Vogtle Units 3 & 4 COL Project

Attachment F
Laboratory Testing Data (Geotechnical)

Volume 1 of 2

Job No. 6141-06-0286

**MACTEC ENGINEERING
AND CONSULTING, INC.**

November 9, 2007

MACTEC

November 9, 2007

Mr. Tom McCallum
Georgia Power Company
C/O Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
Birmingham, Alabama 35201
Phone: (205) 992-6697
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Subject: **Geotechnical Data Report Attachment F – Laboratory Testing Data (Geotechnical)**
Vogtle Units 3 & 4 COL Project
Vogtle Electric Generating Plant
Burke County, Georgia
MACTEC Project Number 6141-06-0286

Dear Mr. McCallum:

MACTEC Engineering & Consulting, Inc. is pleased to submit Attachment F of the Final Data Report for the geotechnical exploration and laboratory testing for the Vogtle Units 3 & 4 COL Project located adjacent to the existing Vogtle Electric Generating Plant near Waynesboro, Burke County, Georgia.

Attachment F is submitted in two volumes (Volume 1 and Volume 2) due to its large size.

It has been a pleasure to perform the work described in the attached report. If you have any questions, or if we may be of further service, we hope that you will contact us at your convenience.

Sincerely,

MACTEC ENGINEERING & CONSULTING, INC.

Matthew F. Cooke
Senior Geologist
Site Superintendent
Registered, Georgia 1887

Wm. Allen Lancaster
Project Manager
Civil Engineer
Registered, Georgia 7075

BY KJB WITH PERMISSION.

WITH PERMISSION

Pieter J. DePree
Principal Geotechnical Engineer
Registered, Georgia 19637

DCN VGCOL 324
Revision 3, 11/9/07

ATTACHMENT F

This Attachment is one of a number of attachments that are part of the following report which was prepared by MACTEC Engineering & Consulting Inc.:

Geotechnical Data Report
Vogtle Units 3 & 4 COL Project
Vogtle Electric Generating Plant
Burke County, Georgia
Subsurface Investigation and Laboratory Testing
SNC Subcontract No. 7074425
MACTEC Job No. 6141-06-0286

For background and a description of scope of work contained in the report, please refer to the above referenced report. The report was addressed as follows:

Mr. Tom McCallum
Georgia Power Company
C/O Southern Nuclear Operating Company, Inc.
40 Inverness Center Parkway
Post Office Box 1295
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The following list shows other Attachments to the above report and their included information:

Survey Data and Test Locations…… See Attachment A

Geotechnical Boring Logs……...…….…….See Attachment B

Cone Penetrometer Test Results...…….…….See Attachment C

Geophysical Test Data (Downhole and Field Electrical Resistivity) ……See Attachment D

ReMi Seismic Shear Wave Velocity Measurements .....…….See Attachment E

Resonant Column Torsional Shear (RCTS) Test Results.…….See Attachment G

ATTACHMENT F

Laboratory Testing Data (Geotechnical)

CONSISTS OF:

Table F-1: Summary of Soil Tests
Laboratory Test Data Sheets

Volume 1 of 2

LABORATORY TESTING - GEOTECHNICAL

Laboratory testing was performed on disturbed, undisturbed, and remolded soil samples obtained during the subsurface investigation. All testing was performed in accordance with ASTM standards or other standards where applicable. Selection of the samples to be tested and the tests to be performed on the samples were made by Bechtel. Bechtel provided thirteen separate Geotechnical Laboratory Test Assignment Sheets. The assignment sheet number (designated by MACTEC) and the final Bechtel revision date are tabulated below.

Laboratory Test Assignment Number	Date of Final Lab Assignment Revision by Bechtel
1	December 4, 2006
2	January 5, 2007
3	February 1, 2007
4	April 16, 2007
5	April 16, 2007
6	February 15, 2007
7	March 12, 2007
8	March 31, 2007
9	April 16, 2007
10	May 4, 2007
11	April 26, 2007
12	May 18, 2007
13	July 13, 2007

The laboratory personnel determined that some of the initially assigned tests on soil samples could not be performed due to insufficient sample volume, laboratory equipment constraints, or other reasons. In these cases, the information was reported to Bechtel who issued a revised laboratory assignment sheet deleting, modifying, or assigning replacement tests on other samples.

Testing of soil samples, except for chemical tests and resonant column torsional shear (RCTS) testing, was performed in MACTEC's laboratories in Atlanta, Georgia, and Charlotte, North Carolina.

Chemical testing for pH, sulfates and chlorides in selected soil samples as assigned by Bechtel was performed by Severn Trent Laboratories, Inc. (STL), a subcontractor to MACTEC.

Resonant Column Torsional Shear (RCTS) testing of soil samples as assigned by Bechtel are being conducted by the Fugro Consultants laboratory in Houston, Texas, a subcontractor to MACTEC, under the technical overview of Dr. K.H. Stokoe of the University of Texas. The tests on the samples selected for RCTS testing, including the classification tests on these samples, when completed will be presented in Attachment G.

Excluding the RCTS tests, the following tests were assigned and performed. The results are presented in this Attachment.

1.1 IDENTIFICATION TESTS

- Moisture content, ASTM D 2216-05
- Atterberg limits, ASTM D 4318-05
- Sieve and hydrometer analysis, ASTM D 422-63 (2002) and ASTM D 6913-04
- Specific gravity of soil, ASTM D 854-06
- Chemical analysis, (pH, Chloride, Sulfate) EPA SW846 9045C and EPA MCAWW 300.0A
- Unit weight of soil, ASTM D 5084-03 (Sections 5.7 – 5.9. 8.1, 11.3.2)

1.2 COMPRESSIBILITY TEST

- Consolidation tests, ASTM D 2435-04

1.3 COMPACTION AND STRENGTH TESTS

- Unconsolidated-undrained triaxial compression, ASTM D 2850-03
- Consolidated – undrained triaxial compression, ASTM D 4767-04
- Direct shear – Soil, ASTM D 3080-04
- Moisture-density, ASTM D 1557-02

1.4 REPORTING

The laboratory test reports, with a few exceptions, consisting of individual test data and results sheets as required by the testing standard, are contained in Attachment F. A summary of the test results on soil samples in Attachment F is found in Table 5 of the Data Report, which is Table F-1 of Attachment F.

The exceptions noted above include the RCTS tests, some direct shear tests, and carbonate content tests with associated index testing. The RCTS tests, including the data and report reviewed by Dr. K. H. Stokoe, when completed will be found in Attachment G. The classification tests on the RCTS tests, when completed will also be found in Attachment G. The additional direct shear tests, and carbonate content tests with associated index testing when completed will be found in an Addendum to Attachment F.

1.5 DESCRIPTIONS

A brief description of the tests performed and reported in this Attachment F is as follows:

Moisture Content ASTM D 2216-05

A test specimen is dried in an oven at a temperature according to the ASTM standard to a constant weight. The loss of weight due to drying is considered to be water. The water content is calculated by dividing the weight of water by the weight of the dry specimen. The water content is expressed as a percentage value.

Atterberg Limits ASTM D 4318-05

The specimen is processed to remove any material retained on the 425-µm (No. 40) sieve. The liquid limit is determined by performing trials in which a portion of the specimen is spread in a brass cup,

divided in two by a grooving tool, and then allowed to flow together from the shocks caused by repeatedly dropping the cup in a standard mechanical device. The multipoint liquid limit, Method A, requires three or more trials over a range of water contents to be performed and the data from the trials plotted or calculated to make a relationship from which the liquid limit is determined. The one-point liquid limit, Method B, uses the data from two trials at one water content multiplied by a correction factor to determine the liquid limit.

The plastic limit is determined by alternately pressing together and rolling into 3.2-µm (1/8-inch) diameter thread a small portion of plastic soil until its water content is reduced to a point at which the thread crumbles and can no longer be pressed together and re-rolled. The water content of the soil at this point is reported as the plastic limit.

The plasticity index is calculated as the difference between the liquid limit and the plastic limit.

Particle Size Analysis ASTM D 422-63 (2002) and ASTM D 6913-04

Sieve Analysis – The dried soil sample is separated into a series of fractions using a standard set of nested sieves. The sieving operation is conducted by means of a lateral and vertical motion of the nest of sieves, accompanied by jarring action to keep the sample moving continuously over the surface of the sieves. The weights retained on each of the set of nested sieves are used to calculate the percent of the sample passing each sieve size.

Hydrometer Analysis – The portion of the soil sample passing the No. 10 (2.0 mm) sieve is soaked in water and dispersed using a dispersing agent. The solution is placed in a cylinder and stirred, and the density of the solution is monitored over time with a hydrometer to observe the settling out of suspended soil particles. Diameters corresponding to the readings of the hydrometer are then calculated using Stoke's law.

ASTM D 6913-04 is the current specification for grain size analysis, but does not include hydrometer testing. Where hydrometer testing was required, Section 1.4 of the specification allows that ASTM D 422-63 (2002) be used.

Section 5.1.1 of ASTM D 422-63 (2002) and Table 1 of ASTM D 6913-04 give minimum sample mass requirements (the minimum depends on the maximum particle size present) for each test. In cases where there was not enough sample to meet the appropriate recommended mass, the test was completed using the available sample and it was noted in the Remarks section of the Particle Size Distribution Report.

Specific Gravity of Soil ASTM D 854-06

The specific gravity is required in calculation of the soil properties void ratio and degree of saturation. Specific gravity G is defined as the ratio of the unit weight (or density) of soil solids (particles) to the unit weight (or density) of water. The specific gravity of the soil particles is determined according to Method B of the ASTM standard.

Chemical Analysis (pH, Chloride, Sulfate) EPA SW846 9045C and EPA MCAWW 300.0A

A small quantity of soil was placed in a jar and sent to the laboratory for chemical analysis. Chemical analyses consisted of soil pH, and chloride and sulfate ion concentration. The concentration of chloride and sulfate ions is measured using an ion chromatograph with results reported in units of milligrams per kilogram. Soil pH is measured using a pH meter with results reported to 0.1 pH units.

Unit Weight of Soil ASTM D5084-03 (Sections 5.7 – 5.9. 8.1, 11.3.2)

Sections of the undisturbed samples were extruded from the sampling tubes and trimmed to remove any surface irregularities. Dimensions of the sample were measured and recorded and the weight is determined. Unit weight is calculated by dividing the sample weight by volume. If the moisture content is known, dry unit weight can be calculated by dividing the wet sample unit weight by (1 + moisture content, in decimal format).

Consolidation Tests ASTM D 2435-04

Sections of the undisturbed samples were extruded from the sampling tube for consolidation testing. The specimen was then trimmed into a disc 2.5 inches in diameter and 1-inch thick. The disc was confined in a stainless steel ring and sandwiched between porous plates. It was then subjected to incrementally increasing vertical loads and the resulting changes in specimen height with respect to time were measured with a micrometer dial gauge. The load increments were doubled each time, and deformation (consolidation) under each load increment was considered complete when the deformations versus time plot was analyzed using the log-time method. The test results are presented in the form of pressure versus percent strain curves and pressure versus void ratio curves.

We note that some of the consolidation test results indicate "after test" saturation levels in excess of 100 percent. This reflects free water on the surface of the test specimen when it is removed from the test apparatus. These tests were generally conducted under inundated conditions. Attempts to remove this free water by blotting or other measures may have compromised the solid portion of the sample and, therefore, the dry density. The water content measurement at the end of the test does not impact calculations of other parameters. It is reasonable to assume, given the high pressures, observed strains, and inundated test conditions that samples were fully saturated after the test.

The compression index (Cc) and recompression index (Cr) were interpreted as requested. These are "straight line" approximations based on the void-ratio vs. log of stress plot. For the compression index, we used a best fit of points at applied stresses of 16, 32, and 64 ksf. In some cases these points were approximately co-linear, but in many cases they were not. For the recompression index, we used the best-fit of the upper rebound curve.

Unconsolidated – Undrained Triaxial Shear Testing ASTM D 2850-03

The undisturbed samples assigned for testing were cut into sections which were extruded vertically from the sampling tubes for triaxial shear testing. The specimens thus formed consisted of cylinders with nominal diameter 2.9 inches and a height to diameter ratio of between 2 and 2.5 as required by the ASTM standard. The specimens were encased in rubber membranes. Each was then placed into a compression chamber and confined by an all-around fluid pressure. The samples were then loaded axially without any special effort to saturate them, or otherwise change their moisture content, and without allowing any drainage to occur during the testing. Failure was assumed to have occurred when the specimens had undergone the maximum load they would support.

Consolidated – Undrained Triaxial Shear Testing ASTM D 4767-04

The specimens, encased in the rubber membranes, were saturated by back-pressure prior to shearing. Section 8.2.3.1 of the ASTM standard describes how to determine when the specimen is saturated. Drainage was allowed from the specimen during the consolidation phase, thus allowing equilibrium under

the confining stress, but no drainage was allowed during the loading phase. Failure was assumed to have occurred when the specimens had reached the maximum deviator stress or an axial strain of 17 percent.

Pore pressures generated during the loading phase were measured. The test is termed consolidated-undrained and total stresses result if no pore pressure corrections are included. When the pore pressures generated during the loading phase are subtracted from the total stresses, effective stresses result.

Direct shear – Soil ASTM D 3080-04

A soil specimen with a nominal diameter of 2.5 inches and a height of 1 inch is placed in a loading device and is held under constant normal (vertical) load while the loading device deforms the specimen at a controlled strain rate on or near a single shear plane determined by the configuration of the device. One vertical stress was assigned for each test, and shear stresses versus horizontal displacements are taken whereby peak shear stress is obtained. For each test, the vertical stress is constant throughout the test. The direct shear test, thus assigned, provides an estimate of the shear strength at the assigned normal (vertical) stress.

Moisture-Density Modified Proctor Test ASTM D 1557-02

Three buckets of soil were obtained in the field for each bulk sample assigned by Bechtel. In the laboratory these buckets were thoroughly mixed to assure uniformity of test specimens for all testing assigned on the bulk samples.

For the moisture-density relationship, the samples were tested in accordance with the ASTM standard for the modified Proctor test. The test yielded the optimum moisture content and corresponding maximum dry density for the bulk sample.

