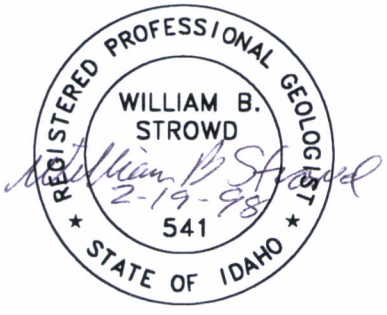
GEOTECHNICAL EVALUATION
PICKLES BUTTE SANITARY LANDFILL

CANYON COUNTY, IDAHO

February 1998



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Holladay Engineering Company
Project No. 030496

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INTRODUCTION

Pickles Butte Sanitary Landfill, owned and operated by Canyon County, is a municipal solid waste landfill located approximately 12 miles south of Caldwell, Idaho in section 21, T2N., R3W. The landfill has been in operation since April 1, 1983. Since the ultimate capacity of the landfill has been tentatively projected to exceed 21.5 million cubic yards (HECO, 1994), the stability of both foundation and fill is an important consideration in the final design. The question of future stability has been raised by Idaho Department of Environmental Quality (IDEQ, 1994) and Holladay Engineering Company (HECO, 1991 and 1994) during the initial design and Subtitle D permit phases of the landfill. This is because the proposed design exceeded 300 feet in height, whereas currently it is less than 70 feet. This report addresses the stability of both the waste fill and the foundation as a component of final design, providing recommended safe limits of fill height and verifying the stability of the designed side slopes with appropriate drainage control to minimize infiltration of water (for stability and reduced leachate potential). General guidance for landfill stability evaluation, as well as other landfill criteria, has been provided for by an Environmental Protection Agency (EPA) technical manual (1993).

Psuedostatic analysis of the landfill under seismic loading was conducted according to the maximum credible earthquake as defined in this region's seismic zone. As stipulated in Subtitle D, Section 258.14a, new landfills or landfills with lateral extensions require stability analysis under seismic loading if they are located within "seismic impact zones". A seismic impact zone is defined as an area mapped with a 10% or greater probability that the lithified earth material will exceed a maximum

horizontal acceleration (MHA) of 0.10% of the earths gravity (g) within a 250-year period. Pickles Butte Landfill is located in a region mapped (Algermissen, S. T., et al, 1982) with a 250-year, 10% probability of a MHA of 0.13g's. Although the landfill does not presently have any lateral expansion, and therefore a stability evaluation is not required, need for increased capacity will likely necessitate a lateral expansion at some time in the future. This investigation should fulfill the need for future design stability under both static and dynamic conditions so long as the delimited maximum allowable fill height, grade of slopes, and drainage control measures as recommended here are incorporated into the fill at this site.

Landfill settlement has been briefly addressed in this report. Among other things, settlement is influenced by waste height, so it can affect the final design's drainage control and final cover. Since surveyed control monitoring equipment at this site has not been in place, an estimate of settlement rate and magnitude is based on the experience of other landfills. Therefore the value given for settlement at Pickles Butte is subject to a range of variability which serves only as a general guidance for final design.

The potential for foundation liquifaction was evaluated during an event of the maximum credible earthquake. Results of this study indicate that liquifaction under the landfill is possible but unlikely.

GEOLOGICAL INVESTIGATION/LABORATORY TESTING

A review of surface and subsurface geologic information previously collected at the site included reviewing the site's topographic features and incorporating borehole lithologic and stratigraphic information gathered during an earlier site hydrogeologic investigation. A review of published geotechnical information on other landfills was performed to assist in characterizing landfill waste stability, risk assessment and potential failure modes.

Comprehensive information on the subsurface geology had been established from prior drilling during a hydrogeologic investigation required in the facility's permitting process (PB-2 through PB-8 on the As-Built map). This earlier information was helpful in accurate computer modeling of the site stratigraphy for foundation stability analysis, for confirming newly acquired subsurface information drilled specifically for this investigation, and for providing pre-existing core samples (from borehole PB-2) suitable for laboratory testing at no additional cost. These prior samples were preserved undisturbed and hermetically sealed in plastic (Lexan) tubing from diamond core drilling in the spring and summer of 1992 and proved especially useful for deep subsurface data from depths between 200 and 550 feet.

New drilling (November 1996) designed for this investigation employed five test holes (GT-1 through GT-5 on the As-Built Map) with maximum depths to 201 feet. This entailed hollow-stem auger drilling located on, and adjacent to, the current fill with standard penetration tests (SPT) on five-foot intervals and soil sample collection in 1 1/2-inch brass rings or three-inch Shelby tubes. Location of these boreholes were also confined to the currently designed waste footprint as permitted by IDEQ. All drilling

was supervised by an onsite geologist to direct drill operations, log soil profiles, optimize sample collection, and maximize acquired information. Borehole logs, blow counts, laboratory test results and other supporting data are included in the **Appendices** of this report.

Sample selection for laboratory testing of foundation materials was based on sample integrity, good vertical and horizontal distribution and complete stratigraphic representation. The tests performed in this investigation includes SPT, gradation analysis, plastic and liquid limits, unit weight, native moisture and unconsolidated-undrained, triaxial compression (Tx_{UU}-ASTM 2850). However, due to sample heterogeneity, only SPT, unit weight and moisture analysis were performed on the municipal waste. Strength parameters of the waste were assigned values based on studies performed elsewhere and published in the literature. Due to solid waste compositional heterogeneity, the sample testing diversity, comprehensiveness, and large-scale shear testing on bulk municipal waste described in the literature is considered more reliable than any limited site-specific, small-scale testing that could be conducted for this study.

STABILITY ANALYSIS

Analysis using the limit equilibrium approach was performed using G-SLOPE Version 3.32. Slope failures can have various modes of failure. Planar failures occur where a material layer with a low shear strength influences the shape of the failure surface. Landfill liners can create a plane of weakness on which failures may occur. Since waste in the Pickles Butte Landfill has been placed horizontally in approximately 15-foot lifts and does not rest upon any membrane liner system, internal fill structure minimizes the potential for sliding-block or infinite-slope type failure. Therefore a circular slip was assumed to be the most likely type of failure mode. There are a number of analysis methods that can be used to determine the stability of slopes. The Modified Bishop's Method was used for this study with Janbu's Method used for a check on the critical circles. These are the more conventionally employed limit equilibrium methods for circular slip failures. This type of analysis divides the failure mass into slices to determine the critical failure surface and minimum factor of safety. The Modified Bishop's Method is applicable only for circular failure modes since the normal forces acting on the base of the slices pass through the center of the failure circle, thus not affecting moment equilibrium. This method is based on satisfying overall moment equilibrium about the center of a circular surface and vertical force equilibrium for each slice.

The geologic and design profile through the landfill, which is located along line A-A' on the 1997 Design Map (in **Appendices A & B**) served as the model for evaluating fill and foundation stability. This line closely dissects the maximum fill depth and buried canyon slopes. The depth of groundwater shown on the profile is based on water levels of a network of existing well's used for groundwater monitoring at the landfill, however,

only total stress is considered in the analysis since sample testing was performed under undrained conditions of triaxial compression. Results of this form of test yield material strengths that are inclusive of resulting pore pressures. Table 1 below shows the stratigraphic units with their lab measured soil properties and physical properties of the waste. As anticipated, the shear strength of the lowest stratigraphic unit (clay/claystone) showed relatively high variation in the lab results due to significant variation in the material's induration (consolidation / cementation) and degree of fracture density. Therefore the strength parameters selected in the analysis were determined by averaging the results of six tests on the clay/claystone unit. The internal friction angle and cohesive strength assigned for waste within the table were obtained from values cited as the most representative for municipal solid waste based on a review of a number of test results published in the literature (Edinclier A., C. H. Benson and T. B. Edil, 1996). The values used in this study (ϕ=35° and c=420 psf) were determined to be the middle of the ranges compiled from small-scale shear tests of municipal wastes. Also, the authors stated that these values were considered conservative in that larger reinforcing elements typically found in solid waste were selectively removed for testing purposes. Previous studies of landfill failures have shown that municipal solid waste strength is rarely at fault and, in fact, both landfill failures and testing have generally demonstrated it to be a relatively strong material. The density of the waste and incorporated interim cover was determined by volumetric data provided from scale weight records and by a topographic survey of the landfill in October of 1996 using air photogrammetry.

Table 1. Model Input Data.

Mat'l No.	Description	c (psf)	ϕ (degrees)	γ (pcf)
1	Landfill Refuse	420	35	71
2	Clayey Sand	100	30	100
3	Sandy silt/clayey silty sand	150	29	88
4	Sandy silt/silty sand	706	20	113
		1339	37	89
		490	33	102
	Delete, probable local cementation	~~3845~~	~~27~~	~~96~~
	Average:	845	30	101
5	Sandy silt/clayey silty sand	150	29	88
6	Sandy silt/silty sand (Same as Mat'l 4, use Average)	845	30	101
7	Sandy silt/clayey silty sand	150	29	88
8	Clayey silt to silty clay	9936	2	121
		6566	3	121
		7114	10	112
		7762	1	121
	Average:	7845	4	119
9	Clayey silt to silty clay	3370	8	122
10	Clayey silt to silty clay (Same as Mat'l 8, use Average)	7845	4	119
11	Clayey silty to silty clay	3370	8	122
12	Silty clay/clayey silt (Claystone)	17928	9	115
		29765	2	114
		29491	1	112
		16128	7	113
		24336	4	114
		1973	1	112
	Average:	19937	4	113
13	Clayey silty to silty clay (Same as Mat'l 8, use Average)	7845	4	119
14	Silty clay/clayey silt -Claystone (Same as Mat'l 12, use Average)	19937	4	113
15	Clayey silty to silty clay	3370	8	122

For reasons of safety, conservatism has been incorporated into this evaluation. Conservative elements include: small-scale sample testing performed on the foundation generally reflect lower strength parameters than in situ materials, the model section

follows the deepest zone of fill whereas off section the fill diminishes laterally and in two quadrants topography buttresses the waste, the valley is a product of erosion of pre-existing sediments and the uneroded foundation materials have been pre-consolidated by former dewatering and lithostatic loading to at least the height of the canyon rim, the slow progressive loading of waste should result in drained conditions within the most sensitive, upper, unconsolidated units as opposed to the undrained sample test values used in the analysis, conservative strength parameter values were selected for the solid waste, "limit equilibrium" methods of failure analysis generally tend to be conservative in nature, and a design with a relatively large static safety factor for stability has been propounded to meet seismic requirements. The use of maximum ground acceleration in seismic analysis is particularly conservative in that peak ground acceleration is very transitory during seismic events; generally lasting only fractions of a second. The accumulation of these conservative factors assure that a safe design has been proposed. It is probable that future expansion from the present waste cell may justifiably exploit some of this conservatism by advancing a design with a more favorable capacity while still retaining an acceptable margin of safety.

The computer analysis was completed for two different loading conditions; static and pseudostatic conditions. Static loading conditions represent the landfill constructed at the maximum design height. For analysis, the maximum design slope was depicted on the model cross section even though the apparent slope along the selected cross section A-A' is flatter; the steeper maximum design slope represents the worst-case loading condition. The long-term stability considered in this study employs effective stress since pore pressures will have time to dissipate. Since pore water pressures are not present for the conditions at this site, the shear strength values for ϕ and c from the laboratory tests can be considered (drained) effective strengths, even though

unconsolidated-undrained tests were performed.

A pseudostatic analysis is a simplified simulation of earthquake forces (non-cyclic loading) applied at the site. To determine the effects of seismic loading on the stability of the landfill, pseudostatic analysis was performed on the critical circle (failure circle with the lowest factor of safety) determined from the static analysis. The critical circle from the static load condition is analyzed since this is the region with the highest initial stress. The analysis is performed by varying the seismic coefficient and determining the corresponding factors of safety. The results are plotted and compared to the maximum horizontal acceleration (as a percentage of the earth's gravity) expected at the site. The seismic coefficient that corresponds to a factor of safety of 1.0 is the point at which simulated failure of the slope is imminent. As long as the MHA expected for the site (0.13 g) is below the seismic coefficient at a factor of safety of 1.0, the design is considered adequately stable during a MCE.

To determine the stability of the Pickles Butte Landfill, a minimum factor of safety criteria was selected for both the static and pseudostatic conditions. The values selected are based on the minimum factors of safety recommended in EPA's technical manual (EPA, 1993). A factor of safety indicates the ability of a slope to resist failure. A factor of safety of 1.0 indicates imminent slope failure whereas a factor of safety of 2.0 indicates that the slope has a resistance to failure twice as great as the driving forces involved in a failure condition. The minimum factors of safety selected for this project were:

- Static- 1.5
- Pseudostatic- 1.3

ANALYSIS RESULTS

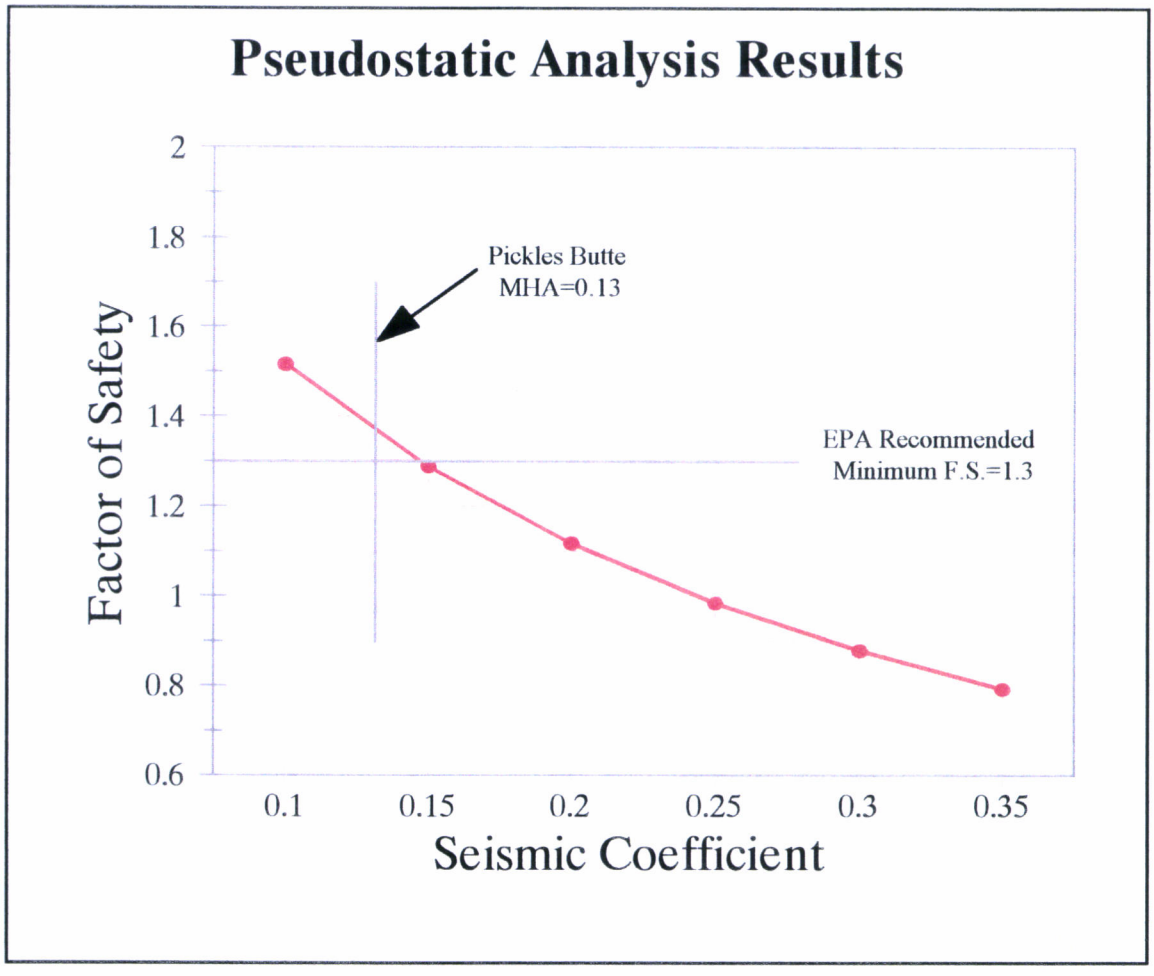
Static Loading Conditions

Based on a global search for the critical failure circle under static loading conditions, the factor of safety was found to be 2.31, well above the recommended minimum of 1.5. A failure circle passing only through the refuse was also analyzed to check the stability of the side slopes of the design. The factor of safety for this circle was found to be 2.91, again well above the recommended minimum.

Pseudostatic Loading Conditions

Based on the results of stability under static loading conditions, the landfill height could be designed for a greater height. However, results from pseudostatic analysis limits this option. To complete the pseudostatic analysis, the seismic coefficient was varied and a corresponding factor of safety computed. The seismic coefficient producing a factor of safety lower than the recommended minimum value of 1.3 was greater than the MHA of 0.13 at Pickles Butte Landfill. Therefore, the design meets the minimum criteria for performance under earthquake loading. Figure 1 represents varying pseudostatic factors of safety for differening trial seismic coefficients.

Figure 1. Factors of Safety with Varying Seismic Coefficients.



From Figure 1 and pseudostatic analysis with a seismic coefficient of 0.13, the factor of safety for the failure circle only in the refuse is 1.93 and for the circle passing through both refuse and foundation is 1.37; both above the minimum recommended value of 1.3. With the high factors of safety for the circle only in the refuse, the designed side slopes of 3:1 are not too steep for stability, but limited to this slope for control of

erosion. The geologic and design profile in **Appendix B** depicts the cross-section with the two critical circles shown.

Other Methods

Hand calculations were done for the critical circle only passing through the refuse to verify the computer model results. The failure mass was divided into slices using the slope geometry break points as slice edges. The necessary information for each slice was determined using an engineering scale and protractor. Since the Modified Bishop's Method requires an iterative solution, all information was input into an electronic spreadsheet for the analysis. The factor of safety using the manual calculation was found to be 2.92, very close to the G-SLOPE result of 2.91. The cross section showing the slice locations and the manual spreadsheet output are included in **Appendix C**.

As another check for validity of methods, Janbu's method was also performed on the critical circles using G-SLOPE. The factor of safety for the static loading condition was 2.25 and for the pseudostatic condition was 1.33; very close to the results using the Modified Bishop's Method. Table 2 summarizes the results.

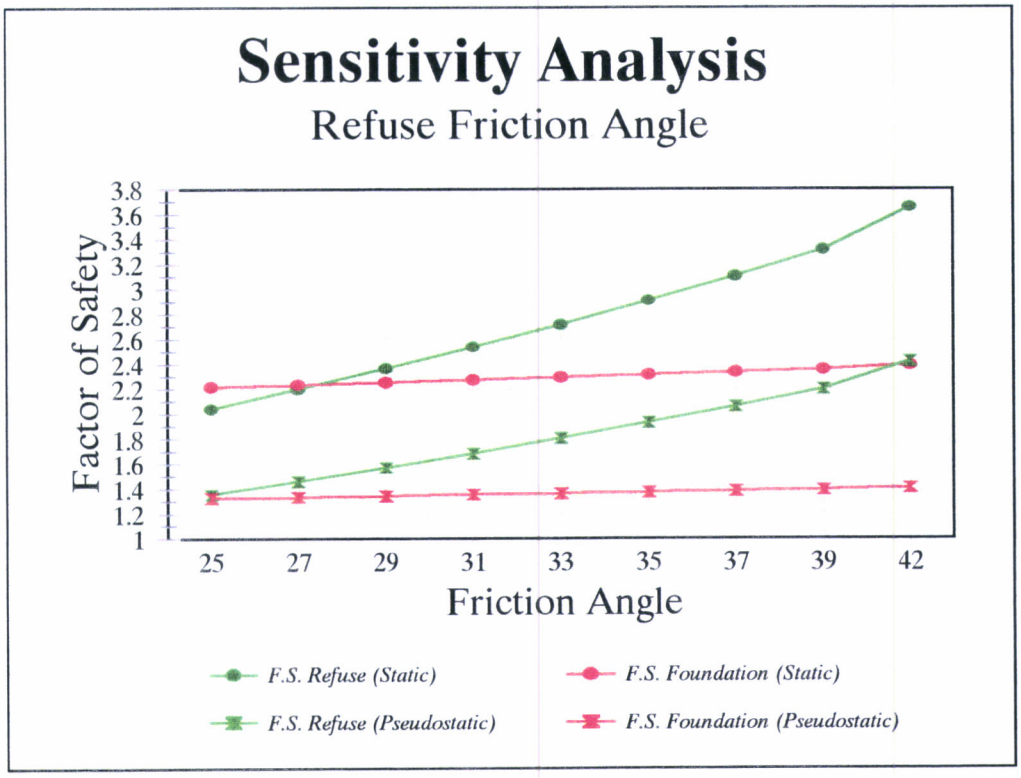
Table 2. Factors of Safety.

Location of Circle	Static F.S. (Bishop's)	Pseudostatic F.S. (Bishop's)	Static F.S. (Janbu's)	Pseudostatic F.S. (Janbu's)
Refuse Only	2.91	1.93	2.97	1.96
Refuse/Foundation	2.31	1.37	2.25	1.33

Sensitivity Analysis Results

Since the shear strength of the refuse was assigned based on published data, the friction angle (ϕ) was varied from 25° to 42° representing plausible variability in the published test values. From this analysis, it was found that the factor of safety for the critical circle located in both the refuse and foundation was not significantly influenced by varying the refuse friction angle (ϕ). This was due to the critical circle passing mostly through the foundation and only a minor amount of the circle passing through the refuse. However, the factor of safety of the circle mostly confined to the refuse increased rapidly with an increase in the friction angle. The circle that passes through both the refuse and the foundation was the controlling condition within the full range of trial friction angles used with pseudostatic analysis. Figure 2 represents the variation in the factors of safety with changes in friction angle.

Figure 2. Safety Factor Versus Coefficient of Friction



The initial Tx_{UU} laboratory testing included only a single test result on the deep claystone unit. The laboratory test result indicated a very low relative shear strength whereas computer sensitivity analysis found that the factor of safety had a high degree of variability when the strength parameters of the claystone unit were slightly adjusted. With this evident sensitivity to varying strength parameters, additional laboratory testing was performed on other samples of this material.

SETTLEMENT

The nature of the foundation soils below the waste indicate low potential for excessive total or differential settlement which can be detrimental to the landfill's final cover. Since soils are unsaturated to depths exceeding 300 feet, capacity for settlement from consolidation is virtually nil. Below 40 to 60 feet materials are preconsolidated, Pliocene lacustrine deposits and therefore, with low potential for settlement. Most or all of the settlement of the uppermost, Quaternary, alluvial fine sands that are unconsolidated will be accommodated by primary settlement prior to final cover placement. Lateral continuity and homogeneity of subsurface materials without significant contrast in strength across geologic boundaries precludes conditions leading to differential settlement problems. Hence significant deformations to the final cover by differential foundation settlement should not be a concern.

However, long term settlement of waste fill will occur and can have potential consequences on the integrity of the final cover and drainage control system. Previous predictions of settlement rates at other landfills have a poor track record (Edil, T. B., et al, 1990). Although several deterministic models have been developed for settlement, these methods were not used. This is because there can be, and frequently are, large and unknown errors in the results. Numerical prognosis generally tend to be relied upon once they are proffered, thereby doing more harm than good. So without measured information from the site, estimates for Pickles Butte are subjective and as given here serve only as general guidance.

Landfill settlement is a product of several processes; these include mechanical compaction of foundation and fill from loading, consolidation of foundation and fill

from de-watering, and shrinkage of waste due to organic decomposition. Much of the settlement occurs as immediate (primary) settlement from load compaction of self-weight during filling operations; but substantial secondary settlement can occur over the following years after operations cease which decreases with time logarithmically. From the standpoint of final cover and drainage, only secondary settlement of fill is a consideration since primary settlement involves the purely operational issue of increasing fill capacity.

Vertical movement from settlement is generally greatest at the top interior of the fill and diminishes towards the edges, especially along valley supported sides. Central portions frequently have as much as 15 to 20% settlement (Hutric, R., 1981), but can range from 5 to 30% (Edil, T. B., et al, 1990). For several reasons, it is anticipated that secondary settlement after waste cell closure at Pickles Butte will be on the lower end of this range. Because secondary settlement is partially a function of waste moisture due to dewatering and decomposition, its anticipated rate and magnitude would be expected to be relatively low at this arid site. In fact, since neither the fill nor foundation are saturated, neither should experience consolidation. Also, organic decomposition is confined to the limited moisture available to the waste in the prevailing dry climate (8 to 12 inches annual precipitation versus 50 inches evaporation). The low moisture content of the garbage was confirmed in the split spoon samples taken at the facility (in **Appendix F**). Also, equipment compaction has been maintained continuously throughout the history of the facility so that a large amount of settlement has been eliminated through operational practice. Furthermore, much of the fill's capacity to settle will have been incurred prior to closure due to the extensive life of the waste cell since inception (40+ years).

For these reasons it is probable that settlement will be relatively minor in the period following closure, although maximum settlement on the order of four to seven percent can be expected in the first three years and ten percent can be reasonably expected over ten years. This translates to 14 to 25 feet in three years and 35 feet over ten years. Since drainage control on the final cover is needed to reduce infiltration and erosion, construction of this system should be deferred for three years to minimize problems with grade of drainage ditches from settlement and damage in general to the system. Immediately after capping the landfill and prior to final drainage construction, it is suggested that survey control be established for monitoring the degree and rate of settlement over this three-year period so as to evaluate its impact on the cover and drainage system. The settlement monitoring can occur as landfilling continues at the next adjacent cell.

LIQUIFACTION

Liquifaction is a process of certain types of shallow soils losing their shear strength because of sudden volumetric contraction within the soil with an attendant rise in pore pressure during seismic vibration. The process occurs so quickly that undrained conditions prevail and effective stress of the soil falls drastically. The characteristic result of liquifaction is an immediate loss of virtually all of the soil's material strength and it starts to behave as a liquid or slurry.

The possibility of liquifaction occurring within the municipal solid waste itself is not a concern as waste does not behave in the manner of the sensitive soils described above. However, any structure, including waste fill, built on this type of foundation soil could be at risk from liquifaction during a strong earthquake. Hence an evaluation for liquifaction potential is required for Subtitle D landfills in delineated seismic impacts zones such as at Pickles Butte.

By using a screening process of site characteristics, many foundations can be eliminated from the need to perform a more rigorous evaluation. However, there is some upper foundation soil at Pickles Butte which does not pass this screening test. It possesses several characteristics amenable to liquifaction and the more thorough numerical analysis is needed. Hence liquifaction analysis was performed since prevailing conditions indicate a possibility of occurrence using screening criteria for its evaluation at landfills (Richardson, G. N., E. Kavazanjian, and N. Matasović, 1994) and as indicated in by the EPA solid waste disposal technical manual (EPA, 1993, p. 45).

The calculation details of the liquifaction analysis are shown in **Appendix C.** To

summarize the results here, the results indicate the soil interval from five to twenty-five feet below surface is a candidate for potential liquifaction during a 7.3 magnitude earthquake. The calculated factors of safety for each five-foot sample interval, based principally on normalized SPT blow counts, range from 0.64 to 0.93 (see F.S. in Step 4 of liquifaction analysis in **Appendix C**). The average factor of safety of this 20-foot-thick interval of silty fine sand is 0.84, whereas unity (1.0) is the minimum safety factor representing low liquifaction potential.

The maximum credible earthquake (MCE) for this region is mapped as a 7.3 magnitude event (Algmissen, 1982). An assigned magnitude this large is sufficient to lend credibility to the possibility for liquifaction, but only if the assigned magnitude is credible. Though perhaps not impossible, such a major earthquake impacting the area would almost certainly cause severe and widespread damage. Virtually any degree of landfill failure resulting under these conditions most likely would be relegated to an unfortunate long list of area-wide environmental and property damage; not to mention loss to human life.

Despite analytical procedures, foundation conditions at Pickles Butte are not conducive for liquifaction in several important aspects. Although some of these aspects are included in the evaluation, they are conservatively diminished in quantitative importance. The most important is that the upper foundation soils are not saturated with groundwater in excess of 300 feet below surface (see soils data in **Appendix F**). For liquifaction to be a real possibility, sufficient intergranular water must be present to reach saturation during earthquake shaking. Few instances of liquifaction have been documented in areas where groundwater is deeper than 20 meters (Youd, 1984). Also, though some 35 vertical feet of loose fine sand and silt comprise the valley bottom

adjacent the landfill, these loose materials are sustaining progressive compaction in response to the slowly applied waste load. The analysis conservatively employed SPT blow counts from a borehole (GT-1) not yet buried by waste. Blow counts within this same soil interval that has been buried under waste (GT- 4) yield acceptable safety factors. Besides compaction, the increased confining pressure of the landfill overburden also reduces liquifaction potential; the consequent higher yield strength from the substantially greater confining pressure of the landfill is not represented in the analysis. Inclusion of this real condition into the equations produces a safety factor approaching two (1.96).

Other items within the evaluation that are conservative and tend to overstate the probability of liquifaction include: using predicted peak ground acceleration as input which tends to amplify its transient nature producing a worst-case scenario, the calculations ignore distance to the earthquake and seismic attenuation which reduce ground motions, and the implicit assumption of the analysis which prescribes a predictably quantified response to a given soil type under dynamic conditions. Although the basic principals of liquifaction are well understood, it is a complex process with influencing variables of large uncertainty. Even though the results should not be ignored, acceptance of the analysis should be tempered with some degree of latitude.

CONCLUSIONS

This evaluation indicates the most probable type of instability at Pickles Butte Landfill would involve foundation failure. This means that a large-scale failure of the fill is of more concern than simply slope failure. Unfortunately this represents the worst type of failure. Foundation failure by lateral spreading has previously occurred in high (> 200 feet) municipal solid waste fills when constructed above weak clay beds or colluvium in Ohio, in New Jersey, and in Maine (Kenter, R. J., B. O. Schmucker, and K. R. Miller, 1997, and Singh, S. and B. Murphy, 1990). Foundation problems can be alleviated by placing design constraints on fill height, slope geometry, drainage control, and certain operational practices. Although unlithified alluvium and colluvium occurs under the fill at Pickles Butte, and lacustrine clays occur at substantial depths, the location, orientation, distribution and unsaturated conditions of these materials do not pose undue risk of failure without levels of static stress substantially higher than will be applied in the recommended design. Other than exceeding design limits, operational practices that lead to instability are: routine end-dumping of waste off steep side slopes with significant height (greater than fifty feet), construction of slopes steeper than 3:1 with heights greater than 100 feet, excessively large amounts of water frequently ponded on the fill, and deep excavation at or near the fill toe in the down-valley direction. It should be noted that current design also has 3:1 slopes limited to 50 feet high due to erosion control.

The potential risk from foundation liquifaction during a minor or moderate seismic event is low, mostly due to unsaturated shallow foundation conditions at Pickles Butte. However, analysis suggest that liquifaction within some shallow soils may become a consideration during the unlikely event of a major earthquake. Liquifaction does not

place design constraints on the landfill because increased waste height reduces the possibility of liquifaction (due to increased normal stress within the foundation). The progression towards design completion actually diminishes this potential hazard.

Landfill settlement after operations are difficult to predict without measured historic data and collection of this information has been recommended prior to completion of the drainage control system. Current estimation of the general magnitude of secondary settlement after reaching design capacity is probably in the range of 14 to 25 feet over the first three years and perhaps 35 feet over ten years.

RECOMMENDATIONS

1. Waste fill should be limited to a maximum thickness of 350 feet. Furthermore, the limited size of the currently permitted footprint operationally constrains exceeding this height.

2. Maximum grade of any fill slope in excess of 100 feet high should be limited to three horizontal to one vertical (3H:1V).

3. End-dumping of waste or cover off of slopes greater than 50 feet high and steeper than 4:1 is not recommended, especially in the down-valley direction.

4. Excavating within the vicinity of the fill toe, especially in the down-valley direction, is not recommended.

5. Ponded water on interim surfaces should not be allowed to collect in significant amounts. Also, construction of a drainage system of water ditches on the final cap is recommended to minimize erosion and infiltration. Increased moisture in the fill would not only destabilizes high fill slopes but increase leachate potential and methane production. The proposed design has included a drainage control system.

6. Secondary settlement experienced over the first three years following closure may be on the order of four to seven percent (14 to 25 feet). It is recommended that final drainage controls be installed after this interval of settlement or following a monitoring period of surveyed elevations for establishing the rate of settlement.

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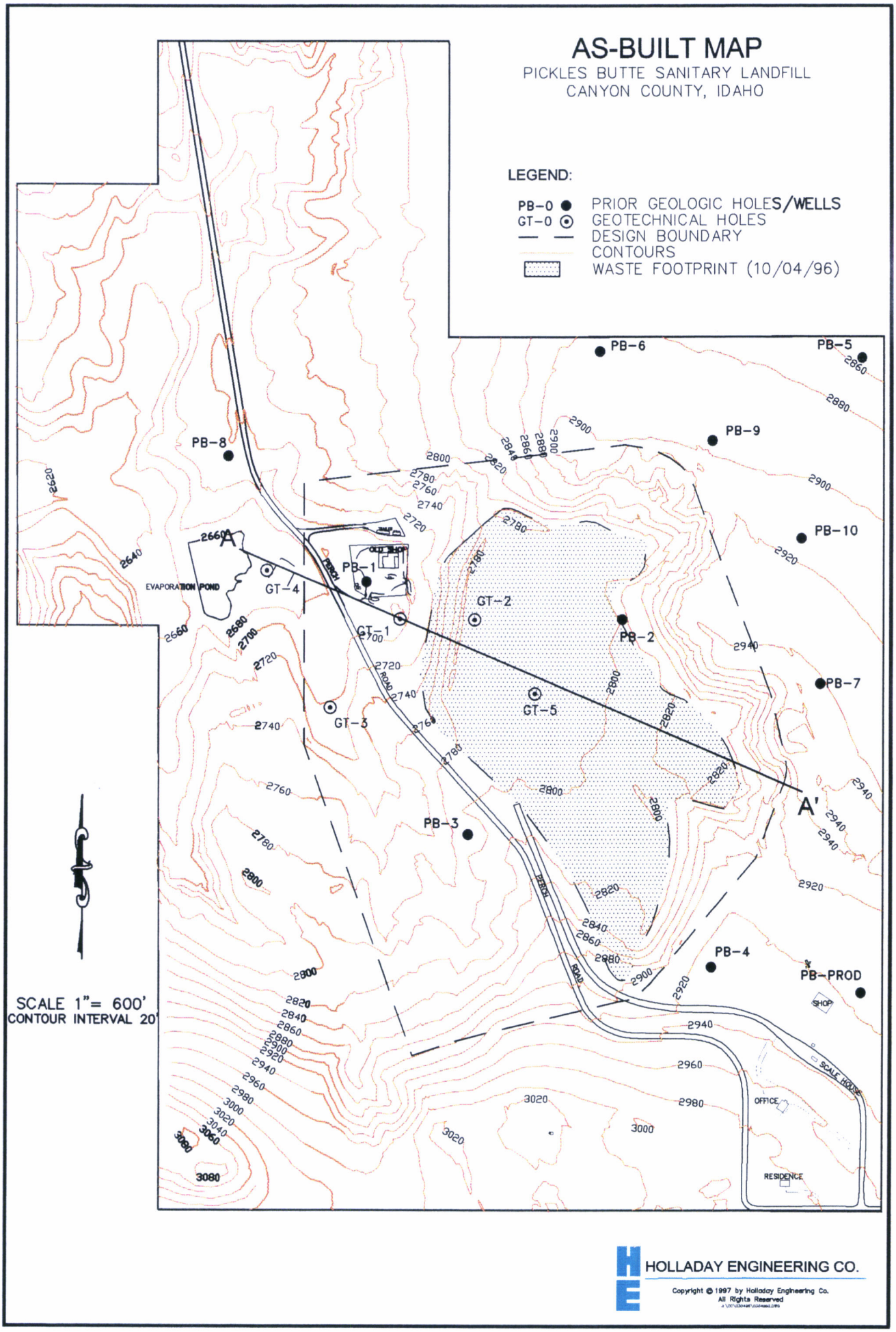
APPENDIX A: As-Built Map & 1997 Design Map

AS-BUILT MAP

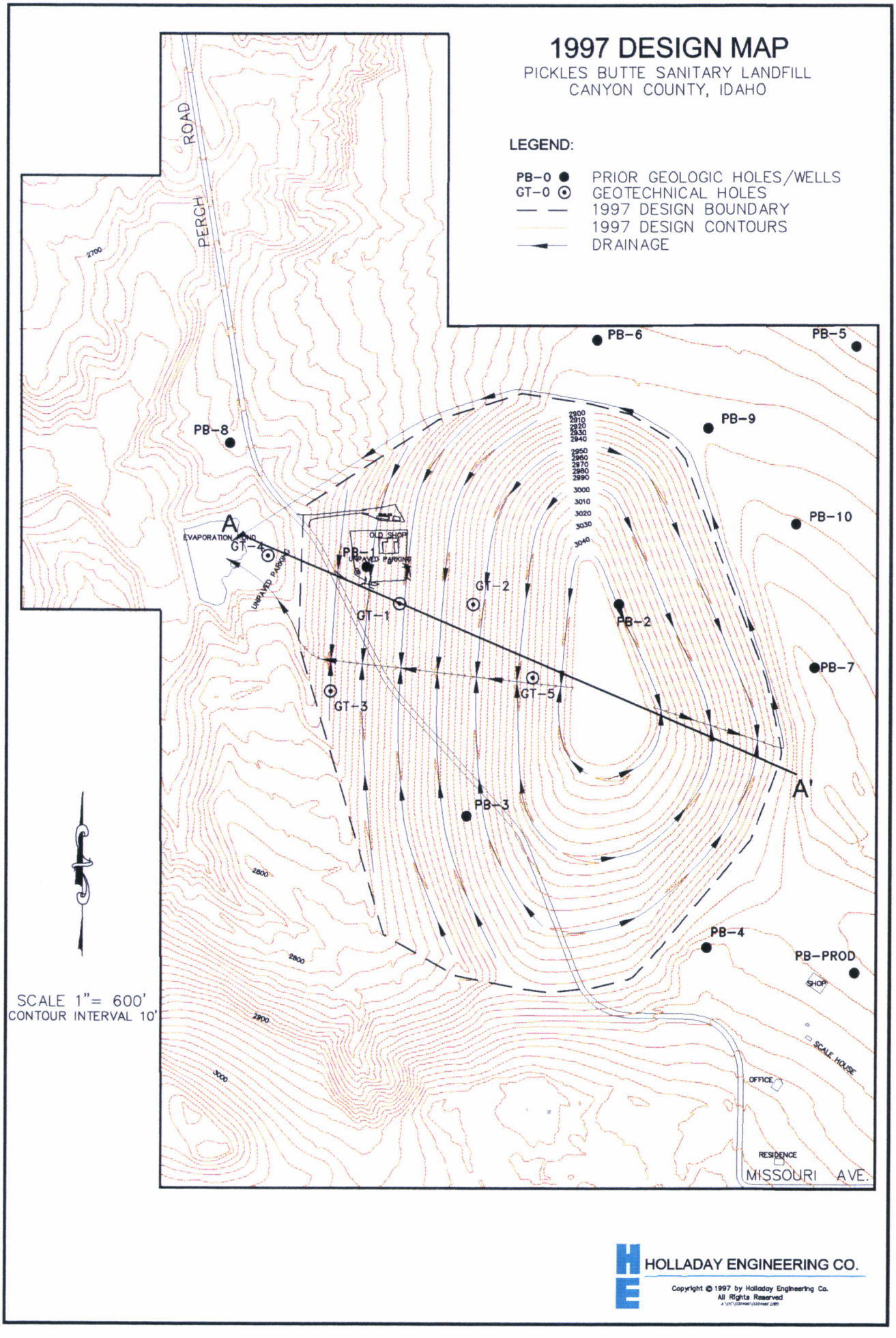
PICKLES BUTTE SANITARY LANDFILL
CANYON COUNTY, IDAHO



HOLLADAY ENGINEERING CO.

1997 DESIGN MAP

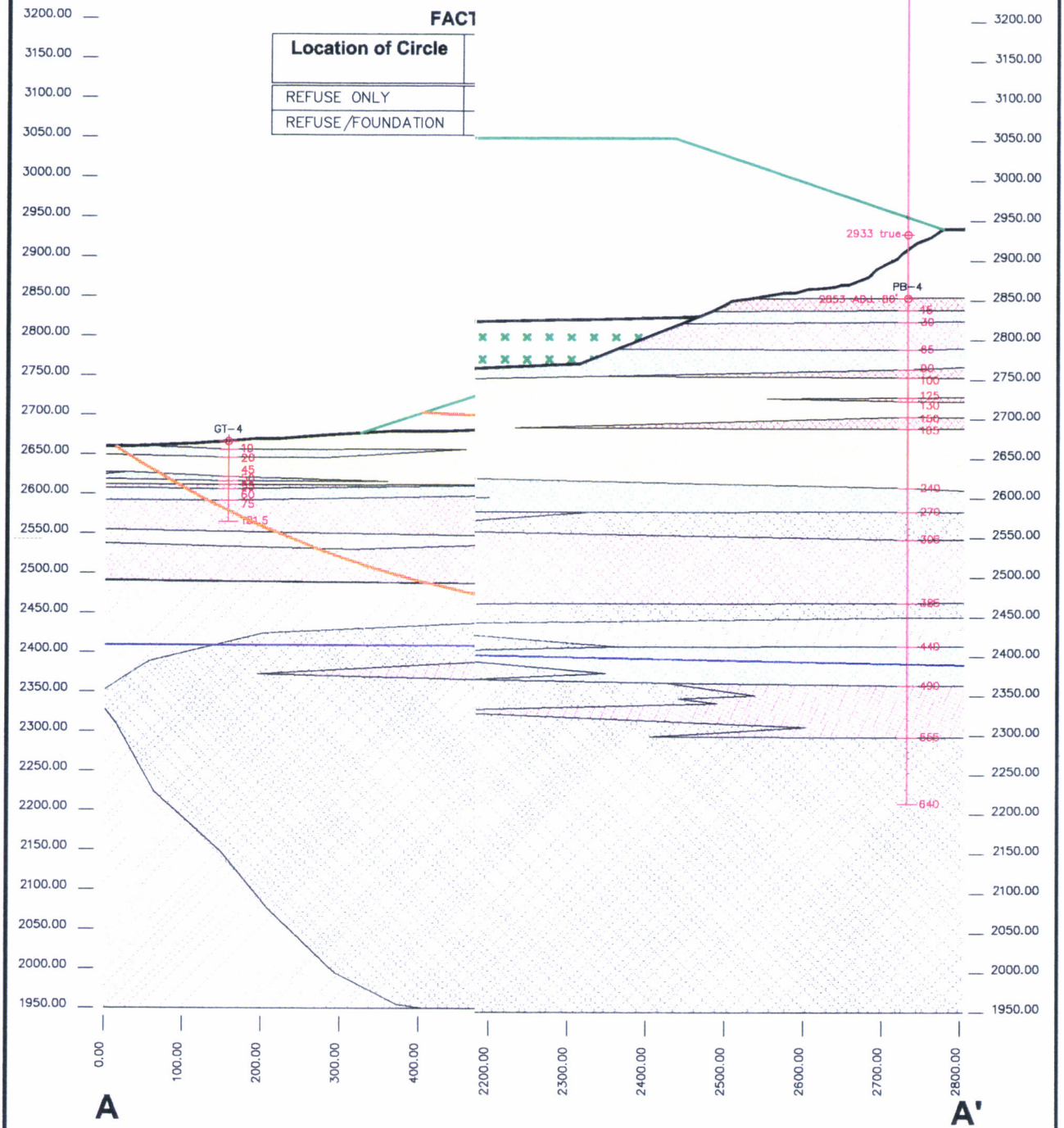
PICKLES BUTTE SANITARY LANDFILL
CANYON COUNTY, IDAHO



SCALE 1"= 600'
CONTOUR INTERVAL 10'

HOLLADAY ENGINEERING CO.

APPENDIX B: Geologic & Design Profile



GEOLOGIC & DESIGN PROFILE
PICKLES BUTTE SANITARY LANDFILL
CANYON COUNTY, IDAHO

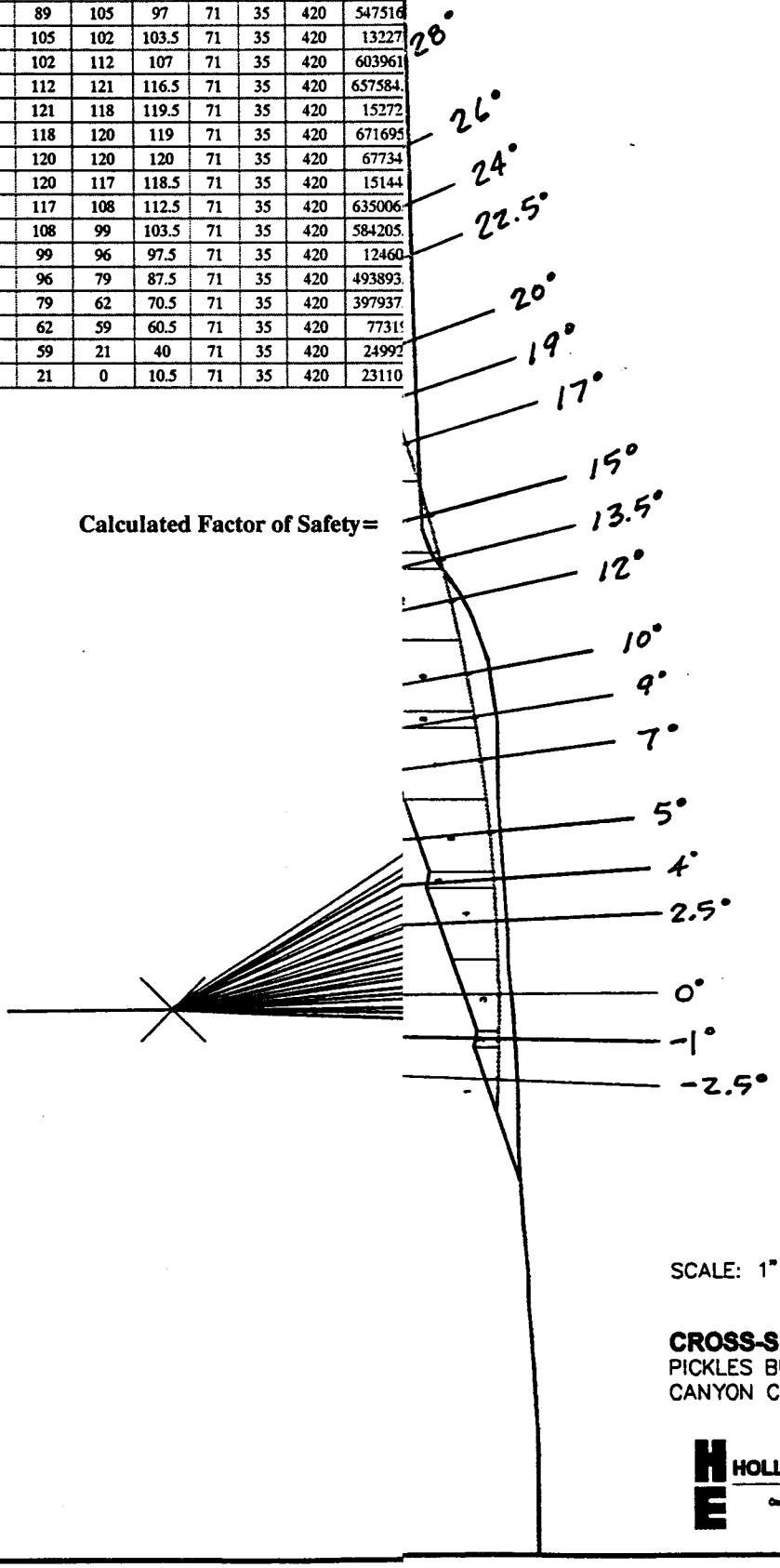
HOLLADAY ENGINEERING CO.

APPENDIX C: Hand Calculations

Location of Circle: **Center @ x=1050,y=4750;R=2050**

Slice	Width	h (l)	h(r)	h	γ	ϕ	c	Weigh
1	72.5	0	26	13	71	35	420	66917.
2	18	26	23	24.5	71	35	420	31311
3	79.5	23	50	36.5	71	35	420	206024.
4	79.5	50	73	61.5	71	35	420	347136.
5	18	73	70	71.5	71	35	420	91377
6	79.5	70	89	79.5	71	35	420	448737.
7	79.5	89	105	97	71	35	420	547516
8	18	105	102	103.5	71	35	420	13227
9	79.5	102	112	107	71	35	420	603961
10	79.5	112	121	116.5	71	35	420	657584.
11	18	121	118	119.5	71	35	420	15272
12	79.5	118	120	119	71	35	420	671695
13	79.5	120	120	120	71	35	420	67734
14	18	120	117	118.5	71	35	420	15144
15	79.5	117	108	112.5	71	35	420	635006
16	79.5	108	99	103.5	71	35	420	584205.
17	18	99	96	97.5	71	35	420	12460
18	79.5	96	79	87.5	71	35	420	493893.
19	79.5	79	62	70.5	71	35	420	397937
20	18	62	59	60.5	71	35	420	7731
21	88	59	21	40	71	35	420	24992
22	31	21	0	10.5	71	35	420	23110

Calculated Factor of Safety=



SCALE: 1" : 200'

CROSS-SECTION SLICES
PICKLES BUTTE SANITARY LANDFILL
CANYON COUNTY, IDAHO

HOLLADAY ENGINEERING CO.

PICKLES BUTTE GEOTECHNICAL EVALUATION OF FINAL DESIGN

PROJECT NO. 030496

CANYON COUNTY

LIQUEFACTION POTENTIAL EVALUATION

1. DETERMINE INITIAL σ_o & σ_o'

- SINCE UNSATURATED CONDITIONS → $\sigma_o' = \sigma_o$
- $\gamma = 113$ pcf
- $N_{60} = C_N \cdot N$ $\quad C_N = \left(\frac{1}{\sigma_o}\right)^{1/2}$ $\quad \sigma_o$ IN TONS/FT^2

DEPTH	σ_o	N	N_{60}
5	565	6	12
10	1130	5	7
15	1695	5	6
20	2260	5	5
25	2825	6	5
30	3390	10	8
35	3955	20	15

2. CRITICAL STRESS RATIO, MATERIAL, CSR

DEPTH	N_{60}	% FINES (FROM SIEVES)	CSR*
5	12	2	0.135
10	7	4	0.075
15	6	5	0.070
20	5	3	0.050
25	5	12	0.070
30	8	13	0.120
35	15	3	0.160

* CSR FROM FIG. 5.5

3. CALCULATE CORRECTED CSR:

- $CSR_L = CSR \cdot K_M \cdot K_\sigma \cdot K_\alpha$

$K_M = 1.02$ (FOR 7.3M EARTH QUAKE)

K_σ = FROM FIG 5.7

$K_\alpha = 1.0$ (LEVEL GROUND)

DEPTH	σ_o	K_σ	CSR_L
5	565	1.0	0.138
10	1130	1.0	0.077
15	1695	1.0	0.071
20	2260	0.98	0.050
25	2825	0.95	0.068 ~~0.078~~
30	3390	0.91	0.111
35	3955	0.87	0.142

4. CALCULATE CRITICAL STRESS RATIO CAUSED BY EARTHQUAKE

- $r_d = 1 - 0.015\,D$ D in METERS
- $CSR_{EQ} = 0.65 \left(\frac{a_{max}}{g}\right) r_d \left(\frac{\sigma_o}{\sigma_o'}\right)$ $\left(\frac{a_{max}}{g}\right) = 0.13$ ↳ 1.0

DEPTH	r_d	CSR_{EQ}	CSR_L	F.S.
5	0.98	0.083	0.138	1.66
10	0.95	0.080	0.077	0.96 *
15	0.93	0.079	0.071	0.90 *
20	0.91	0.077	0.050	0.65 *
25	0.89	0.075	~~0.078~~ 0.068	0.91 *
30	0.86	0.073	0.111	1.52
35	0.84	0.071	0.142	2.00

* LIQUEFACTION IS POSSIBLE

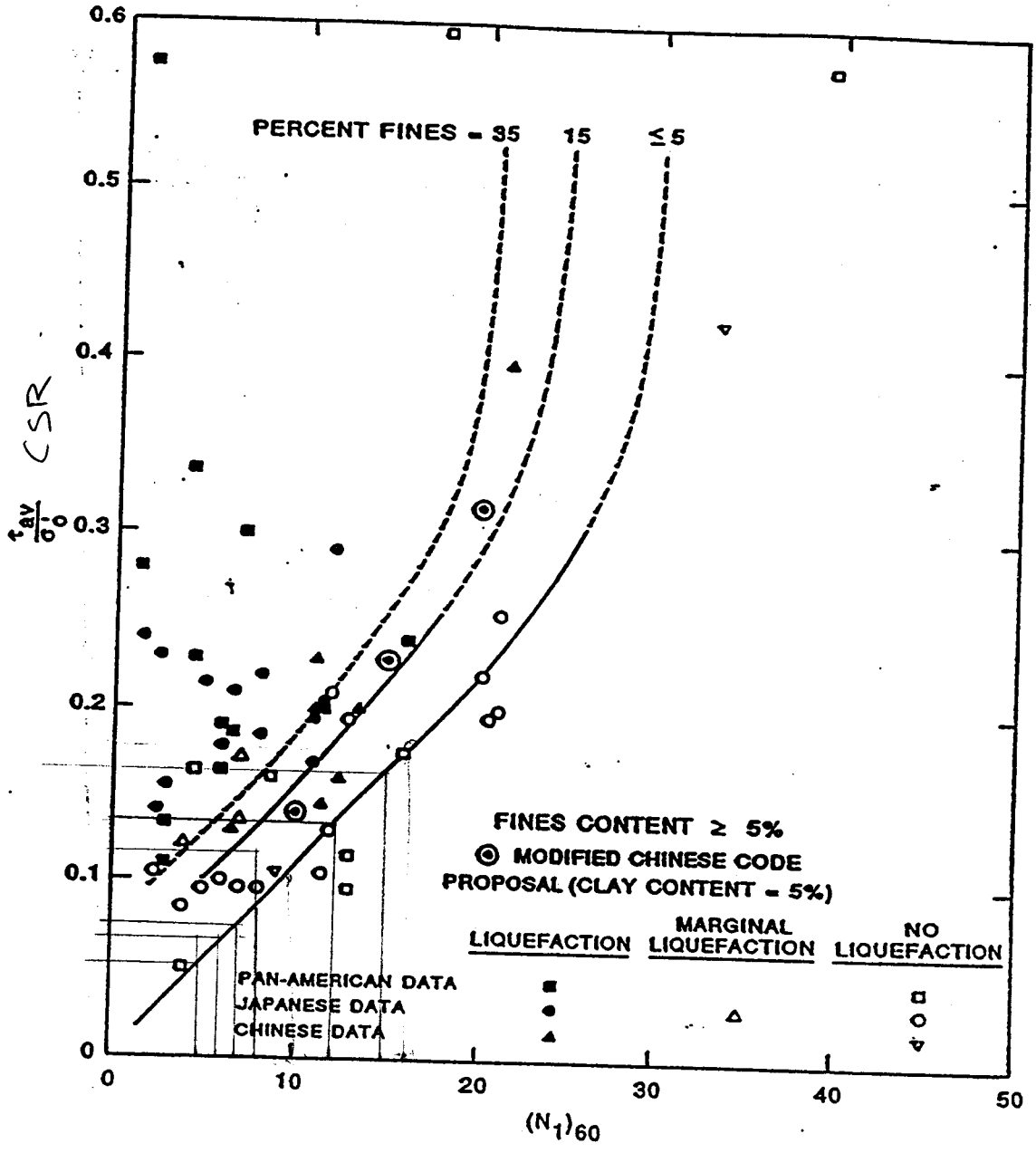


Figure 5.5 Relationships Between Stress Ratio Causing Liquefaction and $(N_1)_{60}$ Values for Sands for M 7.5 Earthquakes (Seed et al., 1985).

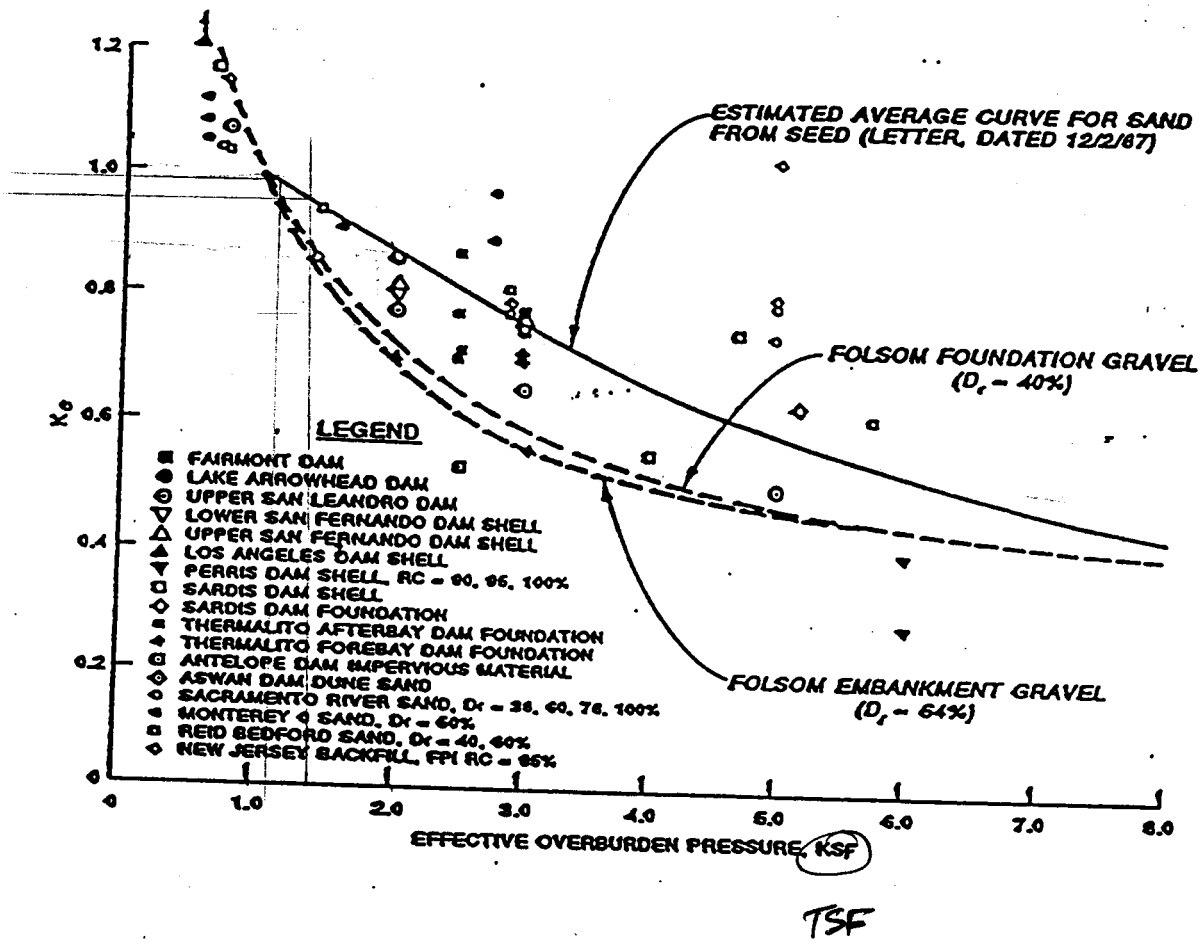
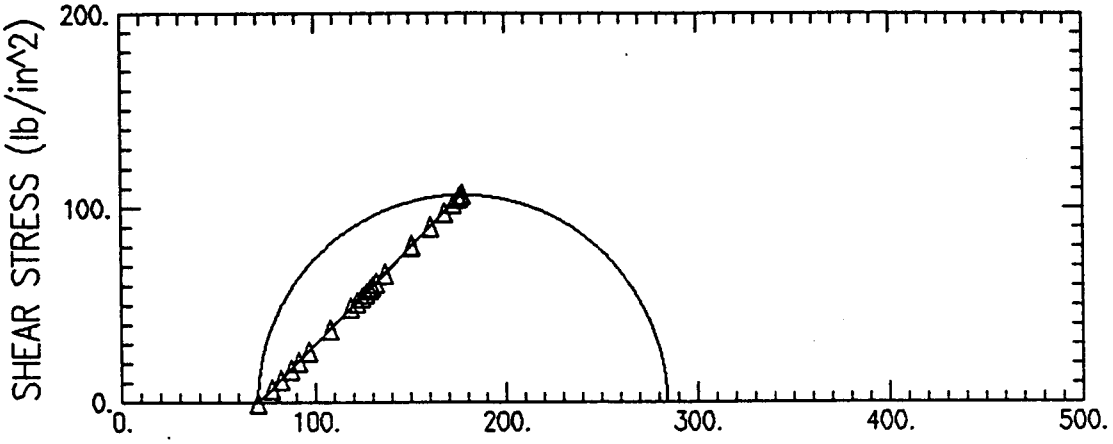


Figure 5.7 Curves for Estimation of Correction Factor k_σ (Harder 1988, and Hynes 1988, as Quoted in Marcuson et al., 1990)

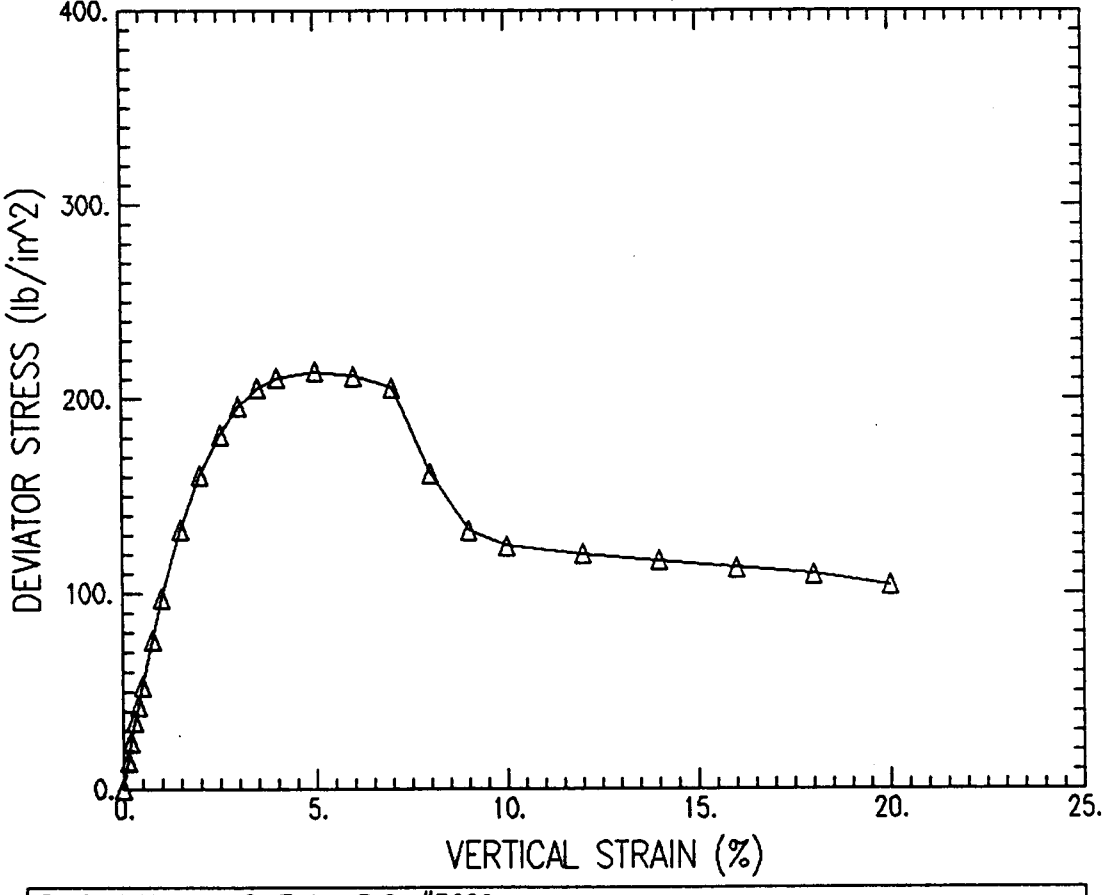
APPENDIX D: Laboratory Reports

Woodward-Clyde

UNDRAINED TRIAXIAL TEST



NORMAL STRESS (lb/in^2)



VERTICAL STRAIN (%)

Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-4	@70 PSI	70-71 FEET	GT4-70	GT4-70.UU

Wed Mar 19 17:14:58 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-4
Sample No. : @70 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT4-70
Test Date : 03/11/97
Depth : 70-71 FEET
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 70 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	70.00	70.00
2)	0.004	0.11	1.61	0.00	22.98	22.98	14.28	84.28	84.28
3)	0.007	0.20	1.61	0.00	38.49	38.49	23.89	93.89	93.89
4)	0.011	0.31	1.61	0.00	56.30	56.30	34.88	104.88	104.88
5)	0.014	0.39	1.62	0.00	68.94	68.94	42.65	112.65	112.65
6)	0.018	0.50	1.62	0.00	86.18	86.18	53.21	123.21	123.21
7)	0.027	0.75	1.63	0.00	124.09	124.09	76.30	146.30	146.30
8)	0.036	1.00	1.63	0.00	159.71	159.71	97.78	167.78	167.78
9)	0.054	1.51	1.65	0.00	219.46	219.46	133.22	203.22	203.22
10)	0.072	2.01	1.66	0.00	267.72	267.72	161.12	231.12	231.12
11)	0.090	2.51	1.68	0.00	304.49	304.49	181.66	251.66	251.66
12)	0.107	2.99	1.69	0.00	331.49	331.49	196.13	266.13	266.13
13)	0.125	3.49	1.71	0.00	350.45	350.45	205.52	275.52	275.52
14)	0.143	3.99	1.72	0.00	362.51	362.51	210.71	280.71	280.71
15)	0.179	5.00	1.75	0.00	375.15	375.15	214.14	284.14	284.14
16)	0.215	6.00	1.78	0.00	378.02	378.02	211.84	281.84	281.84
17)	0.251	7.01	1.82	0.00	374.00	374.00	205.69	275.69	275.69
18)	0.287	8.01	1.85	0.00	299.89	299.89	161.80	231.80	231.80
19)	0.322	8.99	1.89	0.00	250.48	250.48	132.61	202.61	202.61
20)	0.358	9.99	1.93	0.00	239.57	239.57	124.33	194.33	194.33
21)	0.430	12.00	2.01	0.00	241.29	241.29	120.19	190.19	190.19
22)	0.502	14.01	2.10	0.00	244.74	244.74	116.80	186.80	186.80
23)	0.573	15.99	2.19	0.00	247.61	247.61	113.08	183.08	183.08
24)	0.645	18.00	2.29	0.00	251.63	251.63	109.67	179.67	179.67
25)	0.717	20.01	2.41	0.00	250.48	250.48	103.95	173.95	173.95

Wed Mar 19 17:31:24 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT4-70
Boring No. : GT-4
Test Date : 03/11/97
Tested by : C. WASON
Sample No. : @70 PSI
Depth : 70-71 FEET
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 70 PSI

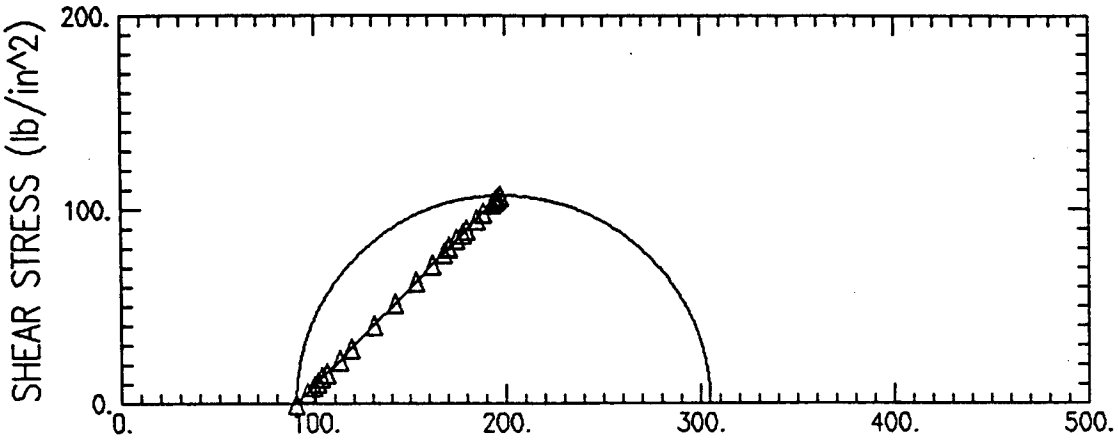
Liquid Limit : 0
Plastic Limit : 0
Specific Gravity : 2.72

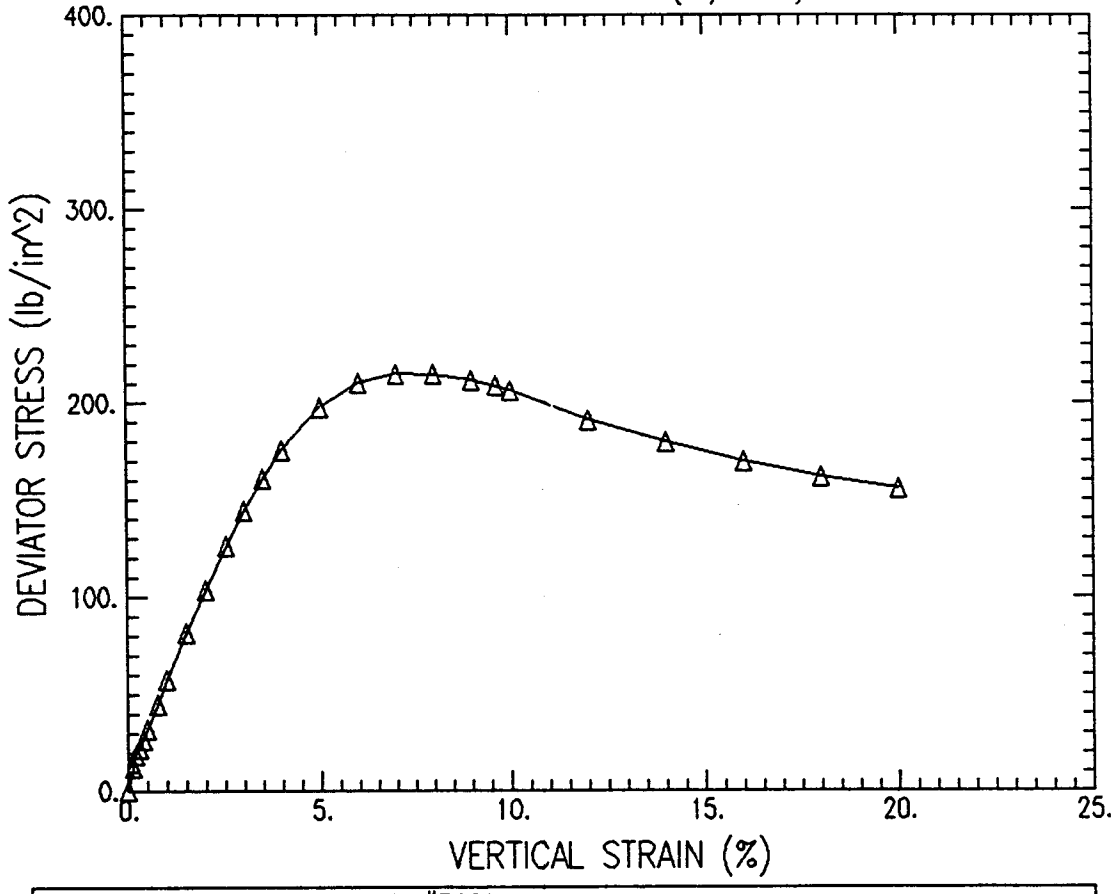
	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	135.70	135.70	0.00
WT CONTAINER + DRY SOIL (gm)	128.20	128.20	0.00
WT WATER (gm)	7.50	7.50	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	128.20	128.20	0.00
WATER CONTENT (%)	5.85	5.85	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	5.85	5.85
VOID RATIO	0.82	0.82
WET DENSITY (lb/ft^3)	98.78	98.78
DRY DENSITY (lb/ft^3)	93.32	93.32
DEGREE OF SATURATION (%)	19.43	19.43

Maximum Shear Stress = 107.07 (lb/in^2) at a Vertical Strain of 5.00 %

UNDRAINED TRIAXIAL TEST





Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-4	@90 PSI	90-91 FEET	GT4-90	GT4-90.UU

Wed Mar 19 17:17:01 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-4
Sample No. : @90 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT4-90
Test Date : 03/12/97
Depth : 90-91 FEET
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. GRAYISH BROWN FINE SANDY SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 90 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	90.00	90.00
2)	0.004	0.11	1.61	0.00	19.64	19.64	12.20	102.20	102.20
3)	0.007	0.20	1.61	0.00	30.61	30.61	19.00	109.00	109.00
4)	0.011	0.31	1.61	0.00	36.38	36.38	22.54	112.54	112.54
5)	0.014	0.39	1.62	0.00	43.89	43.89	27.15	117.15	117.15
6)	0.018	0.50	1.62	0.00	51.98	51.98	32.09	122.09	122.09
7)	0.027	0.75	1.63	0.00	72.77	72.77	44.74	134.74	134.74
8)	0.036	1.00	1.63	0.00	93.56	93.56	57.28	147.28	147.28
9)	0.054	1.51	1.65	0.00	133.98	133.98	81.33	171.33	171.33
10)	0.072	2.01	1.66	0.00	172.10	172.10	103.57	193.57	193.57
11)	0.090	2.51	1.68	0.00	211.37	211.37	126.10	216.10	216.10
12)	0.107	2.99	1.69	0.00	243.71	243.71	144.19	234.19	234.19
13)	0.125	3.49	1.71	0.00	274.31	274.31	160.87	250.87	250.87
14)	0.143	3.99	1.72	0.00	302.61	302.61	175.89	265.89	265.89
15)	0.179	5.00	1.75	0.00	346.50	346.50	197.79	287.79	287.79
16)	0.215	6.00	1.78	0.00	375.38	375.38	210.36	300.36	300.36
17)	0.251	7.01	1.82	0.00	390.97	390.97	215.02	305.02	305.02
18)	0.287	8.01	1.85	0.00	398.48	398.48	214.99	304.99	304.99
19)	0.322	8.99	1.89	0.00	400.21	400.21	211.87	301.87	301.87
20)	0.345	9.63	1.91	0.00	399.63	399.63	208.90	298.90	298.90
21)	0.358	9.99	1.93	0.00	397.90	397.90	206.50	296.50	296.50
22)	0.430	12.00	2.01	0.00	383.46	383.46	191.01	281.01	281.01
23)	0.502	14.01	2.10	0.00	376.53	376.53	179.71	269.71	269.71
24)	0.573	15.99	2.19	0.00	371.91	371.91	169.85	259.85	259.85
25)	0.645	18.00	2.29	0.00	371.33	371.33	161.84	251.84	251.84
26)	0.717	20.01	2.41	0.00	375.38	375.38	155.78	245.78	245.78

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT4-90
Boring No. : GT-4
Test Date : 03/12/97
Tested by : C. WASON
Sample No. : @90 PSI
Depth : 90-91 FEET
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : LT. GRAYISH BROWN FINE SANDY SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 90 PSI

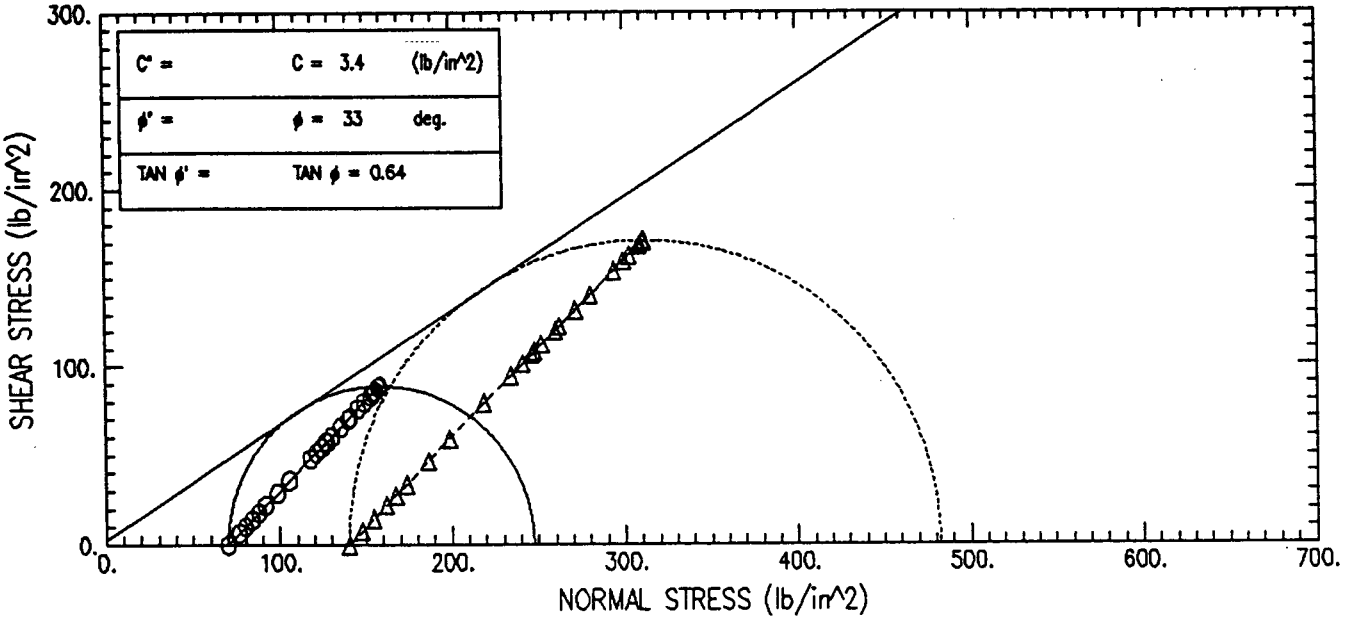
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	166.00	166.00	0.00
WT CONTAINER + DRY SOIL (gm)	138.43	138.43	0.00
WT WATER (gm)	27.57	27.57	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	138.43	138.43	0.00
WATER CONTENT (%)	19.92	19.92	0.00

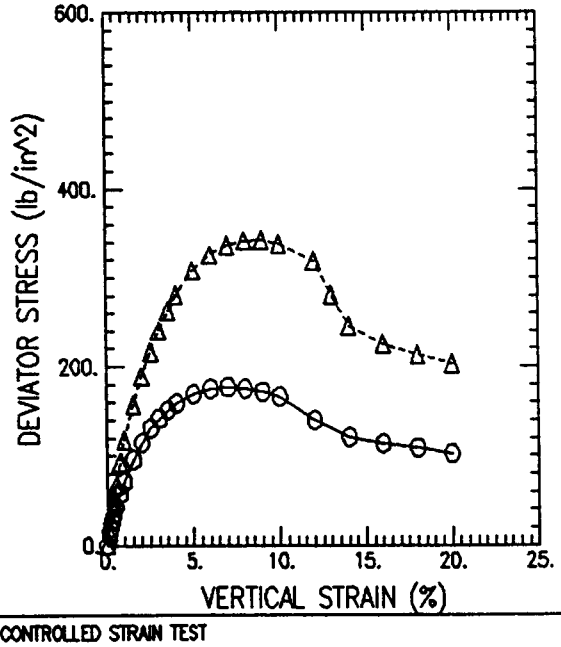
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	19.92	19.92
VOID RATIO	0.85	0.85
WET DENSITY (lb/ft^3)	109.90	109.90
DRY DENSITY (lb/ft^3)	91.65	91.65
DEGREE OF SATURATION (%)	63.58	63.58

Maximum Shear Stress = 107.51 (lb/in^2) at a Vertical Strain of 7.01 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress

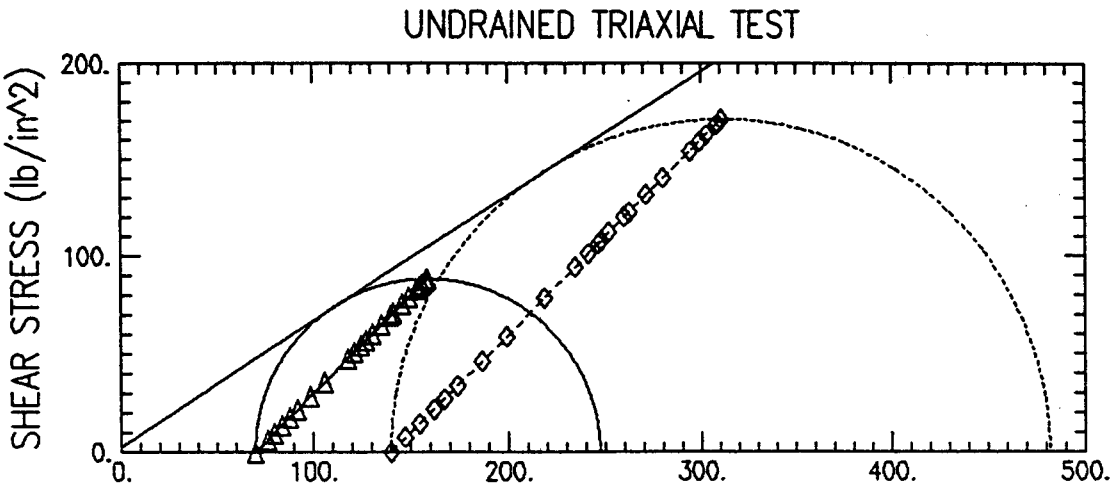


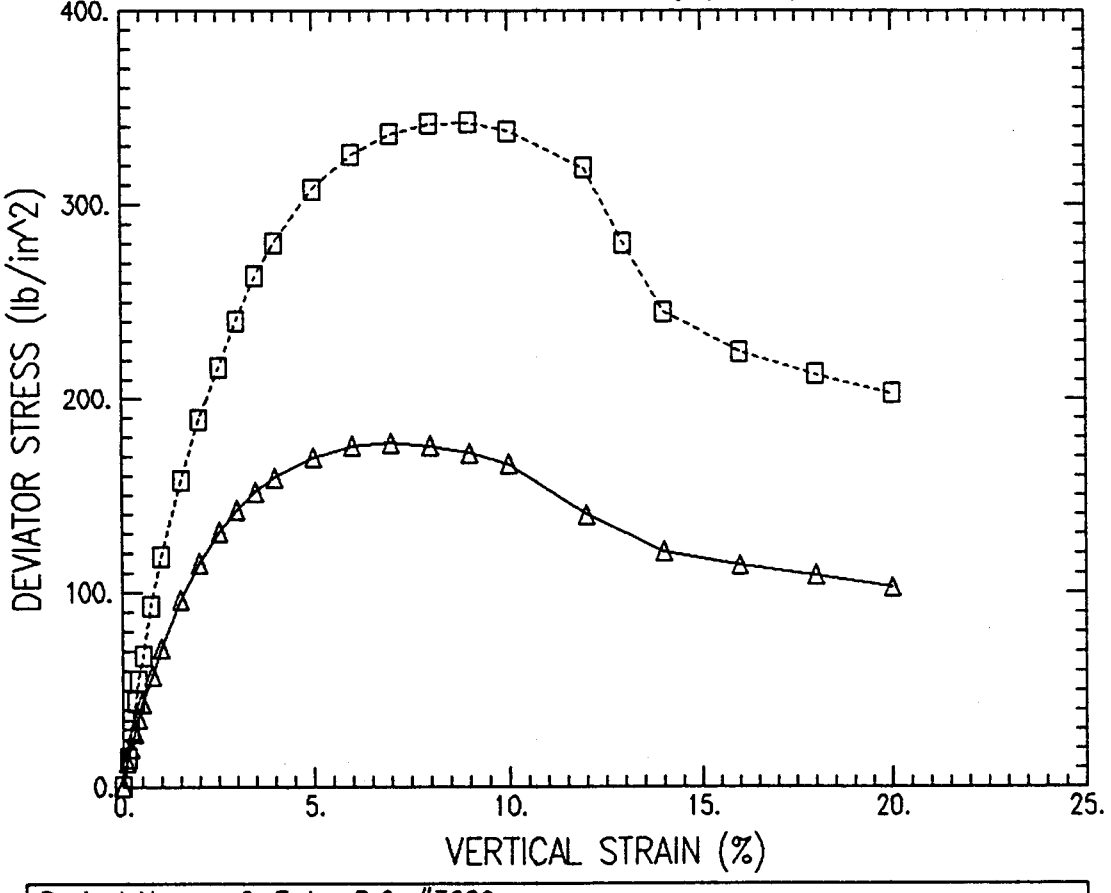
SYMBOL		○	△		
TEST NO.		GT5-70A	GT5-70B		
INITIAL	WATER CONTENT (%)	4.87	5.48		
	DRY DENSITY (lb/ft^3)	97.07	97.29		
	SATURATION (%)	17.69	20.03		
	VOID RATIO	0.748	0.744		
BEFORE SHEAR	WATER CONTENT (%)	4.87	5.48		
	DRY DENSITY (lb/ft^3)	97.07	97.29		
	SATURATION (%)	17.69	20.03		
	VOID RATIO	0.748	0.744		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		70.00	140.00		
MAX. DEV. STRESS (lb/in^2)		177.22	342.11		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.74	3.50		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) BROWN SILTY SAND WITH CLAYSTONE & SANDSTONE FRAGS 2) BROWN SILTY SAND

