

LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 45.4-46.9'

Sample Number: SS-12

Material Description: Brownish Yellow Fat CLAY with sand

USCS: CH

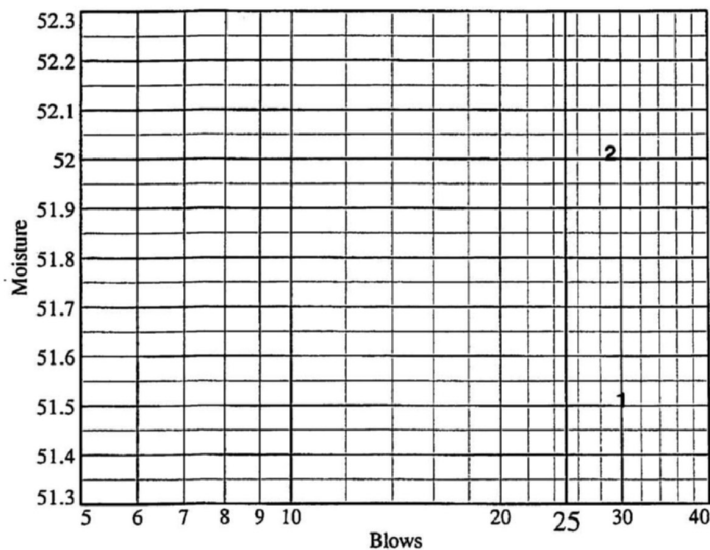
AASHTO: A-7-6(25)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.44	29.11				
Dry+Tare	24.67	24.46				
Tare	15.41	15.52				
# Blows	30	29				
Moisture	51.5	52.0				



Liquid Limit= 53
 Plastic Limit= 17
 Plasticity Index= 36
 Natural Moisture= 20.0
 Liquidity Index= 0.1

Plastic Limit Data

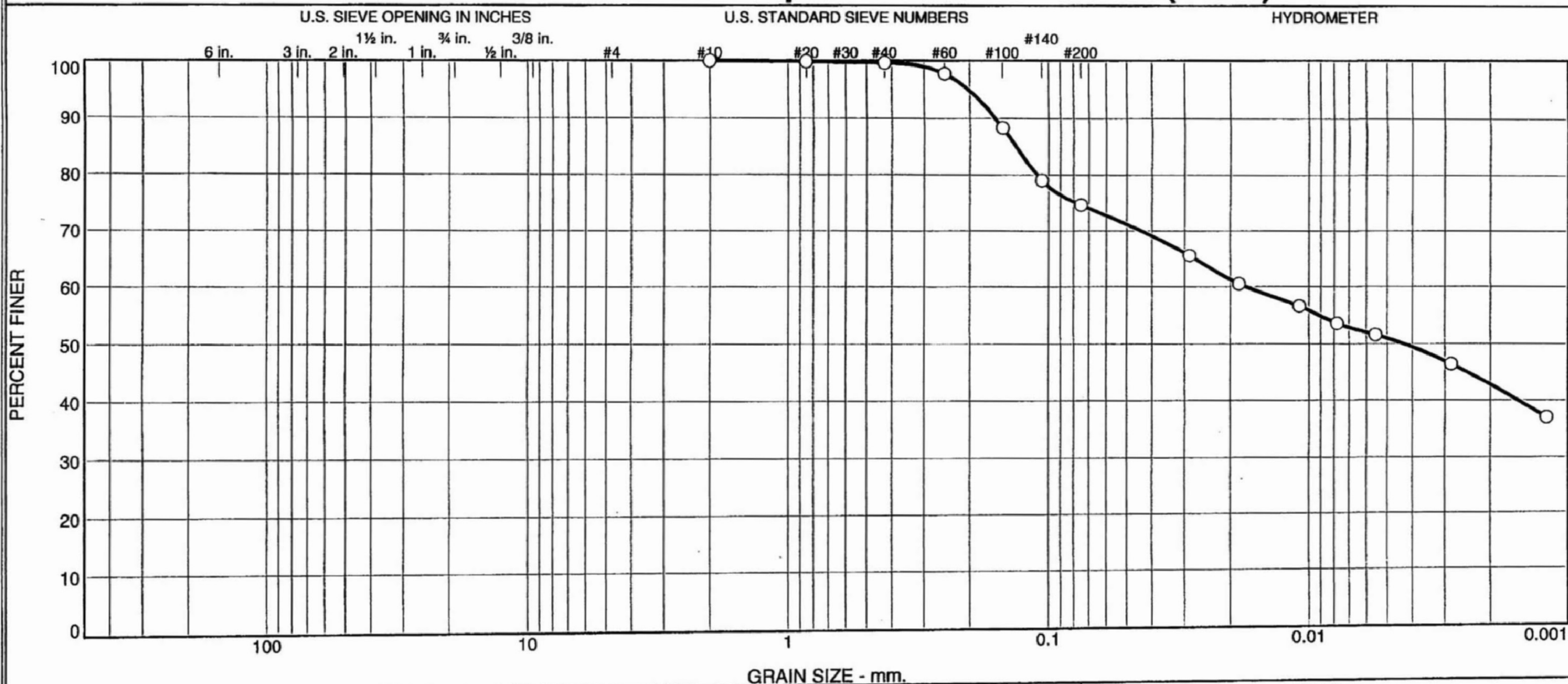
Run No.	1	2	3	4
Wet+Tare	23.30	24.20		
Dry+Tare	22.20	22.90		
Tare	15.50	15.30		
Moisture	16.4	17.1		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
155.47	131.06	9.10	20.0

MACTEC, Inc.

Particle Size Distribution Report / ASTM D-422-63(2002)e1



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.4	24.9	23.7	51.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-13	50.4-51.9'	11/8/07	CH	Light Gray Fat CLAY with sand	20.3	53	16

Client Bechtel		MACTEC, Inc. Raleigh, North Carolina	○ Specific gravity is assumed.
Project Exelon Texas COL (Victoria)			
Project No. 6468071777	Figure NA		

Tested By: CS

Checked By: LBJ

DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 50.4-51.9'

Sample Number: SS-13

Material Description: Light Gray Fat CLAY with sand

Date: 11/8/07

Natural Moisture: 20.3

Liquid Limit: 53

Plastic Limit: 16

USCS Class.: CH

Testing Remarks: Specific gravity is assumed.

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
212.06	0.00	0.00	#10	0.00	100.0
51.45	0.00	0.00	#20	0.07	99.9
			#40	0.20	99.6
			#60	1.15	97.8
			#100	5.96	88.4
			#140	10.78	79.0
			#200	13.01	74.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 51.45

Hygroscopic moisture correction:

Moist weight and tare = 28.44

Dry weight and tare = 28.04

Tare weight = 15.39

Hygroscopic moisture = 3.2%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	23.4	38.0	33.1	0.0129	39.0	9.9	0.0287	65.5
5.00	23.3	35.5	30.5	0.0129	36.5	10.3	0.0185	60.5
15.00	23.4	33.5	28.6	0.0129	34.5	10.6	0.0109	56.6
30.00	23.3	32.0	27.0	0.0129	33.0	10.9	0.0078	53.6
60.00	23.3	31.0	26.0	0.0129	32.0	11.0	0.0055	51.6
240.00	22.9	28.5	23.4	0.0130	29.5	11.5	0.0028	46.5
1440.00	21.6	24.0	18.6	0.0132	25.0	12.2	0.0012	36.9

MACTEC, Inc.

Fractional Components

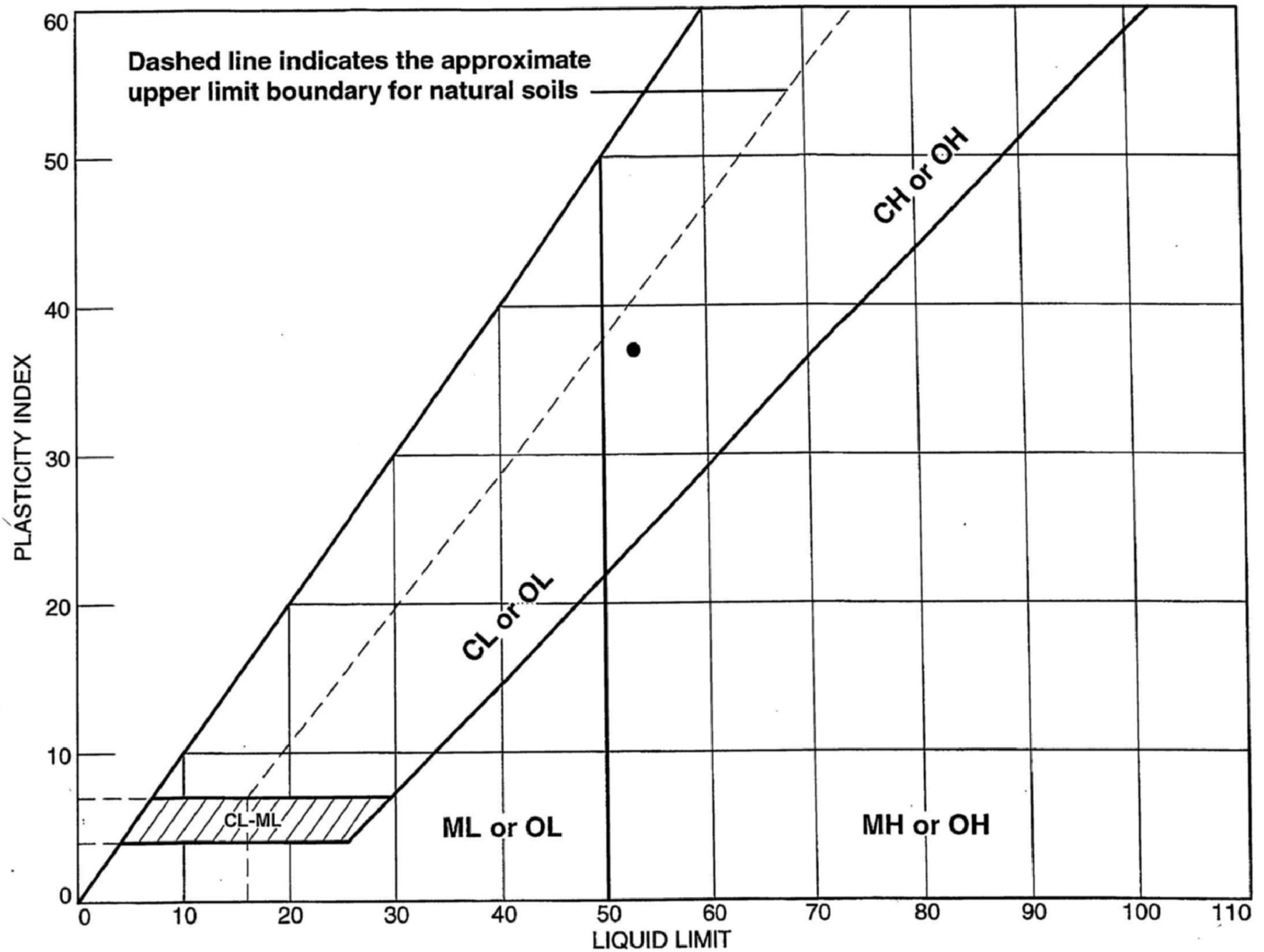
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.4	24.9	25.3	23.7	51.0	74.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0043	0.0174	0.1107	0.1330	0.1594	0.2026

