

LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 28.5-30

Sample Number: SS-9

Material Description: Greenish Gray Sandy Lean CLAY

USCS: CL

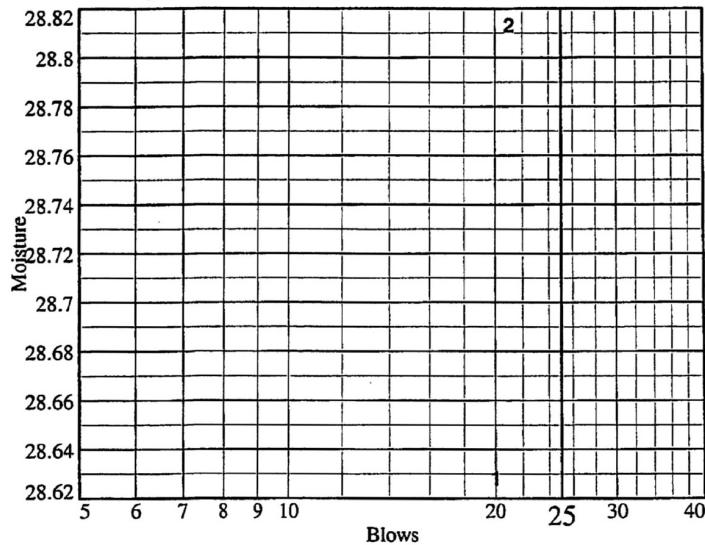
AASHTO: A-6(4)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	31.75	31.52				
Dry+Tare	28.16	27.95				
Tare	15.62	15.56				
# Blows	20	21				
Moisture	28.6	28.8				



Liquid Limit= 28
Plastic Limit= 12
Plasticity Index= 16
Natural Moisture= 14.1
Liquidity Index= 0.1

Plastic Limit Data

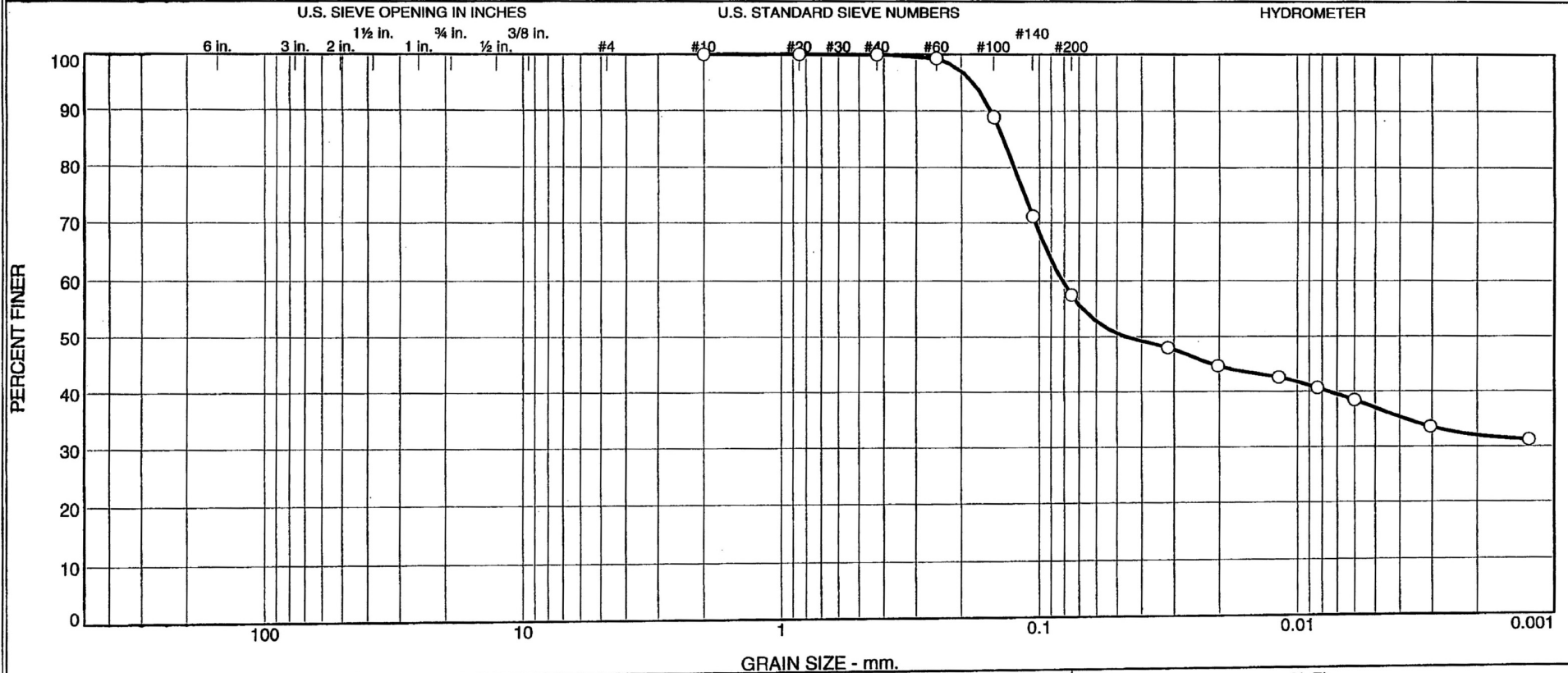
Run No.	1	2	3	4
Wet+Tare	23.08	21.76		
Dry+Tare	22.23	21.06		
Tare	15.45	15.44		
Moisture	12.5	12.5		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
116.25	102.73	7.07	14.1

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	0.0	42.5	20.4	37.1

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2265	SS-10	33.5-35.0	11-9-07	CL	Greenish Gray Sandy Lean CLAY	16.7	43	14

Client Bechtel Project Exelon Texas COL (Victoria)	MACTEC, Inc. Raleigh, North Carolina	Specific Gravity = 2.671 (ASTM D854-06) Organic content = 5.5% (ASTM D2794-07)
Project No. 6468071777	Figure NA	

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 33.5-35.0

Sample Number: SS-10

Material Description: Greenish Gray Sandy Lean CLAY

Date: 11-9-07

Natural Moisture: 16.7

Liquid Limit: 43

Plastic Limit: 14

USCS Class.: CL

Testing Remarks: Specific Gravity = 2.671 (ASTM D854-06)
Organic content = 5.5% (ASTM D2794-07)

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
212.14	0.00	0.00	#10	0.00	100.0
47.34	0.00	0.00	#20	0.01	100.0
			#40	0.02	100.0
			#60	0.34	99.3
			#100	5.22	89.0
			#140	13.66	71.1
			#200	20.11	57.5

Hydrometer Test Data

Hydrometer test uses material passing #10
Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 47.34

Hygroscopic moisture correction:

Moist weight and tare = 29.34

Dry weight and tare = 29.07

Tare weight = 15.48

Hygroscopic moisture = 2.0%

Table of composite correction values:

Temp., deg. C: 12.8 27.3

Comp. corr.: -7.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.671

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	23.2	26.5	22.4	0.0130	27.5	11.8	0.0317	48.0
5.00	23.0	25.0	20.8	0.0131	26.0	12.0	0.0203	44.6
15.00	23.1	24.0	19.8	0.0131	25.0	12.2	0.0118	42.5
30.00	23.5	23.0	19.0	0.0130	24.0	12.4	0.0083	40.6
59.00	23.4	22.0	17.9	0.0130	23.0	12.5	0.0060	38.4
240.00	22.5	20.0	15.7	0.0131	21.0	12.9	0.0030	33.6
1440.00	22.2	19.0	14.6	0.0132	20.0	13.0	0.0013	31.3

MACTEC, Inc.

