

## **ATTACHMENT C – PENETROMETER TEST RESULTS**



## **Vogtle Units 3 & 4 COL Project**

### **Attachment C Cone Penetrometer Test Results**

**Consists of:  
Gregg In-Situ Report, dated May 4, 2007**

**Volume 1 of 1**

**Job No. 6141-06-0286**

**MACTEC ENGINEERING  
AND CONSULTING, INC.**

**May 31, 2007**





May 31, 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 C – CPT Test Results**  
**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 C 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.

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

Pieter J. Depree.  
Principal Geotechnical Engineer  
Registered, Georgia 19637

## ATTACHMENT C

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  
Birmingham, Alabama 35201  
Phone: (205) 992-6697  
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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
Geophysical Test Data (Downhole and Field Electrical Resistivity) .....	See Attachment D
ReMi Seismic Shear Wave Velocity Measurements .....	See Attachment E
Laboratory Testing Data (Geotechnical).....	See Attachment F
Resonant Column Torsional Shear (RCTS) Test Results.....	See Attachment G

## **ATTACHMENT C**

### **CONE PENETROMETER TEST RESULTS**

#### **CONSISTS OF:**

**Gregg In-Situ Report, dated May 4, 2007**

**Volume 1 of 1**

## ATTACHMENT C

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## GREGG IN SITU, INC.

GEOTECHNICAL AND ENVIRONMENTAL INVESTIGATION SERVICES

May 4, 2007

MACTEC

Attn: Matt Cooke

396 Plasters Ave.

Atlanta, Georgia 30324

Subject: CPT Site Investigation  
Plant Vogtle  
Augusta, Georgia  
GREGG Project Number: 07-002SC

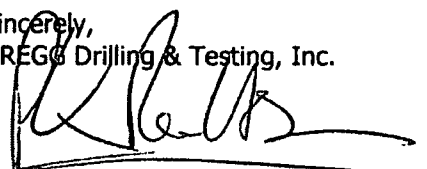
Dear Mr. Cooke:

The following report presents the results of GREGG Drilling & Testing's Cone Penetration Test investigation for the above referenced site. The following testing services were performed:

1	Cone Penetration Tests	(CPTU)	<input checked="" type="checkbox"/>
2	Pore Pressure Dissipation Tests	(PPD)	<input checked="" type="checkbox"/>
3	Seismic Cone Penetration Tests	(SCPTU)	<input checked="" type="checkbox"/>
4	Resistivity Cone Penetration Tests	(RCPTU)	<input type="checkbox"/>
5	UVIF Cone Penetration Tests	(UVIFCPTU)	<input type="checkbox"/>
6	Groundwater Sampling	(GWS)	<input type="checkbox"/>
7	Soil Sampling	(SS)	<input type="checkbox"/>
8	Vapor Sampling	(VS)	<input type="checkbox"/>
9	Vane Shear Testing	(VST)	<input type="checkbox"/>
10	SPT Energy Calibration	(SPTE)	<input type="checkbox"/>

A list of reference papers providing additional background on the specific tests conducted is provided in the bibliography following the text of the report. If you would like a copy of any of these publications or should you have any questions or comments regarding the contents of this report, please do not hesitate to contact our office at (925) 313-5800.

Sincerely,  
GREGG Drilling & Testing, Inc.

  
Peter Robertson  
Technical Operations

1112 Pasture Lane • Columbia, South Carolina 29201 • (803) 253-7633 • FAX (803) 253-7634

OTHER OFFICES: LOS ANGELES • SAN FRANCISCO • HOUSTON  
[www.greggdrilling.com](http://www.greggdrilling.com)



## GREGG IN SITU, INC.

GEOTECHNICAL AND ENVIRONMENTAL INVESTIGATION SERVICES

### Cone Penetration Test Sounding Summary

-Table 1-

CPT Sounding Identification	Date	Termination Depth (Feet)	Depth of Groundwater Samples (Feet)	Depth of Soil Samples (Feet)	Depth of Pore Pressure Dissipation Tests (Feet)
C-1101	1/24/07	71.4	-	-	50.0, 71.4
C-1102	1/24/07	51.4	-	-	47.1, 51.3
C-1103	1/23/07	27.4	-	-	16.1, 27.4
C-1104	1/23/07	77.1	-	-	38.2, 77.1
C-1105	1/25/07	50.2	-	-	-
C-1106	1/24/07	20.0	-	-	-
C-1107	1/19/07	71.0	-	-	28.1, 71.0
C-1108	1/19/07	59.6	-	-	46.1, 59.5
C-1109	1/20/07	72.5	-	-	58.1, 72.5
C-1110	1/20/07	72.3	-	-	-
C-1111	1/23/07	32.2	-	-	-
C-3001s	1/27/07	70.1	-	-	38.1, 70.0
C-3002s	1/27/07	67.9	-	-	31.0
C-3003s	1/26/07	82.0	-	-	43.1, 82.0
C-3004	1/25/07	72.7	-	-	47.1, 72.0
C-3005s	1/26/07	101.1	-	-	50.4, 101.1
C-4001s	1/31/07	74.2	-	-	34.1, 74.1
C-4002s	1/30/07	82.2	-	-	34.1, 82.2
C-4003s	1/29/07	82.5	-	-	35.1, 82.5
C-4004	1/29/07	77.1	-	-	41.0, 77.1
C-4005s	1/30/07	90.2	-	-	47.1, 90.2

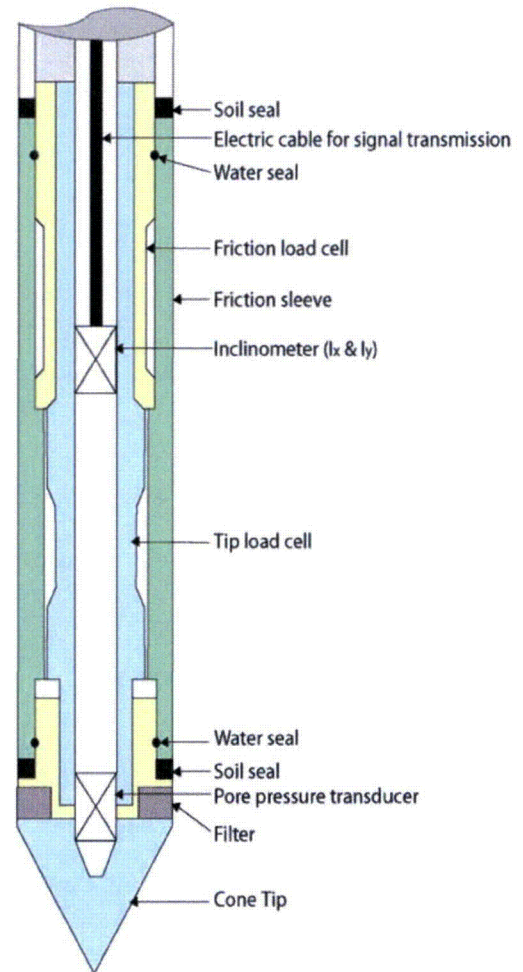


## Cone Penetration Testing Procedure (CPT)

Gregg Drilling & Testing, Inc. carries out all Cone Penetration Tests (CPT) using an integrated electronic cone system, *Figure CPT*. The soundings were conducted using a 20 ton capacity cone with a tip area of 15 cm<sup>2</sup> and a friction sleeve area of 225 cm<sup>2</sup>. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.85.

The cone takes measurements of cone bearing ( $q_c$ ), sleeve friction ( $f_s$ ) and penetration pore water pressure ( $u_2$ ) at 5-cm intervals during penetration to provide a nearly continuous hydrogeologic log. CPT data reduction and interpretation is performed in real time facilitating on-site decision making. The above mentioned parameters are stored on disk for further analysis and reference. All CPT soundings are performed in accordance with revised (2002) ASTM standards (D 5778-95).

The cone also contains a porous filter element located directly behind the cone tip ( $u_2$ ), *Figure CPT*. It consists of porous plastic and is 5.0mm thick. The filter element is used to obtain penetration pore pressure as the cone is advanced as well as Pore Pressure Dissipation Tests (PPDT's) during appropriate pauses in penetration. It should be noted that prior to penetration, the element is fully saturated with silicon oil under vacuum pressure to ensure accurate and fast dissipation.



*Figure CPT*

When the soundings are complete, the test holes are grouted using a Gregg In Situ support rig. The grouting procedures generally consist of pushing a hollow CPT rod with a "knock out" plug to the termination depth of the test hole. Grout is then pumped under pressure as the tremie pipe is pulled from the hole. Disruption or further contamination to the site is therefore minimized.





## Cone Penetration Test Data & Interpretation

Soil behavior type and stratigraphic interpretation is based on relationships between cone bearing ( $q_c$ ), sleeve friction ( $f_s$ ), and pore water pressure ( $u_2$ ). The friction ratio ( $R_f$ ) is a calculated parameter defined by  $100f_s/q_c$  and is used to infer soil behavior type. Generally:

Cohesive soils (clays)

- High friction ratio ( $R_f$ ) due to small cone bearing ( $q_c$ )
- Generate large excess pore water pressures ( $u_2$ )

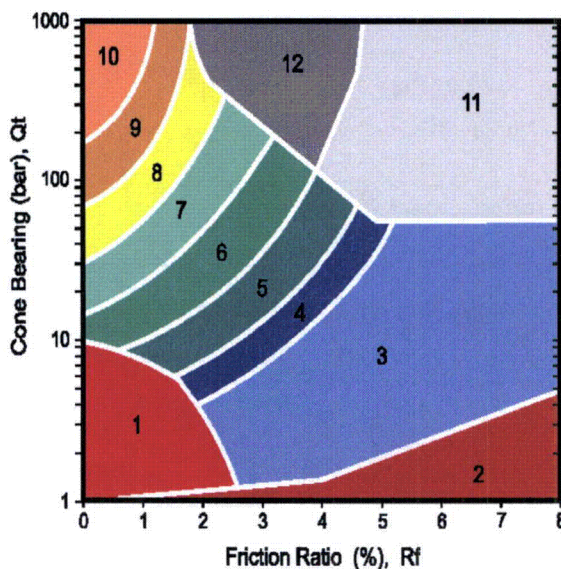
Cohesionless soils (sands)

- Low friction ratio ( $R_f$ ) due to large cone bearing ( $q_c$ )
- Generate very little excess pore water pressures ( $u_2$ )

A complete set of baseline readings are taken prior to and at the completion of each sounding to determine temperature shifts and any zero load offsets. Corrections for temperature shifts and zero load offsets can be extremely important, especially when the recorded loads are relatively small. In sandy soils, however, these corrections are generally negligible.

The cone penetration test data collected from your site is presented in graphical form in Appendix CPT. The data includes CPT logs of measured soil parameters, computer calculations of interpreted soil behavior types (SBT), and additional geotechnical parameters. A summary of locations and depths is available in Table 1. Note that all penetration depths referenced in the data are with respect to the existing ground surface.

Soil interpretation for this project was conducted using recent correlations developed by Robertson et al, 1990, *Figure SBT*. Note that it is not always possible to clearly identify a soil type based solely on  $q_c$ ,  $f_s$ , and  $u_2$ . In these situations, experience, judgment, and an assessment of the pore pressure dissipation data should be used to infer the soil behavior type.



ZONE	Qt/N	SBT
1	2	Sensitive, fine grained
2	1	Organic materials
3	1	Clay
4	1.5	Silty clay to clay
5	2	Clayey silt to silty clay
6	2.5	Sandy silt to clayey silt
7	3	Silty sand to sandy silt
8	4	Sand to silty sand
9	5	Sand
10	6	Gravely sand to sand
11	1	Very stiff fine grained*
12	2	Sand to clayey sand*

\*over consolidated or cemented

Figure SBT





## Pore Pressure Dissipation Tests (PPDT)

Pore Pressure Dissipation Tests (PPDT's) conducted at various intervals measured hydrostatic water pressures and determined the approximate depth of the ground water table. A PPDT is conducted when the cone is halted at specific intervals determined by the field representative. The variation of the penetration pore pressure ( $u$ ) with time is measured behind the tip of the cone and recorded by a computer system.

Pore pressure dissipation data can be interpreted to provide estimates of:

- Equilibrium piezometric pressure
- Phreatic Surface
- In situ horizontal coefficient of consolidation ( $c_h$ )
- In situ horizontal coefficient of permeability ( $k_h$ )

In order to correctly interpret the equilibrium piezometric pressure and/or the phreatic surface, the pore pressure must be monitored until such time as there is no variation in pore pressure with time, *Figure PPDT*. This time is commonly referred to as  $t_{100}$ , the point at which 100% of the excess pore pressure has dissipated.

A complete reference on pore pressure dissipation tests is presented by Robertson et al. 1992.

A summary of the pore pressure dissipation tests is summarized in Table 1. Pore pressure dissipation data is presented in graphical form in Appendix PPDT.

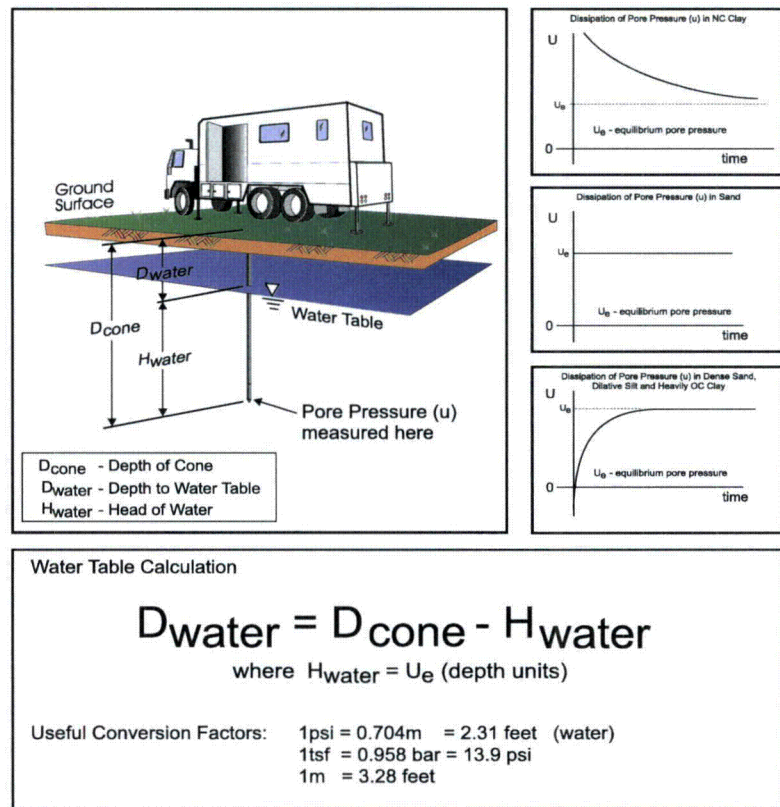


Figure PPDT



## Seismic Cone Penetrometer Testing (SCPTu)

Gregg Drilling & Testing, Inc. uses a modified CPT cone that contains a built in seismometer to measure compression and shear wave velocities in addition to the standard piezocone parameters ( $q_c$ ,  $f_s$ , and  $u_2$ ). Therefore, four independent readings are compiled with depth in a single sounding. The standard CPT parameters are recorded continuously while the seismic test is usually performed at 5-foot intervals.

Gregg generates shear waves by striking a seismic beam coupled to the ground surface by a hydraulic cylinder under the CPT rig, *Figure SCPTu*. Compression waves are generated by striking an auger in the ground. The sledgehammer that strikes the beam/auger acts as a trigger, initiating the recording of the seismic wave trace. Before measurements are taken, the rods are decoupled from the CPT rig to prevent energy transmission down the rods.

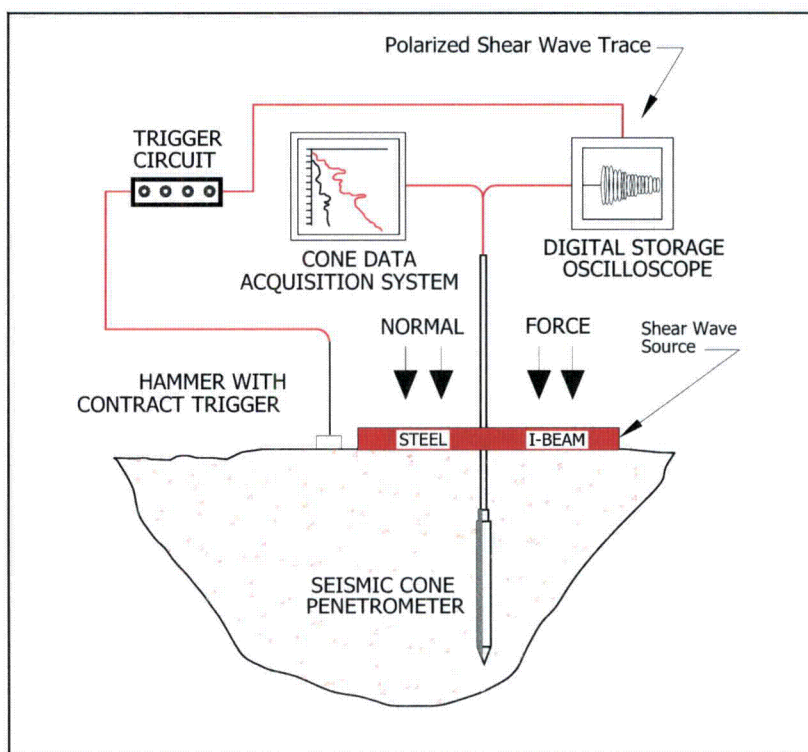
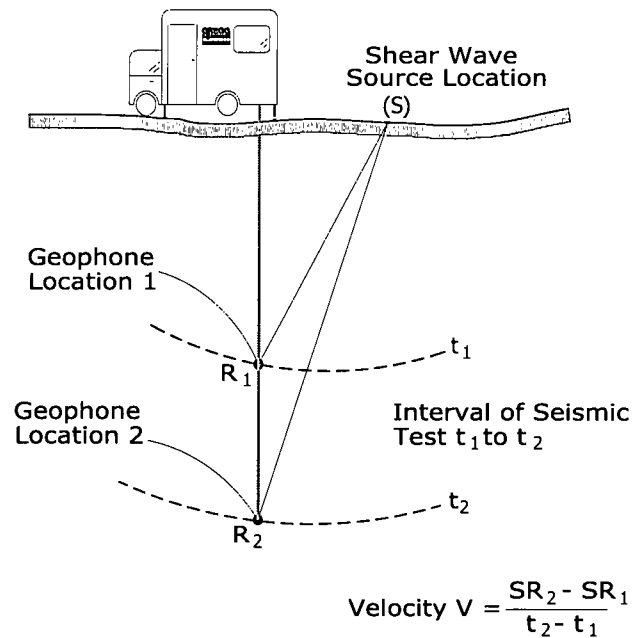


Figure SCPTu

Geophones in the body of the piezocone recognize the arriving waves generated at the ground surface, *Figure Seismic*. Any waves received by the geophones on the cone penetrometer are sent back up to the truck to be displayed on an oscilloscope. On site software then plots the wave amplitude versus time to calculate wave velocities.

At least two waves are recorded for each test depth so the operator can check consistency of the waveforms. Shear wave data is sampled at a frequency of 20 kHz (20,000 samples per second) and compression wave data is sampled at 50 kHz (50,000 samples per second). To maintain a desired signal resolution, the input sensitivity (gain) is increased with depth.



*Figure Seismic*

Offset distances of the beam from the cone and the location of the geophone are all taken into account in calculations.

The shear wave velocity ( $V_s$ ) provides information about small-strain stiffness while the penetration data provides information about large-strain strength. From interval shear wave velocity ( $V_s$ ) and the mass density ( $\rho$ ) of a soil layer, the dynamic shear modulus ( $G_o$ ) of the soil can be calculated in a specific depth interval. The dynamic shear modulus ( $G_o$ ) is a key parameter for the analysis of soil behavior in response to dynamic loading from earthquakes, vibrating machine foundations, waves and wind.

A summary of the data collected including the depth and location identification is displayed in Table 1 and graphical formats and can be found with the corresponding CPT plot.

For a detailed reference on seismic CPT, refer to Robertson et. al., 1986.



## Cone Penetration Test (CPT) Interpretation

Gregg have recently updated their CPT interpretation and plotting software (2007). The software takes the CPT data and performs basic interpretation in terms of soil behavior type (SBT) and various geotechnical parameters using current published empirical correlations based on the comprehensive review by Lunne, Robertson and Powell (1997). The interpretation is presented in tabular format using MS Excel. The interpretations are presented only as a guide for geotechnical use and should be carefully reviewed. Gregg does not warranty the correctness or the applicability of any of the geotechnical parameters interpreted by the software and does not assume any liability for any use of the results in any design or review. The user should be fully aware of the techniques and limitations of any method used in the software.

The following provides a summary of the methods used for the interpretation. Many of the empirical correlations to estimate geotechnical parameters have constants that have a range of values depending on soil type, geologic origin and other factors. The software uses 'default' values that have been selected to provide, in general, conservatively low estimates of the various geotechnical parameters.

### Input:

- 1 Units for display (Imperial or metric) (atm. pressure,  $p_a = 0.96$  tsf or 0.1 MPa)
- 2 Depth interval to average results, (ft or m). Data are collected at either 0.02 or 0.05m and can be averaged every 1, 3 or 5 intervals.
- 3 Elevation of ground surface (ft or m)
- 4 Depth to water table,  $z_w$  (ft or m) – input required
- 5 Net area ratio for cone,  $a$  (default to 0.85)
- 6 Relative Density constant,  $C_{Dr}$  (default to 350)
- 7 Young's modulus number for sands,  $\alpha$  (default to 5)
- 8 Small strain shear modulus number
  - a. for sands,  $S_G$  (default to 180 for  $SBT_n$  5, 6, 7)
  - b. for clays,  $C_G$  (default to 50 for  $SBT_n$  1, 2, 3 & 4)
- 9 Undrained shear strength cone factor for clays,  $N_{kt}$  (default to 15)
- 10 Over Consolidation ratio number,  $k_{ocr}$  (default to 0.3)
- 11 Unit weight of water, (default to  $\gamma_w = 62.4$  lb/ft<sup>3</sup> or 9.81 kN/m<sup>3</sup>)

### Column

- 1 Depth,  $z$ , (m) – CPT data is collected in meters
- 2 Depth (ft)
- 3 Cone resistance,  $q_c$  (tsf or MPa)
- 4 Sleeve friction,  $f_s$  (tsf or MPa)
- 5 Penetration pore pressure,  $u$  (psi or MPa), measured behind the cone (i.e.  $u_2$ )
- 6 Other – any additional data, if collected, e.g. electrical resistivity or UVIF
- 7 Total cone resistance,  $q_t$  (tsf or MPa)  $q_t = q_c + u(1-a)$

8	Friction Ratio, $R_f$ (%)	$R_f = (f_s/q_t) \times 100\%$
9	Soil Behavior Type (non-normalized), SBT	see note
10	Unit weight, $\gamma$ (pcf or kN/m <sup>3</sup> )	based on SBT, see note
11	Total overburden stress, $\sigma_v$ (tsf)	$\sigma_{vo} = \gamma z$
12	Insitu pore pressure, $u_o$ (tsf)	$u_o = \gamma_w (z - z_w)$
13	Effective overburden stress, $\sigma'_{vo}$ (tsf)	$\sigma'_{vo} = \sigma_{vo} - u_o$
14	Normalized cone resistance, $Q_{tl}$	$Q_{tl} = (q_t - \sigma_{vo}) / \sigma'_{vo}$
15	Normalized friction ratio, $F_r$ (%)	$F_r = f_s / (q_t - \sigma_{vo}) \times 100\%$
16	Normalized Pore Pressure ratio, $B_q$	$B_q = u - u_o / (q_t - \sigma_{vo})$
17	Soil Behavior Type (normalized), $SBT_n$	see note
18	$SBT_n$ Index, $I_c$	see note
19	Normalized Cone resistance, $Q_{tn}$ (n varies with $I_c$ )	see note
20	Estimated permeability, $k_{SBT}$ (cm/sec or ft/sec)	see note
21	Equivalent SPT $N_{60}$ , blows/ft	see note
22	Equivalent SPT $(N_1)_{60}$ blows/ft	see note
23	Estimated Relative Density, $D_r$ , (%)	see note
24	Estimated Friction Angle, $\phi'$ , (degrees)	see note
25	Estimated Young's modulus, $E_s$ (tsf)	see note
26	Estimated small strain Shear modulus, $G_o$ (tsf)	see note
27	Estimated Undrained shear strength, $s_u$ (tsf)	see note
28	Estimated Undrained strength ratio	$s_u/\sigma'_v$
29	Estimated Over Consolidation ratio, OCR	see note

**Notes:**

- 1 Soil Behavior Type (non-normalized), SBT      Lunne et al. (1997)  
listed below
- 2 Unit weight,  $\gamma$  either constant at 119 pcf or based on Non-normalized SBT  
(Lunne et al., 1997 and table below)
- 3 Soil Behavior Type (Normalized),  $SBT_n$       Lunne et al. (1997)
- 4  $SBT_n$  Index,  $I_c$        $I_c = ((3.47 - \log Q_{tl})^2 + (\log F_r + 1.22)^2)^{0.5}$
- 5 Normalized Cone resistance,  $Q_{tn}$  (n varies with  $I_c$ )  
  
 $Q_{tn} = ((q_t - \sigma_{vo})/pa) (pa/(\sigma'_{vo}))^n$  and recalculate  $I_c$ , then iterate:  
  
 When  $I_c < 1.64$ ,       $n = 0.5$  (clean sand)  
 When  $I_c > 3.30$ ,       $n = 1.0$  (clays)  
 When  $1.64 < I_c < 3.30$ ,       $n = (I_c - 1.64)0.3 + 0.5$   
 Iterate until the change in n,  $\Delta n < 0.01$
- 6 Estimated permeability,  $k_{SBT}$  (based on Normalized  $SBT_n$ )  
(Lunne et al., 1997 and table below)

- |    |  |  |
|----|--|--|
| 7  | Equivalent SPT $N_{60}$ , blows/ft   | Lunne et al. (1997)<br>$\frac{(q_c/p_a)}{N_{60}} = 8.5 \left( 1 - \frac{I_c}{4.6} \right)$   |
| 8  | Equivalent SPT $(N_1)_{60}$ blows/ft<br>where $C_N = (p_a/\sigma'_{vo})^{0.5}$                           | $(N_1)_{60} = N_{60} C_N$  |
| 9  | Relative Density, $D_r$ , (%)<br>Only $SBT_n$ 5, 6, 7 & 8  | $D_r^2 = Q_{tn} / C_{Dr}$<br>Show 'N/A' in zones 1, 2, 3, 4 & 9  |
| 10 | Friction Angle, $\phi'$ , (degrees)<br>Only $SBT_n$ 5, 6, 7 & 8  | $\tan \phi' = \frac{1}{2.68} \left[ \log \left( \frac{q_c}{\sigma'_{vo}} \right) + 0.29 \right]$<br>Show 'N/A' in zones 1, 2, 3, 4 & 9 |
| 11 | Young's modulus, $E_s$<br>Only $SBT_n$ 5, 6, 7 & 8   | $E_s = \alpha q_t$<br>Show 'N/A' in zones 1, 2, 3, 4 & 9   |
| 12 | Small strain shear modulus, $G_o$<br>a. $G_o = S_G (q_t - \sigma'_{vo} p_a)^{1/3}$<br>b. $G_o = C_G q_t$ | For $SBT_n$ 5, 6, 7<br>For $SBT_n$ 1, 2, 3 & 4<br>Show 'N/A' in zones 8 & 9  |
| 13 | Undrained shear strength, $s_u$<br>Only $SBT_n$ 1, 2, 3, 4 & 9   | $s_u = (q_t - \sigma_{vo}) / N_{kt}$<br>Show 'N/A' in zones 5, 6, 7 & 8  |
| 14 | Over Consolidation ratio, OCR<br>Only $SBT_n$ 1, 2, 3, 4 & 9   | $OCR = k_{ocr} Q_{t1}$<br>Show 'N/A' in zones 5, 6, 7 & 8  |

#### SBT Zones

The following updated and simplified SBT descriptions have been used in the software:

- |    |                          |
|----|--------------------------|
| 1  | sensitive fine grained   |
| 2  | organic soil             |
| 3  | clay                     |
| 4  | clay & silty clay        |
| 5  | clay & silty clay        |
| 6  | sandy silt & clayey silt |
| 7  | silty sand & sandy silt  |
| 8  | sand & silty sand        |
| 9  | sand                     |
| 10 | sand                     |
| 11 | very dense/stiff soil*   |
| 12 | very dense/stiff soil*   |
- \* heavily overconsolidated and/or cemented

#### SBT<sub>n</sub> Zones

- |   |                         |
|---|-------------------------|
| 1 | sensitive fine grained  |
| 2 | organic soil            |
| 3 | clay                    |
| 4 | clay & silty clay       |
| 5 | silty sand & sandy silt |
| 6 | sand & silty sand       |
| 7 | sand                    |
| 8 | very dense/stiff soil*  |
| 9 | very dense/stiff soil*  |

Track when soils fall with zones of same description and print that description (i.e. if soils fall only within SBT zones 4 & 5, print 'clays & silty clays')

**Estimated Permeability** (see Lunne et al., 1997)

SBT <sub>n</sub>	Permeability (ft/sec)	(m/sec)
1	$3 \times 10^{-8}$	$1 \times 10^{-8}$
2	$3 \times 10^{-7}$	$1 \times 10^{-7}$
3	$1 \times 10^{-9}$	$3 \times 10^{-10}$
4	$3 \times 10^{-8}$	$1 \times 10^{-8}$
5	$3 \times 10^{-6}$	$1 \times 10^{-6}$
6	$3 \times 10^{-4}$	$1 \times 10^{-4}$
7	$3 \times 10^{-2}$	$1 \times 10^{-2}$
8	$3 \times 10^{-6}$	$1 \times 10^{-6}$
9	$1 \times 10^{-8}$	$3 \times 10^{-9}$

**Estimated Unit Weight** (see Lunne et al., 1997)

SBT	Approximate Unit Weight (lb/ft <sup>3</sup> )	(kN/m <sup>3</sup> )
1	111.4	17.5
2	79.6	12.5
3	111.4	17.5
4	114.6	18.0
5	114.6	18.0
6	114.6	18.0
7	117.8	18.5
8	120.9	19.0
9	124.1	19.5
10	127.3	20.0
11	130.5	20.5
12	120.9	19.0



## Bibliography

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Copies of ASTM Standards are available through [www.astm.org](http://www.astm.org)





# MACTEC

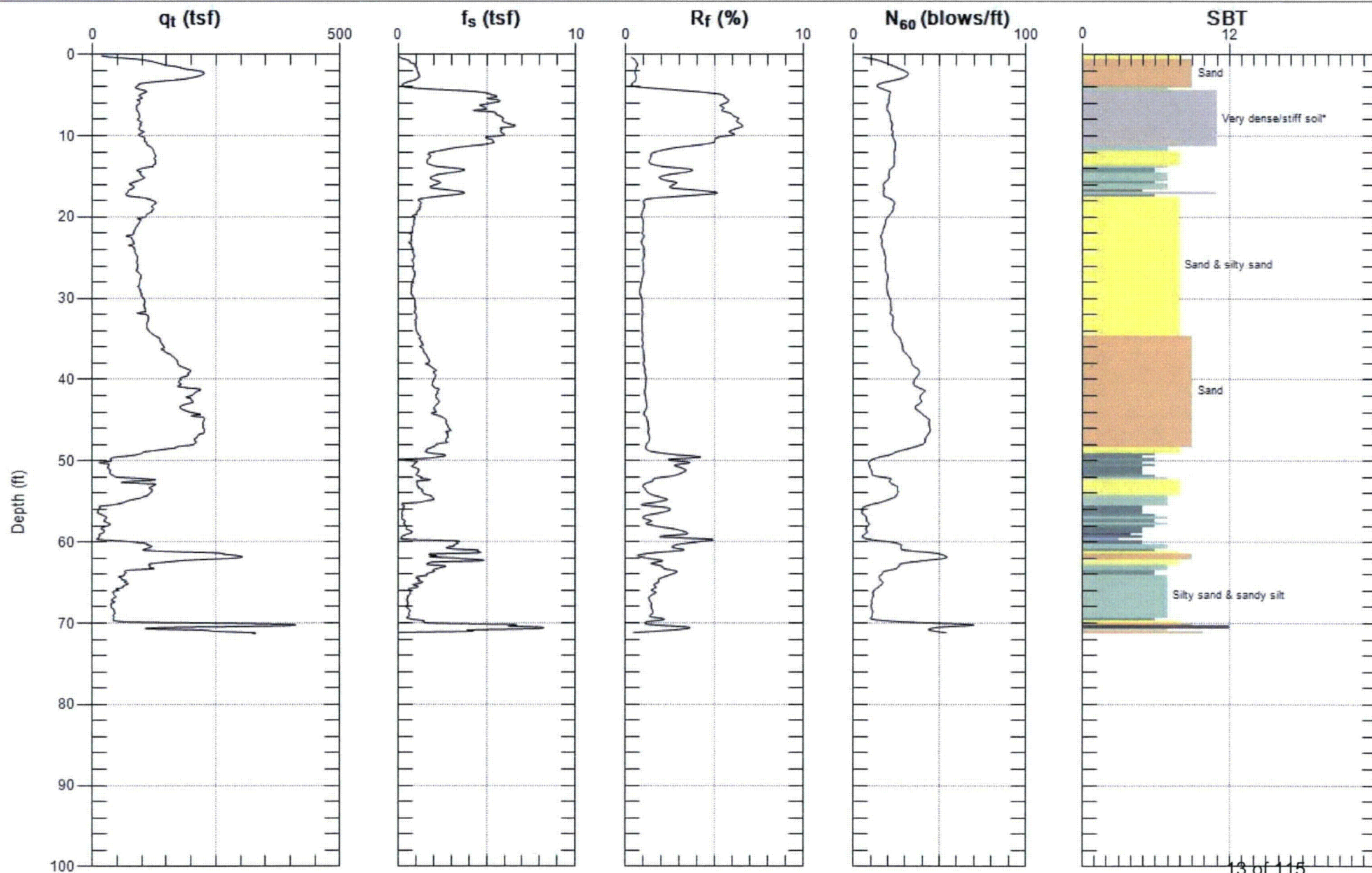
Northing: 1144357.46 Easting: 620185.46 Elevation: 265.76 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1101

Engineer: M.COOKE

Date: 1/24/2007 09:15



Max. Depth: 71.358 (ft)  
Avg. Interval: 0.328 (ft)

13 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

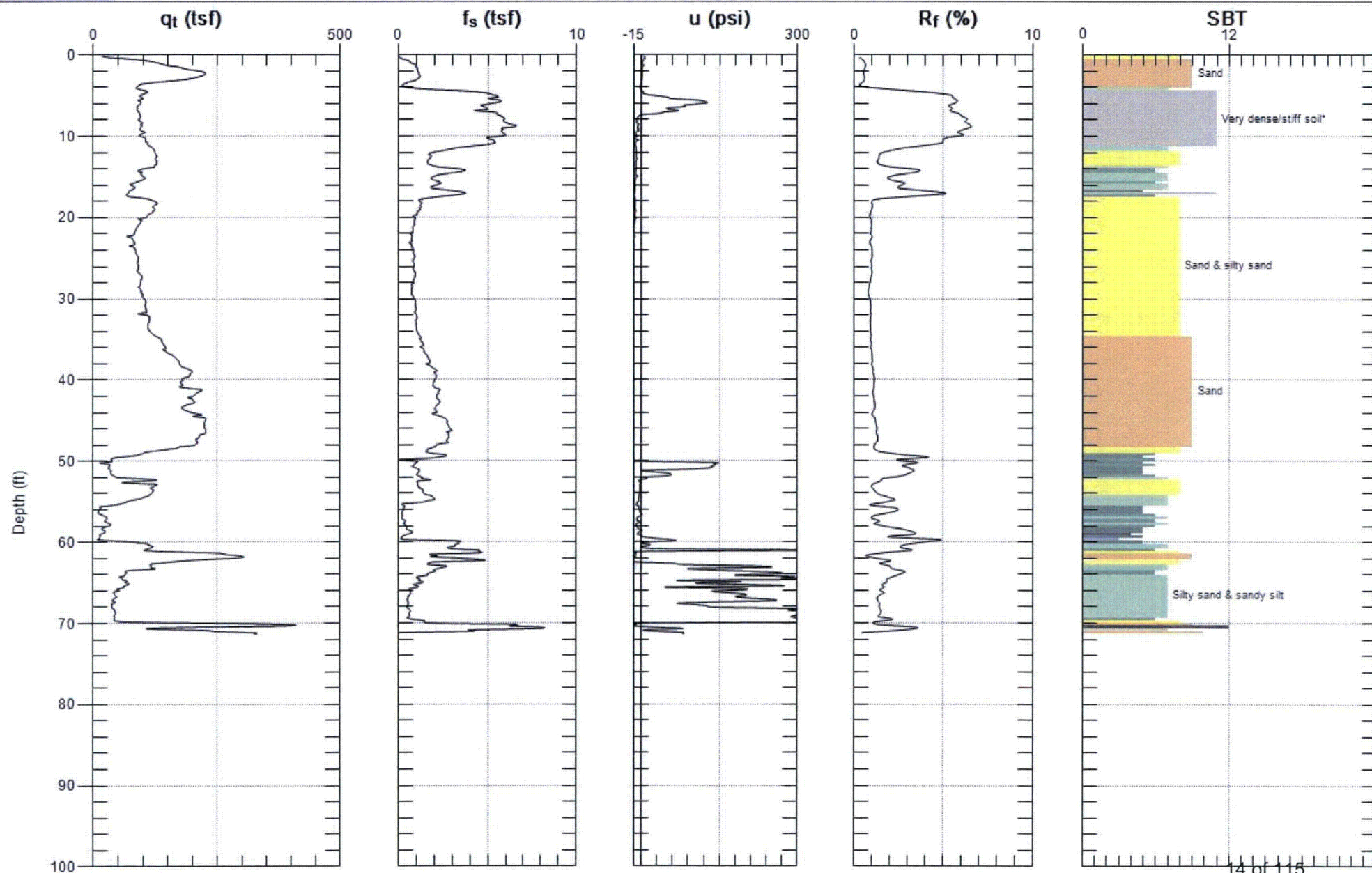
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Site: PLANT VOGTLE

Sounding: C-1101

Engineer: M.COOKE

Date: 1/24/2007 09:15



Max. Depth: 71.358 (ft)

Avg. Interval: 0.328 (ft)

14 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

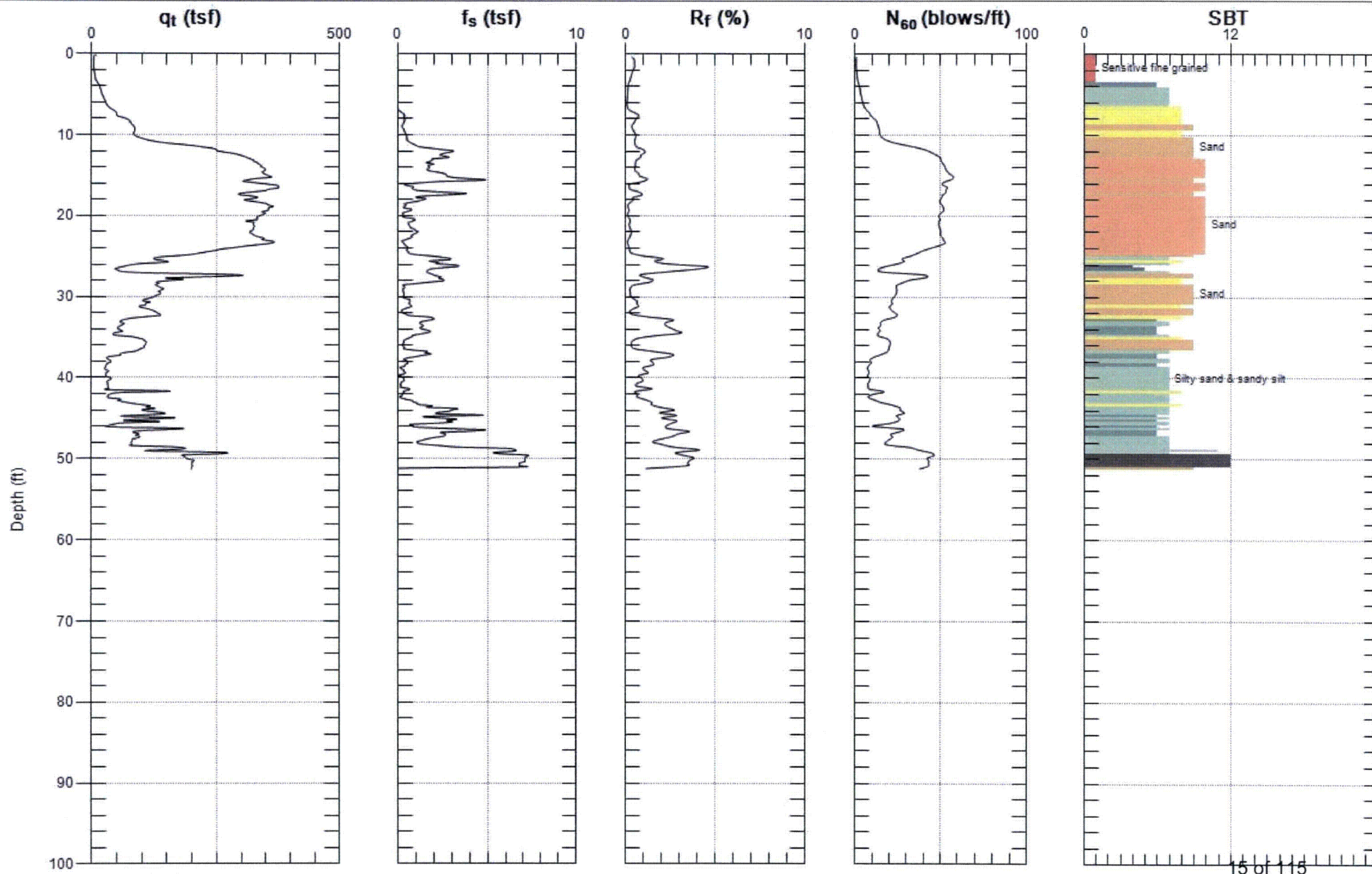
Northing: 1144424.00 Easting: 621333.43 Elevation: 267.61 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1102

Engineer: M.COOKE

Date: 1/24/2007 05:35



Max. Depth: 51.345 (ft)  
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

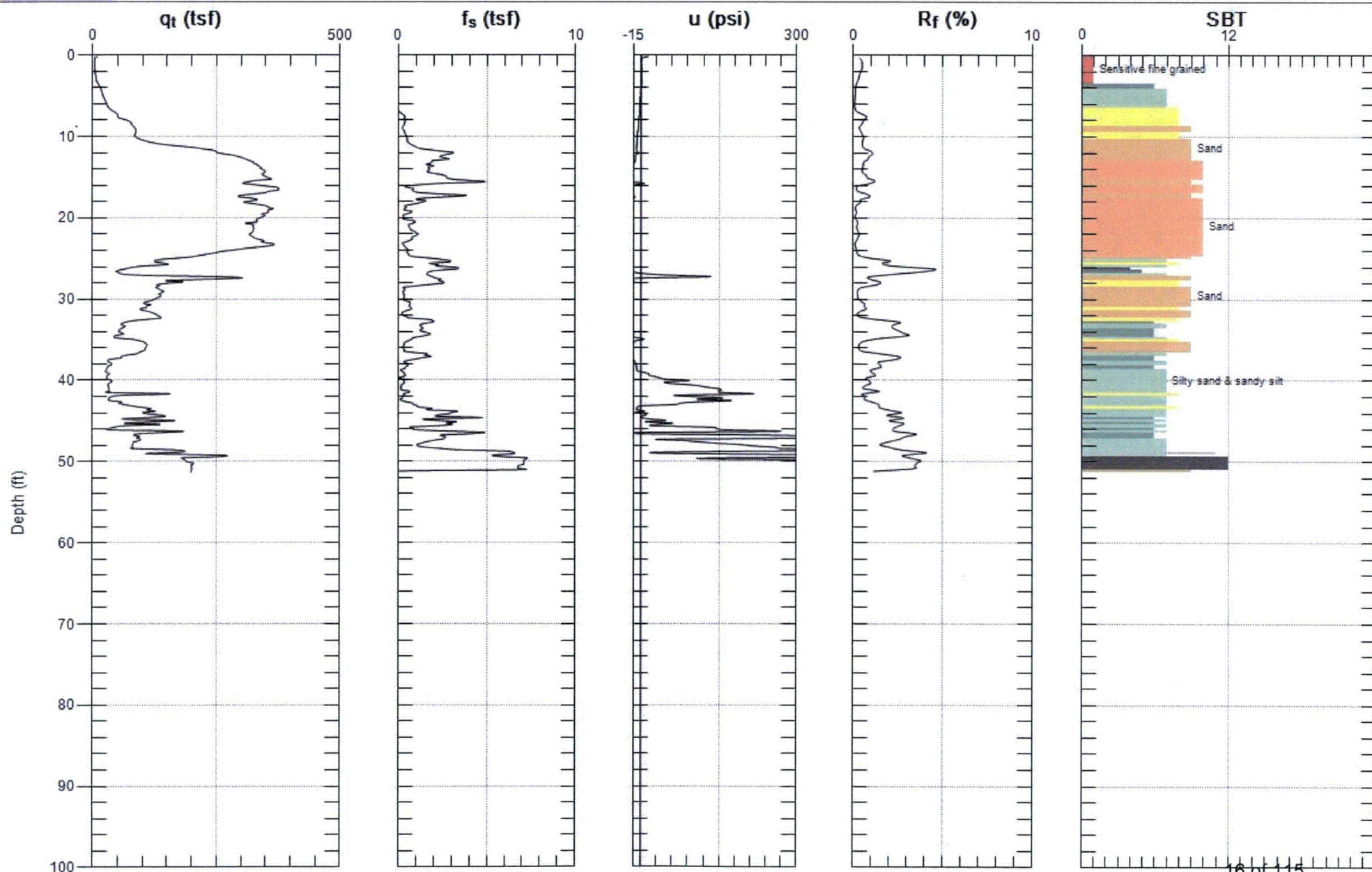
Northing: 1144424.00 Easting: 621333.43 Elevation: 267.61 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1102

Engineer: M.COOKE

Date: 1/24/2007 05:35



Max. Depth: 51.345 (ft)  
Avg. Interval: 0.328 (ft)

16 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

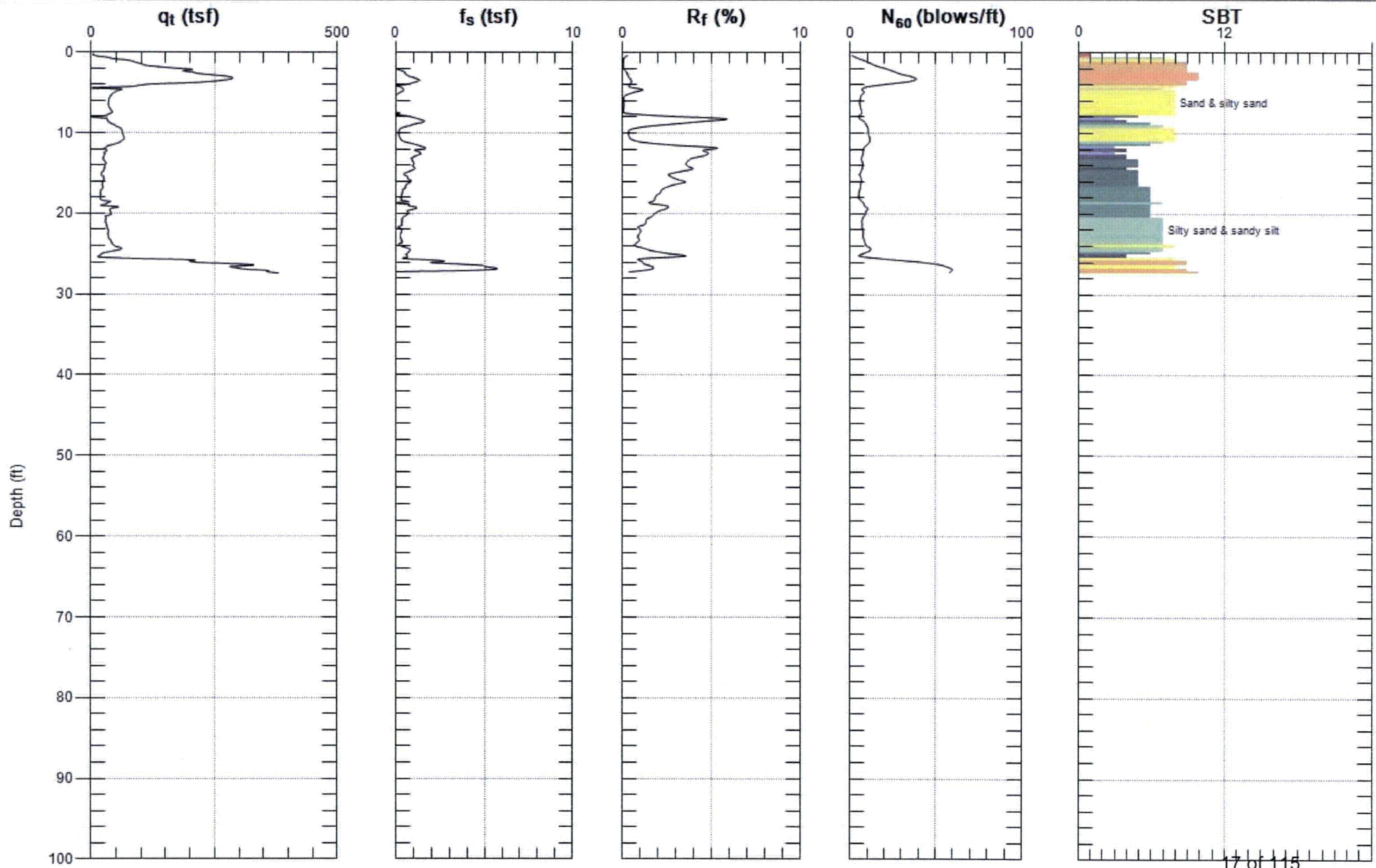
Northing: 1145011.61 Easting: 622037.40 Elevation: 236.52 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1103

Engineer: M.COOKE

Date: 1/23/2007 10:42



Max. Depth: 27.395 (ft)  
Avg. Interval: 0.328 (ft)