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Natural Moisture Content (%) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Dry Density (pcf) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-1105	SS-1	0.0	SS	0.0	87.5	12.5			SM			8.3					8.3													
B-1105	SS-3	3.5	SS	0.0	66.7	33.3			SM			18.5					18.5													
B-1105	SS-4	6.0	SS	0.2	82.1	17.7			SM			12.5					12.5													
B-1105	SS-6	11.0	SS	0.0	80	20			SM			12.9					12.9													
B-1105	SS-8	18.5	SS	0.0	66.2	33.8			SC			23.8					23.8	69	19											
B-1105	SS-9	23.5	SS	0.0	77.5	22.5			SC			16.4					16.4													
B-1105	SS-11	33.5	SS	0.9	74.3	24.8			SM			14.8					14.8													
B-1105	SS-13	43.5	SS	0.7	89.8	9.5			SP-SM			15.1					15.1													
B-1108	SS-2	1.5	SS	0.2	75.6	24.2			SM																					
B-1108	SS-3	3.5	SS	NA	NA	8.8			SP-SM																					
B-1108	SS-4	6.0	SS	0.0	94.1	5.9			SP-SM																					
B-1108	SS-6	11.0	SS	0.0	88.9	11.1			SP-SC									41	20											
B-1108	SS-8	18.5	SS	1.0	69.8	29.2			SM																					
B-1108	SS-9	23.5	SS	NA	NA	8.4			SP-SM																					
B-1108	SS-11	33.5	SS	NA	NA	7.7			SP-SM																					
B-1108	SS-12	38.5	SS	0.0	83.4	16.6			SC									45	16											
B-1113	SS-2	1.5	SS	0.0	93.5	6.5			SP-SM																					
B-1113	SS-4	6.0	SS	NA	NA	6.1			SP-SM																					
B-1113	SS-5	8.5	SS	0.0	94.1	5.9			SP-SM																					
B-1113	SS-6	11.0	SS	NA	NA	6.0			SP-SM																					
B-1113	SS-8	18.5	SS	0.0	95.9	4.1			SP																					
B-1113	SS-10	28.5	SS	NA	NA	4.9			SP																					
B-1113	SS-11	33.5	SS	0.0	18.4	81.6	16.9	64.7	CL																					
B-1116	SS-2	1.5	SS	0.0	90.5	9.5			SP-SM			2.4					2.4													
B-1116	SS-4	6.0	SS	0.0	92.8	7.2			SP-SM			8.3					8.3													
B-1116	SS-6	11.0	SS	0.0	81.5	18.5			SC			8.5					8.5													
B-1116	SS-7	13.5	SS	0.0	75.1	24.9			SC			8.8					8.8													
B-1116	SS-9	23.5	SS	0.0	78.5	21.5			SC			17.1					17.1													
B-1116	SS-11	33.5	SS	0.4	84.6	15.0			SC			14.4					14.4													
B-1118	SS-5	8.5	SS	0.0	75.4	24.6			SC																					
B-1118	SS-8	18.5	SS	0.0	82.1	17.9			SC																					
B-1118	SS-10	28.5	SS	0.0	82.1	17.9			SC									83	32											
B-1121	SS-1	0.0	SS	0.0	81.6	18.4			SM			10.2					10.2													
B-1121	SS-3	3.5	SS	1.5	85.1	13.4			SM			13.3					13.3													
B-1121	SS-4	6.0	SS	0.0	75.0	25.0			SM			12.6					12.6													
B-1121	SS-6	11.0	SS	0.0	72.4	27.6			SC			18.6					18.6	35	13											
B-1121	SS-9	23.5	SS	0.0	84.6	15.4			SC			20.8					20.8	77	27											
B-1123	SS-2	1.5	SS	NA	NA	12.4			SM																					
B-1123	SS-3	3.5	SS	0.0	85.1	14.9			SM																					
B-1123	SS-4	6.0	SS	NA	NA	9.6			SP-SM																					
B-1123	SS-6	11.0	SS	0.0	78.3	21.7			SC									31	13											
B-1123	SS-7	13.5	SS	NA	NA	27.5			SC																					
B-1123	SS-8	18.5	SS	NA	NA	27.5			SC																					
B-1123	SS-10	28.5	SS	0.0	73.9	26.1			SC																					
B-1123	SS-12	38.5	SS	0.0	85.9	14.1			SC									63	23											
B-1124	SS-3	3.5	SS	NA	NA	10.8			SP-SM																					
B-1124	SS-5	8.5	SS	0.0	93.2	6.8			SP-SM																					
B-1124	SS-7	18.5	SS	NA	NA	20.5			SC																					

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Triaxial, Compression or Direct Shear 1	Triaxial, Compression or Direct Shear 2	Triaxial, Compression or Direct Shear 3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Triaxial, Compression or Direct Shear 1	Triaxial, Compression or Direct Shear 2	Triaxial, Compression or Direct Shear 3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-1124	SS-8	18.5	SS	0.0	75.2	24.8			SC			14.6					14.6	35	20											
B-1124	SS-10	28.5	SS	NA	NA	25.3			SC																					
B-1125	SS-2	1.5	SS	0.8	85.6	13.6			SM																					
B-1125	SS-4	6.0	SS	NA	NA	8.2			SP-SM																					
B-1125	SS-6	11.0	SS	NA	NA	13.5			SM																					
B-1125	SS-8	18.5	SS	0.0	82.7	17.3			SC									35	22											
B-1125	SS-10	28.5	SS	NA	NA	77.6			MH									121	58											
B-1127	SS-3	3.5	SS	0.0	77.1	22.9			SC			13.5					13.5	32	20											
B-1127	SS-6	11.0	SS	0.0	77.6	22.4			SC			16.1					16.1	46	22											
B-1127	SS-8	18.5	SS	0.0	90.5	9.5			SP-SM			9.7					9.7													
B-1127	SS-9	23.5	SS	0.0	80.6	19.4			SM			15.1					15.1													
B-1130	UD-1	28.5	UD	NA	NA	16.5			SC																					
B-1130	UD-2	33.5	UD						CL				33.5	29.4	28.9		30.6					85.1	90.8	91.4		89.1	116			
B-1130	UD-3	38.5	UD	NA	NA	6.7			SP-SC				16.9	16.9			16.9					96.8	96.4			96.6	113			
B-1131	UD-1	28.5	UD						SM				36.2	18.6			27.4					85.7	110.3			98.0	124			
B-1132	UD-2	33.5	UD						CL				34.3				34.3					88.2				88.2	118			
B-1132	UD-3	38.5	UD						CH				35.2			51.0	43.1	85	33			82.8			70.0	76.4	109			
B-1133	UD-1	28.0	UD	0.0	60.9	39.1			SM				25.0	27.2	17.3		23.2					97.2	89.3	100.9		95.8	118			
B-1133	UD-2	33.0	UD	NA	NA	14.4			SM				19.0				19.0					93.9				93.9	112			
B-1133	UD-3	38.5	UD	NA	NA	66.2			CL				38.2	42.9	42.9		41.3					79.5	77.0	75.8		77.4	109			
B-1136	UD-2	33.5	UD	NA	NA	19.9			SC-SM				20.9	18.1			19.5					95.8	104.9			100.4	120			
B-1136	UD-3	38.5	UD	NA	NA	36.9			SM							71.1	71.1	107	58						55.0	55.0	94			
B-1136	UD-4	43.5	UD						SM				68.5				68.5					58.5				58.5	99			
B-1138	SS-2	1.5	SS	0.0	65.5	34.5			SC			18.0					18.0													
B-1138	SS-4	6.0	SS	0.0	87.7	12.3			SM			13.0					13.0													
B-1138	SS-6	11.0	SS	0.0	94.4	5.6			SP-SM			13.3					13.3													
B-1138	SS-8	18.5	SS	1.1	81.1	17.8			SM			20.0					20.0													
B-1138	SS-10	28.5	SS	0.0	67.3	32.7			SC			31.4					31.4													
B-1139	UD-1	28.5	UD	0.0	81.9	18.1			SC			19.8					19.8													
B-1139	UD-2	33.5	UD	NA	NA	16.1			SC				19.3	25.0			22.2					106.3	88.7			97.5	119			
B-1139	UD-3	38.5	UD	NA	NA	30.7			SC									65	24											
B-1155	SS-3	3.5	SS	19.4	78.0	2.6			SP											2.65										
B-1155	SS-6	11.0	SS						CL									37	22	2.73										
B-1155	SS-10	28.5	SS						SP									NV	NP											
B-1155	SS-11	33.5	SS						MH									55	41											
B-1155	SS-14B	48.5	SS	0.0	95.7	4.3			SP			23.9					23.9			2.74										
B-1155	SS-18	68.5	SS	0.0	92.3	7.7	1.5	6.2	SP-SC			25.2					25.2													
B-1155	SS-21	83.5	SS	0.0	95.7	4.3			SP			14.0					14.0													
B-1155	SS-22	88.5	SS						CH									112	39											
B-1155	SS-25	103.5	SS	0.2	91.8	8.0	2.8	5.2	SP-SC			20.8					20.8													
B-1155	SS-27	113.5	SS						SP									NV	NP											
B-1155	SS-34	148.5	SS						CL									34	18											
B-1156	SS-4	6.0	SS	0.0	9.1	90.9	32.4	58.5	CH									100	39	2.76										
B-1156	SS-6	11.0	SS						ML									44	34	2.67										
B-1156	SS-8	18.5	SS						CH			32.2					32.2	61	22											
B-1156	SS-10	28.5	SS	0.0	93.5	6.5			SP-SC																					
B-1156	SS-12	48.5	SS						CL			35.9					35.9	39	17											
B-1156	SS-13	53.5	SS	0.0	92.5	7.5			SP-SM																					
B-1156	SS-16	68.5	SS	0.0	94.9	5.1	1.9	3.2	SP-SC																					

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Natural Moisture Content (%) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Dry Density (pcf) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-1156	SS-18	78.5	SS	0.6	93.1	6.3			SP-SM																					
B-1156	SS-21	98.5	SS	4.4	83.5	12.1	6.1	6.0	SC-SM																					
B-1157	SS-3	3.5	SS	0.0	98.9	1.1			SP			17.5					17.5			2.66										
B-1157	SS-6	11.0	SS						ML									39	26	2.65										
B-1157	SS-8	18.5	SS						MH									59	42	2.56										
B-1157	SS-11	33.5	SS						CH									56	22											
B-1157	SS-14A	48.5	SS						CL									44	17											
B-1157	SS-16	58.5	SS	0.0	76.7	23.3			SC			32.9					32.9													
B-1157	SS-19	73.5	SS	0.0	88.7	11.3	1.8	9.5	SP-SC			33.7					33.7													
B-1157	SS-21	83.5	SS	0.5	96.2	3.3			SP			25.1					25.1													
B-1157	SS-25	103.5	SS	0.0	73.4	26.6	14.4	12.2	SC-SM			32.8					32.8													
B-1157	SS-26	108.5	SS						CL			26.7					26.7	43	20											
B-1159	SS-3	3.5	SS						CH									58	30	2.78										
B-1159	SS-6	11.0	SS						CH									50	28	2.58										
B-1159	SS-5	18.5	SS						ML									NV	NP	2.59										
B-1159	SS-8	18.5	SS						ML									NV	NP											
B-1159	SS-12	38.5	SS	45.1	34.5	20.4			GM																					
B-1159	SS-14	48.5	SS	0.0	84.8	15.2			SC																					
B-1159	SS-16	58.5	SS	0.0	88.3	11.7			SP-SC																					
B-1159	SS-22	88.5	SS						SP-SC									69	27											
B-1161	SS-3	3.5	SS						MH									56	32											
B-1161	SS-4	6.0	SS						CL									36	23											
B-1161	SS-6	11.0	SS						CL									40	25											
B-1161	SS-10	28.5	SS	0.9	94.9	4.2			SP											2.70										
B-1161	SS-11	33.5	SS						MH									78	41											
B-1161	SS-12	38.5	SS						MH									86	47	2.59										
B-1161	SS-14	48.5	SS	0.0	91.5	8.5			SP-SM																					
B-1161	SS-22	88.5	SS						CH									69	27											
B-1162	SS-3	3.5	SS						CH									58	28											
B-1162	SS-4	6.0	SS						MH									50	29											
B-1162	SS-6	11.0	SS						ML									NV	NP	2.76										
B-1162	SS-10	33.5	SS						CL									33	20											
B-1162	SS-11	38.5	SS						CL									37	20											
B-1162	SS-13A	48.5	SS	0.0	89.2	10.8			SP-SM																					
B-1162	SS-16	73.5	SS	0.0	93.9	6.1			SP-SC																					
B-1162	SS-20	93.5	SS						CH									87	33											
B-1162	SS-26	138.5	SS	0.2	85.9	13.9			SM																					
B-1162	SS-29	158.5	SS	1.6	63.6	34.8			SC																					
B-1162	SS-31	188.5	SS						CH									51	25											
B-1162	UD-1	13.5	UD						ML				45.5	38.7	38.1		40.8					74.4	82.8	82.4		79.9	112			
B-1162	UD-2	53.5	UD	0.0	95.2	4.8			SP							21.9	21.9	50	19	2.68					102.3	102.3	125			
B-1162	UD-3	58.5	UD						SM				27.0	23.8	23.7		24.8					93.8	96.0	96.3		95.4	119			
B-1162	UD-7	168.5	UD	0.3	81.6	19.1			SC							9.5	9.5	56	21	2.65					110.8	110.8	121			
B-1163	SS-2	1.5	SS						MH									65	35											
B-1163	SS-3	3.5	SS						MH									58	33											
B-1163	SS-10	28.5	SS						CH									68	29											
B-1163	SS-11	33.5	SS						CH									60	25											
B-1163	SS-12	38.5	SS						CH									64	30											
B-1163	SS-15	53.5	SS	0.0	95.3	4.7			SP																					

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Triaxial, Compression or Direct Shear 1	Triaxial, Compression or Direct Shear 2	Triaxial, Compression or Direct Shear 3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Triaxial, Compression or Direct Shear 1	Triaxial, Compression or Direct Shear 2	Triaxial, Compression or Direct Shear 3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-1163	SS-19	73.5	SS	0.2	91.8	8.0			SP-SM																					
B-1163	SS-22	88.5	SS						CH									98	38											
B-1164	UD-1	28.0	UD						SP-SC				13.7	14.4	16.9		15.0	95	25			96.6	95.6	93.9		95.4	110			
B-1164	UD-2	38.0	UD	0.0	66.7	33.3			SC				25.5	25.4	34.2		28.4	70	27			88.2	91.3	82.7		87.4	112			
B-1164	UD-3	73.0	UD						CL				30.2				30.2					90.3				90.3	118			
B-1164	UD-4	98.0	UD	6.4	27.4	66.2			MH							26.4	26.4	66	34						90.8	90.8	115			
B-1164	UD-5	103.0	UD						CL				19.5				19.5					110.8				110.8	132			
B-1185	SS-2	1.5	SS	0.0	89.9	10.1			SP-SM			7.8					7.8													
B-1185	SS-4	6.0	SS	0.4	79.1	20.5			SC			11.0					11.0	46	15											
B-1185	SS-6	11.0	SS	0.0	72.0	28.0			SC			16.3					16.3	75	26											
B-1185	SS-11	33.5	SS	0.2	77.5	22.3			SC			34.4					34.4	96	33											
B-1186	SS-1	0.0	SS	0.0	90.8	9.2			SP-SM			6.9					6.9													
B-1186	SS-3	3.5	SS	0.0	90.6	9.4			SP-SM			8.8					8.8													
B-1186	SS-5	8.5	SS	0.0	76.2	23.8			SC			15.6					15.6													
B-1186	SS-7	13.5	SS	0.0	67.6	32.4			SC			19.3					19.3	57	22											
B-1186	SS-12	38.5	SS	0.0	78.2	21.8			SC-SM			23.6					23.6													
B-1189	SS-2	1.5	SS	0.0	92.6	7.4			SP-SM																					
B-1189	SS-4	6.0	SS	NA	NA	4.1			SP																					
B-1189	SS-6	11.0	SS	NA	NA	21.8			SC																					
B-1189	SS-7	13.5	SS	4.5	56.2	39.3			SC									53	27											
B-1189	SS-8	18.5	SS	NA	NA	37.6			SC									59	25											
B-1189	SS-10	28.5	SS	0.0	76.3	23.7			SM																					
B-1189	SS-12	38.5	SS	NA	NA	28.7			SC									42	22											
B-1189	SS-14	48.5	SS	0.0	91.4	8.6			SP-SM																					
B-1194	SS-1	0.0	SS	0.0	93.4	6.6			SP-SM																					
B-1194	SS-3	3.5	SS	0.0	92.9	7.1			SP-SM									NV	NP											
B-1194	SS-5	8.5	SS	0.0	77.9	22.1			SM									NV	NP											
B-1194	SS-7	13.5	SS	0.0	70.5	29.5			SM																					
B-1194	SS-9	23.5	SS	0.0	79.3	20.7			SC																					
B-1194	SS-11	33.5	SS	0.0	89.2	10.8			SP-SM																					
B-1194	SS-13	43.5	SS	0.0	88.2	11.8			SP-SC																					
B-1195	SS-2	1.5	SS	0.0	92.9	7.1			SP-SM			5.4					5.4	NV	NP											
B-1195	SS-4	6.0	SS	0.0	93.2	6.8			SP-SM			7.2					7.2	NV	NP											
B-1195	SS-6	11.0	SS	0.0	81.6	18.4			SC			14.5					14.5													
B-1195	SS-8	18.5	SS	0.0	77.2	22.8			SC			13.5					13.5													
B-1195	SS-10	28.5	SS	0.0	80.7	19.3			SC			19.7					19.7													
B-1195	SS-12	38.5	SS	0.0	74.8	25.2			SC			33.1					33.1													
B-1195	SS-14	48.5	SS	0.0	64.4	35.6			SC			39.8					39.8													
B-1196	SS-1	0.0	SS	0.0	93.0	7.0			SP-SM																					
B-1196	SS-3	3.5	SS	0.0	92.6	7.4			SP-SM																					
B-1196	SS-5	8.5	SS	0.0	93.3	6.7			SP-SM																					
B-1196	SS-7	13.5	SS	0.0	82.6	17.4			SM									NV	NP											
B-1196	SS-9	23.5	SS	0.6	81.0	18.4			SM									NV	NP											
B-1196	SS-11	33.5	SS	0.0	68.3	31.7			SC																					
B-1196	SS-13	43.5	SS	0.0	78.4	21.6			SC																					
B-1197	SS-2	1.5	SS	0.0	90.1	9.9			SP-SM			5.6					5.6	NV	NP											
B-1197	SS-4	6.0	SS	0.0	87.7	12.3			SM			14.2					14.2													
B-1197	SS-6	11.0	SS	0.0	86.2	13.8			SM			11.9					11.9	NV	NP											
B-1197	SS-8	18.5	SS	0.0	91.6	8.4			SP-SM			13.5					13.5													

