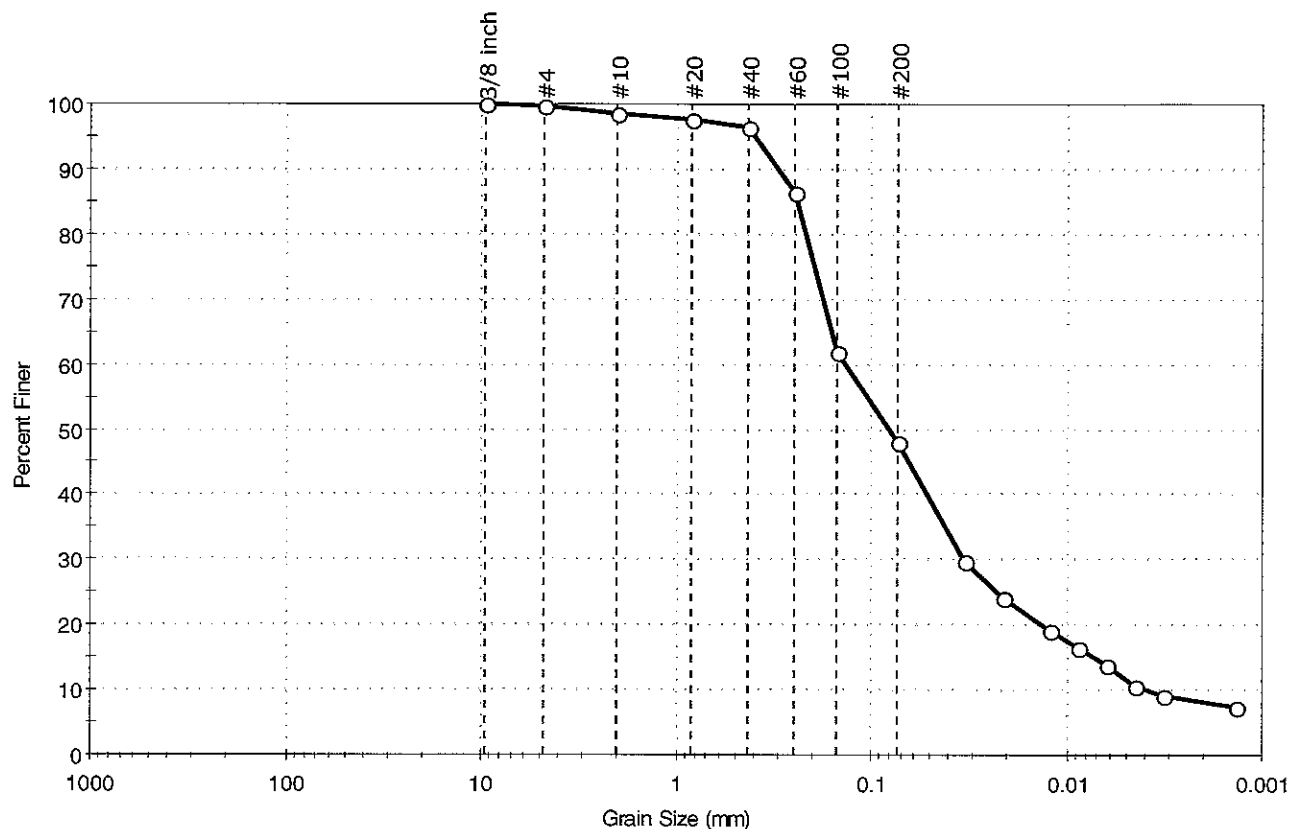
ASTM	Silty sand (SM)
AASHTO	Silty Gravel and Sand (A-2-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project: Onondaga	Project No: GTX-7143
Location: Syracuse	Boring ID: OL-STA-30033	Sample Type: jar
Sample ID: OL-0301-08	Test Date: 03/20/07	Tested By: mll
Depth: 107-109 ft	Test Id: 109021	Checked By: jdt
Test Comment: ---		
Sample Description: Moist, brown silty sand		
Sample Comment: ---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.3	51.5	48.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	99		
#20	0.84	98		
#40	0.42	97		
#60	0.25	86		
#100	0.15	62		
#200	0.074	48		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0331	30		
---	0.0210	24		
---	0.0124	19		
---	0.0088	17		
---	0.0063	14		
---	0.0045	11		
---	0.0032	9		
---	0.0014	7		

Coefficients

D ₈₅ = 0.2432 mm	D ₃₀ = 0.0333 mm
D ₆₀ = 0.1358 mm	D ₁₅ = 0.0072 mm
D ₅₀ = 0.0812 mm	D ₁₀ = 0.0038 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty sand (SM)

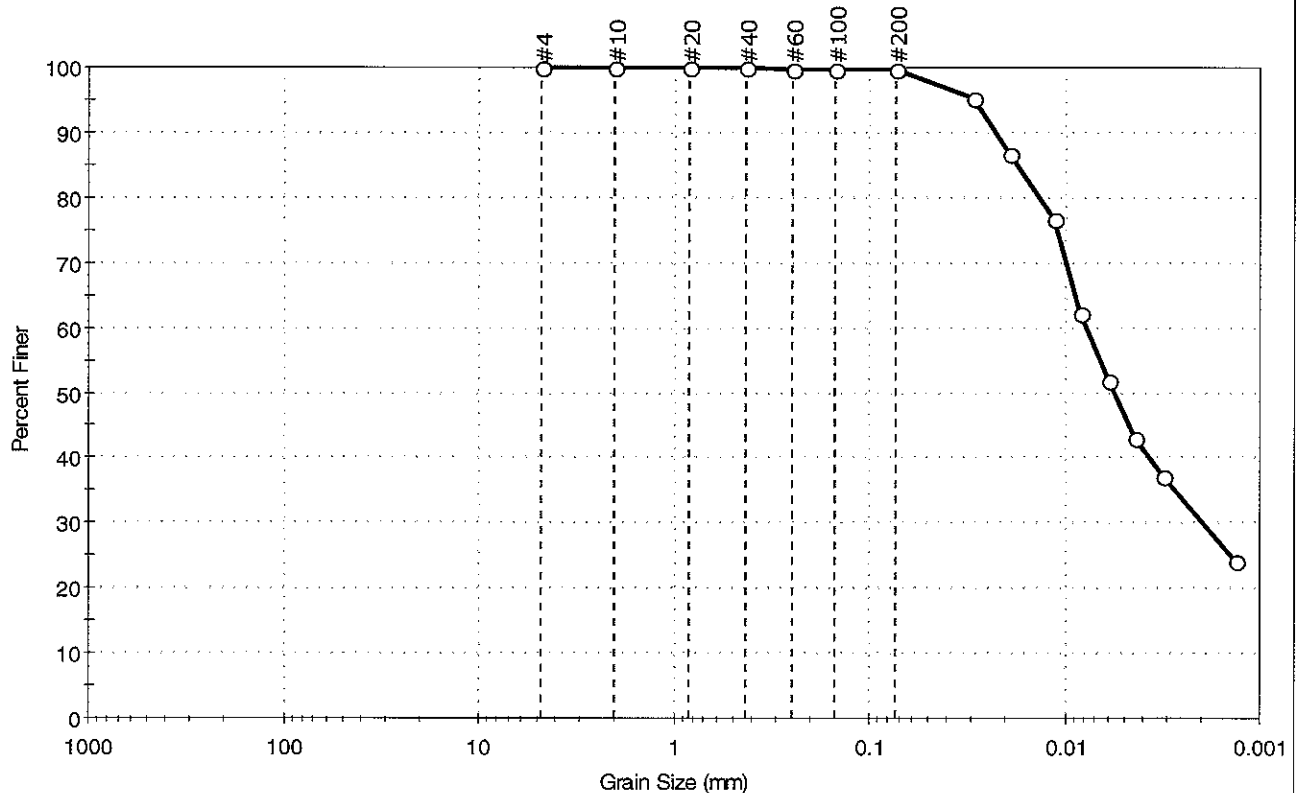
AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-STA-10108	Sample Type: jar
Sample ID: OL-0301-10	Test Date: 03/22/07
Depth: 76-78 ft	Test Id: 109022
Test Comment: ---	
Sample Description: Wet, light olive brown silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	0.0	0.4	99.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0297	95		
---	0.0193	87		
---	0.0114	77		
---	0.0083	62		
---	0.0060	52		
---	0.0043	43		
---	0.0031	37		
---	0.0013	24		

Coefficients

D ₈₅ = 0.0176 mm	D ₃₀ = 0.0020 mm
D ₆₀ = 0.0078 mm	D ₁₅ = N/A
D ₅₀ = 0.0056 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM elastic silt (MH)

AASHTO Clayey Soils (A-7-5 (43))

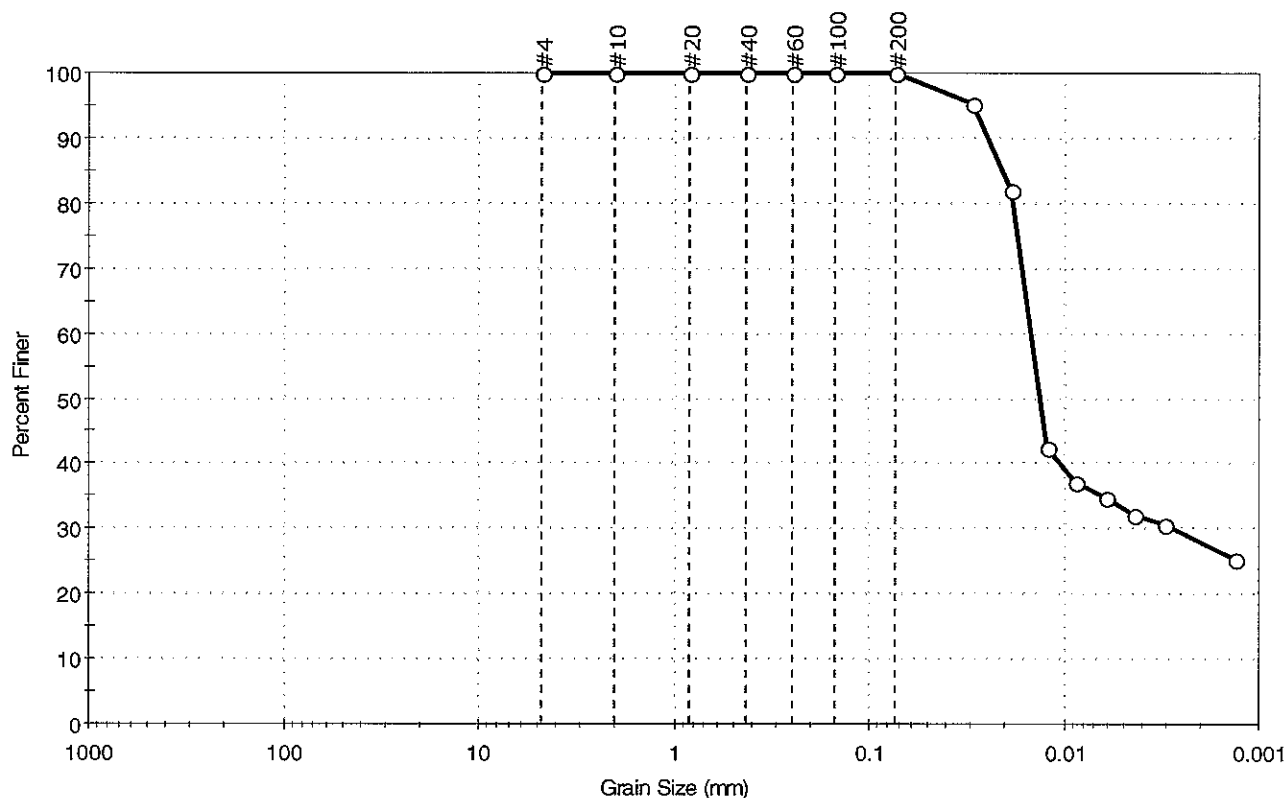
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-STA-10108	Sample Type: jar
Sample ID: OL-0301-11	Test Date: 03/27/07
Depth: 88-90 ft	Test Id: 109023
Test Comment: ---	
Sample Description: Moist, black clay	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.0	100.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0294	95		
---	0.0190	82		
---	0.0122	42		
---	0.0087	37		
---	0.0061	35		
---	0.0044	32		
---	0.0031	31		
---	0.0013	25		

Coefficients

D ₈₅ = 0.0210 mm	D ₃₀ = 0.0028 mm
D ₆₀ = 0.0149 mm	D ₁₅ = N/A
D ₅₀ = 0.0133 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM lean clay (CL)

AASHTO Clayey Soils (A-7-6 (28))

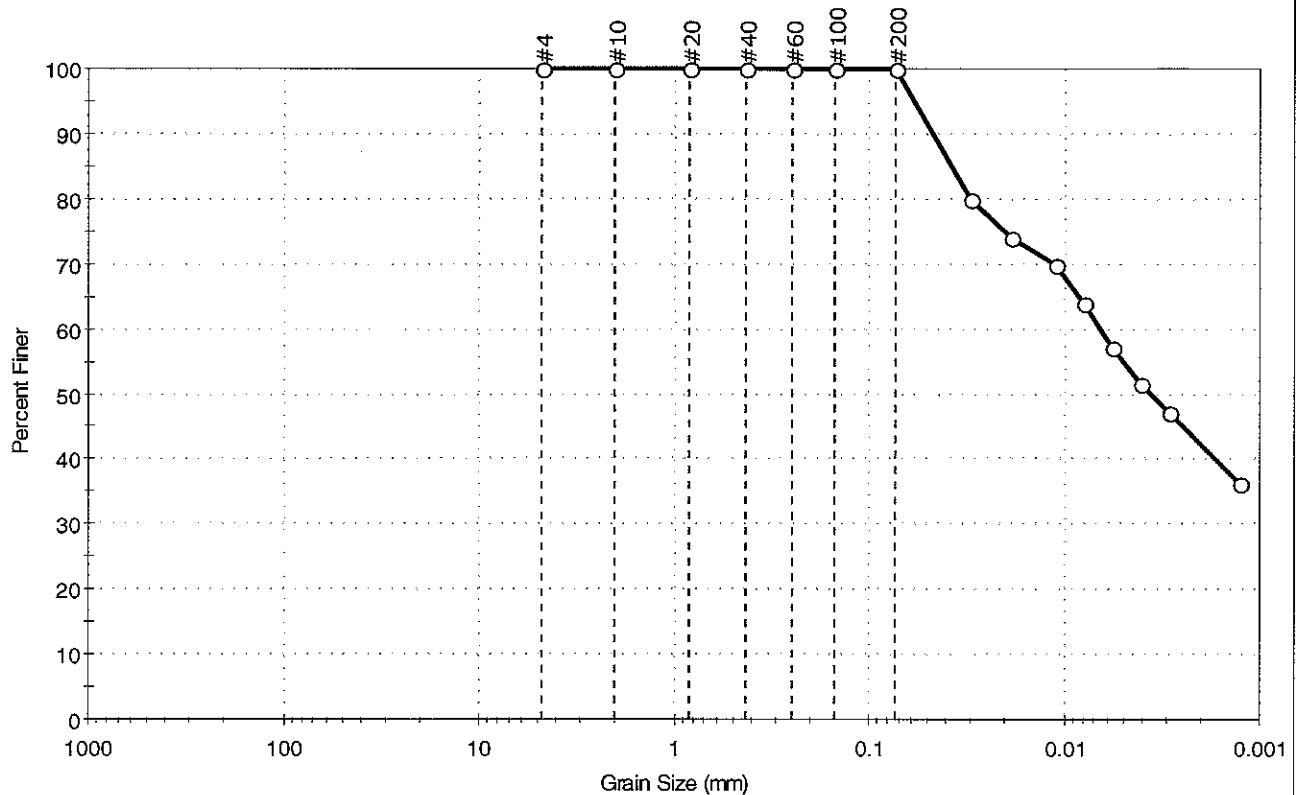
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-STA-10108	Sample Type: jar
Sample ID: OL-0301-12	Test Date: 03/22/07
Depth: 118-120 ft	Test Id: 109024
Test Comment: ---	
Sample Description: Moist, reddish gray clay	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.0	100.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.074	100		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0301	80		
---	0.0187	74		
---	0.0110	70		
---	0.0079	64		
---	0.0057	57		
---	0.0041	52		
---	0.0030	47		
---	0.0013	36		

Coefficients

D ₈₅ = 0.0378 mm	D ₃₀ = N/A
D ₆₀ = 0.0065 mm	D ₁₅ = N/A
D ₅₀ = 0.0037 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM lean clay (CL)

AASHTO Clayey Soils (A-6 (25))

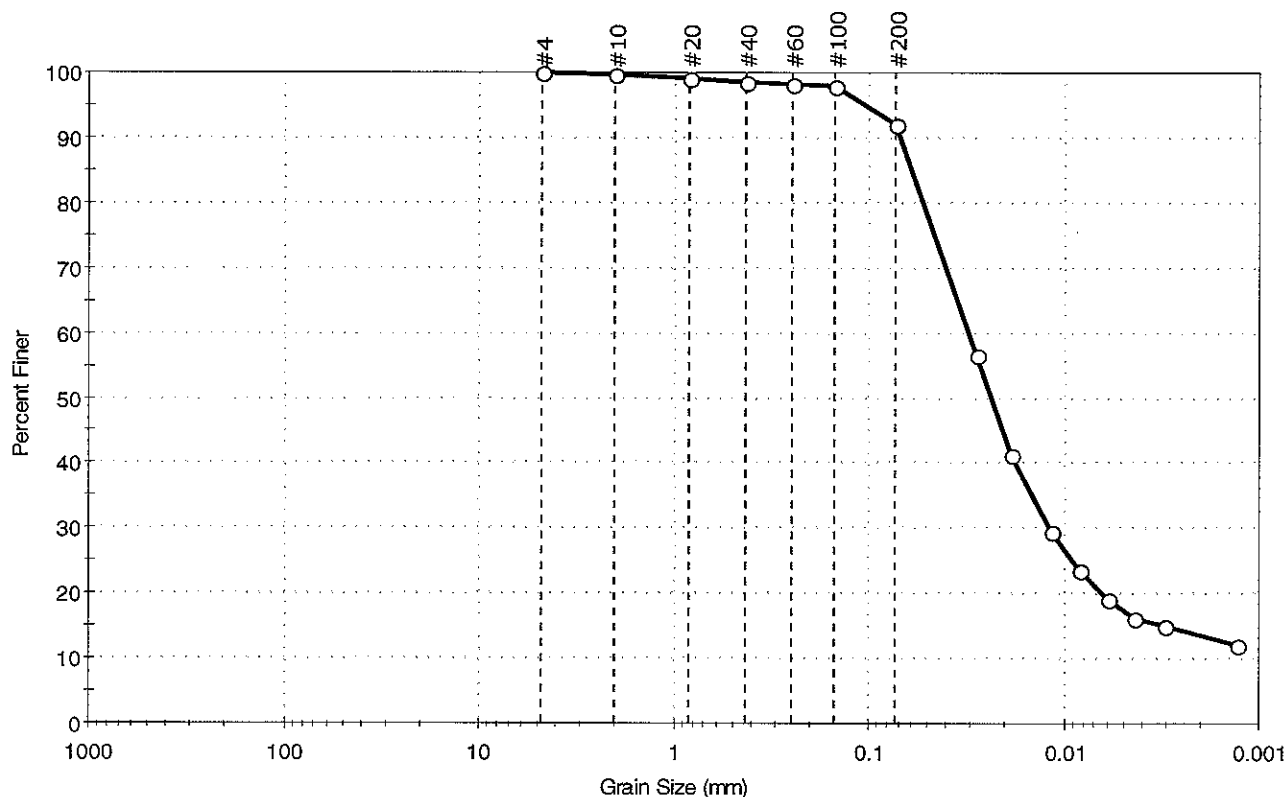
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-STA-10108	Sample Type: jar
Sample ID: OL-0301-14	Test Date: 03/21/07
Depth : 134-136 ft	Test Id: 109025
Test Comment: ---	
Sample Description: Moist, grayish brown silt	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	8.1	91.9

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.85	99		
#40	0.425	99		
#60	0.25	98		
#100	0.15	98		
#200	0.075	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0280	57		
---	0.0187	41		
---	0.0116	30		
---	0.0084	24		
---	0.0060	19		
---	0.0043	16		
---	0.0031	15		
---	0.0013	12		

Coefficients

D ₈₅ = 0.0611 mm	D ₃₀ = 0.0118 mm
D ₆₀ = 0.0307 mm	D ₁₅ = 0.0031 mm
D ₅₀ = 0.0235 mm	D ₁₀ = 0.0007 mm
C _u = N/A	C _c = N/A

Classification

ASTM silt (ML)

AASHTO Silty Soils (A-4 (0))

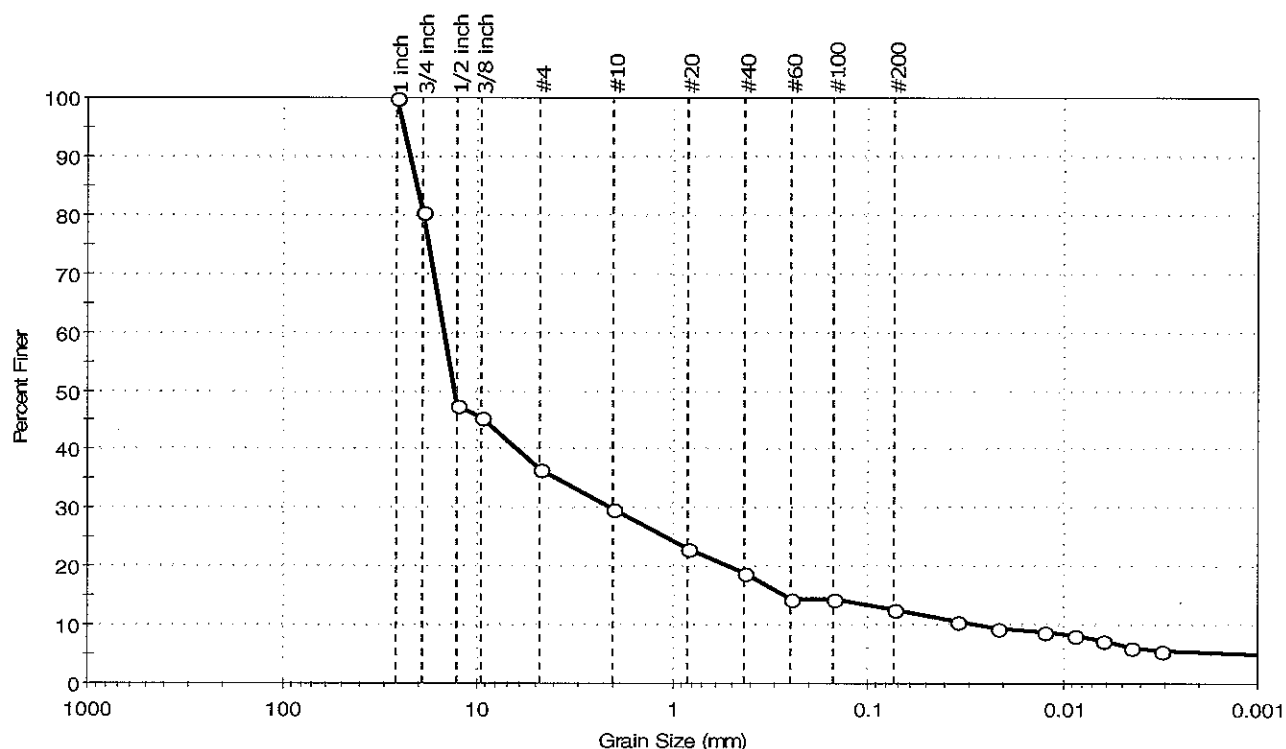
Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-STA-10108	Sample Type: jar
Sample ID: OL-0301-15	Test Date: 03/22/07
Depth: 147-149 ft	Test Id: 109026
Test Comment: ---	
Sample Description: Wet, reddish brown clayey gravel with sand	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	63.3	24.0	12.7

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 inch	25.70	100		
3/4 inch	19.00	81		
1/2 inch	12.70	47		
3/8 inch	9.51	45		
#4	4.75	37		
#10	2.00	30		
#20	0.84	23		
#40	0.42	19		
#60	0.25	14		
#100	0.15	14		
#200	0.074	13		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0351	11		
---	0.0217	9		
---	0.0125	9		
---	0.0088	8		
---	0.0063	7		
---	0.0045	6		
---	0.0031	6		
---	0.0008	5		

Coefficients

D ₈₅ = 20.3681 mm	D ₃₀ = 2.0427 mm
D ₆₀ = 14.7966 mm	D ₁₅ = 0.2670 mm
D ₅₀ = 13.0987 mm	D ₁₀ = 0.0274 mm
C _u = N/A	C _c = N/A

Classification

ASTM Clayey gravel with sand (GC)

AASHTO Clayey Gravel and Sand (A-2-6 (0))

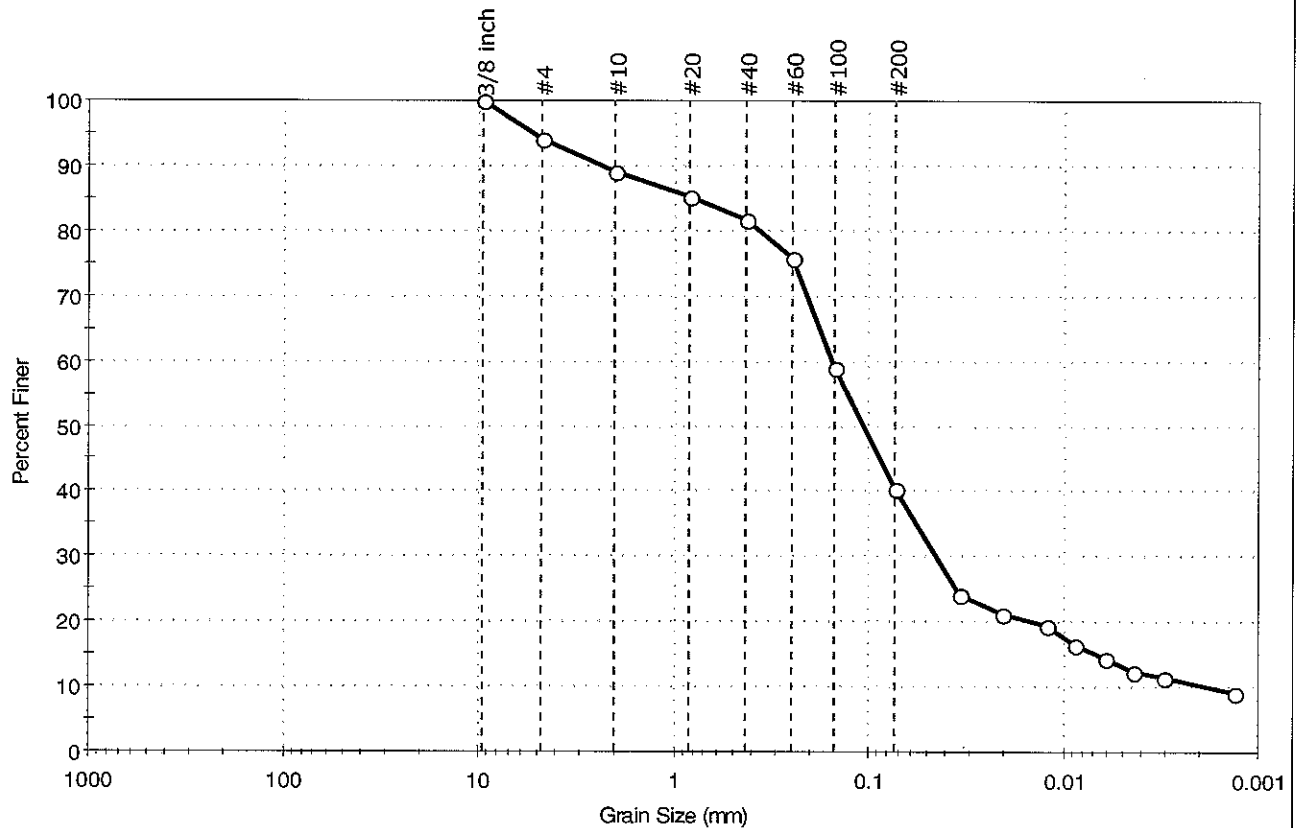
Sample/Test Description

Sand/Gravel Particle Shape : **ROUNDED**

Sand/Gravel Hardness : **HARD**

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0301-16	Test Date:	03/27/07
Depth:	153-155 ft	Test Id:	109027
Test Comment:	---		
Sample Description:	Moist, reddish brown silty, clayey sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	5.9	53.7	40.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	94		
#10	2.00	89		
#20	0.84	85		
#40	0.42	82		
#60	0.25	76		
#100	0.15	59		
#200	0.074	40		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0338	24		
---	0.0207	21		
---	0.0122	20		
---	0.0087	17		
---	0.0062	14		
---	0.0044	12		
---	0.0031	11		
---	0.0013	9		

Coefficients

D ₈₅ = 0.7848 mm	D ₃₀ = 0.0449 mm
D ₆₀ = 0.1542 mm	D ₁₅ = 0.0068 mm
D ₅₀ = 0.1063 mm	D ₁₀ = 0.0018 mm
C _u = N/A	C _c = N/A

Classification

ASTM Silty, clayey sand (SC-SM)

AASHTO Silty Soils (A-4 (0))

Sample/Test Description

Sand/Gravel Particle Shape : ---

Sand/Gravel Hardness : ---

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-STA-10108

Sample Type: jar

Tested By: mll

Sample ID: OL-0301-17

Test Date: 03/21/07

Checked By: jdt

Depth: 155-157 ft

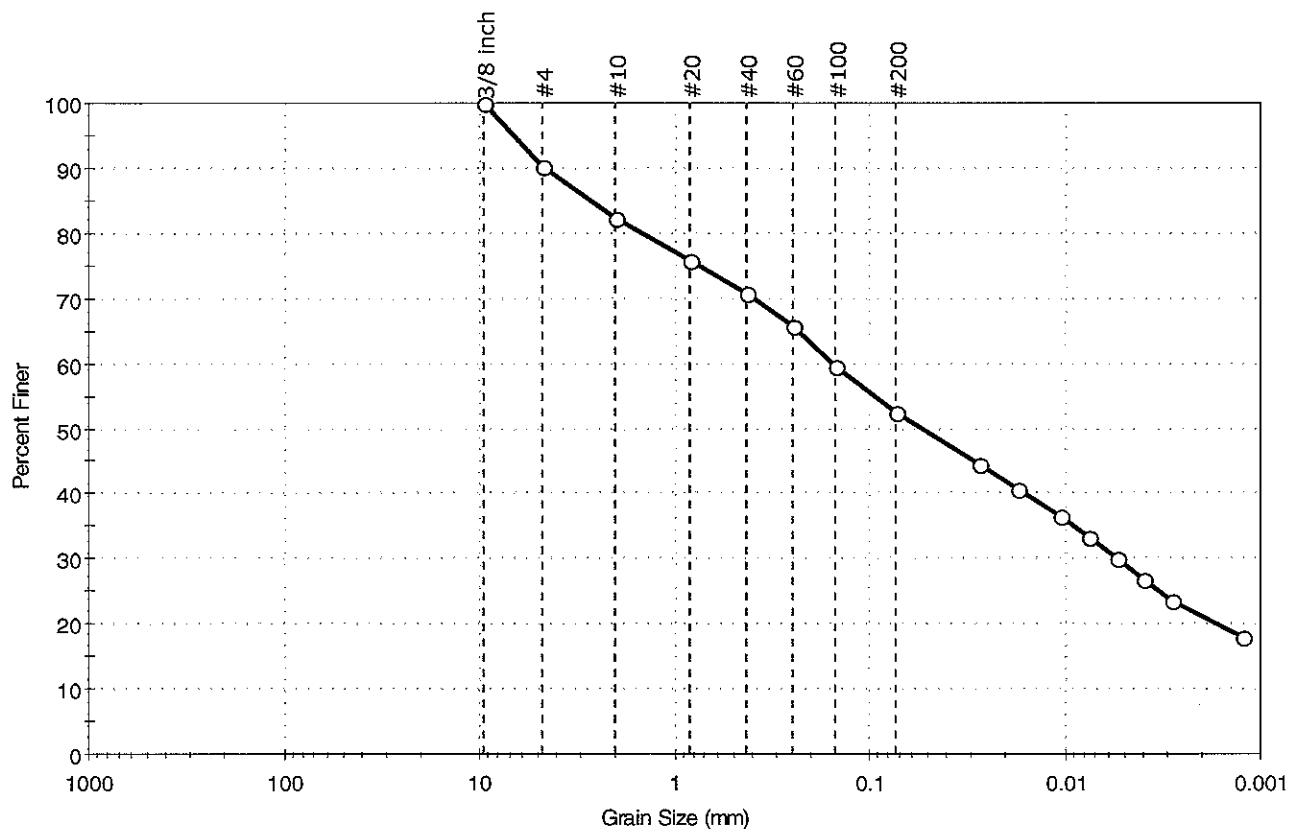
Test Id: 109028

Test Comment: ---

Sample Description: Moist, reddish brown sandy clay

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	9.6	38.0	52.4

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	90		
#10	2.00	82		
#20	0.84	76		
#40	0.42	71		
#60	0.25	66		
#100	0.15	59		
#200	0.074	52		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0278	45		
---	0.0176	41		
---	0.0105	37		
---	0.0076	33		
---	0.0055	30		
---	0.0040	27		
---	0.0029	23		
---	0.0012	18		

Coefficients

$D_{85} = 2.6483$ mm $D_{30} = 0.0054$ mm

$D_{60} = 0.1564$ mm $D_{15} = N/A$

$D_{50} = 0.0548$ mm $D_{10} = N/A$

$C_u = N/A$ $C_c = N/A$

Classification

ASTM Sandy lean clay (CL)

AASHTO Silty Soils (A-4 (1))

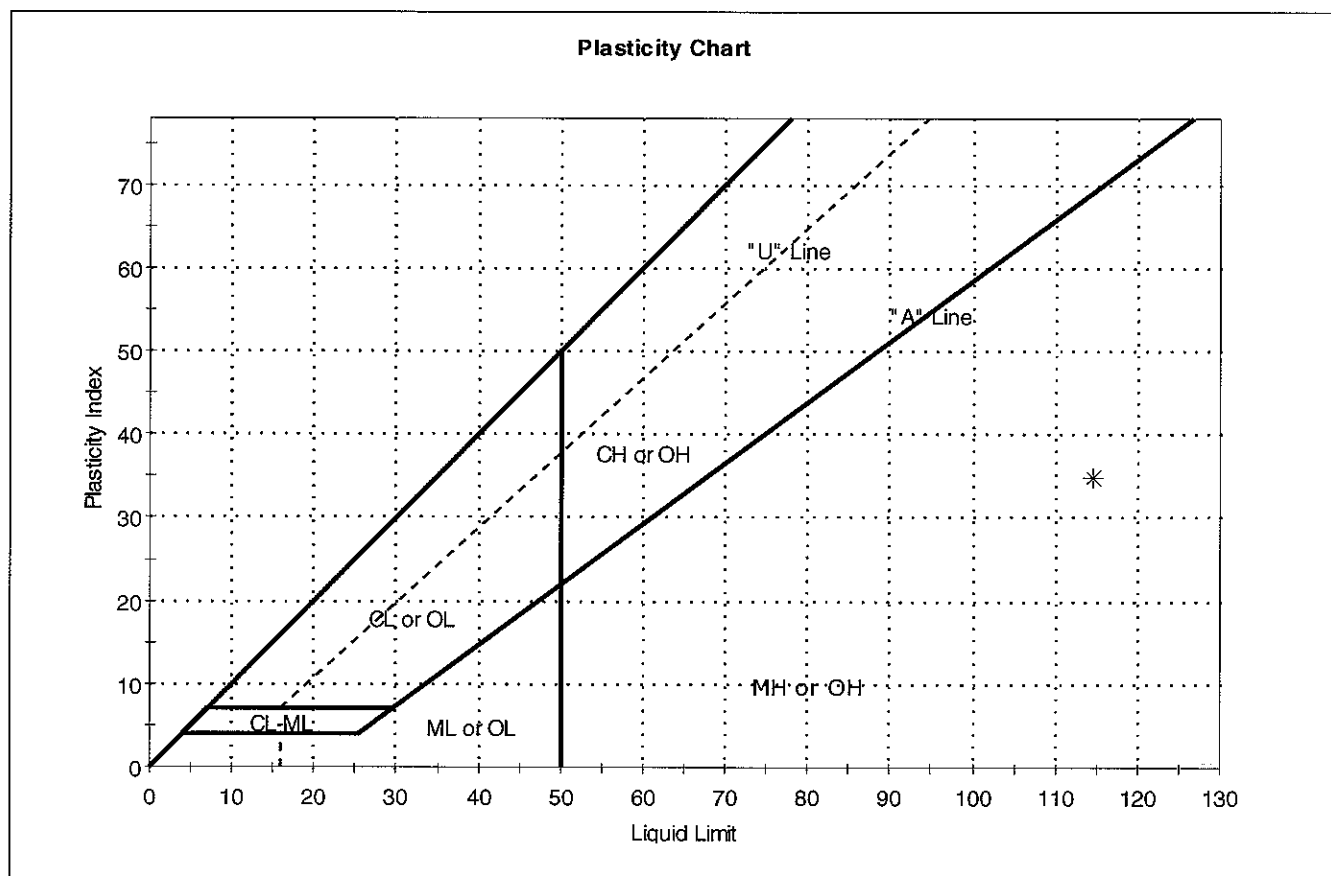
Sample/Test Description

Sand/Gravel Particle Shape: ROUNDED

Sand/Gravel Hardness: SOFT

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	
Location: Syracuse	
Boring ID: OL-STA-30033	Sample Type: jar
Sample ID: OL-0301-02	Test Date: 03/20/07
Depth: 5-7 ft	Test Id: 108998
Test Comment: ---	Tested By: ap
Sample Description: Moist, white silt	Checked By: jdt
Sample Comment: ---	

Atterberg Limits - ASTM D 4318-05

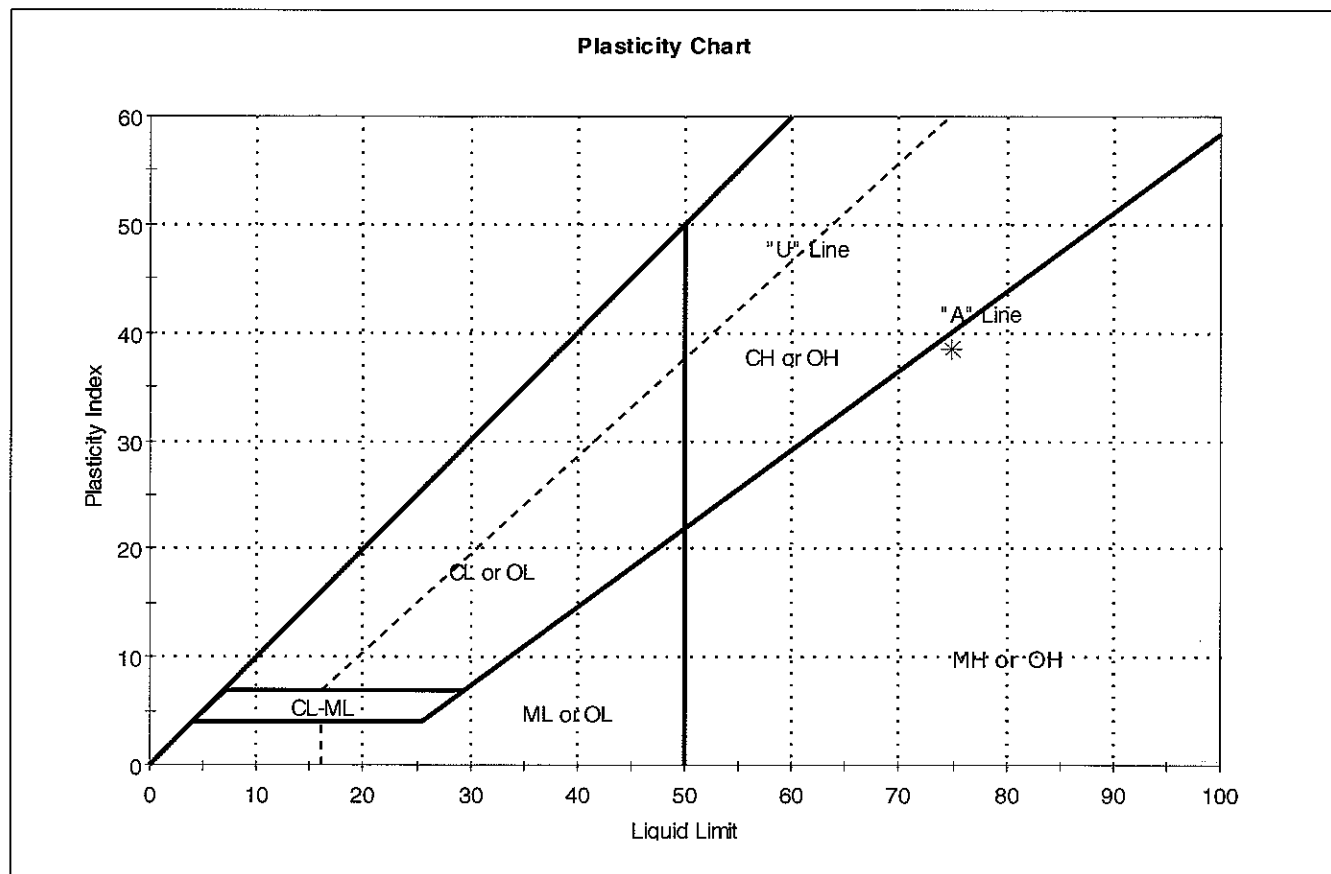


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-02	STA-300	5-7 ft	198	115	80	35	3	elastic silt (MH)

Sample Prepared using the WET method
1% Retained on #40 Sieve
Dry Strength: HIGH
Dilatancy: RAPID
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-30033	Sample Type:	jar
Sample ID:	OL-0301-03	Test Date:	03/20/07
Depth :	30-32 ft	Test Id:	108999
Test Comment:	---		
Sample Description:	Moist, olive gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

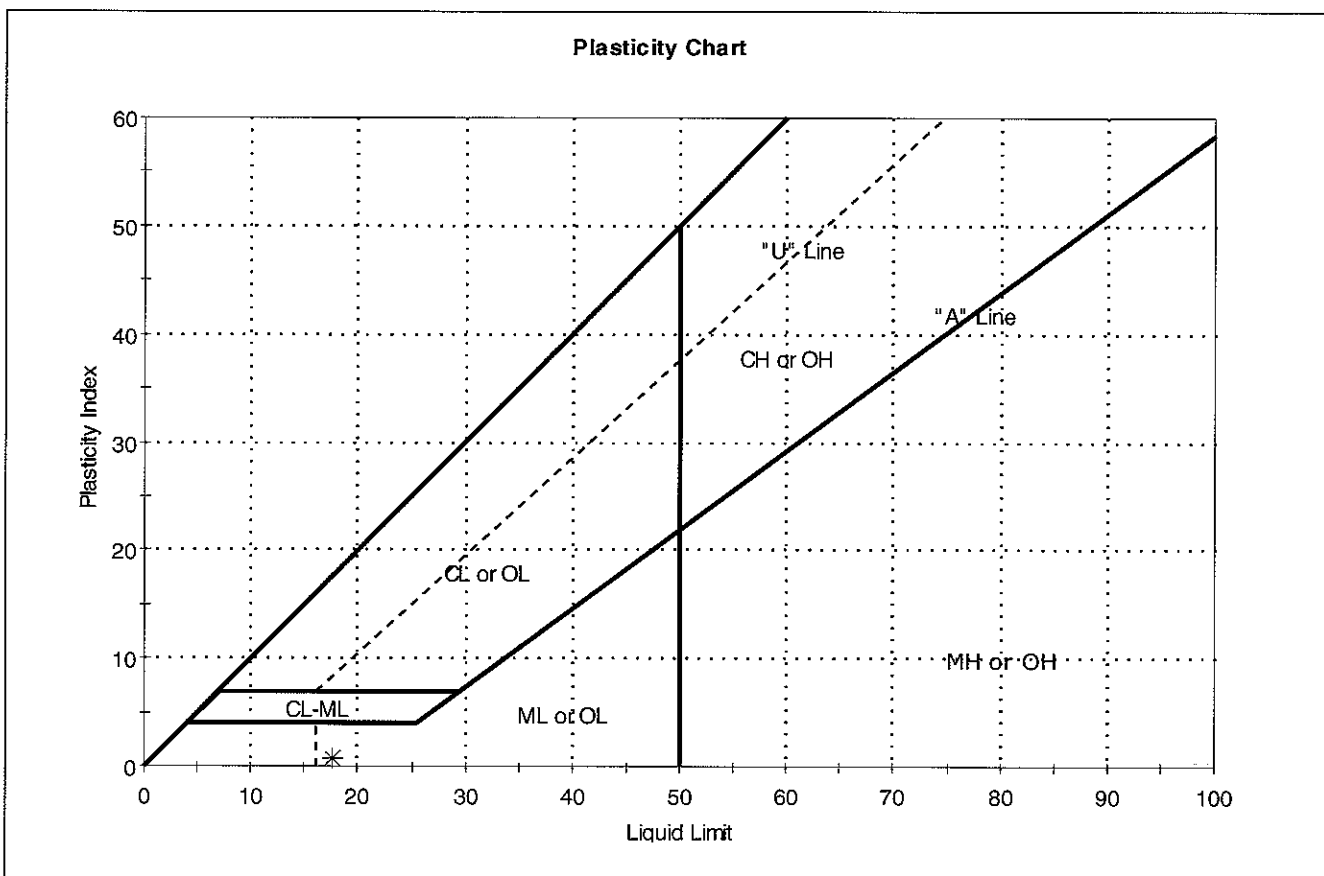


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-03	STA-300	30-32 ft	64	75	36	39	1	elastic silt (MH)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-30033	Sample Type:	jar
Sample ID:	OL-0301-04	Test Date:	03/22/07
Depth :	59-61 ft	Test Id:	109000
Test Comment:	---		
Sample Description:	Wet, reddish gray silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-04	STA-300	59-61 ft	20	18	17	1	3	silt (ML)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-STA-30033	Sample Type:	jar
Sample ID:	OL-0301-05	Test Date:	03/20/07
Depth :	73-75 ft	Test Id:	109001
Test Comment:	---		
Sample Description:	Moist, brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-05	STA-300	73-75 ft	19	n/a	n/a	n/a	n/a	Silty sand (SM)

9% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-STA-30033	Sample Type:	jar
Sample ID:	OL-0301-06	Test Date:	03/22/07
Depth :	85-87 ft	Test Id:	109002
Test Comment:	---		
Sample Description:	Wet, reddish gray silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-06	STA-300	85-87 ft	25	n/a	n/a	n/a	n/a	Silty sand (SM)

42% Retained on #40 Sieve

Dry Strength: MEDIUM

Dilancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-STA-30033	Sample Type:	jar
Sample ID:	OL-0301-07	Test Date:	03/22/07
Depth :	99-101 ft	Test Id:	109003
Test Comment:	---		
Sample Description:	Wet, reddish brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

Sample Determined to be non-plastic

Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-07	STA-300	99-101 ft	21	n/a	n/a	n/a	n/a	Silty sand (SM)

8% Retained on #40 Sieve

Dry Strength: MEDIUM

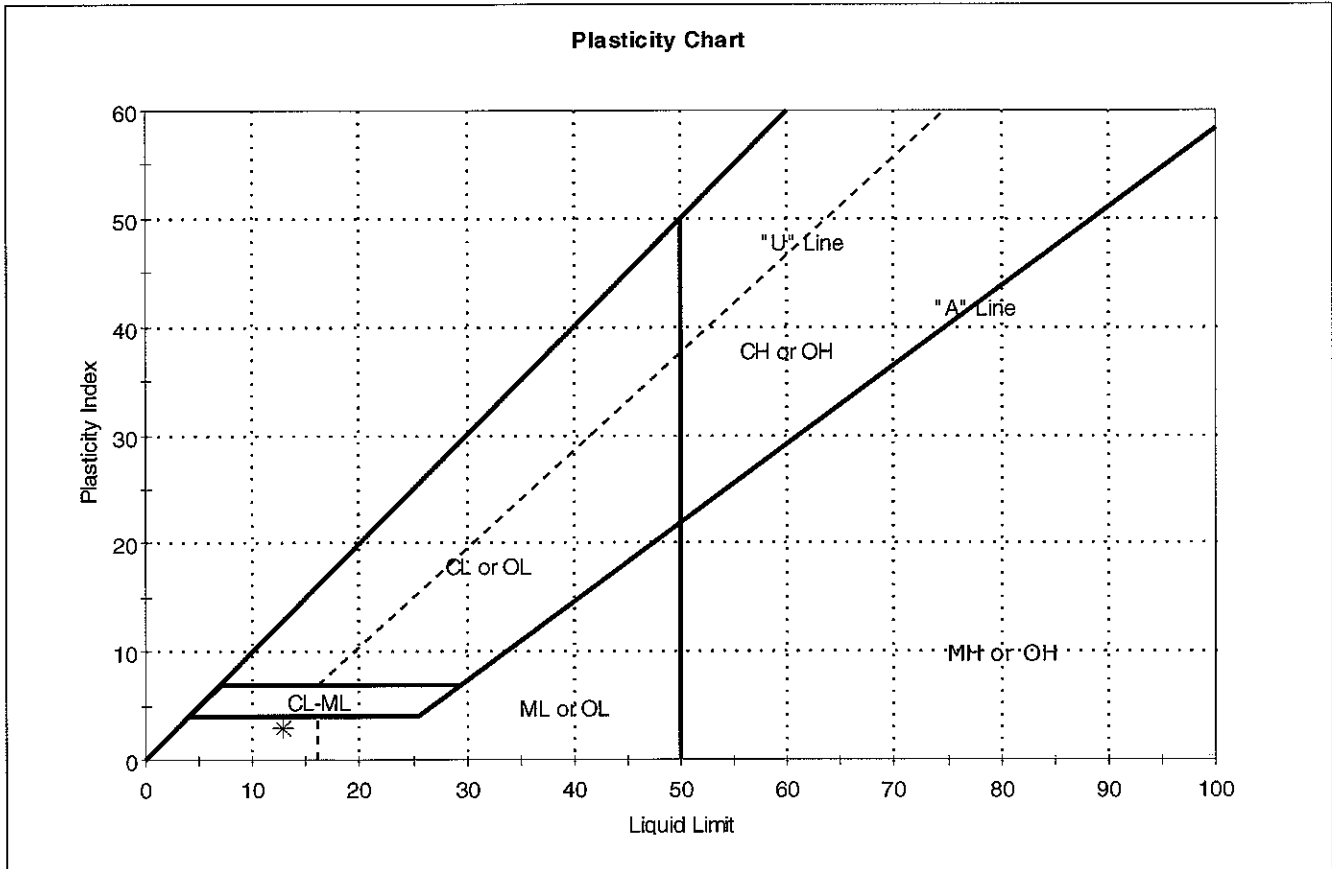
Dilatancy: RAPID

Toughness: n/a

The sample was determined to be Non-Plastic

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-30033	Sample Type:	jar
Sample ID:	OL-0301-08	Test Date:	03/22/07
Depth:	107-109 ft	Test Id:	109004
Test Comment:	---		
Sample Description:	Moist, brown silty sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-08	STA-300	107-109 ft	14	13	10	3	1	Silty sand (SM)

Sample Prepared using the WET method
 3% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-STA-10108

Sample Type: jar

Tested By: ap

Sample ID: OL-0301-10

Test Date: 03/23/07

Checked By: jdt

Depth: 76-78 ft

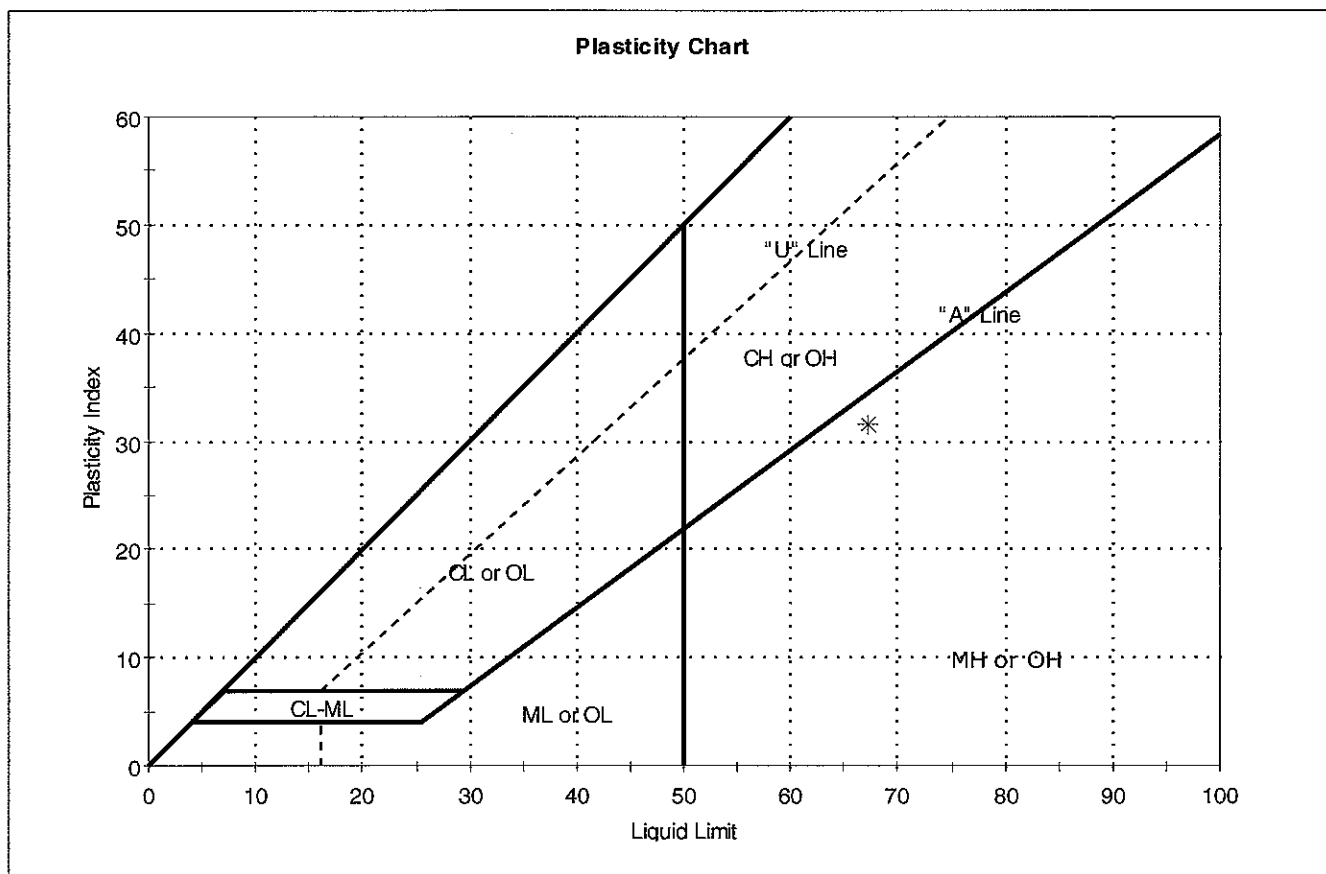
Test Id: 109005

Test Comment: ---

Sample Description: Wet, light olive brown silt

Sample Comment: ---

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-10	STA-101	76-78 ft	65	67	36	31	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

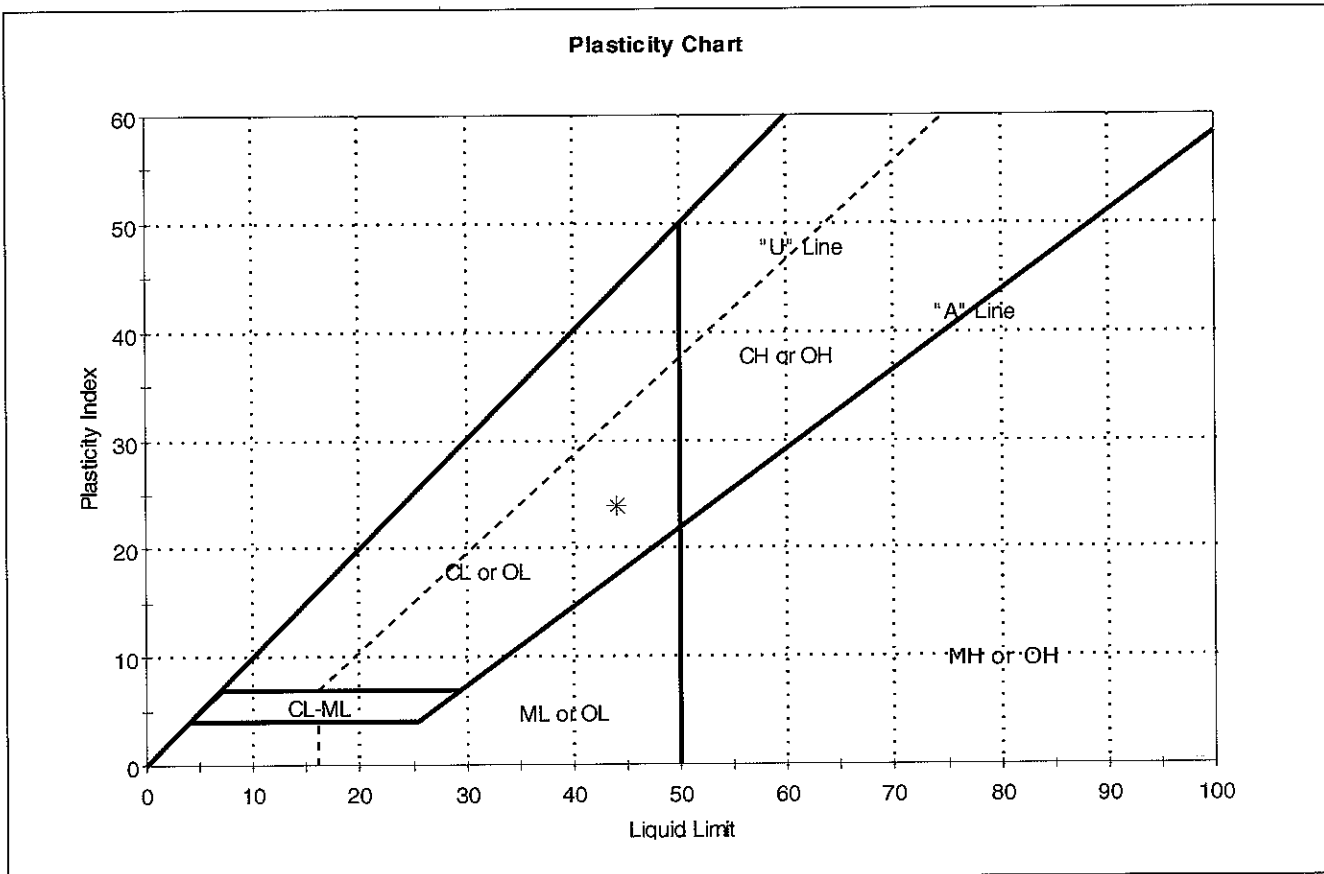
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0301-11	Test Date:	03/22/07
Depth :	88-90 ft	Test Id:	109006
Test Comment:	---		
Sample Description:	Moist, black clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

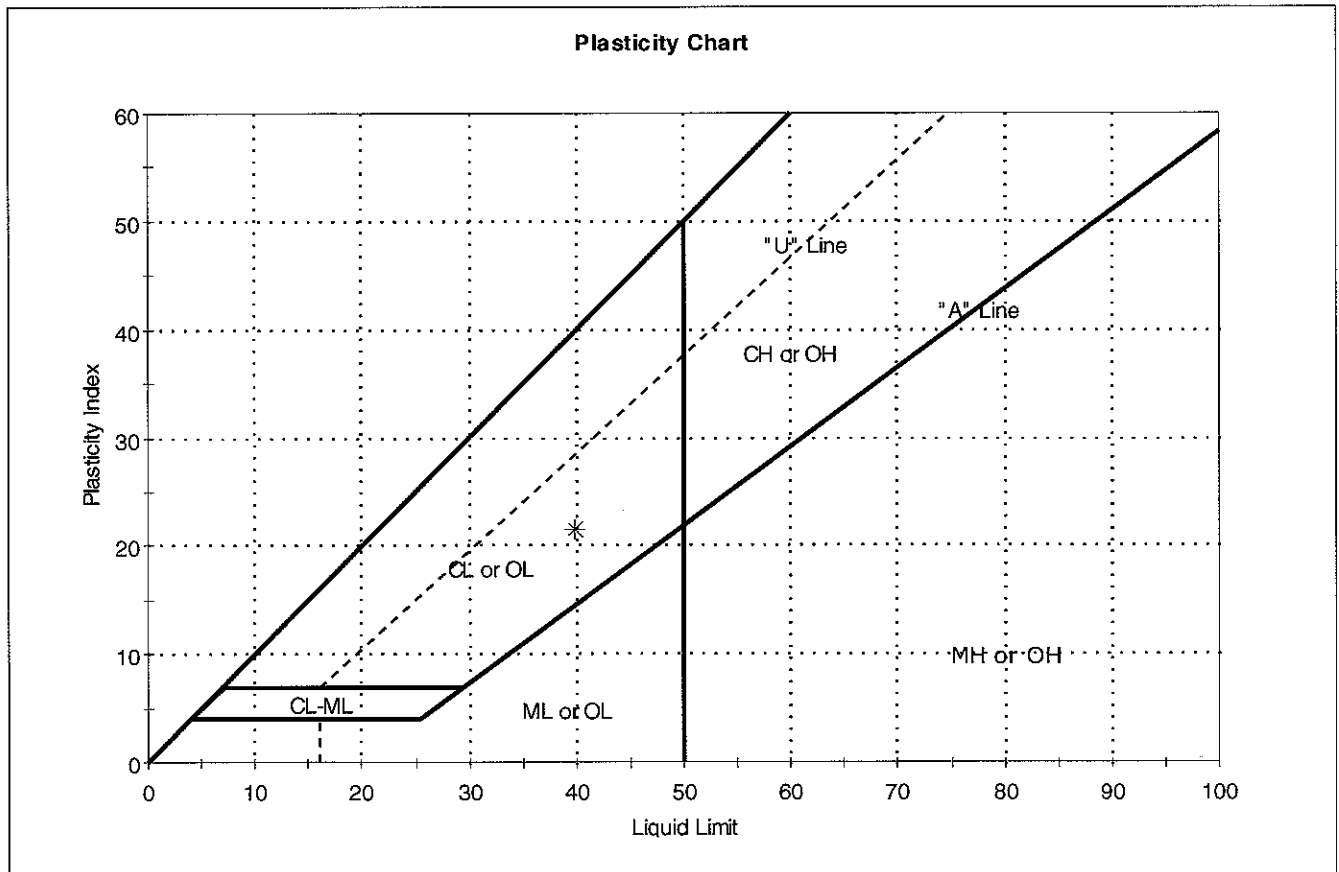


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-11	STA-101	88-90 ft	42	44	20	24	1	lean clay (CL)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0301-12	Test Date:	03/23/07
Depth :	118-120 ft	Test Id:	109007
Test Comment:	---		
Sample Description:	Moist, reddish gray clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

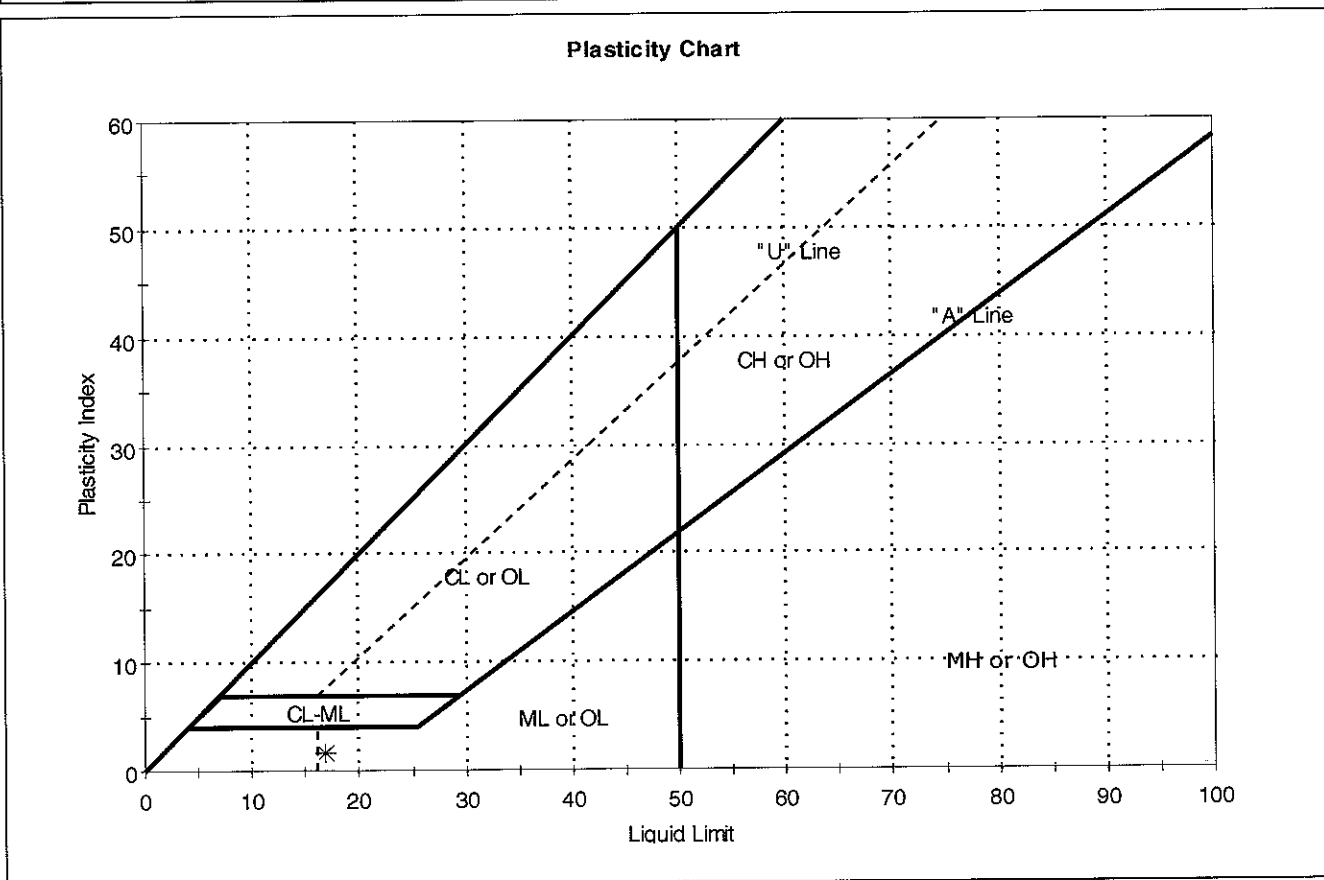


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-12	STA-101	118-120 ft	32	40	18	22	1	lean clay (CL)

Sample Prepared using the WET method
 0% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: MEDIUM

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0301-14	Test Date:	03/20/07
Depth:	134-136 ft	Test Id:	109008
Test Comment:	---		
Sample Description:	Moist, grayish brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-14	STA-101	134-136 ft	17	17	15	2	1	silt (ML)

Sample Prepared using the WET method

1% Retained on #40 Sieve

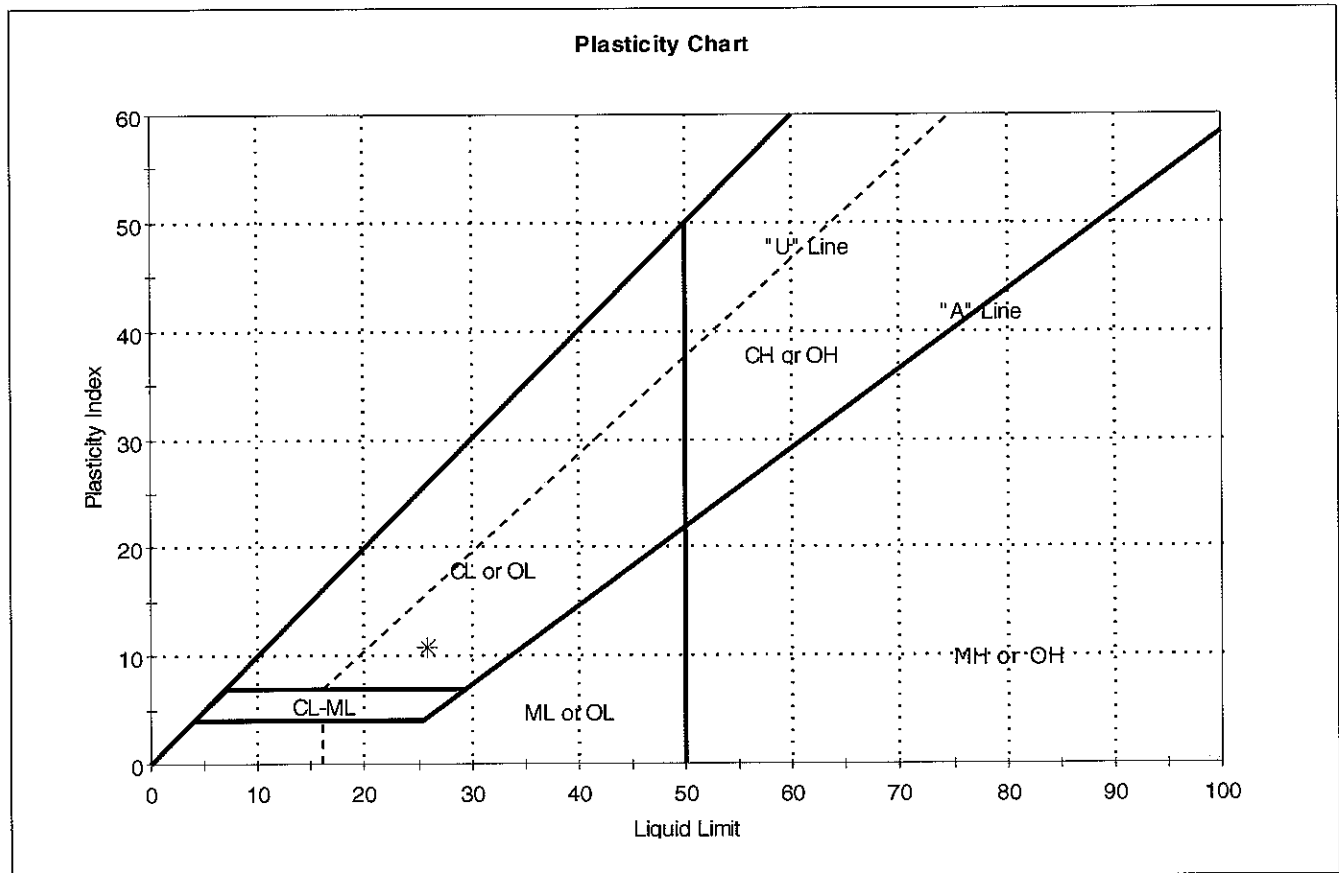
Dry Strength: MEDIUM

Dilatancy: RAPID

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0301-15	Test Date:	03/27/07
Depth:	147-149 ft	Test Id:	109009
Test Comment:	---		
Sample Description:	Wet, reddish brown clayey gravel with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

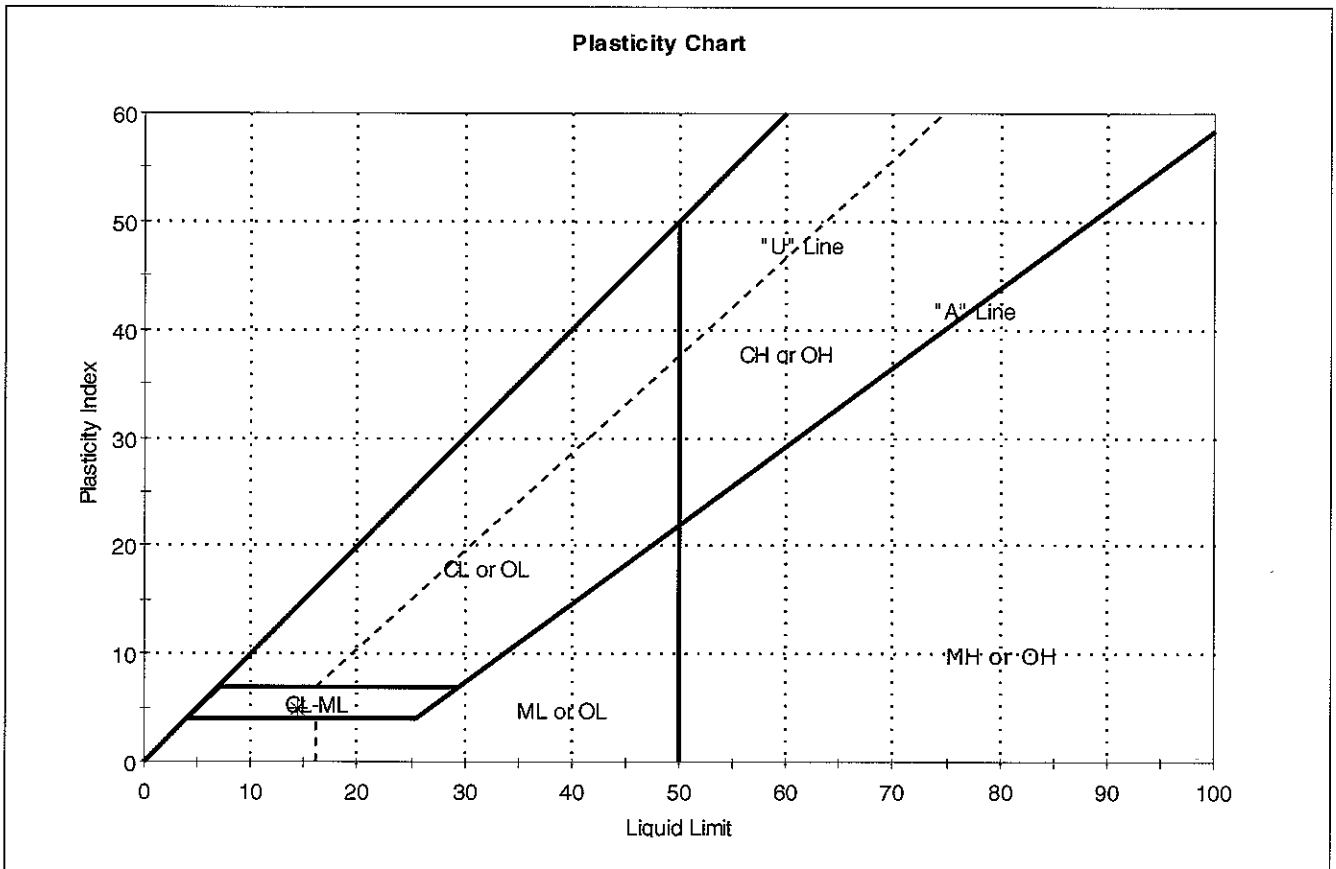


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-15	STA-101	147-149 ft	10	26	15	11	0	Clayey gravel with sand (GC)

Sample Prepared using the WET method
 81% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse	Project No:	GTX-7143
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0301-16	Test Date:	03/23/07
Depth :	153-155 ft	Test Id:	109010
Test Comment:	---		
Sample Description:	Moist, reddish brown silty, clayey sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

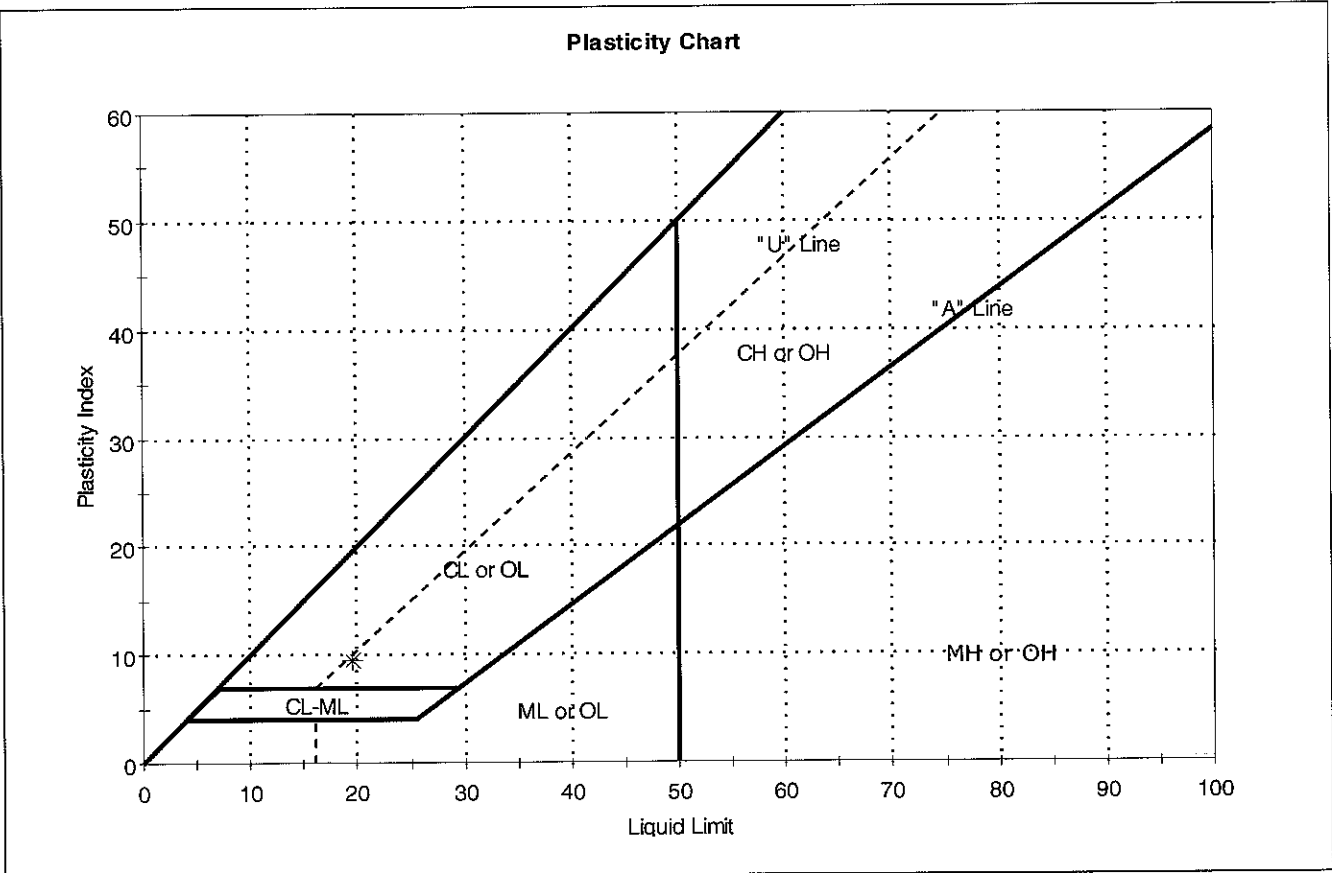


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-16	STA-101	153-155 ft	8	14	10	4	0	Silty, clayey sand (SC-SM)

Sample Prepared using the WET method
 18% Retained on #40 Sieve
 Dry Strength: MEDIUM
 Dilatancy: RAPID
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-STA-10108	Sample Type:	jar
Sample ID:	OL-0301-17	Test Date:	03/20/07
Depth :	155-157 ft	Test Id:	109011
Test Comment:	---		
Sample Description:	Moist, reddish brown sandy clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0301-17	STA-101	155-157 ft	9	20	10	10	0	Sandy lean clay (CL)

Sample Prepared using the WET method
 29% Retained on #40 Sieve
 Dry Strength: HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 02/14/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
SB915-PZ13-15	OL-0302-01	55-57 ft	Moist, brown silt	37.5
SB915-PZ13-16	OL-0302-02	0-7 ft	Moist, olive brown clayey gravel with sand	8.4
SB915-PZ13-13	OL-0302-03	10-12 ft	Dry, dark reddish brown sandy clay	8.5
SB915-PZ13-14	OL-0302-04	50-52 ft	Moist, olive brown silty clay	23.4

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	---	Sample Type:	---
Sample ID:	---	Test Date:	02/14/07
Depth :	---	Test Id:	106245
		Tested By:	yf
		Checked By:	jdt

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Specific Gravity
SB915-PZ13-15	OL-0302-01	55-57 ft	Moist, brown sandy silt	2.67
SB915-PZ13-14	OL-0302-04	50-52 ft	Moist, olive brown silty clay	2.7

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.

Client:	Parsons Engineering Science		Project No:	GTX-7143
Project:	Onondaga		Tested By:	rmt
Location:	Syracuse		Checked By:	jdt
Boring ID:	---	Sample Type:	---	
Sample ID:	---	Test Date:	02/14/07	
Depth :	---	Test Id:	106244	

Specific Gravity of Soils by ASTM D 854-06

Boring ID	Sample ID	Depth	Visual Description	Coarse %	Coarse SG	Fine %	Fine SG	Specific Gravity
SB915-PZ13-16	OL-0302-02	0-7 ft	Moist, olive brown clayey gravel with sand	39	2.3	61	2.83	2.59
SB915-PZ13-13	OL-0302-03	10-12 ft	Dry, dark reddish brown sandy clay	12	2.24	88	2.79	2.71

Notes: Specific Gravity performed by using method A (oven dried specimens) of ASTM D 854
Moisture Content determined by ASTM D 2216.
coarse fraction > #4 sieve
fine fraction < #4 sieve

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: SB915- PZ13-15

Sample Type: jar

Tested By: mll

Sample ID: OL-0302-01

Test Date: 02/13/07

Checked By: jdt

Depth : 55-57 ft

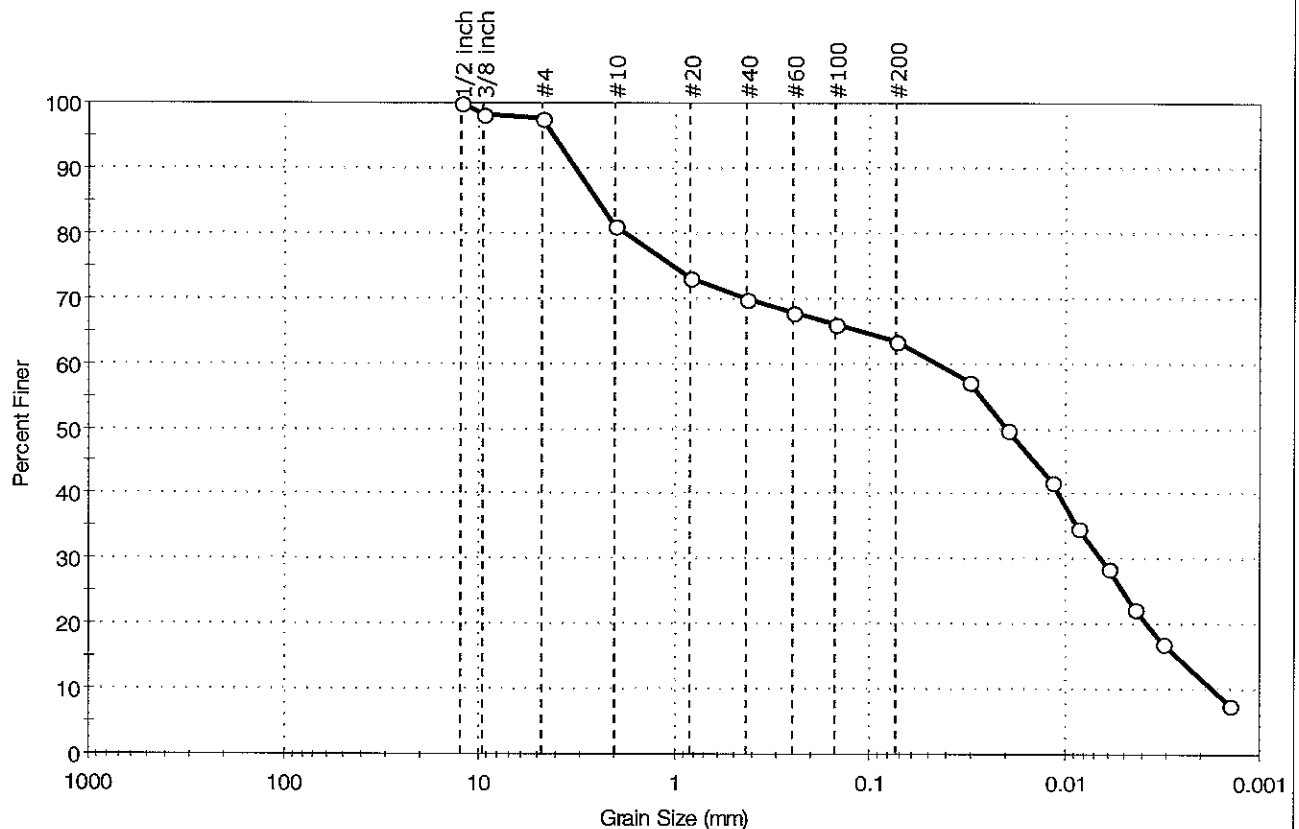
Test Id: 106266

Test Comment: ---

Sample Description: Moist, brown sandy silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	2.2	34.5	63.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	98		
#4	4.75	98		
#10	2.00	81		
#20	0.84	73		
#40	0.42	70		
#60	0.25	68		
#100	0.15	66		
#200	0.074	63		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0313	57		
---	0.0199	50		
---	0.0116	42		
---	0.0085	35		
---	0.0060	29		
---	0.0044	23		
---	0.0032	17		
---	0.0014	8		

Coefficients

$D_{85} = 2.4403$ mm $D_{30} = 0.0065$ mm
 $D_{60} = 0.0468$ mm $D_{15} = 0.0027$ mm
 $D_{50} = 0.0201$ mm $D_{10} = 0.0017$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM Sandy elastic silt (MH)

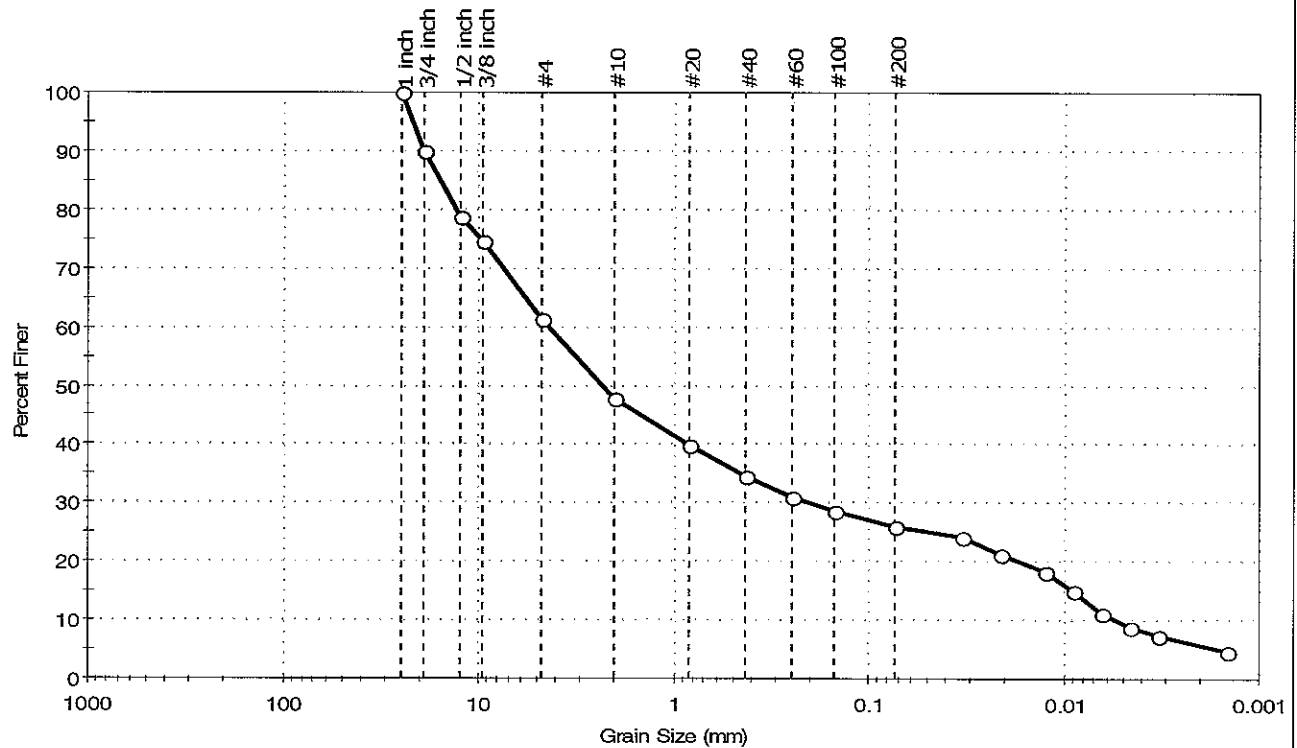
AASHTO Clayey Soils (A-7-5 (13))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
 Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ml
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-16	Sample Type:	jar
Sample ID:	OL-0302-02	Test Date:	01/09/07
Depth :	0-7 ft	Test Id:	106267
Test Comment:	---		
Sample Description:	Moist, olive brown clayey gravel with sand		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
---	38.7	35.3	26.0

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1 inch	25.00	100		
3/4 inch	19.00	90		
1/2 inch	12.50	79		
3/8 inch	9.50	75		
#4	4.75	61		
#10	2.00	48		
#20	0.84	40		
#40	0.42	35		
#60	0.25	31		
#100	0.15	29		
#200	0.074	26		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0334	24		
---	0.0215	21		
---	0.0126	18		
---	0.0090	15		
---	0.0065	11		
---	0.0046	9		
---	0.0033	7		
---	0.0015	5		

Coefficients

D ₈₅ = 15.7829 mm	D ₃₀ = 0.1999 mm
D ₆₀ = 4.3719 mm	D ₁₅ = 0.0089 mm
D ₅₀ = 2.2971 mm	D ₁₀ = 0.0055 mm
C _u = N/A	C _c = N/A

Classification

ASTM Clayey gravel with sand (GC)

AASHTO Silty Gravel and Sand (A-2-4 (0))

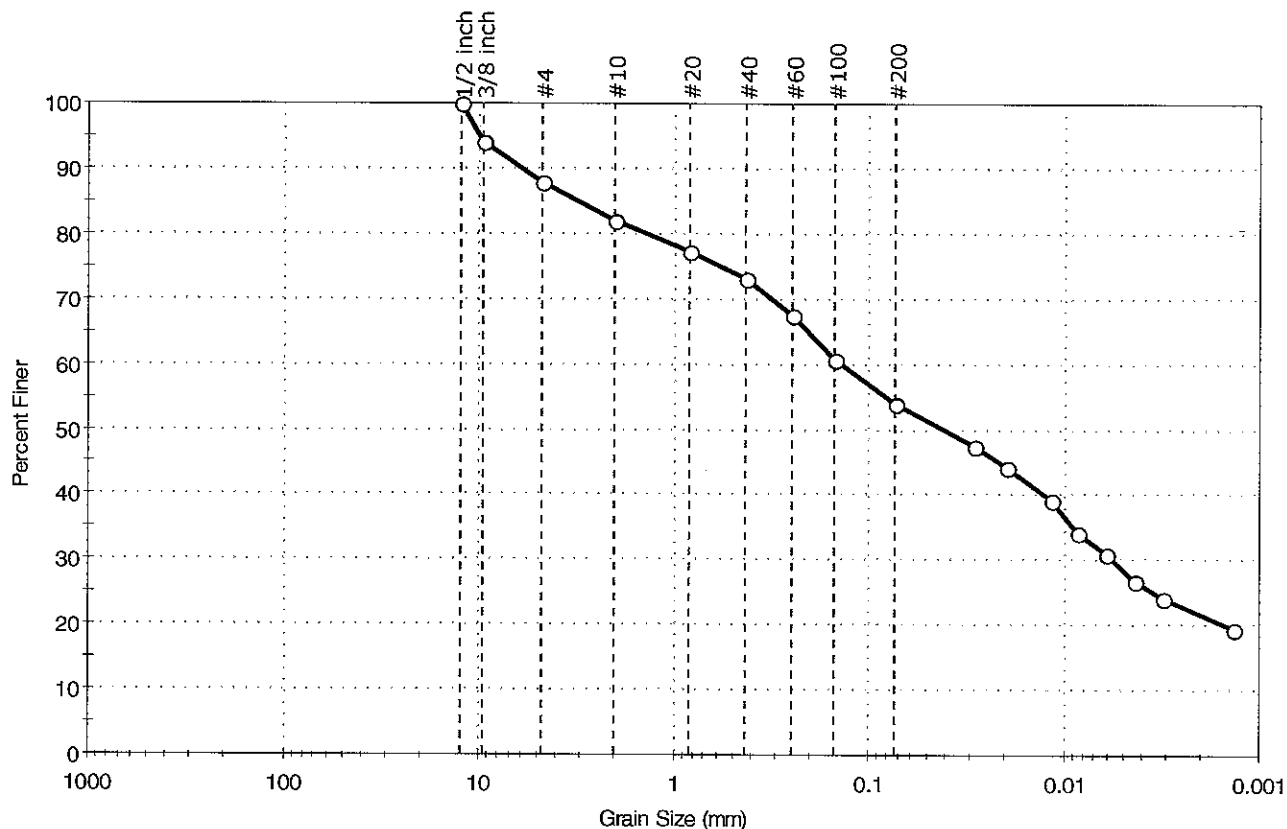
Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR

Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-13	Sample Type:	jar
Sample ID:	OL-0302-03	Test Date:	02/13/07
Depth :	10-12 ft	Test Id:	106268
Test Comment:	---		
Sample Description:	Dry, dark reddish brown sandy clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	12.1	33.8	54.1

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
1/2 inch	12.50	100		
3/8 inch	9.50	94		
#4	4.75	88		
#10	2.00	82		
#20	0.84	77		
#40	0.42	73		
#60	0.25	68		
#100	0.15	61		
#200	0.074	54		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0292	47		
---	0.0196	44		
---	0.0117	39		
---	0.0085	34		
---	0.0061	31		
---	0.0044	27		
---	0.0031	24		
---	0.0014	19		

Coefficients

D ₈₅ = 3.1283 mm	D ₃₀ = 0.0056 mm
D ₆₀ = 0.1398 mm	D ₁₅ = N/A
D ₅₀ = 0.0419 mm	D ₁₀ = N/A
C _u = N/A	C _c = N/A

Classification

ASTM Sandy lean clay (CL)

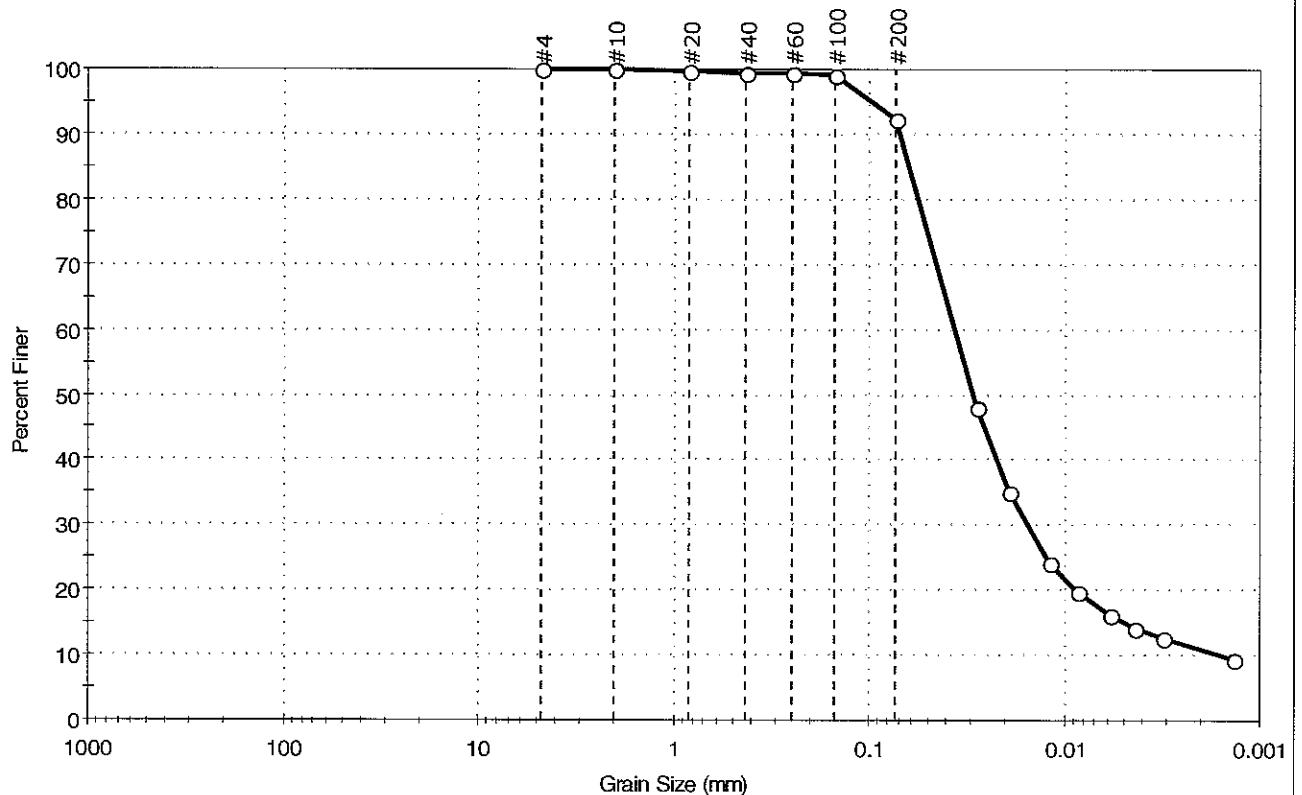
AASHTO Silty Soils (A-4 (2))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-14	Sample Type:	jar
Sample ID:	OL-0302-04	Test Date:	02/13/07
Depth:	50-52 ft	Test Id:	106269
Test Comment:	---		
Sample Description:	Moist, olive brown silty clay		
Sample Comment:	----		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	7.7	92.3

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	99		
#100	0.15	99		
#200	0.074	92		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0280	48		
---	0.0193	35		
---	0.0118	24		
---	0.0086	20		
---	0.0059	16		
---	0.0044	14		
---	0.0031	13		
---	0.0014	10		

Coefficients

D ₈₅ = 0.0630 mm	D ₃₀ = 0.0153 mm
D ₆₀ = 0.0363 mm	D ₁₅ = 0.0050 mm
D ₅₀ = 0.0291 mm	D ₁₀ = 0.0016 mm
C _u = N/A	C _c = N/A

Classification

ASTM silty clay (CL-ML)

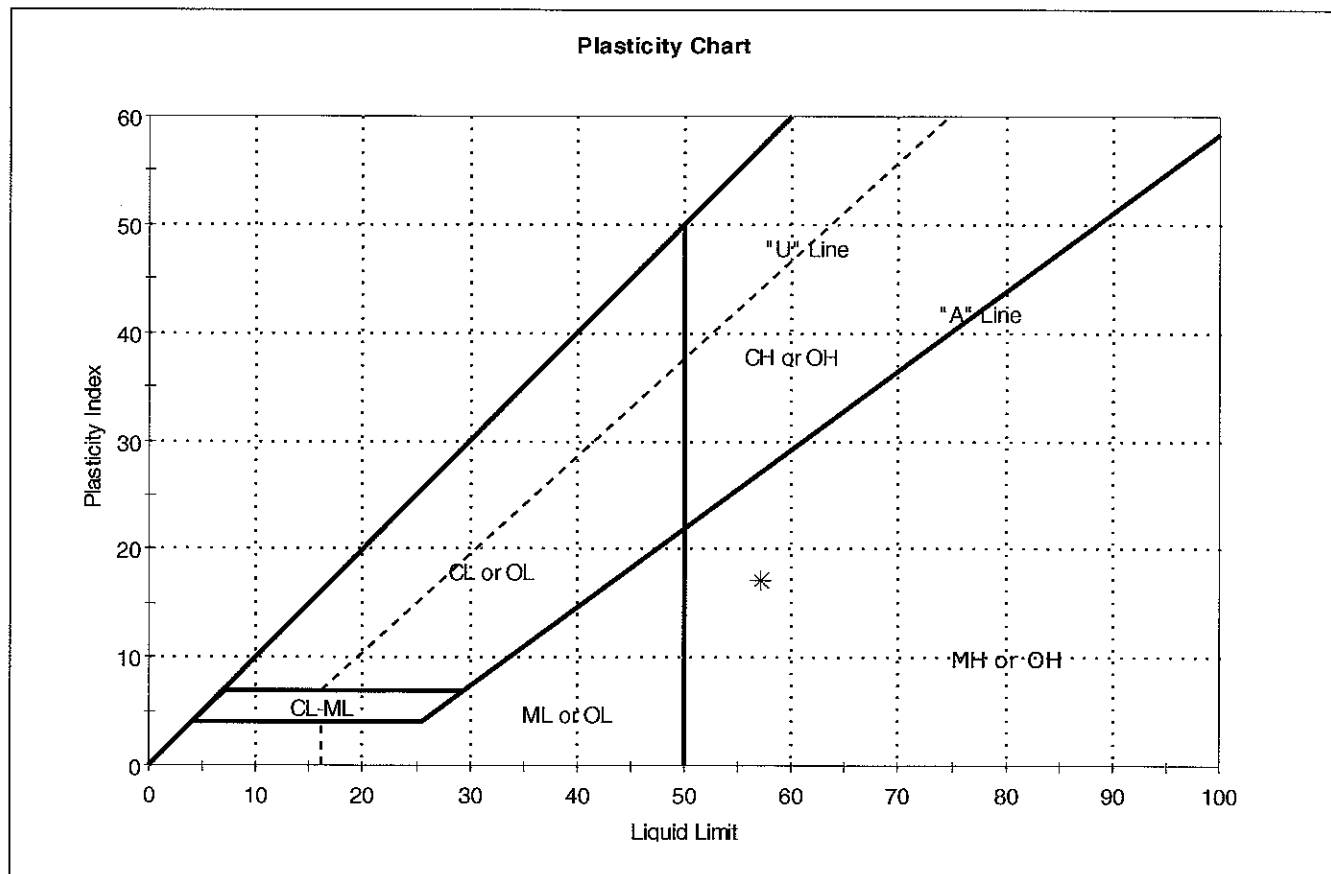
AASHTO Silty Soils (A-4 (2))

Sample/Test Description

Sand/Gravel Particle Shape : ANGULAR
Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-15	Sample Type:	jar
Sample ID:	OL-0302-01	Test Date:	02/09/07
Depth :	55-57 ft	Test Id:	106194
Test Comment:	---		
Sample Description:	Moist, brown silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0302-01	915-PZ13	55-57 ft	38	57	40	17	0	Sandy elastic silt (MH)

Sample Prepared using the WET method

30% Retained on #40 Sieve

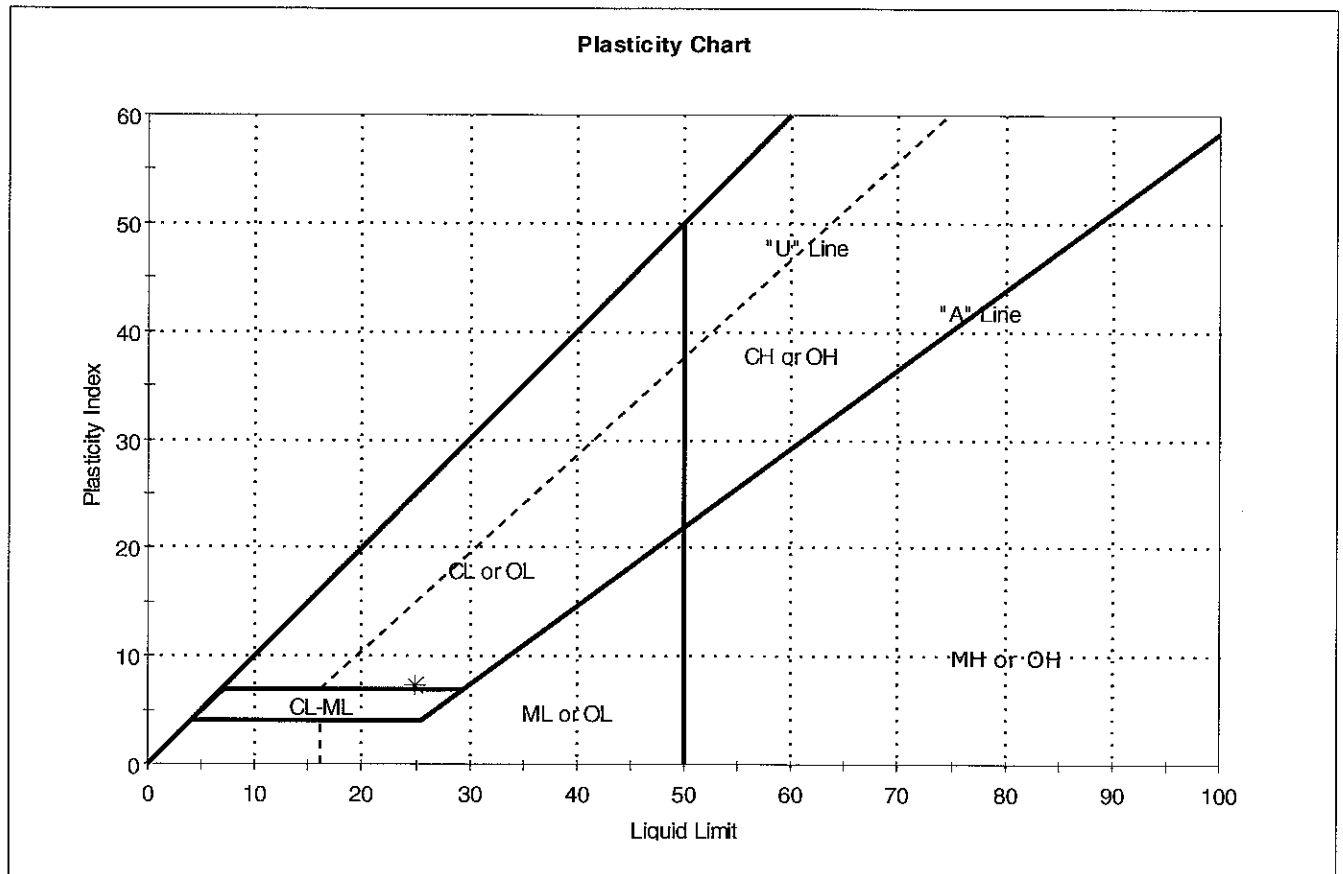
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-16	Sample Type:	jar
Sample ID:	OL-0302-02	Test Date:	01/25/07
Depth :	0-7 ft	Test Id:	106195
Test Comment:	---		
Sample Description:	Moist, olive brown clayey gravel with sand		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

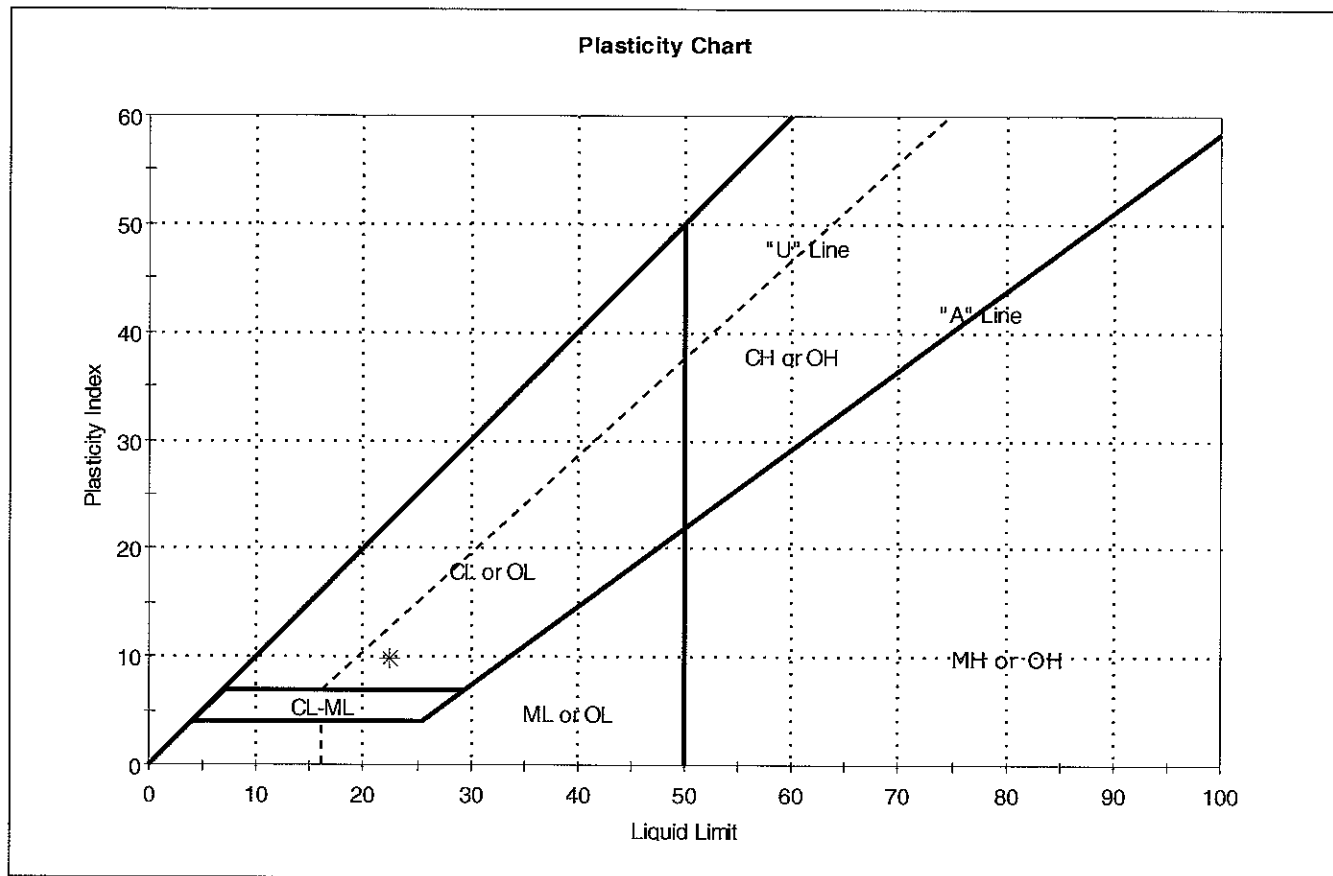


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0302-02	915-PZ13	0-7 ft	8	25	18	7	-1	Clayey gravel with sand (GC)

Sample Prepared using the WET method
65% Retained on #40 Sieve
Dry Strength: HIGH
Dilatancy: RAPID
Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-13	Sample Type:	jar
Sample ID:	OL-0302-03	Test Date:	02/09/07
Depth:	10-12 ft	Test Id:	106196
Test Comment:	---		
Sample Description:	Dry, dark reddish brown sandy clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0302-03	915-PZ13	10-12 ft	8	22	12	10	0	Sandy lean clay (CL)

Sample Prepared using the WET method

27% Retained on #40 Sieve

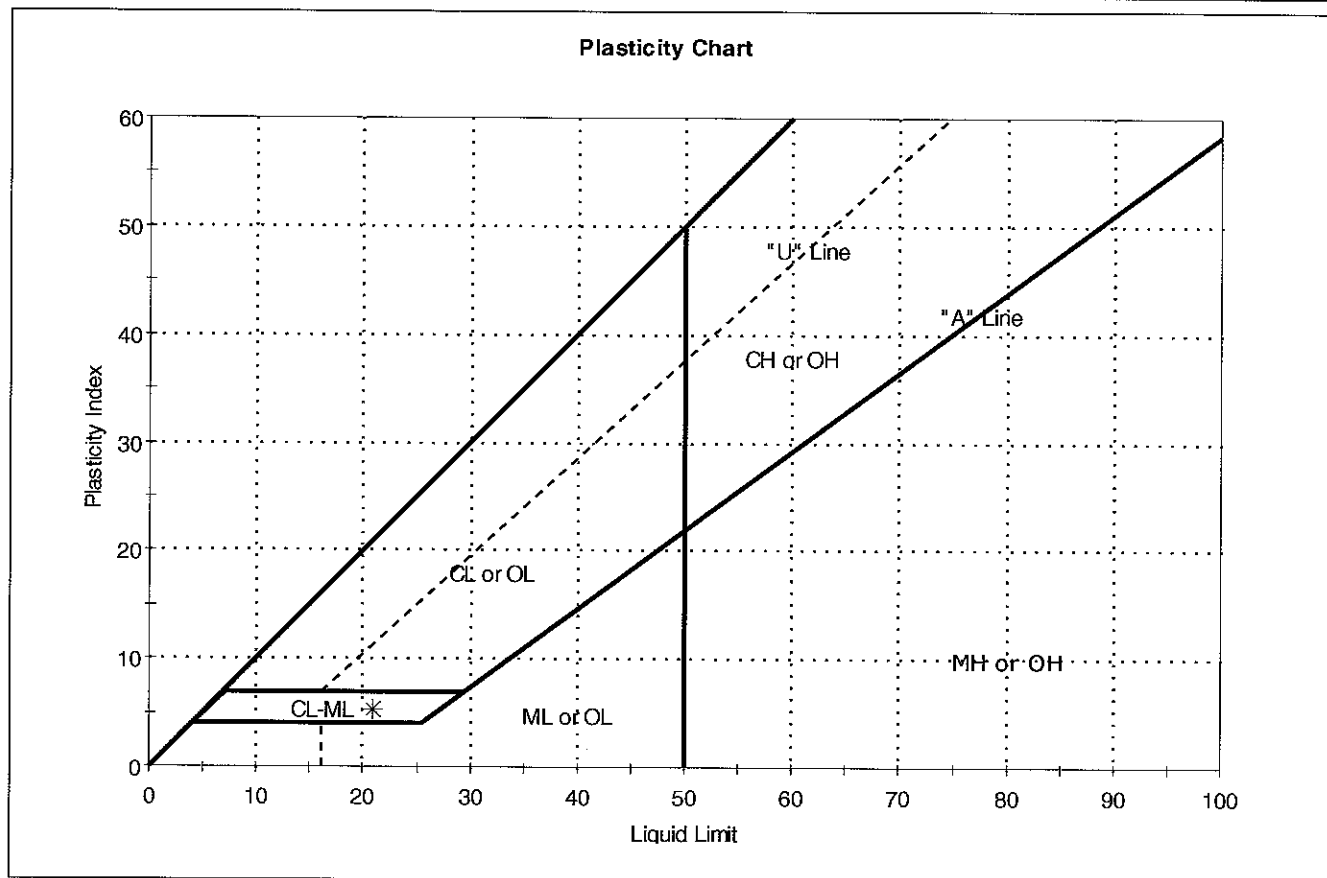
Dry Strength: HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	SB915-PZ13-14	Sample Type:	jar
Sample ID:	OL-0302-04	Test Date:	02/02/07
Depth:	50-52 ft	Test Id:	106197
Test Comment:	---		
Sample Description:	Moist, olive brown silty clay		
Sample Comment:	----		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0302-04	915-PZ13	50-52 ft	23	21	16	5	2	silty clay (CL-ML)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: NONE

Toughness: LOW

Fed Ex Tracking No. 8543 4832 3070

Chain of Custody / Analysis Request

Client Contact: PARSONS 290 Elwood Davis Road, Suite 312 Liverpool, NY 13088		Privileged and Confidential: Lorraine Weber Lorraine Weber PO #: Analysis Turnaround Time: Standard - Rush Charges Authorized for - 2 weeks - 1 week - Next Day -		Site Name: Onondaga Lake Location of Site: Syracuse, New York		Lab Use Only: Lab Proj # Lab ID Job No. GTE		IAESI Ref: 38292-40495 COC #: 0304																																													
Sample ID OL-VC-80051 OL-VC-80050 OL-VC-80051 OL-VC-80028 OL-VC-40037 OL-VC-40041 OL-VC-60056 OL-VC-80034 OL-VC-80036		Sample Date 10/10/2008 10/10/2008 10/10/2008 10/9/2008 10/2/2008 9/28/2008 10/4/2008 10/10/2008 10/10/2008		Sample Time 15:12 14:31 15:13 12:01 15:43 14:09 14:48 10:25 13:00		Sample Type SEDIMENT SEDIMENT SEDIMENT SEDIMENT SEDIMENT SEDIMENT SEDIMENT SEDIMENT		Sample Matrix SOIL SOIL SOIL SOIL SOIL SOIL SOIL SOIL		Sample Purpose REG REG REG REG REG REG REG REG		# of Cont. 1 1 1 1 1 1 1 1 1		Field Sample ID OL-0304-01 OL-0304-02 OL-0304-03 OL-0304-04 OL-0304-05 OL-0304-06 OL-0304-07 OL-0304-08 OL-0304-09		Start Depth (ft) 0.5 16.5 3.3 6.6 9.9 13.2 13.2 13.2 0.5 13.2		End Depth (ft) 3.3 17 6.6 9.9 13.2 16.5 16.5 3.3 16.5		Field Sample ID OL-0304-01 OL-0304-02 OL-0304-03 OL-0304-04 OL-0304-05 OL-0304-06 OL-0304-07 OL-0304-08 OL-0304-09		Consolidation <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		UUT <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		CUT <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Porosity <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		SIC <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Grain Size <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		Specific Gravity <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Moisture Content <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>		Organic Content <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Carbonate Content <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Bulk Density <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Atterberg Limits <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		Field Filtered Sample? <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>		Grab/Composite <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Units <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		Lab Sample Numbers 	

Special Instructions: Please retain excess sample volume

Relinquished by: Lorraine M. Chmura 4/5/07 @ 1400		Received by: FED EX		Company Parsons		Condition Custody Seals Intact	
Relinquished by: 		Received by: 		Company 		Condition Cooler Temp.	
Relinquished by: 		Received by: 		Company 		Condition Cooler Temp.	

Preservatives: 0 = None; [1 = HCL]; [2 = HNO3]; [3 = H2SO4]; [4 = NaOH]; [5 = Zn. Acetate]; [6 = MeOH]; [7 = NaHSO4]; [8 = Other (specify)]:

Date Printed: 4/5/2007

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID: ---	Sample Type: ---	Tested By: mll	
Sample ID:---	Test Date: 05/08/07	Checked By: n/a	
Depth : ---	Sample Id: ---		

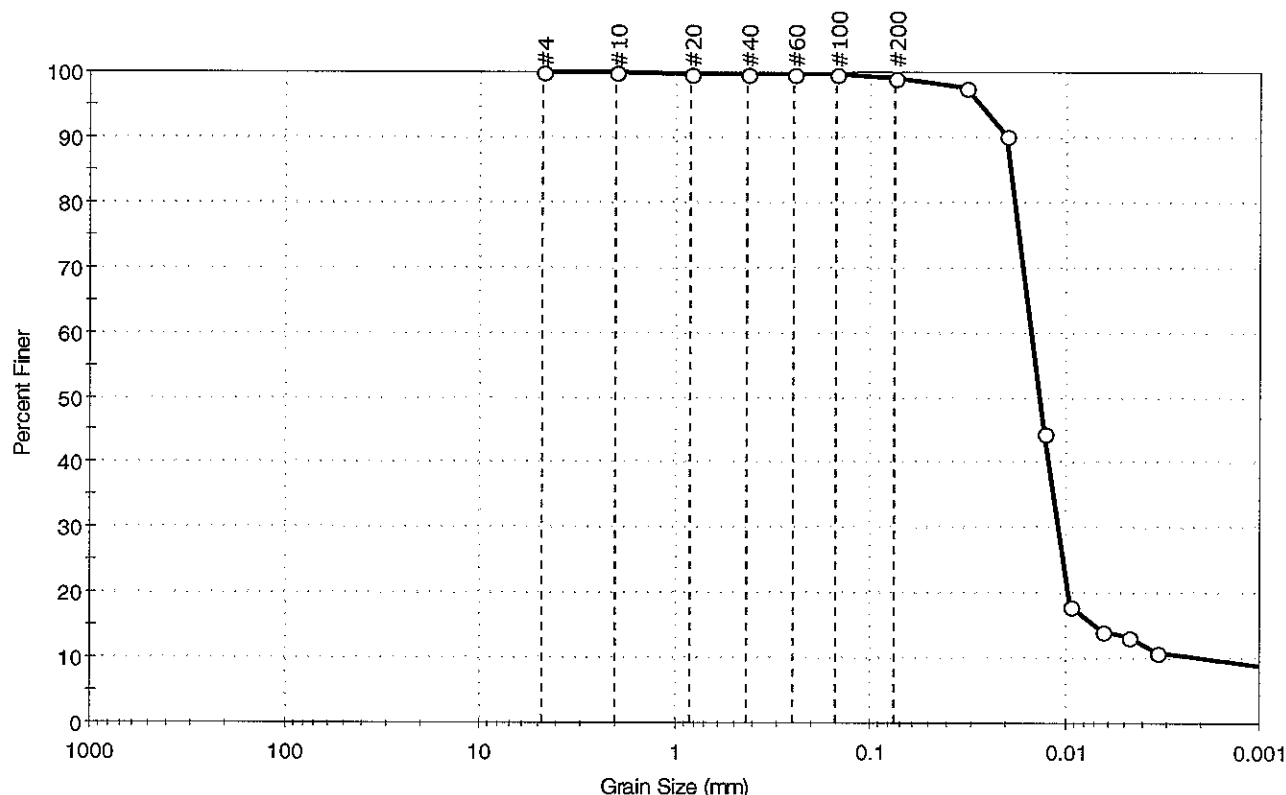
Moisture Content of Soil - ASTM D 2216-05

Boring ID	Sample ID	Depth	Description	Moisture Content, %
OL-VC-80051	OL-0304-01	0.5-3.3 ft	Wet, black clay	189.1
OL-VC-80050	OL-0304-02	16.5-17 ft	Wet, olive gray silt	91.4
OL-VC-80051	OL-0304-03	3.3-6.6 ft	Wet, black silt	169.3
OL-VC-80028	OL-0304-04	6.6-9.9 ft	Wet, black silt	161.1
OL-VC-40037	OL-0304-05	9.9-13.2 ft	Wet, very dark gray silt	80.4
OL-VC-40041	OL-0304-06	13.2-16.5 ft	Moist, dark olive gray silt with sand	37.9
OL-VC-60056	OL-0304-07	13.2-16.5 ft	Wet, light olive brown silt	85.1
OL-VC-80034	OL-0304-08	0.5-3.3 ft	Wet, black clay	232.5

Notes: Temperature of Drying : 110° Celsius

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	mll
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80051	Sample Type:	jar
Sample ID:	OL-0304-01	Test Date:	04/13/07
Depth :	0.5-3.3 ft	Test Id:	110415
Test Comment:	---		
Sample Description:	Wet, black clay		
Sample Comment:	---		

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	0.8	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0325	98		
---	0.0202	90		
---	0.0128	45		
---	0.0094	18		
---	0.0065	14		
---	0.0047	13		
---	0.0033	11		
---	0.0008	9		

Coefficients

D ₈₅ = 0.0192 mm	D ₃₀ = 0.0108 mm
D ₆₀ = 0.0150 mm	D ₁₅ = 0.0070 mm
D ₅₀ = 0.0136 mm	D ₁₀ = 0.0019 mm
C _u = N/A	C _c = N/A

Classification

ASTM fat clay (CH)

AASHTO Clayey Soils (A-7-5 (112))

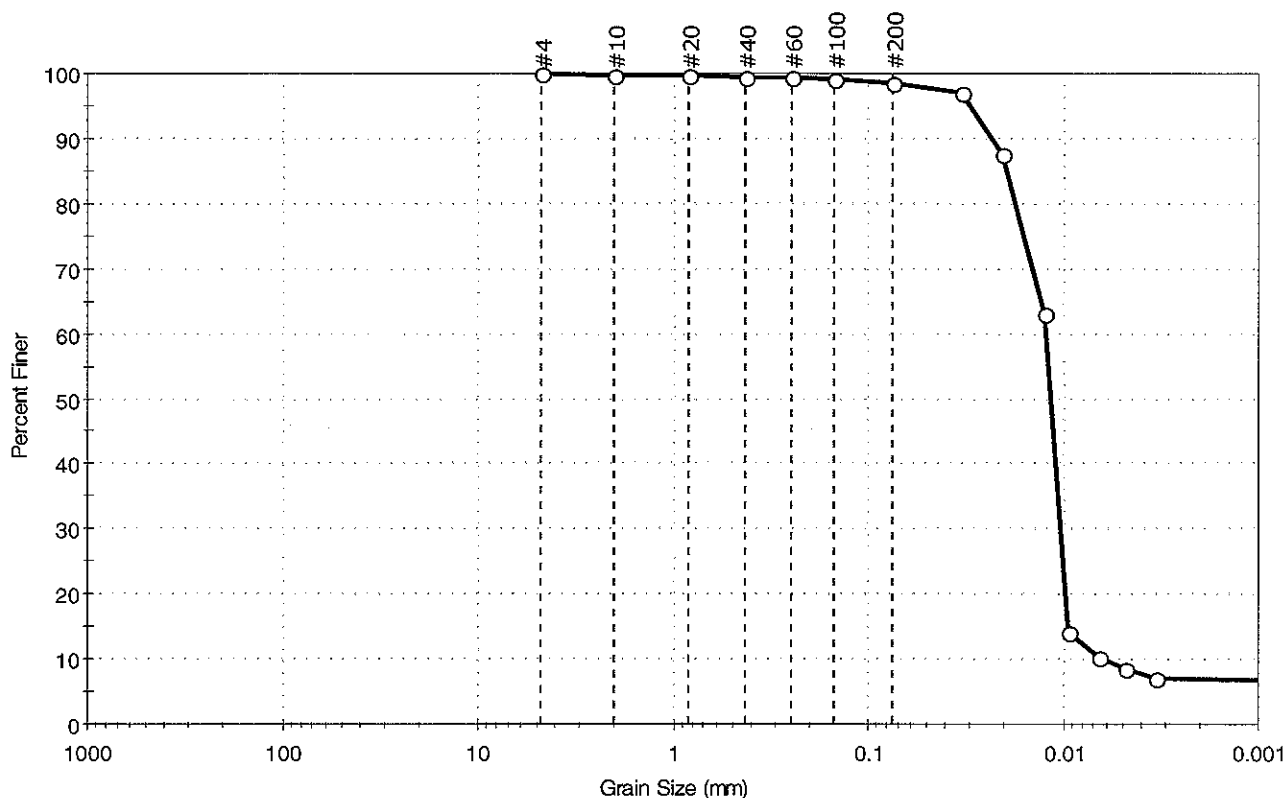
Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED

Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science	Project No: GTX-7143
Project: Onondaga	Tested By: mll
Location: Syracuse	Checked By: jdt
Boring ID: OL-VC-80034	Sample Type: jar
Sample ID: OL-0304-08	Test Date: 04/13/07
Depth: 0.5-3.3 ft	Test Id: 110416
Test Comment: ---	
Sample Description: Wet, black clay	
Sample Comment: ---	

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



% Cobble	% Gravel	% Sand	% Silt & Clay Size
—	0.0	1.4	98.6

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	99		
#60	0.25	99		
#100	0.15	99		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0332	97		
---	0.0207	88		
---	0.0125	63		
---	0.0095	14		
---	0.0066	10		
---	0.0048	8		
---	0.0034	7		
---	0.0008	7		

Coefficients

D ₈₅ = 0.0195 mm	D ₃₀ = 0.0104 mm
D ₆₀ = 0.0122 mm	D ₁₅ = 0.0095 mm
D ₅₀ = 0.0116 mm	D ₁₀ = 0.0062 mm
C _u = N/A	C _c = N/A

Classification

ASTM fat clay (CH)

AASHTO Clayey Soils (A-7-5 (152))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
Sand/Gravel Hardness : HARD

Client: Parsons Engineering Science

Project: Onondaga

Location: Syracuse

Project No: GTX-7143

Boring ID: OL-VC-80036

Sample Type: jar

Tested By: mll

Sample ID: OL-0304-09

Test Date: 04/13/07

Checked By: jdt

Depth: 13.2-16.5 ft

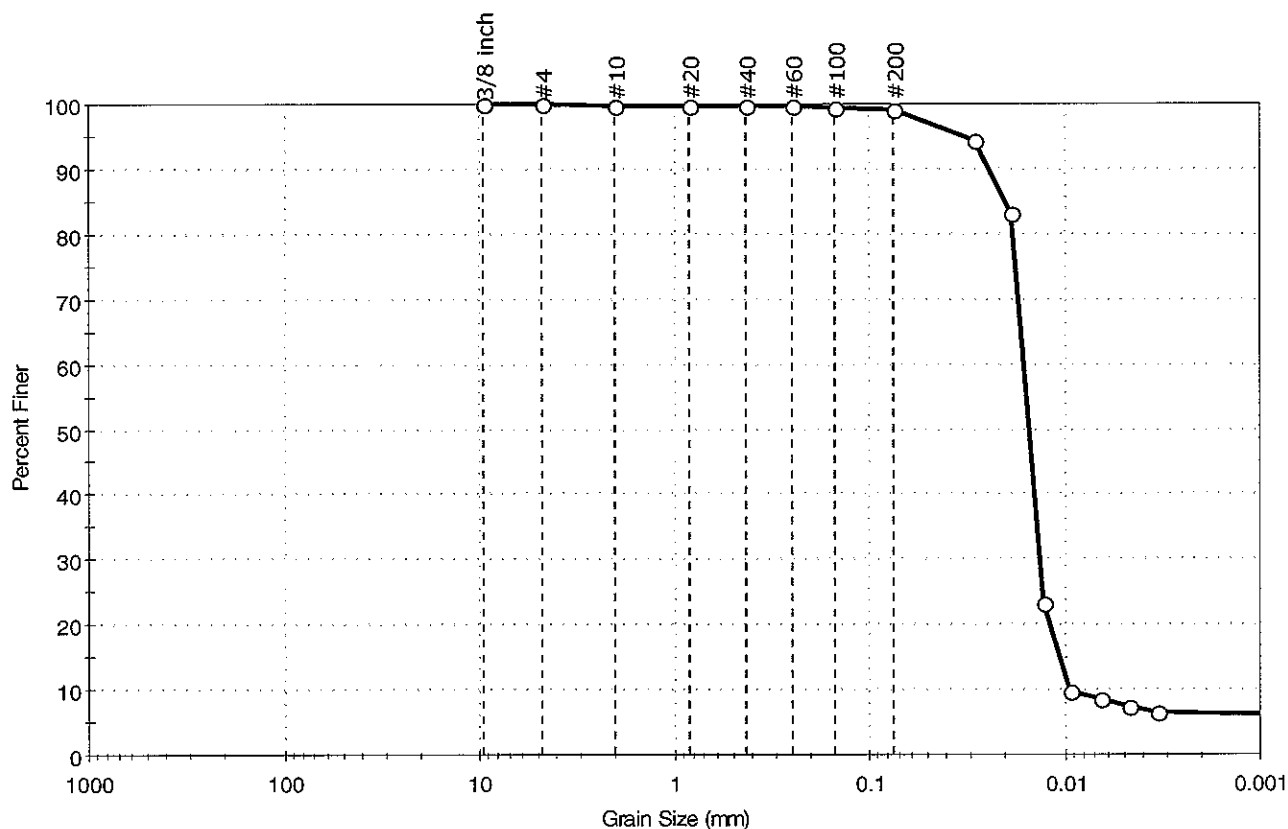
Test Id: 110417

Test Comment: ---

Sample Description: Moist, black silt

Sample Comment: ---

Particle Size Analysis - ASTM D 422-63 (reapproved 2002)



%Cobble	%Gravel	%Sand	%Silt & Clay Size
---	0.1	0.7	99.2

Sieve Name	Sieve Size, mm	Percent Finer	Spec. Percent	Complies
3/8 inch	9.51	100		
#4	4.75	100		
#10	2.00	100		
#20	0.84	100		
#40	0.42	100		
#60	0.25	100		
#100	0.15	100		
#200	0.075	99		
---	Particle Size (mm)	Percent Finer	Spec. Percent	Complies
---	0.0289	94		
---	0.0188	83		
---	0.0129	23		
---	0.0095	10		
---	0.0066	8		
---	0.0048	7		
---	0.0033	6		
---	0.0008	6		

Coefficients

$D_{85} = 0.0202$ mm $D_{30} = 0.0135$ mm
 $D_{60} = 0.0163$ mm $D_{15} = 0.0107$ mm
 $D_{50} = 0.0153$ mm $D_{10} = 0.0096$ mm
 $C_u = N/A$ $C_c = N/A$

Classification

ASTM elastic silt (MH)

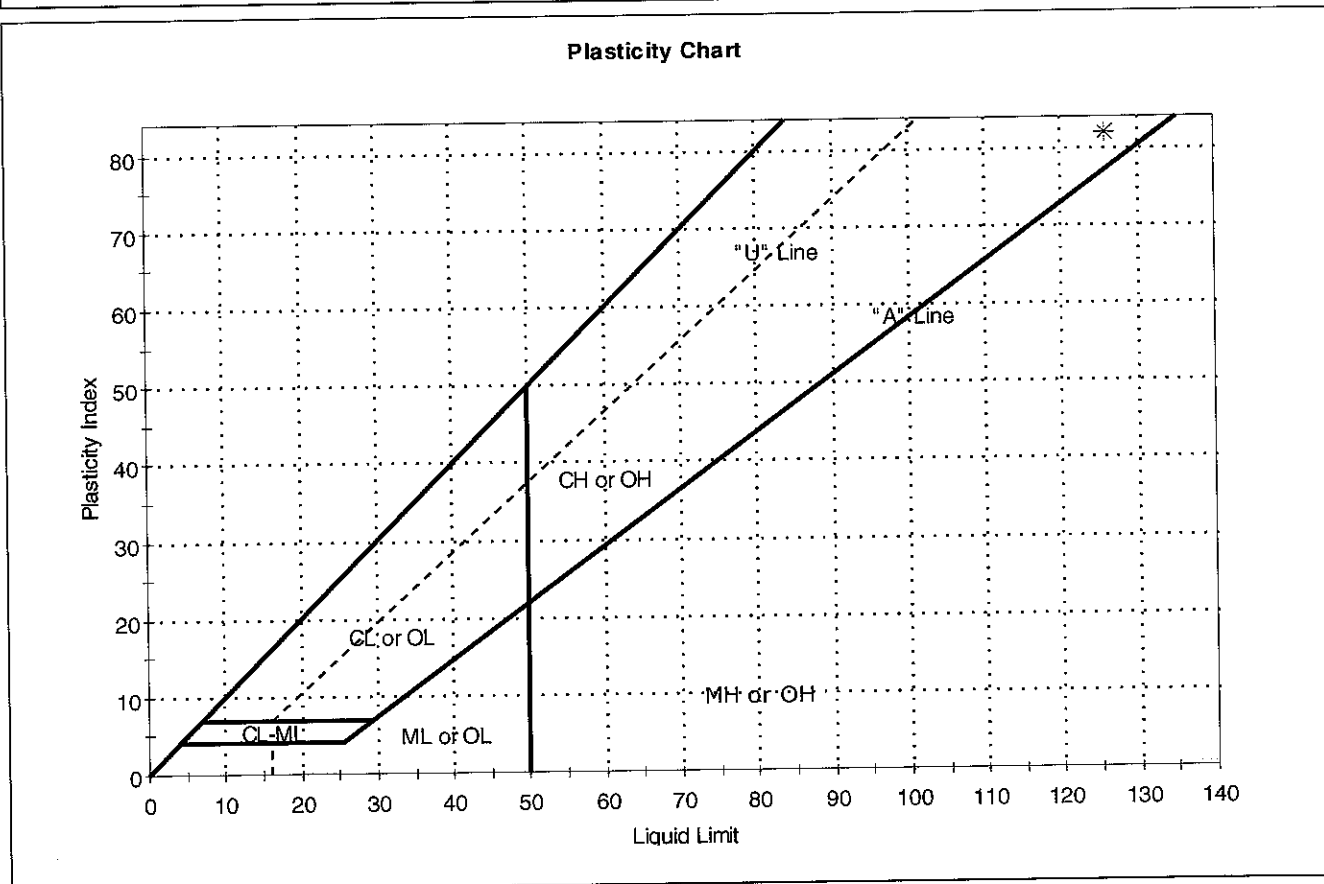
AASHTO Clayey Soils (A-7-5 (55))

Sample/Test Description

Sand/Gravel Particle Shape : ROUNDED
 Sand/Gravel Hardness : HARD

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80051	Sample Type:	jar
Sample ID:	OL-0304-01	Test Date:	04/19/07
Depth:	0.5-3.3 ft	Test Id:	110412
Test Comment:	---		
Sample Description:	Wet, black clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0304-01	VC-800	0.5-3.3 ft	189	126	44	82	2	fat clay (CH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