17 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

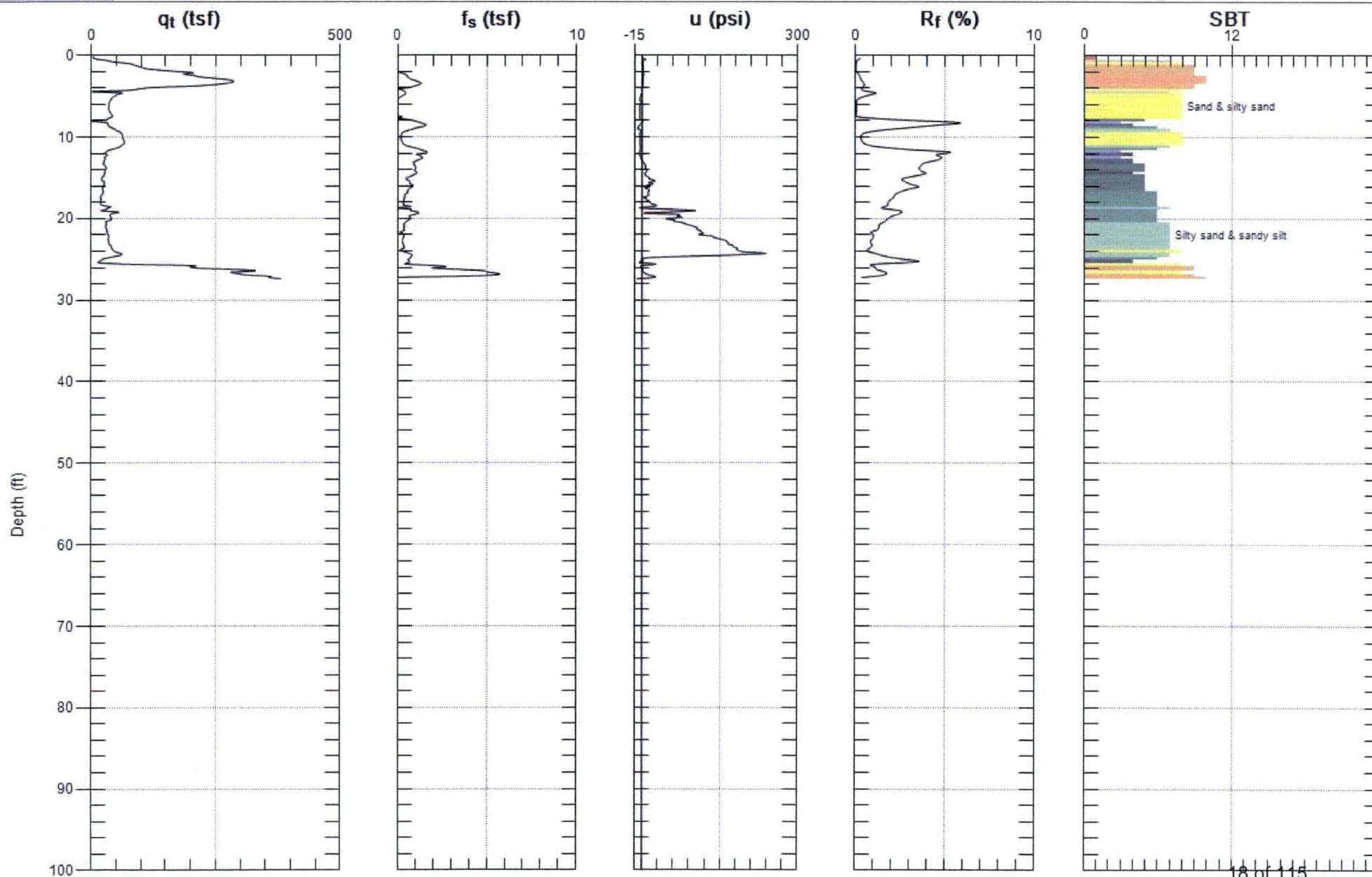
Northing: 1145011.61 Easting: 622037.40 Elevation: 236.52 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1103

Engineer: M.COOKE

Date: 1/23/2007 10:42



Max. Depth: 27.395 (ft)  
Avg. Interval: 0.328 (ft)

18 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

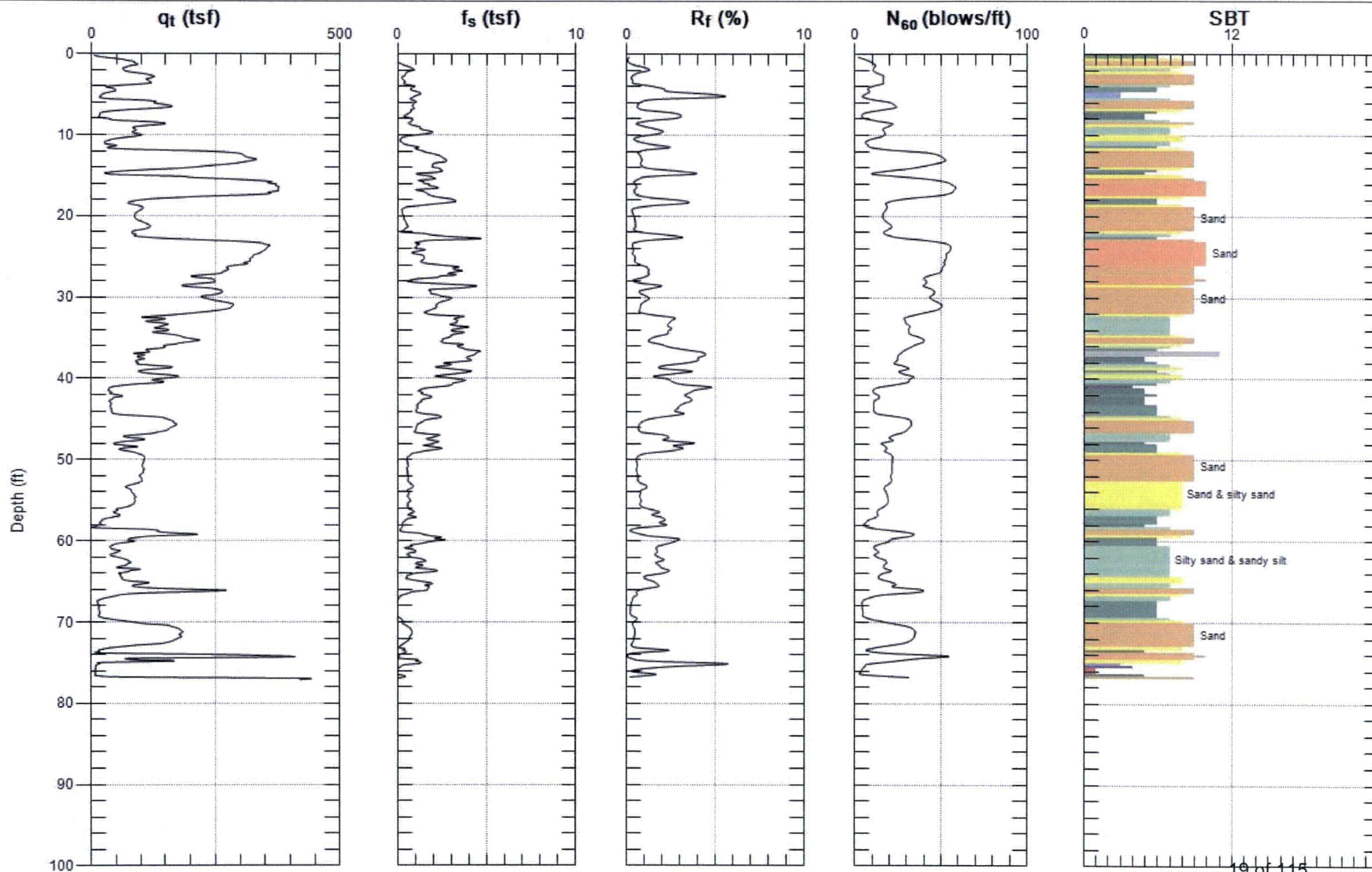
Northing: 1145601.77 Easting: 622746.95 Elevation: 230.19 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1104

Engineer: M.COOKE

Date: 1/23/2007 06:59



Max. Depth: 77.100 (ft)  
Avg. Interval: 0.328 (ft)

19 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

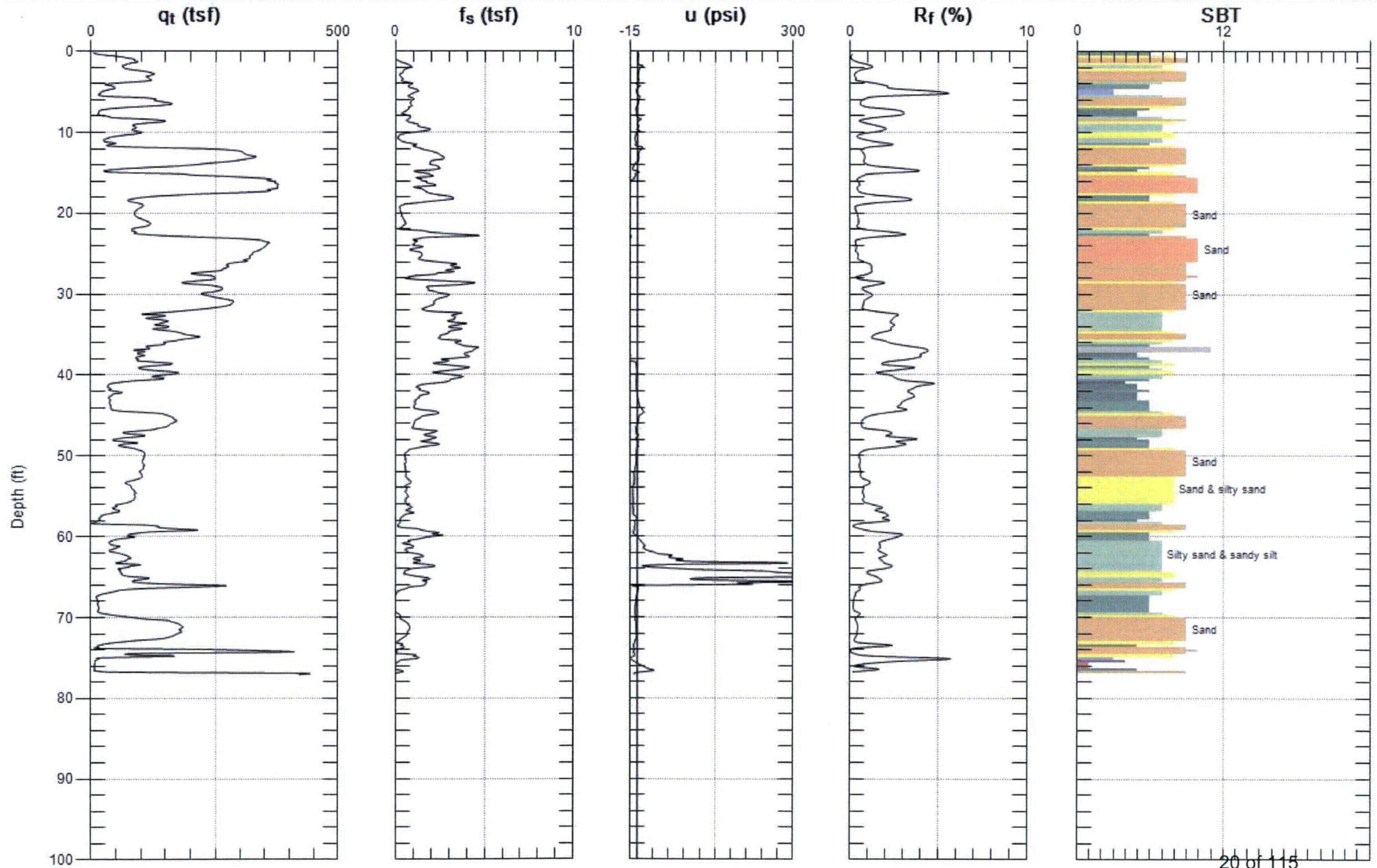
Northing: 1145601.77 Easting: 622746.95 Elevation: 230.19 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1104

Engineer: M.COOKIE

Date: 1/23/2007 06:59



Max. Depth: 77.100 (ft)  
Avg. Interval: 0.328 (ft)

20 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

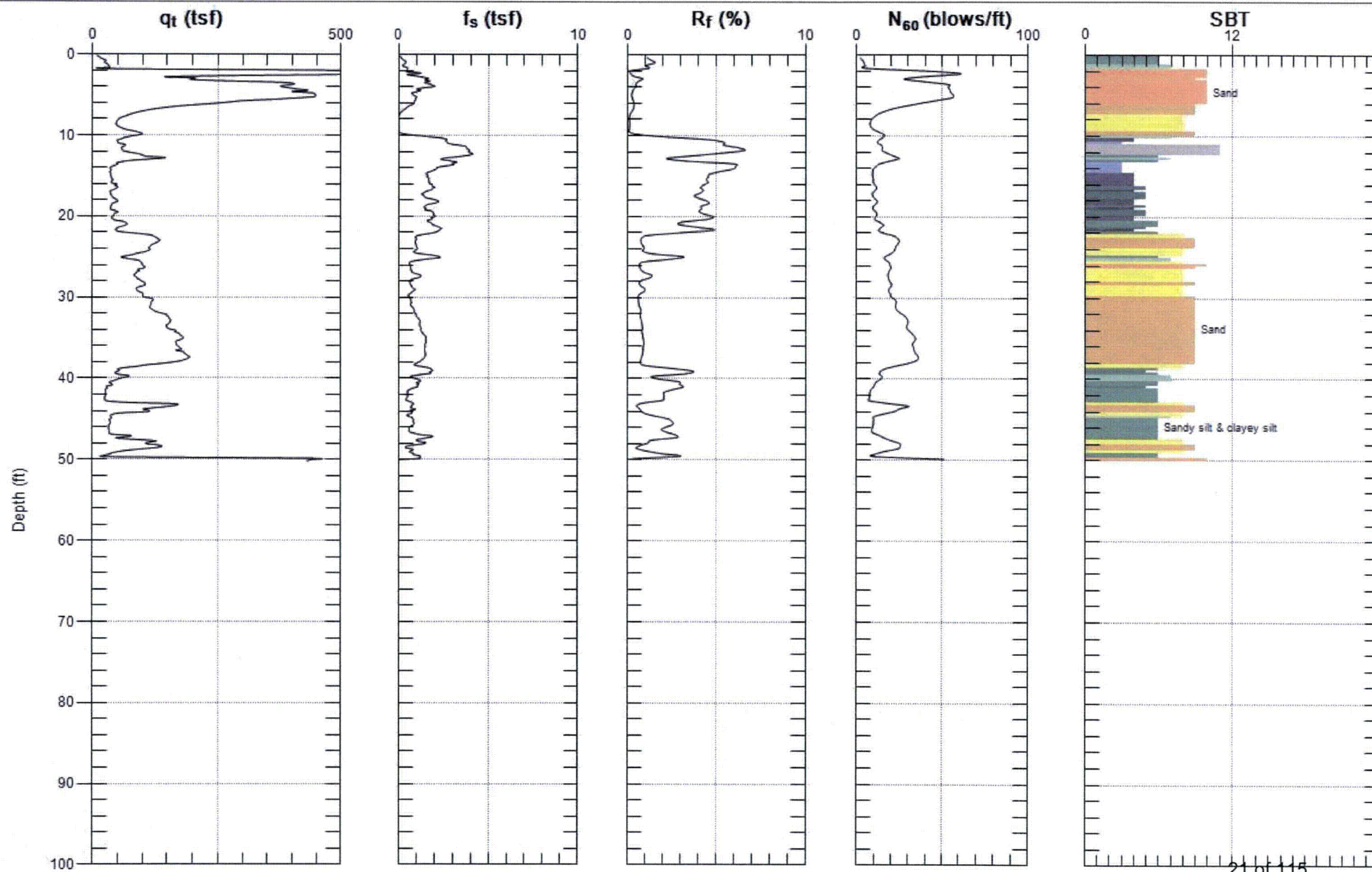
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Site: PLANT VOGTLE

Sounding: C-1105

Engineer: M.COOKE

Date: 1/25/2007 05:55



Max. Depth: 50.197 (ft)  
Avg. Interval: 0.328 (ft)

21 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

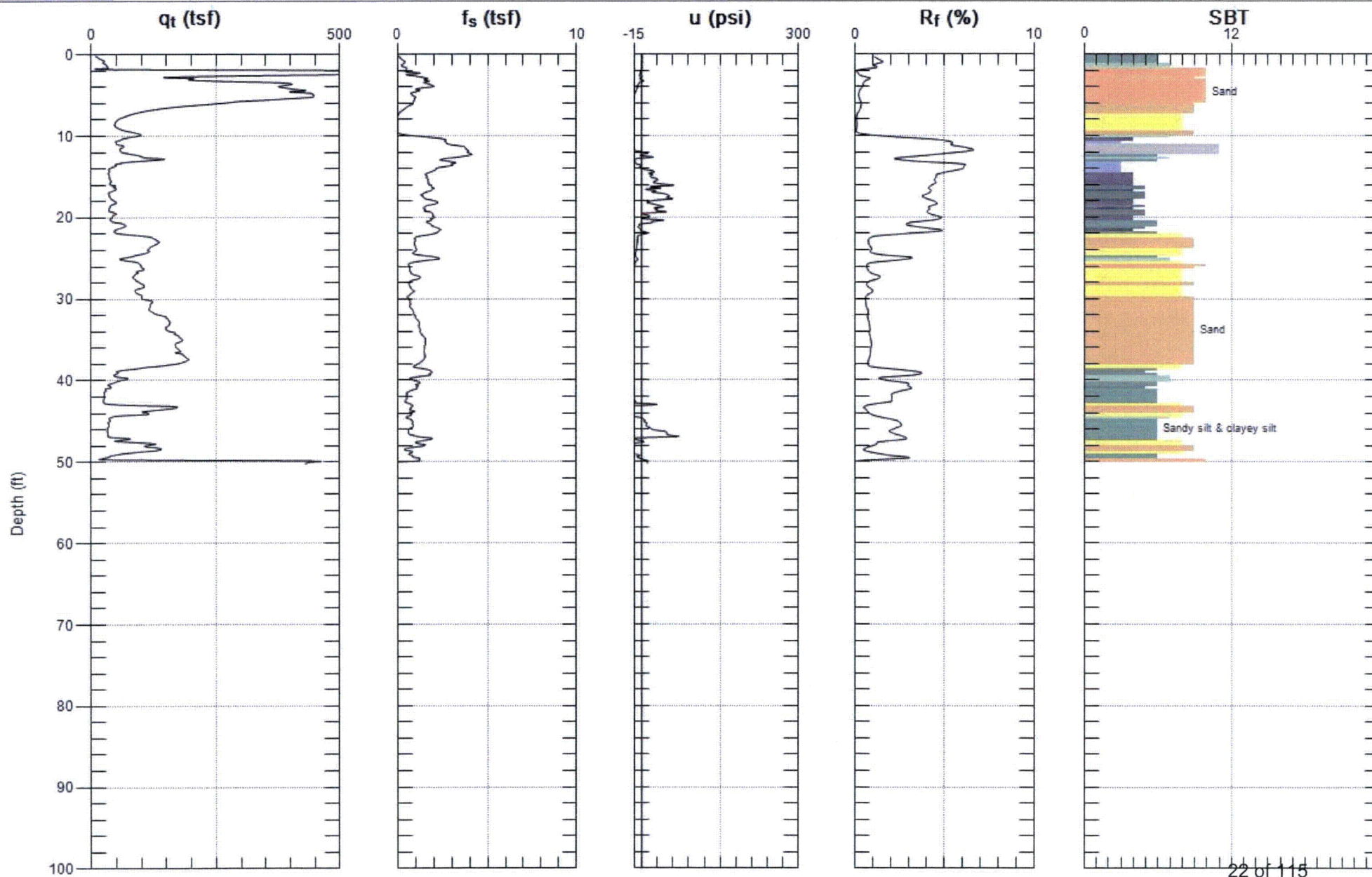
Northing: 1145483.00 Easting: 623733.68 Elevation: 200.57 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1105

Engineer: M.COOKE

Date: 1/25/2007 05:55



Max. Depth: 50.197 (ft)  
Avg. Interval: 0.328 (ft)

22 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

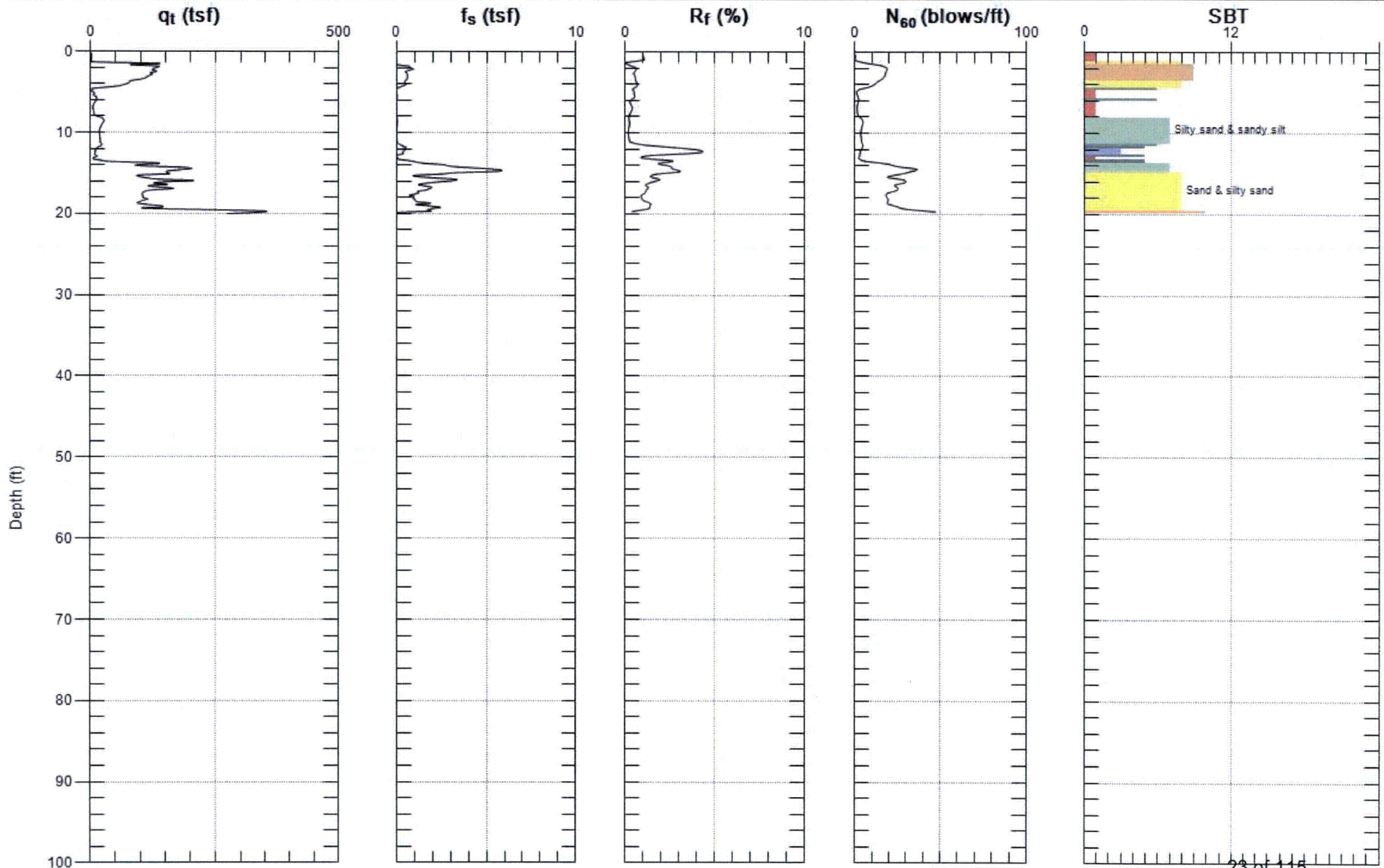
Northing: 1145533.96 Easting: 624748.08 Elevation: 138.02 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1106

Engineer: M.COOKE

Date: 1/24/2007 01:17



Max. Depth: 20.013 (ft)  
Avg. Interval: 0.328 (ft)



# MACTEC

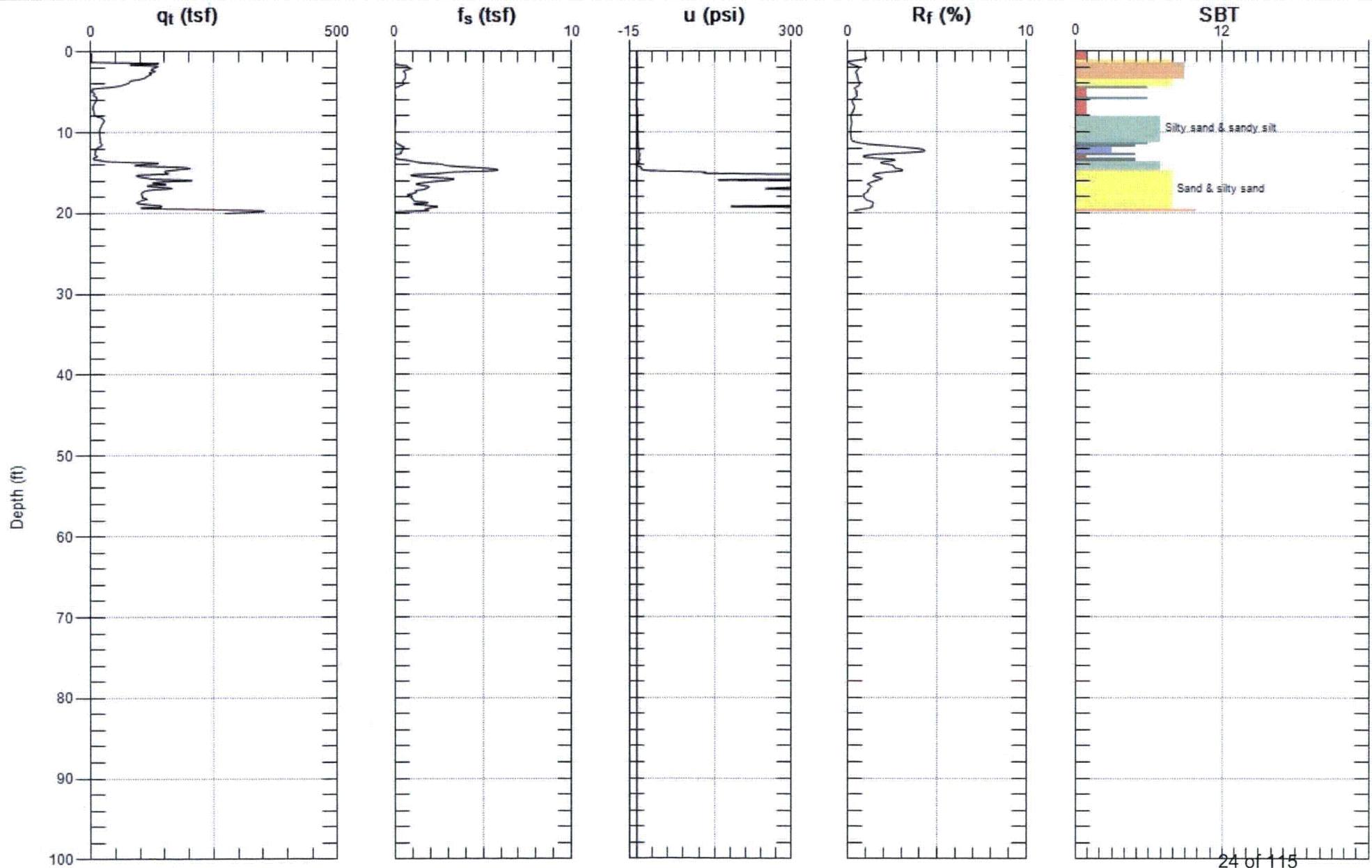
Northing: 1145533.96 Easting: 624748.08 Elevation: 138.02 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1106

Engineer: M.COOKE

Date: 1/24/2007 01:17



Max. Depth: 20.013 (ft)  
Avg. Interval: 0.328 (ft)

24 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

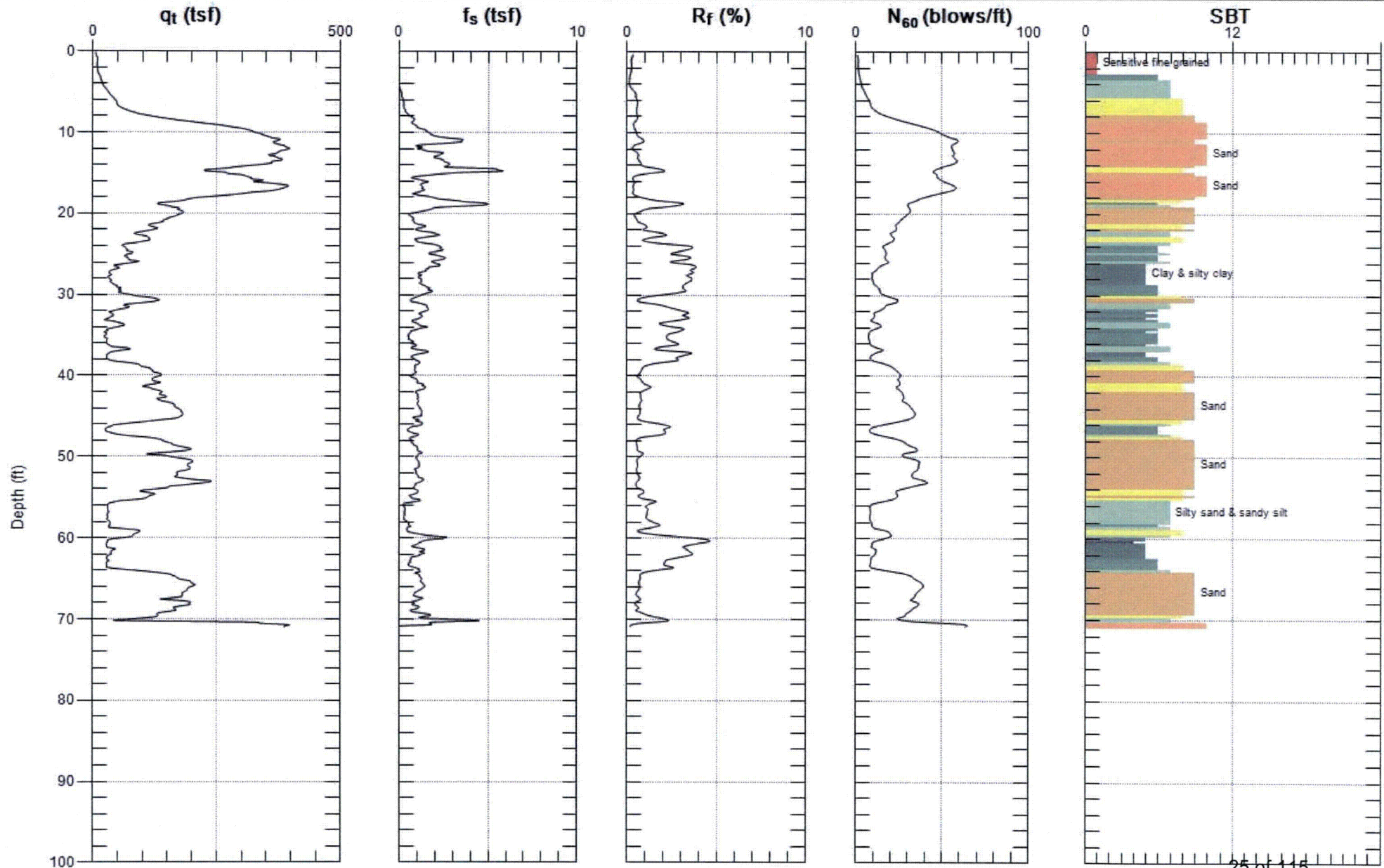
Northing: 1147233.91 Easting: 624202.32 Elevation: 211.92 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1107

Engineer: M.COOKE

Date: 1/19/2007 06:14



Max. Depth: 71.030 (ft)  
Avg. Interval: 0.328 (ft)

25 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

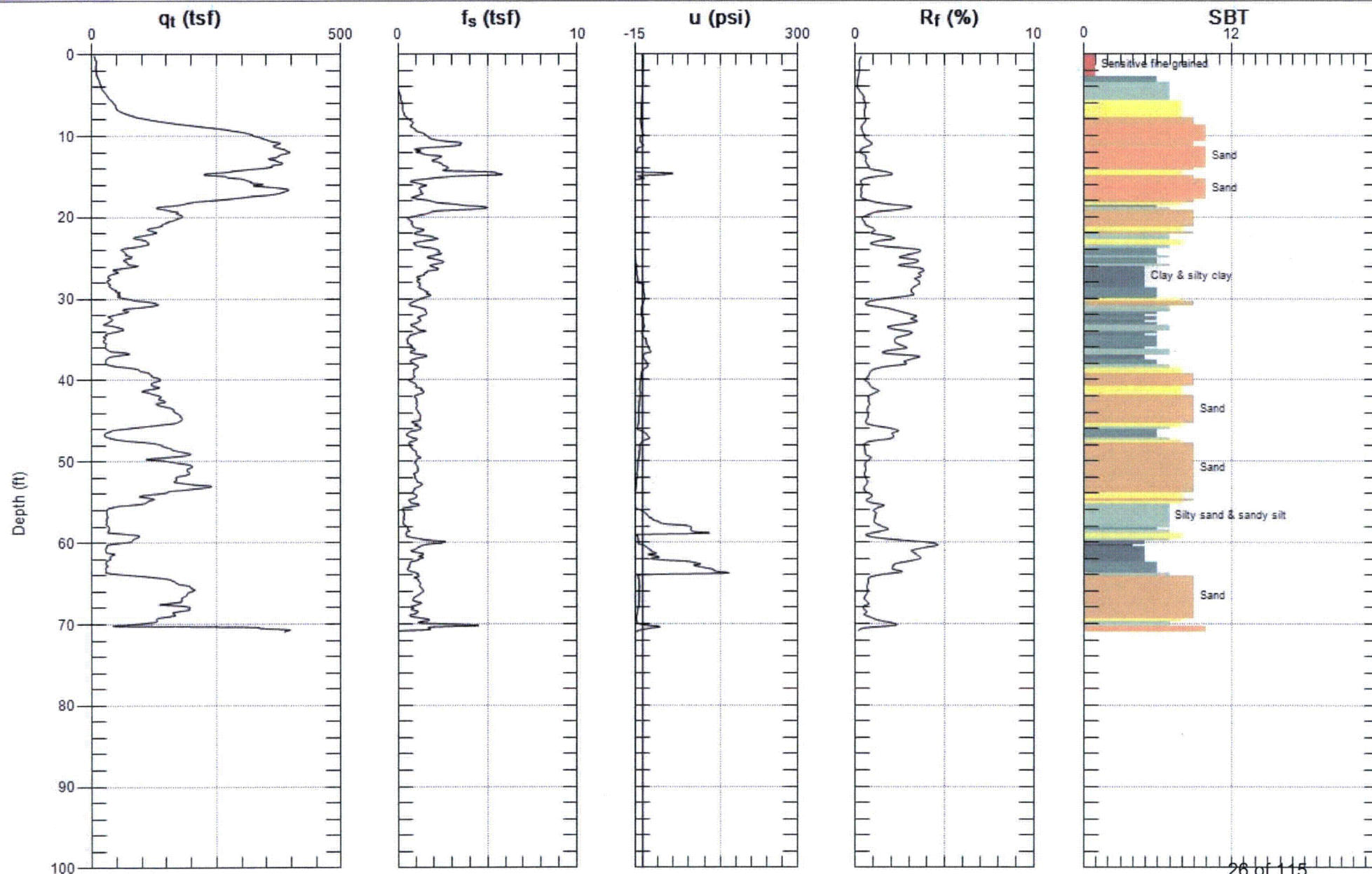
Northing: 1147233.91 Easting: 624202.32 Elevation: 211.92 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1107

Engineer: M.COOKE

Date: 1/19/2007 06:14



Max. Depth: 71.030 (ft)  
Avg. Interval: 0.328 (ft)





# MACTEC

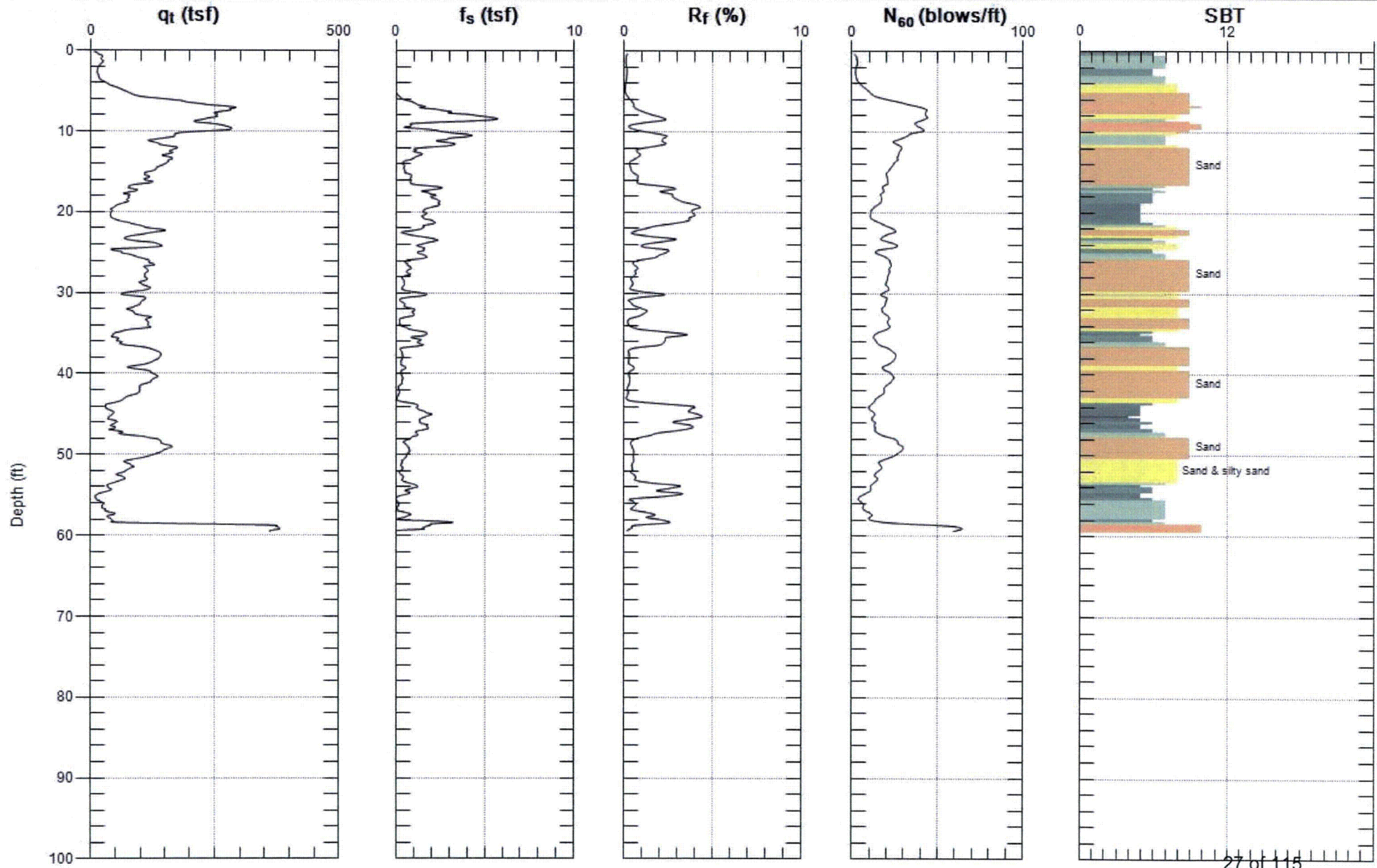
Northing: 1147628.30 Easting: 623753.23 Elevation: 200.89 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1108

Engineer: M.COOKE

Date: 1/19/2007 11:23



Max. Depth: 59.547 (ft)  
Avg. Interval: 0.328 (ft)

27 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

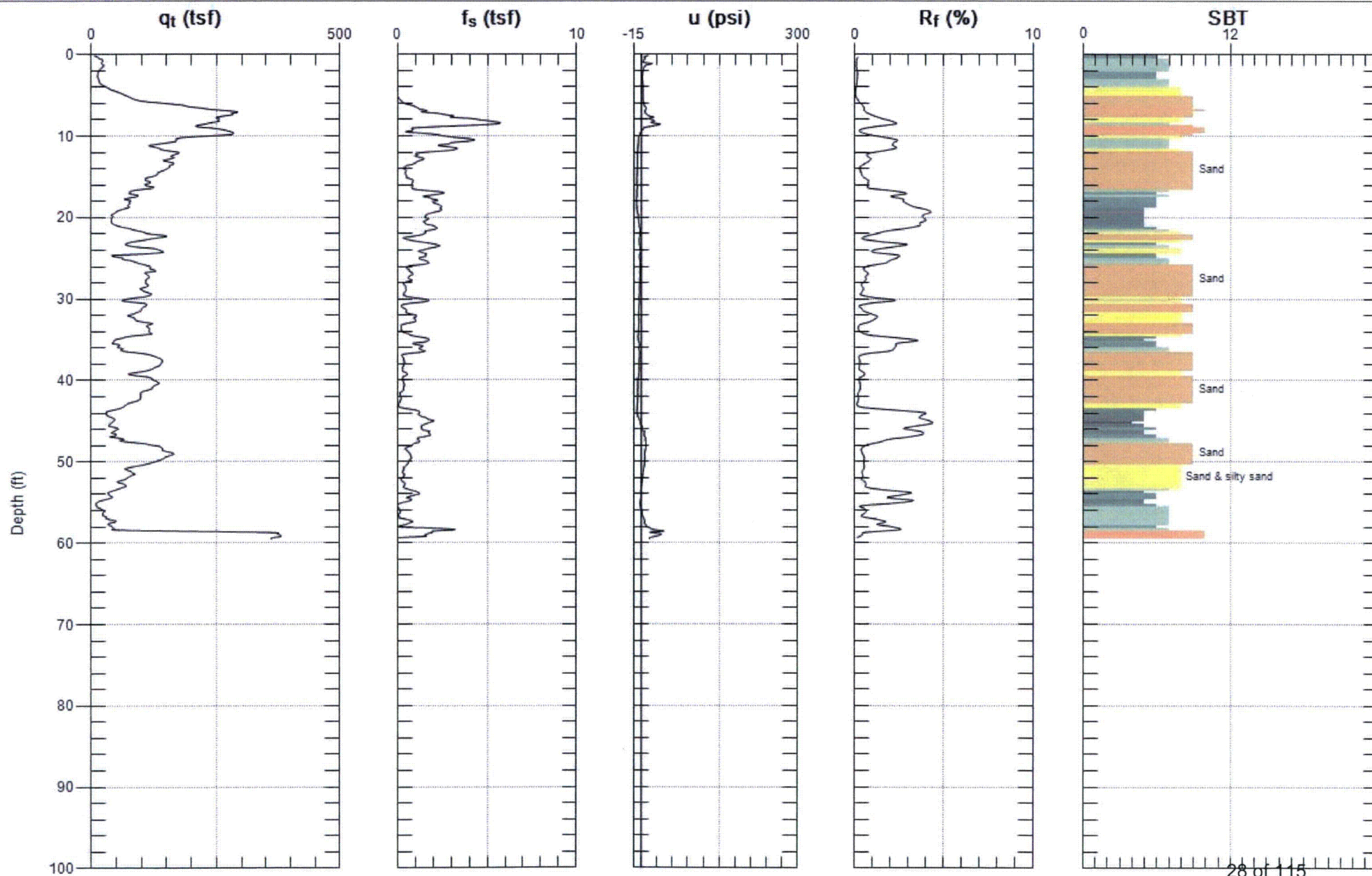
Northing: 1147628.30 Easting: 623753.23 Elevation: 200.89 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1108

Engineer: M.COOKE

Date: 1/19/2007 11:23



Max. Depth: 59.547 (ft)  
Avg. Interval: 0.328 (ft)

28 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

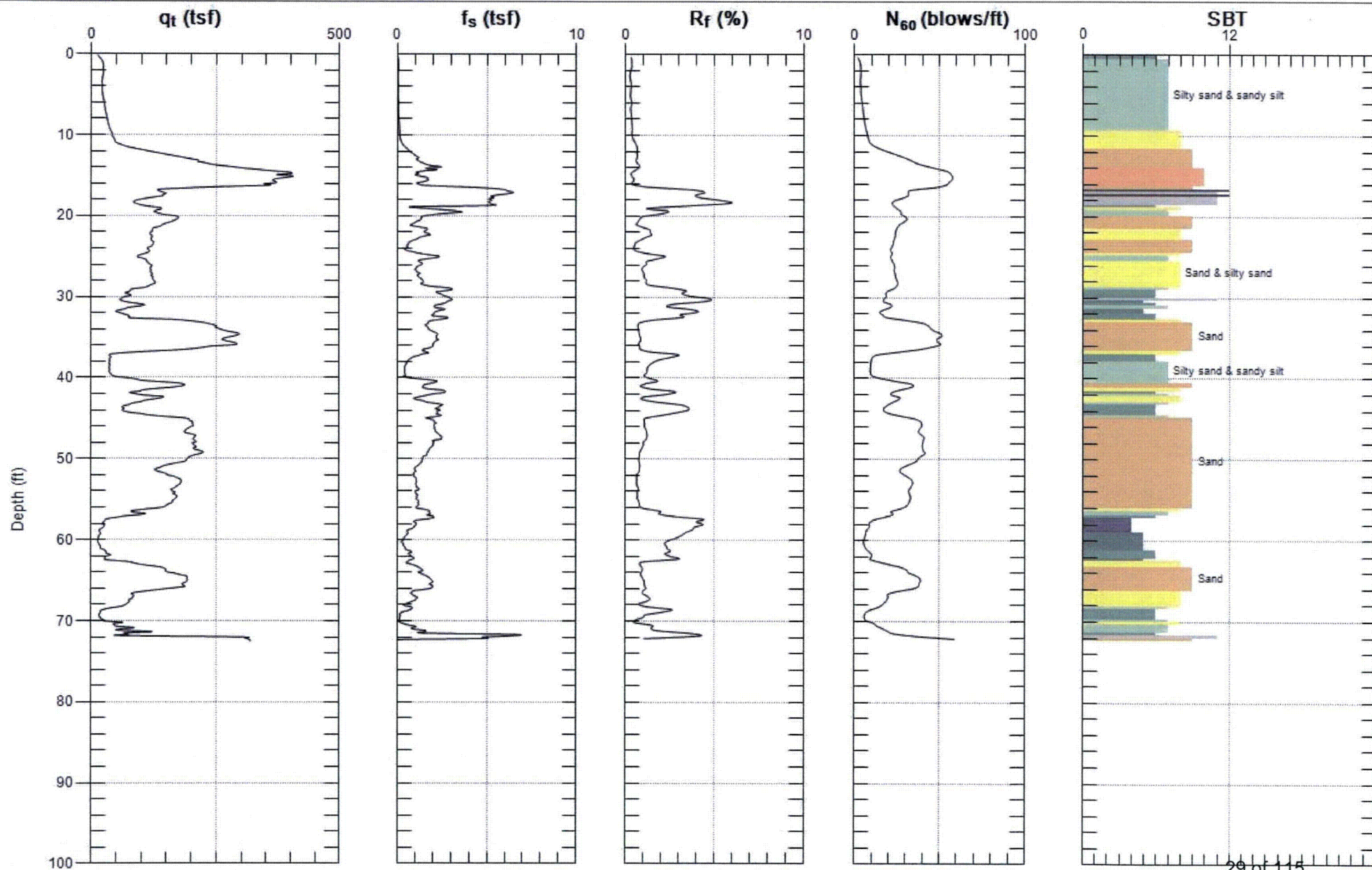
Northing: 1147622.11 Easting: 623171.88 Elevation: 209.79 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1109

Engineer: M.COOKE

Date: 1/20/2007 05:32



Max. Depth: 72.507 (ft)  
Avg. Interval: 0.328 (ft)

29 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

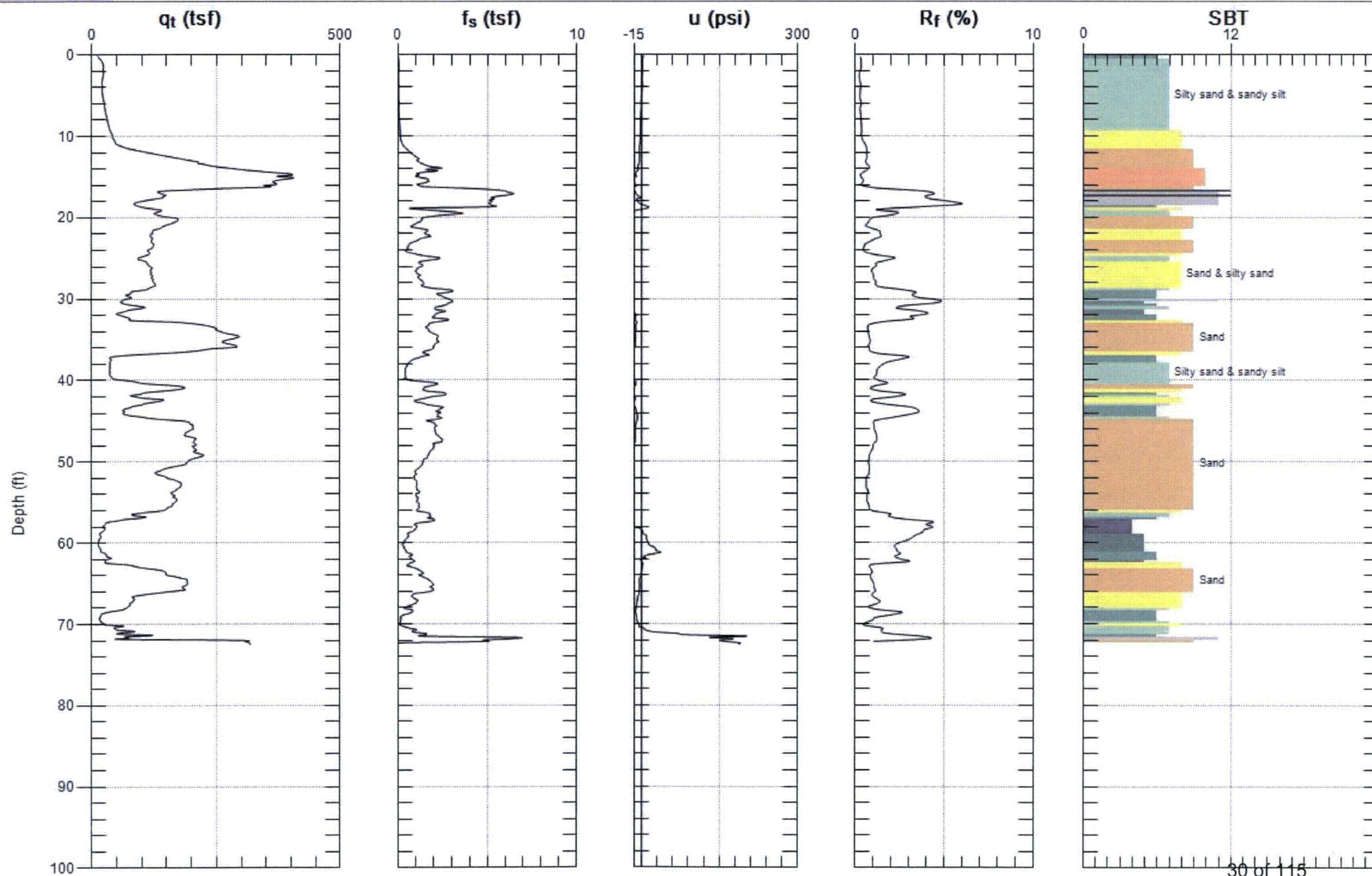
Northing: 1147622.11 Easting: 623171.88 Elevation: 209.79 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1109