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction: Optimum Moisture (%)	Compaction: Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o: SPT	Triaxial, Compression or Direct Shear: 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o: SPT	Triaxial, Compression or Direct Shear: 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-1197	SS-10	28.5	SS	0.0	89.5	10.5			SP-SM			17.1					17.1													
B-1197	SS-12	38.5	SS	0.0	91.9	8.1			SP-SM			5.9					5.9													
B-1197	SS-14	48.5	SS	0.0	56.7	43.3			SM			48.5					48.5													
B-3001	SS-2	1.5	SS	NA	NA	25.1			SM																					
B-3001	SS-4	6.0	SS	NA	NA	7.4			MH																					
B-3001	SS-6	11.0	SS	0.0	69.7	30.3			SM																					
B-3001	SS-7	13.5	SS	NA	NA	27.7			SM																					
B-3001	SS-8	18.5	SS	0.0	80.0	20.0			SM																					
B-3001	SS-10	28.5	SS	0.0	71.5	28.5			SM																					
B-3001	SS-11	33.5	SS	NA	NA	34.2			SM			29.7					29.7													
B-3001	SS-12	38.5	SS	0.0	74.3	25.7			SC																					
B-3001	SS-13	43.5	SS	NA	NA	6.1			SP-SM																					
B-3001	SS-15	53.5	SS	0.0	95.2	4.8			SP																					
B-3001	SS-16	58.5	SS	0.0	93.6	6.4			SP-SM																					
B-3001	UD-3	108.5	UD						CL							27.2	27.2								94.9	94.9	121			
B-3001	UD-4	113.5	UD	NA	NA	57.8			CH				23.9	33.1			28.5	63	33	2.66		94.3	86.7			90.5	116			
B-3001	UD-5	133.5	UD	NA	NA	67.5			CL				25.8			29.7	27.8	47	23	2.61		97.2			91.6	94.4	121			
B-3001	UD-6	153.5	UD						CL				24.8	26.6			25.7					99.3	97.5			98.4	124			
B-3001	UD-8	173.5	UD	NA	NA	11.6			SP-SC							24.2	24.2	43	24	2.65					99.1	99.1	123			
B-3001	UD-9	193.5	UD						SP-SC				28.1				28.1					95.0				95.0	122			
B-3001	UD-10	208.5	UD	NA	NA	17.0			SP-SC				21.2	21.5	21.5		21.4	74	28			106.0	105.4	99.4		103.6	126			
B-3001	UD-14	388.5	UD						CL				32.8	26.9	25.0		28.2					85.8	98.0	100.5		94.8	121			
B-3002	SS-3	3.5	SS	NA	NA	18.7			SM																					
B-3002	SS-4	6.0	SS	NA	NA	35.2			SC-SM																					
B-3002	SS-8	18.5	SS	NA	NA	17.5			SC-SM																					
B-3002	SS-12	38.5	SS	NA	NA	11.7			SP-SC																					
B-3002	SS-15	53.5	SS	NA	NA	6.3			SP-SC																					
B-3002	SS-17	63.5	SS	0.0	84.3	15.7			SC			47.0					47.0	137	31											
B-3002	SS-22	88.5	SS	0.0	2.5	97.5			MH			47.9					47.9	93	46											
B-3002	SS-25	108.5	SS	0.0	29.8	70.2			CH			33.4					33.4	93	35											
B-3002	UD-1	97.0	UD	NA	NA	75.1			MH				41.2	41.2	38.0		40.1	94	40			73.0	74.8	77.8		75.2	105			
B-3002	UD-2	113.5	UD	NA	NA	46.1			SM							39.3	39.3	76	35	2.65					73.0	73.0	102			
B-3003	SS-2	1.5	SS	NA	NA	33.3			SC																					
B-3003	SS-4	6.0	SS	NA	NA	18.9			SM																					
B-3003	SS-9	23.5	SS	NA	NA	14.7			SM																					
B-3003	SS-11	33.5	SS	NA	NA	55.3			ML																					
B-3003	SS-15	53.5	SS	NA	NA	10.1			SP-SM																					
B-3003	SS-16	58.5	SS	NA	NA	15.4			SM																					
B-3003	SS-22	88.5	SS	0.0	4.6	95.4			MH			42.3					42.3	98	45											
B-3003	SS-23	93.5	SS	0.0	11.7	88.3			MH			48.8					48.8	95	43											
B-3003	SS-24	113.5	SS	37.0	22.2	40.8			GM			22.0					22.0	60	32											
B-3003	SS-27	128.5	SS	0.0	23.3	76.7			CL			28.5					28.5	49	27											
B-3003	UD-2	103.0	UD						CL				33.9	24.4		37.6	32.0					84.7	99.8		75.0	86.5	114			
B-3003	UD-5	148.0	UD	NA	NA	63.7			CH				30.0	27.4	17.7		25.0	55	21			89.1	96.2	108.8		98.0	122			
B-3003	UD-6	163.0	UD	NA	NA	20.8			SC				20.4	19.9	20.0		20.1					99.4	101.2	102.7		101.1	121			
B-3004	SS-3	3.5	SS	NA	NA	24.1			SC																					
B-3004	SS-5	8.5	SS	NA	NA	27.6			SC																					
B-3004	SS-8	18.5	SS	NA	NA	7.3			SP-SM																					
B-3004	SS-12	38.5	SS	0.0	77.2	22.8			SC			28.2					28.2	63	31											

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Natural Moisture Content (%) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Dry Density (pcf) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-3004	SS-14	48.5	SS	NA	NA	13.9			SC																					
B-3004	SS-16	58.5	SS	NA	NA	5.3			SP-SM																					
B-3004	SS-23	98.5	SS	0.0	7.4	92.6			MH			32.2					32.2	80	43											
B-3004	SS-26	118.5	SS	0.0	27.2	72.8			MH			39.1					39.1	60	32											
B-3004	UD-1	93.0	UD						MH				42.0	39.9	31.2		37.7	97	53			74.6	76.1	79.5		76.7	106			
B-3004	UD-2	113.0	UD						CL				21.6				21.6					102.2				102.2	124			
B-3005	SS-3	3.5	SS	0.0	76.5	23.5			SC			14.1					14.1	34	18											
B-3005	SS-6	11.0	SS	0.0	86.0	14.0			SM			5.9					5.9	NV	NP											
B-3005	SS-9	23.5	SS	0.0	87.2	12.8			SC			12.2					12.2	47	21											
B-3005	SS-14	48.5	SS	0.0	90.4	9.6			SP-SM			19.2					19.2	NV	NP											
B-3005	SS-23	103.5	SS	0.0	10.4	89.6			MH			38.5					38.5	109	47											
B-3005	SS-25	123.5	SS	1.4	23.5	75.1			CH			29.8					29.8	50	24											
B-3005	UD-1	93.0	UD	NA	NA	92.7			CL-ML				46.8	49.6	55.0		50.5					69.2	69.7	66.2		68.4	103			
B-3005	UD-3	118.0	UD						CL-ML				42.4	38.4	27.6		36.1					77.5	81.0	95.2		84.6	115			
B-3005	UD-4	138.0	UD	NA	NA	65.0			CH				16.8	27.0	25.0		22.9	52	24			103.0	97.3	100.1		100.1	123			
B-3006	SS-4	6.0	SS	NA	NA	31.1			SC-SM																					
B-3006	SS-7	13.5	SS	NA	NA	30.5			SC-SM																					
B-3006	SS-9	23.5	SS	NA	NA	19.1			SM																					
B-3006	SS-15	53.5	SS	NA	NA	7.1			SP-SC																					
B-3006	SS-23	93.5	SS	0.0	29.3	70.7			MH			31.9					31.9	67	39											
B-3006	SS-25	103.5	SS	0.0	8.8	91.2			MH			42.2					42.2	80	42											
B-3006	SS-30	128.5	SS	0.0	22.1	77.9			CL			27.9					27.9	43	26											
B-3006	SS-33	143.5	SS	46.0	24.6	29.4			GC			14.3					14.3	49	20											
B-3007	SS-5	8.5	SS	NA	NA	20.1			SM																					
B-3007	SS-9	23.5	SS	NA	NA	19.7			SM																					
B-3007	SS-14	48.5	SS	NA	NA	10.5			SP-SC																					
B-3007	SS-23	93.5	SS	0.0	8.6	91.4			MH			42.2																		
B-3007	SS-26	108.5	SS	0.0	10.8	89.2			CH			41.6					41.6	112	64											
B-3008	SS-2	1.5	SS	0.0	77.8	22.2			SC																					
B-3008	SS-3	3.5	SS	10.4	62.0	27.6			SC																					
B-3008	SS-4	6.0	SS	0.0	75.5	24.5			SC																					
B-3008	SS-6	11.0	SS	0.0	79.1	20.9	1.9	19.0	SC			15.1					15.1											5.09	140.0	19.0
B-3008	SS-9	23.5	SS	0.0	89.6	10.4			SP-SM																					
B-3008	SS-10	28.5	SS	0.0	73.4	26.6			SC									55	25											
B-3008	SS-11	33.5	SS	NA	NA	31.5			SC																					
B-3008	SS-12	38.5	SS	NA	NA	31.1			SC																					
B-3008	SS-13	43.5	SS	0.0	85.5	14.5			SC									42	23											
B-3008	SS-15	53.5	SS	NA	NA	5.4			SP-SC																					
B-3008	SS-16	58.5	SS	0.0	84.4	15.6	1.1	14.5	SC			31.4					31.4											5.53	390.0	14.0
B-3008	SS-27	113.5	SS						MH									58	36											
B-3008	SS-29	123.5	SS						CH									61	30									7.49	150.0	2400.0
B-3009	SS-4	6.0	SS	NA	NA	21.3			SM																					
B-3009	SS-9	23.5	SS	NA	NA	6.8			SP-SM																					
B-3009	SS-13	43.5	SS	NA	NA	14.8			SM																					
B-3009	SS-24	98.5	SS	0.0	28.6	71.4			CH			32.4					32.4	65	31											
B-3009	SS-30	128.5	SS	0.0	34.1	65.9			CL			24.8					24.8	46	22											
B-3010	SS-3	3.5	SS	NA	NA	21.6			SC																					
B-3010	SS-5	8.5	SS	NA	NA	39.3			SC																					
B-3010	SS-8	18.5	SS	NA	NA	8.3			SP-SM																					

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-3010	SS-25	108.5	SS	0.0	9.2	90.8			CL			36.8					36.8													
B-3010	SS-28	123.5	SS	9.5	34.4	56.1			CL			22.0					22.0	41	21											
B-3010	SS-31	143.5	SS	1.1	36.7	62.2			CL			24.7					24.7	45	21											
B-3010	UD-1	103.5	UD						CL				6.0	43.3	41.3		30.2					103.4	76.4	78.7		86.2	110			
B-3010	UD-2	128.5	UD	NA	NA	75.4			CL				28.6				28.6					93.0				93.0	120			
B-3013	UD-1	98.5	UD	NA	NA	60.4			MH							31.4	31.4	66	37	2.66					84.2	84.2	111			
B-3013	UD-2	101.0	UD						CL-ML				10.6	40.2	26.9		25.9			2.66		100.2	77.2	84.5		87.3	109			
B-3013	UD-3	118.5	UD						GP				15.2				15.2					94.0				94.0	108			
B-3013	UD-4	121.0	UD						CL-ML				41.5	28.9	23.8		31.4					86.6	92.4	91.4		90.1	118			
B-3015	SS-3	3.5	SS	NA	NA	16.0			SM			12.4					12.4													
B-3015	SS-5	8.5	SS	NA	NA	42.1			SC			15.0					15.0													
B-3015	SS-12	38.5	SS	NA	NA	29.0			SC-SM			38.2					38.2													
B-3015	SS-14	48.5	SS	NA	NA	9.8			SP-SM			24.0					24.0													
B-3015	SS-25	103.5	SS	0.0	14.5	85.5			MH			42.4					42.4	50	30											
B-3015	UD-1C	121.5	UD	NA	NA	62.2			CH				30.4			27.6	29.0	52	27			89.1			91.1	90.1	116			
B-3015	UD-2	143.5	UD						CH				17.6				17.6					111.7				111.7	131			
B-3017	SS-1	0.0	SS	0.0	85.6	14.4			SC																					
B-3017	SS-3	3.5	SS	NA	NA	15.8			SC																					
B-3017	SS-5	8.5	SS	0.0	81.0	19.0			SM																					
B-3017	SS-7	13.5	SS	NA	NA	31.6			SC																					
B-3017	SS-9	23.5	SS	NA	NA	95.5			MH									107	52											
B-3017	UD-1	93.0	UD	NA	NA	68.7			MH							34.3	34.3	65	36	2.63					84.9	84.9	114			
B-3017	UD-2	113.5	UD						CL				21.7	24.1	24.5		23.4					102.1	99.6	99.0		100.2	124			
B-3018	SS-4	6.0	SS	NA	NA	13.9			SC			8.1					8.1													
B-3018	SS-7	13.5	SS	NA	NA	19.9			SC			15.9					15.9													
B-3018	SS-10	28.5	SS	NA	NA	19.3			SM			20.1					20.1													
B-3018	SS-25	108.5	SS	0.0	30.9	69.1			MH			32.0					32.0	66	33											
B-3018	SS-28	128.5	SS	NA	NA	75.1			CL			24.9					24.9	46	22											
B-3018	SS-31	143.5	SS	1.8	22.6	75.6			CL			28.3					28.3	34	23											
B-3018	UD-2	113.5	UD	NA	NA	75.7			MH				21.4				21.4	63	37			99.7				99.7	121			
B-3018	UD-3	148.5	UD						CL				23.1				23.1					102.2				102.2	126			
B-3019	SS-3	3.5	SS	NA	NA	34.5			SM																					
B-3019	SS-8	18.5	SS	0.5	81.7	17.8			SM																					
B-3019	SS-25	108.5	SS	0.0	15.1	84.9			MH			38.9					38.9	71	35											
B-3019	SS-26	123.5	SS	0.0	14.4	85.6			CH			38.4					38.4	55	28											
B-3019	UD-1	93.5	UD						ML				55.1	43.4	43.8		47.4					68.4	75.2	75.2		72.9	107			
B-3019	UD-2	113.5	UD	NA	NA	30.3			GM							45.5	45.5								71.2	71.2	104			
B-3019	UD-3	118.5	UD						GM				28.8				28.8					92.4				92.4	119			
B-3020	UD-1	103.5	UD						CL-ML				32.8				32.8					83.4				83.4	111			
B-3020	UD-2	133.5	UD						CL-ML				52.9	28.9	29.2		37.0					80.1	91.6	93.0		88.2	120			
B-3021	UD-1	103.5	UD						CL-ML				30.2				30.2					88.6				88.6	115			
B-3021	UD-2	148.5	UD	0.5	91.6	7.9			SP-SM				20.7	15.8	16.0		17.5					98.1	101.8	98.0		99.3	117			
B-3021	UD-3	153.5	UD	0.0	87.5	12.5			SM			19.3					19.3													
B-3023	UD-1	93.0	UD						CL				29.9				29.9					89.3				89.3	116			
B-3023	UD-2	103.0	UD	NA	NA	44.8			CH							32.4	32.4	62	26						87.1	87.1	115			
B-3023	UD-3	113.0	UD						CL				38.5	25.6			32.1					80.4	94.5			87.5	115			
B-3023	UD-4	148.0	UD						SP-SM				24.5				24.5					102.1				102.1	127			
B-3024	SS-3	3.5	SS	NA	NA	13.5			SM																					
B-3024	SS-6	11.0	SS	NA	NA	24.9			SM																					