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 70 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 140 PSI				BORING NO. GT-5	SAMPLE NO.	A @70 PSI	B @140 PSI		
				TECH. C. WASON	DEPTH/ELEV	70-71 FEET	70-71 FEET		
				LABORATORY	DATE	03/12/97	03/12/97		
				TRIAXIAL COMPRESSION TEST REPORT					





Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-5	A @70 PSI	70-71 FEET	GT5-70A	GT5A-70.UU
GT-5	B @140 PSI	70-71 FEET	GT5-70B	GT5B-70.UU

Failure Criteria: Peak Deviator Stress

Wed Mar 19 17:23:07 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-5
Sample No. : A @70 PSI
Sample Type : TUBE
Soil Description : BROWN SILTY SAND WITH CLAYSTONE & SANDSTONE FRAGS
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 70 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT5-70A
Test Date : 03/12/97
Depth : 70-71 FEET
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 3.740 (in)
Area : 1.61 (in^2)
Volume : 6.01 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : None

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	70.00	70.00
2)	0.004	0.11	1.61	0.00	20.79	20.79	12.95	82.95	82.95
3)	0.007	0.19	1.61	0.00	32.34	32.34	20.14	90.14	90.14
4)	0.011	0.29	1.61	0.00	45.05	45.05	28.05	98.05	98.05
5)	0.015	0.40	1.61	0.00	57.75	57.75	35.96	105.96	105.96
6)	0.019	0.51	1.61	0.00	70.46	70.46	43.87	113.87	113.87
7)	0.028	0.75	1.61	0.00	93.56	93.56	58.25	128.25	128.25
8)	0.037	0.99	1.61	0.00	116.66	116.66	72.64	142.64	142.64
9)	0.056	1.50	1.61	0.00	158.24	158.24	98.53	168.53	168.53
10)	0.075	2.01	1.61	0.00	190.58	190.58	118.66	188.66	188.66
11)	0.094	2.51	1.61	0.00	219.45	219.45	136.64	206.64	206.64
12)	0.112	2.99	1.61	0.00	240.24	240.24	149.59	219.59	219.59
13)	0.131	3.50	1.61	0.00	258.72	258.72	161.10	231.10	231.10
14)	0.150	4.01	1.61	0.00	273.74	273.74	170.45	240.45	240.45
15)	0.187	5.00	1.61	0.00	296.84	296.84	184.83	254.83	254.83
16)	0.224	5.99	1.61	0.00	313.01	313.01	194.90	264.90	264.90
17)	0.262	7.01	1.61	0.00	322.25	322.25	200.65	270.65	270.65
18)	0.299	7.99	1.61	0.00	325.13	325.13	202.45	272.45	272.45
19)	0.337	9.01	1.61	0.00	324.56	324.56	202.09	272.09	272.09
20)	0.374	10.00	1.61	0.00	320.51	320.51	199.57	269.57	269.57
21)	0.449	12.01	1.61	0.00	280.67	280.67	174.76	244.76	244.76
22)	0.524	14.01	1.61	0.00	252.95	252.95	157.50	227.50	227.50
23)	0.598	15.99	1.61	0.00	249.48	249.48	155.34	225.34	225.34
24)	0.673	17.99	1.61	0.00	249.48	249.48	155.34	225.34	225.34
25)	0.748	20.00	1.61	0.00	247.17	247.17	153.90	223.90	223.90

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT5-70A
Boring No. : GT-5
Test Date : 03/12/97
Tested by : C. WASON
Sample No. : A @70 PSI
Depth : 70-71 FEET
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : BROWN SILTY SAND WITH CLAYSTONE & SANDSTONE FRAGS
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 70 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	160.50	159.40	0.00
WT CONTAINER + DRY SOIL (gm)	153.05	152.00	0.00
WT WATER (gm)	7.45	7.40	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	153.05	152.00	0.00
WATER CONTENT (%)	4.87	4.87	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	4.87	4.87
VOID RATIO	0.75	0.75
WET DENSITY (lb/ft^3)	101.80	101.80
DRY DENSITY (lb/ft^3)	97.07	97.07
DEGREE OF SATURATION (%)	17.69	17.69

Maximum Shear Stress = 101.22 (lb/in^2) at a Vertical Strain of 7.99 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-5
Sample No. : B @140 PSI
Sample Type : TUBE
Soil Description : BROWN SILTY SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 140 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT5-708
Test Date : 03/12/97
Depth : 70-71 FEET
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 3.505 (in)
Area : 1.61 (in^2)
Volume : 5.63 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	140.00	140.00
2)	0.004	0.11	1.61	0.00	24.26	24.26	15.07	155.07	155.07
3)	0.007	0.20	1.61	0.00	47.36	47.36	29.39	169.39	169.39
4)	0.011	0.31	1.61	0.00	71.61	71.61	44.36	184.36	184.36
5)	0.014	0.40	1.62	0.00	88.94	88.94	55.01	195.01	195.01
6)	0.018	0.51	1.62	0.00	109.73	109.73	67.74	207.74	207.74
7)	0.026	0.74	1.63	0.00	151.31	151.31	93.05	233.05	233.05
8)	0.035	1.00	1.63	0.00	192.89	192.89	118.10	258.10	258.10
9)	0.053	1.51	1.65	0.00	259.88	259.88	157.74	297.74	297.74
10)	0.070	2.00	1.66	0.00	314.16	314.16	189.11	329.11	329.11
11)	0.088	2.51	1.68	0.00	362.67	362.67	216.37	356.37	356.37
12)	0.105	3.00	1.69	0.00	406.56	406.56	240.51	380.51	380.51
13)	0.123	3.51	1.71	0.00	449.30	449.30	263.40	403.40	403.40
14)	0.140	3.99	1.72	0.00	482.79	482.79	280.60	420.60	420.60
15)	0.175	4.99	1.75	0.00	539.39	539.39	307.91	447.91	447.91
16)	0.210	5.99	1.78	0.00	580.97	580.97	325.62	465.62	465.62
17)	0.245	6.99	1.82	0.00	611.00	611.00	336.12	476.12	476.12
18)	0.280	7.99	1.85	0.00	632.94	632.94	341.64	481.64	481.64
19)	0.315	8.99	1.89	0.00	646.22	646.22	342.11	482.11	482.11
20)	0.350	9.99	1.93	0.00	650.84	650.84	337.81	477.81	477.81
21)	0.420	11.98	2.01	0.00	639.87	639.87	318.85	458.85	458.85
22)	0.455	12.98	2.05	0.00	575.19	575.19	280.66	420.66	420.66
23)	0.491	14.01	2.10	0.00	513.98	513.98	245.31	385.31	385.31
24)	0.561	16.01	2.19	0.00	492.03	492.03	224.64	364.64	364.64
25)	0.631	18.00	2.29	0.00	488.57	488.57	212.93	352.93	352.93
26)	0.701	20.00	2.41	0.00	488.57	488.57	202.81	342.81	342.81

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT5-70B
Boring No. : GT-5
Test Date : 03/12/97
Tested by : C. WASON
Sample No. : B @140 PSI
Depth : 70-71 FEET
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : BROWN SILTY SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 140 PSI

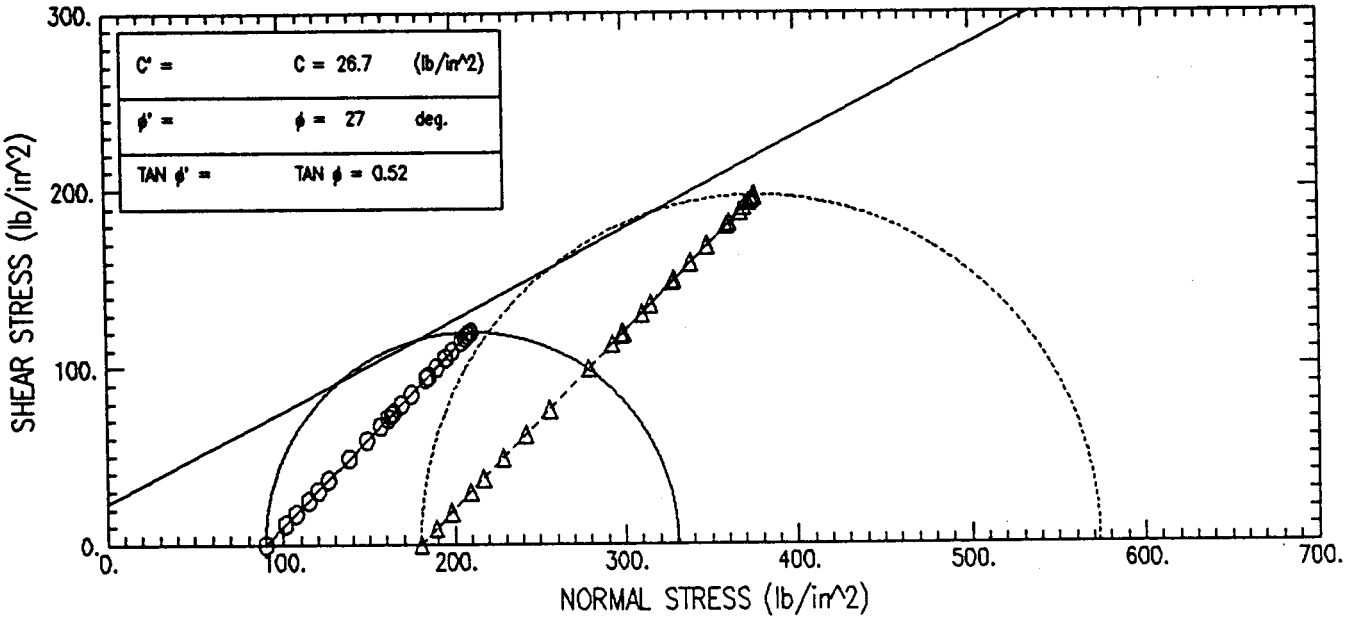
Liquid Limit : 0
Plastic Limit : 0
Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	151.60	151.10	0.00
WT CONTAINER + DRY SOIL (gm)	143.72	143.25	0.00
WT WATER (gm)	7.88	7.85	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	143.72	143.25	0.00
WATER CONTENT (%)	5.48	5.48	0.00

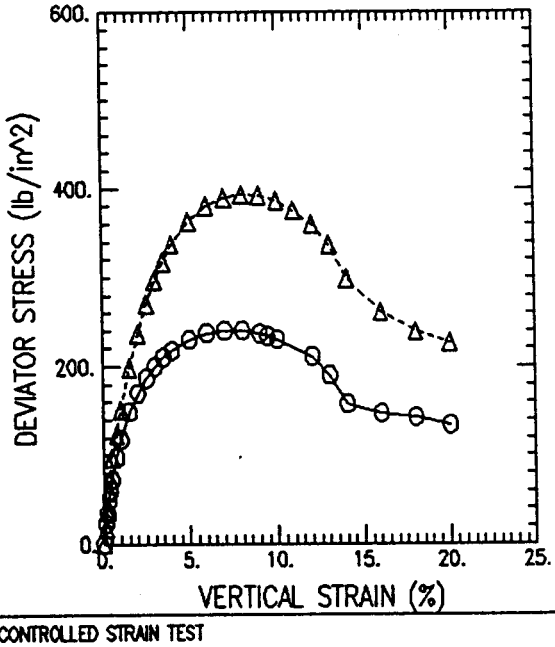
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	5.48	5.48
VOID RATIO	0.74	0.74
WET DENSITY (lb/ft^3)	102.63	102.63
DRY DENSITY (lb/ft^3)	97.29	97.29
DEGREE OF SATURATION (%)	20.03	20.03

Maximum Shear Stress = 171.05 (lb/in^2) at a Vertical Strain of 8.99 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



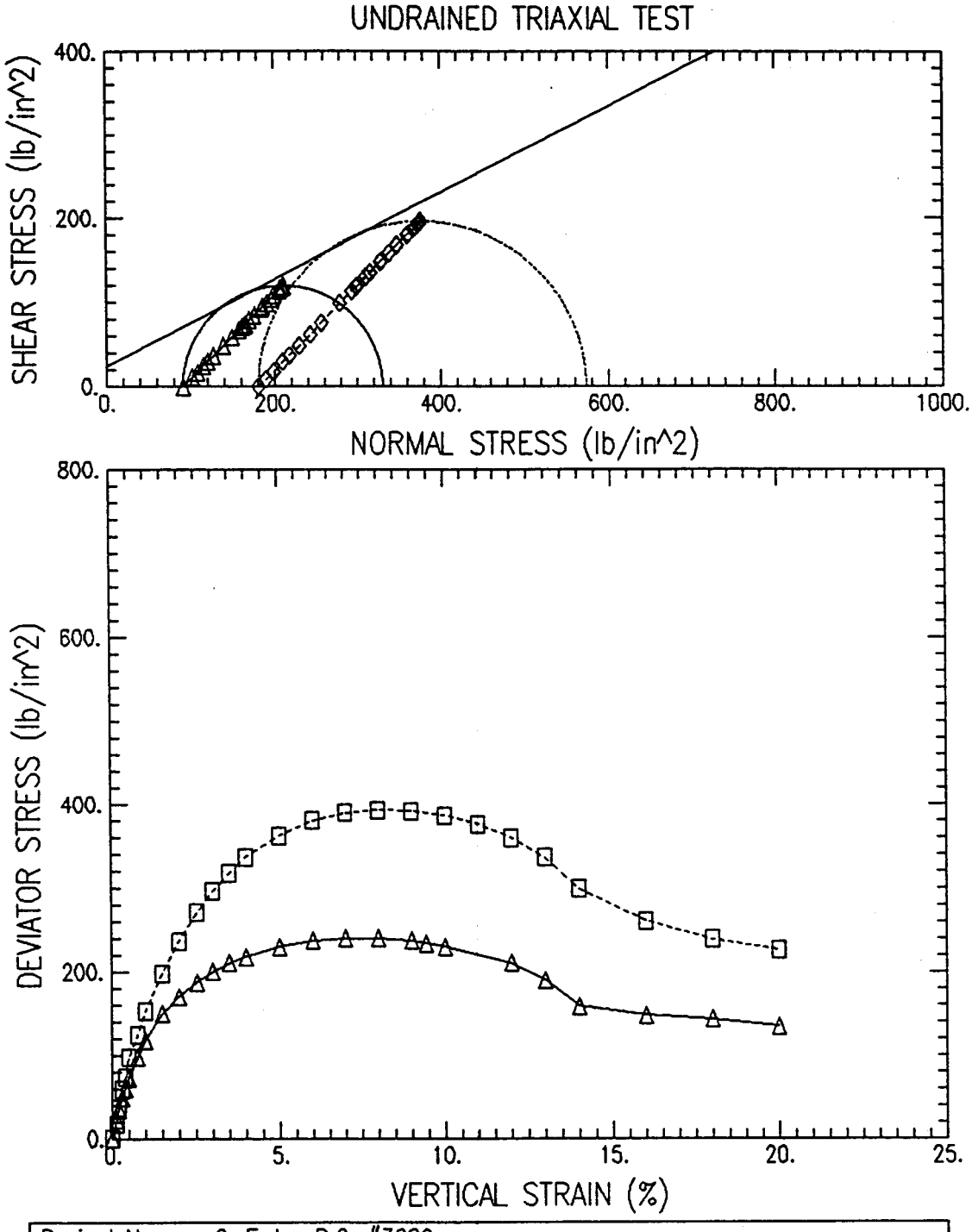
SYMBOL		○	△		
TEST NO.		GT5-90A	GT5-90B		
INITIAL	WATER CONTENT (%)	4.91	4.73		
	DRY DENSITY (lb/ft^3)	91.22	91.53		
	SATURATION (%)	15.66	15.19		
	VOID RATIO	0.847	0.841		
BEFORE SHEAR	WATER CONTENT (%)	4.91	4.73		
	DRY DENSITY (lb/ft^3)	91.22	91.53		
	SATURATION (%)	15.66	15.19		
	VOID RATIO	0.847	0.841		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		90.00	180.00		
MAX. DEV. STRESS (lb/in^2)		240.43	393.22		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.58	3.58		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) BROWN SILTY SAND 2) BROWN SILTY SAND

LL	PL	PI	GS 2.70	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 90 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 180 PSI				BORING NO. GT-5	SAMPLE NO.	A @90 PSI	B @180 PSI		
				TECH. C. WASON	DEPTH/ELEV	90-91 FEET	90-91 FEET		
				LABORATORY	DATE	03/13/97	03/13/97		
				TRIAXIAL COMPRESSION TEST REPORT					

Woodward-Clyde



Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-5	A @90 PSI	90-91 FEET	GT5-90A	GT5A-90.UU
GT-5	B @180 PSI	90-91 FEET	GT5-90B	GT5B-90.UU

Failure Criteria: Peak Deviator Stress

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-5
Sample No. : A @90 PSI
Sample Type : TUBE
Soil Description : BROWN SILTY SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 90 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT5-90A
Test Date : 03/13/97
Depth : 90-91 FEET
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	90.00	90.00
2)	0.004	0.11	1.61	0.00	36.96	36.96	22.97	112.97	112.97
3)	0.007	0.20	1.61	0.00	56.60	56.60	35.12	125.12	125.12
4)	0.011	0.31	1.61	0.00	80.85	80.85	50.08	140.08	140.08
5)	0.014	0.39	1.62	0.00	98.18	98.18	60.73	150.73	150.73
6)	0.018	0.50	1.62	0.00	117.81	117.81	72.74	162.74	162.74
7)	0.027	0.75	1.63	0.00	158.24	158.24	97.29	187.29	187.29
8)	0.036	1.00	1.63	0.00	192.89	192.89	118.09	208.09	208.09
9)	0.054	1.51	1.65	0.00	246.02	246.02	149.34	239.34	239.34
10)	0.072	2.01	1.66	0.00	282.98	282.98	170.30	260.30	260.30
11)	0.090	2.51	1.68	0.00	314.16	314.16	187.43	277.43	277.43
12)	0.107	2.99	1.69	0.00	338.42	338.42	200.23	290.23	290.23
13)	0.125	3.49	1.71	0.00	359.21	359.21	210.66	300.66	300.66
14)	0.143	3.99	1.72	0.00	375.38	375.38	218.19	308.19	308.19
15)	0.179	5.00	1.75	0.00	403.10	403.10	230.09	320.09	320.09
16)	0.215	6.00	1.78	0.00	423.89	423.89	237.54	327.54	327.54
17)	0.251	7.01	1.82	0.00	437.17	437.17	240.43	330.43	330.43
18)	0.287	8.01	1.85	0.00	445.25	445.25	240.23	330.23	330.23
19)	0.322	8.99	1.89	0.00	448.14	448.14	237.25	327.25	327.25
20)	0.338	9.43	1.91	0.00	446.41	446.41	234.26	324.26	324.26
21)	0.358	9.99	1.93	0.00	443.52	443.52	230.18	320.18	320.18
22)	0.430	12.00	2.01	0.00	423.89	423.89	211.15	301.15	301.15
23)	0.466	13.01	2.05	0.00	390.39	390.39	190.39	280.39	280.39
24)	0.502	14.01	2.10	0.00	331.49	331.49	158.21	248.21	248.21
25)	0.573	15.99	2.19	0.00	322.25	322.25	147.17	237.17	237.17
26)	0.645	18.00	2.29	0.00	328.02	328.02	142.97	232.97	232.97
27)	0.717	20.01	2.41	0.00	323.40	323.40	134.21	224.21	224.21

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-5
Sample No. : A @90 PSI
Sample Type : TUBE
Soil Description : BROWN SILTY SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 90 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT5-90A
Test Date : 03/13/97
Depth : 90-91 FEET
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.7

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	144.55	144.10	0.00
WT CONTAINER + DRY SOIL (gm)	137.78	137.35	0.00
WT WATER (gm)	6.77	6.75	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	137.78	137.35	0.00
WATER CONTENT (%)	4.91	4.91	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	4.91	4.91
VOID RATIO	0.85	0.85
WET DENSITY (lb/ft^3)	95.70	95.70
DRY DENSITY (lb/ft^3)	91.22	91.22
DEGREE OF SATURATION (%)	15.66	15.66

Maximum Shear Stress = 120.21 (lb/in^2) at a Vertical Strain of 7.01 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-5
Sample No. : B @180 PSI
Sample Type : TUBE
Soil Description : BROWN SILTY SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 180 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT5-908
Test Date : 03/13/97
Depth : 90-91 FEET
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	180.00	180.00
2)	0.004	0.11	1.61	0.00	28.88	28.88	17.95	197.95	197.95
3)	0.007	0.20	1.61	0.00	58.91	58.91	36.56	216.56	216.56
4)	0.011	0.31	1.61	0.00	95.87	95.87	59.39	239.39	239.39
5)	0.014	0.39	1.62	0.00	120.12	120.12	74.31	254.31	254.31
6)	0.018	0.50	1.62	0.00	158.24	158.24	97.70	277.70	277.70
7)	0.027	0.75	1.63	0.00	202.13	202.13	124.28	304.28	304.28
8)	0.036	1.00	1.63	0.00	248.33	248.33	152.03	332.03	332.03
9)	0.054	1.51	1.65	0.00	326.87	326.87	198.42	378.42	378.42
10)	0.072	2.01	1.66	0.00	393.86	393.86	237.03	417.03	417.03
11)	0.090	2.51	1.68	0.00	453.92	453.92	270.80	450.80	450.80
12)	0.107	2.99	1.69	0.00	501.27	501.27	296.59	476.59	476.59
13)	0.125	3.49	1.71	0.00	541.70	541.70	317.68	497.68	497.68
14)	0.143	3.99	1.72	0.00	579.81	579.81	337.01	517.01	517.01
15)	0.179	5.00	1.75	0.00	635.25	635.25	362.61	542.61	542.61
16)	0.215	6.00	1.78	0.00	679.14	679.14	380.59	560.59	560.59
17)	0.251	7.01	1.82	0.00	708.59	708.59	389.70	569.70	569.70
18)	0.287	8.01	1.85	0.00	728.81	728.81	393.22	573.22	573.22
19)	0.322	8.99	1.89	0.00	740.36	740.36	391.94	571.94	571.94
20)	0.358	9.99	1.93	0.00	743.82	743.82	386.02	566.02	566.02
21)	0.394	11.00	1.97	0.00	738.05	738.05	375.33	555.33	555.33
22)	0.430	12.00	2.01	0.00	721.88	721.88	359.58	539.58	539.58
23)	0.466	13.01	2.05	0.00	689.54	689.54	336.28	516.28	516.28
24)	0.502	14.01	2.10	0.00	626.01	626.01	298.77	478.77	478.77
25)	0.573	15.99	2.19	0.00	571.73	571.73	261.11	441.11	441.11
26)	0.645	18.00	2.29	0.00	548.63	548.63	239.12	419.12	419.12
27)	0.717	20.01	2.41	0.00	545.16	545.16	226.24	406.24	406.24

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-5
Sample No. : B @180 PSI
Sample Type : TUBE
Soil Description : BROWN SILTY SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 180 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT5-90B
Test Date : 03/13/97
Depth : 90-91 FEET
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

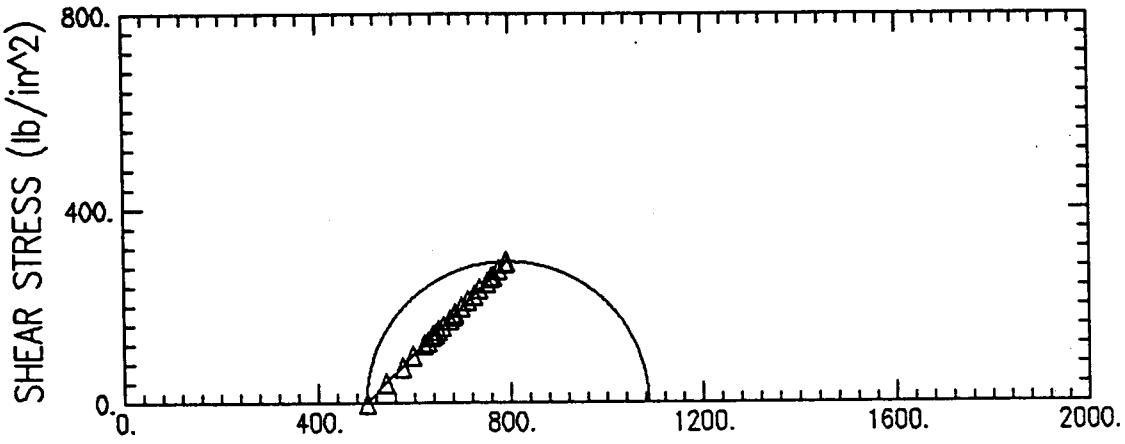
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.7

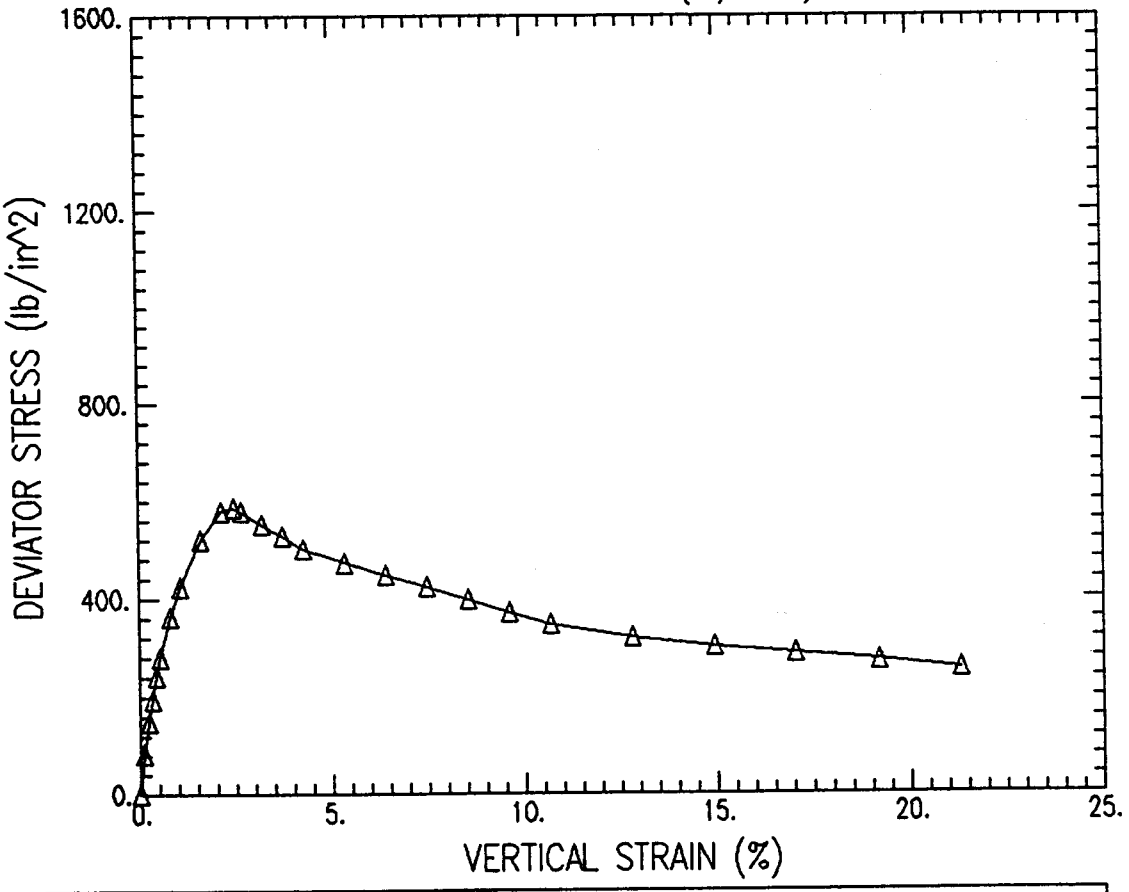
	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	144.80	144.32	0.00
WT CONTAINER + DRY SOIL (gm)	138.26	137.80	0.00
WT WATER (gm)	6.54	6.52	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	138.26	137.80	0.00
WATER CONTENT (%)	4.73	4.73	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	4.73	4.73
VOID RATIO	0.84	0.84
WET DENSITY (lb/ft^3)	95.86	95.86
DRY DENSITY (lb/ft^3)	91.53	91.53
DEGREE OF SATURATION (%)	15.19	15.19

Maximum Shear Stress = 196.61 (lb/in^2) at a Vertical Strain of 8.01 %

UNDRAINED TRIAXIAL TEST





Project Name : C. E. L. P.O. #3689				
Boring No:	Sample No	Depth	Test No	Filename
PB-2	1 @500 PSI	522-524 FT	PB2-522	PB2-522.UU

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : PB-2
Sample No. : 1 @500 PSI
Sample Type : PLASTIC TUBE
Soil Description : LT. BROWN SILTY CLAYSTONE -CH-
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 500 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : PB2-522
Test Date : 03/17/97
Depth : 522-524 FT
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 5.079 (in)
Area : 3.89 (in^2)
Volume : 19.75 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.89	0.00	0.00	0.00	0.00	500.00	500.00
2)	0.005	0.10	3.89	0.00	328.02	328.02	84.23	584.23	584.23
3)	0.011	0.22	3.90	0.00	581.49	581.49	149.02	649.02	649.02
4)	0.016	0.32	3.91	0.00	767.87	767.87	196.46	696.46	696.46
5)	0.022	0.43	3.92	0.00	954.24	954.24	243.66	743.66	743.66
6)	0.027	0.53	3.92	0.00	1103.34	1103.34	281.27	781.27	781.27
7)	0.040	0.79	3.94	0.00	1431.36	1431.36	363.32	863.32	863.32
8)	0.054	1.06	3.96	0.00	1684.83	1684.83	425.66	925.66	925.66
9)	0.081	1.59	3.99	0.00	2079.95	2079.95	520.75	1020.75	1020.75
10)	0.108	2.13	4.03	0.00	2340.87	2340.87	580.74	1080.74	1080.74
11)	0.125	2.46	4.05	0.00	2378.15	2378.15	586.57	1086.57	1086.57
12)	0.135	2.66	4.07	0.00	2355.78	2355.78	579.07	1079.07	1079.07
13)	0.162	3.19	4.11	0.00	2266.32	2266.32	551.91	1051.91	1051.91
14)	0.189	3.72	4.15	0.00	2191.77	2191.77	528.76	1028.76	1028.76
15)	0.217	4.27	4.19	0.00	2102.31	2102.31	502.21	1002.21	1002.21
16)	0.271	5.34	4.27	0.00	2020.31	2020.31	473.42	973.42	973.42
17)	0.325	6.40	4.35	0.00	1953.21	1953.21	448.79	948.79	948.79
18)	0.379	7.46	4.44	0.00	1886.12	1886.12	424.78	924.78	924.78
19)	0.433	8.53	4.53	0.00	1804.11	1804.11	398.09	898.09	898.09
20)	0.487	9.59	4.63	0.00	1714.65	1714.65	370.53	870.53	870.53
21)	0.541	10.65	4.73	0.00	1640.10	1640.10	346.95	846.95	846.95
22)	0.650	12.80	4.94	0.00	1580.46	1580.46	319.79	819.79	819.79
23)	0.758	14.92	5.18	0.00	1558.10	1558.10	301.06	801.06	801.06
24)	0.866	17.05	5.43	0.00	1565.55	1565.55	288.23	788.23	788.23
25)	0.974	19.18	5.71	0.00	1565.55	1565.55	273.96	773.96	773.96
26)	1.083	21.32	6.03	0.00	1543.19	1543.19	255.85	755.85	755.85

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : PB2-522
Boring No. : PB-2 Test Date : 03/17/97 Tested by : C. WASON
Sample No. : 1 @500 PSI Depth : 522-524 FT Checked by : C. CAPPS
Sample Type : PLASTIC TUBE Elevation : NA
Soil Description : LT. BROWN SILTY CLAYSTONE -CH-
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 500 PSI

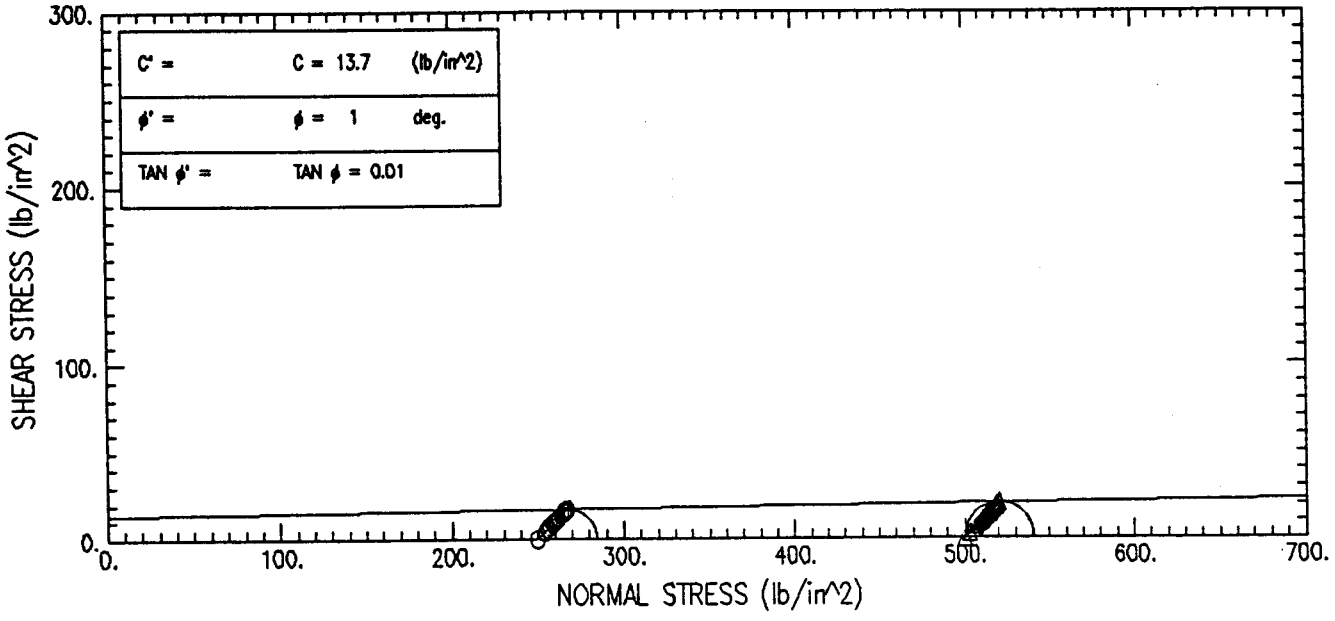
Liquid Limit : 58.63 Plastic Limit : 23.68 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	544.40	544.40	0.00
WT CONTAINER + DRY SOIL (gm)	508.52	508.52	0.00
WT WATER (gm)	35.88	35.88	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	508.52	508.52	0.00
WATER CONTENT (%)	7.06	7.06	0.00

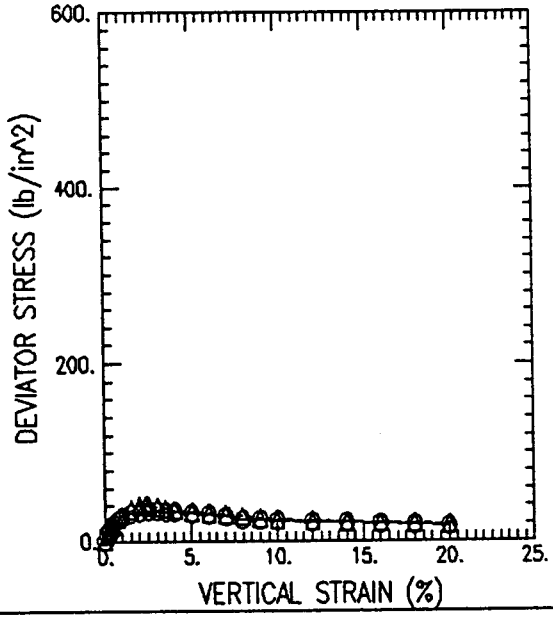
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	7.06	7.06
VOID RATIO	0.73	0.73
WET DENSITY (lb/ft^3)	105.03	105.03
DRY DENSITY (lb/ft^3)	98.10	98.10
DEGREE OF SATURATION (%)	26.29	26.29

Maximum Shear Stress = 293.29 (lb/in^2) at a Vertical Strain of 2.46 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



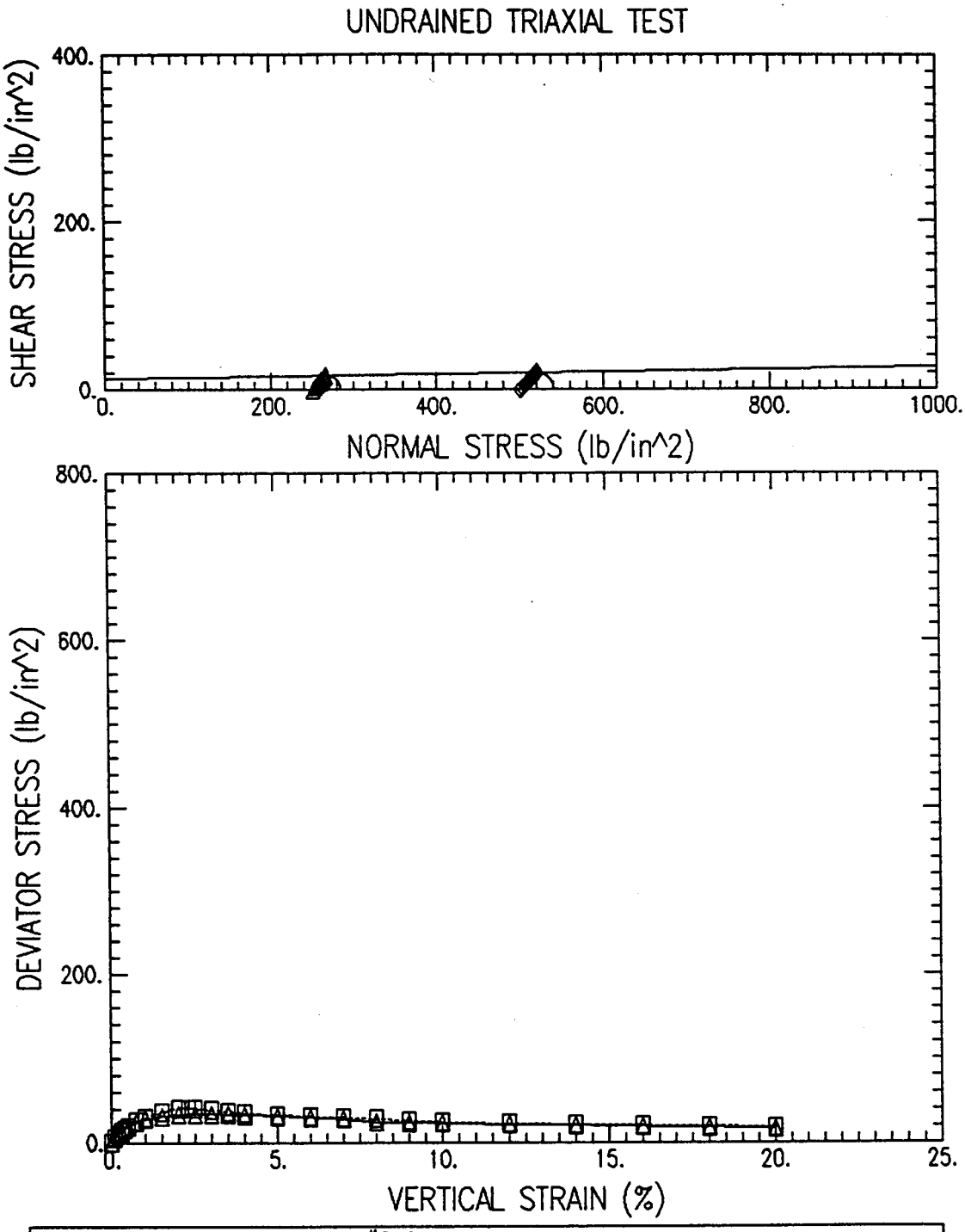
SYMBOL		○	△		
TEST NO.		PB2-536A	PB2-536B		
INITIAL	WATER CONTENT (%)	31.29	31.87		
	DRY DENSITY (lb/ft^3)	85.34	84.61		
	SATURATION (%)	86.07	86.18		
	VOID RATIO	0.989	1.006		
BEFORE SHEAR	WATER CONTENT (%)	31.29	31.87		
	DRY DENSITY (lb/ft^3)	85.34	84.61		
	SATURATION (%)	86.07	86.18		
	VOID RATIO	0.989	1.006		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		250.00	500.00		
MAX. DEV. STRESS (lb/in^2)		34.33	40.84		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		2.35	2.35		
INITIAL HEIGHT (in)		5.39	5.41		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) LT. GRAYISH BROWN SILTY CLAY -CH- 2) LT. GRAYISH BROWN SILTY CLAY -CH-

LL 58.06	PL 25.27	PI 32.79	GS 2.72	TYPE OF SPECIMEN PLASTIC TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 250 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 500 PSI				BORING NO. PB-2	SAMPLE NO.	A @250 PSI	B @500 PSI		
				TECH. C. WASON	DEPTH/ELEV	536-538 FT	536-538 FT		
				LABORATORY	DATE	03/17/97	03/17/97		
				TRIAXIAL COMPRESSION TEST REPORT					

Woodward-Clyde



Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
PB-2	A @250 PSI	536-538 FT	PB2-536A	PB2A-536.UU
PB-2	B @500 PSI	536-538 FT	PB2-536B	PB2B-536.UU

Failure Criteria: Peak Deviator Stress

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : PB2-536A
Boring No. : PB-2 Test Date : 03/17/97 Tested by : C. WASON
Sample No. : A @250 PSI Depth : 536-538 FT Checked by : C. CAPPS
Sample Type : PLASTIC TUBE Elevation : NA
Soil Description : LT. GRAYISH BROWN SILTY CLAY -CH-
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 250 PSI

Height : 5.394 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 4.33 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 23.36 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	4.33	0.00	0.00	0.00	0.00	250.00	250.00
2)	0.005	0.09	4.34	0.00	33.50	33.50	7.72	257.72	257.72
3)	0.011	0.20	4.34	0.00	50.82	50.82	11.70	261.70	261.70
4)	0.016	0.30	4.35	0.00	62.37	62.37	14.33	264.33	264.33
5)	0.022	0.41	4.36	0.00	76.23	76.23	17.49	267.49	267.49
6)	0.027	0.50	4.37	0.00	85.47	85.47	19.57	269.57	269.57
7)	0.040	0.74	4.38	0.00	106.26	106.26	24.24	274.24	274.24
8)	0.054	1.00	4.40	0.00	123.01	123.01	27.93	277.93	277.93
9)	0.081	1.50	4.44	0.00	138.60	138.60	31.21	281.21	281.21
10)	0.108	2.00	4.48	0.00	148.42	148.42	33.13	283.13	283.13
11)	0.135	2.50	4.52	0.00	154.19	154.19	34.12	284.12	284.12
12)	0.162	3.00	4.56	0.00	156.50	156.50	34.33	284.33	284.33
13)	0.189	3.50	4.60	0.00	153.62	153.62	33.41	283.41	283.41
14)	0.216	4.00	4.64	0.00	153.04	153.04	32.98	282.98	282.98
15)	0.270	5.01	4.72	0.00	149.57	149.57	31.66	281.66	281.66
16)	0.324	6.01	4.81	0.00	144.95	144.95	30.12	280.12	280.12
17)	0.378	7.01	4.90	0.00	136.87	136.87	27.92	277.92	277.92
18)	0.431	7.99	5.00	0.00	121.85	121.85	24.39	274.39	274.39
19)	0.485	8.99	5.09	0.00	120.70	120.70	23.70	273.70	273.70
20)	0.539	9.99	5.20	0.00	118.39	118.39	22.79	272.79	272.79
21)	0.647	11.99	5.41	0.00	115.50	115.50	21.34	271.34	271.34
22)	0.755	14.00	5.65	0.00	116.66	116.66	20.66	270.66	270.66
23)	0.863	16.00	5.90	0.00	113.77	113.77	19.27	269.27	269.27
24)	0.971	18.00	6.19	0.00	111.46	111.46	18.02	268.02	268.02
25)	1.079	20.00	6.50	0.00	109.73	109.73	16.89	266.89	266.89

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : PB2-536A
Boring No. : PB-2 Test Date : 03/17/97 Tested by : C. WASON
Sample No. : A @250 PSI Depth : 536-538 FT Checked by : C. CAPPS
Sample Type : PLASTIC TUBE Elevation : NA
Soil Description : LT. GRAYISH BROWN SILTY CLAY -CH-
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 250 PSI

Liquid Limit : 58.06 Plastic Limit : 25.27 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	686.90	524.96	0.00
WT CONTAINER + DRY SOIL (gm)	523.19	399.86	0.00
WT WATER (gm)	163.71	125.10	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	523.19	399.86	0.00
WATER CONTENT (%)	31.29	31.29	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	31.29	31.29
VOID RATIO	0.99	0.99
WET DENSITY (lb/ft^3)	112.04	112.04
DRY DENSITY (lb/ft^3)	85.34	85.34
DEGREE OF SATURATION (%)	86.07	86.07

Maximum Shear Stress = 17.17 (lb/in^2) at a Vertical Strain of 3.00 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : PB-2
Sample No. : B @500 PSI
Sample Type : PLASTIC TUBE
Soil Description : LT. GRAYISH BROWN SILTY CLAY -CH-
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 500 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : PB2-536B
Test Date : 03/17/97
Depth : 536-538 FT
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 5.413 (in)
Area : 4.34 (in^2)
Volume : 23.48 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	4.34	0.00	0.00	0.00	0.00	500.00	500.00
2)	0.005	0.09	4.34	0.00	25.41	25.41	5.85	505.85	505.85
3)	0.011	0.20	4.35	0.00	45.05	45.05	10.35	510.35	510.35
4)	0.016	0.30	4.36	0.00	59.48	59.48	13.65	513.65	513.65
5)	0.022	0.41	4.37	0.00	73.92	73.92	16.93	516.93	516.93
6)	0.027	0.50	4.37	0.00	85.47	85.47	19.54	519.54	519.54
7)	0.040	0.74	4.39	0.00	110.88	110.88	25.25	525.25	525.25
8)	0.054	1.00	4.41	0.00	130.52	130.52	29.59	529.59	529.59
9)	0.081	1.50	4.45	0.00	161.12	161.12	36.22	536.22	536.22
10)	0.108	2.00	4.49	0.00	181.34	181.34	40.42	540.42	540.42
11)	0.125	2.31	4.51	0.00	184.22	184.22	40.84	540.84	540.84
12)	0.135	2.49	4.53	0.00	182.49	182.49	40.33	540.33	540.33
13)	0.162	2.99	4.56	0.00	175.56	175.56	38.46	538.46	538.46
14)	0.189	3.49	4.60	0.00	169.79	169.79	36.87	536.87	536.87
15)	0.217	4.01	4.65	0.00	162.86	162.86	35.04	535.04	535.04
16)	0.271	5.01	4.73	0.00	156.50	156.50	33.07	533.07	533.07
17)	0.325	6.00	4.82	0.00	151.31	151.31	31.40	531.40	531.40
18)	0.379	7.00	4.91	0.00	146.11	146.11	29.76	529.76	529.76
19)	0.433	8.00	5.00	0.00	139.76	139.76	27.93	527.93	527.93
20)	0.487	9.00	5.10	0.00	132.83	132.83	26.03	526.03	526.03
21)	0.541	9.99	5.20	0.00	127.05	127.05	24.41	524.41	524.41
22)	0.650	12.01	5.42	0.00	122.43	122.43	22.58	522.58	522.58
23)	0.758	14.00	5.66	0.00	120.70	120.70	21.33	521.33	521.33
24)	0.866	16.00	5.91	0.00	121.28	121.28	20.51	520.51	520.51
25)	0.974	17.99	6.19	0.00	121.28	121.28	19.58	519.58	519.58
26)	1.083	20.01	6.51	0.00	119.54	119.54	18.37	518.37	518.37

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : PB2-536B
Boring No. : PB-2
Test Date : 03/17/97
Tested by : C. WASON
Sample No. : B @500 PSI
Depth : 536-538 FT
Checked by : C. CAPPS
Sample Type : PLASTIC TUBE
Elevation : NA
Soil Description : LT. GRAYISH BROWN SILTY CLAY -CH-
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 500 PSI

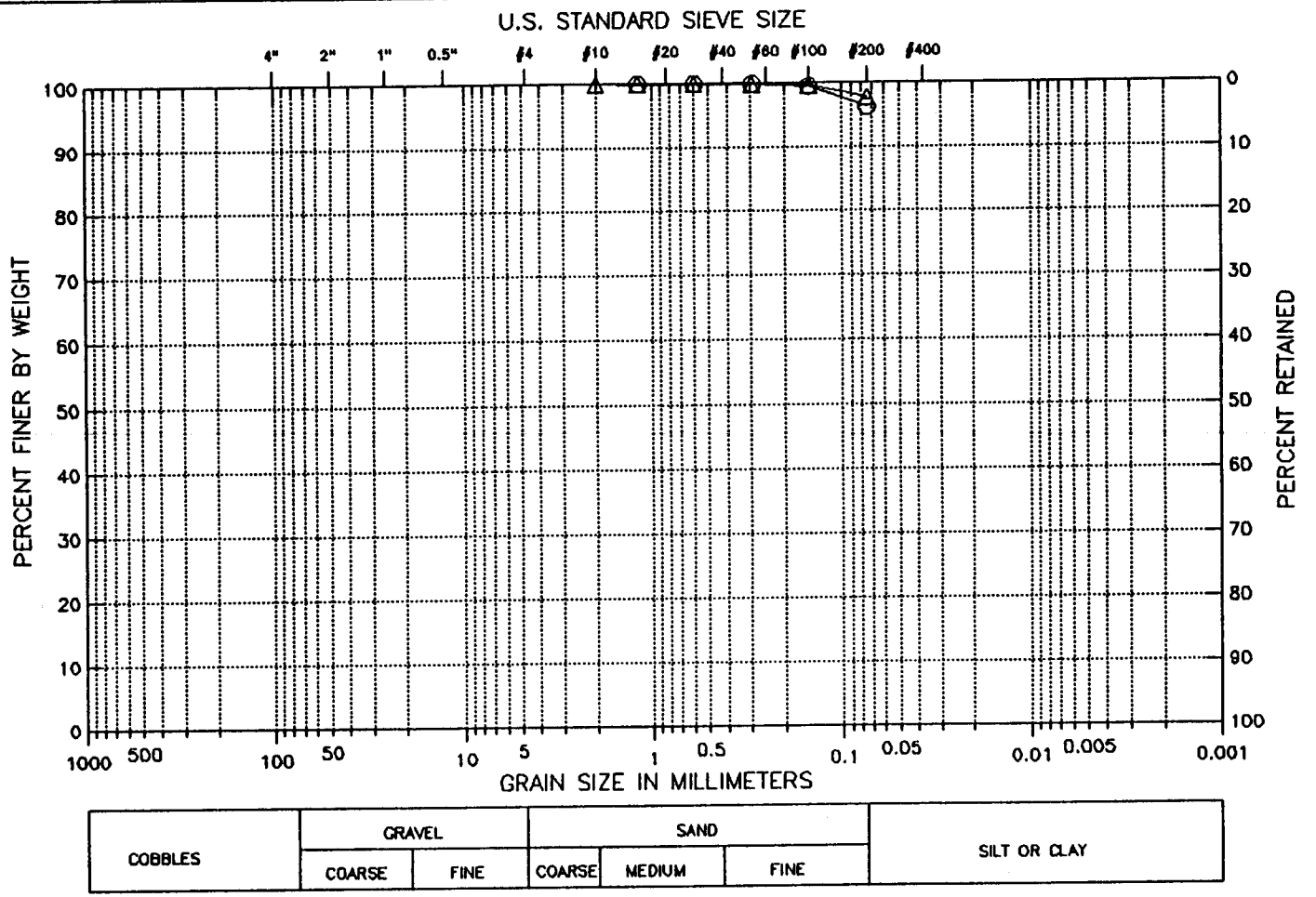
Liquid Limit : 58.06
Plastic Limit : 25.27
Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	687.60	510.80	0.00
WT CONTAINER + DRY SOIL (gm)	521.42	387.34	0.00
WT WATER (gm)	166.18	123.46	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	521.42	387.34	0.00
WATER CONTENT (%)	31.87	31.87	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	31.87	31.87
VOID RATIO	1.01	1.01
WET DENSITY (lb/ft^3)	111.58	111.58
DRY DENSITY (lb/ft^3)	84.61	84.61
DEGREE OF SATURATION (%)	86.18	86.18

Maximum Shear Stress = 20.42 (lb/in^2) at a Vertical Strain of 2.31 %

Project : CONSOLIDATED ENGINEERING LABORATORY
Project No.: 941138NA
Location: PICKLES BUTTE LANDFILL, IDAHO
Date : Wed Mar 19 1997

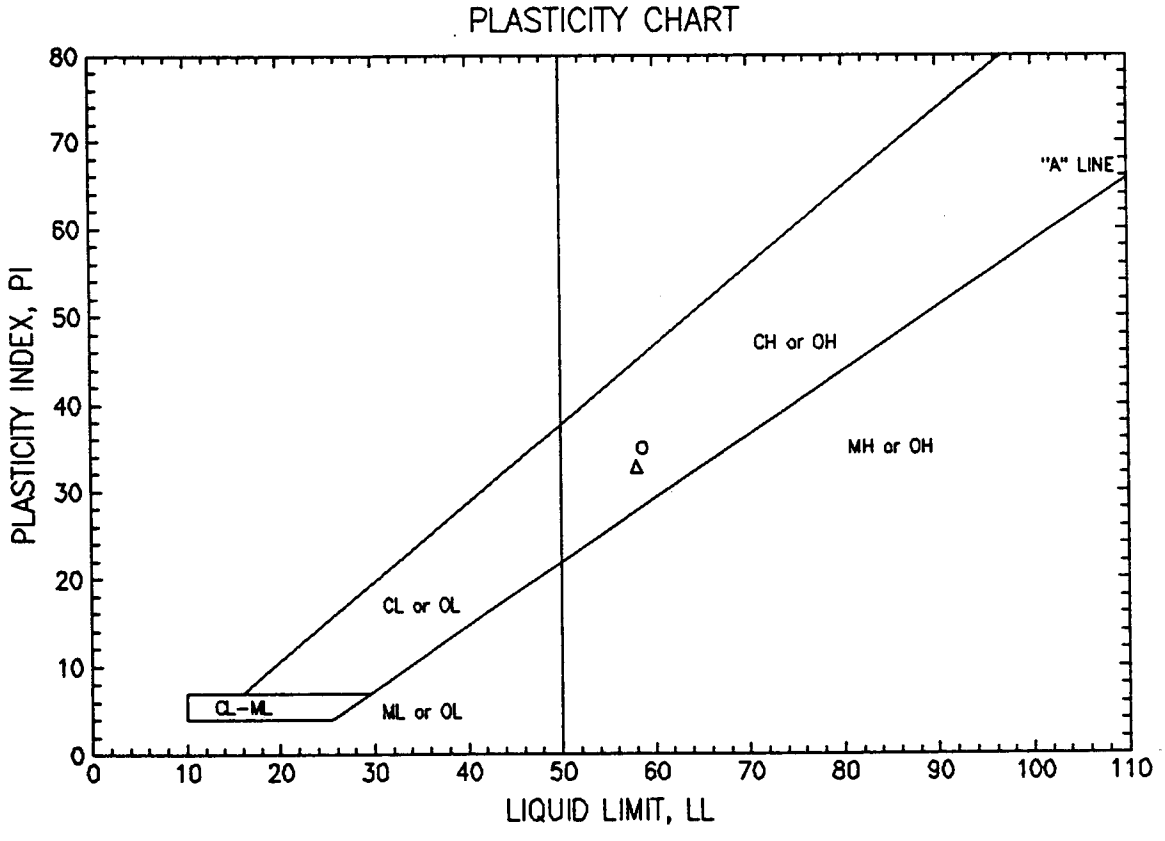


Symbol	Boring No.	Sample No.	Depth	Filename	Classification	/ Description
⊖	PB-2	522-524	522-524 FEET	PB2-522	CH	fat clay
△	PB-2	536-538	536-538 FEET	PB2-536	CH	fat clay

Figure 1

Woodward-Clyde

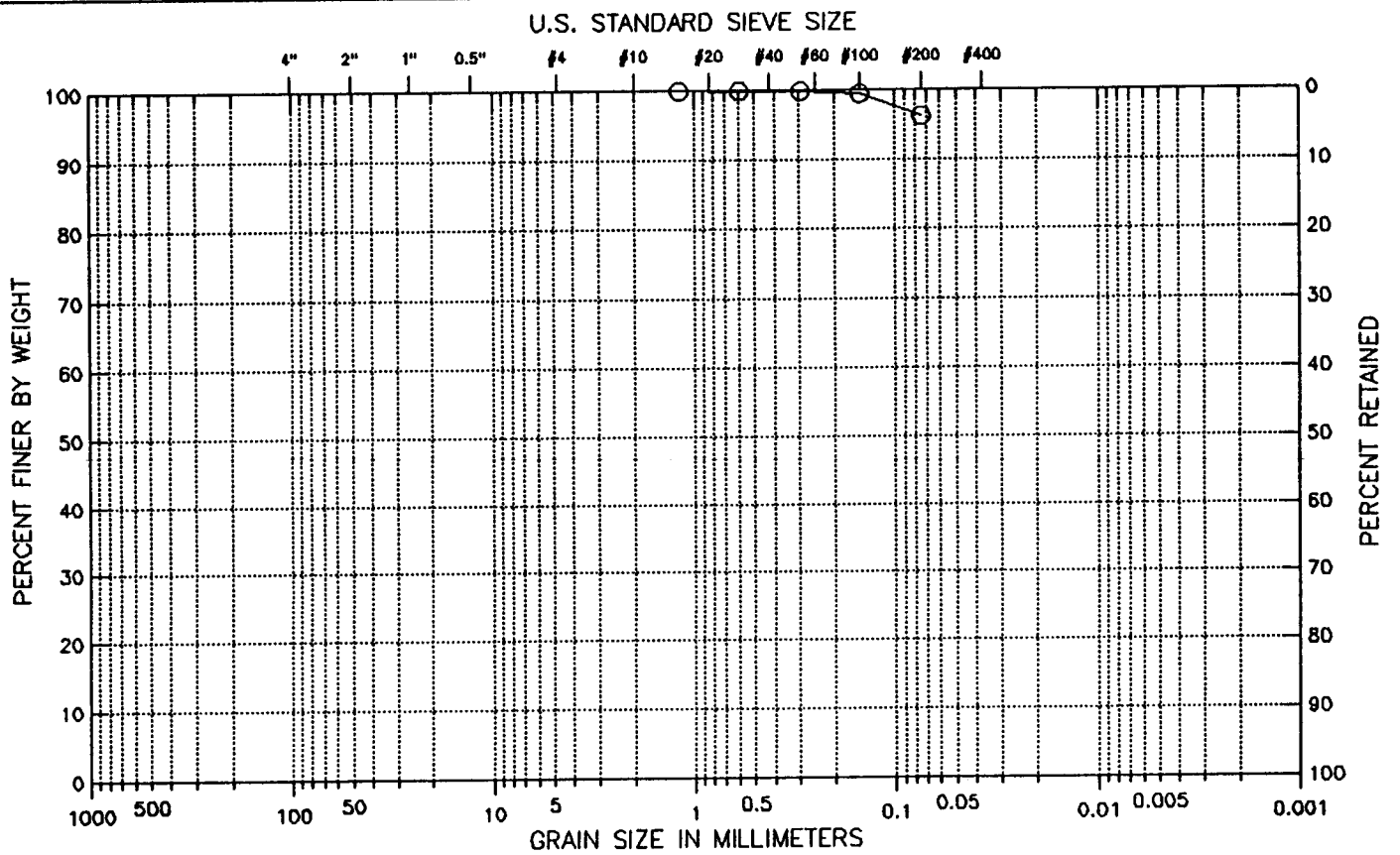
Project : CONSOLIDATED ENGINEERING LABORATORY
Project No. : 941138NA
Location : PICKLES BUTTE LANDFILL, IDAHO
Date : Wed Mar 19 1997



Symbol	Boring No.	Sample No.	Liquid Limit	Plastic Limit	Plasticity Index
O	PB-2	522-524	58.63	23.68	34.95
Δ	PB-2	536-538	58.06	25.27	32.79

Figure 1

	Boring No. : PB-2 Sample No: 522-524 Tested by : C. WASON Filename : PB2-522	Project : CONSOLIDATED ENGINEERING LABORATORY Project No.: 941138NA Location: PICKLES BUTTE LANDFILL, IDAHO Date : Wed Mar 19 1997



Classification :
(CH) fat clay
Visual Description :
LT. BROWN SILTY CLAY -CH-

Remarks :
P.O. # 3689

Figure 1

Woodward-Clyde

Wed Mar 19 14:47:45 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : CONSOLIDATED ENGINEERING LABORATORY
Project No. : 941138NA
Boring No. : PB-2
Sample No. : 522-524
Location : PICKLES BUTTE LANDFILL, IDAHO
Soil Description : LT. BROWN SILTY CLAY -CH-
Remarks : P.O. # 3689

Depth : 522-524 FEET
Test Date : 03/18/97
Test Method : ASTM D422/4318

Filename : PB2-522
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS

COARSE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#16	0.047	1.19	0.00	0.00	100
#30	0.023	0.60	0.11	0.11	100
#50	0.012	0.30	0.35	0.46	100
#100	0.006	0.15	1.82	2.28	100
#200	0.003	0.07	16.51	18.79	96

Total Dry Weight of Sample = 508.52

D85 : N/A
D60 : N/A
D50 : N/A
D30 : N/A
D15 : N/A
D10 : N/A

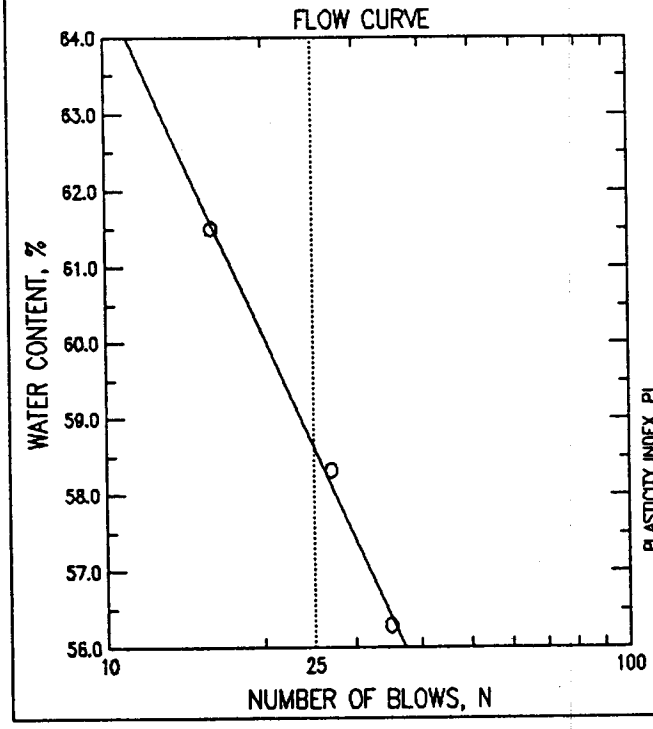
Soil Classification
ASTM Group Symbol : CH
ASTM Group Name : fat clay
AASHTO Group Symbol : A-7-6(42)
AASHTO Group Name : Clayey Soils

ATTERBERG LIMITS

PROJECT CONSOLIDATED ENGINEERING LABORATORY	PROJECT NUMBER 941138NA	TESTED BY C. WASON	BORING NUMBER PB-2
LOCATION PICKLES BUTTE LANDFILL, IDAHO		CHECKED BY C. CAPPS	SAMPLE NUMBER 522-524
SAMPLE DESCRIPTION LT. BROWN SILTY CLAY -CH-		DATE Wed Mar 19 1997	FILENAME PB2-522

LIQUID LIMIT DETERMINATIONS					
CONTAINER NUMBER	44	88	91		
WT. WET SOIL + TARE	26.73	27.73	27.09		
WT. DRY SOIL + TARE	21	21.63	21		
WT. WATER	5.73	6.1	6.09		
TARE WT.	10.82	11.17	11.1		
WT. DRY SOIL	10.18	10.46	9.9		
WATER CONTENT, W_N (%)	56.29	58.32	61.52		
NUMBER OF BLOWS, N	35	27	16		
ONE-POINT LIQUID LIMIT, LL	58.63	58.86	58.28		

PLASTIC LIMIT DETERMINATIONS					
CONTAINER NUMBER	26				
WT. WET SOIL + TARE	26.69				
WT. DRY SOIL + TARE	24.53				
WT. WATER	2.16				
TARE WT.	15.41				
WT. DRY SOIL	9.12				
WATER CONTENT (%)	23.68				



SUMMARY OF RESULTS	
NATURAL WATER CONTENT, W (%)	7.1
LIQUID LIMIT, LL	58.6
PLASTIC LIMIT, PL	23.7
PLASTICITY INDEX, PI	35.0
LIQUIDITY INDEX, LI*	-0.48

*LI = (W - PL)/PI

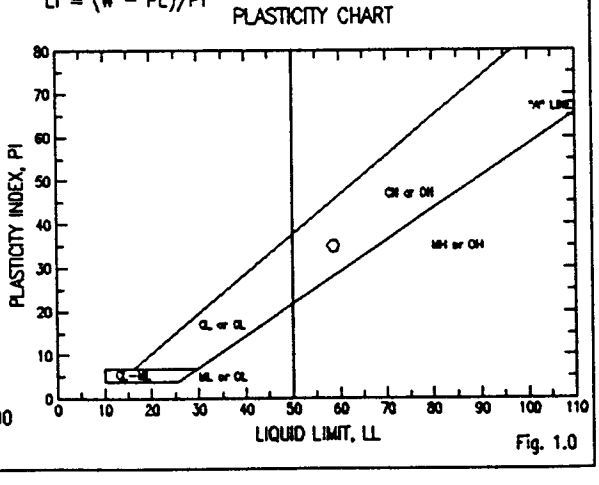


Fig. 1.0

GEOTECHNICAL LABORATORY TEST DATA

Project : CONSOLIDATED ENGINEERING LABORATORY
Project No. : 941138NA
Boring No. : PB-2
Sample No. : 522-524
Location : PICKLES BUTTE LANDFILL, IDAHO
Soil Description : LT. BROWN SILTY CLAY -CH-
Remarks : P.O. # 3689

Depth : 522-524 FEET
Test Date : 03/18/97
Test Method : ASTM D422/4318

Filename : PB2-522
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS

Natural Moisture Content

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1) PB2-522	218.68	763.08	727.20	7.06

Average Moisture Content = 7.06

Plastic Limit

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1) 26	15.41	26.69	24.53	23.68

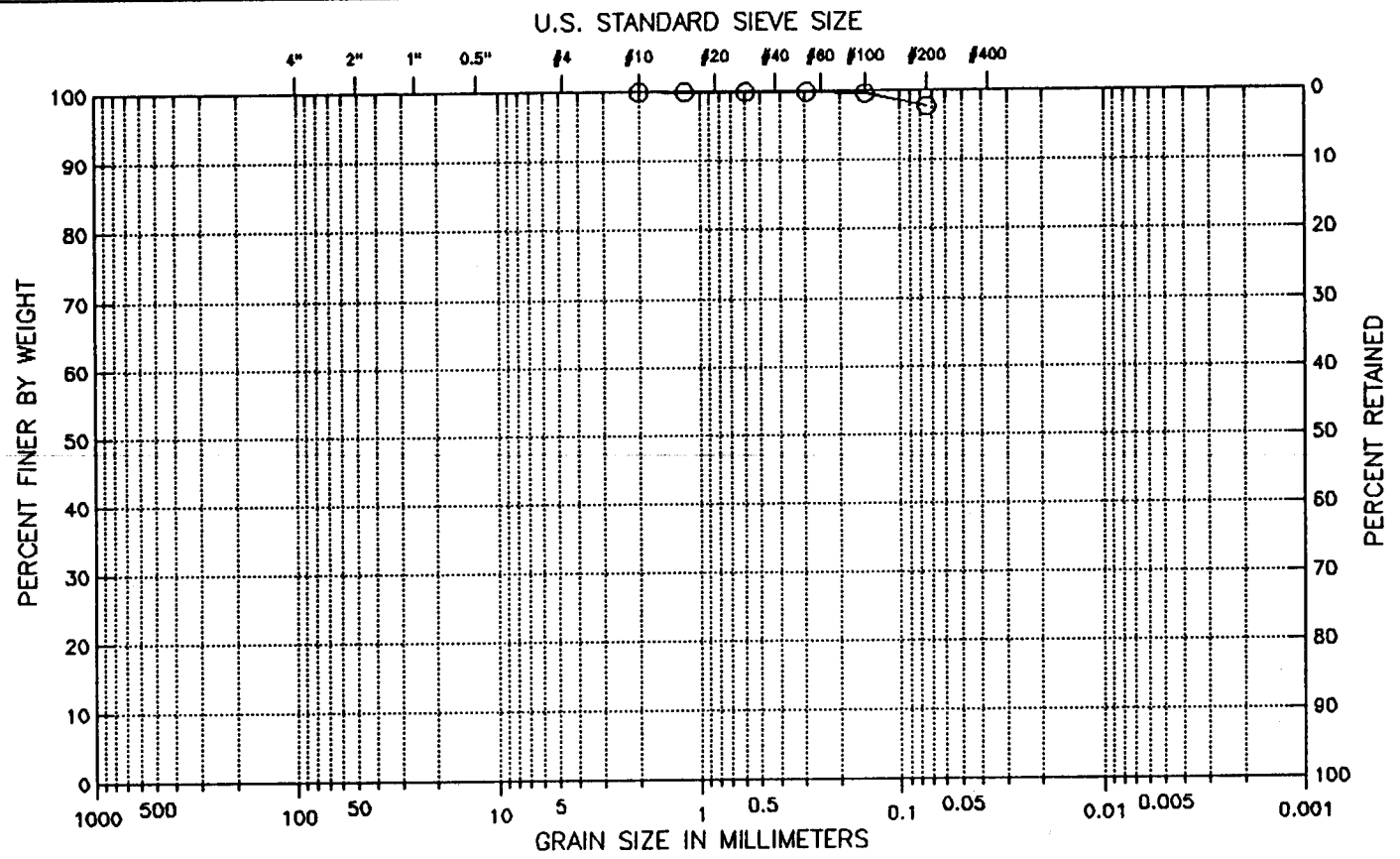
Plastic Limit = 23.68

Liquid Limit

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Number of Drops	Moisture Content (%)
1) 44	10.82	26.73	21.00	35	56.29
2) 88	11.17	27.73	21.63	27	58.32
3) 91	11.10	27.09	21.00	16	61.52

Liquid Limit = 58.63
Plastic Index = 34.95

	Boring No. : PB-2 Sample No.: 536-538 Tested by : C. WASON Filename : PB2-536	Project : CONSOLIDATED ENGINEERING LABORATORY Project No.: 941138NA Location: PICKLES BUTTE LANDFILL, IDAHO Date : Wed Mar 19 1997



Classification :
(CH) fat clay
Visual Description :
LT. GRAYISH BROWN SILTY CLAY -CH-

Remarks :
P.O. # 3689

Figure 2

Woodward-Clyde

Wed Mar 19 14:47:51 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : CONSOLIDATED ENGINEERING LABORATORY
Project No. : 941138NA
Boring No. : PB-2
Sample No. : 536-538
Location : PICKLES BUTTE LANDFILL, IDAHO
Soil Description : LT. GRAYISH BROWN SILTY CLAY -CH-
Remarks : P.O. # 3689

Depth : 536-538 FEET
Test Date : 03/18/97
Test Method : ASTM D422/4318

Filename : PB2-536
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS

COARSE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#16	0.047	1.19	0.09	0.09	100
#30	0.023	0.60	0.07	0.16	100
#50	0.012	0.30	0.20	0.36	100
#100	0.006	0.15	1.03	1.39	100
#200	0.003	0.07	7.44	8.83	98

Total Dry Weight of Sample = 399.86

D85 : N/A
D60 : N/A
D50 : N/A
D30 : N/A
D15 : N/A
D10 : N/A

Soil Classification
ASTM Group Symbol : CH
ASTM Group Name : fat clay
AASHTO Group Symbol : A-7-6(41)
AASHTO Group Name : Clayey Soils

GEOTECHNICAL LABORATORY TEST DATA

Project : CONSOLIDATED ENGINEERING LABORATORY
Project No. : 941138NA
Boring No. : PB-2
Sample No. : 536-538
Location : PICKLES BUTTE LANDFILL, IDAHO
Soil Description : LT. GRAYISH BROWN SILTY CLAY -CH-
Remarks : P.O. # 3689

Depth : 536-538 FEET
Test Date : 03/18/97
Test Method : ASTM D422/4318

Filename : PB2-536
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS

Natural Moisture Content

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1) PB2-536	225.24	750.20	625.10	31.29

Average Moisture Content = 31.29

Plastic Limit

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1) 48	16.01	27.46	25.15	25.27

Plastic Limit = 25.27

Liquid Limit

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Number of Drops	Moisture Content (%)
1) 18	10.70	26.54	20.80	31	56.83
2) 14	10.83	25.96	20.41	25	57.93
3) 8	11.12	26.94	21.00	18	60.12

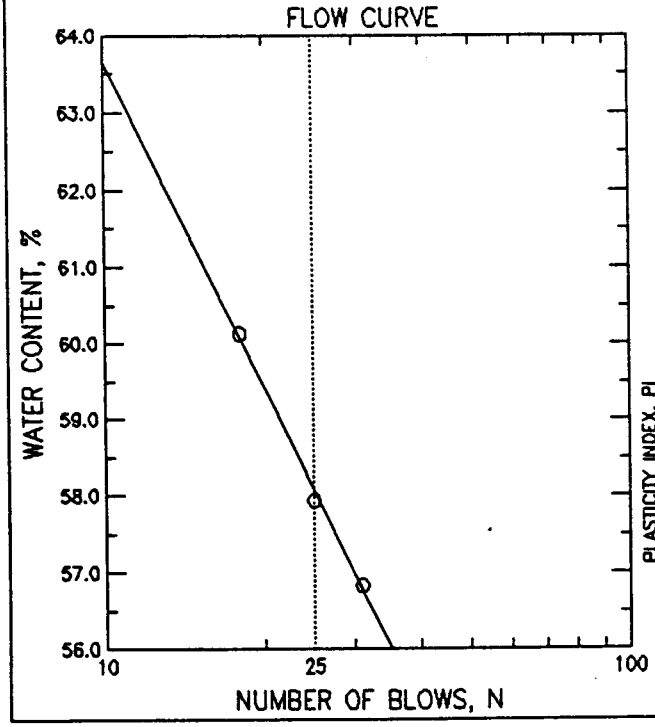
Liquid Limit = 58.06
Plastic Index = 32.79

ATTERBERG LIMITS

PROJECT	PROJECT NUMBER	TESTED BY	BORING NUMBER
CONSOLIDATED ENGINEERING LABORATORY	941138NA	C. WASON	PB-2
LOCATION PICKLES BUTTE LANDFILL, IDAHO		CHECKED BY C. CAPPS	SAMPLE NUMBER 536-538
SAMPLE DESCRIPTION LT. GRAYISH BROWN SILTY CLAY -CH-		DATE Wed Mar 19 1997	FILENAME PB2-536

LIQUID LIMIT DETERMINATIONS					
CONTAINER NUMBER	18	14	8		
WT. WET SOIL + TARE	26.54	25.96	26.94		
WT. DRY SOIL + TARE	20.8	20.41	21		
WT. WATER	5.74	5.55	5.94		
TARE WT.	10.7	10.83	11.12		
WT. DRY SOIL	10.1	9.58	9.88		
WATER CONTENT, W_N (%)	56.83	57.93	60.12		
NUMBER OF BLOWS, N	31	25	18		
ONE-POINT LIQUID LIMIT, LL	58.33	57.93	57.78		

PLASTIC LIMIT DETERMINATIONS					
CONTAINER NUMBER	48				
WT. WET SOIL + TARE	27.46				
WT. DRY SOIL + TARE	25.15				
WT. WATER	2.31				
TARE WT.	16.01				
WT. DRY SOIL	9.14				
WATER CONTENT (%)	25.27				



SUMMARY OF RESULTS	
NATURAL WATER CONTENT, W (%)	31.3
LIQUID LIMIT, LL	58.1
PLASTIC LIMIT, PL	25.3
PLASTICITY INDEX, PI	32.8
LIQUIDITY INDEX, LI*	0.18

*LI = (W - PL)/PI

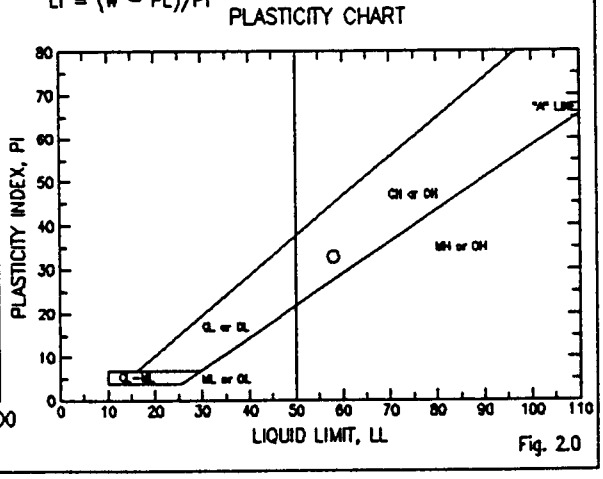


Fig. 2.0

ASTM D2937

WATER CONTENT(%), WET AND DRY UNIT WEIGHT(PCF)

Project Name C.E.L P.O. 3689 Project Number 941138NA Date 03/06/97

Tested By C. WASON Reduced By C. WASON Checked By S. CAPPS

Location PICKLES BUTTE LANDFILL Page 1 of 1

Specimen Number	Diam. Inch	Height CM.	Wet Wt. Grams	Dry Wt. Grams	Visual Description	Water Content	Wet Unit Weight	Dry Unit Weight
GT-4 15-17 mid	2.86	15.2	927.7	877.2	lt. brown clayey fine sandy silt/ clayey silty sand	5.76	91.9	86.9
GT-4 15-17 bottom	2.86	15.2	845.9	783.7	lt. brown clayey fine sandy silt/ clayey silty sand	7.94	83.8	77.6
GT-4 70-71 B	1.43	9.0	140.7	133.81	lt. orange brown fine sandy silt/ silty sand	5.15	94.1	89.5
GT-4 90-91 B	1.43	9.0	168.7	145.81	lt. grayish brown clayey silty sand to sandy silt	15.70	112.9	97.6
GT-5 65-67	1.43	14.45	222.92	212.0	lt. grayish brown silty sand	5.15	92.9	88.4
GT-5 80-81	1.43	13.0	204.32	191.52	grayish brown silty sand	6.68	94.7	88.7
GT-5 100-101	1.43	13.55	190.32	172.79	lt. grayish brown silty sand	10.15	84.6	76.8

Woodward-Clyde

Project: Pickles Butte Landfill Slope Stability Study
Owner: Canyon County
Project #: 030496
RE: Soils Lab test data summary

Boring #:	Depth	c	ϕ	Water Content		Dry Unit Weight		Wet Unit Weight		Avg Wet Unit Weight	Visual Description
				Top	Bottom	Top	Bottom	Top	Bottom	Calculated	
GT-1	10-12 ft	706	20	11.7	9.95	100.69	103.33	112.47	113.61	113.04	Brown silty sand to sandy silt with traces of clay & mica
	100-101 ft	9936	2	25.81	27.16	98.51	92.98	123.94	118.23	121.08	Lt. brown silty clay to clayey silt
	140-141 ft	6566	3	27.96	26.96	94.66	95.91	121.13	121.77	121.45	Grayish brown clayey silt to silty clay
	160-161 ft	3370	8	27.22	26.58	96.39	96.51	122.63	122.16	122.39	Grayish brown clayey silt to silty clay
	180-181 ft	7114	10	26.5	24.43	90.24	88.17	114.15	109.71	111.93	Lt. yellowish brown silty clay to clayey silt
	200-201 ft	7762	1	27.12	27.09	95.73	94.66	121.69	120.30	121.00	Lt. brown clayey silty to silty clay
GT-4	15-17 ft	One test		5.76	7.94	86.9	77.6	91.91	83.76	87.83	Lt. brown clayey fine sandy silt/clayey silty sand
	30-31 ft	1339	37	6.23	5.85	82.52	84.57	87.66	89.52	88.59	Lt. orange brown fine sandy silt/silty fine sand
	40-41 ft	One test									
	70-71 ft	One test		5.15		89.5		94.11		94.11	Lt. orange brown fine sandy silt/silty sand
	90-91 ft	One test		15.7		97.6		112.92		112.92	Lt. grayish brown clayey silty sand to sandy silt
GT-5	65-67 ft			5.15		88.4		92.95		92.95	Lt. grayish brown silty sand
	70-71 ft	490	33	4.87	5.48	97.07	97.29	101.80	102.62	102.21	Brown silty sand
	80-81 ft			6.68		88.7		94.63		94.63	Grayish brown silty sand
	90-91 ft	3845	27	4.91	4.73	91.22	91.53	95.70	95.86	95.78	Brown silty sand
	100-101 ft	No test		10.15		76.8		84.60		84.60	Lt. grayish brown silty sand
PB-2	429-430 ft	17928	9	22.98	23.31	93.27	93.1	114.70	114.80	114.75	Grayish brown silty clay/clayey silt
	456-457 ft	29765	2	21.88	22.92	93.08	92.53	113.45	113.74	113.59	Lt. grayish brown silty clay/clayey silt
	458-460 ft	29491	1	22.5	22.66	93.27	89.19	114.26	109.40	111.83	Lt. grayish brown silty clay/clayey silt
	474-475 ft	16128	7	24.79	25.22	91.46	90.11	114.13	112.84	113.48	Grayish brown sitly clay/clayey silt
	522-524 ft	One test									
	530-531 ft	24336	4	21.24	20.21	93.63	95.26	113.52	114.51	114.01	Brown silty clay/clayey silt
	536-538 ft	1973	1	31.29	31.87	85.34	84.61	112.04	111.58	111.81	Lt. grayish brown silty clay

CONSOLIDATED ENGINEERING
L A B O R A T O R I E S

June 30, 1997

Holladay Engineering Co.
P.O. Box 235
Payette, ID 83661
Bill Stroud

RE: Pickles Butte Landfill
15500 Missouri
Caldwell, ID
CEL #11364
LAB #27735

SOIL ANALYSIS REPORT

On 01/24/97, a Holladay Engineering representative in Payette, ID prepared various soil samples for analysis from the above project.

The samples were transported to Consolidated Engineering Laboratories in Pleasanton for testing as requested. Please refer to the attached data sheets for results.

REVIEWED BY: LORENZO K. LAWSON, LABORATORY MANAGER

REVIEWING ENGINEER: JAMES M. POWERS, R.C.E.

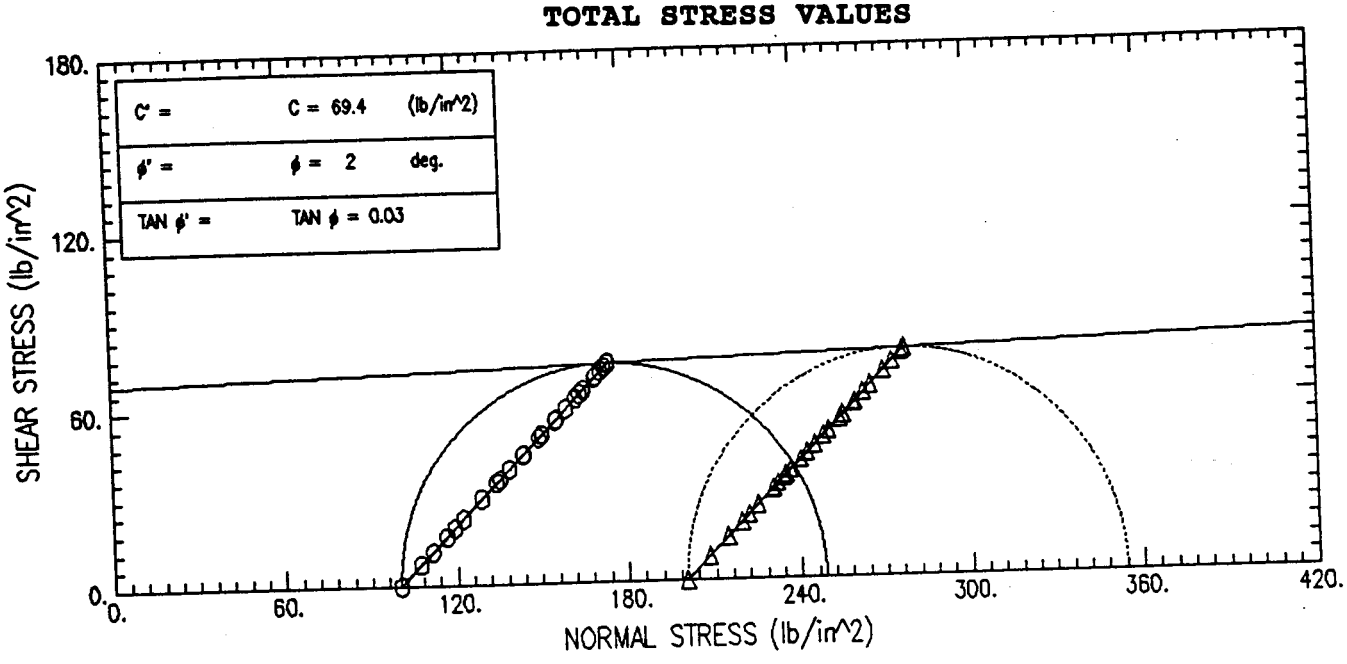
cc: Holladay Engineering Co.

