



GEOLOGICAL SURVEY OF CANADA

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HYDROGEOLOGY OF THE FRASER VALLEY

**In-Situ Testing for the Characterization of Aquifers:
Demonstration Project**

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1994



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ABSTRACT

A cone penetration survey was conducted, under contract to the GSC, in and adjacent to the Brookwood and Abbotsford aquifers, in the municipalities of Surrey, Langley, and Matsqui under the auspices of the GSC's hydrogeology initiative - The Geological Framework of Groundwater, Vancouver Lower Mainland and Fraser Valley (see Ricketts and Jackson, 1994, and associated papers). The objective was to establish the utility of cone penetrometry for acquiring detailed information on aquifer and aquitard architecture. A new system for in situ measuring of hydraulic conductivity, developed by the UBC In Situ Testing Group, was also tested. Test sites were chosen to complement data collected during ground penetrating radar studies in 1993 (Rea et al. 1994). In some cases, cone penetration sites were chosen close to stratigraphic test drilling (conductivity, magnetic susceptibility, and gamma logs available) and piezometer installations (data to be released), plus electromagnetic surveys and seismic surveys conducted in 1994.

This study used the CPTU in three separate areas within the Lower Fraser Valley. Dense gravel and sand encountered during the program restricted the use of the resistivity module. However, even with these difficult ground conditions, about 300 m of soundings were successfully achieved, the results providing a basis for assessing the technology as a complementary tool to conventional investigation methods for other aquifer characterization efforts. The best results were obtained from fine grained deposits, mainly sand, silt and clay, but including diamictons. Deep penetration in test sites along the eastern margin of Brookwood aquifer (216th Ave.), show the method is particularly useful for delineating the pinchout margins of coarse grained aquifers.

The In-Situ Testing Group (ISTG) of the Civil Engineering Department of the University of British Columbia has been carrying out applied research in the area of In-Situ testing for over 15 years. Over that period of time, the geotechnical community has come to accept one of the test devices, the cone penetration test (CPT), as the premier stratigraphic logging tool for most soil conditions. Besides stratigraphic information the CPT, which now routinely includes pore pressure measurement (CPTU), also provides accurate estimates of key geotechnical parameters and yields extensive information on the aquifer systems. Aquifer parameters assessed include accurate location of the phreatic surface, determination of in-situ gradients, and estimates of hydraulic conductivity's. Over the past few years, tools that augment the CPTU have been developed that allow the hydrogeology and environmental engineering fields to have even greater benefits from In-Situ testing.

For groundwater quality investigations, the UBC ISTG utilizes a two-step approach for site characterization which combines the standard CPTU data suite with downhole resistivity mapping and discrete groundwater sampling. A continuous record with depth of standard CPTU data *and* bulk resistivity is obtained with the resistivity CPTU (RCPTU). The RCPTU allows measurements of bulk resistivity

to be made from a separate module located behind a standard piezometer cone. These bulk resistivity measurements are then used to determine whether some form(s) of dissolved or free product constituent is present at or above background values. Background values are established either from on-site experience or from similar geological/geochemical environments. Areas where resistivity values are strikingly different are then further evaluated with the BAT groundwater sampling system which recovers groundwater samples at discrete depths for in-depth field and/or laboratory chemical analysis. BAT groundwater samples are also recovered and analyzed to establish background chemistry. This combination of a detailed logging/environmental screening technology and a subsequently guided discrete sampling system provides a rapid, cost-effective means of carrying out site characterization.

PROJECT BACKGROUND

As described fully in Ricketts and Jackson (1994), the Geological Survey of Canada (GSC) initiated a hydrogeological program in 1993 to delineate and characterize major aquifers in Canada. The components of the characterization are to include the geology of these aquifers, discharge and recharge components, and the general water chemistry. Ricketts and Jackson (1994) note that two projects are being carried out to start this overall initiative; the Oak Ridges Moraine north of Toronto, Ontario and the Lower Mainland of British Columbia.

The overall intention of the GSC is to assemble the characterization efforts into a user friendly database that will be accessible to all interested parties. Existing well placement and geotechnical investigation data will form the majority of the initial database information. As the project expands, various geophysical techniques, project specific stratigraphic test drilling and piezometer arrays will be used to generate new data (Ricketts and Jackson, 1994).

The overall aim of the project is to develop comprehensive three-dimensional representations of the hydrogeological architecture of the key aquifers investigated. To aid in developing this three-dimensional characterization, the GSC has indicated an interest in any technology that can demonstrate accuracy, cost-effectiveness and relevance to the characterization exercises. The consideration of in-situ testing falls under this latter category and the project described in this report is a summary of the demonstration of in-situ testing technology for aquifer characterization.

IN-SITU TESTING

As noted in the introduction to this report, the method of site characterization utilized dictates the quality of information obtained. If that quality is important for a given project, then the method that can combine the best quality in the most efficient manner, i.e. most economically, should be the method of choice. In-situ testing, using sophisticated instrumented mechanical devices, offers a technically superior and cost effective alternative for site characterization when compared to traditional methods in many ground conditions. The ability to obtain continuous subsurface data has traditionally only been available through continuous sampling which is seldom carried out in non-mineral valuation characterizations due to the associated extremely high costs. A further problem with traditional sampling methods, e.g. piston sampling, split spoons or auger drilling, is the extreme disturbance that the materials undergo in the sampling process. In many cases this disturbance can render the samples meaningless for the intended measurement purposes.

Research conducted by the UBC ISTG and others has expanded the knowledge base in the field of in-situ testing where subsurface materials can be tested under prevailing stress, hydrogeological and environmental conditions. This research, coupled with growing use by design professionals worldwide, has provided practicing engineers and scientists with reliable, repeatable, and economical in-situ tools, procedures, and evaluation methodologies to solve a variety of engineering problems.

For any site, the key items that must be characterized in order to evaluate subsurface conditions are:

- the stratigraphic profile;
- the relative geotechnical properties of each stratigraphic unit;
- the hydraulic properties and gradients in the aquifer and aquitard materials; and
- the nature of the pore fluid/gases that are present in the materials.

The following sections give a brief description of the application of in-situ testing in the measurement of these required parameters with emphasis on piezocone technology. The sections concentrate on soils (e.g. non-indurated materials) but piezocone technology is being increasingly used for soft to medium glacial tills and rocks. Heavy-weight in-situ testing, e.g. piezocone testing in dense gravels, sandstone's and other like materials, has been carried out on project specific basis using specialized equipment. For example, project work at the Hanford Nuclear Waste Deposit Facility in Washington State has used a special piezocone and vehicle with pushing capacity of 30 tons for penetrating thick sections of dense gravel.

Piezometer Cone Penetration Test

The Piezometer Cone Penetration Test (CPTU) represents a rapid and repeatable means of delineating soil stratigraphy and determining geotechnical and hydrogeological parameters. The cone has a standard (ASTM and Internationally controlled) 10 cm², 60° conical tip, a 150 cm² friction sleeve and pore pressure transducers which allow the CPTU to measure tip resistance (q_c), friction sleeve stress (f_s) and pore pressure response at up to three locations (on face, behind tip at shoulder and behind the friction sleeve, typically referred to as U1, U2, and U3, respectively). All measurements are made by calibrated stain gauges and/or pressure transducers that are highly linear and non-hysteretic. Temperature and instrument inclination are also measured simultaneously as the CPTU is advanced into the ground. In addition, a seismic model of the cone has been developed to measure downhole seismic low strain dynamic properties of the soil.

Figure 1 shows a schematic CPTU test with two pore pressure transducers as carried out by UBC for this project. The face pore pressure location, (U1), was not used because of the hard pushing encountered. Figure 2 shows a typical CPTU profile of a sounding from this study. Note that the data appears to be essentially continuous and with the digitization interval of 2.5 cm which is averaged over 10 cm intervals, this is essentially the case. The full dissipation of pore pressures U2 and U3 at several depths indicated a hydrostatic profile of water pressure with the groundwater table at 7.4m below ground. Note the very high tip resistance at depths above 7m where the interpreted relative density (using the cone interpretation program CPTINT 5.0 developed at UBC) was above 100% and as high as 140% at 2m depth. This indicates that nature has compacted the sands and gravels far more densely than the maximum 100% obtained in the laboratory. The predominant friction ratios of 0.5 to 1.0% indicate a profile relatively free of plastic fines except for a thin layer at 14m. The soil density decreases slightly with depth but still only got down to about 70% in this area of the Brookwood aquifer at the CRTC station. Cone pushing was very difficult and hard on the equipment as it bore its way through the variable gravels which finally stopped the cone 'cold' at 19.3m. Some data was lost in this profile as in others due to repeated start, stop, release and restart of the push.

Prior to commencing any detailed field program with the CPTU, a calibrative check of the various cone channels is carried out. The cone tip and friction sleeve are calibrated by applying several known loads to the cone and measuring corresponding voltage outputs. The voltage outputs are then compared to the expected calibrated values under the given loads. As an example, calibration accuracy is acceptable when within 0.07% of full scale for the cone tip (0.7 bar for the 1000 bar cones used in this study). The pore pressure transducers are calibrated by placing the cone into a sealed calibration chamber and then increasing the air pressure to known values. Other channels are calibrated following specific procedures on an as-needed basis.

The cone is pushed into the ground at a constant rate of 2 cm/sec (about one metre per minute) as per ASTM Standard D-3441 by a hydraulic pushing source; often a drill rig or a specially outfitted enclosed vehicle. As the cone is advanced, the forces measured by the tip and the friction sleeve vary with material properties of the soil being penetrated. One of the main attractions of the CPTU is the repeatability of the data which is due to its standard configuration, stable electronics and freedom from operator variability.

There are extensive empirical correlations available between the various CPTU channels, and combinations thereof, that provide soil behaviour type (equivalent to stratigraphy), geotechnical strength parameters and hydraulic parameters (Robertson and Campanella, 1983). An estimate of soil type is made using the cone bearing (q_c) and the friction ratio, R_f , defined as $(f_s/q_c) \times 100\%$. This interpretation chart was developed from several thousand direct correlations with sampled locations made by many operators and researchers. Fig. 3 shows this classification scheme and Zone Number designation. Using such a chart is typically automated (UBC program CPTINT), but can be carried out for each depth by the user at a quick glance. For example, in the case of a clean sand the cone bearing will be approximately greater than 40 bars (where 1 bar is equal to exactly 100 kPa), and the friction ratio will be less than 0.5%-1%. As the proportion of fines and plastic characteristics increases, generally the bearing decreases and the friction ratio increases. Values of friction ratio greater than 2% are generally representative of a clayey material.

During penetration below the groundwater table (or phreatic surface), pore pressures are generated which are above or below hydrostatic values (e.g. dependent upon a materials propensity to contract or dilate when sheared) are termed excess pore pressures. The excess pore pressure ($\Delta u = u - u_0$) measured during penetration is a useful indication of soil type and provides an excellent means of detecting details in soil stratigraphy. For clean sandy and gravelly soils, excess pore pressures dissipate almost immediately, while finer grained clayey and or silty materials have relatively lower permeability, and significant excess pore pressures can be generated. Excess pore pressures can be either positive or negative depending upon measurement location and soil behaviour. Normally consolidated silts and clays tend to develop large positive excess pore pressures, whereas overconsolidated silts and clays tend to develop smaller positive or even negative excess pore pressures. Excess pore pressure measurements are incorporated into a soil classification scheme similar to Figs. 3 which is also incorporated in CPTINT. The inclusion of excess pore pressure measurements into the identification of soil type improves the interpretation in all soils.

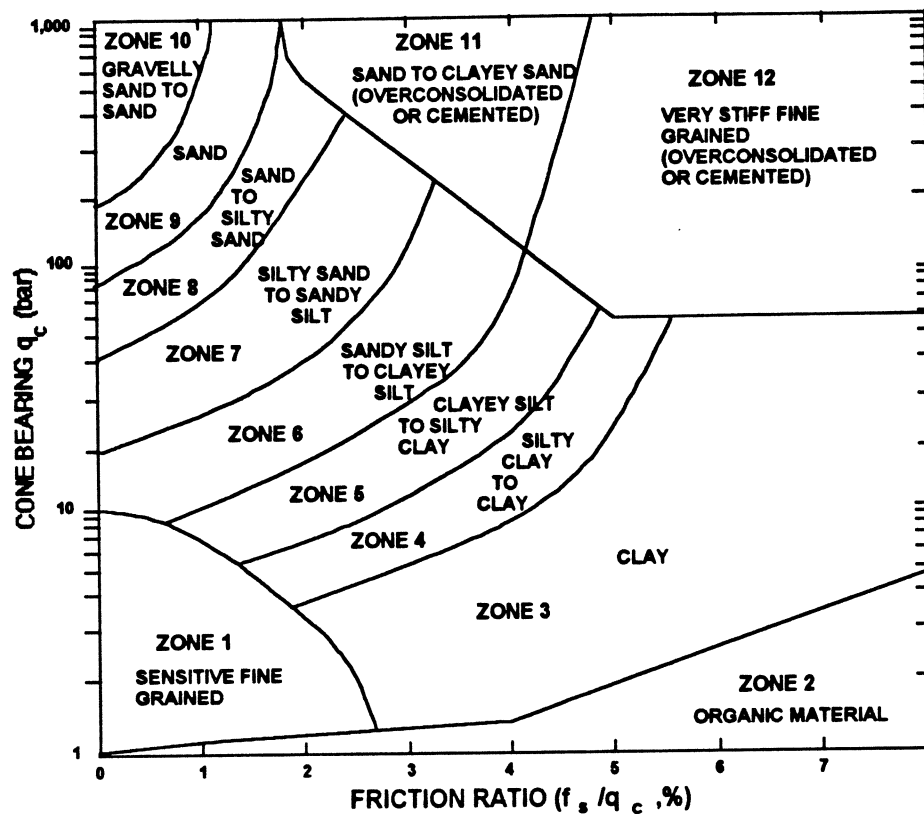
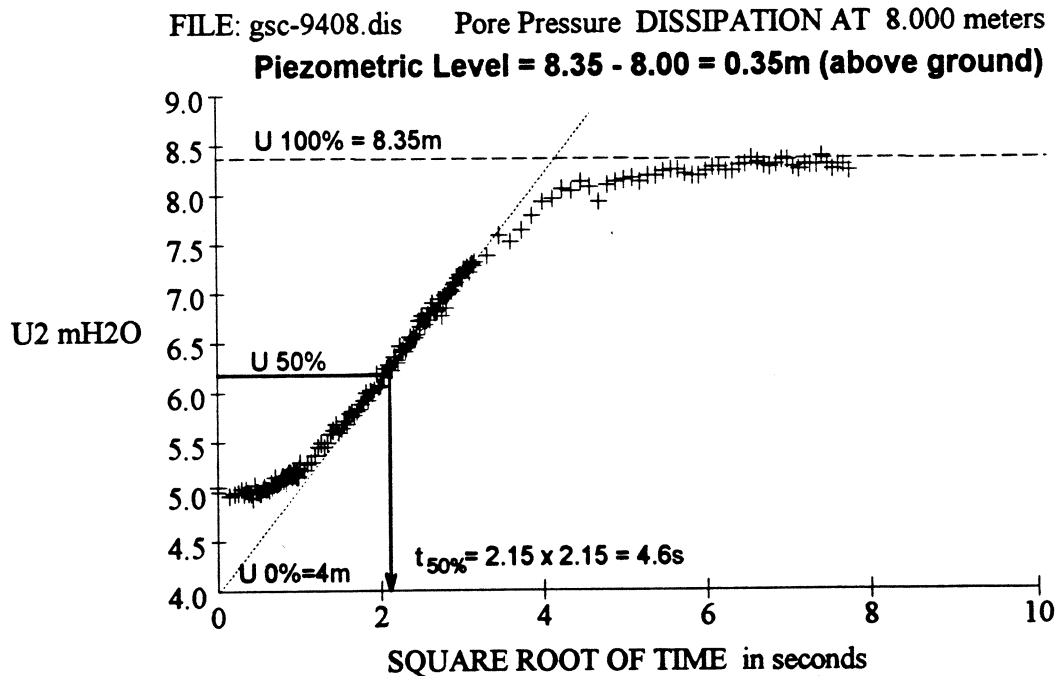
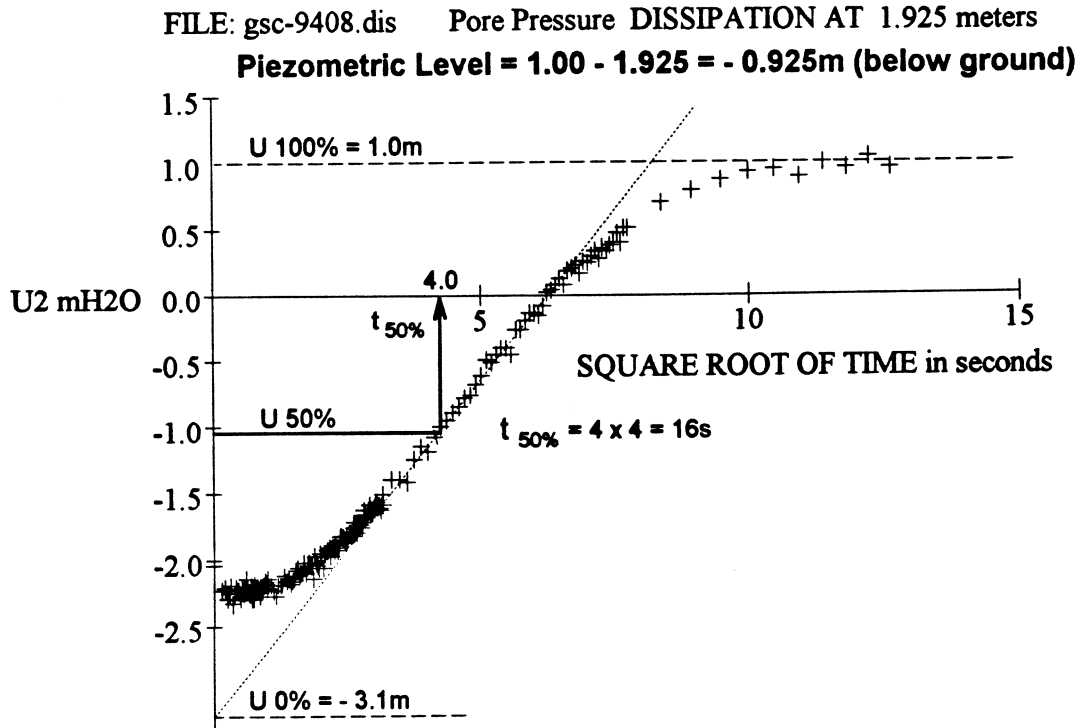


Fig. 3 - Soil Behaviour Type Classification Chart based on Cone Tip Resistance and Friction Ratio as proposed by Robertson and Campanella, 1984.

Excess pore pressure measurements provide valuable insight into the hydraulic parameters of the porous media which are key to aquifer characterization efforts. When penetration ceases, e.g., after a 1-metre rod push, any excess pore pressures generated during cone penetration will start to dissipate. The amount of pore pressure generated, as noted above, is dependent upon soil type and measurement location (i.e. U1, U2 or U3). The rate of dissipation is dependent upon the coefficient of consolidation which, in turn, is dependent upon the compressibility and hydraulic conductivity of the soil. Dissipation profiles acquired during a typical piezocone sounding from this study along Zero Avenue in the Abbotsford Aquifer where an upward gradient was measured are shown on Fig. 4. Note that the pressures come towards an equilibrium value (i.e. zero excess pore pressure) after some period of time. The shape of dissipation curves, such as those shown on Fig. 4, are very amenable to the application of consolidation theory. The plots of square root of time shown in Fig. 4 make it easy to determine the time for 50% dissipation of the excess pore pressure. By theory, the initial dissipation is linear with square root of time up to about 50-60% which allows one to back-extrapolate and determine the initial excess pore pressure at zero time. The t_{50} time is then determined and used to calculate coefficient of consolidation from which the soil permeability can be determined. Due to the geometry of the piezocone, radial cavity expansion theories are directly applicable to the data in determining the time rate of consolidation from the classical consolidation theory.



Upward Gradient = $[0.35 - (- 0.925)] \div (8.000 - 1.925) = 0.21 \text{ m/m}$

FIG. 4 - Typical U2 Pore Pressure Dissipation Curves at 0 Ave at Matsqui-Langely Border showing equilibrium pressures, gradient calculation and time for 50% dissipation.

Estimates of the coefficient of consolidation, $c_{v,h}$ (where v and h are vertical and horizontal coefficients, respectively), for sandy to clayey soils are obtained by measuring the rate of dissipation of the excess pore pressure and then applying closed-form linear cavity expansion solutions. Knowing $c_{v,h}$, the hydraulic conductivity ($K_{v,h}$) of the range of silty sand to clayey materials can then be estimated using:

$$K_{v,h} = c_{v,h} \cdot m_{v,h} \cdot \gamma_w \quad (1)$$

where $m_{v,h}$ is the coefficient of volume compressibility in either the vertical or horizontal plane, which can be estimated from CPTU data, and γ_w is the unit weight of water. In addition, pressure head distribution within the saturated zone can be estimated based on the equilibrium pore pressure data for all soil types.

Measurement of pore pressure decay in coarser-grained materials is, however, more difficult to measure because the excess pore pressures are smaller in magnitude and, more importantly, dissipation occurs very rapidly. Cavity expansion theories are still valid, and special data acquisition enhancements have been made in the UBC Geodas system to measure these rapid dissipations. The anisotropic ratio, K_v/K_h , can also be estimated from the CPTU profile using some judgment which is based on the degree of layering.

CPTU technology is currently best-suited for sand-sized and finer material (e.g. all soils and some finer grained soft rocks and tills). CPTU systems for testing coarser and denser materials are available and will likely increase in numbers as experience is gained. Many of the soundings carried out in this demonstration study encountered dense to very dense gravels and sandy gravels and likely represent the upper bound of penetrability for most standard CPTU systems.

Resistivity Cone Penetration Test

The measurement of resistance to electrical current flow in soils is a relatively new development in penetration technology. Resistivity cone penetrometers are currently available on a limited, but increasing, commercial basis and Hogentogler and Co. manufacture a resistivity module for their CPTU systems and local contractors have their own version (Woeller et al., 1993). UBC designed and developed its own Resistivity cone in 1987. The *UBC Resistivity Cone Penetration Test (RCPTU)* consists of a resistivity module which is added to the standard piezocone. The addition of the resistivity module permits assessment of groundwater quality by measuring the bulk soil resistivity, without imparting extra costs or time to a standard sounding. The original concept of combining resistivity measurements with a standard cone was developed in Holland in the 1970's. A schematic of the resistivity module developed at UBC, is shown in Fig.5. The main difference between the UBC developed modules and those currently used in industry is that the ISTG is researching several electrode spacings whereas commercial endeavors typically use only one spacing. Co-operative industry-research initiatives such as this project will assist in the promotion of the RCPTU technology. If the trend that has developed in some areas, e.g. Southern California, follows in Canada, this technology will become common place on appropriate projects within the near future.

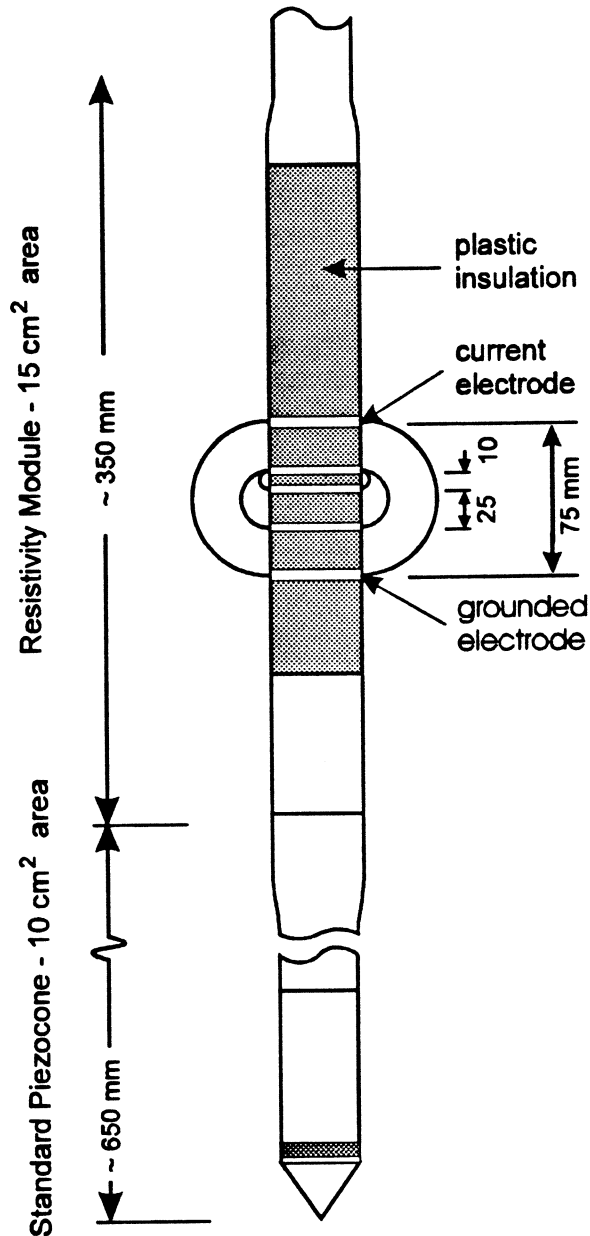


Fig. 5 - UBC Resistivity Piezocone (RCPTU)

The bulk resistivity of the soil is not directly measured by the resistivity module, but rather it is determined from the measured RMS-AC voltage (V) across an electrode pair at a constant supplied RMS-AC current (I) at 1000 Hz. The bulk resistance of the soil (R) is computed from Ohm's Law:

$$R = V / I \tag{2}$$

The bulk resistance is not a fundamental property of the soil and pore water. It is dependent upon the current path length (L) and the cross-sectional area (A) of the effective resistive unit. The bulk resistivity can be computed from the bulk resistance if the following assumptions are made:

- the soil acts as a homogeneous isotropic media;
- the measurement electrodes act as perfect conductors; and
- the resistivity module circuitry acts as a perfect current supply source.

Unlike bulk resistance, bulk resistivity (ρ) is a fundamental property of the porous media and is related to the bulk resistance in the following manner:

$$\rho = (A/L) \times R = CF \times R = CF \times (V/I) \quad (3)$$

Resistivity is the reciprocal of electrical conductivity and is given by the following as

$$\text{Resistivity(Ohm-m)} = 1 \div \text{Conductivity(Mho/m)} = 10,000 \div \text{Conductivity}(\mu\text{S/cm}) \quad (4)$$

Hydrogeologists appear to prefer units of electrical conductivity in ($\mu\text{S/cm}$) while Geophysicists prefer units of resistivity in (Ohm-m). ISTG has been using resistivity in Ohm-m.

The calibration factor (CF) of the resistivity module is dependent upon the geometry of the electrode dimensions and the magnitude of the excitation current. CF is a constant for a given configuration of electrode spacing and excitation current, and is determined by submerging the resistivity module in a constant temperature buffer solution of known resistivities. Calibration work by the UBC ISTG is typically carried out by starting with de-ionized water and adding conductive salts in increments.

When the electrodes are in a homogeneous and isotropic medium, they should respond in a similar manner to that observed in the calibration procedure. However, soil is rarely homogeneous and isotropic, so during field testing the response of the electrodes will be dependent on the state of the soil and the changes to the soil caused by penetration. However, of considerable practical value is the fact that the measured resistivity is almost totally governed by the pore fluid chemistry and the pore volume. In other words, the soil grains have a limited affect in most circumstances.

During a RCPTU sounding, the electrodes will not respond fully to a layer unless the layers are completely within the electrode spacing. For minimum layer thickness to be correctly sensed the thickness must be greater than the electrode spacing. Smaller distances between the electrodes allow for the possible detection of thinner layers of contrasting resistivity. Wider spacing provides an average resistivity over a larger depth and a greater penetration of the electric field into undisturbed soil. This should give a more accurate determination of soil resistivity in homogeneous ground. This effect of layering is one of the main reasons for the ISTG's interest in electrode spacing research.

Campanella and Weemes (1990) provide a thorough discussion of the RCPTU.

Water Sampling

The UBC ISTG uses a modification of the *BAT* groundwater sampling system (named after the inventor, *Bengt Arne Torstensson*) for obtaining pore fluid samples. The system consists of a sampling tip that is accessed through sterile evacuated glass

sample tubes and a double-ended hypodermic needle set-up. The tube sampler is lowered by wireline cable or electrical wire depending upon whether only a pore fluid sample or a pore fluid sample and pressure test are being carried out. The sealed porous tip and AWL casing rods are hydraulically pushed with the same equipment used for cone penetration testing. The BAT sampling tip used by the ISTG consists of a probe slightly larger in diameter than the piezocone. This sampling tip can be pushed on its own or down the same hole as the smaller CPTU sounding. A schematic of a typical BAT System is shown in Fig. 6. Research is currently under way comparing the related accuracy of the two insertion methods (own hole versus expanding a piezocone sounding hole) and preliminary indications are that there is no difference in measured results. The US-EPA and other high conformance level groups have adopted BAT technology as appropriate and preferred for many applications. BAT technology has been scrutinized by many investigators and has met with widespread acceptance (e.g. Zemo et al., 1992).

The manner in which UBC ISTG recommends using the BAT system is to use it in conjunction with a RCPTU program. The RCPTU log is used to identify depths where groundwater samples are desired based upon soil type (sand is desired) and bulk resistivity trends. The BAT is then used by pushing the porous filter element on the BAT probe to a depth within the zone(s) of interest. As noted above, water samples are taken by a wire-line evacuated sample tube, using a needle-punch system that allows purging of the first sample and then in-situ pore water sampling. Sterile glass vials (typically 35 ml or larger) are used for water and gas sample recovery.

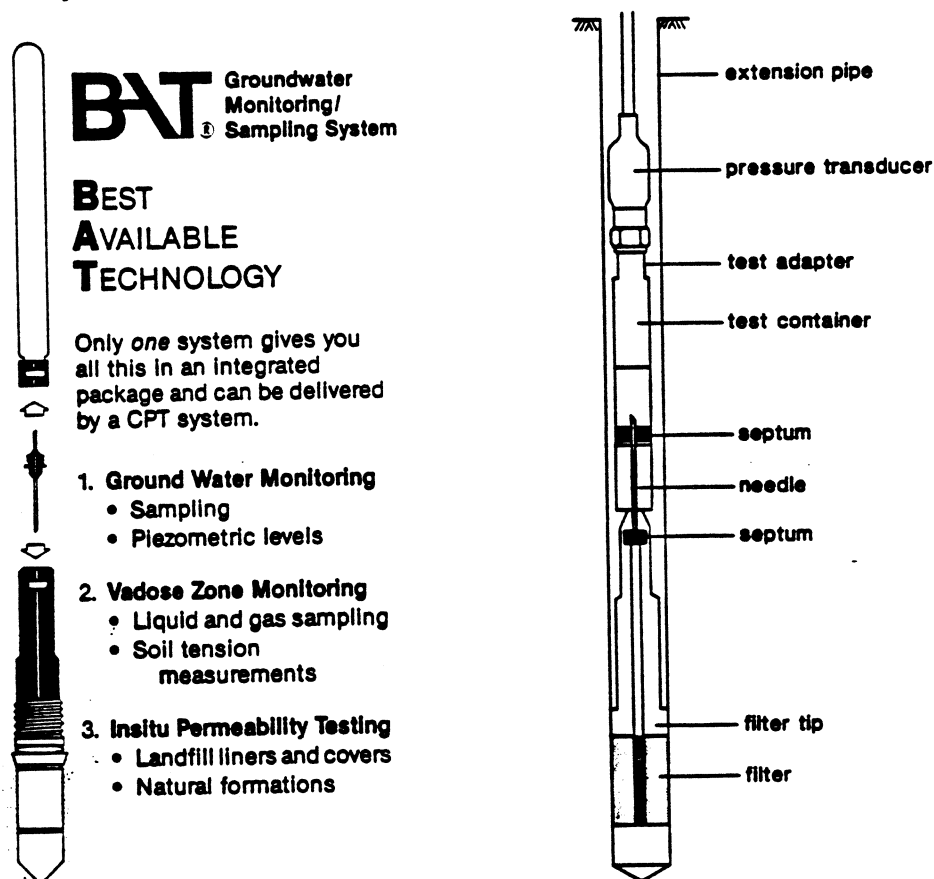


Fig. 6 - BAT Groundwater System for specific depth piezometric head measurement, pore water sampling and in-situ hydraulic conductivity determination

Another similar procedure to the BAT water sampling system is an in-situ hydraulic conductivity test procedure. This system utilizes a set up essentially identical to the BAT water sampling except the glass vials are replaced by a fixed, 115 ml stainless steel chamber. Additionally, a sensitive pore pressure transducer is connected to this chamber so that the requisite readings can be obtained. The procedure involves evacuating the chamber and then lowering it to the desired depth and beginning the test. The measurement of time versus pressure, from roughly negative one atmosphere to the hydrostatic value, is then used to directly measure hydraulic conductivity for this falling head test.

USE OF IN-SITU TESTING IN THE GSC AQUIFER CHARACTERIZATION PROJECT

WINTER/SPRING 1994 IN-SITU DEMONSTRATION

General

All work for this project was carried out using the specially designed UBC ISTG research vehicle. The UBC ISTG research vehicle is a 10 tonne truck mounted hydraulic penetration rig. The specialized features include the enclosed facilities, computer systems, water chemistry testing capabilities and sophisticated power supplies. The vehicle is licensed for road travel and could access all planned areas for the project.

The GSC identified the three main areas to be investigated for this project which were

- the southern Canadian reaches of the Abbotsford Aquifer in Matsqui, BC; (Fig. 7)
- an area along 216th Street in Langley which is along the eastern edge of the Brookwood Aquifer; (Fig. 8) and
- the Brookwood Aquifer area at two locations in Surrey, BC. (Fig. 8).

Figures 7 and 8 show the approximate locations of the CPTU soundings for this project. Tables 1 to 3 inclusive present a summary of the Piezocone testing (CPTU) at the three areas investigated for this project and the last two digits of the Test No. are designated as CPT location numbers in Figs. 7 and 8. Appendix A contains plots of all soundings data in the order carried out with interpreted profiles appended to all penetrations of significant depth. Appendix B includes printouts of all spread sheets of interpreted data using CPTINT 5.0.

IBM Formatted data disks include ASCII files of all cone test data and all interpreted parameters.

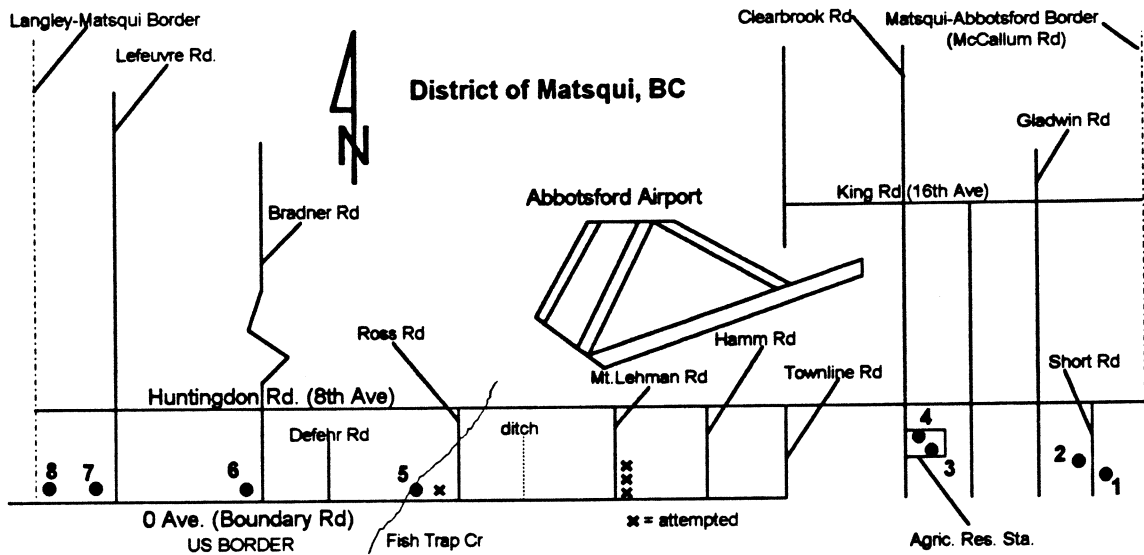


Fig. 7 - Abbotsford Aquifer Area CPT Locations (Not To Scale)

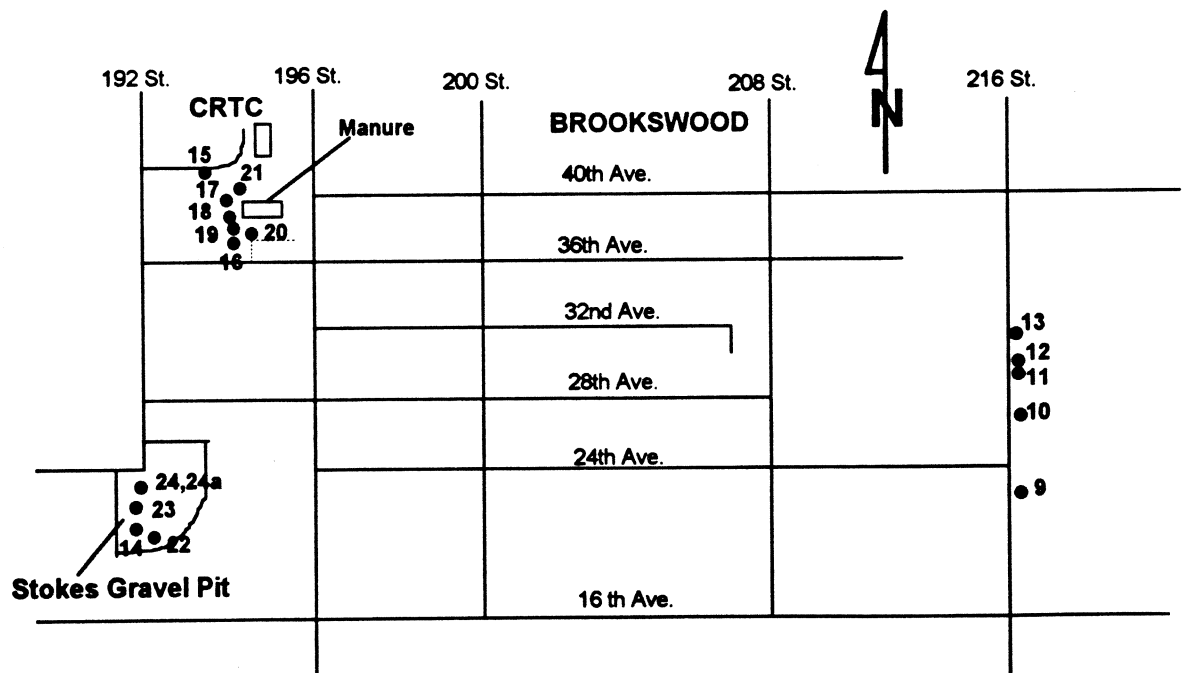


Fig. 8 - Brookwood Aquifer & 216th St. Area CPT Locations (Not To Scale)

Table 1 - Summary of Abbotsford Aquifer In-Situ Data

Date	Test No.	Location	Cone	Depth (metres)	Phreatic Surface,m	Comments
17-02-94	GSC 9401	Short Rd. near 0 Ave. and Clearbrook Rd	HOG3 U2 Res1	12.95 refusal	7.0	Abbotsford Aquifer
17-02-94	GSC 9402	Short Rd. near 0 Ave. and Clearbrook Rd.	HOG U2 Res1	4.05 refusal	3.25	Abbotsford Aquifer
18-02-94	GSC 9403	Agricultural Research Centre, Clearbrook Rd.	HOG3 U2 Res1	3.35 refusal	>3.35	Abbotsford Aquifer - Hard Pushing
18-02-94	GSC 9404	Agricultural Research Centre, Clearbrook Rd.	HOG3 U2 Res1	3.88 refusal	3.50	Abbotsford Aquifer - Hard Pushing
22-02-94	N/A	0 Ave. along Mt. Lehman Road	Dummy Cone	1.6 refusal	-	Abbotsford Aquifer - Hard Pushing
22-02-94	N/A	0 Ave. along Mt. Lehman Road	Dummy Cone	2.6 refusal	-	
22-02-94	N/A	0 Ave. along Mt. Lehman Road	Dummy Cone	2.57 refusal	-	
22-02-94	N/A	0 Ave. , 40 m east of bridge at Fishtrap Ck.	Dummy Cone	4.00 refusal	-	
22-02-94	GSC 9405	0 Ave. at Fishtrap Ck. at Bridge (east side)	Hog3U2	3.55 refusal	1.5	
22-02-94	GSC 9406	0 Ave. at 30 m west of Bradner Rd.	Hog3U2	4.63 refusal	0.5	Very hard pushing through sand and gravel
25-02-94	GSC 9407	0 Ave. at 30 m west of Defferer Rd.	Hog3U2	1.38 refusal	-	
25-02-94	GSC 9408	0 Ave., at Langley - Matsqui border	Hog3U2	7.75 refusal	approx. 1.5	silty-clayey...upward gradient present (discharge area)
4-Days	12 Soundings	7 Locations		52.3m		All pushed to shallow refusal

Table 2 - Summary of 216th Street In-Situ Data

Date	Test No.	Location	Cone	Depth (metres)	Phreatic Surface,m	Comments
01-03-94	GSC 9409	2275-216th St.,	UBC9U2U3RES1	32.6	~1.7	Mostly clay with some sand lenses
03-03-94	GSC 9410	2755-216th St.	UBC9U2U3RES1	31.45	~1.2	Mostly clay with several sand lenses
03-03-94	GSC 9411	2932-216th St.	UBC9U2U3RES1	2.03		Refusal
03-03-94	GSC 9412	2932-216th St.	UBC9U2U3RES1	2.38		Refusal
03-03-94	GSC 9413	3173-216th St.	UBC9U2U3RES1	15.55	~1.0	Mostly clay with several sand lenses
2-Days	5 Soundings	4 Locations		84.0m		Only one location refused

Table 3 - Summary of Brookwood Aquifer In-Situ Data

Date	Test No.	Location	Cone	Depth (metres)	Phreatic Surface,m	Comments
04-03-94	GSC 9414	Stokes Pit SW corner, at S-PIT transect	UBC9U2U3	32.1	1.00	very dense sand and gravel to 19m Stokes Pit at 192St & 24Ave
08-03-94	GSC 9415	CRTC 192nd St & 36th Ave.	UBC9U2U3RES1	2.3m Refusal		
08-03-94	GSC 9416	CRTC near So. End	UBC9U2U3RES1	1.3 Refusal		
08-03-94	GSC 9416a	CRTC same as 9416	UBC9U2U3	2.6 Refusal		
08-03-94	GSC 9417	CRTC west of Manure Pile	UBCU2U3	19.3 Refusal	7.4	
10-03-94	GSC 9418	CRTC west of Manure Pile	UBC9U2U3	3.8 Refusal		
10-03-94	GSC 9419	CRTC west of Manure Pile	UBC9U2U3	3.5 Refusal		
10-03-94	GSC 9420	CRTC south of Manure Pile	UBC3U2U3	23.8 Refusal	7.4	very dense sand and gravel
10-03-94	GSC 9421	CRTC north of Manure Pile	UBC9U2U3	23..8 Refusal	7.4	very dense sand and gravel
11-03-94	GSC 9422	Stokes Pit, east of 9414	UBC9U2U3	3.3 Refusal	1.0	very dense sand & gravel
11-03-94	GSC 9423	Stokes Pit, NW of 9414	UBC9U2U3	32.1m	1.0	sand & gravel to 20m, interbedded clays & sands to 32.1m
11-03-94	GSC 9424	Stokes Pit SW corner, 75m south of N-PIT-1	UBC9U2U3	5.9	1.0	very dense sand & gravel
11-03-94	GSC 9424A	Stokes Pit near 9424	UBC9U2U3RES1	11.7 Refusal	1.0	very dense sand & gravel to 10m with RES1
4-Days	13 Soundings	2 Locations		165.5m		10 soundings refused, yet good penetration

Specific Discussion

Abbotsford Aquifer, Matsqui

12 soundings were attempted in the Abbotsford Aquifer and all were pushed to refusal at 7 different locations as indicated in Fig. 7.. In general all pushing was difficult and most of the very dense sands and sandy gravels could not be penetrated.

The deepest cone sounding at Short Rd. and 0 Ave. (GSC-9401) went to 12.95m and encountered very dense sand and gravel to about 6m followed by 2.5m of heavily overconsolidated clay, and then interlayered medium dense sand and clay sequences to refusal. Equilibrium pore pressures in the sands indicated a hydrostatic water table or phreatic surface at a depth of about 7m below ground surface. Bulk resistivities below the water table gave measured values of about 30 to 70 ohm-m with values as high as 400 ohm-m from 9 to 10m depth.

At the location at 0 Ave. and the Matsqui-Langley border (GSC-9408) the soils were moderately dense sands interbedded with clays and silty clays to refusal in very dense gravely-sands at 8.1m. At this location a clear measured upward gradient averaging about 0.2 was identified from full pore pressure dissipation at 5 different depths.

The interpreted parameters in the spread sheets in Appendix B were obtained from the UBC developed program called CPTINT ver 5.0. The averaging interval was chosen as 0.1m and the measured cone data was listed along with interpreted values for effective overburden stress (EOS), friction ratio classification zone number (Rf Zone), excess pore pressure ratio zone number (Bq Zone), SPT N and SPTN1(corrected for overburden stress) values, internal friction of sands (Phi), constrained modulus (M), relative density of sands (Dr), unit weight (Gamma) used in the computations and undrained shear strength and overconsolidation ratio (OCR) for clay soils. The separation of soils into drained sands (Zones 7 to 11) and undrained clays (Zone 1 to 6) is made by the program CPTINT.

South 216th Street, Langley

5 soundings were attempted along 216th Street near 23, 27, 29 and 32 Ave. and only two were refused at about 2m depth. CPT locations are shown in Fig. 8. Two went to 32m and one to 15.5m depth. The soils were clayey with high ground water table (average of 1.3m below ground) and no measured gradients. At 23rd Ave. (GSC-9409) the clays to 11m depth were overconsolidated followed by normally consolidated firm clays to 32.6m. Distinct sandy lenses were easy to identify

One of the soundings (GSC-9413) made use of the resistivity module and gave measured resistivities from 30 to 400 ohm-m. for the 75mm electrode spacing.

Brookwood Aquifer, Surrey

Two locations were studied in the Brookwood aquifer, one at the CRTC site at 192nd St. and 36th Ave. and the other at Stokes sand and gravel Pit. Cpt locations are shown in Fig. 8. 13 soundings were done in 4-days and 6 penetrated from 12m to 24m in depth. All were pushed to refusal except for GSC-9414, GSC- 9423 and GSC-9424a. The pushing was very difficult and as a consequence the enlarged resistivity module was attempted only once at the beginning and at the end at Stokes where it could be pushed to 12m depth. The profiles were all similar with high water table (about 1m

below ground at Stokes but 7.4m at CRTC) and very dense sand and gravel to refusal at about 20m at CRTC site (very dense in the upper 10-11m) and decreasing to about 50-60% relative density at 24m depth. The CRTC Site was relatively free of fines and silt layers.

The Stokes pit in the south-west section near the GPR Transects had very dense mixed sands and gravels to about 18m depth followed by interbedded clay silts and sands. No upward gradients were identified in the Brookwood aquifer.

EVALUATION OF IN-SITU TECHNOLOGY FOR AQUIFER CHARACTERIZATION

In-situ technology has been shown over a long period to have excellent potential for aquifer characterization. In this study, the aquifer materials were mainly sandy gravels to gravels and were almost always dense to very dense in nature. As a consequence, the technology was performing at or near its current "standard" upper limit of both soil coarseness and density.

CONCLUSIONS AND RECOMMENDATIONS

The results of some 300m of soundings (30 individual locations) over 10 working days at three different areas in the Fraser Valley, BC, (Matsqui, Langley and Surrey close to the US border) showed that CPT technology can be used effectively in gravel-sand aquifers. Although penetration was often-times very difficult causing refusal, nine of the thirty attempted soundings made it to depths in excess of 8m and most to more than 20m. The CPTU data clearly gives a very detailed description of the stratigraphy as well as groundwater conditions and estimates of hydraulic conductivity. The large volume of pore pressure dissipation data collected requires considerable time to fully analyze the results. The only mishap was damage to one of the Hogentogler cones requiring that it be returned to the manufacturer for repair. The resistivity-piezocone had no problems penetrating to 32m (extent of the push rods on-board) along 216th St. in the clayey soils at the aquifer margins.

In addition to the usual CPTU data, bulk resistivity was also measured in several of the soundings where penetration with the large diameter resistivity module was possible. Because of time constraints, only one series of in-situ K-BAT measurements were attempted, but the depth below groundwater was shallow and the hydraulic conductivity was lower than expected, so the collection of water samples and K-data was very time consuming. Although it was difficult to push in the gravels, the CPTU acquitted itself well and gave excellent results and was much more cost effective (on a meterage basis) than comparable drilling technology. It is recommended that the use of the cone to gather stratigraphic data and aquifer properties be extensively increased in the rest of the Fraser River valley and lower mainland where pushing is considerably easier and faster. Also, given additional time and resources the BAT piezometer-water sampling probes can be left in the ground after a CPTU sounding for long term monitoring of water quality and piezometric levels needed for transport modelling and can be removed at a future date. Additionally the BAT can be used to introduce fluids and chemical constituents for abatement and tracer transport studies.