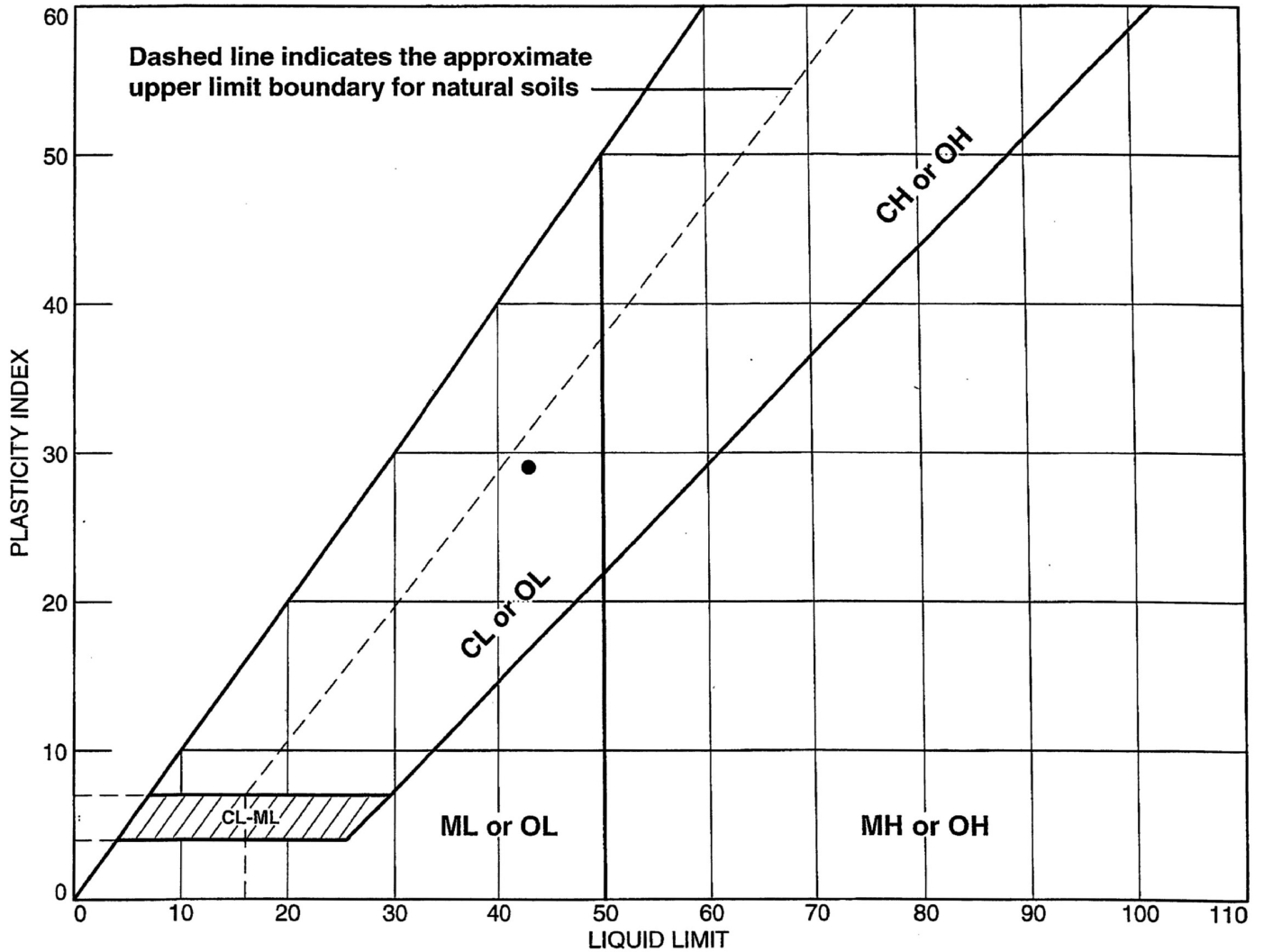
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	0.0	42.5	42.5	20.4	37.1	57.5

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0461	0.0813	0.1251	0.1376	0.1539	0.1809

Fineness Modulus
0.11

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-2265	SS-10	33.5-35.0	16.7	14	43	29	CL

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure NA

Tested By: CS

Checked By: LBJ KAW 1/26/08

LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 33.5-35.0

Sample Number: SS-10

Material Description: Greenish Gray Sandy Lean CLAY

USCS: CL

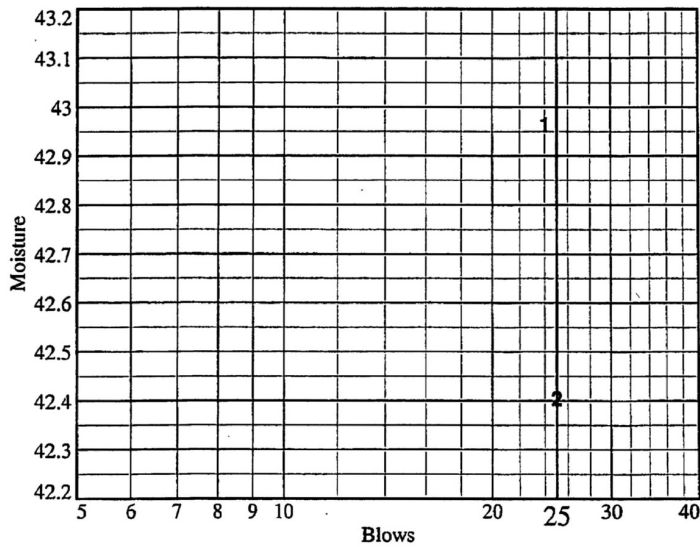
AASHTO: A-7-6(13)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.65	29.39				
Dry+Tare	26.10	25.23				
Tare	15.51	15.42				
# Blows	24	25				
Moisture	43.0	42.4				



Liquid Limit= 43
Plastic Limit= 14
Plasticity Index= 29
Natural Moisture= 16.7
Liquidity Index= 0.1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	22.38	19.15		
Dry+Tare	21.57	18.17		
Tare	15.78	11.15		
Moisture	14.0	14.0		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
163.52	141.16	6.90	16.7

MACTEC, Inc.

**MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA**

**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: 3/12/08

SAMPLE IDENTIFICATION: B-2265 SS-10

(A) Mass of oven-dried soil, grams:	51.69
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.79
(C) Mass of pycnometer, water and soil, grams:	689.13
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	21.4
(G) Specific Gravity at observed temperature:	$A / [C - (C - A)]$ 2.671
(F) Correction factor:	0.99970
(G x F) SPECIFIC GRAVITY @ 20°C:	2.671

MATERIAL TESTED: - # 4 - # 10

PREPARATION METHOD: DRY WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100%
Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 3.1.19

