Schnabel Engineering

Project Name: Constellation Generation Group C[illegible] Project
Calvert Cliffs Nuclear Power Plant (CCNPP)
Calvert County, Maryland

Project Number: 06120048.00

SUMMARY OF SOIL LABORATORY TEST RESULTS[1]

Boring / Test Pit No.	Sample Top Depth (ft.)	Sample Type[2]	USCS Sample Class. (D 2487)[3]	Sieve Results (D 422)		Atterberg Limits[4] (D 4318)				Organic Content (%)	Natural Moisture (%) (D 2216)	Moist Unit Weight (PCF)	Specific Gravity (D 854)	Moisture-Density Relationship (D 1557)		Bearing Ratio (D 1883)		Specimen		Shear Strength						Consolidation (D 2435)			
				Percent Passing No. 200	Percent Retained No. 4	LL	PL	PI	Oven Dried LL					Dry Unit Wt. (PCF)	Optimum Moisture (%)	Dry	Soaked	Intact	Compacted	Test Type[5]	Total f deg.	Total C psi	Effective f deg.	Effective C' psi	Failure Criterion[6]	Cer	Cec	eo	Pp' tsf
B-320	48.5	UD	CH	81.5	0.0	59	19	40			34.4	114	2.74					X	-	UU	NA	12.7	NA	NA	Dev				
																		X	-	DS	NA	NA	21.9	9.6	NA				
B-320	53.5	SPT	CH			69	24	45			34.9																		
B-320	73.5	SPT	SM	15.3	5.0						18.8																		
B-320	93.5	SPT	SM	15.1	1.8						25.4																		
B-320	103.5	SPT	SM	16.8	0.0						29.2																		
B-320	113.5	SPT	CL			44	16	28			28.5																		
B-320	128.5	SPT	MH			50	30	20			34.1																		
B-320	148.5	SPT	SM	47.7	1.4						37.0																		
B-321	2.5	SPT	SC	31.0	0.9						9.7																		
B-321	5.0	SPT	SP-SM								7.4																		
B-321	7.5	SPT	CL								25.2																		
B-321	10.5	SPT	CH	65.9	0.0	55	20	35			36.2																		
B-321	13.5	SPT	SC								30.0																		
B-321	18.5	SPT	SC	35.3	0.0						29.7																		
B-321	23.5	UD	CL	99.7	0.0	45	18	27			26.2	117.8	2.79					X	-	UU	NA	32	NA	NA	Dev	0.009	0.306	1.03	19
B-321	28.5	SPT	SM	43.6	0.0	47	29	18			27.0																		
B-321	33.5	SPT	SP-SM								30.9																		
B-321	38.5	SPT	SP-SM	9.0	1.5						27.1																		
B-321	43.5	SPT	SP-SM								26.0																		
B-321	48.5	SPT	MH	73.0	0.0						35.1																		
B-321	53.5	SPT	SM	14.3	8.6	NP	NP	NP			25.0																		
B-321	58.5	SPT	SM	18.6	5.1						27.4																		
B-321	63.5	SPT	SM								27.6																		
B-321	68.5	SPT	SM	16.0	0.2						28.4																		
B-321	73.5	UD	SM	15.3	0.0	NP	NP	NP			28.5	120.5	2.67					X	-	CIU-bar	20	13.5	30	7	PSR	0.003	0.064	0.72	14.2
B-321	78.5	SPT	SM								34.9																		
B-321	83.5	SPT	SM								20.6																		
B-321	88.5	SPT	SM	30.0	0.2						31.0																		
B-321	93.5	SPT	SC	32.2	1.0	59	26	33			36.9																		
B-321	98.5	SPT	SM	29.8	0.0						36.1																		
B-321	103.5	SPT	SM								58.2																		
B-321	108.5	SPT	SM								42.6																		
B-321	113.5	SPT	SM	36.3	0.9						34.6																		
B-321	118.5	SPT	SM								39.8																		
B-321	123.5	SPT	SM								43.1																		
B-321	128.5	SPT	MH	60.8	0.0						49.5																		

