*prepared for:*

Delaware Solid Waste Authority
1128 S. Bradford Street
Dover, Delaware 19903

# Volume 3: Geotechnical Characterization Report: Appendices A - F

## Cherry Island Landfill Expansion Project Wilmington, Delaware

*prepared by:*

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10015 Old Columbia Road
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Project No. ME0250
April 2003 -
Revised September 2003
Revised June 2004

# CONE PENETRATION TESTS RESULTS AND PROCEDURES

## APPENDIX A

## CONE PENETRATION TESTS RESULTS AND PROCEDURES

A total of sixty-eight (69) CPTs were advanced in the five phases of CIL (Figure 3-9). The CPT soundings ranged in depth from 70 to 120 ft below the existing ground surface. The main features of the CPT are summarized in Table 3-8.

Fifty-nine (59) CPT soundings were performed at the site during the period of January 28 through February 14, 2002. During this period, fifty (50) CPTs were advanced along the perimeter of the CIL (CPT C001-C050). The remaining nine (9) CPTs, C051-C058, were advanced through the waste. All of these nine CPTs, except for CPT C059, were advanced into the underlying foundation.

Nine (9) CPTs in seven locations between April 11 through April 16, 2002. All of these CPTs were advanced through the waste. Of these CPTs, only CPTs C060, C062, C067 and C068 penetrated into the underlying soils, while the remaining five CPTs encountered refusal within the waste.

Locations for the first forty-six (46) CPTs were surveyed by Tetra Tech, Inc. prior to carrying out the soundings. The locations of CPTs 47 through 59 were surveyed by Tetra Tech, Inc. prior to performing soundings. As-built locations of CPTs 47 through 59 were surveyed by Tetra Tech, Inc. following completion of the soundings.

The CPT soundings were performed by ConeTec, Inc. (ConeTec) of West Berlin, New Jersey, using an electro-piezo cone with a 10 $cm^2$ cross-sectional area and a 150 $cm^2$ of friction sleeve area. On one sounding, a more sensitive probe, with a 15 $cm^2$ cross-sectional area and a 225 $cm^2$ of friction sleeve area, was used. The CPT probes were advanced at a standard rate of 2 cm/sec. The cones are designed with a ratio of net area equal to 0.85 and an equal end area friction sleeve. The cone tip resistance and sleeve friction were recorded electronically at 2-in. intervals as the soundings were advanced. Additionally, the probe recorded dynamic excess pore pressures immediately behind the probe tip during the advancement of the cone at the same depth intervals as the tip resistance and sleeve friction. The CPT probe was advanced using a hydraulic push system mounted on a mobile truck with 20-ton capacity. Tip resistance, sleeve friction, pore pressure and inclination data were obtained electronically at a 0.05 m interval as the sounding was advanced. The CPT testing was performed in general conformance with the requirements of ASTM D 3441-94 and D 5778 –95 test methods. Graphic logs of the CPT data are presented in this appendix.

Soil types as interpreted from the CPT data obtained, are presented on the logs. The plots present the cone-tip resistance (corrected for unequal pressure area) and the friction ratio and averaged over a 10-cm length. These parameters allow infer the encountered soil types, shown on the right side of the logs, using existing correlations.

It should be noted that the notation used by ConeTec for CPT 60 through CPT 68 is different than that used by GeoSyntec. The table below shows this relationship.

| Designation | |
|---|---|
| **ConeTec** | **GeoSyntec** |
| MSW-01 | P5-02-C060 |
| MSW-02 | P5-02-C061 |
| MSW-03 | P3-02-C062 |
| MSW-04 | P1-02-C063 |
| MSW-04A | P1-02-C064 |
| MSW-05 | P2-02-C065 |
| MSW-05A | P2-02-C066 |
| MSW-06 | P3-02-C067 |
| MSW-07 | P4-02-C068 |

CONETEC

# ConeTec Inc.

Geotechnical and Environmental In Situ Testing Contractors

415 Commerce Lane, Unit 3, West Berlin, N.J. 08091 • Tel: (609) 767-8600 • Fax: (609) 767-4008 • Email: ConetecNJ@AOL.Com

March 22, 2002

**Duffield Associates**
**5400 Limestone Road**
**Wilmington, DE 19808-1232**

**Attn.:** Punith Venkatesh

**Re.:** Site Investigation Project at Cherry Island Landfill in Wilmington, Delaware

Dear Mr. Venkatesh

Please find attached the results for the In Situ Testing project we completed at Cherry Island Landfill in Wilmington, Delaware. A total of fifty-nine cone profiles were completed at locations selected by Duffield personnel.

We appreciated the opportunity of working with you on this project, and hope to work with you in the future.

Yours Sincerely,
***ConeTec Inc.***

Rick Pope
Field Manager

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## 1.0 INTRODUCTION

This report presents the results of an In Situ testing program carried out in Wilmington, Delaware for the possible expansion of the Cherry Island Landfill. The testing program was started on January 28, 2002 and completed on February 14, 2002. The program consisted of fifty-nine electronic piezo cone penetration (CPTU) sounding locations. The sounding locations were selected, located and numbered by Duffield Associates staff. A summary of the completed soundings is included in Table 1.

## 2.0 FIELD EQUIPMENT AND PROCEDURES

### 2.1 CONE PENETRATION TESTING

The cone soundings were carried out using an integrated electronic piezo cone, manufactured for ConeTec Inc. by Adara Systems of Vancouver, Canada. The piezo cone used was a compression model cone with a 15 $cm^2$ tip and a 225 $cm^2$ friction sleeve. The cone is designed with an equal end area friction sleeve and a tip end area ratio of 0.85. The piezo cone dimensions and the operating procedure were in accordance with ASTM Standard D-3441. A diagram of the cone penetrometer used for this project is shown as Figure 1 on the next page.

Pore pressure filter elements, made of porous plastic, were saturated under a vacuum using glycerin as the saturating fluid. The pore pressure element was 6-mm thick and was located immediately behind the tip (the U2 location) for all soundings.

The cone was advanced using ConeTec's 20 ton tracked CPT rig. The following data were recorded onto magnetic media every .05 cm (approximately every 2 inches) as the cone was advanced into the ground:

- Tip Resistance (Qc)
- Sleeve Friction (Fs)
- Dynamic Pore Pressure (Ut)

The field data recorded is included on the attached diskette.

The major aims of this project were to profile the soils and obtain dissipation data

Before each sounding a complete set of analog baseline readings are taken with a multi meter and compared with the digitized value on the computer screen. This provides a check on the Analog to Digital conversion board.

Evaluation of the analog baselines is key to consistent readings. The baseline data should be stable and should not wander excessively during the course of a sounding. Baseline data can be used to apply corrections to the cone data where necessary. For this project, there were no baseline corrections applied to the data.

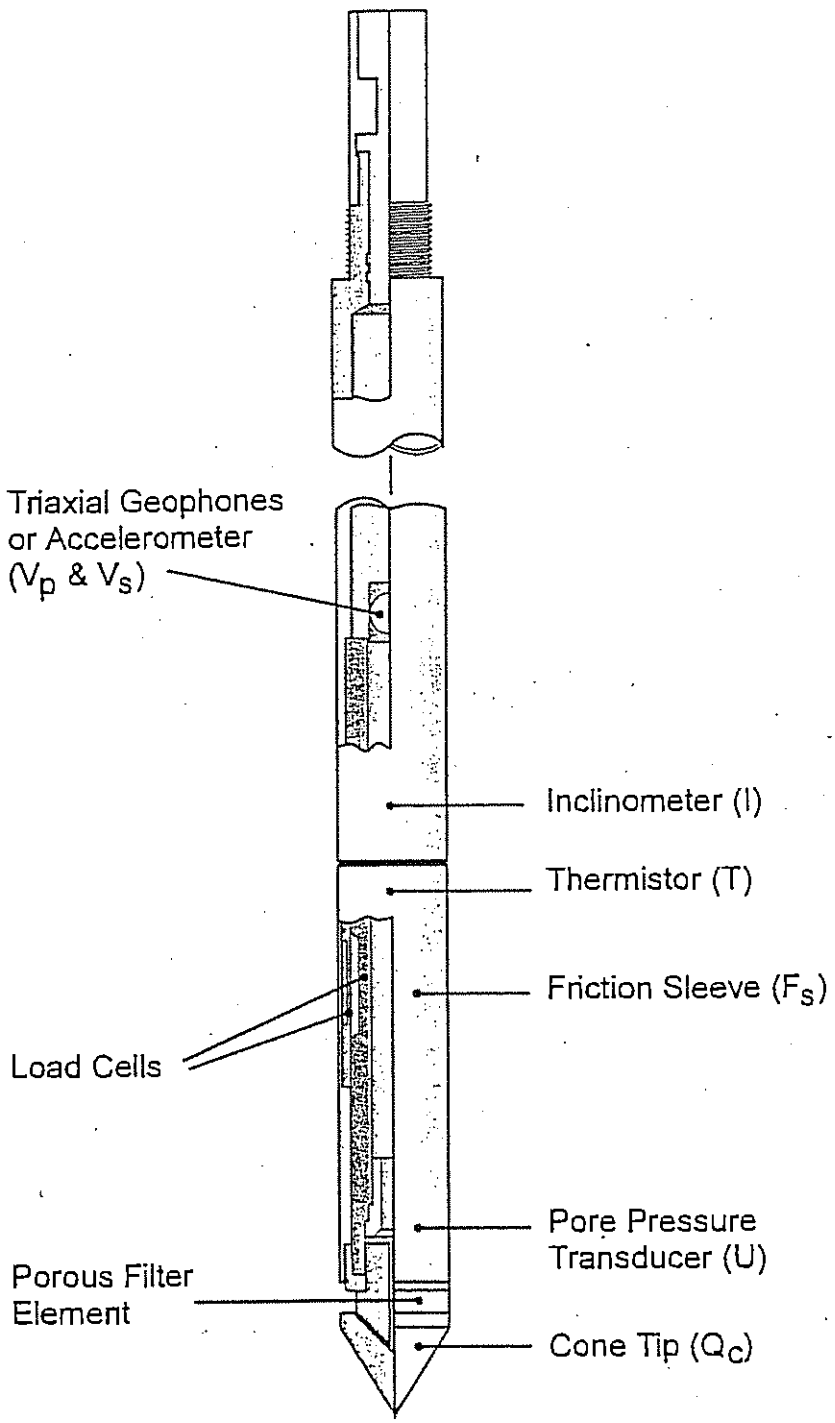



FIGURE 1 - TYPICAL CONE PENETROMETER

## 2.2 PORE PRESSURE DISSIPATION TESTS

When cone penetration is stopped the piezo cone essentially becomes a piezometer. The pore water pressure is recorded at 5 second intervals and the reading stored in a dissipation file. The dissipation file can be plotted to give a dissipation curve consisting of pore pressure plotted against time. The shape of the dissipation curve is very useful in evaluating soil type, drainage and in situ static water level. Pore pressure dissipation plots can be found in Appendix C.

A Summary of Dissipation Tests are given in Reference Table 2, included in Appendix C.

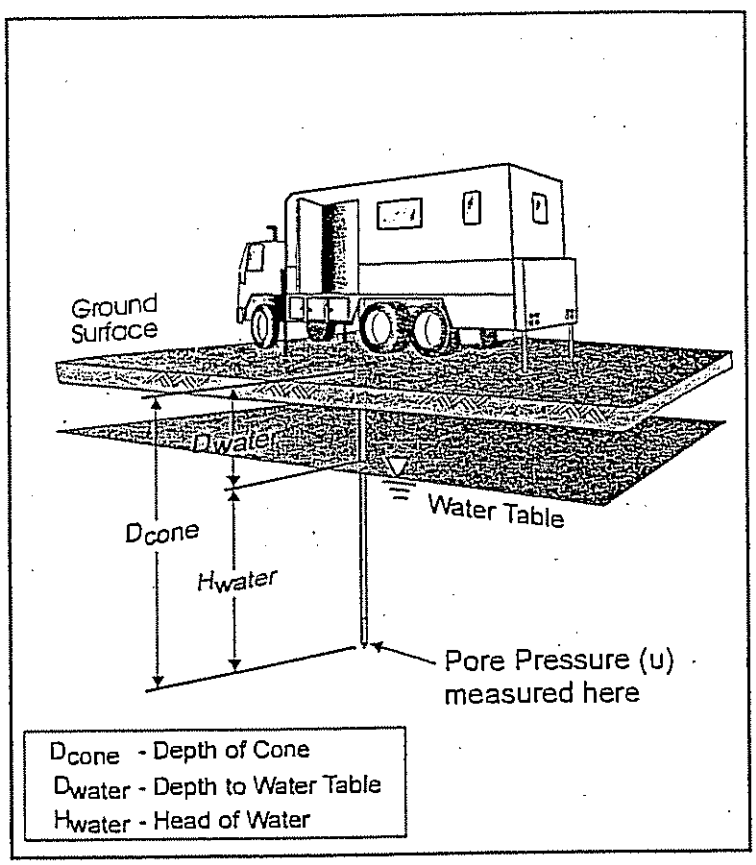
A flat curve that stabilizes quickly, i.e. less than 30 seconds, is typical of a free draining sand. In this case the final measured pore water pressure is the static in situ water pressure.

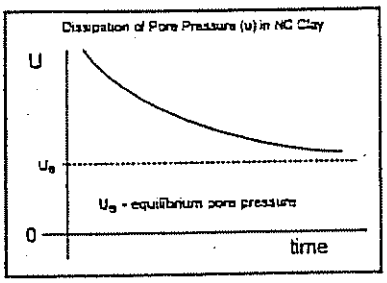
Soils that generate excess dynamic pore water pressure during penetration will dissipate this excess pressure when penetration stops. The shape of the dissipation curve and the time of dissipation can be used to estimate $C_h$, the coefficient of consolidation that can in turn be used to calculate $K_h$, the horizontal permeability.

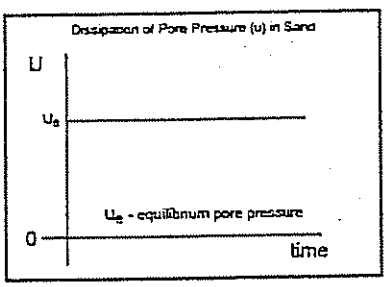
Figure 2 shows the shape of various pore pressure curves.

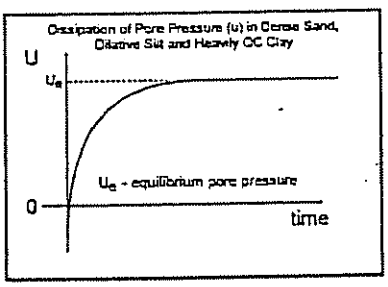
The actual analysis of dissipation tests is beyond the scope of this report. The readers are referred to the publication by Robertson et al, 1990.

# Estimation of Ground Water Table from CPT Dissipation Tests




Water Table Calculation

$$D_{water} = D_{cone} - H_{water}$$

where $H_{water} = U_e$ (depth units)

Useful Conversion Factors:
1psi = 0.704m = 2.31 feet (water)
1tsf = 0.958 bar = 13.9 psi
1m = 3.28 feet

FIGURE 2 - TYPICAL DISSIPATION TEST

# 3.0 CONE PENETRATION TEST DATA AND INTERPRETATION

## 3.1 ANALYSIS OF PIEZOCONE DATA - GENERAL

The interpretation of cone data is based on the relationship between cone bearing, Qc, sleeve friction, Fs, and penetration pore pressure, U. The friction ratio, Rf, (sleeve friction divided by cone bearing) is a calculated parameter which is used to infer soil behavior type. Generally, saturated cohesive soils have low tip resistance, high friction ratios and generate large excess pore water pressures. Cohesionless soils have higher tip resistances, lower friction ratios and do not generate significant excess pore water pressure.

Each of the parameters measured in the sounding is discussed briefly below. A detailed explanation of CPTU testing and interpretation of the results can be found in "Guidelines for Geotechnical Design Using CPT and CPTU" by P. K. Robertson and R. G. Campanella, listed in the references.

*TIP RESISTANCE* ($Q_c$): The resistance to penetration measured at the cone tip, provides an accurate profile of subsurface strata. The recorded tip resistance is a composite of the penetration resistance of the soils located five to ten cone diameters (7 to 14 inches) in front of and behind the tip. The actual resistance "sensed" by the tip depends on the soil properties and on the relative stiffness of the layers encountered. Tip resistance is often corrected for pore pressure effects when testing in soft saturated cohesive soils. For this project the correction was made and the tip resistance shown, $Q_t$ is the corrected tip resistance.

The correction used is: $Q_t = Q_c + (1+a)U$ Where: $Q_t$ = corrected tip resistance
$Q_c$ = measured tip resistance
a = net area ratio for cone (0.85 for this project)
U = dynamic pore water pressure measured behind tip

*SLEEVE FRICTION* ($F_s$) The resistance recorded on the friction sleeve, is a measure of the remolded strength of the soil. Values of Sleeve Friction in very soft soils (such as peat) may fluctuate due to the measured force being small relative to the capacity of the measuring load cell.

*FRICTION RATIO* ($R_f$) The ratio of sleeve friction to tip resistance expressed as a percentage, is an indicator of soil type. Cohesive soils generally have friction ratios that are greater than two, while sands and non-plastic silts have friction ratios that are lower than two.

*PORE PRESSURE (U)* The pore pressure is the dynamic pore pressure measured during penetration. The measured pore pressure changes with the location of the porous filter and negative readings are possible when the filter is located behind the tip.

It is important to note that the CPT classifies soil by physical behavior, not by grain size; therefore, the CPT classification should be verified against samples obtained from a conventional drilling program. While the CPT soil classification may not always be accurate in terms of the actual label it applies to a particular soil, it is very accurate in grouping soils with similar mechanical properties.

## 3.2 CONE PLOTS

The data from each sounding was plotted using the program ScreenZ. The normalized plots are included in Appendix A and the non-normalized plots are included in Appendix B. ScreenZ was developed by ConeTec Inc. and the program incorporates soil classification as part of the plot. The soil classification is based on the classification chart found in Appendix D.

## 3.3 CPTSUMM DATA PROCESSING

The electronic data files were processed using the program CPTSUMM. CPTSUMM is a program developed by ConeTec to calculate common engineering parameters from CPT data. The processed data files are attached in Appendix D. The files are also included on the data disk. The calculations used are summarized in the table at the front of the Appendix. Each calculation is derived according to the referenced article.

For this project, for the most part, the depth to ground water was assumed to be at sea level. From the few dissipation tests performed, the water table appeared to be slightly higher than sea-level. I believe that can be attributed to the possible salt content, being salt water is heavier than fresh water. For the locations in which dissipations were run, I used those water levels obtained. For all other locations, sea-level was used as the water table. Table 2 can be found at the beginning of Appendix C. The exact depth used is noted in the header of each CPTSUMM file.

## 3.4 DATA DISK

1 data disk is included in Appendix E. The disk includes all the CPT data and CPTSUMM data.

## 4.0 REFERENCES

**Robertson, P.K., Campananella, R.G.**, 1989, "Guidelines for Geotechnical Design using CPT and CPTU", Soil Mechanics Series No. 120, The University of British Columbia.

**Robertson, P.K., Sully, J., Woeller, D.G., Lunne, T., Powell, J.M., and Gillespie, D.J.**, 1990, "Guidelines for Interpretation of CPTU Test Data for determination of consolidation and permeability Parameters for Soils, Report prepared by Conetec Investigations Ltd. For Energy Mines and Resources, Contract No. 23420-9-m644/01-OSC. (Copies available from Conetec Inc.)

**ConeTec Inc.**
**Job No.** 02-703
**Location** Cherry Island Landfill
**Client** Duffield Associates
**Date** 1/28/2002 -- 2/14/2002

| DATE | HOLE NUMBER | FILE | CHARGE DEPTH (ft) | DRILLOUT | NOTES | SEQUENCE NUMBER |
|---|---|---|---|---|---|---|
| 1/28/02 | P5-02-C042 | 703cp042.cor | 70.04 | no | | 1 |
| | P5-02-C041 | 703cp041.cor | 87.27 | no | refusal | 2 |
| | P5-02-C039 | 703cp039.cor | 105.48 | no | refusal | 3 |
| | P5-02-C038 | 703cp038.cor | 95.8 | no | refusal | 4 |
| | P5-02-C040 | 703cp040.cor | 70.04 | no | | 5 |
| | P5-02-C037 | 703cp037.cor | 70.04 | no | | 6 |
| 1/29/02 | P5-02-C036 | 703cp036.cor | 70.04 | no | | 7 |
| | P5-02-C035 | 703cp035.cor | 1.31 | no | early refusal | 8 |
| | P5-02-C035 | 703cp35a.cor | 118.93 | no | refusal | 9 |
| | P5-02-C034 | 703cp034.cor | 97.44 | no | refusal | 10 |
| | P5-02-C033 | 703cp033.cor | 70.04 | no | | 11 |
| | P5-02-C032 | 703cp032.cor | 99.41 | no | refusal | 12 |
| | P5-02-C030 | 703cp030.cor | 113.51 | no | refusal | 13 |
| 1/30/02 | P2-02-C043 | 703cp043.cor | 2.62 | no | stop possible pipe | 14 |
| | P2-02-C043 | 703cp43a.cor | 85.96 | no | refusal | 15 |
| | P1-02-C044 | 703cp044.cor | 70.04 | no | | 16 |
| | P1-02-C045 | 703cp045.cor | 70.04 | no | | 17 |
| | P1-02-C046 | 703cp046.cor | 122.7 | no | refusal | 18 |
| 1/31/02 | P1-02-C001 | 703cp001.cor | 58.4 | no | refusal | 19 |
| | P2-02-C002 | 703cp002.cor | 70.04 | no | | 20 |
| | P3-02-C003 | 703cp003.cor | 93.34 | no | refusal | 21 |
| | P3-02-C004 | 703cp004.cor | 70.04 | no | | 22 |
| | P3-02-C005 | 703cp005.cor | 98.1 | no | refusal | 23 |
| | P3-02-C006 | 703cp006.cor | 70.04 | no | | 24 |

Table 1

| | | | | | | |
|---|---|---|---|---|---|---|
| **2/1/02** | P3-02-C007 | 703cp007.cor | 99.41 | no | refusal | 25 |
| | P3-02-C008 | 703cp008.cor | 95.96 | no | refusal | 26 |
| | P3-02-C009 | 703cp009.cor | 127.29 | no | refusal | 27 |
| | P3-02-C011 | 703cp011.cor | 98.26 | no | refusal | 28 |
| | P4-02-C013 | 703cp013.cor | 70.04 | no | | 29 |
| **2/4/02** | P4-02-C015 | 703cp015.cor | 101.05 | no | refusal | 30 |
| | P4-02-C017 | 703cp017.cor | 103.51 | no | refusal | 31 |
| | P4-02-C018 | 703cp018.cor | 101.7 | no | refusal | 32 |
| | P5-02-C020 | 703cp020.cor | 103.51 | no | refusal | 33 |
| | P5-02-C022 | 703cp022.cor | 70.04 | no | | 34 |
| | P5-02-C024 | 703cp024.cor | 100.39 | no | refusal | 35 |
| **2/5/02** | P5-02-C026 | 703cp026.cor | 101.38 | no | refusal | 36 |
| | P5-02-C027 | 703cp027.cor | 118.11 | no | refusal | 37 |
| | P5-02-C028 | 703cp028.cor | 68.9 | no | refusal (long dissipation) | 38 |
| **2/6/02** | P5-02-C029 | 703cp029.cor | 102.52 | no | refusal | 39 |
| | P5-02-C031 | 703cp031.cor | 80.05 | no | refusal | 40 |
| | P5-02-C025 | 703cp025.cor | 70.04 | no | | 41 |
| **2/7/02** | P3-02-C012 | 703cp012.cor | 90.39 | no | refusal ( 5 dissipations) | 42 |
| | P3-02-C010 | 703cp010.cor | 75.13 | no | 3 dissipations | 43 |
| **2/8/02** | P4-02-C014 | 703cp014.cor | 70.04 | no | | 44 |
| | P4-02-C019 | 703cp019.cor | 71.19 | no | refusal | 45 |
| | P4-02-C016 | 703cp016.cor | 73.82 | no | refusal | 46 |
| | P5-02-C021 | 703cp021.cor | 70.04 | no | | 47 |
| | P5-02-C023 | 703cp023.cor | 99.41 | no | refusal | 48 |
| **2/9/02** | P3-02-C052 | 703cp052.cor | 85.14 | no | waste | 49 |
| | P4-02-C053 | 703cp053.cor | 7.55 | no | refusal (waste) | 50 |
| | P4-02-C053 | 703cp53a.cor | 100.06 | no | waste | 51 |

Table 1

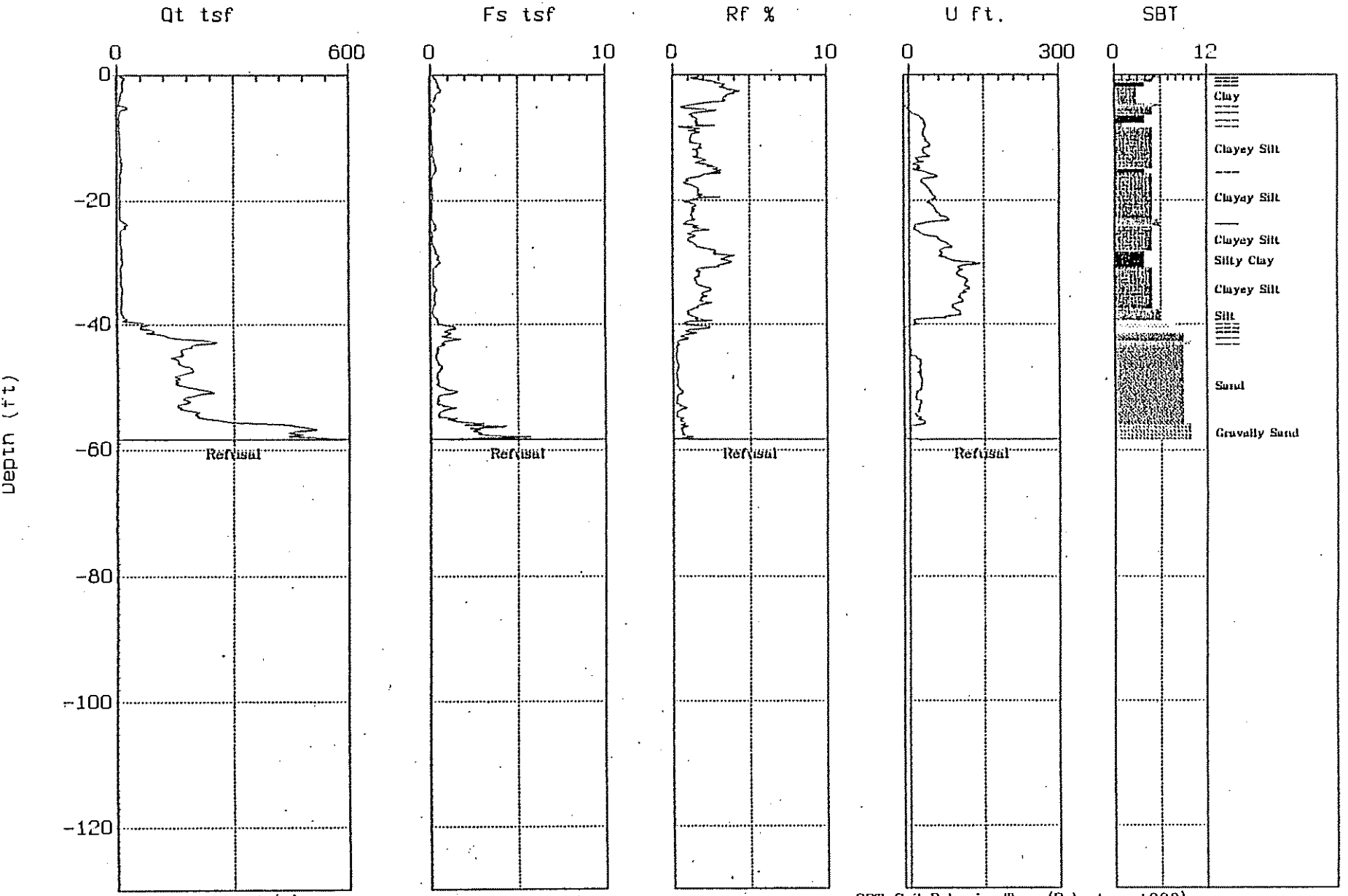
| | | | | | | |
|---|---|---|---|---|---|---|
| **2/12/02** | P5-02-C054 | 703cp054.cor | 85.14 | no | waste | 52 |
| | P2-02-C055 | 703cp055.cor | 90.06 | no | waste | 53 |
| | P5-02-C056 | 703cp056.cor | 90.06 | no | waste | 54 |
| | P5-02-C057 | 703cp057.cor | 90.06 | no | waste | 55 |
| **2/13/02** | P1-02-C050 | 703cp050.cor | 70.04 | no | | 56 |
| | P1-02-C049 | 703cp049.cor | 70.04 | no | | 57 |
| | P1-02-C048 | 703cp048.cor | 62.5 | no | refusal | 58 |
| | P1-02-C047 | 703cp047.cor | 63.32 | no | refusal | 59 |
| **2/14/02** | P1-02-C059 | 703cp059.cor | 67.58 | no | refusal (waste) | 60 |
| | P1-02-C051 | 703cp051.cor | 33.3 | no | refusal (waste) | 61 |
| | P1-02-C051 | 703cp51a.cor | 90.06 | no | | 62 |
| | P3-02-C058 | 703cp058.cor | 90.06 | no | | 63 |
| **Job Totals** | **59 locations** | **63 files** | **5137.82** | | | **63 pushes** |

CONETEC

*Duffield Associates*

Site: P1-02-C001
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:31:02 07:56




Max. Depth: 58.40 (ft)
Depth Inc.: 0.164 (ft)

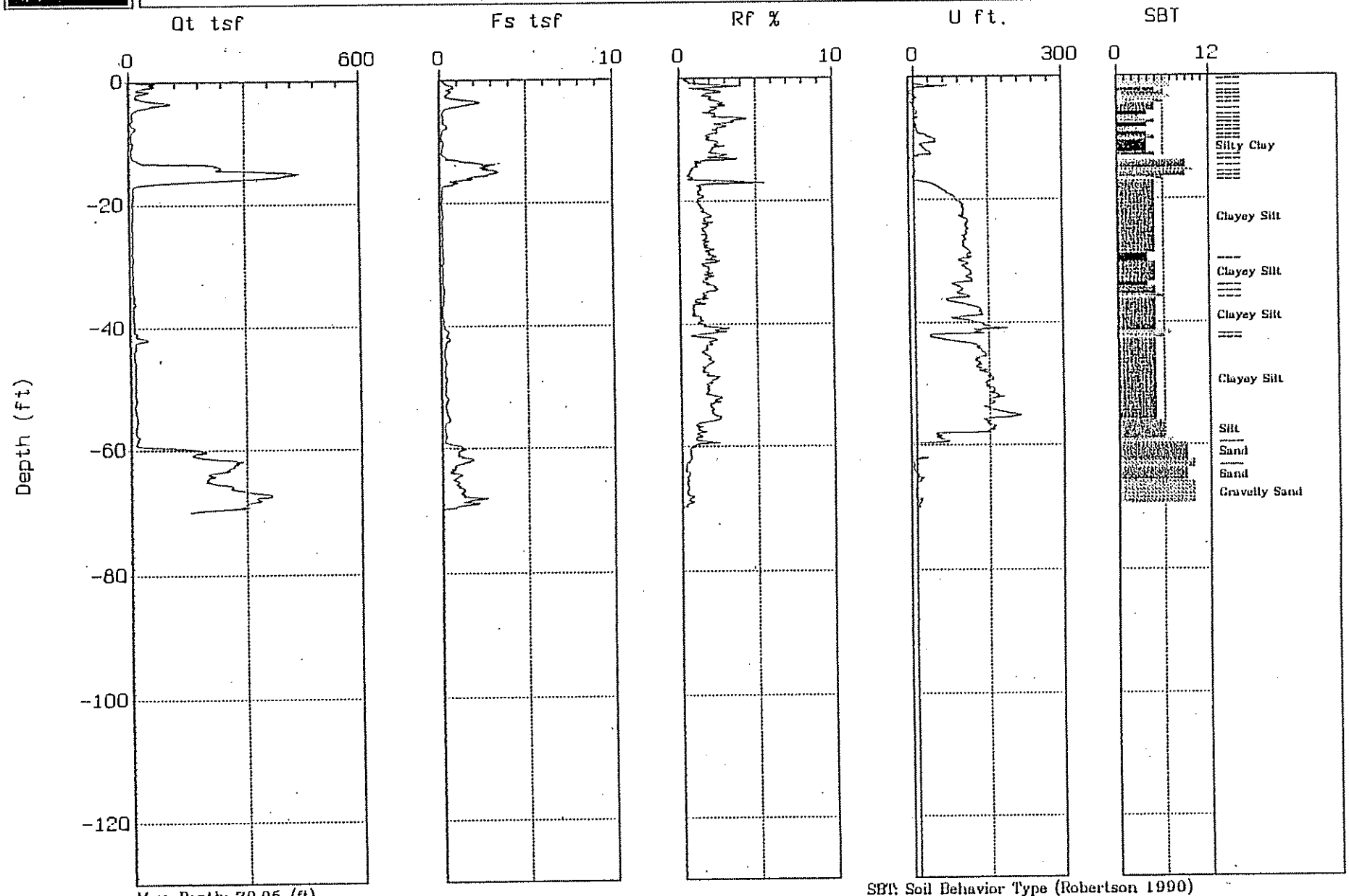
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P2-02-C002
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:31:02 09:05




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

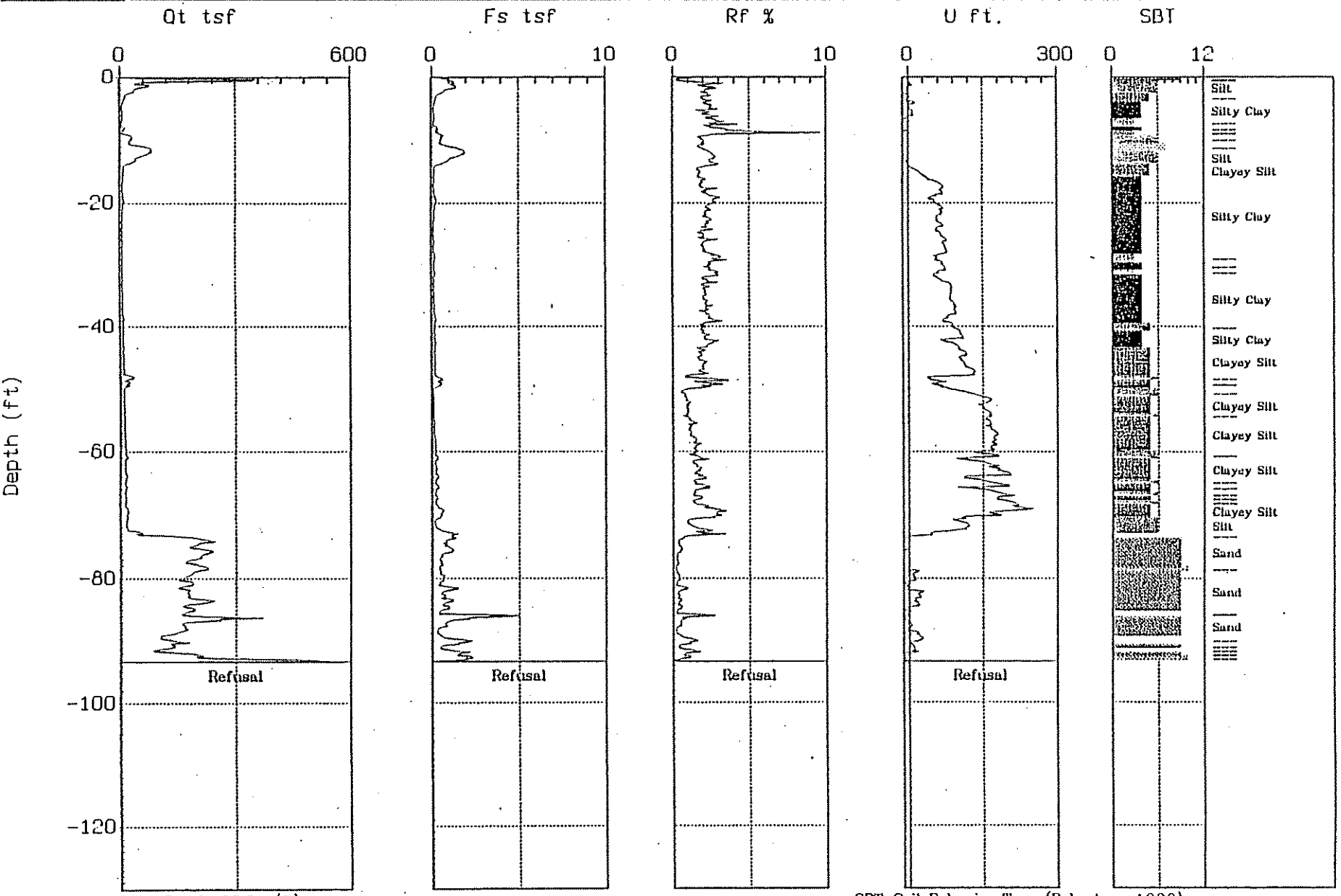
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C003
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:31:02 10:04




Max. Depth: 93.34 (ft)
Depth Inc.: 0.164 (ft)

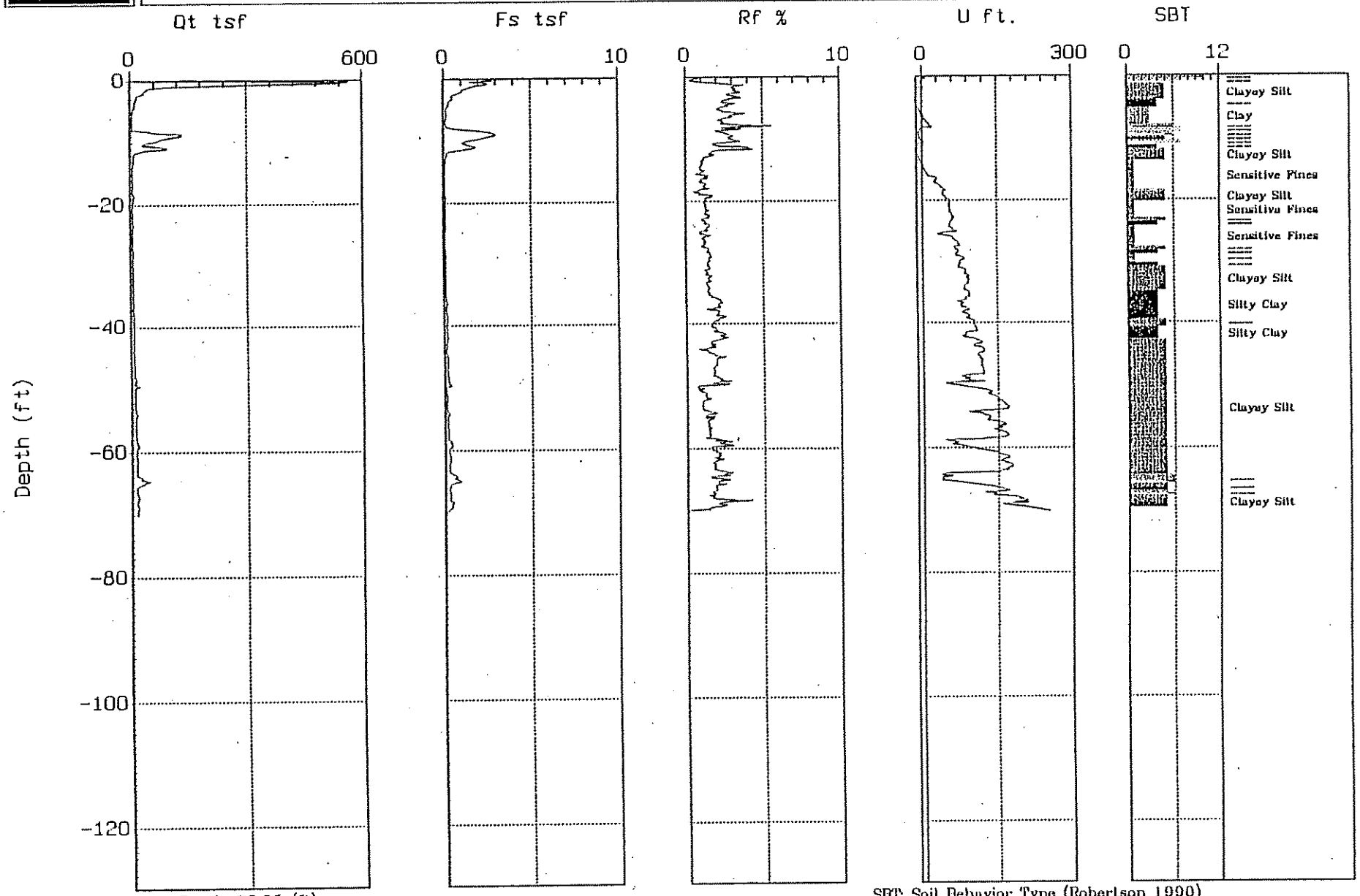
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C004
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:31:02 11:16




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

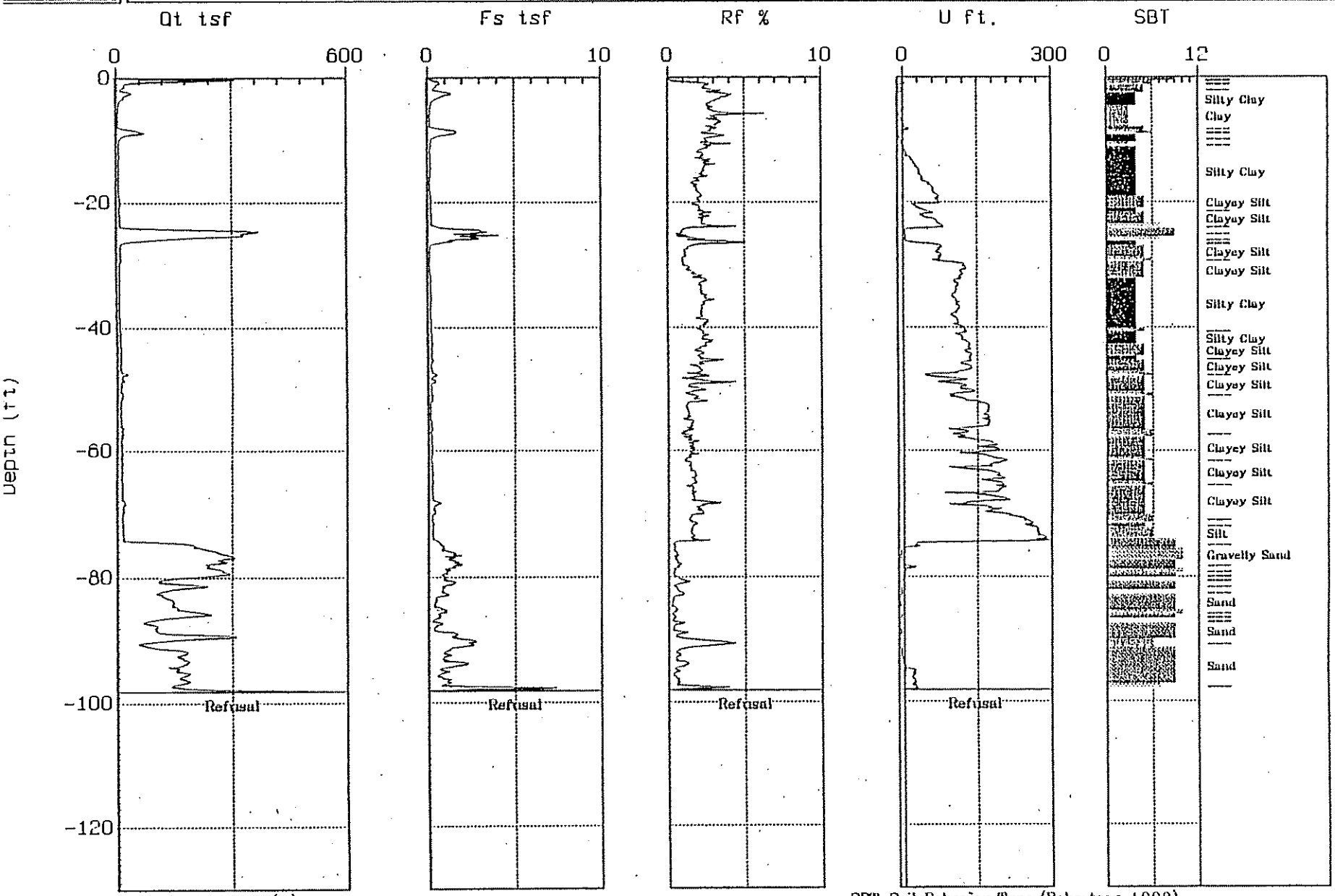
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C005
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:31:02 12:10




Max. Depth: 98.10 (ft)

Depth Inc.: 0.164 (ft)

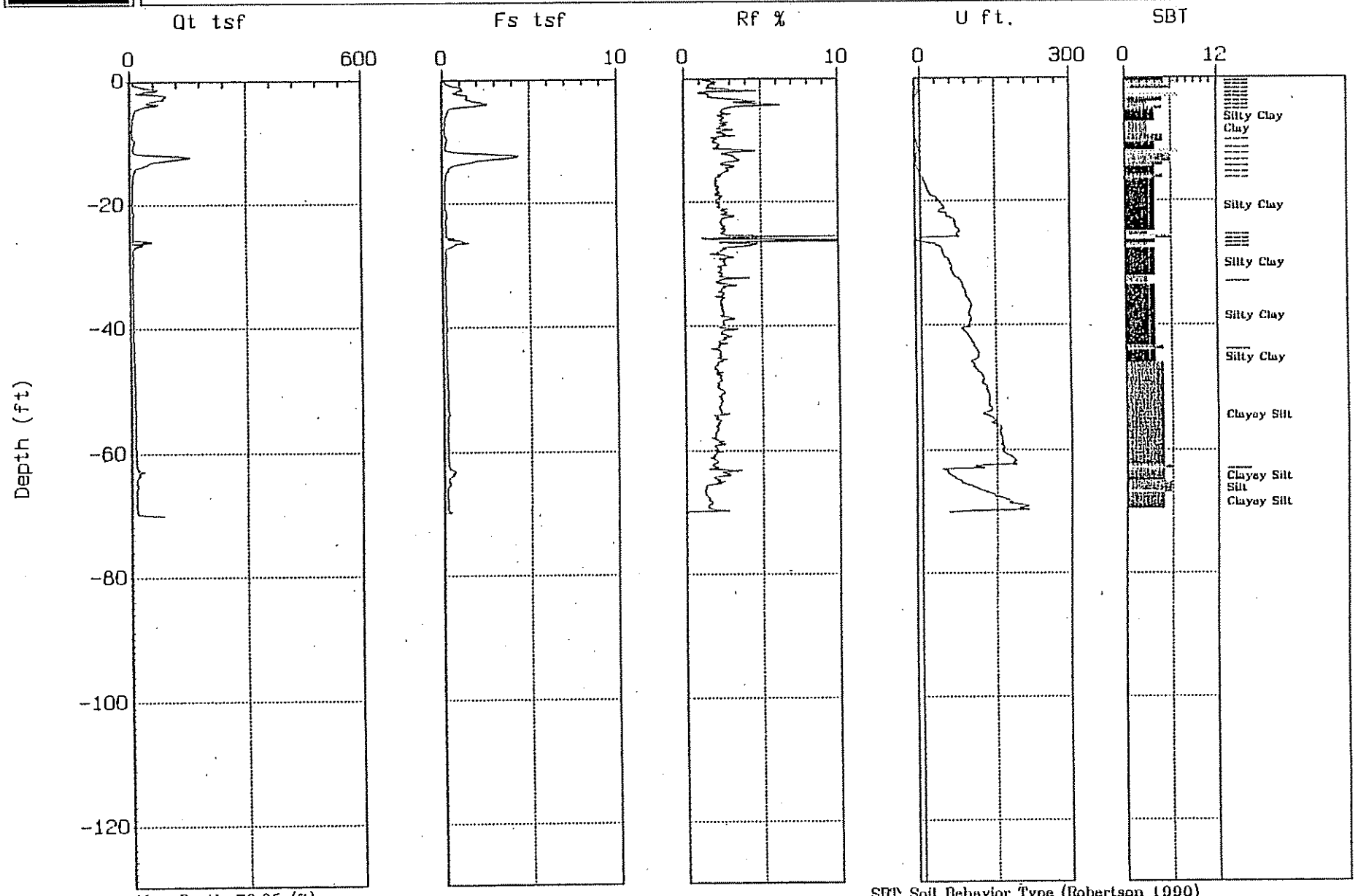
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C006
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:31:02 13:21




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

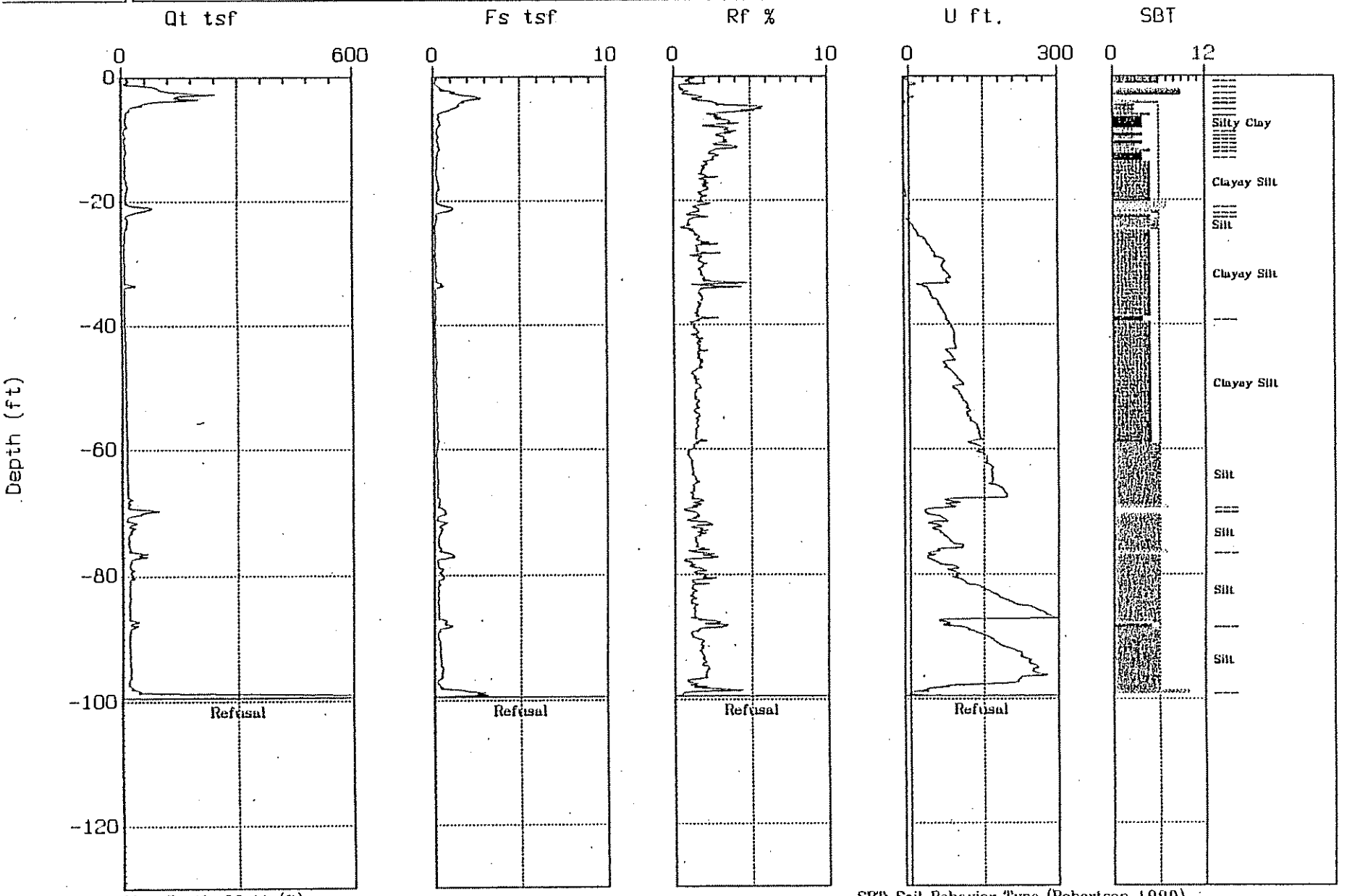
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C007
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:01:02 08:01




Max. Depth: 00.41 (ft)

Depth Inc.: 0.164 (ft)

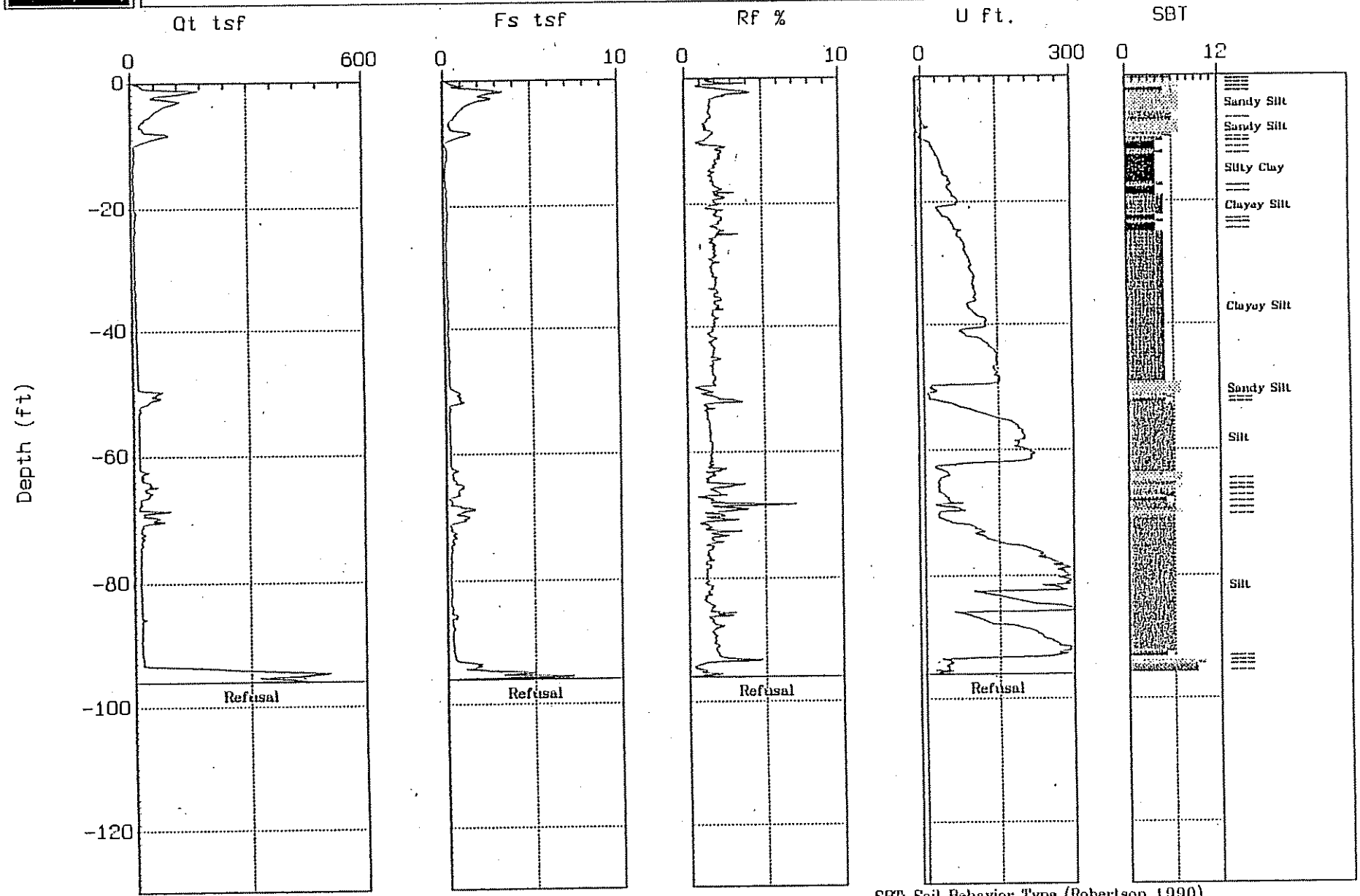
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C008
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:01:02 09:12




Max. Depth: 95.96 (ft)

Depth Inc: 0.164 (ft)

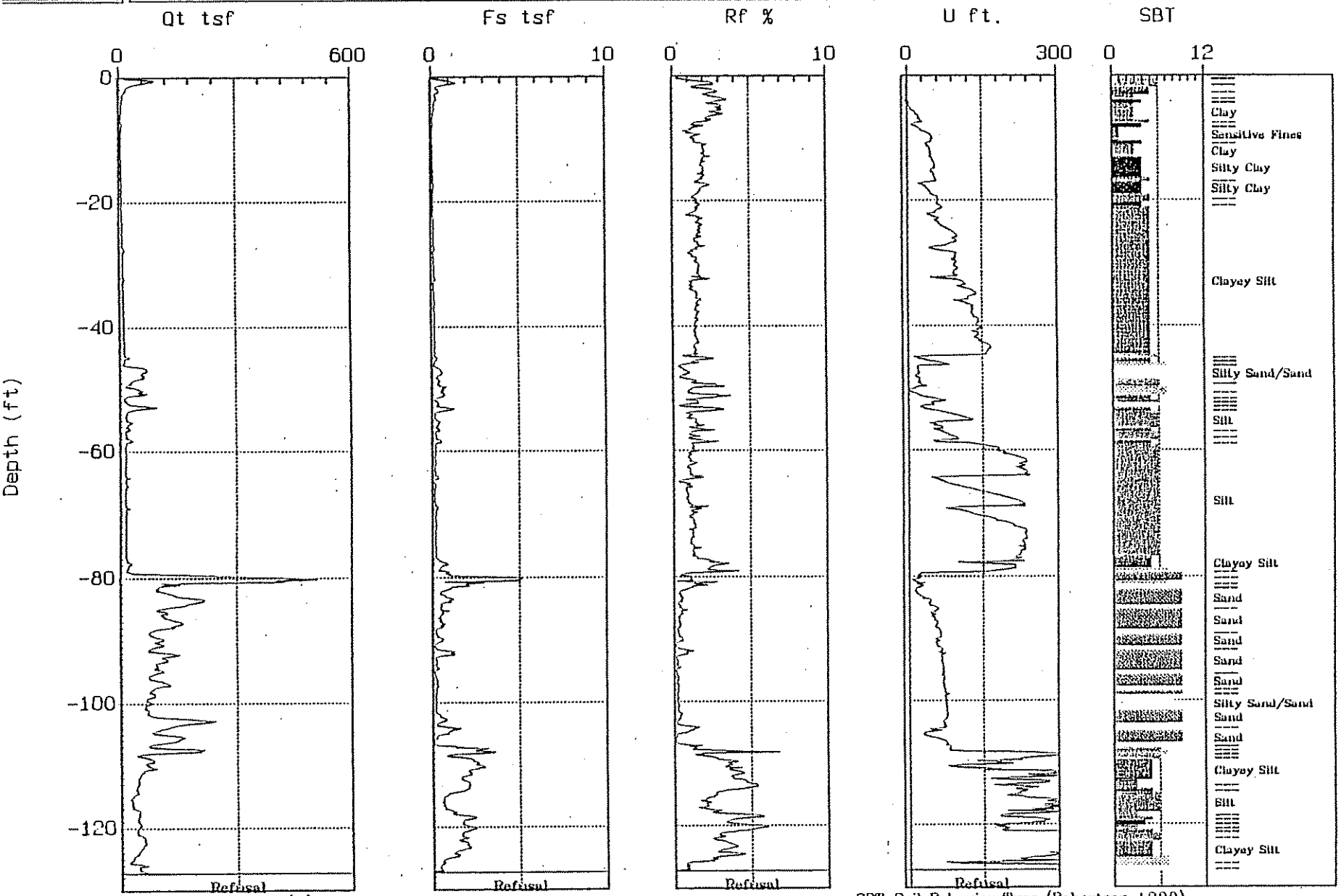
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C009
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:01:02 10:28




Max. Depth: 127.30 (ft)

Depth Inc.: 0.164 (ft)

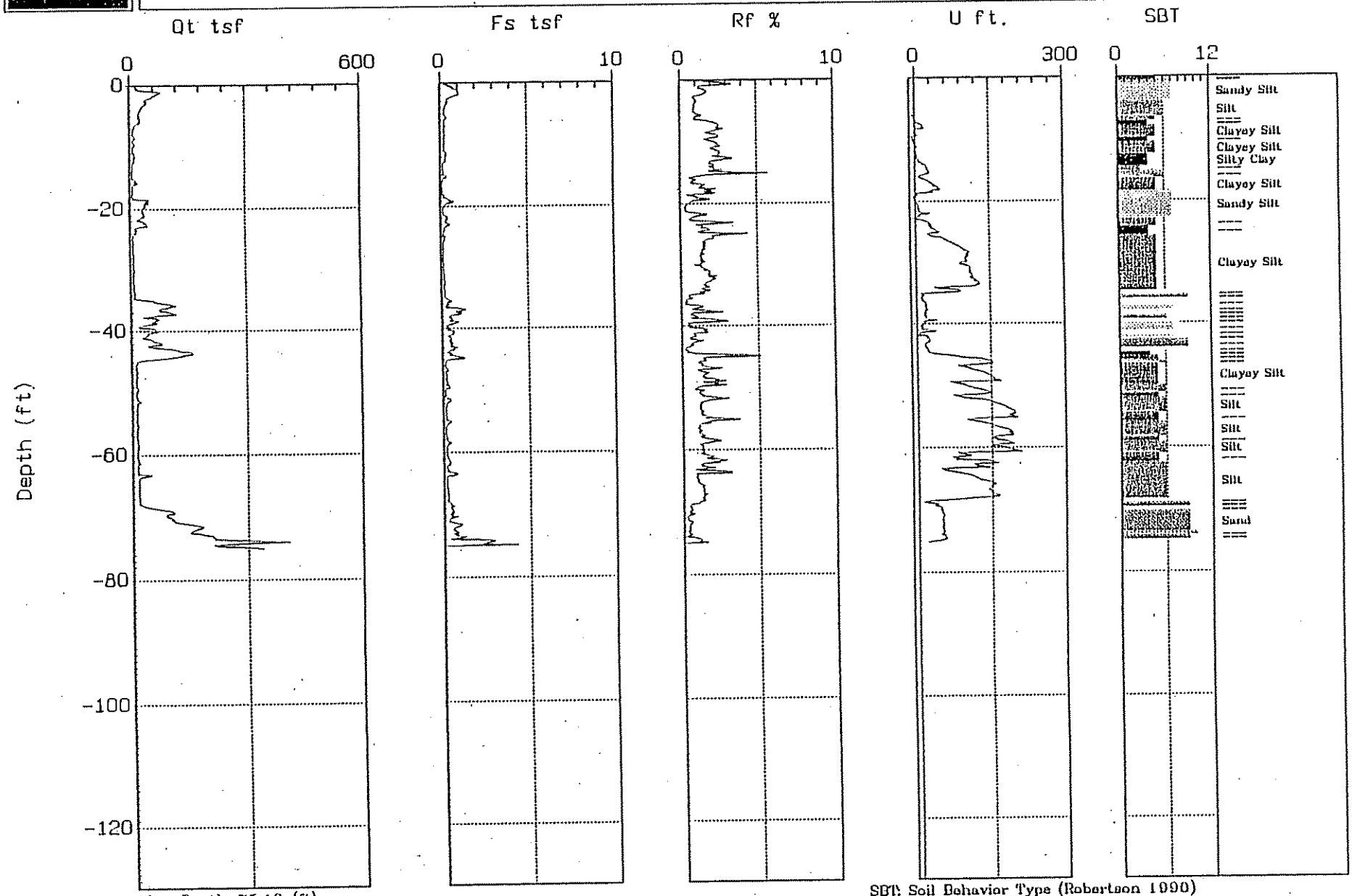
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C010
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:07:02 12:05




Max. Depth: 75.13 (ft)
Depth Inc.: 0.164 (ft)

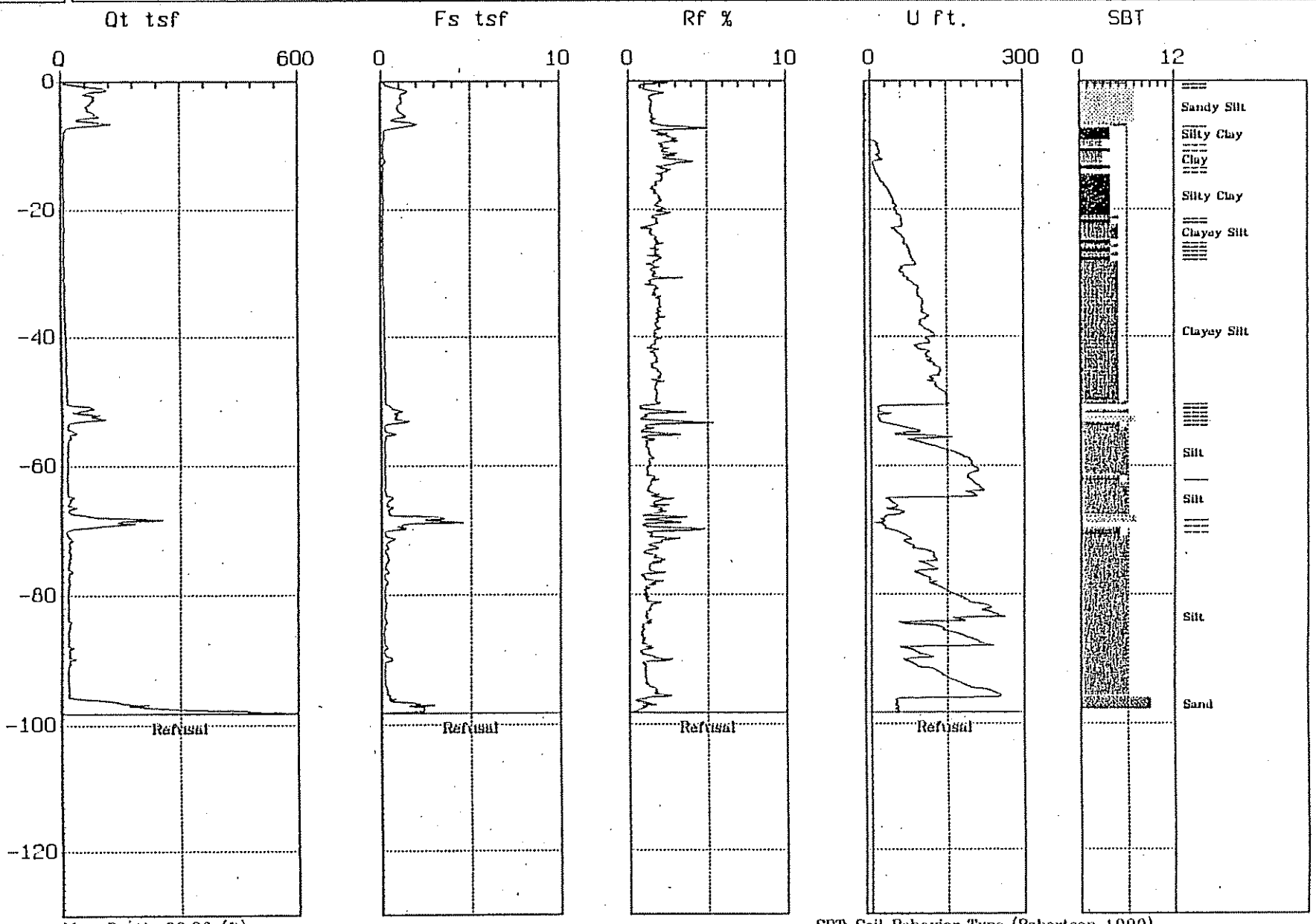
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C011
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:01:02 12:12




Max. Depth: 98.26 (ft)

Depth Inc.: 0.164 (ft)

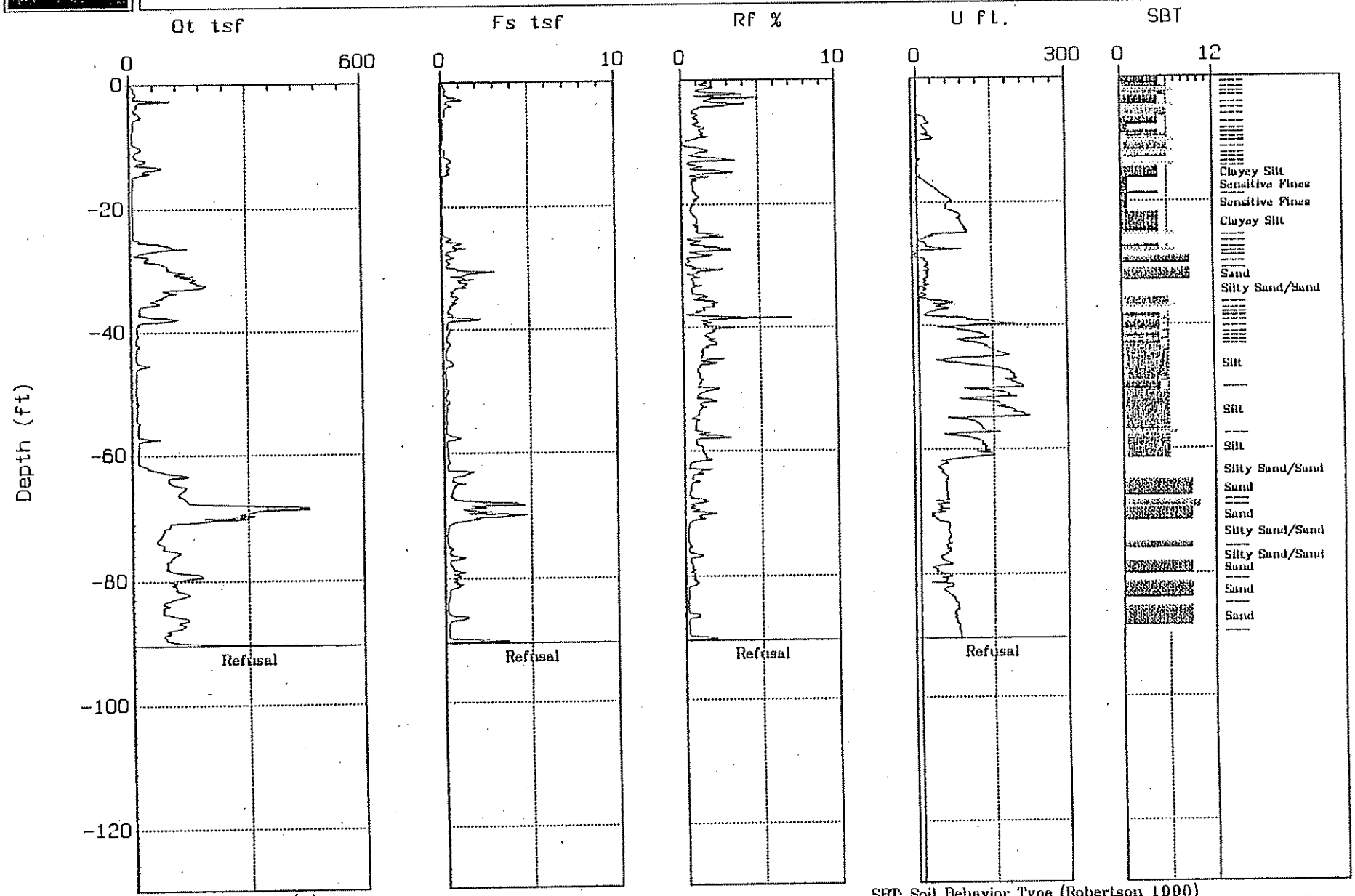
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C012
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:07:02 08:10




Max. Depth: 90.39 (ft)
Depth Inc.: 0.164 (ft)

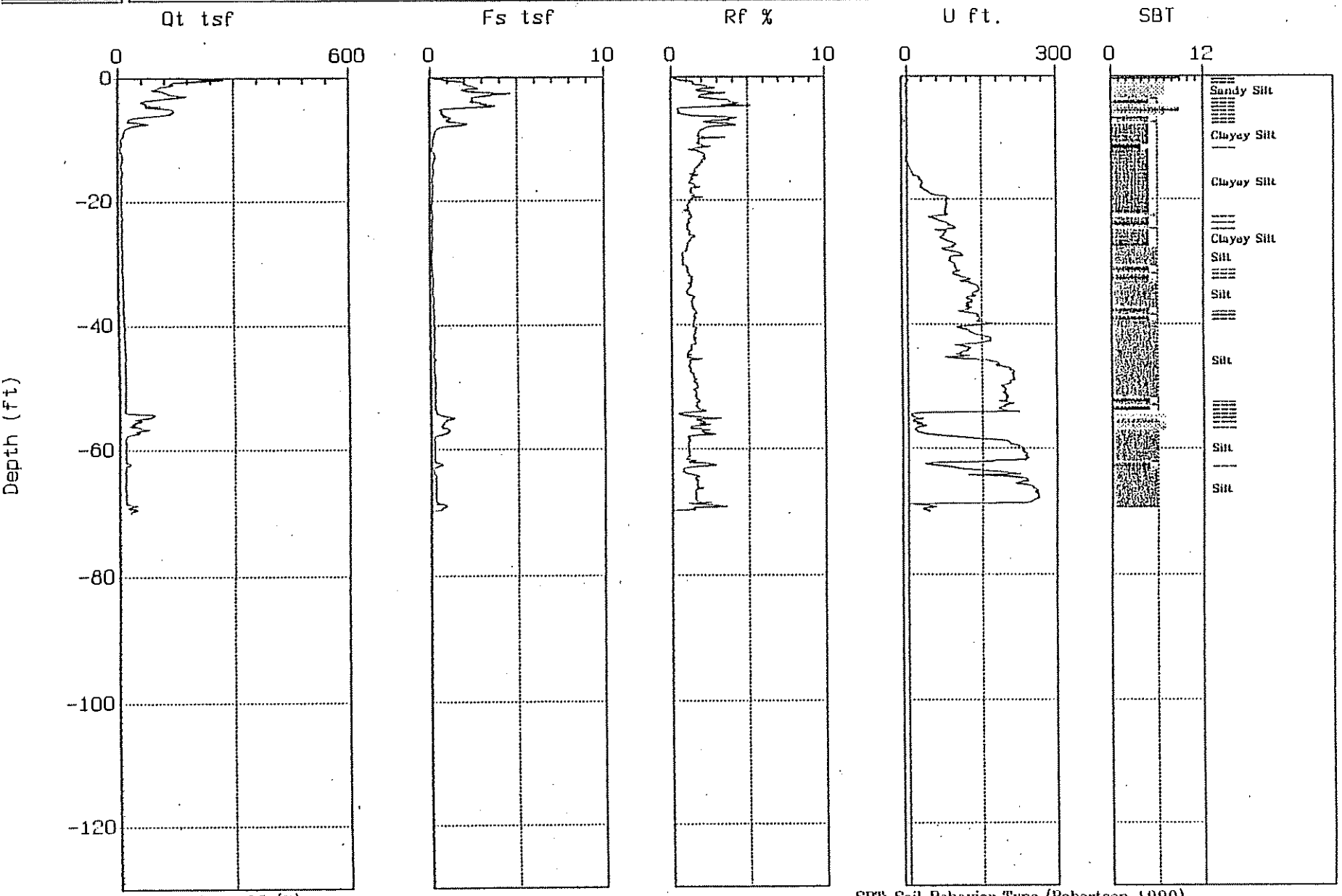
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C013
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:01:02 13:18




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

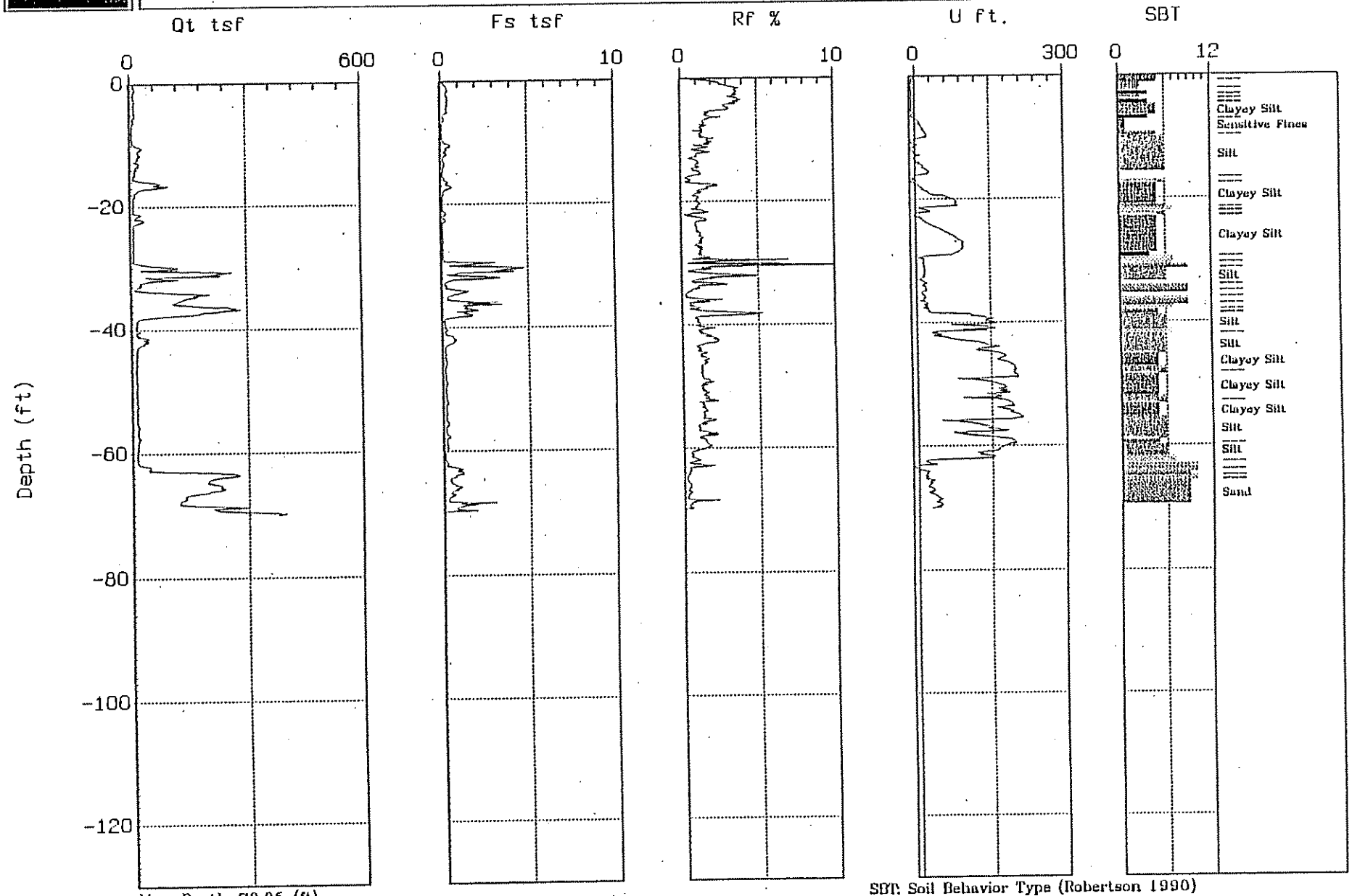
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C014
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:08:02 07:59




Max. Depth: 70.05 (ft)
Depth Inc: 0.164 (ft)

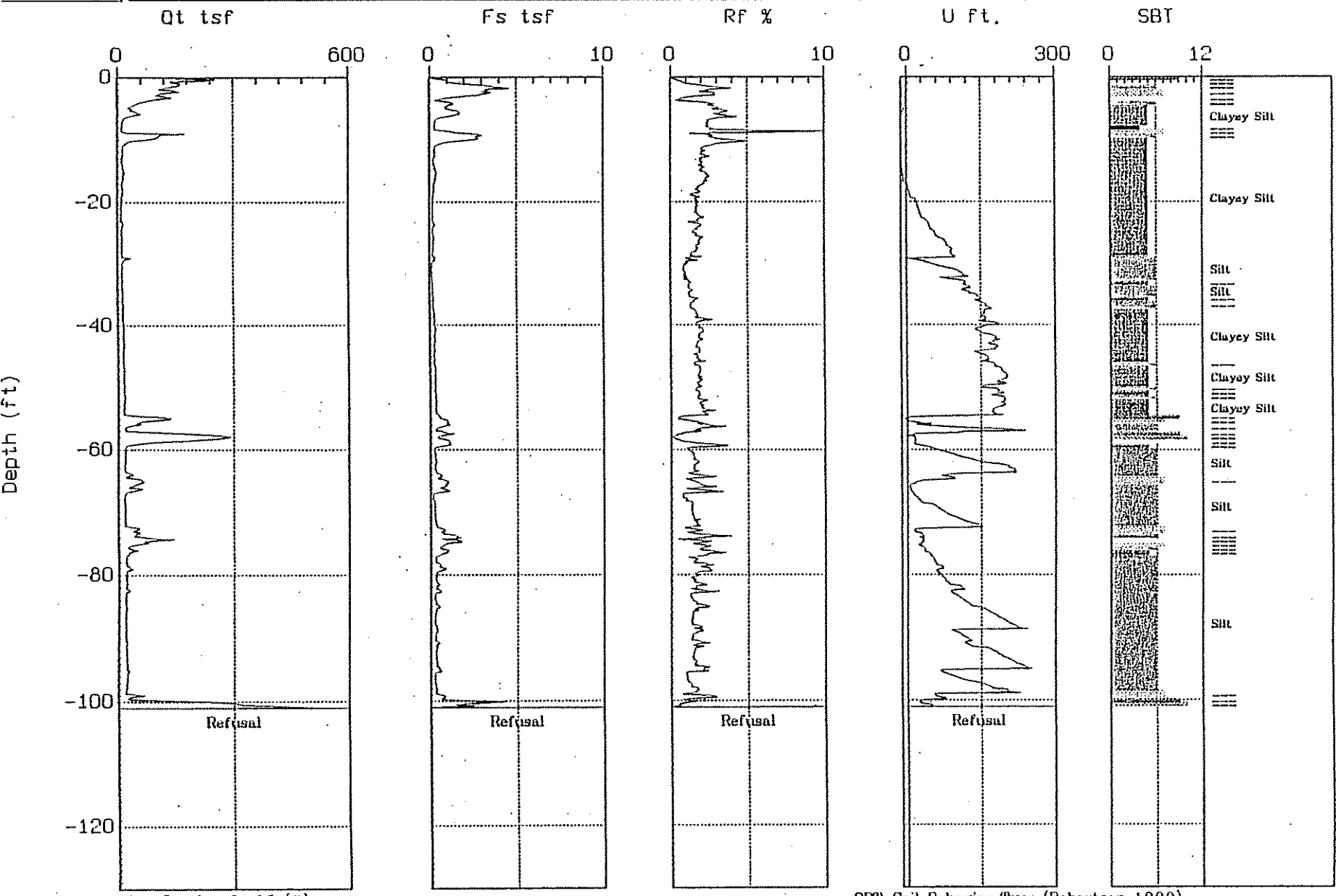
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C015
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:04:02 08:03




Max. Depth: 101.05 (ft)
Depth Inc.: 0.164 (ft)

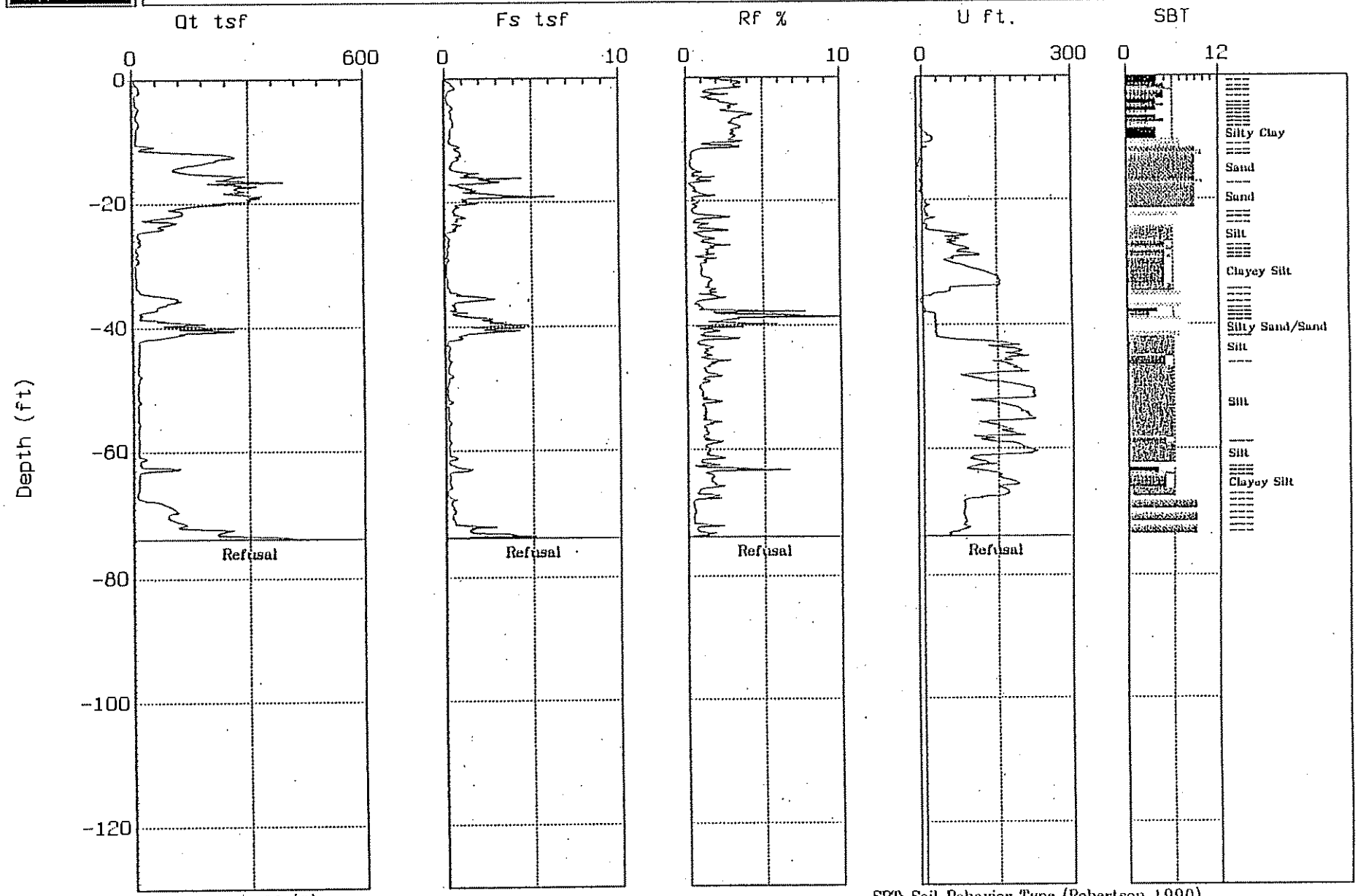
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C016
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:08:02 10:06




Max. Depth: 73.82 (ft)

Depth Inc.: 0.164 (ft)

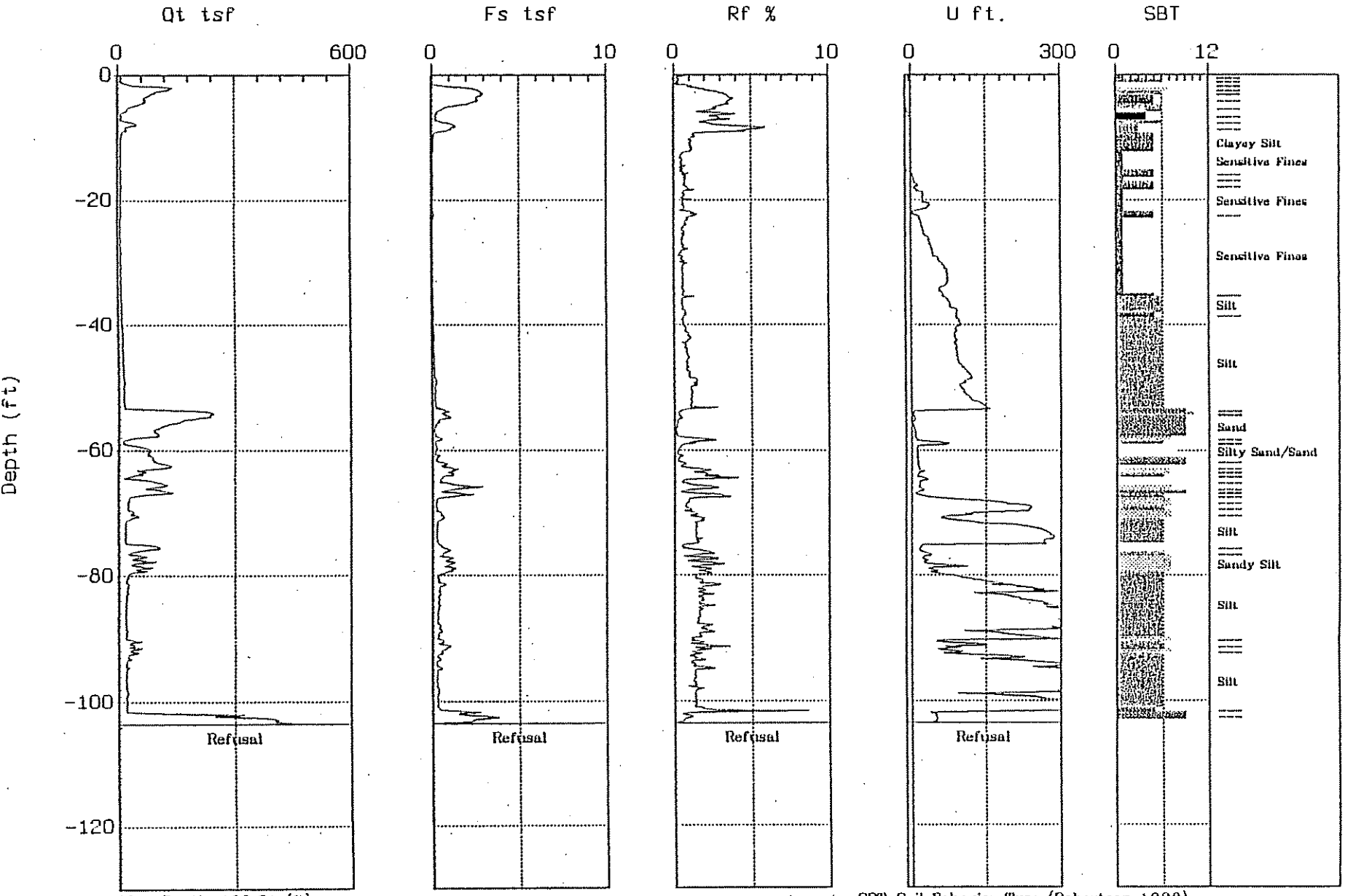
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C017
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:04:02 09:22




Max. Depth: 103.51 (ft)

Depth Inc.: 0.164 (ft)

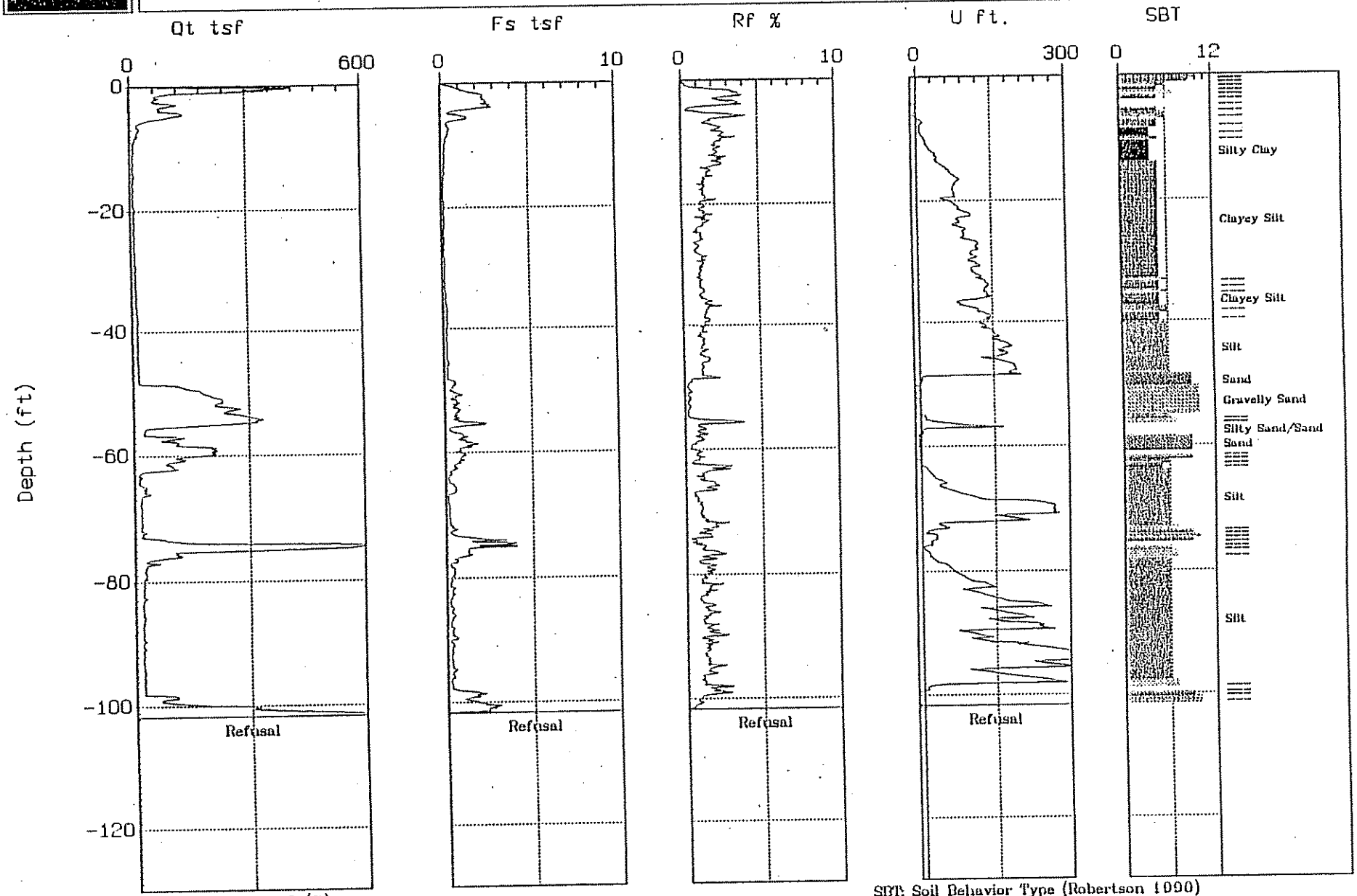
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C018
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:04:02 10:44




Max. Depth: 101.70 (ft)
Depth Inc.: 0.164 (ft)

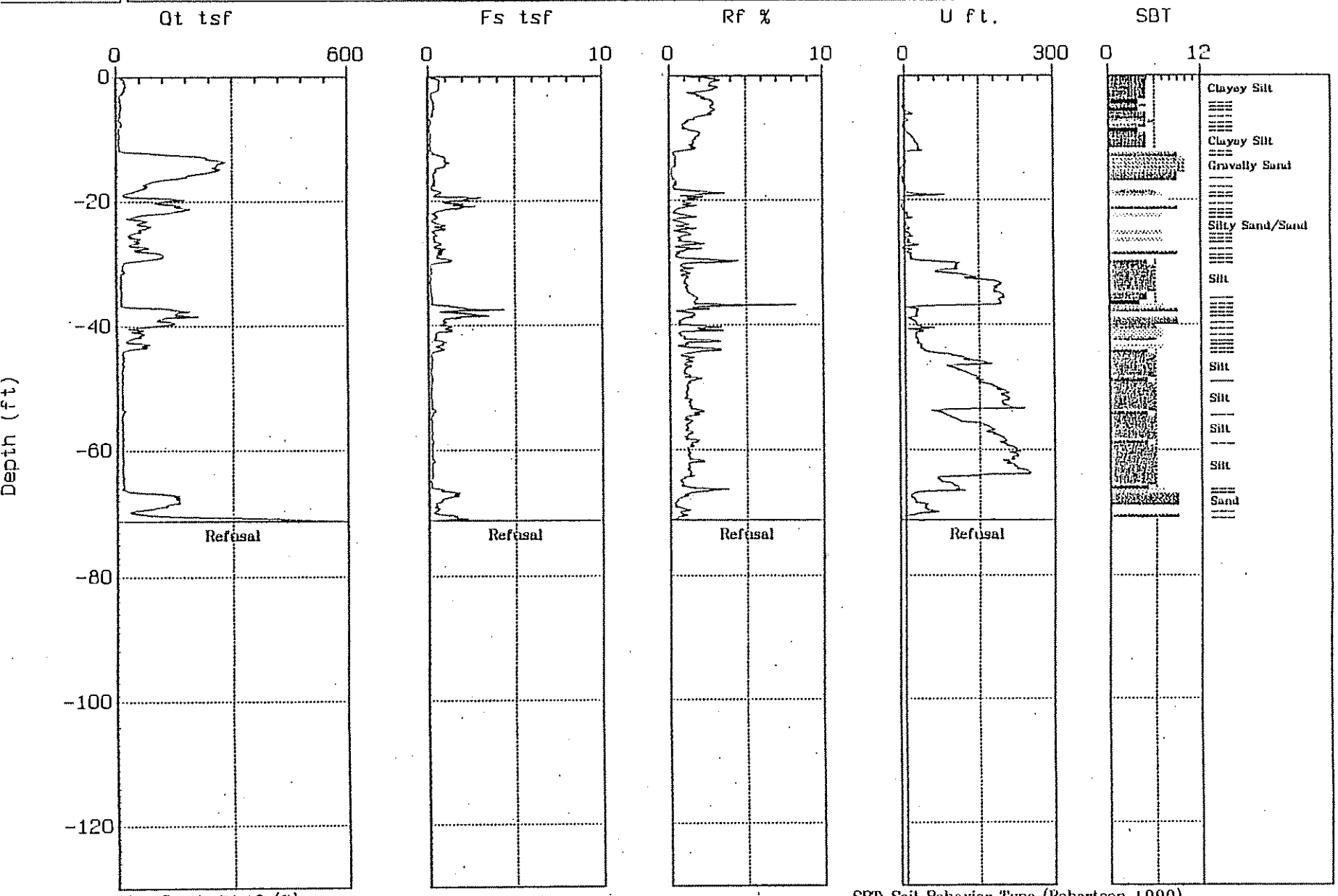
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C019
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:08:02 09:08




Max. Depth: 71.10 (ft)

Depth Inc.: 0.164 (ft)

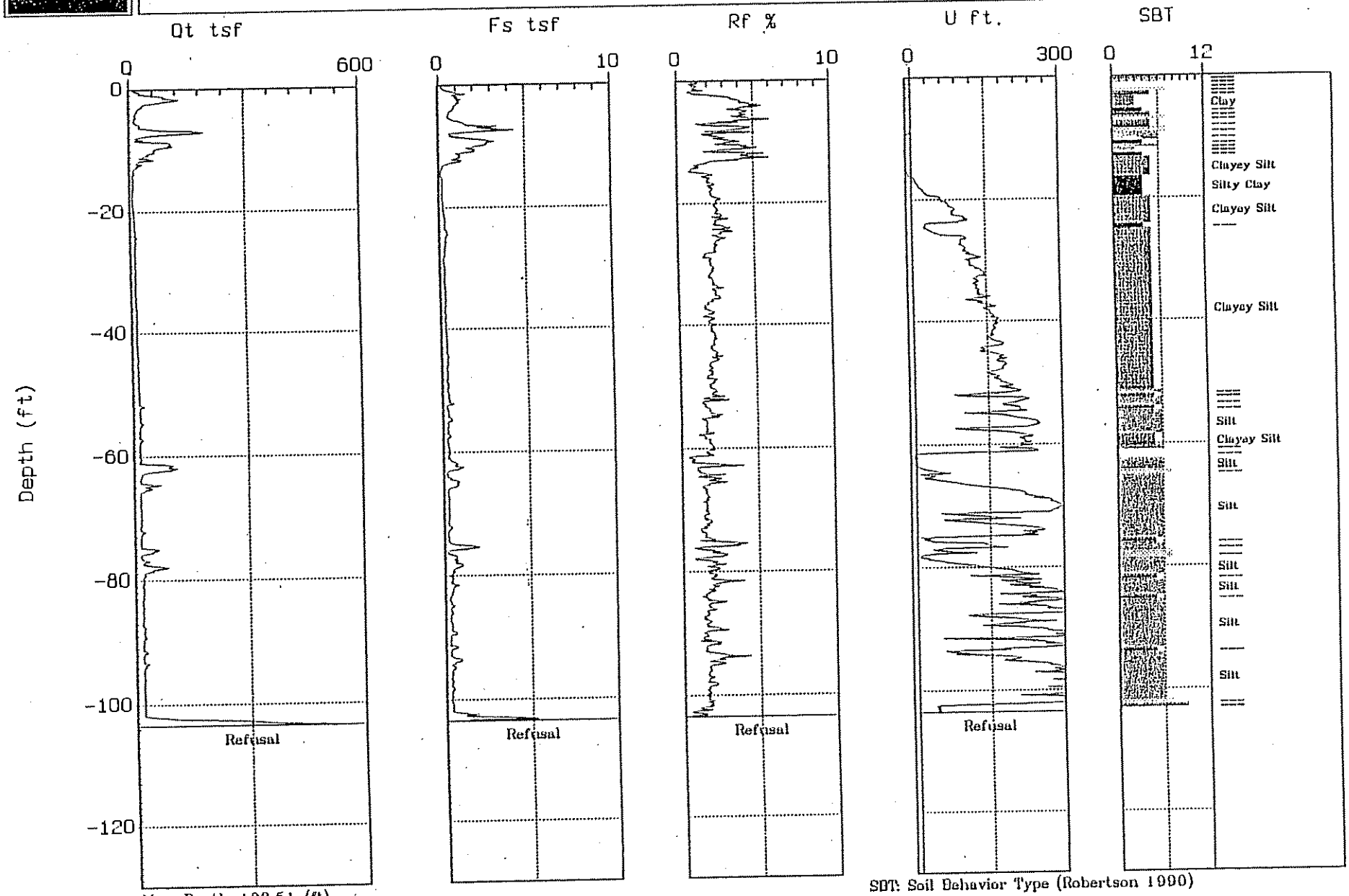
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C020
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:04:02 11:51




SBT: Soil Behavior Type (Robertson 1990)

Max. Depth: 103.51 (ft)

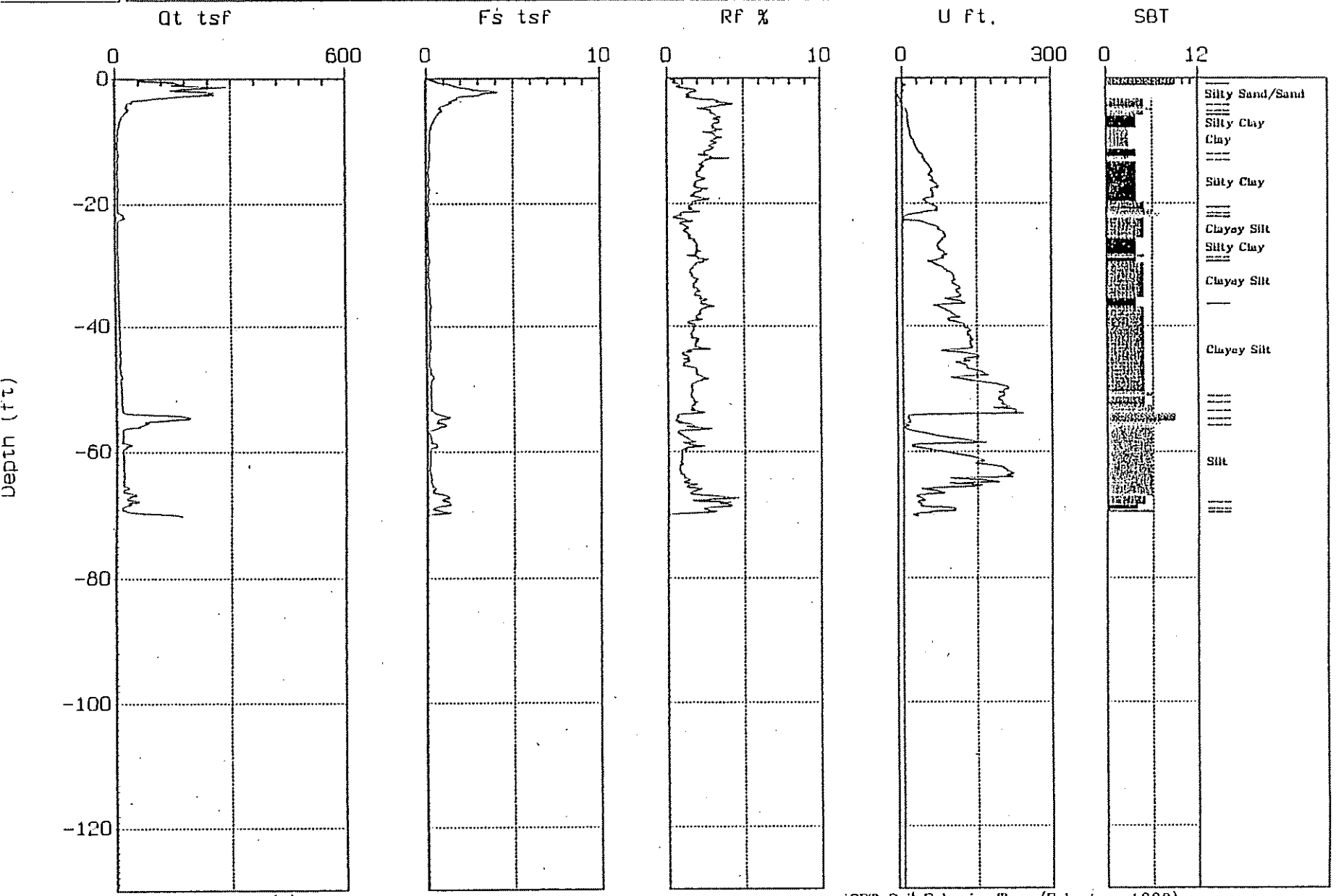
Depth Inc.: 0.164 (ft)

CONETEC

*Duffield Associates*

Site: P5-02-C021
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:08:02 11:25




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

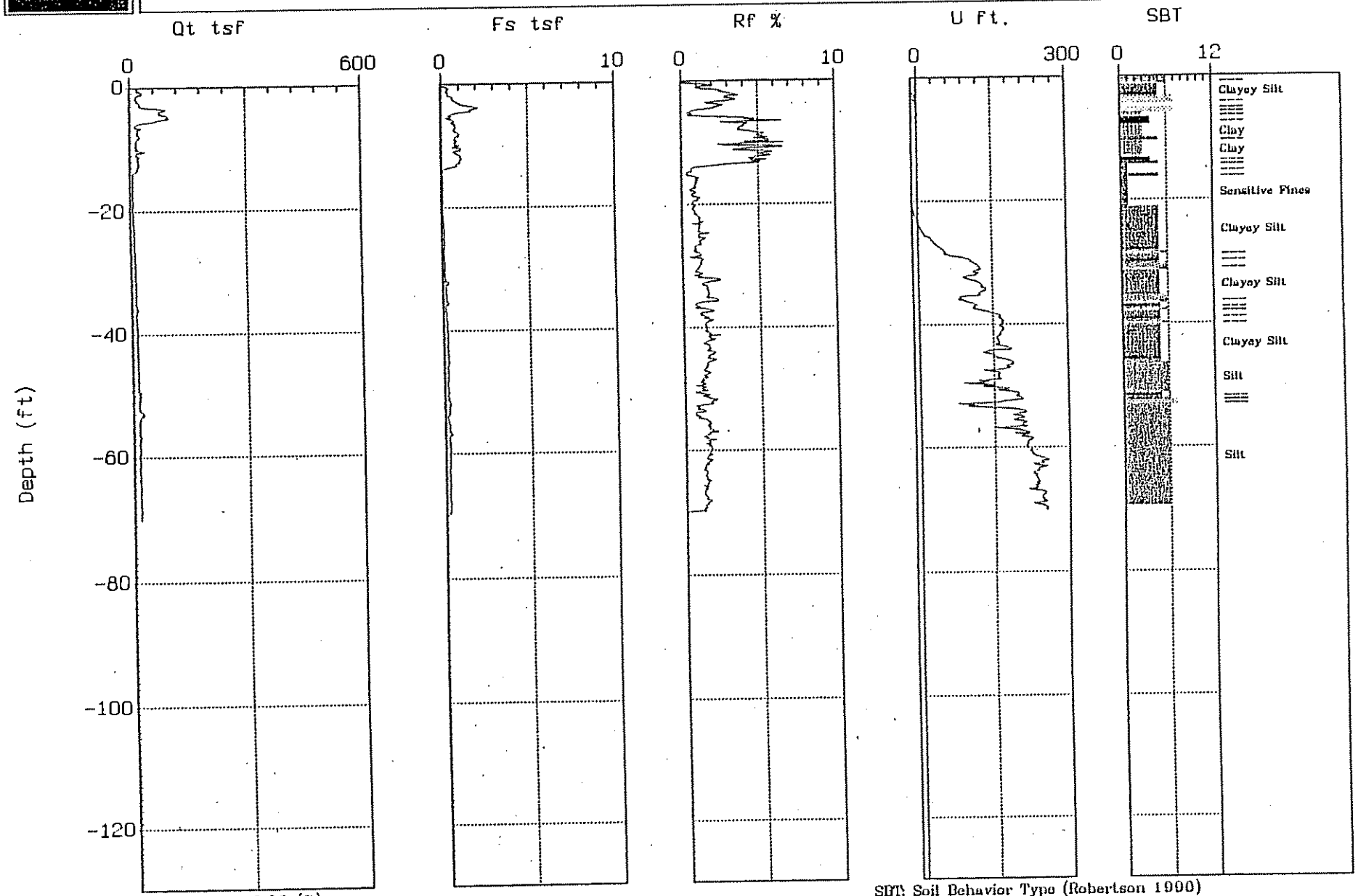
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C022
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:04:02 12:57




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

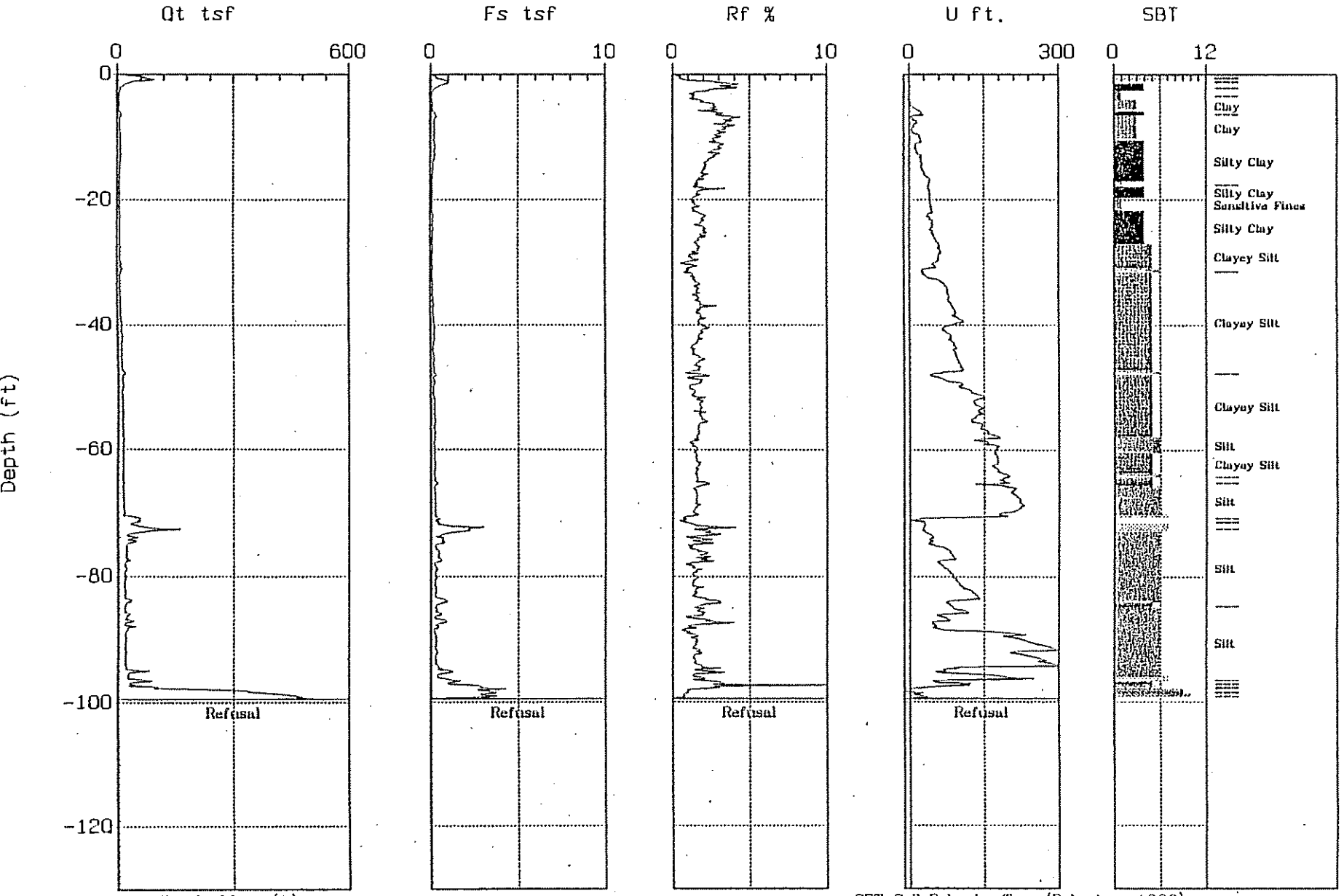
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C023
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:08:02 12:15




Max. Depth: 99.41 (ft)
Depth Inc.: 0.164 (ft)

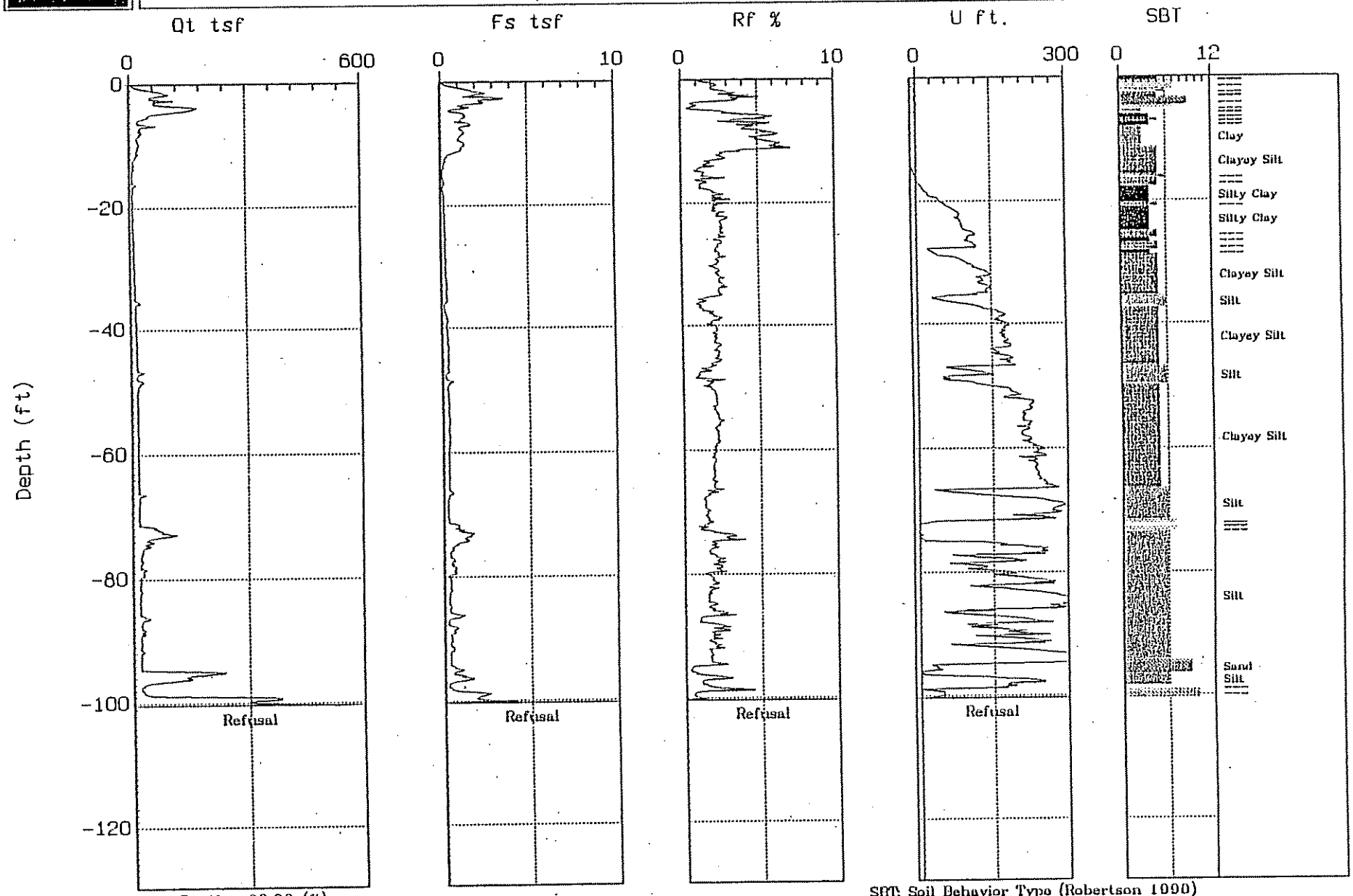
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C024
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:04:02 13:46




Max. Depth: 100.39 (ft)

Depth Inc.: 0.164 (ft)

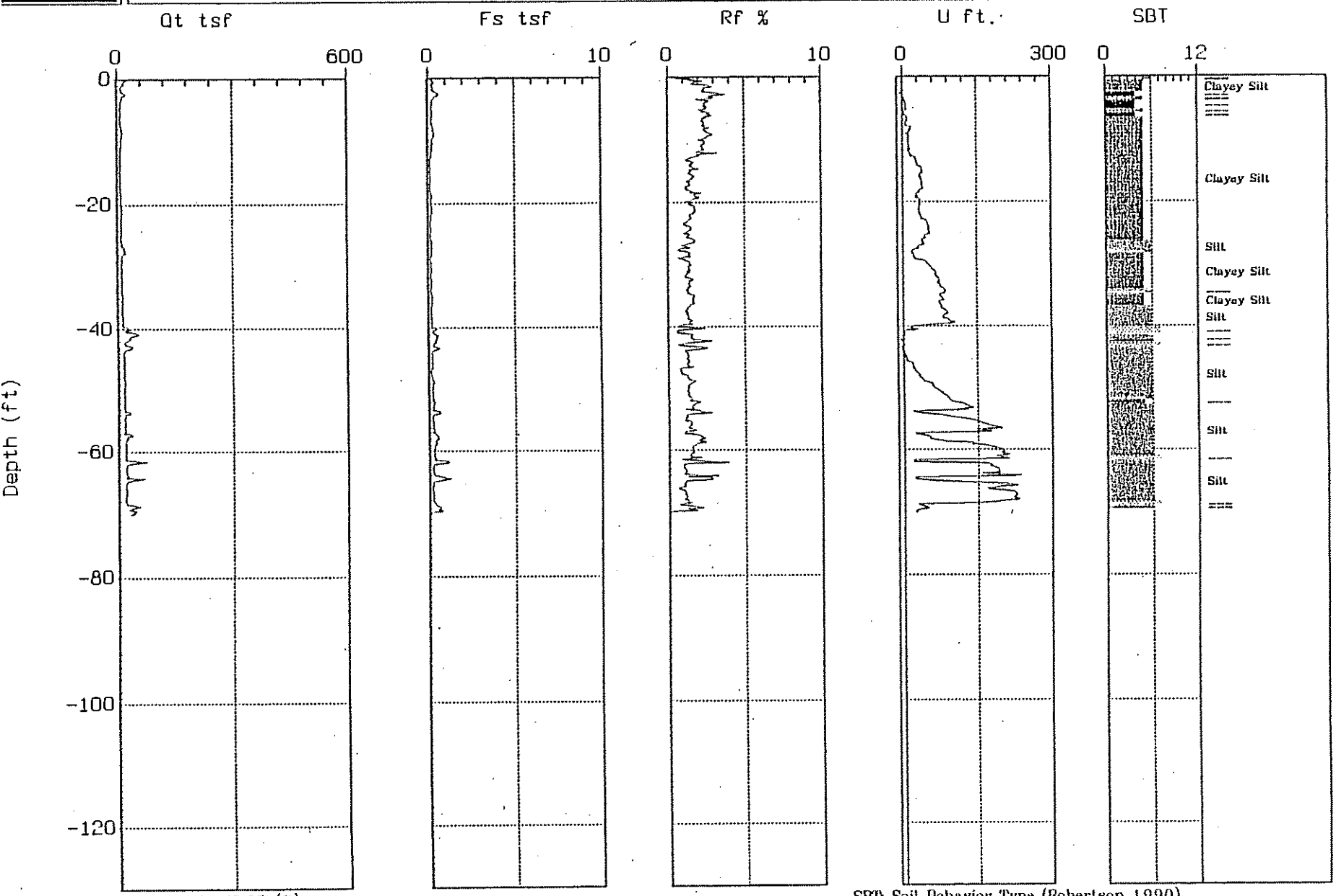
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C025
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:06:02 13:30




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

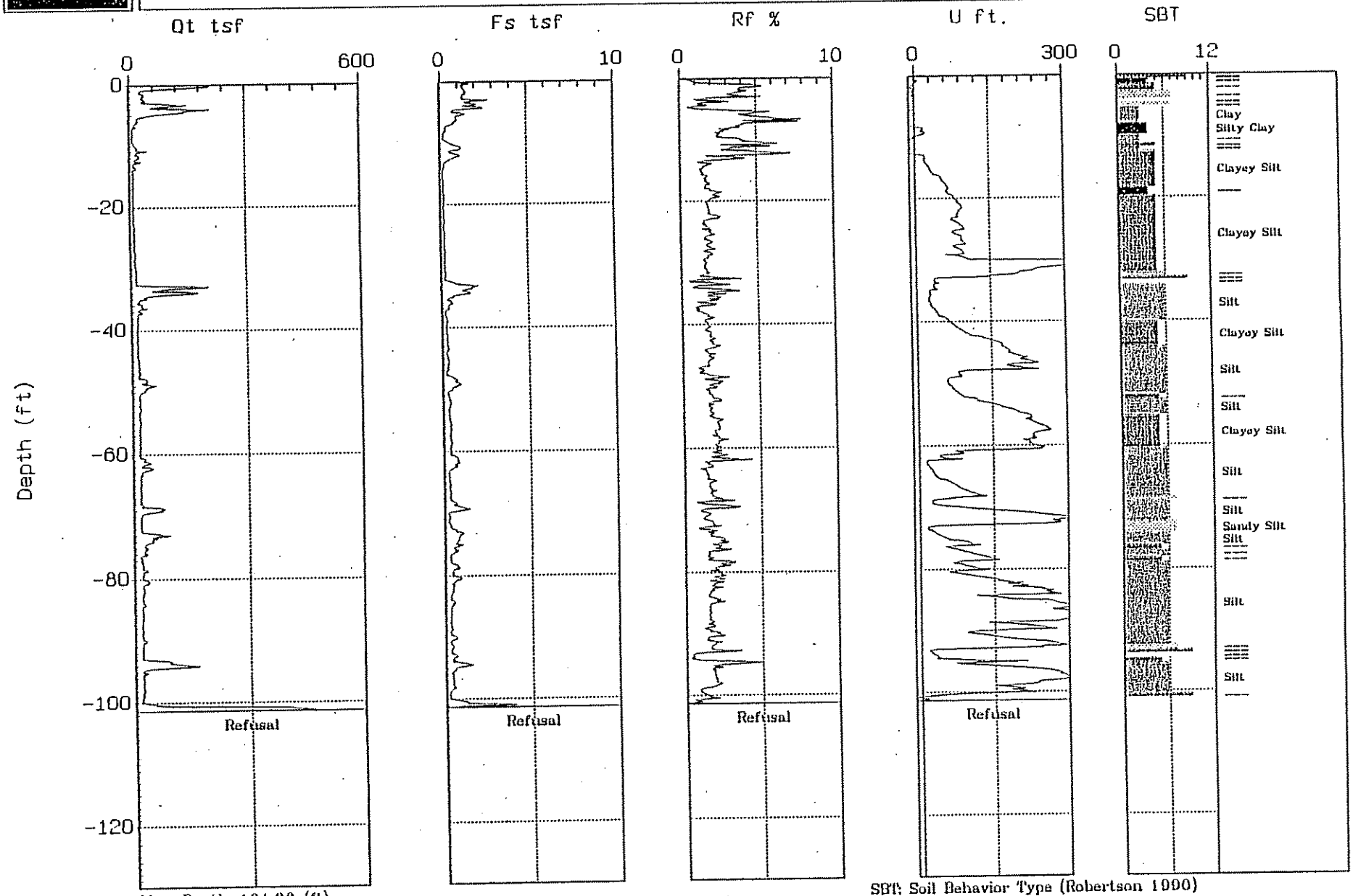
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C026
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:05:02 08:39




Max. Depth: 101.38 (ft)

Depth Inc: 0.164 (ft)

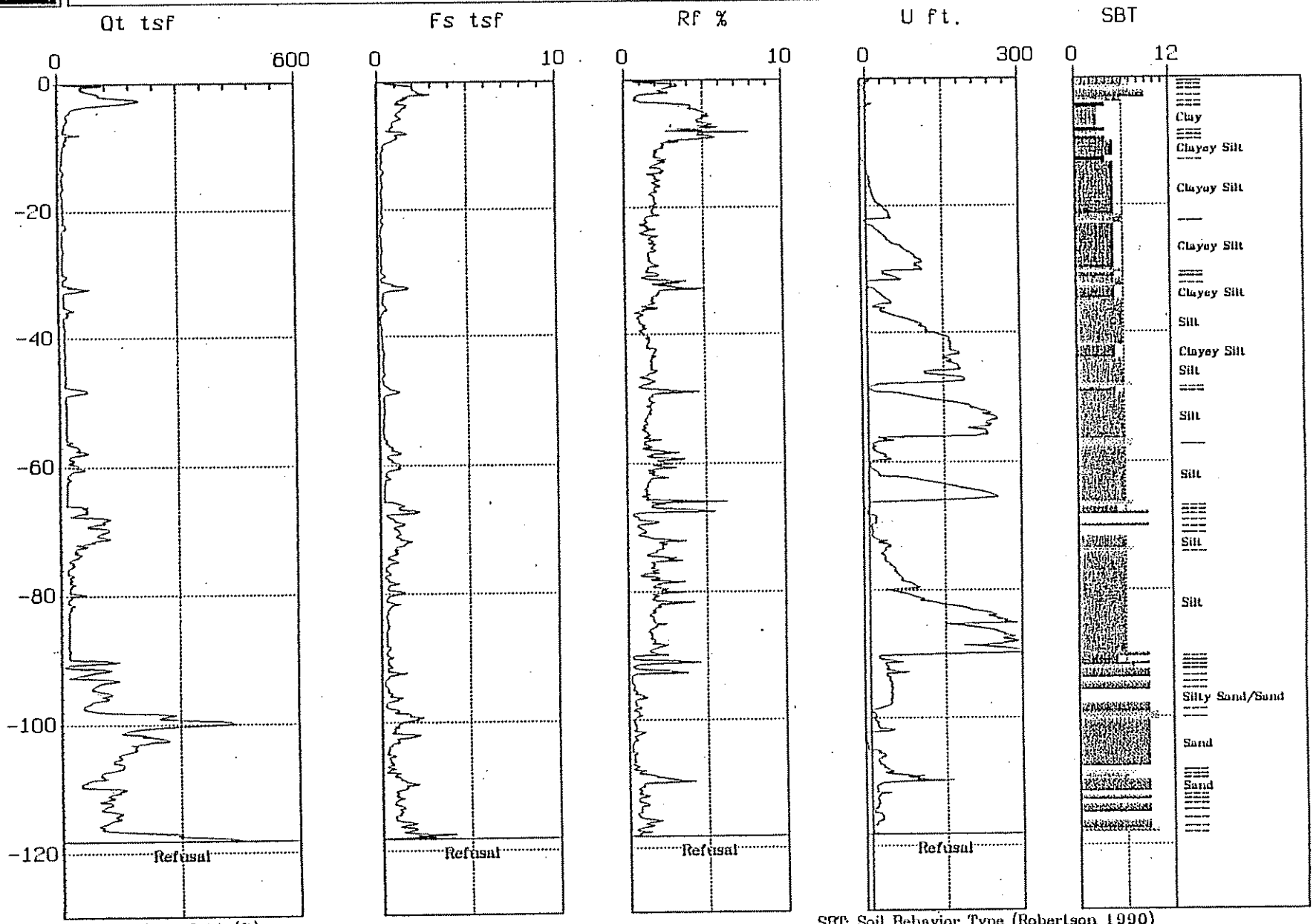
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C027
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:05:02 10:09




Max. Depth: 118.11 (ft)
Depth Inc.: 0.164 (ft)

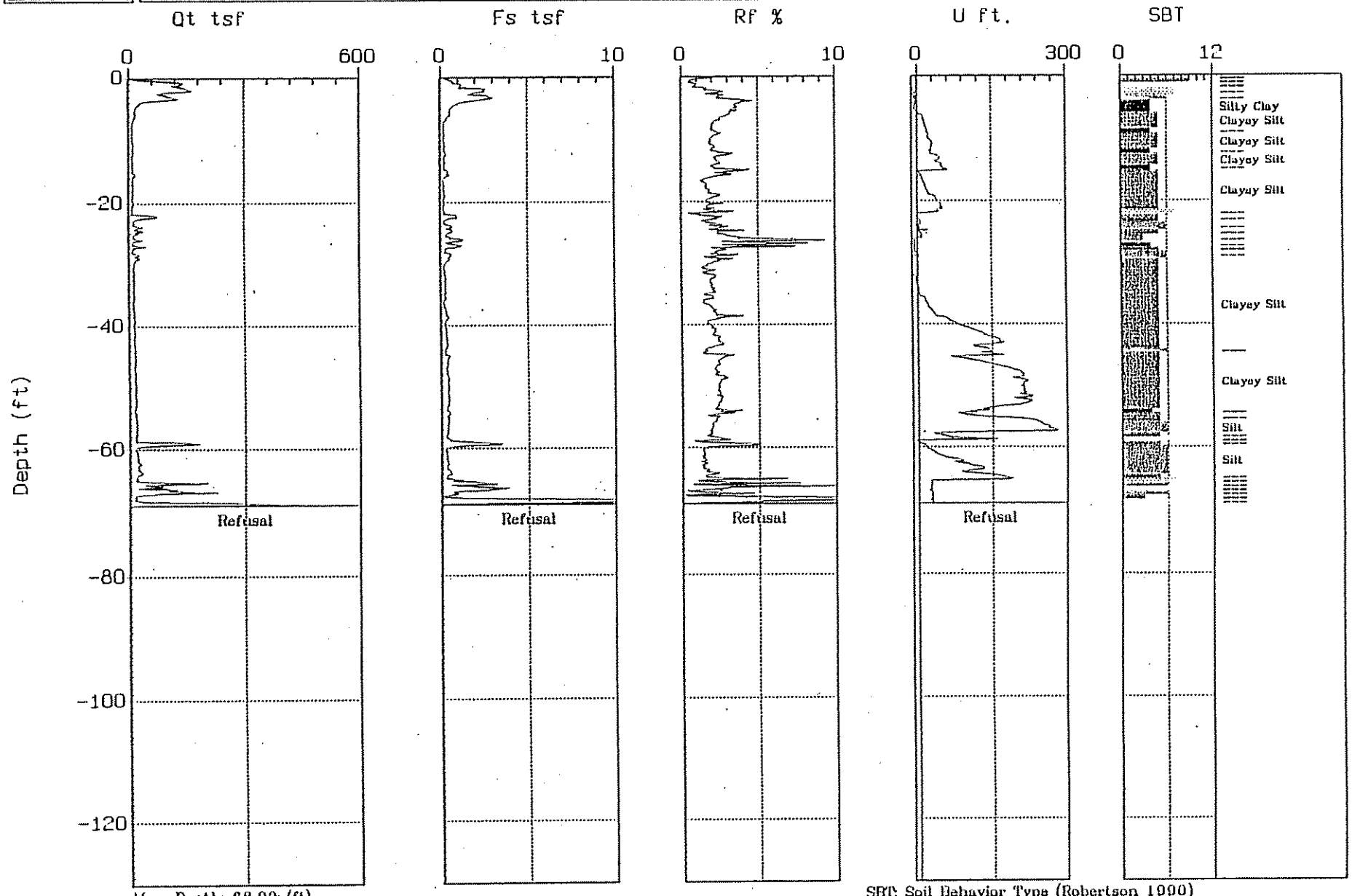
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C028
Location: Cherry Isd. Ldfl

Cone: 20 TON AD120
Date: 02:05:02 11:59




Max. Depth: 68.00 (ft)
Depth Inc.: 0.164 (ft)

