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GEOLOGICAL SURVEY

GEOTECHNICAL PROPERTIES AND SLOPE STABILITY ANALYSIS OF SURFICIAL SEDIMENTS ON THE GEORGES BANK CONTINENTAL SLOPE

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INTRODUCTION

The many recent investigations of the Continental Slope off Georges Bank have brought into focus the depositional history, morphology, geologic processes, and other salient geologic characteristics of the area. These investigations have also served a dual purpose for hazards analysis: they have defined what appears to be the most prominent geologic hazard, mass movement, and they have provided insight into the geotechnical properties of the sediment, one of the primary means for assessing the potential for that mass movement.

Attention has been directed to mass movement as the preeminent hazard because of its apparent widespread occurrence in the past. Aaron and others (in press), for example, reported that up to 37% of the slope may have been affected by slump or slide phenomena. Mass movement features were also identified by Uchupi (1967) and McGregor (1979); McIlvaine and Ross (1979) presented a detailed description of a slump in the area. Establishing whether these events were caused by triggering mechanisms, such as oceanographic forces or earthquakes, or by inherent instability, such as from times of rapid deposition, is, of course, relevant to the present-day stability of the slope. And, although information on triggering mechanisms is unavailable, it has been established (Emery and Uchupi, 1972) that high rates of deposition did characterize the area in the past. In fact, these authors pointed out that during low stands of the sea depositional rates were not only enhanced by greater proximity to drainage systems, but by greater runoff from glacial melt as well.

This past rapid rate of sediment accumulation could have led to underconsolidated sediment section and thus to a slope vulnerable to failure. Even though depositional rates are undoubtedly less at present (hemipelagic deposition with a small amount of shelf sediment spillover currently predominates (Doyle and others, 1979)), the underconsolidation effect of past rapid sedimentation still may be within the sediment column, particularly if fine-grain sediments are involved. This is the case over much of the area. Doyle and others (1979) showed that although a wide variety of grain sizes exist, including sand and clasts of glacial origin, silts and clays dominate. This is supported by the work of Keller and others (1979) who show that the surficial sediments on the Continental Slope off Georges Bank are composed, on the average, of more than 80% silts and clays. Further, Hathaway and others (1976) found thick sections of fine sediments in several areas during drilling operations in the general vicinity of and within the Georges Bank lease area.

These finer grain sizes augment the effect of rapid deposition by trapping pore fluids more efficiently than sand or gravel. This can result in a buildup of excess pore pressure and the creation of a higher degree of underconsolidation (hence relative weakness) within the sediment column.

The relatively steep declivity of the Continental Slope off Georges Bank also is an important stability consideration. Keller and others (1979) reported that on the mid and lower slope gradients average 7^{o}. Bathymetric data analyzed by Aaron and others (in press) indicate gradients of up to 10^{o}. These rather steep slopes would warrent a careful hazards analysis even in the absence of the other factors mentioned.

Within this geologic setting - with its geotechnical implications - the present study was planned and conducted. Our objectives were to verify the occurrence of past mass movement, provide more quantitative information on slope stability, and establish the general geotechnical properties of the sediments. Core sites were selected accordingly, and included locations on the open slope, on possible mass movement scars, and on possible mass movement deposits (blocks) (fig. 1). The limited subbottom penetration of piston coring (less than 6 m in this area) has necessarily restricted the scope of our investigation but, nonetheless, data from the surficial sediments are an important part of an overall evaluation.

METHODS

Shipboard

The piston cores used for the geotechnical studies were collected aboard the R.V. ENDEAVOR in August, 1979 and October, 1980. The coring system was designed to obtain cores with minimal mechanical disturbance because many geotechnical properties, especially those related to strength, are vulnerable to the effects of disturbance. The system thus differed from conventional systems in many respects. The core sample diameter was 89 mm, which is larger than normal piston cores. This extra size reduces disturbance during penetration and, in the event of distortion on the core edge due to wall friction, permits removal of a relatively undisturbed inner core (subcore) for triaxial and consolidation testing. In addition, the liner was protected against collapse from differential pressure by a special sleeve and O-ring assembly at the joints between the outer barrels. The cutter unit had a cutting angle of less than 10^{o} which assured optimum penetration with a minimum of disturbance. Liner sections (up to 4, 3 m long sections per

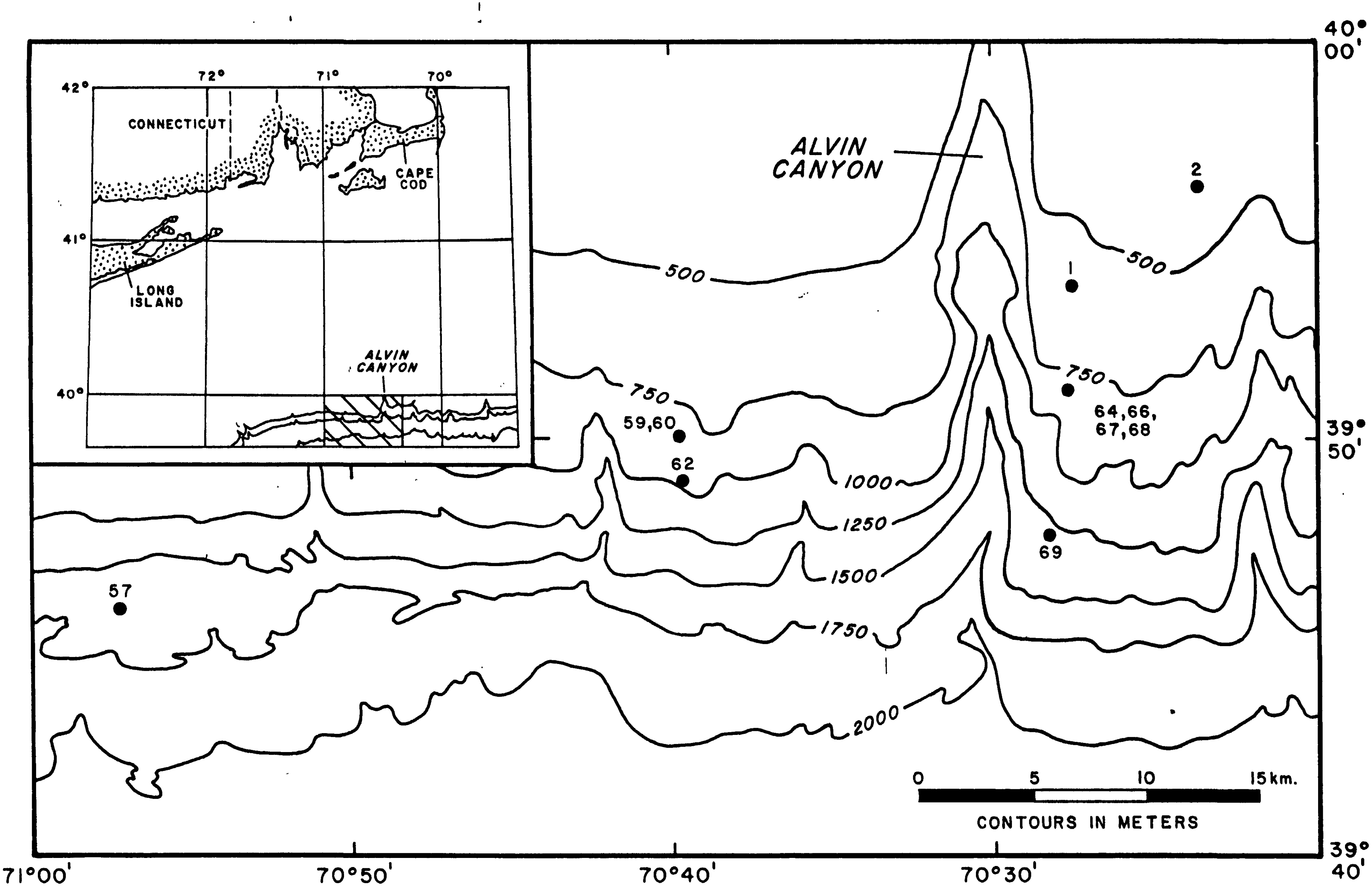

Fig. 1. Core locations. Labeling refers to core number, not site number.

core) were taped at the ends to achieve a snug fit against the barrel and were beveled inside each end to promote a smooth piston action. Eleven cores up to 5 m long were recovered.

As was the case during the sampling operation, avoiding disturbance was the prime consideration during core processing and storage. Once on board the cores were cut into 1-1/2 m sections by using a tube cutter to sever the liner and wire saw to part the sediment. Three subsections were also cut for later triaxial and consolidation testing. All subsections, which were cut from the bottom portions of the cores, were X-rayed in order to judge the condition of the sample; only "undisturbed" samples were retained for later testing. Finally, the subsections were capped, taped, sealed with wax, and stored upright at $4^{o}C$ in specially fabricated boxes padded with foam rubber.

The remaining core sections were split lengthwise: one part of each section served as the archive half, the other as a working half. The archive half was placed in a D-tube and stored in a refrigerated van. The working half was taken to the shipboard laboratory for description, strength testing, and subsampling.

After a cursory description, "undisturbed" shear strength was measured with a four-bladed, 12.7 mm-square laboratory vane at intervals of 0.50 m and at lithologic changes. Obvious sand layers, which are cohesionless and therefore inappropriate for this type of test, were avoided. The blade was inserted normal to the long direction of the core and buried at least 20 mm into the sample. In order to guard against sample drainage during the application of torque, a rotation rate of 0.0262 radians/second (90^{o}/min) was used. Because of ship motion and vibrations, this rapid rate also allowed the test to be completed quickly and thus reduced disturbance due to ship motion and vibration. The accuracy of the vane shear measurements is ±0.30 kiloPascals (kPa). It is assumed on the basis of previous experience (e.g., Booth, 1979) that strength reduction due to the release of in situ stresses and mechanical disturbance is generally between 15 and 30 percent. Remolded strength (strength of thoroughly kneaded sample) was also determined with the vane apparatus. Subsamples for index property testing were taken at the points of strength measurements, placed in plastic bags, and sealed in cans for later laboratory testing. These samples, and those taken for triaxial and consolidation testing, were transported to the laboratory in a refrigerated (4°C) van. Results of the shear strength measurements are presented in Appendix I.

Laboratory

Index properties

The suite of index property tests (bulk density, water content, liquid and plastic limits, and grain specific gravity) was conducted according to procedures recommended by ASTM (1977), with two exceptions. Grain specific gravity was measured with an air comparison pycnometer and all water content data were corrected for salt content. Precisions were: water content, ±3% (relative); liquid limit, ±3% (absolute); platic limit, ±2% (absolute); grain specific gravity, ±1% (relative); and bulk density, ±2% (relative). Derived from this basic data set were plasticity index, liquidity index, and porosity. The values of the index properties are presented in Appendix II.

Triaxial Testing

Consolidated undrained triaxial tests with pore pressure measurements were conducted in accordance with procedures given by Bishop and Henkel (1957). Briefly, for each set of tests three specimens were cut from the prime core sample and trimmed to a right cylinder 50 mm in diameter and 100 mm in height. The specimens were then placed in triaxial cells, saturated, and consolidated to approximately 1.0, 2.0; and 4.0 times the assumed in situ overburden pressure. After consolidation was complete, the specimens were sheared: generally at a rate of 0.015 mm/min. Data from all phases of the tests were logged by an automatic data acquisition system.

The test results are presented in tables and graphs in Appendix III. Information about each sample, including index properties, test conditions, and laboratory data are given in that appendix along with a full explanation of symbols and graphs.

The angle of internal friction with respect to effective stress and cohesion (C'), which are necessary for evaluating slope stability, were derived from p'-q diagrams. Specifically, a continuous plot of $p'=(\sigma_1' + \sigma_2')/2$ versus $q=(\sigma_1-\sigma_2/2)$ for each of the three levels of confining pressure results in three stress paths, where σ' and σ_3 are the major and minor principal stresses and σ_1' and σ_3' are the major and minor effective principal stresses. The line that best encloses these stress paths is drawn, and its slope and its intercept a are calculated. The values of internal friction ϕ' and cohesion C' are calculated from the following relationships: $\sin\phi' \tan\alpha$ and $C' = a/\cos\phi'$.

RESULTS AND INTERPRETATIONS

Analyses of the 11 cores recovered are still underway, as are the analyses of 7 additional piston cores recovered during cruise operations in 1980. The results presented herein are thus partial, and generalizations or interpretations based on them are subject to change. All types of analyses that are complete or nearly complete for an entire core are included in this report. No consolidation test results are available at this time.

Shear Strength

Considering the average length of the cores (about 2.5 m), the shear strength values in general are unusually high. As shown in the data summary (table 1), the range is from 3.1 to 50.2 kPa, with a mean of 9.5 kPa. This average is about twice the strength that would be expected for normally consolidated fine-grained sediments and is higher than that reported by Keller and others (1979) for cores taken within the same general area. The highest single value measured, 50.2 kPa, was from a core (PC-57) taken on what appeared in seismic reflection records to be a mass movement scar. Approximately 0.5 m of considerably weaker sediment (less than 10 kPa) overlie the apparently overconsolidated material. Individual strength profiles for the cores are shown in figures 2a to 2f. Cores with less than three measurements were not plotted. The profiles generally display the strength increase expected with depth or, if values are initially high, as in the cases where apparent mass movement scars were cored, they generally remain at about the same high value (e.g., PC-59) throughout the core. An exception to this is PC-68 (fig. 2f), which shows a decrease in strength downcore. PC-68 was taken from a slump or slide block, and an atypical strength profile associated with such a feature has been reported previously (e.g., McGregor and others, 1979).

Sensitivity, the ratio of natural to remolded shear strength of a sediment, is an important measure of the strength lost after

Table 1. Summary of geotechnical data

Natural shear strength (kPa)			Sensitivity			Water content (%)			Bulk density (g/cc)			Porosity (%)		
min	avg	max	min	avg	max	min	avg	max	min	avg	max	min	avg	max
3.1	9.5	50.2	1.5	5.2	15.0	36	53	65	1.66	1.75	1.91	49	59	64

Liquid limit			Plastic limit			Plasticity index			Liquidity index		
min	avg	max	min	avg	max	min	avg	max	min	avg	max
40	56	65	21	26	30	18	30	36	0.50	0.90	1.14

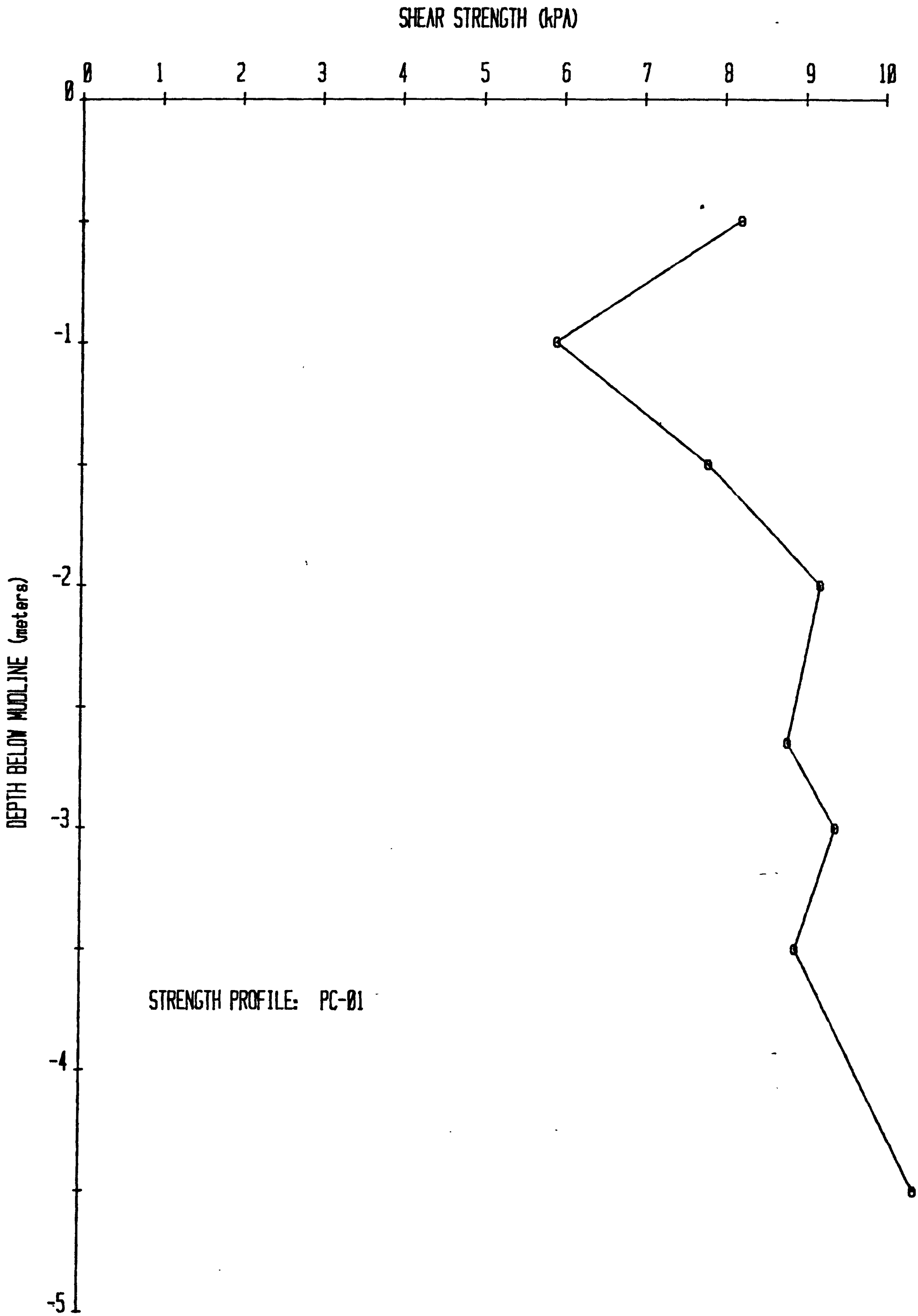

Fig. 2a. Shear strength (S_u) vs. depth in core.

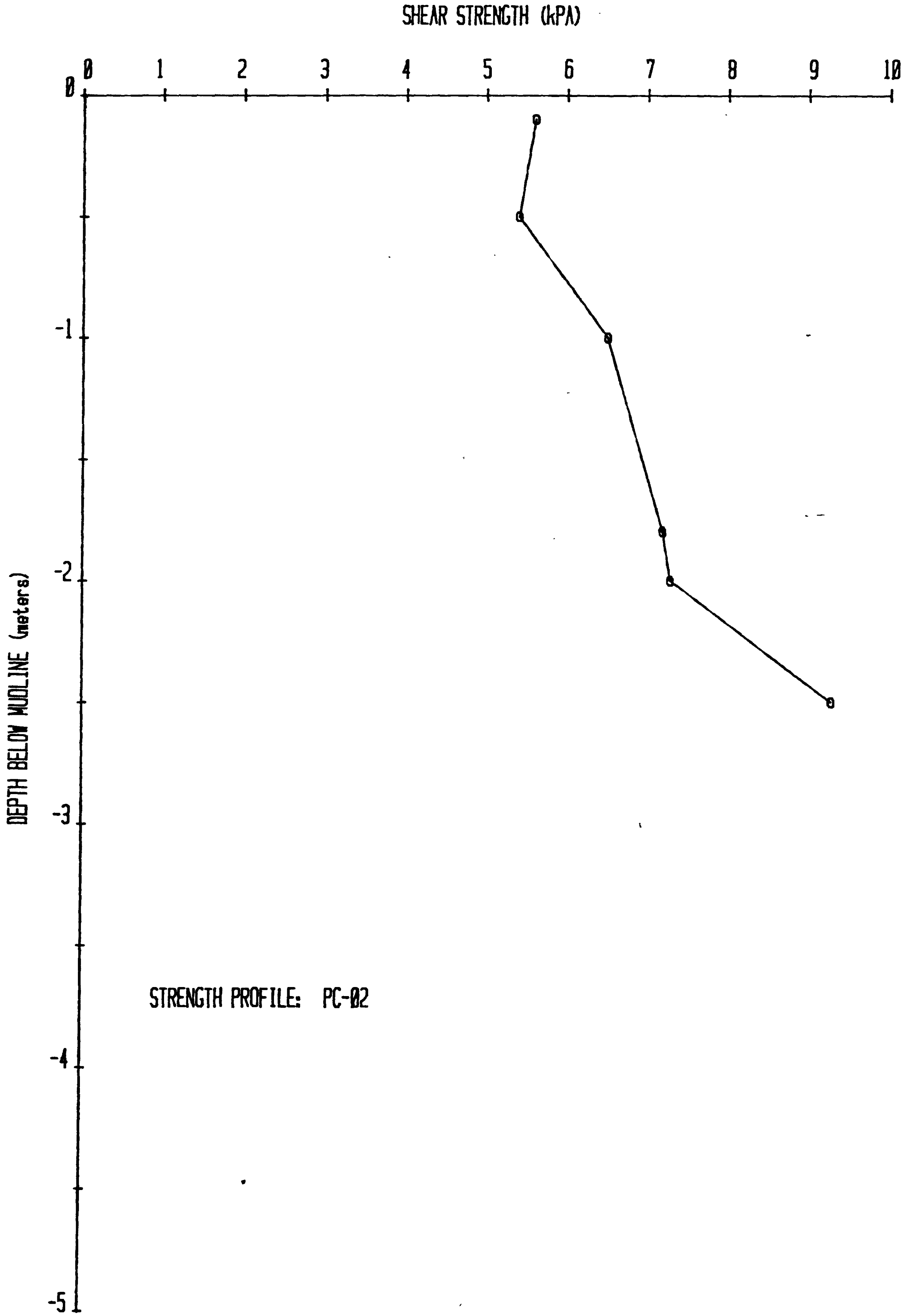

Fig. 2b. Shear strength (S_u) vs. depth in core.

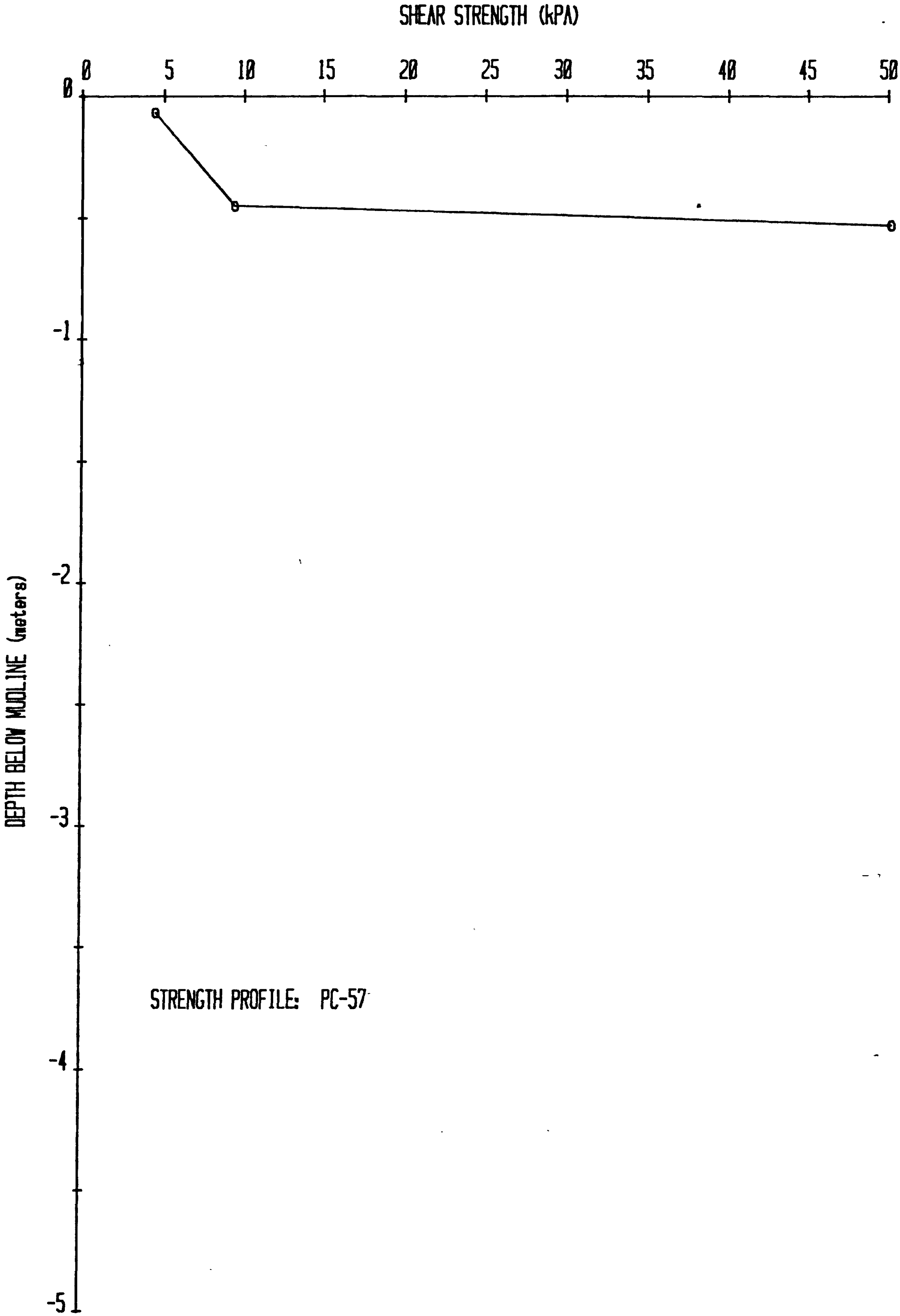

Fig. 2c. Shear strength (S_u) vs. depth in core.