Fineness Modulus
0.13

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-13	50.4-51.9'	20.3	16	53	37	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ DSC 1-25-08

LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 50.4-51.9'

Sample Number: SS-13

Material Description: Light Gray Fat CLAY with sand

USCS: CH

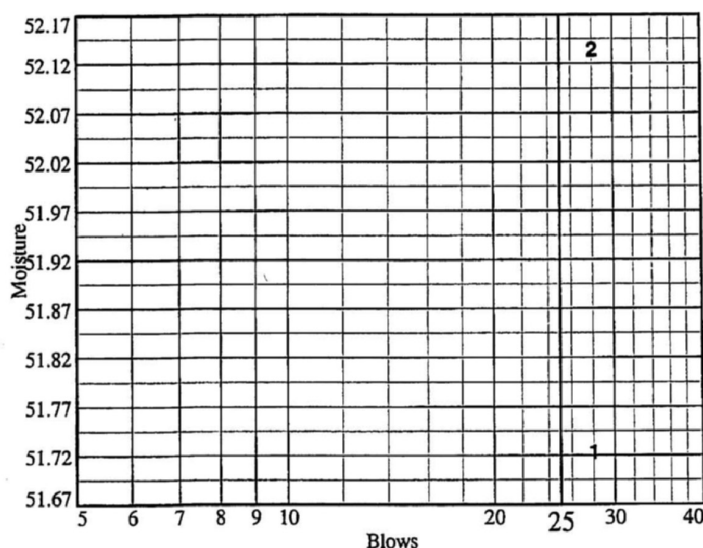
AASHTO: A-7-6(27)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	24.30	25.96				
Dry+Tare	21.30	22.42				
Tare	15.50	15.63				
# Blows	28	28				
Moisture	51.7	52.1				



Liquid Limit= 53
 Plastic Limit= 16
 Plasticity Index= 37
 Natural Moisture= 20.3
 Liquidity Index= 0.1

Plastic Limit Data

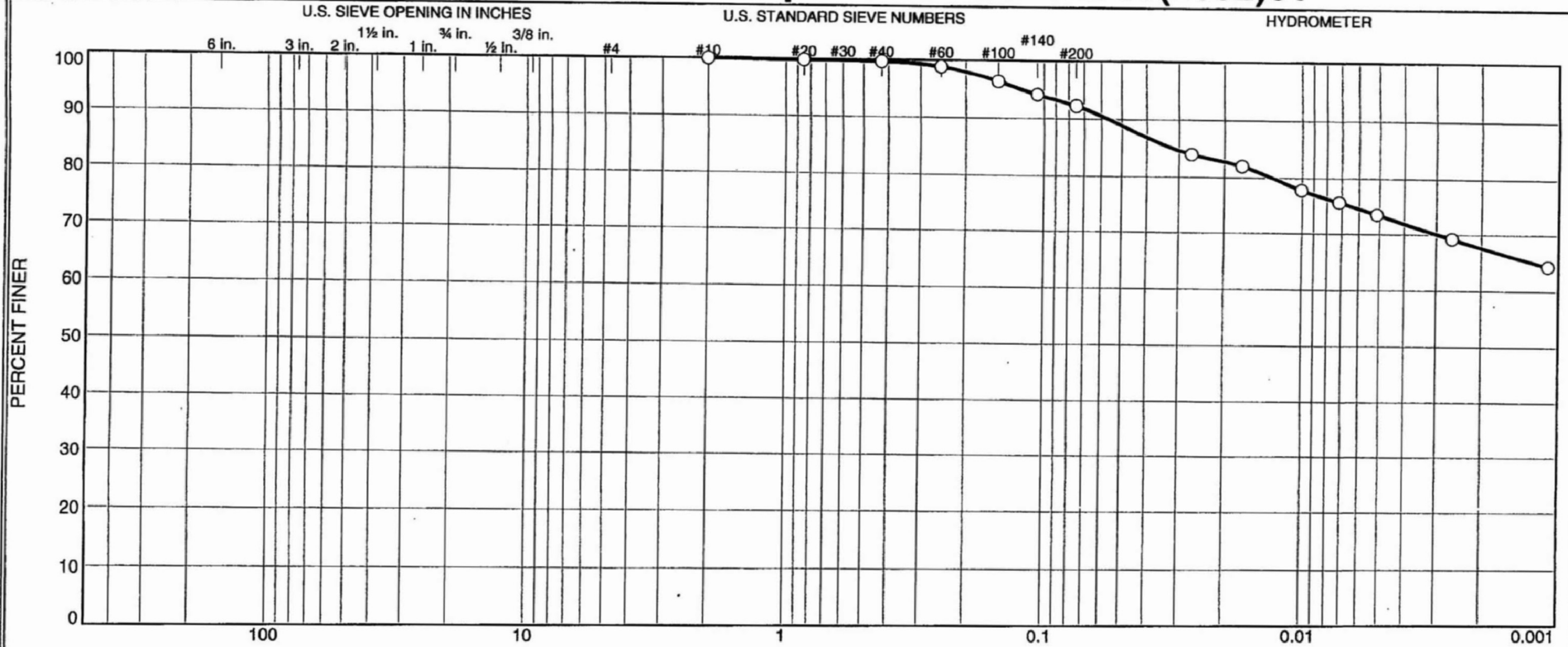
Run No.	1	2	3	4
Wet+Tare	22.56	24.60		
Dry+Tare	21.60	23.37		
Tare	15.62	15.43		
Moisture	16.1	15.5		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
172.27	144.32	6.88	20.3

MACTEC, Inc.

Particle Size Distribution Report / ASTM D 422-63(2002)e1



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.3	7.5	18.8	73.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-14	55.4-56.9'	11/8/07	CH	Light Gray Fat CLAY	32.1	85	25

Client Bechtel

Project Exelon Texas COL (Victoria)

MACTEC, Inc.

○ Specific gravity = 2.738 (ASTM D 854-06)

Project No. 6468071777

Figure **NA**

Raleigh, North Carolina

Tested By: CS

Checked By: LBJ DSC 3-13-08

GRAIN SIZE DISTRIBUTION TEST DATA

3/12/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 55.4-56.9'

Sample Number: SS-14

Material Description: Light Gray Fat CLAY

Date: 11/8/07

Natural Moisture: 32.1

Liquid Limit: 85

Plastic Limit: 25

USCS Class.: CH

Testing Remarks: Specific gravity = 2.738 (ASTM D 854-06)

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
201.95	0.00	0.00	#10	0.00	100.0
48.66	0.00	0.00	#20	0.08	99.8
			#40	0.16	99.7
			#60	0.56	98.8
			#100	1.75	96.4
			#140	2.86	94.1
			#200	3.78	92.2

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.66

Hygroscopic moisture correction:

Moist weight and tare = 27.80

Dry weight and tare = 27.29

Tare weight = 15.49

Hygroscopic moisture = 4.3%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.738

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	23.0	45.0	40.0	0.0128	46.0	8.8	0.0268	84.0
5.00	23.2	44.0	39.0	0.0128	45.0	8.9	0.0171	82.0
15.00	23.2	42.0	37.0	0.0128	43.0	9.2	0.0100	77.8
30.00	23.1	41.0	36.0	0.0128	42.0	9.4	0.0072	75.7
60.00	23.0	40.0	35.0	0.0128	41.0	9.6	0.0051	73.5
240.00	22.9	38.0	32.9	0.0128	39.0	9.9	0.0026	69.3
1440.00	21.6	36.0	30.6	0.0130	37.0	10.2	0.0011	64.4

MACTEC, Inc.

