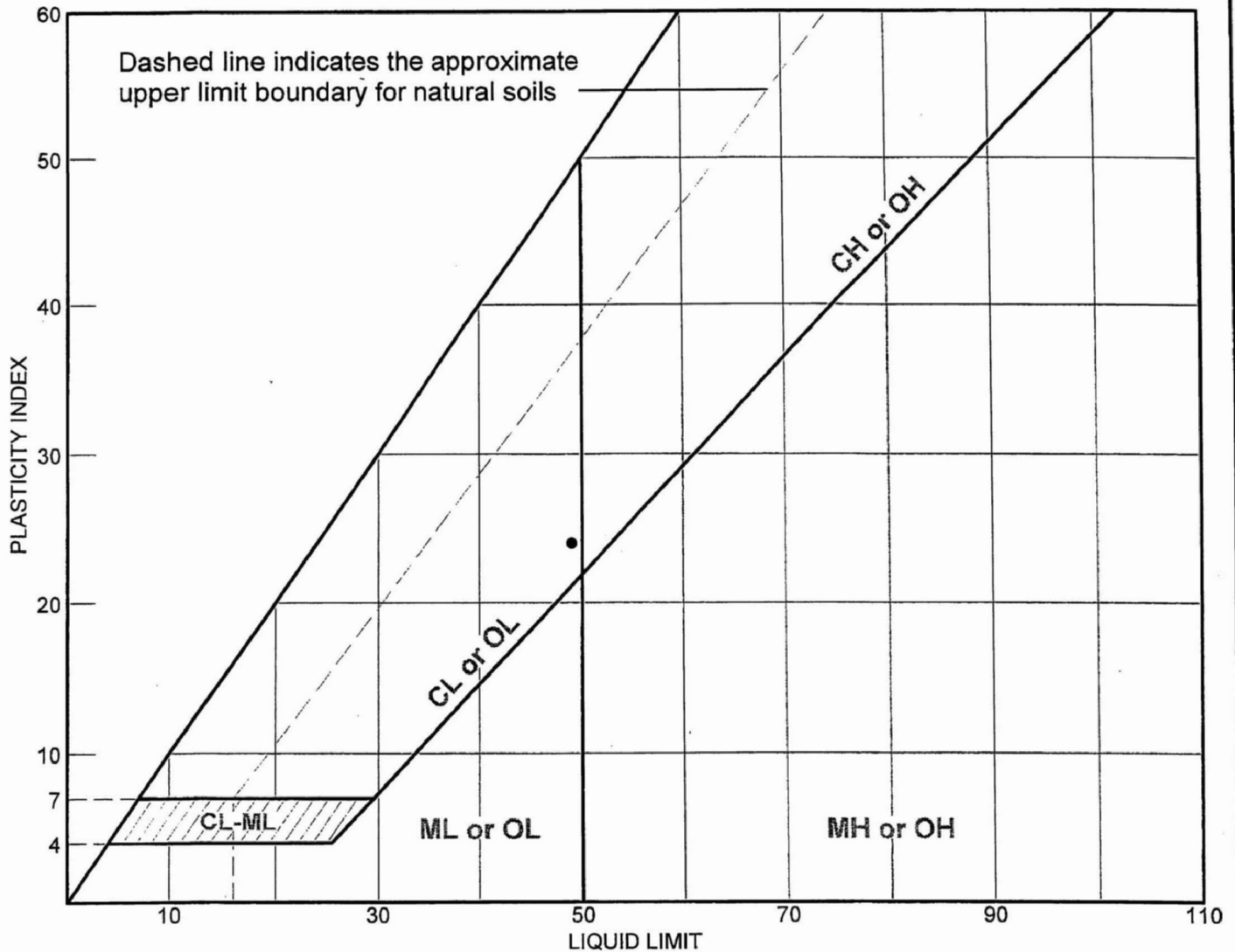


LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	2182UD	UD-37	400-402.5	23.6	25	49	24	CL

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468-07-1777

Lab No. 8201

LIQUID AND PLASTIC LIMIT TEST DATA

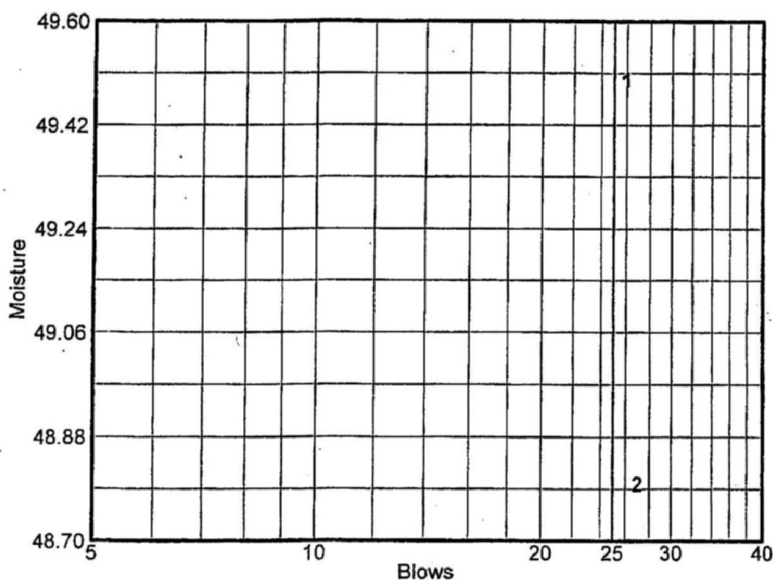
Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project Number: 6468-07-1777

Sample Data

Source: B-2182UD
 Sample No.: UD-37
 Elev. or Depth: 400-402.5 Ft Sample Length(in./cm.): ID#8201
 Location: B-2182UD
 Description: Light Gray Mottled Yellowish Brown Lean CLAY with sand
 Water Content: 23.6 USCS: CL AASHTO:

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.12	22.7				
Dry+Tare	27.36	19.33				
Tare	21.78	12.42				
# Blows	26	27				
Moisture	49.5	48.8				



Liquid Limit= 49
 Plastic Limit= 25
 Plasticity Index= 24

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	18.46	19.85			
Dry+Tare	17.2	18.32			
Tare	12.17	12.32			
Moisture	25.0	25.5			

MACTEC ENGINEERING AND CONSULTING, 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: 2/8/08

SAMPLE IDENTIFICATION: B-2182UD, UD-37 @ 400.0-402.5 Ft.

(A) Mass of oven-dried soil, grams:	37.21
(B) Mass of pycnometer filled with water at test temperature (T), grams:	363.65
(C) Mass of pycnometer, water and soil, grams:	387.37
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.9
(G) Specific Gravity at observed temperature: $A / [B - (C - A)]$	2.758
(F) Correction factor:	0.99912
(G x F) SPECIFIC GRAVITY @ 20°C:	2.756

MATERIAL TESTED:

☐

- # 4

☒

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Lean CLAY with sand (CL)

