

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: TP-2320

Depth: 5.0-10.0'

Sample Number: Bulk 2

Material Description: Olive Yellow Sandy Lean CLAY

USCS: CL

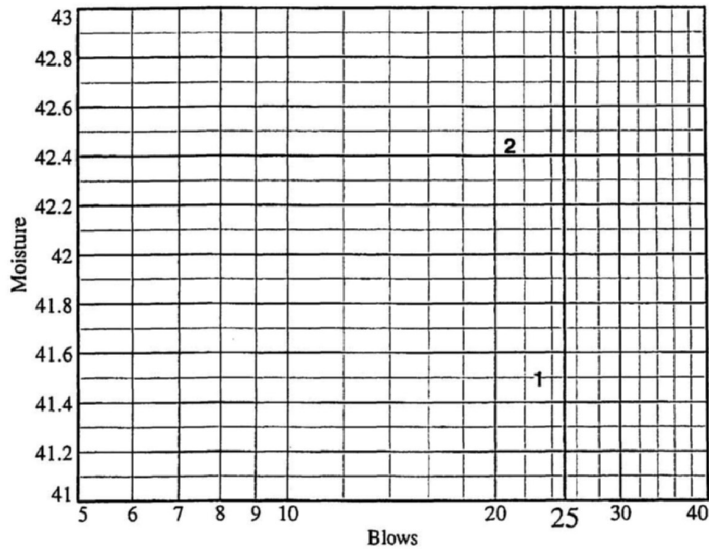
AASHTO: A-7-6(15)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	22.29	23.74				
Dry+Tare	20.29	21.27				
Tare	15.47	15.45				
# Blows	23	21				
Moisture	41.5	42.4				



Liquid Limit= 41
 Plastic Limit= 16
 Plasticity Index= 25
 Natural Moisture= 9.3
 Liquidity Index= -0.3

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	22.91	22.07		
Dry+Tare	21.93	21.22		
Tare	15.59	15.76		
Moisture	15.5	15.6		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
160.85	148.00	9.26	9.3

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: 2/17/08

SAMPLE IDENTIFICATION: TP-2320 BULK 2, 5-10'

(A) Mass of oven-dried soil, grams:		52.40
(B) Mass of pycnometer filled with water at test temperature (T), grams:		655.66
(C) Mass of pycnometer, water and soil, grams:		688.45
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		21.6
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$	2.672
(F)	Correction factor:	0.99966
(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 : 3.1.99
OVEN : 5.1.16
THERMOMETER : 5.1.01
PYCNOMETER : P-6

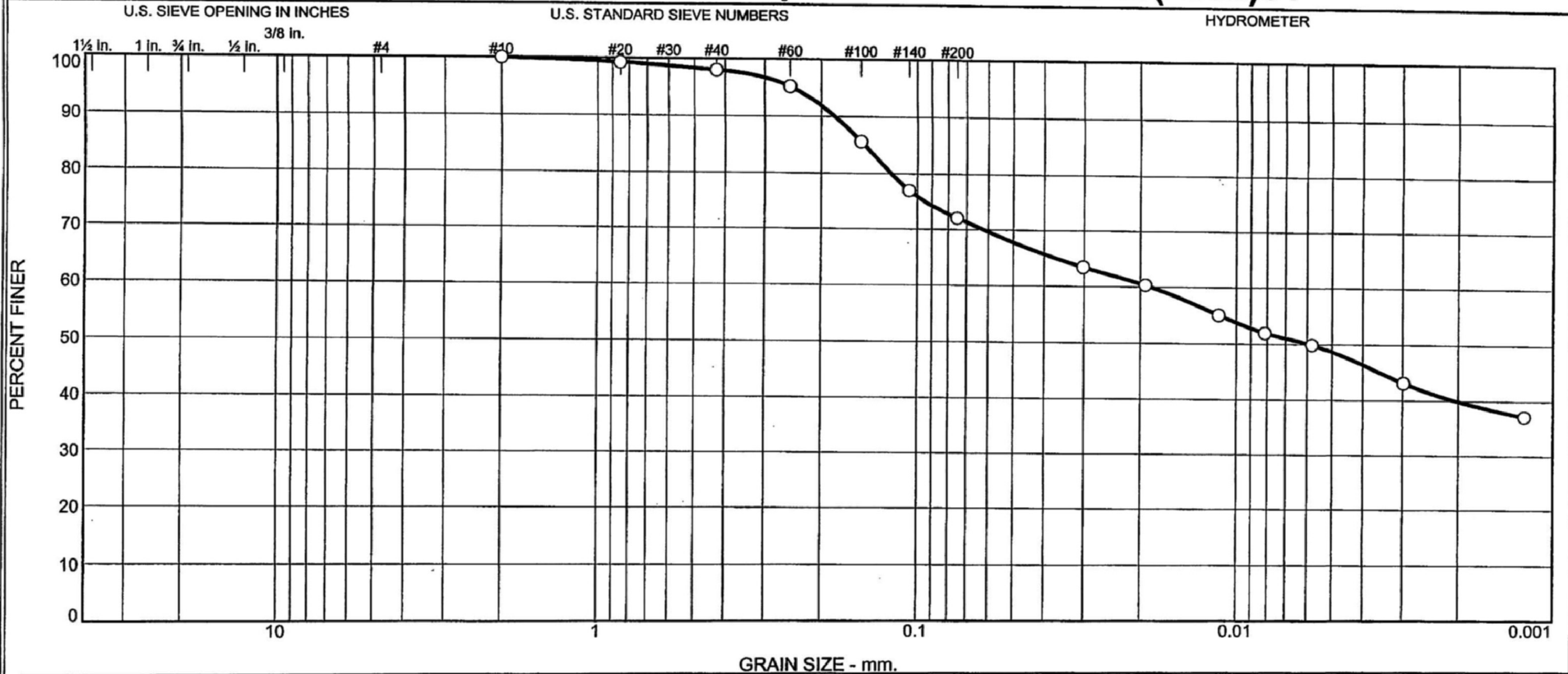
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

DSC 3-4-08

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



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.0	26.0	23.3	48.7

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
TP-2321	Bulk 1	4.0-5.0'	1/30/08	CH	Dark Gray Fat CLAY with sand	15.3	51	20

Client Bechtel	MACTEC, Inc.	○ Specific Gravity = 2.696 (ASTM D854-06) Organic Content = 3.6% (ASTM D2974-07) Natural Moisture and Organic Content obtained from Jar Sample S-2, 4'
Project Exelon Texas COL (Victoria)		
Project No. 6468071777		

Tested By: CS

Checked By: LBJ

DSC 4-2-08

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: TP-2321

Depth: 4.0-5.0'

Sample Number: Bulk 1

Material Description: Dark Gray Fat CLAY with sand

Date: 1/30/08

Natural Moisture: 15.3

Liquid Limit: 51

Plastic Limit: 20

USCS Class.: CH

Testing Remarks: Specific Gravity = 2.696 (ASTM D854-06)

Organic Content = 3.6% (ASTM D2974-07)

Natural Moisture and Organic Content obtained from Jar Sample S-2, 4'

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
367.94	0.00	0.00	#10	0.00	100.0
48.51	0.00	0.00	#20	0.36	99.3
			#40	0.98	98.0
			#60	2.32	95.2
			#100	6.94	85.7
			#140	11.15	77.0
			#200	13.56	72.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 48.51

Hygroscopic moisture correction:

Moist weight and tare = 30.21

Dry weight and tare = 29.87

Tare weight = 15.64

Hygroscopic moisture = 2.4%

Table of composite correction values:

Temp., deg. C: 12.9 29.9

Comp. corr.: -8.0 -2.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.696

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	21.1	35.5	30.4	0.0133	36.5	10.3	0.0301	63.5
5.00	21.1	34.0	28.9	0.0133	35.0	10.6	0.0193	60.4
15.00	21.1	31.5	26.4	0.0133	32.5	11.0	0.0114	55.1
30.00	21.1	30.0	24.9	0.0133	31.0	11.2	0.0081	52.0
60.00	21.1	29.0	23.9	0.0133	30.0	11.4	0.0058	49.9
240.00	20.4	26.0	20.6	0.0134	27.0	11.9	0.0030	43.1
1440.00	20.9	23.0	17.8	0.0133	24.0	12.4	0.0012	37.2

MACTEC, Inc.