Fractional Components

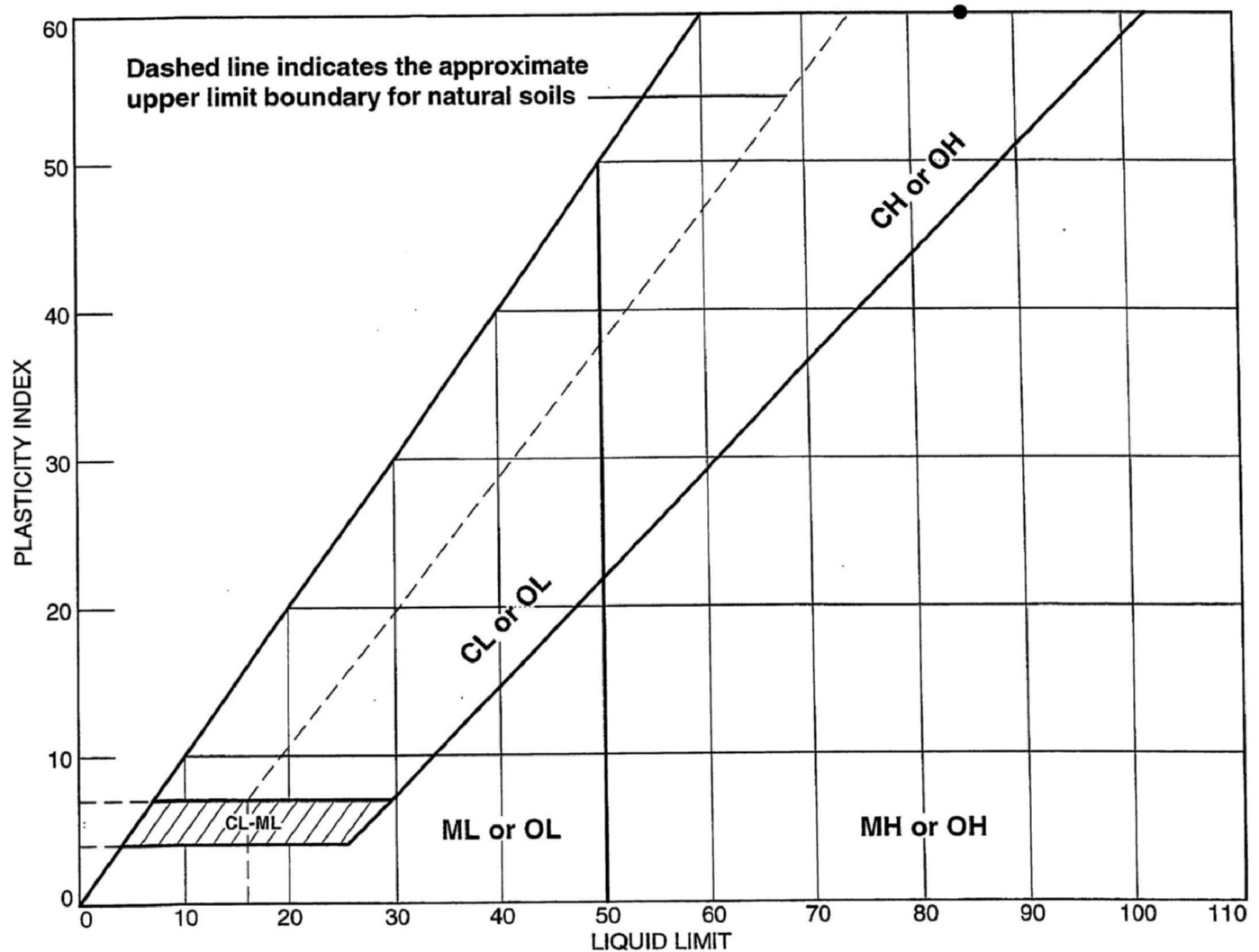
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.3	7.5	7.8	18.8	73.4	92.2

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0130	0.0313	0.0560	0.1217

Fineness Modulus
0.05

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-14	55.4-56.9'	32.1	25	85	60	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ

DSC 3-13-08

LIQUID AND PLASTIC LIMIT TEST DATA

3/12/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 55.4-56.9'

Sample Number: SS-14

Material Description: Light Gray Fat CLAY

USCS: CH

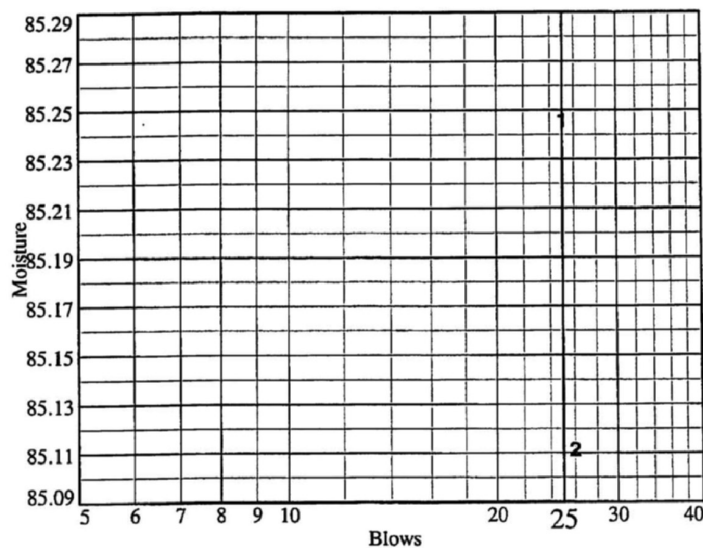
AASHTO: A-7-6(63)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.42	22.95				
Dry+Tare	19.30	19.52				
Tare	15.64	15.49				
# Blows	25	26				
Moisture	85.2	85.1				



Liquid Limit= 85
 Plastic Limit= 25
 Plasticity Index= 60
 Natural Moisture= 32.1
 Liquidity Index= 0.1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	21.92	23.34		
Dry+Tare	20.64	21.81		
Tare	15.62	15.56		
Moisture	25.5	24.5		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
113.93	87.91	6.86	32.1

MACTEC, Inc.

REPORT OF THE STANDARD TEST METHOD FOR SPECIFIC GRAVITY OF SOILS
Performed in General Accordance with ASTM D 854-06 (Method B)

PROJECT NAME: EXELON COL PROJECT [VICTORIA]

PROJECT NUMBER: 6468071777

DATE: 11/16/07

SAMPLE IDENTIFICATION: B-2269 SS-14

(A) Mass of oven-dried soil, grams:	52.83
(B) Mass of pycnometer filled with water at test temperature (T), grams:	654.71
(C) Mass of pycnometer, water and soil, grams:	688.30
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	24.0
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.746
(F) Correction factor:	0.99730
(G x F) SPECIFIC GRAVITY @ 20°C:	2.738

MATERIAL TESTED:

☒

- # 4

☐

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100%

Fat CLAY (CH)

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNO METER : P-5

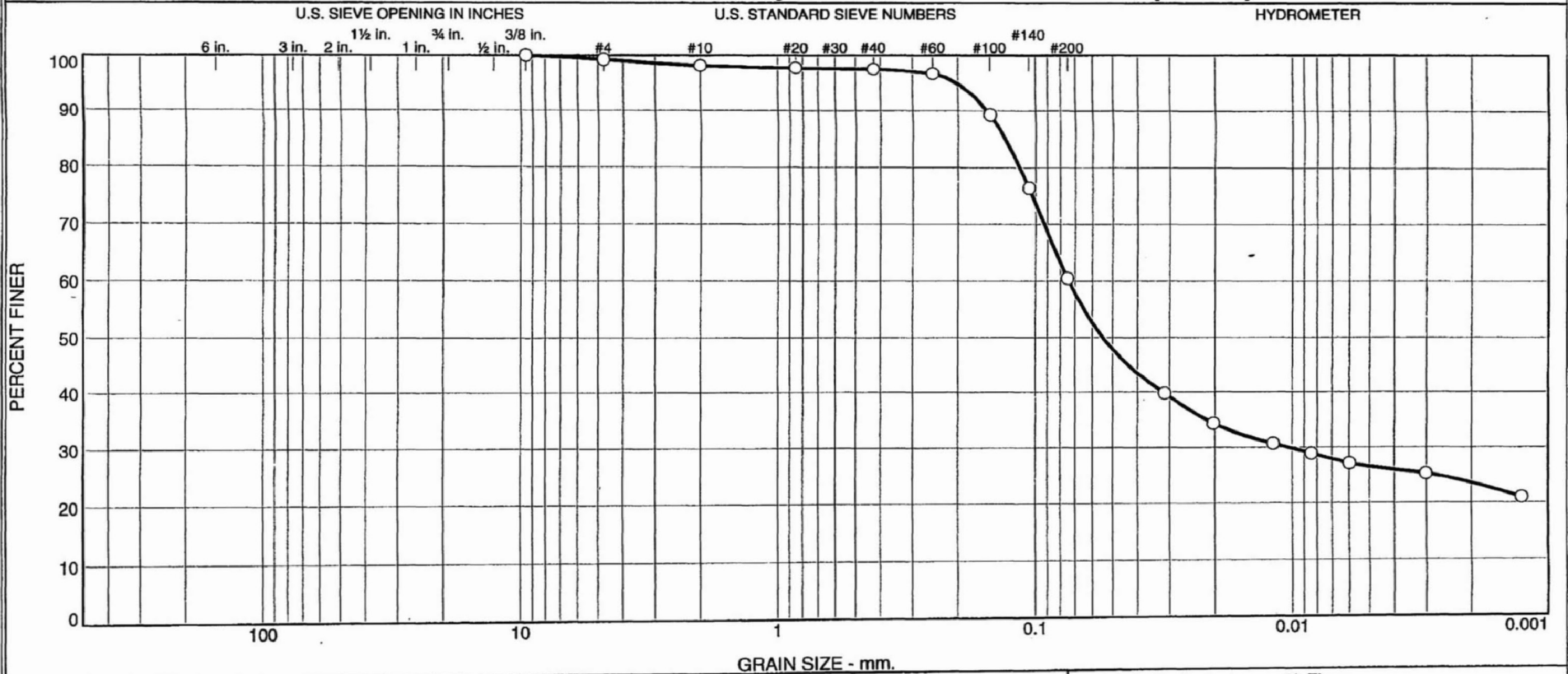
TESTED BY: CS

\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: Brian Johnson

DSC 1-25-08

Particle Size Distribution Report / ASTM D 422-63(2002)e1



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.7	1.1	0.7	37.0	34.0	26.5

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-15	60.4-61.9'	11/8/07	CL	Light Gray Sandy Lean CLAY	20.9	35	16

Client Bechtel		MACTEC, Inc. Raleigh, North Carolina	○ Specific gravity is assumed.
Project Exelon Texas COL (Victoria)			
Project No. 6468071777	Figure NA		

Tested By: CS Checked By: LBJ ZHU 4/30/08

GRAIN SIZE DISTRIBUTION TEST DATA

4/9/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 60.4-61.9'

Sample Number: SS-15

Material Description: Light Gray Sandy Lean CLAY

Date: 11/8/07

Natural Moisture: 20.9

Liquid Limit: 35

Plastic Limit: 16

USCS Class.: CL

Testing Remarks: Specific gravity is assumed.