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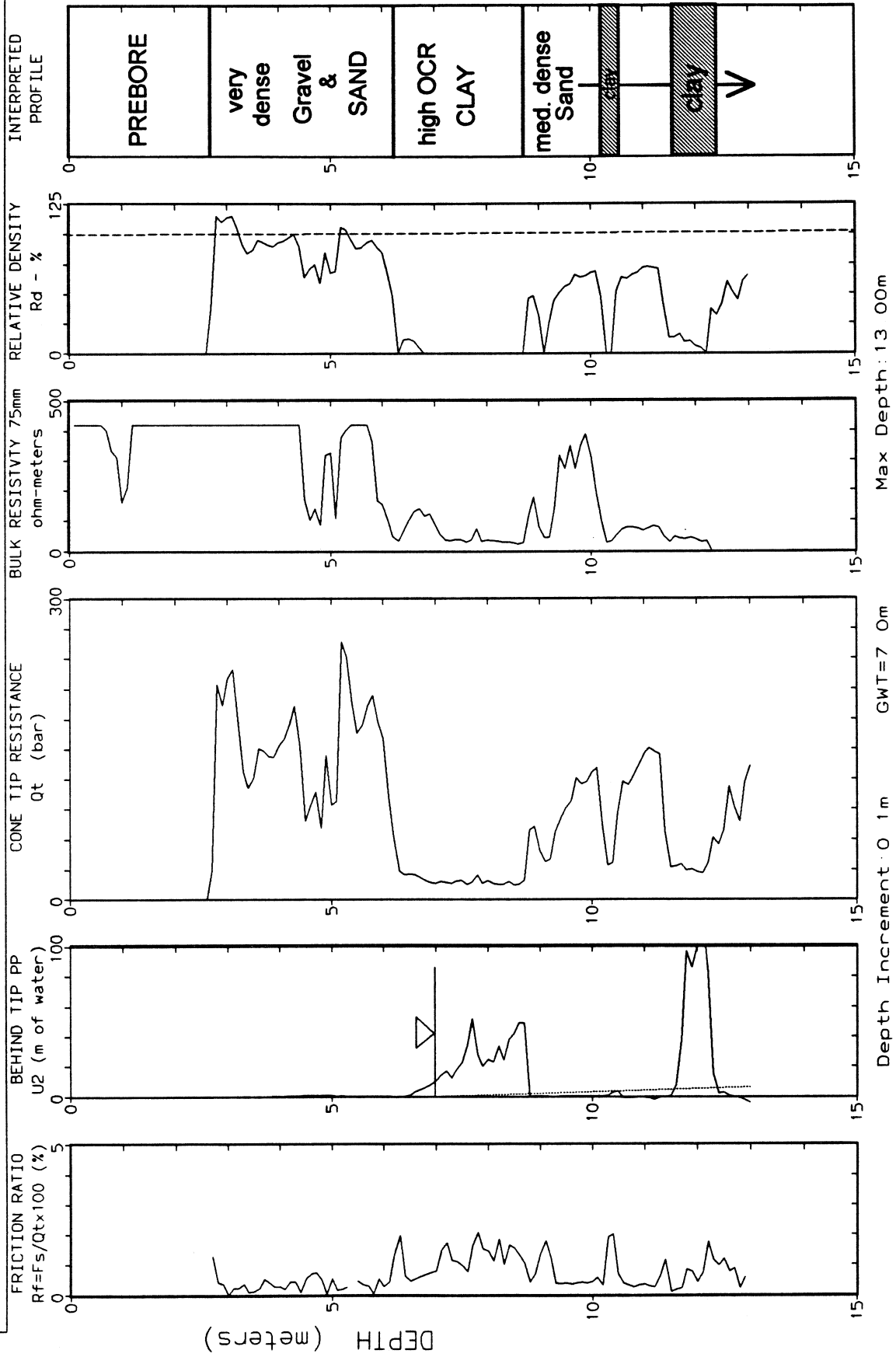
Table 2 - Summary of 216th Street In-Situ Data

Table 3 - Summary of Brookwood Aquifer In-Situ Data

Appendix A - CONELOTS of Soundings, GSC-94 Aquifer Study

GSC-1994 UBC RCPTU

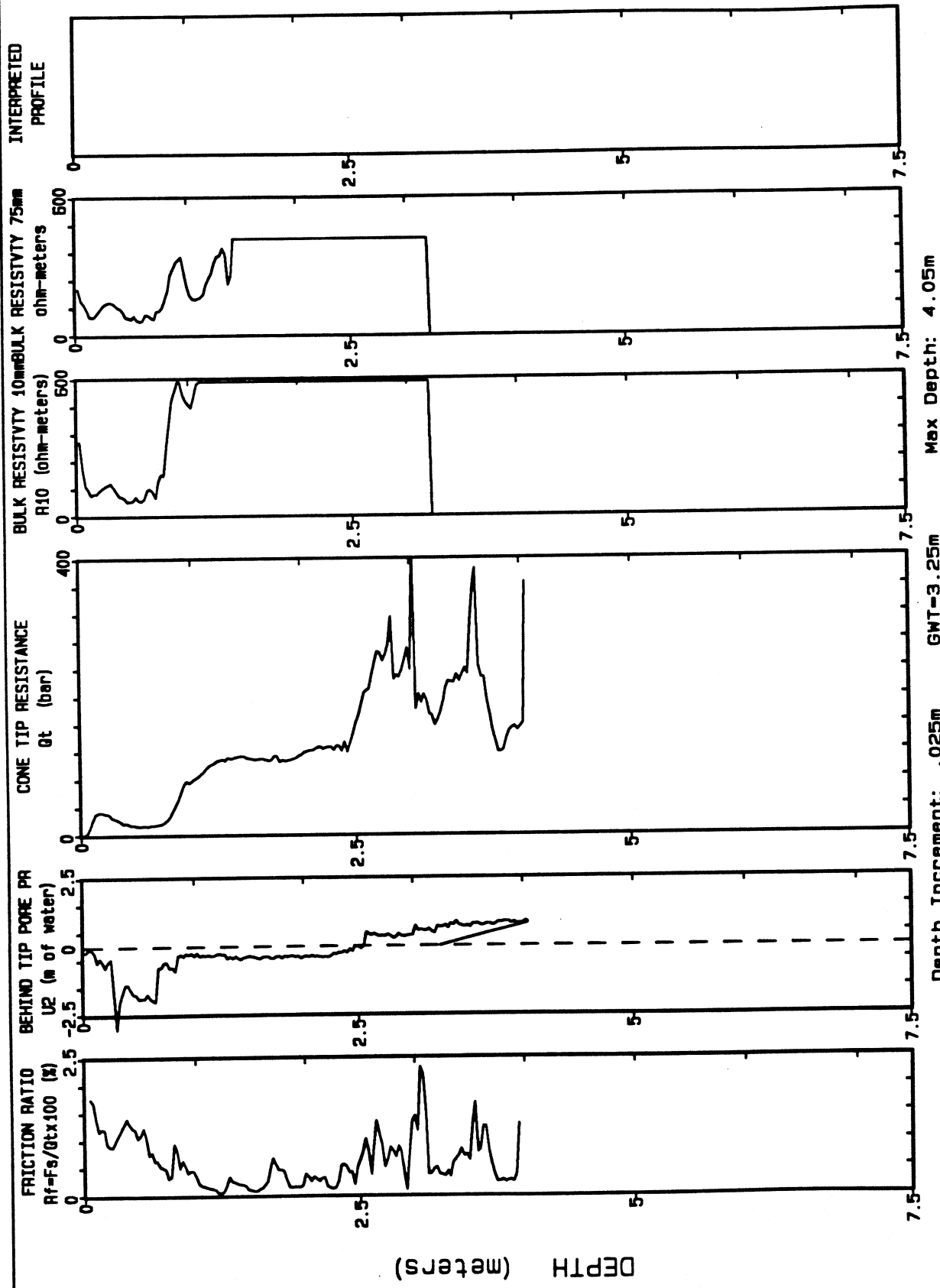
Operators: MPD-TJB-JLE CPT Date: 17-02-94 11:19 File Name: GSC-9401.ADJ
 Location: SHORT Rd @ 0 Ave Cone Used HOG3U2RES1 Comments: RCPTU Matsqui, BC



RCPTU at Short Rd. at 0 Ave. & Clearbrook, Matsqui, BC (Abbotsford Aquifer)

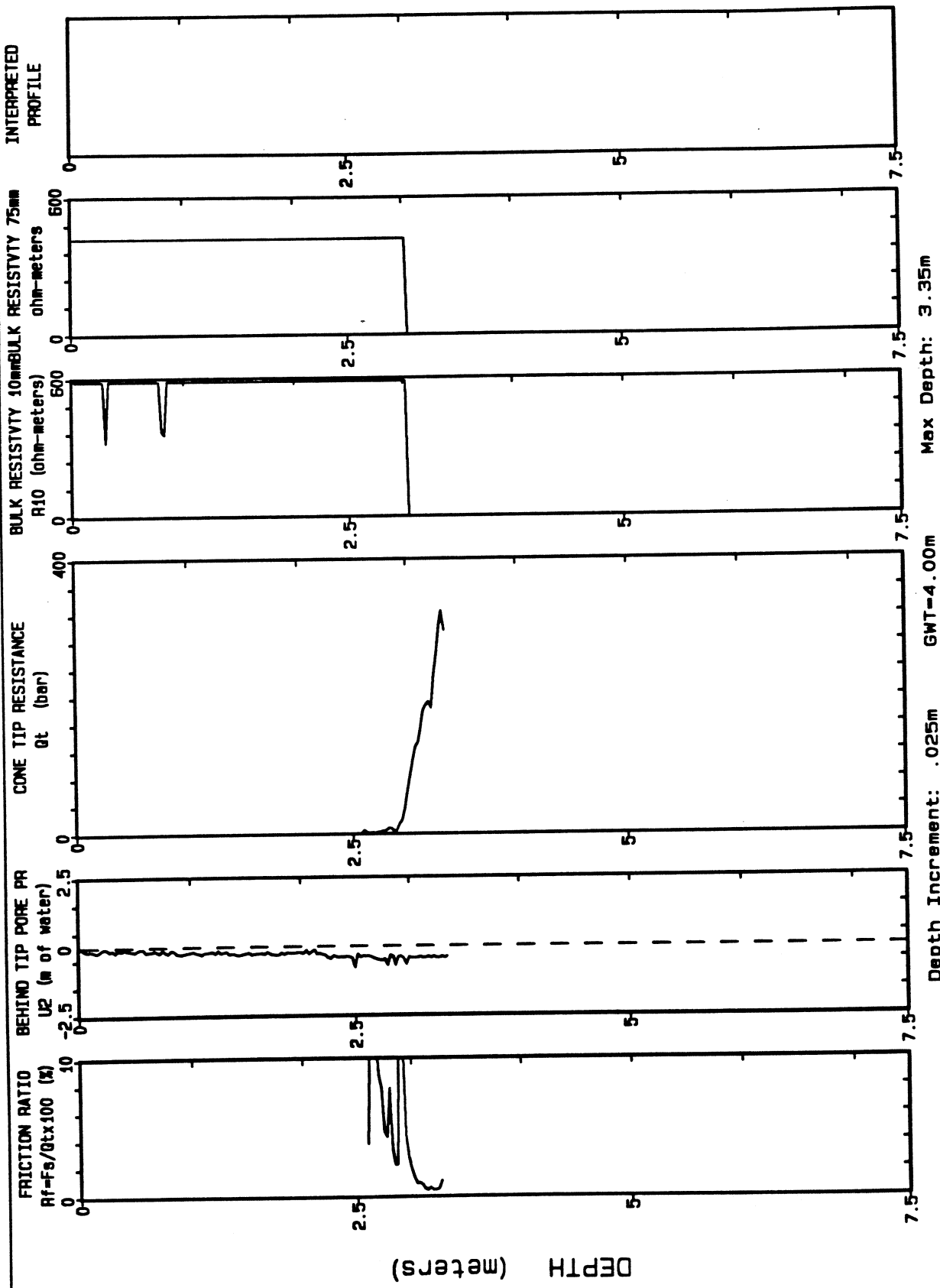
GSC-1994 UBC RCPTU

Operators: MPD-TJB-JLE CPT Date: 17-02-94 16:06 File Name: GSC-9402.EDT
 Location: SHORT ROAD Cone Used: HOG3U2RES1 Comments: RCPTU



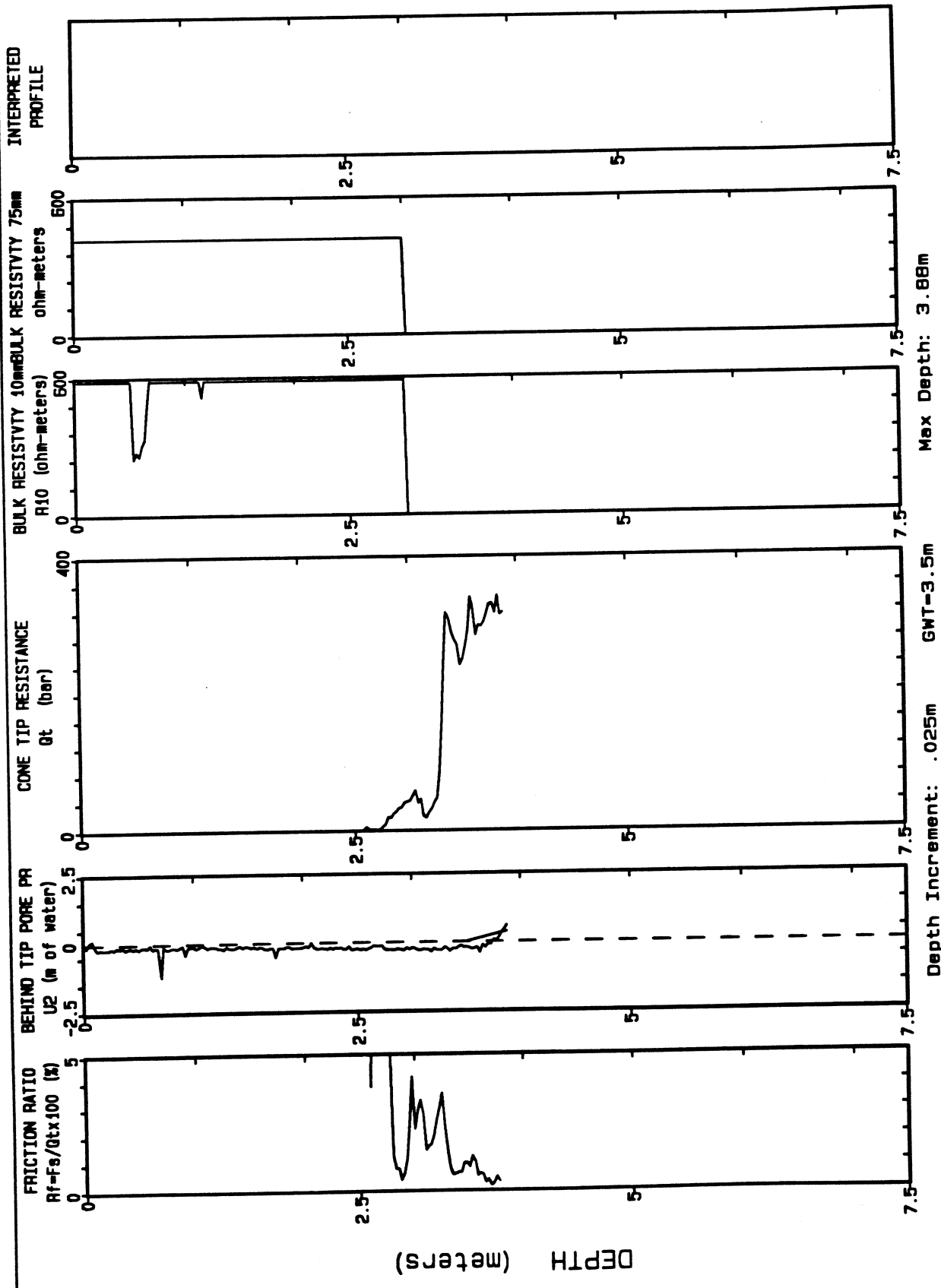
GSC-1994 UBC RCPTU

Operators: TJB-HS-DR CPT Date: 18-02-94 12:32 File Name: GSC-9403.EDT
Location: AGRIC RES CENTRE Cone Used: H0G3U2RES1 Comments: RCPTU@MATSQUI, BC



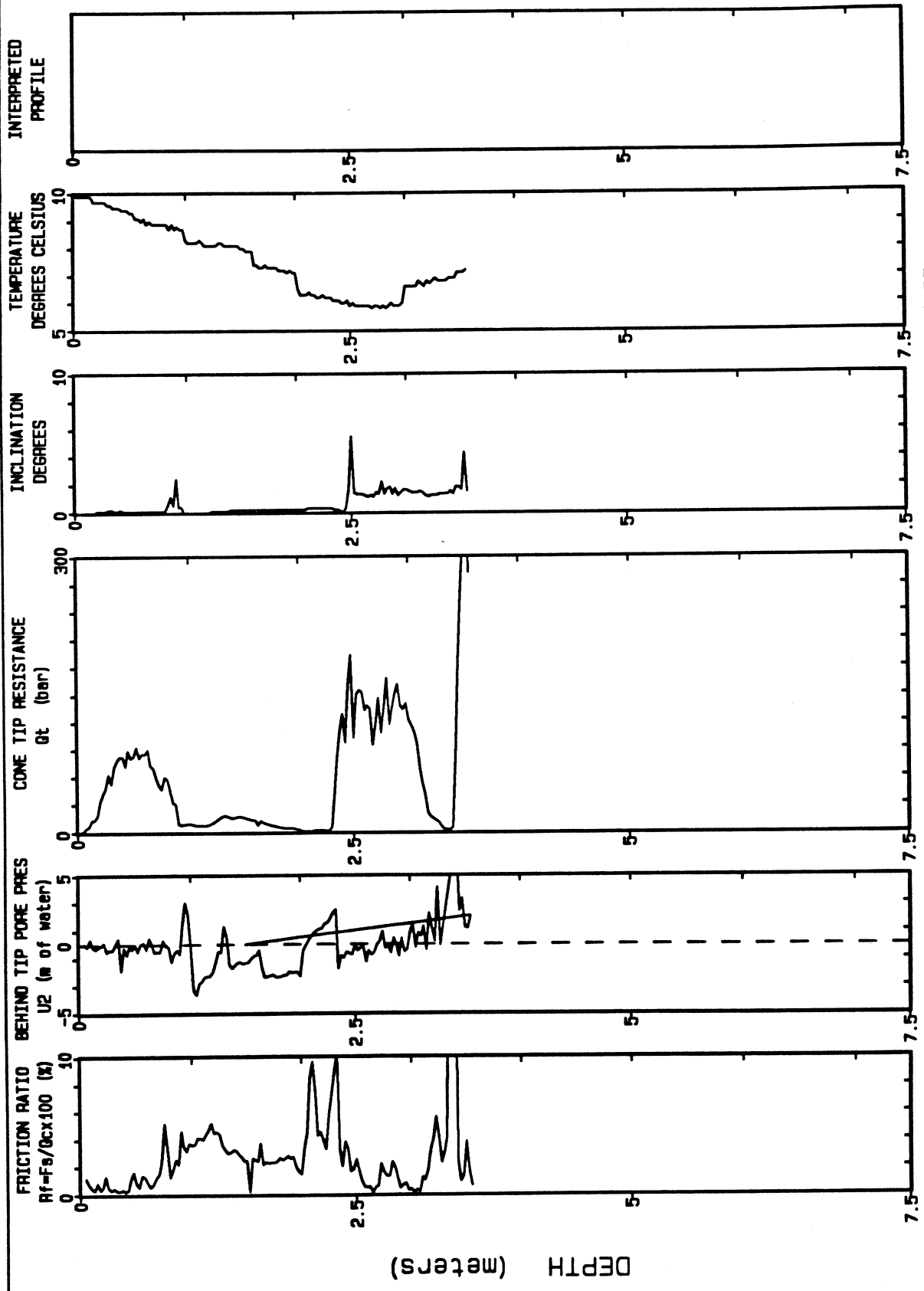
GSC-1994 UBC RCPTU

Operators: TJB-HS-DR CPT Date: 18-02-94 14:07 File Name: GSC-9404.EDT
 Location: AGRIC RES CENTRE Cone Used: HOG3U2RES1 Comments: RCPTU@MATSQUI, BC



GSC-1994 UBC RCPTU

Operators: RGC-SST CPT Date: 22-02-94 14:52 File Name: GSC-9405.EDT
Location: FISH TRAP CREEK Cone Used: HOG3U2 Comments: CPILUDAYR MAISQUIT BC



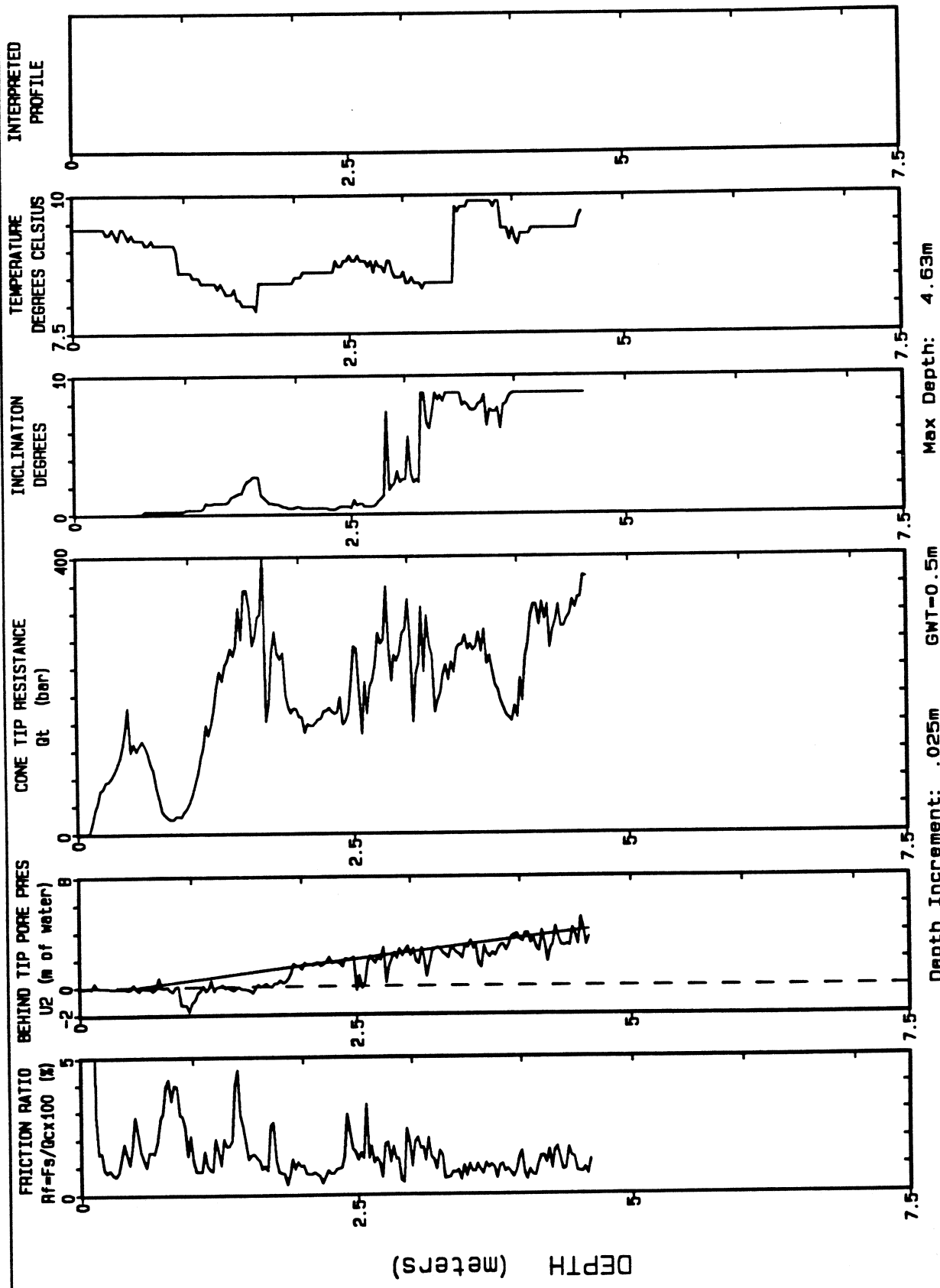
Max Depth: 3.55m

GWT-1.5m

Depth Increment: .025m

GSC-1994 UBC RCPTU

Operators: RGC-SST
Location: 30MofBRADNERAve. Cone Used: H063U2
CPT Date: 22-02-94 15:51
File Name: GSC-9406.EDT
Comments: CPTU@OAVE.MATSGUI



GSC-1994 UBC RCPTU

Operators: MPD-TJB

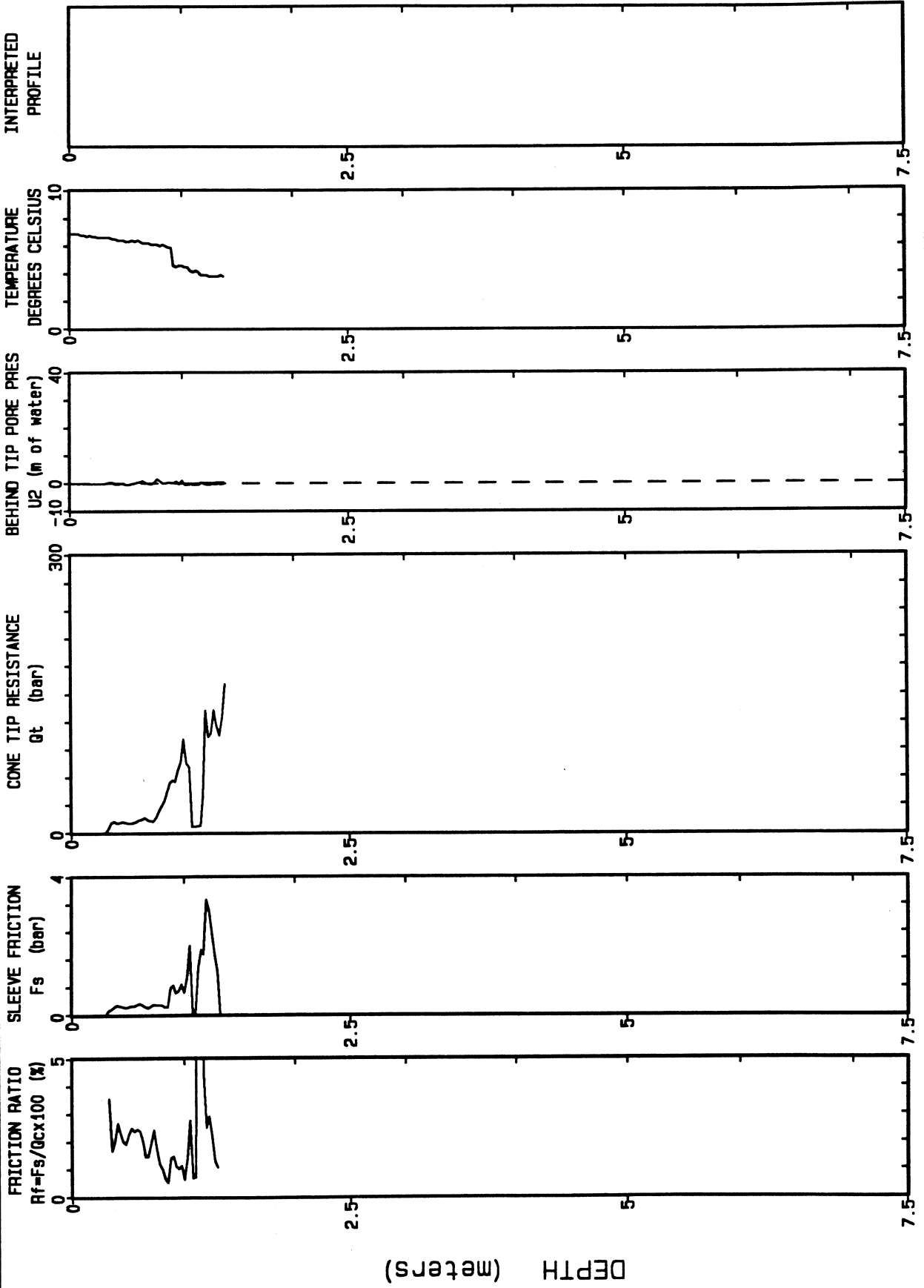
CPT Date: 25-02-94 11:47

File Name: GSC-9407.EDT

Location: 10M-DEFFHER@AV

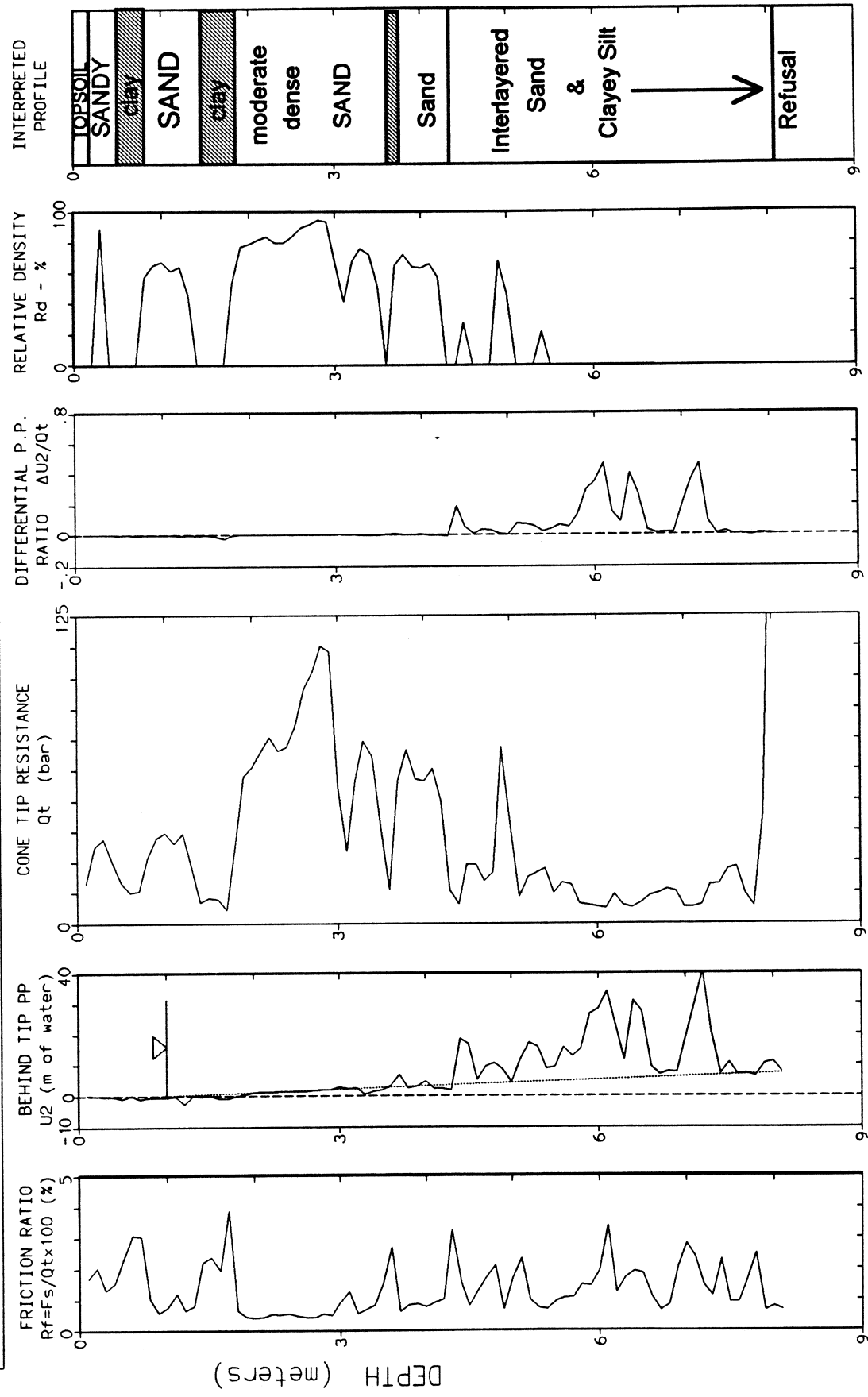
Cone Used: HOG3U2

Comments: CPTU@OAVE.



GSC-1994 UBC CPTU

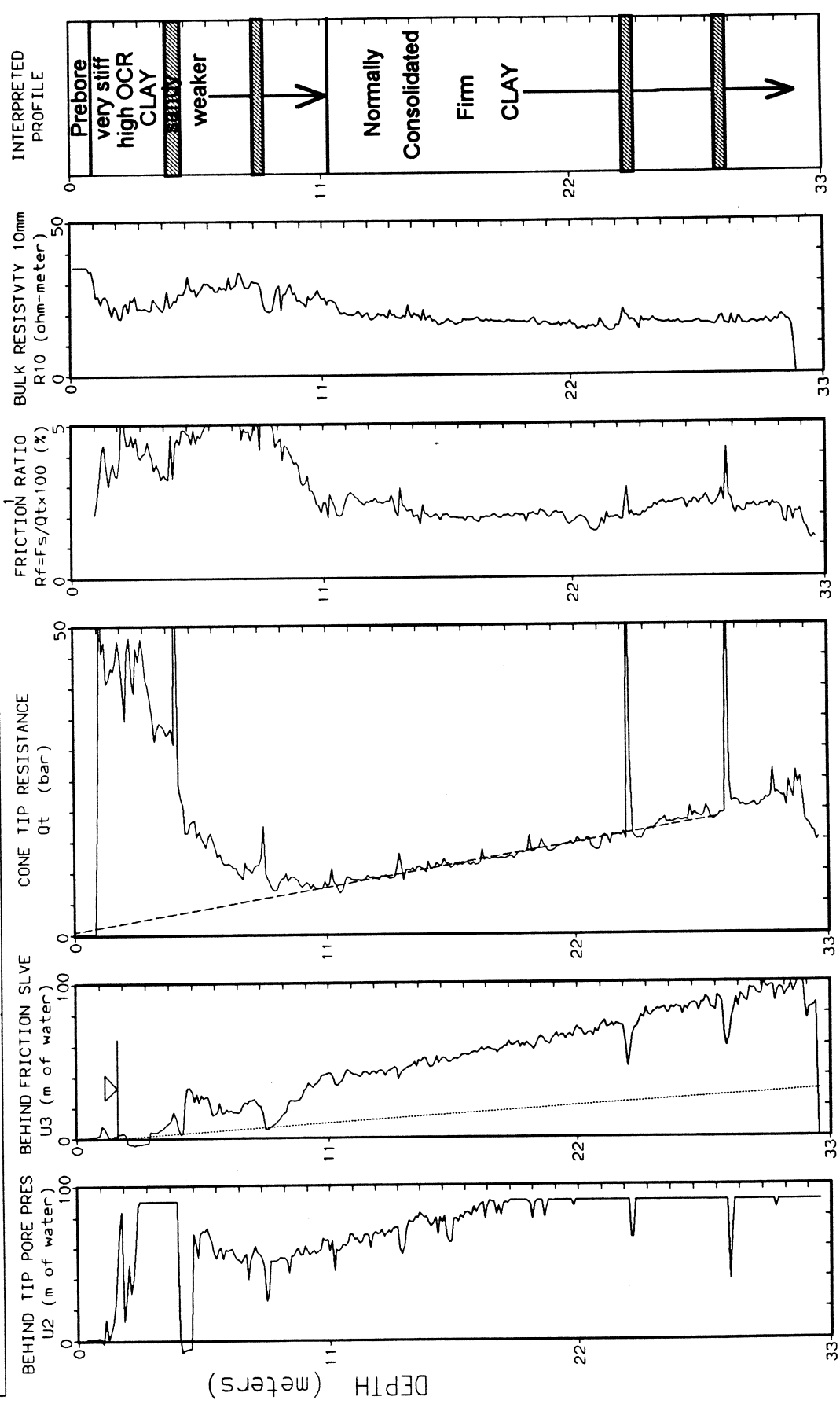
Operators: MPD-TJB
 Location: 30m EofL/Mbrdr@0Ave Cone Used: HOG3U2
 CPT Date: 25-02-94 12:51
 File Name: GSC-9408.ADJ
 Comments: OAVE.@Lngly/Mtsqi Bordr



CPTU along 0 Ave. at Langley/Matsqui Border, Matsqui, BC (Abbotsford Aquifer)

GSC-1994 UBC RCPTU

Operators: RCC-DR CPT Date: Mar-1-94 13:12 File Name: G9409COR.ADJ
 Location: 2275-216St, Langley Cone Used: UBC9U2U3RES1 Comments: RCPTU10mSofPOSTbox



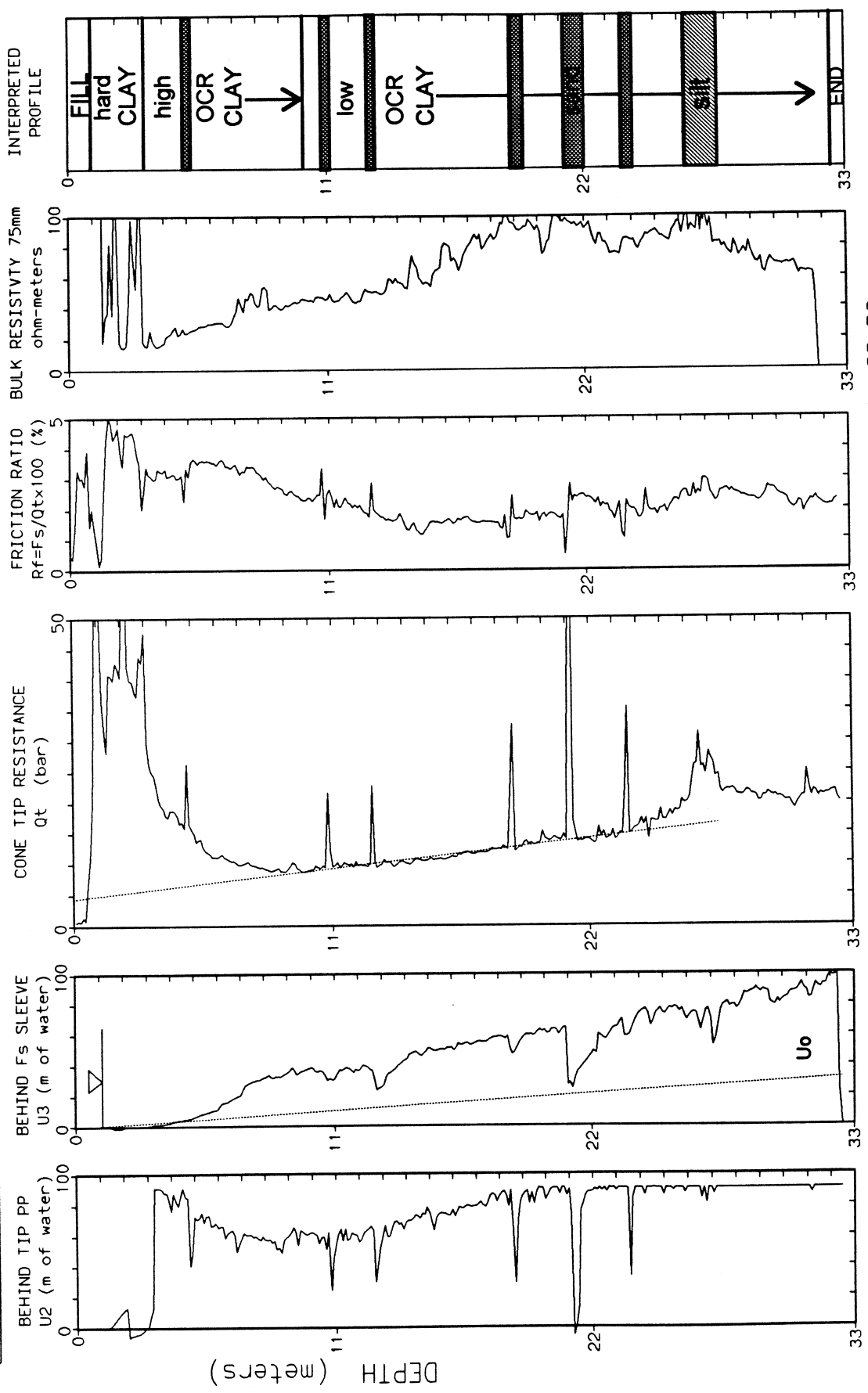
Max Depth: 32.60m

Depth Increment: 0.1m GWT=1.7m

Resistivity CPTU Profile along 216th St. & 22nd Ave., Langley, BC (G9409COR.ADJ)

GSC-1994 UBC RCPTU

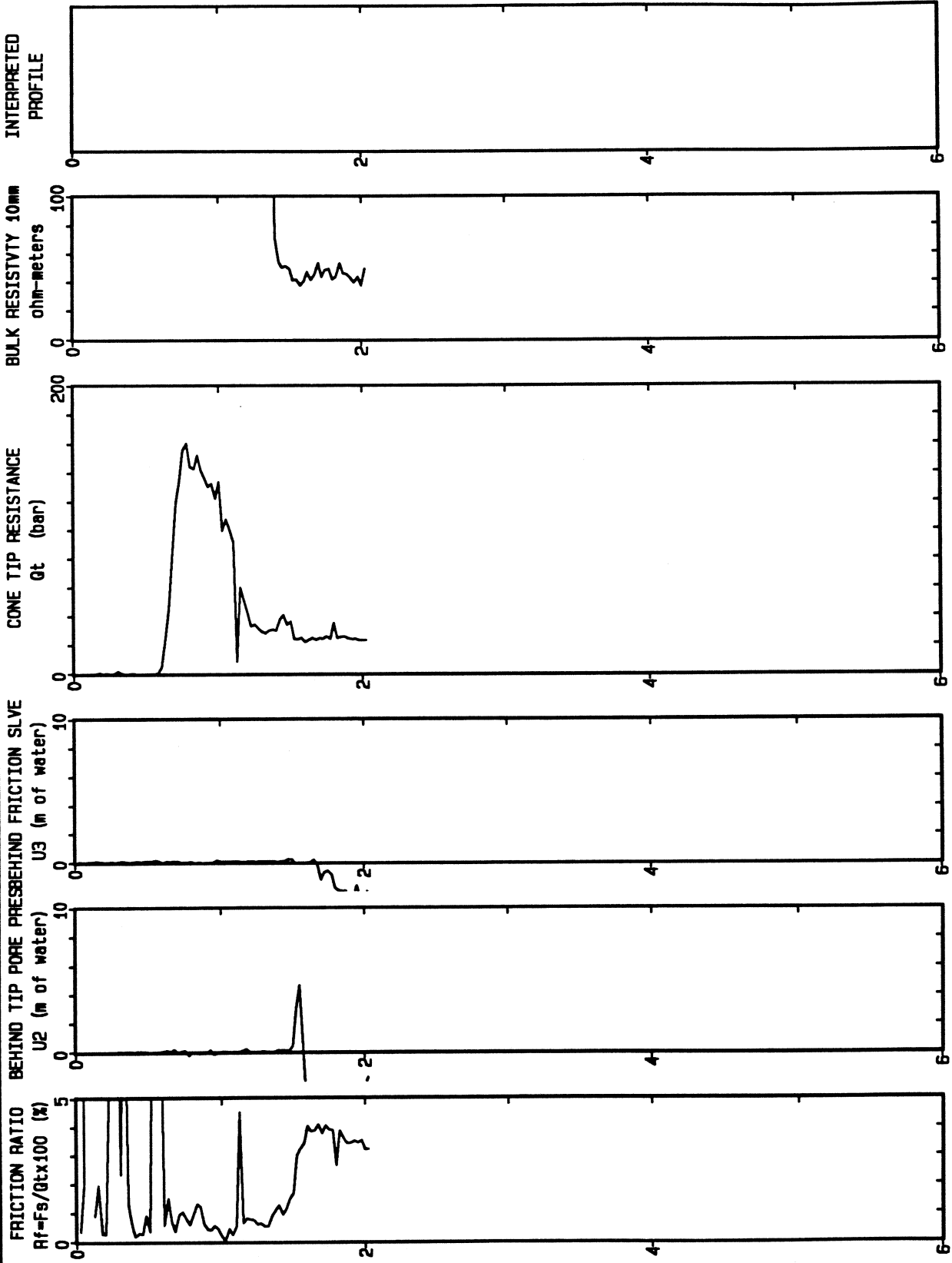
Operators: JLE-HS-SST CPT Date: 03-03-94 09:29 File Name: gsc-9410.adj
 Location: 2755-216St E SIDE Cone Used: UBC9U2U3RES1 Comments: RCPTU10mSoftPOSTbox



Resistivity Piezocone along 216th St., at eastern edge of Brookwood Aquifer (Langley, BC)

GSC-1994 UBC RCPTU

Operators: JLE-HS-SST CPT Date: 03-03-94 11:42 File Name: GSC-9411.EDT
Location: 2932-216StEsid Cone Used: UBC9U2U3RES1 Comments: RCPTU NoFPOSTb



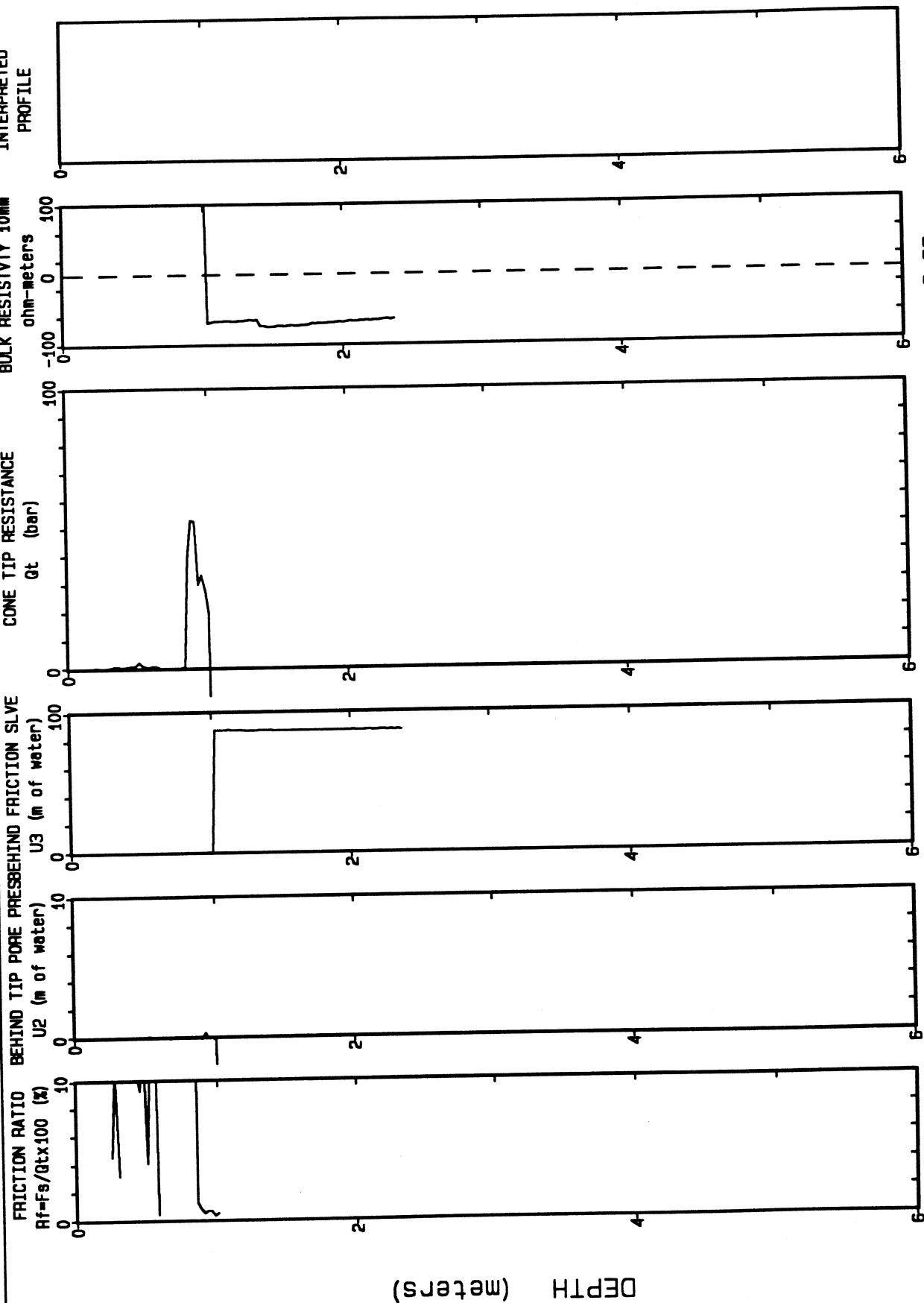
Max Depth : 2.03 m

Depth Increment : .025 m

DEPTH (meters)

GSC-1994 UBC RCPTU

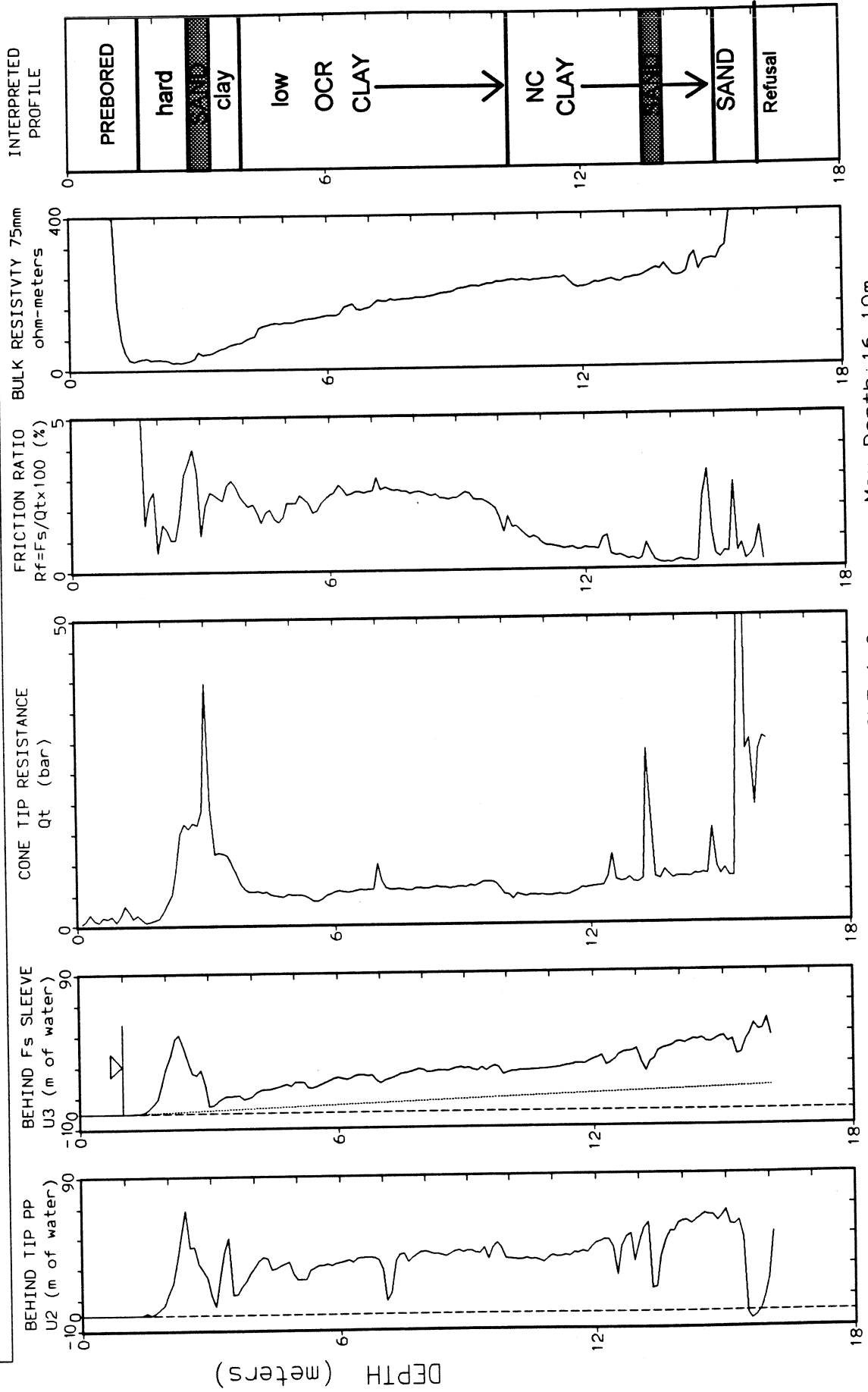
Operators: JLE-HS-SST CPT Date: 03-03-94 12:48 File Name: GSC-9412.EDT
 Location: 2932-216StEsid Cone Used: UBC9U2U3RES1 Comments: RCPTU NofPOSTb