Note: Retest of Sample

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNO METER : 2184

TESTED BY: EH

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

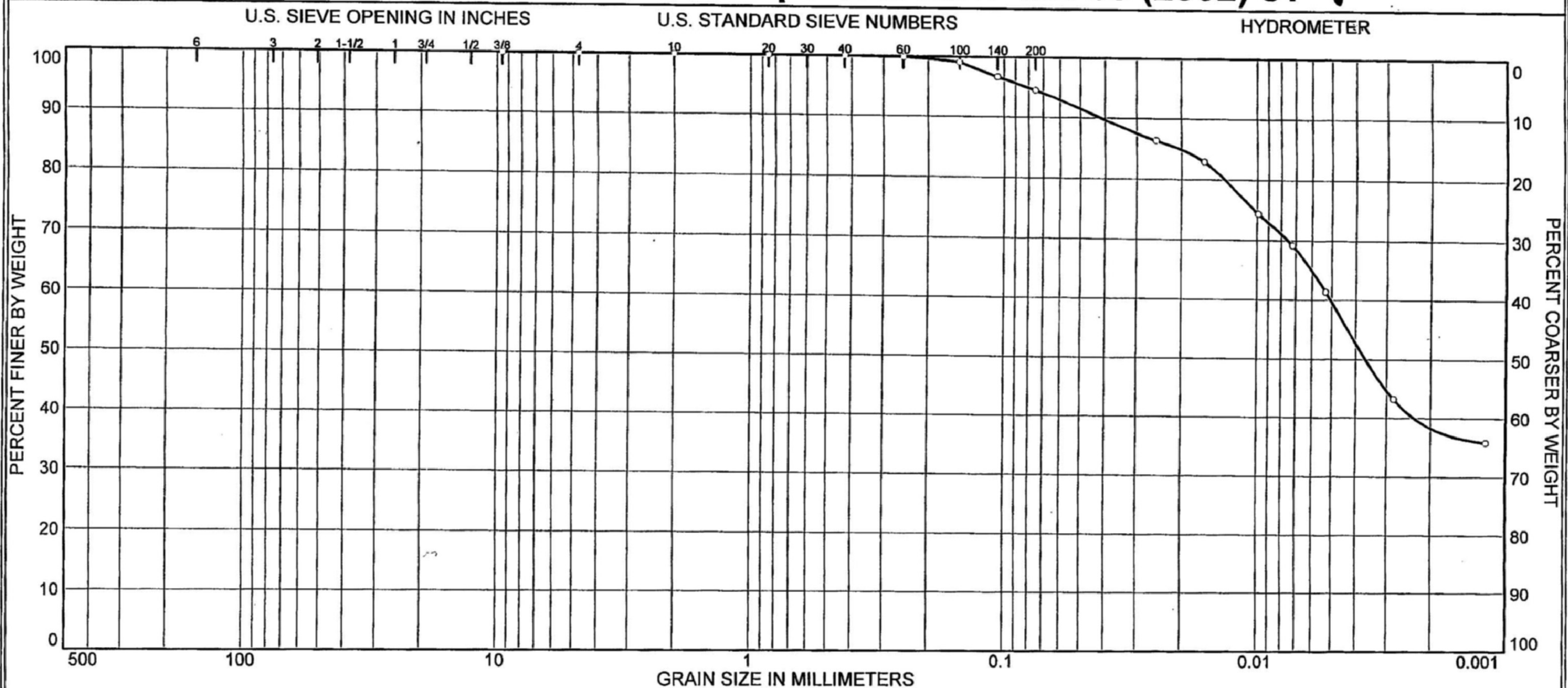
REVIEWED BY: Harry Johnson

DSC
3-3-08

143

Boring B-2269UD

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



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.0	5.5	34.8	59.7

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
2269UD	UD-1	10-12 Ft.	11/30/07	CL	Brownish Yellow Mottled Light Gray Lean CLAY	17.8	40	16

Client Bechtel
 Project Exelon Texas COL (Victoria)
 Project No. 6468-07-1777 Lab No. 8167

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

Tested by: EH Reviewed by: HJ
 NM value from first strength test performed.
 Specific Gravity = 2.67 (ASTM D 854-06)
 3-3-08

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
Sample No.: UD-1
Elev. or Depth: 10-12 Ft Sample Length(in./cm.): ID#8167
Location: B-2269UD
Description: Brownish Yellow Mottled Light Gray Lean CLAY
Date: 11/30/07 PL: 16 LL: 40 PI: 24
USCS Classification: CL AASHTO Classification:
Testing Remarks: Tested by: EH Reviewed by: HJ

NM value from first strength test performed.
Specific Gravity = 2.67 (ASTM D 854-06)

Mechanical Analysis Data

	Initial	
Dry sample and tare=	145.50	
Tare =	87.88	
Dry sample weight =	57.62	
Tare for cumulative weight retained=	.00	
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.00	100.0
# 40	0.00	100.0
# 60	0.03	99.9
# 100	0.49	99.1
# 140	1.88	96.7
# 200	3.17	94.5

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 94.5
Weight of hydrometer sample: 54.45
Calculated biased weight= 57.62
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only= 0
Specific gravity of solids= 2.667
Specific gravity correction factor= 0.996
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	22.2	55.0	50.1	0.0132	55.0	7.3	0.0252	86.5
5.00	22.2	53.0	48.1	0.0132	53.0	7.6	0.0163	83.1
15.00	22.2	48.0	43.1	0.0132	48.0	8.4	0.0099	74.4
30.00	22.2	45.0	40.1	0.0132	45.0	8.9	0.0072	69.2
60.00	22.2	40.5	35.6	0.0132	40.5	9.7	0.0053	61.5
250.00	22.2	30.0	25.1	0.0132	30.0	11.4	0.0028	43.3
1440.00	22.8	25.5	20.7	0.0131	25.5	12.1	0.0012	35.8

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

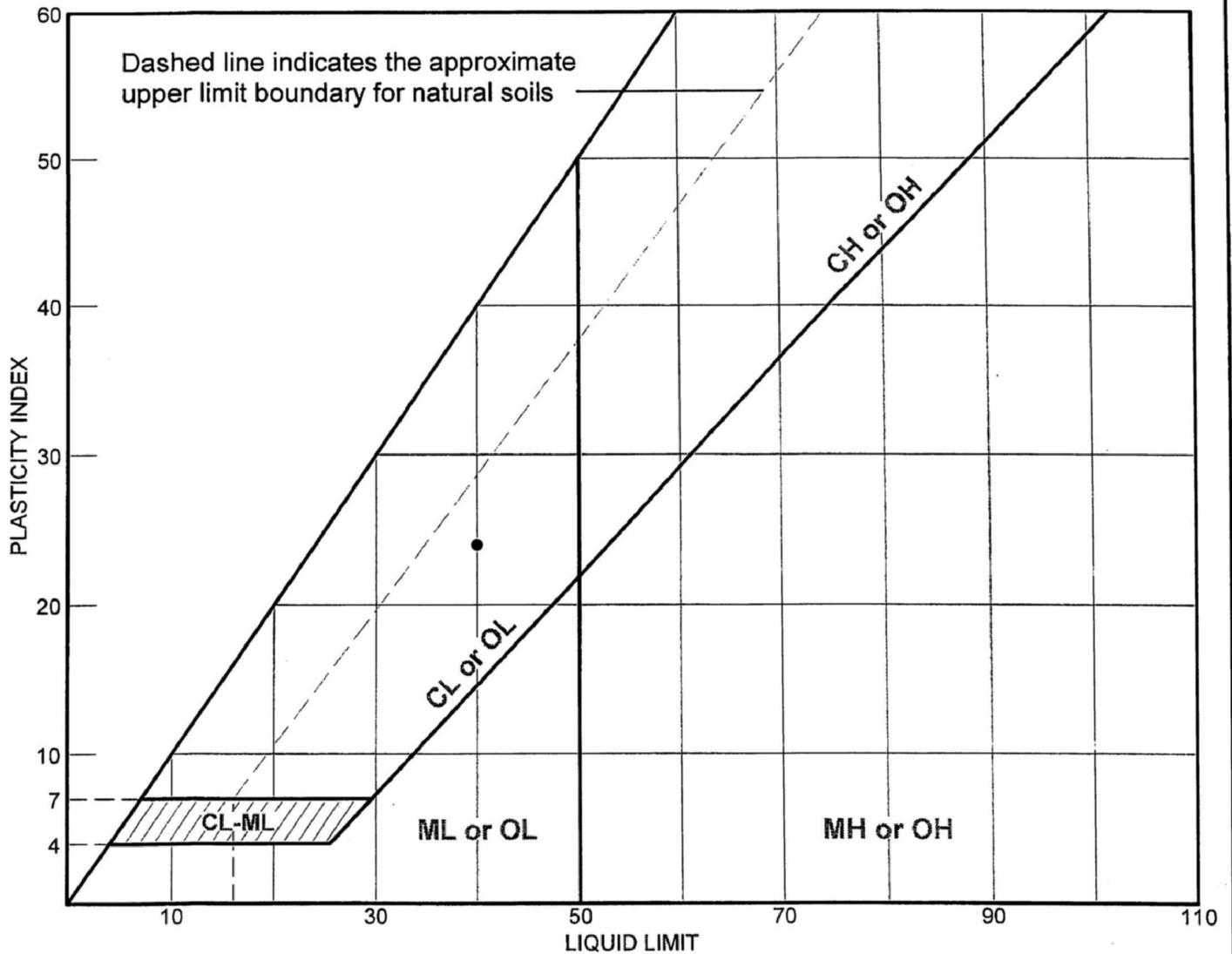
% COBBLES = % GRAVEL =

% SAND = 5.5 (% coarse = 0.0 % medium = 0.0 % fine = 5.5)

% SILT = 34.7 % CLAY = 59.8

D₈₅= 0.02 D₆₀= 0.01 D₅₀= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	2269UD	UD-1	10-12 Ft.	17.8	16	40	24	CL