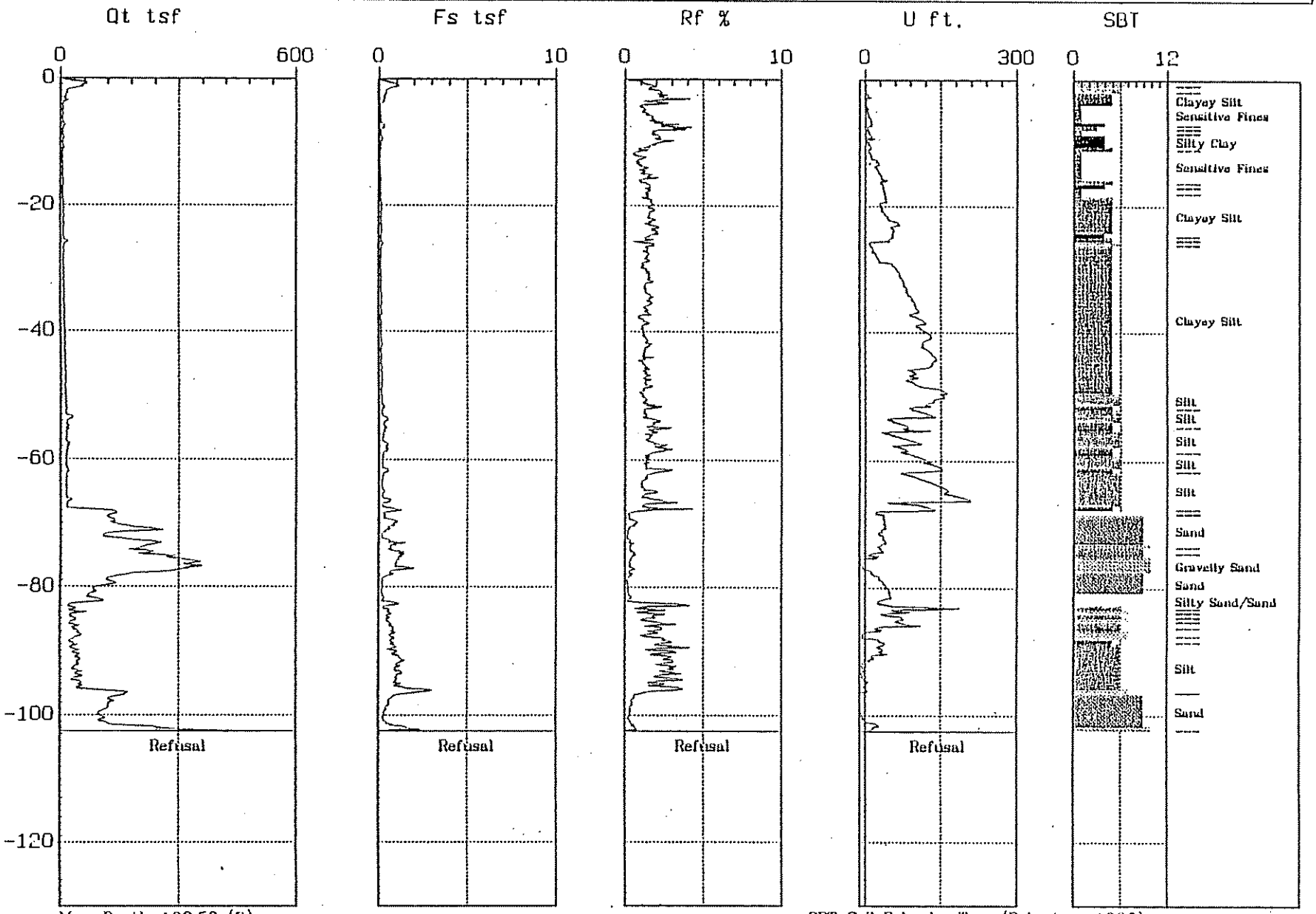
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C029
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:06:02 10:49




Max. Depth: 102.53 (ft)
Depth Inc.: 0.164 (ft)

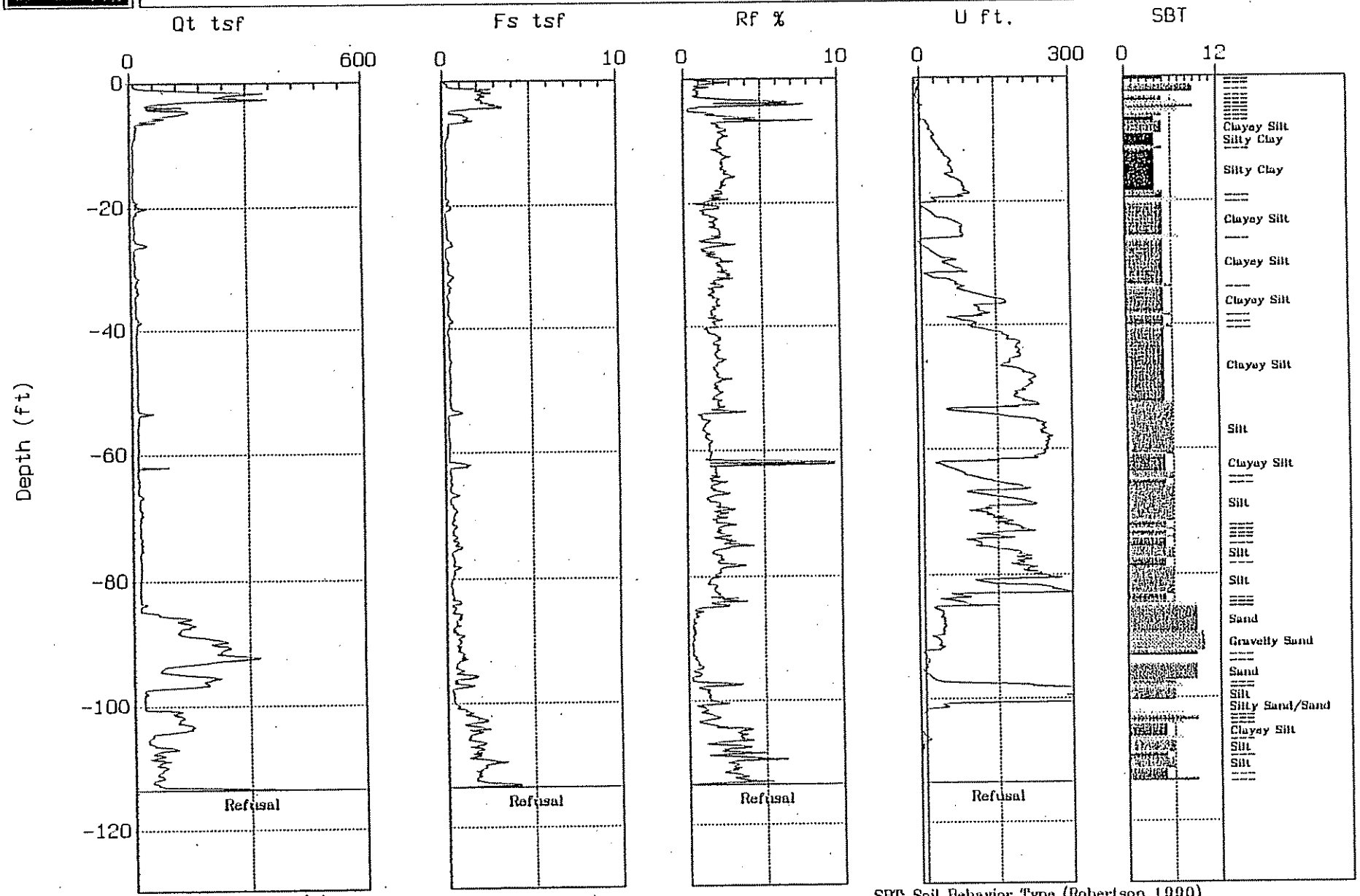
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C030
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:29:02 13:58




Max. Depth: 113.52 (ft)

Depth Inc.: 0.164 (ft)

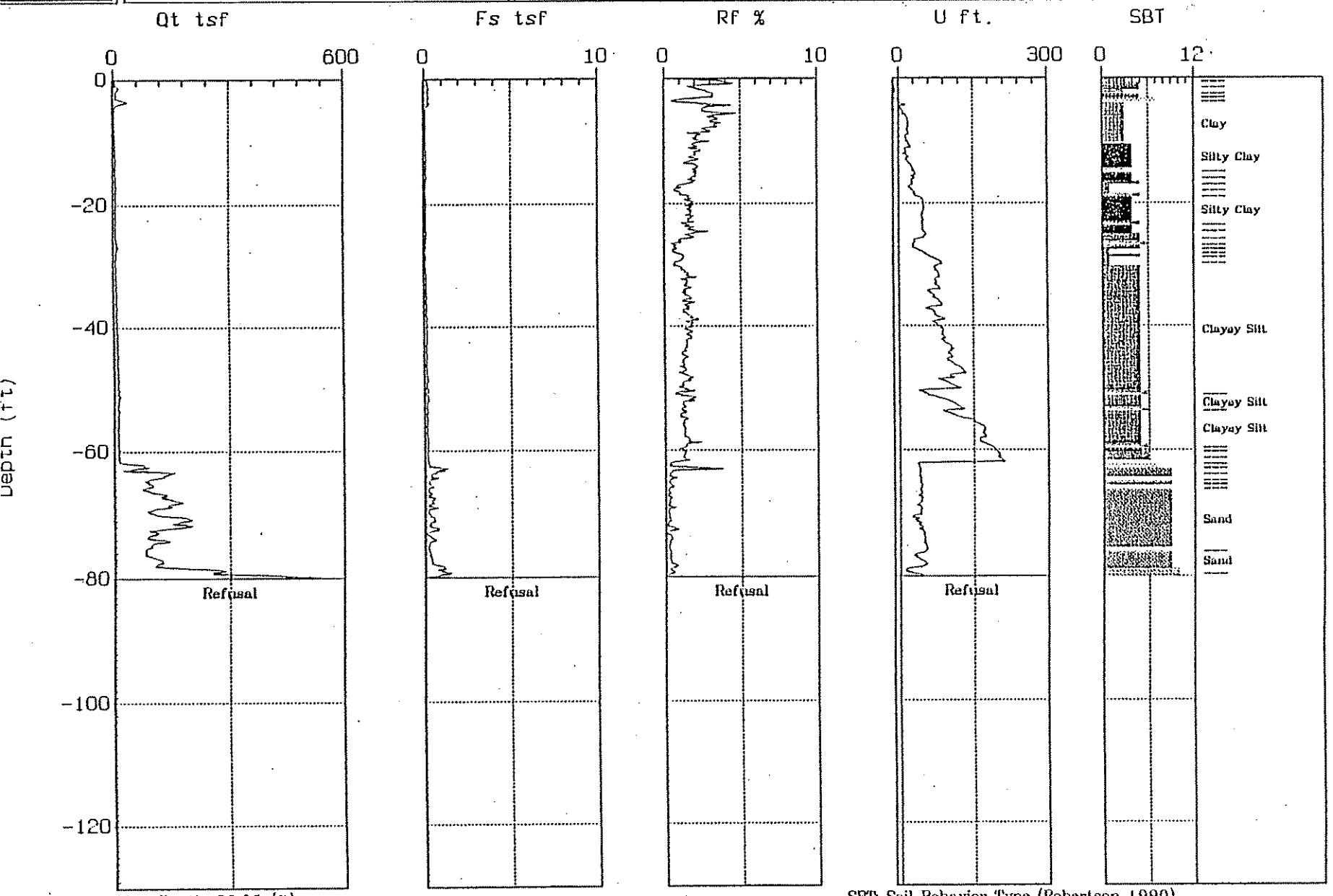
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C031
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:06:02 12:16




Max. Depth: 80.05 (ft)

Depth Inc.: 0.164 (ft)

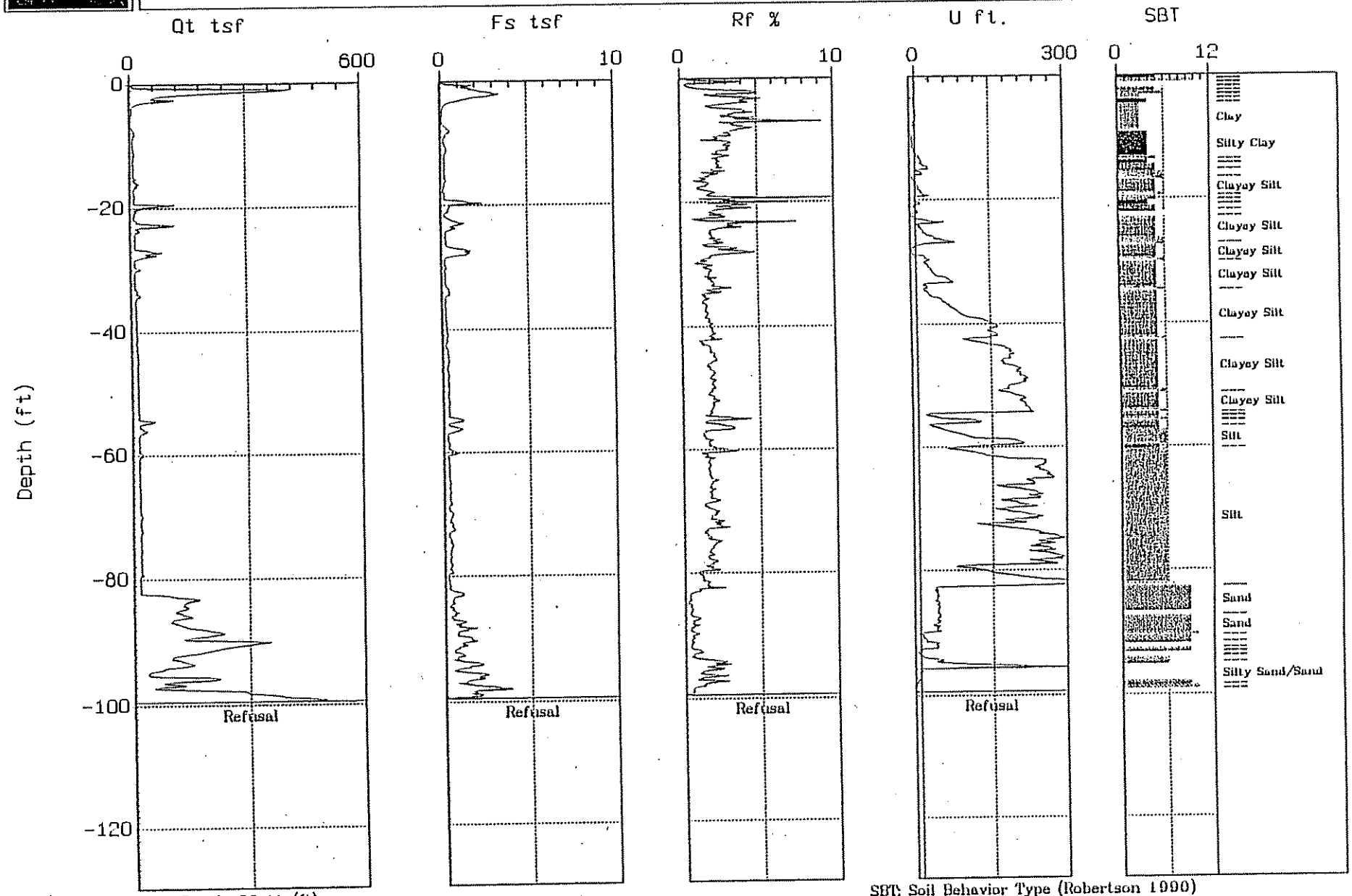
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C032
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:29:02 12:47




Max. Depth: 00.41 (ft)
Depth Inc.: 0.164 (ft)

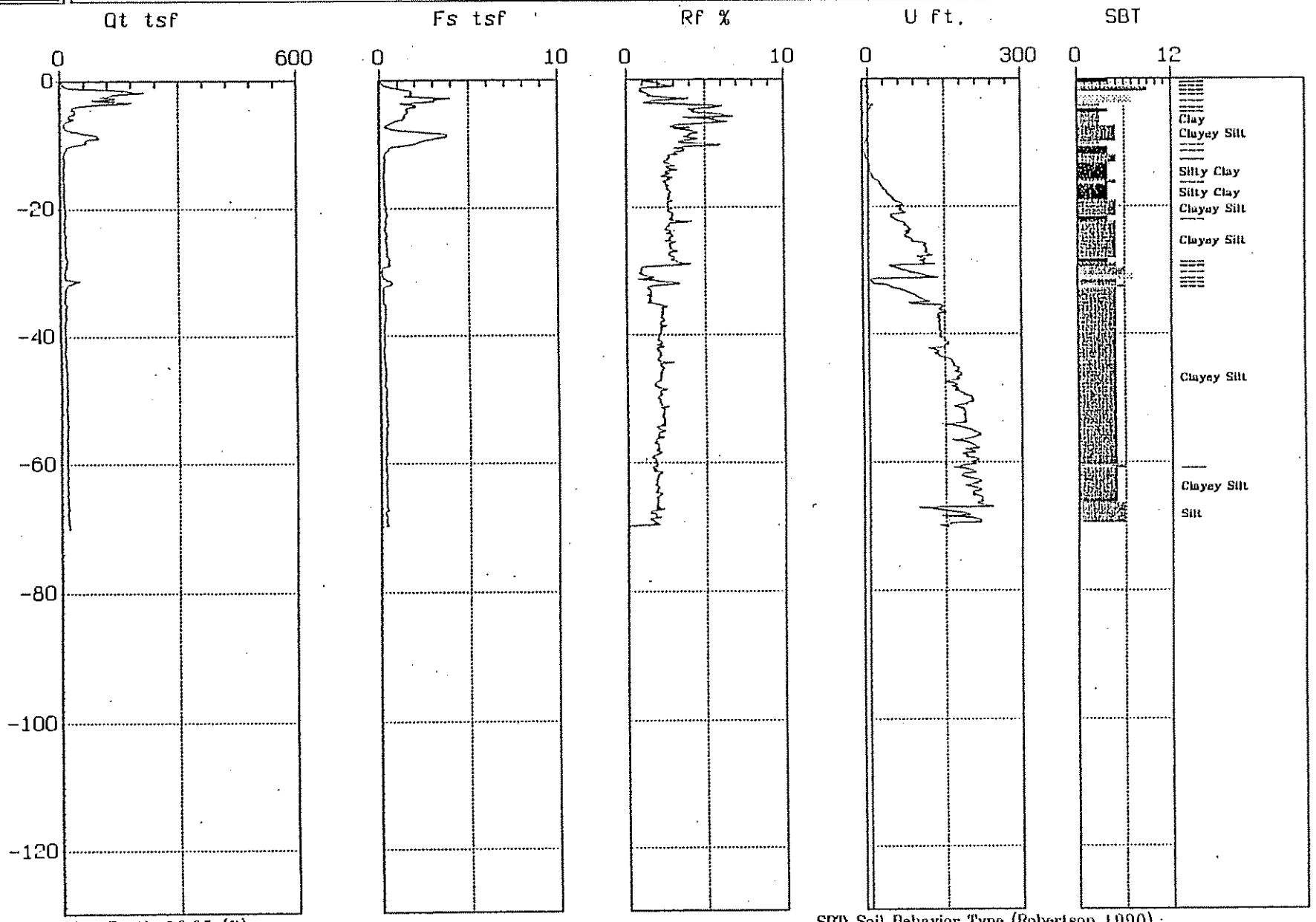
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C033
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:29:02 11:43




Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

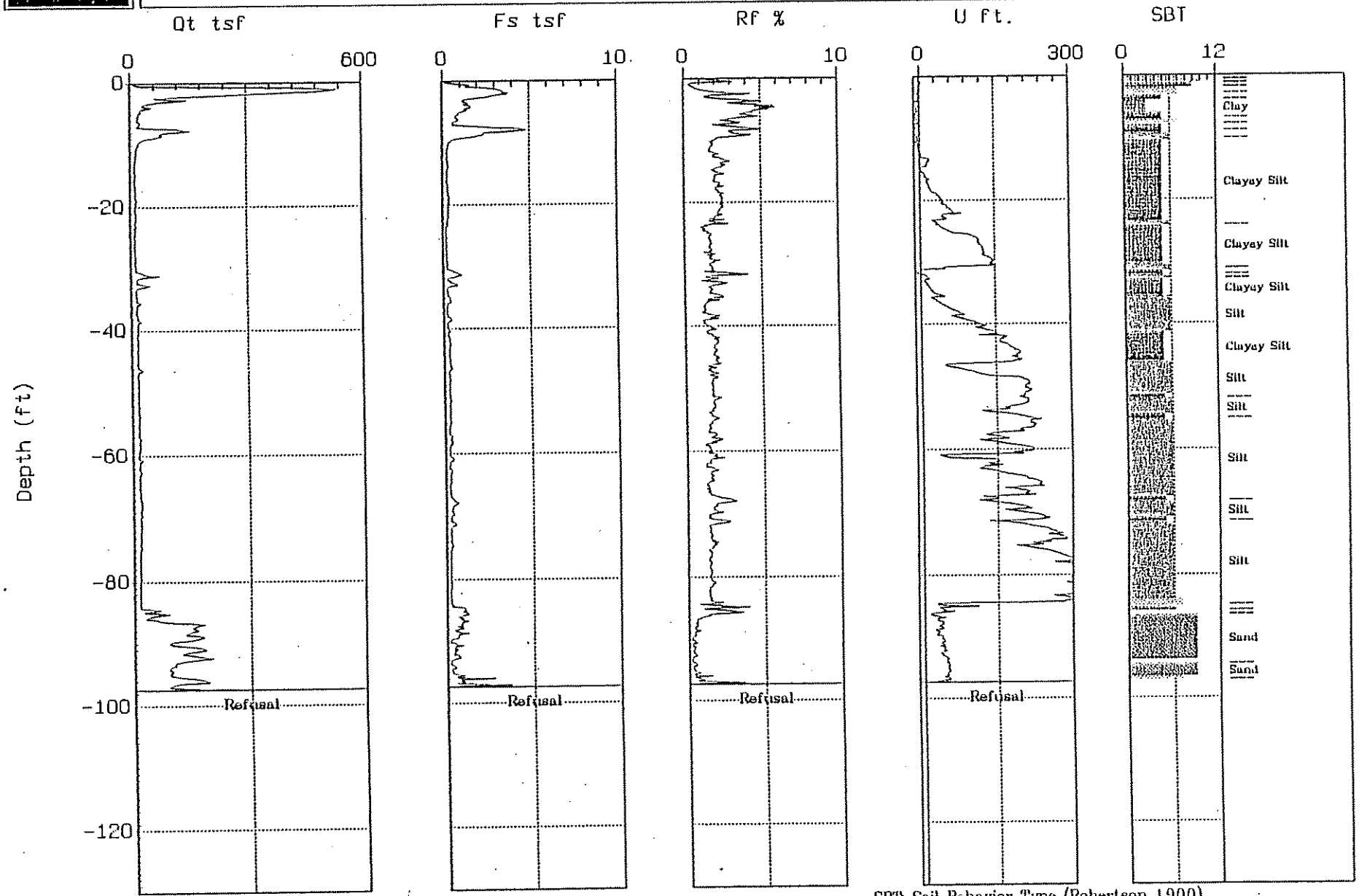
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C034
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:29:02 10:30




Max. Depth: 97.44 (ft)

Depth Inc.: 0.164 (ft)

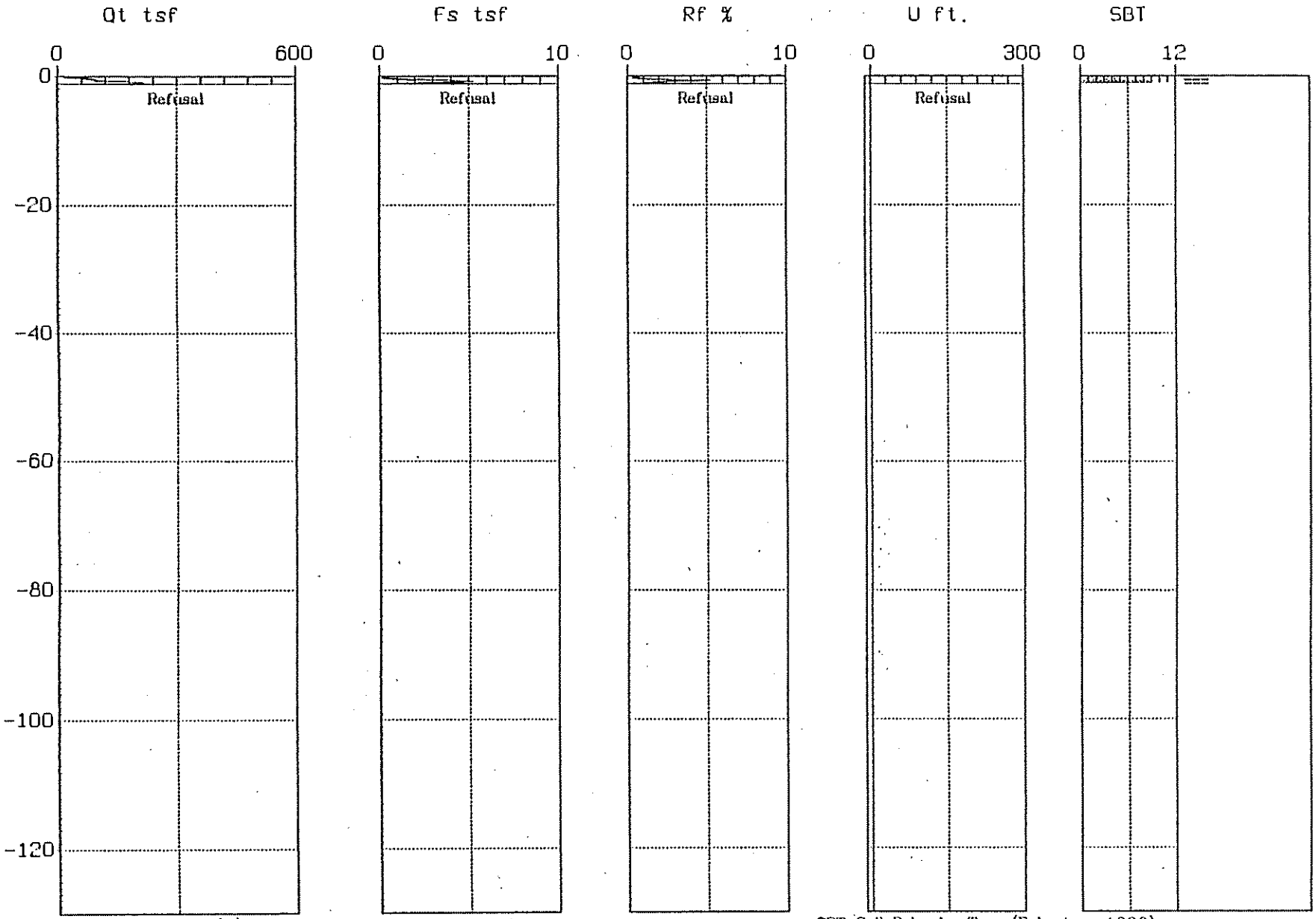
SBT: Soil Behavior Type (Robertson 1900)

CONETEC

*Duffield Associates*

Site: P5-02-C035
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:29:02 08:58




Max. Depth: 1.31 (ft)
Depth Inc.: 0.164 (ft)

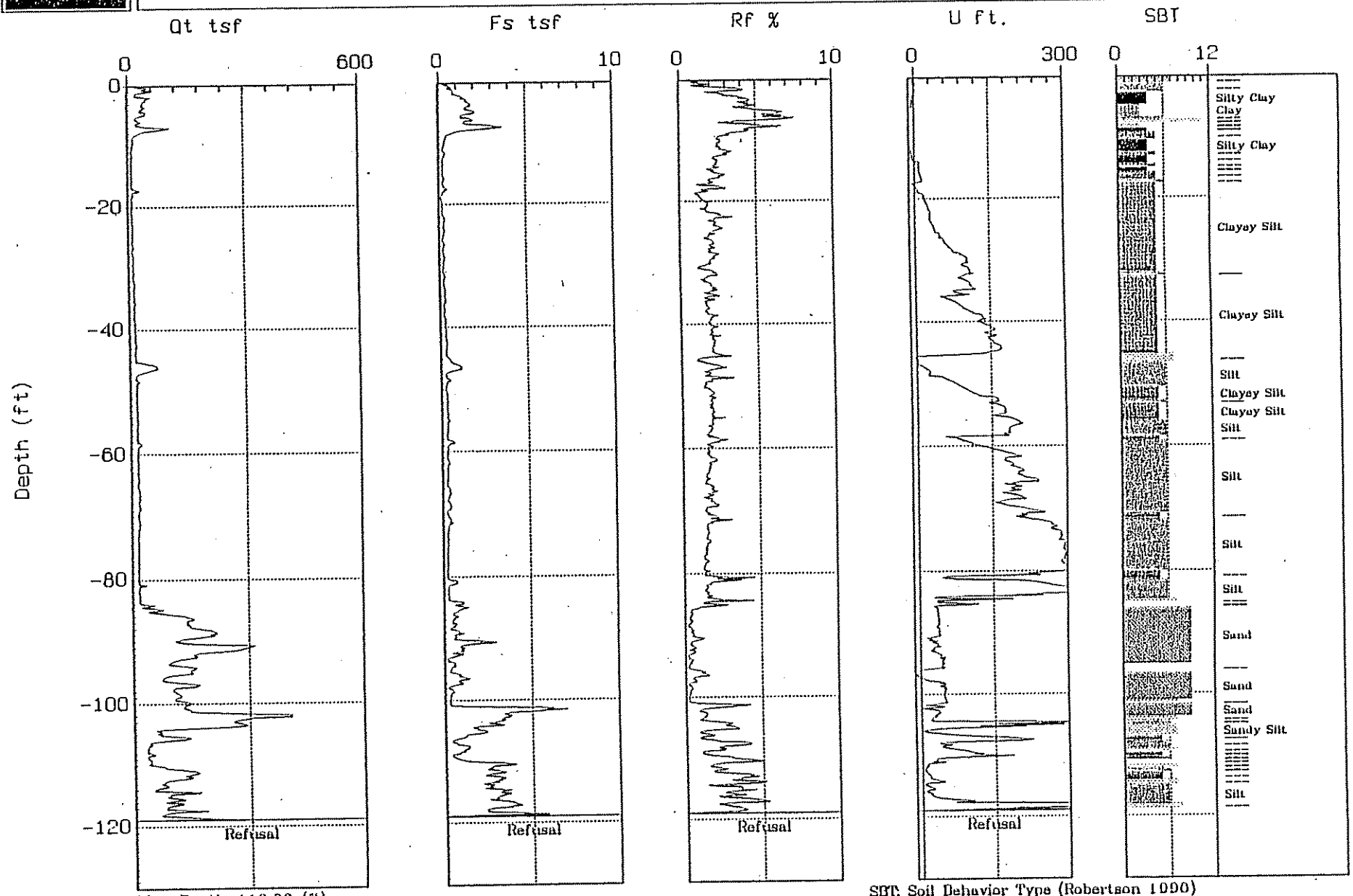
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C035
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:29:02 09:05




Max. Depth: 118.93 (ft)
Depth Inc.: 0.164 (ft)

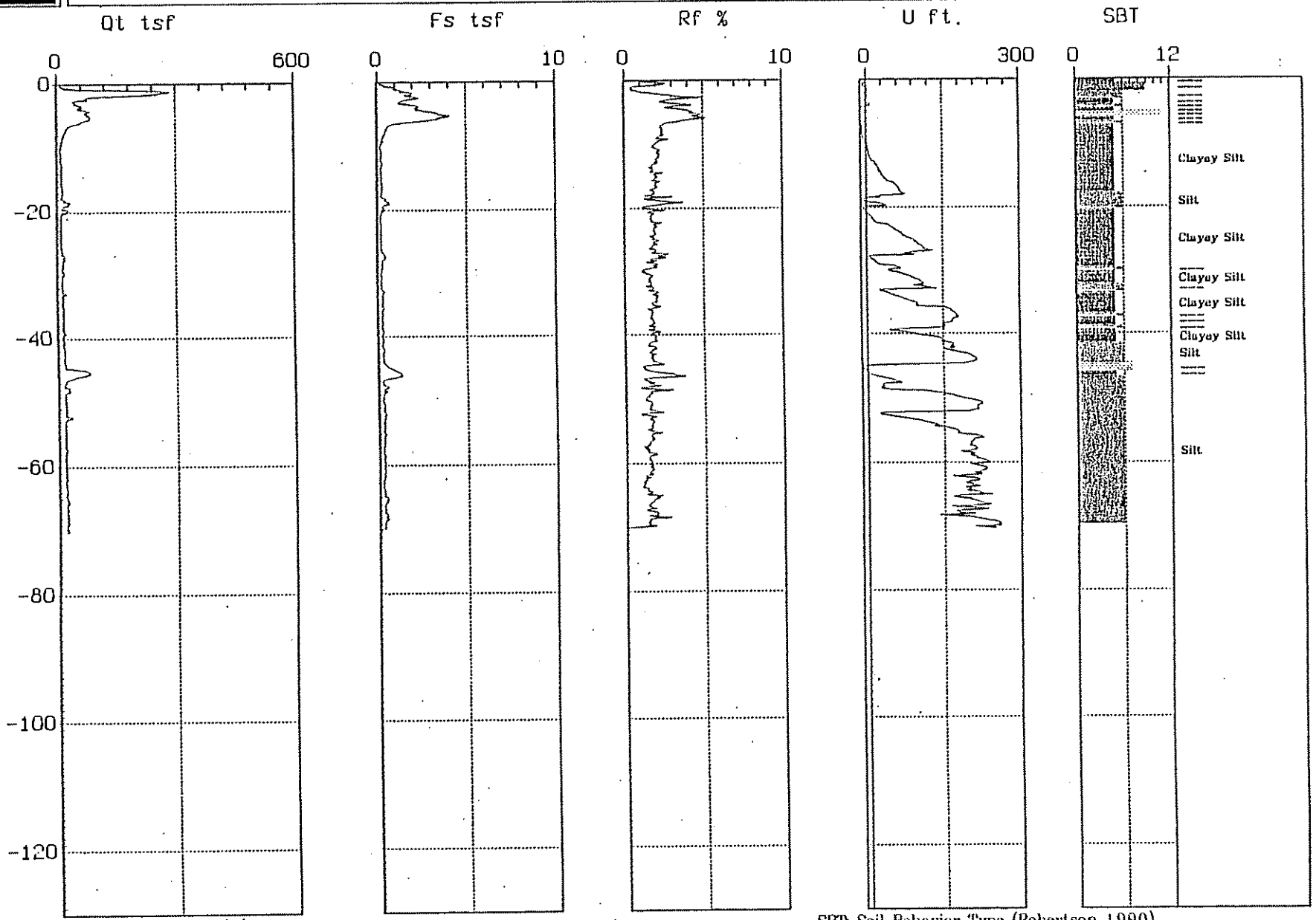
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C036
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:29:02 08:03




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

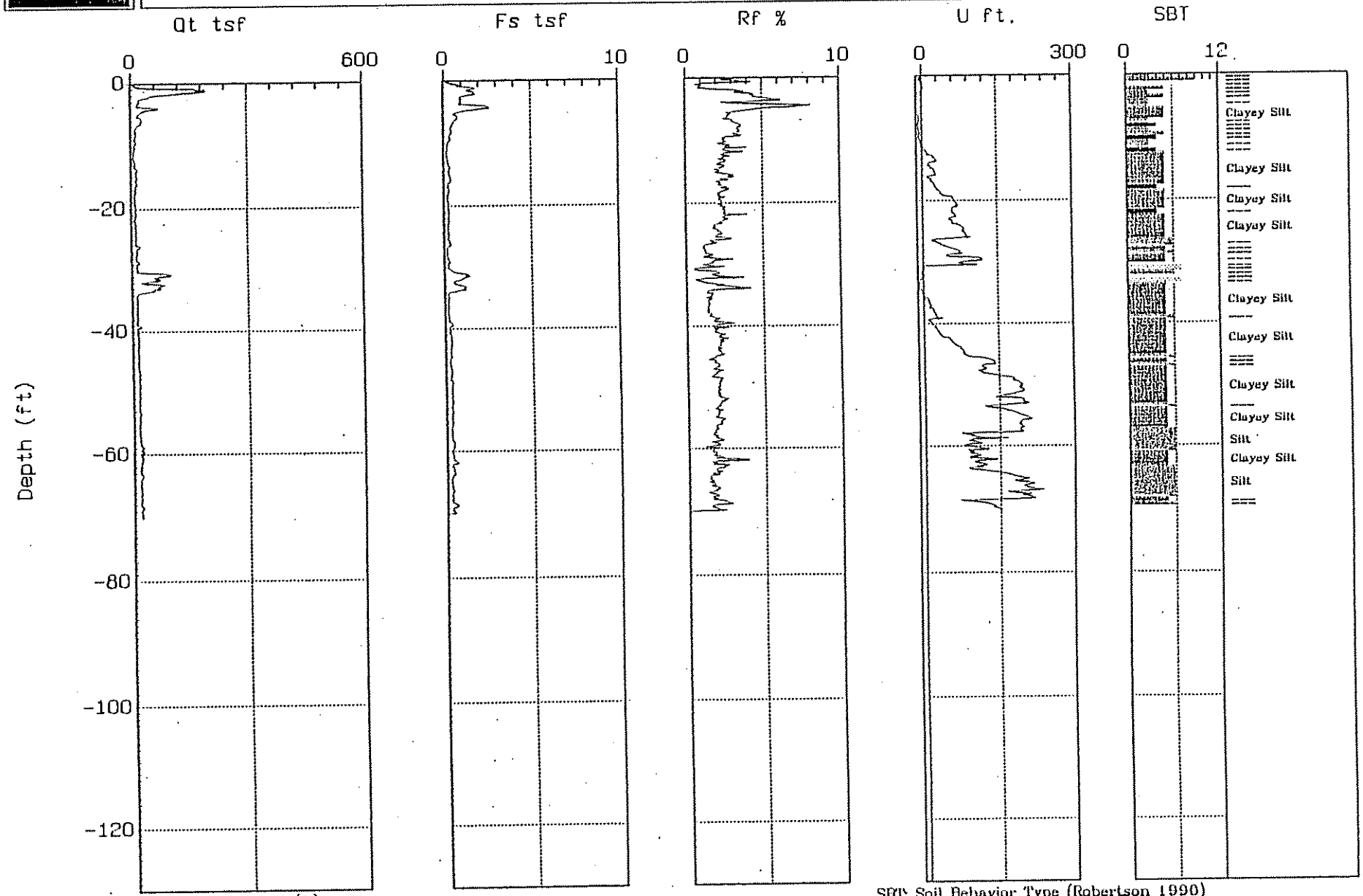
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C037
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:28:02 14:42




Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

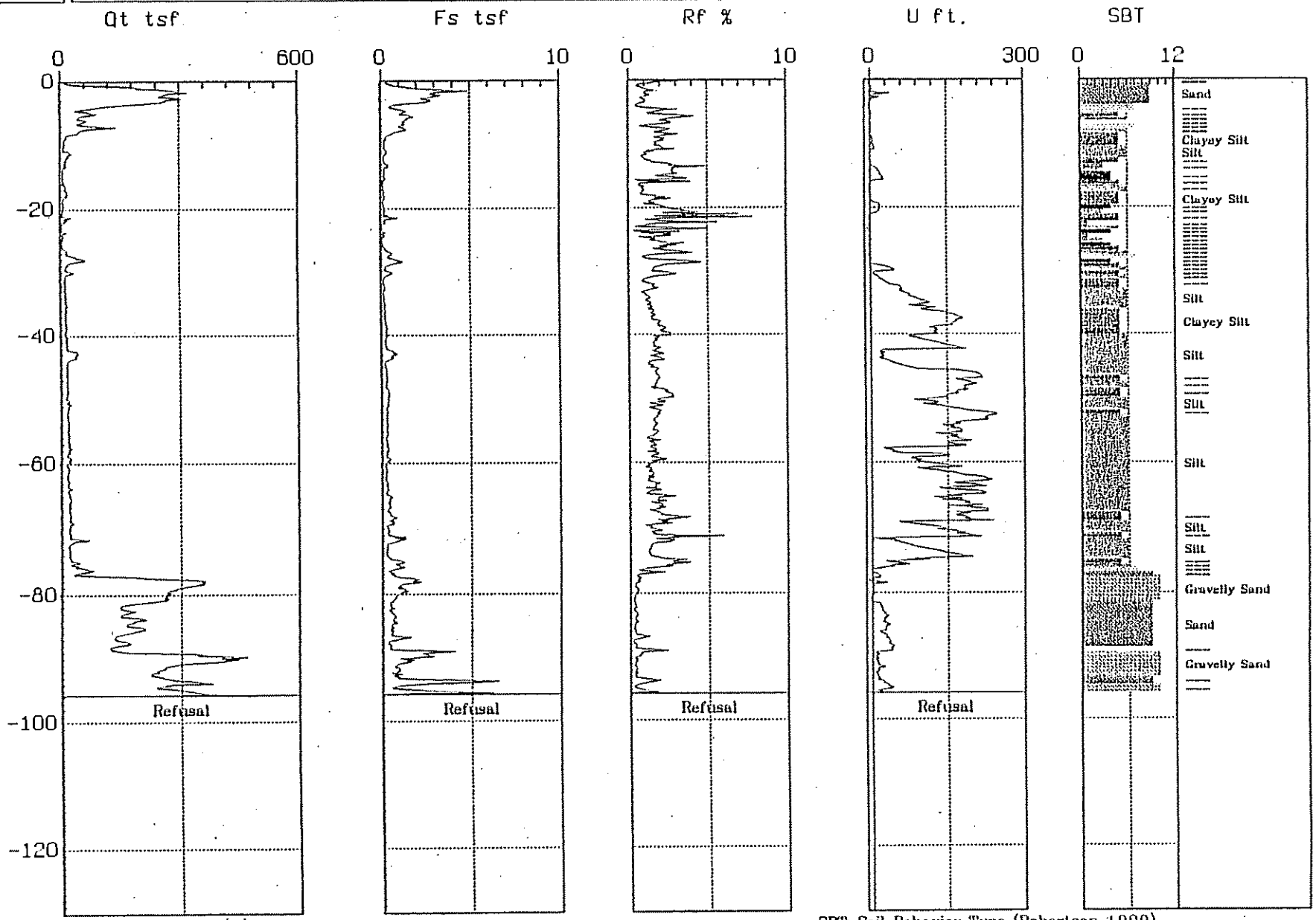
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C038
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:28:02 12:36




Max. Depth: 95.80 (ft)

Depth Inc.: 0.164 (ft)

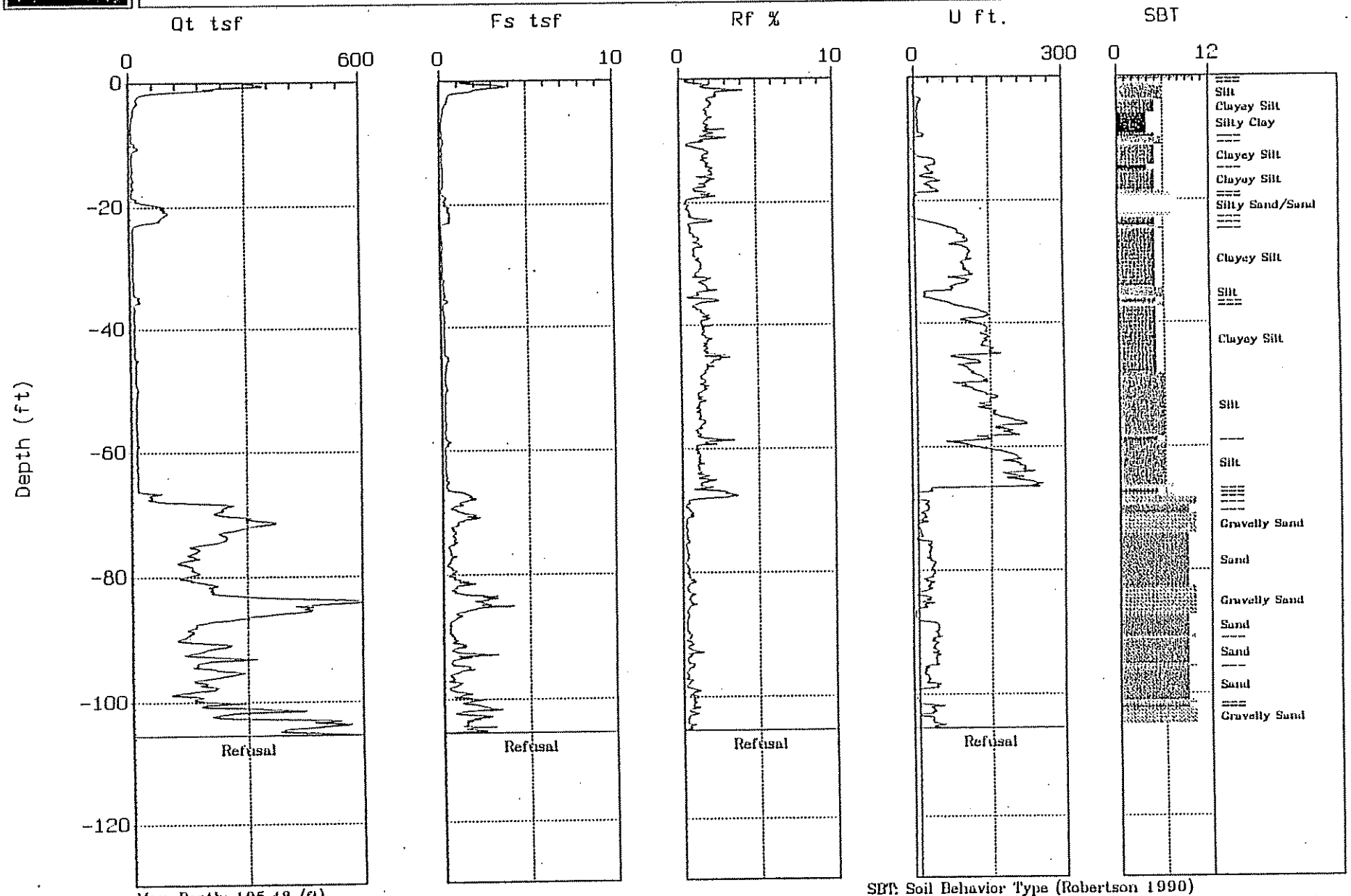
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C039
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:28:02 11:10




SBT: Soil Behavior Type (Robertson 1990)

Max. Depth: 105.48 (ft)

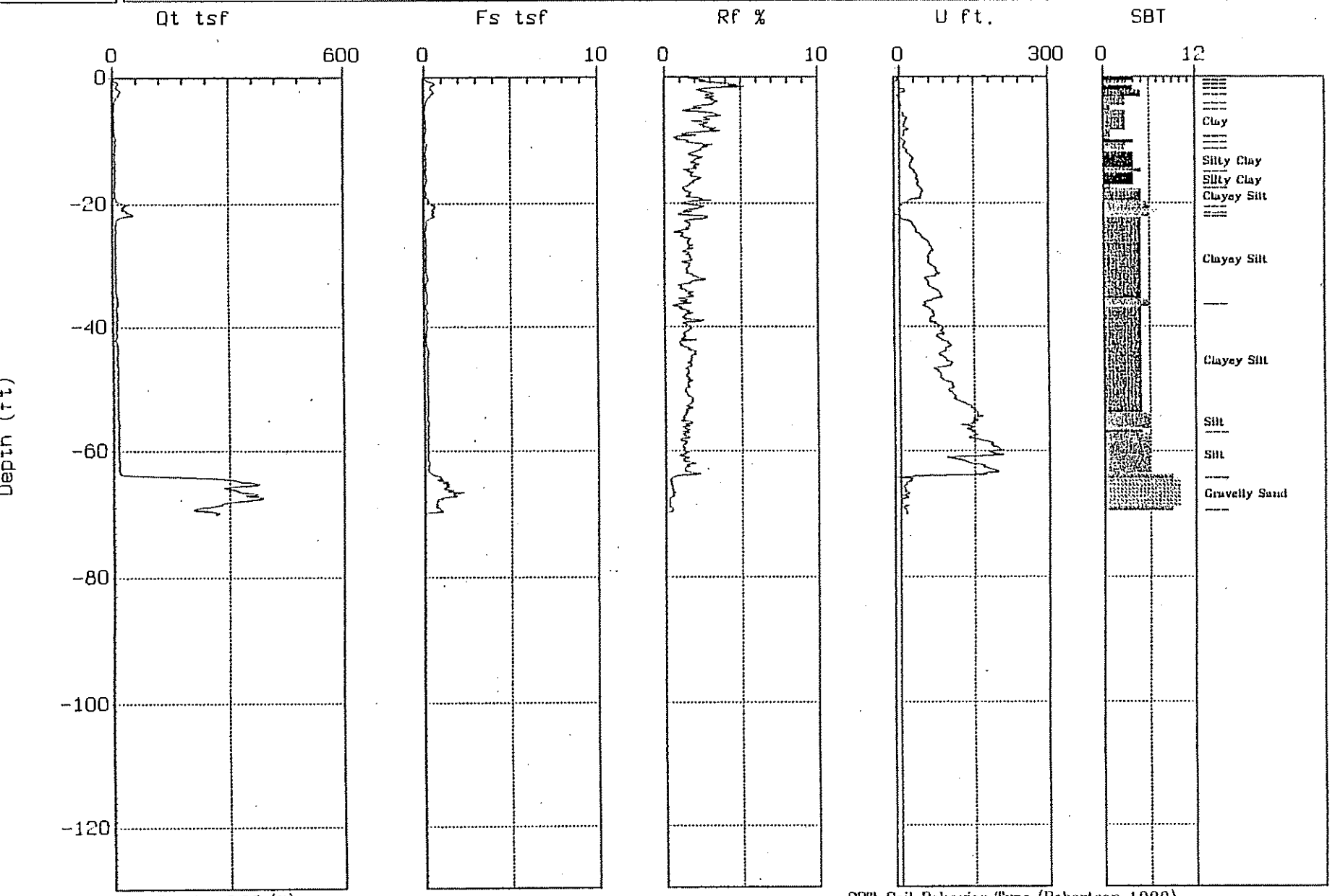
Depth Inc.: 0.164 (ft)

CONETEC

*Duffield Associates*

Site: P5-02-C040
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:28:02 13:49




Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

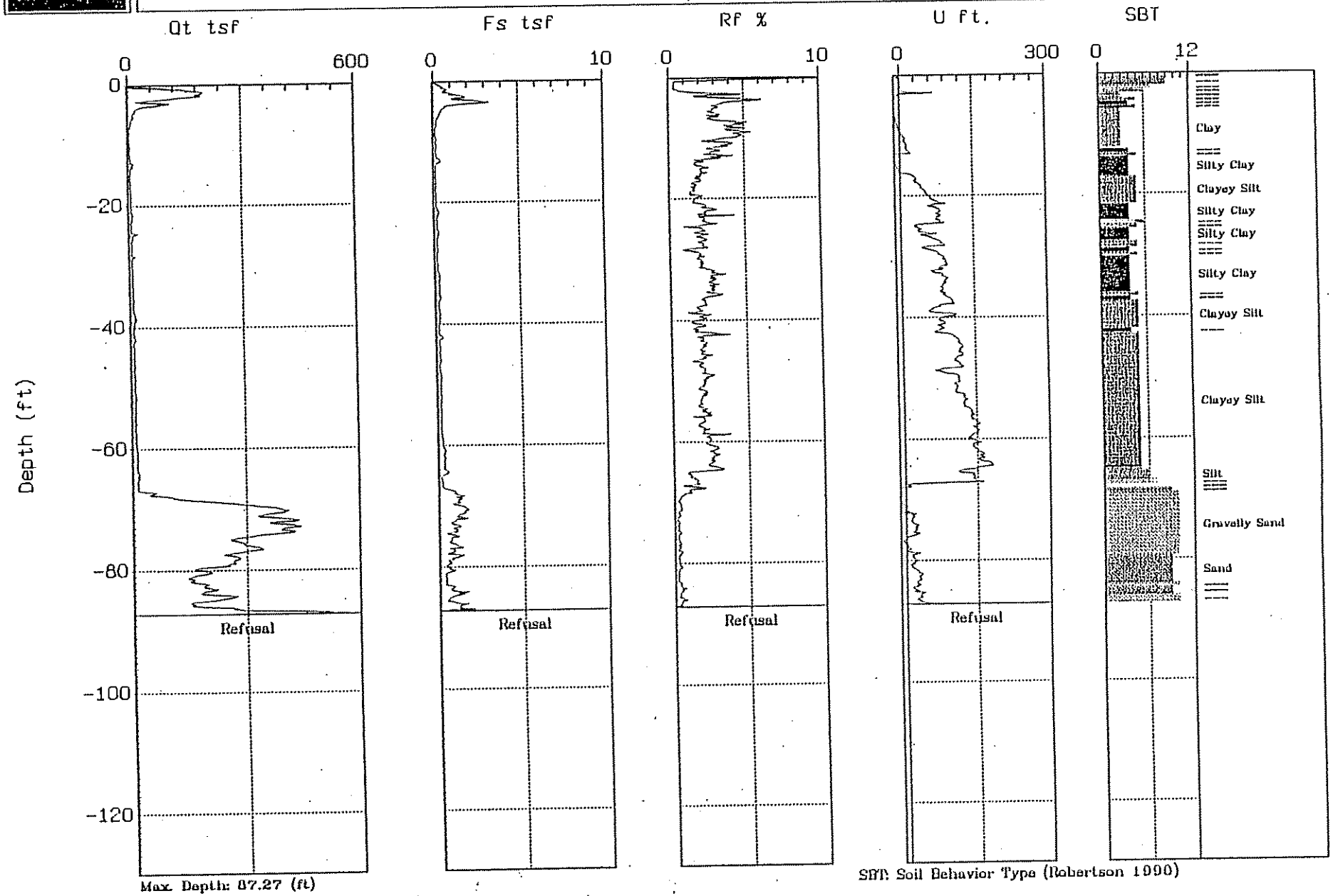
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C041
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:28:02 10:01




Max. Depth: 87.27 (ft)

Depth Inc.: 0.164 (ft)

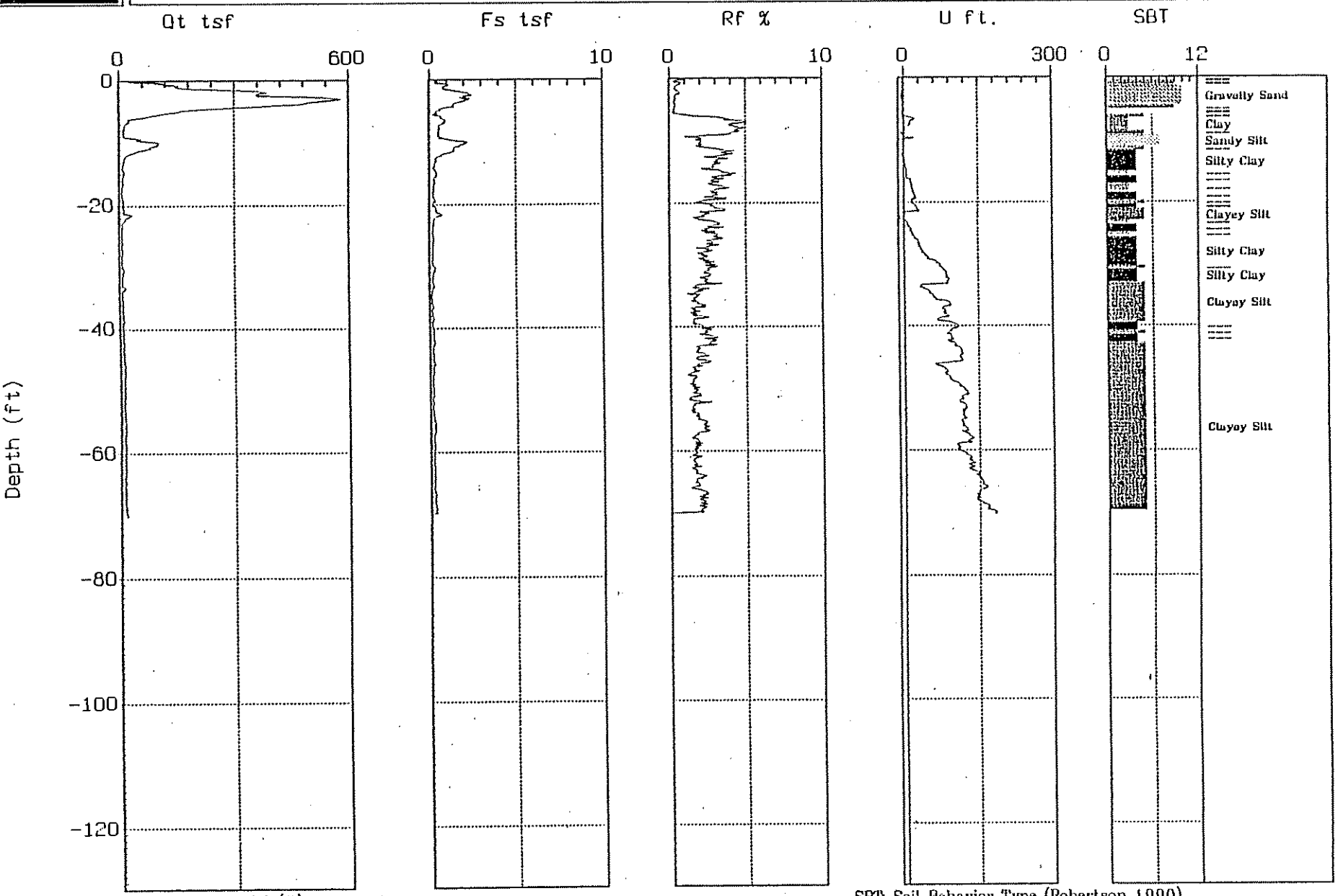
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C042
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:28:02 09:04




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

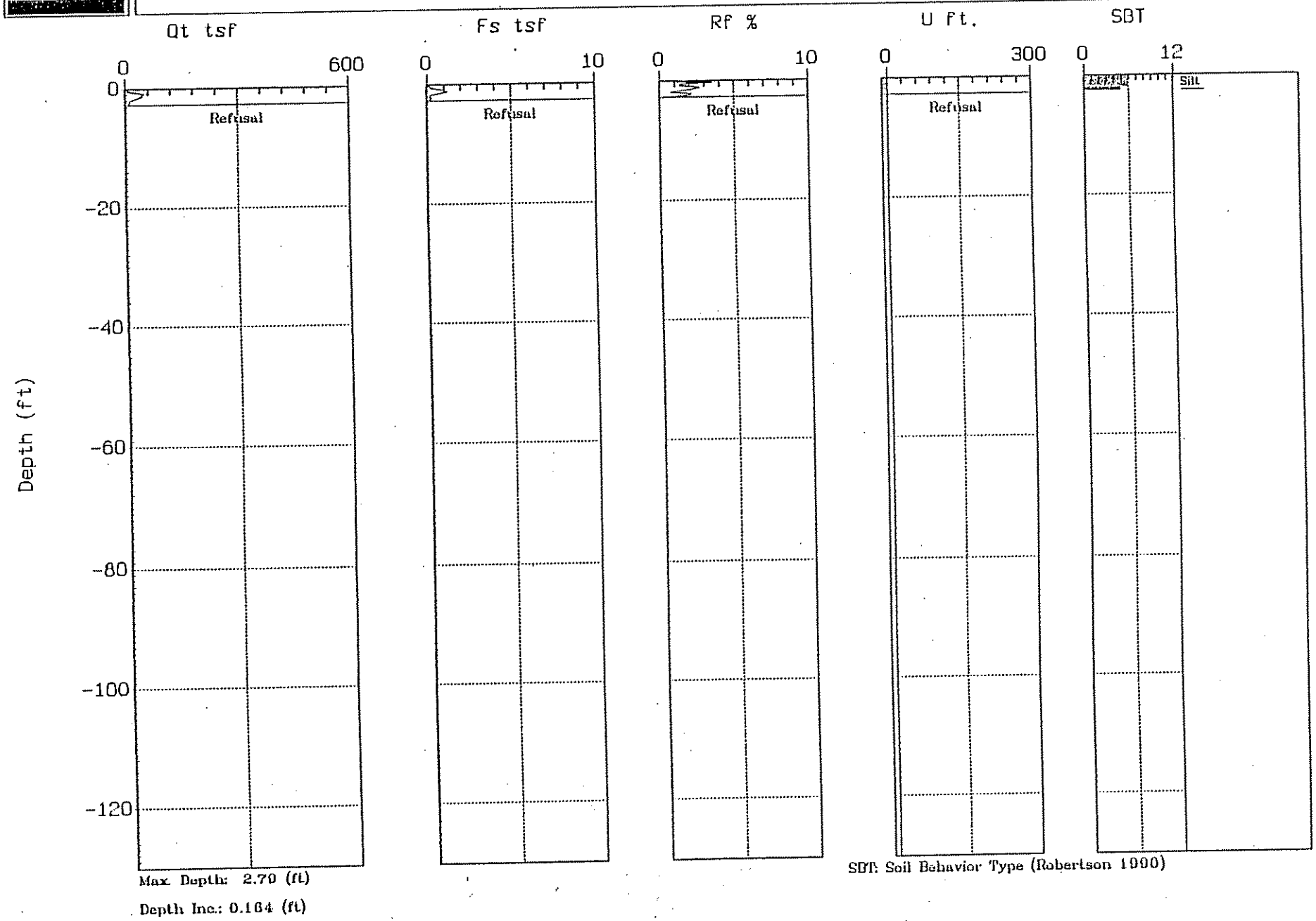
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P2-02-C043
Location: Cherry Isd. Ldfl

Cone: 20 TON A D059
Date: 01:30:2 08:04

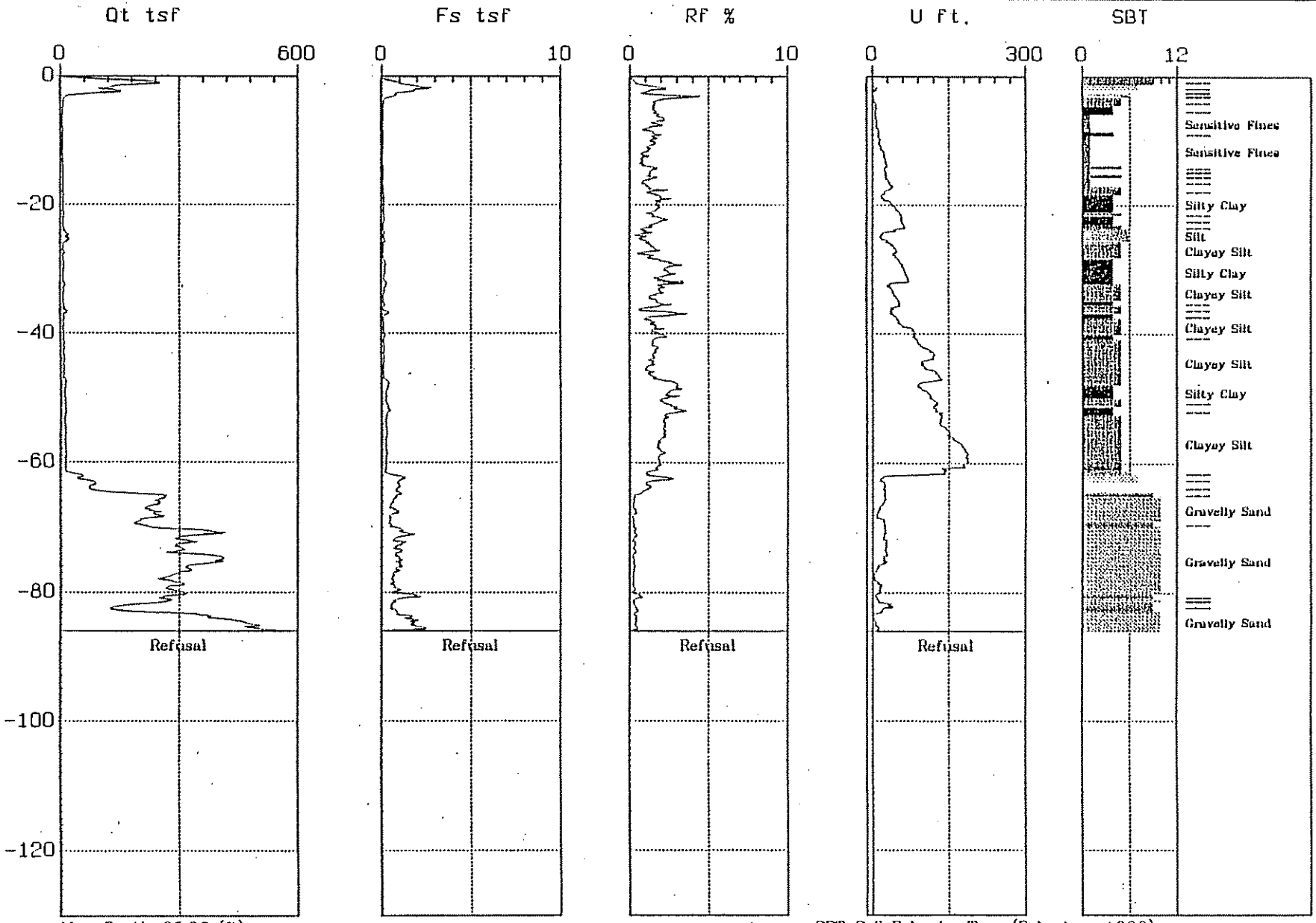


CONETEC

*Duffield Associates*

Site: P2-02-C043
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:30:02 08:24




Max. Depth: 85.96 (ft)

Depth Inc.: 0.164 (ft)

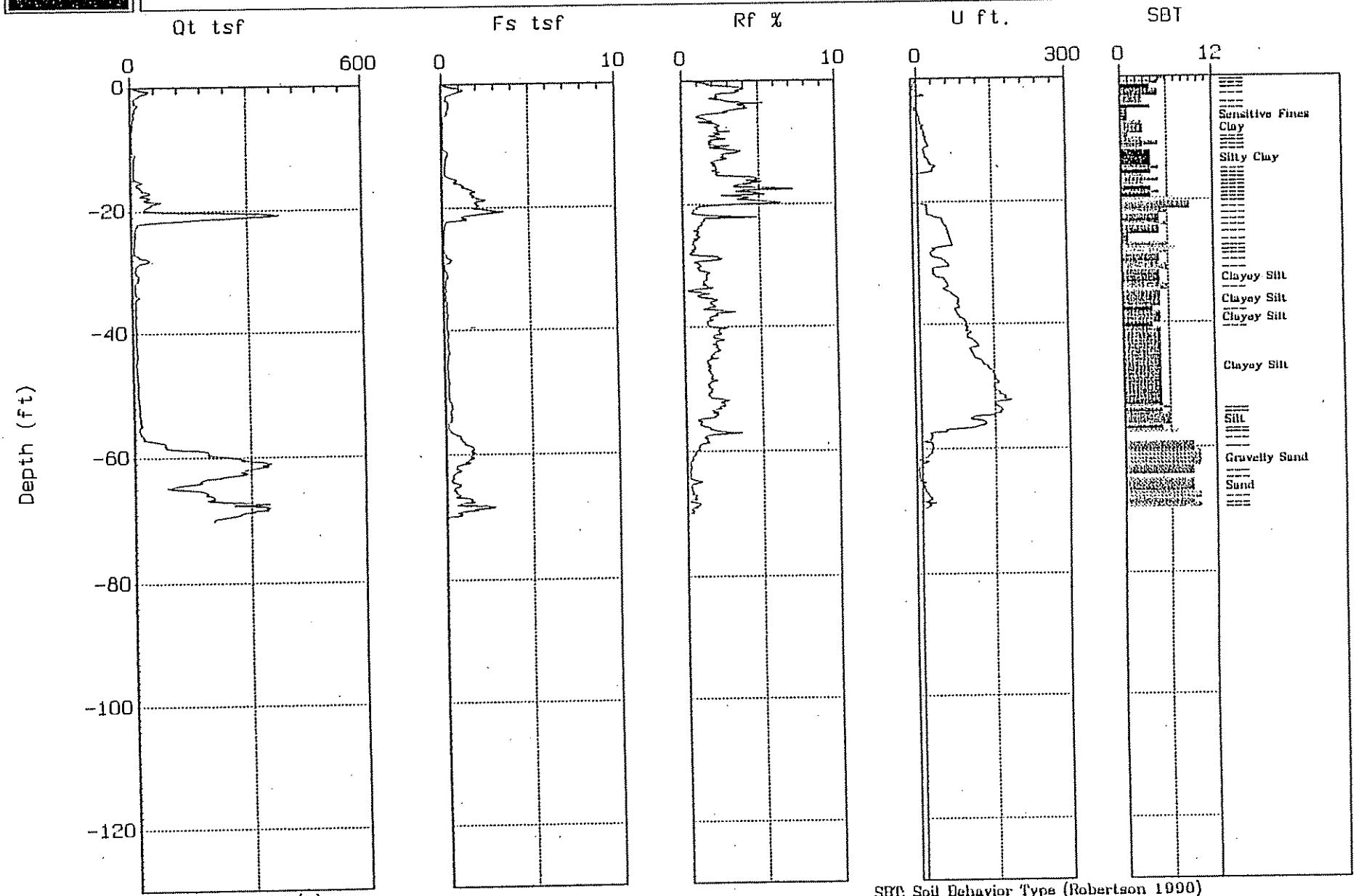
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C044
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:30:02 09:44




Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

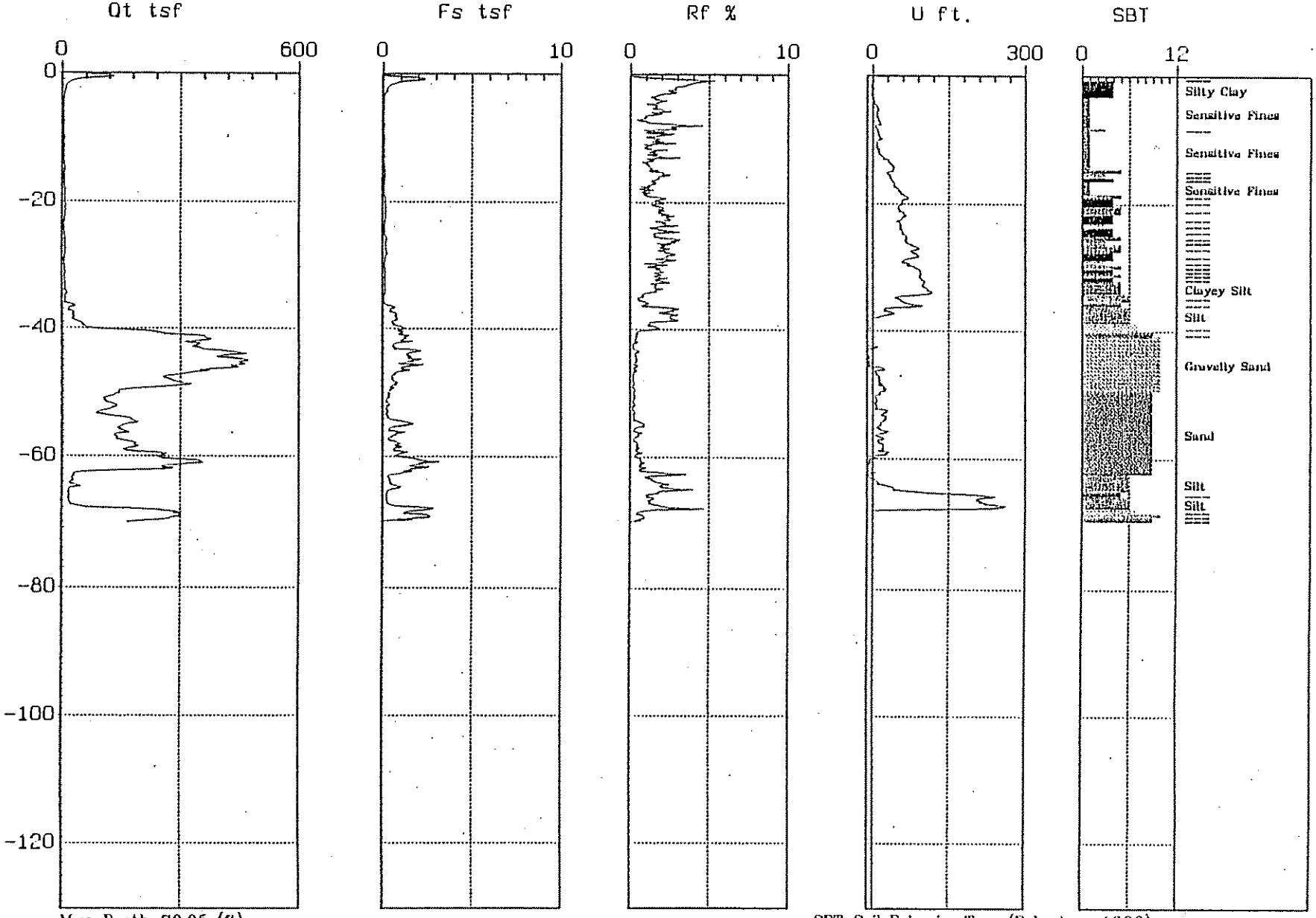
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C045
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:30:02 10:47




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

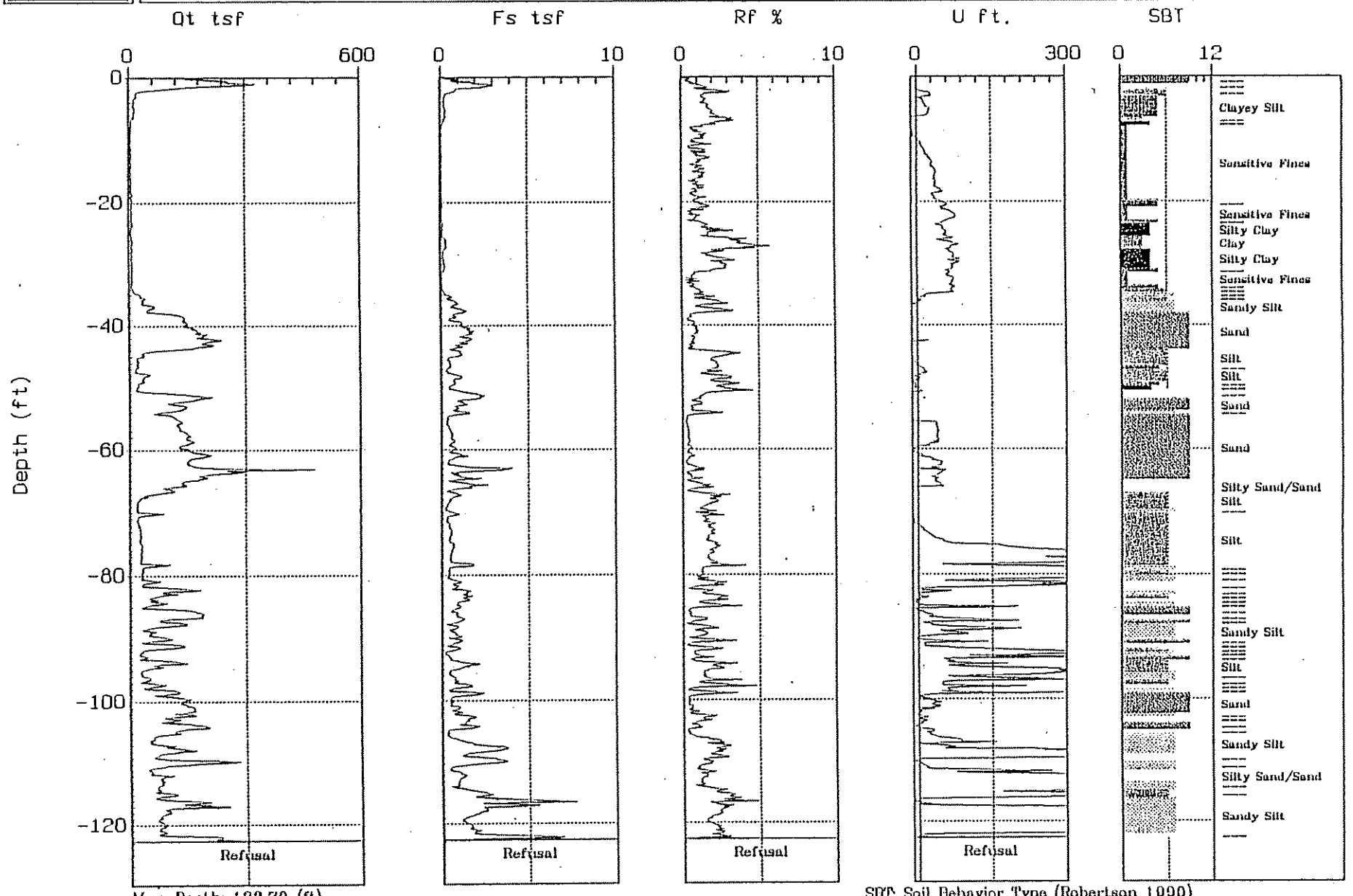
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C046
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 01:30:02 11:45




Max. Depth: 122.70 (ft)

Depth Inc.: 0.164 (ft)

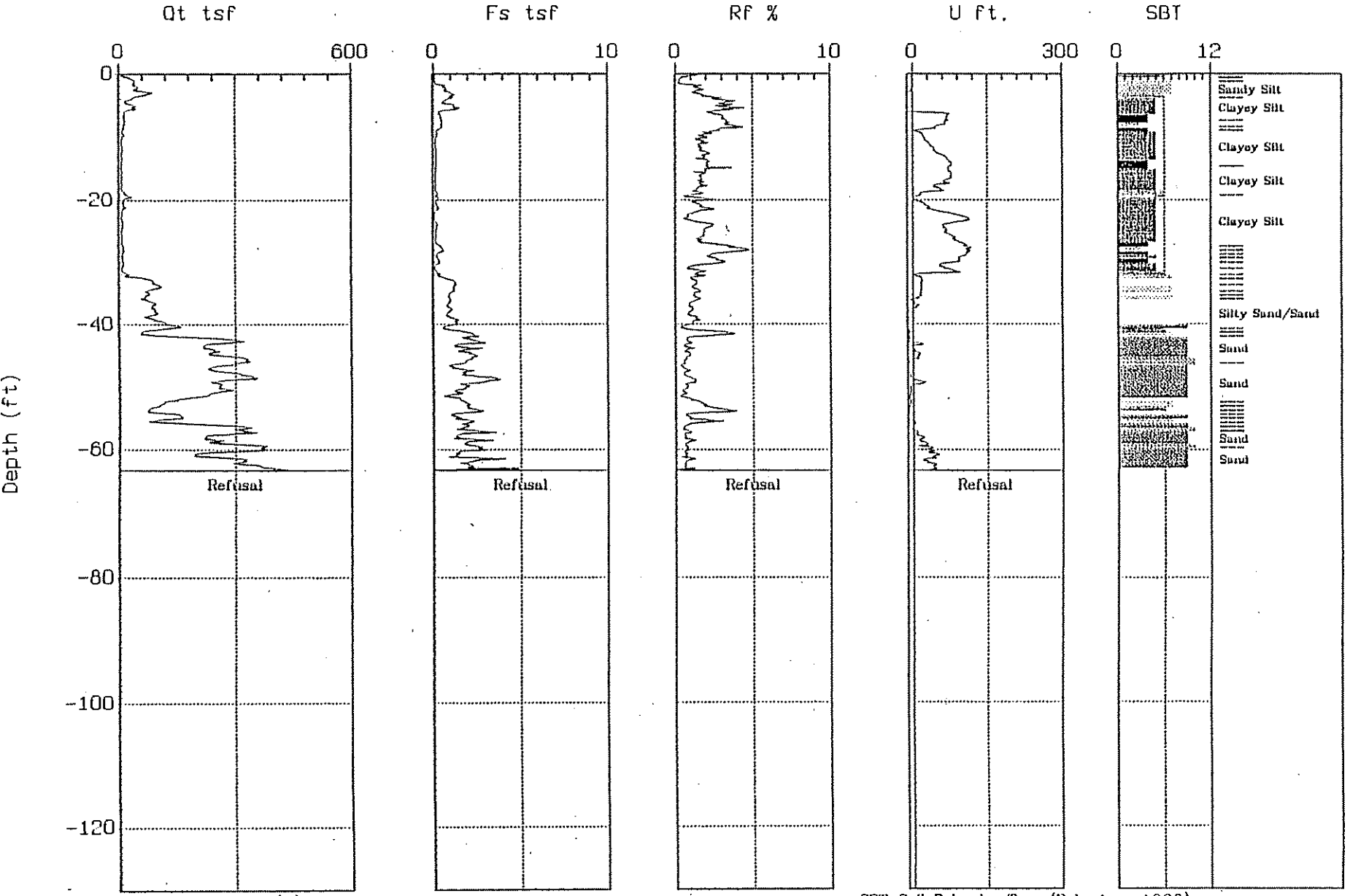
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C047
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:13:02 12:03




Max. Depth: 63.32 (ft)

Depth Inc.: 0.164 (ft)

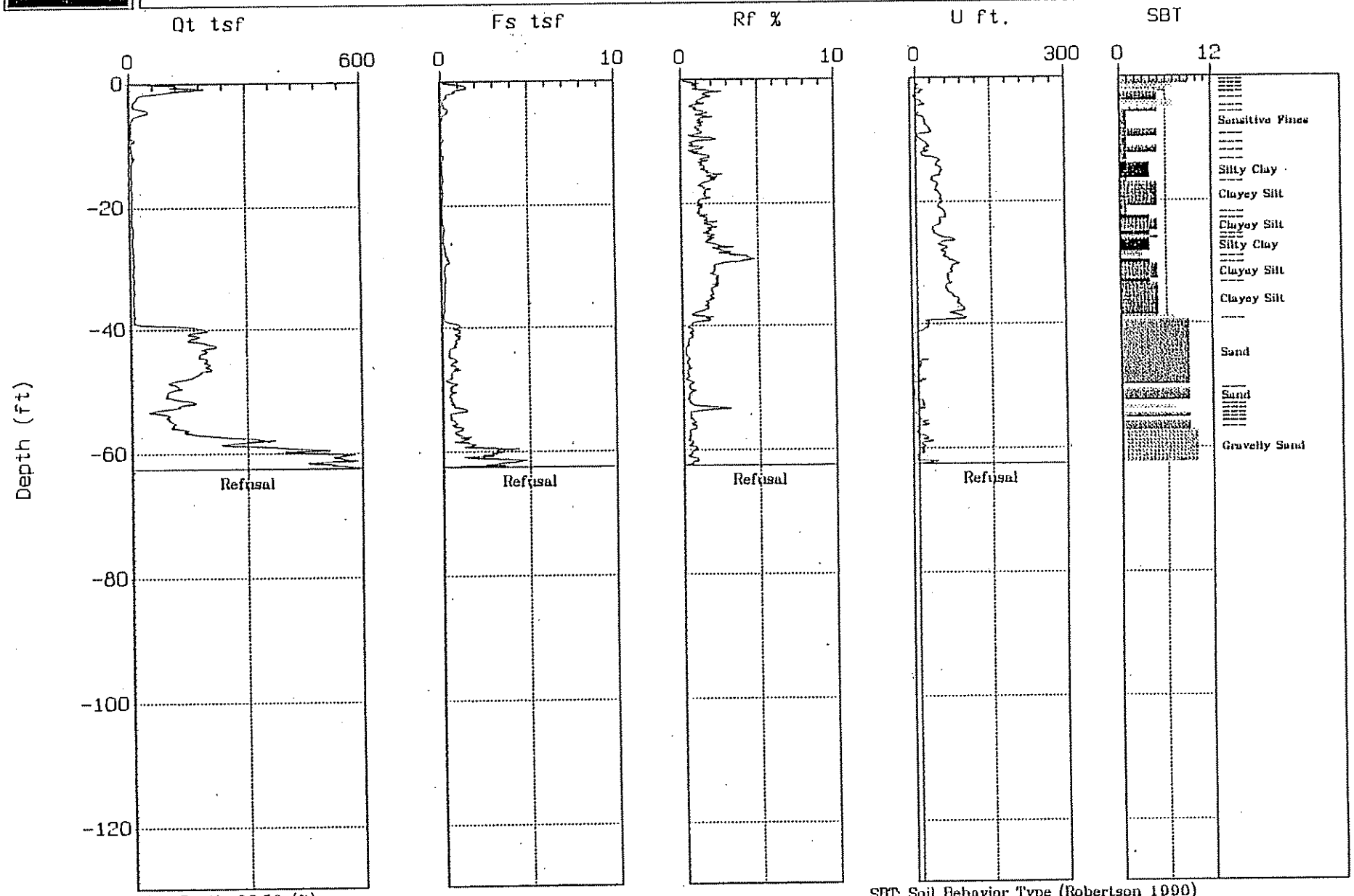
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C048
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:13:02 10:33




Max. Depth: 62.50 (ft)

Depth Inc.: 0.164 (ft)

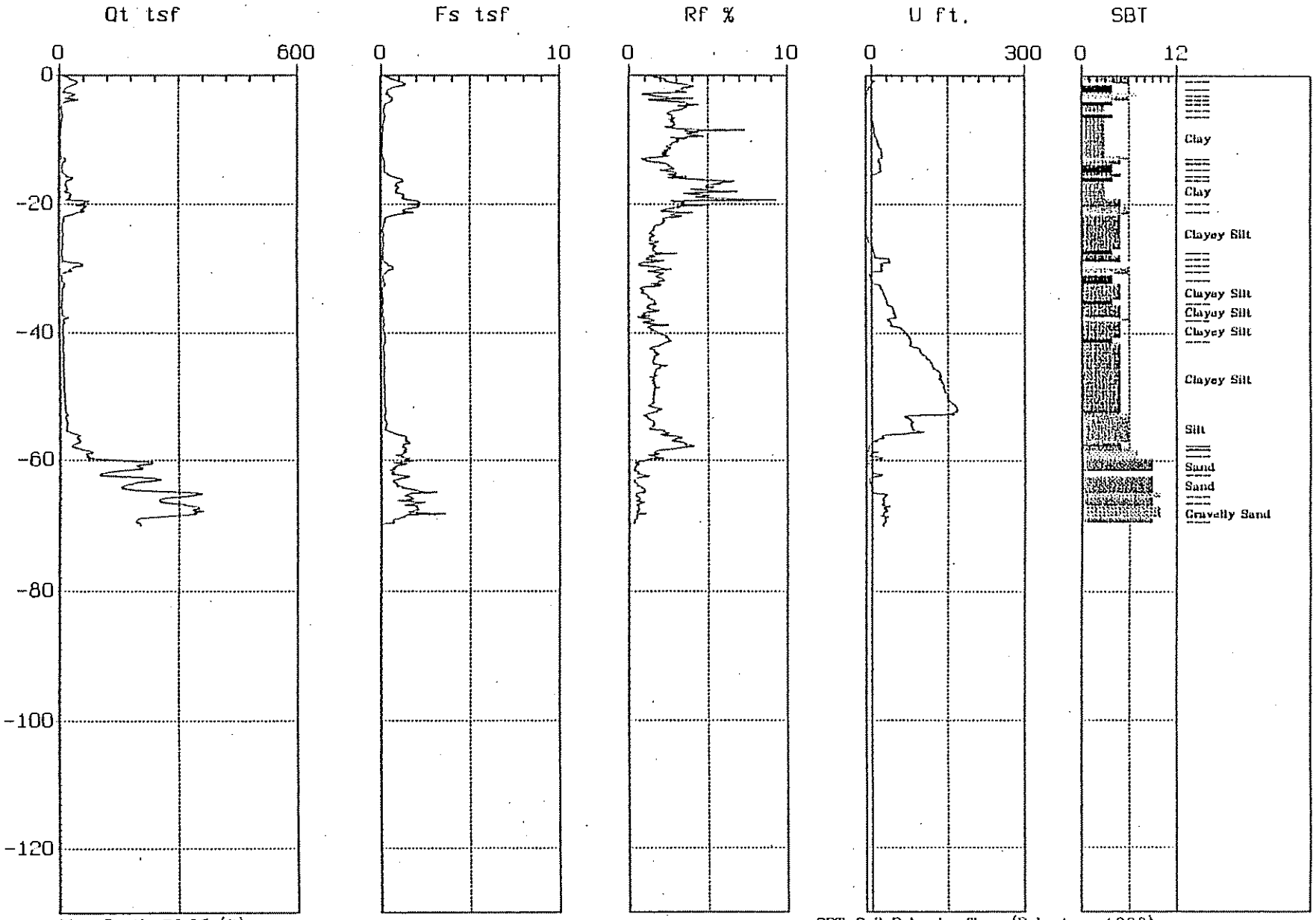
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C049
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:13:02 09:34




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

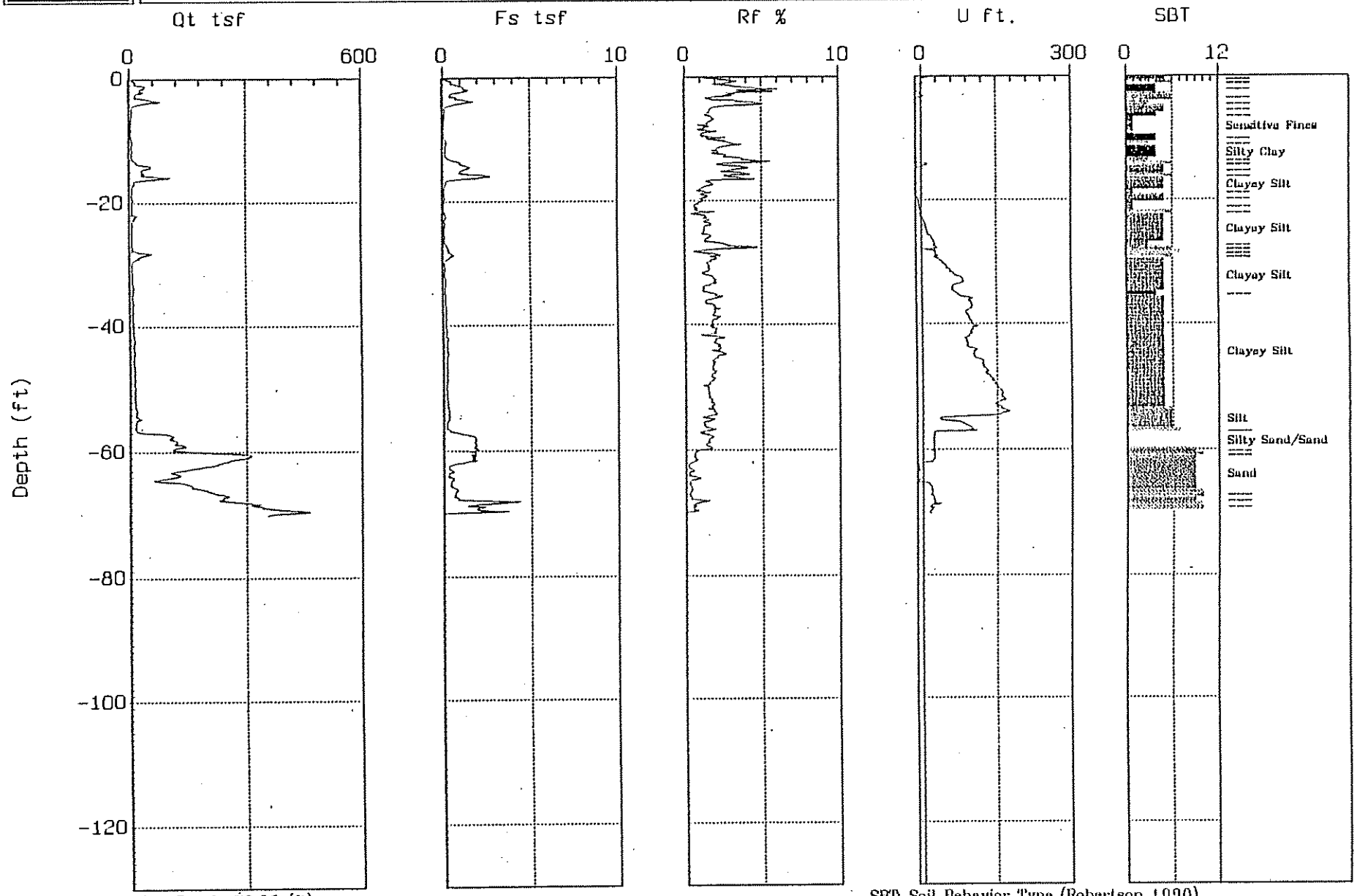
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C050
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:13:02 08:43




Max. Depth: 70.05 (ft)
Depth Inc.: 0.164 (ft)

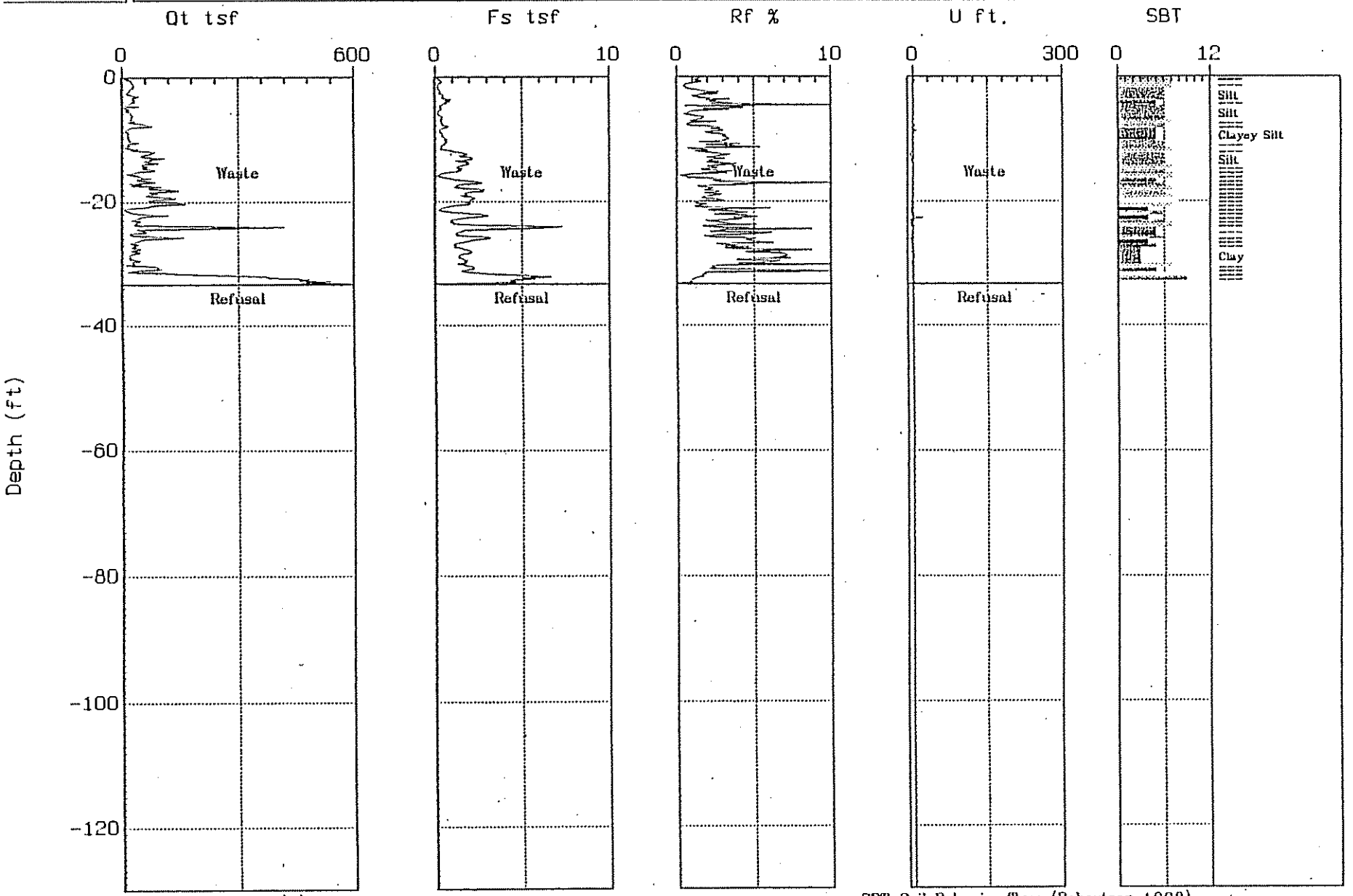
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P2-02-C051
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:14:02 10:47




Max. Depth: 33.30 (ft)

Depth Inc.: 0.164 (ft)

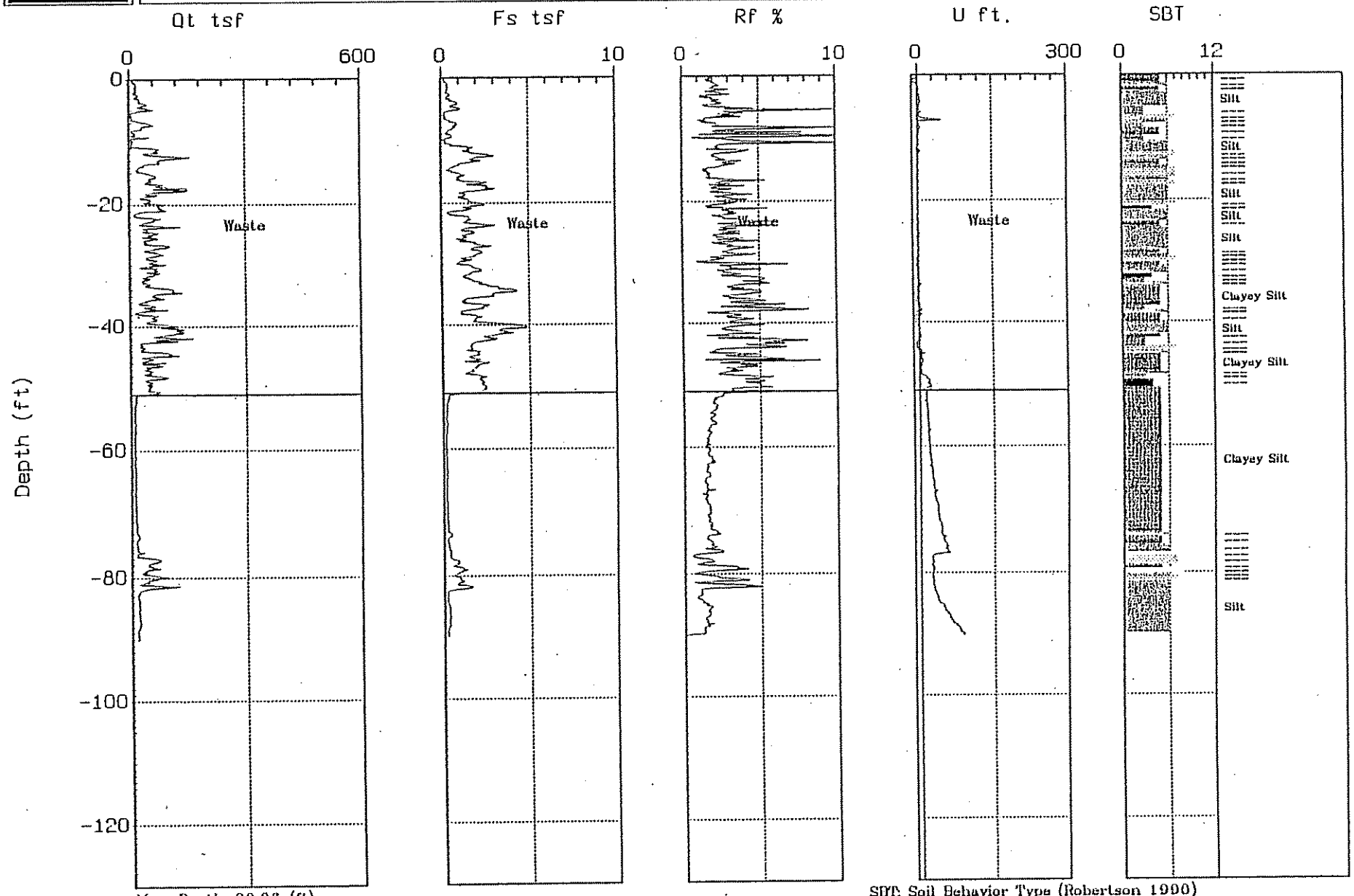
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P2-02-C051
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:14:02 11:23




Max. Depth: 90.06 (ft)

Depth Inc.: 0.164 (ft)

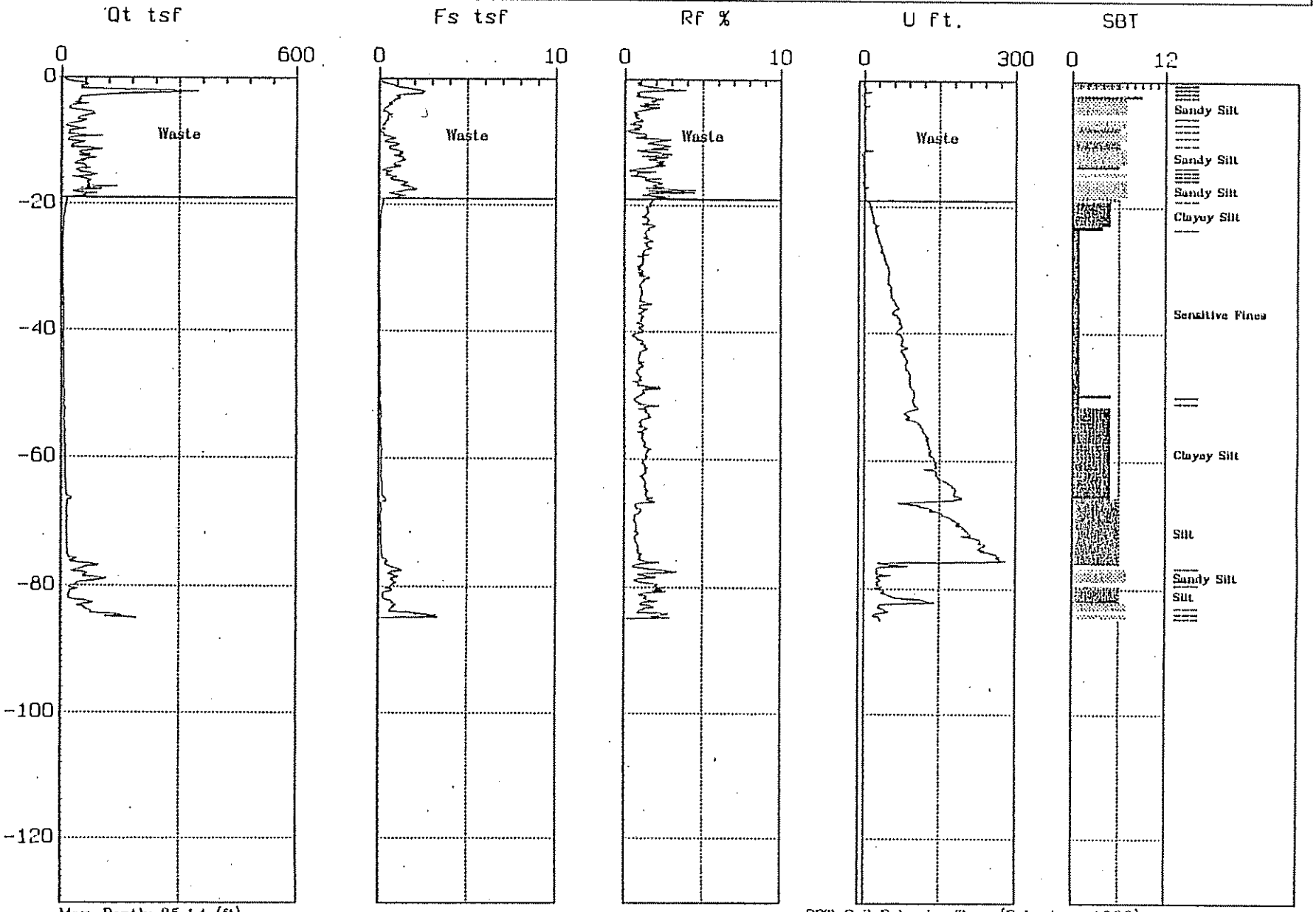
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C052
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:11:02 08:58




Max. Depth: 85.14 (ft)

Depth Inc.: 0.164 (ft)

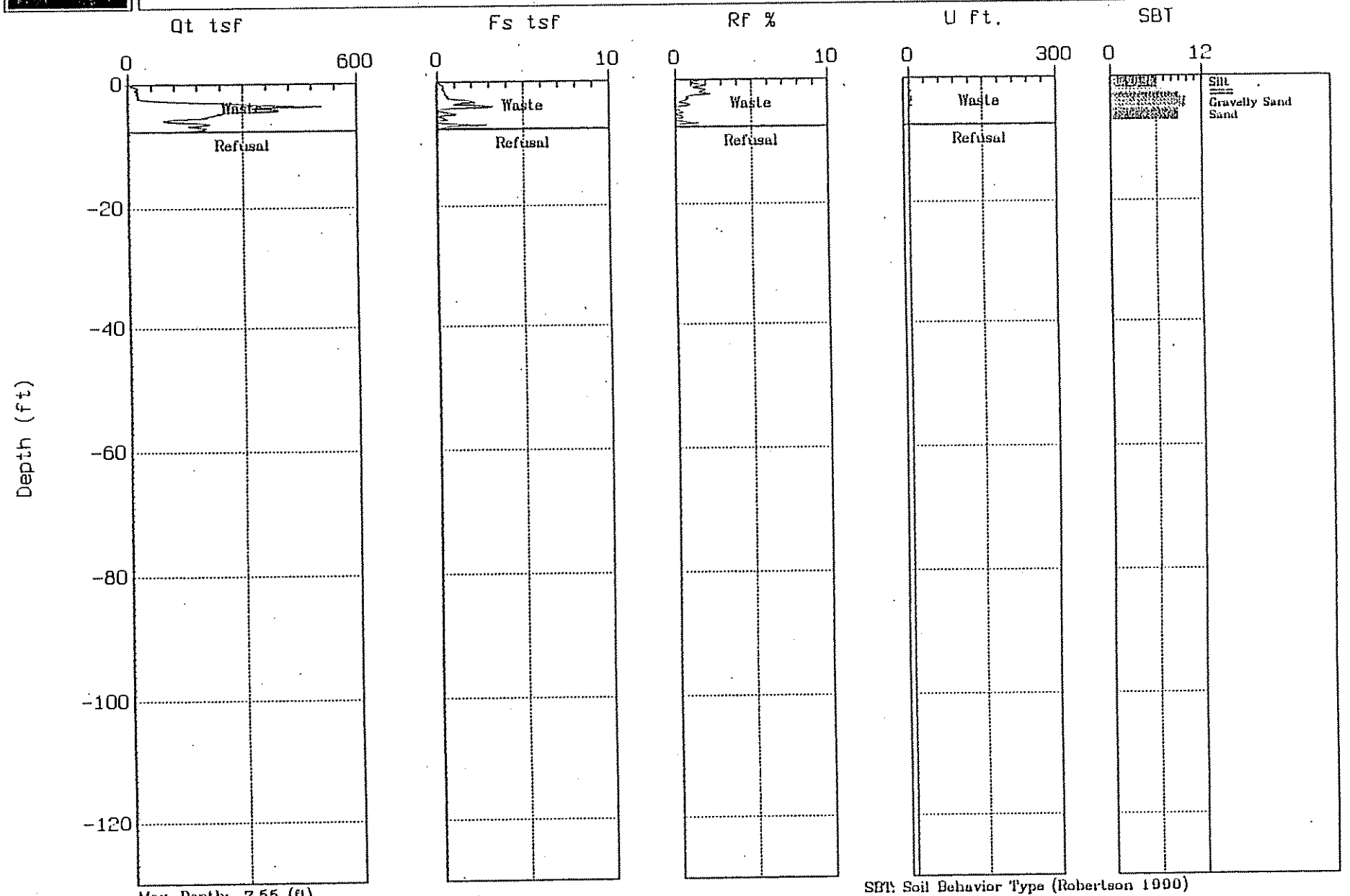
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C053
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:11:02 10:55




Max. Depth: 7.55 (ft)
Depth Inc.: 0.164 (ft)

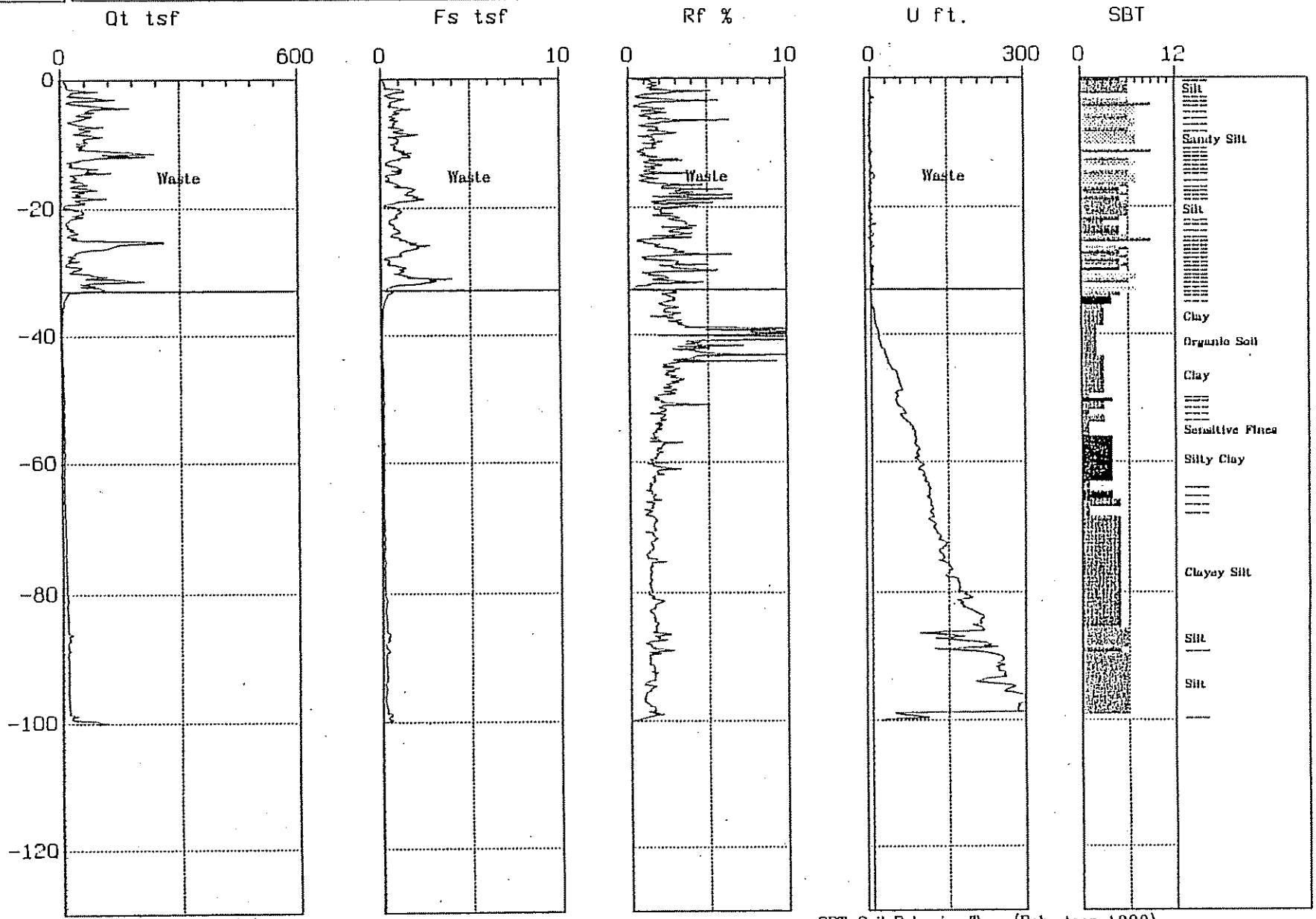
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P4-02-C053
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:11:02 11:07




Max. Depth: 100.06 (ft)
Depth Inc.: 0.164 (ft)

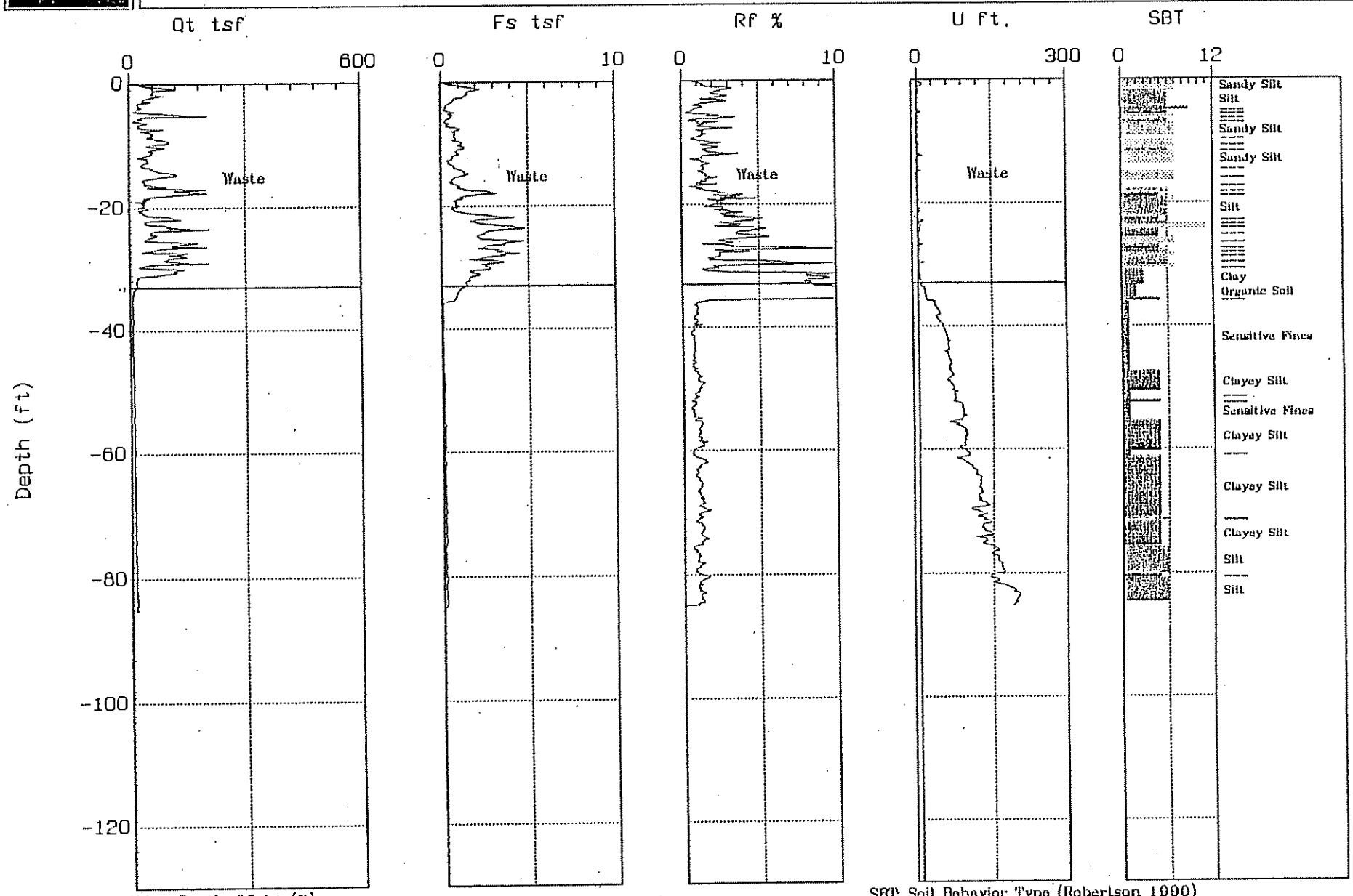
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C054
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:12:02 08:08




Max. Depth: 85.14 (ft)
Depth Inc.: 0.164 (ft)

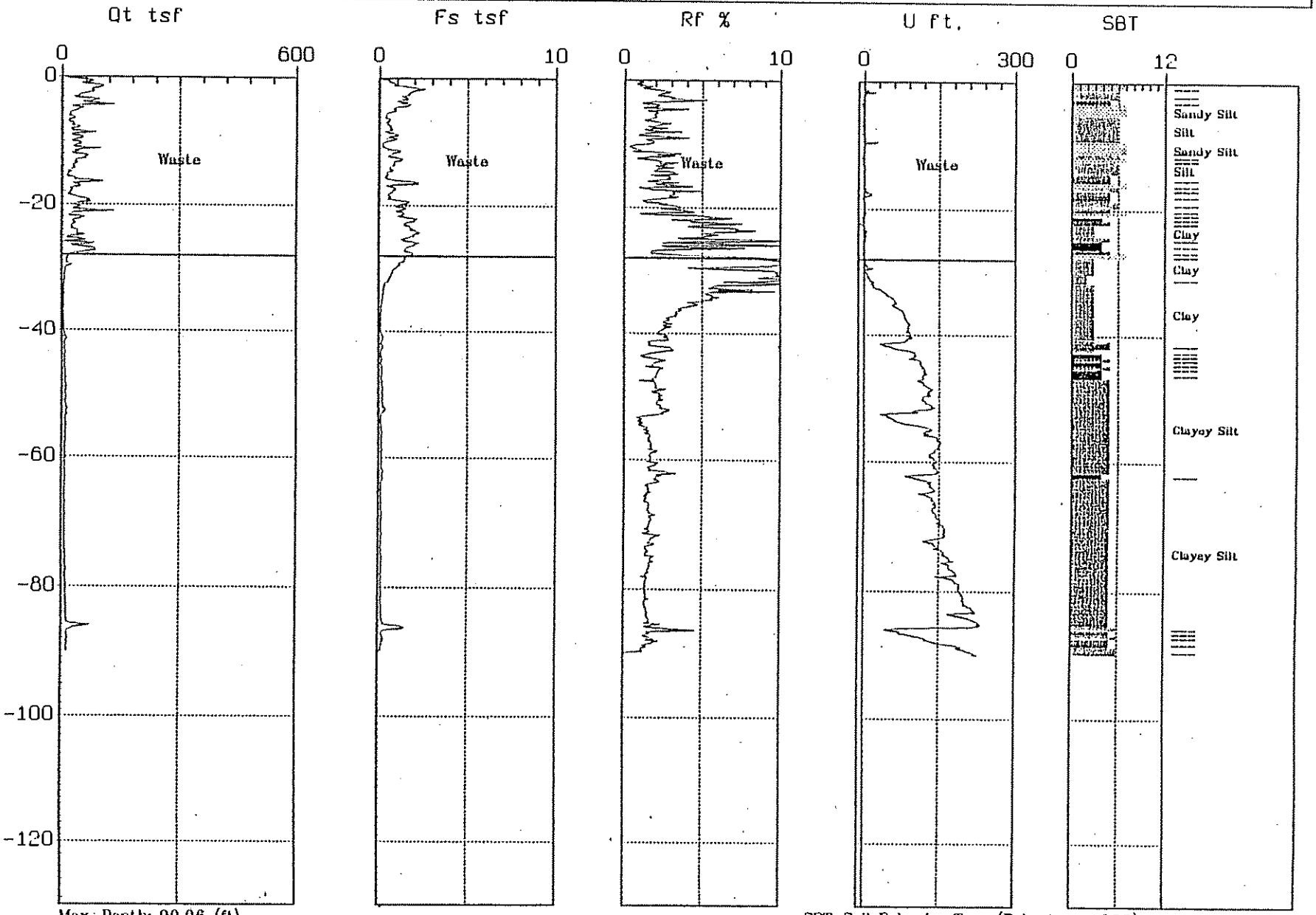
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P2-02-C055
Location: Cherry Isd. Ldfl

Cone: 20 TON A D059
Date: 02:12:2 10:22




Max. Depth: 90.06 (ft)
Depth Inc.: 0.164 (ft)

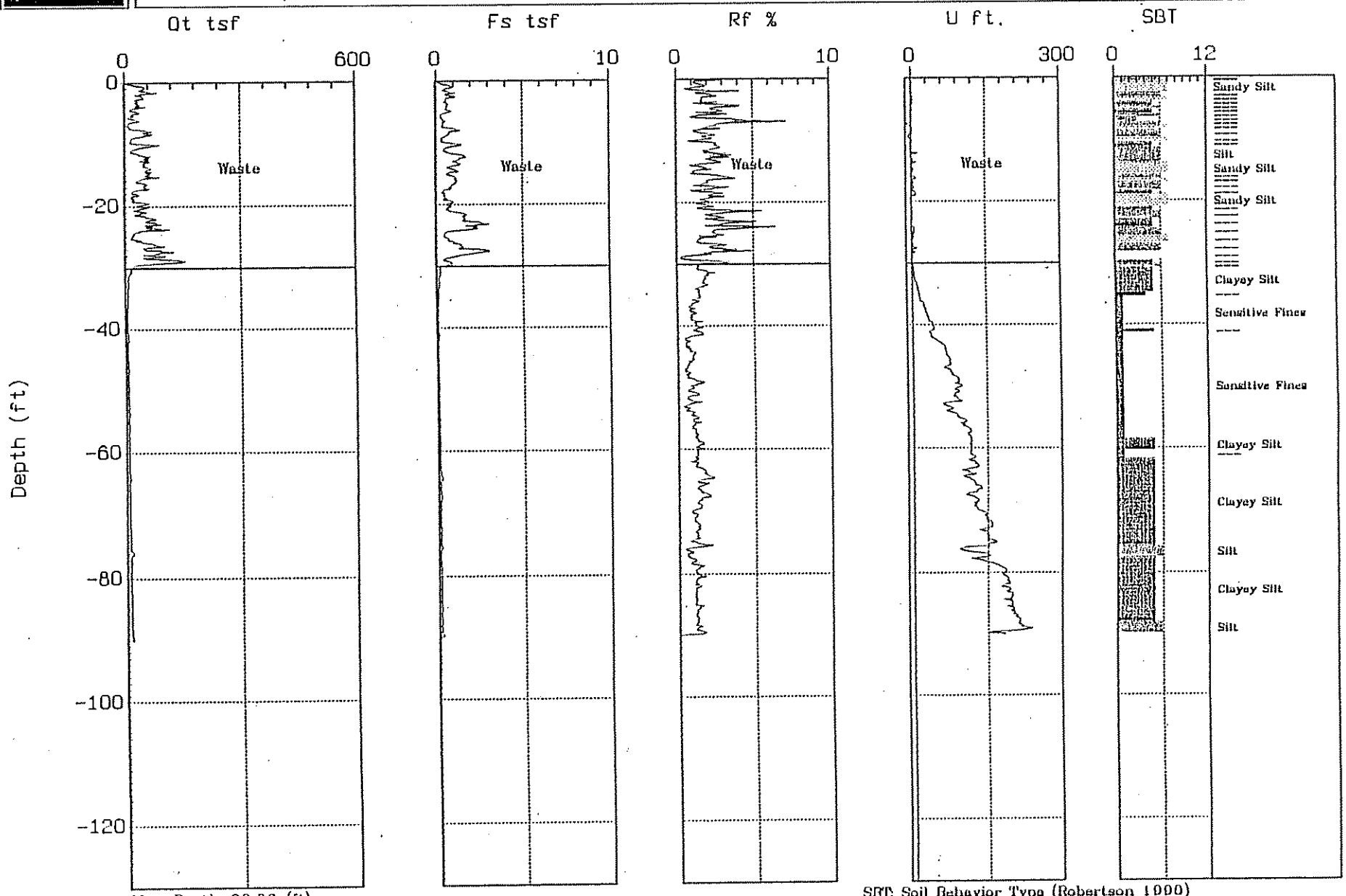
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C056
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:12:02 11:57




Max. Depth: 90.06 (ft)
Depth Inc.: 0.164 (ft)

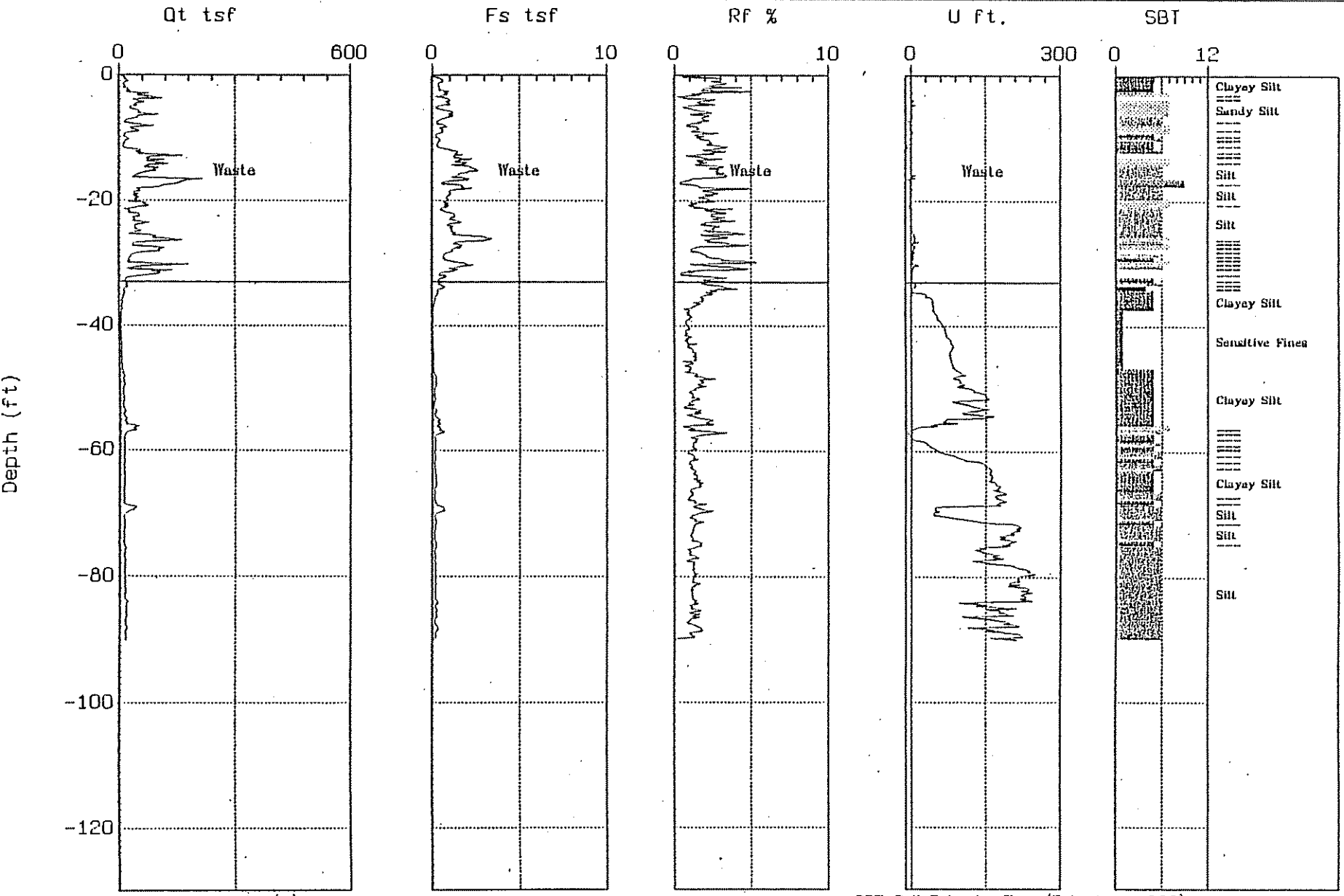
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P5-02-C057
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:12:02 13:27




Max. Depth: 90.06 (ft)
Depth Inc.: 0.164 (ft)

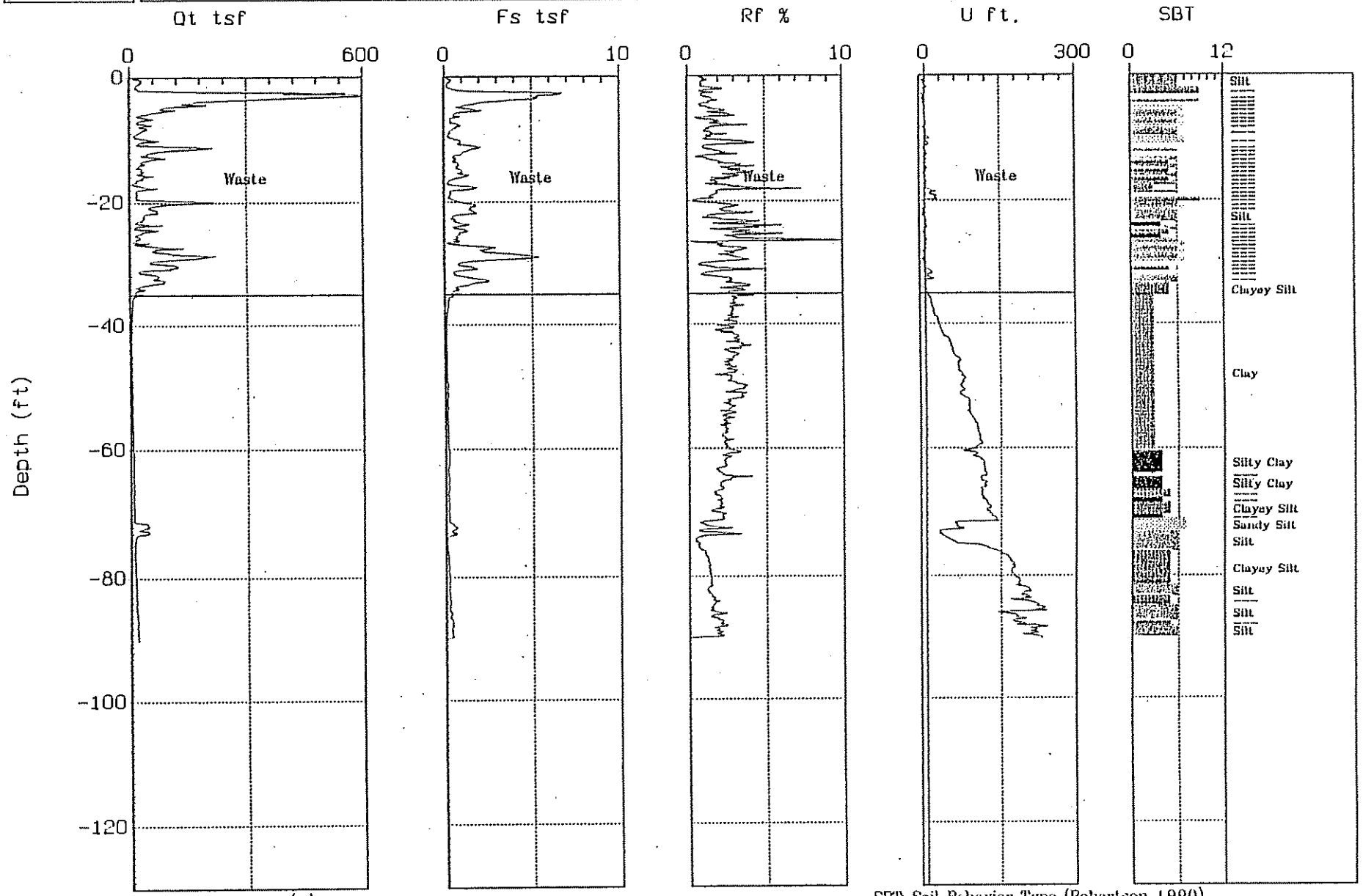
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P3-02-C058
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:14:02 13:23




Max. Depth: 90.06 (ft)
Depth Inc.: 0.164 (ft)

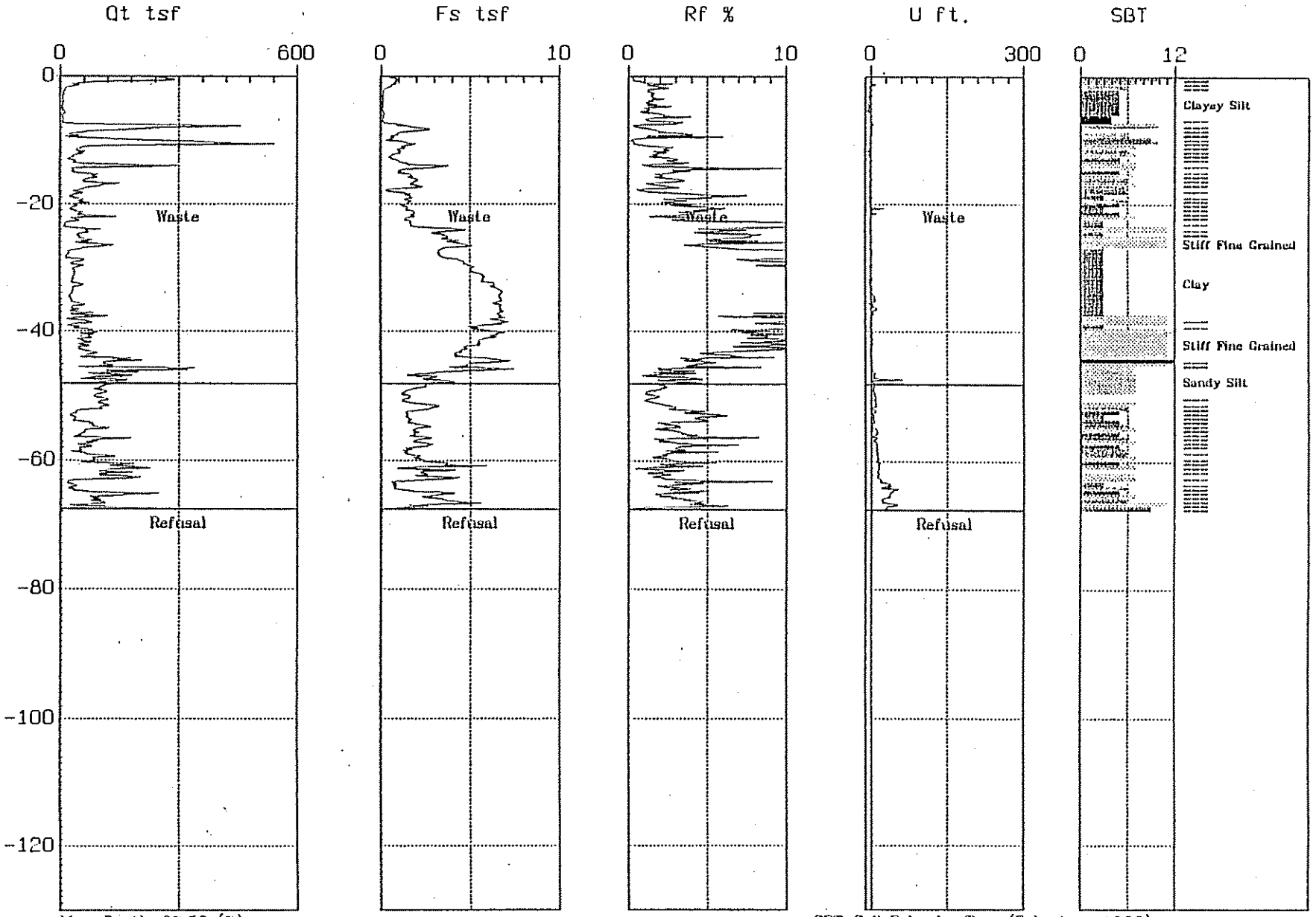
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

*Duffield Associates*

Site: P1-02-C059
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 02:14:02 08:22




Max. Depth: 67.58 (ft)
Depth Inc.: 0.164 (ft)