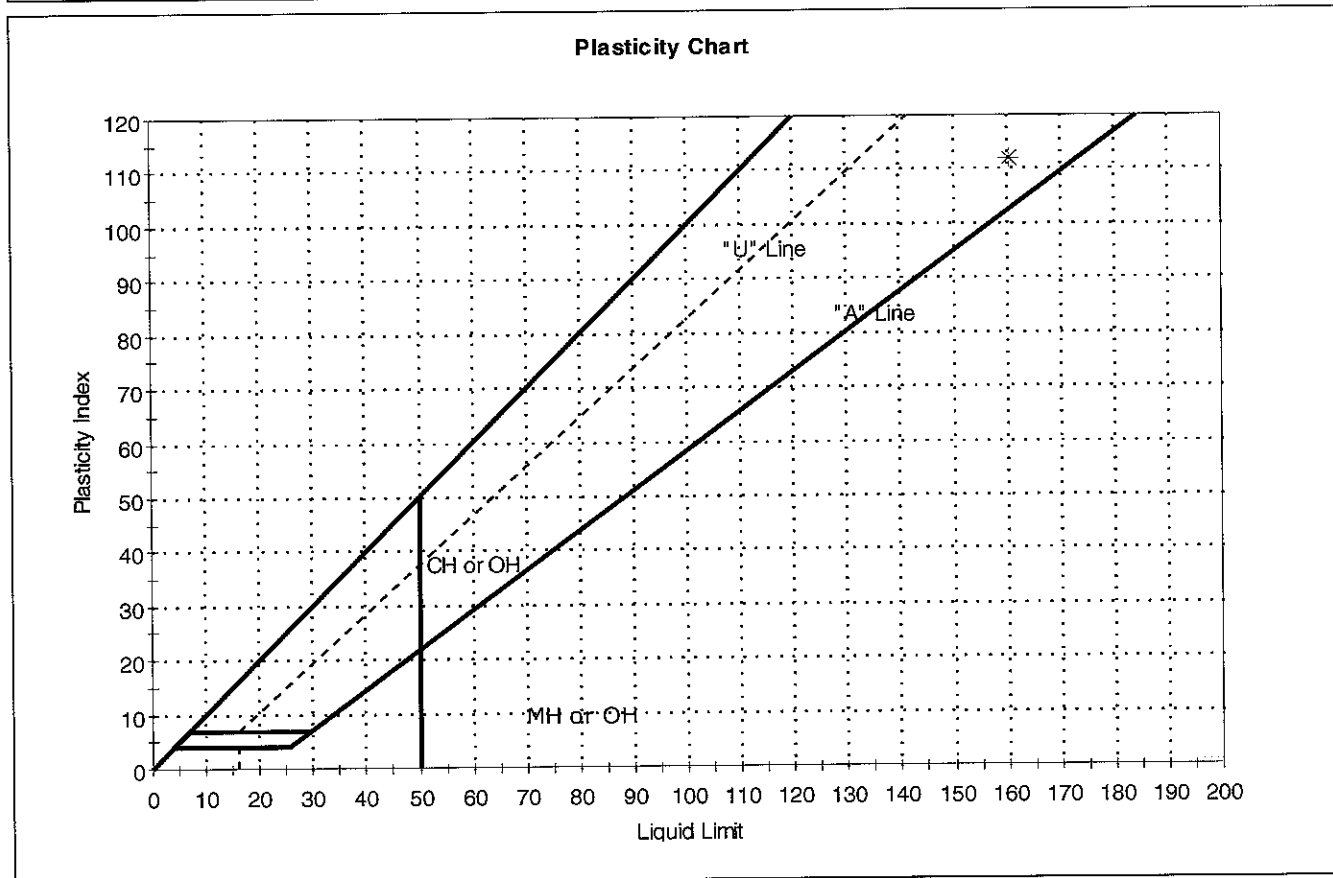
Dry Strength: VERY HIGH

Dilatancy: SLOW

Toughness: LOW

Client:	Parsons Engineering Science		
Project:	Onondaga		
Location:	Syracuse		Project No: GTX-7143
Boring ID:	OL-VC-80034	Sample Type:	jar
Sample ID:	OL-0304-08	Test Date:	04/17/07
Depth :	0.5-3.3 ft	Test Id:	110413
Test Comment:	---		
Sample Description:	Wet, black clay		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05

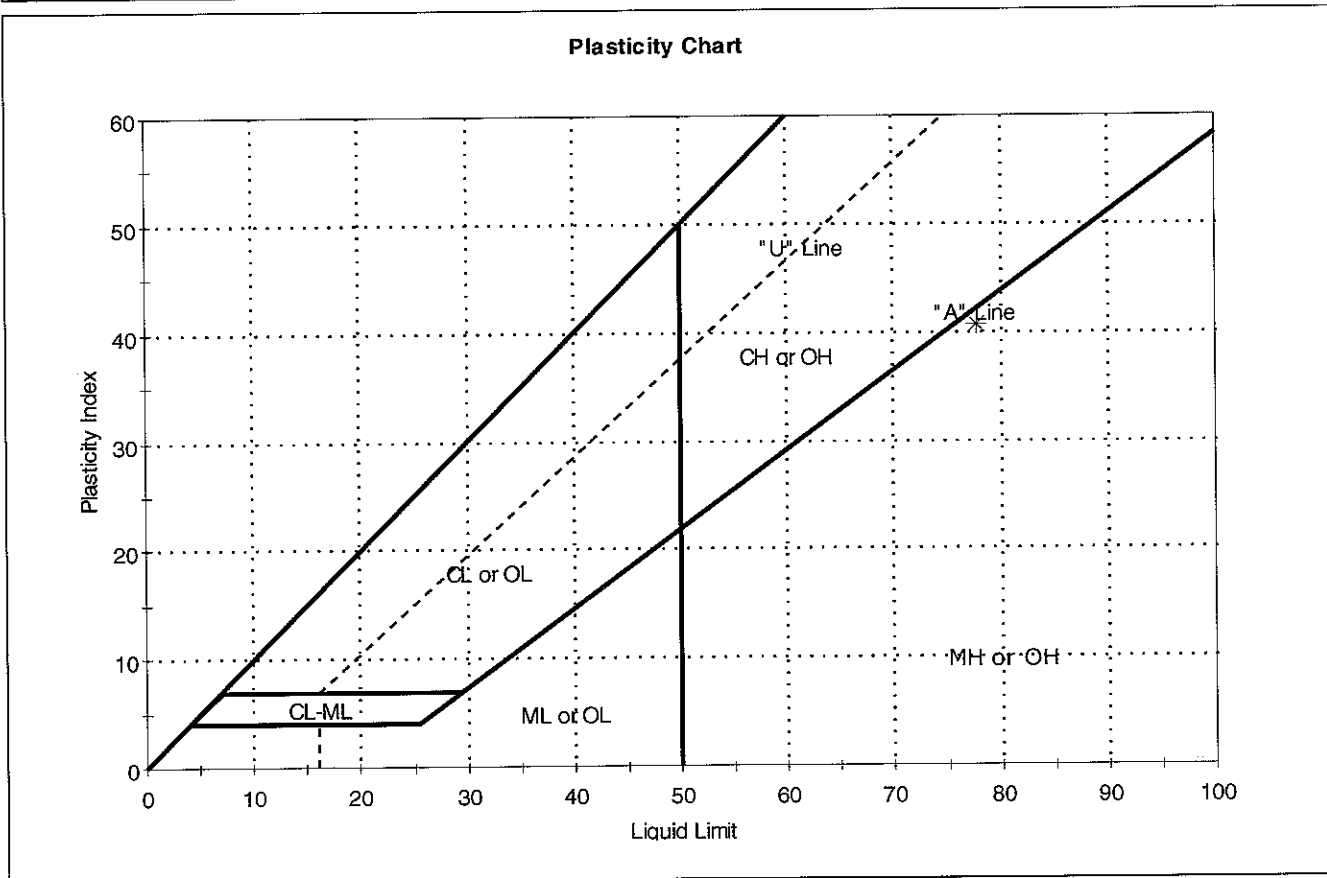


Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0304-08	-VC-800	0.5-3.3 ft	233	161	49	112	2	fat clay (CH)

Sample Prepared using the WET method
 1% Retained on #40 Sieve
 Dry Strength: VERY HIGH
 Dilatancy: SLOW
 Toughness: LOW

Client:	Parsons Engineering Science	Project No:	GTX-7143
Project:	Onondaga	Tested By:	ap
Location:	Syracuse	Checked By:	jdt
Boring ID:	OL-VC-80036	Sample Type:	jar
Sample ID:	OL-0304-09	Test Date:	04/16/07
Depth:	13.2-16.5 ft	Test Id:	110414
Test Comment:	---		
Sample Description:	Moist, black silt		
Sample Comment:	---		

Atterberg Limits - ASTM D 4318-05



Symbol	Sample ID	Boring	Depth	Natural Moisture Content, %	Liquid Limit	Plastic Limit	Plasticity Index	Liquidity Index	Soil Classification
*	OL-0304-09	VC-800	13.2-16.5 ft	98	78	37	41	1	elastic silt (MH)

Sample Prepared using the WET method

0% Retained on #40 Sieve

Dry Strength: HIGH

Dilatancy: RAPID

Toughness: LOW

WARRANTY and LIABILITY

GeoTesting Express (GTX) warrants that all tests it performs are run in general accordance with the specified test procedures and accepted industry practice. GTX will correct or repeat any test that does not comply with this warranty. GTX has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

GTX may report engineering parameters that require us to interpret the test data. Such parameters are determined using accepted engineering procedures. However, GTX does not warrant that these parameters accurately reflect the true engineering properties of the *in situ* material. Responsibility for interpretation and use of the test data and these parameters for engineering and/or construction purposes rests solely with the user and not with GTX or any of its employees.

GTX's liability will be limited to correcting or repeating a test which fails our warranty. GTX's liability for damages to the Purchaser of testing services for any cause whatsoever shall be limited to the amount GTX received for the testing services. GTX will not be liable for any damages, or for any lost benefits or other consequential damages resulting from the use of these test results, even if GTX has been advised of the possibility of such damages. GTX will not be responsible for any liability of the Purchaser to any third party.

Commonly Used Symbols

A	pore pressure parameter for $\Delta\sigma_1 - \Delta\sigma_3$	T	temperature
B	pore pressure parameter for $\Delta\sigma_3$	t	time
CIU	isotropically consolidated undrained triaxial shear test	U, UC	unconfined compression test
CR	compression ratio for one dimensional consolidation	UU, Q	unconsolidated undrained triaxial test
C_c	coefficient of curvature, $(D_{30})^2 / (D_{10} \times D_{60})$	u_a	pore gas pressure
C_u	coefficient of uniformity, D_{60}/D_{10}	u_e	excess pore water pressure
C_c	compression index for one dimensional consolidation	u, u_w	pore water pressure
C_α	coefficient of secondary compression	V	total volume
c_v	coefficient of consolidation	V_g	volume of gas
c	cohesion intercept for total stresses	V_s	volume of solids
c'	cohesion intercept for effective stresses	V_v	volume of voids
D	diameter of specimen	V_w	volume of water
D_{10}	diameter at which 10% of soil is finer	V_o	initial volume
D_{15}	diameter at which 15% of soil is finer	v	velocity
D_{30}	diameter at which 30% of soil is finer	W	total weight
D_{50}	diameter at which 50% of soil is finer	W_s	weight of solids
D_{60}	diameter at which 60% of soil is finer	W_w	weight of water
D_{85}	diameter at which 85% of soil is finer	w	water content
d_{50}	displacement for 50% consolidation	w_c	water content at consolidation
d_{90}	displacement for 90% consolidation	w_f	final water content
d_{100}	displacement for 100% consolidation	w_l	liquid limit
E	Young's modulus	w_n	natural water content
e	void ratio	w_p	plastic limit
e_c	void ratio after consolidation	w_s	shrinkage limit
e_o	initial void ratio	w_o, w_i	initial water content
G	shear modulus	α	slope of q_f versus p_f
G_s	specific gravity of soil particles	α'	slope of q_f versus p_f'
H	height of specimen	γ_t	total unit weight
PI	plasticity index	γ_d	dry unit weight
i	gradient	γ_s	unit weight of solids
K_o	lateral stress ratio for one dimensional strain	γ_w	unit weight of water
k	permeability	ϵ	strain
LI	Liquidity Index	ϵ_{vol}	volume strain
m_v	coefficient of volume change	ϵ_h, ϵ_v	horizontal strain, vertical strain
n	porosity	μ	Poisson's ratio, also viscosity
PI	plasticity index	σ	normal stress
P_c	preconsolidation pressure	σ'	effective normal stress
p	$(\sigma_1 + \sigma_3) / 2, (\sigma_v + \sigma_h) / 2$	σ_c, σ'_c	consolidation stress in isotropic stress system
p'	$(\sigma'_1 + \sigma'_3) / 2, (\sigma'_v + \sigma'_h) / 2$	σ_h, σ'_h	horizontal normal stress
p'_c	p' at consolidation	σ_v, σ'_v	vertical normal stress
Q	quantity of flow	σ_1	major principal stress
q	$(\sigma_1 - \sigma_3) / 2$	σ_2	intermediate principal stress
q_f	q at failure	σ_3	minor principal stress
q_o, q_i	initial q	τ	shear stress
q_c	q at consolidation	ϕ	friction angle based on total stresses
S	degree of saturation	ϕ'	friction angle based on effective stresses
SL	shrinkage limit	ϕ'_r	residual friction angle
s_u	undrained shear strength	ϕ_{ult}	ϕ for ultimate strength
T	time factor for consolidation		



University of Colorado, Boulder

Dobroslav Znidarčić, Professor

Department of Civil, Environmental, and Architectural Engineering

College of Engineering and Applied Science

428 UCB, Engineering Center, Room OT 649

Boulder, CO 80309-0428

Telephone: 303.492.7577

Fax: 303.492.7317

e-mail: Dobroslav.Znidarcic@colorado.edu

Jeffrey Coffin and Dobroslav Znidarčić

**Consolidation Test Results for
Slurry Samples
Onondaga Lake Pre-design
Investigation: Phase II project
Subcontract No. 442636.30010.00**

Prepared for:

**Parsons Engineering Science Inc.
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088**

February 16, 2007

Introduction

This report presents the results of the consolidation testing for the following disturbed samples for the Onondaga Lake Pre-design Investigation: Phase II project:

Location ID	Field Sample ID	Depth
OL-VC-10037	OL-0296-01	9.9'-13.2'
OL-VC-10038	OL-0296-02	9.9'-13.2'
OL-VC-10062A	OL-0296-03	3.3'- 6.6'
OL-VC-10080	OL-0296-04	9.9'-13.2'
OL-VC-10081A	OL-0296-05	13.2'-16.5'
OL-VC-10105	OL-0296-06	0-3.3'

In this report the samples are identified by their Field Sample ID.

We received the samples in a quart size glass jars. We also received Onondaga Lake water to be used in preparing the slurry sample and for performing the seepage induced consolidation tests (SICT).

The samples had plastic consistency and the process water was added to create a slurry sample suitable for SIC testing.

The natural water and solids contents for the samples were:

Sample	Water Content	Solids Content
OL-0296-01	191.3%	33.4%
OL-0296-02	223.4%	30.2%
OL-0296-03	194.8%	33.2%
OL-0296-04	224.3%	30.2%
OL-0296-05	206.3%	32.0%
OL-0296-06	215.3%	31.2%

The samples were first thoroughly mixed with additional process water to reach the desired consistency for testing. The obtained water and solids contents of the prepared slurries were:

Sample	Water Content	Solids Content
OL-0296-01	614.3%	13.7%
OL-0296-02	737.1%	11.8%
OL-0296-03	384.9%	20.4%
OL-0296-04	606.2%	14.1%
OL-0296-05	716.7%	12.1%
OL-0296-06	606.2%	14.1%

The Seepage Induced Consolidation Test (SICT) and the step loading test were performed on the so prepared slurry. In calculations, the following specific gravity values were used. They were selected from the summary tables of geotechnical parameters at proposed SIC test locations. The specific gravity values obtained for adjacent samples were used in the

calculation as the specific gravity tests were not performed on the samples on which the SIC tests were performed.

Sample	G_s
OL-0296-01	2.50
OL-0296-02	2.50
OL-0296-03	2.70
OL-0296-04	2.69
OL-0296-05	2.69
OL-0296-06	2.63

The Seepage Induced Consolidation Test and analysis procedures are described in the attachment to this report

Material Characteristics

The void ratio corresponding to the zero effective stress was found to be:

Sample	e_o
OL-0296-01	10.99
OL-0296-02	14.20
OL-0296-03	10.39
OL-0296-04	9.38
OL-0296-05	13.49
OL-0296-06	8.68

The test results are presented in Tables 2 to 7 and in Figures 1 to 6.

The model parameters A, B, Z, C and D in Table 1 define the compressibility and hydraulic conductivity relationships given by the following expressions, and presented in the figures

Compressibility $e = A (\sigma' + Z)^B$

Hydraulic Conductivity $k = C e^D$

where e is the void ratio, k is the hydraulic conductivity. The values for the parameters A, Z and C depend on the system of units and are given for SI units.

Table 1 – Consolidation model parameters

Sample	A	B	Z(kPa)	C(m/sec)	D
OL-0296-01	6.39	-0.133	0.017	8.7×10^{-10}	3.22
OL-0296-02	7.89	-0.107	0.008	6.3×10^{-12}	5.19
OL-0296-03	6.16	-0.103	0.006	1.8×10^{-10}	4.26
OL-0296-04	8.50	-0.114	0.424	1.8×10^{-10}	4.44
OL-0296-05	8.19	-0.104	0.008	1.3×10^{-11}	5.20
OL-0296-06	6.62	-0.104	0.073	4.9×10^{-10}	4.40

Table 2 – SICTA results for sample OL-0296-01.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-10037 9.9-13.2 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	24.52500
Initial Height of the Sample	=	.03631
Void Ratio at zero effective stress	=	10.99000
Top Effective Stress	=	.07000
Darcian Velocity	=	.39600E-05
Final Height of the Sample	=	.02280
Final Bottom Effective Stress	=	2.65260

Step Loading Test Results :		
Void Ratio	=	3.34000
Effective Stress	=	130.00000
Permeability Coefficient	=	.42400E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	6.39074
Parameter B	=	-.13330
Parameter Z	=	.01713
Parameter C	=	.87209E-09
Parameter D	=	3.22065
Number of Iterations	=	6
Total Normalized Difference	=	.44792E-04

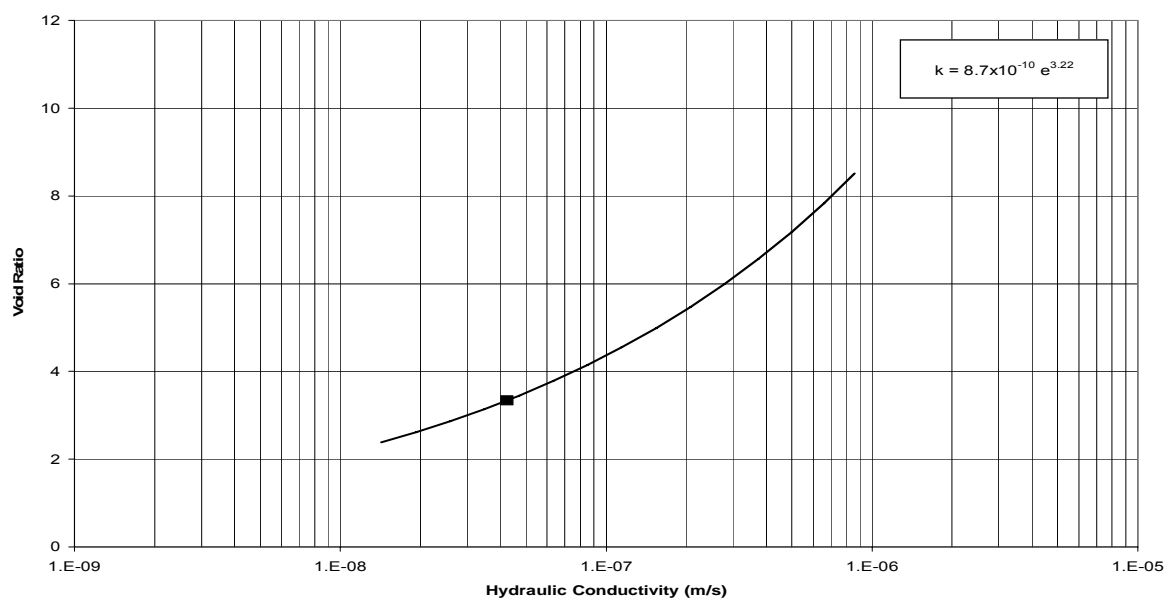
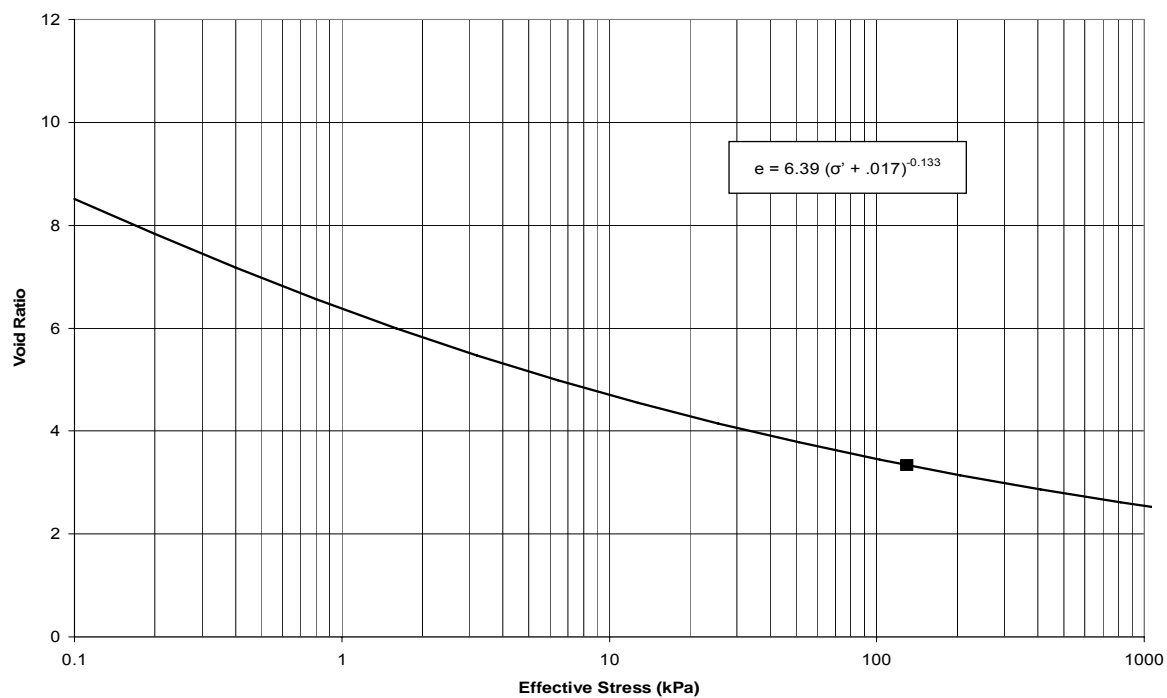


Figure 1 Compressibility and Permeability Characteristics for Sample OL-0296-01

Table 3 – SICTA results for sample OL-0296-02.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-10038 9.9-13.2 ft		
Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	24.52500
Initial Height of the Sample	=	.02822
Void Ratio at zero effective stress	=	13.19200
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-05
Final Height of the Sample	=	.01789
Final Bottom Effective Stress	=	3.31000
Step Loading Test Results :		
Void Ratio	=	4.70000
Effective Stress	=	128.00000
Permeability Coefficient	=	.19400E-07
THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		
PARAMETER ESTIMATION RESULTS		
Parameter A	=	7.88799
Parameter B	=	-.10671
Parameter Z	=	.00807
Parameter C	=	.62795E-11
Parameter D	=	5.19251
Number of Iterations	=	17
Total Normalized Difference	=	.17513E-04

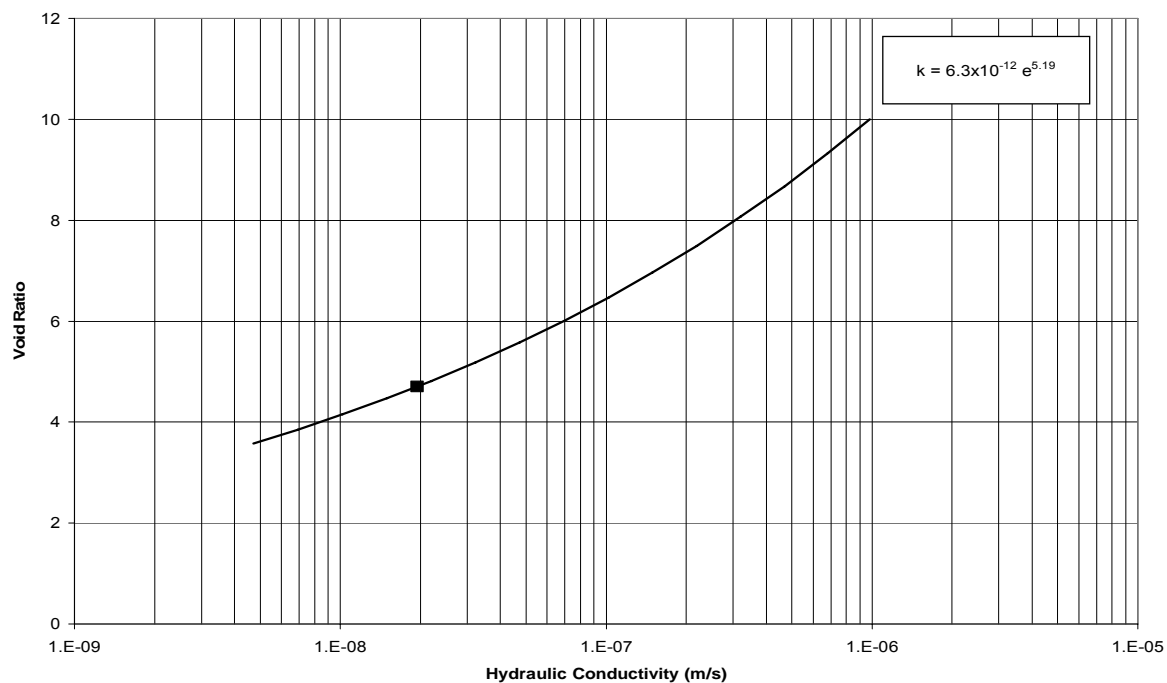
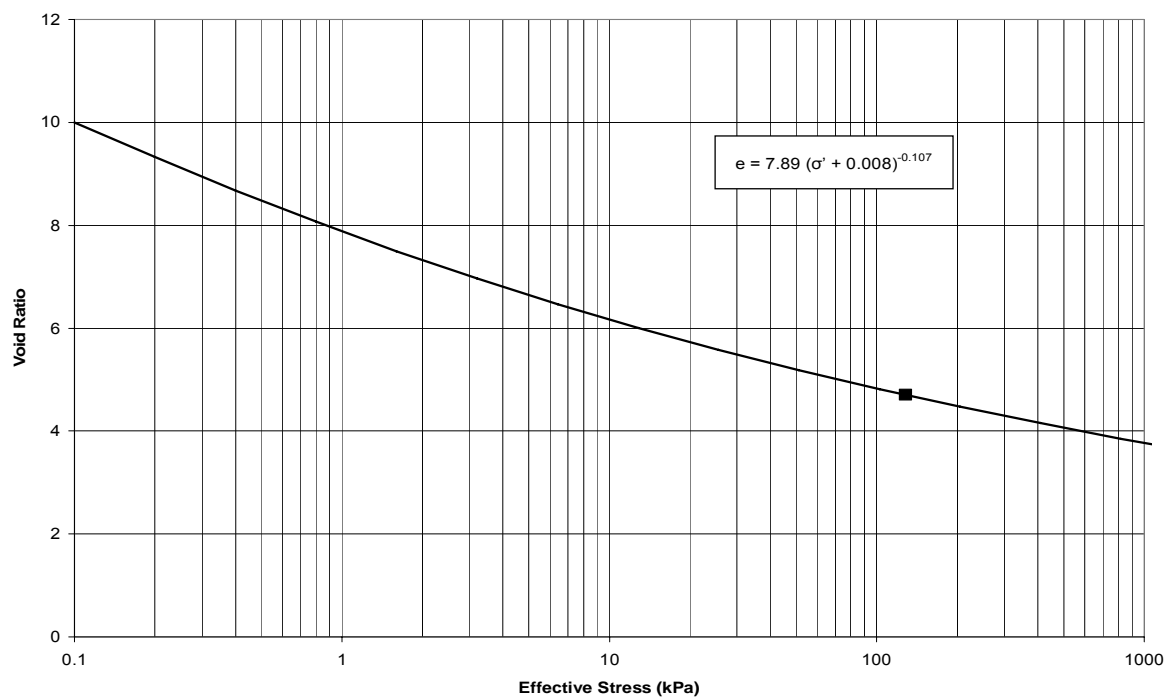


Figure 2 Compressibility and Permeability Characteristics for Sample OL-0296-02

Table 4 – SICTA results for sample OL-0296-03.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-10062A 3.3-6.6 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.49000
Initial Height of the Sample	=	.01914
Void Ratio at zero effective stress	=	10.39000
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-04
Final Height of the Sample	=	.01216
Final Bottom Effective Stress	=	2.98000

Step Loading Test Results :		
Void Ratio	=	3.74700
Effective Stress	=	127.00000
Permeability Coefficient	=	.50300E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	6.16399
Parameter B	=	-.10275
Parameter Z	=	.00621
Parameter C	=	.18037E-09
Parameter D	=	4.26262
Number of Iterations	=	9
Total Normalized Difference	=	.14797E-04

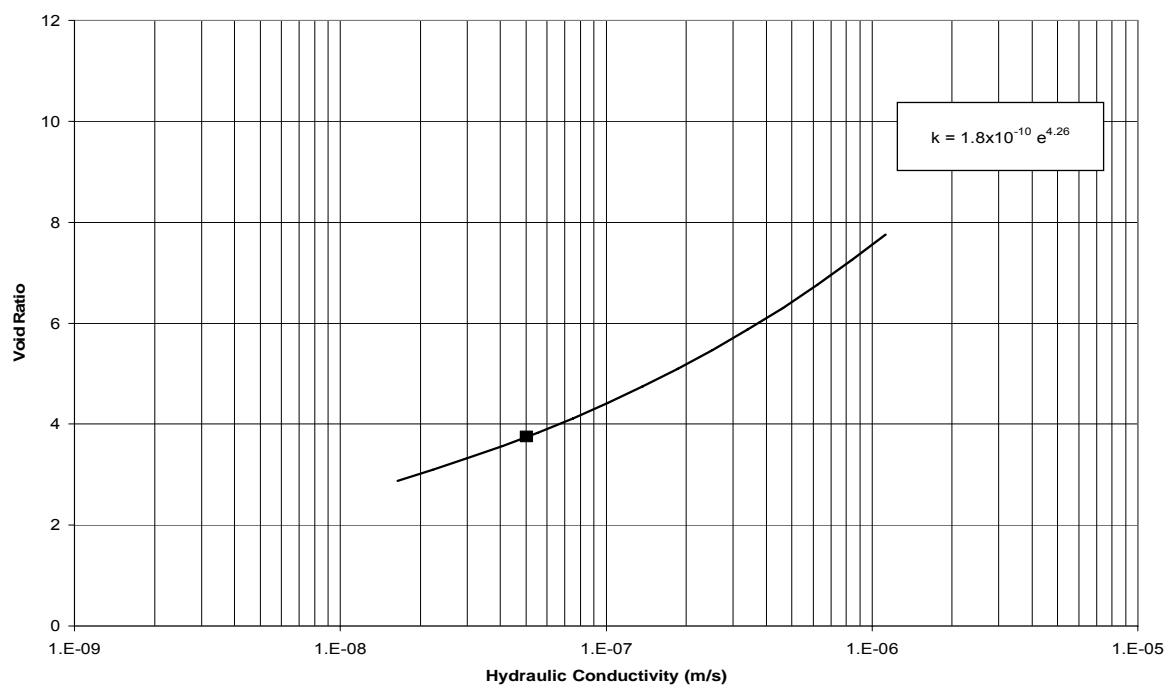
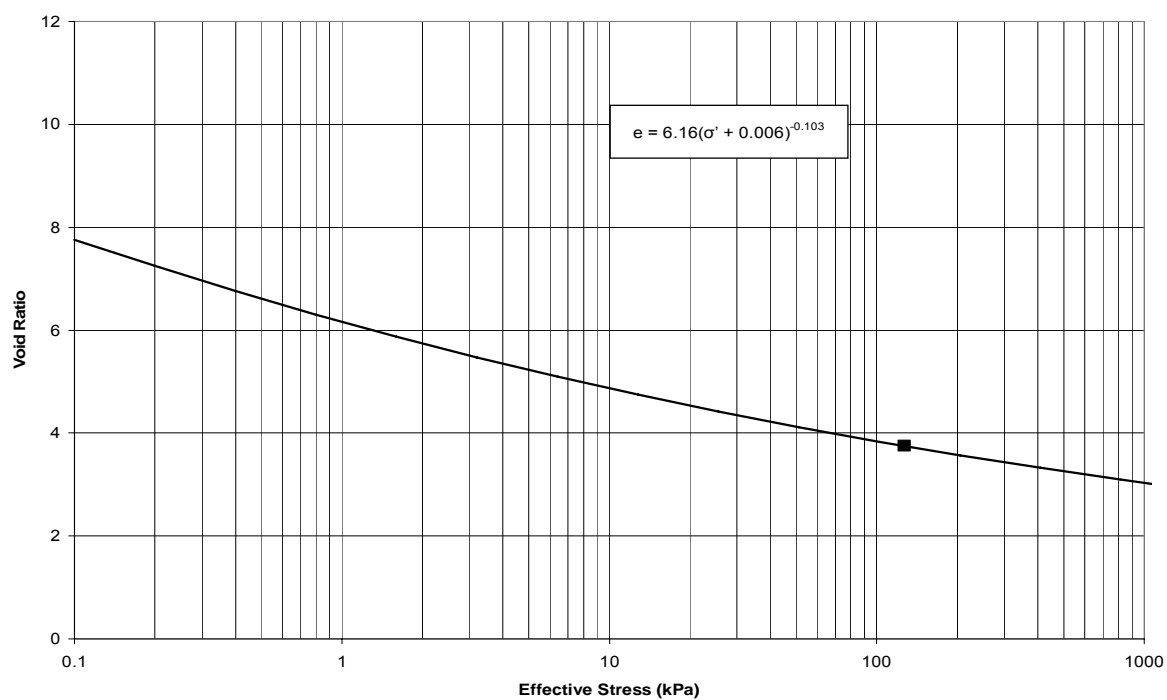


Figure 3 Compressibility and Permeability Characteristics for Sample OL-0296-03

Table 5 – SICTA results for sample OL-0296-04.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-10080 9.9-13.2 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.39000
Initial Height of the Sample	=	.02700
Void Ratio at zero effective stress	=	9.38000
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-04
Final Height of the Sample	=	.02496
Final Bottom Effective Stress	=	1.07000

Step Loading Test Results :		
Void Ratio	=	4.86000
Effective Stress	=	132.00000
Permeability Coefficient	=	.20500E-06

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	8.50169
Parameter B	=	-.11445
Parameter Z	=	.42359
Parameter C	=	.18176E-09
Parameter D	=	4.44524
Number of Iterations	=	14
Total Normalized Difference	=	.37733E-04

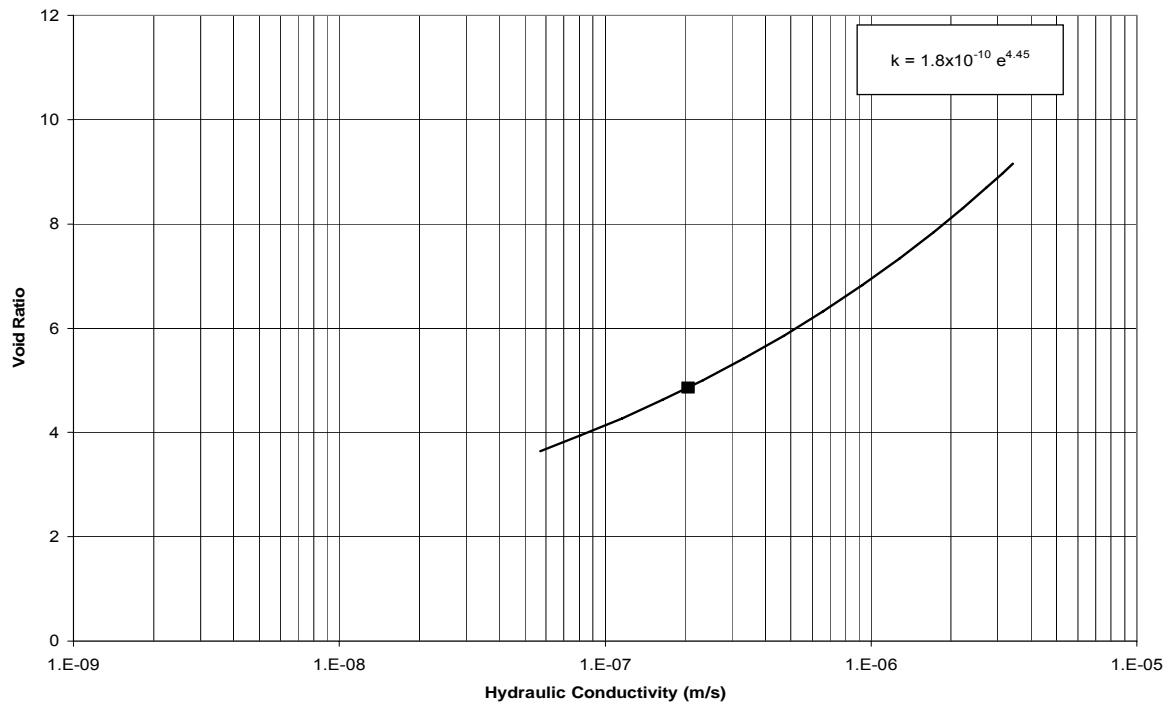
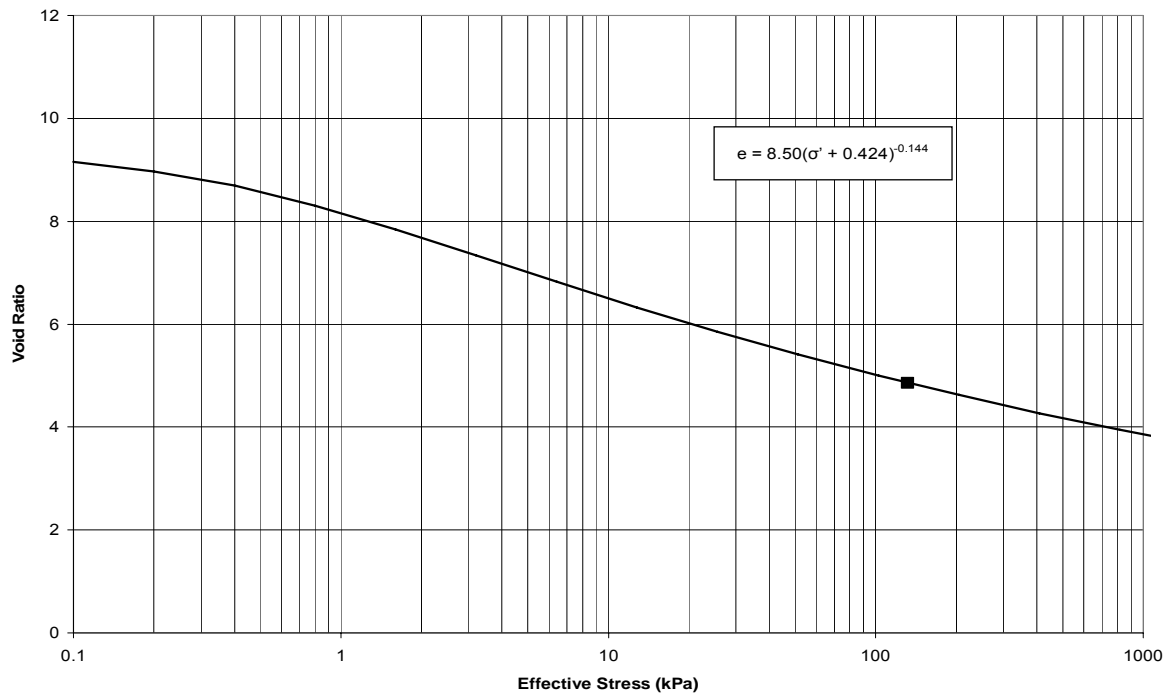


Figure 4 Compressibility and Permeability Characteristics for Sample OL-0296-04

Table 6 – SICTA results for sample OL-0296-05.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-10081A 13.2-16.5 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.39000
Initial Height of the Sample	=	.02154
Void Ratio at zero effective stress	=	13.48500
Top Effective Stress	=	.07000
Darcian Velocity	=	.20000E-04
Final Height of the Sample	=	.01350
Final Bottom Effective Stress	=	4.52800

Step Loading Test Results :		
Void Ratio	=	4.96400
Effective Stress	=	123.01800
Permeability Coefficient	=	.53800E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	8.18515
Parameter B	=	-.10392
Parameter Z	=	.00820
Parameter C	=	.13039E-10
Parameter D	=	5.19601
Number of Iterations	=	15
Total Normalized Difference	=	.41300E-04

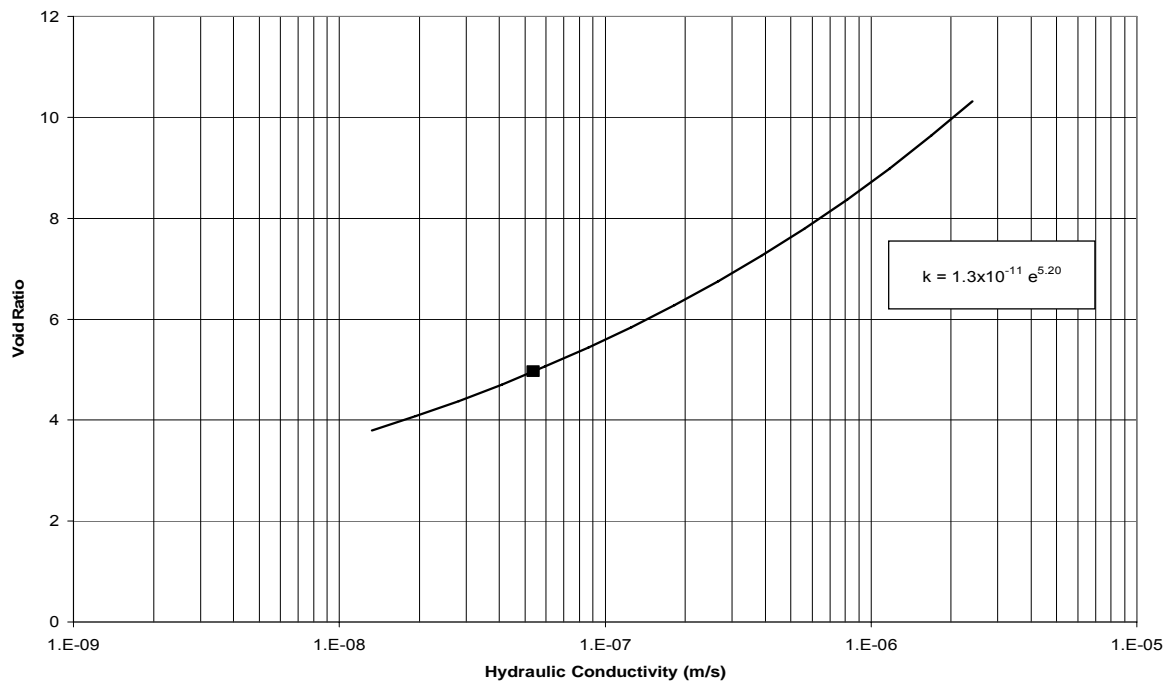
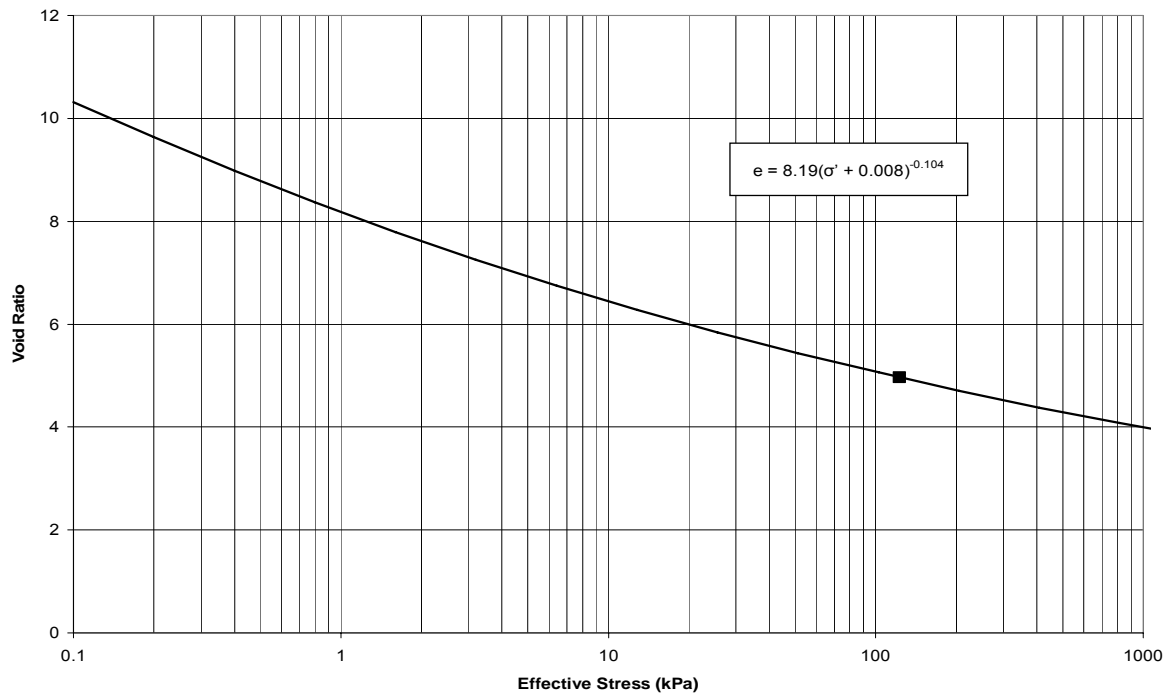


Figure 5 Compressibility and Permeability Characteristics for Sample OL-0296-05

Table 7 – SICTA results for sample OL-0296-06.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-10105 0.0-3.3 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	25.80000
Initial Height of the Sample	=	.02096
Void Ratio at zero effective stress	=	8.68000
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-04
Final Height of the Sample	=	.01586
Final Bottom Effective Stress	=	5.16700

Step Loading Test Results :		
Void Ratio	=	4.01830
Effective Stress	=	124.63000
Permeability Coefficient	=	.22400E-06

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	6.62331
Parameter B	=	-.10355
Parameter Z	=	.07342
Parameter C	=	.49505E-09
Parameter D	=	4.39637
Number of Iterations	=	13
Total Normalized Difference	=	.85026E-04

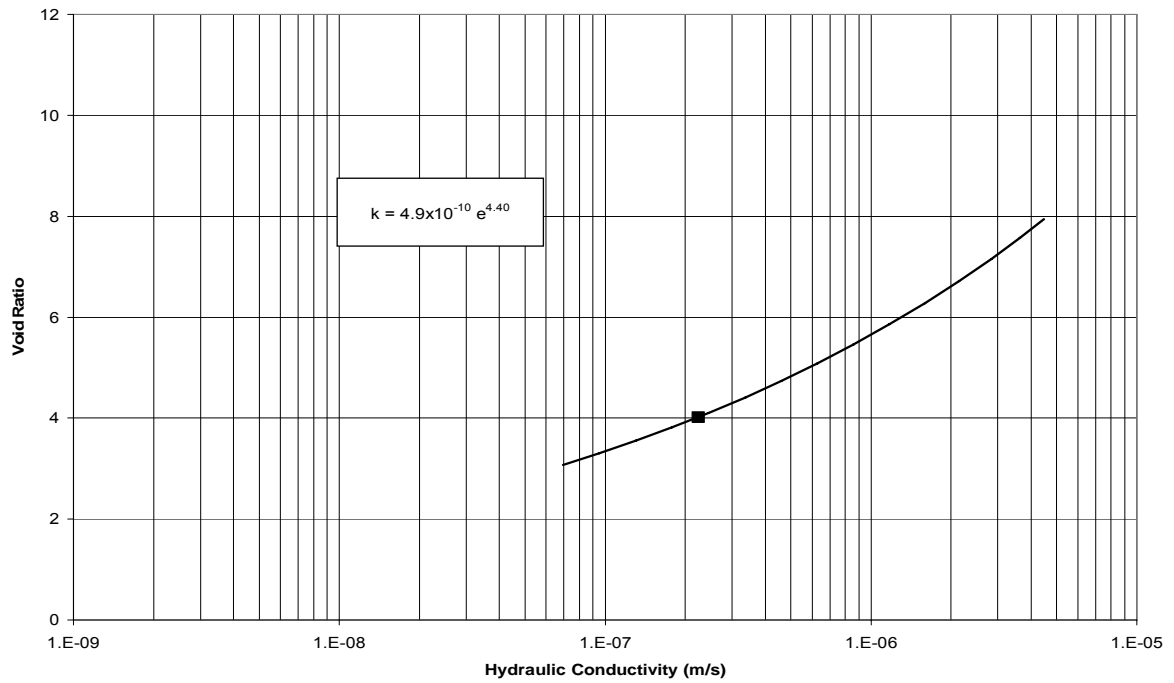
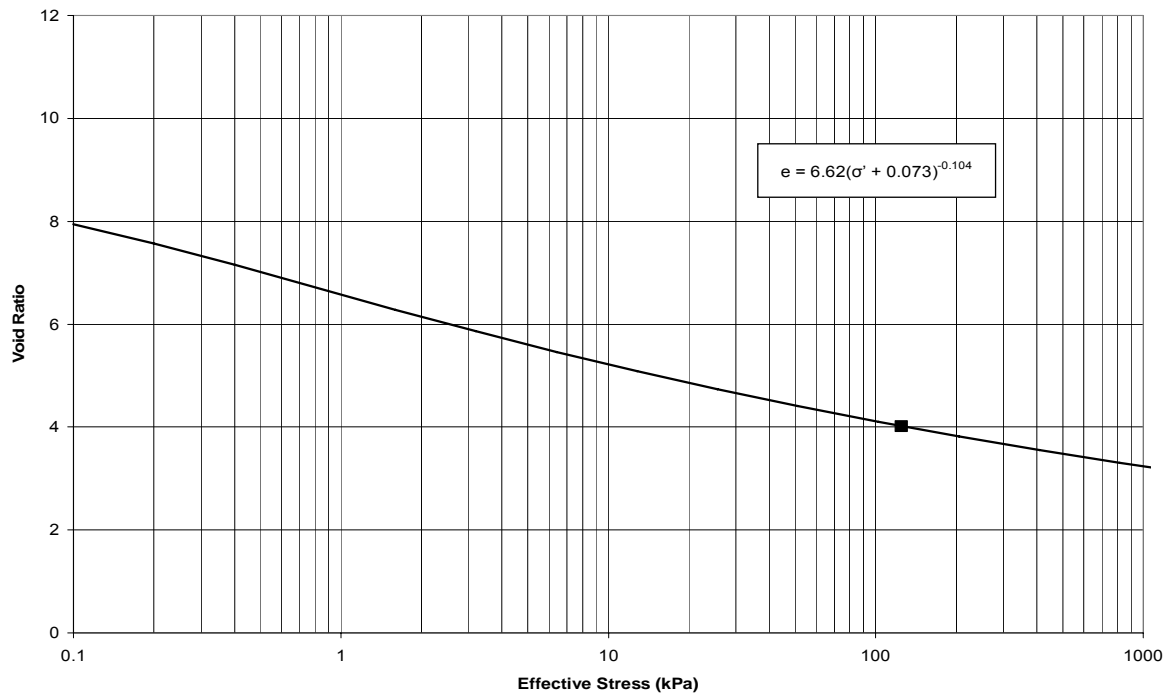


Figure 6 Compressibility and Permeability Characteristics for Sample OL-0296-06

Seepage Induced Consolidation Test (SICT)

The seepage induced consolidation test is an experimental procedure used for determining the consolidation characteristics of soft soils and soil like materials (slurry mine waste, dredged spoils, sludge from waste water treatment plants etc.). The testing procedure consists of three steps.