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Triaxial, Compression or Direct Shear 1	Triaxial, Compression or Direct Shear 2	Triaxial, Compression or Direct Shear 3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Triaxial, Compression or Direct Shear 1	Triaxial, Compression or Direct Shear 2	Triaxial, Compression or Direct Shear 3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-3024	SS-8	18.5	SS	NA	NA	30.8			SC																					
B-3024	SS-11	33.5	SS	NA	NA	41.6			SC																					
B-3024	SS-15	53.5	SS	NA	NA	13.2			SC																					
B-3024	SS-17	63.5	SS	NA	NA	8.4			SP-SC																					
B-3024	UD-1	97.0	UD						CH				40.0	40.1	36.7		38.9					80.0	76.7	80.8		79.2	110			
B-3024	UD-2	117.5	UD	NA	NA	69.1			CH							45.9	45.9	67	32						73.1	73.1	107			
B-3025	SS-4	6.0	SS	NA	NA	22.8			SC																					
B-3025	SS-7	13.5	SS	NA	NA	24.0			SC																					
B-3025	SS-10	28.5	SS	NA	NA	15.2			SC																					
B-3025	SS-11	33.5	SS	NA	NA	38.3			SC																					
B-3025	UD-1	103.5	UD						ML				38.6				38.6					78.6				78.6	109			
B-3025	UD-2	133.5	UD	NA	NA	64.9			CH				22.7				22.7	53	23			99.0				99.0	122			
B-3026	UD-1	28.5	UD	NA	NA	24.0			SC				19.1	30.8	12.8		20.9					97.8	81.5	100.7		93.3	112			
B-3026	UD-2	33.5	UD						SC				25.9	26.1	29.8		27.3					89.0	88.8	86.9		88.3	112			
B-3026	UD-3	38.5	UD	NA	NA	20.6			SC				23.3	22.4	18.5		21.4					94.1	99.1	101.4		98.2	119			
B-3030	UD-1	30.0	UD	0.0	91.9	8.1			SP-SM																					
B-3030	UD-2	35.0	UD	0.0	93.3	6.7			SP-SM			22.0					22.0			2.72	91					91.0	111	7.51	120.0	120.0
B-3030	UD-3	40.0	UD						SC				16.9	14.7	14.6		15.4					104.6	107.3	101.1		104.3	120			
B-3031	UD-1	30.0	UD	0.0	95.7	4.3			SP			22.0					22.0													
B-3031	UD-2	33.5	UD	0.0	76.6	23.4			SM			17.4					17.4													
B-3031	UD-3	38.5	UD						SP-SM				18.6	18.0	25.2		20.6					90.6	91.3	85.8		89.2	108	4.74	120.0	120.0
B-3033	UD-1	13.5	UD	0.0	91.5	8.5			SP-SM											2.69								5.96	110.0	110.0
B-3033	UD-2	28.5	UD	0.0	85.3	14.7			SM			24.9					24.9													
B-3033	UD-3	33.5	UD	0.0	90.4	9.6			SP-SM			18.3					18.3													
B-3033	UD-4	38.5	UD						SM				24.8	16.5	18.1		19.8			2.72		90.9	86.7	85.5		87.7	105			
B-3034	UD-1	28.5	UD	0.0	89.5	10.5			SP-SM			17.2					17.2													
B-3034	UD-2	33.5	UD	0.0	85.8	14.2			SM																			8.80	120.0	120.0
B-3034	UD-4	118.5	UD	0.4	30.6	69.0			MH				32.8	27.2	28.3		29.4	68	36			87.5	95.0	90.9		91.1	118			
B-3034	UD-5	138.5	UD	0.1	84.4	15.5			SC							16.4	16.4	40	19	2.65					95.8	95.8	111			
B-3035	UD-1	95.5	UD	NA	NA	90.8			MH							42.5	42.5	93	47						75.8	75.8	108			
B-3035	UD-2	103.5	UD						CL-ML				30.1	25.9	26.3		27.4					84.1	88.4	86.1		86.2	110			
B-3035	UD-3	133.5	UD						CL-ML							28.3	28.3								93.3	93.3	120			
B-3035	UD-4	148.5	UD						CL-ML				17.9				17.9					109.8				109.8	129			
B-3036	SS-3	3.5	SS	1.0	79.8	19.2			SM			13.3					13.3													
B-3036	SS-6	11.0	SS	2.0	82.2	15.8			SM			13.3					13.3													
B-3036	SS-11	33.5	SS	0.0	53.1	46.9	7.8	39.1	SC																					
B-3036	SS-13	43.5	SS	0.0	87.1	12.9			SM			39.5					39.5													
B-3036	SS-18	68.5	SS	0.0	76.5	23.5	5.6	17.9	SC																					
B-3036	SS-21	83.5	SS	0.4	37.5	62.1			ML			60.1					60.1													
B-3036	SS-22	88.5	SS	8.2	45.4	46.4			SM			48.4					48.4													
B-3036	SS-24	98.5	SS						MH									69	37											
B-3036	SS-27	113.5	SS						CH									51	26											
B-3036	SS-35	153.5	SS	9.4	81.1	9.5			SP-SC			20.0					20.0													
B-4001	SS-2	1.5	SS	NA	NA	12.6			SM																					
B-4001	SS-5	8.5	SS	0.0	74.6	25.4			SC									49	24											
B-4001	SS-7	13.5	SS	0.0	91.8	8.2			SP-SM																					
B-4001	SS-9	23.5	SS	NA	NA	57.2			MH									110	49											
B-4001	SS-11	33.5	SS	NA	NA	21.2			SC																					
B-4001	SS-13	43.5	SS	0.0	72.3	27.7			SM									50	30											

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Natural Moisture Content (%) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Dry Density (pcf) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-4001	SS-23	93.5	SS	0.9	17.4	81.7			MH			45.3					45.3	101	54											
B-4001	SS-25	108.5	SS	0.0	33.0	67.0			MH			29.8					29.8	51	29											
B-4001	SS-28	138.5	SS	0.0	20.2	79.8			ML			26.7					26.7	38	25											
B-4001	SS-29	143.5	SS	0.0	25.8	74.2			CH			30.2					30.2	56	26											
B-4001	SS-31	153.5	SS	0.0	26.8	73.2			CL			28.2					28.2	44	22											
B-4001	UD-3	148.5	UD	NA	NA	44.1			SM				15.2				15.2	96	59			111.0				111.0	128			
B-4001	UD-5	133.5	UD	NA	NA	57.1			CL				15.4				15.4	50	28			114.9				114.9	133			
B-4001	UD-6	158.5	UD						ML				25.9				25.9					97.1				97.1	122			
B-4001	UD-7	178.5	UD	0.9	73.9	25.2			SM				40.0	25.4			32.7					78.8	96.9			87.8	116			
B-4001	UD-8	198.5	UD	NA	NA	19.7			SM			27.9																		
B-4001	UD-9	238.5	UD	NA	NA	69.6			ML				18.6				18.6	45	27			112.5				112.5	133			
B-4001	UD-10	248.5	UD						SP							16.5	16.5			2.65					106.7	106.7	124			
B-4001	UD-12	298.5	UD	NA	NA	13.7			SM				12.6				12.6					101.3				101.3	114			
B-4001	UD-13	308.5	UD	NA	NA	67.4			CL							16.7	16.7	49	22	2.68					114.2	114.2	133			
B-4001	UD-14	348.5	UD						CH				19.9				19.9					106.1				106.1	127			
B-4002	SS-4	6.0	SS	NA	NA	8.0			SP-SM																					
B-4002	SS-7	13.5	SS	NA	NA	47.2			SC																					
B-4002	SS-9	23.5	SS	NA	NA	13.3			SM																					
B-4002	SS-11	33.5	SS	NA	NA	36.2			SC																					
B-4002	SS-16	58.5	SS	NA	NA	10.2			SP-SM																					
B-4002	SS-19	73.5	SS	NA	NA	6.2			SP-SM																					
B-4002	SS-23	103.5	SS	0.0	19.3	80.7			MH			40.2					40.2	81	38											
B-4002	SS-26	118.5	SS	0.0	13.0	87.0			CH			38.9					38.9	78	35											
B-4002	SS-30	143.5	SS	0.0	30.4	69.6			CL			30.3					30.3	49	23											
B-4002	UD-1	98.5	UD						ML				40.4	33.1	41.7		38.4					75.5	80.3	75.1		77.0	106			
B-4002	UD-2	123.5	UD						ML							40.9	40.9			2.65					76.4	76.4	108			
B-4002	UD-3	173.5	UD	NA	NA	5.4			SP-SM				17.5	18.3			17.9					105.0	104.8			104.9	124			
B-4002	UD-4	233.5	UD						CL				27.7				27.7					94.1				94.1	120			
B-4003	SS-4	11.0	SS	NA	NA	20.8			SC																					
B-4003	SS-10	28.5	SS	0.0	71.2	28.8			SC			22.4					22.4													
B-4003	SS-14	48.5	SS	NA	NA	20.3			SC																					
B-4003	SS-24	98.5	SS	NA	NA	94.1			MH			50.8					50.8	98	51											
B-4003	SS-26	108.5	SS	1.6	35.4	63.0			MH			30.2					30.2	61	32											
B-4003	SS-32	148.5	SS	0.0	25.7	74.3			CL			25.5					25.5	45	25											
B-4003	UD-1	117.0	UD						ML				25.2				25.2					98.4				98.4	123			
B-4003	UD-2	136.0	UD						ML							34.3	34.3								85.4	85.4	115			
B-4003	UD-5	201.0	UD	NA	NA	18.3			SM				29.7	31.6	32.3		31.2			2.7		88.2	88.3	82.7		86.4	113			
B-4003	UD-6	248.5	UD	NA	NA	17.8			SM																					
B-4004	SS-5	8.5	SS	0.0	75.1	24.9			SM			14.7					14.7			2.75										
B-4004	SS-6	11.0	SS	NA	NA	22.5			SM																					
B-4004	SS-8	18.5	SS	0.0	92.8	7.2			SP-SM			12.6					12.6			2.69										
B-4004	SS-11	33.5	SS	0.0	43.1	56.9	9.3	47.6	CL																					
B-4004	SS-14	48.5	SS	0.0	74.0	26.0	5.8	20.2	SC																			5.47	150.0	20.0
B-4004	SS-16	58.5	SS	NA	NA	11.3			SP-SC																					
B-4004	SS-17	63.5	SS	10.5	70.9	18.6			SC			31.5					31.5													
B-4004	SS-19	73.5	SS	2.1	81.4	16.5			SM			24.2					24.2											8.89	130.0	20.0
B-4004	SS-22	88.5	SS	9.5	82.3	8.2			SW-SM			24.0					24.0											9.24	130.0	30.0
B-4004	SS-24	98.5	SS						MH			46.2					46.2	95	50											
B-4004	SS-25	103.5	SS	0.0	5.7	94.3			MH			50.7					50.7	97	50											

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Natural Moisture Content (%) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Dry Density (pcf) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-4004	SS-28	118.5	SS						MH									57	32									7.62	150.0	2600.0
B-4004	SS-31	133.5	SS						MH									66	33											
B-4004	SS-34	148.5	SS	0.0	26.3	73.7			CL			31.0					31.0	49	25											
B-4005	SS-5	8.5	SS	NA	NA	13.3			SM																					
B-4005	SS-8	18.5	SS	NA	NA	31.9			SC																					
B-4005	SS-12	38.5	SS	NA	NA	36.9			SC																					
B-4005	SS-24	98.5	SS	0.0	3.1	96.9			MH			52.2					52.2	92	45											
B-4005	SS-26	113.5	SS	1.4	33.7	64.9			MH			31.6					31.6	63	34											
B-4005	SS-29	128.5	SS	0.0	12.1	87.9			MH			45.1					45.1	68	33											
B-4005	SS-32	143.5	SS	0.0	28.5	71.5			CL			21.3					21.3	41	23											
B-4006	SS-6	11.0	SS	NA	NA	24.5			SC																					
B-4006	SS-9	23.5	SS	NA	NA	18.5			SC																					
B-4006	SS-15	53.5	SS	NA	NA	19.3			SM																					
B-4006	SS-29	123.5	SS	0.0	17.8	82.2			MH			45.2					45.2	73	35											
B-4006	SS-33	143.5	SS	0.0	35.3	64.7			CH			17.7					17.7	53	23											
B-4007	SS-3	3.5	SS	NA	NA	19.0			SC																					
B-4007	SS-10	28.5	SS	NA	NA	15.6			SC																					
B-4007	SS-16	58.5	SS	NA	NA	12.5			SC																					
B-4007	SS-25	108.5	SS	0.0	26.0	74.0			MH			40.3					40.3	87	48											
B-4007	SS-28	128.5	SS	1.7	22.8	75.5			MH			38.3					38.3	66	34											
B-4007	UD-1	98.5	UD	NA	NA	59.3			MH				30.7	45.2			38.0	95	52			80.2	71.7			76.0	104			
B-4007	UD-2	118.5	UD	9.4	39.5	51.1			CH							18.8	18.8	53	27						102.1	102.1	121			
B-4007	UD-3	153.5	UD						ML				32.2	26.6	24.6		27.8					87.9	95.6	100.2		94.6	121			
B-4008	SS-4	6.0	SS	NA	NA	26.8			SC																					
B-4008	SS-7	13.5	SS	NA	NA	18.0			SM																					
B-4008	SS-12	38.5	SS	0.0	65.4	34.6			SM			45.9					45.9	81	53											
B-4008	SS-24	108.5	SS	0.0	20.7	79.3			MH			46.4					46.4	96	43											
B-4008	SS-31	153.5	SS	0.0	32.3	67.7			CL			26.6					26.6	47	23											
B-4008	UD-1	98.5	UD						ML				32.6				32.6					71.8				71.8	95			
B-4008	UD-2	103.5	UD						ML				38.1				38.1					80.7				80.7	111			
B-4008	UD-3	123.5	UD	0.0	6.4	94.6			MH							44.6	44.6	76	35	2.61					72.8	72.8	105			
B-4008	UD-4	128.5	UD						ML				27.2				27.2					95.8				95.8	122			
B-4009	SS-5	8.5	SS	NA	NA	19.9			SM																					
B-4009	SS-8	18.5	SS	NA	NA	17.9			SC-SM																					
B-4009	SS-12	38.5	SS	0.0	57.8	42.2			SM			47.0					47.0	45	27											
B-4009	SS-17	63.5	SS	0.0	90.2	9.8			SP-SM																					
B-4009	SS-24	98.5	SS	0.0	6.7	93.3			MH			45.4					45.4	109	62											
B-4009	SS-28	123.5	SS	0.0	20.9	79.1			MH			31.0					31.0	62	32											
B-4009	SS-34	158.5	SS	0.6	29.5	69.9			CH			26.5					26.5	60	26											
B-4009	UD-1	108.0	UD	NA	NA	89.1			MH				41.7	42.5	40.9		41.7	89	48			77.4	76.8	78.1		77.4	110			
B-4009	UD-2	148.0	UD						CL-ML				28.7	27.3	30.4		28.8					93.1	95.9	92.6		93.8	121			
B-4010	SS-5	8.5	SS	NA	NA	19.1			SM																					
B-4010	SS-10	28.5	SS	NA	NA	21.4			SC-SM																					
B-4010	SS-14	48.5	SS	NA	NA	23.7			SC-SM																					
B-4010	SS-25	108.5	SS	0.0	17.9	82.1			MH			38.2					38.2	67	39											
B-4010	SS-29	143.5	SS	0.0	30.1	69.9			CH			31.1					31.1	56	26											
B-4011	SS-5	8.5	SS	NA	NA	23.9			SM																					
B-4011	SS-9	23.5	SS	NA	NA	18.4			SC-SM																					
B-4011	SS-15	53.5	SS	NA	NA	10.2			SP-SM																					
B-4011	SS-23	93.5	SS	0.0	24.0	76.0			MH			30.8					30.8	71	46											