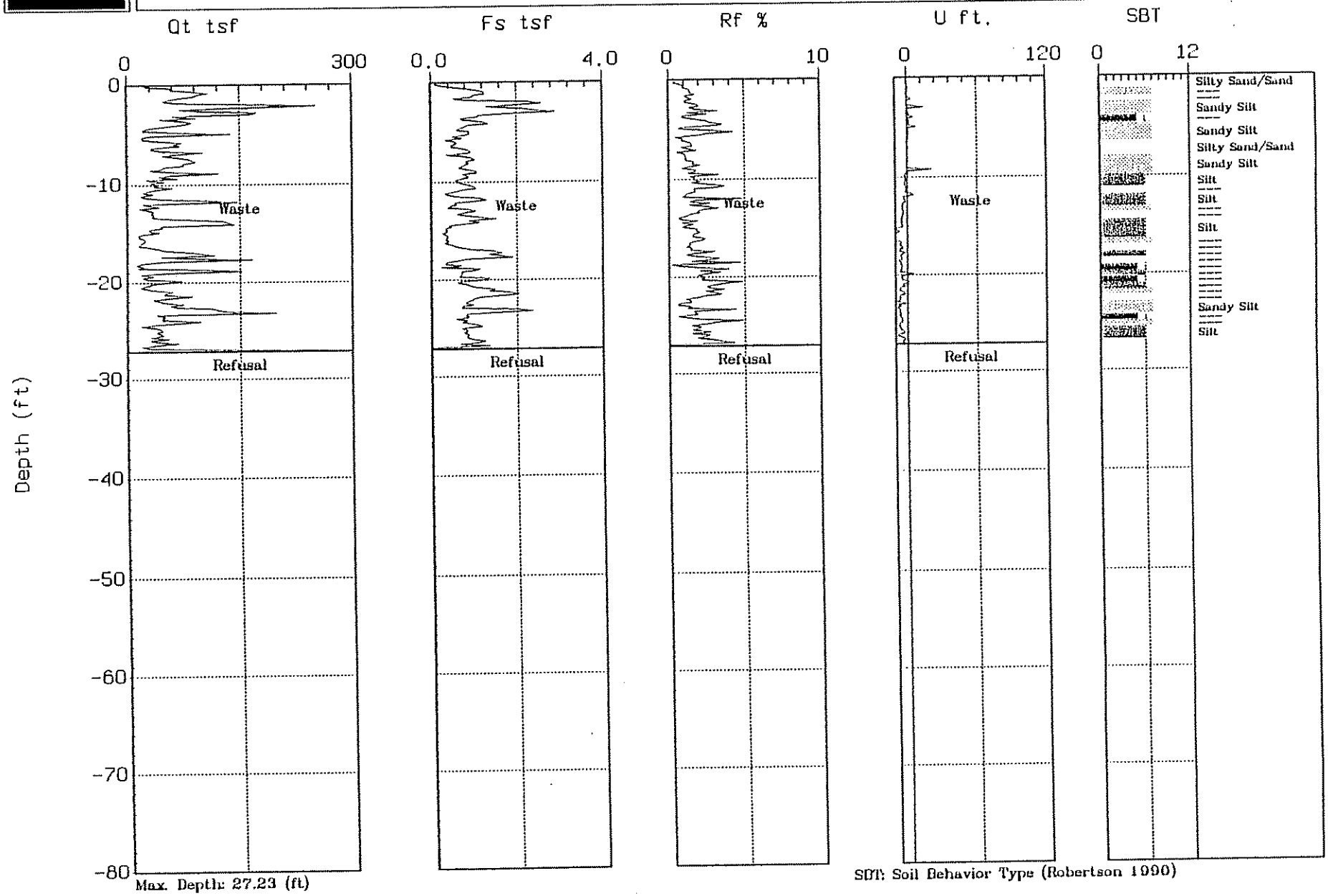
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-02 P5-02-C061
Location: Cherry Isd. Ldfl

Cone: 10 TON AD023
Date: 04:11:02 12:50




Max. Depth: 27.23 (ft)

Depth Inc.: 0.164 (ft)

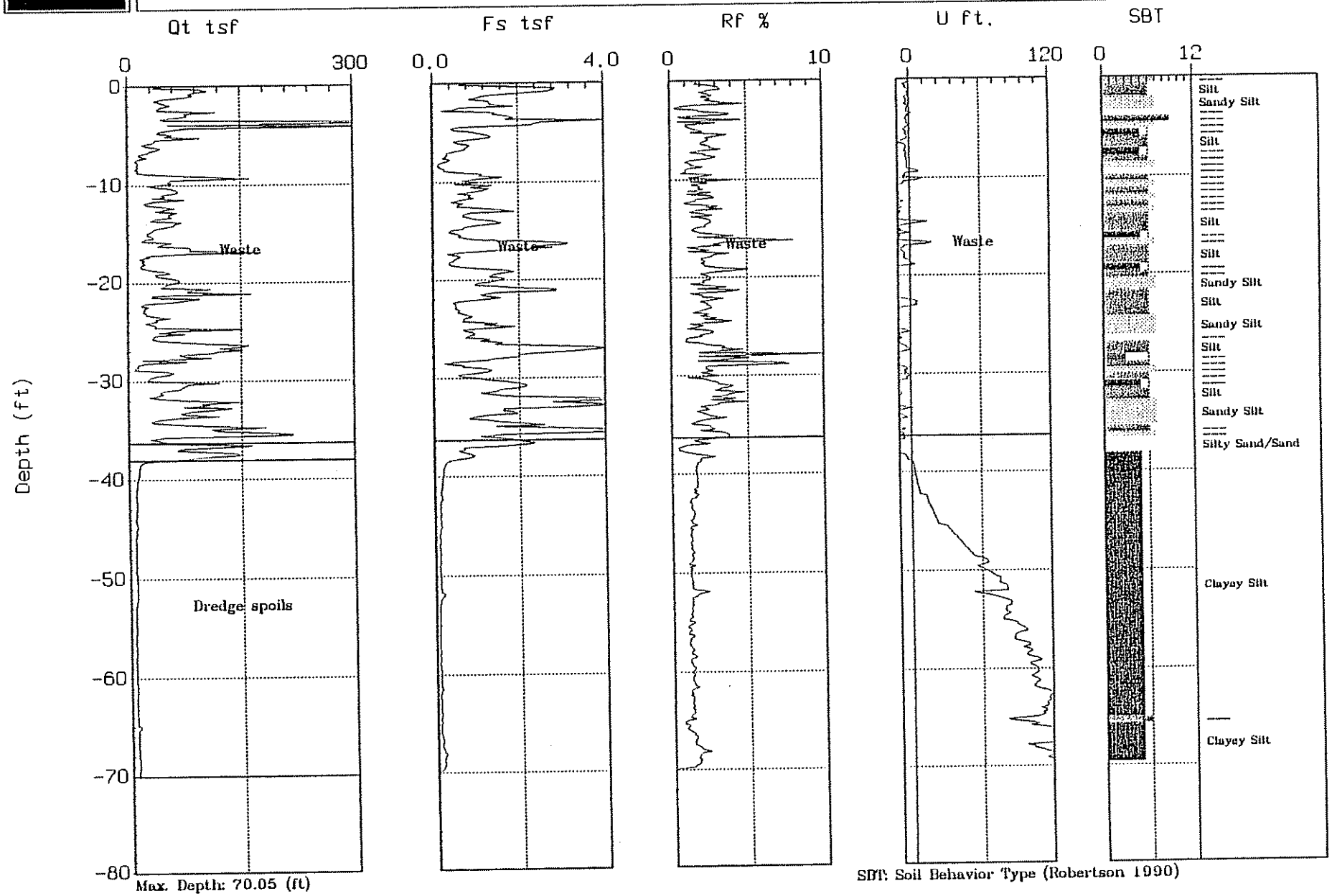
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-03 P3-02-C062
Location: Cherry Isd. Ldfl

Cone: 10 TON AD023
Date: 04:12:02 07:26




Max. Depth: 70.05 (ft)

Depth Inc.: 0.164 (ft)

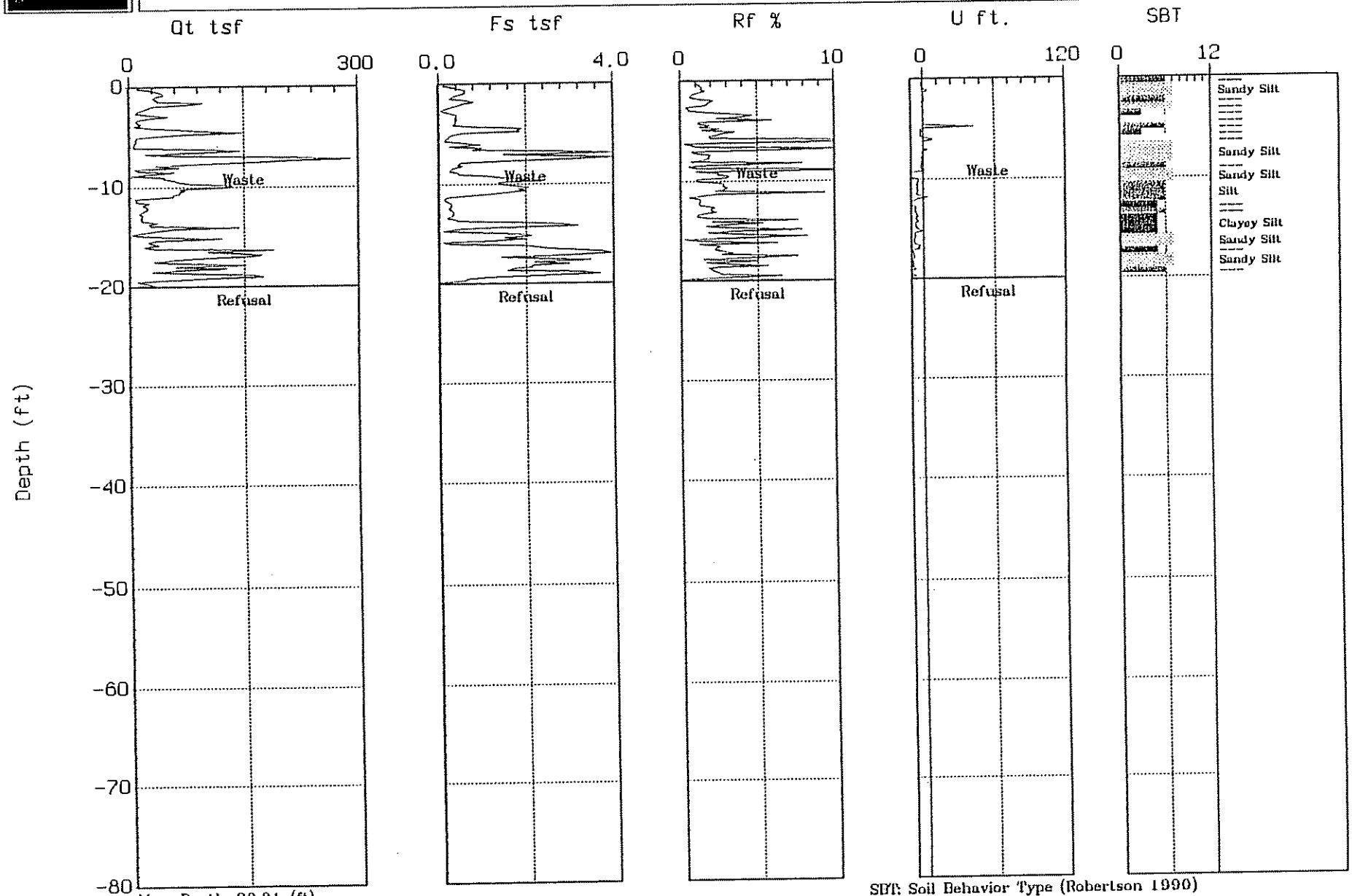
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-04 P1-02-C063
Location: Cherry Isd. Ldfl

Cone: 10 TON AD023
Date: 04:15:02 06:34




Max. Depth: 20.01 (ft)
Depth Inc.: 0.164 (ft)

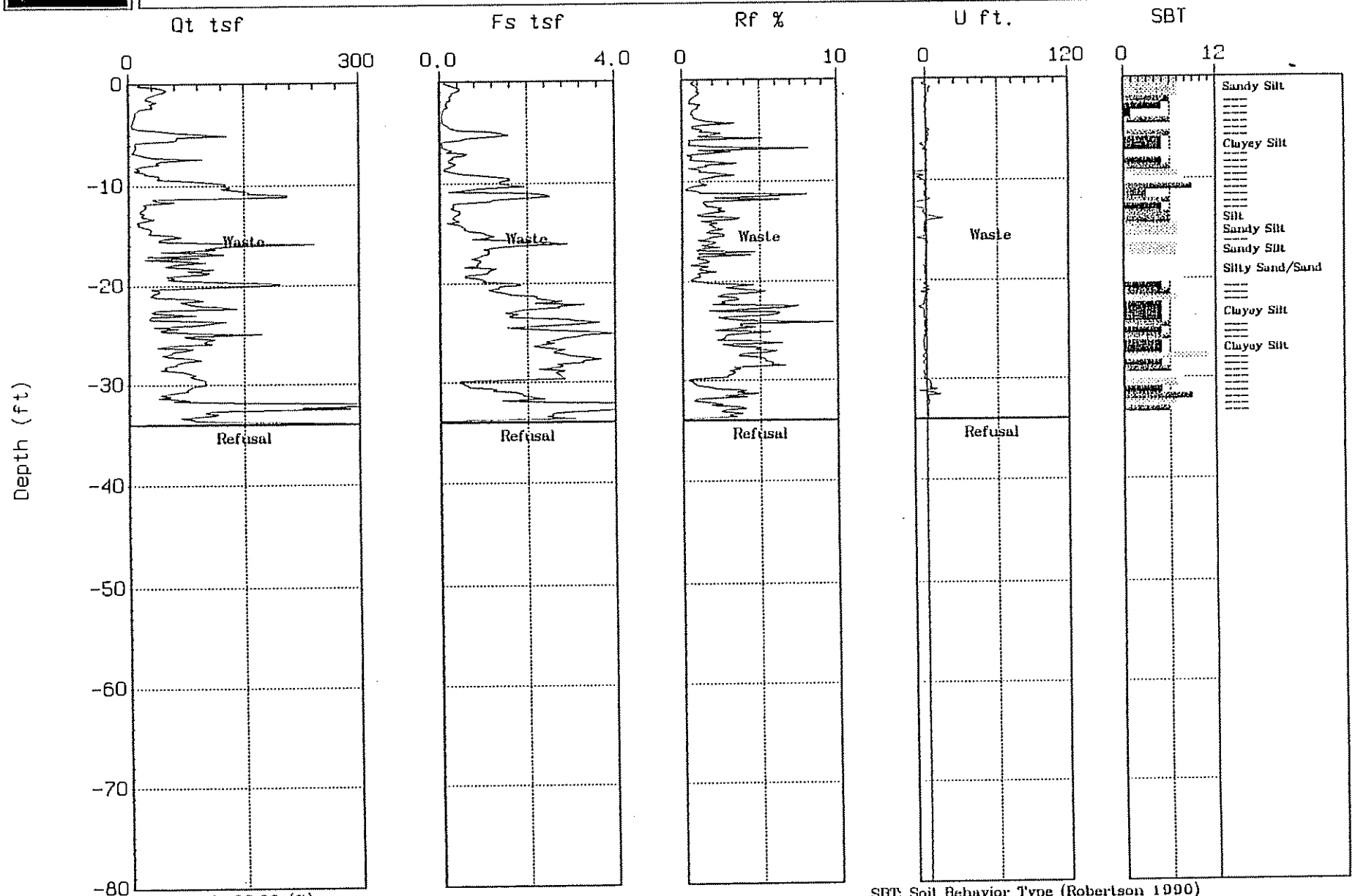
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-4A P1-02-CD604
Location: Cherry Isd. Ldfl

Cone: 20 TON AD059
Date: 04:15:02 07:23




Max. Depth: 33.96 (ft)
Depth Inc.: 0.164 (ft)

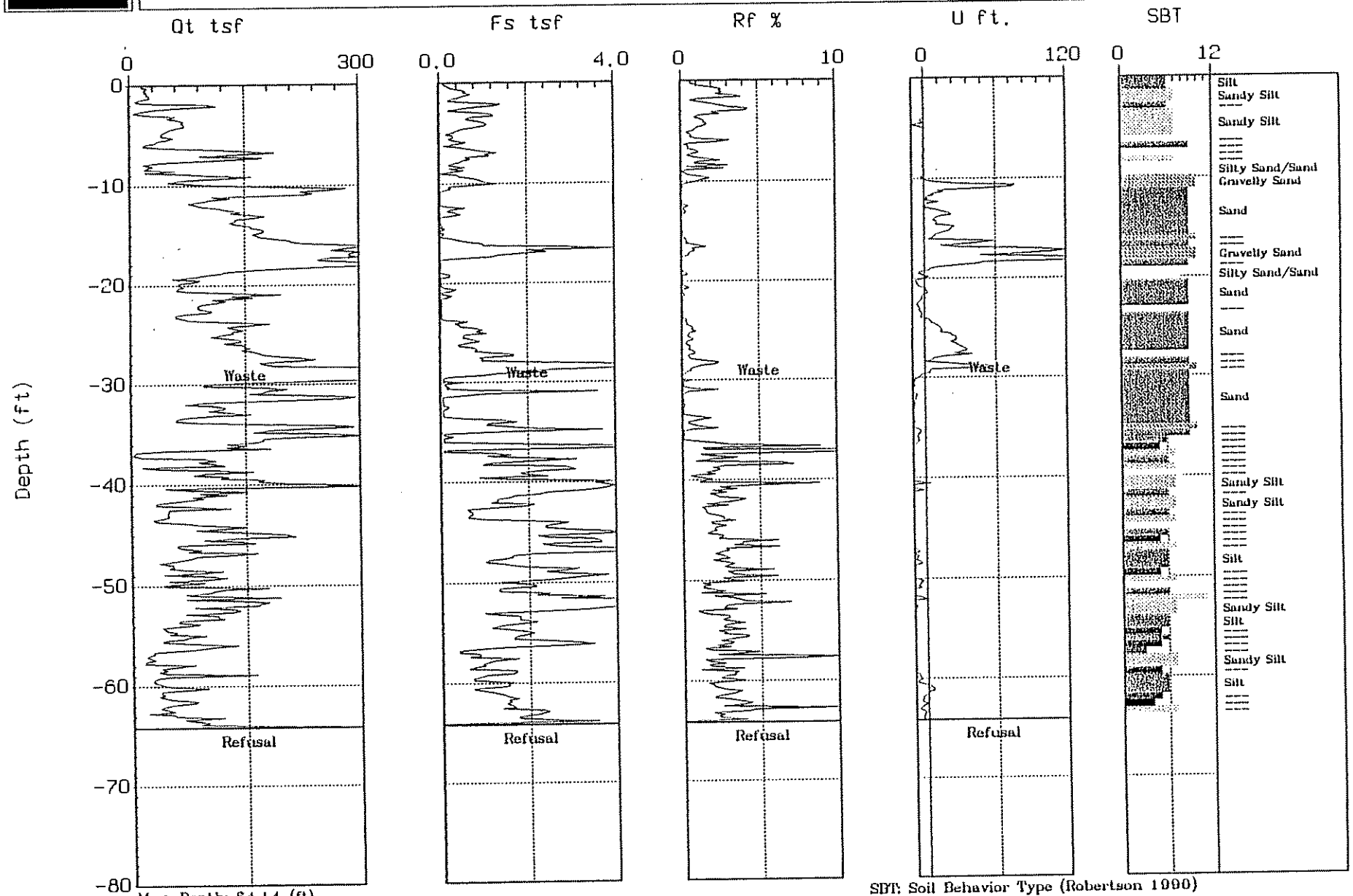
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-05 P2-02-C065
Location: Cherry Isd. Ldfl

Cone: 10 TON AD023
Date: 04:15:02 09:08




Max. Depth: 64.14 (ft)
Depth Inc.: 0.164 (ft)

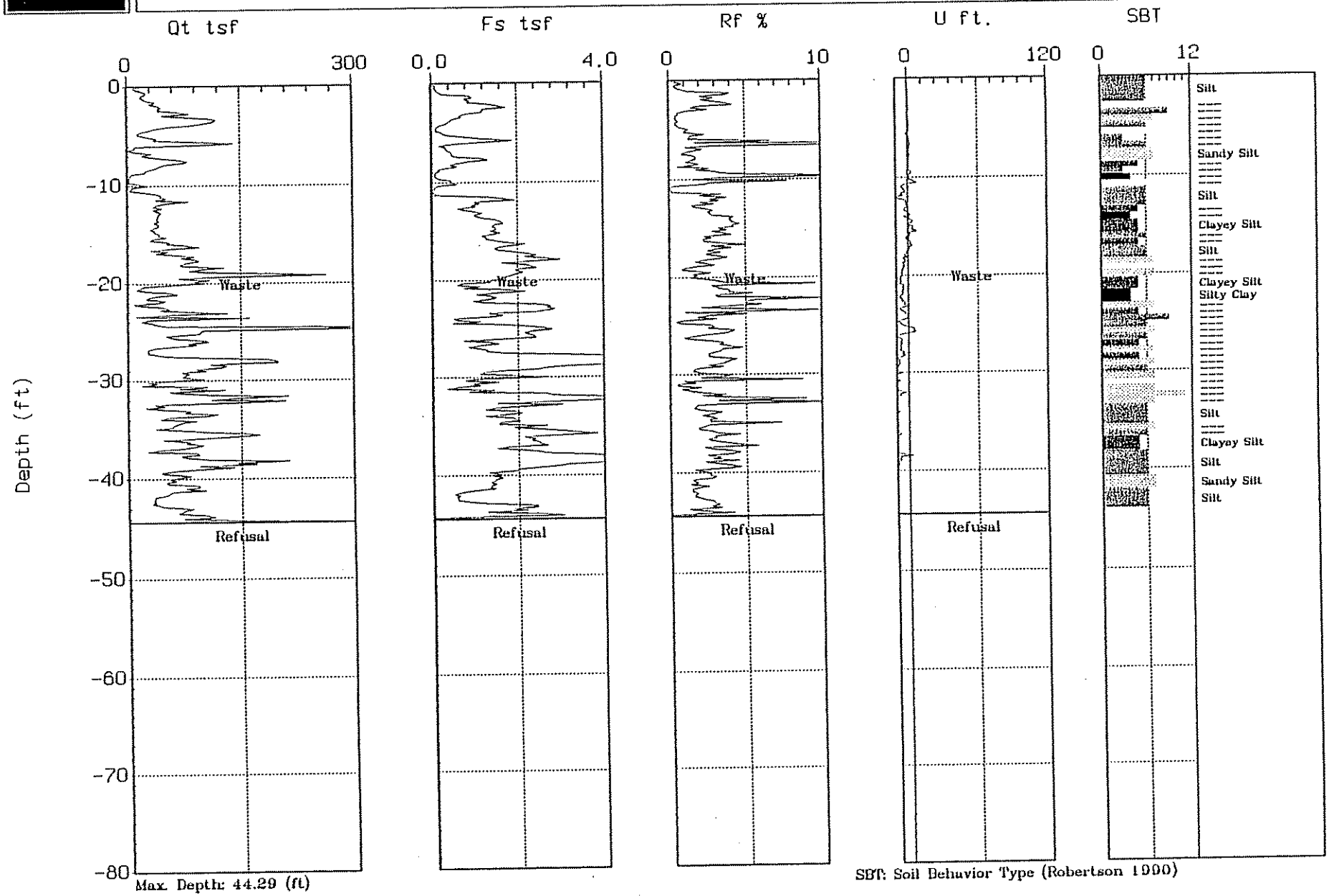
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-5A P2-02-C066
Location: Cherry Isd. Ldfl

Cone: 10 TON AD023
Date: 04:15:02 11:20




Max. Depth: 44.29 (ft)

Depth Inc.: 0.164 (ft)

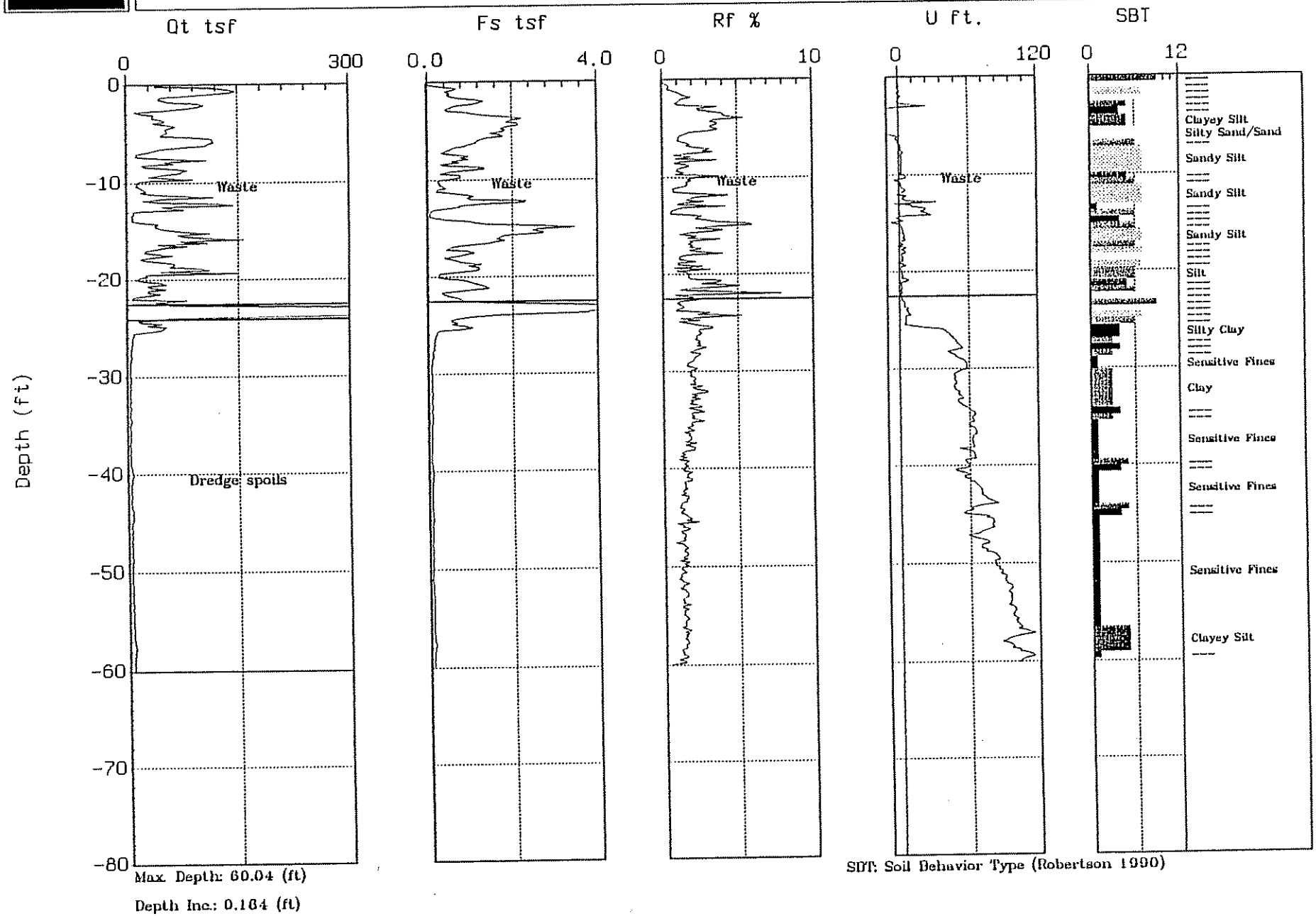
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-06 P3-02-CC67
Location: Cherry Isd. Ldfl

Cone: 10 TON AD023
Date: 04:15:02 12:22




Max. Depth: 60.04 (ft)
Depth Inc.: 0.164 (ft)

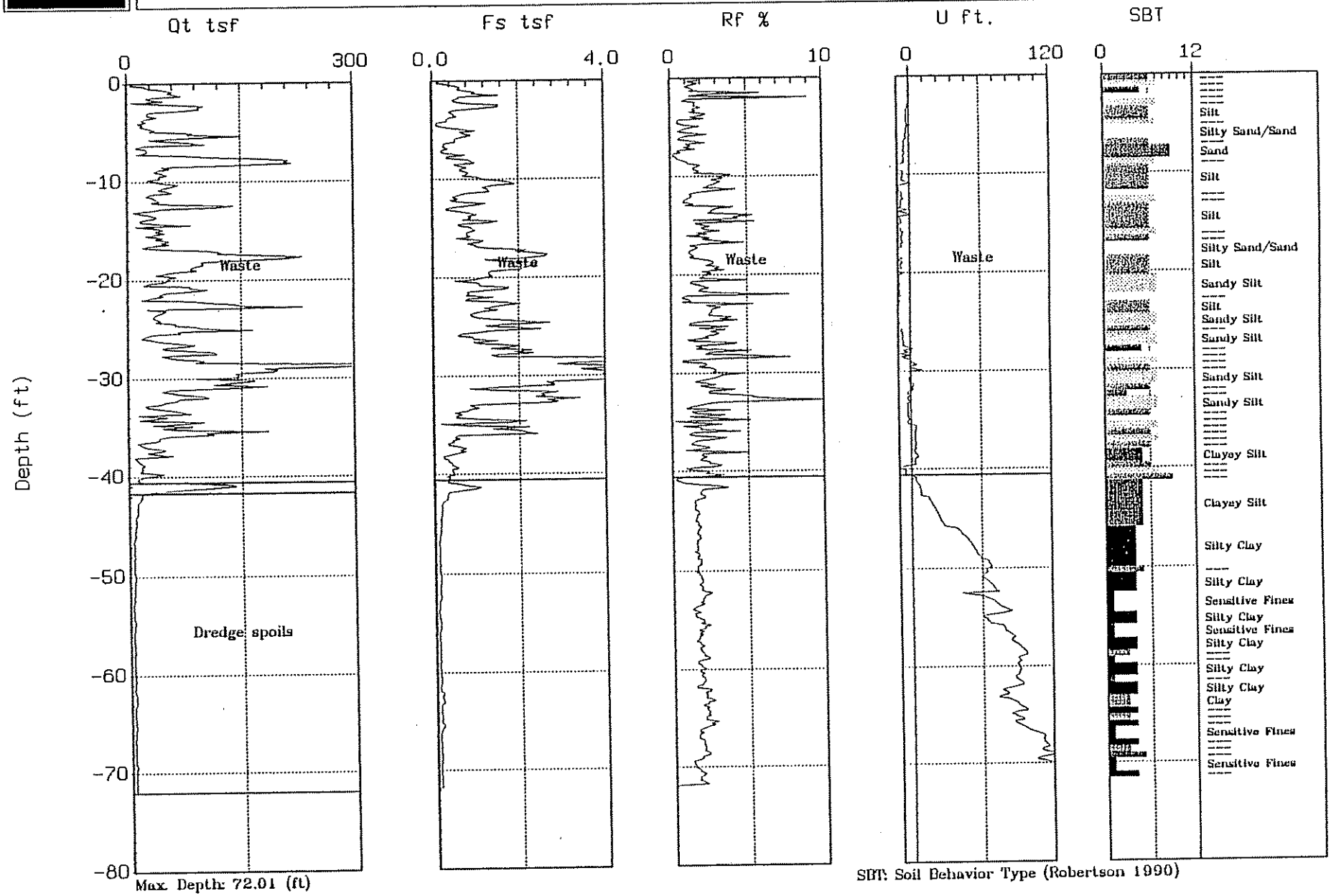
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: MSW-07 P4-02-CD68
Location: Cherry Isd. Ldfl

Cone: 10 TON AD023
Date: 04:16:02 06:31




Max. Depth: 72.01 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

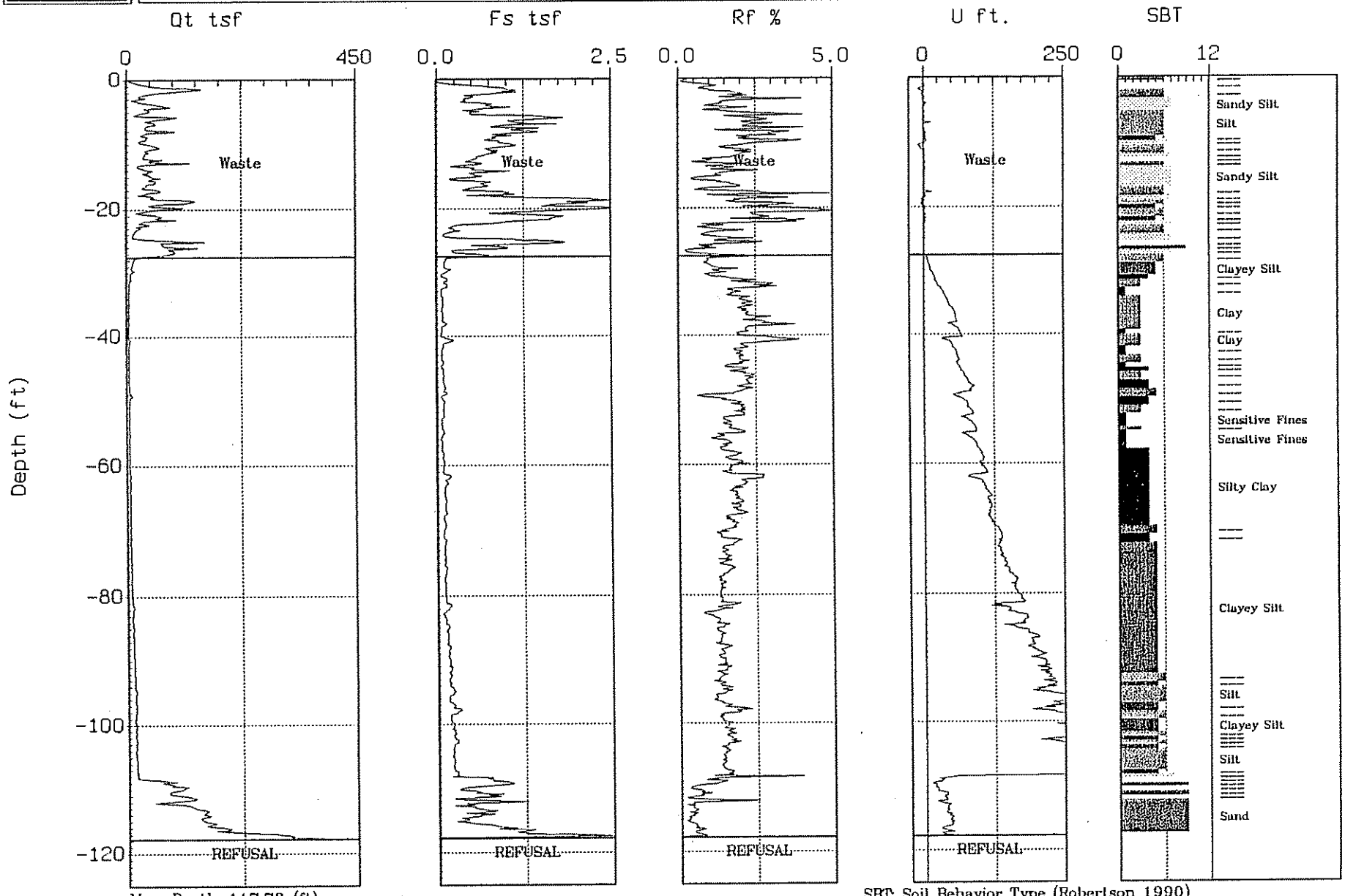
# PVD PILOT TEST
# CPT RESULTS

CONETEC

GeoSyntec

Site: CPT-A8G12
Location: Cherry Island, DE

Cone: 20 TON AD076
Date: 01:02:03 09:43




Max. Depth: 117.78 (ft)

Depth Inc.: 0.164 (ft)

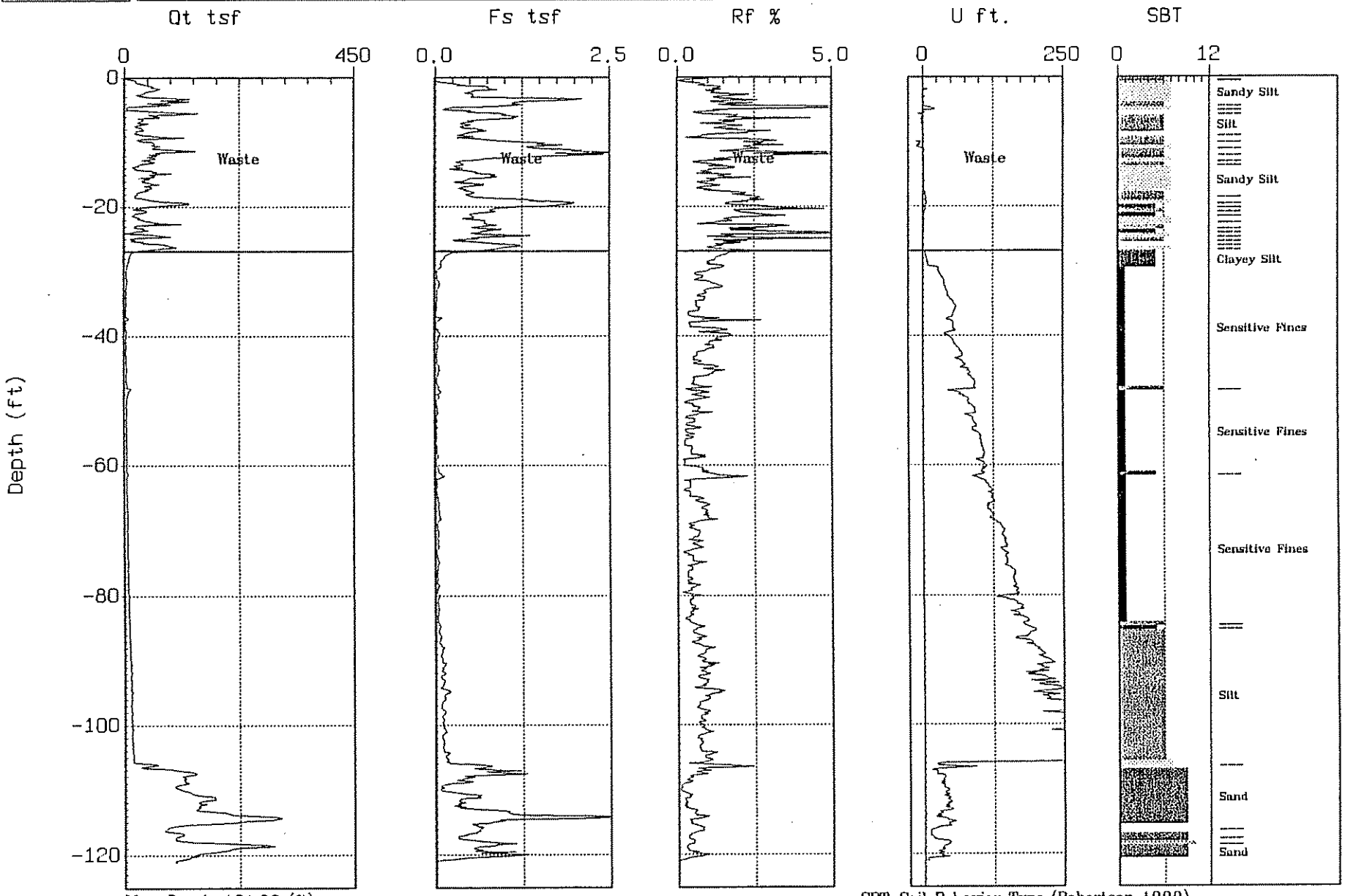
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A8C10
Location: Cherry Island, DE

Cone: 20 TON A0076
Date: 01:02:03 11:12




Max. Depth: 121.06 (ft)

Depth Inc.: 0.164 (ft)

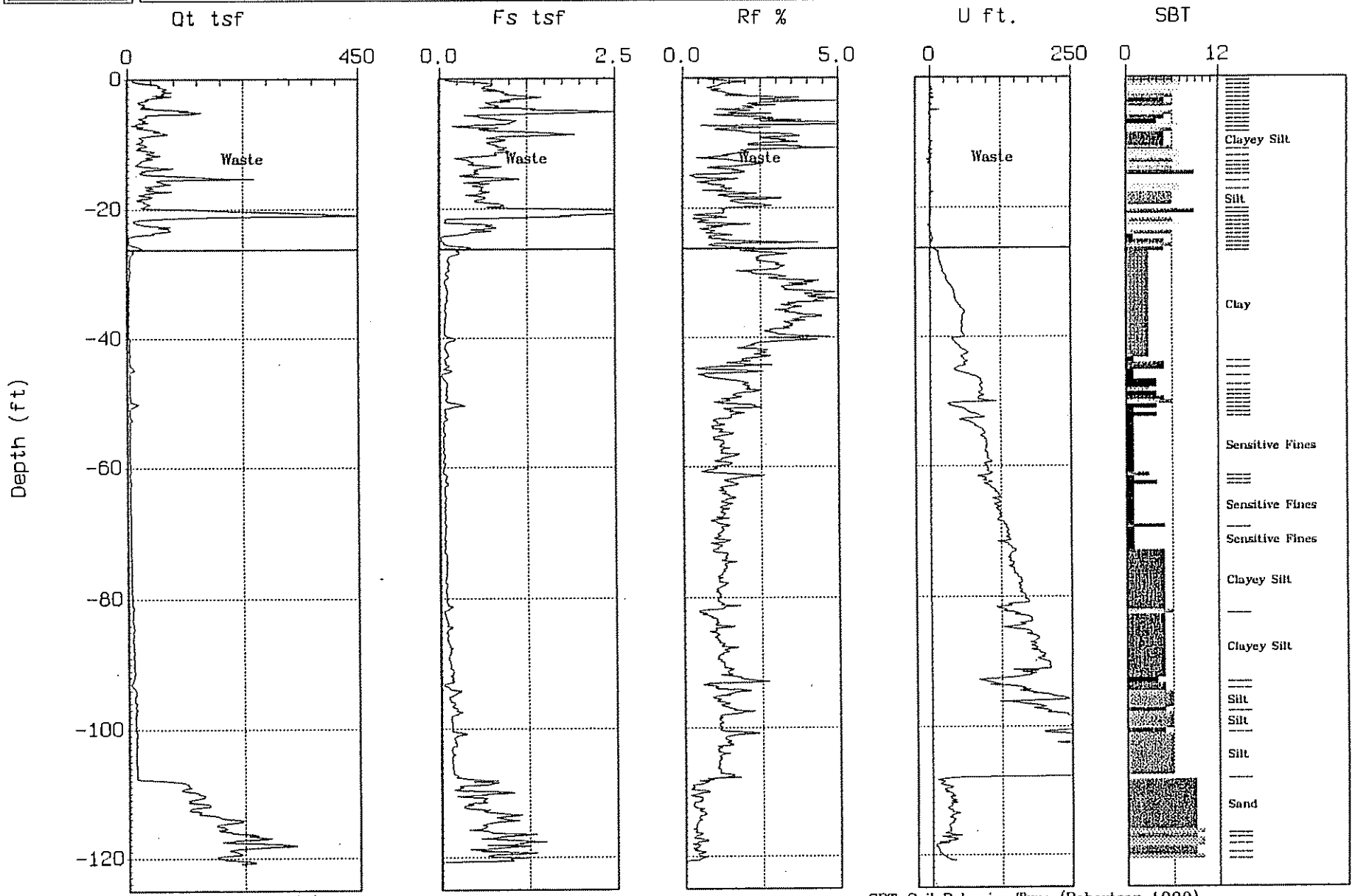
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-ABCNT
Location: Cherry Island, DE

Cone: 20 TON AD076
Date: 01:02:03 12:32




Max. Depth: 120.90 (ft)

Depth Inc.: 0.164 (ft)

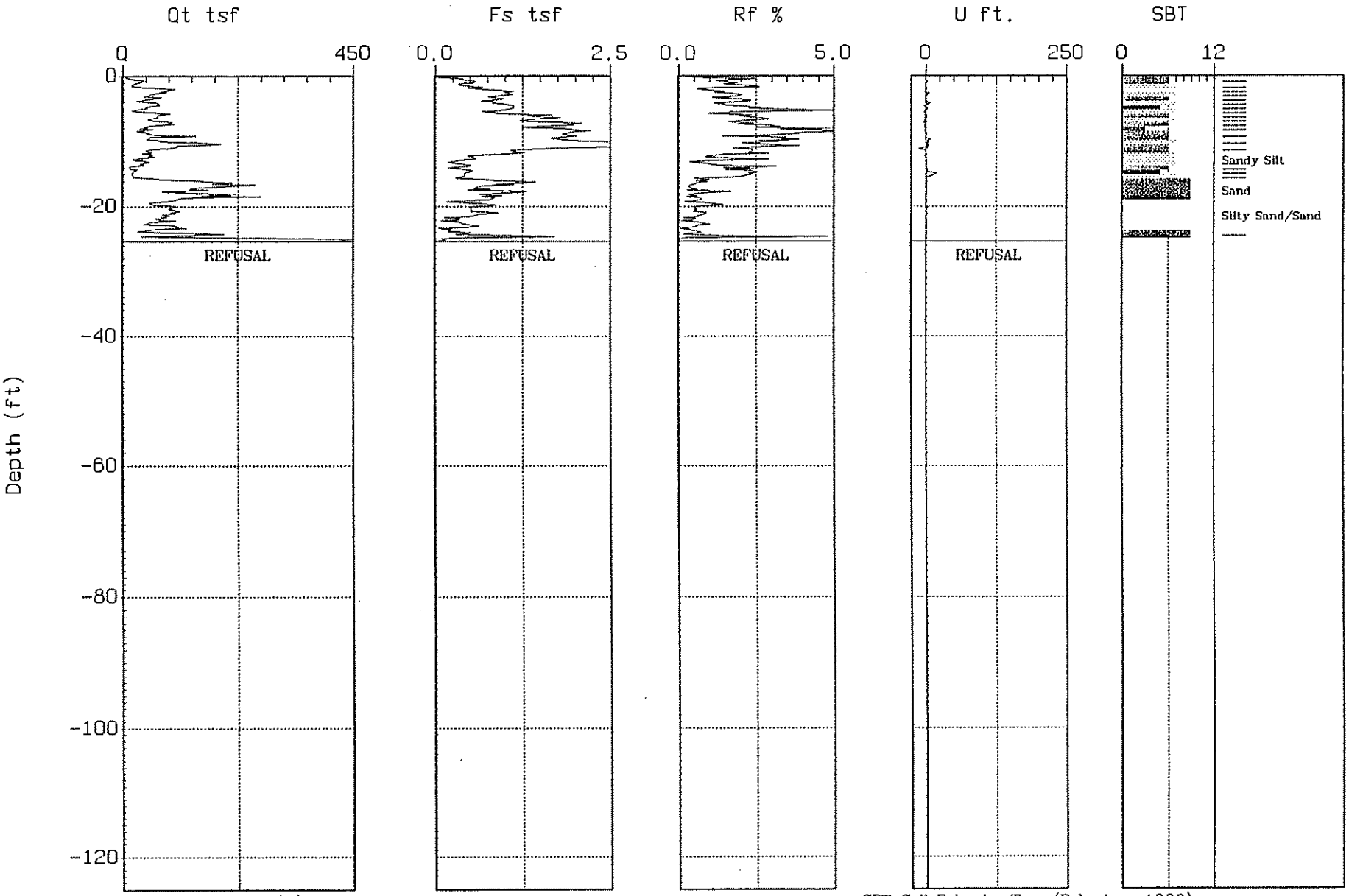
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A8K11
Location: Cherry Island, DE

Cone: 20 TON AD076
Date: 01:02:03 13:39




Max. Depth: 25.43 (ft)

Depth Inc.: 0.164 (ft)

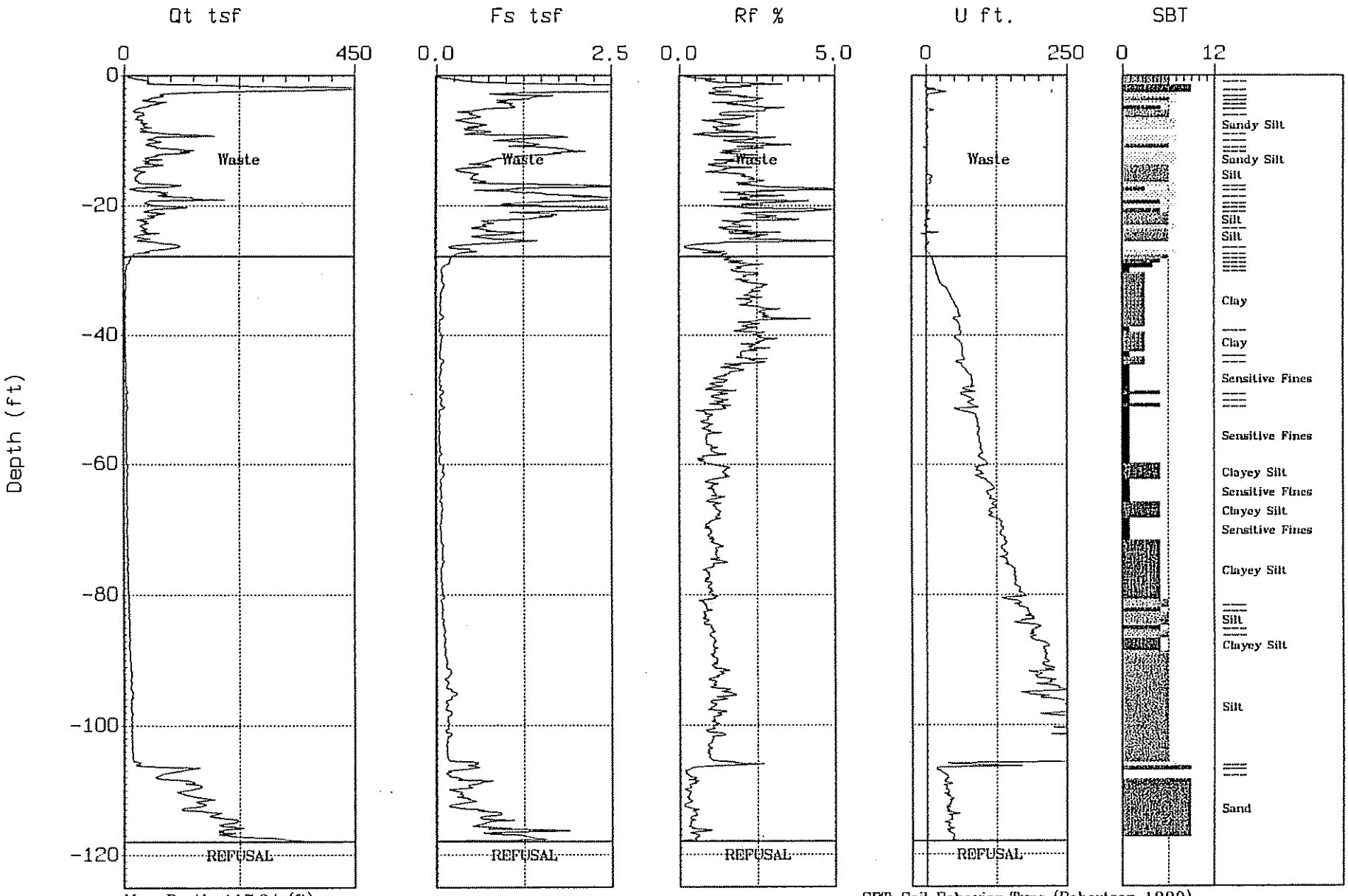
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-ABK10
Location: Cherry Island, DE

Cone: 20 TON AD076
Date: 01.02.03 14:19




Max. Depth: 117.94 (ft)

Depth Inc.: 0.164 (ft)

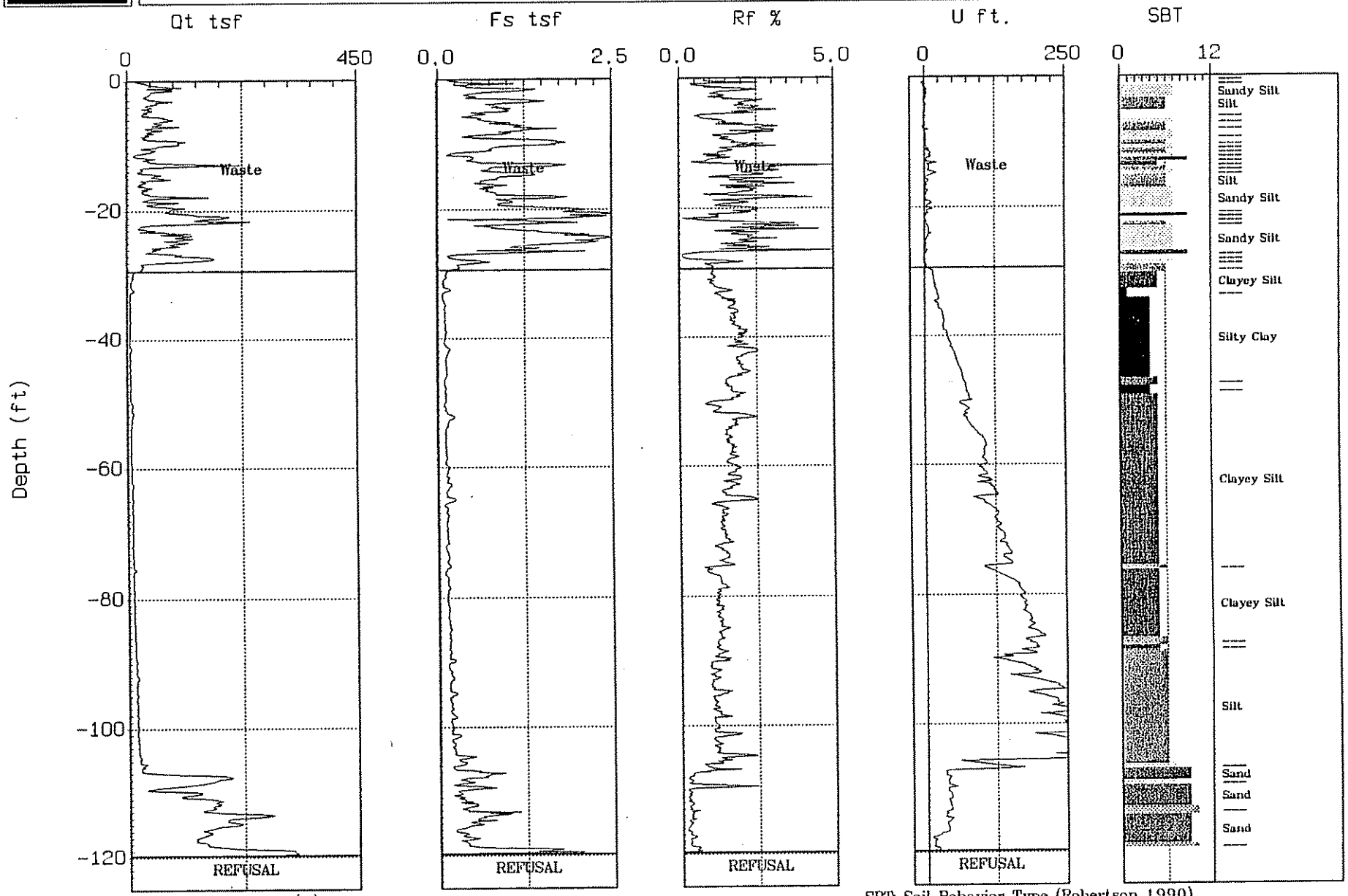
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A7K3
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01:03:03 10:58




Max. Depth: 110.75 (ft)

Depth Inc.: 0.164 (ft)

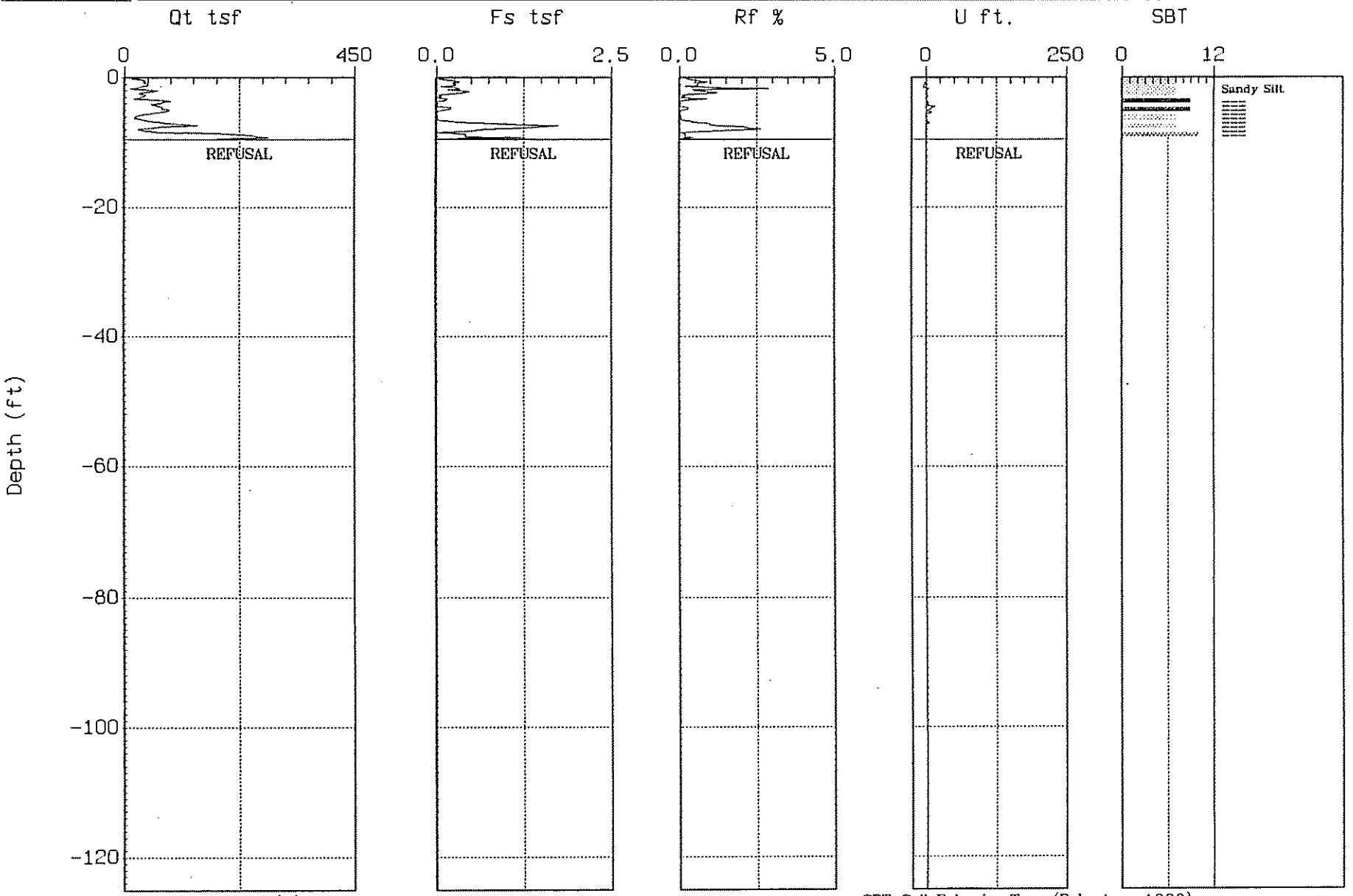
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A7C3
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01/03/03 12:26




Max. Depth: 9.51 (ft)

Depth Inc.: 0.164 (ft)

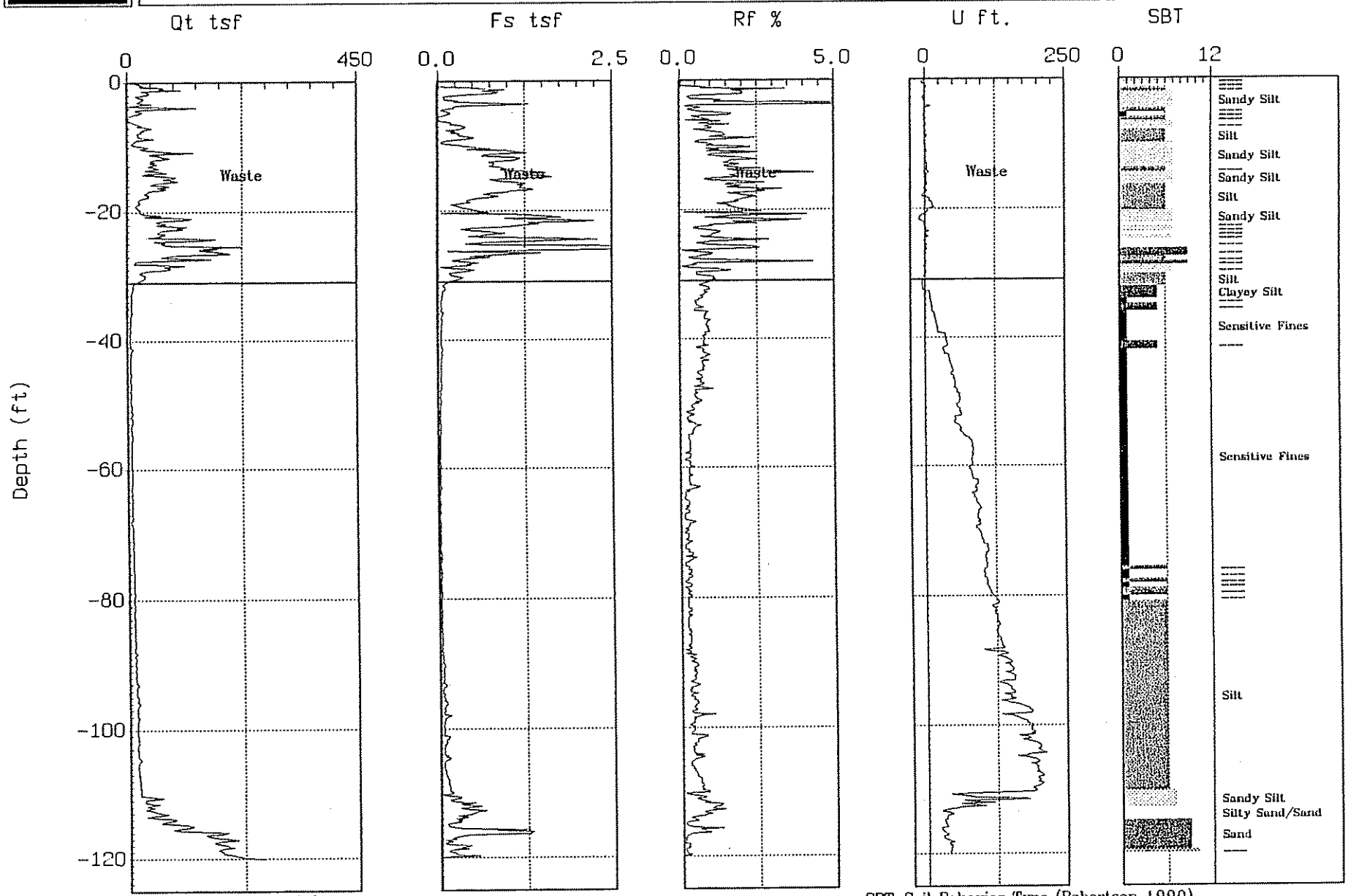
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A7C4
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01:03:03 13:00




Max. Depth: 120.08 (ft)

Depth Inc.: 0.164 (ft)

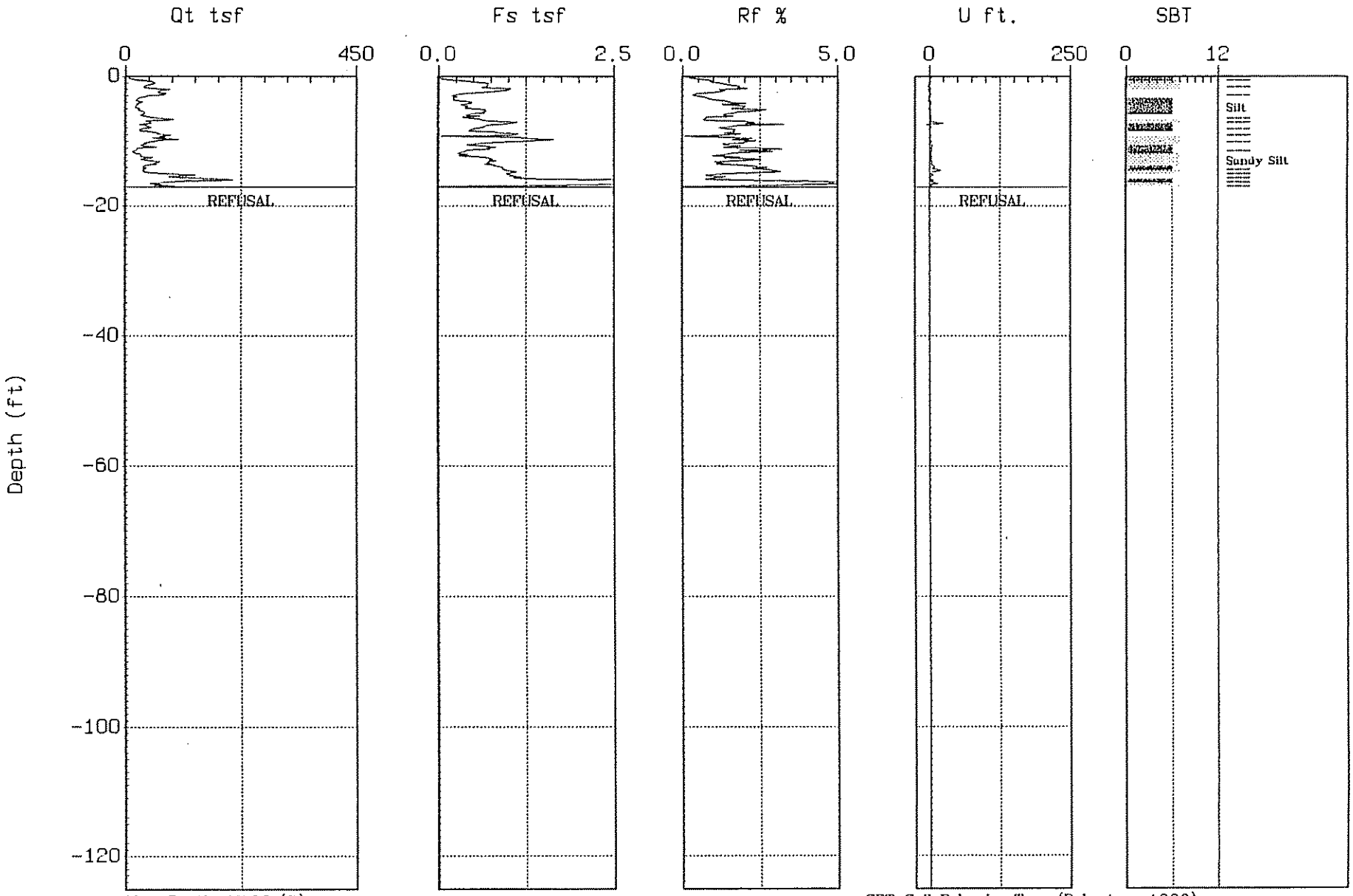
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A7K10
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01/03/03 14:23




Max. Depth: 17.06 (ft)

Depth Inc.: 0.164 (ft)

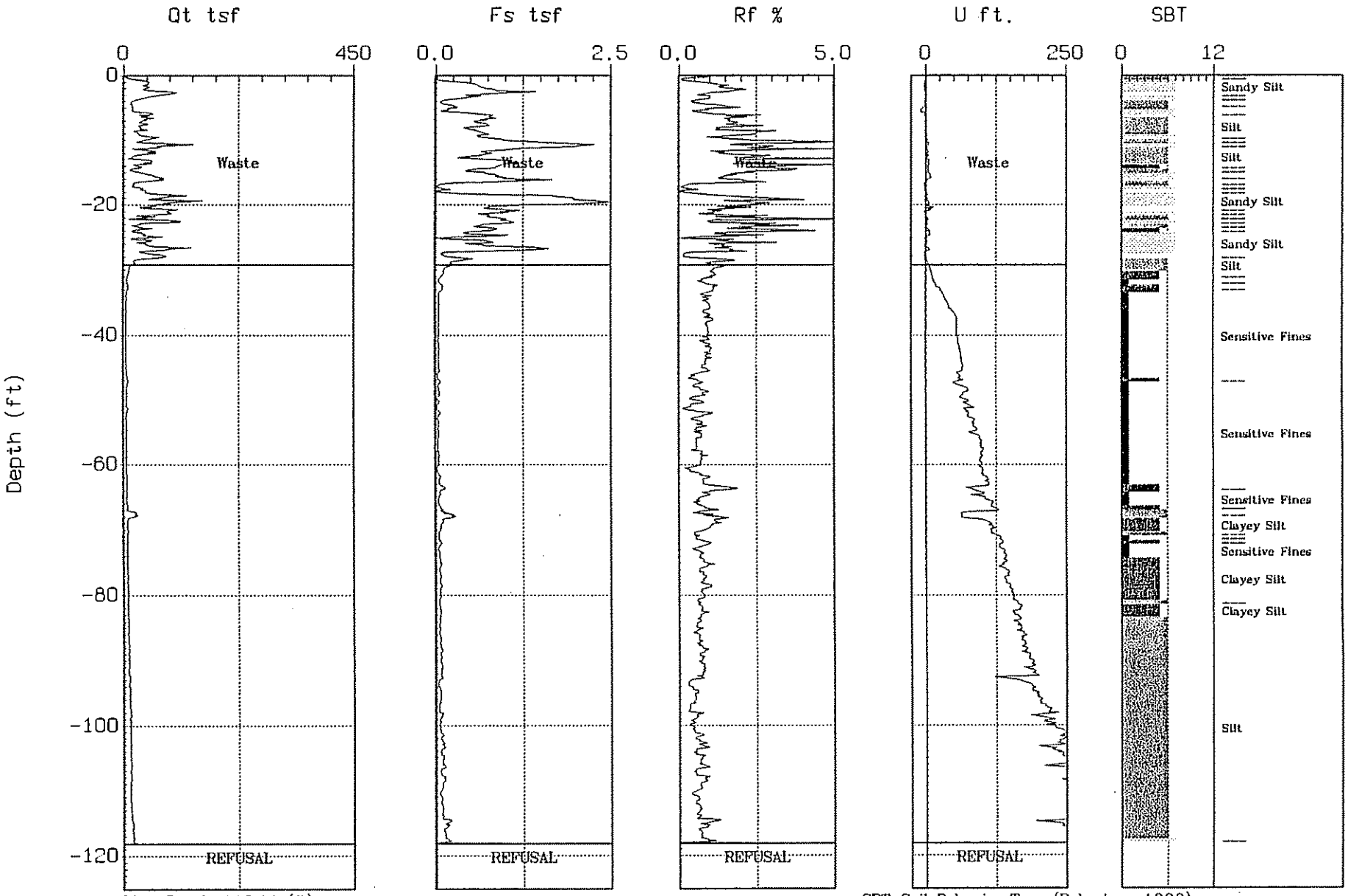
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A7K11
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01:03:03 14:41




Max. Depth: 118.11 (ft)

Depth Inc.: 0.164 (ft)

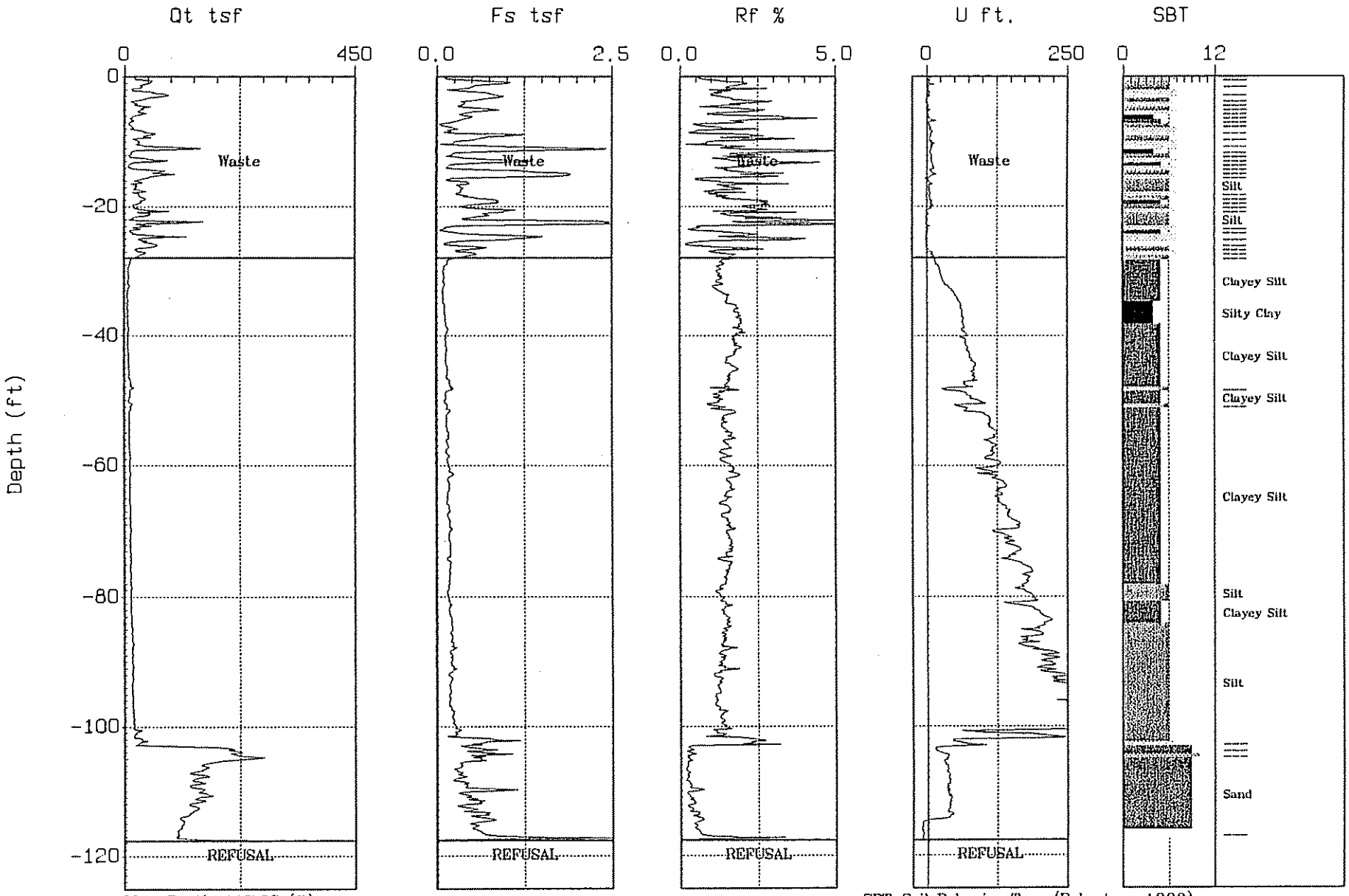
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A6K3
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01.06.03 08:12




Max. Depth: 117.62 (ft)

Depth Inc.: 0.164 (ft)

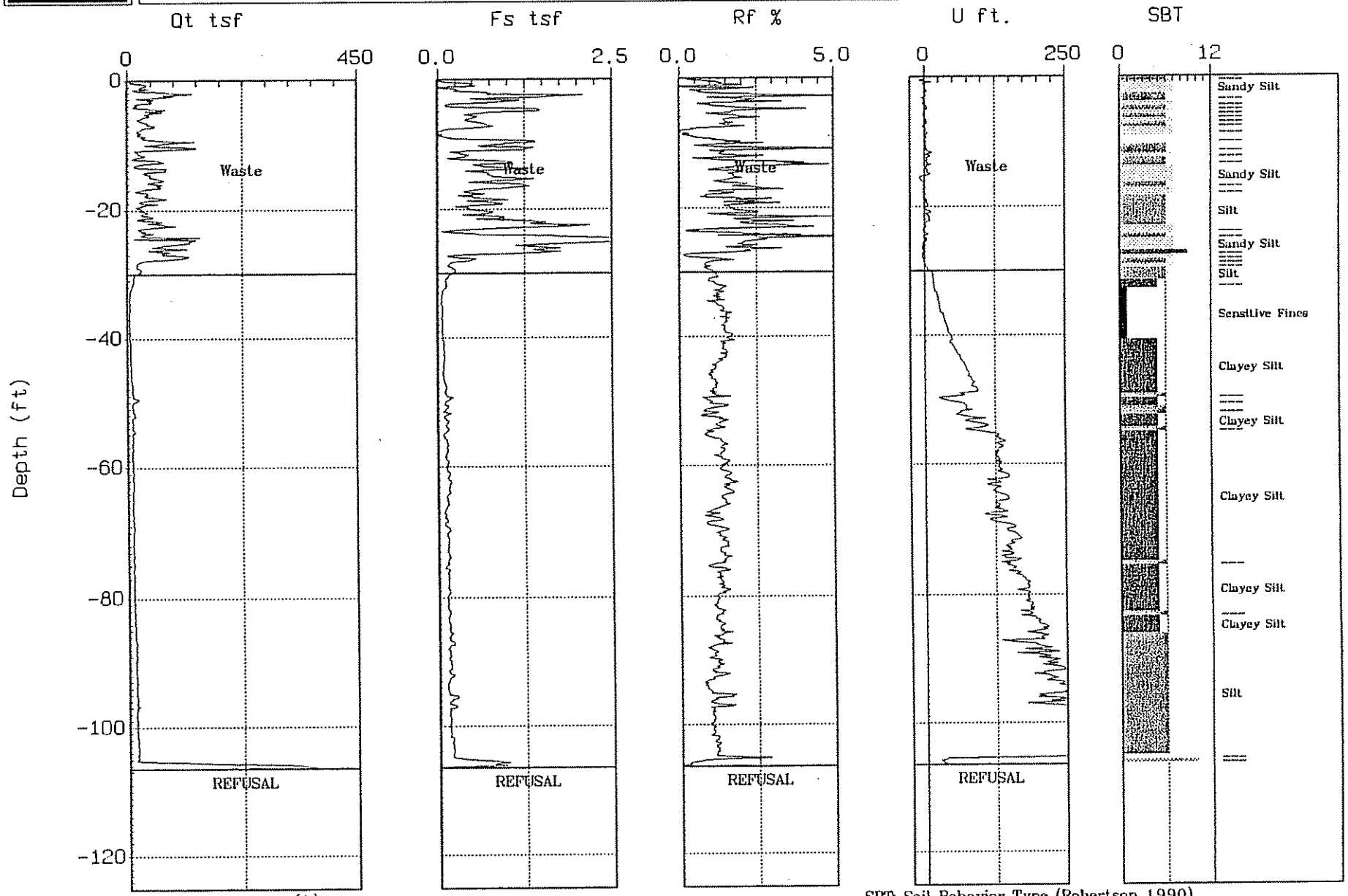
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A6A1
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01/06/03 09:32




Max. Depth: 106.46 (ft)

Depth Inc.: 0.164 (ft)

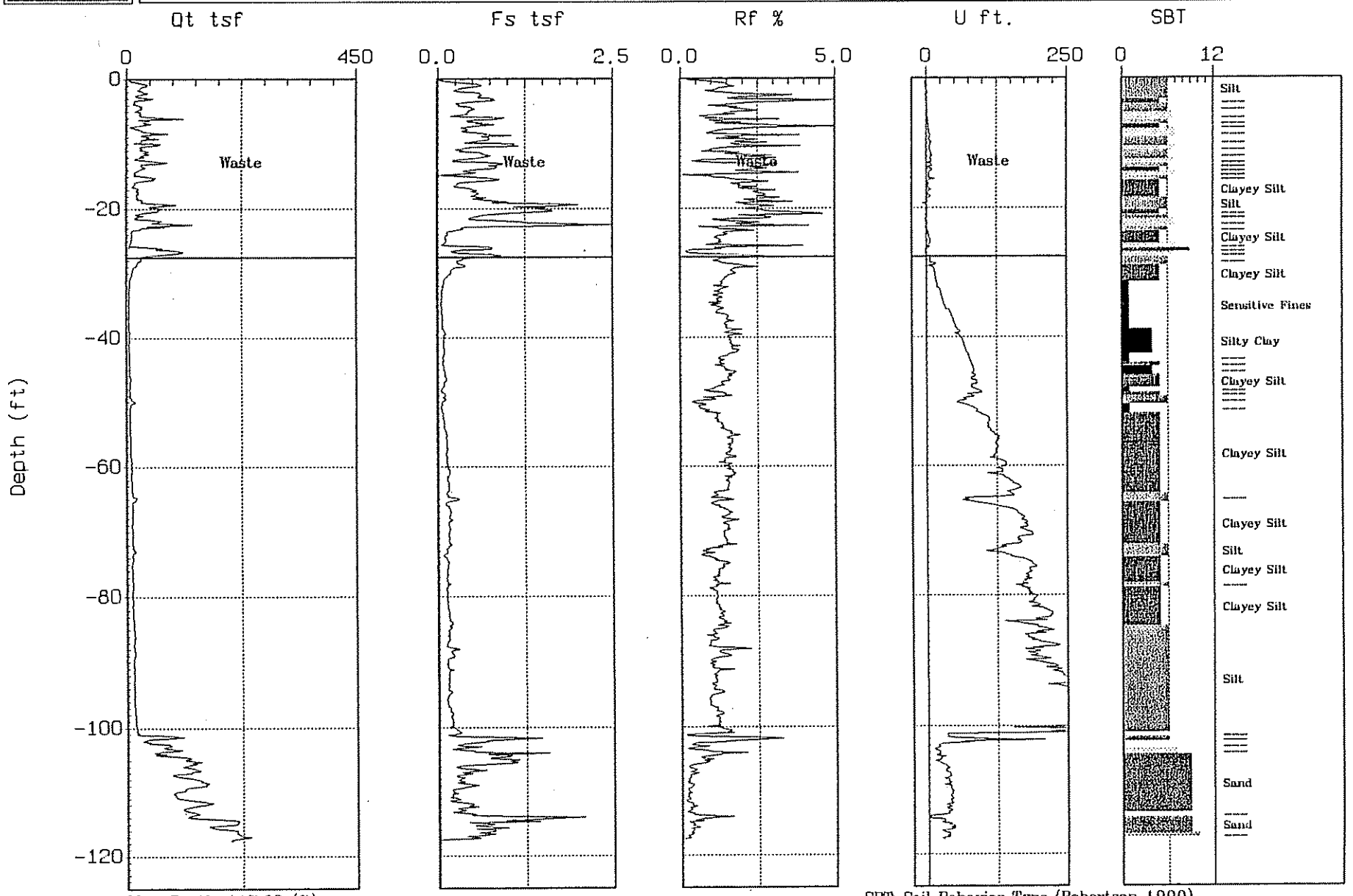
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-A6K10
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01/06/03 10:58




Max. Depth: 117.62 (ft)

Depth Inc.: 0.164 (ft)

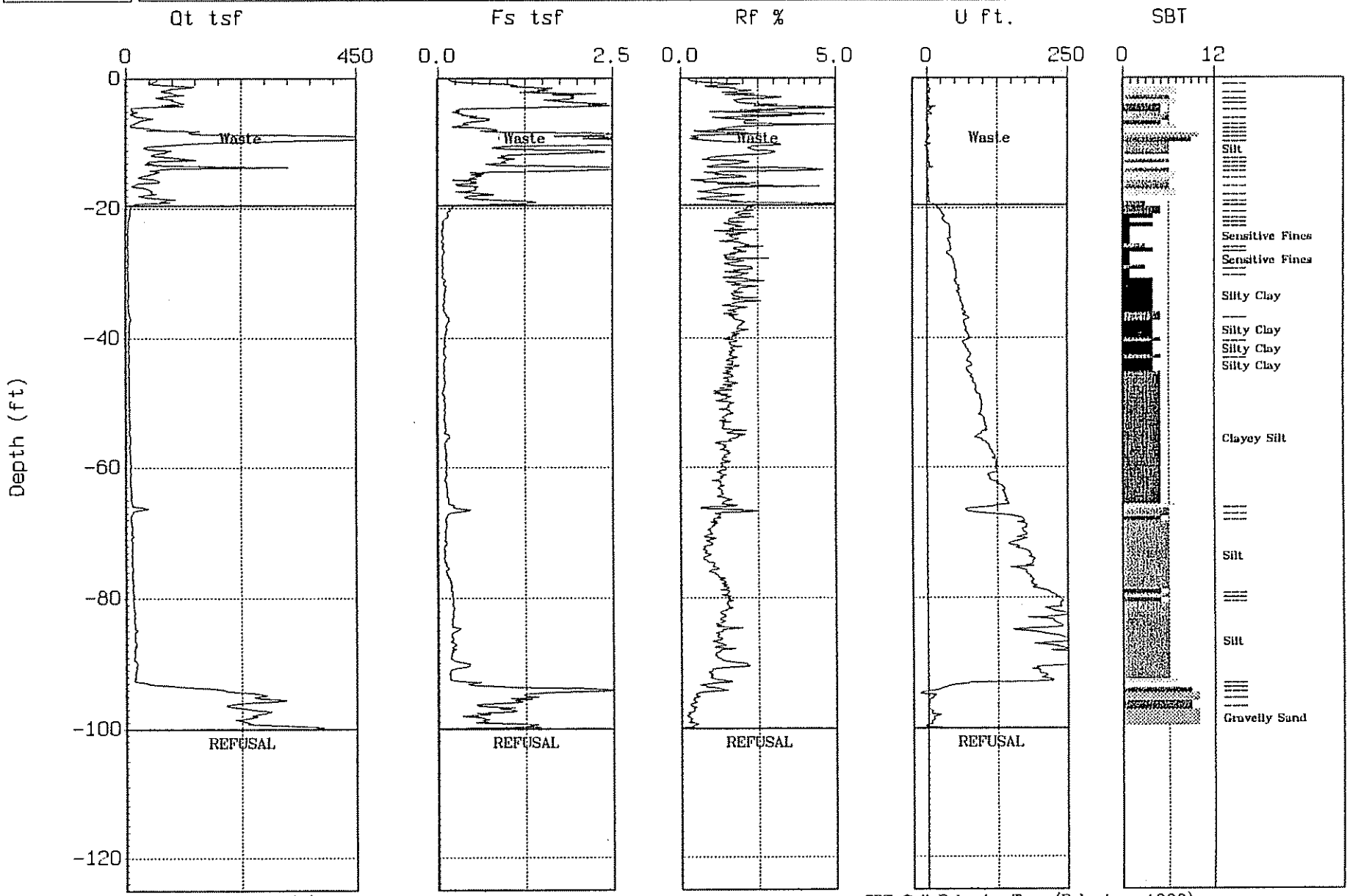
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-11E
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01/07/03 09:51




Max. Depth: 100.06 (ft)

Depth Inc.: 0.164 (ft)

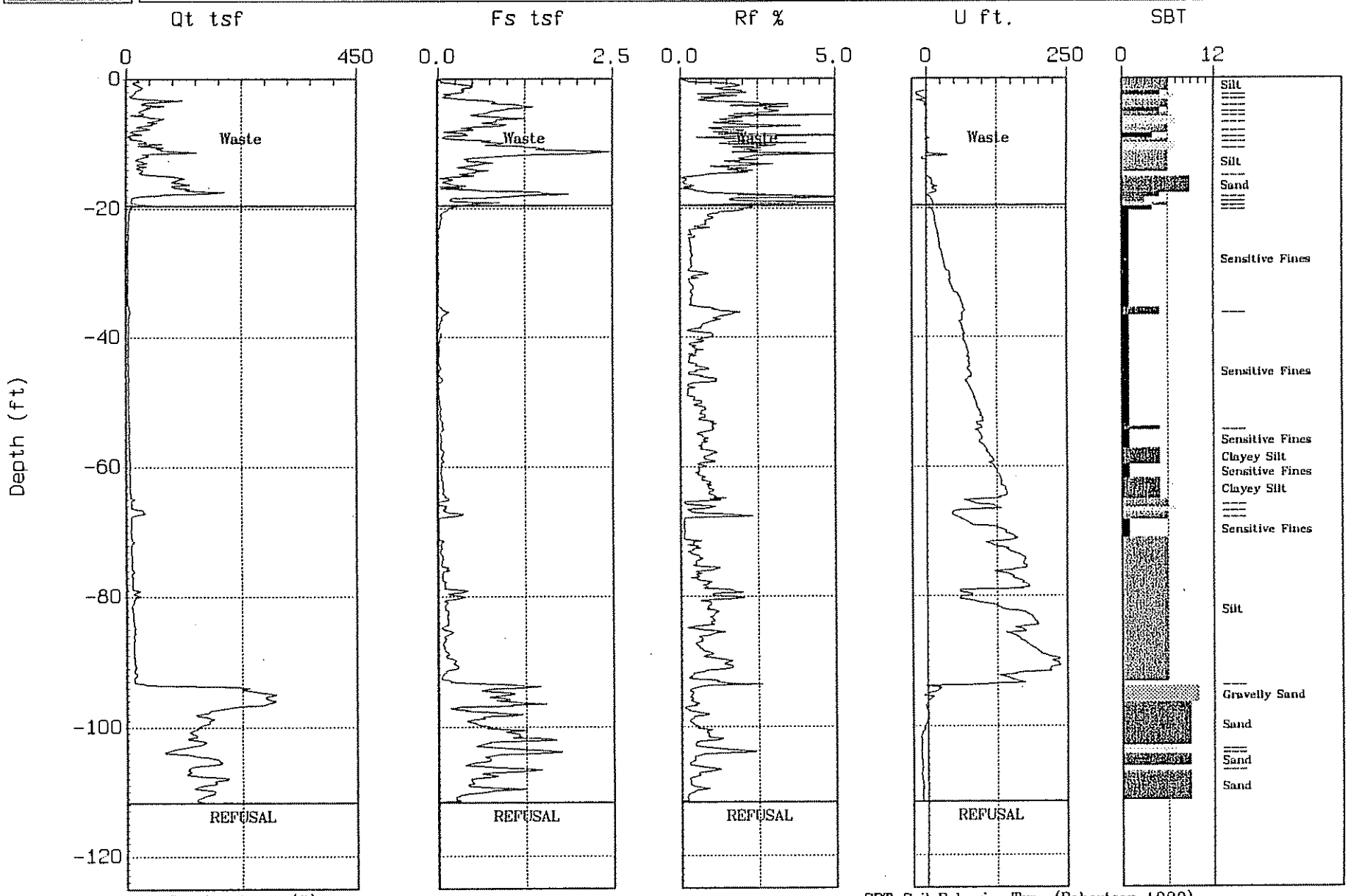
SBT: Soil Behavior Type (Robertson 1990)

CONETEC

GeoSyntec

Site: CPT-12E
Location: Cherry Island, DE

Cone: 20 TON AD106
Date: 01:07:03 10:47




Max. Depth: 111.71 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson 1990)

## APPENDIX B

## BORING LOGS DRILLING AND SAMPLING PROCEDURES

Exploration through soil borings took place in two phases. Twelve exploratory borings were drilled at the site during the period of 11 February through 6 March 2002. Likewise, five exploratory borings were drilled at the site from 20 May to 29 May 2002. Depths ranged from 51 to 160 ft below the existing ground surface. Approximate locations in the form of northings, eastings, and elevations for borings were provided by GeoSyntec (Figure 3-9).

Drilling was performed by the Walton Company, under the supervision of Duffield Associates personnel. Borings were drilled using one of three rigs: (i) a truck-mounted CME-55; (ii) an ATV-mounted CME-55; or (iii) an ATV-mounted CME-75. The borings were advanced using a hollow-stem, 4¼-inch diameter drill bit on drill rods. The first twelve borings performed used mud rotary drilling below a certain depth. Bentonite drilling mud was used to lift the cuttings and support the borehole while advancing the borings. Borings 13 through 17 were drilled using a truck-mounted CME-75 without mud rotary drilling due to difficulties of installing bentonite through drilling waste. Specific equipment used for each borehole is shown in the following table:

| Boring | Drilling Rig | Depth of Drilling Fluid Below Existing Ground (ft) |
|---|---|---|
| P3-02-S01 | Truck Mounted CME-55 | Mud rotary 48 |
| P3-02-S02 | ATV Mounted CME-55 | Mud rotary 55 |
| P4-02-S03 | Truck Mounted CME-55 | Mud rotary 60 |
| P5-02-S04 | Truck Mounted CME-55 | Mud rotary 85 |
| P5-02-S05 | Truck Mounted CME-55 | Mud rotary 60 |
| P1-02-S06 | Truck Mounted CME-55 | Mud rotary 48 |
| P1-02-S07 | ATV Mounted CME-55 | Mud rotary 40 |
| P1-02-S08 | ATV Mounted CME-55 | Mud rotary 55 |
| P3-02-S09 | ATV Mounted CME-75 | Mud rotary 70 |
| P5-02-S10 | Truck Mounted CME-55 | Mud rotary 65 |
| P1-02-S11 | ATV Mounted CME-55 | Mud rotary 34 |
| P3-02-S12 | ATV Mounted CME-55 | Mud rotary 49 |
| P3-02-S13 | Truck Mounted CME-75 | Not Used |
| P4-02-S14 | Truck Mounted CME-75 | Not Used |
| P5-02-S15 | Truck Mounted CME-75 | Not Used |
| P5-02-S16 | Truck Mounted CME-75 | Not Used |
| P2-02-S17 | Truck Mounted CME-75 | Not Used |

## SOIL SAMPLING

Soil samples were obtained at selected depths in the borings by advancing the sampler into the soil at the bottom of the borehole. Two types of samplers were utilized:

- Standard Penetration Sampler - 1½-inch I.D., 2-inch O.D., split-barrel sampler without liners. Bulk samples recovered were bagged and sealed; and.
- Shelby Tube Thin Wall Sampler – 2.86 inch ID, 3-inch O.D., 24-inch long sampler. Samples were recovered to respective sample containers.

The samplers were threaded to fit a cutting shoe on one end and a check-valve connection at the other end. After the borehole was drilled to the specified depth, the sampler mounted on the drill rods was lowered to the bottom, seated, and then driven into the soil with a 140-pound safety hammer falling approximately 30 inches for each blow. The hammer was controlled by a manual cathead-rope system with three turns of rope on the cathead. The number of hammer blows required to advance the sampler each of three successive 6-inch increments was counted in the field. The number of blows required to advance the sampler the last 12 inches was recorded as the penetration resistance (blows-per-foot).

The Shelby tube sampler was advanced using a hydraulic push method. The gauge pressure to advance the sampler was monitored during and recorded following the push.

- After drilling and sampling, boreholes were grouted with Portland cement-bentonite slurry from bottom of the borehole to the top in phase one, and from the bottom of the borehole to approximately 3 ft above bottom of waste in conformance with local requirements. Drill cuttings and wash water were spread on the site.
- The SPT bulk samples were reviewed in the field, logged and portions sealed into plastic bags to preserve the moisture content. The Shelby tube samples were retained in the sampler tube, sealed and transported to the laboratory.

"Undisturbed" sampling in the form of Shelby tubes was also undertaken. Prior to exploration, GeoSyntec provided locations for collection of these "undisturbed samples." A total of 52 Shelby Tube samples were collected in the field investigation.

Water was not observed in Borings 1 through 17.

## LOGS OF BORINGS

The soil samples and cuttings were examined and classified in the field as the drilling proceeded. The samples were later taken to Duffield Associates geotechnical laboratory in Wilmington, Delaware, for further examination and testing. Preliminary visual soil classifications were made in accordance with the Unified Soil Classification System and verified by further inspection of the samples in the laboratory and by testing. Logs of borings were prepared from the field logs and laboratory test data and are found in this appendix.

The logs of borings show the soil classifications (according to the Unified Soil Classification System) of subsurface strata encountered, locations where soil samples were obtained, type of sampler used, sampling resistance, and the results of several of the laboratory tests.

# BORING LOGS
# DRILLING AND SAMPLING PROCEDURES

## LOGS OF BORINGS

The soil samples and cuttings were examined and classified in the field as the drilling proceeded. The samples were later taken to Duffield Associates geotechnical laboratory in Wilmington, Delaware, for further examination and testing. Preliminary visual soil classifications were made in accordance with the Unified Soil Classification System and verified by further inspection of the samples in the laboratory and by testing. Logs of borings were prepared from the field logs and laboratory test data and are found in this appendix.

The logs of borings show the soil classifications (according to the Unified Soil Classification System) of subsurface strata encountered, locations where soil samples were obtained, type of sampler used, sampling resistance, and the results of several of the laboratory tests.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S01



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 18, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 24.0 feet |
| Weather | : Sunny, Windy ,40's | Northing | : 474,313 DE State Plane |
| Driller/Agency | : G. Truver, Jr./Walton Corp | Easting | : 628,918 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 24.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | Brown Gravel, some fine to coarse sand, some silt | | | | | |
| 5 | 20 | | | Dark gray CLAYEY SILT, trace micaceous fine sand | Remolded | 1 | 2-2-3 | 1.2 | |
| 10 | 15 | | | Dark gray CLAYEY SILT, trace to little micaceous fine to medium sand, little organics | Remolded | 2 | 1-1-1 | 1.5 | |
| | | | | Shelby Tube No.1 | Undisturbed | SH-1 | | 2.0 | |
| 15 | 10 | | | Vane#1A | | | | | 333/64 |
| | | | | Dark gray CLAYEY SILT, trace fine sand, trace organics | Remolded | 3 | 1-1-1 | 1.5 | |
| 20 | 5 | | | Dark gray CLAYEY SILT, trace fine sand, trace mica, little organics | Remolded | 4 | WH/6"-1-1 | 1.5 | |
| | | | | Shelby Tube No.2 | Undisturbed | SH-2 | | 1.9 | |
| 25 | 0 | | MH | Dark gray CLAYEY SILT, trace fine sand<br>Vane#2A | Remolded | 5 | 1-1-1 | 1.3 | 636/223 |
| | | | | SAME | Remolded | 6 | WH/6"-1-1 | 1.2 | |
| 30 | -5 | | | SAME | Remolded | 7 | WH/6"-1-1 | 1.5 | |
| 35 | -10 | | | | | | | | |
| 40 | -15 | | | SAME | Remolded | 8 | WH/12"-1-1 | 1.3 | |
| | | | | Shelby Tube No.3 | Undisturbed | SH-3 | | 2.0 | |
| 45 | -20 | | | Vane#3 | | | | | 829/218 |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 48 feet below existing ground surface.

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*Consultants in the Geosciences*

# TEST BORING P3-02-S01



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 18, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 24.0 feet |
| Weather | : Sunny, Windy ,40's | Northing | : 474,313 DE State Plane |
| Driller/Agency | : G. Truver, Jr./Walton Corp | Easting | : 628,918 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 24.0 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 45 | | SM | Dark gray fine SAND, trace coarse sand, trace organics | | 9A | WR-1-1 | 1.0 | |
| | | ML | Dark gray CLAYEY SILT, interlayerred with thin fine sand | | 9B | | | |
| 50 | -25 | SM | Dark gray fine to coarse SAND, some silt, trace gravel. | | 10 | WR/6"-1-2 | 0.5 | |
| 55 | -30 | CH | | | | | | |
| 60 | -35 | | Dark gray SILTY CLAY, interlayered with thin fine sand lenses | | 11 | 1-2-1 | 1.5 | |
| 65 | -40 | | | | | | | |
| 70 | -45 | | Dark gray SILTY CLAY, trace fine sand layers | | 12 | WH-2-2 | 1.3 | |
| | | | Shelby Tube No.4 | | SH-4 | | 2.0 | |
| 75 | -50 | | Friction Test Vane#4 | | | | | 992/157 |
| 80 | -55 | SM | Brown, gray fine SAND, little silt | | 13 | 10-8-21 | 0.7 | |
| 85 | -60 | | | | | | | |
| 90 | -65 | | Brown, gray fine to medium SAND,little to trace silt, trace coarse sand, trace gravel | | 14 | 5-9-11 | 0.6 | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers.according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 48 feet below existing ground surface.

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*Consultants in the Geosciences*

# TEST BORING P3-02-S01



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 18, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 24.0 feet |
| Weather | : Sunny, Windy ,40's | Northing | : 474,313 DE State Plane |
| Driller/Agency | : G. Truver, Jr./Walton Corp | Easting | : 628,918 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 24.0 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 90 | | | | | | | | |
| | -70 | | | | | | | |
| 95 | | SM | | | | | | |
| | -75 | | Brown, gray fine to medium SAND, little to trace silt, trace gravel, trace coarse sand | ☒ | 15 | 8-11-14 | 0.9 | |
| 100 | | | | | | | | |
| | -80 | | | | | | | |
| 105 | | | | | | | | |
| | -85 | | Green, red, brown SILTY CLAY, trace fine sand | ☒ | 16 | 10-20-33 | 0.5 | |
| 110 | | | | | | | | |
| | -90 | CL | | | | | | |
| 115 | | | | | | | | |
| | -95 | | Dark, gray SILTY CLAY, trace fine to coarse sand | ☒ | 17 | 10-19-29 | 1.0 | |
| 120 | | | | | | | | |
| | -100 | | | | | | | |
| 125 | | | | | | | | |
| | -105 | | Red, green, brown (varicolored) SILT, little fine sand | ☒ | 18 | 20-40-45 | 1.4 | |
| 130 | | ML | | | | | | |
| | -110 | | | | | | | |
| 135 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 48 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S01



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 18, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 24.0 feet |
| Weather | : Sunny, Windy ,40's | Northing | : 474,313 DE State Plane |
| Driller/Agency | : G. Truver, Jr./Walton Corp | Easting | : 628,918 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 24.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | | | | | |
| | -115 | | ML | Light brown, red, green (varicolored) SILT, little fine sand | ☒ | 19 | 17-25-33 | 1.5 | |
| 140 | | | | | | | | | |
| | -120 | | | | | | | | |
| 145 | | | | | | | | | |
| | -125 | | | Dark brownish red, fine SAND, little medium to coarse sand, some to and clayey silt | ☒ | 20 | 14-21-37 | 1.5 | |
| 150 | | | SM | | | | | | |
| | -130 | | | | | | | | |
| 155 | | | | | | | | | |
| | -135 | | | SAME | ☒ | 21 | 10-16-23 | 1.0 | |
| 160 | | | | Boring terminated at 160 feet below existing ground surface. | | | | | |
| | -140 | | | | | | | | |
| 165 | | | | | | | | | |
| | -145 | | | | | | | | |
| 170 | | | | | | | | | |
| | -150 | | | | | | | | |
| 175 | | | | | | | | | |
| | -155 | | | | | | | | |
| 180 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 48 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S02



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 11, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 14, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 5.0 feet |
| Weather | : Over cast | Northing | : 474,171 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 628,149 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 5.0 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 0 | 5 | ML | Dark gray brown, SILT, little fine sand | | | | | |
| | | SM | Gray, orange-brown fine SAND, trace silt | | 1 | | | |
| 5 | 0 | MH | Dark gray, black, CLAYEY SILT, trace fine sand | | 2 | WH-1-1 | 1.5 | |
| 10 | -5 | | Dark gray SILT, trace organics | | 3 | 5-2-1 | 0.5 | |
| 15 | -10 | | Dark gray CLAYEY SILT, trace fine sand, trace organics | | 4 | WH/12"-1-1 | 1.5 | |
| 20 | -15 | | Shelby Tube No.1 | | SH-1 | | 2.0 | |
| 25 | -20 | | Vane#1 | | | | | 792/72 |
| 30 | -25 | SM | Dark gray fine to coarse SAND, some clayey silt, trace fine gravel interlayerred with clayey silt | | 5 | 1-4-5 | 1.2 | |
| 35 | -30 | MH | Dark gray CLAYEY SILT, trace fine sand | | 6 | 1-1-2 | 1.5 | |
| 40 | -35 | | | | | | | |
| 45 | -40 | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 55 feet below existing ground surface.

TEST BORING LOG UNDRAINED WO_4685GC.GPJ DUFFIELD.GDT 5/2/02

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S02



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 11, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 14, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 5.0 feet |
| Weather | : Over cast | Northing | : 474,171 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 628,149 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 5.0 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 45 | -40 | | | | | | | |
| 50 | -45 | CH | Dark gray SILTY CLAY, trace fine sand, trace organics | | 7 | | 1.5 | |
| | | | Shelby Tube No.2 | | SH-2 | 140-160 | 2.0 | |
| 55 | -50 | | Vane#2 | | | | | 1204/463 |
| | | | Dark gray fine to medium SAND, little silt, trace coarse sand, trace organics at top of sample, trace gravel | | 8 | 2-1-6 | 2.0 | |
| 60 | -55 | | Gray fine to medium SAND, trace silt (No Recovery, sample observed in soil cuttings) | | 9 | 6-7-9 | 0.0 | |
| 65 | -60 | | | | | | | |
| 70 | -65 | SM | Brownish gray fine to medium SAND, little coarse sand, trace to little silt | | 10 | 21-10-10 | 1.0 | |
| 75 | -70 | | | | | | | |
| 80 | -75 | | Grayish brown fine to medium SAND, little coarse sand, trace to little silt, trace gravel, trace mica | | 11 | 10-11-13 | 0.9 | |
| 85 | -80 | | | | | | | |
| 90 | -85 | | | | 12 | 10-50/5" | 0.7 | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 55 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S02



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 11, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 14, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 5.0 feet |
| Weather | : Over cast | Northing | : 474,171 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 628,149 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 5.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|---|
| 90 | -85 | | SM | Grayish brown fine to medium SAND, little coarse sand, trace to little silt, trace gravel, trace mica | | | | | | |
| | | | | Boring terminated at 91 feet below existing ground surface. | | | | | | |
| 95 | -90 | | | | | | | | | |
| 100 | -95 | | | | | | | | | |
| 105 | -100 | | | | | | | | | |
| 110 | -105 | | | | | | | | | |
| 115 | -110 | | | | | | | | | |
| 120 | -115 | | | | | | | | | |
| 125 | -120 | | | | | | | | | |
| 130 | -125 | | | | | | | | | |
| 135 | -130 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 55 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P4-02-S03



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 11, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 14, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 48.0 feet |
| Weather | : Sunny, Windy ,40's | Northing | : 473,711 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 627,489 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 48.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | Gravel Pavement | | | | | |
| | 45 | | ML | Gray, brown SILT, some to and fine sand, trace mica, trace rock fragments | | 1 | 3-6-7 | 0.7 | |
| 5 | | | | | | | | | |
| | 40 | | | Gray, dark gray CLAYEY SILT, trace fine sand, trace organics | | 2 | 4-4-6 | 1.1 | |
| 10 | | | | | | | | | |
| | 35 | | | Gray, dark gray CLAYEY SILT, trace fine sand, trace organics | | 3 | 2-2-4 | 1.0 | |
| 15 | | | | | | | | | |
| | 30 | | | Gray CLAYEY SILT, trace fine sand, trace organics | | 4 | 1-1-2 | 1.2 | |
| 20 | | | | Shelby Tube No.1 | | SH-1 | | 1.0 | |
| | 25 | | | | | | | | |
| 25 | | | | Vane#1A | | | | | 397/124 |
| | | | CL | Gray CLAYEY SILT, trace fine sand | | 5 | 1-2-2 | 1.5 | |
| | 20 | | | Gray, dark gray, CLAYEY SILT, trace fine sand, trace organics | | 6 | WH/6"-2-2 | 1.5 | |
| 30 | | | | | | | | | |
| | 15 | | | | | | | | |
| 35 | | | | | | | | | |
| | 10 | | | SAME | | 7 | 1-2-3 | 1.5 | |
| 40 | | | | Shelby Tube No.2 | | SH-2 | | 1.9 | |
| | 5 | | | | | | | | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 60 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P4-02-S03



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 11, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 14, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 48.0 feet |
| Weather | : Sunny, Windy ,40's | Northing | : 473,711 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 627,489 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 48.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | | | CL | Vane#2 | | | | | 448/ |
| | 0 | | | Gray fine to coarse SAND, trace gravel, little silt | ☒ | 8 | 4-15-13 | 1.3 | |
| 50 | | | | | | | | | |
| | -5 | | | | | | | | |
| 55 | | | SM | | | | | | |
| | -10 | | | Gray, fine to medium SAND, little silt, trace gravel (silty clay lense) | ☒ | 9 | 1-3-9 | 0.6 | |
| 60 | | | | | | | | | |
| | -15 | | | | | | | | |
| 65 | | | | | | | | | |
| | -20 | | | Gray CLAYEY SILT, trace fine sand, little organics | ☒ | 10 | 3-5-10 | 1.5 | |
| 70 | | | | | | | | | |
| | -25 | | | | | | | | |
| 75 | | | MH | | | | | | |
| | -30 | | | Gray CLAYEY SILT, little fine sand | ☒ | 11 | 4-4-4 | 1.5 | |
| 80 | | | | | | | | | |
| | -35 | | | | | | | | |
| 85 | | | | | | | | | |
| | -40 | | | Gray CLAYEY SILT, little fine sand | ☒ | 12 | 2-3-4 | 1.5 | |
| 90 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 60 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P4-02-S03



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 11, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 14, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 48.0 feet |
| Weather | : Sunny, Windy ,40's | Northing | : 473,711 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 627,489 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 48.0 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 90 | | MH | Shelby Tube No.3 | | SH-3 | | 1.0 | |
| | -45 | | | | | | | |
| 95 | | | Vane#3 | | | | | 749/330 |
| | -50 | SC | Gray fine to coarse SAND and SILTY CLAY, trace gravel, trace organics, trace rock fragments | | 13 | 19-37-50/5" | 0.8 | |
| 100 | | | | | | | | |
| | -55 | | | | | | | |
| 105 | | | | | | | | |
| | -60 | SP | Gray fine to coarse SAND, trace silt, trace gravel | | 14 | 27-45-48 | | |
| 110 | | | | | | | | |
| | -65 | CH | Gray, orange brown SILTY CLAY, interlayerred fine sand | | 15 | 5-10-27 | 1.5 | |
| 115 | | | | | | | | |
| | -70 | SC | Gray fine to medium SAND, trace silt, interlayerred, silty clay, trace gravel | | 16 | 17-16-25 | 1.0 | |
| 120 | | | Boring terminated at 120 feet below existing ground surface. | | | | | |
| | -75 | | | | | | | |
| 125 | | | | | | | | |
| | -80 | | | | | | | |
| 130 | | | | | | | | |
| | -85 | | | | | | | |
| 135 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 60 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-SO4



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 19, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 37.0 feet |
| Weather | : Sunny,,40's | Northing | : 473,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 626,860 DE State Plane |

Sample Condition: Remolded; Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 37.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | Gravel | | | | | |
| | 35 | | | FILL: Orange-brown SILT, little fine to medium sand, trace clay | | | | | |
| | | | | FILL: Yellow, white fine to coarse SAND, some rock fragments | | 1 | 10-17-10 | 0.4 | |
| 5 | | | | | | | | | |
| | 30 | | | | | | | | |
| | | | | FILL: Orange, brown SILT, trace fine to coarse sand, rock fragments in geotextile fabric | | 2 | 5-9-7 | 0.3 | |
| 10 | | | | | | | | | |
| | 25 | | | | | | | | |
| | | | | Gray CLAYEY SILT, trace fine sand, trace organics | | 3 | 5-5-3 | 0.9 | |
| 15 | | | | | | | | | |
| | 20 | | | | | | | | |
| | | | | Gray CLAYEY SILT, trace fine sand (very little recovery) | | 4 | 3-2-3 | 0.1 | |
| 20 | | | | | | | | | |
| | 15 | | | | | | | | |
| | | | | Gray CLAYEY SILT, trace organics, trace fine sand | | 5 | 1-1-2 | 1.4 | |
| 25 | | | | | | | | | |
| | 10 | | | | | | | | |
| | | | MH | Brown, dark gray, CLAYEY SILT, trace fine sand, trace organics | | 6 | 1-2-3 | 1.5 | |
| 30 | | | | Shelby Tube No.1 | | SH-1 | | 1.8 | |
| | 5 | | | | | | | | |
| | | | | Friction Test | | | | | |
| | | | | Vane#1 | | | | | 332/- |
| 35 | | | | | | | | | |
| | 0 | | | No Recovery | | 7 | 2-2-3 | 0.0 | |
| | | | | Gray CLAYEY SILT, trace fine sand | | 8 | 2-2-3 | 1.5 | |
| 40 | | | | | | | | | |
| | -5 | | | | | | | | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 85 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-SO4



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 19, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 37.0 feet |
| Weather | : Sunny,,40's | Northing | : 473,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 626,860 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 37.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | | | | | | | | | |
| | -10 | | | | | | | | |
| 50 | | | | Gray CLAYEY SILT, little fine sand | ☒ | 9 | 1-3-3 | 1.5 | |
| | -15 | | | | | | | | |
| 55 | | | | | | | | | |
| | -20 | | | | | | | | |
| 60 | | | | Gray CLAYEY SILT, trace fine sand, little organics | ☒ | 10 | 2-3-4 | 1.5 | |
| | -25 | | | | | | | | |
| 65 | | | | | | | | | |
| | -30 | | MH | | | | | | |
| 70 | | | | Gray CLAYEY SILT, very thin fine sand lenses interlayered with silt | ☒ | 11 | 3-3-4 | 1.5 | |
| | -35 | | | | | | | | |
| 75 | | | | | | | | | |
| | -40 | | | | | | | | |
| 80 | | | | No Recovery | ☐ | 12 | 4-5-4 | 0.0 | |
| | | | | Shelby Tube No.2 | ▨ | SH-2 | | 1.2 | |
| | -45 | | | | | | | | |
| 85 | | | | Vane#2 | — | | | | 2781/2276 |
| | -50 | | | Gray CLAYEY SILT, with interlayered thin fine sand lenses | ☒ | 13 | 2-3-3 | 1.5 | |
| 90 | | | | | ☒ | 14 | 2-2-4 | 1.5 | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 85 feet below existing ground surface.

TEST BORING LOG UNDRAINED WO_4685GC.GPJ DUFFIELD.GDT 5/2/02

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-SO4



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 19, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 37.0 feet |
| Weather | : Sunny,,40's | Northing | : 473,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 626,860 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 37.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 90 | -55 | | MH | Gray CLAYEY SILT, with interlayered thin fine sand lenses | | | | | |
| 95 | -60 | | SM | Brown, gray fine to coarse SAND, some silt, little gravel | ☒ | 15 | 7-8-13 | 0.8 | |
| 100 | -65 | | | | | | | | |
| 105 | -70 | | | Brown fine to coarse SAND and GRAVEL, trace to little silt | ☒ | 16 | 15-20-18 | 0.4 | |
| 110 | -75 | | | | | | | | |
| 115 | -80 | | | Brown fine to coarse SAND, some gravel, trace to little silt | ☒ | 17 | 25-30-23 | 0.5 | |
| 120 | -85 | | | | | | | | |
| 125 | -90 | | | Orange-brown, gray fine to medium SAND, some clayey silt, little coarse sand, trace gravel, trace mica | ☒ | 18 | 23-23-34 | 0.7 | |
| 130 | -95 | | | | | | | | |
| 135 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 85 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-SO4



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 14, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 19, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 37.0 feet |
| Weather | : Sunny,,40's | Northing | : 473,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 626,860 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 37.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | | | | | |
| | -100 | | | | | | | | |
| 140 | | | | Brown, light brown, yellow brown fine to coarse SAND and GRAVEL, little silt | ☒ | 19 | 60-60/3" | 0.4 | |
| | -105 | | | | | | | | |
| 145 | | | SM | | | | | | |
| | -110 | | | | | | | | |
| 150 | | | | White/gray fine to medium SAND, little to trace silt, trace coarse sand | ☒ | 20 | 27-44-50 | 1.1 | |
| | -115 | | | | | | | | |
| 155 | | | | | | | | | |
| | -120 | | CL | | | | | | |
| | | | | Purple-brown, gray SILTY CLAY, little fine sand | ☒ | 21 | 17-31-34 | 1.3 | |
| 160 | | | | Boring terminated at 160 feet below existing ground surface. | | | | | |
| | -125 | | | | | | | | |
| 165 | | | | | | | | | |
| | -130 | | | | | | | | |
| 170 | | | | | | | | | |
| | -135 | | | | | | | | |
| 175 | | | | | | | | | |
| | -140 | | | | | | | | |
| 180 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 85 feet below existing ground surface.

TEST BORING LOG UNDRAINED WO 4685GC.GPJ DUFFIELD.GDT 5/2/02

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S05



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 25, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 27, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 47.5 feet |
| Weather | : Sunny | Northing | : 471,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 628,054 DE State Plane |

Sample Condition: Remolded; Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | Gravel Road Surface/Fill (Orange-brown fine to medium SAND, trace debris) | | | | | |
| | 45 | | | Gray CLAYEY SILT, trace roots, trace to little fine sand, trace gravel | | S-1 | 3-2-2 | 0.4 | |
| 5 | | | | | | | | | |
| | 40 | | | No Recovery (Gray CLAYEY SILT observed in shoe tip) | | S-2 | 1-1-1 | 0.0 | |
| 10 | | | | Shelby Tube No. 1 | | SH-1 | | 1.3 | |
| | 35 | | | | | | | | |
| 15 | | | | Vane#1 | | | | | 479/46 |
| | | | | Gray CLAYEY SILT, trace fine sand | | S-3 | WH-WH-2 | 1.5 | |
| | 30 | | | Gray/black CLAYEY SILT, trace organics (roots, grass) | | S-4 | 1-2-2 | 1.5 | |
| 20 | | | | | | | | | |
| | 25 | | MH | SAME | | S-5 | WH-WH-2 | 1.5 | |
| 25 | | | | | | | | | |
| | 20 | | | SAME | | S-6 | 1-1-2 | 1.5 | |
| 30 | | | | Shelby Tube No. 2 | | SH-2 | | 1.9 | |
| | 15 | | | | | | | | |
| 35 | | | | Vane#2 | | | | | 923/57 |
| | | | | Gray/dark, gray CLAYEY SILT, trace fine sand, trace organics | | S-7 | WH-2-1 | 1.5 | |
| | 10 | | | Gray/dark gray CLAYEY SILT, trace fine sand interlayered (< 0.01' thick), trace organics | | S-8 | WH-2-1 | 1.5 | |
| 40 | | | | | | | | | |
| | 5 | | | | | | | | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 60 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S05



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 25, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 27, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 47.5 feet |
| Weather | : Sunny | Northing | : 471,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 628,054 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 45 | | | | | | | | |
| | 0 | | Gray CLAYEY SILT, trace fine sand, trace organics | | S-9 | 1-2-3 | 1.5 | |
| 50 | | | | | | | | |
| | -5 | | Gray/dark gray CLAYEY SILT, trace fine sand interlayered (< 0.01' thick), trace organics | | S-10 | WH-2-3 | 1.5 | |
| 55 | | MH | Shelby Tube No. 3 | | SH-3 | | 1.9 | |
| | -10 | | | | | | | |
| | | | Vane#3 | | | | | 1510/459 |
| 60 | | | Gray/dark, gray CLAYEY SILT, trace fine sand interlayered (< 0.01' thick), trace organics | | S-11 | 1-2-2 | 1.5 | |
| | -15 | | | | | | | |
| 65 | | | | | | | | |
| | -20 | | Gray fine to coarse SAND, trace to little silt, little gravel, trace root fibers | | S-12 | 22-27-26 | 1.1 | |
| 70 | | | | | | | | |
| | -25 | | | | | | | |
| 75 | | | | | | | | |
| | -30 | SM | Gray fine to medium SAND, little silt, trace gravel | | S-13 | 12-17-17 | 0.5 | |
| 80 | | | | | | | | |
| | -35 | | | | | | | |
| 85 | | | | | | | | |
| | -40 | | No Recovery | | S-14 | 20-21-23 | 0.0 | |
| 90 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 60 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S05



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 25, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 27, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 47.5 feet |
| Weather | : Sunny | Northing | : 471,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 628,054 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 90 | | | | | | | | |
| | -45 | | | | | | | |
| 95 | | | | | | | | |
| | -50 | | Gray, fine to medium SAND, little silt, trace coarse sand, trace gravel, trace mica | ☒ | S-15 | 12-16-16 | 0.6 | |
| 100 | | | | | | | | |
| | -55 | SM | | | | | | |
| 105 | | | | | | | | |
| | -60 | | Gray, fine to medium SAND, little silt, trace coarse sand, little gravel | ☒ | S-16 | 39-29-37 | 0.7 | |
| 110 | | | | | | | | |
| | -65 | | | | | | | |
| 115 | | | | | | | | |
| | -70 | | Brown, purple-brown SILTY CLAY, little fine sand | ☒ | S-17 | 9-14-20 | 1.4 | |
| 120 | | CL | | | | | | |
| | -75 | | | | | | | |
| 125 | | | | | | | | |
| | -80 | SM | Gray, light gray fine to medium SAND, some silt, trace gravel, trace organics | ☒ | S-18 | 28-39-47 | 0.9 | |
| 130 | | | | | | | | |
| | -85 | | | | | | | |
| | | ML | | | | | | |
| 135 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 60 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S05



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 25, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 27, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 47.5 feet |
| Weather | : Sunny | Northing | : 471,218 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 628,054 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | | | | | |
| | -90 | | ML | Orange-brown, blue/green, gray/brown SILT, some fine sand, trace to little clay | ☒ | S-19 | 32-81 | 1.4 | |
| 140 | | | | | | | | | |
| | -95 | | | | | | | | |
| 145 | | | | | | | | | |
| | -100 | | SM | Orange-brown, brown, bluish-gray fine SAND, little silt, trace clay | ☒ | S-20 | 15-17-25 | 1.5 | |
| 150 | | | | | | | | | |
| | -105 | | | | | | | | |
| 155 | | | | | | | | | |
| | -110 | | CL | Red, brown, gray SILTY CLAY, little to some fine sand | ☒ | S-21 | 29-40-50 | 1.5 | |
| 160 | | | | Boring terminated at 160 feet below existing ground surface. | | | | | |
| | -115 | | | | | | | | |
| 165 | | | | | | | | | |
| | -120 | | | | | | | | |
| 170 | | | | | | | | | |
| | -125 | | | | | | | | |
| 175 | | | | | | | | | |
| | -130 | | | | | | | | |
| 180 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 80 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S06



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 27, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : March 1, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 44.0 feet |
| Weather | : Sunny, Cold, 30s | Northing | : 470,944 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 629,490 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 44.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | Gravel Road Surface/Fill (Orange-brown fine to medium sand, trace debris) | | | | | |
| 5 | 40 | | | Gray CLAYEY SILT, trace organics (roots, grass), trace fine sand, trace gravel | | S-1 | 3-2-3 | 0.4 | |
| 10 | 35 | | | Gray, black CLAYEY SILT, trace organics (roots, grass), trace fine sand | | S-2 | 1-3-3 | 0.7 | |
| 15 | 30 | | | SAME (possibly driving gravel) | | S-3 | 1-1-1 | 0.1 | |
| | | | | Shelby Tube No. 1 | | SH-1 | | 1.9 | |
| 20 | 25 | | | Vane#1 | | | | | 96/35 |
| | | | | Gray, black CLAYEY SILT, little organics (roots/grass), trace fine sand | | S-4 | WR-WH/1' | 1.5 | |
| 25 | 20 | | MH | SAME | | S-5 | WR-WH/1' | 1.5 | |
| 30 | 15 | | | SAME | | S-6 | WH/1.5' | 1.5 | |
| 35 | 10 | | | | | | | | |
| 40 | 5 | | | Gray, black CLAYEY SILT, trace organics (roots/grass), trace fine sand | | S-7 | WH/1.5' | 1.5 | |
| | | | | Shelby Tube No. 2 | | SH-2 | | 1.9 | |
| 45 | 0 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 48 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S06



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 27, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : March 1, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 44.0 feet |
| Weather | : Sunny, Cold, 30s | Northing | : 470,944 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 629,490 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 44.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | | | | Vane#2 | | | | | 767/69 |
| | -5 | | | Gray CLAYEY SILT, trace organics | | S-8 | WH-WH-2 | 1.5 | |
| 50 | | | MH | | | | | | |
| | -10 | | | | | | | | |
| 55 | | | | | | | | | |
| | -15 | | | Gray CLAYEY SILT, trace organics, interlayered with fine sand lenses | | S-9 | 2-3-4 | 1.5 | |
| 60 | | | | | | | | | |
| | -20 | | | | | | | | |
| 65 | | | | | | | | | |
| | -25 | | | Gray fine to coarse SAND, little silt, some gravel, trace mica | | S-10 | 20-21-23 | 1.1 | |
| 70 | | | | | | | | | |
| | -30 | | | | | | | | |
| 75 | | | SM | | | | | | |
| | -35 | | | Gray, brown fine to coarse SAND, little to trace silt, little gravel, trace mica | | S-11 | 25-33-28 | 0.9 | |
| 80 | | | | | | | | | |
| | -40 | | | | | | | | |
| 85 | | | | | | | | | |
| | -45 | | | | | S-12 | 15-15-18 | 0.7 | |
| 90 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 48 feet below existing ground surface.

TEST BORING LOG UNBRAINED WO_4685GC.GPJ DUFFIELD.GDT 5/2/02

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# TEST BORING P1-02-S06



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 27, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : March 1, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 44.0 feet |
| Weather | : Sunny, Cold, 30s | Northing | : 470,944 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 629,490 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 44.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 90 | | | SM | Light gray, white fine to coarse SAND, little to trace silt, trace gravel | | | | | |
| | -50 | | | | | | | | |
| 95 | | | CL | Gray, SILTY CLAY, little fine sand, trace mica | ☒ | S-13A S-13B | 5-9-14 | 1.1 | |
| | -55 | | | Orange-brown, brown fine SAND and SILT, trace mica | | | | | |
| 100 | | | SM | | | | | | |
| | -60 | | | | | | | | |
| 105 | | | CL | Red/brown/blue-gray, fine to medium SANDY CLAY, little silt | ☒ | S-14 | 4-5-8 | 1.4 | |
| | -65 | | | | | | | | |
| 110 | | | | | | | | | |
| | -70 | | | | | | | | |
| 115 | | | | | | | | | |
| | -75 | | | SAME | ☒ | S-15 | 21-36-50/0.3' | 1.4 | |
| 120 | | | | Boring terminated at 120 feet below existing ground surface. | | | | | |
| | -80 | | | | | | | | |
| 125 | | | | | | | | | |
| | -85 | | | | | | | | |
| 130 | | | | | | | | | |
| | -90 | | | | | | | | |
| 135 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 48 feet below existing ground surface.

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*Consultants in the Geosciences*

# TEST BORING P1-02-S07



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : March 1, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : March 6, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 22.5 feet |
| Weather | : Clear | Northing | : 469,417 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 630,407 DE State Plane |

Sample Condition: Remolded; Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 22.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | FILL: Dark brown/black SILT, little fine sand, trace organics | | | | | |
| | 20 | | | FILL: Light brown fine to medium SAND, little silt | | S-1A<br>S-1B | 6-5-3 | 1.0 | |
| 5 | | | | Dark gray CLAYEY SILT, trace to little fine sand, trace organics | | | | | |
| | 15 | | | | | | | | |
| 10 | | | MH | Dark gray CLAYEY SILT, trace fine sand, little organics | | S-2 | 1/0.8'-1/0.7' | 1.3 | |
| | | | | Shelby Tube No. 1 | | SH-1 | | 1.6 | |
| | 10 | | | | | | | | |
| 15 | | | | Vane#1 | | | | | 1154/387 |
| | | | | Brown SILT, little to some fine sand, trace medium to coarse sand | | S-3 | 4-5-8 | 0.8 | |
| | 5 | | | | | | | | |
| 20 | | | SM | Orange, pink, red, brown SAND and CLAYEY SILT, trace gravel<br>Brown fine to medium SAND, some silt, little coarse sand, trace gravel | | S-4A<br>S4-B | 3-6-12 | 0.8 | |
| | 0 | | | | | | | | |
| 25 | | | MH | Dark gray CLAYEY SILT, trace to little organics, trace fine sands | | S-5 | WH-2-3 | 1.5 | |
| | -5 | | | | | | | | |
| | | | | SAME | | S-6A<br>S-6B | WH-2-5 | 1.2 | |
| 30 | | | SM | Dark gray, light orange fine SAND and SILT, trace organics | | | | | |
| | -10 | | | Shelby Tube No. 2 | | SH-2 | | 1.8 | |
| 35 | | | | Vane#2 | | | | | 199/105 |
| | -15 | | MH | Dark gray/black CLAYEY SILT, trace to little fine sand, trace organics | | S-7 | WR-WH-WH-WH | 2.0 | |
| | | | | SAME | | S-8 | WH/1'-2 | 1.5 | |
| 40 | | | | | | | | | |
| | -20 | | | | | | | | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 40 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S07



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : March 1, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : March 6, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 22.5 feet |
| Weather | : Clear | Northing | : 469,417 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 630,407 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 22.5 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 45–50 | -25 to -30 | MH | Dark gray CLAYEY SILT, little organics (Peat layers), trace fine sand | ☒ | S-9 | 1-2-2 | 1.5 | |
| 55–60 | -35 to -40 | SM | Dark gray, brown fine SAND, some silt, interlayered with clayey silt layers <0.1' thick | ☒ | S-10 | 4-7-7 | 1.0 | |
| 65–70 | -45 to -50 | SM | Gray fine to coarse SAND, little silt, some gravel | ☒ | S-11 | 9-18-14 | 0.7 | |
| 75–80 | -55 to -60 | SM | Dark gray/black fine to coarse SAND, little silt, some to and gravel | ☒ | S-12 | 10-44-41 | 0.9 | |
| 85–90 | -65 | SM | Gray fine to coarse SAND and GRAVEL, trace to little silt | ☒ | S-13A | 66-28-14 | 1.2 | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 40 feet below existing ground surface.

TEST BORING LOG UNDRAINED W/O_4685GC.GPJ DUFFIELD.GDT 5/2/02

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S07



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : March 1, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : March 6, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 22.5 feet |
| Weather | : Clear | Northing | : 469,417 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 630,407 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 22.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 90 | -70 | | MH | Gray, orange-brown CLAYEY SILT, trace fine sand | | S-13B | | | |
| 95 | -75 | | SC | Gray/orange fine to medium SAND and SILTY CLAY, trace coarse sand, trace gravel | ☒ | S-14A S14-B | 9-14-14 | | |
| 100 | -80 | | SM | Orange fine to coarse SAND and GRAVEL, trace to little silt | | | | | |
| 105 | -85 | | ML | Dark gray, brown, red SILT, little fine sand, trace medium to coarse sand, trace to little gravel | ☒ | S-15 | 4-16-19 | 0.8 | |
| 110 | -90 | | | | | | | | |
| 115 | -95 | | SM | Gray, red, brown fine to medium SAND, some clayey silt, trace coarse sand, trace gravel | ☒ | S-16 | 14-14-29 | 1.1 | |
| 120 | -100 | | | | | | | | |
| 125 | -105 | | MH | Red, gray CLAYEY SILT, little to some fine sand, trace medium to coarse sand, trace gravel | ☒ | S-17 | 15-17-44 | 1.5 | |
| 130 | -110 | | | | | | | | |
| 135 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 40 feet below existing ground surface.

TEST BORING LOG UNDRAINED WO 4685GC.GPJ DUFFIELD.GDT 5/2/02

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S07



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : March 1, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : March 6, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 22.5 feet |
| Weather | : Clear | Northing | : 469,417 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 630,407 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 22.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | | | | | | |
| | -115 | | SC | Red, gray, brown fine SAND, little silty clay, trace medium sand | ☒ | S-18 | 6-12-17 | 1.5 | | |
| 140 | | | | Boring terminated at 140 feet below existing ground surface. | | | | | | |
| | -120 | | | | | | | | | |
| 145 | | | | | | | | | | |
| | -125 | | | | | | | | | |
| 150 | | | | | | | | | | |
| | -130 | | | | | | | | | |
| 155 | | | | | | | | | | |
| | -135 | | | | | | | | | |
| 160 | | | | | | | | | | |
| | -140 | | | | | | | | | |
| 165 | | | | | | | | | | |
| | -145 | | | | | | | | | |
| 170 | | | | | | | | | | |
| | -150 | | | | | | | | | |
| 175 | | | | | | | | | | |
| | -155 | | | | | | | | | |
| 180 | | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 40 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S08



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 27, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 28, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 20.0 feet |
| Weather | : Clear/Windy | Northing | : 470,408 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 631,070 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 20.0 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 0 | 20 | | Gravel Road Surface (3 inches), Fill: Brown fine to medium sand | | | | | |
| 5 | 15 | MH | Dark blakish gray CLAYEY SILT, trace fine sand, little organics | | S-1 | 2-2-5 | 1.2 | |
| 10 | 10 | MH | SAME | | S-2 | WH-1-1 | 1.1 | |
| 15 | 5 | MH | SAME | | S-3 | WH-WH-WH | 1.4 | |
| 20 | 0 | MH | Dark gray CLAYEY SILT, trace to little fine sand, little organics | | S-4 | WH-1/1' | 1.5 | |
| | | MH | Shelby Tube No. 1 | | SH-1 | | 1.8 | |
| 25 | -5 | MH | Vane#1 | | | | | 651/55 |
| | | | Dark brown PEAT, some silt | | S-5 | 1-1-1 | 1.5 | |
| 30 | -10 | ML | Dark brownish gray SILT and PEAT | | S-6 | WH-2-2 | 1.5 | |
| 35 | -15 | ML | | | | | | |
| 40 | -20 | SM | Brownish gray fine to medium SAND, little to some silt, little coarse sand, trace gravel | | S-7 | 4-8-10 | 0.6 | |
| 45 | -25 | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 55 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S08



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 27, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 28, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 20.0 feet |
| Weather | : Clear/Windy | Northing | : 470,408 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 631,070 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 20.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | -25 | | | | | | | | |
| 50 | -30 | | SM | No Recovery | | | 8-6-5 | 0.0 | |
| 55 | -35 | | SM | Orange-brown fine to coarse SAND, trace to little silt, trace gravel | | S-8 | 8-9-12 | 1.0 | |
| 60 | -40 | | SM | SAME | | S-9 | 11-12-12 | 0.6 | |
| 65 | -45 | | | | | | | | |
| 70 | -50 | | CH | Gray, SILTY CLAY, trace fine sand | | S-10 | 2-3-4 | 1.2 | |
| | | | CH | Light gray SILTY CLAY, trace fine sand, trace organics (fibers) | | S-11 | 5-6-8 | 1.5 | |
| | | | CH | Shelby Tube No. 2 | | SH-2 | | 1.7 | |
| 75 | -55 | | CH | Vane#2 | | | | | 3139/1978 |
| | | | CH | Light gray SILTY CLAY, little fine to coarse sand, trace mica, trace organics | | S-12 | 6-9-12 | 0.9 | |
| | | | CH | Light gray SILTY CLAY, little fine sand, trace mica, trace organics | | S-13 | 5-7-7 | 1.5 | |
| 80 | -60 | | | | | | | | |
| 85 | -65 | | | | | | | | |
| | | | ML | | | | | | |
| 90 | -70 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 55 feet below existing ground surface.