Schnabel Engineering

Project Name: Constellation Generation Group COLA Project
Calvert Cliffs Nuclear Power Plant (CCNPP)
Calvert County, Maryland

Project Number: 06120048.00

SUMMARY OF SOIL LABORATORY TEST RESULTS[1]

Boring / Test Pit No.	Sample Top Depth (ft.)	Sample Type[2]	USCS Sample Class. (D 2487)[3]	Sieve Results (D 422)		Atterberg Limits[4] (D 4318)				Organic Content (%)	Natural Moisture (%) (D 2216)	Moist Unit Weight (PCF)	Specific Gravity (D 854)	Moisture-Density Relationship (D 1557)		Bearing Ratio (D 1883)		Specimen		Shear Strength						Consolidation (D 2435)			
																					Total		Effective						
				Percent Passing No. 200	Percent Retained No. 4	LL	PL	PI	Oven Dried LL					Dry Unit Wt. (PCF)	Optium Moisture (%)	Dry	Soaked	Intact	Compacted	Test Type[5]	f deg.	C psi	f deg.	C' psi	Failure Criterion[6]	Cer	Cec	eo	Pp' tsf
B-321	133.5	SPT	MH								42.3																		
B-321	138.5	SPT	MH								39.7																		
B-321	143.5	SPT	MH	84.6	0.0						60.2																		
B-321	148.5	SPT	MH								66.0																		
B-323	2.5	SPT	SP								5.0																		
B-323	7.5	SPT	SP-SM	8.2	1.1						13.0																		
B-323	13.5	SPT	SP-SM	8.4	0.0						16.2																		
B-323	18.5	SPT	SM			NP	NP	NP			11.9																		
B-323	28.5	SPT	SP								17.6																		
B-323	38.5	SPT	SP-SM	11.4	0.9						20.7																		
B-323	48.5	SPT	CH	51.6	0.0	50	17	33			28.1																		
B-323	58.5	SPT	CH	89.1	0.6	65	22	43			35.1																		
B-323	68.5	SPT	SC	32.8	0.0	46	24	22			29.0																		
B-323	83.5	UD	CL	72.7	0.0	42	20	22			36.2	117	2.76					X	-	UU	NA	40	NA	NA	Dev				
B-323	93.5	SPT	SM	27.9	6.8	NP	NP	NP			26.3																		
B-323	103.5	SPT	SP-SM	10.6	0.8	NP	NP	NP			28.6																		
B-323	113.5	SPT	SM	18.1	0.0						30.2																		
B-323	123.5	SPT	SM								19.4																		
B-323	133.5	SPT	SM	30.2	0.1						33.1																		
B-323	143.5	SPT	MH	52.1	0.0	73	38	35			48.3																		
B-323	153.5	SPT	ML			39	30	9			31.3																		
B-323	163.5	SPT	MH	63.3	0.0						54.2																		
B-323	173.5	SPT	CH	56.9	0.0	97	31	66			44.0																		
B-323	183.5	SPT	CH	94.0	0.0	124	33	91			68.3																		
B-323	193.5	SPT	CH	76.3	0.0	116	36	80			58.1																		
B-323	198.5	SPT	MH			97	62	35			52.9																		
B-326	5.0	SPT	SP-SM								8.2																		
B-326	13.5	SPT	SP-SM	10.5	0.0						12.2																		
B-326	23.5	SPT	SM	23.7	1.0						22.7																		
B-326	33.5	UD	CL	62.0	0.0	41	16	25			27.6	120	2.76					X	-	Qu	NA	11.9	NA	NA	Dev				
																		X	-	UU	NA	8.4	NA	NA	Dev				
B-326	43.5	UD	OH	89.3	0.0	63	22	41	45	0.4	33.9	111	2.70					X	-	Qu	NA	19.7	NA	NA	Dev				
																		X	-	DS	NA	NA	19.0	4.9	NA				
B-327	113.5	UD	CH	51.9	0.0	60	24	36			44.3	107	2.70													0.003	0.374	1.34	20.6
B-328	2.5	SPT	SP-SM	8.7	0.0	NP	NP	44			4.5																		
B-328	7.5	SPT	CH								30.0																		
B-328	10.5	SPT	CH			59	17	42			28.8																		