Engineer: M.COOKE

Date: 1/20/2007 05:32



Max. Depth: 72.507 (ft)  
Avg. Interval: 0.328 (ft)

30 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

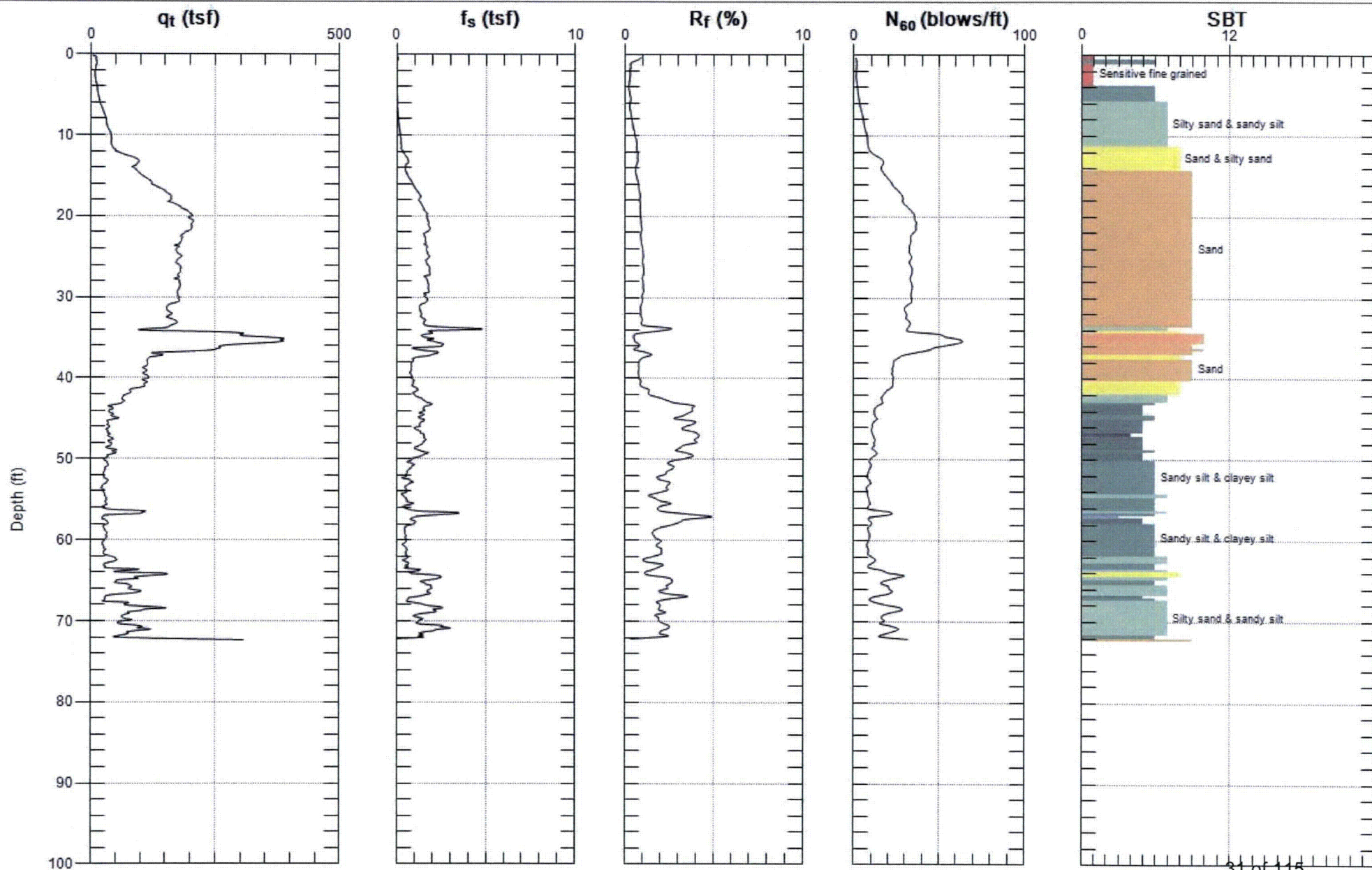
Northing: 1147198.95 Easting: 622740.32 Elevation: 242.39 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1110

Engineer: M.COOKE

Date: 1/20/2007 09:57



Max. Depth: 72.343 (ft)  
Avg. Interval: 0.328 (ft)

31 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

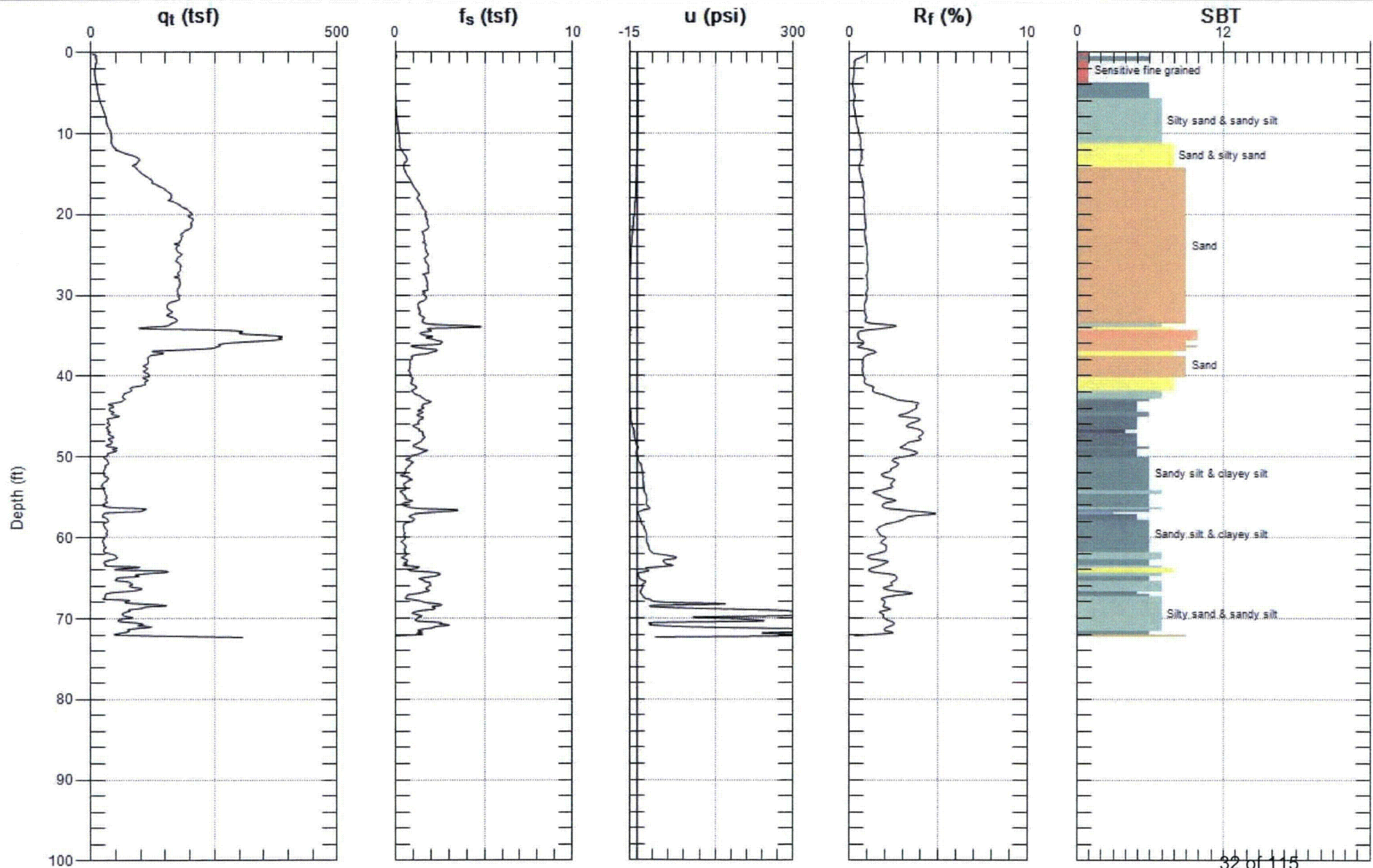
Northing: 1147198.95 Easting: 622740.32 Elevation: 242.39 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1110

Engineer: M.COOKE

Date: 1/20/2007 09:57



Max. Depth: 72.343 (ft)  
Avg. Interval: 0.328 (ft)

32 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

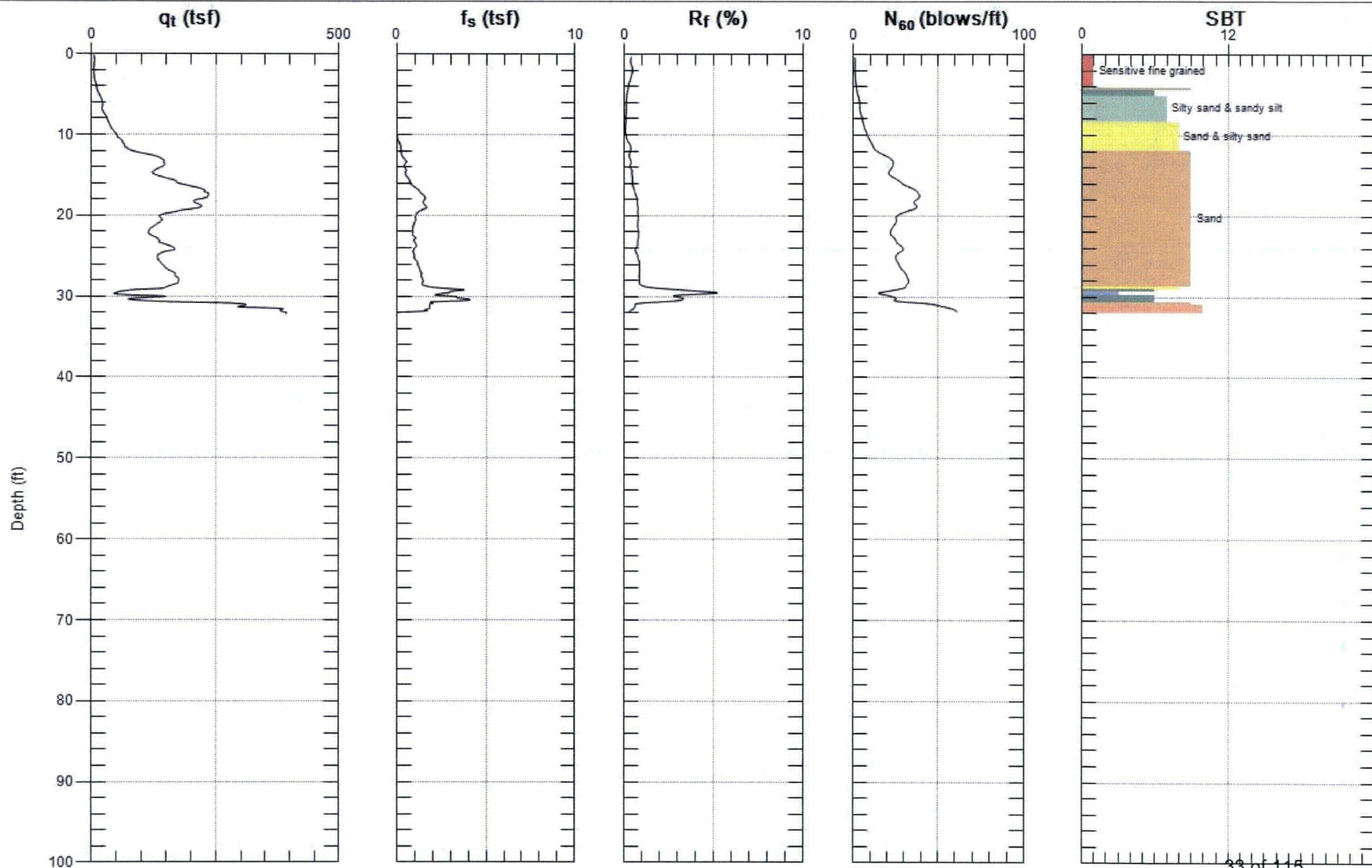
Northing: 1146753.15 Easting: 622346.15 Elevation: 250.69 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1111

Engineer: M.COOKE

Date: 1/23/2007 06:00



Max. Depth: 32.152 (ft)  
Avg. Interval: 0.328 (ft)



# MACTEC

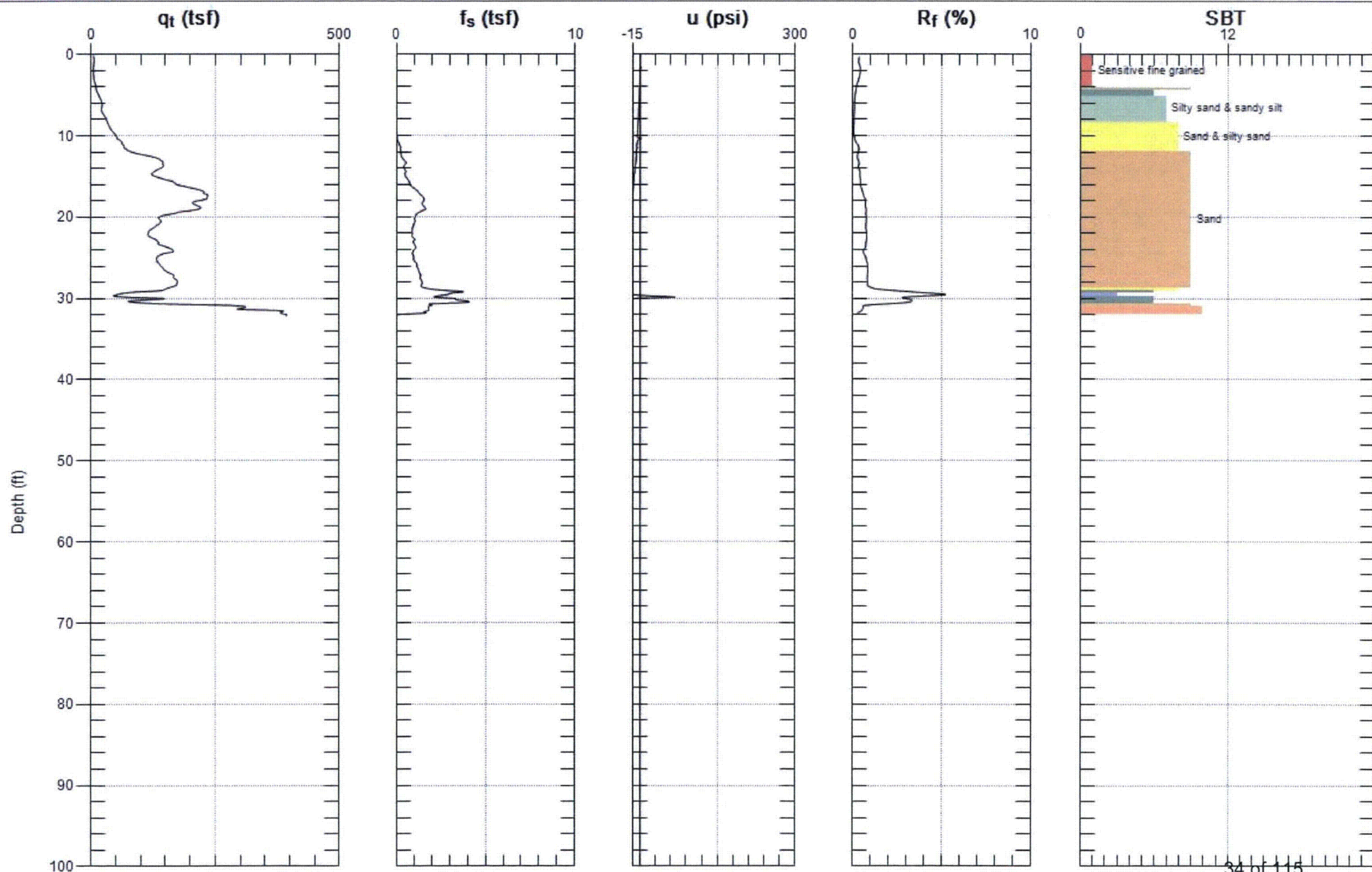
Northing: 1146753.15 Easting: 622346.15 Elevation: 250.69 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-1111

Engineer: M.COOKE

Date: 1/23/2007 06:00



Max. Depth: 32.152 (ft)  
Avg. Interval: 0.328 (ft)





# MACTEC

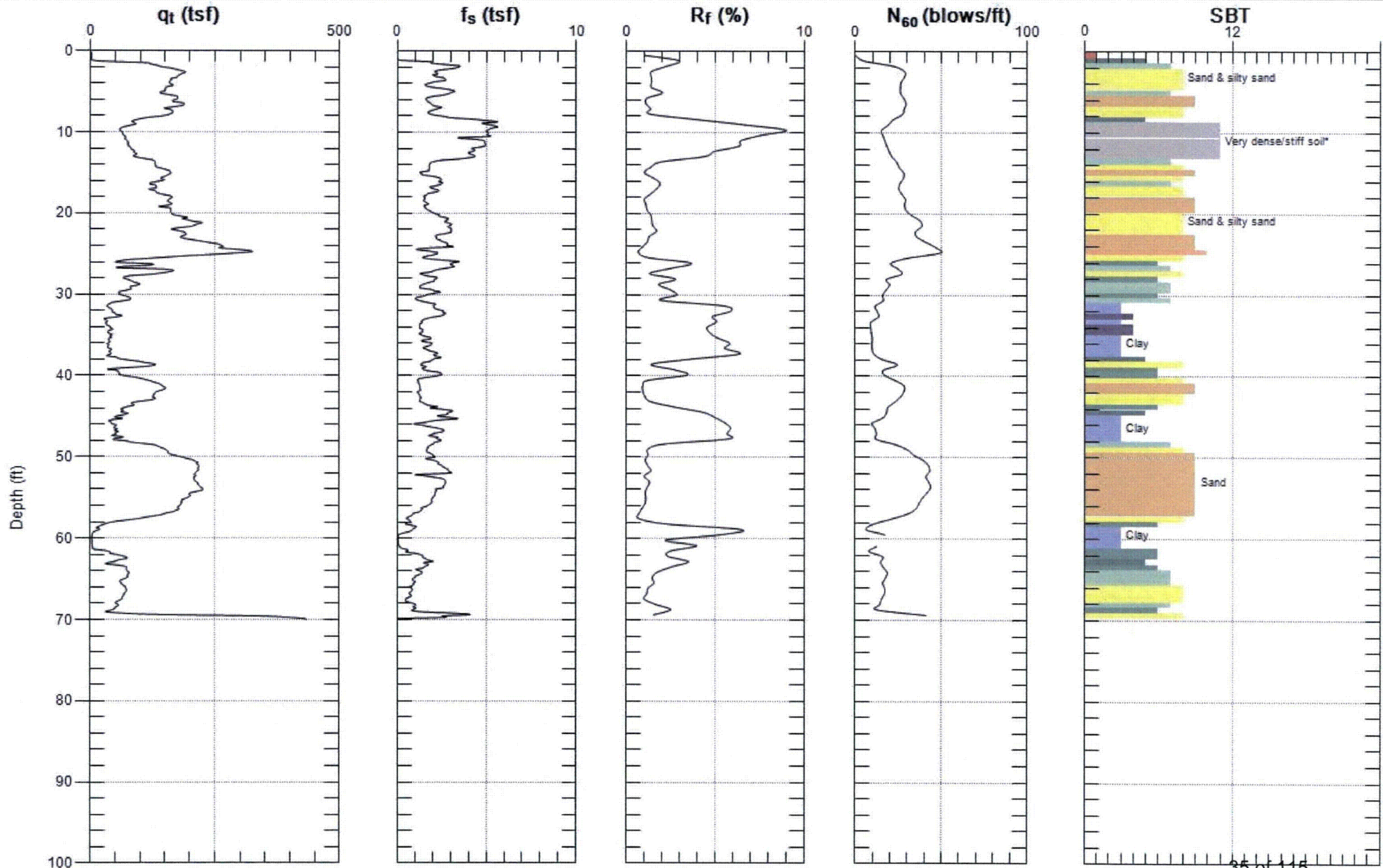
Northing: 1142610.55 Easting: 621726.54 Elevation: 218.37 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3001s

Engineer: M.COOKE

Date: 1/27/2007 09:31



Max. Depth: 70.050 (ft)  
Avg. Interval: 0.656 (ft)

35 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

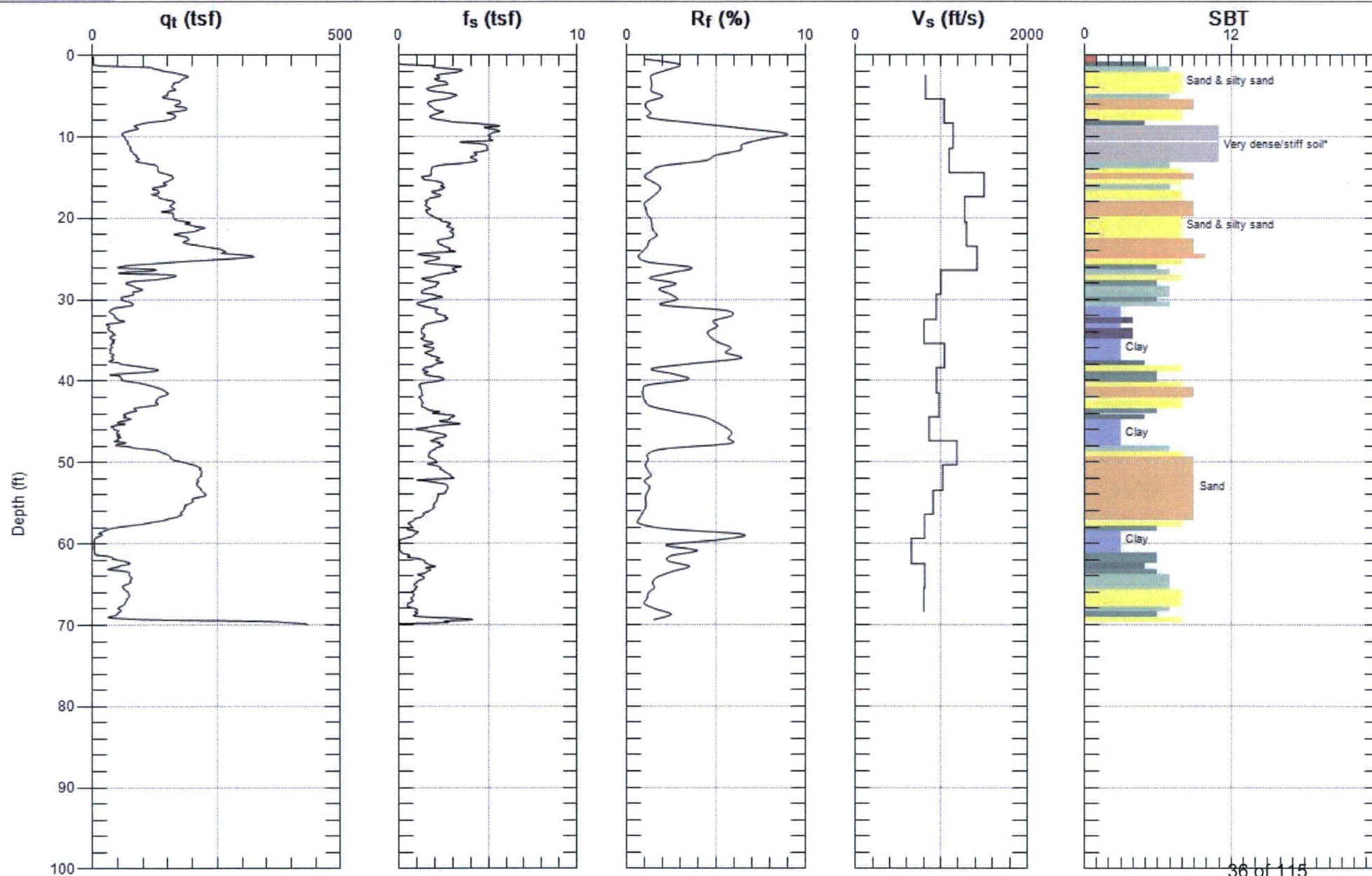
Northing: 1142610.55 Easting: 621726.54 Elevation: 218.37 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3001s

Engineer: M.COOKE

Date: 1/27/2007 09:31



Max. Depth: 70.050 (ft)  
Avg. Interval: 0.656 (ft)

36 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

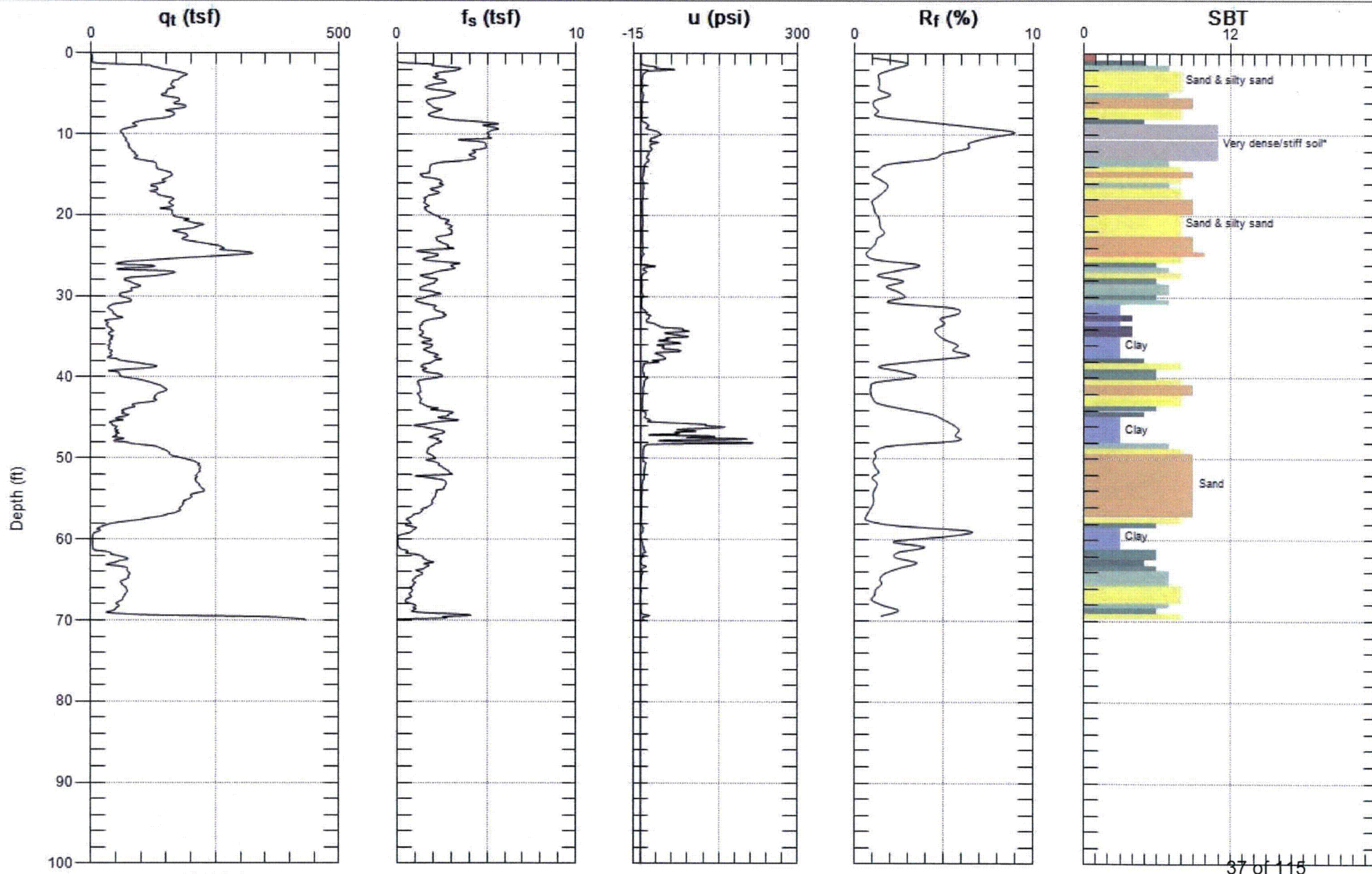
Northing: 1142610.55 Easting: 621726.54 Elevation: 218.37 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3001s

Engineer: M.COOKE

Date: 1/27/2007 09:31



Max. Depth: 70.050 (ft)  
Avg. Interval: 0.656 (ft)

37 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

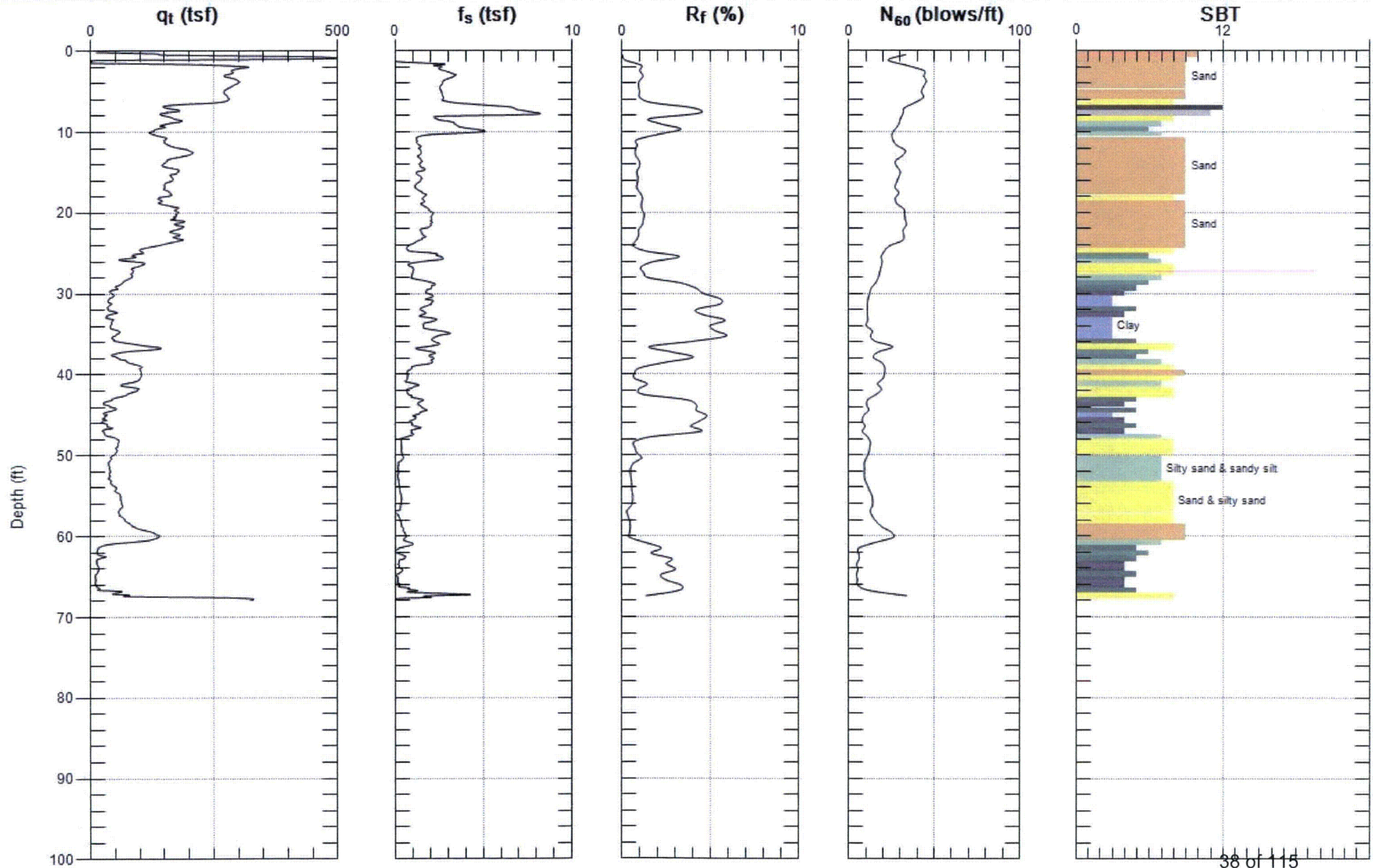
Northing: 1142606.51 Easting: 621872.75 Elevation: 218.89 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3002s

Engineer: M.COOKE

Date: 1/27/2007 05:18



Max. Depth: 67.910 (ft)  
Avg. Interval: 0.656 (ft)





# MACTEC

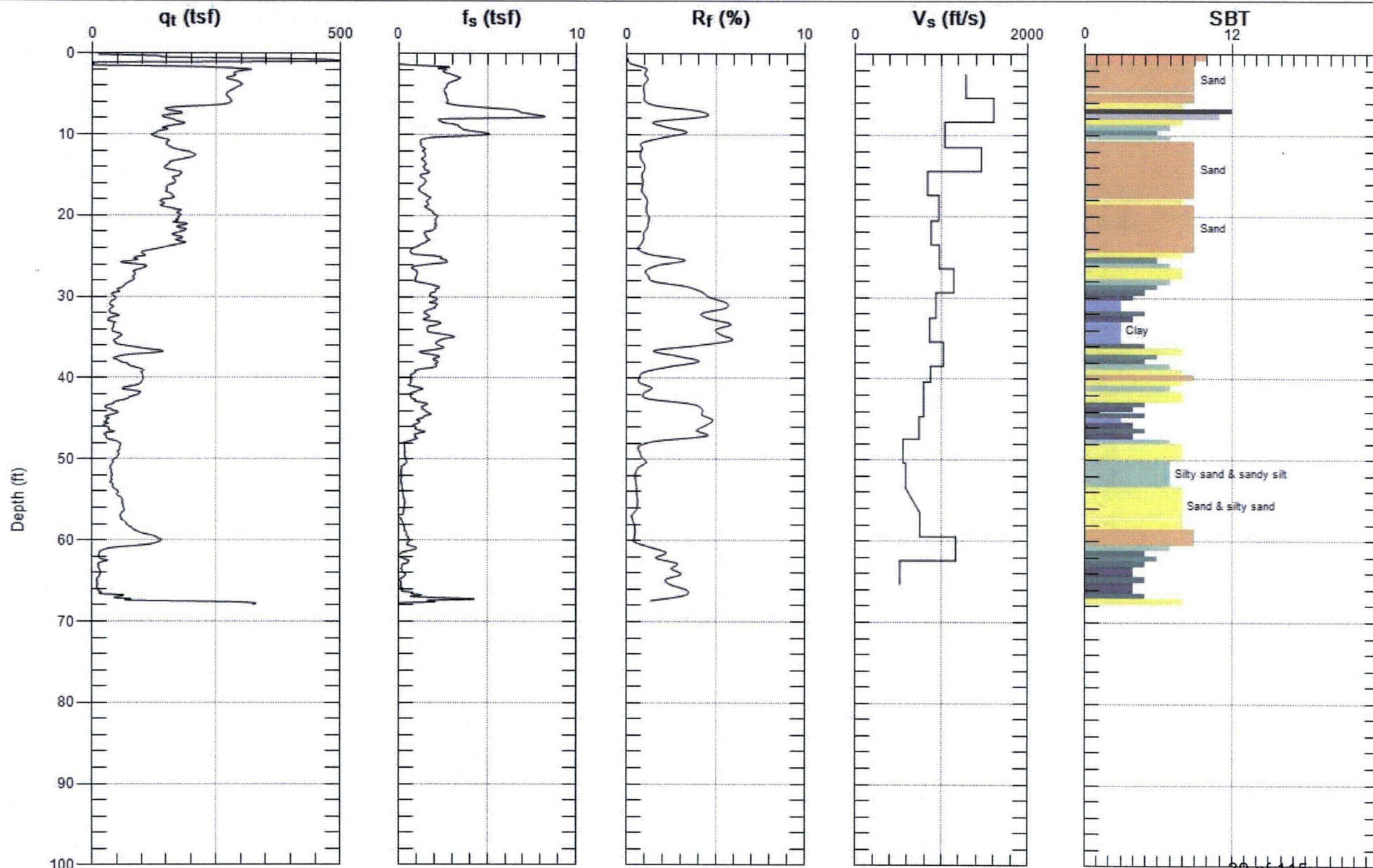
Northing: 1142606.51 Easting: 621872.75 Elevation: 218.89 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3002s

Engineer: M.COOKE

Date: 1/27/2007 05:18



Max. Depth: 67.910 (ft)  
Avg. Interval: 0.656 (ft)



# MACTEC

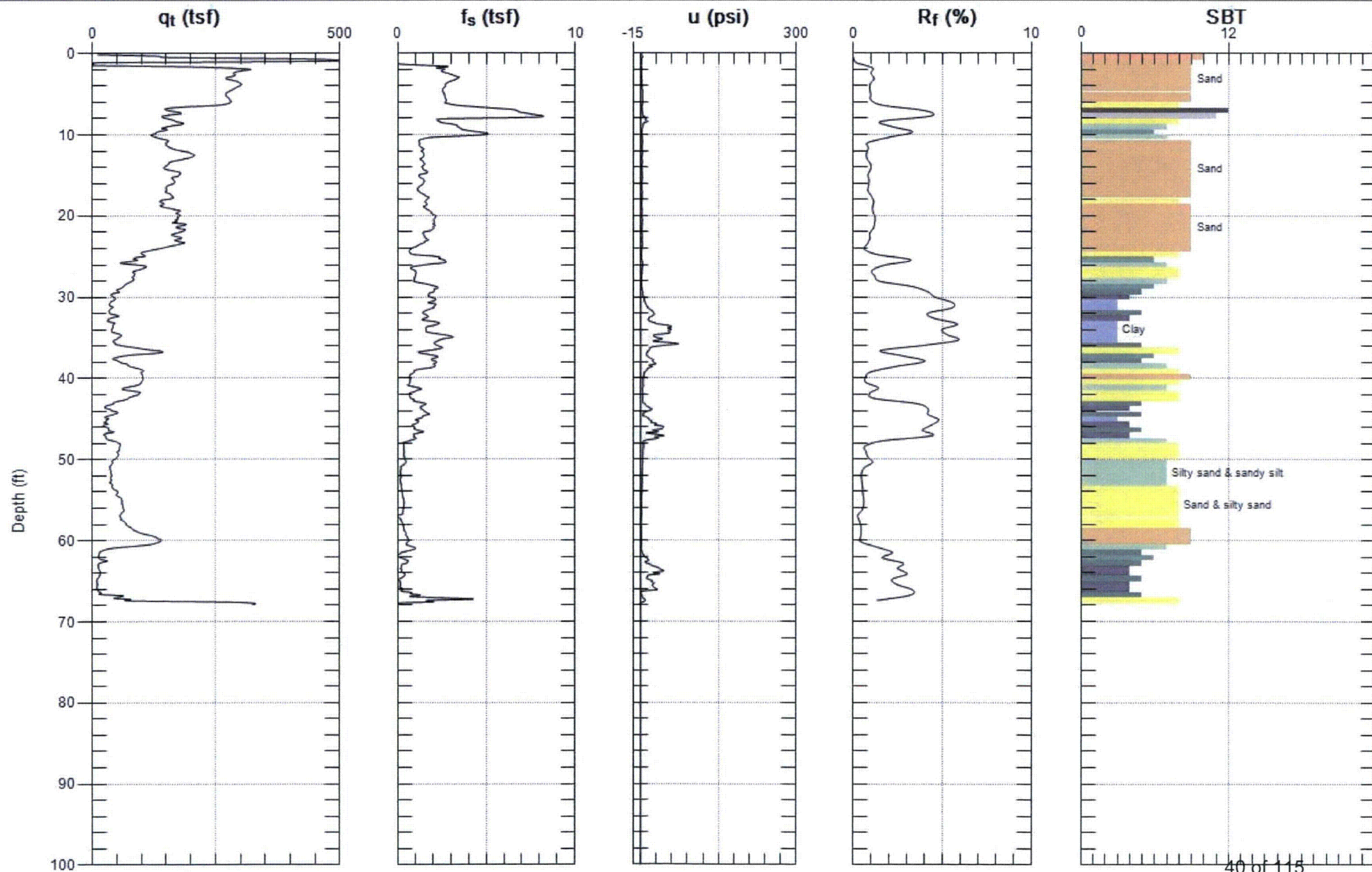
Northing: 1142606.51 Easting: 621872.75 Elevation: 218.89 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3002s

Engineer: M.COOKE

Date: 1/27/2007 05:18



Max. Depth: 67.910 (ft)  
Avg. Interval: 0.656 (ft)

40 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

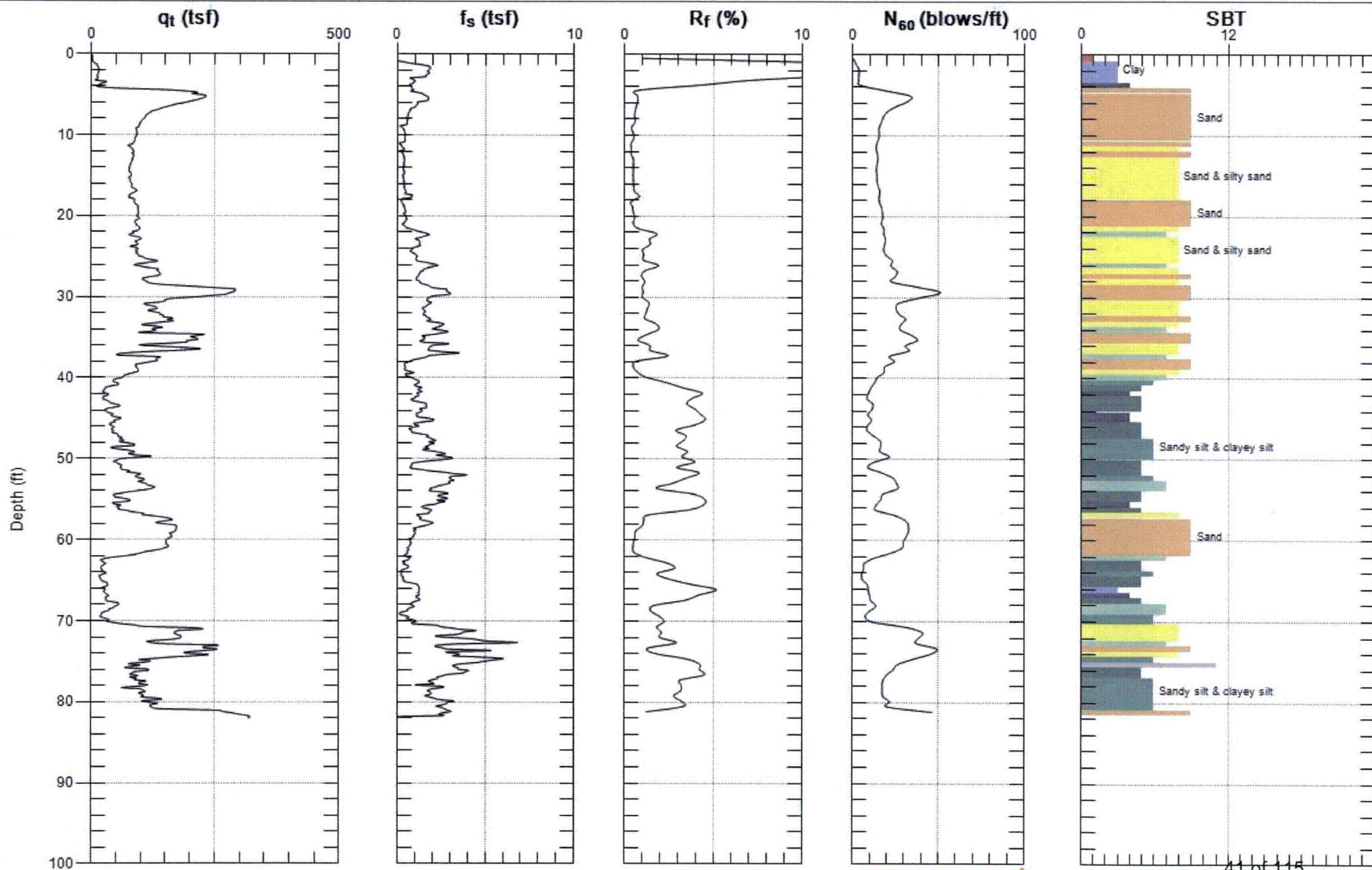
Northing: 1141171.79 Easting: 621801.62 Elevation: 221.38 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3003s

Engineer: M.COOKE

Date: 1/26/2007 10:46



Max. Depth: 82.020 (ft)  
Avg. Interval: 0.656 (ft)

41 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

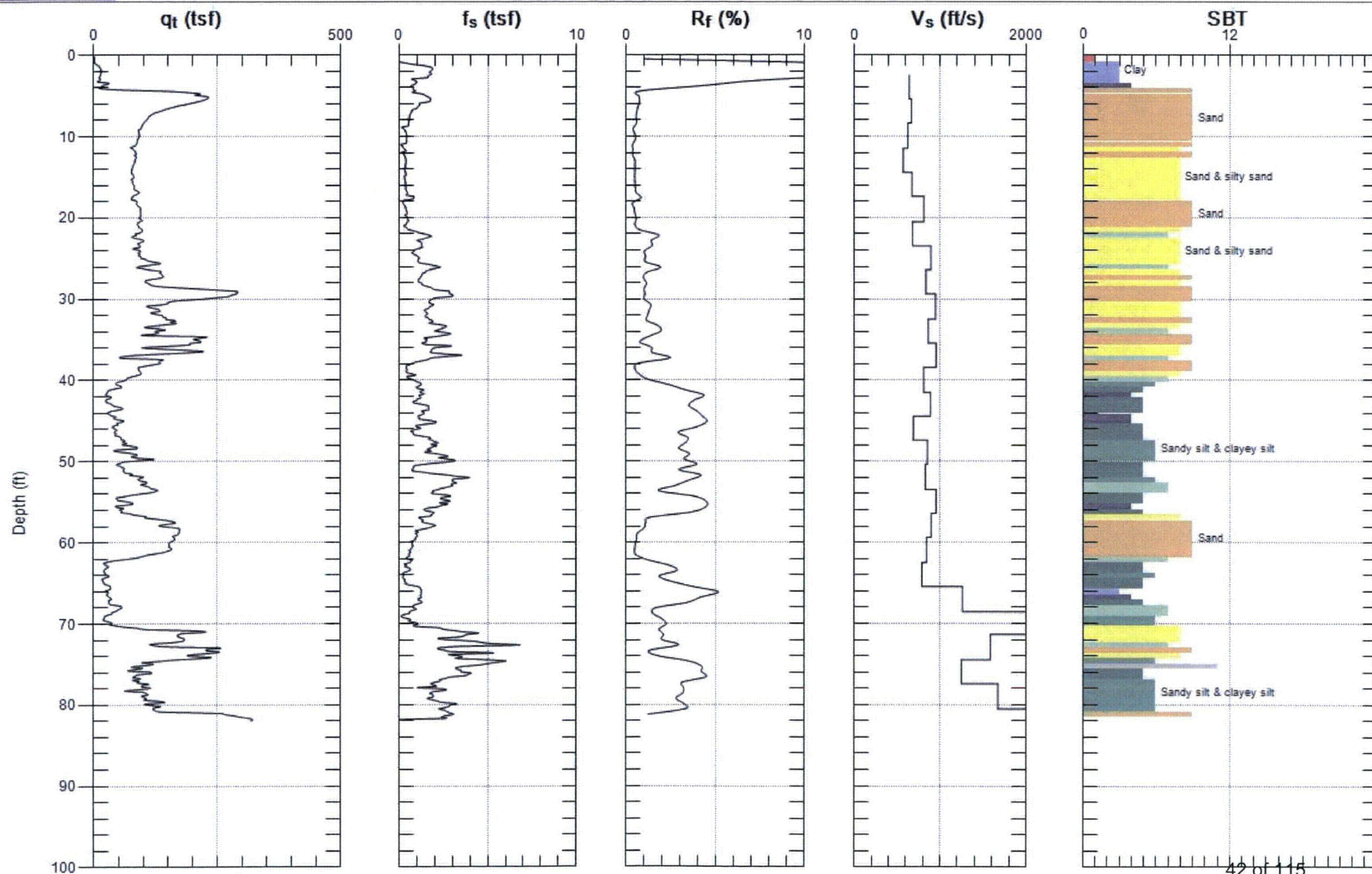
Northing: 1141171.79 Easting: 621801.62 Elevation: 221.38 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3003s

Engineer: M.COOKE

Date: 1/26/2007 10:46



Max. Depth: 82.020 (ft)

Avg. Interval: 0.656 (ft)

42 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

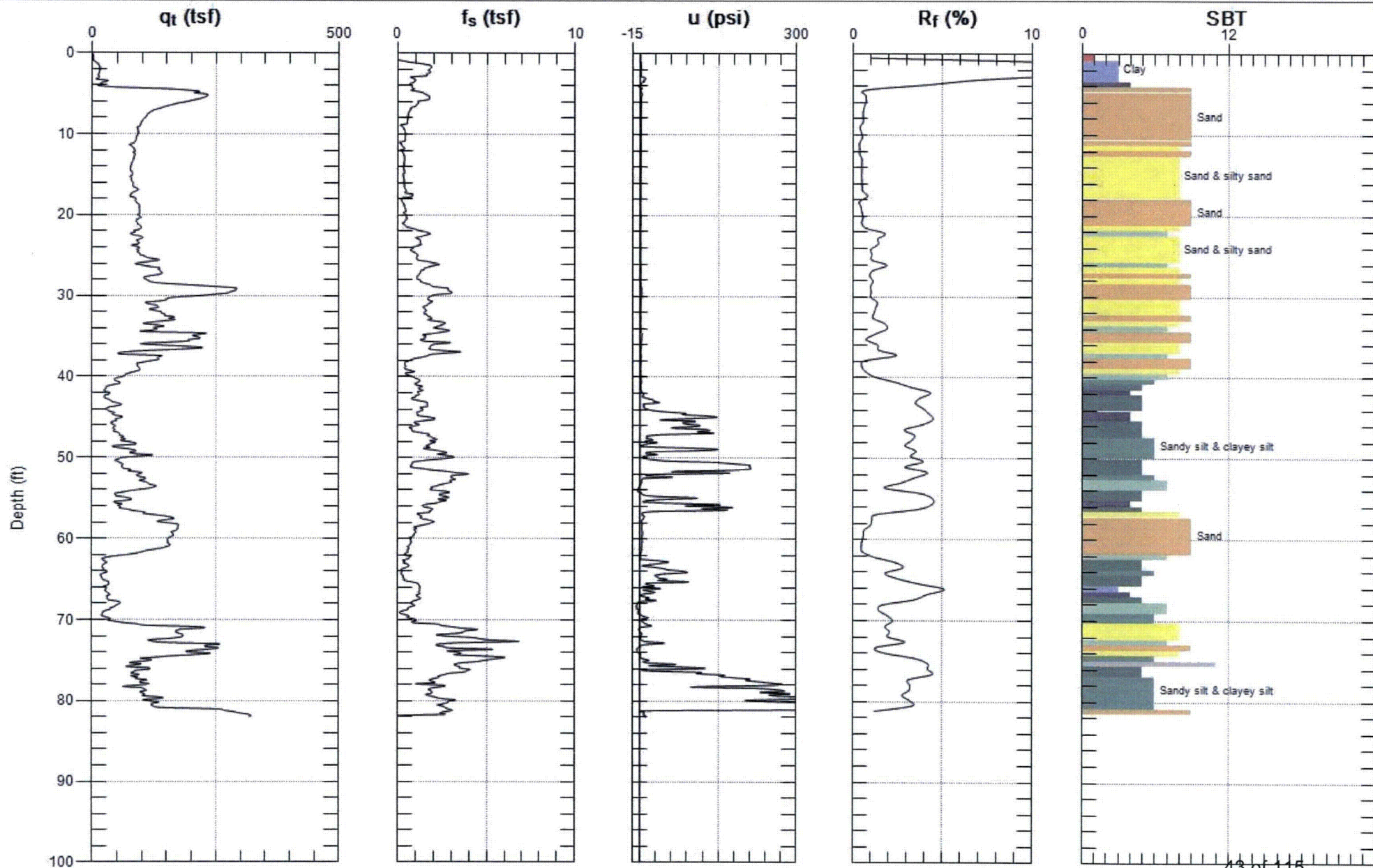
Northing: 1141171.79 Easting: 621801.62 Elevation: 221.38 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3003s