DUFFIELD ASSOCIATES
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# TEST BORING P1-02-S08



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 27, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 28, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 20.0 feet |
| Weather | : Clear/Windy | Northing | : 470,408 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 631,070 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 20.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 90 | -70 | | ML | Light gray, brown SILT and fine SAND, trace mica | | S-14 | 4-10-8 | 1.4 | |
| 95 | -75 | | SM | Gray fine to medium SAND, little coarse sand, trace to little silt, trace gravel | | S-15 | 8-12-12 | 0.8 | |
| 100 | -80 | | | | | | | | |
| 105 | -85 | | | | | | | | |
| 110 | -90 | | | Red, brown, bluish-gray fine to medium SAND, some to and clayey silt, little to trace coarse sand, trace gravel | | S-16 | 12-14-15 | 1.5 | |
| 115 | -95 | | MH | Brownish red, red, gray CLAYEY SILT, little to some fine sand | | S-17 | 12-17-21 | 1.5 | |
| 120 | -100 | | | Boring terminated at 120 feet below existing ground surface. | | | | | |
| 125 | -105 | | | | | | | | |
| 130 | -110 | | | | | | | | |
| 135 | -115 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 55 feet below existing ground surface.

DUFFIELD ASSOCIATES
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# TEST BORING P3-02-S09



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : ATV Mounted CME-75 |
| Date Completed | : February 28, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 47.5 feet |
| Weather | : Overcast | Northing | : 472,624 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 629,897 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | FILL: Brown/black GRAVEL and fine to coarse SAND, little silt | | | | | |
| | 45 | | | Dark gray/black SILT, little to trace fine sand, trace organics | | S-1 | WH-1-2 | 0.6 | |
| 5 | | | | | | | | | |
| | 40 | | ML | Dark gray/black SILT, trace to little fine sand, trace medium sand, trace gravel, trace to little organics | | S-2 | 2-3-3 | 1.4 | |
| 10 | | | | | | | | | |
| | 35 | | | Dark gray, SILT, little to trace fine sand | | S-3 | 2-1-2 | 1.4 | |
| 15 | | | | | | | | | |
| | 30 | | | Dark gray/black CLAYEY SILT, trace fine sand, trace to little organics | | S-4 | WH-WH-WH | 1.5 | |
| 20 | | | | Shelby Tube No. 1 | | SH-1 | | 1.4 | |
| | 25 | | | Vane#1 | | | | | 736/86 |
| 25 | | | | Dark gray CLAYEY SILT, trace fine sand, little organics | | S-5 | 1-1-1 | 1.5 | |
| | 20 | | | SAME | | S-6 | WH-WH-WH | 1.4 | |
| 30 | | | MH | | | | | | |
| | 15 | | | | | | | | |
| 35 | | | | | | | | | |
| | 10 | | | Dark gray CLAYEY SILT, trace fine sand, little organics | | S-7 | WH-WH-WH | 1.5 | |
| 40 | | | | Shelby Tube No. 2 | | SH-2 | | 2.0 | |
| | 5 | | | | | | | | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 70 feet below existing ground surface.

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# TEST BORING P3-02-S09



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : ATV Mounted CME-75 |
| Date Completed | : February 28, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 47.5 feet |
| Weather | : Overcast | Northing | : 472,624 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 629,897 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 45 | | | | | | | | |
| | 0 | MH | Vane#2A | | | | | 974/97 |
| | | | Dark gray/black CLAYEY SILT, trace to little fine sand, trace to little organics | | S-8 | WR/1'-WH/1' | 1.4 | |
| 50 | -5 | | | | | | | |
| 55 | | | | | | | | |
| | -10 | CH | Friction Test | | | | | |
| | | | Dark gray, SILTY CLAY, trace to little fine sand, trace organics | | S-9 | WH-1-3 | 1.5 | |
| 60 | -15 | | | | | | | |
| | | | SAME | | S-10 | WH/1.25'-1 | 1.5 | |
| 65 | | | Shelby Tube No. 3 | | SH-3 | | 0.6 | |
| | -20 | | Shelby Tube No. 4 | | SH-4 | | 0.6 | |
| 70 | | | Vane#3 | | | | | 2775/1305 |
| | | | Gray, light brown, black SILTY CLAY, little organics, trace to little fine sand, trace gravel | | S-11 | 4-3-5-5 | 2.0 | |
| | -25 | SM | Brown fine to medium SAND, little to some silt, little coarse sand | | S-12 | 13-18-12 | 1.3 | |
| 75 | | | | | | | | |
| | -30 | | | | | | | |
| 80 | | | Gray fine to coarse SAND, little gravel, little to trace silt | | S-13 | 5-13-16 | 1.1 | |
| | -35 | | | | | | | |
| 85 | | | | | | | | |
| | -40 | | | | | | | |
| 90 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 70 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S09



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : ATV Mounted CME-75 |
| Date Completed | : February 28, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 47.5 feet |
| Weather | : Overcast | Northing | : 472,624 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 629,897 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 90 | | | | Brown, gray, fine to coarse SAND, little silt, trace gravel | | S-14 | 7-11-13 | 1.4 | |
| | -45 | | | | | | | | |
| 95 | | | | | | | | | |
| | -50 | | SM | Brown fine to medium SAND, trace coarse sand, trace to little silt | | S-15 | 12-14-45 | 0.7 | |
| 100 | | | | | | | | | |
| | -55 | | | | | | | | |
| 105 | | | | | | | | | |
| | -60 | | | Brownish-red CLAYEY SILT and fine sand, trace medium to coarse sand, trace gravel | | S-16 | 12-13-16 | 1.7 | |
| 110 | | | | | | | | | |
| | -65 | | | | | | | | |
| 115 | | | ML | | | | | | |
| | -70 | | | Brownish-red, brown, gray CLAYEY SILT, some fine sand | | S-17 | 4-6-9 | 1.5 | |
| 120 | | | | | | | | | |
| | -75 | | | | | | | | |
| 125 | | | | | | | | | |
| | -80 | | SC | Dark red, light gray fine to medium SAND and SILTY CLAY | | S-18 | 7-8-9 | 1.5 | |
| 130 | | | | | | | | | |
| | -85 | | | | | | | | |
| 135 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 70 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S09



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : ATV Mounted CME-75 |
| Date Completed | : February 28, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 47.5 feet |
| Weather | : Overcast | Northing | : 472,624 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 629,897 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 47.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 135 | | | | | | | | | |
| | -90 | | | | | | | | |
| 140 | | | | Red, pink, light gray, light brown CLAYEY SILT, trace to little fine sand | ☒ | S-19 | 12-19-24 | 1.5 | |
| | -95 | | | | | | | | |
| 145 | | | ML | | | | | | |
| | -100 | | | | | | | | |
| 150 | | | | Dark brownish-red CLAYEY SILT, little to some fine sand | ☒ | S-20 | 14-18-24 | 1.5 | |
| | -105 | | | | | | | | |
| 155 | | | | | | | | | |
| | -110 | | SM | Brown, orange-brown, gray fine to medium SAND, some silty clay, trace coarse sand | ☒ | S-21 | 13-27-35 | 1.5 | |
| 160 | | | | Boring terminated at 160 feet below existing ground surface. | | | | | |
| | -115 | | | | | | | | |
| 165 | | | | | | | | | |
| | -120 | | | | | | | | |
| 170 | | | | | | | | | |
| | -125 | | | | | | | | |
| 175 | | | | | | | | | |
| | -130 | | | | | | | | |
| 180 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 70 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S10



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 22, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : GT,Sr./JPC | Surface Elevation | : 48.0 feet |
| Weather | : Partially Cloudy | Northing | : 471,985 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 626,775 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 48.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | FILL: Silt, Sand, Gravel | | | | | |
| | 45 | | | Brown, gray SILT, some clay, little fine sand, little to trace medium to coarse sand | | 1 | 3-5-7 | 0.6 | |
| 5 | | | | | | | | | |
| | 40 | | | Dark gray CLAYEY SILT, trace to little fine sand | | 2 | 3-7-9 | 1.5 | |
| 10 | | | | | | | | | |
| | 35 | | | Dark gray CLAYEY SILT, trace to little fine sand | | 3 | 1-3-3 | 1.3 | |
| 15 | | | | Shelby Tube No.1 | | SH-1 | | | |
| | 30 | | | Friction Test Vane#1 | | | | | 698/232 |
| 20 | | | | Dark gray CLAYEY SILT, trace to little fine sand | | 4 | 2-3-5 | 1.3 | |
| | 25 | | MH | SAME | | 5 | 2-2-3 | 1.5 | |
| 25 | | | | | | | | | |
| | 20 | | | Gray CLAYEY SILT, interlayered with fine sand layers ( 0.01' thick) | | 6 | 3-3-3 | 1.5 | |
| 30 | | | | | | | | | |
| | 15 | | | | | | | | |
| 35 | | | | | | | | | |
| | 10 | | | Gray CLAYEY SILT, interlayered with fine sand layers ( 0.01' thick) | | 7 | 2-3-2 | 1.5 | |
| 40 | | | | Shelby Tube No.2 | | SH-2 | | 1.8 | |
| | 5 | | | | | | | | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 65 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S10



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 22, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : GT,Sr.JJPC | Surface Elevation | : 48.0 feet |
| Weather | : Partially Cloudy | Northing | : 471,985 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 626,775 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 48.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | | | | | | | | | |
| | 0 | | | Vane#2 | — | | | | 2034/667 |
| 50 | | | | Gray CLAYEY SILT, interlayered with trace fine sand layers ( 0.01' thick), little organics | ☒ | 8 | 2-3-4 | 1.5 | |
| | -5 | | | | | | | | |
| 55 | | | | | | | | | |
| | -10 | | | SAME | ☒ | 9 | 2-3-4 | 1.5 | |
| 60 | | | | Shelby Tube No.3 | ▨ | SH-3 | | 2.0 | |
| | -15 | | MH | Vane#3 | — | | | | 1242/977 |
| 65 | | | | Gray CLAYEY SILT, interlayered with fine sand layers < 0.01' thick | ☒ | 10 | 2-3-5 | 1.5 | |
| | -20 | | | SAME | ☒ | 11 | 2-2-3 | 1.5 | |
| 70 | | | | | | | | | |
| | -25 | | | | | | | | |
| 75 | | | | | | | | | |
| | -30 | | | Gray CLAYEY SILT, trace layers of fine sand | ☒ | 12 | 1-2-3 | 1.5 | |
| 80 | | | | | | | | | |
| | -35 | | | | | | | | |
| 85 | | | SM | | | | | | |
| | -40 | | | Brown, gray fine to coarse SAND, little silt, little gravel | ☒ | 13 | 28-27-14 | 1.0 | |
| 90 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 65 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S10



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : Truck Mounted CME-55 |
| Date Completed | : February 22, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : GT,Sr./JPC | Surface Elevation | : 48.0 feet |
| Weather | : Partially Cloudy | Northing | : 471,985 DE State Plane |
| Driller/Agency | : G. Truver, Sr./Walton Corp | Easting | : 626,775 DE State Plane |

Sample Condition: Remolded; Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 48.0 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 90 | | | | | | | | | |
| | -45 | | | | | | | | |
| 95 | | | | | | | | | |
| | -50 | | SM | Brown, gray, green fine coarse SAND, little clayey silt, trace gravel | ☒ | 14 | 16-19-25 | 1.0 | |
| 100 | | | | | | | | | |
| | -55 | | | | | | | | |
| 105 | | | | | | | | | |
| | -60 | | | Boring terminated at 108.5 feet below existing ground surface. | | | | | |
| 110 | | | | | | | | | |
| | -65 | | | | | | | | |
| 115 | | | | | | | | | |
| | -70 | | | | | | | | |
| 120 | | | | | | | | | |
| | -75 | | | | | | | | |
| 125 | | | | | | | | | |
| | -80 | | | | | | | | |
| 130 | | | | | | | | | |
| | -85 | | | | | | | | |
| 135 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 65 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S11



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 25, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 26, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 22.5 feet |
| Weather | : Clear, 60's | Northing | : 471,365 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 630,647 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 22.5 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 0 | | | FILL | | | | | |
| | 20 | MH | Dark blakish gray CLAYEY SILT, little organics, trace fine sand | | 1 | 1-1-1 | 1.5 | |
| 5 | | | | | | | | |
| | 15 | | Dark gray CLAYEY SILT, trace organics, trace fine sand | | 2 | WH-1-1 | 1.5 | |
| 10 | | | | | | | | |
| | 10 | | Dark gray/ black CLAYEY SILT, some fine sand, little organics, trace asphalt debris, trace medium to coarse sand | | 3 | 1-2-2 | 1.5 | |
| 15 | | | | | | | | |
| | 5 | | Dark gray/ black CLAYEY SILT, little to some fine sand, trace organics | | 4 | WH/1'-2 | 1.5 | |
| 20 | | | Shelby Tube No.1 | | SH-1 | | 2.0 | |
| | 0 | | Vane#1 | | | | | 242/17 |
| 25 | | | Dark gray to light gray CLAYEY SILT, trace fine sand, trace organics | | 5 | WH-1-2 | 1.5 | |
| | -5 | | Dark brown CLAYEY SILTand PEAT | | 6 | 1-2-3 | 1.5 | |
| 30 | | | Shelby Tube No.2 | | SH-2 | | 0.8 | |
| | -10 | | Vane#2 | | | | | 2236/407 |
| 35 | | CL | Brownish gray, micaceous SILTY CLAY, little fine sand | | 7 | 2-3-3 | 1.5 | |
| | -15 | | SAME | | 8A 8B | 1-6-6 | 1.3 | |
| 40 | | SM | Brownish, gray fine SAND, some silt, trace to little medium sand, trace coarse sand | | | | | |
| | -20 | | | | | | | |
| 45 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 34 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S11



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 25, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 26, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 22.5 feet |
| Weather | : Clear, 60's | Northing | : 471,365 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 630,647 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 22.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | | | | | | | | | |
| | -25 | | | Gray fine to coarse SAND, trace to little silt, trace fine sand, trace fine gravel | ☒ | 9 | 10-13-15 | 1.0 | |
| 50 | | | | | | | | | |
| | -30 | | | | | | | | |
| 55 | | | SM | | | | | | |
| | -35 | | | Gray fine to coarse SAND and GRAVEL, little silt | ☒ | 10 | 45-50/.3 | 0.1 | |
| 60 | | | | | | | | | |
| | -40 | | | | | | | | |
| 65 | | | | | | | | | |
| | -45 | | | | | | | | |
| 70 | | | CL | Dark, gray SILTY CLAY, trace fine sand | ☒ | 11 | 7-7-9 | 0.7 | |
| | -50 | | | | | | | | |
| 75 | | | SM | | | | | | |
| | -55 | | | Grayish brown fine to medium SAND, little silt, trace coarse sand, trace gravel | ☒ | 12 | 38-50/.25 | 0.4 | |
| 80 | | | | | | | | | |
| | -60 | | | | | | | | |
| 85 | | | CL | | | | | | |
| | -65 | | | | ☒ | 13 | 10-10-18 | 1.5 | |
| 90 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 34 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P1-02-S11



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 25, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 26, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : JPC | Surface Elevation | : 22.5 feet |
| Weather | : Clear, 60's | Northing | : 471,365 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 630,647 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 22.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|---|
| 90 | | | CL | Red, brown, gray (varicolored) SILTY CLAY, little to some fine sand, trace medium sand, trace gravel | | | | | | |
| | -70 | | | | | | | | | |
| 95 | | | | | | | | | | |
| | -75 | | | Red, gray, brown (varicolored) SILTY CLAY, some fine sand, trace medium sand | ☒ | 14 | 17-26-44 | 1.3 | | |
| 100 | | | | | | | | | | |
| | -80 | | | | | | | | | |
| 105 | | | | | | | | | | |
| | -85 | | | Red, gray, brown (varicolored) CLAYEY SILT,little to some fine sand, trace medium sand | ☒ | 15 | 30-64 | 1.0 | | |
| 110 | | | | | | | | | | |
| | -90 | | | | | | | | | |
| 115 | | | SM-ML | | | | | | | |
| | -95 | | | Red, gray, brown, (varicolored), fine SAND and CLAYEY SILT, trace medium to coarse sand | ☒ | 16 | 30-42-54 | 1.3 | | |
| 120 | | | | Boring terminated at 120 feet below existing ground surface. | | | | | | |
| | -100 | | | | | | | | | |
| 125 | | | | | | | | | | |
| | -105 | | | | | | | | | |
| 130 | | | | | | | | | | |
| | -110 | | | | | | | | | |
| 135 | | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 34 feet below existing ground surface.

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# TEST BORING P3-02-S12



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 22, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 45.5 feet |
| Weather | : Cloudy, 50's | Northing | : 473,646 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 629,037 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 45.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 45 | | | Gravel | | | | | |
| | | | | Gray CLAYEY SILT, trace fine sand, trace organics | | 1 | 2-3-4 | | |
| 5 | 40 | | | | | | | | |
| | | | | Gray, black CLAYEY SILT, trace fine to mediumsand, trace organics | | 2 | 2-3-4 | | |
| 10 | 35 | | | | | | | | |
| | | | | Gray CLAYEY SILT, trace organics | | 3 | 2-1-2 | 1.4 | |
| 15 | 30 | | | | | | | | |
| | | | | Gray CLAYEY SILT, little organics | | 4 | WH-1-1 | 1.5 | |
| 20 | 25 | | | Shelby Tube No.1 | | SH-1 | | | |
| | | | MH | | | | | | |
| | | | | Vane#1 | | | | | 457/42 |
| 25 | 20 | | | Gray, black CLAYEY SILT, trace fine sand, trace organics | | 5 | WH-2-2 | 1.5 | |
| | | | | SAME | | 6 | WH-1-1 | 1.5 | |
| 30 | 15 | | | | | | | | |
| 35 | 10 | | | | | | | | |
| | | | | Gray, black CLAYEY SILT, trace fine sand, trace organics | | 7 | WR-WH/0.8 | 1.5 | |
| 40 | 5 | | | | | | | | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 49 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S12



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 22, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 45.5 feet |
| Weather | : Cloudy, 50's | Northing | : 473,646 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 629,037 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 45.5 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 45 | 0 | | | | | | | |
| | | MH | Gray CLAYEY SILT, trace fine sand, little organics | | 8 | WR/0.3-WH/1 | 1.5 | |
| 50 | -5 | | Shelby Tube No.2 | | SH-2 | | | |
| 55 | -10 | | Vane#2 | | | | | 634/22 |
| | | | Gray CLAYEY SILT, very thin fine sand layers < 0.01' thick | | 9 | WH-WH-2-4 | 2.0 | |
| 60 | -15 | | | | | | | |
| 65 | -20 | | | | | | | |
| | | SM | Gray fine to medium SAND, trace ~ 0.05' thick gravelly lenses, some silt | | 10 | 10-10-12 | 0.7 | |
| 70 | -25 | | | | | | | |
| | | | Gray CLAYEY SILT and interlayered fine sand | | 11 | 1-3-4 | 1.5 | |
| 75 | -30 | | Shelby Tube No.3 | | SH-3 | | | |
| | | | Vane#3 | | | | | 1291/1066 |
| 80 | -35 | MH | Gray CLAYEY SILT, trace brown, black organics, sandy silt layers ~ 0.3' thick | | 12 | 5-3-4 | 1.3 | |
| 85 | -40 | | | | | | | |
| | | | Gray CLAYEY SILT, trace organics | | 13 | 2-4-6 | 1.5 | |
| 90 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 49 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S12



W.O.4685.GC
Phase I Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : February 20, 2002 | Drilling Equipment | : ATV Mounted CME-55 |
| Date Completed | : February 22, 2002 | Drilling Methods | : Hollow Stem Auger |
| Logged by | : STS | Surface Elevation | : 45.5 feet |
| Weather | : Cloudy, 50's | Northing | : 473,646 DE State Plane |
| Driller/Agency | : D.Taylor/Walton Corp | Easting | : 629,037 DE State Plane |

Sample Condition: Remolded / Undisturbed
Water Levels

| Depth in feet | Surf. Elev. 45.5 ft | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|
| 90 | -45 | MH | | | | | | |
| 95 | -50 | SM | Light gray fine to coarse SAND, little gravel, little to trace silt | ☒ | 14 | 20-40-50/0.4 | 0.5 | |
| 100 | -55 | | | | | | | |
| 105 | -60 | | Gray, brown fine to medium SAND, trace coarse sand, trace gravel, trace silt | ☒ | 15 | 31-69-18 | 0.2 | |
| 110 | -65 | | | | | | | |
| 115 | -70 | CL | Gray SILTY CLAY, some fine sand | ☒ | 16 | 4-11-15 | 1.5 | |
| 120 | -75 | | Boring terminated at 120 feet below existing ground surface. | | | | | |
| 125 | -80 | | | | | | | |
| 130 | -85 | | | | | | | |
| 135 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Soil description & classifications according to ASTM D: 2488 (Visual-Manual Procedure) and ASTM D:2487 (Unified Soil Classification System) along with laboratory analysis if analysis performed.
3. Boring grouted to ground surface with portland cement grout at completion.
4. See Vane Shear Test Results in Appendix C
5. Driller switched to mud rotary drilling at approximately 49 feet below existing ground surface.

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S013



W.O.4685.GC
- Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 24, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 24, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 69.8 feet |
| Weather | : Clear, 70s | Northing | : 628,560 DE State Plane |
| Driller/Agency | : G. Truver, Jr./Walton Corp | Easting | : 473,537 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 69.8 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| 5 | 65 | | | | | | | | |
| 10 | 60 | | | | | | | | |
| 15 | 55 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| 20 | 50 | | | | | | | | |
| 25 | 45 | | | | | | | | |
| 30 | 40 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | S-1 | 4-3-2-1 | 0.1 | |
| 35 | 35 | | MH | Vane#1 | | | | | 377/102 |
| | | | | Shelby Tube No. 1<br>Dark gray, black CLAYEY SILT, trace to little fine sand, trace organics. | | SH-1 | 100 psi | | |
| 40 | 30 | | CH | Vane#2<br>Friction Test ( See Appendix C ) | | | | | 328/91 |
| | | | | Shelby Tube No. 2<br>Dark gray, black SILTY CLAY, trace fine sand, trace organics. | | SH-2 | 135 psi | | |
| 45 | 25 | | MH | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P3-02-S013



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 24, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 24, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 69.8 feet |
| Weather | : Clear, 70s | Northing | : 628,560 DE State Plane |
| Driller/Agency | : G. Truver, Jr./Walton Corp | Easting | : 473,537 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 69.8 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | | | | Vane#3 | | | | | 374/21 |
| | | | | Shelby Tube No. 3<br>Dark gray, black CLAYEY SILT, trace fine sand, trace organics. | | SH-3 | 180 psi | | |
| 50 | 20 | | MH | Vane#4 | | | | | 134/67 |
| | | | | Shelby Tube No. 4<br>SAME | | SH-4 | 180 psi | | |
| 55 | 15 | | | Boring terminated at 55 feet below existing ground surface. | | | | | |
| 60 | 10 | | | | | | | | |
| 65 | 5 | | | | | | | | |
| 70 | 0 | | | | | | | | |
| 75 | -5 | | | | | | | | |
| 80 | -10 | | | | | | | | |
| 85 | -15 | | | | | | | | |
| 90 | -20 | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P4-02-S014



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 23, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 23, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 75.2 feet |
| Weather | : Clear, 70s | Northing | : 627,994 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 473,582 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 75.2 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 75 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| 5 | 70 | | | | | | | | |
| 10 | 65 | | | | | | | | |
| 15 | 60 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| 20 | 55 | | | | | | | | |
| 25 | 50 | | | | | | | | |
| 30 | 45 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. Vane#1- Vane severely deformed. Possibly Landfill waste. | | | | | |
| | | | | Black, brown, fine to coarse SAND, trace gravel. Possibly Leachate Collection System. | ☒ | S-1 | 5-10 | 0.2 | |
| 35 | 40 | | | Dark gray, black SILT, trace fine sand, little organic fibers. | ☒ | S-2 | 1-1 | 0.2 | |
| | | | | Vane#2 | | | | | 240/55 |
| 40 | 35 | | MH | Shelby Tube No.1 Dark gray/black CLAYEY SILT, trace fine sand, trace organics. | ▨ | SH-1 | 62 psi | 1.9 | |
| | | | | Vane#3 | | | | | 193/173 |
| 45 | | | | Shelby Tube No.2 | ▨ | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P4-02-S014



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 23, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 23, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 75.2 feet |
| Weather | : Clear, 70s | Northing | : 627,994 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 473,582 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 75.2 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 30 | | | SAME | | SH-2 | 140 psi | 2.0 | |
| | | | | Vane#4 | | | | | 514/49 |
| 50 | 25 | | MH | Shelby Tube No.3<br>SAME | | SH-3 | 160 psi | 2.0 | |
| | | | | Vane#5 | | | | | 362/67 |
| 55 | 20 | | | Shelby Tube No.4<br>SAME | | SH-4 | 140 psi | 2.0 | |
| | | | | Boring terminated at 56 feet below existing ground surface. | | | | | |
| 60 | 15 | | | | | | | | |
| 65 | 10 | | | | | | | | |
| 70 | 5 | | | | | | | | |
| 75 | 0 | | | | | | | | |
| 80 | -5 | | | | | | | | |
| 85 | -10 | | | | | | | | |
| 90 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S015



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 20, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 21, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 73.2 feet |
| Weather | : Clear, 70s | Northing | : 627,218 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 473,176 DE State Plane |

Sample Condition: Undisturbed / Remolded

Water Levels

| Depth in feet | Surf. Elev. 73.2 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| | 70 | | | | | | | | |
| 5 | | | | | | | | | |
| | 65 | | | | | | | | |
| 10 | | | | | | | | | |
| | 60 | | | | | | | | |
| 15 | | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| | 55 | | | | | | | | |
| 20 | | | | | | | | | |
| | 50 | | | | | | | | |
| 25 | | | | | | | | | |
| | 45 | | | | | | | | |
| 30 | | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| | 40 | | SM | Dark gray, light brown, fine to coarse SAND, some to and fine gravel, trace to little silt. Apparent (LCZ) | | CME-1 | | 1.1 | |
| 35 | | | | Dark gray/black CLAYEY SILT, trace to little organics,trace fine sand. | | S-2 | WH/1.5' | 0.4 | |
| | | | | Shelby Tube No. 1 | | SH-1 | 75 psi | 2.0 | |
| | 35 | | | Dark gray/black CLAYEY SILT, trace organics, trace fine sand. | | | | | |
| 40 | | | MH | Vane#1 | | | | | 120/102 |
| | | | | Shelby Tube No. 2 SAME | | SH-2 | 75 psi | 2.0 | |
| | 30 | | | | | | | | |
| | | | | Vane#2 | | | | | 316/52 |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S015



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 20, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 21, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 73.2 feet |
| Weather | : Clear, 70s | Northing | : 627,218 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 473,176 DE State Plane |

Sample Condition: Undisturbed / Remolded

Water Levels

| Depth in feet | Surf. Elev. 73.2 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | | | | Shelby Tube No. 3 SAME | | SH-3 | 110 psi | 2.0 | | |
| | 25 | | | Vane#3 | | | | | | 233/126 |
| 50 | | | MH | Shelby Tube No. 4 SAME | | SH-4 | 160 psi | 2.0 | | |
| | 20 | | | Vane#4 | | | | | | 333/158 |
| 55 | | | | Boring terminated at 55 feet below existing ground surface. | | | | | | |
| | 15 | | | | | | | | | |
| 60 | | | | | | | | | | |
| | 10 | | | | | | | | | |
| 65 | | | | | | | | | | |
| | 5 | | | | | | | | | |
| 70 | | | | | | | | | | |
| | 0 | | | | | | | | | |
| 75 | | | | | | | | | | |
| | -5 | | | | | | | | | |
| 80 | | | | | | | | | | |
| | -10 | | | | | | | | | |
| 85 | | | | | | | | | | |
| | -15 | | | | | | | | | |
| 90 | | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S016



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 21, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 22, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 73.5 feet |
| Weather | : Clear, 60s | Northing | : 627,328 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 471,926 DE State Plane |

Sample Condition: Undisturbed / Remolded

Water Levels

| Depth in feet | Surf. Elev. 73.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 0 | | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| | 70 | | | | | | | | |
| 5 | | | | | | | | | |
| | 65 | | | | | | | | |
| 10 | | | | | | | | | |
| | 60 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| 15 | | | | | | | | | |
| | 55 | | | | | | | | |
| 20 | | | | | | | | | |
| | 50 | | | | | | | | |
| 25 | | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| | 45 | | | | | | | | |
| 30 | | | | Black, dark brown Solid Waste, little silt and fine sand observed in the sampler. No Leachate collection system material recovered. | | CME-1 | | 0.4 | |
| | 40 | | | Shelby Tube No.1<br>Dark gray/black CLAYEY SILT, trace organics, trace fine sand. | | SH-1 | 180 psi | 0.0 | |
| 35 | | | | Vane#1 | | | | | 269/233 |
| | 35 | | ML | Shelby Tube No.2<br>SAME | | SH-2 | 140 psi | 1.5 | |
| 40 | | | | Vane#2 | | | | | 176/149 |
| | 30 | | | Shelby Tube No.3<br>SAME | | SH-3 | 60 psi | 2.0 | |
| 45 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P5-02-S016



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 21, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 22, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 73.5 feet |
| Weather | : Clear, 60s | Northing | : 627,328 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 471,926 DE State Plane |

Sample Condition: Undisturbed / Remolded

Water Levels

| Depth in feet | Surf. Elev. 73.5 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | | | | Vane#3 | | | | | | 146/102 |
| | 25 | | ML | Shelby Tube No.4 SAME | | SH-4 | 120-140 psi | 2.0 | | |
| 50 | | | | Vane#4 | | | | | | 258/137 |
| | 20 | | | Boring terminated at 51.7 feet below existing ground surface. | | | | | | |
| 55 | | | | | | | | | | |
| | 15 | | | | | | | | | |
| 60 | | | | | | | | | | |
| | 10 | | | | | | | | | |
| 65 | | | | | | | | | | |
| | 5 | | | | | | | | | |
| 70 | | | | | | | | | | |
| | 0 | | | | | | | | | |
| 75 | | | | | | | | | | |
| | -5 | | | | | | | | | |
| 80 | | | | | | | | | | |
| | -10 | | | | | | | | | |
| 85 | | | | | | | | | | |
| | -15 | | | | | | | | | |
| 90 | | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P2-02-S017



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 24, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 31, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 91.4 feet |
| Weather | : Clear, 80s | Northing | : 629,417 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 471,667 DE State Plane |

Sample Condition: Remolded / Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 91.4 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 90 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | | |
| 5 | 85 | | | | | | | | | |
| 10 | 80 | | | | | | | | | |
| 15 | 75 | | | | | | | | | |
| 20 | 70 | | | SAME | | | | | | |
| 25 | 65 | | | | | | | | | |
| 30 | 60 | | | | | | | | | |
| 35 | 55 | | | | | | | | | |
| 40 | 50 | | | SAME | | | | | | |
| 45 | | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

DUFFIELD ASSOCIATES
*Consultants in the Geosciences*

# TEST BORING P2-02-S017



W.O.4685.GC
Phase II Site Exploration
Cherry Island Landfill Expansion
New Castle County, Delaware

| | | | |
|---|---|---|---|
| Date Started | : May 24, 2002 | Drilling Equipment | : Truck Mounted CME-75 |
| Date Completed | : May 31, 2002 | Drilling Methods | : Hollow Stem Auger (4 1/4") |
| Logged by | : JPC | Surface Elevation | : 91.4 feet |
| Weather | : Clear, 80s | Northing | : 629,417 DE State Plane |
| Driller/Agency | : D. Taylor/Walton Corp | Easting | : 471,667 DE State Plane |

Sample Condition: Remolded; Undisturbed

Water Levels

| Depth in feet | Surf. Elev. 91.4 ft | GRAPHIC | USCS | DESCRIPTION | SAMPLES | Sample Number | Blows per 6 inches | Recovery (ft) | Undrained Shear Strength (psf) Undisturbed/Remolded |
|---|---|---|---|---|---|---|---|---|---|
| 45 | 45 | | | | | | | | |
| 50 | 40 | | | FILL: Landfill Solid Waste. Auger drilling, no samples collected. | | | | | |
| 55 | 35 | | | | | | | | |
| 60 | 30 | | | FILL: Landfill Solid Waste. | | S-1 | 24-20-35/0.2 | 0.7 | |
| | | | | Dark gray/black CLAYEY SILT, trace organics, trace fine sand. | | S-2 | | | |
| 65 | 25 | | | Vane#1 | | | | | 543/88 |
| | | | | Shelby Tube No.1<br>Dark gray/black CLAYEY SILT, trace fine sand, trace organics. | | SH-1 | 200 psi | 2.0 | |
| 70 | 20 | | | Vane#2 | | | | | 667/132 |
| | | | MH | Shelby Tube No.2<br>SAME | | SH-2 | 160 psi | 1.6 | |
| 75 | 15 | | | Vane#3 | | | | | 348/108 |
| | | | | Shelby Tube No.3<br>SAME | | SH-3 | 180 psi | 2.0 | |
| 80 | 10 | | | Vane#4 | | | | | 959/155 |
| | | | | Shelby Tube No.4<br>SAME | | SH-4 | 200 psi | 2.0 | |
| 85 | 5 | | | Boring terminated at 85 feet below existing ground surface. | | | | | |
| 90 | | | | | | | | | |

NOTES:
1. Drilling procedures performed with 4 1/4-inch hollow stem augers according to ASTM D: 1586 for SPT sampling and ASTM D:1587 for thin-walled tube sampling.
2. Boring grouted from the bottom of the borehole to approximately 3 feet above bottom of waste.
3. See Vane Shear Test Results in Appendix B

# VANE SHEAR TESTS RESULTS AND TEST PROCEDURES

## APPENDIX C

## VANE SHEAR TESTS RESULTS AND TEST PROCEDURES

The following description is based on Duffield Associates field investigation reports to GeoSyntec (Duffield, 2002a). The field vane shear tests (VSTs) were performed within the test borings at locations and depths selected by GeoSyntec. The majority of VSTs were carried out in the dredge and alluvium deposits. A total of 51 VSTs and five friction tests, for both undisturbed and remolded conditions, were performed as part of the field exploration. The VST results, corrected for friction, were used to estimate the undrained shear strength of the site soils.

The VSTs were performed in general accordance with ASTM D 2573. Two vane sizes, both tapered, were used in the testing. One vane was 3⅝ inches in diameter (for softer soils) and the other was 2½ inches in diameter (for stiffer soils).

For each test, a 4¼-inch internal diameter (ID) hollow-stem auger was drilled to a depth above the selected test elevation. The vane was then pushed approximately 2 feet (5 times the vane diameter) into the soil below the auger and allowed to set for 10 minutes before the test was conducted. The vane was then turned by a hand-operated geared drive at the rate of approximately 0.1° per second. The deflection was measured using a load cell. The corresponding torque was calculated by multiplying the force indicated by the load cell by the length of the moment arm. The maximum torque observed was used in the peak shear strength calculations. After the peak test, the vane was rotated 10 times and immediately tested again at a shear rate of 0.1° per second. The observed maximum torque after 10 rotations was used in the remolded shear strength calculations.

Friction tests were conducted at four depths to determine the maximum torque required to shear the soil without the vane (i.e., with the blank rod). The results of the vane tests were plotted to obtain curves of torque correction with depth for both the undisturbed and remolded tests. The torque corrections were then obtained from this curve for a given testing depth, and used to reduce the maximum torque obtained during the VST and obtain the net maximum torque for each test.

The undrained shear strength is calculated from the net torque by the following equation (ASTM D 2573):

$$S_u = (T-f)/K$$

where: $S_u$ = undrained shear strength, lb/ft$^2$ (peak or remolded)

$T$ = measured maximum torque from the vane test, lb-ft (peak or remolded)

$f$ = torque correction from friction test curves, lb-ft (peak or remolded)

$K$ = vane constant reflecting vane dimensions, ft$^3$

K is calculated as follows for a tapered vane:

$$K = 1 / 1728[\pi D^3 + 0.37(2 D^3 - d^3)]$$

where: $D$ = vane diameter, inch

$d$ = rod diameter, inch

The vane constant, $K$, for the 3⅝-inch diameter was calculated to be 0.1071 ft$^3$, and the vane constant for the 2½-inch diameter was calculated to be 0.0351 ft$^3$.

Duffield Associates, 2002a, "*Data Compilation Report, Phase I Site Exploration Cherry Island Landfill Expansion Project, Wilmington, Delaware, report" Presented to GeoSyntec Consultants, May 2002.*

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/GARY TRUVER, SR. |
| DATE: | 2-28-02 |
| TEST BORING DESIGNATION: | P1-02-S06 |
| VANE SHEAR TEST DESIGNATION: | VANE #1 |
| GROUND SURFACE ELEV. (ft): | 44.0 |
| DEPTH TO VANE TIP (ft) | 19.7 |
| ELEV. AT VANE TIP (ft): | 24.3 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 13.0 |
| FRICTION CORRECTION (ft-lb) | 2.7 |
| NET TORQUE (ft-lb) | 10.3 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 96 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 5.8 |
| FRICTION CORRECTION (ft-lb) | 2.0 |
| NET TORQUE (ft-lb) | 3.8 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 35 |

NOTES:

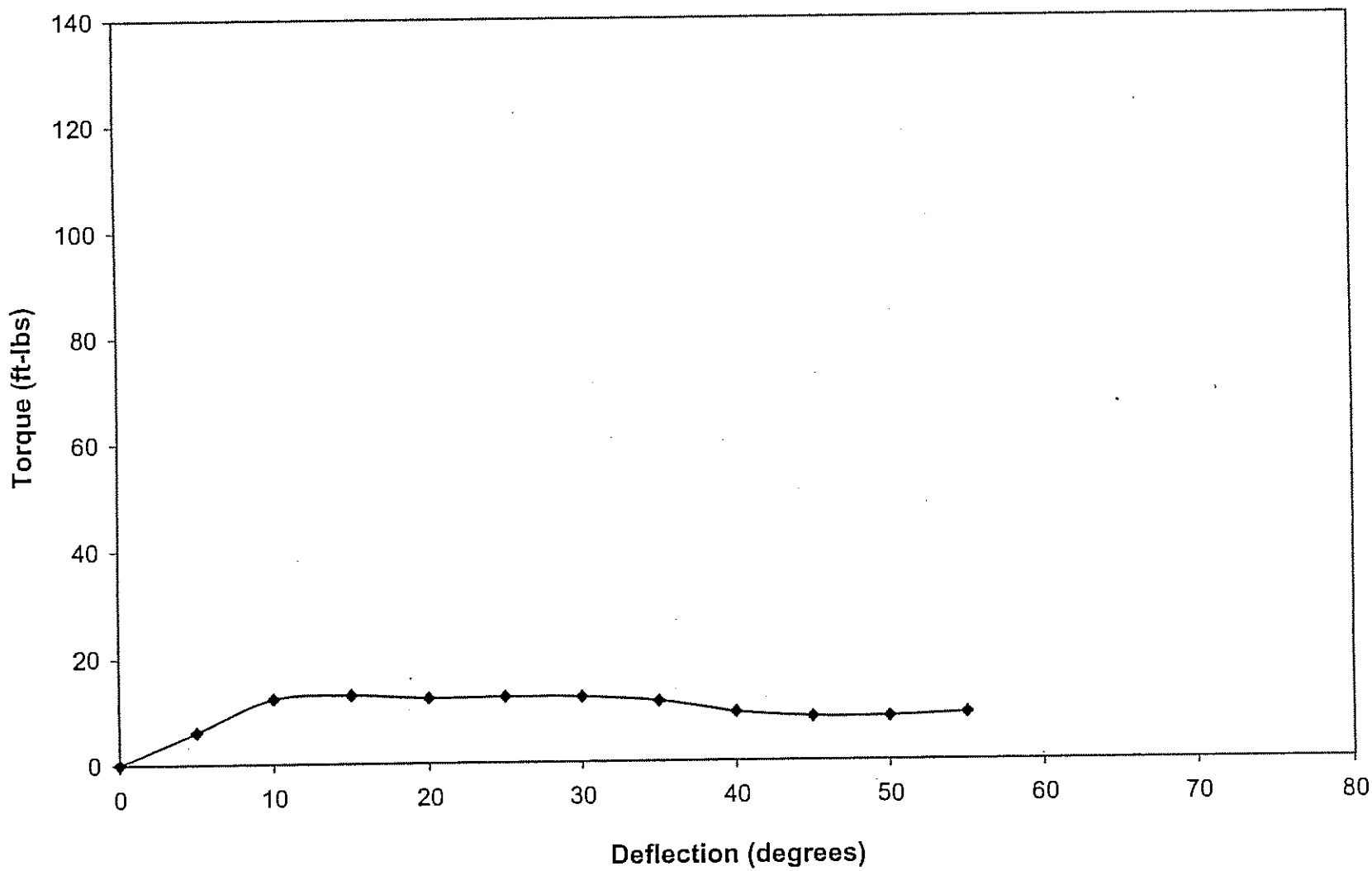
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

DUFFIELD ASSOCIATES, INC.
4/24/02

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S06**
**Vane #1: Depth = 19.7 ft., Elevation = 24.3 ft.**
**Undisturbed Condition**



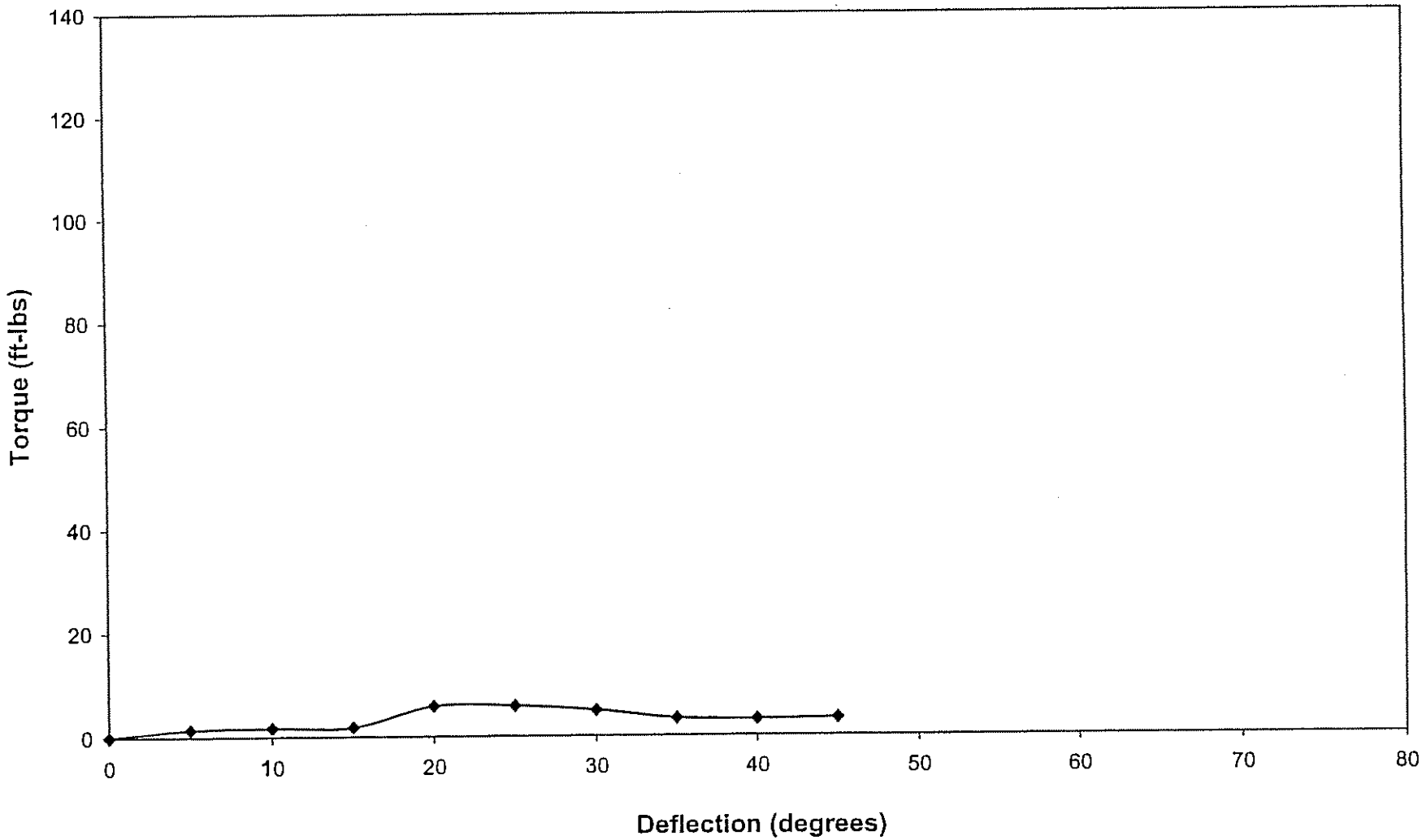

P1-02-S06 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S06**
**Vane #1: Depth = 19.7 ft., Elevation = 24.3 ft.**
**Remolded Condition**




P1-02-S06 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/GARY TRUVER, SR. |
| DATE: | 2-28-02 |
| TEST BORING DESIGNATION: | P1-02-S06 |
| VANE SHEAR TEST DESIGNATION: | VANE #2 |
| GROUND SURFACE ELEV. (ft): | 44.0 |
| DEPTH TO VANE TIP (ft) | 46.7 |
| ELEV. AT VANE TIP (ft): | -2.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 22 |
| MAXIMUM TORQUE (ft-lb) | 86.6 |
| FRICTION CORRECTION (ft-lb) | 4.5 |
| NET TORQUE (ft-lb) | 82.1 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 767 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 10.2 |
| FRICTION CORRECTION (ft-lb) | 2.8 |
| NET TORQUE (ft-lb) | 7.4 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 69 |

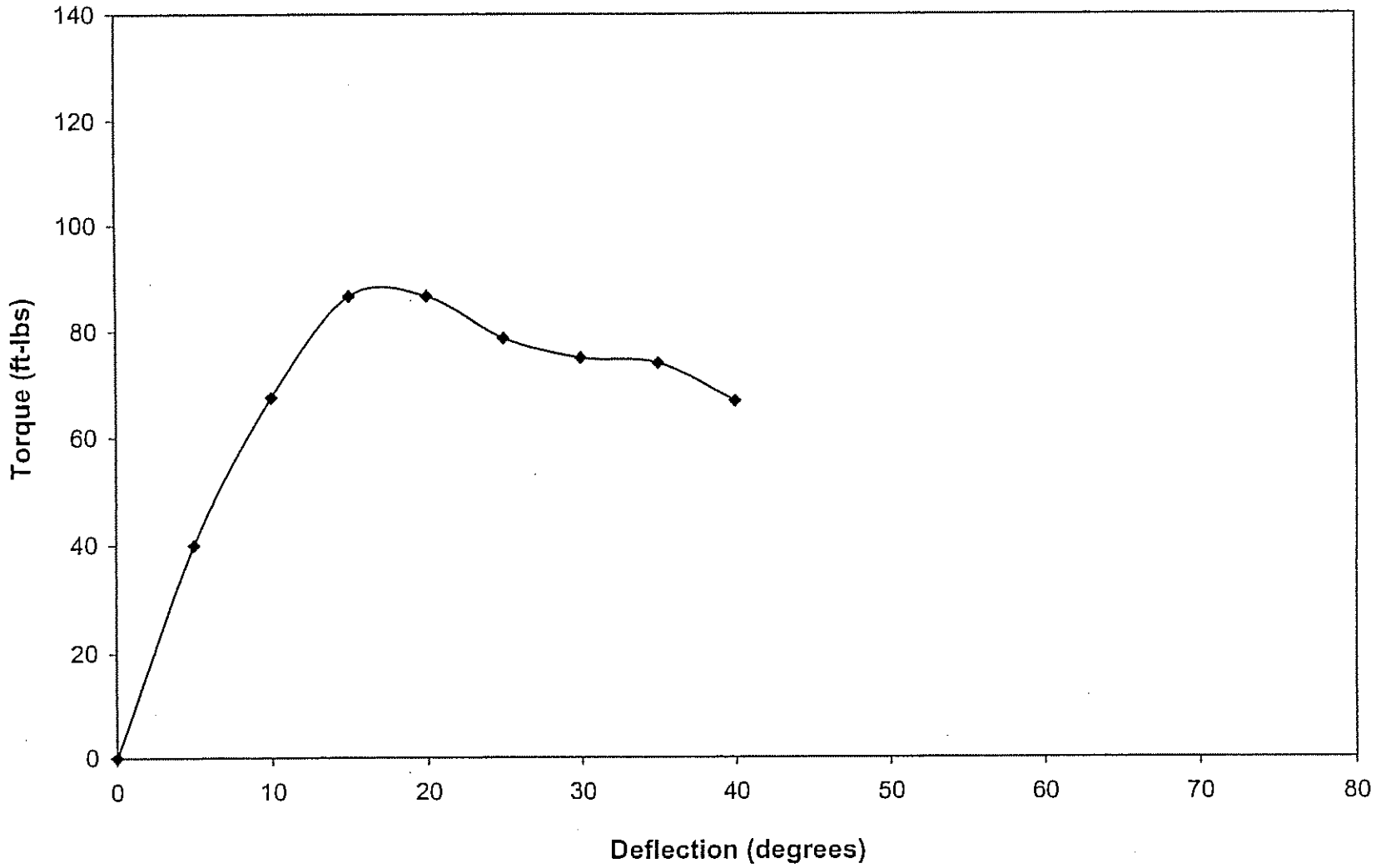
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S06**
**Vane #2: Depth = 46.7 ft., Elevation = -2.7 ft.**
**Undisturbed Condition**



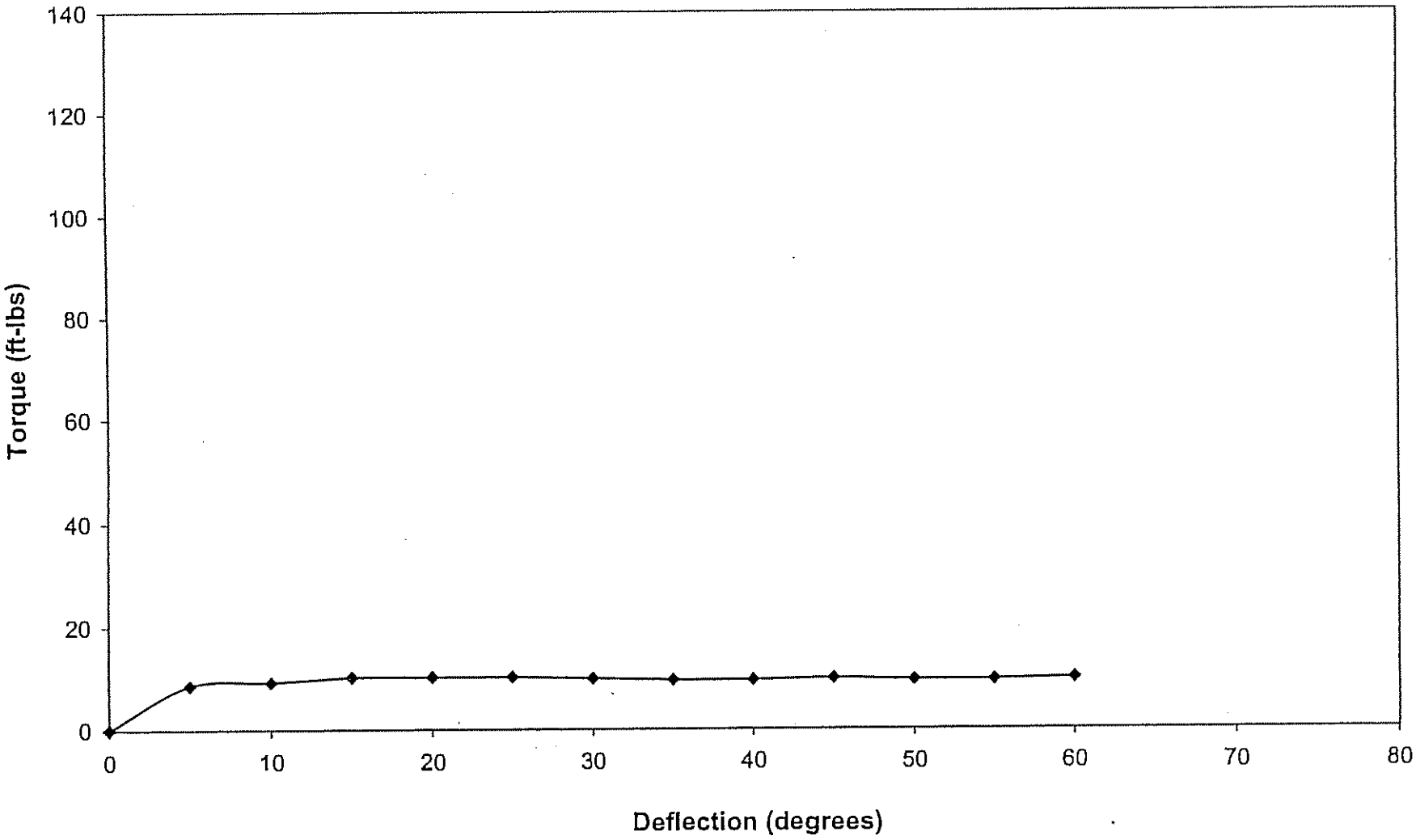

P1-02-S06 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S06**
**Vane #2: Depth = 46.7 ft., Elevation = -2.7 ft.**
**Remolded Condition**




P1-02-S06 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
' " 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 3-01-02 |
| TEST BORING DESIGNATION: | P1-02-S07 |
| VANE SHEAR TEST DESIGNATION: | VANE #1 |
| GROUND SURFACE ELEV. (ft): | 22.5 |
| DEPTH TO VANE TIP (ft) | 14.7 |
| ELEV. AT VANE TIP (ft): | 7.8 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 14 |
| MAXIMUM TORQUE (ft-lb) | 42.9 |
| FRICTION CORRECTION (ft-lb) | 2.4 |
| NET TORQUE (ft-lb) | 40.5 |
| K VALUE ($ft^3$): | 0.0351 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 1154 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 37 |
| MAXIMUM TORQUE (ft-lb) | 15.4 |
| FRICTION CORRECTION (ft-lb) | 1.8 |
| NET TORQUE (ft-lb) | 13.6 |
| K VALUE ($ft^3$): | 0.0351 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 387 |

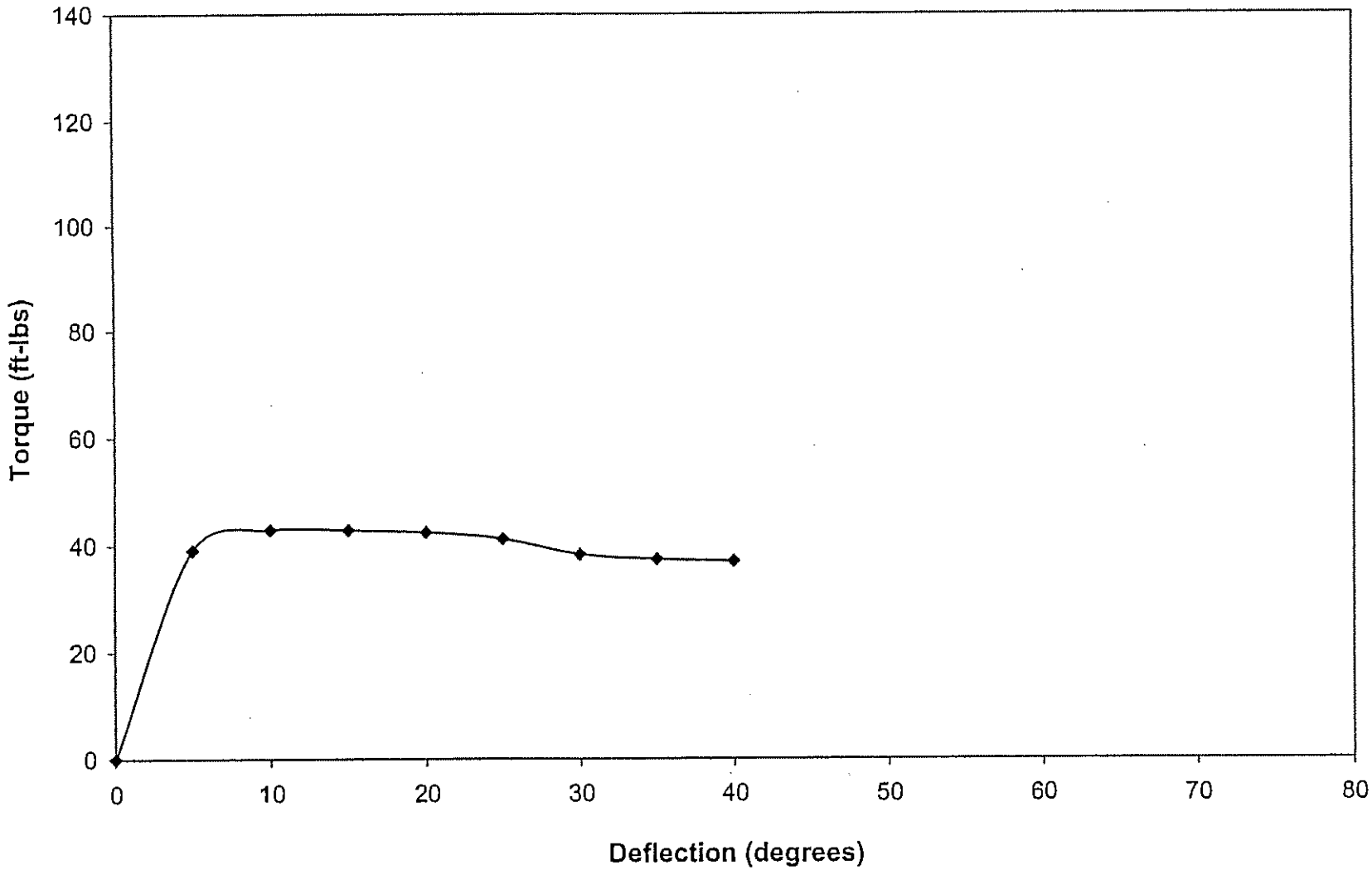
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S07**
**Vane #1: Depth = 14.7 ft., Elevation = 7.8 ft.**
**Undisturbed Condition**



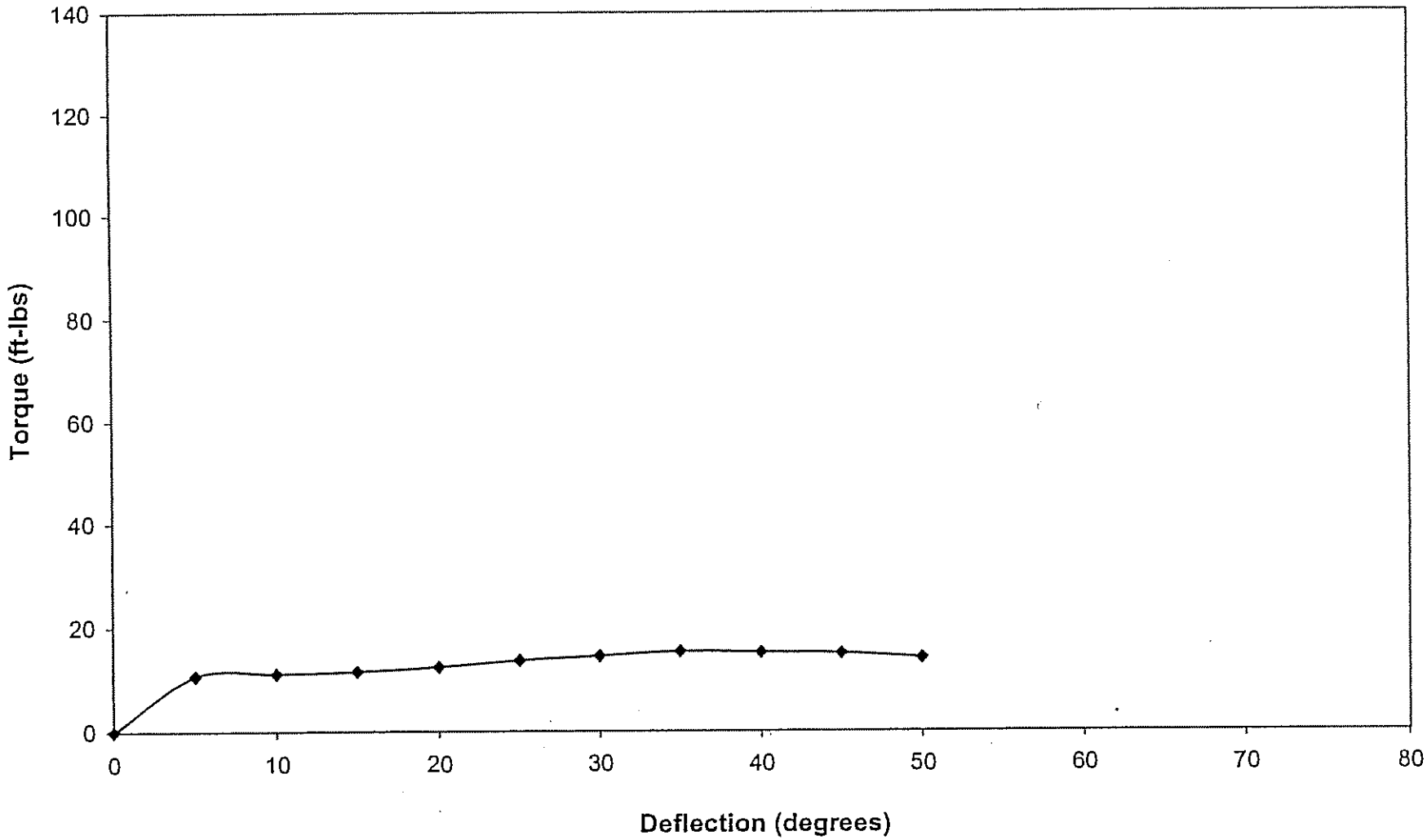

P1-02-S07 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
/ '002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S07**
**Vane #1: Depth = 14.7 ft., Elevation = 7.8 ft.**
**Remolded Condition**




P1-02-S07 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 3-01-02 |
| **TEST BORING DESIGNATION:** | **P1-02-S07** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #2** |
| GROUND SURFACE ELEV. (ft): | 22.5 |
| DEPTH TO VANE TIP (ft) | 36.5 |
| ELEV. AT VANE TIP (ft): | -14.0 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 40 |
| MAXIMUM TORQUE (ft-lb) | 10.8 |
| FRICTION CORRECTION (ft-lb) | 3.8 |
| NET TORQUE (ft-lb) | 7.0 |
| K VALUE ($ft^3$): | 0.0351 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **199** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 6.2 |
| FRICTION CORRECTION (ft-lb) | 2.5 |
| NET TORQUE (ft-lb) | 3.7 |
| K VALUE ($ft^3$): | 0.0351 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **105** |

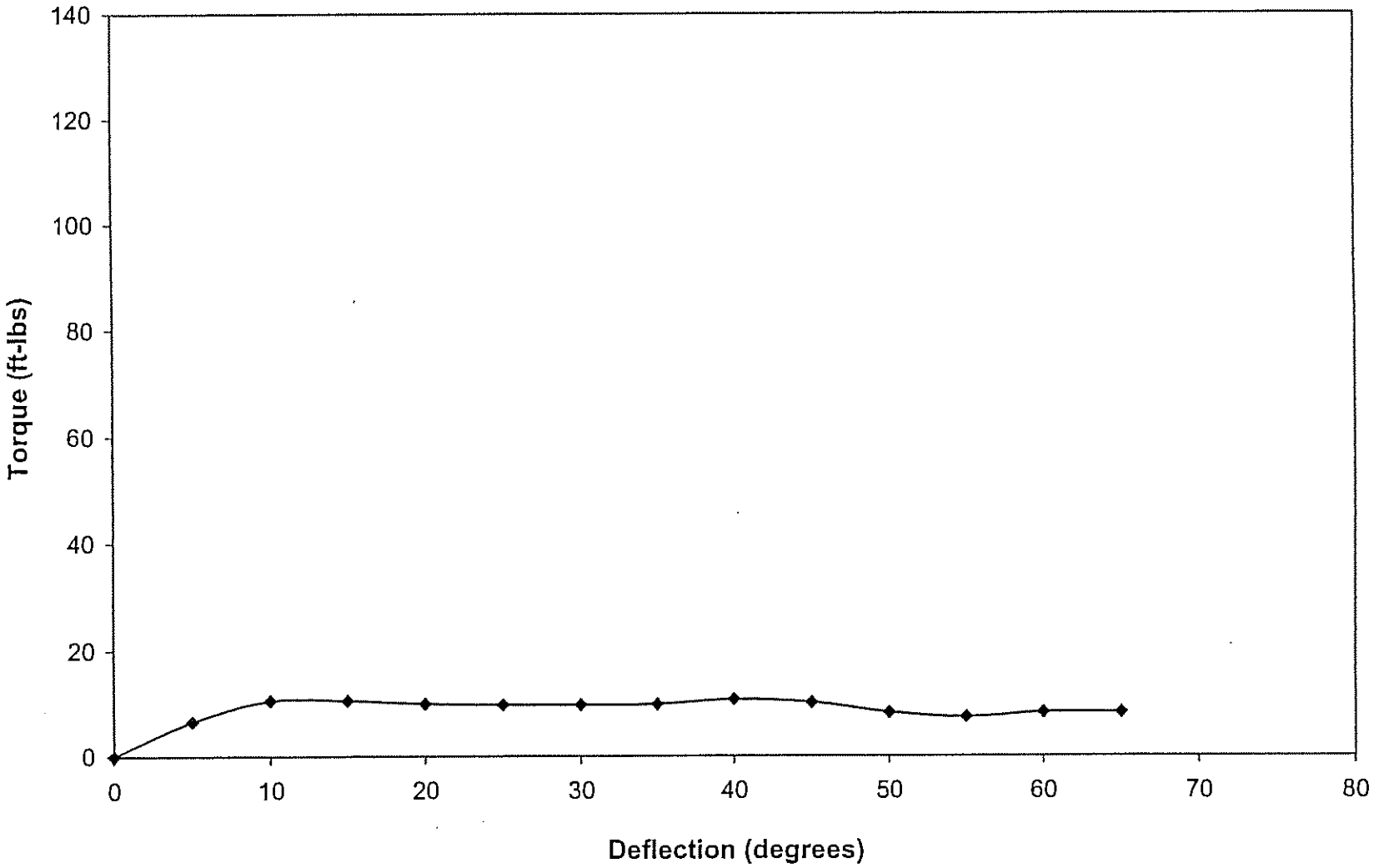
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S07**
**Vane #2: Depth = 36.5 ft., Elevation = -14.0 ft.**
**Undisturbed Condition**



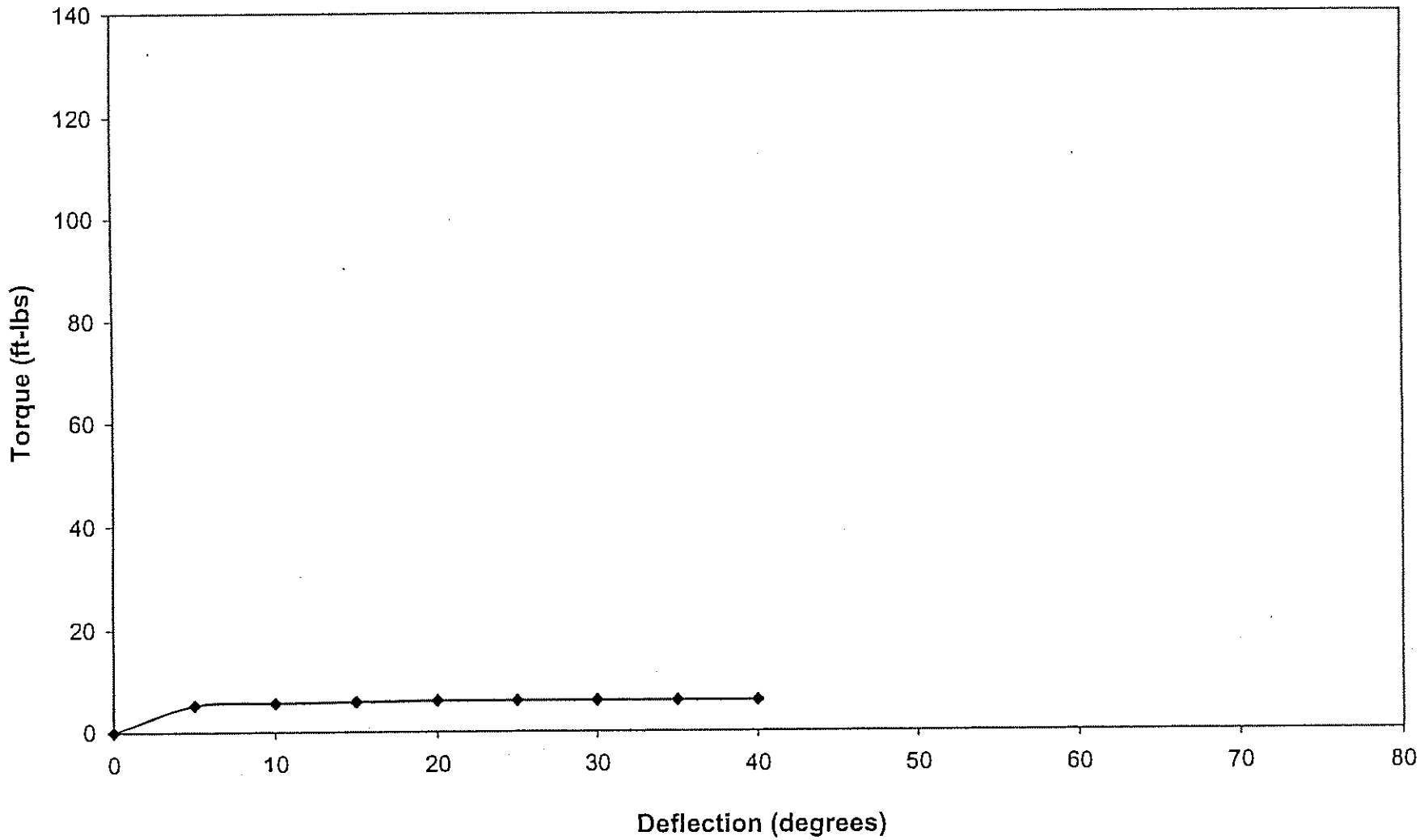

P1-02-S07 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S07**
**Vane #2: Depth = 36.5 ft., Elevation = -14.0 ft.**
**Remolded Condition**




P1-02-S07 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
/ 2002

# VANE SHEAR TEST REPORT

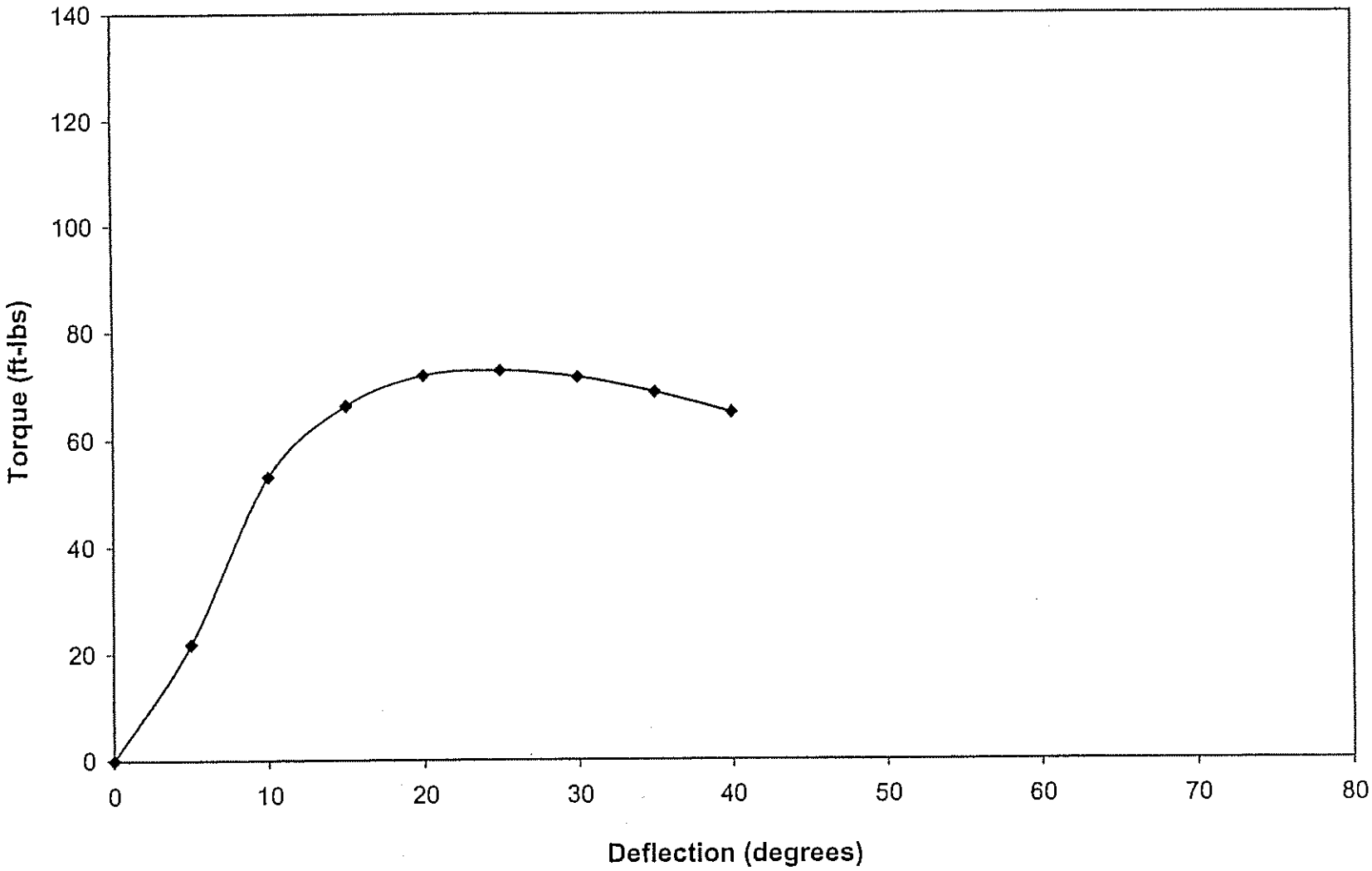
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION<br>4685.GC.03<br>WALTON CORPORATION/DAN TAYLOR<br>2-27-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P1-02-S08<br>VANE #1 |
| GROUND SURFACE ELEV. (ft): | 20.0 |
| DEPTH TO VANE TIP (ft) | 24.7 |
| ELEV. AT VANE TIP (ft): | -4.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 28 |
| MAXIMUM TORQUE (ft-lb) | 72.8 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 69.7 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 651 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 8 |
| DEGREES ROTATION AT FAILURE: | 50 |
| MAXIMUM TORQUE (ft-lb) | 7.7 |
| FRICTION CORRECTION (ft-lb) | 1.8 |
| NET TORQUE (ft-lb) | 5.9 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 55 |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S08**
**Vane #1: Depth = 14.7 ft., Elevation = -4.7 ft.**
**Undisturbed Condition**



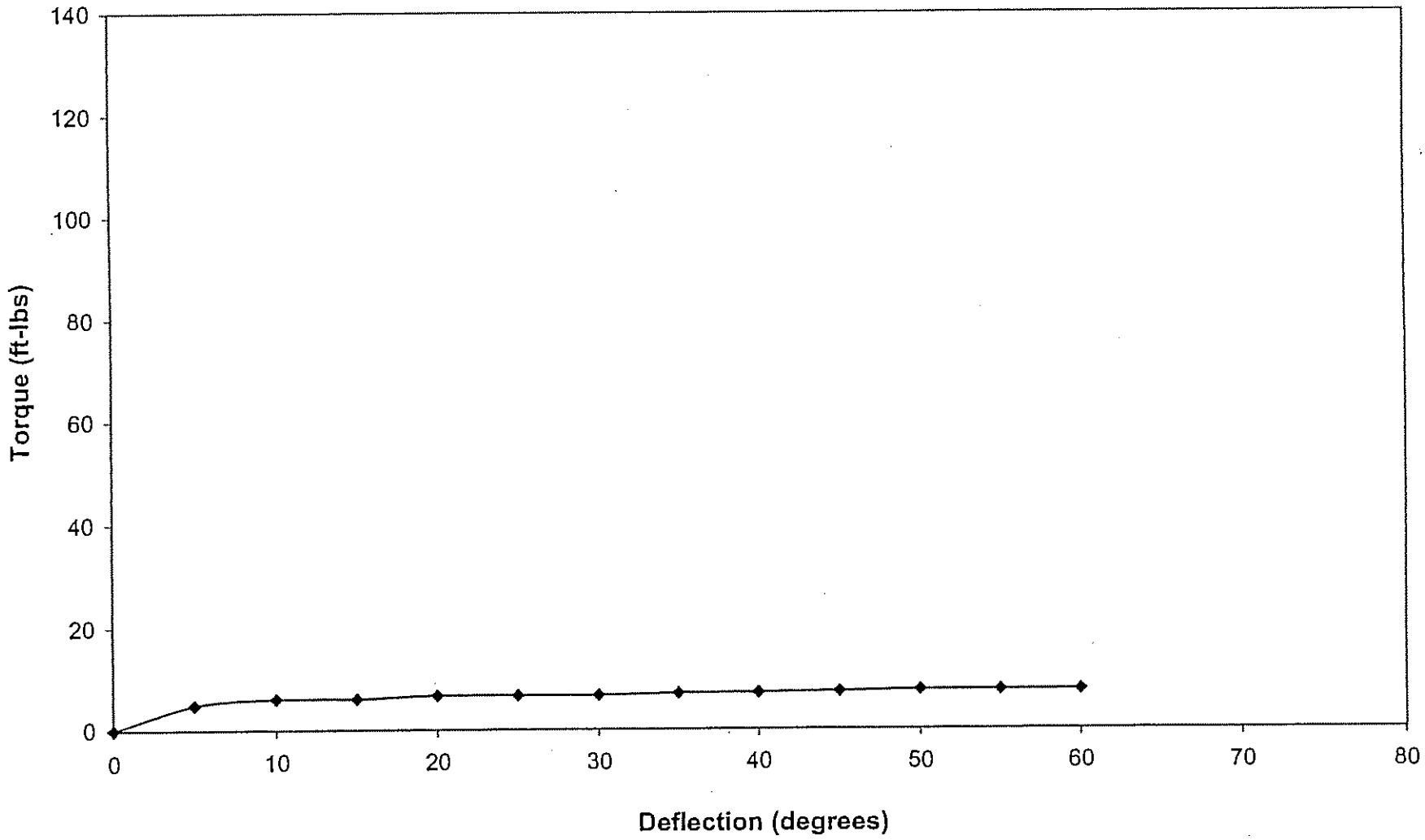

P1-02-S08 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
/ 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S08**
**Vane #1: Depth = 24.7 ft., Elevation = -4.7 ft.**
**Remolded Condition**




P1-02-S08 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

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|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-27-02 |
| **TEST BORING DESIGNATION:** | **P1-02-S08** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #2** |
| GROUND SURFACE ELEV. (ft): | 20.0 |
| DEPTH TO VANE TIP (ft) | 76.5 |
| ELEV. AT VANE TIP (ft): | -56.5 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 24 |
| MAXIMUM TORQUE (ft-lb) | 63.0 |
| FRICTION CORRECTION (ft-lb) | 6.5 |
| NET TORQUE (ft-lb) | 56.5 |
| K VALUE ($ft^3$): | 0.0180 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **3139** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 22 |
| MAXIMUM TORQUE (ft-lb) | 39.2 |
| FRICTION CORRECTION (ft-lb) | 3.6 |
| NET TORQUE (ft-lb) | 35.6 |
| K VALUE ($ft^3$): | 0.0180 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **1978** |

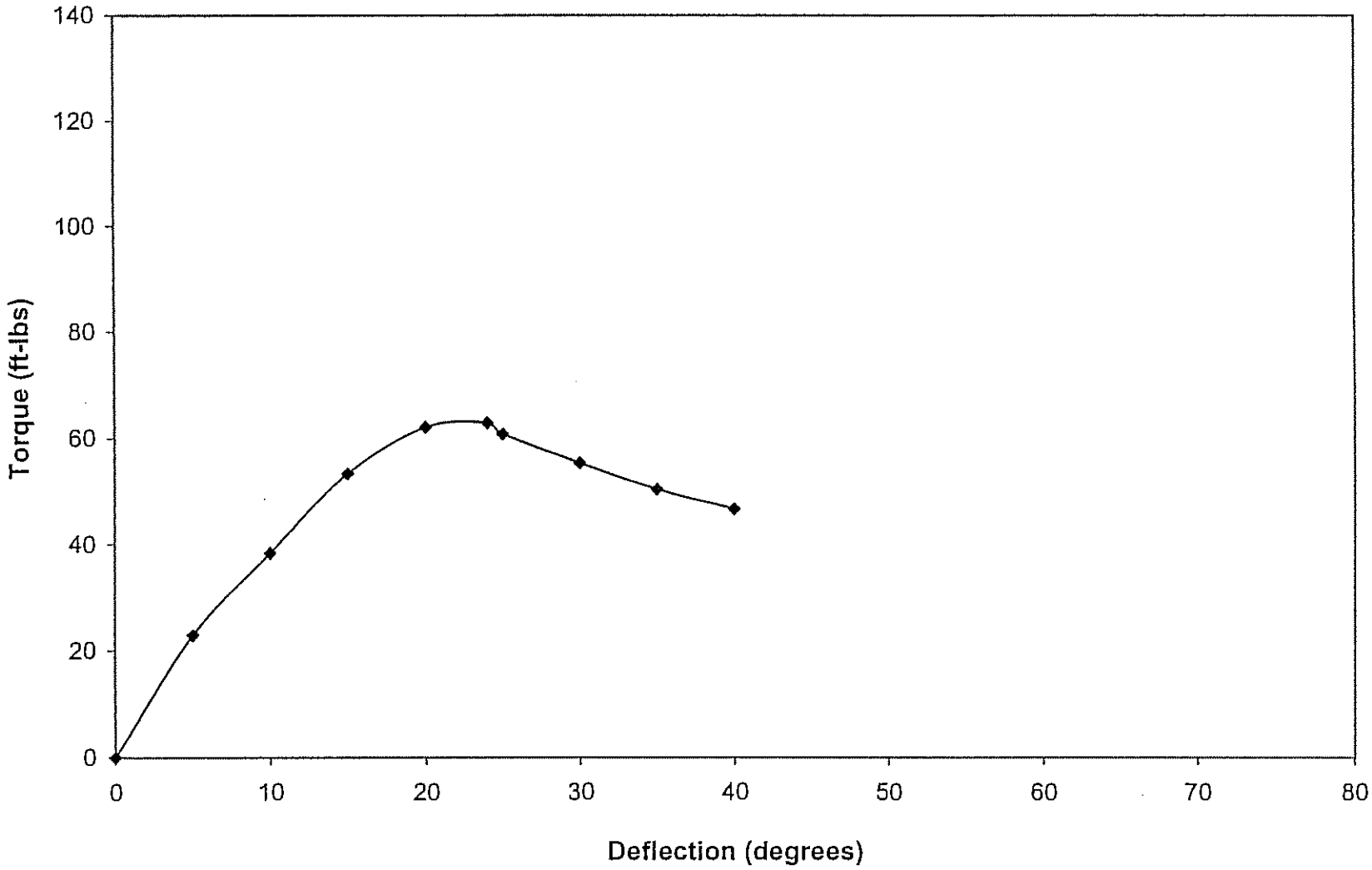
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S08**
**Vane #2: Depth = 76.5 ft., Elevation = -56.5 ft.**
**Undisturbed Condition**



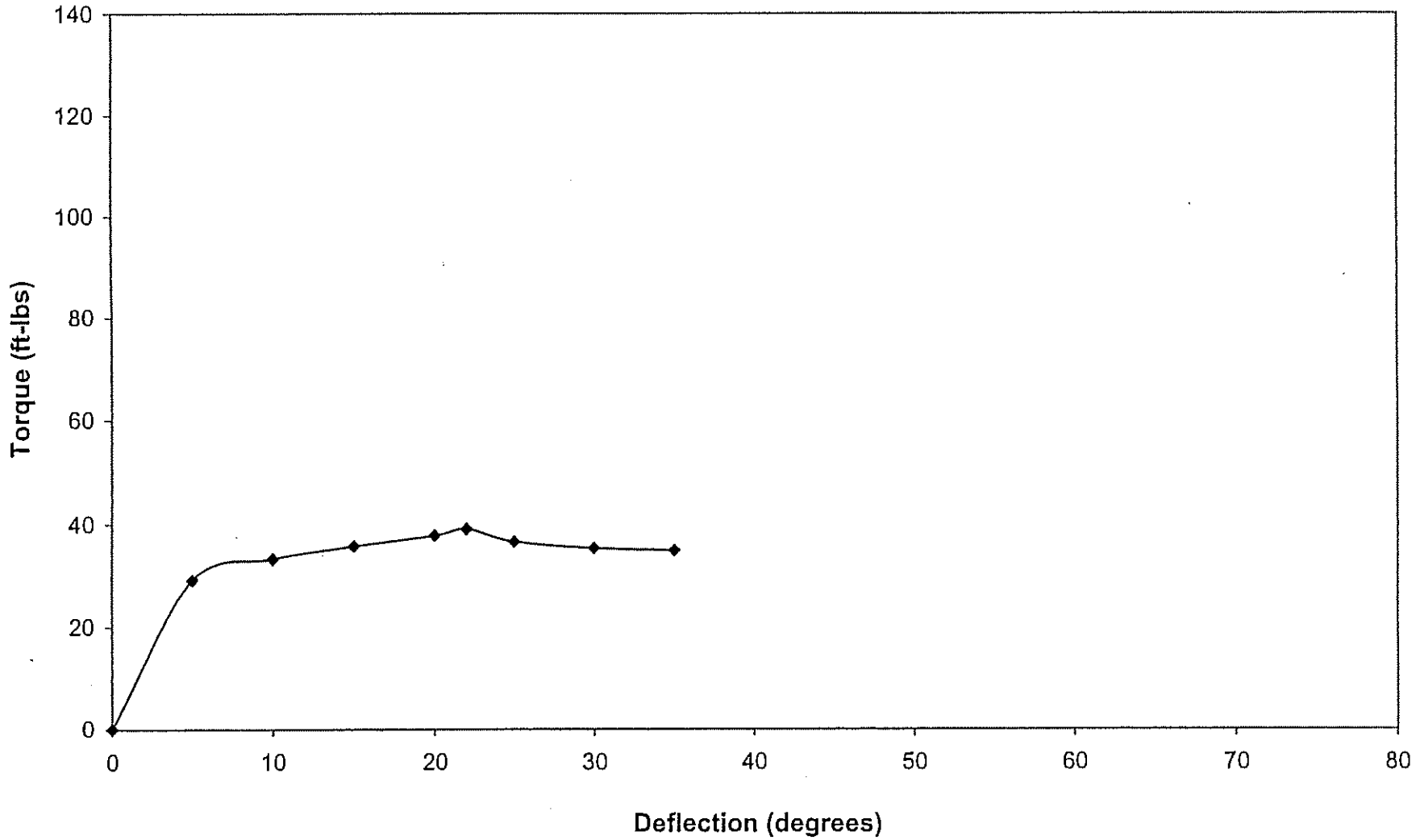

P1-02-S08 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S08**
**Vane #2: Depth = 76.5 ft., Elevation = -56.5 ft.**
**Remolded Condition**




P1-02-S08 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
A· ·2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-25-02 |
| TEST BORING DESIGNATION: | P1-02-S11 |
| VANE SHEAR TEST DESIGNATION: | VANE #1 |
| GROUND SURFACE ELEV. (ft): | 22.5 |
| DEPTH TO VANE TIP (ft) | 24.7 |
| ELEV. AT VANE TIP (ft): | -2.2 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 11 |
| MAXIMUM TORQUE (ft-lb) | 11.6 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 8.5 |
| K VALUE ($ft^3$): | 0.0351 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 242 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 40 |
| MAXIMUM TORQUE (ft-lb) | 2.8 |
| FRICTION CORRECTION (ft-lb) | 2.2 |
| NET TORQUE (ft-lb) | 0.6 |
| K VALUE ($ft^3$): | 0.0351 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 17 |

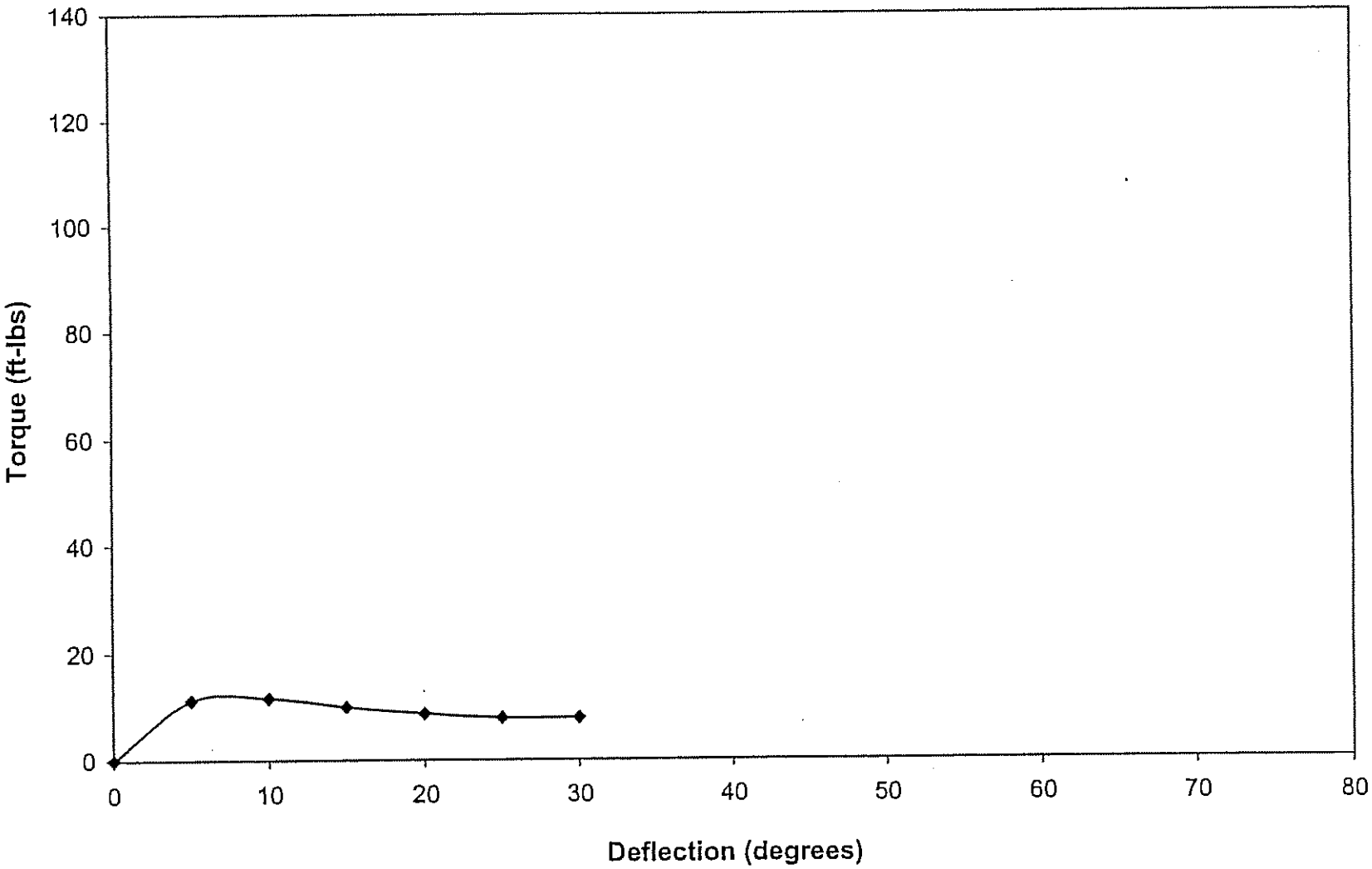
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S11**
**Vane #1: Depth = 24.7 ft., Elevation = -2.2 ft.**
**Undisturbed Condition**



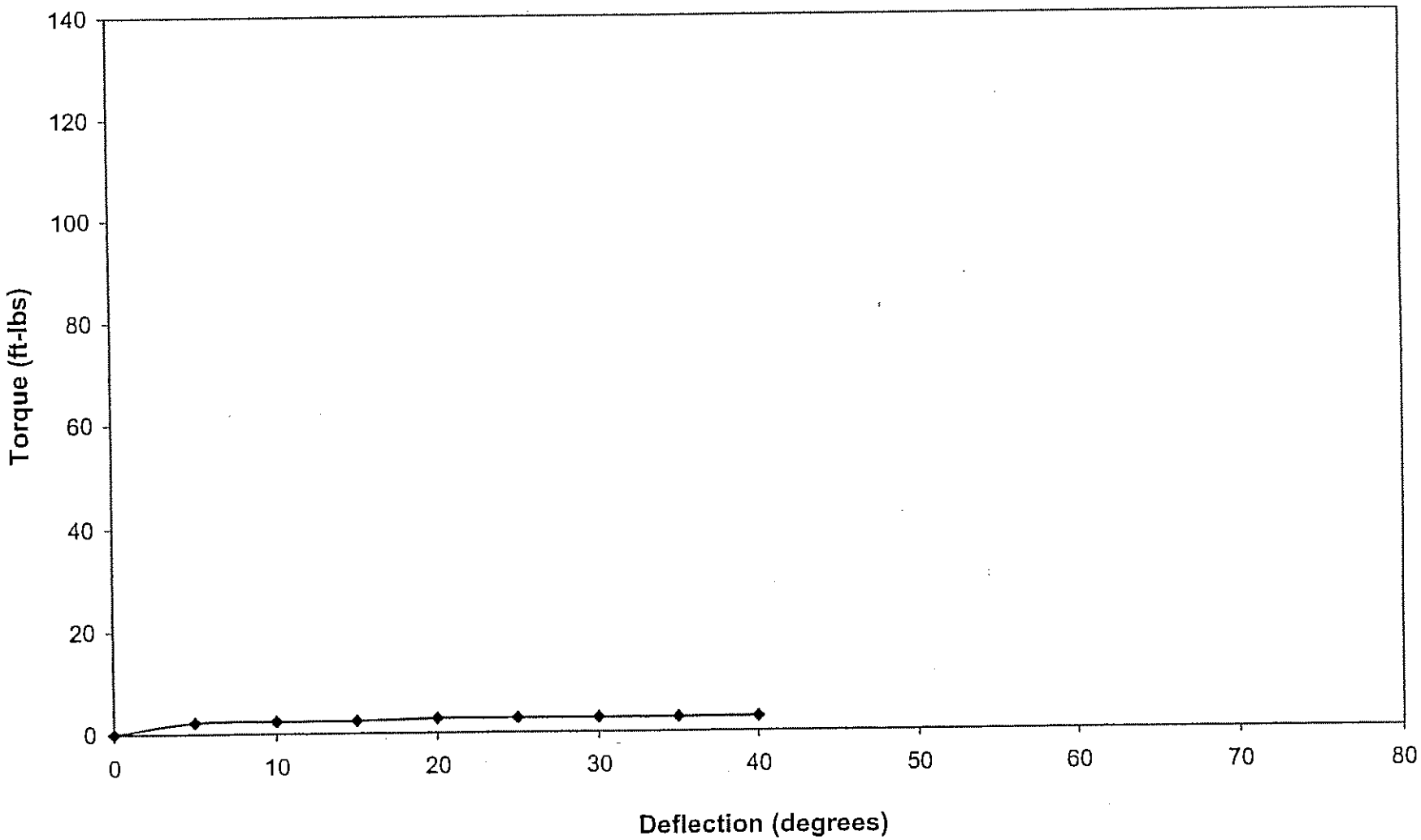

P1-02-S11 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
A 002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S11**
**Vane #1: Depth = 24.7 ft., Elevation = -2.2 ft.**
**Remolded Condition**




P1-02-S11 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

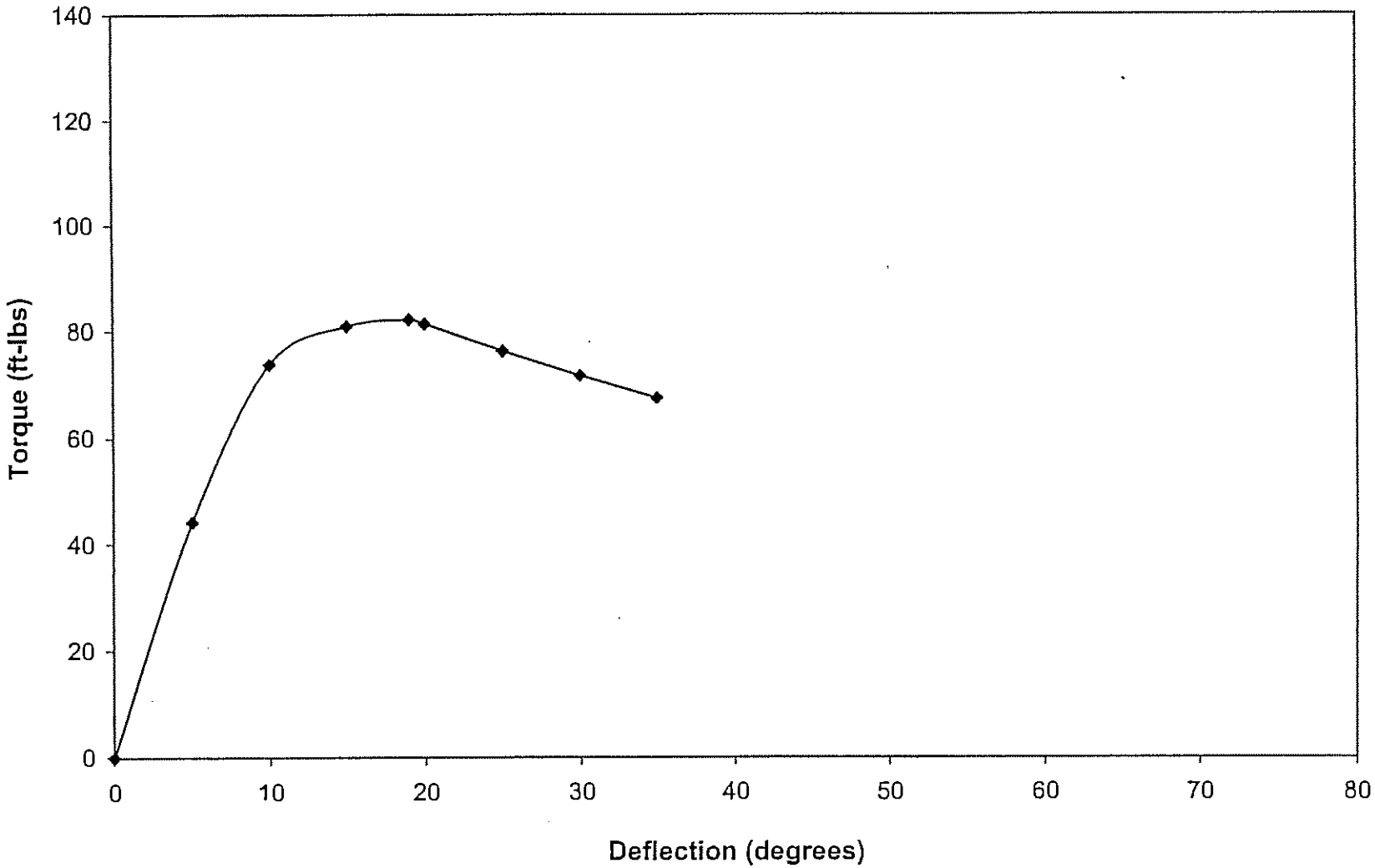
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-25-02 |
| TEST BORING DESIGNATION: | P1-02-S11 |
| VANE SHEAR TEST DESIGNATION: | VANE #2 |
| GROUND SURFACE ELEV. (ft): | 22.5 |
| DEPTH TO VANE TIP (ft) | 34.7 |
| ELEV. AT VANE TIP (ft): | -12.2 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 17 |
| MAXIMUM TORQUE (ft-lb) | 82.2 |
| FRICTION CORRECTION (ft-lb) | 3.7 |
| NET TORQUE (ft-lb) | 78.5 |
| K VALUE ($ft^3$): | 0.0351 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **2236** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 22 |
| MAXIMUM TORQUE (ft-lb) | 16.8 |
| FRICTION CORRECTION (ft-lb) | 2.5 |
| NET TORQUE (ft-lb) | 14.3 |
| K VALUE ($ft^3$): | 0.0351 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **407** |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S11**
**Vane #2: Depth = 34.7 ft., Elevation = -12.2 ft.**
**Undisturbed Condition**



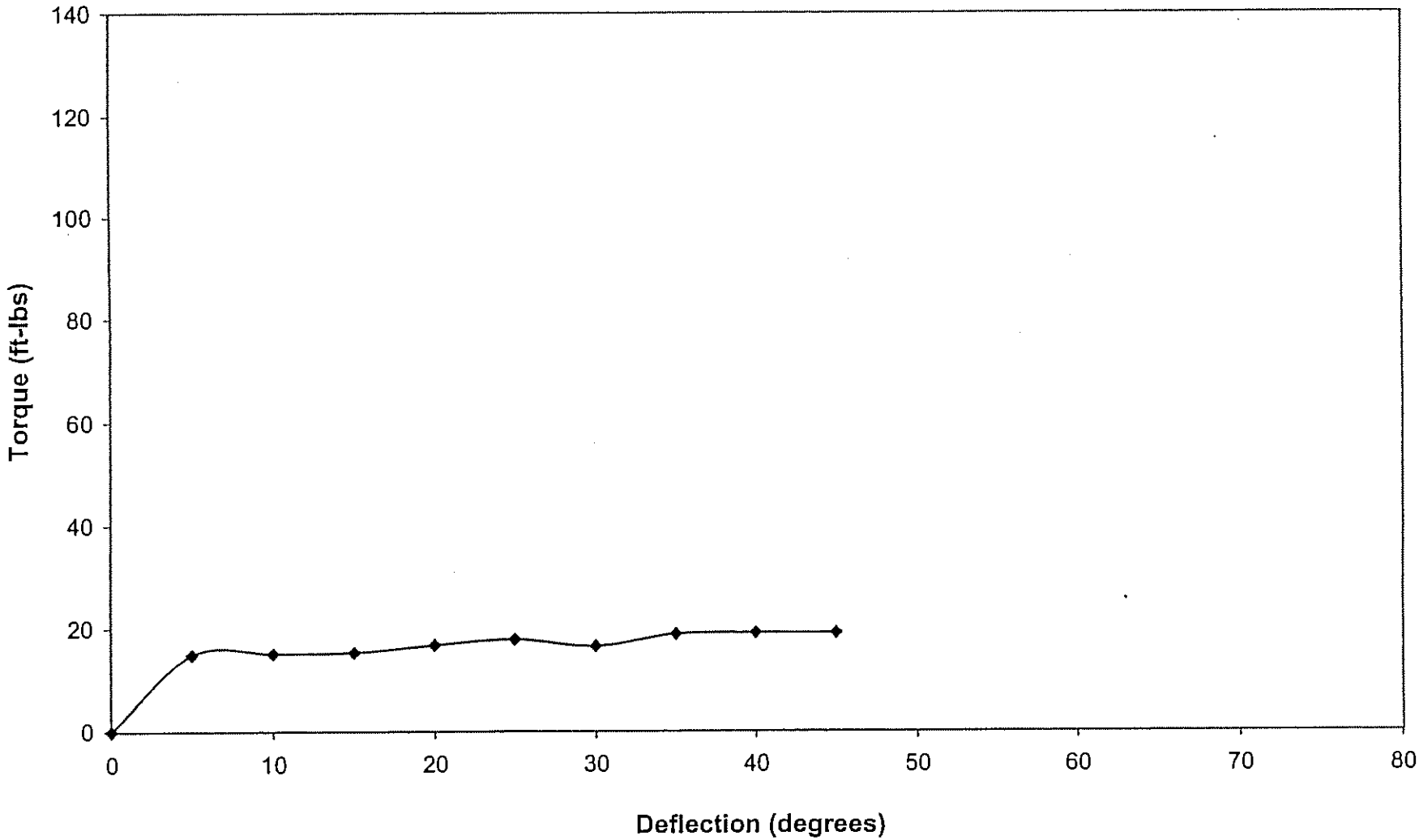

P1-02-S11 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P1-02-S11**
**Vane #2: Depth = 34.7 ft., Elevation = -12.2 ft.**
**Remolded Condition**




P1-02-S11 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
A 702

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-19-02 |
| TEST BORING DESIGNATION: | P3-02-S01(A) |
| VANE SHEAR TEST DESIGNATION: | VANE #1A |
| GROUND SURFACE ELEV. (ft): | 24.0 |
| DEPTH TO VANE TIP (ft) | 14.7 |
| ELEV. AT VANE TIP (ft): | 9.3 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 8 |
| DEGREES ROTATION AT FAILURE: | 45 |
| MAXIMUM TORQUE (ft-lb) | 38.1 |
| FRICTION CORRECTION (ft-lb) | 2.4 |
| NET TORQUE (ft-lb) | 35.7 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 333 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 10 |
| MAXIMUM TORQUE (ft-lb) | 8.6 |
| FRICTION CORRECTION (ft-lb) | 1.8 |
| NET TORQUE (ft-lb) | 6.8 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 64 |

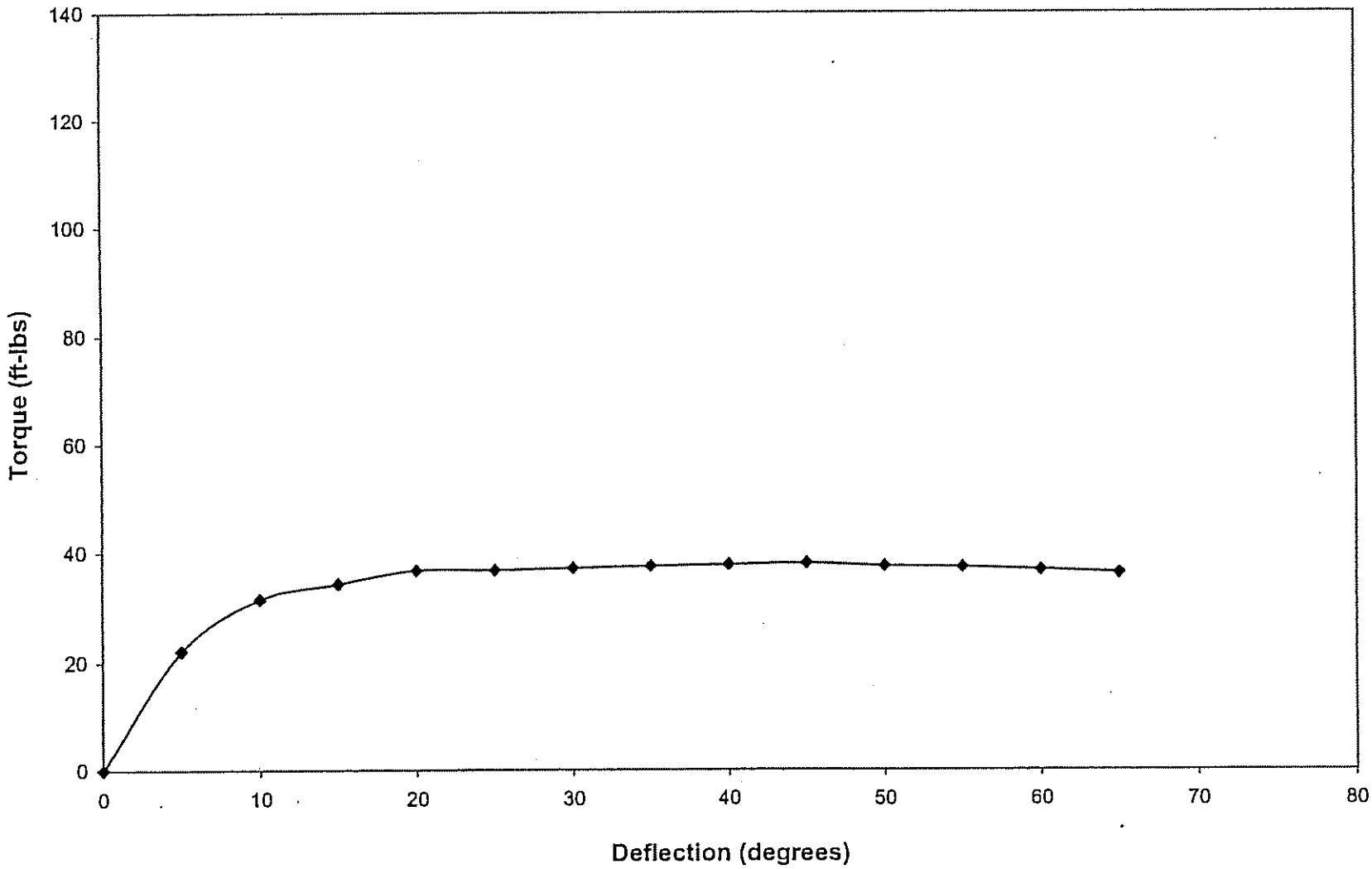
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01A**
**Vane #1A: Depth = 14.7 ft., Elevation = 9.3 ft.**
**Undisturbed Condition**




P3-02-S01A Vane #1A

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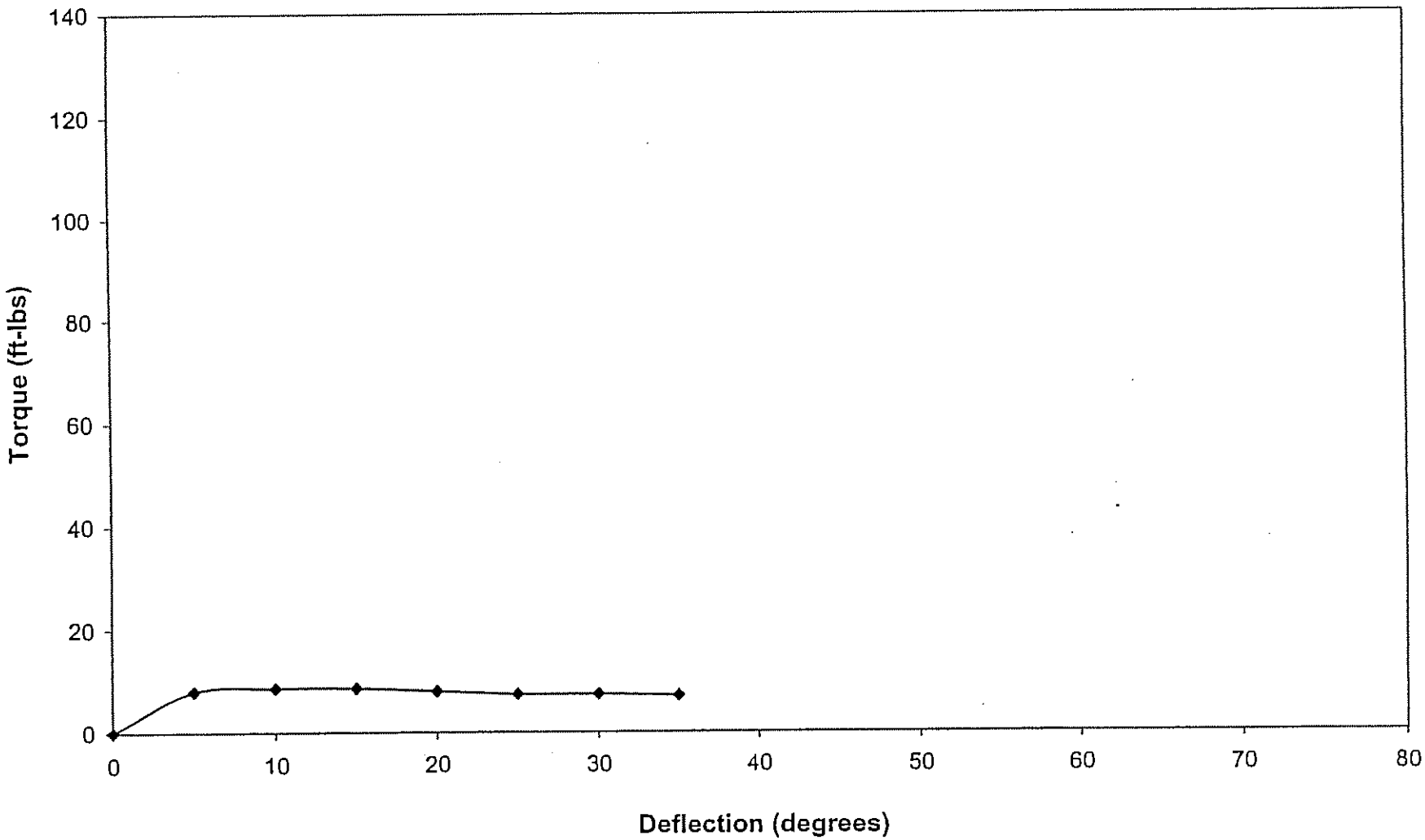
CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01A**
**Vane #1A: Depth = 14.7 ft., Elevation = 9.3 ft.**
**Remolded Condition**




P3-02-S01A Vane #1A

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

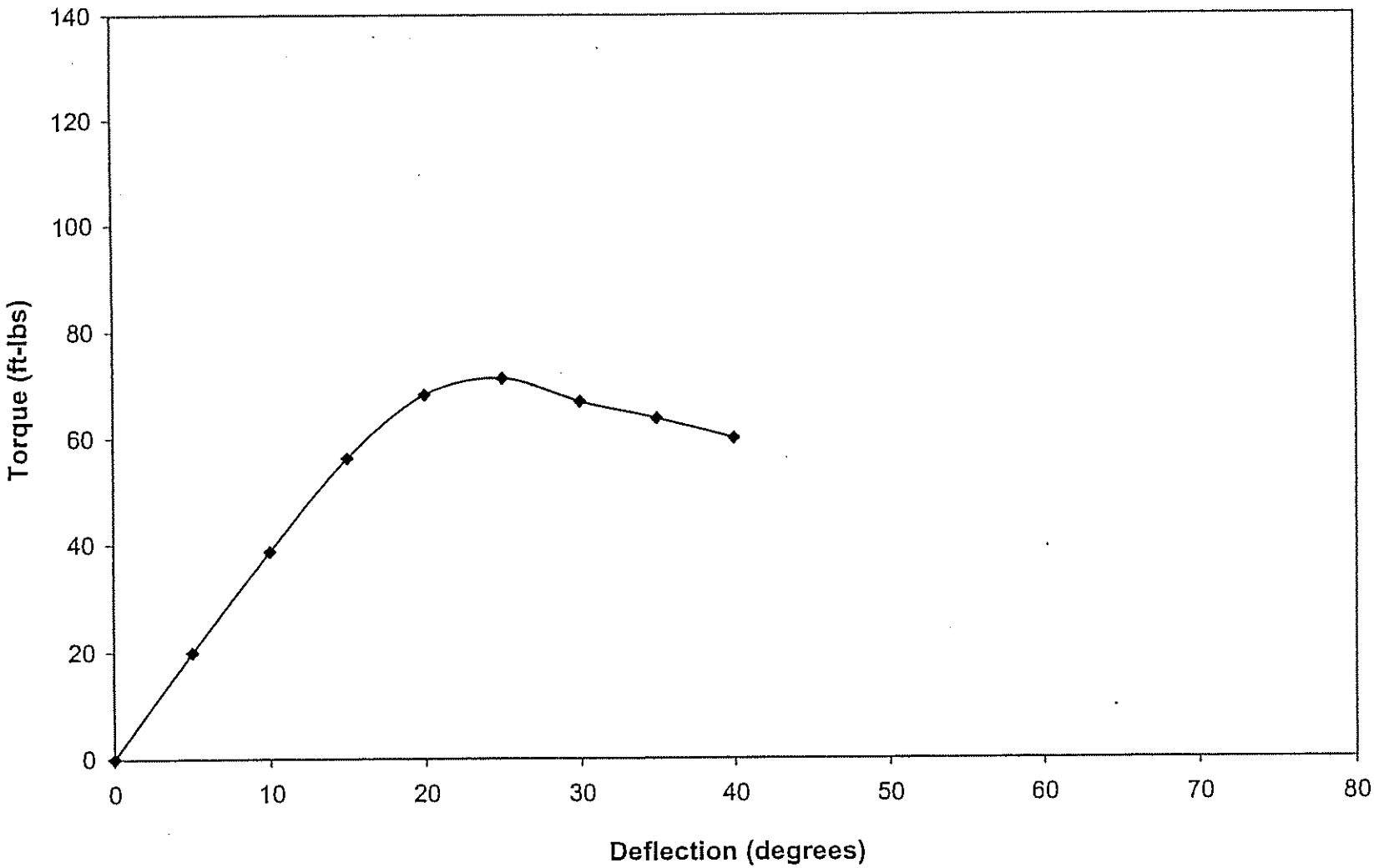
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-19-02 |
| **TEST BORING DESIGNATION:** | **P3-02-S01(A)** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #2A** |
| GROUND SURFACE ELEV. (ft): | 24.0 |
| DEPTH TO VANE TIP (ft) | 24.7 |
| ELEV. AT VANE TIP (ft): | -0.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 71.2 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 68.1 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **636** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 1 |
| DEGREES ROTATION AT FAILURE: | 5 |
| MAXIMUM TORQUE (ft-lb) | 26.1 |
| FRICTION CORRECTION (ft-lb) | 2.2 |
| NET TORQUE (ft-lb) | 23.9 |
| K VALUE ($ft^3$): | 0.1071 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **223** |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01A**
**Vane #2A: Depth = 24.7 ft., Elevation = -0.7 ft.**
**Undisturbed Condition**




P3-02-S01A Vane #2A

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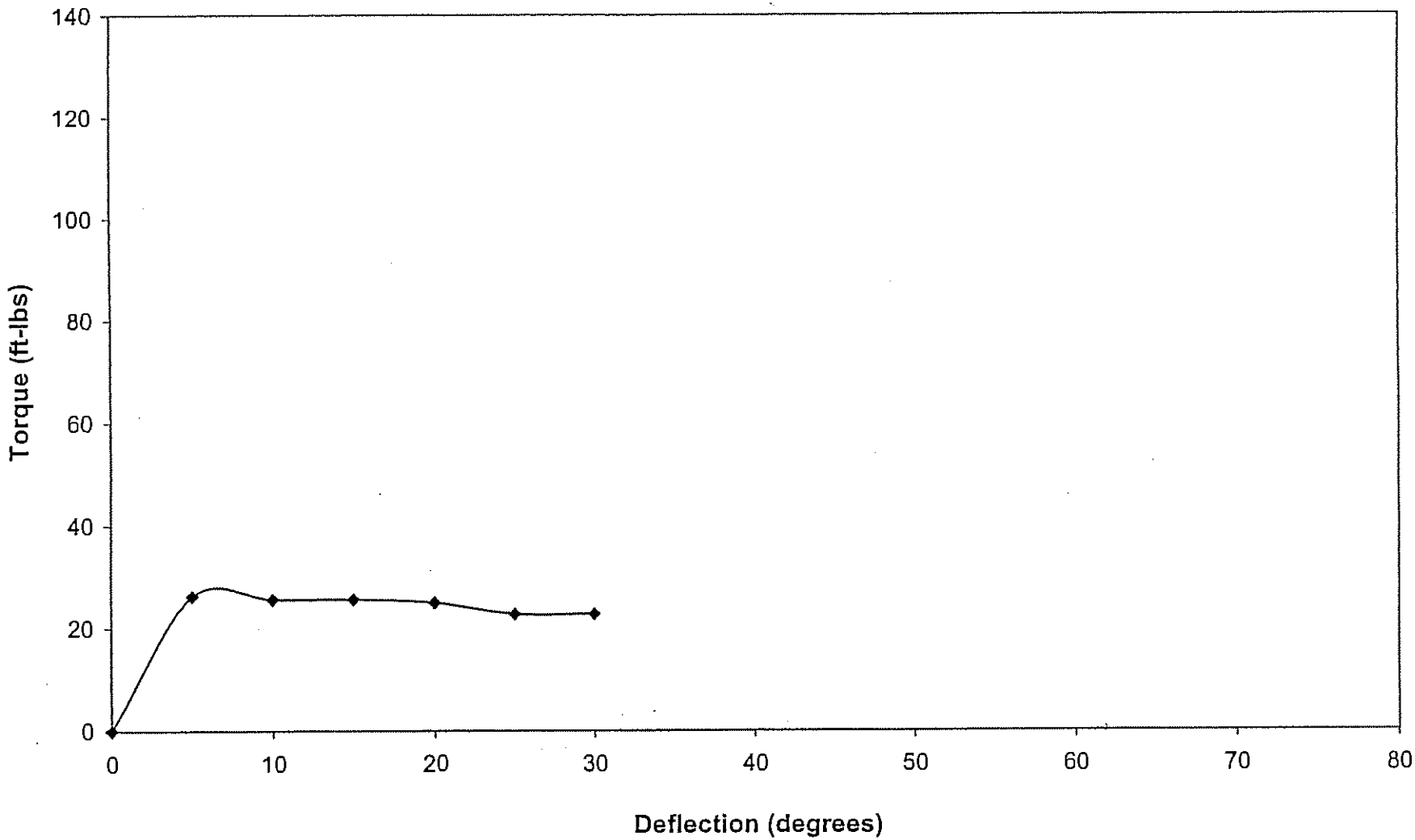
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01A**
**Vane #2A: Depth = 24.7 ft., Elevation = -0.7 ft.**
**Remolded Condition**




P3-02-S01A Vane #2A

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/ 002

# VANE SHEAR TEST REPORT

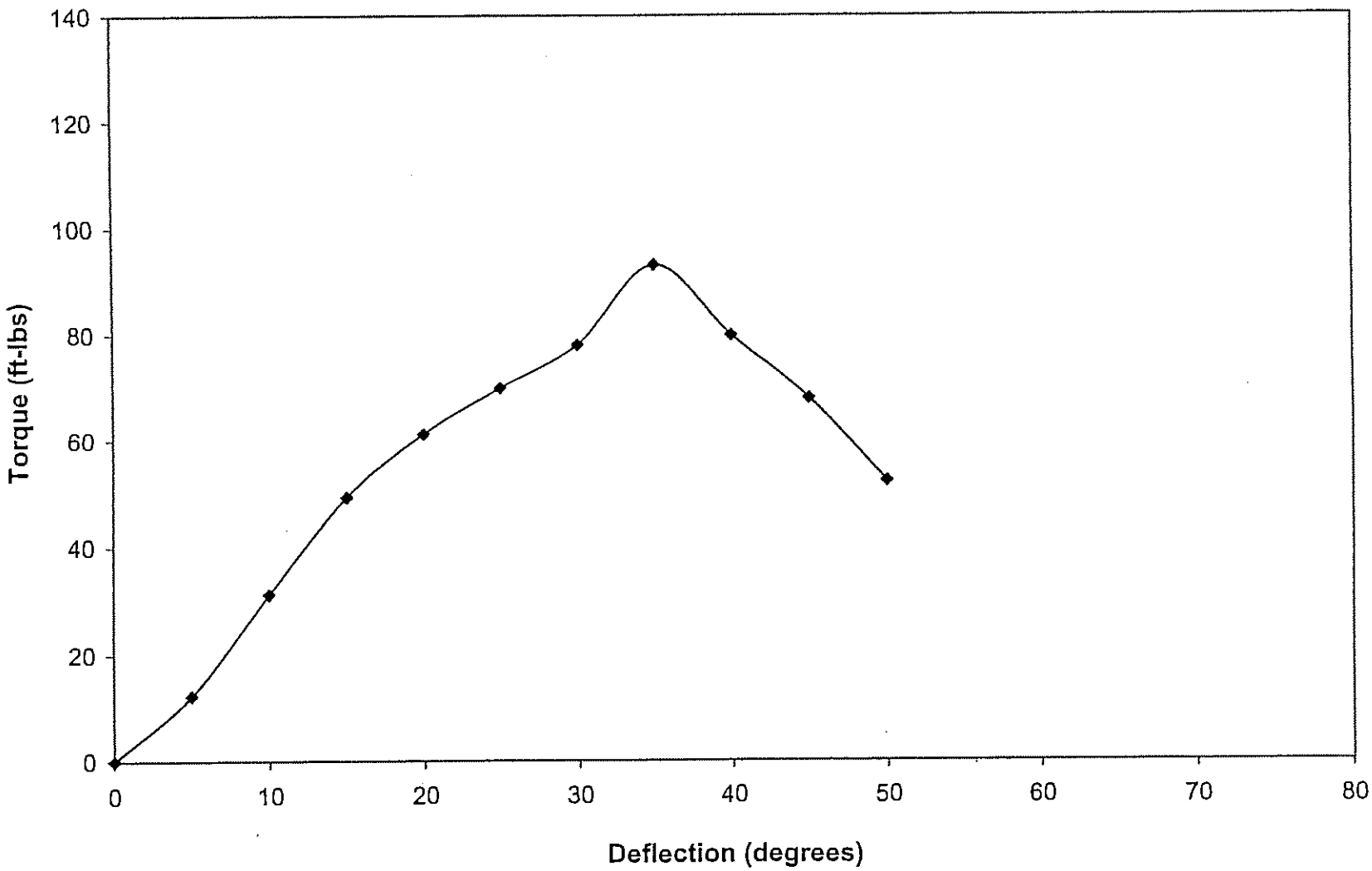
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-15-02 |
| **TEST BORING DESIGNATION:** | **P3-02-S01** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #3** |
| GROUND SURFACE ELEV. (ft): | 24.0 |
| DEPTH TO VANE TIP (ft) | 44.7 |
| ELEV. AT VANE TIP (ft): | -20.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 93.2 |
| FRICTION CORRECTION (ft-lb) | 4.4 |
| NET TORQUE (ft-lb) | 88.8 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **829** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 7 |
| DEGREES ROTATION AT FAILURE: | 45 |
| MAXIMUM TORQUE (ft-lb) | 26.1 |
| FRICTION CORRECTION (ft-lb) | 2.8 |
| NET TORQUE (ft-lb) | 23.3 |
| K VALUE ($ft^3$): | 0.1071 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **218** |

NOTES:
1. Friction corrections from curves developed based on the results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01**
**Vane #3: Depth = 44.7 ft., Elevation = -20.7 ft.**
**Undisturbed Condition**




P3-02-S01 Vane #3

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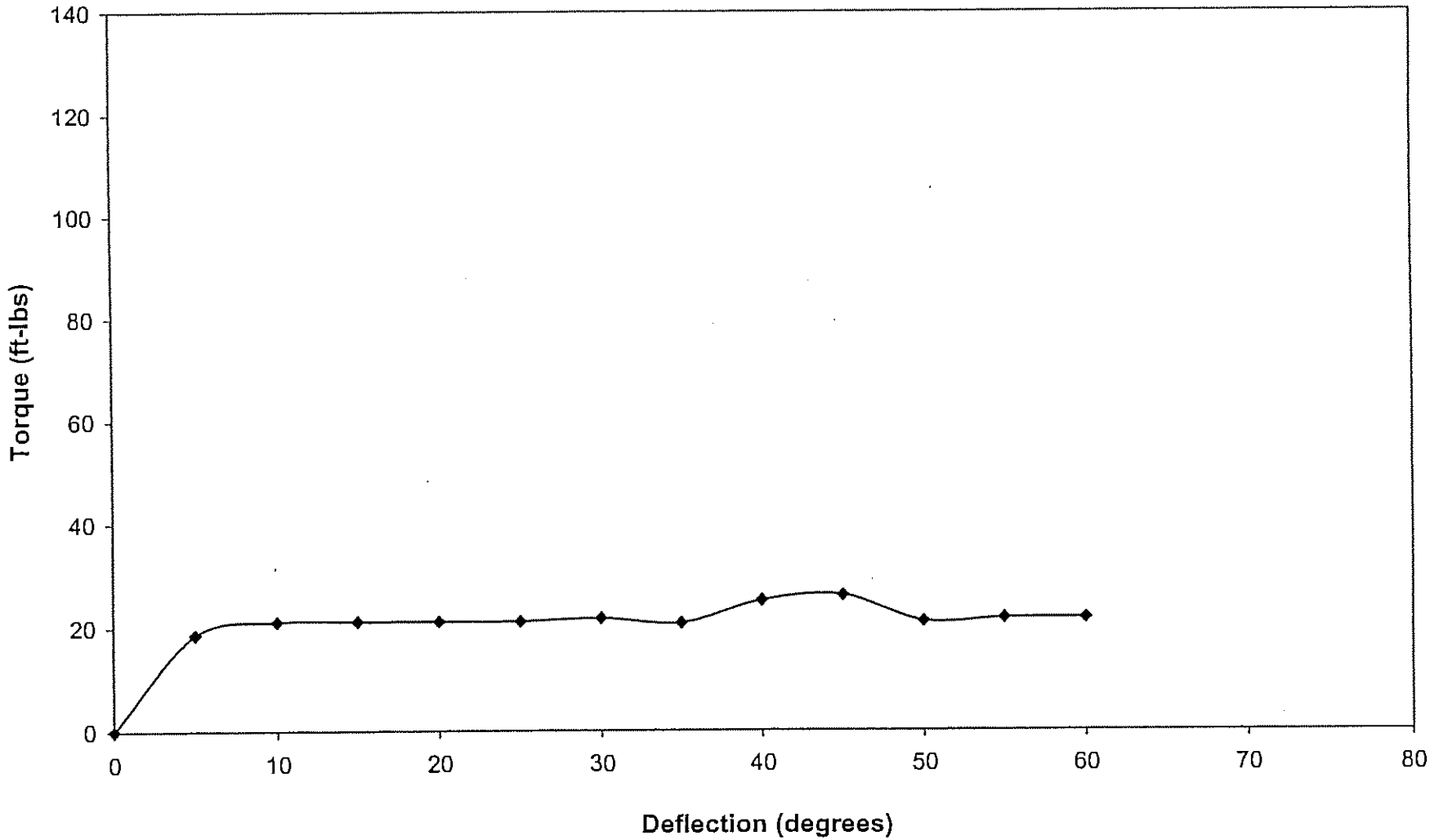
CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01**
**Vane #3: Depth = 44.7 ft., Elevation = -20.7 ft.**
**Remolded Condition**




P3-02-S01 Vane #3

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Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION<br>4685.GC.03<br>WALTON CORPORATION/DAN TAYLOR<br>2-16-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P3-02-S01<br>VANE #4 |
| GROUND SURFACE ELEV. (ft): | 24.0 |
| DEPTH TO VANE TIP (ft) | 75.7 |
| ELEV. AT VANE TIP (ft): | -51.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 8 |
| DEGREES ROTATION AT FAILURE: | 50 |
| MAXIMUM TORQUE (ft-lb) | 41.23 |
| FRICTION CORRECTION (ft-lb) | 6.4 |
| NET TORQUE (ft-lb) | 34.8 |
| K VALUE ($ft^3$): | .0351 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 992 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 9.1 |
| FRICTION CORRECTION (ft-lb) | 3.6 |
| NET TORQUE (ft-lb) | 5.5 |
| K VALUE ($ft^3$): | 0.0351 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 157 |

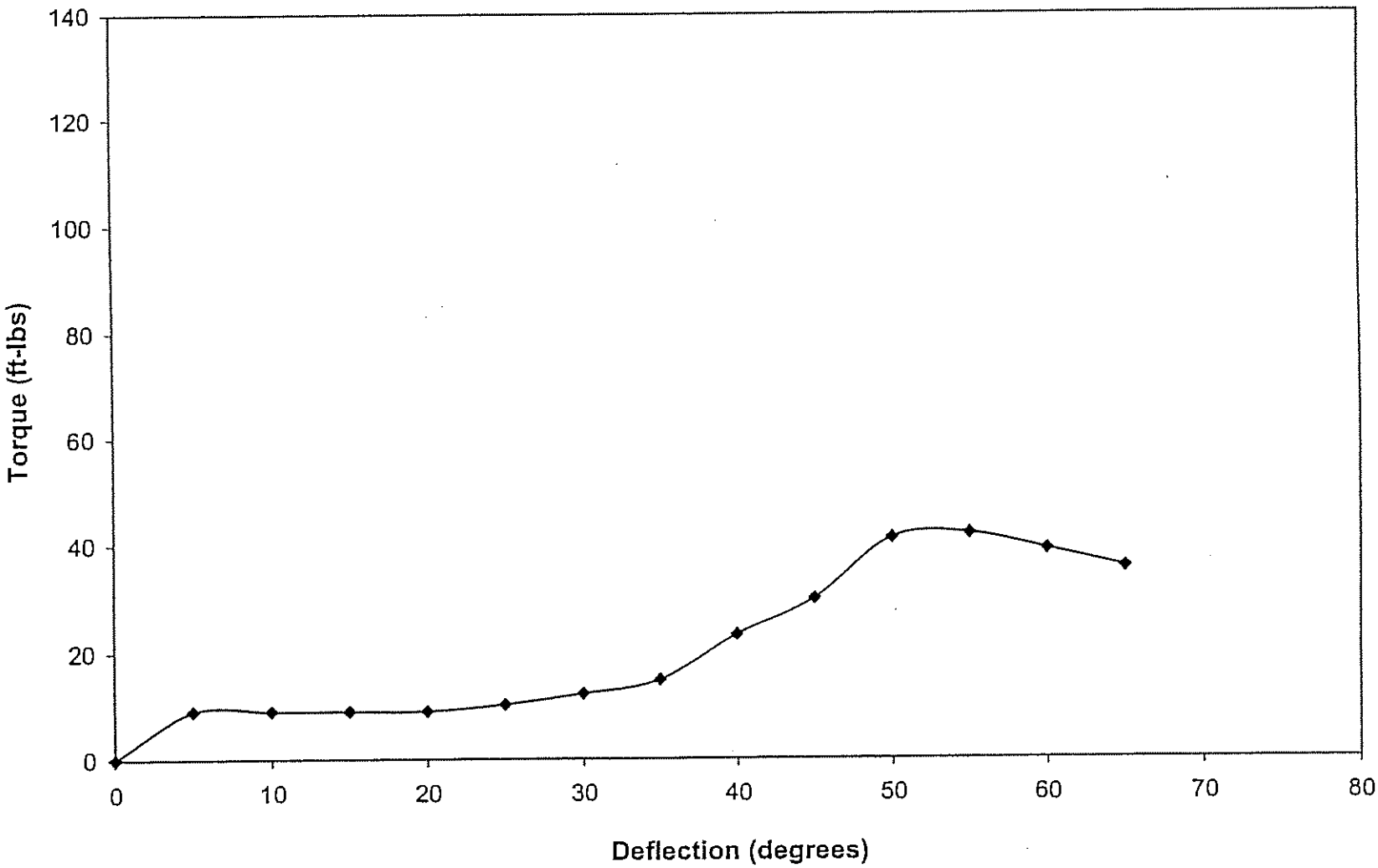
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01**
**Vane #4: Depth = 75.7 ft., Elevation = -51.7 ft.**
**Undisturbed Condition**