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468-07-1777

Lab No. 8167

LIQUID AND PLASTIC LIMIT TEST DATA

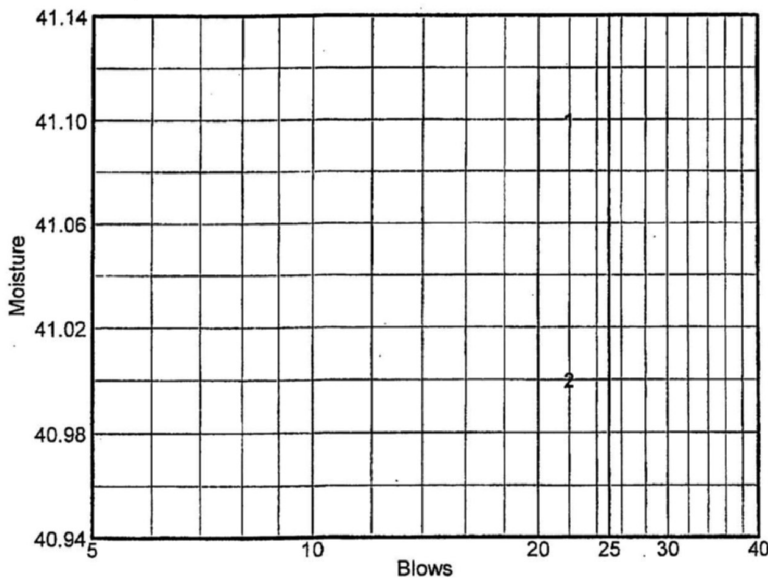
Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
 Sample No.: UD-1
 Elev. or Depth: 10-12 Ft Sample Length(in./cm.): ID#8167
 Location: B-2269UD
 Description: Brownish Yellow Mottled Light Gray Lean CLAY
 Water Content: 17.8 USCS: CL AASHTO:

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	30.66	30.07				
Dry+Tare	27.67	27.21				
Tare	20.39	20.23				
# Blows	22	22				
Moisture	41.1	41.0				



Liquid Limit= 40
 Plastic Limit= 16
 Plasticity Index= 24

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	29.22	28.07			
Dry+Tare	28.02	26.93			
Tare	20.58	19.91			
Moisture	16.1	16.2			

MACTEC ENGINEERING AND CONSULTING, 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: 2/8/08

SAMPLE IDENTIFICATION: B-2269UD, UD-1 @ 10-12 Ft.

(A) Mass of oven-dried soil, grams:	49.15
(B) Mass of pycnometer filled with water at test temperature (T), grams:	339.47
(C) Mass of pycnometer, water and soil, grams:	370.20
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	22.0
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.668
(F) Correction factor:	0.99957
(G x F) SPECIFIC GRAVITY @ 20°C:	2.667

MATERIAL TESTED:

☐

- # 4

☒

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Lean CLAY (CL)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNO METER : 2053

TESTED BY: EH

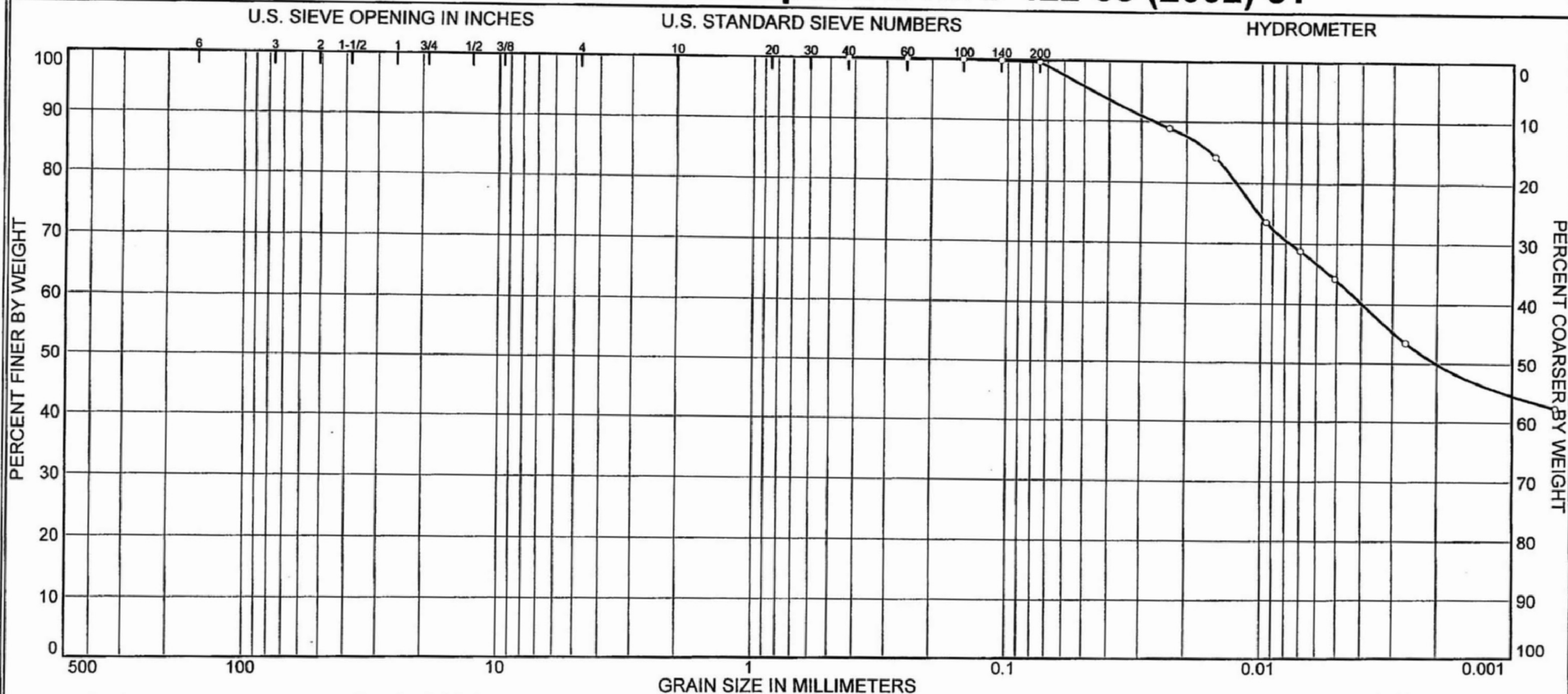
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REVIEWED BY: Harry Johnson

DSC
3-3-08

10

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



GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
Sample No.: UD-2
Elev. or Depth: 13-15 Ft Sample Length(in./cm.): ID#8168
Location: B-2269UD
Description: Brownish Yellow Mottled Light Gray Fat CLAY
Date: 11/30/07 PL: 21 LL: 53 PI: 32
USCS Classification: CH AASHTO Classification:
Testing Remarks: Tested by: EH Reviewed by: HJ

NM value from first strength test performed.
Specific Gravity = 2.66 (ASTM D 854-06)

Mechanical Analysis Data

Initial
Dry sample and tare= 154.35
Tare = 89.49
Dry sample weight = 64.86
Tare for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 40	0.00	100.0
# 60	0.00	100.0
# 100	0.00	100.0
# 140	0.07	99.9
# 200	0.21	99.7

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 99.7
Weight of hydrometer sample: 64.65
Calculated biased weight= 64.84
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only= 0
Specific gravity of solids= 2.658
Specific gravity correction factor= 0.998
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.8	63.0	57.7	0.0135	63.0	6.0	0.0233	88.9
5.00	20.8	60.0	54.7	0.0135	60.0	6.5	0.0153	84.2
15.00	20.8	53.0	47.7	0.0135	53.0	7.6	0.0096	73.5
30.00	20.8	50.0	44.7	0.0135	50.0	8.1	0.0070	68.8
60.00	20.8	47.0	41.7	0.0135	47.0	8.6	0.0051	64.2

MACTEC Engineering and Consulting, Inc.