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
211.22	0.00	0.00	3/8"	0.00	100.0
			#4	1.56	99.3
			#10	3.87	98.2
54.56	0.00	0.00	#20	0.25	97.7
			#40	0.39	97.5
			#60	0.85	96.6
			#100	4.92	89.3
			#140	12.08	76.4
			#200	20.91	60.5

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 98.2

Weight of hydrometer sample = 54.56

Hygroscopic moisture correction:

Moist weight and tare = 26.90

Dry weight and tare = 26.71

Tare weight = 15.73

Hygroscopic moisture = 1.7%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	23.0	27.0	22.0	0.0130	28.0	11.7	0.0313	39.8
5.00	23.0	24.0	19.0	0.0130	25.0	12.2	0.0202	34.3
15.00	23.0	22.0	17.0	0.0130	23.0	12.5	0.0118	30.7
30.00	23.1	21.0	16.0	0.0129	22.0	12.7	0.0084	28.9
60.00	23.2	20.0	15.0	0.0129	21.0	12.9	0.0060	27.2
240.00	23.1	19.0	14.0	0.0129	20.0	13.0	0.0030	25.3
1440.00	21.5	17.0	11.6	0.0132	18.0	13.3	0.0013	21.0

MACTEC, Inc.

Fractional Components

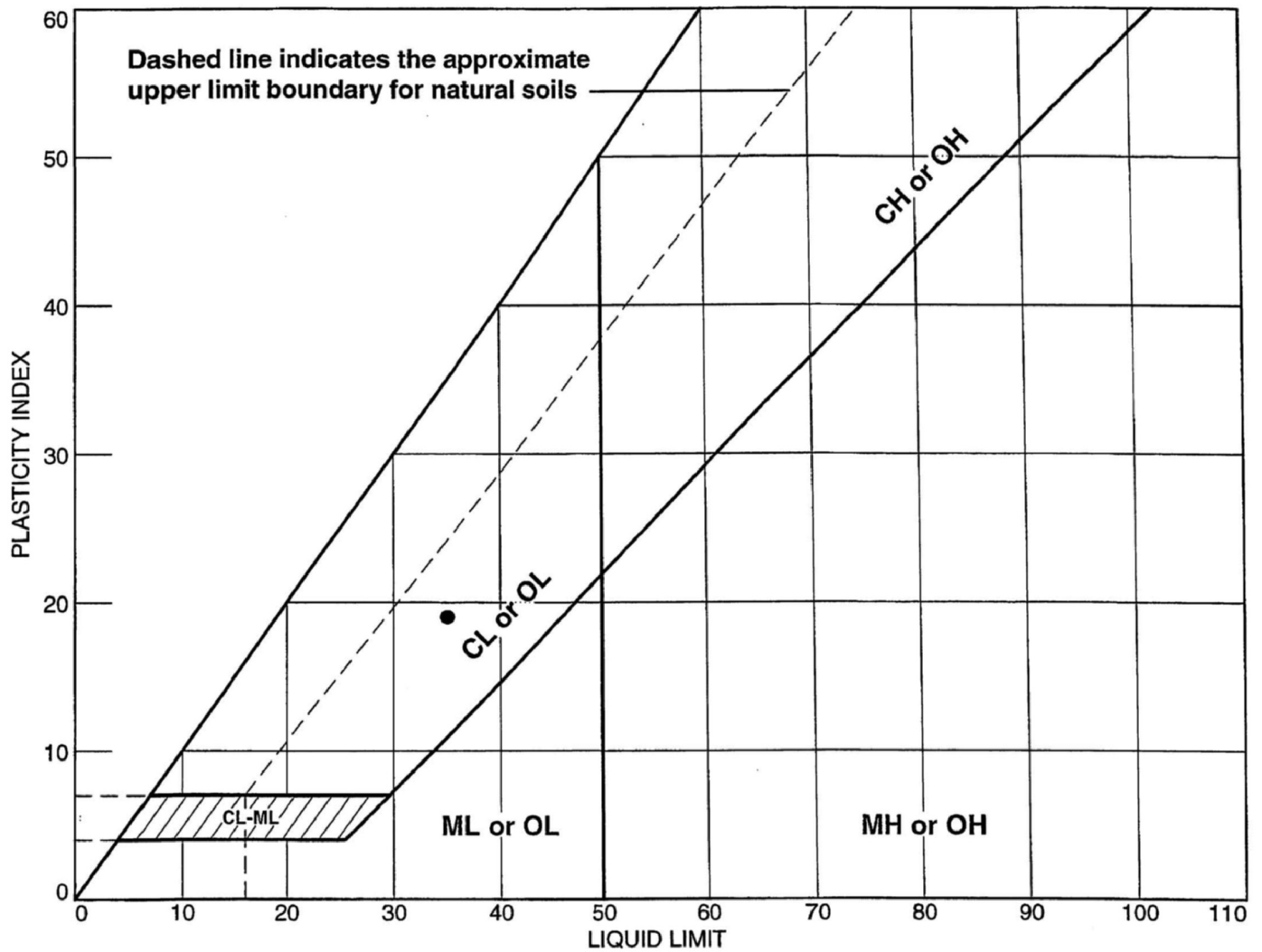
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.7	0.7	1.1	0.7	37.0	38.8	34.0	26.5	60.5

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0103	0.0545	0.0740	0.1151	0.1309	0.1539	0.2033

Fineness Modulus
0.21

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-15	60.4-61.9'	20.9	16	35	19	CL

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ ZHU 4/30/08

LIQUID AND PLASTIC LIMIT TEST DATA

4/9/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 60.4-61.9'

Sample Number: SS-15

Material Description: Light Gray Sandy Lean CLAY

USCS: CL

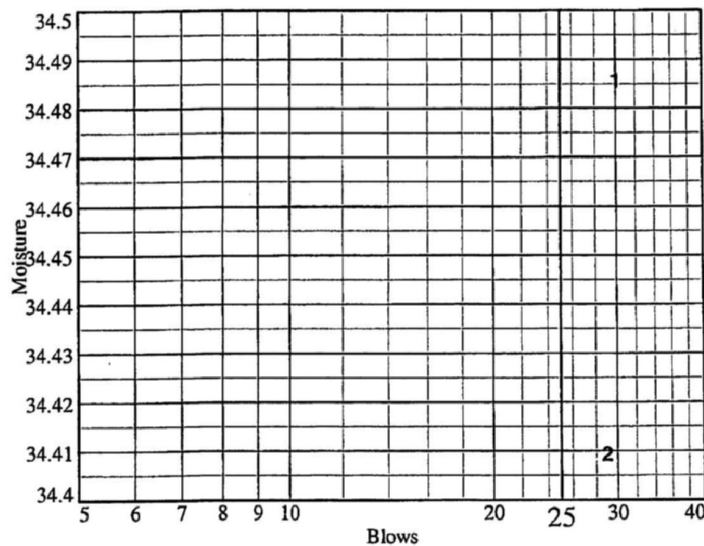
AASHTO: A-6(8)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	31.11	31.42				
Dry+Tare	27.12	27.37				
Tare	15.55	15.60				
# Blows	30	29				
Moisture	34.5	34.4				



Liquid Limit= 35
 Plastic Limit= 16
 Plasticity Index= 19
 Natural Moisture= 20.9
 Liquidity Index= 0.3

