

**GEOTECHNICAL SUBSURFACE INVESTIGATION
DATA REPORT
(REVISION NO. 1)**

**CGG Combined Operating License Application (COLA) Project
Calvert Cliffs Nuclear Power Plant (CCNPP)
Calvert County, Maryland**

April 13, 2007

Prepared By:

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Submitted To:

**BECHTEL POWER CORPORATION
Frederick, Maryland
(Bechtel Subcontract No. 25237-103-HC4-CY00-00001)**

Binder No. 3 of 3

Including:

Appendix I: Soil Laboratory Testing

Appendix I
Soil Laboratory Testing

APPENDIX I
SOIL LABORATORY TESTING

- Summary of Soil Laboratory Test Results
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- Moisture Density Relationships
- California Bearing Ratio Results
- Consolidation Results
- Unconfined Compression Results
- UU Triaxial Compression Results
- CIU-bar Triaxial Compression Results
- Direct Shear Results
- Chemical Test Results – Soil
- Chemical Test Results – Water
- Organic Content

SUMMARY OF SOIL LABORATORY TEST RESULTS

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SUMMARY OF SOIL LABORATORY TEST RESULTS¹

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		Effective		Failure Criterion ⁶	Ccr	Cec	ee	Pp tsf								
																					f deg	c psi	f deg	c psi													
B-301	373.5	SPT	SC	16.0	0.0	61	26	35																													
B-301	388.5	SPT	SC	15.7	0.0																																
B-301	398.5	SPT	SC																																		
B-304	0.0	SPT	SM																																		
B-304	2.5	SPT	SM																																		
B-304	5.0	SPT	ML																																		
B-304	7.5	SPT	CH	71.8	0.0	57	23	34																													
B-304	10.5	SPT	CH	57.4	0.0	59	19	40																													
B-304	13.5	SPT	CH			63	23	40																													
B-304	18.5	SPT	CH	96.9	0.0	62	21	41																													
B-304	22.5	SPT	CL			38	20	18																													
B-304	28.5	SPT	SM																																		
B-304	33.5	SPT	SP																																		
B-304	38.5	SPT	SP-SM	8.5	1.3																																
B-304	43.5	SPT	SP-SM																																		
B-304	48.5	SPT	GM-GC			25	18	7																													
B-304	53.5	SPT	SM																																		
B-304	58.5	SPT	SM	12.4	5.4	NP	NP	NP																													
B-304	63.5	SPT	SM	14.6	3.8	30	23	7																													
B-304	68.5	SPT	SM																																		
B-304	78.5	SPT	SC			32	19	13																													
B-304	83.5	SPT	SM																																		
B-304	88.5	SPT	SM	35.0	0.0	49	28	21																													
B-304	93.5	SPT	SM																																		
B-304	98.5	UD	SC	47.3	0.0	79	28	51			42.1	113.2	2.65					X		Qu	NA	26.0	NA	NA	Dev	0.003	0.251	1.03						20			
B-304	103.5	SPT	SC	35.4	0.0																																
B-304	108.5	SPT	SM	28.2	2.4																																
B-304	113.5	SPT	SC	36.3	0.4																																
B-304	118.5	SPT	SC																																		
B-304	123.5	SPT	ML																																		
B-304	128.5	SPT	SC	42.7	0.3																																
B-304	133.5	SPT	ML																																		
B-304	138.5	UD	SC	45.7	0.0	43	26	17			36.5	113.4	2.65					X		Qu	NA	36.4	NA	NA	Dev	0.003	0.143	0.95						16			
B-304	143.5	SPT	CH	91.3	0.0	134	49	85																													
B-304	148.5	SPT	MH																																		
B-304	153.5	SPT	MH																																		
B-304	158.5	SPT	MH	59.1	0.0	92	53	39																													
B-304	163.5	SPT	MH																																		
B-304																																					



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 RESULTS¹

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	Total		Effective		Failure Criterion ⁵	Ccr	Cec	eo	Pp' tsf							
																					r deg	C psi	r deg	C psi												
B-316	53.5	UD	CL	50.0	1.0	33	11	22		26.2	103	2.77					X	-	DS	NA	NA	30.1	4.5	NA												
B-316	58.5	SPT	SC							24.4							X	-	CU-bar	12.5	14.3	32.1	6.84	PSR												
B-316	63.5	SPT	SC							31.3																										
B-316	68.5	SPT	SM	16.5	0.1					19.8																										
B-316	73.5	SPT	SP							21.2																										
B-316	93.5	SPT	SC	17.7	0.5					32.0																										
B-316	98.5	SPT	SC							27.7																										
B-317	23.5	SPT	ML							28.4																										
B-317	28.5	UD	CL	97.8	2.2	27	19	8		31.7	122.3	2.75					X	-	CU-bar	17	5	31	3.1	PSR												
B-317	33.5	SPT	CH							30.2																										
B-317	48.5	UD	CL	69.8	0.0	35	17	18		22.8	125.5	2.7					X	-	CU-bar	19.5	8.2	33.5	4.2	PSR												
B-317	58.5	SPT	SP-SM							26.0																										
B-317	73.5	SPT	SC							22.3																										
B-319	2.5	SPT	SP-SM	8.1	0.2					5.7																										
B-319	7.5	SPT	SP			NP	NP	NP		4.7																										
B-319	13.5	SPT	SP-SM	8.6	1.3					7.6																										
B-319	23.5	SPT	SC	20.0	1.4					19.8																										
B-319	28.5	SPT	SC							24.5																										
B-319	33.5	UD	CL	72.0	0.0	49	12	37		29.2	120	2.67					X	-	UU	NA	10.1	NA	NA	Dev	0.010	0.190	0.85	5.4								
B-319	38.5	SPT	CH							27.9							X	-	DS	NA	NA	24.9	6.2	NA												
B-319	43.5	UD	CH	87.0	0.0	58	13	45		32.1	121	2.73					X	-	UU	NA	12	NA	NA	Dev	0.040	0.280	0.82	12								
B-319	48.5	SPT	CH			79	27	52		38.6							X	-	DS	NA	NA	20.8	9.1	NA												
B-319	58.5	SPT	ML			40	32	8		26.7																										
B-319	73.5	SPT	SM	13.6	4.6					17.5																										
B-319	83.5	SPT	SM	25.2	14.0					18.2																										
B-319	88.5	SPT	SM	18.9	1.4					29.8																										
B-319	98.5	SPT	SM	12.0	0.6	NP	NP	NP		30.0																										
B-320	2.5	SPT	SP-SM							10.4																										
B-320	7.5	SPT	SP							5.3																										
B-320	18.5	SPT	SP							9.1																										
B-320	33.5	SPT	SC	42.5	0.0	33	18	15		26.1																										
B-320	38.5	UD	SC	49.0	0.0	36	16	20		29.4	124	2.63					X	-	CU-bar	13.3	8.03	27.9	3.79	PSR												
B-320	43.5	SPT	CH	60.7	0.0	56	19	37		30.0							X	-	DS	NA	NA	26.0	2.9	NA												