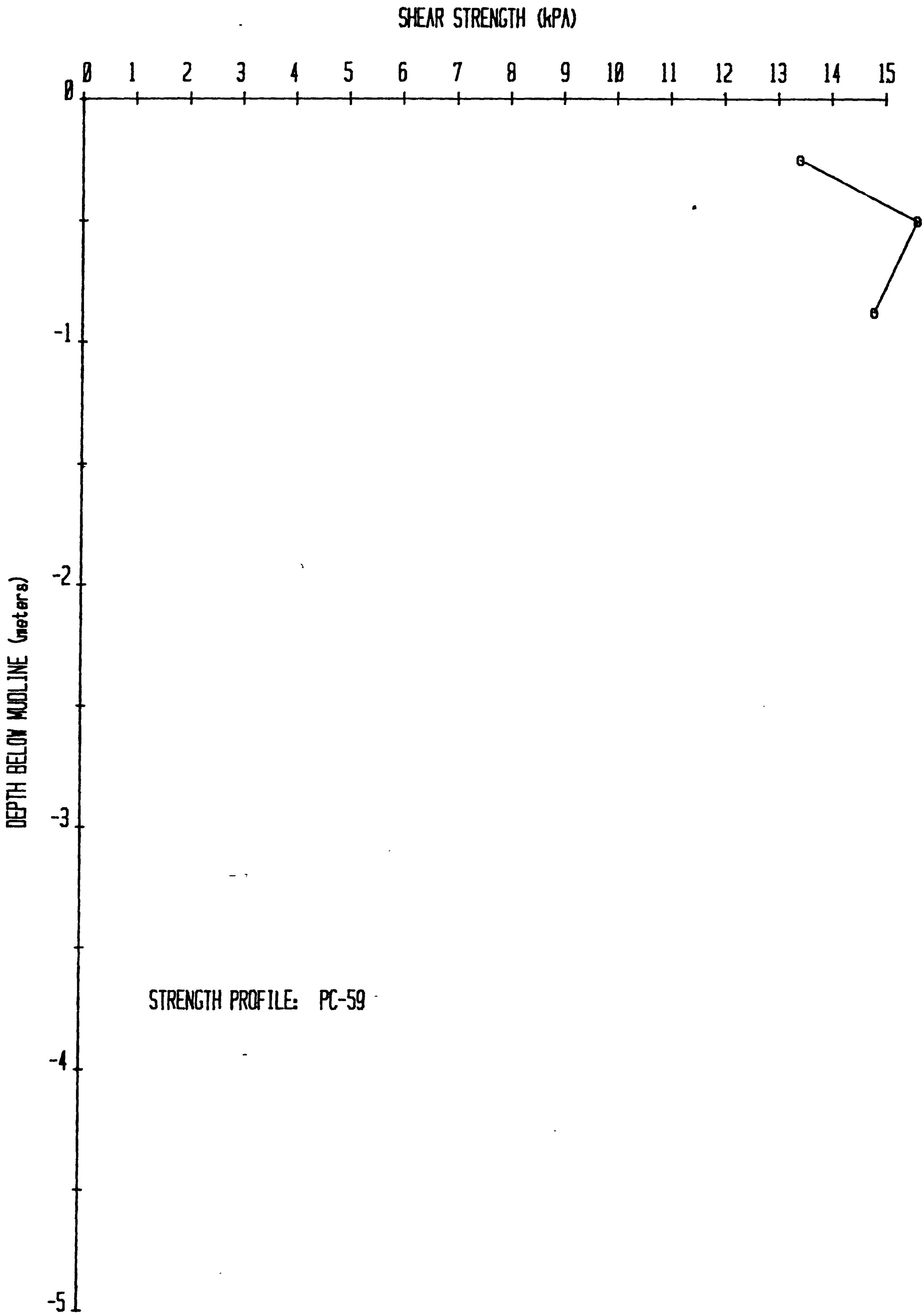

Fig. 2d. Shear strength (S_u) vs. depth in core.

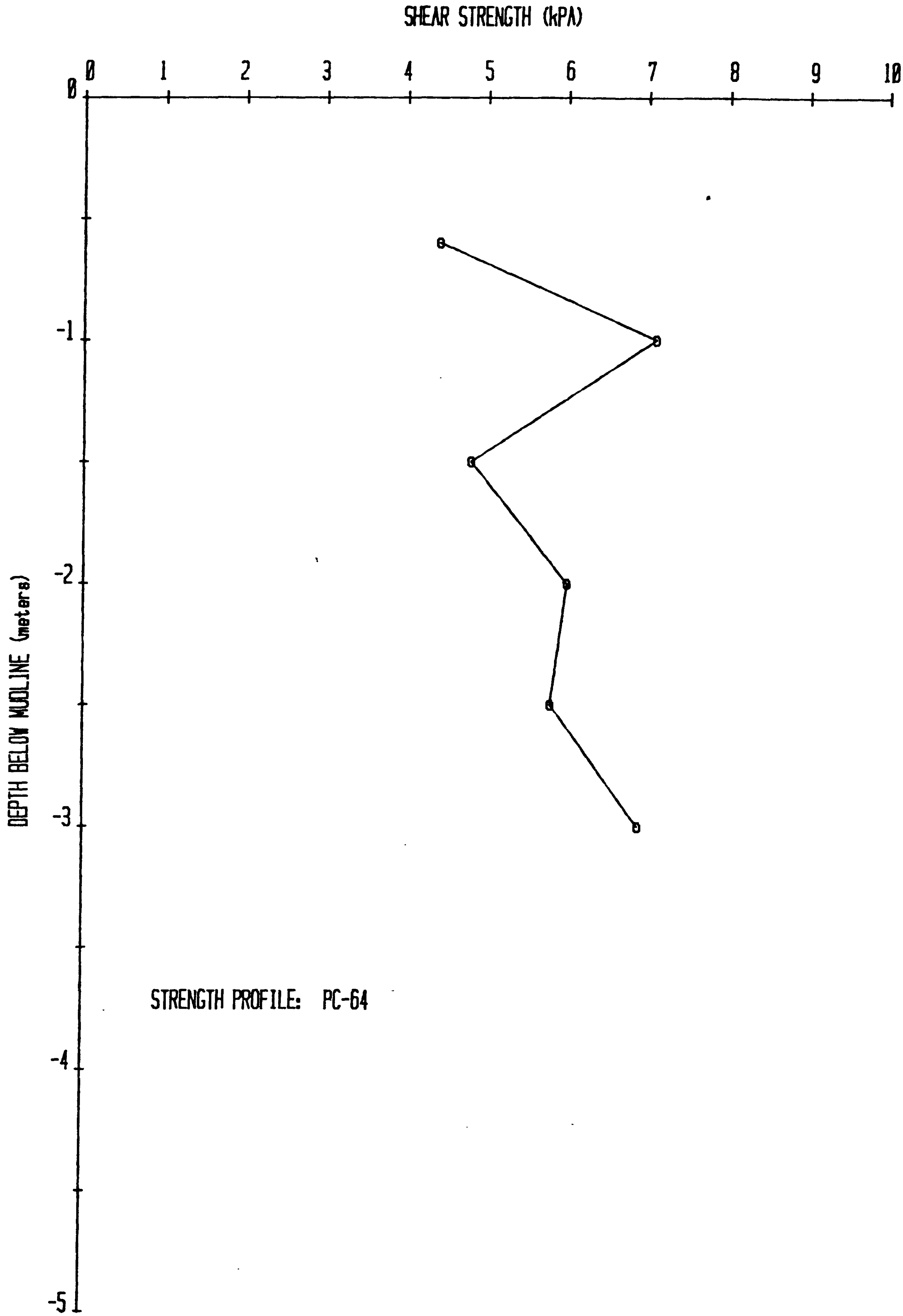

Fig. 2e. Shear strength (S_u) vs. depth in core.

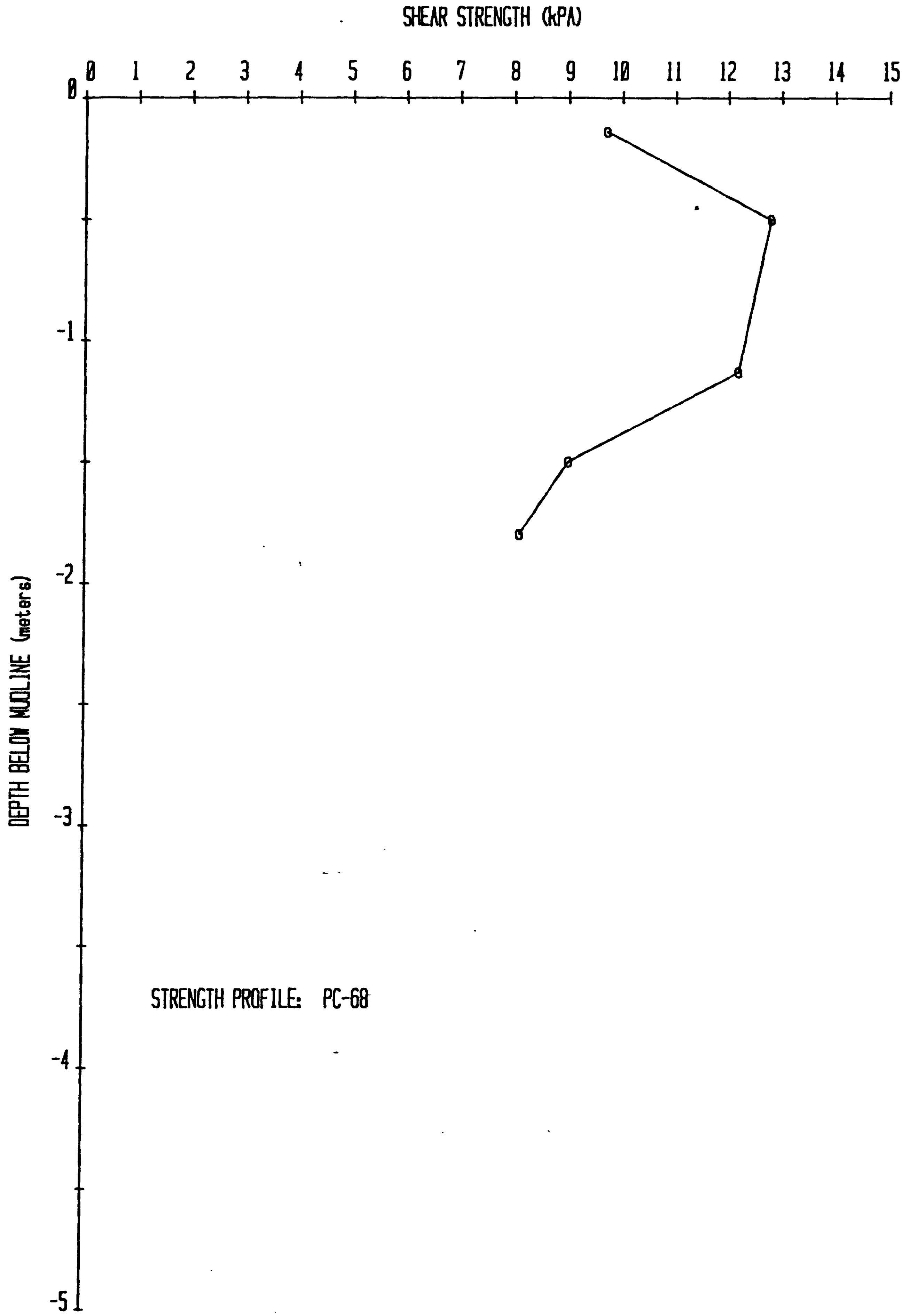

Fig. 2f. Shear strength (S_u) vs. depth in core.

disturbance, such as by shocks from earthquakes or other forms of loading. The mean sensitivity of these sediments is 5.2, which corresponds to an 84% reduction in strength (table 1). According to the classification of Rosenquist (1953), these sediments, on the average, would be considered very sensitive, and range from slightly sensitive to slightly quick. The most sensitive value (15.0) was associated with core PC-57, that also had the highest shear strength. Sediment in this core would lose over 90% of its strength if it were shocked. Marine fine-grained sediments typically have sensitivities of four or less, thus these sediments are slightly more sensitive than normal.

Index Properties

The combination of low water contents, low porosities, and high bulk densities is consistent with the abnormal shear strengths (see table 1). The extremes for these three variables are especially significant for surficial sediments. For example, the maximum water content of 64% is much lower than would be expected (typical values would generally be over 90%) and a bulk density value of 1.91 g/cc is far above the range of 1.50 to 1.60 g/cc that is usually reported from surficial sediments. Relatively coarse grain sizes could force the typical values toward these extremes and, in fact, Keller and others, (1979) report that some of the sediments in this general area contain significant sand. However, the unusual values reported here could also be attributed to the exhumation of once-buried, and thus more compacted, sediment. Size analyses from these cores are not yet available to provide further information on the relative effects of texture and overconsolidation. It is noteworthy, though, that the cores taken from apparent slump scars have the lowest water content, lowest porosity, and highest bulk density values.

Grain specific gravity, measured on 16 samples, averaged 2.70. This value is typical of fine-grained terrigenous sediment and is in accord with value of 2.71 reported for the New England slope cores recovered by Keller and others (1979).

The plasticity data, which here include liquid and plastic limit, plasticity index (liquid limit minus plastic limit), and liquidity index (the ratio of natural water content minus liquid limit to plasticity index) provide a means for classifying sediments. One way this is accomplished is by using the plasticity chart devised by Casagrande (1948). The chart is divided into fields that embrace the different plasticity characteristics of different sediment types. Figure 3 is the plot of the samples from this study on such a chart. Note the fairly tight cluster that is basically confined to one field: inorganic clays of high plasticity. Here, fine-grain sediment of relatively high strength (in comparison with soils of lower plasticity) is indicated. In addition, a common clay mineral suite is implied. The values shown in figure 3 are typical of many terrestrial soils and in fact are quite similar to those found in adjacent coastal areas. The plasticity data are summarized in table 1.

The vertical profiles of liquidity index, as represented by the relationship between natural water content and liquid limit, are shown in figures 4a-4d. Note that of the four plots only one (PC-64, fig. 4c) shows a water content at or above the liquid limit throughout its length. The other cores show only water contents above liquid limits in the upper few centimeters, if at all. This is uncharacteristic of many surficial muds, which typically have water contents above their liquid limits in the upper few meters rather than centimeters. This situation is, however, compatible with the suggestion that once-buried sediment may be represented within these cores. The average liquidity index for the sediments is 0.90 (table 1), which supports the above suggestion. Further, it implies that, on the average, these sediments would behave as a plastic if remolded (by an earthquake, for example) rather than as a liquid.

The plasticity data also have implications regarding consolidation state and the presence of cements. They are discussed elsewhere in this report.

Triaxial Testing

The textural and mineralogical implications of the index tests are supported by the results of the triaxial analyses. One of the most important variables in that regard is the angle of internal friction (ϕ'). Determination of this angle for cores PC-1 and PC-2 yielded values of 22.6° and 27.2°, respectively. The latter value is typical of marine sediments and reflects, as does the plasticity data, the presence of fine-grained material with a standard mineralogy (i.e., no exotic or rare clay minerals). The value of 22.6° for PC-1 is slightly lower than would normally be expected.

Cohesion (c') is the strength of the sediments at zero effective stress; that is, the strength due to interparticle attraction alone. The values of 9.9 kPa for PC-1 and 7.4 kPa for PC-2 are typical for marine sediment of the type sampled.

The stress-strain relationships (shown in Appendix III) indicate failure at 8-10% strain in both samples. Failure at 5-15% strain is common for most fine sediments and thus these samples are typical. Plastic failure (no discrete failure planes) occurred in both cases.

PLASTICITY CHART

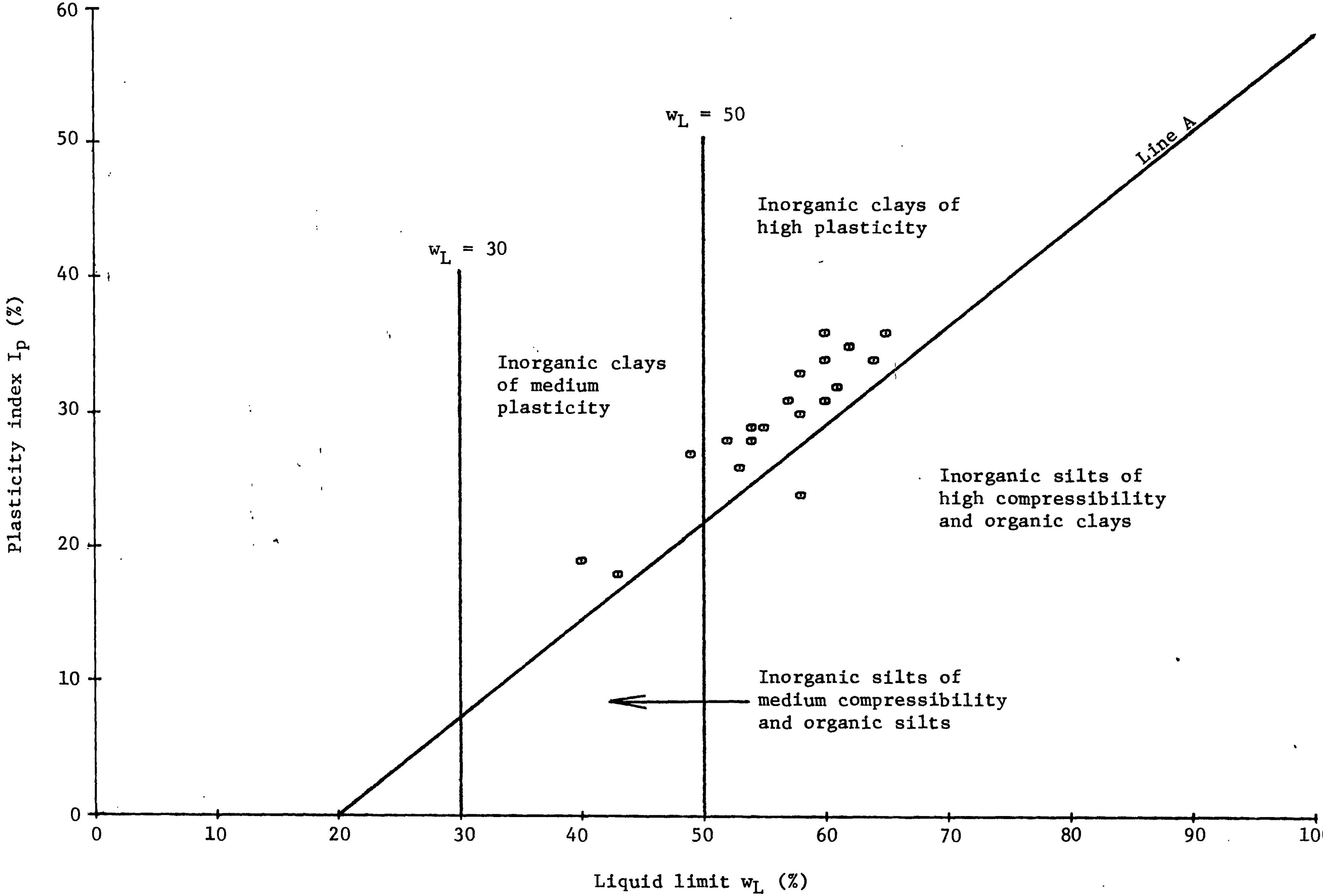

Fig. 3. Classification of sediments based on plasticity characteristics.

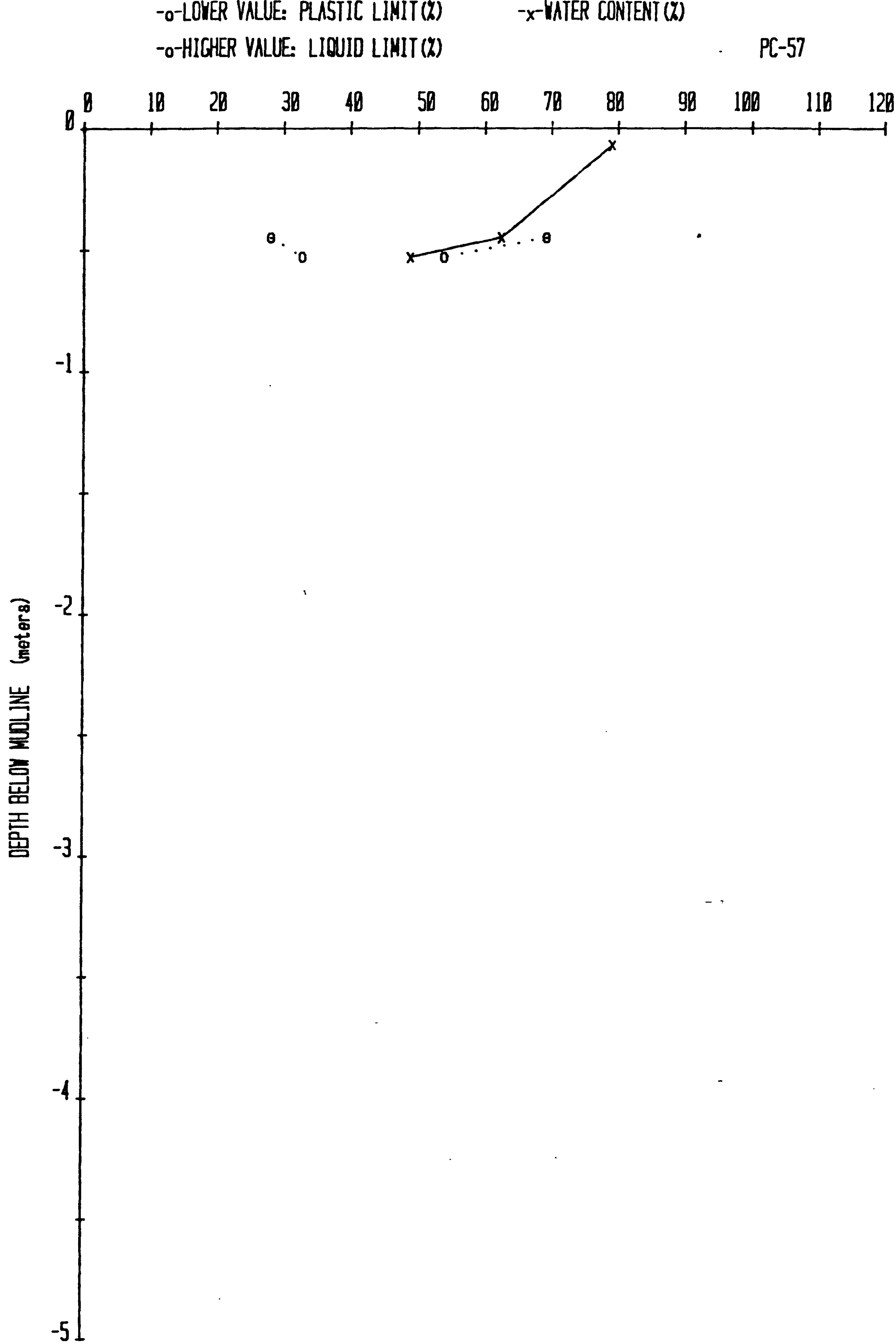

Fig. 4a. Plastic limit, liquid limit, and natural water content vs. depth in core.

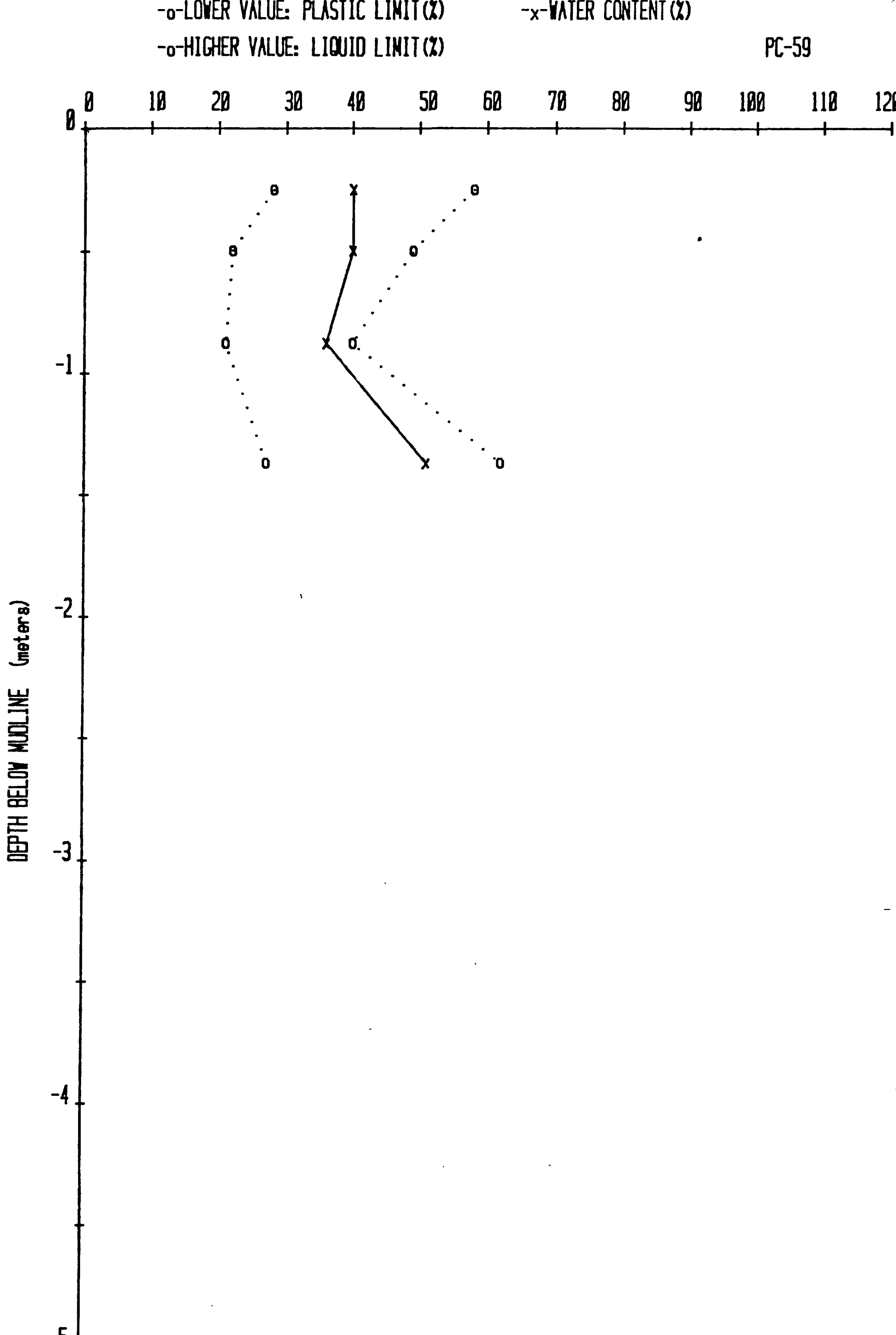

Fig. 4b. Plastic limit, liquid limit, and natural water content vs. depth in core.