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction Optimum Moisture (%)	Compaction Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o SPT	Natural Moisture Content (%) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o SPT	Dry Density (pcf) at e_o Triaxial, Compression or Direct Shear 1	2	3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-4011	SS-26	108.5	SS	0.0	15.9	84.1			MH			37.2					37.2	65	36											
B-4013	SS-4	6.0	SS	NA	NA	12.4			SM																					
B-4013	SS-10	21.0	SS	NA	NA	31.1			SC																					
B-4013	SS-16	36.0	SS	NA	NA	56.6			CL																					
B-4013	SS-22	51.0	SS	NA	NA	13.1			SC																					
B-4013	UD-2	101.0	UD						CL-ML				38.0				38.0					80.6				80.6	111			
B-4013	UD-3	128.5	UD						CL-ML				27.5	29.6	30.0		29.0					91.3	87.8	85.4		88.2	114			
B-4014	SS-2	1.5	SS	0.0	90.8	9.2			SP-SM																					
B-4014	SS-4	6.0	SS	NA	NA	4.5			SP																					
B-4014	SS-6	11.0	SS	NA	NA	25.7			SC																					
B-4014	SS-8	18.5	SS	0.3	74.2	25.5			SC									51	19											
B-4014	SS-10	28.5	SS	0.0	64.5	35.5			SC-SM																					
B-4014	SS-12	38.5	SS	NA	NA	67.4			MH									95	49											
B-4014	SS-14	48.5	SS	NA	NA	13.1			SC																					
B-4014	SS-16	58.5	SS	0.0	87.2	12.8			SC																					
B-4014	SS-25	103.5	SS	0.0	32.2	67.8			MH			29.9					29.9	56	35											
B-4015	SS-3	3.5	SS	NA	NA	14.9			SM																					
B-4015	SS-16	58.5	SS	NA	NA	6.8			SP-SM																					
B-4015	SS-22	88.5	SS	4.8	13.6	81.6			MH			41.1					41.1	83	49											
B-4015	SS-25	103.5	SS	0.0	17.9	82.1			CH			34.8					34.8	86	37											
B-4015	SS-32	138.5	SS	0.0	25.0	75.0			CL			21.0					21.0	44	21											
B-4016	SS-24	98.5	SS	1.2	19.1	79.7			MH			44.3					44.3	88	45											
B-4017	SS-4	6.0	SS	NA	NA	27.1			SC																					
B-4017	SS-9	23.5	SS	NA	NA	17.0			SC																					
B-4017	SS-30	138.5	SS	0.0	25.3	74.7			CL			34.7					34.7	40	24											
B-4017	UD-1	96.0	UD						ML				62.1				62.1					69.4				69.4	113			
B-4017	UD-3	116.0	UD						ML				23.5				23.5					99.3				99.3	123			
B-4018	UD-1	93.5	UD						CL				42.5	43.9	44.0		43.5					74.4	75.1	95.5		81.7	117			
B-4018	UD-3	103.0	UD						CL				28.2	24.8			26.5					92.2	99.3			95.7	121			
B-4018	UD-4	128.5	UD	NA	NA	81.8			CL							21.3	21.3	35	23			35.0	23.0		97.8	97.8	119			
B-4018	UD-5	138.5	UD						CL				28.9	23.6	24.0		25.5					91.8	98.6	99.3		96.5	121			
B-4022	SS-6	11.0	SS	NA	NA	24.8			SC																					
B-4022	SS-15	53.5	SS	NA	NA	11.4			SP-SC																					
B-4023	SS-3	3.5	SS	NA	NA	30.4			SC																					
B-4023	SS-9	23.5	SS	NA	NA	19.3			SC																					
B-4026	SS-4	6.0	SS	NA	NA	11.0			SP-SM																					
B-4026	SS-7	13.5	SS	NA	NA	28.4			SC-SM																					
B-4026	SS-11	33.5	SS	NA	NA	22.8			SM																					
B-4026	SS-15	53.5	SS	NA	NA	23.8			SC-SM																					
B-4030	UD-1	13.5	UD	0.0	89.3	10.7			SP-SM				12.2	9.7			11.0			2.72		100.5	97.4			99.0	110			
B-4030	UD-2	28.5	UD	0.0	91.5	8.5			SP-SM			12.5					12.5													
B-4030	UD-3	33.5	UD	0.0	90.4	9.6			SP-SM																					
B-4030	UD-5	103.0	UD						CL											2.68										
B-4030	UD-6	105.0	UD						CL				29.8	30.7	35.6		32.0					91.7	89.4	112.8		97.9	130			
B-4031	UD-1	28.5	UD	0.0	82.4	17.6			SM																					
B-4031	UD-2	33.5	UD						SM				15.8	13.5	13.8		14.4					103.7	107.2	107.2		106.0	121			
B-4031	UD-3	38.5	UD						SM				21.1	17.6			19.4					96.7	94.7			95.7	114			
B-4032	UD-1	28.5	UD	0.0	77.1	22.9			SM				22.8	31.6			27.2					101.3	89.6			95.5	121			
B-4032	UD-2	33.5	UD	NA	NA	11.1			SM				27.3	11.6			19.5					96.3	108.1			102.2	122			

TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of Sample	Sample No.	Depth (ft)	Sample Type	Gravel (1) (%)	Sand (1) (%)	Fines (1) (%)	Silt (1) (%)	0.005 mm Clay (1) (%)	USCS(2)	Compaction: Optimum Moisture (%)	Compaction: Maximum Dry Density (pcf)	Natural Moisture Content (%) at e_o: SPT	Triaxial, Compression or Direct Shear: 1	Triaxial, Compression or Direct Shear: 2	Triaxial, Compression or Direct Shear: 3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o: SPT	Triaxial, Compression or Direct Shear: 1	Triaxial, Compression or Direct Shear: 2	Triaxial, Compression or Direct Shear: 3	Consolidation	Avg.	Wet Density Avg. (pcf)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
B-4032A	UD-1	38.5	UD	0.0	96.7	3.3			SP			19.2					19.2													
B-4033	UD-1	28.5	UD	0.0	88.9	11.1			SP-SM				15.7	19.4			17.6					92.2	90.2			91.2	107	6.26	140.0	110.0
B-4033	UD-2	33.5	UD	0.0	63.4	36.6			SC-SM			22.8					22.8													
B-4033	UD-3	38.5	UD						SP-SC				26.8	26.0	22.4		25.1					82.1	81.5	88.0		83.9	105	6.73	120.0	120.0
B-4034	UD-1	28.5	UD	0.0	86.6	13.4			SM			18.0					18.0													
B-4034	UD-3	38.5	UD						SP-SC									NV	NP											
B-4034	UD-4	108.5	UD						MH				28.5				28.5					92.7				92.7	119			
B-4034	UD-5	113.5	UD	23.9	19.9	56.2			MH				33.5	29.7	20.5		27.9	53	31			87.1	90.2	108.4		95.2	121			
B-4034	UD-6	143.5	UD	0.0	38.1	61.9			CL							26.4	26.4	47	26	2.74					94.2	94.2	119			
B-4035	UD-1	98.5	UD						CL-ML				46.3	43.1	37.3		42.2					70.5	74.1	79.9		74.8	106			
B-4035	UD-2	103.5	UD	NA	NA	83.8			MH				36.4			37.2	36.8	86	50			79.9			79.6	79.7	109			
B-4035	UD-3	148.5	UD	0.0	33.6	66.4			CL			24.3					24.3	43	22		98.7					98.7	123			
B-6020	SS-2	1.5	SS	0.0	70.9	29.1			SC									53	27											
B-6020	SS-4	6.0	SS	0.0	90.1	9.9			SP-SM									NV	NP											
B-6020	SS-6	11.0	SS	0.0	76.6	23.4			SC									47	25											
B-6020	SS-14	48.5	SS	0.0	58.4	41.6			SM			44.3					44.3	111	60											
B-6020	SS-16	58.5	SS	0.0	65.7	34.3			SM			46.1					46.1	139	78											
B-6021	SS-4	6.0	SS	0.0	73.3	26.7			SC									41	22											
B-6021	SS-7	13.5	SS	0.0	66.4	33.6			SM									47	28											
B-6022	SS-12	38.5	SS	0.0	52.7	47.3			SM			41.8					41.8	82	41											
B-6022	SS-14	48.5	SS	0.0	81.9	18.1			SC			27.4					27.4	68	29											
B-6023	SS-5	8.5	SS	0.0	83.0	17.0			SC									36	17											
B-6027	SS-3	7.5	SS	7.4	85.0	7.6			SP-SM			21.2					21.2											8.52	100.0	100.0
B-6027	SS-5	12.5	SS	15.4	74.7	9.9			SP-SM			16.3					16.3											8.22	170.0	100.0
B-6027	SS-7	20.0	SS	0.0	52.2	47.8			SM			24.3					24.3													
B-6027	SS-8	23.5	SS	1.7	51.8	46.5			SM			22.9					22.9													
B-6027	SS-10	33.5	SS	0.0	78.2	21.8			SM			17.3					17.3													
B-6027	SS-11	38.5	SS	0.0	93.3	6.7			SP-SM			23.8					23.8													
B-6027	SS-13	48.5	SS	0.5	90.8	8.7			SP-SM			29.5					29.5													
B-6027	SS-14	53.5	SS	0.0	77.5	22.5			SM			23.8					23.8	46	29											
B-6027	SS-15	58.5	SS	0.0	78.8	21.2			SM			32.4					32.4	45	29											
B-6027	SS-16	63.5	SS	0.0	91.2	8.8			SW-SM			24.8					24.8													
B-6028	SS-3	3.5	SS	0.0	89.2	10.8			SP-SM			9.5					9.5											6.91	130.0	99.0
B-6028	SS-5	8.5	SS	0.0	88.4	11.6			SP-SM			8.1					8.1											6.47	98.0	98.0
B-6028	SS-6	11.0	SS	0.0	91.0	9.0			SP-SM			14.4					14.4											6.36	180.0	100.0
B-6028	SS-8	18.5	SS	0.0	2.6	97.4			ML			33.0					33.0	49	28											
B-6028	SS-10	28.5	SS	0.3	97.3	2.4			SP			25.6					25.6											6.97	110.0	65.0
B-6028	SS-12	38.5	SS	0.0	98.4	1.6			SP			19.8					19.8													
B-6028	SS-14	48.5	SS	4.9	88.3	6.8			SW-SM			19.6					19.6													
B-6029	SS-3	3.5	SS	0.0	57.1	42.9			SC			33.2					33.2	43	20											
B-6029	SS-5	8.5	SS	1.7	42.5	55.8			CL			37.1					37.1	42	20											
B-6029	SS-6	11.0	SS	10.1	44.1	45.8			SM			32.7					32.7													
B-6029	SS-8	18.5	SS	2.6	27.6	69.8			CH			46.2					46.2	76	26											
B-6029	SS-12	38.5	SS	0.0	89.1	10.9			SP-SM			23.4					23.4													
B-6030	SS-2	1.5	SS	0.0	30.0	70.0			CL			31.4					31.4	42	23											
B-6030	SS-4	6.0	SS	0.0	70.9	29.1			SC			26.4					26.4	69	22											
B-6030	SS-6	11.0	SS	0.0	67.0	33.0			SM			31.1					31.1													
B-6030	SS-8	18.5	SS	0.0	50.7	49.3			SM			47.7					47.7	NV	NP											
B-6030	SS-9	23.5	SS	0.0	53.1	46.9			SM			42.5					42.5	42	28											

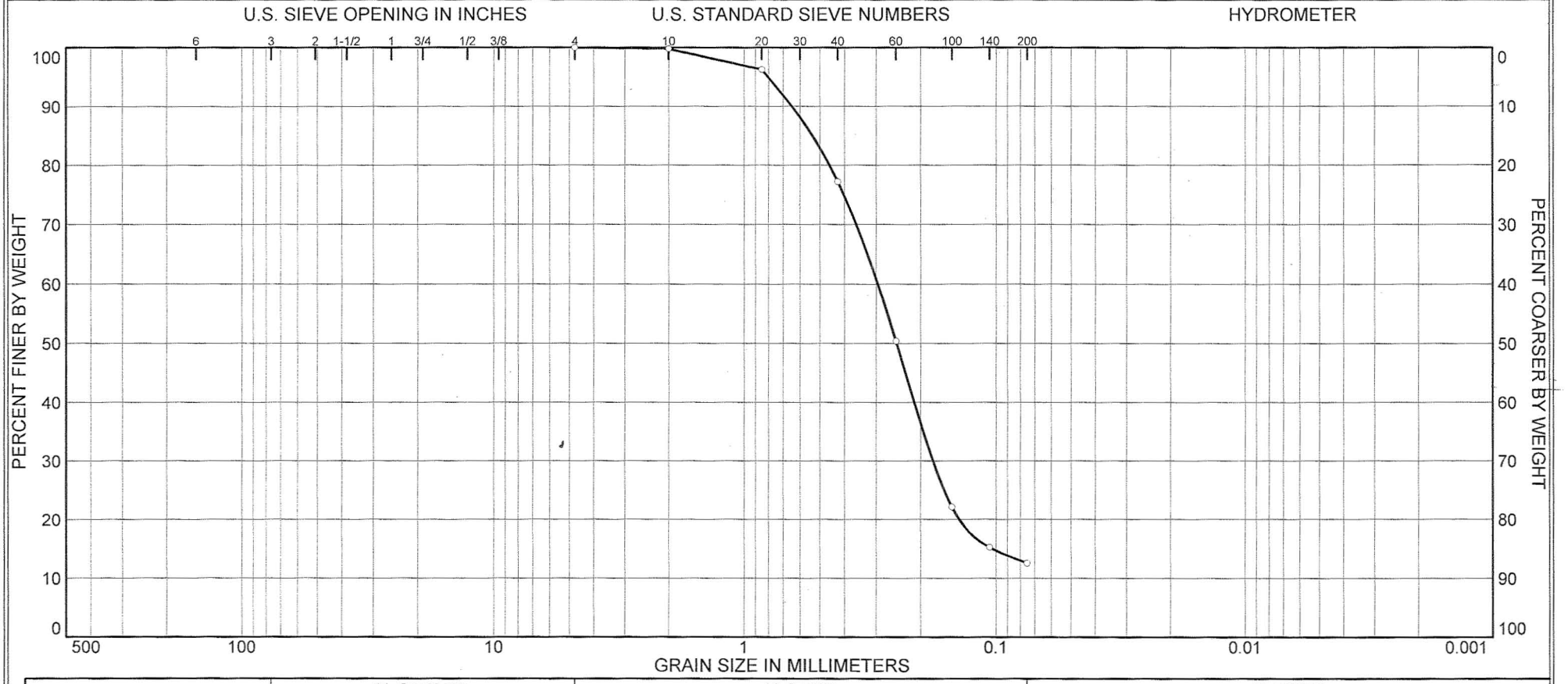
TABLE F-1
SUMMARY OF SOIL TESTS
VOGTLE UNITS 3 & 4 COL PROJECT
MACTEC ENGINEERING AND CONSULTING, INC.
MACTEC PROJECT No. 6141-06-0286

Source of	Sample	Depth	Sample Type	Gravel (1)	Sand (1)	Fines (1)	Silt (1)	0.005 mm Clay (1)	USCS(2)	Compaction: Optimum Moisture	Compaction: Maximum Dry Density	Natural Moisture Content (%) at e_o: SPT	Triaxial, Compression or Direct Shear: 1	2	3	Consolidation	Avg.	LL	PL	G_s	Dry Density (pcf) at e_o: SPT	Triaxial, Compression or Direct Shear: 1	2	3	Consolidation	Avg.	Wet Density Avg.	pH	Chloride	Sulfate
Sample	No.	(ft)		(%)	(%)	(%)	(%)	(%)		(%)	(pcf)																(pcf)		(mg/kg)	(mg/kg)
B-6030	SS-12	38.5	SS	0.0	92.1	7.9			SP-SM			23.1					23.1													
B-6030	SS-13	43.5	SS	0.0	44.5	55.5			CH			35.9					35.9	54	22											
TP-B-1108	B1	8.5	Bulk	0.0	75.1	24.9			SM	14.8	120.0																	5.14	80.0	8.6
TP-B-1117	B1	6.0	Bulk	0.0	92.2	7.8			SP-SM	5.1	111.3																	5.30	71.0	11.0
TP-B-1121	B1	6.0	Bulk	0.1	87.6	12.3			SM	13.7	116.3							NV	NP									6.40	450.0	13.0
TP-B-1125	B1	6.0	Bulk	0.0	95.0	5.0			SP-SM	7.3	107.1							NV	NP									7.89	71.0	8.1
TP-B-1185	B1	6.0	Bulk	0.0	26.7	73.3			MH	63.3								91	46											
TP-B-1194	B1	5.0	Bulk	0.0	91.6	8.4			SP-SM	5.4	112.8																	5.23	74.0	18.0
TP-B-1194	B2	8.0	Bulk	0.0	71.9	28.1			SC	15.1	120.7							37	22									5.25	91.0	16.0
TP-B-1197	B1	5.0	Bulk	0.0	89.9	10.1			SP-SM	6.6	113.2							NV	NP									5.69	250.0	15.0

(1) Due to computer roundoff, particle size fractions may total 100 ± 1. Fines include silt plus clay.
(2) USCS Symbol is based on visual-manual method where incomplete classification testing was performed.