Depth Increment : .025 m Max Depth : 2.38 m

GSC-1994 UBC RCP TU

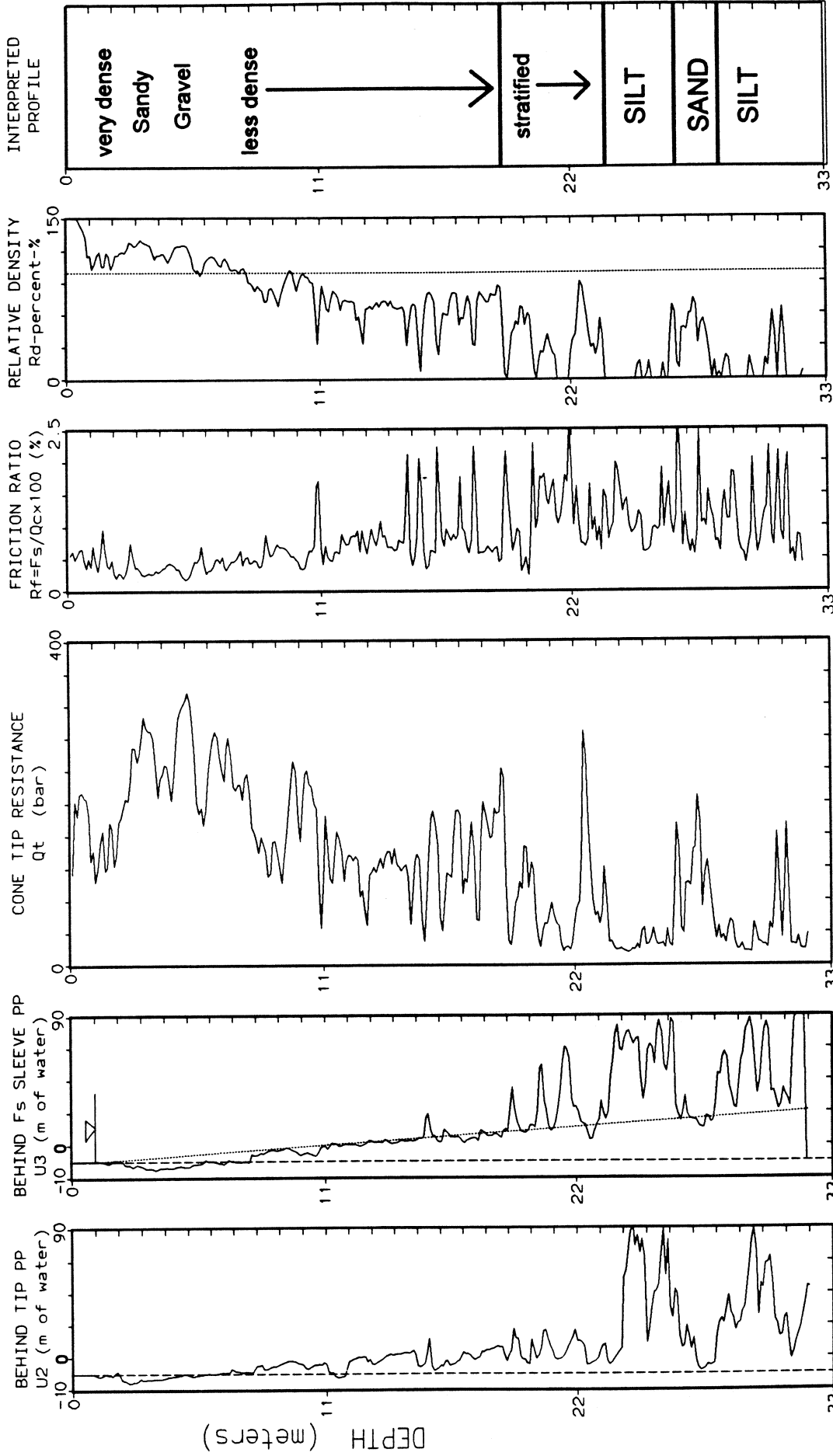
Operators: JLE-HS-SST
 Location: NORTHof3173-216St.
 CPT Date: 03-03-94 14:11
 Cone Used: UBC9U2U3RES1
 File Name: gsc-9413.adj
 Comments: S0of32Ave,LANGLY



Resistivity Piezocone at 216th St. & 32nd Ave. along eastern edge of Brookwood Aquifer

GSC-1994 UBC CPTU

Operators: MPD-TJB
 Location: STOKES PIT SWcrn Cone Used: UBC9U2U3
 CPT Date: 04-03-94 11:00
 File Name: gsc-9414.adj
 Comments: SBondry@S-PIT1n



Max Depth=32.00m

GWT=1.00m

Depth Increment=0.10m

CPTU at STOKES PIT on 3 March 1994 (GSC-9414.ADJ)

GSC-1994 UBC RCPTU

Operators: RGC-SST

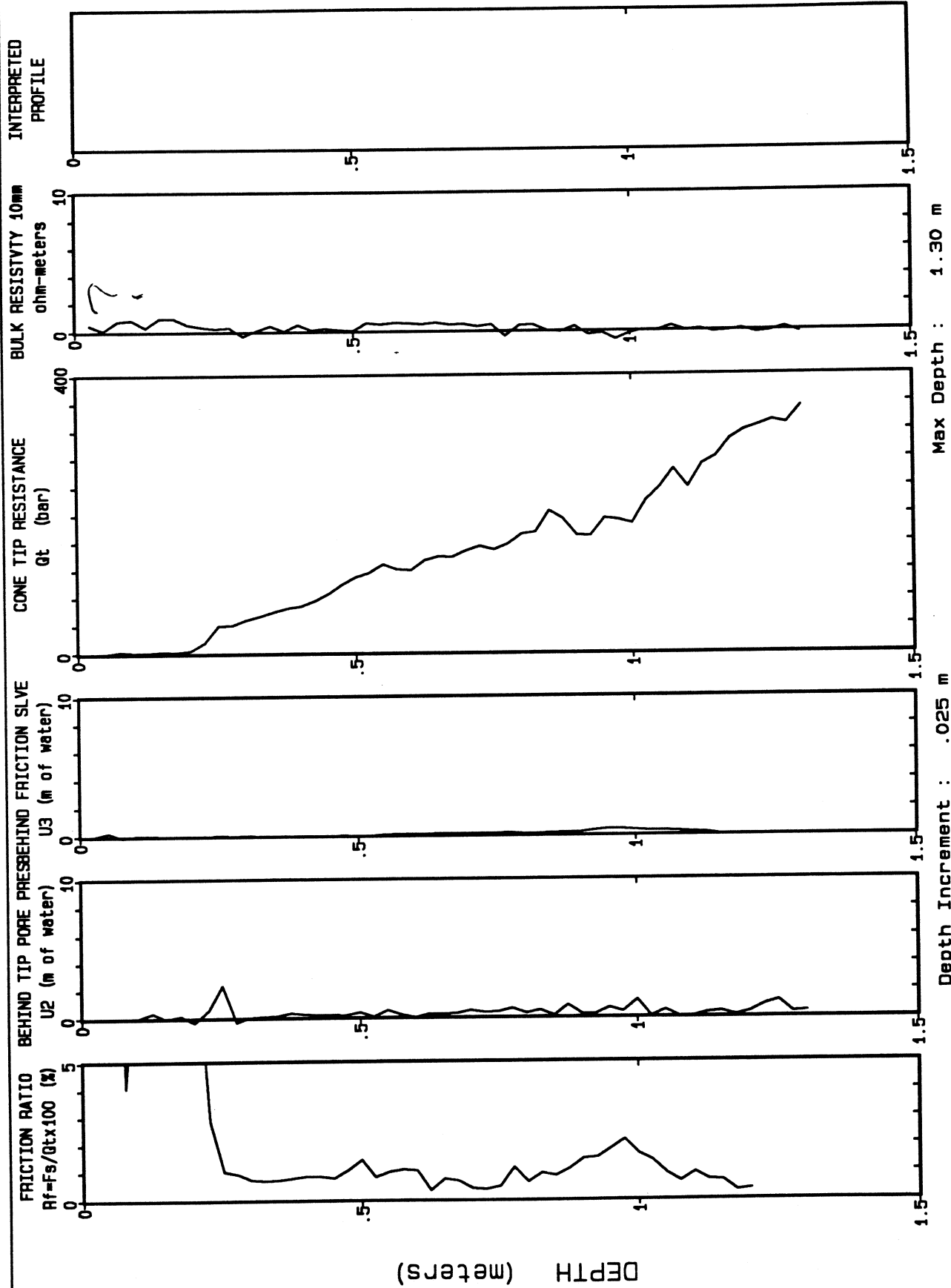
CPT Date: 03-08-94 10:43

File Name: GSC-9415.EDT

Location: CATC192&36SURREY

Cone Used: UBC9U2U3RES1

Comments: 4mSofRd&20mWofBG



GSC-1994 UBC RCPTU

Operators: RGC-SST

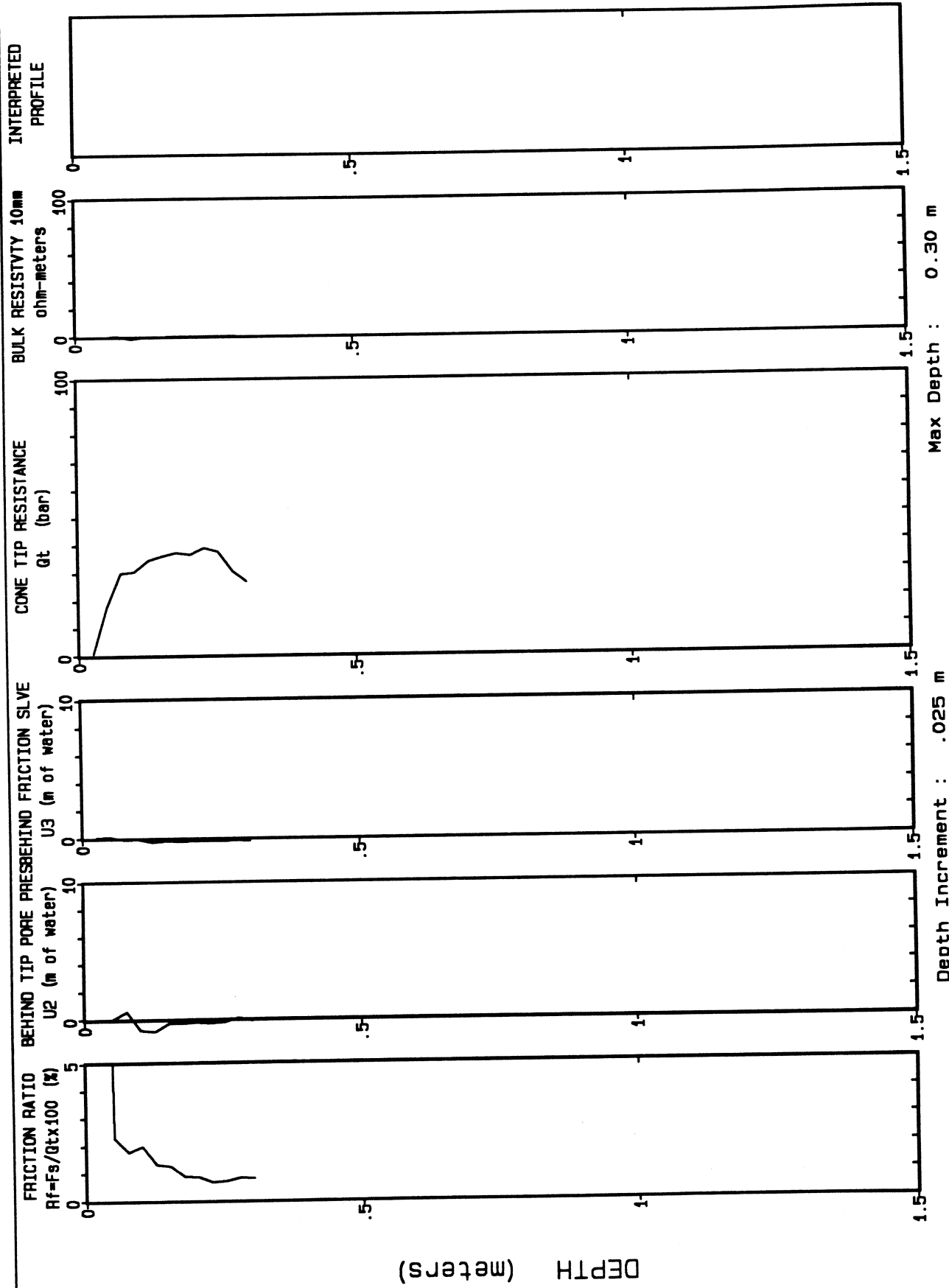
CPT Date: 03-08-94 11:36

File Name: GSC-9416.EDT

Location: CRTC192&36SURREY

Cone Used: UBC9U2U3RES1

Comments: nearSOend@FENCcr



INTERPRETED PROFILE

Depth Increment : .025 m

Max Depth : 0.30 m

GSC-1994 UBC CPTU

Operators: RGC-SST

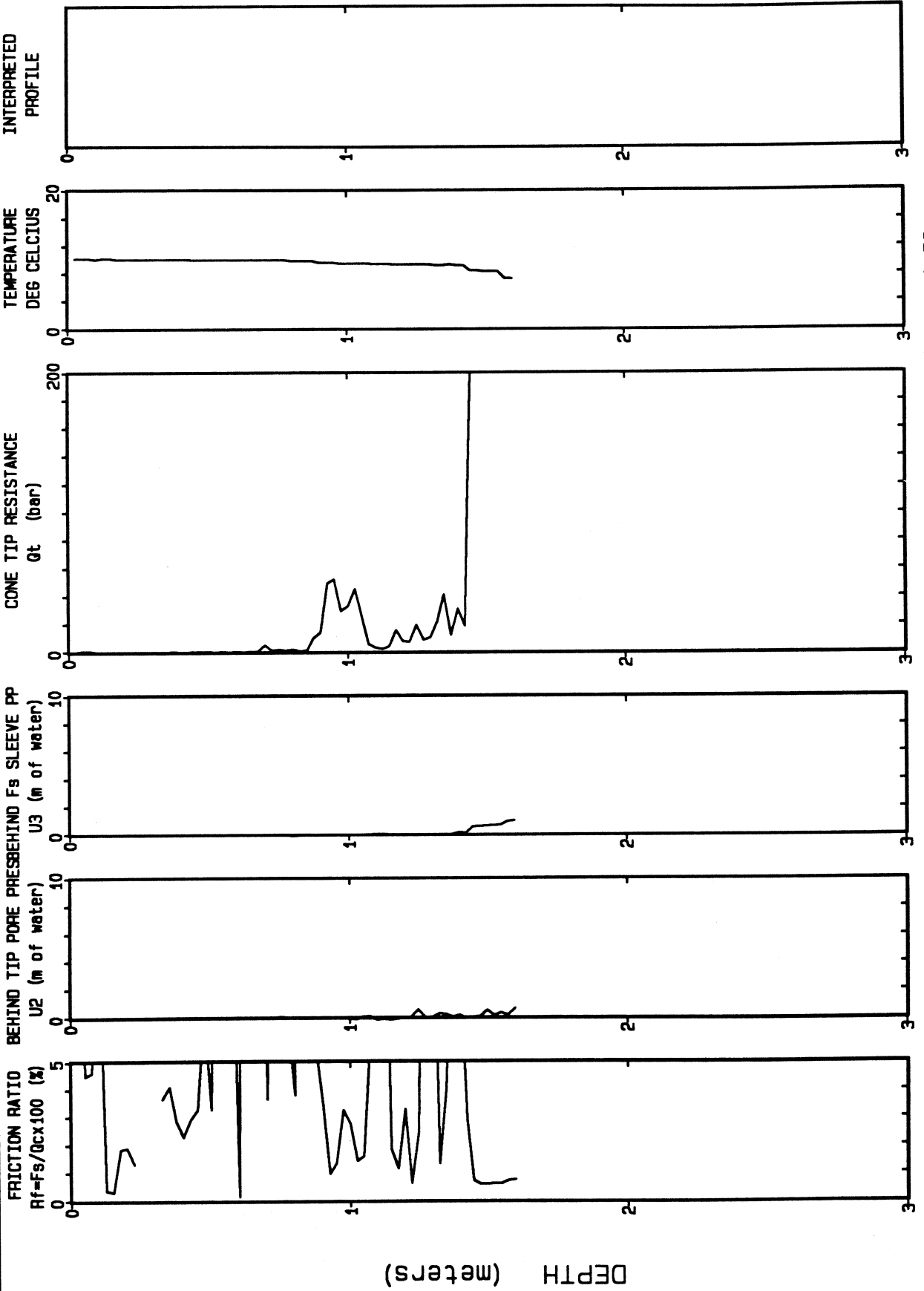
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Comments: SoENDE@CPT16

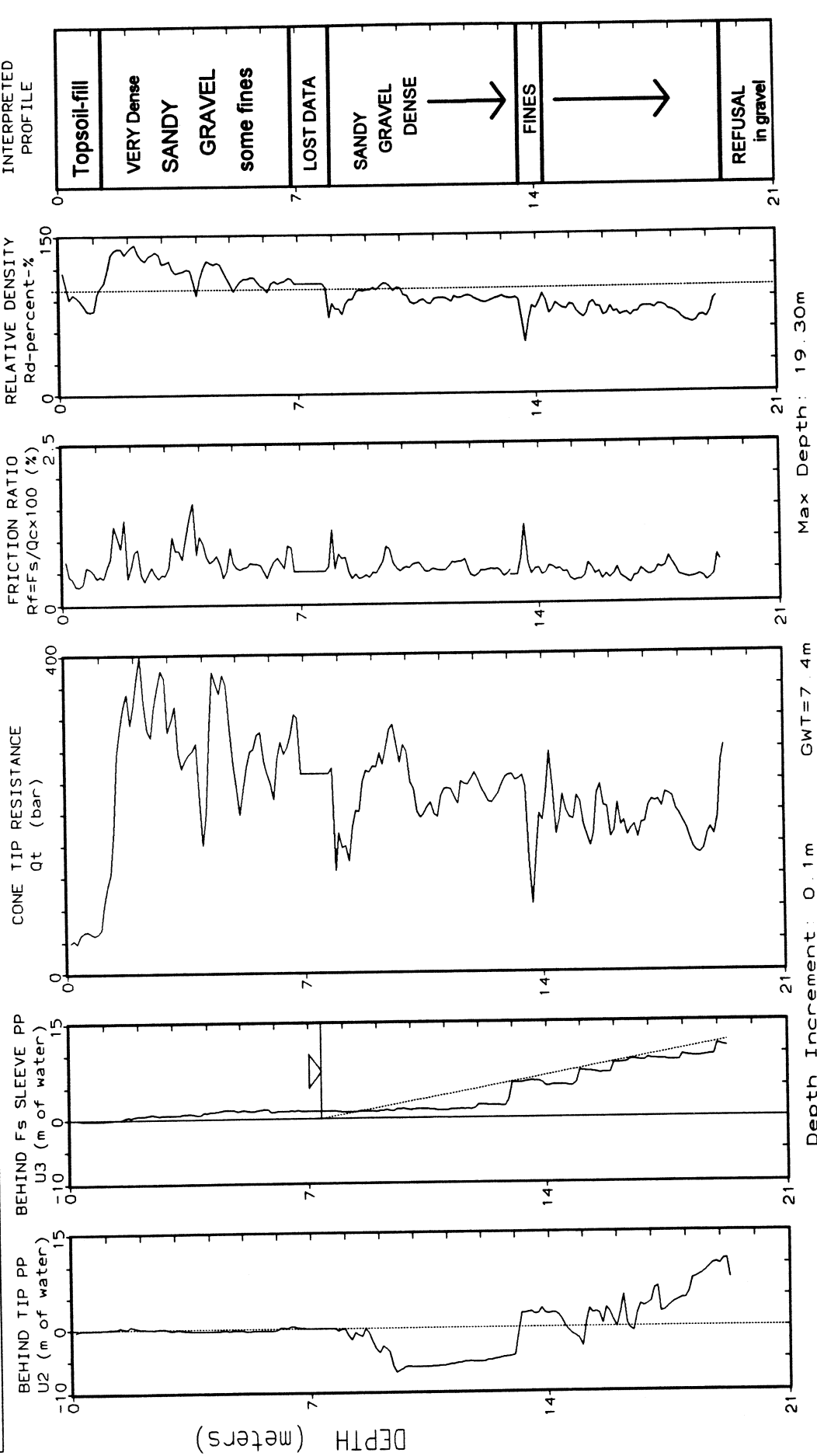


Depth Increment : .025 m

Max Depth : 1.60 m

GSC-1994 UBC CPTU

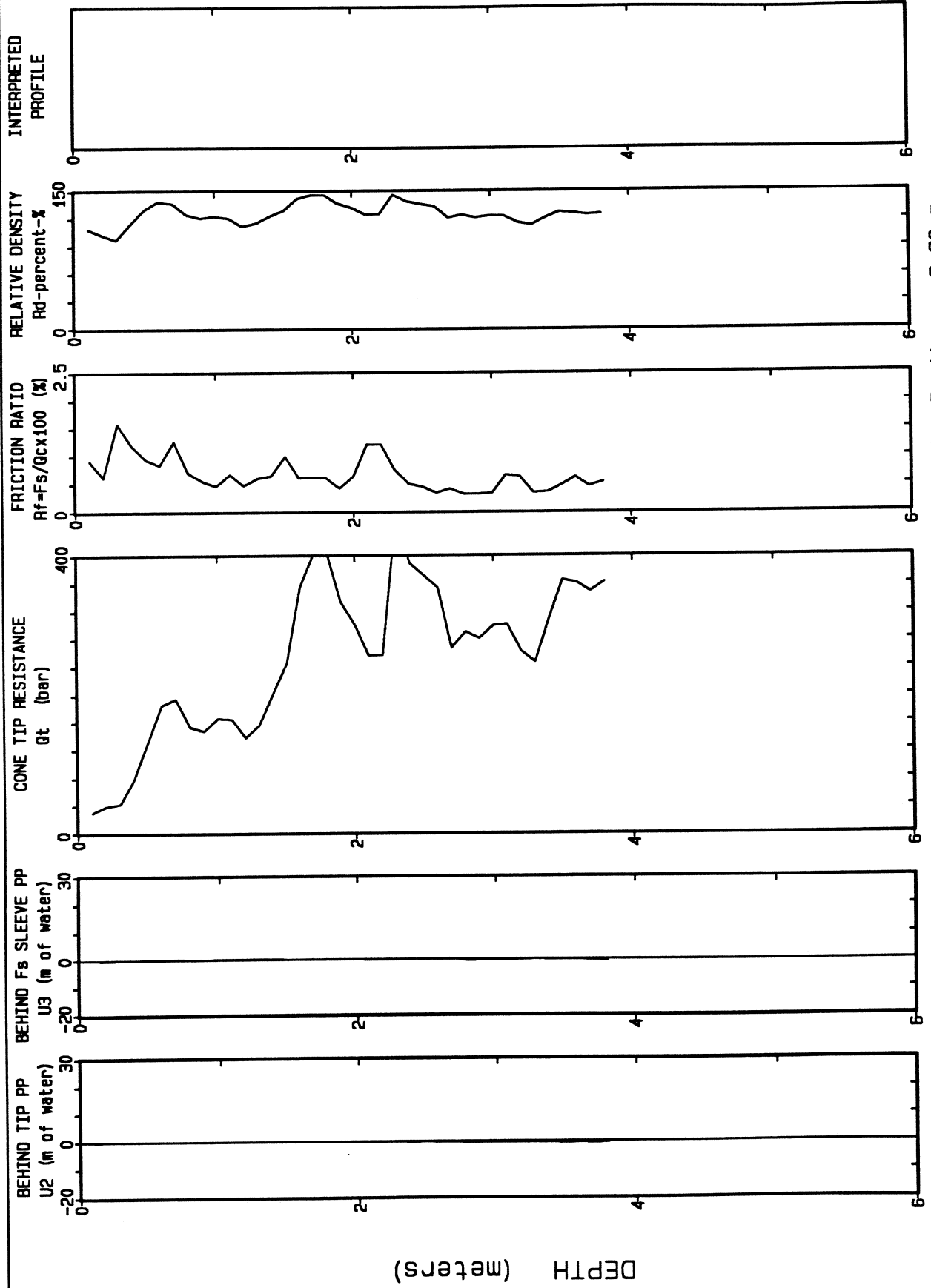
Operators: RGC-SST
 Location: CRTIC192&36, SURREY, BC Cone Used: UBC9U2U3
 CPT Date: 8 MAR 94 13:00
 File Name: GSC-9417.ADJ
 Comments: SO end w. of MANURE



CPTU PROFILE at CRTIC Site (GSC-9417.ADJ), 8 March 1994
 192nd St. and 36th Ave., Surrey, B.C.

GSC-1994 UBC CPTU

Operators: JLE-HS File Name: GSC-9418.ADJ
Location: CRTC192&36SURREY CPT Date: 10-03-94 08:52 Comments: SOendNofMANUIRE
Cone Used: UBC9U2U3

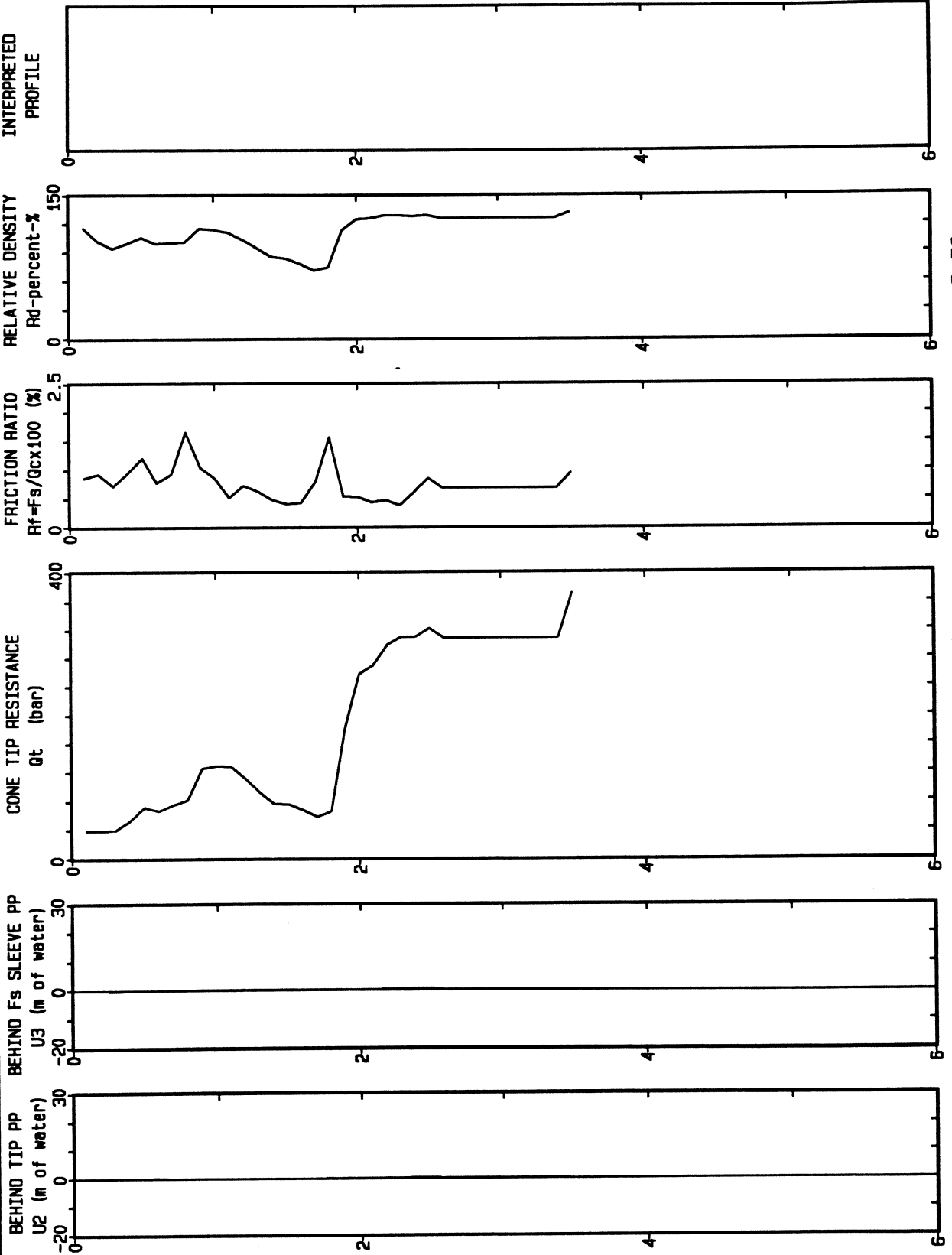


Max Depth : 3.80 m

Depth Increment : .1 m

GSC-1994 UBC CPTU

Operators: JLE-HS
Location: CRTC192&36SURREY
CPT Date: 10-03-94 09:31
Cone Used: UBC9U2U3
File Name: GSC-9419.ADJ
Comments: SOendNofMANURE



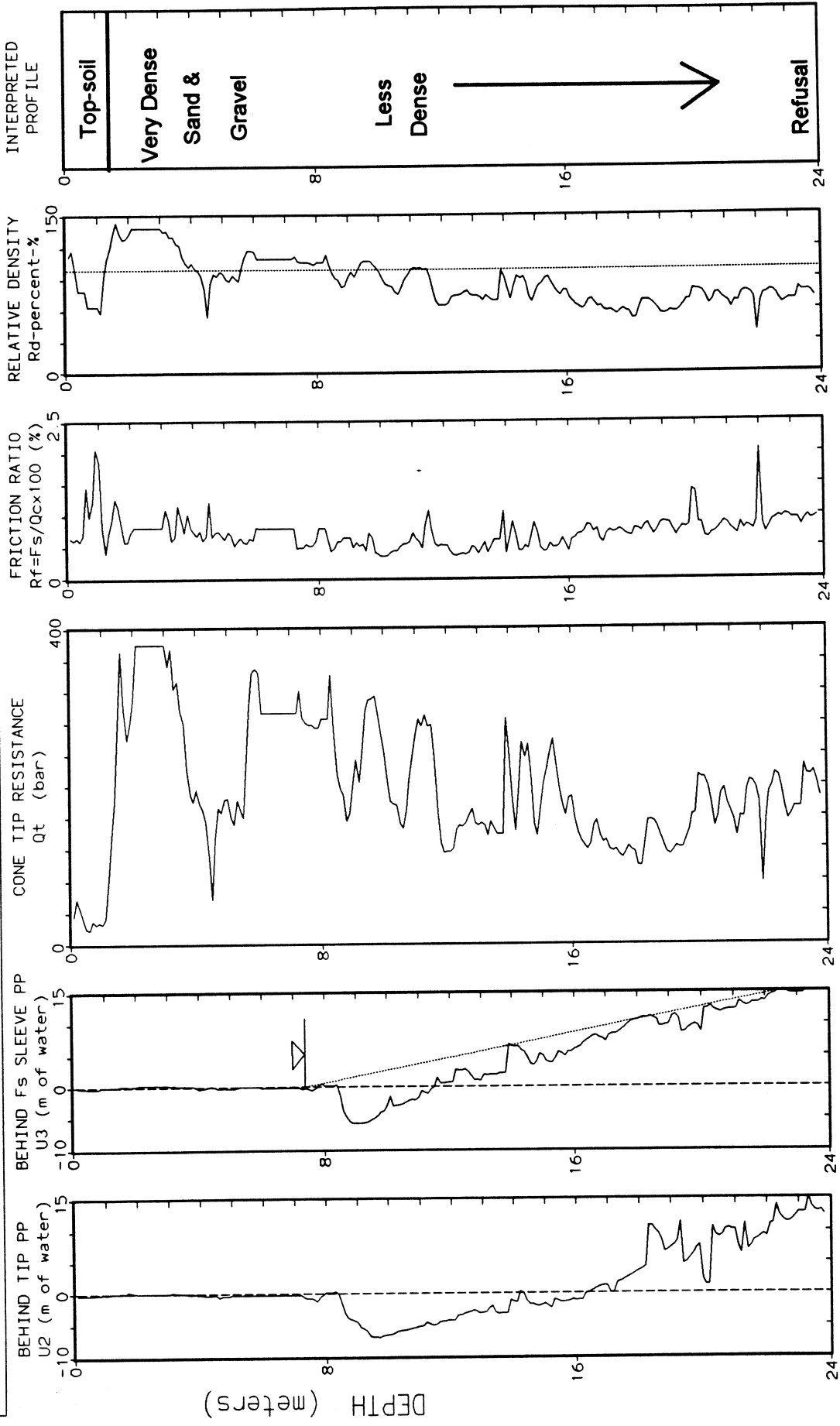
DEPTH (meters)

Depth Increment : .1 m

Max Depth : 3.50 m

GSC-1994 UBC CPTU

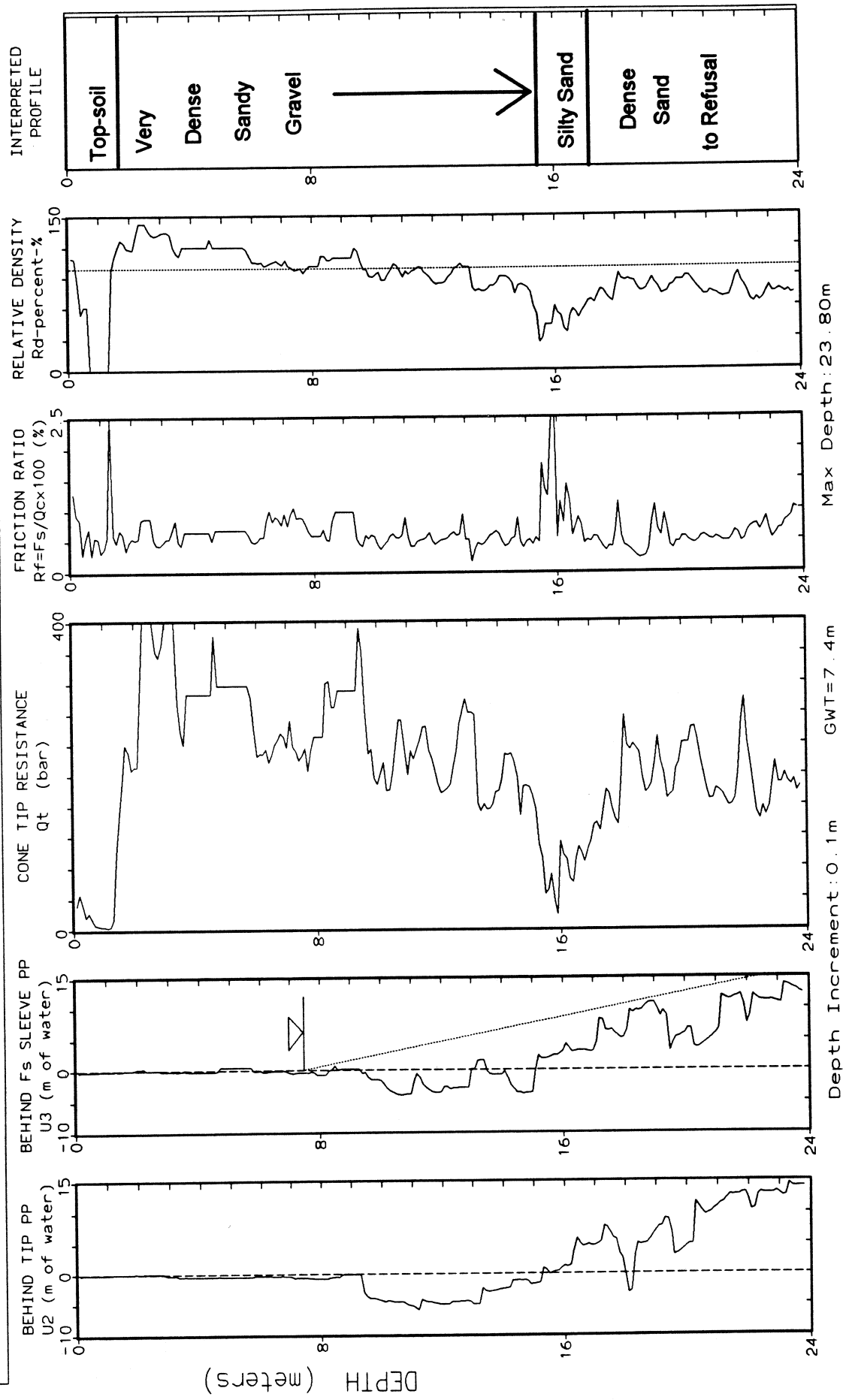
Operators: JLE-HS
 Location: CRTC192&36SURREY
 CPT Date: 10-03-94 10:30
 Cone Used: UBC9U2U3
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CPTU Profile at CRTC Site (GSC-9420.adj) South of Manure Pile, 10 March 94

GSC-1994 UBC CPTU

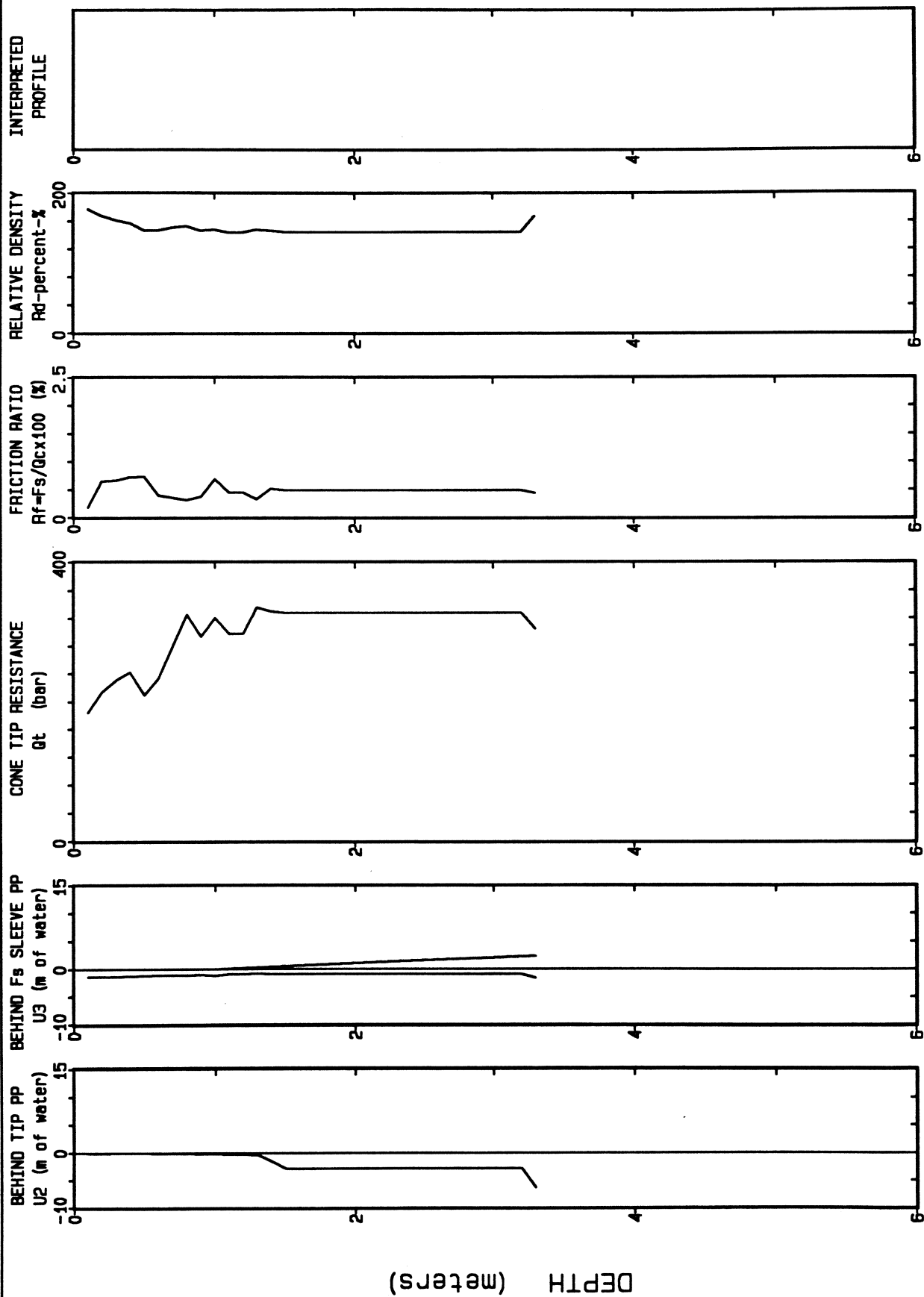
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 Location: CRTC192&36SURREY Cone Used: UBC9U2U3 Comments: SOendNofMANURE



CPTU Profile at CRTC Site (GSC-9421.adj) NW of Manure Pile, 10 March 94

GSC-1994 UBC CPTU

Operators: MPD-TJB CPT Date: 11-03-94 09:34 File Name: GSC-9422.ADJ
 Location: STOKES PIT SWcrn Cone Used: UBC9U2U3 Comments: East of GSC-9414



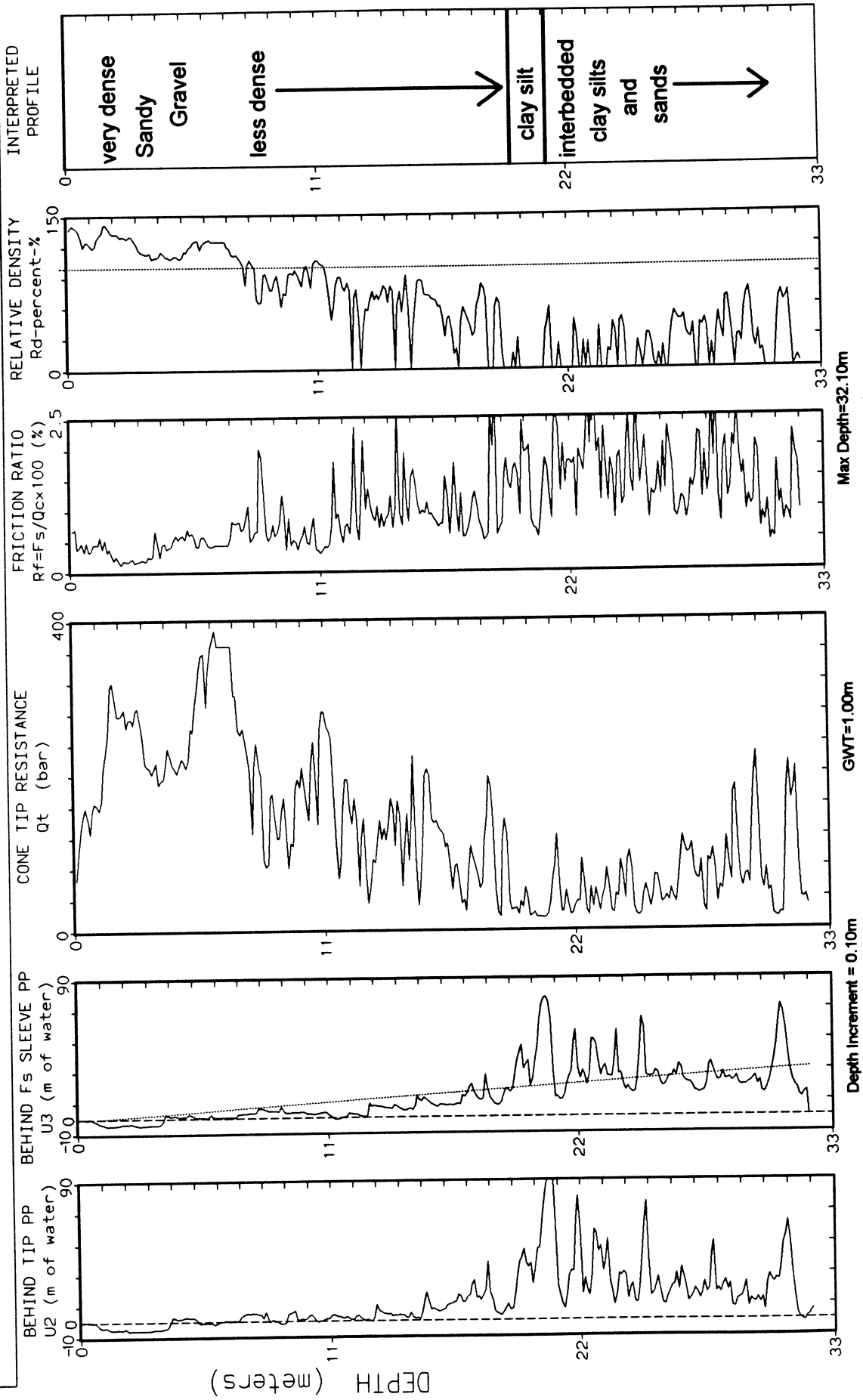
Max Depth: 3.30m

GWT=1.00m

Depth Increment: 0.1m

GSC-1994 UBC CPTU

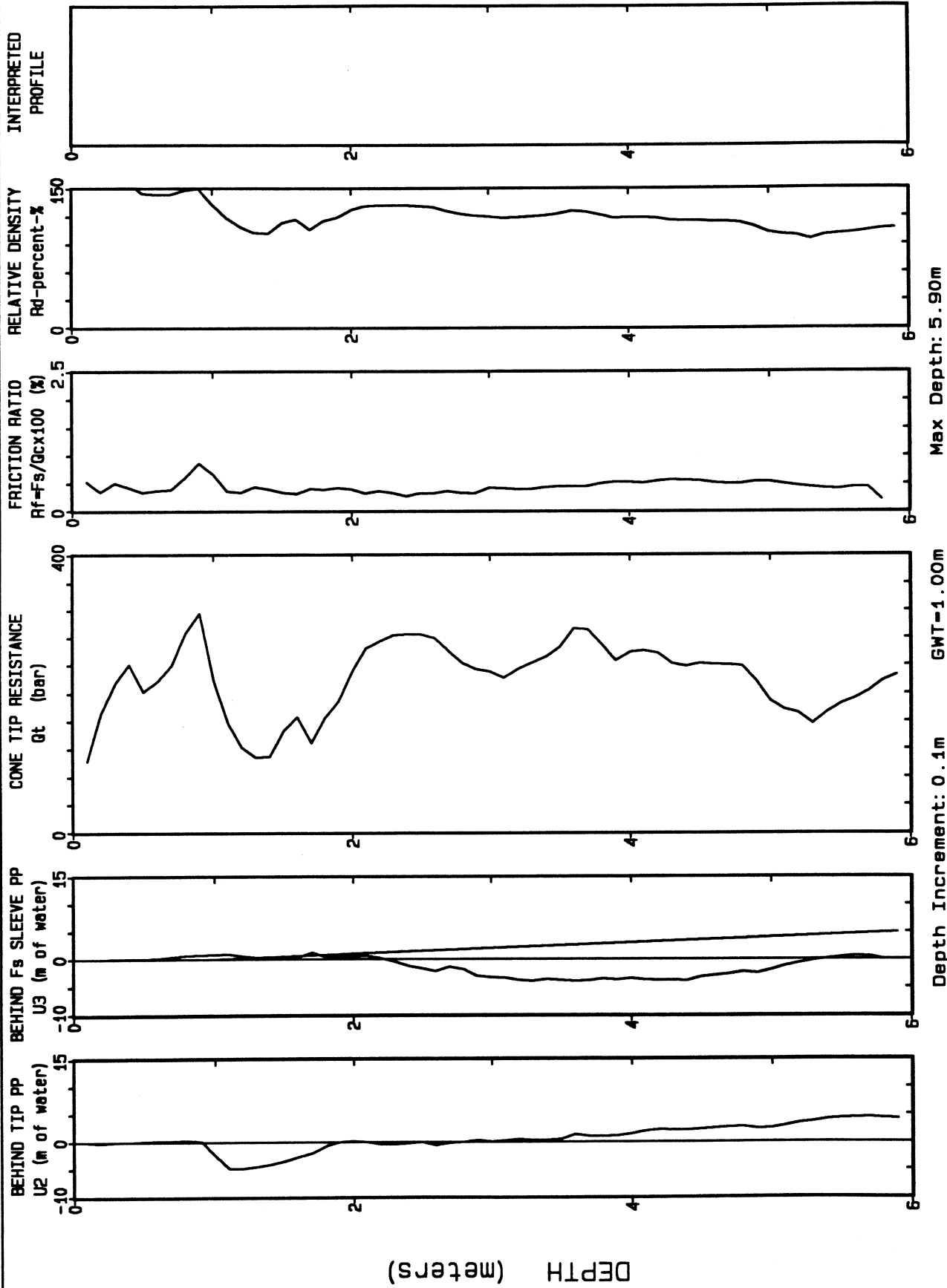
Operators: MPD-TJB
 Location: STOKES PIT Swcrn
 CPT Date: 11-03-94 10:43
 Cone Used: UBC9U2U3
 File Name: GSC-9423.ADJ
 Comments: NW of GSC-9414



CPTU at STOKES PIT on 11 March 1994 (GSC-9423.ADJ)

GSC-1994 UBC CPTU

Operators: MPD-TJB CPT Date: 11-03-94 13:25 File Name: GSC-9424.ADJ
Location: STOKES PIT SWcrn Cone Used: UBC9U2U3 Comments: 75m SO of N-PIT-1

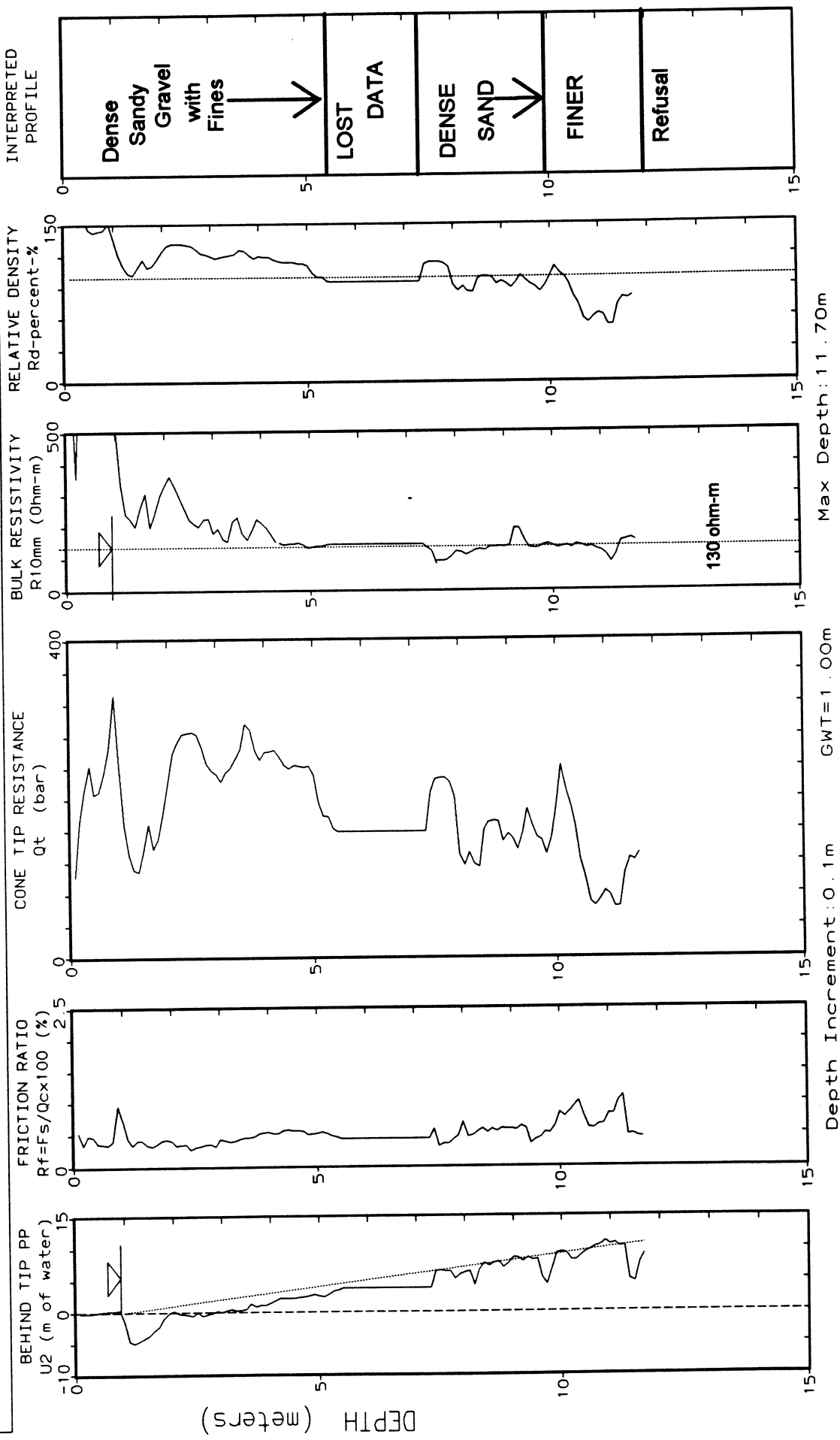


GSC-1994 UBC CPTU

Operators: MPD-TJB
 Location: STOKES PIT Swern

CPT Date: 11-03-94 14:16
 Cone Used: UBC9U2RES1

File Name: GSC9424A.ADJ
 Comments: 75m SO of N-PIT-1



Resistivity CPTU at STOKES PIT on 11 March 1994 (GSC9424A.ADJ) near N-PIT-1 Transect

Appendix - B : Cone Interpretation for estimated Soil parameters

Output file from CPTINT - Version 5.0ppd
 INPUT FILE: E:\GSC-9A\GSC-9401.EDT
 Licensed to: UBC Course - For teaching only
 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GSC01
 Operator: MPD-JBL
 On Site: RCPTU MatSqu1, BC
 Date: 7-02-94 11:19
 Comment: RCPTU MatSqu1, BC
 Cone Type: HOJZREST

SUMMARY SHEET

a for calculating Qt:
 Value for Water Table (in m): 0.800
 Valid Zone Classification based on: Rf
 Missing unit weight to start depth: 18.000
 Method for calculating Su: Nk, 0.00
 Value of the constant Nk: 4.000
 Method used to calculate OCR: Su/EOS
 (Su/EOS) for normal consolidation: 0.780
 Define Zone 6 for Sand Parameters?
 Sand Compressibility for calc Df:
 Method for Friction Angle:
 Initial guess of OCR for sand:
 Method for Modulus In sand:
 Baldi Method

Soil Behavior Type, Zone Numbers
 For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained
 Zone #2=Organic Material
 Zone #3=Clay
 Zone #4=Silty clay
 Zone #5=Clayey silt
 Zone #6=Sandy silt
 * Overconsolidated and/or cemented

NOTE:
 For soil classification, Rf values > 8 are assumed to be 8.