Engineer: M.COOKE

Date: 1/26/2007 10:46



Max. Depth: 82.020 (ft)  
Avg. Interval: 0.656 (ft)

43 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

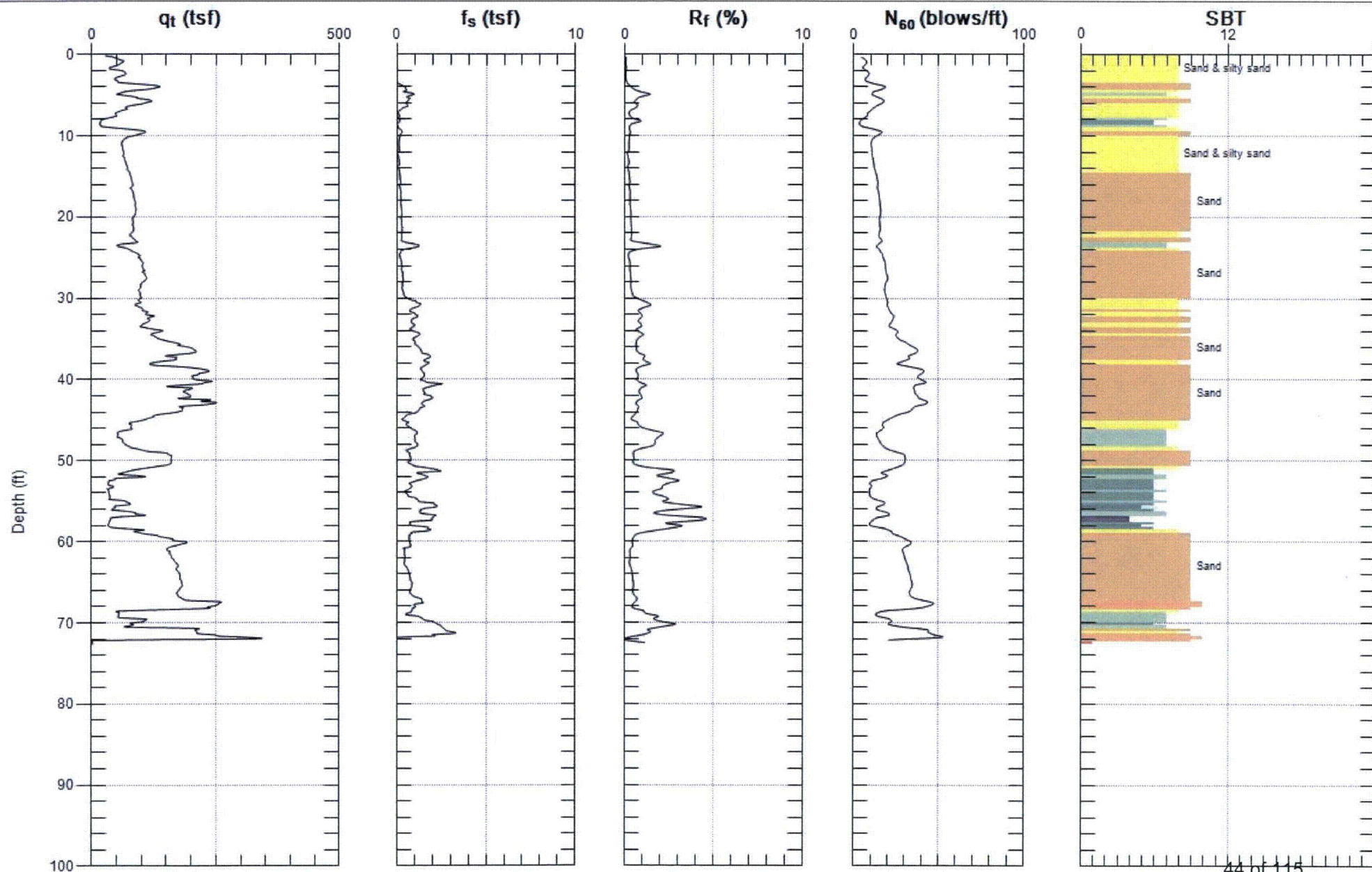
Northing: 1141542.00 Easting: 621807.33 Elevation: 223.25 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3004

Engineer: M.COOKE

Date: 1/25/2007 07:49

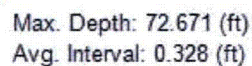


Max. Depth: 72.671 (ft)  
Avg. Interval: 0.328 (ft)





Date: 1/25/2007 07:49



SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

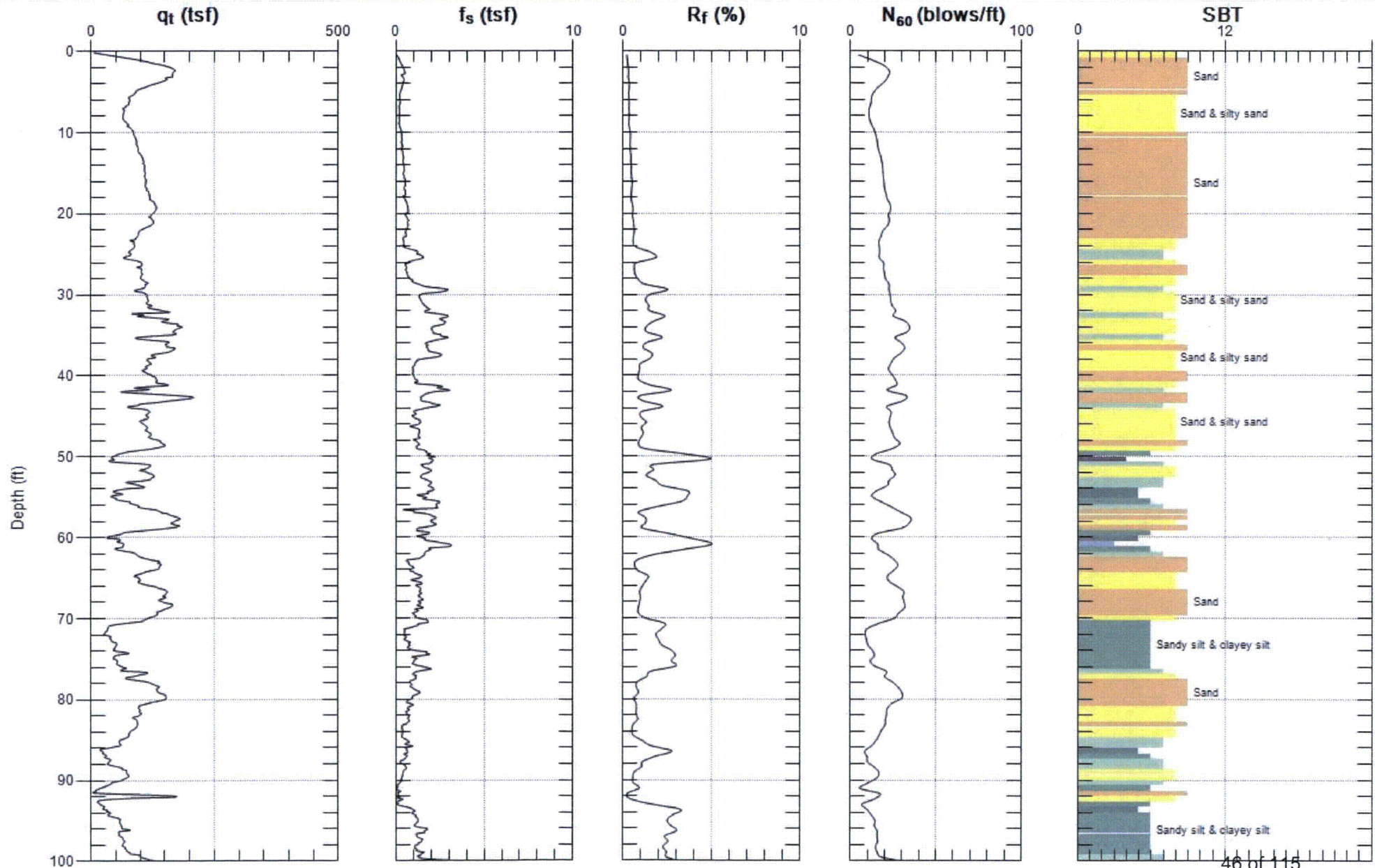
Northing: 1141266.89 Easting: 621792.33 Elevation: 221.27 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3005s

Engineer: M.COOKE

Date: 1/26/2007 05:24



Max. Depth: 101.050 (ft)

Avg. Interval: 0.656 (ft)

46 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

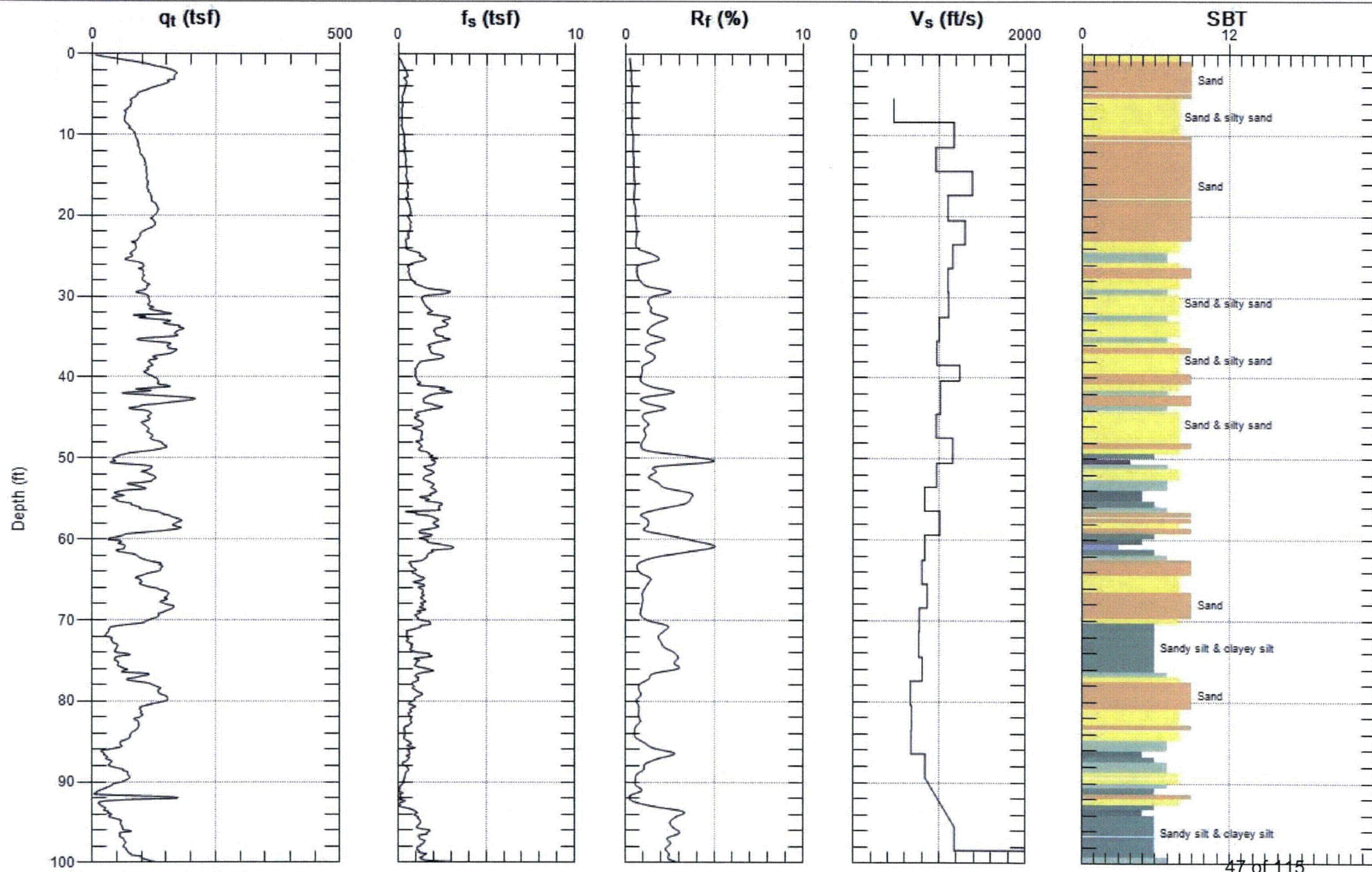
Northing: 1141266.89 Easting: 621792.33 Elevation: 221.27 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3005s

Engineer: M.COOKE

Date: 1/26/2007 05:24



Max. Depth: 101.050 (ft)

Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

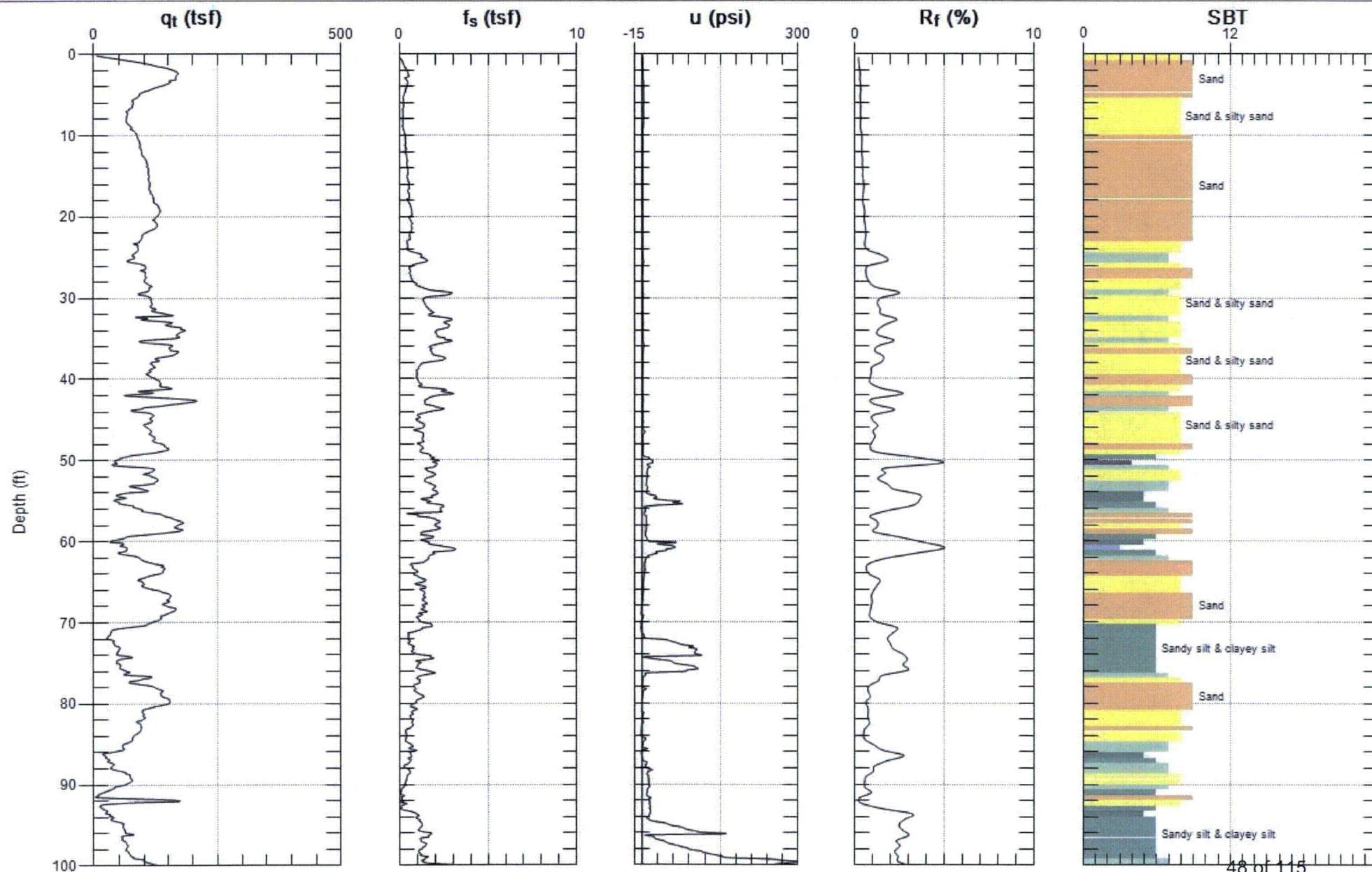
Northing: 1141266.89 Easting: 621792.33 Elevation: 221.27 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-3005s

Engineer: M.COOKE

Date: 1/26/2007 05:24



Max. Depth: 101.050 (ft)  
Avg. Interval: 0.656 (ft)

48 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

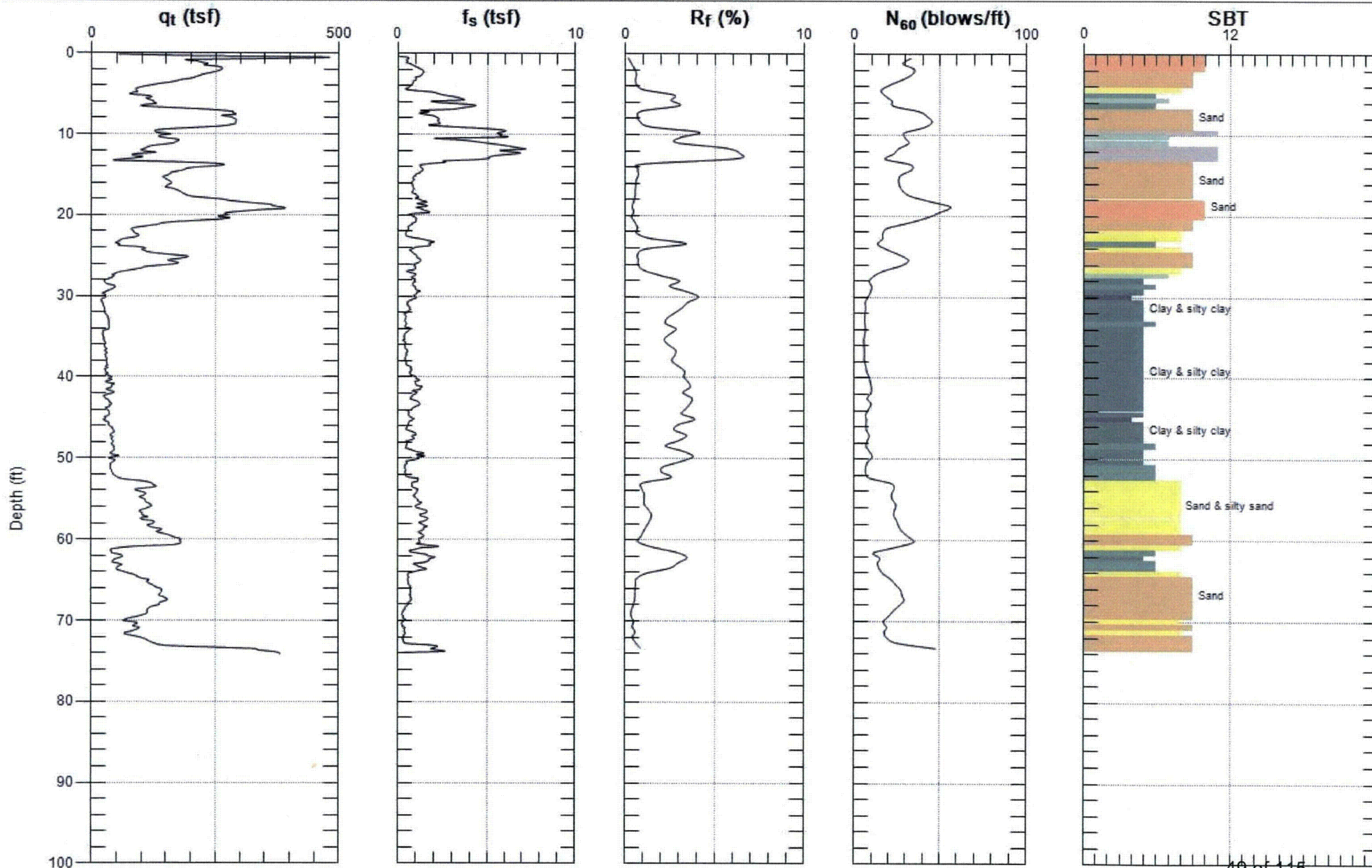
Northing: 1142599.87 Easting: 620918.51 Elevation: 218.87 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4001s

Engineer: M.COOKIE

Date: 1/31/2007 05:36



Max. Depth: 74.150 (ft)

Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

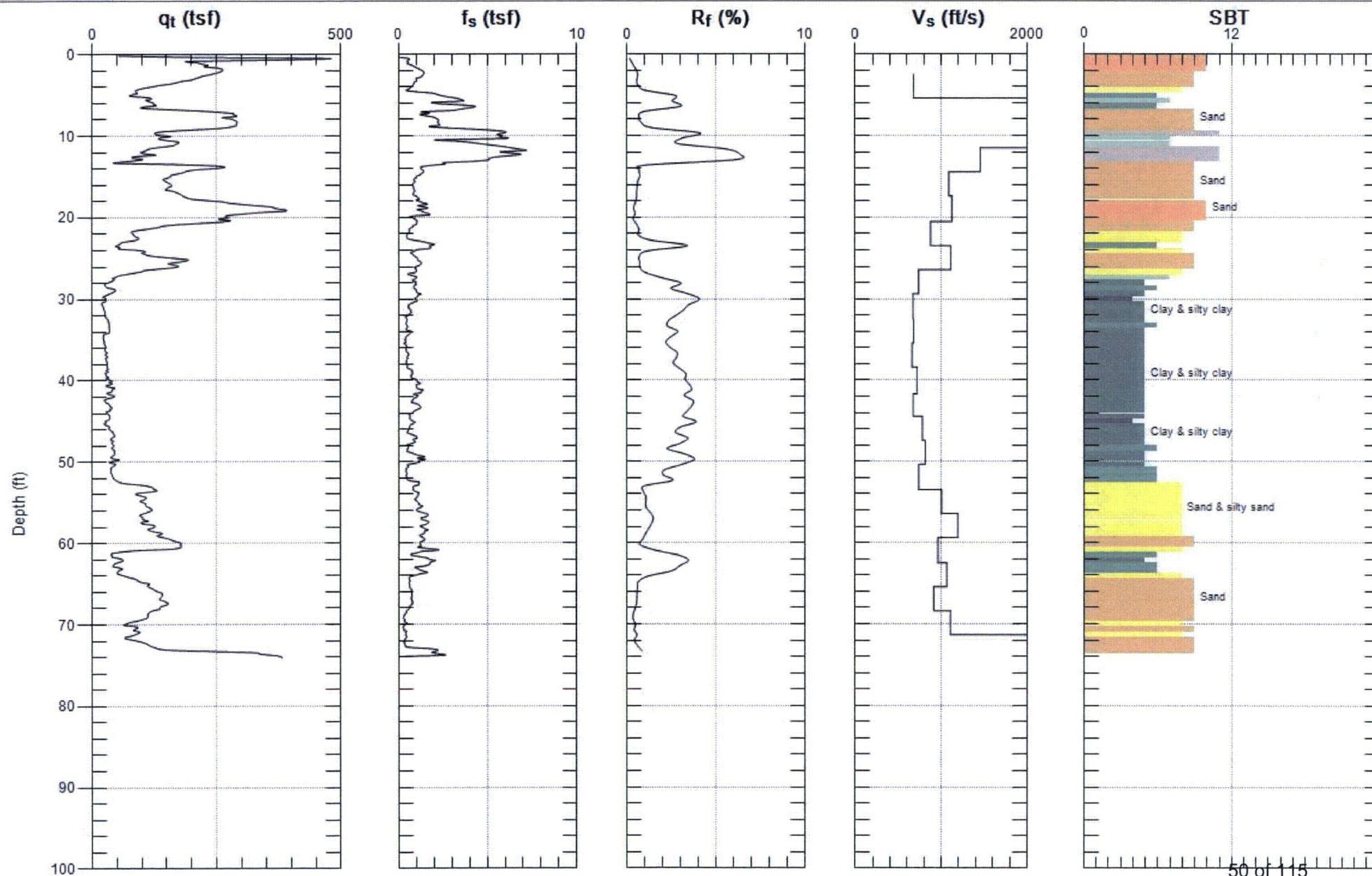
Northing: 1142599.87 Easting: 620918.51 Elevation: 218.87 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4001s

Engineer: M.COOKE

Date: 1/31/2007 05:36



Max. Depth: 74.150 (ft)  
Avg. Interval: 0.656 (ft)

50 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

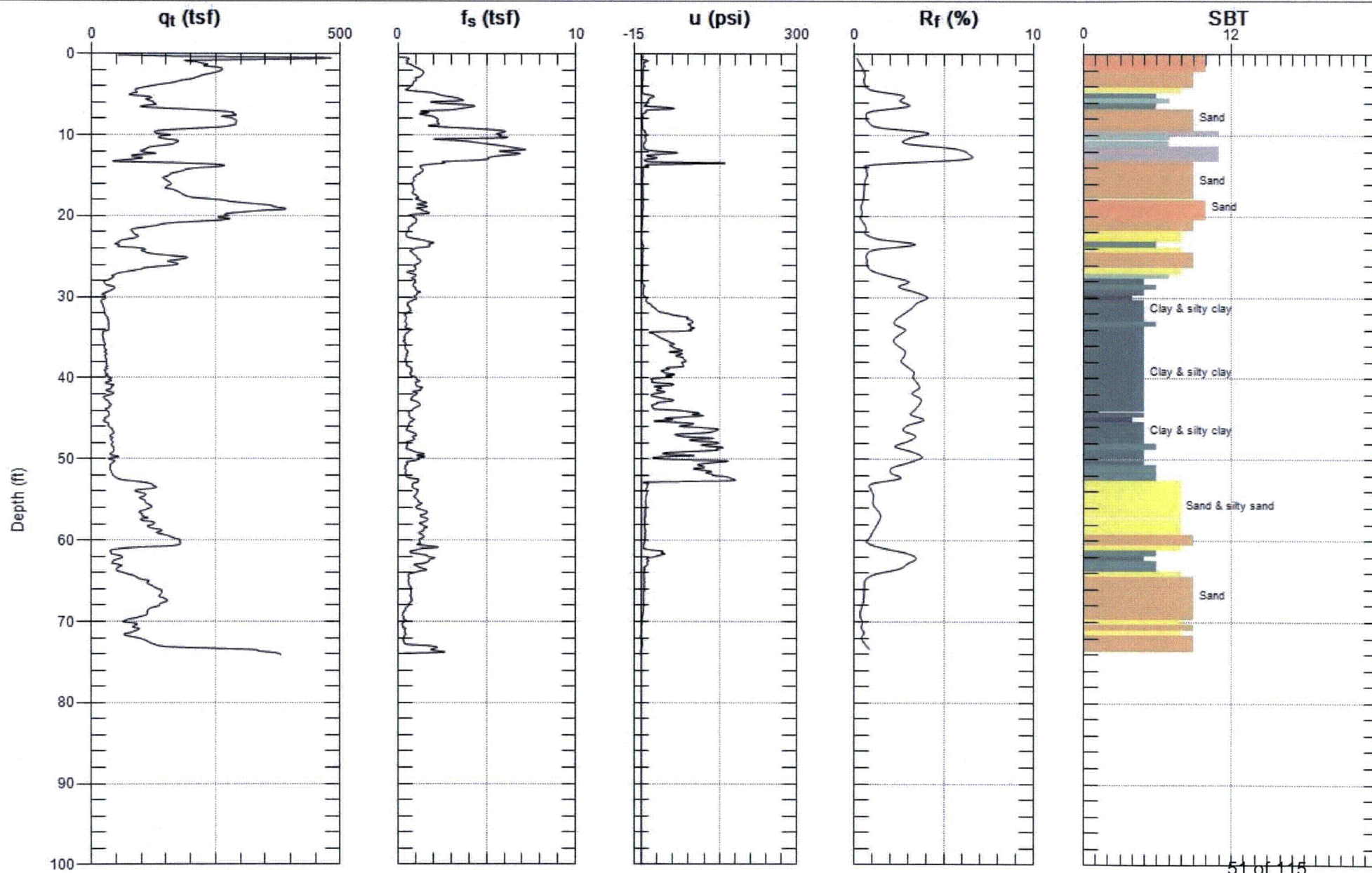
Northing: 1142599.87 Easting: 620918.51 Elevation: 218.87 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4001s

Engineer: M.COOKE

Date: 1/31/2007 05:36



Max. Depth: 74.150 (ft)  
Avg. Interval: 0.656 (ft)

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

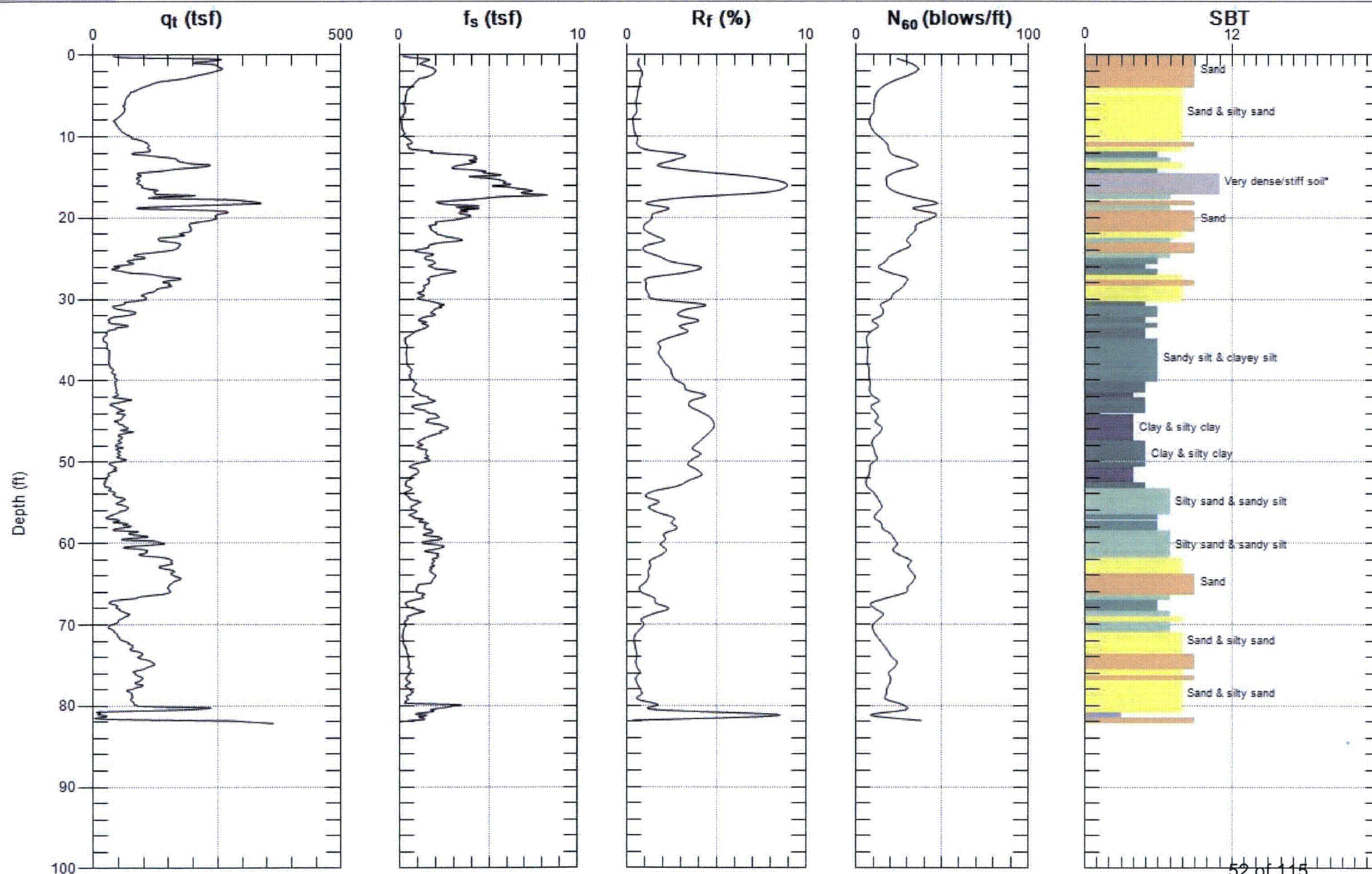
Northing: 1142599.94 Easting: 621063.82 Elevation: 219.08 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4002s

Engineer: M.COOKE

Date: 1/30/2007 10:52



Max. Depth: 82.190 (ft)  
Avg. Interval: 0.656 (ft)

52 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

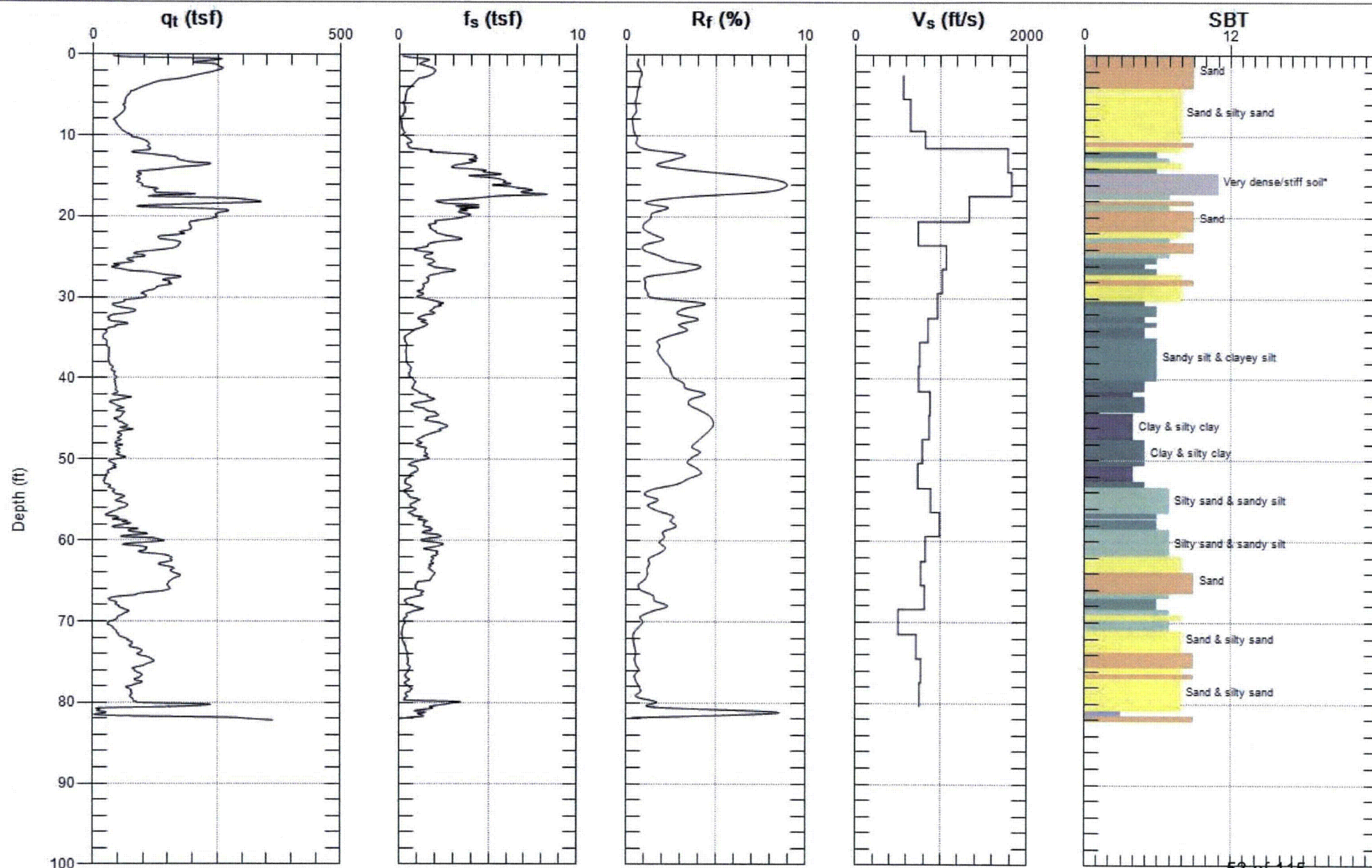
Northing: 1142599.94 Easting: 621063.82 Elevation: 219.08 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4002s

Engineer: M.COOKE

Date: 1/30/2007 10:52



Max. Depth: 82.190 (ft)

Avg. Interval: 0.656 (ft)

53 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

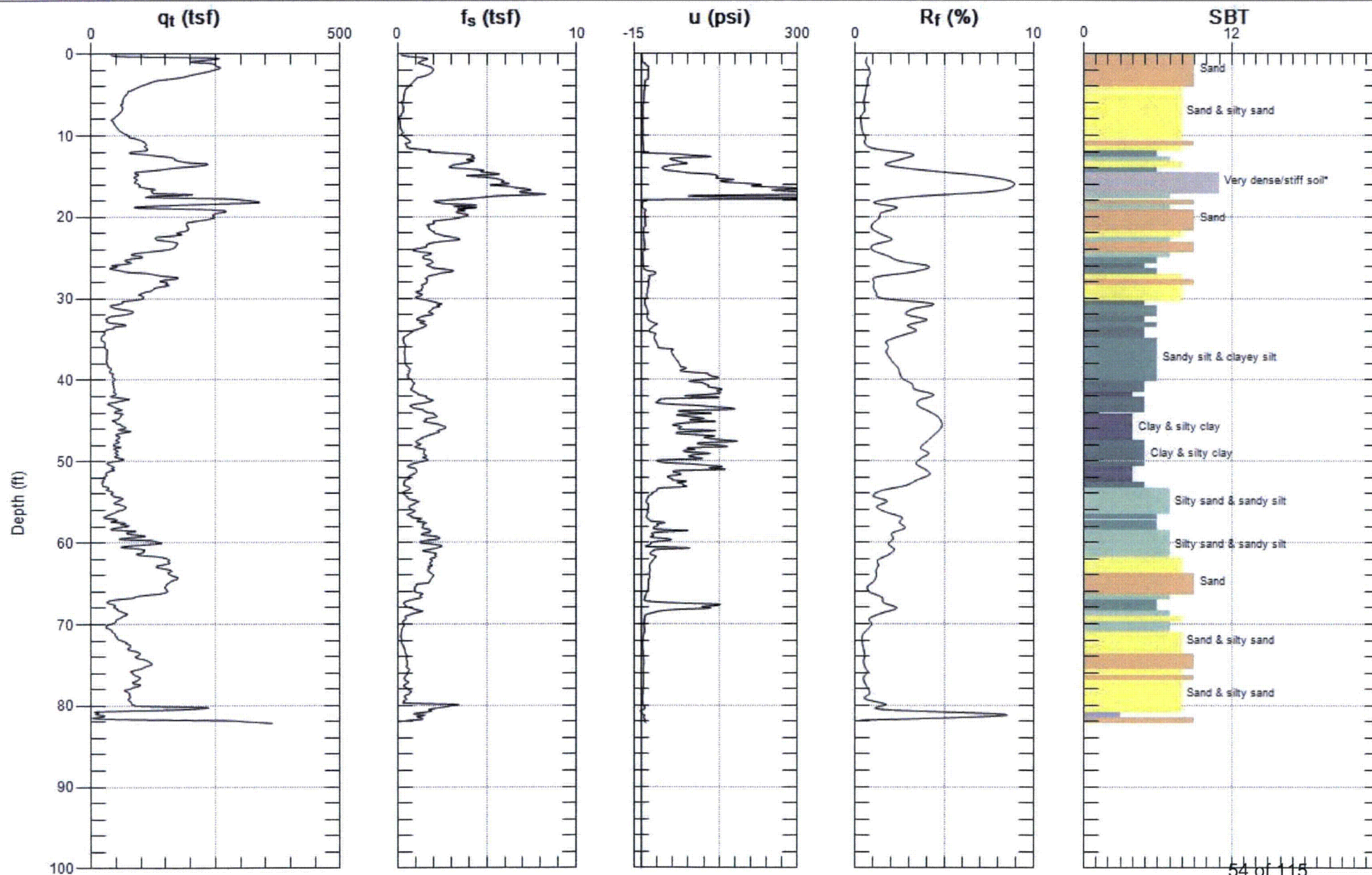
Northing: 1142599.94 Easting: 621063.82 Elevation: 219.08 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4002s

Engineer: M.COOKE

Date: 1/30/2007 10:52



Max. Depth: 82.190 (ft)  
Avg. Interval: 0.656 (ft)

54 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

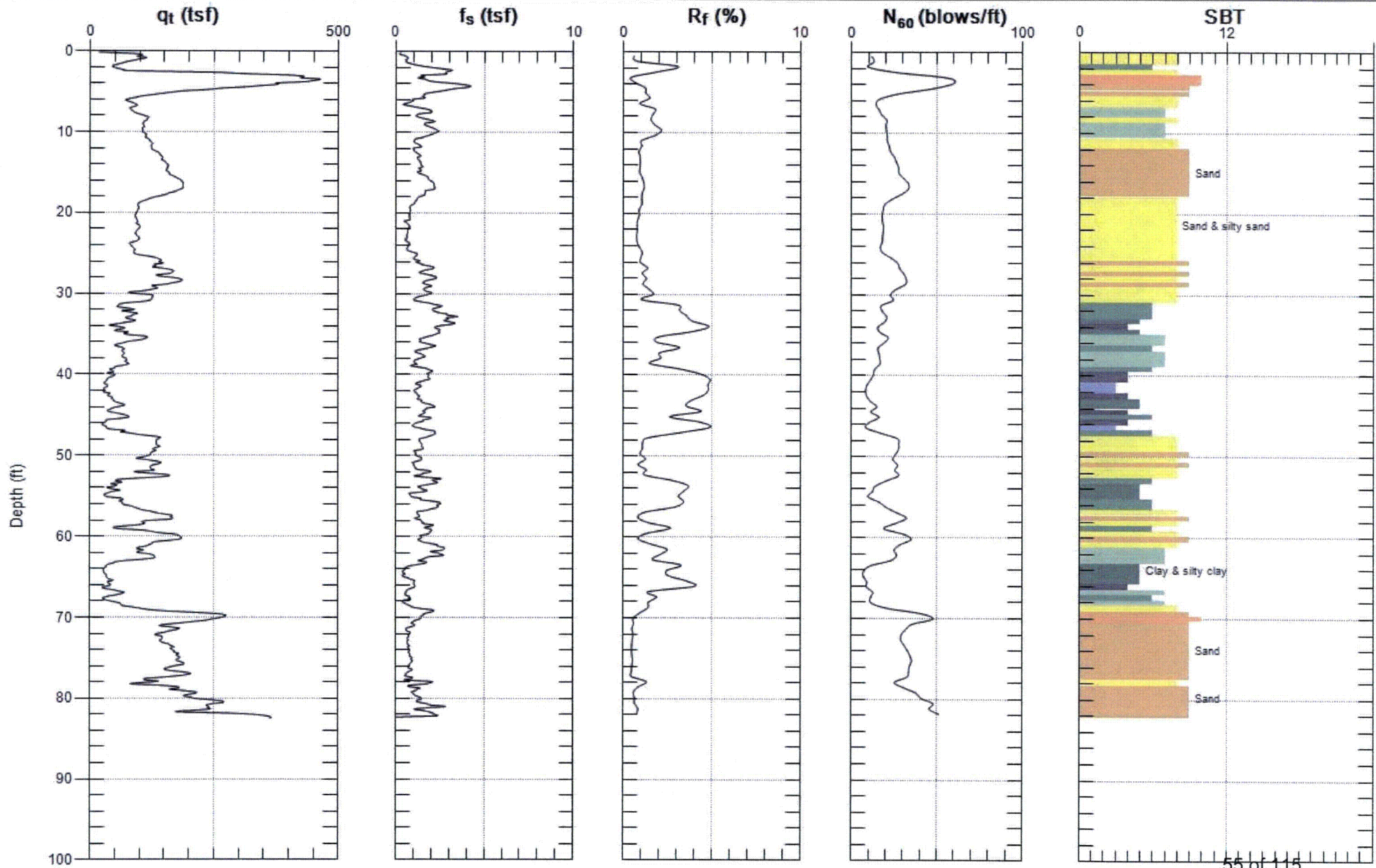
Northing: 1141784.64 Easting: 620708.48 Elevation: 221.16 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4003s

Engineer: M.COOKE

Date: 1/29/2007 07:41



Max. Depth: 82.510 (ft)

Avg. Interval: 0.656 (ft)

55 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

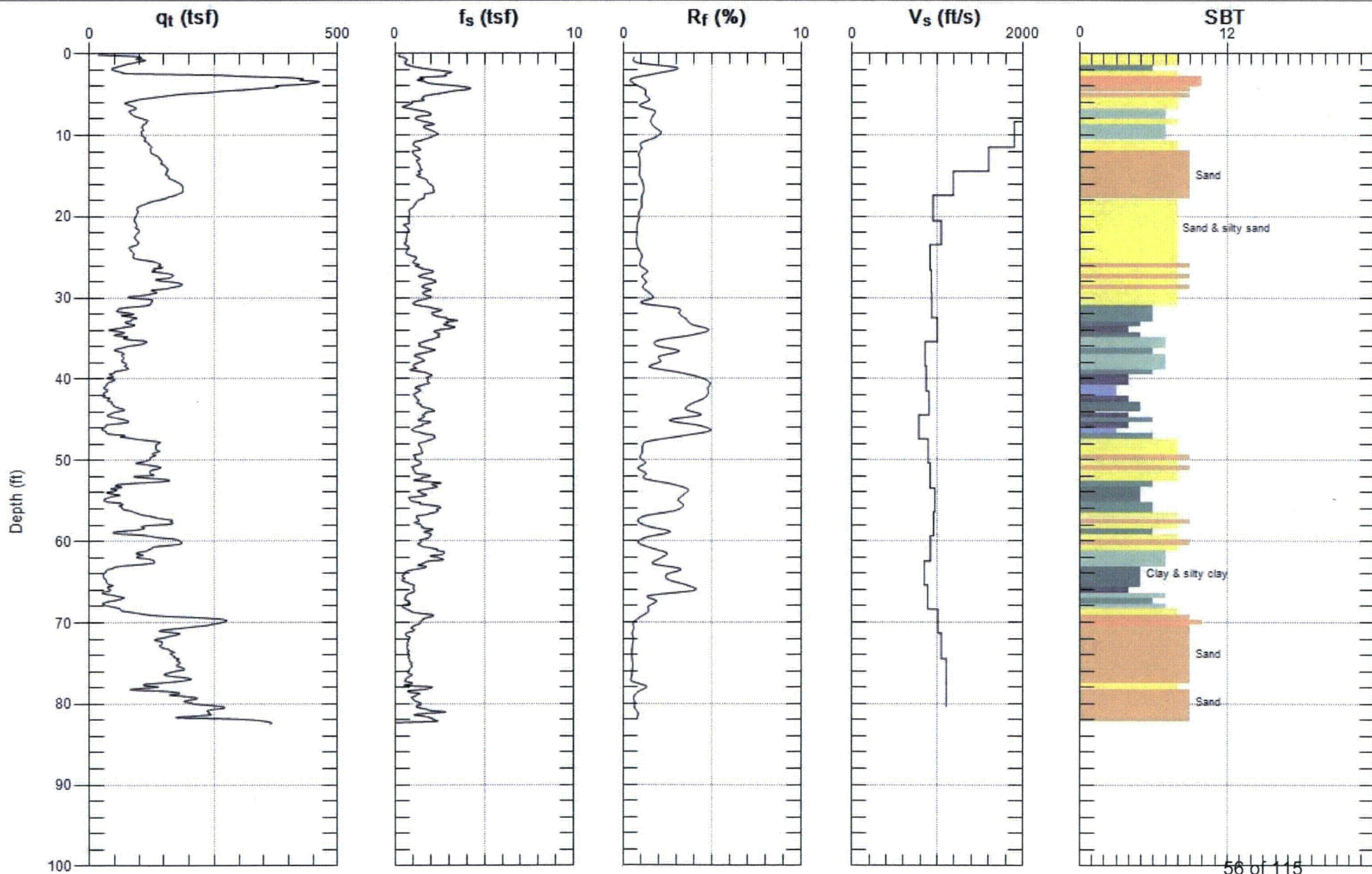
Northing: 1141784.64 Easting: 620708.48 Elevation: 221.16 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4003s

Engineer: M.COOKE

Date: 1/29/2007 07:41



Max. Depth: 82.510 (ft)

Avg. Interval: 0.656 (ft)