Fractional Components

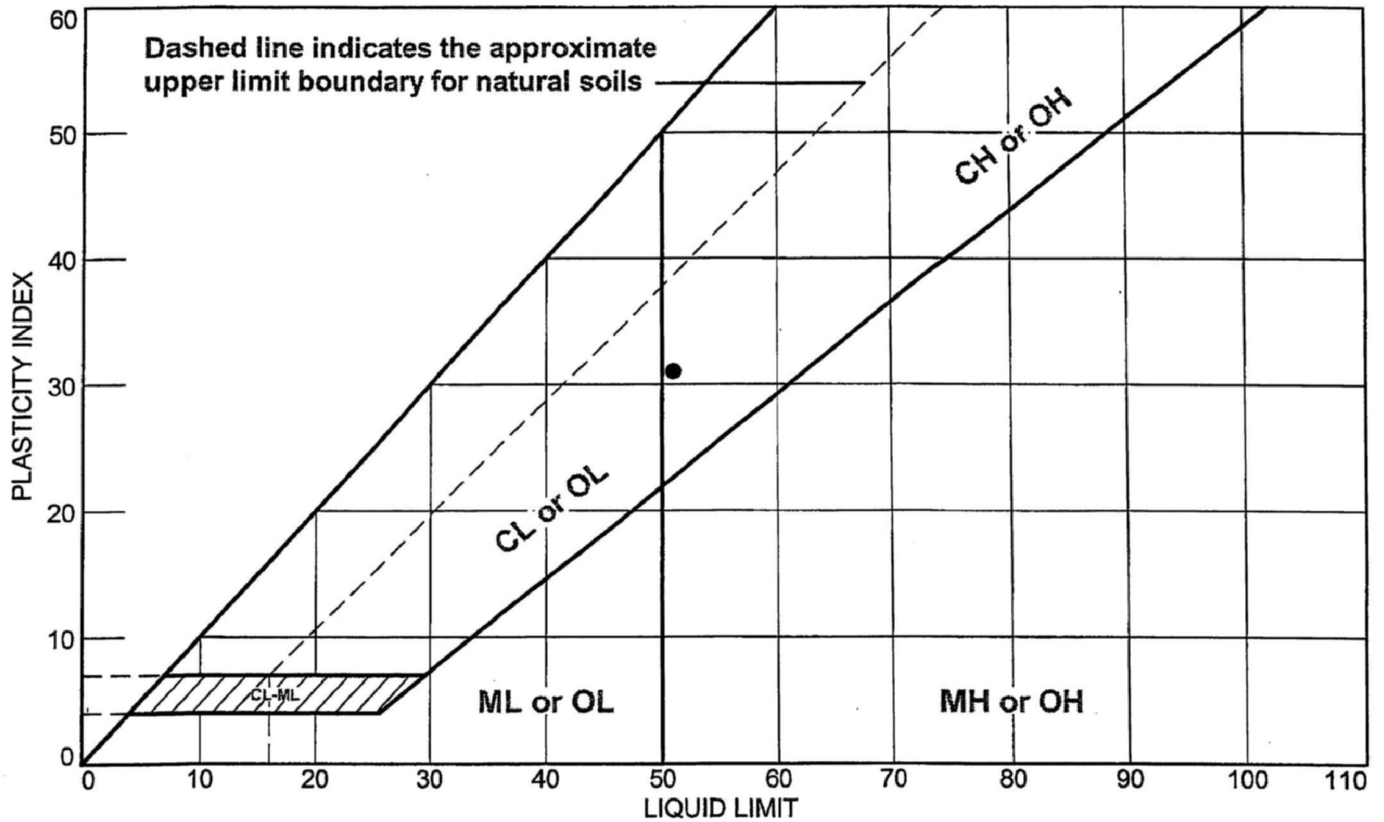
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.0	26.0	28.0	23.3	48.7	72.0

D10	D15	D20	D30	D50	D60	D80	D85	D90	D95
				0.0058	0.0185	0.1206	0.1460	0.1808	0.2453

Fineness Modulus
0.19

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	TP-2321	Bulk 1	4.0-5.0'	15.3	20	51	31	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 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: TP-2321

Depth: 4.0-5.0'

Sample Number: Bulk 1

Material Description: Dark Gray Fat CLAY with sand

USCS: CH

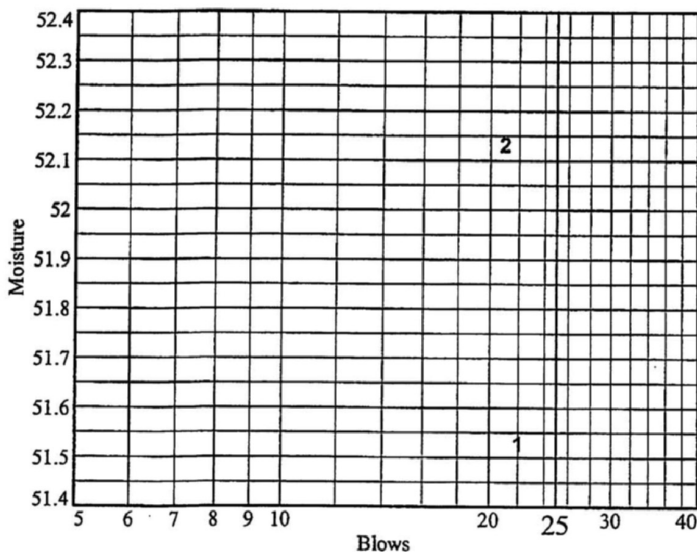
AASHTO: A-7-6(21)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	25.56	25.05				
Dry+Tare	22.19	21.75				
Tare	15.65	15.42				
# Blows	22	21				
Moisture	51.5	52.1				



Liquid Limit= 51
 Plastic Limit= 20
 Plasticity Index= 31
 Natural Moisture= 15.3
 Liquidity Index= -0.2

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	22.60	22.88		
Dry+Tare	21.45	21.64		
Tare	15.72	15.51		
Moisture	20.1	20.2		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
202.51	176.58	6.82	15.3

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: 2/17/08

SAMPLE IDENTIFICATION: TP-2321 BULK 1,4-5'

(A) Mass of oven-dried soil, grams:	52.03
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.49
(C) Mass of pycnometer, water and soil, grams:	689.23
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	21.7
(G) Specific Gravity at observed temperature:	A / [B - (C - A)]
(F)	Correction factor:
(G x F)	SPECIFIC GRAVITY @ 20°C:
	2.697
	0.99963
	2.696

MATERIAL TESTED:

- # 4

- # 10

PREPARATION METHOD:

DRY

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100

Fat CLAY with sand (CH)