(Note: 9E9 means Out of Range)

Depth (meter)	Q (bars)	f (bars)	Costavg (bars)	U0 (meter)	U1 (meter)	incl (degree)	R10 (Ohm-m)	R25 (Ohm-m)	R75 (Ohm-m)	Rf Zone (Zone #)	Bq Zone (Zone #)	SPT N (blow/ft)	SPT N (blow/ft)	Phi (degree)	M Modulus (bars)	Em (kN/m ²)	Rf (kpa)	OCR (Ratio)
0.100	0.096	0.000	0.015	9E9	-0.183	0.100	73.290	65.220	419.130	1	9E9	0	0	9E9	0.386	15.700	0.570	1.521
0.200	0.097	0.000	0.030	9E9	-0.165	0.125	113.490	88.080	419.130	1	9E9	0	0	9E9	0.387	15.700	0.465	0.473
0.300	0.097	0.000	0.046	9E9	-0.155	0.100	562.560	352.570	419.130	1	9E9	0	0	9E9	0.388	15.700	0.360	0.204
0.400	0.097	0.000	0.062	9E9	-0.175	0.100	587.860	352.570	419.130	1	9E9	0	0	9E9	0.386	15.700	0.256	0.092
0.500	0.097	0.000	0.077	9E9	-0.170	0.100	587.860	352.570	419.130	1	9E9	0	0	9E9	0.387	15.700	0.151	0.036
0.600	0.096	0.000	0.093	9E9	-0.195	0.375	482.987	352.570	419.130	1	9E9	0	0	9E9	0.385	15.700	0.046	0.006
0.700	0.096	0.000	0.109	9E9	-0.218	0.350	503.012	352.570	419.130	1	9E9	0	0	9E9	0.383	15.700	0.000	0.000
0.800	0.094	0.000	0.140	9E9	-0.210	0.700	337.698	334.805	308.717	1	9E9	0	0	9E9	0.384	15.700	0.000	0.000
1.000	0.095	0.000	0.156	9E9	-0.232	0.800	166.288	164.550	160.793	1	9E9	0	0	9E9	0.382	15.700	0.000	0.000
1.100	0.095	0.000	0.172	9E9	-0.230	0.825	334.005	232.602	209.947	1	9E9	0	0	9E9	0.382	15.700	0.000	0.000
1.200	0.095	0.000	0.187	9E9	-0.230	0.900	587.860	352.570	419.130	1	9E9	0	0	9E9	0.382	15.700	0.000	0.000
1.300	0.095	0.000	0.203	9E9	-0.250	0.900	587.860	352.570	419.130	1	9E9	0	0	9E9	0.380	15.700	0.000	0.000
1.400	0.095	0.000	0.219	9E9	-0.210	0.925	587.860	352.570	419.130	1	9E9	0	0	9E9	0.384	15.700	0.000	0.000
1.500	0.095	0.000	0.234	9E9	-0.237	1.000	587.860	352.570	419.130	1	9E9	0	0	9E9	0.381	15.700	0.000	0.000
1.600	0.094	0.000	0.250	9E9	-0.287	1.075	555.390	352.570	419.130	1	9E9	0	0	9E9	0.377	15.700	0.000	0.000
1.700	0.095	0.000	0.266	9E9	-0.282	1.125	587.860	352.570	419.130	1	9E9	0	0	9E9	0.379	15.700	0.000	0.000
1.800	0.095	0.000	0.282	9E9	-0.285	1.200	587.860	352.570	419.130	1	9E9	0	0	9E9	0.379	15.700	0.000	0.000
1.900	0.095	0.000	0.297	9E9	-0.285	1.200	587.860	352.570	419.130	1	9E9	0	0	9E9	0.380	15.700	0.000	0.000
2.000	0.095	0.000	0.313	9E9	-0.235	1.200	587.860	352.570	419.130	1	9E9	0	0	9E9	0.382	15.700	0.000	0.000
2.100	0.094	0.000	0.329	9E9	-0.310	1.225	587.860	352.570	419.130	1	9E9	0	0	9E9	0.376	15.700	0.000	0.000
2.200	0.094	0.000	0.344	9E9	-0.290	1.400	587.860	352.570	419.130	1	9E9	0	0	9E9	0.377	15.700	0.000	0.000
2.300	0.095	0.000	0.360	9E9	-0.272	1.400	587.860	352.570	419.130	1	9E9	0	0	9E9	0.379	15.700	0.000	0.000
2.400	0.094	0.000	0.376	9E9	-0.300	1.467	587.860	352.570	419.130	1	9E9	0	0	9E9	0.375	15.700	0.000	0.000
2.500	0.094	0.000	0.391	9E9	-0.300	1.500	587.860	352.570	419.130	1	9E9	0	0	9E9	0.376	15.700	0.000	0.000
2.600	0.094	0.000	0.407	9E9	-0.300	2.000	587.860	352.570	419.130	7	9E9	0	0	9E9	0.376	15.700	0.000	0.000
2.700	28.666	0.365	0.424	9E9	-0.340	2.000	587.860	352.570	419.130	7	9E9	10	12	9E9	422.374	18.890	0.000	0.000
2.800	193.666	0.642	0.443	9E9	-0.385	2.200	587.860	352.570	419.130	9	19	33	39	9E9	1255.067	19.850	0.000	0.000
2.900	220.418	1.025	0.463	9E9	-0.360	2.225	587.860	352.570	419.130	9	10	44	59	9E9	1358.178	19.850	0.000	0.000
3.000	229.517	1.497	0.503	9E9	-0.395	2.475	587.860	352.570	419.130	9	10	46	66	9E9	1396.563	19.850	0.000	0.000
3.100	180.395	1.387	0.522	9E9	-0.200	2.725	587.860	352.570	419.130	9	9	46	69	9E9	1224.921	19.850	0.000	0.000
3.200	127.621	0.450	0.542	9E9	-0.227	2.200	587.860	352.570	419.130	9	9	26	39	9E9	1012.193	19.850	0.000	0.000
3.300	110.746	0.112	0.561	9E9	-0.190	2.200	587.860	352.570	419.130	9	9	22	33	9E9	938.520	19.850	0.000	0.000
3.400	121.472	0.142	0.581	9E9	-0.170	2.200	587.860	352.570	419.130	9	9	24	35	9E9	993.141	19.850	0.000	0.000
3.500	190.223	0.338	0.620	9E9	-0.093	2.200	587.860	352.570	419.130	9	9	30	43	9E9	1124.465	19.850	0.000	0.000
3.600	147.924	0.787	0.640	9E9	0.000	2.100	587.860	352.570	419.130	9	9	30	42	9E9	1119.276	19.850	0.000	0.000
3.700	182.375	0.562	0.640	9E9	0.000	2.075	587.860	352.570	419.130	9	9	38	50	9E9	1099.709	19.850	0.000	0.000
3.800	153.972	0.438	0.679	9E9	0.190	2.200	587.860	352.570	419.130	9	9	32	40	9E9	1158.178	19.850	0.000	0.000
3.900	160.004	0.438	0.699	9E9	0.195	2.200	587.860	352.570	419.130	9	9	32	41	9E9	1187.852	19.850	0.000	0.000
4.000	174.484	0.778	0.719	9E9	0.460	2.200	587.860	352.570	419.130	9	9	35	44	9E9	1251.808	19.850	0.000	0.000
4.100	192.912	0.847	0.738	9E9	0.593	2.200	587.860	352.570	419.130	9	9	39	48	9E9	1329.377	19.850	0.000	0.000
4.200	152.463	1.155	0.758	9E9	0.640	2.200	487.130	352.570	419.130	9	9	30	36	9E9	1167.839	19.850	0.000	0.000
4.300	78.014	1.428	0.777	9E9	0.700	2.200	182.180	169.890	169.890	7	9	26	31	9E9	802.482	19.850	0.000	0.000
4.400	94.689	0.662	0.796	9E9	0.700	2.200	328.845	240.288	103.360	8	9	24	28	9E9	898.031	19.850	0.000	0.000

4.700	107.039	0.785	0.816	969	0.690	2.200	294.530	284.880	139.592	7	8	9	31	41	965.387	75	19.650	969
4.800	71.292	1.350	0.835	969	0.888	2.200	514.895	326.705	316.612	8	9	8	27	41	769.682	59	18.860	969
4.900	43.892	1.048	0.875	969	0.905	2.200	242.665	246.137	324.913	7	8	9	33	43	1147.646	68	19.650	969
5.000	97.675	1.162	0.893	969	1.175	2.375	232.595	163.702	107.232	8	9	10	25	35	905.564	65	18.860	969
5.100	256.651	1.520	0.913	969	1.332	2.625	498.710	352.570	401.340	9	10	10	51	61	927.286	69	19.650	969
5.200	241.723	1.648	0.932	969	1.192	3.425	587.860	352.570	419.130	9	10	10	49	59	1604.557	106	19.650	969
5.300	195.247	1.000	0.972	969	1.135	3.000	587.860	352.570	419.130	9	9	9	38	48	1555.364	104	19.650	969
5.400	165.848	0.758	0.991	969	1.148	3.600	587.860	352.570	419.130	9	9	9	39	49	1555.364	104	19.650	969
5.500	173.948	0.595	1.011	969	1.132	3.000	587.860	352.570	419.130	9	9	9	43	53	1282.280	88	19.650	969
5.600	203.497	0.567	1.031	969	1.137	3.700	587.860	352.570	419.130	9	9	9	32	42	1301.698	89	19.650	969
5.700	175.877	0.445	1.070	969	1.137	3.700	587.860	352.570	419.130	9	9	9	41	51	1386.550	93	19.650	969
5.800	102.821	0.415	1.090	969	1.095	3.775	491.033	352.570	185.033	9	9	9	39	49	1429.332	89	19.650	969
5.900	62.824	0.425	1.070	969	1.102	3.000	401.142	352.570	152.645	9	9	9	32	42	1256.732	85	19.650	969
6.000	28.347	0.560	1.128	969	-0.053	3.800	49.900	47.313	46.358	9	8	7	21	31	978.972	67	19.650	969
6.100	24.850	0.155	1.147	969	0.012	3.900	103.740	69.433	66.342	6	7	8	11	21	742.860	48	18.860	969
6.200	24.810	0.132	1.166	969	0.107	4.025	109.143	96.980	102.280	7	8	9	8	18	113.389	99	19.650	969
6.300	21.610	0.130	1.185	969	0.375	4.075	208.695	133.333	139.563	7	7	8	9	33	441.894	11	18.860	969
6.400	18.712	0.127	1.223	969	0.435	4.150	208.695	133.333	139.563	7	7	8	9	33	441.894	11	18.860	969
6.500	16.749	0.125	1.242	969	0.571	4.200	170.072	108.330	191.275	6	7	8	9	33	430.309	12	18.860	969
6.600	17.874	0.235	1.270	969	0.708	4.200	170.072	108.330	191.275	6	7	8	9	33	430.309	12	18.860	969
6.700	17.078	0.268	1.299	969	0.908	4.200	128.070	81.525	58.365	6	6	7	7	9	410.875	4	18.860	969
6.800	16.135	0.185	1.327	969	1.100	4.300	58.438	58.490	55.428	6	6	7	6	9	74.848	9	18.860	969
6.900	16.375	0.203	1.356	969	0.200	4.400	54.438	39.575	36.275	6	5	6	6	9	66.997	9	18.860	969
7.000	17.368	0.285	1.384	969	0.400	4.500	50.927	37.217	33.990	6	6	7	6	9	68.313	9	18.860	969
7.100	18.375	0.117	1.413	969	0.600	4.600	50.903	40.033	37.020	6	6	7	6	9	68.313	9	18.860	969
7.200	18.732	0.113	1.442	969	0.800	4.700	52.615	39.232	29.127	6	6	7	6	9	74.542	9	18.860	969
7.300	15.420	0.293	1.470	969	1.000	4.800	37.950	30.222	26.368	6	5	6	6	9	74.542	9	18.860	969
7.400	14.766	0.293	1.498	969	1.200	4.900	55.430	40.208	37.000	6	6	7	6	9	74.542	9	18.860	969
7.500	14.933	0.197	1.526	969	1.400	5.000	99.693	68.525	71.202	6	6	7	6	9	74.542	9	18.860	969
7.600	14.933	0.197	1.554	969	1.600	5.100	44.098	36.957	35.248	6	6	7	6	9	60.557	9	18.860	969
7.700	14.740	0.275	1.582	969	1.800	5.200	44.448	38.342	34.160	6	6	7	6	9	97.466	9	18.860	969
7.800	16.085	0.505	1.610	969	2.000	5.300	42.403	37.360	33.833	6	5	6	6	9	64.339	9	18.860	969
7.900	16.085	0.283	1.638	969	2.200	5.400	36.513	31.550	28.717	6	5	6	6	9	75.217	9	18.860	969
8.000	18.794	0.178	1.666	969	2.400	5.500	44.847	32.770	30.382	6	5	6	6	9	68.313	9	18.860	969
8.100	17.078	0.275	1.694	969	2.600	5.600	44.847	32.770	30.382	6	5	6	6	9	68.313	9	18.860	969
8.200	15.320	0.155	1.722	969	2.800	5.700	42.403	37.360	33.833	6	5	6	6	9	68.313	9	18.860	969
8.300	14.766	0.293	1.750	969	3.000	5.800	44.847	32.770	30.382	6	5	6	6	9	68.313	9	18.860	969
8.400	14.933	0.197	1.778	969	3.200	5.900	44.847	32.770	30.382	6	5	6	6	9	68.313	9	18.860	969
8.500	14.933	0.197	1.806	969	3.400	6.000	32.770	30.222	26.368	6	5	6	6	9	71.074	9	18.860	969
8.600	14.933	0.197	1.834	969	3.600	6.100	44.847	32.770	30.382	6	5	6	6	9	71.074	9	18.860	969
8.700	16.584	0.197	1.862	969	3.800	6.200	28.490	26.887	23.257	6	4	5	6	9	56.775	9	18.860	969
8.800	59.105	0.290	1.890	969	4.000	6.300	25.300	25.300	23.257	6	4	5	6	9	60.557	9	18.860	969
8.900	42.976	0.597	1.918	969	4.200	6.400	37.543	30.432	27.420	6	4	5	6	9	74.333	9	18.860	969
9.000	37.876	0.678	1.946	969	4.400	6.500	65.092	65.702	76.415	6	4	5	6	9	809.252	46	19.650	969
9.100	40.698	0.502	1.974	969	4.600	6.600	59.438	49.807	43.427	6	4	5	6	9	834.634	48	19.650	969
9.200	67.189	0.268	1.472	969	4.800	6.700	423.625	291.425	136.762	8	8	9	12	35	662.773	32	18.860	969
9.300	80.123	0.302	1.492	969	5.000	6.800	593.932	352.570	272.360	8	8	9	11	35	131.504	99	19.650	969
9.400	91.153	0.352	1.512	969	5.200	6.900	587.860	352.570	272.360	8	8	9	12	35	602.130	25	18.860	969
9.500	96.153	0.385	1.532	969	5.400	7.000	587.860	352.570	272.360	8	8	9	14	37	799.834	44	19.650	969
9.600	121.253	0.470	1.552	969	5.600	7.100	587.860	352.570	272.360	8	8	9	16	39	884.187	51	19.650	969
9.700	115.053	0.483	1.572	969	5.800	7.200	587.860	352.570	272.360	8	8	9	18	41	963.731	58	19.650	969
9.800	126.604	0.555	1.592	969	6.000	7.300	587.860	352.570	272.360	8	8	9	20	43	993.275	64	19.650	969
9.900	131.105	0.740	1.612	969	6.200	7.400	587.860	352.570	272.360	8	8	9	22	45	1120.073	66	19.650	969
10.000	131.105	0.740	1.632	969	6.400	7.500	587.860	352.570	272.360	8	8	9	24	47	1068.256	64	19.650	969
10.100	141.655	1.250	1.652	969	6.600	7.600	93.467	120.118	199.432	9	9	10	16	47	1100.072	65	19.650	969
10.200	34.655	0.665	1.672	969	6.800	7.700	49.807	49.807	43.427	9	9	10	17	47	1150.547	68	19.650	969
10.300	37.080	0.750	1.692	969	7.000	7.800	423.625	291.425	136.762	9	9	10	18	47	1174.416	68	19.650	969
10.400	86.166	0.593	1.712	969	7.200	7.900	423.625	291.425	136.762	9	9	10	19	47	855.158	47	18.860	969
10.500	91.153	0.352	1.732	969	7.400	8.000	593.932	352.570	272.360	9	9	10	20	47	138.340	99	19.650	969
10.600	117.465	0.455	1.752	969	7.600	8.100	587.860	352.570	272.360	9	9	10	21	47	999.470	62	19.650	969
10.700	114.239	0.370	1.772	969	7.800	8.200	587.860	352.570	272.360	9	9	10	23	49	1108.083	64	19.650	969
10.800	133.825	0.435	1.792	969	8.000	8.300	587.860	352.570	272.360	9	9	10	25	51	1091.643	63	19.650	969
10.900	144.893	0.435	1.812	969	8.200	8.400	587.860	352.570	272.360	9	9	10	27	53	1140.425	66	19.650	969
11.000	151.339	0.530	1.832	969	8.400	8.500	87.337	90.658	68.205	9	9	10	18	53	1194.003	68	19.650	969
11.100	147.658	0.377	1.852	969	8.600	8.600	87.337	90.658	68.205	9	9	10	19	53	1194.003	68	19.650	969
11.200	144.546	0.920	1.872	969	8.800	8.700	90.715	100.395	82.197	9	9	10	20	53	1251.357	72	19.650	969
11.300	144.546	0.920	1.892	969	9.000	8.800	83.533	96.980	76.743	9	9	10	21	53	1283.472	73	19.650	969
11.400	168.269	0.788	1.912	969	9.200	8.900	54.855	45.078	49.373	9	9	10	22	53	1283.472	73	19.650	969
11.500	32.970	0.060	1.932	969	9.400	9.000	39.960	26.452	29.507	9	9	10	19	53	820.483	42	19.650	969
11.600	35.377	0.264	1.952															

Output file from CPTINT - Version 3.0ppd
 INPUT FILE: E:\GSC-94\GSC-9405-EDT
 Licensed to: UBC Course - For teaching only
 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GSC052 Date: 2-02-94 14:52
 Operator: RGC-SST On Site Location: FISH TRAP CREEK
 Cone Type: HOG302 Comment: CPT060AVC.MTSQU

SUMMARY SHEET

a. For calculating Q_t:
 Value for Water Table (in m): 0.000
 Rf 1.500
 Valid Zone Classification based on:
 Missing unit weight to start depth: 18.000
 Method for calculating S_u: NK
 Value of the constant Nk: 15.000
 alpha for Modulus in clay: SPT/EGS
 Method used to calculate Q_t: SPT/EGS
 Value of the constant alpha: 0.280
 Method for calculating E_s: NO
 Define Zone # for Sand Parameter: Moderate
 Sand Compressibility for calc Dr: Robertsson & Campanella
 Method for Friction Angle: 3.000
 Initial guess of OCR for sand: Baldi Method
 Method for Modulus in sand: Baldi Method

Soil Behavior Type Zone Numbers
 For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained Zone #7 =Silty sand
 Zone #2=Organic material Zone #8 =Fine sand
 Zone #3=Clay Zone #9 =Sand
 Zone #4=Silty clay Zone #10=Gravelly sand
 Zone #5=Clayey silt Zone #11=Very stiff fine grained
 Zone #6=Sandy silt Zone #12=Sand to clayey sand
 * Overconsolidated and/or cemented

NOTE:
 For soil classification, Rf values > 8 are assumed to be 8.
 (Note: 9E9 means Out of Range)

Depth (meter)	Q _t (avg) (bars)	F _s (avg) (bars)	EOS(avg) (%)	Rf	U ₂ (meter)	U ₃ (meter)	Incl (degree)	Rf Zone (Zone #)	Bq Zone (Zone #)	SPT (N) (blow/ft)	SPT (N) (blow/ft)	phi (degree)	N Modulus D _v (bars)	C _{mu} (kN/m ³)	S _u (kPa)	OCR (ratio)
0.100	9.466	0.052	0.016	0.532	9E9	-0.065	-0.050	6	6	4	6	9E9	345.213	18.860	63.009	479.473
0.200	35.137	0.247	0.035	0.703	9E9	-0.160	0.175	7	8	12	18	9E9	522.051	18.860	9E9	9E9
0.300	60.268	0.203	0.066	0.306	9E9	-0.105	0.150	8	8	17	26	9E9	611.039	19.650	9E9	9E9
0.400	81.692	0.415	0.074	0.508	9E9	-0.775	0.125	8	9	20	30	9E9	642.641	19.650	9E9	9E9
0.500	84.713	0.887	0.094	1.046	9E9	-0.213	0.100	8	9	21	32	9E9	574.855	19.650	9E9	9E9
0.600	83.822	0.700	0.113	0.836	9E9	-0.337	0.100	8	9	21	32	9E9	379.148	19.650	379.148	323.878
0.700	56.998	1.345	0.133	2.360	9E9	-0.337	0.100	8	9	21	32	9E9	324.417	19.650	324.417	224.317
0.800	48.804	1.101	0.172	2.618	9E9	-0.803	0.100	8	9	21	32	9E9	195.217	19.650	195.217	40.737
0.900	19.021	0.319	0.191	3.735	9E9	-1.245	0.000	3	6	9	14	9E9	36.082	18.860	59.029	20.170
1.000	10.399	0.481	0.209	4.315	9E9	-2.550	0.000	3	5	8	12	9E9	30.240	18.860	49.337	14.326
1.200	17.142	0.854	0.229	4.625	9E9	-1.565	0.050	3	6	10	15	9E9	41.597	19.650	68.008	19.170
1.400	16.301	0.498	0.267	3.037	9E9	-1.478	0.100	5	6	9	14	9E9	68.566	18.860	112.630	32.534
1.500	15.587	0.306	0.286	1.962	0.000	-0.953	0.200	5	6	8	12	9E9	65.205	18.860	107.088	27.886
1.600	11.821	0.309	0.295	2.614	0.000	-2.298	0.200	5	6	6	9	9E9	62.350	18.860	172.303	44.280
1.700	9.165	0.212	0.304	2.310	0.200	-1.298	0.200	4	5	6	9	9E9	35.285	18.860	55.244	11.314
1.800	5.894	0.149	0.315	2.527	0.200	-2.083	0.200	3	4	6	6	9E9	21.577	18.860	37.318	6.120
2.000	2.281	0.049	0.326	2.170	0.400	-1.238	0.200	3	4	4	6	9E9	17.256	18.860	26.626	3.873
2.100	0.978	0.064	0.333	6.531	0.600	-1.642	0.275	2	3	1	2	9E9	9.123	15.700	12.844	1.513
2.200	1.693	0.075	0.339	4.400	0.700	-1.308	0.300	3	3	1	2	9E9	3.910	11.800	3.819	0.327
2.300	32.969	1.971	0.348	5.979	0.800	-1.215	0.300	3	3	2	3	9E9	6.773	18.860	8.400	0.859
2.400	112.377	3.527	0.358	3.139	0.900	-0.813	0.275	3	8	33	50	9E9	131.875	19.650	216.788	48.272
2.500	151.805	2.865	0.368	1.887	1.000	-0.510	0.200	7	9	45	68	9E9	449.510	19.650	746.313	218.613
2.600	145.077	0.942	0.377	0.649	1.000	-0.553	0.200	7	9	51	77	47	1062.771	18.860	9E9	9E9
2.700	123.554	1.165	0.387	0.943	1.200	-0.320	1.200	6	9	29	44	47	1039.248	19.650	9E9	9E9
2.800	146.840	1.151	0.397	1.620	1.300	-0.025	1.200	6	9	31	47	47	992.306	19.650	9E9	9E9
2.900	82.502	0.797	0.407	0.409	1.400	0.342	1.525	9	9	20	28	47	1056.339	19.650	9E9	9E9
3.000	23.370	0.497	0.426	0.602	1.500	0.786	1.425	5	9	26	39	45	982.465	19.650	9E9	9E9
3.100	27.796	0.774	0.436	0.396	1.600	0.716	1.225	5	7	21	32	43	767.441	19.650	9E9	9E9
3.200	22.602	0.265	0.445	3.399	1.700	0.987	1.350	3	5	12	16	9E9	93.482	19.650	151.681	23.324
3.300	22.602	0.265	0.455	4.704	1.800	1.920	1.350	3	5	12	12	9E9	31.186	18.860	47.370	5.329
3.400	296.710	6.212	0.465	2.094	2.000	2.025	2.375	8	7	23	35	9E9	90.407	19.650	145.641	21.024
3.500	283.079	1.852	0.475	2.100	2.100	2.010	1.500	9	10	74	86	9E9	1560.822	19.650	9E9	9E9

Output file from CPTINT - Version 5.0ppd
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 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GSC082 Date: 5-02-94 12:51
 Operator: MJC/BS On Site Location: 30ME-01 LANDAVE
 Cone Type: HOGJUZ Comment: OAVE.MJ.ng/MSJql

SUMMARY SHEET

Value for calculating Q_t: 0.800
 Value for Water Table (in m): 0.000
 Valid Zone Classification based on: Rf
 Missing unit weight to start depth: 18.000
 Method for calculating Su: 15.000
 Value of the constant in Clay: 4.000
 Method used to calculate OCR: SU/EOS
 (SU/EOS) for normal consolidation: 0.280
 Define Zone 6 for Sand Parameters: NO
 Sand Compressibility for calc Dr: Moderate
 Method for Friction Angle: Robertson & Campanella
 Initial guess of OCR for sand: 3.000
 Method for Modulus in sand: Baldi Method

Soil Behavior Type Zone Numbers

For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained
 Zone #2=Organic material
 Zone #3=Clay
 Zone #4=Silty clay
 Zone #5=Clayey silt
 Zone #6=Sandy silt
 Zone #7=Silty sand
 Zone #8=Fine sand
 Zone #9=Sand
 Zone #10=Gravelly sand
 Zone #11=Very stiff fine grained
 Zone #12=Sand to clayey sand
 * Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: 9E9 means Out of Range)

Depth (meter)	Q (kN/m ²)	f (kPa)	Q _u (kN/m ²)	f _u (kPa)	U ₂ (meter)	U ₁ (meter)	Incl (degree)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt Ni (blow/ft)	Phi (degree)	M Modulus Dr (kN/m ²)	Gamma (kN/m ³)	Su (kPa)	OCR (ratio)
0.100	16.332	0.277	0.006	1.695	0.100	0.100	0.100	6	6	7	11	9E9	65.327	18.860	108.724	3060.120
0.200	31.020	0.633	0.016	2.041	0.200	-0.025	0.300	6	7	12	16	9E9	124.768	18.860	206.524	2176.474
0.300	34.435	0.630	0.025	1.307	0.300	-0.142	0.350	7	7	11	16	9E9	124.768	18.860	206.524	2176.474
0.400	25.062	0.389	0.035	1.350	0.400	-0.235	0.400	6	7	11	15	9E9	100.250	18.860	166.624	621.609
0.500	16.616	0.386	0.044	2.325	0.500	-0.100	0.500	6	6	8	12	9E9	66.464	18.860	110.246	274.446
0.600	12.387	0.382	0.053	3.000	0.600	-0.100	0.500	6	6	8	12	9E9	49.548	18.860	81.820	149.709
0.700	13.151	0.379	0.071	1.032	0.700	-0.375	0.500	4	7	9	14	9E9	52.603	18.860	86.928	132.667
0.800	34.850	0.196	0.080	0.961	0.900	-0.652	0.500	7	7	9	14	47	322.269	18.860	86.928	132.667
1.000	37.012	0.274	0.089	0.741	1.000	-0.645	0.500	7	8	12	18	47	381.696	18.860	86.928	132.667
1.100	32.532	0.387	0.098	1.190	1.100	-0.445	0.500	7	8	12	18	47	400.277	18.860	86.928	132.667
1.200	23.083	0.107	0.107	0.660	1.200	-0.255	0.500	7	8	11	17	47	376.735	18.860	86.928	132.667
1.300	23.083	0.184	0.117	0.795	1.300	-0.240	0.500	7	8	12	18	47	376.735	18.860	86.928	132.667
1.400	8.567	0.188	0.126	2.197	1.400	-0.765	0.500	4	6	12	16	47	305.028	18.860	86.928	132.667
1.500	9.710	0.191	0.144	3.971	1.500	-0.797	0.500	3	6	12	16	47	34.289	18.860	86.928	132.667
1.700	3.384	0.205	0.162	0.641	1.700	-0.740	0.500	3	6	12	16	47	34.289	18.860	86.928	132.667
1.900	58.853	0.275	0.171	0.459	1.900	-0.240	0.600	7	7	6	8	9E9	41.143	18.860	55.331	31.386
2.100	70.041	0.271	0.303	0.426	2.000	0.640	0.600	8	7	10	15	43	393.228	18.860	62.829	31.054
2.200	75.776	0.201	0.211	0.531	2.200	0.320	0.600	8	8	15	23	43	570.237	18.860	62.829	31.054
2.300	70.342	0.367	0.211	0.522	2.300	0.320	0.600	8	8	15	23	47	594.834	18.860	62.829	31.054
2.400	71.771	0.393	0.220	0.548	2.400	0.497	0.600	8	8	16	24	47	631.862	18.860	62.829	31.054
2.500	80.272	0.368	0.230	0.483	2.500	0.597	0.600	8	8	19	29	47	684.352	18.860	62.829	31.054
2.600	95.749	0.410	0.260	0.436	2.600	0.663	0.600	8	8	19	29	47	652.426	18.860	62.829	31.054
2.700	102.680	0.609	0.260	0.539	2.700	0.850	0.600	8	8	20	30	47	698.861	18.860	62.829	31.054
2.800	110.815	0.554	0.270	0.501	2.800	0.977	0.600	9	9	20	30	47	776.135	18.860	62.829	31.054
3.000	55.772	0.517	0.279	0.927	3.000	1.960	0.900	9	9	20	30	47	809.762	18.860	62.829	31.054
3.100	29.290	0.368	0.289	1.256	3.100	2.780	0.900	9	9	22	33	45	854.091	18.860	62.829	31.054
3.200	58.456	0.298	0.319	0.298	3.200	2.408	0.900	8	7	22	33	45	854.091	18.860	62.829	31.054
3.300	74.242	0.498	0.308	0.671	3.300	2.620	0.900	8	8	23	35	45	854.091	18.860	62.829	31.054
3.400	68.021	0.564	0.318	0.830	3.400	1.475	0.900	8	8	15	23	43	603.659	18.860	62.829	31.054
3.500	39.506	0.327	0.337	1.952	3.500	2.870	0.900	8	8	17	29	45	651.090	18.860	62.829	31.054
3.600	13.722	0.370	0.338	2.695	3.600	2.870	0.900	8	8	17	29	45	651.090	18.860	62.829	31.054
3.700	57.972	0.577	0.366	0.819	3.700	2.997	0.900	8	8	13	20	41	489.688	18.860	62.829	31.054
3.800	59.069	0.508	0.366	0.863	3.800	2.997	0.900	8	8	14	21	43	612.359	18.860	62.829	31.054
3.900	59.937	0.440	0.375	0.760	3.900	2.997	0.900	8	8	15	23	43	622.280	18.860	62.829	31.054
4.100	62.883	0.574	0.385	0.914	4.000	4.000	1.375	8	8	16	24	43	618.540	18.860	62.829	31.054
4.200	49.838	0.506	0.395	0.915	4.200	2.308	1.500	8	8	14	21	43	649.958	18.860	62.829	31.054
4.300	13.474	0.438	0.404	3.247	4.300	1.748	1.500	7	4	17	26	43	571.743	18.860	62.829	31.054
4.400	23.973	0.124	0.413	1.575	4.400	1.525	1.500	4	6	9	14	36	31.564	18.860	62.829	31.054
4.500	7.891	0.188	0.422	0.784	4.500	16.993	1.600	5	6	8	12	36	381.395	18.860	62.829	31.054
4.600	23.933	0.312	0.431	1.305	4.600	3.100	1.600	6	7	10	15	36	395.730	18.860	62.829	31.054

4.700	17.020	0.295	0.441	1.733	4.700	9.532	1.600	6	6	7	11	9E9	68.078	9E9	18.860	106.204	14.738
4.800	20.540	0.433	0.450	2.109	4.800	10.587	1.600	6	6	8	12	9E9	716.091	9E9	19.650	129.409	16.374
4.900	71.737	0.486	0.460	0.678	4.900	8.398	1.625	6	6	14	21	41	716.091	9E9	19.650	9E9	9E9
5.000	40.902	0.683	0.470	2.969	5.000	12.010	2.000	5	5	15	8	41	522.753	9E9	18.860	63.274	6.961
5.100	10.706	0.250	0.488	0.989	5.200	17.263	2.000	6	6	5	11	9E9	42.823	9E9	18.860	115.065	14.359
5.200	26.396	0.148	0.497	0.728	5.300	15.863	2.025	6	6	8	12	9E9	74.385	9E9	18.860	126.603	15.798
5.300	22.090	0.131	0.507	0.684	5.400	8.783	2.100	7	7	7	11	37	372.716	24	18.860	73.882	7.9E9
5.400	12.319	0.117	0.516	0.948	5.500	9.230	2.100	6	6	5	8	9E9	49.274	9E9	18.860	103.882	11.897
5.500	16.448	0.176	0.525	1.069	5.600	15.675	2.200	6	6	6	11	9E9	65.790	9E9	18.860	94.798	10.069
5.600	15.561	0.168	0.534	1.078	5.700	12.688	2.200	6	6	4	9	9E9	65.790	9E9	18.860	94.798	10.069
5.700	8.014	0.119	0.543	1.482	5.800	15.137	2.225	5	5	4	6	9E9	32.088	9E9	18.860	44.039	3.781
5.800	7.279	0.106	0.552	1.463	5.900	26.115	2.450	5	5	4	6	9E9	29.117	9E9	18.860	44.039	3.781
5.900	6.594	0.128	0.561	1.337	6.000	38.977	2.700	3	3	4	6	9E9	26.377	9E9	18.860	37.496	3.029
6.000	6.112	0.207	0.579	1.234	6.200	23.970	2.900	3	3	4	6	9E9	24.448	9E9	18.860	32.587	2.491
6.100	1.733	0.195	0.588	1.703	6.300	11.663	2.900	5	5	5	7	9E9	24.897	9E9	18.860	28.500	2.065
6.200	8.214	0.150	0.597	1.932	6.400	31.048	2.900	4	4	4	6	9E9	24.897	9E9	18.860	39.260	2.964
6.300	8.214	0.150	0.597	1.932	6.500	27.460	2.900	5	5	4	6	9E9	24.897	9E9	18.860	39.260	2.964
6.400	11.196	0.121	0.606	1.844	6.600	9.342	2.900	4	4	4	6	9E9	32.855	9E9	18.860	42.875	2.014
6.500	12.206	0.080	0.615	1.083	6.700	6.825	2.900	6	6	4	6	9E9	44.783	9E9	18.860	42.875	2.014
6.600	13.637	0.112	0.624	0.657	6.800	7.870	2.900	6	6	5	7	9E9	48.826	9E9	18.860	42.875	2.014
6.700	12.762	0.263	0.633	0.818	6.900	7.842	2.925	6	6	5	7	9E9	54.060	9E9	18.860	42.875	2.014
6.800	6.374	0.185	0.642	2.061	7.000	7.842	2.925	6	6	7	7	9E9	54.060	9E9	18.860	42.875	2.014
6.900	6.448	0.154	0.651	2.814	7.100	18.873	3.100	3	3	4	7	9E9	26.794	9E9	18.860	42.875	2.014
7.000	7.293	0.108	0.660	2.388	7.200	28.853	3.300	5	5	4	7	9E9	25.793	9E9	18.860	42.875	2.014
7.100	15.690	0.365	0.669	1.425	7.300	20.790	3.300	5	5	4	7	9E9	29.171	9E9	18.860	42.875	2.014
7.200	15.690	0.365	0.669	1.425	7.400	20.790	3.300	5	5	4	7	9E9	29.171	9E9	18.860	42.875	2.014
7.300	22.905	0.208	0.678	2.300	7.500	10.720	3.300	6	6	8	10	9E9	62.722	9E9	18.860	42.875	2.014
7.400	22.905	0.214	0.687	0.940	7.600	6.753	3.375	6	6	8	10	9E9	63.489	9E9	18.860	42.875	2.014
7.500	11.995	0.201	0.697	0.936	7.700	7.240	3.400	6	6	9	11	9E9	87.811	9E9	18.860	42.875	2.014
7.600	7.071	0.178	0.716	1.676	7.800	6.307	3.400	5	5	6	8	9E9	91.620	9E9	18.860	42.875	2.014
7.700	44.781	0.294	0.725	2.521	7.900	6.307	3.425	5	5	6	8	9E9	47.978	9E9	18.860	42.875	2.014
7.800	200.519	1.552	0.734	0.656	8.000	10.417	3.500	7	7	15	16	9E9	48.265	4E9	18.860	42.875	2.014
7.900	338.890	2.249	0.744	0.774	8.100	11.180	4.400	9	9	15	16	47	1360.002	101	19.650	9E9	9E9
8.000			0.754	0.664	8.100	7.630	4.400	10	10	15	16	47	1832.295	121	20.440	9E9	9E9

Output file from CPTINT - Version 3.0ppd
 INPUT FILE: E:\GSC-94\GSC-9409.EDT
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 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GSC090 Date: 1-03-94 13:12
 Operator: RGC-DR On Site Location: 2275-216StESIDE
 Cone Type: UBC94JURRESI Comment: RCP10DM501POSTD

SUMMARY SHEET

RF for calculating Q: 0.000
 Value for Water Table (in m): 1.700
 Valid Zone Classification based on: RF
 Missing unit weight to start depth: 18.000
 Method for calculating Su: Nk
 Value of the constant Nk: 15.000
 alpha for modulus in clay: 5.000
 Method used to calculate OCR: Su/2
 (Su/2) for normal compression: 0.280
 Sand Compressibility Parameter: NO
 Method for Friction Angle: Moderate
 Initial guess of OCR for sand: Robertston & Campanella
 Method for Modulus in sand: Baldi Method

Soil Behavior Type Zone Numbers

For RF Zone & Bq Zone Classification
 Zone #7 = Silty sand
 Zone #8 = fine sand
 Zone #9 = sand
 Zone #10 = Gravely sand
 Zone #11 = Very stiff fine grained
 Zone #12 = Sand to clayey sand
 * Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.
 (Note: 9E9 means Out of Range)

Depth (meter)	QC (bars)	F (avg) (bars)	EOS (avg) (bars)	Rf (%)	Uo (meter)	U2 (meter)	U3 (meter)	US (meter)	nCl (degree)	R10 (Ohm-m)	R25 (Ohm-m)	R75 (Ohm-m)	Rf Zone #	Bq Zone #	SPT N (blow/ft)	SPT N1 (blow/ft)	Phi (degree)	M Modulus Dr (bars)	Gamma (kN/m ³)	SU (kPa)	OCR (ratio)
0.300	0.100	0.000	0.000	0.015	0.000	0.141	0.112	21.808	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.411	15.700	0.570	1.321
0.300	0.100	0.000	0.000	0.030	0.000	0.227	0.205	22.480	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.418	15.700	0.570	1.321
0.300	0.100	0.000	0.000	0.046	0.000	0.277	0.277	23.296	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.408	15.700	0.570	1.321
0.300	0.100	0.000	0.000	0.062	0.000	0.321	0.321	23.708	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.451	15.700	0.570	1.321
0.500	0.100	0.000	0.000	0.077	0.000	0.472	0.472	22.460	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.457	15.700	0.570	1.321
0.500	0.100	0.000	0.000	0.093	0.000	0.595	0.595	22.335	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.451	15.700	0.570	1.321
0.700	0.100	0.000	0.000	0.109	0.000	0.787	0.787	22.374	44.177	33.851	38.265	38.265	9E9	9E9	0	0	9E9	0.462	15.700	0.570	1.321
0.800	0.100	0.000	0.000	0.124	0.000	1.030	1.030	21.814	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.483	15.700	0.570	1.321
0.800	0.100	0.000	0.000	0.159	0.000	1.793	1.793	20.709	45.660	35.416	40.821	40.821	9E9	9E9	0	0	9E9	0.541	15.700	0.570	1.321
1.000	0.100	0.000	0.000	0.186	0.000	2.079	2.079	22.104	5.530	30.399	26.233	26.233	6	7	12	12	9E9	84.677	19.650	139.964	75.137
1.000	0.100	0.000	0.000	0.197	0.000	2.205	2.205	21.611	4.000	25.719	21.747	21.747	6	7	8	8	9E9	236.307	19.650	139.964	21.137
1.200	0.100	0.000	0.000	0.216	0.000	3.203	3.203	21.650	0.915	26.008	21.747	21.747	6	7	24	24	9E9	183.962	19.650	139.964	149.511
1.200	0.100	0.000	0.000	0.233	0.000	4.203	4.203	21.605	-0.325	23.465	19.009	19.009	5	8	35	35	9E9	162.836	19.650	139.964	139.360
1.400	0.100	0.000	0.000	0.256	0.000	5.774	5.774	21.559	1.637	25.624	17.705	17.705	5	8	46	46	9E9	166.287	19.650	269.240	102.710
1.600	0.100	0.000	0.000	0.276	0.000	8.292	8.292	21.306	2.775	26.077	20.963	20.963	5	7	21	21	9E9	174.789	19.650	274.076	95.046
1.800	0.100	0.000	0.000	0.295	0.000	11.811	11.811	21.143	-4.082	19.658	16.107	16.107	5	7	33	33	9E9	182.041	19.650	282.497	82.576
2.000	0.100	0.000	0.000	0.315	0.000	16.322	16.322	21.126	-2.008	22.775	17.490	17.490	5	6	22	22	9E9	193.435	19.650	292.316	82.720
2.000	0.100	0.000	0.000	0.329	0.000	21.841	21.841	21.145	-3.065	22.108	18.519	18.519	5	6	25	25	9E9	187.145	19.650	315.402	97.428
2.000	0.100	0.000	0.000	0.345	0.000	27.091	27.091	21.145	-5.938	18.754	16.096	16.096	5	6	38	38	9E9	181.788	19.650	299.921	67.223
2.200	0.100	0.000	0.000	0.354	0.000	33.580	33.580	21.335	-5.310	18.662	17.314	17.314	5	6	35	35	9E9	193.435	19.650	277.043	52.401
2.200	0.100	0.000	0.000	0.364	0.000	40.111	40.111	21.445	-1.220	20.746	19.850	19.850	5	4	42	42	9E9	170.418	19.650	319.380	74.077
2.400	0.100	0.000	0.000	0.384	0.000	53.003	53.003	21.427	-1.990	22.812	17.314	17.314	5	6	41	41	9E9	183.492	19.650	272.766	58.825
2.600	0.100	0.000	0.000	0.404	0.000	68.972	68.972	21.445	-1.620	20.865	17.543	17.543	5	6	36	36	9E9	184.420	19.650	307.421	64.071
2.600	0.100	0.000	0.000	0.424	0.000	86.972	86.972	21.472	1.025	23.746	17.543	17.543	5	6	24	24	9E9	193.435	19.650	292.173	58.297
2.800	0.100	0.000	0.000	0.443	0.000	110.972	110.972	21.472	1.225	24.859	19.895	19.895	5	6	36	36	9E9	199.351	19.650	316.926	62.620
2.800	0.100	0.000	0.000	0.463	0.000	140.972	140.972	21.559	2.395	26.074	20.963	20.963	5	6	36	36	9E9	191.850	19.650	304.294	57.792
3.000	0.100	0.000	0.000	0.483	0.000	180.972	180.972	21.559	1.918	18.901	18.901	18.901	5	6	25	25	9E9	191.850	19.650	271.396	48.793
3.000	0.100	0.000	0.000	0.503	0.000	230.972	230.972	21.559	-2.273	22.056	18.226	18.226	5	6	36	36	9E9	191.850	19.650	271.396	48.793
3.000	0.100	0.000	0.000	0.523	0.000	290.972	290.972	21.553	-2.555	21.988	17.968	17.968	5	5	21	21	9E9	168.042	19.650	287.583	41.049
3.000	0.100	0.000	0.000	0.543	0.000	360.972	360.972	21.553	-2.555	21.988	17.968	17.968	5	5	39	39	9E9	191.850	19.650	227.287	35.909
3.200	0.100	0.000	0.000	0.563	0.000	450.972	450.972	21.656	-2.743	21.962	17.469	17.469	5	5	26	26	9E9	191.850	19.650	204.089	32.506
3.400	0.100	0.000	0.000	0.583	0.000	570.972	570.972	21.948	-3.467	21.208	16.998	16.998	5	5	18	18	9E9	191.850	19.650	216.358	32.050
3.600	0.100	0.000	0.000	0.603	0.000	730.972	730.972	21.909	-2.210	21.543	17.728	17.728	5	5	17	17	9E9	191.850	19.650	223.277	32.050
3.800	0.100	0.000	0.000	0.623	0.000	930.972	930.972	21.909	1.435	24.952	19.847	19.847	5	5	36	36	9E9	191.850	19.650	220.263	31.177
4.000	0.100	0.000	0.000	0.643	0.000	1170.972	1170.972	21.700	0.838	23.852	19.453	19.453	5	5	27	27	9E9	191.850	19.650	209.668	27.938
4.000	0.100	0.000	0.000	0.663	0.000	1530.972	1530.972	21.681	1.825	22.003	17.365	17.365	5	5	26	26	9E9	191.850	19.650	217.949	30.031
4.200	0.100	0.000	0.000	0.683	0.000	1930.972	1930.972	21.681	-1.372	21.113	17.291	17.291	5	5	17	17	9E9	191.850	19.650	220.263	30.031
4.400	0.100	0.000	0.000	0.703	0.000	2430.972	2430.972	21.681	-1.305	22.558	18.245	18.245	5	5	18	18	9E9	191.850	19.650	223.277	30.031
4.600	0.100	0.000	0.000	0.723	0.000	3030.972	3030.972	21.706	-3.262	22.646	17.646	17.646	5	5	26	26	9E9	191.850	19.650	217.949	27.938
4.800	0.100	0.000	0.000	0.743	0.000	3730.972	3730.972	21.731	-2.260	22.404	20.091	20.091	5	5	22	22	9E9	191.850	19.650	220.263	30.031
5.000	0.100	0.000	0.000	0.763	0.000	4530.972	4530.972	21.681	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
5.200	0.100	0.000	0.000	0.783	0.000	5530.972	5530.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
5.400	0.100	0.000	0.000	0.803	0.000	6730.972	6730.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
5.600	0.100	0.000	0.000	0.823	0.000	8130.972	8130.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
5.800	0.100	0.000	0.000	0.843	0.000	9730.972	9730.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
6.000	0.100	0.000	0.000	0.863	0.000	11530.972	11530.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
6.200	0.100	0.000	0.000	0.883	0.000	13530.972	13530.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
6.400	0.100	0.000	0.000	0.903	0.000	15730.972	15730.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
6.600	0.100	0.000	0.000	0.923	0.000	18130.972	18130.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
6.800	0.100	0.000	0.000	0.943	0.000	20730.972	20730.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	24.360
7.000	0.100	0.000	0.000	0.963	0.000	23530.972	23530.972	21.584	-0.925	22.898	20.858	20.858	6	6	26	26	9E9	191.850	19.650	198.573	

