Georgia Power Company
333 Piedmont Avenue
Atlanta, Georgia 30308
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Mailing Address:
Post Office Box 4545
Atlanta, Georgia 30302

Georgia Power
the southern electric system

D. O. Foster
Vice President and General Manager
Vogtle Project

September 7, 1984

Director of Nuclear Reactor Regulation
Attention: Ms. Elinor G. Adensam, Chief
Licensing Branch #4
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

File: X2BA06
X2BE02

Log: GN-413

REFERENCE: Letter Number GN-376 dated June 13, 1984
Letter Number GN-404 dated August 10, 1984

NRC DOCKET NUMBERS 50-424 AND 50-425
CONSTRUCTION PERMIT NUMBERS CPPR-108 AND CPPR-109
VOGTLE ELECTRIC GENERATING PLANT - UNITS 1 AND 2
TESTING PROGRAM FOR CATEGORY I BACKFILL

Dear Mr. Denton:

In the above referenced letter number GN-404, GPC transmitted the results of the testing program for Category I backfill from both GPC and the Law Engineering Testing Company. In the law report the compaction test data sheet for sample number 2 was inadvertently omitted. This data sheet is enclosed in this transmittal.

The permeability test of sample numbers 10 and 11 have been completed, and the results of these tests are also included in this transmittal.

If there are any questions concerning the attached information or the information presented in the above referenced letters, do not hesitate to contact us.

Yours truly,

D. O. Foster

DOF/JAB/sw
xc: M. A. Miller
R. A. Thomas
J. A. Bailey
L. T. Gucwa
J. E. Joiner
G. F. Trowbridge
C. A. Stangler
W. F. Sanders
L. Fowler
W. R. Ferris
M. Malcom
M. A. Perovich
Z. Yazdani
W. T. Nickerson
H. H. Gregory, III
J. P. O'Reilly

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LAW ENGINEERING TESTING COMPANY
geotechnical, environmental & construction materials consultants
396 PLASTERS AVENUE, N.E.
P.O. BOX 13260 • ATLANTA, GEORGIA 30324
(404) 873-4761

August 21, 1984

Southern Company Services, Inc.
P.O. Box 2625
Birmingham, Alabama 35202

Attention: Mr. J. A. Bailey

Subject: Confirmatory Laboratory Testing Program
For Category I Backfill
Vogtle Electrical Generating Plant
LETCo Job Number 7429

Gentlemen:

On August 20, 1984, I received a telephone call from Mr. Zia Yazdani of Bechtel Corporation concerning our report of August 8, 1984. Mr. Yazdani indicated that the Compaction Test Data Sheet for sample number 2 was not includes in his copy of the report. Attached are copies of the Compaction Test Data Sheet for sample 2. Pleases add a copy of this sheet to any other copy of the report for which it was omitted.