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-6

TESTED BY: CS

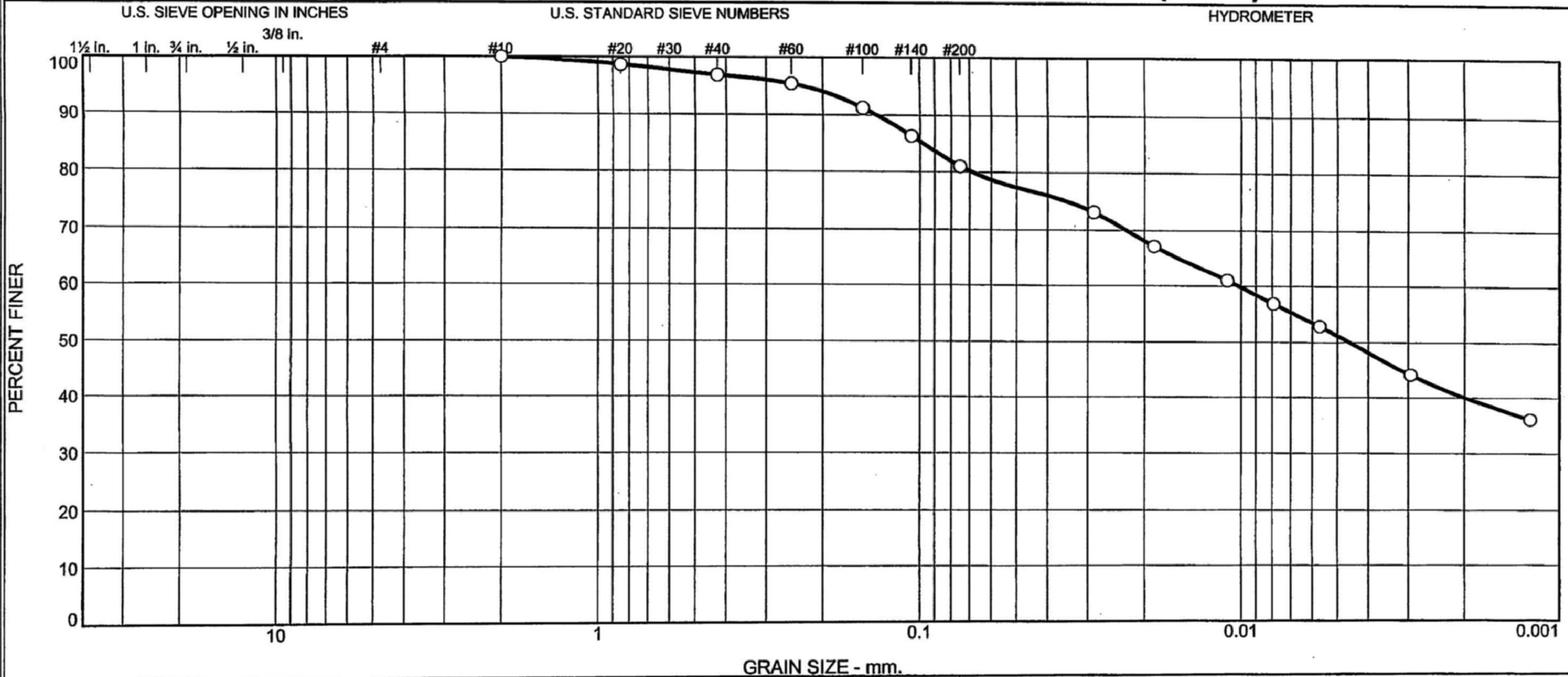
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REVIEWED BY:

Brian Johnson

DSC 3-4-08.

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



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	3.1	15.9	29.8	51.2

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
TP-2321	Bulk 2	6.5-10.0	1/30/08	CL	Yellow Lean CLAY with sand	16.0	49	19

Client Bechtel	MACTEC, Inc.	○ Specific Gravity = 2.703 (ASTM D854-06) Natural Moisture and Organic Content was obtained from Jar Sample S-3,7'
Project Exelon Texas COL (Victoria)		
Project No. 6468071777	Figure <i>N4</i>	Raleigh, North Carolina

Tested By: CS

Checked By: LBJ

DSC 4-2-08

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: TP-2321

Depth: 6.5-10.0

Sample Number: Bulk 2

Material Description: Yellow Lean CLAY with sand

Date: 1/30/08

Natural Moisture: 16.0

Liquid Limit: 49

Plastic Limit: 19

USCS Class.: CL

Testing Remarks: Specific Gravity = 2.703 (ASTM D854-06)

Natural Moisture and Organic Content was obtained from Jar Sample S-3,7'

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
393.41	0.00	0.00	#10	0.00	100.0
49.33	0.00	0.00	#20	0.66	98.7
			#40	1.55	96.9
			#60	2.28	95.4
			#100	4.32	91.2
			#140	6.71	86.4
			#200	9.36	81.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.33

Hygroscopic moisture correction:

Moist weight and tare = 30.37

Dry weight and tare = 30.11

Tare weight = 15.68

Hygroscopic moisture = 1.8%

Table of composite correction values:

Temp., deg. C: 12.9 29.9

Comp. corr.: -8.0 -2.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.703

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	21.1	41.0	35.9	0.0132	42.0	9.4	0.0287	73.2
5.00	21.1	38.0	32.9	0.0132	39.0	9.9	0.0186	67.1
15.00	21.1	35.0	29.9	0.0132	36.0	10.4	0.0110	61.0
30.00	21.1	33.0	27.9	0.0132	34.0	10.7	0.0079	56.9
60.00	21.2	31.0	25.9	0.0132	32.0	11.0	0.0057	52.9
240.00	20.4	27.0	21.6	0.0134	28.0	11.7	0.0030	44.1
1440.00	20.5	23.0	17.7	0.0133	24.0	12.4	0.0012	36.1

MACTEC, Inc.

Fractional Components

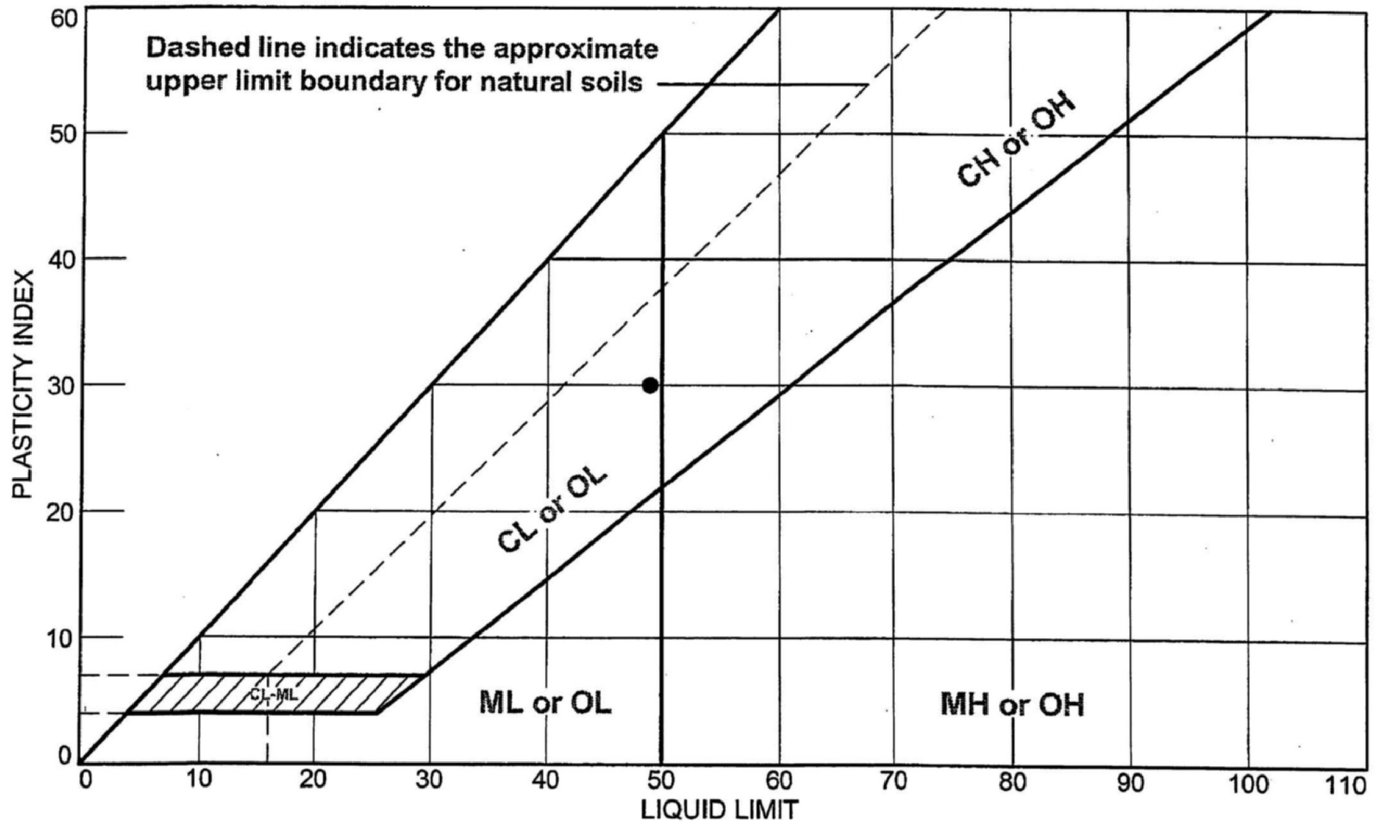
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	3.1	15.9	19.0	29.8	51.2	81.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
				0.0046	0.0102	0.0688	0.0973	0.1357	0.2324