56 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

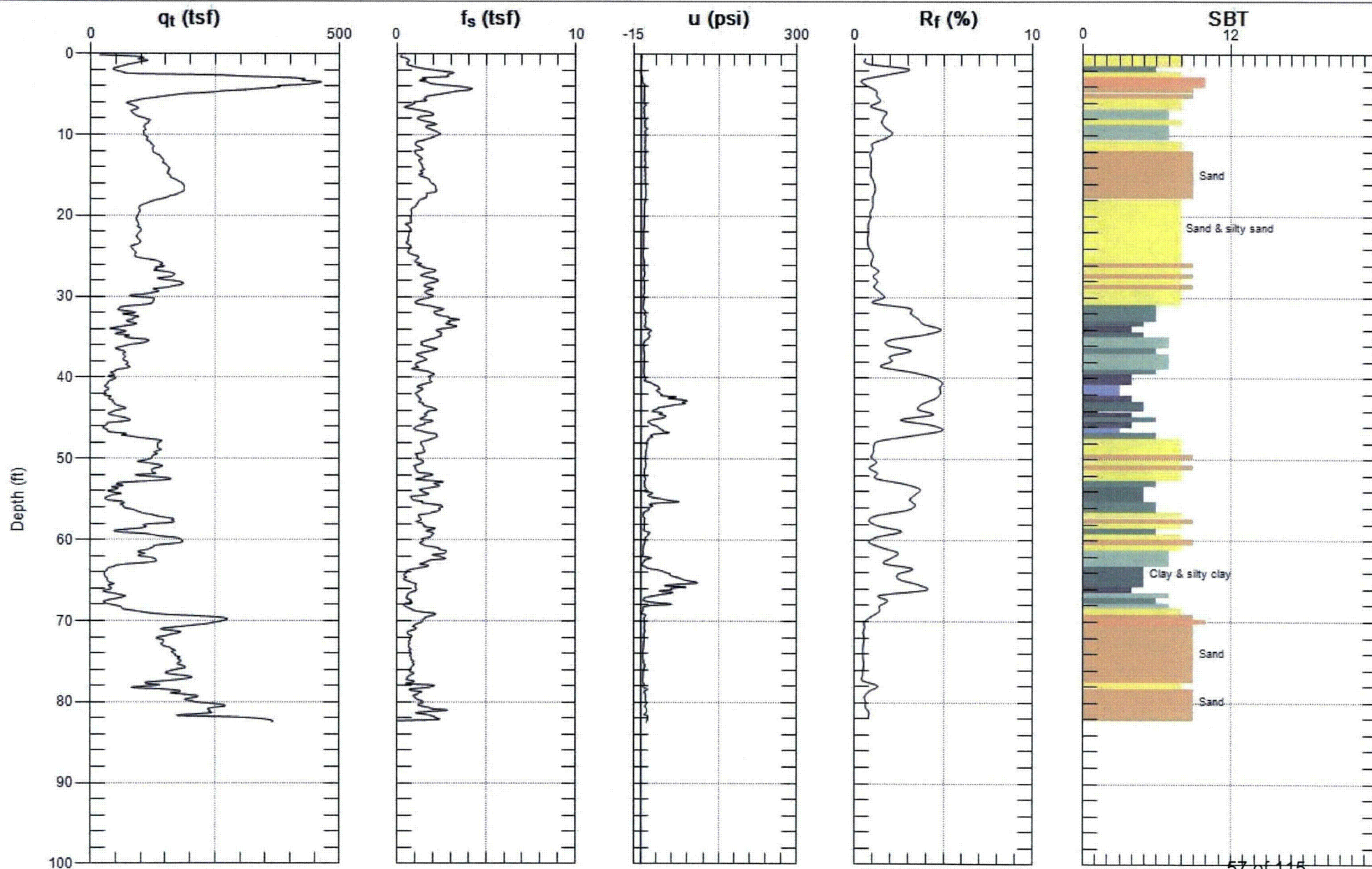
Northing: 1141784.64 Easting: 620708.48 Elevation: 221.16 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4003s

Engineer: M.COOKIE

Date: 1/29/2007 07:41



Max. Depth: 82.510 (ft)  
Avg. Interval: 0.656 (ft)

57 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

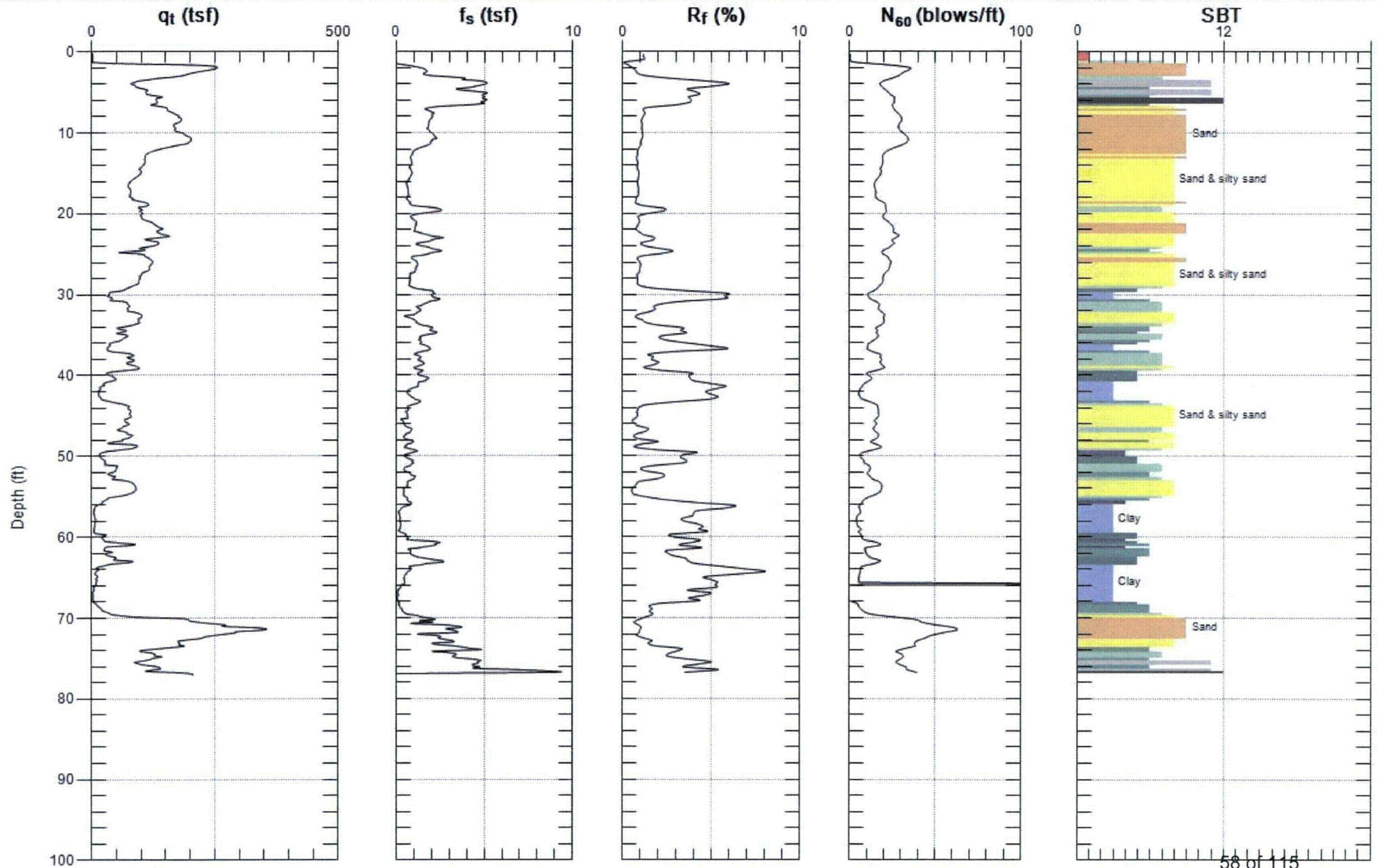
Northing: 1141543.07 Easting: 620597.67 Elevation: 219.99 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4004

Engineer: M.COOKIE

Date: 1/29/2007 11:23



Max. Depth: 77.100 (ft)  
Avg. Interval: 0.328 (ft)

58 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

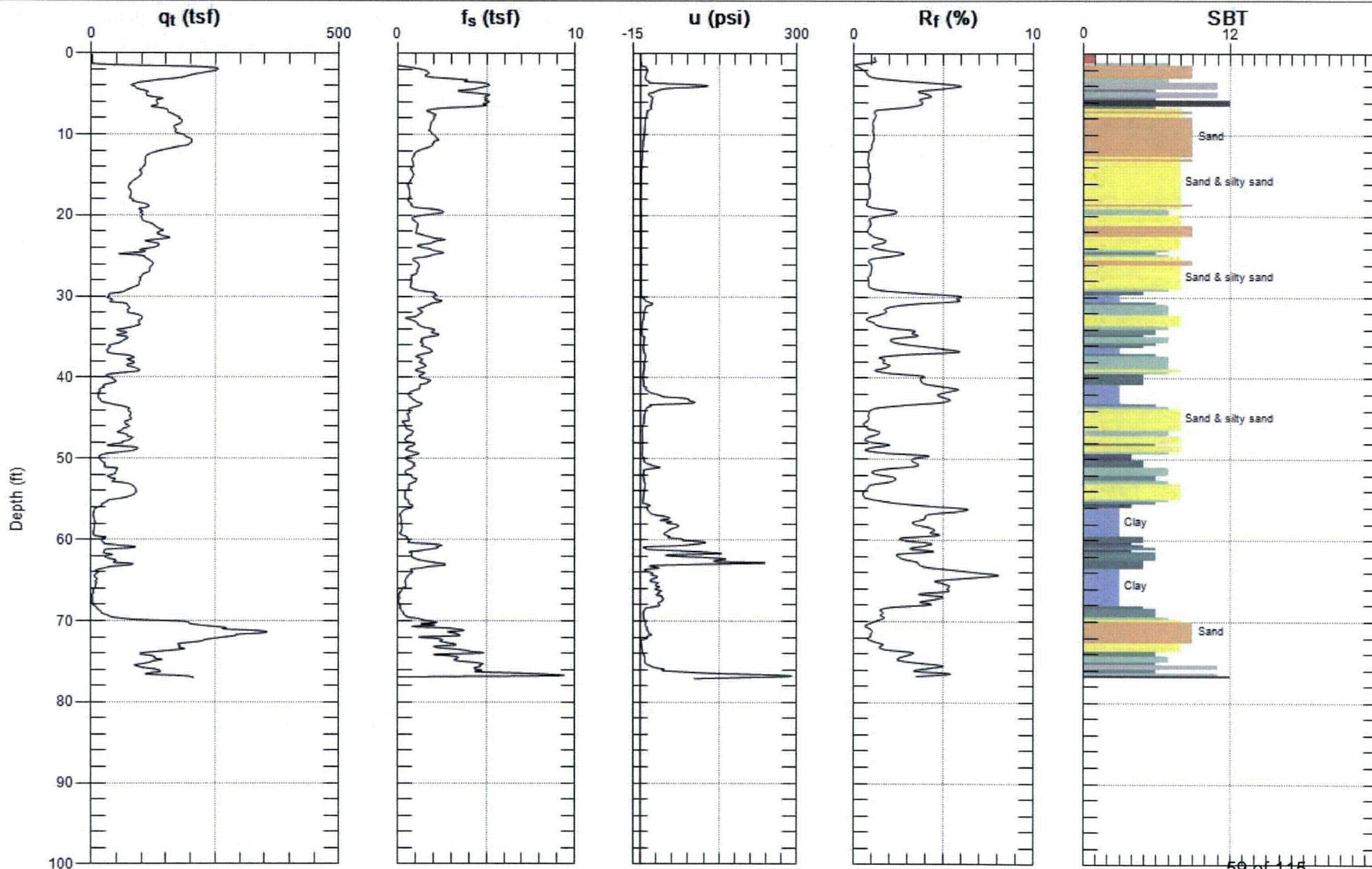
Northing: 1141543.07 Easting: 620597.67 Elevation: 219.99 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4004

Engineer: M.COOKIE

Date: 1/29/2007 11:23



Max. Depth: 77.100 (ft)  
Avg. Interval: 0.328 (ft)

59 of 115

SBT: Soil Behavior Type (Robertson 1990)



# MACTEC

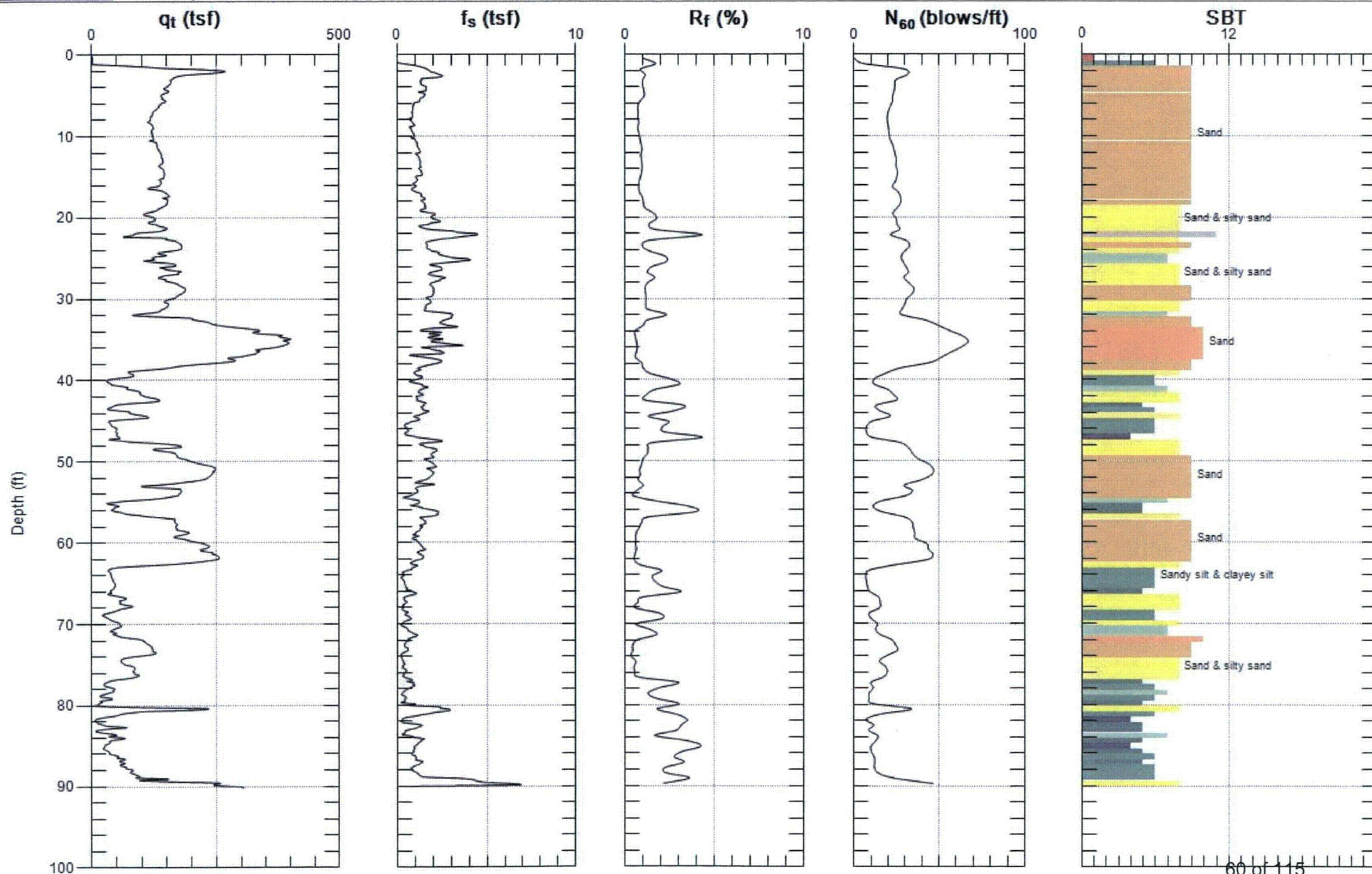
Northing: 1141249.90 Easting: 620593.96 Elevation: 220.01 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4005s

Engineer: M.COOKE

Date: 1/30/2007 05:43



Max. Depth: 90.220 (ft)  
Avg. Interval: 0.656 (ft)

60 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

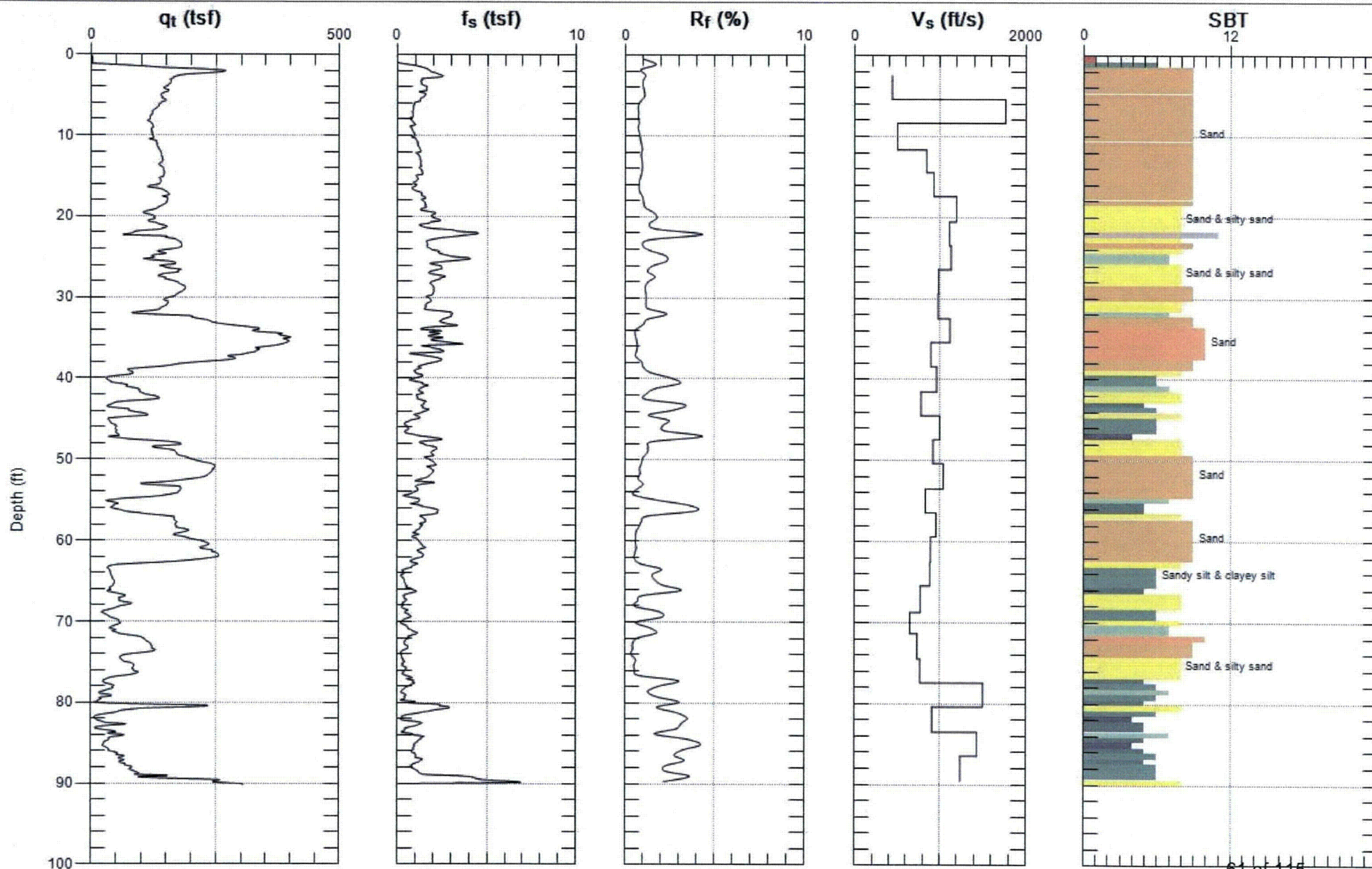
Northing: 1141249.90 Easting: 620593.96 Elevation: 220.01 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4005s

Engineer: M.COOKIE

Date: 1/30/2007 05:43



Max. Depth: 90.220 (ft)  
Avg. Interval: 0.656 (ft)

61 of 115

SBT: Soil Behavior Type (Robertson 1990)





# MACTEC

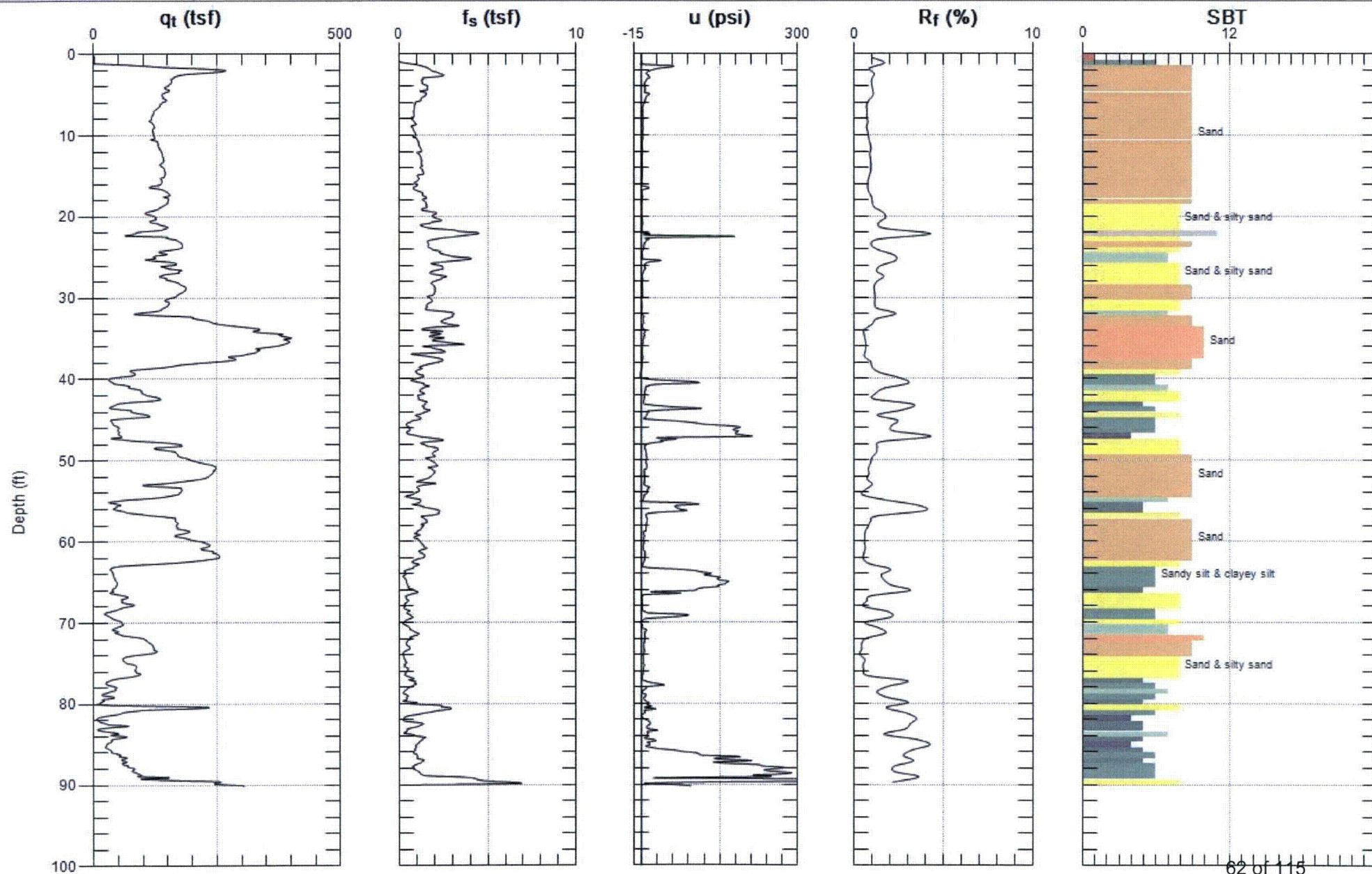
Northing: 1141249.90 Easting: 620593.96 Elevation: 220.01 Operator: R.AGUILLAR

Site: PLANT VOGTLE

Sounding: C-4005s

Engineer: M.COOKE

Date: 1/30/2007 05:43



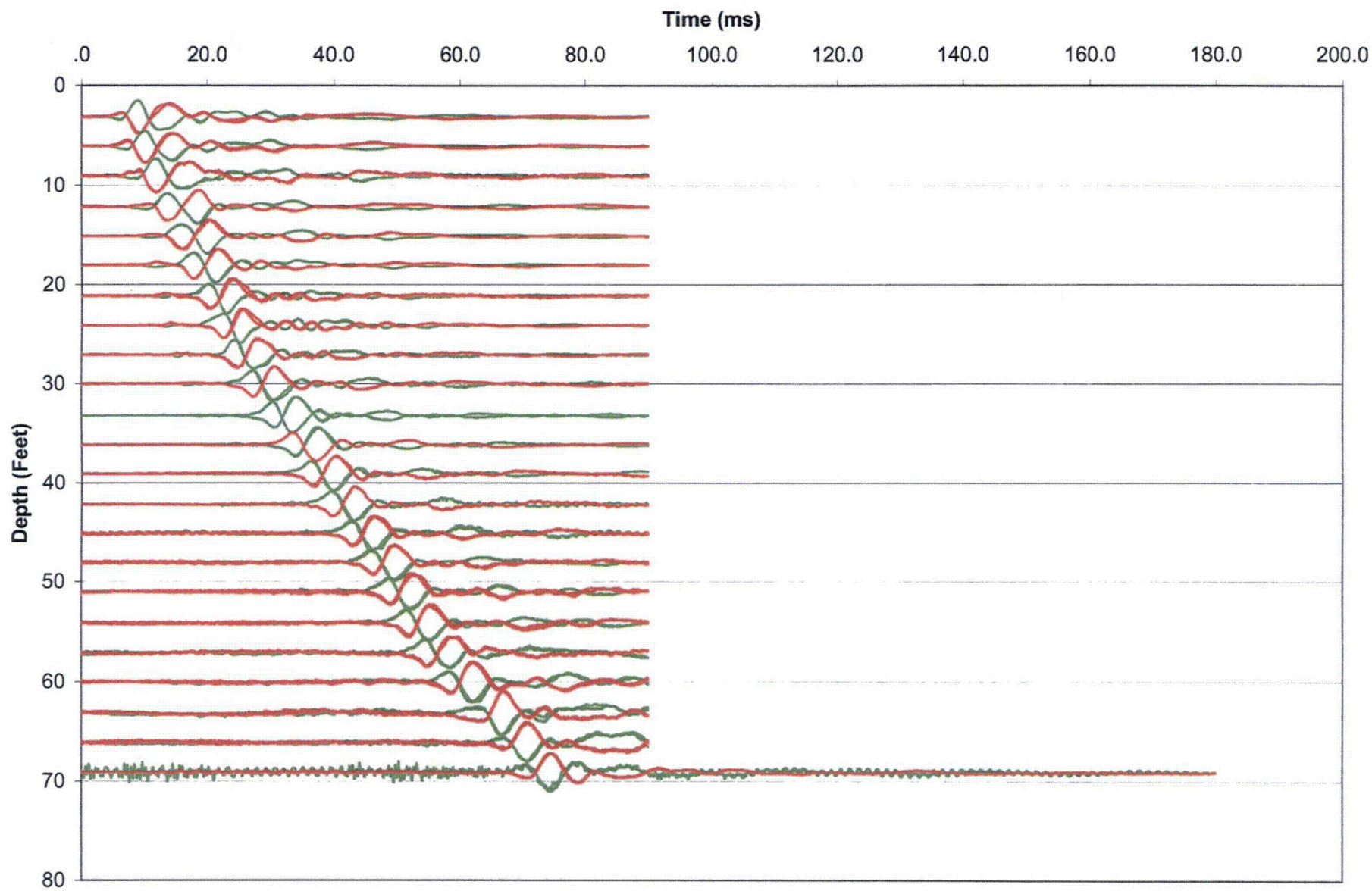
Max. Depth: 90.220 (ft)  
Avg. Interval: 0.656 (ft)

62 of 115

SBT: Soil Behavior Type (Robertson 1990)



# Waveforms for Sounding c-3001s





## Shear Wave Velocity Calculations

PLANT VOGTLE  
AUGUSTA, GA

Geophone Offset: 0.66 Feet  
Source Offset: 9.17 Feet

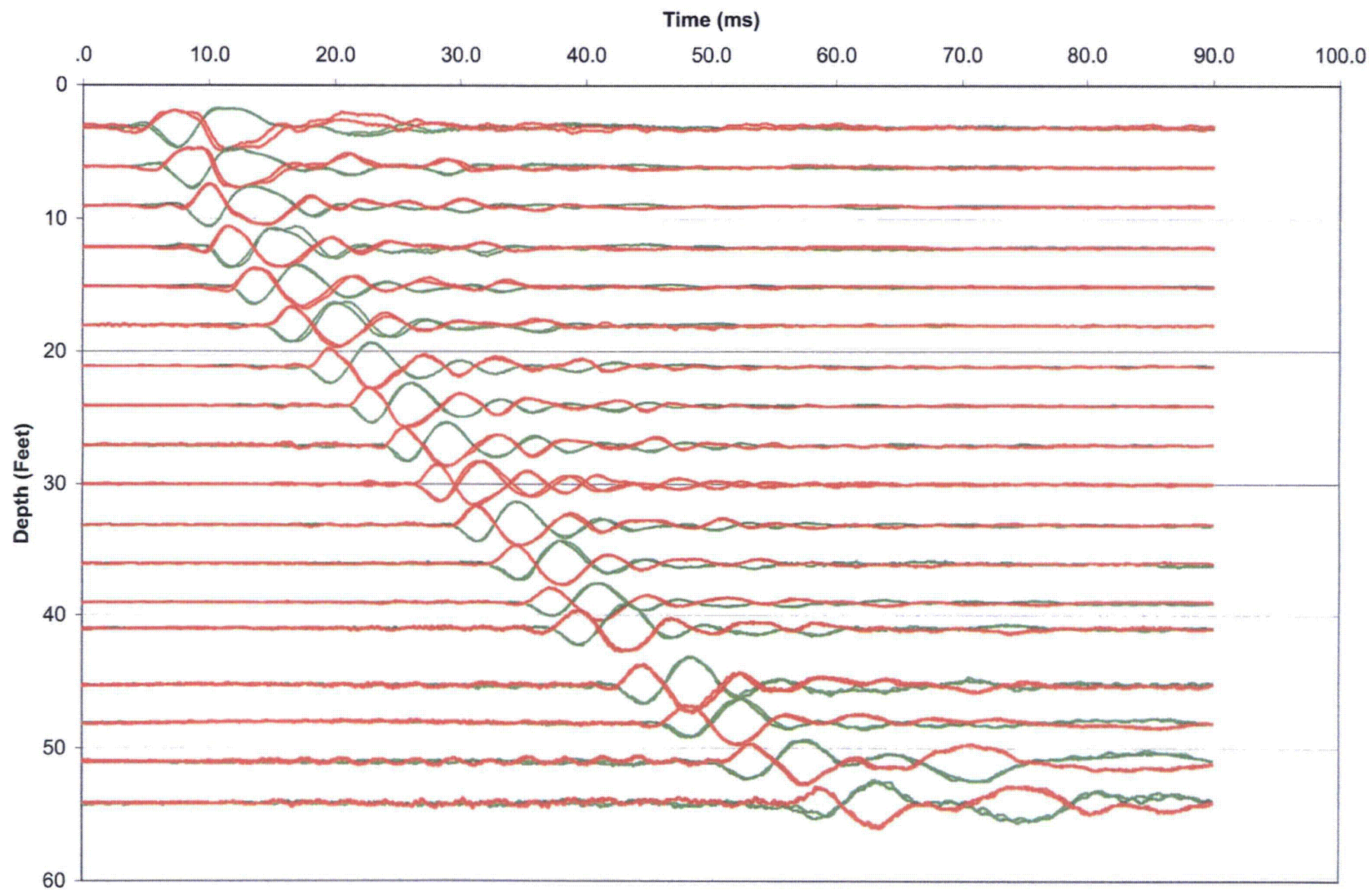
c-3001s

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	10.7000			
6.07	5.41	10.65	1.15	12.1000	1.4000	823.8	3.93
9.02	8.36	12.41	1.76	13.8000	1.7000	1037.4	6.89
12.14	11.48	14.69	2.28	15.8000	2.0000	1140.9	9.92
15.09	14.43	17.10	2.41	18.0000	2.2000	1093.9	12.96
18.04	17.38	19.65	2.56	19.7000	1.7000	1503.6	15.91
21.16	20.50	22.46	2.80	21.9000	2.2000	1274.5	18.94
24.11	23.45	25.18	2.72	24.0000	2.1000	1297.3	21.98
27.07	26.41	27.95	2.77	25.9500	1.9500	1420.9	24.93
30.02	29.36	30.76	2.80	28.7500	2.8000	1001.6	27.88
33.14	32.48	33.75	2.99	31.9000	3.1500	948.5	30.92
36.09	35.43	36.60	2.85	35.4500	3.5500	802.9	33.95
39.04	38.38	39.46	2.87	38.2000	2.7500	1042.0	36.91
42.16	41.50	42.50	3.04	41.4000	3.2000	949.3	39.94
45.11	44.45	45.39	2.89	44.3500	2.9500	978.9	42.98
48.06	47.40	48.28	2.90	47.7000	3.3500	864.3	45.93
51.02	50.36	51.19	2.90	50.1500	2.4500	1184.5	48.88
54.13	53.47	54.25	3.07	53.1500	3.0000	1023.1	51.92
57.09	56.43	57.17	2.91	56.3500	3.2000	910.1	54.95
60.04	59.38	60.08	2.92	59.9500	3.6000	810.1	57.90
63.16	62.50	63.17	3.08	64.6500	4.7000	655.8	60.94
66.11	65.45	66.09	2.92	68.2500	3.6000	811.9	63.97
69.06	68.40	69.01	2.93	71.9000	3.6500	801.5	66.93





# Waveforms for Sounding c-3002s





## Shear Wave Velocity Calculations

PLANT VOGTLE

AUGUSTA, GA

Geophone Offset: 0.66 Feet

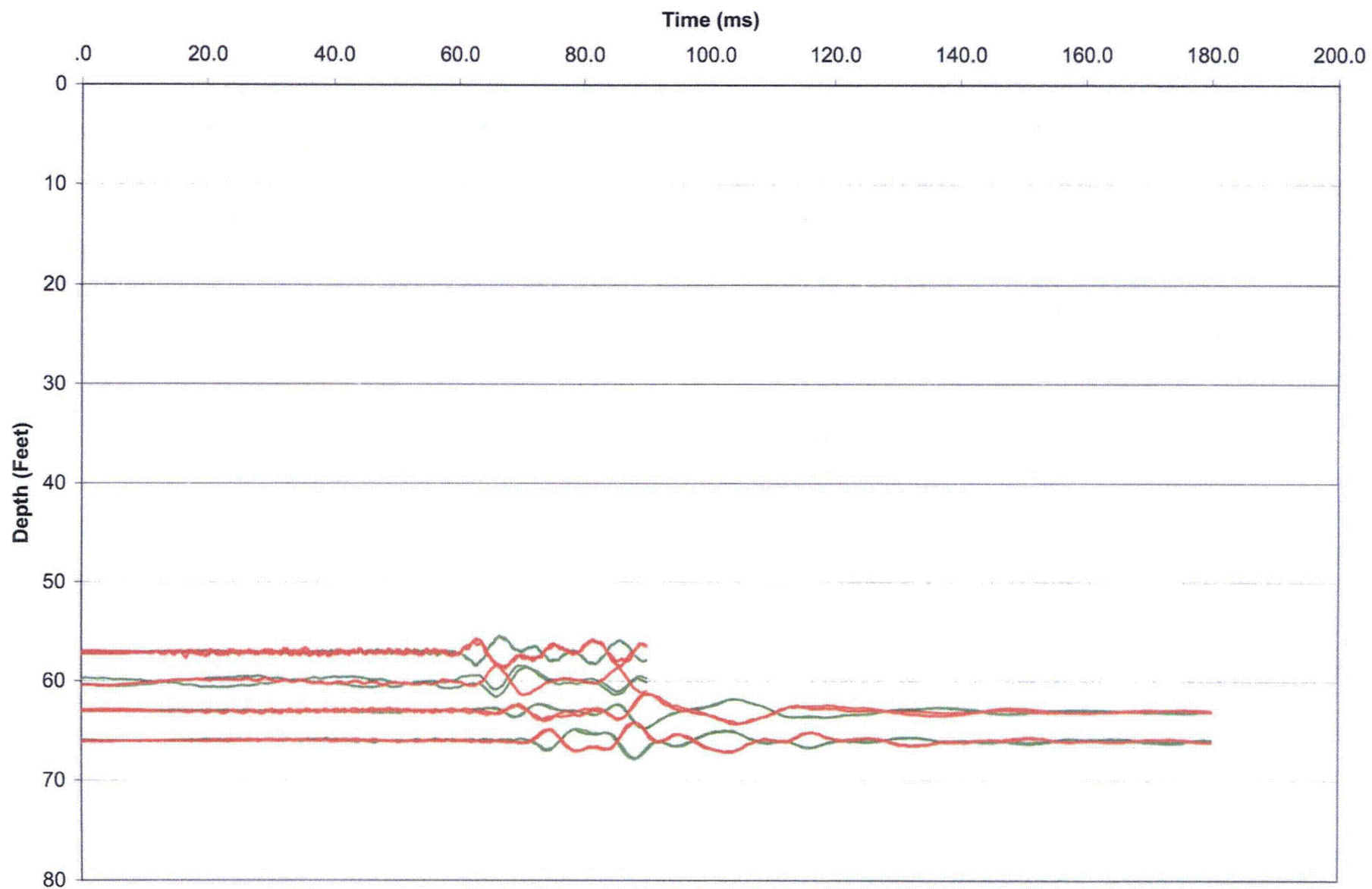
Source Offset: 9.17 Feet

c-3002s

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	9.4000			
6.07	5.41	10.65	1.15	10.3000	0.9000	1281.4	3.93
9.02	8.36	12.41	1.76	11.4000	1.1000	1603.3	6.89
12.14	11.48	14.69	2.28	13.6000	2.2000	1037.2	9.92
15.09	14.43	17.10	2.41	15.2500	1.6500	1458.6	12.96
18.04	17.38	19.65	2.56	18.3000	3.0500	838.1	15.91
21.16	20.50	22.46	2.80	21.2000	2.9000	966.9	18.94
24.11	23.45	25.18	2.72	24.3000	3.1000	878.8	21.98
27.07	26.41	27.95	2.77	27.1500	2.8500	972.2	24.93
30.02	29.36	30.76	2.80	29.6000	2.4500	1144.7	27.88
33.14	32.48	33.75	2.99	32.8000	3.2000	933.7	30.92
36.09	35.43	36.60	2.85	36.1000	3.3000	863.8	33.95
39.04	38.38	39.46	2.87	38.9000	2.8000	1023.4	36.91
41.01	40.35	41.38	1.92	41.1000	2.2000	871.4	39.37
45.28	44.62	45.55	4.17	46.3500	5.2500	794.1	42.48
48.06	47.40	48.28	2.73	50.0500	3.7000	739.2	46.01
51.02	50.36	51.19	2.90	55.3000	5.2500	552.8	48.88
54.13	53.47	54.25	3.07	60.5500	5.2500	584.6	51.92



# Waveforms for Sounding c-3002sa







## Shear Wave Velocity Calculations

PLANT VOGTLE  
AUGUSTA, GA

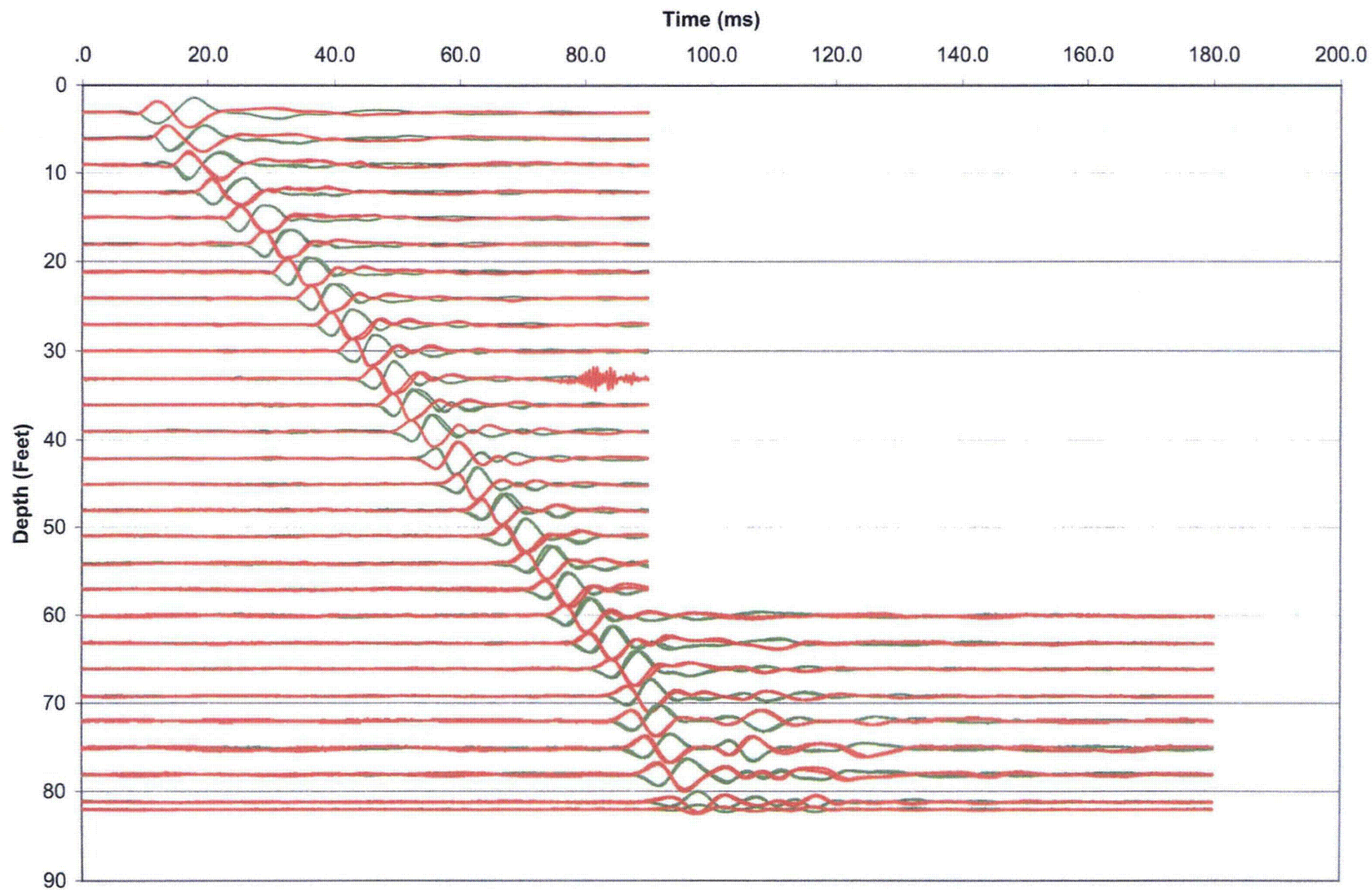
Geophone Offset: 0.66 Feet  
Source Offset: 9.17 Feet

i407002  
C-3002SA

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
57.15	56.49	57.23	57.23	64.5000			
60.10	59.44	60.15	2.92	68.4000	3.9000	747.8	57.97
63.06	62.40	63.07	2.92	70.9000	2.5000	1167.9	60.92
66.01	65.35	65.99	2.92	76.5500	5.6500	517.3	63.87



# Waveforms for Sounding c-3003s





## Shear Wave Velocity Calculations

PLANT VOGTLE  
AUGUSTA, GA

Geophone Offset: 0.66 Feet  
Source Offset: 9.17 Feet

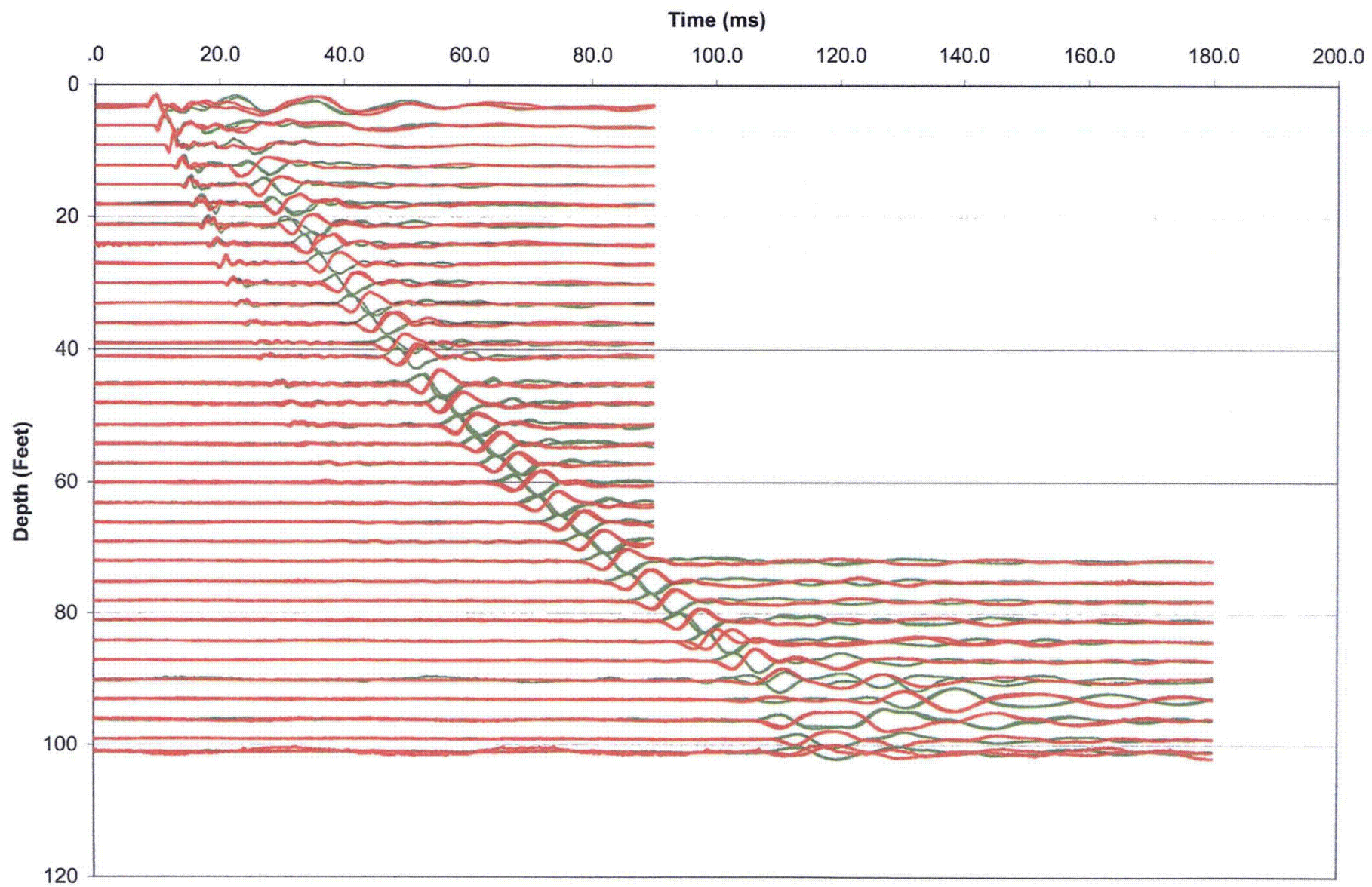
C-3003S

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	14.5000			
6.07	5.41	10.65	1.15	16.3000	1.8000	640.7	3.93
9.02	8.36	12.41	1.76	18.9500	2.6500	665.5	6.89
12.14	11.48	14.69	2.28	22.6000	3.6500	625.1	9.92
15.09	14.43	17.10	2.41	26.8000	4.2000	573.0	12.96
18.04	17.38	19.65	2.56	30.6000	3.8000	672.7	15.91
21.16	20.50	22.46	2.80	34.0500	3.4500	812.7	18.94
24.11	23.45	25.18	2.72	38.0500	4.0000	681.1	21.98
27.07	26.41	27.95	2.77	41.1500	3.1000	893.8	24.93
30.02	29.36	30.76	2.80	44.5000	3.3500	837.2	27.88
33.14	32.48	33.75	2.99	47.6500	3.1500	948.5	30.92
36.09	35.43	36.60	2.85	50.9500	3.3000	863.8	33.95
39.04	38.38	39.46	2.87	53.9500	3.0000	955.2	36.91
42.16	41.50	42.50	3.04	57.7000	3.7500	810.0	39.94
45.11	44.45	45.39	2.89	60.9500	3.2500	888.5	42.98
48.06	47.40	48.28	2.90	65.1500	4.2000	689.4	45.93
51.02	50.36	51.19	2.90	68.5500	3.4000	853.6	48.88
54.13	53.47	54.25	3.07	72.2500	3.7000	829.5	51.92
57.09	56.43	57.17	2.91	75.3000	3.0500	954.9	54.95
60.04	59.38	60.08	2.92	78.5500	3.2500	897.3	57.90
63.16	62.50	63.17	3.08	82.2000	3.6500	844.4	60.94
66.11	65.45	66.09	2.92	85.9000	3.7000	790.0	63.97
69.23	68.57	69.18	3.09	88.3500	2.4500	1260.4	67.01
72.01	71.35	71.94	2.77	89.5000	1.1500	2404.4	69.96
75.13	74.47	75.03	3.09	91.4500	1.9500	1585.9	72.91
78.08	77.42	77.96	2.93	93.8000	2.3500	1247.4	75.95
81.20	80.54	81.06	3.10	95.6500	1.8500	1673.5	78.98
82.02	81.36	81.88	0.81	96.0000	0.3500	2328.6	80.95