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-5

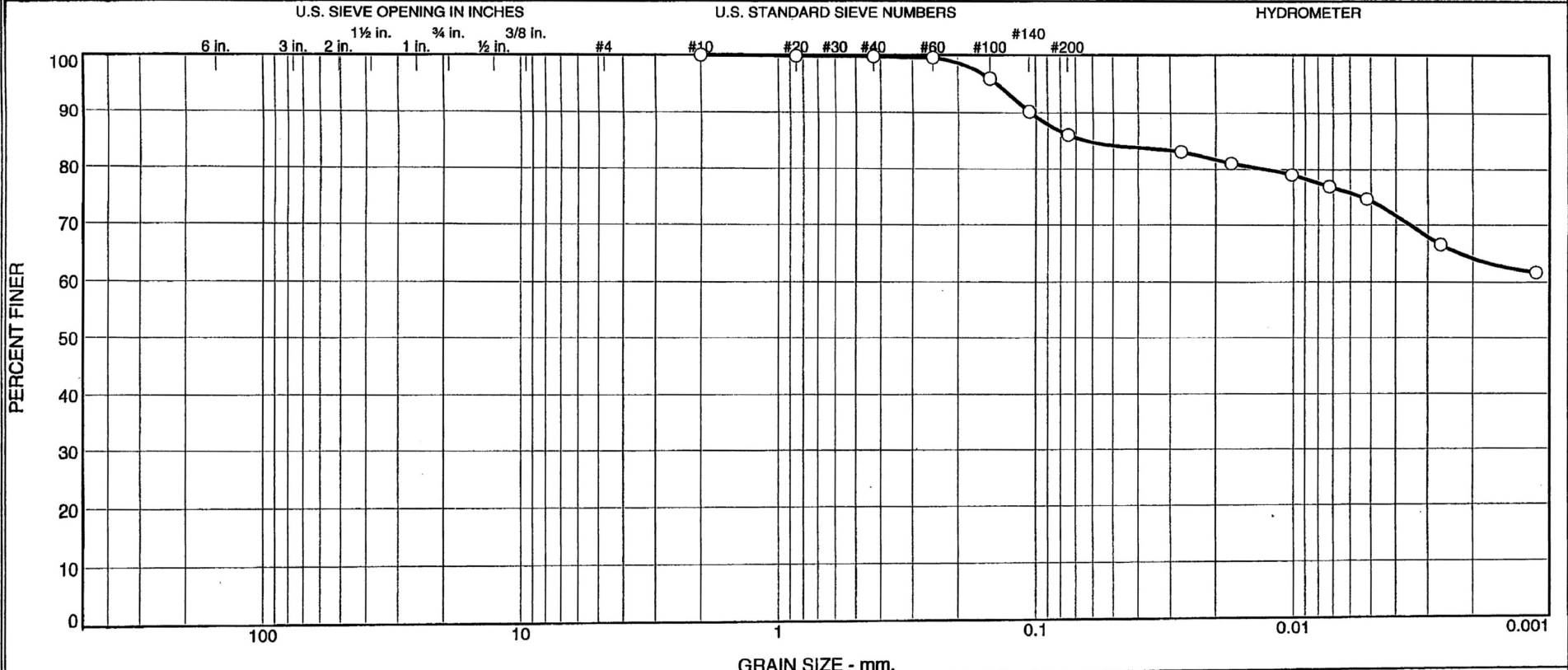
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

DSC 3-13-08

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	0.0	0.0	0.3	13.6	11.8	74.3

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2265	SS-11	38.5-40.0	11-9-07	CH	Greenish Gray Fat CLAY	24.6	74	23

Client Bechtel	MACTEC, Inc.	○ Specific Gravity is assumed
Project Exelon Texas COL (Victoria)		
Project No. 6468071777	Figure N/A	Raleigh, North Carolina

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 38.5-40.0

Sample Number: SS-11

Material Description: Greenish Gray Fat CLAY

Date: 11-9-07

Natural Moisture: 24.6

Liquid Limit: 74

Plastic Limit: 23

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
212.86	0.00	0.00	#10	0.00	100.0
50.39	0.00	0.00	#20	0.09	99.8
			#40	0.14	99.7
			#60	0.24	99.5
			#100	2.11	95.8
			#140	4.94	90.2
			#200	7.00	86.1

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.39

Hygroscopic moisture correction:

Moist weight and tare = 27.40

Dry weight and tare = 26.93

Tare weight = 15.28

Hygroscopic moisture = 4.0%

Table of composite correction values:

Temp., deg. C: 12.8 27.3

Comp. corr.: -7.0 -3.0

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	22.6	45.0	40.7	0.0130	46.0	8.8	0.0272	83.1
5.00	22.6	44.0	39.7	0.0130	45.0	8.9	0.0174	81.1
15.00	22.6	43.0	38.7	0.0130	44.0	9.1	0.0101	79.0
30.00	22.5	42.0	37.7	0.0130	43.0	9.2	0.0072	76.9
60.00	22.1	41.0	36.6	0.0131	42.0	9.4	0.0052	74.7
240.00	22.3	37.0	32.6	0.0131	38.0	10.1	0.0027	66.6
1440.00	20.9	35.0	30.2	0.0133	36.0	10.4	0.0011	61.7

MACTEC, Inc.

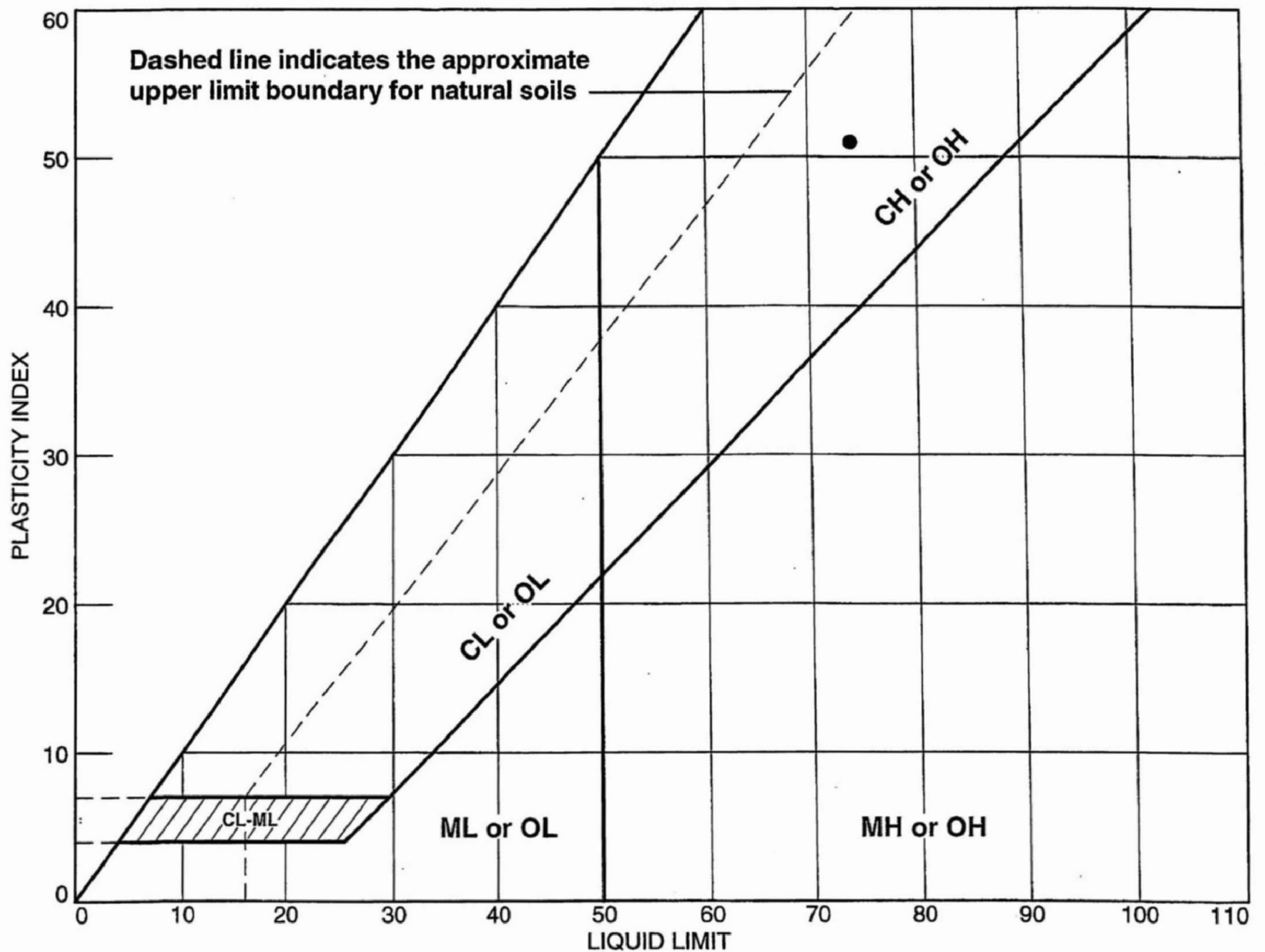
Fractional Components

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	13.6	13.9	11.8	74.3	86.1

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
						0.0128	0.0632	0.1047	0.1419