Very truly yours,

William Allen Lancaster
Civil Engineer

/ej

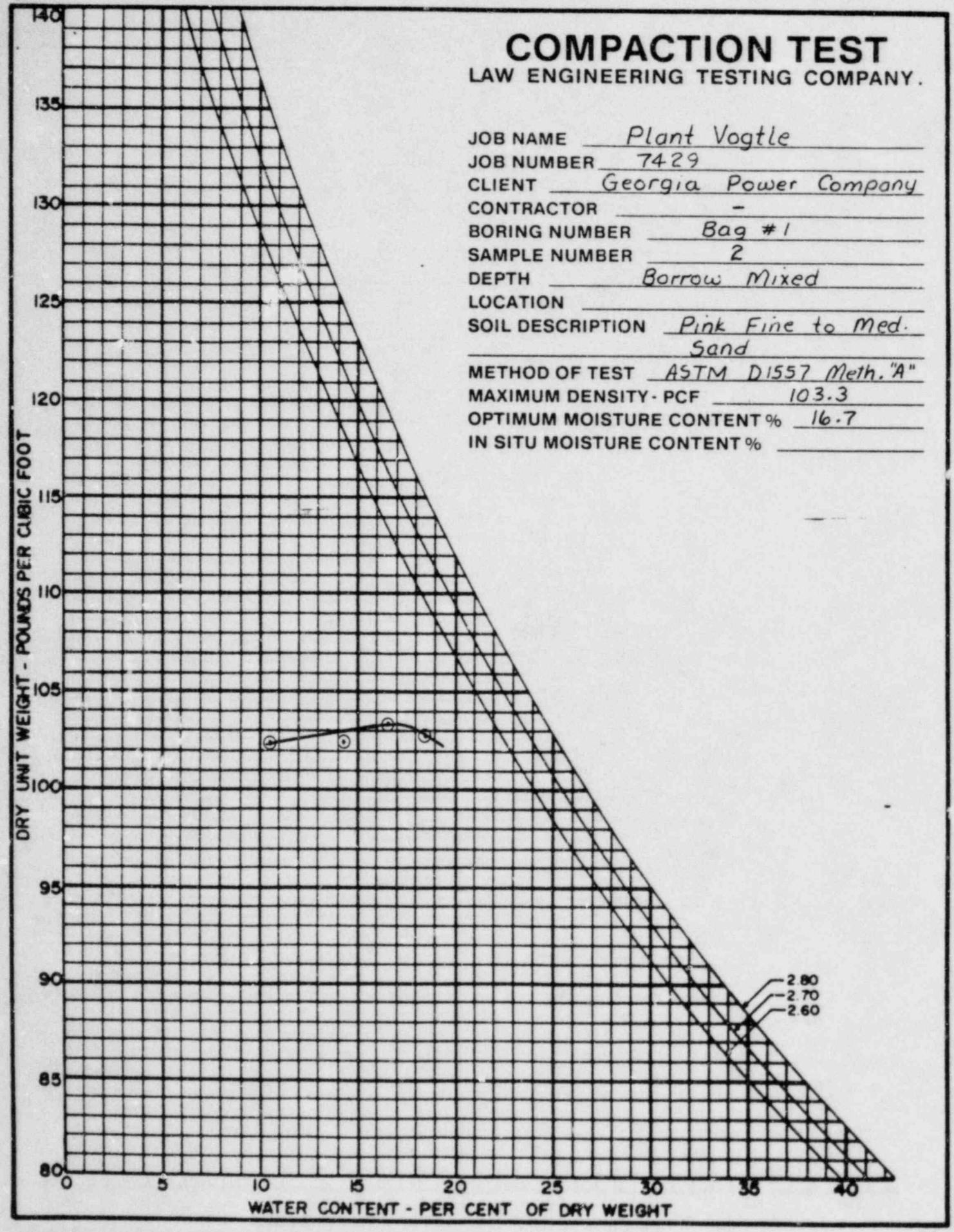
cc: Mr. Zia Yardani

AF 34913A

COMPACTION TEST

LAW ENGINEERING TESTING COMPANY.

JOB NAME Plant Vogtle
JOB NUMBER 7429
CLIENT Georgia Power Company
CONTRACTOR -
BORING NUMBER Bag #1
SAMPLE NUMBER 2
DEPTH Borrow Mixed
LOCATION
SOIL DESCRIPTION Pink Fine to Med. Sand
METHOD OF TEST ASTM D1557 Meth. "A"
MAXIMUM DENSITY - PCF 103.3
OPTIMUM MOISTURE CONTENT % 16.7
IN SITU MOISTURE CONTENT %



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LAW ENGINEERING TESTING COMPANY
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(404) 873-4761

August 31, 1984

Southern Company Services, Inc.
P.O. Box 2625
Birmingham, Alabama 35202

Attention: Mr. J. A. Bailey

Subject: Confirmatory Laboratory Testing Program
For Category I Backfill Permeability Testing
Vogtle Electrical Generating Plant
LETCo Job Number 7429

Gentlemen:

This report presents the results of the permeability tests which were performed on two (2) backfill materials for Plant Vogtle Project of Georgia Power Company.

I. INTRODUCTION:

Sample No. 10 and No. 11 were selected representing different grain size ranges, (5% to 9% passing the No. 200 sieve and 9% to 12% passing the No. 200 sieve respectively), to evaluate the coefficient of permeability by falling head method. Sample No. 10 had 5.9% passing the No. 200 sieve and sample No. 11 contained 11.0% passing the No. 200 sieve.

II. PROCEDURE:

A Modified Proctor Compaction Test (ASTM D1557-78, Method A) was performed on each sample to evaluate the maximum dry density of the soils, and permeability specimens then were compacted at approximately 100,97, 94, and 91 percent of the modified proctor density. The samples were compacted in six layers using a moist tamping method utilizing a small height controlled tamper.