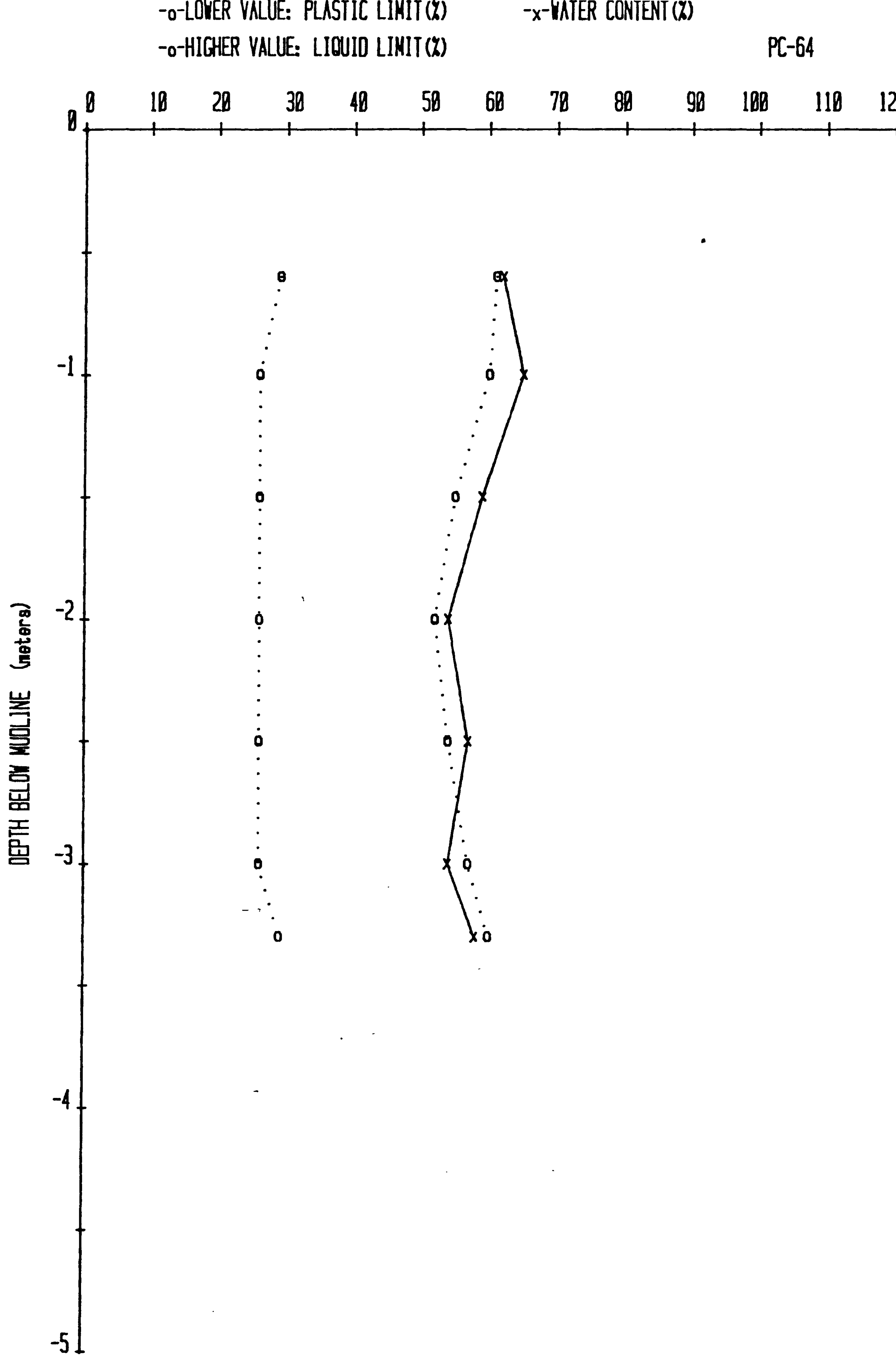

Fig. 4c. Plastic limit, liquid limit, and natural water content vs. depth in core.

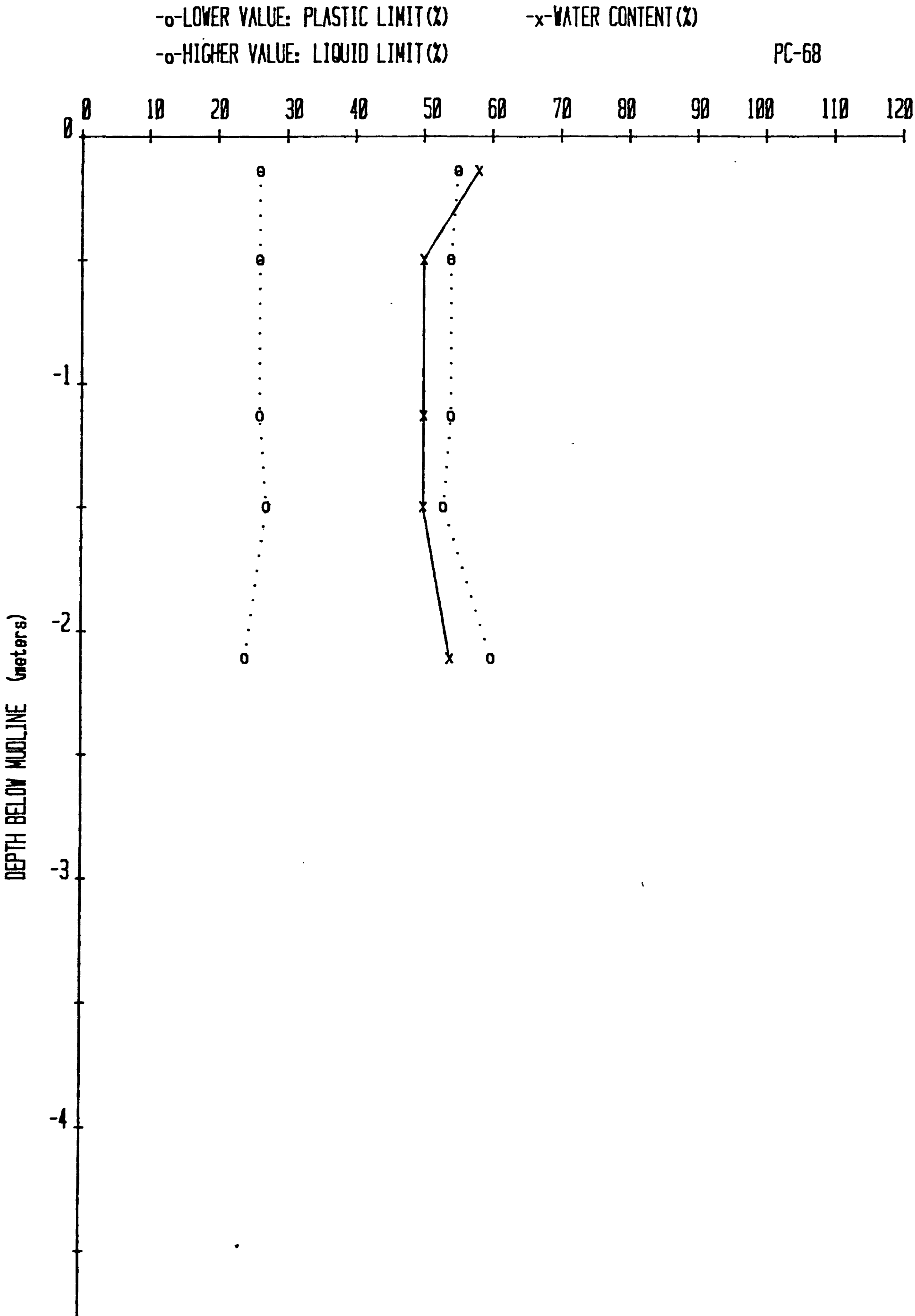

Fig. 4d. Plastic limit, liquid limit, and natural water content vs. depth in core.

SLOPE STABILITY

The mass movement features tentatively identified from seismic records were the focal points of the coring operation. The general purpose of sampling these sites was to verify that the features were the result of mass movement and were not depositional forms or artifacts of seismic profiling. If the samples were taken on scars left by mass movement, we would expect them to have a much greater shear strength than typical surface sediments. Cores PC-1, PC-57, PC-59, and PC-64 were targeted for scars, and PC-57 and PC-59 showed anomalously high shear strengths. It is possible that PC-1 and PC-64 did not hit the intended target, or that post-movement deposition prevented the piston core on the front reaching the scar. In any case, the data do not show that a major strength anomaly (e.g., a scar) was sampled. The other two cores showed shear strengths in the upper 0.5 m that were considerably in excess of normal expectations at this level. PC-57, in particular, with a shear strength of 50 kPa near the top of the core, exemplifies what would be expected if a scar were cored.

Abnormally high strength at the surface is not unequivocal proof that mass movement occurred; such an effect may also be attributed to the presence of cements or to the removal of overburden by scour or other types of erosion. Criteria for recognizing the presence of cements in marine sediments have been developed by Nacci et al. (1974). These criteria include liquidity indices greater than 1.5, sensitivities above a value of 4, and certain behavioral characteristics of the sediment during loading. As shown for PC-57 and PC-59 (figures 4a and 4b), the natural water content is well below the liquid limit (the actual values shown in Appendix II range from 0.76 - 0.84 and 0.50 -

0.76, respectively). Further, if cements, and hence a rigid structure, were present, peak shearing resistance would typically develop early, at strains of less than 2%. This is well below the strains of 8-10% found in this study (see Appendix III). The sensitivity values are in accord with the established criterion, however, and even though many of the values are marginal (Appendix II), the hypothesis that cements exist in these sediments cannot be ruled out on this basis. However, their presence is unlikely because other evidence is lacking, as was discussed.

Similarly, removal of material by scour seems unlikely. The site of PC-57, for example, is located under 1600 m of water in an intercanyon area where strong currents normally would not be expected. If fact, there is a half meter of rather soupy material above the stiff sediment, which implies an absence of scour at least at present. The site of PC-59, which was taken farther upslope in 850 m of water, may be more vulnerable to scour, particularly at a time of lower sea level. This site, as was that of PC-57, is characterized by fine-grained sediment of low water content, and erosion would require a current of several tens of cm/sec. (Southard, 1974). Although no current data are available current velocities of this magnitude would not be expected.

The anomalous shear strengths and index properties, and the lack of significant evidence for cements or scour together suggests that some form of mass wasting occurred at sites PC-57 and PC-59. Thus, the initial interpretations of the high resolution seismic data that these sites are mass movement scars is in accord with the geotechnical data.

Assuming that the overburden involved in the mass wasting event was normally or underconsolidated, the thickness of the sediments involved in the mass wasting may be crudely estimated. In lieu of consolidation test results (not yet available), the formula of Skempton (1954) may be applied. It uses the plasticity index to predict the ratio of undrained shear strength to effective overburden (Su/σ'_v) for cases of normal consolidation. Accordingly, these sediments should have a Su/σ'_v value of 0.22. Thus, the effective overburden values should exceed shear strength values by a factor of five. Assuming an average buoyant unit weight of 0.62 g/cc (bulk density of 1.65 g/cc minus seawater density of 1.03 g/cc), and using the strengths found at the two sites, we determined that on the order of 10 m of overburden were removed from the PC-59 site and perhaps as much as 40 m from the PC-57 site. If substantial underconsolidation (and hence lower densities) were present in the original (pre-mass wasting) sediment column these estimates could more than double.

The fact that mass movement has occurred in the past does not necessarily mean that it will occur in the future. In terms of hazards evaluations, the appropriate concern is the present stability of the slope. This may be addressed by using the infinite slope method of stability analysis. The basic equation is:

$$F = (1 - u_e/\gamma' Z \cos^2\alpha)\tan\phi'/\tan\alpha$$

where F is the factor of safety against failure (<1 is unstable, >1 is stable), u_e is the excess pore pressure (above hydrostatic), γ' is the buoyant unit weight, Z is the thickness of the sediment, α is the slope angle, and ϕ' is the angle of internal friction with respect to effective stress. In order to apply the equation the excess pore pressure (u_e) must be known. In these cases it is not. A state of normal consolidation (i.e., zero excess pore pressure) must be assumed therefore, which is a serious limitation of this type of analysis. The veracity of this assumption is dealt with in the discussion of consolidation states. For a first approximation, however, the assumption is appropriate and instructional. With u_e at zero the equation may be rewritten as

$$F = \tan \phi' / \tan \alpha$$

Therefore, failure should only occur where the slope is equal to or greater than the angle of internal friction. For the two cores that are available for this type of analysis, the appropriate data are: PC-1, $\alpha = 3^\circ$, $\phi' = 22.6^\circ$; PC-2, $\alpha = 2^\circ$, $\phi' = 27.2^\circ$. Thus, with factors of safety of 8 and 15, the surficial sediment on these sites should be stable.

The validity of assuming zero excess pore pressure can be judged by determining consolidation states. In particular, if a state of underconsolidation exists, excess pore pressure is implied and the calculated F values would be too high. For normally consolidated sediment, the strength to overburden ratio (Su/σ'_v) should be about 0.22, as mentioned previously. At the bottom of PC-1 and PC-2, the values are 0.32 and 0.52 respectively. A state of overconsolidation is thus suggested by the data. The F values, therefore, err on the "safe" side.

In a similar fashion, consolidation states may be used to develop a general picture of slope stability and thus provide a crude check on the more formal infinite slope method. Specifically, the Su/σ'_v values may be used to infer relative strength or weakness in a sediment column. Of the 9 cores for which data are available, none have values less than 0.32 and values may be as great as 13. The sites represented by these cores are apparently overconsolidated to some degree. The mass wasting scars, of course, are very overconsolidated. In sum, estimates of consolidation state support the hypothesis that the surficial sediments are stable.

Evaluating the potential for a major mass movement event (involving a thickness of several tens of meters, or more) is not possible because of the limited penetration of the piston corer. If rates of deposition were high at certain times in the past, however, as seems likely because slumps or slides apparently have occurred in the area, then thick sections of underconsolidated sediment could still exist. And, because of the associated excess pore pressures, marginally stable sediments may be present. Even given the likelihood that these excess pore pressures are dissipating under current conditions, the degree of dissipation, hence the present-day stability of the slope, can only be surmized. Until more evidence is available, especially from a deep drilling program, the exact stability condition of the sediment must remain unknown.

CONCLUSIONS

Analyses completed to date suggest the following tentative conclusions:

1. The surficial sediments on the Continental Slope off Georges Bank tend to be highly plastic, inorganic silts and clays. No exotic minerals or abnormal textures were indicated by the geotechnical data.
2. Measurements of shear strength and index properties, and inferences concerning consolidation state suggest that the sites of cores PC-57 and PC-9 were once buried under a considerable amount of overburden. They may be mass movement scars. This finding is in accord with interpretations of high resolution seismic reflection data.

3. Slope stability analyses and indirect assessments of consolidation states suggest that the surficial sediments cored are stable with respect to mass movement.

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Shear Strength Data

Core no. (length)	Penetration (m)	Shear strength (natural) (kPa)	Shear strength (remolded) (kPa)	Sensitivity
PC-1 (5.20 m)	0.50	8.2	1.5	5.5
	1.00	5.9	1.0	5.9
	1.50	7.8	1.2	6.2
	2.00	9.2	1.2	7.3
	2.65	8.8	1.2	7.0
	3.00	9.4	1.5	6.2
	3.50	8.9	1.4	6.4
	4.50	10.4	1.8	5.9
PC-2 (3.13 m)	0.10	5.6	1.8	3.1
	0.50	5.4	1.2	4.4
	1.00	6.5	0.9	7.4
	1.80	7.2	0.9	8.2
	2.00	7.3	1.2	6.2
	2.50	9.3	1.2	7.4
PC-57 (1.00 m)	0.07	4.4	ND	-
	0.45	9.4	0.6	15.0
	0.53	50.2	4.5	11.1
PC-59 (1.71 m)	0.25	13.4	2.7	5.0
	0.50	15.6	1.8	8.6
	0.88	14.8	2.1	6.9
PC-60 (1.91 m)	1.02	8.3	2.4	3.5
PC-62 (0.96 m)	0.15	12.3	2.8	4.5
	0.50	9.2	3.3	2.8

ND: no data - sample too weak for strength measurement

Shear Strength Data

Core no. (length)	Penetration (m)	Shear strength (natural (kPa)	Shear strength (remolded) (kPa)	Sensitivity
PC-64				
(3.81 m)	0.60	4.4	1.2	3.5
	1.00	7.1	ND	-
	1.50	4.8	1.1	4.2
	2.00	6.0	2.3	2.6
	2.50	5.8	1.5	3.8
	3.00	6.9	3.6	1.9
PC-67				
(2.16 m)	1.00	5.1	2.7	1.9
	1.40	3.1	3.1	1.5
PC-68				
(2.45 m)	0.14	9.7	3.5	2.8
	0.50	12.8	4.3	3.0
	1.13	12.2	5.2	2.3
	1.50	9.0	4.5	2.0
	1.80	8.1	4.4	1.8

ND: no data - sample too weak for strength measurement

Index Properties

Core no. (length)	Penetration (m)	Water content (%)	Bulk density (g/cc)	Porosity	Liquid limit	Plastic limit	Plasticity index	Liquidity index
PC-59 (1.71 m)	0.25	40	1.87	52	58	28	30	0.50
	0.50	40	1.87	52	49	22	27	0.65
	0.88	36	1.91	49	40	21	19	0.76
	1.37	51	1.76	58	62	27	35	0.69
PC-60 (1.91 m)	.18	57	1.72	61	64	30	34	0.79
	1.02	59	1.70	61	58	28	30	1.03
PC-62 (0.96 m)	0.15	52	1.75	58	-	-	-	-
	0.50	42	1.85	53	43	25	18	0.93
PC-64 (3.81 m)?	0.60	62	1.68	63	61	29	32	1.04
	1.00	65	1.66	64	60	26	34	1.14
	1.50	59	1.70	61	55	26	29	1.12
	2.00	54	1.74	59	52	26	26	1.04
	2.50	57	1.72	60	54	26	28	1.08
	3.00	54	1.74	59	57	26	31	0.90
	3.30	58	1.71	61	60	29	31	0.81
PC-67 (2.16 m)	1.00	58	1.71	61	58	28	30	1.02
	1.40	59	1.70	61	65	29	36	0.85
	1.65	56	1.72	60	58	25	33	0.94
PC-68 (2.45 m)	0.14	58	1.71	61	55	26	29	1.13
	0.50	50	1.77	58	54	26	28	0.86
	1.13	50	1.77	57	54	26	28	0.86
	1.50	50	1.77	58	53	27	26	0.91
	1.80	-	-	-	-	-	-	-
	2.11	54	1.74	60	60	24	36	0.83

TRIAXIAL TEST RESULTS

GENERAL TEST INFORMATION

SAMPLE INFORMATION

SAMPLE ID:	GD-3, PC-2; 300/330
INTERVAL (meters):	2.74-2.86
GENERAL LOCATION:	GEORGES BANK
DESCRIPTION:	OLIVE-GRAY CLAY
DATE FINISHED:	1/12/80

INDEX PROPERTIES

MOISTURE CONTENT:	0.48
BULK DENSITY (g/cc):	1.77
VOID RATIO:	1.27
POROSITY:	0.56
GRAIN SPEC GRAVITY (g/cc):	2.72

SAMPLE PARAMETERS

HEIGHT (mm):	100.00
DIAMETER (mm):	50.00
AREA (sq. mm):	1963.50
VOLUME (cc):	196.35
WEIGHT (gm):	346.30

TEST RESULTS

SATURATION PHASE

READING	CELL PRESSURE kPa	DELTA C kPa	PORE PRESSURE kPa	DELTA P kPa	B
1	0.00		0.00		
2	50.00	50.00	47.00	47.00	0.94
3	100.00	50.00	96.00	49.00	0.98
4	150.00	50.00	145.00	49.00	0.98
5	200.00	50.00	195.00	50.00	1.00

CONSOLIDATION PHASE

CELL PRESSURE (kPa):	330.00
BACK PRESSURE (kPa):	300.00
CONSOLIDATION PRESSURE (kPa):	30.00
ASSUMED EFFECTIVE OVERBURDEN PRESSURE (kPa):	20.46

CHANGES IN PROPERTIES DUE TO CONSOLIDATION

PROPERTY	INITIAL VALUE	CONSOLIDATED VALUE
HEIGHT (mm):	100.00	98.48
AREA (sq. mm):	1963.50	1904.08
VOLUME (cc):	196.35	187.51
WATER CONTENT:	0.48	0.44
POROSITY:	0.56	0.46
VOID RATIO:	1.27	0.84
BULK DENSITY (g/cc):	1.77	1.81
BOUYANT BULK DENSITY (g/cc):	0.75	0.78
% SATURATION:	100.00	100.00

MEASURED PROPERTIES

READING	TIME (sec)	Log TIME	Sqrt TIME	DVOL (cc)
1	0	-4.00	0.00	0.00
2	4	0.60	2.00	0.10
3	10	1.00	3.16	0.22
4	20	1.30	4.47	0.38
5	38	1.58	6.16	0.59
6	75	1.88	8.66	0.91
7	194	2.29	13.93	1.60
8	324	2.51	18.00	2.13
9	582	2.76	24.12	2.95
10	1096	3.04	33.11	4.10
11	2122	3.33	46.07	5.53
12	3924	3.59	62.64	6.82
13	5727	3.76	75.68	7.47
14	7529	3.88	86.77	7.81
15	9331	3.97	96.60	8.03
16	11133	4.05	105.51	8.17
17	12935	4.11	113.73	8.26
18	14737	4.17	121.40	8.33
19	16539	4.22	128.60	8.41
20	18341	4.26	135.43	8.44
21	20143	4.30	141.93	8.48
22	21946	4.34	148.14	8.52
23	23748	4.38	154.10	8.54
24	25550	4.41	159.84	8.56
25	27352	4.44	165.38	8.58
26	29154	4.46	170.75	8.60
27	30956	4.49	175.94	8.62
28	32758	4.52	180.99	8.64
29	34561	4.54	185.91	8.66
30	36363	4.56	190.69	8.68
31	38165	4.58	195.36	8.69
32	39967	4.60	199.92	8.70
33	41769	4.62	204.37	8.72
34	43571	4.64	208.74	8.73

35	45373	4.66	213.01	8.74
36	47176	4.67	217.20	8.75
37	48978	4.69	221.31	8.76
38	50780	4.71	225.34	8.76
39	52588	4.72	229.32	8.77
40	54390	4.74	233.22	8.79
41	56192	4.75	237.05	8.78
42	57994	4.76	240.82	8.78
43	59796	4.78	244.53	8.81
44	61598	4.79	248.19	8.90
45	63401	4.80	251.80	8.81
46	65203	4.81	255.35	8.83
47	67005	4.83	258.85	9.82
48	68807	4.84	262.31	8.85
49	70609	4.85	265.72	8.84
50	72421	4.86	269.11	8.84

ALPHA: 0.98
Ao (sq. mm): 1904.09
Lo (mm): 98.48

SHEAR PHASE

CELL PRESSURE (kPa): 330.00
STRAIN RATE: .015 mm/min

MEASURED PROPERTIES

READING	DVOL	PORP	DLNG	AXFO	CELP	TIME
	(cc)	(kPa)	(mm)	(N)	(kPa)	(sec)
1	0.00	303.44	0.00	0.00	330.00	0
2	0.00	303.80	-0.01	-0.35	330.00	1322
3	0.01	303.96	-0.03	18.26	330.00	2644
4	0.00	305.02	0.15	51.66	330.00	3966
5	-0.00	312.20	0.43	98.63	330.00	5288
6	0.00	313.52	0.68	102.28	330.00	6610
7	0.00	314.30	0.98	106.62	330.00	7932
8	-0.00	314.69	1.28	115.42	330.00	9255
9	0.00	314.82	1.57	117.08	330.00	10577
10	0.00	314.79	1.79	118.15	330.00	11899
11	-0.00	314.89	2.11	113.50	330.00	13221
12	-0.00	315.11	2.44	126.57	330.00	14543
13	0.00	315.47	2.75	133.87	330.00	15865
14	0.00	315.60	3.10	130.72	330.00	17187
15	-0.00	315.73	3.43	126.53	330.00	18509
16	-0.00	315.73	3.78	129.80	330.00	19831
17	-0.01	315.57	4.12	130.14	330.00	21154

2	-0.0002	329.82	330.00	1.00	26.02	26.20	0.99
3	-0.0003	339.59	330.00	1.03	35.63	26.04	1.37
4	0.0015	357.09	330.00	1.08	48.07	20.98	2.29
5	0.0043	381.57	330.00	1.16	69.38	17.81	3.90
6	0.0070	383.34	330.00	1.16	69.82	16.48	4.24
7	0.0099	385.44	330.00	1.17	71.14	15.70	4.53
8	0.0130	389.83	330.00	1.18	75.14	15.31	4.91
9	0.0160	390.51	330.00	1.18	75.69	15.18	4.99
10	0.0181	390.93	330.00	1.18	76.14	15.21	5.01
11	0.0214	388.33	330.00	1.18	73.45	15.12	4.86
12	0.0248	394.83	330.00	1.20	79.71	14.89	5.35
13	0.0280	398.34	330.00	1.21	82.87	14.53	5.70
14	0.0314	396.49	330.00	1.20	80.90	14.40	5.62
15	0.0349	394.14	330.00	1.19	78.41	14.27	5.49
16	0.0384	395.55	330.00	1.20	79.82	14.27	5.59
17	0.0419	395.49	330.00	1.20	79.92	14.43	5.54
18	0.0454	393.48	330.00	1.19	77.78	14.31	5.44
19	0.0489	393.32	330.00	1.19	77.59	14.27	5.44
20	0.0525	395.30	330.00	1.20	79.89	14.60	5.47
21	0.0560	395.04	330.00	1.20	79.53	14.50	5.49
22	0.0596	383.13	330.00	1.16	67.57	14.43	4.68
23	0.0632	384.19	330.00	1.16	68.86	14.66	4.70
24	0.0668	384.27	330.00	1.16	69.13	14.86	4.65
25	0.0704	382.37	330.00	1.16	67.10	14.73	4.56
26	0.0740	381.63	330.00	1.16	66.52	14.89	4.47
27	0.0776	380.42	330.00	1.15	65.15	14.73	4.42
28	0.0812	380.74	330.00	1.15	65.60	14.86	4.42
29	0.0848	380.86	330.00	1.15	66.04	15.18	4.35
30	0.0883	380.81	330.00	1.15	66.02	15.21	4.34
31	0.0919	380.78	330.00	1.15	65.86	15.08	4.37
32	0.0954	380.85	330.00	1.15	66.03	15.18	4.35
33	0.0990	380.33	330.00	1.15	65.73	15.41	4.27
34	0.1025	380.96	330.00	1.15	66.30	15.34	4.32
35	0.1060	380.91	330.00	1.15	66.35	15.44	4.30
36	0.1095	380.37	330.00	1.15	65.80	15.44	4.26
37	0.1130	380.51	330.00	1.15	65.76	15.25	4.31
38	0.1165	380.10	330.00	1.15	65.54	15.44	4.24
39	0.1200	379.76	330.00	1.15	65.13	15.37	4.24
40	0.1234	381.09	330.00	1.15	66.52	15.44	4.31
41	0.1269	381.08	330.00	1.15	66.58	15.50	4.29
42	0.1303	380.65	330.00	1.15	66.21	15.57	4.25
43	0.1338	381.04	330.00	1.15	66.54	15.50	4.29
44	0.1373	381.48	330.00	1.16	66.89	15.41	4.34
45	0.1407	381.98	330.00	1.16	67.42	15.44	4.37
46	0.1442	381.70	330.00	1.16	67.14	15.44	4.35
47	0.1476	381.02	330.00	1.15	66.39	15.37	4.32
48	0.1511	381.37	330.00	1.16	66.81	15.44	4.33
49	0.1546	380.46	330.00	1.15	65.87	15.41	4.28
50	0.1581	380.73	330.00	1.15	66.20	15.47	4.28
51	0.1616	381.18	330.00	1.16	66.59	15.41	4.32
52	0.1652	381.79	330.00	1.16	67.39	15.60	4.32