Fineness Modulus
0.16

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA							
SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
● TP-2321	Bulk 2	6.5-10.0	16.0	19	49	30	CL

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

Tested By: CS Checked By: LBJ DSC 4-2-08

LIQUID AND PLASTIC LIMIT TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: TP-2321

Depth: 6.5-10.0

Sample Number: Bulk 2

Material Description: Yellow Lean CLAY with sand

USCS: CL

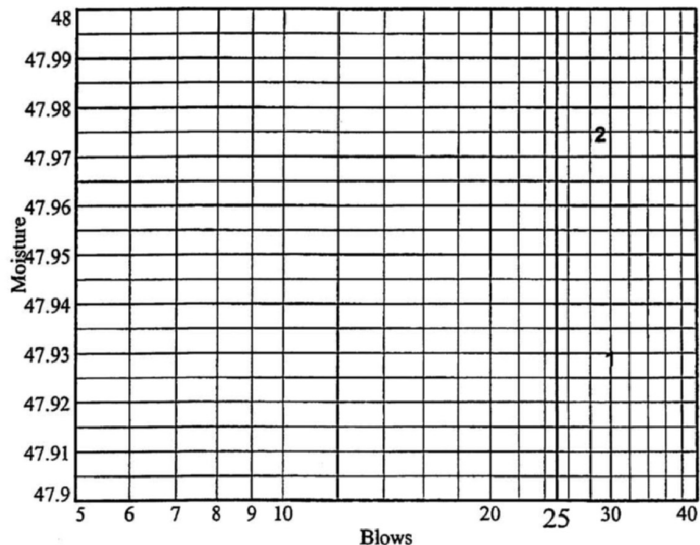
AASHTO: A-7-6(24)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	32.90	34.05				
Dry+Tare	27.23	28.01				
Tare	15.40	15.42				
# Blows	30	29				
Moisture	47.9	48.0				



Liquid Limit= 49
 Plastic Limit= 19
 Plasticity Index= 30
 Natural Moisture= 16.0
 Liquidity Index= -0.1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	22.26	21.82		
Dry+Tare	21.20	20.84		
Tare	15.61	15.51		
Moisture	19.0	18.4		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
176.61	153.15	6.73	16.0

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: 2/22/08

SAMPLE IDENTIFICATION: TP-2321 BULK 2,6.5-10'

(A) Mass of oven-dried soil, grams:		53.54
(B) Mass of pycnometer filled with water at test temperature (T), grams:		655.74
(C) Mass of pycnometer, water and soil, grams:		689.48
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		20.9
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$	2.704
(F)	Correction factor:	0.99981
(G x F)	SPECIFIC GRAVITY @ 20°C:	2.704

MATERIAL TESTED:

- # 4

- # 10

PREPARATION METHOD:

DRY

WET (dispersed)

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

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNO METER : P-3

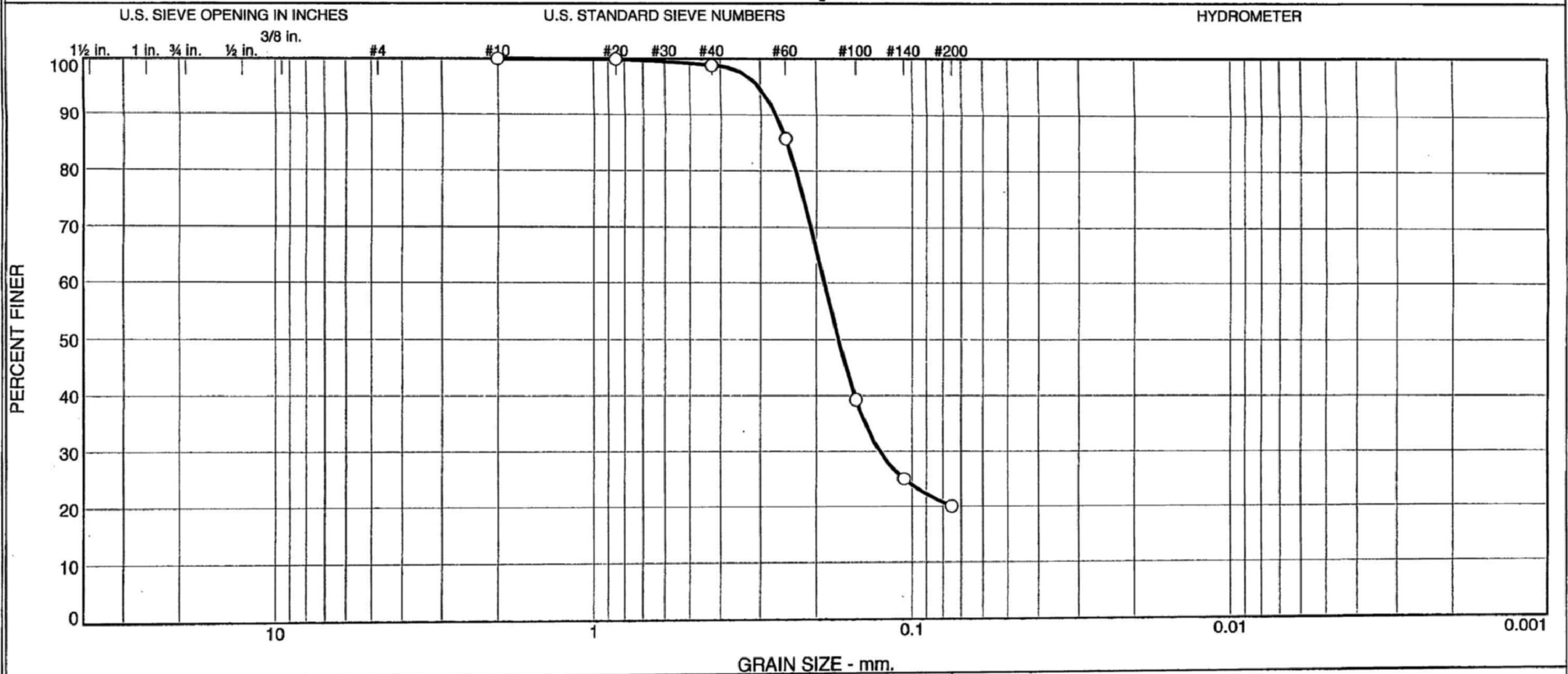
TESTED BY: CS

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REVIEWED BY: Brian Johnson

DSC 3-4-08

Particle Size Distribution Report / ASTM D 6913-04e1



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.2	78.8	20.0	

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
TP-2332	Bulk 2	3.0-10.0	1/22/08	SM	Very Pale Brown Silty SAND (Visual)	10.9	ND	ND

Client Bechtel Project Exelon Texas COL (Victoria)	<h2 style="margin: 0;">MACTEC, Inc.</h2> <h3 style="margin: 0;">Raleigh, North Carolina</h3>	○ SIEVE ANALYSIS ONLY Specific Gravity = 2.656 (ASTM D854-06) Organic content = 1.9% (ASTM D2974-07)-(S-2 5'), ND = Not Determined Natural Moisture obtained from Jar Sample S-3, 7'
Project No. 6468071777	Figure <i>NA</i>	

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: TP-2332

Depth: 3.0-10.0

Sample Number: Bulk 2

Material Description: Very Pale Brown Silty SAND (Visual)

Date: 1/22/08

Natural Moisture: 10.9

Liquid Limit: ND

Plastic Limit: ND

USCS Class.: SM

Testing Remarks: SIEVE ANALYSIS ONLY

Specific Gravity = 2.656 (ASTM D854-06)