# Waveforms for Sounding c-3005S





## Shear Wave Velocity Calculations

PLANT VOGTLE  
AUGUSTA, GA

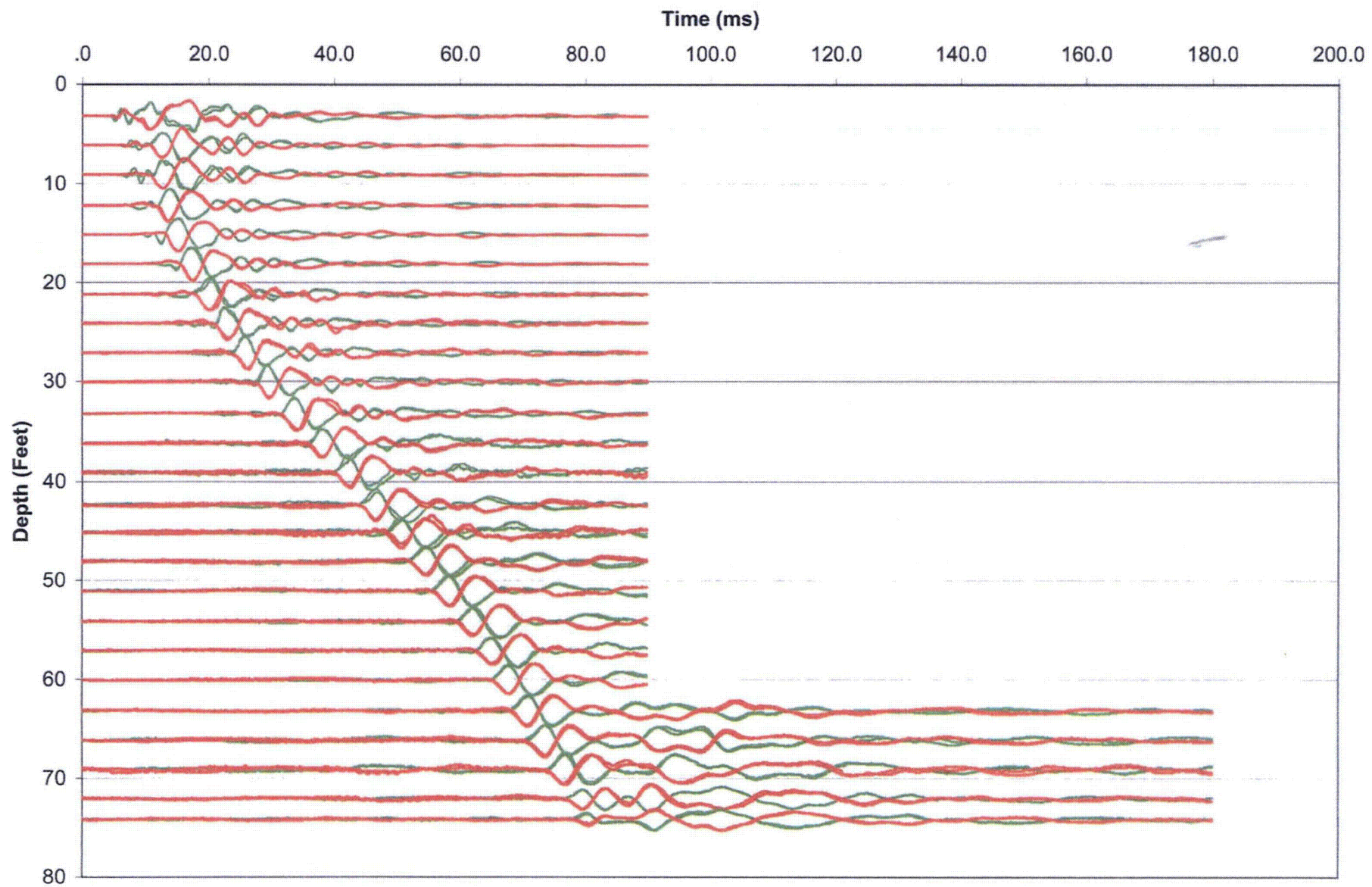
Geophone Offset: 0.66 Feet  
Source Offset: 9.17 Feet

C-3005S

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49				
6.07	5.41	10.65	1.15	20.3000			3.93
9.02	8.36	12.41	1.76	24.0500	3.7500	470.3	6.89
12.14	11.48	14.69	2.28	26.0000	1.9500	1170.1	9.92
15.09	14.43	17.10	2.41	28.5000	2.5000	962.6	12.96
18.04	17.38	19.65	2.56	30.3500	1.8500	1381.7	15.91
21.16	20.50	22.46	2.80	32.9000	2.5500	1099.6	18.94
24.11	23.45	25.18	2.72	35.0000	2.1000	1297.3	21.98
27.07	26.41	27.95	2.77	37.4000	2.4000	1154.5	24.93
30.02	29.36	30.76	2.80	39.9500	2.5500	1099.8	27.88
33.14	32.48	33.75	2.99	42.6500	2.7000	1106.6	30.92
36.09	35.43	36.60	2.85	45.5000	2.8500	1000.2	33.95
39.04	38.38	39.46	2.87	48.4500	2.9500	971.4	36.91
41.01	40.35	41.38	1.92	50.0000	1.5500	1236.9	39.37
45.11	44.45	45.39	4.01	53.9500	3.9500	1014.7	42.40
48.06	47.40	48.28	2.90	56.9500	3.0000	965.2	45.93
51.18	50.52	51.35	3.06	59.6000	2.6500	1156.0	48.96
54.13	53.47	54.25	2.91	62.6000	3.0000	969.3	52.00
57.09	56.43	57.17	2.91	66.1000	3.5000	832.1	54.95
60.04	59.38	60.08	2.92	69.0000	2.9000	1005.6	57.90
63.16	62.50	63.17	3.08	72.7000	3.7000	833.0	60.94
66.11	65.45	66.09	2.92	76.3500	3.6500	800.8	63.97
69.06	68.40	69.01	2.93	79.7500	3.4000	860.4	66.93
72.01	71.35	71.94	2.93	83.5500	3.8000	770.4	69.88
75.13	74.47	75.03	3.09	87.6000	4.0500	763.6	72.91
78.08	77.42	77.96	2.93	91.2500	3.6500	803.1	75.95
81.04	80.38	80.90	2.93	95.6500	4.4000	666.6	78.90
84.15	83.49	84.00	3.10	100.2000	4.5500	680.8	81.93
87.11	86.45	86.93	2.94	104.5500	4.3500	674.9	84.97
90.06	89.40	89.87	2.94	108.0500	3.5000	839.1	87.92
93.01	92.35	92.81	2.94				90.88
96.13	95.47	95.91	3.10	113.0000			93.91
99.08	98.42	98.85	2.94	115.5000	2.5000	1175.9	96.94
101.05	100.39	100.81	1.96	115.7500	0.2500	7840.7	99.41



# Waveforms for Sounding c-4001s







## Shear Wave Velocity Calculations

PLANT VOGTLE

AUGUSTA, GA

Geophone Offset: 0.66 Feet

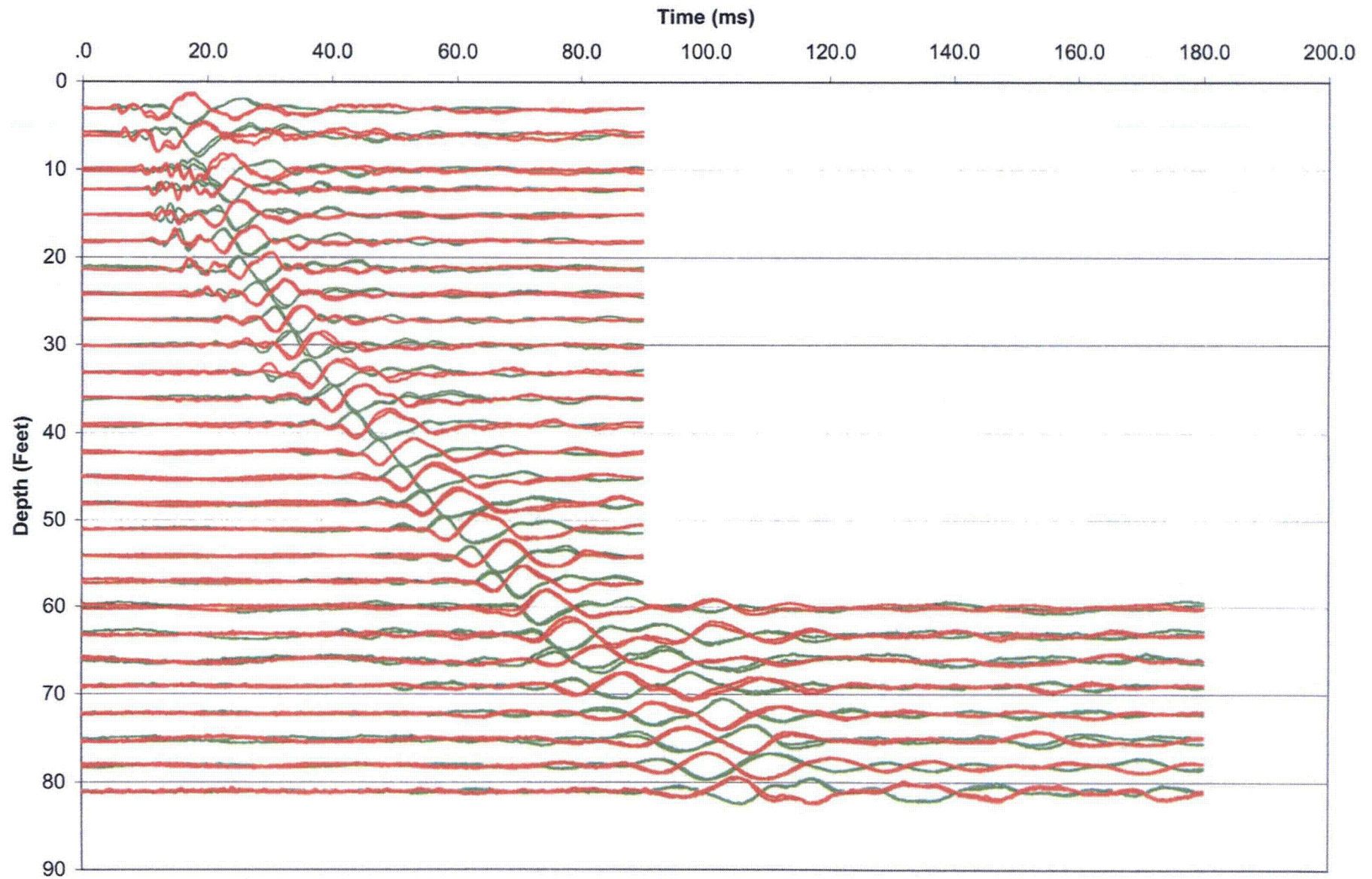
Source Offset: 9.17 Feet

c-4001s

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	12.3000			
6.07	5.41	10.65	1.15	14.0000	1.7000	678.4	3.93
9.02	8.36	12.41	1.76	14.6500	0.6500	2713.3	6.89
12.14	11.48	14.69	2.28	15.2500	0.6000	3802.9	9.92
15.09	14.43	17.10	2.41	16.9000	1.6500	1458.6	12.96
18.04	17.38	19.65	2.56	19.2500	2.3500	1087.7	15.91
21.16	20.50	22.46	2.80	21.7500	2.5000	1121.6	18.94
24.11	23.45	25.18	2.72	24.8500	3.1000	878.8	21.98
27.07	26.41	27.95	2.77	27.3500	2.5000	1108.3	24.93
30.02	29.36	30.76	2.80	31.1500	3.8000	738.1	27.88
33.14	32.48	33.75	2.99	35.6000	4.4500	671.4	30.92
36.09	35.43	36.60	2.85	39.8000	4.2000	678.7	33.95
39.04	38.38	39.46	2.87	44.1500	4.3500	658.7	36.91
42.32	41.66	42.66	3.20	48.6000	4.4500	718.6	40.02
45.11	44.45	45.39	2.73	52.6500	4.0500	673.5	43.06
48.06	47.40	48.28	2.90	56.3500	3.7000	782.6	45.93
51.02	50.36	51.19	2.90	59.9000	3.5500	817.5	48.88
54.13	53.47	54.25	3.07	64.0500	4.1500	739.6	51.92
57.09	56.43	57.17	2.91	66.9500	2.9000	1004.3	54.95
60.04	59.38	60.08	2.92	69.4000	2.4500	1190.4	57.90
63.16	62.50	63.17	3.08	72.6000	3.2000	963.1	60.94
66.11	65.45	66.09	2.92	75.3500	2.7500	1062.9	63.97
69.06	68.40	69.01	2.93	78.5500	3.2000	914.2	66.93
72.01	71.35	71.94	2.93	81.2000	2.6500	1104.8	69.88
74.15	73.49	74.06	2.12	81.8000	0.6000	3526.1	72.42



# Waveforms for Sounding c-4002s





# Shear Wave Velocity Calculations

PLANT VOGTLE  
AUGUSTA, GA

Geophone Offset: 0.66 Feet  
Source Offset: 9.17 Feet

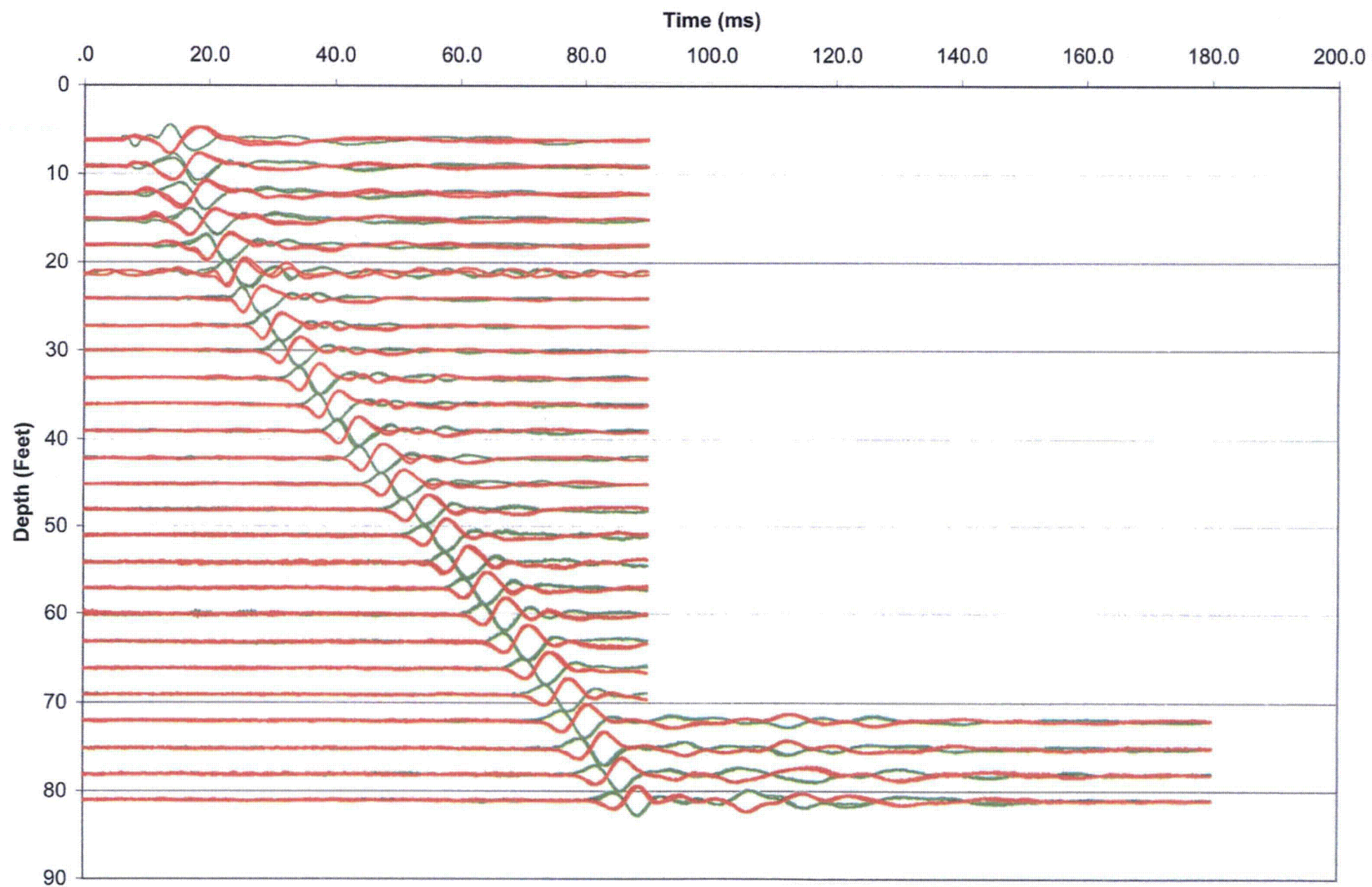
c-4002s

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	13.7500			
6.07	5.41	10.65	1.15	15.8000	2.0500	562.6	3.93
10.01	9.35	13.09	2.45	19.6000	3.8000	644.0	7.38
12.14	11.48	14.69	1.60	21.5500	1.9500	819.7	10.41
15.09	14.43	17.10	2.41	22.9000	1.3500	1782.7	12.96
18.04	17.38	19.65	2.56	24.3000	1.4000	1825.8	15.91
21.16	20.50	22.46	2.80	26.4000	2.1000	1335.2	18.94
24.11	23.45	25.18	2.72	30.1000	3.7000	736.3	21.98
27.07	26.41	27.95	2.77	32.7000	2.6000	1065.7	24.93
30.02	29.36	30.76	2.80	35.4500	2.7500	1019.9	27.88
33.14	32.48	33.75	2.99	38.5500	3.1000	963.8	30.92
36.09	35.43	36.60	2.85	41.9000	3.3500	850.9	33.95
39.04	38.38	39.46	2.87	45.7000	3.8000	754.1	36.91
42.16	41.50	42.50	3.04	49.8000	4.1000	740.9	39.94
45.11	44.45	45.39	2.89	53.1000	3.3000	875.0	42.98
48.06	47.40	48.28	2.90	56.4500	3.3500	864.3	45.93
51.02	50.36	51.19	2.90	60.1500	3.7000	784.3	48.88
54.13	53.47	54.25	3.07	64.3500	4.2000	730.8	51.92
57.09	56.43	57.17	2.91	67.6500	3.3000	882.6	54.95
60.04	59.38	60.08	2.92	70.6000	2.9500	988.6	57.90
63.16	62.50	63.17	3.08	74.3500	3.7500	821.9	60.94
66.11	65.45	66.09	2.92	78.1500	3.8000	769.2	63.97
69.06	68.40	69.01	2.93	81.7500	3.6000	812.6	66.93
72.18	71.52	72.10	3.09	87.8500	6.1000	506.6	69.96
75.13	74.47	75.03	2.93	91.9500	4.1000	714.6	72.99
78.08	77.42	77.96	2.93	95.7500	3.8000	771.4	75.95
81.04	80.38	80.90	2.93	99.6500	3.9000	752.1	78.90





# Waveforms for Sounding c-4003s





## Shear Wave Velocity Calculations

PLANT VOGTLE  
AUGUSTA, GA

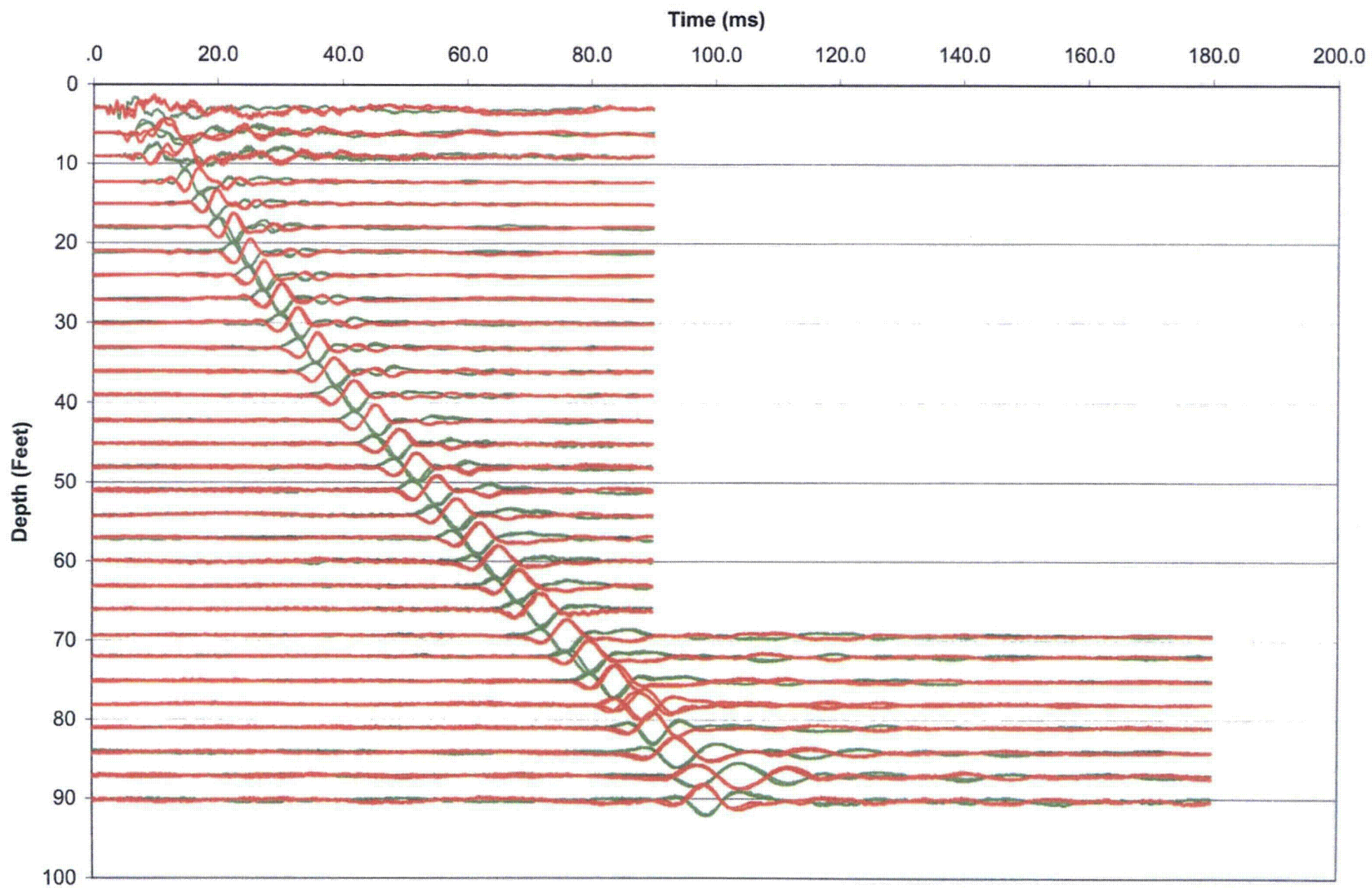
Geophone Offset: 0.66 Feet  
Source Offset: 9.17 Feet

c-4003s

Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
6.07	5.41	10.65	10.65	15.5500			
9.02	8.36	12.41	1.76	16.2500	0.7000	2519.5	6.89
12.14	11.48	14.69	2.28	17.4500	1.2000	1901.5	9.92
15.09	14.43	17.10	2.41	18.9500	1.5000	1604.4	12.96
18.04	17.38	19.65	2.56	21.1000	2.1500	1188.9	15.91
21.16	20.50	22.46	2.80	24.0500	2.9500	950.5	18.94
24.11	23.45	25.18	2.72	26.6500	2.6000	1047.8	21.98
27.23	26.57	28.11	2.93	29.8500	3.2000	914.3	25.01
30.02	29.36	30.76	2.65	32.7000	2.8500	929.7	27.97
33.14	32.48	33.75	2.99	35.9000	3.2000	933.7	30.92
36.09	35.43	36.60	2.85	38.7500	2.8500	1000.2	33.95
39.04	38.38	39.46	2.87	42.1000	3.3500	855.4	36.91
42.16	41.50	42.50	3.04	45.6000	3.5000	867.9	39.94
45.11	44.45	45.39	2.89	48.8000	3.2000	902.4	42.98
48.06	47.40	48.28	2.90	52.5000	3.7000	782.6	45.93
51.02	50.36	51.19	2.90	55.7500	3.2500	892.9	48.88
54.13	53.47	54.25	3.07	59.1000	3.3500	916.2	51.92
57.09	56.43	57.17	2.91	62.1000	3.0000	970.8	54.95
60.04	59.38	60.08	2.92	65.1500	3.0500	956.2	57.90
63.16	62.50	63.17	3.08	68.5000	3.3500	920.0	60.94
66.11	65.45	66.09	2.92	71.9500	3.4500	847.2	63.97
69.06	68.40	69.01	2.93	75.2500	3.3000	886.5	66.93
72.01	71.35	71.94	2.93	78.1500	2.9000	1009.5	69.88
75.13	74.47	75.03	3.09	81.1000	2.9500	1048.3	72.91
78.08	77.42	77.96	2.93	83.7500	2.6500	1106.2	75.95
81.04	80.38	80.90	2.93	86.4000	2.6500	1106.8	78.90



# Waveforms for Sounding c-4005s







## Shear Wave Velocity Calculations

PLANT VOGTLE  
AUGUSTA, GA

Geophone Offset: 0.66 Feet  
Source Offset: 9.17 Feet

c-4005s

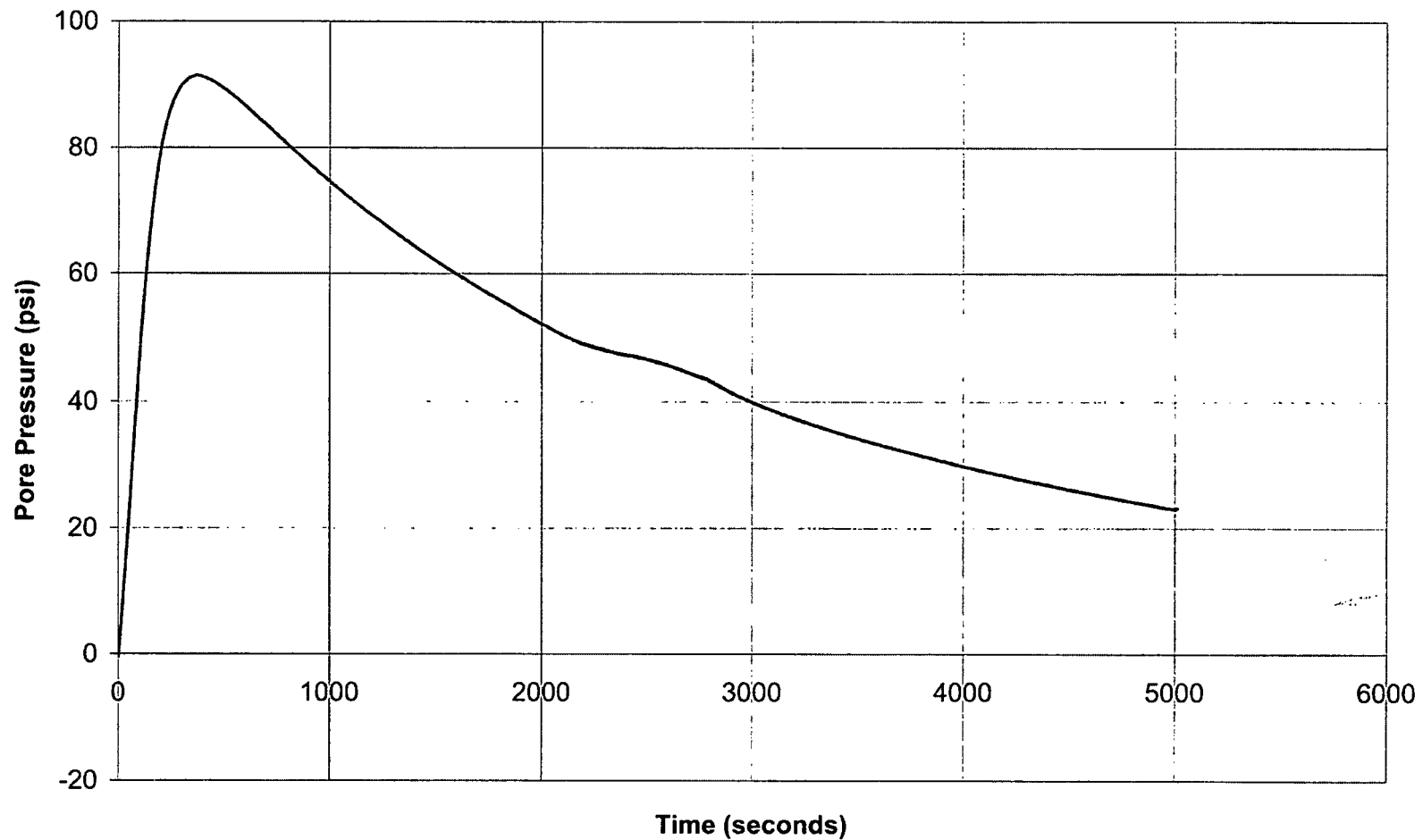
Test Depth (Feet)	Geophone Depth (Feet)	Waveform Ray Path (Feet)	Incremental Distance (Feet)	Characteristic Arrival Time (ms)	Incremental Time Interval (ms)	Interval Velocity (Ft/Sec)	Interval Depth (Feet)
3.12	2.46	9.49	9.49	7.4000			
6.07	5.41	10.65	1.15	10.0500	2.6500	435.2	3.93
9.02	8.36	12.41	1.76	11.0500	1.0000	1763.7	6.89
12.30	11.64	14.82	2.41	15.9000	4.8500	497.0	10.00
15.09	14.43	17.10	2.28	18.6000	2.7000	843.7	13.04
18.04	17.38	19.65	2.56	21.3500	2.7500	929.5	15.91
21.16	20.50	22.46	2.80	23.7000	2.3500	1193.2	18.94
24.11	23.45	25.18	2.72	26.1500	2.4500	1112.0	21.98
27.07	26.41	27.95	2.77	28.6000	2.4500	1130.9	24.93
30.02	29.36	30.76	2.80	31.4500	2.8500	984.1	27.88
33.14	32.48	33.75	2.99	34.5000	3.0500	979.6	30.92
36.09	35.43	36.60	2.85	37.0500	2.5500	1117.8	33.95
39.04	38.38	39.46	2.87	40.2500	3.2000	895.5	36.91
42.16	41.50	42.50	3.04	43.4000	3.1500	964.3	39.94
45.11	44.45	45.39	2.89	47.1000	3.7000	780.4	42.98
48.06	47.40	48.28	2.90	50.0000	2.9000	998.5	45.93
51.02	50.36	51.19	2.90	53.1500	3.1500	921.3	48.88
54.13	53.47	54.25	3.07	56.1000	2.9500	1040.4	51.92
57.09	56.43	57.17	2.91	59.6000	3.5000	832.1	54.95
60.04	59.38	60.08	2.92	62.6500	3.0500	956.2	57.90
63.16	62.50	63.17	3.08	66.1000	3.4500	893.4	60.94
66.11	65.45	66.09	2.92	69.4000	3.3000	885.7	63.97
69.39	68.73	69.34	3.25	73.6000	4.2000	773.9	67.09
72.01	71.35	71.94	2.60	77.6000	4.0000	650.6	70.04
75.13	74.47	75.03	3.09	81.8000	4.2000	736.3	72.91
78.08	77.42	77.96	2.93	85.6000	3.8000	771.4	75.95
81.04	80.38	80.90	2.93	87.5500	1.9500	1504.1	78.90
84.15	83.49	84.00	3.10	90.9500	3.4000	911.0	81.93
87.11	86.45	86.93	2.94	93.0000	2.0500	1432.0	84.97
90.22	89.56	90.03	3.10	95.5000	2.5000	1240.0	88.00



## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1101  
Depth: 50.033  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

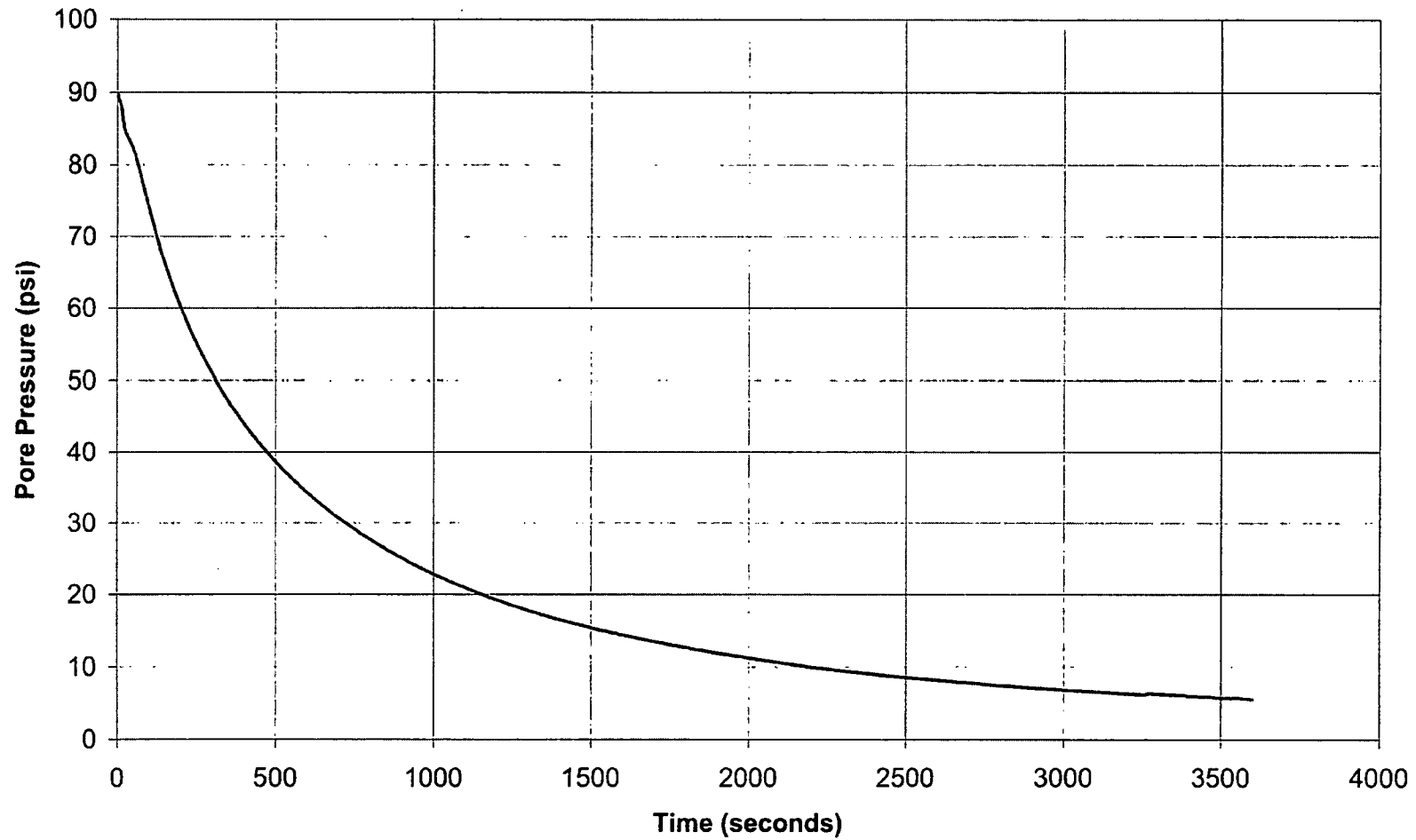




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1101  
Depth: 71.358  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



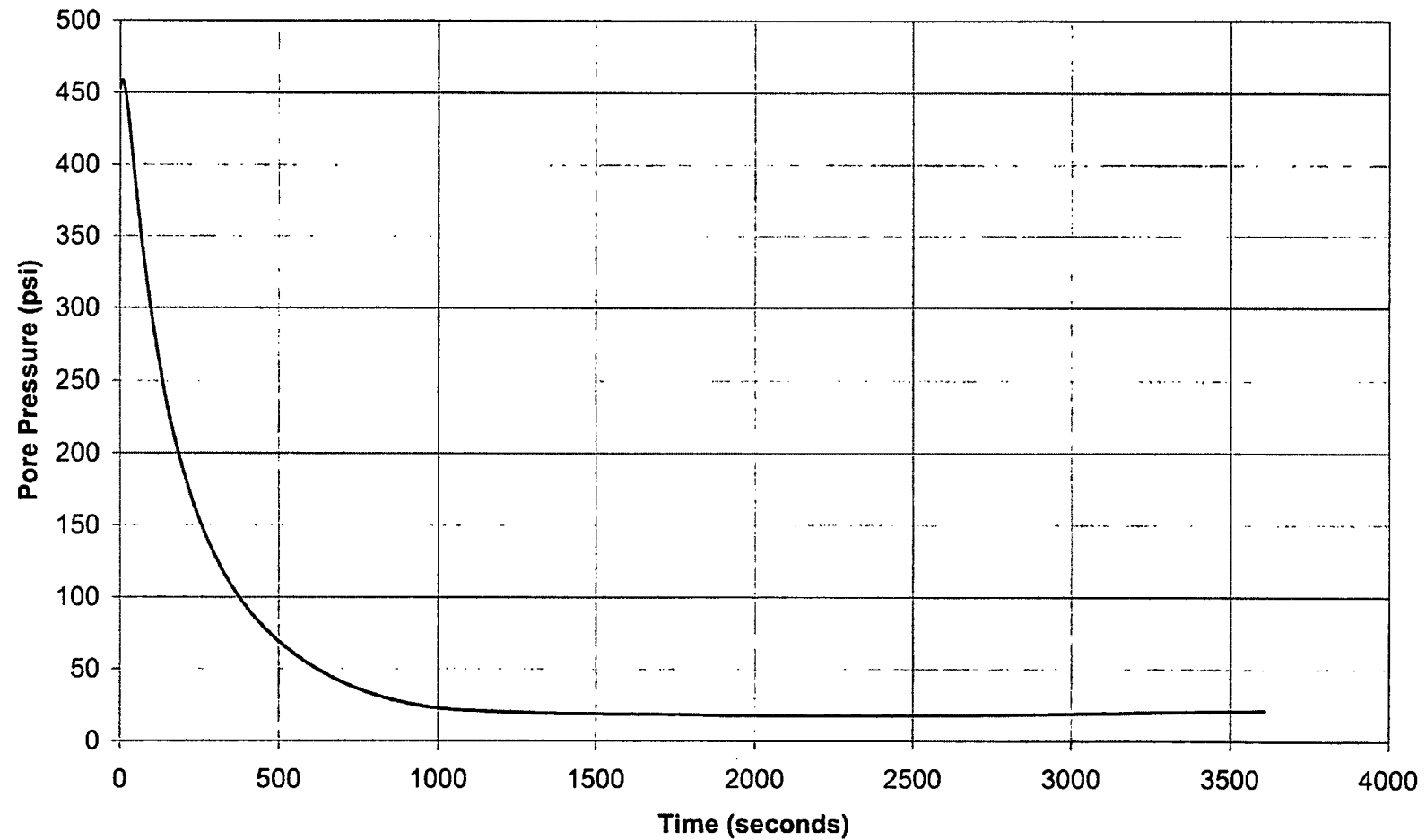




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1102  
Depth: 47.08  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

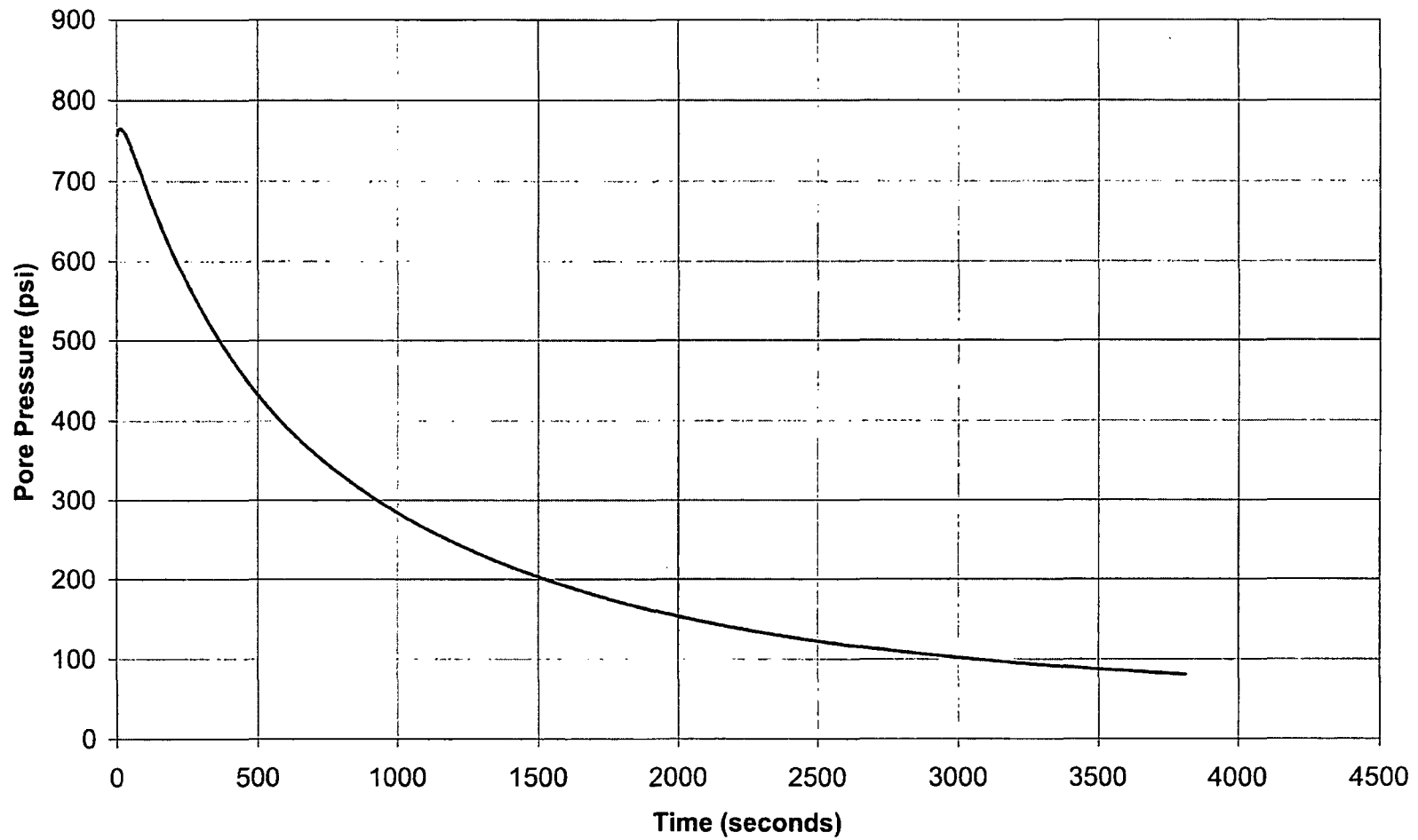




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1102  
Depth: 51.345  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

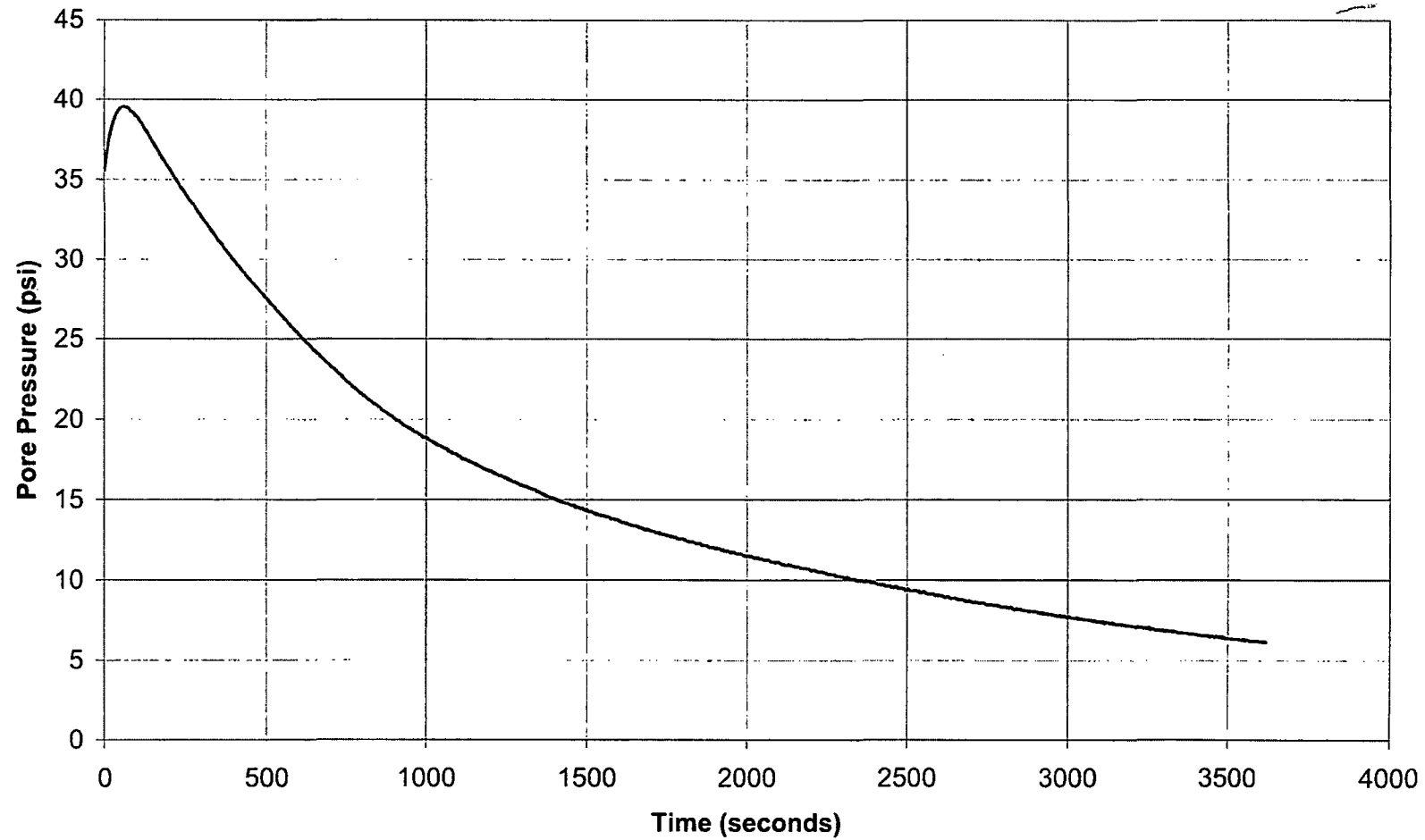




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1103  
Depth: 16.076  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



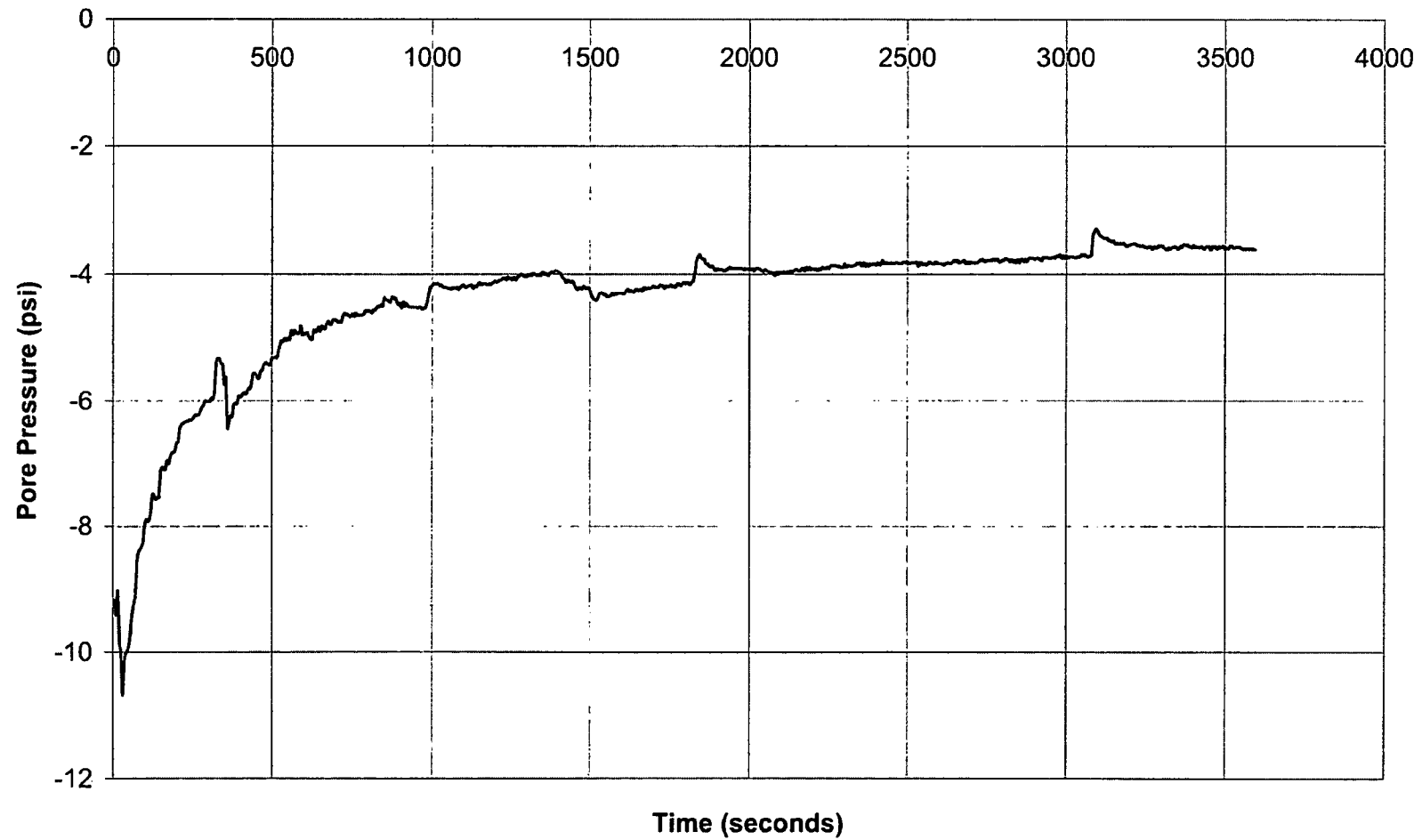




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1103  
Depth: 27.395  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

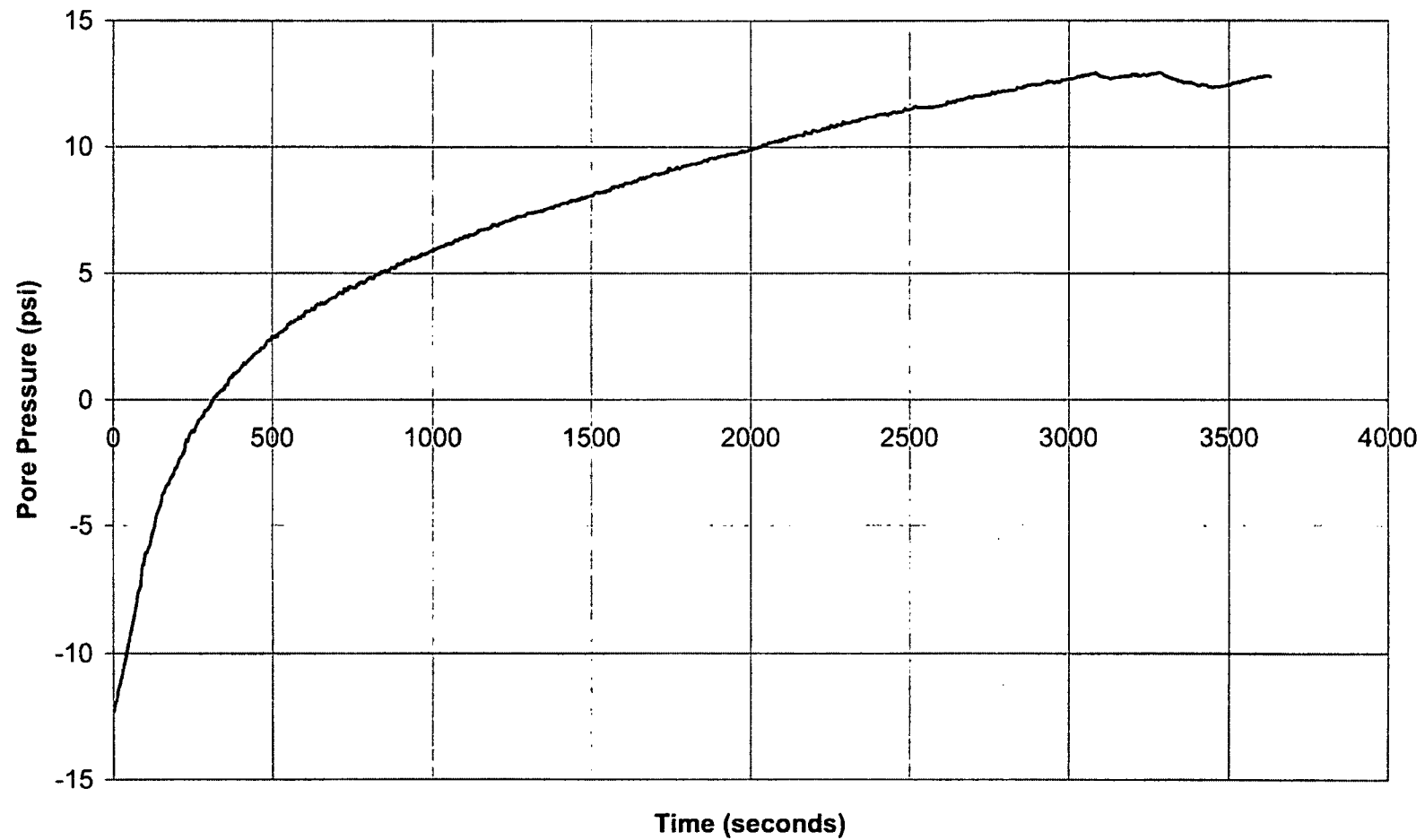




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1104  
Depth: 38.222  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