Schnabel Engineering

Project Name: Constellation Generation Group C[illegible], Project
Calvert Cliffs Nuclear Power Plant (CCNPP)
Calvert County, Maryland

Project Number: 06120048.00

SUMMARY OF SOIL LABORATORY TEST RESULTS[1]

Boring / Test Pit No.	Sample Top Depth (ft.)	Sample Type[2]	USCS Sample Class. (D 2487)[3]	Sieve Results (D 422)		Atterberg Limits[4] (D 4318)				Organic Content (%)	Natural Moisture (%) (D 2216)	Moist Unit Weight (PCF)	Specific Gravity (D 854)	Moisture-Density Relationship (D 1557)		Bearing Ratio (D 1883)		Specimen		Shear Strength						Consolidation (D 2435)			
																					Total		Effective						
				Percent Passing No. 200	Percent Retained No. 4	LL	PI	PI	Oven Dried LL					Dry Unit Wt. (PCF)	Optium Moisture (%)	Dry	Soaked	Intact	Compacted	Test Type[5]	f deg.	C psi	f deg.	C psi	Failure Criterion[6]	Cer	Cec	eo	Pp' tsf
B-328	18.5	SPT	MH			64	36	28			35.1																		
B-328	23.5	SPT	CH			77	28	49			53.0																		
B-328	28.5	SPT	SC	42.6	0.1	40	21	19			30.5																		
B-328	33.5	SPT	SP-SM								18.2																		
B-328	38.5	SPT	SP-SM	7.8	0.0						22.6																		
B-328	43.5	SPT	SP-SM	10.8	4.2	NP	NP	NP			24.2																		
B-328	48.5	SPT	ML								25.8																		
B-328	53.5	SPT	SM	21.9	9.6						24.0																		
B-328	63.5	UD	OH	87.0	0.0	72	41	31	50		44.2	121	2.66					X	-	UU	Test Not Performed					<0.01	0.060	0.90	2.3
																		X	-	CIU-bar	13.4	23.3	34.6	0.236	PSR				
B-328	68.5	SPT	SM			NP	NP	NP			29.4																		
B-328	73.5	SPT	SM			NP	NP	NP			32.2																		
B-328	83.5	SPT	SM	18.6	15.7	NP	NP	NP			21.2																		
B-328	88.5	SPT	MH			47	31	16			34.0																		
B-328	98.5	SPT	MH			53	34	19			38.2																		
B-328	103.5	SPT	SM	36.6	0.0						62.7																		
B-328	113.5	SPT	MH								30.5																		
B-328	118.5	SPT	MH								44.7																		
B-328	123.5	UD	MH	82.6	0.0	72	45	27			45.6	102	2.76					X	-	CIU-bar	Test Not Performed					0.020	0.380	1.74	10.0
B-328	133.5	SPT	MH	52.8	0.0	70	51	19			48.2																		
B-328	143.5	SPT	MH								59.3																		
B-328	148.5	SPT	MH			134	100	34			74.8																		
B-331	5.0	SPT	CL	66.9	0.0	43	15	28			20.2																		
B-331	18.5	UD	CH	97.1	0.0	57	23	34			30.8	111	2.71					X	-	Qu	NA	28.2	NA	NA	Dev				
																		X	-	UU	NA	22.7	NA	NA	Dev				
B-331	33.5	SPT	SP-SM	8.3	0.8						21.9																		
B-331	43.5	SPT	SM	50.6	0.0						31.6																		
B-331	58.5	SPT	SM								26.6																		
B-331	73.5	SPT	SM								35.8																		
B-331	88.5	SPT	SM								32.7																		
B-333	2.5	SPT	SP-SM	6.9	0.4						6.2																		
B-333	7.5	SPT	SP-SM	5.3	0.1						4.8																		
B-333	23.5	SPT	CH	74.2	0.0	57	33	24			32.0																		
B-333	28.5	UD	CH	85.3	0.0	52	19	33			38.9	114	2.82					X	-	Qu	NA	10.4	NA	NA	Dev	0.021	0.316	1.15	9.3
B-333	38.5	UD	CH	98.8	0.0	61	23	38			39.7	115	2.85					X	-	Qu	NA	20.7	NA	NA	Dev	0.009	0.240	1.10	15.2
B-333	43.5	SPT	SM	38.8	0.0						26.1																		