Plastic Limit Data

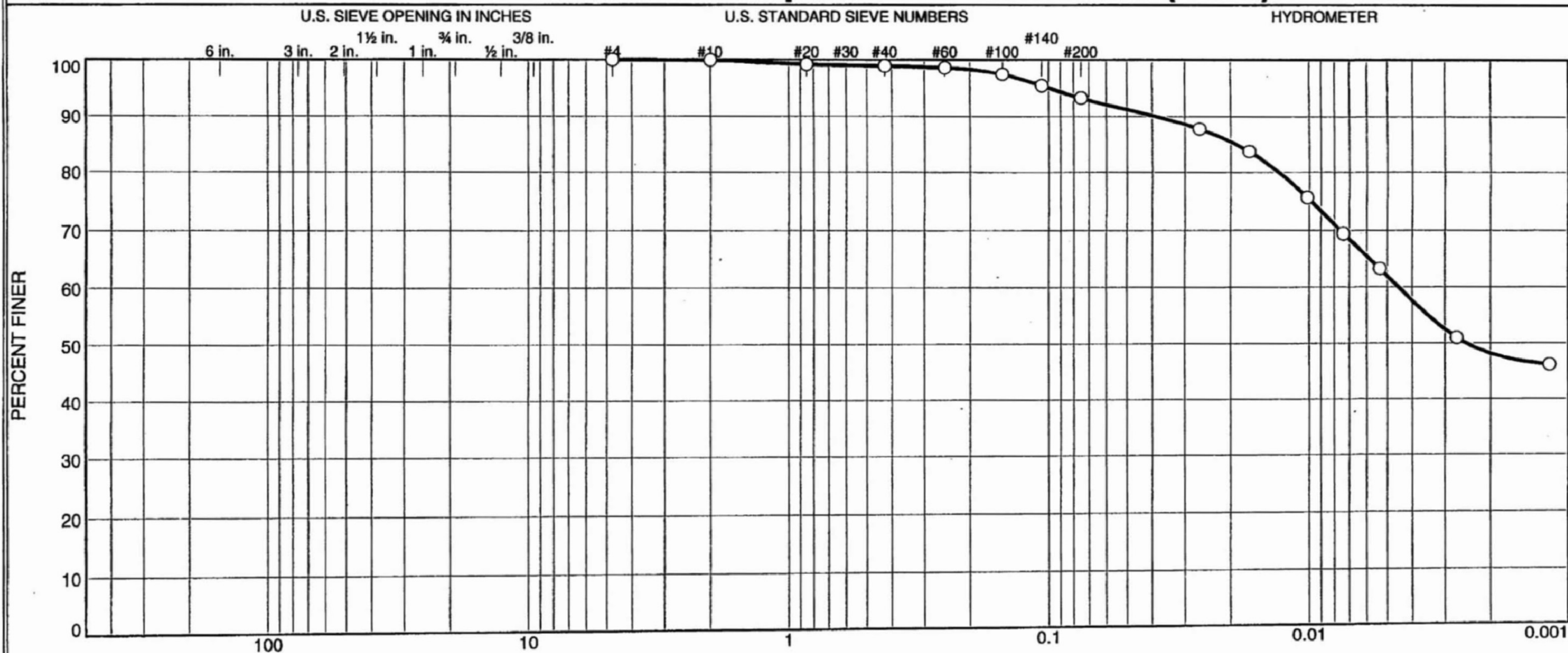
Run No.	1	2	3	4
Wet+Tare	23.30	25.00		
Dry+Tare	22.20	23.70		
Tare	15.50	15.50		
Moisture	16.4	15.9		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
164.20	137.35	9.13	20.9

MACTEC, Inc.

Particle Size Distribution Report / ASTM D-422-63(2002)e1



GRAIN SIZE - mm.

% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.1	1.0	5.6	31.3	62.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-16	65.4-66.9'	11/8/07	CH	Light Gray Fat CLAY	23.3	67	32

Client Bechtel
 Project Exelon Texas COL (Victoria)

MACTEC, Inc.

○ Specific gravity is assumed.
 Organic content = 0.9% (ASTM D 2974-07)

Project No. 6468071777

Figure NA

Raleigh, North Carolina

Tested By: CS

Checked By: LBJ

DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 65.4-66.9'

Sample Number: SS-16

Material Description: Light Gray Fat CLAY

Date: 11/8/07

Natural Moisture: 23.3

Liquid Limit: 67

Plastic Limit: 32

USCS Class.: CH

Testing Remarks: Specific gravity is assumed.

Organic content = 0.9% (ASTM D 2974-07)

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
225.96	0.00	0.00	#4	0.00	100.0
			#10	0.14	99.9
50.08	0.00	0.00	#20	0.37	99.2
			#40	0.51	98.9
			#60	0.67	98.6
			#100	1.25	97.4
			#140	2.27	95.4
			#200	3.34	93.3

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.9

Weight of hydrometer sample = 50.08

Hygroscopic moisture correction:

Moist weight and tare = 26.97

Dry weight and tare = 26.58

Tare weight = 15.42

Hygroscopic moisture = 3.5%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	R _m	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	23.1	48.0	43.0	0.0129	49.0	8.3	0.0263	87.8
5.00	23.1	46.0	41.0	0.0129	47.0	8.6	0.0170	83.7
15.00	23.2	42.0	37.0	0.0129	43.0	9.2	0.0101	75.6
30.00	23.2	39.0	34.0	0.0129	40.0	9.7	0.0074	69.5
60.00	23.2	36.0	31.0	0.0129	37.0	10.2	0.0053	63.3
258.00	23.0	30.0	25.0	0.0130	31.0	11.2	0.0027	51.0
1440.00	21.5	28.0	22.6	0.0132	29.0	11.5	0.0012	46.2

MACTEC, Inc.

Fractional Components

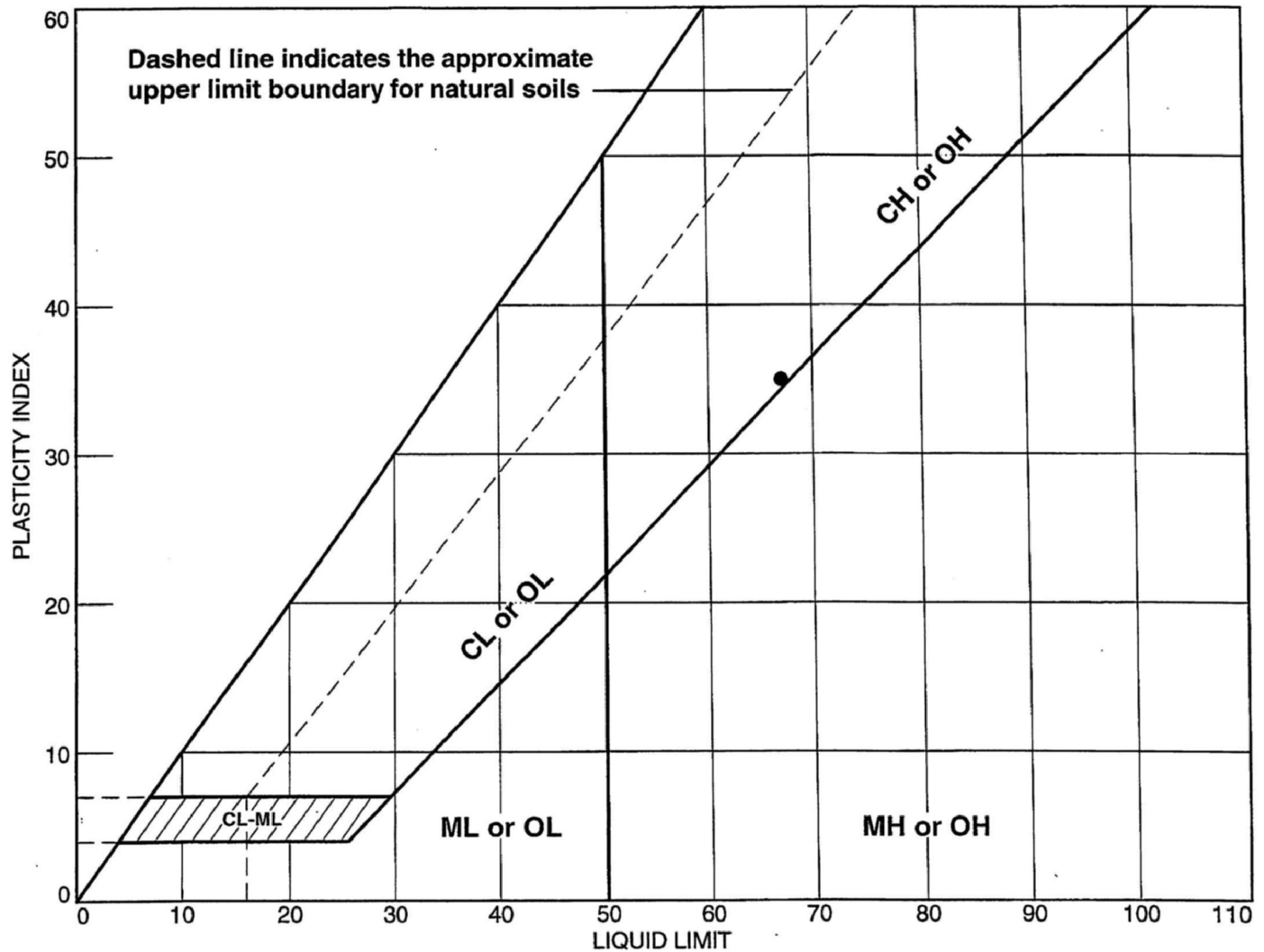
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.1	1.0	5.6	6.7	31.3	62.0	93.3

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0025	0.0045	0.0131	0.0190	0.0383	0.0995

Fineness Modulus
0.05

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-16	65.4-66.9'	23.3	32	67	35	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ DSC 1-25-08

LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 65.4-66.9'

Sample Number: SS-16

Material Description: Light Gray Fat CLAY

USCS: CH

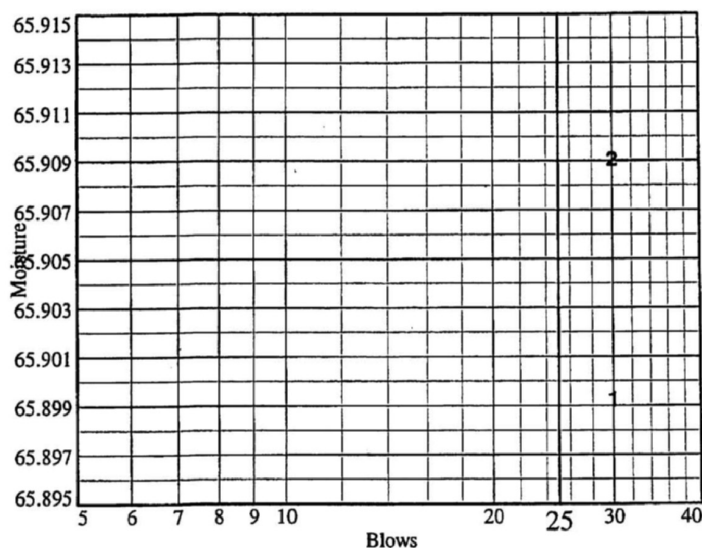
AASHTO: A-7-5(39)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.04	26.52				
Dry+Tare	22.46	22.17				
Tare	15.51	15.57				
# Blows	30	30				
Moisture	65.9	65.9				



Liquid Limit= 67
 Plastic Limit= 32
 Plasticity Index= 35
 Natural Moisture= 23.3
 Liquidity Index= -0.2

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	22.60	22.80		
Dry+Tare	20.89	20.99		
Tare	15.60	15.40		
Moisture	32.3	32.4		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
145.19	119.05	6.63	23.3

MACTEC, Inc.