P3-02-S01 Vane #4

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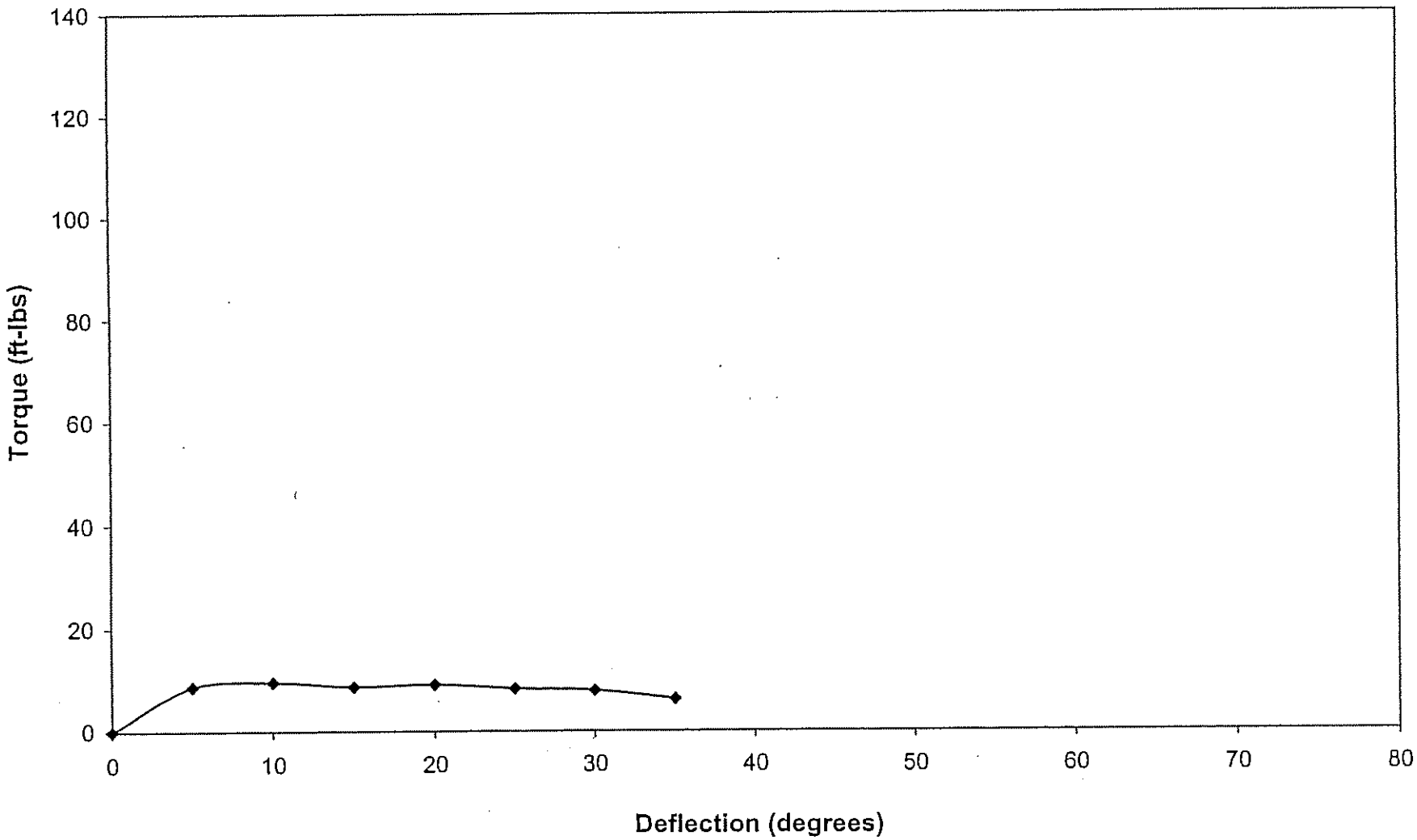
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S01**
**Vane #4: Depth = 75.7 ft., Elevation = -51.7 ft.**
**Remolded Condition**




P3-02-S01 Vane #4

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Duffield Associates, Inc.
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# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-11-02 |
| TEST BORING DESIGNATION: | P3-02-S02 |
| VANE SHEAR TEST DESIGNATION: | VANE #1 |
| GROUND SURFACE ELEV. (ft): | 5.0 |
| DEPTH TO VANE TIP (ft) | 24.6 |
| ELEV. AT VANE TIP (ft): | -19.6 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 87.9 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 84.8 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 792 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 9.9 |
| FRICTION CORRECTION (ft-lb) | 2.2 |
| NET TORQUE (ft-lb) | 7.7 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 72 |

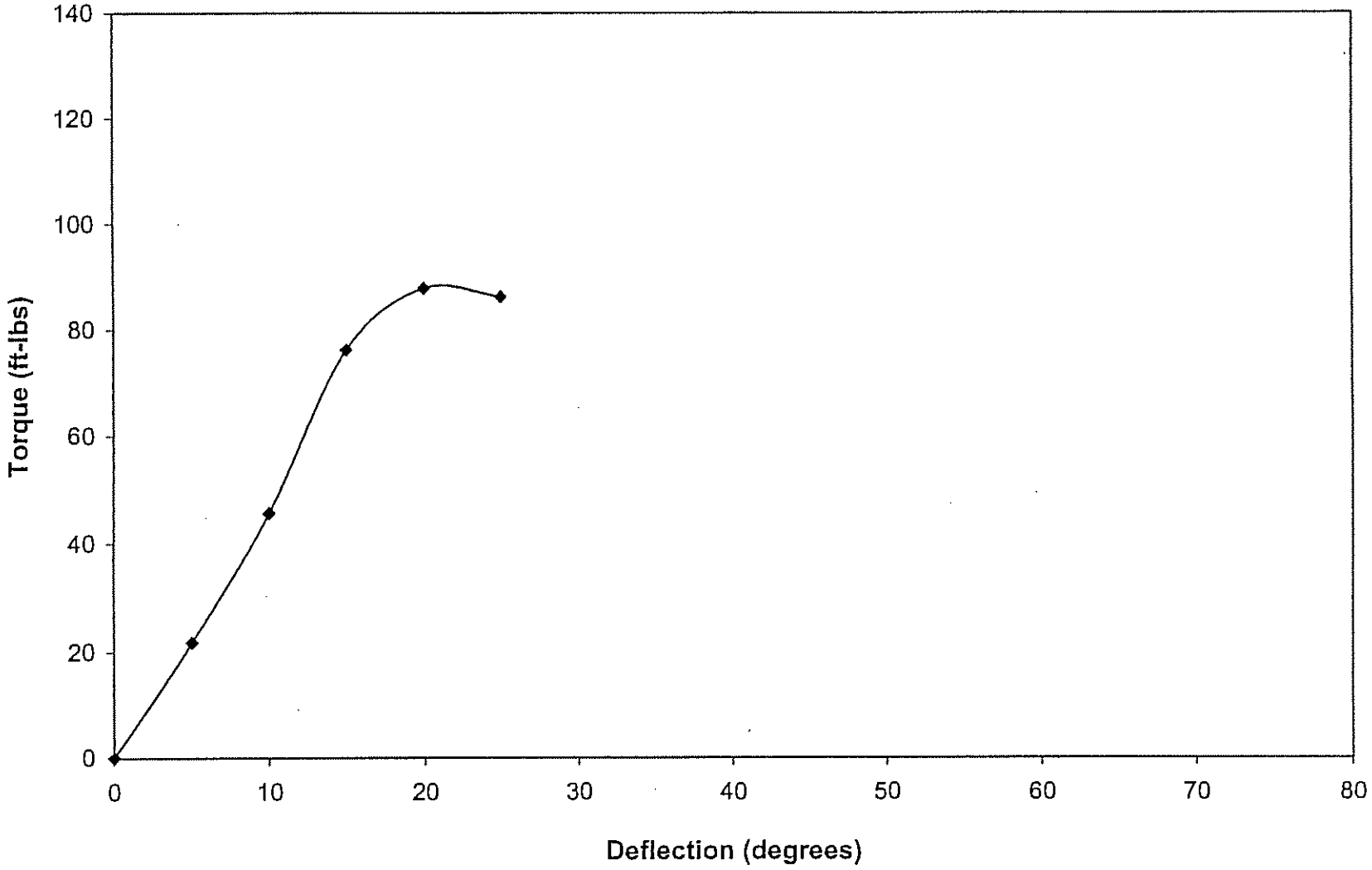
NOTES:

1. Friction corrections from curves developed based on results of 4 friction test performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S02**
**Vane #1: Depth = 24.6 ft., Elevation = -19.6 ft.**
**Undisturbed Condition**




P3-02-S02 Vane #1

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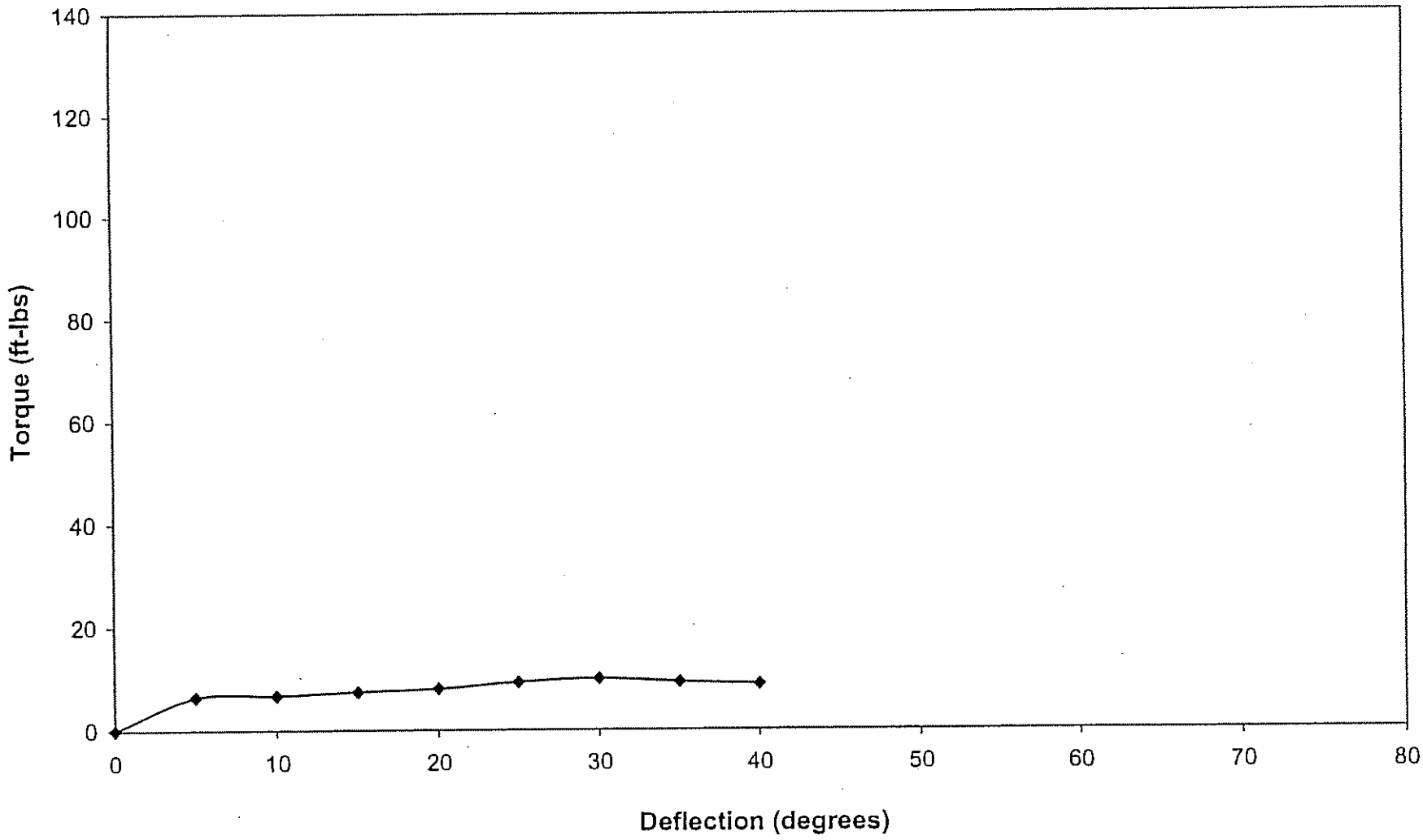
CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S02**
**Vane #1: Depth = 24.6 ft., Elevation = -19.6 ft.**
**Remolded Condition**




P3-02-S02 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

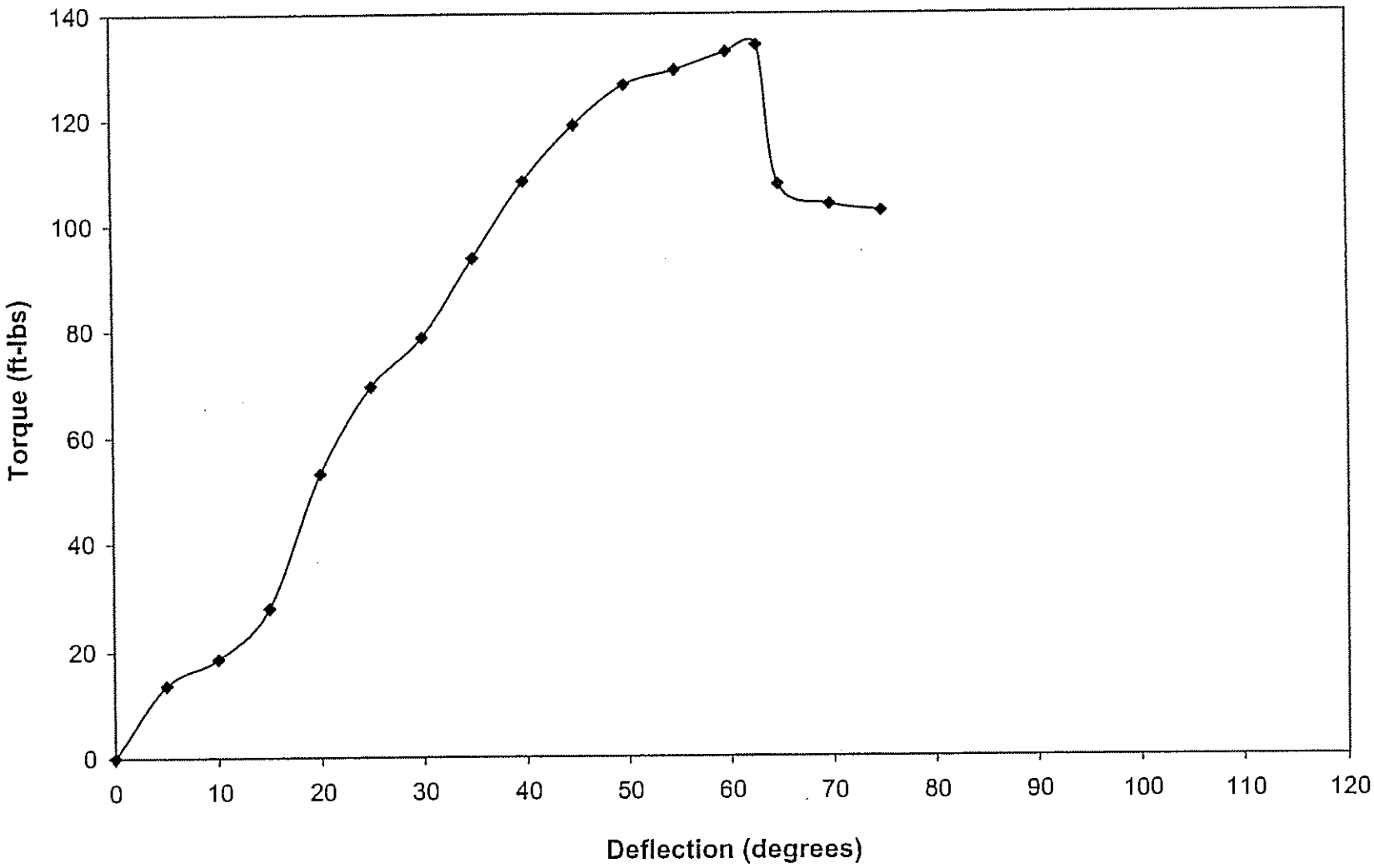
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-11-02 |
| TEST BORING DESIGNATION: | P3-02-S02 |
| VANE SHEAR TEST DESIGNATION: | VANE #2 |
| GROUND SURFACE ELEV. (ft): | 5.0 |
| DEPTH TO VANE TIP (ft) | 54.7 |
| ELEV. AT VANE TIP (ft): | -49.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 10 |
| DEGREES ROTATION AT FAILURE: | 63 |
| MAXIMUM TORQUE (ft-lb) | 133.9 |
| FRICTION CORRECTION (ft-lb) | 5.0 |
| NET TORQUE (ft-lb) | 128.9 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **1204** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 15 |
| DEGREES ROTATION AT FAILURE: | 95 |
| MAXIMUM TORQUE (ft-lb) | 52.6 |
| FRICTION CORRECTION (ft-lb) | 3.0 |
| NET TORQUE (ft-lb) | 49.6 |
| K VALUE ($ft^3$): | 0.1071 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **463** |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction test performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S02**
**Vane #2: Depth = 54.7 ft., Elevation = -49.7 ft.**
**Undisturbed Condition**



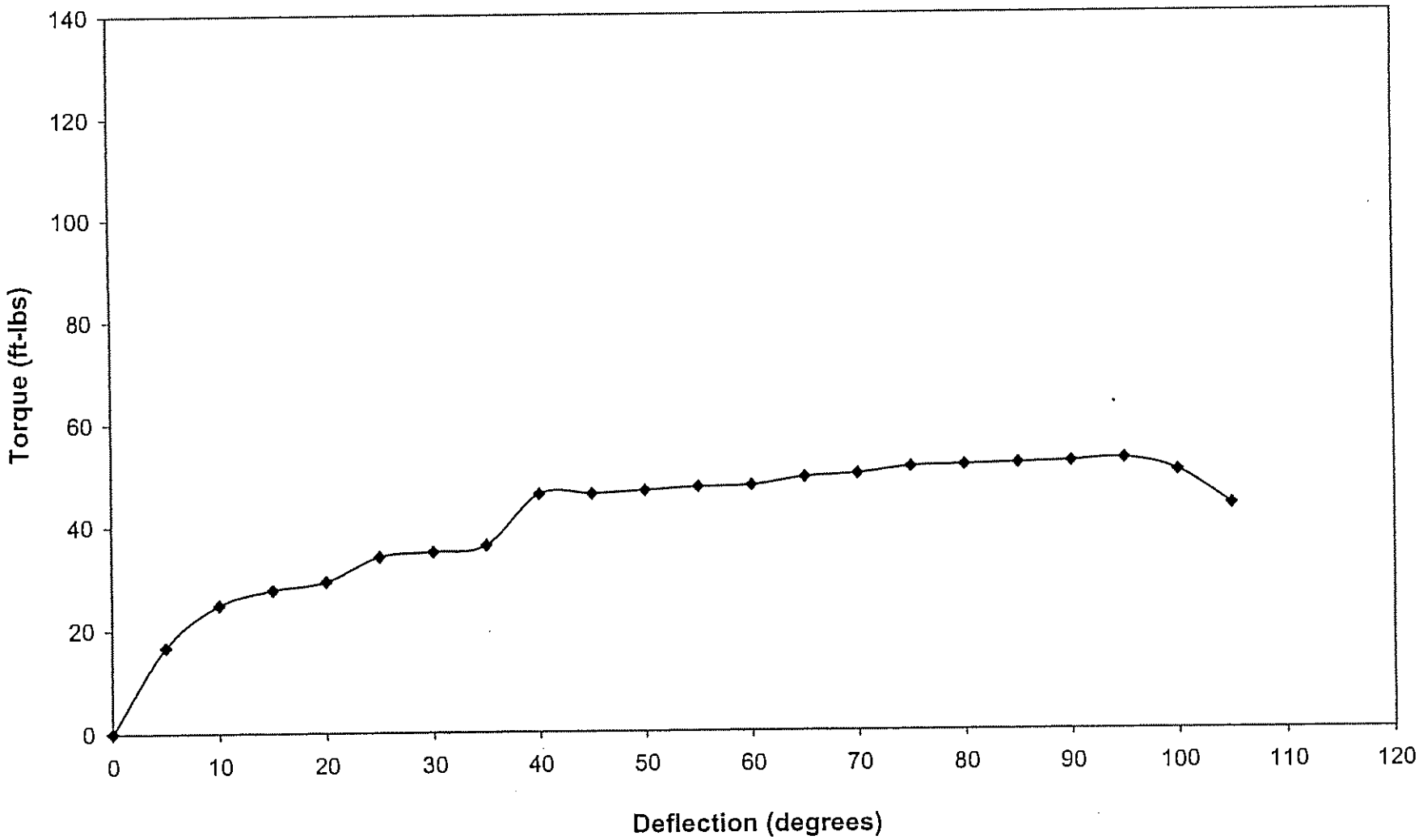

P3-02-S02 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S02**
**Vane #2: Depth = 54.7 ft., Elevation = -49.7 ft.**
**Remolded Condition**




P3-02-S02 Vane #2

W.O. 4685.GC
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# VANE SHEAR TEST REPORT

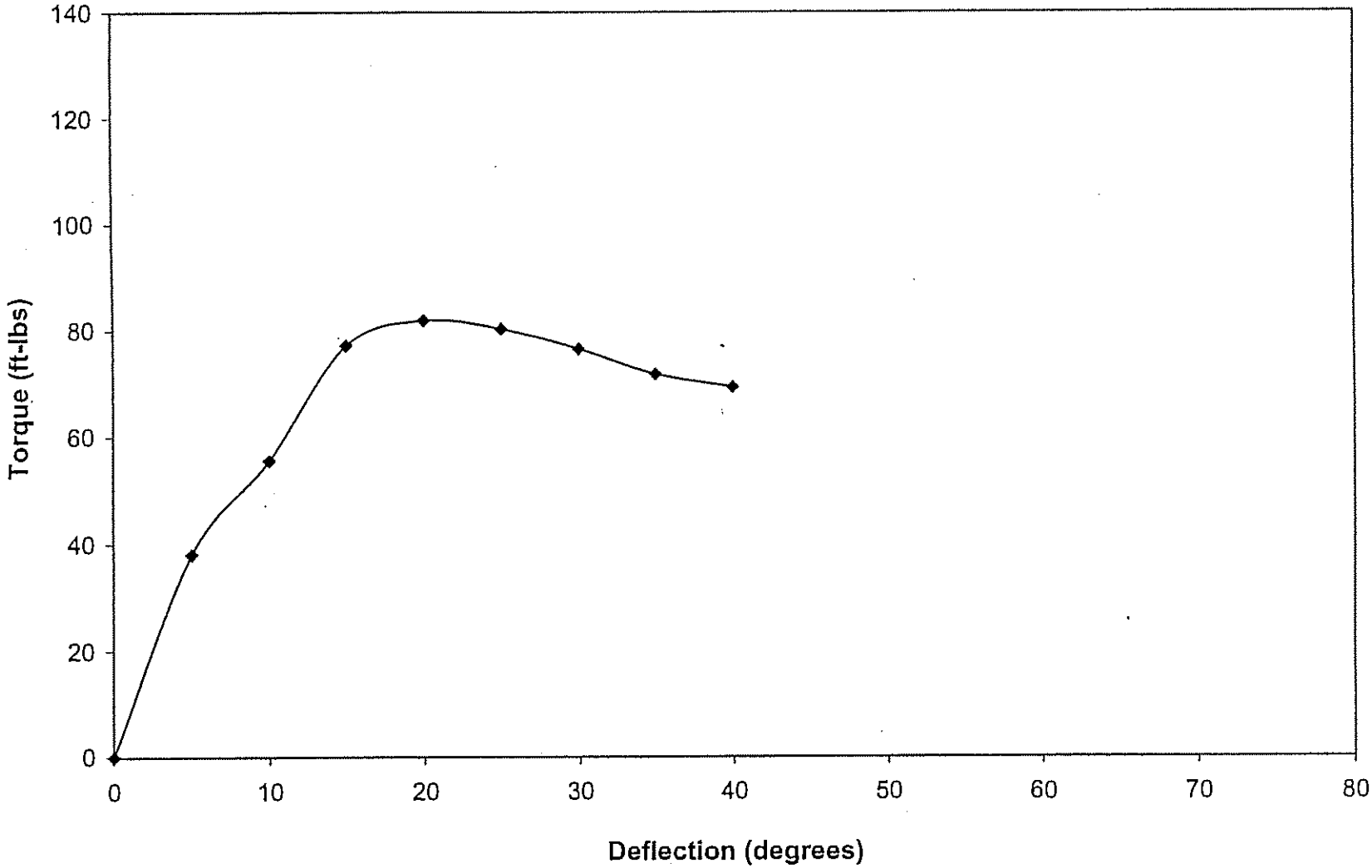
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-20-02 |
| **TEST BORING DESIGNATION:** | **P3-02-S09** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #1** |
| GROUND SURFACE ELEV. (ft): | 47.5 |
| DEPTH TO VANE TIP (ft) | 24.7 |
| ELEV. AT VANE TIP (ft): | 22.8 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 81.9 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 78.8 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **736** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 1 |
| DEGREES ROTATION AT FAILURE: | 5 |
| MAXIMUM TORQUE (ft-lb) | 11.4 |
| FRICTION CORRECTION (ft-lb) | 2.2 |
| NET TORQUE (ft-lb) | 9.2 |
| K VALUE ($ft^3$): | 0.1071 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **86** |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S09**
**Vane #1: Depth = 24.7 ft., Elevation = 22.8 ft.**
**Undisturbed Condition**




P3-02-S09 Vane #1

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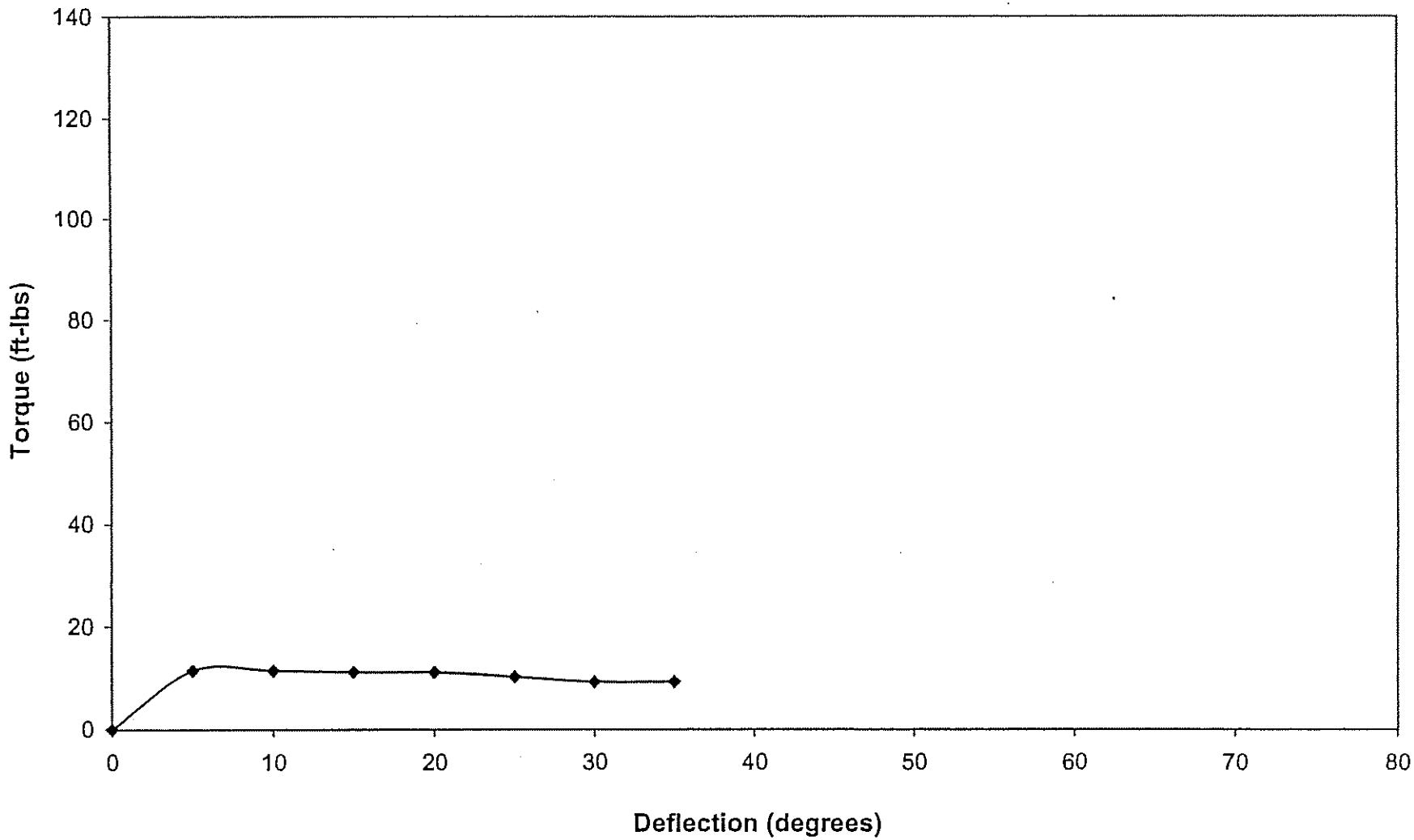
CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S09**
**Vane #1: Depth = 24.7 ft., Elevation = 22.8 ft.**
**Remolded Condition**




P3-02-S09 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-22-02 |
| **TEST BORING DESIGNATION:** | **P3-02-S09** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE # 2A** |
| GROUND SURFACE ELEV. (ft): | 47.5 |
| DEPTH TO VANE TIP (ft) | 46.7 |
| ELEV. AT VANE TIP (ft): | 0.8 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 18 |
| MAXIMUM TORQUE (ft-lb) | 38.7 |
| FRICTION CORRECTION (ft-lb) | 4.5 |
| NET TORQUE (ft-lb) | 34.2 |
| K VALUE ($ft^3$): | 0.0351 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | 974 |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 16 |
| DEGREES ROTATION AT FAILURE: | 90 |
| MAXIMUM TORQUE (ft-lb) | 6.2 |
| FRICTION CORRECTION (ft-lb) | 2.8 |
| NET TORQUE (ft-lb) | 3.4 |
| K VALUE ($ft^3$): | 0.0351 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | 97 |

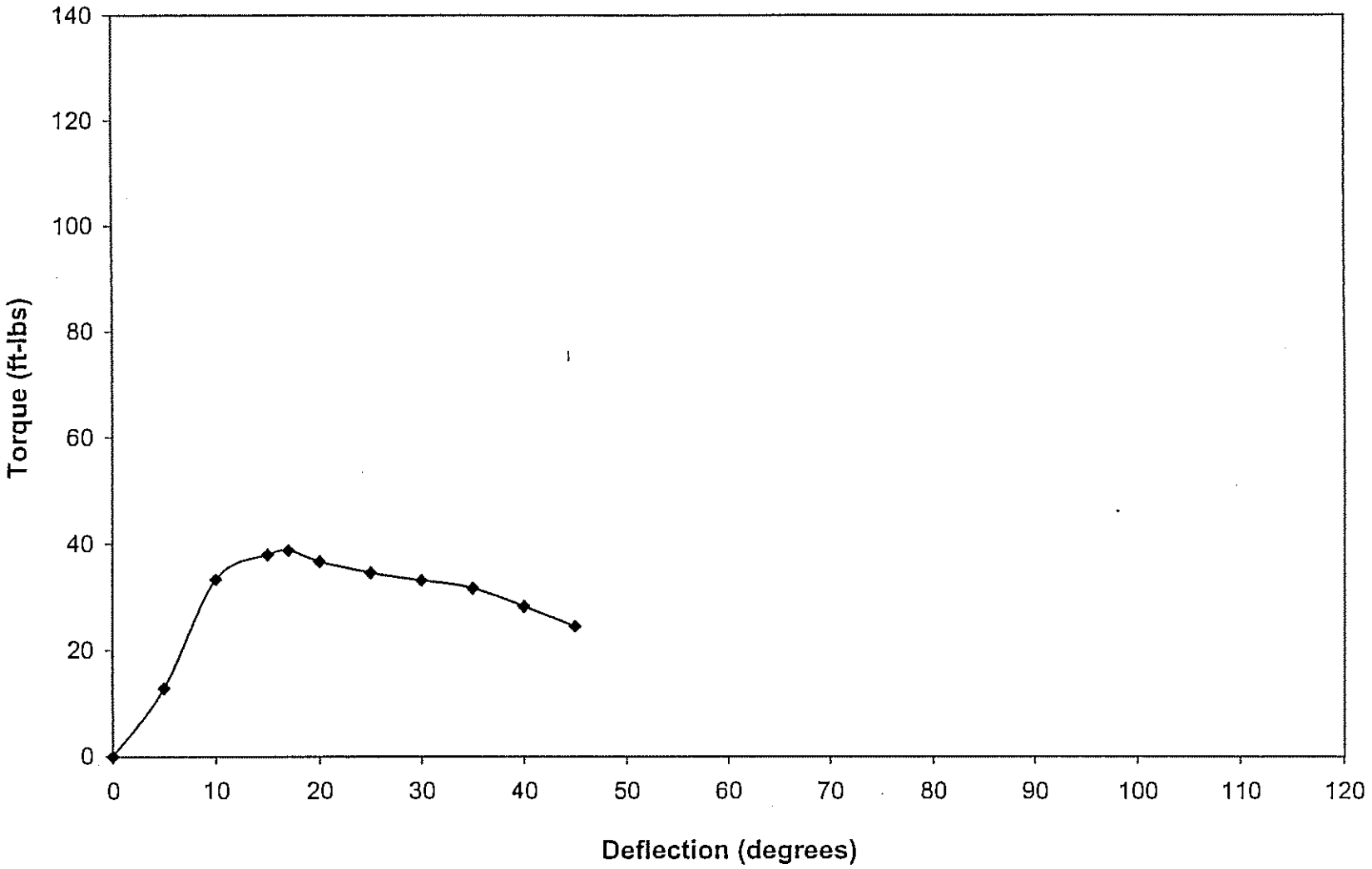
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S09**
**Vane #2A: Depth = 46.7 ft., Elevation = 0.8 ft.**
**Undisturbed Condition**



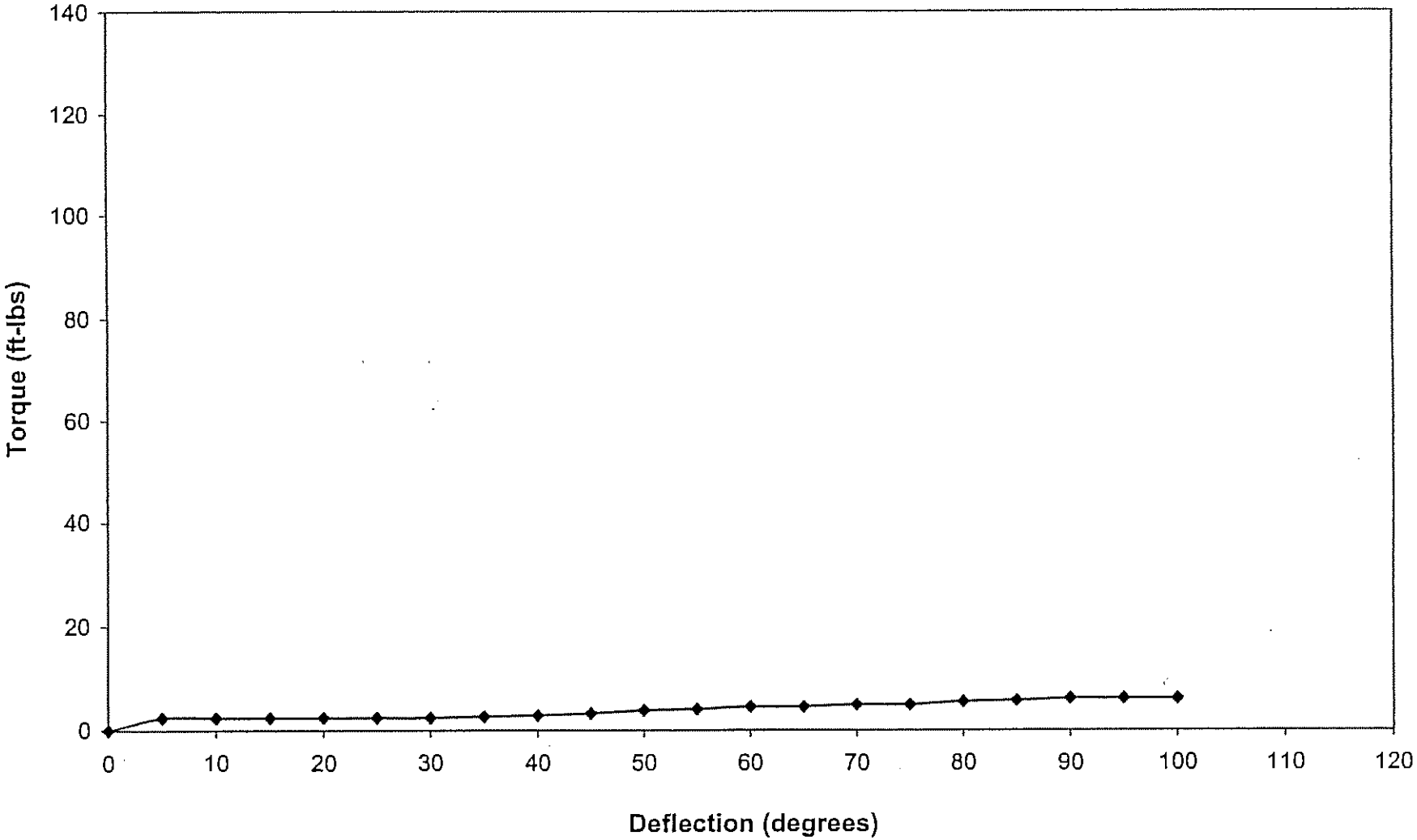

P3-02-S09 Vane #2A

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S09**
**Vane #2A: Depth = 46.7 ft., Elevation = 0.8 ft.**
**Remolded Condition**




P3-02-S09 Vane #2A

W.O. 4685.GC
Duffield Associates, Inc.
A 02

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/G. TRUVER, JR. |
| DATE: | 2-22-02 |
| **TEST BORING DESIGNATION:** | **P3-02-S09** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #3** |
| GROUND SURFACE ELEV. (ft): | 47.5 |
| DEPTH TO VANE TIP (ft) | 70.2 |
| ELEV. AT VANE TIP (ft): | -22.7 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 16 |
| DEGREES ROTATION AT FAILURE: | 95 |
| MAXIMUM TORQUE (ft-lb) | 103.5 |
| FRICTION CORRECTION (ft-lb) | 6.1 |
| NET TORQUE (ft-lb) | 97.4 |
| K VALUE ($ft^3$): | 0.0351 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **2775** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 49.2 |
| FRICTION CORRECTION (ft-lb) | 3.4 |
| NET TORQUE (ft-lb) | 45.8 |
| K VALUE ($ft^3$): | 0.0351 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **1305** |

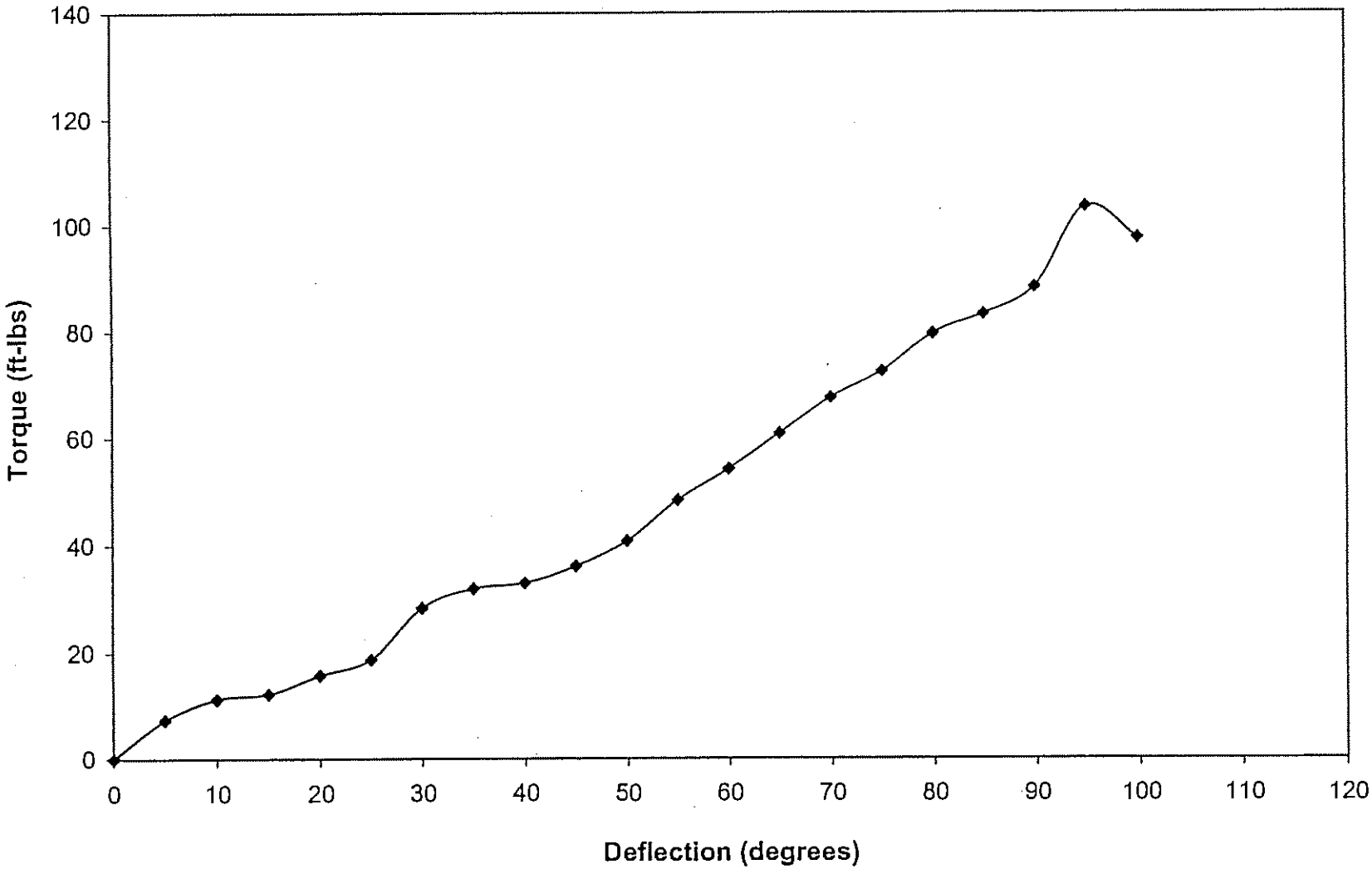
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Vane was observed to be deformed after completion of the test.
3. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S09**
**Vane #3: Depth = 70.2 ft., Elevation = -22.7 ft.**
**Undisturbed Condition**



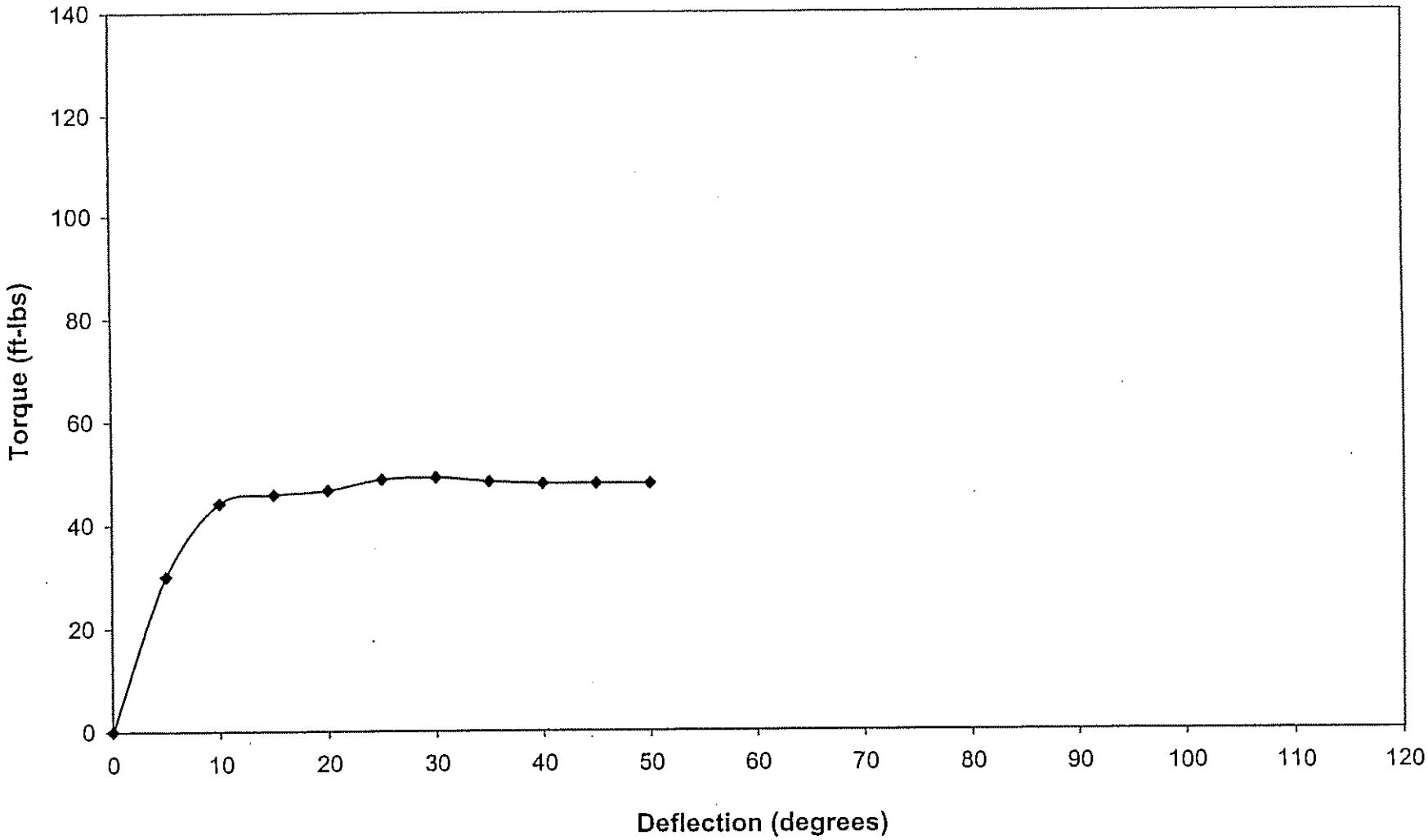

P3-02-S09 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
A 002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S09**
**Vane #3: Depth = 70.2 ft., Elevation = -22.7 ft.**
**Remolded Condition**




P3-02-S09 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

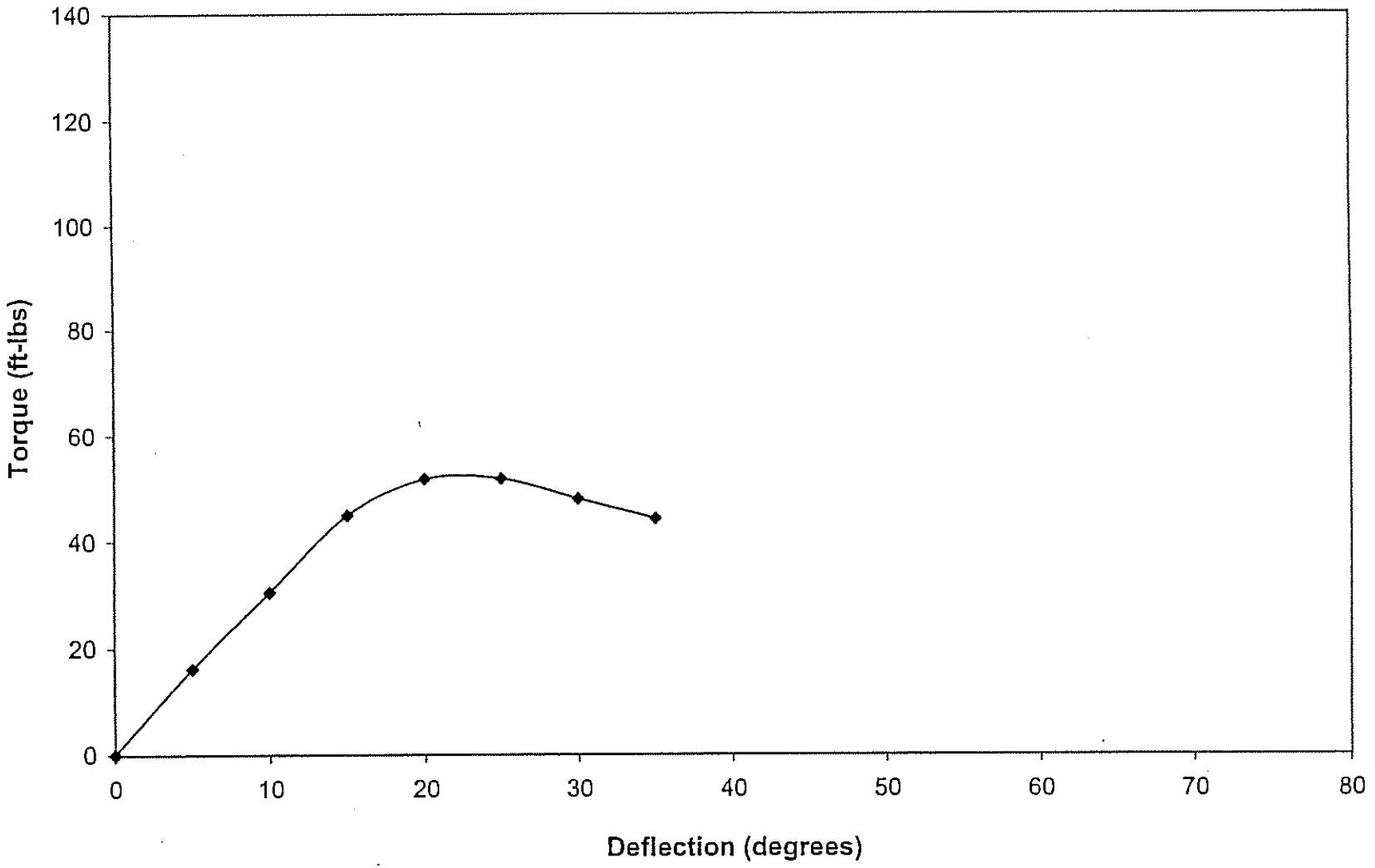
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-20-02 |
| TEST BORING DESIGNATION: | P3-02-S12 |
| VANE SHEAR TEST DESIGNATION: | VANE #1 |
| GROUND SURFACE ELEV. (ft): | 45.5 |
| DEPTH TO VANE TIP (ft) | 24.7 |
| ELEV. AT VANE TIP (ft): | 20.8 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 26 |
| MAXIMUM TORQUE (ft-lb) | 52 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 48.9 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | 457 |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 22 |
| MAXIMUM TORQUE (ft-lb) | 6.7 |
| FRICTION CORRECTION (ft-lb) | 2.2 |
| NET TORQUE (ft-lb) | 4.5 |
| K VALUE ($ft^3$): | 0.1071 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | 42 |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S12**
**Vane #1: Depth = 24.7 ft., Elevation = 20.8 ft.**
**Undisturbed Condition**



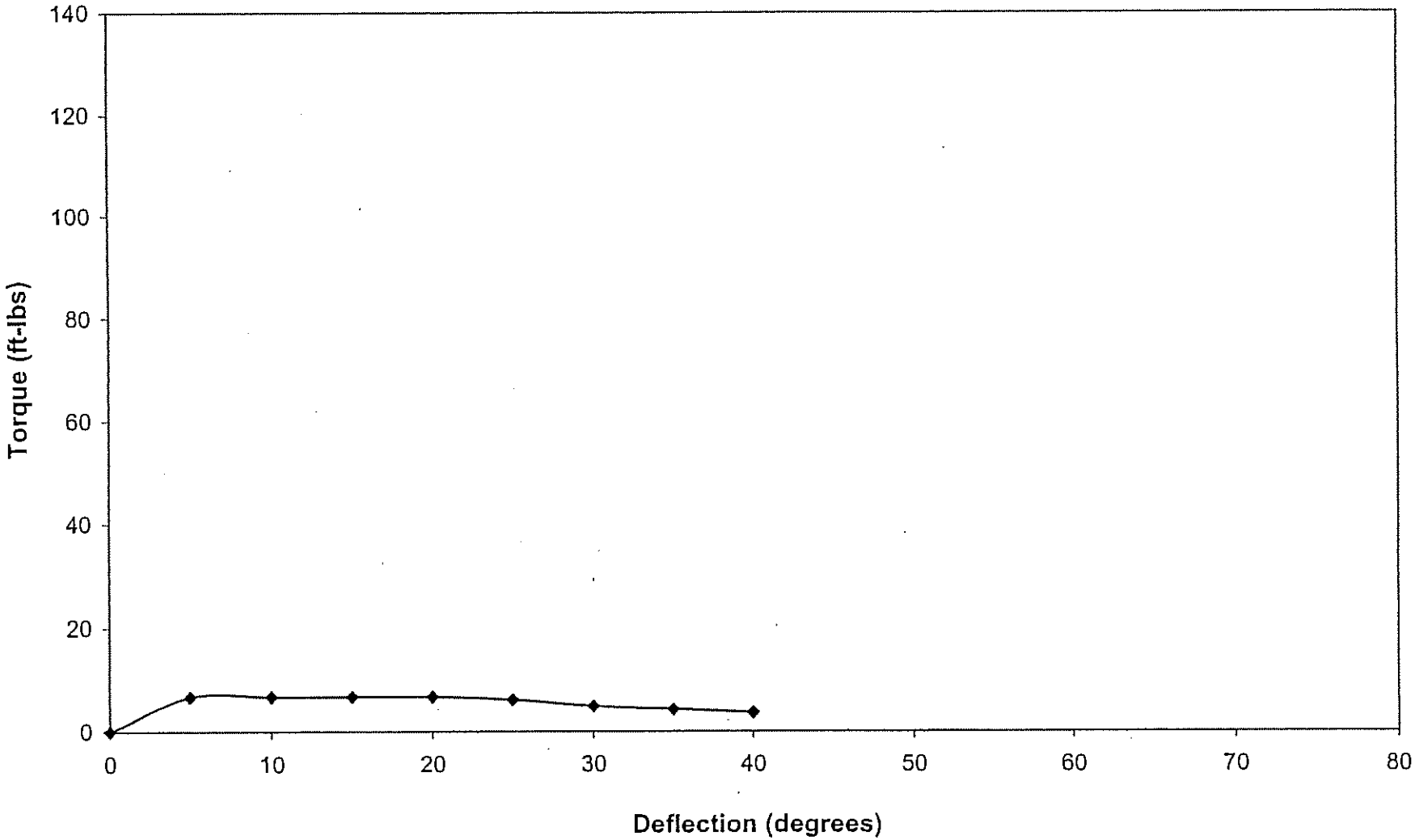

P3-02-S12 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S12**
**Vane #1: Depth = 24.7 ft., Elevation = 20.8 ft.**
**Remolded Condition**




P3-02-S12 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
A 02

# VANE SHEAR TEST REPORT

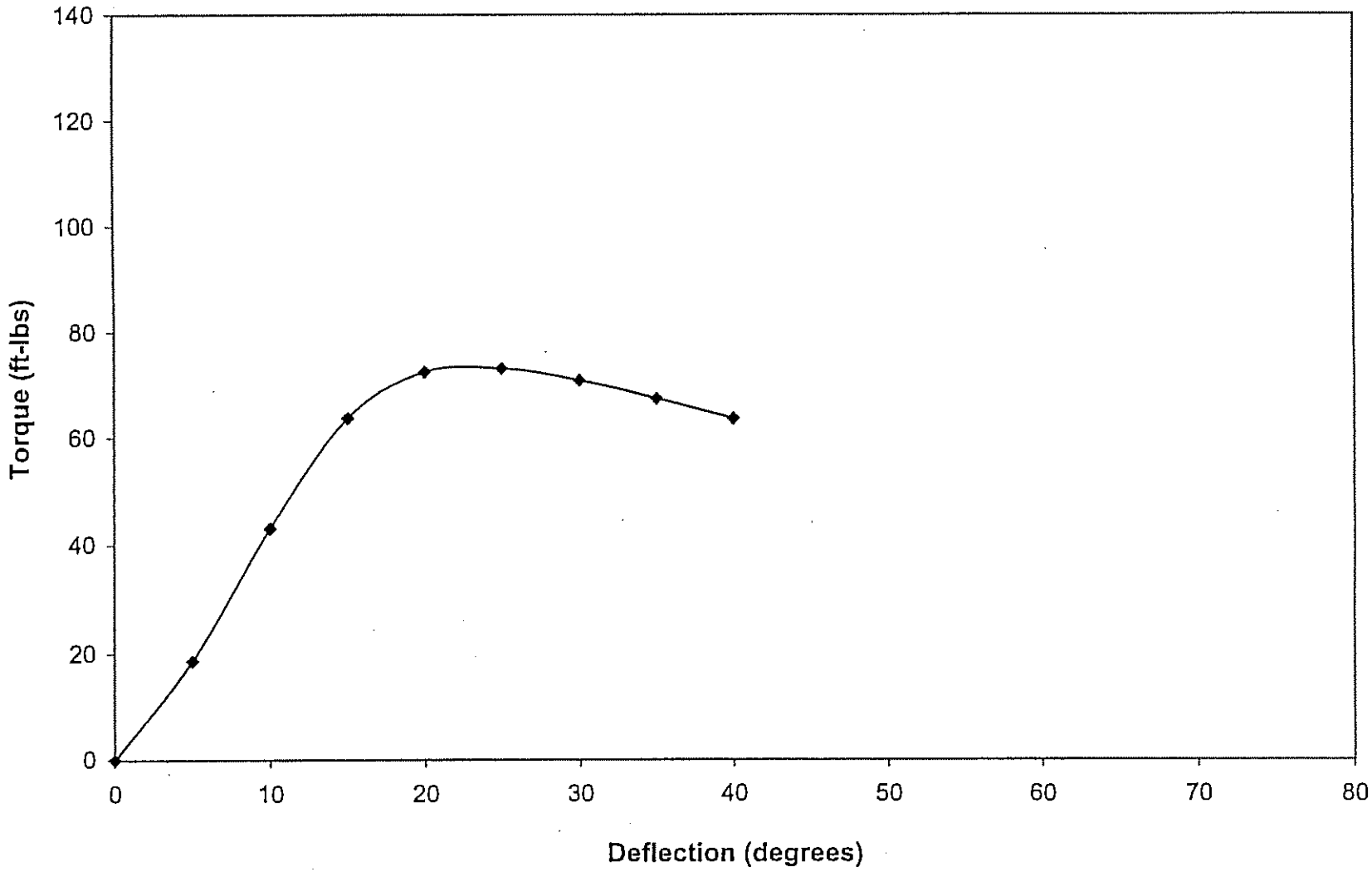
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-20-02 |
| **TEST BORING DESIGNATION:** | **P3-02-S12** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #2** |
| GROUND SURFACE ELEV. (ft): | 45.5 |
| DEPTH TO VANE TIP (ft) | 56.7 |
| ELEV. AT VANE TIP (ft): | -11.2 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 73.1 |
| FRICTION CORRECTION (ft-lb) | 5.2 |
| NET TORQUE (ft-lb) | 67.9 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **634** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 22 |
| MAXIMUM TORQUE (ft-lb) | 5.5 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 2.4 |
| K VALUE ($ft^3$): | 0.1071 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **22** |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S12**
**Vane #2: Depth = 56.7 ft., Elevation = -11.2 ft.**
**Undisturbed Condition**



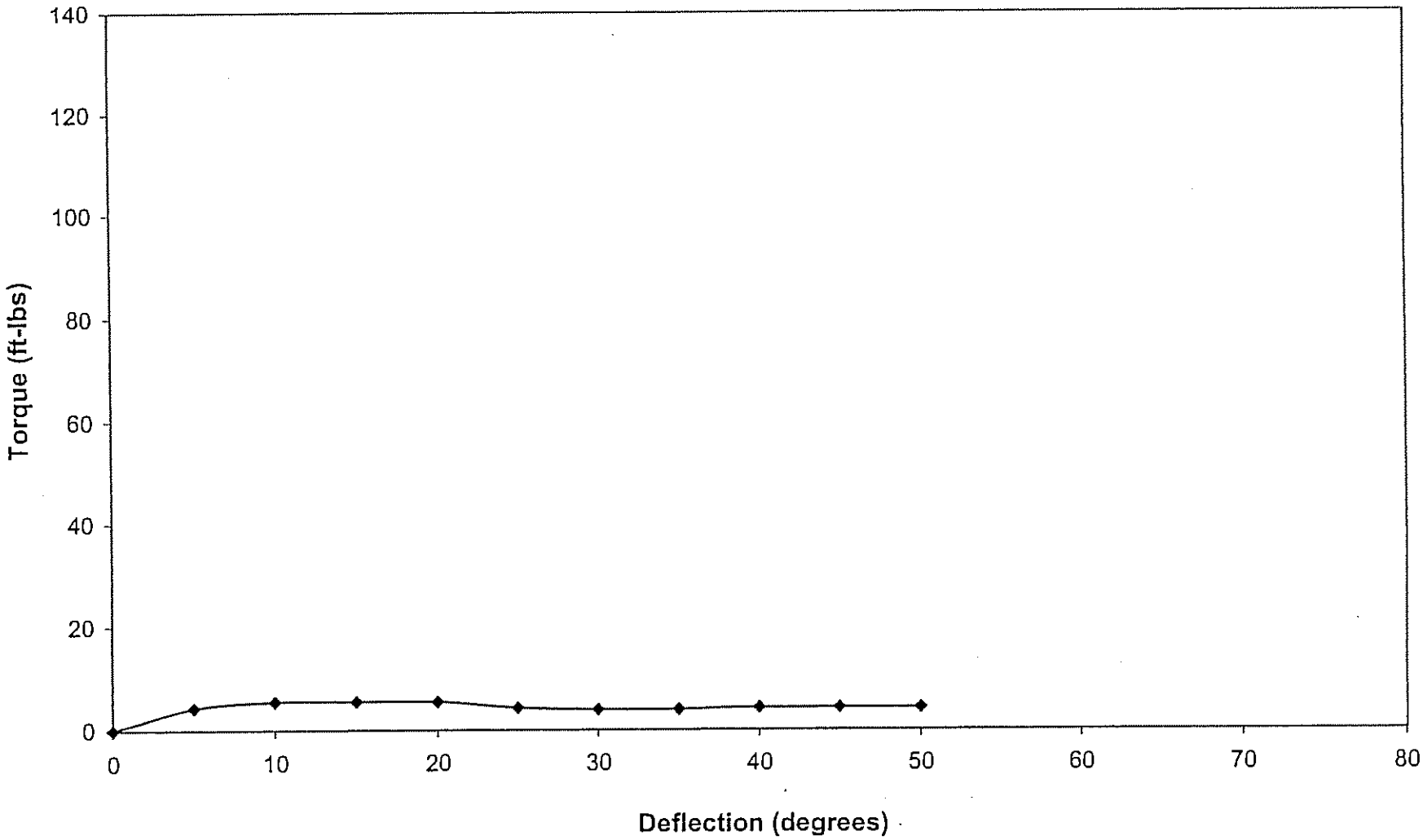

P3-02-S12 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
A 002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S12**
**Vane #2: Depth = 56.7 ft., Elevation = -11.2 ft.**
**Remolded Condition**




P3-02-S12 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-21-02 |
| **TEST BORING DESIGNATION:** | **P3-02-S12** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #3** |
| GROUND SURFACE ELEV. (ft): | 45.5 |
| DEPTH TO VANE TIP (ft) | 79.7 |
| ELEV. AT VANE TIP (ft): | -34.2 |
| | |
| DRILLING EQUIPMENT: | CME 55 ATV |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 52.1 |
| FRICTION CORRECTION (ft-lb) | 6.8 |
| NET TORQUE (ft-lb) | 45.3 |
| K VALUE ($ft^3$): | 0.0351 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **1291** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 100 |
| MAXIMUM TORQUE (ft-lb) | 41.2 |
| FRICTION CORRECTION (ft-lb) | 3.8 |
| NET TORQUE (ft-lb) | 37.4 |
| K VALUE ($ft^3$): | 0.0351 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **1066** |

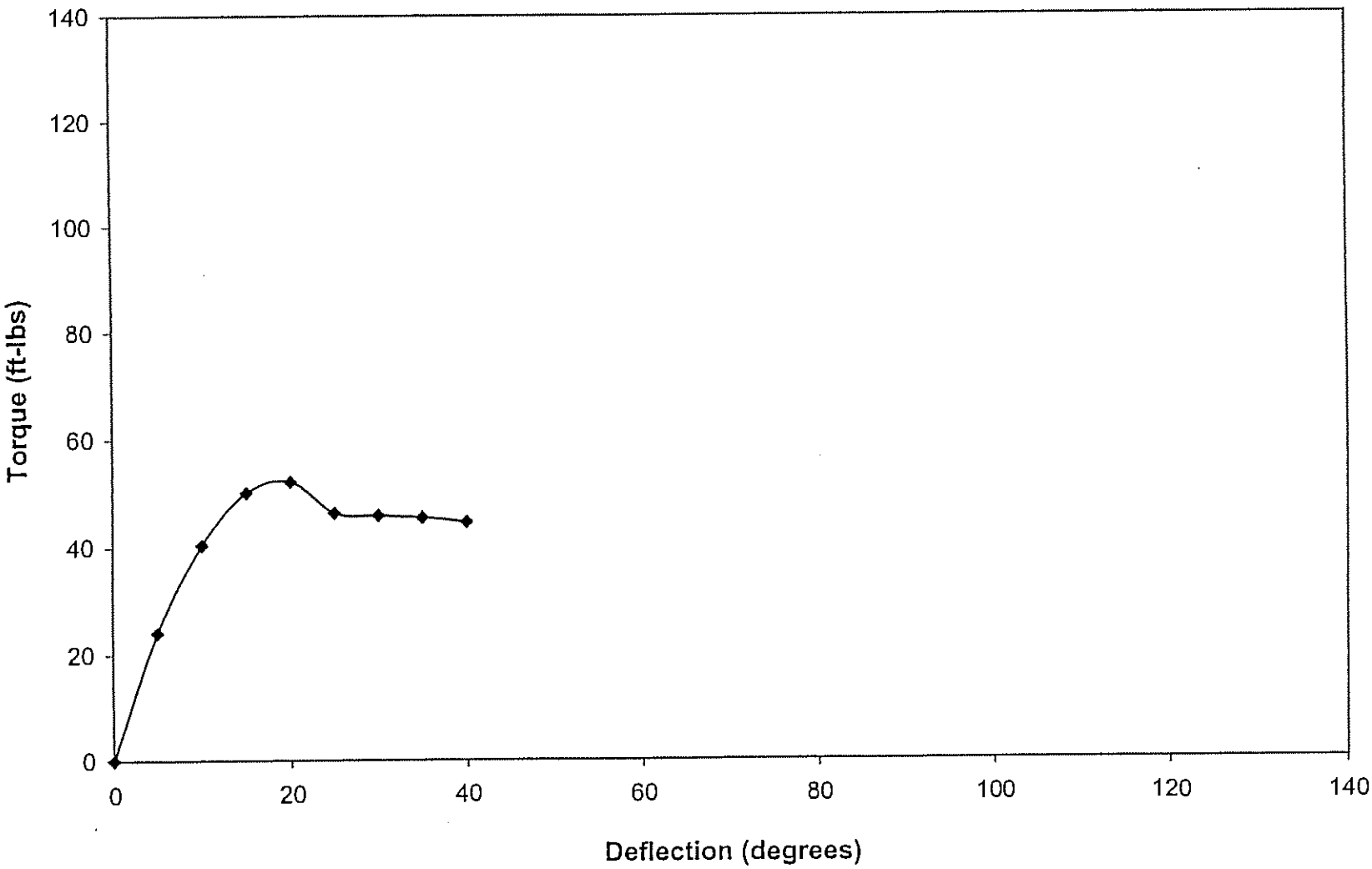
NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

DUFFIELD ASSOCIATES, INC.
4/24/02

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S12**
**Vane #3: Depth = 79.7 ft., Elevation = -34.2 ft.**
**Undisturbed Condition**



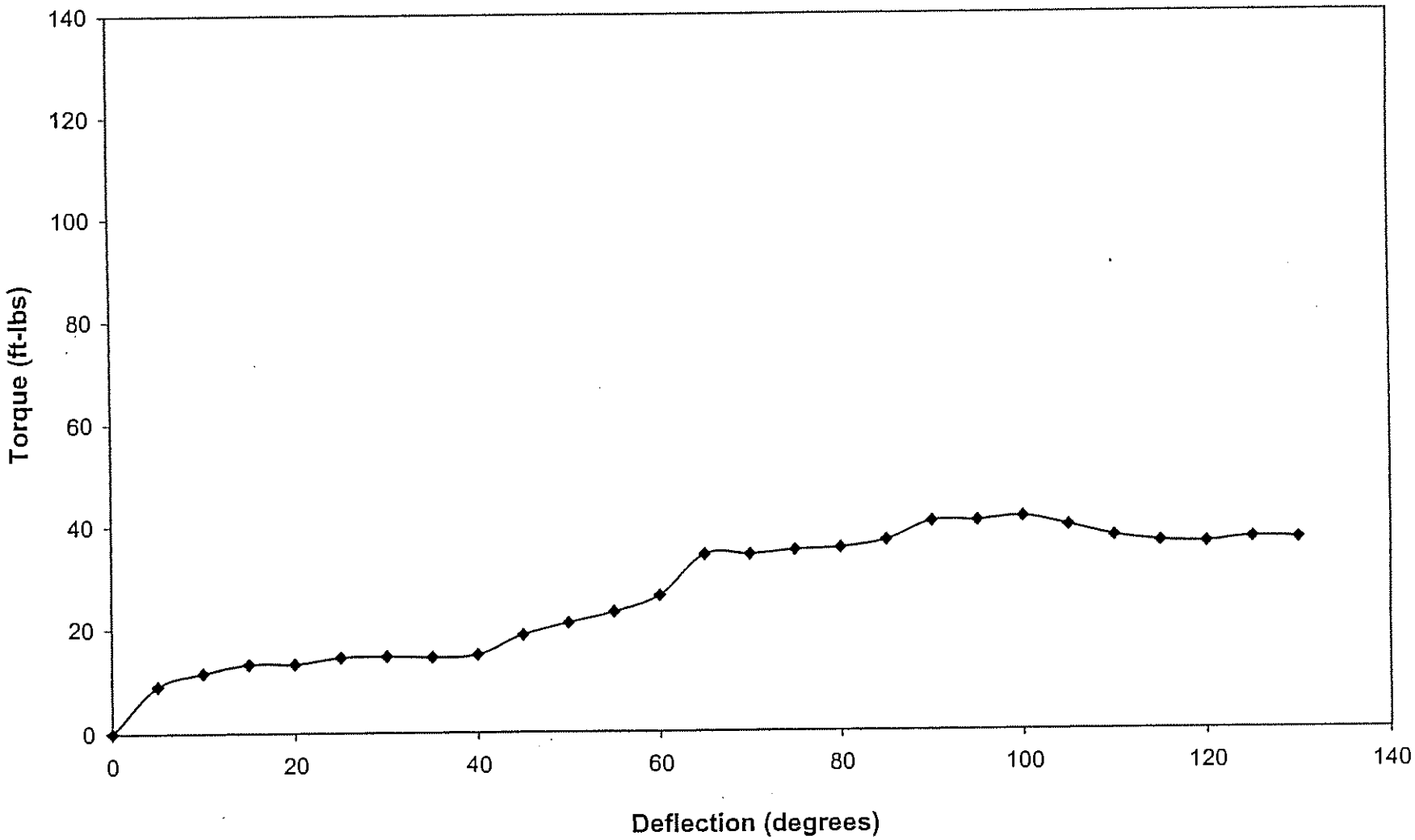

P3-02-S12 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S12**
**Vane #3: Depth = 79.7 ft., Elevation = -34.2 ft.**
**Remolded Condition**




P3-02-S12 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/G. TRUVER, SR. |
| DATE: | 2-14-02 |
| TEST BORING DESIGNATION: | P4-02-S03A |
| VANE SHEAR TEST DESIGNATION: | VANE #1A |
| GROUND SURFACE ELEV. (ft): | 48.0 |
| DEPTH TO VANE TIP (ft) | 24.7 |
| ELEV. AT VANE TIP (ft): | 23.3 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 45.6 |
| FRICTION CORRECTION (ft-lb) | 3.1 |
| NET TORQUE (ft-lb) | 42.5 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 397 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 1 |
| DEGREES ROTATION AT FAILURE: | 7 |
| MAXIMUM TORQUE (ft-lb) | 15.5 |
| FRICTION CORRECTION (ft-lb) | 2.2 |
| NET TORQUE (ft-lb) | 13.3 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 124 |

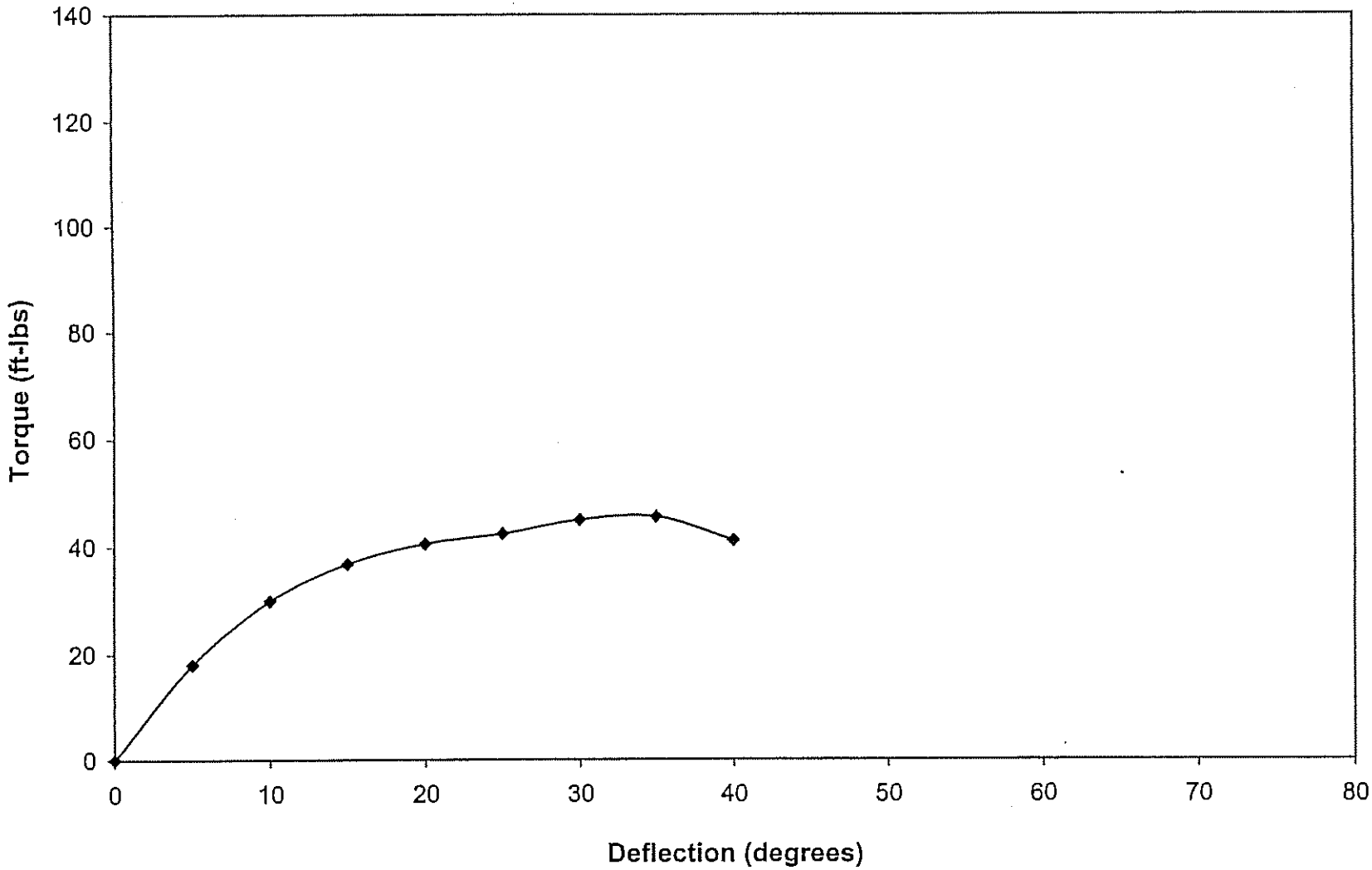
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S03A**
**Vane #1A: Depth = 24.7 ft., Elevation = 23.3 ft.**
**Undisturbed Condition**




P4-02-S03A Vane #1A

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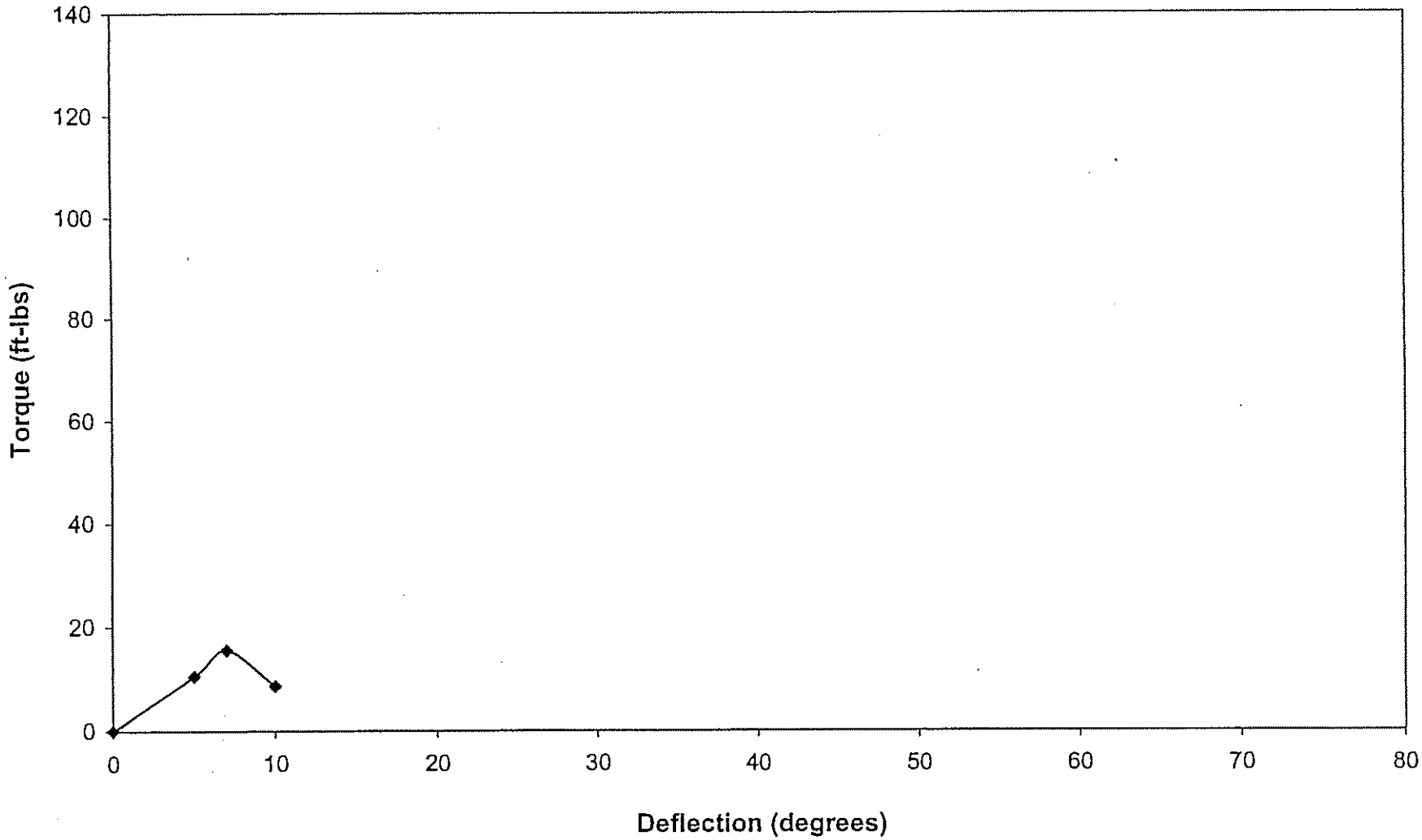
Duffield Associates, Inc.
A 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S03A**
**Vane #1A: Depth = 24.7 ft., Elevation = 23.3 ft.**
**Remolded Condition**




P4-02-S03A Vane #1A

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

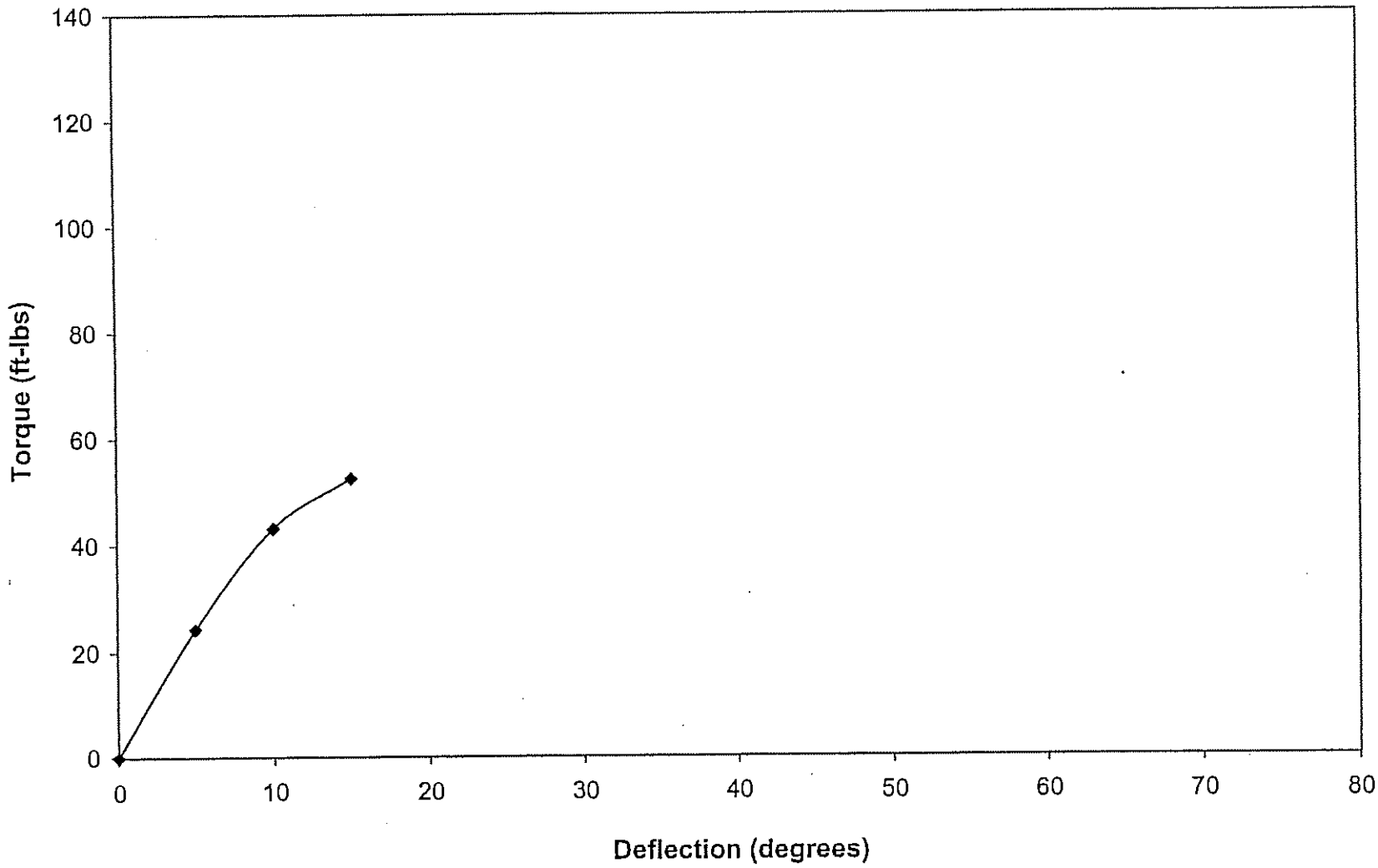
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/G. TRUVER, SR. |
| DATE: | 2-11-02 |
| TEST BORING DESIGNATION: | P4-02-S03 |
| VANE SHEAR TEST DESIGNATION: | VANE #2 |
| GROUND SURFACE ELEV. (ft): | 48.0 |
| DEPTH TO VANE TIP (ft) | 46.7 |
| ELEV. AT VANE TIP (ft): | 1.3 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 15 |
| MAXIMUM TORQUE (ft-lb) | 52.5 |
| FRICTION CORRECTION (ft-lb) | 4.5 |
| NET TORQUE (ft-lb) | 48.0 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 448 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | |
| DEGREES ROTATION AT FAILURE: | |
| MAXIMUM TORQUE (ft-lb) | |
| FRICTION CORRECTION (ft-lb) | |
| NET TORQUE (ft-lb) | |
| K VALUE ($ft^3$): | |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests.
2. Remolded test was abandoned due to extreme difficulty in rotating the Vane. Excess pressure would have resulted in damaging the Vane.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S03**
**Vane #2: Depth = 46.7 ft., Elevation = 1.3 ft.**
**Undisturbed Condition**




P4-02-S03 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION<br>4685.GC.03<br>WALTON CORPORATION/G. TRUVER, SR.<br>2-12-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P4-02-S03<br>VANE #3 |
| GROUND SURFACE ELEV. (ft): | 48.0 |
| DEPTH TO VANE TIP (ft) | 96.2 |
| ELEV. AT VANE TIP (ft): | -48.2 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 3 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 34.1 |
| FRICTION CORRECTION (ft-lb) | 7.8 |
| NET TORQUE (ft-lb) | 26.3 |
| K VALUE ($ft^3$): | 0.0351 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 749 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 12 |
| MAXIMUM TORQUE (ft-lb) | 15.8 |
| FRICTION CORRECTION (ft-lb) | 4.2 |
| NET TORQUE (ft-lb) | 11.6 |
| K VALUE ($ft^3$): | 0.0351 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 330 |

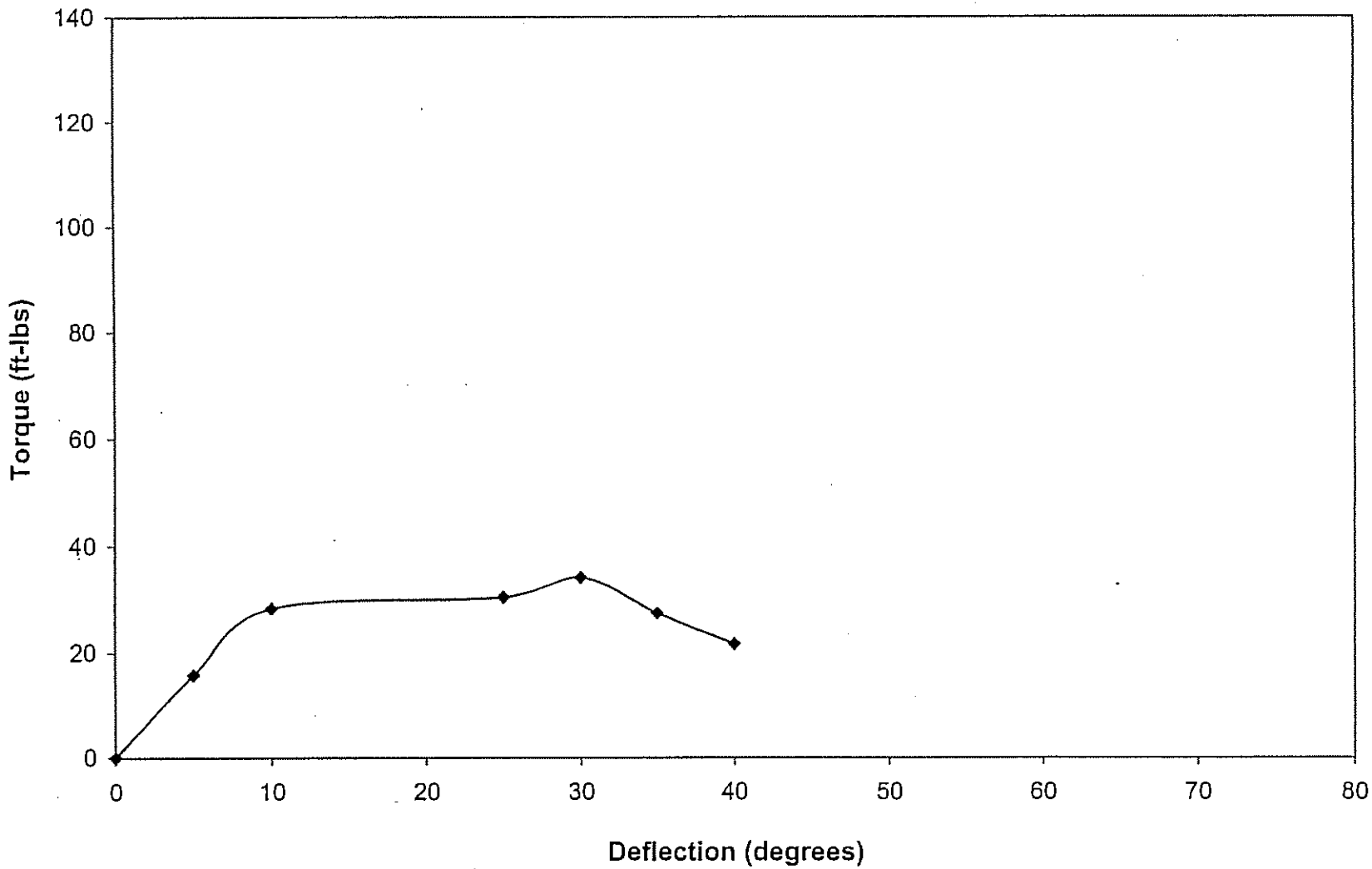
NOTES:

1. Friction corrections from curves developed based on results of 4 friction test performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S03**
**Vane #3: Depth = 96.2 ft., Elevation = -48.2 ft.**
**Undisturbed Condition**



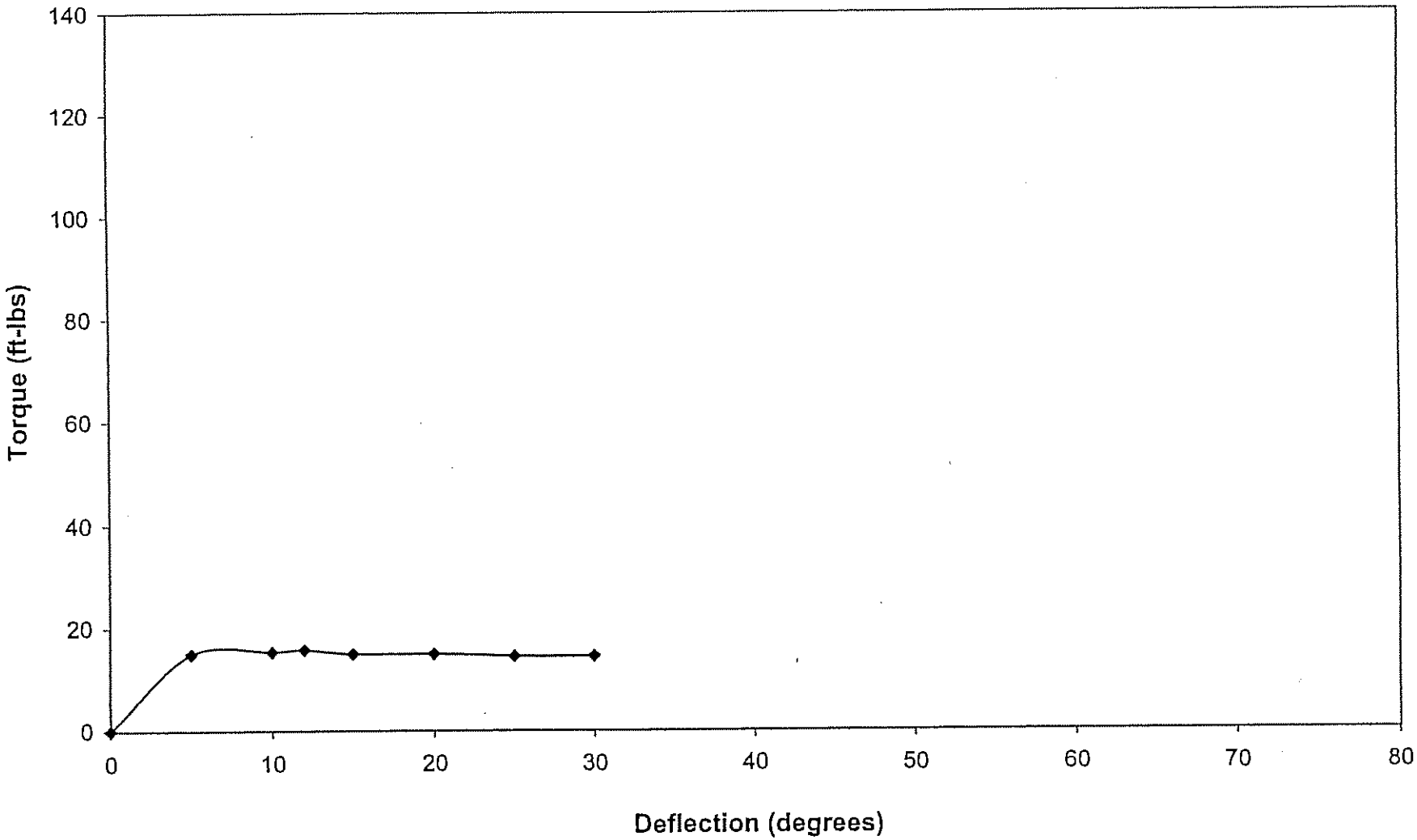

P4-02-S03 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S03**
**Vane #3: Depth = 96.2 ft., Elevation = -48.2 ft.**
**Remolded Condition**




P4-02-S03 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
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# VANE SHEAR TEST REPORT

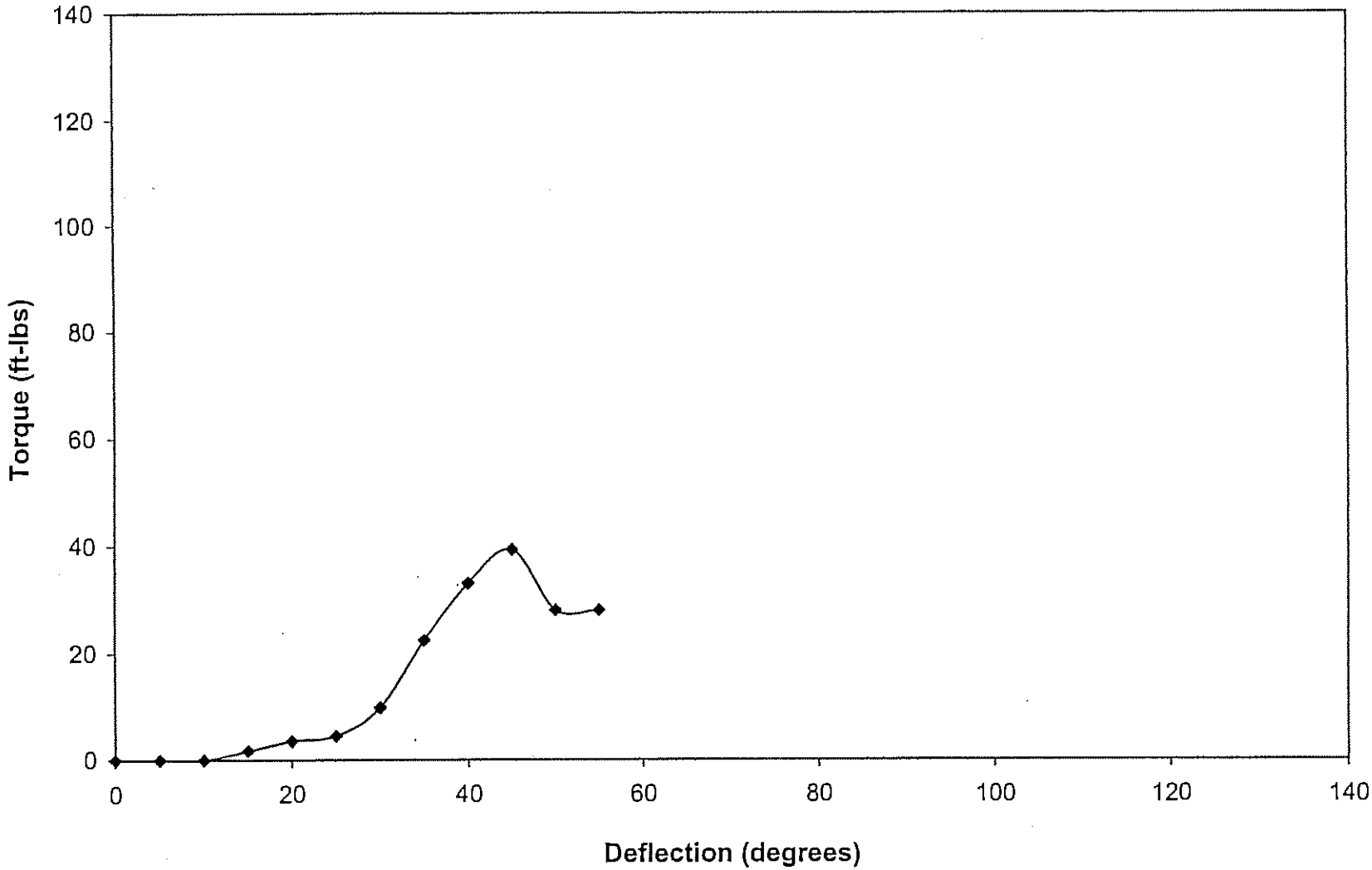
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/G. TRUVER, SR. |
| DATE: | 2-14-02 |
| **TEST BORING DESIGNATION:** | **P5-02-S04** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #1** |
| GROUND SURFACE ELEV. (ft): | 37.0 |
| DEPTH TO VANE TIP (ft) | 34.7 |
| ELEV. AT VANE TIP (ft): | 2.3 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 45 |
| MAXIMUM TORQUE (ft-lb) | 39.3 |
| FRICTION CORRECTION (ft-lb) | 3.7 |
| NET TORQUE (ft-lb) | 35.6 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **332** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | |
| DEGREES ROTATION AT FAILURE: | |
| MAXIMUM TORQUE (ft-lb) | |
| FRICTION CORRECTION (ft-lb) | |
| NET TORQUE (ft-lb) | |
| K VALUE ($ft^3$): | |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests.
2. Remolded test was abandoned due to extreme difficulty in rotating the Vane. Excess pressure would have resulted in damaging the Vane.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S04**
**Vane #1: Depth = 34.7 ft., Elevation = 2.3 ft.**
**Undisturbed Condition**




P5-02-S04 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
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# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 2-18-02 |
| **TEST BORING DESIGNATION:** | **P5-02-S04** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #2** |
| GROUND SURFACE ELEV. (ft): | 37.0 |
| DEPTH TO VANE TIP (ft) | 84.7 |
| ELEV. AT VANE TIP (ft): | -47.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 104.7 |
| FRICTION CORRECTION (ft-lb) | 7.1 |
| NET TORQUE (ft-lb) | 97.6 |
| K VALUE ($ft^3$): | .0351 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **2781** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 21 |
| DEGREES ROTATION AT FAILURE: | 135 |
| MAXIMUM TORQUE (ft-lb) | 83.8 |
| FRICTION CORRECTION (ft-lb) | 3.9 |
| NET TORQUE (ft-lb) | 79.9 |
| K VALUE ($ft^3$): | 0.0351 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **2276** |

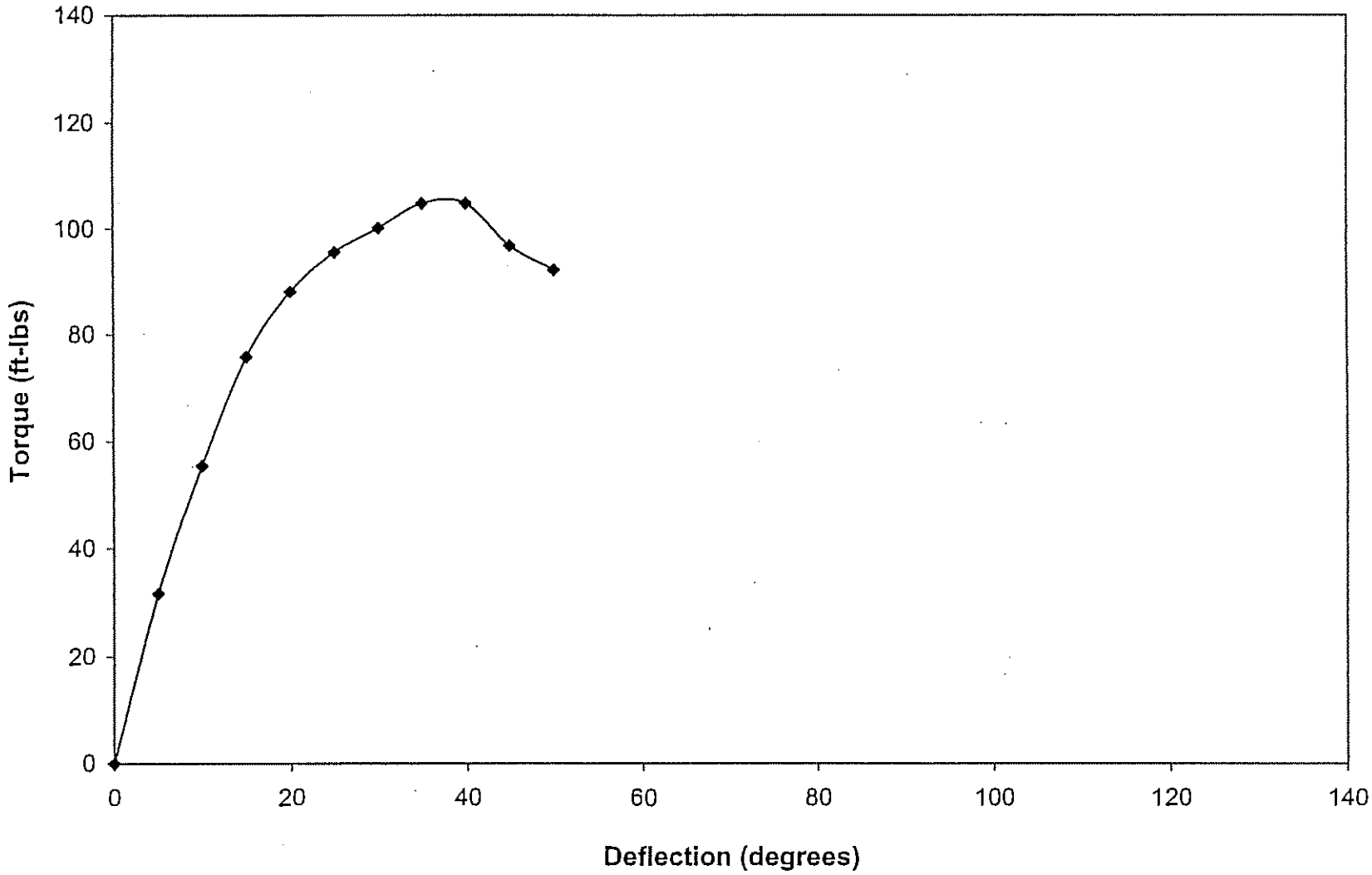
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S04**
**Vane #2: Depth = 84.7 ft., Elevation = -47.7 ft.**
**Undisturbed Condition**




P5-02-S04 Vane #2

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Duffield Associates, Inc.
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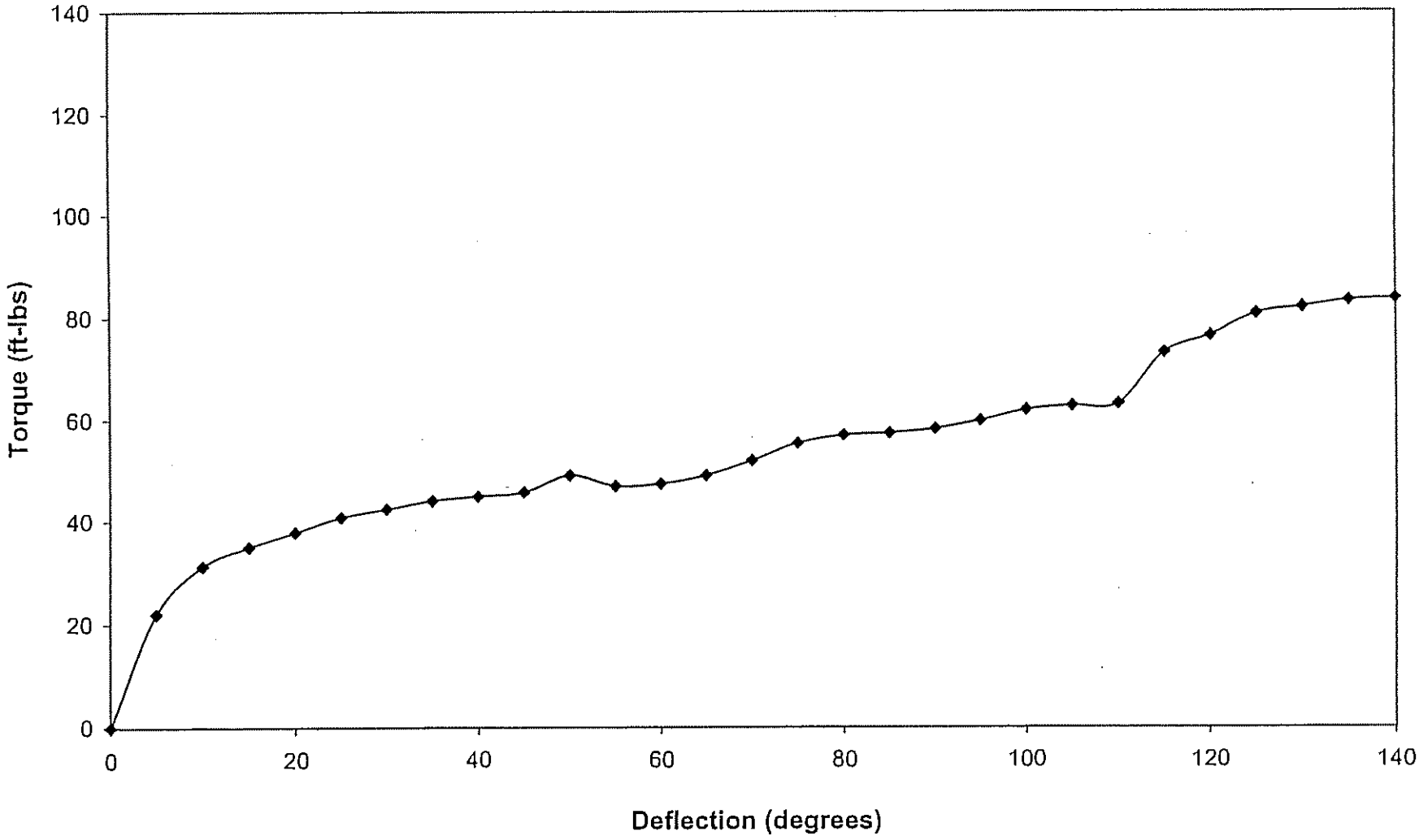
CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S04**
**Vane #2: Depth = 84.7 ft., Elevation = -47.7 ft.**
**Remolded Condition**




P5-02-S04 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

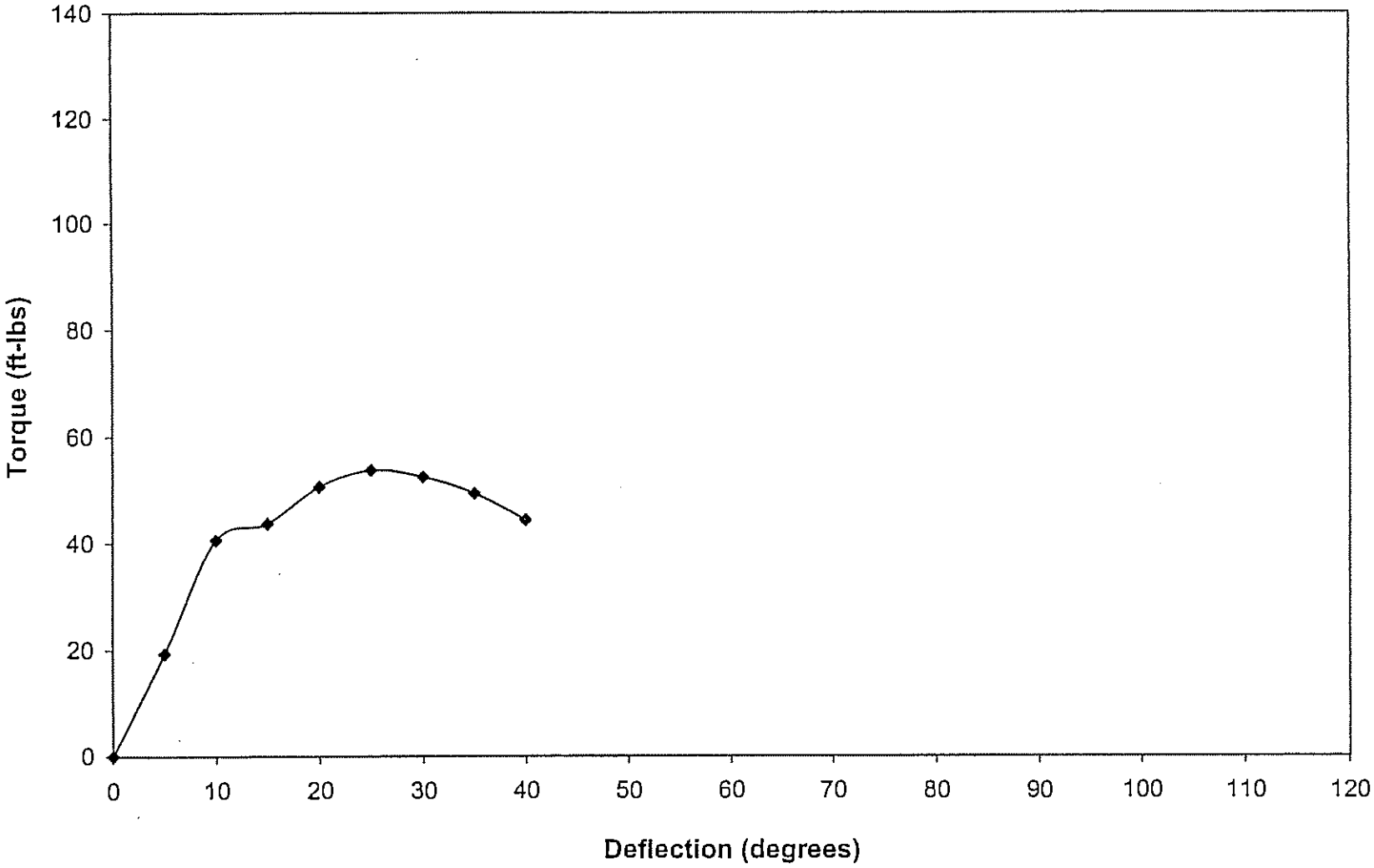
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/GARY TRUVER, SR. |
| DATE: | 2-25-02 |
| **TEST BORING DESIGNATION:** | **P5-02-S05** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #1** |
| GROUND SURFACE ELEV. (ft): | 47.5 |
| DEPTH TO VANE TIP (ft) | 14.7 |
| ELEV. AT VANE TIP (ft): | 32.8 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 53.7 |
| FRICTION CORRECTION (ft-lb) | 2.4 |
| NET TORQUE (ft-lb) | 51.3 |
| K VALUE ($ft^3$): | 0.1071 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **479** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 14 |
| DEGREES ROTATION AT FAILURE: | 110 |
| MAXIMUM TORQUE (ft-lb) | 6.7 |
| FRICTION CORRECTION (ft-lb) | 1.8 |
| NET TORQUE (ft-lb) | 4.9 |
| K VALUE ($ft^3$): | 0.1071 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **46** |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S05**
**Vane #1: Depth = 14.7 ft., Elevation = 32.8 ft.**
**Undisturbed Condition**



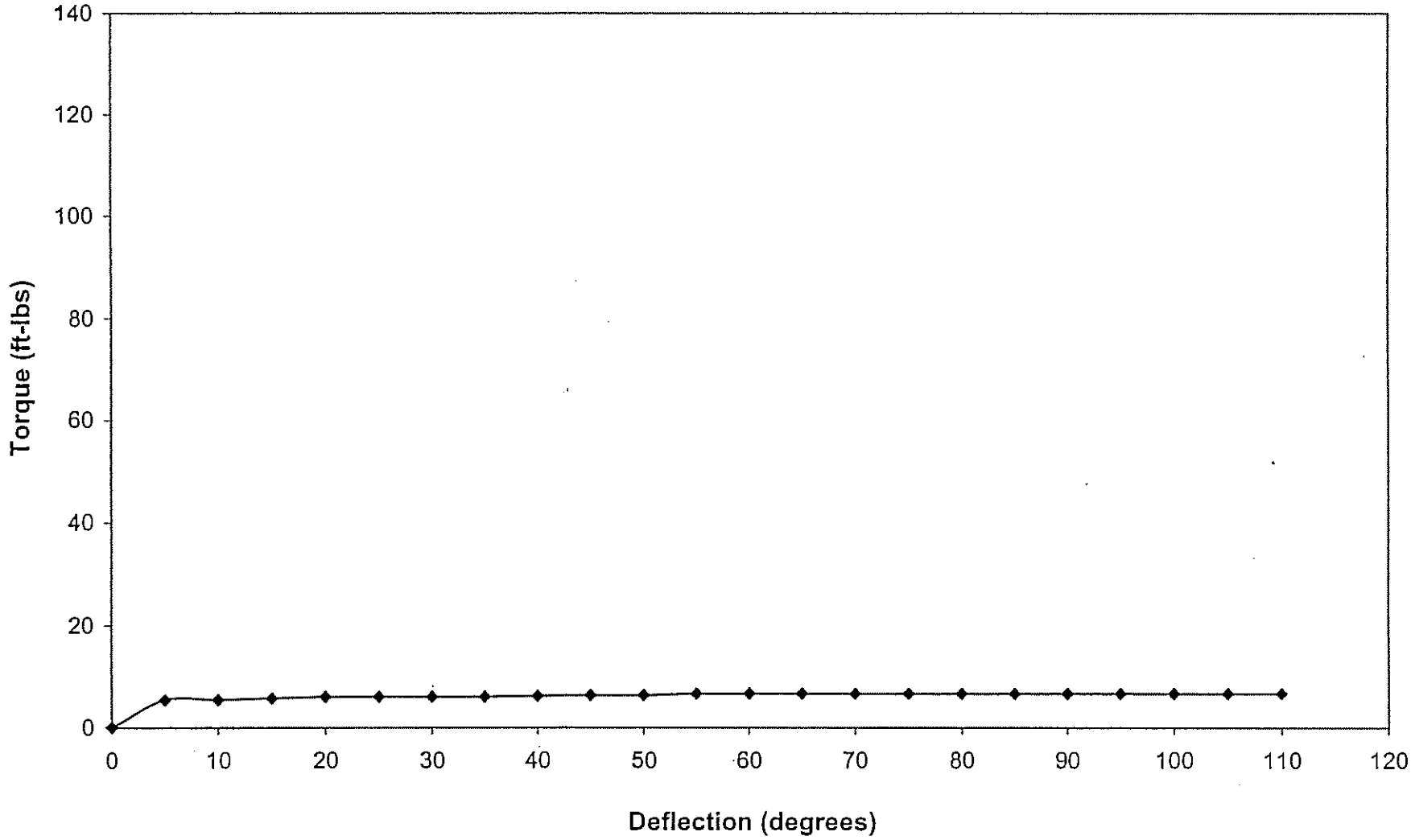

P5-02-S05 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S05**
**Vane #1: Depth = 14.7 ft., Elevation = 32.8 ft.**
**Remolded Condition**




P5-02-S05 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
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# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION<br>4685.GC.03<br>WALTON CORPORATION/GARY TRUVER, SR.<br>2-25-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S05<br>VANE #2 |
| GROUND SURFACE ELEV. (ft): | 47.5 |
| DEPTH TO VANE TIP (ft) | 34.7 |
| ELEV. AT VANE TIP (ft): | 12.8 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 40 |
| MAXIMUM TORQUE (ft-lb) | 102.6 |
| FRICTION CORRECTION (ft-lb) | 3.7 |
| NET TORQUE (ft-lb) | 98.9 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 923 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 15 |
| MAXIMUM TORQUE (ft-lb) | 8.6 |
| FRICTION CORRECTION (ft-lb) | 2.5 |
| NET TORQUE (ft-lb) | 6.1 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 57 |

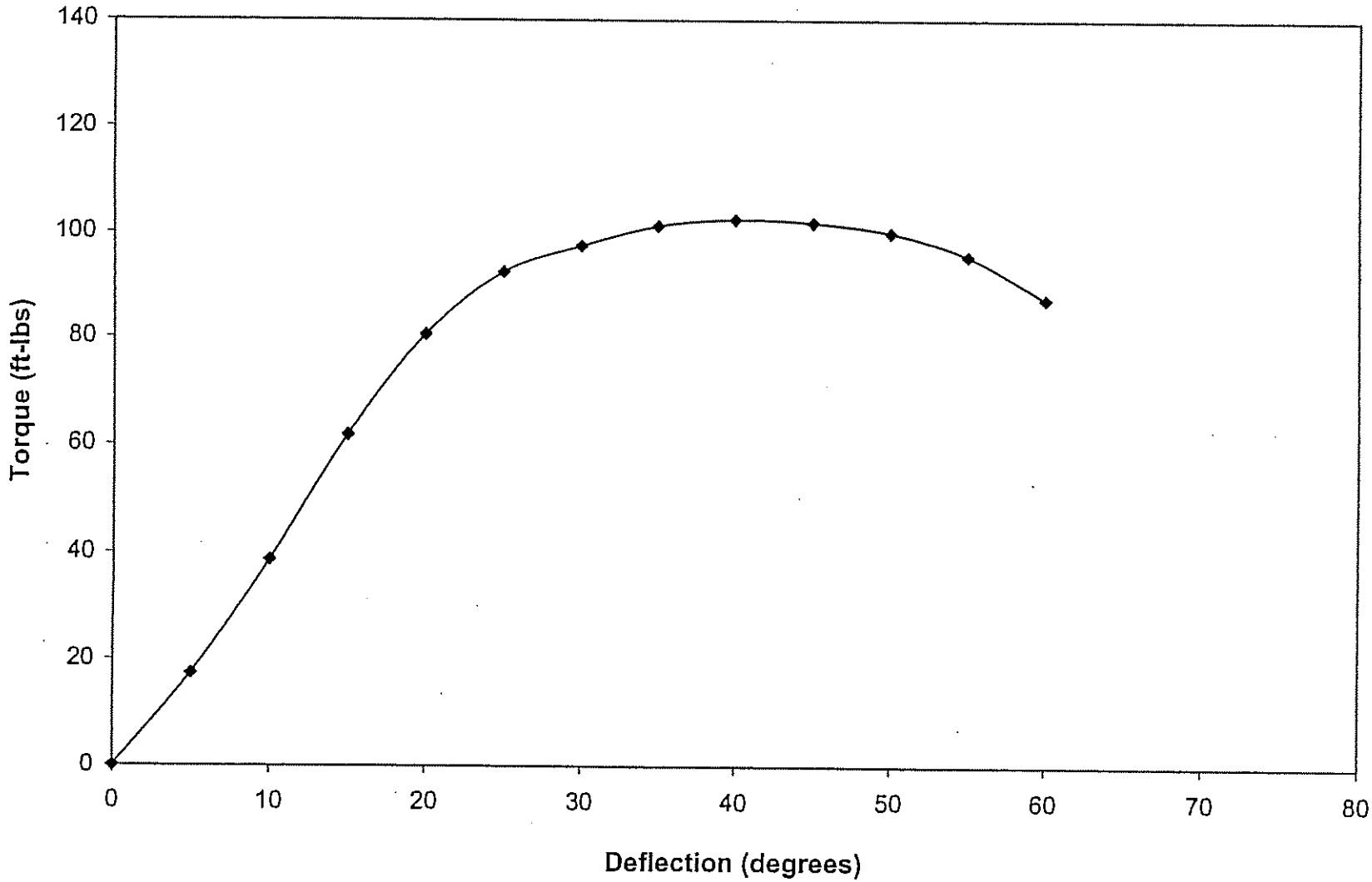
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S05**
**Vane #2: Depth = 34.7 ft., Elevation = 12.8 ft.**
**Undisturbed Condition**



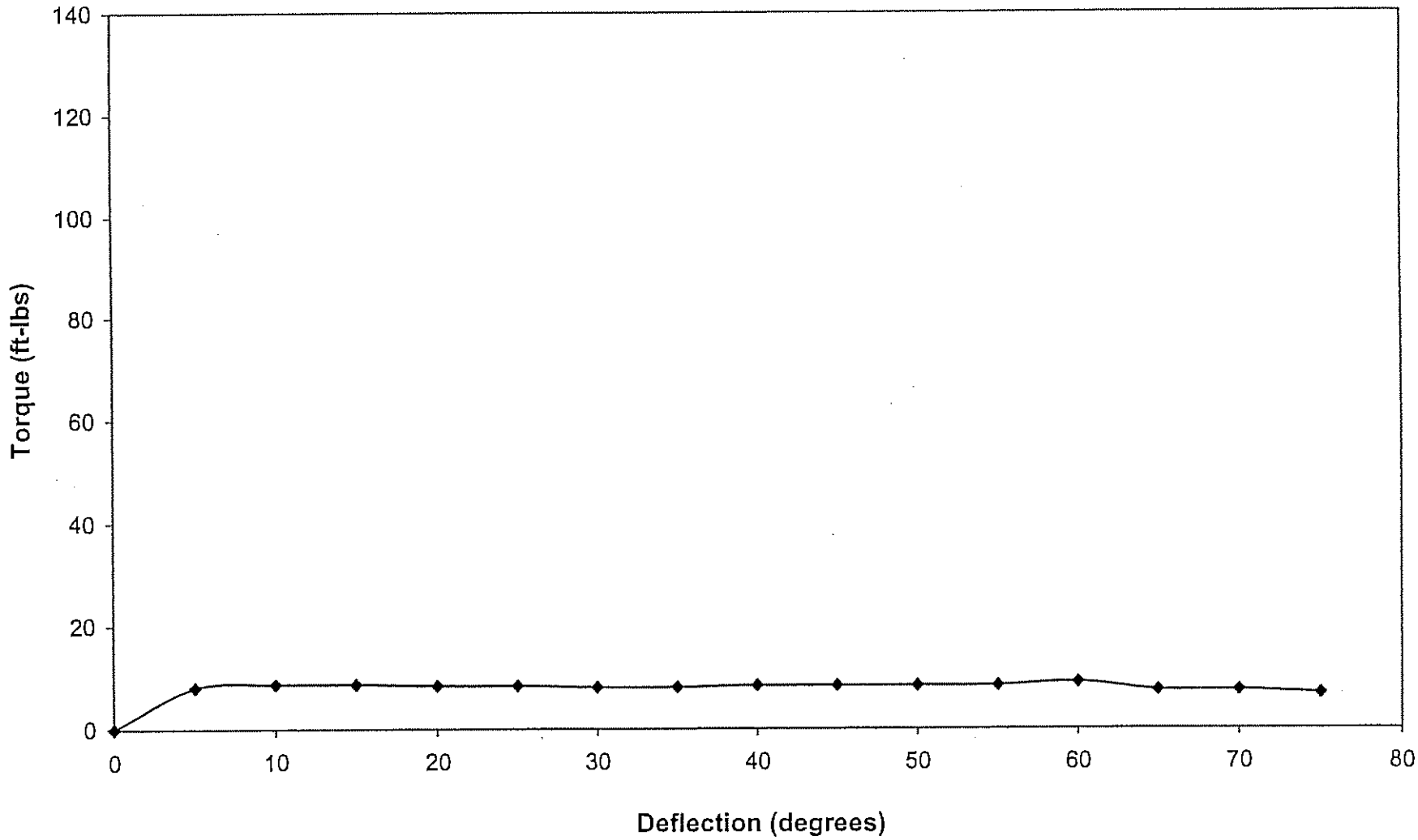

P5-02-S05 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
/ 002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S05**
**Vane #2: Depth = 34.7 ft., Elevation = 12.8 ft.**
**Remolded Condition**




P5-02-S05 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/GARY TRUVER, SR. |
| DATE: | 2-26-02 |
| **TEST BORING DESIGNATION:** | **P5-02-S05** |
| **VANE SHEAR TEST DESIGNATION:** | **VANE #3** |
| GROUND SURFACE ELEV. (ft): | 47.5 |
| DEPTH TO VANE TIP (ft) | 59.7 |
| ELEV. AT VANE TIP (ft): | -12.2 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| **UNDISTURBED TEST** | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 42 |
| MAXIMUM TORQUE (ft-lb) | 58.4 |
| FRICTION CORRECTION (ft-lb) | 5.4 |
| NET TORQUE (ft-lb) | 53.0 |
| K VALUE ($ft^3$): | 0.0351 |
| **UNDISTURBED UNDRAINED SHEAR STRENGTH (psf):** | **1510** |
| **REMOLDED TEST** | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 15 |
| MAXIMUM TORQUE (ft-lb) | 19.3 |
| FRICTION CORRECTION (ft-lb) | 3.2 |
| NET TORQUE (ft-lb) | 16.1 |
| K VALUE ($ft^3$): | 0.0351 |
| **REMOLDED UNDRAINED SHEAR STRENGTH (psf):** | **459** |

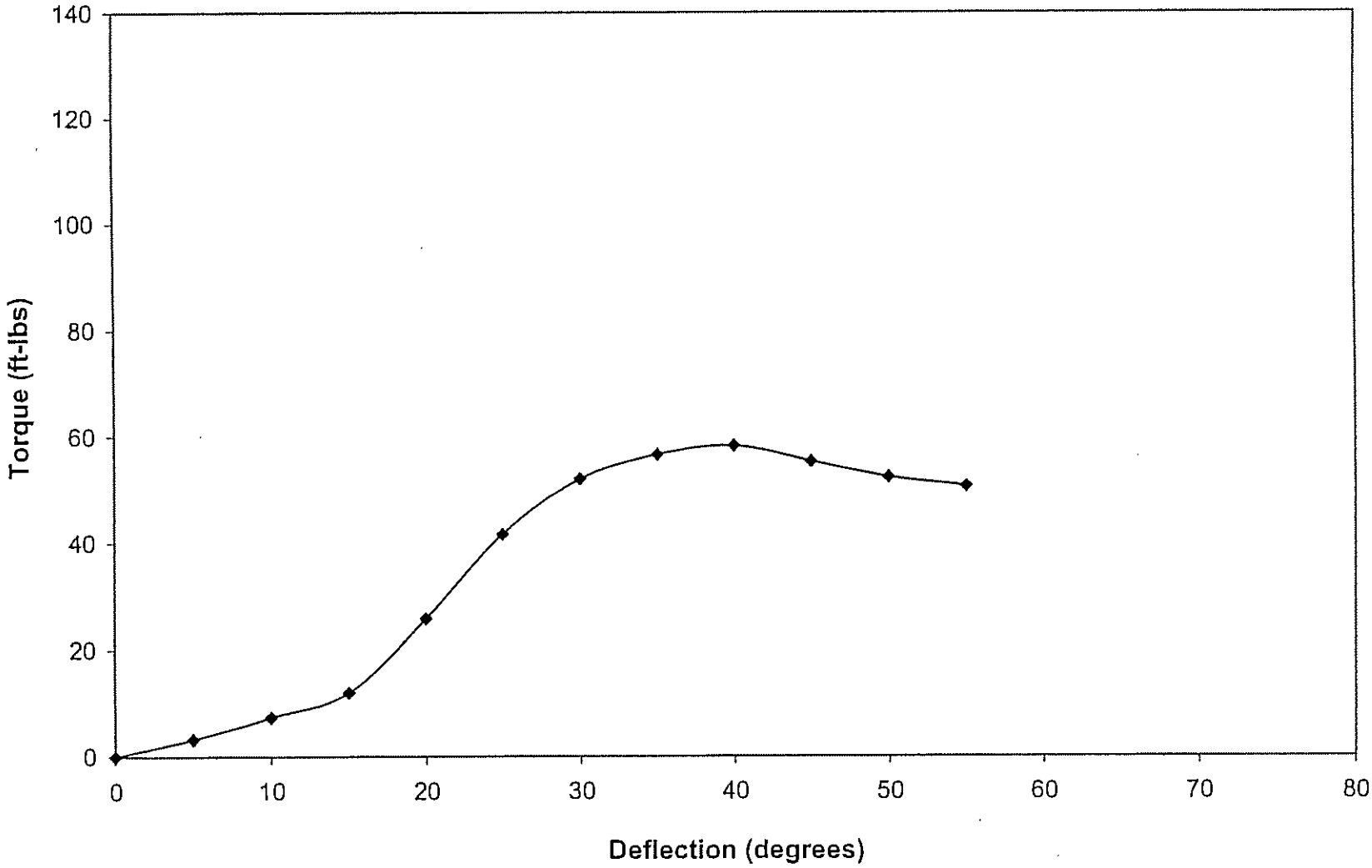
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S05**
**Vane #3: Depth = 59.7 ft., Elevation = -12.2 ft.**
**Undisturbed Condition**



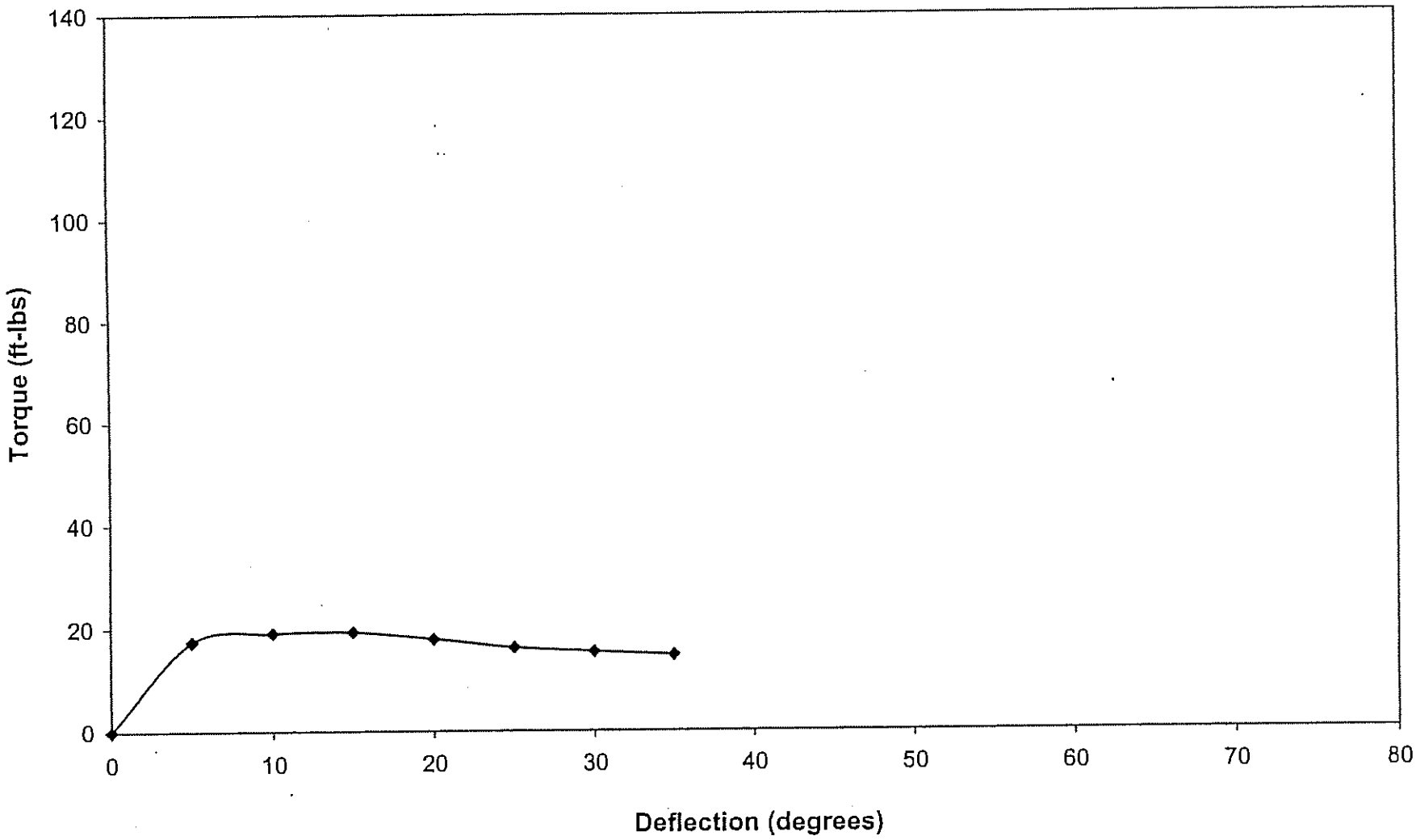

P5-02-S05 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S05**
**Vane #3: Depth = 59.7 ft., Elevation = -12.2 ft.**
**Remolded Condition**