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Project Name: Constellation Generation Group COLA Project
Calvert Cliffs Nuclear Power Plant (CCNPP)
Calvert County, Maryland

Project Number: 06120048.00

SUMMARY OF SOIL LABORATORY TEST RESULTS[1]

Boring / Test Pit No.	Sample Top Depth (ft.)	Sample Type[2]	USCS Sample Class. (D 2487)[3]	Sieve Results (D 422)		Atterberg Limits[4] (D 4318)				Organic Content (%)	Natural Moisture (%) (D 2216)	Moist Unit Weight (PCF)	Specific Gravity (D 854)	Moisture-Density Relationship (D 1557)		Bearing Ratio (D 1883)		Specimen		Shear Strength						Consolidation (D 2435)			
				Percent Passing No. 200	Percent Retained No. 4	LL	PL	PI	Oven Dried LL					Dry Unit Wt. (PCF)	Optium Moisture (%)	Dry	Soaked	Intact	Compacted	Test Type[5]	Total f deg.	Total C psi	Effective f' deg.	Effective C' psi	Failure Criterion[6]	Ccr	Cec	eo	Pp' tsf
B-333	48.5	UD	SC	20.0	2.0	34	13	21			25.2	Test Not Performed	2.73					X	-	Qu	Test Not Performed								
B-333	53.5	SPT	SM	13.4	1.6						20.9																		
B-333	58.5	SPT	SM								34.5																		
B-333	68.5	SPT	SM	23.2	20.4						19.3																		
B-333	78.5	SPT	SP-SM	10.8	5.7	NP	NP	NP			28.7																		
B-333	93.5	SPT	SM	23.7	23.3						16.1																		
B-334	0.0	SPT	SP-SM	11.2	0.0						9.6																		
B-334	5.0	SPT	SM	21.3	0.0						15.9																		
B-334	10.5	SPT	SM			NP	NP	NP			15.6																		
B-334	18.5	SPT	CL								31.3																		
B-334	23.0	UD	CH	79.0	0.0	51	16	35			35.3	119	2.7					X	-	UU	NA	10.1	NA	NA	Dev	0.020	0.220	1.12	5.3
B-334	28.5	SPT	CH								42.5																		
B-334	33.0	UD	CL	95.0	0.0	47	13	34			32.6	115	2.71					X	-	UU	Test Not Performed					0.020	0.210	1.06	5.4
B-334	43.5	SPT	SM								27.0																		
B-334	48.5	SPT	SM	26.2	0.0						27.2																		
B-334	53.5	SPT	SP-SM								21.4																		
B-334	63.5	SPT	GM	29.8	36.1	NP	NP	NP			19.0																		
B-334	73.5	SPT	SM	12.6	9.9						27.3																		
B-334	83.5	SPT	SM	13.8	0.1						28.0																		
B-334	98.5	SPT	SM	16.6	1.0						28.9																		
B-336	13.5	SPT	SC								11.4																		
B-336	28.5	SPT	CH								26.9																		
B-336	48.5	SPT	CL								25.9																		
B-336	68.5	SPT	SM								19.6																		
B-336	83.5	SPT	SM								27.3																		
B-336	98.5	SPT	SC								32.1																		
B-337	33.5	SPT	ML								29.0																		
B-337	48.5	SPT	SC								39.9																		
B-337	53.5	UD	SC	39.0	2.0	38	19	19			25.7	126	2.75					X	-	UU	NA	6.2	NA	NA	Dev				
B-337	73.5	SPT	SM								30.9																		
B-337	88.5	SPT	SM								21.0																		
B-339	5.0	SPT	SP	4.6	0.1						6.9																		
B-339	13.5	SPT	SM	12.1	10.8						19.9																		
B-339	28.5	SPT	CH			55	19	36			31.5																		
B-339	33.5	SPT	CH	62.7	0.0	62	21	41			27.0																		
B-339	38.5	SPT	CH			71	17	54			28.6																		

