Table 4.2 Summary of Soil Index Test Results (Test Pits)(Table Not Used)

Prepared By: RAA Date: 11/10/09
Checked By: GSA Date: 11/11/09

TABLE 4.3
SUMMARY OF SOIL INDEX TEST RESULTS FOR UNDISTURBED SAMPLES
EXELON TEXAS COL PROJECT - SUPPLEMENTAL INVESTIGATION, INCLUDING UHS
MACTEC PROJECT NO. 6468-07-1777

Number	Sample Number	Depth Sample (ft)	USCS Symbol	Gravel (%)	Sand (%)	Fines (%)	Silt (%)	0.005 mm Clay (%)	Natural Moisture (%)	LL (%)	PL (%)	PI (%)	G_s	Organic Content (%)
B-3234UD	UD-2	35.0-36.6	CL	0.0	41.6	58.4	19.3	39.1	12.6	36	15	21	2.72	
B-3234UD	UD-4	53.8-55.4	CH	0.0	2.8	97.2	17.4	79.8	27.6	78	26	52	2.71	
B-3234UD	UD-5	70.0-71.6	CH	0.0	3.4	96.6	20.2	76.4	32.5	79	31	48	2.76	
B-3234UD	UD-7	105.0-107.5	SP-SM	0.0	90.4	9.6	7.1	2.5	20.5	14	NP	NP		
B-3234UD	UD-8	125.0-126.6	CH	1.8	2.1	96.1	30.4	65.7	26.5	56	18	38	2.71	
B-3234UD	UD-9	150.0-151.6	CH	0.0	13.8	86.2	30.2	56.0	21.3	50	18	32	2.69	
B-3234UD	UD-11	168.8-171.3	SP-SM	24.5	67.4	8.1	5.2	2.9		18	NP	NP		
B-3234UD	UD-14	216.8-219.3	SM	1.0	85.8	13.2	7.5	5.7		18	NP	NP		
B-3234UD	UD-15	260.0-262.5	SM	0.4	76.9	22.7	12.4	10.3		17	14	3		
U-3234UD	UD-16	305.0-307.3	CH	0.0	8.4	91.6	21.4	70.2	21.6	69	23	46	2.74	
U-3234UD	UD-19	393.0-394.8	CH	0.0	5.8	94.2	15.0	79.2	32.4	68	30	38	2.75	
B-3101UD	UD-1	8.0-10.0	CL	0.0	32.7	67.3	23.7	43.6	16.1	38	16	22	2.71	
B-3101UD	UD-6	100.0-102.5	SM	0.4	81.2	18.4	12.5	5.9	15.7	17	16	1		
B-3101UD	UD-7	115.0-117.5	CH	0.0	25.9	74.1	23.9	50.2	17.6	50	18	32	2.72	
B-3101UD	UD-8	120.0-122.0	CH	1.0	27.6	71.4	20.2	51.2	27.9	60	19	41		
B-3101UD	UD-10	126.0-128.5	CL	3.8	41.3	54.9	31.9	23.0	13.9	25	15	10		
B-3101UD	UD-13	159.0-161.5	CL	0.0	1.8	98.2	41.3	56.9	18.5	45	18	27	2.71	
B-3101UD	UD-14	209.0-211.5	SC-SM	0.0	55.9	44.1	26.1	18.0	13.3	23	18	5		
B-3101UD	UD-15	229.0-231.5	CH	0.0	25.0	75.0	22.2	52.8	20.7	58	21	37	2.68	
B-3101UD	UD-16	279.0-281.0	CL	0.0	31.5	68.5	28.3	40.2	20.9	48	19	29	2.65	
B-3101UD	UD-17	289.0-291.5	CL	0.0	14.1	85.9	23.2	62.7	20.3	47	24	23		

1 Classification is based on quantitative and qualitative (visual inspection) information.
Underlined Values: Test was conducted eventhough it had not been assigned
Information not available or test not assigned

LL= Liquid Limit
PL= Plastic Limit
PI = Plasticity Index
G_s = Specific Gravity
NV= No Value
NP= Non-Plastic

MACTEC ENGINEERING AND CONSULTING, INC.
RALEIGH, NC

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TABLE 4.4
SUMMARY OF UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST RESULTS
EXELON TEXAS COL PROJECT-SUPPLEMENTAL INVESTIGATION, INCLUDING UHS
MACTEC PROJECT NO. 6468-07-1777