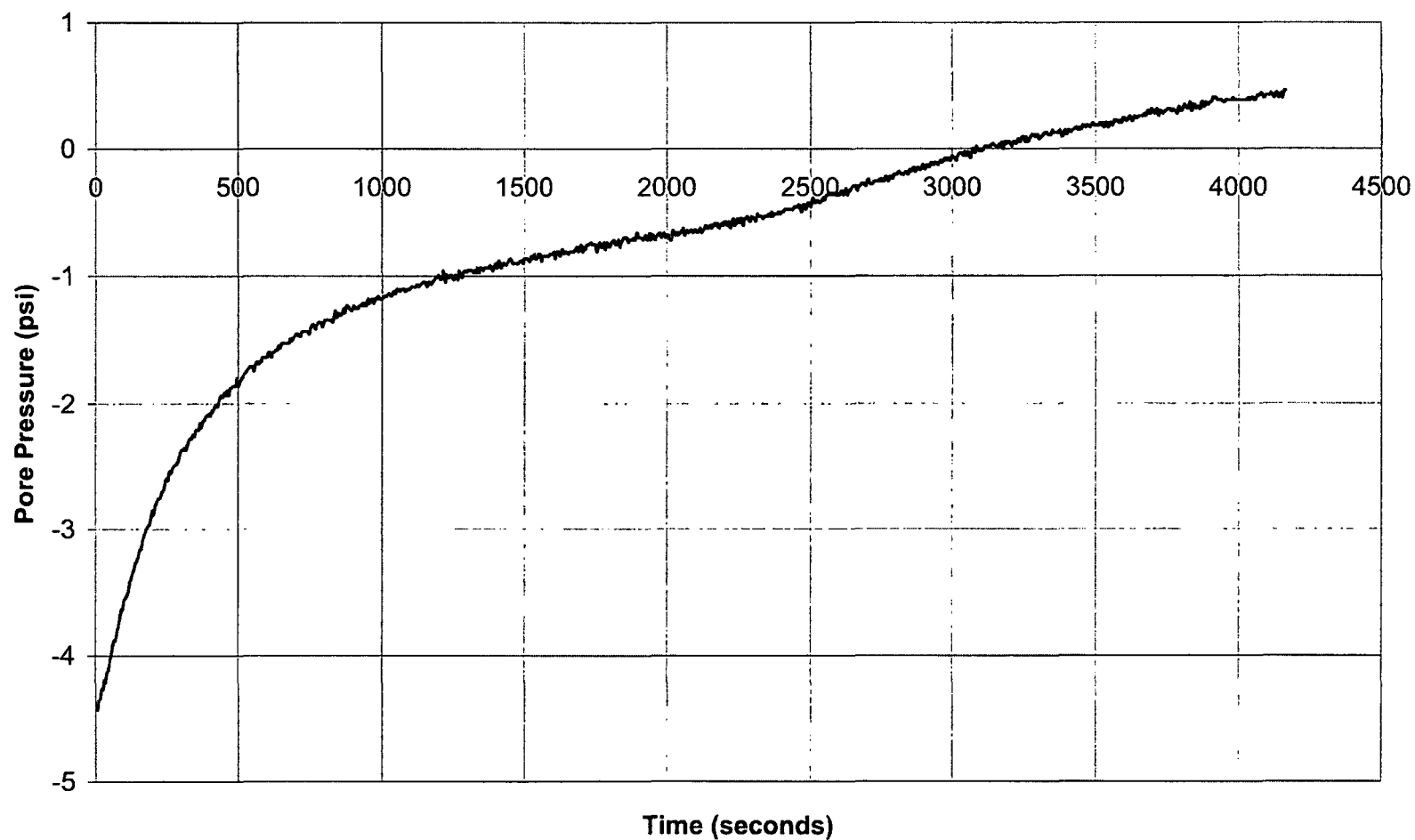




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1104  
Depth: 77.1  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



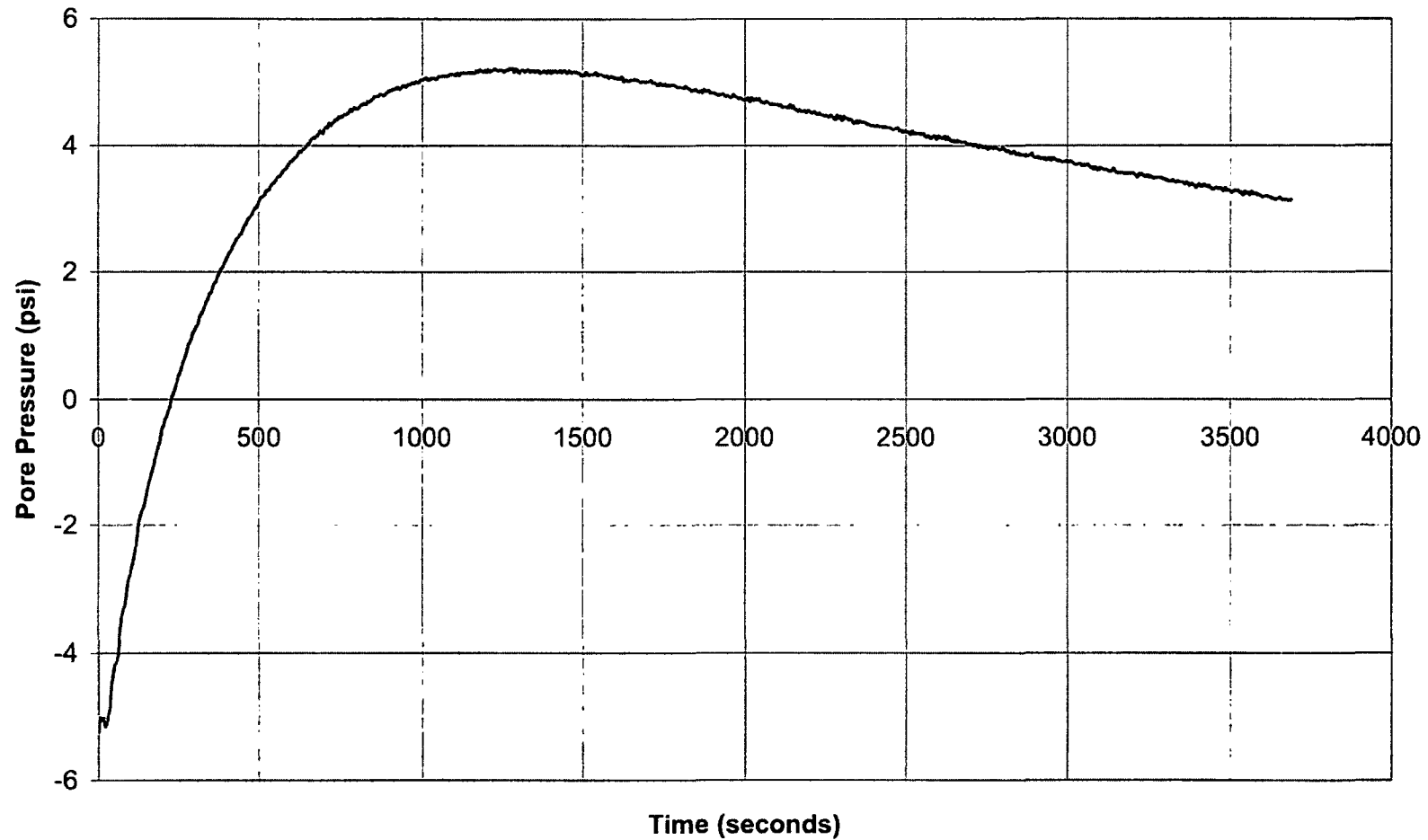




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1107  
Depth: 28.051  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

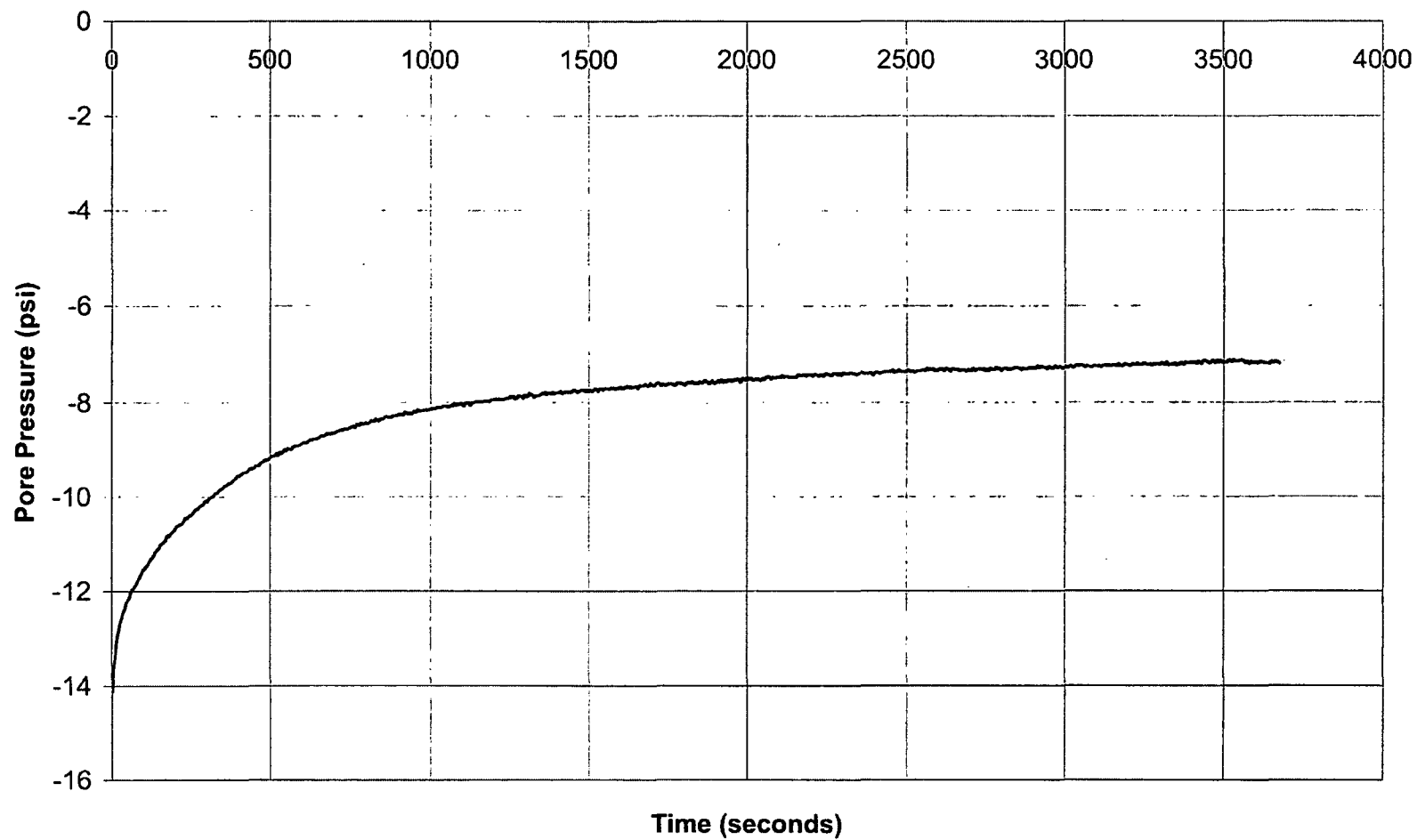




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1107  
Depth: 71.03  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

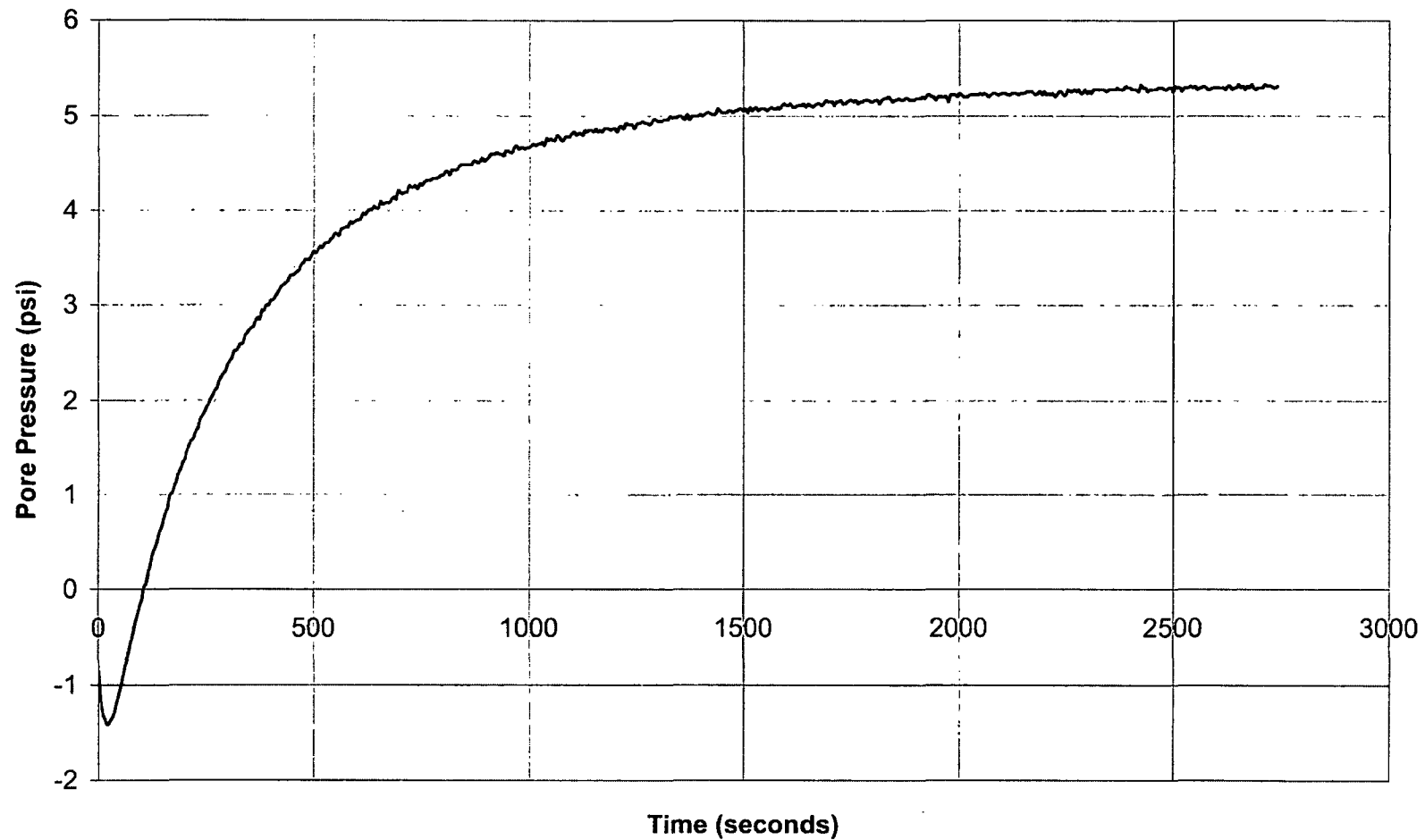




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1108  
Depth: 46.096  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



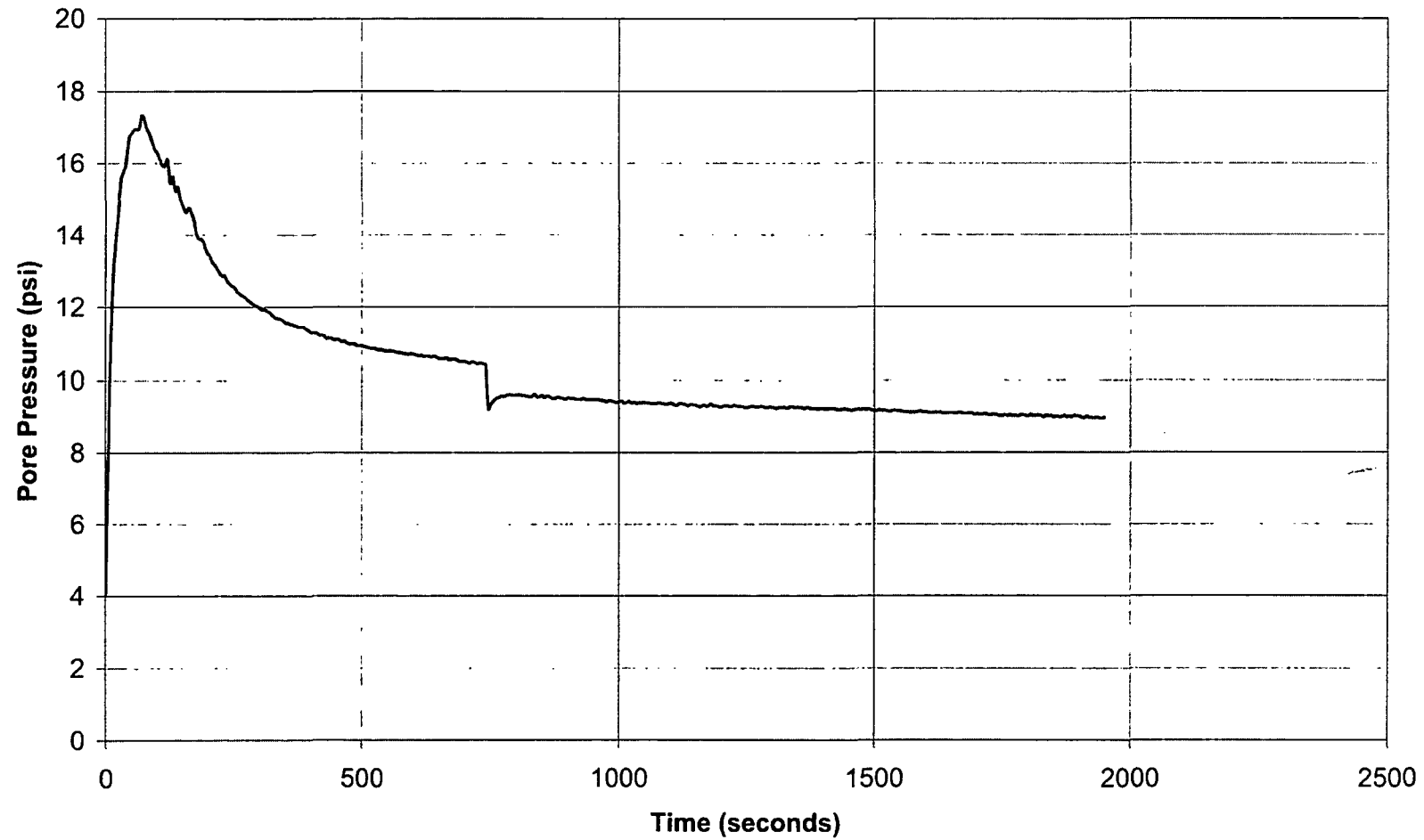




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1108  
Depth: 59.547  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

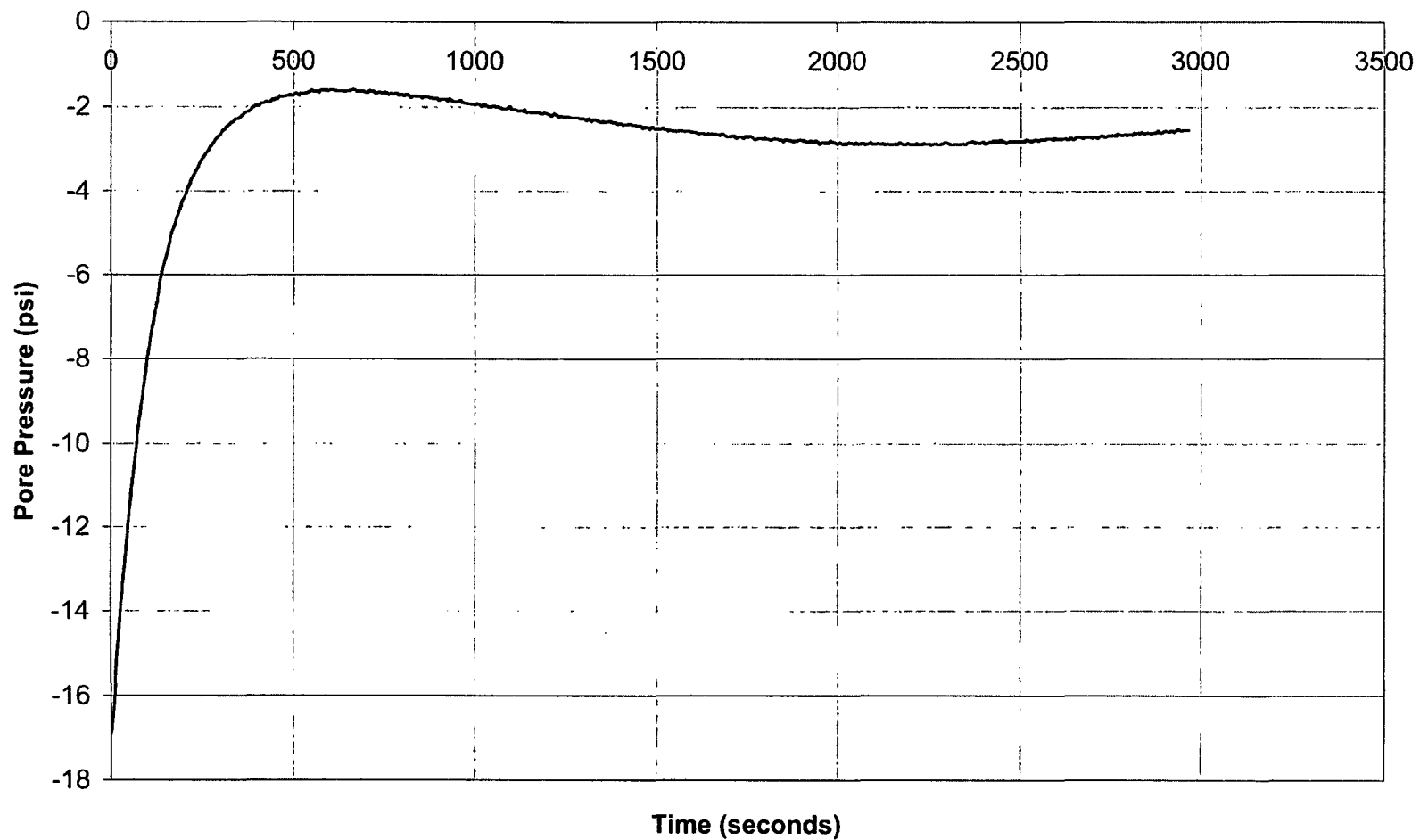




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1109  
Depth: 58.071  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

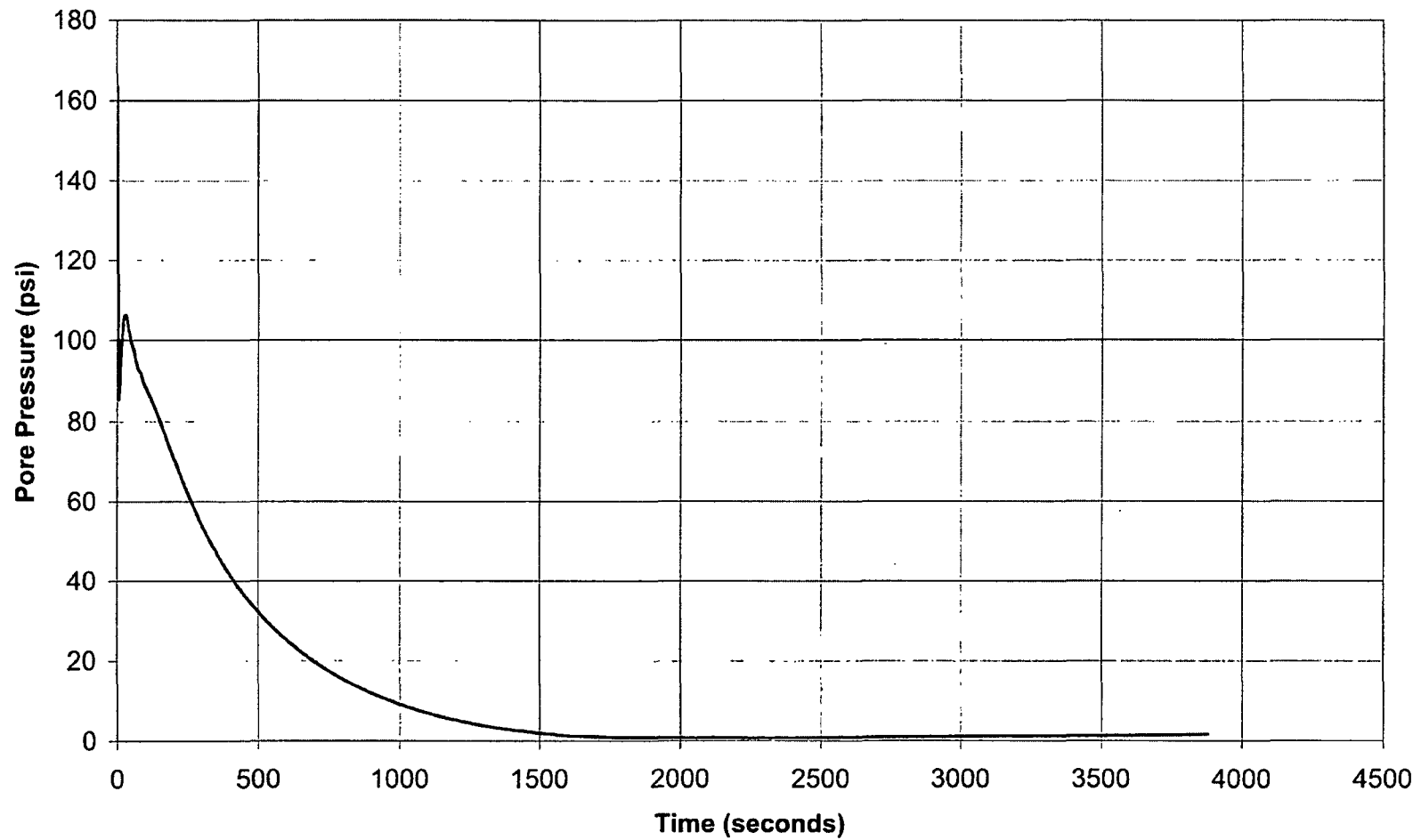




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-1109  
Depth: 72.506  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



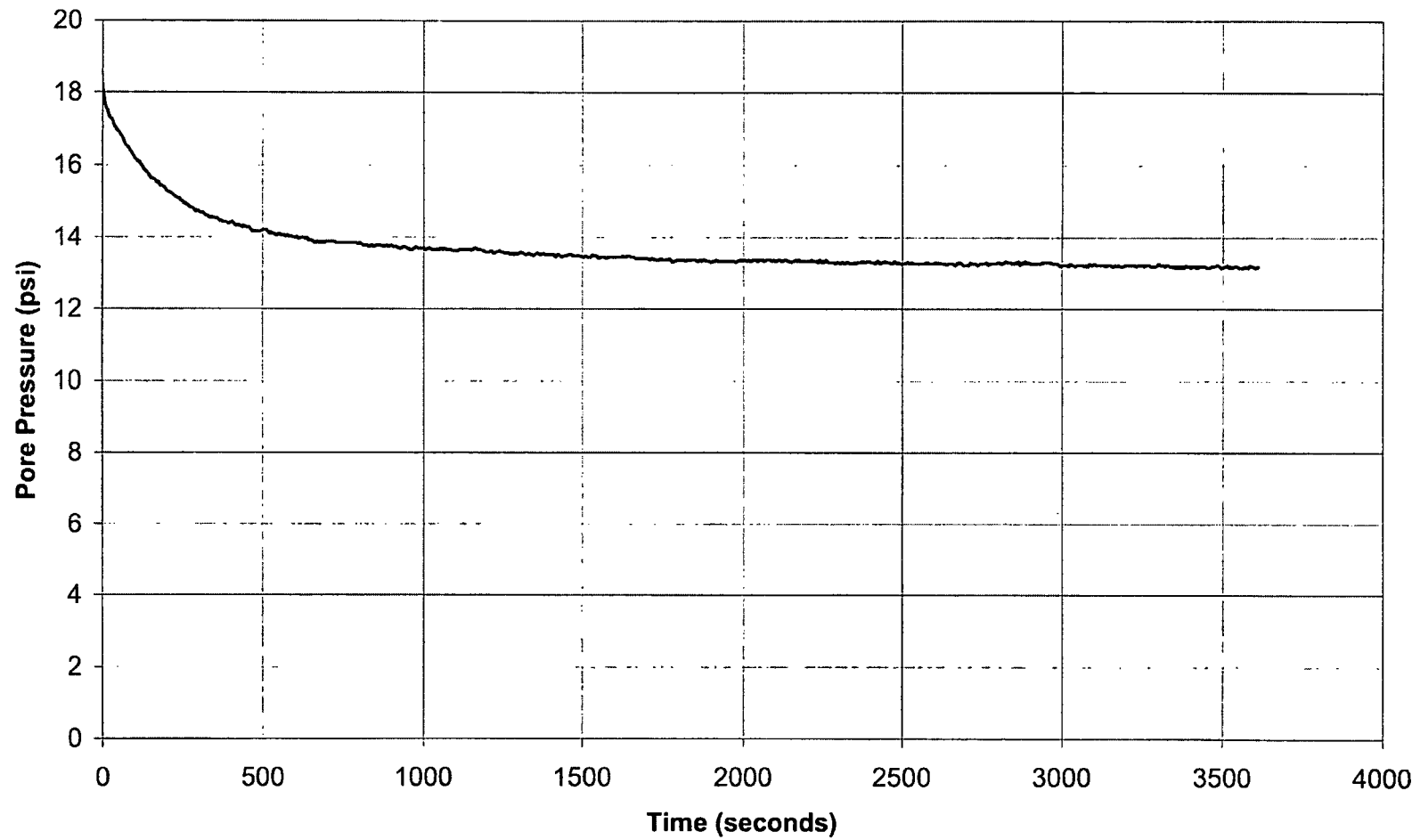




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3001s  
Depth: 38.058  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

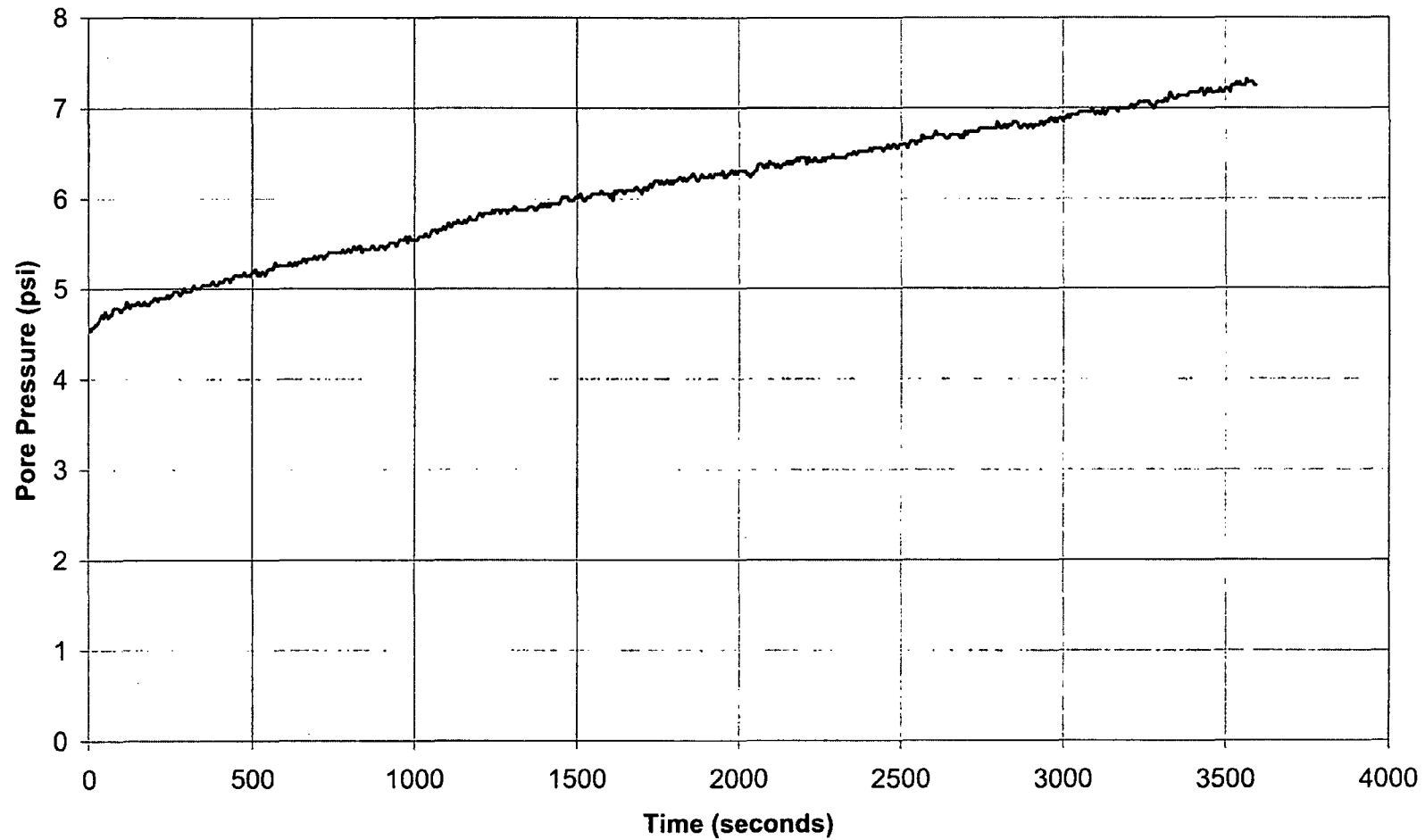




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3001s  
Depth: 70.046 --  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

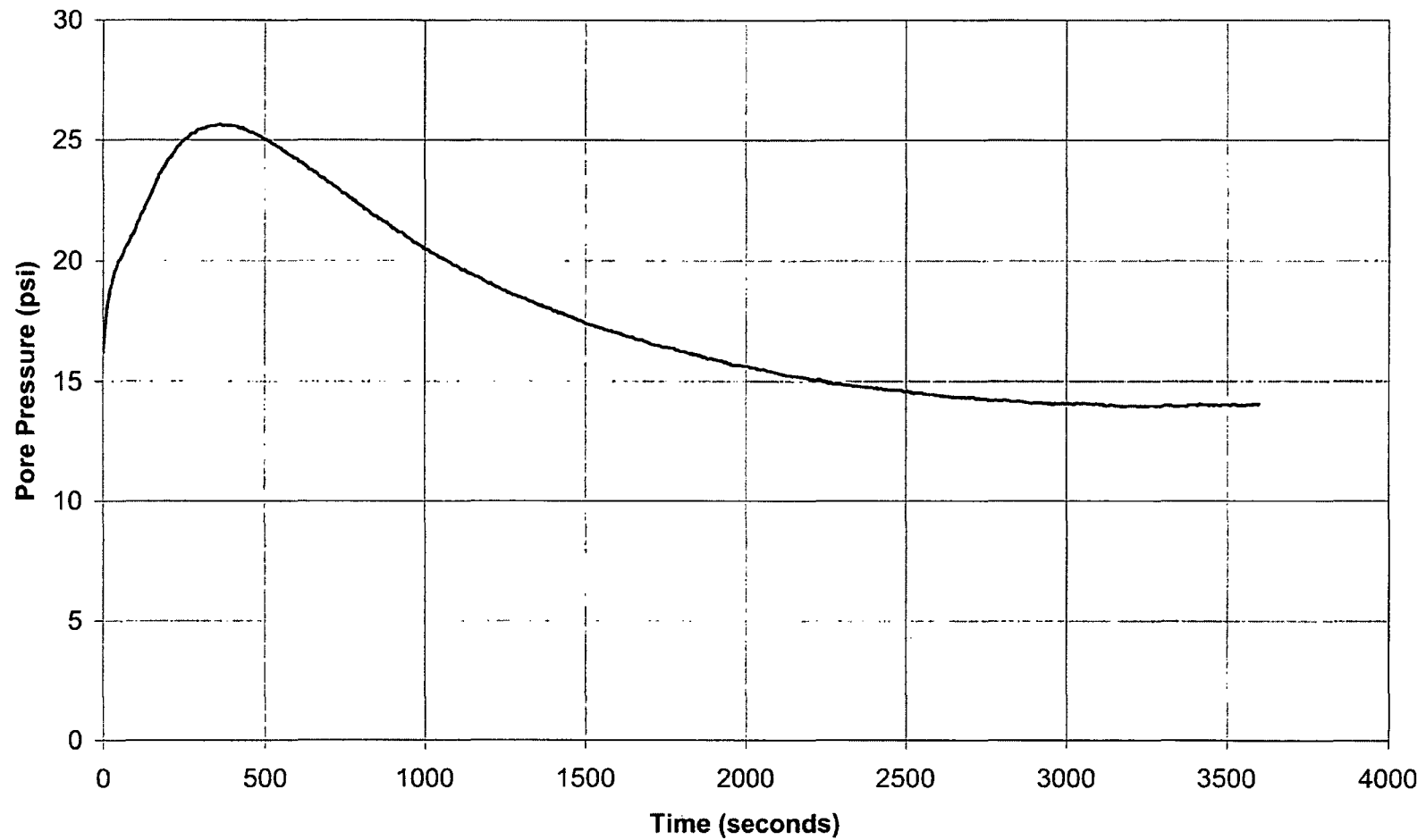




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3002s  
Depth: 31.004  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



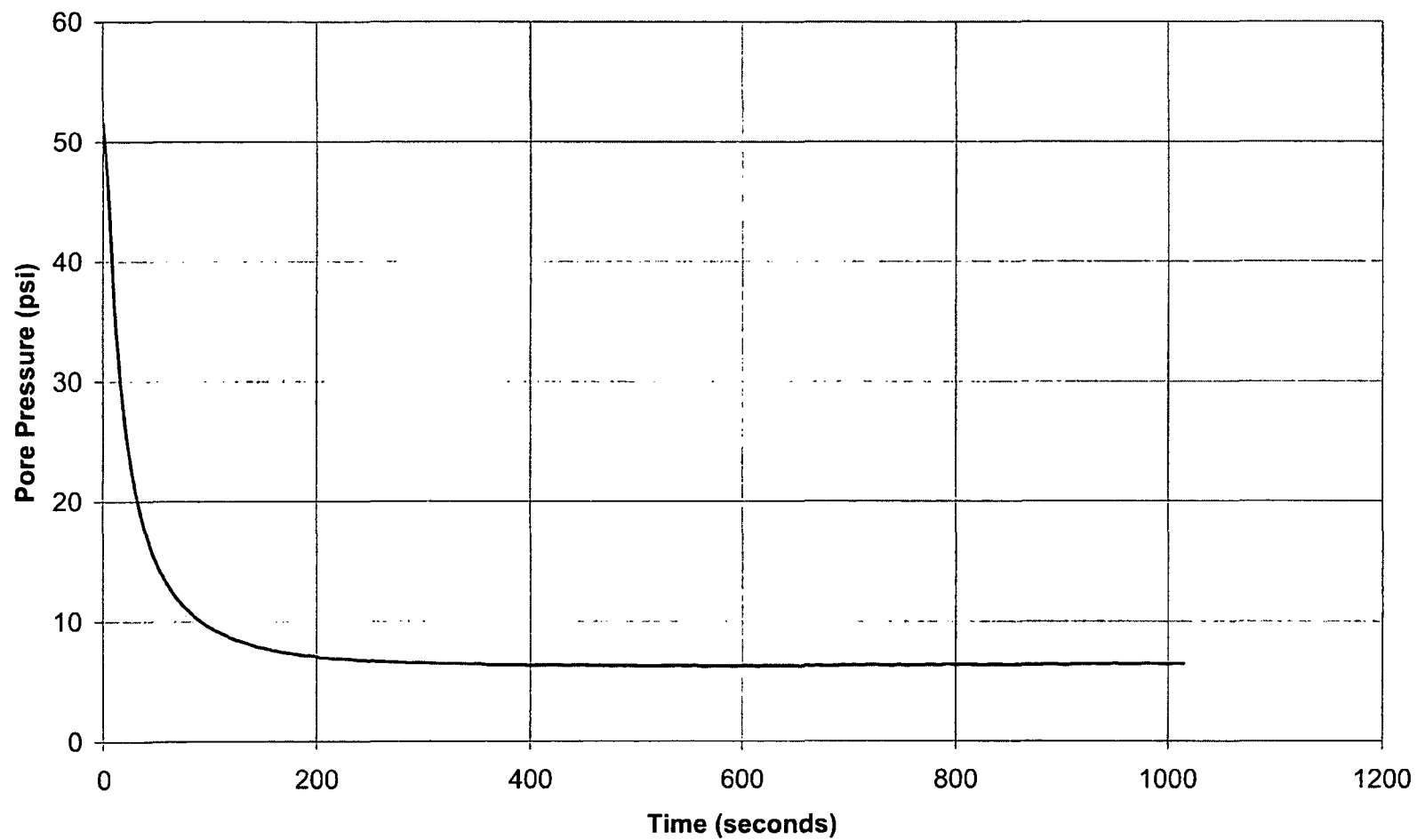




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3003s  
Depth: 43.143  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

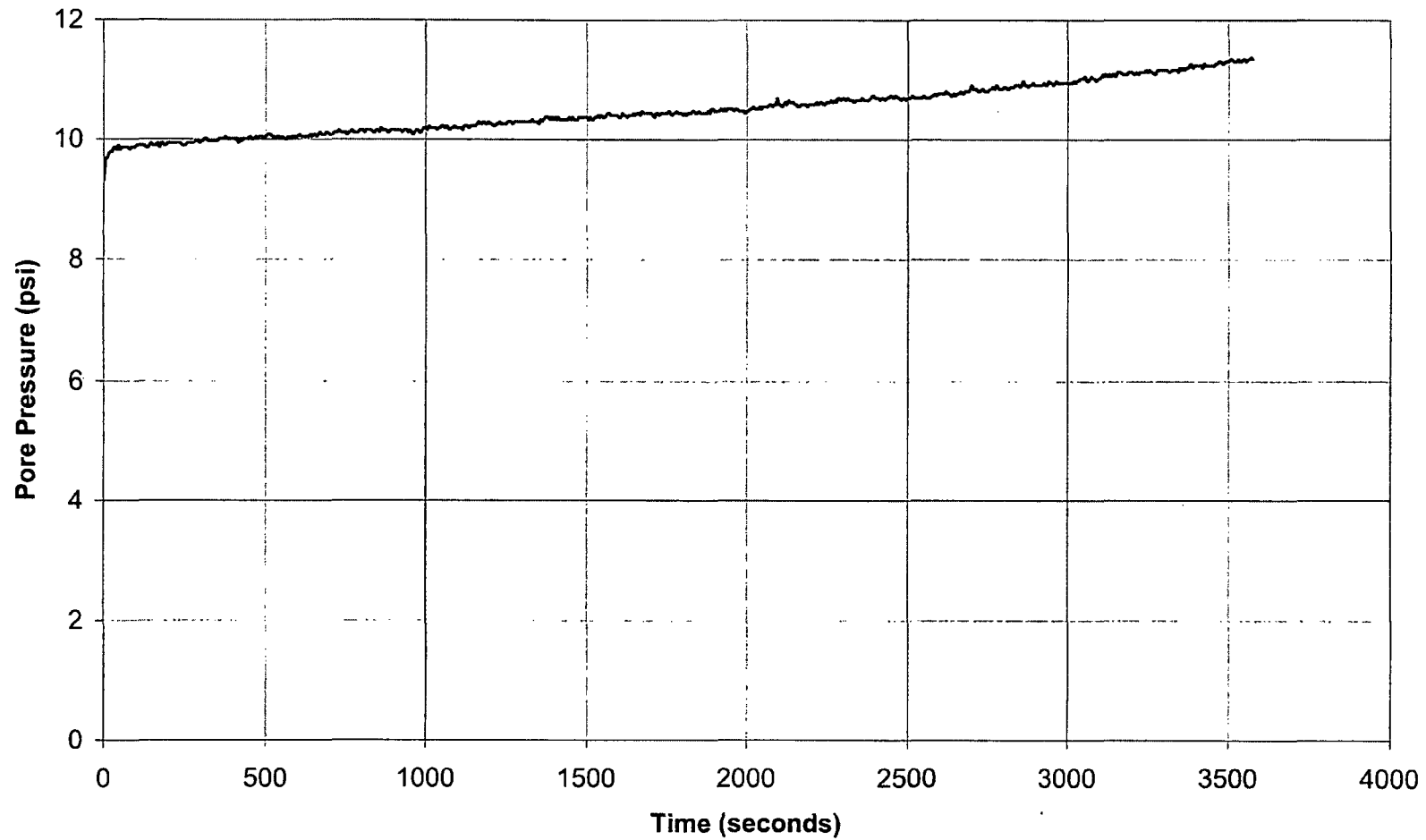




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3003s  
Depth: 82.021  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

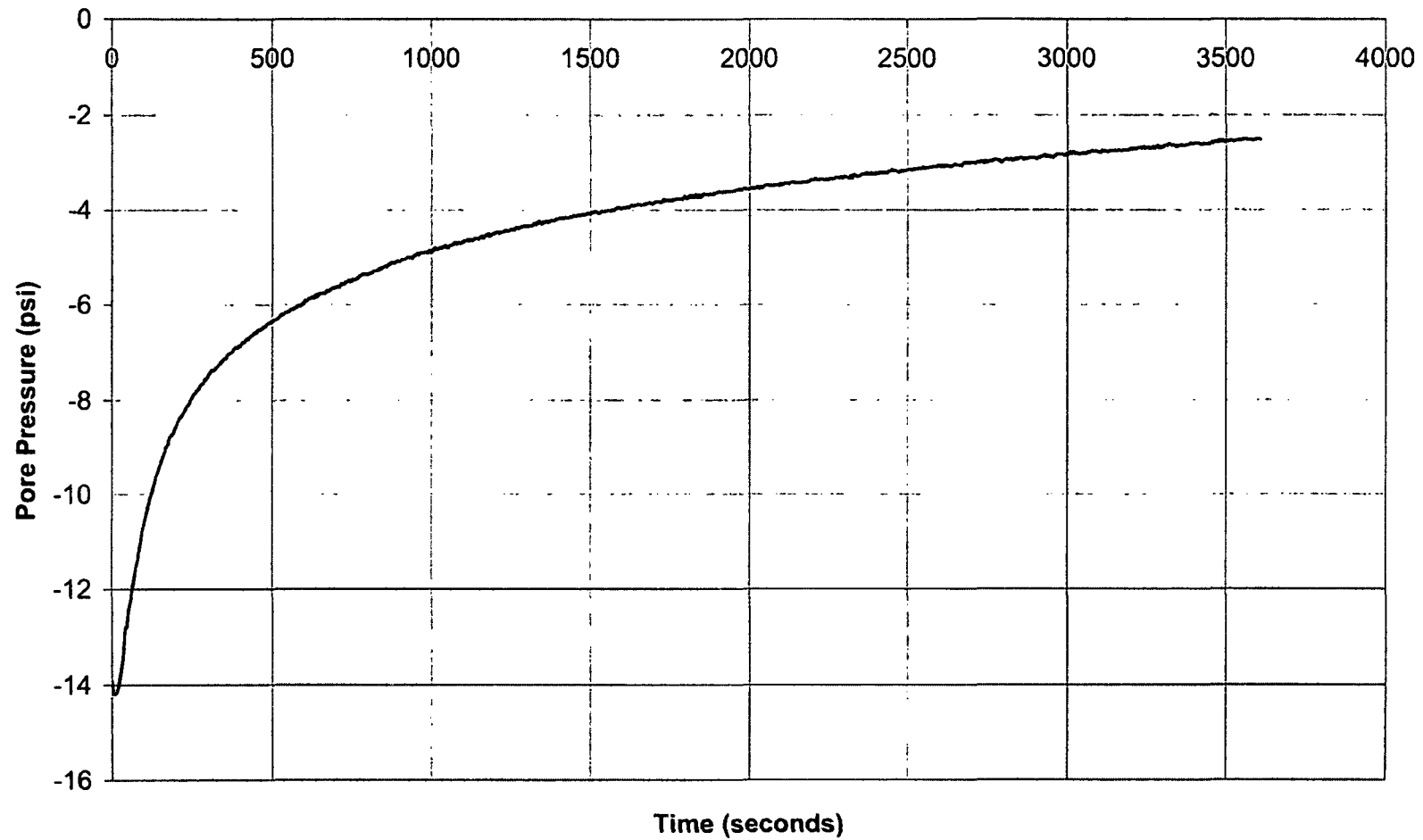




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3004  
Depth: 47.08  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