Prepared By/Date: Alexandra Taylor/11-6-07 AT
Checked By/Date: Gautham Pillappa/11-6-07 GSP

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.2	22.6	64.7	12.5	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-1	0/257.89 Ft.	12/4/06		SAND, silty (SM)	8.3		

Client GPC c/o SNOC

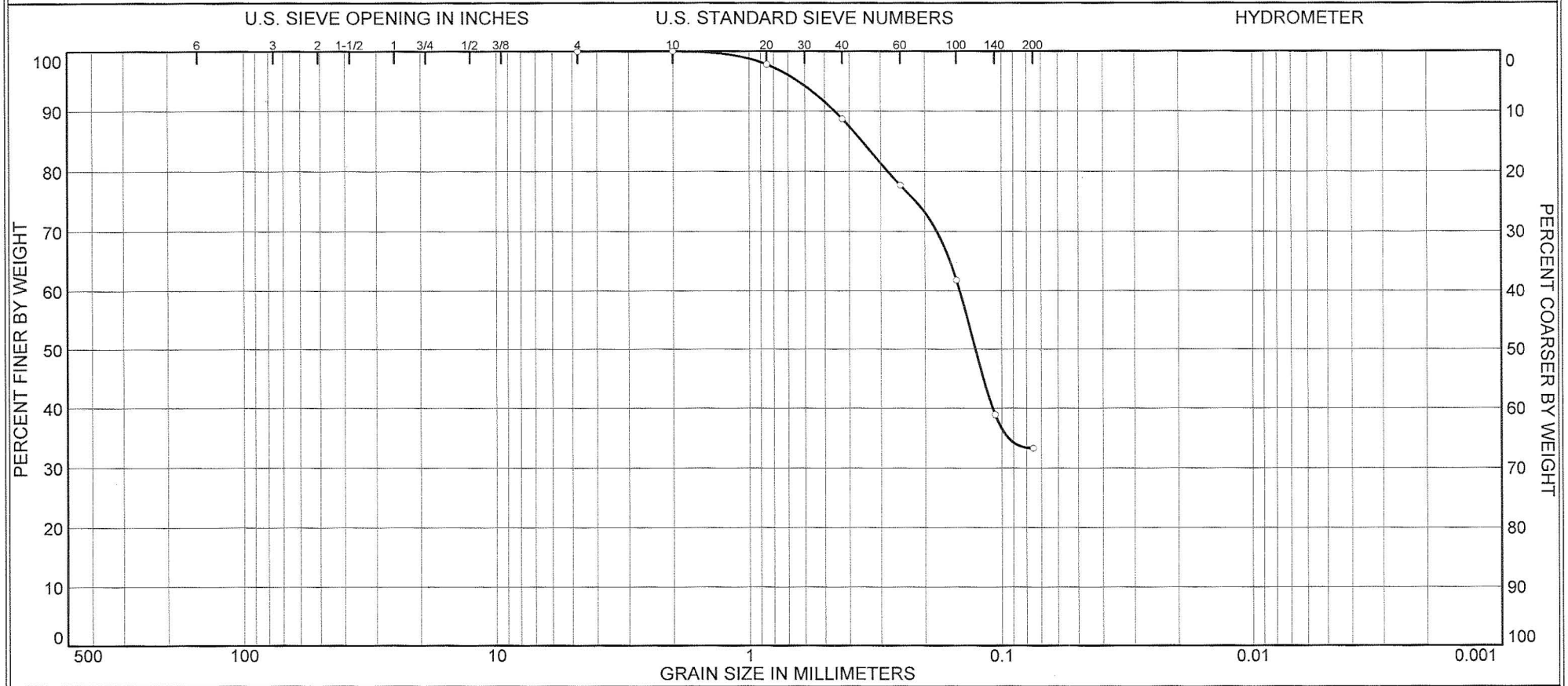
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7109

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.0	11.3	55.4	33.3	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-3	3.5/254.39 Ft.	12/4/2006		SAND, silty (SM)	18.5		

Client GPC c/o SNOC

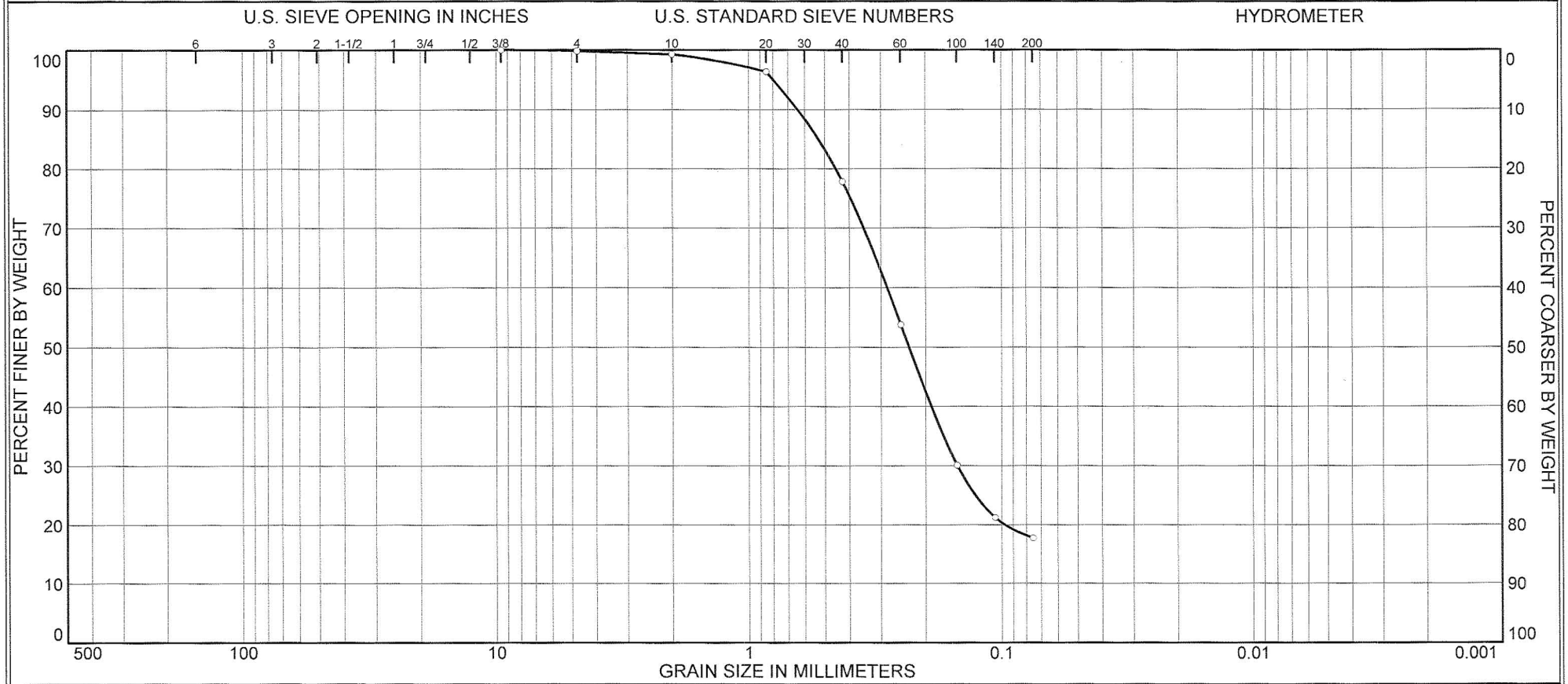
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7110

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.2	0.5	21.5	60.1	17.7	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-4	6.0/251.89 Ft.	12/4/2006		SAND,silty (SM)	12.5		

Client GPC c/o SNOC

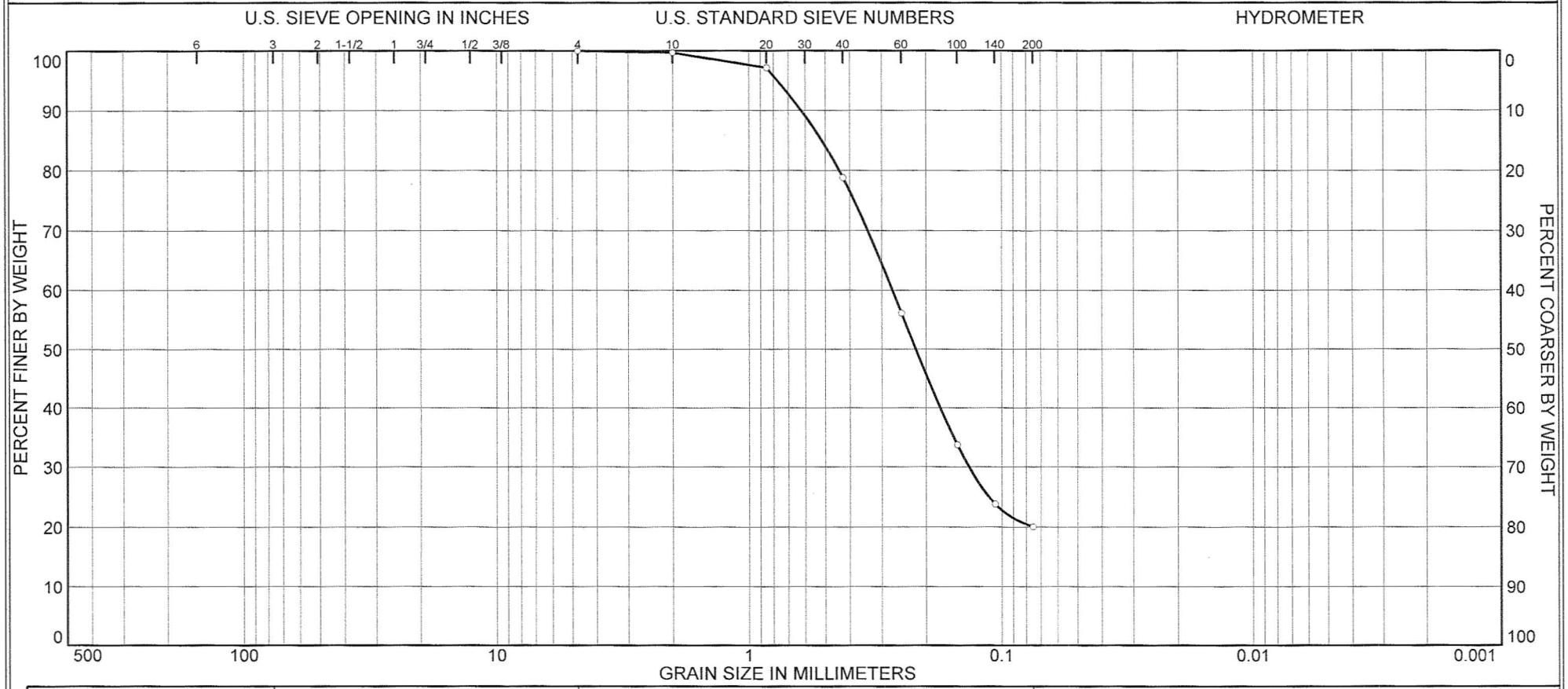
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7111

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.3	20.9	58.8	20.0	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-6	11.0/246.89 Ft.	12/4/2006		SAND, silty (SM)	12.9		

Client GPC c/o SNOC

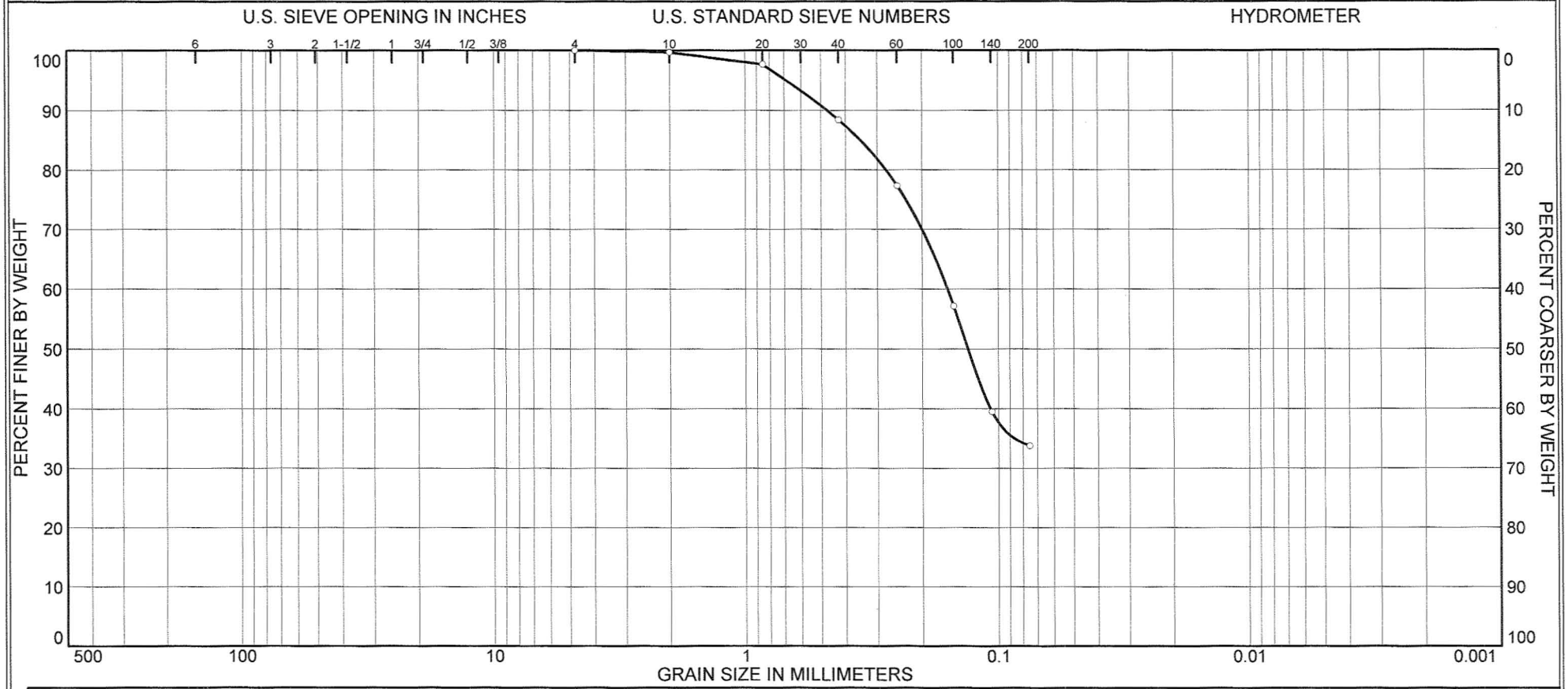
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7112

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.3	11.3	54.6	33.8	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-8	18.5/239.39	12/4/2006	SC	SAND, clayey (SC)	23.8	69	19