Organic content = 1.9% (ASTM D2974-07)-(S-2.5'),

ND = Not Determined

Natural Moisture obtained from Jar Sample S-3, 7'

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
229.94	0.00	0.00	#10	0.00	100.0
98.94	0.00	0.00	#20	0.11	99.9
			#40	1.14	98.8
			#60	14.03	85.8
			#100	60.10	39.3
			#140	74.14	25.1
			#200	79.12	20.0

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	1.2	78.8	80.0			20.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.1263	0.1704	0.1885	0.2319	0.2471	0.2678	0.3029

Fineness Modulus
0.67

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: 2/21/08

SAMPLE IDENTIFICATION: TP-2332 BULK 2,3-10'

(A) Mass of oven-dried soil, grams:	75.00
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.48
(C) Mass of pycnometer, water and soil, grams:	703.25
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	21.8
(G) Specific Gravity at observed temperature:	A / [B - (C - A)]
(F) Correction factor:	0.99961
(G x F)	SPECIFIC GRAVITY @ 20°C: 2.656

MATERIAL TESTED:

- # 4

- # 10

PREPARATION METHOD:

DRY

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100
Silty SAND (SM)-Visual

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER :5.1.01

PYCNO METER : P-6

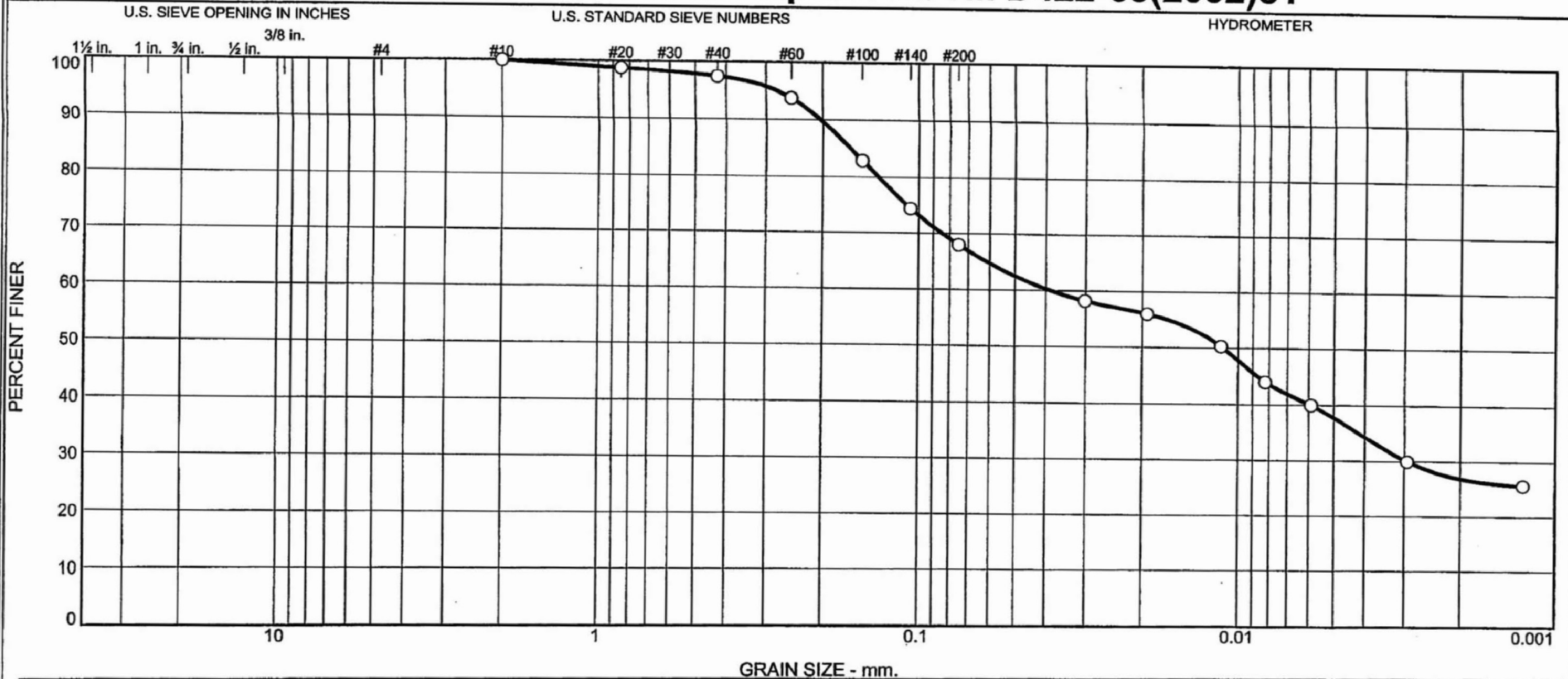
TESTED BY: CS

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

REVIEWED BY: Brian Johnson

DSC 3-4-08

Particle Size Distribution Report / ASTM D422-63(2002)e1



% Gravel		% Sand			% Fines	
Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	2.6	29.4	30.2	37.8

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
TP-2334	Bulk 1	2.0-5.0	1/20/08	CL	Light Brownish Gray Sandy Lean CLAY	14.8	44	13

Client Bechtel	MACTEC, Inc.	○ Specific Gravity = 2.722 (ASTM D854-06) Organic content = 4.3% (ASTM D2974-07) Natural Moisture and Organic Content obtained from Jar Sample S-2,2-5'
Project Exelon Texas COL (Victoria)		
Project No. 6468071777		
Figure <i>NA</i>	Raleigh, North Carolina	

Tested By: CS

Checked By: LBJ

DSC 4-2-08

GRAIN SIZE DISTRIBUTION TEST DATA

4/2/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria)

Project Number: 6468071777

Location: TP-2334

Depth: 2.0-5.0

Sample Number: Bulk 1

Material Description: Light Brownish Gray Sandy Lean CLAY

Date: 1/20/08

Natural Moisture: 14.8

Liquid Limit: 44

Plastic Limit: 13

USCS Class.: CL

Testing Remarks: Specific Gravity = 2.722 (ASTM D854-06)

Organic content = 4.3% (ASTM D2974-07)

Natural Moisture and Organic Content obtained from Jar Sample S-2,2-5'

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
379.83	0.00	0.00	#10	0.00	100.0
50.25	0.00	0.00	#20	0.64	98.7
			#40	1.31	97.4
			#60	3.16	93.7
			#100	8.59	82.9
			#140	12.85	74.4
			#200	16.08	68.0

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 50.25

Hygroscopic moisture correction:

Moist weight and tare = 27.33

Dry weight and tare = 27.04

Tare weight = 15.53

Hygroscopic moisture = 2.5%

Table of composite correction values:

Temp., deg. C: 12.9 29.9

Comp. corr.: -8.0 -2.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.722

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	34.0	29.0	0.0131	35.0	10.6	0.0302	58.2
5.00	21.1	33.0	27.9	0.0132	34.0	10.7	0.0193	56.0
15.00	21.6	30.0	25.1	0.0131	31.0	11.2	0.0113	50.3
30.00	21.2	27.0	21.9	0.0132	28.0	11.7	0.0082	44.0
60.00	21.2	25.0	19.9	0.0132	26.0	12.0	0.0059	40.0
258.00	21.2	20.0	14.9	0.0132	21.0	12.9	0.0029	30.0
1440.00	20.9	18.0	12.8	0.0132	19.0	13.2	0.0013	25.7

MACTEC, Inc.