Enclosures

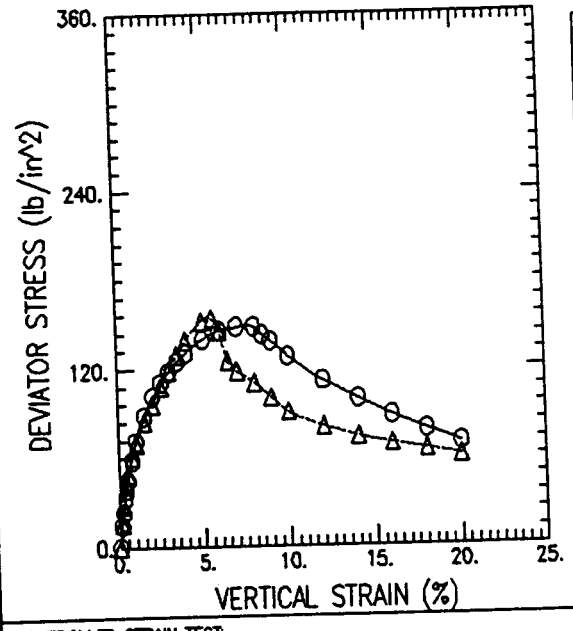
REGISTERED PROFESSIONAL ENGINEER
JAMES M. POWERS
No. C41046
Exp. 5-31-99
CIVIL
STATE OF CALIFORNIA

P. O. Box 9131 • Pleasanton, CA 94566 • 510 460-5100 • FAX 510 460-5118

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



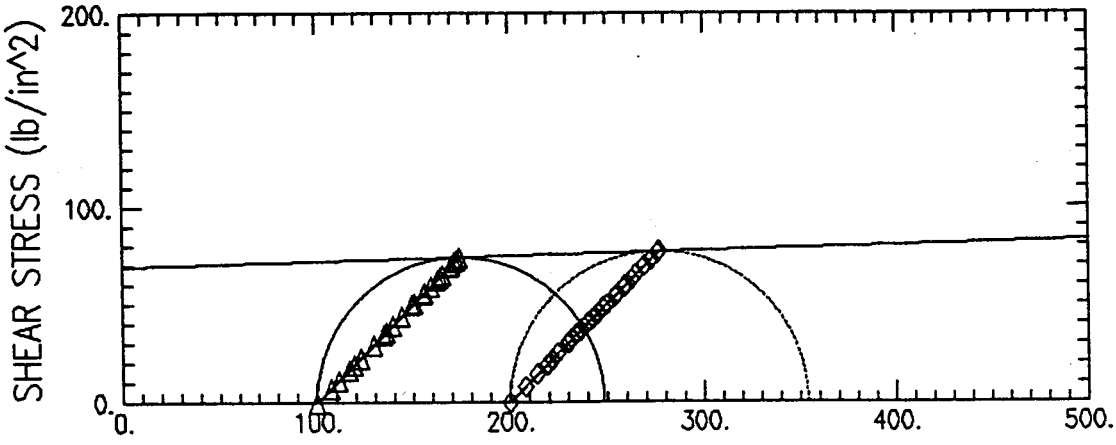
SYMBOL		○	△		
TEST NO.		GT1-100A	GT1-100B		
INITIAL	WATER CONTENT (%)	25.81	27.16		
	DRY DENSITY (lb/ft^3)	98.51	92.98		
	SATURATION (%)	97.10	89.52		
	VOID RATIO	0.723	0.825		
BEFORE SHEAR	WATER CONTENT (%)	25.81	27.16		
	DRY DENSITY (lb/ft^3)	98.51	92.98		
	SATURATION (%)	97.10	89.52		
	VOID RATIO	0.723	0.825		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		100.00	200.00		
MAX. DEV. STRESS (lb/in^2)		148.31	153.94		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.58	3.58		

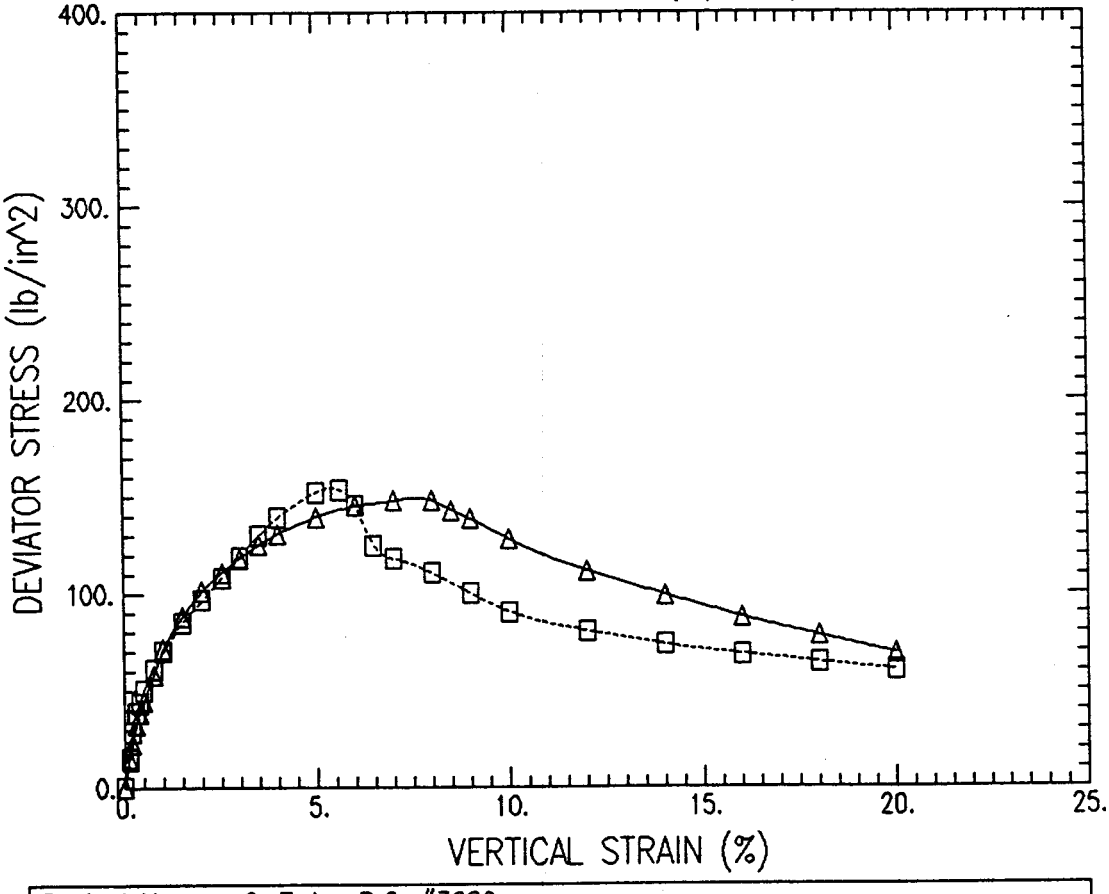
CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) LT. BROWN SILTY CLAY TO CLAYEY SILT 2) LT. BROWN SILTY CLAY TO CLAYEY SILT

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 100 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 200 PSI				BORING NO. GT-1	SAMPLE NO.	A @100 PSI	B @200 PSI		
				TECH. C. WASON	DEPTH/ELEV	100-101 FT	100-101 FT		
				LABORATORY	DATE	03/13/97	03/13/97		
				TRIAXIAL COMPRESSION TEST REPORT					

UNDRAINED TRIAXIAL TEST





Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-1	A @100 PSI	100-101 FT	GT1-100A	GT1A-100.UU
GT-1	B @200 PSI	100-101 FT	GT1-100B	GT1B-100.UU

Failure Criteria: Peak Deviator Stress

Wed Mar 19 15:58:56 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : A @100 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-100A
Test Date : 03/13/97
Depth : 100-101 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. BROWN SILTY CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 100 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	100.00	100.00
2)	0.004	0.11	1.61	0.00	23.10	23.10	14.36	114.36	114.36
3)	0.007	0.20	1.61	0.00	36.96	36.96	22.94	122.94	122.94
4)	0.011	0.31	1.61	0.00	53.13	53.13	32.91	132.91	132.91
5)	0.014	0.39	1.62	0.00	62.37	62.37	38.58	138.58	138.58
6)	0.018	0.50	1.62	0.00	72.77	72.77	44.93	144.93	144.93
7)	0.027	0.75	1.63	0.00	94.71	94.71	58.23	158.23	158.23
8)	0.036	1.00	1.63	0.00	116.66	116.66	71.42	171.42	171.42
9)	0.054	1.51	1.65	0.00	145.53	145.53	88.34	188.34	188.34
10)	0.072	2.01	1.66	0.00	168.63	168.63	101.48	201.48	201.48
11)	0.090	2.51	1.68	0.00	185.96	185.96	110.94	210.94	210.94
12)	0.107	2.99	1.69	0.00	200.39	200.39	118.57	218.57	218.57
13)	0.125	3.49	1.71	0.00	213.68	213.68	125.31	225.31	225.31
14)	0.143	3.99	1.72	0.00	225.23	225.23	130.91	230.91	230.91
15)	0.179	5.00	1.75	0.00	244.86	244.86	139.77	239.77	239.77
16)	0.215	6.00	1.78	0.00	259.88	259.88	145.63	245.63	245.63
17)	0.251	7.01	1.82	0.00	269.12	269.12	148.00	248.00	248.00
18)	0.287	8.01	1.85	0.00	274.89	274.89	148.31	248.31	248.31
19)	0.305	8.51	1.87	0.00	267.96	267.96	143.18	243.18	243.18
20)	0.322	8.99	1.89	0.00	262.19	262.19	138.80	238.80	238.80
21)	0.358	9.99	1.93	0.00	247.17	247.17	128.27	228.27	228.27
22)	0.430	12.00	2.01	0.00	224.07	224.07	111.61	211.61	211.61
23)	0.502	14.01	2.10	0.00	207.90	207.90	99.22	199.22	199.22
24)	0.573	15.99	2.19	0.00	192.31	192.31	87.83	187.83	187.83
25)	0.645	18.00	2.29	0.00	179.03	179.03	78.03	178.03	178.03
26)	0.717	20.01	2.41	0.00	166.32	166.32	69.02	169.02	169.02

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT1-100A
Boring No. : GT-1
Test Date : 03/13/97
Tested by : C. WASON
Sample No. : A @100 PSI
Depth : 100-101 FT
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : LT. BROWN SILTY CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 100 PSI

Liquid Limit : 0
Plastic Limit : 0
Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	187.20	186.47	0.00
WT CONTAINER + DRY SOIL (gm)	148.80	148.21	0.00
WT WATER (gm)	38.40	38.26	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	148.80	148.21	0.00
WATER CONTENT (%)	25.81	25.81	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	25.81	25.81
VOID RATIO	0.72	0.72
WET DENSITY (lb/ft^3)	123.93	123.93
DRY DENSITY (lb/ft^3)	98.51	98.51
DEGREE OF SATURATION (%)	97.10	97.10

Maximum Shear Stress = 74.16 (lb/in^2) at a Vertical Strain of 8.01 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : B @200 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-100B
Test Date : 03/13/97
Depth : 100-101 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. BROWN SILTY CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 200 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	200.00	200.00
2)	0.004	0.11	1.61	0.00	25.41	25.41	15.79	215.79	215.79
3)	0.007	0.20	1.61	0.00	46.20	46.20	28.67	228.67	228.67
4)	0.011	0.31	1.61	0.00	62.37	62.37	38.64	238.64	238.64
5)	0.014	0.39	1.62	0.00	70.46	70.46	43.58	243.58	243.58
6)	0.018	0.50	1.62	0.00	80.85	80.85	49.92	249.92	249.92
7)	0.027	0.75	1.63	0.00	99.33	99.33	61.07	261.07	261.07
8)	0.036	1.00	1.63	0.00	114.35	114.35	70.01	270.01	270.01
9)	0.054	1.51	1.65	0.00	140.33	140.33	85.19	285.19	285.19
10)	0.072	2.01	1.66	0.00	160.55	160.55	96.62	296.62	296.62
11)	0.090	2.51	1.68	0.00	181.34	181.34	108.18	308.18	308.18
12)	0.107	2.99	1.69	0.00	201.55	201.55	119.25	319.25	319.25
13)	0.125	3.49	1.71	0.00	221.76	221.76	130.05	330.05	330.05
14)	0.143	3.99	1.72	0.00	239.66	239.66	139.30	339.30	339.30
15)	0.179	5.00	1.75	0.00	266.81	266.81	152.30	352.30	352.30
16)	0.200	5.58	1.77	0.00	272.58	272.58	153.94	353.94	353.94
17)	0.215	6.00	1.78	0.00	259.88	259.88	145.63	345.63	345.63
18)	0.232	6.48	1.80	0.00	225.23	225.23	125.11	325.11	325.11
19)	0.251	7.01	1.82	0.00	214.83	214.83	118.15	318.15	318.15
20)	0.287	8.01	1.85	0.00	205.01	205.01	110.61	310.61	310.61
21)	0.322	8.99	1.89	0.00	189.42	189.42	100.28	300.28	300.28
22)	0.358	9.99	1.93	0.00	174.41	174.41	90.51	290.51	290.51
23)	0.430	12.00	2.01	0.00	161.70	161.70	80.55	280.55	280.55
24)	0.502	14.01	2.10	0.00	153.62	153.62	73.32	273.32	273.32
25)	0.573	15.99	2.19	0.00	150.15	150.15	68.57	268.57	268.57
26)	0.645	18.00	2.29	0.00	147.84	147.84	64.44	264.44	264.44
27)	0.717	20.01	2.41	0.00	145.53	145.53	60.39	260.39	260.39

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT1-100B
Boring No. : GT-1 Test Date : 03/13/97 Tested by : C. WASON
Sample No. : B @200 PSI Depth : 100-101 FT Checked by : C. CAPPS
Sample Type : TUBE Elevation : NA
Soil Description : LT. BROWN SILTY CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 200 PSI

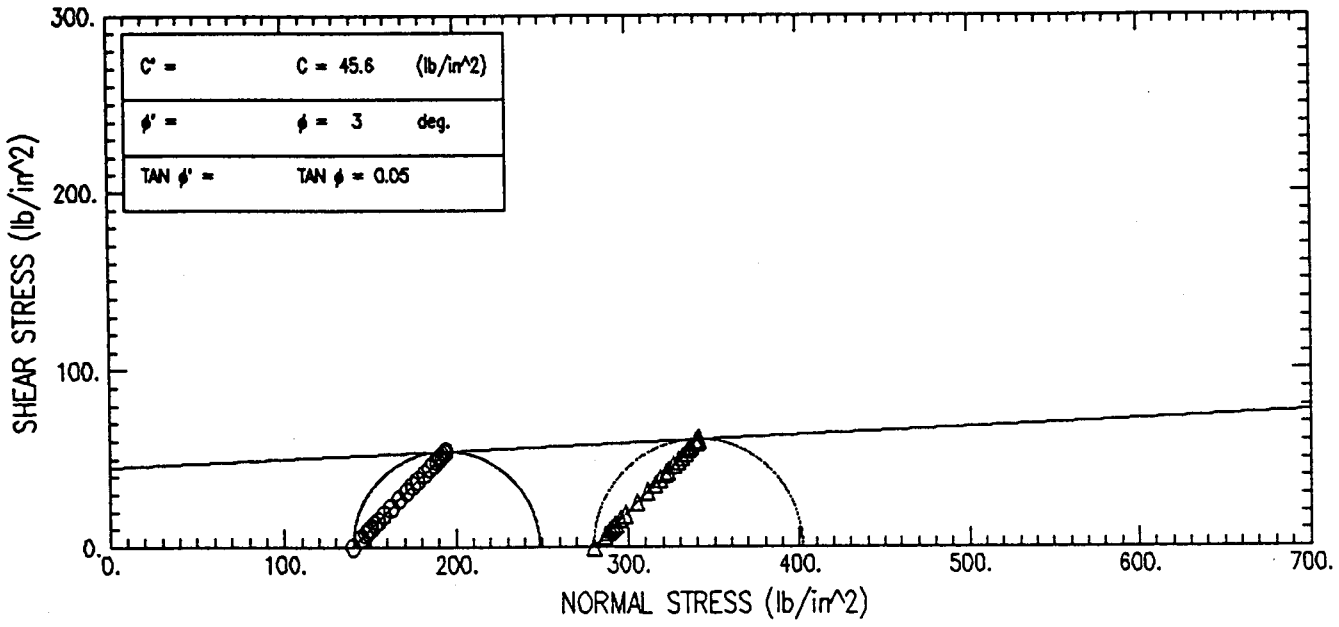
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	178.60	178.32	0.00
WT CONTAINER + DRY SOIL (gm)	140.45	140.23	0.00
WT WATER (gm)	38.15	38.09	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	140.45	140.23	0.00
WATER CONTENT (%)	27.16	27.16	0.00

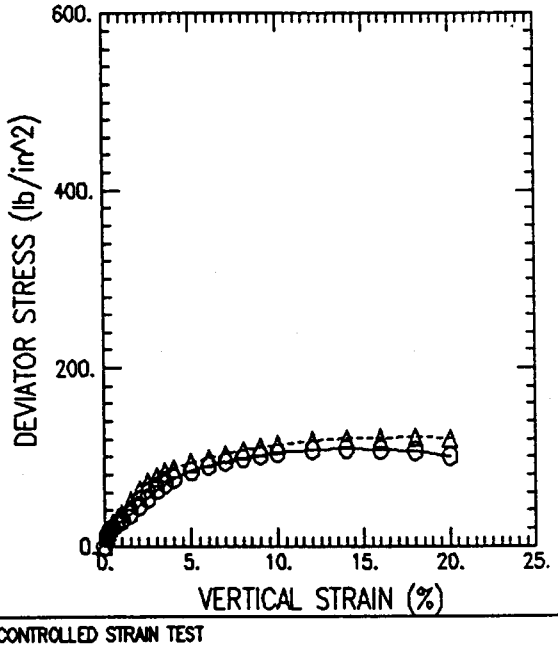
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	27.16	27.16
VOID RATIO	0.83	0.83
WET DENSITY (lb/ft^3)	118.24	118.24
DRY DENSITY (lb/ft^3)	92.98	92.98
DEGREE OF SATURATION (%)	89.52	89.52

Maximum Shear Stress = 76.97 (lb/in^2) at a Vertical Strain of 5.58 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



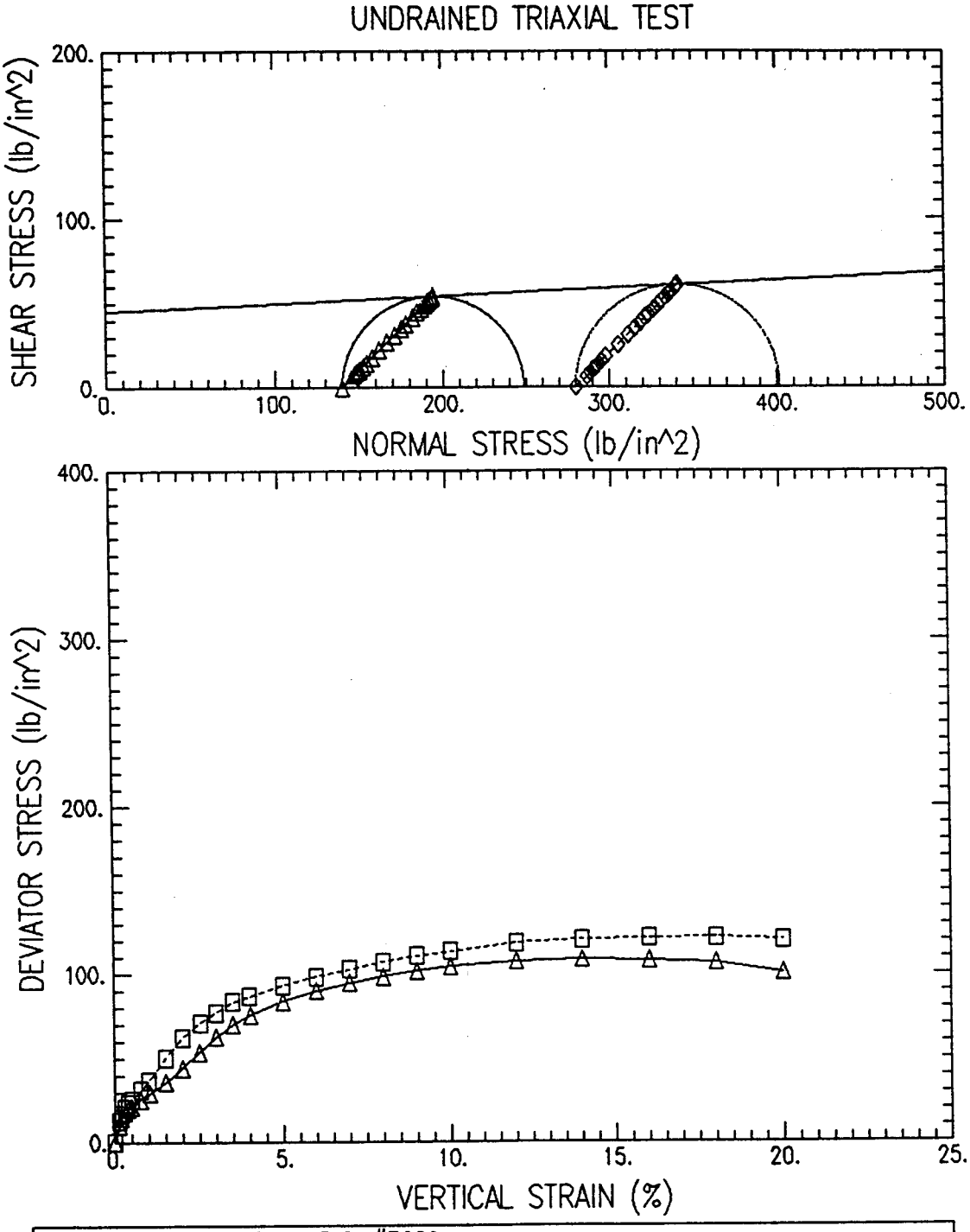
SYMBOL		O	Δ		
TEST NO.		GT1-140A	GT1-140B		
INITIAL	WATER CONTENT (%)	27.96	26.96		
	DRY DENSITY (lb/ft^3)	94.66	95.91		
	SATURATION (%)	95.91	95.26		
	VOID RATIO	0.793	0.770		
BEFORE SHEAR	WATER CONTENT (%)	27.96	26.96		
	DRY DENSITY (lb/ft^3)	94.66	95.91		
	SATURATION (%)	95.91	95.26		
	VOID RATIO	0.793	0.770		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		140.00	280.00		
MAX. DEV. STRESS (lb/in^2)		108.61	121.82		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.56	3.58		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) GRAYISH BROWN CLAYEY SILT TO SILTY CLAY 2) GRAYISH BROWN CLAYEY SILT TO SILTY CLAY

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 140 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 280 PSI				BORING NO. GT-1	SAMPLE NO.	A @140 PSI	B @280 PSI		
				TECH. C. WASON	DEPTH/ELEV	140-141 FT	140-141 FT		
				LABORATORY	DATE	03/14/97	03/14/97		
				TRIAXIAL COMPRESSION TEST REPORT					

Woodward-Clyde



Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-1	A @140 PSI	140-141 FT	GT1-140A	GT1A-140.UU
GT-1	B @280 PSI	140-141 FT	GT1-140B	GT1B-140.UU

Failure Criteria: Peak Deviator Stress

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No.. : A @140 PSI
Sample Type : TUBE
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 140 PSI

Location : PIKCLES BUTTE L/F- IDAHO
Test No. : GT1-140A
Test Date : 03/14/97
Depth : 140-141 FT
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 3.563 (in)
Area : 1.61 (in^2)
Volume : 5.72 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	140.00	140.00
2)	0.004	0.11	1.61	0.00	16.17	16.17	10.05	150.05	150.05
3)	0.007	0.20	1.61	0.00	24.26	24.26	15.05	155.05	155.05
4)	0.011	0.31	1.61	0.00	28.88	28.88	17.89	157.89	157.89
5)	0.014	0.39	1.62	0.00	32.34	32.34	20.01	160.01	160.01
6)	0.018	0.51	1.62	0.00	34.65	34.65	21.39	161.39	161.39
7)	0.027	0.76	1.63	0.00	41.58	41.58	25.56	165.56	165.56
8)	0.036	1.01	1.63	0.00	47.93	47.93	29.34	169.34	169.34
9)	0.053	1.49	1.65	0.00	59.48	59.48	36.12	176.12	176.12
10)	0.071	1.99	1.66	0.00	73.92	73.92	44.50	184.50	184.50
11)	0.089	2.50	1.68	0.00	90.09	90.09	53.76	193.76	193.76
12)	0.107	3.00	1.69	0.00	106.26	106.26	62.85	202.85	202.85
13)	0.125	3.51	1.71	0.00	119.54	119.54	70.08	210.08	210.08
14)	0.143	4.01	1.72	0.00	130.52	130.52	75.83	215.83	215.83
15)	0.178	5.00	1.75	0.00	146.69	146.69	83.73	223.73	223.73
16)	0.214	6.01	1.78	0.00	160.55	160.55	89.96	229.96	229.96
17)	0.249	6.99	1.82	0.00	172.10	172.10	94.68	234.68	234.68
18)	0.285	8.00	1.85	0.00	182.49	182.49	98.48	238.48	238.48
19)	0.321	9.01	1.89	0.00	192.31	192.31	101.76	241.76	241.76
20)	0.356	9.99	1.93	0.00	200.97	200.97	104.30	244.30	244.30
21)	0.428	12.01	2.01	0.00	215.99	215.99	107.56	247.56	247.56
22)	0.499	14.01	2.10	0.00	227.54	227.54	108.61	248.61	248.61
23)	0.570	16.00	2.19	0.00	236.78	236.78	108.12	248.12	248.12
24)	0.641	17.99	2.29	0.00	244.86	244.86	106.75	246.75	246.75
25)	0.713	20.01	2.41	0.00	243.13	243.13	100.90	240.90	240.90

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : A @140 PSI
Sample Type : TUBE
Location : PIKCLES BUTTE L/F- IDAHO
Test No. : GT1-140A
Test Date : 03/14/97
Depth : 140-141 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 140 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	181.94	181.94	0.00
WT CONTAINER + DRY SOIL (gm)	142.18	142.18	0.00
WT WATER (gm)	39.76	39.76	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	142.18	142.18	0.00
WATER CONTENT (%)	27.96	27.96	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	27.96	27.96
VOID RATIO	0.79	0.79
WET DENSITY (lb/ft^3)	121.13	121.13
DRY DENSITY (lb/ft^3)	94.66	94.66
DEGREE OF SATURATION (%)	95.91	95.91

Maximum Shear Stress = 54.30 (lb/in^2) at a Vertical Strain of 14.01 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : B @280 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-140B
Test Date : 03/14/97
Depth : 140-141 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 280 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	280.00	280.00
2)	0.004	0.11	1.61	0.00	20.79	20.79	12.92	292.92	292.92
3)	0.007	0.20	1.61	0.00	27.72	27.72	17.20	297.20	297.20
4)	0.011	0.31	1.61	0.00	33.50	33.50	20.75	300.75	300.75
5)	0.014	0.39	1.62	0.00	38.12	38.12	23.58	303.58	303.58
6)	0.018	0.50	1.62	0.00	41.58	41.58	25.67	305.67	305.67
7)	0.027	0.75	1.63	0.00	50.82	50.82	31.25	311.25	311.25
8)	0.036	1.00	1.63	0.00	60.06	60.06	36.77	316.77	316.77
9)	0.054	1.51	1.65	0.00	83.16	83.16	50.48	330.48	330.48
10)	0.072	2.01	1.66	0.00	103.95	103.95	62.56	342.56	342.56
11)	0.090	2.51	1.68	0.00	118.97	118.97	70.97	350.97	350.97
12)	0.107	2.99	1.69	0.00	130.52	130.52	77.22	357.22	357.22
13)	0.125	3.49	1.71	0.00	142.07	142.07	83.32	363.32	363.32
14)	0.143	3.99	1.72	0.00	149.00	149.00	86.60	366.60	366.60
15)	0.179	5.00	1.75	0.00	162.86	162.86	92.96	372.96	372.96
16)	0.215	6.00	1.78	0.00	175.56	175.56	98.38	378.38	378.38
17)	0.251	7.01	1.82	0.00	187.11	187.11	102.90	382.90	382.90
18)	0.287	8.01	1.85	0.00	198.66	198.66	107.18	387.18	387.18
19)	0.322	8.99	1.89	0.00	209.06	209.06	110.67	390.67	390.67
20)	0.358	9.99	1.93	0.00	218.30	218.30	113.29	393.29	393.29
21)	0.430	12.00	2.01	0.00	237.93	237.93	118.52	398.52	398.52
22)	0.502	14.01	2.10	0.00	252.37	252.37	120.45	400.45	400.45
23)	0.573	15.99	2.19	0.00	265.65	265.65	121.32	401.32	401.32
24)	0.645	18.00	2.29	0.00	279.51	279.51	121.82	401.82	401.82
25)	0.717	20.01	2.41	0.00	289.91	289.91	120.31	400.31	400.31

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT1-140B
Boring No. : GT-1 Test Date : 03/14/97 Tested by : C. WASON
Sample No. : B @280 PSI Depth : 140-141 FT Checked by : C. CAPPS
Sample Type : TUBE Elevation : NA
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 280 PSI

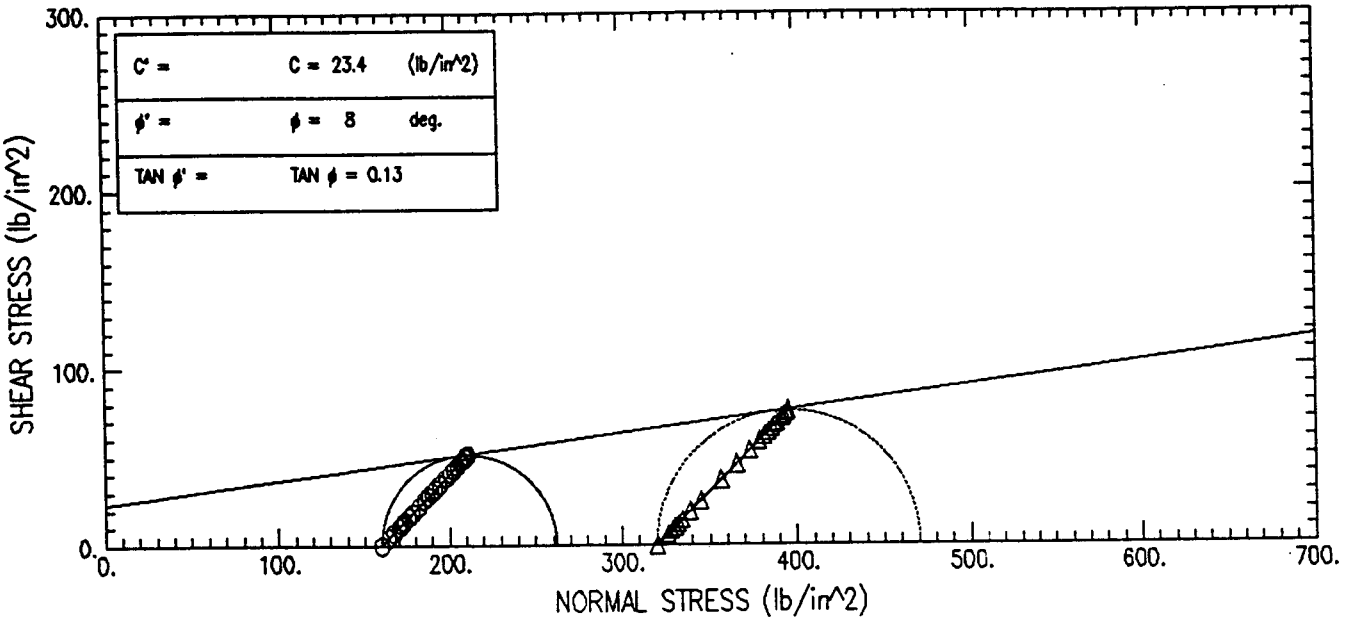
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	183.92	183.92	0.00
WT CONTAINER + DRY SOIL (gm)	144.87	144.87	0.00
WT WATER (gm)	39.05	39.05	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	144.87	144.87	0.00
WATER CONTENT (%)	26.96	26.96	0.00

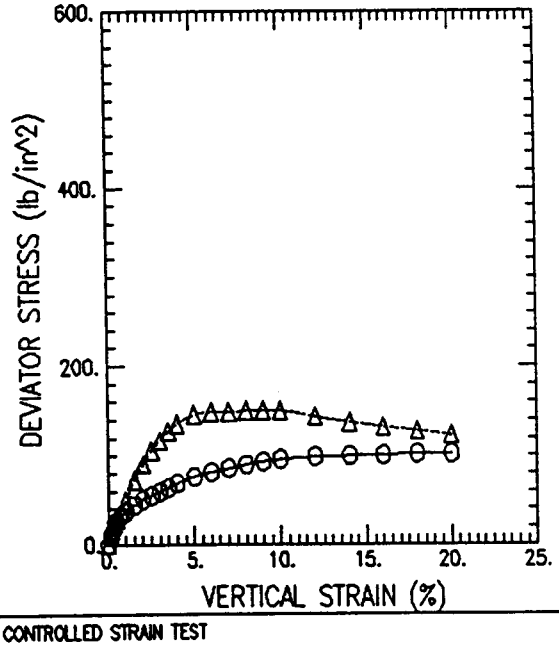
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	26.96	26.96
VOID RATIO	0.77	0.77
WET DENSITY (lb/ft^3)	121.76	121.76
DRY DENSITY (lb/ft^3)	95.91	95.91
DEGREE OF SATURATION (%)	95.26	95.26

Maximum Shear Stress = 60.91 (lb/in^2) at a Vertical Strain of 18.00 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



SYMBOL		○	△		
TEST NO.		GT1-160A	GT1-160B		
INITIAL	WATER CONTENT (%)	27.22	26.58		
	DRY DENSITY (lb/ft^3)	96.39	96.51		
	SATURATION (%)	97.30	95.30		
	VOID RATIO	0.761	0.759		
BEFORE SHEAR	WATER CONTENT (%)	27.22	26.58		
	DRY DENSITY (lb/ft^3)	96.39	96.51		
	SATURATION (%)	97.30	95.30		
	VOID RATIO	0.761	0.759		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		160.00	320.00		
MAX. DEV. STRESS (lb/in^2)		101.94	150.42		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.58	3.58		

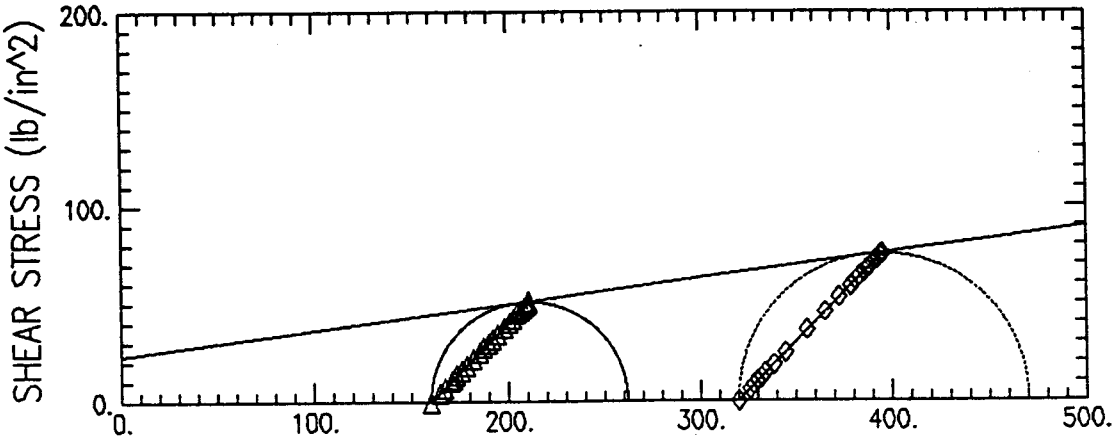
CONTROLLED STRAIN TEST

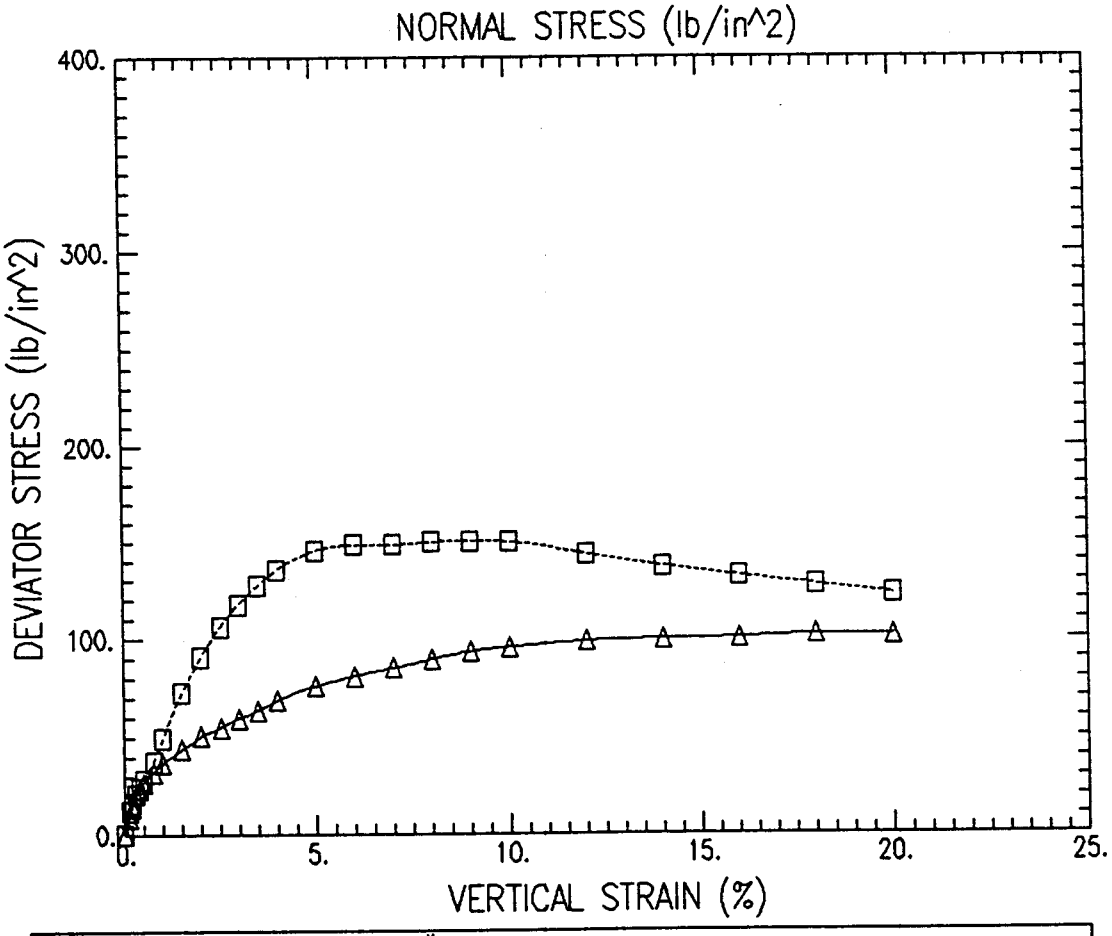
DESCRIPTION OF SPECIMENS: 1) GRAYISH BROWN CLAYEY SILT TO SILTY CLAY 2) GRAYISH BROWN CLAYEY SILT TO SILTY CLAY

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 160 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 320 PSI				BORING NO. GT-1	SAMPLE NO.	A @160 PSI	B @320 PSI		
				TECH. C. WASON	DEPTH/ELEV	160-161 FT	160-161 FT		
				LABORATORY	DATE	03/14/97	03/14/97		
				TRIAXIAL COMPRESSION TEST REPORT					

Woodward-Clyde

UNDRAINED TRIAXIAL TEST





Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-1	A @160 PSI	160-161 FT	GT1-160A	GT1A-160.UU
GT-1	B @320 PSI	160-161 FT	GT1-160B	GT1B-160.UU

. **Failure Criteria: Peak Deviator Stress**

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : A @160 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-160A
Test Date : 03/14/97
Depth : 160-161 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 160 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	160.00	160.00
2)	0.004	0.11	1.61	0.00	13.86	13.86	8.61	168.61	168.61
3)	0.007	0.20	1.61	0.00	23.10	23.10	14.34	174.34	174.34
4)	0.011	0.31	1.61	0.00	33.50	33.50	20.75	180.75	180.75
5)	0.014	0.39	1.62	0.00	38.12	38.12	23.58	183.58	183.58
6)	0.018	0.50	1.62	0.00	43.89	43.89	27.10	187.10	187.10
7)	0.027	0.75	1.63	0.00	52.55	52.55	32.31	192.31	192.31
8)	0.036	1.00	1.63	0.00	60.06	60.06	36.77	196.77	196.77
9)	0.054	1.51	1.65	0.00	72.77	72.77	44.17	204.17	204.17
10)	0.072	2.01	1.66	0.00	84.32	84.32	50.74	210.74	210.74
11)	0.090	2.51	1.68	0.00	92.40	92.40	55.13	215.13	215.13
12)	0.107	2.99	1.69	0.00	101.06	101.06	59.80	219.80	219.80
13)	0.125	3.49	1.71	0.00	108.57	108.57	63.67	223.67	223.67
14)	0.143	3.99	1.72	0.00	118.39	118.39	68.81	228.81	228.81
15)	0.179	5.00	1.75	0.00	133.40	133.40	76.15	236.15	236.15
16)	0.215	6.00	1.78	0.00	144.95	144.95	81.23	241.23	241.23
17)	0.251	7.01	1.82	0.00	155.35	155.35	85.44	245.44	245.44
18)	0.287	8.01	1.85	0.00	166.32	166.32	89.74	249.74	249.74
19)	0.322	8.99	1.89	0.00	176.72	176.72	93.55	253.55	253.55
20)	0.358	9.99	1.93	0.00	184.22	184.22	95.61	255.61	255.61
21)	0.430	12.00	2.01	0.00	198.08	198.08	98.67	258.67	258.67
22)	0.502	14.01	2.10	0.00	209.06	209.06	99.77	259.77	259.77
23)	0.573	15.99	2.19	0.00	220.03	220.03	100.49	260.49	260.49
24)	0.645	18.00	2.29	0.00	233.89	233.89	101.94	261.94	261.94
25)	0.717	20.01	2.41	0.00	244.86	244.86	101.62	261.62	261.62

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT1-160A
Boring No. : GT-1 Test Date : 03/14/97 Tested by : C. WASON
Sample No. : A @160 PSI Depth : 160-161 FT Checked by : C. CAPPS
Sample Type : TUBE Elevation : NA
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 160 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	185.22	185.22	0.00
WT CONTAINER + DRY SOIL (gm)	145.59	145.59	0.00
WT WATER (gm)	39.63	39.63	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	145.59	145.59	0.00
WATER CONTENT (%)	27.22	27.22	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	27.22	27.22
VOID RATIO	0.76	0.76
WET DENSITY (lb/ft^3)	122.62	122.62
DRY DENSITY (lb/ft^3)	96.39	96.39
DEGREE OF SATURATION (%)	97.30	97.30

Maximum Shear Stress = 50.97 (lb/in^2) at a Vertical Strain of 18.00 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : B @320 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-160B
Test Date : 03/14/97
Depth : 160-161 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 320 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	320.00	320.00
2)	0.004	0.11	1.61	0.00	19.64	19.64	12.20	332.20	332.20
3)	0.007	0.20	1.61	0.00	26.57	26.57	16.49	336.49	336.49
4)	0.011	0.31	1.61	0.00	33.50	33.50	20.75	340.75	340.75
5)	0.014	0.39	1.62	0.00	39.27	39.27	24.29	344.29	344.29
6)	0.018	0.50	1.62	0.00	46.20	46.20	28.53	348.53	348.53
7)	0.027	0.75	1.63	0.00	61.22	61.22	37.64	357.64	357.64
8)	0.036	1.00	1.63	0.00	80.85	80.85	49.50	369.50	369.50
9)	0.054	1.51	1.65	0.00	120.12	120.12	72.92	392.92	392.92
10)	0.072	2.01	1.66	0.00	151.31	151.31	91.06	411.06	411.06
11)	0.090	2.51	1.68	0.00	177.87	177.87	106.12	426.12	426.12
12)	0.107	2.99	1.69	0.00	198.66	198.66	117.54	437.54	437.54
13)	0.125	3.49	1.71	0.00	217.14	217.14	127.34	447.34	447.34
14)	0.143	3.99	1.72	0.00	233.31	233.31	135.61	455.61	455.61
15)	0.179	5.00	1.75	0.00	255.26	255.26	145.70	465.70	465.70
16)	0.215	6.00	1.78	0.00	265.65	265.65	148.87	468.87	468.87
17)	0.251	7.01	1.82	0.00	270.27	270.27	148.64	468.64	468.64
18)	0.287	8.01	1.85	0.00	278.36	278.36	150.18	470.18	470.18
19)	0.322	8.99	1.89	0.00	284.13	284.13	150.42	470.42	470.42
20)	0.358	9.99	1.93	0.00	289.33	289.33	150.15	470.15	470.15
21)	0.430	12.00	2.01	0.00	288.17	288.17	143.54	463.54	463.54
22)	0.502	14.01	2.10	0.00	287.60	287.60	137.26	457.26	457.26
23)	0.573	15.99	2.19	0.00	289.33	289.33	132.14	452.14	452.14
24)	0.645	18.00	2.29	0.00	292.79	292.79	127.61	447.61	447.61
25)	0.717	20.01	2.41	0.00	296.26	296.26	122.95	442.95	442.95

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT1-160B
Boring No. : GT-1 Test Date : 03/14/97 Tested by : C. WASON
Sample No. : B @320 PSI Depth : 160-161 FT Checked by : C. CAPPS
Sample Type : TUBE Elevation : NA
Soil Description : GRAYISH BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 320 PSI

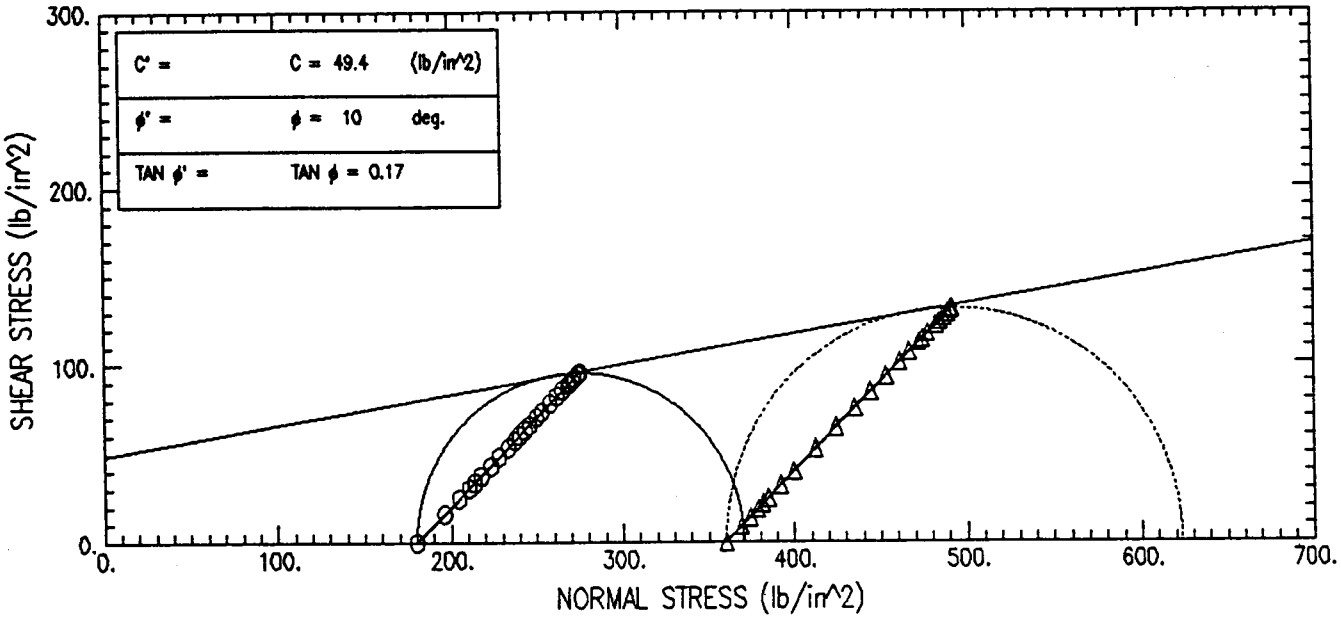
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	184.52	184.52	0.00
WT CONTAINER + DRY SOIL (gm)	145.77	145.77	0.00
WT WATER (gm)	38.75	38.75	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	145.77	145.77	0.00
WATER CONTENT (%)	26.58	26.58	0.00

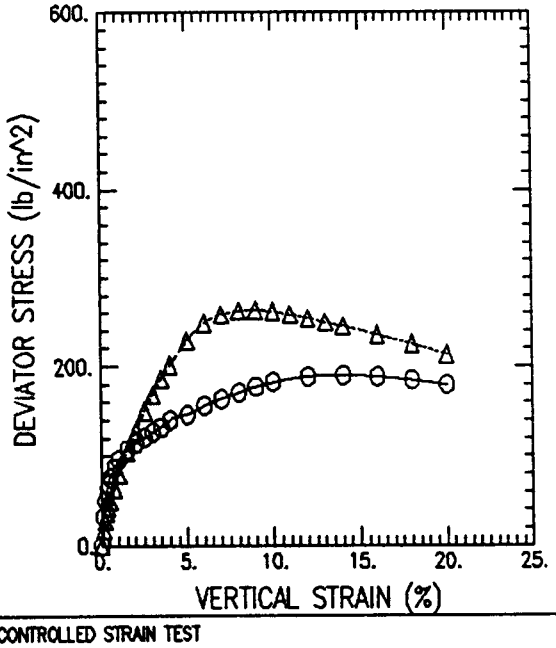
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	26.58	26.58
VOID RATIO	0.76	0.76
WET DENSITY (lb/ft^3)	122.16	122.16
DRY DENSITY (lb/ft^3)	96.51	96.51
DEGREE OF SATURATION (%)	95.30	95.30

Maximum Shear Stress = 75.21 (lb/in^2) at a Vertical Strain of 8.99 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress

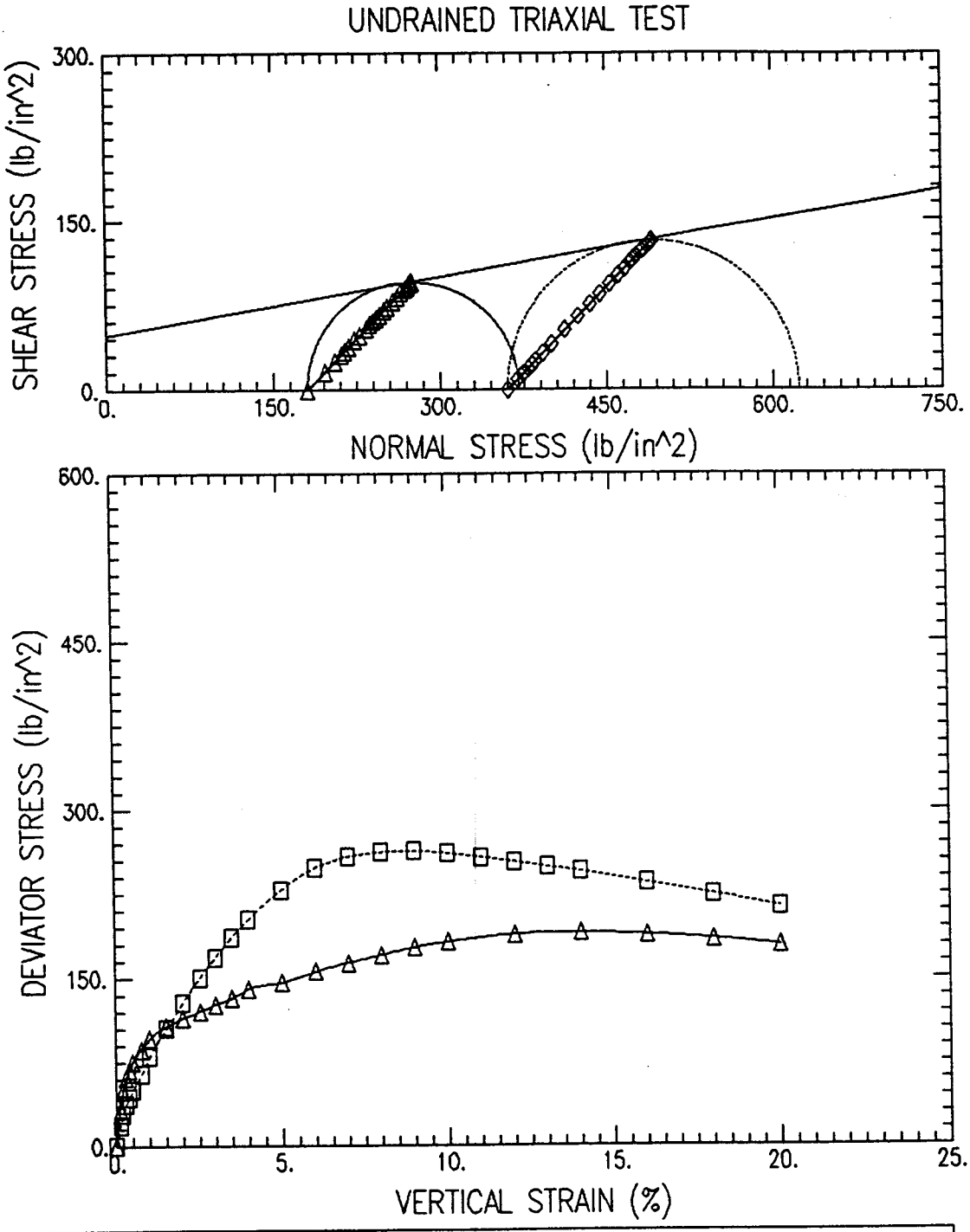


SYMBOL		○	△		
TEST NO.		GT1-180A	GT1-180B		
INITIAL	WATER CONTENT (%)	26.50	24.43		
	DRY DENSITY (lb/ft^3)	90.24	88.17		
	SATURATION (%)	81.82	71.85		
	VOID RATIO	0.881	0.925		
BEFORE SHEAR	WATER CONTENT (%)	26.50	24.43		
	DRY DENSITY (lb/ft^3)	90.24	88.17		
	SATURATION (%)	81.82	71.85		
	VOID RATIO	0.881	0.925		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		180.00	360.00		
MAX. DEV. STRESS (lb/in^2)		190.18	263.23		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.58	3.58		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) LT. YELLOWISH BROWN SI-CLAY TO CLAYEY SILT 2) LT. YELLOWISH BROWN SI-CLAY TO CLAYEY SILT

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 180 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 360 PSI				BORING NO. GT-1	SAMPLE NO.	A @180 PSI	B @360 PSI		
				TECH. C. WASON	DEPTH/ELEV	180-181 FT	180-181 FT		
				LABORATORY	DATE	03/14/97	03/14/97		
				TRIAXIAL COMPRESSION TEST REPORT					



Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-1	A @180 PSI	180-181 FT	GT1-180A	GT1A-180.UU
GT-1	B @360 PSI	180-181 FT	GT1-180B	GT1B-180.UU

Failure Criteria: Peak Deviator Stress

Wed Mar 19 16:08:26 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : A @180 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-180A
Test Date : 03/14/97
Depth : 180-181 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. YELLOWISH BROWN SI-CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 180 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	180.00	180.00
2)	0.004	0.11	1.61	0.00	51.98	51.98	32.30	212.30	212.30
3)	0.007	0.20	1.61	0.00	79.70	79.70	49.46	229.46	229.46
4)	0.011	0.31	1.61	0.00	99.33	99.33	61.53	241.53	241.53
5)	0.014	0.39	1.62	0.00	109.73	109.73	67.88	247.88	247.88
6)	0.018	0.50	1.62	0.00	122.43	122.43	75.59	255.59	255.59
7)	0.027	0.75	1.63	0.00	140.91	140.91	86.64	266.64	266.64
8)	0.036	1.00	1.63	0.00	157.08	157.08	96.17	276.17	276.17
9)	0.054	1.51	1.65	0.00	176.72	176.72	107.27	287.27	287.27
10)	0.072	2.01	1.66	0.00	190.58	190.58	114.69	294.69	294.69
11)	0.090	2.51	1.68	0.00	202.13	202.13	120.59	300.59	300.59
12)	0.107	2.99	1.69	0.00	213.68	213.68	126.43	306.43	306.43
13)	0.125	3.49	1.71	0.00	225.23	225.23	132.09	312.09	312.09
14)	0.143	3.99	1.72	0.00	241.40	241.40	140.31	320.31	320.31
15)	0.179	5.00	1.75	0.00	256.41	256.41	146.36	326.36	326.36
16)	0.215	6.00	1.78	0.00	278.36	278.36	155.99	335.99	335.99
17)	0.251	7.01	1.82	0.00	297.99	297.99	163.88	343.88	343.88
18)	0.287	8.01	1.85	0.00	316.47	316.47	170.75	350.75	350.75
19)	0.322	8.99	1.89	0.00	334.95	334.95	177.32	357.32	357.32
20)	0.358	9.99	1.93	0.00	351.12	351.12	182.22	362.22	362.22
21)	0.430	12.00	2.01	0.00	378.84	378.84	188.71	368.71	368.71
22)	0.502	14.01	2.10	0.00	398.48	398.48	190.18	370.18	370.18
23)	0.573	15.99	2.19	0.00	412.34	412.34	188.31	368.31	368.31
24)	0.645	18.00	2.29	0.00	423.89	423.89	184.75	364.75	364.75
25)	0.717	20.01	2.41	0.00	431.97	431.97	179.27	359.27	359.27

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT1-180A
Boring No. : GT-1
Test Date : 03/14/97
Tested by : C. WASON
Sample No. : A @180 PSI
Depth : 180-181 FT
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : LT. YELLOWISH BROWN SI-CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 180 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	172.42	172.42	0.00
WT CONTAINER + DRY SOIL (gm)	136.30	136.30	0.00
WT WATER (gm)	36.12	36.12	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	136.30	136.30	0.00
WATER CONTENT (%)	26.50	26.50	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	26.50	26.50
VOID RATIO	0.88	0.88
WET DENSITY (lb/ft^3)	114.15	114.15
DRY DENSITY (lb/ft^3)	90.24	90.24
DEGREE OF SATURATION (%)	81.82	81.82

Maximum Shear Stress = 95.09 (lb/in^2) at a Vertical Strain of 14.01 %

Wed Mar 19 16:09:01 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : 8 @360 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-180B
Test Date : 03/14/97
Depth : 180-181 FT
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. YELLOWISH BROWN SI-CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 360 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	360.00	360.00
2)	0.004	0.11	1.61	0.00	28.88	28.88	17.95	377.95	377.95
3)	0.007	0.20	1.61	0.00	45.05	45.05	27.96	387.96	387.96
4)	0.011	0.31	1.61	0.00	60.06	60.06	37.21	397.21	397.21
5)	0.014	0.39	1.62	0.00	70.46	70.46	43.58	403.58	403.58
6)	0.018	0.50	1.62	0.00	80.85	80.85	49.92	409.92	409.92
7)	0.027	0.75	1.63	0.00	103.95	103.95	63.91	423.91	423.91
8)	0.036	1.00	1.63	0.00	130.52	130.52	79.91	439.91	439.91
9)	0.054	1.51	1.65	0.00	173.25	173.25	105.17	465.17	465.17
10)	0.072	2.01	1.66	0.00	213.68	213.68	128.59	488.59	488.59
11)	0.090	2.51	1.68	0.00	251.79	251.79	150.22	510.22	510.22
12)	0.107	2.99	1.69	0.00	284.71	284.71	168.45	528.45	528.45
13)	0.125	3.49	1.71	0.00	317.63	317.63	186.27	546.27	546.27
14)	0.143	3.99	1.72	0.00	347.66	347.66	202.07	562.07	562.07
15)	0.179	5.00	1.75	0.00	400.79	400.79	228.78	588.78	588.78
16)	0.215	6.00	1.78	0.00	443.52	443.52	248.55	608.55	608.55
17)	0.251	7.01	1.82	0.00	469.51	469.51	258.21	618.21	618.21
18)	0.287	8.01	1.85	0.00	486.26	486.26	262.35	622.35	622.35
19)	0.322	8.99	1.89	0.00	497.23	497.23	263.23	623.23	623.23
20)	0.358	9.99	1.93	0.00	503.58	503.58	261.35	621.35	621.35
21)	0.394	11.00	1.97	0.00	507.05	507.05	257.86	617.86	617.86
22)	0.430	12.00	2.01	0.00	509.36	509.36	253.72	613.72	613.72
23)	0.466	13.01	2.05	0.00	511.09	511.09	249.25	609.25	609.25
24)	0.502	14.01	2.10	0.00	513.40	513.40	245.03	605.03	605.03
25)	0.573	15.99	2.19	0.00	515.13	515.13	235.26	595.26	595.26
26)	0.645	18.00	2.29	0.00	515.71	515.71	224.77	584.77	584.77
27)	0.717	20.01	2.41	0.00	514.55	514.55	213.54	573.54	573.54

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT1-180B
Boring No. : GT-1 Test Date : 03/14/97 Tested by : C. WASON
Sample No. : B @360 PSI Depth : 180-181 FT Checked by : C. CAPPS
Sample Type : TUBE Elevation : NA
Soil Description : LT. YELLOWISH BROWN SI-CLAY TO CLAYEY SILT
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 360 PSI

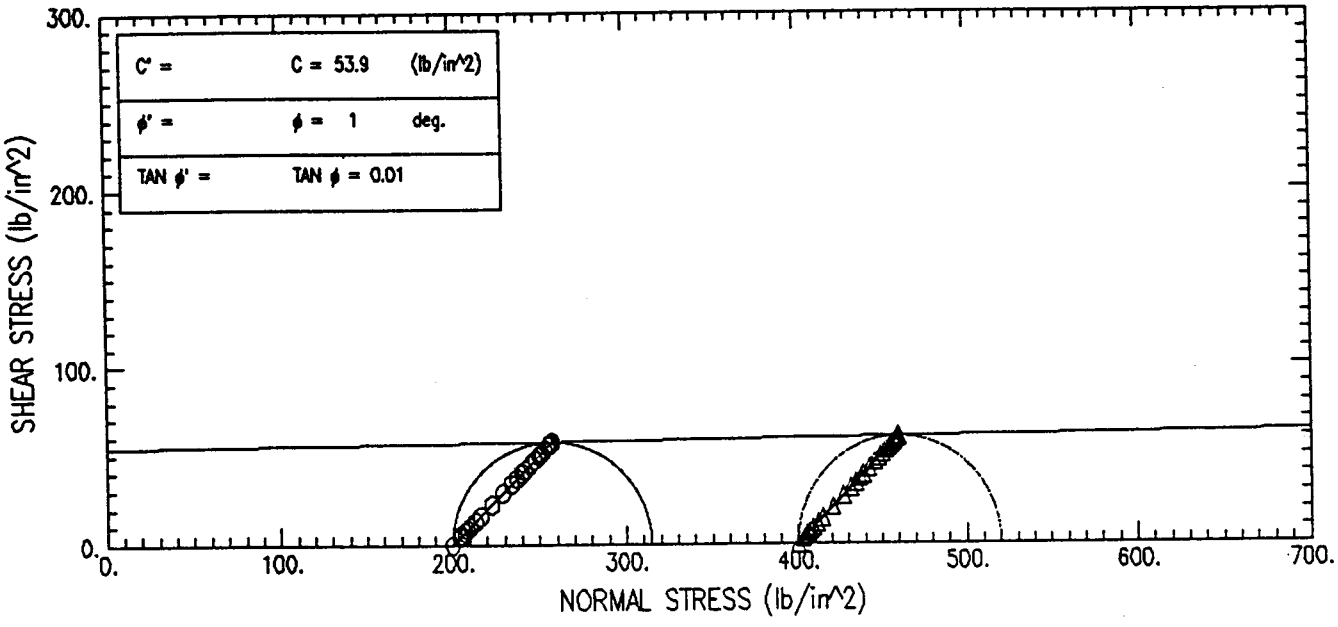
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	165.72	164.68	0.00
WT CONTAINER + DRY SOIL (gm)	133.18	132.35	0.00
WT WATER (gm)	32.54	32.33	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	133.18	132.35	0.00
WATER CONTENT (%)	24.43	24.43	0.00

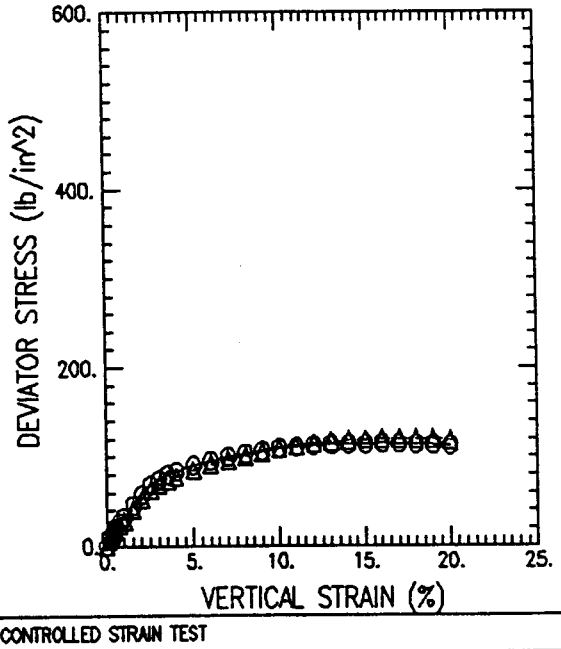
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	24.43	24.43
VOID RATIO	0.92	0.92
WET DENSITY (lb/ft^3)	109.71	109.71
DRY DENSITY (lb/ft^3)	88.17	88.17
DEGREE OF SATURATION (%)	71.85	71.85

Maximum Shear Stress = 131.62 (lb/in^2) at a Vertical Strain of 8.99 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



SYMBOL		○	△		
TEST NO.		GT1-200A	GT1-200B		
INITIAL	WATER CONTENT (%)	27.12	27.09		
	DRY DENSITY (lb/ft^3)	95.73	94.66		
	SATURATION (%)	95.44	92.93		
	VOID RATIO	0.773	0.793		
BEFORE SHEAR	WATER CONTENT (%)	27.12	27.09		
	DRY DENSITY (lb/ft^3)	95.73	94.66		
	SATURATION (%)	95.44	92.93		
	VOID RATIO	0.773	0.793		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		200.00	400.00		
MAX. DEV. STRESS (lb/in^2)		114.47	119.74		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.58	3.58		

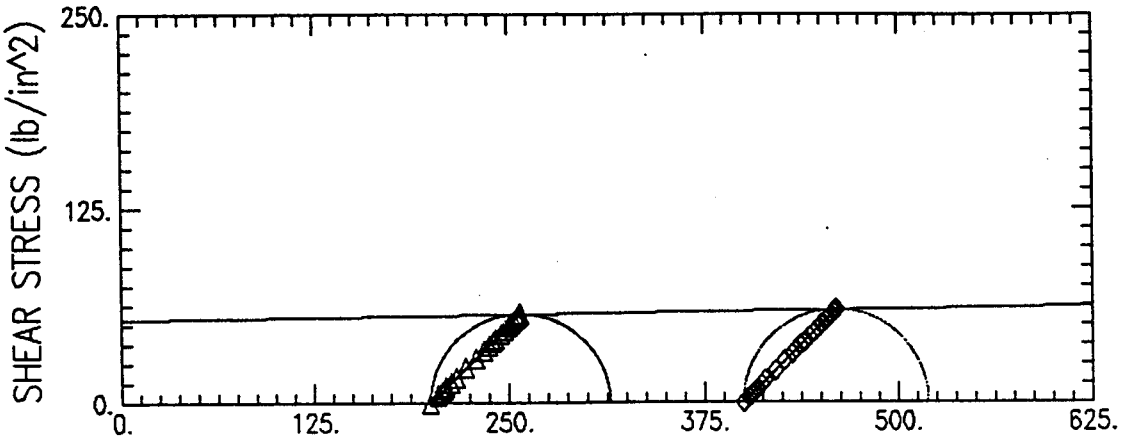
CONTROLLED STRAIN TEST

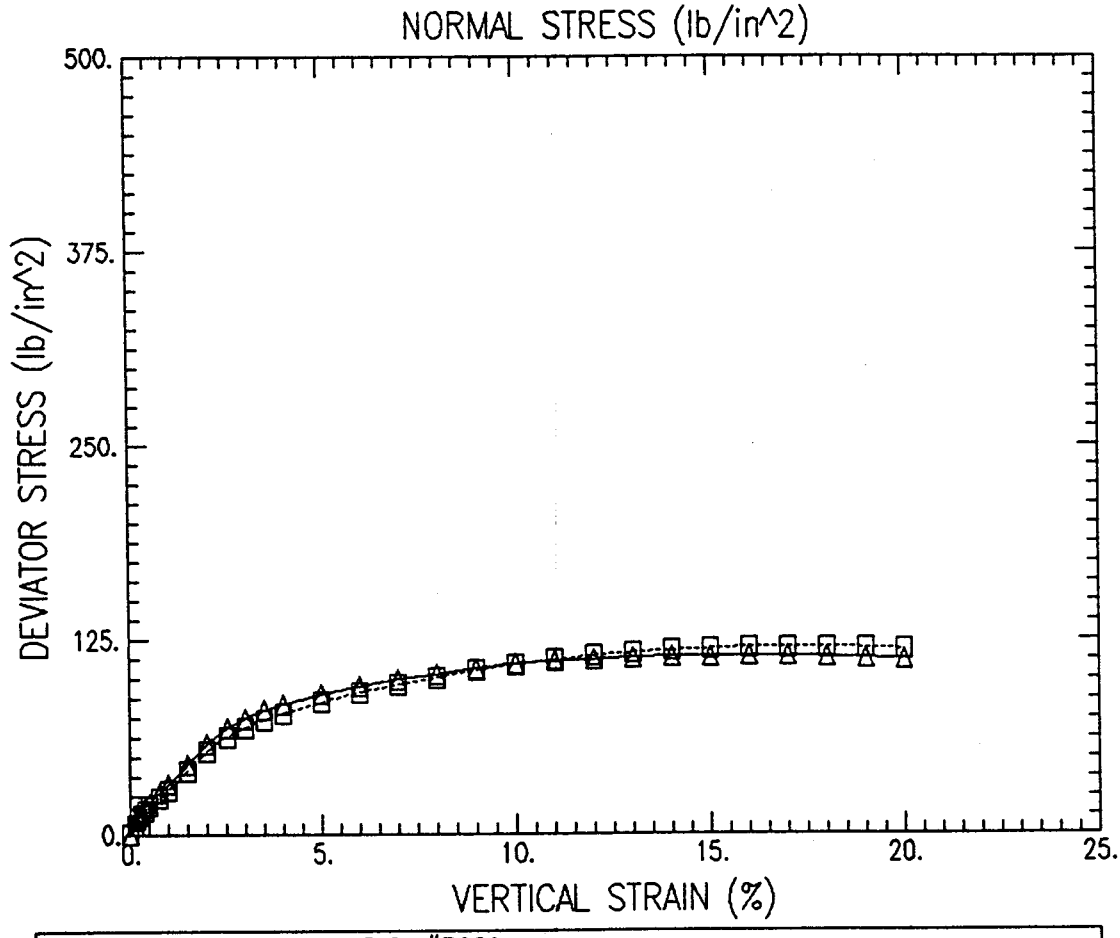
DESCRIPTION OF SPECIMENS: 1) LT. BROWN CLAYEY SILT TO SILTY CLAY 2) LT. BROWN CLAYEY SILT TO SILTY CLAY

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 200 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 400 PSI				BORING NO. GT-1	SAMPLE NO.	A @200 PSI	B @400 PSI		
				TECH. C. WASON	DEPTH/ELEV	200-201 FT	200-201 FT		
				LABORATORY	DATE	03/17/97	03/17/97		
				TRIAXIAL COMPRESSION TEST REPORT					

Woodward-Clyde

UNDRAINED TRIAXIAL TEST





Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-1	A @200 PSI	200-201 FT	GT1-200A	GT1A-200.UU
GT-1	B @400 PSI	200-201 FT	GT1-200B	GT1B-200.UU

Failure Criteria: Peak Deviator Stress

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : A @200 PSI
Sample Type : TUBE
Soil Description : LT. BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 200 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-200A
Test Date : 03/17/97
Depth : 200-201 FT
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	200.00	200.00
2)	0.004	0.11	1.61	0.00	15.02	15.02	9.33	209.33	209.33
3)	0.007	0.20	1.61	0.00	17.33	17.33	10.75	210.75	210.75
4)	0.011	0.31	1.61	0.00	23.10	23.10	14.31	214.31	214.31
5)	0.014	0.39	1.62	0.00	28.30	28.30	17.51	217.51	217.51
6)	0.018	0.50	1.62	0.00	33.50	33.50	20.68	220.68	220.68
7)	0.027	0.75	1.63	0.00	43.31	43.31	26.63	226.63	226.63
8)	0.036	1.00	1.63	0.00	53.13	53.13	32.53	232.53	232.53
9)	0.054	1.51	1.65	0.00	75.08	75.08	45.57	245.57	245.57
10)	0.072	2.01	1.66	0.00	97.02	97.02	58.39	258.39	258.39
11)	0.090	2.51	1.68	0.00	114.35	114.35	68.22	268.22	268.22
12)	0.107	2.99	1.69	0.00	125.90	125.90	74.49	274.49	274.49
13)	0.125	3.49	1.71	0.00	136.29	136.29	79.93	279.93	279.93
14)	0.143	3.99	1.72	0.00	143.80	143.80	83.58	283.58	283.58
15)	0.179	5.00	1.75	0.00	157.66	157.66	89.99	289.99	289.99
16)	0.215	6.00	1.78	0.00	169.79	169.79	95.15	295.15	295.15
17)	0.251	7.01	1.82	0.00	181.34	181.34	99.73	299.73	299.73
18)	0.287	8.01	1.85	0.00	190.58	190.58	102.82	302.82	302.82
19)	0.322	8.99	1.89	0.00	200.97	200.97	106.39	306.39	306.39
20)	0.358	9.99	1.93	0.00	210.79	210.79	109.39	309.39	309.39
21)	0.394	11.00	1.97	0.00	218.30	218.30	111.01	311.01	311.01
22)	0.430	12.00	2.01	0.00	224.65	224.65	111.90	311.90	311.90
23)	0.466	13.01	2.05	0.00	232.16	232.16	113.22	313.22	313.22
24)	0.502	14.01	2.10	0.00	238.51	238.51	113.83	313.83	313.83
25)	0.538	15.02	2.14	0.00	244.28	244.28	114.04	314.04	314.04
26)	0.573	15.99	2.19	0.00	250.64	250.64	114.47	314.47	314.47
27)	0.609	17.00	2.24	0.00	255.83	255.83	114.17	314.17	314.17
28)	0.645	18.00	2.29	0.00	261.03	261.03	113.77	313.77	313.77
29)	0.681	19.01	2.35	0.00	265.65	265.65	113.01	313.01	313.01
30)	0.717	20.01	2.41	0.00	270.27	270.27	112.16	312.16	312.16

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT1-200A
Boring No. : GT-1
Test Date : 03/17/97
Tested by : C. WASON
Sample No. : A @200 PSI
Depth : 200-201 FT
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : LT. BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 200 PSI

Liquid Limit : 0
Plastic Limit : 0
Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	183.82	183.82	0.00
WT CONTAINER + DRY SOIL (gm)	144.60	144.60	0.00
WT WATER (gm)	39.22	39.22	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	144.60	144.60	0.00
WATER CONTENT (%)	27.12	27.12	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	27.12	27.12
VOID RATIO	0.77	0.77
WET DENSITY (lb/ft^3)	121.70	121.70
DRY DENSITY (lb/ft^3)	95.73	95.73
DEGREE OF SATURATION (%)	95.44	95.44

Maximum Shear Stress = 57.23 (lb/in^2) at a Vertical Strain of 15.99 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : B @400 PSI
Sample Type : TUBE
Soil Description : LT. BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 400 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-200B
Test Date : 03/17/97
Depth : 200-201 FT
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	400.00	400.00
2)	0.004	0.11	1.61	0.00	10.40	10.40	6.46	406.46	406.46
3)	0.007	0.20	1.61	0.00	16.17	16.17	10.04	410.04	410.04
4)	0.011	0.31	1.61	0.00	20.79	20.79	12.88	412.88	412.88
5)	0.014	0.39	1.62	0.00	24.83	24.83	15.36	415.36	415.36
6)	0.018	0.50	1.62	0.00	29.45	29.45	18.19	418.19	418.19
7)	0.027	0.75	1.63	0.00	38.12	38.12	23.43	423.43	423.43
8)	0.036	1.00	1.63	0.00	47.36	47.36	28.99	428.99	428.99
9)	0.054	1.51	1.65	0.00	68.15	68.15	41.37	441.37	441.37
10)	0.072	2.01	1.66	0.00	89.51	89.51	53.87	453.87	453.87
11)	0.090	2.51	1.68	0.00	105.68	105.68	63.05	463.05	463.05
12)	0.107	2.99	1.69	0.00	116.66	116.66	69.02	469.02	469.02
13)	0.125	3.49	1.71	0.00	125.90	125.90	73.83	473.83	473.83
14)	0.143	3.99	1.72	0.00	133.98	133.98	77.88	477.88	477.88
15)	0.179	5.00	1.75	0.00	149.00	149.00	85.05	485.05	485.05
16)	0.215	6.00	1.78	0.00	162.86	162.86	91.26	491.26	491.26
17)	0.251	7.01	1.82	0.00	174.98	174.98	96.23	496.23	496.23
18)	0.287	8.01	1.85	0.00	186.53	186.53	100.64	500.64	500.64
19)	0.322	8.99	1.89	0.00	198.66	198.66	105.17	505.17	505.17
20)	0.358	9.99	1.93	0.00	209.63	209.63	108.79	508.79	508.79
21)	0.394	11.00	1.97	0.00	219.45	219.45	111.60	511.60	511.60
22)	0.430	12.00	2.01	0.00	229.85	229.85	114.49	514.49	514.49
23)	0.466	13.01	2.05	0.00	238.51	238.51	116.32	516.32	516.32
24)	0.502	14.01	2.10	0.00	246.59	246.59	117.69	517.69	517.69
25)	0.538	15.02	2.14	0.00	254.10	254.10	118.62	518.62	518.62
26)	0.573	15.99	2.19	0.00	262.19	262.19	119.74	519.74	519.74
27)	0.609	17.00	2.24	0.00	267.96	267.96	119.58	519.58	519.58
28)	0.645	18.00	2.29	0.00	274.31	274.31	119.56	519.56	519.56
29)	0.681	19.01	2.35	0.00	280.67	280.67	119.40	519.40	519.40
30)	0.717	20.01	2.41	0.00	285.29	285.29	118.39	518.39	518.39

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT1-2008
Boring No. : GT-1
Test Date : 03/17/97
Tested by : C. WASON
Sample No. : B @400 PSI
Depth : 200-201 FT
Checked by : C. CAPPS
Sample Type : TUBE
Elevation : NA
Soil Description : LT. BROWN CLAYEY SILT TO SILTY CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 400 PSI

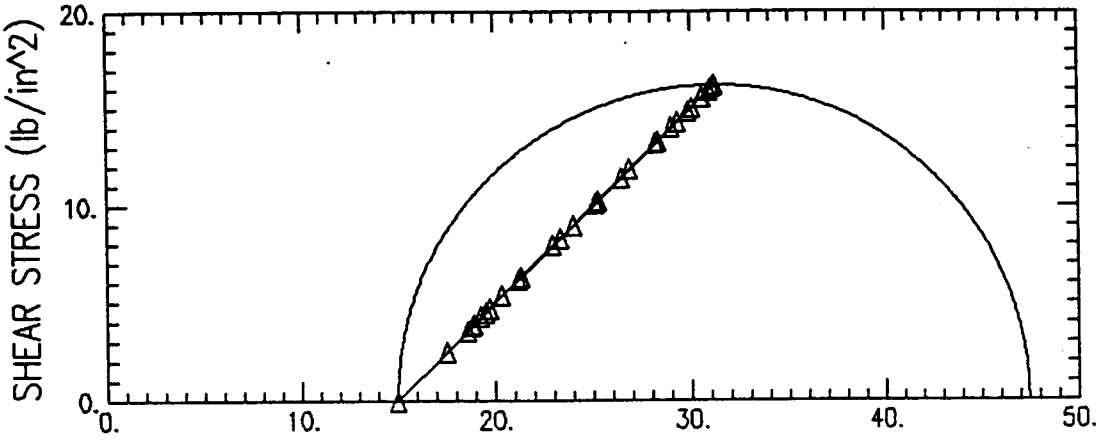
Liquid Limit : 0
Plastic Limit : 0
Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	181.72	181.72	0.00
WT CONTAINER + DRY SOIL (gm)	142.98	142.98	0.00
WT WATER (gm)	38.74	38.74	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	142.98	142.98	0.00
WATER CONTENT (%)	27.09	27.09	0.00

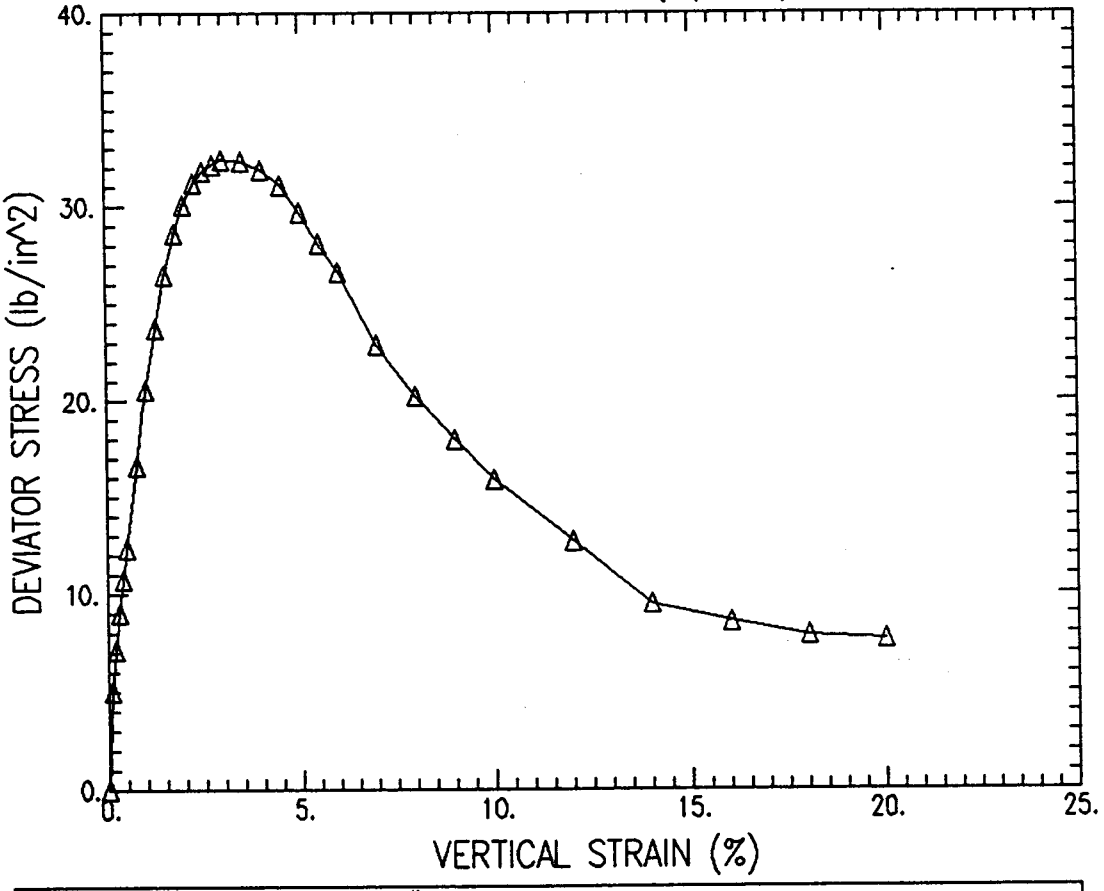
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	27.09	27.09
VOID RATIO	0.79	0.79
WET DENSITY (lb/ft^3)	120.31	120.31
DRY DENSITY (lb/ft^3)	94.66	94.66
DEGREE OF SATURATION (%)	92.93	92.93