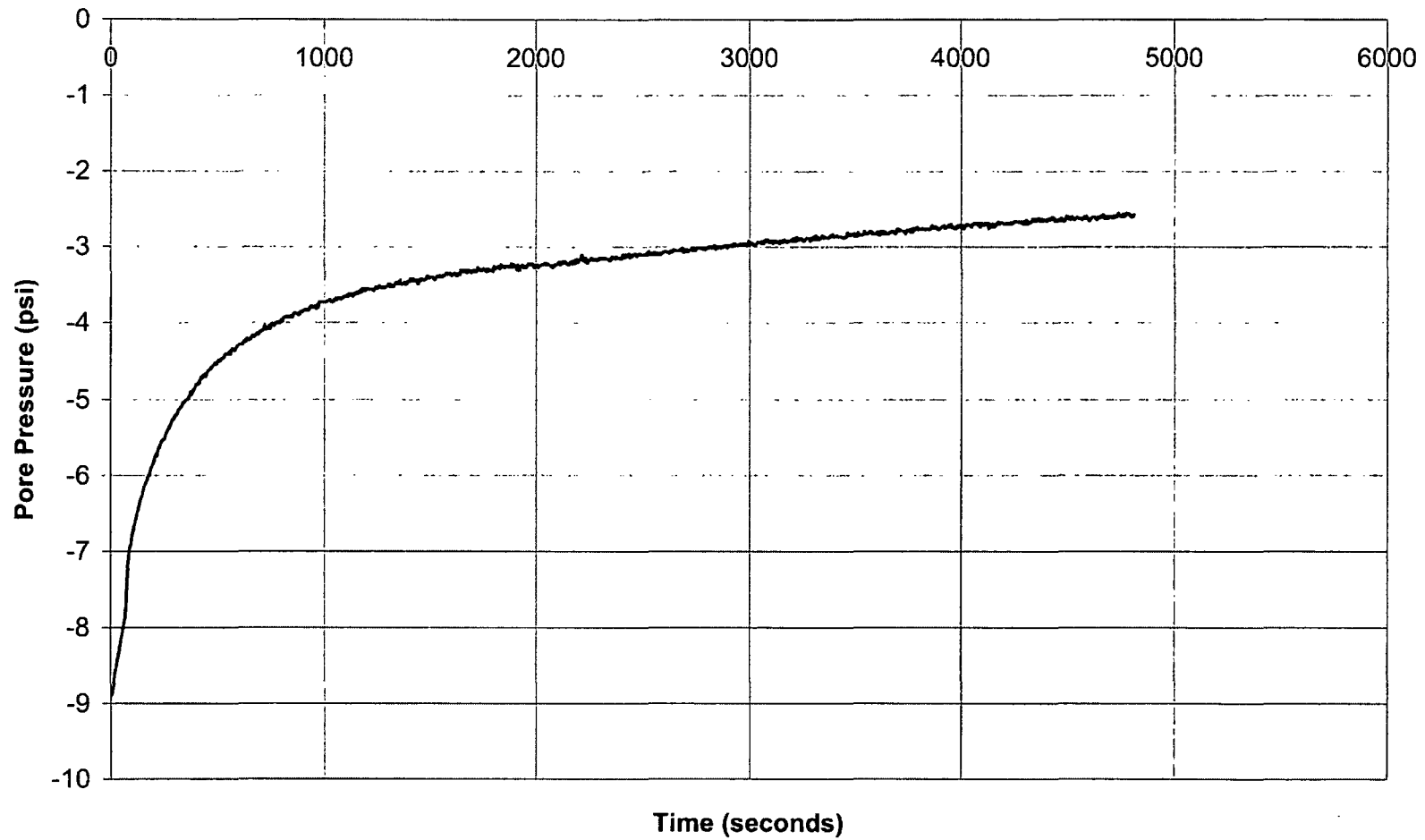




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3004  
Depth: 72.014  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

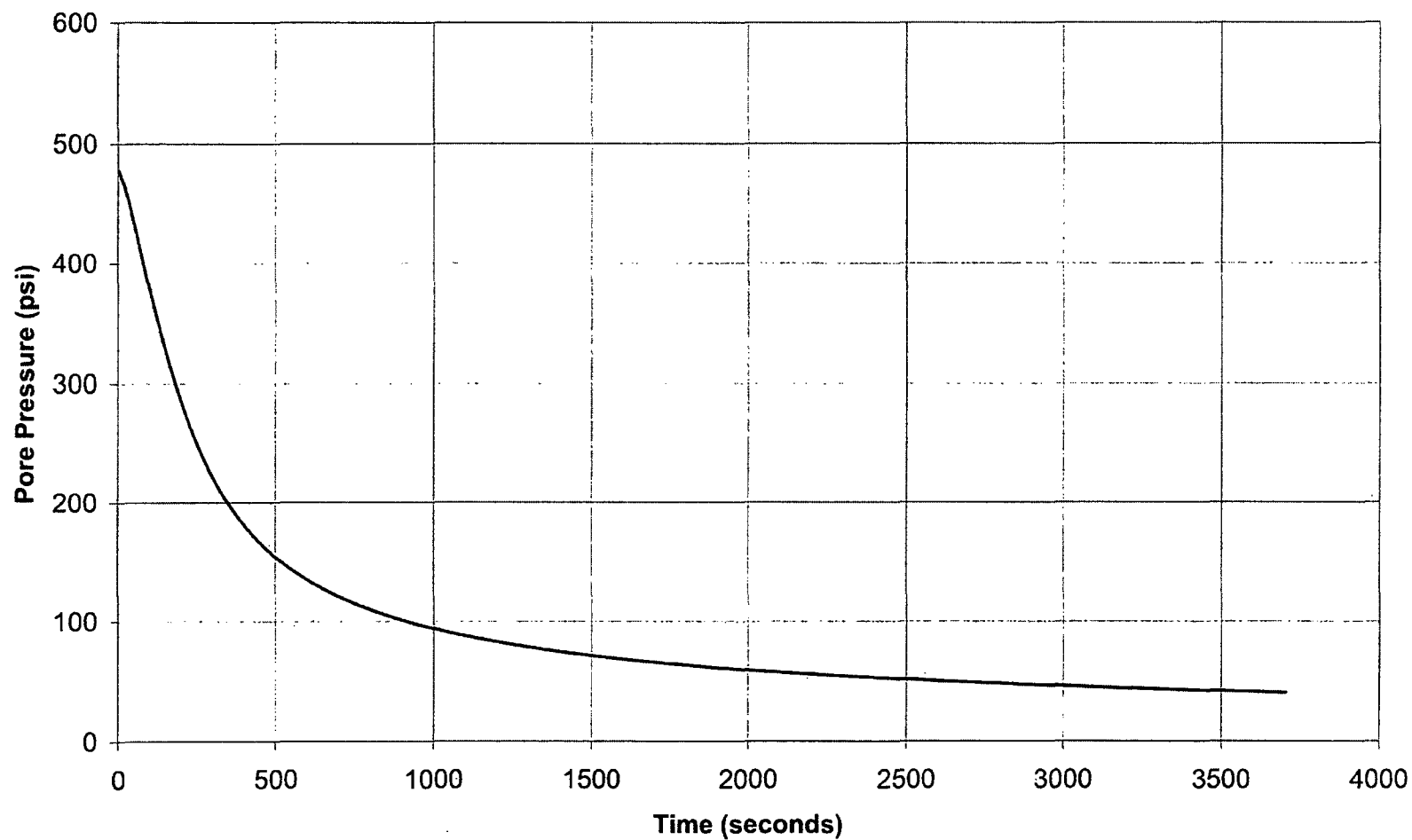




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3005s  
Depth: 101.05  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

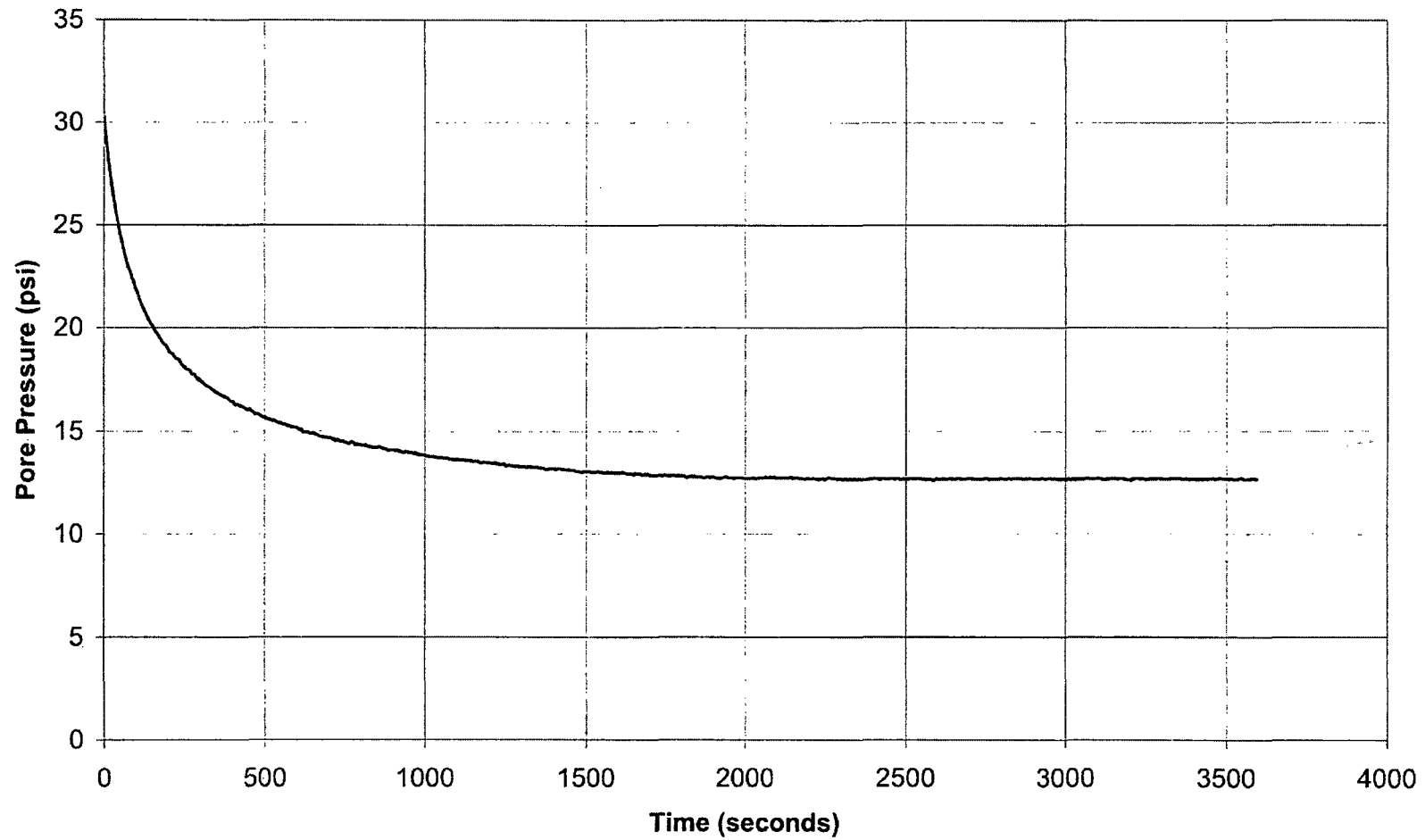




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-3005s  
Depth: 50.361  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



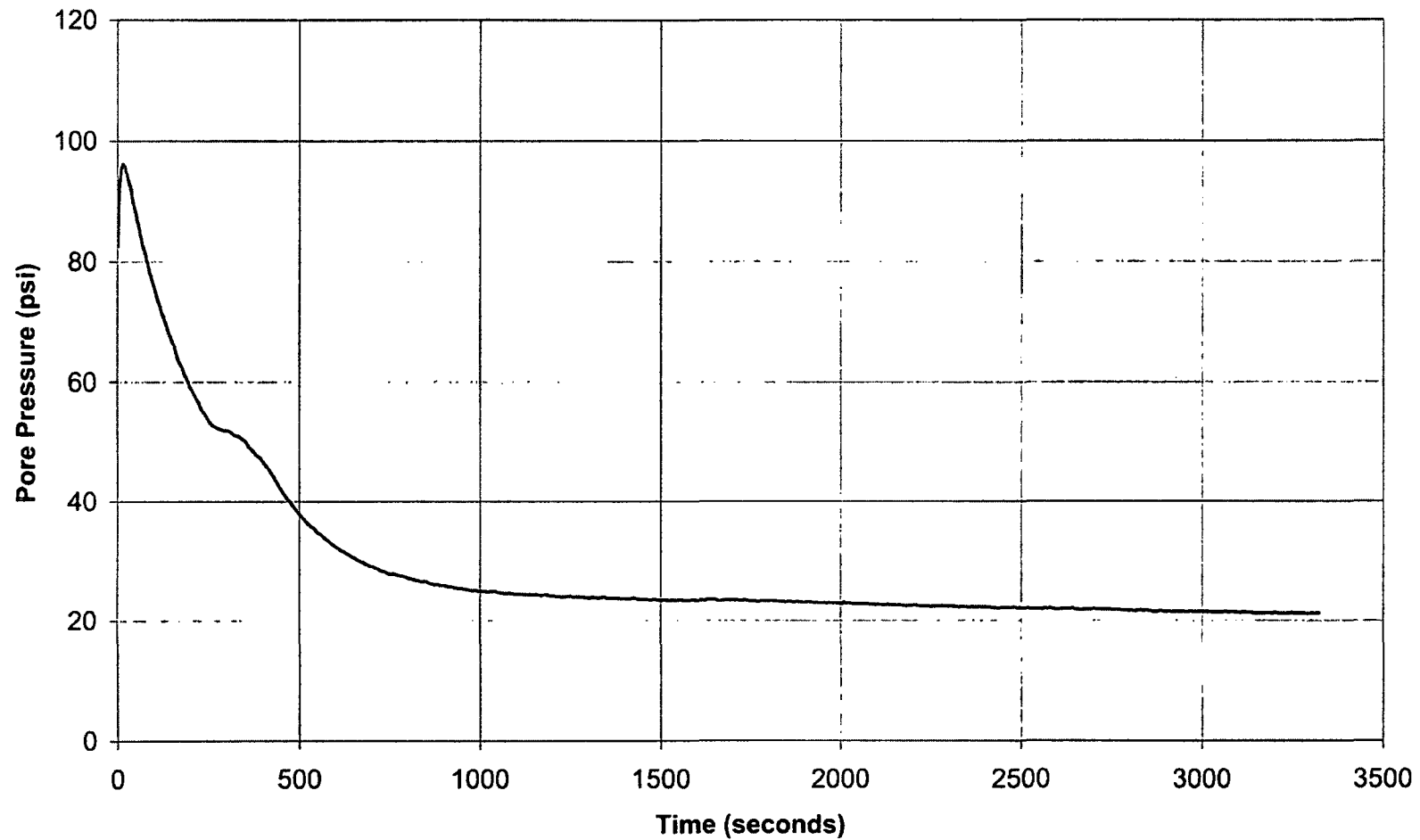




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4001s  
Depth: 34.121  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

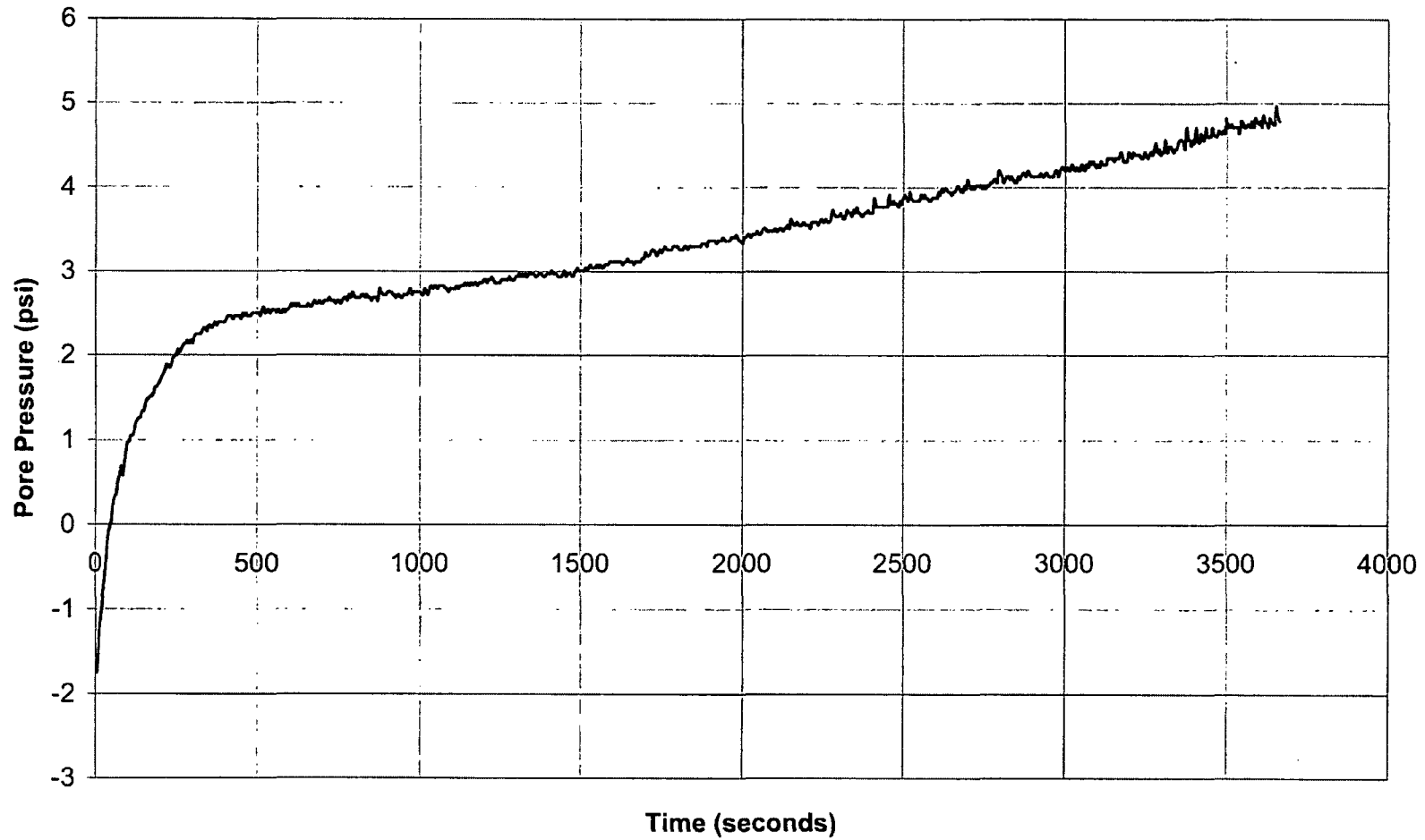




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4001s  
Depth: 74.147  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

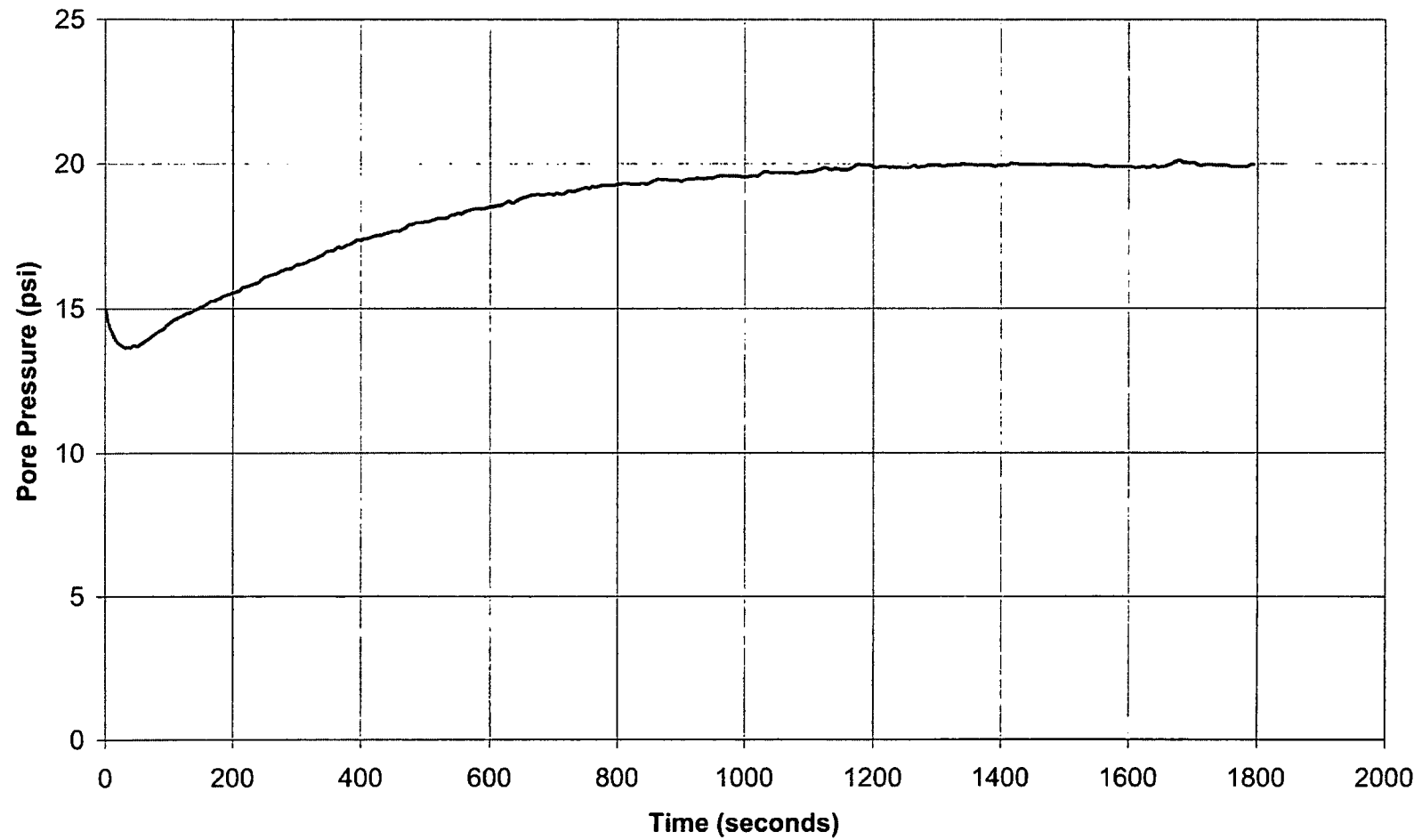




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4002s  
Depth: 34.121  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

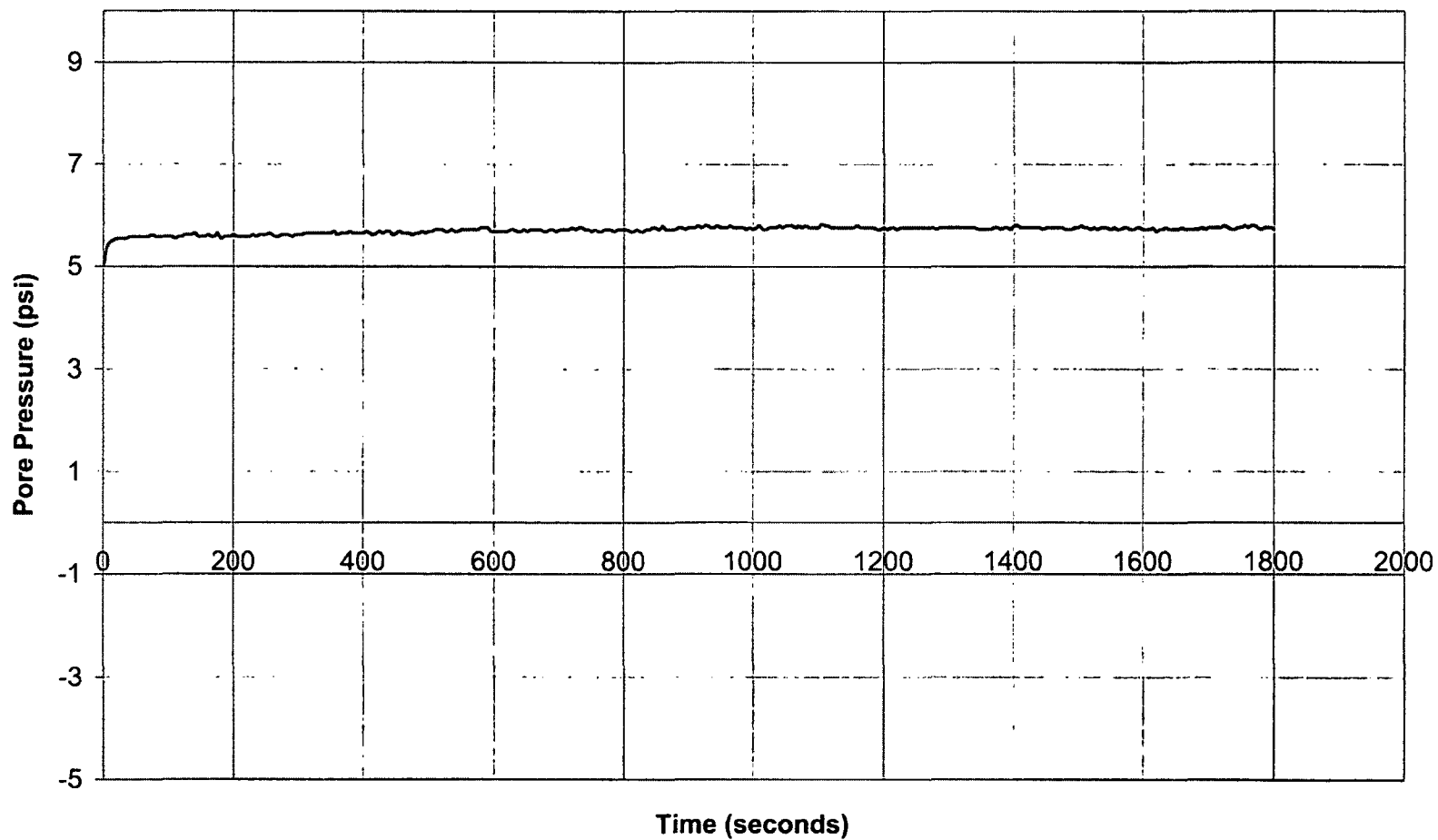




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4002s  
Depth: 82.185  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



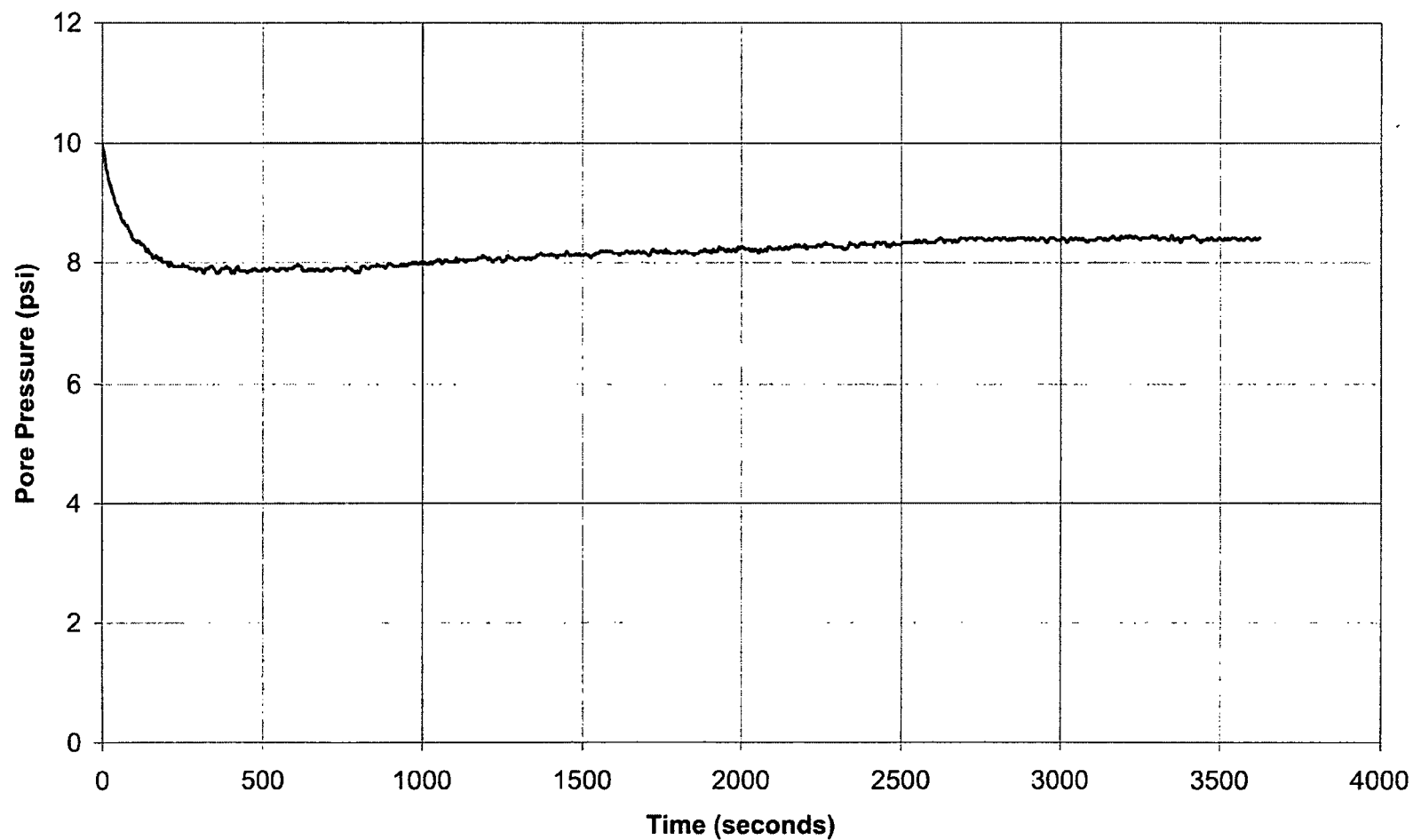




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4003sb  
Depth: 35.105  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

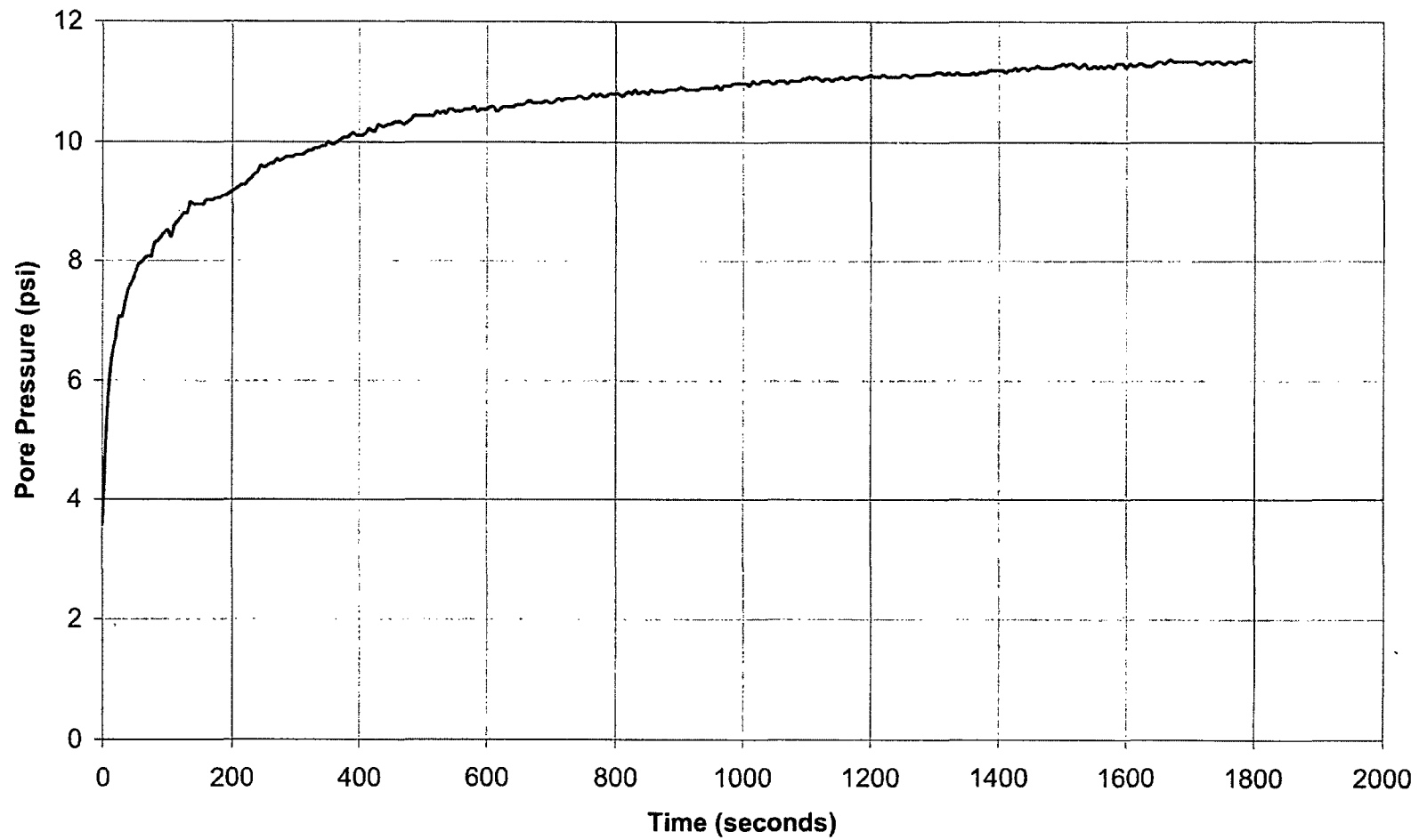




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4003sb  
Depth: 82.513  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

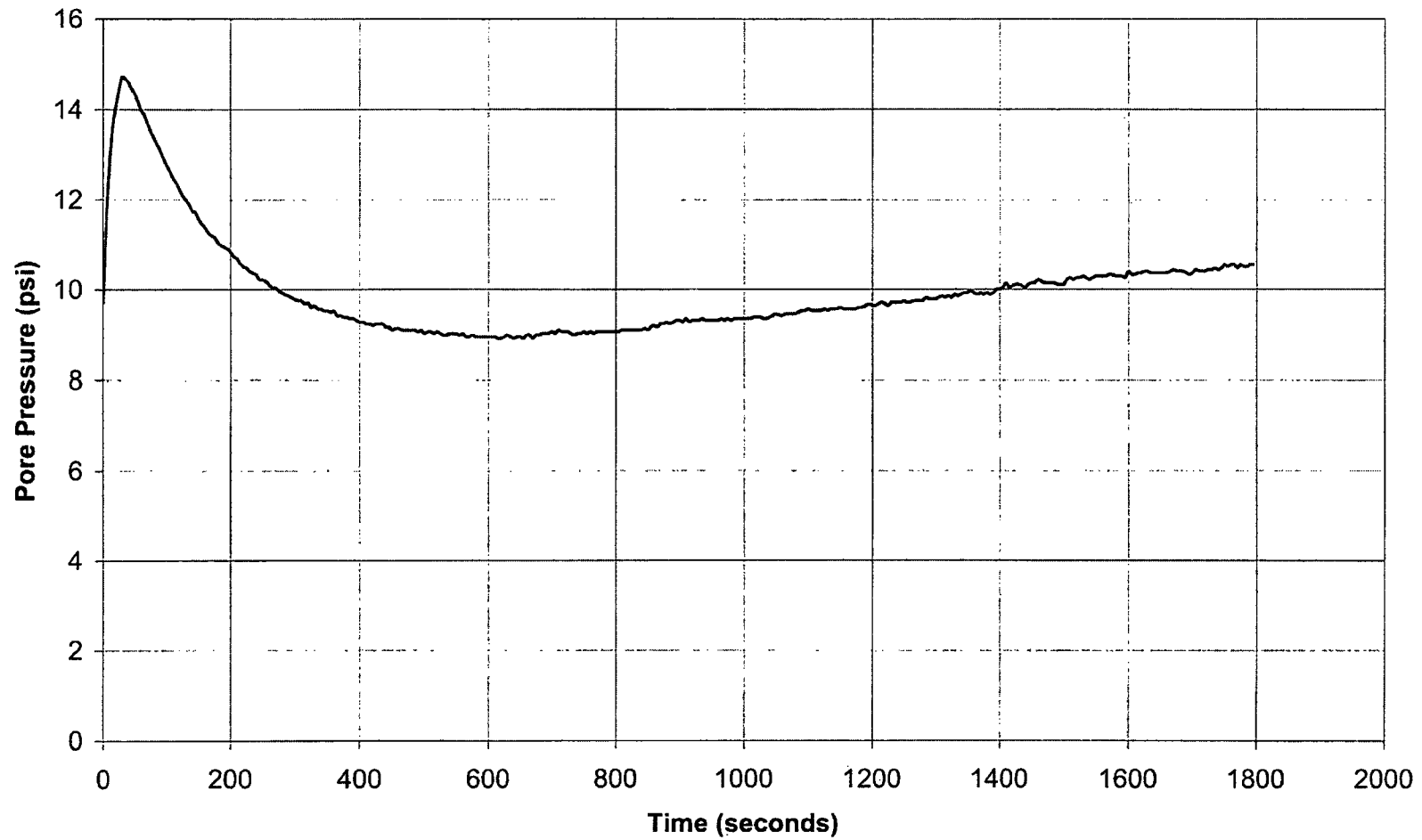




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4004  
Depth: 41.01  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

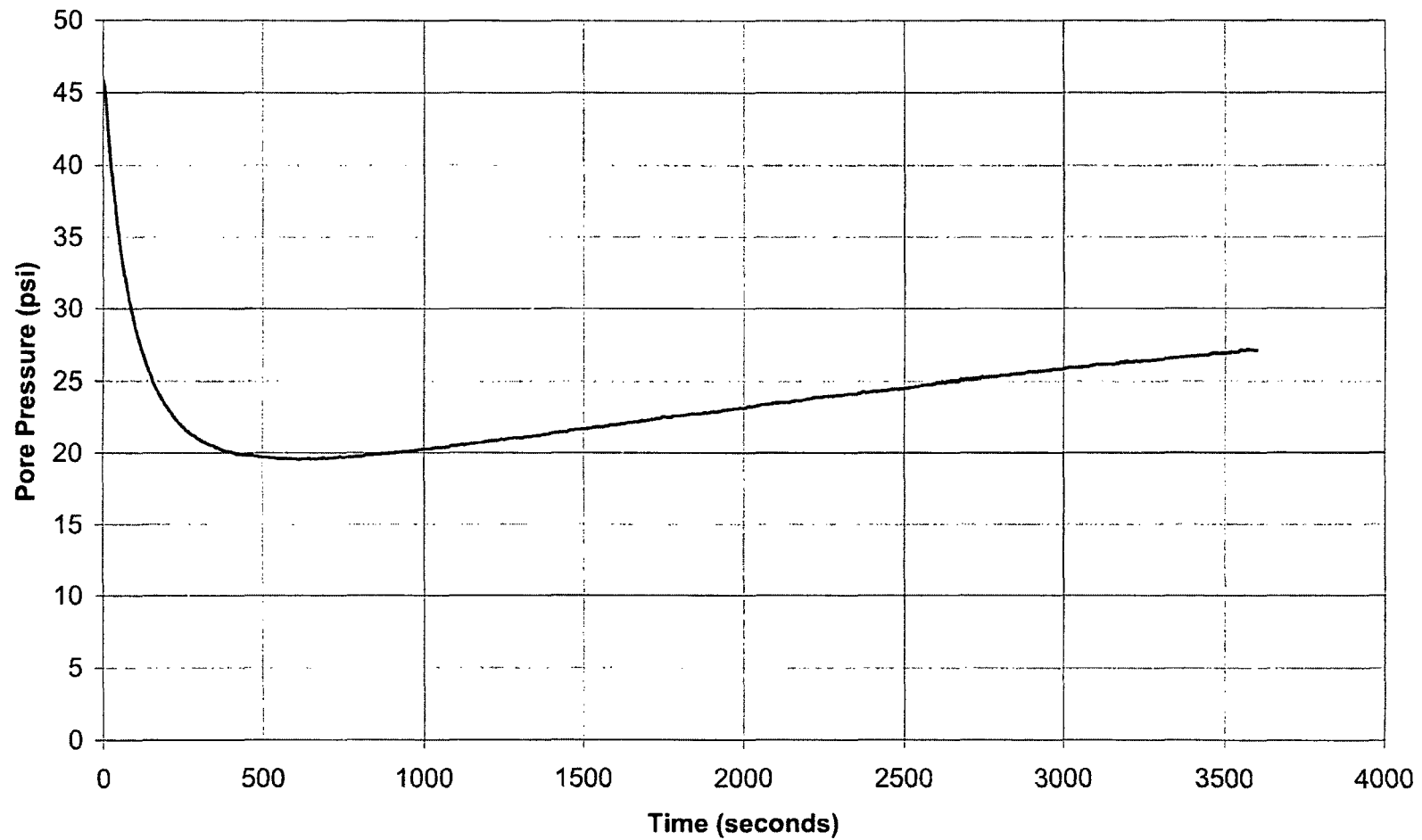




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4004  
Depth: 77.1  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



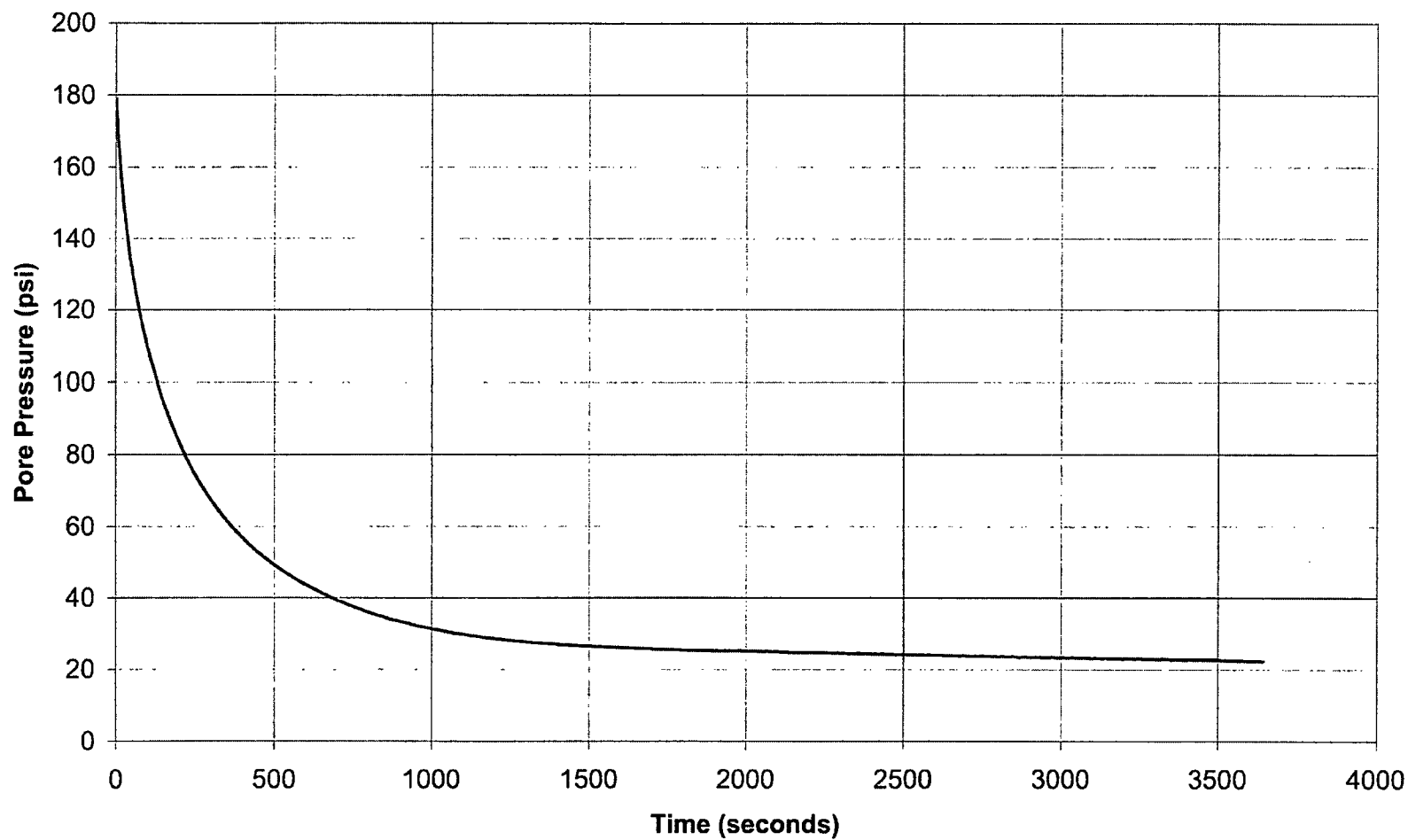




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4005s  
Depth: 47.08  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR

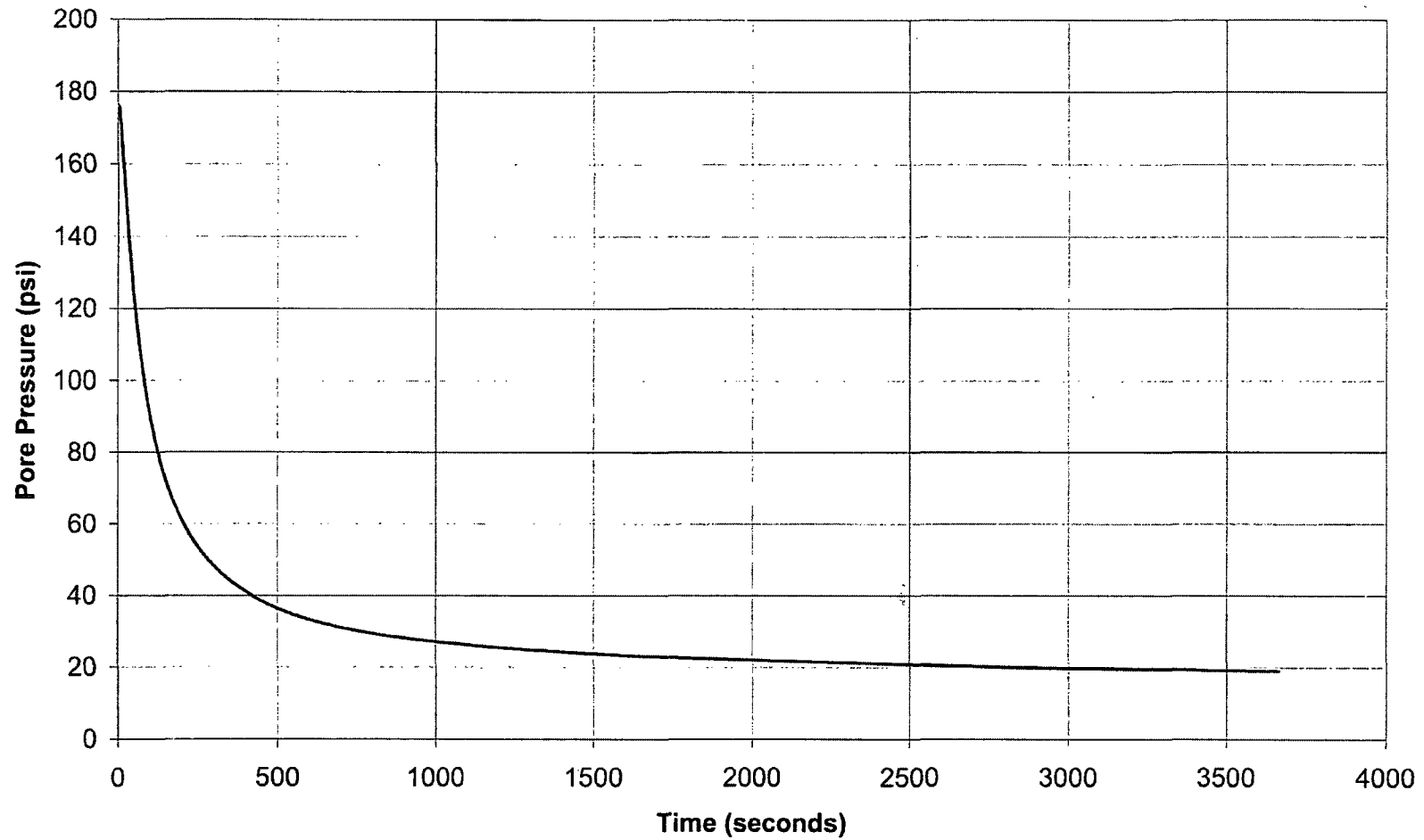




## GREGG DRILLING & TESTING

### Pore Pressure Dissipation Test

Sounding: c-4005s  
Depth: 90.223  
Site: PLANT VOGTLE  
Operator: R.AGUILLAR



## **GREGG IN SITU**

### **Digital File Formats**

#### **CPT Data Files**

Unless otherwise requested by the client, Gregg CPT data files are named such that the first 3 characters contain Gregg In-Situ, Inc. job number, the next character is typically C for CPT (S if shear waves were collected, R if Resistivity was used, U for UVIF or M for 'Mini-Cone') followed by two or three characters indicating the sounding number. The last character position is reserved for the letters a, b, c, d etc to uniquely identify multiple soundings at the same location. The CPT sounding file has the extension COR and pore pressure dissipation files have the extension PPD. As an example, for job number 05-127 (Job Number 127 in the year 2005) the first sounding will have file names 127C01.COR and 127C01.PPC.

The CPT (COR) file consists of the following components:

1. Two lines of header information
2. Data records
3. End of data marker
4. Units information

#### **Header Lines**

Line 1: Columns 1-6 are blank (future use)  
Columns 7-21 contain the sounding Date and Time  
Columns 22-36 contain the sounding Operator  
Line 2: Columns 1-16 contain the sounding ID  
Columns 17-31 Field representative  
Columns 32-47 contain the project name

#### **Data Records**

The data records contain 4 or more columns of data in floating point format. A comma (and spaces) separates each data item:

Column 1: Sounding Depth (m)

Column 2: Tip ( $q_c$ ) data uncorrected for pore pressure effects. Recorded in units selected by the CPT operator.

Column 3: Sleeve ( $f_s$ ) data. Recorded in units selected by the operator

Column 4: Dynamic pore pressure readings ( $u_2$ ). Recorded in units selected by the operator

Column 5: Exists only if specialty modules (Resistivity and/or UVIF) have been used

#### **End of Data Marker**

After the last line of data a line containing ASCII 26 (CTL-Z) and a new line (carriage return/ line feed) character. This is used to mark the end of data.

#### **Units Information**

The last section of the file contains information about the units that were selected for the sounding. A separator bar makes up the first line. The second line contains the type of units used for depth,  $q_c$ ,  $f_s$  and  $u_2$ . The third line contains the conversion values required for Gregg's software to convert the recorded data to an internal set of base units (bar for  $q_c$ , bar for  $f_s$  and meters for  $u_2$ ).



## **CPT Dissipation Files**

CPT Dissipation files have the same naming convention as the CPT sounding files and have the extension PPC. PPC files consist of the following components:

1. Two lines of header information
2. Data records

### **Header Lines (same as COR file):**

Line 1: Columns 1-6 are blank (future use)  
Columns 7-21 contain the sounding Date and Time  
Columns 22-36 contain the sounding Operator  
Line 2: Columns 1-16 Sounding or Location ID  
Columns 17-31 Field Representative  
Columns 32-47 Project Name

### **Data Records**

The data records immediately follow the header lines. Each data record can occupy several lines in the file and is a complete record of a dissipation test at a particular depth. Each data record starts with a line containing two values separated by spaces; the first value being an index number and the second being the dissipation test depth in meters. Following this line are the dissipation pore pressure values stored at 5 second intervals with a maximum of 12 entries per line. The last line of the dissipation record may not contain a full 12 entries. The data record is terminated with an ASCII 30 character (appears as a triangle in some editors). This sequence is repeated for every dissipation test in the sounding. No marker is used to indicate end of file. Unit information is not stored in this file. Users would have to check the CPT file for the units that were used.