DSC 1-25-08

GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 70.4-71.9'

Sample Number: SS-17

Material Description: Gray Fat CLAY

Date: 11/8/07

Natural Moisture: 36.8

Liquid Limit: 69

Plastic Limit: 29

USCS Class.: CH

Testing Remarks: Specific gravity is assumed.

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
176.73	0.00	0.00	#10	0.00	100.0
48.23	0.00	0.00	#20	1.06	97.8
			#40	1.57	96.7
			#60	1.86	96.1
			#100	2.15	95.5
			#140	2.41	95.0
			#200	2.56	94.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.23

Hygroscopic moisture correction:

Moist weight and tare = 26.48

Dry weight and tare = 25.64

Tare weight = 15.51

Hygroscopic moisture = 8.3%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	47.0	41.6	0.0132	48.0	8.4	0.0271	92.3
5.00	21.3	46.5	41.1	0.0132	47.5	8.5	0.0173	91.2
15.00	21.3	46.0	40.6	0.0132	47.0	8.6	0.0100	90.1
30.00	21.3	45.5	40.1	0.0132	46.5	8.7	0.0071	88.9
70.00	21.3	45.0	39.6	0.0132	46.0	8.8	0.0047	87.8
240.00	21.8	44.0	38.7	0.0131	45.0	8.9	0.0025	85.9
1440.00	23.2	42.0	37.0	0.0129	43.0	9.2	0.0010	82.2

MACTEC, Inc.

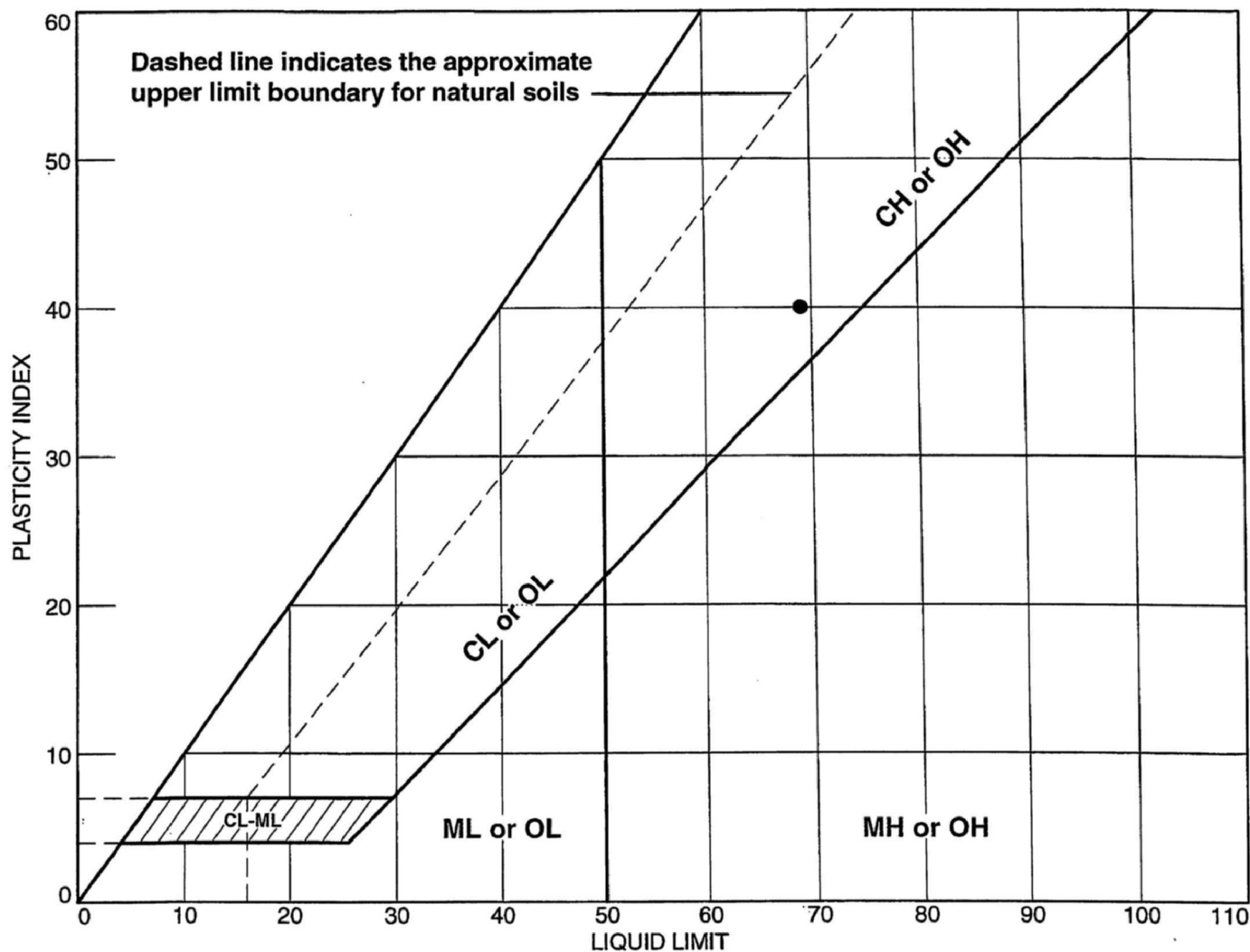
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	3.3	2.0	5.3	6.7	88.0	94.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
							0.0020	0.0098	0.1057

Fineness Modulus
0.12

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-17	70.4-71.9'	36.8	29	69	40	CH

MACTEC, Inc.		Client: Bechtel
Raleigh, North Carolina		Project: Exelon Texas COL (Victoria)
		Project No.: 6468071777
		Figure NA

Tested By: CS

Checked By: LBJ DSC 1-25-08

LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 70.4-71.9'

Sample Number: SS-17

Material Description: Gray Fat CLAY

USCS: CH

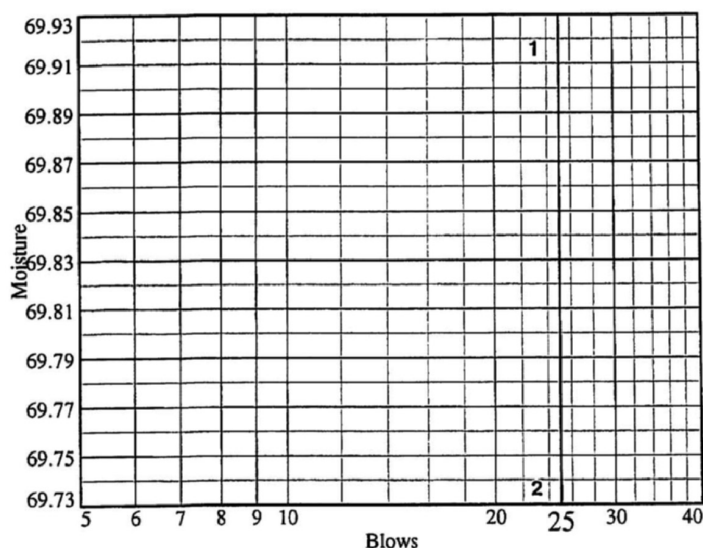
AASHTO: A-7-6(45)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	27.80	28.40				
Dry+Tare	22.78	23.10				
Tare	15.60	15.50				
# Blows	23	23				
Moisture	69.9	69.7				



Liquid Limit= 69
 Plastic Limit= 29
 Plasticity Index= 40
 Natural Moisture= 36.8
 Liquidity Index= 0.2

Plastic Limit Data

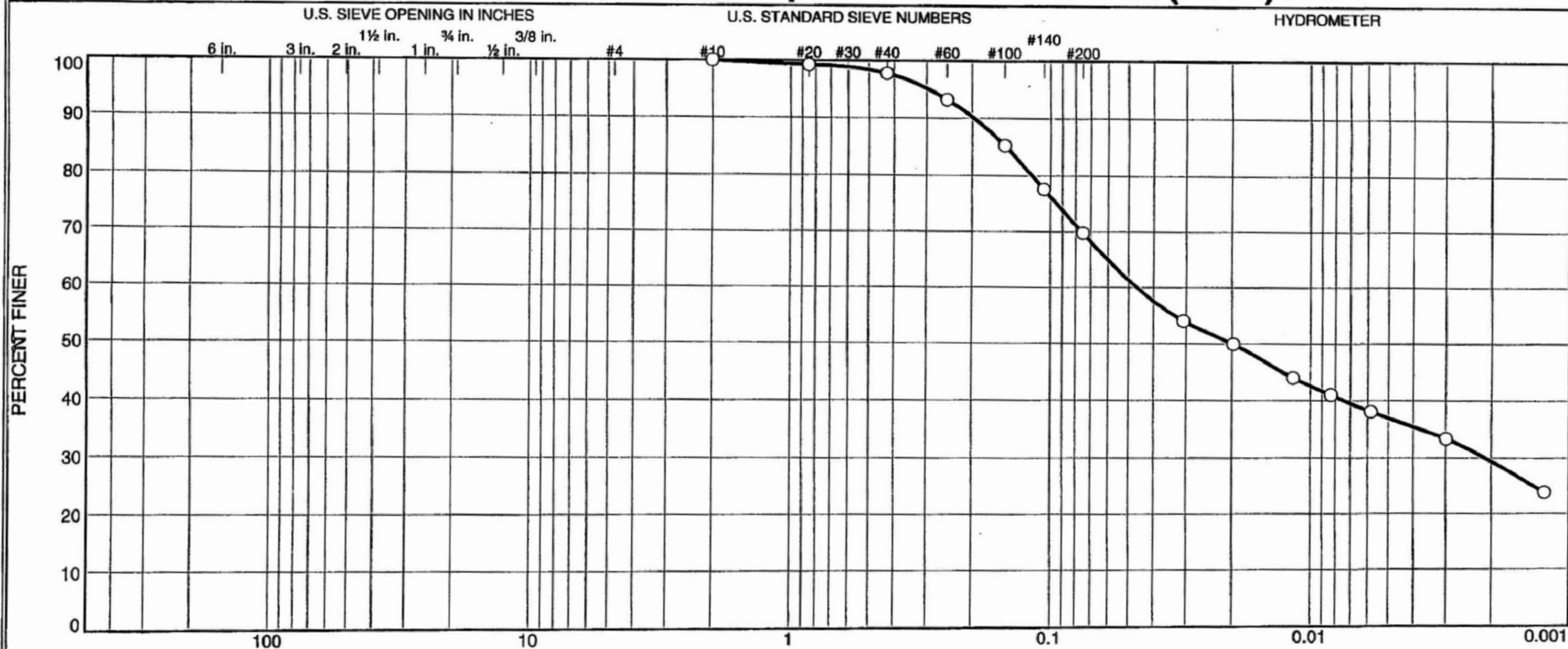
Run No.	1	2	3	4
Wet+Tare	23.20	21.70		
Dry+Tare	21.50	20.29		
Tare	15.50	15.40		
Moisture	28.3	28.8		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
113.71	85.55	9.09	36.8