Boring No.	Sample No.	Sample Depth (ft)	USCS Symbol[1]	Initial Dry Unit Weight (pcf)	Void Ratio	Specific Gravity	Initial Moisture Content (%)	Confining Stress (psi)	Confining Stress (tsf)	Undrained Shear Strength (tsf)
B-3234UD	UD-2	35.0-36.6	CL	114.9	0.48	2.72	15.5	29.8	2.14	2.49
B-3234UD	UD-4	53.8-55.4	CH	92.3	0.83	2.71	28.6	34.7	2.50	1.19
B-3234UD	UD-5	70.0-71.6	CH	88.2	0.95	2.76	32.7	44.6	3.21	1.48
B-3234UD	UD-8	125.0-126.6	CH	109.5	0.55	2.71	19.2	69.4	5.00	4.14
B-3234UD	UD-9	150.0-151.6	CH	102.9	0.63	2.69	22.2	79.3	5.71	2.06
B-3234UD	UD-16	305.0-307.3	CH	102.1	0.68	2.74	23.6	148.8	10.71	2.73
B-3234UD	UD-19	393.0-394.8	CH	86.7	0.98	2.75	31.0	183.5	13.21	3.64
B-3101UD	UD-1	8.0-10.0	CL	95.7	0.77	2.71	21.1	9.9	0.71	0.54
B-3101UD	UD-7	115.0-117.5	CH	111.5	0.52	2.72	18.4	64.4	4.64	3.06
B-3101UD	UD-8	120.0-122.0	CH	95.9	0.76	2.70[2]	26.4	64.4	4.64	0.36
B-3101UD	UD-10	126.0-128.5	CL	111.1	0.52	2.70[2]	15.9	70.0	5.04	3.41
B-3101UD	UD-13	159.0-161.5	CL	106.9	0.58	2.71	21.3	79.3	5.71	3.26
B-3101UD	UD-14	209.0-211.5	SC-SM	114.1	0.48	2.70[2]	14.3	105.0	7.56	4.86
B-3101UD	UD-15	229.0-231.5	CH	105.3	0.59	2.68	22.0	114.0	8.21	3.27
B-3101UD	UD-16	279.0-281	CL	98.8	0.67	2.65	25.9	133.9	9.64	0.74
B-3101UD	UD-17	289.0-291.5	CL	105.3	0.60	2.70[2]	21.3	138.9	10.00	1.42

Notes:
(1) USCS Symbol also presented in Table 4.3
(2) Estimated value of soil specific gravity

Prepared by: PAR Date: 11/10/09
Checked by: CSA Date: 11/11/09

Table 4.5 Summary of CU Triaxial Test Results (Table Not Used)

Prepared By: [illegible] Date: 11/10/09
Checked By: [illegible] Date: 11/11/09

TABLE 4.6
SUMMARY OF DIRECT SHEAR TEST RESULTS
EXELON TEXAS COL PROJECT - SUPPLEMENTAL INVESTIGATION, INCLUDING UHS
MACTEC PROJECT NO. 6468-07-1777

Boring No.	Sample No.	Sample Depth (ft)	USCS Symbol(1)	Initial Dry Unit Weight (2) (pcf)	Initial Void Ratio (2)	Specific Gravity (4)	Initial Moisture Content (2) (%)	Normal Stress (tsf)	Shear Strength c (tsf)	Shear Strength φ (°)
B-3101UD	UD-6	100.0-102.5	SM	111.6	0.51	2.7	15.7	2.16 4.32 7.91	0.13	33.0
B-3234UD	UD-7	105.0-107.5	SP-SM	104.4	0.61	2.70	20.5	2.16 4.32 7.91	0.24	29.9
B-3234UD	UD-11	168.8-171.3	SP-SM	111.2	0.52	2.70	16.1	3.25 6.50 7.91	0.45	30.3
B-3234UD	UD-14	216.8-219.3	SM	113.3	0.49	2.70	18.4	3.95 5.75 7.91	0.41	30.7
B-3234UD	UD-15	260.0-262.5	SM	102.0	0.65	2.70	22.5	4.67 6.12 7.91	0.10	29.4

Notes:
(1) USCS Symbol also presented in Table 4.3
(2) Value shown are the average of three samples
(3) φ = Total stress internal friction angle
c = Total stress cohesion intercept
(4) Estimated Specific Gravity
IP Test In Progress

Prepared By: PAR 11/10/09
Checked By: CSA 11/11/09

TABLE 4.7
SUMMARY OF CONSOLIDATION (LOAD CONTROLLED) TEST RESULTS
EXELON TEXAS COL PROJECT - SUPPLEMENTAL INVESTIGATION, INCLUDING UHS
MACTEC PROJECT NO. 6468-07-1777

Boring Number	Sample No.	Sample Depth (ft)	USCS Symbol(1)	Specific Gravity(1)	σ_v' (3) (ksf)	Dry Unit Weight (2) (pcf)	Moisture Content (2) (%)	Consolidation Test Results		
								p_c(3) (ksf)	C_c (3)	C_r (3)
B-3234UD	UD-2	35.0-36.6	CL	2.72	4.48	110.8	16.3	4.44	0.136	0.030
B-3234UD	UD-4	53.8-55.4	CH	2.71	6.54	85.3	33.3	9.73	0.344	0.056
B-3234UD	UD-5	70.0-71.6	CH	2.76	7.55	87.9	34.4	8.42	0.196	0.052
B-3234UD	UD-8	125.0-126.6	CH	2.71	11.00	107.8	20.1	8.00	0.166	0.034
B-3234UD	UD-9	150.0-151.6	CH	2.69	12.56	104.9	21.7	7.27	0.150	0.029
B-3234UD	UD-16	305.0-307.3	CH	2.74	22.29	94.1	25.3	11.07	0.251	0.044
B-3234UD	UD-19	393.0-394.8	CH	2.75	27.78	85.4	36.1	26.34	0.456	0.056
B-3101UD	UD-1	8.0-10.0	CL	2.71	1.13	101.6	18.7	3.03	0.216	0.044
B-3101UD	UD-7	115.0-117.5	CH	2.72	10.40	111.9	18.6	12.92	0.184	0.030
B-3101UD	UD-13	159.0-161.5	CL	2.71	13.15	111.2	18.8	8.19	0.137	0.030
B-3101UD	UD-15	229.0-231.5	CH	2.68	17.54	104.0	22.4	15.00	0.254	0.043
B-3101UD	UD-16	279.0-281.0	CL	2.65	20.65	97.9	23.5	17.14	0.276	0.048

(1) USCS Symbol, and Specific Gravity values are also presented in Table 4.3.