Client GPC c/o SNOC

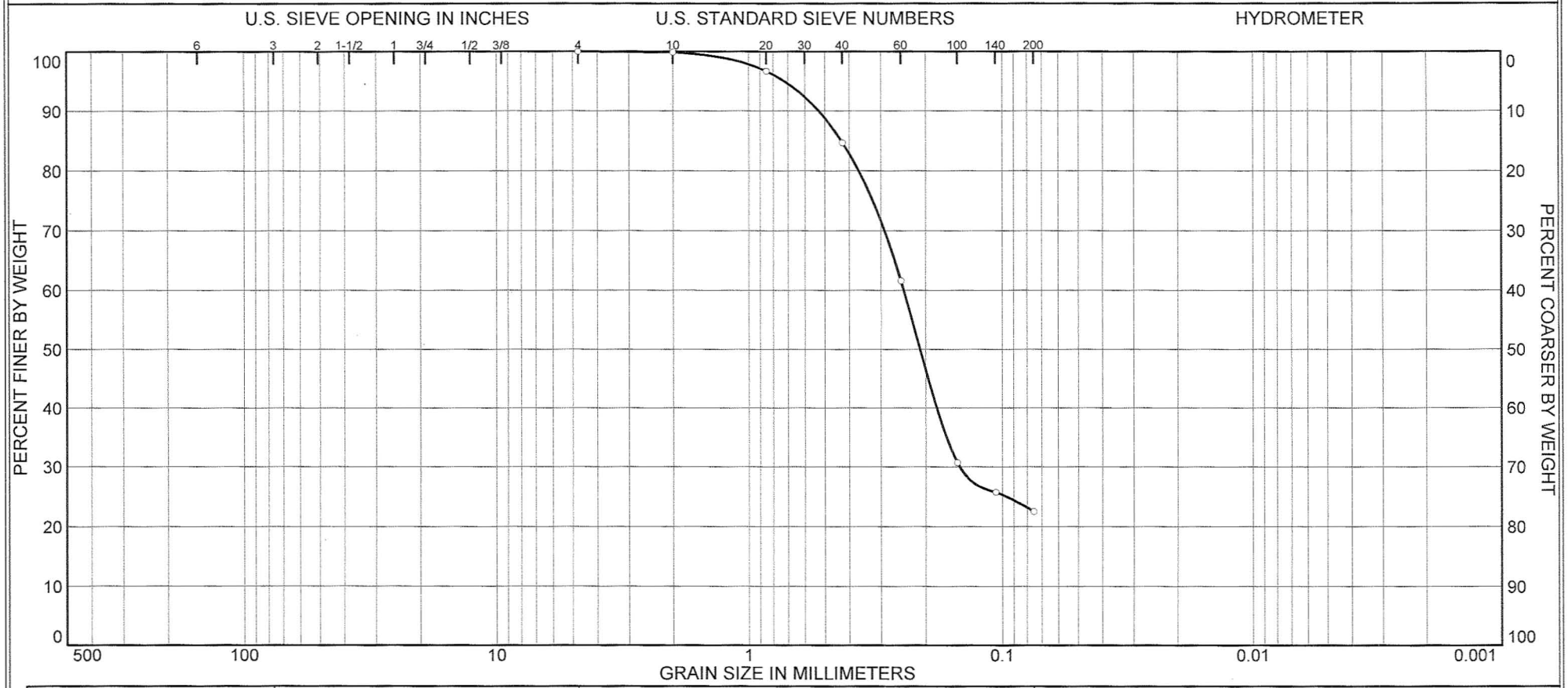
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7113

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.1	15.2	62.2	22.5	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-9	23.5/234.39 Ft.	12/4/2006		SAND, clayey (SC)	16.4		

Client GPC c/o SNOC

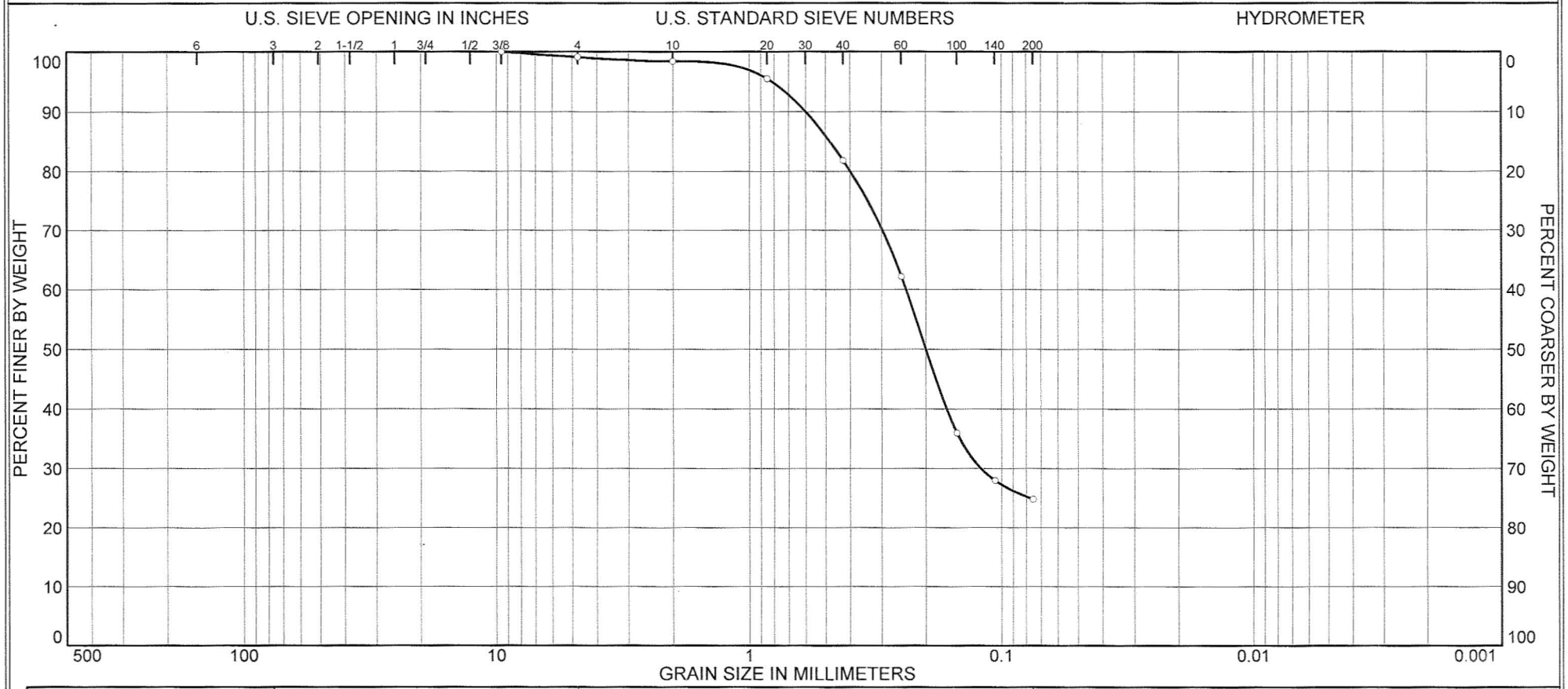
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7114

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.9	0.7	16.6	57.0	24.8	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-11	33.5/224.39 Ft.	12/4/2006		SAND, silty (SM)	14.8		

Client GPC c/o SNOC

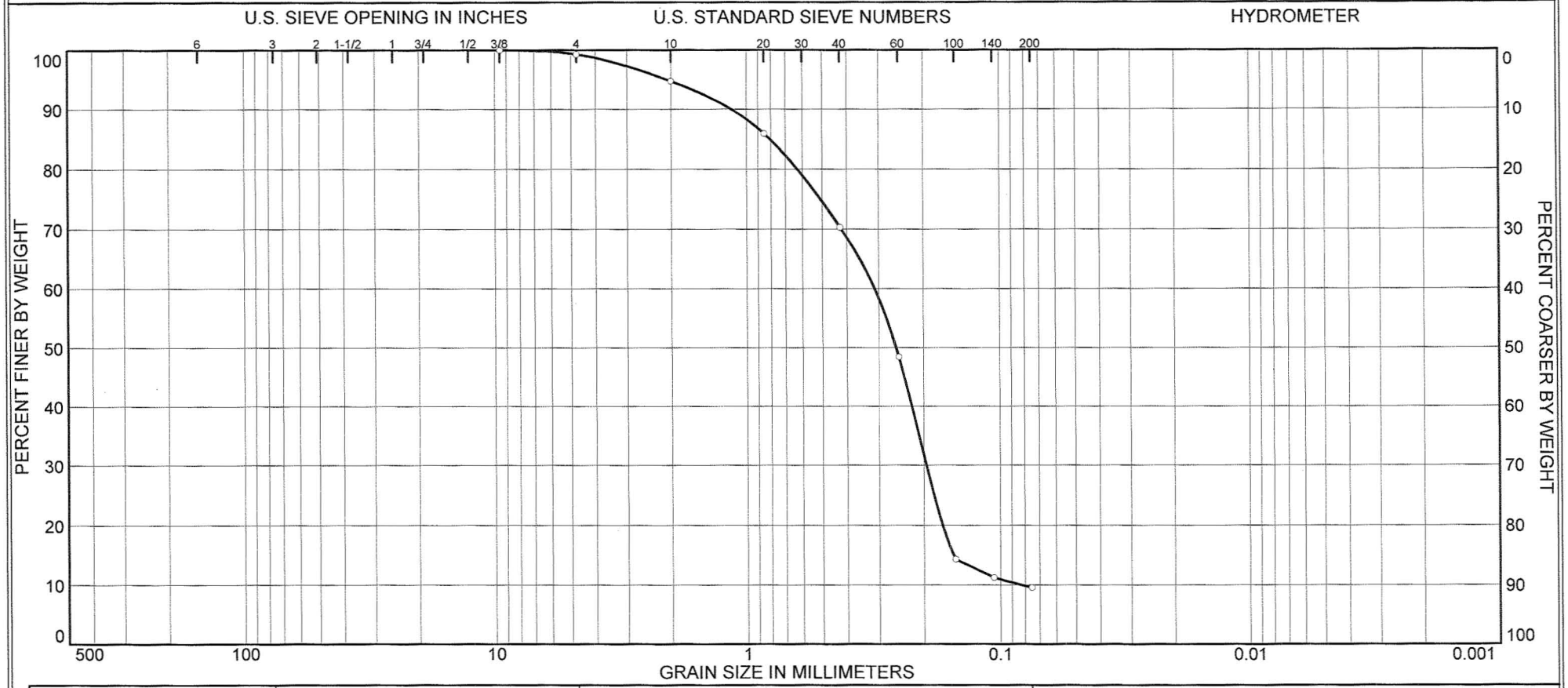
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7115

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.7	4.6	24.4	60.8	9.5	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1105	SS-13	43.5/214.39 Ft.	12/5/2006		SAND, with silt (SP-SM)	15.1		

Client GPC c/o SNOC

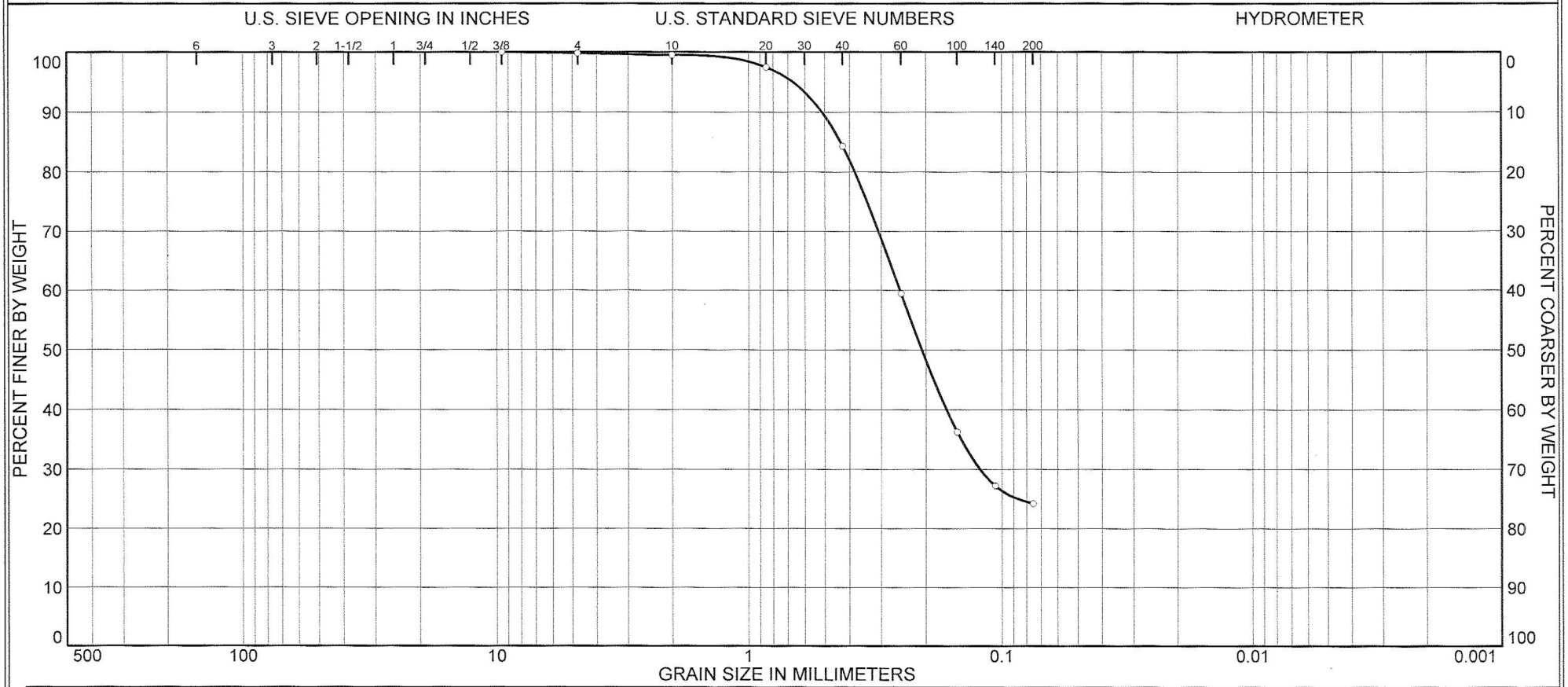
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7116

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.2	0.3	15.2	60.1	24.2	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1108	SS-2	1.5/272.06 Ft.	1/3/2007		SAND, silty (SM)			

Client GPC c/o SNOC

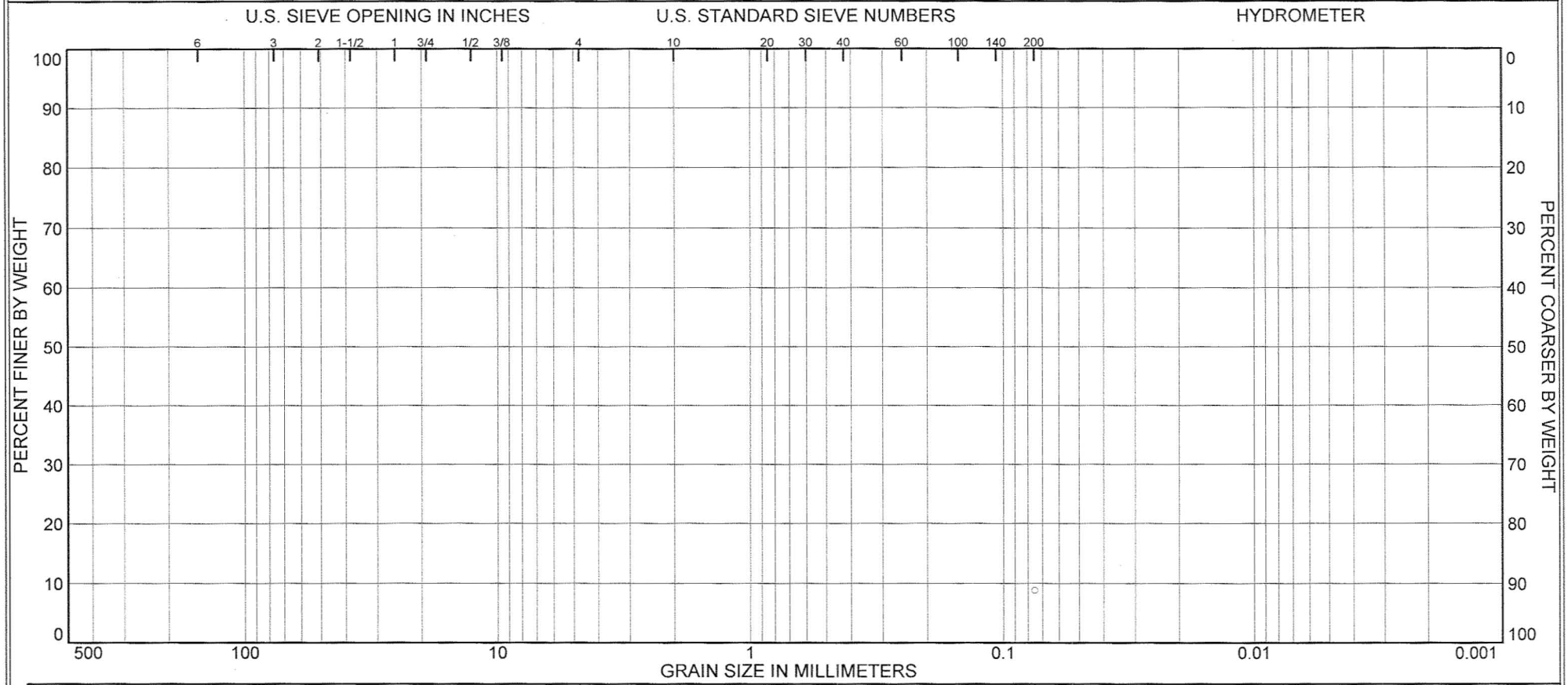
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7270