Elapsed time, min	Temp, Actual deg C reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
250.00	20.9 40.0	34.8	0.0135	40.0	9.7	0.0027	53.5
4230.00	22.2 32.5	27.6	0.0132	32.5	11.0	0.0007	42.4

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

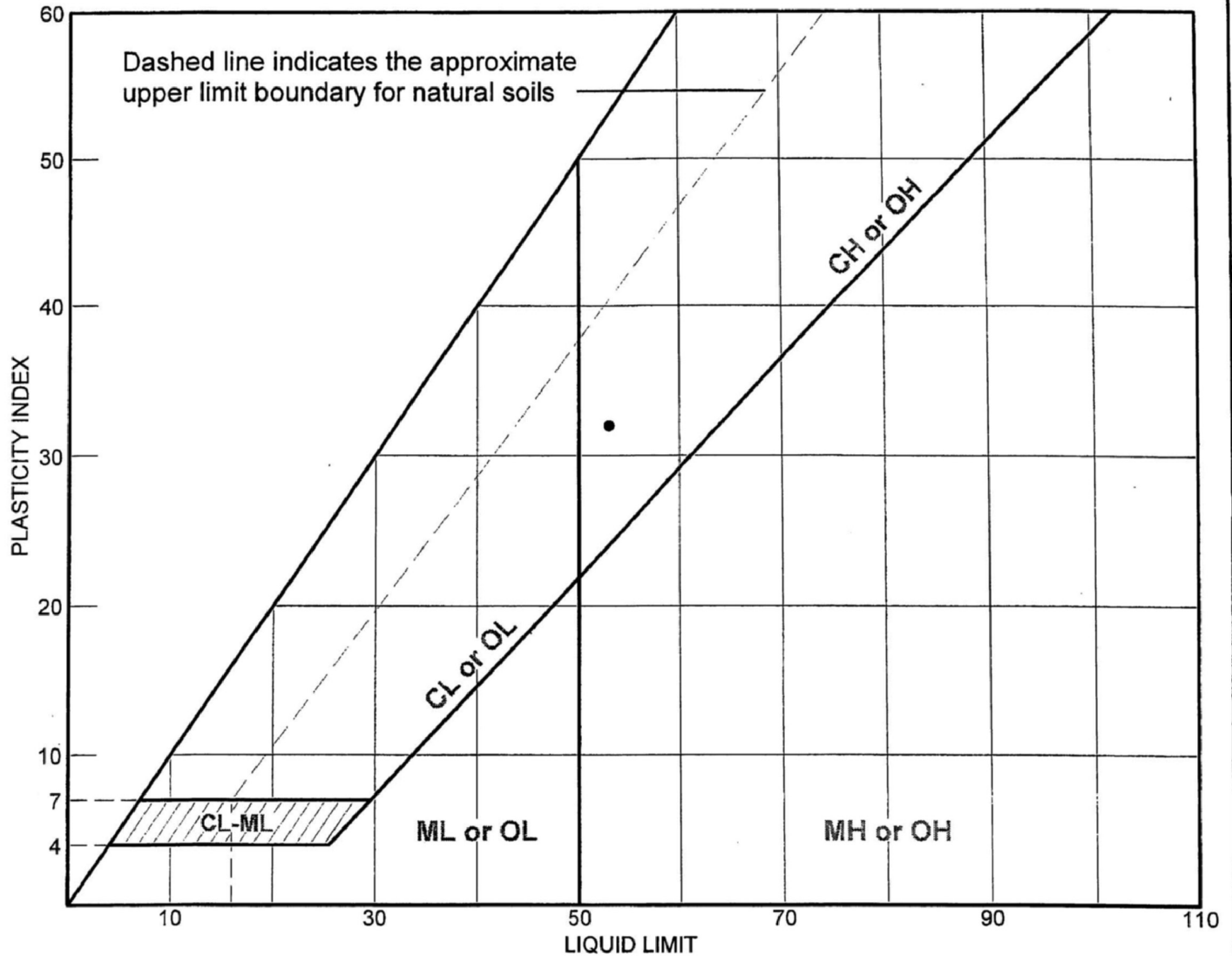
% COBBLES = % GRAVEL =

% SAND = 0.3 (% coarse = % medium = % fine = 0.3)

% SILT = 35.8 % CLAY = 63.9 (% CLAY COLLOIDS = 44.4)

D85= 0.02 D60= 0.00 D50= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	2269UD	UD-2	13-15 Ft.	23.0	21	53	32	CH

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project No.: 6468-07-1777

Lab No. 8168

LIQUID AND PLASTIC LIMIT TEST DATA

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
Sample No.: UD-2
Elev. or Depth: 13-15 Ft Sample Length(in./cm.): ID#8168
Location: B-2269UD
Description: Brownish Yellow Mottled Light Gray Fat CLAY
Water Content: 23.0 USCS: CH AASHTO:

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	32.2	29.74				
Dry+Tare	28.1	26.46				
Tare	20.31	20.22				
# Blows	28	27				
Moisture	52.6	52.6				

Liquid Limit= 53
Plastic Limit= 21
Plasticity Index= 32

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	28.26	27.76	28.26		
Dry+Tare	27.04	26.43	27.04		
Tare	21.11	20.08	21.11		
Moisture	20.6	20.9	20.6		

MACTEC ENGINEERING AND CONSULTING, 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: 2/8/08

SAMPLE IDENTIFICATION: B-2269UD, UD-2 @ 13-15 Ft.

(A) Mass of oven-dried soil, grams:	49.11
(B) Mass of pycnometer filled with water at test temperature (T), grams:	364.00
(C) Mass of pycnometer, water and soil, grams:	394.64
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	22.0
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.659
(F)	Correction factor: 0.99957
(G x F)	SPECIFIC GRAVITY @ 20°C: 2.658

MATERIAL TESTED:

☐

- # 4

☒

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Fat CLAY (CH)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNO METER : 2184

TESTED BY: EH

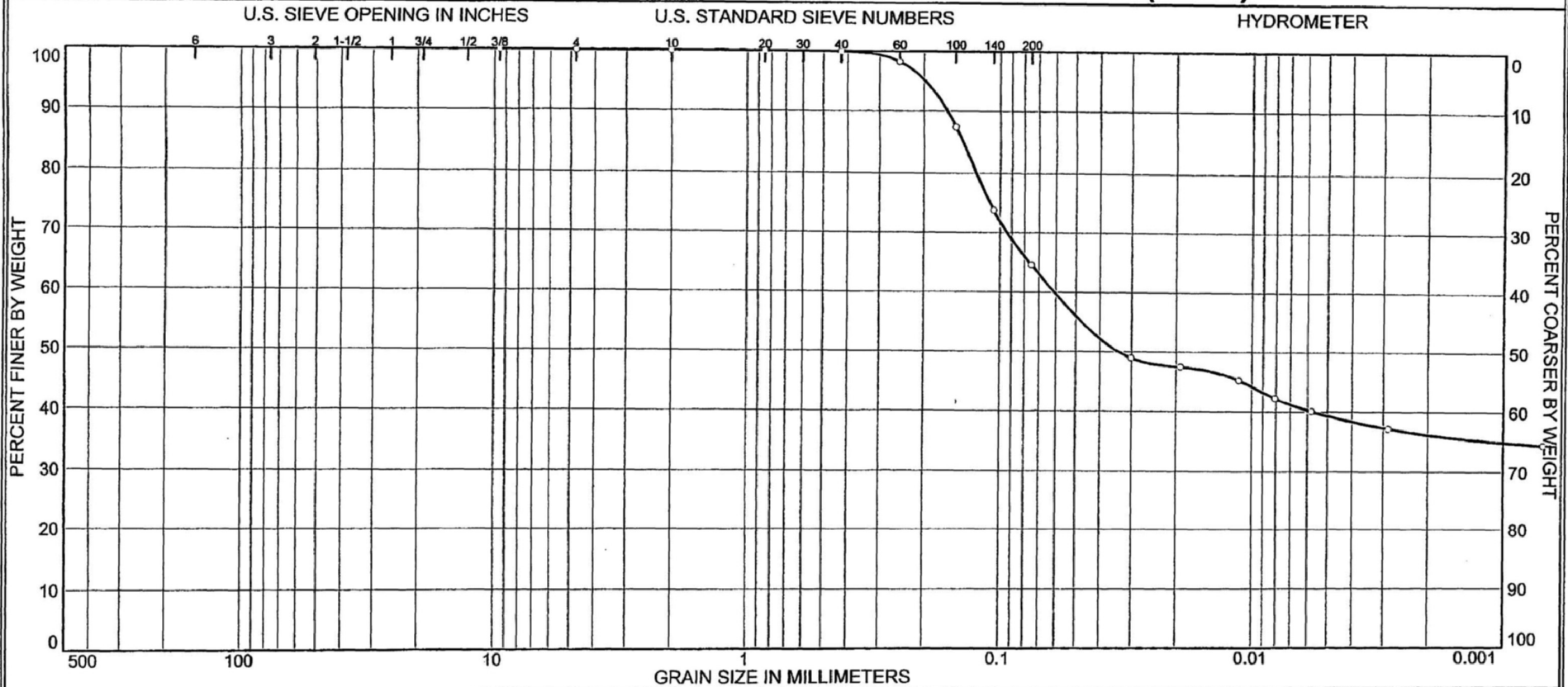
\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: Harry Johnson

psc
3-3-08

HJ

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



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.1	35.3	25.2	39.4

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
2269UD	UD-3	30-32 Ft	11/30/07	CL	Very Pale Brown Sandy Lean CLAY	15.8	34	15