(2) Dry unit weight and moisture content values shown were determined prior to beginning test procedure.

(3) σ_v' = Overburden Pressure; p_c = Preconsolidation Pressure; C_c = Coefficient of Compression; C_r = Coeffiecient of Recompression

Prepared By: RAA Date: 11/10/09
Checked By: LLB Date: 11/11/09

TABLE 4.8
SUMMARY OF SOIL
CHEMICAL TEST RESULTS[1]
EXELON TEXAS COL PROJECT - SUPPLEMENTAL INVESTIGATION, INCLUDING UHS
MACTEC PROJECT NO. 6468-07-1777

Sample Identification			Natural Moisture (%)	pH SW 846 9045D	Chloride (mg/kg) SW 846 9056[3]	Sulfate (mg/kg) SW 846 8056[4]
Boring No.	Sample Number	Depth (feet)				
B-3123	SS-9	27.5-29.0	18.8	8.3	381.0	308.0
B-3123	SS-11	37.5-39.0	20.7	8.5	220.0	242.0
B-3123	SS-25	112.5-114.0	21.4	8.4	81.5	30.1
B-3129	SS-9	28.5-30.0	18.3	8.2	114	241
B-3129	SS-11	38.5-40.0	23.5	8.6	90.2	202
B-3129	SS-15	58.5-60.0	22.1	8.7	43.4	129
B-3129	SS-22	93.5-95.0	16.3	9.0	38.2	31.8
B-3170A	SS-2	3.5-5.0	15.2	8.5	7.4	7.2
B-3170A	SS-6	13.5-15.0	16.3	8.5	4.6	6.3
B-3170A	SS-8	24.0-25.5	19.5	8.3	17.9	54.3
B-3170A	SS-10	34.0-35.5	17.1	8.3	11.7	30.3
B-3170A	SS-12	44.0-45.5	18.4	8.2	21.5	55.8
B-3223	SS-9	28.4-29.9	12.9	8.2	4.6	2.2 B[2]
B-3223	SS-11	38.4-39.9	12.4	8.8	12.7	4.5 B[2]
B-3223	SS-15	58.4-59.9	12.7	8.9	8.2	6.5
B-3223	SS-22	93.5-95.0	12.8	8.8	26.6	14.3
B-3223	SS-25	118.7-120.2	27.4	8.6	36.5	25.6
B-3229	SS-7	18.5-20.0	23.2	8.9	37.3	10.0
B-3229	SS-13	48.5-50.0	22.2	8.9	9.2	17.9
B-3229	SS-17	68.5-70.0	17.5	9.1	45.5	16.1
B-3229	SS-21	88.5-90.0	16.5	8.9	21.0	52.6
B-3270A	SS-2	3.9-5.4	12.6	8.2	21.6	38.3
B-3270A	SS-4	9.0-10.5	16.9	8.0	112.0	8.8
B-3270A	SS-7	18.8-20.3	13.5	8.0	9.5	5.2 B[2]
B-3270A	SS-9	28.8-30.3	19.5	7.8	18.0	2.2 B[2]
B-3270A	SS-11	38.8-40.3	22.2	8.1	16.4	8.4
B-3270A	SS-13	48.8-50.3	13.4	8.2	19.2	4.7 B[2]

NOTES:
(1) Tests performed by TEST AMERICA - St. Louis, MO
(2) B indicates an estimated result. The result is less than the reporting limit.
(3) SW 846 9056/EPA Method 300.0A (EPA-600 / 4-79-020)
(4) SW 846 8056/EPA Method 300.0A (EPA-600 / 4-79-020)

Table 5.1 Pertinent Information for Wells (Table Not Used)

Table 5.2 Summary of Groundwater Field Measurements (Table Not Used)

Table 5.3 Summary of Groundwater Test Results (Table Not Used)

Table 5.4 Slug Test Results Summary (Table Not Used)

Table 5.5 Summary of Transmissivity Values TW-2320 Aquifer Pump Test (Table Not Used)

Table 5.6 Summary of Manual Water Level Measurements TW-2320 Aquifer Pump Test (Table Not Used)

Table 5.7 Summary of TW-2320 Pump Test Recovery Results (Table Not Used)

Table 5.8 Summary of Transmissivity Values TW-2359 Aquifer Pump Test (Table Not Used)

Table 5.9 Summary of Manual Water Level Measurements TW-2359 Aquifer Pump Test (Table Not Used)

Table 5.10 Summary of TW-2359 Pump Test Recovery Results (Table Not Used)

Table 5.11 Summary of Saturated Hydraulic Conductivity Results (Table Not Used)

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GEOTECHNICAL EXPLORATION AND TESTING