14.700	9.280	1.504	2.065	13.000	76.287	47.285	21.799	-5.165	18.825	15.111	5	5	9E9	9E9	43.107	18.860	43.338	1.037
14.800	9.700	1.512	2.070	13.100	77.962	48.285	21.803	-4.298	19.815	17.265	5	5	9E9	9E9	45.275	18.860	46.346	1.119
14.900	9.102	1.522	2.075	13.200	79.637	49.285	21.807	-3.431	20.810	18.360	5	5	9E9	9E9	47.363	18.860	47.354	1.201
15.000	9.503	1.532	2.080	13.300	81.312	50.285	21.811	-2.564	21.805	19.405	5	5	9E9	9E9	49.451	18.860	48.362	1.283
15.100	9.904	1.542	2.085	13.400	82.987	51.285	21.815	-1.697	22.800	20.450	5	5	9E9	9E9	51.539	18.860	49.370	1.365
15.200	9.305	1.552	2.090	13.500	84.662	52.285	21.819	-0.830	23.795	21.495	5	5	9E9	9E9	53.627	18.860	50.378	1.447
15.300	9.706	1.562	2.095	13.600	86.337	53.285	21.823	0.037	24.790	22.540	5	5	9E9	9E9	55.715	18.860	51.386	1.529
15.400	9.107	1.572	2.100	13.700	88.012	54.285	21.827	0.904	25.785	23.585	5	5	9E9	9E9	57.803	18.860	52.394	1.611
15.500	9.508	1.582	2.105	13.800	89.687	55.285	21.831	1.771	26.780	24.630	5	5	9E9	9E9	59.891	18.860	53.402	1.693
15.600	9.909	1.592	2.110	13.900	91.362	56.285	21.835	2.638	27.775	25.675	5	5	9E9	9E9	61.979	18.860	54.410	1.775
15.700	9.310	1.602	2.115	14.000	93.037	57.285	21.839	3.505	28.770	26.720	5	5	9E9	9E9	64.067	18.860	55.418	1.857
15.800	9.711	1.612	2.120	14.100	94.712	58.285	21.843	4.372	29.765	27.765	5	5	9E9	9E9	66.155	18.860	56.426	1.939
15.900	9.112	1.622	2.125	14.200	96.387	59.285	21.847	5.239	30.760	28.810	5	5	9E9	9E9	68.243	18.860	57.434	2.021
16.000	9.513	1.632	2.130	14.300	98.062	60.285	21.851	6.106	31.755	29.855	5	5	9E9	9E9	70.331	18.860	58.442	2.103
16.100	9.914	1.642	2.135	14.400	99.737	61.285	21.855	6.973	32.750	30.900	5	5	9E9	9E9	72.419	18.860	59.450	2.185
16.200	9.315	1.652	2.140	14.500	101.412	62.285	21.859	7.840	33.745	31.945	5	5	9E9	9E9	74.507	18.860	60.458	2.267
16.300	9.716	1.662	2.145	14.600	103.087	63.285	21.863	8.707	34.740	32.990	5	5	9E9	9E9	76.595	18.860	61.466	2.349
16.400	9.117	1.672	2.150	14.700	104.762	64.285	21.867	9.574	35.735	34.035	5	5	9E9	9E9	78.683	18.860	62.474	2.431
16.500	9.518	1.682	2.155	14.800	106.437	65.285	21.871	10.441	36.730	35.080	5	5	9E9	9E9	80.771	18.860	63.482	2.513
16.600	9.919	1.692	2.160	14.900	108.112	66.285	21.875	11.308	37.725	36.125	5	5	9E9	9E9	82.859	18.860	64.490	2.595
16.700	9.320	1.702	2.165	15.000	109.787	67.285	21.879	12.175	38.720	37.170	5	5	9E9	9E9	84.947	18.860	65.498	2.677
16.800	9.721	1.712	2.170	15.100	111.462	68.285	21.883	13.042	39.715	38.215	5	5	9E9	9E9	87.035	18.860	66.506	2.759
16.900	9.122	1.722	2.175	15.200	113.137	69.285	21.887	13.909	40.710	39.260	5	5	9E9	9E9	89.123	18.860	67.514	2.841
17.000	9.523	1.732	2.180	15.300	114.812	70.285	21.891	14.776	41.705	40.305	5	5	9E9	9E9	91.211	18.860	68.522	2.923
17.100	9.924	1.742	2.185	15.400	116.487	71.285	21.895	15.643	42.700	41.350	5	5	9E9	9E9	93.299	18.860	69.530	3.005
17.200	9.325	1.752	2.190	15.500	118.162	72.285	21.899	16.510	43.695	42.395	5	5	9E9	9E9	95.387	18.860	70.538	3.087
17.300	9.726	1.762	2.195	15.600	119.837	73.285	21.903	17.377	44.690	43.440	5	5	9E9	9E9	97.475	18.860	71.546	3.169
17.400	9.127	1.772	2.200	15.700	121.512	74.285	21.907	18.244	45.685	44.485	5	5	9E9	9E9	99.563	18.860	72.554	3.251
17.500	9.528	1.782	2.205	15.800	123.187	75.285	21.911	19.111	46.680	45.530	5	5	9E9	9E9	101.651	18.860	73.562	3.333
17.600	9.929	1.792	2.210	15.900	124.862	76.285	21.915	19.978	47.675	46.575	5	5	9E9	9E9	103.739	18.860	74.570	3.415
17.700	9.330	1.802	2.215	16.000	126.537	77.285	21.919	20.845	48.670	47.620	5	5	9E9	9E9	105.827	18.860	75.578	3.497
17.800	9.731	1.812	2.220	16.100	128.212	78.285	21.923	21.712	49.665	48.665	5	5	9E9	9E9	107.915	18.860	76.586	3.579
17.900	9.132	1.822	2.225	16.200	129.887	79.285	21.927	22.579	50.660	49.710	5	5	9E9	9E9	110.003	18.860	77.594	3.661
18.000	9.533	1.832	2.230	16.300	131.562	80.285	21.931	23.446	51.655	50.755	5	5	9E9	9E9	112.091	18.860	78.602	3.743
18.100	9.934	1.842	2.235	16.400	133.237	81.285	21.935	24.313	52.650	51.800	5	5	9E9	9E9	114.179	18.860	79.610	3.825
18.200	9.335	1.852	2.240	16.500	134.912	82.285	21.939	25.180	53.645	52.845	5	5	9E9	9E9	116.267	18.860	80.618	3.907
18.300	9.736	1.862	2.245	16.600	136.587	83.285	21.943	26.047	54.640	53.890	5	5	9E9	9E9	118.355	18.860	81.626	3.989
18.400	9.137	1.872	2.250	16.700	138.262	84.285	21.947	26.914	55.635	54.935	5	5	9E9	9E9	120.443	18.860	82.634	4.071
18.500	9.538	1.882	2.255	16.800	139.937	85.285	21.951	27.781	56.630	55.980	5	5	9E9	9E9	122.531	18.860	83.642	4.153
18.600	9.939	1.892	2.260	16.900	141.612	86.285	21.955	28.648	57.625	57.025	5	5	9E9	9E9	124.619	18.860	84.650	4.235
18.700	9.340	1.902	2.265	17.000	143.287	87.285	21.959	29.515	58.620	58.070	5	5	9E9	9E9	126.707	18.860	85.658	4.317
18.800	9.741	1.912	2.270	17.100	144.962	88.285	21.963	30.382	59.615	59.115	5	5	9E9	9E9	128.795	18.860	86.666	4.399
18.900	9.142	1.922	2.275	17.200	146.637	89.285	21.967	31.249	60.610	60.160	5	5	9E9	9E9	130.883	18.860	87.674	4.481
19.000	9.543	1.932	2.280	17.300	148.312	90.285	21.971	32.116	61.605	61.205	5	5	9E9	9E9	132.971	18.860	88.682	4.563
19.100	9.944	1.942	2.285	17.400	150.987	91.285	21.975	32.983	62.600	62.250	5	5	9E9	9E9	135.059	18.860	89.690	4.645
19.200	9.345	1.952	2.290	17.500	152.662	92.285	21.979	33.850	63.595	63.295	5	5	9E9	9E9	137.147	18.860	90.698	4.727
19.300	9.746	1.962	2.295	17.600	154.337	93.285	21.983	34.717	64.590	64.340	5	5	9E9	9E9	139.235	18.860	91.706	4.809
19.400	9.147	1.972	2.300	17.700	156.012	94.285	21.987	35.584	65.585	65.385	5	5	9E9	9E9	141.323	18.860	92.714	4.891
19.500	9.548	1.982	2.305	17.800	157.687	95.285	21.991	36.451	66.580	66.430	5	5	9E9	9E9	143.411	18.860	93.722	4.973
19.600	9.949	1.992	2.310	17.900	159.362	96.285	21.995	37.318	67.575	67.475	5	5	9E9	9E9	145.499	18.860	94.730	5.055
19.700	9.350	2.002	2.315	18.000	161.037	97.285	21.999	38.185	68.570	68.520	5	5	9E9	9E9	147.587	18.860	95.738	5.137
19.800	9.751	2.012	2.320	18.100	162.712	98.285	22.003	39.052	69.565	69.565	5	5	9E9	9E9	149.675	18.860	96.746	5.219
19.900	9.152	2.022	2.325	18.200	164.387	99.285	22.007	39.919	70.560	70.610	5	5	9E9	9E9	151.763	18.860	97.754	5.301
20.000	9.553	2.032	2.330	18.300	166.062	100.285	22.011	40.786	71.555	71.655	5	5	9E9	9E9	153.851	18.860	98.762	5.383
20.100	9.954	2.042	2.335	18.400	167.737	101.285	22.015	41.653	72.550	72.700	5	5	9E9	9E9	155.939	18.860	99.770	5.465
20.200	9.355	2.052	2.340	18.500	169.412	102.285	22.019	42.520	73.545	73.745	5	5	9E9	9E9	158.027	18.860	100.778	5.547
20.300	9.756	2.062	2.345	18.600	171.087	103.285	22.023	43.387	74.540	74.790	5	5	9E9	9E9	160.115	18.860	101.786	5.629
20.400	9.157	2.072	2.350	18.700	172.762	104.285	22.027	44.254	75.535	75.935	5	5	9E9	9E9	162.203	18.860	102.794	5.711
20.500	9.558	2.082	2.355	18.800	174.437	105.285	22.031	45.121	76.530	77.030	5	5	9E9	9E9	164.291	18.860	103.802	5.793
20.600	9.959	2.092	2.360	18.900	176.112	106.285	22.035	45.988	77.525	78.125	5	5	9E9	9E9	166.379	18.860	104.810	5.875
20.700	9.360	2.102	2.365	19.000	177.787	107.285	22.039	46.855	78.520	79.220	5	5	9E9	9E9	168.467	18.860	105.818	5.957
20.800	9.761	2.112	2.370	19.100	179.462	108.285	22.043	47.722	79.515	80.315	5	5	9E9	9E9	170.555	18.860	106.826	6.039
20.900	9.162	2.122	2.375	19.200	181.137	109.285	22.047	48.589	80.510	81.410	5	5	9E9	9E9	172.643	18.860	107.834	6.121
21.000	9.563	2.132	2.380	19.300	182.812	110.285	22.051	49.456	81.505</									

24.700	13.700	0.297	2.373	1.920	23.000	90.130	75.143	19.994	-7.507	17.655	14.266	5	3	8	4	9	61.873	18.860	60.473	0.889
24.900	13.657	0.303	2.382	1.924	23.000	90.128	76.710	20.002	-7.755	17.466	14.747	5	3	8	4	9	62.033	18.860	60.614	0.887
25.000	14.528	0.344	2.391	1.924	23.200	90.129	76.792	20.070	-8.842	16.414	13.695	5	3	8	4	9	61.703	18.860	60.572	0.871
25.100	14.948	0.315	2.400	1.933	23.400	90.128	83.605	20.143	-10.382	14.602	12.257	5	3	8	4	9	66.853	18.860	68.270	1.015
25.200	15.082	0.341	2.409	1.957	23.400	90.130	79.120	20.147	-9.622	15.297	14.009	5	3	8	4	9	66.403	18.860	68.061	1.025
25.300	15.057	0.348	2.418	1.968	23.400	90.129	80.888	20.145	-7.782	17.506	14.584	5	3	8	4	9	68.112	18.860	70.118	1.040
25.400	15.087	0.368	2.436	1.987	23.700	90.122	81.175	20.141	-7.995	17.066	14.722	5	3	8	4	9	69.303	18.860	70.642	1.008
25.500	15.983	0.379	2.445	2.184	23.900	90.133	82.620	20.143	-7.337	17.376	14.702	5	3	8	4	9	69.403	18.860	72.017	0.995
25.600	16.533	0.415	2.463	2.269	24.000	90.128	83.257	20.133	-6.685	18.262	15.002	5	3	8	4	9	70.703	18.860	72.058	1.068
25.700	16.575	0.436	2.472	2.376	24.100	90.121	84.012	20.116	-7.552	17.146	14.427	5	3	8	4	9	73.203	18.860	78.099	1.168
25.800	16.300	0.454	2.481	2.414	24.200	90.133	79.977	20.108	-7.952	17.032	14.340	5	3	8	4	9	73.372	18.860	78.099	1.166
26.000	16.345	0.421	2.499	2.326	24.400	90.128	84.010	20.077	-8.940	16.893	13.795	5	3	8	4	9	75.273	18.860	78.256	1.207
26.100	16.220	0.431	2.499	2.398	24.500	90.125	82.683	20.075	-8.335	16.774	13.795	5	3	8	4	9	75.273	18.860	78.256	1.207
26.200	16.507	0.457	2.500	2.437	24.600	90.135	82.683	20.075	-7.855	17.150	14.404	5	3	8	4	9	76.346	18.860	78.256	1.207
26.300	16.567	0.437	2.523	2.391	24.700	90.134	83.932	20.046	-7.855	17.150	14.404	5	3	8	4	9	76.346	18.860	78.256	1.207
26.400	16.500	0.448	2.536	2.431	24.800	90.134	83.932	20.046	-8.493	16.594	14.100	5	3	8	4	9	72.123	18.860	75.387	1.092
26.500	16.475	0.448	2.545	2.418	24.900	90.132	79.478	20.045	-8.295	16.906	14.100	5	3	8	4	9	73.103	18.860	75.544	1.113
26.600	16.450	0.448	2.554	2.461	25.000	90.124	84.245	20.077	-7.343	16.671	13.975	5	3	8	4	9	73.753	18.860	78.009	1.125
26.700	16.627	0.452	2.562	2.488	25.100	90.135	81.912	20.066	-8.443	16.374	14.448	5	3	8	4	9	73.153	18.860	76.884	1.100
26.800	16.600	0.444	2.572	2.436	25.200	90.130	85.048	20.040	-8.555	16.577	14.056	5	3	8	4	9	72.893	18.860	76.325	1.085
26.900	16.755	0.451	2.581	2.198	25.300	90.132	86.075	20.040	-8.885	16.100	13.856	5	3	8	4	9	72.993	18.860	77.349	1.098
27.000	16.995	0.447	2.591	2.385	25.400	90.128	86.458	20.019	-8.795	16.500	13.532	5	3	8	4	9	72.993	18.860	76.240	1.074
27.100	17.795	0.457	2.600	2.483	25.500	90.125	81.048	20.008	-8.795	16.493	13.760	5	3	8	4	9	71.115	18.860	76.987	1.115
27.200	17.142	0.476	2.619	2.489	25.600	90.112	86.705	20.008	-8.618	16.500	13.761	5	3	8	4	9	78.093	18.860	84.357	1.202
27.300	17.123	0.476	2.619	2.489	25.700	90.112	86.705	20.008	-8.190	16.734	13.755	5	3	8	4	9	75.642	18.860	81.698	1.150
27.400	17.215	0.438	2.627	2.331	25.800	90.123	86.747	19.990	-8.020	17.133	14.412	5	3	8	4	9	75.642	18.860	81.698	1.150
27.500	17.023	0.438	2.636	2.486	25.900	90.120	80.598	20.010	-7.692	17.285	14.387	5	3	8	4	9	75.123	18.860	79.030	1.094
27.600	18.760	0.513	2.645	2.500	26.000	90.124	89.088	20.010	-8.395	16.455	13.973	5	3	8	4	9	75.972	18.860	80.321	1.111
27.700	17.943	0.532	2.655	2.650	26.100	90.131	83.702	19.986	-8.870	16.396	13.619	5	3	8	4	9	81.113	18.860	90.426	1.283
27.800	16.900	0.472	2.664	2.528	26.200	90.129	83.038	19.977	-8.802	16.592	13.763	5	3	8	4	9	74.673	18.860	84.848	1.180
27.900	16.900	0.428	2.673	2.314	26.300	90.132	81.480	19.965	-8.840	16.392	14.113	5	3	8	4	9	77.772	18.860	90.426	1.283
28.000	16.710	0.422	2.682	2.290	26.400	90.132	81.480	19.965	-9.065	16.079	13.394	5	3	8	4	9	73.713	18.860	86.987	1.019
28.100	16.670	0.452	2.691	2.360	26.500	90.134	89.633	19.932	-8.200	15.856	13.227	5	3	8	4	9	75.053	18.860	86.298	1.045
28.200	16.995	0.454	2.700	2.568	26.600	90.136	85.553	19.936	-7.775	16.824	13.678	5	3	8	4	9	79.024	18.860	91.786	1.103
28.300	17.907	0.507	2.709	2.709	26.700	90.133	85.553	19.936	-7.047	18.290	13.678	5	3	8	4	9	79.024	18.860	91.786	1.103
28.400	18.243	0.556	2.719	2.786	26.800	90.133	85.553	19.936	-7.775	16.824	13.678	5	3	8	4	9	84.393	18.860	84.393	1.143
28.500	18.243	0.556	2.719	2.786	26.900	90.133	85.553	19.936	-7.047	18.290	13.678	5	3	8	4	9	84.393	18.860	84.393	1.143
28.600	63.917	1.034	2.729	2.473	26.900	78.043	64.570	19.873	-6.680	18.825	15.044	6	3	26	13	9	258.639	19.650	390.306	7.681
28.700	23.097	1.359	2.738	2.473	27.000	73.410	77.685	19.607	-9.205	16.343	13.487	6	3	8	4	9	85.151	19.650	88.974	1.123
28.800	19.493	0.560	2.748	2.634	27.100	90.127	82.005	19.480	-8.790	15.901	13.384	6	3	8	4	9	85.043	19.650	86.555	1.148
28.900	19.612	0.540	2.758	2.524	27.200	90.132	82.005	19.480	-8.790	15.901	13.384	6	3	8	4	9	85.043	19.650	86.555	1.148
29.000	19.720	0.477	2.768	2.219	27.300	90.133	84.123	19.292	-7.785	18.833	13.218	6	3	8	4	9	82.644	19.650	88.726	1.148
29.100	19.355	0.427	2.778	2.020	27.400	90.127	81.985	19.277	-8.705	16.766	14.200	6	3	8	4	9	81.354	19.650	89.717	1.099
29.200	18.940	0.452	2.788	2.020	27.500	90.127	81.985	19.277	-9.670	16.077	13.115	6	3	8	4	9	82.493	19.650	92.596	1.244
29.300	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
29.400	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
29.500	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
29.600	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
29.700	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
29.800	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
29.900	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.000	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.100	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.200	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.300	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.400	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.500	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.600	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.700	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.800	18.975	0.452	2.799	2.183	27.600	90.116	88.135	19.464	-7.000	18.353	14.559	6	3	8	4	9	81.343	19.650	86.167	1.093
30.900	18.975	0.452	2.799																	

Output file from OPTINT - Version 5.0ppd
 INPUT FILE: E:\GSC-94\GSC-9410.EDT

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 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GSC100 Date: 3-03-94 09:29
 Operator: JLE-RS-SST On Site Location: 2785-216StEside
 Cone Type: UBC90ZJRES Comment: RCPUI\msc\POSTB

SUMMARY SHEET

a. for calculating qt: 0.800
 Value for Water Table (in m): 1.200
 Valid Zone Classification based on: Rf
 Missing unit weight to start depth: 18.000
 Method for calculating Su: NK
 Value of the constant NK: 15.000
 Su/EOS: SW/EOS
 Method used to calculate C_u: NO
 Overconsolidation parameters?
 Sand Compressibility for calc D_r:
 Method for Friction Angle:
 Initial guess of OCR for sand:
 Method for Modulus in sand:

Soil Behavior Type Zone Numbers
 For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained
 Zone #2=Non sensitive fine grained
 Zone #3=Clay
 Zone #4=Silty clay
 Zone #5=Clayey silt
 Zone #6=Sandy silt
 Zone #7=Very stiff fine grained
 Zone #8=Stiff fine grained
 Zone #9=Stiff clayey sand
 Zone #10=Gravelly sand
 Zone #11=Very stiff fine grained
 Zone #12=Sand to clayey sand
 Zone #13=Sand to gravelly sand
 Zone #14=Gravelly sand
 Zone #15=Very stiff fine grained
 Zone #16=Stiff fine grained
 Zone #17=Stiff clayey sand
 Zone #18=Gravelly sand
 Zone #19=Very stiff fine grained
 Zone #20=Stiff fine grained
 Zone #21=Stiff clayey sand
 Zone #22=Gravelly sand
 Zone #23=Very stiff fine grained
 Zone #24=Stiff fine grained
 Zone #25=Stiff clayey sand
 Zone #26=Gravelly sand
 Zone #27=Very stiff fine grained
 Zone #28=Stiff fine grained
 Zone #29=Stiff clayey sand
 Zone #30=Gravelly sand

NOTE:
 For soil classification, Rf values > 8 are assumed to be 8.
 (Note: 9E9 means Out of Range)

Depth (meter)	qc (bars)	fs (bars)	EO (avg) (bars)	U0 (meter)	U2 (meter)	U3 (meter)	Incl (degree)	R10 (OH-m)	R25 (OH-m)	R75 (OH-m)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt Nf (blow/ft)	Phi (degree)	M Modulus Dr (bars)	Gamma (KN/m ³)	Su (kPa)	OCR (ratio)
1.000	0.563	0.002	0.015	-0.003	0.474	587.781	352.480	419.085	419.085	0	9E9	9E9	0	0	9E9	2.252	18.700	2.689	15.846
2.000	0.730	0.010	0.030	-0.025	0.046	587.781	352.480	419.085	419.085	0	9E9	9E9	0	0	9E9	2.669	18.700	4.437	12.437
3.000	0.668	0.022	0.045	0.010	0.678	587.781	352.480	419.085	419.085	2	9E9	9E9	0	2	9E9	5.465	18.860	4.151	7.466
4.000	1.367	0.041	0.061	0.000	0.518	569.442	352.480	419.085	419.085	2	9E9	9E9	0	2	9E9	5.465	18.860	8.711	7.466
5.000	0.850	0.026	0.077	0.000	2.324	581.039	352.480	419.085	419.085	4	9E9	9E9	0	4	9E9	3.398	18.860	5.153	2.972
6.000	0.600	0.183	0.093	-0.005	0.536	581.039	352.480	419.085	419.085	4	9E9	9E9	0	4	9E9	26.368	18.860	43.313	33.541
7.000	10.810	0.422	0.112	0.008	0.536	581.039	352.480	419.085	419.085	5	9E9	9E9	0	5	9E9	43.241	18.860	71.318	49.461
8.000	19.830	0.295	0.132	-0.002	1.563	587.781	352.480	419.085	419.085	6	9E9	9E9	0	6	9E9	79.313	18.860	131.323	87.061
9.000	43.172	0.876	0.170	-0.005	2.010	587.781	352.480	419.085	419.085	6	9E9	9E9	0	6	9E9	174.920	18.860	290.511	198.034
1.000	53.967	0.488	0.189	-0.045	2.430	587.781	352.480	419.085	419.085	7	9E9	9E9	0	7	9E9	423.906	18.860	909.569	909.569
2.000	36.550	0.050	0.209	-0.002	1.576	534.943	352.480	419.085	419.085	8	9E9	9E9	0	8	9E9	306.288	18.860	909.569	909.569
3.000	32.173	0.133	0.218	-0.013	1.130	587.781	352.480	419.085	419.085	8	9E9	9E9	0	8	9E9	233.700	18.860	909.569	909.569
4.000	28.075	0.698	0.228	0.115	0.783	25.432	22.268	17.883	325.781	11	9E9	9E9	0	11	9E9	17.330	18.860	185.516	67.498
5.000	40.840	1.754	0.238	-0.235	1.553	51.247	35.430	37.164	325.781	11	9E9	9E9	0	11	9E9	163.559	19.850	270.485	102.576
6.000	40.717	2.041	0.248	0.345	1.390	37.709	84.094	81.810	325.781	11	9E9	9E9	0	11	9E9	163.559	19.850	269.536	97.079
7.000	40.040	1.944	0.257	-1.408	1.410	56.014	37.931	35.936	325.781	11	9E9	9E9	0	11	9E9	160.654	19.850	264.890	90.475
8.000	41.898	1.836	0.267	-1.455	1.410	56.014	37.931	35.936	325.781	11	9E9	9E9	0	11	9E9	172.187	19.850	283.742	94.078
9.000	42.887	1.836	0.267	-1.455	1.410	56.014	37.931	35.936	325.781	11	9E9	9E9	0	11	9E9	172.187	19.850	283.742	94.078
1.000	41.898	1.836	0.267	-1.455	1.410	56.014	37.931	35.936	325.781	11	9E9	9E9	0	11	9E9	162.687	19.850	276.745	97.159
2.000	56.215	1.895	0.287	-0.970	1.315	169.811	103.078	107.468	107.468	28	9E9	9E9	0	28	9E9	225.949	19.850	371.534	181.814
3.000	58.215	2.193	0.297	-0.485	1.043	24.216	22.493	18.355	107.468	28	9E9	9E9	0	28	9E9	168.515	19.850	476.902	155.912
4.000	71.940	2.463	0.307	-0.207	1.195	169.811	103.078	107.468	107.468	28	9E9	9E9	0	28	9E9	168.515	19.850	476.902	155.912
5.000	42.235	1.892	0.316	-0.450	1.067	21.434	19.084	15.045	107.468	28	9E9	9E9	0	28	9E9	158.504	19.850	278.737	74.491
6.000	40.003	1.769	0.326	-0.293	1.005	19.746	18.666	14.621	107.468	28	9E9	9E9	0	28	9E9	158.504	19.850	278.737	74.491
7.000	39.780	1.784	0.336	-0.217	1.223	21.991	19.213	16.303	107.468	28	9E9	9E9	0	28	9E9	151.917	19.850	262.109	63.968
8.000	38.098	1.729	0.356	-0.346	1.005	18.978	44.945	97.968	107.468	28	9E9	9E9	0	28	9E9	151.917	19.850	262.109	63.968
9.000	37.365	1.616	0.356	-0.233	0.835	15.704	76.316	73.664	107.468	28	9E9	9E9	0	28	9E9	149.190	19.850	245.747	58.304
1.000	43.770	1.671	0.366	-0.440	0.810	40.117	52.855	52.855	107.468	28	9E9	9E9	0	28	9E9	174.908	19.850	288.316	64.864
2.000	42.763	1.859	0.368	-0.138	0.777	147.822	96.014	98.111	107.468	28	9E9	9E9	0	28	9E9	171.735	19.850	282.068	61.214
3.000	29.908	0.859	0.385	-0.110	0.777	154.103	96.014	98.111	107.468	28	9E9	9E9	0	28	9E9	104.361	19.850	170.549	29.613
4.000	26.183	0.775	0.395	0.068	0.537	23.066	20.622	16.052	107.468	28	9E9	9E9	0	28	9E9	104.361	19.850	170.549	29.613
5.000	25.300	0.789	0.405	0.537	0.647	20.859	19.239	16.052	107.468	28	9E9	9E9	0	28	9E9	98.391	19.850	157.682	25.654
6.000	24.035	0.823	0.415	0.680	0.805	20.225	19.249	15.847	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
7.000	22.813	0.663	0.435	0.855	0.805	36.784	28.080	25.799	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
8.000	20.602	0.622	0.444	1.015	0.793	25.645	21.431	19.050	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
9.000	19.653	0.652	0.454	1.220	0.767	20.914	18.123	15.395	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
1.000	19.055	0.620	0.464	1.443	0.767	20.914	18.123	15.395	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
2.000	17.532	0.583	0.484	1.803	0.767	20.914	18.123	15.395	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
3.000	18.647	0.573	0.492	2.005	0.803	23.127	20.151	17.412	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
4.000	18.480	0.566	0.502	3.082	0.777	28.990	26.886	21.712	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
5.000	16.847	0.566	0.512	3.467	0.747	30.591	27.610	23.034	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
6.000	17.743	0.562	0.521	3.690	0.760	30.798	28.942	24.303	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
7.000	16.943	0.530	0.530	3.993	0.658	35.143	30.011	26.076	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654
8.000	16.818	0.514	0.539	4.335	0.618	29.853	26.092	22.742	107.468	28	9E9	9E9	0	28	9E9	85.325	19.850	147.682	22.654

4.700	15.760	0.495	0.548	3.500	84.678	4.900	0.618	31.055	26.130	23.780	4	5	3	9	14	959	69.685	18.860	99.122
4.800	16.175	0.526	0.569	3.600	46.546	4.900	0.582	32.837	29.309	27.085	6	6	3	11	17	959	107.882	18.860	99.122
4.900	16.600	0.556	0.599	3.700	48.180	5.212	0.545	31.572	28.204	24.269	4	5	3	9	14	959	86.921	18.860	97.776
5.000	17.025	0.584	0.628	3.800	72.423	5.595	0.483	31.819	23.340	23.935	4	4	3	9	13	959	97.744	18.860	103.566
5.100	17.450	0.585	0.629	3.900	70.800	6.477	0.463	33.654	28.760	25.419	5	4	4	10	14	959	58.286	18.860	83.097
5.200	17.875	0.496	0.594	4.000	71.995	7.392	0.433	33.361	26.030	25.176	4	4	4	10	14	959	59.255	18.860	82.755
5.300	18.300	0.603	0.641	4.100	75.220	7.770	0.443	34.184	28.030	26.030	4	4	4	10	14	959	61.730	18.860	84.674
5.400	18.725	0.612	0.650	4.200	69.060	8.155	0.468	35.024	30.195	27.376	5	4	4	10	14	959	60.800	18.860	85.937
5.500	19.150	0.621	0.659	4.300	72.820	8.008	0.435	37.811	29.499	26.957	4	4	4	10	14	959	56.555	18.860	77.778
5.600	19.575	0.631	0.668	4.400	69.420	9.535	0.425	38.199	32.187	28.844	3	3	3	9	13	959	53.573	18.860	74.669
5.700	20.000	0.640	0.677	4.500	70.015	9.400	0.425	38.460	32.268	28.914	4	3	3	9	12	959	52.192	18.860	72.669
5.800	20.425	0.649	0.686	4.600	69.035	10.505	0.375	39.139	32.843	29.909	4	3	3	9	12	959	50.611	18.860	68.923
5.900	20.850	0.658	0.695	4.700	65.420	10.825	0.375	40.434	33.324	30.295	4	3	3	9	12	959	48.723	18.860	64.974
6.000	21.275	0.667	0.704	4.800	66.305	12.815	0.363	40.766	33.824	30.717	4	3	3	9	12	959	49.517	18.860	66.031
6.100	21.700	0.676	0.713	4.900	66.222	14.667	0.345	40.511	33.474	31.034	4	3	3	9	12	959	48.161	18.860	64.373
6.200	22.125	0.685	0.722	5.000	58.700	15.193	0.383	41.426	33.850	31.404	4	3	3	9	12	959	47.209	18.860	62.230
6.300	22.550	0.694	0.731	5.100	61.938	15.855	0.377	44.869	36.046	31.842	4	3	3	9	12	959	46.504	18.860	60.828
6.400	22.975	0.703	0.740	5.200	62.932	16.540	0.352	44.375	32.490	29.489	4	3	3	9	12	959	45.264	18.860	59.227
6.500	23.400	0.712	0.749	5.300	63.768	17.315	0.340	40.221	32.087	28.587	4	3	3	9	12	959	44.595	18.860	59.086
6.600	23.825	0.721	0.758	5.400	60.720	18.686	0.328	41.204	32.908	28.828	4	3	3	9	12	959	43.363	18.860	57.227
6.700	24.250	0.730	0.767	5.500	60.720	18.686	0.313	42.548	34.186	30.871	4	3	3	9	12	959	42.209	18.860	53.349
6.800	24.675	0.739	0.776	5.600	58.728	20.413	0.310	50.052	38.063	35.524	4	3	3	9	12	959	41.533	18.860	53.840
6.900	25.100	0.748	0.785	5.700	62.105	23.575	0.298	55.618	40.864	38.142	4	3	3	9	12	959	40.865	18.860	53.840
7.000	25.525	0.757	0.794	5.800	60.817	26.525	0.298	71.149	49.495	47.138	4	3	3	9	12	959	43.001	18.860	54.559
7.100	25.950	0.766	0.803	5.900	60.333	27.363	0.307	61.550	44.357	42.322	4	3	3	9	12	959	43.001	18.860	55.572
7.200	26.375	0.775	0.812	6.000	60.750	28.300	0.320	54.870	40.591	38.056	4	3	3	9	12	959	42.136	18.860	53.013
7.300	26.800	0.784	0.821	6.100	59.207	29.115	0.305	56.087	46.944	45.761	4	3	3	9	12	959	41.403	18.860	51.621
7.400	27.225	0.793	0.830	6.200	59.548	30.520	0.298	71.124	46.944	45.761	4	3	3	9	12	959	41.403	18.860	51.621
7.500	27.650	0.802	0.839	6.300	59.548	30.520	0.298	71.124	46.944	45.761	4	3	3	9	12	959	41.403	18.860	51.621
7.600	28.075	0.811	0.848	6.400	59.213	30.942	0.288	75.066	51.609	49.610	4	3	3	9	12	959	40.309	18.860	50.762
7.700	28.500	0.820	0.857	6.500	59.632	31.000	0.220	64.844	45.663	43.817	4	3	3	9	12	959	39.730	18.860	49.836
7.800	28.925	0.829	0.866	6.600	57.635	31.782	0.220	59.953	43.249	41.369	4	3	3	9	12	959	38.733	18.860	48.845
7.900	29.350	0.838	0.875	6.700	57.395	32.330	0.178	62.231	44.159	42.322	4	3	3	9	12	959	37.716	18.860	47.845
8.000	29.775	0.847	0.884	6.800	57.802	33.328	0.178	79.007	53.934	53.551	4	3	3	9	12	959	37.140	18.860	46.845
8.100	30.200	0.856	0.893	6.900	56.483	32.327	0.173	81.145	54.651	54.346	4	3	3	9	12	959	36.784	18.860	45.845
8.200	30.625	0.865	0.902	7.000	55.483	32.327	0.173	78.370	52.575	50.497	4	3	3	9	12	959	35.951	18.860	44.845
8.300	31.050	0.874	0.911	7.100	55.483	32.327	0.150	59.034	43.800	40.374	4	3	3	9	12	959	35.286	18.860	43.845
8.400	31.475	0.883	0.920	7.200	57.217	33.388	0.150	61.552	43.516	41.944	4	3	3	9	12	959	34.716	18.860	42.845
8.500	31.900	0.892	0.929	7.300	56.772	34.030	0.095	61.206	43.270	41.069	4	3	3	9	12	959	34.146	18.860	41.845
8.600	32.325	0.901	0.938	7.400	60.048	35.005	0.087	58.759	42.071	39.593	4	3	3	9	12	959	33.576	18.860	40.845
8.700	32.750	0.910	0.947	7.500	62.030	36.288	0.055	58.532	42.846	40.056	4	3	3	9	12	959	33.006	18.860	39.845
8.800	33.175	0.919	0.956	7.600	65.423	38.438	0.023	62.146	45.477	42.201	5	3	3	9	12	959	32.436	18.860	38.845
8.900	33.600	0.928	0.965	7.700	63.065	36.750	0.025	61.573	45.844	42.035	5	3	3	9	12	959	31.866	18.860	37.845
9.000	34.025	0.937	0.974	7.800	63.914	33.482	0.027	62.063	48.116	43.756	5	3	3	9	12	959	31.296	18.860	36.845
9.100	34.450	0.946	0.983	7.900	63.797	34.150	0.011	66.333	47.415	44.408	5	3	3	9	12	959	30.726	18.860	35.845
9.200	34.875	0.955	0.992	8.000	67.412	37.452	0.003	64.056	46.589	43.310	5	3	3	9	12	959	30.156	18.860	34.845
9.300	35.300	0.964	1.001	8.100	60.828	37.032	0.003	66.361	47.211	44.366	5	3	3	9	12	959	29.586	18.860	33.845
9.400	35.725	0.973	1.010	8.200	61.948	37.858	0.001	69.643	48.757	46.495	5	3	3	9	12	959	29.016	18.860	32.845
9.500	36.150	0.982	1.019	8.300	62.195	38.362	0.001	69.643	48.757	46.495	5	3	3	9	12	959	28.446	18.860	31.845
9.600	36.575	0.991	1.028	8.400	61.025	38.362	0.001	69.643	48.757	46.495	5	3	3	9	12	959	27.876	18.860	30.845
9.700	37.000	0.999	1.037	8.500	60.160	35.575	0.001	69.558	49.376	45.533	5	3	3	9	12	959	27.306	18.860	29.845
9.800	37.425	1.008	1.046	8.600	58.875	36.910	0.001	69.558	49.376	45.533	5	3	3	9	12	959	26.736	18.860	28.845
9.900	37.850	1.017	1.055	8.700	57.105	33.112	0.001	74.106	52.025	47.473	5	3	3	9	12	959	26.166	18.860	27.845
10.000	38.275	1.026	1.064	8.800	62.287	30.332	0.001	76.624	52.951	47.336	5	3	3	9	12	959	25.596	18.860	26.845
10.100	38.700	1.035	1.073	8.900	24.145	31.042	0.001	70.963	50.383	46.967	6	3	3	9	12	959	25.026	18.860	25.845
10.200	39.125	1.044	1.082	9.000	44.923	29.960	0.001	73.083	47.867	45.756	6	3	3	9	12	959	24.456	18.860	24.845
10.300	39.550	1.053	1.091	9.100	54.028	30.800	0.001	70.963	47.867	45.756	6	3	3	9	12	959	23.886	18.860	23.845
10.400	39.975	1.062	1.100	9.200	64.448	36.775	0.001	76.235	50.999	48.220	6	3	3	9	12	959	23.316	18.860	22.845
10.500	40.400	1.071	1.109	9.300	57.018	36.965	0.001	76.235	50.999	48.220	6	3	3	9	12	959	22.746	18.860	21.845
10.600	40.825	1.080	1.118	9.400	61.082	36.467	0.001	71.206	47.340	45.155	6	3	3	9	12	959	22.176	18.860	20.845
10.700	41.250	1.089	1.127	9.500	58.380	37.912	0.001	70.442	47.529	45.285	6	3	3	9	12	959	21.606	18.860	19.845
10.800	41.675	1.098	1.136	9.600	61.755	37.250	0.001	74.304	48.830	47.319	6	3	3	9	12	959	21.036	18.860	18.845
10.900	42.100	1.107	1.145	9.700	60.397	35.267	0.001	77.840	51.782	48.529	6	3	3	9	12	959	20.466	18.860	17.845
11.000	42.525	1.116	1.154	9.800	60.623	36.967	0.001	77.840	51.782	48.529	6	3	3	9	12	959	19.896	18.860	

14,700	9,635	1,456	13,500	74,045	46,000	0.001	108,266	70,583	68,985	3	3	6	4	9E9	18,860	47,033	1,196
14,800	9,630	1,465	13,600	73,610	47,410	0.001	103,131	66,176	66,032	3	3	6	4	9E9	18,860	45,541	1,140
14,900	9,493	1,474	13,700	73,313	48,592	0.001	93,750	66,074	65,972	3	3	6	4	9E9	18,860	44,498	1,099
15,000	9,587	1,483	13,800	74,057	50,742	0.001	90,140	66,110	66,010	3	3	6	4	9E9	18,860	44,234	1,066
15,100	9,642	1,492	13,900	74,800	53,000	0.001	88,669	67,667	67,565	3	3	6	4	9E9	18,860	45,247	1,105
15,200	10,035	1,492	14,000	75,520	55,323	0.001	90,436	68,617	68,515	3	3	6	4	9E9	18,860	46,278	1,144
15,300	10,035	1,510	14,100	71,783	49,168	0.001	88,165	67,559	67,457	3	3	6	4	9E9	18,860	45,696	1,084
15,400	9,769	1,519	14,200	73,540	49,523	0.001	88,165	67,559	67,457	3	3	6	4	9E9	18,860	45,577	1,082
15,500	9,667	1,528	14,300	74,768	50,193	0.001	83,859	65,065	64,963	3	3	6	4	9E9	18,860	45,985	1,086
15,600	9,647	1,537	14,400	74,545	50,358	0.001	96,794	62,281	62,179	3	3	6	4	9E9	18,860	44,676	1,040
15,700	9,670	1,546	14,500	74,217	50,000	0.001	102,749	65,398	65,296	3	3	6	4	9E9	18,860	44,834	1,042
15,800	9,712	1,555	14,600	72,973	51,235	0.001	102,042	65,320	65,218	3	3	6	4	9E9	18,860	45,258	1,048
15,900	9,795	1,564	14,700	72,935	51,033	0.001	104,100	66,338	66,236	3	3	6	4	9E9	18,860	45,732	1,048
16,000	9,885	1,573	14,800	76,803	51,490	0.001	122,945	70,389	70,287	3	3	6	4	9E9	18,860	46,156	1,110
16,100	10,038	1,582	14,900	72,425	51,823	0.001	122,945	70,389	70,287	3	3	6	4	9E9	18,860	46,497	1,055
16,200	10,038	1,591	15,000	72,425	51,823	0.001	124,787	70,329	70,227	3	3	6	4	9E9	18,860	46,255	1,131
16,300	10,065	1,600	15,100	78,458	54,167	0.001	126,032	71,425	71,323	3	3	6	4	9E9	18,860	48,203	1,080
16,400	10,350	1,610	15,200	78,458	54,167	0.001	109,829	68,744	68,642	3	3	6	4	9E9	18,860	50,594	1,040
16,500	10,350	1,619	15,300	77,937	52,917	0.001	113,349	71,189	71,087	3	3	6	4	9E9	18,860	51,635	1,161
16,600	10,350	1,628	15,400	77,937	52,917	0.001	111,752	69,411	69,309	3	3	6	4	9E9	18,860	51,076	1,137
16,700	10,903	1,637	15,500	79,640	54,677	0.001	105,608	64,355	64,253	3	3	6	4	9E9	18,860	49,008	1,086
16,800	10,620	1,646	15,600	79,533	54,425	0.001	101,794	67,100	66,998	3	3	6	4	9E9	18,860	49,516	1,086
16,900	10,620	1,655	15,700	78,010	53,527	0.001	115,259	72,566	72,464	3	3	6	4	9E9	18,860	50,107	1,081
17,000	10,565	1,664	15,800	79,010	53,527	0.001	123,007	73,456	73,354	3	3	6	4	9E9	18,860	49,214	1,055
17,100	10,515	1,673	15,900	79,198	54,172	0.001	125,368	74,200	74,098	3	3	6	4	9E9	18,860	49,304	1,048
17,200	10,767	1,682	16,000	80,183	55,523	0.001	131,074	76,200	76,098	3	3	6	4	9E9	18,860	49,812	1,048
17,300	10,742	1,691	16,100	78,952	55,208	0.001	136,803	85,185	85,083	3	3	6	4	9E9	18,860	49,798	1,047
17,400	10,757	1,700	16,200	78,528	54,995	0.001	132,270	83,556	83,454	3	3	6	4	9E9	18,860	49,024	1,039
17,500	10,757	1,709	16,300	81,043	55,155	0.001	139,052	88,490	88,388	3	3	6	4	9E9	18,860	51,028	1,039
17,600	10,767	1,718	16,400	85,478	56,428	0.001	123,160	77,291	77,189	3	3	6	4	9E9	18,860	52,786	1,108
17,700	11,000	1,727	16,500	87,230	57,180	0.001	126,513	79,891	79,789	3	3	6	4	9E9	18,860	52,786	1,075
17,800	11,282	1,736	16,600	85,960	57,940	0.001	130,198	82,671	82,569	3	3	6	4	9E9	18,860	51,851	1,065
17,900	11,150	1,745	16,700	81,975	56,833	0.001	145,354	91,426	91,324	3	3	6	4	9E9	18,860	52,142	1,071
18,000	11,242	1,754	16,800	85,500	58,698	0.001	145,354	91,426	91,324	3	3	6	4	9E9	18,860	51,666	1,052
18,100	11,242	1,763	16,900	87,698	60,351	0.001	149,761	90,346	90,244	3	3	6	4	9E9	18,860	53,374	1,073
18,200	11,445	1,772	17,000	86,308	58,155	0.001	137,214	86,700	86,598	3	3	6	4	9E9	18,860	52,772	1,047
18,300	11,445	1,781	17,100	86,308	58,155	0.001	137,214	86,700	86,598	3	3	6	4	9E9	18,860	52,772	1,047
18,400	11,445	1,790	17,200	79,975	59,065	0.001	146,245	94,331	94,229	3	3	6	4	9E9	18,860	52,772	1,047
18,500	11,337	1,800	17,300	89,563	61,842	0.001	147,440	93,369	93,267	3	3	6	4	9E9	18,860	51,417	1,022
18,600	20,725	1,809	17,400	82,620	47,220	0.001	180,893	112,922	105,332	3	3	6	4	9E9	18,860	50,173	0,976
18,700	20,725	1,818	17,500	29,270	48,555	0.001	152,766	99,997	99,914	3	3	6	4	9E9	18,860	50,173	0,976
18,800	11,080	1,827	17,600	70,305	51,603	0.001	145,354	91,426	91,324	3	3	6	4	9E9	18,860	51,497	1,002
18,900	11,297	1,837	17,700	81,490	54,307	0.001	145,354	91,426	91,324	3	3	6	4	9E9	18,860	53,355	1,041
19,000	11,595	1,846	17,800	85,355	56,717	0.001	149,761	90,346	90,244	3	3	6	4	9E9	18,860	52,879	1,023
19,100	11,343	1,855	17,900	89,052	59,903	0.001	137,214	86,700	86,598	3	3	6	4	9E9	18,860	53,089	1,015
19,200	12,175	1,864	18,000	89,052	59,903	0.001	140,446	88,771	88,669	3	3	6	4	9E9	18,860	56,649	1,072
19,300	12,175	1,873	18,100	81,035	59,620	0.001	139,972	88,360	88,258	3	3	6	4	9E9	18,860	54,863	1,052
19,400	12,175	1,882	18,200	87,983	59,983	0.001	139,972	88,360	88,258	3	3	6	4	9E9	18,860	54,863	1,052
19,500	12,220	1,891	18,300	80,497	59,405	0.001	147,440	93,369	93,267	3	3	6	4	9E9	18,860	56,893	1,094
19,600	12,220	1,891	18,400	80,497	59,405	0.001	152,505	96,189	96,087	3	3	6	4	9E9	18,860	54,417	1,022
19,700	11,868	1,900	18,500	90,705	63,308	0.001	117,686	74,671	74,569	3	3	6	4	9E9	18,860	54,375	1,022
19,800	11,868	1,909	18,600	90,978	61,910	0.001	144,506	96,189	96,087	3	3	6	4	9E9	18,860	55,479	1,045
19,900	12,085	1,918	18,700	90,978	61,910	0.001	144,506	96,189	96,087	3	3	6	4	9E9	18,860	56,023	1,048
20,000	12,165	1,927	18,800	92,280	63,280	0.001	140,279	88,841	88,739	3	3	6	4	9E9	18,860	68,664	1,344
20,100	14,080	1,936	18,900	91,280	62,823	0.001	140,279	88,841	88,739	3	3	6	4	9E9	18,860	68,664	1,344
20,200	12,772	1,945	19,000	86,482	60,665	0.001	131,535	85,768	85,666	3	3	6	4	9E9	18,860	59,333	1,107
20,300	12,772	1,954	19,100	89,910	63,621	0.001	141,535	90,522	90,420	3	3	6	4	9E9	18,860	59,333	1,107
20,400	12,465	1,963	19,200	90,705	63,308	0.001	137,574	85,951	85,849	3	3	6	4	9E9	18,860	57,520	1,058
20,500	12,465	1,972	19,300	90,705	63,308	0.001	115,840	74,269	74,167	3	3	6	4	9E9	18,860	59,701	1,093
20,600	12,567	1,981	19,400	90,870	62,927	0.001	117,686	74,671	74,569	3	3	6	4	9E9	18,860	61,786	1,144
20,700	12,818	1,990	19,500	90,870	62,927	0.001	131,464	83,014	82,912	3	3	6	4	9E9	18,860	61,786	1,144
20,800	12,583	2,008	19,600	90,832	59,897	0.001	127,949	80,510	80,408	3	3	6	4	9E9	18,860	59,403	1,085
20,900	13,535	2,026	19,700	85,766	61,767	0.001	140,654	94,307	94,205	3	3	6	4	9E9	18,860	58,101	1,047
21,000	14,640	2,045	19,800	85,766	61,767	0.001	154,732	97,242	97,140	3	3	6	4	9E9	18,860	57,692	1,032
21,100	14,640	2,054	19,900	90,125	64,613	0.001	152,320	96,051	95,949	3	3	6	4	9E9	18,860	63,599	1,194
21,200	14,640	2,063	20,000	73,630	28,413	0.001	165,291	103,930	97,177	3	3	6	4	9E9	18,860	63,599	1,194
21,300	14,363	2,072	20,100	73,630	28,413	0.001	175,723	112,970	96,017	3	3	6	4	9E9	18,860	63,599	1,194
21,400	14,363	2,081	20,200	13,433	35,730	1,253	148,558	93,853	93,751	3	3	6	4	9E9	18,860	82,641	1,573
21,500	12,837	2,090	20,300	76,360	37,090	1,217	141,516	89,084	88,982	3	3	6	4	9E9	18,860	68,782	1,243
21,600	12,837	2,099	20,400	80,815	38,978	1,230	174,246	94,307	94,205	3	3	6	4	9E9	18,860		