Fineness Modulus
0.05

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-2265	SS-11	38.5-40.0	24.6	23	74	51	CH

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure **NA**

Tested By: CS

Checked By: LBJ KAW 1/26/08

LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 38.5-40.0

Sample Number: SS-11

Material Description: Greenish Gray Fat CLAY

USCS: CH

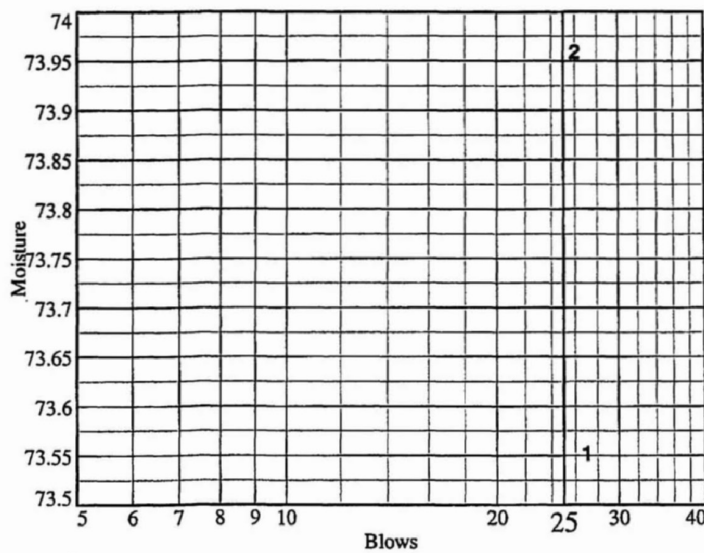
AASHTO: A-7-6(48)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.59	28.49				
Dry+Tare	21.89	22.98				
Tare	15.50	15.53				
# Blows	27	26				
Moisture	73.6	74.0				



Liquid Limit= 74
 Plastic Limit= 23
 Plasticity Index= 51
 Natural Moisture= 24.6
 Liquidity Index= 0.0

Plastic Limit Data

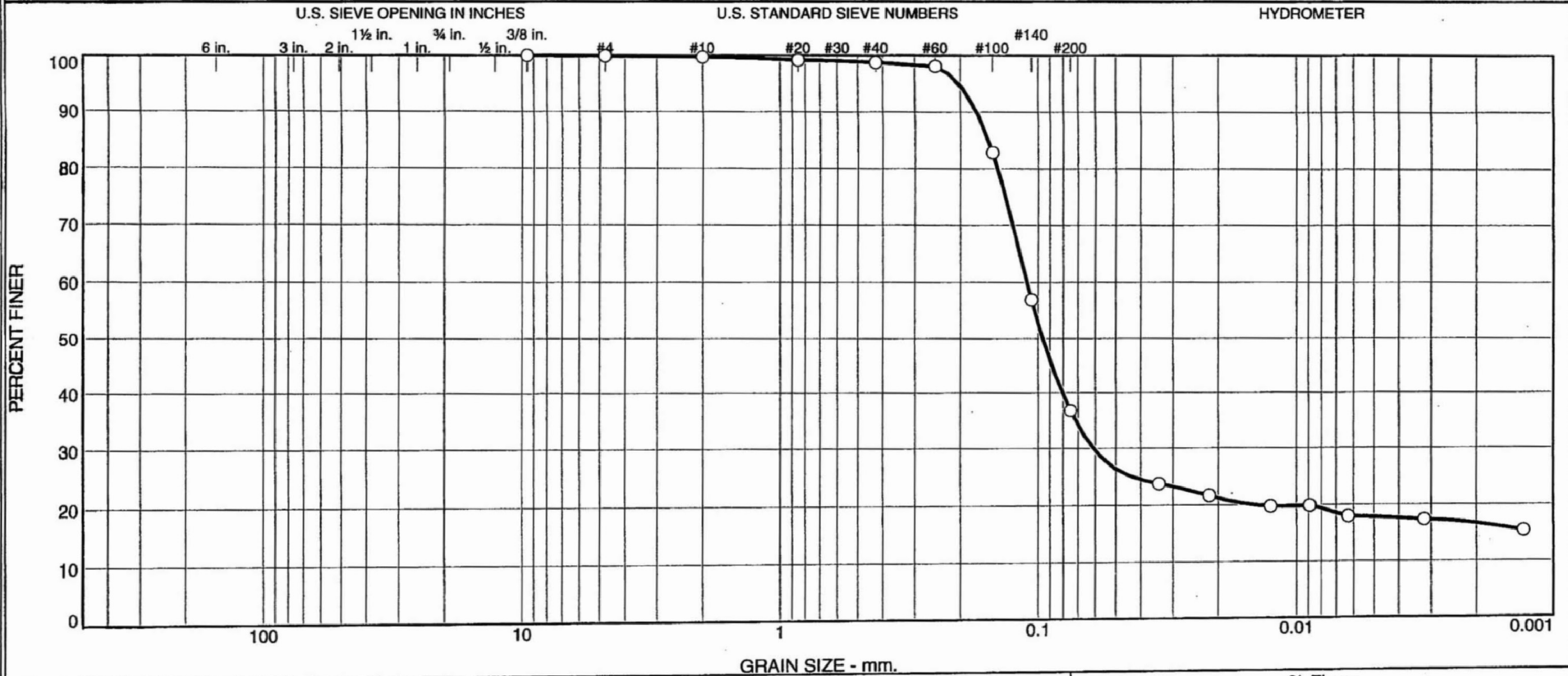
Run No.	1	2	3	4
Wet+Tare	22.74	22.57		
Dry+Tare	21.47	21.26		
Tare	15.79	15.48		
Moisture	22.4	22.7		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
120.57	98.63	9.44	24.6

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	0.1	0.2	1.0	62.0	18.9	17.8

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2265	SS-12	43.5-45.0	11-9-07	SC	Gray and Brownish Yellow Clayey SAND	16.5	24	15

Client Bechtel	MACTEC, Inc.	○ Specific Gravity = 2.663 (ASTM D2794-07)
Project Exelon Texas COL (Victoria)		
Project No. 6468071777		
Figure <i>NA</i>	Raleigh, North Carolina	

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 43.5-45.0

Sample Number: SS-12

Material Description: Gray and Brownish Yellow Clayey SAND

Date: 11-9-07

Natural Moisture: 16.5

Liquid Limit: 24

Plastic Limit: 15

USCS Class.: SC

Testing Remarks: Specific Gravity = 2.663 (ASTM D2794-07)

Tested by: CS

Checked by: LBJ

Steve Test Data

Dry Sample and Tare (grams)	Tare (grams)	Cumulative Pan Tare Weight (grams)	Sieve Opening Size	Cumulative Weight Retained (grams)	Percent Finer
174.15	0.00	0.00	3/8"	0.00	100.0
			#4	0.15	99.9
			#10	0.48	99.7
49.89	0.00	0.00	#20	0.28	99.2
			#40	0.49	98.7
			#60	0.84	98.0
			#100	8.44	82.9
			#140	21.42	56.9
			#200	31.51	36.7

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.7

Weight of hydrometer sample = 49.89

Hygroscopic moisture correction:

Moist weight and tare = 27.90

Dry weight and tare = 27.82

Tare weight = 15.64

Hygroscopic moisture = 0.7%

Table of composite correction values:

Temp., deg. C: 12.8 27.3

Comp. corr.: -7.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.663

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	23.1	16.0	11.8	0.0131	17.0	13.5	0.0340	23.8
5.00	22.9	15.0	10.8	0.0131	16.0	13.7	0.0217	21.6
15.00	23.1	14.0	9.8	0.0131	15.0	13.8	0.0126	19.7
30.00	23.3	14.0	9.9	0.0131	15.0	13.8	0.0089	19.9
60.00	23.5	13.0	9.0	0.0130	14.0	14.0	0.0063	18.0
240.00	22.4	13.0	8.6	0.0132	14.0	14.0	0.0032	17.3
1440.00	22.5	12.0	7.7	0.0132	13.0	14.2	0.0013	15.4

MACTEC, Inc.