EXELON TEXAS COL PROJECT
VICTORIA COUNTY, TEXAS
SUPPLEMENTAL INVESTIGATION INCLUDING UHS

August 11, 2009

VOLUME 1
Figures

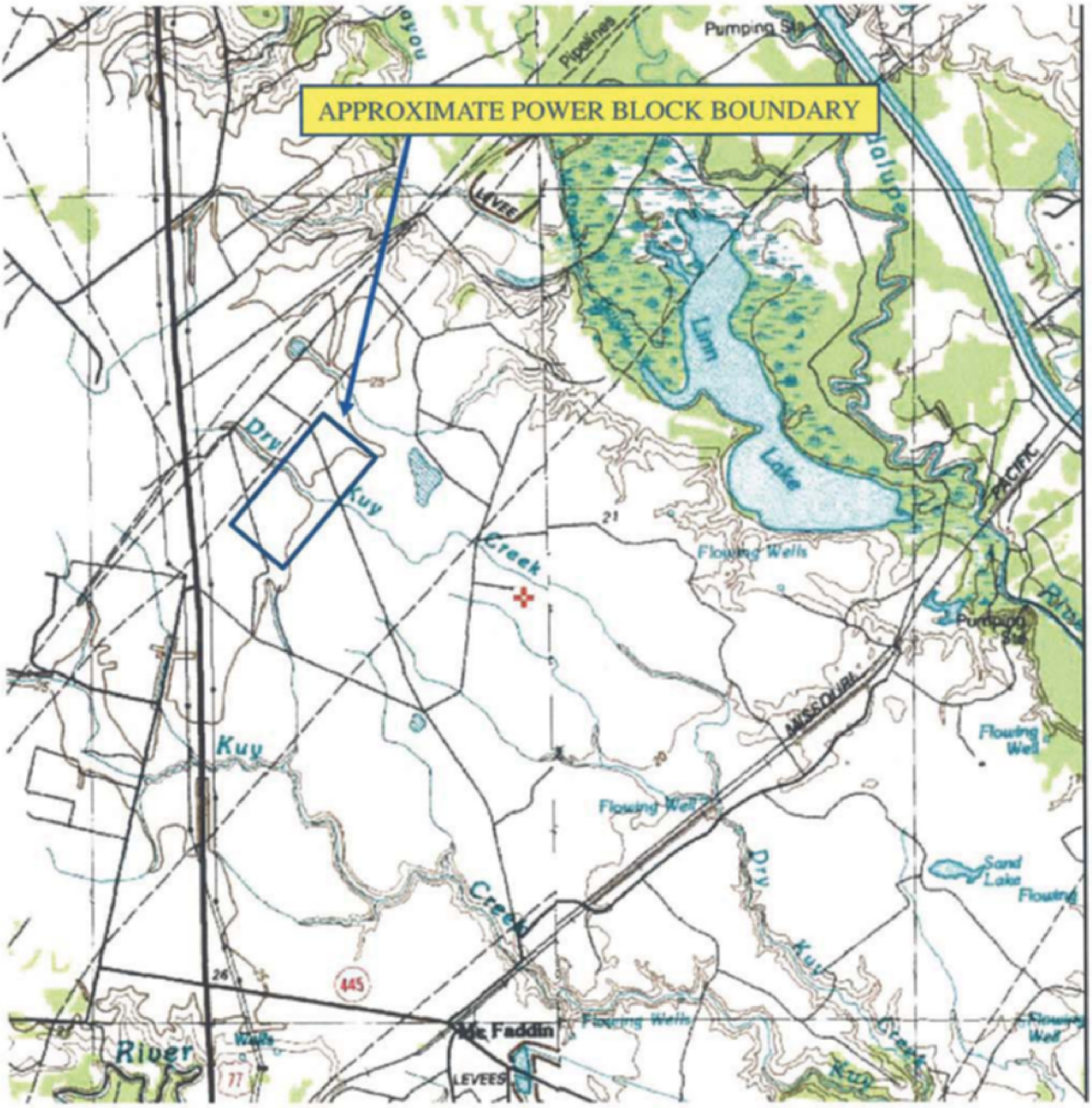
Prepared By:

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

MACTEC Project No. 6468-07-1777

Prepared For:

Bechtel Power Corporation
Subcontract No. 25352-102-HC4-CY00-00001



0 1 2 3 4 5 km

0 0.8 1.6 2.4 3.2 4 mi

UTM 14 695259E 3165327N (NAD83/WGS84)

USGS McFaddin (TX) Quadrangle

Projection is UTM Zone 14 NAD83 Datum

NORTH

NOTE: SITE LOCATION IS APPROXIMATE

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MACTEC ENGINEERING AND CONSULTING, INC.
3301 ATLANTIC AVENUE
RALEIGH, NORTH CAROLINA 27604

SITE VICINITY MAP
EXELON TEXAS COL PROJECT SUPPLEMENTAL INVESTIGATION INCLUDING ULTIMATE HEAT SINK
VICTORIA, TEXAS

DRAWN:	DBH	DATE:	AUGUST 2009	FIGURE
CHECKED BY:	WED	SCALE:	AS SHOWN	1
		JOB:	6468-07-1777	

FINAL DATA REPORT REVISION 0
GEOTECHNICAL EXPLORATION AND TESTING

EXELON TEXAS COL PROJECT
VICTORIA COUNTY, TEXAS
SUPPLEMENTAL INVESTIGATION INCLUDING UHS

August 11, 2009

VOLUME 1
Appendix A – Survey Report

Prepared By:

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

MACTEC Project No. 6468-07-1777

Prepared For:

Bechtel Power Corporation
Subcontract No. 25352-102-HC4-CY00-00001

MACTEC

DOCUMENTATION OF TECHNICAL REVIEW
SUBCONTRACTOR WORK PRODUCT

Project Name: Exelon Texas COL Project – Supplemental Investigation, Including UHS

Project Number: 6468-07-1777

Project Manager: Scott Auger

Project Principal: Kathryn White

The report described below has been prepared by the named subcontractor retained in accordance with the MACTEC QAPD. The work and report have been reviewed by a MACTEC technically qualified person. Comments on the work or report, if any, have been satisfactorily addressed by the subcontractor. The attached report is approved in accordance with section QS-7 of MACTEC's QAPD.

The information and data contained in the attached report are hereby released by MACTEC for project use.