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Project Name: Constellation Generation Group C... Project
Calvert Cliffs Nuclear Power Plant (CCNPP)
Calvert County, Maryland

Project Number: 06120048.00

SUMMARY OF SOIL LABORATORY TEST RESULTS[1]

Boring / Test Pit No.	Sample Top Depth (ft.)	Sample Type[2]	USCS Sample Class. (D 2487)[3]	Sieve Results (D 422)		Atterberg Limits[4] (D 4318)			Organic Content (%)	Natural Moisture (%) (D 2216)	Moist Unit Weight (PCF)	Specific Gravity (D 854)	Moisture-Density Relationship (D 1557)		Bearing Ratio (D 1883)		Specimen		Shear Strength						Consolidation (D 2435)			
																				Total		Effective						
				Percent Passing No. 200	Percent Retained No. 4	LL	PL	PI	Oven Dried LL				Dry Unit Wt (PCF)	Optimum Moisture (%)	Dry	Soaked	Intact	Compacted	Test Type[5]	f deg.	C psi	f deg.	C' psi	Failure Criterion[6]	Cer	Cec	eo	Pp' tsf
B-339	43.5	SPT	CH	86.9	0.0	60	22	38			31.0																	
B-339	48.5	SPT	CL			40	20	20			27.8																	
B-339	53.5	SPT	SM	33.7	0.0	48	30	18			30.8																	
B-339	58.5	SPT	SP-SM			NP	NP	NP			28.1																	
B-339	63.5	SPT	SC	15.5	9.9	49	21	28			25.0																	
B-339	68.5	SPT	MH			53	38	15			38.8																	
B-339	78.5	SPT	SM	23.6	18.6						16.6																	
B-339	83.5	SPT	SM								31.5																	
B-339	88.5	SPT	SP-SM	11.0	0.4						29.0																	
B-339	93.5	SPT	SP-SM								31.7																	
B-339	98.5	SPT	SP-SM								32.7																	
B-340	66.0	UD	Not yet available (Fugro)																									
B-401	2.5	SPT	SM								3.6																	
B-401	10.5	SPT	CH	85.3	0.0	66	20	46			26.6																	
B-401	13.5	SPT	CH			62	20	42			34.2																	
B-401	18.5	SPT	MH			70	37	33			36.9																	
B-401	23.5	SPT	CL	52.1	0.0	47	28	19			27.9																	
B-401	33.5	SPT	SP								20.8																	
B-401	43.5	SPT	SM	21.2	13.1						21.4																	
B-401	53.5	SPT	SM								31.6																	
B-401	58.5	SPT	SM	13.1	4.3						25.0																	
B-401	78.5	SPT	SM								17.5																	
B-401	88.5	SPT	SM	38.3	0.5						35.3																	
B-401	98.5	UD	MH	64.8	0.0	78	48	30			50.5	117	2.70				X	-	UU	NA	19.6	NA	NA	Dev	Test Not Performed			
																	X	-	DS	Test Not Performed								
B-401	108.5	SPT	SM	34.2	1.9						35.6																	
B-401	113.5	SPT	CL								46.1																	
B-401	123.5	UD	MH	82.4	0.0	85	54	31			57.4	103	2.65				X	-	Qu	Test Not Performed					0.030	0.430	1.74	13
																	X	-	UU	NA	72.3	NA	NA	Dev				
B-401	128.5	SPT	ML	56.6	0.0						43.8																	
B-401	138.5	UD	Not yet available (Fugro)																									
B-401	143.5	SPT	MH			142	104	38			77.1																	
B-401	148.5	SPT	MH	86.6	0.0	150	89	61			72.7																	
B-401	153.5	SPT	MH			142	93	49			68.8																	
B-401	158.5	UD	MH	59.2	0.0	81	54	27			49.9	105	2.65				X	-	Qu	Test Not Performed					0.030	0.350	1.56	14
																	X	-	UU	Test Not Performed								
B-401	168.5	SPT	MH	71.8	0.0	103	52	51			53.9																	