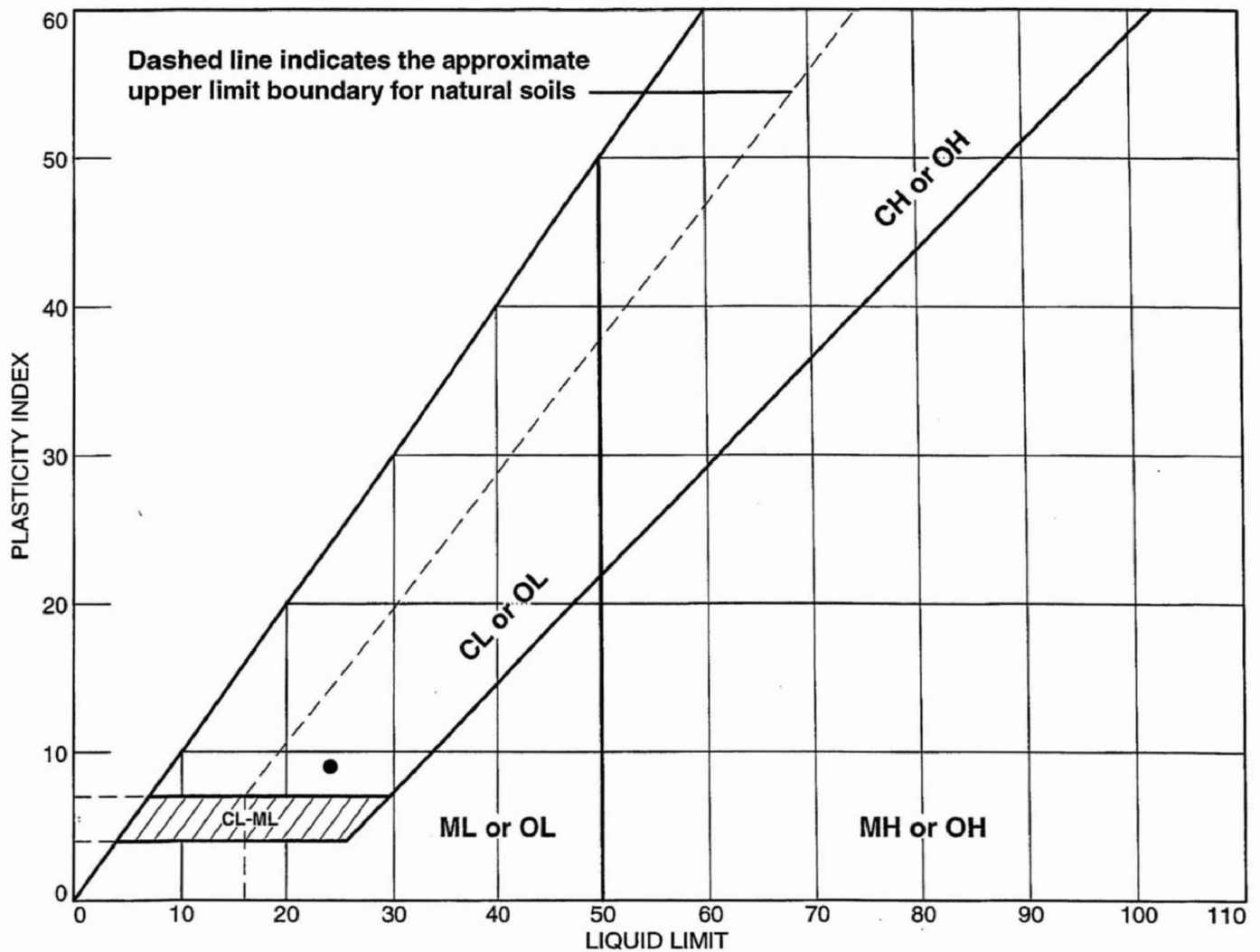
Factorial Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.1	0.1	0.2	1.0	62.0	63.2	18.9	17.8	36.7

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
		0.0145	0.0610	0.0960	0.1104	0.1435	0.1556	0.1729	0.2031

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-2265	SS-12	43.5-45.0	16.5	15	24	9	SC

MACTEC, Inc.

Raleigh, North Carolina

Client: Bechtel
Project: Exelon Texas COL (Victoria)

Project No.: 6468071777

Figure **NA**

Tested By: CS

Checked By: LBj KAW 1/26/08

LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 43.5-45.0

Sample Number: SS-12

Material Description: Gray and Brownish Yellow Clayey SAND

USCS: SC

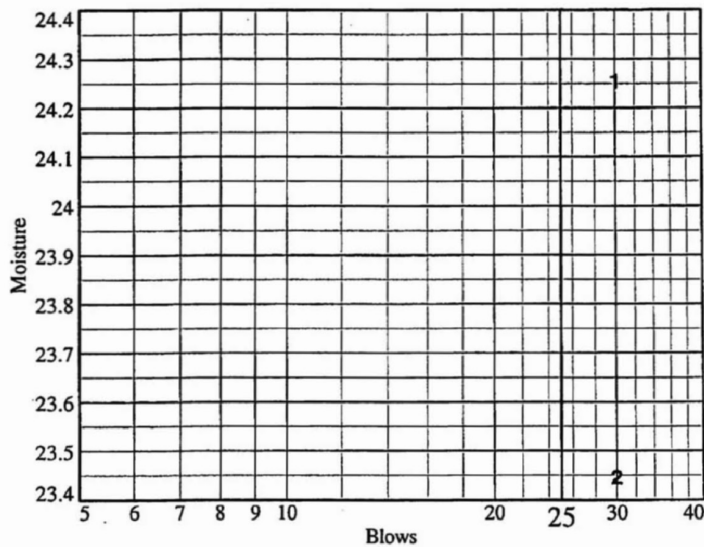
AASHTO: A-4(0)

Tested by: CS

Checked by: LBj

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	26.23	32.48				
Dry+Tare	23.30	29.27				
Tare	11.22	15.58				
# Blows	30	30				
Moisture	24.3	23.4				



Liquid Limit= 24
Plastic Limit= 15
Plasticity Index= 9
Natural Moisture= 16.5
Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	24.71	27.81		
Dry+Tare	23.59	26.27		
Tare	15.72	15.91		
Moisture	14.2	14.9		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
162.61	140.94	9.43	16.5

MACTEC, Inc.

**MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA**

**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: 1/14/08

SAMPLE IDENTIFICATION: B-2265 SS-12

(A) Mass of oven-dried soil, grams:		50.00
(B) Mass of pycnometer filled with water at test temperature (T), grams:		656.75
(C) Mass of pycnometer, water and soil, grams:		687.98
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		21.8
(G) Specific Gravity at observed temperature:	$A / [C - (C - A)]$	2.664
(F)	Correction factor:	0.99961
(G x F)	SPECIFIC GRAVITY @ 20°C:	2.663

MATERIAL TESTED: - # 4 - # 10

PREPARATION METHOD: DRY WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100%
Clayey SAND (SC)