P5-02-S05 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
A[illegible] 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION<br>4685.GC.03<br>WALTON CORPORATION/G. TRUVER, SR.<br>2-20-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S10<br>VANE #1 |
| GROUND SURFACE ELEV. (ft): | 48.0 |
| DEPTH TO VANE TIP (ft) | 19.7 |
| ELEV. AT VANE TIP (ft): | 28.3 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 7 |
| DEGREES ROTATION AT FAILURE: | 40 |
| MAXIMUM TORQUE (ft-lb) | 77.5 |
| FRICTION CORRECTION (ft-lb) | 2.7 |
| NET TORQUE (ft-lb) | 74.8 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 698 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 15 |
| MAXIMUM TORQUE (ft-lb) | 26.8 |
| FRICTION CORRECTION (ft-lb) | 2.0 |
| NET TORQUE (ft-lb) | 24.8 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 232 |

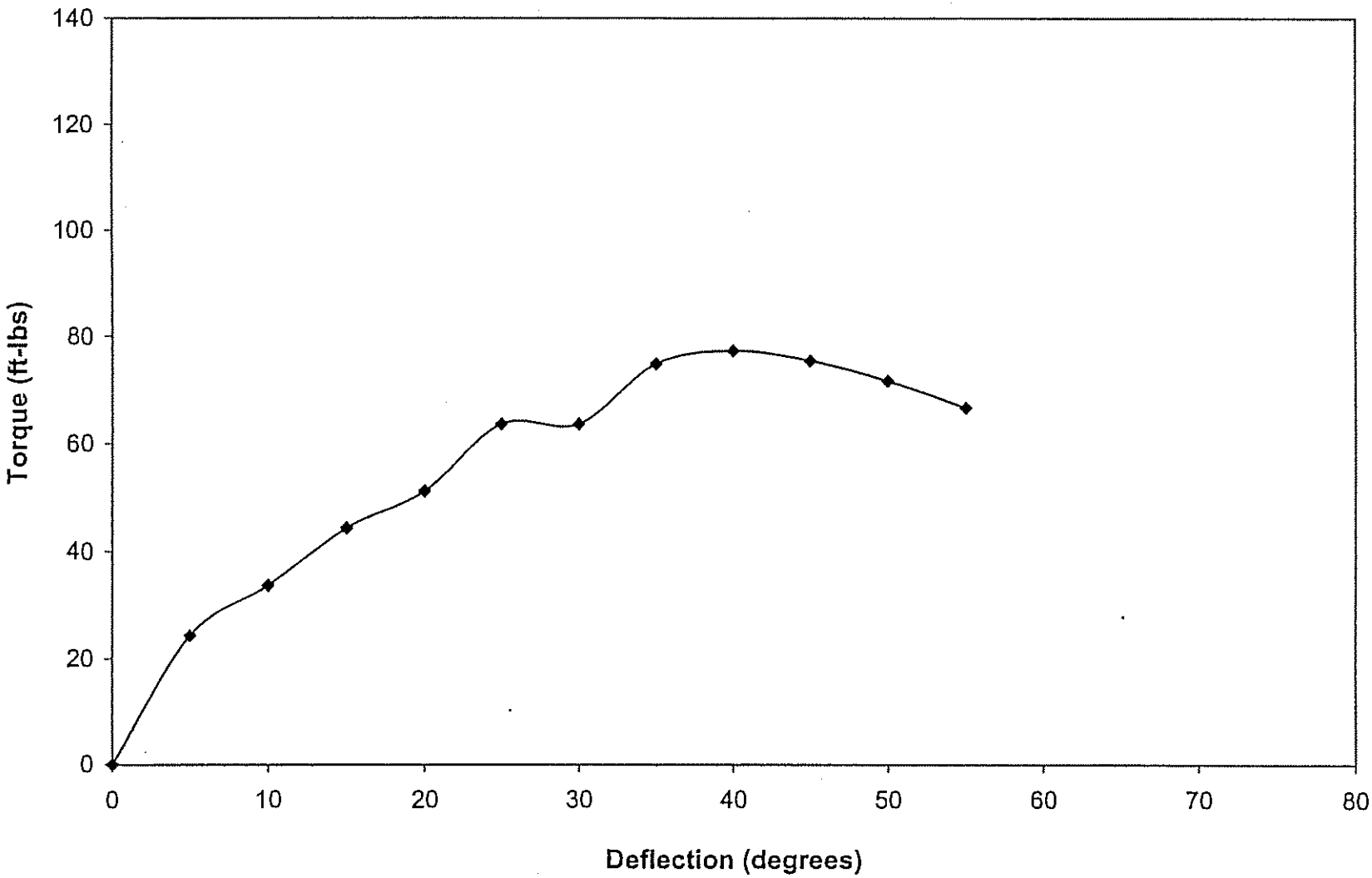
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S10**
**Vane #1: Depth = 19.7 ft., Elevation = 28.3 ft.**
**Undisturbed Condition**




P5-02-S10 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
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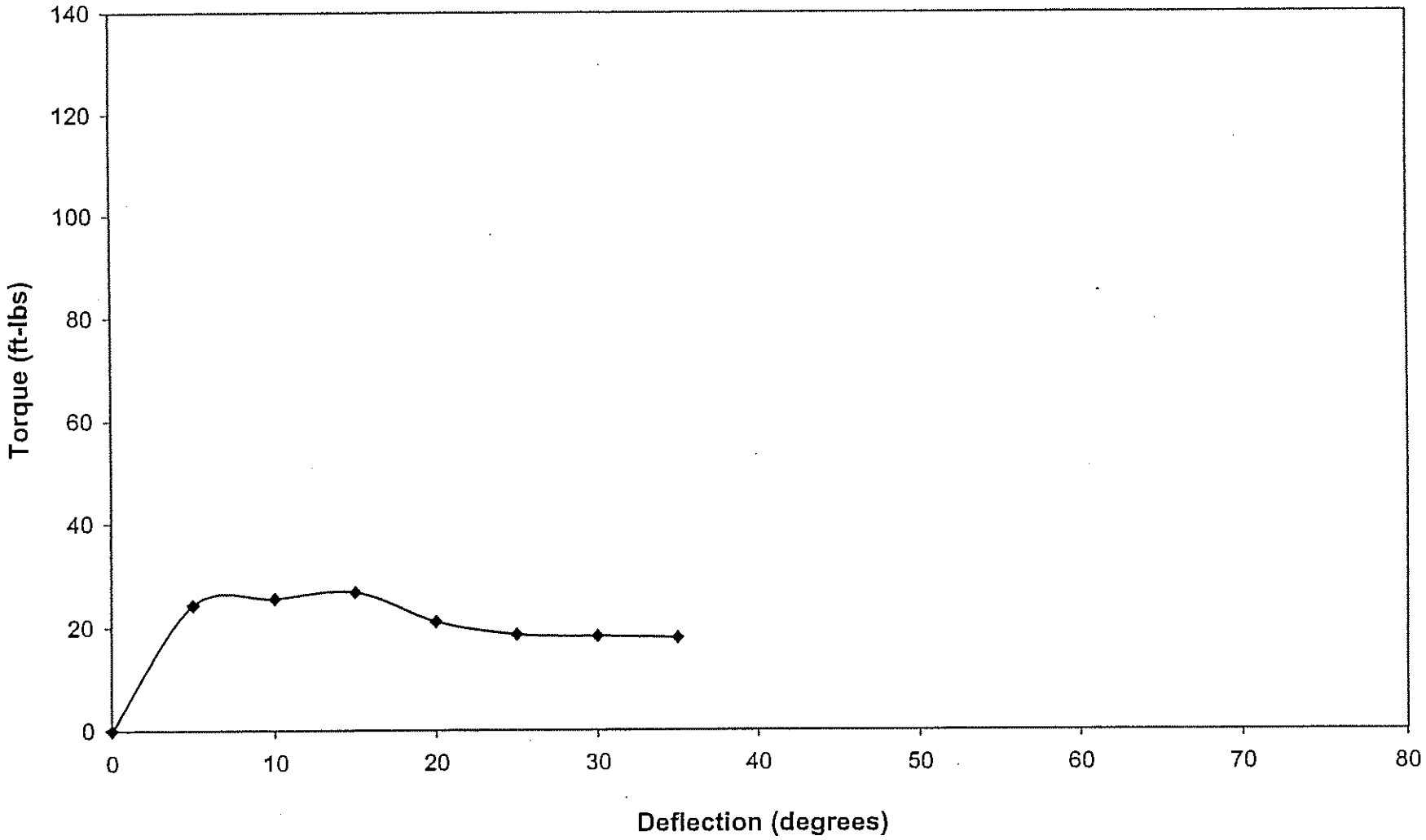
CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S10**
**Vane #1: Depth = 19.7 ft., Elevation = 28.3 ft.**
**Remolded Condition**




P5-02-S10 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE I SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC.03 |
| DRILLER/FOREMAN: | WALTON CORPORATION/G. TRUVER, SR. |
| DATE: | 2-21-02 |
| TEST BORING DESIGNATION: | P5-02-S10 |
| VANE SHEAR TEST DESIGNATION: | VANE #2A |
| GROUND SURFACE ELEV. (ft): | 48.0 |
| DEPTH TO VANE TIP (ft) | 47.7 |
| ELEV. AT VANE TIP (ft): | 0.3 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 13 |
| MAXIMUM TORQUE (ft-lb) | 75.9 |
| FRICTION CORRECTION (ft-lb) | 4.5 |
| NET TORQUE (ft-lb) | 71.4 |
| K VALUE ($ft^3$): | 0.0351 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 2034 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 22 |
| DEGREES ROTATION AT FAILURE: | 135 |
| MAXIMUM TORQUE (ft-lb) | 26.2 |
| FRICTION CORRECTION (ft-lb) | 2.8 |
| NET TORQUE (ft-lb) | 23.4 |
| K VALUE ($ft^3$): | 0.0351 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 667 |

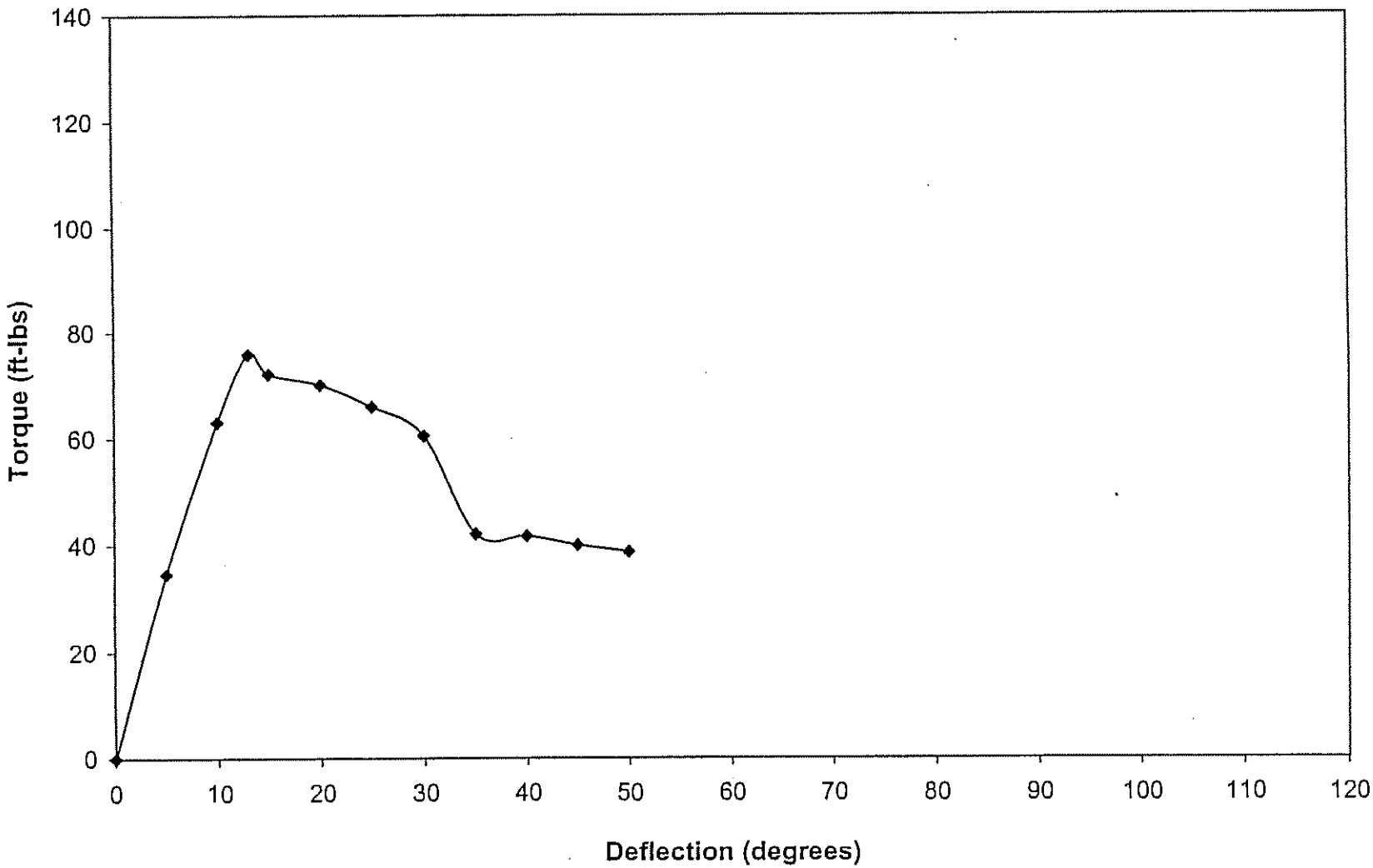
NOTES:

1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S10**
**Vane #2A: Depth = 47.7 ft., Elevation = 0.3 ft.**
**Undisturbed Condition**



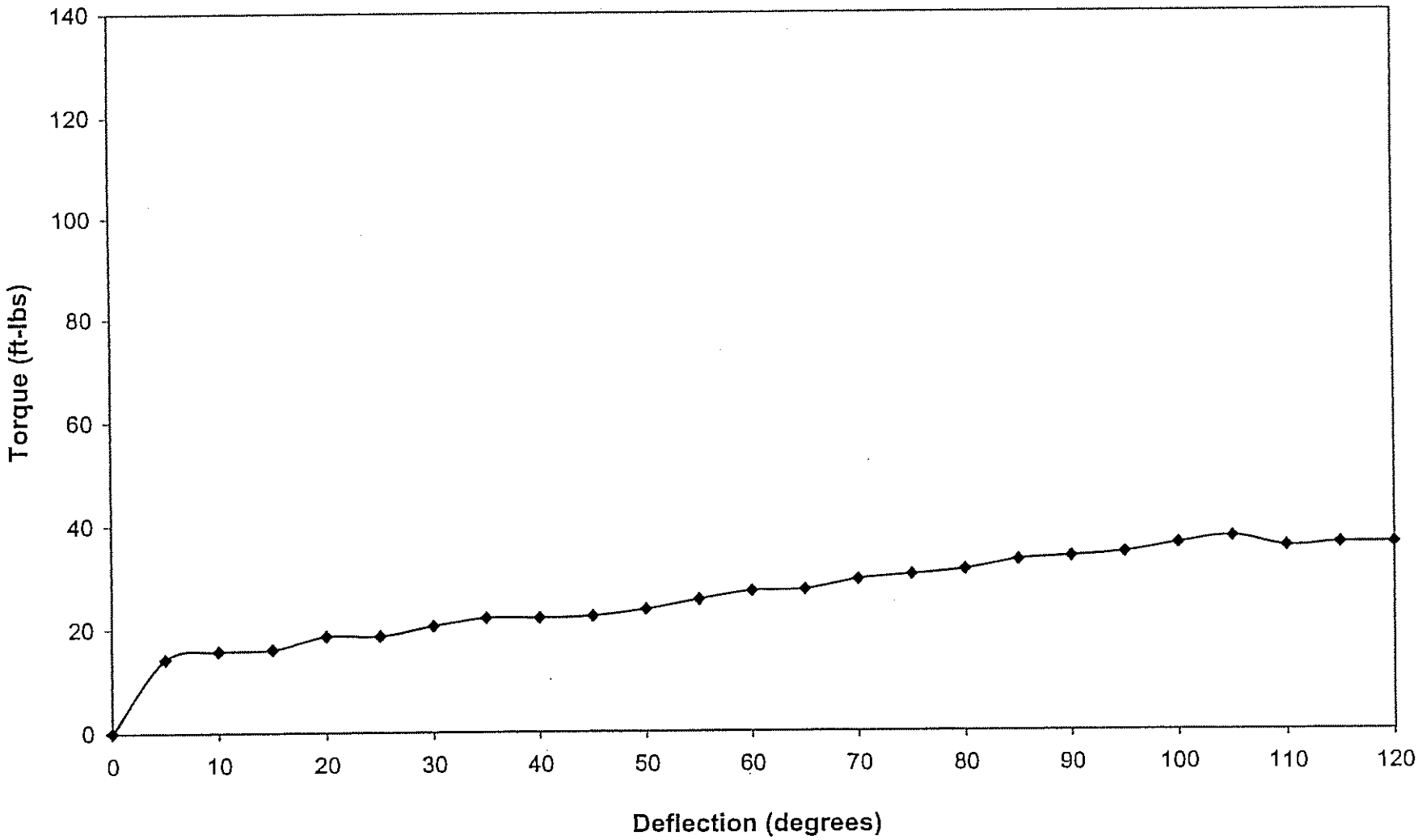

P5-02-S10 Vane #2A

W.O. 4685.GC
Duffield Associates, Inc.
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S10**
**Vane #1: Depth = 19.7 ft., Elevation = 28.3 ft.**
**Remolded Condition**




P5-02-S10 Vane #2A

W.O. 4685.GC
Duffield Associates, Inc.
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# VANE SHEAR TEST REPORT

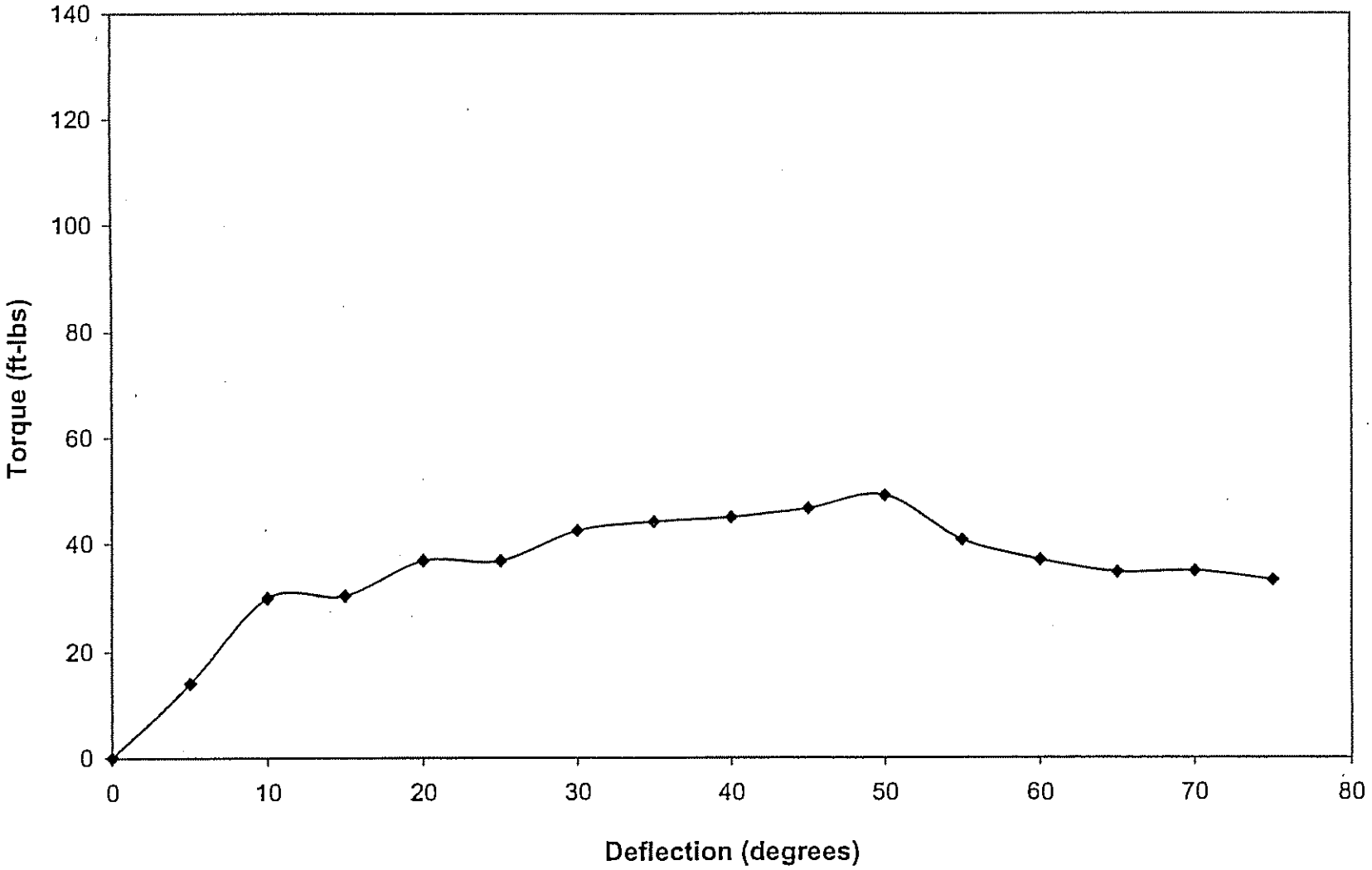
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE I SITE EXPLORATION<br>4685.GC.03<br>WALTON CORPORATION/G. TRUVER, SR.<br>2-21-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S10<br>VANE #3 |
| GROUND SURFACE ELEV. (ft): | 48.0 |
| DEPTH TO VANE TIP (ft) | 64.7 |
| ELEV. AT VANE TIP (ft): | -16.7 |
| | |
| DRILLING EQUIPMENT: | CME 55 TRUCK |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 2-1/2 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 8 |
| DEGREES ROTATION AT FAILURE: | 50 |
| MAXIMUM TORQUE (ft-lb) | 49.2 |
| FRICTION CORRECTION (ft-lb) | 5.6 |
| NET TORQUE (ft-lb) | 43.6 |
| K VALUE ($ft^3$): | 0.0351 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 1242 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 7 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 37.5 |
| FRICTION CORRECTION (ft-lb) | 3.2 |
| NET TORQUE (ft-lb) | 34.3 |
| K VALUE ($ft^3$): | 0.0351 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 977 |

NOTES:
1. Friction corrections from curves developed based on results of 4 friction tests performed as part of this evaluation.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S10**
**Vane #3: Depth = 64.7 ft., Elevation = -16.7 ft.**
**Undisturbed Condition**



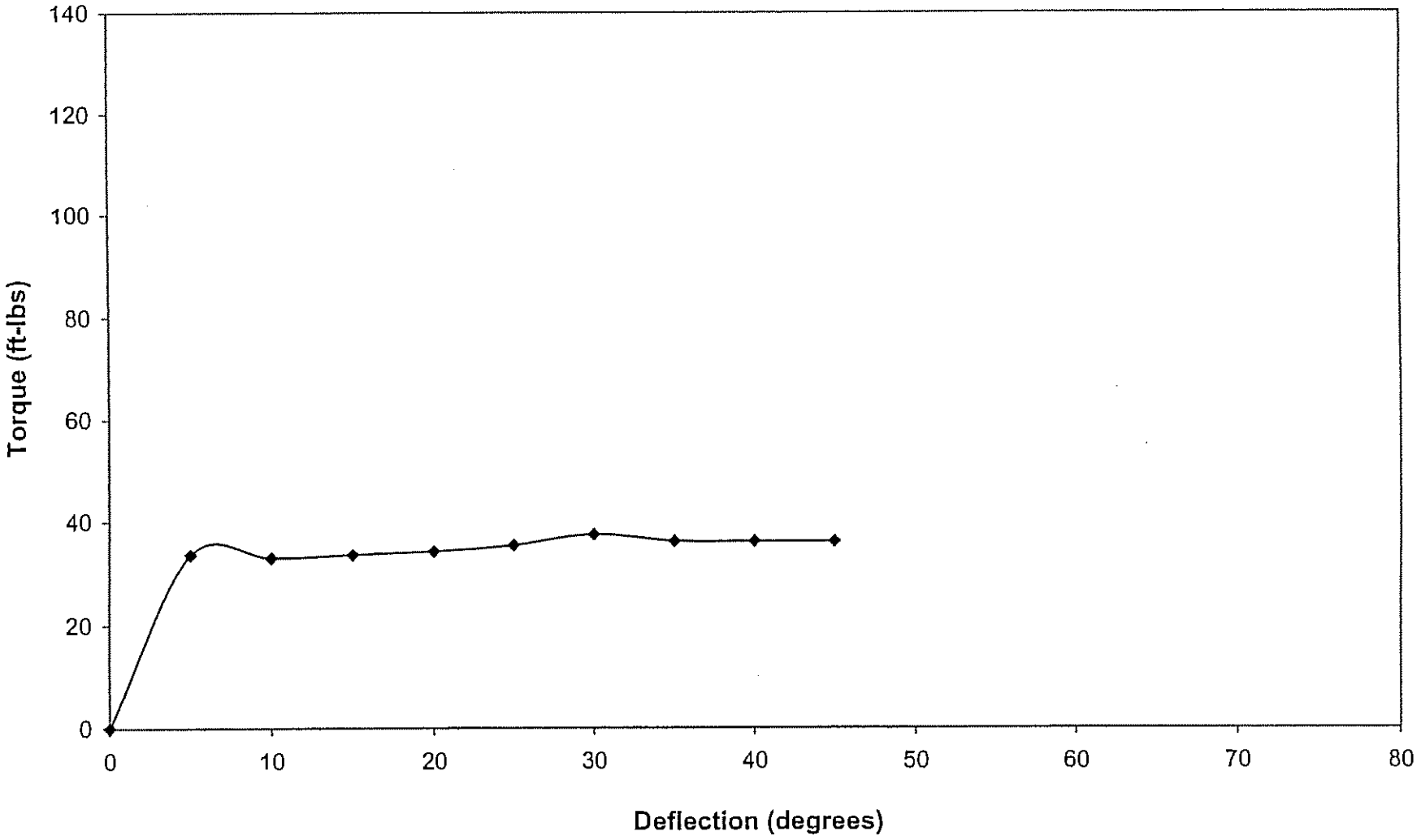

P5-02-S10 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
A 02

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S10**
**Vane #3: Depth = 64.7 ft., Elevation = -16.7 ft.**
**Remolded Condition**




P5-02-S10 Vane #3

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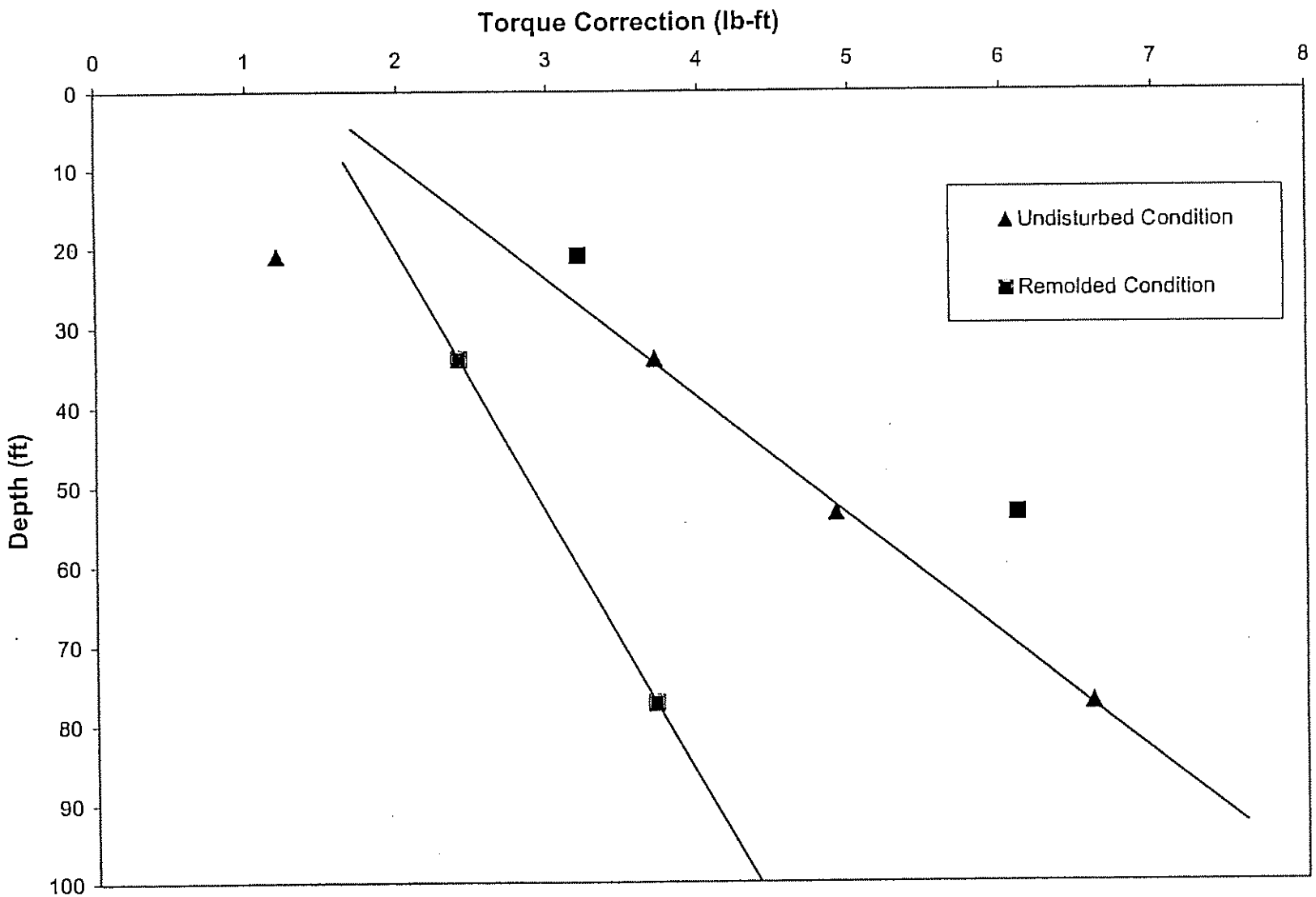
April 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE I SITE EXPLORATION

## Field Vane Shear Test Data

**Friction Test Results**




W.O. 4685.GC
Duffield Associates, Inc.
/ 2002

Friction Results

# VANE SHEAR TEST REPORT

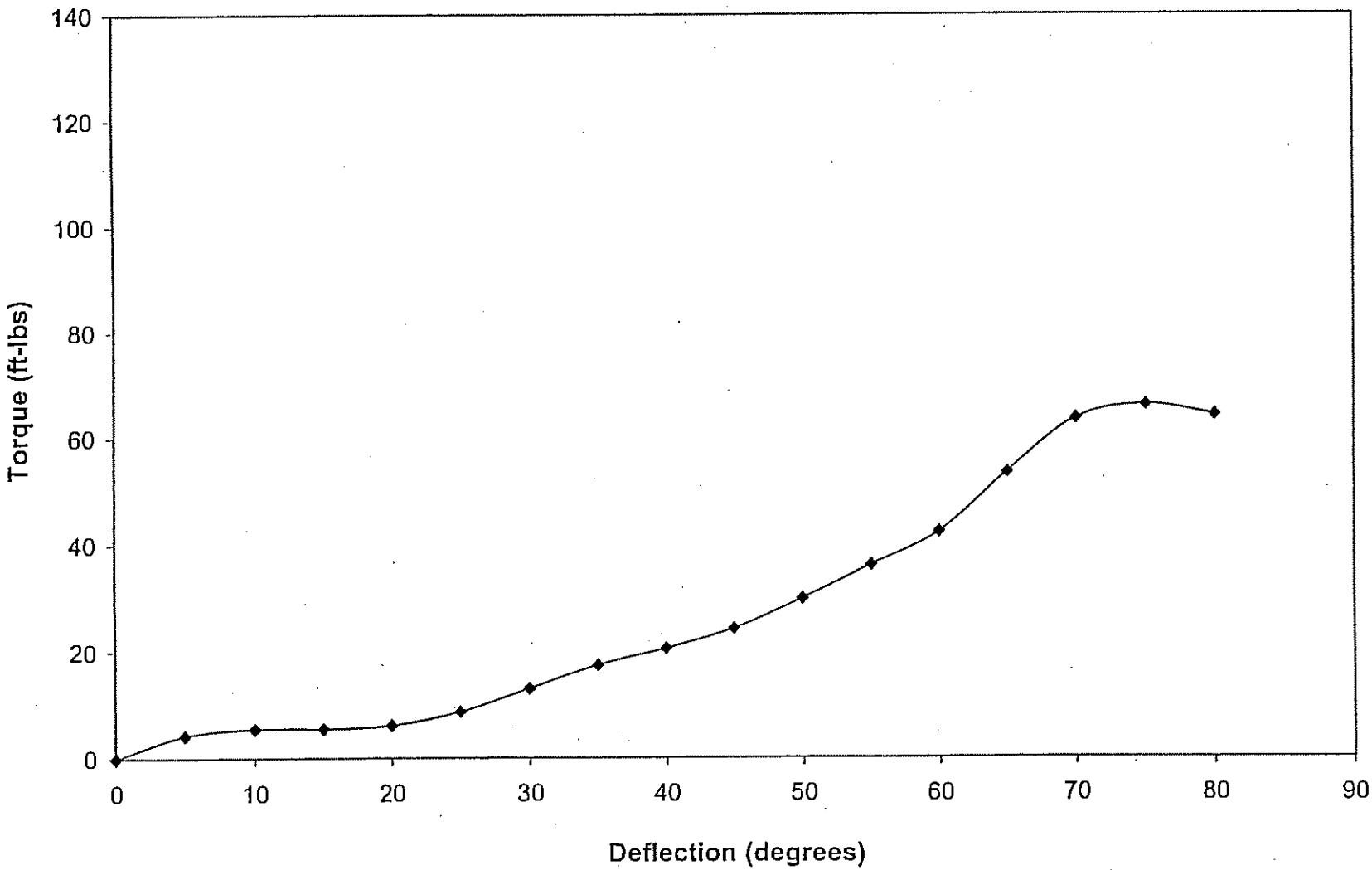
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-29-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P2-02-S017<br>VANE #1 |
| GROUND SURFACE ELEV. (ft): | 91.4 |
| DEPTH TO VANE TIP (ft) | 65.7 |
| ELEV. AT VANE TIP (ft): | 25.7 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 12 |
| DEGREES ROTATION AT FAILURE: | 75 |
| MAXIMUM TORQUE (ft-lb) | 66.2 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 58.2 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 543 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 7 |
| DEGREES ROTATION AT FAILURE: | 40 |
| MAXIMUM TORQUE (ft-lb) | 10.2 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 9.4 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 88 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #1: Depth = 65.7 ft., Elevation = 25.7 ft.**
**Undisturbed Condition**




P2-02 Vane #1

W.O. 4685.GC
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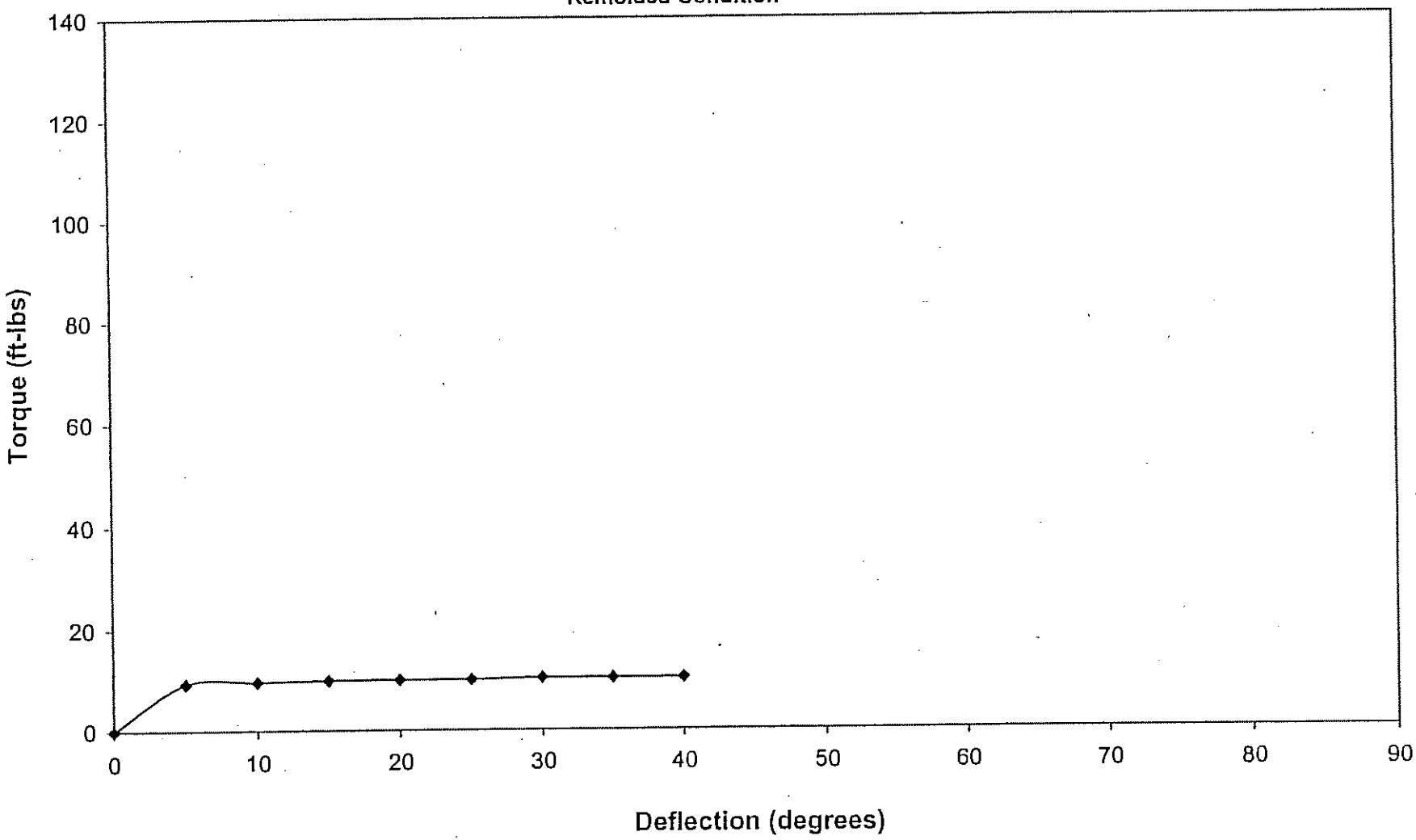
[illegible]y 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #1: Depth = 65.7 ft., Elevation = 25.7 ft.**
**Remolded Condition**




P2-02-S017 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

# VANE SHEAR TEST REPORT

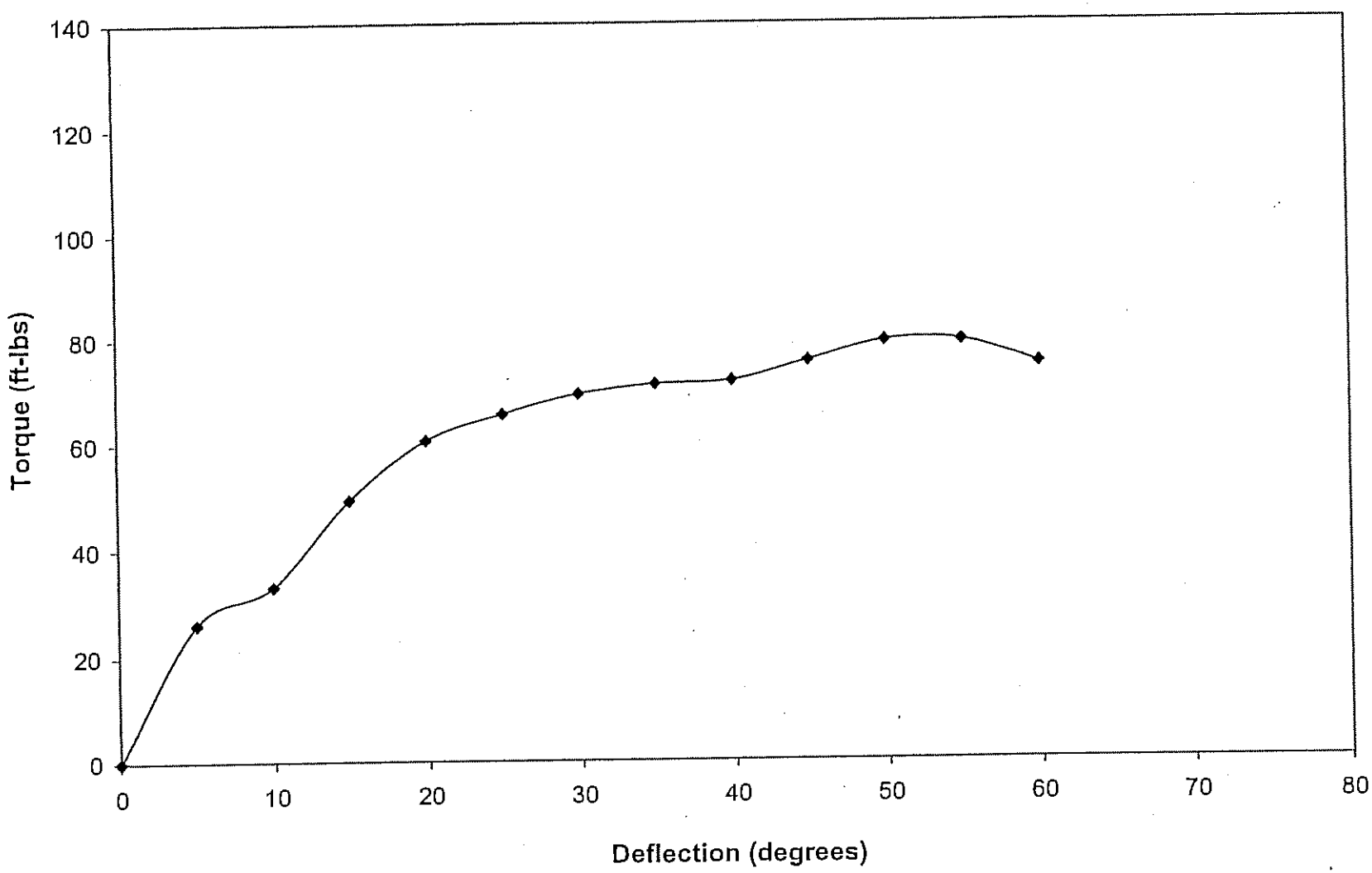
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 5-29-02 |
| TEST BORING DESIGNATION: | P2-02-S017 |
| VANE SHEAR TEST DESIGNATION: | VANE #2 |
| GROUND SURFACE ELEV. (ft): | 91.4 |
| DEPTH TO VANE TIP (ft) | 70.7 |
| ELEV. AT VANE TIP (ft): | 20.7 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 9 |
| DEGREES ROTATION AT FAILURE: | 55 |
| MAXIMUM TORQUE (ft-lb) | 79.4 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 71.4 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 667 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 8 |
| DEGREES ROTATION AT FAILURE: | 45 |
| MAXIMUM TORQUE (ft-lb) | 14.9 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 14.1 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 132 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #2 Depth = 70.7 ft., Elevation = 20.7 ft.**
**Undisturbed Condition**



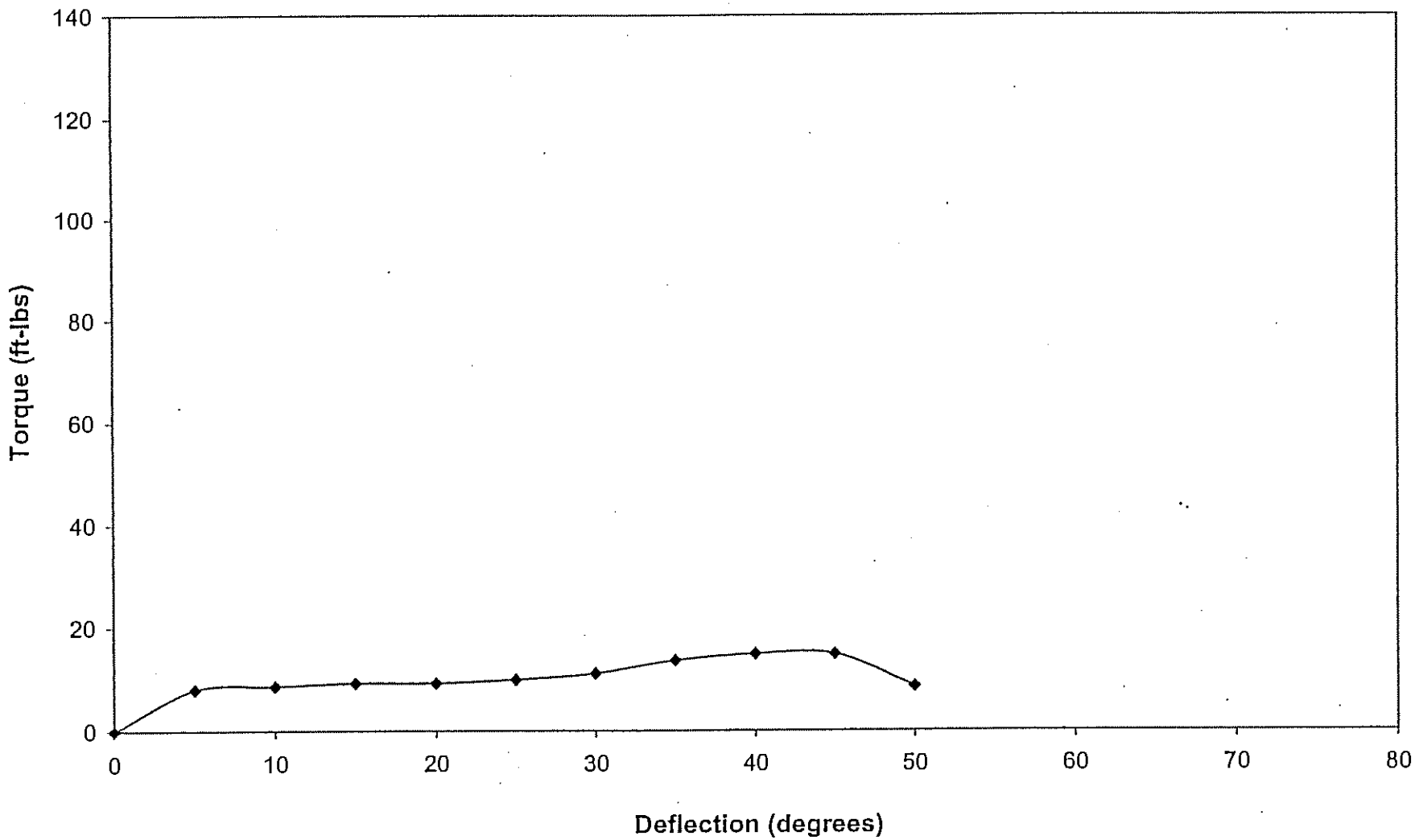

P2-02-S017 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

# Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #2: Depth = 70.7 ft., Elevation = 20.7 ft.**
**Remolded Condition**




P2-02 Vane #2

W.O. 4685.GC
Duffield Ass s, Inc.
2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE II SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 5-31-02 |
| TEST BORING DESIGNATION: | P2-02-S017 |
| VANE SHEAR TEST DESIGNATION: | VANE #3 |
| GROUND SURFACE ELEV. (ft): | 91.4 |
| DEPTH TO VANE TIP (ft) | 76.7 |
| ELEV. AT VANE TIP (ft): | 14.7 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 24 |
| MAXIMUM TORQUE (ft-lb) | 45.3 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 37.3 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 348 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 7 |
| DEGREES ROTATION AT FAILURE: | 40 |
| MAXIMUM TORQUE (ft-lb) | 12.4 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 11.6 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 108 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

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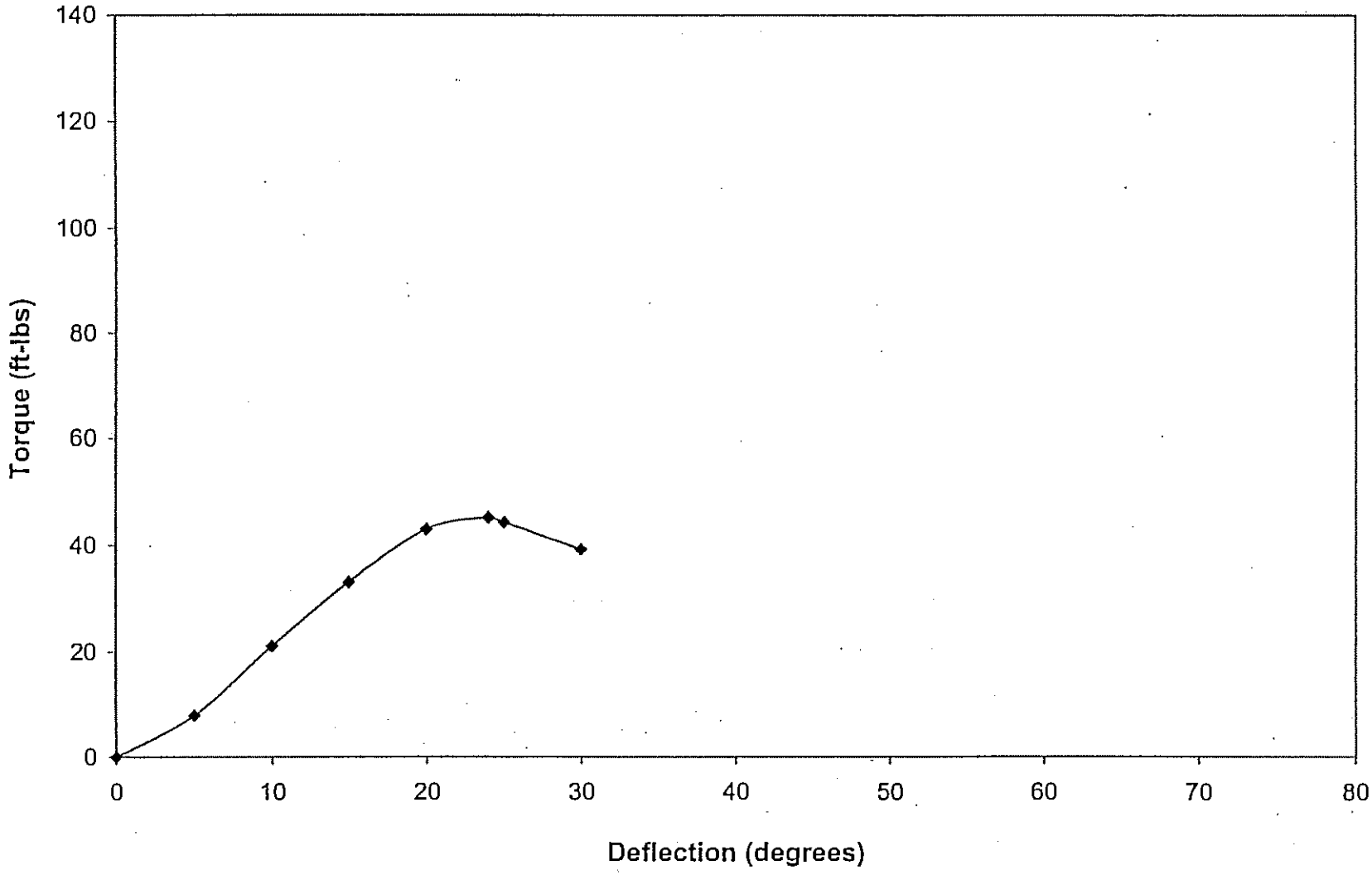
7/1/2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #3 Depth = 76.7 ft., Elevation = 14.7 ft.**
**Undisturbed Condition**



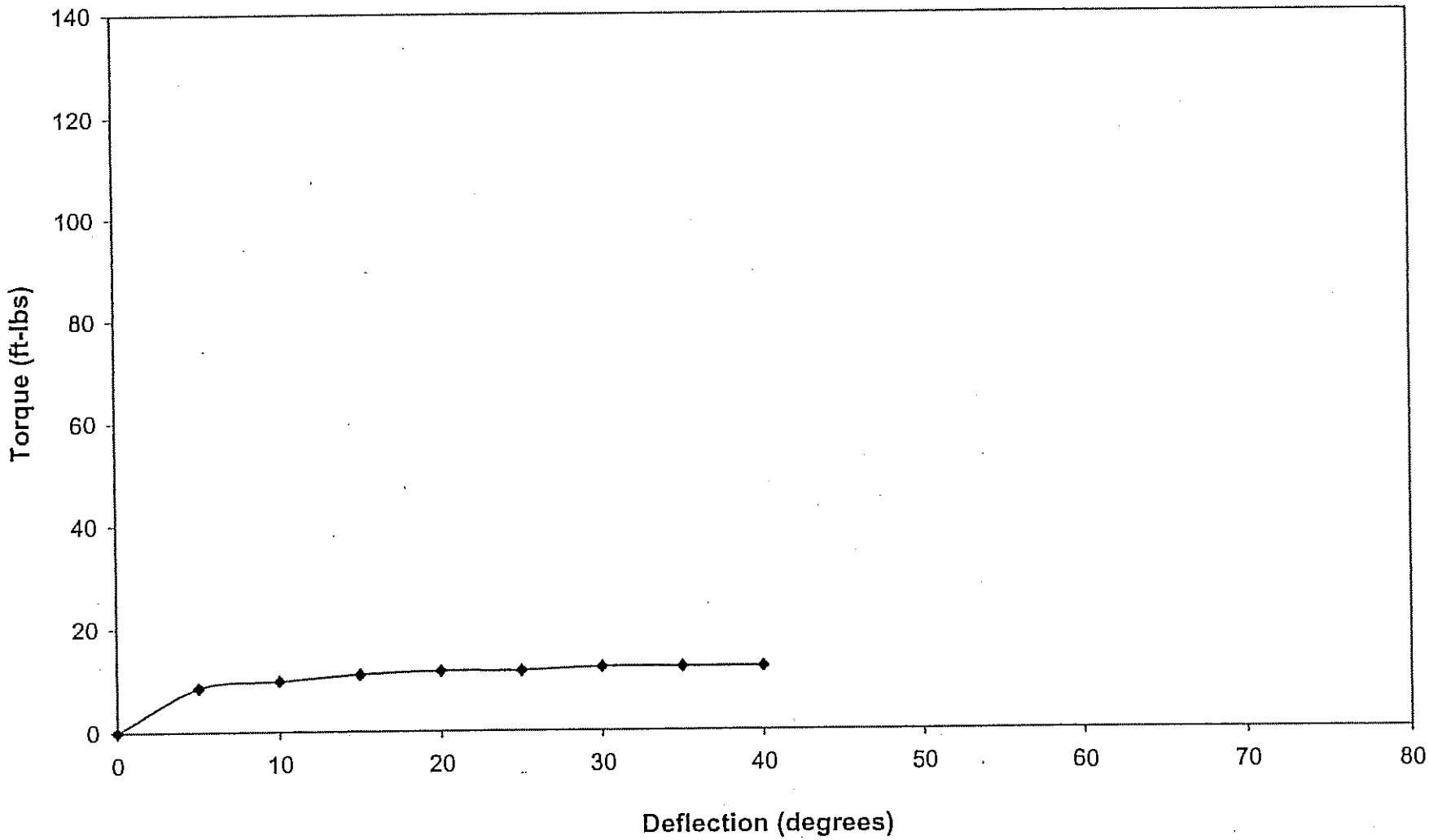

P2-02 Vane #3

W.O. 4685.GC
Duffield Ass s, Inc.
y 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

# Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #3: Depth = 76.7 ft., Elevation = 14.7 ft.**
**Remolded Condition**




P2-02-S017 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE II SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 5-31-02 |
| TEST BORING DESIGNATION: | P2-02-S017 |
| VANE SHEAR TEST DESIGNATION: | VANE #4 |
| GROUND SURFACE ELEV. (ft): | 91.4 |
| DEPTH TO VANE TIP (ft) | 81.7 |
| ELEV. AT VANE TIP (ft): | 9.7 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 110.7 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 102.7 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 959 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 15 |
| MAXIMUM TORQUE (ft-lb) | 17.4 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 16.6 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 155 |

NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

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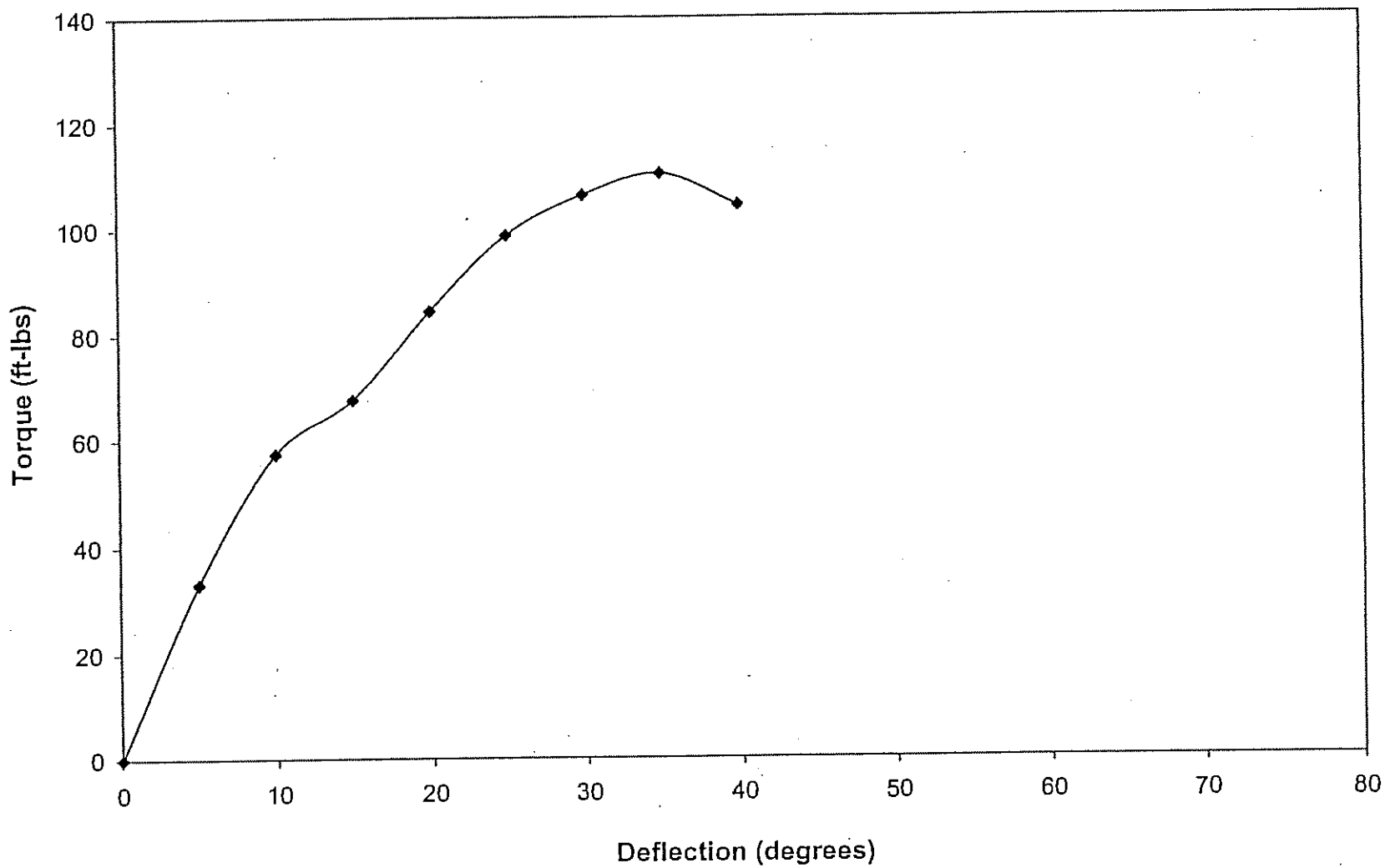
7/1/2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #4: Depth = 81.7 ft., Elevation = 9.7 ft.**
**Undisturbed Condition**



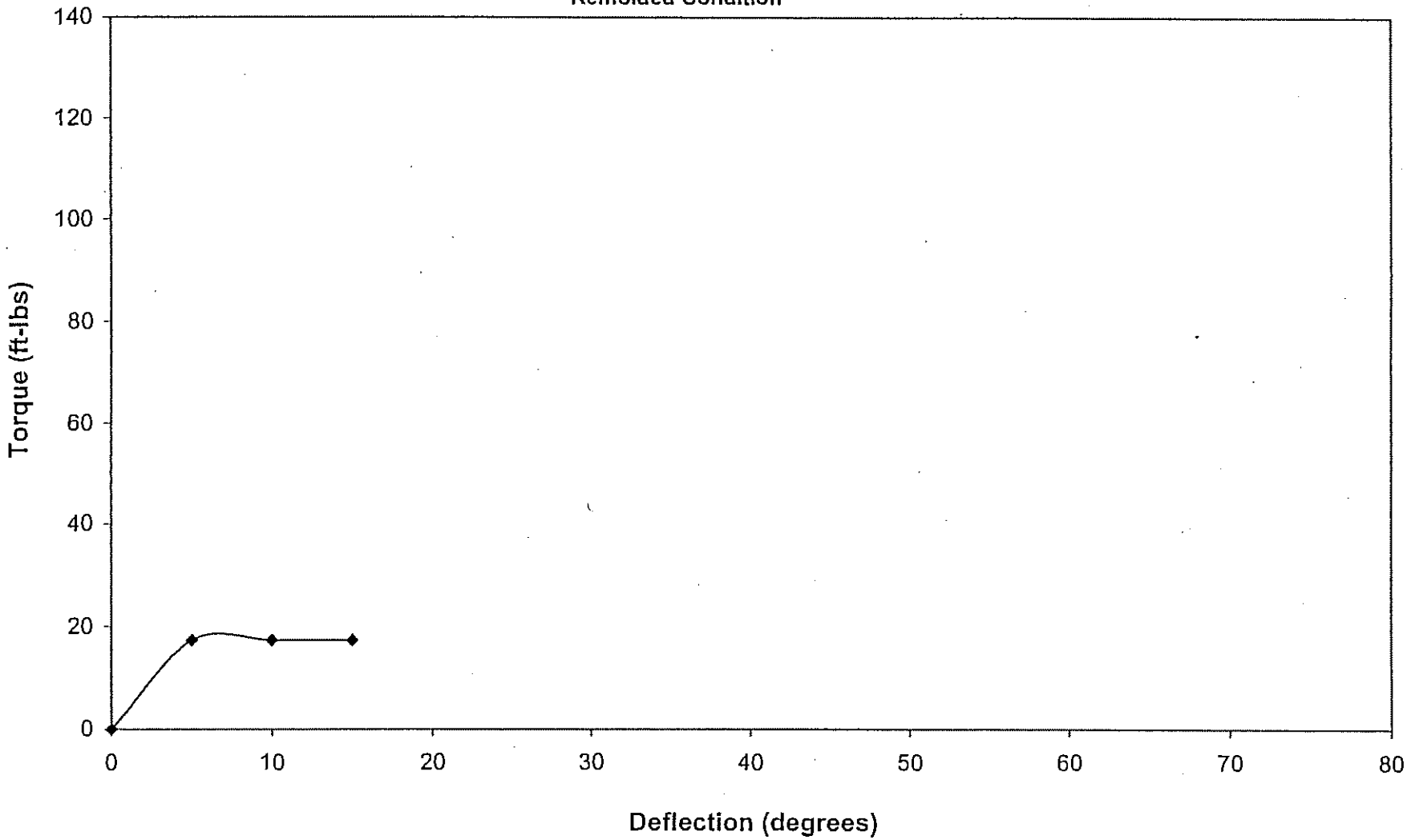

P2-02-S017 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P2-02-S017**
**Vane #4: Depth = 81.7 ft., Elevation = 9.7 ft.**
**Remolded Condition**




P2-02-S017 Vane #4

W.O. 4685.GC
Duffield Assr s, Inc.
2002

# VANE SHEAR TEST REPORT

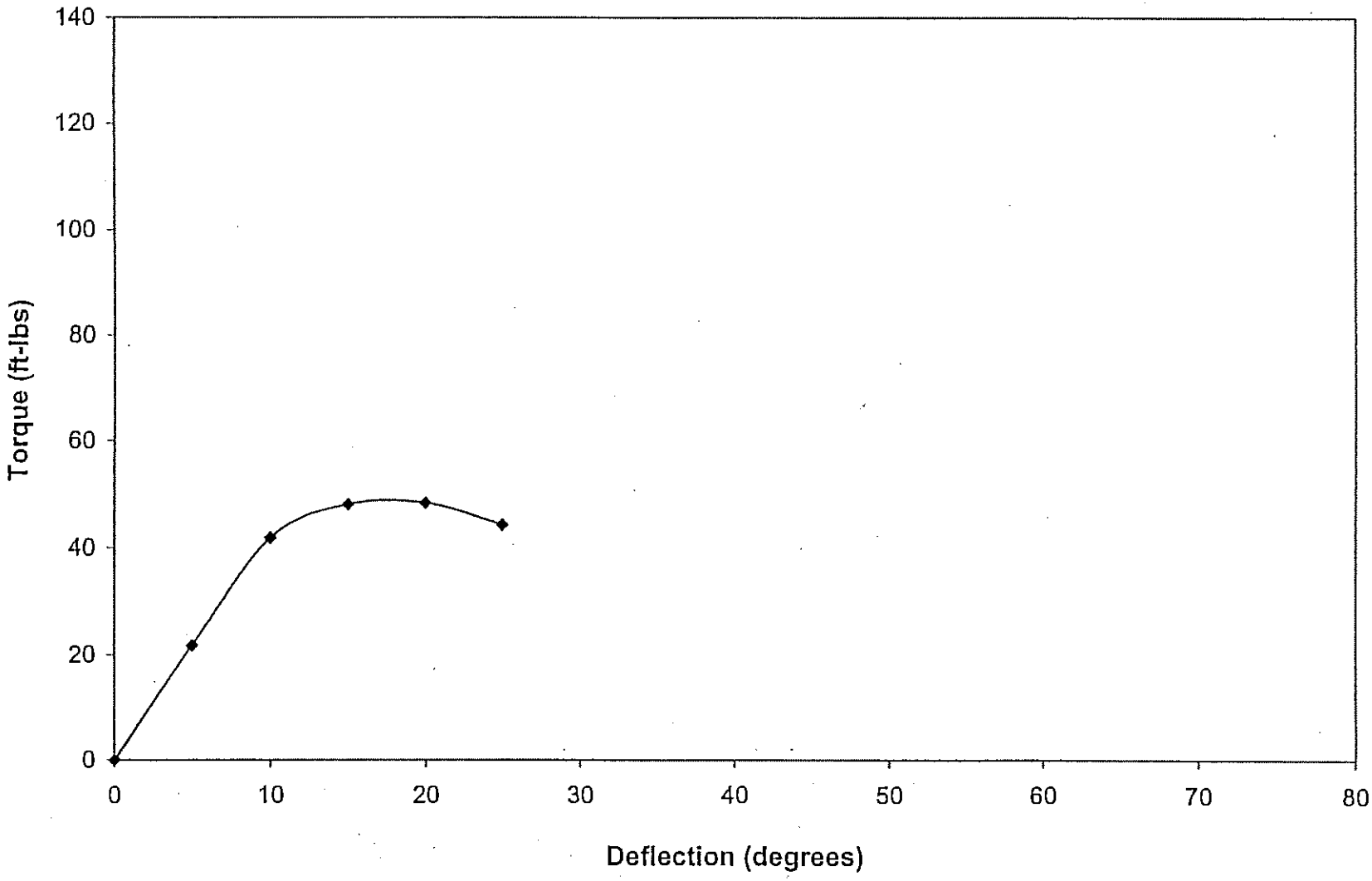
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/GARY TRUVER, JR.<br>5-24-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P3-02-S013<br>VANE #1 |
| GROUND SURFACE ELEV. (ft): | 69.8 |
| DEPTH TO VANE TIP (ft) | 34.7 |
| ELEV. AT VANE TIP (ft): | 35.1 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 48.4 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 40.4 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 377 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 11.7 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 10.9 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 102 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane #1: Depth = 34.7 ft., Elevation = 35.1 ft.**
**Undisturbed Condition**



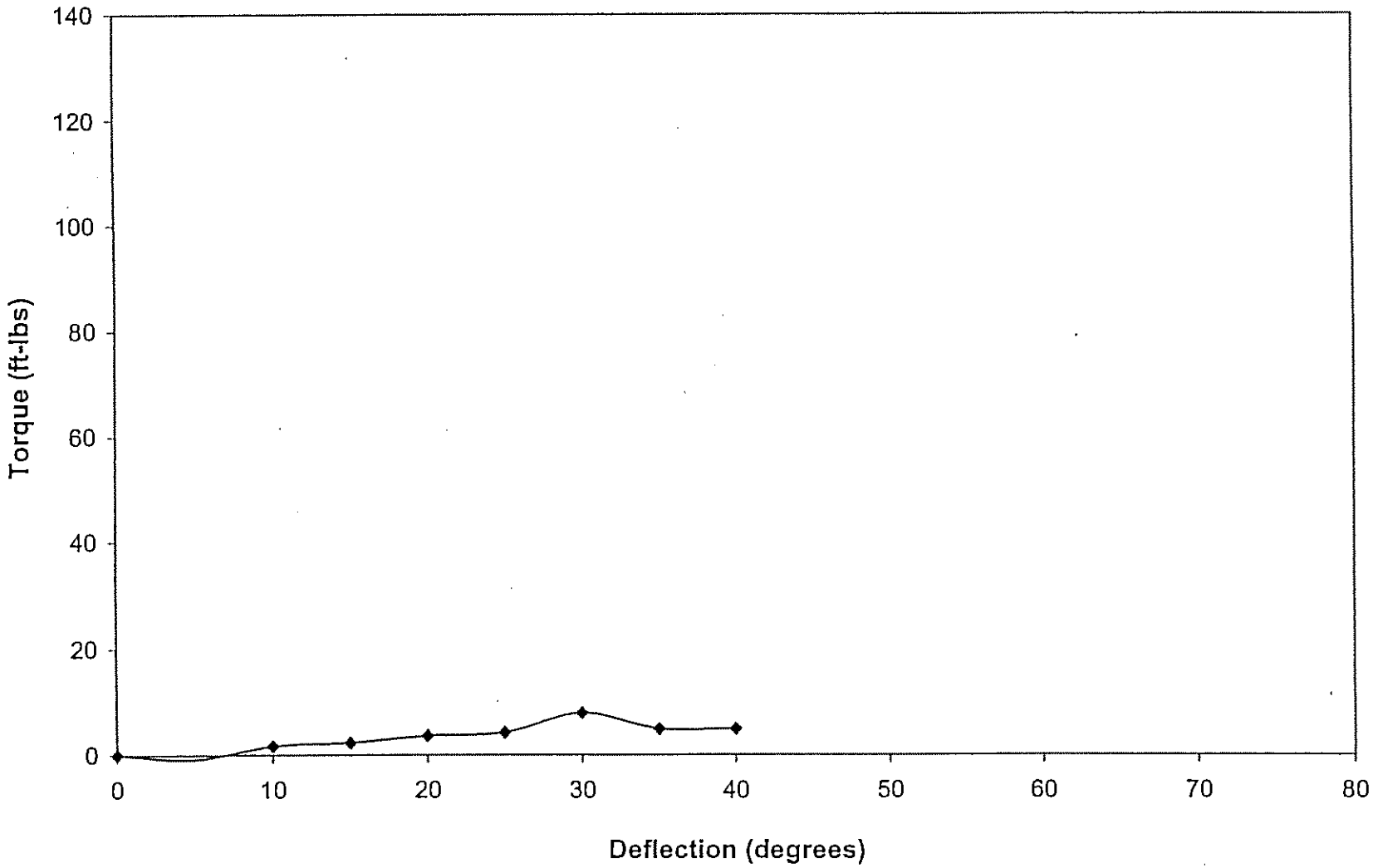

P3-02-[illegible] Vane #1

W.O. 4685.GC
Duffield Assc[illegible], Inc.
[illegible], 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane BL-1 (Friction Test): Depth = 41.0 ft., Elevation = 28.8 ft.**
**Undisturbed Condition**



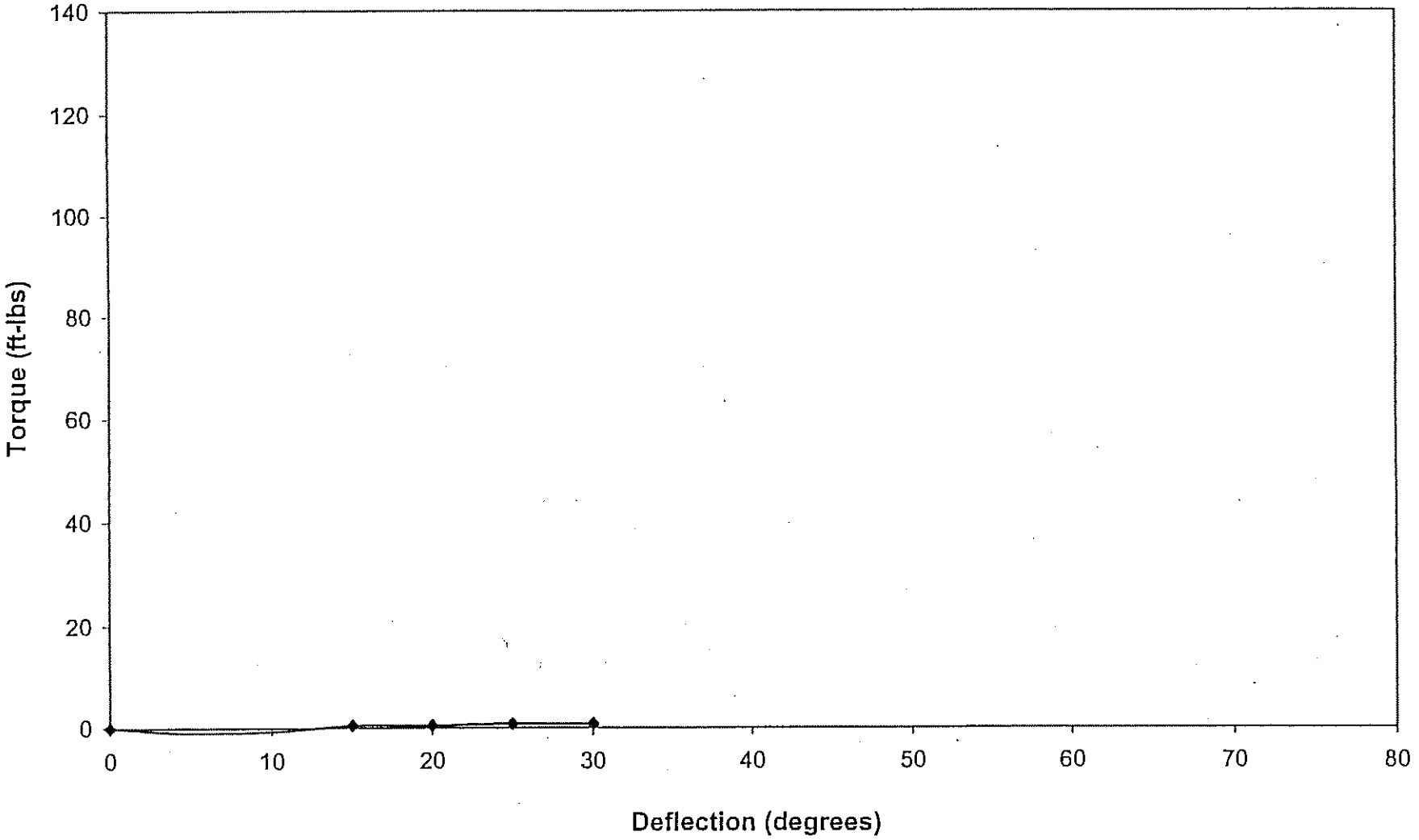

P3-02-S013 BLANK #1

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane BL-1 (Friction Test): Depth = 41.0 ft., Elevation = 28.8 ft.**
**Remolded Condition**




P3-02-S013 BLANK #1

W.O. 4685.GC
Duffield Associates, Inc.
2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/GARY TRUVER, JR.<br>5-24-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P3-02-S013<br>VANE #2 |
| GROUND SURFACE ELEV. (ft): | 69.8 |
| DEPTH TO VANE TIP (ft) | 39.7 |
| ELEV. AT VANE TIP (ft): | 30.1 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 22 |
| MAXIMUM TORQUE (ft-lb) | 43.1 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 35.1 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 328 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 10 |
| DEGREES ROTATION AT FAILURE: | 60 |
| MAXIMUM TORQUE (ft-lb) | 10.5 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 9.7 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 91 |

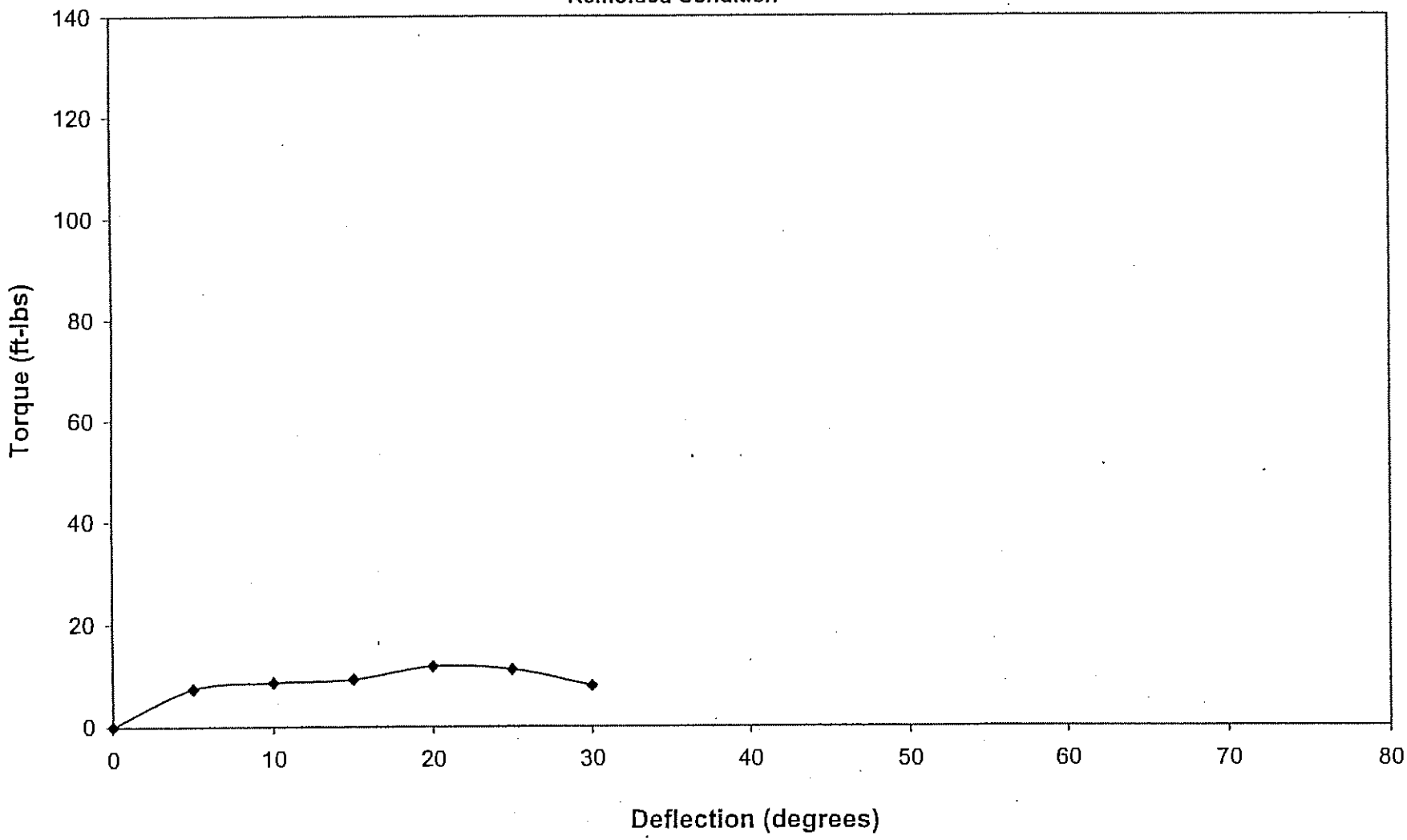
NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane #1: Depth = 34.7 ft., Elevation = 35.1 ft.**
**Remolded Condition**



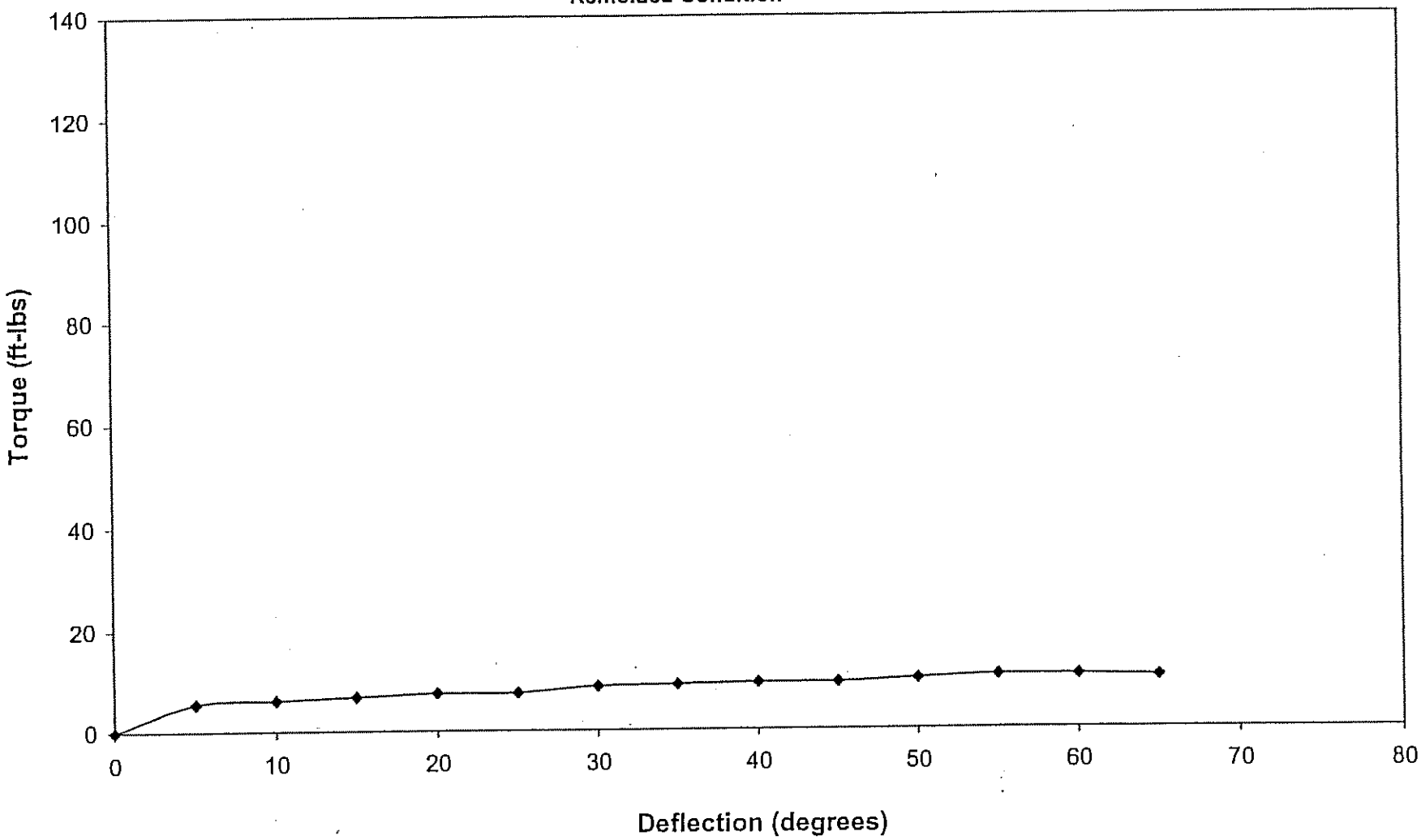

P3-02-S013 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane #2: Depth = 39.7 ft., Elevation = 30.1 ft.**
**Remolded Condition**




P3-02-S013 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

# VANE SHEAR TEST REPORT

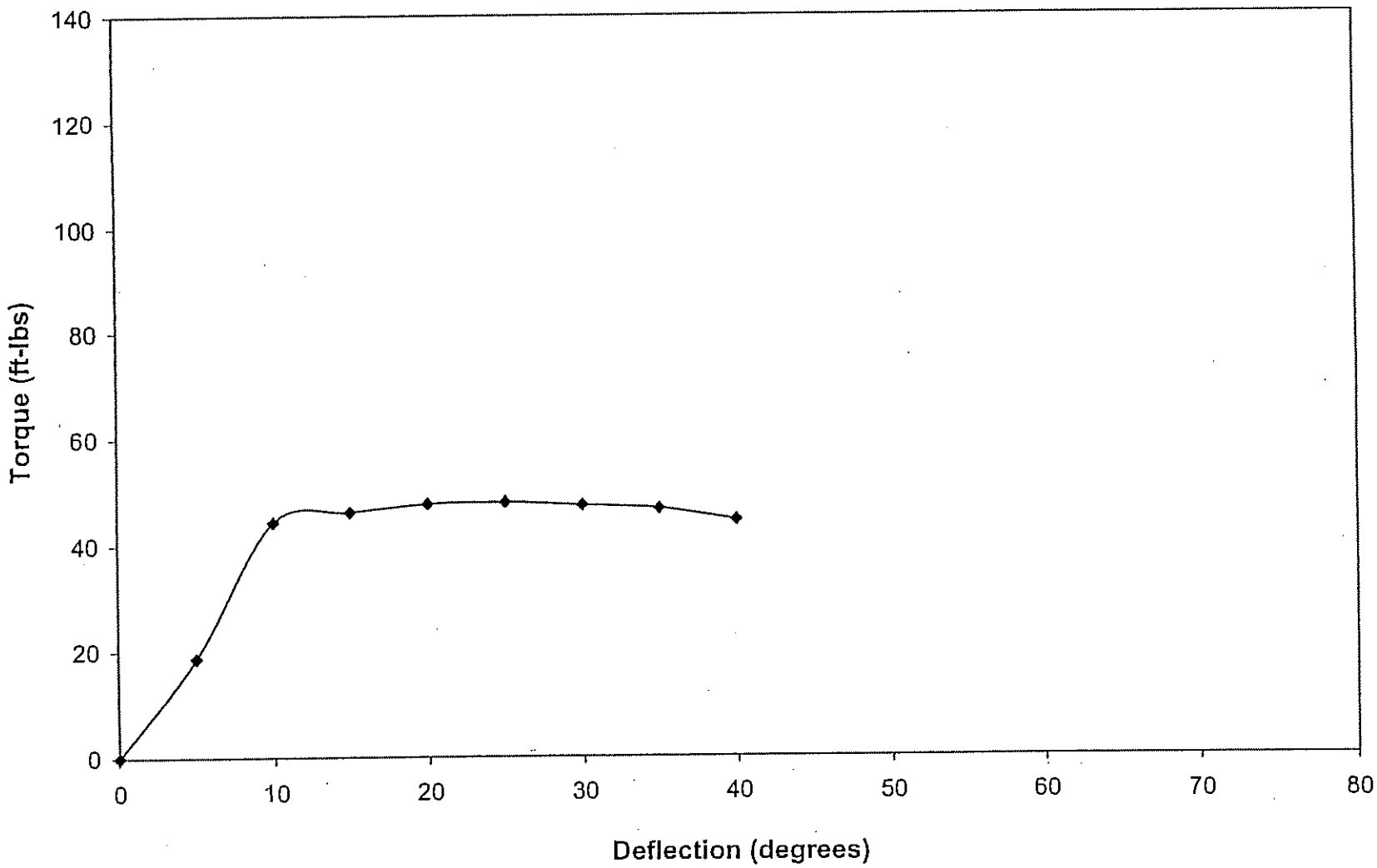
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/GARY TRUVER, JR.<br>5-24-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P3-02-S013<br>VANE #3 |
| GROUND SURFACE ELEV. (ft): | 69.8 |
| DEPTH TO VANE TIP (ft) | 46.7 |
| ELEV. AT VANE TIP (ft): | 23.1 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 48.1 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 40.1 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 374 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 3.0 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 2.2 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 21 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane #3: Depth = 46.7 ft., Elevation = 23.1 ft.**
**Undisturbed Condition**



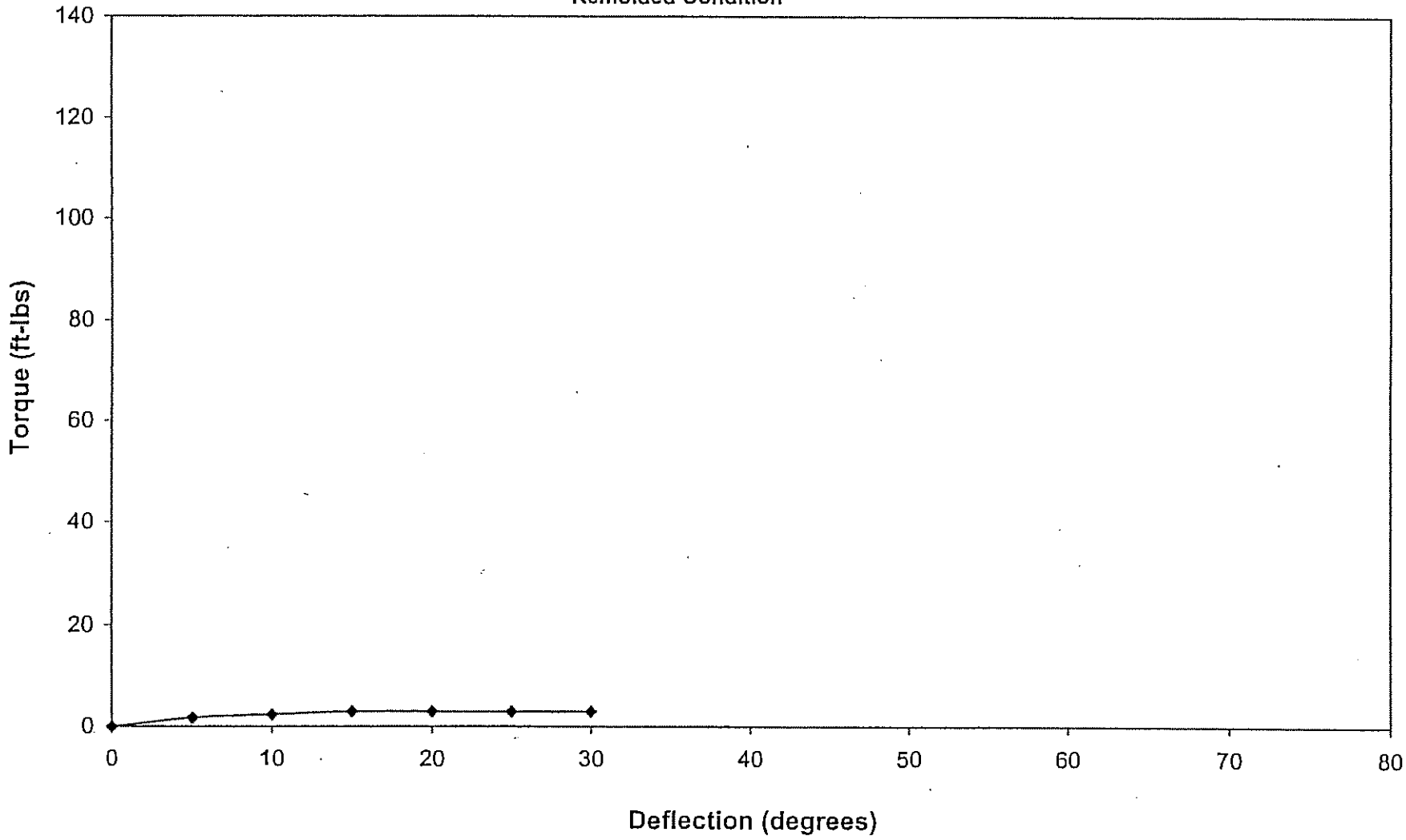

P3-02-S013 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane #3: Depth = 46.7 ft., Elevation = 23.1 ft.**
**Remolded Condition**




P3-02-S013 Vane #3

W.O. 4685.GC
Duffield Asso , Inc.
2002

# VANE SHEAR TEST REPORT

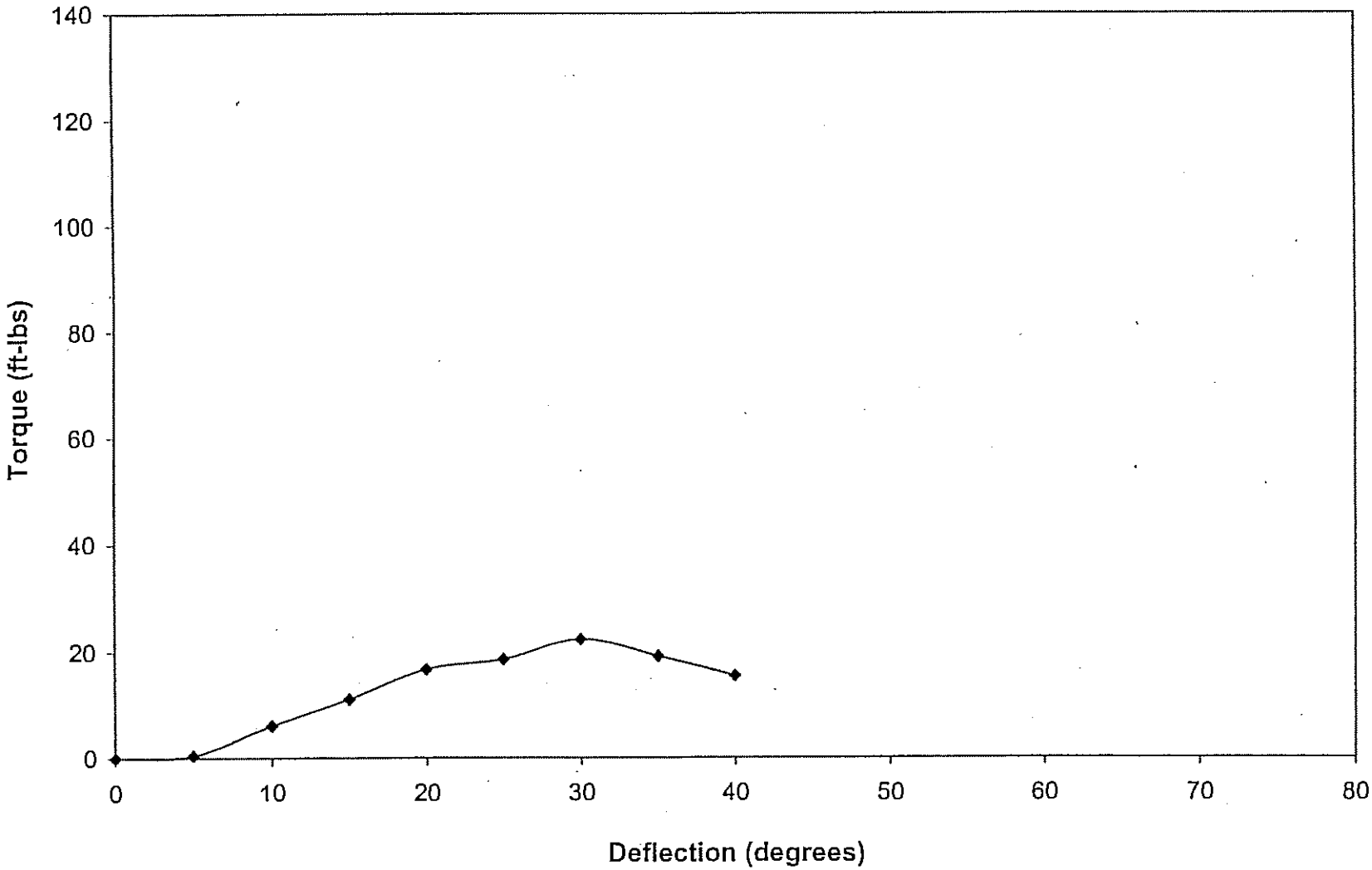
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/GARY TRUVER, JR.<br>5-24-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P3-02-S013<br>VANE #4 |
| GROUND SURFACE ELEV. (ft): | 69.8 |
| DEPTH TO VANE TIP (ft) | 51.7 |
| ELEV. AT VANE TIP (ft): | 18.1 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 22.4 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 14.4 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 134 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 8.0 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 7.2 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 67 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane #4: Depth = 51.7 ft., Elevation = 18.1 ft.**
**Undisturbed Condition**




P3-02-S Vane #4

W.O. 4685.GC
Duffield Asso, Inc.
, 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-23-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P4-02-S014<br>VANE #1 |
| GROUND SURFACE ELEV. (ft): | 75.2 |
| DEPTH TO VANE TIP (ft) | 30.7 |
| ELEV. AT VANE TIP (ft): | 44.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | |
| DEGREES ROTATION AT FAILURE: | |
| MAXIMUM TORQUE (ft-lb) | |
| FRICTION CORRECTION (ft-lb) | |
| NET TORQUE (ft-lb) | |
| K VALUE ($ft^3$): | |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | |
| DEGREES ROTATION AT FAILURE: | |
| MAXIMUM TORQUE (ft-lb) | |
| FRICTION CORRECTION (ft-lb) | |
| NET TORQUE (ft-lb) | |
| K VALUE ($ft^3$): | |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | |

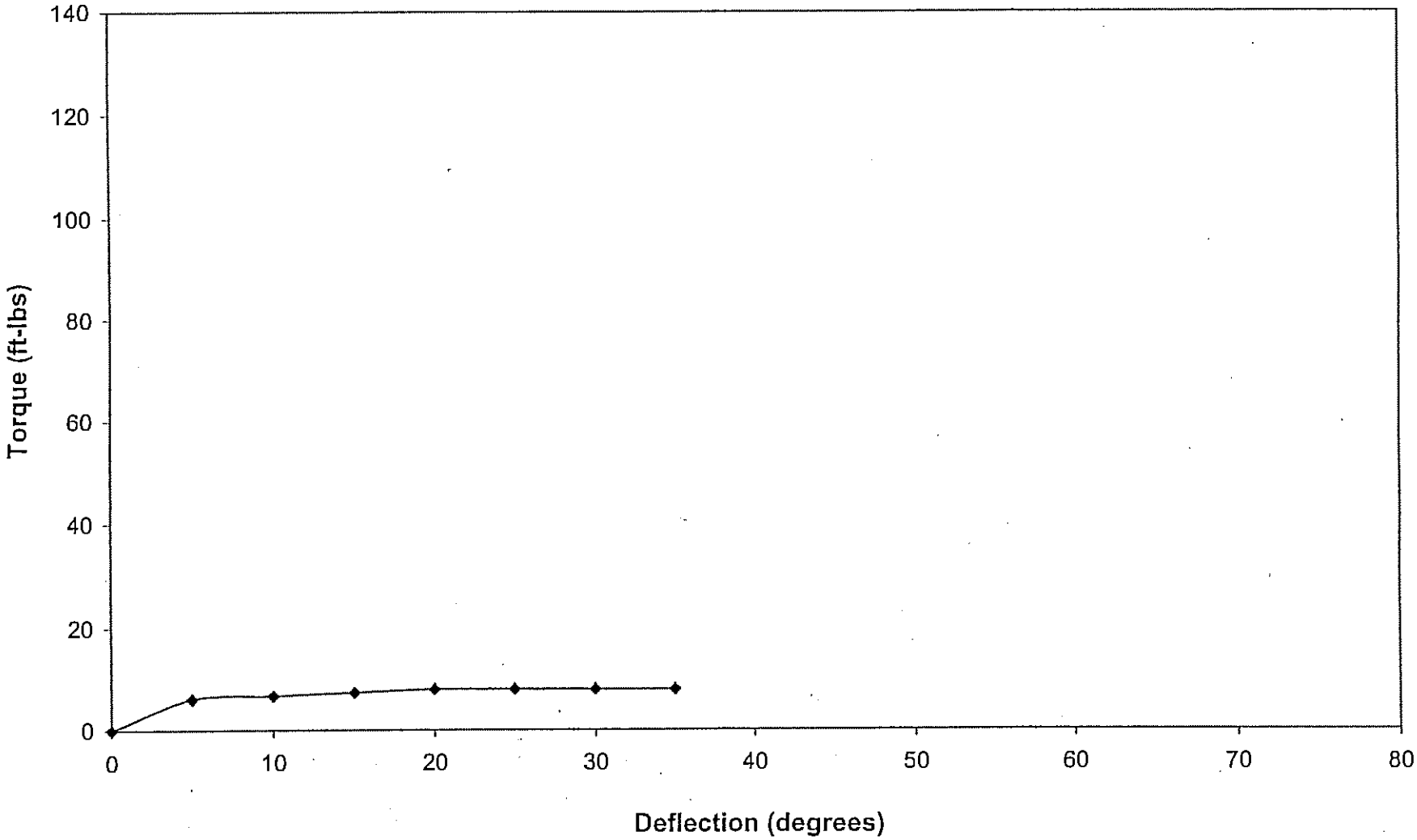
NOTES:

1. Vane observed to be severly deformed. Possibly still in waste. Test disregarded.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P3-02-S013**
**Vane #4: Depth = 51.7 ft., Elevation = 18.1 ft.**
**Remolded Condition**




P3-02-S013 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-23-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P4-02-S014<br>VANE #2 |
| GROUND SURFACE ELEV. (ft): | 75.2 |
| DEPTH TO VANE TIP (ft) | 38.7 |
| ELEV. AT VANE TIP (ft): | 36.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 27 |
| MAXIMUM TORQUE (ft-lb) | 33.7 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 25.7 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 240 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 6.7 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 5.9 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 55 |

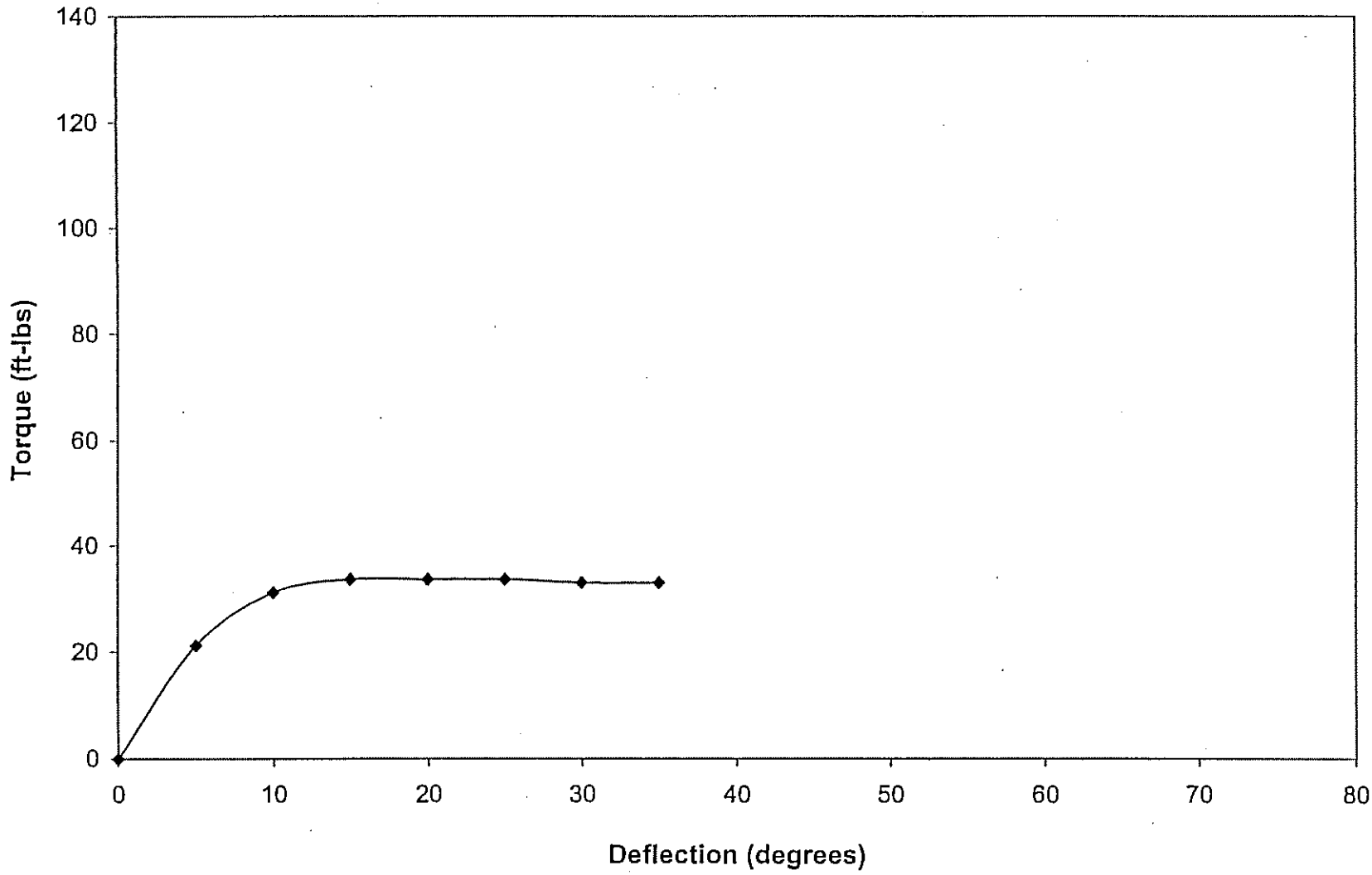
NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #2: Depth = 38.7 ft., Elevation = 36.5 ft.**
**Undisturbed Condition**




P4-02-S Vane #2

W.O. 4685.GC
Duffield Asso , Inc.
July 2002

# VANE SHEAR TEST REPORT

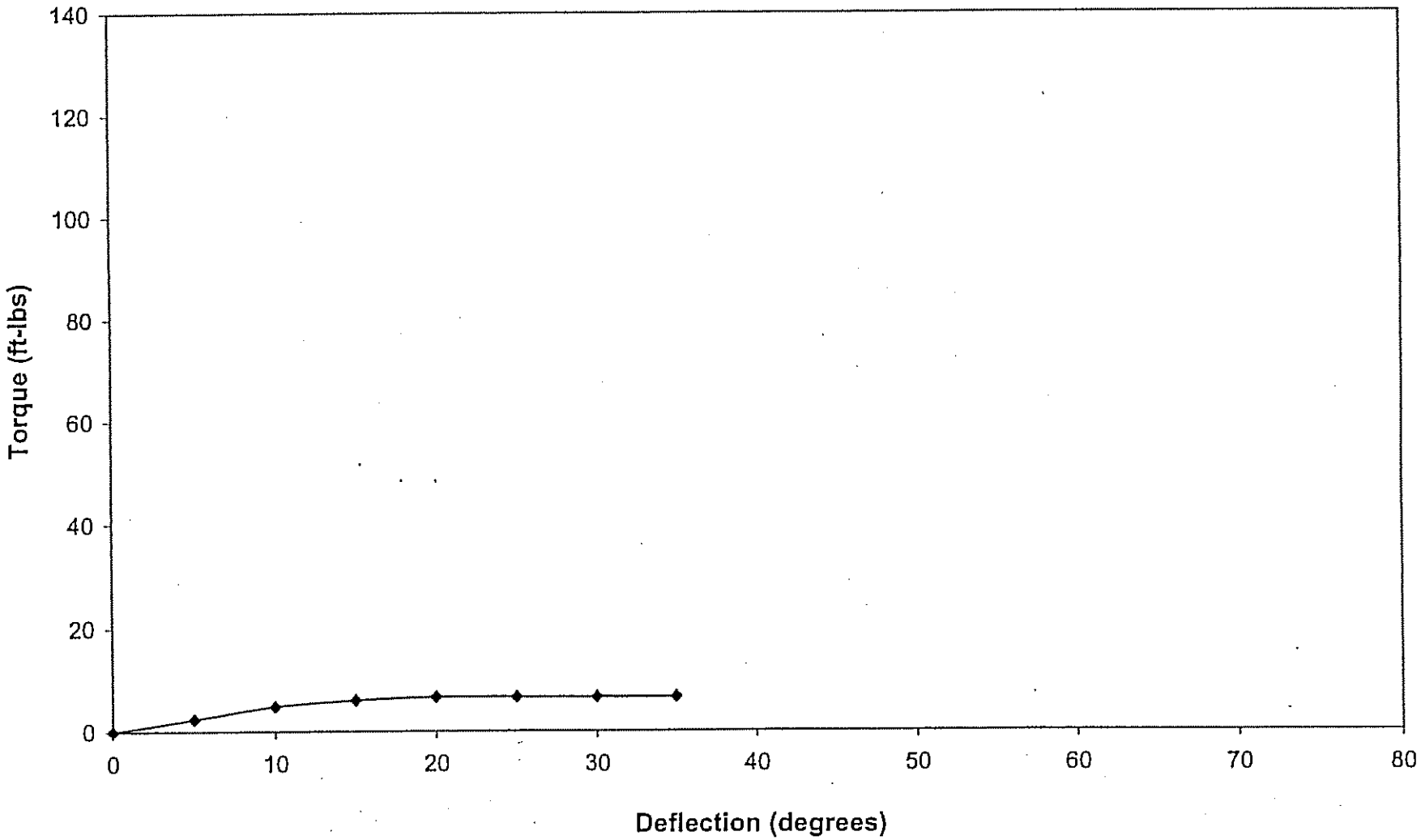
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-23-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P4-02-S014<br>VANE #3 |
| GROUND SURFACE ELEV. (ft): | 75.2 |
| DEPTH TO VANE TIP (ft) | 43.7 |
| ELEV. AT VANE TIP (ft): | 31.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 15 |
| MAXIMUM TORQUE (ft-lb) | 28.7 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 20.7 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 193 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 8 |
| DEGREES ROTATION AT FAILURE: | 50 |
| MAXIMUM TORQUE (ft-lb) | 19.3 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 18.5 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 173 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #2: Depth = 38.7 ft., Elevation = 36.5 ft.**
**Remolded Condition**




P4-02-S014 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-23-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P4-02-S014<br>VANE #4 |
| GROUND SURFACE ELEV. (ft): | 75.2 |
| DEPTH TO VANE TIP (ft) | 48.7 |
| ELEV. AT VANE TIP (ft): | 26.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 63.1 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 55.1 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 514 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 21 |
| MAXIMUM TORQUE (ft-lb) | 6.1 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 5.3 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 49 |

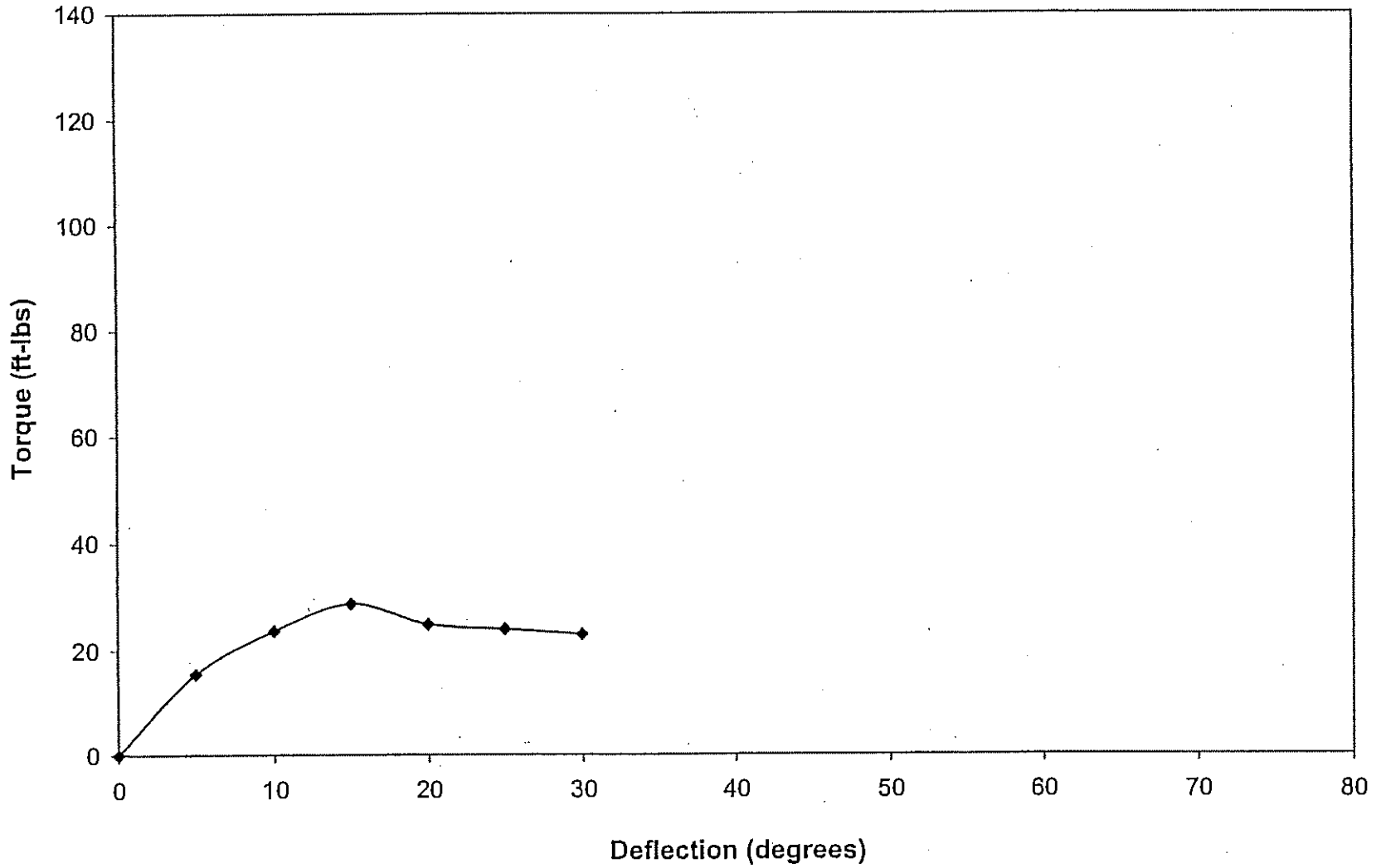
NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #3: Depth = 43.7 ft., Elevation = 31.5 ft.**
**Undisturbed Condition**



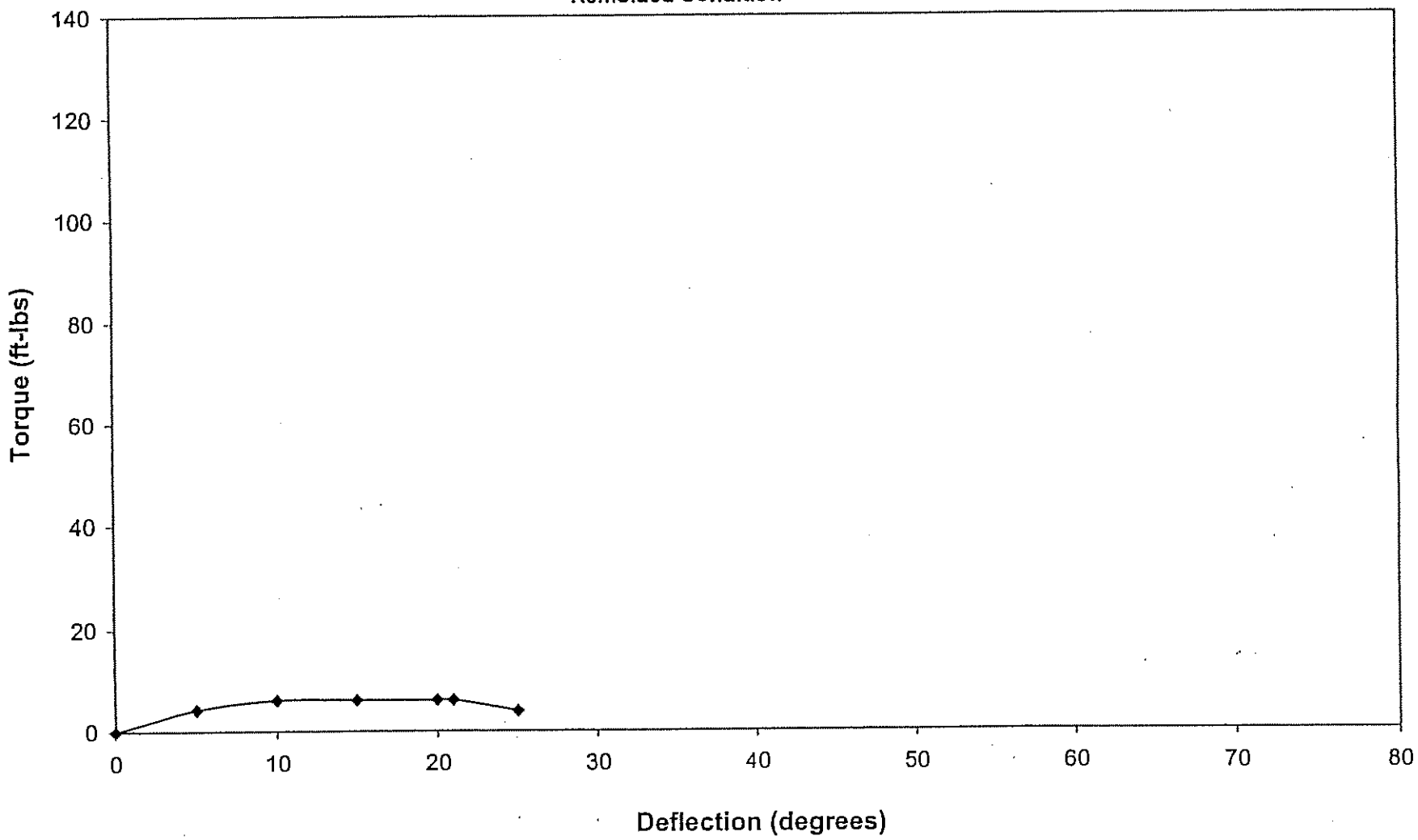

P4-02-S014 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
?002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #4: Depth = 48.7 ft., Elevation = 26.5 ft.**
**Remolded Condition**



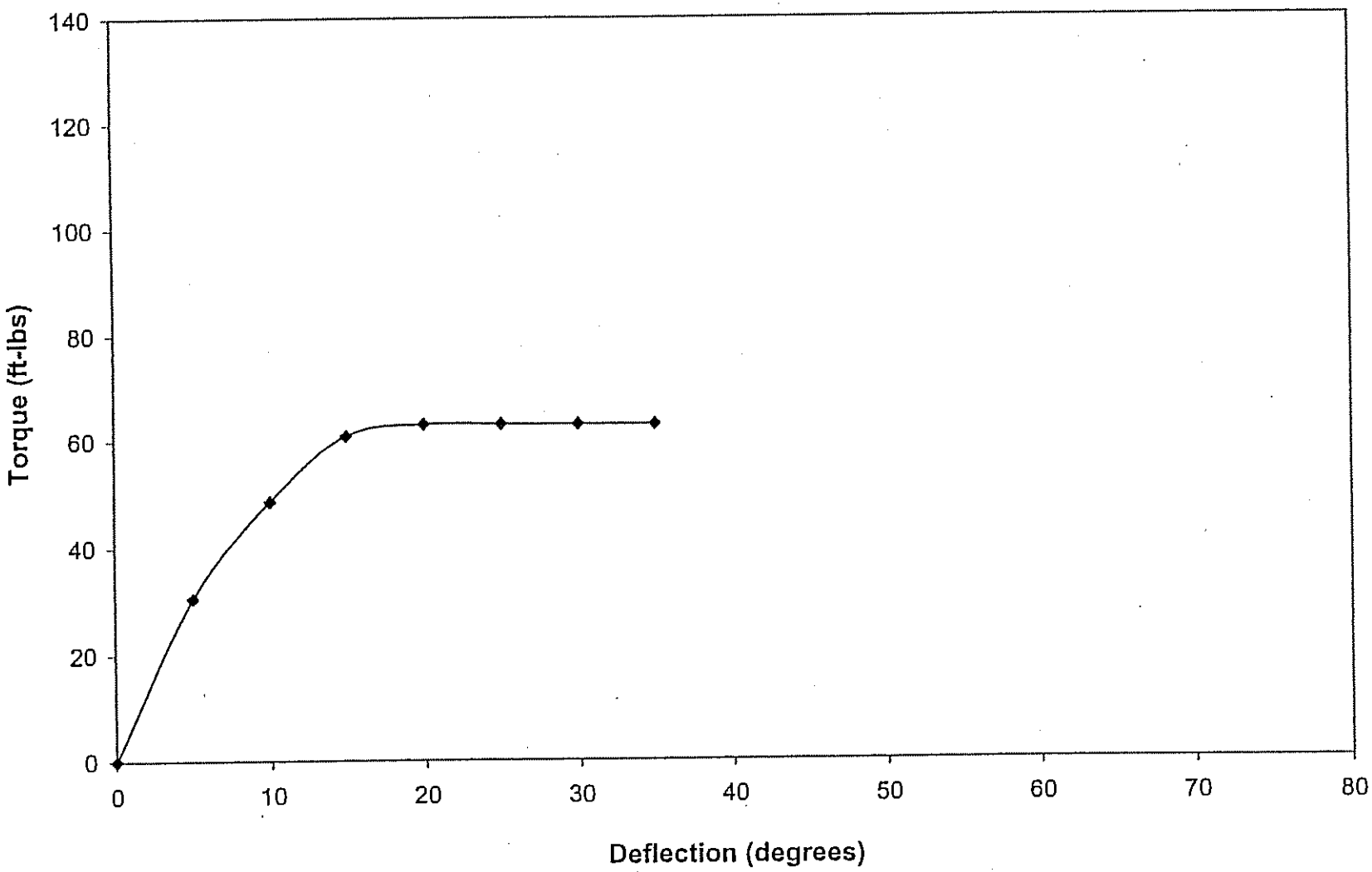

P4-02-S014 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #4: Depth = 48.7 ft., Elevation = 26.5 ft.**
**Undisturbed Condition**



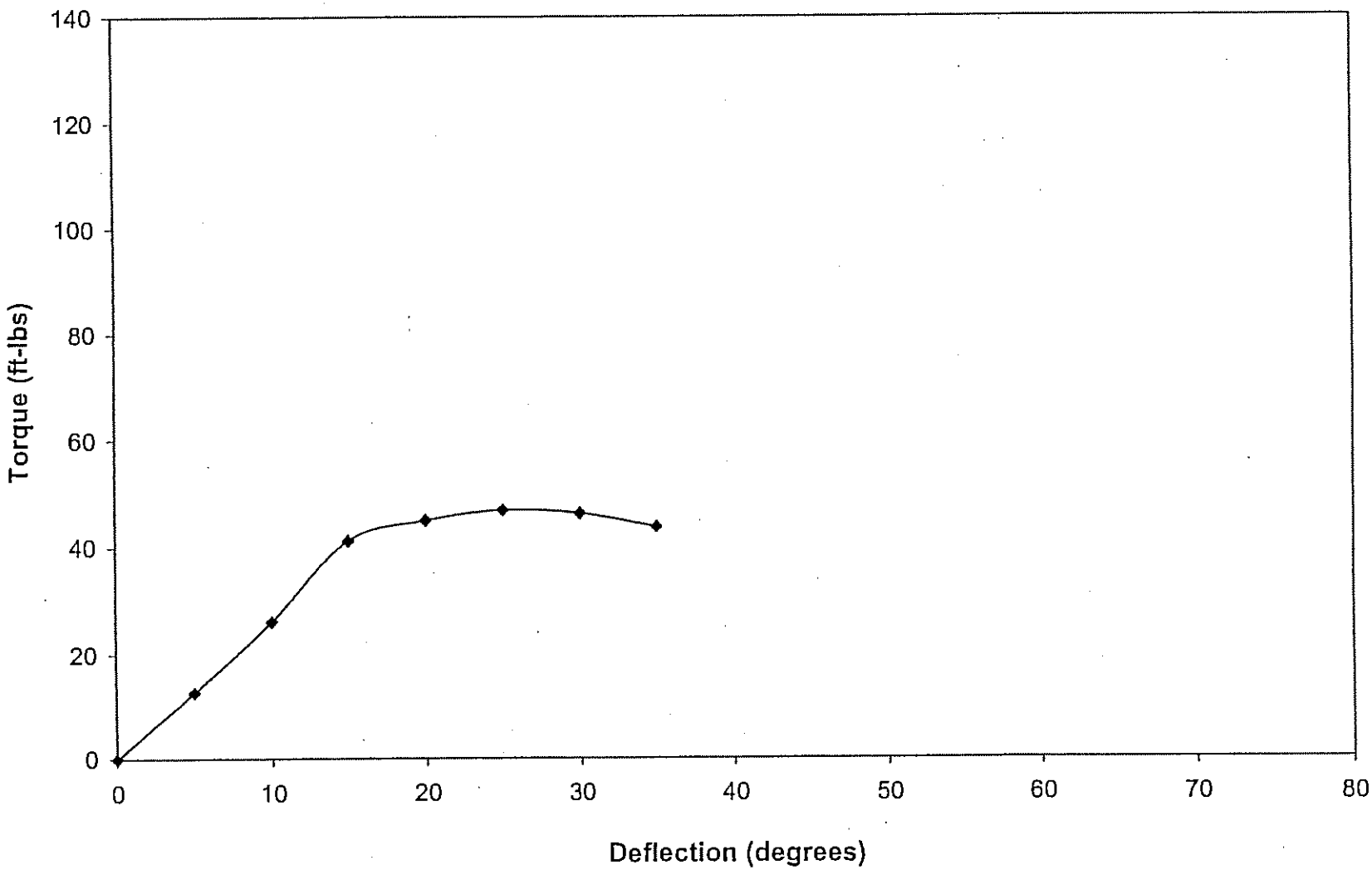

P4-02-S014 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #5: Depth = 53.7 ft., Elevation = 21.5 ft.**
**Undisturbed Condition**




P4-02-S014 Vane #5

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE II SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 5-23-02 |
| TEST BORING DESIGNATION: | P4-02-S014 |
| VANE SHEAR TEST DESIGNATION: | VANE #5 |
| GROUND SURFACE ELEV. (ft): | 75.2 |
| DEPTH TO VANE TIP (ft) | 53.7 |
| ELEV. AT VANE TIP (ft): | 21.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 25 |
| MAXIMUM TORQUE (ft-lb) | 46.8 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 38.8 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 362 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 8.0 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 7.2 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 67 |

NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

# VANE SHEAR TEST REPORT

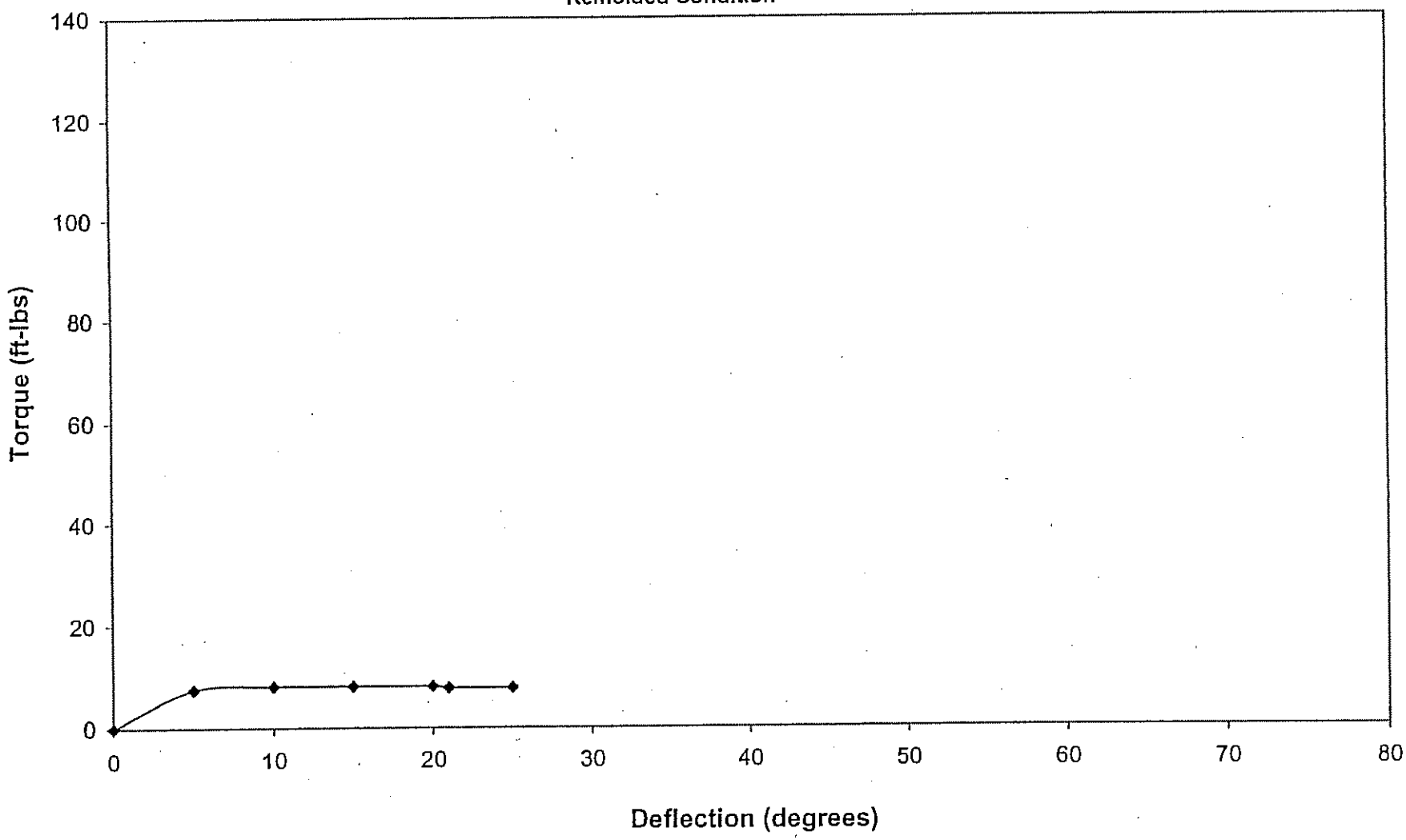
| | |
|---|---|
| PROJECT NAME: | CHERRY ISLAND LANDFILL EXPANSION PROJECT PHASE II SITE EXPLORATION |
| W.O. NUMBER; | 4685.GC |
| DRILLER/FOREMAN: | WALTON CORPORATION/DAN TAYLOR |
| DATE: | 5-20-02 |
| TEST BORING DESIGNATION: | P5-02-S015 |
| VANE SHEAR TEST DESIGNATION: | VANE #1 |
| GROUND SURFACE ELEV. (ft): | 73.2 |
| DEPTH TO VANE TIP (ft) | 40.2 |
| ELEV. AT VANE TIP (ft): | 33.0 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 20.8 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 12.8 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED UNDRAINED SHEAR STRENGTH (psf): | 120 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 6 |
| DEGREES ROTATION AT FAILURE: | 35 |
| MAXIMUM TORQUE (ft-lb) | 11.7 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 10.9 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED UNDRAINED SHEAR STRENGTH (psf): | 102 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #5: Depth = 53.7 ft., Elevation = 21.5 ft.**
**Remolded Condition**



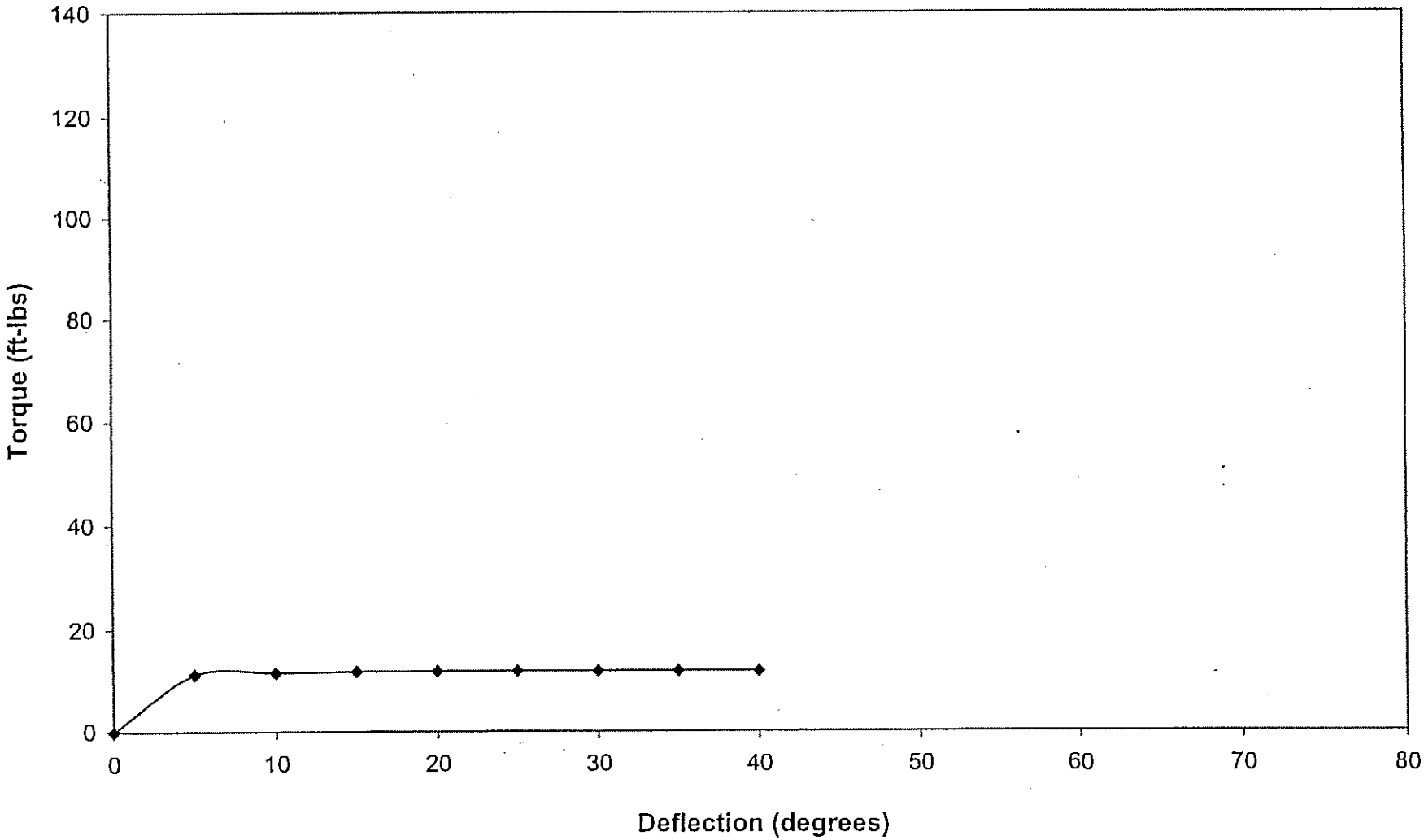

P4-02-S014 Vane #5

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #1: Depth = 40.2 ft., Elevation = 33.0 ft.**
**Remolded Condition**