Maximum Shear Stress = 59.87 (lb/in^2) at a Vertical Strain of 15.99 %

UNDRAINED TRIAXIAL TEST



NORMAL STRESS (lb/in^2)



Project Name : C. E. L. P.O. #3689				
Boring No:	Sample No	Depth	Test No	Filename
GT-4	BOTTOM	15-17 FEET	GT4-BOTTOM	GT4-15.UU

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-4
Sample No. : BOTTOM
Sample Type : SHELBY
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT4-BOTTOM
Test Date : 03/06/97
Depth : 15-17 FEET
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. BRN CLAYEY FINE SA-SILT / CLAYEY SI-FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 15 PSI

Height : 5.984 (in)
Area : 6.42 (in^2)
Volume : 38.44 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : None

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	6.42	0.00	0.00	0.00	0.00	15.00	15.00
2)	0.006	0.10	6.42	0.00	32.17	32.17	5.01	20.01	20.01
3)	0.012	0.20	6.42	0.00	45.96	45.96	7.15	22.15	22.15
4)	0.018	0.30	6.42	0.00	58.02	58.02	9.03	24.03	24.03
5)	0.024	0.40	6.42	0.00	68.94	68.94	10.73	25.73	25.73
6)	0.030	0.50	6.42	0.00	79.28	79.28	12.34	27.34	27.34
7)	0.045	0.75	6.42	0.00	106.86	106.86	16.63	31.63	31.63
8)	0.060	1.00	6.42	0.00	132.14	132.14	20.57	35.57	35.57
9)	0.075	1.25	6.42	0.00	152.82	152.82	23.79	38.79	38.79
10)	0.090	1.50	6.42	0.00	170.05	170.05	26.47	41.47	41.47
11)	0.105	1.75	6.42	0.00	183.84	183.84	28.62	43.62	43.62
12)	0.120	2.01	6.42	0.00	193.61	193.61	30.14	45.14	45.14
13)	0.135	2.26	6.42	0.00	200.50	200.50	31.21	46.21	46.21
14)	0.150	2.51	6.42	0.00	204.52	204.52	31.84	46.84	46.84
15)	0.165	2.76	6.42	0.00	206.82	206.82	32.19	47.19	47.19
16)	0.180	3.01	6.42	0.00	208.54	208.54	32.46	47.46	47.46
17)	0.209	3.49	6.42	0.00	207.97	207.97	32.37	47.37	47.37
18)	0.239	3.99	6.42	0.00	205.10	205.10	31.93	46.93	46.93
19)	0.269	4.50	6.42	0.00	199.93	199.93	31.12	46.12	46.12
20)	0.299	5.00	6.42	0.00	190.73	190.73	29.69	44.69	44.69
21)	0.329	5.50	6.42	0.00	180.39	180.39	28.08	43.08	43.08
22)	0.359	6.00	6.42	0.00	171.20	171.20	26.65	41.65	41.65
23)	0.419	7.00	6.42	0.00	147.07	147.07	22.89	37.89	37.89
24)	0.479	8.00	6.42	0.00	129.84	129.84	20.21	35.21	35.21
25)	0.539	9.01	6.42	0.00	115.47	115.47	17.98	32.98	32.98
26)	0.598	9.99	6.42	0.00	102.26	102.26	15.92	30.92	30.92
27)	0.718	12.00	6.42	0.00	81.58	81.58	12.70	27.70	27.70
28)	0.838	14.00	6.42	0.00	60.90	60.90	9.48	24.48	24.48
29)	0.957	15.99	6.42	0.00	55.15	55.15	8.59	23.59	23.59
30)	1.077	18.00	6.42	0.00	50.56	50.56	7.87	22.87	22.87
31)	1.197	20.00	6.42	0.00	49.41	49.41	7.69	22.69	22.69

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT4-BOTTOM
Boring No. : GT-4 Test Date : 03/06/97 Tested by : C. WASON
Sample No. : BOTTOM Depth : 15-17 FEET Checked by : C. CAPPS
Sample Type : SHELBY Elevation : NA
Soil Description : LT. BRN CLAYEY FINE SA-SILT / CLAYEY SI-FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 15 PSI

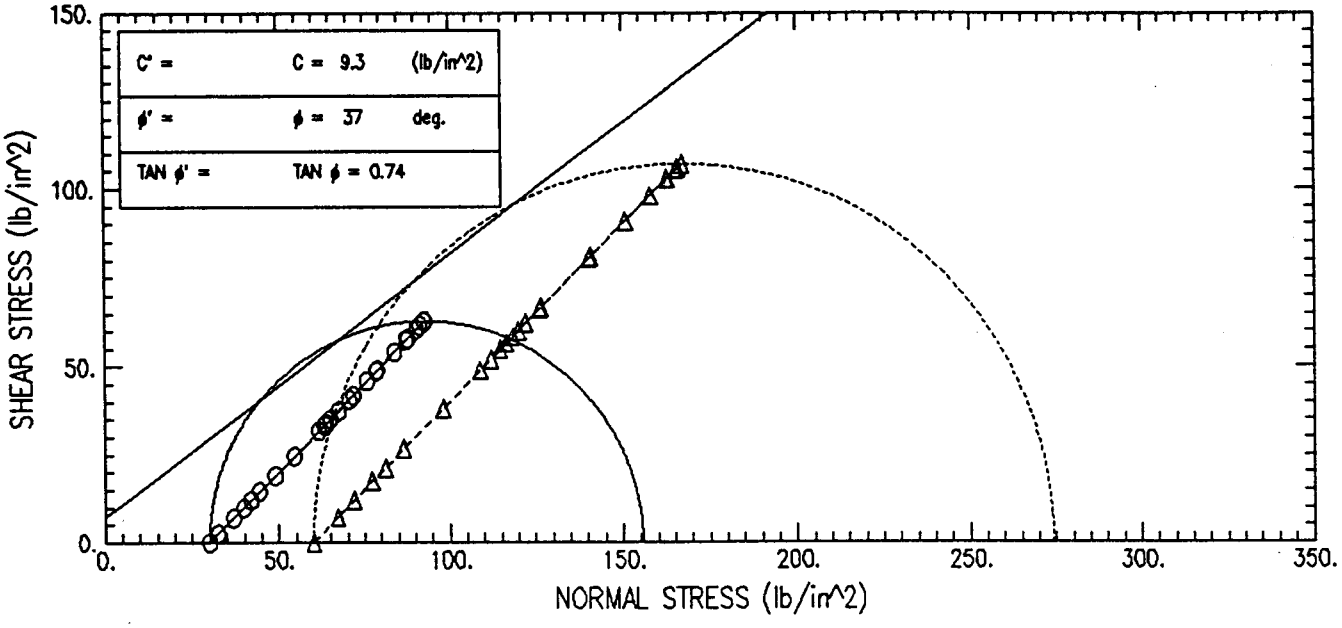
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	1005.60	1005.40	0.00
WT CONTAINER + DRY SOIL (gm)	951.30	951.10	0.00
WT WATER (gm)	54.30	54.30	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	951.30	951.10	0.00
WATER CONTENT (%)	5.71	5.71	0.00

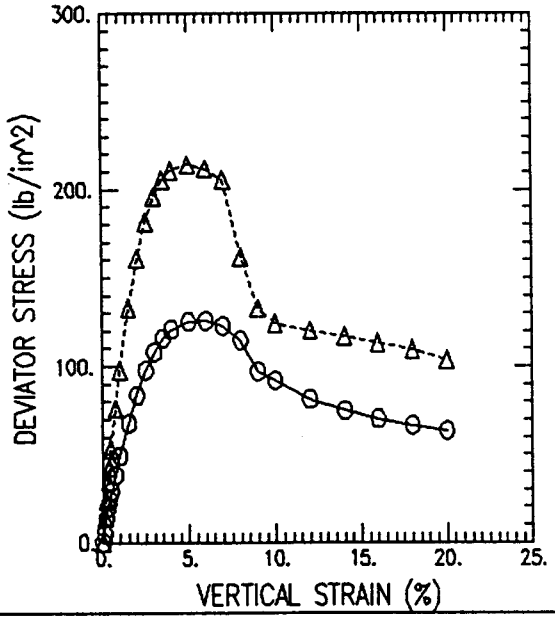
	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	5.71	5.71
VOID RATIO	0.80	0.80
WET DENSITY (lb/ft^3)	99.66	99.66
DRY DENSITY (lb/ft^3)	94.28	94.28
DEGREE OF SATURATION (%)	19.40	19.40

Maximum Shear Stress = 16.23 (lb/in^2) at a Vertical Strain of 3.01 %

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



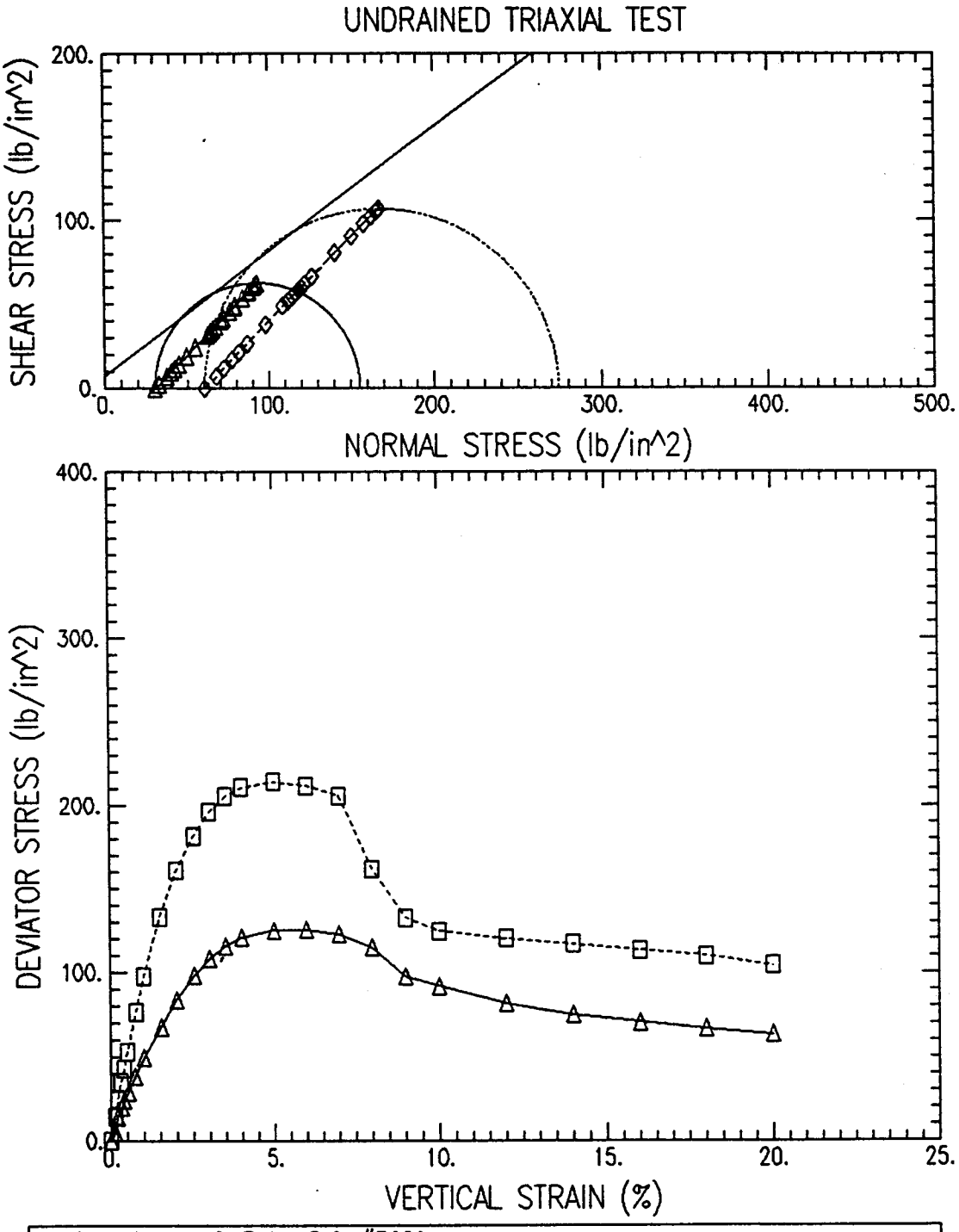
SYMBOL		○	△		
TEST NO.		GT4-30A	GT4-30B		
INITIAL	WATER CONTENT (%)	6.23	5.85		
	DRY DENSITY (lb/ft^3)	82.52	84.87		
	SATURATION (%)	16.05	15.92		
	VOID RATIO	1.057	1.000		
BEFORE SHEAR	WATER CONTENT (%)	6.23	5.85		
	DRY DENSITY (lb/ft^3)	82.52	84.87		
	SATURATION (%)	16.05	15.92		
	VOID RATIO	1.057	1.000		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		30.00	60.00		
MAX. DEV. STRESS (lb/in^2)		125.58	214.14		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.43	1.43		
INITIAL HEIGHT (in)		3.50	3.58		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND 2) LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN TUBE		TYPE OF TEST UNDRAINED			
REMARKS:				PROJECT C. E. L. P.O. #3689					
1) TXUU TEST WITH CONFINING PRESSURE OF 30 PSI									
2) TXUU TEST WITH CONFINING PRESSURE OF 60 PSI				BORING NO. GT-4	SAMPLE NO.	A @30 PSI	B @60 PSI		
				TECH. C. WASON	DEPTH/ELEV	30-31 FEET	30-31 FEET		
				LABORATORY	DATE	03/11/97	03/11/97		
				TRIAXIAL COMPRESSION TEST REPORT					

Woodward-Clyde



Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-4	A @30 PSI	30-31 FEET	GT4-30A	GT4A-30.UU
GT-4	B @60 PSI	30-31 FEET	GT4-30B	GT4B-30.UU

Failure Criteria: Peak Deviator Stress

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-4
Sample No. : A @30 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT4-30A
Test Date : 03/11/97
Depth : 30-31 FEET
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 30 PSI

Height : 3.504 (in)
Area : 1.61 (in^2)
Volume : 5.63 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	30.00	30.00
2)	0.004	0.11	1.61	0.00	8.04	8.04	5.00	35.00	35.00
3)	0.007	0.20	1.61	0.00	22.41	22.41	13.90	43.90	43.90
4)	0.011	0.31	1.61	0.00	32.17	32.17	19.93	49.93	49.93
5)	0.014	0.40	1.62	0.00	39.07	39.07	24.16	54.16	54.16
6)	0.018	0.51	1.62	0.00	47.11	47.11	29.08	59.08	59.08
7)	0.026	0.74	1.63	0.00	62.05	62.05	38.16	68.16	68.16
8)	0.035	1.00	1.63	0.00	80.43	80.43	49.25	79.25	79.25
9)	0.053	1.51	1.65	0.00	111.45	111.45	67.65	97.65	97.65
10)	0.070	2.00	1.66	0.00	139.03	139.03	83.69	113.69	113.69
11)	0.088	2.51	1.68	0.00	164.31	164.31	98.03	128.03	128.03
12)	0.105	3.00	1.69	0.00	182.69	182.69	108.07	138.07	138.07
13)	0.123	3.51	1.71	0.00	197.63	197.63	115.86	145.86	145.86
14)	0.140	4.00	1.72	0.00	207.97	207.97	120.87	150.87	150.87
15)	0.175	4.99	1.75	0.00	219.46	219.46	125.27	155.27	155.27
16)	0.210	5.99	1.78	0.00	224.06	224.06	125.58	155.58	155.58
17)	0.245	6.99	1.82	0.00	223.48	223.48	122.94	152.94	152.94
18)	0.280	7.99	1.85	0.00	212.57	212.57	114.73	144.73	144.73
19)	0.315	8.99	1.89	0.00	183.84	183.84	97.32	127.32	127.32
20)	0.350	9.99	1.93	0.00	176.95	176.95	91.84	121.84	121.84
21)	0.420	11.99	2.01	0.00	163.16	163.16	81.30	111.30	111.30
22)	0.491	14.01	2.10	0.00	156.84	156.84	74.85	104.85	104.85
23)	0.561	16.01	2.19	0.00	153.97	153.97	70.29	100.29	100.29
24)	0.631	18.01	2.29	0.00	152.82	152.82	66.59	96.59	96.59
25)	0.701	20.01	2.41	0.00	152.82	152.82	63.43	93.43	93.43

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT4-30A
Boring No. : GT-4 Test Date : 03/11/97 Tested by : C. WASON
Sample No. : A @30 PSI Depth : 30-31 FEET Checked by : C. CAPPS
Sample Type : TUBE Elevation : NA
Soil Description : LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 30 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	129.50	129.50	0.00
WT CONTAINER + DRY SOIL (gm)	121.90	121.90	0.00
WT WATER (gm)	7.60	7.60	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	121.90	121.90	0.00
WATER CONTENT (%)	6.23	6.23	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	6.23	6.23
VOID RATIO	1.06	1.06
WET DENSITY (lb/ft^3)	87.67	87.67
DRY DENSITY (lb/ft^3)	82.52	82.52
DEGREE OF SATURATION (%)	16.05	16.05

Maximum Shear Stress = 62.79 (lb/in^2) at a Vertical Strain of 5.99 %

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-4
Sample No. : B @60 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT4-30B
Test Date : 03/11/97
Depth : 30-31 FEET
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 60 PSI

Height : 3.583 (in)
Area : 1.61 (in^2)
Volume : 5.75 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	1.61	0.00	0.00	0.00	0.00	60.00	60.00
2)	0.004	0.11	1.61	0.00	22.98	22.98	14.28	74.28	74.28
3)	0.007	0.20	1.61	0.00	38.49	38.49	23.89	83.89	83.89
4)	0.011	0.31	1.61	0.00	56.30	56.30	34.88	94.88	94.88
5)	0.014	0.39	1.62	0.00	68.94	68.94	42.65	102.65	102.65
6)	0.018	0.50	1.62	0.00	86.18	86.18	53.21	113.21	113.21
7)	0.027	0.75	1.63	0.00	124.09	124.09	76.30	136.30	136.30
8)	0.036	1.00	1.63	0.00	159.71	159.71	97.78	157.78	157.78
9)	0.054	1.51	1.65	0.00	219.46	219.46	133.22	193.22	193.22
10)	0.072	2.01	1.66	0.00	267.72	267.72	161.12	221.12	221.12
11)	0.090	2.51	1.68	0.00	304.49	304.49	181.66	241.66	241.66
12)	0.107	2.99	1.69	0.00	331.49	331.49	196.13	256.13	256.13
13)	0.125	3.49	1.71	0.00	350.45	350.45	205.52	265.52	265.52
14)	0.143	3.99	1.72	0.00	362.51	362.51	210.71	270.71	270.71
15)	0.179	5.00	1.75	0.00	375.15	375.15	214.14	274.14	274.14
16)	0.215	6.00	1.78	0.00	378.02	378.02	211.84	271.84	271.84
17)	0.251	7.01	1.82	0.00	374.00	374.00	205.69	265.69	265.69
18)	0.287	8.01	1.85	0.00	299.89	299.89	161.80	221.80	221.80
19)	0.322	8.99	1.89	0.00	250.48	250.48	132.61	192.61	192.61
20)	0.358	9.99	1.93	0.00	239.57	239.57	124.33	184.33	184.33
21)	0.430	12.00	2.01	0.00	241.29	241.29	120.19	180.19	180.19
22)	0.502	14.01	2.10	0.00	244.74	244.74	116.80	176.80	176.80
23)	0.573	15.99	2.19	0.00	247.61	247.61	113.08	173.08	173.08
24)	0.645	18.00	2.29	0.00	251.63	251.63	109.67	169.67	169.67
25)	0.717	20.01	2.41	0.00	250.48	250.48	103.95	163.95	163.95

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-4
Sample No. : B @60 PSI
Sample Type : TUBE
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT4-30B
Test Date : 03/11/97
Depth : 30-31 FEET
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : LT. ORANGE BROWN FINE SA-SILT / SILTY FINE SAND
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 60 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	135.70	135.70	0.00
WT CONTAINER + DRY SOIL (gm)	128.20	128.20	0.00
WT WATER (gm)	7.50	7.50	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	128.20	128.20	0.00
WATER CONTENT (%)	5.85	5.85	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	5.85	5.85
VOID RATIO	1.00	1.00
WET DENSITY (lb/ft^3)	89.84	89.84
DRY DENSITY (lb/ft^3)	84.87	84.87
DEGREE OF SATURATION (%)	15.92	15.92

Maximum Shear Stress = 107.07 (lb/in^2) at a Vertical Strain of 5.00 %

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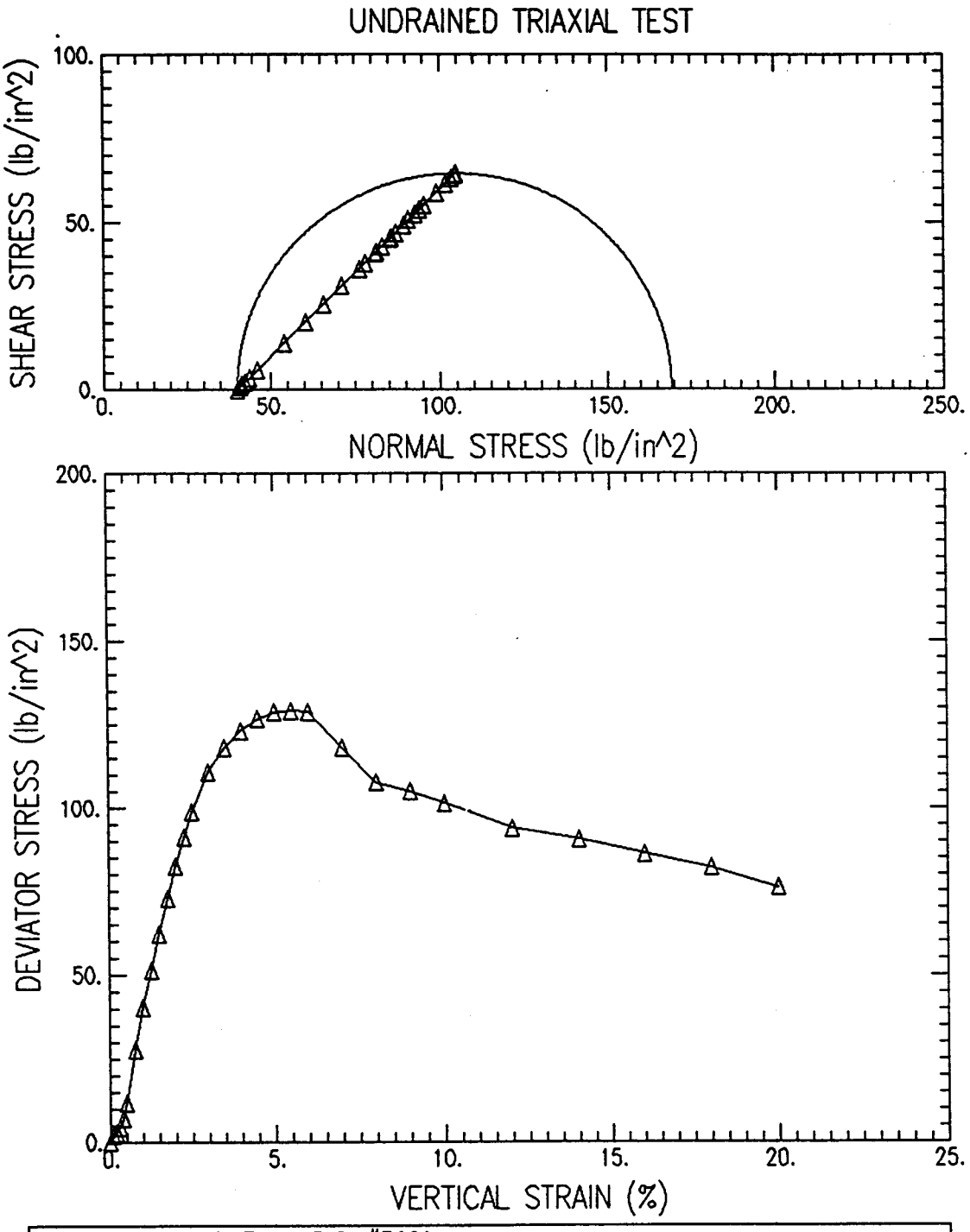

Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-4	@40 PSI	40-41 FEET	GT4-40	GT4-40.UU

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UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-4
Sample No. : @40 PSI
Sample Type : SHELBY
Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT4-40
Test Date : 03/06/97
Depth : 40-41 FEET
Elevation : NA
Tested by : C. WASON
Checked by : C. CAPPS
Soil Description : BROWN SA-SILT / SI-SAND W/ IRON OXIDE STAIN & CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 40 PSI

Height : 5.984 (in)
Area : 6.42 (in^2)
Volume : 38.44 (in^3)
Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)
Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : None

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	6.42	0.00	0.00	0.00	0.00	40.00	40.00
2)	0.006	0.10	6.42	0.00	12.64	12.64	1.97	41.97	41.97
3)	0.012	0.20	6.42	0.00	18.38	18.38	2.86	42.86	42.86
4)	0.018	0.30	6.42	0.00	29.30	29.30	4.56	44.56	44.56
5)	0.024	0.40	6.42	0.00	44.81	44.81	6.98	46.98	46.98
6)	0.030	0.50	6.42	0.00	75.83	75.83	11.80	51.80	51.80
7)	0.045	0.75	6.42	0.00	179.24	179.24	27.90	67.90	67.90
8)	0.060	1.00	6.42	0.00	260.82	260.82	40.60	80.60	80.60
9)	0.075	1.25	6.42	0.00	330.91	330.91	51.51	91.51	91.51
10)	0.090	1.50	6.42	0.00	399.85	399.85	62.24	102.24	102.24
11)	0.105	1.75	6.42	0.00	467.64	467.64	72.80	112.80	112.80
12)	0.120	2.01	6.42	0.00	530.84	530.84	82.63	122.63	122.63
13)	0.135	2.26	6.42	0.00	584.84	584.84	91.04	131.04	131.04
14)	0.150	2.51	6.42	0.00	634.25	634.25	98.73	138.73	138.73
15)	0.180	3.01	6.42	0.00	712.38	712.38	110.89	150.89	150.89
16)	0.209	3.49	6.42	0.00	758.34	758.34	118.05	158.05	158.05
17)	0.239	3.99	6.42	0.00	791.66	791.66	123.23	163.23	163.23
18)	0.269	4.50	6.42	0.00	814.07	814.07	126.72	166.72	166.72
19)	0.299	5.00	6.42	0.00	826.71	826.71	128.69	168.69	168.69
20)	0.329	5.50	6.42	0.00	830.73	830.73	129.32	169.32	169.32
21)	0.359	6.00	6.42	0.00	827.85	827.85	128.87	168.87	168.87
22)	0.419	7.00	6.42	0.00	758.34	758.34	118.05	158.05	158.05
23)	0.479	8.00	6.42	0.00	692.27	692.27	107.76	147.76	147.76
24)	0.538	8.99	6.42	0.00	675.04	675.04	105.08	145.08	145.08
25)	0.598	9.99	6.42	0.00	652.63	652.63	101.59	141.59	141.59
26)	0.718	12.00	6.42	0.00	603.23	603.23	93.90	133.90	133.90
27)	0.838	14.00	6.42	0.00	581.97	581.97	90.59	130.59	130.59
28)	0.957	15.99	6.42	0.00	553.82	553.82	86.21	126.21	126.21
29)	1.077	18.00	6.42	0.00	527.39	527.39	82.10	122.10	122.10
30)	1.197	20.00	6.42	0.00	488.33	488.33	76.02	116.02	116.02

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA Test No. : GT4-40
Boring No. : GT-4 Test Date : 03/06/97 Tested by : C. WASON
Sample No. : @40 PSI Depth : 40-41 FEET Checked by : C. CAPPS
Sample Type : SHELBY Elevation : NA
Soil Description : BROWN SA-SILT / SI-SAND W/ IRON OXIDE STAIN & CLAY
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 40 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	906.90	904.40	0.00
WT CONTAINER + DRY SOIL (gm)	851.50	849.20	0.00
WT WATER (gm)	55.40	55.20	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	851.50	849.20	0.00
WATER CONTENT (%)	6.51	6.50	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	6.51	6.51
VOID RATIO	1.01	1.01
WET DENSITY (lb/ft^3)	89.88	89.88
DRY DENSITY (lb/ft^3)	84.39	84.39
DEGREE OF SATURATION (%)	17.50	17.50

Maximum Shear Stress = 64.66 (lb/in^2) at a Vertical Strain of 5.50 %

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496
Project No. : 971144NA
Boring No. : PB-2
Sample No. : 429-430 FT
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAYISH BROWN SILTY CLAY
Remarks : 429-430 FEET

Depth : 429-430 FEET
Test Date : 07/02/97
Test Method : ASTM D4318/422

Filename : PB2-430
Elevation : NA
Tested by : C. WASON
Checked by : S. CAPPS

Plastic Limit

	Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1)	10	16.22	27.09	24.95	24.51

Plastic Limit = 24.51

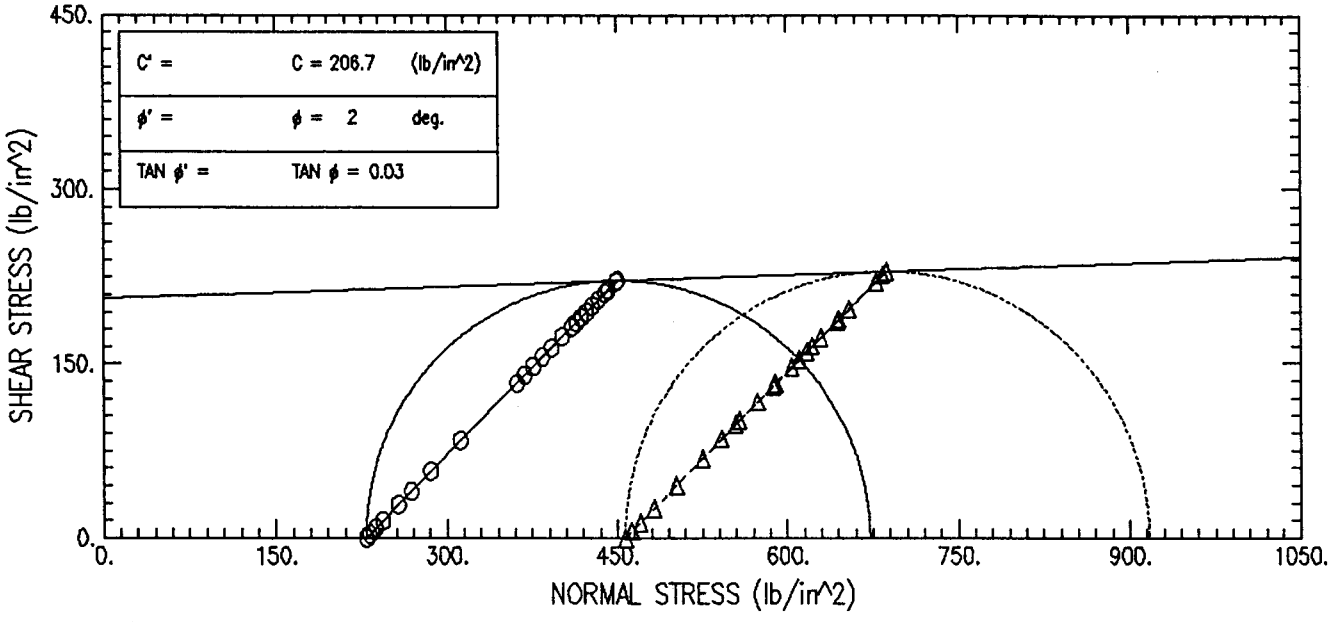
Liquid Limit

	Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Number of Drops	Moisture Content (%)
1)	8	11.11	27.18	22.01	30	47.43
2)	F	10.81	28.50	22.69	24	48.91
3)	90	11.13	28.49	22.64	17	50.83

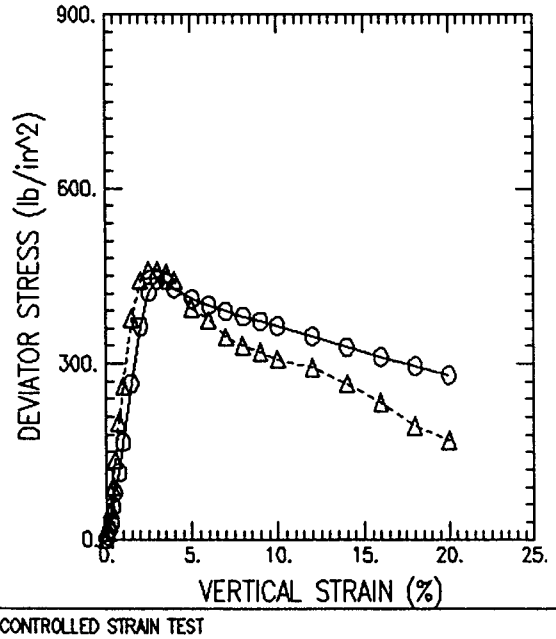
Liquid Limit = 48.57
Plastic Index = 24.06

Woodward-Clyde

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



SYMBOL		○	△		
TEST NO.		PB2-228	PB2-457		
INITIAL	WATER CONTENT (%)	21.88	22.92		
	DRY DENSITY (lb/ft^3)	93.08	92.53		
	SATURATION (%)	71.94	74.39		
	VOID RATIO	0.830	0.841		
BEFORE SHEAR	WATER CONTENT (%)	21.88	22.92		
	DRY DENSITY (lb/ft^3)	93.08	92.53		
	SATURATION (%)	71.94	74.39		
	VOID RATIO	0.830	0.841		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		228.50	457.00		
MAX. DEV. STRESS (lb/in^2)		443.71	459.76		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		2.14	2.15		
INITIAL HEIGHT (in)		3.03	3.74		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT 2) LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT

LL 50.19	PL 25.08	PI 25.11	GS 2.73	TYPE OF SPECIMEN CORE	TYPE OF TEST UNDRAINED

REMARKS:

1)

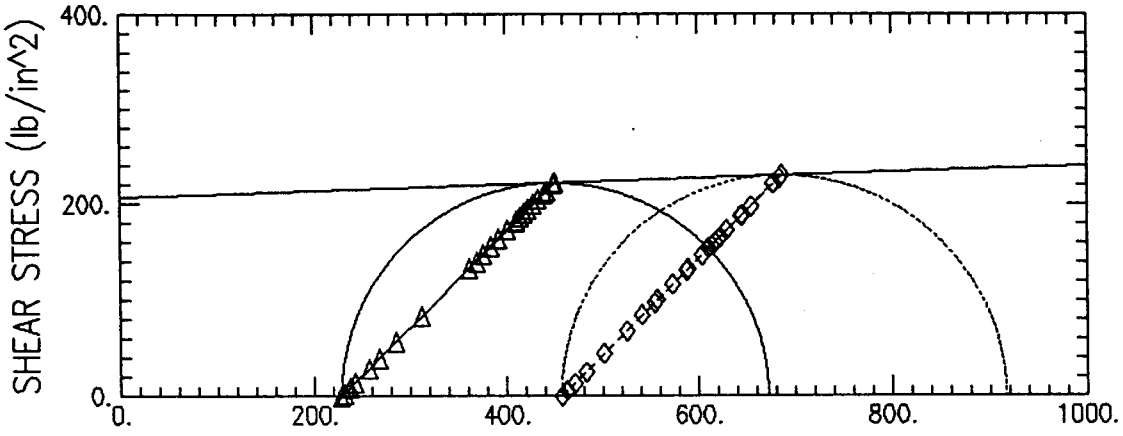
2)

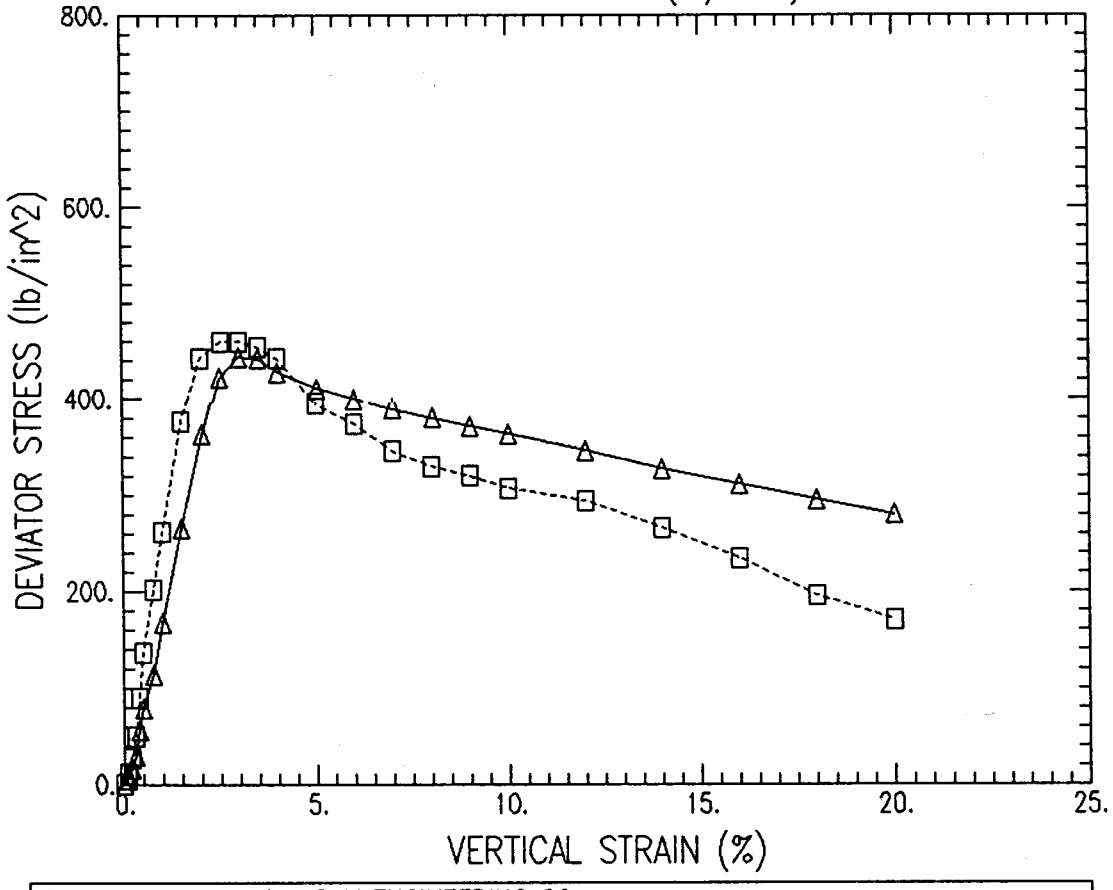
PROJECT HOLLADAY ENGINEERING CO.

BORING NO. PB-2	SAMPLE NO.	228.5 PSI	457 PSI
TECH. S. CAPPS	DEPTH/ELEV	456-457 FT	456-457 FT
LABORATORY	DATE	06/25/97	06/25/97

TRIAXIAL COMPRESSION TEST REPORT

UNDRAINED TRIAXIAL TEST

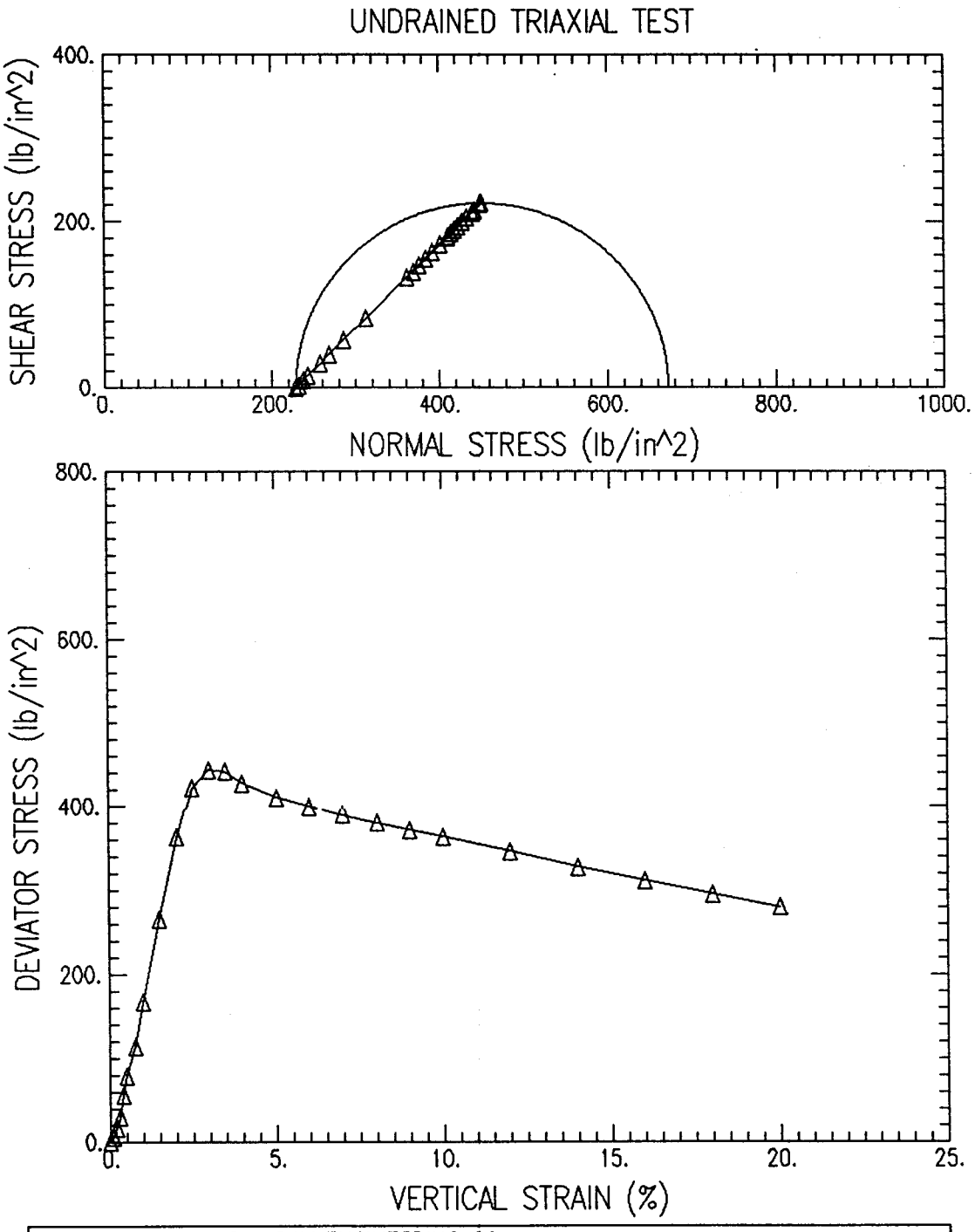




Project Name : HOLLADAY ENGINEERING CO.

Boring No:	Sample No	Depth	Test No	Filename
PB-2	228.5 PSI	456-457 FT	PB2-228	PB2-228.UU
PB-2	457 PSI	456-457 FT	PB2-457	PB2-457.UU

Woodward-Clyde



Project Name : HOLLADAY ENGINEERING CO.				
Boring No:	Sample No	Depth	Test No	Filename
PB-2	228.5 PSI	456-457 FT	PB2-228	PB2-228.UU

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-228
Boring No. : PB-2 Test Date : 06/25/97 Tested by : S. CAPPS
Sample No. : 228.5 PSI Depth : 456-457 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	324.30	324.30	0.00
WT CONTAINER + DRY SOIL (gm)	266.09	266.09	0.00
WT WATER (gm)	58.21	58.21	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	266.09	266.09	0.00
WATER CONTENT (%)	21.88	21.88	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	21.88	21.88
VOID RATIO	0.83	0.83
WET DENSITY (lb/ft^3)	113.44	113.44
DRY DENSITY (lb/ft^3)	93.08	93.08
DEGREE OF SATURATION (%)	71.94	71.94

Maximum Shear Stress = 221.85 (lb/in^2) at a Vertical Strain of 3.00 %

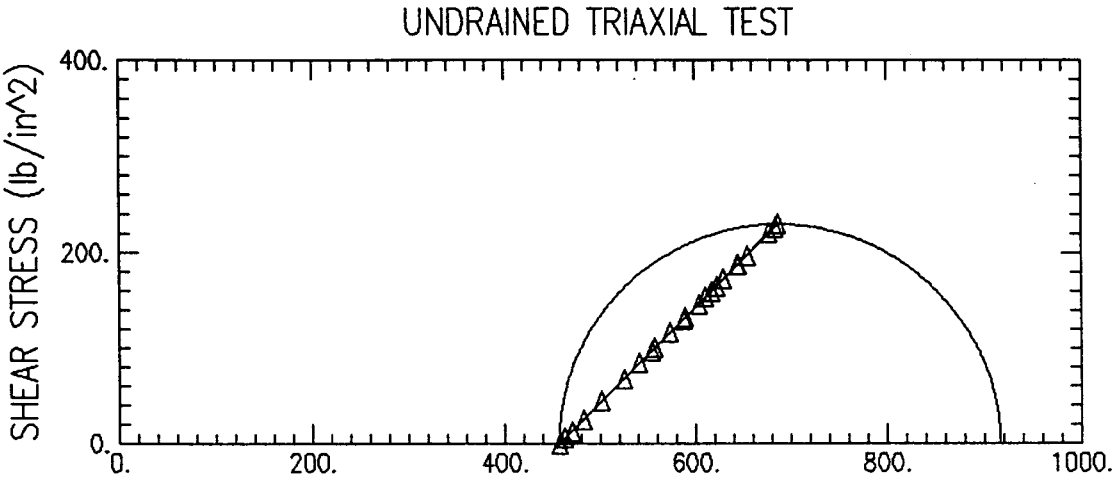
Fri Jun 27 07:41:02 1997

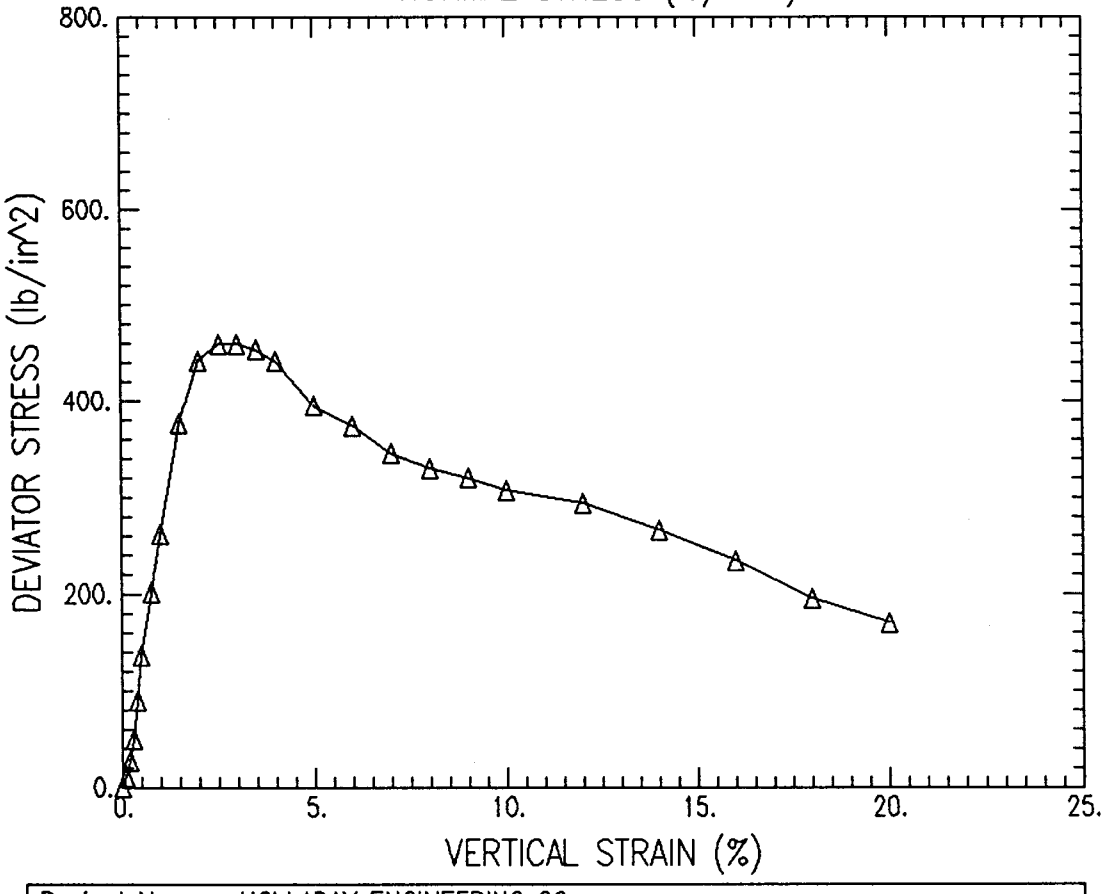
UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-228
Boring No. : PB-2 Test Date : 06/25/97 Tested by : S. CAPPS
Sample No. : 228.5 PSI Depth : 456-457 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Height : 3.031 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.59 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 10.89 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.59	0.00	0.00	0.00	0.00	228.50	228.50
2)	0.003	0.10	3.60	0.00	20.79	20.79	5.78	234.28	234.28
3)	0.006	0.20	3.60	0.00	61.22	61.22	16.98	245.48	245.48
4)	0.009	0.30	3.61	0.00	105.11	105.11	29.11	257.61	257.61
5)	0.012	0.40	3.62	0.00	205.59	205.59	56.84	285.34	285.34
6)	0.015	0.49	3.62	0.00	288.75	288.75	79.70	308.20	308.20
7)	0.023	0.76	3.64	0.00	415.80	415.80	114.26	342.76	342.76
8)	0.030	0.99	3.65	0.00	609.84	609.84	166.93	395.43	395.43
9)	0.045	1.48	3.68	0.00	981.75	981.75	266.48	494.98	494.98
10)	0.061	2.01	3.72	0.00	1350.20	1350.20	363.18	591.68	591.68
11)	0.076	2.51	3.75	0.00	1582.35	1582.35	421.99	650.49	650.49
12)	0.091	3.00	3.78	0.00	1678.22	1678.22	443.71	672.21	672.21
13)	0.106	3.50	3.82	0.00	1686.30	1686.30	441.97	670.47	670.47
14)	0.121	3.99	3.85	0.00	1645.88	1645.88	427.60	656.10	656.10
15)	0.152	5.01	3.92	0.00	1610.07	1610.07	410.66	639.16	639.16
16)	0.182	6.00	3.99	0.00	1595.06	1595.06	399.51	628.01	628.01
17)	0.212	6.99	4.07	0.00	1583.51	1583.51	389.34	617.84	617.84
18)	0.243	8.02	4.15	0.00	1576.58	1576.58	380.16	608.66	608.66
19)	0.273	9.01	4.23	0.00	1571.96	1571.96	371.83	600.33	600.33
20)	0.303	10.00	4.31	0.00	1568.49	1568.49	363.81	592.31	592.31
21)	0.364	12.01	4.49	0.00	1556.94	1556.94	346.59	575.09	575.09
22)	0.424	13.99	4.69	0.00	1536.15	1536.15	327.86	556.36	556.36
23)	0.485	16.00	4.90	0.00	1525.76	1525.76	311.40	539.90	539.90
24)	0.546	18.01	5.13	0.00	1516.52	1516.52	295.35	523.85	523.85
25)	0.606	19.99	5.39	0.00	1510.74	1510.74	280.36	508.86	508.86





Project Name : HOLLADAY ENGINEERING CO.

Boring No:	Sample No	Depth	Test No	Filename
PB-2	457 PSI	456-457 FT	PB2-457	PB2-457.UU

Fri Jun 27 07:42:26 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-457
Boring No. : PB-2 Test Date : 06/25/97 Tested by : S. CAPPS
Sample No. : 457 PSI Depth : 456-457 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Height : 3.740 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.65 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 13.64 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.65	0.00	0.00	0.00	0.00	457.00	457.00
2)	0.004	0.11	3.65	0.00	42.74	42.74	11.70	468.70	468.70
3)	0.007	0.19	3.66	0.00	98.18	98.18	26.84	483.84	483.84
4)	0.011	0.29	3.66	0.00	184.80	184.80	50.42	507.42	507.42
5)	0.015	0.40	3.67	0.00	330.33	330.33	89.97	546.97	546.97
6)	0.019	0.51	3.68	0.00	502.43	502.43	136.60	593.60	593.60
7)	0.028	0.75	3.69	0.00	744.98	744.98	201.72	658.72	658.72
8)	0.037	0.99	3.71	0.00	970.20	970.20	261.64	718.64	718.64
9)	0.056	1.50	3.74	0.00	1409.10	1409.10	376.73	833.73	833.73
10)	0.075	2.01	3.77	0.00	1668.98	1668.98	442.33	899.33	899.33
11)	0.094	2.51	3.81	0.00	1749.83	1749.83	459.70	916.70	916.70
12)	0.112	2.99	3.84	0.00	1764.84	1764.84	459.76	916.76	916.76
13)	0.131	3.50	3.87	0.00	1757.91	1757.91	453.88	910.88	910.88
14)	0.150	4.01	3.91	0.00	1726.73	1726.73	441.82	898.82	898.82
15)	0.187	5.00	3.98	0.00	1570.80	1570.80	394.82	851.82	851.82
16)	0.224	5.99	4.05	0.00	1516.52	1516.52	374.32	831.32	831.32
17)	0.262	7.01	4.13	0.00	1426.43	1426.43	345.46	802.46	802.46
18)	0.299	7.99	4.21	0.00	1390.62	1390.62	330.50	787.50	787.50
19)	0.337	9.01	4.29	0.00	1374.45	1374.45	320.27	777.27	777.27
20)	0.374	10.00	4.38	0.00	1346.73	1346.73	307.73	764.73	764.73
21)	0.449	12.01	4.56	0.00	1340.96	1340.96	294.12	751.12	751.12
22)	0.524	14.01	4.76	0.00	1265.88	1265.88	266.05	723.05	723.05
23)	0.598	15.99	4.97	0.00	1163.09	1163.09	233.93	690.93	690.93
24)	0.673	17.99	5.21	0.00	1017.56	1017.56	195.33	652.33	652.33
25)	0.748	20.00	5.47	0.00	929.78	929.78	169.96	626.96	626.96

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-457
Boring No. : PB-2 Test Date : 06/25/97 Tested by : S. CAPPS
Sample No. : 457 PSI Depth : 456-457 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

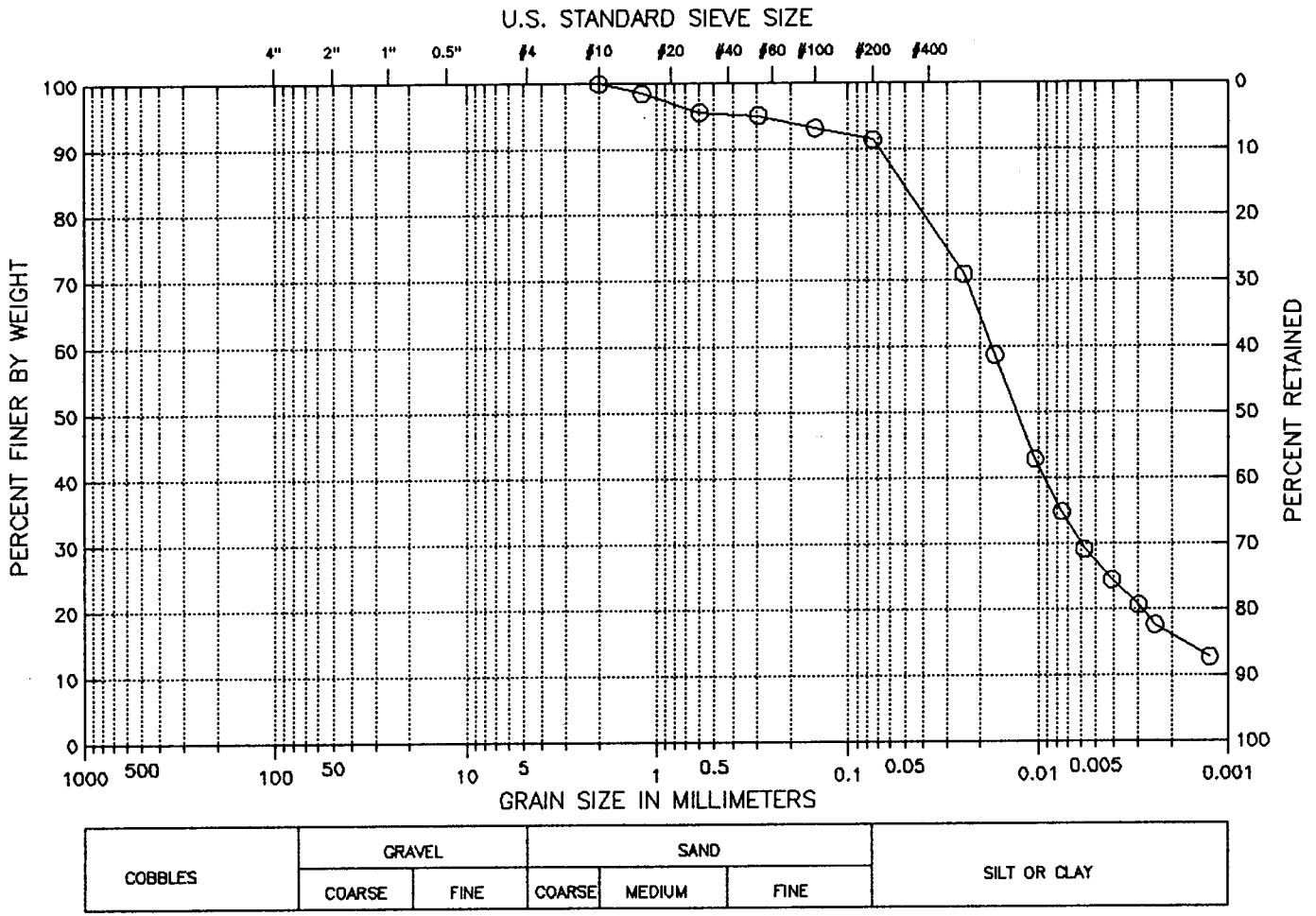
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	407.22	407.22	0.00
WT CONTAINER + DRY SOIL (gm)	331.30	331.30	0.00
WT WATER (gm)	75.92	75.92	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	331.30	331.30	0.00
WATER CONTENT (%)	22.92	22.92	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	22.92	22.92
VOID RATIO	0.84	0.84
WET DENSITY (lb/ft^3)	113.74	113.74
DRY DENSITY (lb/ft^3)	92.53	92.53
DEGREE OF SATURATION (%)	74.39	74.39

Maximum Shear Stress = 229.88 (lb/in^2) at a Vertical Strain of 2.99 %

	Boring No. : PB-2 Sample No.: 456-457 Tested by : C. WASON Filename : PB2-456	Project : HOLLADAY ENGINEERING CO. 030496 Project No.: 971144NA Location: PICKLES BUTTE LANDFILL Date : Tue Jul 01 1997



Classification :
(CH) fat clay
Visual Description :
GRAY BROWN SILTY CLAY WITH FINE SAND

Remarks :
456-457 FEET

Figure 1

Woodward-Clyde

Tue Jul 01 12:59:04 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496 Filename : PB2-456
Project No. : 971144NA Depth : 456-457 FEET Elevation : NA
Boring No. : PB-2 Test Date : 06/30/97 Tested by : C. WASON
Sample No. : 456-457 Test Method : ASTM D4318/422 Checked by : S. CAPPS
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAY BROWN SILTY CLAY WITH FINE SAND
Remarks : 456-457 FEET

HYDROMETER

Hydrometer ID : 1734
Weight of air-dried soil = 70 gm
Specific Gravity = 2.73

Hydroscopic Moisture Content :
Weight of Wet Soil = 70 gm
Weight of Dry Soil = 66.37 gm
Moisture Content = 0.0546934

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	56.00	22.40	47.80	0.024	71	0.024
5.00	47.80	22.40	39.60	0.017	59	0.017
16.00	37.20	22.20	28.91	0.010	43	0.010
33.00	32.00	21.80	23.53	0.008	35	0.008
60.00	28.20	21.70	19.68	0.006	29	0.006
122.00	24.80	22.10	16.47	0.004	24	0.004
240.00	22.20	22.20	13.91	0.003	21	0.003
360.00	20.00	22.60	11.90	0.002	18	0.002
1440.00	17.00	21.90	8.57	0.001	13	0.001

FINE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#16	0.047	1.19	0.98	0.98	99
#30	0.023	0.60	1.91	2.89	96
#50	0.012	0.30	0.32	3.21	95
#100	0.006	0.15	1.31	4.52	93
#200	0.003	0.07	1.14	5.66	91
Pan			60.71	66.37	0

Total Wet Weight of Sample = 66.37
Total Dry Weight of Sample = 66.37
Moisture Content = 0.0546934

D85 : 0.0522 mm
D60 : 0.0175 mm
D50 : 0.0129 mm
D30 : 0.0060 mm
D15 : 0.0017 mm
D10 : 0.0009 mm

Soil Classification
ASTM Group Symbol : CH
ASTM Group Name : fat clay
AASHTO Group Symbol : A-7-6(28)
AASHTO Group Name : Clayey Soils

ATTERBERG LIMITS

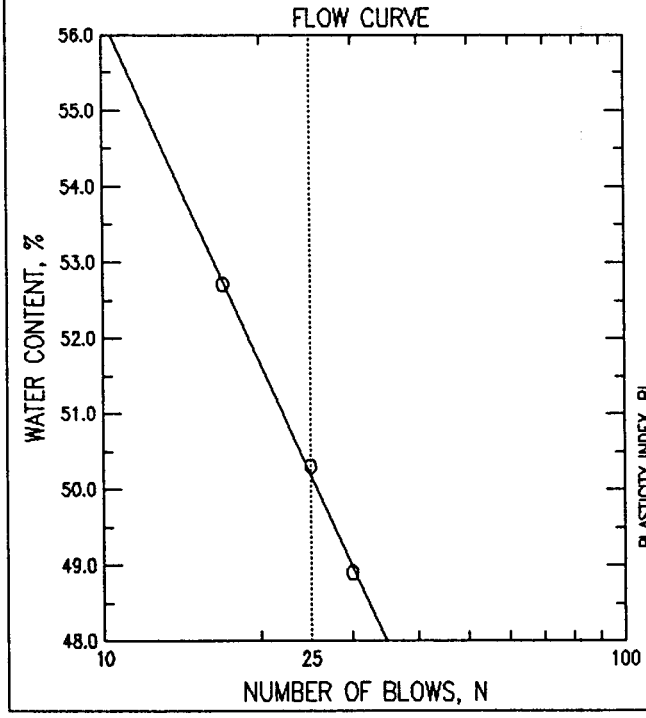
PROJECT	PROJECT NUMBER	TESTED BY	BORING NUMBER
HOLLADAY ENGINEERING CO. 030498	971144NA	C. WASON	PB-2
LOCATION PICKLES BUTTE LANDFILL		CHECKED BY S. CAPPS	SAMPLE NUMBER 456-457
SAMPLE DESCRIPTION GRAY BROWN SILTY CLAY WITH FINE SAND		DATE Tue Jul 01 1997	FILENAME PB2-456

LIQUID LIMIT DETERMINATIONS					
CONTAINER NUMBER	0	17	55		
WT. WET SOIL + TARE	27.25	28.3	26.88		
WT. DRY SOIL + TARE	21.89	22.44	21.44		
WT. WATER	5.36	5.86	5.44		
TARE WT.	10.93	10.79	11.12		
WT. DRY SOIL	10.96	11.65	10.32		
WATER CONTENT, W_N (%)	48.91	50.30	52.71		
NUMBER OF BLOWS, N	30	25	17		
ONE-POINT LIQUID LIMIT, LL	50.00	50.30	50.31		

PLASTIC LIMIT DETERMINATIONS					
CONTAINER NUMBER	6				
WT. WET SOIL + TARE	26.9				
WT. DRY SOIL + TARE	24.67				
WT. WATER	2.23				
TARE WT.	15.78				
WT. DRY SOIL	8.89				
WATER CONTENT (%)	25.08				

SUMMARY OF RESULTS	
NATURAL WATER CONTENT, W (%)	
LIQUID LIMIT, LL	50.2
PLASTIC LIMIT, PL	25.1
PLASTICITY INDEX, PI	25.1
LIQUIDITY INDEX, LI*	

*LI = (W - PL)/PI



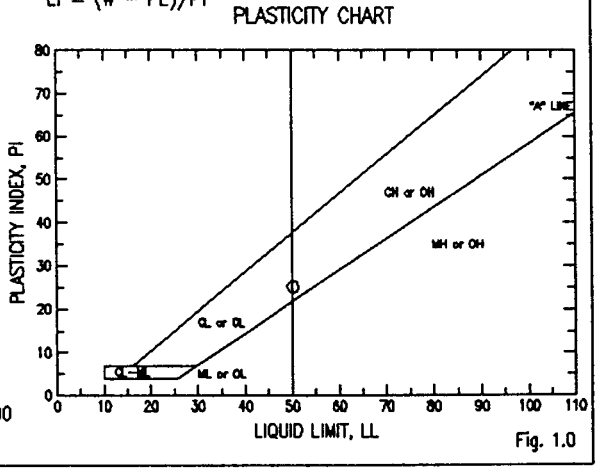


Fig. 1.0

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496 Filename : PB2-456
Project No. : 971144NA Depth : 456-457 FEET Elevation : NA
Boring No. : PB-2 Test Date : 06/30/97 Tested by : C. WASON
Sample No. : 456-457 Test Method : ASTM D4318/422 Checked by : S. CAPPS
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAY BROWN SILTY CLAY WITH FINE SAND
Remarks : 456-457 FEET

Plastic Limit

	Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1)	6	15.78	26.90	24.67	25.08

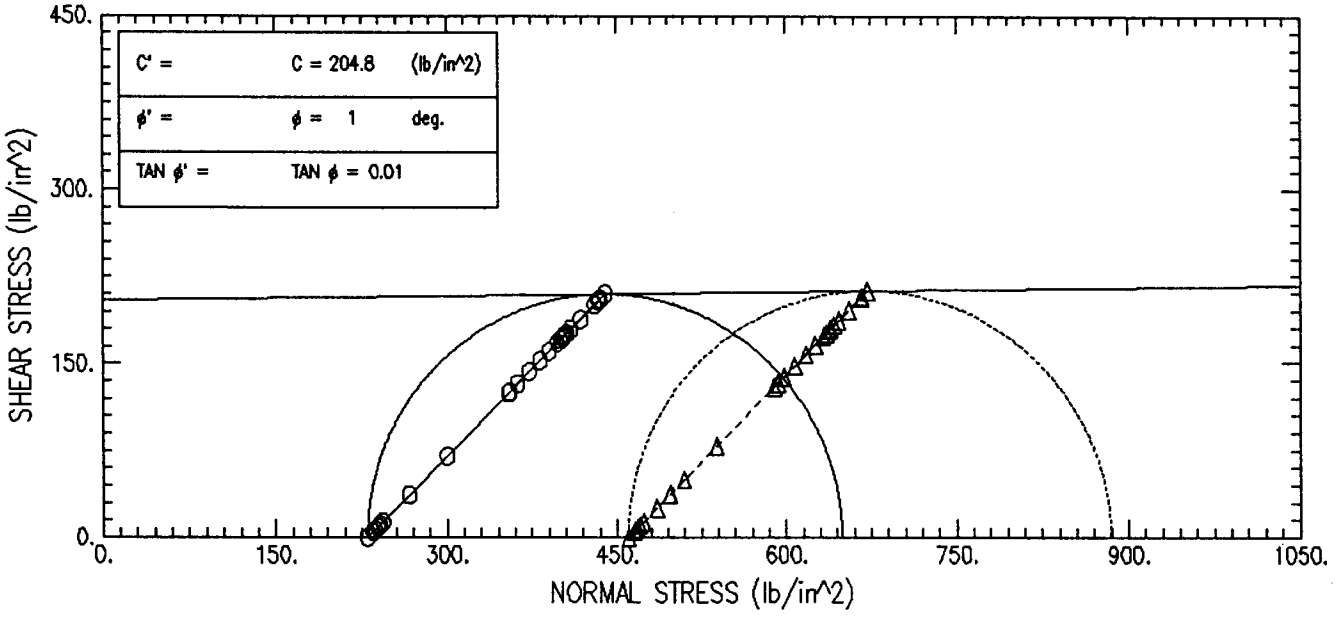
Plastic Limit = 25.08

Liquid Limit

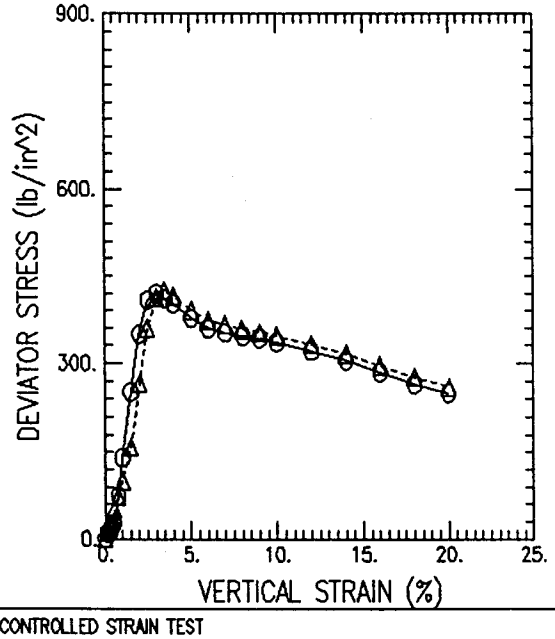
	Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Number of Drops	Moisture Content (%)
1)	0	10.93	27.25	21.89	30	48.91
2)	17	10.79	28.30	22.44	25	50.30
3)	55	11.12	26.88	21.44	17	52.71

Liquid Limit = 50.19
Plastic Index = 25.11

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress

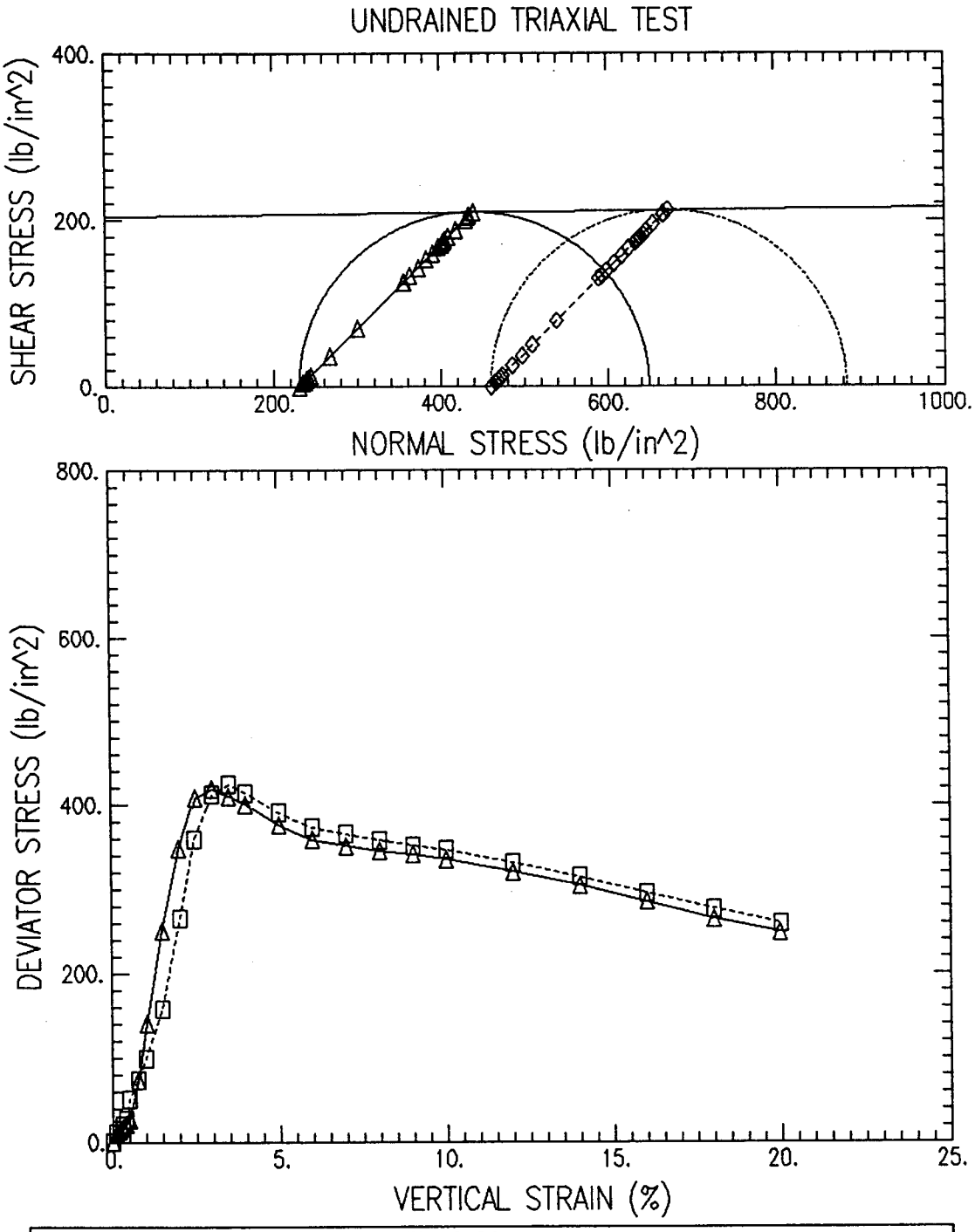


SYMBOL		O	Δ		
TEST NO.		PB2-230	PB2-460		
INITIAL	WATER CONTENT (%)	22.50	22.66		
	DRY DENSITY (lb/ft^3)	93.27	89.19		
	SATURATION (%)	74.32	67.97		
	VOID RATIO	0.827	0.910		
BEFORE SHEAR	WATER CONTENT (%)	22.50	22.66		
	DRY DENSITY (lb/ft^3)	93.27	89.19		
	SATURATION (%)	74.32	67.97		
	VOID RATIO	0.827	0.910		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		230.00	460.00		
MAX. DEV. STRESS (lb/in^2)		419.14	424.22		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		2.14	2.18		
INITIAL HEIGHT (in)		3.96	3.98		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT 2) LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT

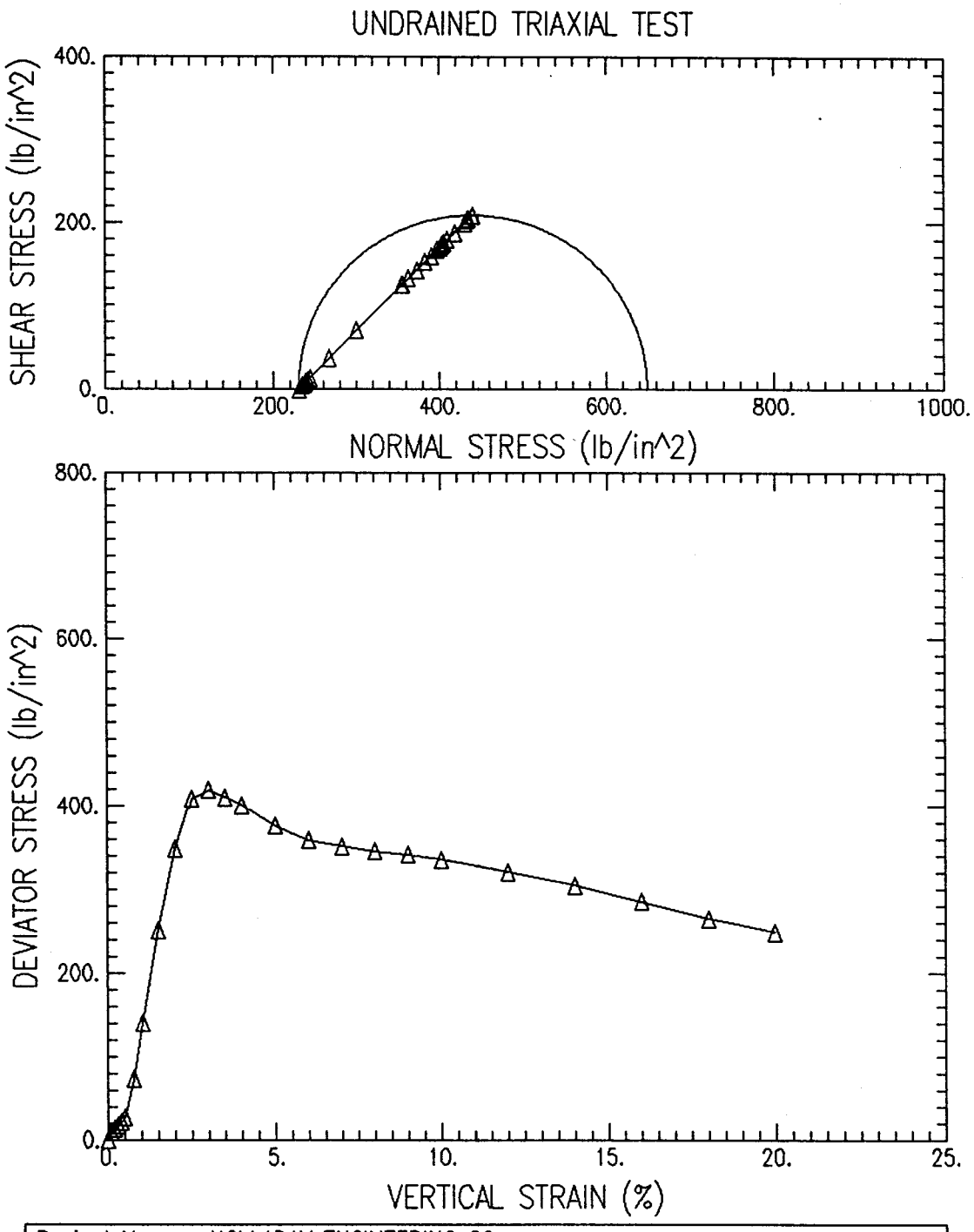
LL 49.21	PL 25.51	PI 23.70	GS 2.73	TYPE OF SPECIMEN CORE	TYPE OF TEST UNDRAINED
REMARKS:				PROJECT HOLLADAY ENGINEERING CO.	
1)					
2)				BORING NO. PB-2	SAMPLE NO. 230 PSI 460 PSI
				TECH. S. CAPPS	DEPTH/ELEV 458-460 FT 458-460 FT
				LABORATORY	DATE 06/25/97 06/26/97
				TRIAXIAL COMPRESSION TEST REPORT	



Project Name : HOLLADAY ENGINEERING CO.