MACTEC, Inc.

Particle Size Distribution Report / ASTM D-422-63(2002)e1



GRAIN SIZE DISTRIBUTION TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 75.4-76.9'

Sample Number: SS-18

Material Description: Gray Sandy Lean CLAY

Date: 11/9/07

Natural Moisture: 19.3

Liquid Limit: 33

Plastic Limit: 12

USCS Class.: CL

Testing Remarks: Specific gravity is assumed.

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
308.15	0.00	0.00	#10	0.00	100.0
50.77	0.00	0.00	#20	0.37	99.3
			#40	1.13	97.8
			#60	3.43	93.2
			#100	7.48	85.3
			#140	11.36	77.6
			#200	15.36	69.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.77

Hygroscopic moisture correction:

Moist weight and tare = 28.59

Dry weight and tare = 28.30

Tare weight = 15.45

Hygroscopic moisture = 2.3%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.700

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	Rm	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	32.5	27.1	0.0132	33.5	10.8	0.0307	53.9
5.00	21.3	30.5	25.1	0.0132	31.5	11.1	0.0197	49.9
15.00	21.4	27.5	22.1	0.0132	28.5	11.6	0.0116	44.0
30.00	21.4	26.0	20.6	0.0132	27.0	11.9	0.0083	41.0
62.00	21.5	24.5	19.1	0.0132	25.5	12.1	0.0058	38.1
240.00	22.1	22.0	16.7	0.0131	23.0	12.5	0.0030	33.4
1440.00	23.2	17.0	12.0	0.0129	18.0	13.3	0.0012	23.9

MACTEC, Inc.

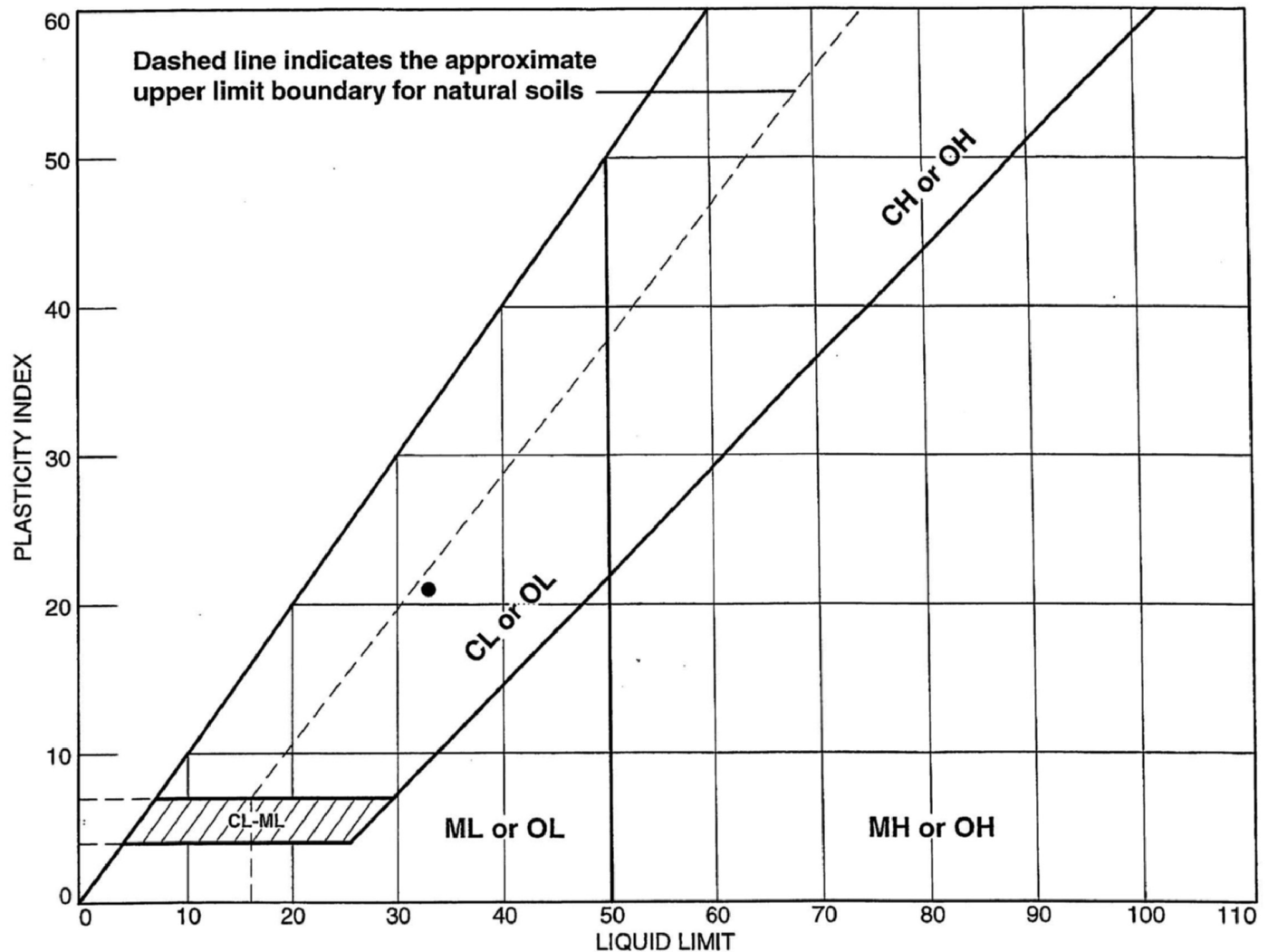
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.2	28.1	30.3	32.8	36.9	69.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0021	0.0199	0.0464	0.1175	0.1480	0.1967	0.2938

Fineness Modulus
0.21

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-18	75.4-76.9'	19.3	12	33	21	CL

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: cs

Checked By: lbj DSC 1-25-08

LIQUID AND PLASTIC LIMIT TEST DATA

1/24/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 75.4-76.9'

Sample Number: SS-18

Material Description: Gray Sandy Lean CLAY

USCS: CL

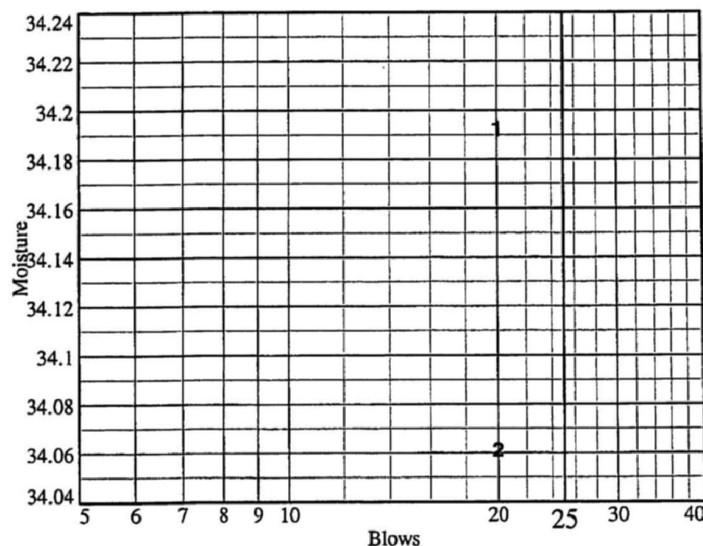
AASHTO: A-6(12)

Tested by: cs

Checked by: lbj

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	33.20	28.90				
Dry+Tare	28.69	25.47				
Tare	15.50	15.40				
# Blows	20	20				
Moisture	34.2	34.1				



Liquid Limit= 33
 Plastic Limit= 12
 Plasticity Index= 21
 Natural Moisture= 19.3
 Liquidity Index= 0.3