REPORT :

Final Survey Report; Dated April 28, 2009

SUBCONTRACTOR:

Rods Surveying, Inc.

DATE OF ACCEPTANCE : 5/5/2009

TECHNICAL REVIEWER: Bill Deobald

PROJECT COORDINATOR: Bill Deobald

RODS Surveying, Inc.

FINAL SURVEY REPORT

Project: Exelon Texas COL Project - Supplemental Investigation, including UHS

Introduction

The project consisted of the staking of proposed borehole locations and providing final as-built coordinates of the boreholes after drilling operations were completed. All survey operations were based on Work Instruction No. 310 issued on January 9, 2009 by MACTEC Engineering and Consulting, Inc.

The location of the boreholes to be staked were provided in a Boring Location Plan issued by the Bechtel Corporation of Frederick, Maryland, Job # 25352, Drawing No. 000-CY-0010-00004, Revision No. 4, and is titled Boring Location Plan Power Block – Sheet 2.

Procedures and Quality Control

An ASCII file with the coordinate values of the boreholes to be staked was created for use in the Trimble TSC2 GPS data collector. This data collector along with a Trimble R8 GNSS dual frequency GPS Receiver operating in a Networked Real Time Kinematic mode (RTK) was used to stake the borehole locations. This equipment easily exceeds the sub-meter requirements for the GPS equipment specified in the work order. Prior to the start and end of survey operations each day, the operation of the GPS equipment was verified by observing at least 2 existing project control points previously set for the project by SURVCON, Inc. Existing observation wells were also used for check shots, these wells were previously located by SURVCON, Inc. and were found to agree very well with the existing control points.

After drilling of the boreholes was completed, RODS Surveying proceeded with the final location of the boreholes. For this portion of the project conventional kinematic GPS surveying procedures were used. This method allows the GPS data to be thoroughly analyzed and checked for quality by using the Trimble Geomatics Software package. The same data checks to existing control and observations wells were completed at the beginning and end of each day of surveying.

Corporate Office: 6810 Lee Road, Suite 100, Spring, Texas 77379 – Tel: 281-257-4020 – Fax: 281-257-4021
Offices: Austin, Edinburg, Nacogdoches, and San Antonio, Texas

Equipment

The following GPS equipment was utilized for the project:

GPS Equipment List

Manufacturer	*Model*	*Serial No.*
Trimble	R8 GNSS	4736138426
Trimble	TSC2	SS37C06015
Trimble	5700	220272891

Project Datum

Horizontal Datum for the project is NAD83 Texas State Plane South Central Zone (4204). Vertical Datum is NAVD88. The Geoid Model used to calculate orthometric heights for the project is Geoid03. All coordinate values are expressed using US Survey Feet. An average combined scale factor of 0.999941186 can be used to calculate surface horizontal distances (grid distance divided by 0.999941186 = surface distance).

Location Tables

The following tables show the proposed location of each borehole along with the final asbuilt location and differences after drilling.

EXELON COL VICTORIA SITE

HORIZONTAL DATUM - NAD83 TEXAS SOUTH CENTRAL ZONE(4204)
VERTICAL DATUM - NAVD88 UNITS - US SURVEY FEET

BORING LOCATIONS UNIT #1 POWER BLOCK

	Plan Location		*Asbuilt Survey Location*			*Difference*	
Point No.	Northing	Easting	Northing	Easting	Elev	ΔNorthing	ΔEasting
B-3101	13412433.12	2599834.68	13412433.30	2599834.66	79.78	-0.18	0.03
B-3101UD	N/A	N/A	13412439.45	2599827.43	79.78	N/A	N/A
B-3102	13412513.81	2599902.39	13412513.20	2599902.00	79.86	0.61	0.39
B-3103	13412939.89	2599652.23	13412938.79	2599652.69	80.02	1.10	-0.46
B-3104	13412203.95	2599516.29	13412202.33	2599516.82	80.64	1.62	-0.53
B-3105	13412124.24	2599611.28	13412124.15	2599612.05	80.50	0.09	-0.77
B-3120	13412272.73	2599684.03	13412271.47	2599685.23	79.96	1.26	-1.20
B-3121	13412286.42	2599731.59	13412285.94	2599732.88	80.10	0.48	-1.29
B-3122	13412236.26	2599763.41	13412236.14	2599763.21	79.98	0.12	0.20
B-3123	13412306.09	2599844.17	13412303.63	2599850.58	80.09	2.46	-6.41
B-3124	13412384.67	2599937.87	13412384.10	2599937.33	79.58	0.57	0.54
B-3125	13412465.52	2599992.13	13412466.08	2599991.90	78.10	-0.56	0.23
B-3126	13412174.88	2599782.44	13412174.89	2599783.81	79.94	-0.01	-1.37
B-3127	13412256.56	2599963.34	13412252.85	2599968.07	79.71	3.71	-4.73
B-3128	13412353.85	2600019.40	13412354.30	2600018.94	79.35	-0.45	0.46
B-3129	13412000.10	2599811.91	13411995.23	2599817.41	79.80	4.87	-5.50
B-3130	13412176.10	2599959.60	13412171.36	2599965.05	79.71	4.74	-5.45
B-3131	13412263.34	2600043.44	13412262.16	2600044.89	78.91	1.18	-1.45
B-3132	13412156.11	2600018.00	13412156.19	2600019.76	79.32	-0.08	-1.76
B-3133	13412231.74	2600081.46	13412232.17	2600080.73	78.41	-0.43	0.73
B-3134	13412307.37	2600144.93	13412307.93	2600144.95	79.67	-0.56	-0.02
B-3150	13412364.49	2599708.40	13412363.96	2599708.26	80.09	0.53	0.14
B-3151	13412602.39	2599908.51	13412601.54	2599907.98	78.55	0.85	0.53
B-3152	13412667.44	2599963.23	13412666.93	2599964.39	79.66	0.51	-1.16