Client Bechtel		MACTEC ENGINEERING AND CONSULTING, INC.	Tested by: EH	Reviewed by: HJ	HS	
Project Exelon Texas COL (Victoria)			NM value from first strength test performed. Specific Gravity = 2.66 (ASTM D 854-06)			DSC
Project No. 6468-07-1777	Lab No. 8169					3-3-08

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
Sample No.: UD-3
Elev. or Depth: 30-32 Ft Sample Length(in./cm.): ID#8169
Location: B-2269UD
Description: Very Pale Brown Sandy Lean CLAY
Date: 11/30/07 PL: 15 LL: 34 PI: 19
USCS Classification: CL AASHTO Classification:
Testing Remarks: Tested by: EH Reviewed by: HJ

NM value from first strength test performed.
Specific Gravity = 2.66 (ASTM D 854-06)

Mechanical Analysis Data

	Initial	
Dry sample and tare=	166.00	
Tare =	99.39	
Dry sample weight =	66.61	
Tare for cumulative weight retained=	.00	
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.00	100.0
# 40	0.07	99.9
# 60	1.18	98.2
# 100	8.34	87.5
# 140	17.43	73.8
# 200	23.58	64.6

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 64.6
Weight of hydrometer sample: 43.03
Calculated biased weight= 66.61
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only= 0
Specific gravity of solids= 2.655
Specific gravity correction factor= 0.999
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.8	38.0	32.7	0.0135	38.0	10.1	0.0303	49.1
5.00	20.8	37.0	31.7	0.0135	37.0	10.2	0.0193	47.6
15.00	20.8	35.5	30.2	0.0135	35.5	10.5	0.0113	45.3
30.00	20.8	33.5	28.2	0.0135	33.5	10.8	0.0081	42.3
60.00	20.8	32.0	26.7	0.0135	32.0	11.0	0.0058	40.1
250.00	21.1	30.0	24.8	0.0134	30.0	11.4	0.0029	37.2
4225.00	22.2	28.0	23.1	0.0133	28.0	11.7	0.0007	34.6

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

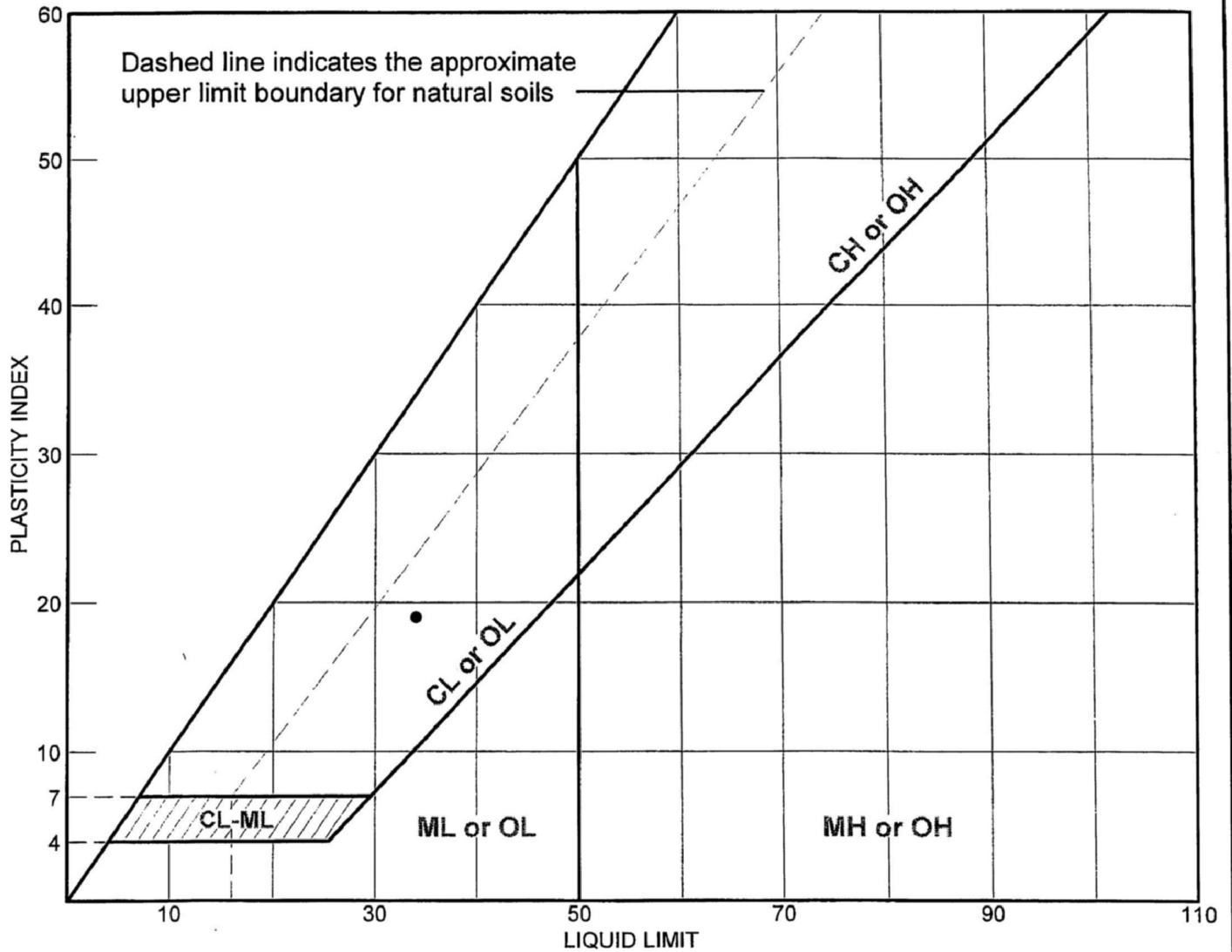
% COBBLES = % GRAVEL =

% SAND = 35.4 (% coarse = 0.0 % medium = 0.1 % fine = 35.3)

% SILT = 25.2 % CLAY = 39.4 (% CLAY COLLOIDS = 35.1)

D₈₅= 0.14 D₆₀= 0.06 D₅₀= 0.03

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	2269UD	UD-3	30-32 Ft	15.8	15	34	19	CL

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Client: Bechtel
Project: Exelon Texas COL (Victoria)

Project No.: 6468-07-1777

Lab No. 8169

LIQUID AND PLASTIC LIMIT TEST DATA

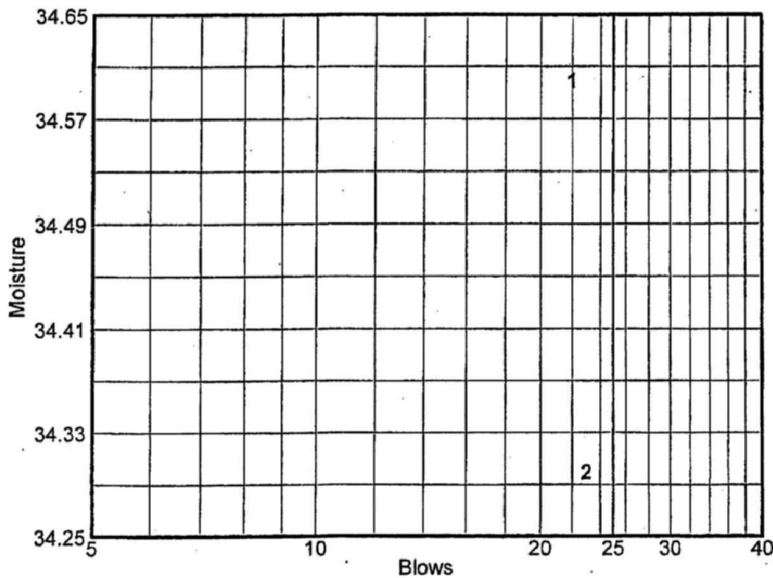
Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
 Sample No.: UD-3
 Elev. or Depth: 30-32 Ft Sample Length(in./cm.): ID#8169
 Location: B-2269UD
 Description: Very Pale Brown Sandy Lean CLAY
 Water Content: 15.8 USCS: CL AASHTO:

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	32.67	31.3				
Dry+Tare	29.66	28.6				
Tare	20.97	20.73				
# Blows	22	23				
Moisture	34.6	34.3				



Liquid Limit= 34
 Plastic Limit= 15
 Plasticity Index= 19

Plastic Limit Data

Run No.	1	2	3	4	
Wet+Tare	27.19	28.89			
Dry+Tare	26.21	27.82			
Tare	19.9	20.78			
Moisture	15.5	15.2			

MACTEC ENGINEERING AND CONSULTING, 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: 2/8/08

SAMPLE IDENTIFICATION: B-2269UD, UD-3 @ 30-32 Ft.