18	-0.00	315.70	4.47	126.61	330.00	22476
19	-0.01	315.73	4.82	126.76	330.00	23798
20	-0.01	315.40	5.17	131.22	330.00	25120
21	-0.00	315.50	5.52	131.18	330.00	26442
22	-0.00	315.57	5.87	107.58	330.00	27764
23	-0.00	315.34	6.23	110.16	330.00	29086
24	-0.00	315.14	6.58	110.73	330.00	30408
25	-0.01	315.27	6.94	107.27	330.00	31730
26	-0.01	315.11	7.29	106.16	330.00	33053
27	-0.01	315.27	7.64	104.08	330.00	34375
28	-0.01	315.14	8.00	105.16	330.00	35697
29	-0.01	314.82	8.35	105.81	330.00	37019
30	-0.01	314.79	8.70	106.12	330.00	38341
31	-0.01	314.92	9.05	106.47	330.00	39663
32	-0.01	314.82	9.40	107.04	330.00	40985
33	-0.01	314.59	9.75	106.35	330.00	42307
34	-0.00	314.66	10.10	108.12	330.00	43629
35	-0.00	314.56	10.44	108.43	330.00	44951
36	-0.00	314.56	10.79	107.70	330.00	46273
37	0.00	314.76	11.13	108.43	330.00	47595
38	0.00	314.56	11.47	107.97	330.00	48917
39	0.00	314.63	11.81	107.66	330.00	50240
40	0.01	314.56	12.15	110.96	330.00	51562
41	0.01	314.50	12.50	111.39	330.00	52884
42	0.01	314.43	12.84	110.89	330.00	54206
43	0.01	314.50	13.18	112.19	330.00	55528
44	0.01	314.59	13.52	113.62	330.00	56850
45	0.01	314.56	13.86	115.19	330.00	58172
46	0.02	314.56	14.20	115.04	330.00	59494
47	0.02	314.63	14.54	113.96	330.00	60816
48	0.02	314.56	14.88	115.23	330.00	62139
49	0.02	314.59	15.22	113.65	330.00	63461
50	0.02	314.53	15.57	114.73	330.00	64783
51	0.03	314.59	15.91	116.23	330.00	66105
52	0.03	314.40	16.26	118.11	330.00	67427
53	0.03	314.53	16.60	118.27	330.00	68749
54	0.03	314.53	16.94	118.65	330.00	70071
55	0.03	314.43	17.30	118.84	330.00	71393
56	0.03	314.66	17.64	120.07	330.00	72715
57	0.03	314.30	17.99	119.88	330.00	74037
58	0.02	314.20	18.34	118.80	330.00	75360
59	0.02	314.01	18.68	118.65	330.00	76682
60	0.01	314.20	19.03	120.76	330.00	78004

DERIVED PROPERTIES

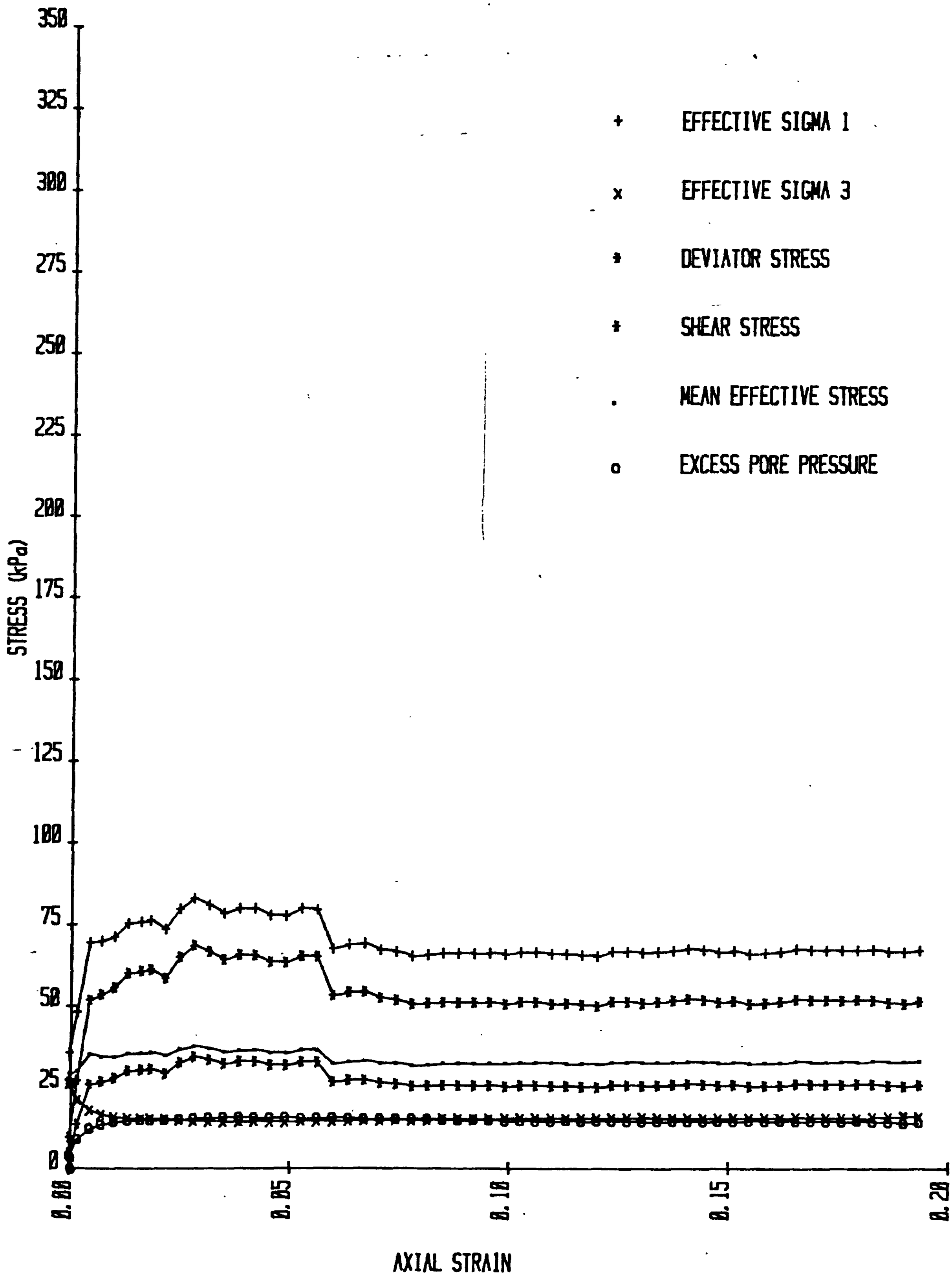
READING	STRAINA	SIG1 (kPa)	SIG3 (kPa)	TOTAL STRESS RATIO	EFFSIG1 (kPa)	EFFSIG3 (kPa)	EFFECTIVE STRESS RATIO
1	0.0000	330.00	330.00	1.00	26.56	26.56	1.00

53	0.1686	381.64	330.00	1.16	67.11	15.47	4.34
54	0.1721	381.59	330.00	1.16	67.06	15.47	4.33
55	0.1756	381.45	330.00	1.16	67.02	15.57	4.30
56	0.1791	381.77	330.00	1.16	67.11	15.34	4.37
57	0.1827	381.46	330.00	1.16	67.16	15.70	4.28
58	0.1863	380.77	330.00	1.15	66.57	15.80	4.21
59	0.1897	380.49	330.00	1.15	66.48	15.99	4.16
60	0.1933	381.17	330.00	1.16	66.96	15.80	4.24

DERIVED PROPERTIES (cont.)

READING	A	q (kPa)	p' (kPa)	q/p'	DEVIATOR STRESS (kPa)	MEAN EFFECTIVE STRESS (kPa)
1	-1.96	0.00	26.56	0.00	0.00	26.56
2	-1.96	-0.09	26.11	-0.00	-0.18	26.14
3	0.02	4.80	30.83	0.16	9.59	29.24
4	0.29	13.54	34.53	0.39	27.09	30.01
5	0.13	25.79	43.59	0.59	51.57	35.00
6	0.75	26.67	43.15	0.62	53.34	34.26
7	0.37	27.72	43.42	0.64	55.44	34.18
8	0.09	29.91	45.22	0.66	59.83	35.25
9	0.19	30.25	45.43	0.67	60.51	35.35
10	-0.08	30.46	45.67	0.67	60.93	35.52
11	-0.04	29.17	44.28	0.66	58.33	34.56
12	0.03	32.41	47.30	0.69	64.83	36.50
13	0.10	34.17	48.70	0.70	68.34	37.31
14	-0.07	33.25	47.65	0.70	66.49	36.57
15	-0.06	32.07	46.34	0.69	64.14	35.65
16	0.00	32.78	47.05	0.70	65.55	36.12
17	2.52	32.74	47.18	0.69	65.49	36.26
18	-0.06	31.74	46.04	0.69	63.48	35.46
19	-0.21	31.66	45.93	0.69	63.32	35.38
20	-0.16	32.65	47.25	0.69	65.30	36.36
21	-0.37	32.52	47.02	0.69	65.04	36.18
22	-0.01	26.57	41.00	0.65	53.13	32.14
23	-0.21	27.10	41.76	0.65	54.19	32.73
24	-2.58	27.14	41.99	0.65	54.27	32.95
25	-0.07	26.19	40.91	0.64	52.37	32.18
26	0.22	25.81	40.70	0.63	51.63	32.10
27	-0.13	25.21	39.94	0.63	50.42	31.53
28	-0.40	25.37	40.23	0.63	50.74	31.77
29	-2.74	25.43	40.61	0.63	50.86	32.13
30	0.63	25.41	40.62	0.63	50.81	32.15
31	-3.75	25.39	40.47	0.63	50.78	32.01
32	-1.26	25.43	40.61	0.63	50.85	32.13
33	0.43	25.16	40.57	0.62	50.33	32.18
34	0.10	25.48	40.82	0.62	50.96	32.33
35	1.89	25.45	40.89	0.62	50.91	32.41
36	0.00	25.18	40.62	0.62	50.37	32.23
37	1.34	25.26	40.50	0.62	50.51	32.08

38	0.47	25.05	40.49	0.62	50.10	32.14
39	-0.19	24.88	40.25	0.62	49.76	31.96
40	-0.05	25.54	40.98	0.62	51.09	32.47
41	5.98	25.54	41.04	0.62	51.08	32.53
42	0.15	25.32	40.89	0.62	50.65	32.45
43	0.17	25.52	41.02	0.62	51.04	32.52
44	0.22	25.74	41.15	0.63	51.48	32.57
45	-0.06	25.99	41.43	0.63	51.98	32.77
46	0.00	25.85	41.29	0.63	51.70	32.67
47	-0.09	25.51	40.88	0.62	51.02	32.38
48	-0.18	25.69	41.13	0.62	51.37	32.56
49	-0.04	25.23	40.64	0.62	50.46	32.23
50	-0.24	25.36	40.84	0.62	50.73	32.38
51	0.00	25.59	41.00	0.62	51.18	32.47
52	0.00	25.89	41.49	0.62	51.79	32.86
53	0.00	25.82	41.29	0.63	51.64	32.69
54	0.00	25.80	41.27	0.63	51.59	32.67
55	0.00	25.73	41.30	0.62	51.45	32.72
56	0.00	25.88	41.22	0.63	51.77	32.60
57	0.00	25.73	41.43	0.62	51.46	32.85
58	0.00	25.39	41.18	0.62	50.77	32.72
59	0.00	25.25	41.24	0.61	50.49	32.82
60	0.00	25.58	41.38	0.62	51.17	32.85



GD-3, PC-2: 300/330

TRIAXIAL TEST RESULTS

GENERAL TEST INFORMATION

SAMPLE INFORMATION

SAMPLE ID:	GD-3, PC-2; 360/420
INTERVAL (meters):	2.86-2.97
GENERAL LOCATION:	GEORGES BANK
DESCRIPTION:	OLIVE-GRAY CLAY
DATE FINISHED:	1/12/80

INDEX PROPERTIES

MOISTURE CONTENT:	0.56
BULK DENSITY (g/cc):	1.71
VOID RATIO:	1.49
POROSITY:	0.60
GRAIN SPEC GRAVITY (g/cc):	2.72
LIQUID LIMIT (%):	58.00
PLASTIC LIMIT (%):	24.00

SAMPLE PARAMETERS

HEIGHT (mm):	100.00
DIAMETER (mm):	50.00
AREA (sq. mm):	1963.50
VOLUME (cc):	196.35
WEIGHT (gm):	337.70

TEST RESULTS

SATURATION PHASE

READING	CELL PRESSURE kPa	DELTA C kPa	PORE PRESSURE kPa	DELTA P kPa	B
1	0.00		0.00		
2	50.00	50.00	46.00	46.00	0.92
3	100.00	50.00	95.00	49.00	0.98
4	150.00	50.00	144.00	49.00	0.98
5	200.00	50.00	184.00	40.00	0.80

CONSOLIDATION PHASE

CELL PRESSURE (kPa):	420.00
BACK PRESSURE (kPa):	360.00
CONSOLIDATION PRESSURE (kPa):	60.00
ASSUMED EFFECTIVE OVERBURDEN PRESSURE (kPa):	19.51

CHANGES IN PROPERTIES DUE TO CONSOLIDATION

PROPERTY	INITIAL VALUE	CONSOLIDATED VALUE
HEIGHT (mm):	100.00	98.80
AREA (sq. mm):	1963.50	1916.71
VOLUME (cc):	196.35	189.37
WATER CONTENT:	0.56	0.53
POROSITY:	0.60	0.54
VOID RATIO:	1.49	1.19
BULK DENSITY (g/cc):	1.71	1.73
BOUYANT BULK DENSITY (g/cc):	0.68	0.71
% SATURATION:	100.00	100.00

MEASURED PROPERTIES

READING	TIME (sec)	Log TIME	Sqrt TIME	DVOL (cc)
1	1	0.00	1.00	0.00
2	5	0.70	2.24	0.00
3	11	1.04	3.32	0.01
4	21	1.32	4.58	0.02
5	39	1.59	6.24	0.03
6	73	1.86	8.54	0.06
7	139	2.14	11.79	0.11
8	269	2.43	16.40	0.19
9	527	2.72	22.96	0.26
10	1042	3.02	32.28	0.40
11	2068	3.32	45.48	1.08
12	3870	3.59	62.21	3.01
13	5672	3.75	75.31	4.06
14	7474	3.87	86.45	4.67
15	9276	3.97	96.31	5.08
16	11078	4.04	105.25	5.34
17	12881	4.11	113.49	5.53
18	14683	4.17	121.17	5.67
19	16485	4.22	128.39	5.82
20	18287	4.26	135.23	5.90
21	20089	4.30	141.74	5.97
22	21891	4.34	147.96	6.05
23	23694	4.37	153.93	6.10
24	25496	4.41	159.67	6.15
25	27298	4.44	165.22	6.20
26	29100	4.46	170.59	6.25
27	30902	4.49	175.79	6.30
28	32704	4.51	180.84	6.34
29	34506	4.54	185.76	6.38
30	36309	4.56	190.55	6.42
31	38111	4.58	195.22	6.46
32	39913	4.60	199.78	6.49
33	41715	4.62	204.24	6.53
34	43517	4.64	208.61	6.56

35	45319	4.66	212.88	6.60
36	47122	4.67	217.08	6.63
37	48924	4.69	221.19	6.66
38	50726	4.71	225.22	6.68
39	52528	4.72	229.19	6.70
40	54330	4.74	233.09	6.75
41	56132	4.75	236.92	6.76
42	57934	4.76	240.69	6.78
43	59736	4.78	244.41	6.83
44	61539	4.79	248.07	6.83
45	63341	4.80	251.68	6.87
46	65143	4.81	255.23	6.89
47	66945	4.83	258.74	6.90
48	68747	4.84	262.20	6.95
49	70549	4.85	265.61	6.94
50	72354	4.86	268.99	6.98

ALPHA: 0.99
Ao (sq. mm): 1916.72
Lo (mm): 98.80

SHEAR PHASE

CELL PRESSURE (kPa): 420.00
STRAIN RATE: .015 mm/min

MEASURED PROPERTIES

READING	DVOL (cc)	PORP (kPa)	DLNG (mm)	AXFO (N)	CELP (kPa)	TIME (sec)
1	0.00	364.28	0.00	0.00	420.00	0
2	0.00	365.55	-0.03	1.31	420.00	1322
3	0.02	366.48	0.05	3.33	420.00	2644
4	0.01	368.45	0.37	9.19	420.00	3967
5	-0.00	369.50	0.71	9.93	420.00	5289
6	0.01	380.40	1.01	50.18	420.00	6611
7	0.00	385.68	1.34	67.86	420.00	7933
8	-0.01	388.54	1.68	78.45	420.00	9255
9	0.00	390.89	2.00	86.15	420.00	10577
10	-0.01	392.51	2.34	92.71	420.00	11899
11	-0.01	393.75	2.69	97.52	420.00	13221
12	-0.01	394.61	3.04	101.06	420.00	14543
13	-0.00	395.66	3.38	104.08	420.00	15866
14	-0.01	396.07	3.73	106.27	420.00	17188
15	-0.01	396.55	4.08	108.15	420.00	18510
16	-0.01	396.87	4.44	110.12	420.00	19832
17	-0.01	397.28	4.79	112.05	420.00	21154

18	-0.01	397.60	5.14	113.62	420.00	22476
19	-0.01	397.60	5.49	115.33	420.00	23798
20	-0.01	397.88	5.84	116.73	420.00	25120
21	-0.01	398.04	6.19	118.30	420.00	26442
22	-0.01	398.04	6.54	119.53	420.00	27764
23	-0.01	398.11	6.90	120.84	420.00	29087
24	-0.01	398.11	7.24	121.71	420.00	30409
25	-0.01	398.17	7.59	122.81	420.00	31731
26	-0.02	398.27	7.94	123.73	420.00	33053
27	-0.02	398.30	8.29	124.69	420.00	34375
28	-0.02	398.42	8.63	125.61	420.00	35697
29	-0.02	398.46	8.98	126.40	420.00	37019
30	-0.02	398.58	9.32	127.31	420.00	38341
31	-0.02	398.65	9.67	127.84	420.00	39663
32	-0.02	398.62	10.01	128.54	420.00	40985
33	-0.01	398.58	10.36	129.11	420.00	42307
34	-0.01	398.55	10.70	129.72	420.00	43630
35	-0.01	398.62	11.04	130.20	420.00	44952
36	-0.01	398.74	11.39	130.64	420.00	46274
37	-0.01	398.77	11.74	131.30	420.00	47596
38	-0.01	398.71	12.08	131.65	420.00	48918
39	-0.01	398.68	12.42	132.00	420.00	50240
40	-0.01	398.96	12.77	132.65	420.00	51562
41	-0.00	398.96	13.11	132.74	420.00	52884
42	-0.00	398.96	13.45	133.31	420.00	54206
43	-0.00	399.00	13.80	133.48	420.00	55529
44	-0.00	398.96	14.15	133.83	420.00	56851
45	0.00	399.19	14.51	134.14	420.00	58173
46	0.00	399.19	14.86	134.45	420.00	59495
47	0.00	399.28	15.21	134.62	420.00	60817
48	0.01	399.44	15.56	134.88	420.00	62139
49	0.01	399.47	15.92	135.15	420.00	63461
50	0.02	399.47	16.27	135.32	420.00	64784
51	0.02	399.57	16.62	135.76	420.00	66106
52	0.02	399.54	16.97	135.93	420.00	67428
53	0.02	399.66	17.33	136.06	420.00	68750
54	0.02	399.66	17.69	136.37	420.00	70072
55	0.02	399.60	18.05	136.50	420.00	71394
56	0.02	399.70	18.41	136.55	420.00	72716
57	0.02	399.76	18.76	136.63	420.00	74038
58	0.02	399.63	19.11	136.37	420.00	75360
59	0.01	399.63	19.47	136.41	420.00	76683
60	0.01	399.60	19.84	136.11	420.00	78005

DERIVED PROPERTIES

READING	STRAINA	SIG1 (kPa)	SIG3 (kPa)	TOTAL STRESS RATIO	EFFSIG1 (kPa)	EFFSIG3 (kPa)	EFFECTIVE STRESS RATIO
1	0.0000	420.00	420.00	1.00	55.72	55.72	1.00

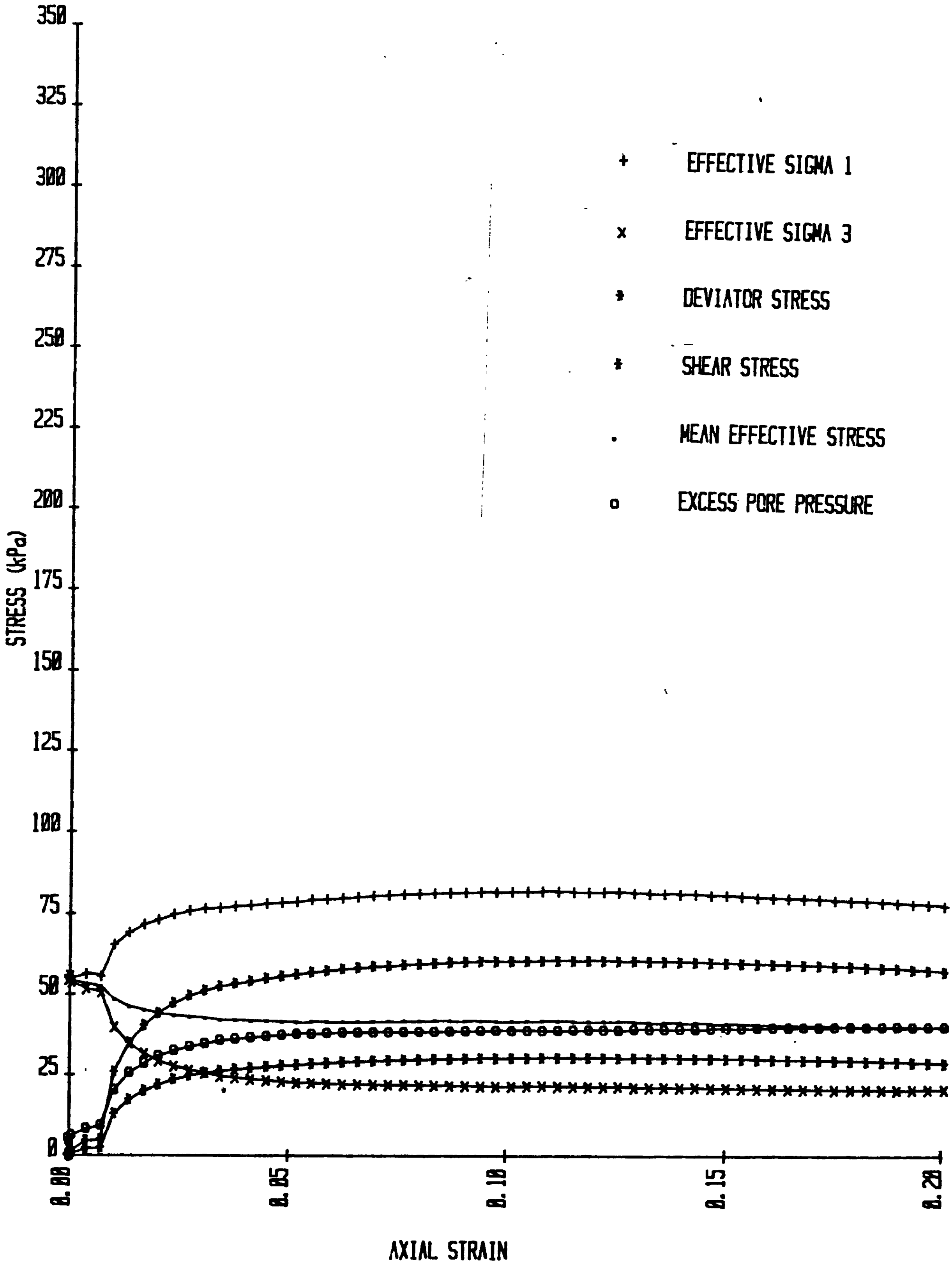
2	-0.0003	420.69	420.00	1.00	55.13	54.45	1.01
3	0.0005	421.73	420.00	1.00	55.26	53.53	1.03
4	0.0038	424.78	420.00	1.01	56.33	51.55	1.09
5	0.0072	425.14	420.00	1.01	55.65	50.51	1.10
6	0.0102	445.91	420.00	1.06	65.52	39.60	1.65
7	0.0136	454.92	420.00	1.08	69.25	34.32	2.02
8	0.0170	460.23	420.00	1.10	71.70	31.46	2.28
9	0.0202	464.04	420.00	1.10	73.15	29.11	2.51
10	0.0237	467.22	420.00	1.11	74.71	27.49	2.72
11	0.0273	469.49	420.00	1.12	75.74	26.25	2.89
12	0.0308	471.11	420.00	1.12	76.50	25.39	3.01
13	0.0342	472.45	420.00	1.12	76.79	24.34	3.15
14	0.0377	473.35	420.00	1.13	77.28	23.93	3.23
15	0.0413	474.10	420.00	1.13	77.55	23.45	3.31
16	0.0449	474.87	420.00	1.13	78.01	23.13	3.37
17	0.0485	475.62	420.00	1.13	78.35	22.72	3.45
18	0.0520	476.20	420.00	1.13	78.60	22.40	3.51
19	0.0555	476.83	420.00	1.14	79.23	22.40	3.54
20	0.0591	477.30	420.00	1.14	79.42	22.12	3.59
21	0.0627	477.85	420.00	1.14	79.81	21.96	3.63
22	0.0662	478.23	420.00	1.14	80.19	21.96	3.65
23	0.0698	478.64	420.00	1.14	80.54	21.89	3.68
24	0.0733	478.85	420.00	1.14	80.74	21.89	3.69
25	0.0768	479.15	420.00	1.14	80.98	21.83	3.71
26	0.0804	479.36	420.00	1.14	81.10	21.74	3.73
27	0.0839	479.60	420.00	1.14	81.30	21.70	3.75
28	0.0874	479.81	420.00	1.14	81.38	21.58	3.77
29	0.0909	479.95	420.00	1.14	81.49	21.54	3.78
30	0.0943	480.16	420.00	1.14	81.57	21.42	3.81
31	0.0978	480.17	420.00	1.14	81.53	21.35	3.82
32	0.1014	480.27	420.00	1.14	81.65	21.39	3.82
33	0.1048	480.30	420.00	1.14	81.71	21.42	3.82
34	0.1083	480.35	420.00	1.14	81.80	21.45	3.81
35	0.1118	480.34	420.00	1.14	81.72	21.39	3.82
36	0.1153	480.30	420.00	1.14	81.56	21.26	3.84
37	0.1188	480.36	420.00	1.14	81.59	21.23	3.84
38	0.1223	480.29	420.00	1.14	81.58	21.29	3.83
39	0.1257	480.21	420.00	1.14	81.53	21.32	3.82
40	0.1292	480.26	420.00	1.14	81.30	21.04	3.86
41	0.1327	480.06	420.00	1.14	81.10	21.04	3.86
42	0.1362	480.08	420.00	1.14	81.12	21.04	3.86
43	0.1397	479.91	420.00	1.14	80.92	21.00	3.85
44	0.1432	479.82	420.00	1.14	80.86	21.04	3.84
45	0.1468	479.71	420.00	1.14	80.52	20.81	3.87
46	0.1504	479.60	420.00	1.14	80.41	20.81	3.86
47	0.1539	479.42	420.00	1.14	80.14	20.72	3.87
48	0.1575	479.29	420.00	1.14	79.85	20.56	3.88
49	0.1611	479.15	420.00	1.14	79.68	20.53	3.88
50	0.1647	478.97	420.00	1.14	79.50	20.53	3.87
51	0.1682	478.91	420.00	1.14	79.34	20.43	3.88
52	0.1718	478.74	420.00	1.14	79.20	20.46	3.87

53	0.1754	478.54	420.00	1.14	78.87	20.34	3.88
54.	0.1791	478.41	420.00	1.14	78.74	20.34	3.87
55	0.1827	478.20	420.00	1.14	78.60	20.40	3.85
56	0.1863	477.97	420.00	1.14	78.27	20.31	3.85
57	0.1899	477.75	420.00	1.14	77.99	20.24	3.85
58	0.1934	477.39	420.00	1.14	77.75	20.37	3.82
59	0.1970	477.15	420.00	1.14	77.52	20.37	3.81
60	0.2008	476.75	420.00	1.14	77.15	20.40	3.78

DERIVED PROPERTIES (cont.)