In the first step the void ratio at the effective stress zero is determined by allowing a slurry column about 0.05 m high to consolidate under its own weight. The average void ratio of the settled slurry is considered the void ratio at the effective stress of zero, or the void ratio at which the soil is formed and the consolidation theory (as opposed to the sedimentation theory) applies.

In the second step, seepage at a constant flow rate is applied through the soil by means of a flow pump and the sample is allowed to consolidate completely, i.e. until the steady state is reached. The steady state is determined from the pressure difference across the sample that is continuously monitored during the test. At steady state, the pressure difference and the final height of the sample are recorded. It is recognized that during this phase of the test the void ratio within the sample is non-uniform and this is correctly accounted for in the test analysis.

In the third step the sample is consolidated under the maximum desired stress level and the hydraulic conductivity is measured with the flow pump using a low flow rate to maintain sample uniformity during the test. At the end of the test the sample is dried and the total volume of solids is determined.

The analysis of the test is performed using the software package SICTA (Seepage Induced Consolidation Test Analysis). The procedure is based on the inverse problem solution approach and the theory used is compatible with the finite strain nonlinear consolidation theory (i.e. no simplifying or restrictive assumptions are made in the analysis). The input data for the SICTA program are all obtained from the described test. The output gives five parameters A, B, Z, C and D that define the consolidation properties for the sample. The compressibility and hydraulic conductivity relations with the five parameters are defined as:

$$\text{Compressibility} \quad e = A (\sigma' + Z)^B$$

$$\text{Hydraulic Conductivity} \quad k = C e^D$$

The more detailed description of the testing equipment and testing and analysis procedures can be found in the following publications:

Abu-Hejleh, A.N., and Znidarcic, D., 1992, User Manual for Computer Program SICTA, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 122 pp.

Znidarcic, D., Abu-Hejleh, A.N., Fairbanks, T. and Robertson A., 1992, Seepage-Induced Consolidation Test; Equipment Description and Users Manual, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 52 pp.

Abu-Hejleh, A.N. and Znidarcic, D., 1994, Estimation of the Consolidation Constitutive Relations, Computer Methods and Advances in Geomechanics, Siriwardane & Zaman (eds) Balkema, Rotterdam, pp. 499-504.

Abu-Hejleh, A. N. and Znidarcic, D., 1996, Consolidation Characteristics of Phosphatic Clays, Journal of Geotechnical Engineering, ASCE, New-York, Vol. 122, No. 4. pp. 295-301.



University of Colorado, Boulder

Dobroslav Znidarčić, Professor

Department of Civil, Environmental, and Architectural Engineering

College of Engineering and Applied Science

428 UCB, Engineering Center, Room OT 649

Boulder, CO 80309-0428

Telephone: 303.492.7577

Fax: 303.492.7317

e-mail: Dobroslav.Znidarcic@colorado.edu

Jeffrey Coffin and Dobroslav Znidarčić

**Consolidation Test Results for
Slurry Samples
Onondaga Lake Pre-design
Investigation project
Purchase order No.
441797.00010.00**

Prepared for:

**Parsons Engineering Science Inc.
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088**

March 20, 2007

Introduction

This report presents the results of the consolidation testing for the following disturbed samples for the Onondaga Lake Pre-design Investigation project:

Location ID	Field Sample ID	Depth
OL-VC-20074	OL-0297-01	13.2'-16.5'
OL-VC-20079	OL-0297-02	0.0'-3.3'
OL-VC-70031	OL-0297-03	0.0'- 3.3'
OL-VC-70022	OL-0297-04	13.2'-16.5'

In this report the samples are identified by their Field Sample ID.

We received the samples in a quart size glass jars. We also received Onondaga Lake water to be used in preparing the slurry sample and for performing the seepage induced consolidation tests (SICT).

The samples had plastic consistency and the process water was added to create a slurry sample suitable for SIC testing.

The natural water and solids contents for the samples were:

Sample	Water Content	Solids Content
OL-0297-01	69.8%	58.4%
OL-0297-02	123.3%	44.4%
OL-0297-03	163.3%	37.6%
OL-0297-04	83.2%	54.1%

The samples were first thoroughly mixed with additional process water to reach the desired consistency for testing. The obtained water and solids contents of the prepared slurries were:

Sample	Water Content	Solids Content
OL-0297-01	429.9%	18.7%
OL-0297-02	340.9%	22.5%
OL-0297-03	434.2%	18.6%
OL-0297-04	374.3%	20.9%

The Seepage Induced Consolidation Test (SICT) and the step loading test were performed on the so prepared slurry. In calculations, the following specific gravity values were used. They were selected from the summary tables of geotechnical parameters at proposed SIC test locations. The specific gravity values obtained for adjacent samples were used in the calculation as the specific gravity tests were not performed on the samples on which the SIC tests were performed.

Sample	G_s
OL-0297-01	2.72
OL-0297-02	2.37
OL-0297-03	2.49
OL-0297-04	2.52

The Seepage Induced Consolidation Test and analysis procedures are described in the attachment to this report

Material Characteristics

The void ratio corresponding to the zero effective stress was found to be:

Sample	e_o
OL-0297-01	6.05
OL-0297-02	4.34
OL-0297-03	7.22
OL-0297-04	5.52

The test results are presented in Tables 2 to 7 and in Figures 1 to 6.

The model parameters A, B, Z, C and D in Table 1 define the compressibility and hydraulic conductivity relationships given by the following expressions, and presented in the figures

Compressibility $e = A (\sigma' + Z)^B$

Hydraulic Conductivity $k = C e^D$

where e is the void ratio, k is the hydraulic conductivity. The values for the parameters A, Z and C depend on the system of units and are given for SI units.

Table 1 – Consolidation model parameters

Sample	A	B	Z(kPa)	C(m/sec)	D
OL-0297-01	3.51	-0.130	0.015	1.9×10^{-10}	3.56
OL-0297-02	4.17	-0.205	0.823	7.9×10^{-9}	2.29
OL-0297-03	4.70	-0.194	0.109	8.1×10^{-11}	3.74
OL-0297-04	3.28	-0.146	0.028	2.3×10^{-10}	4.82

Table 2 – SICTA results for sample OL-0297-01.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-20074 13.2-16.5 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.68000
Initial Height of the Sample	=	.01716
Void Ratio at zero effective stress	=	6.05218
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-06
Final Height of the Sample	=	.01089
Final Bottom Effective Stress	=	3.73449

Step Loading Test Results :		
Void Ratio	=	1.88756
Effective Stress	=	116.08500
Permeability Coefficient	=	.18100E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.50553
Parameter B	=	-.13021
Parameter Z	=	.01509
Parameter C	=	.18808E-09
Parameter D	=	3.56408
Number of Iterations	=	8
Total Normalized Difference	=	.21591E-04

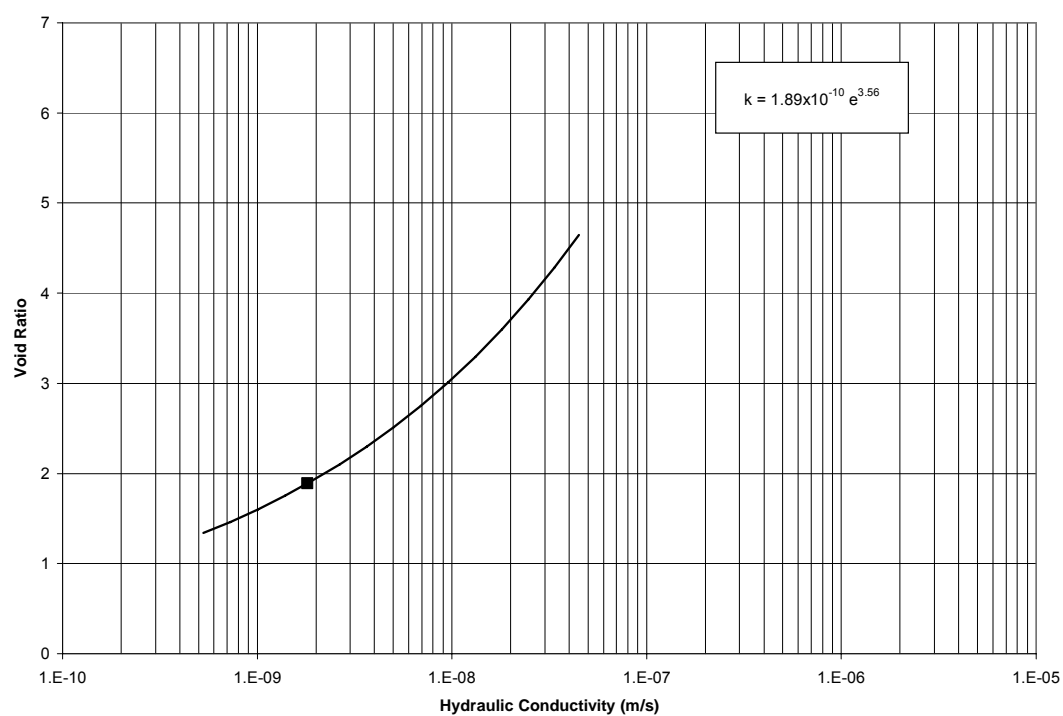
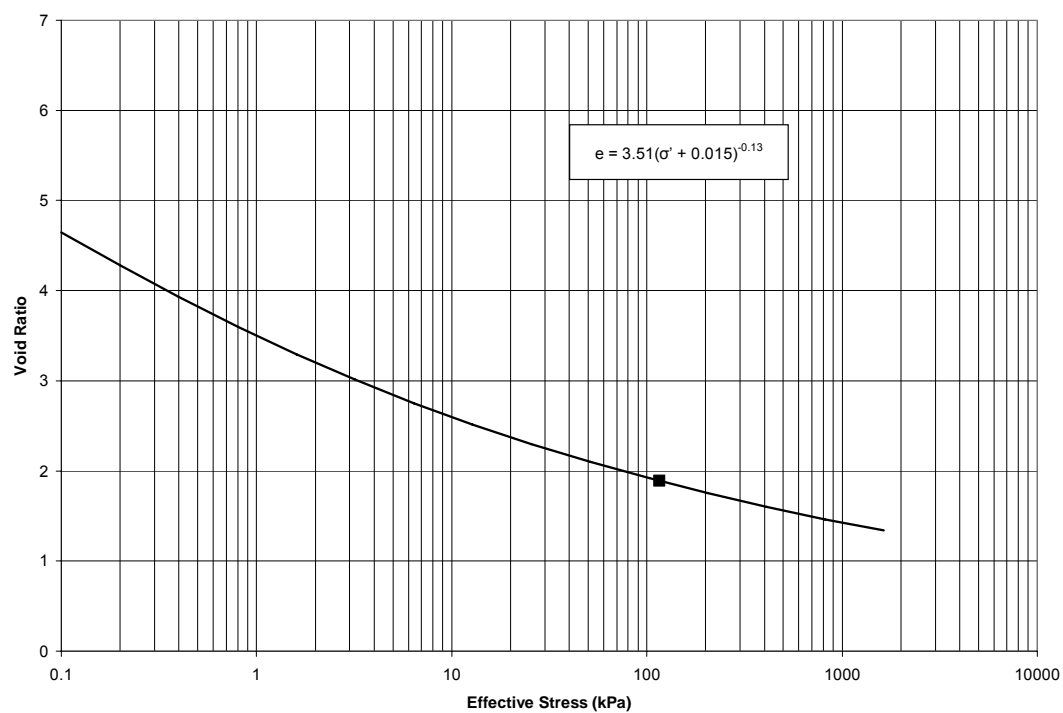


Figure 1 Compressibility and Permeability Characteristics for Sample OL-0297-01

Table 3 – SICTA results for sample OL-0297-02.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-20079 0.0-3.3 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	23.25000
Initial Height of the Sample	=	.02000
Void Ratio at zero effective stress	=	4.34000
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-05
Final Height of the Sample	=	.01600
Final Bottom Effective Stress	=	6.87000

Step Loading Test Results :		
Void Ratio	=	1.48300
Effective Stress	=	155.49000
Permeability Coefficient	=	.19500E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.17036
Parameter B	=	-.20466
Parameter Z	=	.82298
Parameter C	=	.79009E-08
Parameter D	=	2.29259
Number of Iterations	=	7
Total Normalized Difference	=	.67107E-04

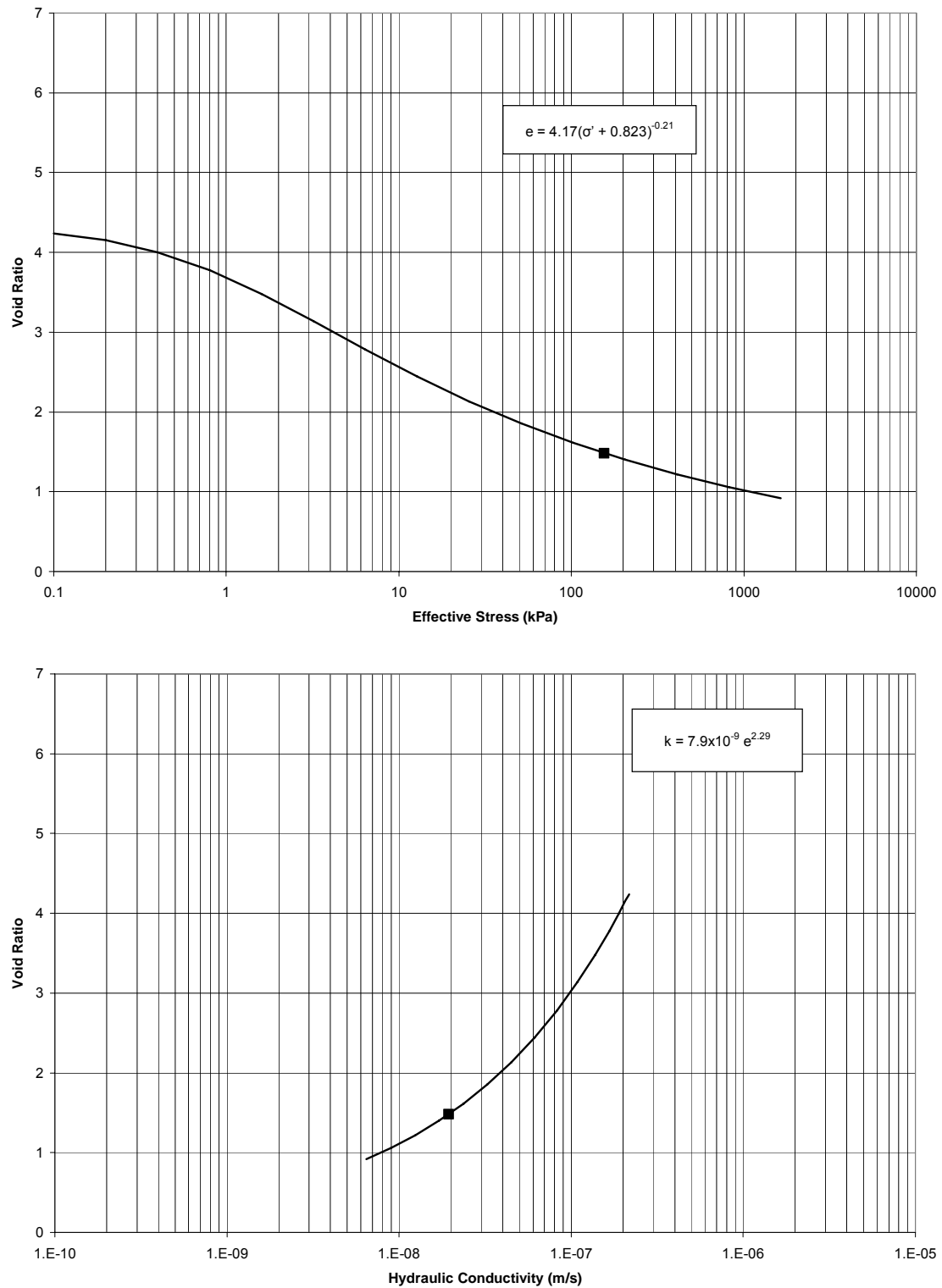


Figure 2 Compressibility and Permeability Characteristics for Sample OL-297-02

Table 4 – SICTA results for sample OL-0297-03.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-70031 0.0-3.3 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	24.43000
Initial Height of the Sample	=	.02310
Void Ratio at zero effective stress	=	7.21680
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-06
Final Height of the Sample	=	.01581
Final Bottom Effective Stress	=	3.73400

Step Loading Test Results :		
Void Ratio	=	1.80600
Effective Stress	=	138.45000
Permeability Coefficient	=	.73900E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.69546
Parameter B	=	-.19376
Parameter Z	=	.10879
Parameter C	=	.81220E-10
Parameter D	=	3.73556
Number of Iterations	=	5
Total Normalized Difference	=	.30167E-04

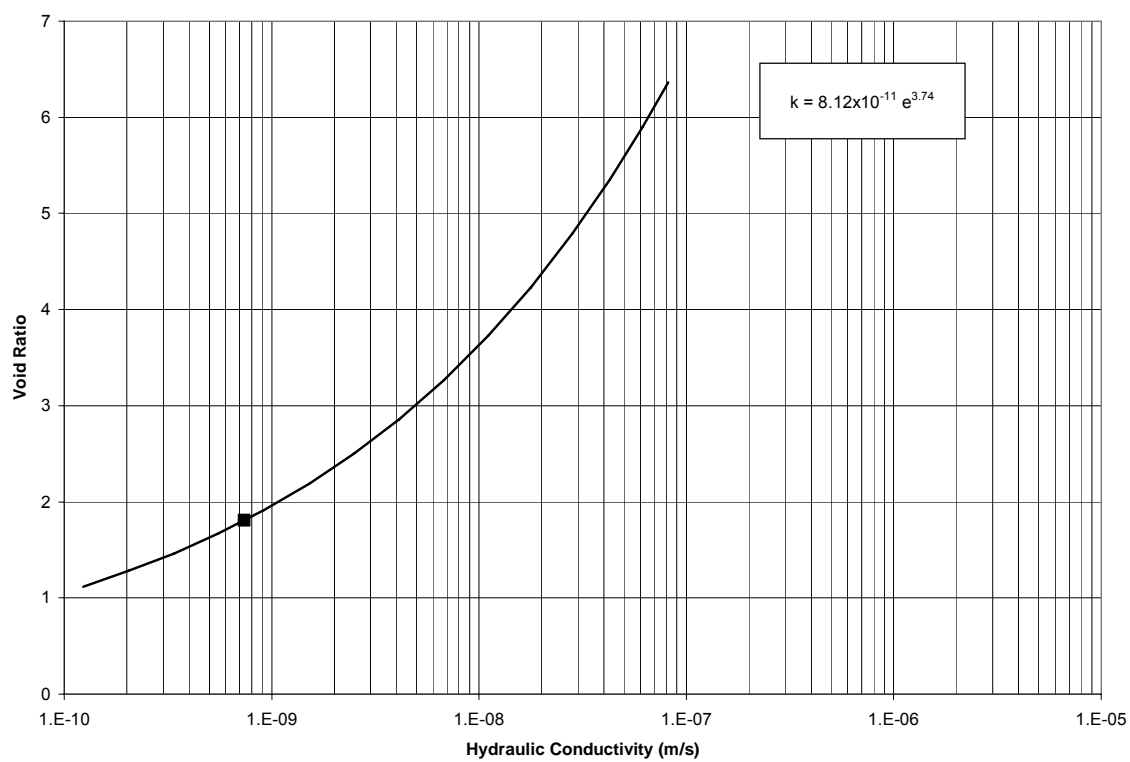
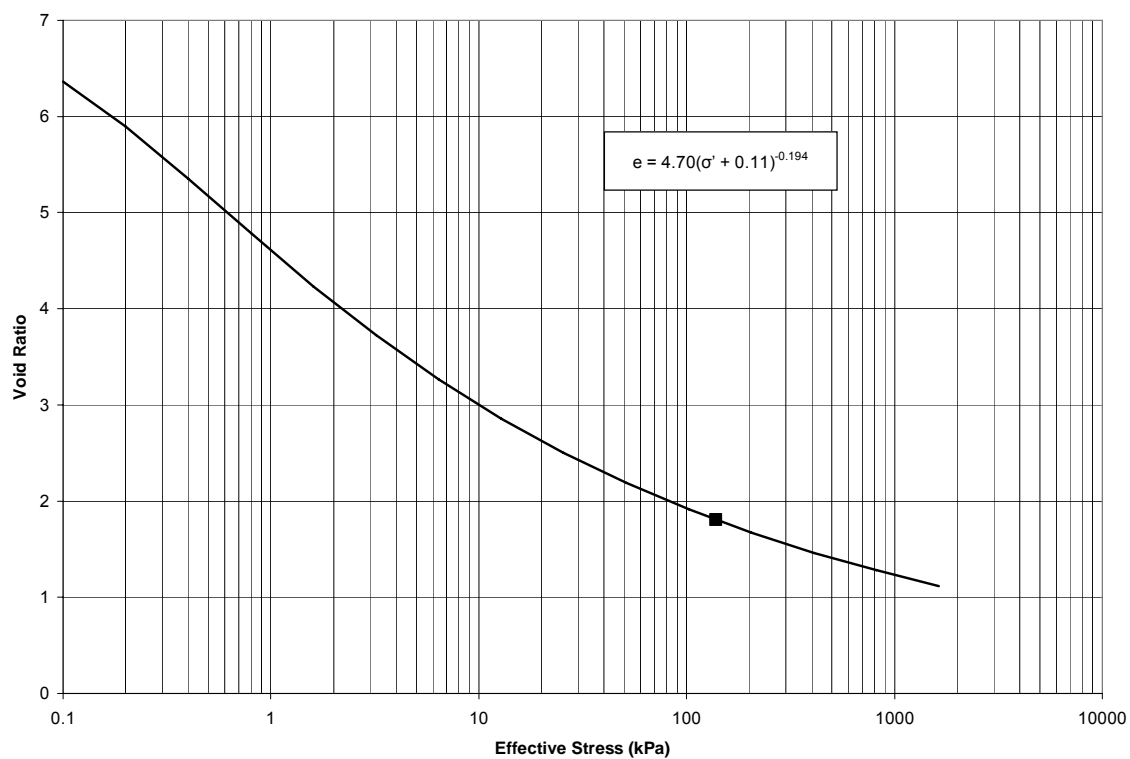


Figure 3 Compressibility and Permeability Characteristics for Sample OL-0297-03

Table 5 – SICTA results for sample OL-0297-04.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-70022 13.2-16.5 ft.		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	24.72000
Initial Height of the Sample	=	.01850
Void Ratio at zero effective stress	=	5.52100
Top Effective Stress	=	.07000
Darcian Velocity	=	.20000E-05
Final Height of the Sample	=	.01220
Final Bottom Effective Stress	=	4.18900

Step Loading Test Results :		
Void Ratio	=	1.59700
Effective Stress	=	136.53000
Permeability Coefficient	=	.21900E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.27819
Parameter B	=	-.14627
Parameter Z	=	.02833
Parameter C	=	.22964E-09
Parameter D	=	4.81739
Number of Iterations	=	9
Total Normalized Difference	=	.47470E-06

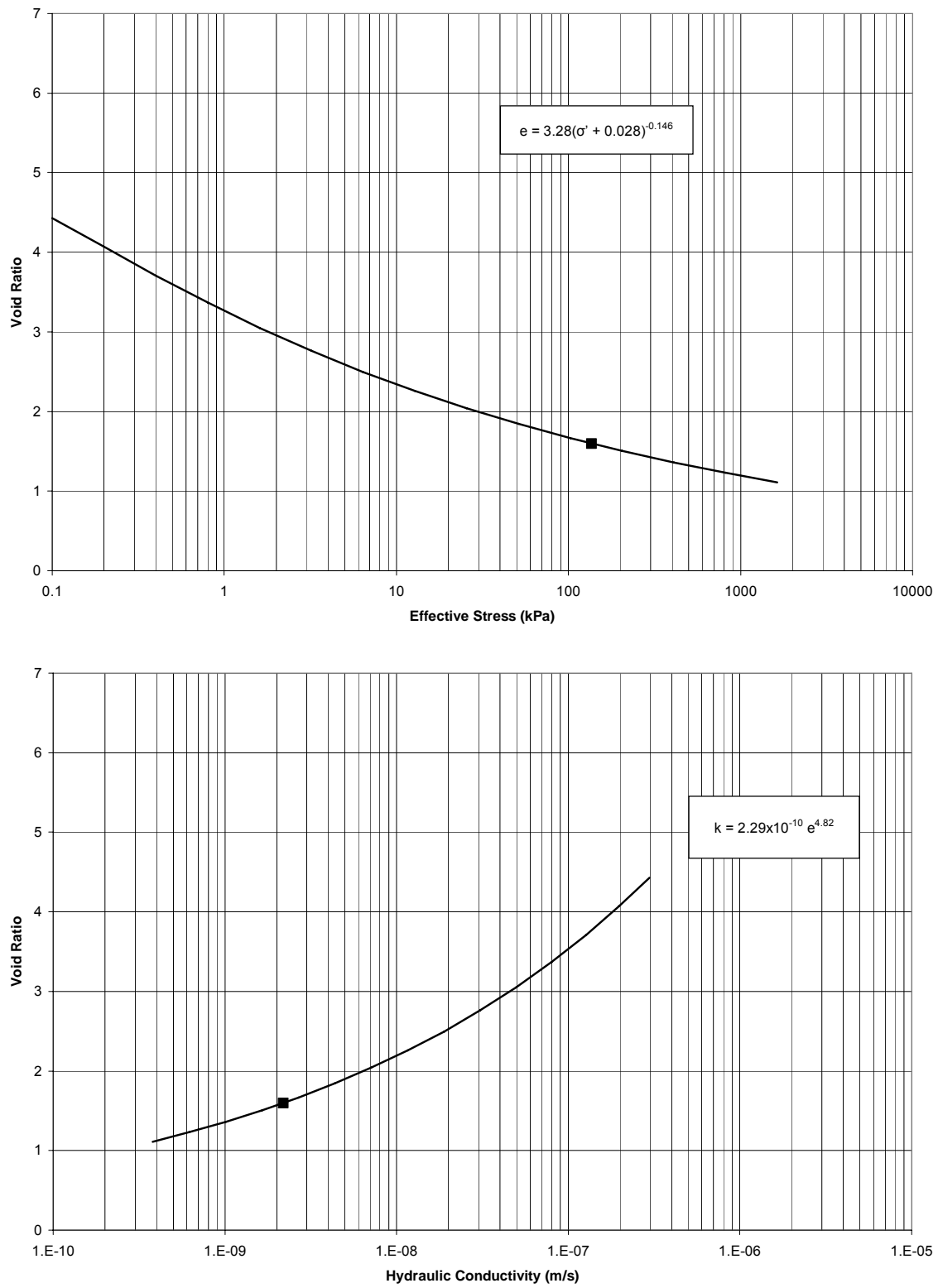


Figure 4 Compressibility and Permeability Characteristics for Sample OL-0297-04

Seepage Induced Consolidation Test (SICT)

The seepage induced consolidation test is an experimental procedure used for determining the consolidation characteristics of soft soils and soil like materials (slurry mine waste, dredged spoils, sludge from waste water treatment plants etc.). The testing procedure consists of three steps.

In the first step the void ratio at the effective stress zero is determined by allowing a slurry column about 0.05 m high to consolidate under its own weight. The average void ratio of the settled slurry is considered the void ratio at the effective stress of zero, or the void ratio at which the soil is formed and the consolidation theory (as opposed to the sedimentation theory) applies.

In the second step, seepage at a constant flow rate is applied through the soil by means of a flow pump and the sample is allowed to consolidate completely, i.e. until the steady state is reached. The steady state is determined from the pressure difference across the sample that is continuously monitored during the test. At steady state, the pressure difference and the final height of the sample are recorded. It is recognized that during this phase of the test the void ratio within the sample is non-uniform and this is correctly accounted for in the test analysis.

In the third step the sample is consolidated under the maximum desired stress level and the hydraulic conductivity is measured with the flow pump using a low flow rate to maintain sample uniformity during the test. At the end of the test the sample is dried and the total volume of solids is determined.

The analysis of the test is performed using the software package SICTA (Seepage Induced Consolidation Test Analysis). The procedure is based on the inverse problem solution approach and the theory used is compatible with the finite strain nonlinear consolidation theory (i.e. no simplifying or restrictive assumptions are made in the analysis). The input data for the SICTA program are all obtained from the described test. The output gives five parameters A, B, Z, C and D that define the consolidation properties for the sample. The compressibility and hydraulic conductivity relations with the five parameters are defined as:

$$\text{Compressibility} \quad e = A (\sigma' + Z)^B$$

$$\text{Hydraulic Conductivity} \quad k = C e^D$$

The more detailed description of the testing equipment and testing and analysis procedures can be found in the following publications:

Abu-Hejleh, A.N., and Znidarcic, D., 1992, User Manual for Computer Program SICTA, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 122 pp.

Znidarcic, D., Abu-Hejleh, A.N., Fairbanks, T. and Robertson A., 1992, Seepage-Induced Consolidation Test; Equipment Description and Users Manual, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 52 pp.

Abu-Hejleh, A.N. and Znidarcic, D., 1994, Estimation of the Consolidation Constitutive Relations, Computer Methods and Advances in Geomechanics, Siriwardane & Zaman (eds) Balkema, Rotterdam, pp. 499-504.

Abu-Hejleh, A. N. and Znidarcic, D., 1996, Consolidation Characteristics of Phosphatic Clays, Journal of Geotechnical Engineering, ASCE, New-York, Vol. 122, No. 4. pp. 295-301.



University of Colorado, Boulder

Dobroslav Znidarčić, Professor

Department of Civil, Environmental, and Architectural Engineering

College of Engineering and Applied Science

428 UCB, Engineering Center, Room OT 649

Boulder, CO 80309-0428

Telephone: 303.492.7577

Fax: 303.492.7317

e-mail: Dobroslav.Znidarcic@colorado.edu

Jeffrey Coffin and Dobroslav Znidarčić

**Consolidation Test Results for
Slurry Samples
Onondaga Lake Pre-design
Investigation project
Purchase order No.
441797.00010.00**

Prepared for:

**Parsons Engineering Science Inc.
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088**

April 17, 2007

Introduction

This report presents the results of the consolidation testing for the following disturbed samples for the Onondaga Lake Pre-design Investigation project:

Location ID	Field Sample ID	Depth
OL-VC-20070	OL-0302-01	9.9'-13.2'
OL-VC-30036	OL-0302-02	6.6'-9.9'
OL-VC-30038	OL-0302-03	3.3'- 6.6'
OL-VC-30040	OL-0302-04	0.0'-3.3'
OL-VC-30043	OL-0302-05	13.2'-16.5'
OL-VC-40016	OL-0302-06	13.2'-16.5'
OL-VC-40021	OL-0302-07	3.3'-6.6'
OL-VC-40025	OL-0302-08	3.3'-6.6'
OL-VC-40032	OL-0302-09	13.2'-16.5'
OL-VC-40034	OL-0302-10	16.5'-17.8'

In this report the samples are identified by their Field Sample ID.

We received the samples in a quart size glass jars. We also received Onondaga Lake water to be used in preparing the slurry sample and for performing the seepage induced consolidation tests (SICT).

The samples had plastic consistency and the process water was added to create a slurry sample suitable for SIC testing.

The natural water and solids contents for the samples were:

Sample	Water Content	Solids Content
OL-0302-01	44.70%	68.2%
OL-0302-02	150.3%	39.4%
OL-0302-03	261.5%	27.3%
OL-0302-04	221.1%	30.8%
OL-0302-05	90.50%	52.0%
OL-0302-06	75.61%	56.2%
OL-0302-07	77.00%	56.0%
OL-0302-08	123.8%	44.3%
OL-0302-09	69.49%	58.2%
OL-0302-10	70.11%	58.4%

The samples were first thoroughly mixed with additional process water to reach the desired consistency for testing. The obtained water and solids contents of the prepared slurries were:

Sample	Water Content	Solids Content
OL-0302-01	299.7%	24.9%
OL-0302-02	815.8%	47.1%

OL-0302-03	834.0%	38.1%
OL-0302-04	509.9%	16.3%
OL-0302-05	337.4%	22.7%
OL-0302-06	427.4%	18.8%
OL-0302-07	243.4%	28.9%
OL-0302-08	287.2%	25.6%
OL-0302-09	497.5%	16.6%
OL-0302-10	162.7%	37.8%

The Seepage Induced Consolidation Test (SICT) and the step loading test were performed on the so prepared slurry. In calculations, the following specific gravity values were used. They were selected from the summary tables of geotechnical parameters at proposed SIC test locations. The specific gravity values obtained for adjacent samples were used in the calculation as the specific gravity tests were not performed on the samples on which the SIC tests were performed.

Sample	G_s
OL-0302-01	2.72
OL-0302-02	2.71
OL-0302-03	2.65
OL-0302-04	2.65
OL-0302-05	2.72
OL-0302-06	2.75
OL-0302-07	2.78
OL-0302-08	2.78
OL-0302-09	2.70
OL-0302-10	2.70

The Seepage Induced Consolidation Test and analysis procedures are described in the attachment to this report

Material Characteristics

The void ratio corresponding to the zero effective stress was found to be:

Sample	e_0
OL-0302-01	2.66
OL-0302-02	8.90
OL-0302-03	15.5
OL-0302-04	10.5
OL-0302-05	5.30
OL-0302-06	5.91
OL-0302-07	3.81
OL-0302-08	4.84
OL-0302-09	5.97
OL-0302-10	3.32

The test results are presented in Tables 2 to 11 and in Figures 1 to 10.

The model parameters A, B, Z, C and D in Table 1 define the compressibility and hydraulic conductivity relationships given by the following expressions, and presented in the figures

Compressibility $e = A (\sigma' + Z)^B$

Hydraulic Conductivity $k = C e^D$

where e is the void ratio, k is the hydraulic conductivity. The values for the parameters A, Z and C depend on the system of units and are given for SI units.

Table 1 – Consolidation model parameters

Sample	A	B	Z(kPa)	C(m/sec)	D
OL-0302-01	1.77	-0.137	0.051	1.7×10^{-8}	2.65
OL-0302-02	4.92	-0.149	0.018	1.8×10^{-10}	4.19
OL-0302-03	6.20	-0.116	0.00037	5.4×10^{-11}	5.29
OL-0302-04	7.23	-0.114	0.039	9.6×10^{-12}	6.33
OL-0302-05	3.30	-0.149	0.041	2.5×10^{-9}	4.11
OL-0302-06	3.73	-0.184	0.082	2.5×10^{-10}	3.09
OL-0302-07	2.64	-0.146	0.081	2.4×10^{-9}	3.28
OL-0302-08	3.76	-0.099	0.077	3.9×10^{-9}	3.63
OL-0302-09	3.88	-0.167	0.076	8.0×10^{-11}	5.17
OL-0302-10	2.29	-0.127	0.054	1.6×10^{-9}	3.44

Table 2 – SICTA results for sample OL-0302-01.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-20070 9.9-13.2ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.68000
Initial Height of the Sample	=	.01350
Void Ratio at zero effective stress	=	2.66100
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-05
Final Height of the Sample	=	.01076
Final Bottom Effective Stress	=	1.29290

Step Loading Test Results :		
Void Ratio	=	.90280
Effective Stress	=	132.55900
Permeability Coefficient	=	.12600E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	1.76682
Parameter B	=	-.13738
Parameter Z	=	.05075
Parameter C	=	.16529E-07
Parameter D	=	2.65445
Number of Iterations	=	7
Total Normalized Difference	=	.62681E-04

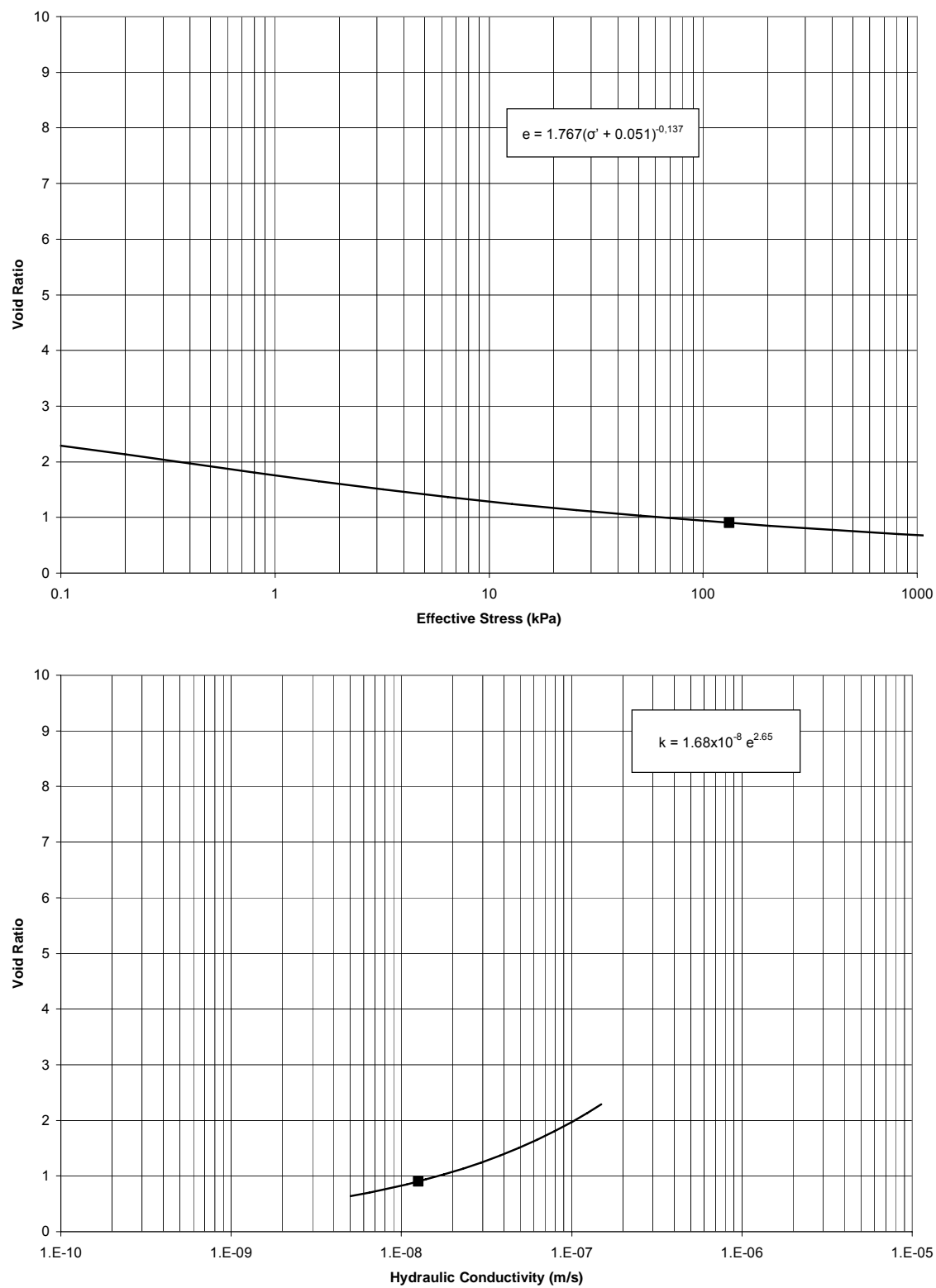


Figure 1 Compressibility and Permeability Characteristics for Sample OL-0302-01

Table 3 – SICTA results for sample OL-0302-02.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-30036 6.6-9.9ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.58510
Initial Height of the Sample	=	.01344
Void Ratio at zero effective stress	=	8.90370
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-05
Final Height of the Sample	=	.00832
Final Bottom Effective Stress	=	2.78240

Step Loading Test Results :		
Void Ratio	=	2.35700
Effective Stress	=	140.00000
Permeability Coefficient	=	.66300E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.91658
Parameter B	=	-.14878
Parameter Z	=	.01847
Parameter C	=	.18197E-09
Parameter D	=	4.19356
Number of Iterations	=	9
Total Normalized Difference	=	.10058E-04

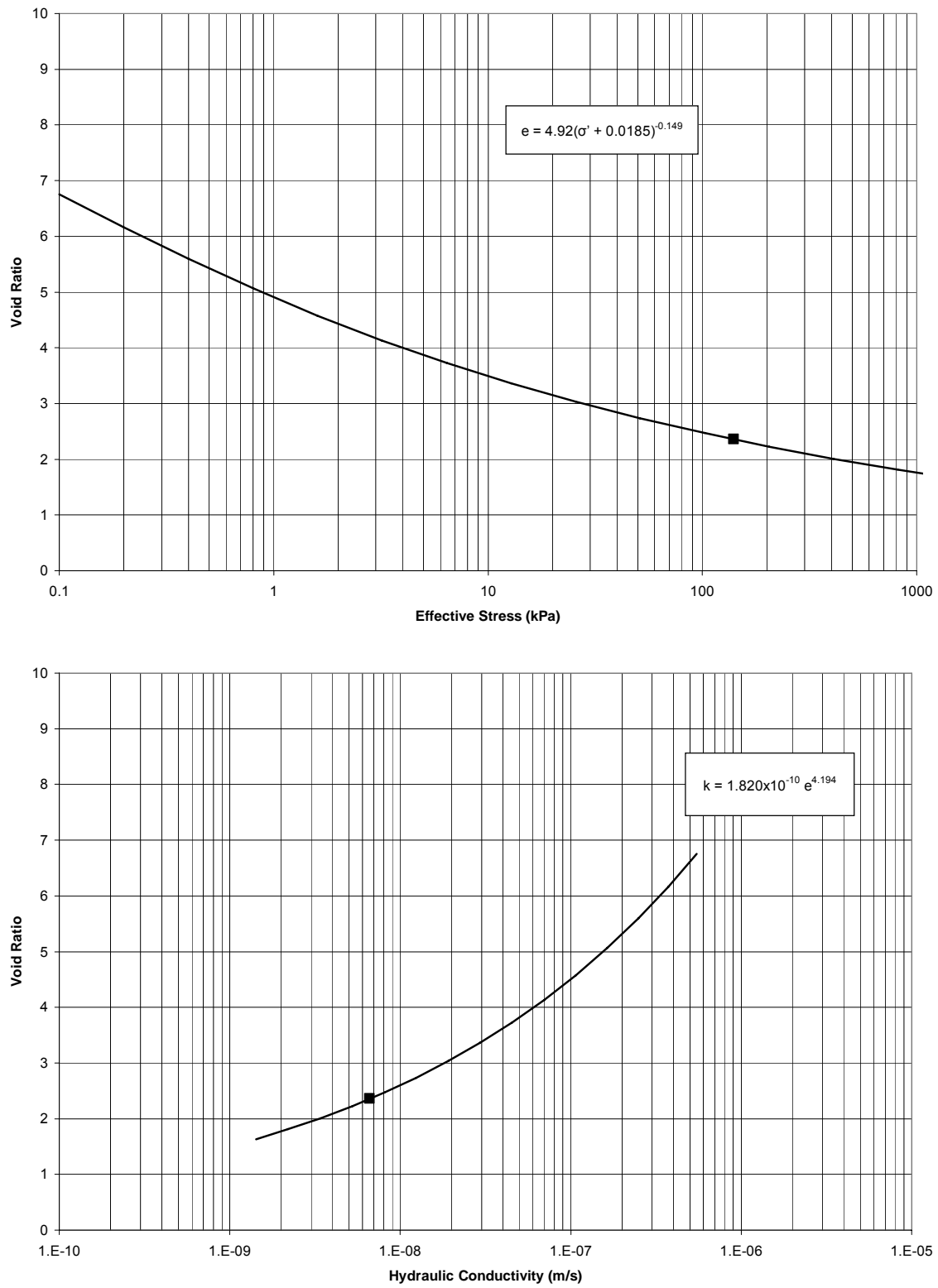


Figure 2 Compressibility and Permeability Characteristics for Sample OL-0302-02

Table 4 – SICTA results for sample OL-0302-03.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-30038 3.3-6.6ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	25.99650
Initial Height of the Sample	=	.02545
Void Ratio at zero effective stress	=	15.50000
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-04
Final Height of the Sample	=	.01023
Final Bottom Effective Stress	=	12.71200