(A) Mass of oven-dried soil, grams:	51.07
(B) Mass of pycnometer filled with water at test temperature (T), grams:	346.68
(C) Mass of pycnometer, water and soil, grams:	378.53
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.0
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.657
(F) Correction factor:	0.99933
(G x F) SPECIFIC GRAVITY @ 20°C:	2.655

MATERIAL TESTED:

☐

- # 4

☒

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 100 %

Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNOMETER : 2197

TESTED BY: EH

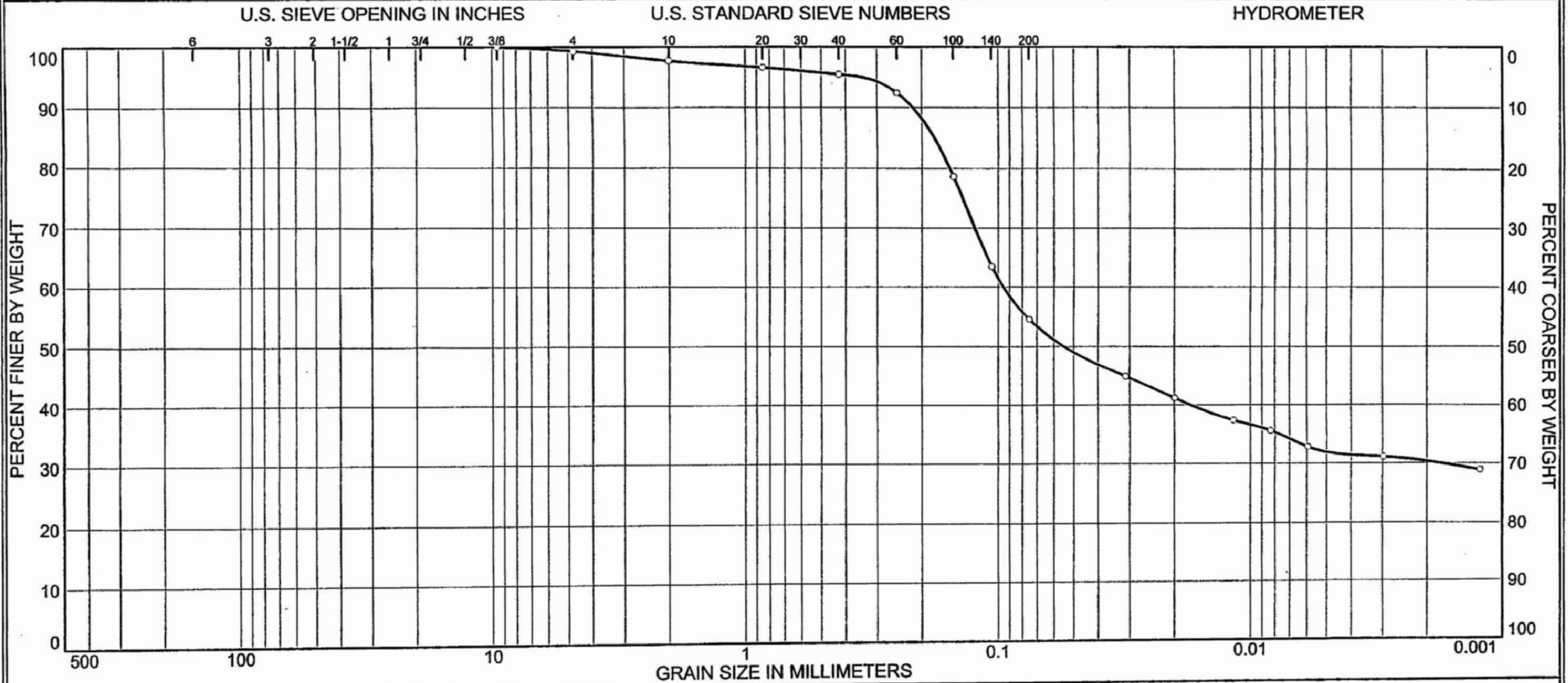
\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: Harry Johnson

DSC
3-3-08

HJ

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



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.7	1.6	2.2	40.9	22.7	31.9

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
2269UD	UD-4	33-34.8 Ft.	11/30/07	CL	Light Brownish Gray Sandy Lean CLAY	15.0	34	17

Client Bechtel		MACTEC ENGINEERING AND CONSULTING, INC.	Tested by: EH Reviewed by: HJ NM value from first strength test performed. Specific Gravity 2.74 (ASTM D 854-06)
Project Exelon Texas COL (Victoria)			170 DSC 3-3-08
Project No. 6468-07-1777	Lab No. 8170		

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
Sample No.: UD-4
Elev. or Depth: 33-34.8 Ft Sample Length(in./cm.): ID#8170
Location: B-2269UD
Description: Light Brownish Gray Sandy Lean CLAY
Date: 11/30/07 PL: 17 LL: 34 PI: 17
USCS Classification: CL AASHTO Classification:
Testing Remarks: Tested by: EH Reviewed by: HJ

NM value from first strength test performed.
Specific Gravity 2.74 (ASTM D 854-06)

Mechanical Analysis Data

	Initial	
Dry sample and tare=	69.13	
Tare =	16.66	
Dry sample weight =	52.47	
Tare for cumulative weight retained=	.00	
Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.39	99.3
# 10	1.19	97.7
# 20	1.77	96.6
# 40	2.38	95.5
# 60	3.91	92.5
# 100	11.25	78.6
# 140	19.14	63.5
# 200	23.81	54.6

Hydrometer Analysis Data

Separation sieve is #200
Percent -#200 based upon complete sample= 54.6
Weight of hydrometer sample: 28.66
Calculated biased weight= 52.49
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only= 0
Specific gravity of solids= 2.743
Specific gravity correction factor= 0.980
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	22.2	29.0	24.1	0.0129	29.0	11.5	0.0310	44.9
5.00	22.2	27.0	22.1	0.0129	27.0	11.9	0.0199	41.2
15.00	22.2	25.0	20.1	0.0129	25.0	12.2	0.0117	37.4
30.00	22.2	24.0	19.1	0.0129	24.0	12.4	0.0083	35.6
60.00	22.2	22.5	17.6	0.0129	22.5	12.6	0.0059	32.8
240.00	22.5	21.5	16.6	0.0129	21.5	12.8	0.0030	31.1
1440.00	21.9	20.5	15.5	0.0130	20.5	12.9	0.0012	28.9

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

% COBBLES = % GRAVEL = 0.7 (% coarse = % fine = 0.7)