READING	A	q (kPa)	p′ (kPa)	q/p′	DEVIATOR STRESS (kPa)	MEAN EFFECTIVE STRESS (kPa)
1	1.86	0.00	55.72	0.00	0.00	55.72
2	1.86	0.34	54.79	0.01	0.69	54.68
3	0.88	0.87	54.39	0.02	1.73	54.10
4	0.65	2.39	53.94	0.04	4.78	53.15
5	2.84	2.57	53.08	0.05	5.14	52.22
6	0.52	12.96	52.56	0.25	25.91	48.24
7	0.59	17.46	51.79	0.34	34.92	45.96
8	0.54	20.12	51.58	0.39	40.23	44.87
9	0.62	22.02	51.13	0.43	44.04	43.79
10	0.51	23.61	51.10	0.46	47.22	43.23
11	0.55	24.75	50.99	0.49	49.49	42.75
12	0.53	25.55	50.94	0.50	51.11	42.43
13	0.78	26.22	50.56	0.52	52.45	41.82
14	0.46	26.68	50.61	0.53	53.35	41.71
15	0.64	27.05	50.50	0.54	54.10	41.48
16	0.41	27.44	50.57	0.54	54.87	41.42
17	0.55	27.81	50.53	0.55	55.62	41.26
18	0.56	28.10	50.50	0.56	56.20	41.14
19	0.00	28.41	50.82	0.56	56.83	41.35
20	0.60	28.65	50.77	0.56	57.30	41.22
21	0.29	28.93	50.88	0.57	57.85	41.24
22	0.00	29.11	51.07	0.57	58.23	41.37
23	0.15	29.32	51.22	0.57	58.64	41.44
24	0.00	29.42	51.32	0.57	58.85	41.51
25	0.21	29.58	51.41	0.58	59.15	41.55
26	0.45	29.68	51.42	0.58	59.36	41.52
27	0.14	29.80	51.50	0.58	59.60	41.57
28	0.60	29.90	51.48	0.58	59.81	41.51
29	0.23	29.97	51.52	0.58	59.95	41.53
30	0.61	30.08	51.50	0.58	60.16	41.47
31	4.16	30.09	51.44	0.58	60.17	41.41
32	-0.33	30.13	51.52	0.58	60.27	41.47
33	-0.99	30.15	51.57	0.58	60.30	41.52
34	-0.59	30.18	51.62	0.58	60.35	41.57
35	-4.35	30.17	51.55	0.59	60.34	41.50
36	-3.61	30.15	51.41	0.59	60.30	41.36
37	0.50	30.18	51.41	0.59	60.36	41.35

38	0.81	30.14	51.43	0.59	60.29	41.39
39	0.43	30.11	51.43	0.59	60.21	41.39
40	5.52	30.13	51.17	0.59	60.26	41.12
41	0.00	30.03	51.07	0.59	60.06	41.06
42	0.00	30.04	51.08	0.59	60.08	41.06
43	-0.19	29.96	50.96	0.59	59.91	40.97
44	0.36	29.91	50.95	0.59	59.82	40.98
45	-1.94	29.85	50.67	0.59	59.71	40.72
46	0.00	29.80	50.61	0.59	59.60	40.68
47	-0.55	29.71	50.43	0.59	59.42	40.53
48	-1.17	29.64	50.20	0.59	59.29	40.32
49	-0.23	29.57	50.10	0.59	59.15	40.24
50	0.00	29.49	50.01	0.59	58.97	40.18
51	0.00	29.46	49.89	0.59	58.91	40.07
52	0.00	29.37	49.83	0.59	58.74	40.04
53	0.00	29.27	49.60	0.59	58.54	39.85
54	0.00	29.20	49.54	0.59	58.41	39.81
55	0.00	29.10	49.50	0.59	58.20	39.80
56	0.00	28.98	49.29	0.59	57.97	39.63
57	0.00	28.88	49.12	0.59	57.75	39.49
58	0.00	28.69	49.06	0.58	57.39	39.50
59	0.00	28.57	48.94	0.58	57.15	39.42
60	0.00	28.38	48.78	0.58	56.75	39.32



GD-3, PC-2: 360/420

TRIAXIAL TEST RESULTS

GENERAL TEST INFORMATION

SAMPLE INFORMATION

SAMPLE ID:	GD-3, PC-2; 300/420
INTERVAL (meters):	2.97-3.13
GENERAL LOCATION:	GEORGES BANK
DESCRIPTION:	OLIVE-GRAY CLAY
DATE FINISHED:	1/12/80

INDEX PROPERTIES

MOISTURE CONTENT:	0.61
BULK DENSITY (g/cc):	1.67
VOID RATIO:	1.62
POROSITY:	0.62
GRAIN SPEC GRAVITY (g/cc):	2.72

SAMPLE PARAMETERS

HEIGHT (mm):	100.00
DIAMETER (mm):	50.00
AREA (sq. mm):	1963.50
VOLUME (cc):	196.35
WEIGHT (gm):	334.90

TEST RESULTS

SATURATION PHASE

READING	CELL PRESSURE kPa	DELTA C kPa	PORE PRESSURE kPa	DELTA P kPa	B
1	0.00		0.00		
2	50.00	50.00	47.00	47.00	0.94
3	100.00	50.00	95.00	48.00	0.96
4	150.00	50.00	149.00	54.00	1.08
5	200.00	50.00	196.00	47.00	0.94

CONSOLIDATION PHASE

CELL PRESSURE (kPa):	420.00
BACK PRESSURE (kPa):	300.00
CONSOLIDATION PRESSURE (kPa):	120.00
ASSUMED EFFECTIVE OVERBURDEN PRESSURE (kPa):	19.35

CHANGES IN PROPERTIES DUE TO CONSOLIDATION

PROPERTY	INITIAL VALUE	CONSOLIDATED VALUE
HEIGHT (mm):	100.00	95.80
AREA (sq. mm):	1963.50	1801.97
VOLUME (cc):	196.35	172.63
WATER CONTENT:	0.61	0.49
POROSITY:	0.62	0.56
VOID RATIO:	1.62	1.25
BULK DENSITY (g/cc):	1.67	1.76
BOUYANT BULK DENSITY (g/cc):	0.65	0.74
% SATURATION:	100.00	100.00

MEASURED PROPERTIES

READING	TIME (sec)	Log TIME	Sqrt_TIME	DVOL (cc)
1	0	-4.00	0.00	0.00
2	4	0.60	2.00	0.10
3	10	1.00	3.16	0.22
4	20	1.30	4.47	0.38
5	38	1.58	6.16	0.63
6	72	1.86	8.49	1.00
7	138	2.14	11.75	1.59
8	297	2.47	17.23	2.67
9	555	2.74	23.56	4.05
10	1069	3.03	32.70	6.19
11	2095	3.32	45.77	9.41
12	3897	3.59	62.43	13.37
13	5699	3.76	75.49	16.01
14	7501	3.88	86.61	17.79
15	9303	3.97	96.45	19.06
16	11105	4.05	105.38	19.95
17	12908	4.11	113.61	20.60
18	14710	4.17	121.28	21.10
19	16512	4.22	128.50	21.50
20	18314	4.26	135.33	21.78
21	20116	4.30	141.83	22.01
22	21918	4.34	148.05	22.22
23	23720	4.38	154.01	22.37
24	25522	4.41	159.76	22.50
25	27324	4.44	165.30	22.62
26	29126	4.46	170.66	22.72
27	30929	4.49	175.87	22.81
28	32731	4.51	180.92	22.89
29	34533	4.54	185.83	22.97
30	36335	4.56	190.62	23.03
31	38137	4.58	195.29	23.09
32	39939	4.60	199.85	23.15
33	41741	4.62	204.31	23.20
34	43544	4.64	208.67	23.24

35	45346	4.66	212.95	23.29
36	47148	4.67	217.14	23.33
37	48950	4.69	221.25	23.37
38	50752	4.71	225.28	23.40
39	52564	4.72	229.27	23.43
40	54366	4.74	233.17	23.49
41	56168	4.75	237.00	23.50
42	57970	4.76	240.77	23.52
43	59773	4.78	244.49	23.58
44	61575	4.79	248.14	23.58
45	63377	4.80	251.75	23.61
46	65179	4.81	255.30	23.65
47	66981	4.83	258.81	23.65
48	68783	4.84	262.27	23.70
49	70585	4.85	265.68	23.69
50	72387	4.86	269.05	23.72

ALPHA: 0.96
Ao (sq. mm): 1801.98
Lo (mm): 95.80

SHEAR PHASE

CELL PRESSURE (kPa): 420.00
STRAIN RATE: .015 mm/min

MEASURED PROPERTIES

READING	DVOL (cc)	PORP (kPa)	DLNG (mm)	AXFO (N)	CELP (kPa)	TIME (sec)
1	0.00	306.62	0.00	0.00	420.00	0
2	0.02	307.40	-0.03	-0.23	420.00	1322
3	0.03	307.53	0.18	0.27	420.00	2644
4	0.01	312.81	0.48	14.07	420.00	3966
5	0.00	316.29	0.75	17.83	420.00	5288
6	0.02	318.64	1.01	19.07	420.00	6610
7	0.01	340.44	1.32	84.49	420.00	7933
8	0.00	351.26	1.62	108.55	420.00	9255
9	0.02	358.26	1.91	122.27	420.00	10577
10	0.01	363.61	2.23	131.96	420.00	11899
11	0.00	367.48	2.56	139.36	420.00	13221
12	0.00	370.81	2.89	144.87	420.00	14543
13	0.01	373.51	3.21	149.59	420.00	15865
14	0.00	375.21	3.56	153.32	420.00	17187
15	0.00	376.74	3.90	155.60	420.00	18509
16	0.00	378.17	4.25	157.38	420.00	19832
17	-0.00	379.64	4.58	158.93	420.00	21154

18	-0.00	380.65	4.93	160.21	420.00	22476
19	-0.00	381.14	5.28	161.65	420.00	23798
20	-0.00	382.05	5.63	162.73	420.00	25120
21	-0.01	382.90	5.99	163.93	420.00	26442
22	-0.00	383.32	6.34	164.79	420.00	27764
23	-0.00	383.68	6.70	165.64	420.00	29086
24	-0.01	384.27	7.05	166.14	420.00	30408
25	-0.01	384.56	7.40	166.80	420.00	31731
26	-0.01	385.21	7.75	167.15	420.00	33053
27	-0.01	385.47	8.10	167.73	420.00	34375
28	-0.01	385.70	8.45	168.27	420.00	35697
29	-0.01	386.09	8.80	168.70	420.00	37019
30	-0.01	386.12	9.15	169.20	420.00	38341
31	-0.01	386.55	9.50	169.67	420.00	39663
32	-0.01	386.87	9.85	170.02	420.00	40985
33	-0.01	387.10	10.20	170.33	420.00	42307
34	-0.01	387.26	10.55	170.52	420.00	43629
35	-0.01	387.59	10.90	171.22	420.00	44952
36	-0.01	388.05	11.25	171.53	420.00	46274
37	-0.01	388.08	11.59	171.96	420.00	47596
38	-0.00	388.14	11.94	172.30	420.00	48918
39	-0.00	388.50	12.29	172.77	420.00	50240
40	-0.01	388.40	12.64	172.96	420.00	51562
41	-0.01	388.63	12.99	173.35	420.00	52884
42	-0.00	388.63	13.34	173.51	420.00	54206
43	-0.00	388.86	13.69	174.09	420.00	55528
44	-0.00	388.73	14.03	174.20	420.00	56850
45	-0.00	388.86	14.38	174.55	420.00	58173
46	-0.00	388.66	14.72	175.02	420.00	59495
47	-0.00	388.99	15.06	175.29	420.00	60817
48	0.00	389.06	15.41	175.75	420.00	62139
49	0.00	389.28	15.75	176.06	420.00	63461
50	0.00	389.35	16.10	176.41	420.00	64783
51	0.00	389.32	16.45	176.53	420.00	66105
52	0.00	389.25	16.80	176.88	420.00	67427
53	0.00	389.48	17.15	177.03	420.00	68749
54	0.00	389.28	17.49	177.27	420.00	70071
55	0.00	389.32	17.84	177.27	420.00	71394
56	0.00	389.09	18.19	177.46	420.00	72716
57	-0.00	389.15	18.54	177.27	420.00	74038
58	-0.00	389.25	18.89	177.03	420.00	75360
59	-0.01	388.60	19.25	176.92	420.00	76682
60	-0.01	388.11	19.60	176.68	420.00	78004

DERIVED PROPERTIES

READING	STRAINA	SIG1 (kPa)	SIG3 (kPa)	TOTAL STRESS RATIO	EFFSIG1 (kPa)	EFFSIG3 (kPa)	EFFECTIVE STRESS RATIO
1	0.0000	420.00	420.00	1.00	113.39	113.39	1.00

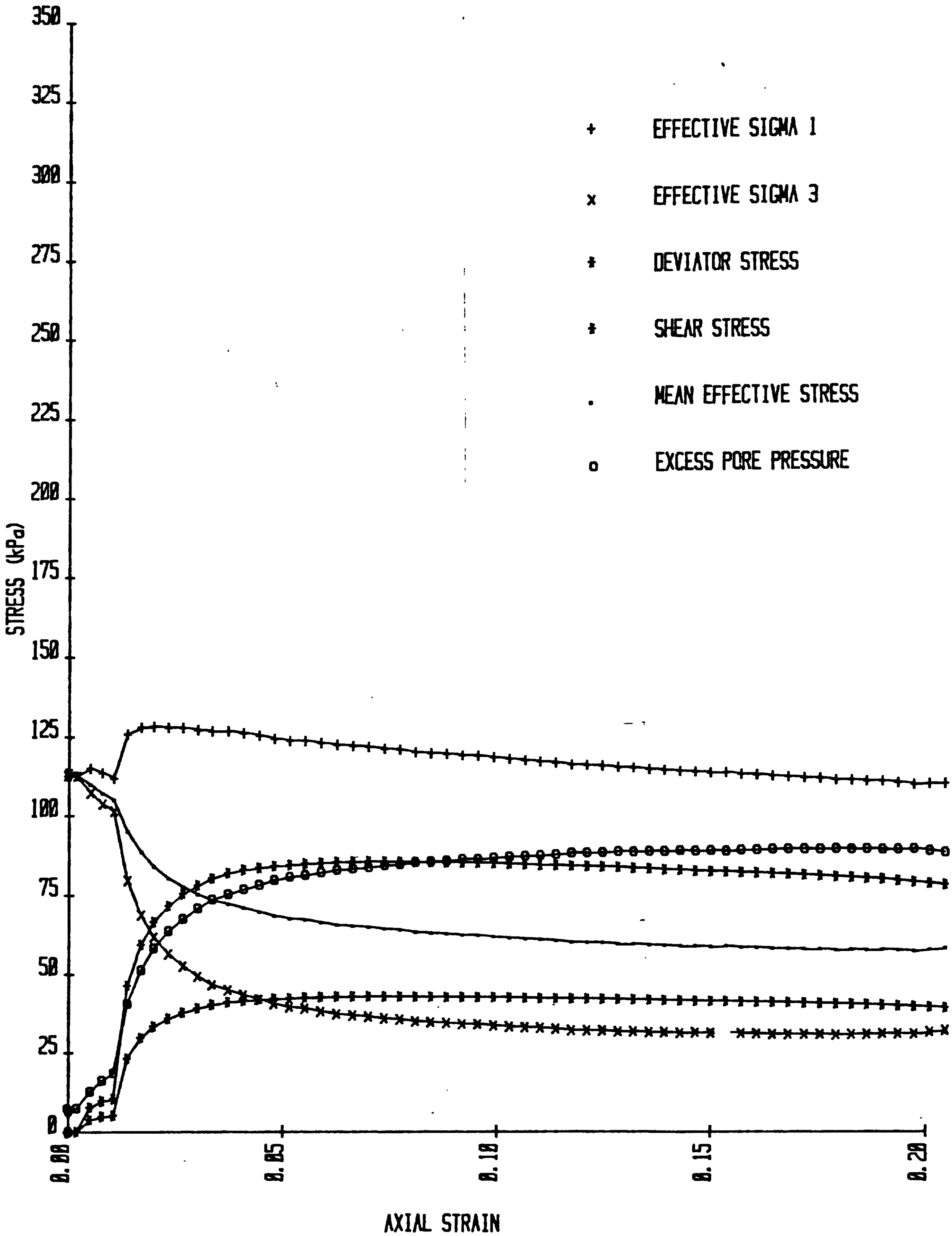
2	-0.0003	419.87	420.00	1.00	112.47	112.60	1.00
3	0.0019	420.15	420.00	1.00	112.62	112.47	1.00
4	0.0050	427.77	420.00	1.02	114.96	107.19	1.07
5	0.0079	429.82	420.00	1.02	113.52	103.71	1.09
6	0.0106	430.47	420.00	1.02	111.83	101.36	1.10
7	0.0137	466.24	420.00	1.11	125.80	79.56	1.58
8	0.0169	479.22	420.00	1.14	127.96	68.74	1.86
9	0.0199	486.50	420.00	1.16	128.24	61.74	2.08
10	0.0233	491.52	420.00	1.17	127.92	56.39	2.27
11	0.0268	495.27	420.00	1.18	127.79	52.52	2.43
12	0.0302	497.97	420.00	1.19	127.16	49.19	2.58
13	0.0335	500.23	420.00	1.19	126.72	46.49	2.73
14	0.0372	501.92	420.00	1.20	126.71	44.79	2.83
15	0.0407	502.83	420.00	1.20	126.09	43.26	2.91
16	0.0443	503.47	420.00	1.20	125.30	41.83	3.00
17	0.0479	503.98	420.00	1.20	124.34	40.36	3.08
18	0.0515	504.33	420.00	1.20	123.69	39.35	3.14
19	0.0551	504.76	420.00	1.20	123.63	38.86	3.18
20	0.0588	505.00	420.00	1.20	122.95	37.95	3.24
21	0.0625	505.29	420.00	1.20	122.39	37.10	3.30
22	0.0662	505.39	420.00	1.20	122.07	36.68	3.33
23	0.0699	505.49	420.00	1.20	121.82	36.32	3.35
24	0.0736	505.41	420.00	1.20	121.15	35.74	3.39
25	0.0772	505.42	420.00	1.20	120.86	35.44	3.41
26	0.0809	505.25	420.00	1.20	120.04	34.79	3.45
27	0.0845	505.21	420.00	1.20	119.74	34.53	3.47
28	0.0882	505.15	420.00	1.20	119.45	34.30	3.48
29	0.0918	505.02	420.00	1.20	118.93	33.91	3.51
30	0.0955	504.93	420.00	1.20	118.81	33.88	3.51
31	0.0992	504.82	420.00	1.20	118.27	33.45	3.54
32	0.1028	504.65	420.00	1.20	117.78	33.13	3.56
33	0.1065	504.46	420.00	1.20	117.36	32.90	3.57
34	0.1102	504.21	420.00	1.20	116.94	32.74	3.57
35	0.1138	504.21	420.00	1.20	116.62	32.41	3.60
36	0.1174	504.01	420.00	1.20	115.97	31.96	3.63
37	0.1210	503.88	420.00	1.20	115.80	31.92	3.63
38	0.1247	503.70	420.00	1.20	115.56	31.86	3.63
39	0.1283	503.58	420.00	1.20	115.08	31.50	3.65
40	0.1319	503.32	420.00	1.20	114.92	31.60	3.64
41	0.1356	503.16	420.00	1.20	114.52	31.37	3.65
42	0.1392	502.88	420.00	1.20	114.25	31.37	3.64
43	0.1429	502.81	420.00	1.20	113.95	31.14	3.66
44	0.1464	502.52	420.00	1.20	113.79	31.27	3.64
45	0.1501	502.33	420.00	1.20	113.47	31.14	3.64
46	0.1536	502.20	420.00	1.20	113.54	31.34	3.62
47	0.1572	501.98	420.00	1.20	112.99	31.01	3.64
48	0.1608	501.85	420.00	1.19	112.79	30.95	3.64
49	0.1645	501.64	420.00	1.19	112.36	30.72	3.66
50	0.1681	501.44	420.00	1.19	112.10	30.65	3.66
51	0.1718	501.14	420.00	1.19	111.82	30.68	3.64
52	0.1754	500.94	420.00	1.19	111.69	30.75	3.63

53	0.1790	500.66	420.00	1.19	111.18	30.52	3.64
54	0.1826	500.41	420.00	1.19	111.13	30.72	3.62
55	0.1862	500.05	420.00	1.19	110.74	30.68	3.61
56	0.1899	499.78	420.00	1.19	110.69	30.91	3.58
57	0.1935	499.34	420.00	1.19	110.18	30.85	3.57
58	0.1972	498.87	420.00	1.19	109.62	30.75	3.56
59	0.2009	498.45	420.00	1.19	109.85	31.40	3.50
60	0.2046	497.99	420.00	1.19	109.88	31.89	3.45

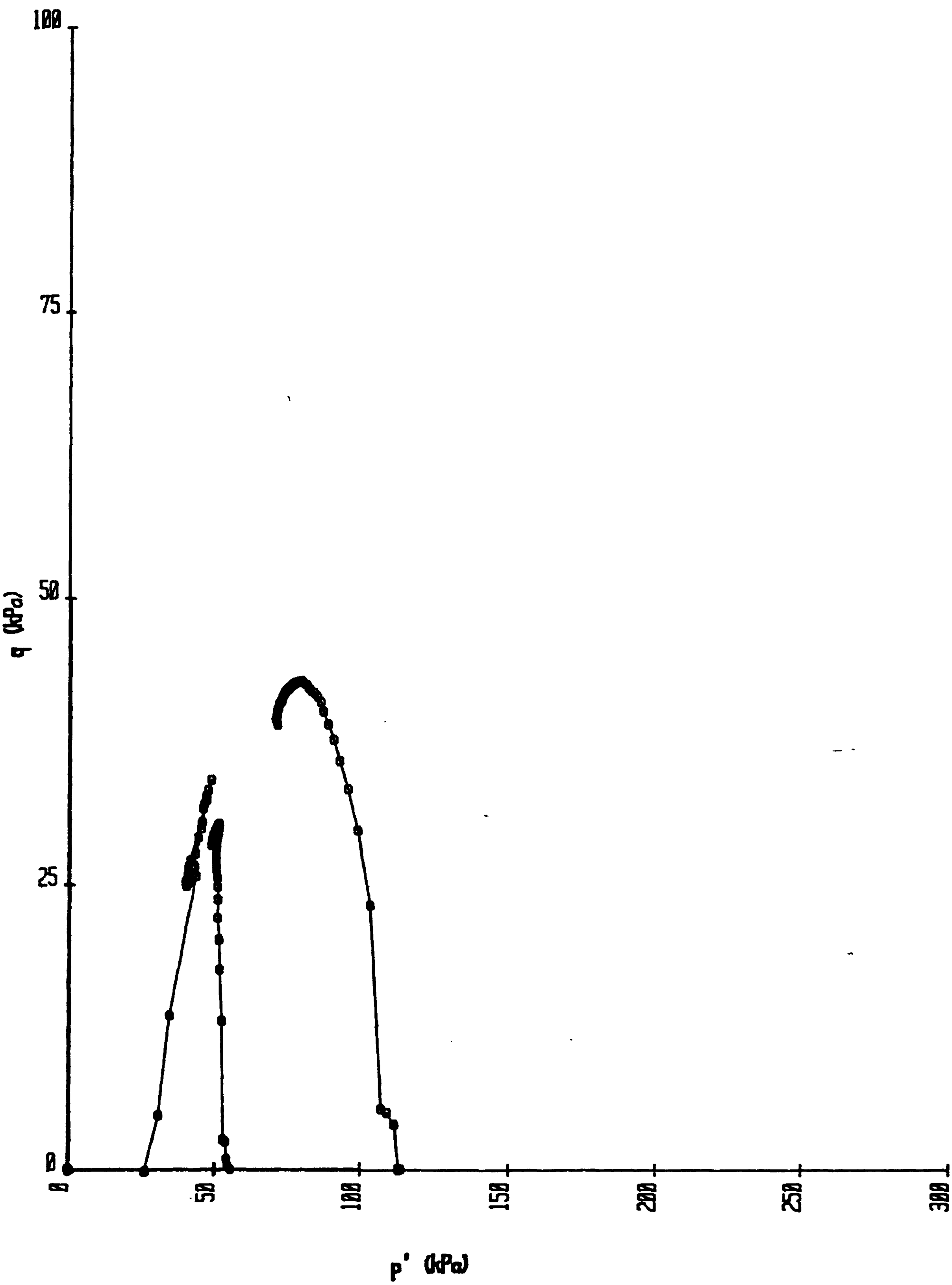
<u>DERIVED PROPERTIES (cont.)</u>

READING	A	q (kPa)	p' (kPa)	q/p'	DEVIATOR STRESS (kPa)	MEAN EFFECTIVE STRESS (kPa)
1	-6.06	0.00	113.39	0.00	0.00	113.39
2	-6.06	-0.06	112.54	-0.00	-0.13	112.56
3	0.47	0.08	112.55	0.00	0.15	112.52
4	0.69	3.88	111.08	0.03	7.77	109.78
5	1.70	4.91	108.61	0.05	9.82	106.98
6	3.59	5.23	106.60	0.05	10.47	104.85
7	0.61	23.12	102.68	0.23	46.24	94.97
8	0.83	29.61	98.35	0.30	59.22	88.48
9	0.96	33.25	94.99	0.35	66.50	83.91
10	1.06	35.76	92.16	0.39	71.52	80.24
11	1.03	37.64	90.15	0.42	75.27	77.61
12	1.23	38.98	88.18	0.44	77.97	75.18
13	1.19	40.12	86.61	0.46	80.23	73.23
14	1.01	40.96	85.75	0.48	81.92	72.10
15	1.68	41.42	84.68	0.49	82.83	70.87
16	2.26	41.73	83.56	0.50	83.47	69.65
17	2.86	41.99	82.35	0.51	83.98	68.36
18	2.85	42.17	81.52	0.52	84.33	67.46
19	1.13	42.38	81.25	0.52	84.76	67.12
20	3.91	42.50	80.45	0.53	85.00	66.28
21	2.91	42.64	79.75	0.53	85.29	65.53
22	4.01	42.70	79.38	0.54	85.39	65.14
23	3.58	42.75	79.07	0.54	85.49	64.82
24	-7.15	42.71	78.44	0.54	85.41	64.21
25	73.70	42.71	78.15	0.55	85.42	63.91
26	-4.00	42.63	77.42	0.55	85.25	63.21
27	-6.66	42.61	77.14	0.55	85.21	62.93
28	-3.50	42.57	76.88	0.55	85.15	62.68
29	-3.07	42.51	76.42	0.56	85.02	62.25
30	-0.37	42.47	76.34	0.56	84.93	62.19
31	-3.73	42.41	75.86	0.56	84.82	61.73
32	-1.91	42.32	75.45	0.56	84.65	61.34
33	-1.19	42.23	75.13	0.56	84.46	61.05
34	-0.65	42.10	74.84	0.56	84.21	60.81
35	1570.93	42.10	74.51	0.57	84.21	60.48
36	-2.35	42.01	73.96	0.57	84.01	59.96
37	-0.24	41.94	73.86	0.57	83.88	59.88