EXELON COL VICTORIA SITE

HORIZONTAL DATUM - NAD83 TEXAS SOUTH CENTRAL ZONE(4204)
VERTICAL DATUM - NAVD88 UNITS - US SURVEY FEET

UHS BORING LOCATIONS UNIT #1 POWER BLOCK

	Plan Location		*Asbuilt Survey Location*			*Difference*	
Point No.	Northing	Easting	Northing	Easting	Elev	Δ Northing	Δ Easting
B-3170A	13411918.93	2599278.43	13411920.22	2599278.60	80.20	-1.29	-0.17
B-3170A OFFSET	N/A	N/A	13411915.24	2599287.68	80.12	N/A	N/A
B-3171	13411944.31	2599565.08	13411943.98	2599565.10	79.94	0.33	-0.02
B-3172	13411885.86	2599615.14	13411885.94	2599615.55	79.89	-0.08	-0.40
B-3173	13411880.21	2599375.78	13411880.20	2599376.72	80.23	0.01	-0.94
B-3174	13411986.10	2599453.90	13411986.60	2599453.62	80.39	-0.50	0.28
B-3175	13411910.70	2599430.14	13411911.53	2599430.38	80.27	-0.83	-0.24
B-3176	13412071.11	2599439.41	13412070.79	2599439.29	80.46	0.32	0.12
B-3177	13411788.04	2599435.14	13411787.89	2599435.89	80.19	0.15	-0.75
B-3178	13412145.08	2599455.59	13412145.80	2599455.30	80.34	-0.72	0.29
B-3179	13412079.81	2599530.82	13412080.02	2599530.84	80.10	-0.21	-0.02
B-3179B	N/A	N/A	13412088.18	2599525.43	80.19	N/A	N/A
B-3180	13411995.01	2599329.66	13411994.56	2599329.41	80.42	0.45	0.25
B-3181	13412058.75	2599554.36	13412057.76	2599554.50	80.01	0.99	-0.14
B-3182	13411777.72	2599588.62	13411777.24	2599588.12	79.75	0.48	0.50
B-3183	13411925.76	2599712.85	13411924.45	2599713.35	79.90	1.31	-0.50
B-3184	13411652.58	2599601.86	13411652.94	2599602.59	80.17	-0.36	-0.73
B-3185A	13411834.26	2599721.67	13411833.03	2599722.22	79.77	1.23	-0.55
B-3185A OFFSET	N/A	N/A	13411826.65	2599726.94	79.58	N/A	N/A
B-3186	13411693.41	2599689.09	13411693.36	2599689.25	79.64	0.05	-0.16
B-3187	13412012.78	2599728.81	13412013.89	2599728.28	79.95	-1.11	0.53
B-3194	13411841.46	2599813.32	13411840.05	2599813.20	79.48	1.41	0.12

EXELON COL *VICTORIA SITE*

HORIZONTAL DATUM - NAD83 TEXAS SOUTH CENTRAL ZONE(4204)
VERTICAL DATUM - NAVD88 *UNITS - US SURVEY FEET*

BORING LOCATIONS UNIT #2 POWER BLOCK

	Plan Location		*Asbuilt Survey Location*			*Difference*	
Point No.	Northing	Easting	Northing	Easting	Elev	Δ Northing	Δ Easting
B-3201	13413199.11	2600477.42	13413199.23	2600478.73	80.51	-0.12	-1.31
B-3202	13413279.80	2600545.13	13413278.38	2600546.43	80.05	1.42	-1.30
B-3203	13413705.88	2600294.97	13413704.80	2600295.99	80.75	1.08	-1.02
B-3204	13412969.94	2600159.03	13412969.79	2600159.57	80.32	0.15	-0.54
B-3205	13412890.23	2600254.02	13412890.30	2600253.76	80.12	-0.07	0.26
B-3220	13413038.72	2600326.77	13413038.65	2600329.99	80.34	0.07	-3.22
B-3221	13413052.41	2600374.33	13413050.44	2600375.52	80.01	1.97	-1.19
B-3222	13413002.25	2600406.15	13413000.60	2600409.71	79.96	1.65	-3.56
B-3223	13413069.43	2600486.91	13413068.13	2600491.68	80.33	1.30	-4.77
B-3224	13413150.66	2600580.61	13413149.85	2600580.51	80.00	0.81	0.10
B-3225	13413231.51	2600634.87	13413231.70	2600635.22	79.87	-0.19	-0.35
B-3226	13412940.87	2600425.18	13412942.00	2600423.84	80.40	-1.13	1.34
B-3227	13413022.55	2600606.08	13413022.23	2600606.30	80.10	0.33	-0.22
B-3228	13413109.43	2600679.40	13413109.76	2600679.85	80.32	-0.33	-0.45
B-3229	13412766.14	2600454.70	13412764.61	2600458.23	80.11	1.53	-3.53
B-3230	13412942.09	2600602.34	13412942.18	2600604.56	80.28	-0.09	-2.22
B-3231	13413029.33	2600686.18	13413029.48	2600686.21	80.19	-0.15	-0.03
B-3232	13412922.10	2600660.74	13412922.28	2600661.21	80.51	-0.18	-0.47
B-3233	13412997.73	2600724.20	13412996.09	2600724.96	80.10	1.64	-0.76
B-3234	13413073.36	2600787.67	13413073.73	2600787.16	80.56	-0.37	0.51
B-3234UD	N/A	N/A	13413081.49	2600780.76	80.57	N/A	N/A
B-3250	13413130.53	2600351.19	13413129.73	2600351.61	80.07	0.80	-0.42
B-3251	13413368.43	2600551.30	13413367.88	2600552.94	80.26	0.55	-1.64
B-3252	13413433.48	2600606.02	13413433.44	2600606.15	80.28	0.04	-0.13