Schnabel Engineering

Project Name: Constellation Generation Group COLA Project
Calvert Cliffs Nuclear Power Plant (CCNPP)
Calvert County, Maryland

Project Number: 06120048.00

SUMMARY OF SOIL LABORATORY TEST RESULTS[1]

Boring / Test Pit No.	Sample Top Depth (ft.)	Sample Type[2]	USCS Sample Class. (D 2487)[3]	Sieve Results (D 422)		Atterberg Limits[4] (D 4318)				Organic Content (%)	Natural Moisture (%) (D 2216)	Moist Unit Weight (PCF)	Specific Gravity (D 854)	Moisture-Density Relationship (D 1557)		Bearing Ratio (D 1883)		Specimen		Shear Strength						Consolidation (D 2435)			
																					Total		Effective						
				Percent Passing No. 200	Percent Retained No. 4	LL	PL	PI	Oven Dried LL					Dry Unit Wt. (PCF)	Optium Moisture (%)	Dry	Soaked	Intact	Compacted	Test Type[5]	f deg.	C psi	f' deg.	C' psi	Failure Criteron[6]	Cer	Cec	eo	Pp' tsf
B-401	173.5	UD	CH	98.2	0.0	57	17	40			33.7	95	2.76					X	-	UU	Test Not Performed								
																		X	-	DS	NA	NA	18.9	32.5	NA	0.040	0.540	2.80	11
B-401	183.5	SPT	SM	32.2	0.0						31.2																		
B-401	193.5	SPT	ML								49.2																		
B-401	198.5	UD	Not yet available (Fugro)																										
B-401	203.5	SPT	MH			94	69	25			58.4																		
B-401	208.5	SPT	MH	64.5	0.0	113	74	39			62.7																		
B-401	213.5	UD	Not yet available (Fugro)																										
B-401	218.5	SPT	MH	64.6	0.0						77.4																		
B-401	228.5	UD	Not yet available (Fugro)																										
B-401	238.5	SPT	MH								122.5																		
B-401	243.5	UD	MH	98.7	0.0	140	65	75			96.2	86.0	2.36													0.006	0.519	2.41	18.3
B-401	248.5	SPT	MH			218	100	118			122.8																		
B-401	258.5	SPT	MH								130.2																		
B-401	268.5	SPT	SM	43.0	0.0						63.5																		
B-401	283.5	SPT	MH			76	42	34			30.2																		
B-401	293.5	SPT	SC								20.7																		
B-401	307.5	SPT	SM	16.3	0	57	42	15			27.4																		
B-401	318.5	SPT	CH			58	28	30			28.9																		
B-401	338.5	SPT	ML								25.3																		
B-401	368.5	SPT	SP-SM	11.7	0.0						36.9																		
B-401	400.0	SPT	SM	18.2	0.0						33.1																		
B-404	52.0	UD	Not yet available (Fugro)																										
B-404	83.5	UD	Not yet available (Fugro)																										
B-406	63.5	UD	OH	90.1	0.0	63	19	44	41	1.6	36.1	122.0	2.74					X	-	Qu	NA	20	NA	NA	Dev	0.04	0.3	1.17	10.5
																		X	-	UU	NA	8.2	NA	NA	Dev				
B-407	2.5	SPT	ML			NP	NP	NP			4.8																		
B-407	10.5	SPT	SP-SM								12.3																		
B-407	18.5	SPT	SM	30.4	0.0						24.9																		
B-407	28.5	SPT	MH								35.1																		
B-407	33.5	SPT	MH	96.0	0.0	77	43	34			39.4																		
B-407	43.5	SPT	SM	17.4	1.6						23.3																		
B-407	63.5	SPT	SM								28.1																		
B-407	68.5	SPT	SM	11.4	6.0						30.0																		
B-407	73.5	SPT	SM								27.3																		
B-407	83.5	SPT	SM	14.8	12.5						38.3																		
B-407	88.5	SPT	SM								12.4																		