Fractional Components

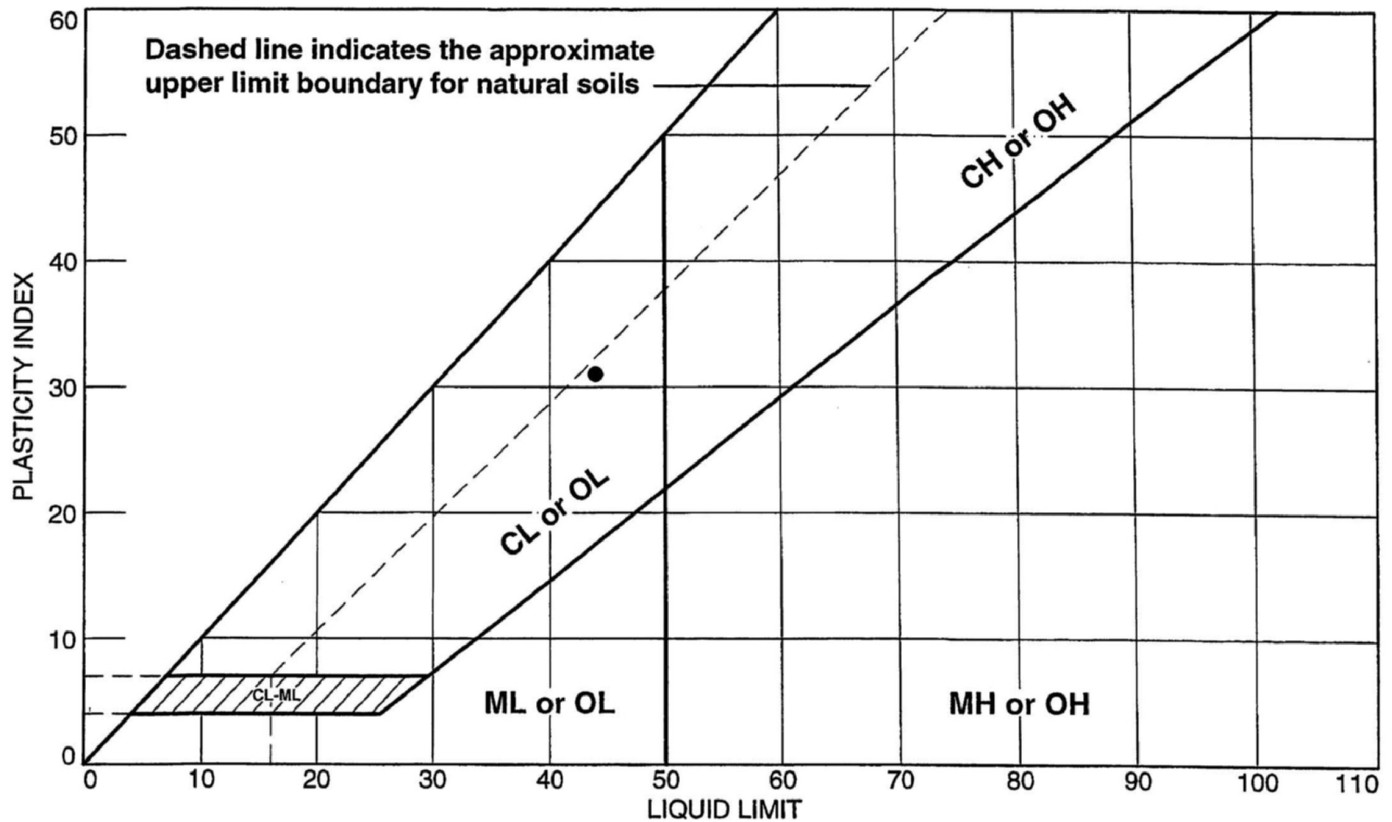
Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	2.6	29.4	32.0	30.2	37.8	68.0

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0029	0.0111	0.0387	0.1337	0.1631	0.2028	0.2778

Fineness Modulus
0.24

MACTEC, Inc.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	TP-2334	Bulk 1	2.0-5.0	14.8	13	44	31	CL

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

Figure **NR**

Tested By: CS

Checked By: LBJ

DSC 3-4-08

LIQUID AND PLASTIC LIMIT TEST DATA

3/4/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: TP-2334

Depth: 2.0-5.0

Sample Number: Bulk 1

Material Description: Light Brownish Gray Sandy Lean CLAY

USCS: CL

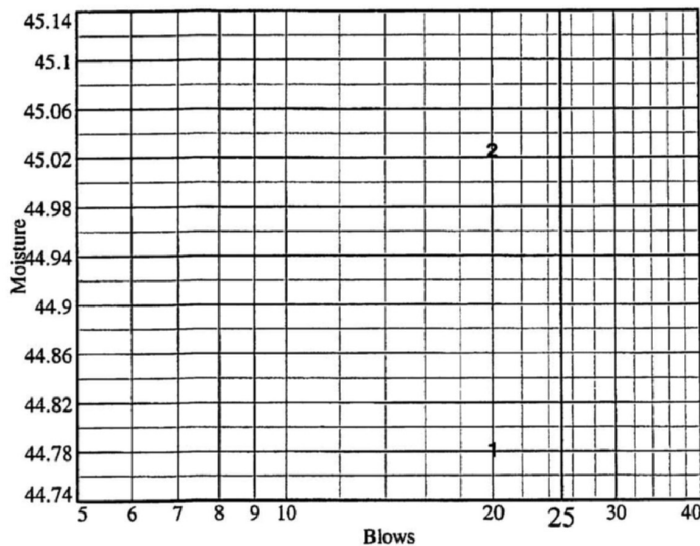
AASHTO: A-7-6(18)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	31.74	34.95				
Dry+Tare	26.72	28.93				
Tare	15.51	15.56				
# Blows	20	20				
Moisture	44.8	45.0				



Liquid Limit= 44
Plastic Limit= 13
Plasticity Index= 31
Natural Moisture= 14.8
Liquidity Index= 0.1

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	19.09	24.40		
Dry+Tare	18.20	23.40		
Tare	11.06	15.49		
Moisture	12.5	12.6		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
174.67	153.34	9.44	14.8

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: 2/23/08

SAMPLE IDENTIFICATION: TP-2334 BULK 1,2-5'

(A) Mass of oven-dried soil, grams:	50.00
(B) Mass of pycnometer filled with water at test temperature (T), grams:	656.51
(C) Mass of pycnometer, water and soil, grams:	688.15
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	21.5
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.723
(F)	Correction factor: 0.99968
(G x F)	SPECIFIC GRAVITY @ 20°C: 2.722

MATERIAL TESTED:

- # 4

- # 10

PREPARATION METHOD:

DRY

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100

Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNOMETER : P-6

TESTED BY: CS

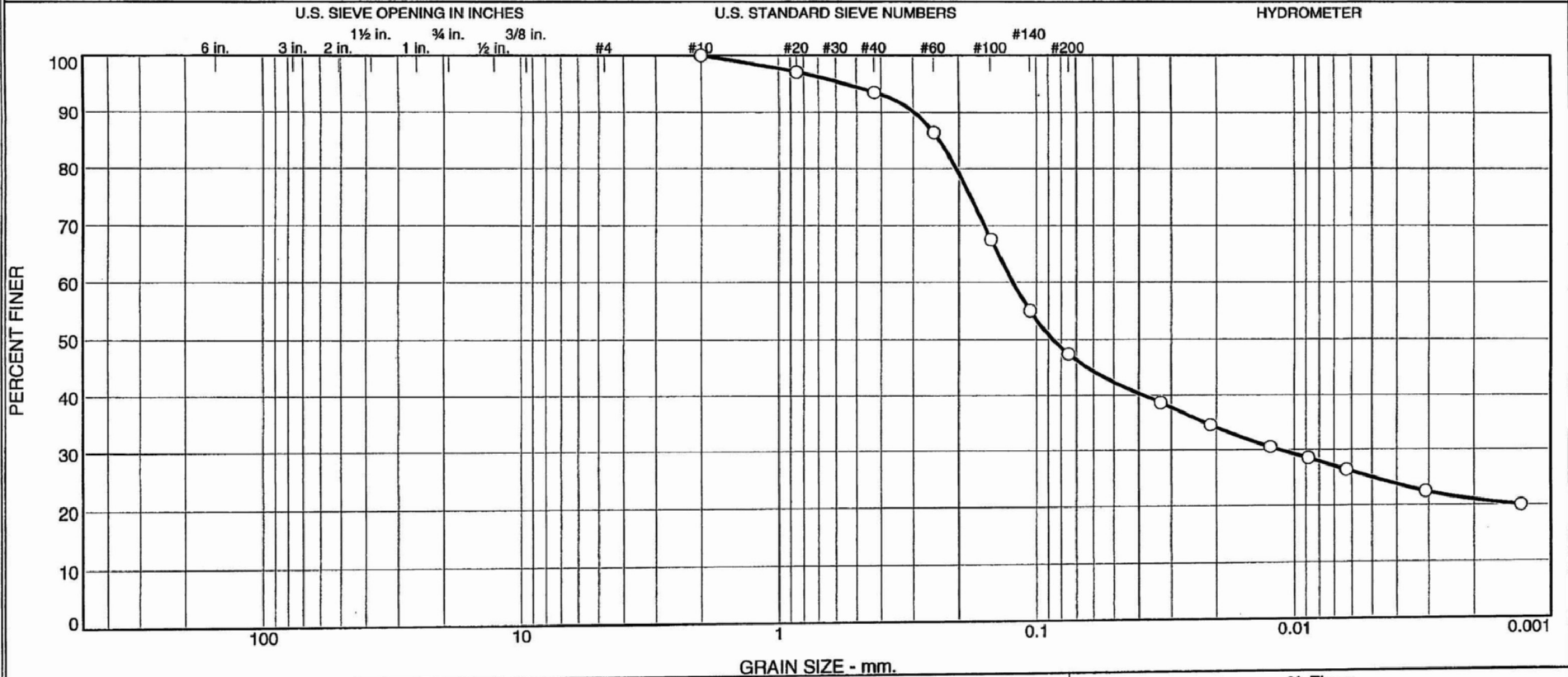
\\Test Reports\Soils\SPECIFIC GRAVITY(ref).xls

REVIEWED BY:

Brian Johnson

DSC 3-4-08

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	6.5	46.1	22.4	25.0

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
TP-2334	Bulk 2	5.0-10.0	1/20/08	SC	Light Pale Brown Clayey SAND	15.2	31	12

Client Bechtel Project Exelon Texas COL (Victoria Reservoir)	<h2 style="margin: 0;">MACTEC, Inc.</h2> <h3 style="margin: 0;">Raleigh, North Carolina</h3>	○ Specific Gravity = 2.669 (ASTM D854-06) Natural Moisture was obtained from Jar Sample S-3,7'
Project No. 6468071777	Figure <i>NA</i>	

GRAIN SIZE DISTRIBUTION TEST DATA

3/4/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: TP-2334

Depth: 5.0-10.0

Sample Number: Bulk 2

Material Description: Light Pale Brown Clayey SAND

Date: 1/20/08

Natural Moisture: 15.2

Liquid Limit: 31

Plastic Limit: 12

USCS Class.: SC

Testing Remarks: Specific Gravity = 2.669 (ASTM D854-06)

Natural Moisture was obtained from Jar Sample S-3,7'

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
379.05	0.00	0.00	#10	0.00	100.0
49.97	0.00	0.00	#20	1.47	97.1
			#40	3.23	93.5
			#60	6.75	86.5
			#100	16.20	67.6
			#140	22.46	55.1
			#200	26.28	47.4

Hydrometer Test Data

Hydrometer test uses material passing #10

Percent passing #10 based upon complete sample = 100.0

Weight of hydrometer sample = 49.97

Hygroscopic moisture correction:

Moist weight and tare = 28.92

Dry weight and tare = 28.61

Tare weight = 15.29

Hygroscopic moisture = 2.3%

Table of composite correction values:

Temp., deg. C: 12.9 29.9

Comp. corr.: -8.0 -2.0

Meniscus correction only = 1.0

Specific gravity of solids = 2.669

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	21.3	24.0	19.0	0.0134	25.0	12.2	0.0330	38.7
5.00	21.3	22.0	17.0	0.0134	23.0	12.5	0.0211	34.6
15.00	21.3	20.0	15.0	0.0134	21.0	12.9	0.0124	30.5
30.00	21.3	19.0	14.0	0.0134	20.0	13.0	0.0088	28.5
60.00	21.2	18.0	12.9	0.0134	19.0	13.2	0.0063	26.4
252.00	21.4	16.0	11.0	0.0133	17.0	13.5	0.0031	22.4
1440.00	20.9	15.0	9.8	0.0134	16.0	13.7	0.0013	20.0

MACTEC, Inc.

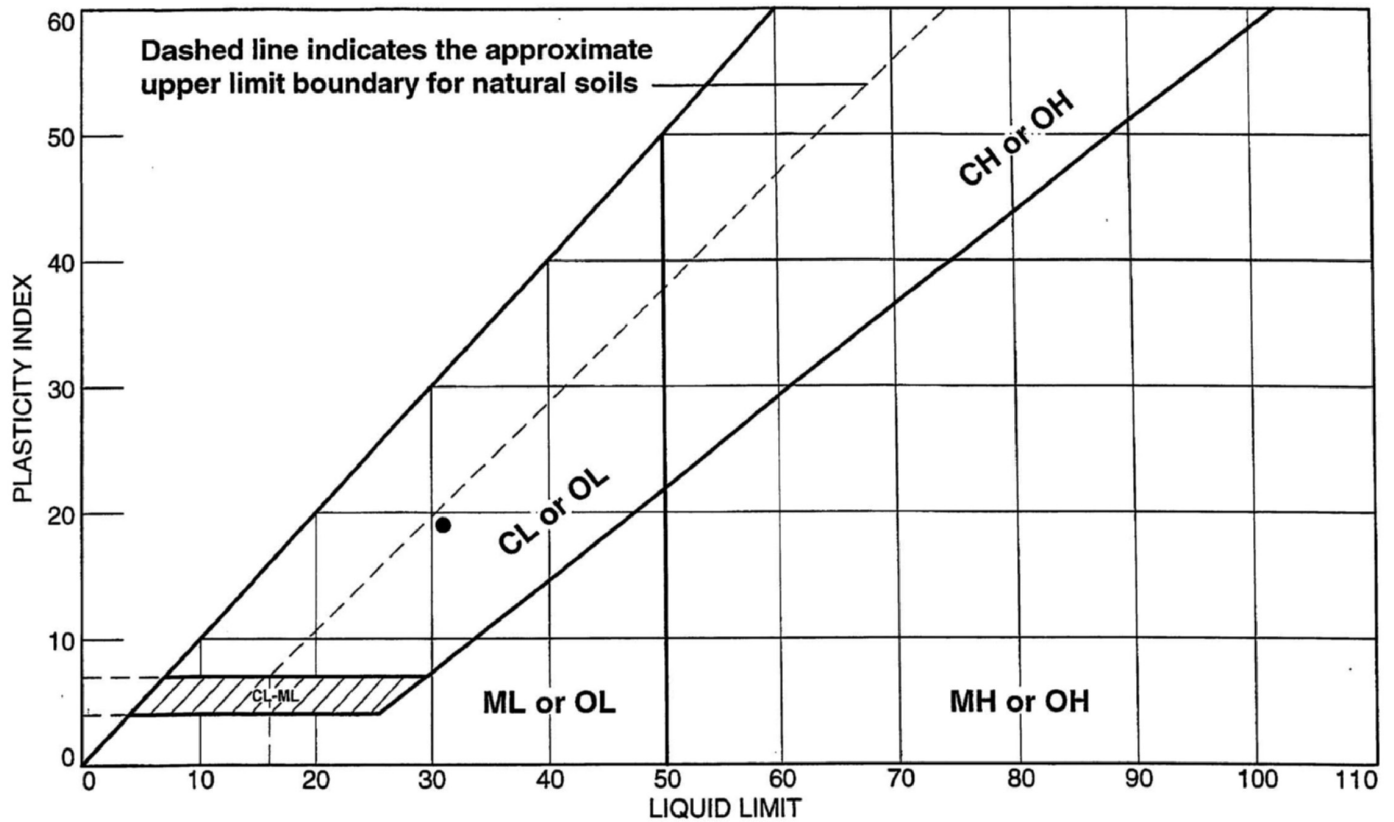
Fractional Components

Cobbles	Gravel			Sand				Fines		
	Coarse	Fine	Total	Coarse	Medium	Fine	Total	Silt	Clay	Total
0.0	0.0	0.0	0.0	0.0	6.5	46.1	52.6	22.4	25.0	47.4