EXELON COL VICTORIA SITE

HORIZONTAL DATUM - NAD83 TEXAS SOUTH CENTRAL ZONE(4204)
VERTICAL DATUM - NAVD88 UNITS - US SURVEY FEET

UHS BORING LOCATIONS UNIT #2 POWER BLOCK

	Plan Location		*Asbuilt Survey Location*			*Difference*	
Point No.	Northing	Easting	Northing	Easting	Elev	Δ Northing	Δ Easting
B-3270A	13413806.23	2600964.09	13413806.35	2600963.12	80.63	-0.12	0.97
B-3270A OFFSET	N/A	N/A	13413799.21	2600956.76	80.15	N/A	N/A
B-3271	13413662.98	2601056.66	13413662.26	2601056.45	80.22	0.72	0.21
B-3272	13413580.98	2600953.94	13413580.96	2600954.08	80.26	0.03	-0.14
B-3273	13413726.98	2601029.33	13413726.75	2601028.78	80.34	0.24	0.55
B-3274	13413659.91	2600812.44	13413659.47	2600812.95	80.10	0.45	-0.51
B-3275	13413716.45	2600945.49	13413717.05	2600944.49	80.69	-0.60	1.00
B-3276	13413655.36	2600720.79	13413655.40	2600721.81	80.50	-0.04	-1.02
B-3277	13413668.12	2601131.79	13413665.44	2601131.40	80.17	2.68	0.39
B-3278	13413659.41	2600843.54	13413658.66	2600844.38	80.18	0.75	-0.83
B-3279	13413519.64	2600996.94	13413517.67	2600996.95	79.73	1.97	-0.01
B-3280	13413800.76	2600845.02	13413800.24	2600844.41	80.49	0.52	0.61
B-3281	13413568.41	2600821.26	13413568.70	2600821.85	79.96	-0.29	-0.59
B-3282	13413584.17	2601103.07	13413584.99	2601102.66	80.24	-0.82	0.41
B-3283	13413436.12	2600978.84	13413436.23	2600979.48	80.27	-0.11	-0.64
B-3285A	13413443.20	2601070.39	13413442.17	2601072.10	80.14	1.03	-1.71
B-3285A OFFSET	N/A	N/A	13413451.41	2601067.99	80.14	N/A	N/A
B-3286	13413499.82	2601203.67	13413498.60	2601204.05	80.08	1.22	-0.38
B-3287	13413393.21	2600910.38	13413394.33	2600911.93	80.34	-1.12	-1.55
B-3288	13413284.94	2601039.42	13413285.93	2601038.97	80.19	-0.99	0.45
B-3289	13413159.15	2600933.87	13413160.23	2600933.39	80.44	-1.08	0.48
B-3290	13413567.28	2601255.18	13413566.86	2601255.83	80.52	0.42	-0.65
B-3291	13412949.94	2600555.51	13412951.38	2600555.75	80.21	-1.44	-0.24
B-3292	13413351.77	2601079.44	13413352.05	2601079.59	80.52	-0.28	-0.15

EXELON COL VICTORIA SITE

HORIZONTAL DATUM - NAD83 TEXAS SOUTH CENTRAL ZONE(4204)
VERTICAL DATUM - NAVD88 UNITS - US SURVEY FEET

UHS CONE PENETROMETER TEST (CPT) LOCATIONS UNIT # 1

	Plan Location		Asbuilt Survey Location			Difference	
Point No	Northing	Easting	Northing	Easting	Elev	Δ Northing	Δ Easting
C-3101	13411983.40	2599506.75	13411985.89	2599505.85	79.87	-2.49	0.90
C-3102	13412110.14	2599642.43	13412109.22	2599642.04	80.03	0.92	0.39
C-3110	13411775.18	2599768.36	13411774.14	2599769.00	79.19	1.04	-0.64

UHS CONE PENETROMETER TEST (CPT) LOCATIONS UNIT # 2

	Plan Location		Asbuilt Survey Location			Difference	
Point No	Northing	Easting	Northing	Easting	Elev	Δ Northing	Δ Easting
C-3201	13413648.97	2600903.50	13413646.69	2600904.17	79.87	2.28	-0.67
C-3204	13413338.19	2600977.17	13413340.70	2600979.03	79.99	-2.51	-1.86
C-3205	13413222.04	2600986.64	13413222.51	2600985.88	80.12	-0.47	0.76
C-3206	13413097.14	2600878.83	13413096.81	2600879.63	80.31	0.33	-0.79
C-3207	13412842.83	2600672.18	13412840.47	2600672.65	79.99	2.36	-0.47
C-3208	13412901.97	2600612.19	13412902.67	2600610.62	80.08	-0.70	1.57
C-3209	13413407.36	2601137.92	13413406.91	2601142.50	80.26	0.45	-4.58
C-3211	13413000.56	2600359.42	13413000.85	2600359.97	79.98	-0.29	-0.55
C-3212	13412998.53	2600497.12	13412998.23	2600496.82	80.22	0.30	0.30

Conclusion

The as-built location of the boreholes meets or exceeds the accuracies as specified in Work Instruction No. 310 issued on January 9, 2009 by MACTEC Engineering and Consulting, Inc.