Step Loading Test Results :		
Void Ratio	=	3.53930
Effective Stress	=	127.07800
Permeability Coefficient	=	.43100E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	6.20410
Parameter B	=	-.11585
Parameter Z	=	.00037
Parameter C	=	.53770E-10
Parameter D	=	5.29030
Number of Iterations	=	7
Total Normalized Difference	=	.49101E-04

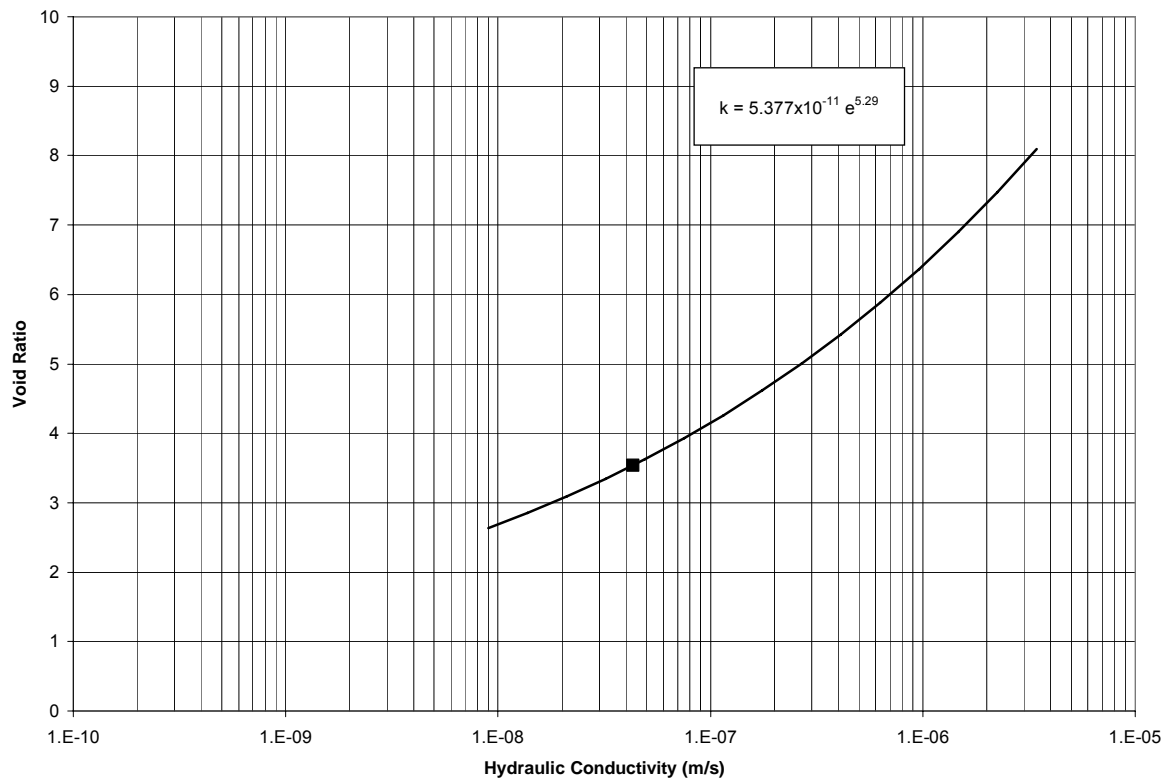
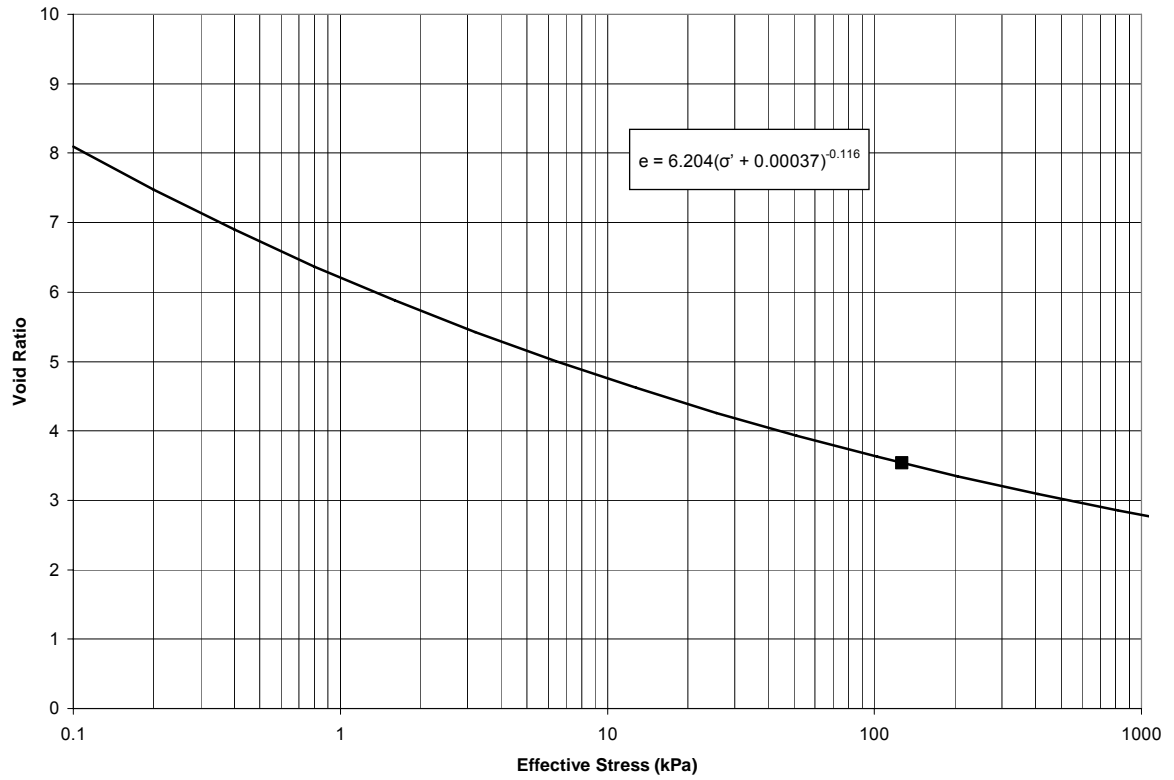


Figure 3 Compressibility and Permeability Characteristics for Sample OL-0302-03

Table 5 – SICTA results for sample OL-0302-04.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-30040 0.0-3.3ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	25.99650
Initial Height of the Sample	=	.02478
Void Ratio at zero effective stress	=	10.48900
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-04
Final Height of the Sample	=	.01785
Final Bottom Effective Stress	=	4.06090

Step Loading Test Results :		
Void Ratio	=	4.03219
Effective Stress	=	167.27600
Permeability Coefficient	=	.64900E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	7.23486
Parameter B	=	-.11418
Parameter Z	=	.03867
Parameter C	=	.95747E-11
Parameter D	=	6.32677
Number of Iterations	=	13
Total Normalized Difference	=	.47584E-04

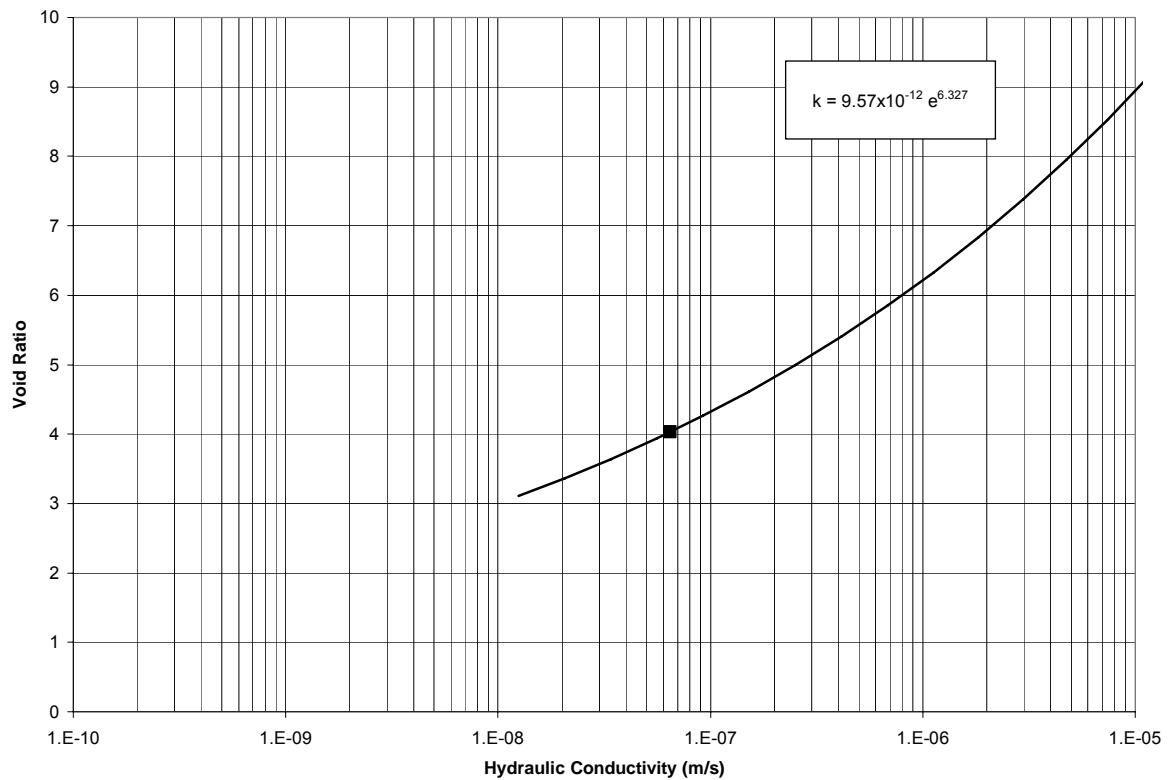
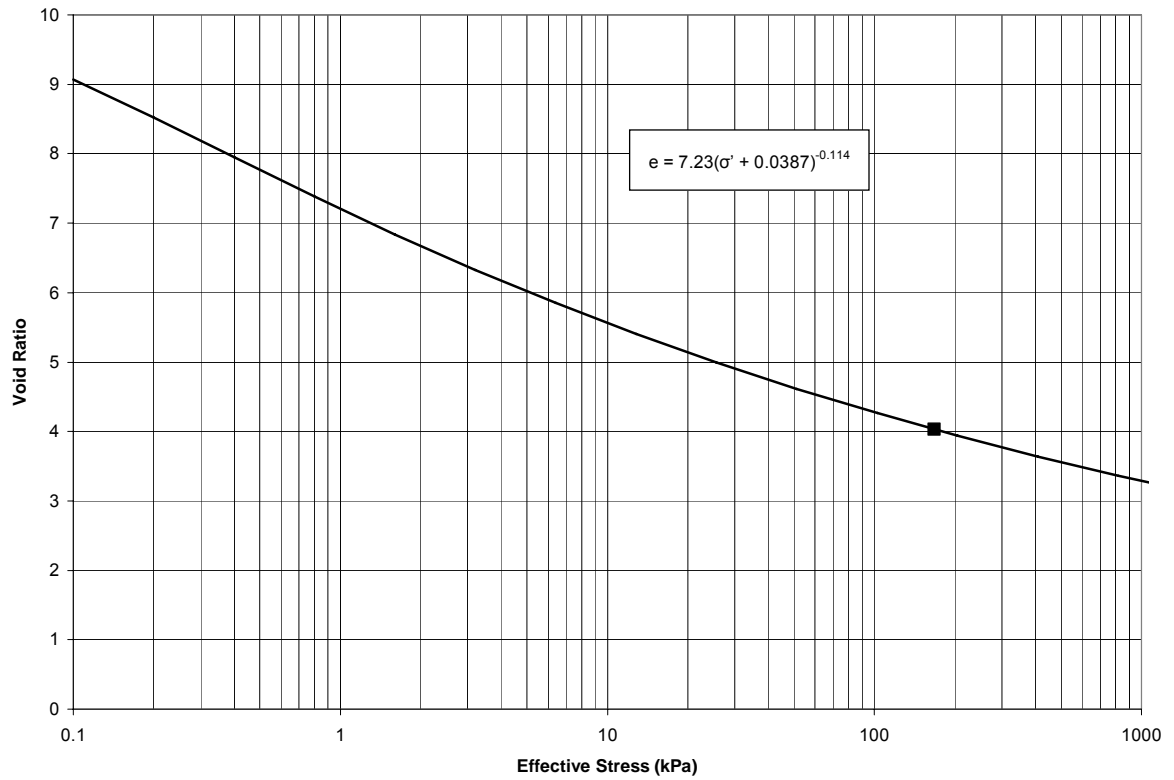


Figure 4 Compressibility and Permeability Characteristics for Sample OL-0302-04

Table 6 – SICTA results for sample OL-0302-05.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-30043 13.2-16.5ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.68320
Initial Height of the Sample	=	.02280
Void Ratio at zero effective stress	=	5.30090
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-05
Final Height of the Sample	=	.01621
Final Bottom Effective Stress	=	2.22700

Step Loading Test Results :		
Void Ratio	=	1.59780
Effective Stress	=	130.63000
Permeability Coefficient	=	.17100E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.29821
Parameter B	=	-.14874
Parameter Z	=	.04117
Parameter C	=	.24879E-08
Parameter D	=	4.11335
Number of Iterations	=	12
Total Normalized Difference	=	.16253E-04

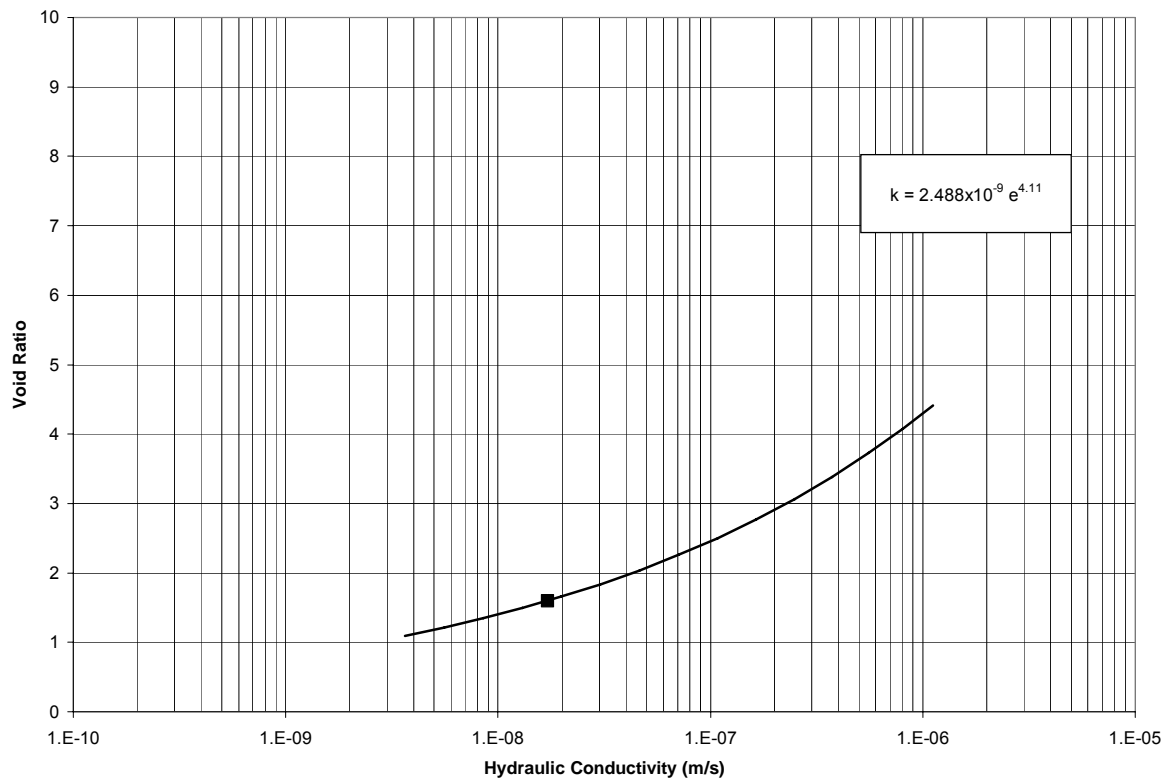
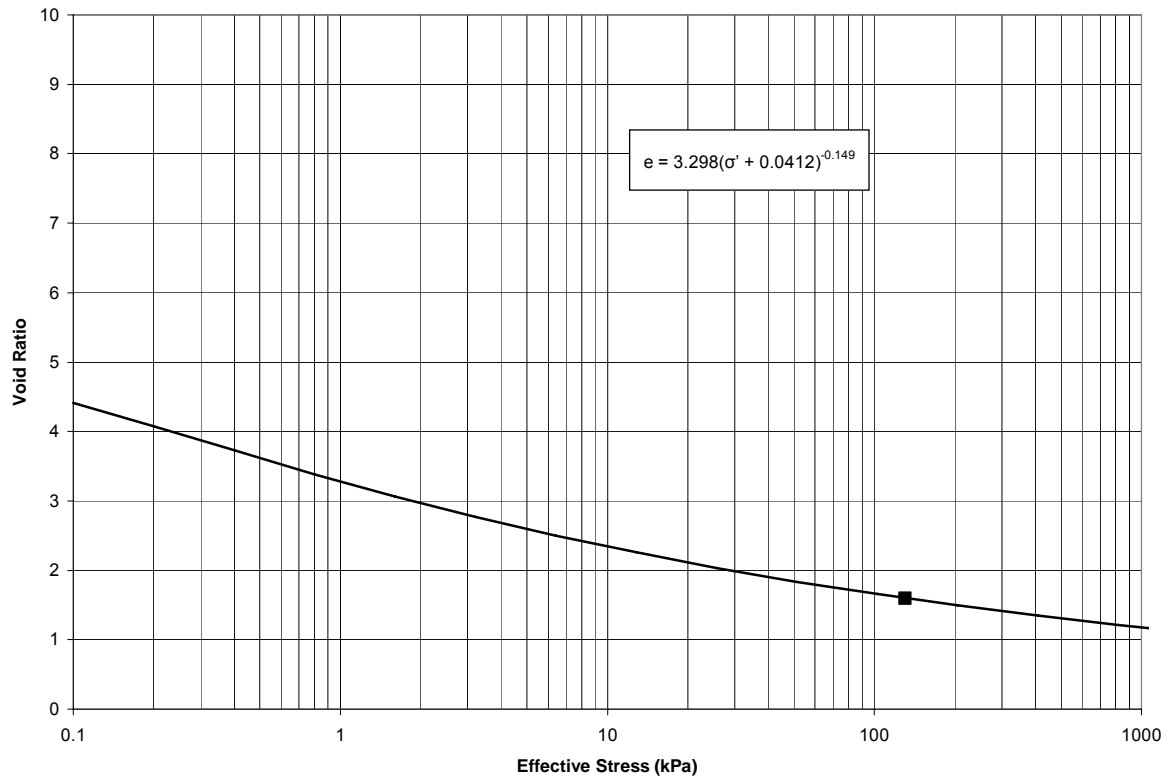


Figure 5 Compressibility and Permeability Characteristics for Sample OL-0302-05

Table 7 – SICTA results for sample OL-0302-06.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-40016 13.2-16.5ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.97750
Initial Height of the Sample	=	.01972
Void Ratio at zero effective stress	=	5.90845
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-06
Final Height of the Sample	=	.01245
Final Bottom Effective Stress	=	6.71230

Step Loading Test Results :		
Void Ratio	=	1.48570
Effective Stress	=	150.59000
Permeability Coefficient	=	.83900E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.73386
Parameter B	=	-.18376
Parameter Z	=	.08229
Parameter C	=	.24725E-09
Parameter D	=	3.08630
Number of Iterations	=	6
Total Normalized Difference	=	.39676E-04

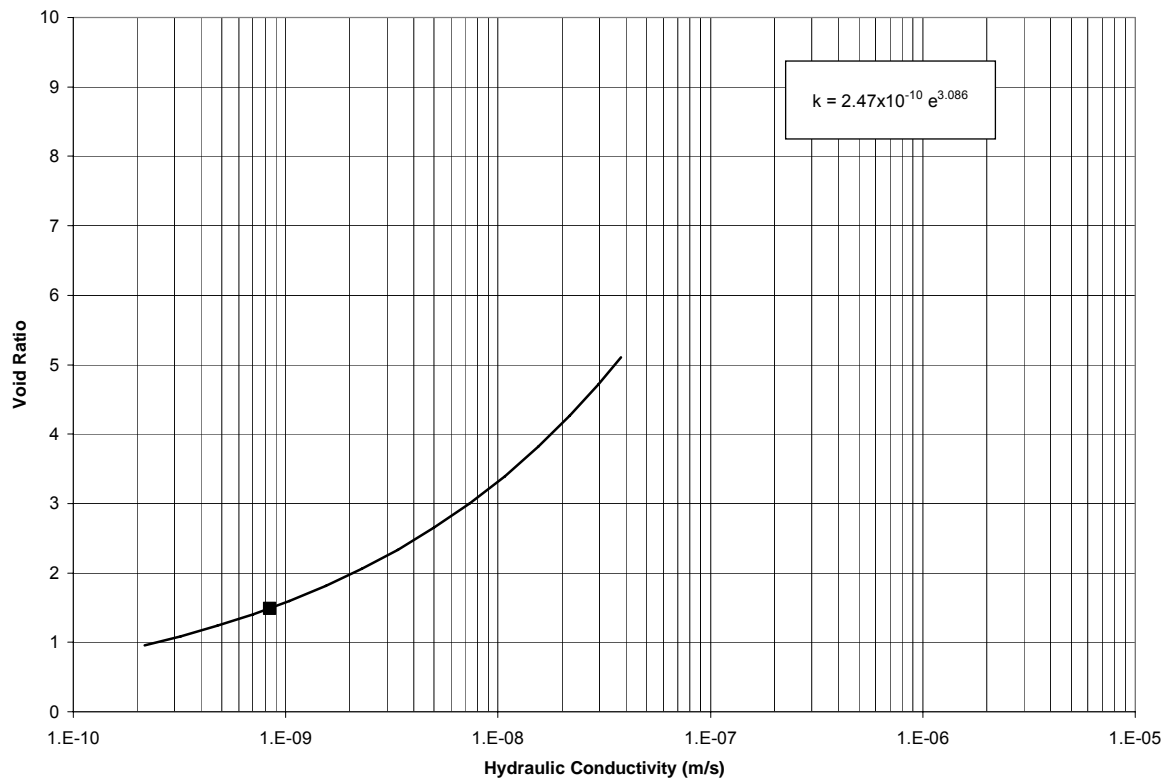
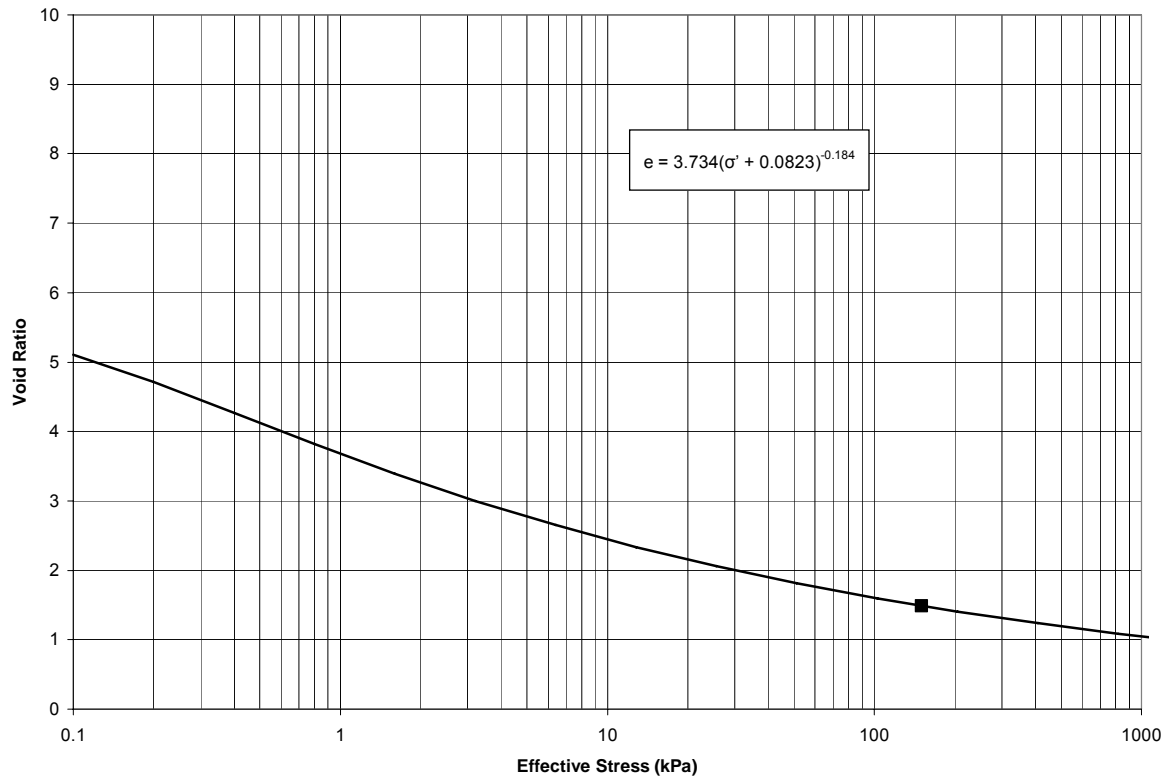


Figure 6 Compressibility and Permeability Characteristics for Sample OL-0302-06

Table 8 – SICTA results for sample OL-0302-07.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-40021 3.3-6.6ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	27.27180
Initial Height of the Sample	=	.02240
Void Ratio at zero effective stress	=	3.80760
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-05
Final Height of the Sample	=	.01673
Final Bottom Effective Stress	=	3.42740

Step Loading Test Results :		
Void Ratio	=	1.29410
Effective Stress	=	131.74700
Permeability Coefficient	=	.55000E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	2.63774
Parameter B	=	-.14588
Parameter Z	=	.08076
Parameter C	=	.23634E-08
Parameter D	=	3.27614
Number of Iterations	=	8
Total Normalized Difference	=	.30028E-04

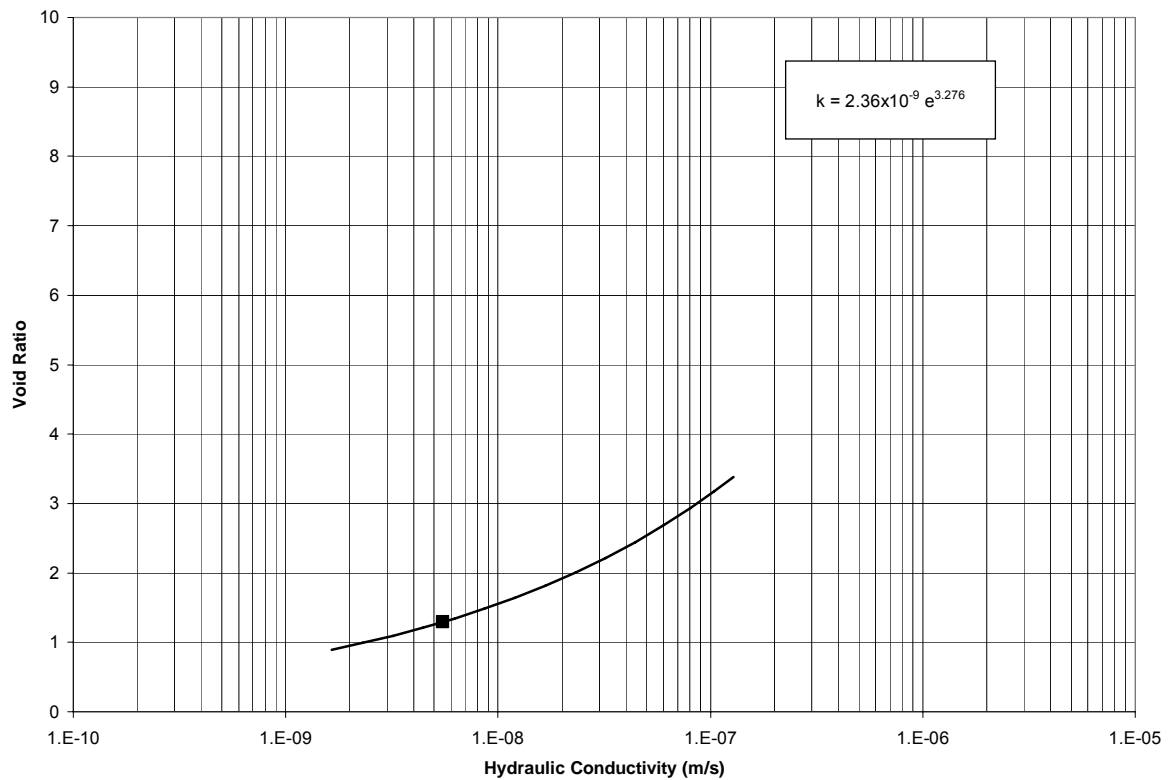
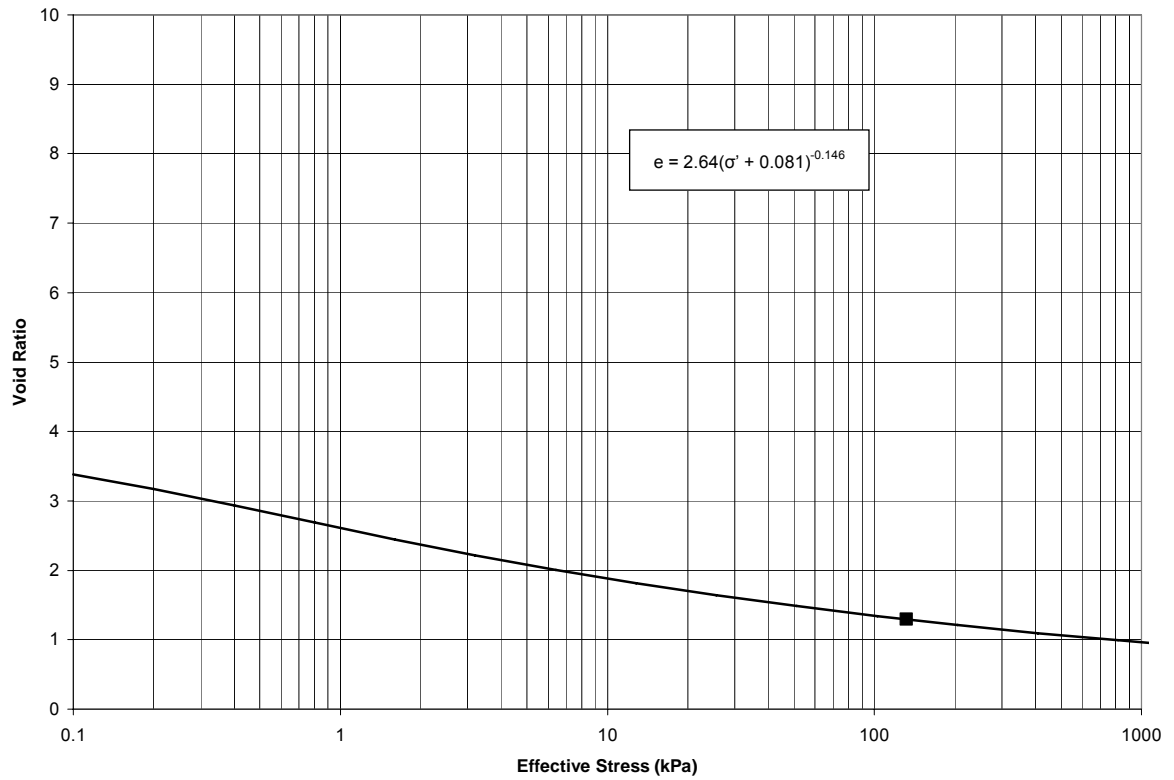


Figure 7 Compressibility and Permeability Characteristics for Sample OL-0302-07

Table 9 – SICTA results for sample OL-0302-08.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-40025 3.3-6.6ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	27.27000
Initial Height of the Sample	=	.02147
Void Ratio at zero effective stress	=	4.83980
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-04
Final Height of the Sample	=	.01701
Final Bottom Effective Stress	=	4.24840

Step Loading Test Results :		
Void Ratio	=	2.29150
Effective Stress	=	152.00000
Permeability Coefficient	=	.79600E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.76005
Parameter B	=	-.09856
Parameter Z	=	.07721
Parameter C	=	.39317E-08
Parameter D	=	3.62749
Number of Iterations	=	9
Total Normalized Difference	=	.56651E-04

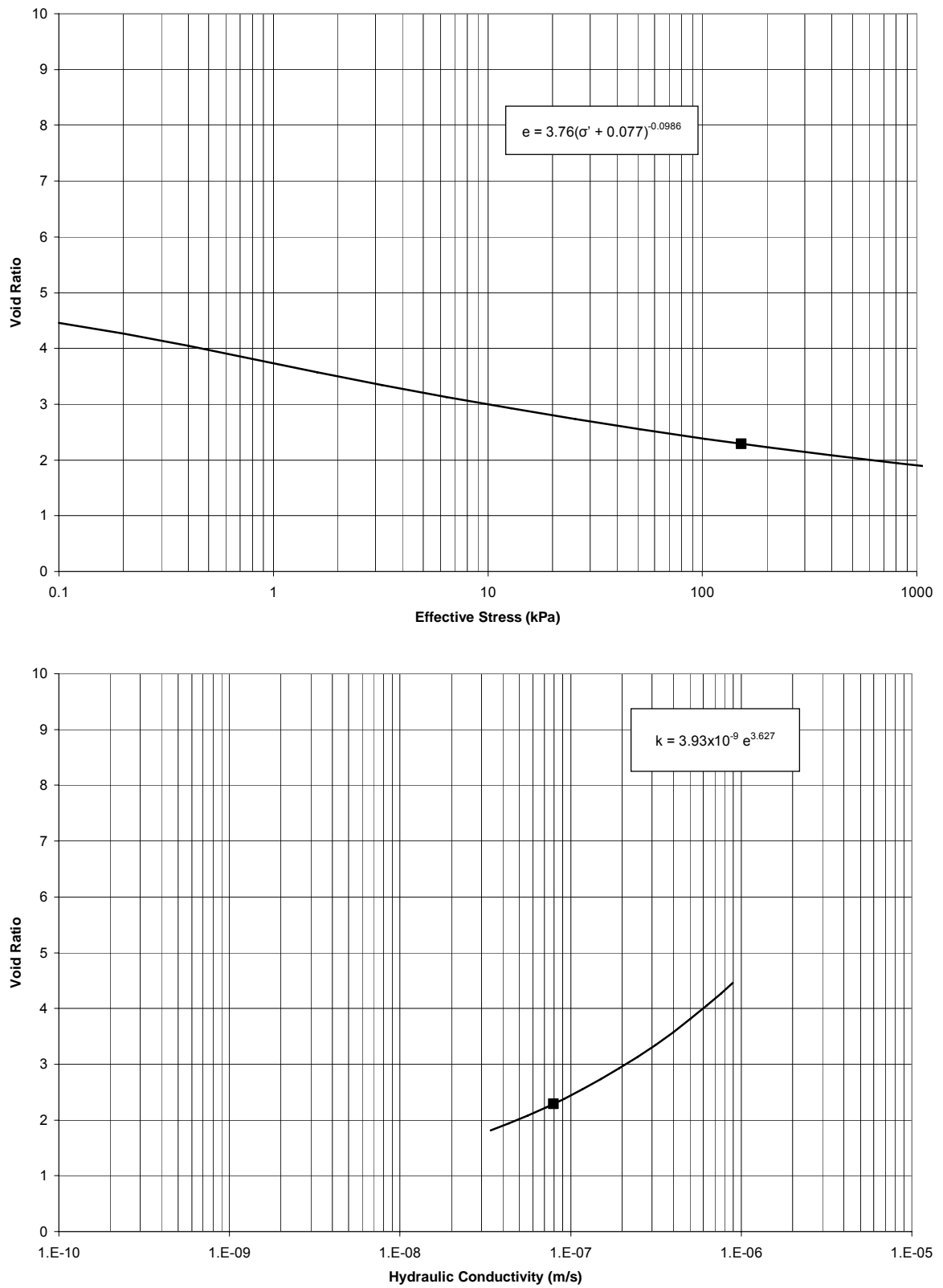


Figure 8 Compressibility and Permeability Characteristics for Sample OL-0302-08

Table 10 – SICTA results for sample OL-0302-09.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-40032 13.2-16.5ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.48700
Initial Height of the Sample	=	.01580
Void Ratio at zero effective stress	=	5.96690
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-05
Final Height of the Sample	=	.00984
Final Bottom Effective Stress	=	20.04120

Step Loading Test Results :		
Void Ratio	=	1.72660
Effective Stress	=	129.92000
Permeability Coefficient	=	.13500E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.88383
Parameter B	=	-.16655
Parameter Z	=	.07590
Parameter C	=	.79964E-10
Parameter D	=	5.17489
Number of Iterations	=	7
Total Normalized Difference	=	.36789E-04

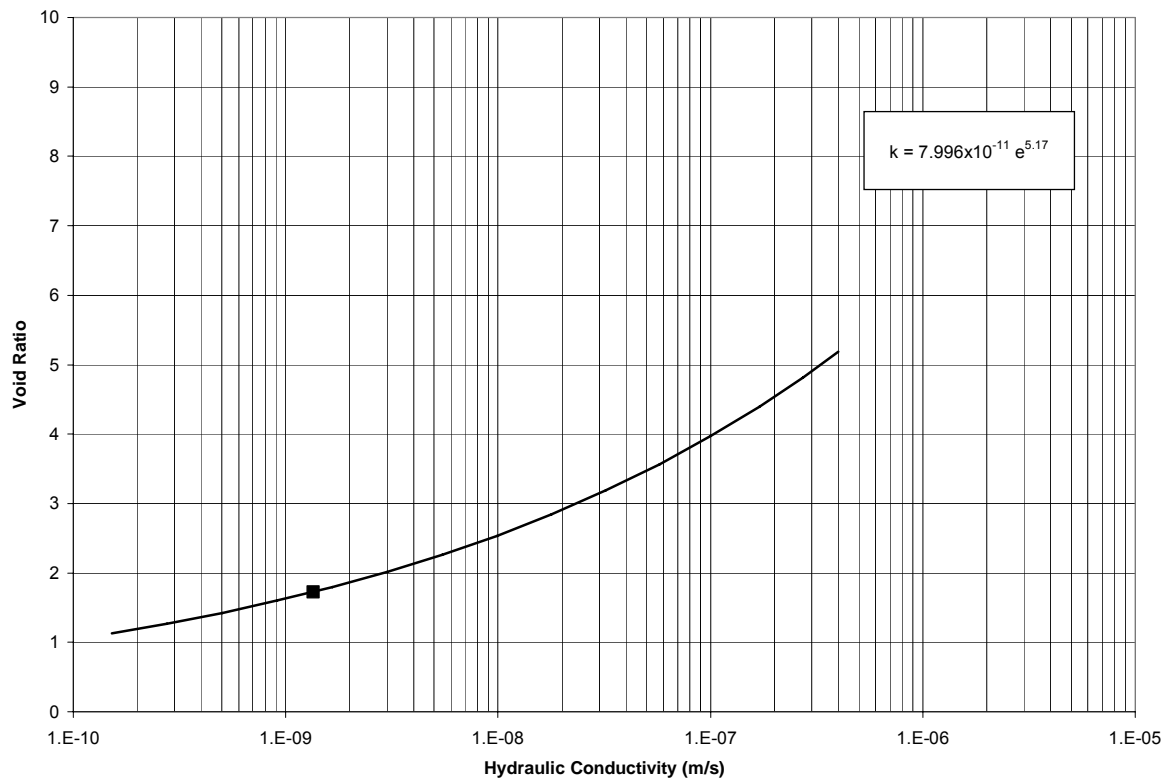
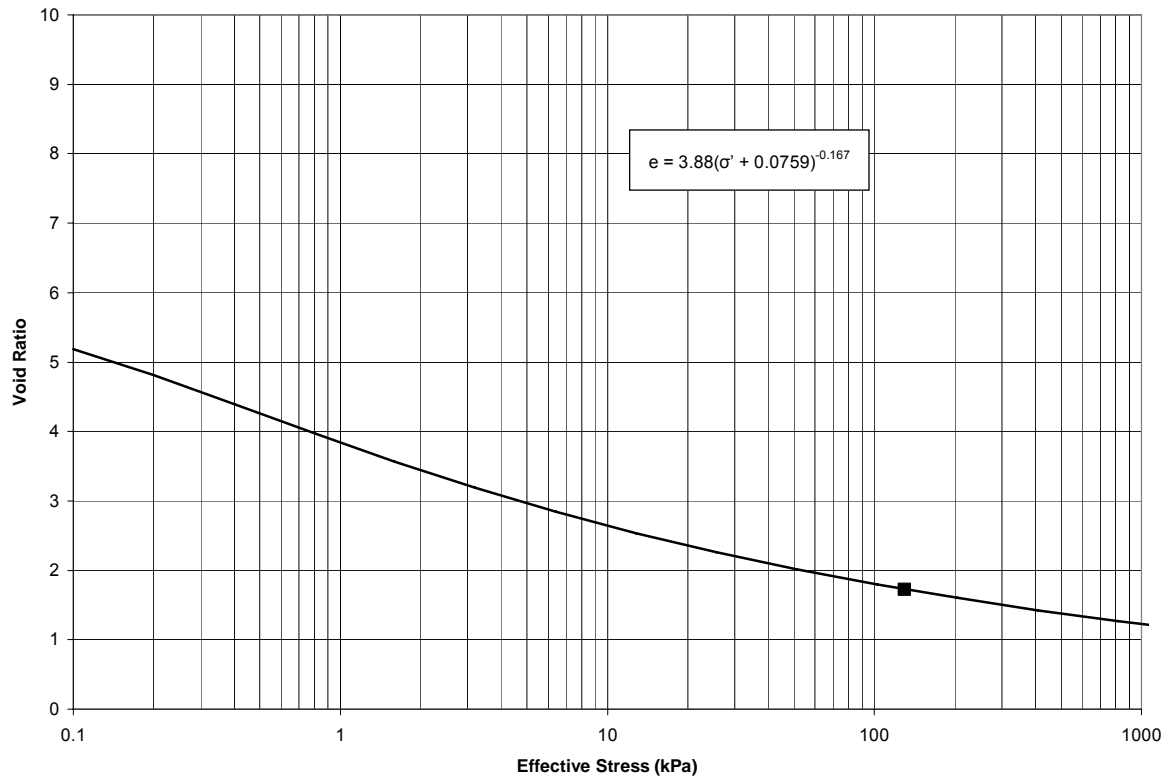


Figure 9 Compressibility and Permeability Characteristics for Sample OL-0302-09

Table 11 – SICTA results for sample OL-0302-10.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-40034 16.5-17.8ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.48700
Initial Height of the Sample	=	.03065
Void Ratio at zero effective stress	=	3.32343
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-06
Final Height of the Sample	=	.02237
Final Bottom Effective Stress	=	5.56596

Step Loading Test Results :		
Void Ratio	=	1.26228
Effective Stress	=	108.87800
Permeability Coefficient	=	.34800E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	2.29242
Parameter B	=	-.12721
Parameter Z	=	.05396
Parameter C	=	.15612E-08
Parameter D	=	3.44156
Number of Iterations	=	7
Total Normalized Difference	=	.59270E-05

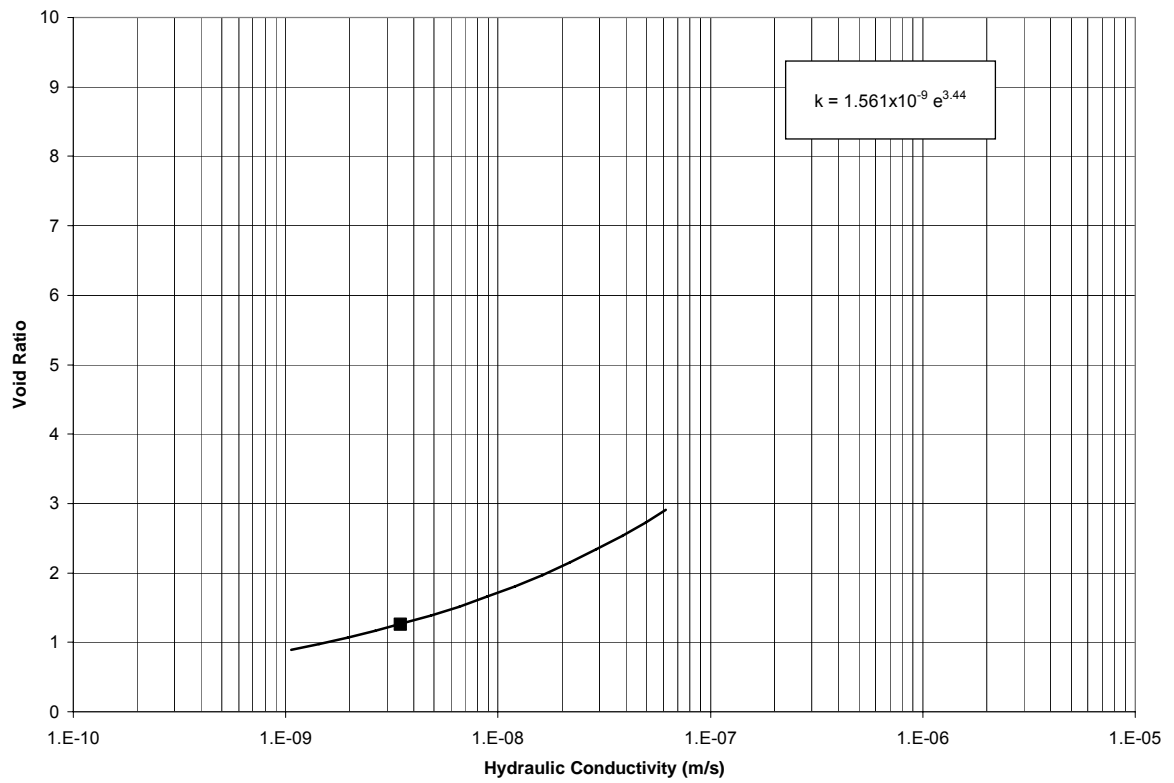
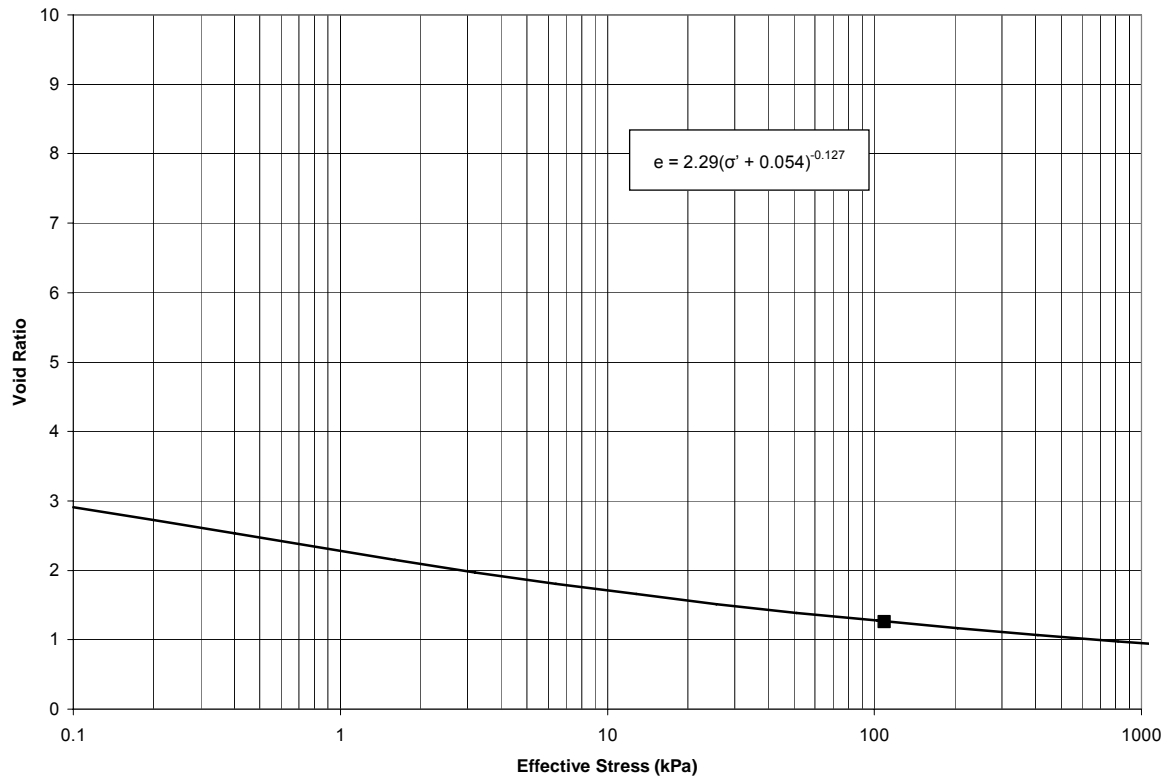


Figure 10 Compressibility and Permeability Characteristics for Sample OL-0302-10

Seepage Induced Consolidation Test (SICT)

The seepage induced consolidation test is an experimental procedure used for determining the consolidation characteristics of soft soils and soil like materials (slurry mine waste, dredged spoils, sludge from waste water treatment plants etc.). The testing procedure consists of three steps.