Boring No:	Sample No	Depth	Test No	Filename
PB-2	230 PSI	458-460 FT	PB2-230	PB2-230.UU
PB-2	460 PSI	458-460 FT	PB2-460	PB2-460.UU

Woodward-Clyde



Project Name : HOLLADAY ENGINEERING CO.				
Boring No:	Sample No	Depth	Test No	Filename
PB-2	230 PSI	458-460 FT	PB2-230	PB2-230.UU

Fri Jun 27 07:43:17 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-230
Boring No. : PB-2 Test Date : 06/25/97 Tested by : S. CAPPS
Sample No. : 230 PSI Depth : 458-460 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Height : 3.957 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.59 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 14.19 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.59	0.00	0.00	0.00	0.00	230.00	230.00
2)	0.004	0.10	3.59	0.00	33.50	33.50	9.32	239.32	239.32
3)	0.008	0.20	3.60	0.00	48.51	48.51	13.48	243.48	243.48
4)	0.012	0.30	3.60	0.00	65.84	65.84	18.27	248.27	248.27
5)	0.016	0.40	3.61	0.00	76.23	76.23	21.11	251.11	251.11
6)	0.020	0.51	3.62	0.00	97.02	97.02	26.83	256.83	256.83
7)	0.030	0.76	3.63	0.00	265.65	265.65	73.14	303.14	303.14
8)	0.040	1.01	3.65	0.00	512.82	512.82	140.60	370.60	370.60
9)	0.059	1.49	3.68	0.00	924.00	924.00	251.27	481.27	481.27
10)	0.079	2.00	3.71	0.00	1293.60	1293.60	348.73	578.73	578.73
11)	0.099	2.50	3.74	0.00	1526.91	1526.91	408.04	638.04	638.04
12)	0.119	3.01	3.78	0.00	1582.35	1582.35	419.14	649.14	649.14
13)	0.138	3.49	3.81	0.00	1562.72	1562.72	410.45	640.45	640.45
14)	0.158	3.99	3.84	0.00	1539.62	1539.62	400.77	630.77	630.77
15)	0.198	5.00	3.91	0.00	1472.63	1472.63	376.41	606.41	606.41
16)	0.237	5.99	3.98	0.00	1429.89	1429.89	358.94	588.94	588.94
17)	0.277	7.00	4.06	0.00	1428.74	1428.74	351.94	581.94	581.94
18)	0.317	8.01	4.14	0.00	1431.05	1431.05	345.78	575.78	575.78
19)	0.356	9.00	4.22	0.00	1440.29	1440.29	341.42	571.42	571.42
20)	0.396	10.01	4.30	0.00	1444.91	1444.91	335.72	565.72	565.72
21)	0.475	12.00	4.48	0.00	1437.98	1437.98	320.77	550.77	550.77
22)	0.554	14.00	4.68	0.00	1426.43	1426.43	304.96	534.96	534.96
23)	0.633	16.00	4.89	0.00	1395.24	1395.24	285.34	515.34	515.34
24)	0.712	17.99	5.12	0.00	1357.13	1357.13	264.96	494.96	494.96
25)	0.791	19.99	5.38	0.00	1339.80	1339.80	249.14	479.14	479.14

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-230
Boring No. : PB-2 Test Date : 06/25/97 Tested by : S. CAPPS
Sample No. : 230 PSI Depth : 458-460 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

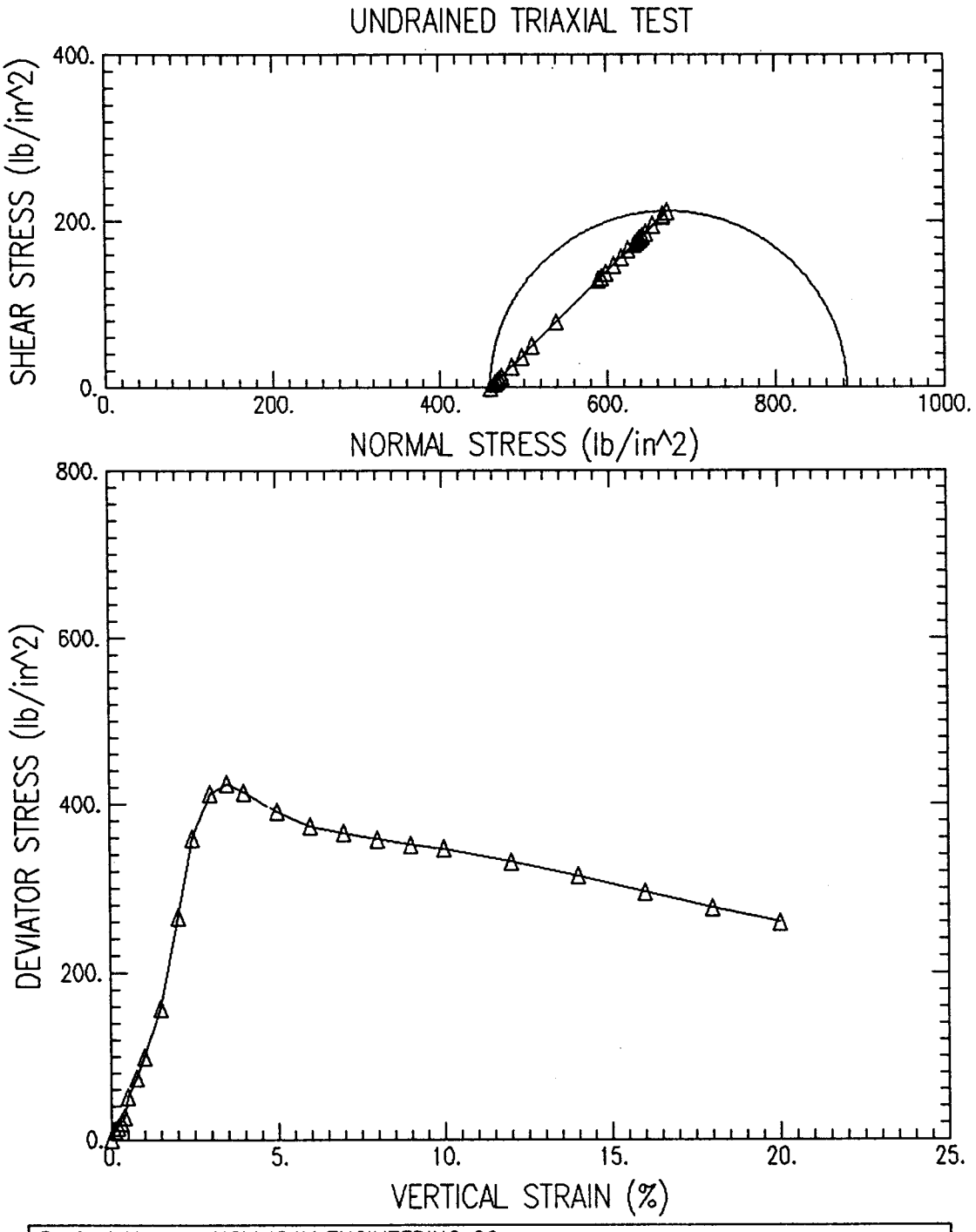
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	425.20	425.20	0.00
WT CONTAINER + DRY SOIL (gm)	347.10	347.10	0.00
WT WATER (gm)	78.10	78.10	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	347.10	347.10	0.00
WATER CONTENT (%)	22.50	22.50	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	22.50	22.50
VOID RATIO	0.83	0.83
WET DENSITY (lb/ft^3)	114.25	114.25
DRY DENSITY (lb/ft^3)	93.27	93.27
DEGREE OF SATURATION (%)	74.32	74.32

Maximum Shear Stress = 209.57 (lb/in^2) at a Vertical Strain of 3.01 %

Woodward-Clyde



Project Name : HOLLADAY ENGINEERING CO.				
Boring No:	Sample No	Depth	Test No	Filename
PB-2	460 PSI	458-460 FT	PB2-460	PB2-460.UU

Fri Jun 27 07:48:05 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-460
Boring No. : PB-2 Test Date : 06/26/97 Tested by : S. CAPPS
Sample No. : 460 PSI Depth : 458-460 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Height : 3.976 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.75 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 14.89 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.75	0.00	0.00	0.00	0.00	460.00	460.00
2)	0.004	0.10	3.75	0.00	41.58	41.58	11.08	471.08	471.08
3)	0.008	0.20	3.76	0.00	58.91	58.91	15.67	475.67	475.67
4)	0.012	0.30	3.76	0.00	78.54	78.54	20.86	480.86	480.86
5)	0.016	0.40	3.77	0.00	100.49	100.49	26.64	486.64	486.64
6)	0.020	0.50	3.78	0.00	190.58	190.58	50.45	510.45	510.45
7)	0.030	0.75	3.79	0.00	280.67	280.67	73.98	533.98	533.98
8)	0.040	1.01	3.81	0.00	378.84	378.84	99.44	559.44	559.44
9)	0.060	1.51	3.84	0.00	607.53	607.53	158.10	618.10	618.10
10)	0.080	2.01	3.88	0.00	1032.57	1032.57	266.40	726.40	726.40
11)	0.098	2.46	3.91	0.00	1404.48	1404.48	359.53	819.53	819.53
12)	0.119	2.99	3.94	0.00	1626.24	1626.24	412.47	872.47	872.47
13)	0.139	3.50	3.98	0.00	1687.46	1687.46	424.22	884.22	884.22
14)	0.159	4.00	4.01	0.00	1663.20	1663.20	414.40	874.40	874.40
15)	0.199	5.01	4.09	0.00	1597.37	1597.37	390.85	850.85	850.85
16)	0.239	6.01	4.16	0.00	1554.63	1554.63	373.43	833.43	833.43
17)	0.278	6.99	4.24	0.00	1550.01	1550.01	365.56	825.56	825.56
18)	0.318	8.00	4.32	0.00	1547.70	1547.70	358.09	818.09	818.09
19)	0.358	9.00	4.41	0.00	1551.17	1551.17	351.95	811.95	811.95
20)	0.398	10.01	4.50	0.00	1560.41	1560.41	347.06	807.06	807.06
21)	0.477	12.00	4.68	0.00	1553.48	1553.48	331.78	791.78	791.78
22)	0.557	14.01	4.89	0.00	1540.77	1540.77	315.28	775.28	775.28
23)	0.636	16.00	5.11	0.00	1509.59	1509.59	295.55	755.55	755.55
24)	0.716	18.01	5.35	0.00	1481.87	1481.87	276.86	736.86	736.86
25)	0.795	19.99	5.62	0.00	1459.92	1459.92	259.85	719.85	719.85

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-460
Boring No. : PB-2 Test Date : 06/26/97 Tested by : S. CAPPS
Sample No. : 460 PSI Depth : 458-460 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : LT. GRAYISH BROWN SILTY CLAY/CLAYEY SILT
Remarks :

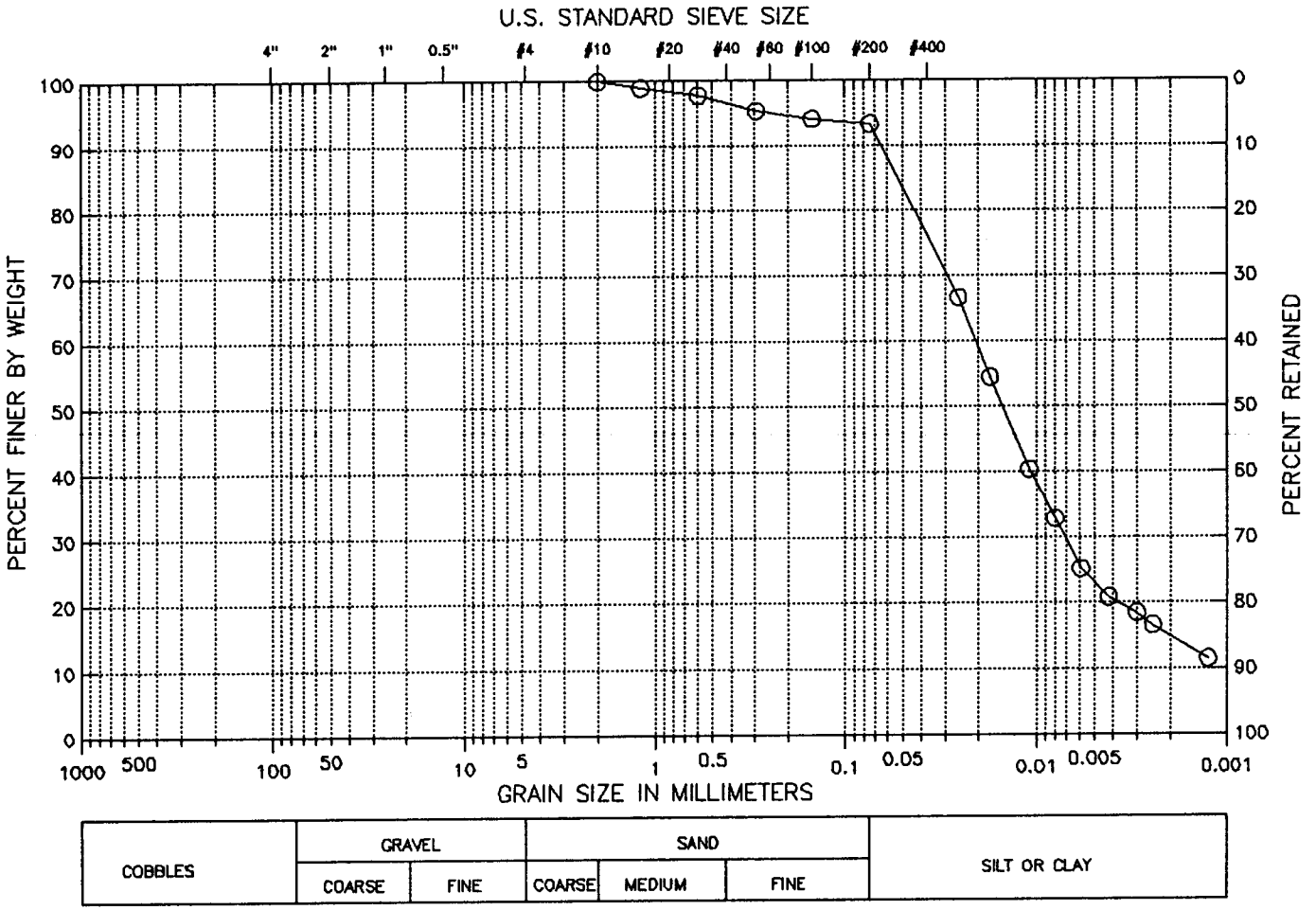
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	427.70	427.70	0.00
WT CONTAINER + DRY SOIL (gm)	348.70	348.70	0.00
WT WATER (gm)	79.00	79.00	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	348.70	348.70	0.00
WATER CONTENT (%)	22.66	22.66	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	22.66	22.66
VOID RATIO	0.91	0.91
WET DENSITY (lb/ft^3)	109.40	109.40
DRY DENSITY (lb/ft^3)	89.19	89.19
DEGREE OF SATURATION (%)	67.97	67.97

Maximum Shear Stress = 212.11 (lb/in^2) at a Vertical Strain of 3.50 %

	Boring No. : PB-2 Sample No: 458-460 Tested by : C. WASON Filename : PB2-460	Project : HOLLADAY ENGINEERING CO. 030496 Project No.: 971144NA Location: PICKLES BUTTE LANDFILL Date : Tue Jul 01 1997



Classification :
(CL) lean clay
Visual Description :
GRAYISH BROWN FINE SANDY SILTY LEAN CLAY

Remarks :
458-460 FEET

Figure 2

Woodward-Clyde

Tue Jul 01 12:59:29 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496
Project No. : 971144NA
Boring No. : PB-2
Sample No. : 458-460
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAYISH BROWN FINE SANDY SILTY LEAN CLAY
Remarks : 458-460 FEET

Depth : 458-460 FEET
Test Date : 06/30/97
Test Method : ASTM D4318/422

Filename : PB2-460
Elevation : NA
Tested by : C. WASON
Checked by : S. CAPPS

HYDROMETER

Hydrometer ID : 1734
Weight of air-dried soil = 70 gm
Specific Gravity = 2.73

Hydroscopic Moisture Content :
Weight of Wet Soil = 70 gm
Weight of Dry Soil = 64.7 gm
Moisture Content = 0.0819165

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	52.00	22.40	43.80	0.026	67	0.026
5.00	44.00	22.40	35.80	0.017	54	0.017
15.00	34.80	22.20	26.51	0.011	40	0.011
30.00	30.00	22.00	21.62	0.008	33	0.008
60.00	25.00	21.80	16.53	0.006	25	0.006
120.00	22.00	22.10	13.67	0.004	21	0.004
240.00	20.40	22.20	12.11	0.003	18	0.003
360.00	19.00	22.60	10.90	0.002	17	0.002
1440.00	16.00	21.80	7.53	0.001	11	0.001

FINE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#16	0.047	1.19	0.66	0.66	99
#30	0.023	0.60	0.77	1.43	98
#50	0.012	0.30	1.55	2.98	95
#100	0.006	0.15	0.77	3.75	94
#200	0.003	0.07	0.52	4.27	93
Pan			60.43	64.70	0

Total Wet Weight of Sample = 64.7
Total Dry Weight of Sample = 64.7
Moisture Content = 0.0819165

D85 : 0.0530 mm
D60 : 0.0208 mm
D50 : 0.0150 mm
D30 : 0.0071 mm
D15 : 0.0020 mm
D10 : 0.0011 mm

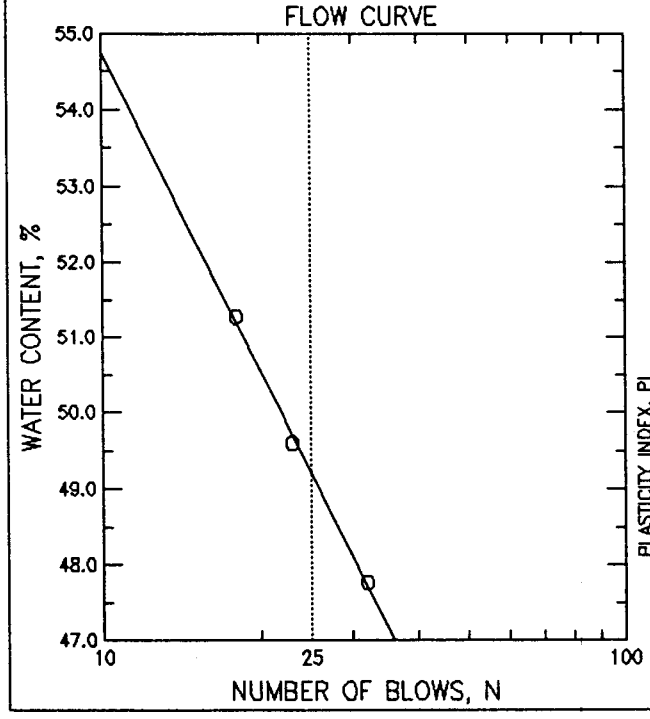
Soil Classification
ASTM Group Symbol : CL
ASTM Group Name : lean clay
AASHTO Group Symbol : A-7-6(27)
AASHTO Group Name : Clayey Soils

ATTERBERG LIMITS

PROJECT	PROJECT NUMBER	TESTED BY	BORING NUMBER
HOLLADAY ENGINEERING CO. 030496	971144NA	C. WASON	PB-2
LOCATION		**CHECKED BY**	**SAMPLE NUMBER**
PICKLES BUTTE LANDFILL		S. CAPPS	458-460
SAMPLE DESCRIPTION		**DATE**	**FILENAME**
GRAYISH BROWN FINE SANDY SILTY LEAN CLAY		Tue Jul 01 1997	PB2-460

LIQUID LIMIT DETERMINATIONS					
CONTAINER NUMBER	11	12	45		
WT. WET SOIL + TARE	27.25	27.63	27.93		
WT. DRY SOIL + TARE	21.91	22.1	22.07		
WT. WATER	5.34	5.53	5.86		
TARE WT.	10.73	10.95	10.64		
WT. DRY SOIL	11.18	11.15	11.43		
WATER CONTENT, W_N (%)	47.76	49.60	51.27		
NUMBER OF BLOWS, N	32	23	18		
ONE-POINT LIQUID LIMIT, LL	49.21	49.10	49.27		

PLASTIC LIMIT DETERMINATIONS					
CONTAINER NUMBER	47				
WT. WET SOIL + TARE	27.35				
WT. DRY SOIL + TARE	24.97				
WT. WATER	2.38				
TARE WT.	15.64				
WT. DRY SOIL	9.33				
WATER CONTENT (%)	25.51				



SUMMARY OF RESULTS	
NATURAL WATER CONTENT, W (%)	
LIQUID LIMIT, LL	49.2
PLASTIC LIMIT, PL	25.5
PLASTICITY INDEX, PI	23.7
LIQUIDITY INDEX, LI*	

*LI = (W - PL)/PI

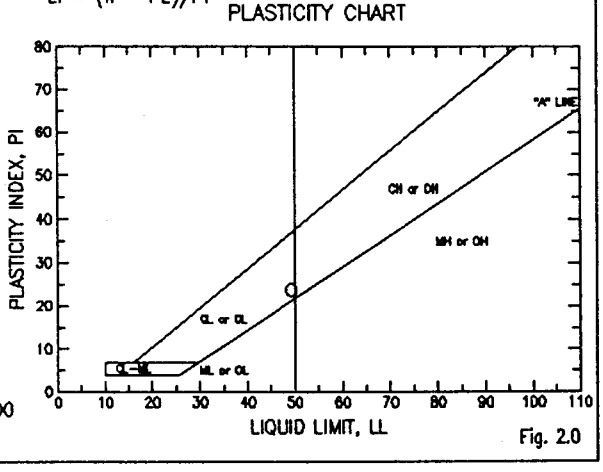


Fig. 2.0

Tue Jul 01 12:59:29 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496 Filename : PB2-460
Project No. : 971144NA Depth : 458-460 FEET Elevation : NA
Boring No. : PB-2 Test Date : 06/30/97 Tested by : C. WASON
Sample No. : 458-460 Test Method : ASTM D4318/422 Checked by : S. CAPPS
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAYISH BROWN FINE SANDY SILTY LEAN CLAY
Remarks : 458-460 FEET

Plastic Limit

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1) 47	15.64	27.35	24.97	25.51

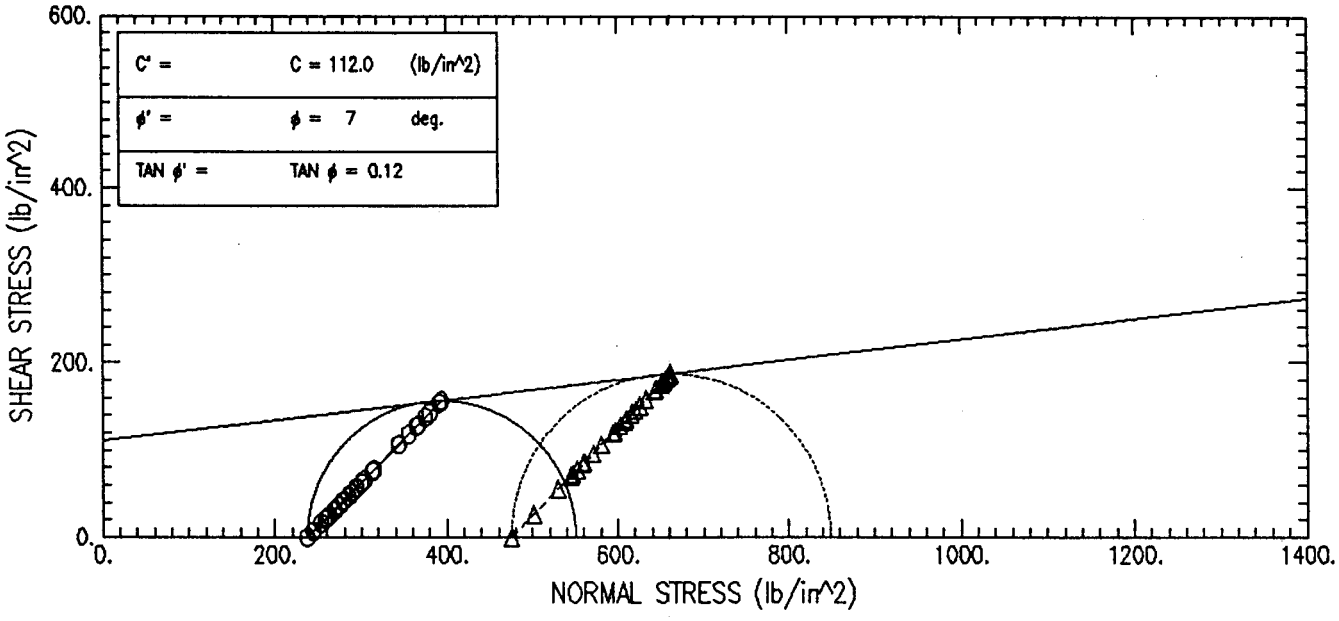
Plastic Limit = 25.51

Liquid Limit

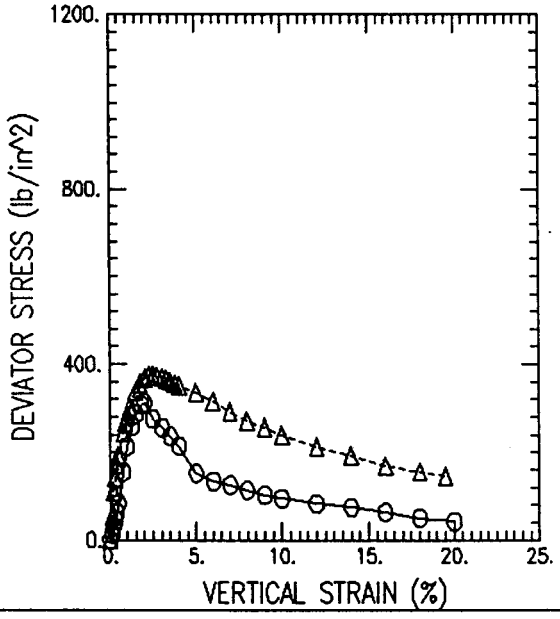
Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Number of Drops	Moisture Content (%)
1) 11	10.73	27.25	21.91	32	47.76
2) 12	10.95	27.63	22.10	23	49.60
3) 45	10.64	27.93	22.07	18	51.27

Liquid Limit = 49.21
Plastic Index = 23.70

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



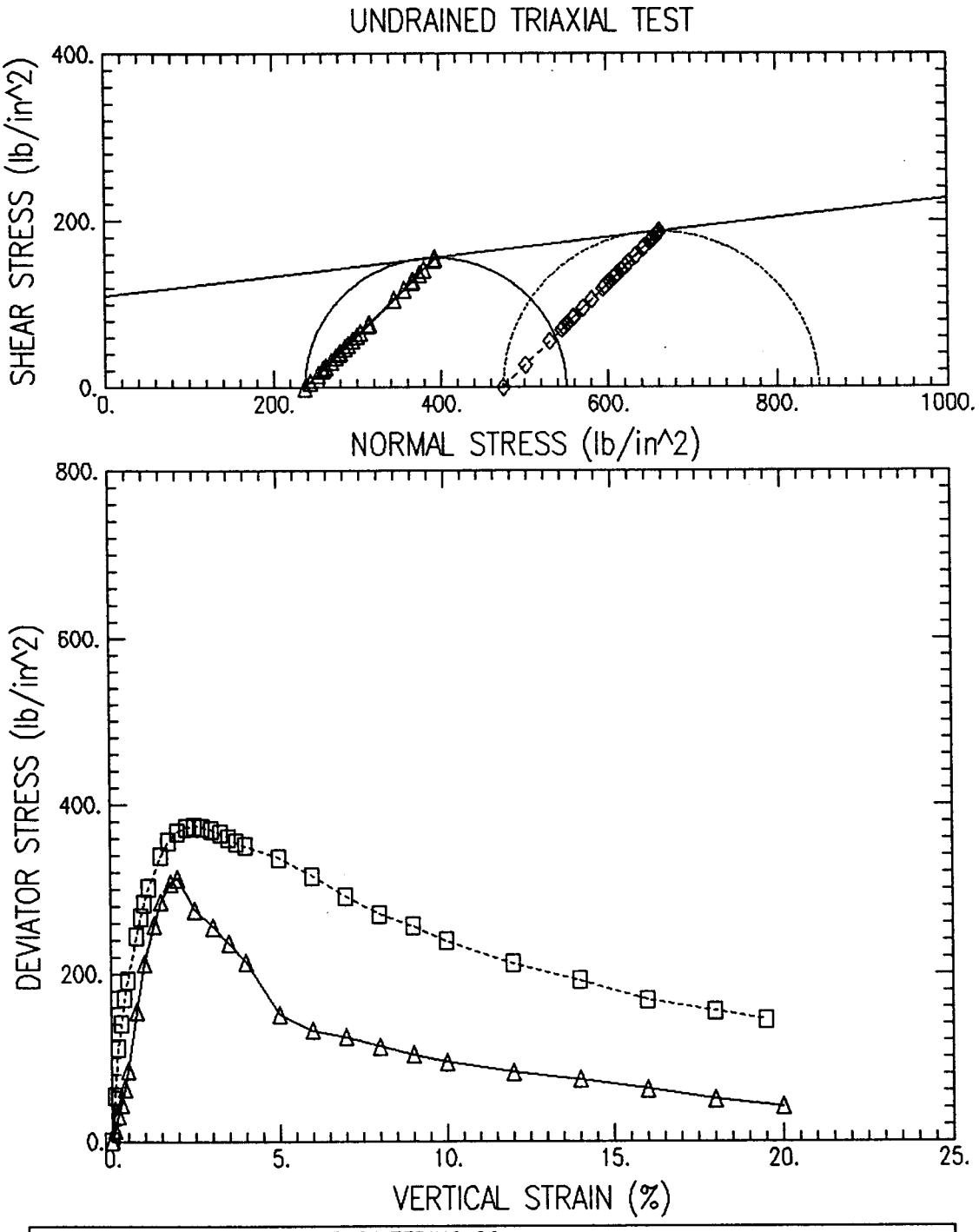
SYMBOL		○	△		
TEST NO.		PB2-237	PB2-475		
INITIAL	WATER CONTENT (%)	24.79	25.22		
	DRY DENSITY (lb/ft^3)	91.46	90.11		
	SATURATION (%)	78.47	77.33		
	VOID RATIO	0.863	0.890		
BEFORE SHEAR	WATER CONTENT (%)	24.79	25.22		
	DRY DENSITY (lb/ft^3)	91.46	90.11		
	SATURATION (%)	78.47	77.33		
	VOID RATIO	0.863	0.890		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		237.50	475.00		
MAX. DEV. STRESS (lb/in^2)		312.84	374.27		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		2.36	2.19		
INITIAL HEIGHT (in)		5.73	4.49		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) GRAYISH BROWN SI CLAY / CLAYEY SILT 2) GRAYISH BROWN SI CLAY / CLAYEY SILT

LL 54.76	PL 25.96	PI 28.80	GS 2.73	TYPE OF SPECIMEN CORE		TYPE OF TEST UNDRAINED	
REMARKS:				PROJECT HOLLADAY ENGINEERING CO.			
1)							
2)				BORING NO. PB-2	SAMPLE NO.	237.5 PSI	475 PSI
				TECH. C. WASON	DEPTH/ELEV	474-475 FT	474-475 FT
				LABORATORY	DATE	07/01/97	07/01/97
				TRIAXIAL COMPRESSION TEST REPORT			

Woodward-Clyde



Project Name : HOLLADAY ENGINEERING CO.				
Boring No:	Sample No	Depth	Test No	Filename
PB-2	237.5 PSI	474-475 FT	PB2-237	PB2-237.UU
PB-2	475 PSI	474-475 FT	PB2-475	PB2-475.UU

Failure Criteria: Peak Deviator Stress

Thu Jul 03 15:45:46 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-237
Boring No. : PB-2 Test Date : 07/01/97 Tested by : C. WASON
Sample No. : 237.5 PSI Depth : 474-475 FT Checked by : C. CAPPS
Sample Type : CORE Elevation :
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

Height : 5.728 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 4.38 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 25.10 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	4.38	0.00	0.00	0.00	0.00	237.50	237.50
2)	0.006	0.10	4.39	0.00	57.75	57.75	13.16	250.66	250.66
3)	0.011	0.19	4.40	0.00	138.60	138.60	31.53	269.03	269.03
4)	0.017	0.30	4.40	0.00	196.35	196.35	44.59	282.09	282.09
5)	0.023	0.40	4.41	0.00	277.20	277.20	62.84	300.34	300.34
6)	0.029	0.51	4.42	0.00	371.91	371.91	84.16	321.66	321.66
7)	0.043	0.75	4.44	0.00	686.07	686.07	154.61	392.11	392.11
8)	0.057	1.00	4.46	0.00	947.10	947.10	212.55	450.05	450.05
9)	0.074	1.29	4.48	0.00	1157.31	1157.31	258.42	495.92	495.92
10)	0.086	1.50	4.49	0.00	1282.05	1282.05	285.25	522.75	522.75
11)	0.103	1.80	4.52	0.00	1390.62	1390.62	307.84	545.34	545.34
12)	0.115	2.01	4.53	0.00	1418.34	1418.34	312.84	550.34	550.34
13)	0.143	2.50	4.57	0.00	1258.95	1258.95	275.35	512.85	512.85
14)	0.173	3.02	4.61	0.00	1178.10	1178.10	255.32	492.82	492.82
15)	0.200	3.49	4.65	0.00	1099.56	1099.56	236.32	473.82	473.82
16)	0.229	4.00	4.69	0.00	1004.85	1004.85	214.03	451.53	451.53
17)	0.286	4.99	4.78	0.00	723.03	723.03	151.27	388.77	388.77
18)	0.344	6.01	4.87	0.00	644.49	644.49	132.36	369.86	369.86
19)	0.401	7.00	4.96	0.00	616.77	616.77	124.33	361.83	361.83
20)	0.458	8.00	5.06	0.00	571.73	571.73	113.08	350.58	350.58
21)	0.516	9.01	5.16	0.00	528.99	528.99	102.59	340.09	340.09
22)	0.573	10.00	5.26	0.00	496.65	496.65	94.44	331.94	331.94
23)	0.687	11.99	5.48	0.00	450.45	450.45	82.25	319.75	319.75
24)	0.802	14.00	5.72	0.00	421.58	421.58	73.76	311.26	311.26
25)	0.916	15.99	5.97	0.00	371.91	371.91	62.25	299.75	299.75
26)	1.031	18.00	6.26	0.00	311.85	311.85	49.82	287.32	287.32
27)	1.146	20.01	6.57	0.00	271.43	271.43	41.29	278.79	278.79

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-237
Boring No. : PB-2 Test Date : 07/01/97 Tested by : C. WASON
Sample No. : 237.5 PSI Depth : 474-475 FT Checked by : C. CAPPS
Sample Type : CORE Elevation :
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

Liquid Limit : 54.76 Plastic Limit : 25.96 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	752.00	752.00	0.00
WT CONTAINER + DRY SOIL (gm)	602.60	602.60	0.00
WT WATER (gm)	149.40	149.40	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	602.60	602.60	0.00
WATER CONTENT (%)	24.79	24.79	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	24.79	24.79
VOID RATIO	0.86	0.86
WET DENSITY (lb/ft^3)	114.14	114.14
DRY DENSITY (lb/ft^3)	91.46	91.46
DEGREE OF SATURATION (%)	78.47	78.47

Maximum Shear Stress = 156.42 (lb/in^2) at a Vertical Strain of 2.01 %

Thu Jul 03 14:45:31 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-475
Boring No. : PB-2 Test Date : 07/01/97 Tested by : C. WASON
Sample No. : 475 PSI Depth : 474-475 FT Checked by : C. CAPPS
Sample Type : CORE Elevation :
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

Height : 4.488 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.77 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 16.91 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.77	0.00	0.00	0.00	0.00	475.00	475.00
2)	0.004	0.09	3.77	0.00	200.97	200.97	53.26	528.26	528.26
3)	0.009	0.20	3.78	0.00	418.11	418.11	110.59	585.59	585.59
4)	0.013	0.29	3.79	0.00	531.30	531.30	140.32	615.32	615.32
5)	0.018	0.40	3.79	0.00	647.96	647.96	170.81	645.81	645.81
6)	0.022	0.49	3.80	0.00	729.96	729.96	192.14	667.14	667.14
7)	0.034	0.76	3.82	0.00	930.93	930.93	243.94	718.94	718.94
8)	0.040	0.89	3.82	0.00	1022.18	1022.18	267.25	742.25	742.25
9)	0.045	1.00	3.83	0.00	1085.70	1085.70	283.32	758.32	758.32
10)	0.051	1.14	3.84	0.00	1158.47	1158.47	301.63	776.63	776.63
11)	0.067	1.49	3.86	0.00	1310.93	1310.93	339.25	814.25	814.25
12)	0.078	1.74	3.88	0.00	1382.54	1382.54	356.29	831.29	831.29
13)	0.090	2.01	3.90	0.00	1432.20	1432.20	367.39	842.39	842.39
14)	0.101	2.25	3.91	0.00	1461.08	1461.08	373.21	848.21	848.21
15)	0.112	2.50	3.93	0.00	1471.47	1471.47	374.27	849.27	849.27
16)	0.123	2.74	3.95	0.00	1472.63	1472.63	372.97	847.97	847.97
17)	0.135	3.01	3.97	0.00	1468.01	1468.01	370.07	845.07	845.07
18)	0.146	3.25	3.98	0.00	1457.61	1457.61	365.87	840.87	840.87
19)	0.157	3.50	4.00	0.00	1443.75	1443.75	360.82	835.82	835.82
20)	0.168	3.74	4.02	0.00	1426.43	1426.43	354.94	829.94	829.94
21)	0.180	4.01	4.04	0.00	1416.03	1416.03	350.68	825.68	825.68
22)	0.224	4.99	4.11	0.00	1383.69	1383.69	336.67	811.67	811.67
23)	0.269	5.99	4.19	0.00	1322.48	1322.48	315.91	790.91	790.91
24)	0.314	7.00	4.27	0.00	1245.09	1245.09	291.91	766.91	766.91
25)	0.359	8.00	4.35	0.00	1175.79	1175.79	270.44	745.44	745.44
26)	0.404	9.00	4.43	0.00	1136.52	1136.52	256.37	731.37	731.37
27)	0.449	10.00	4.52	0.00	1079.93	1079.93	238.82	713.82	713.82
28)	0.539	12.01	4.71	0.00	1000.23	1000.23	212.32	687.32	687.32
29)	0.628	13.99	4.91	0.00	944.79	944.79	192.26	667.26	667.26
30)	0.718	16.00	5.14	0.00	867.41	867.41	168.82	643.82	643.82
31)	0.808	18.00	5.38	0.00	836.22	836.22	155.34	630.34	630.34
32)	0.875	19.50	5.58	0.00	809.66	809.66	145.05	620.05	620.05

Thu Jul 03 14:45:31 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO.
Project No. : 971144NA
Boring No. : PB-2
Sample No. : 475 PSI
Sample Type : CORE
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

Location : PICKLES BUTTE LANDFILL
Test No. : PB2-475
Test Date : 07/01/97
Depth : 474-475 FT
Elevation :

Tested by : C. WASON
Checked by : C. CAPPS

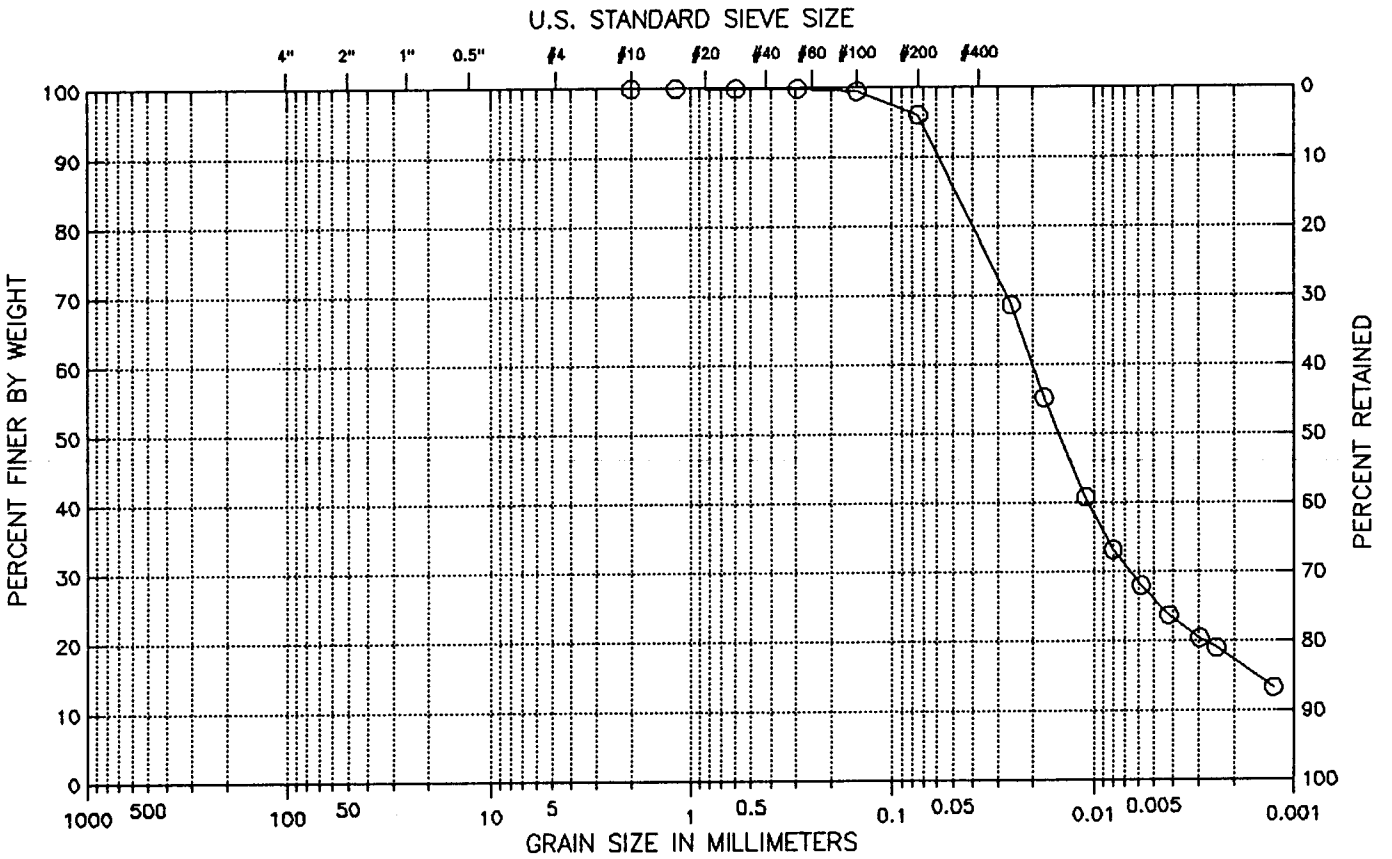
Liquid Limit : 54.76
Plastic Limit : 25.96
Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	500.90	500.90	0.00
WT CONTAINER + DRY SOIL (gm)	400.00	400.00	0.00
WT WATER (gm)	100.90	100.90	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	400.00	400.00	0.00
WATER CONTENT (%)	25.22	25.22	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	25.22	25.22
VOID RATIO	0.89	0.89
WET DENSITY (lb/ft^3)	112.84	112.84
DRY DENSITY (lb/ft^3)	90.11	90.11
DEGREE OF SATURATION (%)	77.33	77.33

Maximum Shear Stress = 187.14 (lb/in^2) at a Vertical Strain of 2.50 %

	Boring No. : PB-2 Sample No.: 474-475 FT Tested by : C. WASON Filename : PB2-475	Project : HOLLADAY ENGINEERING CO. 030496 Project No.: 971144NA Location: PICKLES BUTTE LANDFILL Date : Thu Jul 03 1997



Classification :
(CH) fat clay
Visual Description :
GRAYISH BROWN SILTY CLAY

Remarks :
474-475 FFET

Figure 1

Woodward-Clyde

Thu Jul 03 14:29:09 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496
Project No. : 971144NA
Boring No. : PB-2
Sample No. : 474-475 FT
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAYISH BROWN SILTY CLAY
Remarks : 474-475 FFET

Depth : 474-475 FEET
Test Date : 07/02/97
Test Method : ASTM D4318/422

Filename : PB2-475
Elevation : NA
Tested by : C. WASON
Checked by : S. CAPPS

HYDROMETER

Hydrometer ID : 1734
Weight of air-dried soil = 70 gm
Specific Gravity = 2.73

Hydroscopic Moisture Content :
Weight of Wet Soil = 70 gm
Weight of Dry Soil = 62.09 gm
Moisture Content = 0.127396

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	51.50	22.40	43.30	0.026	69	0.026
5.00	43.00	22.40	34.80	0.018	55	0.018
15.00	34.00	22.30	25.76	0.011	41	0.011
30.00	29.20	22.20	20.91	0.008	33	0.008
60.00	26.00	22.10	17.67	0.006	28	0.006
120.00	23.30	22.00	14.92	0.004	24	0.004
244.00	21.00	22.50	12.85	0.003	20	0.003
360.00	20.00	22.80	11.99	0.002	19	0.002
1440.00	16.80	21.90	8.37	0.001	13	0.001

FINE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#16	0.047	1.19	0.00	0.00	100
#30	0.023	0.60	0.03	0.03	100
#50	0.012	0.30	0.03	0.06	100
#100	0.006	0.15	0.23	0.29	100
#200	0.003	0.07	2.14	2.43	96
Pan			59.66	62.09	0

Total Wet Weight of Sample = 70
Total Dry Weight of Sample = 62.09
Moisture Content = 0.127396

D85 : 0.0482 mm
D60 : 0.0202 mm
D50 : 0.0148 mm
D30 : 0.0066 mm
D15 : 0.0015 mm
D10 : 0.0009 mm

Soil Classification
ASTM Group Symbol : CH
ASTM Group Name : fat clay
AASHTO Group Symbol : A-7-6(35)
AASHTO Group Name : Clayey Soils

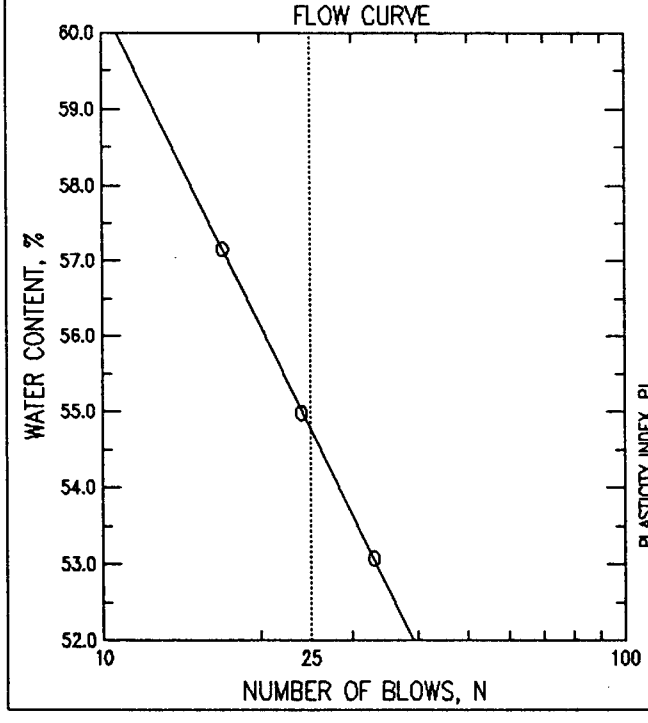
Woodward-Clyde

ATTERBERG LIMITS

PROJECT	PROJECT NUMBER	TESTED BY	BORING NUMBER
HOLLADAY ENGINEERING CO. 030496	971144NA	C. WASON	PB-2
LOCATION PICKLES BUTTE LANDFILL		CHECKED BY S. CAPPS	SAMPLE NUMBER 474-475 FT
SAMPLE DESCRIPTION GRAYISH BROWN SILTY CLAY		DATE Thu Jul 03 1997	FILENAME PB2-475

LIQUID LIMIT DETERMINATIONS					
CONTAINER NUMBER	13	14	18		
WT. WET SOIL + TARE	27.48	27.62	27.51		
WT. DRY SOIL + TARE	21.78	21.66	21.4		
WT. WATER	5.7	5.96	6.11		
TARE WT.	11.04	10.82	10.71		
WT. DRY SOIL	10.74	10.84	10.69		
WATER CONTENT, W_N (%)	53.07	54.98	57.16		
NUMBER OF BLOWS, N	33	24	17		
ONE-POINT LIQUID LIMIT, LL	54.89	54.71	54.55		

PLASTIC LIMIT DETERMINATIONS					
CONTAINER NUMBER	2				
WT. WET SOIL + TARE	27.29				
WT. DRY SOIL + TARE	24.93				
WT. WATER	2.36				
TARE WT.	15.84				
WT. DRY SOIL	9.09				
WATER CONTENT (%)	25.96				



SUMMARY OF RESULTS	
NATURAL WATER CONTENT, W (%)	
LIQUID LIMIT, LL	54.8
PLASTIC LIMIT, PL	26.0
PLASTICITY INDEX, PI	28.8
LIQUIDITY INDEX, LI*	

*LI = (W - PL)/PI

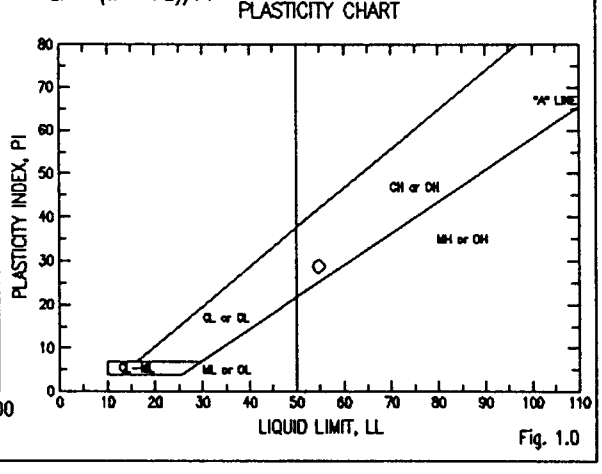


Fig. 1.0

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496
Project No. : 971144NA
Boring No. : PB-2
Sample No. : 474-475 FT
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAYISH BROWN SILTY CLAY
Remarks : 474-475 FFET

Depth : 474-475 FEET
Test Date : 07/02/97
Test Method : ASTM D4318/422

Filename : PB2-475
Elevation : NA
Tested by : C. WASON
Checked by : S. CAPPS

Plastic Limit

Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1) 2	15.84	27.29	24.93	25.96

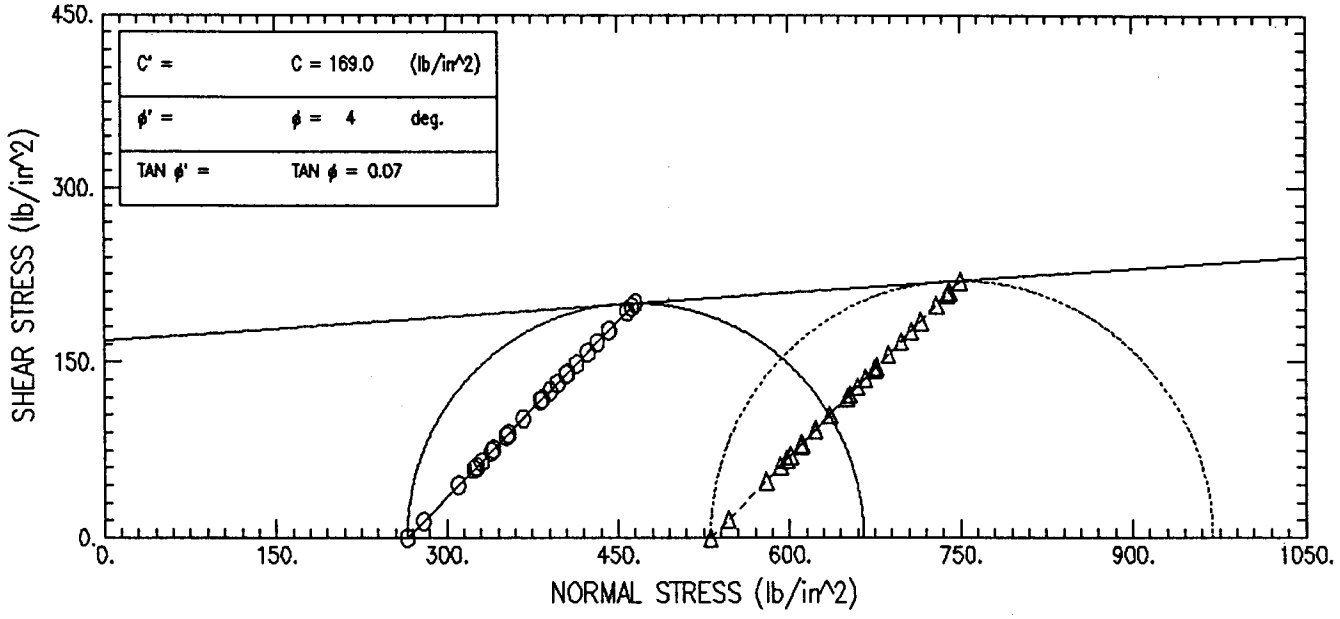
Plastic Limit = 25.96

Liquid Limit

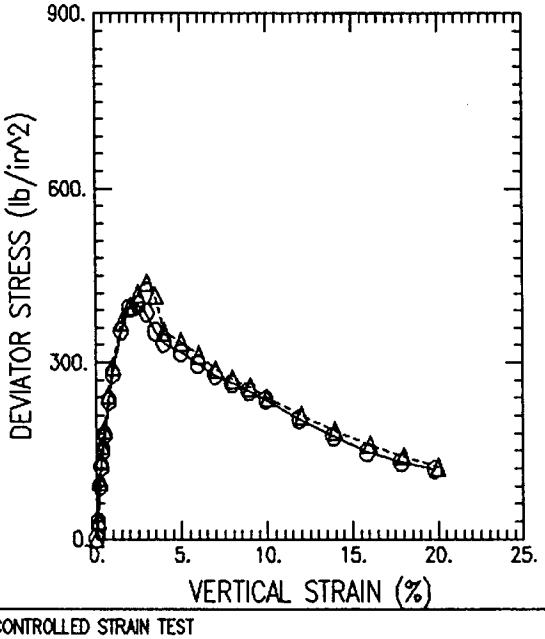
Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Number of Drops	Moisture Content (%)
1) 13	11.04	27.48	21.78	33	53.07
2) 14	10.82	27.62	21.66	24	54.98
3) 18	10.71	27.51	21.40	17	57.16

Liquid Limit = 54.76
Plastic Index = 28.80

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



SYMBOL		○	△		
TEST NO.		PB2-265	PB2-531		
INITIAL	WATER CONTENT (%)	21.24	20.21		
	DRY DENSITY (lb/ft^3)	93.63	95.26		
	SATURATION (%)	70.76	69.99		
	VOID RATIO	0.819	0.788		
BEFORE SHEAR	WATER CONTENT (%)	21.24	20.21		
	DRY DENSITY (lb/ft^3)	93.63	95.26		
	SATURATION (%)	70.76	69.99		
	VOID RATIO	0.819	0.788		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		265.50	531.00		
MAX. DEV. STRESS (lb/in^2)		399.73	437.99		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		1.99	1.98		
INITIAL HEIGHT (in)		3.97	3.78		

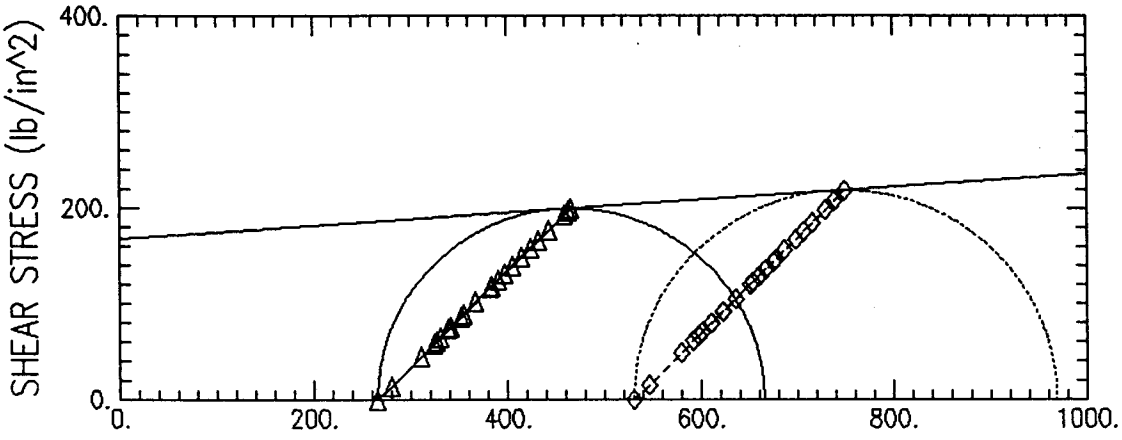
CONTROLLED STRAIN TEST

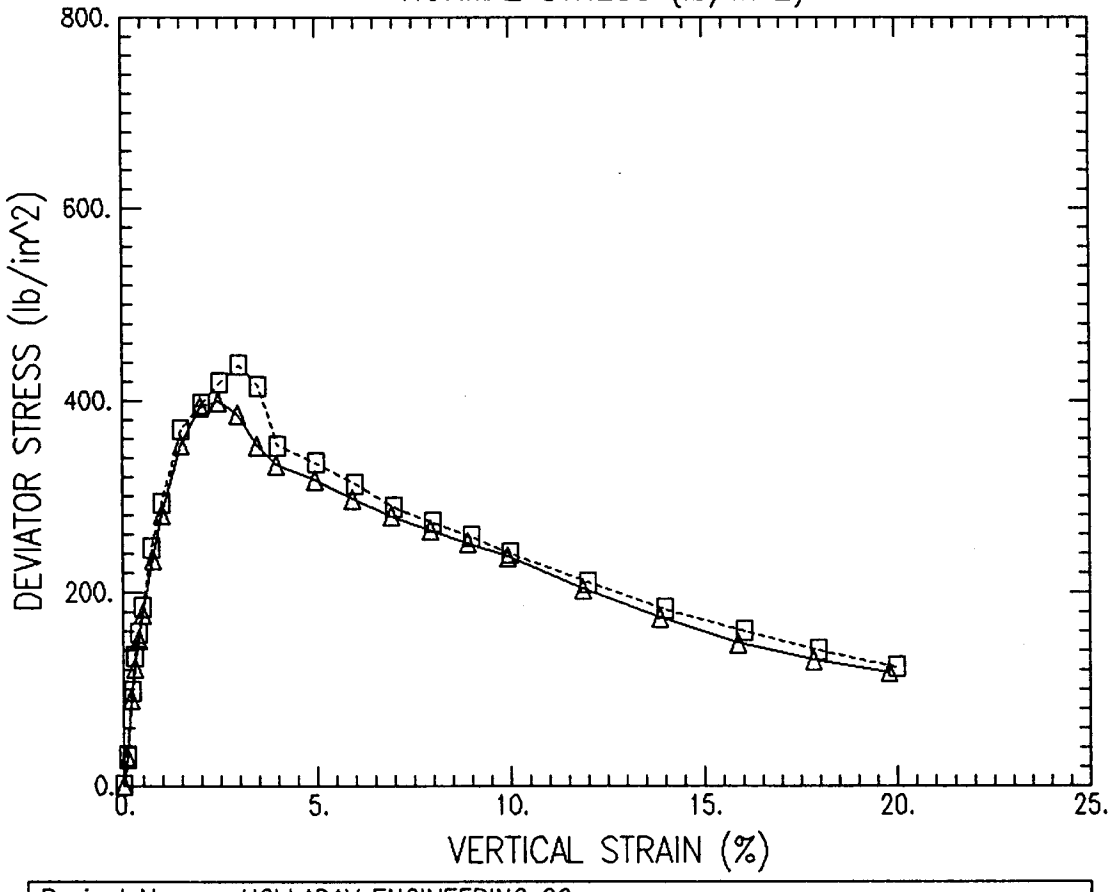
DESCRIPTION OF SPECIMENS: 1) BROWN SILTY CLAY/CLAYEY SILT 2) BROWN SILTY CLAY/CLAYEY SILT

LL 55.01	PL 24.30	PI 30.71	GS 2.73	TYPE OF SPECIMEN CORE		TYPE OF TEST UNDRAINED	
REMARKS:				PROJECT HOLLADAY ENGINEERING CO.			
1)							
2)				BORING NO. PB-2	SAMPLE NO.	265.5 PSI	531 PSI
				TECH. S. CAPPS	DEPTH/ELEV	530-531 FT	530-531 FT
				LABORATORY	DATE	06/27/97	06/27/97
				TRIAXIAL COMPRESSION TEST REPORT			

Woodward-Clyde

UNDRAINED TRIAXIAL TEST

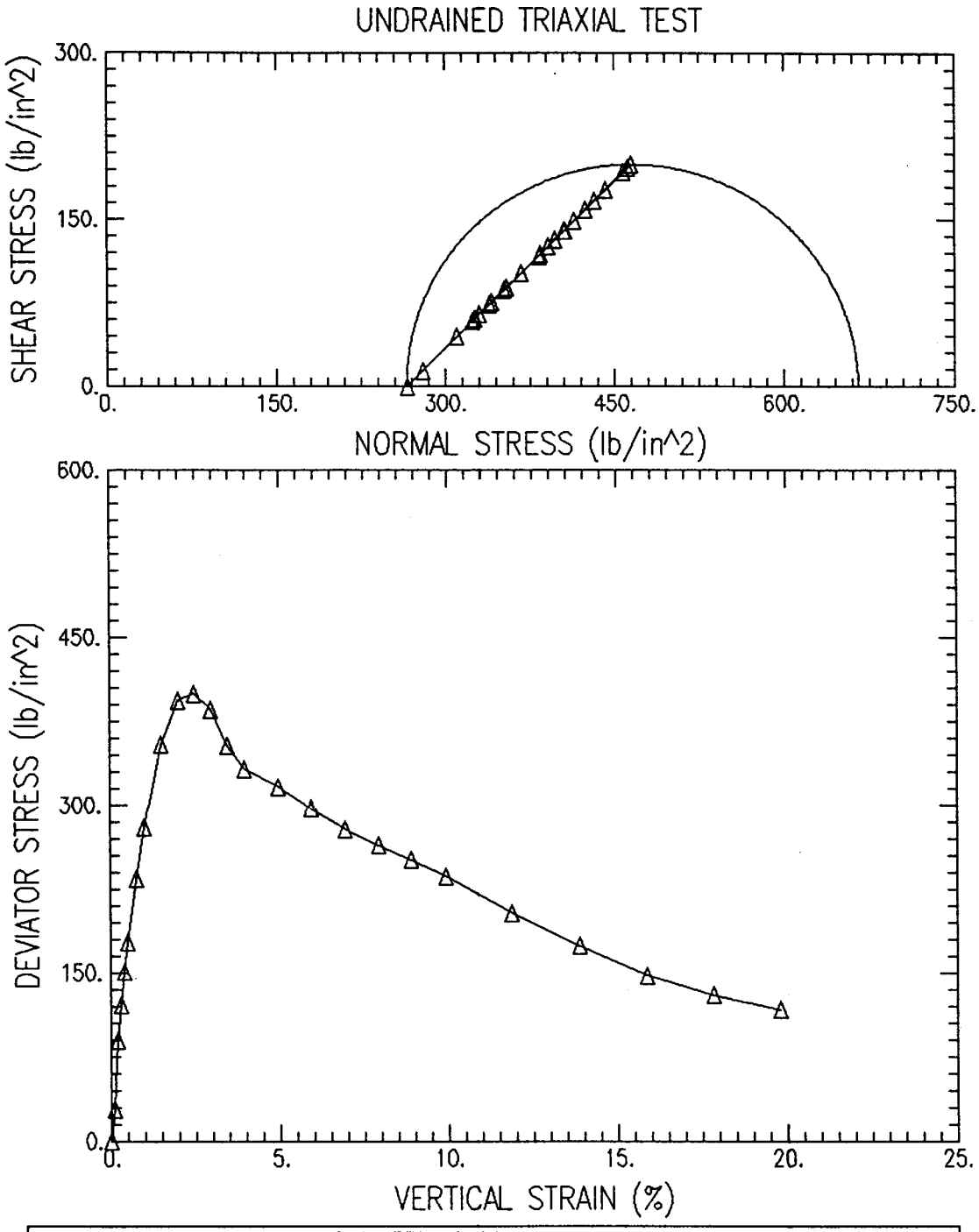




Project Name : HOLLADAY ENGINEERING CO.

Boring No:	Sample No	Depth	Test No	Filename
PB-2	265.5 PSI	530-531 FT	PB2-265	PB2-265.UU
PB-2	531 PSI	530-531 FT	PB2-531	PB2-531.UU

Woodward-Clyde



Project Name : HOLLADAY ENGINEERING CO.

Boring No:	Sample No	Depth	Test No	Filename
PB-2	265.5 PSI	530-531 FT	PB2-265	PB2-265.UU

Mon Jun 30 08:12:41 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-265
Boring No. : PB-2 Test Date : 06/27/97 Tested by : S. CAPPS
Sample No. : 265.5 PSI Depth : 530-531 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Height : 3.973 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.12 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 12.38 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.12	0.00	0.00	0.00	0.00	265.50	265.50
2)	0.004	0.10	3.12	0.00	88.94	88.94	28.48	293.98	293.98
3)	0.008	0.20	3.13	0.00	279.51	279.51	89.37	354.87	354.87
4)	0.012	0.30	3.13	0.00	381.15	381.15	121.67	387.17	387.17
5)	0.016	0.40	3.14	0.00	473.55	473.55	150.91	416.41	416.41
6)	0.020	0.50	3.14	0.00	557.87	557.87	177.47	442.97	442.97
7)	0.030	0.76	3.16	0.00	739.20	739.20	234.17	499.67	499.67
8)	0.039	0.98	3.17	0.00	889.35	889.35	280.65	546.15	546.15
9)	0.059	1.49	3.20	0.00	1131.90	1131.90	354.15	619.65	619.65
10)	0.079	1.99	3.22	0.00	1269.35	1269.35	393.74	659.24	659.24
11)	0.098	2.47	3.25	0.00	1299.38	1299.38	399.73	665.23	665.23
12)	0.118	2.97	3.28	0.00	1264.73	1264.73	385.67	651.17	651.17
13)	0.138	3.47	3.31	0.00	1168.86	1168.86	353.29	618.79	618.79
14)	0.157	3.95	3.34	0.00	1111.11	1111.11	332.99	598.49	598.49
15)	0.197	4.96	3.40	0.00	1076.46	1076.46	316.81	582.31	582.31
16)	0.236	5.94	3.46	0.00	1027.95	1027.95	297.14	562.64	562.64
17)	0.276	6.95	3.53	0.00	982.91	982.91	278.83	544.33	544.33
18)	0.315	7.93	3.59	0.00	948.26	948.26	264.02	529.52	529.52
19)	0.354	8.91	3.66	0.00	919.38	919.38	251.15	516.65	516.65
20)	0.394	9.92	3.73	0.00	884.73	884.73	236.93	502.43	502.43
21)	0.472	11.88	3.89	0.00	791.18	791.18	203.57	469.07	469.07
22)	0.551	13.87	4.05	0.00	705.71	705.71	174.07	439.57	439.57
23)	0.630	15.86	4.24	0.00	624.86	624.86	147.49	412.99	412.99
24)	0.709	17.85	4.44	0.00	576.35	576.35	129.91	395.41	395.41
25)	0.787	19.81	4.65	0.00	545.16	545.16	117.16	382.66	382.66

UNDRAINED TRIAXIAL COMPRESSION TEST

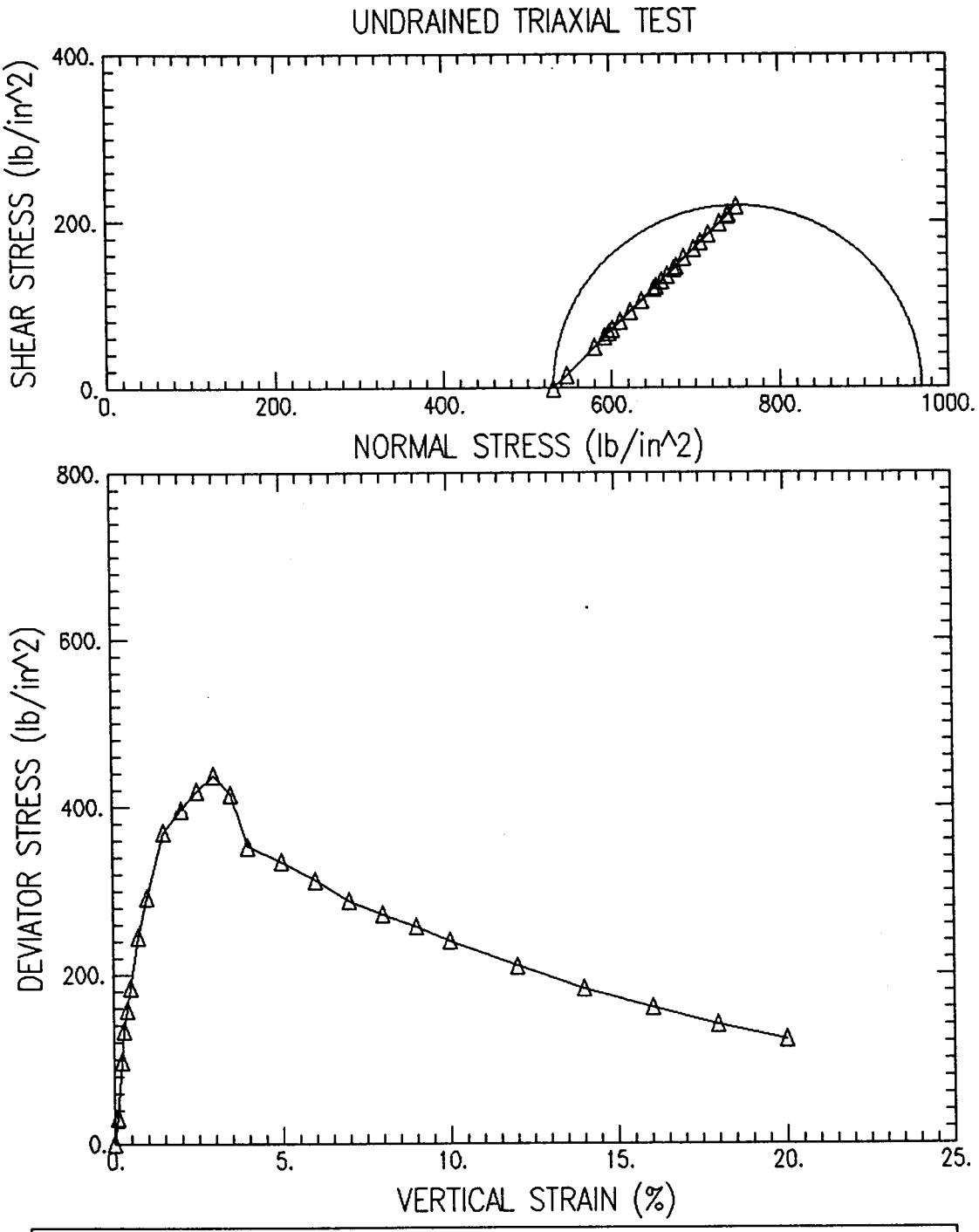
Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-265
Boring No. : PB-2 Test Date : 06/27/97 Tested by : S. CAPPS
Sample No. : 265.5 PSI Depth : 530-531 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	369.00	369.00	0.00
WT CONTAINER + DRY SOIL (gm)	304.36	304.36	0.00
WT WATER (gm)	64.64	64.64	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	304.36	304.36	0.00
WATER CONTENT (%)	21.24	21.24	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	21.24	21.24
VOID RATIO	0.82	0.82
WET DENSITY (lb/ft^3)	113.51	113.51
DRY DENSITY (lb/ft^3)	93.63	93.63
DEGREE OF SATURATION (%)	70.76	70.76

Maximum Shear Stress = 199.86 (lb/in^2) at a Vertical Strain of 2.47 %



Project Name : HOLLADAY ENGINEERING CO.

Boring No:	Sample No	Depth	Test No	Filename
PB-2	531 PSI	530-531 FT	PB2-531	PB2-531.UU

Mon Jun 30 08:13:41 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-531
Boring No. : PB-2 Test Date : 06/27/97 Tested by : S. CAPPS
Sample No. : 531 PSI Depth : 530-531 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : BROWN SILTY CLAY/CLAYEY SILT
Remarks :

Height : 3.780 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.09 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 11.69 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.09	0.00	0.00	0.00	0.00	531.00	531.00
2)	0.004	0.11	3.10	0.00	97.02	97.02	31.32	562.32	562.32
3)	0.008	0.21	3.10	0.00	301.46	301.46	97.15	628.15	628.15
4)	0.011	0.29	3.11	0.00	414.65	414.65	133.45	664.45	664.45
5)	0.015	0.40	3.11	0.00	493.19	493.19	158.45	689.45	689.45
6)	0.019	0.50	3.12	0.00	575.19	575.19	184.47	715.47	715.47
7)	0.028	0.74	3.13	0.00	768.08	768.08	245.34	776.34	776.34
8)	0.038	1.01	3.14	0.00	920.54	920.54	292.73	823.73	823.73
9)	0.057	1.51	3.17	0.00	1172.33	1172.33	369.62	900.62	900.62
10)	0.076	2.01	3.20	0.00	1269.35	1269.35	396.77	927.77	927.77
11)	0.094	2.49	3.23	0.00	1352.51	1352.51	419.29	950.29	950.29
12)	0.113	2.99	3.25	0.00	1425.27	1425.27	437.99	968.99	968.99
13)	0.132	3.49	3.28	0.00	1364.06	1364.06	415.48	946.48	946.48
14)	0.151	3.99	3.31	0.00	1168.86	1168.86	352.86	883.86	883.86
15)	0.189	5.00	3.37	0.00	1129.59	1129.59	334.88	865.88	865.88
16)	0.227	6.01	3.44	0.00	1075.31	1075.31	312.96	843.96	843.96
17)	0.265	7.01	3.50	0.00	1009.47	1009.47	288.33	819.33	819.33
18)	0.302	7.99	3.57	0.00	971.36	971.36	272.32	803.32	803.32
19)	0.340	8.99	3.64	0.00	937.86	937.86	257.85	788.85	788.85
20)	0.378	10.00	3.71	0.00	890.51	890.51	240.00	771.00	771.00
21)	0.454	12.01	3.87	0.00	811.97	811.97	210.04	741.04	741.04
22)	0.529	13.99	4.03	0.00	738.05	738.05	183.02	714.02	714.02
23)	0.606	16.03	4.22	0.00	676.83	676.83	160.41	691.41	691.41
24)	0.680	17.99	4.42	0.00	620.24	620.24	140.45	671.45	671.45
25)	0.756	20.00	4.64	0.00	568.26	568.26	122.52	653.52	653.52

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-531
Boring No. : PB-2 Test Date : 06/27/97 Tested by : S. CAPPS
Sample No. : 531 PSI Depth : 530-531 FT Checked by : C. WASON
Sample Type : CORE Elevation :
Soil Description : BROWN SILTY CLAY/CLAYEY SILT
Remarks :

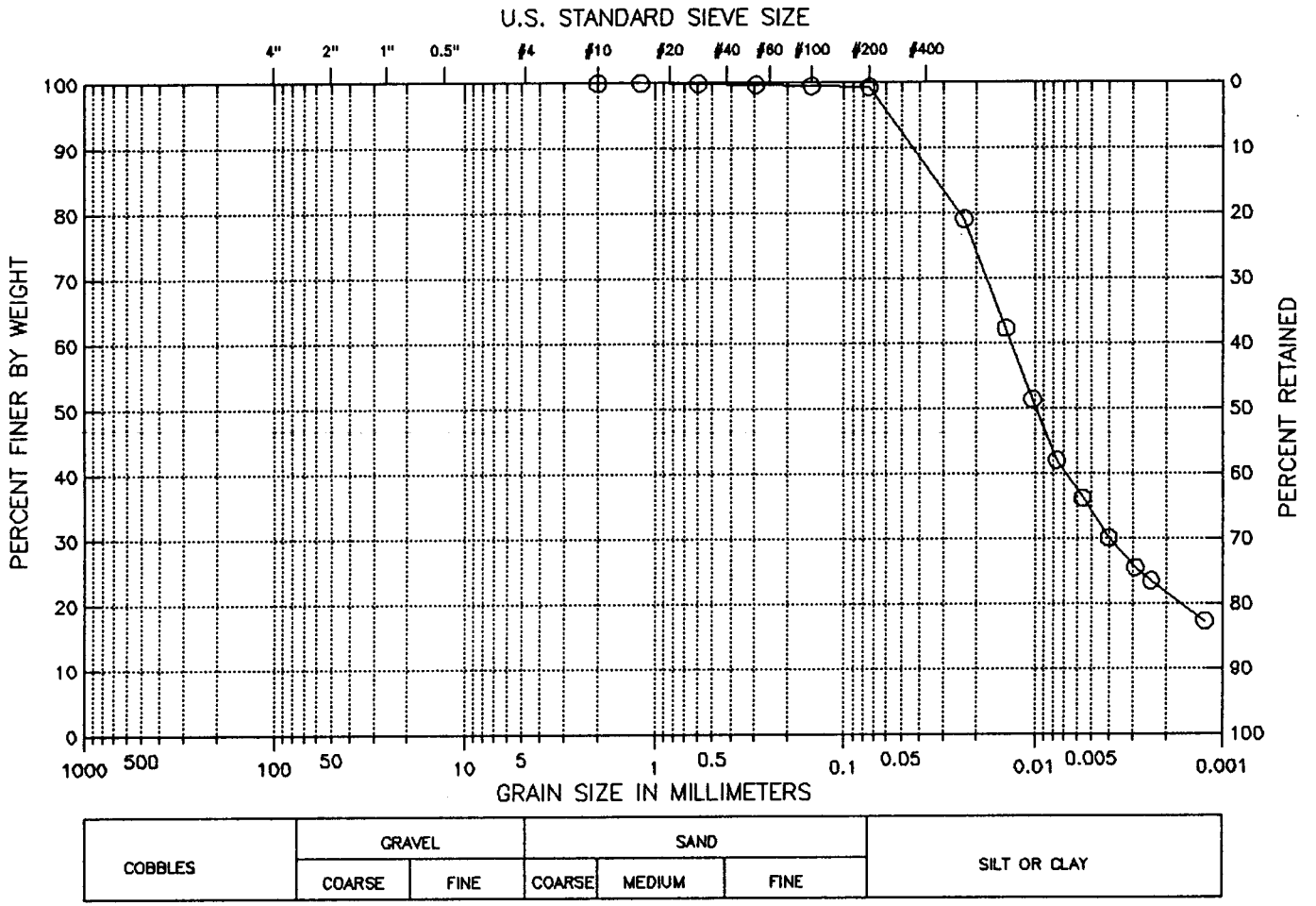
Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	351.32	351.32	0.00
WT CONTAINER + DRY SOIL (gm)	292.26	292.26	0.00
WT WATER (gm)	59.06	59.06	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	292.26	292.26	0.00
WATER CONTENT (%)	20.21	20.21	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	20.21	20.21
VOID RATIO	0.79	0.79
WET DENSITY (lb/ft^3)	114.51	114.51
DRY DENSITY (lb/ft^3)	95.26	95.26
DEGREE OF SATURATION (%)	69.99	69.99

Maximum Shear Stress = 218.99 (lb/in^2) at a Vertical Strain of 2.99 %

	Boring No. : PB-2 Sample No.: 530-531 Tested by : C. WASON Filename : PB2-530	Project : HOLLADAY ENGINEERING CO. 030496 Project No.: 971144NA Location: PICKLES BUTTE LANDFILL Date : Tue Jul 01 1997



Classification :
(CH) fat clay
Visual Description :
BROWN SILTY CLAY

Remarks :
530-531 FEET

Figure 3

Woodward-Clyde

Tue Jul 01 12:59:38 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496 Filename : PB2-530
Project No. : 971144NA Depth : 530-531 FEET Elevation : NA
Boring No. : PB-2 Test Date : 06/30/97 Tested by : C. WASON
Sample No. : 530-531 Test Method : ASTM D4318/422 Checked by : S. CAPPS
Location : PICKLES BUTTE LANDFILL
Soil Description : BROWN SILTY CLAY
Remarks : 530-531 FEET

HYDROMETER

Hydrometer ID : 1734
Weight of air-dried soil = 70 gm
Specific Gravity = 2.73

Hydroscopic Moisture Content :
Weight of Wet Soil = 70 gm
Weight of Dry Soil = 64.46 gm
Moisture Content = 0.0859448

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	60.00	22.40	51.80	0.023	79	0.023
7.00	49.00	22.40	40.80	0.014	62	0.014
15.00	42.00	22.10	33.67	0.010	51	0.010
30.00	36.00	21.80	27.53	0.008	42	0.008
60.00	32.20	21.80	23.73	0.006	36	0.006
120.00	28.00	22.20	19.71	0.004	30	0.004
240.00	25.00	22.20	16.71	0.003	26	0.003
360.00	23.50	22.60	15.40	0.002	24	0.002
1440.00	20.00	21.40	11.34	0.001	17	0.001

FINE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#16	0.047	1.19	0.00	0.00	100
#30	0.023	0.60	0.05	0.05	100
#50	0.012	0.30	0.14	0.19	100
#100	0.006	0.15	0.13	0.32	100
#200	0.003	0.07	0.12	0.44	99
Pan			64.02	64.46	0

Total Wet Weight of Sample = 64.46
Total Dry Weight of Sample = 64.46
Moisture Content = 0.0859448

D85 : 0.0326 mm
D60 : 0.0132 mm
D50 : 0.0099 mm
D30 : 0.0040 mm
D15 : N/A
D10 : N/A

Soil Classification
ASTM Group Symbol : CH
ASTM Group Name : fat clay
AASHTO Group Symbol : A-7-6(38)
AASHTO Group Name : Clayey Soils

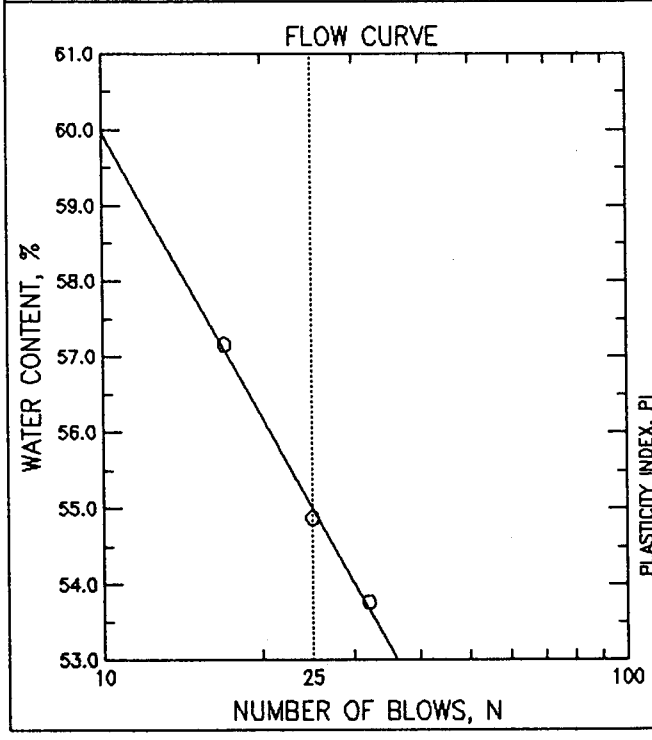
Woodward-Clyde

ATTERBERG LIMITS

PROJECT	PROJECT NUMBER	TESTED BY	BORING NUMBER
HOLLADAY ENGINEERING CO. 030496	971144NA	C. WASON	PB-2
LOCATION PICKLES BUTTE LANDFILL		CHECKED BY S. CAPPS	SAMPLE NUMBER 530-531
SAMPLE DESCRIPTION BROWN SILTY CLAY		DATE Tue Jul 01 1997	FILENAME PB2-530

LIQUID LIMIT DETERMINATIONS					
CONTAINER NUMBER	J	14	33		
WT. WET SOIL + TARE	28.24	27.4	27.99		
WT. DRY SOIL + TARE	22.17	21.54	21.72		
WT. WATER	6.07	5.86	6.27		
TARE WT.	10.88	10.86	10.75		
WT. DRY SOIL	11.29	10.68	10.97		
WATER CONTENT, W_N (%)	53.76	54.87	57.16		
NUMBER OF BLOWS, N	32	25	17		
ONE-POINT LIQUID LIMIT, LL	55.39	54.87	54.55		

PLASTIC LIMIT DETERMINATIONS					
CONTAINER NUMBER	98				
WT. WET SOIL + TARE	26.22				
WT. DRY SOIL + TARE	24.15				
WT. WATER	2.07				
TARE WT.	15.63				
WT. DRY SOIL	8.52				
WATER CONTENT (%)	24.30				



SUMMARY OF RESULTS	
NATURAL WATER CONTENT, W (%)	
LIQUID LIMIT, LL	55.0
PLASTIC LIMIT, PL	24.3
PLASTICITY INDEX, PI	30.7
LIQUIDITY INDEX, LI*	

*LI = (W - PL)/PI

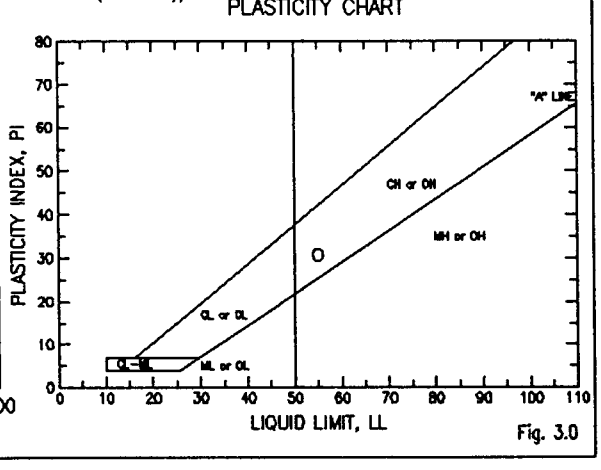


Fig. 3.0

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496 Filename : PB2-530
Project No. : 971144NA Depth : 530-531 FEET Elevation : NA
Boring No. : PB-2 Test Date : 06/30/97 Tested by : C. WASON
Sample No. : 530-531 Test Method : ASTM D4318/422 Checked by : S. CAPPS
Location : PICKLES BUTTE LANDFILL
Soil Description : BROWN SILTY CLAY
Remarks : 530-531 FEET

Plastic Limit

	Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Moisture Content (%)
1)	98	15.63	26.22	24.15	24.30

Plastic Limit = 24.30

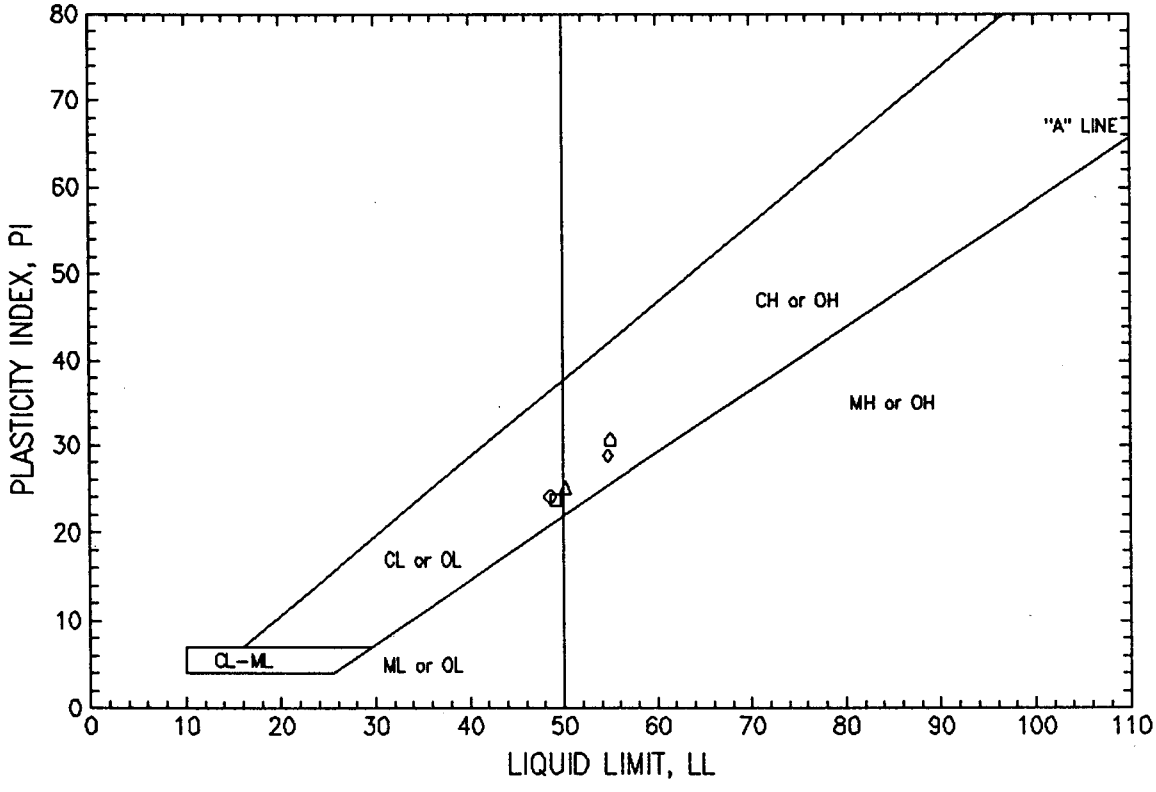
Liquid Limit

	Moisture Content ID	Mass of Container (gm)	Mass of Container and Moist Soil (gm)	Mass of Container and Dried Soil (gm)	Number of Drops	Moisture Content (%)
1)	J	10.88	28.24	22.17	32	53.76
2)	14	10.86	27.40	21.54	25	54.87
3)	33	10.75	27.99	21.72	17	57.16

Liquid Limit = 55.01
Plastic Index = 30.72

Project : HOLLADAY ENGINEERING CO. 030496
Project No. : 971144NA
Location : PICKLES BUTTE LANDFILL
Date : Thu Jul 03 1997