EQUIPMENT USED
SCALES : 3.1.19
OVEN : 5.1.16
THERMOMETER : 5.1.01
PYCNOMETER : P-5

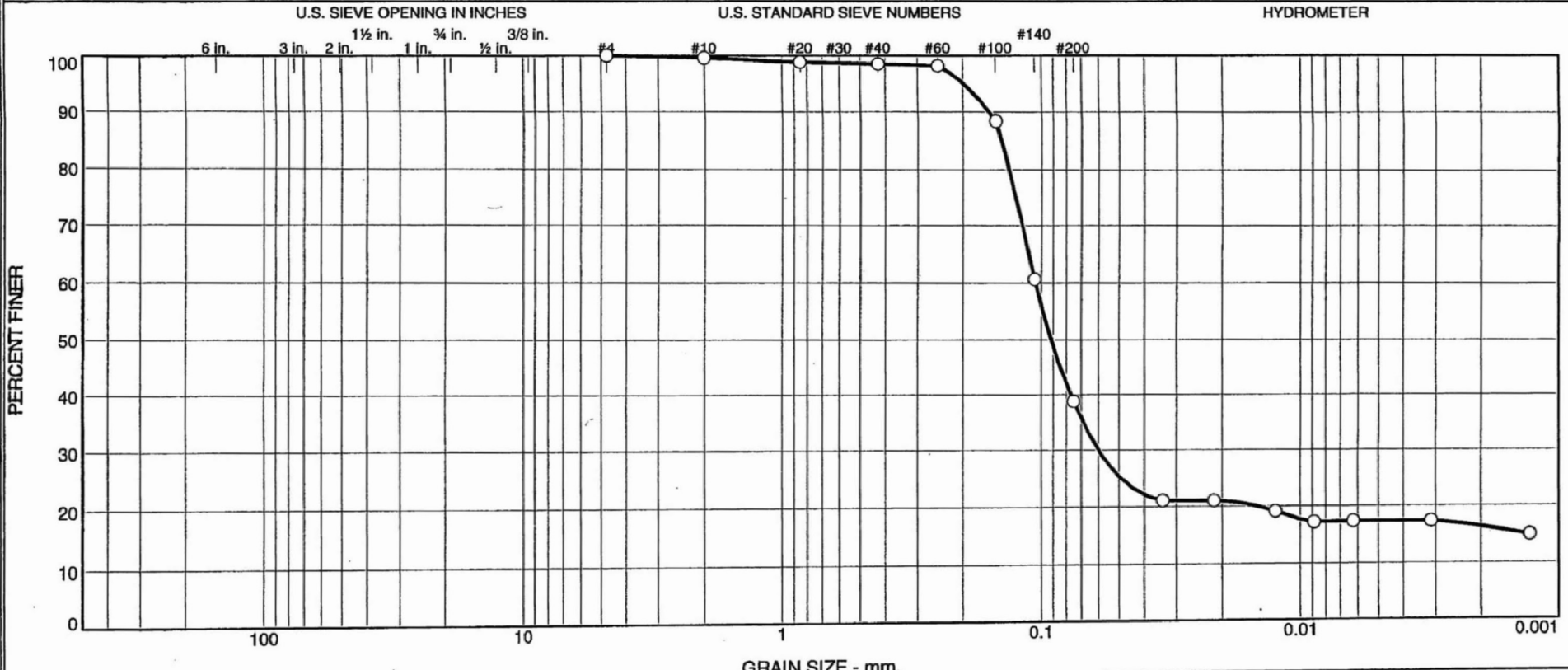
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

KAW 1/26/08

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	0.0	0.4	1.1	59.7	21.5	17.3

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2265	SS-13	48.5-50.0	11-9-07	SC	Gray Clayey SAND	21.1	25	16

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

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DCN# EXE805

GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 48.5-50.0

Sample Number: SS-13

Material Description: Gray Clayey SAND

Date: 11-9-07

Natural Moisture: 21.1

Liquid Limit: 25

Plastic Limit: 16

USCS Class.: SC

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
189.06	0.00	0.00	#4	0.00	100.0
			#10	0.67	99.6
50.76	0.00	0.00	#20	0.40	98.9
			#40	0.57	98.5
			#60	0.74	98.2
			#100	5.67	88.5
			#140	19.84	60.7
			#200	31.00	38.8

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 99.6

Weight of hydrometer sample = 50.76

Hygroscopic moisture correction:

Moist weight and tare = 28.44

Dry weight and tare = 28.41

Tare weight = 15.50

Hygroscopic moisture = 0.2%

Table of composite correction values:

Temp., deg. C: 12.8 27.3

Comp. corr.: -7.0 -3.0

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	15.0	10.8	0.0130	16.0	13.7	0.0339	21.0
5.00	22.9	15.0	10.8	0.0130	16.0	13.7	0.0215	21.0
15.00	23.0	14.0	9.8	0.0130	15.0	13.8	0.0124	19.1
30.00	23.0	13.0	8.8	0.0130	14.0	14.0	0.0089	17.1
60.00	23.3	13.0	8.9	0.0129	14.0	14.0	0.0062	17.3
240.00	23.3	13.0	8.9	0.0129	14.0	14.0	0.0031	17.3
1440.00	22.5	12.0	7.7	0.0130	13.0	14.2	0.0013	14.9

MACTEC, Inc.

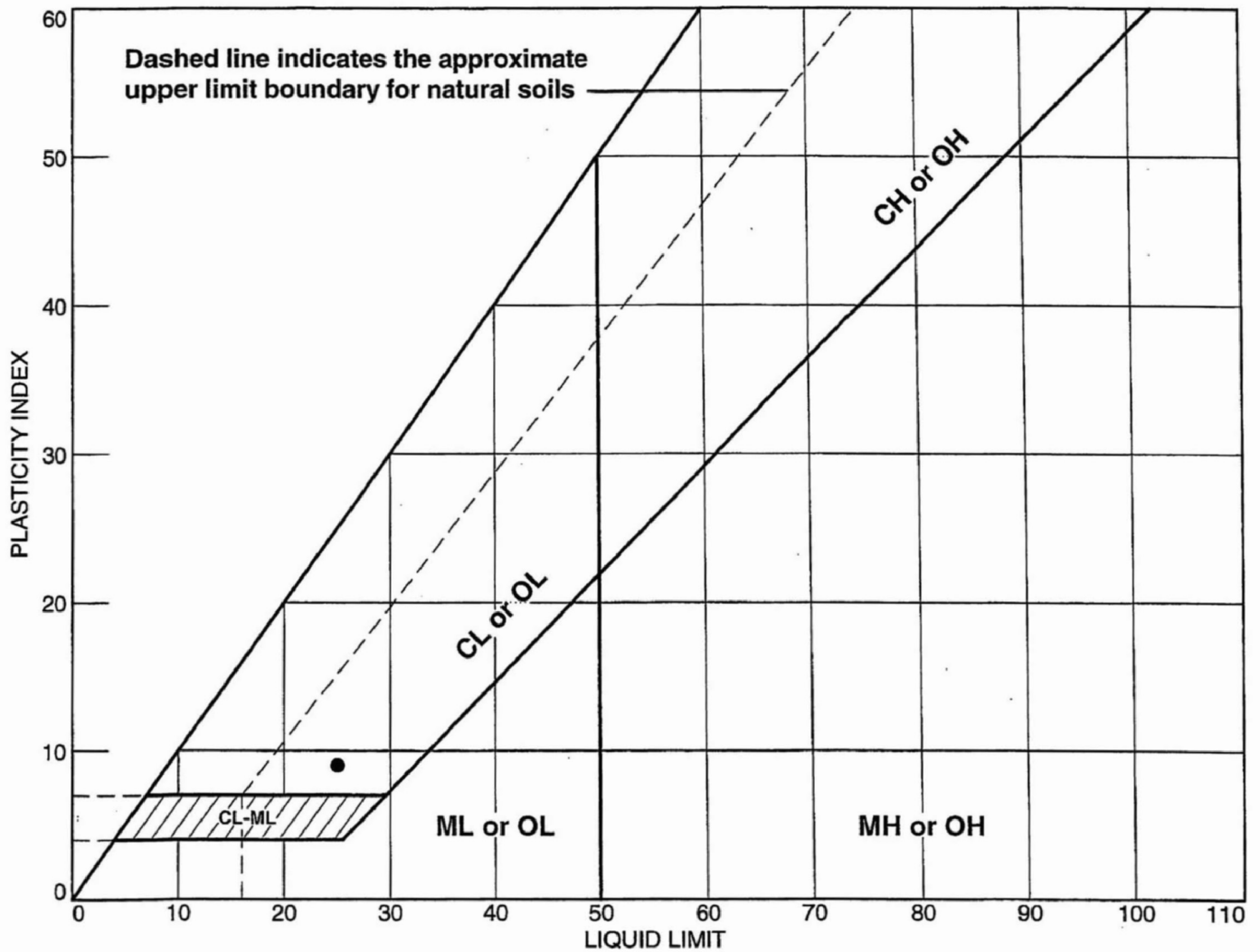
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.4	1.1	59.7	61.2	21.5	17.3	38.8