Plastic Limit Data

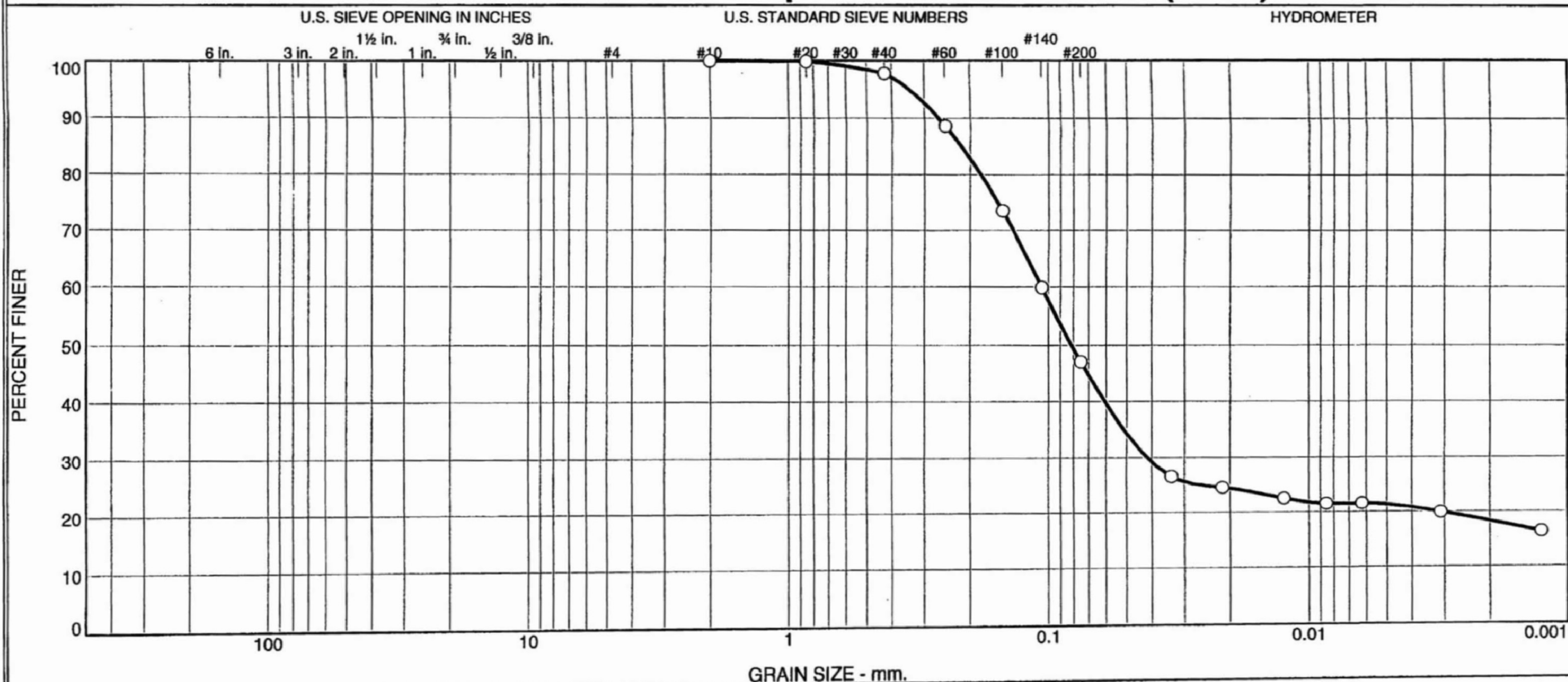
Run No.	1	2	3	4
Wet+Tare	24.20	23.37		
Dry+Tare	23.30	22.53		
Tare	15.47	15.51		
Moisture	11.5	12.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
141.73	120.25	9.16	19.3

MACTEC, Inc.

Particle Size Distribution Report / ASTM D 422-63(2002)e1



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	2.2	50.8	25.6	21.4

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2269	SS-19	80.4-81.9'	11/9/07	SC	Light Gray Clayey SAND	17.4	26	14

Client Bechtel		MACTEC, Inc. Raleigh, North Carolina	○ Specific gravity = 2.721 (ASTM D 854-06)
Project Exelon Texas COL (Victoria)			
Project No. 6468071777	Figure NA		

GRAIN SIZE DISTRIBUTION TEST DATA

4/9/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2269

Depth: 80.4-81.9'

Sample Number: SS-19

Material Description: Light Gray Clayey SAND

Date: 11/9/07

Natural Moisture: 17.4

Liquid Limit: 26

Plastic Limit: 14

USCS Class.: SC

Testing Remarks: Specific gravity = 2.721 (ASTM D 854-06)

Tested by: CS

Checked by: LBJ

Sieve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
280.48	0.00	0.00	#10	0.00	100.0
49.13	0.00	0.00	#20	0.06	99.9
			#40	1.09	97.8
			#60	5.56	88.7
			#100	13.01	73.5
			#140	19.70	59.9
			#200	26.02	47.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.13

Hygroscopic moisture correction:

Moist weight and tare = 27.16

Dry weight and tare = 26.97

Tare weight = 15.47

Hygroscopic moisture = 1.7%

Table of composite correction values:

Temp., deg. C: 10.5 29.5

Comp. corr.: -8.0 -3.5

Meniscus correction only = 1.0

Specific gravity of solids = 2.721

Hydrometer type = 152H

Hydrometer effective depth equation: $L = 16.294964 - 0.164 \times R_m$

Elapsed Time (min.)	Temp. (deg. C.)	Actual Reading	Corrected Reading	K	R _m	Eff. Depth	Diameter (mm.)	Percent Finer
2.00	21.4	18.5	13.1	0.0131	19.5	13.1	0.0336	26.6
5.00	21.4	17.5	12.1	0.0131	18.5	13.3	0.0214	24.6
15.00	21.4	16.5	11.1	0.0131	17.5	13.4	0.0124	22.6
32.00	21.4	16.0	10.6	0.0131	17.0	13.5	0.0085	21.6
60.00	21.5	16.0	10.6	0.0131	17.0	13.5	0.0062	21.6
240.00	22.3	15.0	9.8	0.0130	16.0	13.7	0.0031	20.0
1440.00	23.4	13.0	8.1	0.0128	14.0	14.0	0.0013	16.4

MACTEC, Inc.

Fractional Components

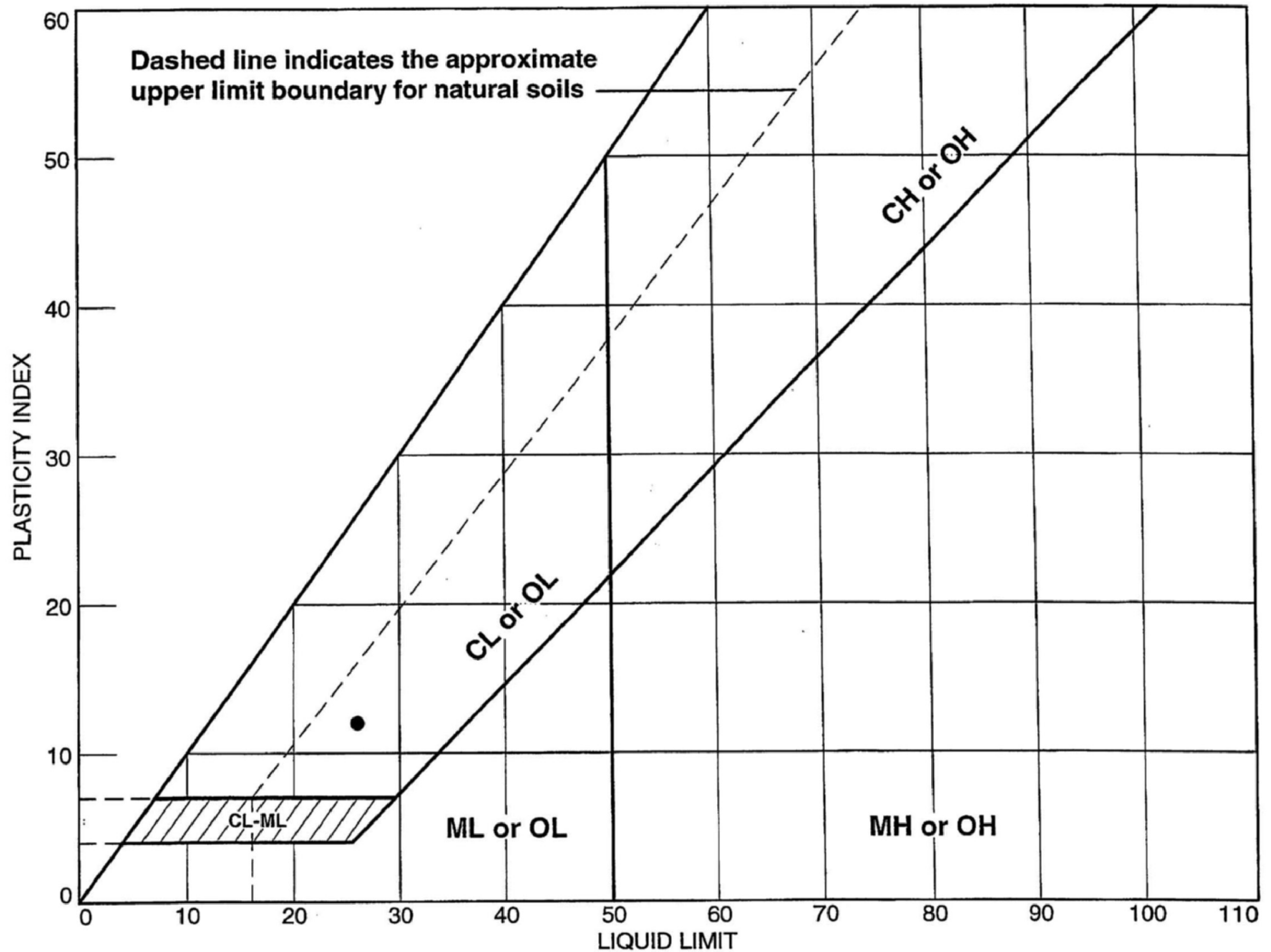
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.2	50.8	53.0	25.6	21.4	47.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0031	0.0416	0.0815	0.1063	0.1817	0.2160	0.2648	0.3432

Fineness Modulus
0.35

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	Boring B-2269	SS-19	80.4-81.9'	17.4	14	26	12	SC

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ

ZHU 4/30/08