The permeability tests were performed in general accordance with the procedure described in Appendix VII of the Laboratory Testing Manual (EM 1110-2-1906, Permeability Tests with Back Pressure) published by the U.S. Army Corps of Engineers. The permeability tests with back pressure were performed in a pressure chamber (Triaxial Cell), and

by increasing the chamber pressure and back pressure at the same time, the saturation processes were completed. A pressure transducer was used to measure the "B" value, with the values ranging from 0.90 to 1.00. Utilizing a 2 KSF confining pressure, the sample then was consolidated until primary consolidation was completed. The coefficient of premeability by falling head method was calculated directly from computations using data obtained from a series of readings for each sample. At the end of each test, the sample was removed from the pressure chamber and the wet weight was obtained in order to calculate the unit weight and moisture content. Based on the final data, the actual density of each specimen was computed.

The results of mositure content, unit weights, void ratio, and permeability tests are shown on the tabulated laboratory test sheets which are attached to this report.

III. DISCUSSION:

Results of the permeability tests show that for sample No. 10 with 5.9% passing the No. 200 sieve, the coefficient of permeability ranges from approximately 2.0×10^{-3} cm/sec. to 6.0×10^{-3} cm/sec. For sample No. 11 with 11.0% passing the No. 200 sieve, the coefficient of permeability ranged from approximately 4.0×10^{-4} cm/sec. to 4.0×10^{-3} cm/sec.

If you have any questions concerning this report or if we can be of additional assistance to you, please contact us.

Very truly yours,

LAW ENGINEERING TESTING COMPANY

Khalil Dehghanian, EIT

William Allen Lancaster
Civil Engineer

/es

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JOB NO. 7429 SHEET 1 OF 1
JOB NAME Plant Vogtle
BY K.D. DATE 8-15-84
CHECKED BY JGS DATE 8/29/84

Table of Permeability Test results, Sample # 10

(Falling Head)

		92.9% of Compaction	93.9% of Compaction	95.7% of Compaction	99.8% of Compaction	Remarks
Permeability Test, K Cm/sec.		6.07×10^{-3}	4.58×10^{-3}	4.41×10^{-3}	2.26×10^{-3}	8 to 10 Trials
"B" Value		1.00	0.98	0.91	0.92	w/C.P. = 60 to 90 psi B.P. = 58 to 88 psi Conf. P. = 14 psi (2 x S.P.)
Moisture Content (%)	Before Test	14.9	13.8	15.1	14.1	
	After Test	24.2	23.1	22.1	17.1	
Wet Unit wt. (pcf)	Before Test	115.1	115.3	118.8	122.7	
	After Test	124.5	124.7	126.0	125.9	
Dry Unit wt., pcf Before & After Test		100.2	101.3	103.2	107.6	mod. Proctor { γ_d = 107.8 pcf w.c. = 14.7%
Void Ratio, e		0.651	0.633	0.603	0.538	S.G. = 2.65

Diameter of Specimen = 2.88 In.

Height of Specimen = 5.60 In.

Area of Specimen = 3.770 Sq. In.

Volume of Specimen = 0.02111 Cu. In.

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JOB NO. 7429 SHEET 1 OF 1
JOB NAME Plant Vogtle
BY K.D. DATE 8-20-84
CHECKED BY JEF DATE 8/29/84

Table of permeability Test results, Sample # 11
(Falling Head)

		91.2% of Compaction	94% of Compaction	97% of Compaction	98.8% of Compaction	Remarks
Permeability Test, K Cm/Sec.		4.11×10^{-3}	1.82×10^{-3}	1.43×10^{-3}	4.33×10^{-4}	8 to 10 trials
"B" Value		1.00	0.98	0.91	0.90	w/C.P. = 45 to 80 psi B.P. = 43 to 78 psi Conf. Press. = 14 psi (2 ks
Moisture Content (%)	Before Test	12.7	12.9	13.0	13.1	
	After Test	22.4	20.9	19.4	19.8	
Wet Unit wt. (pcf)	Before Test	118.5	122.4	126.3	128.8	
	After Test	128.7	131.1	133.5	136.5	
Dry Unit wt., pcf Before & After Test		105.2	108.4	111.8	113.9	mod. Proctor { γ_d = 115.3 pcf w.c. = 13.2%
Void Ratio, e		0.585	0.537	0.491	0.463	S.G. = 2.67

Diameter of specimen = 2.88 In.
Height of specimen = 5.60 In.
Area of specimen = 3.770 Sq. In.
Volume of specimen = 0.02111 Cu. In.