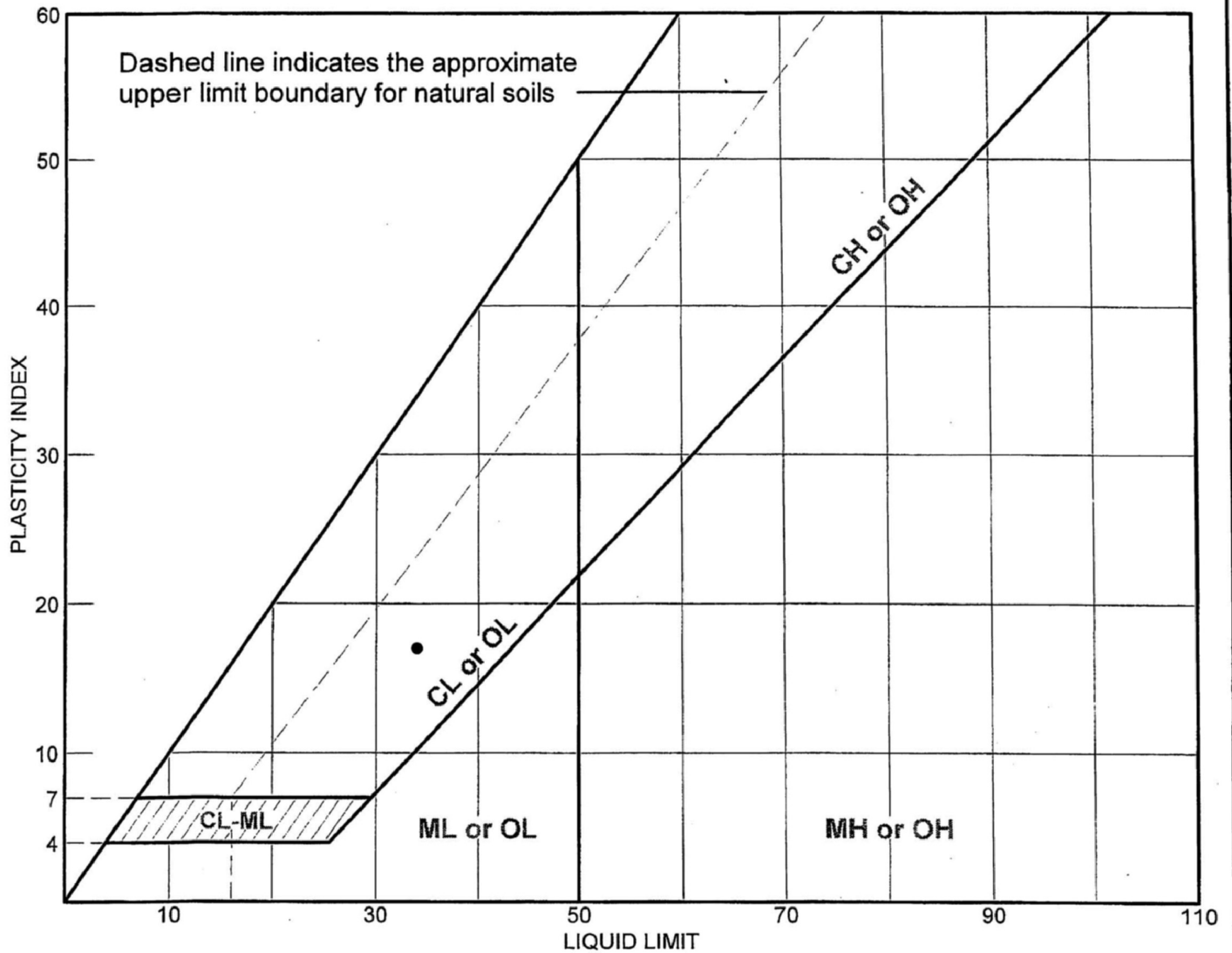
% SAND = 44.7 (% coarse = 1.6 % medium = 2.2 % fine = 40.9)

% SILT = 22.7 % CLAY = 31.9

D₈₅= 0.18 D₆₀= 0.10 D₅₀= 0.05

D₃₀= 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	2269UD	UD-4	33-34.8 Ft.	15.0	17	34	17	CL

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Client: Bechtel
Project: Exelon Texas COL (Victoria)

Project No.: 6468-07-1777

Lab No. 8170

LIQUID AND PLASTIC LIMIT TEST DATA

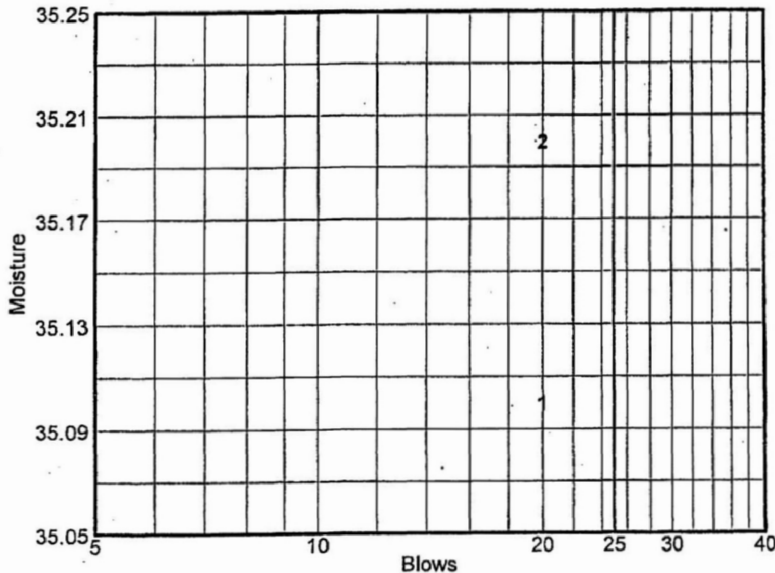
Client: Bechtel
 Project: Exelon Texas COL (Victoria)
 Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
 Sample No.: UD-4
 Elev. or Depth: 33-34.8 Ft Sample Length(in./cm.): ID#8170
 Location: B-2269UD
 Description: Light Brownish Gray Sandy Lean CLAY
 Water Content: 15.0 USCS: CL AASHTO:

Liquid Limit Data

Run No.	1	2	3	4	5	6
Wet+Tare	32.5	31.25				
Dry+Tare	29.17	28.14				
Tare	19.67	19.3				
# Blows	20	20				
Moisture	35.1	35.2				



Liquid Limit= 34
 Plastic Limit= 17
 Plasticity Index= 17

Plastic Limit Data

Run No.	1	2	3	4
Wet+Tare	25.98	26.38		
Dry+Tare	25.08	25.33		
Tare	19.57	19.04		
Moisture	16.3	16.7		

MACTEC ENGINEERING AND CONSULTING, 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: 2/8/08

SAMPLE IDENTIFICATION: B-2269UD, UD-4 @ 33-34.8 Ft.

(A) Mass of oven-dried soil, grams:	51.69
(B) Mass of pycnometer filled with water at test temperature (T), grams:	363.70
(C) Mass of pycnometer, water and soil, grams:	396.56
(T) Temperature of pycnometer, water and soil, °C when mass (C) determined:	23.0
(G) Specific Gravity at observed temperature:	$A / [B - (C - A)]$ 2.745
(F) Correction factor:	0.99933
(G x F) SPECIFIC GRAVITY @ 20°C:	2.743

MATERIAL TESTED:

☐

- # 4

☒

- # 10

PREPARATION METHOD:

☒

DRY

☐

WET (dispersed)

REMARKS: Estimated % Passing # 4 : 99 %

Sandy Lean CLAY (CL)

EQUIPMENT USED

SCALES : 418

OVEN : 144

THERMOMETER : 2759

PYCNO METER : 2184

TESTED BY: EH

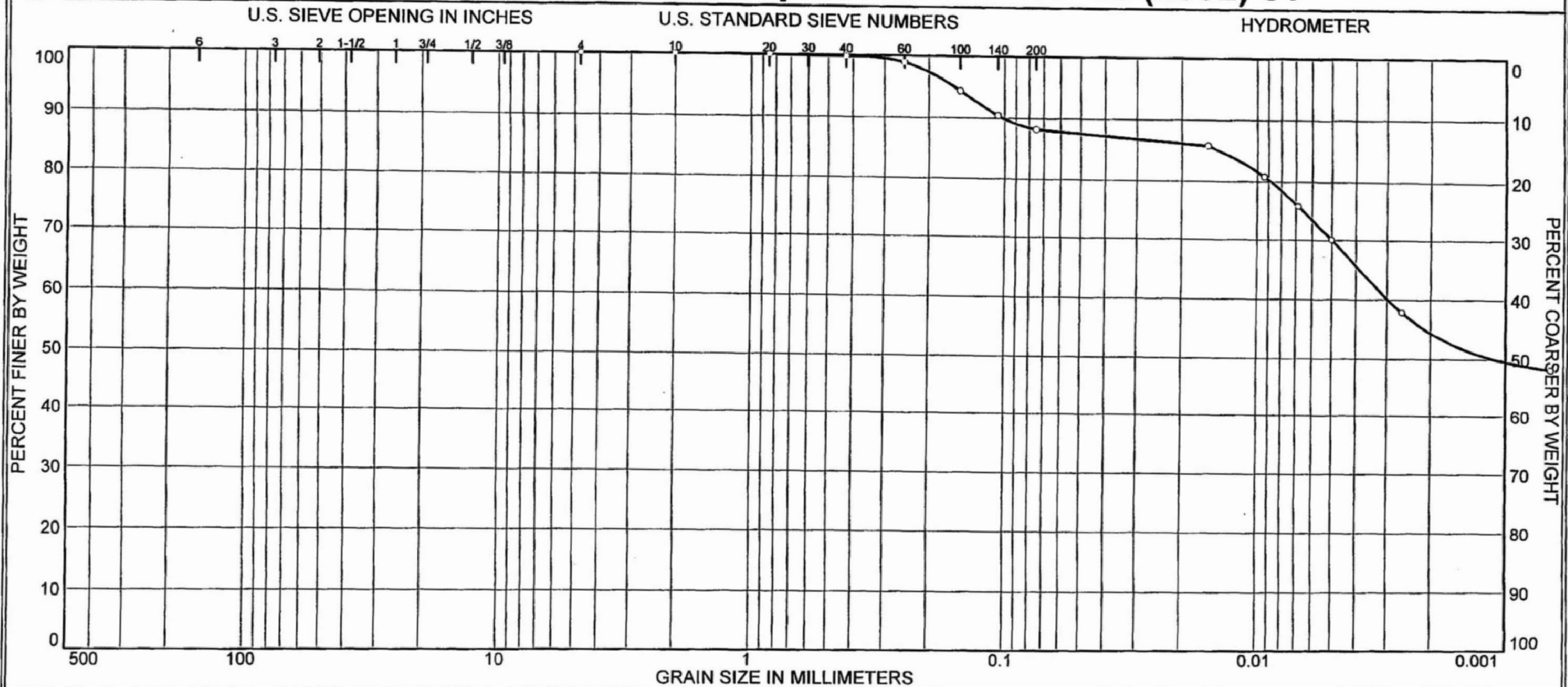
\\Test Reports\\Soils\\SPECIFIC GRAVITY(ref).xls