24.700	15.515	0.329	23.500	90.967	73.075	0.673	132.751	64.250	87.253	6	4	4	7	9	9E9	69.199	18.860	72.311	1.117
24.800	15.392	0.324	23.600	90.965	73.238	0.650	137.638	86.621	88.720	6	4	4	7	9	9E9	68.709	18.860	71.368	1.094
24.900	15.395	0.330	23.700	90.973	77.190	0.935	148.217	87.501	90.324	6	4	4	7	9	9E9	68.719	18.860	71.259	1.087
25.000	15.430	0.338	23.800	90.967	77.183	0.903	148.217	87.501	90.324	6	4	4	7	9	9E9	68.719	18.860	71.259	1.087
25.100	15.690	0.336	23.900	90.967	76.000	0.615	132.730	85.946	86.152	6	4	4	7	9	9E9	69.699	18.860	72.975	1.088
25.200	15.765	0.366	24.000	90.975	77.577	0.600	139.979	86.554	89.019	6	4	4	7	9	9E9	69.479	18.860	72.149	1.089
25.300	15.765	0.366	24.100	90.975	76.635	0.590	139.979	86.554	89.019	6	4	4	7	9	9E9	72.019	18.860	76.729	1.060
25.400	17.063	0.346	24.200	90.955	78.305	0.585	132.609	82.176	86.554	6	4	4	7	9	9E9	75.258	18.860	76.005	1.145
25.500	16.220	0.363	24.300	90.955	77.512	0.627	131.690	82.927	84.274	6	4	4	7	9	9E9	76.255	18.860	82.946	1.239
25.600	17.090	0.408	24.400	90.963	77.512	0.627	131.690	82.927	84.274	6	4	4	7	9	9E9	75.499	18.860	81.554	1.243
25.700	17.185	0.432	24.500	90.967	74.893	0.618	139.286	87.453	90.076	6	4	4	7	9	9E9	82.606	18.860	93.583	1.458
25.800	18.408	0.455	24.600	90.965	74.893	0.605	142.865	87.453	90.076	6	4	4	7	9	9E9	80.769	18.860	89.952	1.381
25.900	18.408	0.455	24.700	90.967	74.893	0.605	142.865	87.453	90.076	6	4	4	7	9	9E9	84.509	18.860	91.354	1.481
26.000	18.537	0.478	24.800	90.967	73.318	0.570	149.425	84.134	87.856	6	4	4	7	9	9E9	84.509	18.860	91.354	1.481
26.100	19.437	0.518	24.900	90.967	71.800	0.532	155.538	85.306	88.963	6	4	4	7	9	9E9	98.409	18.860	112.423	1.789
26.200	19.437	0.518	25.000	90.973	74.015	0.515	152.511	95.679	96.532	6	4	4	7	9	9E9	104.629	18.860	132.491	1.850
26.300	24.377	0.549	25.100	90.970	74.537	0.493	160.462	109.219	109.219	6	4	4	7	9	9E9	104.749	18.860	128.168	2.077
26.400	24.887	0.709	25.200	90.967	73.880	0.493	160.462	109.219	109.219	6	4	4	7	9	9E9	104.749	18.860	128.168	2.077
26.500	29.987	0.754	25.300	90.970	68.037	0.433	155.331	97.899	94.070	6	4	4	7	9	9E9	99.479	18.860	119.956	1.894
26.600	24.278	0.663	25.400	90.970	68.037	0.433	155.331	97.899	94.070	6	4	4	7	9	9E9	113.959	18.860	143.956	2.367
26.700	24.403	0.643	25.500	90.970	68.037	0.433	155.331	97.899	94.070	6	4	4	7	9	9E9	108.155	18.860	134.046	2.272
26.800	24.033	0.643	25.600	81.497	75.487	0.483	145.000	108.131	105.952	6	4	4	7	9	9E9	98.409	18.860	117.649	1.814
26.900	26.708	0.834	25.700	90.967	76.865	0.440	153.551	113.002	107.469	6	4	4	7	9	9E9	98.409	18.860	117.649	1.814
27.000	26.105	0.788	25.800	90.960	76.865	0.440	153.551	113.002	107.469	6	4	4	7	9	9E9	88.988	18.860	118.484	1.841
27.100	25.257	0.681	25.900	90.960	76.865	0.440	153.551	113.002	107.469	6	4	4	7	9	9E9	88.988	18.860	118.484	1.841
27.200	25.257	0.681	26.000	90.960	76.865	0.440	153.551	113.002	107.469	6	4	4	7	9	9E9	88.988	18.860	118.484	1.841
27.300	22.965	0.564	26.100	90.973	64.313	0.215	154.230	100.912	98.275	6	4	4	7	9	9E9	85.269	18.860	101.760	1.478
27.400	20.510	0.506	26.200	90.957	75.443	0.222	126.881	83.994	83.261	6	4	4	7	9	9E9	85.269	18.860	101.760	1.478
27.500	19.775	0.548	26.300	90.967	78.935	0.215	127.729	80.874	82.214	6	4	4	7	9	9E9	88.559	18.860	102.148	1.471
27.600	20.222	0.561	26.400	90.967	78.935	0.215	127.729	80.874	82.214	6	4	4	7	9	9E9	88.559	18.860	102.148	1.471
27.700	20.532	0.561	26.500	90.967	78.935	0.215	127.729	80.874	82.214	6	4	4	7	9	9E9	88.559	18.860	102.148	1.471
27.800	20.388	0.563	26.600	90.950	79.195	0.317	129.109	79.592	79.284	6	4	4	7	9	9E9	85.059	18.860	95.203	1.335
27.900	20.355	0.577	26.700	90.970	79.235	0.315	129.109	79.592	79.284	6	4	4	7	9	9E9	85.059	18.860	95.203	1.335
28.000	20.627	0.577	26.800	90.970	79.235	0.315	129.109	79.592	79.284	6	4	4	7	9	9E9	85.059	18.860	95.203	1.335
28.100	19.420	0.496	26.900	90.970	78.575	0.280	116.640	75.335	75.683	6	4	4	7	9	9E9	83.549	18.860	93.108	1.368
28.200	19.420	0.496	27.000	90.970	78.575	0.280	116.640	75.335	75.683	6	4	4	7	9	9E9	83.549	18.860	93.108	1.368
28.300	19.359	0.531	27.100	90.962	87.000	0.300	131.916	83.994	83.261	6	4	4	7	9	9E9	84.939	18.860	96.531	1.266
28.400	19.602	0.512	27.200	90.962	87.000	0.265	121.364	77.062	77.370	6	4	4	7	9	9E9	84.939	18.860	96.531	1.266
28.500	20.200	0.528	27.300	90.973	86.268	0.262	113.408	71.396	73.972	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
28.600	19.925	0.514	27.400	90.970	86.877	0.308	122.814	79.805	78.230	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
28.700	19.450	0.497	27.500	90.967	86.877	0.308	122.814	79.805	78.230	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
28.800	19.420	0.496	27.600	90.963	86.877	0.308	122.814	79.805	78.230	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
28.900	19.180	0.563	27.700	90.969	82.478	0.250	110.640	74.502	74.502	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
29.000	19.208	0.546	27.800	90.969	82.478	0.250	110.640	74.502	74.502	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
29.100	18.405	0.452	27.900	90.970	83.385	0.295	112.749	75.938	75.938	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
29.200	19.260	0.476	28.000	90.973	85.328	0.280	108.803	68.770	69.611	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
29.300	19.670	0.501	28.100	90.967	88.177	0.237	113.217	70.977	71.938	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
29.400	19.670	0.501	28.200	90.967	88.177	0.237	113.217	70.977	71.938	6	4	4	7	9	9E9	84.019	18.860	92.903	1.254
29.500	19.603	0.529	28.300	90.973	81.025	0.225	103.839	64.658	64.084	6	4	4	7	9	9E9	85.209	18.860	91.505	1.189
29.600	19.603	0.529	28.400	90.973	81.025	0.225	103.839	64.658	64.084	6	4	4	7	9	9E9	85.209	18.860	91.505	1.189
29.700	19.368	0.558	28.500	90.970	79.143	0.270	98.233	61.791	62.235	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
29.800	19.518	0.563	28.600	90.969	82.478	0.243	106.038	67.985	67.985	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
29.900	19.180	0.546	28.700	90.969	82.478	0.243	106.038	67.985	67.985	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.000	19.208	0.546	28.800	90.970	83.385	0.295	112.749	75.938	75.938	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.100	19.208	0.546	28.900	90.970	83.385	0.295	112.749	75.938	75.938	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.200	18.583	0.505	29.000	90.970	83.338	0.168	108.415	68.479	68.111	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.300	18.583	0.505	29.100	90.965	84.240	0.165	103.357	65.714	67.663	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.400	18.542	0.480	29.200	90.965	86.485	0.157	105.444	65.914	67.140	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.500	17.685	0.472	29.300	90.967	87.663	0.145	106.088	66.397	67.775	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.600	17.183	0.385	29.400	90.967	87.663	0.145	106.088	66.397	67.775	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.700	17.930	0.391	29.500	90.963	90.787	0.193	103.485	65.953	67.824	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.800	18.430	0.421	29.600	90.970	88.915	0.178	104.666	66.757	69.260	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
30.900	19.153	0.466	29.700	90.970	88.300	0.180	102.523	64.564	65.440	6	4	4	7	9	9E9	83.859	18.860	89.993	1.154
31.000	23.433																		

Output file from CPTINT - Version 5.0ppd

INPUT FILE: E:\GSC-94\GSC-9413.EDT

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City:

Interpreter Name: CAMPANELLA FOR GSC-94

File Number: GSC130 Date: 3-03-94 14:11
Operator: JLE-HS-SST On Site Location: NORTH3173-2165T
Cone Type: UBC92U3RES1 Comment: 500F32AVELANGLY

SUMMARY SHEET

Value for calculating Qt: 0.800
Value for Water Table (in m): 1.000
Valid Zone Classification based on: Rf
Missing unit weight to start depth: 18.000
Method for calculating Su: NK
Value of the constant Nk: 15.000
alpha for Modulus in clay: 4.000
Method used to calculate OCR: SU/EO5
Beta for Zone 8 (blow/ft) for Calc Dr: No.200
Robertson & Campanella
Method for Friction Angle: Baldi Method
Initial guess of OCR for sand: 1.000
Method for Modulus in sand: Baldi Method

Soil Behavior Type Zone Numbers

For Rf Zone & Bq Zone Classification
Zone #1=Sensitive fine-grained Zone #7 =Silty sand
Zone #2=Clayey material Zone #8 =Fine sand
Zone #3=Clayey material Zone #9 =Sand
Zone #4=Silty clay Zone #10=Gravelly sand
Zone #5=Clayey silt Zone #11=Very stiff fine grained
Zone #6=Sandy silt Zone #12=Sand to clayey sand
Zone #13=Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: 9E9 means Out of Range)

INPUT FILE: E:\GSC-94\GSC-9413.EDT

Depth (meter)	Qc (bars)	Fs (bars)	EO5 (avg)	Uo (meter)	Uz (meter)	Us (meter)	incl (degree)	R10 (Ohm-m)	R25 (Ohm-m)	R50 (Ohm-m)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt N1 (blow/ft)	Phi (degree)	M. Modulus Dr (bars)	Gamma SU (kPa)	OCR (ratio)
0.100	0.100	0.000	0.015	0.015	0.033	0.015	-1.485	147.180	326.310	1251.000	1	9E9	0	0	9E9	0.397	15.700	0.570
0.200	0.100	0.000	0.010	0.010	-0.033	0.010	0.300	174.477	326.310	1251.000	1	9E9	0	0	9E9	0.394	15.700	0.465
0.300	0.100	0.000	0.046	0.070	-0.070	0.070	-0.308	135.273	326.310	1251.000	1	9E9	0	0	9E9	0.395	15.700	0.290
0.400	0.100	0.000	0.062	0.093	-0.063	0.093	-0.710	137.640	326.310	1251.000	1	9E9	0	0	9E9	0.393	15.700	0.092
0.500	0.100	0.000	0.077	0.116	-0.093	0.116	-2.470	207.770	326.310	1251.000	1	9E9	0	0	9E9	0.397	15.700	0.131
0.600	0.100	0.000	0.093	0.139	-0.063	0.139	-1.173	162.880	326.310	1251.000	1	9E9	0	0	9E9	0.395	15.700	0.046
0.700	0.100	0.000	0.109	0.162	-0.063	0.162	-2.467	130.923	326.310	1251.000	1	9E9	0	0	9E9	0.397	15.700	9E9
0.800	0.100	0.000	0.124	0.185	-0.038	0.185	-1.842	139.292	326.310	1251.000	1	9E9	0	0	9E9	0.396	15.700	9E9
0.900	0.100	0.000	0.148	0.208	-0.037	0.208	-2.617	133.585	326.310	1168.020	1	9E9	0	0	9E9	0.397	15.700	9E9
1.000	0.100	0.000	0.162	0.231	-0.078	0.231	-2.053	35.210	67.390	498.148	1	9E9	0	0	9E9	0.394	15.700	9E9
1.200	0.100	0.000	0.168	0.254	-0.063	0.254	-1.903	28.325	74.963	233.780	1	9E9	0	0	9E9	0.395	15.700	9E9
1.300	0.100	0.000	0.174	0.277	-0.060	0.277	-1.678	13.710	37.952	133.310	1	9E9	0	0	9E9	0.202	15.700	9E9
1.400	0.100	0.000	0.179	0.300	0.060	0.300	-1.952	10.908	22.045	77.367	1	9E9	0	0	9E9	0.508	15.700	9E9
1.500	0.100	0.000	0.185	0.323	1.375	0.592	-2.317	11.015	21.290	96.783	1	9E9	0	0	9E9	0.406	15.700	9E9
1.600	0.100	0.000	0.191	0.346	0.078	0.346	-2.205	10.863	21.555	84.750	1	9E9	0	0	9E9	0.505	15.700	9E9
1.700	0.100	0.000	0.197	0.369	0.000	0.369	-2.310	10.155	19.860	87.462	1	9E9	0	0	9E9	0.725	15.700	9E9
1.800	0.100	0.000	0.203	0.392	0.000	0.392	-2.265	7.307	17.760	72.857	1	9E9	0	0	9E9	0.912	15.700	9E9
1.900	0.100	0.000	0.209	0.415	0.000	0.415	-2.133	7.370	16.913	79.057	1	9E9	0	0	9E9	3.587	15.700	9E9
2.000	0.100	0.000	0.215	0.438	0.000	0.438	-2.092	5.550	14.915	75.600	1	9E9	0	0	9E9	13.779	15.700	2.114
2.100	0.100	0.000	0.221	0.461	0.000	0.461	-2.195	5.512	15.212	73.650	1	9E9	0	0	9E9	19.968	15.700	18.060
2.200	0.100	0.000	0.227	0.484	0.000	0.484	-2.457	7.155	17.392	69.885	5	9E9	0	0	9E9	26.036	15.700	52.263
2.300	0.100	0.000	0.233	0.507	0.000	0.507	-2.523	7.470	17.590	64.763	6	9E9	0	0	9E9	37.374	18.860	91.853
2.400	0.100	0.000	0.239	0.530	0.000	0.530	-2.460	6.392	15.165	54.715	6	9E9	0	0	9E9	44.900	18.860	103.861
2.500	0.100	0.000	0.245	0.553	0.000	0.553	-2.450	6.810	17.930	50.335	3	9E9	0	0	9E9	64.900	18.860	99.569
2.600	0.100	0.000	0.251	0.576	0.000	0.576	-2.507	6.397	19.210	28.988	4	9E9	0	0	9E9	67.715	18.860	105.576
2.700	0.100	0.000	0.257	0.599	0.000	0.599	-2.507	6.744	25.910	81.952	4	9E9	0	0	9E9	65.565	18.860	102.467
2.800	0.100	0.000	0.263	0.622	0.000	0.622	-2.525	11.275	25.670	133.075	5	9E9	0	0	9E9	344.532	18.860	119.808
2.900	0.100	0.000	0.269	0.645	0.000	0.645	-2.525	14.977	24.485	110.522	5	9E9	0	0	9E9	77.046	18.860	9E9
3.000	0.100	0.000	0.275	0.668	0.000	0.668	-2.645	17.677	27.400	119.007	5	9E9	0	0	9E9	48.222	18.860	124.257
3.100	0.100	0.000	0.281	0.691	0.000	0.691	-2.530	18.648	28.448	122.925	6	9E9	0	0	9E9	50.799	18.860	73.381
3.200	0.100	0.000	0.287	0.714	0.000	0.714	-2.635	24.058	37.518	139.020	5	9E9	0	0	9E9	50.199	18.860	74.322
3.300	0.100	0.000	0.293	0.737	0.000	0.737	-2.628	26.860	45.870	156.773	4	9E9	0	0	9E9	58.912	18.860	13.065
3.400	0.100	0.000	0.299	0.760	0.000	0.760	-2.967	32.572	49.360	182.967	4	9E9	0	0	9E9	58.912	18.860	70.954
3.500	0.100	0.000	0.305	0.783	0.000	0.783	-2.552	35.522	55.540	206.753	4	9E9	0	0	9E9	34.152	18.860	60.695
3.600	0.100	0.000	0.311	0.806	0.000	0.806	-2.550	38.270	60.085	207.258	4	9E9	0	0	9E9	27.917	18.860	59.376
3.700	0.100	0.000	0.317	0.829	0.000	0.829	-2.538	42.063	64.450	230.193	4	9E9	0	0	9E9	24.729	18.860	7.409
3.800	0.100	0.000	0.323	0.852	0.000	0.852	-2.548	46.211	71.128	244.237	4	9E9	0	0	9E9	23.796	18.860	31.092
3.900	0.100	0.000	0.329	0.875	0.000	0.875	-2.503	51.035	80.750	252.840	4	9E9	0	0	9E9	23.896	18.860	4.155
4.000	0.100	0.000	0.335	0.898	0.000	0.898	-2.503	59.380	92.737	282.570	4	9E9	0	0	9E9	24.023	18.860	3.527
4.100	0.100	0.000	0.341	0.921	0.000	0.921	-2.503	67.728	102.505	307.122	4	9E9	0	0	9E9	23.940	18.860	3.387
4.200	0.100	0.000	0.347	0.944	0.000	0.944	-2.503	76.070	112.273	332.570	4	9E9	0	0	9E9	23.332	18.860	28.846
4.300	0.100	0.000	0.353	0.967	0.000	0.967	-2.503	84.413	122.045	357.020	4	9E9	0	0	9E9	23.332	18.860	3.159
4.400	0.100	0.000	0.359	0.990	0.000	0.990	-2.545	92.756	131.817	382.470	4	9E9	0	0	9E9	20.601	18.860	26.307
4.500	0.100	0.000	0.365	1.013	0.000	1.013	-2.545	101.100	141.590	407.920	4	9E9	0	0	9E9	20.601	18.860	24.881
4.600	0.100	0.000	0.371	1.036	0.000	1.036	-2.545	109.443	151.363	433.370	4	9E9	0	0	9E9	20.601	18.860	2.393

4.700	0.450	3.700	33.042	17.440	-2.540	65.512	104.313	351.730	9E9	3	3	9E9	19.943	17.300	21.494
4.800	0.458	3.600	34.015	16.307	-2.555	67.143	105.695	358.723	9E9	3	3	9E9	19.779	17.300	22.060
4.900	0.465	3.900	26.253	16.885	-2.555	65.298	102.222	353.525	9E9	3	3	9E9	17.300	17.300	22.413
5.000	0.474	4.000	22.900	19.320	-2.545	69.935	107.385	361.445	9E9	3	3	9E9	18.860	18.860	22.226
5.100	0.479	4.000	22.900	19.320	-2.545	69.935	107.385	361.445	9E9	3	3	9E9	18.860	18.860	22.226
5.200	0.486	4.300	28.655	15.968	-2.559	69.790	102.215	373.350	9E9	3	3	9E9	18.860	18.860	21.172
5.300	0.492	4.000	30.790	17.360	-2.559	71.200	109.210	380.505	9E9	3	3	9E9	18.860	18.860	20.741
5.400	0.498	4.600	31.437	16.727	-2.533	73.182	116.292	388.193	9E9	3	3	9E9	18.860	18.860	17.099
5.500	0.502	4.600	31.437	16.727	-2.533	73.182	116.292	388.193	9E9	3	3	9E9	18.860	18.860	17.099
5.600	0.508	4.000	32.632	19.170	-2.557	75.200	119.412	395.628	9E9	3	3	9E9	18.860	18.860	16.192
5.700	0.512	4.000	31.632	20.490	-2.555	77.357	123.168	404.368	9E9	3	3	9E9	18.860	18.860	15.856
5.800	0.516	4.000	32.912	21.660	-2.535	79.315	126.522	411.385	9E9	3	3	9E9	18.860	18.860	14.941
5.900	0.524	5.000	33.702	22.448	-2.525	79.245	126.522	411.385	9E9	3	3	9E9	18.860	18.860	22.082
6.000	0.534	5.000	34.283	21.035	-2.508	79.723	126.785	416.073	9E9	3	3	9E9	18.860	18.860	22.007
6.100	0.543	5.000	35.200	21.035	-2.508	81.120	126.785	416.073	9E9	3	3	9E9	18.860	18.860	22.007
6.200	0.552	5.000	33.583	21.035	-2.422	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
6.300	0.561	5.000	36.028	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
6.400	0.569	5.000	36.987	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
6.500	0.578	5.000	36.987	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
6.600	0.586	5.000	36.987	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
6.700	0.595	5.000	36.987	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
6.800	0.604	5.000	36.987	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
6.900	0.613	5.000	36.987	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
7.000	0.622	5.000	36.987	23.140	-2.462	93.378	143.970	482.625	9E9	3	3	9E9	18.860	18.860	22.828
7.100	0.631	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.200	0.640	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.300	0.649	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.400	0.658	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.500	0.667	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.600	0.676	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.700	0.685	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.800	0.694	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
7.900	0.703	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.000	0.712	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.100	0.721	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.200	0.730	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.300	0.739	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.400	0.748	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.500	0.757	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.600	0.766	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.700	0.775	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.800	0.784	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
8.900	0.793	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.000	0.802	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.100	0.811	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.200	0.820	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.300	0.829	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.400	0.838	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.500	0.847	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.600	0.856	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.700	0.865	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.800	0.874	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
9.900	0.883	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.000	0.892	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.100	0.901	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.200	0.910	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.300	0.919	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.400	0.928	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.500	0.937	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.600	0.946	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.700	0.955	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.800	0.964	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
10.900	0.973	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.000	0.982	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.100	0.991	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.200	0.999	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.300	1.008	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.400	1.017	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.500	1.026	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.600	1.035	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.700	1.044	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.800	1.053	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
11.900	1.062	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
12.000	1.071	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
12.100	1.080	6.000	38.323	18.442	-2.540	92.303	148.333	480.135	9E9	3	3	9E9	18.860	18.860	27.229
12.200	1.089	6.000	38.323	18.442	-2.540	92.303	148.333	480.135							

14.700	6.960	0.181	1.245	13.700	62.775	43.592	-0.880	149.467	247.105	741.273	4	3	3	5	4	9E9	32.766	18.860	29.139	0.799
14.800	14.390	0.486	1.254	13.800	58.713	44.990	-1.398	154.685	245.258	807.593	7	4	3	6	4	9E9	62.168	18.860	78.546	2.735
14.900	6.180	0.106	1.263	13.900	62.190	46.690	-1.903	159.917	257.420	820.352	5	3	4	5	3	9E9	37.597	18.860	37.021	1.059
15.000	6.795	0.034	1.272	14.000	66.075	47.132	-1.837	163.745	263.237	832.480	3	3	3	4	3	9E9	32.365	17.300	27.667	0.730
15.100	7.892	0.027	1.287	14.100	68.370	44.777	-1.827	168.510	265.570	842.480	3	3	3	4	3	9E9	35.995	17.300	34.868	0.967
15.200	6.363	0.037	1.294	14.200	59.243	35.105	-1.735	172.285	295.570	900.943	1	3	3	4	3	9E9	30.678	17.300	25.892	0.662
15.300	6.432	0.032	1.304	14.300	59.243	35.105	-1.735	172.285	276.283	929.122	1	3	3	4	3	9E9	31.499	17.300	26.771	0.685
15.400	48.132	1.139	1.303	14.400	47.590	36.192	-1.380	201.085	318.172	1189.850	6	7	13	17	13	9E9	165.485	19.650	251.488	11.170
15.500	104.558	0.514	1.313	14.500	-1.665	44.065	-0.767	207.120	326.310	1213.800	9	9	16	21	16	41	717.324	19.650	95.0	9E9
15.600	27.060	0.214	1.322	14.600	-5.665	48.105	-0.585	207.770	326.310	1229.075	7	7	7	9	7	31	323.728	18.860	95.0	9E9
15.700	28.688	0.070	1.331	14.700	-3.375	55.128	-0.753	207.770	326.310	1251.000	7	7	7	10	7	31	285.997	18.860	95.0	9E9
15.800	17.942	0.073	1.340	14.800	8.840	51.065	-0.917	207.770	326.310	1247.200	7	6	6	10	6	9E9	336.079	18.860	95.0	9E9
15.900	26.962	0.174	1.349	14.900	8.602	51.577	-0.995	207.770	324.848	1201.103	7	7	6	6	6	33	351.892	18.860	95.0	9E9
16.000	28.972	0.396	1.358	15.000	21.200	58.273	-1.300	207.770	326.740	1179.133	7	7	7	10	7	33	354.749	18.860	95.0	9E9
16.100	28.753	0.064	1.367	15.100	51.710	47.157	-1.783	207.770	324.707	1179.133	7	6	6	10	6	33		18.860		

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 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94

File Number: GSC140 Date: 4-03-94 11:00
 Operator: MPD-TJB On Site Location: STOKES PIT SWCRN
 Cone Type: URCWZUJ Comment: Sobondry@S-PIT.in

SUMMARY SHEET

a. for calculating qt: 0.800
 Value for water table (in m): 9.000
 Valid Zone Classification Based on: 9.000
 Method for calculating start depth: 16.000
 Method for calculating Su: NK
 Value of the constant nk: 15.000
 Su/EOS: 4.000
 Method used to calculate OCR: NO
 Define Zone 6 for Sand consolidation: Robertson & Campanella
 Sand Compressibility for calc Dr: 1.000
 Method for Friction Angle sand: Baldi Method
 Initial guess for Friction Angle sand: Baldi Method
 Method for Modulus in sand: Baldi Method

Soil Behavior Type Zone Numbers

For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained
 Zone #2=Organic material
 Zone #3=Clay
 Zone #4=Silty clay
 Zone #5=Sandy silt
 Zone #6=Sandy silt
 Zone #7=Silty sand
 Zone #8=Fine sand
 Zone #9=Medium sand
 Zone #10=Coarsely sand
 Zone #11=Very stiff fine grained
 Zone #12=Sand to clayey sand
 * Overconsolidated and/or cemented

NOTE:

-For soil classification, Rf values > 8 are assumed to be 8.

- (Note: 9E9 means Out Of Range)

Depth (meter)	U0 (meter)	U1 (meter)	U2 (meter)	U3 (meter)	Incl (degree)	Rf Zone (zone #)	Bq Zone (zone #)	Spt N (blow/ft)	Spt Nf (blow/ft)	Phi (degree)	# Modulus D _v (bars)	Gamma (kN/m ³)	SU (kpa)	OCR (ratio)
0.100	112.955	0.634	0.020	9E9	0.023	9	9	23	35	9E9	439.853	158	9E9	9E9
0.200	202.010	1.249	-0.035	9E9	0.025	9	9	40	60	9E9	666.853	165	9E9	9E9
0.300	183.363	0.974	-0.072	9E9	0.035	9	9	37	56	9E9	664.670	153	9E9	9E9
0.400	215.080	1.352	0.070	9E9	0.075	9	9	42	63	9E9	744.983	152	9E9	9E9
0.500	206.975	1.348	0.097	9E9	0.058	9	9	43	65	9E9	771.934	147	9E9	9E9
0.600	204.658	0.980	0.110	9E9	0.085	9	9	41	62	9E9	777.131	132	9E9	9E9
0.700	184.595	0.660	0.127	9E9	0.060	9	9	41	62	9E9	755.875	132	9E9	9E9
0.800	128.973	0.642	-0.170	9E9	0.375	9	9	37	56	9E9	626.348	116	9E9	9E9
0.900	141.508	0.527	-0.160	9E9	0.450	9	9	28	42	9E9	668.861	116	9E9	9E9
1.000	103.108	0.723	-1.160	9E9	0.060	8	9	26	47	9E9	562.792	103	9E9	9E9
1.200	119.260	0.537	-1.583	9E9	0.275	9	9	24	36	9E9	614.638	108	9E9	9E9
1.300	151.000	0.316	-0.660	9E9	0.165	9	9	30	45	9E9	706.300	116	9E9	9E9
1.400	197.745	0.936	-0.233	9E9	0.350	9	9	33	50	9E9	748.754	119	9E9	9E9
1.500	177.445	1.126	-0.943	9E9	0.175	9	9	33	50	9E9	706.300	116	9E9	9E9
1.600	171.188	0.750	-0.955	9E9	0.350	9	9	29	44	9E9	620.242	105	9E9	9E9
1.700	175.645	0.693	-0.256	9E9	0.675	8	9	24	36	9E9	533.569	118	9E9	9E9
1.800	169.772	0.621	-0.943	9E9	0.450	9	9	35	53	9E9	773.765	116	9E9	9E9
1.900	123.317	0.590	-0.770	9E9	0.275	9	9	34	51	9E9	648.899	103	9E9	9E9
2.000	135.225	0.384	-0.285	9E9	0.125	9	9	35	53	9E9	686.442	106	9E9	9E9
2.100	176.598	0.353	1.265	9E9	0.975	9	9	27	41	9E9	801.277	116	9E9	9E9
2.200	183.170	0.511	-3.615	9E9	0.408	9	9	35	53	9E9	821.270	116	9E9	9E9
2.300	194.378	0.304	-0.245	9E9	0.245	9	9	39	59	9E9	852.596	118	9E9	9E9
2.400	202.897	0.335	-4.473	9E9	0.435	9	9	37	56	9E9	884.031	119	9E9	9E9
2.500	226.153	0.345	-5.570	9E9	0.268	10	9	34	51	9E9	880.274	118	9E9	9E9
2.600	267.510	1.060	-5.523	9E9	-2.213	9	10	46	69	9E9	946.308	122	9E9	9E9
2.800	267.402	1.973	-5.237	9E9	-3.327	9	10	46	69	9E9	1036.370	127	9E9	9E9
3.000	259.508	0.951	-3.065	9E9	-2.050	9	10	45	68	9E9	1005.635	124	9E9	9E9
3.100	283.230	0.880	-3.815	9E9	-2.495	10	10	45	68	9E9	1029.569	128	9E9	9E9
3.200	306.872	0.796	-3.670	9E9	-2.712	10	10	42	63	9E9	1085.362	130	9E9	9E9
3.300	282.685	0.977	-4.446	9E9	0.925	10	10	47	72	9E9	1112.861	128	9E9	9E9
3.400	289.320	0.746	-3.583	9E9	0.925	10	10	49	74	9E9	1112.861	128	9E9	9E9
3.500	279.742	0.756	-3.372	9E9	-4.486	10	10	48	72	9E9	1112.861	128	9E9	9E9
3.600	279.742	0.460	-5.020	9E9	-5.020	10	10	48	72	9E9	1112.861	128	9E9	9E9
3.700	231.055	0.656	-3.190	9E9	-4.960	10	10	42	63	9E9	1112.861	128	9E9	9E9
3.800	207.370	0.656	-3.128	9E9	-3.955	10	10	41	62	9E9	1112.861	128	9E9	9E9
3.900	235.960	0.651	-2.793	9E9	-3.932	10	10	38	56	9E9	1112.861	128	9E9	9E9
4.000	247.263	0.860	-2.410	9E9	-3.923	10	10	38	56	9E9	1112.861	128	9E9	9E9
4.100	245.482	0.860	-2.130	9E9	-4.883	10	10	41	62	9E9	1112.861	128	9E9	9E9
4.200	222.223	0.823	-1.717	9E9	-4.100	10	10	41	62	9E9	1112.861	128	9E9	9E9
4.300	234.673	0.969	-1.566	9E9	-3.977	9	10	44	66	9E9	1112.861	128	9E9	9E9
4.400	234.673	0.969	-1.380	9E9	-3.470	9	10	41	62	9E9	1112.861	128	9E9	9E9
4.500	279.310	1.086	-1.053	9E9	-3.075	10	10	37	56	9E9	1112.861	128	9E9	9E9

4.700	305.445	1.029	0.574	3.700	-0.522	-2.932	2.050	10	10	51	76	47	9E9
4.800	316.000	1.077	0.564	3.800	-0.203	-3.062	2.100	10	10	23	78	9E9	
4.900	321.923	0.787	0.595	3.900	-0.441	-3.190	2.150	10	10	55	78	9E9	
5.000	328.057	0.655	0.616	4.000	-1.337	-3.320	2.200	10	10	55	78	9E9	
5.100	335.362	0.855	0.627	4.100	-1.735	-3.428	2.250	10	10	54	79	9E9	
5.200	342.842	0.762	0.637	4.200	-1.385	-1.972	2.275	10	10	50	68	9E9	
5.300	349.497	0.947	0.648	4.300	-1.923	-1.803	2.250	10	10	43	58	9E9	
5.400	356.057	0.914	0.658	4.400	-1.625	-1.695	2.250	10	10	40	53	9E9	
5.500	361.515	0.836	0.668	4.500	-0.608	-1.525	2.350	9	9	38	90	9E9	
5.600	367.003	0.989	0.678	4.600	-0.352	-0.772	2.325	9	9	39	91	9E9	
5.700	372.423	1.210	0.688	4.700	-0.015	0.690	2.325	9	9	39	91	9E9	
5.800	377.885	0.872	0.719	4.800	0.215	0.995	2.325	9	9	39	91	9E9	
5.900	383.397	0.872	0.719	4.900	0.063	1.050	2.325	9	9	39	91	9E9	
6.000	388.957	0.880	0.729	5.000	-0.025	1.050	2.325	9	9	39	91	9E9	
6.100	394.567	0.880	0.729	5.100	0.025	1.050	2.325	9	9	39	91	9E9	
6.200	400.227	0.880	0.729	5.200	0.025	1.050	2.325	9	9	39	91	9E9	
6.300	405.937	0.880	0.729	5.300	0.025	1.050	2.325	9	9	39	91	9E9	
6.400	411.697	0.880	0.729	5.400	0.025	1.050	2.325	9	9	39	91	9E9	
6.500	417.507	0.880	0.729	5.500	0.025	1.050	2.325	9	9	39	91	9E9	
6.600	423.367	0.880	0.729	5.600	0.025	1.050	2.325	9	9	39	91	9E9	
6.700	429.277	0.880	0.729	5.700	0.025	1.050	2.325	9	9	39	91	9E9	
6.800	435.237	0.880	0.729	5.800	0.025	1.050	2.325	9	9	39	91	9E9	
6.900	441.247	0.880	0.729	5.900	0.025	1.050	2.325	9	9	39	91	9E9	
7.000	447.307	0.880	0.729	6.000	0.025	1.050	2.325	9	9	39	91	9E9	
7.100	453.417	0.880	0.729	6.100	0.025	1.050	2.325	9	9	39	91	9E9	
7.200	459.577	0.880	0.729	6.200	0.025	1.050	2.325	9	9	39	91	9E9	
7.300	465.787	0.880	0.729	6.300	0.025	1.050	2.325	9	9	39	91	9E9	
7.400	472.047	0.880	0.729	6.400	0.025	1.050	2.325	9	9	39	91	9E9	
7.500	478.357	0.880	0.729	6.500	0.025	1.050	2.325	9	9	39	91	9E9	
7.600	484.717	0.880	0.729	6.600	0.025	1.050	2.325	9	9	39	91	9E9	
7.700	491.127	0.880	0.729	6.700	0.025	1.050	2.325	9	9	39	91	9E9	
7.800	497.587	0.880	0.729	6.800	0.025	1.050	2.325	9	9	39	91	9E9	
7.900	504.097	0.880	0.729	6.900	0.025	1.050	2.325	9	9	39	91	9E9	
8.000	510.657	0.880	0.729	7.000	0.025	1.050	2.325	9	9	39	91	9E9	
8.100	517.267	0.880	0.729	7.100	0.025	1.050	2.325	9	9	39	91	9E9	
8.200	523.927	0.880	0.729	7.200	0.025	1.050	2.325	9	9	39	91	9E9	
8.300	530.637	0.880	0.729	7.300	0.025	1.050	2.325	9	9	39	91	9E9	
8.400	537.397	0.880	0.729	7.400	0.025	1.050	2.325	9	9	39	91	9E9	
8.500	544.207	0.880	0.729	7.500	0.025	1.050	2.325	9	9	39	91	9E9	
8.600	551.067	0.880	0.729	7.600	0.025	1.050	2.325	9	9	39	91	9E9	
8.700	557.977	0.880	0.729	7.700	0.025	1.050	2.325	9	9	39	91	9E9	
8.800	564.937	0.880	0.729	7.800	0.025	1.050	2.325	9	9	39	91	9E9	
8.900	571.947	0.880	0.729	7.900	0.025	1.050	2.325	9	9	39	91	9E9	
9.000	579.007	0.880	0.729	8.000	0.025	1.050	2.325	9	9	39	91	9E9	
9.100	586.117	0.880	0.729	8.100	0.025	1.050	2.325	9	9	39	91	9E9	
9.200	593.277	0.880	0.729	8.200	0.025	1.050	2.325	9	9	39	91	9E9	
9.300	600.487	0.880	0.729	8.300	0.025	1.050	2.325	9	9	39	91	9E9	
9.400	607.747	0.880	0.729	8.400	0.025	1.050	2.325	9	9	39	91	9E9	
9.500	615.057	0.880	0.729	8.500	0.025	1.050	2.325	9	9	39	91	9E9	
9.600	622.417	0.880	0.729	8.600	0.025	1.050	2.325	9	9	39	91	9E9	
9.700	629.827	0.880	0.729	8.700	0.025	1.050	2.325	9	9	39	91	9E9	
9.800	637.287	0.880	0.729	8.800	0.025	1.050	2.325	9	9	39	91	9E9	
9.900	644.797	0.880	0.729	8.900	0.025	1.050	2.325	9	9	39	91	9E9	
10.000	652.357	0.880	0.729	9.000	0.025	1.050	2.325	9	9	39	91	9E9	

14.700	109.240	1.325	1.571	13.700	12.818	4.175	8	9	27	18	39	753.425	64	19.650	969	313.449	969	11.548	969
14.800	49.952	0.561	1.581	14.158	12.180	4.175	6	6	21	14	37	200.921	57	19.650	969				
14.900	84.000	1.016	1.591	11.837	12.227	4.260	6	6	26	16	41	650.705	61	19.650	969				
15.000	127.792	0.504	1.601	4.323	14.205	4.360	9	9	26	17	41	856.530	70	19.650	969				
15.100	136.583	0.679	1.611	4.940	13.900	4.650	9	9	27	18	41	837.885	68	19.650	969				
15.200	131.158	1.090	1.620	6.142	14.960	4.700	9	9	26	17	41	523.281	35	19.650	969				
15.300	59.503	0.440	1.630	13.967	26.835	4.725	7	7	11	13	37	111.085	969	163.019	4.875	969			
15.400	71.765	0.445	1.640	21.642	29.087	4.600	8	8	11	12	37	821.374	68	19.650	969				
15.500	134.182	0.447	1.650	4.970	19.263	4.600	9	9	27	18	41	1004.468	77	19.650	969				
15.600	179.727	0.652	1.659	1.647	15.188	4.725	9	9	36	23	41	1035.313	81	19.650	969				
15.700	189.358	1.182	1.679	2.155	15.565	4.800	9	9	35	23	41	989.840	71	19.650	969				
15.800	174.465	1.076	1.689	3.247	12.578	4.875	9	9	29	23	41	234.704	969						
15.900	147.273	0.865	1.699	4.558	12.545	4.725	6	6	29	15	969	439.268	22	18.660	969				
16.000	58.592	1.313	1.708	7.153	19.353	4.575	7	7	33	37	37	614.525	45	18.660	969				
16.100	56.592	1.602	1.718	9.958	13.220	4.525	8	8	19	12	37	779.478	61	19.650	969				
16.200	41.138	0.602	1.728	7.950	17.968	4.525	8	8	39	39	39	774.480	50	19.650	969				
16.300	74.570	0.960	1.737	15.400	16.468	4.575	8	8	28	18	39	639.237	73	19.650	969				
16.400	112.970	1.722	1.747	5.225	14.532	4.725	9	9	39	39	39	1046.503	80	19.650	969				
16.500	106.410	0.960	1.757	5.943	14.382	4.850	9	9	41	24	41	1046.503	80	19.650	969				
16.600	155.490	1.209	1.767	8.662	14.382	4.900	9	9	38	24	41	1046.503	80	19.650	969				
16.700	189.803	1.649	1.777	8.005	15.222	4.900	9	9	36	24	41	1046.503	80	19.650	969				
16.800	189.803	1.649	1.786	13.183	13.853	4.867	9	9	37	23	41	1046.503	80	19.650	969				
16.900	190.210	1.528	1.796	13.853	12.425	4.867	9	9	37	23	41	1046.503	80	19.650	969				
17.000	184.068	1.610	1.806	13.085	12.425	4.875	7	7	29	17	37	1028.325	79	18.660	969				
17.100	87.755	1.586	1.816	11.872	11.706	4.600	9	9	29	17	37	756.470	57	18.660	969				
17.200	106.527	1.030	1.826	9.958	13.220	4.425	8	8	26	16	39	909.156	56	19.650	969				
17.300	102.347	0.941	1.835	16.400	13.220	4.425	8	8	26	16	39	909.156	56	19.650	969				
17.400	147.313	1.823	1.845	9.475	14.195	4.500	9	9	41	1005.253	77	1005.253	77	19.650	969				
17.500	143.970	1.034	1.854	8.218	14.015	4.925	9	9	39	39	39	957.924	77	19.650	969				
17.600	55.598	1.129	1.864	6.125	14.015	4.925	9	9	35	26	37	519.314	31	18.660	969				
17.700	55.598	1.252	1.874	9.858	12.328	4.900	6	6	18	8	37	935.687	71	18.660	969				
17.800	60.033	1.854	1.884	13.412	12.328	4.900	6	6	18	8	37	752.774	54	19.650	969				
17.900	154.100	0.887	1.893	13.180	17.990	5.067	9	9	40	24	41	1087.087	81	19.650	969				
18.000	200.712	1.204	1.903	14.620	17.130	5.275	9	9	40	24	41	1087.087	81	19.650	969				
18.100	186.563	1.119	1.913	14.960	15.408	5.200	9	9	35	31	41	1043.859	78	19.650	969				
18.200	173.423	1.059	1.923	15.420	15.408	5.200	9	9	35	31	41	1043.859	78	19.650	969				
18.300	195.980	1.013	1.932	17.300	16.247	4.950	9	9	32	23	41	945.207	71	19.650	969				
18.400	192.260	1.013	1.942	17.400	16.247	4.950	9	9	32	23	41	945.207	71	19.650	969				
18.500	186.155	1.151	1.952	16.728	16.728	4.900	9	9	37	23	41	1068.079	78	19.650	969				
18.600	186.155	1.189	1.962	17.600	16.430	4.900	9	9	37	23	41	1053.996	78	19.650	969				
18.700	188.450	1.276	1.972	16.325	15.758	4.900	9	9	37	23	41	1053.996	78	19.650	969				
18.800	241.833	1.077	1.982	17.700	16.325	4.900	9	9	40	24	41	1212.856	87	20.440	969				
18.900	230.090	1.116	1.992	11.703	18.377	5.135	10	10	46	26	41	1180.638	85	19.650	969				
19.000	103.435	1.420	1.992	17.800	19.377	5.470	8	8	26	16	37	752.774	54	19.650	969				
19.100	29.175	0.643	2.002	11.573	15.570	5.300	6	6	12	7	969	117.604	969	169.315	3.942	969			
19.200	23.273	0.363	2.011	18.200	35.795	5.367	6	6	12	7	969	95.258	6	19.650	969	129.869	2.869	969	
19.300	72.075	0.466	2.021	17.953	45.705	5.367	6	6	14	9	37	458.796	20	19.650	969				
19.400	84.512	0.466	2.031	21.765	32.700	5.700	8	8	14	11	37	630.748	42	19.650	969				
19.500	84.512	0.466	2.041	18.400	21.423	5.675	8	8	21	12	37	760.713	53	19.650	969				
19.600	102.370	0.984	2.051	10.468	20.217	5.725	8	8	25	12	37	712.150	50	19.650	969				
19.700	93.088	0.850	2.060	18.600	8.645	5.700	8	8	25	12	37	712.150	50	19.650	969				
19.800	146.253	0.438	2.070	18.700	8.360	5.700	8	8	29	16	39	919.224	67	19.650	969				
19.900	145.020	0.586	2.080	8.360	17.370	5.700	8	8	39	39	39	919.224	67	19.650	969				
20.000	94.768	0.487	2.090	16.800	6.458	5.855	9	9	29	16	39	919.224	67	19.650	969				
20.100	126.318	0.874	2.100	35.835	21.845	5.825	9	9	25	14	37	848.371	61	19.650	969				
20.200	55.815	1.291	2.110	14.072	21.845	5.825	9	9	25	14	37	848.371	61	19.650	969				
20.300	30.233	0.303	2.120	9.050	20.835	5.825	9	9	25	14	37	848.371	61	19.650	969				
20.400	41.870	0.754	2.130	11.175	20.835	5.750	6	6	10	5	969	224.737	58	18.660	969	345.349	9.039	969	
20.500	40.230	0.884	2.140	16.055	20.835	5.750	6	6	10	5	969	224.737	58	18.660	969	345.349	9.039	969	
20.600	41.870	0.754	2.150	56.760	56.760	5.925	6	6	8	8	969	831.045	969	18.660	107.992	2.090	969		
20.700	40.230	0.884	2.160	26.065	56.760	5.925	6	6	8	8	969	831.045	969	18.660	107.992	2.090	969		
20.800	65.103	0.925	2.170	19.700	36.870	5.800	7	7	11	9	33	504.675	24	18.660	969				
20.900	76.565	0.925	2.180	21.945	36.870	5.800	7	7	11	9	33	504.675	24	18.660	969				
21.000	50.924	0.877	2.190	19.097	21.850	5.800	7	7	11	9	33	504.675	24	18.660	969				
21.100	50.924	0.877	2.200	19.687	18.352	6.225	7	7	12	10	33	586.738	35	18.660	969				
21.200	46.740	0.556	2.210	8.350	23.817	6.225	7	7	12	10	33	586.738	35	18.660	969				
21.300	46.740	0.556	2.220	6.350	23.817	6.225	7	7	12	10	33	586.738	35	18.660	969				
21.400	46.740	0.556	2.230	9.217	43.628	6.125	7	7	16	8	969	347.910	-1	18.660	969				
21.500	14.892	0.276	2.240	20.400	43.628	6.125	7	7	16	8	969	347.910	-1	18.660	969				
21.600	18.865	0.278	2.250	13.715	70.198	6.200	6	6	8	3	969	60.646	969	18.660	71.010	1.174	969		
21.700	17.020	0.299	2.260	19.367	69.548	6.200	6	6	8	3	969	60.646	969	18.660	71.010	1.174	969		
21.800	25.920	0.384	2.270	19.367	69.548	6.272	6	6	8	3	969	60.646	969	18.660	71.010	1.174	969		
21.900	25.920	0.384	2.280	19.367	69.548	6.272	6	6	8	3	969	60.646	969	18.660	71.010	1.174	969		
22.000	52.781	0.709	2.290	19.367	69.548	6.375	6	6	7	4	969	60.646							