D ₁₀	D ₁₅	D ₂₀	D ₃₀	D ₅₀	D ₆₀	D ₈₀	D ₈₅	D ₉₀	D ₉₅
			0.0114	0.0864	0.1233	0.2043	0.2370	0.2960	0.5470

Fineness Modulus
0.48

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	TP-2334	Bulk 2	5.0-10.0	15.2	12	31	19	SC

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

Figure *NA*

Tested By: CS

Checked By: LBJ

DSC 3-4-08

LIQUID AND PLASTIC LIMIT TEST DATA

3/4/2008

Client: Bechtel

Project: Exelon Texas COL (Victoria Reservoir)

Project Number: 6468071777

Location: TP-2334

Depth: 5.0-10.0

Sample Number: Bulk 2

Material Description: Light Pale Brown Clayey SAND

USCS: SC

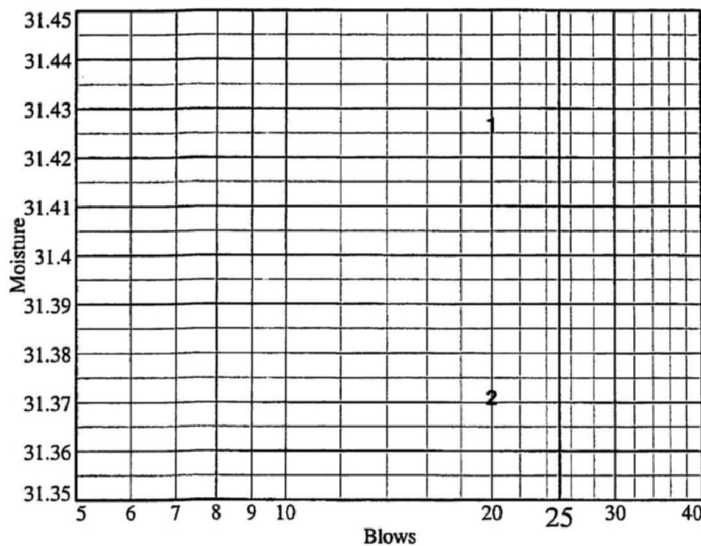
AASHTO: A-6(5)

Tested by: CS

Checked by: LBJ

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	35.92	33.16				
Dry+Tare	31.03	28.95				
Tare	15.47	15.53				
# Blows	20	20				
Moisture	31.4	31.4				



Liquid Limit= 31
 Plastic Limit= 12
 Plasticity Index= 19
 Natural Moisture= 15.2
 Liquidity Index= 0.2

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	23.45	23.62		
Dry+Tare	22.60	22.80		
Tare	15.52	15.67		
Moisture	12.0	11.5		

Natural Moisture Data

Wet+Tare	Dry+Tare	Tare	Moisture
138.32	121.28	9.10	15.2

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: 2/23/08

SAMPLE IDENTIFICATION: TP-2334 BULK 2,5-10'

(A) Mass of oven-dried soil, grams:		51.63
(B) Mass of pycnometer filled with water at test temperature (T), grams:		655.70
(C) Mass of pycnometer, water and soil, grams:		687.99
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:		21.3
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$	2.670
(F)	Correction factor:	0.99972
(G x F)	SPECIFIC GRAVITY @ 20°C:	2.669

MATERIAL TESTED:

- # 4

- # 10

PREPARATION METHOD:

DRY

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100

Clayey SAND (SC)

EQUIPMENT USED

SCALES : 3.1.99

OVEN : 5.1.16

THERMOMETER : 5.1.01

PYCNO METER : P-3

TESTED BY: CS

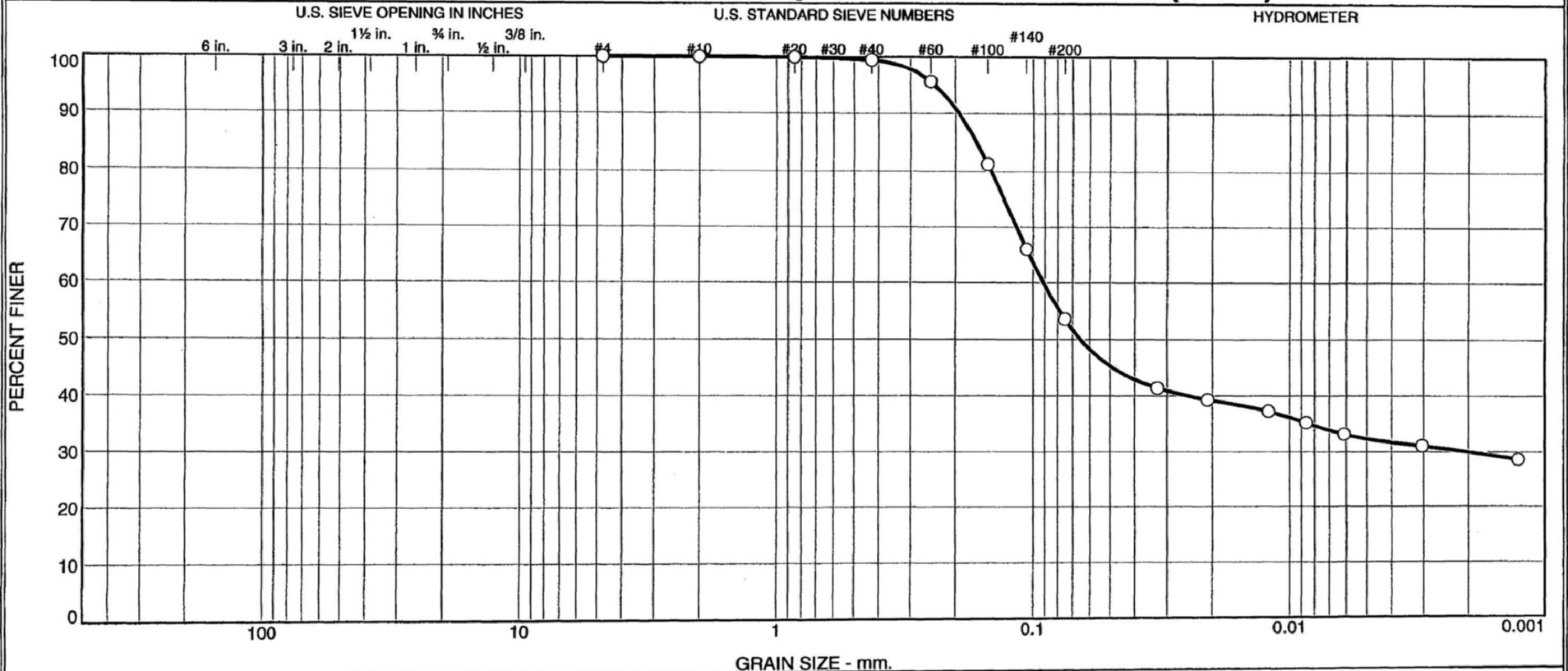
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REVIEWED BY:

Brian Johnson

DSC 3-4-08

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



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.5	45.9	21.3	32.3

Source	Sample #	Depth/Elev.	Date Sampled	USCS	Material Description	NM %	LL	PL
TP-2335	Bulk 2	4.0-8.0	1/20/08	CL	Pale Yellow Sandy Lean CLAY	11.2	37	14

Client Bechtel	MACTEC, Inc.	○ Specific Gravity = 2.674 (ASTM D854-06) Organic content = 3.9% (ASTM D2974-07) Natural Moisture and Organic Content were obtained from Jar Sample S-3,6'
Project Exelon Texas COL (Victoria Reservoir)		
Project No. 6468071777		
Figure <i>NA</i>	Raleigh, North Carolina	