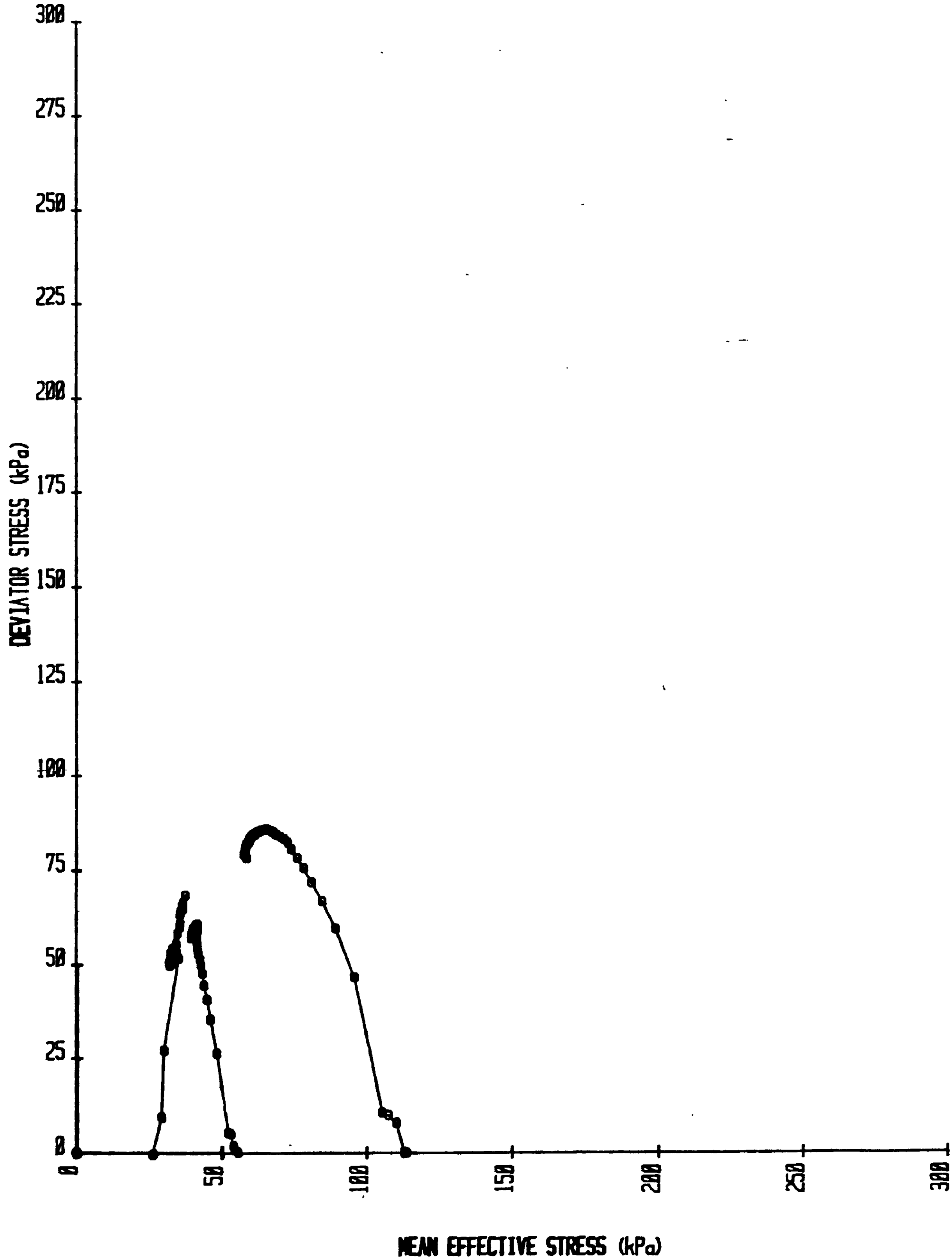
38	-0.37	41.85	73.71	0.57	83.70	59.76
39	-2.90	41.79	73.29	0.57	83.58	59.36
40	0.38	41.66	73.26	0.57	83.32	59.37
41	-1.38	41.58	72.95	0.57	83.16	59.09
42	0.00	41.44	72.81	0.57	82.88	59.00
43	-3.02	41.40	72.54	0.57	82.81	58.74
44	0.45	41.26	72.53	0.57	82.52	58.78
45	-0.70	41.16	72.30	0.57	82.33	58.58
46	1.55	41.10	72.44	0.57	82.20	58.74
47	-1.47	40.99	72.00	0.57	81.98	58.34
48	-0.49	40.92	71.87	0.57	81.85	58.23
49	-1.08	40.82	71.54	0.57	81.64	57.93
50	-0.34	40.72	71.37	0.57	81.44	57.80
51	0.00	40.57	71.25	0.57	81.14	57.73
52	0.00	40.47	71.22	0.57	80.94	57.73
53	0.00	40.33	70.85	0.57	80.66	57.41
54	0.00	40.20	70.92	0.57	80.41	57.52
55	0.00	40.03	70.71	0.57	80.05	57.37
56	0.00	39.89	70.80	0.56	79.78	57.51
57	0.00	39.67	70.51	0.56	79.34	57.29
58	0.00	39.43	70.18	0.56	78.87	57.04
59	0.00	39.23	70.63	0.56	78.45	57.55
60	0.00	39.00	70.89	0.55	77.99	57.89



GD-3, PC-2: 300/420



GD-3, PC-2: 300/330, 360/420, 300/420



GO-3, PC-2: 300/330, 360/420, 300/420

TRIAXIAL TEST RESULTS

GENERAL TEST INFORMATION

SAMPLE INFORMATION

SAMPLE ID:	GD-1, PC-1B; 350/380
INTERVAL (meters):	3.75-3.87
GENERAL LOCATION:	GEORGES BANK
DESCRIPTION:	OLIVE-GRAY CLAY
DATE FINISHED:	1/10/80

INDEX PROPERTIES

MOISTURE CONTENT:	0.48
BULK DENSITY (g/cc):	1.77
VOID RATIO:	1.27
POROSITY:	0.56
GRAIN SPEC GRAVITY (g/cc):	2.71

SAMPLE PARAMETERS

HEIGHT (mm):	100.00
DIAMETER (mm):	50.00
AREA (sq. mm):	1963.50
VOLUME (cc):	196.35
WEIGHT (gm):	341.50

TEST RESULTS

SATURATION PHASE

READING	CELL PRESSURE kPa	DELTA C kPa	PORE PRESSURE kPa	DELTA P kPa	B
1	100.00		95.40		
2	150.00	50.00	141.18	45.78	0.92
3	200.00	50.00	191.00	49.82	1.00
4	250.00	50.00	242.10	51.10	1.02
5	300.00	50.00	291.79	49.69	0.99

CONSOLIDATION PHASE

CELL PRESSURE (kPa):	380.00
BACK PRESSURE (kPa):	350.00
CONSOLIDATION PRESSURE (kPa):	30.00
ASSUMED EFFECTIVE OVERBURDEN PRESSURE (kPa):	27.80

CHANGES IN PROPERTIES DUE TO CONSOLIDATION

PROPERTY	INITIAL VALUE	CONSOLIDATED VALUE
HEIGHT (mm):	100.00	99.11
AREA (sq. mm):	1963.50	1928.55
VOLUME (cc):	196.35	191.13
WATER CONTENT:	0.48	0.46
POROSITY:	0.56	0.47
VOID RATIO:	1.27	0.87
BULK DENSITY (g/cc):	1.77	1.79
BOUYANT BULK DENSITY (g/cc):	0.74	0.76
% SATURATION:	100.00	100.00

MEASURED PROPERTIES

READING	TIME (sec)	Log TIME	Sqrt TIME	DVOL (cc)
1	0	-4.00	0.00	0.00
2	4	0.60	2.00	0.03
3	10	1.00	3.16	0.07
4	20	1.30	4.47	0.13
5	38	1.58	6.16	0.21
6	72	1.86	8.49	0.35
7	139	2.14	11.79	0.58
8	269	2.43	16.40	0.93
9	527	2.72	22.96	1.47
10	1064	3.03	32.62	2.22
11	2090	3.32	45.72	3.04
12	3892	3.59	62.39	3.66
13	5694	3.76	75.46	3.92
14	7496	3.87	86.58	4.05
15	9298	3.97	96.43	4.12
16	11100	4.05	105.36	4.17
17	12903	4.11	113.59	4.22
18	14705	4.17	121.26	4.25
19	16507	4.22	128.48	4.28
20	18309	4.26	135.31	4.31
21	20111	4.30	141.81	4.33
22	21913	4.34	148.03	4.35
23	23715	4.38	154.00	4.64
24	25518	4.41	159.74	4.75
25	27320	4.44	165.29	4.81
26	29122	4.46	170.65	4.86
27	30924	4.49	175.85	4.90
28	32726	4.51	180.90	4.94
29	34528	4.54	185.82	4.96
30	36331	4.56	190.61	4.98
31	38133	4.58	195.28	5.00
32	39935	4.60	199.84	5.02
33	41737	4.62	204.30	5.04
34	43539	4.64	208.66	5.05

35	45341	4.66	212.93	5.06
36	47143	4.67	217.12	5.07
37	48945	4.69	221.24	5.08
38	50747	4.71	225.27	5.09
39	52549	4.72	229.24	5.10
40	54352	4.74	233.14	5.11
41	56154	4.75	236.97	5.12
42	57956	4.76	240.74	5.13
43	59758	4.78	244.45	5.14
44	61560	4.79	248.11	5.15
45	63362	4.80	251.72	5.15
46	65164	4.81	255.27	5.16
47	66966	4.83	258.78	5.17
48	68769	4.84	262.24	5.18
49	70571	4.85	265.65	5.18
50	72373	4.86	269.02	5.19
51	74175	4.87	272.35	5.20
52	75977	4.88	275.64	5.21
53	77779	4.89	278.89	5.21
54	79581	4.90	282.10	5.22
55	81384	4.91	285.28	5.22
56	83186	4.92	288.42	5.23
57	84988	4.93	291.53	5.21
58	86790	4.94	294.60	5.21
59	88592	4.95	297.64	5.22

ALPHA: 0.99
Ao (sq. mm): 1928.56
Lo (mm): 99.11

SHEAR PHASE

CELL PRESSURE (kPa): 380.00
STRAIN RATE: .015 mm/min

MEASURED PROPERTIES

READING	DVOL (cc)	PORP (kPa)	DLNG (mm)	AXFO (N)	CELP (kPa)	TIME (sec)
1	0.00	354.39	0.00	0.00	380.00	0
2	-0.01	359.01	0.30	18.25	380.00	1322
3	-0.01	363.57	0.61	38.29	380.00	2644
4	-0.01	365.56	0.92	48.87	380.00	3966
5	-0.01	366.90	1.25	56.70	380.00	5288
6	-0.01	367.52	1.58	63.56	380.00	6610
7	0.02	368.30	1.90	69.91	380.00	7932
8	0.01	368.23	2.27	74.72	380.00	9255

9	0.00	368.49	2.62	78.25	380.00	10577
10	-0.00	368.23	2.97	81.31	380.00	11899
11	-0.01	368.10	3.32	84.14	380.00	13221
12	-0.01	368.27	3.66	86.54	380.00	14543
13	-0.01	368.01	4.00	88.17	380.00	15865
14	-0.01	368.01	4.35	89.64	380.00	17187
15	-0.02	367.91	4.70	91.00	380.00	18509
16	-0.02	367.71	5.06	92.12	380.00	19832
17	-0.02	367.19	5.41	92.90	380.00	21154
18	-0.02	367.45	5.77	93.44	380.00	22476
19	-0.01	367.45	6.12	93.63	380.00	23798
20	-0.01	367.19	6.47	93.86	380.00	25120
21	-0.01	367.32	6.83	94.14	380.00	26442
22	-0.01	367.03	7.18	94.72	380.00	27764
23	-0.01	367.13	7.53	95.22	380.00	29086
24	-0.01	367.06	7.87	95.63	380.00	30408
25	-0.02	367.29	8.23	96.07	380.00	31730
26	-0.01	367.13	8.58	96.23	380.00	33053
27	-0.02	367.00	8.93	96.62	380.00	34375
28	-0.01	366.87	9.28	96.77	380.00	35697
29	-0.02	366.90	9.63	96.93	380.00	37019
30	-0.02	366.77	9.98	97.16	380.00	38341
31	-0.02	367.13	10.31	97.43	380.00	39663
32	-0.02	366.70	10.66	97.70	380.00	40986
33	-0.02	366.93	11.01	97.86	380.00	42308
34	-0.02	366.87	11.36	98.09	380.00	43630
35	-0.02	366.54	11.70	98.24	380.00	44952
36	-0.02	366.60	12.06	98.36	380.00	46274
37	-0.03	366.54	12.41	98.44	380.00	47596
38	-0.02	366.54	12.76	98.67	380.00	48918
39	-0.02	366.57	13.10	98.55	380.00	50240
40	-0.02	366.54	13.45	98.55	380.00	51562
41	-0.02	366.57	13.78	98.75	380.00	52885
42	-0.02	366.51	14.14	98.86	380.00	54207
43	-0.03	366.60	14.48	98.98	380.00	55529
44	-0.02	366.60	14.83	99.06	380.00	56851
45	-0.03	366.83	15.19	99.17	380.00	58173
46	-0.03	366.67	15.53	99.33	380.00	59495
47	-0.02	366.70	15.88	99.45	380.00	60817
48	-0.02	366.51	16.23	99.45	380.00	62140
49	-0.02	366.67	16.58	99.52	380.00	63462
50	-0.02	366.83	16.92	99.76	380.00	64784
51	-0.02	366.80	17.27	99.87	380.00	66106
52	-0.02	367.00	17.62	99.99	380.00	67428
53	-0.00	367.03	17.97	100.45	380.00	68750
54	-0.00	366.96	18.32	100.92	380.00	70072
55	-0.01	366.93	18.68	101.00	380.00	71394
56	-0.01	366.77	19.02	100.88	380.00	72716
57	0.01	367.03	19.36	101.07	380.00	74039
58	0.01	366.96	19.72	101.62	380.00	75361
59	0.00	367.00	20.06	101.46	380.00	76683

60	0.01	367.35	20.40	101.62	380.00	78005

DERIVED PROPERTIES

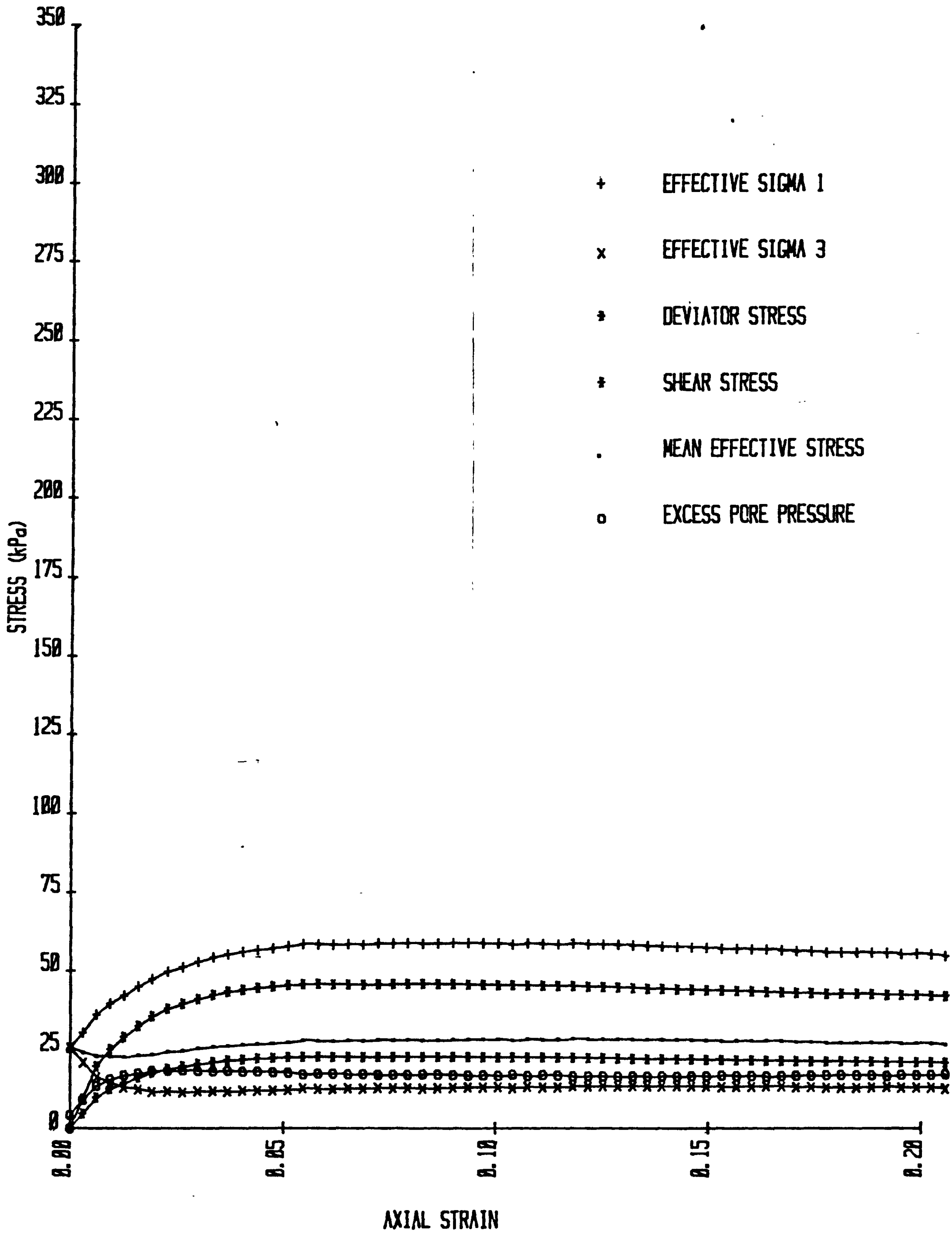
READING	STRAINA	SIG1 (kPa)	SIG3 (kPa)	TOTAL STRESS RATIO	EFFSIG1 (kPa)	EFFSIG3 (kPa)	EFFECTIVE STRESS RATIO
1	0.0000	380.00	380.00	1.00	25.62	25.62	1.00
2	0.0030	389.44	380.00	1.02	30.42	20.99	1.45
3	0.0062	399.73	380.00	1.05	36.16	16.43	2.20
4	0.0093	405.10	380.00	1.07	39.54	14.44	2.74
5	0.0126	409.03	380.00	1.08	42.13	13.10	3.22
6	0.0160	412.43	380.00	1.09	44.91	12.48	3.60
7	0.0192	415.56	380.00	1.09	47.26	11.70	4.04
8	0.0229	417.86	380.00	1.10	49.62	11.77	4.22
9	0.0265	419.50	380.00	1.10	51.01	11.51	4.43
10	0.0300	420.90	380.00	1.11	52.66	11.77	4.48
11	0.0335	422.17	380.00	1.11	54.06	11.90	4.54
12	0.0369	423.22	380.00	1.11	54.95	11.73	4.68
13	0.0404	423.87	380.00	1.12	55.87	12.00	4.66
14	0.0439	424.44	380.00	1.12	56.44	12.00	4.70
15	0.0474	424.95	380.00	1.12	57.04	12.09	4.72
16	0.0511	425.33	380.00	1.12	57.62	12.29	4.69
17	0.0546	425.54	380.00	1.12	58.35	12.81	4.56
18	0.0582	425.63	380.00	1.12	58.18	12.55	4.64
19	0.0617	425.55	380.00	1.12	58.10	12.55	4.63
20	0.0653	425.49	380.00	1.12	58.30	12.81	4.55
21	0.0689	425.45	380.00	1.12	58.13	12.68	4.58
22	0.0724	425.56	380.00	1.12	58.53	12.97	4.51
23	0.0760	425.62	380.00	1.12	58.50	12.87	4.54
24	0.0794	425.68	380.00	1.12	58.62	12.94	4.53
25	0.0830	425.68	380.00	1.12	58.39	12.71	4.59
26	0.0865	425.58	380.00	1.12	58.45	12.87	4.54
27	0.0901	425.58	380.00	1.12	58.59	13.01	4.51
28	0.0936	425.48	380.00	1.12	58.62	13.14	4.46
29	0.0971	425.38	380.00	1.12	58.48	13.10	4.46
30	0.1007	425.31	380.00	1.12	58.54	13.23	4.42
31	0.1040	425.26	380.00	1.12	58.14	12.87	4.52
32	0.1075	425.21	380.00	1.12	58.51	13.30	4.40
33	0.1111	425.10	380.00	1.12	58.17	13.07	4.45
34	0.1146	425.03	380.00	1.12	58.17	13.14	4.43
35	0.1181	424.93	380.00	1.12	58.39	13.46	4.34
36	0.1217	424.80	380.00	1.12	58.19	13.40	4.34
37	0.1252	424.65	380.00	1.12	58.11	13.46	4.32
38	0.1287	424.58	380.00	1.12	58.04	13.46	4.31
39	0.1322	424.35	380.00	1.12	57.77	13.43	4.30
40	0.1357	424.17	380.00	1.12	57.63	13.46	4.28
41	0.1391	424.08	380.00	1.12	57.51	13.43	4.28
42	0.1426	423.95	380.00	1.12	57.44	13.49	4.26
43	0.1461	423.82	380.00	1.12	57.22	13.40	4.27

44	0.1496	423.68	380.00	1.11	57.07	13.40	4.26
45	0.1532	423.54	380.00	1.11	56.71	13.17	4.31
46	0.1567	423.43	380.00	1.11	56.76	13.33	4.26
47	0.1603	423.30	380.00	1.11	56.60	13.30	4.26
48	0.1637	423.12	380.00	1.11	56.61	13.49	4.20
49	0.1673	422.97	380.00	1.11	56.30	13.33	4.22
50	0.1708	422.89	380.00	1.11	56.06	13.17	4.26
51	0.1743	422.76	380.00	1.11	55.96	13.20	4.24
52	0.1778	422.63	380.00	1.11	55.63	13.01	4.28
53	0.1813	422.64	380.00	1.11	55.62	12.97	4.29
54	0.1849	422.65	380.00	1.11	55.69	13.04	4.27
55	0.1884	422.50	380.00	1.11	55.57	13.07	4.25
56	0.1920	422.27	380.00	1.11	55.50	13.23	4.19
57	0.1953	422.17	380.00	1.11	55.14	12.97	4.25
58	0.1990	422.21	380.00	1.11	55.24	13.04	4.24
59	0.2024	421.96	380.00	1.11	54.97	13.01	4.23
60	0.2058	421.85	380.00	1.11	54.49	12.65	4.31

DERIVED PROPERTIES (cont.)