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
						8.8	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1108	SS-3	3.5/270.06 Ft.	1/3/2007		SAND, with silt (SP-SM)			

Client GPC c/o SNOC

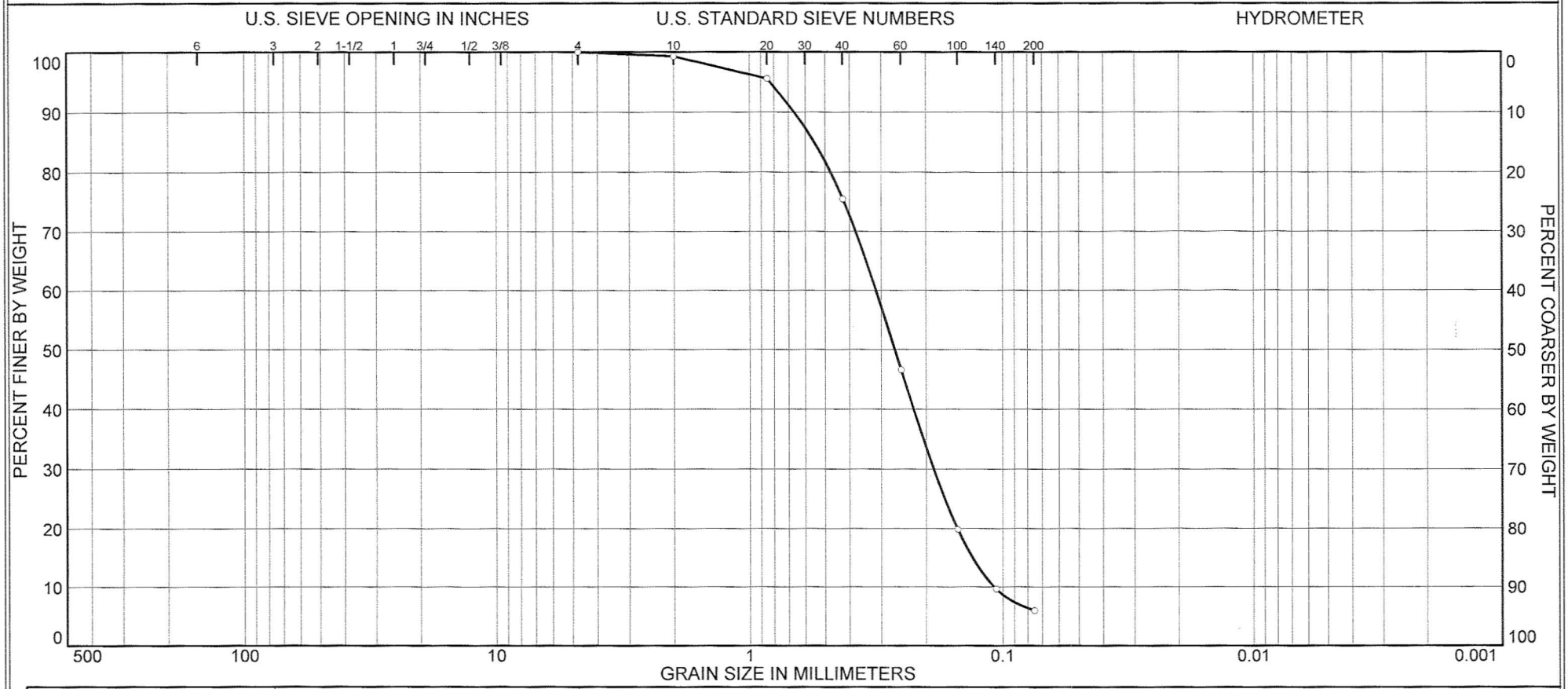
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7271

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	0.7	23.8	69.6	5.9	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1108	SS-4	6/267.56 Ft.	1/3/2007		SAND, with silt (SP-SM)			

Client GPC c/o SNOC

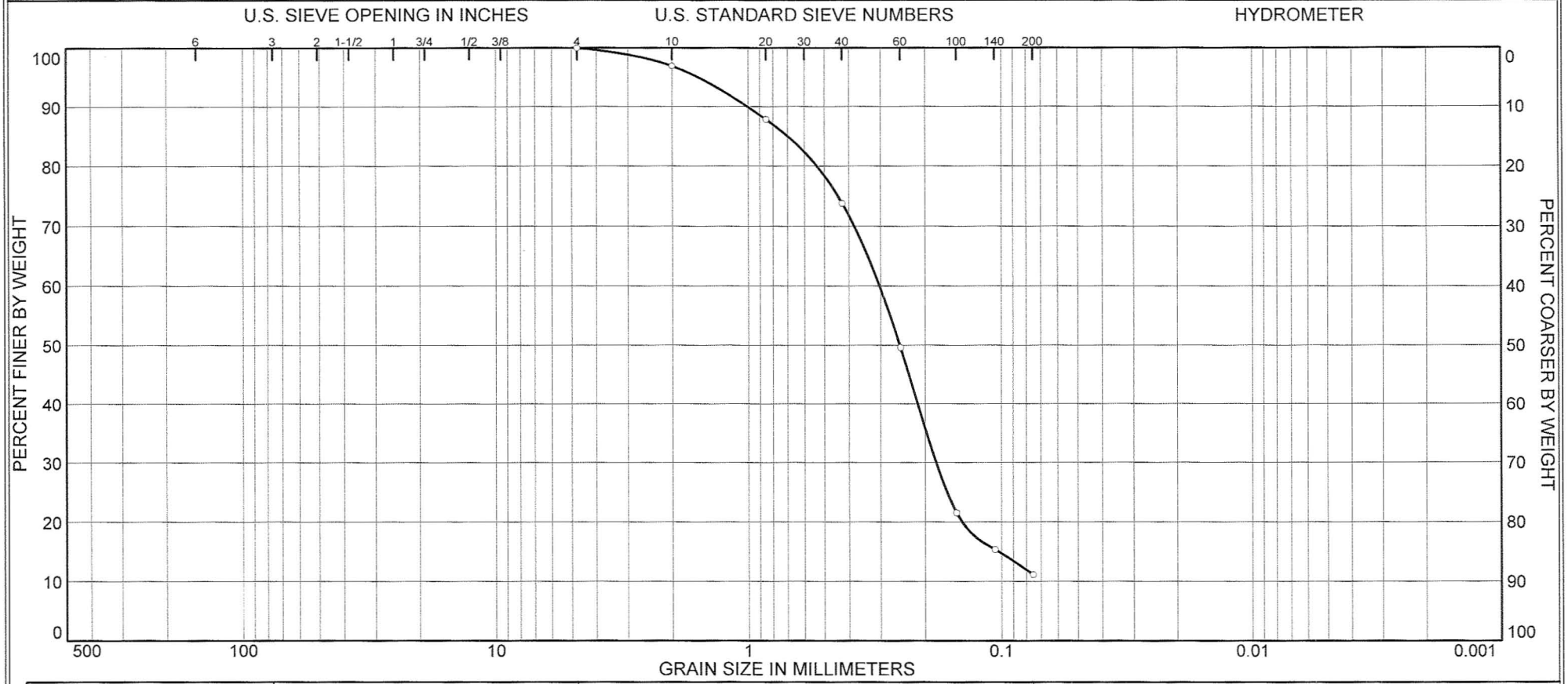
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7272

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	0.0	3.1	23.1	62.7	11.1	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1108	SS-6	11/262.56 ft.	1/3/2007	SP-SC	SAND, with clay (SP-SC)		41	20

Client GPC c/o SNOC

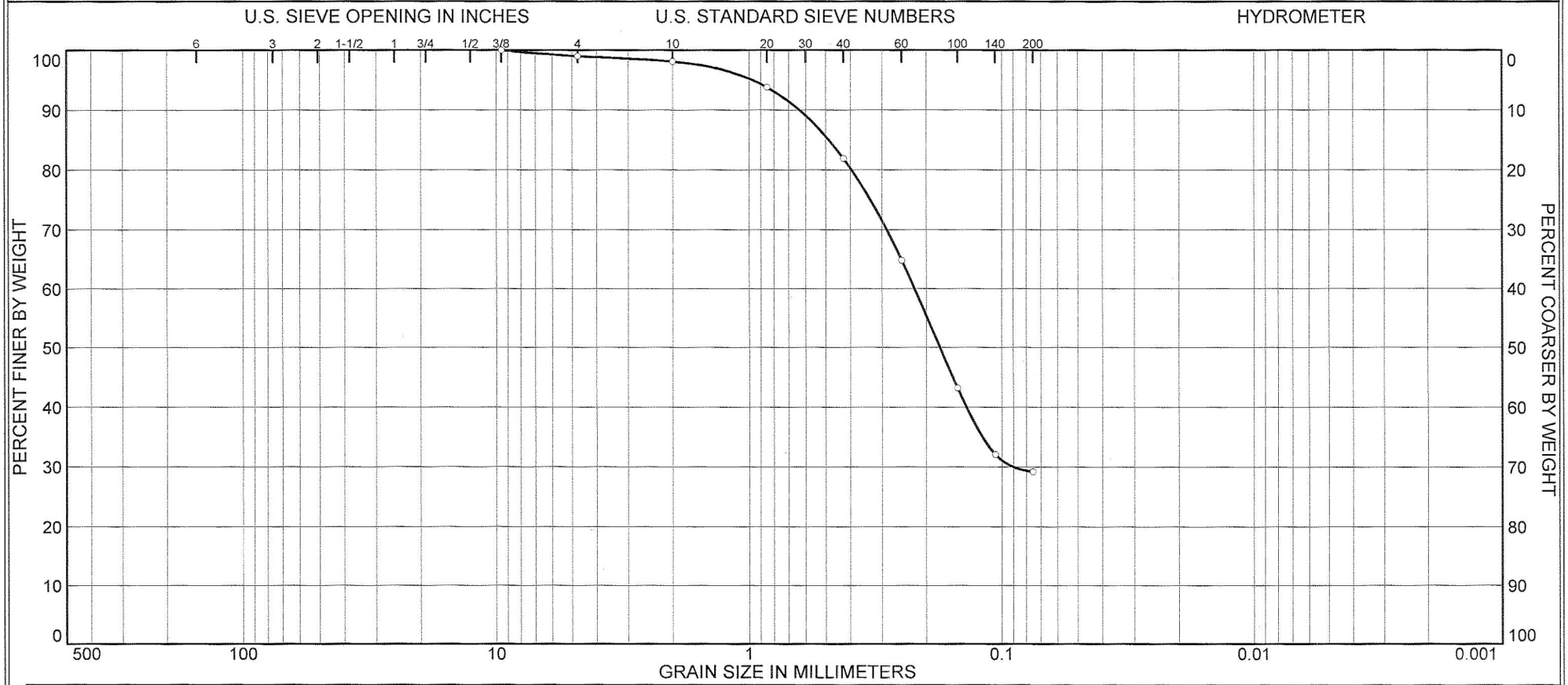
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7273

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



% COBBLES	% GRAVEL		% SAND			% FINES	
	COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
0.0	0.0	1.0	0.9	16.2	52.7	29.2	

SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
B-1108	SS-8	18.5/255.06	1/4/2007		SAND, silty (SM)			
		fT.						

Client GPC c/o SNOC

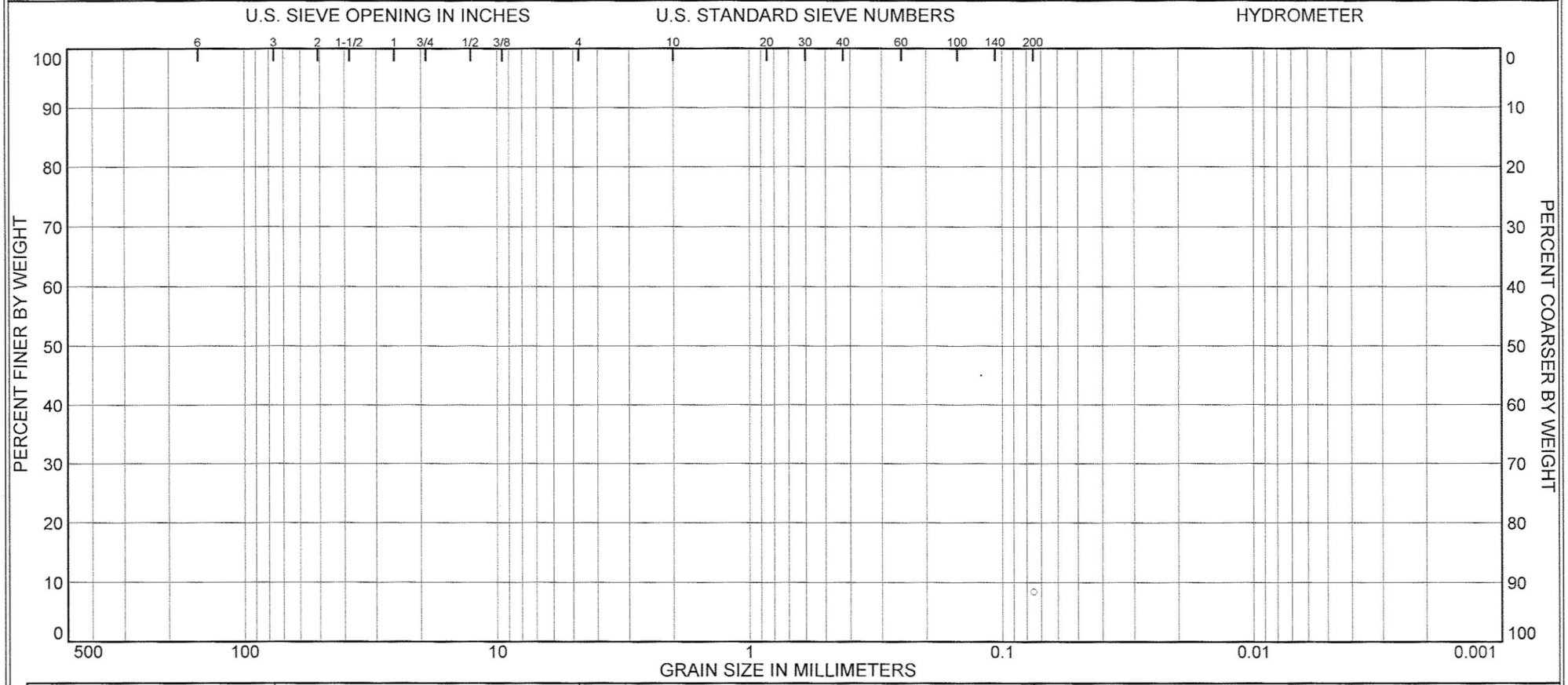
Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7274

MACTEC ENGINEERING AND CONSULTING, INC.

Tested by: RW Reviewed by: HJ

Particle Size Distribution Report



	% COBBLES	% GRAVEL		% SAND			% FINES	
		COARSE	FINE	COARSE	MEDIUM	FINE	SILT	CLAY
○							8.4	

	SOURCE	SAMPLE #	DEPTH/ELEV.	DATE SAMPLED	USCS	MATERIAL DESCRIPTION	NM %	LL	PL
○	B-1108	SS-9	23.5/250.06	1/4/2007		SAND, with silt (SP-SM)			
			Ft.						

Client GPC c/o SNOC

Project Vogtle Units 3 & 4 COL Project

Project No. 6141-06-0286 Figure 7275

MACTEC ENGINEERING AND CONSULTING, INC.

○ Tested by: RW Reviewed by: HJ