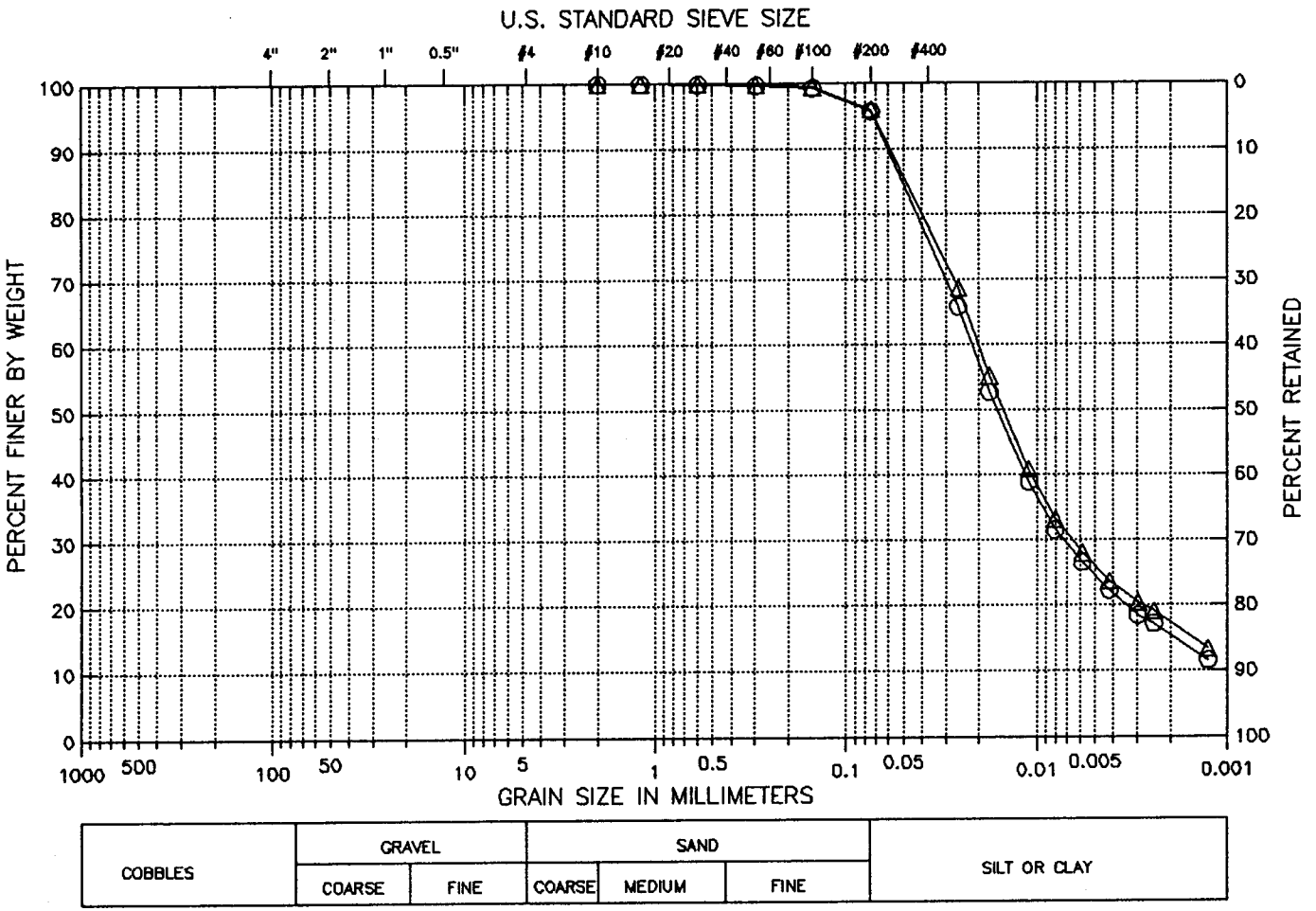
PLASTICITY CHART



Symbol	Boring No.	Sample No.	Liquid Limit	Plastic Limit	Plasticity Index
○	PB-2	429-430 FT	48.57	24.51	24.06
△	PB-2	456-457	50.19	25.08	25.11
□	PB-2	458-460	49.21	25.51	23.70
◇	PB-2	474-475 FT	54.76	25.96	28.80
⌂	PB-2	530-531	55.01	24.30	30.72

Figure 1

Project : HOLLADAY ENGINEERING CO. 030496
Project No.: 971144NA
Location: PICKLES BUTTE LANDFILL
Date : Thu Jul 03 1997

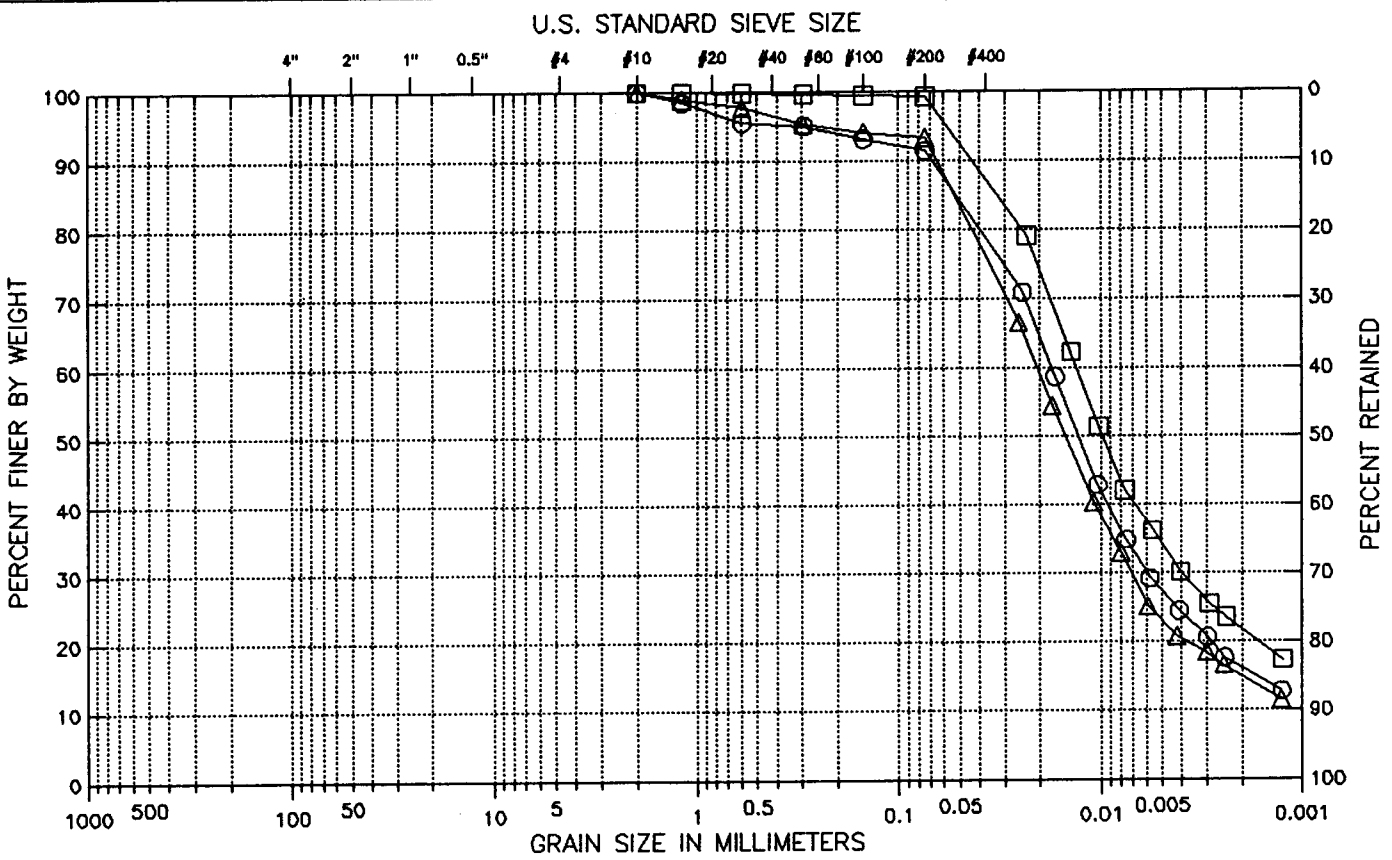


Symbol	Boring No.	Sample No.	Depth	Filename	Classification / Description	
⊖	PB-2	429-430 FT	429-430 FEET	PB2-430	CL	lean clay
△	PB-2	474-475 FT	474-475 FEET	PB2-475	CH	fat clay

Figure 1

Woodward-Clyde

Project : HOLLADAY ENGINEERING CO. 030496
Project No.: 971144NA
Location: PICKLES BUTTE LANDFILL
Date : Thu Jul 03 1997

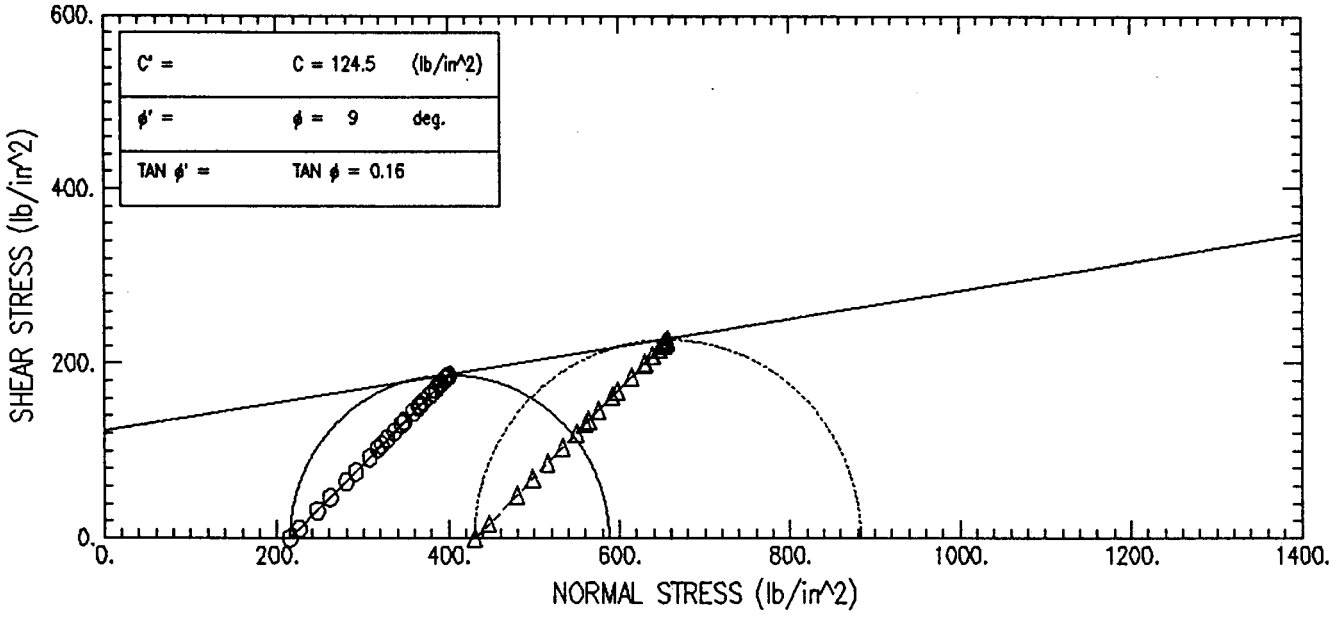


Symbol	Boring No.	Sample No.	Depth	Filename	Classification	/ Description
⊖	PB-2	456-457	456-457 FEET	PB2-456	CH	fat clay
△	PB-2	458-460	458-460 FEET	PB2-460	CL	lean clay
⊞	PB-2	530-531	530-531 FEET	PB2-530	CH	fat clay

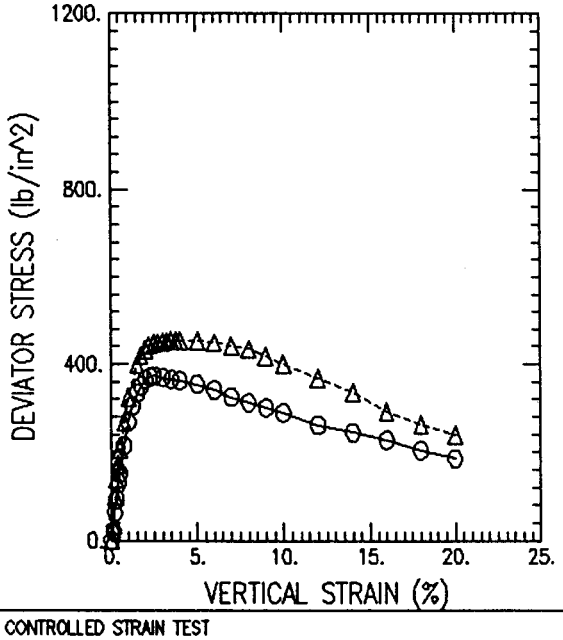
Figure 1

Woodward-Clyde

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



SYMBOL		O	Δ		
TEST NO.		PB2-215	PB2-430		
INITIAL	WATER CONTENT (%)	22.98	23.31		
	DRY DENSITY (lb/ft^3)	93.27	93.10		
	SATURATION (%)	75.90	76.71		
	VOID RATIO	0.826	0.830		
BEFORE SHEAR	WATER CONTENT (%)	22.98	23.31		
	DRY DENSITY (lb/ft^3)	93.27	93.10		
	SATURATION (%)	75.90	76.71		
	VOID RATIO	0.826	0.830		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		215.00	430.00		
MAX. DEV. STRESS (lb/in^2)		372.81	453.61		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		2.10	2.09		
INITIAL HEIGHT (in)		4.69	4.37		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) GRAYISH BROWN SI CLAY / CLAYEY SILT 2) GRAYISH BROWN SI CLAY / CLAYEY SILT

LL 48.57	PL 24.51	PI 24.06	GS 2.73	TYPE OF SPECIMEN CORE	TYPE OF TEST UNDRAINED

REMARKS:

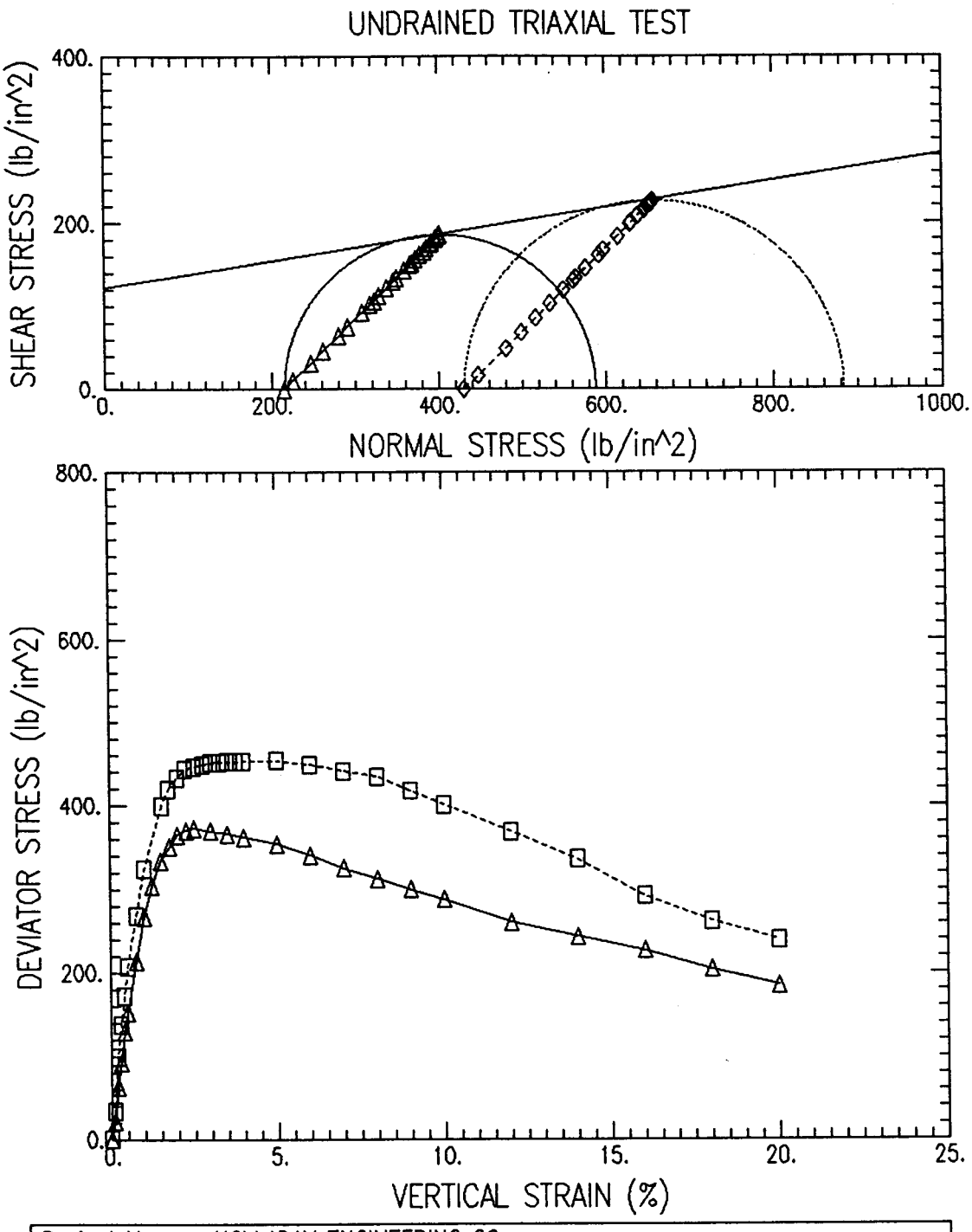
1)

2)

PROJECT HOLLADAY ENGINEERING CO.

BORING NO. PB-2	SAMPLE NO.	215 PSI	430 PSI
TECH. C. WASON	DEPTH/ELEV	429-430 FT	429-430 FT
LABORATORY	DATE	07/01/97	07/01/97

TRIAXIAL COMPRESSION TEST REPORT



Project Name : HOLLADAY ENGINEERING CO.				
Boring No:	Sample No	Depth	Test No	Filename
PB-2	215 PSI	429-430 FT	PB2-215	PB2-215.UU
PB-2	430 PSI	429-430 FT	PB2-430	PB2-430.UU

Failure Criteria: Peak Deviator Stress

Thu Jul 03 14:40:36 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-215
Boring No. : PB-2 Test Date : 07/01/97 Tested by : C. WASON
Sample No. : 215 PSI Depth : 429-430 FT Checked by : C. CAPPS
Sample Type : CORE Elevation :
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

Height : 4.685 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.47 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 16.25 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.47	0.00	0.00	0.00	0.00	215.00	215.00
2)	0.005	0.11	3.47	0.00	75.08	75.08	21.61	236.61	236.61
3)	0.009	0.19	3.48	0.00	219.45	219.45	63.08	278.08	278.08
4)	0.014	0.30	3.49	0.00	324.56	324.56	93.12	308.12	308.12
5)	0.019	0.41	3.49	0.00	452.76	452.76	129.67	344.67	344.67
6)	0.023	0.49	3.50	0.00	532.46	532.46	152.28	367.28	367.28
7)	0.035	0.75	3.51	0.00	751.91	751.91	214.11	429.11	429.11
8)	0.047	1.00	3.53	0.00	944.79	944.79	267.88	482.88	482.88
9)	0.058	1.24	3.54	0.00	1078.77	1078.77	304.65	519.65	519.65
10)	0.070	1.49	3.56	0.00	1188.50	1188.50	334.17	549.17	549.17
11)	0.082	1.75	3.57	0.00	1254.33	1254.33	351.14	566.14	566.14
12)	0.094	2.01	3.59	0.00	1308.62	1308.62	364.72	579.72	579.72
13)	0.106	2.26	3.60	0.00	1334.03	1334.03	370.16	585.16	585.16
14)	0.117	2.50	3.62	0.00	1349.04	1349.04	372.81	587.81	587.81
15)	0.141	3.01	3.65	0.00	1349.04	1349.04	369.48	584.48	584.48
16)	0.164	3.50	3.68	0.00	1347.89	1347.89	365.99	580.99	580.99
17)	0.187	3.99	3.72	0.00	1346.73	1346.73	362.50	577.50	577.50
18)	0.234	4.99	3.78	0.00	1340.96	1340.96	354.48	569.48	569.48
19)	0.281	6.00	3.85	0.00	1313.24	1313.24	340.82	555.82	555.82
20)	0.328	7.00	3.93	0.00	1277.43	1277.43	325.37	540.37	540.37
21)	0.375	8.00	4.00	0.00	1253.18	1253.18	313.15	528.15	528.15
22)	0.422	9.01	4.08	0.00	1226.61	1226.61	300.60	515.60	515.60
23)	0.469	10.01	4.16	0.00	1200.05	1200.05	288.30	503.30	503.30
24)	0.562	12.00	4.33	0.00	1130.75	1130.75	260.86	475.86	475.86
25)	0.656	14.00	4.52	0.00	1103.03	1103.03	243.83	458.83	458.83
26)	0.750	16.01	4.73	0.00	1073.00	1073.00	226.85	441.85	441.85
27)	0.843	17.99	4.95	0.00	1011.78	1011.78	204.25	419.25	419.25
28)	0.937	20.00	5.20	0.00	963.27	963.27	185.17	400.17	400.17

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-215
Boring No. : PB-2 Test Date : 07/01/97 Tested by : C. WASON
Sample No. : 215 PSI Depth : 429-430 FT Checked by : C. CAPPS
Sample Type : CORE Elevation :
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

Liquid Limit : 48.57 Plastic Limit : 24.51 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	489.20	489.20	0.00
WT CONTAINER + DRY SOIL (gm)	397.80	397.80	0.00
WT WATER (gm)	91.40	91.40	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	397.80	397.80	0.00
WATER CONTENT (%)	22.98	22.98	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	22.98	22.98
VOID RATIO	0.83	0.83
WET DENSITY (lb/ft^3)	114.70	114.70
DRY DENSITY (lb/ft^3)	93.27	93.27
DEGREE OF SATURATION (%)	75.90	75.90

Maximum Shear Stress = 186.40 (lb/in^2) at a Vertical Strain of 2.50 %

Thu Jul 03 14:38:41 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-430
Boring No. : PB-2 Test Date : 07/01/97 Tested by : C. WASON
Sample No. : 430 PSI Depth : 429-430 FT Checked by : C. CAPPS
Sample Type : CORE Elevation :
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

Height : 4.370 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 3.44 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 15.04 (in^3) Piston Weight : 0.00 (gm) Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	3.44	0.00	0.00	0.00	0.00	430.00	430.00
2)	0.004	0.09	3.45	0.00	114.35	114.35	33.17	463.17	463.17
3)	0.009	0.21	3.45	0.00	343.04	343.04	99.32	529.32	529.32
4)	0.013	0.30	3.46	0.00	475.86	475.86	137.57	567.57	567.57
5)	0.017	0.39	3.46	0.00	597.14	597.14	172.36	602.36	602.36
6)	0.022	0.50	3.47	0.00	718.41	718.41	206.97	636.97	636.97
7)	0.033	0.76	3.49	0.00	937.86	937.86	269.05	699.05	699.05
8)	0.044	1.01	3.50	0.00	1135.37	1135.37	324.32	754.32	754.32
9)	0.066	1.51	3.53	0.00	1410.26	1410.26	399.41	829.41	829.41
10)	0.076	1.74	3.54	0.00	1485.33	1485.33	419.02	849.02	849.02
11)	0.087	1.99	3.56	0.00	1540.77	1540.77	432.79	862.79	862.79
12)	0.097	2.22	3.57	0.00	1582.35	1582.35	442.71	872.71	872.71
13)	0.109	2.49	3.59	0.00	1603.14	1603.14	446.40	876.40	876.40
14)	0.120	2.75	3.61	0.00	1620.47	1620.47	449.25	879.25	879.25
15)	0.131	3.00	3.62	0.00	1633.17	1633.17	450.78	880.78	880.78
16)	0.142	3.25	3.64	0.00	1644.72	1644.72	451.96	881.96	881.96
17)	0.153	3.50	3.66	0.00	1653.96	1653.96	452.48	882.48	882.48
18)	0.164	3.75	3.67	0.00	1662.05	1662.05	452.67	882.67	882.67
19)	0.175	4.00	3.69	0.00	1670.13	1670.13	452.84	882.84	882.84
20)	0.219	5.01	3.76	0.00	1703.63	1703.63	453.61	883.61	883.61
21)	0.262	6.00	3.82	0.00	1716.33	1716.33	448.82	878.82	878.82
22)	0.306	7.00	3.90	0.00	1719.80	1719.80	441.34	871.34	871.34
23)	0.350	8.01	3.97	0.00	1725.57	1725.57	434.41	864.41	864.41
24)	0.393	8.99	4.05	0.00	1689.77	1689.77	417.34	847.34	847.34
25)	0.437	10.00	4.13	0.00	1657.43	1657.43	401.27	831.27	831.27
26)	0.524	11.99	4.30	0.00	1585.82	1585.82	368.65	798.65	798.65
27)	0.612	14.00	4.49	0.00	1509.59	1509.59	336.21	766.21	766.21
28)	0.699	16.00	4.69	0.00	1372.14	1372.14	292.37	722.37	722.37
29)	0.787	18.01	4.92	0.00	1291.29	1291.29	262.55	692.55	692.55
30)	0.874	20.00	5.16	0.00	1238.16	1238.16	239.81	669.81	669.81

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : HOLLADAY ENGINEERING CO. Location : PICKLES BUTTE LANDFILL
Project No. : 971144NA Test No. : PB2-430
Boring No. : PB-2 Test Date : 07/01/97 Tested by : C. WASON
Sample No. : 430 PSI Depth : 429-430 FT Checked by : C. CAPPS
Sample Type : CORE Elevation :
Soil Description : GRAYISH BROWN SI CLAY / CLAYEY SILT
Remarks :

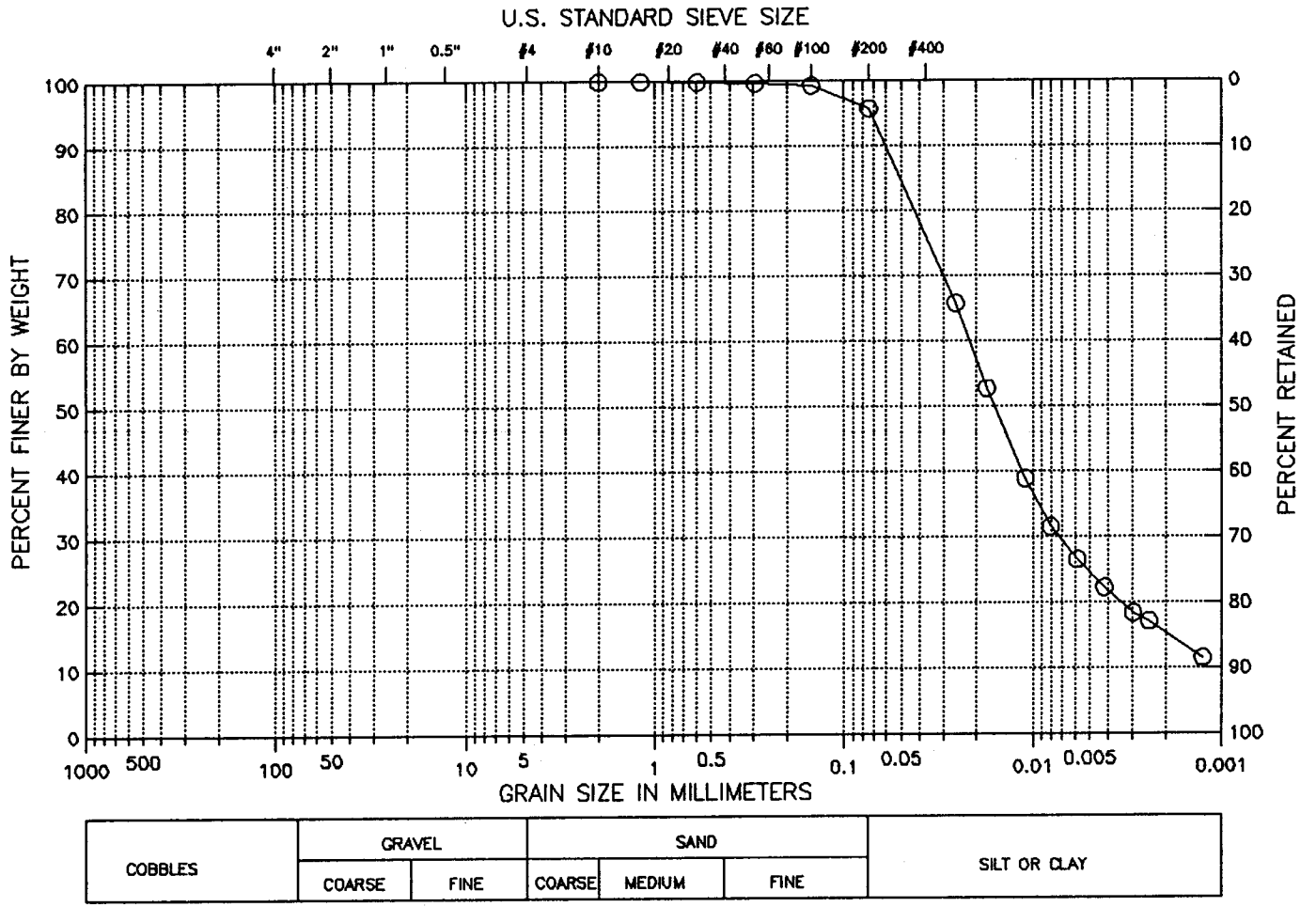
Liquid Limit : 48.57 Plastic Limit : 24.51 Specific Gravity : 2.73

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	453.30	453.30	0.00
WT CONTAINER + DRY SOIL (gm)	367.60	367.60	0.00
WT WATER (gm)	85.70	85.70	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	367.60	367.60	0.00
WATER CONTENT (%)	23.31	23.31	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	23.31	23.31
VOID RATIO	0.83	0.83
WET DENSITY (lb/ft^3)	114.81	114.81
DRY DENSITY (lb/ft^3)	93.10	93.10
DEGREE OF SATURATION (%)	76.71	76.71

Maximum Shear Stress = 226.81 (lb/in^2) at a Vertical Strain of 5.01 %

	Boring No. : PB-2 Sample No.: 429-430 FT Tested by : C. WASON Filename : PB2-430	Project : HOLLADAY ENGINEERING CO. 030496 Project No.: 971144NA Location: PICKLES BUTTE LANDFILL Date : Thu Jul 03 1997



Classification :
(CL) lean clay
Visual Description :
GRAYISH BROWN SILTY CLAY

Remarks :
429-430 FEET

Figure 1

Woodward-Clyde

Thu Jul 03 14:15:56 1997

GEOTECHNICAL LABORATORY TEST DATA

Project : HOLLADAY ENGINEERING CO. 030496
Project No. : 971144NA
Boring No. : PB-2
Sample No. : 429-430 FT
Location : PICKLES BUTTE LANDFILL
Soil Description : GRAYISH BROWN SILTY CLAY
Remarks : 429-430 FEET

Depth : 429-430 FEET
Test Date : 07/02/97
Test Method : ASTM D4318/422

Filename : PB2-430
Elevation : NA
Tested by : C. WASON
Checked by : S. CAPPS

HYDROMETER

Hydrometer ID : 1734
Weight of air-dried soil = 70 gm
Specific Gravity = 2.73

Hydroscopic Moisture Content :
Weight of Wet Soil = 70 gm
Weight of Dry Soil = 64.59 gm
Moisture Content = 0.0837591

Elapsed Time (min)	Reading	Temperature (deg. C)	Corrected Reading	Particle Size (mm)	Percent Finer (%)	Adjusted Particle Size
2.00	51.30	22.50	43.15	0.026	66	0.026
5.00	42.80	22.40	34.60	0.018	53	0.018
15.00	33.80	22.30	25.56	0.011	39	0.011
30.00	29.00	22.10	20.67	0.008	32	0.008
60.00	25.80	22.00	17.42	0.006	27	0.006
120.00	23.00	22.00	14.62	0.004	22	0.004
245.00	20.20	22.50	12.05	0.003	18	0.003
362.00	19.20	22.90	11.23	0.002	17	0.002
1440.00	16.00	21.90	7.57	0.001	12	0.001

FINE SIEVE SET

Sieve Mesh	Sieve Openings Inches	Millimeters	Weight Retained (gm)	Cumulative Weight Retained (gm)	Percent Finer (%)
#10	0.079	2.00	0.00	0.00	100
#16	0.047	1.19	0.00	0.00	100
#30	0.023	0.60	0.08	0.08	100
#50	0.012	0.30	0.09	0.17	100
#100	0.006	0.15	0.24	0.41	99
#200	0.003	0.07	2.33	2.74	96
Pan			61.85	64.59	0

Total Wet Weight of Sample = 70
Total Dry Weight of Sample = 64.59
Moisture Content = 0.0837591

D85 : 0.0506 mm
D60 : 0.0218 mm
D50 : 0.0161 mm
D30 : 0.0073 mm
D15 : 0.0019 mm
D10 : 0.0011 mm

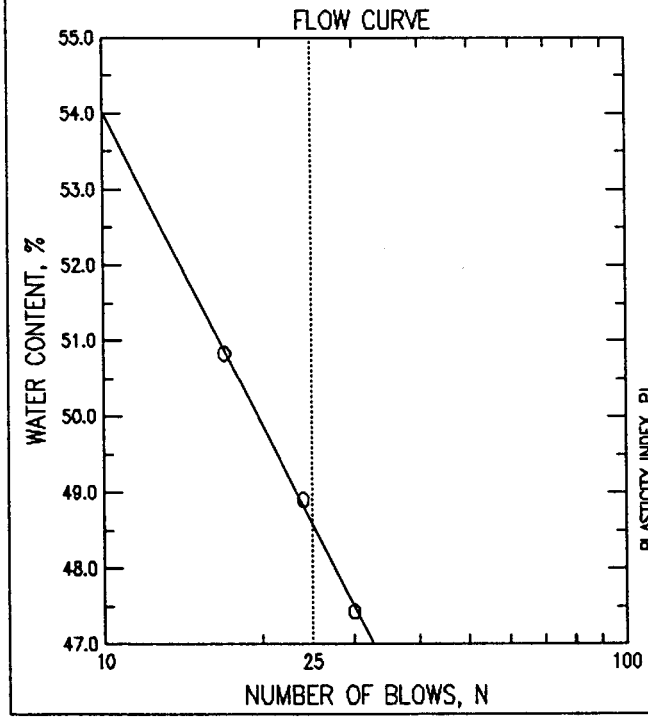
Soil Classification
ASTM Group Symbol : CL
ASTM Group Name : lean clay
AASHTO Group Symbol : A-7-6(28)
AASHTO Group Name : Clayey Soils

ATTERBERG LIMITS

PROJECT	PROJECT NUMBER	TESTED BY	BORING NUMBER
HOLLADAY ENGINEERING CO. 030496	971144NA	C. WASON	PB-2
LOCATION		CHECKED BY	SAMPLE NUMBER
PICKLES BUTTE LANDFILL		S. CAPPS	429-430 FT
SAMPLE DESCRIPTION		DATE	FILENAME
GRAYISH BROWN SILTY CLAY		Thu Jul 03 1997	PB2-430

LIQUID LIMIT DETERMINATIONS					
CONTAINER NUMBER	8	F	90		
WT. WET SOIL + TARE	27.18	28.5	28.49		
WT. DRY SOIL + TARE	22.01	22.69	22.64		
WT. WATER	5.17	5.81	5.85		
TARE WT.	11.11	10.81	11.13		
WT. DRY SOIL	10.9	11.88	11.51		
WATER CONTENT, W_N (%)	47.43	48.91	50.83		
NUMBER OF BLOWS, N	30	24	17		
ONE-POINT LIQUID LIMIT, LL	48.49	48.66	48.51		

PLASTIC LIMIT DETERMINATIONS					
CONTAINER NUMBER	10				
WT. WET SOIL + TARE	27.09				
WT. DRY SOIL + TARE	24.95				
WT. WATER	2.14				
TARE WT.	16.22				
WT. DRY SOIL	8.73				
WATER CONTENT (%)	24.51				



SUMMARY OF RESULTS	
NATURAL WATER CONTENT, W (%)	
LIQUID LIMIT, LL	48.6
PLASTIC LIMIT, PL	24.5
PLASTICITY INDEX, PI	24.1
LIQUIDITY INDEX, LI*	

*LI = (W - PL)/PI

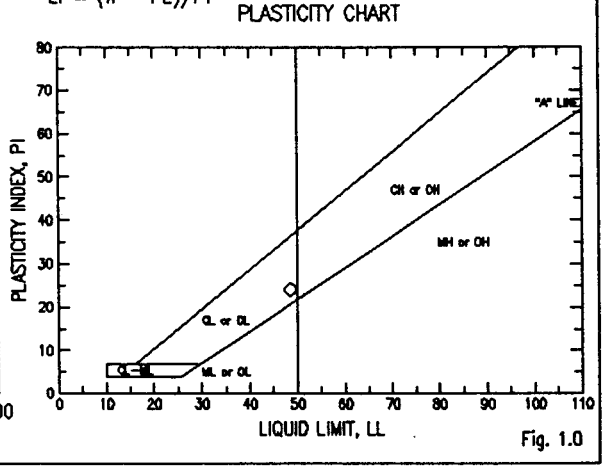
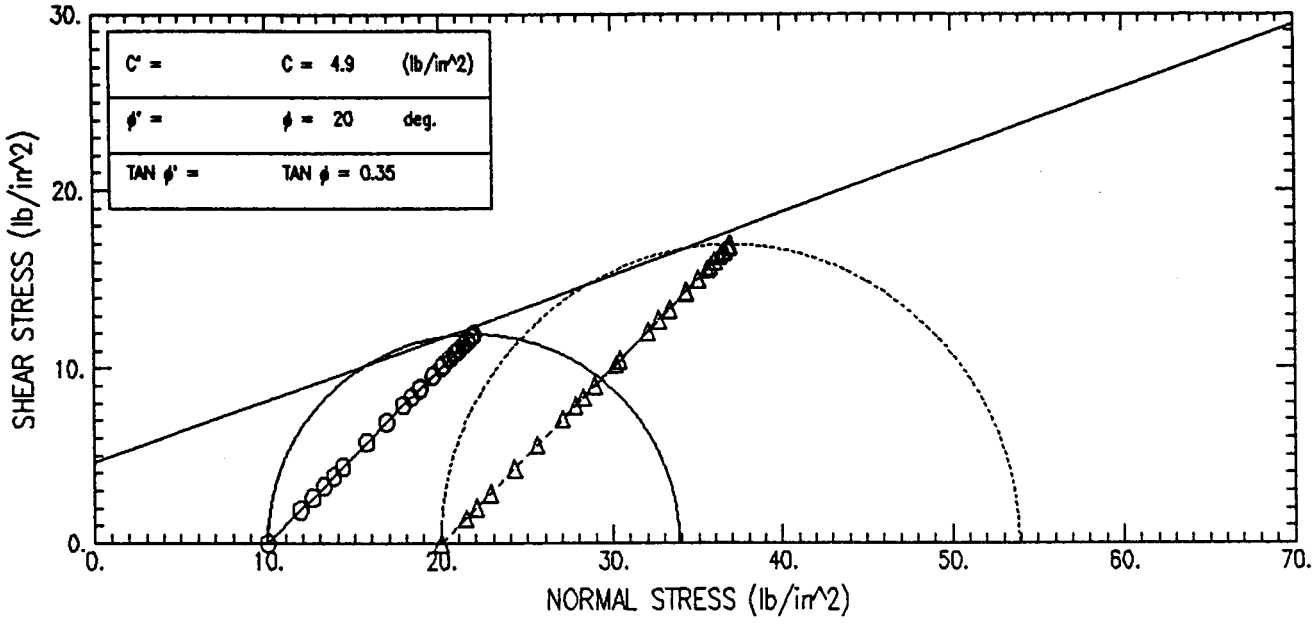
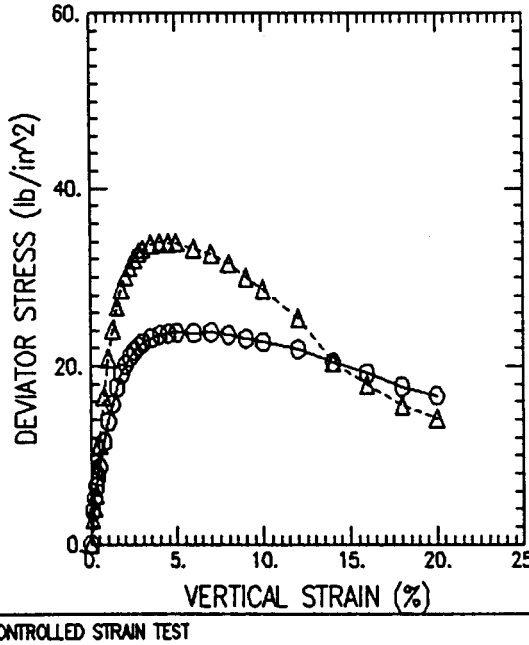


Fig. 1.0

TOTAL STRESS VALUES



Failure Criteria: Peak Deviator Stress



SYMBOL		○	△		
TEST NO.		GT1-TOP	GT1-BOTTOM		
INITIAL	WATER CONTENT (%)	11.70	9.95		
	DRY DENSITY (lb/ft^3)	100.69	103.33		
	SATURATION (%)	46.42	42.10		
	VOID RATIO	0.686	0.643		
BEFORE SHEAR	WATER CONTENT (%)	11.70	9.95		
	DRY DENSITY (lb/ft^3)	100.69	103.33		
	SATURATION (%)	46.42	42.10		
	VOID RATIO	0.686	0.643		
	BACK PRESS. (lb/in^2)	0.00	0.00		
MINOR PRIN. STRESS (lb/in^2)		10.00	20.00		
MAX. DEV. STRESS (lb/in^2)		23.86	33.89		
TIME TO FAILURE (min)					
RATE OF STRAIN INCR (%/min)		0.00	0.00		
INITIAL DIAMETER (in)		2.86	2.86		
INITIAL HEIGHT (in)		5.98	5.98		

CONTROLLED STRAIN TEST

DESCRIPTION OF SPECIMENS: 1) BROWN SI-SAND TO SA-SILT W/ TRACES OF CLAY & MICA 2) BROWN SI-SAND TO SA-SILT W/ TRACES OF CLAY & MICA

LL	PL	PI	GS 2.72	TYPE OF SPECIMEN SHELBY	TYPE OF TEST UNDRAINED

REMARKS:

1) TXUU TEST WITH CONFINING PRESSURE OF 10 PSI

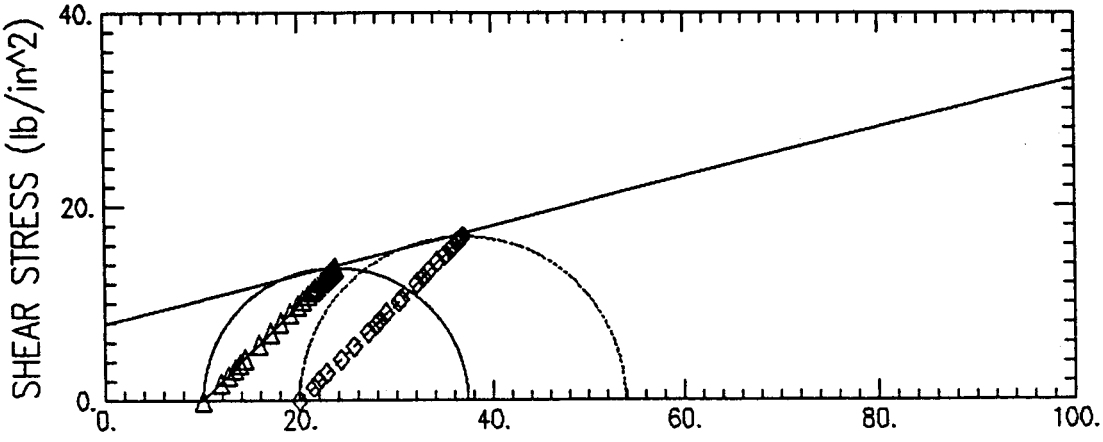
2) TXUU TEST WITH CONFINING PRESSURE OF 20 PSI

PROJECT C. E. L. P.O. #3689

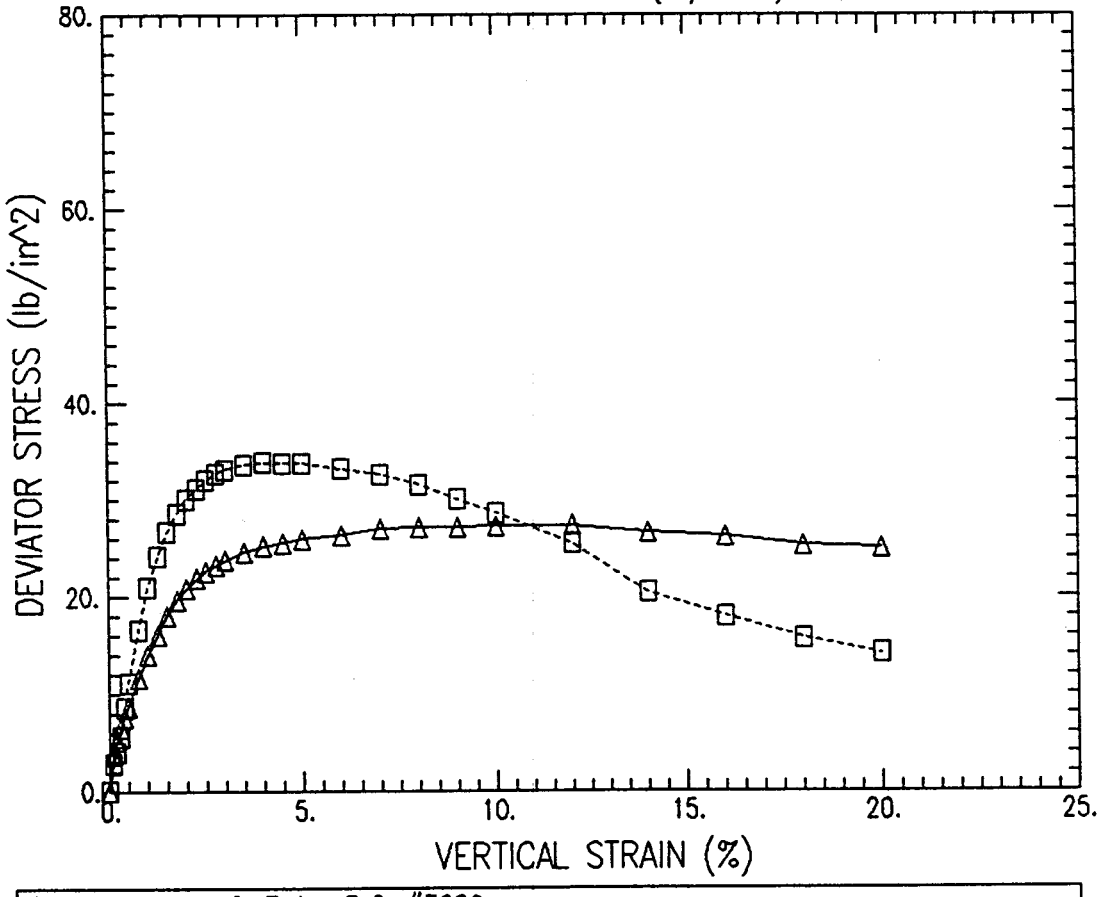
BORING NO. GT-1	SAMPLE NO.	TOP	BOTTOM
TECH. C. WASON	DEPTH/ELEV	10-12 FEET	10-12 FEET
LABORATORY	DATE	03/06/97	03/06/97

TRIAXIAL COMPRESSION TEST REPORT

UNDRAINED TRIAXIAL TEST



NORMAL STRESS (lb/in^2)



VERTICAL STRAIN (%)

Project Name : C. E. L. P.O. #3689

Boring No:	Sample No	Depth	Test No	Filename
GT-1	TOP	10-12 FEET	GT1-TOP	GT1A-10.UU
GT-1	BOTTOM	10-12 FEET	GT1-BOTTOM	GT1B-10.UU

Failure Criteria: Peak Deviator Stress

Wed Mar 19 16:49:15 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F, IDAHO
Project No. : 941138NA Test No. : GT1-TOP
Boring No. : GT-1 Test Date : 03/06/97 Tested by : C. WASON
Sample No. : TOP Depth : 10-12 FEET Checked by : C. CAPPS
Sample Type : SHELBY Elevation : NA
Soil Description : BROWN SI-SAND TO SA-SILT W/ TRACES OF CLAY & MICA
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 10 PSI

Height : 5.984 (in) Piston Diameter : 0.000 (in) Filter Correction : 0.00 (lb/in^2)
Area : 6.42 (in^2) Piston Friction : 0.00 (lb) Membrane Correction : 0.00 (lb/in)
Volume : 38.44 (in^3) Piston Weight : 0.00 (gm) Area Correction : None

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	6.42	0.00	0.00	0.00	0.00	10.00	10.00
2)	0.006	0.10	6.42	0.00	24.13	24.13	3.76	13.76	13.76
3)	0.012	0.20	6.42	0.00	33.32	33.32	5.19	15.19	15.19
4)	0.018	0.30	6.42	0.00	41.94	41.94	6.53	16.53	16.53
5)	0.024	0.40	6.42	0.00	49.41	49.41	7.69	17.69	17.69
6)	0.030	0.50	6.42	0.00	56.30	56.30	8.76	18.76	18.76
7)	0.045	0.75	6.42	0.00	74.69	74.69	11.63	21.63	21.63
8)	0.060	1.00	6.42	0.00	90.20	90.20	14.04	24.04	24.04
9)	0.075	1.25	6.42	0.00	103.41	103.41	16.10	26.10	26.10
10)	0.090	1.50	6.42	0.00	116.05	116.05	18.06	28.06	28.06
11)	0.105	1.75	6.42	0.00	126.39	126.39	19.67	29.67	29.67
12)	0.120	2.01	6.42	0.00	133.86	133.86	20.84	30.84	30.84
13)	0.135	2.26	6.42	0.00	140.75	140.75	21.91	31.91	31.91
14)	0.150	2.51	6.42	0.00	145.35	145.35	22.63	32.63	32.63
15)	0.165	2.76	6.42	0.00	149.37	149.37	23.25	33.25	33.25
16)	0.180	3.01	6.42	0.00	152.82	152.82	23.79	33.79	33.79
17)	0.209	3.49	6.42	0.00	157.99	157.99	24.59	34.59	34.59
18)	0.239	3.99	6.42	0.00	162.01	162.01	25.22	35.22	35.22
19)	0.269	4.50	6.42	0.00	164.31	164.31	25.58	35.58	35.58
20)	0.299	5.00	6.42	0.00	166.61	166.61	25.93	35.93	35.93
21)	0.359	6.00	6.42	0.00	169.48	169.48	26.38	36.38	36.38
22)	0.419	7.00	6.42	0.00	173.50	173.50	27.01	37.01	37.01
23)	0.479	8.00	6.42	0.00	174.65	174.65	27.19	37.19	37.19
24)	0.539	9.01	6.42	0.00	174.65	174.65	27.19	37.19	37.19
25)	0.598	9.99	6.42	0.00	175.22	175.22	27.28	37.28	37.28
26)	0.718	12.00	6.42	0.00	175.80	175.80	27.37	37.37	37.37
27)	0.838	14.00	6.42	0.00	171.20	171.20	26.65	36.65	36.65
28)	0.957	15.99	6.42	0.00	168.33	168.33	26.20	36.20	36.20
29)	1.077	18.00	6.42	0.00	162.58	162.58	25.31	35.31	35.31
30)	1.197	20.00	6.42	0.00	160.86	160.86	25.04	35.04	35.04

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689 Location : PICKLES BUTTE L/F, IDAHO
Project No. : 941138NA Test No. : GT1-TOP
Boring No. : GT-1 Test Date : 03/06/97 Tested by : C. WASON
Sample No. : TOP Depth : 10-12 FEET Checked by : C. CAPPS
Sample Type : SHELBY Elevation : NA
Soil Description : BROWN SI-SAND TO SA-SILT W/ TRACES OF CLAY & MICA
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 10 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	1134.90	1134.90	0.00
WT CONTAINER + DRY SOIL (gm)	1016.00	1016.00	0.00
WT WATER (gm)	118.90	118.90	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	1016.00	1016.00	0.00
WATER CONTENT (%)	11.70	11.70	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	11.70	11.70
VOID RATIO	0.69	0.69
WET DENSITY (lb/ft^3)	112.47	112.47
DRY DENSITY (lb/ft^3)	100.69	100.69
DEGREE OF SATURATION (%)	46.42	46.42

Maximum Shear Stress = 13.68 (lb/in^2) at a Vertical Strain of 12.00 %

Wed Mar 19 16:48:23 1997

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Project No. : 941138NA
Boring No. : GT-1
Sample No. : BOTTOM
Sample Type : SHELBY
Soil Description : BROWN SI-SAND TO SA-SILT W/ TRACES OF CLAY & MICA
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 20 PSI

Location : PICKLES BUTTE L/F- IDAHO
Test No. : GT1-BOTTOM
Test Date : 03/06/97
Depth : 10-12 FEET
Elevation : NA

Tested by : C. WASON
Checked by : C. CAPPS

Height : 5.984 (in)
Area : 6.42 (in^2)
Volume : 38.44 (in^3)

Piston Diameter : 0.000 (in)
Piston Friction : 0.00 (lb)
Piston Weight : 0.00 (gm)

Filter Correction : 0.00 (lb/in^2)
Membrane Correction : 0.00 (lb/in)
Area Correction : Parabolic

	CHANGE IN LENGTH (in)	VERTICAL STRAIN (%)	CORR. AREA (in^2)	PORE PRESSURE (lb/in^2)	DEV. LOAD (lb)	CORR. DEV. LOAD (lb)	DEV. STRESS (lb/in^2)	TOTAL VERTICAL STRESS (lb/in^2)	EFFECTIVE VERTICAL STRESS (lb/in^2)
1)	0.000	0.00	6.42	0.00	0.00	0.00	0.00	20.00	20.00
2)	0.006	0.10	6.43	0.00	18.38	18.38	2.86	22.86	22.86
3)	0.012	0.20	6.45	0.00	26.43	26.43	4.10	24.10	24.10
4)	0.018	0.30	6.46	0.00	36.77	36.77	5.69	25.69	25.69
5)	0.024	0.40	6.47	0.00	55.15	55.15	8.53	28.53	28.53
6)	0.030	0.50	6.48	0.00	72.39	72.39	11.17	31.17	31.17
7)	0.045	0.75	6.51	0.00	108.01	108.01	16.60	36.60	36.60
8)	0.060	1.00	6.53	0.00	136.73	136.73	20.93	40.93	40.93
9)	0.075	1.25	6.56	0.00	158.56	158.56	24.17	44.17	44.17
10)	0.090	1.50	6.59	0.00	175.80	175.80	26.68	46.68	46.68
11)	0.105	1.75	6.62	0.00	189.59	189.59	28.65	48.65	48.65
12)	0.120	2.01	6.65	0.00	199.93	199.93	30.08	50.08	50.08
13)	0.135	2.26	6.67	0.00	207.97	207.97	31.16	51.16	51.16
14)	0.150	2.51	6.70	0.00	214.86	214.86	32.05	52.05	52.05
15)	0.165	2.76	6.73	0.00	220.61	220.61	32.76	52.76	52.76
16)	0.180	3.01	6.76	0.00	224.06	224.06	33.13	53.13	53.13
17)	0.209	3.49	6.82	0.00	229.80	229.80	33.69	53.69	53.69
18)	0.239	3.99	6.88	0.00	233.25	233.25	33.89	53.89	53.89
19)	0.269	4.50	6.94	0.00	234.97	234.97	33.84	53.84	53.84
20)	0.299	5.00	7.01	0.00	237.27	237.27	33.86	53.86	53.86
21)	0.359	6.00	7.14	0.00	237.27	237.27	33.24	53.24	53.24
22)	0.419	7.00	7.27	0.00	237.27	237.27	32.62	52.62	52.62
23)	0.479	8.00	7.41	0.00	233.82	233.82	31.54	51.54	51.54
24)	0.539	9.01	7.56	0.00	226.93	226.93	30.02	50.02	50.02
25)	0.598	9.99	7.71	0.00	220.61	220.61	28.62	48.62	48.62
26)	0.718	12.00	8.03	0.00	204.52	204.52	25.47	45.47	45.47
27)	0.838	14.00	8.38	0.00	171.20	171.20	20.43	40.43	40.43
28)	0.957	15.99	8.76	0.00	157.41	157.41	17.97	37.97	37.97
29)	1.077	18.00	9.18	0.00	143.63	143.63	15.65	35.65	35.65
30)	1.197	20.00	9.64	0.00	136.16	136.16	14.13	34.13	34.13

UNDRAINED TRIAXIAL COMPRESSION TEST

Project : C. E. L. P.O. #3689
Location : PICKLES BUTTE L/F- IDAHO
Project No. : 941138NA
Test No. : GT1-BOTTOM
Boring No. : GT-1
Test Date : 03/06/97
Tested by : C. WASON
Sample No. : BOTTOM
Depth : 10-12 FEET
Checked by : C. CAPPS
Sample Type : SHELBY
Elevation : NA
Soil Description : BROWN SI-SAND TO SA-SILT W/ TRACES OF CLAY & MICA
Remarks : TXUU TEST WITH CONFINING PRESSURE OF 20 PSI

Liquid Limit : 0 Plastic Limit : 0 Specific Gravity : 2.72

	WATER CONTENT		
	BEFORE TEST	AFTER TEST	TRIMMINGS
CONTAINER NO.			
WT CONTAINER + WET SOIL (gm)	1146.40	1146.40	0.00
WT CONTAINER + DRY SOIL (gm)	1042.70	1042.70	0.00
WT WATER (gm)	103.70	103.70	0.00
WT CONTAINER (gm)	0.00	0.00	0.00
WT DRY SOIL (gm)	1042.70	1042.70	0.00
WATER CONTENT (%)	9.95	9.95	0.00

	INITIAL	AT CONSOLIDATION
WATER CONTENT (%)	9.95	9.95
VOID RATIO	0.64	0.64
WET DENSITY (lb/ft^3)	113.61	113.61
DRY DENSITY (lb/ft^3)	103.33	103.33
DEGREE OF SATURATION (%)	42.10	42.10

Maximum Shear Stress = 16.95 (lb/in^2) at a Vertical Strain of 3.99 %

APPENDIX E: Borehole Logs

*N' = N · √(1/σ)

Where σ = .05 T/ft² per ft depth

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-1 JOB NUMBER 030496 (φ + stiffness based on table 13.2 & 13.8) PAGE 1 OF 4

PROJECT Dickles Butte Geotech OWNER Crook County LOCATION: CO. Crook SEC. ___ 1/4 ___ OF 1/4 ___ T ___ N R ___ W @ 50' from toe of fill in drainage

LOGGED BY Stroud DATE START 11/4/96 DATE FINISHED 11/4/96 HOLE DEPTH 20 1/2 ANGLE ~90 DRILL METHOD Hollow Stem Auger SPT DIAMETER 3" DRILL MODEL ___

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT (CLY / SLT / SAND / GRAV)	GRAIN ROUNDING (ANG / WK / MOD / WELL)	HYDRAULIC PROPERTIES (EST. / MEAS.)	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
												BLOW COUNTS
4-5½	Inner sample	11:50	Tan	fine sand; fine sand occas. gravel pebbles ≤1"		sand, grav				4-5½	moist	2 2nd 3 4-5½; 1" clast recovered (shown) 2 1st 6", 3 2nd 6", 3 3rd 6"; *N' = 12 (30°)
10-11½	Inner sample effective drive shell in tube ~200 lbs		Tan to light brown	fine sand, w/ minor gravel; 1st 6"		sand				10-11½	moist	N=5 N' = 7 (30°); 10-11½ 2, 3, 2; very weakly consolidated, breaks up easily
15-16½	Inner		light brn	fine sand		sand				15-16½	moist	N = 3, 3, 2; N' = 6 (29°)
20-21½		12:10	lt brn	fine sand		sand				20-21½	moist	N = 4, 2, 3; N' = 5 (28°)
25-26½		12:2?	lt brn	fine sand		sand					moist	N = 2, 3, 2; N' = 5 (28°)
30-31½		12:25	lt brn	fine sand		sand						N = 3, 4, 6 N' = 8 (32°); ditto
35-36½		12:35	lt brn	fine to med sand, some coarse grains + gravel		sand, grav						N = 6, 7, 13 N' = 15 (35°); ditto
40-42	Shelby tube no sample											push 10" up to 700 psi
45-46½			tan	sand, fine to med, some fine to coarse; 45-46½		sand			drier, weakly cemented			push 2½" @ 100 lbs max; 12, 23, 32 = N; N' = 37 (40°)

HOLE NUMBER GT-1 JOB NUMBER 030496 **HOLLADAY ENGINEERING COMPANY**

PROJECT Dirkles Fitto Gerbcli OWNER ____ LOCATION: CO. ____ SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STROWD DATE START 11/4/96 DATE FINISHED 11/6/96 HOLE DEPTH 201½ ANGLE -90° DRILL METHOD Hollow stem auger SPT w/ hammer DIAMETER 8" Auger DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
																				Blow counts N
50-51½	11/4	1:20	gry-tan	fine sand													med. loose		drier, weakly moist	18, 32, 41 N = 46 (42°)
	55-56½	1:40		gry-tan fine to medium sand																13, 25, 36 N = 36 minor clay (40°)
	60-61½ shut down had lunch 1/2 hr	1:55	tan-gry	fine to medium sand													med loose		dry	18 30 37 N = 37 (40°)
	65-66½	2:20	tan/some orange FeOx	fine sand													mod loose		dry	25 42 41 N = 46 (42°)
	70-71½	2:40	tan/some orange FeOx	fine sand													mod loose breaks on easily		minor moisture	25 40 44 N = 45 (42°)
	75-76½	2:55	tan	fine sand													mod. loose		slightly moist	25 37 46 N = 40 (42°)
	80-81½	3:05	tan	fine sand to very fine sand with silt/lower													ditto		ditto	26 36 50 N = 43 (42°)
	85-86½	3:20	tan	thin very fine sand - silt / bottom clayey silt													[illegible]		ditto	28 47 / 25 47 [illegible] N = 42 (42°)
	90-91½ end of day FOS	3:45	tan	fine silt sand													[illegible]		slightly moist	13 40 56 N = 42 (42°)
95-96½	11:00	11/5 start	lt. tan	silt to 96' clay @ 96'															very slightly damp	19 28 47 N = 34 (hard)

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HOLE NUMBER GT-1 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

PROJECT Dickles Butte Geotech OWNER Canyon LOCATION: CO. ____ SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STROWD DATE START 11-4-96 DATE FINISHED ____ HOLE DEPTH ____ ANGLE 90° DRILL METHOD Hollow Stem / SPT DIAMETER 8" Augers DRILL MODEL BK-51

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
100-101½	11-5 * Brass Rings 1½" ID SPT	11:40	lite tan green	clay		3 Brass No Full													slightly damp	stiff N = 11 18 27 N = 20 perhaps trace clay & 3 brass rings sample
105-106½ (106½)	NO RINGS	12:00	lite tan	1ft clay ½" fine sand 3" clay																very stiff 12 32 34 N = 29 penetrometer unconfined 3.0 T/ft² confined in brass ring 4.0 T/ft²
110-111½	BRASS * RINGS	12:25	tan	Clay 8" fine sandy silt 10"		1 Brass No Full													weakly moist penetrometer brass ring	hard 13 32 50@6" N = 35 *1 brass ring sample clay 1.5 for fine sand (T/ft²) 4.0 T/ft² for clayey silt
115-116½	NO brass rings	12:45	light tan green clay sand lite gray	interbedded very fine silty sand with clay (bedded ½")															very weakly moist (almost dry)	11 41 50 N = 38 (40) confined ring penetrometer in clay > 4.5 Tons/ft²
120-121½	NO RINGS	1:10	tan	silty clay															weakly moist	12 30 48 2-4 Tons/ft² N = 32 Very stiff
125-126½	first H₂O added NO RINGS	2:00		clay contact very fine silty sand to 126															add water very slightly damp	add five gallons water 20 42 50@5" N = 37 hard
130-131½	* RINGS	2:25		clay clayey silt with very fine sand silty clay		4 Brass 2 ... 2 No Full											Moderate Consl.		slightly to moderately damp	30(?) 32 50@5" * 4 brass rings N = 32 Very stiff
135-136½	No Rings	3:00	grayish green	Clay with trace silt													Wk-mod Consl.		add water	add five gallons water 11 21 37 N = 22 penetrometer 1.75-2.75 Very stiff
140-141½	* RINGS	3:45	greenish gray	clay & silty clay interbedded		4 Brass ...											moderately consl.		add water moderately moist (38%?)	19 27 38 N = 25 * 4 rings (test both clay & silty clay) Very Stiff
145-146½	No Rings EOS	4:30 5:00	gray-gray	top 6" clay lower 12" silty clay													Wk-mod		MODERATE MOISTURE ~35%	23 23 28 N = 19 Very stiff

2 full @ 33°

HOLE NUMBER GT-1 JOB NUMBER 030496

HOLLADAY ENGINEERING COMPANY

PROJECT Pickles Butte Geotech OWNER Canyon County LOCATION: CO. Canyon SEC ___ 1/4 ___ OF 1/4 ___ T ___ N R ___ W

LOGGED BY STROUD DATE START 11-4-96 DATE FINISHED 11-6-96 HOLE DEPTH 201½ ANGLE -90 DRILL METHOD Hollow Stem Auger SPT/split spoon DIAMETER ___ DRILL MODEL BK-71

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	GEOPHYSICS LOG	INDURATION & STRUCTURE FXS, VOIDS, ETC.	WATER	COMMENTS
150-151½ *	START Sample RINGS	9:15 9:45	grn-gry	clay w/ interbdd silt/fine sand	1 Brass No Full	WK-MOD CONSOL cly WK CONSL for silt/sand	clay mod damp silt almost dry ADD ~ 2 gal H₂O before PACK SLt	SILT ~ 1.5 T/ft in rings CLAY ~ 4-4.5 T/ft in Rings * ONE BRASS RING CLY & SLT
155-156½	NO RINGS	10:30	grn-gry	clay ditto		WK CONSL PLASTIC	AUGER Rund MOD. DAMP	15 22 25 pure clay GOOD CORE SAMPLE N' = 17 stiff
160-161½ *	RINGS	11:00	grn-gry	pure clay	3 Brass 1 almost 2 No Full	WK CONSOLD PLASTIC	ADD 5 gals MOD DAMP ~ 38-42%	18 22 24 * 3 perfect samples in Rings of clay N' = 16 stiff
165-166½	NO RINGS	11:45	grn-gry	pure clay w/ 3" bd of fine sand		MOD-MOD STG CONSOL (EXCEPT SAND)	ADD 5 gal H₂O MOD DAMP ~ 40%	18 44 50 @ " N' = 33 Very stiff
170-171½	NO RINGS	12:30	grn-gry	Pure clay w/ 1" silt bed		MOD CONSL	~ 40% add water Sand	17 31 33 N' = 22 Very stiff
175-176½	NO RINGS	1:45	grn-gry	clayey silt		WK CONSOL	25% water	13 22 32 2 T/ft² Penetrometer N' = 18 stiff
180-181½ *	BRASS RINGS	2:25	grn-gry	SILTY CLAY	2 Brass No Full	WK-MOD	~35%	14 22 28 N = 17 * 2 BRASS RINGS Stiff 1.5-2.0 T/ft² Penetr.
185-186½	NO RINGS	3:05	grn-gray	SILTY CLAY		WK MOD CONSOLD	~ 35%	13 27 44 N' = 23 1.5 T/ft² Very stiff
190-191½ *	RINGS	3:40	grn-gray	SILTY CLAY	1 Brass No Full	WK-MOD	~ 35-38%	15 22 36 * 1 Brass RING 3.0 T/ft N' = 19 Stiff
195-196½		4:20		clayey silt			~ 30-35%	14 17 23 2.5 T/ft² N' = 13 Stiff
11/7/96	ABANDON HOLE w/ BENTONITE CHIPS TO TOP							
200-201½		5:00		silty clay				12 17 20 / 4.5 T/ft² N' = 13 stiff

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HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-2 JOB NUMBER 030496 PAGE 1 OF 1

PROJECT Pickles Butte Gentech OWNER Canyon County LOCATION: CO. (see map) SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY STROUD DATE START 11-7-96 DATE FINISHED 11-7-96 HOLE DEPTH 25 1/2' ANGLE = 90 DRILL METHOD Hollow stem Auger 3AT DIAMETER 8" DRILL MODEL 3K-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	START 12:25	11-7-96		sand cover ↓ garbage															slightly damp	check for methane - [illegible] smells [illegible]
5-6 1/2	2 BRASS RING	12:35		soil + trash																15 8 7 Dirt + trash
10-11 1/2	NO RINGS	12:55		Soil + trash 2/3 1/3															BARELY DAMP	7, 7, 12 SAMP A - SOIL NO METHANE / SAMP B - Trash
15-16 1/2	RINGS	1:05		all garbage diaper, wood newspaper etc.															OUTSIDE SPLITSPOON WET	17 14 10 5% LEL in Auger Stem quickly drops to 1% LEL Two Rings formed together
20-21 1/2	NO RINGS	1:20		80% Trash 20% soil															MODERATELY DAMP	8 8 14
24-25 1/2	BRASS RINGS	1:35 EOH		MOSTLY GRASS															DAMP	19 13 12 100% LEL METHANE SHUT RIG DOWN FLOOD HOLLOW STEM W/ WATER BACK OUT OF HOLE

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-3 JOB NUMBER 030496 PAGE 1 OF 2

across road 43767

PROJECT Pickles Butte Geotech OWNER Canyon County LOCATION: CO. Canyon SEC. ___ 1/4 ___ OF 1/4 ___ T ___ N R ___ W

LOGGED BY STREWD DATE START 11/8/96 DATE FINISHED 11/8/96 HOLE DEPTH 101½ ANGLE -90 DRILL METHOD SPT/AUGER DIAMETER 8"/2" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	11-8-96	8:30																		
5-6½	NO RINGS	8:40	tan	silty very fine sand													loose		slightly damp	2 3 2
10-12	SHELBY TUBE	8:50	tan	fine sand													med. loose		dry	200 lbs last 6"
15-16½	NO RINGS	9:00	tan	fine sand													loose		medium damp	5 12 19 minor silt
20-21½	BRASS RINGS	9:10	lite brn	fine sand		3 BRASS NO-FILL											mod. loose		DAMP	13 21 23
25-26½	NO RINGS	9:20	lite brn	fine-med. sand													loose		VERY DAMP	13 19 28
30-31½	BRASS & RINGS	9:30	lite brn	fine-med sand		3 Brass No-Fill											mod. loose		very damp	14 21 33 #3 rings
35-36½	NO RINGS	10:00	lite gry-brn	fine to med. sand													loose except for Fe Ox "veins"		almost saturated	23 37 33
40-41½	BRASS RINGS	10:10	lite gry brn & orange	fine sand some med. limonite cemented clay		3-Brass No-Fill											sand loose Fe Ox clay well consol.		very damp	16 25 37
45-46½	NO RINGS	10:20	lite gry-brn	fine sand minor Fe Ox stn													wk consol.		very damp	22 30 35

35

3045

15

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-3 JOB NUMBER 930496 PAGE 2 OF 2

PROJECT PB Geotech OWNER Canyon Co. LOCATION: CO Canyon SEC ___ 1/4 ___ OF 1/4 ___ T ___ N R ___ W

LOGGED BY Strowd DATE START 11/8/96 DATE FINISHED 11/8/96 HOLE DEPTH 101½ ANGLE -90 DRILL METHOD Hollow Stem Auger DIAMETER 8"/2" DRILL MODEL BE-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT (CLY / SLT / SAND / GRAV)	GRAIN ROUNDING (ANG / WK / MOD / WELL)	HYDRAULIC PROPERTIES (EST. / MEAS.)	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
50-51½	11-8-96 * RINGS	10:25	gry-tan	very fine silty sand		3 BRASS 1-Full 2-NO Full				WK-MOD CONSOL		moderately damp	18 31 37 #3 Rings
55-56½	NO RINGS	10:40	gry-tan	very fine silty sand						WK-MOD CONSOL		MOD-STR damp	16 29 40
60-61½	RINGS	10:50	gry-tan	very fine sand/borderline silt		3-BRASS NO-Full				WK-MOD CONSOL		MOD damp	20 35 44
65-66½	NO RINGS	11:00	gry-tan / grn-grey	top 3" silty fine sand bottom 10" clay						SAND WK MOD-STR CONSOL for clay		MOD DAMP	10 29 34
70-71½	RINGS	11:15	gray / tan-gry	Top 2" clay bottom 10" fine sand		2-BRASS NO Full				MOD CLY MOD SAND		WK to MOD DAMP/WET	15 20 37 2 RINGS-BOTH OF SAND
75-76½	NO RINGS	11:30	grn-gry	silty clay, [illegible] silt (layered)						WK-CONSOL		WK DAMP	14 21 27 [illegible]
80-81½	RINGS	11:45	gry-tan	interbdd fine sand-silt-silty clay		2-BRASS NO-Full				MOD-STR		slightly damp	15 44 50 @ 5" 2 RING CLAY/silty sand
65-86½	NO RINGS hard layer	12:00	tan-gry	very fine silty sand						MOD-STR		slightly damp	21 48 50 [illegible] clay [illegible] 3" bed [illegible]
90-91½	RINGS	12:45	tan-gry	fine silty sand w 2" clay bed		2-BRASS NO-Full				MOD-STR		slightly damp	16 40 50
95-96½	NO RINGS	1:00	tan-gry	10" silt top 1' silty clay						MOD CONSOL		slightly damp	22 36 40
100-101½	2 RINGS	1:20	tan-grey	fine sand		2-BRASS [illegible]				MOD CONSOL		very slightly	14 32 50 END HOLE

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-4 JOB NUMBER D30496

PROJECT Pickles Butte Geotech OWNER Canyon County LOCATION: CO. Canyon (large motorcycle parking lot) SEC. ___ 1/4 ___ OF 1/4 ___ T ___ N R ___ W

LOGGED BY Strawf DATE START 11-11-96 DATE FINISHED 11-11-96 HOLE DEPTH 101½ ANGLE -90 DRILL METHOD Hollow Stem Auger DIAMETER 2"/2" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	GEOPHYSICS LOG	INDURATION & STRUCTURE FXS, VOIDS, ETC.	WATER	COMMENTS
		11-11-96						
5-6½	Rings	10:00	tan	fine to med sand w/ minor clay/silt		very loose, but w/ [illegible] caliche	moderately damp	2 1 1 2 rings
10-11½	NO Rings	10:07	tan	clayey silt w/ minor very fine sand		loose	mod. damp	3 2 1
15-16½	Shelby tube	10:15	?	? ?				
20-21½	No Rings	10:25	tan	clayey fine sand		loose	somewhat damp	5 6 8 driven w/ brass rings but [illegible]
25-26½	No Rings	10:30	tan	silty fine sand		mod loose	weak dampness	6 12 22
30-31½	RINGS	10:40	gry-tan	silty fine sand	2-CKTSY No-Full	med dense	almost dry	15 27 27 2 rings
35-36½	NO RINGS	10:50	gry-tan	fine sand		wk-mod dense	almost dry	12 21 32
40-40.75	Shelby tube	11:05	gry-tan	fine sand			almost dry	[illegible] 8" sample left [illegible] minor silt & clay
45-46½		11:15	gry-tan	interbedded fine sand & silt		wk-mod dense	moist	[illegible] 20 27 32

15-17'

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-4 JOB NUMBER D30497e

PAGE 2 OF 2

PROJECT Dickey Butte Geotech OWNER Crook County LOCATION: CO. Crook SEC. ____ 1/4 ____ OF 1/4 ____ T ____ N R ____ W

LOGGED BY Stimson DATE START 11/11/96 DATE FINISHED 11/11/96 HOLE DEPTH 101½ ANGLE - 90 DRILL METHOD Hollow stem Auger DIAMETER 3½" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
		11-11-96																		
50-51½	Brass Rings	11:25		Silt w/ 1" clay interbeds		2 - Brass Almost											MOD STR. [illegible]		[illegible] damp	16 - 30 50 [illegible]
55-56½	NO RINGS	11:40	gry-tan sand, silt, clay tan-gry	fine sand 1", silt - 4", clay 10"													WK-MOD CONSOL		wk damp	11 18 31
60-61½	RINGS	11:55	gry-tan w/ orange	fine sandy silt + 1" [illegible]		2 - BRASS No - Full											MOD CONSOL		almost dry	23 37 50 2 Rings
65-66½	NO RINGS	12:10	gry-tan	Grade from top [illegible] fine sand, silt, clay													MOD [illegible]		[illegible] moist	19 34 45
70-71½	RINGS	12:25	tan-gry	fine sandy silt		2 - BRASS No Full											MOD CONSOL		MODERATELY MOIST	21 42 50
75-76½	NO RINGS	12:40	tan-gry	fine sand + silt													MOD STR. CONSOL		MODERATELY MOIST	20 37 42
	[illegible]																			
80-81½	NO RINGS	1:10	[illegible]	[illegible] silt [illegible]													MOD STR.		SLIGHTLY MOIST	22 32 [illegible]
85-86½	NO RINGS	1:30	gry-tan	[illegible] clay [illegible]													MOD STR.		[illegible] moist	[illegible] 35 [illegible]
90-91½	BRASS RINGS	1:45	gry-tan	varied silt, clay		2 - BRASS Almost											MOD STR.		[illegible] dry	15 40 47 2 rings
95-96½	NO RINGS	2:10	[illegible]	varied clay with ½" fine sand inbtd													MOD STR.		[illegible] added	16 32 50 can't use sample for moisture (drill water)
100-101½	RINGS	2:30	gry-tan	[illegible]		3 - [illegible]											STD [illegible]		Somewhat moist	23 47 50 END OF HOLE

11

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-5 JOB NUMBER 030496

PROJECT Pickles Butte Geotech OWNER Canyon County LOCATION: CO. Canyon (Center of Landfill) SEC. ___ 1/4 ___ OF 1/4 ___ T ___ N R ___ W

LOGGED BY STROUD DATE START 11/12/96 DATE FINISHED 11/14/96 HOLE DEPTH 101 1/2 ANGLE -90 DRILL METHOD Hollow Stem Auger SPT DIAMETER 8 1/2" DRILL MODEL BK-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
0-1 1/2	11/12/96 SHELBY	10:05		COVER & TRASH												Ex LEL; Check thru bolt hole in hollow stem & @ outside collar after augering	0%		MOIST TO DRY	SHELBY TUBE THRU INTERVAL COVER CLAY/SILT & TRASH 1 1/2 ft @ 500 lbs mashed end of tube
5-6 1/2	NO RINGS	10:15		COVER & TRASH												Ex LEL; ditto procedures	0%		MOIST	15 5 4 MOST OF SAMPLE NOT RECOVERED (SHOE BLOCKAGE)
10-11 1/2	NO RINGS	10:30		TRASH												Ex LEL	0%		slightly damp	27 10 8 POOR RECOVERY (~3-4" sample)
15-16 1/2	NO RINGS	10:40		TRASH												Ex LEL	0%		almost dry	70 @ 4 inches wood, plastic, paper
20-21 1/2	NO RINGS	10:55		TRASH												Ex LEL	0%		almost dry	12 9 19 GOOD RECOVERY ~20" Newspaper CINDER (RED)
25-26 1/2	NO RINGS	11:10 ECS 11-13-96		Trash												Ex LEL	0%			50 @ 4 1/2" SHUT DOWN WAITING ON DELIVERY OF BRASS RINGS
30-31 1/2	BRASS RINGS	11:25		Trash												Ex LEL	0%			16 7 12 [illegible] 2 brass rings
35-36 1/2	Auger thru NO SAMPLE			trash												Ex LEL	100% in hollow stem @ collar			NO MORE BLOWS [illegible] ex hazard
40-41	2 1/2" BRASS RING	2:50		trash												Ex LEL	100%			1 large brass ring
45	grab sample	3:15		trash												Ex LEL	100%			~8" sample
50	[illegible]	4:05		trash												Ex LEL	100%			~3" sample [illegible]

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER GT-5 JOB NUMBER 030496 PAGE 2 OF 2

PROJECT [illegible] Butte [illegible] OWNER [illegible] LOCATION: CO. [illegible] SEC. ___ 1/4 ___ OF 1/4 ___ T ___ N R ___ W

LOGGED BY [illegible] DATE START 11/13/96 DATE FINISHED [illegible] HOLE DEPTH 101½ ANGLE -90° DRILL METHOD Hollow Stem DIAMETER 8½" DRILL MODEL B[illegible]-81

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
		11-13-96																		
55	grab	4:30		[illegible]																called 5? on bag
56 }	[illegible]		56'	[illegible]																
58 }																				
60	[illegible]	4:55	tan-gray	Sand (med)																1 ring + 3" in bag
	grab	EOS																		sand ¦ garbage & top
		11-14-96																		
65 →	grab @	9:30	gray	sand (med)															fairly damp	
65-65.5	2½"																sand soil			
	split spoon	9:45	+ grab														not well			1100 lbs [illegible] 6"
65.5-67	standard 2"																[illegible]			11 19 26 SPT
	split spoon [illegible]																in 2½ spoon			
																	wk-mod		mod moist	
70-71½	SPT	10:20	tan-gray	silty fine sand													consol.			13 34 42
75-76½	SPT	10:40	tan-gray	sand &															moderately	13 30 41
			[illegible]	clay													[illegible]		moist	sand-clay interbeds
																	wk well			
																	consolid.			
																	sand [illegible]			
80-81½	SPT	11:00	tan-gray	silty, fine sand													as above		moist	20 35 46
85-86½	SPT	11:15	tan-gray	fine [illegible] sand													MOD well		moist	20 37 50
																	consol.			
90-91½	SPT	11:25	[illegible]	[illegible]													[illegible] to		quite	16 12 22
				sand													MOD consol.		moist	
																			(not saturated or wet)	
95-96½	SPT	11:50	tan-gray	med sand													MOD [illegible]		[illegible]	18 32 32
																	[illegible]		damp & [illegible]	
	[illegible]																		[illegible]	
100-101½	[illegible]		tan-gray	fine & med sand													[illegible]		[illegible]	15 31 45

PB-1
2692 Collar
2353 Static
2097 Water Intercept (Top)

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name: Canyon County
Address: Caldwell, Idaho
Owner's Permit No.:

2. NATURE OF WORK

☑ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)
☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☑ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole: 20 inches Total depth: 658 feet
Casing schedule: ☑ Steel ☐ Concrete

Thickness	Diameter	From	To
.375 inches	16 inches	+2 feet	575 feet
.250 inches	10 inches	537 feet	577 feet
.250 inches	10 inches	637 feet	658 feet

Was casing drive shoe used? ☑ Yes ☐ No
Was a packer or seal used? ☑ Yes ☐ No
Perforated? ☐ Yes ☐ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation ____ inches by ____ inches

Number		From		To	
	perforations		feet		feet
	perforations		feet		feet
	perforations		feet		feet

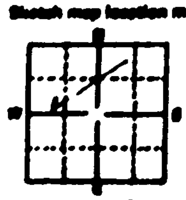
Well screen installed? ☑ Yes ☐ No
Manufacturer's name: Johnson
Type: Stainless Model No.:
Diameter 10 Slot size 25 Set from 577 feet to 637 feet
Diameter __ Slot size __ Set from ____ feet to ____ feet

Gravel packed? ☑ Yes ☐ No Size of gravel: No 16 Del Monte
Placed from 537 feet to 658 feet

Surface seal depth 20 Material used in seal: ☑ Cement grout ☐ Puddling clay ☐ Well cuttings
Sealing procedure used: ☐ Slurry pit ☑ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

Sketch map location must agree with written location. 63



Subdivision Name: ____
Lot No. ____ Block No. ____
County: Canyon
SW ¼ NW ¼ Sec. 21, T. 5 N., R. 3 W.

7. WATER LEVEL

Static water level 237 feet below land surface
Flowing? ☐ Yes ☐ No G.P.M. flow ____
Temperature ____ F. Quality ____
Artesian closed-in pressure ____ p.s.i.
Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☑ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
5 GPM	121	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
20	0	3	Top Soil		
11	3	48	Sand 20% Clay		
11	48	152	Sandy Clay		
11	152	205	Yellow Clay		
11	205	251	Grey Clay Sticky		
20	251	277	Blue Shale		
20	277	327	Blue Clay 10% Sand		
20	327	520	Blue Clay (Shale)		
18	520	595	Grey Shale		
16	595	640	Shale Sandy	✓	
16	640	658	Blue Clay		

Department of Water Resources
Western Regional Office

10.