READING	A	q (kPa)	p' (kPa)	q/p'	DEVIATOR STRESS (kPa)	MEAN EFFECTIVE STRESS (kPa)
1	0.49	0.00	25.62	0.00	0.00	25.62
2	0.49	4.72	25.71	0.18	9.44	24.13
3	0.44	9.87	26.29	0.38	19.73	23.00
4	0.37	12.55	26.99	0.47	25.10	22.81
5	0.34	14.51	27.62	0.53	29.03	22.78
6	0.18	16.21	28.70	0.57	32.43	23.29
7	0.25	17.78	29.48	0.60	35.56	23.55
8	-0.03	18.93	30.69	0.62	37.86	24.38
9	0.16	19.75	31.26	0.63	39.50	24.67
10	-0.19	20.45	32.21	0.63	40.90	25.40
11	-0.10	21.08	32.98	0.64	42.17	25.95
12	0.16	21.61	33.34	0.65	43.22	26.14
13	-0.40	21.94	33.93	0.65	43.87	26.62
14	0.00	22.22	34.22	0.65	44.44	26.81
15	-0.19	22.47	34.56	0.65	44.95	27.07
16	-0.51	22.66	34.95	0.65	45.33	27.40
17	-2.48	22.77	35.58	0.64	45.54	27.99
18	2.84	22.81	35.36	0.65	45.63	27.76
19	0.00	22.78	35.33	0.64	45.55	27.73
20	4.22	22.75	35.55	0.64	45.49	27.97
21	-3.08	22.72	35.40	0.64	45.45	27.83
22	-2.72	22.78	35.75	0.64	45.56	28.16
23	1.45	22.81	35.69	0.64	45.62	28.08
24	-1.28	22.84	35.78	0.64	45.68	28.17
25	37.86	22.84	35.55	0.64	45.68	27.94
26	1.58	22.79	35.66	0.64	45.58	28.07
27	-23.96	22.79	35.80	0.64	45.58	28.20
28	1.26	22.74	35.88	0.63	45.48	28.30

29	-0.32	22.69	35.79	0.63	45.38	28.23
30	1.92	22.65	35.89	0.63	45.31	28.34
31	-8.15	22.63	35.51	0.64	45.26	27.96
32	8.25	22.61	35.90	0.63	45.21	28.37
33	-2.09	22.55	35.62	0.63	45.10	28.10
34	0.93	22.52	35.65	0.63	45.03	28.15
35	3.01	22.46	35.92	0.63	44.93	28.44
36	-0.50	22.40	35.79	0.63	44.80	28.33
37	0.45	22.33	35.79	0.62	44.65	28.34
38	0.00	22.29	35.75	0.62	44.58	28.32
39	-0.14	22.17	35.60	0.62	44.35	28.21
40	0.19	22.08	35.55	0.62	44.17	28.18
41	-0.37	22.04	35.47	0.62	44.08	28.12
42	0.50	21.98	35.47	0.62	43.95	28.14
43	-0.77	21.91	35.31	0.62	43.82	28.00
44	0.00	21.84	35.24	0.62	43.68	27.96
45	-1.71	21.77	34.94	0.62	43.54	27.68
46	1.44	21.72	35.05	0.62	43.43	27.81
47	-0.25	21.65	34.95	0.62	43.30	27.73
48	1.08	21.56	35.05	0.62	43.12	27.87
49	-1.08	21.49	34.82	0.62	42.97	27.65
50	-2.07	21.45	34.61	0.62	42.89	27.47
51	0.24	21.38	34.58	0.62	42.76	27.45
52	-1.45	21.31	34.32	0.62	42.63	27.21
53	1.78	21.32	34.29	0.62	42.64	27.19
54	-8.21	21.33	34.36	0.62	42.65	27.25
55	0.22	21.25	34.32	0.62	42.50	27.24
56	0.70	21.13	34.37	0.61	42.27	27.32
57	-2.72	21.09	34.06	0.62	42.17	27.03
58	-1.86	21.10	34.14	0.62	42.21	27.11
59	-0.13	20.98	33.99	0.62	41.96	26.99
60	0.00	20.92	33.57	0.62	41.85	26.59



GD-1, PC-1B: 350/380

TRIAXIAL TEST RESULTS

GENERAL TEST INFORMATION

SAMPLE INFORMATION

SAMPLE ID:	GD-1, PC-1B; 350/410
INTERVAL (meters):	3.87-4.00
GENERAL LOCATION:	GEORGES BANK
DESCRIPTION:	OLIVE-GRAY CLAY
DATE FINISHED:	1/10/80

INDEX PROPERTIES

MOISTURE CONTENT:	0.48
BULK DENSITY (g/cc):	1.77
VOID RATIO:	1.27
POROSITY:	0.56
GRAIN SPEC GRAVITY (g/cc):	2.71
LIQUID LIMIT (%):	50.00
PLASTIC LIMIT (%):	21.00

SAMPLE PARAMETERS

HEIGHT (mm):	100.00
DIAMETER (mm):	50.00
AREA (sq. mm):	1963.50
VOLUME (cc):	196.35
WEIGHT (gm):	340.90

TEST RESULTS

SATURATION PHASE

READING	CELL PRESSURE kPa	DELTA C kPa	PORE PRESSURE kPa	DELTA P kPa	B
1	100.00		97.54		
2	150.00	50.00	146.65	49.11	0.98
3	200.00	50.00	195.89	49.24	0.98
4	250.00	50.00	246.28	50.39	1.01
5	300.00	50.00	295.58	49.30	0.99

CONSOLIDATION PHASE

CELL PRESSURE (kPa):	410.00
BACK PRESSURE (kPa):	350.00
CONSOLIDATION PRESSURE (kPa):	60.00
ASSUMED EFFECTIVE OVERBURDEN PRESSURE (kPa):	28.67

CHANGES IN PROPERTIES DUE TO CONSOLIDATION

PROPERTY	INITIAL VALUE	CONSOLIDATED VALUE
HEIGHT (mm):	100.00	98.06
AREA (sq. mm):	1963.50	1888.11
VOLUME (cc):	196.35	185.15
WATER CONTENT:	0.48	0.43
POROSITY:	0.56	0.45
VOID RATIO:	1.27	0.81
BULK DENSITY (g/cc):	1.77	1.81
BOUYANT BULK DENSITY (g/cc):	0.74	0.79
% SATURATION:	100.00	100.00

MEASURED PROPERTIES

READING	TIME (sec)	Log TIME	Sqrt TIME	DVOL (cc)
1	0	-4.00	0.00	0.00
2	5	0.70	2.24	0.13
3	11	1.04	3.32	0.27
4	21	1.32	4.58	0.46
5	39	1.59	6.24	0.72
6	73	1.86	8.54	1.11
7	139	2.14	11.79	1.69
8	269	2.43	16.40	2.55
9	527	2.72	22.96	3.78
10	1041	3.02	32.26	5.41
11	2068	3.32	45.48	7.21
12	3870	3.59	62.21	8.56
13	5672	3.75	75.31	9.05
14	7474	3.87	86.45	9.28
15	9276	3.97	96.31	9.47
16	11078	4.04	105.25	9.59
17	12881	4.11	113.49	9.69
18	14683	4.17	121.17	9.77
19	16485	4.22	128.39	9.83
20	18287	4.26	135.23	9.89
21	20089	4.30	141.74	9.93
22	21891	4.34	147.96	10.12
23	23693	4.37	153.93	10.32
24	25496	4.41	159.67	10.42
25	27298	4.44	165.22	10.51
26	29100	4.46	170.59	10.57
27	30902	4.49	175.79	10.63
28	32704	4.51	180.84	10.67
29	34506	4.54	185.76	10.71
30	36309	4.56	190.55	10.75
31	38111	4.58	195.22	10.78
32	39913	4.60	199.78	10.80
33	41715	4.62	204.24	10.83
34	43517	4.64	208.61	10.85

35	45319	4.66	212.88	10.87
36	47121	4.67	217.07	10.89
37	48923	4.69	221.19	10.91
38	50726	4.71	225.22	10.93
39	52528	4.72	229.19	10.94
40	54330	4.74	233.09	10.96
41	56132	4.75	236.92	10.98
42	57934	4.76	240.69	10.99
43	59736	4.78	244.41	11.01
44	61539	4.79	249.07	11.03
45	63341	4.80	251.68	11.04
46	65143	4.81	255.23	11.05
47	66945	4.83	258.74	11.07
48	68747	4.84	262.20	11.08
49	70549	4.85	265.61	11.09
50	72351	4.86	268.98	11.11
51	74153	4.87	272.31	11.12
52	75955	4.88	275.60	11.13
53	77758	4.89	278.85	11.14
54	79560	4.90	282.06	11.14
55	81362	4.91	285.24	11.14
56	83164	4.92	288.38	11.16
57	84966	4.93	291.49	11.17
58	86768	4.94	294.56	11.19
59	88570	4.95	297.61	11.20

ALPHA: 0.98
Ao (sq. mm): 1888.12
Lo (mm): 98.06

SHEAR PHASE

CELL PRESSURE (kPa): 410.00
STRAIN RATE: .015 mm/min

MEASURED PROPERTIES

READING	DVOL (cc)	PORP (kPa)	DLNG (mm)	AXFO (N)	CELP (kPa)	TIME (sec)
1	0.00	358.34	0.00	0.00	410.00	0
2	-0.00	368.16	0.32	37.76	410.00	1322
3	-0.00	374.20	0.66	59.15	410.00	2645
4	-0.00	377.73	0.99	71.23	410.00	3967
5	-0.00	380.11	1.33	79.85	410.00	5289
6	-0.00	381.70	1.67	86.76	410.00	6611
7	0.01	383.23	1.99	93.01	410.00	7933
8	0.01	383.80	2.36	98.05	410.00	9255

9	0.01	384.37	2.71	102.11	410.00	10577
10	0.00	384.75	3.06	105.26	410.00	11899
11	-0.00	385.20	3.41	107.58	410.00	13221
12	-0.00	385.55	3.75	109.55	410.00	14543
13	-0.00	385.61	4.10	110.82	410.00	15865
14	-0.00	385.87	4.46	111.96	410.00	17188
15	-0.00	386.06	4.80	112.92	410.00	18510
16	-0.01	386.22	5.16	114.06	410.00	19832
17	-0.00	386.28	5.51	115.06	410.00	21154
18	-0.00	386.50	5.86	116.07	410.00	22476
19	-0.00	386.57	6.21	116.73	410.00	23798
20	-0.00	386.73	6.56	117.51	410.00	25120
21	-0.00	386.73	6.91	117.86	410.00	26442
22	-0.00	386.88	7.26	118.52	410.00	27764
23	-0.00	387.01	7.60	119.09	410.00	29086
24	-0.00	387.11	7.95	119.35	410.00	30409
25	-0.01	387.27	8.29	119.70	410.00	31731
26	-0.00	387.23	8.64	119.96	410.00	33053
27	-0.01	387.46	8.99	120.14	410.00	34375
28	-0.00	387.43	9.33	120.31	410.00	35697
29	-0.00	387.46	9.67	120.58	410.00	37019
30	-0.01	387.46	10.02	120.71	410.00	38341
31	-0.01	387.43	10.35	120.93	410.00	39664
32	-0.01	387.55	10.70	120.97	410.00	40986
33	-0.01	387.62	11.04	121.23	410.00	42308
34	-0.01	387.68	11.39	121.19	410.00	43630
35	-0.01	387.68	11.73	121.63	410.00	44952
36	-0.01	387.71	12.08	121.50	410.00	46274
37	-0.01	387.87	12.43	121.54	410.00	47596
38	-0.01	387.77	12.77	121.58	410.00	48918
39	-0.01	387.87	13.12	121.76	410.00	50240
40	-0.01	387.93	13.47	121.58	410.00	51563
41	-0.01	387.97	13.82	121.58	410.00	52885
42	-0.01	388.06	14.18	121.54	410.00	54207
43	-0.01	388.16	14.52	121.76	410.00	55529
44	-0.01	388.28	14.88	121.50	410.00	56851
45	-0.01	388.32	15.24	121.58	410.00	58173
46	-0.01	388.38	15.59	121.63	410.00	59496
47	-0.01	388.32	15.95	121.54	410.00	60818
48	-0.01	388.38	16.30	121.54	410.00	62140
49	-0.01	388.54	16.65	121.36	410.00	63462
50	-0.01	388.57	17.02	121.28	410.00	64784
51	-0.01	388.70	17.37	121.23	410.00	66106
52	-0.01	388.73	17.73	121.28	410.00	67428
53	-0.00	388.98	18.09	121.72	410.00	68751
54	0.00	388.95	18.44	121.98	410.00	70073
55	-0.00	389.05	18.79	122.02	410.00	71395
56	-0.00	389.01	19.15	121.76	410.00	72717
57	0.00	389.27	19.50	121.72	410.00	74039
58	0.00	389.24	19.85	122.15	410.00	75361
59	-0.00	389.17	20.21	122.06	410.00	76683

60	-0.01	389.30	20.55	121.85	410.00	78005

DERIVED PROPERTIES

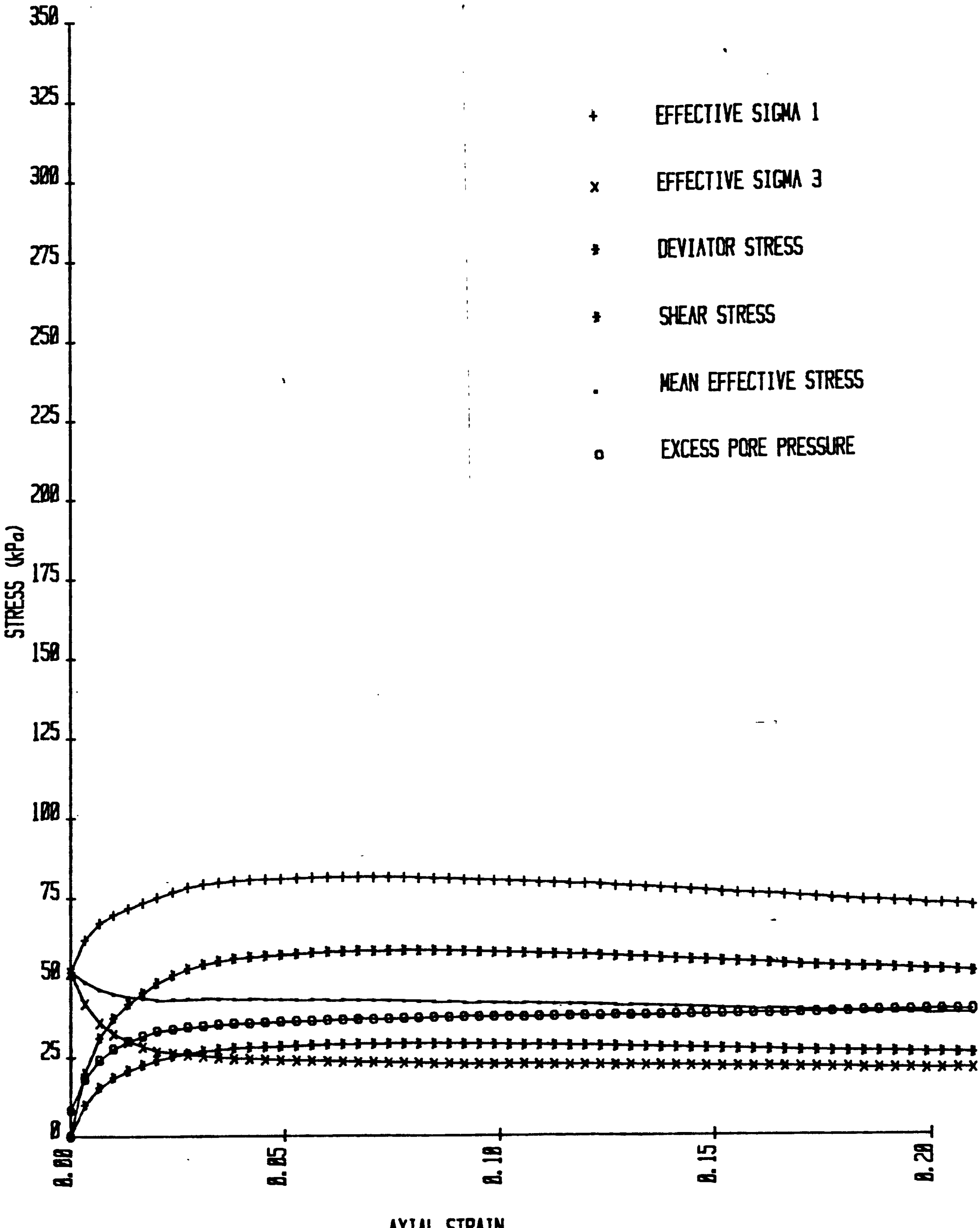
READING	STRAINA	SIG1 (kPa)	SIG3 (kPa)	TOTAL STRESS RATIO	EFFSIG1 (kPa)	EFFSIG3 (kPa)	EFFECTIVE STRESS RATIO
1	0.0000	410.00	410.00	1.00	51.66	51.66	1.00
2	0.0033	429.93	410.00	1.05	61.77	41.84	1.48
3	0.0067	441.12	410.00	1.08	66.92	35.80	1.87
4	0.0101	447.34	410.00	1.09	69.61	32.27	2.16
5	0.0136	451.71	410.00	1.10	71.60	29.89	2.40
6	0.0170	455.17	410.00	1.11	73.47	28.30	2.60
7	0.0203	458.26	410.00	1.12	75.03	26.77	2.80
8	0.0241	460.68	410.00	1.12	76.87	26.20	2.93
9	0.0276	462.59	410.00	1.13	78.21	25.63	3.05
10	0.0312	464.01	410.00	1.13	79.26	25.25	3.14
11	0.0348	465.00	410.00	1.13	79.80	24.80	3.22
12	0.0383	465.80	410.00	1.14	80.25	24.45	3.28
13	0.0418	466.24	410.00	1.14	80.62	24.39	3.31
14	0.0455	466.60	410.00	1.14	80.73	24.13	3.35
15	0.0490	466.88	410.00	1.14	80.82	23.94	3.38
16	0.0526	467.23	410.00	1.14	81.01	23.78	3.41
17	0.0562	467.52	410.00	1.14	81.24	23.72	3.42
18	0.0598	467.80	410.00	1.14	81.30	23.50	3.46
19	0.0633	467.91	410.00	1.14	81.34	23.43	3.47
20	0.0669	468.07	410.00	1.14	81.35	23.28	3.50
21	0.0705	468.02	410.00	1.14	81.30	23.28	3.49
22	0.0740	468.13	410.00	1.14	81.24	23.12	3.51
23	0.0775	468.18	410.00	1.14	81.17	22.99	3.53
24	0.0810	468.09	410.00	1.14	80.98	22.89	3.54
25	0.0846	468.04	410.00	1.14	80.77	22.73	3.55
26	0.0881	467.94	410.00	1.14	80.70	22.77	3.54
27	0.0916	467.80	410.00	1.14	80.34	22.54	3.56
28	0.0951	467.66	410.00	1.14	80.23	22.58	3.55
29	0.0986	467.56	410.00	1.14	80.11	22.54	3.55
30	0.1021	467.40	410.00	1.14	79.94	22.54	3.55
31	0.1056	467.28	410.00	1.14	79.86	22.58	3.54
32	0.1091	467.08	410.00	1.14	79.53	22.45	3.54
33	0.1126	466.98	410.00	1.14	79.36	22.39	3.55
34	0.1162	466.73	410.00	1.14	79.05	22.32	3.54
35	0.1196	466.71	410.00	1.14	79.03	22.32	3.54
36	0.1232	466.42	410.00	1.14	78.71	22.29	3.53
37	0.1267	466.21	410.00	1.14	78.34	22.13	3.54
38	0.1302	466.01	410.00	1.14	78.23	22.23	3.52
39	0.1338	465.86	410.00	1.14	77.99	22.13	3.52
40	0.1374	465.55	410.00	1.14	77.61	22.07	3.52
41	0.1410	465.32	410.00	1.13	77.35	22.04	3.51
42	0.1446	465.07	410.00	1.13	77.01	21.94	3.51
43	0.1481	464.94	410.00	1.13	76.78	21.94	3.51

44	0.1517	464.58	410.00	1.13	76.30	21.72	3.51
45	0.1554	464.39	410.00	1.13	76.07	21.69	3.51
46	0.1589	464.18	410.00	1.13	75.80	21.62	3.51
47	0.1626	463.90	410.00	1.13	75.59	21.69	3.49
48	0.1662	463.67	410.00	1.13	75.29	21.62	3.48
49	0.1698	463.36	410.00	1.13	74.82	21.46	3.49
50	0.1735	463.09	410.00	1.13	74.52	21.43	3.48
51	0.1771	462.83	410.00	1.13	74.14	21.30	3.48
52	0.1808	462.62	410.00	1.13	73.89	21.27	3.47
53	0.1844	462.57	410.00	1.13	73.59	21.02	3.50
54	0.1880	462.46	410.00	1.13	73.51	21.05	3.49
55	0.1916	462.24	410.00	1.13	73.20	20.95	3.49
56	0.1953	461.90	410.00	1.13	72.88	20.99	3.47
57	0.1989	461.64	410.00	1.13	72.38	20.73	3.49
58	0.2024	461.60	410.00	1.13	72.36	20.76	3.49
59	0.2061	461.32	410.00	1.13	72.15	20.83	3.46
60	0.2096	461.01	410.00	1.12	71.71	20.70	3.46

DERIVED PROPERTIES (cont.)

READING	A	q (kPa)	p' (kPa)	q/p'	DEVIATOR STRESS (kPa)	MEAN EFFECTIVE STRESS (kPa)
1	0.49	0.00	51.66	0.00	0.00	51.66
2	0.49	9.97	51.81	0.19	19.93	48.48
3	0.54	15.56	51.36	0.30	31.12	46.17
4	0.57	18.67	50.94	0.37	37.34	44.72
5	0.55	20.86	50.74	0.41	41.71	43.79
6	0.46	22.58	50.88	0.44	45.17	43.35
7	0.49	24.13	50.90	0.47	48.26	42.86
8	0.24	25.34	51.54	0.49	50.68	43.09
9	0.30	26.29	51.92	0.51	52.59	43.16
10	0.27	27.01	52.25	0.52	54.01	43.25
11	0.45	27.50	52.30	0.53	55.00	43.13
12	0.44	27.90	52.35	0.53	55.80	43.05
13	0.15	28.12	52.51	0.54	56.24	43.13
14	0.70	28.30	52.43	0.54	56.60	43.00
15	0.69	28.44	52.38	0.54	56.88	42.90
16	0.45	28.62	52.40	0.55	57.23	42.86
17	0.22	28.76	52.48	0.55	57.52	42.89
18	0.79	28.90	52.40	0.55	57.80	42.76
19	0.59	28.95	52.39	0.55	57.91	42.74
20	0.94	29.04	52.31	0.56	58.07	42.63
21	0.00	29.01	52.29	0.55	58.02	42.62
22	1.54	29.06	52.18	0.56	58.13	42.49
23	2.32	29.09	52.08	0.56	58.18	42.38
24	-1.03	29.04	51.94	0.56	58.09	42.26
25	-2.95	29.02	51.75	0.56	58.04	42.08
26	0.33	28.97	51.74	0.56	57.94	42.08
27	-1.59	28.90	51.44	0.56	57.80	41.81
28	0.22	28.83	51.40	0.56	57.66	41.79

29	-0.32	28.78	51.32	0.56	57.56	41.73
30	0.00	28.70	51.24	0.56	57.40	41.68
31	0.27	28.64	51.22	0.56	57.28	41.67
32	-0.62	28.54	50.99	0.56	57.08	41.47
33	-0.62	28.49	50.87	0.56	56.98	41.38
34	-0.26	28.36	50.69	0.56	56.73	41.23
35	0.00	28.36	50.68	0.56	56.71	41.22
36	-0.11	28.21	50.50	0.56	56.42	41.10
37	-0.77	28.11	50.24	0.56	56.21	40.87
38	0.47	28.00	50.23	0.56	56.01	40.90
39	-0.63	27.93	50.06	0.56	55.86	40.75
40	-0.20	27.77	49.84	0.56	55.55	40.58
41	-0.14	27.66	49.69	0.56	55.32	40.47
42	-0.38	27.53	49.47	0.56	55.07	40.30
43	-0.75	27.47	49.31	0.56	54.94	40.16
44	-0.36	27.29	49.01	0.56	54.58	39.91
45	-0.16	27.19	48.88	0.56	54.39	39.81
46	-0.30	27.09	48.71	0.56	54.18	39.68
47	0.23	26.95	48.64	0.55	53.90	39.65
48	-0.27	26.84	48.46	0.55	53.67	39.51
49	-0.51	26.68	48.14	0.55	53.36	39.25
50	-0.12	26.54	47.97	0.55	53.09	39.13
51	-0.51	26.42	47.72	0.55	52.83	38.92
52	-0.15	26.31	47.58	0.55	52.62	38.81
53	-5.72	26.29	47.31	0.56	52.57	38.54
54	0.27	26.23	47.28	0.55	52.46	38.54
55	-0.44	26.12	47.07	0.55	52.24	38.37
56	0.09	25.95	46.93	0.55	51.90	38.28
57	-1.01	25.82	46.55	0.55	51.64	37.95
58	0.71	25.80	46.56	0.55	51.60	37.96
59	0.23	25.66	46.49	0.55	51.32	37.93
60	0.00	25.50	46.20	0.55	51.01	37.70



GO-1, PC-10: 350/410

TRIAXIAL TEST RESULTS

GENERAL TEST INFORMATION

SAMPLE INFORMATION

SAMPLE ID:	GD-1, PC-1B; 380/500
INTERVAL (meters):	4.00-4.15
GENERAL LOCATION:	GEORGES BANK
DESCRIPTION:	OLIVE-GRAY CLAY
DATE FINISHED:	1/10/80

INDEX PROPERTIES

MOISTURE CONTENT:	0.56
BULK DENSITY (g/cc):	1.70
VOID RATIO:	1.48
POROSITY:	0.60
GRAIN SPEC GRAVITY (g/cc):	2.71

SAMPLE PARAMETERS

HEIGHT (mm):	100.00
DIAMETER (mm):	50.00
AREA (sq. mm):	1963.50
VOLUME (cc):	196.35
WEIGHT (gm):	327.90

TEST RESULTS

SATURATION PHASE

READING	CELL PRESSURE kPa	DELTA C kPa	PORE PRESSURE kPa	DELTA P kPa	B
1	100.00		97.65		
2	150.00	50.00	146.66	49.01	0.98
3	200.00	50.00	197.00	50.34	1.01
4	250.00	50.00	246.66	49.66	0.99
5	300.00	50.00	296.16	49.50	0.99

CONSOLIDATION PHASE

CELL PRESSURE (kPa):	500.00
BACK PRESSURE (kPa):	380.00
CONSOLIDATION PRESSURE (kPa):	120.00
ASSUMED EFFECTIVE OVERBURDEN PRESSURE (kPa):	27.16

CHANGES IN PROPERTIES DUE TO CONSOLIDATION

PROPERTY	INITIAL VALUE	CONSOLIDATED VALUE
HEIGHT (mm):	100.00	96.65
AREA (sq. mm):	1963.50	1834.11
VOLUME (cc):	196.35	177.26
WATER CONTENT:	0.56	0.47
POROSITY:	0.60	0.51
VOID RATIO:	1.48	1.05
BULK DENSITY (g/cc):	1.70	1.78
BOUYANT BULK DENSITY (g/cc):	0.68	0.75
% SATURATION:	100.00	100.00