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
	0.0013	0.0146	0.0599	0.0916	0.1051	0.1330	0.1421	0.1585	0.1989

Fineness Modulus
0.16

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-2265	SS-13	48.5-50.0	21.1	16	25	9	SC

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

Figure **NA**

Tested By: CS

Checked By: LBJ

KAW 1/26/08

LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 48.5-50.0

Sample Number: SS-13

Material Description: Gray Clayey SAND

USCS: SC

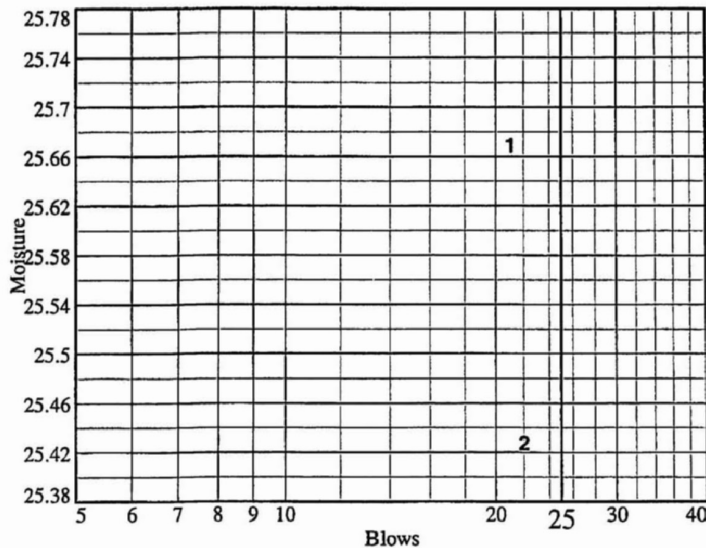
AASHTO: A-4(0)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	32.38	35.26				
Dry+Tare	28.93	31.25				
Tare	15.49	15.48				
# Blows	21	22				
Moisture	25.7	25.4				



Liquid Limit= 25
 Plastic Limit= 16
 Plasticity Index= 9
 Natural Moisture= 21.1
 Liquidity Index= 0.6

Plastic Limit Data

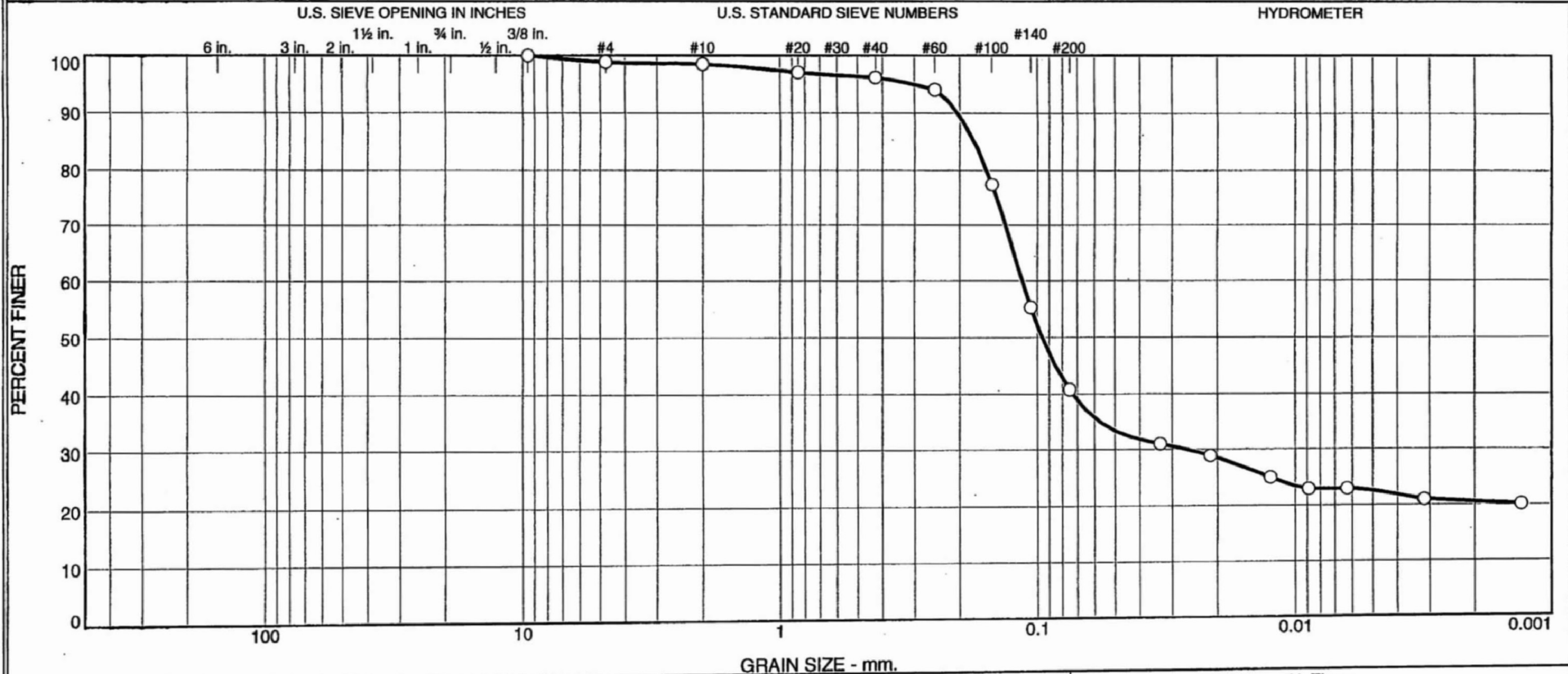
Run No.	1	2	3	4
Wet+Tare	22.29	23.75		
Dry+Tare	21.35	22.61		
Tare	15.49	15.61		
Moisture	16.0	16.3		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
114.07	95.80	9.27	21.1

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	1.1	0.4	2.3	55.4	18.2	22.6

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
Boring B-2265	SS-14	53.5-55.0	11-9-07	SC	Gray Clayey SAND	17.9	27	16

Client Bechtel	MACTEC, Inc.	○ Specific Gravity = 2.656 (ASTM D854-06)
Project Exelon Texas COL (Victoria)		
Project No. 6468071777		
Figure ND	Raleigh, North Carolina	

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GRAIN SIZE DISTRIBUTION TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 53.5-55.0

Sample Number: SS-14

Material Description: Gray Clayey SAND

Date: 11-9-07

Natural Moisture: 17.9

Liquid Limit: 27

Plastic Limit: 16

USCS Class.: SC

Testing Remarks: Specific Gravity = 2.656 (ASTM D854-06)

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
153.05	0.00	0.00	3/8	0.00	100.0
			#4	1.73	98.9
			#10	2.29	98.5
50.98	0.00	0.00	#20	0.74	97.1
			#40	1.19	96.2
			#60	2.28	94.1
			#100	10.90	77.4
			#140	22.33	55.4
			#200	29.86	40.8

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 98.5

Weight of hydrometer sample = 50.98

Hygroscopic moisture correction:

Moist weight and tare = 24.29

Dry weight and tare = 24.05

Tare weight = 11.07

Hygroscopic moisture = 1.8%

Table of composite correction values:

Temp., deg. C: 12.8 27.3

Comp. corr.: -7.0 -3.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.656

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	22.9	20.0	15.8	0.0131	21.0	12.9	0.0333	31.0
5.00	22.6	19.0	14.7	0.0132	20.0	13.0	0.0213	28.9
15.00	22.6	17.0	12.7	0.0132	18.0	13.3	0.0124	25.0
30.00	22.4	16.0	11.6	0.0132	17.0	13.5	0.0089	22.9
60.00	22.4	16.0	11.7	0.0132	17.0	13.5	0.0063	22.9
240.00	22.5	15.0	10.7	0.0132	16.0	13.7	0.0032	21.0
1440.00	20.9	15.0	10.2	0.0135	16.0	13.7	0.0013	20.1

MACTEC, Inc.