Work started 10/4/77 finished 2/10/78

11. DRILLERS CERTIFICATION

Firm Name: Witt Drilling Firm No. 55
Address: Caldwell, Ida. Date 2/10/78
Signed by (Firm Official): Kenneth Witt
and
(Operator): Claude Dykes

USE ADDITIONAL SHEETS IF NECESSARY   FORWARD THE WHITE COPY TO THE DEPARTMENT

HOLE NUMBER PB-2-CC JOB NUMBER I-1120491

HOLLADAY ENGINEERING COMPANY

COLLAR ELV. ~ 2830' (2790 GLC)

PAGE 1 OF 2

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Strowd DATE START 4-15-92 DATE FINISHED -92 HOLE DEPTH 55.7' ANGLE 90° DRILL METHOD CORE LEXAN DIAMETER 2.4" DRILL MODEL Longyear 44

REC	INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	HYDRAULIC PROPERTIES EST.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	0-1	4-15-92	2:00							
	2				silty sand	10^{-4}	unconsolid.			no core recovery/loose sand
	3			lt gy br	"	"	"	R	none	sample collected in container
	4			"	"	"	"	O	"	at collar, probably fill
	5	liner collapsed	2:50	"	"	"	"	A	"	no core rec. Rd fill sand
0%	6			"	"	10^{-3}	"	D	"	"
	7			"	"	"	"	F	"	"
	8			"	"	"	"	I	damp	"
	9			"	"	"	"	L	dry	"
	10			"	"	"	"	L	"	"
				"	"	"	"		"	"
			3:30	"	"	"	"		"	"
				gy wht	silty sand w/ cly	10^{-4}	minor		"	went to call office about collapsing liner
10%		hole caving		"	"	"			"	
	15	at 15'	5:20	"	"		1-2 mm voids		"	try drilling holes in Lexan
				"	"	"	circular voids		damp ~6%	13.5-15 Finished first core Rec.
45%				"	clay w/ ...	10^{-3}	med consolid		"	wk bedding
		EOS	6:00	"		10^{-7}	wk consolid	massive	"	
8%		4-16-92	7:00	lt yel gry	sand	10^{-7}	"		"	
	20	hole ...	7:30	"	med sandstone	10^{-3}	unconsolid	S	dry	coarse immature sandstone
0%		casing to ...	9:15	lt gy tn	fine silty sand	10^{-3}	minor wk cons		dry	bimodal grain size distrib.
		cuttings	9:45	"	silty fine sd & cly	10^{-5}	cuttings?		dry	no rec. sample coll. @ collar
		"		"	"	10^{-5}	un-wk consol		"	Tasked drillers called Ray SLC
		"	11:30	"	"	10^{-6}	wk consol.		"	sampling bias favors coarser
	25	"		"	silty cly	10^{-6}	"		"	w/ collector catching cuttings
		"		"	clayey silt	10^{-6}	"	massive	"	"
		"		"		10^{-6}	"		"	"
		"		"	"	10^{-6}	"		"	"
		"		"	"	10^{-6}	"		"	"
		"	1:00	"	"	10^{-6}	"		"	"
	30	"		"	"	10^{-5}	"		"	"
		"		"	"	10^{-5}	"		dry	"
		EOS @ 4:30	1:45	"	"	10^{-5}	"		"	"
35.5		4-17-92	8:00	olive tan gr	clayey silt	10^{-6}	"		"	1:50-3:00 Reaming stuff to set casing
		using		"	"	10^{-4}	wk consolid		inject clear mud + water	hole bottom 35.5'
90%		H_2O		"	"	10^{-4}	wk-mod consol.		"	(polymer) core boxes too short
		drilling		"	"	10^{-4}	"		"	FOR LEXAN TUBES
38.5		fast	8:30	"	"	10^{-4}	"		"	
				olive gy gr	"	10^{-5}	"		"	
100%		drilling		"	Clayey silt	10^{-5}	"		inject H_2O	
		fast		"	"	10^{-5}	"		+ polymer	
48.1		water run	9:05	"	"	10^{-5}	"		"	
				"	"	10^{-5}	"		"	
85%				"	"	10^{-6}	"		"	
				"	"	10^{-6}	"		"	
				"	"	10^{-5}	"		"	
48.4			10:00	"	"	10^{-5}	"		"	
90%				"	"	10^{-4}	"		"	
				"	"	10^{-5}	"		"	

GEOPHYSICS LOG; GRAIN SIZE REL. PERCENT (CLY, SLT, SAND, GRAV); GRAIN ROUNDING (ANG, WK, MOD, WELL); HYDRAULIC PROPERTIES MEAS.: graphic bars only

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER PB-2 JOB NUMBER T1120491

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Strond DATE START 4-15-92 DATE FINISHED 4-20-92 HOLE DEPTH ____ ANGLE 90° DRILL METHOD core DIAMETER 2.4" DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	ROCK TYPE	HYDRAULIC EST.	INDURATION & STRUCTURE	WATER	COMMENTS
90%	fast	4-17	gry-grn	silty clay + sd	10^{-4}		inject H_2O	+ polymer
	drilling		"	"	10^{-4}	wkly consl. / massive		
53'		10:50	"	siltstone w/ ...	10^{-5}			(Fluidrill clear mud)
			olive grn	"	10^{-5}	mod. consol.		
			"	"	10^{-3}	"		
65%			"	"	10^{-3}	"		
			"	"	10^{-5}	"		
			"		10^{-3}	"		
58'		11:10	"	siltstone	10^{-5}	"		
			"		10^{-4}	"		
85%			gry grn		10^{-4}	"		
			"		10^{-4}	"		
63'	lost circ.	11:30	"		10^{-4}	"	inject H_2O	
			"		10^{-4}	"		
			"	fine sand	10^{-3}			Sand in hole bottom, losing circ.
80%			"	coarse silt	10^{-3}	wk consol.		cross beds
			gry-tan	silty sand	10^{-4}	"		x bedding
			"	silt w/ clay	10^{-4}	"		wk bdd
68'	Water run	12:15	"	sandy clay	10^{-4}			
	4-14	EOS 2:00	"	fine sand + silt	10^{-5}	mod. consol.	Quit for day	EOS @ 2:00 high winds + dust storm
			"	fine sand	10^{-4}	wk bdd	inject H_2O	
53%			"		10^{-4}		+ polymer	
			"		10^{-4}	massive		
73'		8:25	"		10^{-4}	"		
			"		10^{-4}	"		
			"	silt	10^{-4}			
100%			"	silt w/ minor cly	10^{-5}	wk consol / massive		
			"		10^{-5}	"		
			"		10^{-5}	"		
78'		9:05	"	clayey silt	10^{-6}			
			"	silty clay	10^{-7}	mod. consol.		
			"	"	10^{-7}	"		coarse? clay grn near fine silt
55%			"	"	10^{-7}	"		
			"	"	10^{-7}	"	inject H_2O	
83'		9:30	"	fine sand + silt	10^{-7}	cross-bedd	+ polymer	CROSS:
	stuck in hole	4-19 8:00am	"	NO CORE SAMPLE	10^{-6}		water run	air blowby @ casing
0%			"	fine " (fine	10^{-3}	loose fine	drilling dry	Hole squeezed; re-reaming 15' got
	Sand fills	10:00	"	sand)" sand	10^{-3}	"	"	stuck in hole after 3 ft in.
	hole bottom		"		10^{-3}	"	"	backs off hole bottom
88'	losing circ.	11:00	"	NO SAMPLE	10^{-5}	"	"	fills w/ sand/air into formation
			"	NO CORE SAMP	10^{-3}	"	"	sample from sand blowing up casing
	Trip		"		10^{-3}	"	"	" " "
0%	chg bit		gry-tan	"	10^{-3}	"	"	" " "
			"	"	10^{-3}	"	"	" " "
93'		2:30	"	"	10^{-3}	"	"	" " "
	Try Air		tan-olive	silty fine sand	10^{-3}	"	"	" " "
	Quick +		"	"	10^{-4}	wk consol	Air Quik +	2 inches of core recovery
3%	Clear Mud		"	"	10^{-4}	"	Clear Mud.	lost cost down hole
			"	"	10^{-4}	"	H_2O inject	trip out 4:30
		3:10	"	"	10^{-4}	"	"	
ABORT HOLE OFFSET 60' WEST	Trip in	7:30 4/20/92					Lose Circ.	Trip out + get stuck @ 56' ABORT HOLE

HOLE NUMBER DB-2A JOB NUMBER I1102491 **HOLLADAY ENGINEERING COMPANY**

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Stroud DATE START 4-20-92 DATE FINISHED 5-15 HOLE DEPTH 557' ANGLE - 90° DRILL METHOD Rotary/Core DIAMETER ____ DRILL MODEL Longyear 44

REC	INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	ROCK TYPE	HYDRAULIC EST.	INDURATION & STRUCTURE	WATER	COMMENTS
			4-22		no samp				MUD ROTARY W/ BENTONITE
					"				
	103'		9:20		silt				cuttings indicate silt but bonding
					no samp				+ sand from uphole contamination
									does not allow further
									classification
10%	113'	STARTED SET CASING	10:00	gry-tan	silt				REAMING TO SET CASING - ON BOTTOM
	114	Punch	2:30	g "	"	10^{-6}		inject H_2O	BLOWS HYDRAULIC HOSE - DOWN
25%		BORE		"	fine sand w/	-4		clear mud	CASING set to 113' TRY PUNCH
		H_2O		"	silt	-4	minor		BORE CORE
		clear mud		"	"	-4	bdd		
				"	"	-4			
		remove		"	silt w/ fine	-4			core bedding / significant
	120	spring	3:30	"	sand	-4	minor bdd		grain size changes
0%		core lost			NO				
		down			SAMP				
	123	hole	3:45		"				
		insert			fine sand	-4	massive	too much	poor recovery from
30%		spring			clayey sd	-4		inject H_2O?	too much water? Upper
			4:15	lt gry tn	clayey silt + sd	-5			sample very wet - lower
50%	127			"	"	-5			sample almost dry (damp).
				"	clay, minor silt	-7		less H_2O	clay zone
	129		4:45	"	[illegible]	-4		inj-hole dec.	
	130		5:00	"	fine sand w/ silt	-4	massive		CORE BARREL SEPARATED ON SCREWING
80%	131	4-23-92	8:30	"	silt minor cly	-5		inj H_2O +	lost down hole. Sica /129-131
				"	silt	-5		clear mud	Retrieved 6:00 pm
	133		9:10	"	fine sand w/ silt	-4			minor cly w/ silty sand
20%					no sample				
					"				
					"				
		retaining			"				retaining spring in backwards. 1% recovery
	138	spring backwards	10:00	lt gry	silt w/ minor cly	-5			ask Ross to use less H_2O inject
	139		10:05	lt gry-grn	almost pure cly	-7	plastic cly		
				lt tan 4'	clayey silt	-5			
10%					no sample				
					"				Ross says sample is packing +
					"				blocking off core barrel
					"				
	145		11:20		"				
50%	146		12:00		silty fine sand	-4	massive		minor Clay
37%					"	-4			try low rotation - few recovery
	148		12:45		"	-4			try no rotation - no recovery
		trip out				-4			trip out, try core drilling again
						-4			

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER PB-2 JOB NUMBER T1120491 PAGE 4 OF 12

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Strowd DATE START 4-20-92 DATE FINISHED 5-15 HOLE DEPTH 557' ANGLE -90° DRILL METHOD Core DIAMETER 2.4"10 DRILL MODEL Longyear-44

Rec.	Interval (FT)	Drill Notes	Date Time	Color	Rock Type	Hydraulic Est.	Hydraulic Meas.	Induration & Structure	Water	Comments
60%		4-23		grn-gy-tan	fine silty sand	10^{-4}			inject H_2O	
					clay	10^{-6}		mod consol.		
	153	Trip out	2:15		clayey silt	10^{-4}				50% rec. - trip out for lexan tube bit
					"	10^{-4}				
81%				lt gry tan	silty clay	-5				
				"	silty sand	-4				
				grn-tan?	silty clay	-5		wk laminated		silty clays mod. consolidated
	156		3:45	lt gry tan	"	-5		bdd in clys		sands wk to unconsolidated
				"	clayey fine sand	-4		wk consol.		
				"	"	-4				
53%				"	"	-4				
				"	"	-4				
	163	EOS	11:30	"	"	-4				
		4-28-92	7:00 am		no samp.				inject H_2O	trip back in hole, load of H_2O
0%		no rec.								
					"					
	167	no recov.	8:15							
		using		lt gry tan	silty fine sand	-4		sporadic consol		occas. hematite stn + cement
100%		bentonite		"	"	-4		minor x-bd		w/ lumpy consolidated zones
		lumpness?		"	clayey silt	-5		wk - unconsol		mostly wk to unconsolidated
				"	silty fine sand	-4		"		
	172		9:00	"	"	-4		"		
				"	"	-5		"		some visible clay / binding sand
93%				"	"	-4				
				"	"	-4				
				"	"	-4				
	177		9:45	"	silty fine sand	-4				
				"	"	-4				
				"	"	-4				
56%				"	"	-4				
				"	"	-4				
				"	"	-4				
				"	"	-4				
	184		10:30	lt gry tan	sandy silt	-4		mod str consol		
77%				"	silty clay	-6		wk consol.		
				"	silty fine sand	-4				
				"	"	-4				
	188		11:15	"	"	-4		mod consol.		bedding structures
				lt gry tan	sandy silt w/ cly	-5				more clay less sand
				"	"	-5				
93%				"	"	-5				
				"	"	-5				
	193		11:45	"	silty sand	-4		wk consol	inject H_2O	consolidation limited to
				lt gry tan	clayey silt	-5				zones inches to a foot thk
100%				"	"	-5				
				"	silty fine sand	-4				
				"	"	-4				
	198		12:30	"	fine sand	-3				
				"	sandy silt	-4				
				"	"	-4				

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER PB-2 JOB NUMBER T1120491

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Stroud DATE START 4-20-92 DATE FINISHED 5-15 HOLE DEPTH 557' ANGLE -90 DRILL METHOD core DIAMETER 2.4"/4" OD DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	WATER	COMMENTS
82%	mud + H_2O		lt gry tan	sandy silt	-4			inject H_2O	minor clay fraction
			"	"	-4		bedding on	w/ sewn bit	low water mag. high rotation
			"	"	-4		mm's to		low bentonite
204		1:00	"	"	-5		several mm's		increasing clay component
			"	fine sandy silt	-5		scale		
96%			"		~5		sporadic mod		
			orange	silty sand			consolidation		orange hematite stain
			lt gry tan		-4				
209		1:30	"	silty sand	-4		laminate bdd		fine bedding on splitting core apart
			"	"	-4				can't see fine structures in Lexan
50%			"	"	-4		wk consol.		degree of rounding rarely
			"	"	-4				seems to change
	lower circ.		"	"	-4				
214	didn't blo	2:00	"	silt & fine sand	-5				Possibly lost some fines downgoing
			"	"	-4				
86%			"	"	-4				
			"	"	-4				
			"	"	-4				tell driller will blow hole
			"	"	-4				clear of water at EOS to test
220		2:45	"	"	-4				for methane
			"	clayey siltstone	-4				
			"	fine sandy silt	-4		bdd consol.		bdd planes cemented
			"	w/ minor cly	-4		mod. consol.		sedimentary features
			"	"	-4				masked from Lexan
			"	"	-4				tubes.
			"	"	-4				
			"	"	-4				
			"	"	-4				
229		3:45	lt tan gy	"	-4				
			"	clayey silt w/	-5		wk-mod		
			"	fine sand	-5		consolid.		
72%			"	"	-5				
			"	"	-4				
			"	"	-5				
			"	"	-5				
236	EOS	4:30	"	"	-5				blow H_2O from hole - methane chk
	4-29-92	8:00	lt tan gy	"	-5		mod. consol.		mod. induration - holds together
100%	using		"	"	-5				but can be easily broken by
	H_2O + mud		w/ org	"	-5				hand
			"	clayey silt w/	-5				~3 mm round blebs of orange
241		8:45	"	fine sand	-5	augered -4' sand			hematite stain
			lt tan gy	siltstone w/ cly	-6		mod-strong		
100%			"	claystone w/	-6		consolidation		POSSIBLE MONITORING HORZ
			"	siltstone	-6		clay (clasts		HEMATITE rimmed clasts of clay
			"	oxidized	-6				within fine silt/clay matrix
246		9:40	"		-6				10^{-5} w/ 10^{-7} clay beds
	drill w/o		"	clay bed 4" & 1"	-6		bedded sands		drill without Lexan liner for
60%	Lexan		"	clay 13" thick	10^{-7}		massive clay		better logging.
	liner		"	clay & fine sand	10^{-6}		silts, sand, cly		
			"	mixed sd silt cly	10^{-4}				

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER PB-2 [illegible] JOB NUMBER T1120491

PROJECT Pickle Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW [illegible]

LOGGED BY [illegible] DATE START 4-20-92 DATE FINISHED 5-75 HOLE DEPTH 557' ANGLE -90 DRILL METHOD Core DIAMETER 2 [illegible]/4 OD DRILL MODEL [illegible] 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	WATER	COMMENTS
			lt. gry tan	silty sand	10^{-4}		vry wk consol.	inject H_2O	poor recovery - sand washing
252	stop drill [illegible]	10:30	"	" "	10^{-3}		unconsolid.	blow dry hole	out of barrel w/o liner
253		2:50	lt. gry yellow	clay & silty sand	10^{-7}		cly str consol.	NO GRD H_2O	ATTEMPT GRD-WATER MEAS. + AIR CORE
	Drill wet		lt. gry tan	silty fine sand	10^{-4}		unconsolid	after 3½ hrs.	START DRILL AGAIN @ 2:00 →
63% (inverted)			"	" "	10^{-4}		"	AIR CORE	[illegible] AIR CIRC. PLUG [illegible] BIT
			"	silty clay	10^{-7}		mod str. cons	INJECT H_2O +	CLEAR MUD w/ NO LINER
			"	silty clay/silty sd	10^{-7}		"		Thin 1" sand bed in clay
		4:45	"	"	10^{-7}		mod. consolid		2" & 3" sand beds in clay
259	EOS	4:45	"	"	10^{-7}		mod str cons		
	4-30-92	8:00	"	silty sand	10^{-4}		mod cons.		ORIENTATION NEW HELPER 7:00-8:00
	DRILL		"	"	10^{-4}		"		could define bedding ∠30°
	WET		"	sandy silt	10^{-5}		mod str.		
50%	w/o		yel. gry gr	"	10^{-5}		"		sub horiz. bdd.
	LINER		"	"	10^{-5}		"		parting on bdd planes
	penetration		"	"	10^{-5}		"		on well consolid. material
	slowing		"	"	10^{-5}		"		
	down		gra gry tan	silty sandstone	10^{-4}		"		
268		9:30	"	silty sand	10^{-4}		wk consol.		
			"	clayey siltstone	10^{-5}		mod. consol.		
				" " w/ sand	10^{-5}		"		
85%			"	clayey siltstone	-5		mod str cons		
			"	"	-5		"		
273		10:00	gra-gry tan	"	-5		"		hematite stn on bd plane
	slower		"	silty claystone	-6		mod consl.		
73%	drilling		"	"	-6		"		
	more		"	"	-6		"		
	indurated		"	"	-6		"		
			"	"	-7		"		
279		11:15	"	clayey siltstone	-4		"		
			"	silty claystone	-6		consolidated		material is "tight" and dense
86%			"	"	-6		"		and has become more consistently
			"	"	-6		bdd ∠10°		consolidated since about 250'.
			"	"	-6		"		Decide to case to this zone
284		12:40	"	"	-6		"		and try air core again.
	5-1-92			no sample					
	Tricone			"					Tricone Ream hole 113'-
	to set			"					298 - set casing to 259'
	casing			"					
288				"	-6		horiz. bdd. (massive)		
	5-2-92		gra-tan	clayey siltstone	-6			damp from	
	AIR CORE		"	"	-6			previous	Establish circ. blow water
28%	"		"	"	-6			injected	dry hole 7:00-9:00
	"		"	"	-6			H_2O ??	minor fossil wood stems ?
294	blow dry	10:15	"	clayey siltstone	-6				parting planes on bedding
	more		"	silty claystone	-6				minor "hematite" spots"
50%	clay		"	"	-7		gritty,	AIR BLOW	GOOD SAMPLE / DRILL WITHOUT
297	collecting	4:30	"	"	-7		massive. (massive)	DRY MOST	FOR HYDRAULIC / AIR CIRCULATION
100% 298	off	8:30	"	"	-7		dense	OF DAY	CONDUCTIVITY
100% 299	Depth [illegible]	10:00	"	"	-7		damp	FORMATION H_2O	↓ 9:00 [illegible] damp clay bottom
	[illegible]	12:45	"	"coarse" clay	-7			damp clay ?	
					-7		INJECT H_2O	INJECT H_2O	due to plugging up bit air

HOLE NUMBER PB-2 JOB NUMBER T1120491

HOLLADAY ENGINEERING COMPANY

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Stroud DATE START 4-20-92 DATE FINISHED 5-15 HOLE DEPTH 557' ANGLE -90 DRILL METHOD CORE DIAMETER 2.4"/4" DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT (CLY / SLT / SAND / GRAV)	GRAIN ROUNDING (ANG / WK / MOD / WELL)	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
100%			gry-green	"coarse" claystone				10^-7		some fine		inject H2O	clay size fraction but not
			"	" "				-7		bdd subhoriz			a plastic or putty type
			"	" "				-7		mod. str.			a "coarse" powdery damp
304		12:05	"	claystone minor				-7		consolidation			clay w/ minor silt fraction
	Try blocking		"	silt component				-6			massive		perhaps slit siltyer than prev.
84%	water off		"	"				-6					run.
	inside core		"	"				-6					
	tube-		"	"				-6					SAWED INTO TO CHECK SITUATION
	marginally		"	"				-6					
310	successful	1:20	"	"				-6		bdd struct.			CRUSHED UNDER BLOCKING OFF
	Using		gry grn tan	silty claystone				-6					Occassional bands, blebs,
	H2O		"	"				-6					and erratic zones of hematite
84%	without		"	"				-6					stain are present in all of
	clear		"	"				-6			massive		the clays. Minor fossil
	mud or		"	"				-6					plant debris, possible
316	Air	2:00	"	"				-6					gastropods + small mammal bones
	Quick		"	silty claystone				-6		bdd			present
100%			"	"				-6					
			"	"				-6					
			"	"				-6					
321		2:40	"	"				-6		mod strong	massive		
			gry grn tan	silty claystone				-6		induration			same powdery damp clay
100%			"	"				-6					
			"	"				-6					
			"	"				-6					
326		3:15	"	"				-6					
			gy grn tan	silty claystone				-6					
85%			"	"				-6					
			"	"				-6					
			"	"				-6					
			"	"				-6					
332		4:00	"	"				-6					
100%	Drill dry	5-4/8:10	"	"				-6					blow hole dry
334	230% rec	8:10	"	"				-6				NO WATER	DRILL DRY W/O AIR (230% rec)
	DRILL WET		gy grn tan	silty claystone				-6				INJ. SAMPLE	SAMPLE DAMP BUT NOT SATURATED
74%			"	"				-6		str indur.		INJECT H2O	SAME MATERIAL MASSIVE clys.
			"	"				-6					BUT BECOMING HARDER
			"	"				-6					
			"	"				-6					
			"	"				-6					
340		8:45	"	"				-6		bdd Horz.			
			"	silty claystone				-6					
92%			"	"				-6					
			"	"				-6					
			"	"				-6					
345		9:30	"	"				-6		bdd			
			"	silty claystone				-6		strong			
84%			"	"				-6		induration			occassional hematite orange
			"	"				-6					stains
			"	"				-6					
350			"	"				-6					

HOLE NUMBER PB-2 JOB NUMBER T1120491

HOLLADAY ENGINEERING COMPANY

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY STROUD DATE START 4-20-92 DATE FINISHED 5-15 HOLE DEPTH 557 ANGLE -90° DRILL METHOD CORE DIAMETER 2.4"/4" DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	HYDRAULIC PROPERTIES EST.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
351	INJECT	10:30	gy-grn	silty claystone	10^{-6}			inject H_2O	ABIT COARSER THAN PREVIOUS
	H_2O w/	COLOR		"	-6	mod str ind			hematite stain blebs but
	NO	CHANGE	darker	"	-6	parting on		moist-damp	becoming darker
83%	ADDITIVES	→	gy-grn	"	-6	bedding		claystone	iron mineral in reduced
			gry-grn	"	-6				form as metallic gray blebs
			"	"	-6	mod indurated			no hematite / possible
357		12:10	"	"	-6	carbonaceous			REDOX around 353½'
			gry-brn	"	-6	PLANT TRASH			TRANSITIONAL OXIDATION
			"	"	-6	occass.			NO MATERIAL CHANGE OTHER
83%			"	"	-6	bdd-HORZ		INJECTING H_2O	THAN OXID.
			"	"	-6			NO APPARENT	PARTIAL REDUCTION HERE
>		COLOR CHANGE	blue-gry	"	-6			CHANGE IN	REDUCED HERE
363		12:45	"	"	-6	STRONG INDUR.		NATIVE	ON DRYING CLAYSTONE BECOMES
	DRILLING		"	silty claystone	-6			MOISTURE	POWDERY BUT MOD. HARD
	SLOWER		"	"	-6			CONTENT ~	BECOMES LIGHT GRAY ON DRYING
71%	HARDER		"	"	-6	HORIZ BDD		10-12%	CARBON PLANT TRASH
			"	"	-6				COMMON SINCE REDUCED
			"	"	-6				
			"	"	-6		carbon		GOT STUCK 10 MINUTES BREAKING
370	stuck	1:45	"	"	-6			INJECTING H_2O	ROD JOINT ABOVE HOLE BOTTOM.
			MED. GRY	silty claystone	-6	Fine bdd			APPEARS SLIGHTLY MORE SILTY
			"	"	-6	HORZ.		DAMP CLY	
83%	BLOCKING		"	"	-6			10-12%	MUSCOVITE MORE ABUNDANT
	OFF @		"	"	-6	MOD STR.			
	6 FT UP		"	"	-6	CONSOLIDATION	MASSIVE		HOMOGENEOUS SILTY CLAY
376	5 FT LINERS	2:20	"	"	-6				HAS NOT VARIED MUCH
			MED. GRY	silty claystone	-6				PHYSICALLY SINCE ~270'
			WET	"	-6				
87%			LIGHT GRY	"	-6				
			DRY	"	-6			INJECTING H_2O	
			"	"	-6				SAMPLE HARD SUFFICIENTLY
382		2:50	MED GRY	"	-6	platy shear		MOIST CLY	TO CRACK IN LINER EVEN
	Ross says		"	silty claystone	-6			10-12%	WHEN FLUID FILLED
	more fines		"	"	-6	bdd HORZ			
63%	are being		"	"	-6				
	carried		"	"	-6	mod str			
	away w/		"	"	-6	CONSOLD.			
	H_2O in		"	"	-6				
	thingy		"	"	-6	carb bdd planes			CARBONATED CARBO BDD
390	material	3:30	"	"	-6	plant trash		INJECT H_2O	
			MED. GRY	silty claystone	-6	INJECT H_2O			THIS RUN DOESN'T HAVE
			"	"	-6				MUCH INJECTED H_2O IN
100%			"	"	-6	HORZ BDD			SAMPLE LINER-GOOD TEST SAMPLE
			"	"	-6				
395	EOS	4:10	"	"	-6	BLOWN DRY HOLE			BLOW DRY FOR 1 HR 4:15-5:15
100%	5-5-92	7:30	"	claystone	-7				LESS SILTY
397	DRILL DRY	8:15	"		-7	10-12% H_2O	MASSIVE	NO H_2O INJ.	sticky cly/moisture 10-14%?
			"		-7	strong consol.		" " "	almost pure "modeling clay"
			"		-7				
			"		-7				

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER PB-2 JOB NUMBER T1120491

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Strowd DATE START 4-20-92 DATE FINISHED 5-15 HOLE DEPTH 557' ANGLE -90 DRILL METHOD CORE DIAMETER 2.4" DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	HYDRAULIC PROPERTIES EST.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	INDURATION GRAPHIC	WATER	COMMENTS
100%	INJECTING		MED. GRY	claystone	10-7	strong	massive	inject H2O	sticky cly w/ minor silt
	H2O+		"	"	-7	consolidated		est. 10-18%	
403	AIR QUIK	9:00 am	"	"	-7			formation	moist + sticky
			"	"	-7	massive w/		H2O	MEDIUM GRAY BECOMES
100%			"	"	-7	bits of			VERY LIGHT CEMENT GRAY
			"	"	-7	bdd struc.			ON DRYING OUT
			"	"	-7				
408		9:30	"	"	-7			10-14%	~2% silt 98% cly
			MED GRY	CLAYSTONE	-7	STR. CONSOL.		natural H2O	NOT AS [illegible]
					-7				
80%			"	"	-7				
			"	"	-7				
			"	"	-7				
414		10:00	"	"	-7				
	WATER	1:00	MED GRY	claystone	-7				
	TRUCK DOWN		"	"	-7	STR CONSOL.			
83%			"	"	-7				
	WIRE LINE PROBLEMS		"	"	-7				
			"	"	-7				
420		1:30			-7			DAMP CLY	
	[illegible]	1:40	MED GRY	CLAYSTONE	-7			INJECTING	QUAD DEFECTIVE ON CORE
	INJ. H2O			"	-7			WATER	TUBE HAS TO TRIP 3:20-4:00
58%			"	"	-7				REPLACED UNIT - SHOE AT
			"	"	-7				BIT WASN'T IN ALL THE WAY
			"	"	-7				
426	Tripout	3:30	"	"	-7				
		4:45	MED GRY	CLAYSTONE	-7	STRONG			
			"	"	-7	CONSOLIDATED			
71%			"	"	-7				
			"	"	-7				
			"	"	-7				
			"	"	-7				
433	EDS	5:30	"	"	-7	SUBHORIZ. bdd.			3½ HRS DOWN 6½ DRILL
	5-6-92	7:00	MED GRY	CLAYSTONE	-7	STRONG.		INJECT H2O	BROUGHT IN LARGER COMPRESSOR
			"	"	-7	CONSOLID.			220 psi: DRILL STEM WAS
			"	"	-7				STUCK IN HOLE AT
71%			"	"	-7			10-14% natural	BEGINNING OF SHIFT.
			"	"	-7			moisture in	MATERIAL FRACTURES
			"	"	-7			sample	WITH AND ACROSS BEDDING
440		8:45	"	"	-7				
			MED GRY	CLAYSTONE	-7	HORIZ. BDD		INJ. H2O	
			"	"	-7	STD. CONS.			
			"	"	-7				
70%			"	"	-7				
			"	"	-7				
			"	"	-7				
447	"	9:15	"	"	-7				
			"	"	-7				
76 %			"	"	-7				
			"	"	-7				

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER PB-2 JOB NUMBER T1120491

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Strond DATE START 4-20-93 DATE FINISHED 5-15-93 HOLE DEPTH 557' ANGLE -90° DRILL METHOD CORE DIAMETER 2.4" DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	ROCK TYPE	GRAIN SIZE REL. PERCENT	HYDRAULIC PROPERTIES EST.	HYDRAULIC PROPERTIES MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	INDURATION GRAPHIC	WATER	COMMENTS
	DRILLING		MED. GRY	CLAYSTONE		10^{-7}		MOD STR.		INJECT	MATERIAL BASICALLY
	WET		"	"		-7		CONSOLID.	MASSIVE	H_2O	UNCHANGED SINCE 395'
			"	"		-7					OR EVEN 362'
454		9:45	"	"		-7				NATIVE	
			MED. GRY	CLAYSTONE		-7				MOISTURE	
			"	"		-7				~10-12%	
100			"	"		-7					
			"	"		-7					
			"	"		-7					
460		10:00	"	"		-7					
			MED GRY	CLAYSTONE		-7		MOD STRONG		INJECT H_2O	
			VERY	"		-7		CONSOLID			
712			UNIFORM	"		-7					
			GRAY	"		-7					
			COLOR	"		-7					
			"	"		-7					
467		11:30	"	"		-7					
			"	CLAYSTONE		-7					
			"	"		-7					
.832			"	"		-7					
			"	"		-7				INJECT H_2O	
			"	"		-7					
473		12:15	"	"		-7					
			MED. GRY	CLAYSTONE		-7		MOD STR.			
			"	"		-7		CONSOLID.			
832			"	"		-7					
			"	"		-7					
			"	"		-7					
479		12:45	"	"		-7					
			MED GRAY	CLAYSTONE		-7					CARBONACEOUS WOOD FRAGS
			"	"		-7					LINER CRUSHED BY COMPRESSION
93%			"	"		-7				NATIVE MOIST	
			"	"		-7				~12-14%	
			"	"		-7					
485		1:30	"	"		-7					GOT STUCK IN HOLE 15 MIN.
		2:00	MED. GRY	CLAYSTONE		-7		MOD STRONG		USING H_2O	
			"	"		-7		CONSOLID.		+ CLEAR MUD	
832			"	"		-7				(POLYMER)	
	CASING		"	"		-7					
	SEAL		"	"		-7					CASING WORKING LOOSE
491	CAVING	7:45	"	"		-7					
			MED GRY	CLAYSTONE		-7					
			"	"		-7					
			"	"		-7					
			"	"		-7				RETURN	
496	NOW DRY	3:45	"	"		-7				WATER IN	4:00 blow hole - return air
497	5-7-92	10:15	MED GRY	CLAYSTONE	DRILL DRY THIS ONE FOOT SAMPLE	-7				HOLE BOTTOM	comes from outside casing
	5-15-92	10:00		NO SAMPLE	NO SAMP - PACKER BLOCKED PART TIME					IN MORNING	RESEAL CASING + DRY TILL 5:30
0%											SET MORE CASING FROM 290 TO 293

HOLLADAY ENGINEERING COMPANY

PAGE 11 OF 12

HOLE NUMBER PB2 JOB NUMBER T112091

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO Canyon SEC 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY STROUD DATE START 4/20/92 DATE FINISHED 5-15 HOLE DEPTH 557' ANGLE -90° DRILL METHOD CORE DIAMETER 2.4"/4" DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
4	NO SAMPLE PACKER BLOCKED OFF						CORE TUBE													
0% 505			± MED GY	CLAYSTONE											10⁻⁷		MOD STR. CONSOLID.	MASSIVE	INJECT H_2O CLEAR MUD	SAME RUBBER PACKER DEBRIS MIXED WIT SAMPLE
65% 507	10:45	DRILLING	"	"											-7					
100 %			"	"											-7		Grn Lsld		NATIVE MOISTURE IN SHOE CORE WETTING FRONT ~ 15%-20%	
512		11:30	MED GY.												-7				15-20 %	
			"	CLAYSTONE											-7		MOD STR CONS.	MASSIVE		1* MED GRAY COLOR IS VERY LIGHT TAN-GRY UPON DRYING. THIS COLO CHARACTERISTIC APPLIES TO ALL GRY CLAYSTONE ENCOUNTERED THUS FAR.
100%			"	"											-7					
517		12:00	"	"											-7					
70%	LOST RECOVERED SAMPLE		MED GRY	CLAYSTONE											-7		Grn Laminae hdd			RUBBER PACKER DEBRIS IN SAMP
			"	"											-7					
	RETRIEVE WIRE LINE		"	"											-7		Grn Lsld.			
524	1:00	1:00	"	"											-7					
			MED GRY	CLAYSTONE											-7				20-26% NATIVE H_2O	CUT HOLES IN SLEEVE RELEASED INJ. H_2O & RETAPPED
83%			"	"											-7					
			"	"											-7					
			"	"											-7					
530		1:15	"	"											-7					
	DRILLED W/O LINER		MED GRY	CLAYSTONE											-7				20-25 NATIVE MOISTURE	GOOD SAMPLE FOR UNDISTURBED SAMPLE NO PACKER IN INJECT. H_2O (DRILLED W/O LEXAN LINER)
5 HRS 44%			"	"											-7					
			"	"											-7					
536		2:00	"	"											-7					
	WITH LINER		MED GRY	CLAYSTONE											-7					
100%			"	"											-7					
540		2:30	"	"											-7					
			MED GRY	CLAYSTONE											-7					CLAYSTONE BECOMING SLIGHTLY COARSER GRAINED
100%			"	"											-7					
545		3	"	"											-7					
		3:00	"	"											-7					
83%			MED GY	CLAYSTONE											-7					

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER 7B2 JOB NUMBER T1120491

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SE OF 1/4 NW T 2 N R 3 W

LOGGED BY Stroud DATE START 5-20-92 DATE FINISHED 5-15-92 HOLE DEPTH 557' ANGLE -90° DRILL METHOD Core DIAMETER 2.4"/4" DRILL MODEL Longyear 44

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY: ROCK TYPE	LITHOLOGY: GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT: CLY	SLT	SAND	GRAV	GRAIN ROUNDING: ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES: EST.	MEAS.	INDURATION & STRUCTURE EXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
551'		3:30	Med Gry	Claystone											10^{-7}		Mod str			
83%			"	"											-7		consol.		Inject H_2O	Drained injected
			"	"											-7				+ clear mud	water from liner
			"	"											-7					
			"	"											-7					
557	Blow dry	4:00	"	"											-7					
	EOH	5/14/92													-7				Native H_2O	
																			20-25%	Attempt blow hole dry so
																			48' water in	compressor won't start
																			hole @ 7:00am	Formation water!

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY ELEV. ~ 2930 PAGE 1 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC 21 1/4 SW OF 1/4 SE - 2 N R 3 W

LOGGED BY SMcW DATE START 9-29-92 DATE FINISHED 10-21-92 HOLE DEPTH 640 ANGLE -90° DRILL METHOD Air Rotary R.C. DIAMETER 12 1/4" DRILL MODEL Schramm T685-DA

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS. ETC.	GRAPHIC	WATER	COMMENTS
	Reverse Circ. Air Rotary	9-29-92																		
5	5 1/4" will Ream to 12 1/4" mud Rotary	4:20	lt gy-tan	Road fill of fine sand + Gravel											~10^-4		WK consolidation		~8%	Gravel fraction well rounded may be formation gravel in part or gravel from pad construction
10		4:24	lt ba-tan	fine sand/GRV											10^-2 to 3		WK		~10%	Gravel clasts 1/4 to +2" and Bedrock cobble
15		4:26	lt ba-tan	fine sand minor gravel											10^-2 to 3		WK-mod		~12%	slightly damp
20		4:30	lt ba-tan	fine sand minor GRV.											10^-2 to 3		WK-mod		~12%	slightly damp
25		4:34	lt ba-tan	fine sand some silt											10^-3		WK		~10%	drier
30		4:36	tan	clayey silt w/ fine-med sand											10^-4 to 5		WK-mod		~10%	dry
35	EOS	4:40 a-30-92	tan	clayey sandy clay											10^-6		mod.		~15%	slightly damp
40		7:30	tan	clayey fine sand											10^-5		mod.		~17%	
45		7:35	tan	clayey fine sand w/ minor gravel											10^-5		mod.		~15%	very poorly sorted material
50		7:55		clayey silt w/ clay											10^-5		mod.		~17%	SAME

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 2 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SW OF 1/4 SE - 2 N R 3 W

LOGGED BY STROUD DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90° DRILL METHOD Air Rotary R.C. DIAMETER ____ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	HYDRAULIC PROPERTIES MEAS.	INDURATION & STRUCTURE FXS. VOIDS. ETC.	INDURATION & STRUCTURE GRAPHIC	WATER	COMMENTS
	R.C. Air Rotary 5¼"	9-30-92																		
55		9:15	tan	silty clay											10^{-6}		mod.		~28%	clay is partially "balling up"
60		9:30	tan	silty clay w/ fine sand											10^{-5}		mod.		~20%	somewhat "damp" feeling
65		9:45	gy-tan	fine sandy silt											10^{-4}		wk-mod.		~15%	almost "dry + dusty" trace gravel
70		9:00	gy-tan	fine sandy silt											10^{-5}		mod		~15%	more gravel
75		9:02	gy-tan	silty fine sand											10^{-4}		wk-mod		~15%	"flowing sand" almost "dry"
80		9:05	tan	fine sandy silt											10^{-5}		wk-mod		~15%	
85		9:08	tan	clayey fine sandy silt											10^{-5}		WK-mod		~15%	
90		9:10	gy-tan	fine sandy gravel											10^{-4}		wk-mod		~12%	
95		9:12	lt tan-tan	silty fine sand											10^{-5}		wk-mod		~12%	
100		9:15	lt tan-tan	clayey silty fine sand											10^{-4}		wk		~15%	almost damp feeling

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 3 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SW OF 1/4 SE T. 2 N R. 3 W

LOGGED BY Stroud DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90 DRILL METHOD _____ DIAMETER _____ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
R.C. Air Rotary	D.C. AIR Reamer 5¼"	9-30-92																		
105		9:18	lt bn-tan	silty fine sand											10^{-5}		wk-mod		~12-15%	
110		9:20	lt bn-tan	silty fine sand											10^{-3}		wk		~10%	DRY, almost no cly fraction
115		9:25	lt bn-tan	silty fine sand											10^{-4}		wk-mod		~12%	some clay again
120		9:30	lt gy-tan	silty fine sand											10^{-3}		wk		~12%	less clay
125		9:32	lt gy-tan	clayey silt w minor gravel											10^{-5}		wk mod		~12%	
130	START USING AUX. COMPRESSOR MIXER	9:35	lt gy-tan	clayey silt w minor gravel											10^{-5}		wk mod		~12%	almost dry
135	Topping up.	9:40	lt gy-tan	silty fine sand											10^{-4}		wk		~10%	Dry
140		9:45	lt gy-tan	silty fine sand minor gravel											10^{-4}		wk		~12%	
145		9:51	lt gy-tan	silty fine sand											$10^{-3}/10^{-4}$		wk		~15%	almost clean/cleaner sand less clay
150		9:58		silty fine sand											10^{-4}		wk-mod		~17.9%	

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 4 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Stroud DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90 DRILL METHOD _____ DIAMETER _____ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	AIR ROTARY R.C. 5 1/4"																			
155		10:00	lt brn-tan	sandy silt w/ minor gravel											10^{-5}		wk-mod		12-15%	
160		10:10	tan-brn	silty fine sand w/ gravel											10^{-4}		wk-mod		~12-15%	
165		10:20	tan-brn	silty fine sand											10^{-3}		wk		~12%	ALMOST DRY
170	some foaming up on drill stem	10:30	lt brn tan	silty fine sand											10^{-3}		wk		~12%	still "flowing" sand
175		10:40	brn-tan	fine sandy GRAVEL											10^{-3}		wk-mod		~12-15%	LIMONITE STAIN ON MANY CLASTS CLASTS HAVE BEEN WELL ROUNDED
180		10:45	lt brn-tan	fine sandy gravel											10^{-3}		wk-mod		~12%	
185		10:50	tan-brn	fine sand											10^{-3}		wk		~12%	fairly well sorted sand w/ possible few gravel clasts
190		10:55	tan-brn	fine sand											10^{-3}		wk		~12%	clean sand
195		11:00	tan-brn	fine sand											10^{-3}		wk		~10%	DRY
200		11:05	tan brn	silty fine sand											10^{-3}/10^{-4}		wk		~12%	finer sand more silt

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 5 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Steowd DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90 DRILL METHOD _____ DIAMETER _____ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	R.C. AIR ROTARY 5 1/4"	9-30-92																		
205	↓	11:15	tan-brn	silty fine sand											10^{-4}		wk-mod		~12%	ALMOST DRY; "HINT" OF MOISTURE
210		11:25	tan-brn	fine to coarse sand											10^{-3}		wk		~12%	LESS SILT
215		11:30	tan-brn	silty sand											10^{-4}		wk		~12%	MORE SILT AS BEFORE
220		11:40	tan-brn	silty fine sand											10^{-5}		wk-mod		~12%	MORE CLAY
225	drilling slowing down	11:55	tan-brn	fine-coarse sand w/ some GRAVEL											10^{-3}		wk-mod		~10-12%	NO CLAY
230	Torque up	12:10	brn-tan	silty sand w/ gravel											10^{-4}		mod		AIR QUILS inject polymer ~12%	RODS STICKING - silt binding + caving on RODS
235		12:30	brn-tan	silty fine sand											10^{-4}		wk-mod		~12%	
240		12:50	tan-brn	silty fine sand											10^{-4}		wk-mod		~12%	
245		1:20	tan-brn	silty fine sand / fine sandy silt											$10^{-4}/10^{-5}$		wk-mod		~12%	GETTING FINER
250		1:30	tan-brn	fine sandy silt / silt															~12%	

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 6 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO Canyon SEC 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Stowe DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90° DRILL METHOD _____ DIAMETER _____ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS. ETC.	GRAPHIC	WATER	COMMENTS
	R.C. AIR ROTARY 5 1/4"	9-30-92																		
255	↓ Then ream to 12 1/4"	1:45	brn-tan	silty fine sand											10⁻⁴		MOD CONSOLIDATED		~12-15%	TRACE CLAY
260	+ Set Casing from 0 to 270	2:00	brn-tan	f/m sandy silt											10⁻⁵		MOD		~12%	VIRTUALLY DRY + DUSTY
265	270	2:05	brn-tan	f/m sandy silt minor gravel											10⁻⁵		WK-MOD		~12%	
CASING 270	DEGREG.	2:10	lt brn	claystone											10⁻⁶/10⁻⁷		MOD-STR		INJECT POLYMER	INSITU MOISTURE WAS "DRY" SAMPLE WETTED
BOTTOM 272	POLYMER INJECTION SAND-SILT CAVING																			TRACE SAND, MIDDLE SILT
275	TORQUING UP ON RODS	2:15	lt brn	CLAYSTONE											10⁻⁷		MOD-STR		?	WETTED SAMPLE BUT CLAY DUST BEFORE INJECTION
280		2:20	tan	CLAYSTONE											10⁻⁷		MOD-STR		<20%	DUST @ DISCHARGE (DRY) MUCH OF SILT FRACTION BENT COLLECTED @ SAMPLE DISCHARGE AS DUST CLAY BLOWING AWAY
285		2:25	tan	CLAYSTONE											10⁻⁷		MOD-STR		~25%	WETTED BY INJECTION SLIGHTLY
290		2:30	tan	CLAYSTONE											10⁻⁷		MOD-STR		<20%	
295		2:35	tan	CLAYSTONE											10⁻⁷		MOD-STR		<20%	TRIPS OUT - CAN'T GO FURTHER R.C. AIR; WILL REAM 12¼" MUD ROTARY 0-300 FT. END OF SHIFT @ 5:00
300	TRIPS	2:40	tan	CLAYSTONE											10⁻⁷		MOD-STR		<20%	

HOLE NUMBER PB-4 JOB NUMBER T1124091 **HOLLADAY ENGINEERING COMPANY** PAGE 7 OF 13

PROJECT Pickles Butte OWNER Canyon Co LOCATION: CO Canyon SEC 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY STROUD DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90° DRILL METHOD AIR ROTARY DIAMETER 8" DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	8" AIR Rotary	10-13-92																	NO H_2O	REAMED 0-279'
																			INJECT	CHECK FOR WATER - FOUND
																			↓	POSSIBLE RETURN WATER
																				BLOW HOLE WAIT 2 HRS - NO H.
305		7:40	LT-TAN	SILTY CLAY											10^{-6}		WK-MOD CONSOLID			WATER in hole SAMPLE IS NOT REPRESENTATIVE - HOLE REQUIRES BLOWING
	AIR		LT-TAN	SILTY CLAY											10^{-6}		WK-MOD	LOOSE LOW DENSITY CLAY BUT NO OPEN VOIDS	~35%	
	CORE		"	"											-6		"		" ?	
310	↓		"	"											-6		"		" ?	POOR SAMPLE CORE
		2:30	"	"											-6		"		" ?	309 - 311; 2 1/2 ft RECOVERED
	AIR		LT TAN	SILTY CLAY											-6		"		>35%	
	CORE		"	"											-6		"		>35%	CORE ATTEMPT AGAIN
	AGAIN	5:	"	"											-6		"		>35%	LOW RECOVERY (311 - 315
315	↓	5:30	"	"											-6		"		>35%	SAMPLE VERY DAMP - RELEASE
	AIR	10-14-92																		FILM OF MOISTURE ON CORE
	Rotary 5"																			312-313 Pulled for lab test
320	↓	7:15	LT TAN	SILTY CLAY											$10^{-5}/10^{-6}$		WK MOD		>35%	SLIGHTLY DRIER FROM HOT COMPRESSED AIR ROTARY
325		7:25	LT TAN	SILTY CLAY											10^{-6}		WK-MOD		>35%	
330		7:50	LT TAN	CLAYEY SILT											10^{-5}		WK		~35%	
335		8:05	LT TAN	CLAYEY SILT											10^{-5}		WK		~32%	
340		8:15	LT TAN	CLAYEY SILT											10^{-5}		WK		~35%	
345		8:30	LT TAN	CLAYEY SILT											10^{-5}		WK		>35%	QUITE DAMP
350		8:45	LT TAN	CLAYEY SILT											$10^{-5}/-6$		WK		>35%	

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 8 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Strowd DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90 DRILL METHOD _____ DIAMETER _____ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS. ETC.	GRAPHIC	WATER	COMMENTS
	AIR ROTARY 8"	10-14-92																	No H2O INJECTION	
355		9:50	LT TAN	SILTY CLAY											10-6		WK-MOD CONSOLIDATED		~35%	
360		9:00	LT TAN	SILTY CLAY											10-6		WK-MOD		~35%	
ONLY 10% RECOVERY	AIR CORE																			LOST CORE BARREL DOWN HOLE 11:45 – 2:00
365	AIR ROTARY	3:45	LT TAN	CLAYEY SLT											10-5		W/K		~35%	
370		3:50	LT TAN	SILTY CLAY											10-6		WK-MOD		~35%	MORE CLAY
375		3:55	LT TAN	SILTY CLAY											10-6		MOD		~35%	
380		4:00	LT TAN	SILTY CLAY											10-6		MOD		~35%	
385		4:05	LT TAN	SILTY CLAY											10-6		MOD		~35%	
390		4:10	LT TAN	CLAYSTONE											10-7		MOD		>35%	
395		4:15	LT TAN	CLAYSTONE											10-7		MOD		~35%	
400	EOS	4:20	LT TAN	CLAYSTONE											10-7		MOD		~35%	QUITE DAMP

HOLLADAY ENGINEERING COMPANY

HOLE NUMBER PB-4 JOB NUMBER T2120491

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Strowd DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90 DRILL METHOD AIR ROTARY DIAMETER 8" DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	EST. WATER	COMMENTS
	AIR	10-15-92	LT GRN-	CLAY	10^{-7}		WK-MOD		+35%	CHECK FOR WATER - PROBE GOES
	CORE	7:45	BRN	"	-7		CONSOLIDATION		+35%	DOWN TO 388' (TD @ 400) NEGATIVE
			"	"	-7		"		+35%	LEXAN LINER COMPRESSED SPLIT
			LIGHT	"	-7		"		+35%	TUBE IN CORE BARREL MAKING
405	↓	10:20	GRN-BRN	"	-7		"		+35%	EXTRACTION OF SPLIT TUBE DIFFICULT
	AIR								CORE	SAMPLE QUITE DAMP, SOME
	ROTARY									LAMINATED THIN BEDDING
	DRILLING									NO H_2O INJECTION IN HOLE
	DRY		LT.							404 - 405 pulled for lab tests
410		12:05	GRN-BRN	CLAY	-7		MOD. CONSL.		+35%	FORMS CLAY BALLS @ DRILL
										DISCHARGE VERY DAMP
										feeling
415		12:10	LT GRN-BRN	CLAY	-7		MOD CONSL.		+35%	trace silt
420		12:25	GRN-BRN	CLAY	-7		MOD CONSL.		+35%	↑
										OXIDIZED
										REDUCED ↓
425		12:40	BRN-GRY	CLAY	-7		MOD CONSL.		+35%	
430		12:55	BRN-GRY	CLAY	-7		MOD. CONSL.		+35%	TRACE SILT
435		1:05	GRY	CLAY	-7		MOD CONSL.		+35%	
440	EOS	1:20	GRY	CLAY	-7		MOD CONSL.		+35%	DRILLER LEAVES
	Trip in	10-20-92	GRY-GRN-	sand silt			WK-CONSOL.	BROKEN	Groundwater	check after sitting 4-days-none.
60%	for AIR	OXIDIZED	BRN	w/ clay			WK		VERY	(GOT TO WITHIN 3FT OF HOLE
	CORE	"	"	"			WK	AND	DAMP but	BOTTOM) HOLE BLOWN CLEAN. Our
	poor	"	"	"			WK	LOOSE	NOT "WET"	CORE SAMPLE 400-405
445	sample	9:30	"	"	-5 ?? silt?				+35%	appears to be hole sluff
										CORE BIT BURNED + FAILED
										HAVE TO ORDER ANOTHER
										Pull 444-449 for lab tests
450		12:00		fine sl. brown silt	-6		WK		+35%	PARTIALLY OXIDIZED

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 10 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO Canyon SEC 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Stroud DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 660 ANGLE -90 DRILL METHOD AIR ROTARY DIAMETER 8" DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS. VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	HIGH PENETRATION RATE IN THIS MATERIAL	10-20-92																		
455		12:00	GRY-ORN	fine sandy silt											-5		WK		+35%	VERY DAMP PARTIALLY OXIDIZED
460		12:15	GRY-BRN	clayey silt											-6		WK		+35%	BECOMING LESS OXIDIZED
465		12:25	GRN-BRN	clayey silt											-6		WK		~35%	MORE OXIDIZED
470		12:30	DARK BRN	CLAYEY SILT											-5/-6		WK		~35%	
475		12:34	BRN-GRY	CLAYEY SILT											-5/-6		WK		~35%	
480		12:34	BRN-GRY	CLAYEY SILT											-6		WK		+35%	VERY DAMP
485		12:40	BRN GRY	CLAYEY SILT											-5/-6		WK		~35%	
490		12:45	BRN GRY	CLAYEY SILT											-6		WK		+35%	STILL PARTIALLY OXIDIZED
495		12:50	MED GRY	SILTY CLAY											-6/-7		WK-MOD		+35%	QUITE DAMP - MORE CLAY
500		12:55	MED GRY	SILTY CLAY											-7		WK-MOD		+35%	TD @ 500' - Check for water - now DAMP CLAY INCREASING

HOLE NUMBER 7B-4 JOB NUMBER T2120491

HOLLADAY ENGINEERING COMPANY

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Stroud DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90° DRILL METHOD ______ DIAMETER ______ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	AIR	10-20-92																	N°	Clean hole by Trip in + blow
	CORE																			water check 9:00 - 10:00
	NO																			none (10-21-92)
	RECOVERY	10-21-92																		10-20-92 AIR CORE HAD
505	AIR	10:35	DARK GRAY	CLAY											10^-7		WK-MOD		No water	NO RECOVERY DUE TO LOOSE
	ROTARY																CONSOLIDATION		1" morning	FORMATION - AIR BLOWING MATERIAL
																			+35% (500-505)	OUT OF THE TUBE. ROTARY cutting.
																				500-505 VERY DAMP
510		10:40	DARK GRAY	SILTY CLAY											-7		WK-MOD		+35%	MORE SILT - STILL "BALLING"
515		10:45	MED GRAY	SILTY CLAY											-6		WK-LOOSE		~35%	AIR LONGER IN HALLS @ DISCHARGE
520		10:47	MED GRAY	CLAYEY SILT											-5/-6		WK		~35%	
525		10:50	GRAY	SILTY CLAY											-6/-7		WK		~35%	Trace sand
530		10:52	GRAY	CLAY											-7		WK		+35%	
535		10:55	GRAY	SILTY CLAY											-7		WK CONSOL		+35%	
540		10:59	GRAY	SILTY CLAY											-7		WK-MOD		+30%	QUITE DAMP
545		11:01	GRAY	SILTY CLAY											-7		WK to MOD		+35%	
550		11:05	GRAY	SILTY CLAY											-7		[illegible]		+35%	

HOLE NUMBER PB-4 JOB NUMBER T2120491 HOLLADAY ENGINEERING COMPANY PAGE 12 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO. Canyon SEC. 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY Stowell DATE START 9-29-92 DATE FINISHED 10-21 HOLE DEPTH 640 ANGLE -90° DRILL METHOD ____ DIAMETER ____ DRILL MODEL Schramm

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL. PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	AIR ROTARY 8"	10-21-92																		
555		11:10	GRAY	CLAYSTONE											10-7		WK-MOD		~35%	
560		11:14	GRAY	CLAYSTONE											-7		FRK-MOD		+35%	
565		11:16	GRAY	CLAYSTONE											-7		WK-MOD		+35%	VERY DAMP
570		11:20	GRAY	CLAYSTONE											-7		WK-MOD		+35%	VERY DAMP; TRACE SILT
575		11:24	GRAY	CLAYSTONE											-7		WK-MOD		+35%	VERY DAMP ZONE 565-575 or 580 drill screen zone. ALTHOUGH NO APPRECIABLE YIELD EVIDENCE IN HOLE DURING DRILLING.
580		11:28	GRAY	CLAYSTONE											-7		WK-MOD		+35%	
585		11:30	GRAY	CLAYSTONE											-7		MOD CONSOLID		+35%	ABIT HARDER MATERIAL
590		11:35	GRAY	CLAYSTONE											-7		MOD		+35%	
595		11:40	GRAY	CLAYSTONE											-7		MOD		+35%	
															-7					

HOLE NUMBER PD-4 JOB NUMBER 7120491 HOLLADAY ENGINEERING COMPANY PAGE 13 OF 13

PROJECT Pickles Butte OWNER Canyon Co. LOCATION: CO Canyon SEC 21 1/4 SW OF 1/4 SE T 2 N R 3 W

LOGGED BY JTROWD DATE START 9-29-92 DATE FINISHED 10-21-92 HOLE DEPTH 640 ANGLE -90° DRILL METHOD Air Rotary DIAMETER 8" DRILL MODEL Schramm T685

INTERVAL (FT)	DRILL NOTES	DATE TIME	COLOR	LITHOLOGY ROCK TYPE	LITHOLOGY GRAPHIC	GEOPHYSICS LOG	GRAIN SIZE REL PERCENT CLY	SLT	SAND	GRAV	GRAIN ROUNDING ANG	WK	MOD	WELL	HYDRAULIC PROPERTIES EST.	MEAS.	INDURATION & STRUCTURE FXS, VOIDS, ETC.	GRAPHIC	WATER	COMMENTS
	AIR ROTARY 8"	10-21-92																		
605		11:50	GRAY	CLAYSTONE											10-7		MOD CONSOLIDATED		+35%	VERY DAMP
610		11:55	GRAY	CLAYSTONE											-7		MOD		+35%	VERY DAMP
615		12:00	GRAY	CLAYSTONE											-7		MOD		+35%	
620		12:08	GRAY	CLAYSTONE											-7		MOD		+35%	DRILLER FEELS POSSIBLE WATER BEARING ZONE
625		12:15	GRAY	CLAYSTONE											-7		MOD		+35%	ABIT MORE SILT - DRILLER FEELS MAKING MINOR WATER 610-630 POSSIBLE SCREEN ZONE
630		12:20	GRAY	CLAYSTONE											-7		MOD		~35%	ABIT DRIER FEELING
635		12:25	GRAY	CLAYSTONE											-7		MOD		~30-35%	DISTINCTLY LESS MOISTURE PARTIALLY OXIDIZED CLAY CLASTS
640	TD	12:30	GRAY	CLAYSTONE											-7		MOD		~30-35%	WATER CHECK - WATER IN THE PARTIALLY OXIDIZED CLAY CLASTS

APPENDIX F: Gradation & Moisture Analysis

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY PROJECT No: 030496 BY: JB.

SOURCE: PICKLES BUTTE SAMPLE FORMAT: Zip-Lock Bag

SAMPLE NO. GT1 4'-5½' CONTAINER DIMENSIONS: 10¾ x 10¾"

COLLECTION DATE: 11/4/96 MOISTURE ANALYSIS DATE: 12/12/96 DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.90	g	Material or Lithology Name: Poorly Graded Sand w/ gravel (Gravel/sand.) (SP)
2. Wt. Container & Wet Sample	437.67	g	
3. Wt. Container & Dry Sample	417.60	"	Color: DK TAN. % Clay ~~% Silt~~
4. Wt. of Dry Container	13.15		95% Sand 5 % Gravel % Other
5. Wt. of Dry Sample	404.20		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	20.07		Comments:
7. Percent Moisture	4.96		

FORMULA:

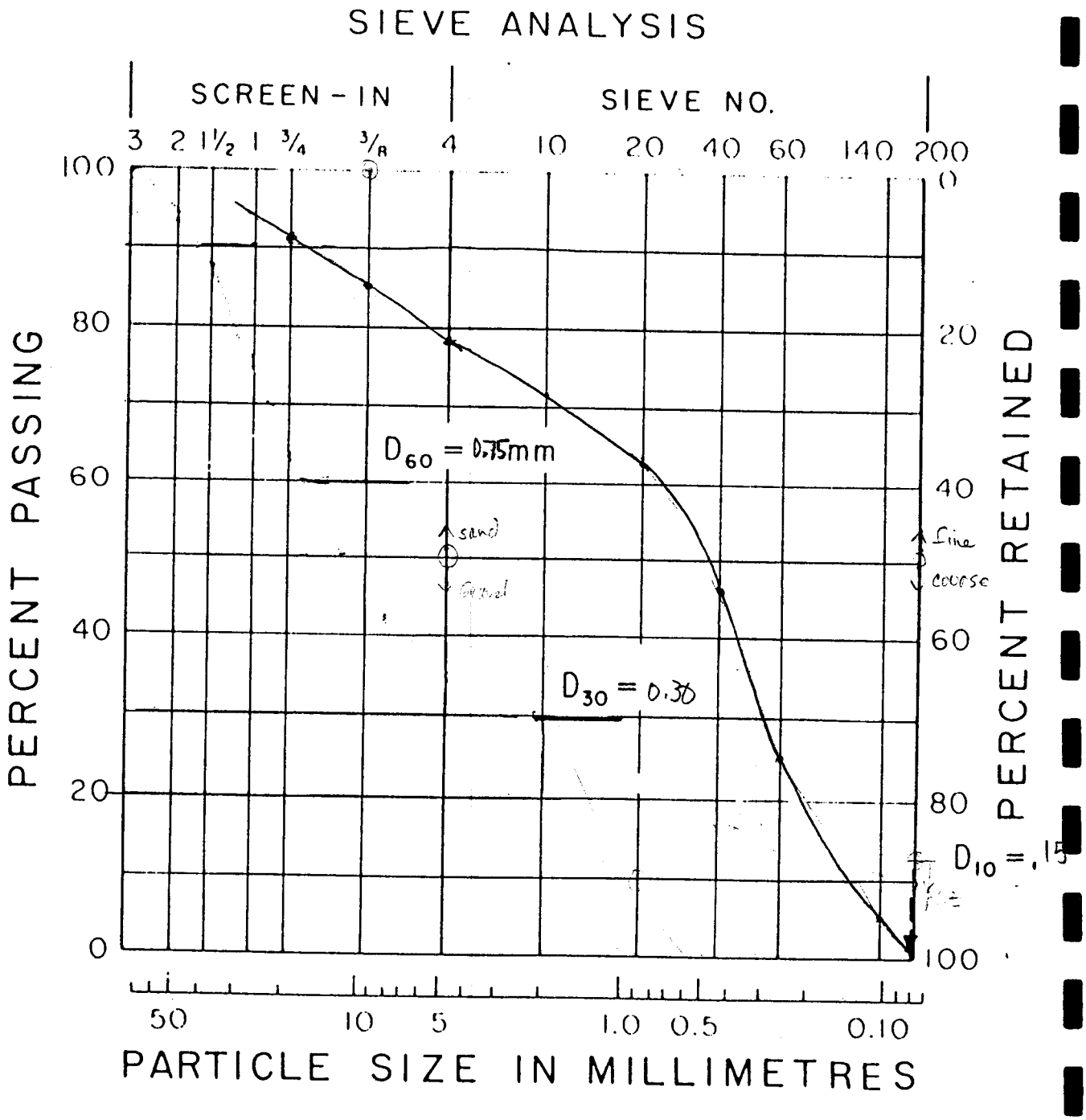
7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/3/96 SIEVE ANALYSIS WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	37.30	37.30	9.23	90.77		
5/8"						
1/2"						
3/8"	25.25	62.55	15.48	84.52		
No 4	24.30	86.85	21.49	78.51		
No 8						
No 10	27.90	114.75	28.39	71.61		
No 12						
No 16						
No 20	33.00	147.75	36.55	63.45		
No 30						
No 40	68.80	216.55	53.57	46.43		
No 50						
No 60	87.90	304.45	75.32	24.68		
No 70						
No 100						
No 140	79.60	384.05	95.01	4.99		
No 200	10.00	394.05	97.49	2.51		
Pan Wt:	9.65	403.70	99.88	.12		
Original Wt:	404.20					
Total Wt:	404.20	403.70	99.88	.12		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

Pickles Butte Landfill
6T-1 4-5½'
poorly graded sand with gravel

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.75}{.15} = 5 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.30)^2}{.15 \times .75} = 0.8$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 10'-11½' | CONTAINER DIMENSIONS: 10¾ X 10¾

COLLECTION DATE: 11/4-6/96 MOISTURE ANALYSIS DATE: 12/9/96 DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	69.3		Material or Lithology Name: Gravel/Sand (SP) → Poorly graded sand
2. Wt. Container & Wet Sample	592.6		
3. Wt. Container & Dry Sample	537.0		Color: Tan % Clay % Silt
4. Wt. of Dry Container	9.8		% Sand % Gravel % Other
5. Wt. of Dry Sample	527.2		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	55.6		Comments: Moist
7. Percent Moisture	10.55		Dark Brown Gravel.

FORMULA:

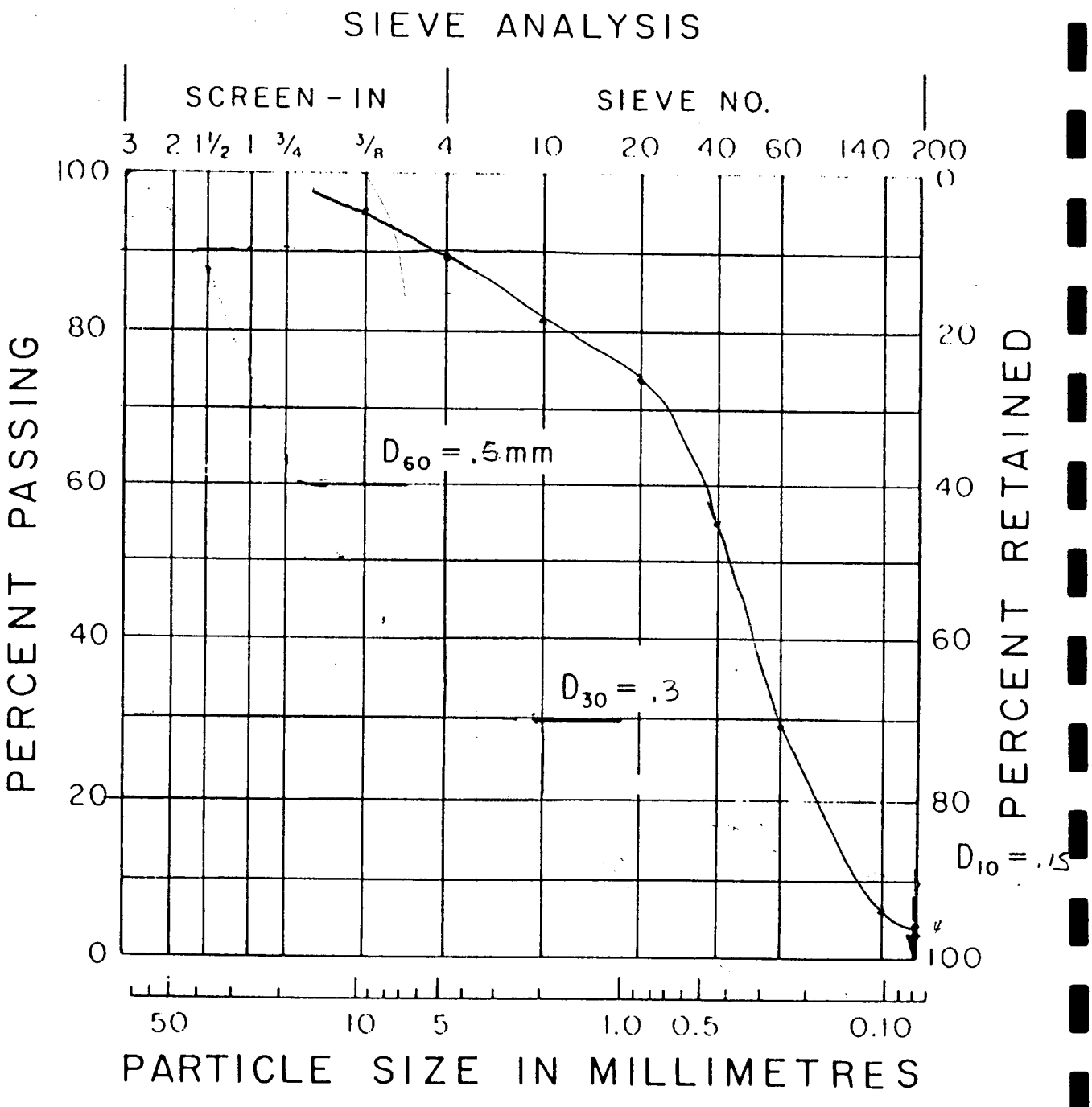
7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	21.2	21.2	4.02	95.98		SOFT-SAND GRAVEL
No 4	34.7	55.9	10.60	89.40		
No 8						
No 10	38.0	93.9	17.81	82.19		
No 12						
No 16						
No 20	41.9	135.8	25.76	74.24		
No 30						
No 40	101.9	237.7	45.09	54.91		
No 50						
No 60	138.2	375.9	71.30	28.70		
No 70						
No 100						
No 140	115.3	491.2	93.17	6.83		
No 200	15.4	506.6	96.09	3.91		
Pan Wt:	20.1	526.7	99.91	.09		
Original Wt:	527.2					
Total Wt:		526.7	99.91	.09		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

GT-1 Pickles Butte Landfill
10-11½'
(SP)
Poorly graded sand

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.5}{.15} = 3.3 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.3)^2}{.15 \times .5} = 1.2$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2-ploc

SAMPLE NO. GT-1 15-16 1/2 | CONTAINER DIMENSIONS: 10 3/4 x 10 3/4

COLLECTION DATE: 11/4-6/96 MOISTURE ANALYSIS DATE: 12/9/96 DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.8	g	Material or Lithology Name: SP-SM poorly graded sand w/ silt
2. Wt. Container & Wet Sample	594.1		[Silt / Sand]
3. Wt. Container & Dry Sample	543.4		Color: Tan % Clay % Silt
4. Wt. of Dry Container	13.3		% Sand % Gravel % Other
5. Wt. of Dry Sample	530.1		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	50.7		Comments: Moist
7. Percent Moisture	9.56		

FORMULA:

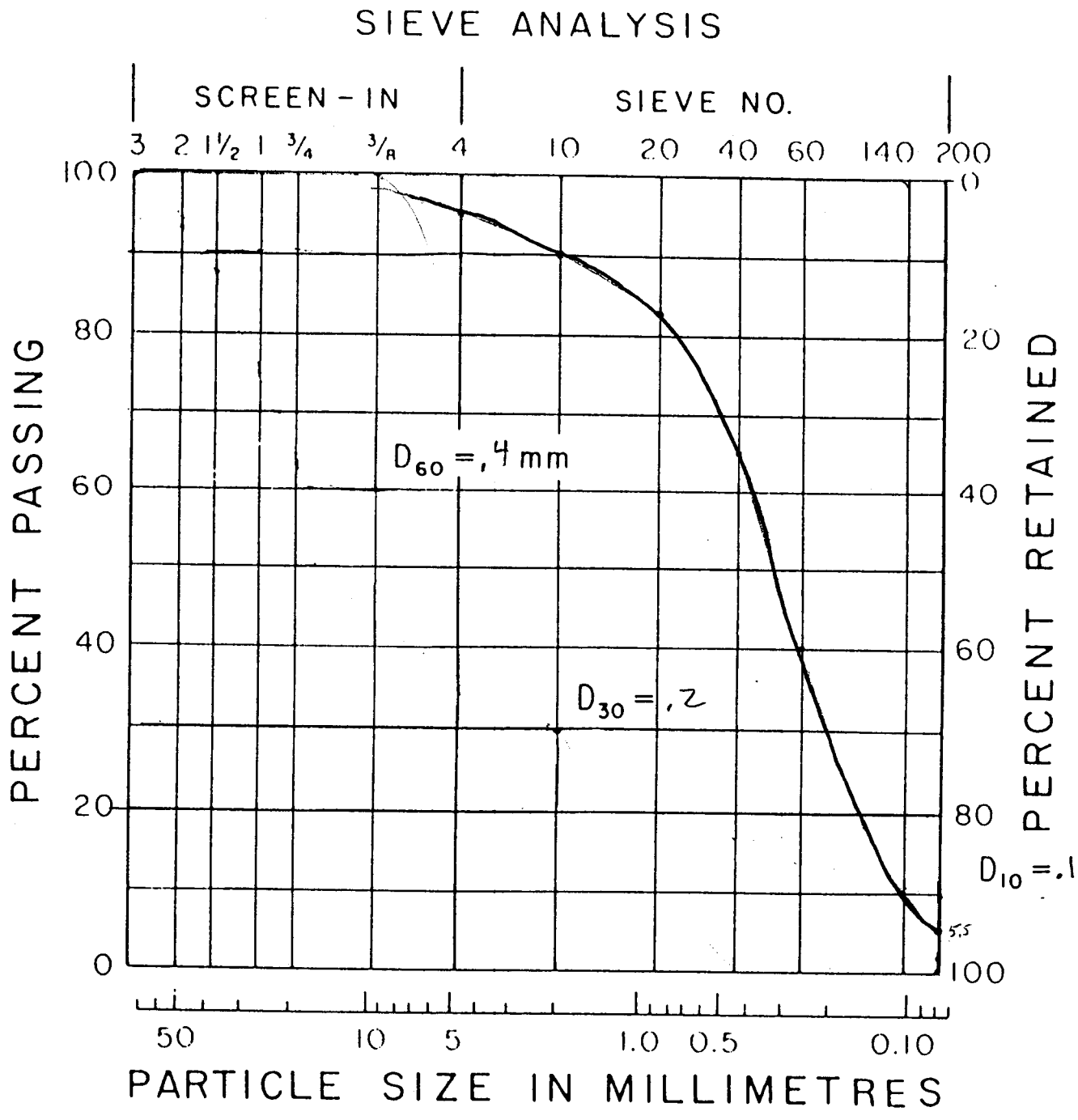
7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Rel.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	-0-	-0-	-0-	-0-		
No 4	23.8	23.8	4.49	95.51		~~soft Sand~~
No 8						
No 10	30.1	53.9	10.17	89.83		
No 12						
No 16						
No 20	37.3	91.2	17.20	82.80		
No 30						
No 40	95.7	186.6	35.26	64.74		
No 50						
No 60	129.5	316.1	56.63	40.37		
No 70						
No 100						
No 140	160.5	476.6	89.91	10.09		
No 200	24.5	501.1	94.53	5.47		
Pan Wt:	29.7	530.8	100.13	-13		
Original Wt:	530.1					
Total Wt:		530.8	100.13	-13		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Rel.		

Pickles Butte Landfill
GT-1 15-16½'
SP-SM
poorly graded sand with silt

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.4}{.1} = 4 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.2)^2}{.1 \times .4} = 1.0$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 20'-21½' | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/26/96 | MOISTURE ANALYSIS DATE: 12/9/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	309.4	g	Material or Lithology Name: poorly graded Sand GRAVEL / SAND (SP)
2. Wt. Container & Wet Sample	655.2		
3. Wt. Container & Dry Sample	605.15		Color: TAN % Clay % Silt
4. Wt. of Dry Container	6.85		% Sand % Gravel % Other
5. Wt. of Dry Sample	598.3		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	53.05		Comments: MOIST.
7. Percent Moisture	8.87		

FORMULA:

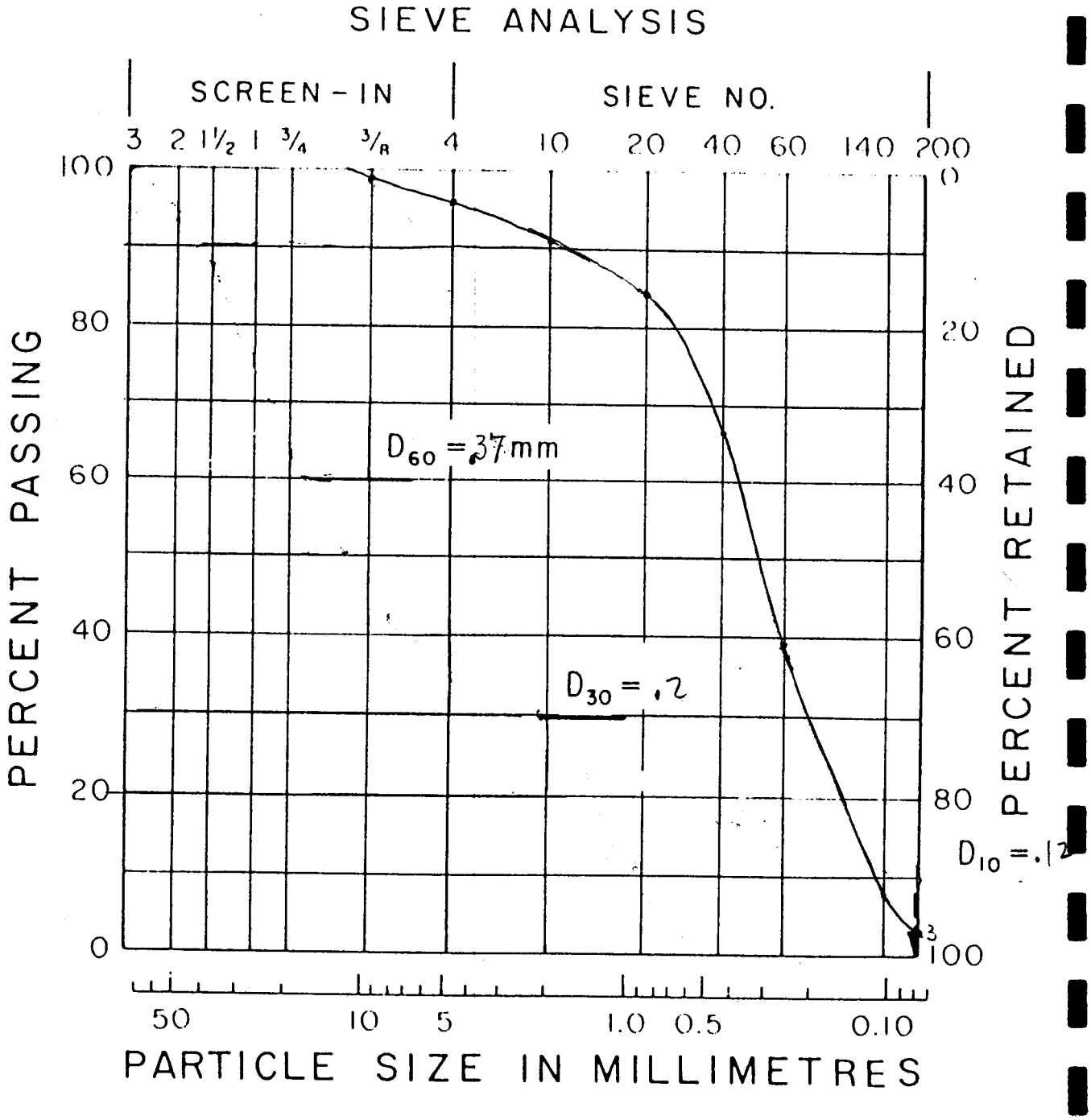
7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	4.0	4.0	.67	99.33		Hard Sand-Stone
No 4	20.45	24.45	4.09	95.91		
No 8						
No 10	28.85	53.3	8.91	91.09		soft SAND GRAVEL
No 12						
No 16						
No 20	41.3	94.6	15.81	84.19		
No 30						
No 40	106.2	200.8	33.56	66.44		
No 50						
No 60	163.2	364.0	60.84	39.16		
No 70						
No 100						
No 140	189.4	553.4	92.50	7.50		
No 200	27.0	580.4	97.01	2.99		
Pan Wt:	28.25	608.65	101.73	-1.73		
Original Wt:	598.3					
Total Wt:		608.65	101.73	-1.73		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

GT-1 Pickles Bottle Landfill
20-21½
(SP) poorly graded sand

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.37}{.12} = 3.1 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.2)^2}{.12 \times .37} = .9$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-1 25'-26½' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/9/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.0	g	Material or Lithology Name: Silty sand (SM)
2. Wt. Container & Wet Sample	710.2		Gravel / SILT / SAND
3. Wt. Container & Dry Sample	636.2		Color: DK / TAN % Clay % Silt 20
4. Wt. of Dry Container	6.8		% Sand 79 % Gravel / % Other
5. Wt. of Dry Sample	629.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	74.		Comments: MED-MOIST
7. Percent Moisture	11.76		Dark Brown Gravel. Small.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Rel.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	-0-	-0-	-0-	-0-		
No 4	23.1	23.1	3.67	96.33		SOFT SAND. 1% GRAVEL
No 8						
No 10	44.4	67.5	10.73	89.27		
No 12						
No 16						
No 20	45.9	113.4	18.03	81.97		
No 30						
No 40	76.15	189.55	30.13	69.87		
No 50						
No 60	116.65	306.2	48.67	51.33		
No 70						
No 100						
No 140	211.2	517.4	82.24	17.76		
No 200	34.5	551.9	87.73	12.27		
Pan Wt:	60.0	611.9	97.27	2.73		
Original Wt:	629.1					
Total Wt:		611.9	97.27	2.73		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Rel.		