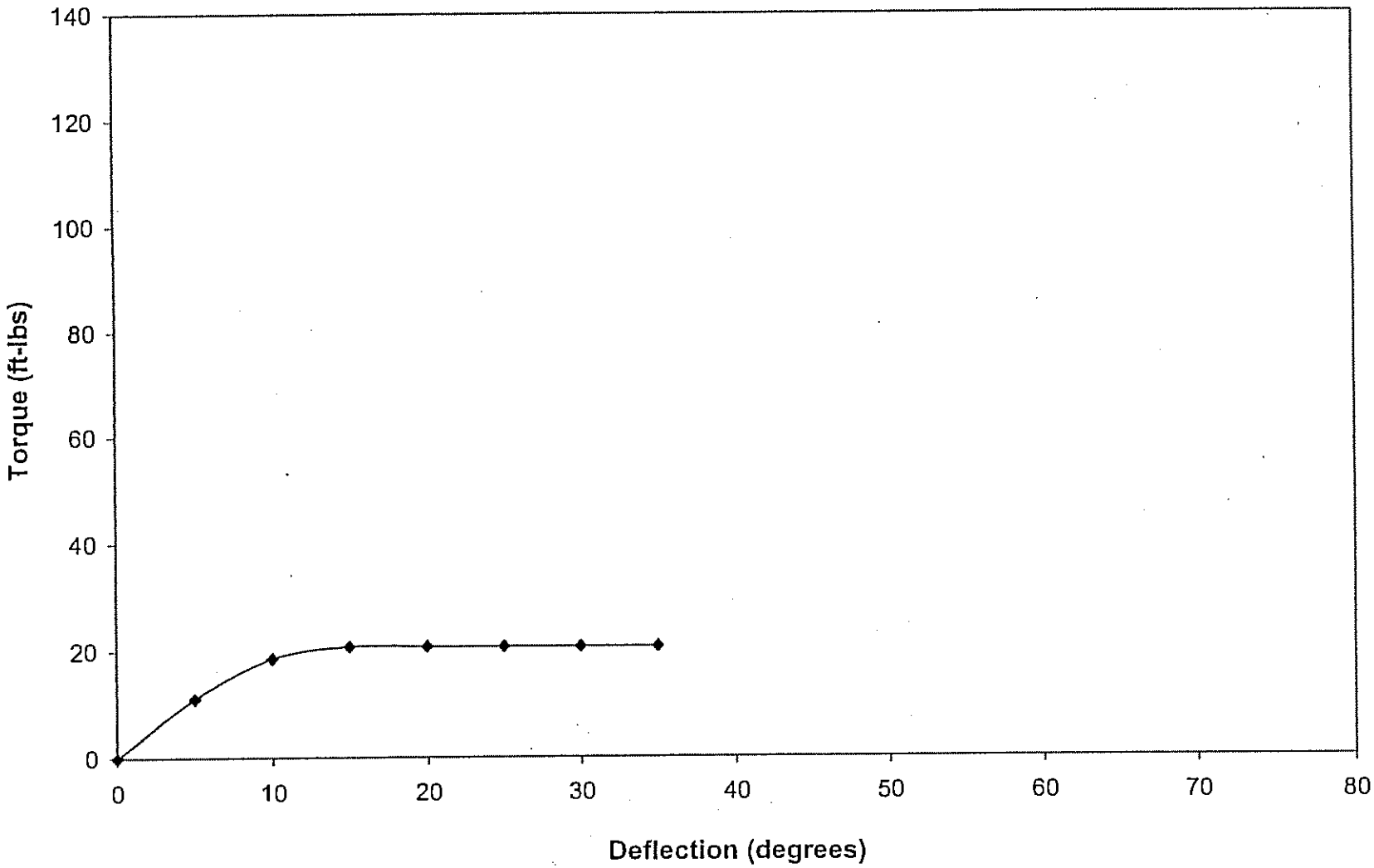

P5-02-S015 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #1: Depth = 40.2 ft., Elevation = 33.0 ft.**
**Undisturbed Condition**



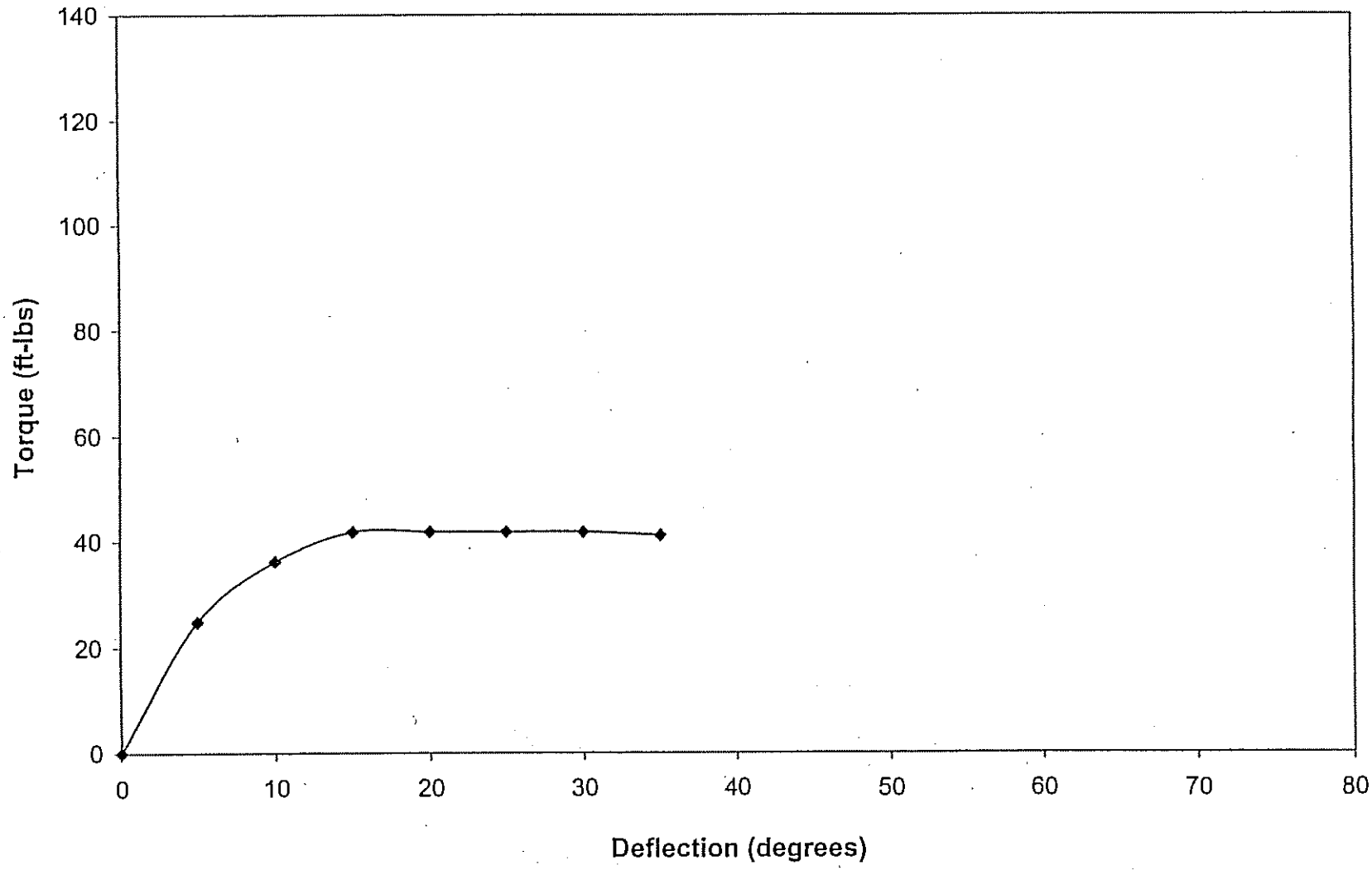

P5-02-S015 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
' ' 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #2: Depth = 44.7 ft., Elevation = 28.5 ft.**
**Undisturbed Condition**




P5-02-S015 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-21-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S015<br>VANE #2 |
| GROUND SURFACE ELEV. (ft): | 73.2 |
| DEPTH TO VANE TIP (ft) | 44.7 |
| ELEV. AT VANE TIP (ft): | 28.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 41.8 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 33.8 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 316 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 6.4 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 5.6 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 52 |

NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

DUFFIELD ASSOCIATES, INC.
7/1/2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-21-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S015<br>VANE #3 |
| GROUND SURFACE ELEV. (ft): | 73.2 |
| DEPTH TO VANE TIP (ft) | 49.7 |
| ELEV. AT VANE TIP (ft): | 23.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 10 |
| MAXIMUM TORQUE (ft-lb) | 33.0 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 25.0 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 233 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 9 |
| DEGREES ROTATION AT FAILURE: | 53 |
| MAXIMUM TORQUE (ft-lb) | 14.3 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 13.5 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 126 |

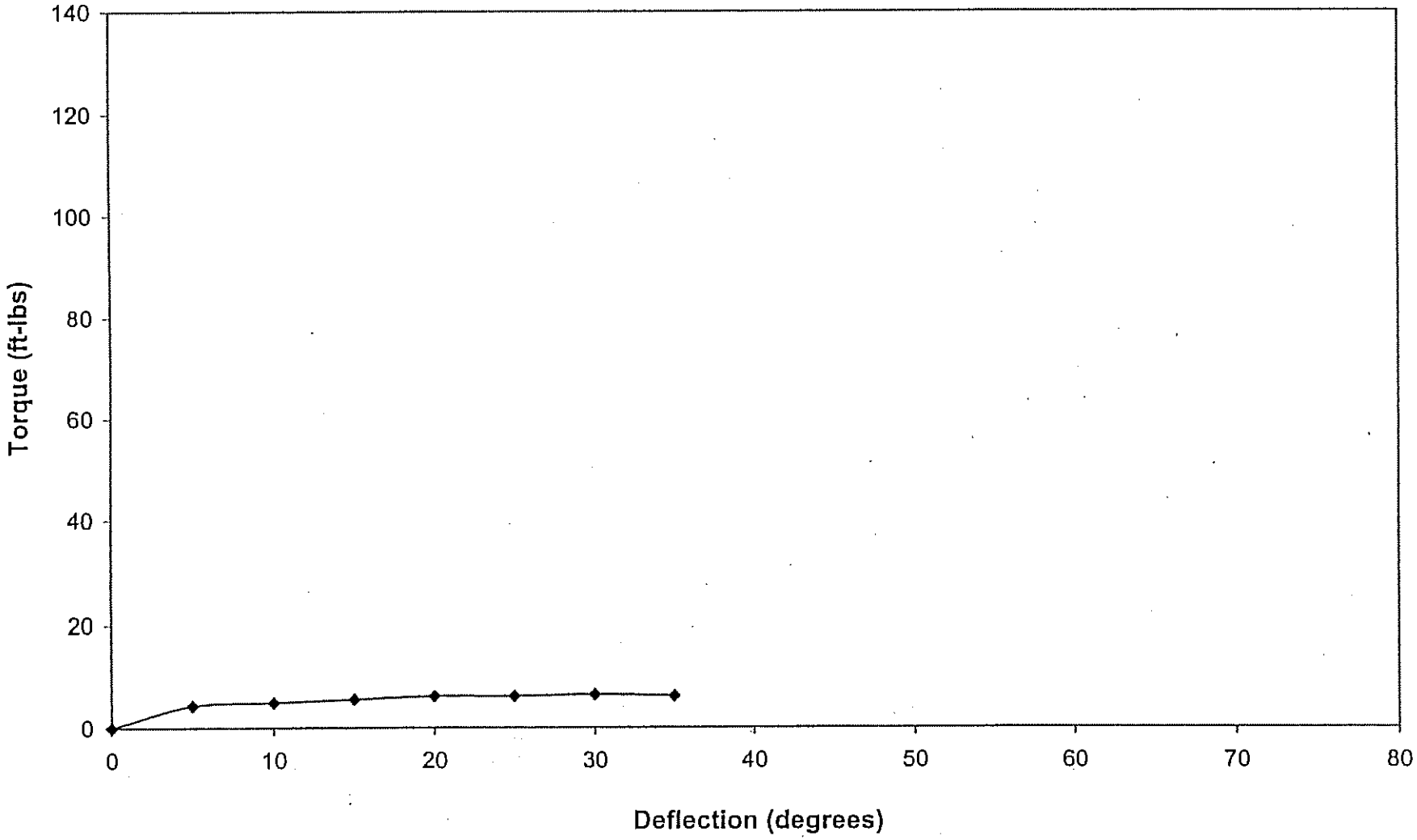
NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #2: Depth = 44.7 ft., Elevation = 28.5 ft.**
**Remolded Condition**



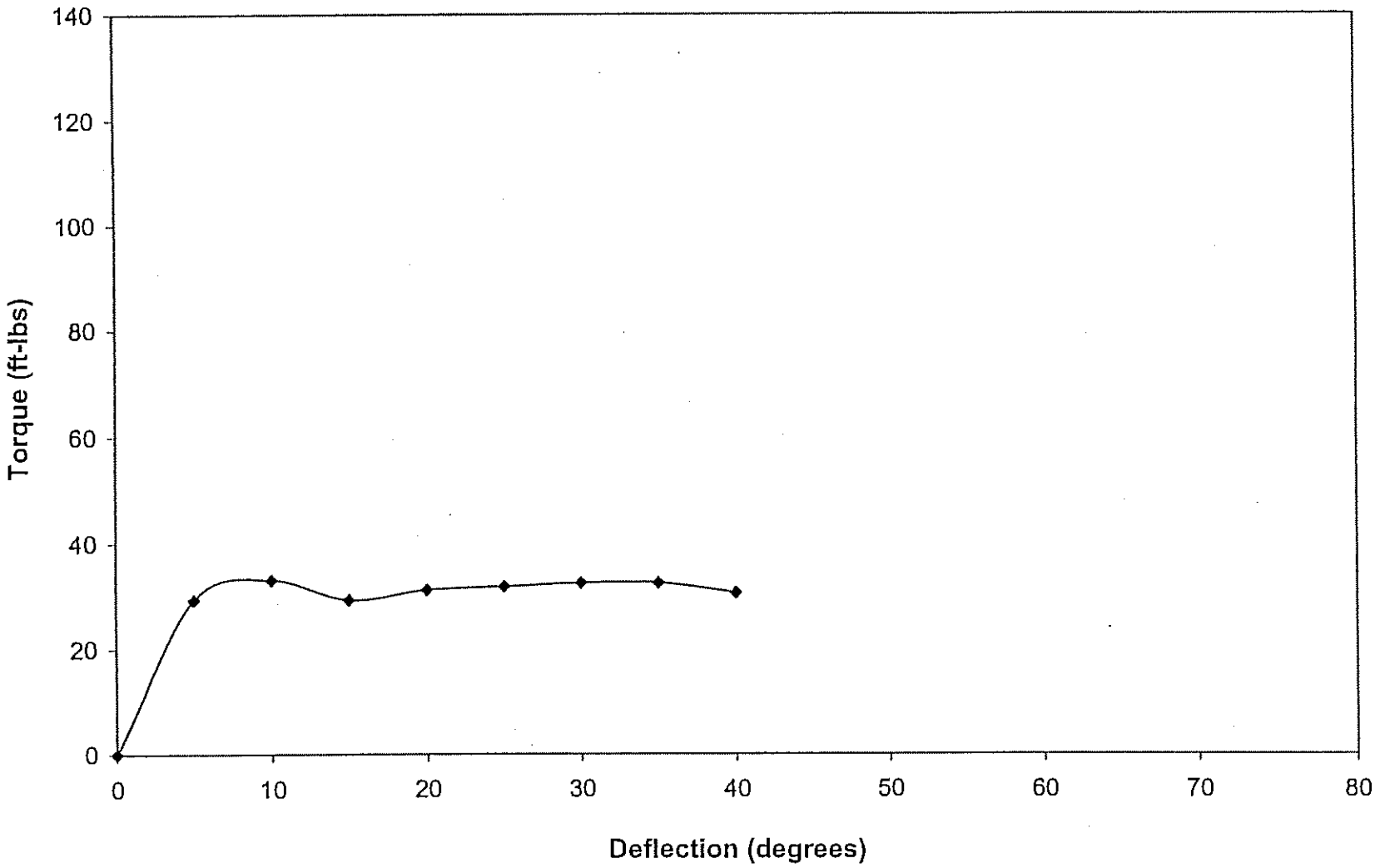

P5-02-S015 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #3: Depth = 49.7 ft., Elevation = 23.5 ft.**
**Undisturbed Condition**



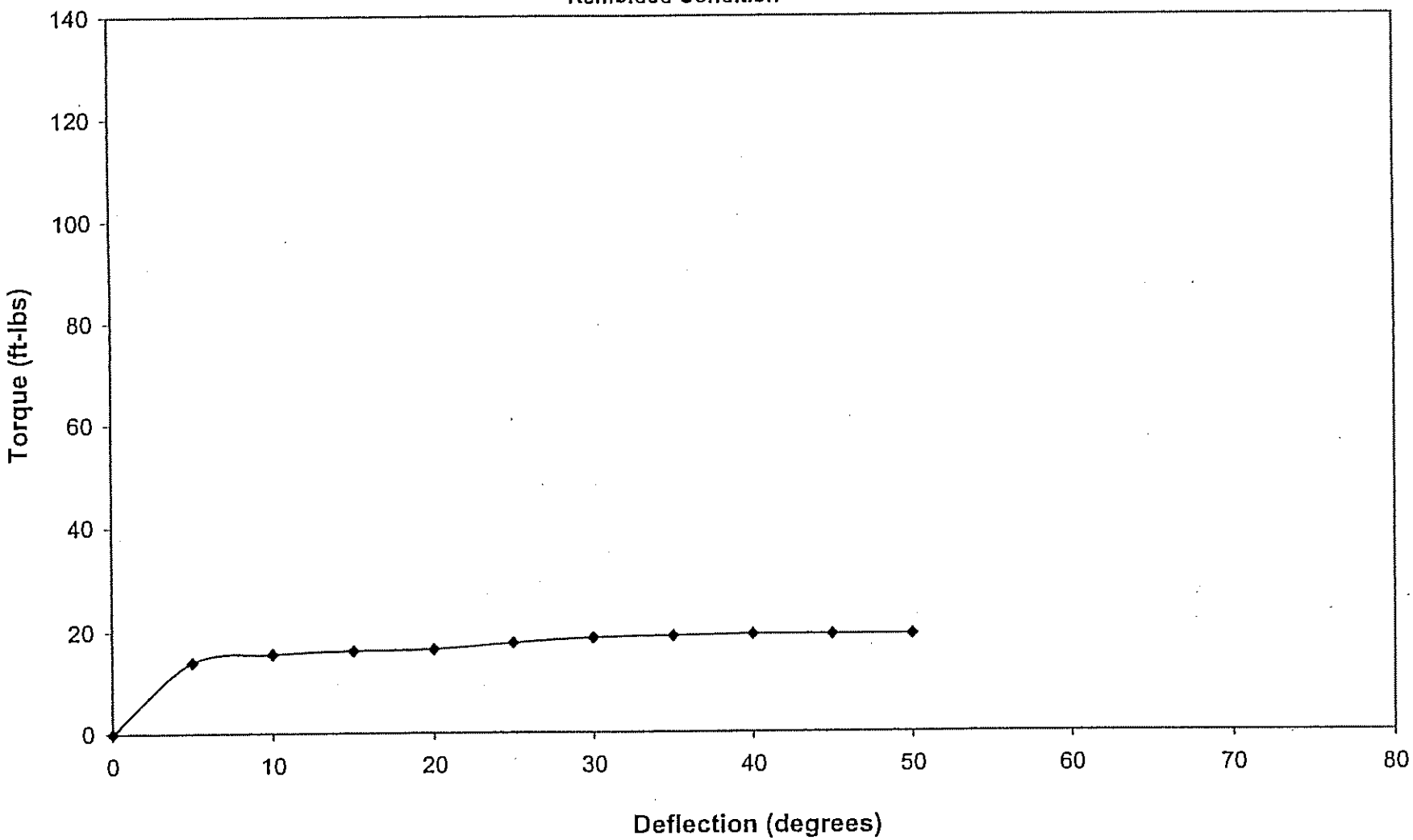

P5-02-S015 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P4-02-S014**
**Vane #3: Depth = 43.7 ft., Elevation = 31.5 ft.**
**Remolded Condition**




P4-02-S014 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
2002

# VANE SHEAR TEST REPORT

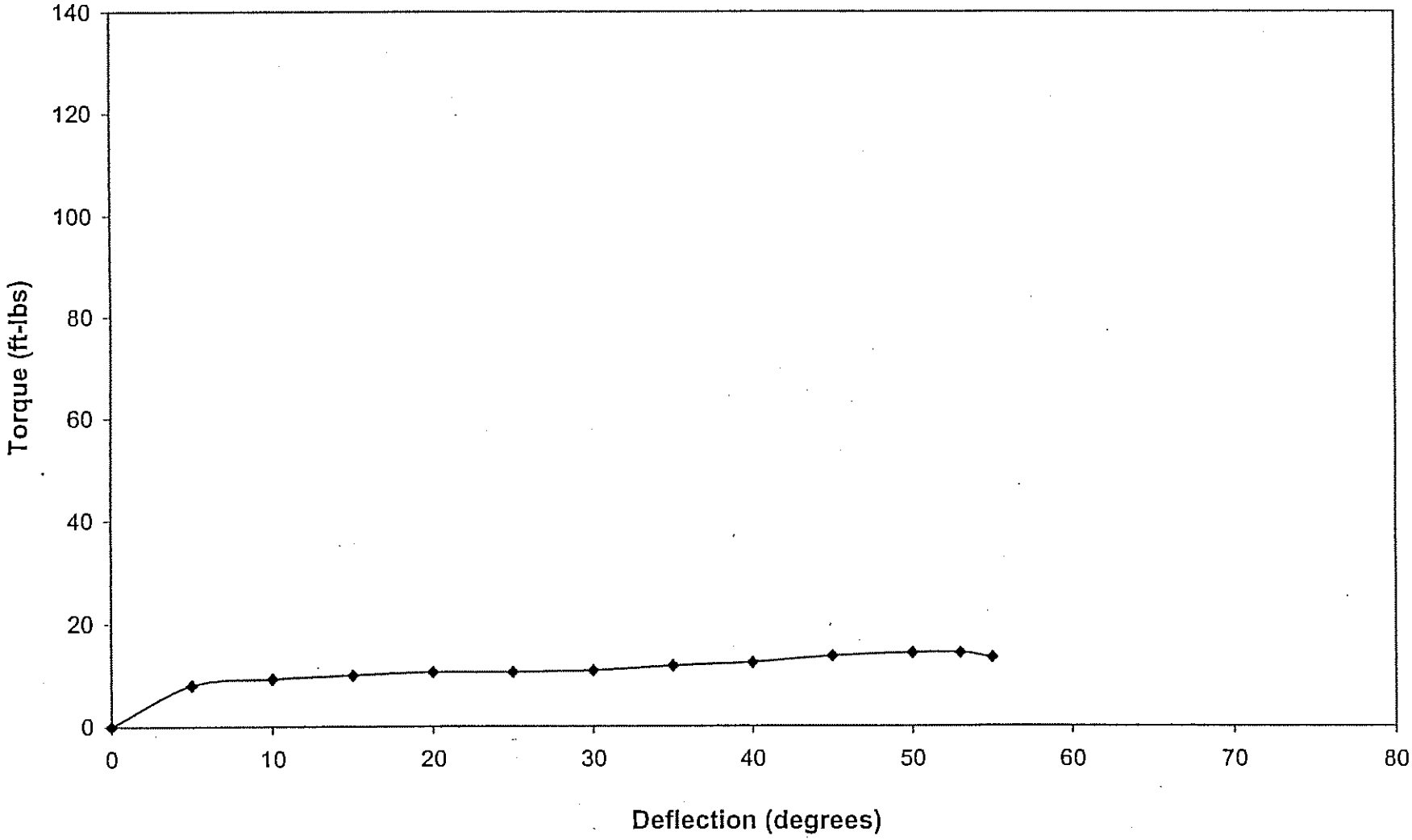
| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-21-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S015<br>VANE #4 |
| GROUND SURFACE ELEV. (ft): | 73.2 |
| DEPTH TO VANE TIP (ft) | 54.7 |
| ELEV. AT VANE TIP (ft): | 18.5 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 43.7 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 35.7 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 333 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 9 |
| DEGREES ROTATION AT FAILURE: | 55 |
| MAXIMUM TORQUE (ft-lb) | 17.7 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 16.9 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 158 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #3: Depth = 49.7 ft., Elevation = 23.5 ft.**
**Remolded Condition**



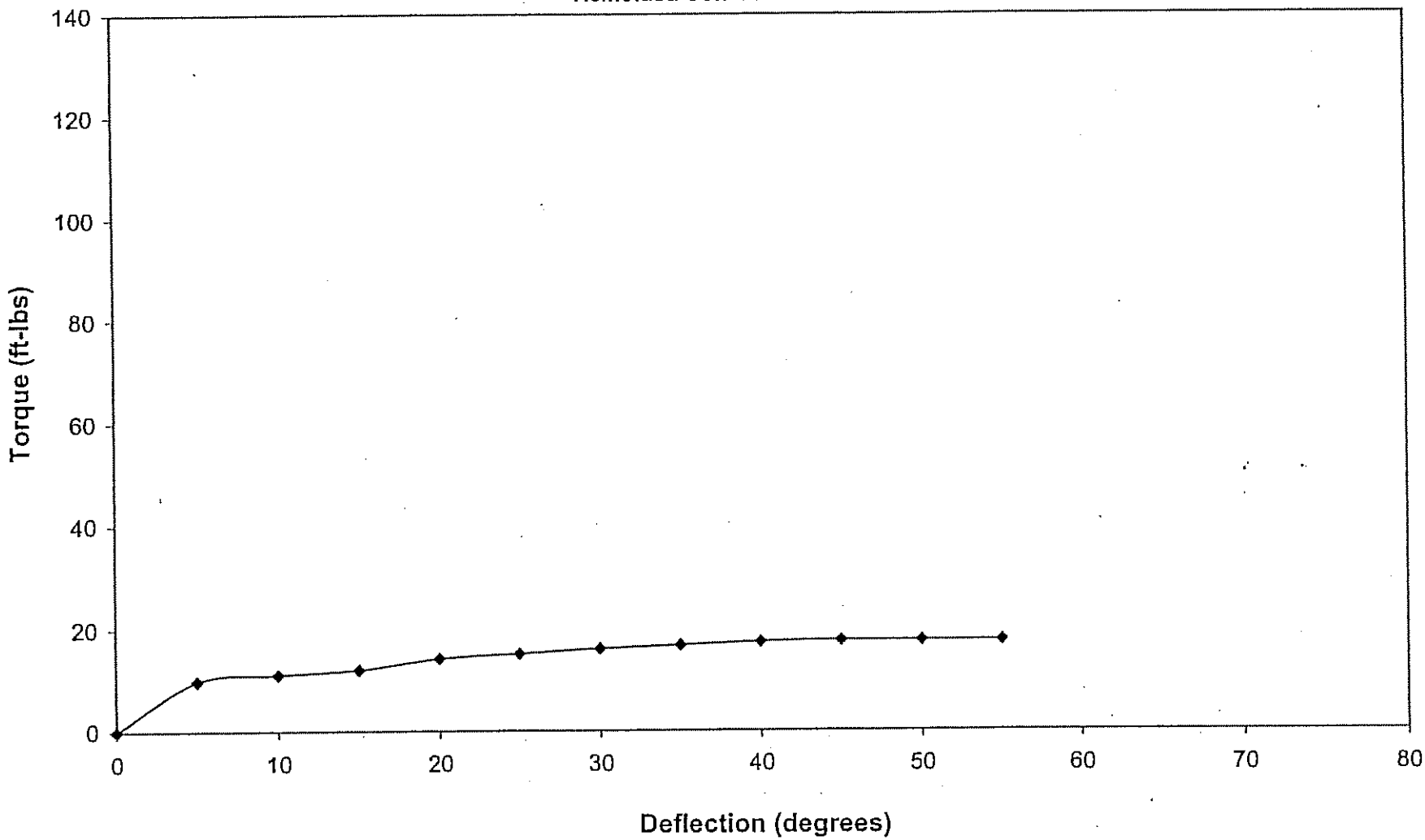

P5-02-S015 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #4: Depth = 54.7 ft., Elevation = 18.5 ft.**
**Remolded Condition**



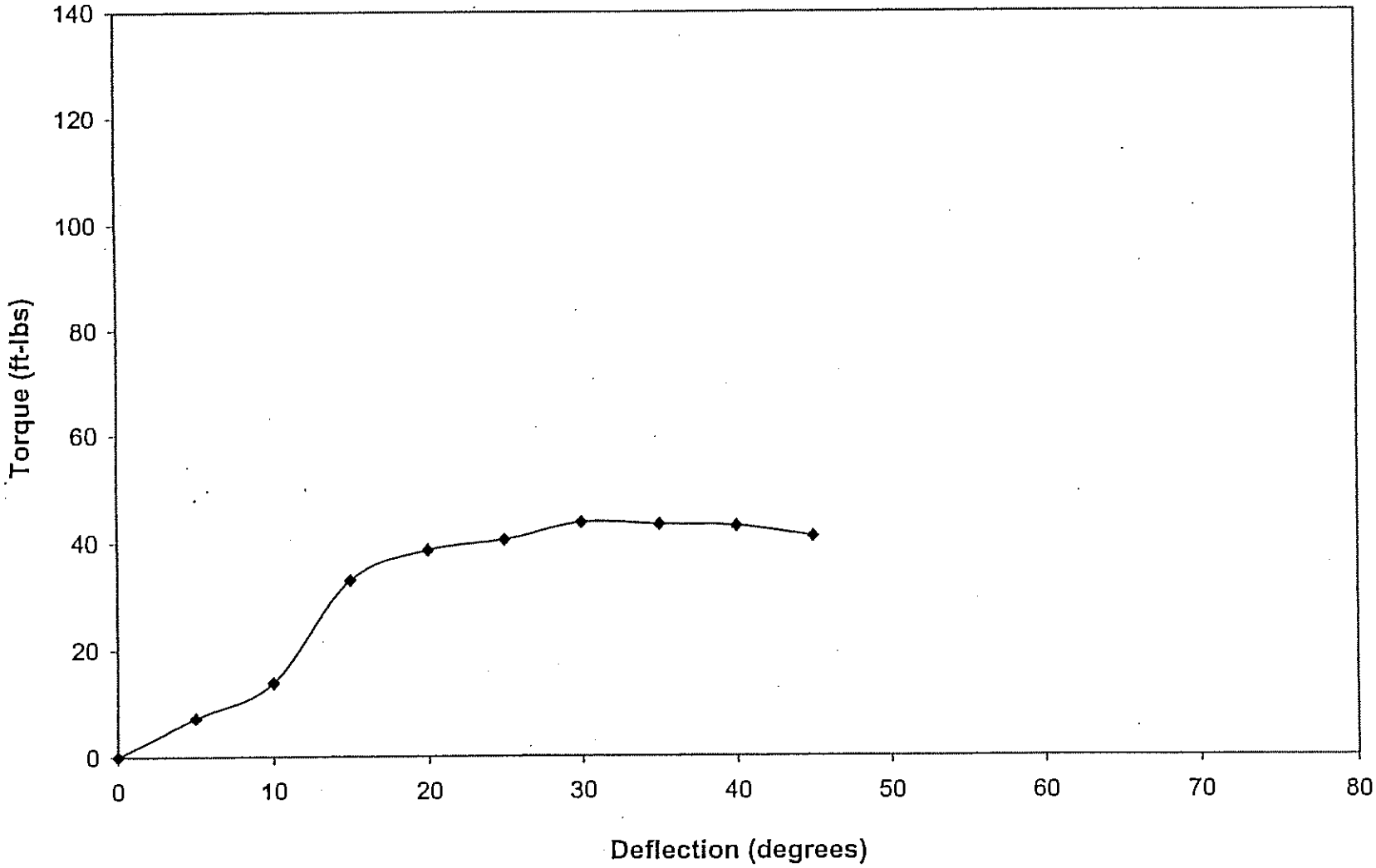

P5-02-S015 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S015**
**Vane #4: Depth = 54.7 ft., Elevation = 18.5 ft.**
**Undisturbed Condition**



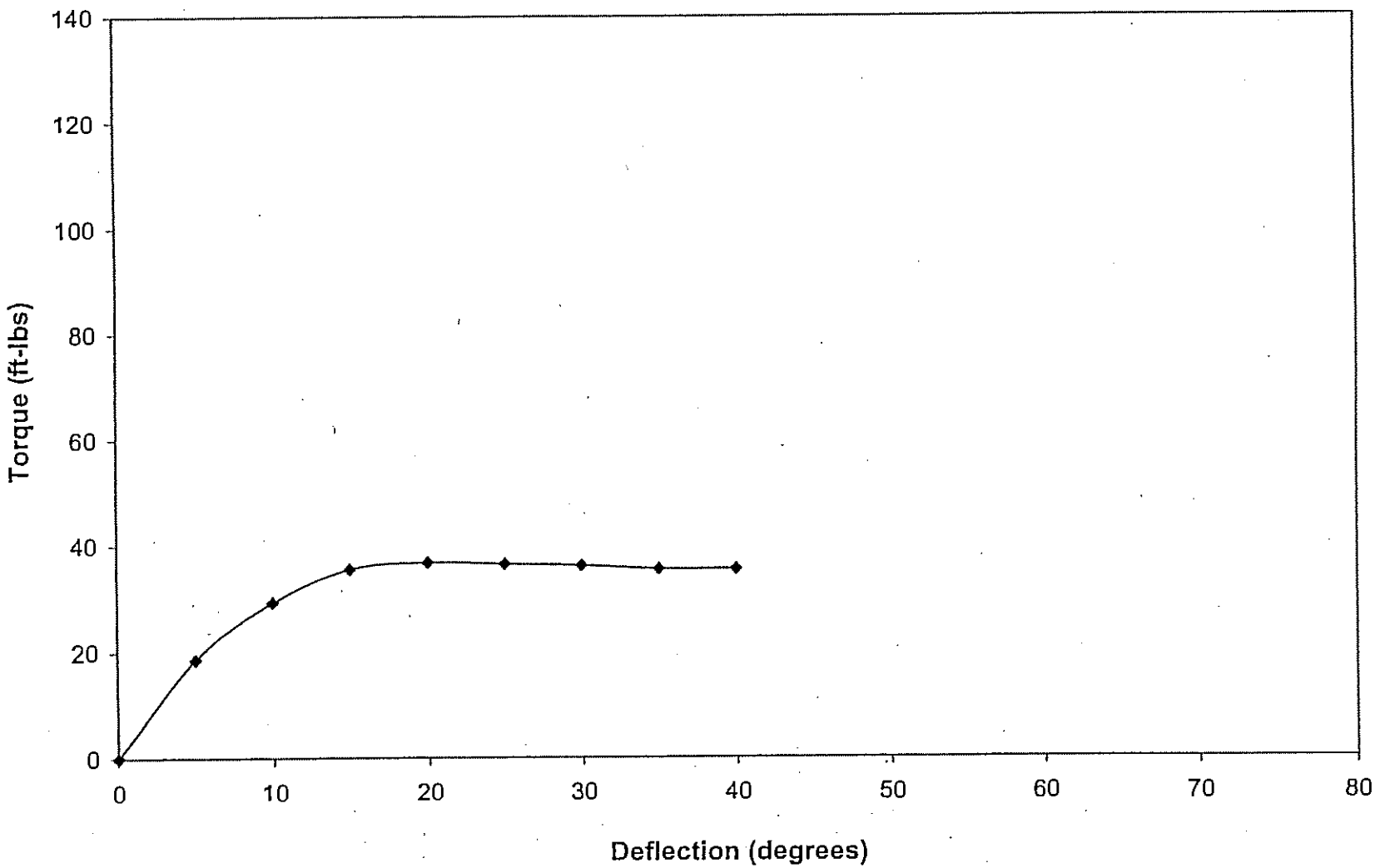

P5-02-S015 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #1: Depth = 36.7 ft., Elevation = 36.8 ft.**
**Undisturbed Condition**




P5-02-S016 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-22-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S016<br>VANE #1 |
| GROUND SURFACE ELEV. (ft): | 73.5 |
| DEPTH TO VANE TIP (ft) | 36.7 |
| ELEV. AT VANE TIP (ft): | 36.8 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 20 |
| MAXIMUM TORQUE (ft-lb) | 36.8 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 28.8 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 269 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 10 |
| DEGREES ROTATION AT FAILURE: | 60 |
| MAXIMUM TORQUE (ft-lb) | 25.8 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 25.0 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 233 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

DUFFIELD ASSOCIATES, INC.
7/1/2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-22-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S016<br>VANE #2 |
| GROUND SURFACE ELEV. (ft): | 73.5 |
| DEPTH TO VANE TIP (ft) | 41.7 |
| ELEV. AT VANE TIP (ft): | 31.8 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 4 |
| DEGREES ROTATION AT FAILURE: | 24 |
| MAXIMUM TORQUE (ft-lb) | 26.8 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 18.8 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 176 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 5 |
| DEGREES ROTATION AT FAILURE: | 30 |
| MAXIMUM TORQUE (ft-lb) | 16.8 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 16.0 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 149 |

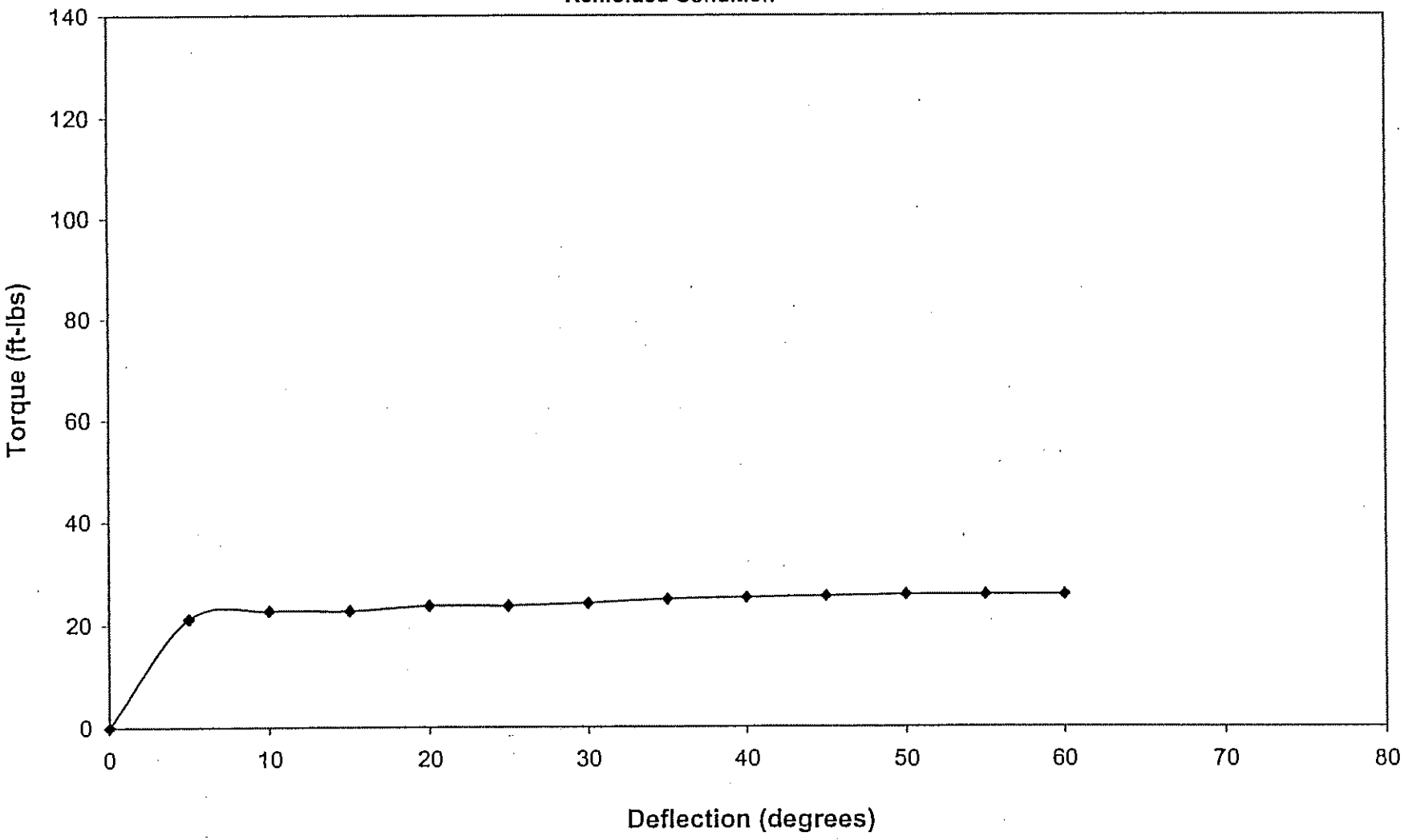
NOTES:

1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #1: Depth = 36.7 ft., Elevation = 36.8 ft.**
**Remolded Condition**



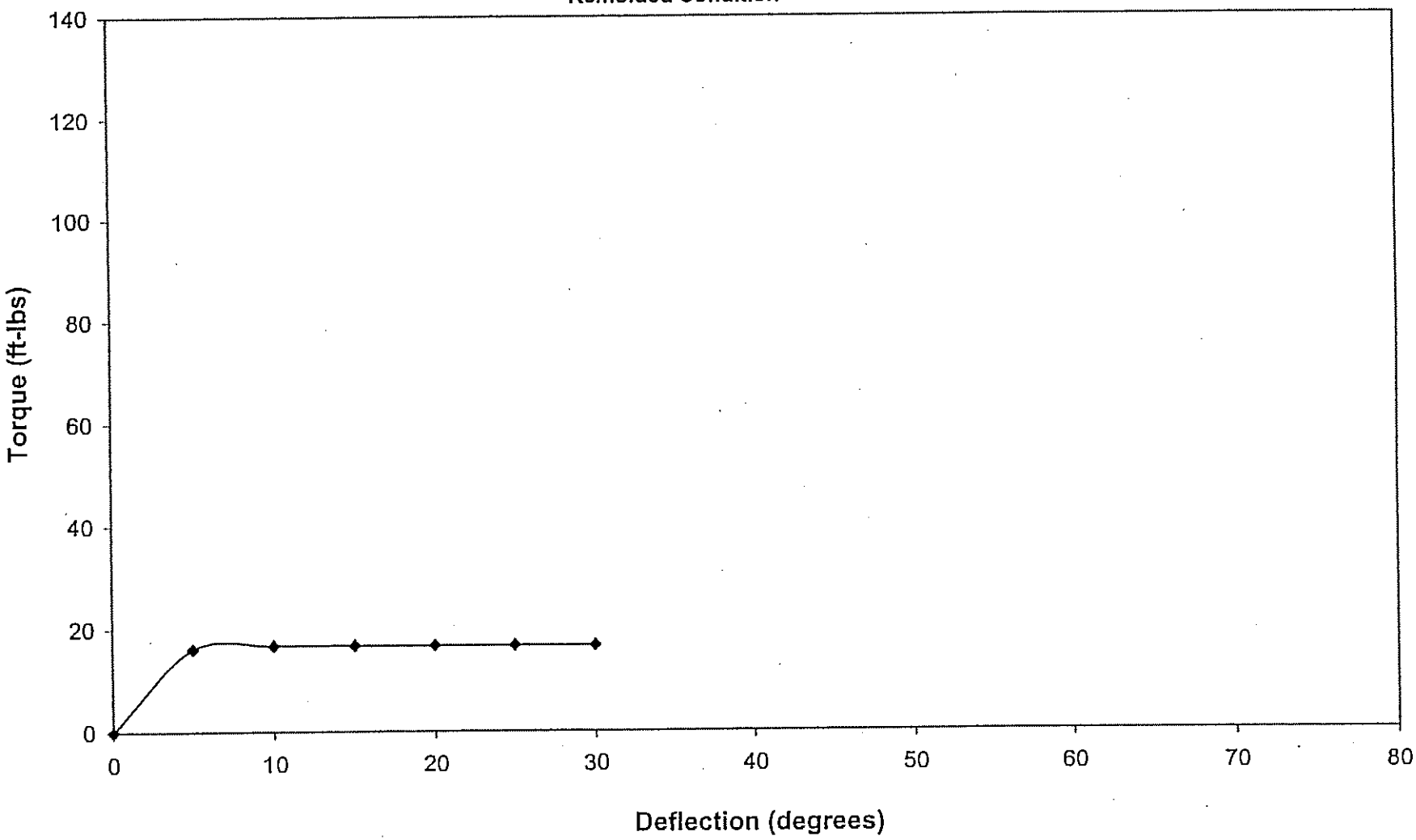

P5-02-S016 Vane #1

W.O. 4685.GC
Duffield Associates, Inc.
?002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #2: Depth = 41.7 ft., Elevation = 31.8 ft.**
**Remolded Condition**



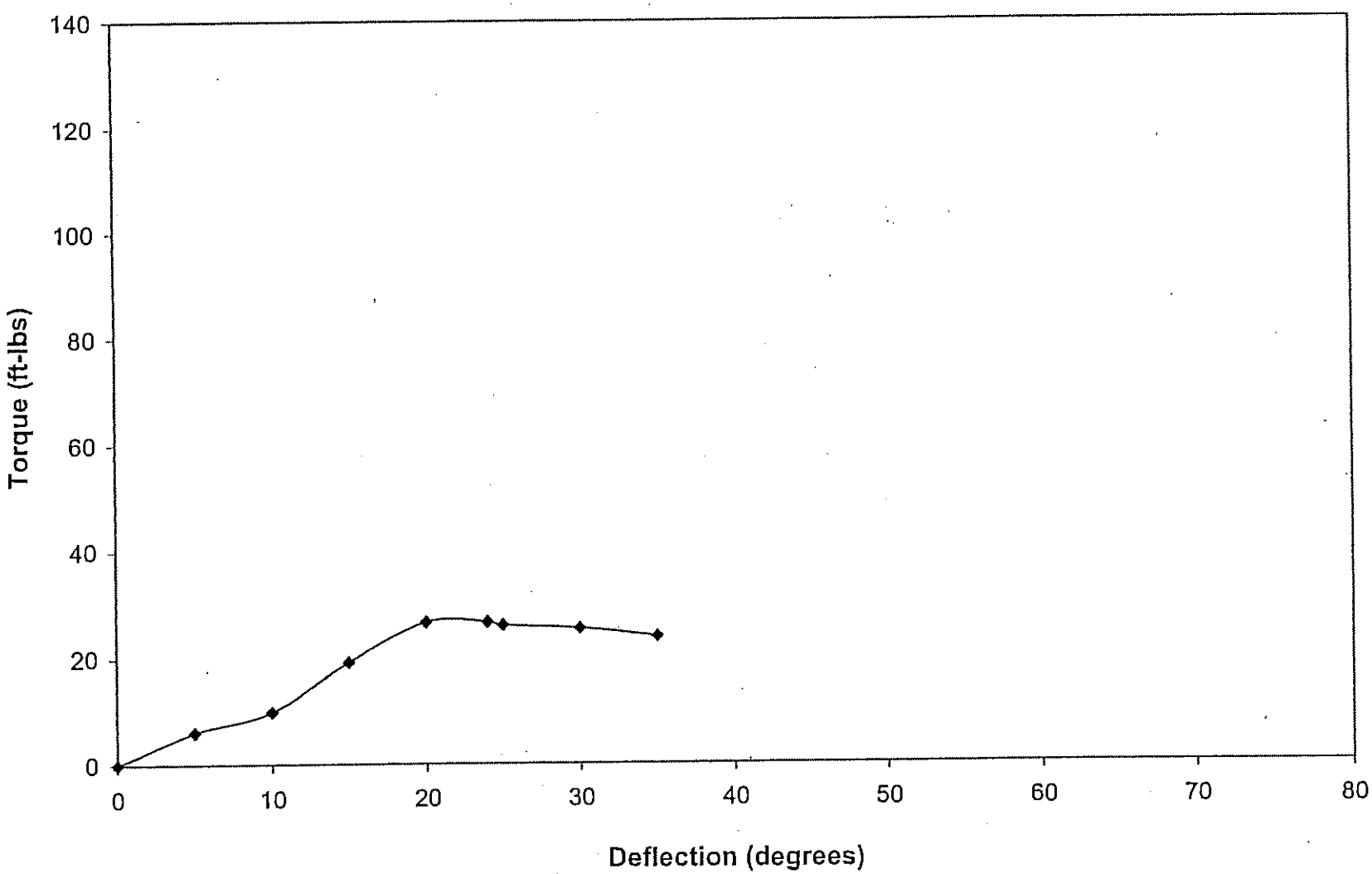

P5-02-S016 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #2: Depth = 41.7 ft., Elevation = 31.8 ft.**
**Undisturbed Condition**



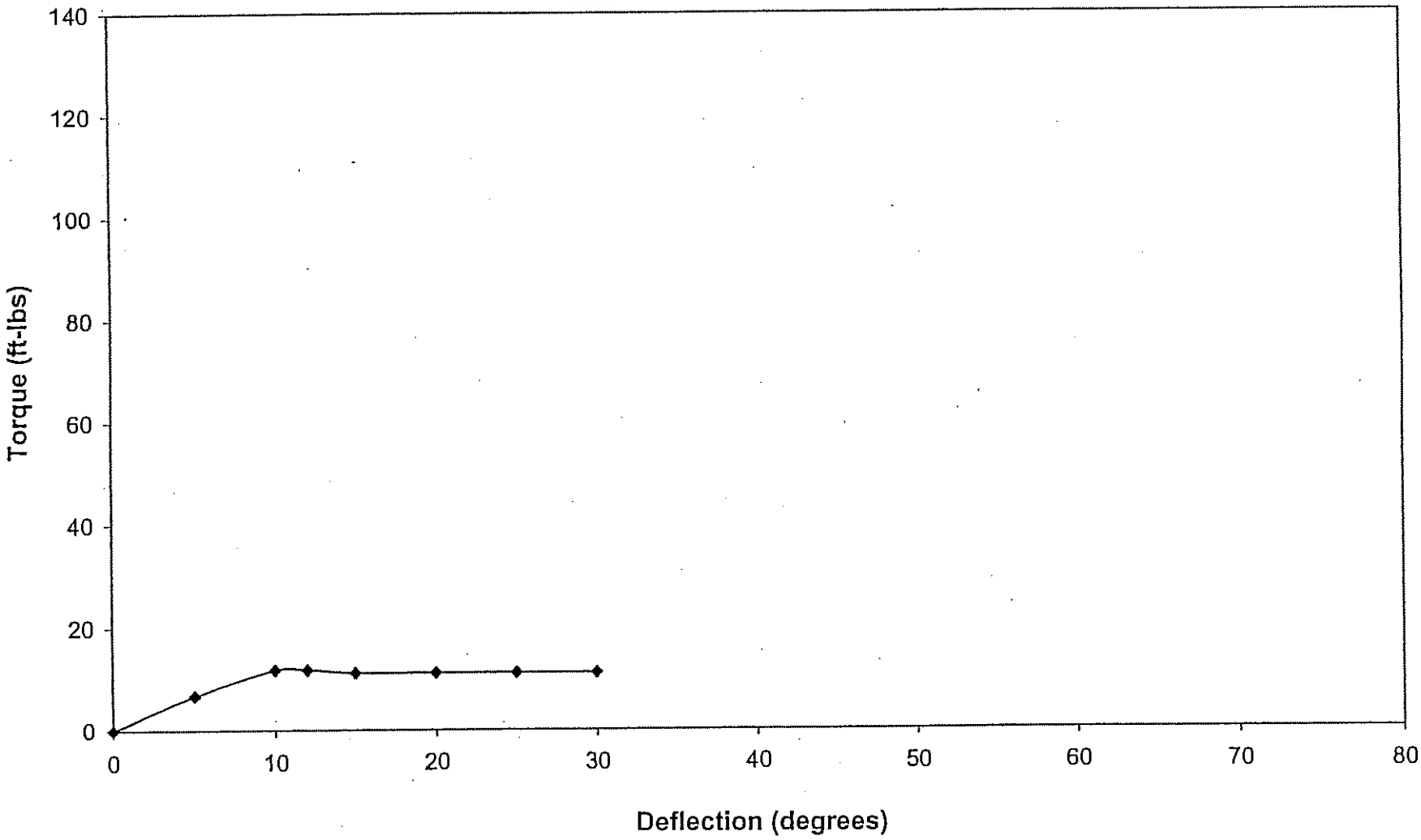

P5-02-S016 Vane #2

W.O. 4685.GC
Duffield Associates, Inc.
2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #3: Depth = 46.7 ft., Elevation = 26.8 ft.**
**Remolded Condition**




P5-02-S016 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-22-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S016<br>VANE #3 |
| GROUND SURFACE ELEV. (ft): | 73.5 |
| DEPTH TO VANE TIP (ft) | 46.7 |
| ELEV. AT VANE TIP (ft): | 26.8 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 14 |
| MAXIMUM TORQUE (ft-lb) | 23.6 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 15.6 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 146 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 2 |
| DEGREES ROTATION AT FAILURE: | 12 |
| MAXIMUM TORQUE (ft-lb) | 11.7 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 10.9 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 102 |

NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

# VANE SHEAR TEST REPORT

| | |
|---|---|
| PROJECT NAME:<br><br>W.O. NUMBER;<br>DRILLER/FOREMAN:<br>DATE: | CHERRY ISLAND LANDFILL EXPANSION PROJECT<br>PHASE II SITE EXPLORATION<br>4685.GC<br>WALTON CORPORATION/DAN TAYLOR<br>5-22-02 |
| TEST BORING DESIGNATION:<br>VANE SHEAR TEST DESIGNATION: | P5-02-S0-16<br>VANE #4 |
| GROUND SURFACE ELEV. (ft): | 73.5 |
| DEPTH TO VANE TIP (ft) | 51.7 |
| ELEV. AT VANE TIP (ft): | 21.8 |
| | |
| DRILLING EQUIPMENT: | CME 75 TRUCK MOUNTED |
| DRILLING METHOD: | HOLLOW STEMMED AUGERS |
| TORQUE METHOD: | CALIBRATED GAUGE WITH HAND CRANK |
| HOLE DIAMETER (in.) | 4-1/4 |
| VANE SHAPE: | TAPERED |
| VANE DIAMETER (in.) | 3-5/8 |
| UNDISTURBED TEST | |
| TIME TO FAILURE (min.): | 3 |
| DEGREES ROTATION AT FAILURE: | 14 |
| MAXIMUM TORQUE (ft-lb) | 35.6 |
| FRICTION CORRECTION (ft-lb) | 8.0 |
| NET TORQUE (ft-lb) | 27.6 |
| K VALUE ($ft^3$): | 0.1071 |
| UNDISTURBED<br>UNDRAINED SHEAR STRENGTH (psf): | 258 |
| REMOLDED TEST | |
| TIME TO FAILURE (min.): | 14 |
| DEGREES ROTATION AT FAILURE: | 85 |
| MAXIMUM TORQUE (ft-lb) | 15.5 |
| FRICTION CORRECTION (ft-lb) | 0.8 |
| NET TORQUE (ft-lb) | 14.7 |
| K VALUE ($ft^3$): | 0.1071 |
| REMOLDED<br>UNDRAINED SHEAR STRENGTH (psf): | 137 |

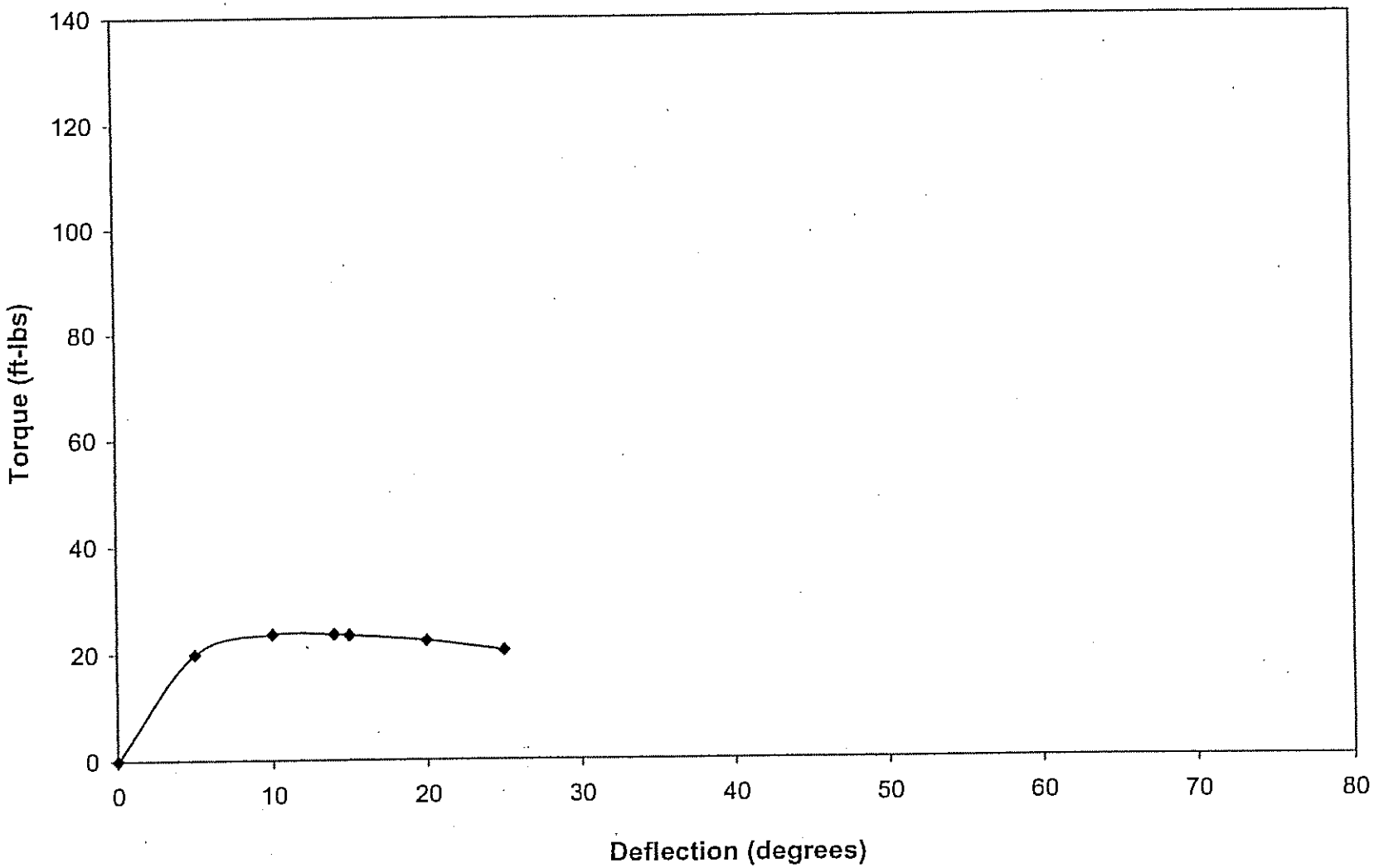
NOTES:
1. Friction corrections from friction test performed in boring P3-02-S013 at an elevation of 28.8 feet.
2. Remolded test performed immediately following completion of 10 rapid revolutions.

DUFFIELD ASSOCIATES, INC.
7/1/2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #3: Depth = 46.7 ft., Elevation = 26.8 ft.**
**Undisturbed Condition**



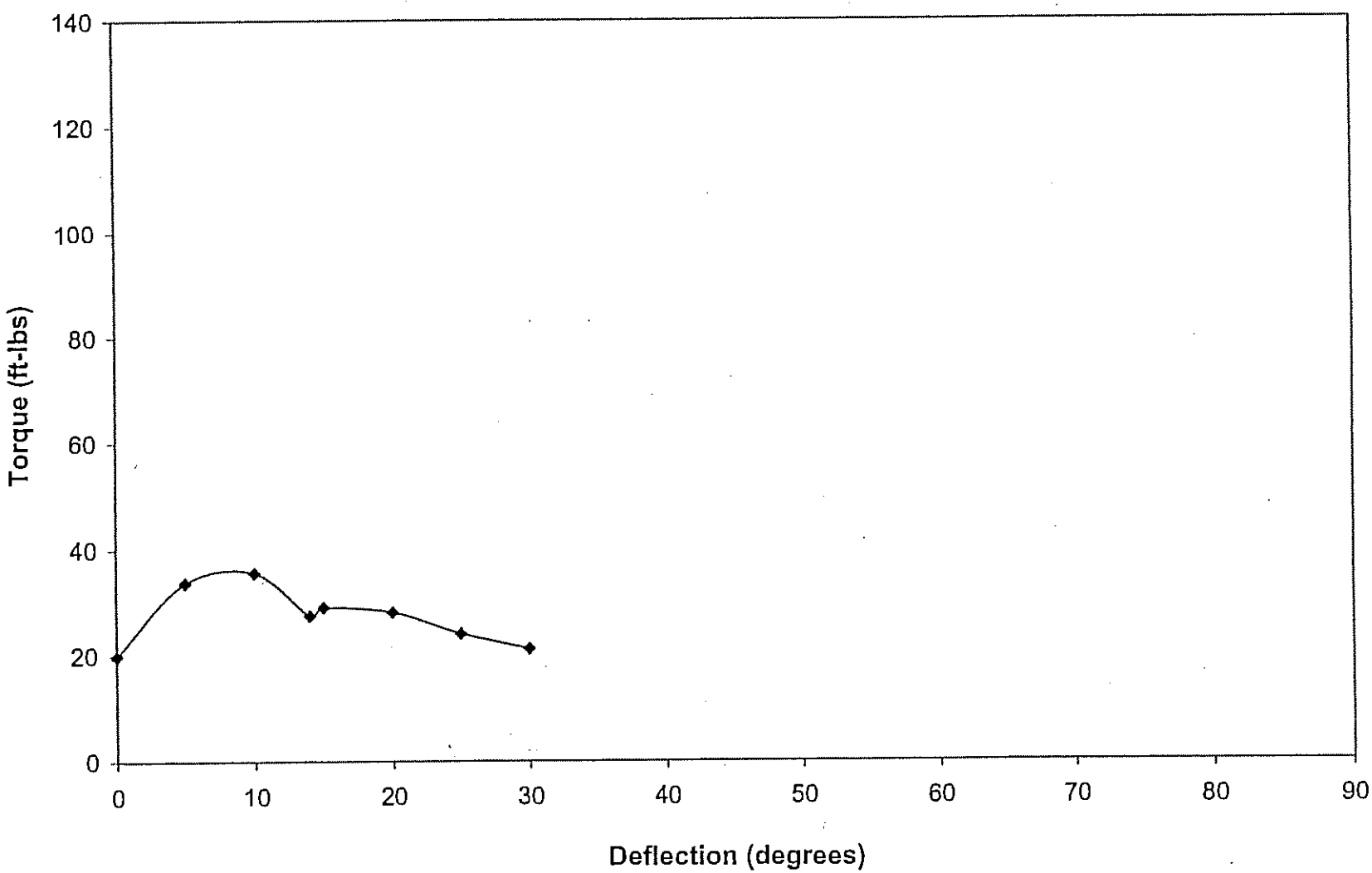

P5-02-S016 Vane #3

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #4: Depth = 51.7 ft., Elevation = 21.8 ft.**
**Undisturbed Condition**



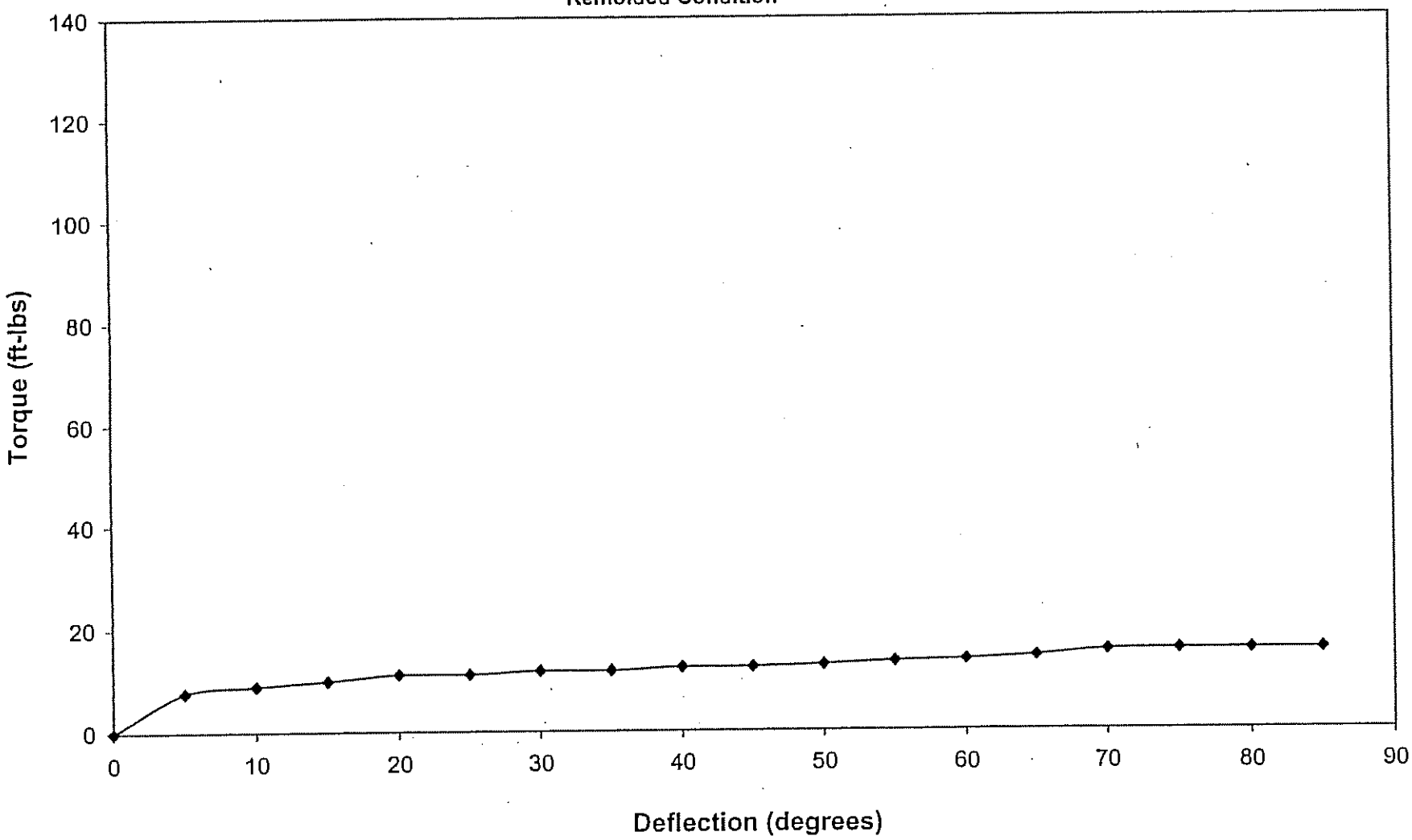

P5-02-S016 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
July 2002

CHERRY ISLAND LANDFILL EXPANSION PROJECT
PHASE II SITE EXPLORATION

## Field Vane Shear Test Data

**Test Boring P5-02-S016**
**Vane #4: Depth = 51.7 ft., Elevation = 21.8 ft.**
**Remolded Condition**




P5-02-S016 Vane #4

W.O. 4685.GC
Duffield Associates, Inc.
2002

# SOIL LABORATORY TESTING PROGRAM

LABORATORY TESTING PROGRAM SUMMARY
PHASE I SITE INVESTIGATION
CHERRY ISLAND LANDFILL EXPANSION PROJECT
LABORATORY TESTING SCHEDULE

| Boring No. | Sample No. | Depth Interval (ft) | Recovery (ft) | Tests Requested[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Atterberg Limits[2] | Sieve with Hydrometer | Sieve without Hydrometer | Natural Water Content | Sample Unit Weight | Loss on Ignition | Triaxial "R-Test" | Consolidation Test |
| P3-02-S01 | S-1 | 3.5 - 5.0 | 1.2 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 1.5 | */* | * | | * | | * | | |
| | S-3 | 16.0 - 17.5 | 1.5 | | | | | | | | |
| | S-4 | 18.5 - 20.0 | 1.5 | */* | * | | * | | * | | |
| | S-5 | 23.0 - 24.5 | 1.3 | | | * | * | | | | |
| | S-6 | 26.0 - 27.5 | 1.2 | | | | | | | | |
| | S-7 | 28.5 - 30.0 | 1.5 | | | | | | | | |
| | S-8 | 38.5 - 40.0 | 1.3 | | | | | | | | |
| | S-9A | 46.0 - 47.0 | 1.0 | | | | | | | | |
| | S-9B | 47.0 - 47.5 | 0.5 | | | | | | | | |
| | S-10 | 48.5 - 50.0 | 1.5 | | | * | | | | | |
| | S-11 | 58.5 - 60.0 | 1.5 | * | | | * | | | | |
| | S-12 | 68.5 - 70.0 | 1.3 | | | | | | | | |
| | S-13 | 78.0 - 79.5 | 0.7 | | | | | | | | |
| | S-14 | 88.5 - 90.0 | 0.6 | | | * | | | | | |
| | S-15 | 98.5 - 100.0 | 0.9 | | | | | | | | |
| | S-16 | 108.5 - 110.0 | 0.5 | * | | | * | | | | |
| | S-17 | 118.5 - 120.0 | 1.0 | | | | | | | | |
| | S-18 | 128.5 - 130.0 | 1.4 | | | | | | | | |
| | S-19 | 138.5 - 140.0 | 1.5 | | | | * | | | | |
| | S-20 | 148.5 - 150.0 | 1.5 | | | * | | | | | |
| | S-21 | 158.5 - 160.0 | 1.0 | | | | | | | | |
| | SH-1 | 10.0 - 12.0 | 2.0 | * | | | * | * | * | * | * |
| | SH-2 | 20.0 - 22.0 | 1.9 | | | | | | | | *[5] |
| | SH-3 | 40.0 - 42.0 | 2.0 | | | | * | * | | * | * |
| | SH-4 | 70.0 - 72.0 | 2.0 | | | | | | | | * |
| P3-02-S02 | S-1 | 3.5 - 5.0 | 1.0 | | | | | | | | |
| | S-2 | 8.5 -10.0 | 1.5 | | * | | | | | | |
| | S-3 | 13.5 - 15.0 | 0.5 | *[3] | | | *[3] | | *[3] | | |
| | S-4 | 18.5 - 20.0 | 1.5 | | | | | | | | |
| | S-5 | 28.0 - 29.5 | 1.2 | | *[3] | | | | | | |
| | S-6 | 38.5 - 40.0 | 1.5 | | | | | | | | |
| | S-7 | 48.5 - 50.0 | 1.5 | * | | | * | | | | |
| | S-8 | 56.0 - 57.5 | 1.3 | | | | | | | | |
| | S-9 | 58.5 - 60.0 | 0.0 | | | *[3] | | | | | |
| | S-10 | 69.5 - 71.0 | 1.0 | | | | | | | | |
| | S-11 | 78.5 - 80.0 | 0.9 | | | * | | | | | |
| | S-12 | 88.5 - 90.0 | 0.7 | | | | | | | | |
| | SH-1 | 20.0 - 22.0 | 2.0 | * | | | * | * | | * | *[5] |
| | SH-2 | 50.0 - 52.0 | 2.0 | | | | * | * | * | * | * |

NOTES:
1. * Indicates test requested.
2. */* indicates Atterberg Limits performed using both wet and dry methods.
3. Not enough sample to perform test.
4. Liquified sample - unable to extract and perform test.
5. Vertical and horizontal consolidation testing performed.
6. Test not performed due to sandy texture of sample.

W.O. 4685.GC
Duffield Associates, Inc.
May 2002

LABORATORY TESTING PROGRAM SUMMARY
PHASE I SITE INVESTIGATION
CHERRY ISLAND LANDFILL EXPANSION PROJECT
LABORATORY TESTING SCHEDULE

| Boring No. | Sample No. | Depth Interval (ft) | Recovery (ft) | Tests Requested[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Atterberg Limits[2] | Sieve with Hydrometer | Sieve without Hydrometer | Natural Water Content | Sample Unit Weight | Loss on Ignition | Triaxial "R-Test" | Consolidation Test |
| P4-02-S03 | S-1 | 3.5 - 5.0 | 0.7 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 1.1 | */* | * | | * | | * | | |
| | S-3 | 13.5 - 15.0 | 1.0 | | | | | | | | |
| | S-4 | 18.5 - 20.0 | 1.2 | | | | | | | | |
| | S-5 | 26.0 - 27.5 | 1.5 | | | | | | | | |
| | S-6 | 28.5 - 30.0 | 1.5 | | * | | * | | | | |
| | S-7 | 38.5 - 40.0 | 1.5 | | | | | | | | |
| | S-8 | 47.0 - 48.5 | 1.3 | | | | | | | | |
| | S-9 | 58.5 - 60.0 | 0.6 | | | * | | | | | |
| | S-10 | 68.5 - 70.0 | 1.5 | */* | | | * | | * | | |
| | S-11 | 78.5 - 80.0 | 1.5 | | | | | | | | |
| | S-12 | 88.5 - 90.0 | 1.5 | | | | * | | | | |
| | S-13 | 98.0 - 99.5 | 0.8 | | | | | | | | |
| | S-14 | 108.5 - 110.0 | 1.5 | | | * | | | | | |
| | S-15 | 113.5 - 115.0 | 1.5 | * | | | * | | | | |
| | S-16 | 118.5 - 120.0 | 1.0 | | | | | | | | |
| | SH-1 | 20.0 - 22.0 | 1.0 | | | | | | | | * |
| | SH-2 | 40.0 - 42.0 | 1.9 | | | | * | * | | * | * |
| | SH-3 | 90.0 - 92.0 | 1.0 | *[4] | | | *[4] | *[4] | | *[4] | *[4] |
| P5-02-S04 | S-1 | 3.5 - 5.0 | 0.4 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 0.3 | | | | | | | | |
| | S-3 | 13.5 - 15.0 | 0.9 | * | | | * | | *[3] | | |
| | S-4 | 18.5 - 20.0 | 0.1 | | | | | | | | |
| | S-5 | 23.5 - 25.0 | 1.4 | | | | | | | | |
| | S-6 | 28.5 - 30.0 | 1.5 | */* | * | | * | | * | | |
| | S-7 | 36.0 - 37.5 | 0.0 | | | | | | | | |
| | S-8 | 38.5 - 40.0 | 1.5 | | | | | | | | |
| | S-9 | 48.5 - 50.0 | 1.5 | | | | * | | | | |
| | S-10 | 58.5 - 60.0 | 1.5 | */* | | | * | | * | | |
| | S-11 | 68.5 - 70.0 | 1.5 | | | | * | | | | |
| | S-12 | 78.5 - 80.0 | 0.0 | | | | | | | | |
| | S-13 | 86.0 - 87.5 | 1.5 | | | | | | | | |
| | S-14 | 88.5 - 90.0 | 1.5 | | | | * | | | | |
| | S-15 | 98.5 - 100.0 | 0.8 | | | * | | | | | |
| | S-16 | 108.5 - 110.0 | 0.4 | | | | | | | | |
| | S-17 | 118.5 - 120.0 | 0.5 | | | | | | | | |
| | S-18 | 128.5 - 130.0 | 0.7 | | | * | | | | | |
| | S-19 | 138.5 - 140.0 | 0.4 | | | | | | | | |
| | S-20 | 148.5 - 150.0 | 1.1 | | | * | | | | | |
| | S-21 | 158.5 - 160.0 | 1.3 | * | | | * | | | | |
| | SH-1 | 30.0 - 32.0 | 1.8 | | | | | | | | * |
| | SH-2 | 80.0 - 82.0 | 1.2 | | | | | | | | * |

NOTES:
1. * Indicates test requested.
2. */* indicates Atterberg Limits performed using both wet and dry methods.
3. Not enough sample to perform test.
4. Liquified sample - unable to extract and perform test.
5. Vertical and horizontal consolidation testing performed.
6. Test not performed due to sandy texture of sample.

LABORATORY TESTING PROGRAM SUMMARY
PHASE I SITE INVESTIGATION
CHERRY ISLAND LANDFILL EXPANSION PROJECT
LABORATORY TESTING SCHEDULE

| Boring No. | Sample No. | Depth Interval (ft) | Recovery (ft) | Tests Requested[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Atterberg Limits[2] | Sieve with Hydrometer | Sieve without Hydrometer | Natural Water Content | Sample Unit Weight | Loss on Ignition | Triaxial "R-Test" | Consolidation Test |
| P5-02-S05 | S-1 | 3.5 -5.0 | 0.4 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 0.0 | | | | | | | | |
| | S-3 | 16.0 - 17.5 | 1.5 | * | * | | * | | | | |
| | S-4 | 18.5 - 20.0 | 1.5 | | | | | | | | |
| | S-5 | 23.5 - 25.0 | 1.5 | | | | | | | | |
| | S-6 | 28.5 - 30.0 | 1.5 | | | | * | | | | |
| | S-7 | 36.0 - 37.5 | 1.5 | * | | | * | | * | | |
| | S-8 | 38.5 - 40.0 | 1.5 | | | | | | | | |
| | S-9 | 48.5 - 50.0 | 1.5 | * | | | * | | * | | |
| | S-10 | 53.5 - 55.0 | 1.5 | | | | | | | | |
| | S-11 | 61.0 - 62.5 | 1.5 | | | | | | | | |
| | S-12 | 68.5 - 70.0 | 1.1 | | | * | | | | | |
| | S-13 | 78.5 - 80.0 | 0.5 | | | | | | | | |
| | S-14 | 88.5 - 90.0 | 0.0 | | | | | | | | |
| | S-15 | 98.5 - 100.0 | 0.6 | | | | | | | | |
| | S-16 | 108.5 - 110.0 | 0.7 | | | | | | | | |
| | S-17 | 118.5 - 120.0 | 1.4 | * | * | | * | | | | |
| | S-18 | 128.5 - 130.0 | 0.9 | | | * | | | | | |
| | S-19 | 138.5 - 140.0 | 1.4 | | | | | | | | |
| | S-20 | 148.5 - 150.0 | 1.5 | | | | | | | | |
| | S-21 | 158.5 - 160.0 | 1.5 | * | | | * | | | | |
| | SH-1 | 10.0 - 12.0 | 1.3 | | | | * | * | | | * |
| | SH-2 | 30.0 - 32.0 | 1.9 | | | | | | | * | |
| | SH-3 | 55.0 - 57.0 | 1.9 | | | | | | | | * |
| P1-02-S06 | S-1 | 4.0 - 5.5 | 0.4 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 0.7 | * | | | * | | | | |
| | S-3 | 13.5 - 15.0 | 0.1 | | | | | | | | |
| | S-4 | 21.0 - 22.5 | 1.5 | | | | | | | | |
| | S-5 | 23.5 - 25.0 | 1.5 | * | | | * | | * | | |
| | S-6 | 28.5 - 30.0 | 1.5 | | | | | | | | |
| | S-7 | 38.5 - 40.0 | 1.5 | * | * | | * | | * | | |
| | S-8 | 48.0 - 49.5 | 1.5 | | | | | | | | |
| | S-9 | 58.5 - 60.0 | 1.5 | | | | | | | | |
| | S-10 | 68.5 - 70.0 | 1.1 | | | * | | | | | |
| | S-11 | 78.5 - 80.0 | 0.9 | | | | | | | | |
| | S-12 | 88.5 - 90.0 | 0.7 | | | | | | | | |
| | S-13 | 98.5 - 100.0 | 1.1 | * | | *[3] | * | | | | |
| | S-14 | 108.5 - 110.0 | 1.4 | | * | | | | | | |
| | S-15 | 118.5 - 120.0 | 1.4 | | | | | | | | |
| | SH-1 | 15.0 - 17.0 | 1.9 | | | | * | * | | * | |
| | SH-2 | 40.0 - 42.0 | 1.9 | | | | | | | | |

NOTES:
1. * Indicates test requested.
2. */* indicates Atterberg Limits performed using both wet and dry methods.
3. Not enough sample to perform test.
4. Liquified sample - unable to extract and perform test.
5. Vertical and horizontal consolidation testing performed.
6. Test not performed due to sandy texture of sample.

W.O. 4685.GC
Duffield Associates, Inc.
May 2002

LABORATORY TESTING PROGRAM SUMMARY
PHASE I SITE INVESTIGATION
CHERRY ISLAND LANDFILL EXPANSION PROJECT
LABORATORY TESTING SCHEDULE

| Boring No. | Sample No. | Depth Interval (ft) | Recovery (ft) | Tests Requested[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Atterberg Limits[2] | Sieve with Hydrometer | Sieve without Hydrometer | Natural Water Content | Sample Unit Weight | Loss on Ignition | Triaxial "R-Test" | Consolidation Test |
| P1-02-S07 | S-1A | 3.5 - 4.2 | 0.5 | | | | | | | | |
| | S-1B | 4.2 - 5.0 | 0.5 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 1.3 | * | * | | * | | * | | |
| | S-3 | 16.0 - 17.5 | 0.8 | | | | | | | | |
| | S-4A | 18.5 - 18.8 | 0.3 | | | * | | | | | |
| | S-4B | 18.8 - 20.0 | 0.5 | | | * | | | | | |
| | S-5 | 23.5 - 25.0 | 1.5 | *[3] | | | * | | | | |
| | S-6A | 28.5 - 29.0 | 0.5 | | | | | | | | |
| | S-6B | 29.0 - 30.0 | 0.7 | | | | | | | | |
| | S-7 | 36.5 - 38.5 | 2.0 | * | | | * | | * | | |
| | S-8 | 38.5 - 40.0 | 1.5 | | | | | | | | |
| | S-9 | 48.5 - 50.0 | 1.5 | | | | | | | | |
| | S-10 | 58.5 - 60.0 | 1.0 | | | | | | | | |
| | S-11 | 68.5 - 70.0 | 0.7 | | | * | | | | | |
| | S-12 | 78.5 - 80.0 | 0.9 | | | | | | | | |
| | S-13A | 88.5 - 89.2 | 0.5 | | | | | | | | |
| | S-13B | 89.2 - 90.0 | 0.7 | | | | * | | | | |
| | S-14A | 98.5 - 99.6 | 0.5 | | | | | | | | |
| | S-14B | 99.6 - 100.0 | 0.5 | | | | | | | | |
| | S-15 | 108.5 - 110.0 | 0.8 | *[6] | | | * | | | | |
| | S-16 | 118.5 - 120.0 | 1.1 | | | * | | | | | |
| | S-17 | 128.5 - 130.0 | 1.5 | | | | | | | | |
| | S-18 | 138.5 - 140.0 | 1.5 | | | | | | | | |
| | SH-1 | 10.0 - 12.0 | 1.6 | | | | * | * | | * | * |
| | SH-2 | 32.0 - 34.0 | 1.8 | | | | | | | | |

NOTES:
1. * Indicates test requested.
2. */* indicates Atterberg Limits performed using both wet and dry methods.
3. Not enough sample to perform test.
4. Liquified sample - unable to extract and perform test.
5. Vertical and horizontal consolidation testing performed.
6. Test not performed due to sandy texture of sample.

LABORATORY TESTING PROGRAM SUMMARY
PHASE I SITE INVESTIGATION
CHERRY ISLAND LANDFILL EXPANSION PROJECT
LABORATORY TESTING SCHEDULE

| Boring No. | Sample No. | Depth Interval (ft) | Recovery (ft) | Tests Requested[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Atterberg Limits[2] | Sieve with Hydrometer | Sieve without Hydrometer | Natural Water Content | Sample Unit Weight | Loss on Ignition | Triaxial "R-Test" | Consolidation Test |
| P1-02-S08 | S-1 | 4.0 - 5.5 | 1.2 | | | | | | | | |
| | S-2 | 9.0 - 10.5 | 1.1 | | | | | | | | |
| | S-3 | 14.0 - 15.5 | 1.4 | * | | | * | | * | | |
| | S-4 | 18.5 - 20.0 | 1.5 | | | | | | | | |
| | S-5 | 26.0 - 27.5 | 1.5 | | | | * | | * | | |
| | S-6 | 29.0 - 30.5 | 1.5 | * | | | * | | | | |
| | S-7 | 39.0 - 40.5 | 0.6 | | | | | | | | |
| | S-8 | 54.0 - 55.5 | 1.0 | | | * | | | | | |
| | S-9 | 59.0 - 60.5 | 0.6 | | | | | | | | |
| | S-10 | 69.0 - 70.5 | 1.2 | | | | | | | | |
| | S-11 | 71.5 - 73.0 | 1.5 | * | * | | * | | * | | |
| | S-12 | 77.0 - 78.5 | 0.9 | | | | | | | | |
| | S-13 | 78.5 - 80.0 | 1.5 | | | | | | | | |
| | S-14 | 89.0 - 90.5 | 1.4 | | | | * | | | | |
| | S-15 | 99.0 - 100.5 | 0.8 | | | | | | | | |
| | S-16 | 109.0 - 110.5 | 1.5 | | | * | | | | | |
| | S-17 | 118.5 - 120.0 | 1.5 | | | | | | | | |
| | SH-1 | 20.0 - 22.0 | 1.3 | | | | | | | | * |
| | SH-2 | 73.0 - 75.0 | 1.9 | | | | * | * | | * | * |

NOTES:
1. * Indicates test requested.
2. */* indicates Atterberg Limits performed using both wet and dry methods.
3. Not enough sample to perform test.
4. Liquified sample - unable to extract and perform test.
5. Vertical and horizontal consolidation testing performed.
6. Test not performed due to sandy texture of sample.

LABORATORY TESTING PROGRAM SUMMARY
PHASE I SITE INVESTIGATION
CHERRY ISLAND LANDFILL EXPANSION PROJECT
LABORATORY TESTING SCHEDULE

| Boring No. | Sample No. | Depth Interval (ft) | Recovery (ft) | Tests Requested[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Atterberg Limits[2] | Sieve with Hydrometer | Sieve without Hydrometer | Natural Water Content | Sample Unit Weight | Loss on Ignition | Triaxial "R-Test" | Consolidation Test |
| P3-02-S09 | S-1 | 3.5 - 5.0 | 0.6 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 1.4 | | | | | | | | |
| | S-3 | 13.5 - 15.0 | 1.5 | | | | | | | | |
| | S-4 | 18.5 - 20.0 | 1.5 | * | * | | * | | * | | |
| | S-5 | 26.0 - 27.5 | 1.5 | | | | | | | | |
| | S-6 | 28.5 - 30.0 | 1.4 | | | | | | | | |
| | S-7 | 38.5 - 40.0 | 1.5 | * | | | * | | * | | |
| | S-8 | 48.0 - 50.0 | 1.4 | | | | | | | | |
| | S-9 | 58.5 - 60.0 | 1.5 | | | | | | | | |
| | S-10 | 63.5 - 65.0 | 1.5 | * | | | * | | * | | |
| | S-11 | 70.0 -72.0 | 2.0 | | | | | | | | |
| | S-12 | 74.0 - 75.5 | 1.3 | | | | | | | | |
| | S-13 | 79.0 - 80.5 | 1.1 | | | | | | | | |
| | S-14 | 89.0 - 90.5 | 1.4 | | | * | | | | | |
| | S-15 | 99.0 - 100.5 | 0.7 | | | | | | | | |
| | S-16 | 109.0 - 110.5 | 1.5 | | | | | | | | |
| | S-17 | 119.0 - 120.5 | 1.5 | | | | | | | | |
| | S-18 | 129.0 - 130.5 | 1.5 | * | | * | * | | | | |
| | S-19 | 139.0 - 140.5 | 1.5 | | | | | | | | |
| | S-20 | 149.0 - 150.5 | 1.5 | | | | | | | | |
| | S-21 | 158.5 - 160.0 | 1.5 | | | * | | | | | |
| | SH-1 | 20.0 - 22.0 | 1.4 | | | | * | * | | | * |
| | SH-2 | 40.0 - 42.0 | 2.0 | | | | | | | | * |
| | SH-3 | 65.0 - 67.0 | 0.6 | | | | | | | * | |
| | SH-4 | 67.0 - 69.0 | 0.6 | | | | | | | | |
| P5-02-S10 | S-1 | 3.5 - 5.0 | 0.6 | | | | * | | | | |
| | S-2 | 8.5 - 10.0 | 1.5 | | | | | | | | |
| | S-3 | 13.5 - 15.0 | 1.3 | * | * | | * | | | | |
| | S-4 | 21.0 - 22.5 | 1.3 | | | | | | | | |
| | S-5 | 23.5 - 25.0 | 1.5 | | | | * | | | | |
| | S-6 | 28.5 - 30.0 | 1.5 | | | * | | | | | |
| | S-7 | 38.5 - 40.0 | 1.5 | | | | | | | | |
| | S-8 | 49.0 - 50.5 | 1.5 | | | | * | | * | | |
| | S-9 | 58.5 - 60.0 | 1.5 | * | * | | * | | | | |
| | S-10 | 66.0 - 67.5 | 1.5 | | | | | | | | |
| | S-11 | 68.5 - 70.0 | 1.5 | | | | | | | | |
| | S-12 | 78.5 - 80.0 | 1.5 | | | | * | | | | |
| | S-13 | 88.5 - 90.0 | 1.0 | | | * | | | | | |
| | S-14 | 98.5 - 100.0 | 1.0 | | | | | | | | |
| | SH-1 | 15.0 - 17.0 | 1.8 | | | | | | | | * |
| | SH-2 | 40.0 - 42.0 | 1.8 | | | | | | | | * |
| | SH-3 | 60.0 - 62.0 | 2.0 | | | | | | | | * |

NOTES:
1. * Indicates test requested.
2. */* indicates Atterberg Limits performed using both wet and dry methods.
3. Not enough sample to perform test.
4. Liquified sample - unable to extract and perform test.
5. Vertical and horizontal consolidation testing performed.
6. Test not performed due to sandy texture of sample.

LABORATORY TESTING PROGRAM SUMMARY
PHASE I SITE INVESTIGATION
CHERRY ISLAND LANDFILL EXPANSION PROJECT
LABORATORY TESTING SCHEDULE

| Boring No. | Sample No. | Depth Interval (ft) | Recovery (ft) | Tests Requested[1] | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Atterberg Limits[2] | Sieve with Hydrometer | Sieve without Hydrometer | Natural Water Content | Sample Unit Weight | Loss on Ignition | Triaxial "R-Test" | Consolidation Test |
| P1-02-S11 | S-1 | 3.5 - 5.0 | 1.5 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 1.5 | | | | * | | * | | |
| | S-3 | 13.5 - 15.0 | 1.5 | | | | | | | | |
| | S-4 | 18.5 - 20.0 | 1.5 | * | | | * | | * | | |
| | S-5 | 25.0 - 26.5 | 1.5 | | | | | | | | |
| | S-6 | 28.5 - 30.0 | 1.5 | | | | | | | | |
| | S-7 | 36.0 - 37.5 | 1.5 | * | | | * | | | | |
| | S-8A | 38.5 - 39.1 | 0.6 | | | | | | | | |
| | S-8B | 39.1 - 40.0 | 0.7 | | | | | | | | |
| | S-9 | 48.5 - 50.0 | 1.0 | | | | | | | | |
| | S-10 | 58.5 - 60.0 | 0.1 | | | *[3] | | | | | |
| | S-11 | 68.5 - 70.0 | 0.7 | | | * | * | | | | |
| | S-12 | 78.5 - 80.0 | 0.4 | | | | | | | | |
| | S-13 | 88.5 - 90.0 | 1.5 | * | | | * | | | | |
| | S-14 | 98.5 - 100.0 | 1.3 | | | | | | | | |
| | S-15 | 108.5 - 110.0 | 1.0 | | | | * | | | | |
| | S-16 | 118.5 - 120.0 | 1.3 | | | | | | | | |
| | SH-1 | 20.0 - 22.0 | 2.0 | | | | | | | | * |
| | SH-2 | 30.0 - 32.0 | 0.8 | | | | | | | | * |
| P3-02-S12 | S-1 | 3.5 - 5.0 | 1.3 | | | | | | | | |
| | S-2 | 8.5 - 10.0 | 1.3 | * | * | | * | | * | | |
| | S-3 | 13.5 - 15.0 | 1.4 | | | | | | | | |
| | S-4 | 18.5 - 20.0 | 1.5 | * | | | * | | * | | |
| | S-5 | 25.0 - 26.5 | 1.5 | | | | | | | | |
| | S-6 | 28.5 - 30.0 | 1.5 | | | | | | | | |
| | S-7 | 38.5 - 40.0 | 1.5 | | | | | | | | |
| | S-8 | 48.5 - 50.0 | 1.5 | * | | | * | | * | | |
| | S-9 | 57.0 - 59.0 | 2.0 | | | | | | | | |
| | S-10 | 68.5 - 70.0 | 0.7 | | | * | | | | | |
| | S-11 | 73.0 - 74.5 | 1.5 | | | | * | | | | |
| | S-12 | 81.0 - 82.5 | 1.3 | | | | | | | | |
| | S-13 | 88.5 - 90.0 | 1.5 | | | | | | | | |
| | S-14 | 98.5 - 100.0 | 0.6 | | | *[3] | | | | | |
| | S-15 | 108.5 - 110.0 | 0.2 | | | | | | | | |
| | S-16 | 118.5 - 120.0 | 1.5 | * | | * | * | | | | |
| | SH-1 | 20.0 - 22.0 | 1.7 | | | | | | | | * |
| | SH-2 | 50.0 - 52.0 | 2.0 | | | | | | | | * |
| | SH-3 | 75.0 - 77.0 | 1.2 | | | | | | | | * |

NOTES:
1. * Indicates test requested.
2. */* indicates Atterberg Limits performed using both wet and dry methods.
3. Not enough sample to perform test.
4. Liquified sample - unable to extract and perform test.
5. Vertical and horizontal consolidation testing performed.
6. Test not performed due to sandy texture of sample.

W.O. 4685.GC
Duffield Associates, Inc.
May 2002

# LABORATORY TESTING PROGRAM SUMMARY
# PHASE II SITE INVESTIGATION
# CHERRY ISLAND LANDFILL EXPANSION PROJECT
# LABORATORY TESTING SCHEDULE

| Boring No. | Surface Elev. (ft.) | Sample No. | Sample Depth | | Recov. (ft.) | Tests Requested | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | From (ft.) | To (ft.) | | Atterberg Limits | #200 Sieve Test | Loss On Ignition | Natural Water Content | Sample Unit Weight | Triaxial "R-Test" | Consolid. Test | Direct Shear Test |
| P3-02-S013 | 69.8 | SH-1 | 36.0 | 38.0 | 2.0 | | | | | | | | |
| | | SH-2 | 42.0 | 44.0 | 2.0 | * | * | * | * | * | | | * [2] |
| | | SH-3 | 47.5 | 49.5 | 2.0 | | | | | | * | | |
| | | SH-4 | 53.0 | 55.0 | 2.0 | | | | | | | | |
| P4-02-S014 | 75.2 | SH-1 | 39.0 | 41.0 | 1.9 | * | * | * | * | * | * | * | |
| | | SH-2 | 44.0 | 46.0 | 2.0 | | * | | * | * | | * | |
| | | SH-3 | 49.0 | 51.0 | 2.0 | Sample sent to GeoTesting Express, Inc. | | | | | | | |
| | | SH-4 | 54.0 | 56.0 | 2.0 | * | * | * | * | * | * | * | |
| P5-02-S015 | 73.2 | CME-1 | 30.0 | 35.0 | 1.1 | | | | | | | | |
| | | SH-1 | 36.5 | 38.5 | 2.0 | | | | | | | | |
| | | SH-2 | 41.0 | 43.0 | 2.0 | * | * | | * | | | | * [2] |
| | | SH-3 | 46.0 | 48.0 | 2.0 | Sample sent to GeoTesting Express, Inc. | | | | | | | |
| | | SH-4 | 51.0 | 53.0 | 2.0 | * | * | * | * | | | | * [2] |
| P5-02-S016 | 73.5 | CME-1 | 28.0 | 33.0 | 0.4 | | | | | | | | |
| | | SH-0 | 33.0 | 35.0 | 0.0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |
| | | SH-1 | 37.0 | 39.0 | 1.4 | | | | | | | | |
| | | SH-2 | 43.0 | 45.0 | 2.0 | | | | | | | | |
| | | SH-3 | 48.0 | 50.0 | 2.0 | * | * | * | * | * | | | * [2] |
| P2-02-S017 | 91.4 | SH-1 | 67.0 | 69.0 | 2.0 | | | | | | | | |
| | | SH-2 | 72.0 | 74.0 | 1.6 | | | | | | | | |
| | | SH-3 | 77.5 | 79.5 | 2.0 | | | | | | * | | |
| | | SH-4 | 83.0 | 85.0 | 2.0 | | | | | | | | |

Notes: 1. * Indicates test requested.
2. Verticle and horizontal direct shear testing requested.

W.O. 4685.GC
DUFFIELD ASSOCIATES, INC.
July 2002

# SUMMARY OF LABORATORY TESTING RESULTS
## PHASE I SITE INVESTIGATION
## CHERRY ISLAND LANDFILL EXPANSION PROJECT
## NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| | S-2 | 8.5 – 10.0 | Dark gray CLAYEY SILT, trace to little micaceous fine to medium sand, little organics | 70.3 | 92.5 | 77 (56) | 36 (20) | MH | 10.3 | | | | | | | | | [5] |
| | S-4 | 18.5 – 20.0 | Dark gray CLAYEY SILT, trace fine sand, trace mica, little organics | 80.4 | 99.2 | 110 (77) | 63 (29) | MH | 11.2 | | | | | | | | | [5] |
| | S-5 | 23.0 – 24.5 | Dark gray CLAYEY SILT, trace fine sand | 75.9 | 99.0 | | | MH | | | | | | | | | | [4] |
| | S-10 | 48.5 – 50.0 | Dark gray fine to coarse SAND, some silt, trace gravel | 34.4 | 30.4 | | | SM | | | | | | | | | | [4] |
| | S-11 | 58.5 – 60.0 | Dark gray SITY CLAY, interlayered with thin fine sand lenses | 60.5 | 90.4 | 85 | 49 | CH | | | | | | | | | | [4] |
| | S-14 | 88.5 – 90.0 | Brown, gray fine to medium SAND, little to trace silt, trace coarse sand, trace gravel | | 10.2 | | | SM | | | | | | | | | | [4] |
| -02-SO1 | S-16 | 108.5 – 110.0 | Green, red, brown SILTY CLAY, trace fine sand | 22.7 | | 36 | 23 | CL | | | | | | | | | | |
| | S-19 | 138.5 – 140.0 | Light brown, red, green (varicolored) SILT, little fine sand | 25.3 | | | | ML | | | | | | | | | | |
| | S-20 | 148.5 – 150.0 | Dark brownish red fine SAND, little medium to coarse sand, some to and clayey silt | 20.8 | 39.2 | | | SM | | | | | | | | | | [4] |
| | SH-1 | 10.0 – 12.0 | Dark gray CLAYEY SILT, trace to little micaceous fine to medium sand, little organics | 82.3 | | 78 | 42 | MH | 11.5 | 58.7 | 0.450 | 0.375 | 15.5 | 36.9 | 0.16 | 0.020 | 2.1 | |
| | SH-2 | 20.0 – 22.0 | Dark gray CLAYEY SILT, trace fine sand, trace mica, little organics | | | | | MH | | | | | | | 0.29<br>0.27(H) | -<br>- | 1.6<br>1.4(H) | |
| | SH-3 | 40.0 – 42.0 | Dark gray CLAYEY SILT, trace fine sand | 65.6 | | | | MH | | 52.3 | 0.825 | 0.700 | 12.2 | 31.8 | 0.33 | 0.039 | 4.3 | |
| | SH-4 | 70.0 – 72.0 | Dark gray SILTY CLAY, trace fine sand layers | | | | | CH | | | | | | | 0.32 | 0.025 | 5.5 | |

[1] Atterberg Limit results only provided for fine-grained soils. Test results in parenthesis represents results of tests performed using the dry method. All other Atterberg Limits results represent testing performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
# PHASE I SITE INVESTIGATION
# CHERRY ISLAND LANDFILL EXPANSION PROJECT
# NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P3-02-SO2 | S-2 | 8.5 – 10.0 | Dark gray, black CLAYEY SILT, trace fine sand | | 97.5 | | | MH | | | | | | | | | | [5] |
| | S-7 | 48.5 – 50.0 | Dark gray SILTY CLAY, trace fine sand, trace organics | 64.4 | | 82 | 47 | CH | | | | | | | | | | |
| | S-11 | 78.5 – 80.0 | Grayish brown fine to medium SAND, little coarse sand, trace to little silt, little gravel, trace mica | 16.5 | 12.3 | | | SM | | | | | | | | | | [4] |
| | SH-1 | 20.0 – 22.0 | Dark gray CLAYEY SILT, trace fine sand, trace organics | 60.3 | | 71 | 38 | MH | | 63.3 | 0.500 | 0.400 | 14.0 | 34.6 | 0.21<br>0.10(H) | -<br>- | 3.0<br>3.0(H) | |
| | SH-2 | 50.0 – 52.0 | Dark gray SILTY CLAY, trace fine sand, trace organics | 55.8 | | | | CH | 5.5 | 64.8 | 0.850 | 0.700 | 13.5 | 31.0 | 0.20 | 0.017 | 4.2 | |

[1] Atterberg Limit results only provided for fine-grained soils. Test results in parenthesis represents results of tests performed using the dry method. All other Atterberg Limits results represent testing performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
## PHASE I SITE INVESTIGATION
## CHERRY ISLAND LANDFILL EXPANSION PROJECT
## NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P4-02-SO3 | S-2 | 8.5 – 10.0 | Gray, dark gray CLAYEY SILT, trace fine sand, trace organics | 47.7 | 97.1 | 92 (74) | 45 (32) | MH | 9.6 | | | | | | | | | [5] |
| | S-6 | 28.5 – 30.0 | Gray, dark gray CLAYEY SILT, trace fine sand, trace organics | 69.1 | 96.4 | | | MH | | | | | | | | | | [5] |
| | S-9 | 58.5 – 60.0 | Gray fine to medium SAND, little silt, little gravel (silty clay lense) | 26.9 | 18.5 | | | SM | | | | | | | | | | [4] |
| | S-10 | 68.5 – 70.0 | Gray CLAYEY SILT, trace fine sand, little organics | 58.4 | | 80 (68) | 38 (24) | MH | 11.7 | | | | | | | | | |
| | S-12 | 88.5 – 90.0 | Gray CLAYEY SILT, little fine sand | 56.3 | | | | MH | | | | | | | | | | |
| | S-14 | 108.5 – 110.0 | Gray fine to coarse SAND, trace silt, trace gravel | 20.4 | 3.5 | | | SP | | | | | | | | | | [4] |
| | S-15 | 113.5 – 115.0 | Gray, orange-brown SILTY CLAY, interlayered fine sand | 34.4 | | 68 | 42 | CH | | | | | | | | | | |
| | SH-1 | 20.0 – 22.0 | Gray CLAYEY SILT, trace fine sand, trace organics | | | | | MH | | | | | | | 0.24 | 0.017 | 3.6 | |
| | SH-2 | 40.0 – 42.0 | Gray, dark gray CLAYEY SILT, trace fine sand, trace organics | 64.7 | | | | MH | | 58.7 | 0.750 | 0.500 | 16.1 | 36.0 | 0.30 | 0.027 | 4.2 | |

[1] Atterberg Limit results only provided for fine-grained soils. Test results in parenthesis represents results of tests performed using the dry method. All other Atterberg Limits results represent testing performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
# PHASE I SITE INVESTIGATION
# CHERRY ISLAND LANDFILL EXPANSION PROJECT
# NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| | S-3 | 13.5 – 15.0 | Gray CLAYEY SILT, trace fine sand, trace organics | | 50.7 | 60 | 27 | MH | | | | | | | | | | |
| | S-6 | 28.5 – 30.0 | Brown, dark gray CLAYEY SILT, trace fine sand, trace organics | 60.6 | 98.1 | 95 (69) | 48 (28) | MH | 8.7 | | | | | | | | | [5] |
| | S-9 | 48.5 – 50.0 | Gray CLAYEY SILT, little fine sand | 46.3 | | | | MH | | | | | | | | | | |
| | S-10 | 58.5 – 60.0 | Gray CLAYEY SILT, trace fine sand, little organics | 67.7 | | 96 (79) | 49 (33) | MH | 11.3 | | | | | | | | | |
| | S-11 | 68.5 – 70.0 | Gray CLAYEY SILT, very thin fine sand lenses interlayered with silt | 59.2 | | | | MH | | | | | | | | | | |
| | S-14 | 88.5 – 90.0 | Gray CLAYEY SILT, with interlayered thin fine sand lenses | 52.5 | | | | MH | | | | | | | | | | |
| P5-02-SO4 | S-15 | 98.5 – 100.0 | Brown gray fine to coarse SAND, some silt, little gravel | 15.6 | 33.3 | | | SM | | | | | | | | | | [4] |
| | S-18 | 128.5 – 130.0 | Orange-brown, gray fine to medium SAND, some clayey silt, little coarse sand, trace gravel, trace mica | 24.1 | 34.1 | | | SM | | | | | | | | | | [4] |
| | S-20 | 148.5 – 150.0 | White/gray fine to medium SAND, little to trace silt, trace coarse sand | 24.5 | 7.5 | | | SM | | | | | | | | | | [4] |
| | S-21 | 158.5 – 160.0 | Purple-brown, gray SILTY CLAY, little fine sand | 18.4 | | 30 | 12 | CL | | | | | | | | | | |
| | SH-1 | 30.0 – 32.0 | Brown, dark gray CLAYEY SILT, trace fine sand, trace organics | | | | | MH | | | | | | | 0.27 | 0.033 | 4.7 | |
| | SH-2 | 80.0 – 82.0. | Gray CLAYEY SILT, very thin fine sand lenses interlayered with silt | | | | | MH | | | | | | | 0.22 | 0.017 | 7.6 | |

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[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
# PHASE I SITE INVESTIGATION
# CHERRY ISLAND LANDFILL EXPANSION PROJECT
# NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P5-02-SO5 | S-3 | 16.0 – 17.5 | Gray CLAYEY SILT, trace fine sand | 80.3 | 98.8 | 104 | 56 | MH | | | | | | | | | | [5] |
| | S-6 | 28.5 – 30.0 | Gray, black CLAYEY SILT, trace organics (roots, grass) | 64.9 | | | | MH | | | | | | | | | | |
| | S-7 | 36.0 – 37.5 | Gray, dark gray CLAYEY SILT, trace fine sand, trace organics | 49.7 | | 51 | 19 | MH | 6.4 | | | | | | | | | |
| | S-9 | 48.5 – 50.0 | Gray CLAYEY SILT, trace fine sand, trace organics | 48.3 | | 77 | 37 | MH | 5.8 | | | | | | | | | |
| | S-12 | 68.5 – 70.0 | Gray fine to coarse SAND, trace to little silt, little gravel, trace root fibers | 16.2 | 10.5 | | | SM | | | | | | | | | | [4] |
| | S-17 | 118.5 – 120.0 | Brown, purple-brown SILTY CLAY, little fine sand | 19.3 | 83.7 | 28 | 10 | CL | | | | | | | | | | [5] |
| | S-18 | 128.5 – 130.0 | Gray, light gray fine to medium SAND, some silt, trace coarse sand, trace organics | 23.4 | 32.1 | | | SM | | | | | | | | | | [4] |
| | S-21 | 158.5 – 160.0 | Red, brown, gray SILTY CLAY, little to some fine sand | 18.5 | | 35 | 15 | CL | | | | | | | | | | |
| | SH-1 | 10.0 – 12.0 | Gray CLAYEY SILT, trace to little fine sand, trace organics | 36.2 | | | | MH | | 82.5 | | | | | 0.05 | 0.004 | 3.3 | |
| | SH-2 | 30.0 – 32.0 | Gray, black CLAYEY SILT, trace organics (roots, grass) | | | | | MH | | | 1.200 | 0.850 | 10.7 | 27.5 | | | | |
| | SH-3 | 55.0 – 57.0 | Gray/dark gray CLAYEY SILT, trace fine sand interlayered (<0.01' thick), trace organics | | | | | MH | | | | | | | 0.21 | 0.017 | 5.3 | |

[1] Atterberg Limit results only provided for fine-grained soils. Test results in parenthesis represents results of tests performed using the dry method. All other Atterberg Limits results represent testing performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
# PHASE I SITE INVESTIGATION
# CHERRY ISLAND LANDFILL EXPANSION PROJECT
# NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P1-02-SO6 | S-2 | 8.5 – 10.0 | Gray, black CLAYEY SILT, trace organics (roots, grass) trace fine sand | 47.3 | | | | MH | | | | | | | | | | |
| | S-5 | 23.5 – 25.0 | Gray, black CLAYEY SILT, little organics (roots, grass), trace fine sand | 85.6 | | 109 | 67 | MH | 11.2 | | | | | | | | | |
| | S-7 | 38.5 – 40.0 | Gray, black CLAYEY SILT, trace organics (roots, grass), trace fine sand | 66.2 | 99.0 | 72 | 37 | MH | 8.1 | | | | | | | | | [5] |
| | S-10 | 68.5 – 70.0 | Gray fine to coarse SAND, little silt, some gravel, trace mica | 15.3 | 12.9 | | | SM | | | | | | | | | | [4] |
| | S-13 | 98.5 – 100.0 | Gray SILTY CLAY, little fine sand, trace mica | 22.8 | | 32 | 10 | CL | | | | | | | | | | |
| | S-14 | 108.5 – 110.0 | Red/brown/blue-gray fine to medium SANDY CLAY, little silt | 24.9 | 59.6 | | | CL | | | | | | | | | | [5] |
| | SH-1 | 15.0 – 17.0 | Gray, black CLAYEY SILT, trace organics (roots, grass), trace fine sand | 93.2 | | | | MH | | 47.5 | 0.350 | 0.200 | 14.8 | 41.1 | | | | |

[1] Atterberg Limit results only provided for fine-grained soils. Test results in parenthesis represents results of tests performed using the dry method. All other Atterberg Limits results represent testing performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
## PHASE I SITE INVESTIGATION
## CHERRY ISLAND LANDFILL EXPANSION PROJECT
## NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P1-02-SO7 | S-2 | 8.5 – 10.0 | Dark gray CLAYEY SILT, trace fine sand, little organics | 81.1 | 99.2 | 123 | 71 | MH | 10.3 | | | | | | | | | [5] |
| | S-4A | 18.5 – 18.8 | Orange, pink, red, brown fine to coarse SAND and CLAYEY SILT, little gravel | 10.8 | 47.8 | | | SM | | | | | | | | | | [4] |
| | S-4B | 18.8 – 20.0 | Brown fine to coarse SAND, some silt, some gravel | 12.9 | 31.4 | | | SM | | | | | | | | | | [4] |
| | S-5 | 23.5 – 25.0 | Dark gray CLAYEY SILT, trace to little organics, trace fine sand | 64.1 | | | | MH | | | | | | | | | | |
| | S-7 | 36.5 – 38.0 | Dark gray/black CLAYEY SILT, trace to little fine sand, trace organics | 11.2 | | 51 | 22 | MH | 4.3 | | | | | | | | | |
| | S-11 | 68.5 – 70.0 | Gray fine to coarse SAND, little silt, some gravel | 14.8 | 11.2 | | | SM | | | | | | | | | | [4] |
| | S-13B | 89.2 – 90.0 | Gray, orange-brown CLAYEY SILT, trace fine sand | 32.9 | | | | MH | | | | | | | | | | |
| | S-15 | 108.5 – 110.0 | Dark gray, brown, red SILT, little fine sand, trace medium to coarse sand, trace to little gravel | 22.0 | | | | ML | | | | | | | | | | |
| | S-16 | 118.5 – 120.0 | Gray, red, brown fine to medium SAND, some clayey silt, trace coarse sand, trace gravel | 20.0 | 32.2 | | | SM | | | | | | | | | | [4] |
| | SH-1 | 10.0 – 12.0 | Dark gray CLAYEY SILT, trace fine sand, little organics | 90.2 | | | | MH | | 47.8 | 0.400 | 0.200 | 14.9 | 37.2 | 0.22 | - | 0.6 | |

[1] Atterberg Limit results only provided for fine-grained soils. Test results in parenthesis represents results of tests performed using the dry method. All other Atterberg Limits results represent testing performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
# PHASE I SITE INVESTIGATION
# CHERRY ISLAND LANDFILL EXPANSION PROJECT
# NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| | S-3 | 14.0 – 15.5 | Dark blackish gray CLAYEY SILT, trace fine sand, little organics | 83.9 | | 118 | 71 | MH | 14.2 | | | | | | | | | |
| | S-5 | 26.0 – 27.5 | Dark brown PEAT, some silt | 418.6 | | | | PT | 246.6 | | | | | | | | | |
| | S-6 | 29.0 – 30.5 | Dark brownish gray SILT and PEAT | 132.5 | | 186 | Fibrous | ML | | | | | | | | | | |
| | S-8 | 54.0 – 55.5 | Orange-brown fine to coarse SAND, trace to little silt, trace gravel | 23.8 | 6.7 | | | SM | | | | | | | | | | [4] |
| P3-02-SO8 | S-11 | 71.5 – 73.0 | Light gray SILTY CLAY, trace fine sand, trace organics (fibers) | 40.0 | 98.7 | 63 | 36 | CH | 4.9 | | | | | | | | | [5] |
| | S-14 | 89.0 – 90.5 | Light gray, brown SILT and fine SAND, trace mica | 34.0 | | | | ML | | | | | | | | | | |
| | S-16 | 109.0 – 110.5 | Red, brown, bluish gray fine to medium SAND, some to and clayey silt, little to trace coarse sand, trace gravel | 14.9 | 37.1 | | | SM | | | | | | | | | | [4] |
| | SH-1 | 20.0 – 22.0 | Dark gray CLAYEY SILT, trace to little fine sand, little organics | | | | | MH | | | | | | | 0.26 | 0.033 | 1.6 | |
| | SH-2 | 73.0 – 75.0 | Light gray SILTY CLAY, trace fine sand, trace organics (fibers) | 41.6 | | | | CH | | 78.7 | 1200 | 1200 | 18.8 | 27.5 | 0.18 | - | 13.8 | |

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[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
## PHASE I SITE INVESTIGATION
## CHERRY ISLAND LANDFILL EXPANSION PROJECT
## NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P3-02-SO9 | S-4 | 18.5 – 20.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace to little organics | 82.0 | 98.1 | 124 | 71 | MH | 10.0 | | | | | | | | | [5] |
| | S-7 | 38.5 – 40.0 | Dark gray CLAYEY SILT, trace fine sand, little organics | 72.1 | | 97 | 52 | MH | 11.2 | | | | | | | | | |
| | S-10 | 63.5 – 65.0 | Dark gray SILTY CLAY, trace to little fine sand, trace organics | 52.1 | | 63 | 33 | CH | 4.8 | | | | | | | | | |
| | S-14 | 89.0 – 90.5 | Brown, gray fine to coarse SAND, little silt, trace gravel | 22.8 | 10.4 | | | SM | | | | | | | | | | [4] |
| | S-18 | 129.0 – 130.5 | Dark red, light gray fine to medium SAND and SILTY CLAY | 18.8 | 37.8 | 27 | 12 | SC | | | | | | | | | | [4] |
| | S-21 | 158.5 – 160.0 | Brown, orange-brown, gray fine to medium SAND, some silty clay, trace coarse sand | 18.9 | 32.6 | | | SM | | | | | | | | | | [4] |
| | SH-1 | 20.0 – 22.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace to little organics | 65.6 | | | | MH | | 58.7 | | | | | 0.25 | 0.033 | 2.7 | |
| | SH-2 | 40.0 – 42.0 | Dark gray CLAYEY SILT, trace fine sand, little organics | | | | | MH | | | | | | | 0.26 | 0.039 | 3.5 | |

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[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
## PHASE I SITE INVESTIGATION
## CHERRY ISLAND LANDFILL EXPANSION PROJECT
## NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P5-02-S10 | S-1 | 3.5 – 5.0 | Brown, gray SILT, some clay, little fine sand, little to trace medium to coarse sand | 15.4 | | | | MH | | | | | | | | | | |
| | S-3 | 13.5 – 15.0 | Dark gray CLAYEY SILT, trace to little fine sand | 43.3 | 92.9 | 86 | 42 | MH | | | | | | | | | | [5] |
| | S-5 | 23.5 – 25.0 | Dark gray CLAYEY SILT, trace to little fine sand | 60.1 | | | | MH | | | | | | | | | | |
| | S-6 | 28.5 – 30.0 | Gray CLAYEY SILT, interlayered with fine sand layers (0.01' thick) | 40.4 | 87.7 | | | MH | | | | | | | | | | [4] |
| | S-8 | 49.0 – 50.5 | Gray CLAYEY SILT, interlayered with trace fine sand layers (0.01' thick), little organics | 70.1 | | | | MH | 13.8 | | | | | | | | | |
| | S-9 | 58.5 – 60.0 | Gray CLAYEY SILT, interlayered with trace fine sand layers (0.01' thick), little organics | 44.7 | 98.0 | 75 | 36 | MH | | | | | | | | | | [5] |
| | S-12 | 78.5 – 80.0 | Gray CLAYEY SILT, trace layers of fine sand | 54.4 | | | | MH | | | | | | | | | | |
| | S-13 | 88.5 – 90.0 | Brown, gray fine to coarse SAND, little silt, little gravel | 14.3 | 11.4 | | | SM | | | | | | | | | | [4] |
| | SH-1 | 15.0 – 17.0 | Dark gray CLAYEY SILT, trace to little fine sand | | | | | MH | | | | | | | 0.31 | - | 6.0 | |
| | SH-2 | 40.0 – 42.0 | Gray CLAYEY SILT, interlayered with fine sand layers (0.01' thick) | | | | | MH | | | | | | | 0.33 | - | 8.9 | |
| | SH-3 | 60.0 – 62.0 | Gray CLAYEY SILT, interlayered with trace fine sand layers (0.01' thick), little organics | | | | | MH | | | | | | | 0.26 | 0.030 | 7.7 | |

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[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
# PHASE I SITE INVESTIGATION
# CHERRY ISLAND LANDFILL EXPANSION PROJECT
# NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P1-02-S11 | S-2 | 8.5 – 10.0 | Dark gray CLAYEY SILT, trace organics, trace fine sand | 62.4 | | | | MH | 9.6 | | | | | | | | | |
| | S-4 | 18.5 – 20.0 | Dark gray/black CLAYEY SILT, little to some fine sand, trace organics | 66.0 | | 82 | 42 | MH | 8.3 | | | | | | | | | |
| | S-7 | 36.0 – 37.5 | Brownish gray micaceous SILTY CLAY, little fine sand | 20.2 | | 24 | 9 | CL | | | | | | | | | | |
| | S-11 | 68.5 – 70.0 | Dark gray SILTY CLAY, trace fine sand | 47.2 | 96.0 | | | CL | | | | | | | | | | [5] |
| | S-13 | 88.5 – 90.0 | Red, brown, gray (varicolored) SILTY CLAY, little to some fine sand, trace medium sand, trace gravel | 26.0 | | 42 | 19 | CL | | | | | | | | | | |
| | S-15 | 108.5 – 110.0 | Red, brown, gray (varicolored) SILTY CLAY, little to some fine sand, trace medium sand | 23.5 | | | | CL | | | | | | | | | | |
| | SH-1 | 20.0 – 22.0 | Dark gray/black CLAYEY SILT, little to some fine sand, trace organics | | | | | MH | | | | | | | 0.26 | - | 3.4 | |
| | SH-2 | 30.0 – 32.0 | Dark brown CLAYEY SILT AND PEAT | | | | | MH | | | | | | | 0.29 | - | 5.1 | |

[1] Atterberg Limit results only provided for fine-grained soils. Test results in parenthesis represents results of tests performed using the dry method. All other Atterberg Limits results represent testing performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

# SUMMARY OF LABORATORY TESTING RESULTS
## PHASE I SITE INVESTIGATION
## CHERRY ISLAND LANDFILL EXPANSION PROJECT
## NEW CASTLE COUNTY, DELAWARE

| Test Boring Designation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (%) | Dry Density [2] (pcf) | Consolidated-Undrained Triaxial Compression Test (R Test) (ASTM D 4767) | | | | Consolidation Test [3] (ASTM D 2435) | | | Grain Size (ASTM D 422) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Total Cohesion (ksf) | Effective Cohesion (ksf) | Total Friction Angle (degrees) | Effective Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) | |
| P3-02-S12 | S-2 | 8.5 – 10.0 | Gray, black CLAYEY SILT, trace fine to medium sand, trace organics | 56.4 | 95.0 | 116 | 66 | MH | 9.4 | | | | | | | | | [5] |
| | S-4 | 18.5 – 20.0 | Gray CLAYEY SILT, little organics | 80.4 | | 121 | 66 | MH | 11.4 | | | | | | | | | |
| | S-8 | 48.5 – 50.0 | Gray CLAYEY SILT, trace fine sand, little organics | 72.3 | | 118 | 67 | MH | 12.7 | | | | | | | | | |
| | S-10 | 68.5 – 70.0 | Gray fine to coarse SAND, trace gravelly lenses, some silt | 24.9 | 26.7 | | | SM | | | | | | | | | | [4] |
| | S-11 | 73.0 – 74.5 | Gray CLAYEY SILT and interlayered fine sand | 48.1 | | | | MH | | | | | | | | | | |
| | S-16 | 118.5 – 120.0 | Gray SILTY CLAY, some fine sand | 19.4 | 75.4 | 30 | 10 | CL | | | | | | | | | | [4] |
| | SH-1 | 20.0 – 22.0 | Gray CLAYEY SILT, little organics | | | | | MH | | | | | | | 0.22 | - | 3.8 | |
| | SH-2 | 50.0 – 52.0 | Gray CLAYEY SILT, trace fine sand, little organics | | | | | MH | | | | | | | 0.29 | 0.033 | 3.6 | |
| | SH-3 | 75.0 – 77.0 | Gray CLAYEY SILT and interlayered fine sand | | | | | MH | | | | | | | 0.24 | 0.022 | 5.5 | |

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[2] Dry densities are averages of all values from a given Shelby Tube.
[3] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure. H = horizontal sample. All other tests performed on vertical samples.
[4] Sieve without Hydrometer performed. See laboratory testing data sheet in Appendix G.
[5] Sieve with Hydrometer performed. See laboratory testing data sheet in Appendix G.

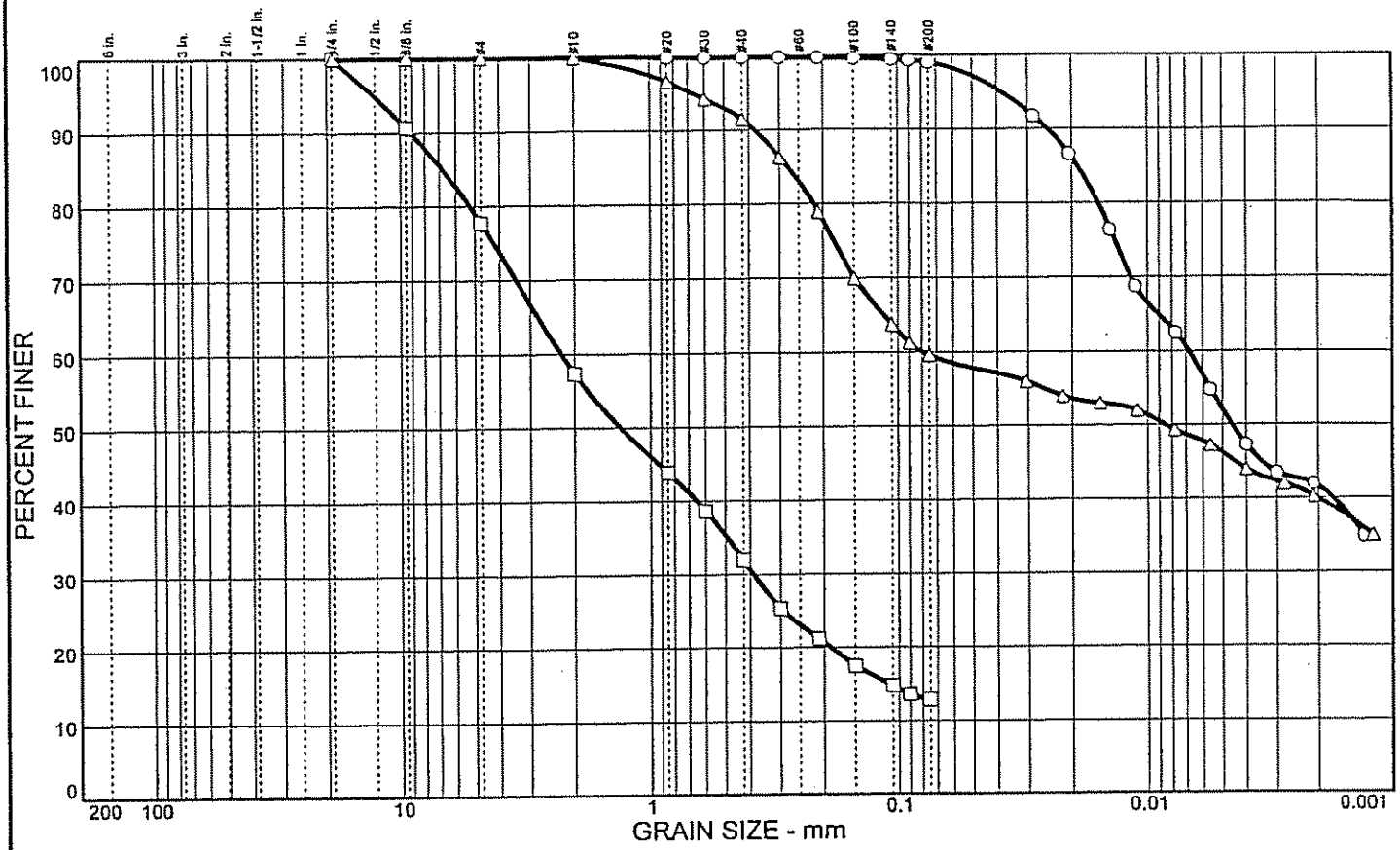
# SUMMARY OF LABORATORY TESTING RESULTS
## PHASE II SITE INVESTIGATION
## CHERRY ISLAND LANDFILL EXPANSION PROJECT
## NEW CASTLE COUNTY, DELAWARE

| Test Boring esignation | Sample No. | Sample Interval (feet) | Visual Description | Natural Moisture Content (ASTM D 2216) % | Less Than No. 200 Sieve (ASTM D 1140) % | Atterberg Limits [1] (ASTM D 4318) | | USCS Classification (ASTM D 2487) | Loss on Ignition (ASTM 2863) (%) | Dry Density [2] ASTM (2937) (pcf) | Triaxial Compression Tests CU[3] (ASTM D 4767) | | Direct Shear Test (ASTM D 3080)[4] | | Consolidation Test [6] (ASTM D 2435) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Liquid Limit | Plasticity Index | | | | Cohesion (ksf) | Friction Angle (degrees) | Cohesion (ksf) | Friction Angle (degrees) | $C_c'$ | $C_r'$ | $P_c'$ (ksf) |
| 3-02-S013 | SH-2 | 42.0 – 44.0 | Dark gray/black SILTY CLAY, trace fine SAND, trace organics | 80.3 | 97.4 | 95 | 57 | CH | 7.8 | 49.3 | | | 0 (H)[5]<br>0 (V) | 18.0 (H)<br>18.5 (V) | | | |
| | SH-3 | 47.5 – 49.5 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 84.6 | | | | MH | | | C = 0.550<br>C' = 0.425 | Φ = 14.4°<br>Φ' = 34.2° | | | | | |
| -02-S014 | SH-1 | 39.0 – 41.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 83.9 | 96.4 | 99 | 53 | MH | 8.7 | 50.4 | C = 0.275<br>C' = 0.275 | Φ = 15.4°<br>Φ' = 37.3° | | | 0.24 | 0.021 | 0.85 |
| | SH-2 | 44.0 – 46.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 90.8 | 99.4 | | | MH | | 45.8 | | | | | 0.24 | 0.021 | 0.9 |
| | SH-4 | 54.0 – 56.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 92.8 | 98.3 | 87 | 47 | MH | 7.2 | 45.3 | C = 0.500<br>C' = 0.350 | Φ = 13.0°<br>Φ' = 30.5° | | | 0.26 | 0.020 | 1.7 |
| P5-02-S015 | SH-2 | 41.0 – 43.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 92.7 | 97.3 | 107 | 62 | MH | | | | | 0 (H)<br>0 (V) | 22.9 (H)<br>22.5 (V) | | | |
| | SH-4 | 51.0 – 53.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 87.0 | 99.2 | 102 | 55 | MH | 10.0 | | | | 0 (H)<br>0 (V) | 18.8 (H)<br>20.0 (V) | | | |
| P5-02-S016 | SH-3 | 48.0 – 50.0 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 59.5 | 89.1 | 63 | 29 | MH | 6.9 | 62.5 | | | 0 (H)<br>0 (V) | 21.4 (H)<br>19.0 (V) | | | |
| -02-S017 | SH-3 | 77.5 – 79.5 | Dark gray/black CLAYEY SILT, trace fine sand, trace organics | 73.9 | | | | MH | | | C = 0.675<br>C' = 0.575 | Φ = 13.8°<br>Φ' = 31.2° | | | | | |

[1] Atterberg Limit performed using wet method.
[2] Dry densities are averages of all values from a given Shelby Tube.
[3] CU denotes Consolidated-Undrained Triaxial Compression Test (R Test).
[4] Results from Direct Shear Test performed in general accordance with ASTM D 3080. Shear rates varied. See Direct Shear test report sheets in Appendix F for shearing rates used in each test.
[5] H denotes horizontal sample (vertical shear plane). V denotes vertical sample (horizontal shear plane).
[6] $C_c'$, $C_r'$ = slope of virgin compression and recompression lines respectively in % strain versus log (pressure), $p_c'$ = preconsolidation pressure.

# CLASSIFICATIONS

# PARTICLE SIZE DISTRIBUTION REPORT: P1-02-S06




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.0 | 57.5 | 41.5 | MH | | 35 | 72 |
| □ | | 22.3 | 64.8 | 12.9 | | SM | | | |
| △ | | | 40.4 | 19.8 | 39.8 | CL | | | |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | 100.0 |
| 3/8 | 100.0 | 90.7 | 100.0 |
| GRAIN SIZE | | | |
| $D_{60}$ | 0.0068 | 2.27 | 0.0793 |
| $D_{30}$ | | 0.387 | |
| $D_{10}$ | | | |
| COEFFICIENTS | | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | 100.0 | 77.7 | 100.0 |
| #10 | 100.0 | 57.3 | 99.9 |
| #20 | 99.9 | 43.8 | 96.6 |
| #30 | 99.8 | 38.6 | 94.2 |
| #40 | 99.8 | 31.9 | 91.5 |
| #50 | 99.7 | 25.3 | 86.3 |
| #70 | 99.7 | 21.2 | 79.0 |
| #100 | 99.6 | 17.5 | 70.0 |
| #140 | 99.4 | 14.8 | 63.7 |
| #170 | 99.3 | 13.6 | 61.3 |
| #200 | 99.0 | 12.9 | 59.6 |

**SOIL DESCRIPTION**

○ Gray, black CLAYEY SILT, trace organics (roots, grass), trace fine sand.

□ Gray fine to coarse SAND, little silt, some gravel, trace mica.

△ Red/brown/blue-gray fine to medium SANDY CLAY, little silt.

**REMARKS:**

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○ Source: P1-02-S06 Sample No.: S-7 Elev./Depth: 38.5'-40.0'

□ Source: P1-02-S06 Sample No.: S-10 Elev./Depth: 68.5'-70.0'

△ Source: P1-02-S06 Sample No.: S-14 Elev./Depth: 108.5'-110.