REVIEWED BY: Harry Johnson

DSC
3-3-08

HS

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



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	0.2	11.6	18.1	70.1

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
2269UD	UD-5	50-51.7 Ft.	11/30/07	CH	Light Gray Mottled Brownish Yellow Fat CLAY	21.5	59	23

Client Bechtel
 Project Exelon Texas COL (Victoria)
 Project No. 6468-07-1777

**MACTEC ENGINEERING
 AND
 CONSULTING, INC.**

Tested by: EH Reviewed by: HJ
 NM value from first strength test performed.
 Specific Gravity = 2.70 (ASTM D 854-06)

HS
 DSC
 3-3-08

GRAIN SIZE DISTRIBUTION TEST DATA

Client: Bechtel
Project: Exelon Texas COL (Victoria)
Project Number: 6468-07-1777

Sample Data

Source: B-2269UD
Sample No.: UD-5
Elev. or Depth: 50-51.7 Ft Sample Length(in./cm.): ID#8171
Location: B-2269UD
Description: Light Gray Mottled Brownish Yellow Fat CLAY
Date: 11/30/07 PL: 23 LL: 59 PI: 36
USCS Classification: CH AASHTO Classification:
Testing Remarks: Tested by: EH Reviewed by: HJ

NM value from first strength test performed.
Specific Gravity = 2.70 (ASTM D 854-06)

Mechanical Analysis Data

Sieve	Cumul. Wt. retained	Percent finer
Initial		
Dry sample and tare=	211.75	
Tare =	144.18	
Dry sample weight =	67.57	
Tare for cumulative weight retained= .00		
# 4	0.00	100.0
# 10	0.03	100.0
# 20	0.03	100.0
# 40	0.11	99.8
# 60	0.75	98.9
# 100	3.77	94.4
# 140	6.46	90.4
# 200	7.98	88.2

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 100.0
Weight of hydrometer sample: 59.59
Calculated biased weight= 59.59
Automatic temperature correction
Composite correction at 20 deg C = -5.4

Meniscus correction only= 0
Specific gravity of solids= 2.702
Specific gravity correction factor= 0.988
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
5.00	20.8	57.0	51.7	0.0133	57.0	6.9	0.0157	85.8
15.00	20.8	54.0	48.7	0.0133	54.0	7.4	0.0094	80.8
30.00	20.8	51.0	45.7	0.0133	51.0	7.9	0.0068	75.8
60.00	20.8	47.5	42.2	0.0133	47.5	8.5	0.0050	70.0
250.00	21.4	40.0	34.9	0.0132	40.0	9.7	0.0026	57.8
4212.00	22.2	34.0	29.1	0.0131	34.0	10.7	0.0007	48.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

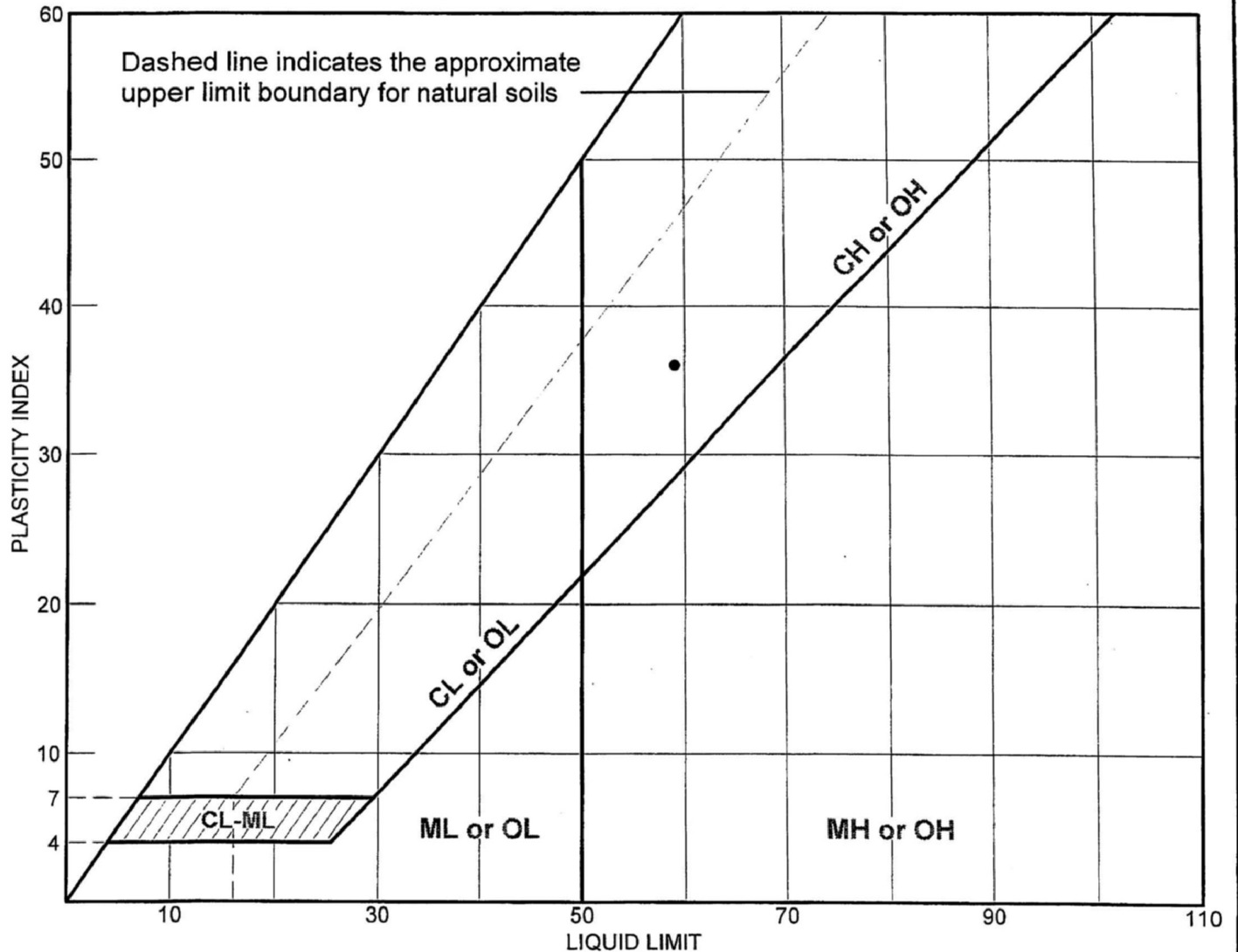
% COBBLES = % GRAVEL =

% SAND = 11.8 (% coarse = 0.0 % medium = 0.2 % fine = 11.6)

% SILT = 18.2 % CLAY = 70.0 (% CLAY COLLOIDS = 49.5)

D₈₅ = 0.01 D₆₀ = 0.00 D₅₀ = 0.00

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318 (05)



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
•	2269UD	UD-5	50-51.7 Ft.	21.5	23	59	36	CH

**MACTEC ENGINEERING
AND
CONSULTING, INC.**

Client: Bechtel
Project: Exelon Texas COL (Victoria)

Project No.: 6468-07-1777

Lab No. 8171