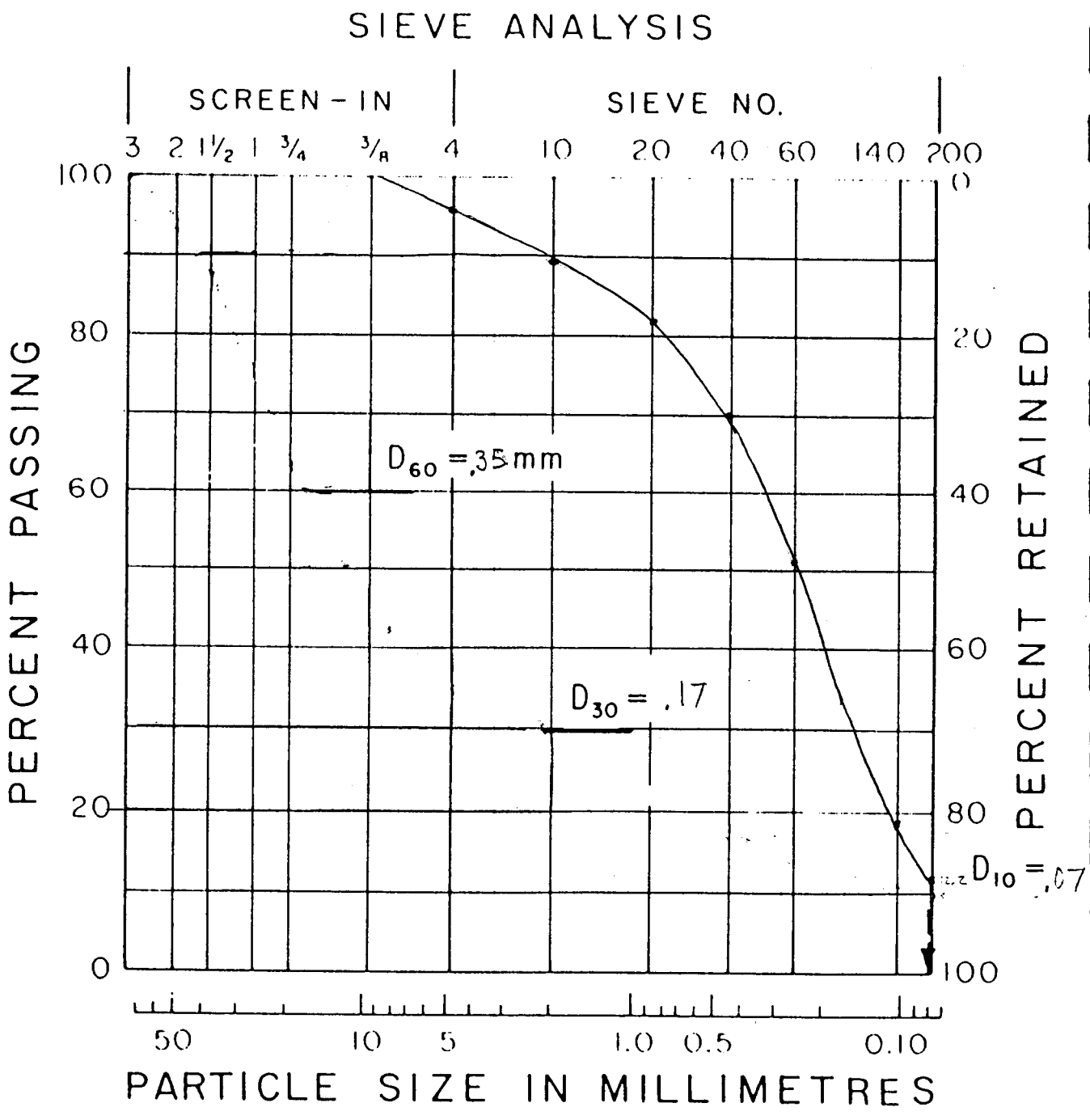
698.6 69.5

GT-1 Pickles Butte Landfill

25-26½

(SM) silty sand

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.35}{.07} = 5 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.17)^2}{.07 \times .35} = 1.2$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-1 30'-31½' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/9/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.9	g	Material or Lithology Name: [SILT/SAND] (SM) silty sand
2. Wt. Container & Wet Sample	729.7		
3. Wt. Container & Dry Sample	661.3		Color: DK TAN % Clay % Silt
4. Wt. of Dry Container	6.8		% Sand % Gravel % Other
5. Wt. of Dry Sample	654.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	68.4		Comments: MED-MOIST
7. Percent Moisture	10.45		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

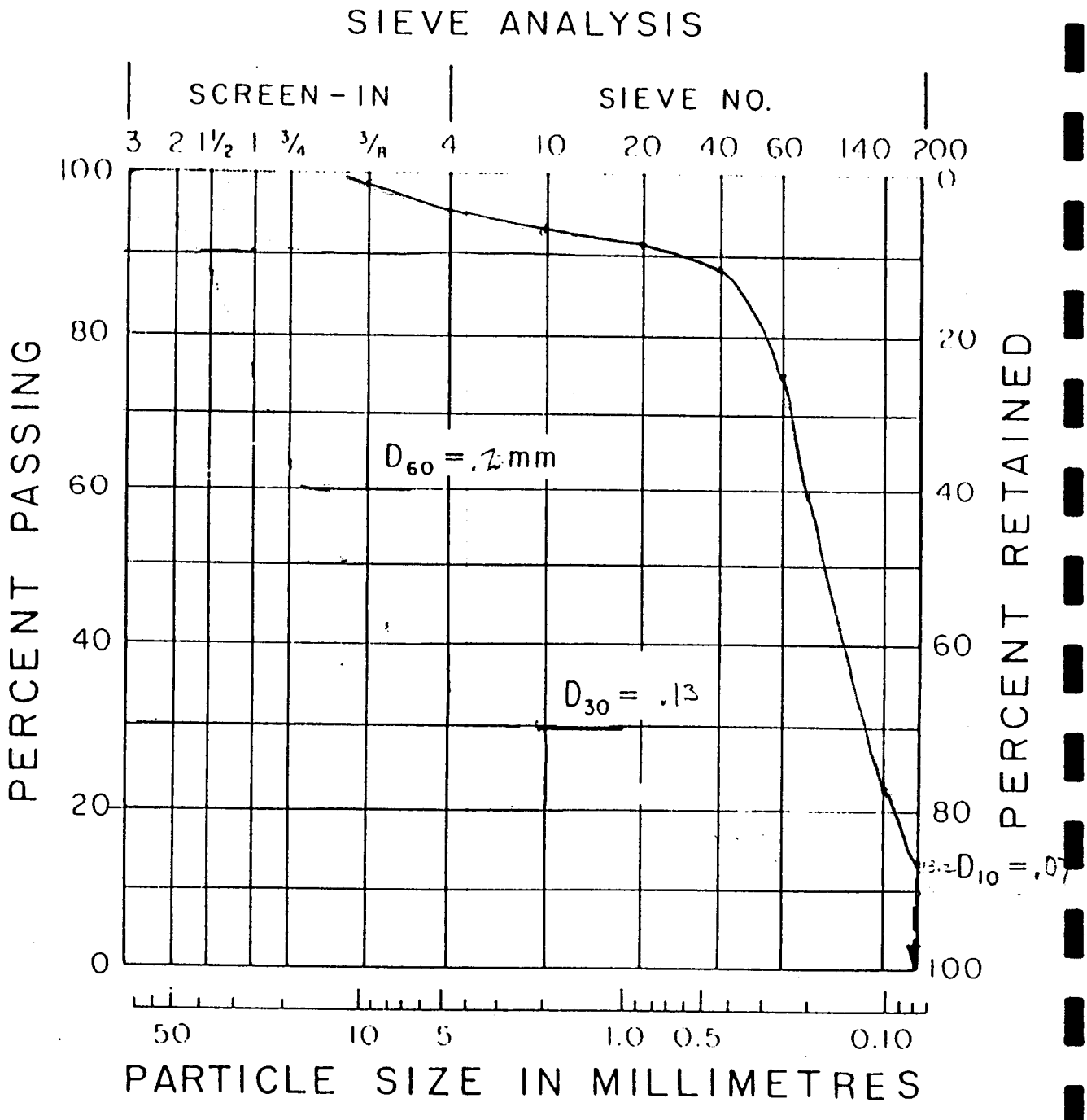
Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	9.65	9.65	1.47	98.53		SOFT-SAND
No 4	13.1	22.75	3.48	96.52		"
No 8						
No 10	14.65	37.4	5.71	94.29		
No 12						
No 16						
No 20	17.6	55.0	8.40	91.60		
No 30						
No 40	24.9	79.9	12.21	87.80		
No 50						
No 60	89.7	169.6	25.91	74.09		
No 70						
No 100						
No 140	332.2	501.8	76.67	23.33		
No 200	66.55	568.35	86.84	13.16		
Pan Wt:	85.0	653.35	99.82	.18		
Original Wt:	654.5					
Total Wt:		653.35	99.82	.18		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

GT-1 Dickles Butte Landfill

30-31½

(SM) silty sand

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.2}{.07} = 2.9 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.13)^2}{.07 \times .2} = 1.2$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 35'-36 1/2' | CONTAINER DIMENSIONS: 4 x 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/9/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.5	g	Material or Lithology Name: GRAVEL/SAND (SP) poorly graded sand
2. Wt. Container & Wet Sample	684.35		
3. Wt. Container & Dry Sample	651.5		Color: ~~DK Brown~~ Tan % Clay % Silt
4. Wt. of Dry Container	6.7		% Sand % Gravel % Other
5. Wt. of Dry Sample	644.9		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	32.85		Comments: Med- Moist.
7. Percent Moisture	5.09		FEOL Gravel is DK Brown.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

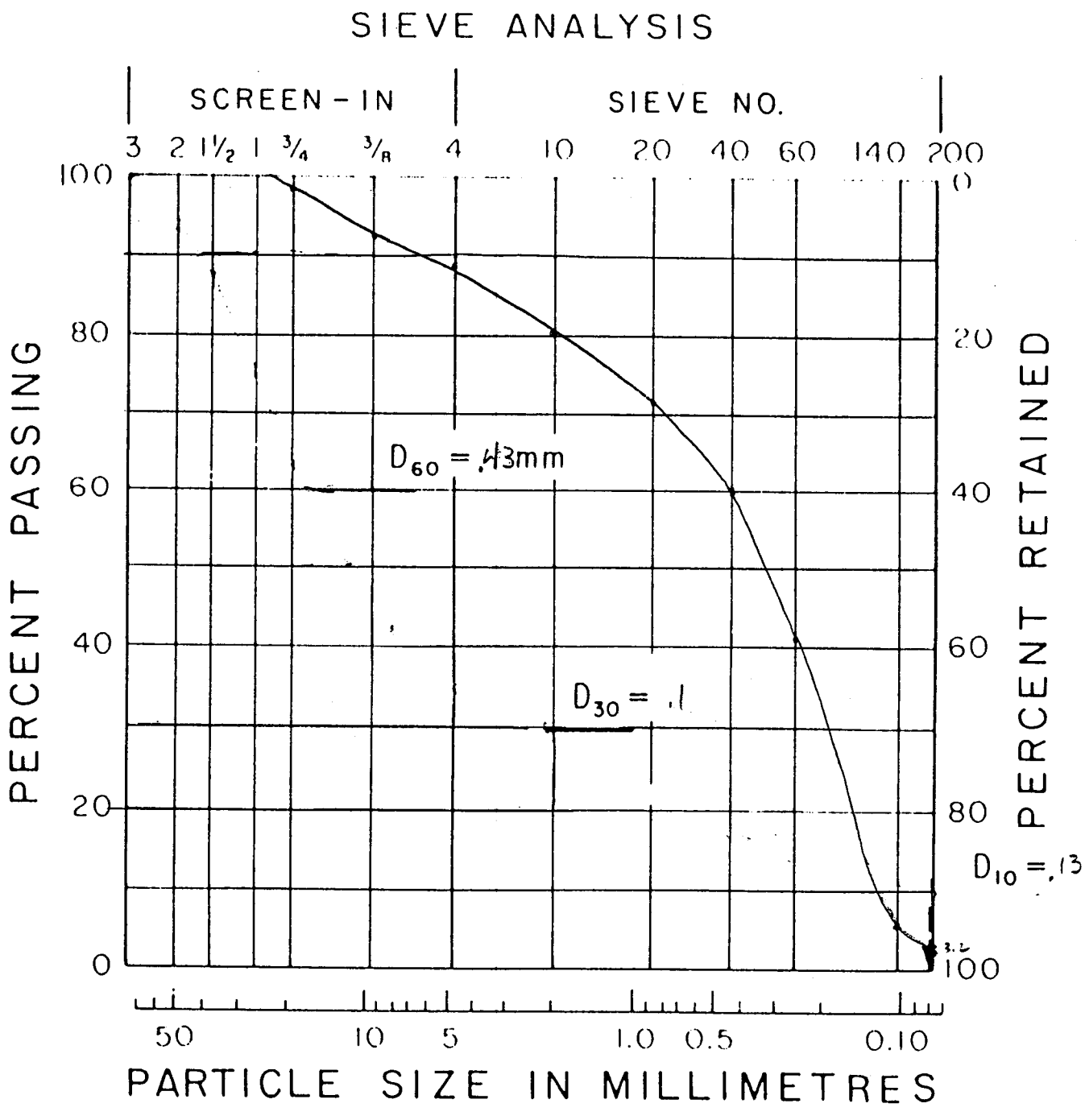
Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	10.1	10.1	1.57	98.43		
5/8"						
1/2"						
3/8"	36.0	46.1	7.15	92.85		
No 4	31.7	77.8	12.06	87.9		
No 8						
No 10	49.4	127.2	19.72	80.28		
No 12						
No 16						
No 20	54.1	181.3	28.11	71.89		
No 30						
No 40	76.0	257.3	39.9	60.10		
No 50						
No 60	125.1	382.4	59.3	40.70		
No 70						
No 100						
No 140	220.8	603.2	93.53	6.47		
No 200	20.9	624.1	98.77	3.23		
Pan Wt:	23.1	647.2	100.36	-.36		
Original Wt:	644.9					
Total Wt:		647.2	100.36	-.36		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

GT-1 Pickles Butte landfill

35-36½

(SP) poorly graded sand

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.43}{.13} = 3.3 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.1)^2}{.13 \times .43} = .18$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 zploc

SAMPLE NO. GT-1 45'-46½' | CONTAINER DIMENSIONS: 7X8

COLLEGTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/9/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	209.6	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	662.2		SAND.
3. Wt. Container & Dry Sample	621.2		Color: 4 1/ TAN % Clay % Silt
4. Wt. of Dry Container	6.9		% Sand % Gravel % Other
5. Wt. of Dry Sample	614.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	41.0		Comments: Moist To DRY
7. Percent Moisture	6.67		FEOX

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

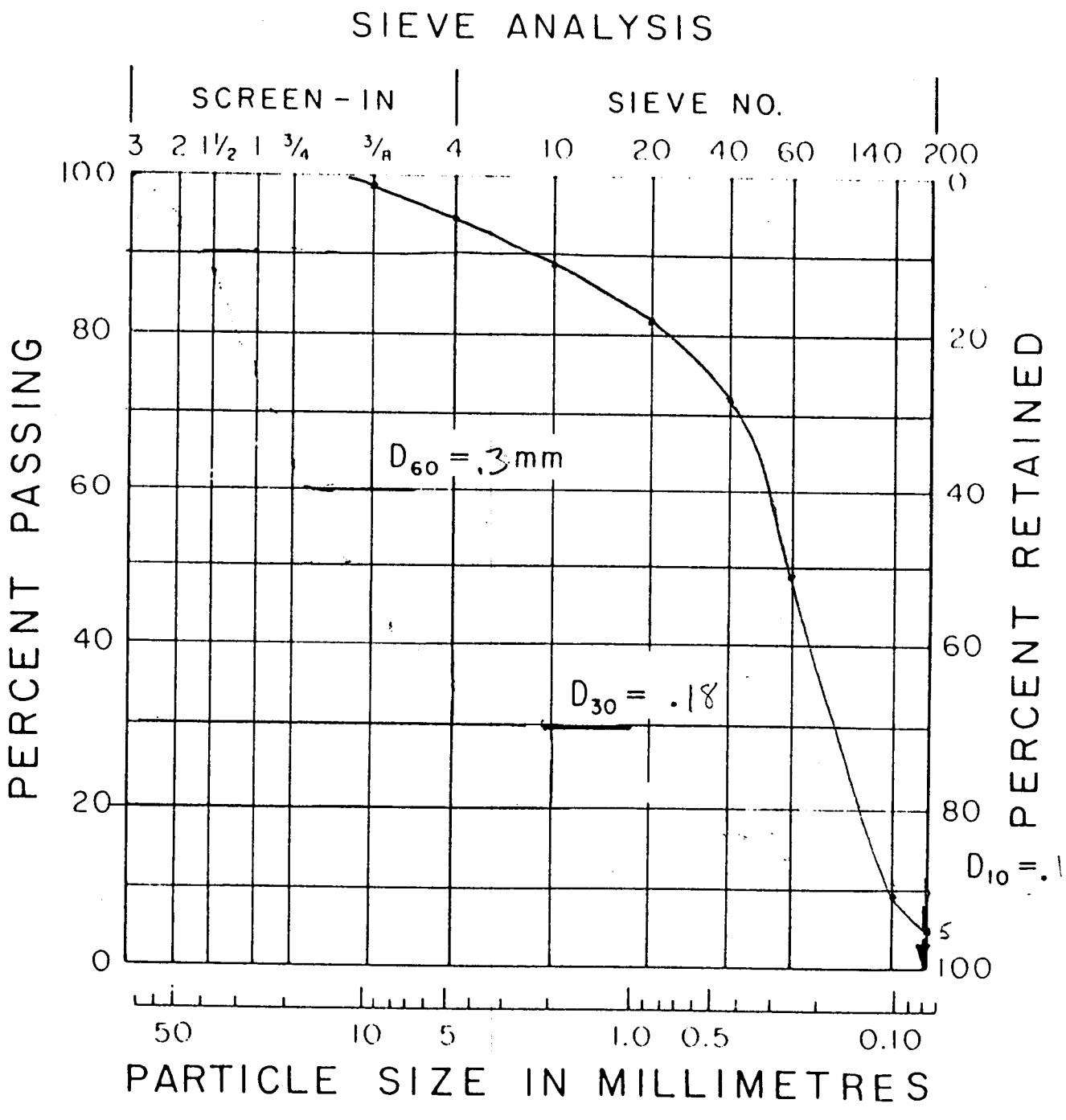
SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	10.8	10.8	1.76	98.24		FEOX Dark/Rust. Hard Sand
No 4	23.5	34.3	5.58	94.42		
No 8						
No 10	39.1	73.4	11.95	88.05		
No 12						
No 16						
No 20	36.0	109.4	17.80	82.19		50% FEOX
No 30						Dark
No 40	62.5	171.9	27.98	72.02		
No 50						
No 60	145.9	317.8	51.73	48.27		
No 70						
No 100						
No 140	241.6	559.4	91.05	8.95		
No 200	23.9	583.3	94.94	5.06		
Pan Wt:	30.9	614.2	99.96	.03		
Original Wt:	614.4					
Total Wt:		614.2	99.96	.03		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

GT-1 Pickles Butte Landfill

45-46½ (SP-SM) poorly graded sand with silt

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.3}{.1} = 3 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.18)^2}{.1 \times .3} = 1.1$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2-gallon

SAMPLE NO. GT-1 50'-51½' | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/11/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	61.8	g	Material or Lithology Name: SP-SM
2. Wt. Container & Wet Sample	635.9		SAND Poorly graded fine sand, with SILT
3. Wt. Container & Dry Sample	616.8		Color: TAN % Clay % Silt
4. Wt. of Dry Container	6.9		% Sand % Gravel % Other
5. Wt. of Dry Sample	603.9		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	25.1		Comments:
7. Percent Moisture	4.16		MOIST

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/12/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

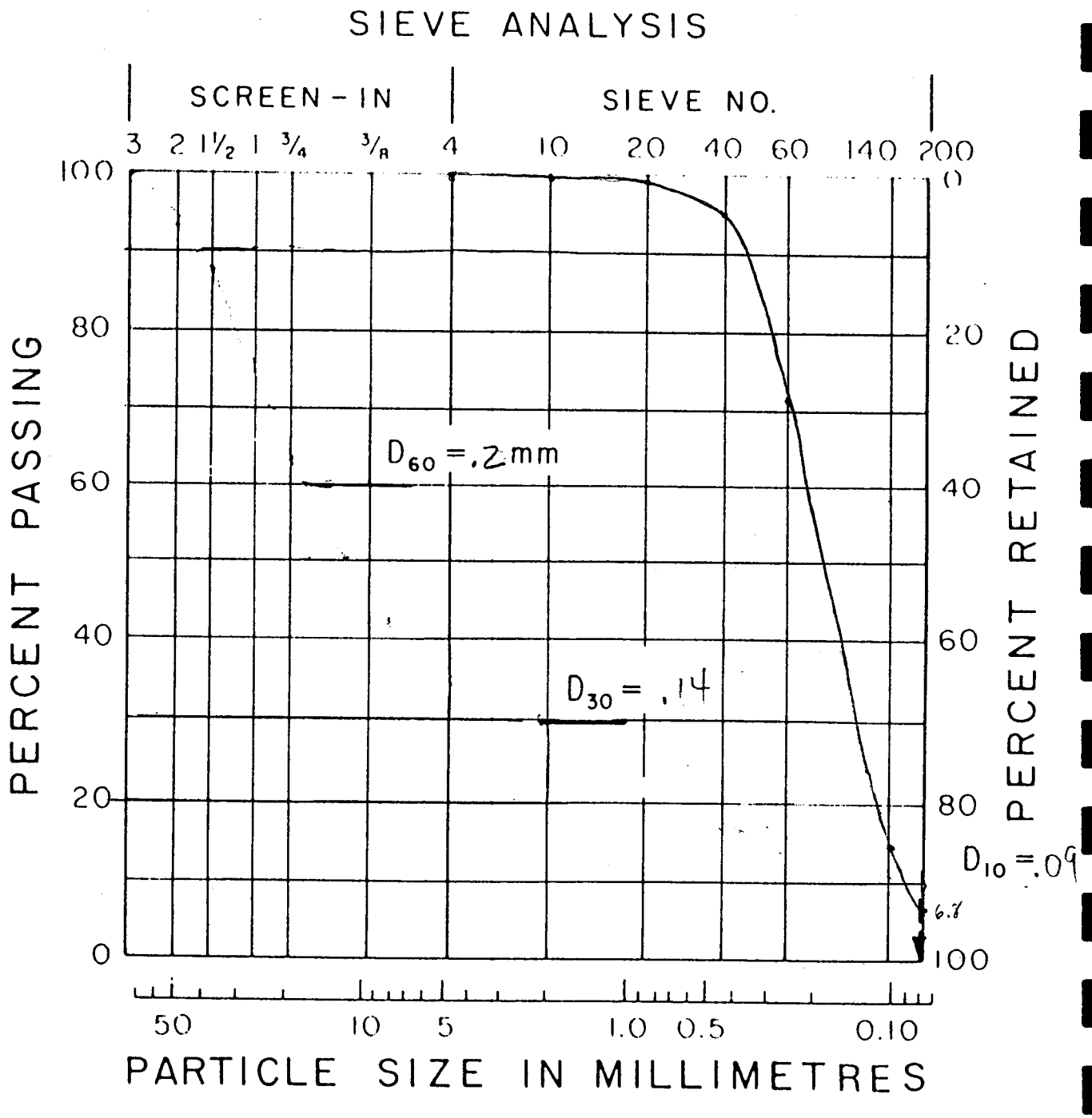
Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4	.3	.3	.05	99.95		
No 8						
No 10	2.4	2.7	.45	99.55		
No 12						
No 16						
No 20	2.85	5.55	.92	99.08		
No 30						
No 40	26.6	32.15	5.32	94.68		
No 50						
No 60	144.3	176.45	29.22	70.78		
No 70						
No 100						
No 140	344.75	521.2	86.31	13.69		
No 200	41.75	562.95	93.22	6.78		
Pan Wt:	38.4	601.35	99.58	.42		
Original Wt:	603.9					
Total Wt:		601.35	99.58	.42		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

GT-1 Pickles Bottle Landfill

50-51½ Poorly graded sand with silt

(SP-SM)

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.2}{.09} = 2.2 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.14)^2}{.09 \times .2} = 1.1$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2-gloc.

SAMPLE NO. GT-1 55'-56 1/2' | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/4-6/96 MOISTURE ANALYSIS DATE: 12/10/96 DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.9	g	Material or Lithology Name: (SP) poorly graded Sand. Gravel / Clay / Sand
2. Wt. Container & Wet Sample	748.9		
3. Wt. Container & Dry Sample	712.9		Color: 4/TAN % Clay % Silt
4. Wt. of Dry Container	7.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	705.8		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	36.		Comments: MOIST Almost DRY
7. Percent Moisture	5.1		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/11/96

SIEVE ANALYSIS

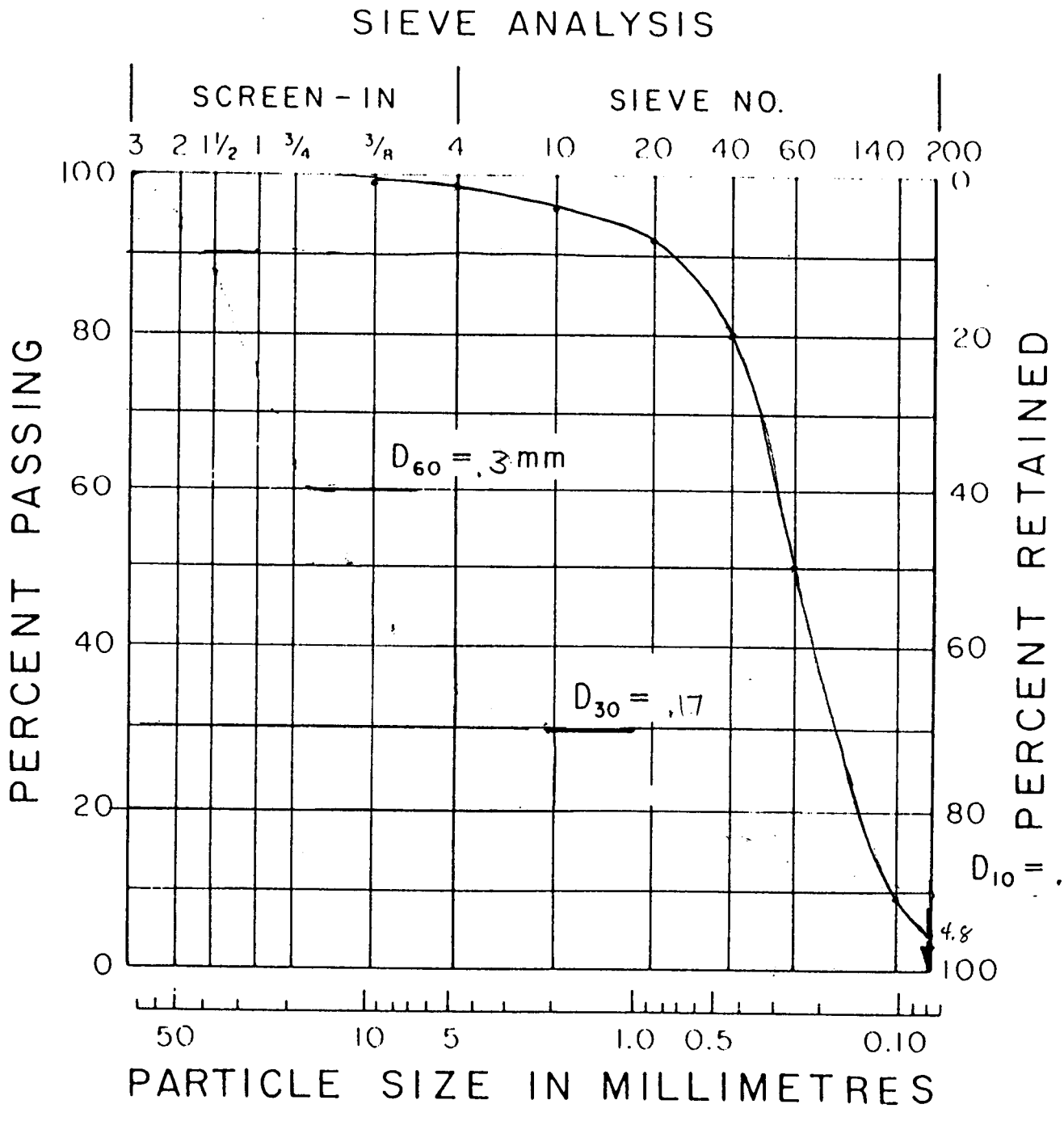
WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	4.9	4.9	.69	99.31		CLAY-COATED WITH SAND & FEOX
No 4	8.2	13.1	1.86	98.14		
No 8						Hard
No 10	12.2	25.3	3.59	96.41		
No 12						
No 16						COARSE
No 20	27.5	52.8	7.49	92.51		SAND
No 30						
No 40	90.0	142.8	20.25	79.75		
No 50						
No 60	211.0	353.8	50.16	49.84		
No 70						
No 100						
No 140	288.5	642.3	91.07	8.93		
No 200	29.1	671.4	95.19	4.81		
Pan Wt:	35.6	707.0	100.24	-.24		
Original Wt:	705.3					
Total Wt:		707.0	100.24	-.24		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

204.5.

GT-1 Pickles Butte Landfill
55-56½ (SP) poorly graded sand

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.3}{.1} = 3 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.17)^2}{.1 \times .3} = 1$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 60'-61 1/2' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/10/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	211.4	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	659.6		Sand
3. Wt. Container & Dry Sample	632.0		Color: Tan % Clay % Silt
4. Wt. of Dry Container	6.8		% Sand % Gravel % Other
5. Wt. of Dry Sample	625.2		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	27.0		Comments: Moist almost Dry.
7. Percent Moisture	4.32		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/11/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

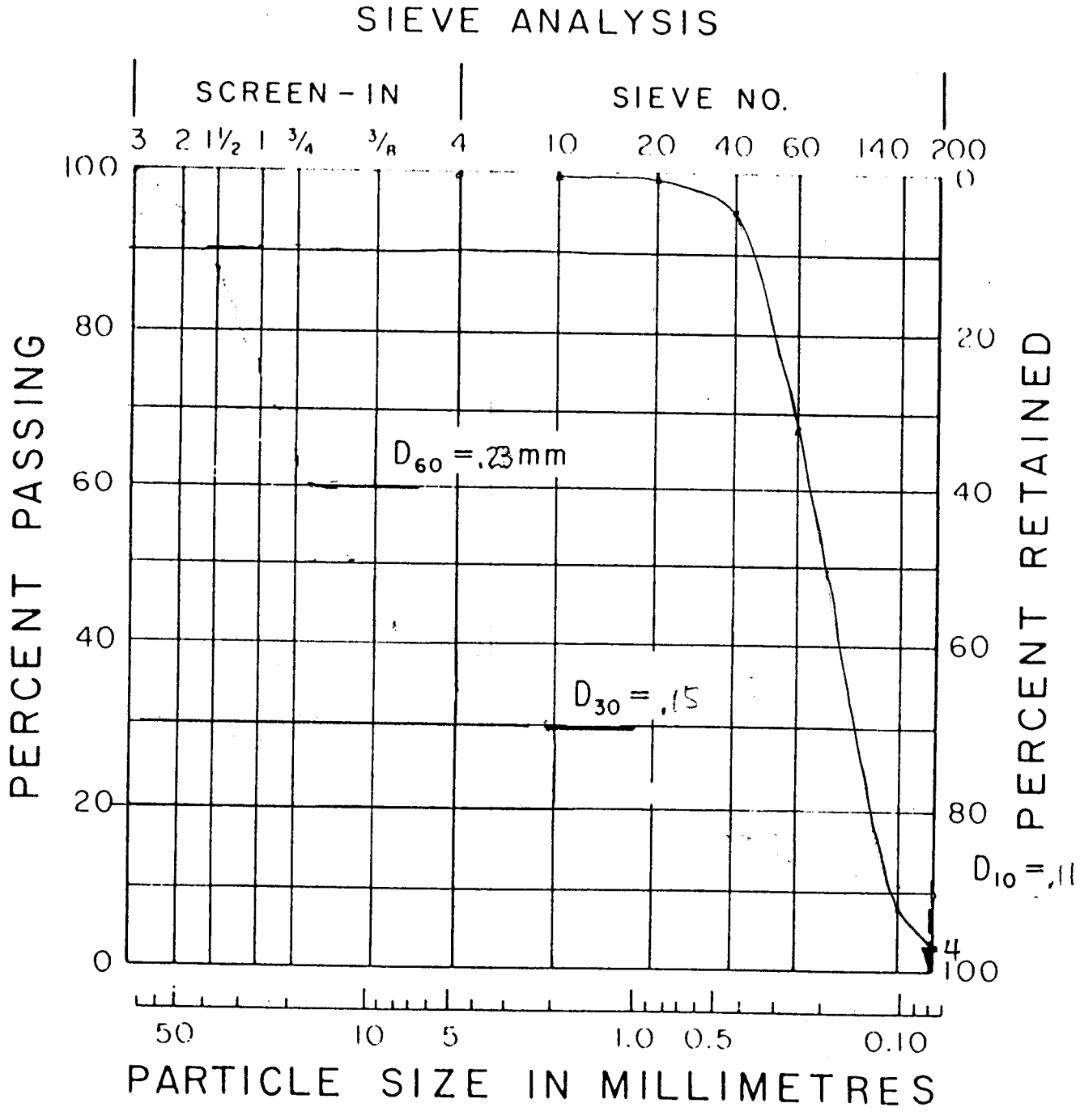
Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Rel.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	-0-	-0-	-0-	-0-		
No 4	.45	.45	.07	99.93		
No 8						
No 10	2.7	3.15	.50	99.50		
No 12						
No 16						
No 20	3.6	6.75	1.08	98.92		
No 30						
No 40	26.1	32.85	5.26	94.74		
No 50						
No 60	167.8	200.65	32.10	67.90		
No 70						
No 100						
No 140	373.9	574.55	91.91	8.09		
No 200	25.65	600.2	96.02	3.98		
Pan Wt:	24.85	625.05	100.00	-0-		
Original Wt:	625.1					
Total Wt:		625.05	100.0	-0-		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Rel.		

211.3

GT-1 Pickles Bottle Landfill

60-61½ (SP) poorly graded sand

ASTM D 2487



$$Cu = \frac{D_{60}}{D_{10}} = \frac{.23}{.15} = 1.5 \qquad Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}} = \frac{(.15)^2}{.11 \times .23} = 5.9$$

Cumulative Particle-Size Plot

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 up loc

SAMPLE NO. GT-1 70'-71½' | CONTAINER DIMENSIONS: 7 X 8

COLLECTION DATE: 11/[illegible]6/96 | MOISTURE ANALYSIS DATE: 12/10/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.8	g	Material or Lithology Name: SAND
2. Wt. Container & Wet Sample	759.3		
3. Wt. Container & Dry Sample	712.3		Color: 4/TAN % Clay % Silt
4. Wt. of Dry Container	7.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	705.2		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	47.0		Comments: Moist
7. Percent Moisture	6.66		FEOX

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/11/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	9.2	9.2	1.30	98.70		sand. Consol. Sand. FEOX
No 4	2.55	11.75	1.67	98.33		
No 8						
No 10	4.6	16.35	2.32	97.68		
No 12						
No 16						
No 20	7.0	23.35	3.31	96.69		
No 30						
No 40	15.45	38.8	5.50	94.50		
No 50						
No 60	77.8	116.6	16.53	83.47		
No 70						
No 100						
No 140	335.95	652.55	92.53	7.47		
No 200	32.0	684.55	97.09	2.93		
Pan Wt:	21.1	705.65	100.06	-.06		
Original Wt:	705.2					
Total Wt:		705.65	100.06	-.06		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 65'-66 1/2 | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/10/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	206.9	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	755.9		SAND
3. Wt. Container & Dry Sample	704.6		Color: Y/TAN. % Clay % Silt
4. Wt. of Dry Container	7.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	697.6		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	51.3		Comments: Moist
7. Percent Moisture	7.35		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/11/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	20.25	20.25	2.90	97.10		Comp. Sand. Hard. FEOX
No 4	16.35	36.6	5.25	94.75		
No 8						
No 10	8.05	44.65	6.40	93.60		
No 12						
No 16						
No 20	9.25	53.9	7.73	92.27		
No 30						
No 40	12.45	66.35	9.51	90.49		
No 50						
No 60	46.1	112.45	16.12	83.88		
No 70						
No 100						
No 140	508.45	620.9	89.02	10.98		
No 200	48.1	669.0	95.92	4.08		
Pan Wt:	28.25	697.25	99.97	.03		
Original Wt:	697.45					
Total Wt:		697.25	99.97	.03		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

206.75

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 mil bag

SAMPLE NO. GT-1 75'-76 1/2' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/9/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	61.8	g	Material or Lithology Name: SAND.
2. Wt. Container & Wet Sample	805.6		
3. Wt. Container & Dry Sample	751.3		Color: TAN % Clay % Silt
4. Wt. of Dry Container	7.2		% Sand % Gravel % Other
5. Wt. of Dry Sample	744.1		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	54.3		Comments: Moist
7. Percent Moisture	7.30		FEOY

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	5.3	5.3	.71	99.29		~~Coarse sand.~~ FEOX
5/8"						
1/2"						
3/8"	2.9	8.2	1.10	98.90		
No 4	5.9	14.1	1.89	98.11		
No 8						
No 10	4.8	18.9	2.54	97.46		
No 12						
No 16						
No 20	8.2	27.1	3.64	96.36		
No 30						
No 40	11.35	38.45	5.17	94.83		
No 50						
No 60	31.90	70.35	9.45	90.55		
No 70						
No 100						
No 140	552.70	623.05	83.73	16.27		
No 200	73.55	696.6	93.62	6.38		
Pan Wt:	47.20	743.8	99.96	.04		
Original Wt:	744.1					
Total Wt:		743.8	99.96	.04		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100 − Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 80-81 1/2' | CONTAINER DIMENSIONS: 7X8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/10/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	207.6	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	814.9		SILT/SAND
3. Wt. Container & Dry Sample	760.6		Color: 41/TAN % Clay % Silt
4. Wt. of Dry Container	7.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	753.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	54.3		Comments: Moist.
7. Percent Moisture	7.21		FEOX

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/11/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	12.7	12.7	1.69	98.31		hard sand.
No 4	15.3	28.0	3.72	96.28		
No 8						
No 10	9.5	37.5	4.98	95.02		
No 12						
No 16						
No 20	7.9	45.4	6.03	93.97		
No 30						
No 40	13.5	58.9	7.82	92.18		
No 50						
No 60	25.9	84.8	11.26	88.74		
No 70						
No 100						
No 140	525.2	610.0	80.99	19.01		
No 200	86.3	696.3	92.45	7.55		
Pan Wt:	57.95	754.25	100.14	-.14		
Original Wt:	753.2					
Total Wt:		754.25	100.14	-.14		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

207.3

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 mylar

SAMPLE NO. GT-1 85 86 1/2' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 MOISTURE ANALYSIS DATE: 12/10/96 DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.6	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	853.55		Clay / Sand
3. Wt. Container & Dry Sample	780.25		Color: Tan % Clay % Silt
4. Wt. of Dry Container	6.85		% Sand % Gravel % Other
5. Wt. of Dry Sample	773.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	73.3		Comments:
7. Percent Moisture	9.48		FEOX Moist.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/11/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	25.0	25.0	3.23	96.77		Soft - Clay Sand mixed
No 4	38.4	63.4	8.20	91.80		
No 8						
No 10	60.2	123.6	15.98	84.02		
No 12						
No 16						
No 20	33.95	157.55	20.37	79.63		
No 30						
No 40	19.85	177.4	22.94	77.06		
No 50						
No 60	20.01	197.5	25.54	74.46		
No 70						
No 100						
No 140	436.8	634.3	82.01	17.99		
No 200	71.3	705.6	91.23	8.77		
Pan Wt:	68.8	774.4	100.13	-.13		
Original Wt:	773.4					
Total Wt:		774.4	100.13	-.13		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Zipbag

SAMPLE NO. GT-1 90'-91 1/2' | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/26/96 | MOISTURE ANALYSIS DATE: 12/9/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	206.8	g	Material or Lithology Name: SILT / SAND / CLAY
2. Wt. Container & Wet Sample	776.5		
3. Wt. Container & Dry Sample	700.2		Color: TAN % Clay % Silt
4. Wt. of Dry Container	7.2		% Sand % Gravel % Other
5. Wt. of Dry Sample	693.2		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	76.3		Comments: Moist
7. Percent Moisture	11.00		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	36.8	36.8	5.31	94.69		Hard Clay and SAND
No 4	51.2	88.0	12.69	87.31		
No 8						
No 10	41.4	129.4	18.67	81.33		
No 12						
No 16						
No 20	27.0	156.4	22.56	77.44		
No 30						
No 40	18.7	175.1	25.26	74.74		
No 50						
No 60	21.9	197.0	28.42	71.58		
No 70						
No 100						
No 140	327.85	524.85	75.71	24.29		
No 200	83.3	608.15	87.73	12.27		
Pan Wt:	85.3	693.45	100.03	-.03		
Original Wt:	693.2					
Total Wt:		693.45	100.03	-.03		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2-gloc

SAMPLE NO. GT-1 95'-96½' | CONTAINER DIMENSIONS: 7X8

COLLECTION DATE: 11/4-6/96 MOISTURE ANALYSIS DATE: 12/9/96 DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.7	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	630.8		SILT/CLAY
3. Wt. Container & Dry Sample	549.2		Color: TAN. % Clay % Silt
4. Wt. of Dry Container	7.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	542.0		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	81.6		Comments: MOIST
7. Percent Moisture	15.06		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	25.85	25.85	4.77	95.23		Hard/clay.
No 4	64.5	90.35	16.67	83.33		
No 8						
No 10	59.1	149.45	27.57	72.43		
No 12						
No 16						
No 20	32.8	182.25	33.63	66.37		
No 30						
No 40	20.5	202.75	37.41	62.59		
No 50						
No 60	14.2	216.96	40.03	59.97		
No 70						
No 100						
No 140	155.0	371.96	68.63	31.37		
No 200	80.9	452.86	83.55	16.45		
Pan Wt:	89.86	542.72	100.13	-.13		
Original Wt:	542.0					
Total Wt:		542.72	100.13	-.13		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziplocs

SAMPLE NO. GT-1 105'-106½ | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 MOISTURE ANALYSIS DATE: 12/9/96 DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	211.4	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	471.5		CLAY / SAND.
3. Wt. Container & Dry Sample	409.6		Color: TAN % Clay 50 % Silt
4. Wt. of Dry Container	6.8		% Sand 50 % Gravel % Other
5. Wt. of Dry Sample	403.0		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	61.9		Comments: Moist
7. Percent Moisture	15.36		wet sample saved

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/10/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	69.4	69.4	17.22	82.78		Hard-Clay.
No 4	45.6	115.0	28.55	71.46		
No 8						
No 10	37.1	152.1	37.74	62.26		
No 12						
No 16						
No 20	19.0	171.1	42.46	57.54		
No 30						
No 40	9.5	180.6	44.81	55.19		
No 50						
No 60	9.0	189.6	47.05	52.95		
No 70						
No 100						
No 140	156.2	345.8	85.81	14.19		
No 200	35.6	381.4	94.64	5.36		
Pan Wt:	22.0	403.4	100.09	-.09		
Original Wt:	403.0					
Total Wt:		403.4	100.09	-.09		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

wet
273.1

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: SAMPLE FORMAT: Brass tube

SAMPLE NO. GT-1 110-111½ CONTAINER DIMENSIONS: 1½ x 6

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	6.7	gm	Material or Lithology Name:
2. Wt. Container & Wet Sample	279.8		silty clay w/ silt layer
3. Wt. Container & Dry Sample	228.3		Color: lt. tan 75% Clay 20 % Silt
4. Wt. of Dry Container	6.5		5 % Sand % Gravel % Other
5. Wt. of Dry Sample	221.6		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	51.5		Comments:
7. Percent Moisture	23.2%		

FORMULA:

$$7.\ \%\ \text{Moisture} = \frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: Canyon County PROJECT No: 030496 BY: JDB.

SOURCE: Pickles Butte Landfill SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 115'-116½' CONTAINER DIMENSIONS: 7"x 8"

COLLECTION DATE: 11/4-6/96 MOISTURE ANALYSIS DATE: 12/5/96 DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	67.9	g	Material or Lithology Name: Clay/sand
2. Wt. Container & Wet Sample	302.4		
3. Wt. Container & Dry Sample	270.75		Color: Tan. % Clay % Silt
4. Wt. of Dry Container	7.25		% Sand % Gravel % Other
5. Wt. of Dry Sample	263.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	31.65		Comments:
7. Percent Moisture	12.0		wet sample saved.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/9/96 # SIEVE ANALYSIS WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	13.25	13.25	5.45	94.55		~~HARD CLAY~~ FEOX
No 4	24.90	38.15	15.71	84.29		
No 8						
No 10	22.65	60.80	25.03	74.97		
No 12						
No 16						
No 20	11.1	71.9	29.60	70.40		
No 30						
No 40	6.95	78.85	32.46	67.54		
No 50						
No 60	6.30	85.15	35.06	64.94		
No 70						
No 100						
No 140	73.3	158.45	65.23	34.77		
No 200	54.1	212.55	87.51	12.49		
Pan Wt:	29.05	241.60	99.46	.54		
Original Wt:	242.9					
Total Wt:		241.60	99.46	.54		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 120'-121½' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	69.5	g	Material or Lithology Name: sand/silt/clay
2. Wt. Container & Wet Sample	788.1		
3. Wt. Container & Dry Sample	658.4		Color: Tan % Clay % Silt
4. Wt. of Dry Container	7.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	651.3		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	129.7		Comments:
7. Percent Moisture	19.91		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						Hard Clay.
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						Hard Clay.
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	$\frac{\text{Acum. Wt.}}{\text{Original}} \times 100$	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-1 125'-126½' | CONTAINER DIMENSIONS: 10¾ x 10¾

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.4	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	589.7		SAND/SILT/CLAY
3. Wt. Container & Dry Sample	526.8		Color: Gry/Tan % Clay % Silt
4. Wt. of Dry Container	10.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	516.8		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	62.9		Comments:
7. Percent Moisture	12.17		wet sample sieved.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-					Large pieces Taken out. Hard Clay.
5/8"						
1/2"						
3/8"	49.8	49.8	11.10	88.90		
No 4	52.45	102.25	22.80	77.20		
No 8						
No 10	46.0	148.25	33.05	66.95		
No 12						
No 16						
No 20	24.5	172.75	38.52	61.48		
No 30						
No 40	15.2	187.95	41.91	58.09		
No 50						
No 60	11.85	199.80	44.55	55.45		
No 70						
No 100						
No 140	94.75	294.55	65.67	34.33		
No 200	85.8	380.35	84.80	15.20		
Pan Wt:	66.9	447.25	99.72	.28		
Original Wt:	448.5					
Total Wt:		447.25	99.72	.28		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

Wet
300.9

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: GT-1 SAMPLE FORMAT: BRASS 6"x 1½"

SAMPLE NO. 130 - 131½ CONTAINER DIMENSIONS:

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	6.9		Material or Lithology Name:
2. Wt. Container & Wet Sample	307.8		Clay TRACE SILT
3. Wt. Container & Dry Sample	249.4		Color: % Clay % Silt
4. Wt. of Dry Container	6.4		% Sand % Gravel % Other
5. Wt. of Dry Sample	242.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	58.4		Comments:
7. Percent Moisture	24.1 %		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziplocs

SAMPLE NO. GT-1 135'-136½' | CONTAINER DIMENSIONS: 10¾ x 10¾

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.5	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	668.2		Silt / Clay.
3. Wt. Container & Dry Sample	541.8		Color: Tan / Brn. % Clay % Silt
4. Wt. of Dry Container	10.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	531.8		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	126.4		Comments:
7. Percent Moisture	23.77		wet sample Bagged

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						Hard Clay.
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 145'-146½' | CONTAINER DIMENSIONS: 10¾ x 10¾

COLLECTION DATE: 11/4/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.7	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	639.7		Silt/Clay.
3. Wt. Container & Dry Sample	520.2		Color: Tan/Brn % Clay 98 % Silt 2
4. Wt. of Dry Container	10.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	510.2		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	119.5		Comments: Bag Matted wet sample saved
7. Percent Moisture	23.42		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						Hard.
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

wet
2881

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: SAMPLE FORMAT: Brass Tube

SAMPLE NO. GT-1 150-151½ CONTAINER DIMENSIONS: 1½ x 6"

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	6.9		Material or Lithology Name:
2. Wt. Container & Wet Sample	295.2		Silty Clay
3. Wt. Container & Dry Sample	241.4		Color: % Clay 90 % Silt 10
4. Wt. of Dry Container	6.6		% Sand % Gravel % Other
5. Wt. of Dry Sample	234.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	53.6		Comments:
7. Percent Moisture	22.9%		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziplock

SAMPLE NO. GT-1 155'-156½' | CONTAINER DIMENSIONS: 10¾ x 10¾

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 200° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	211.5	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	581.1		Clay
3. Wt. Container & Dry Sample	462.3		Color: gray. % Clay % Silt
4. Wt. of Dry Container	14.25		% Sand % Gravel % Other
5. Wt. of Dry Sample	448.2		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	118.8		Comments:
7. Percent Moisture	26.51		wet sample saved.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						Hard Clay
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 165'-166½' | CONTAINER DIMENSIONS: 10¾ x 10¾

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 200°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.7	g	Material or Lithology Name: SiT / Clay
2. Wt. Container & Wet Sample	515.8		
3. Wt. Container & Dry Sample	434.5		Color: gl/gn/Brn % Clay % Silt
4. Wt. of Dry Container	13.7		% Sand % Gravel % Other
5. Wt. of Dry Sample	420.8		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	81.3		Comments:
7. Percent Moisture	19.32		Wet samples sieved

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	.Notes:
3/4"	-0-					Some crushed. Taken off before sieve
5/8"						
1/2"						Hard.
3/8"	27.7	27.7	19.53	80.47		10% SiT 90% Clay
No 4	32.6	60.3	42.52	57.48		
No 8						
No 10	25.1	85.4	60.23	39.77		
No 12						
No 16						
No 20	11.55	96.95	68.37	31.63		
No 30						
No 40	5.6	102.55	72.32	27.68		
No 50						
No 60	3.8	106.35	75.0	25.0		
No 70						
No 100						
No 140	21.8	128.15	90.37	9.63		
No 200	6.45	134.6	94.92	5.08		
Pan Wt:	7.0	141.6	99.86	.14		
Original Wt:	141.8					
Total Wt:		141.6	99.86	.14		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 170' - 171 1/2' | CONTAINER DIMENSIONS: 10 3/4 X 10 3/4

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 200°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.8	g	Material or Lithology Name: Silt / Clay
2. Wt. Container & Wet Sample	628.7		
3. Wt. Container & Dry Sample	513.6		Color: Gy / Grn % Clay 98 % Silt 2
4. Wt. of Dry Container	13.5		% Sand % Gravel % Other
5. Wt. of Dry Sample	500.6		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	115.1		Comments:
7. Percent Moisture	23.0		wet sample saved.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200
Pan Wt:						Hard.
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100 - Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 175'-176½' | CONTAINER DIMENSIONS: 10¾ x 10¾

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 200°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	207.0	g	Material or Lithology Name: Clay.
2. Wt. Container & Wet Sample	509.7		
3. Wt. Container & Dry Sample	416.9		Color: Green % Clay % Silt
4. Wt. of Dry Container	13.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	404.0		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	92.8		Comments:
7. Percent Moisture	22.98		wet sample saved.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						Hard Clay
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-1 185' - 186'1/2 | CONTAINER DIMENSIONS: 7 X 8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 200°F

	MEASURED VALUE		SAMPLE DESCRIPTION
1. Wt. of Pan	207.4	Units g	Material or Lithology Name: Clay.
2. Wt. Container & Wet Sample	550.2		
3. Wt. Container & Dry Sample	451.0		Color: Gray/yL % Clay % Silt
4. Wt. of Dry Container	5.5		% Sand % Gravel % Other
5. Wt. of Dry Sample	444.3		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	99.2		Comments:
7. Percent Moisture	22.33		wet sample saved

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96 **SIEVE ANALYSIS** WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16		*				
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						Hard-Clay
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

wet
269.4

SAMPLE MOISTURE & DESCRIPTION

OWNER: Pickles Butte PROJECT No: BY: WBS/JDS

SOURCE: SAMPLE FORMAT: Brass Tube

SAMPLE NO. GT-1 190-191½ CONTAINER DIMENSIONS: 1½ x 6"

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	138		Material or Lithology Name:
2. Wt. Container & Wet Sample	283.2	gm	Clay
3. Wt. Container & Dry Sample	230.3		Color: tan 98% Clay % Silt
4. Wt. of Dry Container	13.2		% Sand % Gravel % Other
5. Wt. of Dry Sample	216.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	52.9		Comments:
7. Percent Moisture	24.4		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Rel.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Rel.		

299.7

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-1 195'-196½' | CONTAINER DIMENSIONS: 7X8

COLLECTION DATE: 11/4-6/96 | MOISTURE ANALYSIS DATE: 12/5/96 | DRYING TIME & TEMP: 200°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.7	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	376.9		Clay
3. Wt. Container & Dry Sample	299.7		Color: Green % Clay % Silt
4. Wt. of Dry Container	6.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	293.55		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	77.2		Comments:
7. Percent Moisture	26.3		wet sample saved.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/6/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						Clay/STONE
Original Wt:						Hard.
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Brass Ring

SAMPLE NO. GT-2 5'-6 1/2' #1 | CONTAINER DIMENSIONS: 6" x 1 7/16

COLLECTION DATE: 11/7/96 | MOISTURE ANALYSIS DATE: 12/17/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.6	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	310.0		1/4" AIRSPACE CLAY
3. Wt. Container & Dry Sample	290.4		Color: % Clay % Silt
4. Wt. of Dry Container	128.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	162.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	19.6		Comments: Clay 1 PIECE of WOOD.
7. Percent Moisture	12.07		10% wood DRY-MOIST

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: BRASS RING

SAMPLE NO. GT-2 5'-6 1/2' #2 | CONTAINER DIMENSIONS: 6" x 1 7/16"

COLLECTION DATE: 11/7/96 | MOISTURE ANALYSIS DATE: 12/17/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	67.6	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	225.7		5/8" AIRSPACE CLAY
3. Wt. Container & Dry Sample	211.5		Color: % Clay % Silt
4. Wt. of Dry Container	128.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	83.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	14.2		Comments: MOSTLY WOOD, SOME SOFT PLASTIC.
7. Percent Moisture	17.01		CLAY DRY-MOIST

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-2 10'-11 1/2" (A) | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/7/96 | MOISTURE ANALYSIS DATE: 12/17/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	206.7	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	599.6		SAND / CLAY
3. Wt. Container & Dry Sample	501.1		Color: % Clay % Silt
4. Wt. of Dry Container	7.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	494.1		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	98.5		Comments: Mostly Clay
7. Percent Moisture	19.94		(1) Piece of Paper) Moist.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

Very Hard Clay - some SAND.

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	$\frac{\text{Acum. Wt.}}{\text{Original}} \times 100$	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 zip loc

SAMPLE NO. GT-2 10'-11½' (B) | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/7/96 | MOISTURE ANALYSIS DATE: 12/17/96 | DRYING TIME & TEMP: 150° F

MEASURED VALUE			SAMPLE DESCRIPTION
1. Wt. of Pan	211.3	Units g	Material or Lithology Name:
2. Wt. Container & Wet Sample	140.2		
3. Wt. Container & Dry Sample	123.2		Color: % Clay % Silt
4. Wt. of Dry Container	6.8		% Sand % Gravel % Other
5. Wt. of Dry Sample	116.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	17.0		Comments: Soft to Hard Plastic, Styrophom, Wood, Little Pape Moist
7. Percent Moisture	14.60		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: BRASS RING.

SAMPLE NO. GT-2-15'-16 1/2' | CONTAINER DIMENSIONS: 6" x 1 7/16"

COLLECTION DATE: 11/7/96 | MOISTURE ANALYSIS DATE: 12/10/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.6	g	Material or Lithology Name: 12" BRASS RING 1/2 AIRSPACE
2. Wt. Container & Wet Sample	648.7		6" BRASS RING 1" AIRSPACE
3. Wt. Container & Dry Sample	608.1		Color: % Clay % Silt
4. Wt. of Dry Container	385.6		% Sand % Gravel % Other
5. Wt. of Dry Sample	223.1		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	40.0		Comments: WOOD, SOFT PLASTIC, GYPSUM,
7. Percent Moisture	17.93		STYROPHOM, HARD PLASTIC.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziplocs

SAMPLE NO. GT-2 20' | CONTAINER DIMENSIONS: 10 3/4 x 10 3/4

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/26/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.3	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	1173.4		Landfill grab Samples
3. Wt. Container & Dry Sample	1002.2		Color: % Clay % Silt
4. Wt. of Dry Container	15.2		% Sand % Gravel % Other
5. Wt. of Dry Sample	987.0		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	171.2		Comments: Garbage Broken Down. Paper, Wood, Plastics
7. Percent Moisture	17.35		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	129.7	129.7	13.14	86.86		GARBAGE (No Soils.)
5/8"						
1/2"						
3/8"	117.95	247.65	25.09	74.91		
No 4	203.20	450.85	45.68	54.32		75% Garbage 25% Clay
No 8						
No 10	200.5	651.35	65.99	34.01		50/50 Garbage Clay.
No 12						
No 16						
No 20	114.30	765.65	77.57	22.43		
No 30						
No 40	64.1	830.35	84.13	15.87		
No 50						
No 60	50.8	881.15	89.28	10.72		
No 70						
No 100						
No 140	88.8	969.95	98.27	1.73		
No 200	11.1	981.05	99.40	.60		
Pan Wt:	5.6	986.65	99.96	.04		
Original Wt:	987.0					
Total Wt:		986.65	99.96	.04		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc.

SAMPLE NO. GT-2 20'-21½' | CONTAINER DIMENSIONS: 1x8

COLLECTION DATE: 11/1/96 | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	209.3	g	Material or Lithology Name: unlined Split Spoon Sample
2. Wt. Container & Wet Sample	336.0		
3. Wt. Container & Dry Sample	270.1		Color: % Clay % Silt
4. Wt. of Dry Container	7.0		% Sand % Gravel % Other
5. Wt. of Dry Sample	263.1		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	65.9		Comments: Soft to Hard Plastics. Paper, wall paper, wood, Gypsum.
7. Percent Moisture	25.05		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Brass Ring

SAMPLE NO. CT-2 24'-25½' | CONTAINER DIMENSIONS: 6" x 1 9/16"

COLLECTION DATE: 11/9/96 | MOISTURE ANALYSIS DATE: 12/17/96 | DRYING TIME & TEMP: 150 °F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.7	g	Material or Lithology Name: Ring #1 1" AIRSPACE
2. Wt. Container & Wet Sample	602.8		Ring #2 (0") NO AIRSPACE SAND.
3. Wt. Container & Dry Sample	579.8		Color: % Clay % Silt
4. Wt. of Dry Container	255.8		% Sand % Gravel % Other
5. Wt. of Dry Sample	324		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	23.0		Comments: RING #1, MOSTLY SAND (WOOD)
7. Percent Moisture	7.10		RING #2 MOSTLY SAND (SALT PLASTIC)

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 zip lock

SAMPLE NO. GT-3 5'-6½' | CONTAINER DIMENSIONS: 10 3/4" X 10 3/4"

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/3/96 | DRYING TIME & TEMP: 150° F.

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	206.7	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	779.15	g	SILT / SAND.
3. Wt. Container & Dry Sample	753.05		Color: TAN / GRY % Clay % Silt
4. Wt. of Dry Container	10.25		% Sand % Gravel % Other
5. Wt. of Dry Sample	743.30		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	26.10		Comments:
7. Percent Moisture	3.51		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/3/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	-0-	-0-	-0-	-0-		
No 4	1.70	1.70	.23	99.77		
No 8						
No 10	3.20	4.90	.66	99.34		
No 12						
No 16						
No 20	6.75	11.65	1.57	98 43		SEEDS/STICKS.
No 30						
No 40	27.00	38.65	5.20	94.80		SEED/ LESS ↑
No 50						
No 60	228.20	266.85	35.90	64.10		
No 70						
No 100						
No 140	373.40	640.25	86.13	13.87		
No 200	35.95	676.20	90.97	9.03		
Pan Wt:	65.90	742.10	99.83	.17		
Original Wt:	743.30					
Total Wt:		742.10	99.83	.17		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Zip Lock

SAMPLE NO. GT-3 15'-16½' | CONTAINER DIMENSIONS: 10 3/4 X 10 3/4

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/3/96 | DRYING TIME & TEMP: 150° F.

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.75	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	655.25	g	FINE SAND
3. Wt. Container & Dry Sample	603.45		Color: DK TAN / GY % Clay % Silt
4. Wt. of Dry Container	10.00		% Sand % Gravel % Other
5. Wt. of Dry Sample	593.45		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	51.80		Comments:
7. Percent Moisture	8.73		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: 12/3/96 | WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	16.55	16.55	2.79	97.21		~~SEMI~~ - Consold. (CORE)
5/8"						
1/2"						
3/8"	-0-	16.55	2.79	97.21		
No 4	.55	17.10	2.88	97.12		~~semi - soft~~ Sand.
No 8						
No 10	3.25	20.35	3.43	96.57		~~soft - sand~~ Gravel.
No 12						Paper + Sticks
No 16						
No 20	5.75	26.10	4.40	95.60		
No 30						
No 40	20.55	46.65	7.86	92.14		
No 50						
No 60	176.95	223.60	37.68	62.32		
No 70						
No 100						
No 140	313.65	537.35	90.55	9.45		
No 200	35.45	572.70	96.50	3.50		
Pan Wt:	23.00	595.70	100.38	-.38		
Original Wt:	593.45					
Total Wt:		595.10	100.38	-.38		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Zip Lock

SAMPLE NO. GT-3 25' - 26½' | CONTAINER DIMENSIONS: 10¾ X 10¾

COLLECTION DATE: 11/2/96 | MOISTURE ANALYSIS DATE: 12/3/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	207.5	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	695.85	g	FINE SAND.
3. Wt. Container & Dry Sample	641.05		Color: DK TAN/GRY % Clay % Silt
4. Wt. of Dry Container	10.00		% Sand % Gravel % Other
5. Wt. of Dry Sample	630.85		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	54.8		Comments:
7. Percent Moisture	8.68		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: 12/3/96 | WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	6.50	6.50	1.03	98.97		semi-consolid. Coarse Sand.
5/8"						
1/2"						
3/8"	5.00	11.50	1.82	98.18		semi-soft Sand
No 4	2.15	13.65	2.16	97.84		" "
No 8						
No 10	8.40	22.05	3.50	96.50		
No 12						
No 16						
No 20	20.00	42.05	6.67	93.33		
No 30						
No 40	51.90	93.95	14.89	85.11		
No 50						
No 60	112.15	206.10	32.67	67.33		
No 70						
No 100						
No 140	390.45	596.55	94.56	5.44		
No 200	20.80	617.35	97.86	2.14		
Pan Wt:	12.70	630.05	99.87	.13		
Original Wt:	630.85					
Total Wt:		630.05	99.87	.13		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100 - Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Zip Lock.

SAMPLE NO. GT3 35-36 1/2' | CONTAINER DIMENSIONS: 10 3/4 X 10 3/4

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/3/96 | DRYING TIME & TEMP: 150°F.

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	203.15	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	761.65	g	SAND / GRAVEL
3. Wt. Container & Dry Sample	709.60		Color: TAN/GRY % Clay % Silt
4. Wt. of Dry Container	10.50		% Sand % Gravel % Other
5. Wt. of Dry Sample	699.10		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	52.05		Comments: FE OX STAIN (RUST)
7. Percent Moisture	7.45		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	11.00	11.00	1.57	98.43		Consol. Sand) Core = FE OX
5/8"						1
1/2"						11
3/8"	6.35	17.35	2.48	97.52		11 FE OX
No 4	10.35	27.7	3.96	96.04		11
No 8						
No 10	10.30	38.00	5.44	94.56		
No 12						
No 16						
No 20	8.60	46.6	6.67	93.33		
No 30						
No 40	16.65	63.25	9.05	90.95		
No 50						
No 60	49.85	113.1	16.18	83.82		
No 70						
No 100						
No 140	538.10	651.2	93.15	6.85		
No 200	33.45	685.65	98.08	1.92		
Pan Wt:	12.50	697.15	99.72	.28		
Original Wt:	699.10					
Total Wt:		697.15	99.72	.28		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-3 45'-46½' | CONTAINER DIMENSIONS: 7"x8"

COLLECTION DATE: 11-8-96 | MOISTURE ANALYSIS DATE: 12/4/96 | DRYING TIME & TEMP: 150° F.

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	207.35	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	1034.70		SILT / SAND.
3. Wt. Container & Dry Sample	759.10		Color: BRN/GRY % Clay % Silt
4. Wt. of Dry Container	6.85		% Sand % Gravel % Other
5. Wt. of Dry Sample	752.05		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	275.60		Comments:
7. Percent Moisture	36.65		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: 12/4/96 | WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	23.10	23.10	3.07	96.93		Semi Consol. Sand (Core)
5/8"						
1/2"						
3/8"	5.90	29.00	3.86	96.14		Semi Consol. Sand (FEOX)
No 4	7.55	36.55	4.86	95.14		
No 8						
No 10	10.30	46.85	6.23	93.77		
No 12						
No 16						
No 20	10.85	57.70	7.67	92.33		
No 30						
No 40	12.55	70.25	9.34	90.66		
No 50						
No 60	28.55	98.80	13.14	86.86		
No 70						
No 100						
No 140	525.80	624.60	83.05	16.95		
No 200	80.80	705.40	93.80	6.20		
Pan Wt:	45.25	750.65	99.81	.19		
Original Wt:	752.05					
Total Wt:		750.65	99.81	.19		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziplock

SAMPLE NO. GT-3 55'-56½' | CONTAINER DIMENSIONS: 1" x 8"

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/4/96 | DRYING TIME & TEMP: 150°F.

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.70	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	648.80		SILK / SAND FLOX
3. Wt. Container & Dry Sample	608.00		Color: TAN/GRY % Clay % Silt
4. Wt. of Dry Container	7.20		% Sand % Gravel % Other
5. Wt. of Dry Sample	600.80		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	40.80		Comments:
7. Percent Moisture	6.79		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/4/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	-0-	-0-	-0-	-0-		
5/8"						
1/2"						
3/8"	-0-	-0-	-0-	-0-		
No 4	-0-	-0-	-0-	-0-		
No 8						
No 10	1.45	1.45	.24	99.76		semi Soft Sand.
No 12						
No 16						
No 20	3.15	4.60	.75	99.25		
No 30						
No 40	7.00	11.60	1.91	98.09		
No 50						
No 60	30.20	41.80	6.87	93.13		
No 70						
No 100						
No 140	444.8	486.60	79.93	20.07		
No 200	75.4	562.00	92.31	7.69		
Pan Wt:	39.1	601.10	98.74	1.26		
Original Wt:	608.80					
Total Wt:		601.10	98.74	1.26		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-3 65'-66½' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/4/96 | DRYING TIME & TEMP: 150° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.5	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	732.8		CLAY
3. Wt. Container & Dry Sample	590.70		Color: GRAY % Clay 100 % Silt
4. Wt. of Dry Container	6.65		% Sand % Gravel % Other
5. Wt. of Dry Sample	583.90		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	142.10		Comments:
7. Percent Moisture	24.33		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: 12/4/96 | WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200.
Pan Wt:						CLAY
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Zyploc

SAMPLE NO. GT-3 75-76 1/2' | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/4/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	205.90	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	956.10		Clay
3. Wt. Container & Dry Sample	763.30		Color: Gray % Clay 100 % Silt
4. Wt. of Dry Container	6.75		% Sand % Gravel % Other
5. Wt. of Dry Sample	756.55		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	~~199.8~~		Comments:
7. Percent Moisture	25.48		?

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/4/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						98% 200. Clay.
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: ~~Ziploc~~

SAMPLE NO. GT-3 85'-86½' | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/4/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	67.8	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	418.00		CLAY / SILT / SAND.
3. Wt. Container & Dry Sample	373.90		Color: TAN / GRY % Clay 75% % Silt
4. Wt. of Dry Container	7.30		% Sand 25% % Gravel % Other
5. Wt. of Dry Sample	366.60		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	44.10		Comments:
7. Percent Moisture	12.03		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}}$ X 100

SIEVE ANALYSIS

SIEVE DATE: 12/4/96 | WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	103.75	103.75	28.30	71.7		clay stone (Hard) 1- SAND STONE (HARD)
5/8"						
1/2"						
3/8"	27.7	131.45	35.86	64.14		2/3 clay (Hard) 1/3 sand (Hard)
No 4	15.95	147.4	40.21	59.29		" "
No 8						
No 10	14.3	161.70	44.11	55.89		
No 12						
No 16						
No 20	7.95	169.65	46.28	53.72		
No 30						
No 40	5.7	175.35	47.83	52.17		
No 50						
No 60	5.7	181.05	49.39	50.61		
No 70						
No 100						
No 140	102.7	283.75	77.40	22.60		
No 200	54.05	337.80	92.14	7.86		
Pan Wt:	28.4	366.62	100.00	-0-		
Original Wt:	366.60					
Total Wt:		366.62	100.00	-0-		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-3 95'-96½' | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: 11/8/96 | MOISTURE ANALYSIS DATE: 12/4/96 | DRYING TIME & TEMP: 150°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.70	g	Material or Lithology Name: CLAY / SILT / SAND
2. Wt. Container & Wet Sample	852.50		
3. Wt. Container & Dry Sample	825.2		Color: TAN/GRAY % Clay % Silt
4. Wt. of Dry Container	7.5.		% Sand % Gravel % Other
5. Wt. of Dry Sample	817.7		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	27.3		Comments:
7. Percent Moisture	3.33		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: 12/4/96

SIEVE ANALYSIS

WASHED SAMPLE: Y (N)

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						90% 200
Pan Wt:						CLAY
Original Wt:						10% SILT/SAND.
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: SHELBY TUBE

SAMPLE NO. GT. 5 0' - 1½ (A) | CONTAINER DIMENSIONS:

COLLECTION DATE: 11/12-14/96 | MOISTURE ANALYSIS DATE: 12/26/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.5	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	1180.9		1 3/8" Air Space
3. Wt. Container & Dry Sample	1064.4		Color: % Clay % Silt
4. Wt. of Dry Container			% Sand % Gravel % Other
5. Wt. of Dry Sample	1064.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	116.5		Comments: Clay - Paper - Soft Plastic.
7. Percent Moisture	10.95		Wood. (Plastic Bag In End)

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	60.5	60.5	5.68	94.32		1% Garbage
5/8"						99% Clay/Stone
1/2"						
3/8"	100.2	160.7	15.10	84.90		
No 4	145.3	306.0	28.75	71.25		
No 8						
No 10	157.6	463.6	43.56	56.44		
No 12						
No 16						
No 20	101.0	564.6	53.04	46.96		
No 30						
No 40	84.1	648.7	60.95	39.05		
No 50						
No 60					100%	Clay
No 70						
No 100					200	
No 140						
No 200						
Pan Wt:	415.8	1064.5	100.01	-.01		
Original Wt:	1064.4					
Total Wt:		1064.5	100.01	-.01		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT:

SAMPLE NO. GT-5 @ -1½ (B) | CONTAINER DIMENSIONS:

COLLECTION DATE: | MOISTURE ANALYSIS DATE: | DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	310.8	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	1137.5		
3. Wt. Container & Dry Sample	942.1		Color: % Clay % Silt
4. Wt. of Dry Container			% Sand % Gravel % Other
5. Wt. of Dry Sample	942.1		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	195.4		Comments: Tube wt 1176.6 wet
7. Percent Moisture	20.74		1173.4 Dry

17.1" x 2.9"

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	526.0	526.0	55.83	44.17	→ 75% Garbage. 25% Hard Clay.	
5/8"						
1/2"						2% Garbage
3/8"	112.9	638.9	67.82	32.18		98% Hard Clay.
No 4	70.	708.9	75.25	24.75		
No 8						
No 10	66.5	775.4	82.31	17.69		
No 12						
No 16						
No 20	35.6	811	86.08	13.92		
No 30						
No 40	28.9	839.9	89.15	10.85		
No 50						
No 60						
No 70					100% Clay.	
No 100					200	
No 140						
No 200						
Pan Wt:	101.7	941.6	99.95	.05		
Original Wt:	942.1					
Total Wt:		941.6	99.95	.05		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-5 5'-6'1/2' | CONTAINER DIMENSIONS: 10 3/4 x 10 3/4

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	211.3	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	85.5		SAND/CLAY
3. Wt. Container & Dry Sample	75.6		Color: % Clay % Silt
4. Wt. of Dry Container	13.9		% Sand % Gravel % Other
5. Wt. of Dry Sample	61.7		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	9.9		Comments: Paper & HARD Plastic
7. Percent Moisture	16.05		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: Ziploc

SAMPLE NO. GT-5 10'-11½' | CONTAINER DIMENSIONS: 10¾ x 10¾

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.7	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	73.7		
3. Wt. Container & Dry Sample	60.0		Color: % Clay % Silt
4. Wt. of Dry Container	14.3		% Sand % Gravel % Other
5. Wt. of Dry Sample	45.7		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	13.7		Comments: mold. Plastics
7. Percent Moisture	29.98		Looks Like Lunt - Paper.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | **SIEVE ANALYSIS** | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2-qt loc

SAMPLE NO. GT-5 15'-16½" | CONTAINER DIMENSIONS: 7 x 8

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 175 °F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	207.3	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	107.7		
3. Wt. Container & Dry Sample	91.1		Color: % Clay % Silt
4. Wt. of Dry Container	6.9		% Sand % Gravel % Other
5. Wt. of Dry Sample	84.2		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	16.6		Comments: wood, Hard Plastic, Paper
7. Percent Moisture	19.71		metal.

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | **SIEVE ANALYSIS** | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	$\frac{\text{Acum. Wt.}}{\text{Original}} \times 100$	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-5 20'-21½' | CONTAINER DIMENSIONS: 7x8

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.5		Material or Lithology Name:
2. Wt. Container & Wet Sample	386.4		
3. Wt. Container & Dry Sample	315.4		Color: % Clay % Silt
4. Wt. of Dry Container	7.4		% Sand % Gravel % Other
5. Wt. of Dry Sample	308.0		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	71.0		Comments: CLOTH, Paper, Glass,
7. Percent Moisture	23.05		Wood, Hard + Soft Plastic

FORMULA:

7. % Moisture $= \frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | **SIEVE ANALYSIS** | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 gallon

SAMPLE NO. GT-5 25'-26½ | CONTAINER DIMENSIONS: 7"x8"

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE		SAMPLE DESCRIPTION
1. Wt. of Pan	206.7	Units g	Material or Lithology Name:
2. Wt. Container & Wet Sample	54.0		
3. Wt. Container & Dry Sample	44.5		Color: % Clay % Silt
4. Wt. of Dry Container	6.7		% Sand % Gravel % Other
5. Wt. of Dry Sample	37.8		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	9.5		Comments: Wood, Paper
7. Percent Moisture	25.13		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 3- Brass Rings

SAMPLE NO. GT-5 30'-31 1/2 | CONTAINER DIMENSIONS: 6" x 1.4

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.6		Material or Lithology Name: 2-Rings-0- 1- " - 1 1/2 - air space
2. Wt. Container & Wet Sample	751.3		
3. Wt. Container & Dry Sample	670.0		Color: % Clay % Silt
4. Wt. of Dry Container	326.6		% Sand % Gravel % Other
5. Wt. of Dry Sample	343.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	81.3		Comments: Wood, Gypsum, Cloth, Paper, soft plastic, Partical Board.
7. Percent Moisture	25.42		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: BRASS RING (LARGE)

SAMPLE NO. GT-5 40'-41½' | CONTAINER DIMENSIONS: 2.4 x 6

COLLECTION DATE: 11/12-14/96 | MOISTURE ANALYSIS DATE: 12/26/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	206.7	g	Material or Lithology Name: -0- Air Space (Overall: 11 3/4")
2. Wt. Container & Wet Sample	848.1		
3. Wt. Container & Dry Sample	656.4		Color: % Clay % Silt
4. Wt. of Dry Container	209.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	447.3		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	191.7		Comments: PAPER, CARDBOARD PLASTICS CLOTH
7. Percent Moisture	42.86		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	297.3	297.3	66.47	33.53		Garbage.
5/8"						
1/2"						
3/8"	26.75	324.05	72.45	27.55		91% Garbage.
No 4	25.80	349.85	78.21	21.79		3% Gravel
No 8						
No 10	34.3	384.15	85.88	14.12		
No 12						
No 16						
No 20	23.9	408.05	91.23	8.77		
No 30						
No 40	14.6	422.65	94.49	5.51		
No 50						
No 60	8.3	430.95	96.34	3.66		
No 70						
No 100						
No 140	11.1	442.05	98.83	1.17		
No 200	2.2	444.25	99.32	.68		
Pan Wt:	1.6	445.85	99.68	.32		
Original Wt:	447.3					
Total Wt:		445.85	99.68	.32		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-5 46' Grab | CONTAINER DIMENSIONS: 10 3/4 x 10 3/4

COLLECTION DATE: 11/12-14/96 | MOISTURE ANALYSIS DATE: 12/26/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.8	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	758.0		
3. Wt. Container & Dry Sample	598.2		Color: % Clay % Silt
4. Wt. of Dry Container	13.2		% Sand % Gravel % Other
5. Wt. of Dry Sample	585.0		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	159.8		Comments:
7. Percent Moisture	27.32		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	374.5	374.5	64.02	34.98		99% Garbage 1% Clay/Gravel
5/8"						
1/2"						
3/8"	26.5	401.0	68.55	31.45		← 50% Garbage 50% Gravel.
No 4	34.6	435.6	74.46	25.54		← 75% Garbage 25% Gravel
No 8						
No 10	42.6	478.2	81.74	18.26		← 85% Garbage. 15% Gravel
No 12						
No 16						
No 20	29.7	507.9	86.82	13.18		← 95% Garbage 5% Clay or ?
No 30						
No 40	19.8	527.7	90.21	9.79		
No 50						
No 60	16.2	543.9	92.97	7.03		
No 70						
No 100						
No 140	31.7	575.6	98.39	1.61		
No 200	4.6	580.2	99.18	.82		
Pan Wt:	2.4	582.6	99.59	.41		
Original Wt:	585.0					
Total Wt:		582.6	99.59	.41		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 1 Ziploc

SAMPLE NO. GT-5 45' | CONTAINER DIMENSIONS: 10 3/4 x 10 3/4

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/26/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	207.4	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	492.6		
3. Wt. Container & Dry Sample	398.0		Color: % Clay % Silt
4. Wt. of Dry Container	13.5		% Sand % Gravel % Other
5. Wt. of Dry Sample	384.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	94.6		Comments: Glass - Wood - Plastics.
7. Percent Moisture	24.60		Broken Down Material

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

Double Checked on Sample # GT-1- 45'

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	92.1	92.1	24.11	75.89		Garbage: 1-Rock: 1¼"-
5/8"						
1/2"						
3/8"	54.6	147.3	38.31	61.69		98% Garbage 3% Gravel
No 4	57.9	205.2	53.37	46.63		Hard Clay.
No 8						
No 10	49.6	254.8	66.27	33.73		
No 12						
No 16						
No 20	37.9	292.7	76.12	23.88		
No 30						
No 40	22.4	315.1	81.95	18.05		
No 50						
No 60	18.9	334.0	86.87	13.13		
No 70						
No 100						
No 140	39.9	373.9	97.24	2.76		
No 200	6.5	380.4	98.93	1.07		
Pan Wt:	4.2	384.6	100.03	-.03		
Original Wt:	384.5					
Total Wt:		384.6	100.03	-.03		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 gallon

SAMPLE NO. GT-5 50' | CONTAINER DIMENSIONS: 10 3/4 x 10 3/4

COLLECTION DATE: 11/12-14/96 | MOISTURE ANALYSIS DATE: 12/26/96 | DRYING TIME & TEMP: 175°F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.8	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	694.6		
3. Wt. Container & Dry Sample	542.2		Color: % Clay % Silt
4. Wt. of Dry Container	14.6		% Sand % Gravel % Other
5. Wt. of Dry Sample	527.6		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	152.4		Comments: WOOD - PLASTICS - METAL
7. Percent Moisture	28.89		MOSTLY BROKEN DOWN MATERIAL

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	7.7	7.7	1.46	98.54		Garbage.
5/8"						
1/2"						
3/8"	73.0	80.7	15.30	84.70		97% Garbage.
No 4	156.4	237.1	44.94	55.06		3% Gravel
No 8						
No 10	117.4	354.5	67.19	32.81		
No 12						
No 16						
No 20	70.5	425.0	80.55	19.45		
No 30						
No 40	29.7	454.7	86.18	13.82		
No 50						
No 60	23.4	478.1	90.62	9.38		
No 70						
No 100						
No 140	40.3	518.4	98.26	1.74		
No 200	5.4	523.8	99.28	.72		
Pan Wt:	3.0	526.8	99.85	.15		
Original Wt:	527.6					
Total Wt:		526.8	99.85	.15		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100 - Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 sploe

SAMPLE NO. GT-5 50' | CONTAINER DIMENSIONS: 10 3/4 x 10 3/4

COLLECTION DATE: | MOISTURE ANALYSIS DATE: 12/19/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	67.8	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	246.2		From push sample.
3. Wt. Container & Dry Sample	195.7		Color: % Clay % Silt
4. Wt. of Dry Container	14.1		% Sand % Gravel % Other
5. Wt. of Dry Sample	181.6		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	50.5		Comments: Cloth, clipping (grass ?)
7. Percent Moisture	27.81		wood, paper, soft Plastic

FORMULA:

7. % Moisture $= \frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: CANYON COUNTY | PROJECT No: 030496 | BY: JDB

SOURCE: PICKLES BUTTE LANDFILL | SAMPLE FORMAT: 2 ziploc

SAMPLE NO. GT-5 55' | CONTAINER DIMENSIONS: 10 3/4 X 10 3/4

COLLECTION DATE: 11/12-14/96 | MOISTURE ANALYSIS DATE: 12/26/96 | DRYING TIME & TEMP: 175° F

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	204.9	g	Material or Lithology Name:
2. Wt. Container & Wet Sample	697.2		
3. Wt. Container & Dry Sample	555.4		Color: % Clay % Silt
4. Wt. of Dry Container	14.5		% Sand % Gravel % Other
5. Wt. of Dry Sample	540.9		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	141.8		Comments: WOOD - PLASTIC
7. Percent Moisture	26.22		MOSTLEY BROKEN DOWN MATERI

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: | # SIEVE ANALYSIS | WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"	35.0	35.0	6.47	93.53		Garbage.
5/8"						
1/2"						
3/8"	69.8	104.8	19.38	80.62		99% Garbage
No 4	225.1	329.9	61.0	39.0		1% Gravel.
No 8						
No 10	72.1	402.0	74.32	25.68		
No 12						
No 16						
No 20	41.3	443.3	81.96	18.04		
No 30						
No 40	23.0	466.3	86.21	13.79		
No 50						
No 60	18.4	484.7	89.61	10.39		
No 70						
No 100						
No 140	43.3	528.0	97.62	2.38		
No 200	6.7	534.7	98.85	1.15		
Pan Wt:	4.2	538.9	99.63	.37		
Original Wt:	540.9					
Total Wt:		538.9	99.63	.37		
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: SAMPLE FORMAT: ziplock

SAMPLE NO. GT-5 65' CONTAINER DIMENSIONS:

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	6.9	gm	Material or Lithology Name: silty sand w trash
2. Wt. Container & Wet Sample	418.4		
3. Wt. Container & Dry Sample	390.6		Color: tan % Clay 40 % Silt
4. Wt. of Dry Container	6.7		60 % Sand % Gravel % Other
5. Wt. of Dry Sample	383.7		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	27.8		Comments: ~8% garbage
7. Percent Moisture	7.2%		

cont 411.5

FORMULA:

$$7.\ \%\ \text{Moisture} = \frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: SAMPLE FORMAT: lower 3rd Brass tube

SAMPLE NO. GT-5 76-76'1/2 CONTAINER DIMENSIONS: 1'1/2 x 6" Brass

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE		SAMPLE DESCRIPTION
1. Wt. of Pan	13.7	Units gm	Material or Lithology Name:
2. Wt. Container & Wet Sample	275.3		Clay hard w/ fine sand
3. Wt. Container & Dry Sample	226.4		Color: tan % Clay 70 % Silt
4. Wt. of Dry Container	13.1		30 % Sand ~~30~~ % Gravel % Other
5. Wt. of Dry Sample	212.7		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	48.9		Comments:
7. Percent Moisture	23%		

UD

wet samp 261.6

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: Pickles Butte PROJECT No: BY:

SOURCE: SAMPLE FORMAT: Brass Tube

SAMPLE NO. GT-5 60' CONTAINER DIMENSIONS: 2" x 6"

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE		Units	SAMPLE DESCRIPTION
1. Wt. of Pan	20.6	~~15.3~~		Material or Lithology Name:
2. Wt. Container & Wet Sample		437.9	gm	silty fine sand
3. Wt. Container & Dry Sample		412.1		Color: speckled tan % Clay % Silt
4. Wt. of Dry Container		10.0		% Sand % Gravel % Other
5. Wt. of Dry Sample		391.5		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture		25.8		Comments:
7. Percent Moisture		6.6%		NO DENSITY PARTIALLY FILLED

Wet sample 417.3

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Rel.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Rel.		

SAMPLE MOISTURE & DESCRIPTION

OWNER: Pickles Butte PROJECT No: BY:

SOURCE: SAMPLE FORMAT: Ziploc

SAMPLE NO. GT5 58' CONTAINER DIMENSIONS:

COLLECTION DATE: MOISTURE ANALYSIS DATE: 1-22-98 DRYING TIME & TEMP: 24hrs/175°F

	MEASURED VALUE	Units
1. Wt. of Pan	13.7	Units
2. Wt. Container & Wet Sample	370.0	gm
3. Wt. Container & Dry Sample	342.1	
4. Wt. of Dry Container	13±	
5. Wt. of Dry Sample	328±	
6. Wt. of Moisture	27.9	
7. Percent Moisture	8.5%	

SAMPLE DESCRIPTION

Material or Lithology Name: Fine SANDY SILT minor garbage

Color: % Clay % Silt

% Sand % Gravel % Other

Consolidation: Weak Moderate Strong NA

Comments:

Wet Samp 356 ±

dry samp 328 ±

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Preceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

wet sample
338 ±

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: GT5 SAMPLE FORMAT: Ziploc

SAMPLE NO. 65 - 65½ CONTAINER DIMENSIONS:

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	6.8		Material or Lithology Name:
2. Wt. Container & Wet Sample	343.3		fine sand
3. Wt. Container & Dry Sample	336.8 ±		Color: % Clay % Silt
4. Wt. of Dry Container	6.7 ±		% Sand % Gravel % Other
5. Wt. of Dry Sample	330 ±		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	8.5		Comments:
7. Percent Moisture	2.6% ±		

FORMULA:

$$7.\ \%\ \text{Moisture} = \frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$$

SIEVE DATE: SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		

wet samp 238.1

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: SAMPLE FORMAT: 1½ x 6" brass tube

SAMPLE NO. GT-5 86-865 CONTAINER DIMENSIONS:

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	68	gm	Material or Lithology Name: fine sand w minor silt
2. Wt. Container & Wet Sample	244.9		
3. Wt. Container & Dry Sample	230.1		Color: lt brn % Clay 8 % Silt
4. Wt. of Dry Container	6.1		92 % Sand % Gravel % Other
5. Wt. of Dry Sample	223.9		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	14.2		Comments: use for density
7. Percent Moisture	6.3%		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE DATE: # SIEVE ANALYSIS WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100−Accum. % Ret.		

wet
249.4

SAMPLE MOISTURE & DESCRIPTION

OWNER: PROJECT No: BY:

SOURCE: SAMPLE FORMAT: Brass tube

SAMPLE NO. GT-5 96-965 CONTAINER DIMENSIONS: 1 1/2 X 6"

COLLECTION DATE: MOISTURE ANALYSIS DATE: DRYING TIME & TEMP:

	MEASURED VALUE	Units	SAMPLE DESCRIPTION
1. Wt. of Pan	6.9	gm	Material or Lithology Name:
2. Wt. Container & Wet Sample	256.3		med. fine sand
3. Wt. Container & Dry Sample	250.3		Color: gry-tan % Clay 2 % Silt
4. Wt. of Dry Container	6.1		98 % Sand % Gravel % Other
5. Wt. of Dry Sample	243.4		Consolidation: Weak Moderate Strong NA
6. Wt. of Moisture	6.0		Comments:
7. Percent Moisture	2.5%		

FORMULA:

7. % Moisture = $\frac{\text{Step 2} - \text{Step 3}}{\text{Step 3} - \text{Step 4}} \times 100$

SIEVE ANALYSIS

SIEVE DATE: WASHED SAMPLE: Y N

Sieve Size	Dry Wt.	Accum. Wt.	Accum. % Ret.	Accum. % Pass.	Specs.	Notes:
3/4"						
5/8"						
1/2"						
3/8"						
No 4						
No 8						
No 10						
No 12						
No 16						
No 20						
No 30						
No 40						
No 50						
No 60						
No 70						
No 100						
No 140						
No 200						
Pan Wt:						
Original Wt:						
Total Wt:						
Note:	Measured Value	Sum of Proceeding Wt.	Acum. Wt. / Original x100	100-Accum. % Ret.		