Darrell Babcock 4-28-09

Registered Professional Land Surveyor
No. 5466

FINAL DATA REPORT REVISION 0
GEOTECHNICAL EXPLORATION AND TESTING

EXELON TEXAS COL PROJECT
VICTORIA COUNTY, TEXAS
SUPPLEMENTAL INVESTIGATION INCLUDING UHS

August 11, 2009

VOLUME 1
Appendix B – Geotechnical Field Data

Prepared By:

MACTEC Engineering and Consulting, Inc.
Raleigh, North Carolina

MACTEC Project No. 6468-07-1777

Prepared For:

Bechtel Power Corporation
Subcontract No. 25352-102-HC4-CY00-00001

Contents

Geotechnical Boring Logs
Test Pit Logs
SPT Energy Reports

Geotechnical Boring Logs

KEY TO CLASSIFICATION OF SOILS

Soils classified under the Unified Soil Classification System (USCS) and in accordance with ASTM D 2488-06 / 2487-06e1

CORRELATION OF SPT RESISTANCE WITH RELATIVE DENSITY-CONSISTENCY

GRANULAR MATERIAL		SILTS AND CLAYS	
RELATIVE DENSITY	SPT N Value (blows/ft)	CONSISTENCY	SPT N Value (blows/ft)
VERY LOOSE	0 - 4	VERY SOFT	0 - 1
LOOSE	5 - 10	SOFT	2 - 4
FIRM	11 - 20	FIRM	5 - 8
VERY FIRM	21 - 30	STIFF	9 - 15
DENSE	31 - 50	VERY STIFF	16 - 30
VERY DENSE	> 50	HARD	> 30

MOISTURE CONTENT

DRY-Absence of moisture

MOIST-Damp/no visible H2O

WET-Visible free water

HCl Reaction

NONE - No visible reaction

WEAK - Some reaction/slow

STRONG - Violent reaction

MODIFIERS

Modifiers provide an estimate of the percentages of gravel, sand, and fines (silt or clay size particles) or other material such as organics, shells, carbonate nodules, etc.

TRACE	< 5%
FEW	5 to 10%
LITTLE	15 to 25%
SOME	30 to 45%
MOSTLY	50 to 100%

COLOR of Soil: see Munsell Soil Color Charts

Particle Size Range for Sand: Fine, Medium, Coarse

Particle Size Range for Gravel: Fine or Coarse

MEASUREMENTS: Horizontal measurements and vertical measurements, such as SPT sample recovery or penetration, sample depths, etc., are rounded to nearest tenth of a foot (0.1 ft).

HORIZONTAL COORDINATES (Northing and Easting): NAD83 Texas State Plane South Central Zone (4204), US Survey Feet.

ELEVATIONS: North American Vertical Datum of 1988 (NAVD88), US Survey Feet.

SPT SAMPLE NUMBERING: SS-1, SS-2, SS-3, etc.; split samples designated with an A, B, or C, i.e. SS-4A/B

UNDISTURBED SAMPLE NUMBERING (Shelby Tube or Pitcher Barrel Sample): UD-1, UD-2, UD-3, etc.

GROUND WATER: Fluid level observations were recorded at the boring locations at the start of each work day, when possible. Due to the use of drilling fluid additives, these values may not represent the ground water conditions at the site. See observation wells for measured ground water levels.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

No.200 No.40 No.10 No.4 3/4" 3" 12"

U.S. STANDARD SIEVE SIZE

Boring Log Soil Descriptions: The composition and characteristics of each soil type are described completely at the top of each soil layer. Vertical variability of the soil layer is subsequently listed at the depth where a change was observed. Assume that all components or characteristics not modified are still included in the description of deeper samples within the soil layer.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

MACTEC

GEOTECHNICAL BORING LOG

Prepared By WJD Date 8-10-09

Checked By KAW Date 8.10.09

SHEET 1 OF 6

BECHTEL NO.: 25352	MACTEC NO.: 6468-07-1777	COUNTY: Victoria, TX	GEOLOGIST: B. Ford
SITE DESCRIPTION: Exelon Texas COL Project - Supplemental Investigation, Including UHS			GROUND WATER (ft)
BORING NO.: B-3101	DRILL METHOD: Mud Rotary	SAMPLE METHODS: SPT	0 HR. ND
GROUND SURFACE ELEV.: 79.8 ft (NAVD88)	NORTHING: 13,412,433 US ft (NAD83)	EASTING: 2,599,835 US ft (NAD83)	24 HR. ND
TOTAL DEPTH: 300.5 ft	DRILL MACHINE: CME 55 LC Track	DRILLER: D. White (MACTEC RAL)	HAMMER (ID): 140 lb. Auto (MEC 02)
DATE STARTED: 2/3/09	COMPLETED: 2/8/09	CASING DEPTH: 3.5 ft	BITS USED: 3 7/8" Drag Bit

ELEV. (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 20 40 60 80 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
79.8					Ground Surface				79.8 0.0
									Drill without sampling from 0.0 - 149.0 feet.

EXELON COL BORE VICTORIA PHASE III.GPJ EXELON COL.GDT 8/10/09