24.700	23.017	0.228	2.531	23.700	74.590	75.817	6.900	7	5	8	4	9E9	343.485	18.860	9E9	18.860	9E9	1.200	9E9
24.800	17.295	0.185	2.540	23.800	63.020	51.535	6.900	6	4	8	4	9E9	463.374	18.860	9E9	18.860	9E9	82.798	9E9
24.900	39.795	0.499	2.549	23.900	12.860	37.145	7.035	7	4	8	6	9E9	481.324	18.860	9E9	18.860	9E9	9E9	9E9
25.000	44.055	0.513	2.558	24.000	26.140	67.407	7.105	7	7	15	7	9E9	335.948	18.860	9E9	18.860	9E9	9E9	9E9
25.100	21.970	0.153	2.577	24.100	40.425	71.905	7.125	7	6	8	4	9E9	345.722	18.860	9E9	18.860	9E9	9E9	9E9
25.200	42.077	0.210	2.586	24.200	50.215	69.893	7.100	7	6	8	8	9E9	408.113	18.860	9E9	18.860	9E9	9E9	9E9
25.300	43.430	0.294	2.595	24.300	51.015	59.618	7.200	7	6	11	4	9E9	482.451	18.860	9E9	18.860	9E9	9E9	9E9
25.400	37.305	0.275	2.604	24.400	55.485	80.447	7.100	7	6	15	8	9E9	374.823	18.860	9E9	18.860	9E9	1.779	9E9
25.500	32.392	0.238	2.613	24.500	70.772	87.010	7.200	6	6	10	5	9E9	482.451	18.860	9E9	18.860	9E9	1.365	9E9
25.600	32.978	0.260	2.623	24.600	89.410	79.083	7.200	7	5	10	5	9E9	95.124	18.860	9E9	18.860	9E9	9E9	9E9
25.700	25.432	0.260	2.632	24.700	60.640	59.240	7.225	7	5	8	4	9E9	347.952	18.860	9E9	18.860	9E9	9E9	9E9
25.800	42.290	0.387	2.641	24.800	82.607	83.045	7.300	9	5	9	4	9E9	83.743	18.860	9E9	18.860	9E9	9E9	9E9
25.900	48.424	0.424	2.650	24.900	73.000	77.500	7.300	9	4	14	7	9E9	475.545	18.860	9E9	18.860	9E9	9E9	9E9
26.000	78.972	0.360	2.659	25.000	34.664	88.000	7.350	6	6	10	5	9E9	96.531	18.860	9E9	18.860	9E9	9E9	9E9
26.100	78.972	0.360	2.668	25.100	52.110	85.118	7.300	6	5	10	5	9E9	96.531	18.860	9E9	18.860	9E9	9E9	9E9
26.200	78.972	0.360	2.677	25.200	34.305	84.305	7.300	6	5	8	4	9E9	63.569	18.860	9E9	18.860	9E9	9E9	9E9
26.300	78.972	0.360	2.686	25.300	49.585	84.585	7.300	6	5	20	10	9E9	675.418	18.860	9E9	18.860	9E9	9E9	9E9
26.400	144.363	1.519	2.695	25.400	23.253	28.427	7.350	9	39	18	18	9E9	1050.181	18.860	9E9	18.860	9E9	9E9	9E9
26.500	174.272	1.689	2.704	25.500	15.862	28.427	7.325	8	35	18	18	9E9	675.418	18.860	9E9	18.860	9E9	9E9	9E9
26.600	44.372	1.263	2.713	25.600	16.772	29.892	7.325	8	36	18	18	9E9	944.510	18.860	9E9	18.860	9E9	9E9	9E9
26.700	37.502	1.077	2.722	25.700	29.525	39.943	7.200	6	37	18	18	9E9	178.406	18.860	9E9	18.860	9E9	9E9	9E9
26.800	99.445	0.690	2.731	25.800	24.243	29.340	7.225	6	37	18	18	9E9	152.327	18.860	9E9	18.860	9E9	9E9	9E9
26.900	102.023	1.238	2.739	25.900	24.243	29.340	6.875	8	37	18	18	9E9	152.327	18.860	9E9	18.860	9E9	9E9	9E9
27.000	97.260	0.769	2.748	26.000	21.960	25.045	6.850	8	37	18	18	9E9	797.362	18.860	9E9	18.860	9E9	9E9	9E9
27.100	142.350	0.849	2.757	26.100	21.960	25.045	7.500	13	37	18	18	9E9	797.362	18.860	9E9	18.860	9E9	9E9	9E9
27.200	142.350	0.849	2.766	26.200	33.370	33.567	7.500	13	37	18	18	9E9	797.362	18.860	9E9	18.860	9E9	9E9	9E9
27.300	208.140	1.174	2.775	26.300	33.370	33.567	7.500	13	37	18	18	9E9	797.362	18.860	9E9	18.860	9E9	9E9	9E9
27.400	177.965	1.659	2.784	26.400	1.347	21.492	7.375	9	15	15	15	9E9	939.009	18.860	9E9	18.860	9E9	9E9	9E9
27.500	71.468	1.780	2.793	26.500	2.785	21.750	7.375	9	15	15	15	9E9	946.673	18.860	9E9	18.860	9E9	9E9	9E9
27.600	113.510	1.410	2.802	26.600	3.163	20.753	7.325	9	15	15	15	9E9	1164.140	18.860	9E9	18.860	9E9	9E9	9E9
27.700	129.083	1.061	2.811	26.700	5.178	20.815	7.275	6	15	15	15	9E9	1066.127	18.860	9E9	18.860	9E9	9E9	9E9
27.800	107.135	1.290	2.820	26.800	4.938	26.762	7.175	6	15	15	15	9E9	826.108	18.860	9E9	18.860	9E9	9E9	9E9
27.900	82.452	1.061	2.829	26.900	4.938	26.762	7.175	6	15	15	15	9E9	826.108	18.860	9E9	18.860	9E9	9E9	9E9
28.000	53.567	0.689	2.838	27.000	24.590	24.590	7.225	7	16	16	16	9E9	890.735	18.860	9E9	18.860	9E9	9E9	9E9
28.100	48.795	0.366	2.847	27.100	31.425	31.425	7.225	7	16	16	16	9E9	890.735	18.860	9E9	18.860	9E9	9E9	9E9
28.200	48.795	0.366	2.856	27.200	31.425	31.425	7.225	7	16	16	16	9E9	890.735	18.860	9E9	18.860	9E9	9E9	9E9
28.300	48.795	0.366	2.865	27.300	31.425	31.425	7.225	7	16	16	16	9E9	890.735	18.860	9E9	18.860	9E9	9E9	9E9
28.400	34.762	0.240	2.874	27.400	33.697	52.917	7.450	7	16	16	16	9E9	545.146	18.860	9E9	18.860	9E9	9E9	9E9
28.500	24.998	0.219	2.883	27.500	33.697	52.917	7.450	7	16	16	16	9E9	545.146	18.860	9E9	18.860	9E9	9E9	9E9
28.600	42.522	0.664	2.892	27.600	48.632	66.970	7.575	6	16	16	16	9E9	507.071	18.860	9E9	18.860	9E9	9E9	9E9
28.700	54.102	0.608	2.901	27.700	37.845	46.415	7.575	6	16	16	16	9E9	391.649	18.860	9E9	18.860	9E9	9E9	9E9
28.800	50.130	0.561	2.910	27.800	34.347	40.035	7.575	6	16	16	16	9E9	431.003	18.860	9E9	18.860	9E9	9E9	9E9
28.900	27.003	0.309	2.919	27.900	26.875	32.450	7.925	7	17	17	17	9E9	482.035	18.860	9E9	18.860	9E9	9E9	9E9
29.000	16.813	0.251	2.928	28.000	30.785	30.785	7.925	7	17	17	17	9E9	482.035	18.860	9E9	18.860	9E9	9E9	9E9
29.100	16.813	0.251	2.937	28.100	30.785	30.785	7.925	7	17	17	17	9E9	482.035	18.860	9E9	18.860	9E9	9E9	9E9
29.200	24.023	0.292	2.946	28.200	38.095	41.358	7.905	6	17	17	17	9E9	110.424	18.860	9E9	18.860	9E9	9E9	9E9
29.300	14.405	0.100	2.955	28.300	40.827	60.840	7.875	6	17	17	17	9E9	70.730	18.860	9E9	18.860	9E9	9E9	9E9
29.400	14.405	0.100	2.964	28.400	54.790	80.895	7.800	6	17	17	17	9E9	70.730	18.860	9E9	18.860	9E9	9E9	9E9
29.500	14.405	0.100	2.973	28.500	68.635	84.855	7.800	6	17	17	17	9E9	353.070	18.860	9E9	18.860	9E9	9E9	9E9
29.600	13.307	0.069	2.982	28.600	88.585	88.515	7.800	6	17	17	17	9E9	62.510	18.860	9E9	18.860	9E9	9E9	9E9
29.700	50.238	0.101	2.991	28.700	90.868	80.150	7.900	6	17	17	17	9E9	62.510	18.860	9E9	18.860	9E9	9E9	9E9
29.800	41.435	0.455	3.000	28.800	75.307	57.670	7.950	6	17	17	17	9E9	62.510	18.860	9E9	18.860	9E9	9E9	9E9
29.900	26.575	0.176	3.009	28.900	36.300	41.452	8.075	6	17	17	17	9E9	64.295	18.860	9E9	18.860	9E9	9E9	9E9
30.000	26.575	0.176	3.018	29.000	63.185	64.775	7.975	6	17	17	17	9E9	64.295	18.860	9E9	18.860	9E9	9E9	9E9
30.100	22.733	0.182	3.027	29.100	57.895	80.445	8.025	5	17	17	17	9E9	378.535	18.860	9E9	18.860	9E9	9E9	9E9
30.200	22.665	0.249	3.036	29.200	68.597	85.870	8.025	5	17	17	17	9E9	378.535	18.860	9E9	18.860	9E9	9E9	9E9
30.300	19.260	0.252	3.045	29.300	72.618	85.870	8.025	5	17	17	17	9E9	378.535	18.860	9E9	18.860	9E9	9E9	9E9
30.400	50.332	0.668	3.054	29.400	57.818	42.060	8.100	7	18	18	18	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
30.500	42.195	0.965	3.063	29.500	33.112	43.315	8.125	6	18	18	18	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
30.600	89.168	0.765	3.072	29.600	30.313	37.365	8.200	6	18	18	18	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
30.700	163.085	1.129	3.081	29.700	22.425	31.472	8.200	6	18	18	18	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
30.800	35.245	0.300	3.090	29.800	22.425	31.472	8.150	6	18	18	18	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
30.900	35.245	0.300	3.099	29.900	34.240	44.257	8.050	6	18	18	18	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
31.000	82.320	0.766	3.108	30.000	36.073	40.660	8.167	6	18	18	18	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
31.100	173.563	1.324	3.117	30.100	18.350	38.077	8.200	9	19	19	19	9E9	96.043	18.860	9E9	18.860	9E9	9E9	9E9
31.200	100.465	1.739	3.1																

Output file from CPTINT - Version 5.0ppd
 INPUT FILE: E:\GSC-94\GSC-9417.EDT

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 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GSC170 Date: 8-03-94 13:00
 Operator: ROC-SST On Site Location: CRIC192365SURREY
 Cone Type: UBC92UZ3 Comment: SOENHNO/FANURE

SUMMARY SHEET

For calculating Q_t:
 Value for Water Table (in m): 7.400
 Valid Zone Classification based on: Rf
 Missing unit weight to start depth: 18.000
 Method for calculating Su: NK
 Value of the constant Nk: 15.000
 alpha for modulus in clay: 4.000
 Su/EOS: Su/EOS
 Method used to calculate OCR: Moderate
 Define Zone 6 for consolidation: Robertson & Campanella
 Sand Compression Angle Calc Dr: 1.000
 Initial guess of OCR for sand: Baldi Method
 Method for Modulus in sand: Baldi Method

Soil Behavior Type Zone Numbers
 For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained
 Zone #2=Organic material
 Zone #3=Silty clay
 Zone #4=Clayey silt
 Zone #5=Clayey silt
 Zone #6=Sandy silt
 Zone #7=Silty sand
 Zone #8=Fine sand
 Zone #9=Sand
 Zone #10=Gravelly sand
 Zone #11=Very stiff fine grained
 Zone #12=Sand to clayey sand
 Zone #13=Overconsolidated and/or cemented

NOTE:
 For soil classification, Rf values > 8 are assumed to be 8.
 (Note: 9E9 means out of range)

Depth (meter)	Q (avg) (bars)	Fs (avg) (bars)	EOS (avg) (%)	Rf (%)	Uo (meter)	U2 (meter)	U3 (meter)	U3 (meter)	inc (meter)	Time (meter)	Rf Zone (Zone #)	Bq Zone (Zone #)	Spt N (blow/ft)	SPT N1 (blow/ft)	Phi (degree)	M Modulus Dr (bars)	Gamma (kn/m ³)	Su (kPa)	OCR (ratio)
0.100	36.720	0.262	0.020	0.678	9E9	-0.248	0.010	9E9	9E9	9E9	7	8	13	20	9E9	240.893	116	18.860	9E9
0.200	37.715	0.153	0.039	0.406	9E9	-0.112	-0.015	9E9	9E9	9E9	6	8	15	15	9E9	274.083	104	19.650	9E9
0.300	37.715	0.153	0.039	0.406	9E9	-0.105	-0.050	9E9	9E9	9E9	7	8	13	20	9E9	271.854	91	19.650	9E9
0.400	46.303	0.144	0.078	0.298	9E9	-0.105	-0.097	9E9	9E9	9E9	8	8	12	18	9E9	328.676	83	19.650	9E9
0.500	52.243	0.151	0.097	0.289	9E9	-0.087	-0.120	9E9	9E9	9E9	8	8	13	20	9E9	362.154	90	19.650	9E9
0.600	53.628	0.179	0.117	0.334	9E9	-0.098	-0.117	9E9	9E9	9E9	8	8	13	20	9E9	359.587	85	19.650	9E9
0.700	51.144	0.296	0.137	0.578	9E9	-0.073	-0.086	9E9	9E9	9E9	8	8	12	18	9E9	353.625	80	19.650	9E9
0.800	48.176	0.272	0.156	0.565	9E9	-0.052	-0.086	9E9	9E9	9E9	8	8	12	18	9E9	353.625	80	19.650	9E9
0.900	50.660	0.253	0.176	0.499	9E9	-0.032	-0.070	9E9	9E9	9E9	8	8	12	18	9E9	369.309	79	19.650	9E9
1.000	45.176	0.228	0.196	0.440	9E9	0.070	-0.038	9E9	9E9	9E9	8	8	14	21	9E9	392.791	80	19.650	9E9
1.100	45.176	0.228	0.196	0.440	9E9	0.115	-0.012	9E9	9E9	9E9	9	9	21	32	9E9	507.936	95	19.650	9E9
1.200	123.756	0.249	0.233	0.413	9E9	0.180	-0.012	9E9	9E9	9E9	9	9	22	33	9E9	589.285	102	19.650	9E9
1.300	178.187	1.295	0.255	0.572	9E9	0.347	0.038	9E9	9E9	9E9	9	9	25	38	9E9	540.929	106	19.650	9E9
1.400	178.187	1.295	0.255	0.572	9E9	0.274	0.038	9E9	9E9	9E9	9	9	25	38	9E9	1021.864	133	19.650	9E9
1.500	274.592	3.333	0.294	1.214	9E9	0.240	0.042	9E9	9E9	9E9	9	9	25	38	9E9	1101.346	137	19.650	9E9
1.600	308.053	3.252	0.314	1.056	9E9	0.177	0.235	9E9	9E9	9E9	9	9	25	38	9E9	1165.019	139	19.650	9E9
1.700	335.675	2.924	0.333	0.871	9E9	0.528	0.380	9E9	9E9	9E9	9	9	25	38	9E9	1205.521	139	19.650	9E9
1.800	352.055	4.644	0.353	1.319	9E9	0.277	0.357	9E9	9E9	9E9	9	9	25	38	9E9	1135.575	133	19.650	9E9
1.900	352.055	4.644	0.353	1.319	9E9	0.277	0.357	9E9	9E9	9E9	9	9	25	38	9E9	1135.575	133	19.650	9E9
2.000	312.791	1.298	0.373	0.415	9E9	0.070	0.299	9E9	9E9	9E9	10	9E9	52	78	9E9	9E9	9E9	20.440	9E9
2.100	300.9E9	3.419	0.399	0.9E9	9E9	0.045	0.600	9E9	9E9	9E9	10	9E9	67	9E9	9E9	9E9	9E9	20.440	9E9
2.200	300.9E9	3.419	0.399	0.9E9	9E9	0.038	0.722	9E9	9E9	9E9	10	9E9	86	101	9E9	1315.111	142	20.440	9E9
2.300	306.042	1.177	0.434	0.368	9E9	-0.060	0.817	9E9	9E9	9E9	10	9E9	77	86	9E9	1208.150	134	20.440	9E9
2.400	297.269	1.424	0.455	0.479	9E9	0.080	0.757	9E9	9E9	9E9	10	9E9	50	51	9E9	1143.385	127	20.440	9E9
2.500	335.907	1.940	0.475	0.578	9E9	0.085	0.605	9E9	9E9	9E9	10	9E9	56	84	9E9	1219.170	131	20.440	9E9
2.600	300.9E9	1.529	0.496	0.9E9	9E9	0.100	0.710	9E9	9E9	9E9	10	9E9	64	9E9	9E9	1316.052	135	20.440	9E9
2.700	381.018	1.737	0.516	0.468	9E9	-0.130	0.685	9E9	9E9	9E9	10	9E9	62	93	9E9	1303.134	133	20.440	9E9
2.800	303.747	1.372	0.527	0.582	9E9	-0.130	0.685	9E9	9E9	9E9	10	9E9	51	77	9E9	1169.640	124	20.440	9E9
2.900	318.743	1.535	0.577	1.053	9E9	-0.082	0.602	9E9	9E9	9E9	10	9E9	53	80	9E9	1207.089	125	20.440	9E9
3.000	278.208	2.312	0.597	0.831	9E9	-0.150	0.700	9E9	9E9	9E9	10	9E9	67	99	9E9	1249.179	127	19.650	9E9
3.100	278.208	2.312	0.597	0.831	9E9	-0.193	0.805	9E9	9E9	9E9	10	9E9	56	81	9E9	1128.144	119	19.650	9E9
3.200	237.183	2.135	0.616	0.830	9E9	-0.233	0.810	9E9	9E9	9E9	9	9	56	81	9E9	1083.824	112	19.650	9E9
3.300	268.188	1.872	0.636	0.698	9E9	-0.267	0.893	9E9	9E9	9E9	9	9	54	74	9E9	1119.969	116	19.650	9E9
3.400	268.188	1.872	0.636	0.698	9E9	-0.267	0.893	9E9	9E9	9E9	9	9	54	74	9E9	1119.969	116	19.650	9E9
3.500	268.188	1.872	0.636	0.698	9E9	-0.267	0.893	9E9	9E9	9E9	9	9	54	74	9E9	1119.969	116	19.650	9E9
3.600	268.188	1.872	0.636	0.698	9E9	-0.267	0.893	9E9	9E9	9E9	9	9	54	74	9E9	1119.969	116	19.650	9E9
3.700	268.188	1.872	0.636	0.698	9E9	-0.267	0.893	9E9	9E9	9E9	9	9	54	74	9E9	1119.969	116	19.650	9E9
3.800	288.759	4.562	0.656	1.580	9E9	-0.310	0.600	9E9	9E9	9E9	8	10	72	96	9E9	1165.970	118	19.650	9E9
3.900	216.086	1.689	0.675	1.768	9E9	-0.213	0.902	9E9	9E9	9E9	8	10	43	56	9E9	993.598	106	19.650	9E9
4.000	159.445	1.684	0.695	1.9E9	9E9	-0.213	0.902	9E9	9E9	9E9	9	9	32	41	9E9	839.919	94	19.650	9E9
4.100	9E9	9E9	9E9	9E9	9E9	-0.255	1.170	9E9	9E9	9E9	9	9	9E9	9E9	9E9	9E9	9E9	20.440	9E9
4.200	379.360	2.467	0.715	0.650	9E9	-0.255	1.170	9E9	9E9	9E9	10	9E9	63	79	9E9	1375.282	127	20.440	9E9
4.300	351.556	2.677	0.735	0.761	9E9	-0.200	1.410	9E9	9E9	9E9	10	9E9	59	72	9E9	1327.988	123	20.440	9E9
4.400	351.556	2.677	0.735	0.761	9E9	-0.200	1.410	9E9	9E9	9E9	10	9E9	59	72	9E9	1327.988	123	20.440	9E9
4.500	375.618	2.344	0.756	0.624	9E9	-0.235	1.438	9E9	9E9	9E9	10	10	63	76	9E9	1377.287	125	20.440	9E9

14.700	201.533	1.372	1.867	0.681	7.300	-1.000	5.000	9E9	9	9	40	24	41	1086.792	82	19.650	9E9
14.800	192.190	1.143	1.877	0.595	7.500	-1.390	4.930	9E9	9	38	23	23	41	1058.435	79	19.650	9E9
14.900	189.973	1.151	1.887	0.606	7.500	-1.675	5.523	9E9	9	34	24	23	41	1058.435	79	19.650	9E9
15.000	219.274	0.920	1.896	0.419	7.500	-2.785	7.407	9E9	9	42	25	25	41	1142.098	84	19.650	9E9
15.100	212.215	0.661	1.906	0.372	7.400	2.662	7.249	9E9	9	36	21	21	41	1031.923	87	19.650	9E9
15.200	192.481	0.676	1.916	0.371	7.900	2.245	7.222	9E9	9	34	20	20	41	1030.919	77	19.650	9E9
15.300	156.134	0.711	1.926	0.481	8.000	2.245	7.187	9E9	9	31	18	18	41	994.234	74	19.650	9E9
15.400	170.233	1.470	1.946	0.634	8.200	2.068	7.088	9E9	9	34	20	20	41	993.177	74	19.650	9E9
15.500	222.626	1.556	1.955	0.699	8.200	0.553	6.975	9E9	9	10	45	26	41	1156.415	84	19.650	9E9
15.600	234.324	1.196	1.965	0.511	8.300	2.988	6.992	9E9	9	10	47	27	41	1191.105	86	19.650	9E9
15.700	206.532	0.748	1.975	0.612	8.300	2.322	7.003	9E9	9	41	23	23	41	1105.804	81	19.650	9E9
15.800	205.532	0.889	1.985	0.364	8.500	0.990	7.030	9E9	9	34	19	19	41	987.368	81	19.650	9E9
15.900	167.531	0.889	1.995	0.531	8.500	-0.068	8.563	9E9	9	35	20	20	41	1009.180	74	19.650	9E9
16.000	173.948	0.723	2.005	0.417	8.700	2.035	8.438	9E9	9	42	24	24	41	1123.761	81	19.650	9E9
16.100	210.206	1.064	2.014	0.706	8.900	0.520	8.535	9E9	9	36	20	20	41	1034.325	76	19.650	9E9
16.200	181.298	0.285	2.024	0.706	9.000	0.520	8.535	9E9	9	37	21	21	41	1054.490	77	19.650	9E9
16.300	186.673	0.654	2.034	0.456	9.000	-0.795	8.717	9E9	9	37	21	21	41	994.237	73	19.650	9E9
16.400	177.262	0.654	2.044	0.411	9.100	-0.657	9.015	9E9	9	34	19	19	41	1023.135	74	19.650	9E9
16.500	182.129	0.585	2.054	0.330	9.200	2.120	9.000	9E9	9	35	19	19	41	1039.537	75	19.650	9E9
16.600	185.899	0.634	2.064	0.291	9.300	3.507	8.958	9E9	9	36	20	20	41	986.759	72	19.650	9E9
16.700	184.246	0.634	2.073	0.382	9.400	3.140	8.945	9E9	9	33	18	18	41	1087.895	76	19.650	9E9
16.800	185.369	0.945	2.083	0.406	9.500	3.513	8.913	9E9	9	37	20	20	41	1087.895	76	19.650	9E9
16.900	185.369	0.945	2.093	0.510	9.600	3.898	9.225	9E9	9	41	22	22	41	1117.371	80	19.650	9E9
17.000	206.092	0.947	2.103	0.459	9.700	3.985	9.140	9E9	9	43	23	23	41	1143.661	81	19.650	9E9
17.100	214.531	0.892	2.113	0.416	9.800	2.345	9.063	9E9	9	43	23	23	41	1136.898	81	19.650	9E9
17.200	212.066	0.953	2.123	0.443	9.900	2.495	9.033	9E9	9	43	23	23	41	1143.661	81	19.650	9E9
17.300	204.946	1.100	2.133	0.443	10.000	2.967	8.975	9E9	9	41	22	22	41	1143.661	81	19.650	9E9
17.400	221.647	1.135	2.142	0.537	10.100	3.517	8.905	9E9	9	45	24	24	41	1116.480	79	19.650	9E9
17.500	221.011	1.195	2.152	0.517	10.200	3.517	8.905	9E9	9	44	24	24	41	1173.599	82	19.650	9E9
17.600	218.016	1.504	2.162	0.541	10.300	4.102	8.880	9E9	9	44	24	24	41	1166.443	82	19.650	9E9
17.700	201.881	1.194	2.172	0.592	10.400	4.390	8.843	9E9	9	40	21	21	41	1158.156	71	19.650	9E9
17.800	195.180	0.975	2.182	0.499	10.500	4.472	8.833	9E9	9	40	21	21	41	1089.252	77	19.650	9E9
17.900	185.475	0.741	2.192	0.400	10.600	4.720	8.720	9E9	9	37	19	19	41	1058.928	75	19.650	9E9
18.000	177.996	0.693	2.201	0.370	10.700	3.390	8.363	9E9	9	33	19	19	41	1035.086	73	19.650	9E9
18.100	153.030	0.546	2.211	0.377	10.800	7.263	8.460	9E9	9	39	17	17	41	994.798	70	19.650	9E9
18.200	153.030	0.546	2.221	0.357	10.900	8.010	8.425	9E9	9	39	17	17	41	931.576	67	19.650	9E9
18.300	148.179	0.534	2.231	0.361	11.000	8.010	8.425	9E9	9	39	16	16	41	931.576	67	19.650	9E9
18.400	146.358	0.553	2.241	0.378	11.100	8.165	9.457	9E9	9	39	16	16	41	928.947	66	19.650	9E9
18.500	151.104	0.617	2.251	0.408	11.200	8.813	9.510	9E9	9	39	16	16	41	928.947	66	19.650	9E9
18.600	169.547	0.640	2.260	0.377	11.300	9.360	9.583	9E9	9	39	16	16	41	946.363	66	19.650	9E9
18.700	177.754	0.617	2.270	0.377	11.400	9.908	9.640	9E9	9	39	15	15	41	1010.213	66	19.650	9E9
18.800	177.754	0.561	2.280	0.316	11.500	10.035	9.638	9E9	9	34	17	17	41	1006.990	72	19.650	9E9
18.900	168.175	0.586	2.290	0.349	11.600	9.818	11.365	9E9	9	36	17	17	41	1006.990	72	19.650	9E9
19.000	190.922	0.763	2.300	0.379	11.700	10.825	11.365	9E9	9	41	19	19	41	1082.368	75	19.650	9E9
19.100	162.374	1.762	2.310	0.825	11.800	10.825	11.062	9E9	9	52	26	26	41	1295.923	87	19.650	9E9
19.200	282.767	1.762	2.320	0.623	11.900	7.805	11.042	9E9	9	10	47	24	41	1352.635	90	20.440	9E9

Output file from CPTINT - Version 5.0ppd
 INPUT FILE: E:\GSC-94\GSC-9420.EDT

Licensed to: UBC Course - For teaching only
 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94

File Number: GSC201 Date: 0-03-94 10:30
 On Site Location: CRTIC192836SURREY
 Operator: JLE-HS
 Cone Type: UBC92U3 Comment: 11mmofAWASurfEnc

SUMMARY SHEET

for calculating Qr:
 - Rf Correction Factor: 0.800
 - Rf Correction Factor: 7.400
 - Valid Zone Classification based on:
 - Missing unit weight to start depth: 18.000
 - Method for calculating Su: NK
 - Value of the constant 'Nk': 15.000
 - 'alpha' for Modulus in clay: 4.000
 - (Su/EOS) for normal consolidation: Su/EOS
 - Define Zone 6 for Sand Parameters: No
 - Sand Compressibility Angle Calc Df: No
 - Method for guess of OCR for sand: Robertson & Campanella
 - Method for Modulus in sand: Baldi Method

Soil behavior Type Zone Numbers

For Rf Zone & Bq Zone Classification
 - Zone #1=Sensitive fine grained
 - Zone #2=organic material
 - Zone #3=clay
 - Zone #4=clayey silt
 - Zone #5=Sandy silt
 - Zone #6=Sand to clayey sand
 - Zone #7=Silty sand
 - Zone #8=Fine sand
 - Zone #9=Sand
 - Zone #10=Gravelly sand
 - Zone #11=very stiff fine grained
 - Zone #12=Sand to clayey sand
 - Zone #13=Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: 9E9 means Out of Range)

Depth (meter)	Qr (avg) (bars)	E _s (avg) (bars)	EOS (avg) (bars)	Rf (%)	Uo (meter)	Uz (meter)	Uz (meter)	Uz (meter)	T _{emp} (meter)	Rf Zone (zone #)	Bq Zone (zone #)	SPT N (blow/ft)	SPT N1 (blow/ft)	Phi (degree)	M Modulus Dr (bars)	Gamma (KN/m ³)	Su (kPa)	OCR (ratio)
0.100	34.394	0.222	0.038	0.640	9E9	-0.162	9E9	9E9	9E9	7	8	12	18	9E9	224.094	112	19.850	9E9
0.200	37.167	0.283	0.058	0.800	9E9	-0.160	9E9	9E9	9E9	8	8	15	21	9E9	326.392	117	19.850	9E9
0.300	38.437	0.283	0.077	0.643	9E9	-0.153	9E9	9E9	9E9	7	8	14	23	9E9	326.392	98	18.860	9E9
0.400	30.045	0.138	0.096	0.590	9E9	-0.127	9E9	9E9	9E9	7	7	10	12	9E9	233.879	79	18.860	9E9
0.500	18.077	0.261	0.115	0.686	9E9	-0.137	9E9	9E9	9E9	6	6	9	11	9E9	80.180	9E9	19.850	133.011
0.600	29.608	0.287	0.134	0.971	9E9	-0.132	9E9	9E9	9E9	7	7	10	15	9E9	71.310	9E9	18.860	91.684
0.700	24.954	0.303	0.153	0.971	9E9	-0.080	9E9	9E9	9E9	6	7	10	15	9E9	263.407	64	18.860	9E9
0.800	27.425	0.365	0.173	1.214	9E9	-0.075	9E9	9E9	9E9	7	7	11	17	9E9	109.698	9E9	19.850	95.977
0.900	25.959	0.483	0.193	1.483	9E9	-0.075	9E9	9E9	9E9	6	7	10	17	9E9	103.835	9E9	19.850	151.900
1.000	32.740	0.320	0.211	0.815	9E9	-0.067	9E9	9E9	9E9	6	8	11	17	9E9	293.496	93	19.850	9E9
1.100	19.378	0.364	0.231	1.405	9E9	-0.010	9E9	9E9	9E9	7	8	11	32	9E9	671.843	110	19.850	9E9
1.200	179.431	1.613	0.270	0.766	9E9	0.020	9E9	9E9	9E9	8	9	27	54	9E9	796.508	119	19.850	9E9
1.300	279.243	3.546	0.290	1.270	9E9	0.075	9E9	9E9	9E9	9	9	56	84	9E9	1031.648	134	19.850	9E9
1.400	370.882	4.146	0.310	1.118	9E9	0.090	9E9	9E9	9E9	9	10	74	111	9E9	1221.090	144	19.850	9E9
1.500	298.456	2.587	0.329	0.867	9E9	0.407	9E9	9E9	9E9	9	10	60	90	9E9	1088.560	134	19.850	9E9
1.600	259.076	1.478	0.349	0.370	9E9	0.290	9E9	9E9	9E9	9	10	52	78	9E9	1012.377	128	19.850	9E9
1.700	279.028	1.619	0.369	0.580	9E9	-0.008	9E9	9E9	9E9	10	10	47	71	9E9	1063.201	129	20.440	9E9
1.800	308.730	2.236	0.389	0.389	9E9	-0.008	9E9	9E9	9E9	10	10	51	77	9E9	1133.430	132	20.440	9E9
1.900	379.772	3.983	0.412	0.9E9	9E9	0.090	9E9	9E9	9E9	10	10	63	95	9E9	1282.351	139	20.440	9E9
2.000	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.100	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.200	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.300	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.400	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.500	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.600	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.700	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.800	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.900	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
3.000	352.815	3.333	0.450	1.052	9E9	0.260	9E9	9E9	9E9	9	10	71	107	9E9	1237.600	135	19.850	9E9
3.100	374.815	3.333	0.450	0.944	9E9	0.127	9E9	9E9	9E9	9	10	54	81	9E9	1297.733	130	20.440	9E9
3.200	323.990	1.985	0.470	0.605	9E9	0.095	9E9	9E9	9E9	10	10	36	86	9E9	1176.186	130	20.440	9E9
3.300	333.712	2.196	0.490	0.658	9E9	0.005	9E9	9E9	9E9	9	10	56	84	9E9	1145.724	124	19.850	9E9
3.400	296.170	3.404	0.510	1.149	9E9	-0.027	9E9	9E9	9E9	9	10	44	66	9E9	981.255	112	19.850	9E9
3.500	280.062	2.627	0.530	0.938	9E9	-0.055	9E9	9E9	9E9	9	9	37	57	9E9	904.416	105	19.850	9E9
3.600	190.105	1.931	0.549	0.731	9E9	-0.043	9E9	9E9	9E9	9	9	36	52	9E9	878.776	102	19.850	9E9
3.700	179.293	1.430	0.589	0.705	9E9	-0.105	9E9	9E9	9E9	9	9	36	55	9E9	926.568	105	19.850	9E9
3.800	195.473	1.440	0.626	0.648	9E9	-0.227	9E9	9E9	9E9	9	9	36	50	9E9	881.235	100	19.850	9E9
3.900	169.385	1.268	0.648	0.746	9E9	-0.235	9E9	9E9	9E9	9	9	46	46	9E9	862.737	96	19.850	9E9
4.000	155.445	0.768	0.667	0.604	9E9	-0.240	9E9	9E9	9E9	9	9	34	41	9E9	663.075	80	19.850	9E9
4.100	111.433	0.735	0.687	0.660	9E9	-0.225	9E9	9E9	9E9	9	9	28	28	9E9	470.835	54	18.860	9E9
4.200	57.005	0.706	0.688	1.206	9E9	-0.122	9E9	9E9	9E9	9	9	27	27	9E9	763.863	86	19.850	9E9
4.300	133.478	0.872	0.726	0.654	9E9	-0.607	9E9	9E9	9E9	9	9	33	33	9E9	763.863	86	19.850	9E9

Output file from CPTINT - Version 5.0ppd
 INPUT FILE: E:\GSC-94\GSC-9421.EDT

Licensed to: UBC Course - For teaching only
 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94

File Number: GSC211 Date: 0-03-94 13:03
 On Site Location: CRTIC192836SURREY
 Operator: JLE-HS
 Comment: 15MHW/MAJURE
 Cone Type: UBC92U3

SUMMARY SHEET

Existing Qf: 0.800
 Value for Water Table (in m): 7.400
 Valid Zone Classification based on: Rf
 Missing unit weight to start depth: 18.000
 Method for calculating Su: NK
 Value of the constant Nk: 15.000
 'alpha' for Modulus in clay: 4.000
 Method used to calculate OCR: SU/EOS
 Define Zone 6 for Sand Parameters: NO280
 Sand Compaction Angle: Robertsson & Campanella
 Initial guess of OCR for sand: 1.000
 Method for Modulus in sand: Baldi Method

Soil Behavior Type Zone Numbers

For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained
 Zone #2=Organic Material
 Zone #3=Silty clay
 Zone #4=Clayey silt
 Zone #5=Clayey silt
 Zone #6=Sandy silt
 Zone #7=Silly sand
 Zone #8=Fine sand
 Zone #9=Sand
 Zone #10=Gravelly sand
 Zone #11=Very stiff fine grained
 Zone #12=Sand to clayey sand
 * Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: 9E9 means Out Of Range)

Depth (meter)	Qf (avg) (bars)	Fs (avg) (bars)	EOS (avg) (%)	Rf (%)	Uo (meter)	Uz (meter)	Us (meter)	Incl (meter)	Temp (meter)	Rf Zone (Zone #)	Bq Zone (Zone #)	Sq N (blow/ft)	Sq Ni (blow/ft)	Phi (degree)	M Modulus Dr (bars)	% Modulus Dr	Gamma (kN/m ³)	SU (kPa)	OCR (ratio)
0.100	31.798	0.409	0.038	9E9	1.282	-0.205	-0.192	9E9	9E9	7	8	11	17	9E9	214.442	109	18.860	9E9	9E9
0.200	40.259	0.426	0.038	9E9	0.846	-0.045	-0.137	9E9	9E9	7	7	10	23	9E9	287.965	108	18.860	9E9	9E9
0.300	16.442	0.046	0.076	9E9	0.281	-0.035	-0.097	9E9	9E9	7	6	5	18	45	175.793	83	18.860	9E9	9E9
0.400	22.300	0.118	0.095	9E9	0.530	-0.017	-0.115	9E9	9E9	7	6	7	11	45	241.607	9E9	18.860	9E9	61.131
0.500	12.924	0.090	0.114	9E9	0.698	-0.035	-0.125	9E9	9E9	6	6	3	5	45	26.798	9E9	17.300	85.409	22.049
0.600	6.700	0.018	0.132	9E9	0.269	-0.023	-0.075	9E9	9E9	5	5	3	5	9E9	22.998	9E9	17.300	37.340	15.048
0.800	4.373	0.024	0.149	9E9	0.362	-0.027	-0.050	9E9	9E9	1	4	2	3	9E9	17.492	9E9	17.300	28.047	9.438
0.900	4.502	0.014	0.166	9E9	0.349	-0.023	-0.044	9E9	9E9	1	4	2	3	9E9	18.008	9E9	17.300	28.793	8.618
1.000	4.235	0.024	0.206	9E9	0.379	-0.040	-0.040	9E9	9E9	1	4	2	3	9E9	16.259	9E9	15.700	22.433	3.665
1.100	4.335	0.024	0.217	9E9	0.373	-0.015	-0.038	9E9	9E9	1	4	2	3	9E9	16.929	9E9	17.300	26.773	6.170
1.300	13.660	0.340	0.235	9E9	2.485	-0.002	-0.010	9E9	9E9	5	6	7	11	9E9	54.640	9E9	18.860	89.926	26.379
1.500	144.461	0.679	0.254	9E9	0.601	-0.030	-0.030	9E9	9E9	8	6	25	38	47	584.793	110	19.650	9E9	9E9
1.600	191.557	1.294	0.293	9E9	0.470	-0.025	-0.025	9E9	9E9	9	9	29	54	9E9	835.018	120	19.650	9E9	9E9
1.700	239.421	1.477	0.313	9E9	0.675	-0.003	-0.007	9E9	9E9	9	9	28	57	9E9	934.921	127	19.650	9E9	9E9
1.800	230.823	0.808	0.333	9E9	0.313	0.002	0.060	9E9	9E9	10	10	38	72	9E9	942.799	124	20.440	9E9	9E9
1.900	207.285	1.007	0.353	9E9	0.486	0.015	0.235	9E9	9E9	9	9	41	62	9E9	893.846	119	19.650	9E9	9E9
2.000	211.671	1.007	0.373	9E9	0.524	0.023	0.330	9E9	9E9	9	9	42	63	9E9	910.717	118	19.650	9E9	9E9
2.100	218.790	1.151	0.393	9E9	0.716	0.112	0.337	9E9	9E9	9	9	42	63	9E9	915.744	117	19.650	9E9	9E9
2.200	434.783	1.706	0.412	9E9	0.535	0.160	0.100	9E9	9E9	10	10	53	80	9E9	1162.459	132	20.440	9E9	9E9
2.300	434.783	3.710	0.433	9E9	0.853	0.160	0.100	9E9	9E9	10	10	72	108	9E9	1393.662	143	20.440	9E9	9E9
2.400	449.633	3.929	0.453	9E9	0.874	0.150	0.050	9E9	9E9	10	10	75	113	9E9	1428.761	143	20.440	9E9	9E9
2.500	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
2.600	397.155	3.468	0.473	9E9	0.873	0.093	0.103	9E9	9E9	9	9	79	119	9E9	1339.336	137	19.650	9E9	9E9
2.700	362.143	1.901	0.493	9E9	0.525	0.145	0.008	9E9	9E9	10	10	90	90	9E9	1278.050	133	20.440	9E9	9E9
2.800	354.309	1.535	0.514	9E9	0.190	-0.140	-0.140	9E9	9E9	10	10	89	89	9E9	1268.882	131	20.440	9E9	9E9
2.900	370.056	1.579	0.534	9E9	-0.200	-0.120	-0.120	9E9	9E9	10	10	62	93	9E9	1306.883	132	20.440	9E9	9E9
3.000	401.633	1.890	0.555	9E9	-0.271	-0.105	-0.105	9E9	9E9	10	10	67	101	9E9	1375.273	134	20.440	9E9	9E9
3.100	416.526	2.020	0.576	9E9	-0.305	-0.135	-0.135	9E9	9E9	10	10	69	102	9E9	1410.305	135	20.440	9E9	9E9
3.200	401.392	2.651	0.595	9E9	-0.389	-0.150	-0.150	9E9	9E9	10	9E9	9E9	9E9	9E9	1387.093	133	20.440	9E9	9E9
3.300	292.772	2.447	0.616	9E9	-0.417	-0.180	-0.180	9E9	9E9	10	10	57	97	9E9	1367.723	120	20.440	9E9	9E9
3.400	237.548	1.232	0.636	9E9	-0.370	-0.052	-0.052	9E9	9E9	9	10	59	59	9E9	1088.964	114	20.440	9E9	9E9
3.500	239.832	1.019	0.656	9E9	-0.397	-0.078	-0.078	9E9	9E9	10	10	40	54	9E9	1209.350	120	20.440	9E9	9E9
3.600	305.897	1.990	0.676	9E9	-0.400	-0.175	-0.175	9E9	9E9	10	10	51	67	9E9	1209.350	120	20.440	9E9	9E9
3.700	305.897	1.990	0.676	9E9	-0.400	-0.175	-0.175	9E9	9E9	10	9E9	9E9	9E9	9E9	1377.111	128	20.440	9E9	9E9
3.800	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
3.900	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
4.000	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
4.100	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
4.200	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
4.300	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
4.400	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
4.500	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9
4.600	382.447	1.912	0.697	9E9	-0.385	-0.150	-0.150	9E9	9E9	10	10	64	82	9E9	1377.111	128	20.440	9E9	9E9

14.700	146.736	1.274	1.586	0.869	7.300	-1.115	-3.817	9E9	9	9	29	20	41	889.907	73	19.650	9E9
14.800	185.351	0.668	1.596	0.471	7.400	-1.185	-3.717	9E9	9	9	37	25	41	1012.955	81	19.650	9E9
14.900	183.302	0.723	1.606	0.390	7.500	-1.185	-3.703	9E9	9	9	37	25	41	1016.989	82	19.650	9E9
15.000	183.289	0.881	1.616	0.481	7.600	-1.690	-3.645	9E9	9	9	31	21	41	1018.880	81	19.650	9E9
15.100	172.739	0.892	1.626	0.517	7.700	-0.078	-0.078	9E9	9	9	31	21	41	978.834	74	19.650	9E9
15.200	154.011	0.674	1.636	0.538	7.800	1.810	1.810	9E9	9	9	23	15	39	759.666	61	19.650	9E9
15.300	109.871	0.235	1.645	0.472	7.900	1.835	1.835	9E9	9	9	23	15	39	759.666	61	19.650	9E9
15.400	4.877	0.785	1.655	0.472	8.000	0.635	1.832	9E9	9	9	23	15	39	683.340	53	19.650	9E9
15.500	46.632	0.664	1.674	0.774	8.100	-0.018	1.910	9E9	9	9	15	10	33	487.453	26	18.860	9E9
15.600	69.994	0.855	1.683	0.880	8.200	0.210	2.172	9E9	9	9	15	10	33	487.453	26	18.860	9E9
15.700	35.788	0.853	1.693	0.983	8.300	0.330	2.352	9E9	9	9	17	11	37	590.287	43	19.650	9E9
15.800	18.397	0.560	1.702	0.383	8.400	0.422	2.345	9E9	9	9	17	11	37	590.287	43	19.650	9E9
15.900	112.666	0.622	1.712	0.352	8.500	0.850	2.642	9E9	9	9	9	6	9E9	721.002	9E9	18.860	9E9
16.000	95.306	1.081	1.722	1.134	8.600	1.332	3.068	9E9	9	9	23	14	39	721.002	9E9	18.860	9E9
16.100	99.624	0.710	1.731	0.792	8.700	1.395	3.210	9E9	9	9	23	14	39	721.002	9E9	18.860	9E9
16.200	64.438	0.909	1.741	0.800	8.800	1.350	3.270	9E9	9	9	23	14	39	721.002	9E9	18.860	9E9
16.300	59.880	0.533	1.750	0.441	8.900	2.520	3.042	9E9	9	9	21	14	37	681.174	52	19.650	9E9
16.400	1.141	0.533	1.759	0.441	9.000	2.520	3.042	9E9	9	9	21	14	37	681.174	52	19.650	9E9
16.500	1.141	0.533	1.768	0.441	9.100	2.520	3.042	9E9	9	9	21	14	37	681.174	52	19.650	9E9
16.600	109.831	0.779	1.779	0.779	9.200	4.983	3.150	9E9	9	9	23	13	37	583.682	36	18.860	9E9
16.700	98.331	0.779	1.788	0.779	9.300	4.983	3.150	9E9	9	9	23	13	37	583.682	36	18.860	9E9
16.800	86.805	0.653	1.799	0.880	9.400	4.640	3.180	9E9	9	9	25	16	39	749.060	58	19.650	9E9
16.900	102.291	0.464	1.799	0.453	9.500	4.855	3.080	9E9	9	9	25	16	39	749.060	58	19.650	9E9
17.000	113.059	0.573	1.809	0.507	9.600	4.617	2.960	9E9	9	9	22	14	37	671.767	50	19.650	9E9
17.100	133.844	0.646	1.818	0.482	9.700	4.653	2.930	9E9	9	9	22	14	37	671.767	50	19.650	9E9
17.200	137.049	0.769	1.828	0.561	9.800	4.925	4.438	9E9	9	9	23	14	39	809.897	66	19.650	9E9
17.300	126.293	0.704	1.838	0.557	9.900	5.177	4.253	9E9	9	9	27	16	39	809.897	66	19.650	9E9
17.400	152.640	0.619	1.848	0.548	10.000	7.845	6.160	9E9	9	9	27	16	39	809.897	66	19.650	9E9
17.500	179.511	0.750	1.858	0.548	10.100	6.517	6.370	9E9	9	9	25	15	39	833.050	64	19.650	9E9
17.600	179.511	0.585	1.868	0.548	10.200	6.517	6.370	9E9	9	9	25	15	39	833.050	64	19.650	9E9
17.700	155.367	0.620	1.877	0.399	10.300	5.773	6.500	9E9	9	9	36	22	41	927.762	71	19.650	9E9
17.800	140.326	0.557	1.887	0.399	10.400	5.565	6.012	9E9	9	9	36	22	41	927.762	71	19.650	9E9
17.900	134.314	0.867	1.897	0.646	10.500	3.245	5.503	9E9	9	9	35	21	41	1017.739	77	19.650	9E9
18.000	189.943	2.132	1.907	1.122	10.600	0.020	5.130	9E9	9	9	35	21	41	1017.739	77	19.650	9E9
18.100	276.658	1.569	1.917	0.567	10.700	5.215	5.215	9E9	9	9	35	21	41	938.970	71	19.650	9E9
18.200	237.551	0.993	1.928	0.418	10.800	3.170	6.545	9E9	9	9	27	16	39	865.995	95	19.650	9E9
18.300	231.828	0.913	1.938	0.418	10.900	3.275	6.577	9E9	9	9	38	22	41	865.995	95	19.650	9E9
18.400	246.473	2.061	1.948	0.727	11.000	7.127	8.210	9E9	9	9	46	26	41	1053.883	99	20.440	9E9
18.500	238.579	0.702	1.958	0.384	11.100	2.000	6.273	9E9	9	9	40	23	41	1197.419	87	20.440	9E9
18.600	228.176	0.702	1.968	0.384	11.200	4.775	9.583	9E9	9	9	40	23	41	1197.419	87	20.440	9E9
18.700	197.825	0.558	1.978	0.244	11.300	4.875	9.705	9E9	9	9	40	23	41	1197.419	87	20.440	9E9
18.800	175.727	0.391	1.991	0.211	11.400	4.960	10.372	9E9	9	9	33	22	41	1173.742	85	20.440	9E9
18.900	175.727	0.391	1.991	0.211	11.500	4.960	10.372	9E9	9	9	33	22	41	1173.742	85	20.440	9E9
19.000	187.637	0.682	2.001	0.250	11.600	5.568	10.852	9E9	9	9	35	20	41	1043.584	90	20.440	9E9
19.100	216.812	1.793	2.011	0.363	11.700	10.915	10.915	9E9	9	9	35	20	41	1043.584	90	20.440	9E9
19.200	246.473	2.061	2.021	0.827	11.800	7.127	9.210	9E9	9	9	36	20	41	1043.584	90	20.440	9E9
19.300	207.346	1.155	2.031	0.571	11.900	8.990	9.580	9E9	9	9	40	23	41	1026.709	77	19.650	9E9
19.400	207.346	1.155	2.031	0.571	12.000	8.990	9.580	9E9	9	9	40	23	41	1026.709	77	19.650	9E9
19.500	168.615	1.558	2.040	0.573	12.100	8.825	8.795	9E9	9	9	50	28	41	1144.023	83	19.650	9E9
19.600	168.615	1.558	2.040	0.573	12.200	8.825	8.795	9E9	9	9	50	28	41	1144.023	83	19.650	9E9
19.700	172.195	1.262	2.070	0.924	12.300	6.778	3.095	9E9	9	9	43	24	41	1236.326	88	19.650	9E9
19.800	175.899	0.731	2.080	0.415	12.400	3.037	4.088	9E9	9	9	40	22	41	1146.951	83	19.650	9E9
19.900	207.332	0.762	2.090	0.368	12.500	3.282	3.282	9E9	9	9	34	19	41	1099.217	79	19.650	9E9
20.000	214.433	0.997	2.100	0.465	12.600	3.588	5.182	9E9	9	9	34	19	41	995.034	72	19.650	9E9
20.100	240.704	1.110	2.109	0.461	12.700	3.985	5.338	9E9	9	9	34	19	41	1007.516	72	19.650	9E9
20.200	240.704	1.110	2.109	0.461	12.800	3.985	5.338	9E9	9	9	34	19	41	1007.516	72	19.650	9E9
20.300	260.753	1.261	2.119	0.523	12.900	4.520	5.878	9E9	9	9	41	22	41	1020.314	74	19.650	9E9
20.400	260.753	1.261	2.119	0.523	13.000	4.520	5.878	9E9	9	9	41	22	41	1020.314	74	19.650	9E9
20.500	244.003	1.084	2.141	0.481	13.100	9.788	9.788	9E9	9	9	43	24	41	1120.258	80	19.650	9E9
20.600	217.703	1.047	2.151	0.481	13.200	9.788	9.788	9E9	9	9	43	24	41	1120.258	80	19.650	9E9
20.700	198.895	1.099	2.171	0.552	13.300	4.225	4.225	9E9	9	9	40	24	41	1098.844	74	19.650	9E9
20.800	179.778	1.032	2.171	0.552	13.400	4.225	4.225	9E9	9	9	40	24	41	1098.844	74	19.650	9E9
20.900	167.076	0.904	2.181	0.341	13.500	10.108	4.920	9E9	9	9	36	19	39	992.059	71	19.650	9E9
21.000	166.520	0.858	2.190	0.341	13.600	10.523	5.360	9E9	9	9	36	19	39	992.059	71	19.650	9E9
21.100	191.103	0.979	2.200	0.509	13.700	10.985	5.360	9E9	9	9	36	19	39	1002.488	71	19.650	9E9
21.200	212.418	1.079	2.210	0.445	13.800	11.625	6.215	9E9	9	9	36	19	39	1002.488	71	19.650	9E9
21.300	174.181	0.898	2.220	0.445	13.900	11.625	6.215	9E9	9	9	36	19	39	1002.488	71	19.650	9E9
21.400	166.073	0.785	2.230	0.316	14.000	12.172	11.645	9E9	9	9	36	19	39	1044.691	74	19.650	9E9
21.500	159.947	0.750	2.240	0.473	14.100	12.870	11.407	9E9	9	9	36	19	39	1044.691	74	19.650	9E9
21.600	168.085	0.913	2.250	0.473	14.200	12.870	11.407	9E9	9	9	33	17	39	996.319	70	19.650	9E9
21.700	199.692	1.298	2.259	0.543	14.300	12.605	11.475	9E9	9	9	32	17	39	996.319	70	19.650	9E9
21.800	269.313	1.597	2.279	0.850	14.400	12.868	11.938	9E9	9	9	32	17	39	976.691	68	19.650	9E9
21.900	299.308	1.385	2.289	0.593	14.500	13.100	12.250	9E9	9	9	34	16	39	1004.285	77	19.650	9E9
22.000	212.418	1.352	2.309	0.493	14.600												

Output file from CPTINT - Version 5.0ppd
 INPUT FILE: E:\GSC-94\GSC-9423.EDT

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 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GSC231 Date: 1-03-94 10:43
 Operator: MPD-118 On Site Location: STOKES PIT SWCRN
 Cone Type: UBC94/203 Comment: NMO\GSC-9414

SUMMARY SHEET

a. for calculating Q_t: 0.800
 value for Water Table (in m): 1.000
 valid Zone Classification based on: Rf
 missing unit weight to start depth: 18.000
 Method for calculating Su: NK
 value of the constant Nk: 15.000
 Method for Modulus: Su/EOS
 value of the constant Su: 0.280
 Method for Modulus: Bald
 (Su/EOS) for normal consolidation: NO
 Define Zone 6 for Sand Parameters: Robertson & Campanella
 Sand Compressibility for calc Dr: Moderate
 Method for Friction Angle: Bald
 Initial guess of OCR for sand: 1.000
 Method for Modulus in sand: Bald Method

Soil Behavior Type Zone Numbers
 For Rf Zone # Bq Zone Classification
 Zone #1=Sensitive fine grained Zone #7 =Silty sand
 Zone #2=Organic material Zone #8 =Fine sand
 Zone #3=Clay Zone #9 =Sand
 Zone #4=Silty clay Zone #10=Gravelly sand
 Zone #5=Clayey silt Zone #11=Very stiff fine grained
 Zone #6=Sandy silt Zone #12=Sand to clayey sand
 * Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.