In the first step the void ratio at the effective stress zero is determined by allowing a slurry column about 0.05 m high to consolidate under its own weight. The average void ratio of the settled slurry is considered the void ratio at the effective stress of zero, or the void ratio at which the soil is formed and the consolidation theory (as opposed to the sedimentation theory) applies.

In the second step, seepage at a constant flow rate is applied through the soil by means of a flow pump and the sample is allowed to consolidate completely, i.e. until the steady state is reached. The steady state is determined from the pressure difference across the sample that is continuously monitored during the test. At steady state, the pressure difference and the final height of the sample are recorded. It is recognized that during this phase of the test the void ratio within the sample is non-uniform and this is correctly accounted for in the test analysis.

In the third step the sample is consolidated under the maximum desired stress level and the hydraulic conductivity is measured with the flow pump using a low flow rate to maintain sample uniformity during the test. At the end of the test the sample is dried and the total volume of solids is determined.

The analysis of the test is performed using the software package SICTA (Seepage Induced Consolidation Test Analysis). The procedure is based on the inverse problem solution approach and the theory used is compatible with the finite strain nonlinear consolidation theory (i.e. no simplifying or restrictive assumptions are made in the analysis). The input data for the SICTA program are all obtained from the described test. The output gives five parameters A, B, Z, C and D that define the consolidation properties for the sample. The compressibility and hydraulic conductivity relations with the five parameters are defined as:

$$\text{Compressibility} \quad e = A (\sigma' + Z)^B$$

$$\text{Hydraulic Conductivity} \quad k = C e^D$$

The more detailed description of the testing equipment and testing and analysis procedures can be found in the following publications:

Abu-Hejleh, A.N., and Znidarcic, D., 1992, User Manual for Computer Program SICTA, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 122 pp.

Znidarcic, D., Abu-Hejleh, A.N., Fairbanks, T. and Robertson A., 1992, Seepage-Induced Consolidation Test; Equipment Description and Users Manual, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 52 pp.

Abu-Hejleh, A.N. and Znidarcic, D., 1994, Estimation of the Consolidation Constitutive Relations, Computer Methods and Advances in Geomechanics, Siriwardane & Zaman (eds) Balkema, Rotterdam, pp. 499-504.

Abu-Hejleh, A. N. and Znidarcic, D., 1996, Consolidation Characteristics of Phosphatic Clays, Journal of Geotechnical Engineering, ASCE, New-York, Vol. 122, No. 4. pp. 295-301.



University of Colorado, Boulder

Dobroslav Znidarčić, Professor

Department of Civil, Environmental, and Architectural Engineering

College of Engineering and Applied Science

428 UCB, Engineering Center, Room OT 649

Boulder, CO 80309-0428

Telephone: 303.492.7577

Fax: 303.492.7317

e-mail: Dobroslav.Znidarcic@colorado.edu

Jeffrey Coffin and Dobroslav Znidarčić

**Consolidation Test Results for
Slurry Samples
Onondaga Lake Pre-design
Investigation project
Purchase order No.
441797.00010.00**

Prepared for:

**Parsons Engineering Science Inc.
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088**

April 26, 2007

Introduction

This report presents the results of the consolidation testing for the following disturbed samples for the Onondaga Lake Pre-design Investigation project:

Location ID	Field Sample ID	Depth
OL-VC-80047	OL-0303-01	0.0'-3.3'
OL-VC-80037	OL-0303-02	0.0'-3.3'
OL-VC-80041	OL-0303-03	0.0'- 3.3'
OL-VC-80030	OL-0303-04	9.9'-13.2'
OL-VC-80031	OL-0303-05	3.3'-6.6'
OL-VC-80028	OL-0303-06	3.3'-6.6'

In this report the samples are identified by their Field Sample ID.

We received the samples in a quart size glass jars. We also received Onondaga Lake water to be used in preparing the slurry sample and for performing the seepage induced consolidation tests (SICT).

The samples had plastic consistency and the process water was added to create a slurry sample suitable for SIC testing.

The natural water and solids contents for the samples were:

Sample	Water Content	Solids Content
OL-0303-01	141.0%	39.9%
OL-0303-02	166.0%	37.3%
OL-0303-03	219.6%	30.9%
OL-0303-04	176.0%	35.9%
OL-0303-05	179.4%	35.5%
OL-0303-06	109.0%	47.5%

The samples were first thoroughly mixed with additional process water to reach the desired consistency for testing. The obtained water and solids contents of the prepared slurries were:

Sample	Water Content	Solids Content
OL-0303-01	449.2%	18.1%
OL-0303-02	394.1%	20.1%
OL-0303-03	495.6%	16.7%
OL-0303-04	487.9%	16.9%
OL-0303-05	426.8%	18.9%
OL-0303-06	240.9%	29.1%

The Seepage Induced Consolidation Test (SICT) and the step loading test were performed on the so prepared slurry. In calculations, the following specific gravity values were used. They were selected from the summary tables of geotechnical parameters at proposed SIC test locations. The specific gravity values obtained for adjacent samples were used in the calculation as the specific gravity tests were not performed on the samples on which the SIC tests were performed.

Sample	G_s
OL-0303-01	2.66
OL-0303-02	2.72
OL-0303-03	2.66
OL-0303-04	2.69
OL-0303-05	2.69
OL-0303-06	2.73

The Seepage Induced Consolidation Test and analysis procedures are described in the attachment to this report

Material Characteristics

The void ratio corresponding to the zero effective stress was found to be:

Sample	e_o
OL-0303-01	7.09
OL-0303-02	7.15
OL-0303-03	8.70
OL-0303-04	7.92
OL-0303-05	8.85
OL-0303-06	4.77

The test results are presented in Tables 2 to 7 and in Figures 1 to 6.

The model parameters A, B, Z, C and D in Table 1 define the compressibility and hydraulic conductivity relationships given by the following expressions, and presented in the figures

Compressibility $e = A (\sigma' + Z)^B$

Hydraulic Conductivity $k = C e^D$

where e is the void ratio, k is the hydraulic conductivity. The values for the parameters A, Z and C depend on the system of units and are given for SI units.

Table 1 – Consolidation model parameters

Sample	A	B	Z(kPa)	C(m/sec)	D
OL-0303-01	4.72	-0.208	0.140	2.7×10^{-10}	4.37
OL-0303-02	4.26	-0.207	0.081	7.4×10^{-11}	4.03
OL-0303-03	5.97	-0.220	0.180	4.1×10^{-11}	3.42
OL-0303-04	4.41	-0.073	0.00032	7.5×10^{-10}	3.85
OL-0303-05	5.91	-0.169	0.091	5.6×10^{-10}	4.10
OL-0303-06	3.35	-0.134	0.071	1.3×10^{-9}	3.60

Table 2 – SICTA results for sample OL-0303-01.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-80047 0.0-3.3ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.09460
Initial Height of the Sample	=	.02344
Void Ratio at zero effective stress	=	7.09260
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-05
Final Height of the Sample	=	.01586
Final Bottom Effective Stress	=	5.64760

Step Loading Test Results :		
Void Ratio	=	1.71080
Effective Stress	=	132.23420
Permeability Coefficient	=	.27900E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.71749
Parameter B	=	-.20761
Parameter Z	=	.14028
Parameter C	=	.26685E-09
Parameter D	=	4.37112
Number of Iterations	=	5
Total Normalized Difference	=	.89941E-04

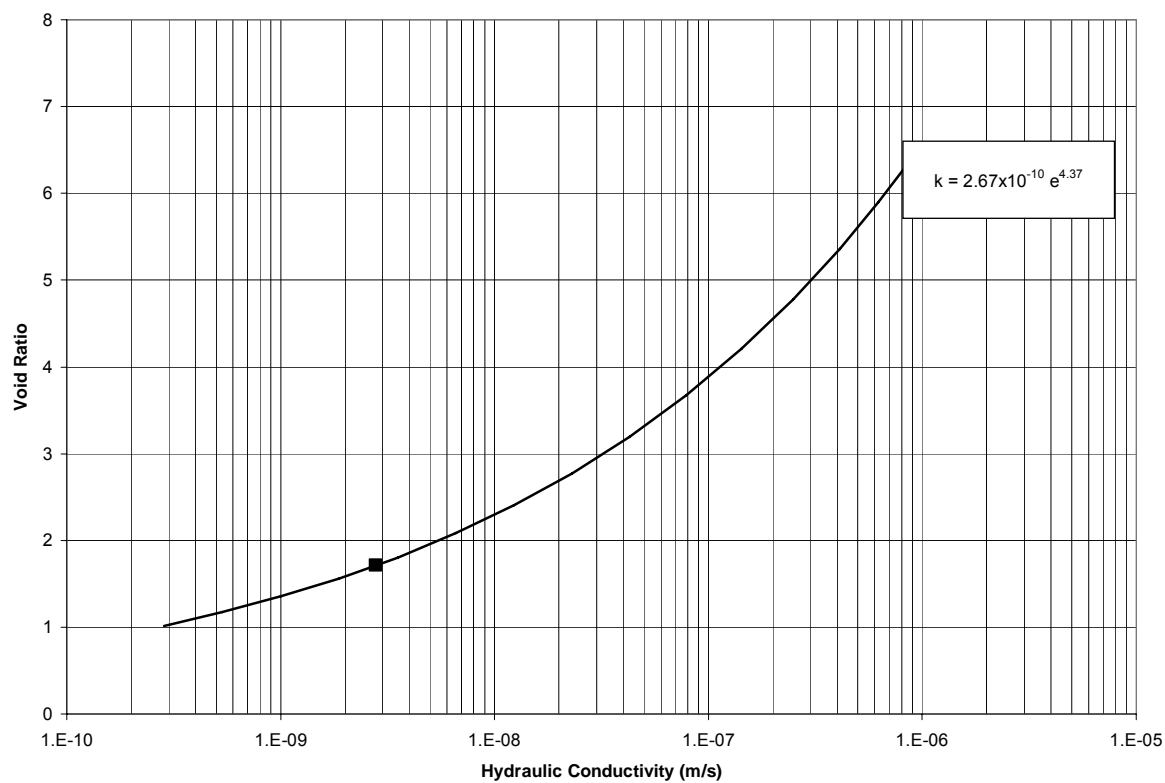
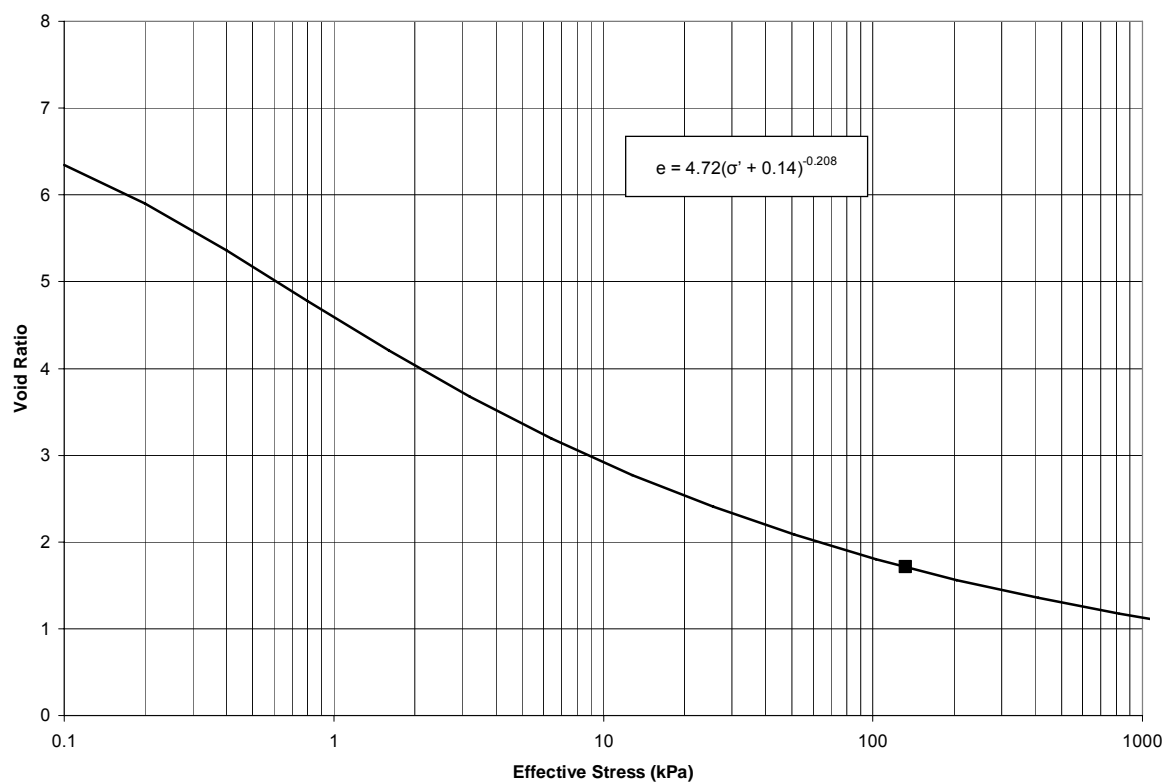


Figure 1 Compressibility and Permeability Characteristics for Sample OL-0303-01

Table 3 – SICTA results for sample OL-0303-02.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-80037 0.0-3.3ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.68320
Initial Height of the Sample	=	.02560
Void Ratio at zero effective stress	=	7.15313
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-06
Final Height of the Sample	=	.01651
Final Bottom Effective Stress	=	4.16288

Step Loading Test Results :		
Void Ratio	=	1.50883
Effective Stress	=	151.79290
Permeability Coefficient	=	.38800E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.25961
Parameter B	=	-.20662
Parameter Z	=	.08136
Parameter C	=	.73985E-10
Parameter D	=	4.02870
Number of Iterations	=	5
Total Normalized Difference	=	.75812E-04

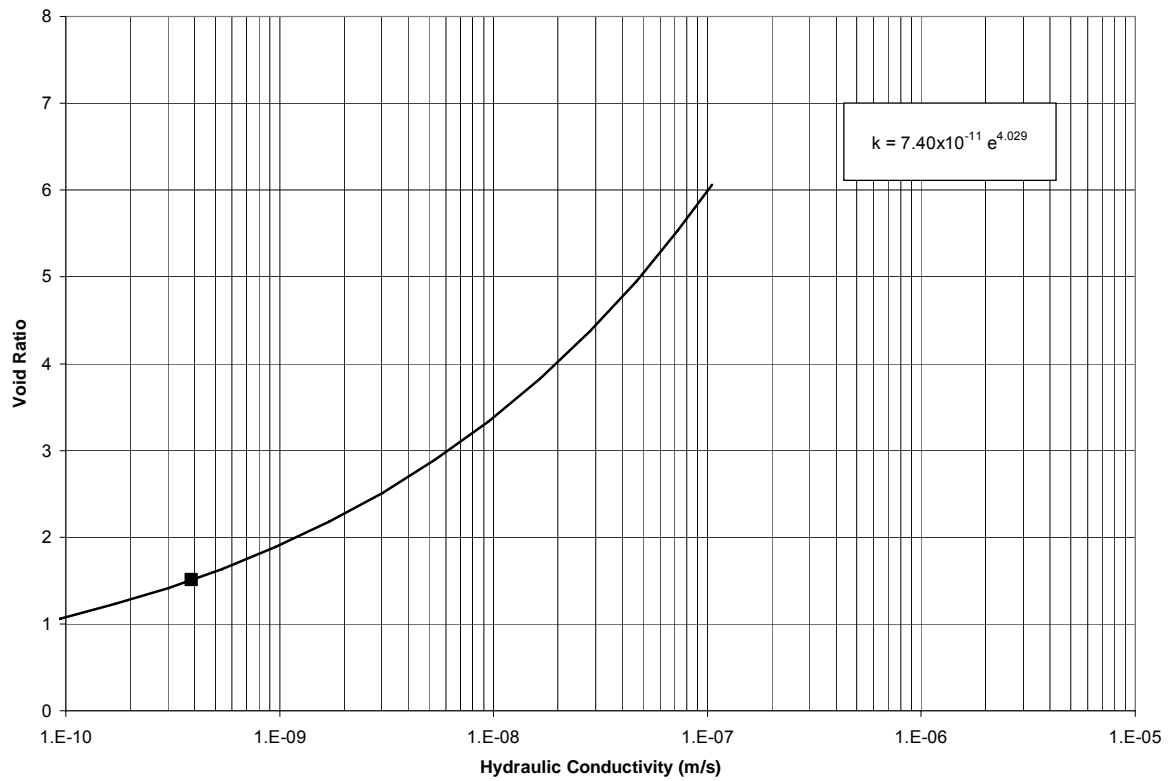
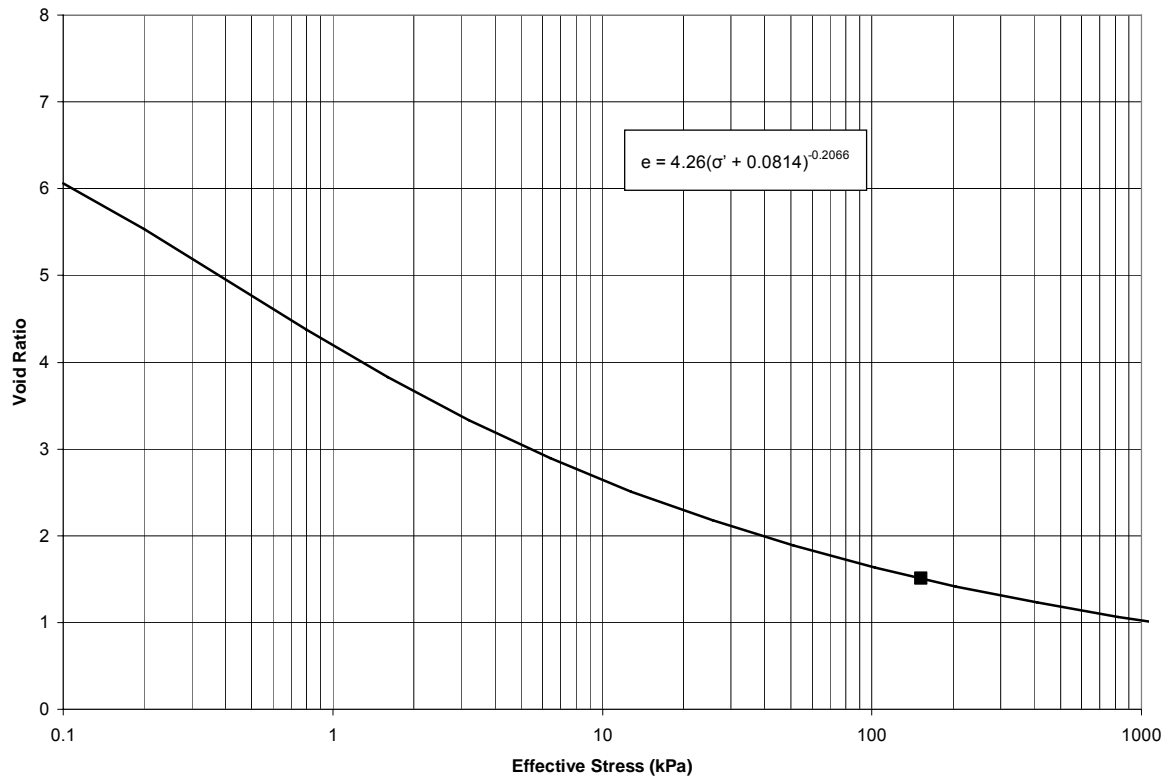


Figure 2 Compressibility and Permeability Characteristics for Sample OL-0303-02

Table 4 – SICTA results for sample OL-0303-03.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-80041 0.0-3.3ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.09460
Initial Height of the Sample	=	.02440
Void Ratio at zero effective stress	=	8.70460
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-06
Final Height of the Sample	=	.01531
Final Bottom Effective Stress	=	8.56750

Step Loading Test Results :		
Void Ratio	=	2.03710
Effective Stress	=	132.43720
Permeability Coefficient	=	.47100E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	5.96820
Parameter B	=	-.21993
Parameter Z	=	.17978
Parameter C	=	.41188E-10
Parameter D	=	3.42464
Number of Iterations	=	5
Total Normalized Difference	=	.15218E-05

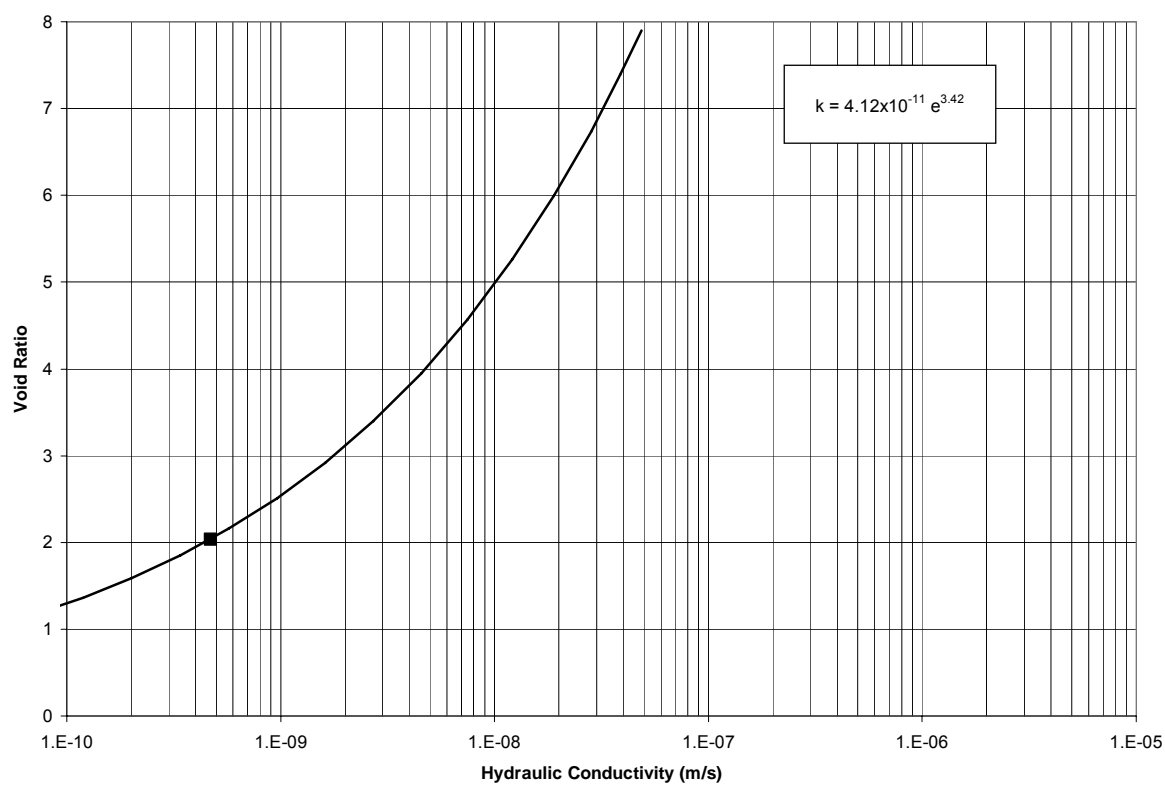
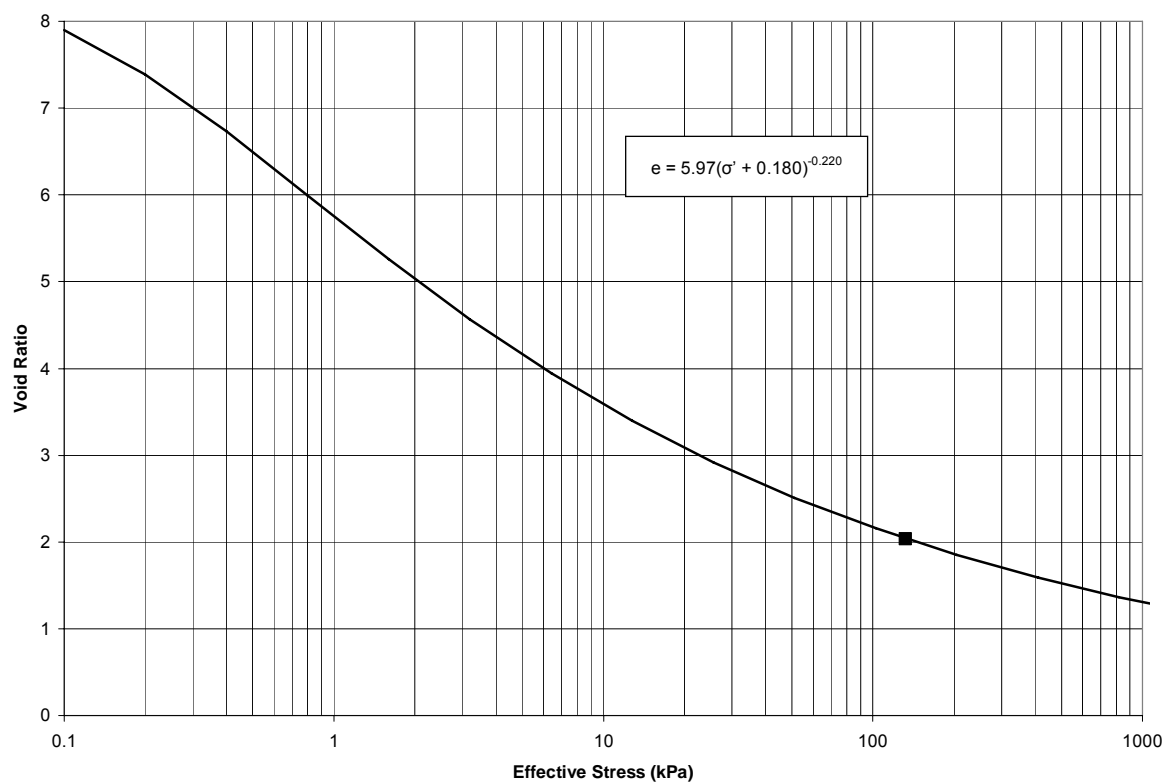


Figure 3 Compressibility and Permeability Characteristics for Sample OL-0303-03

Table 5 – SICTA results for sample OL-0303-04.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-80030 9.9-13.2ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.38890
Initial Height of the Sample	=	.02304
Void Ratio at zero effective stress	=	7.92110
Top Effective Stress	=	.07000
Darcian Velocity	=	.25000E-04
Final Height of the Sample	=	.01248
Final Bottom Effective Stress	=	24.31860

Step Loading Test Results :		
Void Ratio	=	3.05290
Effective Stress	=	152.14640
Permeability Coefficient	=	.54900E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.40524
Parameter B	=	-.07298
Parameter Z	=	.00032
Parameter C	=	.74951E-09
Parameter D	=	3.84722
Number of Iterations	=	6
Total Normalized Difference	=	.63940E-05

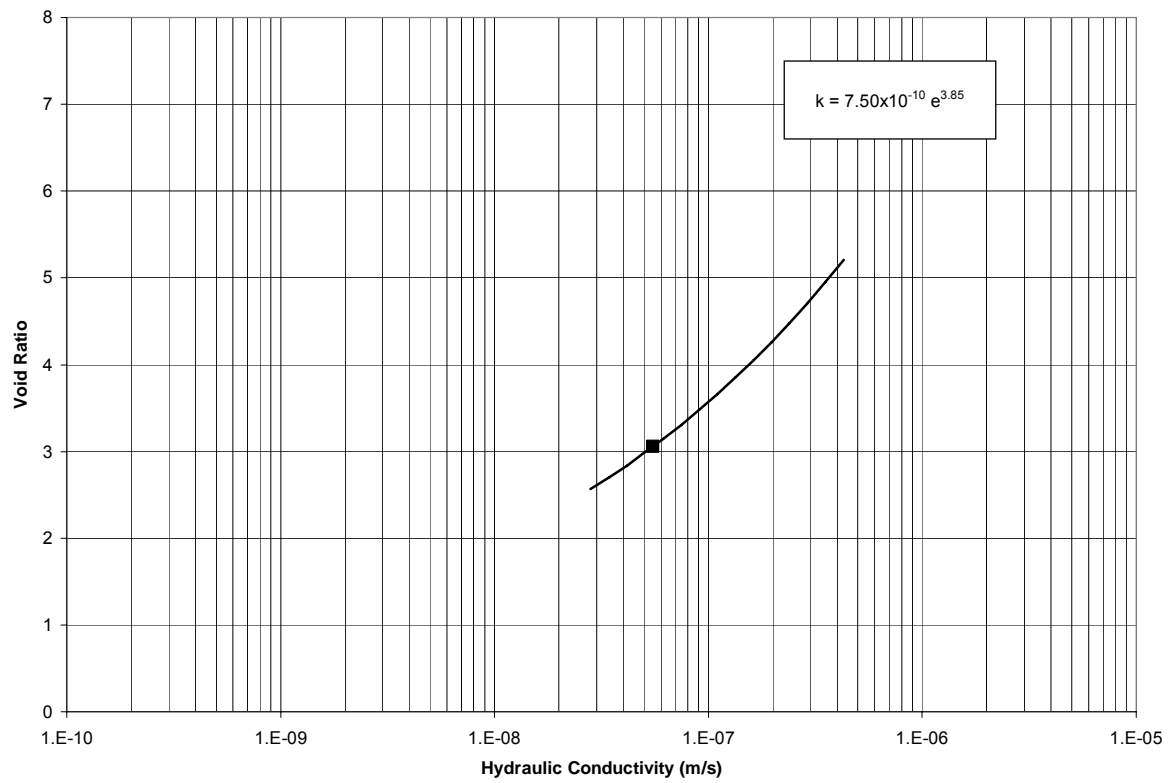
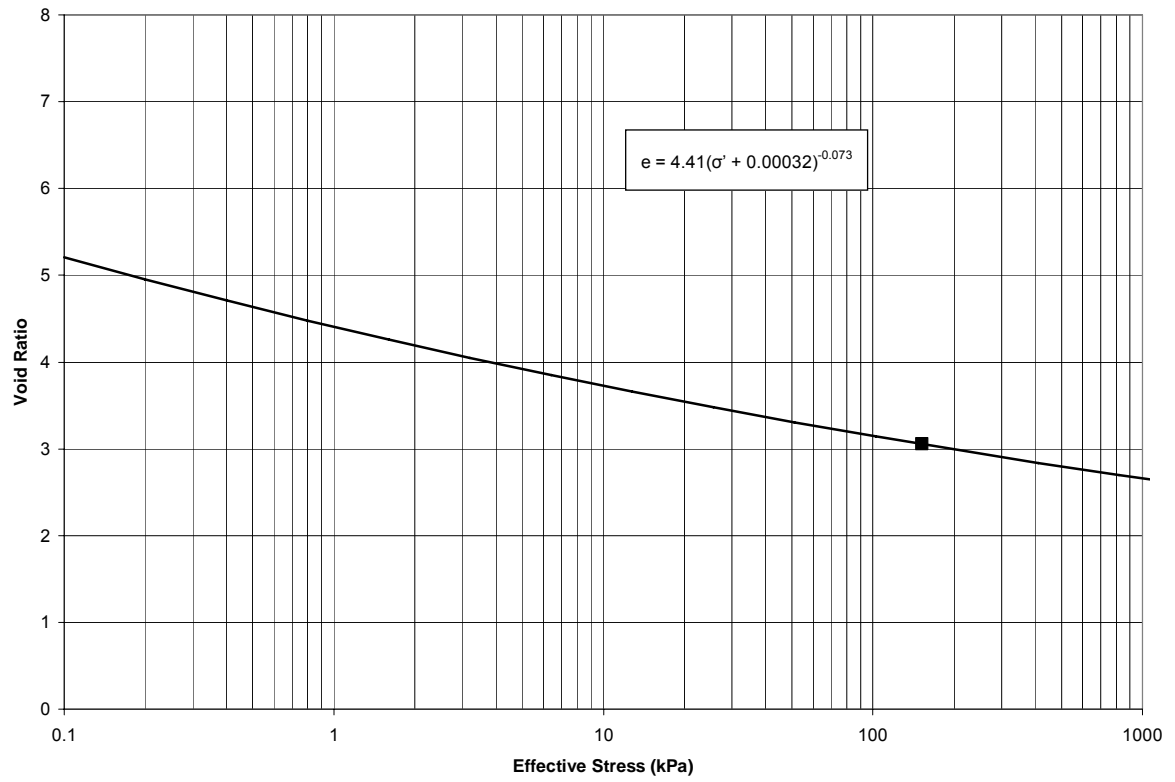


Figure 4 Compressibility and Permeability Characteristics for Sample OL-0303-04

Table 6 – SICTA results for sample OL-0303-05.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-80028 3.3-6.6ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.38900
Initial Height of the Sample	=	.02893
Void Ratio at zero effective stress	=	8.85300
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-04
Final Height of the Sample	=	.02078
Final Bottom Effective Stress	=	2.61934

Step Loading Test Results :		
Void Ratio	=	2.42760
Effective Stress	=	192.98980
Permeability Coefficient	=	.21200E-07

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	5.90856
Parameter B	=	-.16901
Parameter Z	=	.09140
Parameter C	=	.55775E-09
Parameter D	=	4.10174
Number of Iterations	=	11
Total Normalized Difference	=	.68624E-04

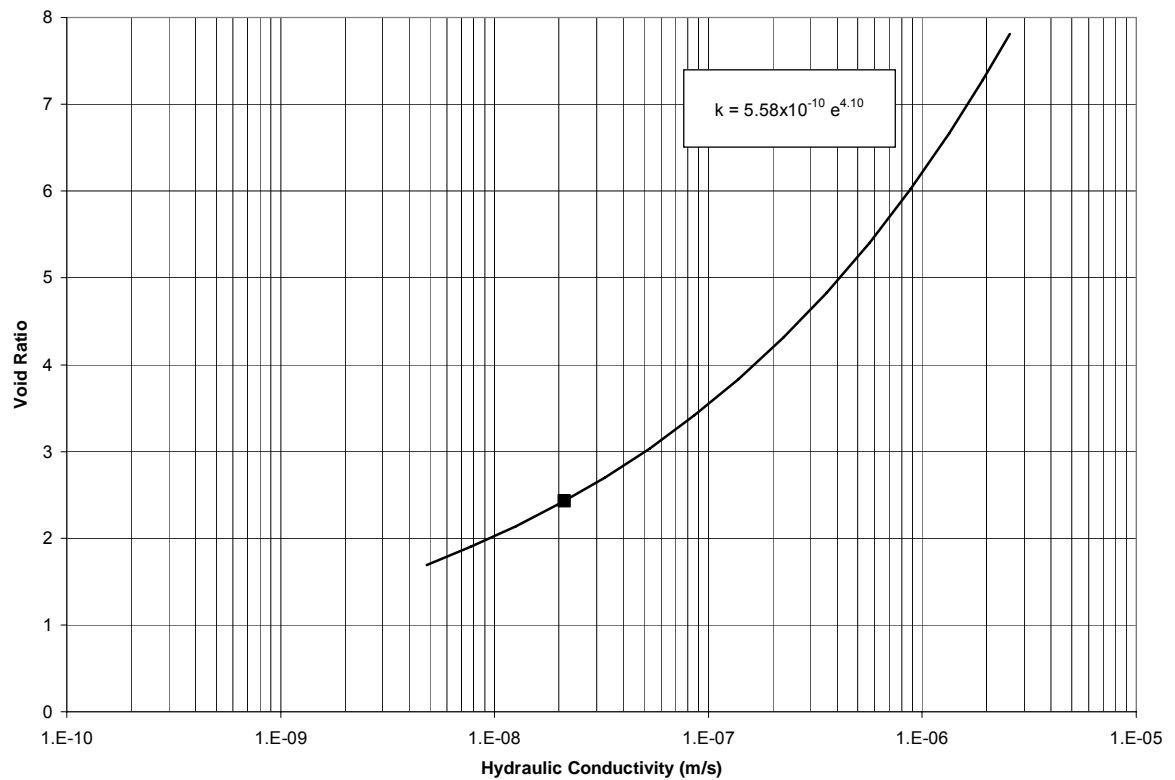
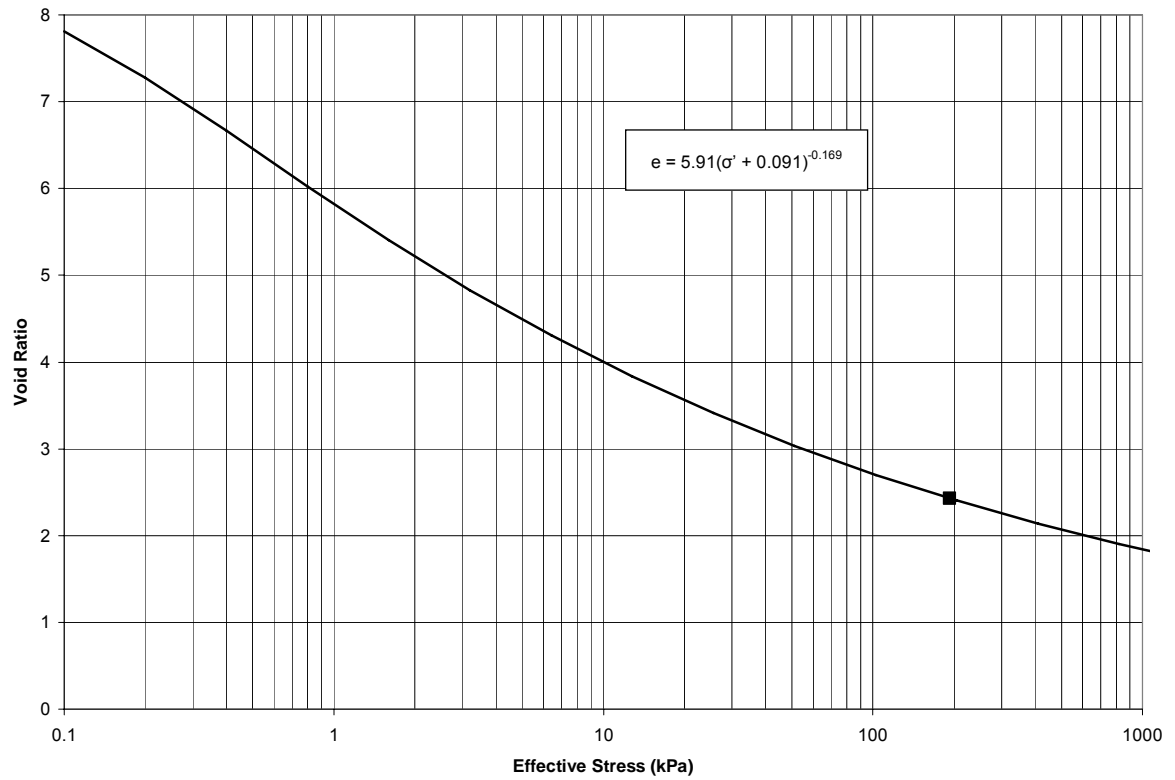


Figure 5 Compressibility and Permeability Characteristics for Sample OL-0303-05

Table 7 – SICTA results for sample OL-0303-06.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-80028 3.3-6.6ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.80000
Unit Weight of Solids	=	26.78130
Initial Height of the Sample	=	.03088
Void Ratio at zero effective stress	=	4.77240
Top Effective Stress	=	.07000
Darcian Velocity	=	.25000E-05
Final Height of the Sample	=	.02144
Final Bottom Effective Stress	=	8.35566

Step Loading Test Results :		
Void Ratio	=	1.71230
Effective Stress	=	151.03640
Permeability Coefficient	=	.92700E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.34819
Parameter B	=	-.13364
Parameter Z	=	.07050
Parameter C	=	.13360E-08
Parameter D	=	3.60163
Number of Iterations	=	7
Total Normalized Difference	=	.73068E-04

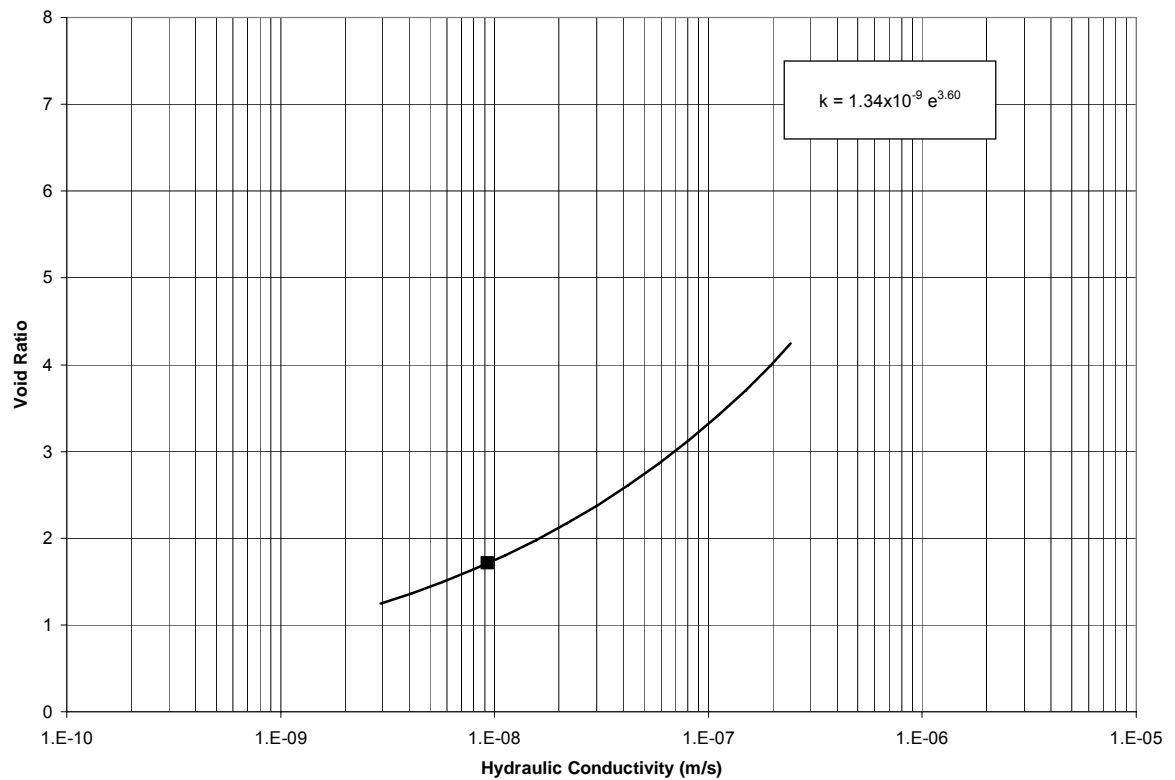
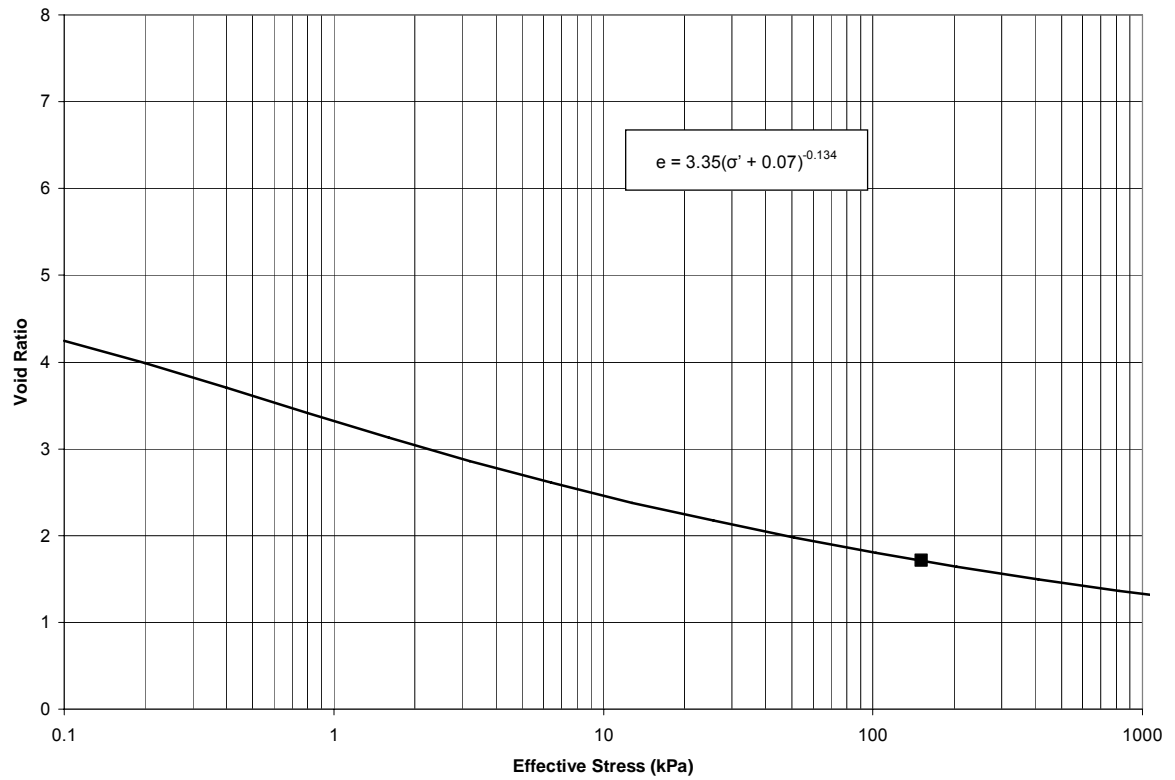


Figure 6 Compressibility and Permeability Characteristics for Sample OL-0303-06

Seepage Induced Consolidation Test (SICT)

The seepage induced consolidation test is an experimental procedure used for determining the consolidation characteristics of soft soils and soil like materials (slurry mine waste, dredged spoils, sludge from waste water treatment plants etc.). The testing procedure consists of three steps.