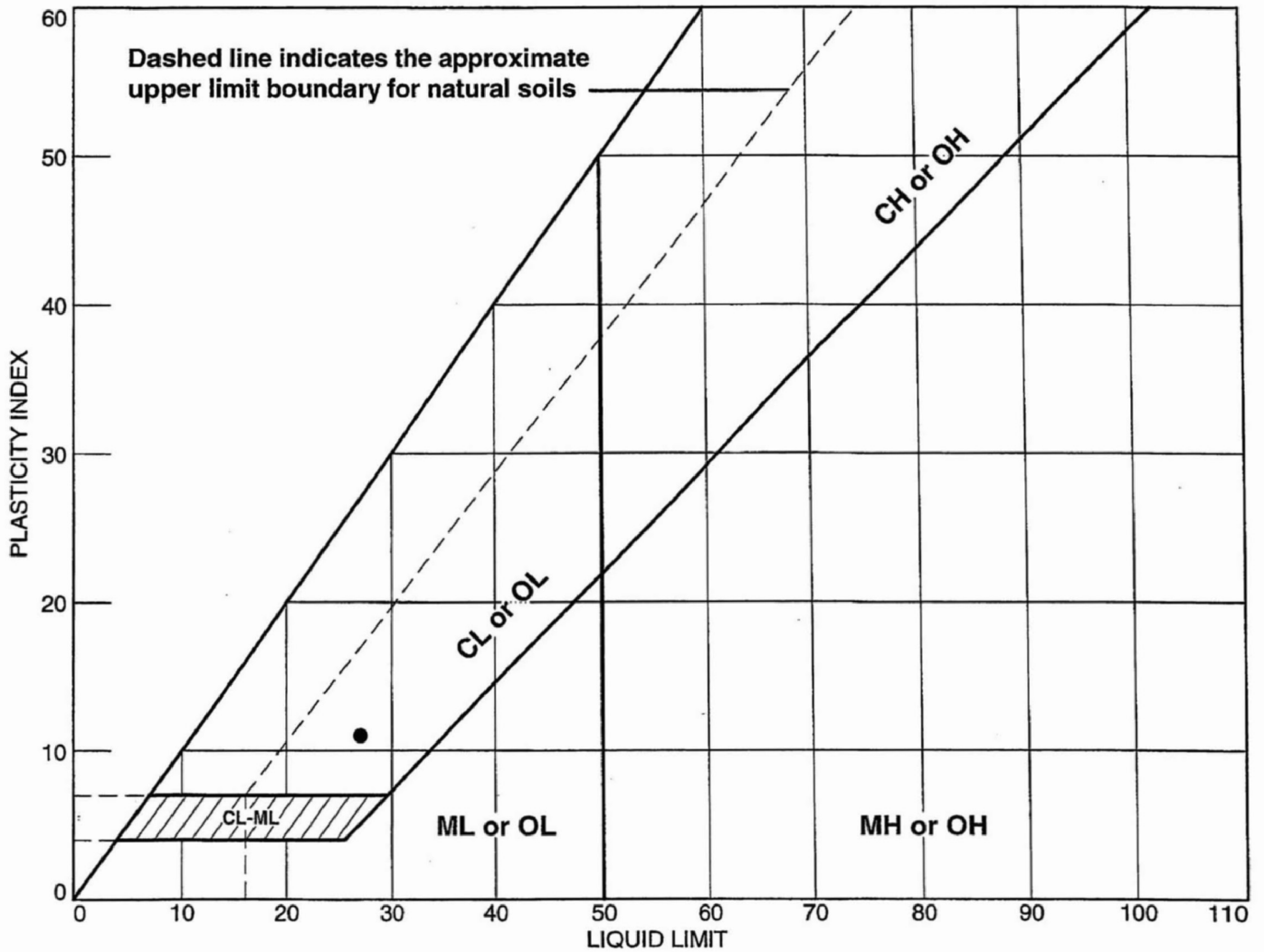
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	1.1	1.1	0.4	2.3	55.4	58.1	18.2	22.6	40.8

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0262	0.0958	0.1143	0.1573	0.1754	0.2036	0.3026

Fineness Modulus
0.36

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-2265	SS-14	53.5-55.0	17.9	16	27	11	SC

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

Figure **NA**

Tested By: CS

Checked By: LBJ KAW 1/26/08

LIQUID AND PLASTIC LIMIT TEST DATA

1/26/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: Boring B-2265

Depth: 53.5-55.0

Sample Number: SS-14

Material Description: Gray Clayey SAND

USCS: SC

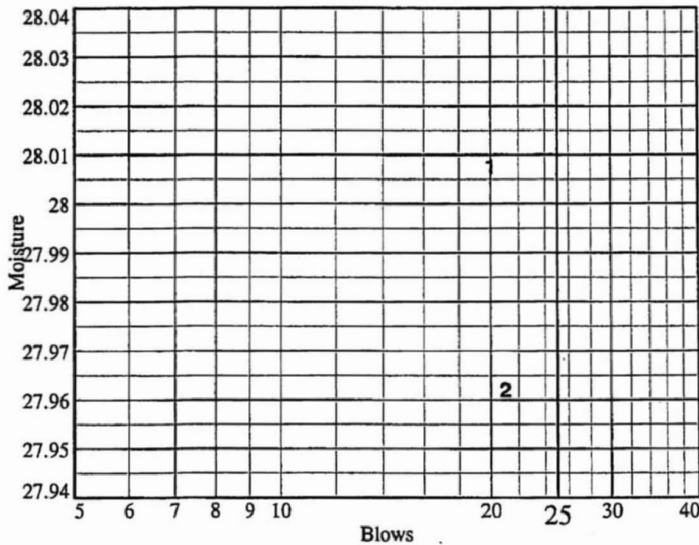
AASHTO: A-6(1)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	29.04	31.65				
Dry+Tare	26.13	28.11				
Tare	15.74	15.45				
# Blows	20	21				
Moisture	28.0	28.0				



Liquid Limit= 27
 Plastic Limit= 16
 Plasticity Index= 11
 Natural Moisture= 17.9
 Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	23.84	25.35		
Dry+Tare	22.64	23.98		
Tare	15.42	15.52		
Moisture	16.6	16.2		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
68.10	58.80	6.85	17.9

MACTEC, Inc.

**MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NORTH CAROLINA**

**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: 1/14/08

SAMPLE IDENTIFICATION: B-2265 SS-14

(A) Mass of oven-dried soil, grams:	49.97
(B) Mass of pycnometer filled with water at test temperature (T), grams:	654.72
(C) Mass of pycnometer, water and soil, grams:	685.89
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	22.9
(G) Specific Gravity at observed temperature:	A / [C - (C - A)]
(F)	Correction factor: 0.99936
(G x F)	SPECIFIC GRAVITY @ 20°C: 2.656

MATERIAL TESTED:

- # 4

- # 10

PREPARATION METHOD:

DRY

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100%
Clayey SAND (SC)

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

KAW 1/26/08