(Note: 9E9 means Out Of Range)

Depth (meter)	Q (kPa)	f (kPa)	ES (kPa)	Rf (%)	U ₂ (meter)	U ₃ (meter)	U ₄ (meter)	U ₅ (meter)	U ₆ (meter)	Rf Zone (Zone #)	Bq Zone (Zone #)	SPT N (blow/ft)	SPT N1 (blow/ft)	Phi (degree)	N Modulus Dr (bars)	Gamma (kn/m ³)	SU (kPa)	OCR (ratio)
0.100	65.904	0.445	0.020	0.675	9E9	0.185	0.233	0.100	0.125	9E9	8	16	24	9E9	324.463	19.650	9E9	9E9
0.200	108.080	0.765	0.039	0.708	9E9	0.243	0.310	0.100	0.100	9E9	8	27	41	9E9	468.420	19.650	9E9	9E9
0.300	131.005	0.490	0.059	0.479	9E9	0.140	0.140	0.100	0.100	9E9	9	26	39	9E9	549.720	19.650	9E9	9E9
0.400	149.728	0.625	0.079	0.417	9E9	0.140	0.140	0.100	0.100	9E9	9	32	48	9E9	614.819	19.650	9E9	9E9
0.500	158.694	0.760	0.098	0.327	9E9	0.140	0.140	0.100	0.100	9E9	9	32	48	9E9	653.985	19.650	9E9	9E9
0.600	143.874	0.485	0.118	0.337	9E9	0.140	0.140	0.100	0.100	9E9	9	32	48	9E9	592.243	19.650	9E9	9E9
0.700	125.805	0.608	0.136	0.483	9E9	0.140	0.140	0.100	0.100	9E9	9	32	48	9E9	592.243	19.650	9E9	9E9
0.800	165.124	0.372	0.177	0.449	9E9	0.140	0.140	0.100	0.100	9E9	9	33	50	9E9	688.794	19.650	9E9	9E9
0.900	162.552	0.730	0.197	0.449	0.000	0.140	0.140	0.100	0.100	9E9	9	33	50	9E9	720.153	19.650	9E9	9E9
1.000	155.328	0.710	0.206	0.456	0.000	0.140	0.140	0.100	0.100	9E9	9	31	47	9E9	709.451	19.650	9E9	9E9
1.200	168.393	0.767	0.216	0.456	0.000	0.140	0.140	0.100	0.100	9E9	9	34	51	9E9	746.957	19.650	9E9	9E9
1.300	208.402	1.190	0.226	0.571	0.000	0.140	0.140	0.100	0.100	9E9	9	42	63	9E9	847.266	19.650	9E9	9E9
1.400	228.899	0.885	0.236	0.387	0.000	0.140	0.140	0.100	0.100	9E9	10	38	57	9E9	896.418	19.650	9E9	9E9
1.500	253.653	1.342	0.247	0.529	0.000	0.140	0.140	0.100	0.100	9E9	10	38	57	9E9	996.418	19.650	9E9	9E9
1.600	314.507	1.038	0.257	0.330	0.000	0.140	0.140	0.100	0.100	9E9	10	38	57	9E9	1066.379	19.650	9E9	9E9
1.700	269.608	0.827	0.277	0.372	0.000	0.140	0.140	0.100	0.100	9E9	10	53	80	9E9	1103.453	19.650	9E9	9E9
1.800	277.585	0.558	0.289	0.201	0.000	0.140	0.140	0.100	0.100	9E9	10	50	75	9E9	1067.912	19.650	9E9	9E9
1.900	276.932	0.715	0.299	0.289	0.000	0.140	0.140	0.100	0.100	9E9	10	46	69	9E9	1027.555	19.650	9E9	9E9
2.000	279.683	0.527	0.310	0.189	1.000	0.140	0.140	0.100	0.100	9E9	10	46	69	9E9	1030.907	19.650	9E9	9E9
2.100	286.335	0.370	0.321	0.129	1.000	0.140	0.140	0.100	0.100	9E9	10	47	71	9E9	1041.281	19.650	9E9	9E9
2.200	262.285	0.470	0.331	0.179	1.000	0.140	0.140	0.100	0.100	9E9	10	48	72	9E9	1059.720	19.650	9E9	9E9
2.300	272.453	0.487	0.342	0.179	1.000	0.140	0.140	0.100	0.100	9E9	10	44	66	9E9	1012.679	19.650	9E9	9E9
2.400	273.786	0.455	0.352	0.179	1.000	0.140	0.140	0.100	0.100	9E9	10	45	68	9E9	1038.922	19.650	9E9	9E9
2.500	266.336	0.525	0.363	0.197	1.000	0.140	0.140	0.100	0.100	9E9	10	46	69	9E9	1043.768	19.650	9E9	9E9
2.600	284.736	0.620	0.374	0.218	1.000	0.140	0.140	0.100	0.100	9E9	10	46	69	9E9	1043.768	19.650	9E9	9E9
2.700	285.943	0.455	0.384	0.172	1.000	0.140	0.140	0.100	0.100	9E9	10	44	66	9E9	1027.138	19.650	9E9	9E9
2.800	288.269	0.428	0.395	0.172	1.000	0.140	0.140	0.100	0.100	9E9	10	48	72	9E9	1049.261	19.650	9E9	9E9
3.000	215.695	0.440	0.416	0.204	2.000	0.140	0.140	0.100	0.100	9E9	10	44	66	9E9	1043.476	19.650	9E9	9E9
3.200	212.272	0.395	0.427	0.186	2.000	0.140	0.140	0.100	0.100	9E9	10	36	53	9E9	933.474	19.650	9E9	9E9
3.300	209.524	0.357	0.437	0.171	2.000	0.140	0.140	0.100	0.100	9E9	10	35	53	9E9	928.043	19.650	9E9	9E9
3.400	202.376	0.517	0.448	0.256	2.000	0.140	0.140	0.100	0.100	9E9	9	35	53	9E9	924.118	19.650	9E9	9E9
3.500	209.530	0.477	0.458	0.227	2.000	0.140	0.140	0.100	0.100	9E9	9	40	60	9E9	908.844	19.650	9E9	9E9
3.600	216.863	0.558	0.469	0.257	2.000	0.140	0.140	0.100	0.100	9E9	10	35	53	9E9	929.512	19.650	9E9	9E9
3.700	188.541	1.250	0.479	0.653	2.000	0.140	0.140	0.100	0.100	9E9	10	36	54	9E9	950.508	19.650	9E9	9E9
3.800	193.478	0.918	0.489	0.473	2.000	0.140	0.140	0.100	0.100	9E9	9	38	56	9E9	896.733	19.650	9E9	9E9
4.000	209.376	0.903	0.508	0.431	2.000	0.140	0.140	0.100	0.100	9E9	9	39	59	9E9	904.739	19.650	9E9	9E9
4.100	235.245	1.120	0.518	0.476	3.000	0.140	0.140	0.100	0.100	9E9	9	42	63	9E9	941.514	19.650	9E9	9E9
4.200	225.131	0.835	0.528	0.371	3.000	0.140	0.140	0.100	0.100	9E9	10	47	71	9E9	1007.986	19.650	9E9	9E9
4.300	212.762	0.855	0.539	0.402	3.000	0.140	0.140	0.100	0.100	9E9	10	38	57	9E9	985.722	19.650	9E9	9E9
4.400	209.516	0.850	0.548	0.406	3.000	0.140	0.140	0.100	0.100	9E9	9	43	65	9E9	957.089	19.650	9E9	9E9
4.500	202.669	1.075	0.558	0.530	3.000	0.140	0.140	0.100	0.100	9E9	9	42	63	9E9	950.997	19.650	9E9	9E9
4.600	212.277	1.250	0.568	0.568	3.000	0.140	0.140	0.100	0.100	9E9	9	42	63	9E9	962.349	19.650	9E9	9E9

4.700	221.749	1.180	0.578	0.332	3.700	2.503	1.350	9E9	9	10	44	65	47	988.521	111	19.850	9E9
4.900	209.824	1.260	0.588	0.377	3.900	2.530	2.275	9E9	9	10	44	64	47	982.333	110	19.850	9E9
5.000	219.738	1.235	0.598	0.399	4.000	2.500	2.500	9E9	9	10	44	66	47	982.550	109	19.850	9E9
5.100	260.284	1.153	0.608	0.524	4.200	1.930	0.520	9E9	9	10	52	60	47	986.643	108	19.850	9E9
5.200	285.985	1.333	0.637	0.670	4.300	0.140	0.670	9E9	9	10	51	73	47	1091.232	115	19.850	9E9
5.300	298.331	1.620	0.657	0.820	4.400	-0.958	0.600	9E9	9	10	48	66	47	1084.355	114	19.850	9E9
5.400	312.481	1.780	0.648	0.670	4.300	-0.953	0.600	9E9	10	10	52	70	47	1165.368	119	20.440	9E9
5.500	336.987	1.393	0.659	0.413	4.500	0.700	0.267	9E9	10	10	56	75	47	1217.346	121	20.440	9E9
5.600	355.882	1.450	0.669	0.408	4.600	-0.933	0.200	9E9	10	10	56	75	47	1272.997	124	20.440	9E9
5.700	358.390	1.990	0.680	0.555	4.700	-0.513	0.200	9E9	10	10	60	78	47	1315.078	126	20.440	9E9
5.800	289.337	1.672	0.691	-1.913	4.800	-1.913	2.400	9E9	10	10	60	78	47	1323.367	125	20.440	9E9
5.900	334.835	1.750	0.701	0.325	4.900	-1.640	0.900	9E9	10	10	48	82	47	1175.014	117	20.440	9E9
6.000	365.190	1.570	0.712	0.430	5.000	-0.510	0.600	9E9	10	10	56	77	47	1278.208	122	20.440	9E9
6.100	374.997	1.525	0.723	0.407	5.100	-0.285	0.700	9E9	10	10	61	77	47	1367.527	125	20.440	9E9
6.200	386.402	1.731	0.707	0.200	5.200	0.085	0.400	9E9	10	10	64	79	47	1357.527	126	20.440	9E9
6.300	367.402	1.615	0.744	0.438	5.300	0.210	0.267	9E9	10	10	64	79	47	1394.682	127	20.440	9E9
6.400	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	10	9E9	61	74	47	1357.834	125	20.440	9E9
6.500	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	10	9E9	61	74	47	9E9	9E9	9E9	9E9
6.600	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	10	9E9	61	74	47	9E9	9E9	9E9	9E9
6.700	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	10	9E9	61	74	47	9E9	9E9	9E9	9E9
6.800	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	10	9E9	61	74	47	9E9	9E9	9E9	9E9
6.900	9E9	9E9	9E9	9E9	9E9	9E9	9E9	9E9	10	9E9	61	74	47	9E9	9E9	9E9	9E9
7.000	303.850	1.690	0.696	0.379	6.000	2.573	2.367	9E9	10	10	51	65	47	1208.952	119	20.440	9E9
7.100	303.749	2.060	0.706	0.779	6.100	2.447	2.647	9E9	10	10	52	65	47	1211.156	118	19.850	9E9
7.200	285.985	1.980	0.725	0.783	6.200	1.812	2.700	9E9	10	10	52	63	47	1108.242	112	19.850	9E9
7.300	255.985	2.115	0.735	0.812	6.300	4.855	2.775	9E9	10	10	63	64	47	1096.063	111	19.850	9E9
7.400	260.540	2.115	0.745	0.670	6.400	4.585	2.775	9E9	10	10	52	64	47	1116.310	112	19.850	9E9
7.500	246.146	1.650	0.745	0.670	6.500	4.885	2.950	9E9	10	10	49	59	47	1082.876	109	19.850	9E9
7.600	228.629	1.590	0.745	0.695	6.600	4.853	2.967	9E9	10	10	46	45	45	1040.388	106	19.850	9E9
7.700	204.298	1.777	0.765	1.072	6.700	4.970	2.967	9E9	10	10	41	49	45	977.940	101	19.850	9E9
7.800	124.957	1.340	0.775	0.872	6.800	4.155	3.225	9E9	9	9	31	37	45	742.070	82	19.850	9E9
7.900	209.686	1.030	0.784	0.491	6.900	4.400	3.867	9E9	9	9	42	49	45	995.030	102	19.850	9E9
8.000	241.239	1.295	0.794	0.537	7.000	1.970	3.800	9E9	9	9	42	49	45	995.030	102	19.850	9E9
8.100	212.993	1.322	0.804	0.646	7.100	0.960	4.900	9E9	9	9	46	48	45	1006.838	102	19.850	9E9
8.200	190.969	1.813	0.823	1.993	7.200	-0.967	4.575	9E9	9	9	40	45	45	967.847	99	19.850	9E9
8.300	84.958	1.508	0.832	0.767	7.300	0.867	4.475	9E9	9	9	30	30	43	625.078	68	18.860	9E9
8.400	84.958	1.038	0.842	1.221	7.400	0.430	4.475	9E9	9	9	27	21	41	585.309	64	18.860	9E9
8.500	170.750	1.025	0.852	0.600	7.500	0.002	4.500	9E9	9	9	23	23	41	603.134	65	19.850	9E9
8.600	144.314	0.815	0.865	0.503	7.600	-0.935	4.250	9E9	9	9	35	37	45	893.889	92	19.850	9E9
8.700	117.944	0.895	0.871	0.365	7.700	-1.845	3.900	9E9	9	9	34	38	45	912.470	93	19.850	9E9
8.800	118.442	0.690	0.881	0.759	7.800	-1.587	6.225	9E9	9	9	29	31	43	617.067	85	19.850	9E9
8.900	183.726	0.950	0.891	0.374	7.900	1.240	4.900	9E9	9	9	24	24	43	730.182	77	19.850	9E9
9.000	173.975	1.312	0.901	0.790	8.000	5.155	3.125	9E9	9	9	34	34	43	656.962	87	19.850	9E9
9.100	184.330	0.930	0.909	0.305	8.100	4.085	2.350	9E9	9	9	37	36	43	904.215	91	19.850	9E9
9.200	158.749	0.920	0.920	0.380	8.200	6.485	3.125	9E9	9	9	30	30	43	904.215	91	19.850	9E9
9.300	142.091	1.048	0.931	0.109	8.300	6.842	3.220	9E9	9	9	20	20	43	743.313	77	19.850	9E9
9.400	213.365	1.013	0.939	0.475	8.400	3.220	3.220	9E9	9	9	20	20	43	585.167	61	19.850	9E9
9.500	112.167	0.392	0.940	0.350	8.500	0.702	3.325	9E9	9	9	22	22	43	715.558	72	19.850	9E9
9.600	188.414	0.938	0.950	0.865	8.600	0.802	3.350	9E9	9	9	22	22	43	702.863	74	19.850	9E9
9.700	181.831	0.775	0.960	0.426	8.700	0.755	3.325	9E9	9	9	36	36	43	942.471	92	19.850	9E9
9.800	184.840	0.988	0.970	0.507	8.800	0.600	3.500	9E9	9	9	36	36	43	942.471	92	19.850	9E9
9.900	163.726	0.790	0.980	0.386	8.900	1.180	3.540	9E9	9	9	38	38	43	950.598	92	19.850	9E9
10.000	184.330	0.930	0.990	0.505	9.000	4.085	2.350	9E9	9	9	42	42	43	1025.428	97	19.850	9E9
10.100	158.749	0.920	1.009	0.380	9.100	4.085	2.350	9E9	9	9	37	36	43	954.618	92	19.850	9E9
10.200	142.091	1.048	1.019	0.109	9.200	0.813	2.000	9E9	9	9	32	32	43	878.470	86	19.850	9E9
10.300	213.365	1.013	1.029	0.475	9.300	-0.530	2.050	9E9	9	9	28	27	43	826.176	81	19.850	9E9
10.400	112.167	0.392	1.039	0.440	9.400	-0.530	2.050	9E9	9	9	43	43	45	1040.659	97	19.850	9E9
10.500	242.672	1.067	1.039	0.440	9.500	-0.142	2.450	9E9	10	10	40	38	45	1120.524	101	20.440	9E9
10.600	200.022	1.355	1.049	0.677	9.600	0.758	3.100	9E9	10	10	47	47	43	1120.524	101	20.440	9E9
10.700	136.415	1.192	1.059	0.874	9.700	0.758	3.100	9E9	10	10	47	47	43	942.471	92	19.850	9E9
10.800	259.630	0.923	1.069	0.335	9.800	1.630	3.250	9E9	10	10	47	47	43	950.598	92	19.850	9E9
10.900	281.751	0.817	1.081	0.390	9.900	3.103	1.667	9E9	10	10	47	43	45	1168.347	103	20.440	9E9
11.000	263.455	0.915	1.101	0.347	10.000	3.103	1.667	9E9	10	10	47	43	45	1227.136	106	20.440	9E9
11.100	257.421	1.028	1.112	0.399	10.100	4.070	1.150	9E9	10	10	44	43	45	1226.645	106	20.440	9E9
11.200	146.454	0.768	1.123	0.386	10.200	3.640	-1.075	9E9	10	10	44	38	45	1162.436	102	20.440	9E9
11.300	246.633	0.952	1.133	0.430	10.300	2.973	-1.075	9E9	10	10	41	36	45	1141.955	100	20.440	9E9
11.400	178.454	0.768	1.143	0.760	10.400	2.027	-1.075	9E9	9	9	36	32	43	952.338	88	19.850	9E9
11.500	65.614	1.170	1.152	1.783	10.500	2.013	-0.150	9E9	9	9	28	24	41	729.949	69	19.850	9E9
11.600	86.654	0.745	1.162	0.460	10.600	2.770	0.100	9E9	9	9	22	19	39	342.114	48	18.860	9E9
11.700	158.080	1.175	1.171	0.233	10.700	0.739	2.875	9E9	9	9	22	19	39	342.114	48	18.860	9E9
11.800	194.344	0.902	1.181	0.463	10.800	0.985	2.300	9E9	9	9	32	27	43	893.106	82	19.850	9E9
11.900	156.301	1.130	1.201	0.463	10.900	0.985	2.300	9E9	9	9	36	33	43	1005.225	90	19.850	9E9
12.000	136.752	1.055	1.211	0.723	11.000	2.598	2.075	9E9	9	9	39	39	43	1005.225	90	19.850	9E9
12.100	170.268	1.040	1.221	0.771	11.100	3.415	2.000	9E9	9	9	31	26	43	890.222	81	19.850	9E9
12.200																	

14.700	89.549	1.712	1.455	1.912	13.700	1.213	4.450	9E9	7	9	30	21	55	655.974	18.860	9E9	18.860	9E9
14.800	145.040	1.560	1.464	1.076	13.800	2.315	5.375	9E9	9	9	41	41	74	875.151	19.650	9E9	19.650	9E9
14.900	223.156	1.790	1.474	0.502	13.900	3.702	6.352	9E9	10	9	45	43	91	1117.187	19.650	9E9	19.650	9E9
15.000	93.543	0.423	1.483	4.716	14.000	4.716	10.850	9E9	9	9	39	39	57	684.285	18.860	9E9	18.860	9E9
15.100	57.524	0.815	1.493	12.452	14.100	12.452	10.375	9E9	6	7	12	19	37	122.777	19.650	183.826	19.650	6.368
15.200	108.770	1.875	1.502	1.422	14.200	17.983	12.500	9E9	9	9	37	37	77	519.813	18.860	9E9	18.860	9E9
15.300	198.070	1.175	1.512	1.080	14.300	12.357	11.050	9E9	9	8	40	39	82	746.987	19.650	9E9	19.650	9E9
15.400	206.356	2.033	1.522	1.936	14.400	17.372	9.825	9E9	9	9	41	43	82	1078.680	19.650	9E9	19.650	9E9
15.500	197.886	1.853	1.541	0.936	14.500	6.940	8.575	9E9	9	9	36	36	85	1048.810	19.650	9E9	19.650	9E9
15.600	142.521	1.260	1.551	1.107	14.600	6.170	6.715	9E9	9	9	36	36	72	872.905	19.650	9E9	19.650	9E9
15.700	137.495	1.295	1.561	1.400	14.700	6.162	7.575	9E9	9	9	41	41	71	856.072	19.650	9E9	19.650	9E9
15.800	130.149	1.053	1.571	1.400	14.800	6.785	7.162	9E9	9	9	28	28	71	865.273	19.650	9E9	19.650	9E9
15.900	123.074	1.053	1.581	0.840	14.900	6.785	7.825	9E9	9	9	26	26	68	831.254	19.650	9E9	19.650	9E9
16.000	105.360	0.875	1.600	0.810	15.000	9.640	7.375	9E9	9	9	39	39	66	823.447	19.650	9E9	19.650	9E9
16.100	110.228	0.798	1.610	0.737	15.200	10.170	7.150	9E9	9	9	25	25	66	806.693	19.650	9E9	19.650	9E9
16.200	82.760	0.837	1.620	0.760	15.400	11.612	7.550	9E9	9	9	39	39	66	739.486	19.650	9E9	19.650	9E9
16.300	80.995	0.623	1.630	1.532	15.500	11.955	7.100	9E9	9	9	28	28	61	739.179	18.860	9E9	18.860	9E9
16.400	80.975	0.475	1.648	0.586	15.600	16.583	7.800	9E9	9	9	37	37	49	746.814	18.860	9E9	18.860	9E9
16.500	59.554	1.042	1.668	1.008	15.700	11.655	8.225	9E9	9	9	17	17	50	651.322	19.650	9E9	19.650	9E9
16.600	53.512	1.042	1.697	1.758	15.800	11.655	7.800	9E9	9	9	21	21	49	651.322	19.650	9E9	19.650	9E9
16.700	37.644	0.340	1.676	1.758	15.900	14.985	12.825	9E9	9	9	20	20	50	536.945	18.860	9E9	18.860	9E9
16.800	37.665	0.295	1.695	0.611	16.000	16.037	11.600	9E9	9	9	13	13	35	536.945	18.860	9E9	18.860	9E9
16.900	74.708	0.738	1.705	1.253	16.200	22.895	18.725	9E9	9	9	33	33	37	390.098	18.860	9E9	18.860	9E9
17.000	106.728	0.405	1.705	0.542	16.300	25.810	16.025	9E9	9	9	31	31	33	416.685	18.860	9E9	18.860	9E9
17.100	91.594	0.623	1.724	0.557	16.400	14.170	16.025	9E9	9	9	33	33	19	416.685	18.860	9E9	18.860	9E9
17.200	62.451	0.683	1.734	0.828	16.500	14.985	13.150	9E9	9	9	12	12	45	613.406	19.650	9E9	19.650	9E9
17.300	66.900	0.672	1.753	1.173	16.600	16.965	11.775	9E9	9	9	39	39	59	750.850	19.650	9E9	19.650	9E9
17.400	52.784	0.672	1.753	1.274	16.700	16.965	10.475	9E9	9	9	21	21	43	750.850	19.650	9E9	19.650	9E9
17.500	58.666	0.610	1.763	1.040	16.800	19.595	11.600	9E9	9	9	37	37	40	689.230	19.650	9E9	19.650	9E9
17.600	112.115	0.897	1.772	0.850	16.900	37.718	18.330	9E9	9	9	15	15	37	689.230	19.650	9E9	19.650	9E9
17.700	187.368	0.972	1.782	0.680	17.000	12.653	11.700	9E9	9	9	22	22	40	578.013	18.860	9E9	18.860	9E9
17.800	182.208	0.972	1.792	0.493	17.100	12.653	11.700	9E9	9	9	22	22	40	578.013	18.860	9E9	18.860	9E9
17.900	139.673	0.980	1.801	0.538	17.200	6.085	10.125	9E9	9	9	28	28	35	537.412	18.860	9E9	18.860	9E9
18.000	49.702	1.288	1.811	0.608	17.300	4.230	6.050	9E9	9	9	39	39	60	775.257	19.650	9E9	19.650	9E9
18.100	16.582	0.507	1.821	2.590	17.400	3.727	6.975	9E9	9	9	36	36	78	1022.022	19.650	9E9	19.650	9E9
18.200	11.575	0.650	1.831	3.061	17.500	2.658	6.975	9E9	9	9	28	28	68	800.868	19.650	9E9	19.650	9E9
18.300	141.851	0.975	1.840	0.581	17.600	5.443	9.025	9E9	9	9	20	20	68	194.327	19.650	9E9	19.650	9E9
18.400	87.376	0.975	1.850	0.757	17.700	10.243	14.975	9E9	9	9	8	8	6	800.868	19.650	9E9	19.650	9E9
18.500	55.262	0.558	1.860	0.850	17.800	37.718	18.330	9E9	9	9	22	22	5	66.329	19.650	9E9	19.650	9E9
18.600	44.606	0.458	1.870	0.757	17.900	7.485	15.525	9E9	9	9	24	24	39	778.468	19.650	9E9	19.650	9E9
18.700	24.606	0.458	1.888	1.572	18.000	16.197	17.300	9E9	9	9	12	12	31	407.766	18.860	9E9	18.860	9E9
18.800	18.949	0.313	1.898	1.418	18.200	27.063	26.200	9E9	9	9	10	10	29	817.076	19.650	9E9	19.650	9E9
18.900	35.555	0.355	1.908	1.322	18.300	36.978	35.725	9E9	9	9	17	17	62	817.076	19.650	9E9	19.650	9E9
19.000	26.848	0.355	1.918	1.649	18.400	40.692	41.500	9E9	9	9	18	18	29	511.895	19.650	9E9	19.650	9E9
19.100	16.949	0.313	1.927	1.716	18.500	45.803	45.950	9E9	9	9	10	10	99	98.424	19.650	9E9	19.650	9E9
19.200	27.024	0.420	1.936	0.554	18.600	37.233	30.675	9E9	9	9	24	24	78	103.702	19.650	9E9	19.650	9E9
19.300	32.643	0.125	1.945	0.840	18.700	38.377	33.900	9E9	9	9	11	11	99	148.912	19.650	9E9	19.650	9E9
19.400	46.375	0.308	1.954	1.689	18.800	38.377	33.900	9E9	9	9	12	12	99	75.793	18.860	9E9	18.860	9E9
19.500	18.453	0.355	1.973	1.859	19.000	33.263	24.175	9E9	9	9	6	6	14	400.634	18.860	9E9	18.860	9E9
19.600	35.555	0.102	1.983	2.027	19.100	46.035	35.575	9E9	9	9	11	11	99	108.097	19.650	9E9	19.650	9E9
19.700	21.093	0.127	1.992	2.027	19.200	60.775	60.485	9E9	9	9	33	33	29	511.895	19.650	9E9	19.650	9E9
19.800	14.674	0.102	2.001	0.699	19.300	46.485	61.200	9E9	9	9	22	22	99	168.419	19.650	9E9	19.650	9E9
19.900	14.666	0.078	2.010	0.598	19.400	87.908	76.600	9E9	9	9	10	10	99	168.419	19.650	9E9	19.650	9E9
20.000	15.141	0.125	2.020	0.528	19.500	70.600	60.485	9E9	9	9	5	5	99	73.613	18.860	9E9	18.860	9E9
20.100	19.211	0.410	2.029	0.326	19.600	91.290	74.925	9E9	9	9	6	6	3	63.510	18.860	9E9	18.860	9E9
20.200	46.375	0.410	2.038	0.249	19.700	91.290	74.925	9E9	9	9	6	6	3	63.510	18.860	9E9	18.860	9E9
20.300	21.093	0.308	2.047	1.779	19.800	61.700	63.400	9E9	9	9	6	6	3	56.697	18.860	9E9	18.860	9E9
20.400	15.141	0.102	2.057	1.670	19.900	61.700	29.350	9E9	9	9	6	6	3	62.275	18.860	9E9	18.860	9E9
20.500	15.141	0.102	2.066	1.252	20.000	21.965	12.075	9E9	9	9	6	6	3	58.664	18.860	9E9	18.860	9E9
20.600	15.141	0.102	2.076	1.252	20.100	16.795	12.600	9E9	9	9	8	8	3	60.564	18.860	9E9	18.860	9E9
20.700	15.141	0.102	2.086	1.252	20.200	16.795	12.600	9E9	9	9	14	14	3	78.044	18.860	9E9	18.860	9E9
20.800	15.141	0.102	2.096	1.252	20.300	16.913	13.450	9E9	9	9	14	14	3	138.842	19.650	9E9	19.650	9E9
20.900	15.141	0.102	2.106	1.252	20.400	16.913	13.450	9E9	9	9	22	22	3	586.636	19.650	9E9	19.650	9E9
21.000	23.004	0.525	2.115	2.282	20.500	13.575	10.450	9E9	9	9	35	35	36	586.636	19.650	9E9	19.650	9E9
21.100	30.887	0.525	2.125	2.282	20.600	20.235	20.325	9E9	9	9	39	39	44	653.693	19.650	9E9	19.650	9E9
21.200	30.887	0.525	2.135	2.282	20.700	28.195	28.575	9E9	9	9	24	24	99	523.129	19.650	9E9	19.650	9E9
21.300	30.887	0.525	2.144	1.990	20.800	31.155	28.575	9E9	9	9	10	10	99	287.227	19.650	9E9	19.650	9E9
21.400	30.887	0.525	2.153	1.990	20.900	64.455	47.950	9E9	9	9	5	5	99	97.016	19.650	9E9	19.650	9E9
21.500	30.887	0.525	2.163	1.746	20.900	79.522	56.100											

Output file from CPTINT - Version 5.0ppd
 INPUT FILE: E:\GSC-94\GSC9424A.EDT
 Licensed to: UBC Course - For teaching only
 Address:
 City:

Interpreter Name: CAMPANELLA FOR GSC-94
 File Number: GS24a1 Date: 1-03-94 14:16
 Operator: MPD-TJB On Site Location: STOKES PIT SWCRN
 Cone Type: URC9U2RES1 Comment: 75MS00TN-PIT-1

SUMMARY SHEET

To Calculate Qf: 0.800
 Valid for Water Table (in m): 1.000
 Valid Zone Classification based on: Rf
 Missing unit weight to start depth: 18.000
 Method for calculating Su: NK
 Value of the constant Nk: 15.000
 'alpha' for modulus in clay: 4.000
 Su/EOS: Su/EOS
 Method used to calculate OCR: 0.280
 Define Zone 6 for Sand consolidation:
 Sand compressibility for calc DR:
 Method for OCR for sand:
 Method for Modulus in sand:
 Baldi Method
 Robertsson & Campanella

Soil Behavior Type Zone Numbers
 For Rf Zone & Bq Zone Classification
 Zone #1=Sensitive fine grained
 Zone #2=Organic material
 Zone #3=Silty sand
 Zone #4=Sandy silt
 Zone #5=Clayey silt
 Zone #6=Sandy silt
 Zone #7=Silty sand
 Zone #8=Sand
 Zone #9=Gravelly sand
 Zone #10=Very stiff fine grained
 Zone #11=Very stiff clayey sand
 Zone #12=Sand to clayey sand
 * Overconsolidated and/or cemented

NOTE:

For soil classification, Rf values > 8 are assumed to be 8.
 For OCR classification, Rf values > 8 are assumed to be 8.

INPUT FILE: E:\GSC-94\GSC9424A.EDT

Depth (meter)	Qf (bars)	Fs (avg) (bars)	EOS (avg) (bars)	Uz (meter)	Incl (degree)	R10 (ohm-m)	R25 (ohm-m)	R75 (ohm-m)	Rf Zone (zone #)	Bq Zone (zone #)	SPT N (blow/ft)	Phi (degree)	M Modulus Dr (bars)	Gamma SU (kPa)	OCR (Ratio)
0.100	103.023	0.545	0.020	9E9	-0.082	525.032	690.415	815.323	9	9	31	9E9	417.578	154	9E9
0.200	170.877	0.597	0.029	9E9	-0.077	899.925	925.953	1042.020	9	9	34	9E9	606.752	159	9E9
0.300	242.500	1.125	0.079	9E9	-0.015	826.507	685.963	437.600	9	9	42	9E9	719.828	158	9E9
0.400	207.027	0.768	0.098	9E9	0.127	1.900	679.468	479.598	9	9	72	9E9	807.248	157	9E9
0.500	209.629	0.738	0.118	9E9	0.237	1.475	634.985	418.922	9	9	62	9E9	759.470	146	9E9
0.600	233.235	0.798	0.138	9E9	0.285	1.125	638.262	418.098	9	9	63	9E9	782.740	143	9E9
0.700	209.629	0.738	0.138	9E9	0.285	1.125	638.262	418.098	9	9	63	9E9	782.740	143	9E9
0.800	264.656	1.065	0.158	9E9	0.285	0.900	616.367	403.160	10	10	39	9E9	848.123	144	9E9
0.900	331.558	3.142	0.178	9E9	0.400	0.688	627.052	418.305	10	10	44	9E9	848.123	144	9E9
1.000	243.944	1.732	0.198	9E9	-1.558	0.875	610.932	418.305	10	10	44	9E9	848.123	144	9E9
1.100	167.885	0.735	0.208	9E9	0.875	326.741	303.435	289.523	9	9	66	9E9	968.727	152	9E9
1.200	178.905	0.735	0.208	9E9	0.875	326.741	303.435	289.523	9	9	66	9E9	968.727	152	9E9
1.300	178.905	0.735	0.208	9E9	0.875	326.741	303.435	289.523	9	9	66	9E9	968.727	152	9E9
1.400	107.518	0.445	0.237	9E9	-4.958	2.280	240.448	235.835	9	9	34	9E9	910.713	137	9E9
1.500	133.879	0.445	0.247	9E9	-4.155	3.950	226.515	243.783	9	9	39	9E9	945.452	122	9E9
1.600	166.270	0.535	0.247	9E9	-3.628	2.078	219.560	227.005	9	9	22	9E9	593.909	104	9E9
1.700	137.132	0.487	0.267	9E9	-2.815	3.065	270.078	230.092	9	9	22	9E9	586.722	102	9E9
1.800	150.231	0.615	0.277	9E9	-2.185	1.983	313.610	237.717	9	9	34	9E9	667.495	109	9E9
1.900	183.747	0.768	0.287	9E9	-1.175	243.753	248.265	194.350	9	9	27	9E9	763.259	117	9E9
2.000	220.555	0.877	0.297	9E9	-0.130	300.075	298.900	208.653	9	9	41	9E9	953.212	109	9E9
2.100	259.670	0.938	0.317	9E9	-0.225	365.840	350.318	240.399	9	9	30	9E9	813.283	118	9E9
2.200	242.569	0.992	0.328	9E9	-0.245	331.973	344.040	238.645	9	9	44	9E9	905.486	125	9E9
2.300	284.055	0.753	0.339	9E9	-0.358	295.190	308.350	219.383	10	10	43	9E9	994.571	130	9E9
2.400	285.027	0.857	0.349	9E9	-0.590	262.093	272.173	213.577	10	10	45	9E9	1029.454	132	9E9
2.500	282.414	0.905	0.360	9E9	-1.000	225.792	234.980	196.305	10	10	47	9E9	1054.902	132	9E9
2.600	266.594	0.920	0.371	9E9	-0.543	210.277	219.387	178.072	10	10	48	9E9	1062.324	131	9E9
2.700	244.298	0.847	0.381	9E9	-0.300	201.660	211.283	167.770	10	10	47	9E9	1068.558	131	9E9
2.800	236.655	0.725	0.392	9E9	-0.285	228.370	235.420	196.438	10	10	44	9E9	1036.709	127	9E9
2.900	231.277	0.978	0.402	9E9	-0.225	178.959	196.455	161.517	10	10	41	9E9	930.365	120	9E9
3.000	222.180	0.915	0.412	9E9	-0.350	184.792	173.198	150.260	10	10	39	9E9	966.715	120	9E9
3.100	239.805	0.943	0.413	9E9	-0.275	184.792	173.198	150.260	9	9	66	9E9	947.958	118	9E9
3.200	231.807	1.035	0.443	9E9	-0.467	152.327	163.323	154.930	10	10	39	9E9	979.716	119	9E9
3.300	263.034	1.165	0.454	9E9	-0.125	216.167	221.455	168.185	10	10	40	9E9	995.945	121	9E9
3.400	284.927	1.308	0.465	9E9	0.472	0.320	236.110	158.295	10	10	42	9E9	1026.952	121	9E9
3.500	287.619	1.325	0.475	9E9	-0.025	187.382	187.230	170.075	10	10	44	9E9	1055.732	122	9E9
3.600	261.721	1.315	0.486	9E9	-0.200	159.560	170.075	148.300	10	10	48	9E9	1129.529	126	9E9
3.700	249.590	1.307	0.496	9E9	-0.133	223.403	231.137	146.410	10	10	44	9E9	1116.837	125	9E9
3.800	260.470	1.313	0.517	9E9	-0.033	211.330	219.417	143.803	9	9	50	9E9	1061.800	121	9E9
3.900	261.967	1.380	0.518	9E9	0.100	196.307	206.387	156.267	10	10	41	9E9	1026.515	120	9E9
4.000	242.217	1.377	0.548	9E9	0.200	149.935	163.785	140.575	10	10	44	9E9	1062.358	119	9E9
4.100	238.493	1.337	0.558	9E9	0.275	144.634	158.638	143.198	9	9	66	9E9	1057.585	117	9E9
4.200	242.646	1.337	0.567	9E9	0.400	146.342	158.960	143.255	10	10	48	9E9	1031.979	115	9E9
4.300	242.646	1.337	0.567	9E9	0.167	145.813	158.960	142.020	9	9	48	9E9	1025.303	114	9E9
4.400	242.646	1.337	0.567	9E9	0.167	145.813	158.960	142.020	9	9	49	9E9	1037.649	114	9E9

4.700	241.547	1.313	0.577	3.700	2.420	0.467	149.263	164.473	144.333	9	10	48	71	47	1037.254	114	19.650	9E9
4.800	240.275	1.185	0.587	3.800	2.558	0.925	144.040	160.250	142.945	9	10	48	70	47	1036.385	113	19.650	9E9
4.900	241.429	1.207	0.597	3.900	2.770	0.100	150.938	150.938	140.473	9	10	48	69	47	1041.388	117	19.650	9E9
5.000	230.675	1.168	0.607	4.000	2.570	0.300	136.860	152.570	137.590	9	10	46	68	47	927.860	104	19.650	9E9
5.100	195.373	1.050	0.617	4.100	2.428	0.428	126.757	157.846	140.781	9	9	36	55	45	862.817	96	19.650	9E9
5.200	178.255	0.998	0.626	4.200	2.315	0.535	123.900	153.900	146.547	9	9	35	54	45	880.851	96	19.650	9E9
5.300	166.344	0.930	0.636	4.300	2.210	0.730	143.478	150.592	154.300	9	9	34	53	45	838.363	100	19.650	9E9
5.400	157.74	0.875	0.646	4.400	2.110	0.800	145.050	158.615	154.300	9	9	32	52	45	828.402	95	19.650	9E9
5.500	157.74	0.800	0.656	4.500	2.000	0.900	145.050	158.615	154.300	9E9	9E9	32	51	45	828.402	95	19.650	9E9
5.600	157.74	0.725	0.666	4.600	1.900	1.000	145.050	158.615	154.300	9E9	9E9	31	50	45	828.402	95	19.650	9E9
5.700	157.74	0.650	0.676	4.700	1.800	1.100	145.050	158.615	154.300	9E9	9E9	30	49	45	828.402	95	19.650	9E9
5.800	157.74	0.575	0.686	4.800	1.700	1.200	145.050	158.615	154.300	9E9	9E9	29	48	45	828.402	95	19.650	9E9
5.900	157.74	0.500	0.696	4.900	1.600	1.300	145.050	158.615	154.300	9E9	9E9	28	47	45	828.402	95	19.650	9E9
6.000	157.74	0.425	0.706	5.000	1.500	1.400	145.050	158.615	154.300	9E9	9E9	27	46	45	828.402	95	19.650	9E9
6.100	157.74	0.350	0.716	5.100	1.400	1.500	145.050	158.615	154.300	9E9	9E9	26	45	45	828.402	95	19.650	9E9
6.200	157.74	0.275	0.726	5.200	1.300	1.600	145.050	158.615	154.300	9E9	9E9	25	44	45	828.402	95	19.650	9E9
6.300	157.74	0.200	0.736	5.300	1.200	1.700	145.050	158.615	154.300	9E9	9E9	24	43	45	828.402	95	19.650	9E9
6.400	157.74	0.125	0.746	5.400	1.100	1.800	145.050	158.615	154.300	9E9	9E9	23	42	45	828.402	95	19.650	9E9
6.500	157.74	0.050	0.756	5.500	1.000	1.900	145.050	158.615	154.300	9E9	9E9	22	41	45	828.402	95	19.650	9E9
6.600	157.74	0.000	0.766	5.600	0.900	2.000	145.050	158.615	154.300	9E9	9E9	21	40	45	828.402	95	19.650	9E9
6.700	157.74	0.000	0.776	5.700	0.800	2.100	145.050	158.615	154.300	9E9	9E9	20	39	45	828.402	95	19.650	9E9
6.800	157.74	0.000	0.786	5.800	0.700	2.200	145.050	158.615	154.300	9E9	9E9	19	38	45	828.402	95	19.650	9E9
6.900	157.74	0.000	0.796	5.900	0.600	2.300	145.050	158.615	154.300	9E9	9E9	18	37	45	828.402	95	19.650	9E9
7.000	157.74	0.000	0.806	6.000	0.500	2.400	145.050	158.615	154.300	9E9	9E9	17	36	45	828.402	95	19.650	9E9
7.100	157.74	0.000	0.816	6.100	0.400	2.500	145.050	158.615	154.300	9E9	9E9	16	35	45	828.402	95	19.650	9E9
7.200	157.74	0.000	0.826	6.200	0.300	2.600	145.050	158.615	154.300	9E9	9E9	15	34	45	828.402	95	19.650	9E9
7.300	157.74	0.000	0.836	6.300	0.200	2.700	145.050	158.615	154.300	9E9	9E9	14	33	45	828.402	95	19.650	9E9
7.400	157.74	0.000	0.846	6.400	0.100	2.800	145.050	158.615	154.300	9E9	9E9	13	32	45	828.402	95	19.650	9E9
7.500	157.74	0.000	0.856	6.500	0.000	2.900	145.050	158.615	154.300	9E9	9E9	12	31	45	828.402	95	19.650	9E9
7.600	157.74	0.000	0.866	6.600	0.000	3.000	145.050	158.615	154.300	9E9	9E9	11	30	45	828.402	95	19.650	9E9
7.700	157.74	0.000	0.876	6.700	0.000	3.100	145.050	158.615	154.300	9E9	9E9	10	29	45	828.402	95	19.650	9E9
7.800	157.74	0.000	0.886	6.800	0.000	3.200	145.050	158.615	154.300	9E9	9E9	9	28	45	828.402	95	19.650	9E9
7.900	157.74	0.000	0.896	6.900	0.000	3.300	145.050	158.615	154.300	9E9	9E9	8	27	45	828.402	95	19.650	9E9
8.000	157.74	0.000	0.906	7.000	0.000	3.400	145.050	158.615	154.300	9E9	9E9	7	26	45	828.402	95	19.650	9E9
8.100	157.74	0.000	0.916	7.100	0.000	3.500	145.050	158.615	154.300	9E9	9E9	6	25	45	828.402	95	19.650	9E9
8.200	157.74	0.000	0.926	7.200	0.000	3.600	145.050	158.615	154.300	9E9	9E9	5	24	45	828.402	95	19.650	9E9
8.300	157.74	0.000	0.936	7.300	0.000	3.700	145.050	158.615	154.300	9E9	9E9	4	23	45	828.402	95	19.650	9E9
8.400	157.74	0.000	0.946	7.400	0.000	3.800	145.050	158.615	154.300	9E9	9E9	3	22	45	828.402	95	19.650	9E9
8.500	157.74	0.000	0.956	7.500	0.000	3.900	145.050	158.615	154.300	9E9	9E9	2	21	45	828.402	95	19.650	9E9
8.600	157.74	0.000	0.966	7.600	0.000	4.000	145.050	158.615	154.300	9E9	9E9	1	20	45	828.402	95	19.650	9E9
8.700	157.74	0.000	0.976	7.700	0.000	4.100	145.050	158.615	154.300	9E9	9E9	0	19	45	828.402	95	19.650	9E9
8.800	157.74	0.000	0.986	7.800	0.000	4.200	145.050	158.615	154.300	9E9	9E9	0	18	45	828.402	95	19.650	9E9
8.900	157.74	0.000	0.996	7.900	0.000	4.300	145.050	158.615	154.300	9E9	9E9	0	17	45	828.402	95	19.650	9E9
9.000	157.74	0.000	1.006	8.000	0.000	4.400	145.050	158.615	154.300	9E9	9E9	0	16	45	828.402	95	19.650	9E9
9.100	157.74	0.000	1.016	8.100	0.000	4.500	145.050	158.615	154.300	9E9	9E9	0	15	45	828.402	95	19.650	9E9
9.200	157.74	0.000	1.026	8.200	0.000	4.600	145.050	158.615	154.300	9E9	9E9	0	14	45	828.402	95	19.650	9E9
9.300	157.74	0.000	1.036	8.300	0.000	4.700	145.050	158.615	154.300	9E9	9E9	0	13	45	828.402	95	19.650	9E9
9.400	157.74	0.000	1.046	8.400	0.000	4.800	145.050	158.615	154.300	9E9	9E9	0	12	45	828.402	95	19.650	9E9
9.500	157.74	0.000	1.056	8.500	0.000	4.900	145.050	158.615	154.300	9E9	9E9	0	11	45	828.402	95	19.650	9E9
9.600	157.74	0.000	1.066	8.600	0.000	5.000	145.050	158.615	154.300	9E9	9E9	0	10	45	828.402	95	19.650	9E9
9.700	157.74	0.000	1.076	8.700	0.000	5.100	145.050	158.615	154.300	9E9	9E9	0	9	45	828.402	95	19.650	9E9
9.800	157.74	0.000	1.086	8.800	0.000	5.200	145.050	158.615	154.300	9E9	9E9	0	8	45	828.402	95	19.650	9E9
9.900	157.74	0.000	1.096	8.900	0.000	5.300	145.050	158.615	154.300	9E9	9E9	0	7	45	828.402	95	19.650	9E9
10.000	157.74	0.000	1.106	9.000	0.000	5.400	145.050	158.615	154.300	9E9	9E9	0	6	45	828.402	95	19.650	9E9
10.100	157.74	0.000	1.116	9.100	0.000	5.500	145.050	158.615	154.300	9E9	9E9	0	5	45	828.402	95	19.650	9E9
10.200	157.74	0.000	1.126	9.200	0.000	5.600	145.050	158.615	154.300	9E9	9E9	0	4	45	828.402	95	19.650	9E9
10.300	157.74	0.000	1.136	9.300	0.000	5.700	145.050	158.615	154.300	9E9	9E9	0	3	45	828.402	95	19.650	9E9
10.400	157.74	0.000	1.146	9.400	0.000	5.800	145.050	158.615	154.300	9E9	9E9	0	2	45	828.402	95	19.650	9E9
10.500	157.74	0.000	1.156	9.500	0.000	5.900	145.050	158.615	154.300	9E9	9E9	0	1	45	828.402	95	19.650	9E9
10.600	157.74	0.000	1.166	9.600	0.000	6.000	145.050	158.615	154.300	9E9	9E9	0	0	45	828.402	95	19.650	9E9
10.700	157.74	0.000	1.176	9.700	0.000	6.100	145.050	158.615	154.300	9E9	9E9	0	0	45	828.402	95	19.650	9E9
10.800	157.74	0.000	1.186	9.800	0.000	6.200	145.050	158.615	154.300	9E9	9E9	0	0	45	828.402	95	19.650	9E9
10.900	157.74	0.000	1.196	9.900	0.000	6.300	145.050	158.615	154.300	9E9	9E9	0	0	45	828.402	95	19.650	9E9
11.000	157.74	0.000	1.206	10.000	0.000	6.400	145.050	158.615	154.300	9E9	9E9	0	0	45	828.402	95	19.650	9E9
11.100	157.74	0.000	1.216	10.100	0.000	6.500	145.050	158.615	154.300	9E9	9E9	0	0	45	828.402	95	19.650	9E9
11.200	157.74	0.000	1.226	10.200	0.000	6.600	145.050	158.615	154.300	9E9	9E9	0	0	45	828.402	95	19.650	9E9
11.300	157.74	0.000	1.236	10.300														