In the first step the void ratio at the effective stress zero is determined by allowing a slurry column about 0.05 m high to consolidate under its own weight. The average void ratio of the settled slurry is considered the void ratio at the effective stress of zero, or the void ratio at which the soil is formed and the consolidation theory (as opposed to the sedimentation theory) applies.

In the second step, seepage at a constant flow rate is applied through the soil by means of a flow pump and the sample is allowed to consolidate completely, i.e. until the steady state is reached. The steady state is determined from the pressure difference across the sample that is continuously monitored during the test. At steady state, the pressure difference and the final height of the sample are recorded. It is recognized that during this phase of the test the void ratio within the sample is non-uniform and this is correctly accounted for in the test analysis.

In the third step the sample is consolidated under the maximum desired stress level and the hydraulic conductivity is measured with the flow pump using a low flow rate to maintain sample uniformity during the test. At the end of the test the sample is dried and the total volume of solids is determined.

The analysis of the test is performed using the software package SICTA (Seepage Induced Consolidation Test Analysis). The procedure is based on the inverse problem solution approach and the theory used is compatible with the finite strain nonlinear consolidation theory (i.e. no simplifying or restrictive assumptions are made in the analysis). The input data for the SICTA program are all obtained from the described test. The output gives five parameters A, B, Z, C and D that define the consolidation properties for the sample. The compressibility and hydraulic conductivity relations with the five parameters are defined as:

$$\text{Compressibility} \quad e = A (\sigma' + Z)^B$$

$$\text{Hydraulic Conductivity} \quad k = C e^D$$

The more detailed description of the testing equipment and testing and analysis procedures can be found in the following publications:

Abu-Hejleh, A.N., and Znidarcic, D., 1992, User Manual for Computer Program SICTA, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 122 pp.

Znidarcic, D., Abu-Hejleh, A.N., Fairbanks, T. and Robertson A., 1992, Seepage-Induced Consolidation Test; Equipment Description and Users Manual, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 52 pp.

Abu-Hejleh, A.N. and Znidarcic, D., 1994, Estimation of the Consolidation Constitutive Relations, Computer Methods and Advances in Geomechanics, Siriwardane & Zaman (eds) Balkema, Rotterdam, pp. 499-504.

Abu-Hejleh, A. N. and Znidarcic, D., 1996, Consolidation Characteristics of Phosphatic Clays, Journal of Geotechnical Engineering, ASCE, New-York, Vol. 122, No. 4. pp. 295-301.



University of Colorado, Boulder

Dobroslav Znidarčić, Professor

Department of Civil, Environmental, and Architectural Engineering

College of Engineering and Applied Science

428 UCB, Engineering Center, Room OT 649

Boulder, CO 80309-0428

Telephone: 303.492.7577

Fax: 303.492.7317

e-mail: Dobroslav.Znidarcic@colorado.edu

Jeffrey Coffin and Dobroslav Znidarčić

**Consolidation Test Results for
Slurry Samples
Onondaga Lake Pre-design
Investigation project
Purchase order No.
441797.00010.00**

Prepared for:

**Parsons Engineering Science Inc.
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088**

April 30, 2007

Introduction

This report presents the results of the consolidation testing for the following disturbed samples for the Onondaga Lake Pre-design Investigation project:

Location ID	Field Sample ID	Depth
OL-STA-30033	OL-0298-01	35.0' - 37.0'
OL-VC-60056	OL-0298-02	0.5' - 3.3'
OL-VC-60061	OL-0298-03	13.2' - 16.5'
OL-VC-60054	OL-0298-04	3.3' - 6.6'
OL-STA-10108	OL-0298-05	47.0' - 49.0'
OL-VC-60064	OL-0298-06	0.0' - 3.3'

In this report the samples are identified by their Field Sample ID.

We received the samples in a quart size glass jars. We also received Onondaga Lake water to be used in preparing the slurry sample and for performing the seepage induced consolidation tests (SICT).

The samples had plastic consistency and the process water was added to create a slurry sample suitable for SIC testing.

The natural water and solids contents for the samples were:

Sample	Water Content	Solids Content
OL-0298-01	74.18%	57.4%
OL-0298-02	158.9%	38.6%
OL-0298-03	75.51%	57.0%
OL-0298-04	137.9%	42.0%
OL-0298-05	86.43%	53.6%
OL-0298-06	112.3%	47.1%

The samples were first thoroughly mixed with additional process water to reach the desired consistency for testing. The obtained water and solids contents of the prepared slurries were:

Sample	Water Content	Solids Content
OL-0298-01	298.0%	25.1%
OL-0298-02	386.7%	20.5%
OL-0298-03	377.0%	21.0%
OL-0298-04	419.5%	19.2%
OL-0298-05	494.1%	16.8%
OL-0298-06	370.9%	21.2%

The Seepage Induced Consolidation Test (SICT) and the step loading test were performed on the so prepared slurry. In calculations, the following specific gravity values were used. They were selected from the summary tables of geotechnical parameters at proposed SIC

test locations. The specific gravity values obtained for adjacent samples were used in the calculation as the specific gravity tests were not performed on the samples on which the SIC tests were performed.

Sample	G_s
OL-0298-01	2.64
OL-0298-02	2.49
OL-0298-03	2.66
OL-0298-04	2.51
OL-0298-05	2.61
OL-0298-06	2.74

The Seepage Induced Consolidation Test and analysis procedures are described in the attachment to this report

Material Characteristics

The void ratio corresponding to the zero effective stress was found to be:

Sample	e_o
OL-0298-01	4.78
OL-0298-02	6.09
OL-0298-03	5.30
OL-0298-04	6.69
OL-0298-05	4.56
OL-0298-06	4.56

The test results are presented in Tables 2 to 7 and in Figures 1 to 6.

The model parameters A, B, Z, C and D in Table 1 define the compressibility and hydraulic conductivity relationships given by the following expressions, and presented in the figures

Compressibility $e = A (\sigma' + Z)^B$

Hydraulic Conductivity $k = C e^D$

where e is the void ratio, k is the hydraulic conductivity. The values for the parameters A, Z and C depend on the system of units and are given for SI units.

Table 1 – Consolidation model parameters

Sample	A	B	Z(kPa)	C(m/sec)	D
OL-0298-01	4.95	-0.247	1.153	2.0×10^{-9}	2.49
OL-0298-02	4.15	-0.202	0.150	1.7×10^{-10}	3.79
OL-0298-03	3.46	-0.178	0.091	4.8×10^{-10}	4.17
OL-0298-04	4.13	-0.218	0.110	1.7×10^{-10}	3.67
OL-0298-05	8.05	-0.298	6.727	9.9×10^{-11}	3.67
OL-0298-06	3.10	-0.170	0.031	3.1×10^{-10}	3.90

Table 2 – SICTA results for sample OL-0298-01.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-STA-20033 35-37ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	25.89840
Initial Height of the Sample	=	.02036
Void Ratio at zero effective stress	=	4.78000
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-05
Final Height of the Sample	=	.01766
Final Bottom Effective Stress	=	2.85500

Step Loading Test Results :		
Void Ratio	=	1.49500
Effective Stress	=	125.86000
Permeability Coefficient	=	.55100E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.95111
Parameter B	=	-.24720
Parameter Z	=	1.15290
Parameter C	=	.20229E-08
Parameter D	=	2.49186
Number of Iterations	=	6
Total Normalized Difference	=	.23718E-05

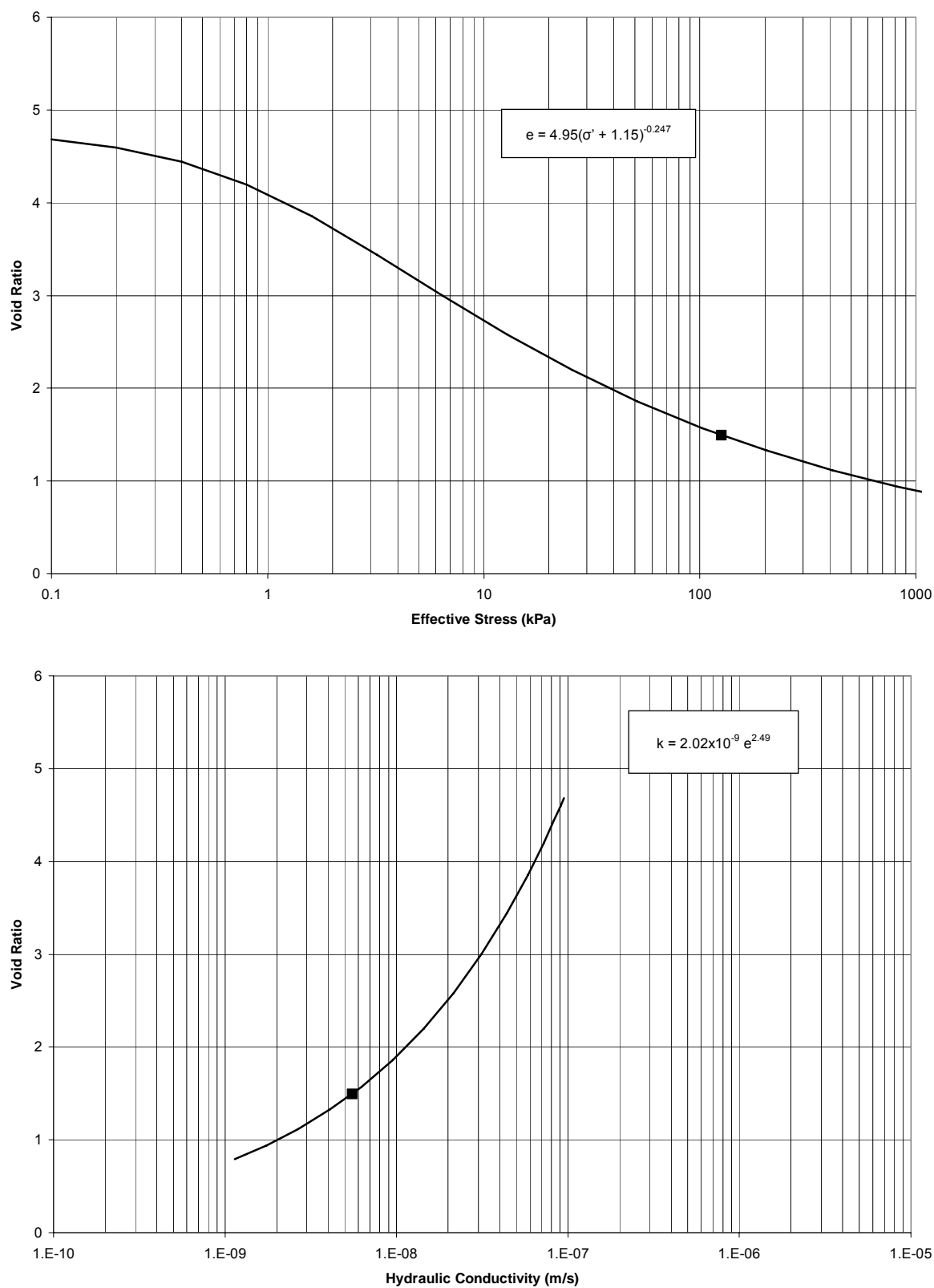


Figure 1 Compressibility and Permeability Characteristics for Sample OL-0298-01

Table 3 – SICTA results for sample OL-0298-02.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-60056 0.5-3.3 ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	24.42690
Initial Height of the Sample	=	.02463
Void Ratio at zero effective stress	=	6.08590
Top Effective Stress	=	.07000
Darcian Velocity	=	.50000E-06
Final Height of the Sample	=	.01818
Final Bottom Effective Stress	=	2.56600

Step Loading Test Results :		
Void Ratio	=	1.55600
Effective Stress	=	130.00000
Permeability Coefficient	=	.92500E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.15173
Parameter B	=	-.20158
Parameter Z	=	.14997
Parameter C	=	.17321E-09
Parameter D	=	3.78925
Number of Iterations	=	6
Total Normalized Difference	=	.37110E-05

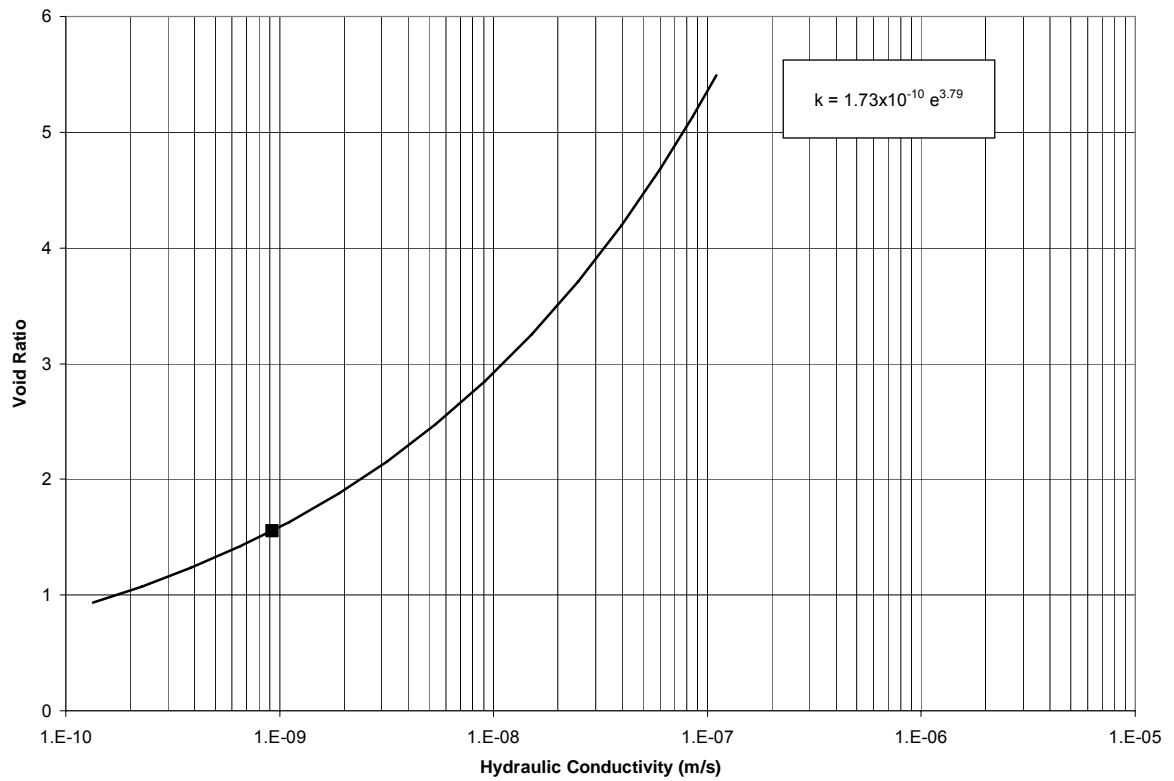
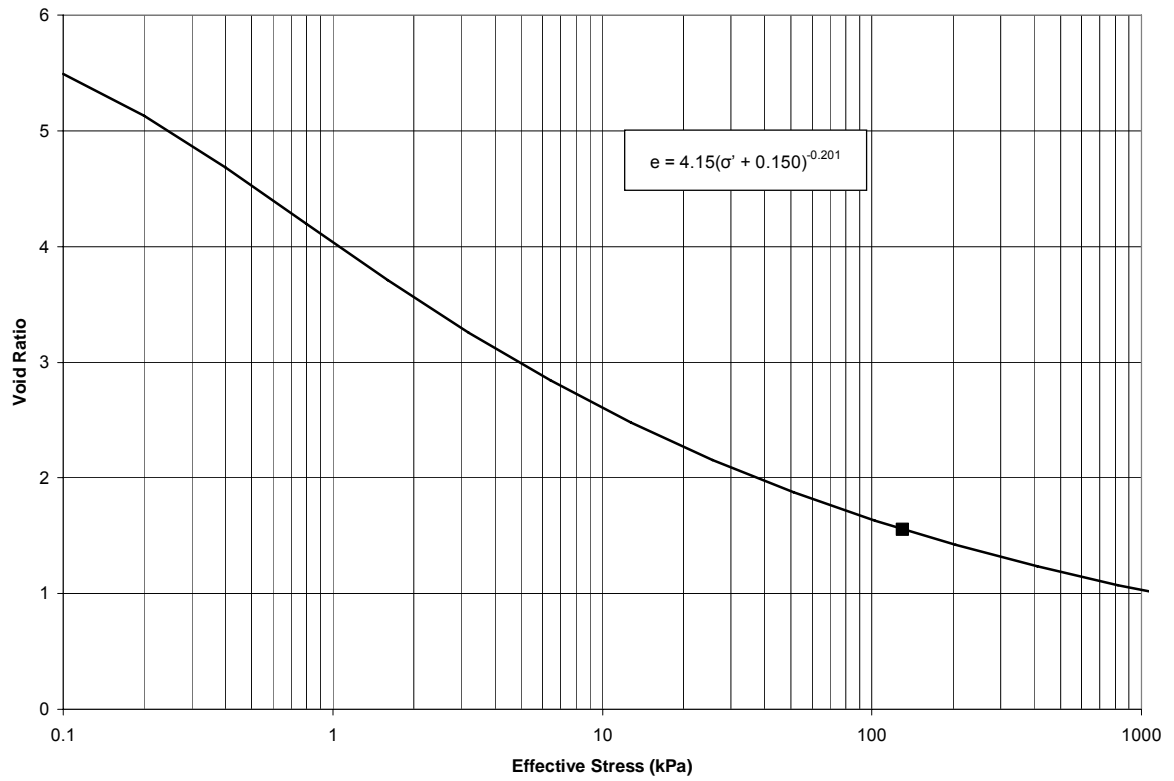


Figure 2 Compressibility and Permeability Characteristics for Sample OL-0298-02

Table 4 – SICTA results for sample OL-0298-03.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-60061-13.2-16.5 OL-0298-03		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.10000
Initial Height of the Sample	=	.02320
Void Ratio at zero effective stress	=	5.30000
Top Effective Stress	=	.07000
Darcian Velocity	=	.15000E-05
Final Height of the Sample	=	.01650
Final Bottom Effective Stress	=	3.40000

Step Loading Test Results :		
Void Ratio	=	1.45100
Effective Stress	=	130.00000
Permeability Coefficient	=	.22800E-08

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.45672
Parameter B	=	-.17831
Parameter Z	=	.09100
Parameter C	=	.48339E-09
Parameter D	=	4.16682
Number of Iterations	=	8
Total Normalized Difference	=	.27290E-06

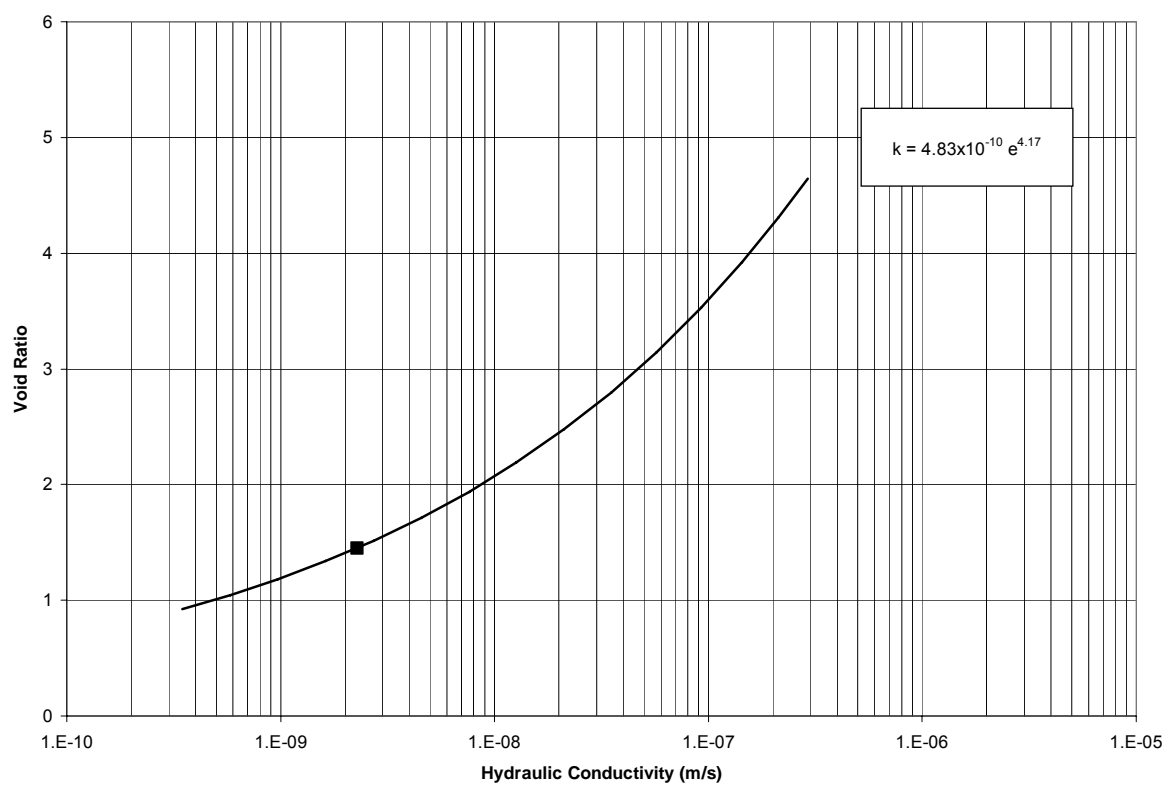
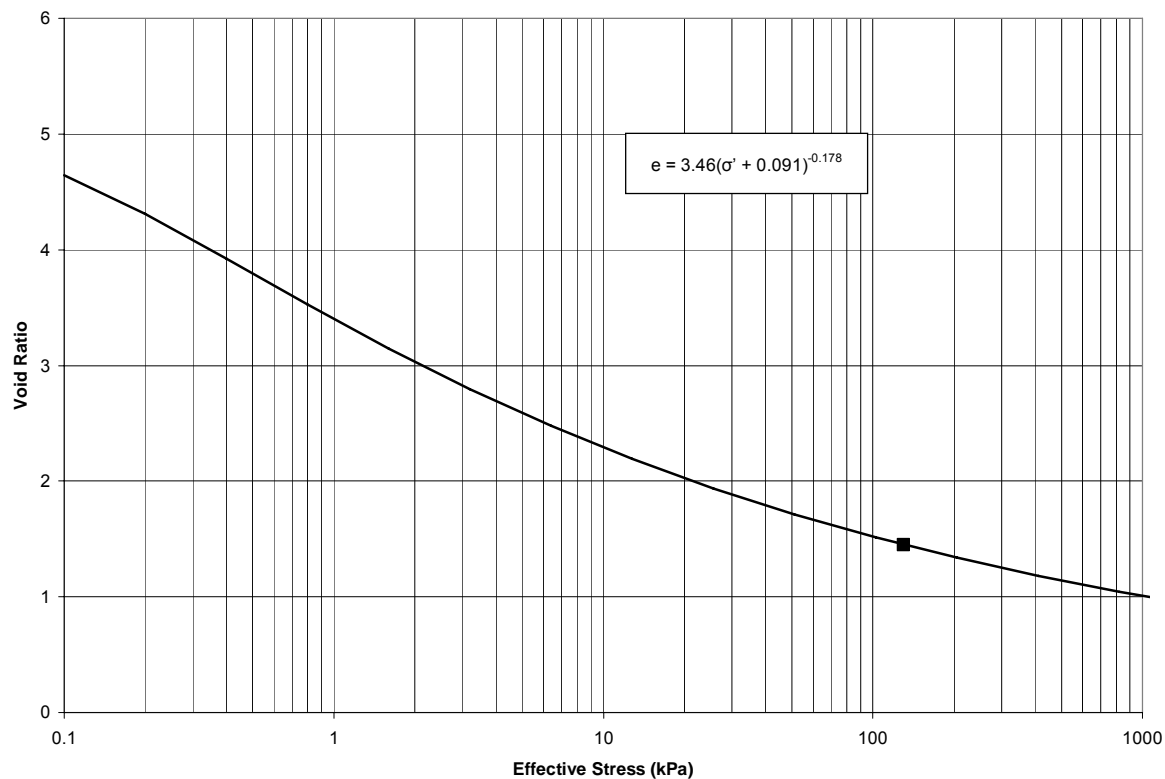


Figure 3 Compressibility and Permeability Characteristics for Sample OL-0298-03

Table 5 – SICTA results for sample OL-0298-04.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-60054 3.3-6.6ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	24.62310
Initial Height of the Sample	=	.02558
Void Ratio at zero effective stress	=	6.68570
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-05
Final Height of the Sample	=	.01491
Final Bottom Effective Stress	=	12.20500

Step Loading Test Results :		
Void Ratio	=	1.38250
Effective Stress	=	150.76775
Permeability Coefficient	=	.56600E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	4.12795
Parameter B	=	-.21806
Parameter Z	=	.10956
Parameter C	=	.17263E-09
Parameter D	=	3.66619
Number of Iterations	=	4
Total Normalized Difference	=	.69860E-04

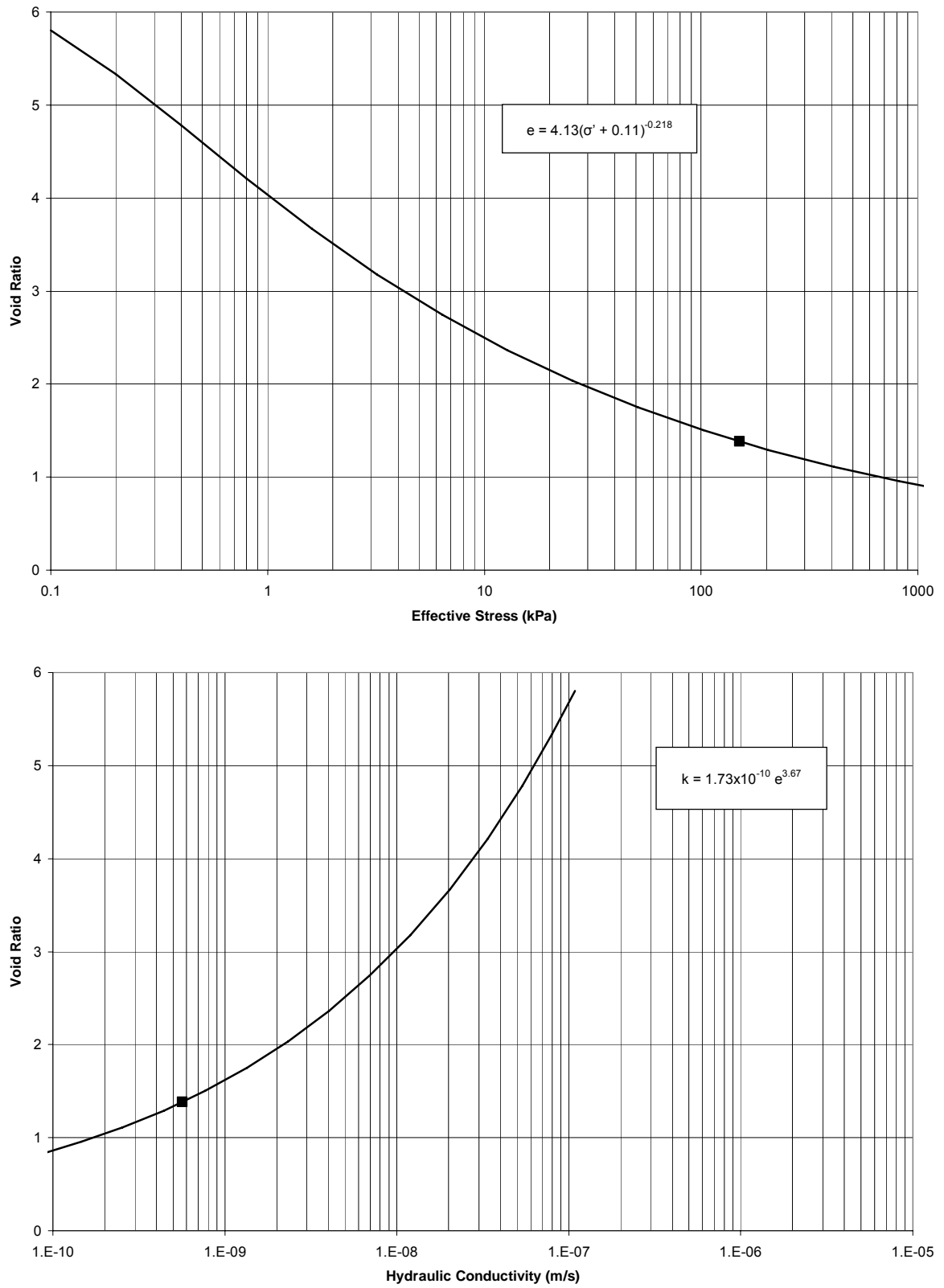


Figure 4 Compressibility and Permeability Characteristics for Sample OL-0298-04

Table 6 – SICTA results for sample OL-0298-05.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-STA-10108 47-49ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	25.60410
Initial Height of the Sample	=	.01316
Void Ratio at zero effective stress	=	4.55800
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-05
Final Height of the Sample	=	.01205
Final Bottom Effective Stress	=	7.07900

Step Loading Test Results :		
Void Ratio	=	1.87600
Effective Stress	=	125.00000
Permeability Coefficient	=	.99500E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	8.05043
Parameter B	=	-.29844
Parameter Z	=	6.72665
Parameter C	=	.99059E-10
Parameter D	=	3.66694
Number of Iterations	=	4
Total Normalized Difference	=	.12512E-04

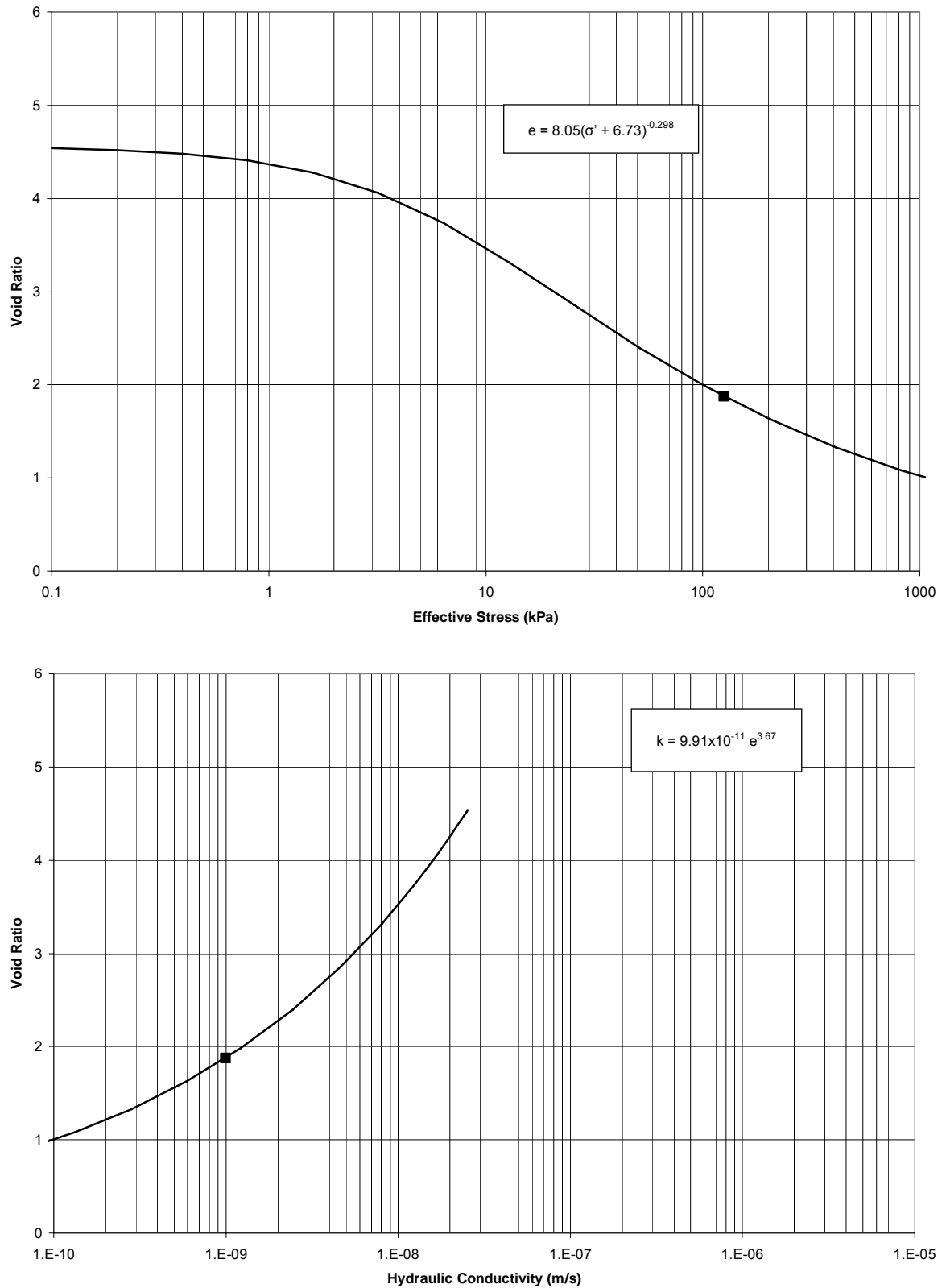


Figure 5 Compressibility and Permeability Characteristics for Sample OL-0298-05

Table 7 – SICTA results for sample OL-0298-06.

DESCRIPTION OF THE PROBLEM		
TITLE OF THE PROBLEM IS		
OL-VC-60064 0.0-3.3ft		

Seepage Induced Consolidation Results :		
Unit Weight of Water	=	9.81000
Unit Weight of Solids	=	26.87900
Initial Height of the Sample	=	.02526
Void Ratio at zero effective stress	=	5.59660
Top Effective Stress	=	.07000
Darcian Velocity	=	.10000E-05
Final Height of the Sample	=	.01415
Final Bottom Effective Stress	=	12.46123

Step Loading Test Results :		
Void Ratio	=	1.32000
Effective Stress	=	151.79000
Permeability Coefficient	=	.90200E-09

THE OUTPUT RESULTS ARE LISTED AS FOLLOWS :		

PARAMETER ESTIMATION RESULTS		
Parameter A	=	3.09568
Parameter B	=	-.16970
Parameter Z	=	.03052
Parameter C	=	.30549E-09
Parameter D	=	3.89973
Number of Iterations	=	6
Total Normalized Difference	=	.39020E-04

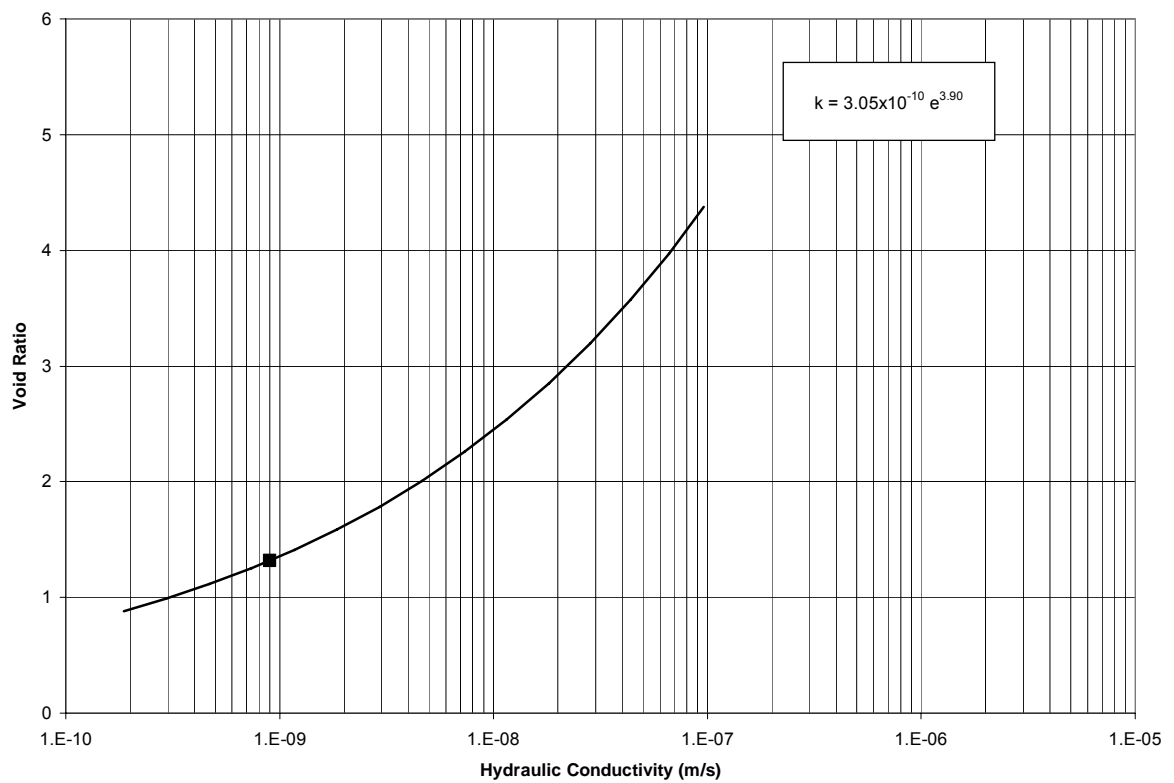
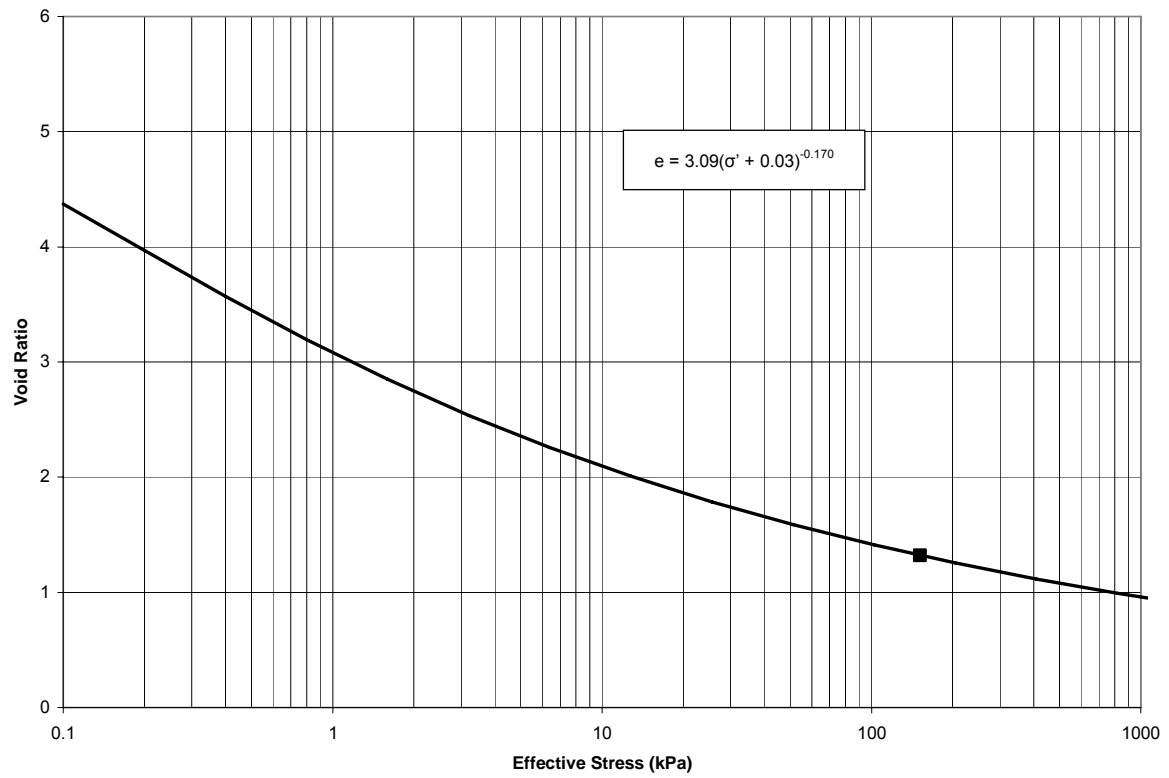


Figure 6 Compressibility and Permeability Characteristics for Sample OL-0298-06

Seepage Induced Consolidation Test (SICT)

The seepage induced consolidation test is an experimental procedure used for determining the consolidation characteristics of soft soils and soil like materials (slurry mine waste, dredged spoils, sludge from waste water treatment plants etc.). The testing procedure consists of three steps.

In the first step the void ratio at the effective stress zero is determined by allowing a slurry column about 0.05 m high to consolidate under its own weight. The average void ratio of the settled slurry is considered the void ratio at the effective stress of zero, or the void ratio at which the soil is formed and the consolidation theory (as opposed to the sedimentation theory) applies.

In the second step, seepage at a constant flow rate is applied through the soil by means of a flow pump and the sample is allowed to consolidate completely, i.e. until the steady state is reached. The steady state is determined from the pressure difference across the sample that is continuously monitored during the test. At steady state, the pressure difference and the final height of the sample are recorded. It is recognized that during this phase of the test the void ratio within the sample is non-uniform and this is correctly accounted for in the test analysis.

In the third step the sample is consolidated under the maximum desired stress level and the hydraulic conductivity is measured with the flow pump using a low flow rate to maintain sample uniformity during the test. At the end of the test the sample is dried and the total volume of solids is determined.

The analysis of the test is performed using the software package SICTA (Seepage Induced Consolidation Test Analysis). The procedure is based on the inverse problem solution approach and the theory used is compatible with the finite strain nonlinear consolidation theory (i.e. no simplifying or restrictive assumptions are made in the analysis). The input data for the SICTA program are all obtained from the described test. The output gives five parameters A, B, Z, C and D that define the consolidation properties for the sample. The compressibility and hydraulic conductivity relations with the five parameters are defined as:

$$\text{Compressibility} \quad e = A (\sigma' + Z)^B$$

$$\text{Hydraulic Conductivity} \quad k = C e^D$$

The more detailed description of the testing equipment and testing and analysis procedures can be found in the following publications:

Abu-Hejleh, A.N., and Znidarcic, D., 1992, User Manual for Computer Program SICTA, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 122 pp.

Znidarcic, D., Abu-Hejleh, A.N., Fairbanks, T. and Robertson A., 1992, Seepage-Induced Consolidation Test; Equipment Description and Users Manual, Prepared for Florida Institute of Phosphate Research, University of Colorado, Boulder, 52 pp.

Abu-Hejleh, A.N. and Znidarcic, D., 1994, Estimation of the Consolidation Constitutive Relations, Computer Methods and Advances in Geomechanics, Siriwardane & Zaman (eds) Balkema, Rotterdam, pp. 499-504.

Abu-Hejleh, A. N. and Znidarcic, D., 1996, Consolidation Characteristics of Phosphatic Clays, Journal of Geotechnical Engineering, ASCE, New-York, Vol. 122, No. 4. pp. 295-301.