MEASURED PROPERTIES

READING	TIME (sec)	Log TIME	Sqrt TIME	DVOL (cc)
1	0	-4.00	0.00	0.00
2	4	0.60	2.00	0.23
3	10	1.00	3.16	0.48
4	20	1.30	4.47	0.80
5	38	1.58	6.16	1.24
6	72	1.86	8.49	1.86
7	138	2.14	11.75	2.76
8	269	2.43	16.40	4.08
9	527	2.72	22.96	5.96
10	1041	3.02	32.26	8.50
11	2067	3.32	45.46	11.36
12	3869	3.59	62.20	13.34
13	5671	3.75	75.31	14.01
14	7473	3.87	86.45	14.30
15	9276	3.97	96.31	14.48
16	11078	4.04	105.25	14.60
17	12880	4.11	113.49	14.70
18	14682	4.17	121.17	14.77
19	16484	4.22	128.39	14.82
20	18286	4.26	135.23	14.87
21	20089	4.30	141.74	14.91
22	21891	4.34	147.96	15.88
23	23693	4.37	153.93	16.19
24	25495	4.41	159.67	16.32
25	27297	4.44	165.22	16.40
26	29099	4.46	170.58	16.46
27	30901	4.49	175.79	16.51
28	32703	4.51	180.84	16.56
29	34506	4.54	185.76	16.60
30	36308	4.56	190.55	16.64
31	38110	4.58	195.22	16.67
32	39912	4.60	199.78	16.71
33	41714	4.62	204.24	16.74
34	43516	4.64	208.60	16.77

35	45318	4.66	212.88	16.80
36	47120	4.67	217.07	16.83
37	48922	4.69	221.18	16.85
38	50725	4.71	225.22	16.88
39	52527	4.72	229.19	16.91
40	54329	4.74	233.09	16.93
41	56131	4.75	236.92	16.96
42	57933	4.76	240.69	16.98
43	59735	4.78	244.41	17.00
44	61537	4.79	248.07	17.03
45	63339	4.80	251.67	17.05
46	65141	4.81	255.23	17.07
47	66944	4.83	258.74	17.09
48	68746	4.84	262.19	17.12
49	70548	4.85	265.61	17.14
50	72350	4.86	268.98	17.16
51	74152	4.87	272.31	17.18
52	75954	4.88	275.60	17.20
53	77756	4.89	278.85	17.23
54	79579	4.90	282.10	17.10
55	81382	4.91	285.28	17.99
56	83184	4.92	288.42	18.51
57	84986	4.93	291.52	18.84
58	86788	4.94	294.60	19.08

ALPHA: 0.97
Ao (sq. mm): 1834.11
Lo (mm): 96.65

SHEAR PHASE

CELL PRESSURE (kPa): 500.00
STRAIN RATE: .015 mm/min

MEASURED PROPERTIES

READING	DVOL (cc)	PORP (kPa)	DLNG (mm)	AXFO (N)	CELP (kPa)	TIME (sec)
1	0.00	410.90	0.00	0.00	500.00	0
2	-0.00	426.39	0.29	39.67	500.00	1322
3	-0.00	435.01	0.61	57.12	500.00	2645
4	-0.00	441.11	0.92	68.80	500.00	3967
5	-0.00	445.64	1.25	77.56	500.00	5289
6	-0.00	448.98	1.57	84.40	500.00	6611
7	0.00	451.71	1.90	90.48	500.00	7933
8	0.01	453.75	2.24	95.13	500.00	9255
9	0.01	455.47	2.59	98.82	500.00	10577

10	0.00	456.86	2.93	101.32	500.00	11899
11	0.00	458.09	3.28	103.01	500.00	13221
12	0.00	459.03	3.63	103.85	500.00	14543
13	0.00	459.75	3.98	103.97	500.00	15865
14	0.00	460.72	4.33	104.31	500.00	17187
15	0.00	461.37	4.68	104.62	500.00	18509
16	-0.00	461.92	5.03	104.78	500.00	19832
17	0.00	462.50	5.38	104.78	500.00	21154
18	0.00	462.95	5.74	105.08	500.00	22476
19	0.00	463.41	6.09	105.08	500.00	23798
20	0.00	463.80	6.45	105.43	500.00	25120
21	0.00	464.28	6.80	105.58	500.00	26442
22	0.00	464.57	7.15	106.01	500.00	27764
23	0.00	465.06	7.50	106.27	500.00	29086
24	0.00	465.29	7.85	106.51	500.00	30408
25	-0.00	465.58	8.20	106.58	500.00	31730
26	-0.00	465.90	8.55	106.62	500.00	33052
27	-0.00	466.10	8.89	106.81	500.00	34374
28	0.00	466.58	9.24	106.93	500.00	35696
29	-0.00	466.58	9.59	107.08	500.00	37019
30	-0.00	466.75	9.93	107.12	500.00	38341
31	-0.00	467.01	10.27	107.43	500.00	39663
32	-0.00	467.20	10.61	107.39	500.00	40985
33	-0.00	467.33	10.95	107.54	500.00	42307
34	-0.00	467.43	11.29	107.62	500.00	43629
35	-0.00	467.52	11.63	107.74	500.00	44951
36	-0.00	467.59	11.97	107.70	500.00	46273
37	-0.00	467.95	12.31	107.77	500.00	47595
38	-0.00	467.88	12.65	107.66	500.00	48917
39	-0.00	468.11	12.99	107.62	500.00	50239
40	0.00	468.21	13.33	107.47	500.00	51562
41	-0.00	468.27	13.68	107.43	500.00	52884
42	0.00	468.56	14.02	107.47	500.00	54206
43	-0.00	468.63	14.36	107.35	500.00	55528
44	-0.00	468.63	14.71	107.35	500.00	56850
45	0.00	468.85	15.05	107.23	500.00	58172
46	0.00	469.08	15.40	107.35	500.00	59494
47	-0.00	469.15	15.74	107.20	500.00	60817
48	0.00	469.27	16.09	107.35	500.00	62139
49	0.00	469.24	16.44	107.16	500.00	63461
50	0.00	469.37	16.78	107.16	500.00	64783
51	0.00	469.47	17.13	107.16	500.00	66105
52	0.00	469.66	17.48	107.27	500.00	67427
53	0.01	469.73	17.82	107.54	500.00	68749
54	0.01	469.99	18.17	107.81	500.00	70072
55	0.01	470.02	18.52	107.74	500.00	71394
56	0.00	470.02	18.86	107.54	500.00	72716
57	0.01	470.21	19.21	107.54	500.00	74038
58	0.01	470.28	19.56	107.66	500.00	75360
59	0.00	470.44	19.91	107.54	500.00	76682
60	-0.00	470.51	20.24	107.16	500.00	78004

DERIVED PROPERTIES

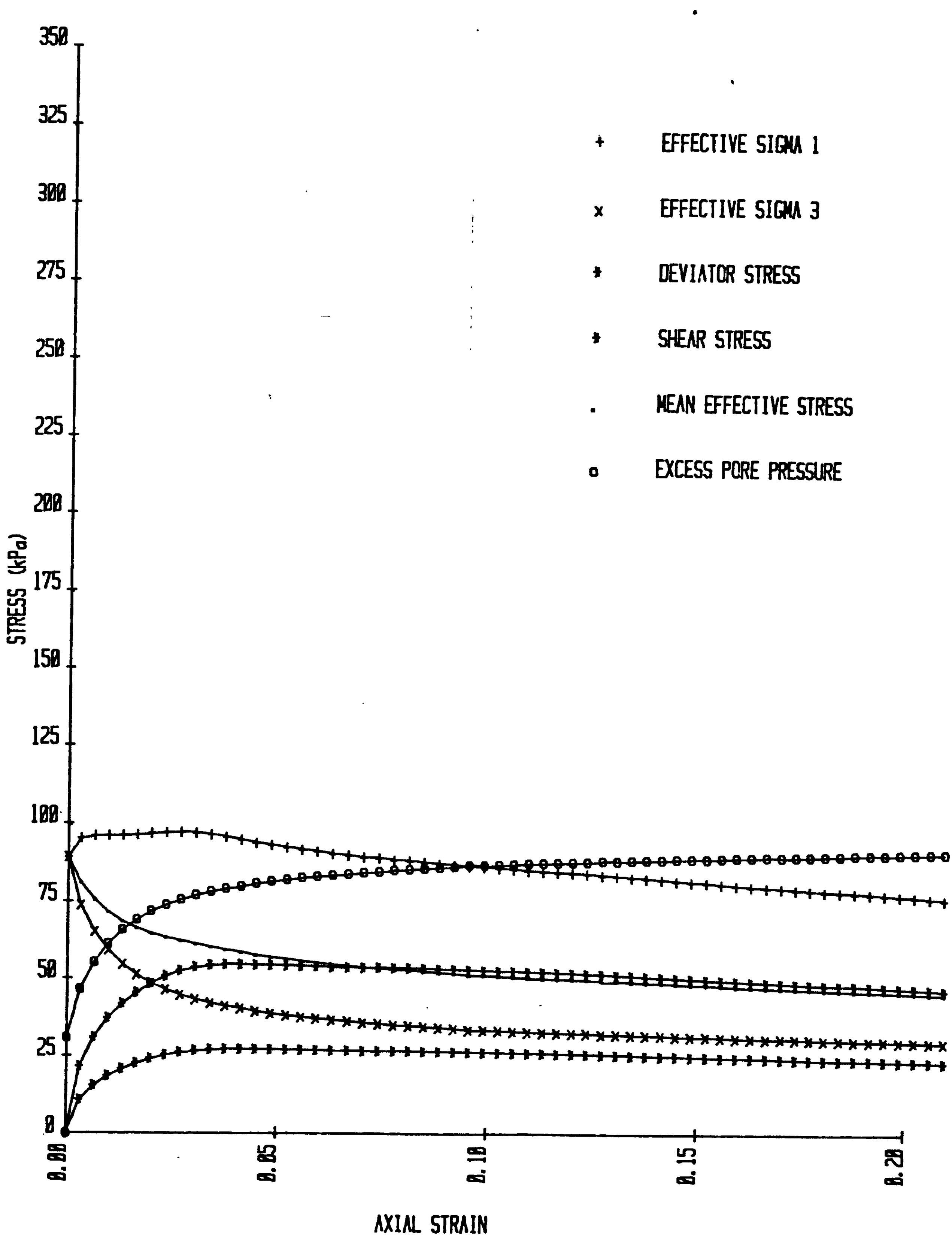
READING	STRAINA	SIG1 (kPa)	SIG3 (kPa)	TOTAL STRESS RATIO	EFFSIG1 (kPa)	EFFSIG3 (kPa)	EFFECTIVE STRESS RATIO
1	0.0000	500.00	500.00	1.00	89.10	89.10	1.00
2	0.0030	521.56	500.00	1.04	95.17	73.61	1.29
3	0.0063	530.95	500.00	1.06	95.93	64.99	1.48
4	0.0095	537.15	500.00	1.07	96.05	58.89	1.63
5	0.0129	541.74	500.00	1.08	96.10	54.36	1.77
6	0.0163	545.27	500.00	1.09	96.29	51.02	1.89
7	0.0196	548.36	500.00	1.10	96.66	48.29	2.00
8	0.0232	550.66	500.00	1.10	96.91	46.25	2.10
9	0.0268	552.44	500.00	1.10	96.97	44.53	2.18
10	0.0303	553.56	500.00	1.11	96.70	43.14	2.24
11	0.0340	554.25	500.00	1.11	96.16	41.91	2.29
12	0.0375	554.50	500.00	1.11	95.47	40.97	2.33
13	0.0412	554.35	500.00	1.11	94.61	40.26	2.35
14	0.0448	554.33	500.00	1.11	93.61	39.28	2.38
15	0.0484	554.28	500.00	1.11	92.92	38.64	2.40
16	0.0521	554.15	500.00	1.11	92.23	38.08	2.42
17	0.0557	553.94	500.00	1.11	91.44	37.50	2.44
18	0.0594	553.89	500.00	1.11	90.94	37.05	2.45
19	0.0630	553.68	500.00	1.11	90.27	36.59	2.47
20	0.0667	553.65	500.00	1.11	89.85	36.20	2.48
21	0.0704	553.51	500.00	1.11	89.23	35.72	2.50
22	0.0740	553.52	500.00	1.11	88.95	35.43	2.51
23	0.0776	553.44	500.00	1.11	88.33	34.94	2.53
24	0.0813	553.35	500.00	1.11	88.06	34.71	2.54
25	0.0848	553.18	500.00	1.11	87.60	34.42	2.55
26	0.0885	552.99	500.00	1.11	87.09	34.10	2.55
27	0.0920	552.83	500.00	1.11	86.78	33.90	2.56
28	0.0956	552.73	500.00	1.11	86.14	33.42	2.58
29	0.0992	552.59	500.00	1.11	86.01	33.42	2.57
30	0.1027	552.41	500.00	1.10	85.66	33.25	2.58
31	0.1063	552.35	500.00	1.10	85.34	33.00	2.59
32	0.1098	552.12	500.00	1.10	84.92	32.80	2.59
33	0.1133	551.99	500.00	1.10	84.66	32.67	2.59
34	0.1168	551.82	500.00	1.10	84.39	32.57	2.59
35	0.1204	551.67	500.00	1.10	84.15	32.48	2.59
36	0.1239	551.45	500.00	1.10	83.86	32.41	2.59
37	0.1274	551.27	500.00	1.10	83.33	32.06	2.60
38	0.1309	551.01	500.00	1.10	83.13	32.12	2.59
39	0.1344	550.79	500.00	1.10	82.68	31.89	2.59
40	0.1379	550.51	500.00	1.10	82.31	31.80	2.59
41	0.1415	550.28	500.00	1.10	82.01	31.73	2.58
42	0.1450	550.09	500.00	1.10	81.53	31.44	2.59
43	0.1486	549.84	500.00	1.10	81.21	31.37	2.59
44	0.1522	549.62	500.00	1.10	81.00	31.37	2.58

45	0.1557	549.36	500.00	1.10	80.51	31.15	2.58
46	0.1593	549.21	500.00	1.10	80.13	30.92	2.59
47	0.1629	548.93	500.00	1.10	79.78	30.86	2.59
48	0.1665	548.79	500.00	1.10	79.51	30.73	2.59
49	0.1701	548.49	500.00	1.10	79.25	30.76	2.58
50	0.1736	548.28	500.00	1.10	78.91	30.63	2.58
51	0.1773	548.07	500.00	1.10	78.60	30.53	2.57
52	0.1808	547.91	500.00	1.10	78.25	30.34	2.58
53	0.1844	547.82	500.00	1.10	78.10	30.27	2.58
54	0.1880	547.73	500.00	1.10	77.74	30.01	2.59
55	0.1916	547.48	500.00	1.09	77.46	29.98	2.58
56	0.1952	547.19	500.00	1.09	77.17	29.98	2.57
57	0.1988	546.98	500.00	1.09	76.77	29.79	2.58
58	0.2024	546.82	500.00	1.09	76.54	29.72	2.58
59	0.2060	546.55	500.00	1.09	76.11	29.56	2.57
60	0.2095	546.19	500.00	1.09	75.68	29.49	2.57

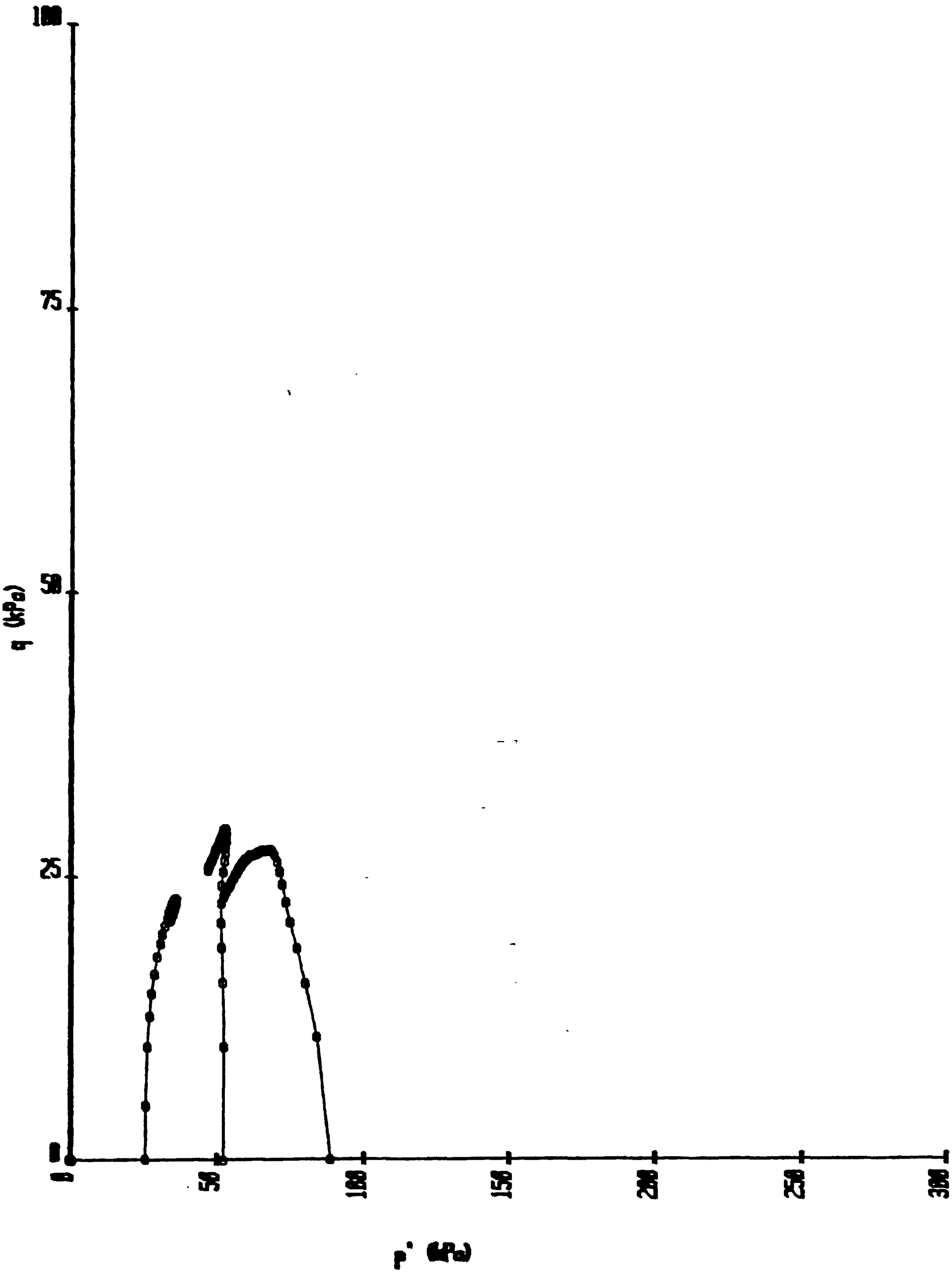
DERIVED PROPERTIES (cont.)

READING	A	q (kPa)	p' (kPa)	q/p'	DEVIATOR STRESS (kPa)	MEAN EFFECTIVE STRESS (kPa)
1	0.72	0.00	89.10	0.00	0.00	89.10
2	0.72	10.78	84.39	0.13	21.56	80.80
3	0.92	15.47	80.46	0.19	30.95	75.30
4	0.98	18.58	77.47	0.24	37.15	71.28
5	0.99	20.87	75.23	0.28	41.74	68.27
6	0.95	22.64	73.65	0.31	45.27	66.11
7	0.88	24.18	72.48	0.33	48.36	64.41
8	0.89	25.33	71.58	0.35	50.66	63.14
9	0.97	26.22	70.75	0.37	52.44	62.01
10	1.24	26.78	69.92	0.38	53.56	60.99
11	1.78	27.13	69.04	0.39	54.25	59.99
12	3.86	27.25	68.22	0.40	54.50	59.13
13	-4.91	27.18	67.43	0.40	54.35	58.37
14	-40.17	27.16	66.45	0.41	54.33	57.39
15	-13.90	27.14	65.78	0.41	54.28	56.73
16	-4.19	27.08	65.16	0.42	54.15	56.13
17	-2.83	26.97	64.47	0.42	53.94	55.48
18	-8.94	26.95	63.99	0.42	53.89	55.01
19	-2.14	26.84	63.43	0.42	53.68	54.49
20	-10.76	26.82	63.03	0.43	53.65	54.09
21	-3.70	26.76	62.47	0.43	53.51	53.55
22	49.30	26.76	62.19	0.43	53.52	53.27
23	-6.51	26.72	61.66	0.43	53.44	52.75
24	-2.40	26.68	61.39	0.43	53.35	52.50
25	-1.73	26.59	61.01	0.44	53.18	52.15
26	-1.69	26.49	60.59	0.44	52.99	51.76
27	-1.73	26.44	60.34	0.44	52.88	51.53
28	-3.22	26.36	59.78	0.44	52.73	50.99
29	0.00	26.30	59.71	0.44	52.59	50.95

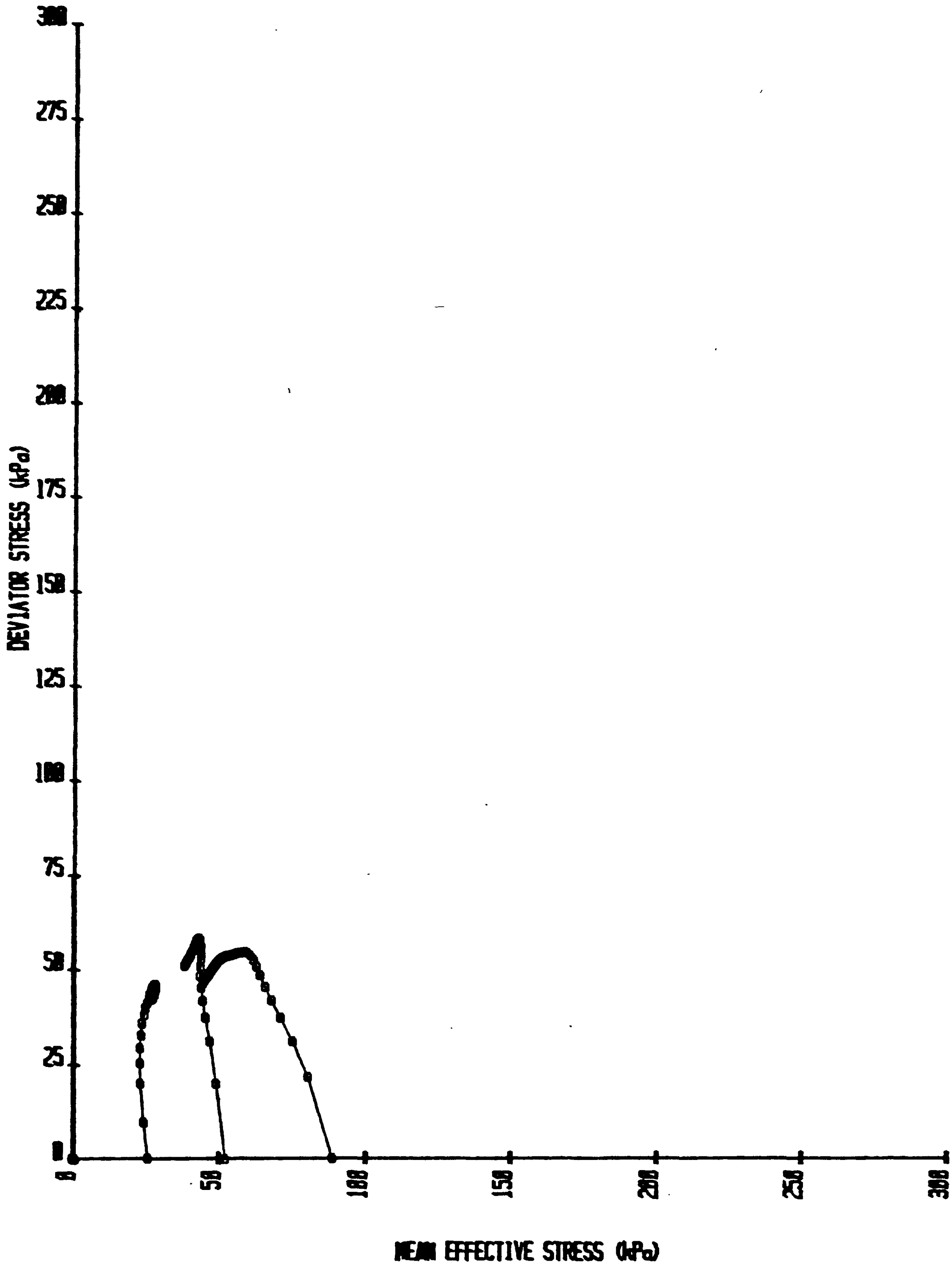
30	-0.86	26.20	59.46	0.44	52.41	50.72
31	-4.53	26.17	59.17	0.44	52.35	50.44
32	-0.87	26.06	58.86	0.44	52.12	50.17
33	-0.98	26.00	58.67	0.44	51.99	50.00
34	-0.57	25.91	58.48	0.44	51.82	49.85
35	-0.64	25.83	58.31	0.44	51.67	49.70
36	-0.29	25.72	58.13	0.44	51.45	49.56
37	-2.07	25.64	57.69	0.44	51.27	49.15
38	0.25	25.51	57.63	0.44	51.01	49.12
39	-1.00	25.39	57.29	0.44	50.79	48.82
40	-0.35	25.26	57.05	0.44	50.51	48.63
41	-0.29	25.14	56.87	0.44	50.28	48.49
42	-1.55	25.05	56.49	0.44	50.09	48.14
43	-0.25	24.92	56.29	0.44	49.84	47.99
44	0.00	24.81	56.19	0.44	49.62	47.92
45	-0.87	24.68	55.83	0.44	49.36	47.60
46	-1.45	24.60	55.52	0.44	49.21	47.32
47	-0.23	24.46	55.32	0.44	48.93	47.16
48	-0.92	24.39	55.12	0.44	48.79	46.99
49	0.11	24.24	55.00	0.44	48.49	46.92
50	-0.63	24.14	54.77	0.44	48.28	46.72
51	-0.46	24.03	54.57	0.44	48.07	46.55
52	-1.23	23.96	54.29	0.44	47.91	46.31
53	-0.74	23.91	54.18	0.44	47.82	46.21
54	-2.78	23.87	53.88	0.44	47.73	45.92
55	-0.13	23.74	53.72	0.44	47.48	45.81
56	0.00	23.59	53.57	0.44	47.19	45.71
57	-0.92	23.49	53.28	0.44	46.98	45.45
58	-0.41	23.41	53.13	0.44	46.82	45.33
59	0.00	23.28	52.84	0.44	46.55	45.08
60	0.00	23.09	52.59	0.44	46.19	44.89



GD-1, PC-1B: 380/500



GD-1, PC-1B: 350/380, 350/410, 380/500



GD-1, PC-1B: 350/380, 350/410, 380/500