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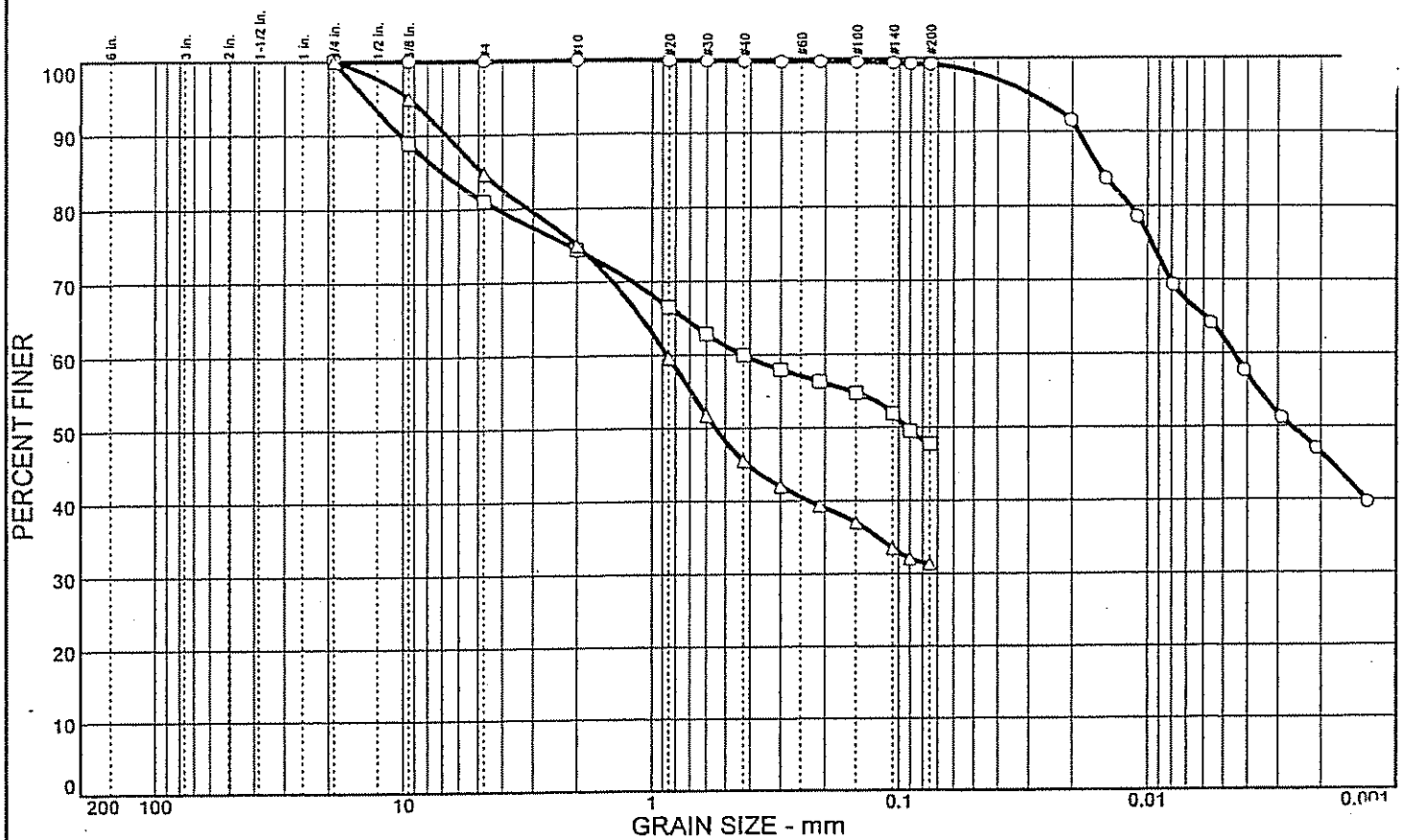
# PARTICLE SIZE DISTRIBUTION REPORT: P1-02-S07




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 0.8 | 52.9 | 46.3 | MH | | 52 | 123 |
| □ | | 18.9 | 33.3 | 47.8 | | SM | | | |
| △ | | 15.2 | 53.4 | 31.4 | | SM | | | |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | 100.0 |
| 3/8 | 100.0 | 89.0 | 95.0 |
| GRAIN SIZE | | | |
| $D_{60}$ | 0.0045 | 0.428 | 0.866 |
| $D_{30}$ | | | |
| $D_{10}$ | | | |
| COEFFICIENTS | | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | 100.0 | 81.1 | 84.8 |
| #10 | 100.0 | 74.4 | 75.0 |
| #20 | 99.9 | 66.6 | 59.6 |
| #30 | 99.8 | 62.9 | 51.8 |
| #40 | 99.7 | 60.0 | 45.5 |
| #50 | 99.6 | 57.9 | 42.0 |
| #70 | 99.6 | 56.3 | 39.3 |
| #100 | 99.5 | 54.8 | 37.0 |
| #140 | 99.4 | 51.9 | 33.5 |
| #170 | 99.3 | 49.5 | 32.1 |
| #200 | 99.2 | 47.8 | 31.4 |

SOIL DESCRIPTION

○ Dark gray CLAYEY SILT, trace fine sand, little organics.

□ Orange, pink, red, brown fine to coarse SAND and CLAYEY SILT, little gravel.

△ Brown fine to coarse SAND, some silt, some gravel.

REMARKS:

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△

○ Source: P1-02-S07 Sample No.: S-2 Elev./Depth: 8.5'-10.0'

□ Source: P1-02-S07 Sample No.: S-4A Elev./Depth: 18.5'-18.8'

△ Source: P1-02-S07 Sample No.: S-4B Elev./Depth: 18.8'-20.0'


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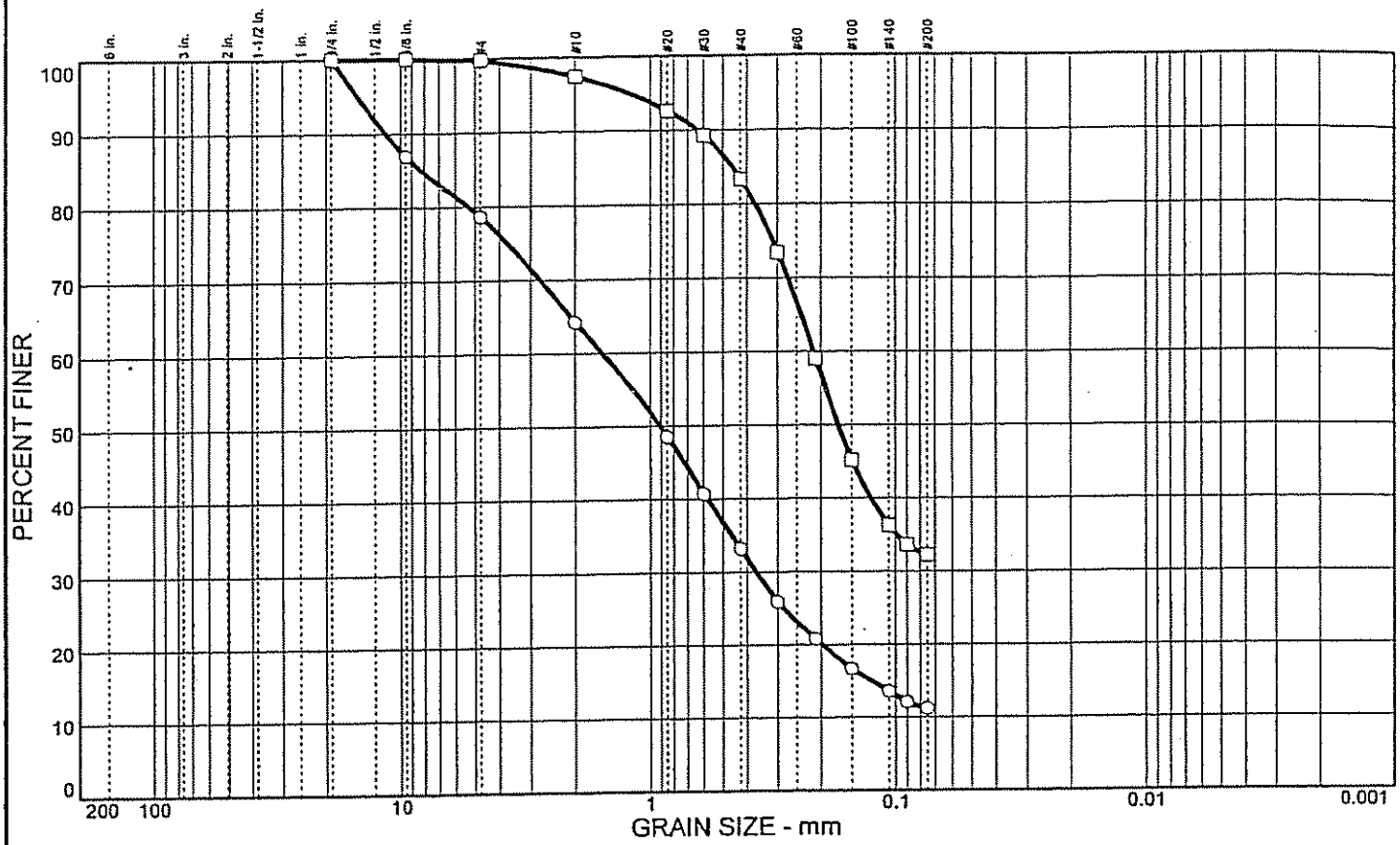
# PARTICLE SIZE DISTRIBUTION REPORT: P1-02-S07




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | 21.4 | 67.5 | 11.1 | | SM | | | |
| □ | | 0.3 | 67.5 | 32.2 | | SM | | | |
| | | | | | | | | | |

| SIEVE Inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 86.9 | 100.0 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 1.57 | 0.215 | |
| $D_{30}$ | 0.367 | | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 78.6 | 99.7 | |
| #10 | 64.2 | 97.4 | |
| #20 | 48.5 | 92.6 | |
| #30 | 40.7 | 89.3 | |
| #40 | 33.2 | 83.3 | |
| #50 | 25.9 | 73.5 | |
| #70 | 20.8 | 59.0 | |
| #100 | 16.7 | 45.2 | |
| #140 | 13.6 | 36.3 | |
| #170 | 12.1 | 33.6 | |
| #200 | 11.2 | 32.2 | |

SOIL DESCRIPTION

○ Gray fine to coarse SAND, little silt, some gravel.

□ Gray, red, brown fine to medium SAND, some clayey silt, trace coarse sand, trace gravel.

REMARKS:

○

□

○ Source: P1-02-S07 Sample No.: S-11 Elev./Depth: 68.5'-70.0'

□ Source: P1-02-S07 Sample No.: S-16 Elev./Depth: 118.0'-120.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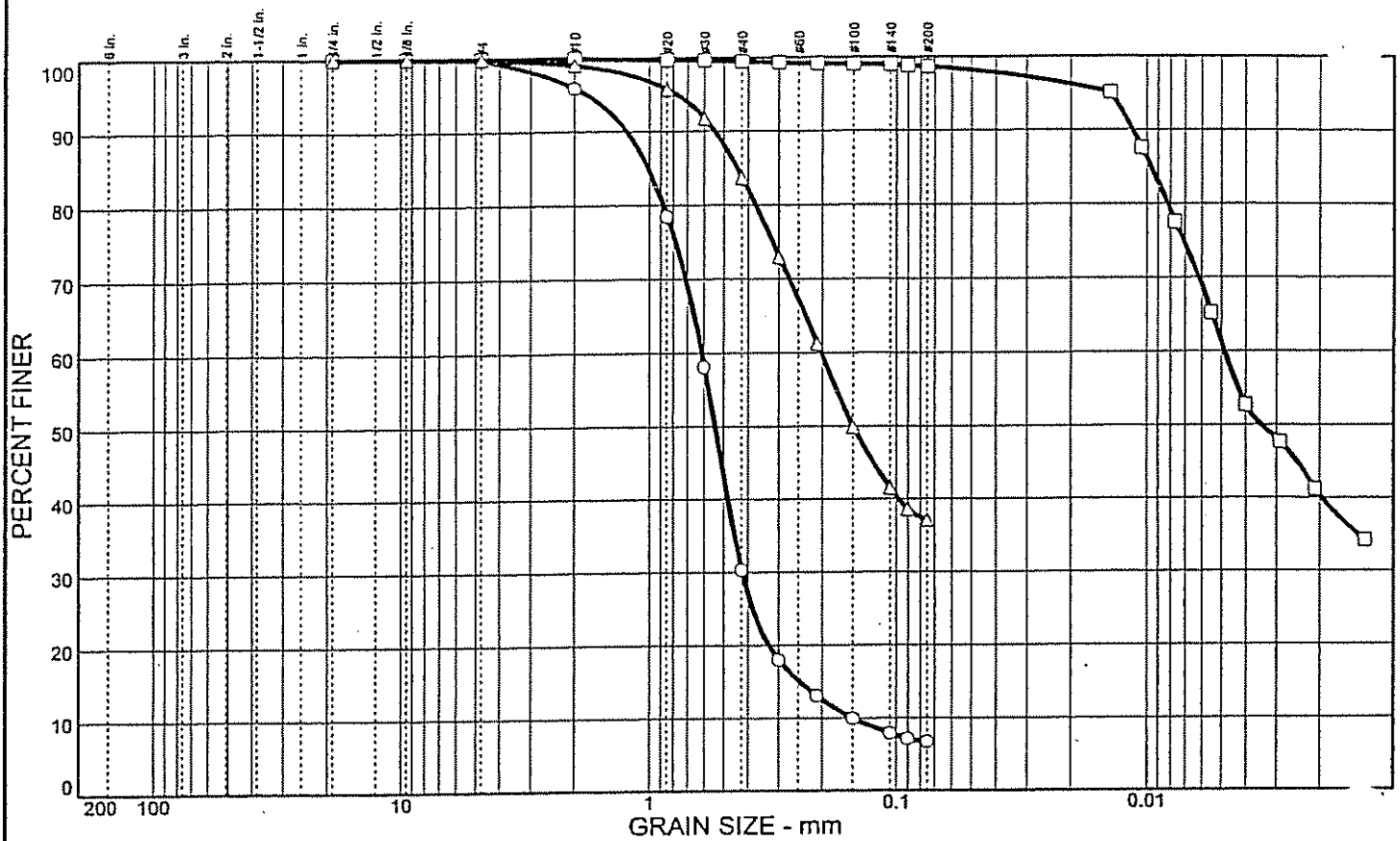
# PARTICLE SIZE DISTRIBUTION REPORT: P1-02-S08




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | 0.1 | 93.2 | 6.7 | | SM | | | |
| □ | | | 1.3 | 58.4 | 40.3 | CH | | 27 | 63 |
| △ | | 0.1 | 62.9 | 37.0 | | SM | | | |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | 100.0 |
| 3/8 | 100.0 | 100.0 | 100.0 |
| GRAIN SIZE | | | |
| $D_{60}$ | 0.615 | 0.0049 | 0.203 |
| $D_{30}$ | 0.423 | | |
| $D_{10}$ | 0.150 | | |
| COEFFICIENTS | | | |
| $C_c$ | 1.93 | | |
| $C_u$ | 4.09 | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | 99.9 | 100.0 | 99.9 |
| #10 | 95.9 | 100.0 | 99.0 |
| #20 | 78.5 | 99.7 | 95.7 |
| #30 | 58.1 | 99.6 | 91.8 |
| #40 | 30.3 | 99.5 | 83.7 |
| #50 | 18.0 | 99.3 | 73.0 |
| #70 | 13.1 | 99.2 | 61.2 |
| #100 | 10.0 | 99.1 | 49.9 |
| #140 | 8.0 | 99.0 | 41.5 |
| #170 | 7.2 | 98.8 | 38.6 |
| #200 | 6.8 | 98.7 | 37.1 |

**SOIL DESCRIPTION**

○ Orange-brown fine to coarse SAND, trace to little silt, trace gravel.

□ Light gray SILTY CLAY, trace fine sand, trace organics (fibers),

△ Red,brown,bluish gray fine to medium SAND, some to and clayey silt, little to trace coarse sand, trace gravel.

**REMARKS:**

○

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○ Source: P1-02-S08 Sample No.: S-8 Elev./Depth: 54.0'-55.5'

□ Source: P1-02-S08 Sample No.: S-11 Elev./Depth: 71.5'-73.0'

△ Source: P1-02-S08 Sample No.: S-16 Elev./Depth: 109.0'-110.


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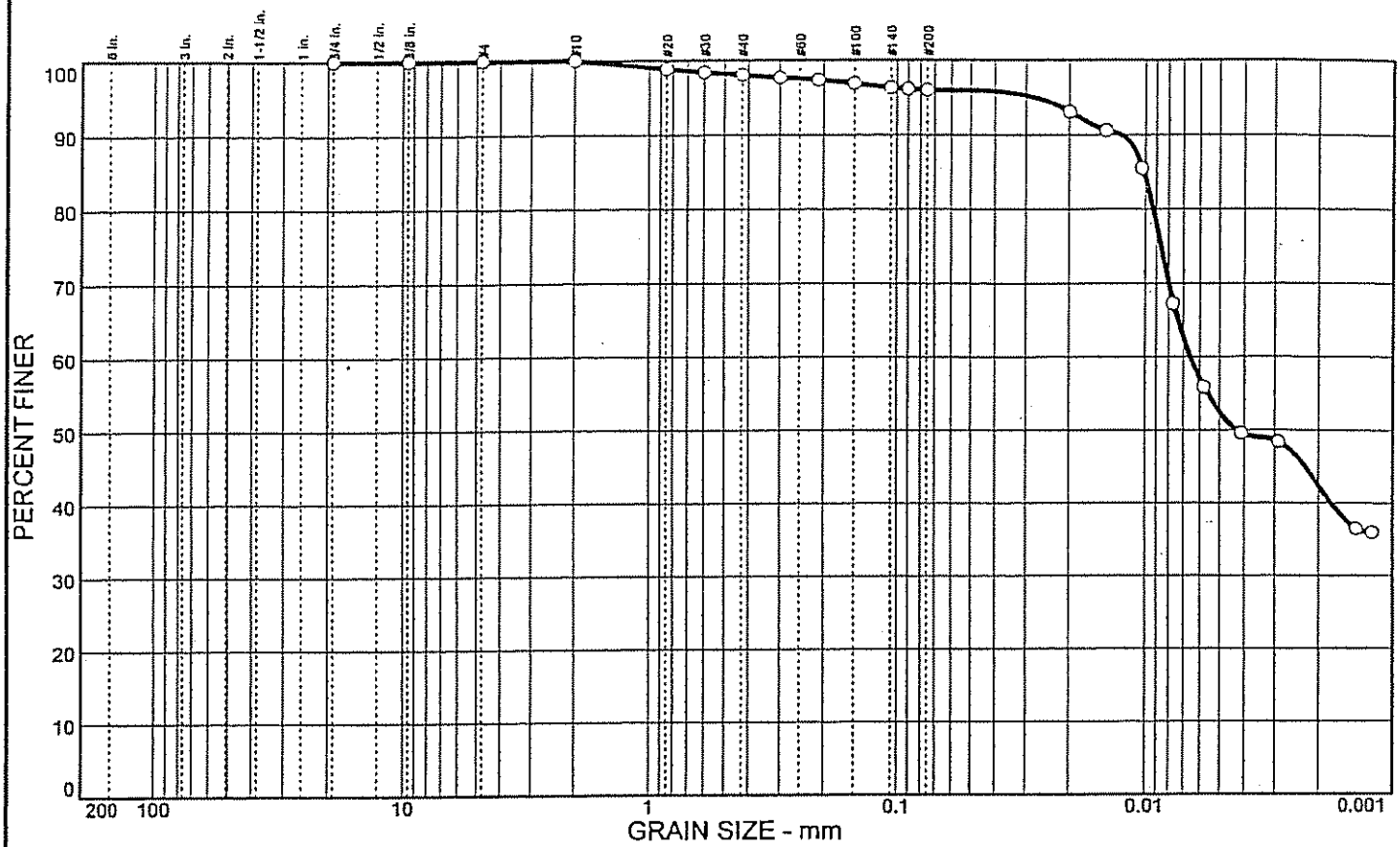
# PARTICLE SIZE DISTRIBUTION REPORT: P1-02-S11




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| O | | | 4.0 | 43.7 | 52.3 | CL | | | |
| | | | | | | | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER O | | |
|---|---|---|---|
| 3/4 | 100.0 | | |
| 3/8 | 100.0 | | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.0066 | | |
| $D_{30}$ | | | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER O | | |
|---|---|---|---|
| #4 | 100.0 | | |
| #10 | 100.0 | | |
| #20 | 98.9 | | |
| #30 | 98.4 | | |
| #40 | 98.0 | | |
| #50 | 97.7 | | |
| #70 | 97.4 | | |
| #100 | 96.9 | | |
| #140 | 96.3 | | |
| #170 | 96.2 | | |
| #200 | 96.0 | | |

SOIL DESCRIPTION

O Dark gray SILTY CLAY, trace fine sand.

REMARKS:

O

O Source: P1-02-S11 Sample No.: S-11 Elev./Depth: 68.5'-70.0'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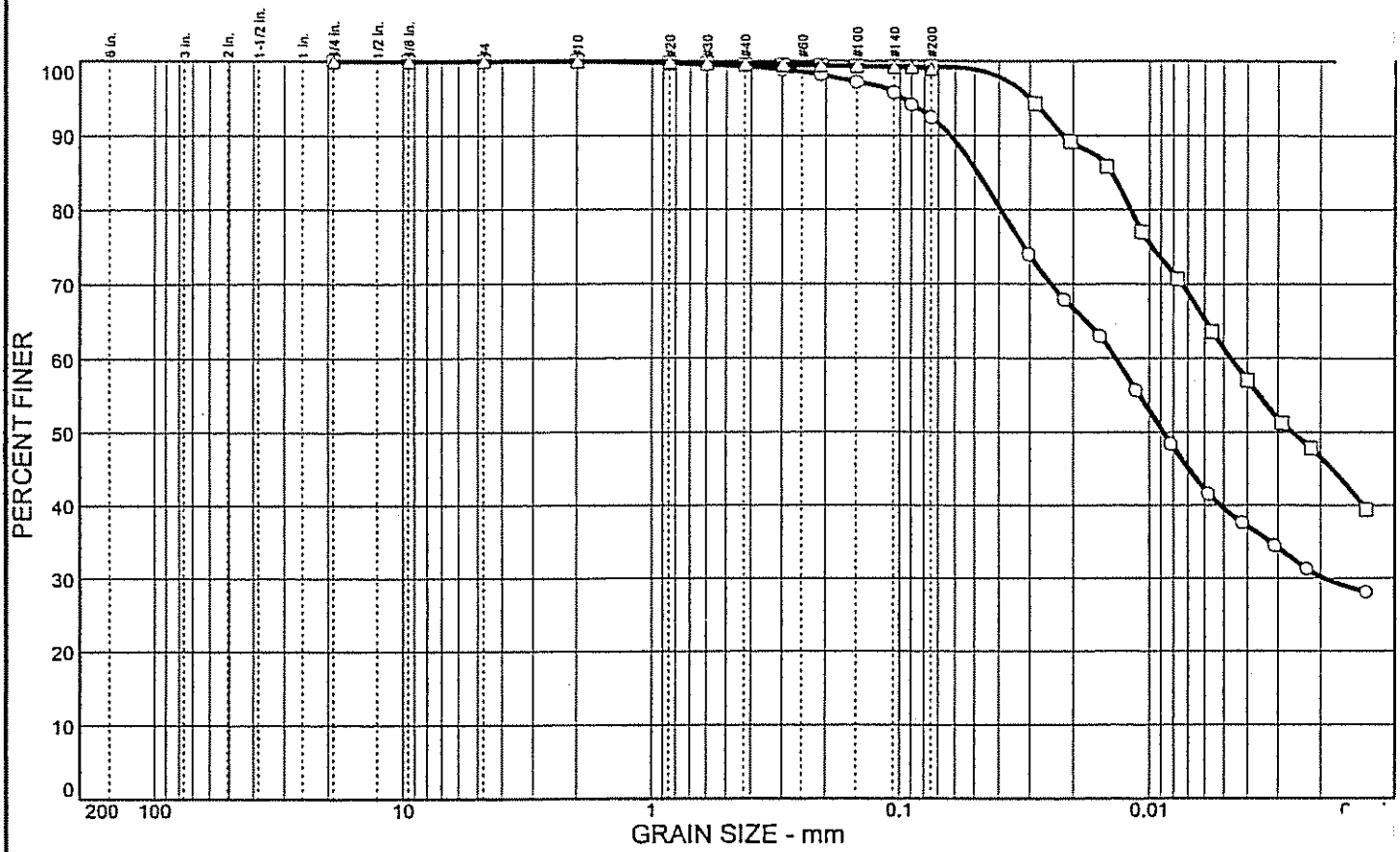
# PARTICLE SIZE DISTRIBUTION REPORT: P3-02-S01




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 7.5 | 52.9 | 39.6 | MH | | 41 | 77 |
| □ | | | 0.8 | 38.0 | 61.2 | MH | | 47 | 110 |
| △ | | | 1.0 | 99.0 | | | | | |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | 100.0 |
| 3/8 | 100.0 | 100.0 | 100.0 |
| GRAIN SIZE | | | |
| $D_{60}$ | 0.0136 | 0.0047 | |
| $D_{30}$ | 0.0019 | | |
| $D_{10}$ | | | |
| COEFFICIENTS | | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | 100.0 | 100.0 | 100.0 |
| #10 | 100.0 | 100.0 | 100.0 |
| #20 | 99.7 | 99.7 | 99.9 |
| #30 | 99.5 | 99.7 | 99.7 |
| #40 | 99.3 | 99.5 | 99.6 |
| #50 | 98.8 | 99.4 | 99.5 |
| #70 | 98.2 | 99.4 | 99.4 |
| #100 | 97.2 | 99.3 | 99.4 |
| #140 | 95.8 | 99.3 | 99.2 |
| #170 | 94.2 | 99.3 | 99.2 |
| #200 | 92.5 | 99.2 | 99.0 |

SOIL DESCRIPTION

○ Dark gray CLAYEY SILT, trace to little micaceous fine to medium sand, little organics.

□ Dark gray CLAYEY SILT, trace fine sand, trace mica, little organics.

△ Dark gray CLAYEY SILT, trace fine sand.

REMARKS:

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○ Source: P3-02-S01 Sample No.: S-2 Elev./Depth: 8.5'-10.0'

□ Source: P3-02-S01 Sample No.: S-4 Elev./Depth: 18.5'-20.0

△ Source: P3-02-S01 Sample No.: S-5 Elev./Depth: 23.0'-24.5'


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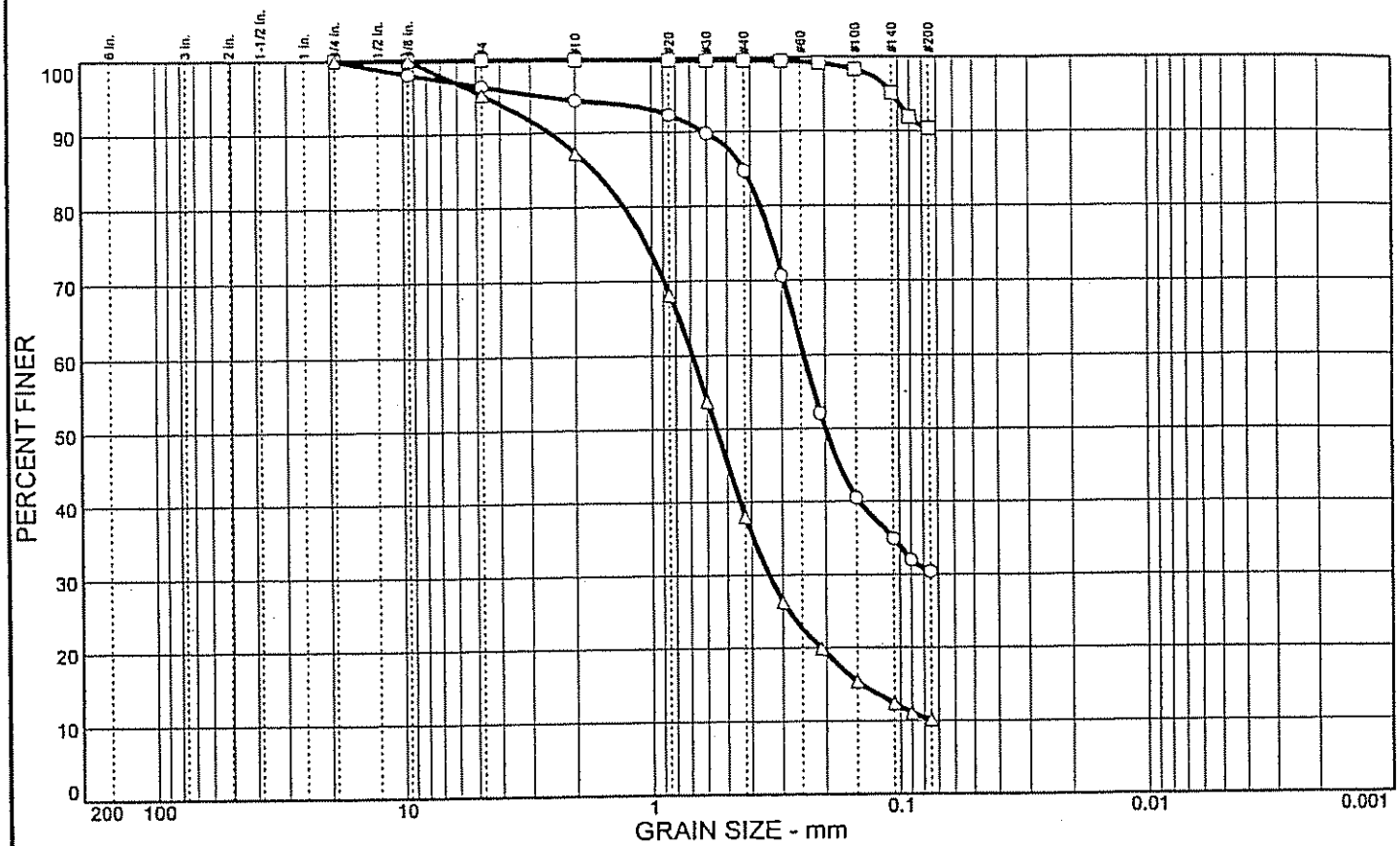
# PARTICLE SIZE DISTRIBUTION REPORT: P3-02-S01




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | 3.6 | 66.0 | 30.4 | | SM | | | |
| □ | | | 9.6 | 90.4 | | CH | | 36 | 85 |
| △ | | 4.8 | 85.0 | 10.2 | | SM | | | |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | 100.0 |
| 3/8 | 98.1 | 100.0 | 100.0 |
| GRAIN SIZE | | | |
| $D_{60}$ | 0.245 | | 0.691 |
| $D_{30}$ | | | 0.342 |
| $D_{10}$ | | | |
| COEFFICIENTS | | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | 96.4 | 100.0 | 95.2 |
| #10 | 94.4 | 99.9 | 87.3 |
| #20 | 92.3 | 99.7 | 68.1 |
| #30 | 89.8 | 99.6 | 53.7 |
| #40 | 84.8 | 99.6 | 38.0 |
| #50 | 70.7 | 99.5 | 26.3 |
| #70 | 52.1 | 99.2 | 19.9 |
| #100 | 40.5 | 98.3 | 15.4 |
| #140 | 34.9 | 95.1 | 12.4 |
| #170 | 32.0 | 91.9 | 11.1 |
| #200 | 30.4 | 90.4 | 10.2 |

SOIL DESCRIPTION

○ Dark gray fine to coarse SAND, some silt, trace gravel.

□ Dark gray SILTY CLAY, interlayered with thin fine sand lenses.

△ Brown,gray fine to medium SAND, little to trace silt, trace coarse sand, trace gravel.

REMARKS:

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○ Source: P3-02-S01 Sample No.: S-10 Elev./Depth: 48.5'-50.0'

□ Source: P3-02-S01 Sample No.: S-11 Elev./Depth: 58.5'-60.0'

△ Source: P3-02-S01 Sample No.: S-14 Elev./Depth: 88.5'-90.0'


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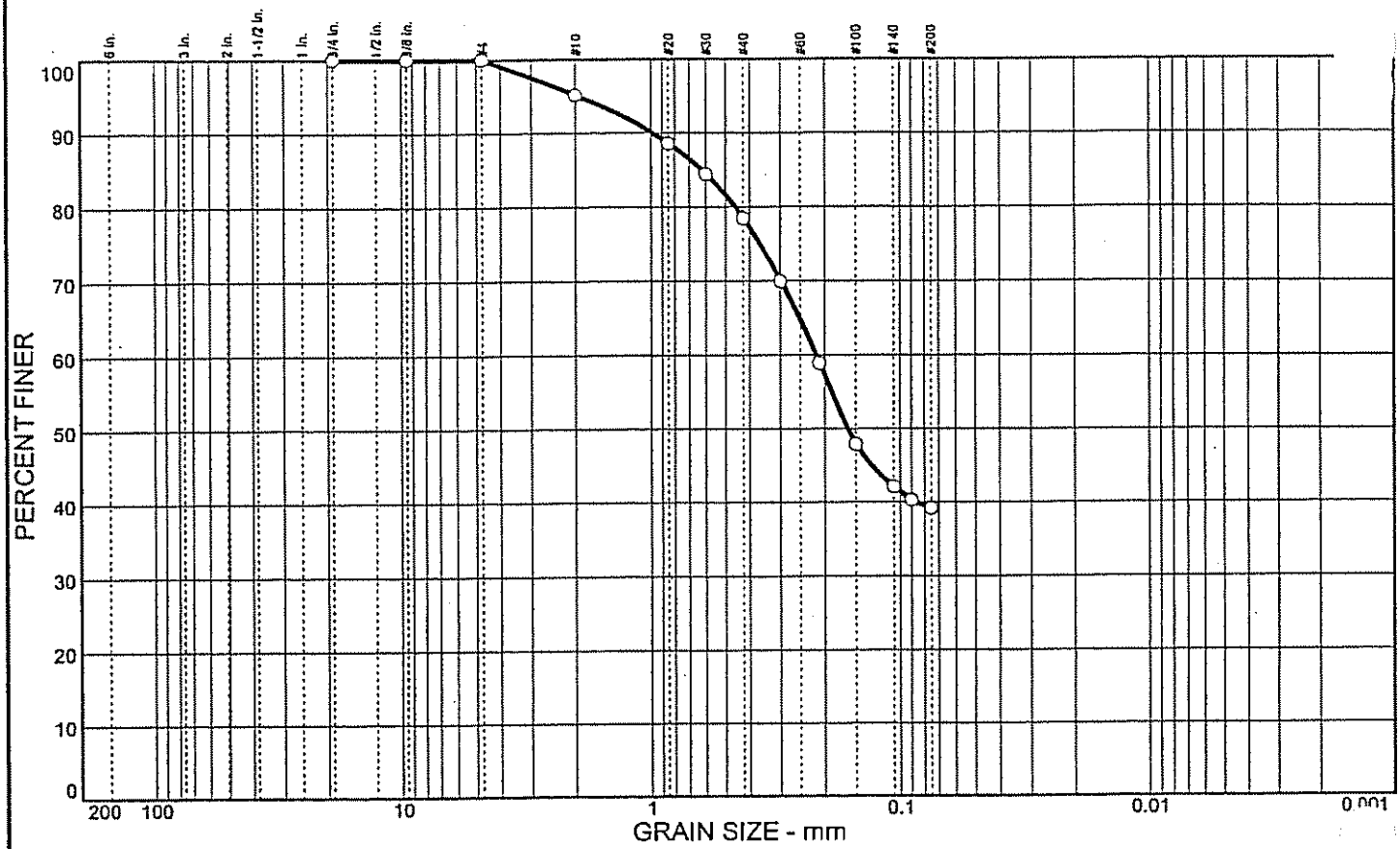
# PARTICLE SIZE DISTRIBUTION REPORT: P3-02-S01




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL |
|---|---|---|---|---|---|---|---|---|
| O | | | 60.8 | 39.2 | | SM | | |
| | | | | | | | | |
| | | | | | | | | |

| SIEVE inches size | PERCENT FINER O | | |
|---|---|---|---|
| 3/4 | 100.0 | | |
| 3/8 | 100.0 | | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.217 | | |
| $D_{30}$ | | | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER O | | |
|---|---|---|---|
| #4 | 100.0 | | |
| #10 | 95.2 | | |
| #20 | 88.6 | | |
| #30 | 84.5 | | |
| #40 | 78.5 | | |
| #50 | 70.0 | | |
| #70 | 58.9 | | |
| #100 | 47.9 | | |
| #140 | 42.1 | | |
| #170 | 40.3 | | |
| #200 | 39.2 | | |

SOIL DESCRIPTION

O Dark brownish red fine SAND, little medium to coarse sand, some to and clayey silt.

REMARKS:

O

O Source: P3-02-S01 Sample No.: S-20 Elev./Depth: 148.5'-150.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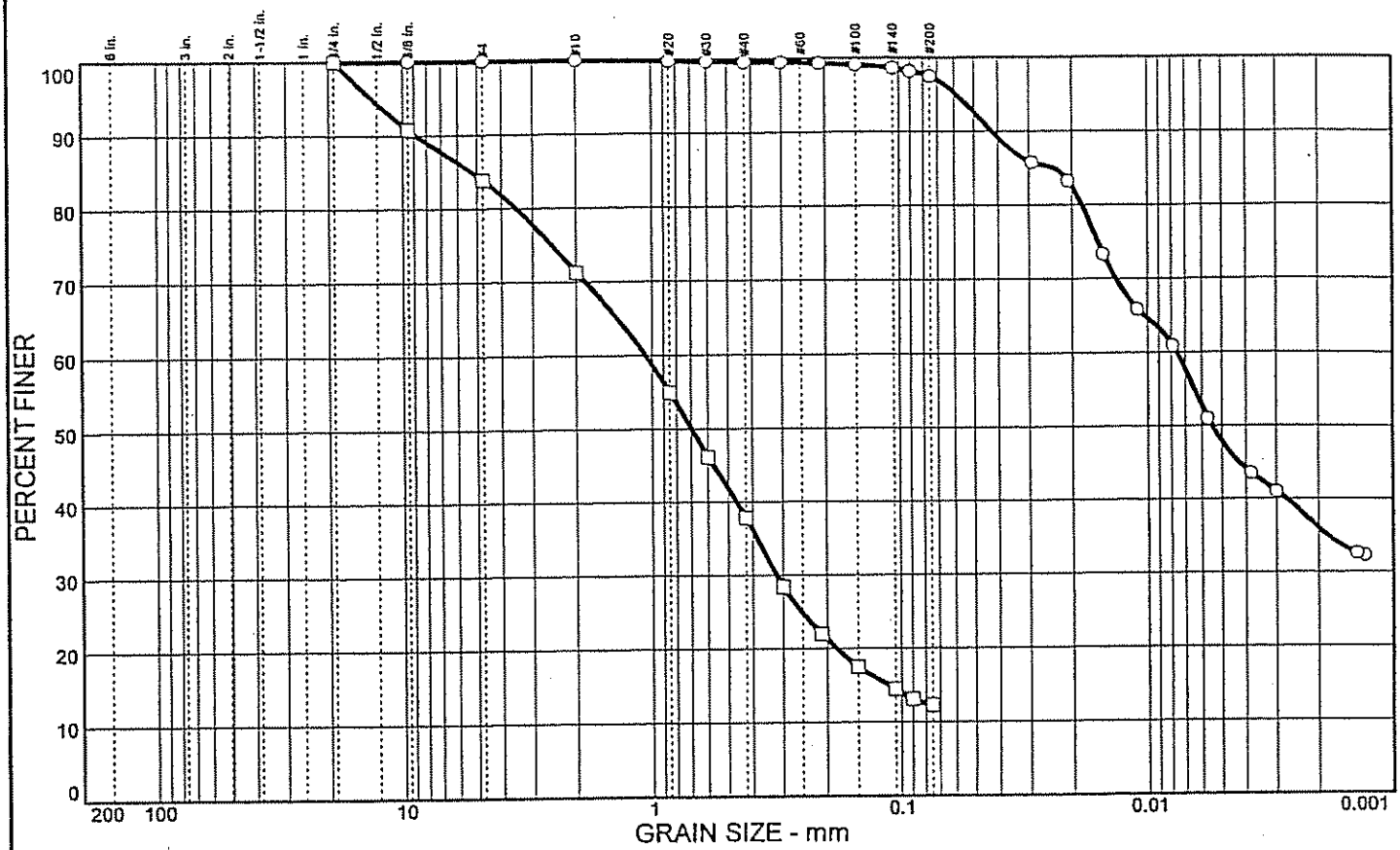
Client: GEOSYNTEC

Project: Cherry Island Landfill Expansion

Project No.: 4685.GC Date/Chk'd by: April 2002/DSS

# PARTICLE SIZE DISTRIBUTION REPORT: P3-02-S02




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 2.5 | 49.7 | 47.8 | MH | | | |
| □ | | 16.1 | 71.6 | 12.3 | | SM | | | |
| | | | | | | | | | |

| SIEVE Inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 100.0 | 90.8 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.0076 | 1.07 | |
| $D_{30}$ | | 0.320 | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 100.0 | 83.9 | |
| #10 | 100.0 | 71.3 | |
| #20 | 99.8 | 54.9 | |
| #30 | 99.7 | 46.1 | |
| #40 | 99.6 | 37.8 | |
| #50 | 99.5 | 28.4 | |
| #70 | 99.3 | 22.0 | |
| #100 | 99.1 | 17.5 | |
| #140 | 98.6 | 14.5 | |
| #170 | 98.2 | 13.1 | |
| #200 | 97.5 | 12.3 | |

SOIL DESCRIPTION

○ Dark gray, black CLAYEY SILT, trace fine sand.

□ Grayish brown fine to medium SAND, little coarse sand, trace to little silt, little gravel, trace mica.

REMARKS:

○

□

○ Source: P3-02-S02 Sample No.: S-2 Elev./Depth: 8.5'-10.0'

□ Source: P3-02-S02 Sample No.: S-11 Elev./Depth: 78.5'-80.0'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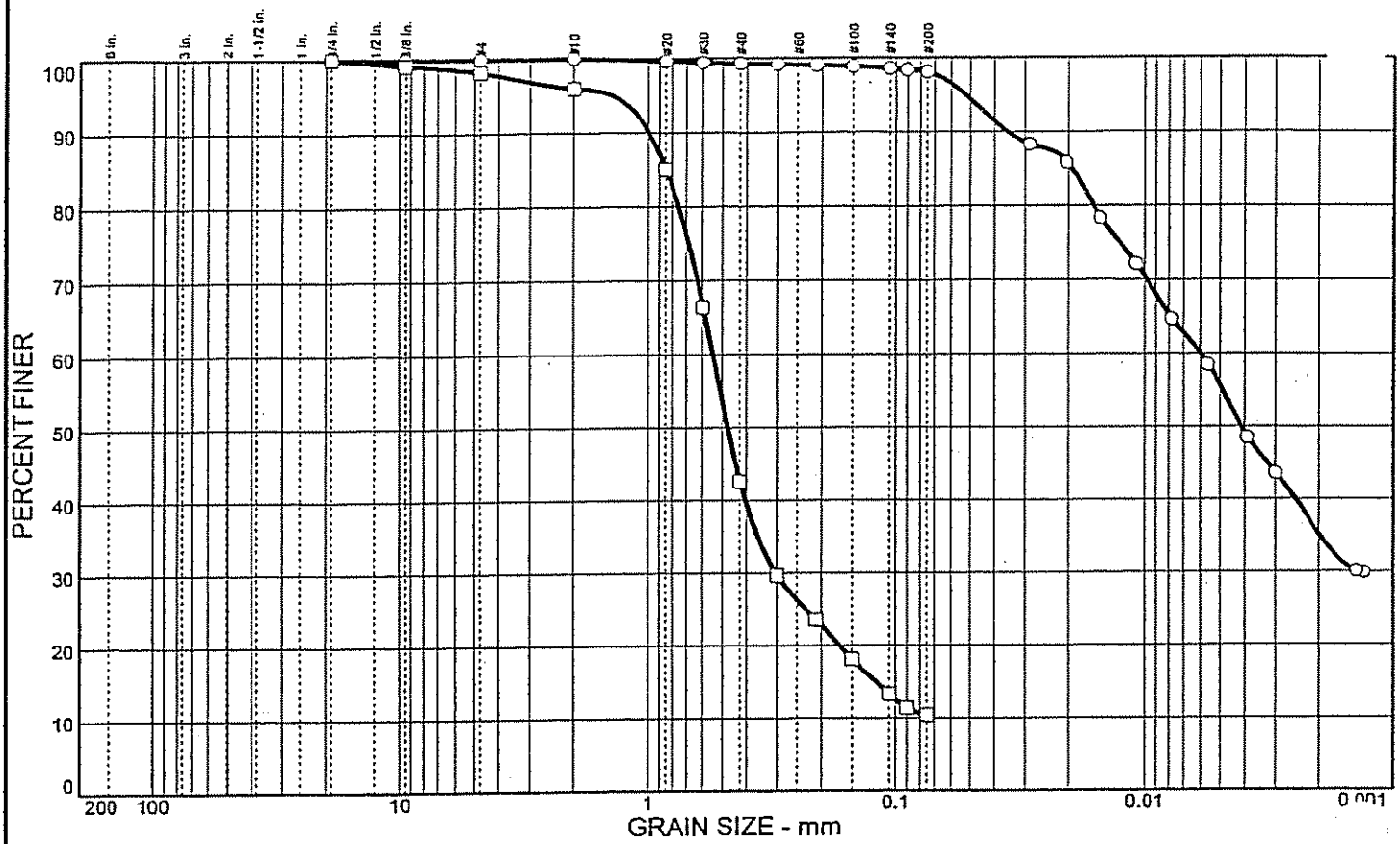
Project: Cherry Island Landfill Expansion

Project No.: 4685.GC Date/Chk'd by: April 2002/DSS

# PARTICLE SIZE DISTRIBUTION REPORT: P3-02-S09




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.9 | 42.6 | 55.5 | MH | | 53 | 124 |
| □ | | 1.7 | 87.9 | 10.4 | | SM | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 100.0 | 99.2 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.0060 | 0.548 | |
| $D_{30}$ | 0.0014 | 0.304 | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 100.0 | 98.3 | |
| #10 | 100.0 | 96.0 | |
| #20 | 99.6 | 85.1 | |
| #30 | 99.4 | 66.4 | |
| #40 | 99.3 | 42.6 | |
| #50 | 99.2 | 29.7 | |
| #70 | 99.0 | 23.6 | |
| #100 | 98.8 | 18.1 | |
| #140 | 98.6 | 13.3 | |
| #170 | 98.4 | 11.4 | |
| #200 | 98.1 | 10.4 | |

SOIL DESCRIPTION

○ Dark gray/black CLAYEY SILT, trace fine sand, trace to little organics.

□ Brown, gray fine to coarse SAND, little silt, trace gravel.

REMARKS:

○

□

○ Source: P3-02-S09 Sample No.: S-4 Elev./Depth: 18.5'-20.0'

□ Source: P3-02-S09 Sample No.: S-14 Elev./Depth: 89.0'-90.5'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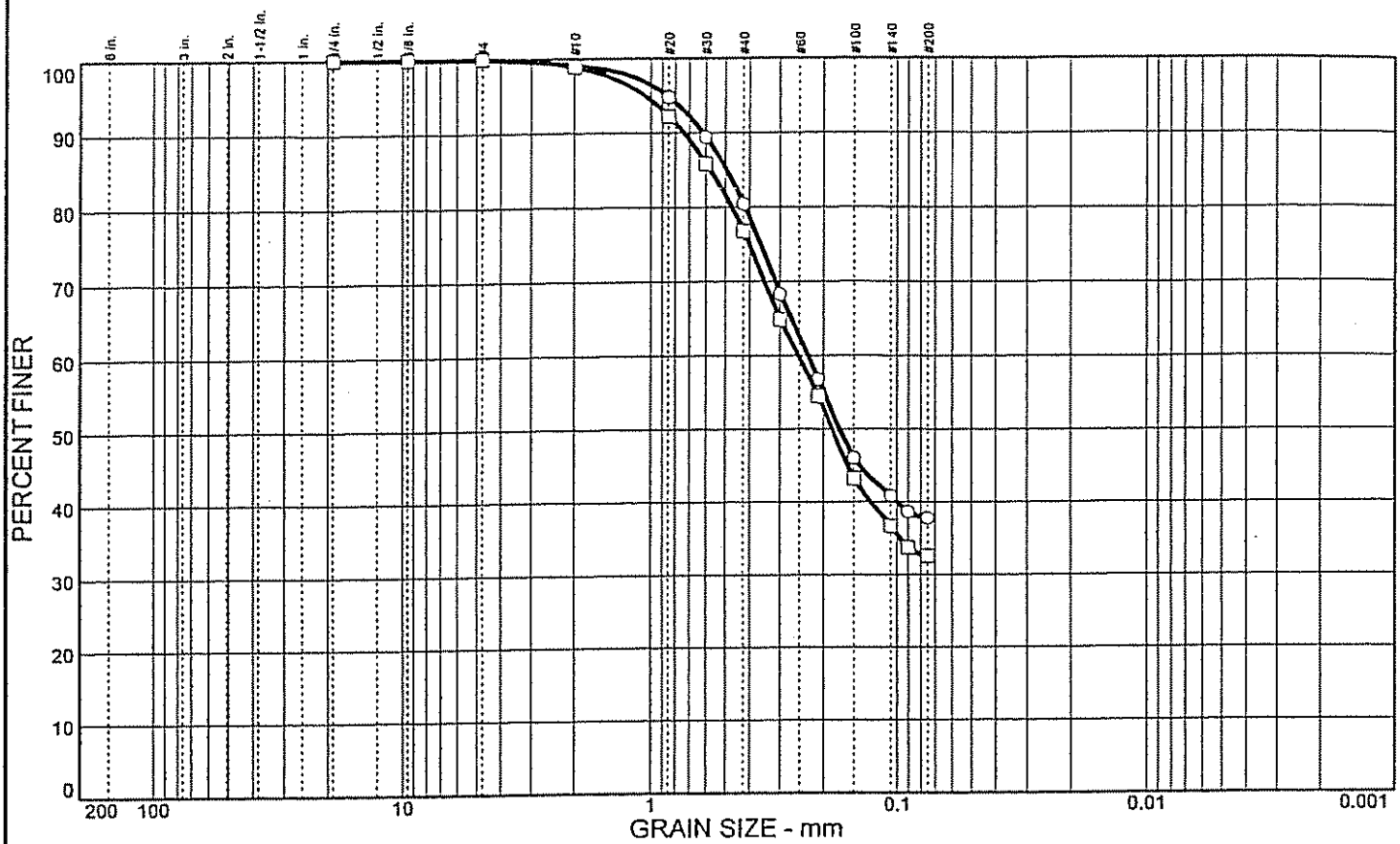
# PARTICLE SIZE DISTRIBUTION REPORT: P3-02-S09




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 62.2 | 37.8 | | SC | | 15 | 27 |
| □ | | | 67.4 | 32.6 | | SM | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 100.0 | 100.0 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.232 | 0.254 | |
| $D_{30}$ | | | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 100.0 | 100.0 | |
| #10 | 99.1 | 98.9 | |
| #20 | 94.8 | 92.2 | |
| #30 | 89.4 | 85.8 | |
| #40 | 80.5 | 76.8 | |
| #50 | 68.3 | 64.9 | |
| #70 | 56.8 | 54.5 | |
| #100 | 46.1 | 43.2 | |
| #140 | 40.8 | 36.7 | |
| #170 | 38.6 | 33.7 | |
| #200 | 37.8 | 32.6 | |

SOIL DESCRIPTION

○ Dark red, light gray fine to medium SAND and SILTY CLAY.

□ Brown, orange-brown, gray fine to medium SAND, some silty clay, trace coarse sand.

REMARKS:

○

□

○ Source: P3-02-S09 Sample No.: S-18 Elev./Depth: 129.0'-130.

□ Source: P3-02-S09 Sample No.: S-21 Elev./Depth: 158.5'-160.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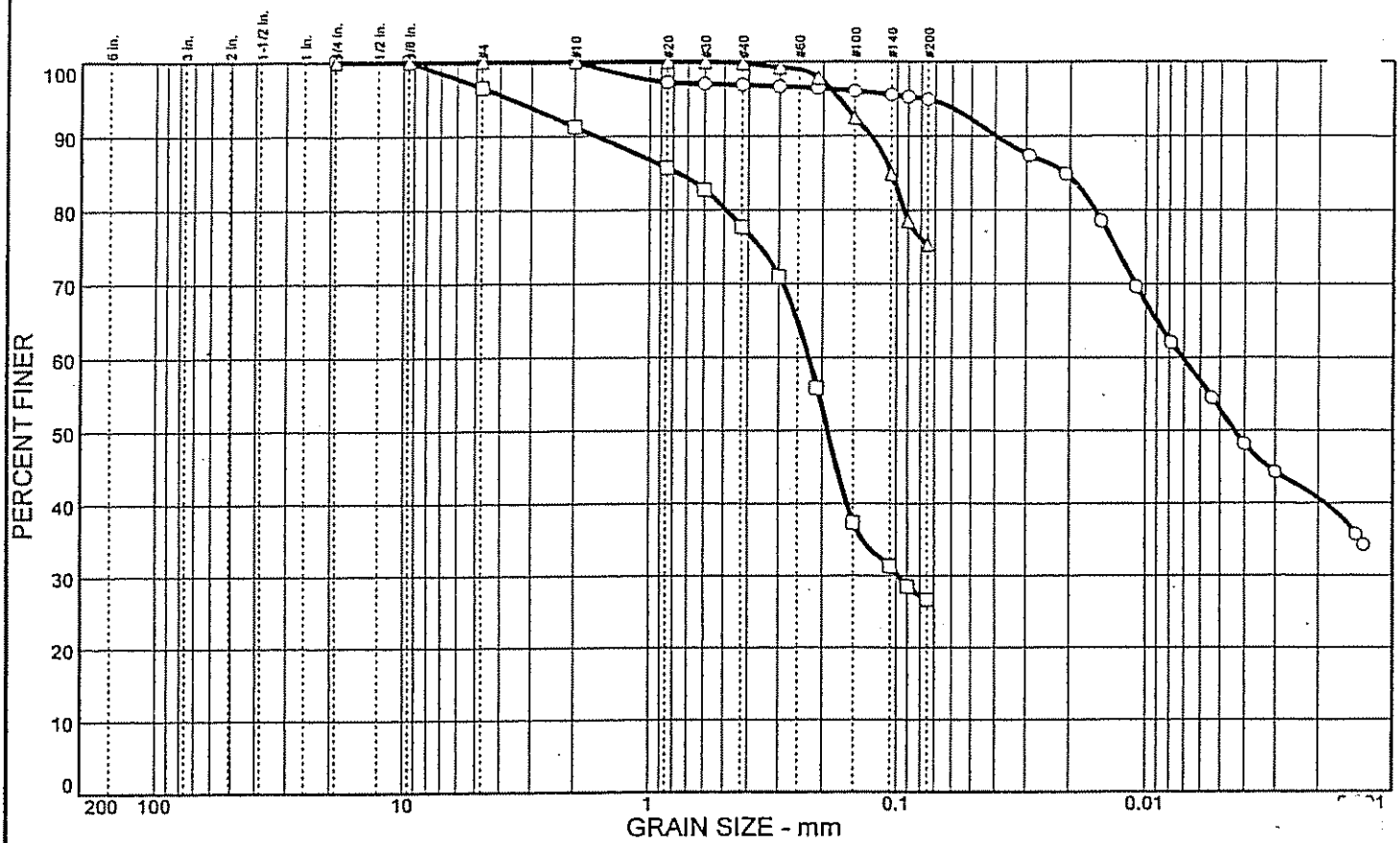
# PARTICLE SIZE DISTRIBUTION REPORT: P3-02-S12




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 5.1 | 42.1 | 52.8 | MH | | 50 | 116 |
| □ | | 3.5 | 69.8 | 26.7 | | SM | | | |
| △ | | | 24.6 | 75.4 | | CL | | 20 | 30 |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | 100.0 |
| 3/8 | 100.0 | 100.0 | 100.0 |
| GRAIN SIZE | | | |
| $D_{60}$ | 0.0071 | 0.227 | |
| $D_{30}$ | | 0.0981 | |
| $D_{10}$ | | | |
| COEFFICIENTS | | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | 100.0 | 96.5 | 100.0 |
| #10 | 100.0 | 91.3 | 100.0 |
| #20 | 97.3 | 85.8 | 100.0 |
| #30 | 97.0 | 82.8 | 100.0 |
| #40 | 96.9 | 77.7 | 99.8 |
| #50 | 96.7 | 71.0 | 99.2 |
| #70 | 96.4 | 55.8 | 97.9 |
| #100 | 96.1 | 37.4 | 92.5 |
| #140 | 95.6 | 31.3 | 85.0 |
| #170 | 95.3 | 28.5 | 78.6 |
| #200 | 95.0 | 26.7 | 75.4 |

SOIL DESCRIPTION

○ Gray, black CLAYEY SILT, trace fine to medium sand, trace organics.

□ Gray fine to coarse SAND, trace gravelly lenses, some silt.

△ Gray SILTY CLAY, some fine sand.

REMARKS:

○

□

△

○ Source: P3-02-S12 Sample No.: S-2 Elev./Depth: 8.5'-10.0'

□ Source: P3-02-S12 Sample No.: S-10 Elev./Depth: 68.5'-70.0'

△ Source: P3-02-S12 Sample No.: S-16 Elev./Depth: 118.5'-120.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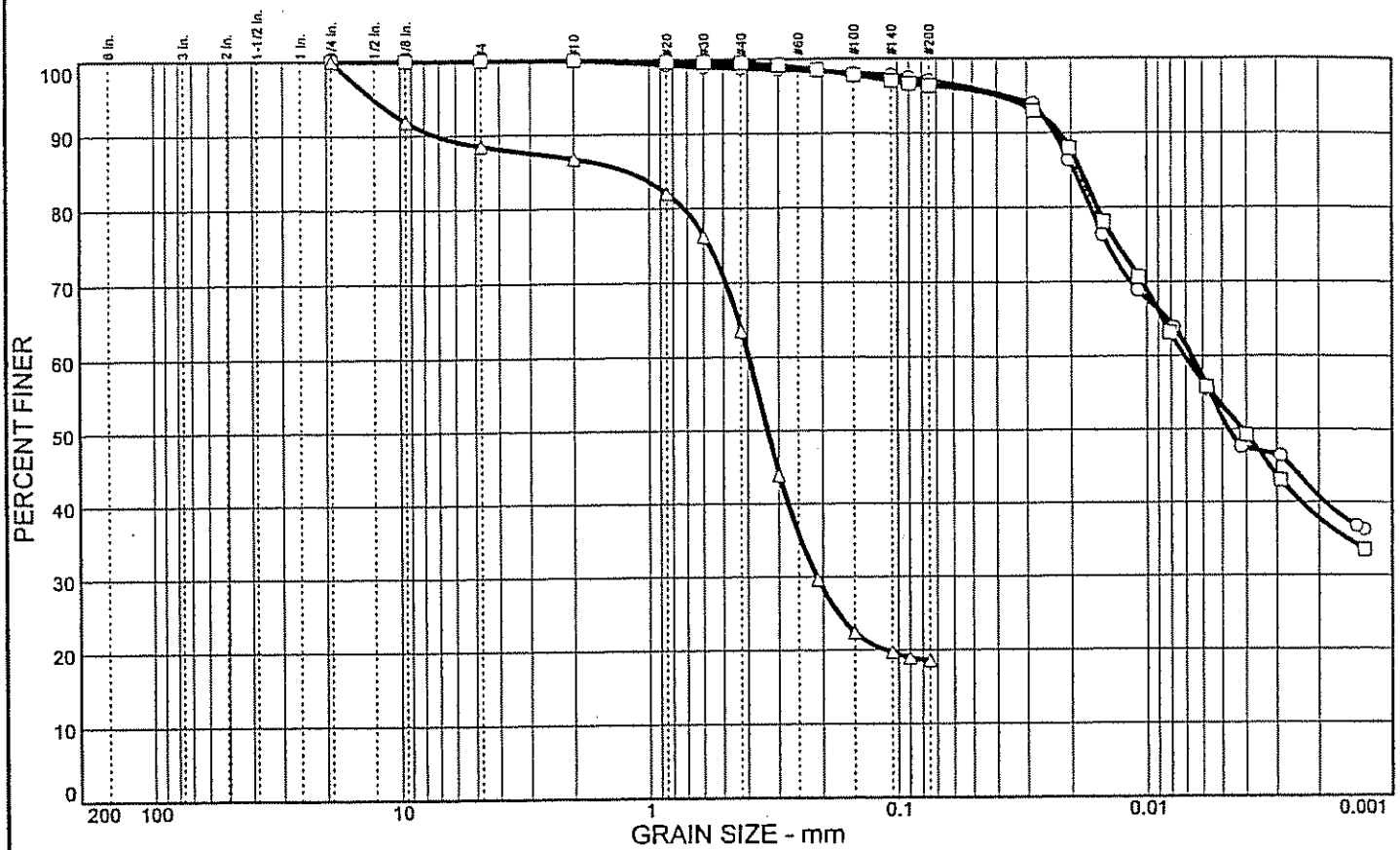
# PARTICLE SIZE DISTRIBUTION REPORT: P4-02-S03




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 2.9 | 45.6 | 51.5 | MH | | 47 | 92 |
| □ | | | 3.6 | 43.2 | 53.2 | MH | | | |
| △ | | 11.5 | 70.0 | 18.5 | | SM | | | |

| SIEVE inches size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | 100.0 |
| 3/8 | 100.0 | 100.0 | 91.9 |
| GRAIN SIZE | | | |
| $D_{60}$ | 0.0066 | 0.0071 | 0.398 |
| $D_{30}$ | | | 0.212 |
| $D_{10}$ | | | |
| COEFFICIENTS | | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | □ | △ |
|---|---|---|---|
| #4 | 100.0 | 100.0 | 88.5 |
| #10 | 100.0 | 100.0 | 86.8 |
| #20 | 99.3 | 99.7 | 82.1 |
| #30 | 99.0 | 99.6 | 76.3 |
| #40 | 98.8 | 99.5 | 63.6 |
| #50 | 98.6 | 99.2 | 43.9 |
| #70 | 98.4 | 98.5 | 29.7 |
| #100 | 98.1 | 97.8 | 22.4 |
| #140 | 97.8 | 97.0 | 19.7 |
| #170 | 97.5 | 96.7 | 18.9 |
| #200 | 97.1 | 96.4 | 18.6 |

SOIL DESCRIPTION

○ Gray, dark gray CLAYEY SILT, trace fine sand, trace organics.

□ Gray, dark gray CLAYEY SILT, trace fine sand, trace organics.

△ Gray fine to medium SAND, little silt, little gravel (silty clay lense).

REMARKS:

○

□

△

○ Source: P4-02-S03 Sample No.: S-2 Elev./Depth: 8.5'-10.0'

□ Source: P4-02-S03 Sample No.: S-6 Elev./Depth: 28.5'-30.0'

△ Source: P4-02-S03 Sample No.: S-9 Elev./Depth: 58.5'-60.0'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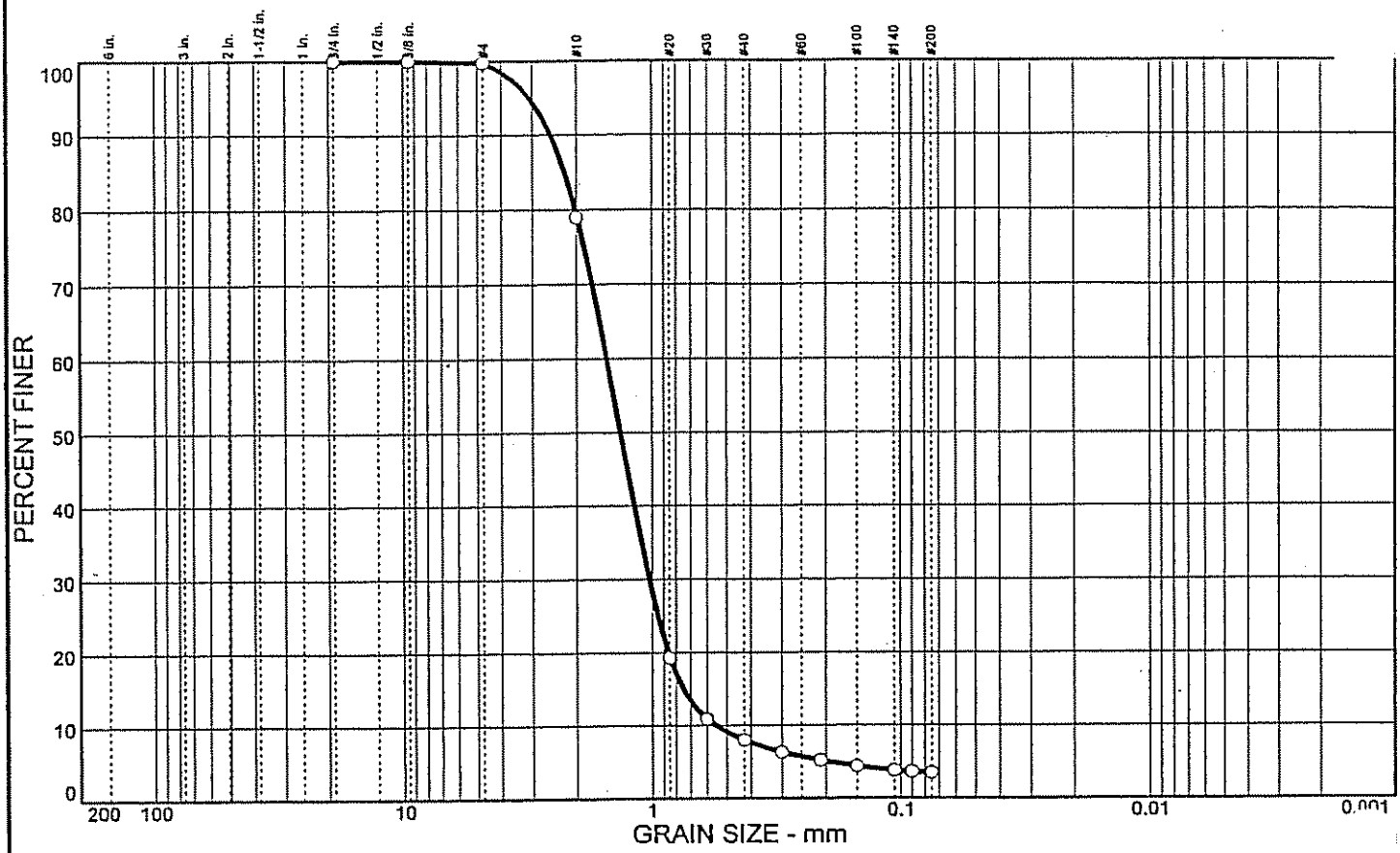
# PARTICLE SIZE DISTRIBUTION REPORT: P4-02-S03




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL |
|---|---|---|---|---|---|---|---|---|
| O | | 0.2 | 96.3 | 3.5 | | SP | | |
| | | | | | | | | |
| | | | | | | | | |

| SIEVE inches size | PERCENT FINER O | | |
|---|---|---|---|
| 3/4 | 100.0 | | |
| 3/8 | 100.0 | | |
| | GRAIN SIZE | | |
| $D_{60}$ | 1.52 | | |
| $D_{30}$ | 1.03 | | |
| $D_{10}$ | 0.552 | | |
| | COEFFICIENTS | | |
| $C_c$ | 1.26 | | |
| $C_u$ | 2.76 | | |

| SIEVE number size | PERCENT FINER O | | |
|---|---|---|---|
| #4 | 99.8 | | |
| #10 | 79.0 | | |
| #20 | 19.3 | | |
| #30 | 10.9 | | |
| #40 | 8.0 | | |
| #50 | 6.3 | | |
| #70 | 5.2 | | |
| #100 | 4.4 | | |
| #140 | 3.8 | | |
| #170 | 3.6 | | |
| #200 | 3.5 | | |

**SOIL DESCRIPTION**

O Gray fine to coarse SAND, trace silt, trace gravel.

**REMARKS:**

O

O Source: P4-02-S03 Sample No.: S-14 Elev./Depth: 108.5'-110'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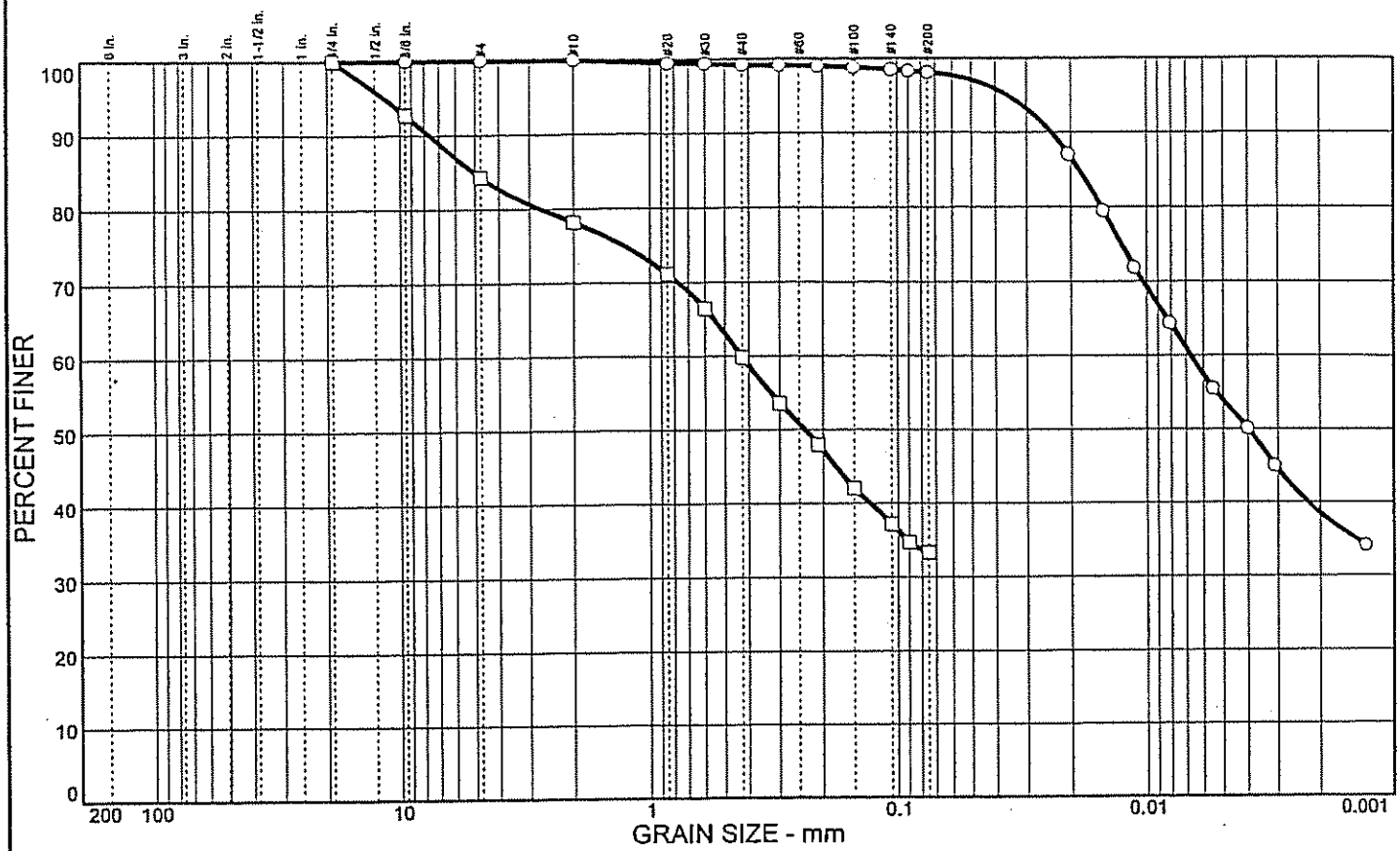
# PARTICLE SIZE DISTRIBUTION REPORT: P5-02-S04




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.9 | 44.3 | 53.8 | MH | | 47 | 95 |
| □ | | 15.7 | 51.0 | 33.3 | | Sm | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 100.0 | 92.8 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.0067 | 0.429 | |
| $D_{30}$ | | | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 100.0 | 84.3 | |
| #10 | 100.0 | 78.2 | |
| #20 | 99.5 | 71.2 | |
| #30 | 99.4 | 66.4 | |
| #40 | 99.2 | 59.8 | |
| #50 | 99.1 | 53.6 | |
| #70 | 99.0 | 47.9 | |
| #100 | 98.8 | 42.0 | |
| #140 | 98.5 | 37.2 | |
| #170 | 98.3 | 34.7 | |
| #200 | 98.1 | 33.4 | |

SOIL DESCRIPTION

○ Brown, dark gray CLAYEY SILT, trace fine sand, trace organics.

□ Brown, gray fine to coarse SAND, some silt, little gravel.

REMARKS:

○

□

○ Source: P5-02-S04 Sample No.: S-6 Elev./Depth: 28.5'-30.0

□ Source: P5-02-S04 Sample No.: S-15 Elev./Depth: 118.5'-120.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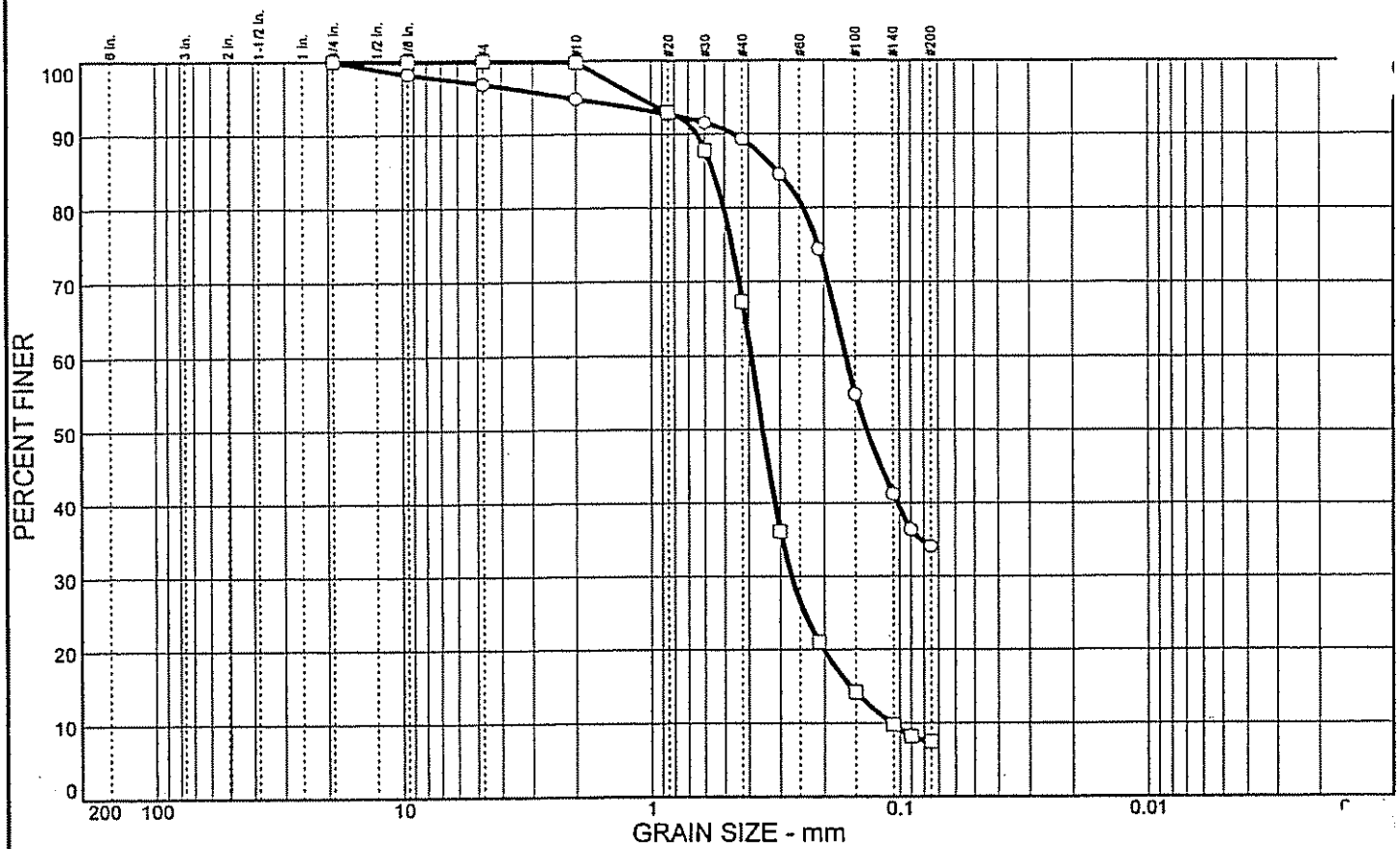
# PARTICLE SIZE DISTRIBUTION REPORT: P5-02-S04




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL |
|---|---|---|---|---|---|---|---|---|
| ○ | | 3.1 | 62.8 | 34.1 | | SM | | |
| □ | | | 92.5 | 7.5 | | SM | | |
| | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ |
|---|---|---|
| 3/4 | 100.0 | 100.0 |
| 3/8 | 98.3 | 100.0 |
| **GRAIN SIZE** | | |
| $D_{60}$ | 0.164 | 0.392 |
| $D_{30}$ | | 0.271 |
| $D_{10}$ | | 0.107 |
| **COEFFICIENTS** | | |
| $C_c$ | | 1.74 |
| $C_u$ | | 3.65 |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ |
|---|---|---|
| #4 | 96.9 | 100.0 |
| #10 | 94.8 | 99.8 |
| #20 | 92.7 | 93.0 |
| #30 | 91.6 | 87.8 |
| #40 | 89.3 | 67.3 |
| #50 | 84.6 | 36.1 |
| #70 | 74.5 | 21.0 |
| #100 | 54.8 | 14.2 |
| #140 | 41.3 | 9.8 |
| #170 | 36.4 | 8.2 |
| #200 | 34.1 | 7.5 |

**SOIL DESCRIPTION**

○ Orange-brown, gray fine to medium SAND, some clayey silt, little coarse sand, trace gravel, trace mica.

□ White/gray fine to medium SAND, little to trace silt, trace coarse sand.

**REMARKS:**

○

□

○ Source: P5-02-S04 Sample No.: S-18 Elev./Depth: 148.5'-150.

□ Source: P5-02-S04 Sample No.: S-20 Elev./Depth: 148.5'-150.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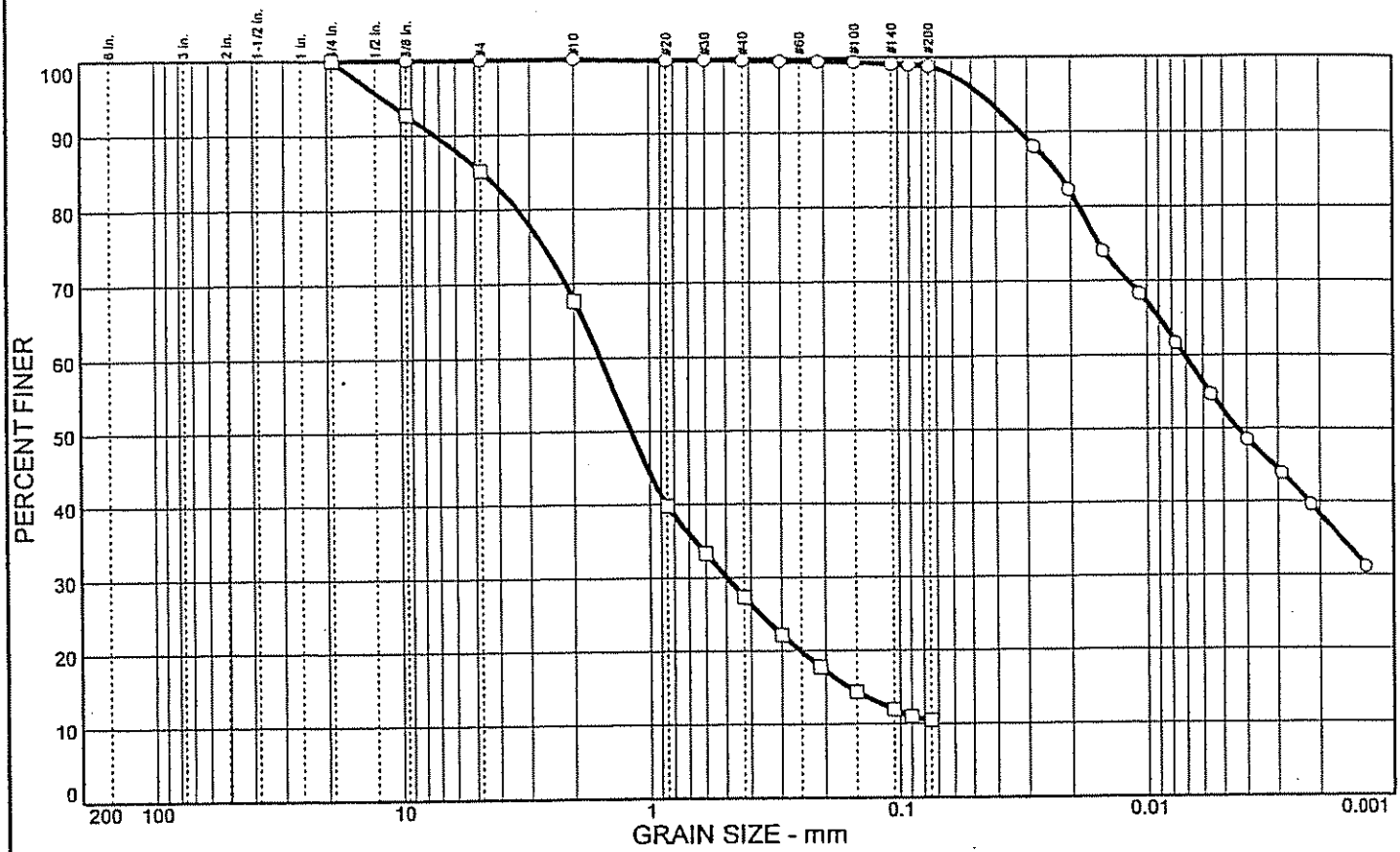
# PARTICLE SIZE DISTRIBUTION REPORT: P5-02-S05




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 1.2 | 60.7 | 38.1 | MH | | 48 | 104 |
| □ | | 14.8 | 74.7 | 10.5 | | SM | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 100.0 | 92.7 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.0071 | 1.59 | |
| $D_{30}$ | | 0.496 | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 100.0 | 85.2 | |
| #10 | 100.0 | 67.7 | |
| #20 | 99.8 | 39.8 | |
| #30 | 99.8 | 33.3 | |
| #40 | 99.7 | 27.4 | |
| #50 | 99.6 | 22.2 | |
| #70 | 99.5 | 17.8 | |
| #100 | 99.4 | 14.4 | |
| #140 | 99.1 | 12.0 | |
| #170 | 99.0 | 11.0 | |
| #200 | 98.8 | 10.5 | |

SOIL DESCRIPTION

○ Gray CLAYEY SILT, trace fine sand.

□ Gray fine to coarse SAND, trace to little silt, little gravel, trace root fibers.

REMARKS:

○

□

○ Source: P5-02-S05 Sample No.: S-3 Elev./Depth: 16.0'-17.5'

□ Source: P5-02-S05 Sample No.: S-12 Elev./Depth: 68.5'-70.0'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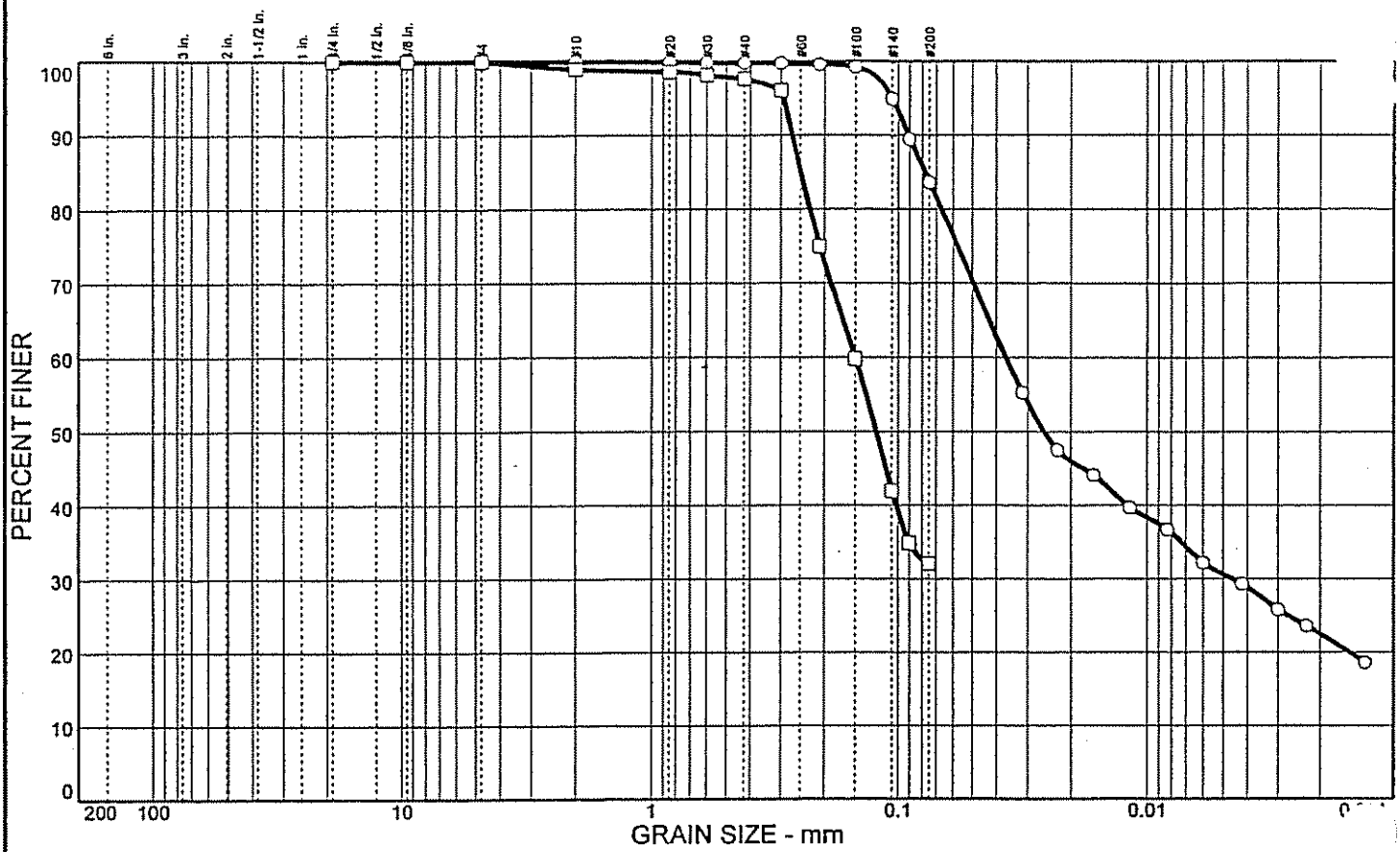
# PARTICLE SIZE DISTRIBUTION REPORT: P5-02-S05




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 16.3 | 61.2 | 22.5 | CL | | 18 | 26 |
| □ | | 0.0 | 67.9 | 32.1 | | SM | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 100.0 | 100.0 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.0369 | 0.151 | |
| $D_{30}$ | 0.0046 | | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 100.0 | 100.0 | |
| #10 | 100.0 | 99.0 | |
| #20 | 99.9 | 98.6 | |
| #30 | 99.8 | 98.1 | |
| #40 | 99.8 | 97.7 | |
| #50 | 99.8 | 96.1 | |
| #70 | 99.6 | 75.0 | |
| #100 | 99.2 | 59.8 | |
| #140 | 94.9 | 41.9 | |
| #170 | 89.5 | 34.9 | |
| #200 | 83.7 | 32.1 | |

**SOIL DESCRIPTION**

○ Brown, purple-brown SILTY CLAY, little fine sand.

□ Gray, light gray fine to medium SAND, some silt, trace coarse sand, trace organics.

**REMARKS:**

○

□

○ Source: P5-02-S05 Sample No.: S-17 Elev./Depth: 118.5'-120.

□ Source: P5-02-S05 Sample No.: S-18 Elev./Depth: 128.5'-130.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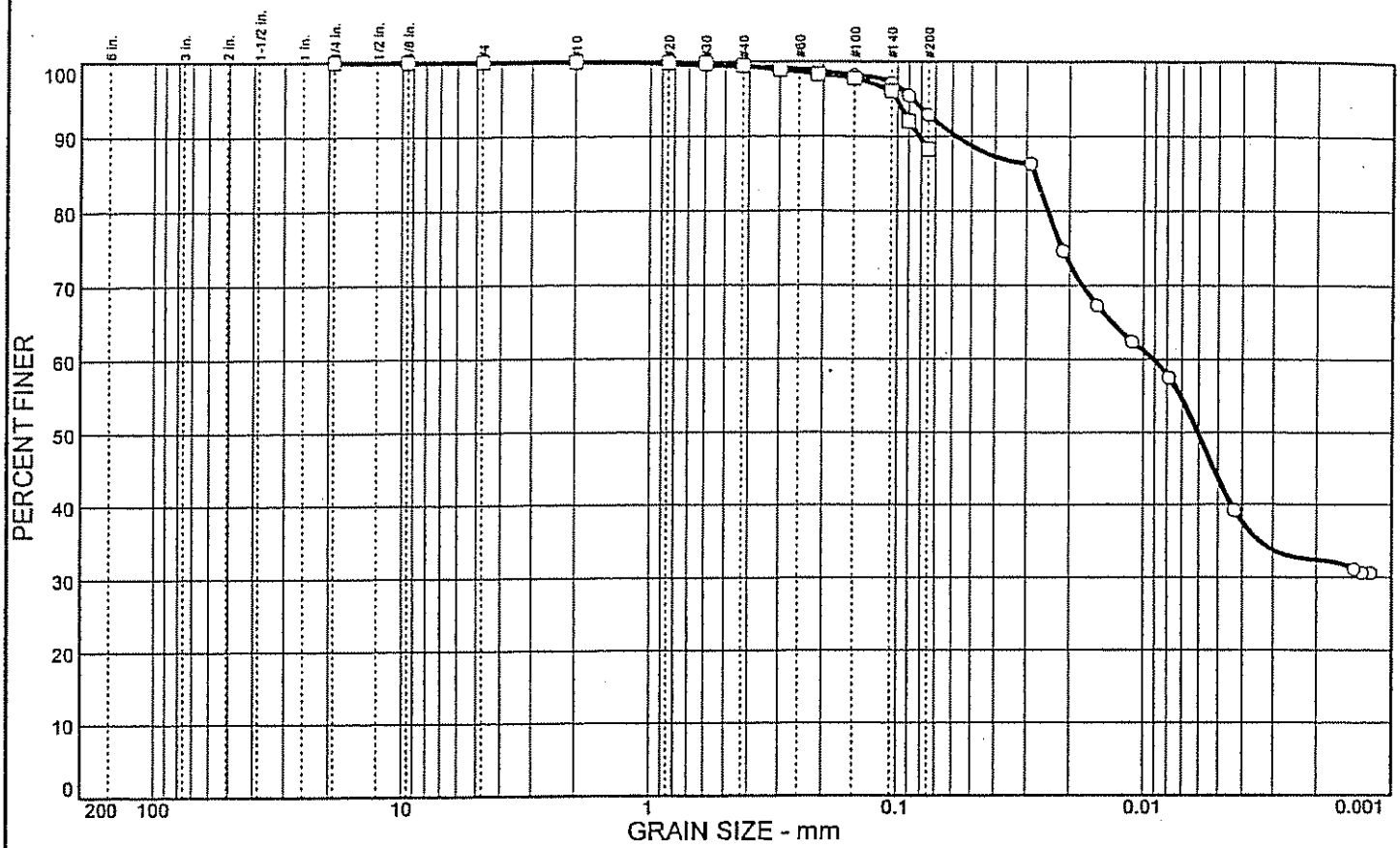
Client: GEOSYNTEC

Project: Cherry Island Landfill Expansion

Project No.: 4685.GC Date/Chk'd by: April 2002/DSS

# PARTICLE SIZE DISTRIBUTION REPORT: P5-02-S10




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | LL |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 7.1 | 49.4 | 43.5 | MH | | 44 | 86 |
| □ | | | 11.7 | 88.3 | | MH | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| 3/4 | 100.0 | 100.0 | |
| 3/8 | 100.0 | 100.0 | |
| | GRAIN SIZE | | |
| $D_{60}$ | 0.0091 | | |
| $D_{30}$ | | | |
| $D_{10}$ | | | |
| | COEFFICIENTS | | |
| $C_c$ | | | |
| $C_u$ | | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ | |
|---|---|---|---|
| #4 | 100.0 | 100.0 | |
| #10 | 100.0 | 100.0 | |
| #20 | 99.8 | 99.9 | |
| #30 | 99.6 | 99.8 | |
| #40 | 99.4 | 99.5 | |
| #50 | 99.2 | 98.9 | |
| #70 | 98.8 | 98.3 | |
| #100 | 98.2 | 97.7 | |
| #140 | 97.2 | 96.1 | |
| #170 | 95.5 | 92.1 | |
| #200 | 92.9 | 88.3 | |

SOIL DESCRIPTION

○ Dark gray CLAYEY SILT, trace to little fine sand.

□ Gray CLAYEY SILT, interlayered with fine sand layers (0.01' thick)

REMARKS:

○

□

○ Source: P5-02-S10 Sample No.: S-3 Elev./Depth: 13.5'-15.0'

□ Source: P5-02-S10 Sample No.: S-6 Elev./Depth: 28.5'-30.0'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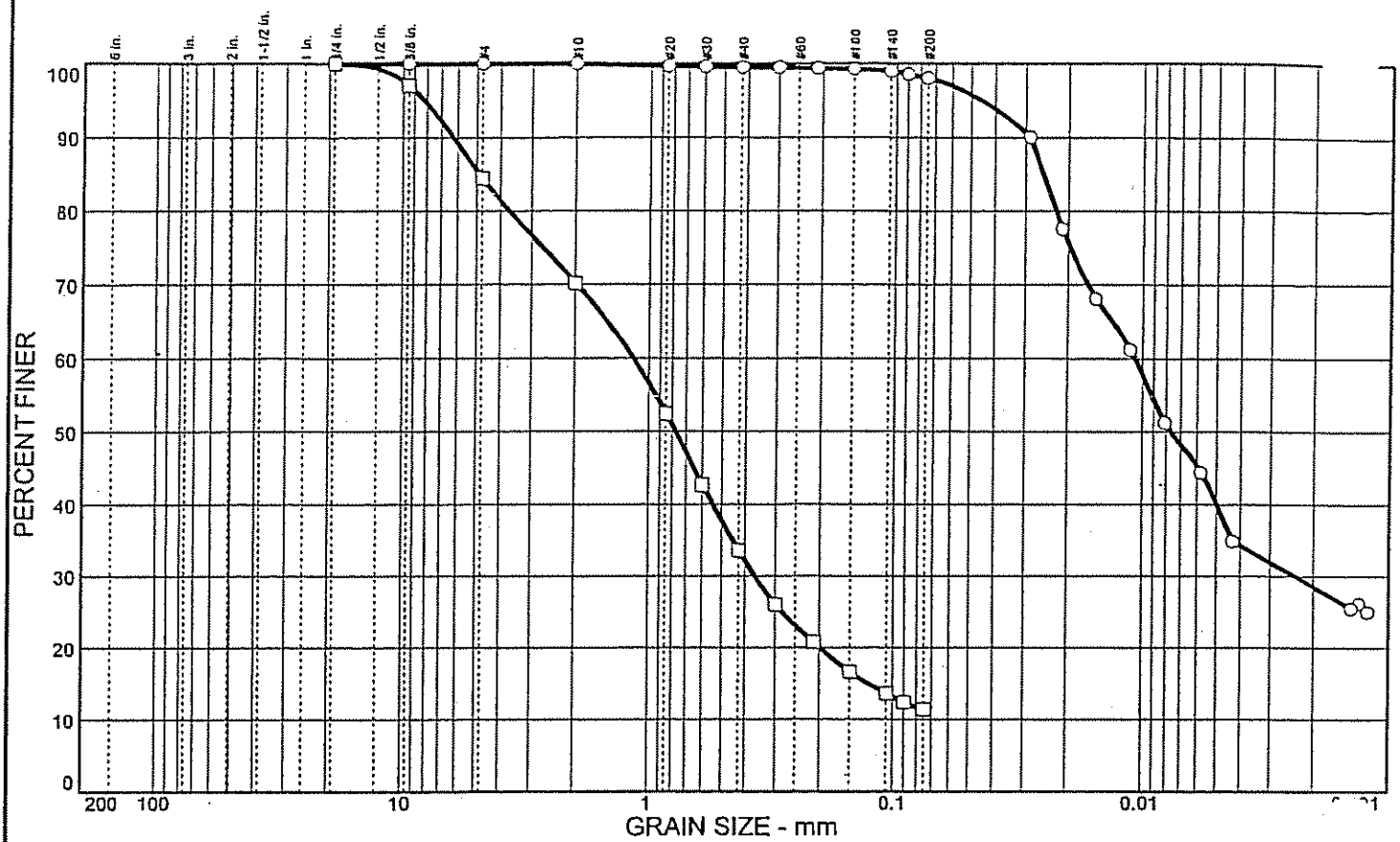
Client: GEOSYNTEC

Project: Cherry Island Landfill Expansion

Project No.: 4685.GC Date/Chk'd by: April 2002/DSS

# PARTICLE SIZE DISTRIBUTION REPORT: P5-02-S10




| | % COBBLES | % GRAVEL | % SAND | % SILT | % CLAY | USCS | AASHTO | PL | |
|---|---|---|---|---|---|---|---|---|---|
| ○ | | | 2.0 | 58.1 | 39.9 | MH | | 39 | 75 |
| □ | | 15.5 | 73.1 | 11.4 | | SM | | | |
| | | | | | | | | | |

| SIEVE inches size | PERCENT FINER ○ | PERCENT FINER □ |
|---|---|---|
| 3/4 | 100.0 | 100.0 |
| 3/8 | 100.0 | 97.1 |
| GRAIN SIZE | | |
| $D_{60}$ | 0.0107 | 1.16 |
| $D_{30}$ | 0.0024 | 0.365 |
| $D_{10}$ | | |
| COEFFICIENTS | | |
| $C_c$ | | |
| $C_u$ | | |

| SIEVE number size | PERCENT FINER ○ | PERCENT FINER □ |
|---|---|---|
| #4 | 100.0 | 84.5 |
| #10 | 100.0 | 70.2 |
| #20 | 99.7 | 52.4 |
| #30 | 99.5 | 42.7 |
| #40 | 99.5 | 33.6 |
| #50 | 99.4 | 26.0 |
| #70 | 99.3 | 20.8 |
| #100 | 99.3 | 16.6 |
| #140 | 98.9 | 13.6 |
| #170 | 98.5 | 12.4 |
| #200 | 98.0 | 11.4 |

SOIL DESCRIPTION

○ Gray CLAYEY SILT, interlayered with trace fine sand layers (0.01'thick), little organics.

□ Brown, gray fine to coarse SAND, little silt, little gravel.

REMARKS:

○

□

○ Source: P5-02-S10 Sample No.: S-9 Elev./Depth: 58.5'-60.0'

□ Source: P5-02-S10 Sample No.: S-13 Elev./Depth: 88.5'-90.0'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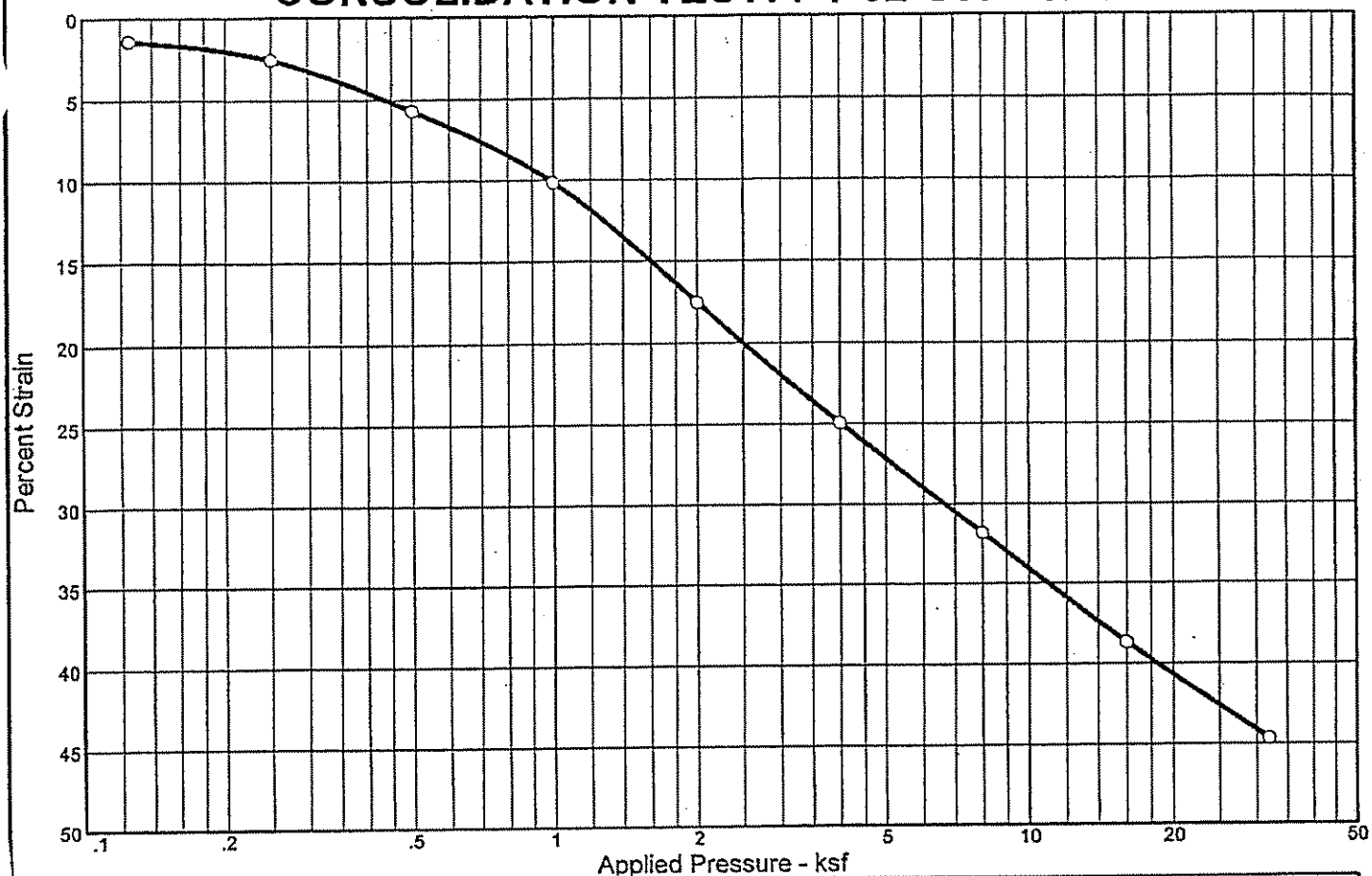
Client: GEOSYNTEC

Project: Cherry Island Landfill Expansion

Project No.: 4685.GC Date/Chk'd by: April 2002/DSS

# CONSOLIDATION TESTS

# CONSOLIDATION TEST: P1-02-S07 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.41 | 0.002 | | | | | | | | |
| 2 | 0.25 | 0.05 | 0.003 | | | | | | | | |
| 3 | 0.50 | 0.03 | 0.011 | | | | | | | | |
| 4 | 1.00 | 0.02 | 0.017 | | | | | | | | |
| 5 | 2.00 | 0.02 | 0.023 | | | | | | | | |
| 6 | 4.00 | 0.02 | 0.025 | | | | | | | | |
| 7 | 8.00 | 0.02 | 0.027 | | | | | | | | |
| 8 | 16.00 | 0.02 | 0.025 | | | | | | | | |
| 9 | 32.00 | 0.02 | 0.022 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 1.1 | 0.6 | 0.22 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P1-02-S07 **Sample No.:** SH-1 **Elev./Depth:** 10.0'-12.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec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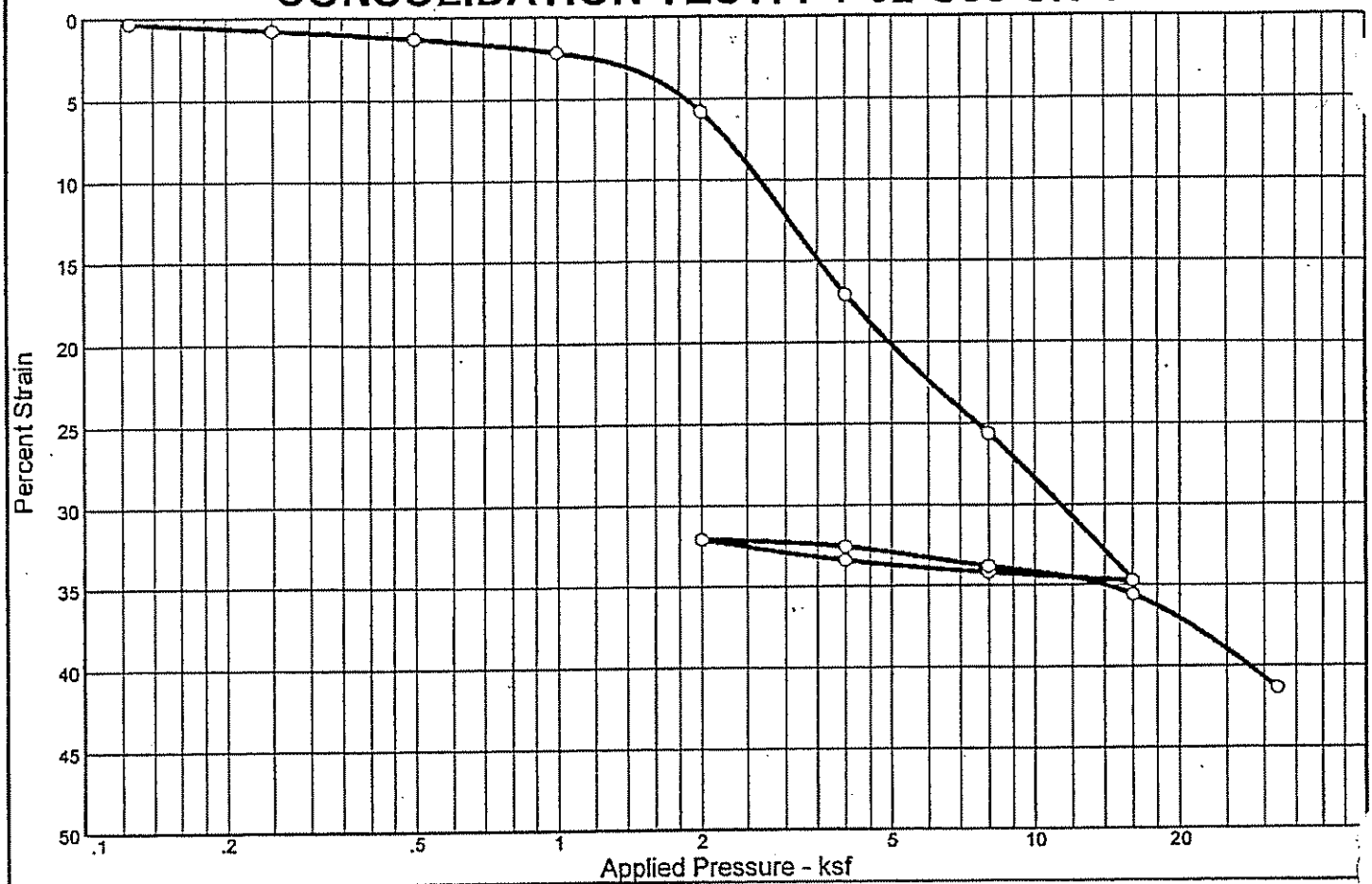
# CONSOLIDATION TEST: P1-02-S08 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.48 | 0.000 | | | | | | | | |
| 2 | 0.25 | 3.60 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.45 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.30 | 0.002 | | | | | | | | |
| 5 | 2.00 | 0.13 | 0.012 | | | | | | | | |
| 6 | 4.00 | 0.02 | 0.023 | | | | | | | | |
| 7 | 8.00 | 0.03 | 0.033 | | | | | | | | |
| 8 | 16.00 | 0.02 | 0.020 | | | | | | | | |
| 15 | 32.00 | 0.04 | 0.043 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.5 | 1.6 | 0.26 | 0.033 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace to little fine sand, little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P1-02-S08 **Sample No.:** SH-1 **Elev./Depth:** 21.0'-23.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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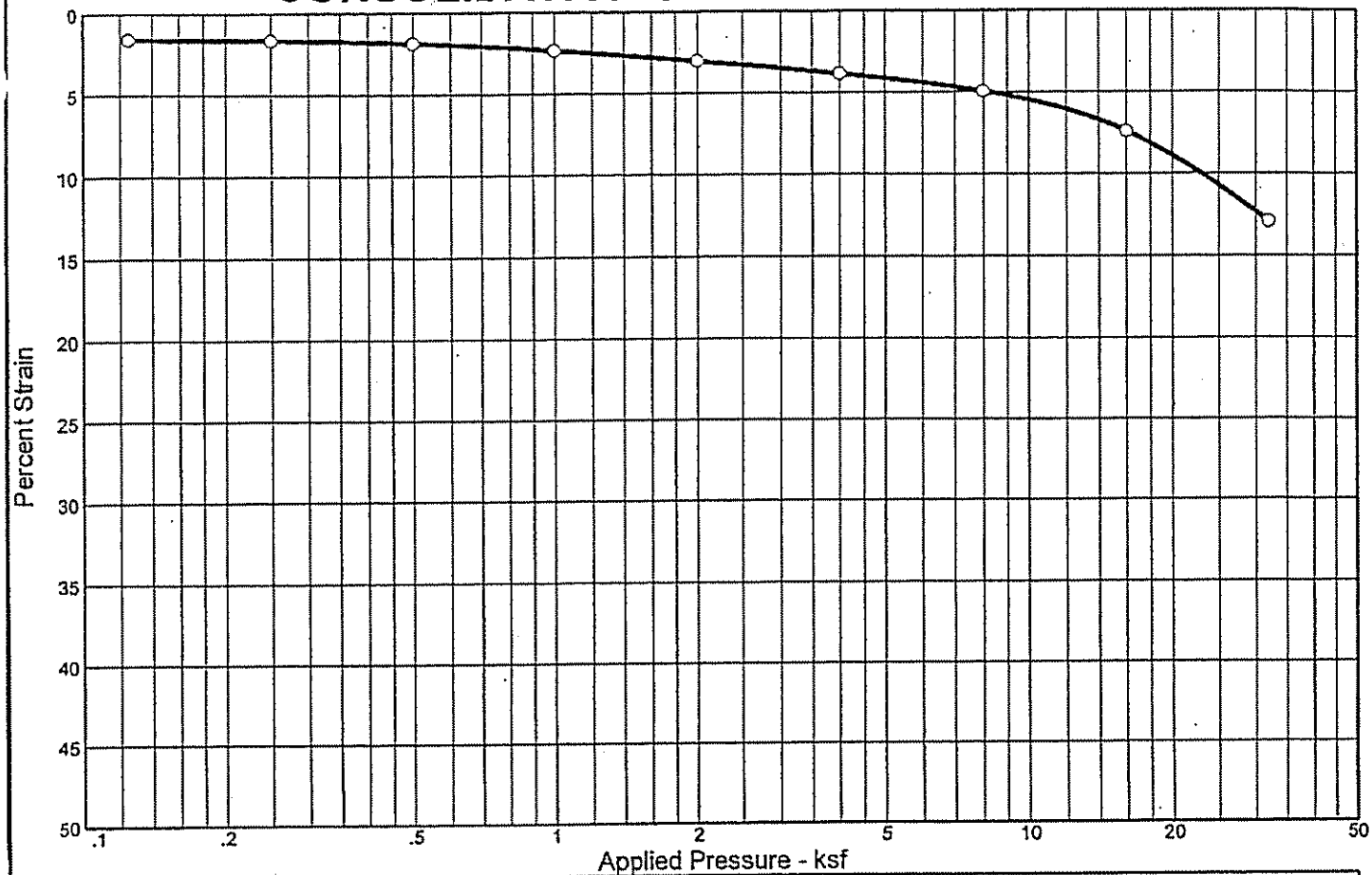
# CONSOLIDATION TEST: P1-02-S08 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 4.34 | 0.000 | | | | | | | | |
| 3 | 0.50 | 1.11 | 0.000 | | | | | | | | |
| 4 | 1.00 | 4.30 | 0.000 | | | | | | | | |
| 5 | 2.00 | 2.09 | 0.001 | | | | | | | | |
| 6 | 4.00 | 3.76 | 0.001 | | | | | | | | |
| 7 | 8.00 | 3.23 | 0.001 | | | | | | | | |
| 8 | 16.00 | 1.07 | 0.004 | | | | | | | | |
| 9 | 32.00 | 0.23 | 0.011 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.1 | 13.8 | 0.18 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Light gray SILTY CLAY, trace fine sand, trace organics (fibers). | CH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P1-02-S08 **Sample No.:** SH-2 **Elev./Depth:** 73.0'-75.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec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# CONSOLIDATION TEST: P1-02-S11 SH-1

Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 2.28 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.42 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.42 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.35 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.27 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.06 | 0.012 | | | | | | | | |
| 7 | 8.00 | 0.04 | 0.014 | | | | | | | | |
| 8 | 16.00 | 0.05 | 0.023 | | | | | | | | |
| 9 | 32.00 | 0.04 | 0.011 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 1.6 | 3.4 | 0.26 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray/black CLAYEY SILT, little to some fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P1-02-S11 **Sample No.:** SH-1 **Elev./Depth:** 20.0'-22.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec


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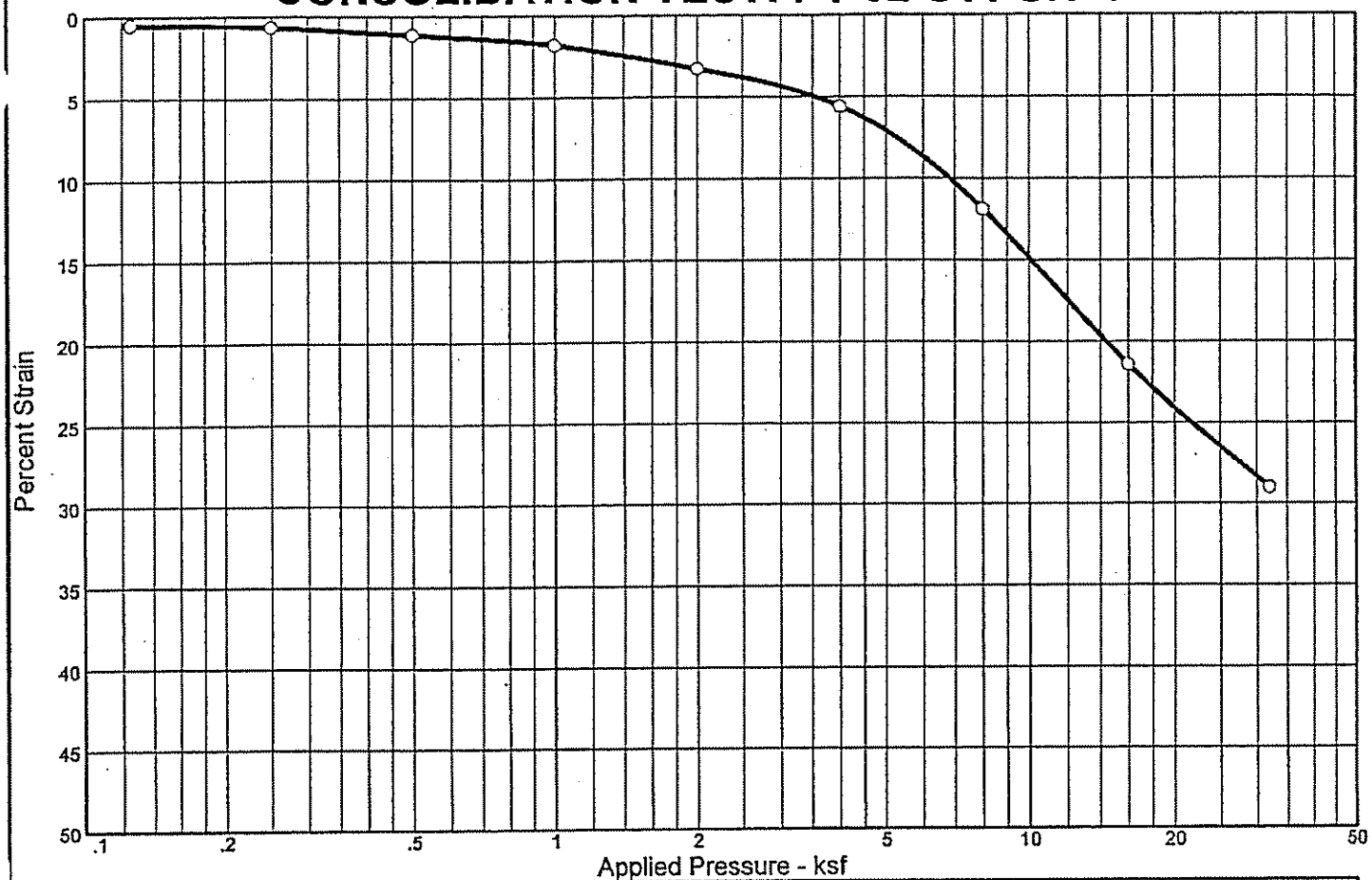
# CONSOLIDATION TEST: P1-02-S11 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 2.31 | 0.000 | | | | | | | | |
| 2 | 0.25 | 1.23 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.46 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.43 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.32 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.19 | 0.006 | | | | | | | | |
| 7 | 8.00 | 0.07 | 0.023 | | | | | | | | |
| 8 | 16.00 | 0.03 | 0.018 | | | | | | | | |
| 9 | 32.00 | 0.02 | 0.016 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 1.9 | 5.1 | 0.29 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark brown CLAYEY SILT and PEAT | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P1-02-S11 **Sample No.:** SH-2 **Elev./Depth:** 30.0'-32.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec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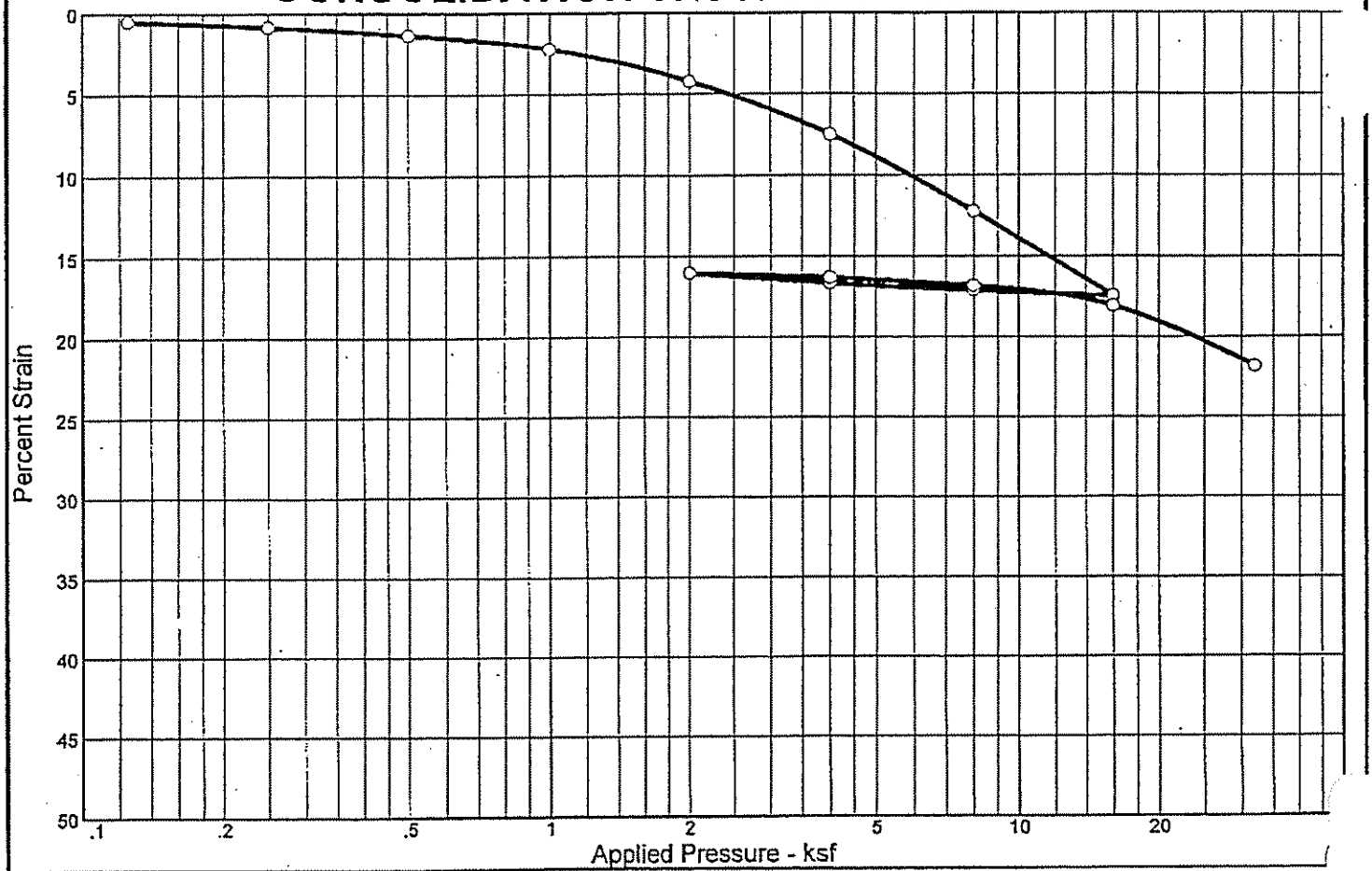
# CONSOLIDATION TEST: P3-02-S01 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 0.50 | 4.14 | 0.001 | | | | | | | | |
| 4 | 1.00 | 4.54 | 0.001 | | | | | | | | |
| 5 | 2.00 | 2.46 | 0.003 | | | | | | | | |
| 6 | 4.00 | 3.09 | 0.006 | | | | | | | | |
| 7 | 8.00 | 2.58 | 0.006 | | | | | | | | |
| 8 | 16.00 | 1.92 | 0.006 | | | | | | | | |
| 15 | 32.00 | 2.47 | 0.006 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | 82.3 | 58.7 | 78 | 42 | | 1.00 | 2.1 | 0.16 | 0.020 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace to little micaceous fine to medium sand, little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S01 **Sample No.:** SH-1 **Elev./Depth:** 10.0'-12.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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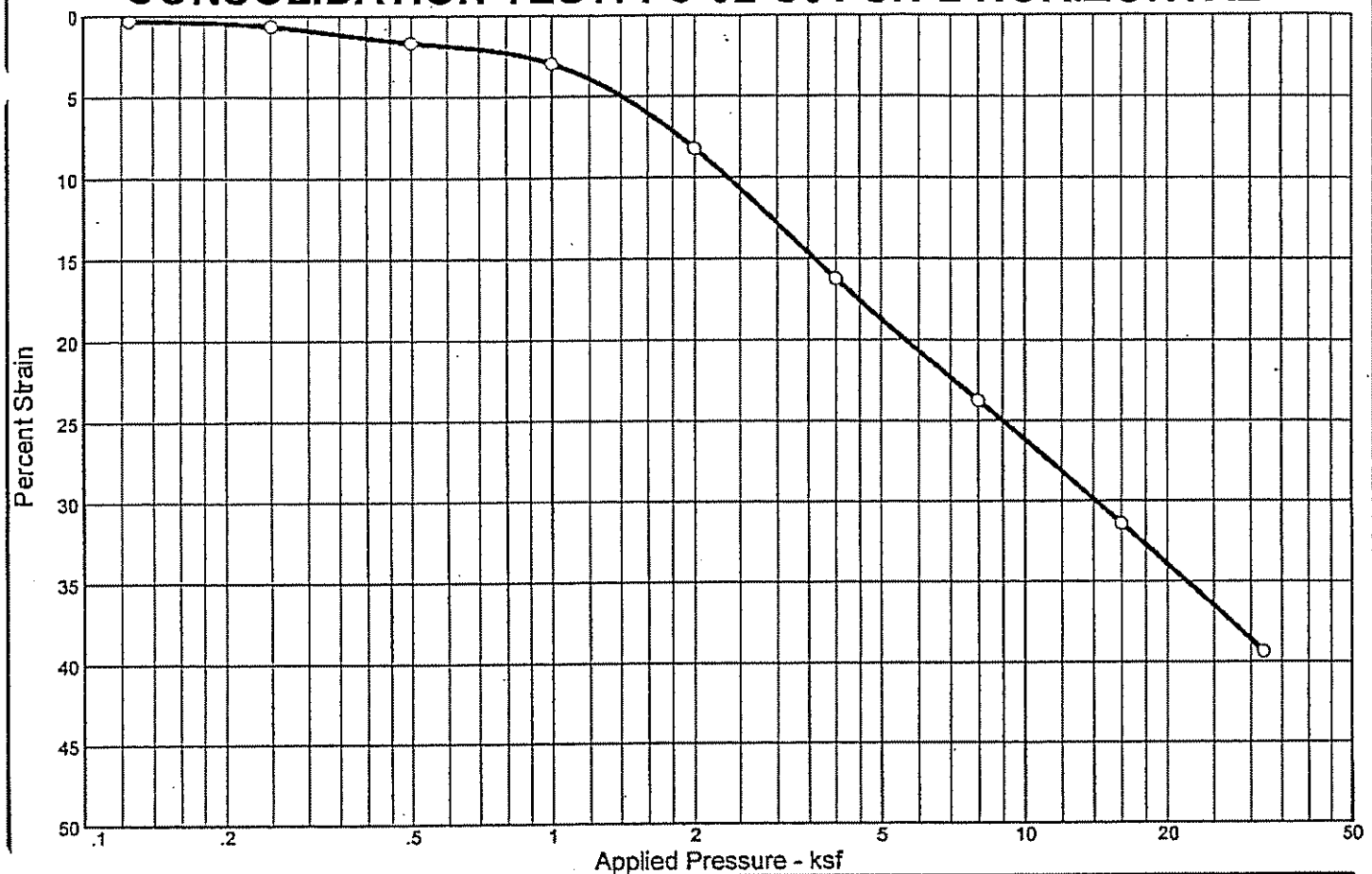
# CONSOLIDATION TEST: P3-02-S01 SH-2 HORIZONTAL




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.53 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.71 | 0.001 | | | | | | | | |
| 3 | 0.50 | 0.57 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.15 | 0.004 | | | | | | | | |
| 5 | 2.00 | 0.05 | 0.010 | | | | | | | | |
| 6 | 4.00 | 0.03 | 0.015 | | | | | | | | |
| 7 | 8.00 | 0.04 | 0.022 | | | | | | | | |
| 8 | 16.00 | 0.05 | 0.023 | | | | | | | | |
| 9 | 32.00 | 0.04 | 0.012 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 1.8 | 1.4 | 0.27 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace fine sand, trace mica, little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S01 **Sample No.:** SH-2 H **Elev./Depth:** 20.0'-22.0'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**Remarks:**

Horizontal Sample
Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec

Sample tested along horixontal axis

# CONSOLIDATION TEST: P3-02-S01 SH-2 VERTICAL

Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.68 | 0.000 | | | | | | | | |
| 2 | 0.25 | 3.55 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.36 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.30 | 0.004 | | | | | | | | |
| 5 | 2.00 | 0.05 | 0.011 | | | | | | | | |
| 6 | 4.00 | 0.02 | 0.021 | | | | | | | | |
| 7 | 8.00 | 0.02 | 0.031 | | | | | | | | |
| 8 | 16.00 | 0.03 | 0.032 | | | | | | | | |
| 9 | 32.00 | 0.02 | 0.017 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 1.8 | 1.6 | 0.29 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace fine sand, trace mica, little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S01 **Sample No.:** SH-2 V **Elev./Depth:** 20.0'-22.0'


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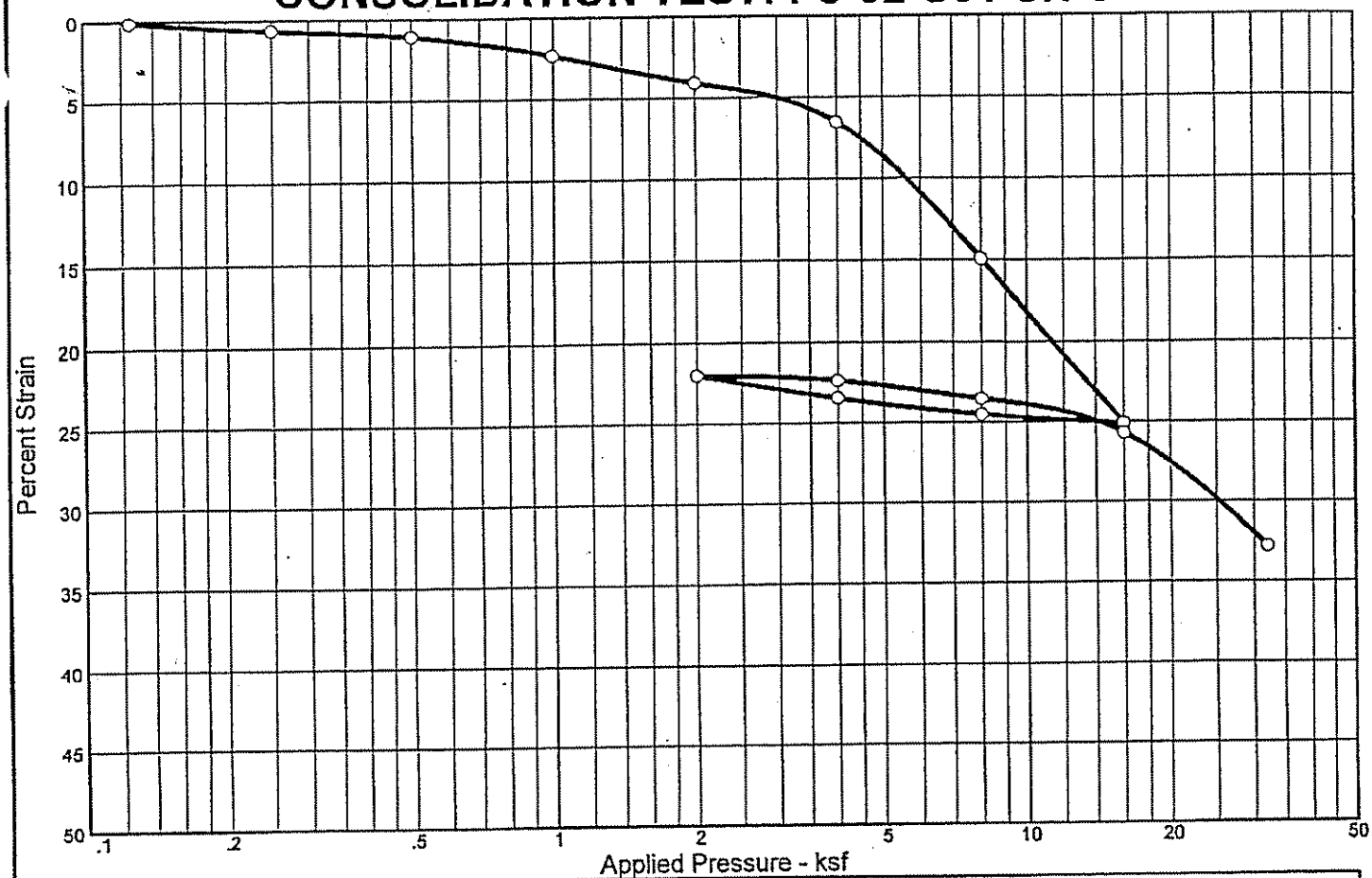
**Remarks:**

Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec

Sample tested along vertical axis

# CONSOLIDATION TEST: P3-02-S01 SH-3




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.32 | 0.000 | | | | | | | | |
| 2 | 0.25 | 1.32 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.55 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.84 | 0.002 | | | | | | | | |
| 5 | 2.00 | 1.35 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.81 | 0.006 | | | | | | | | |
| 7 | 8.00 | 0.08 | 0.020 | | | | | | | | |
| 8 | 16.00 | 0.06 | 0.014 | | | | | | | | |
| 15 | 32.00 | 0.06 | 0.015 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | 65.6 | | | | | 2.3 | 4.3 | 0.33 | 0.039 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace fine sand. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S01 **Sample No.:** SH-3 **Elev./Depth:** 40.0'-42.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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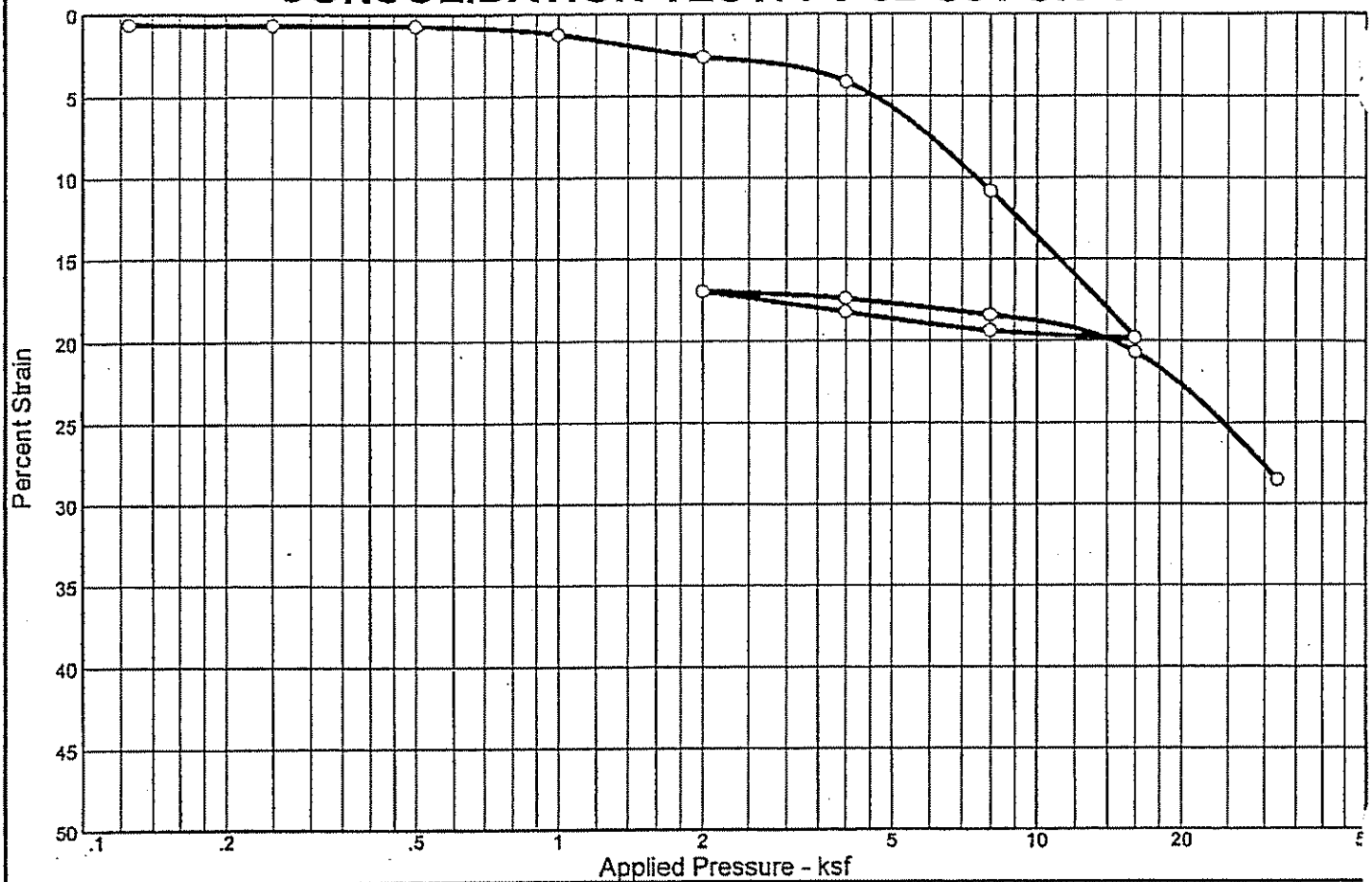
# CONSOLIDATION TEST: P3-02-S01 SH-4




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 0.25 | 0.40 | 0.000 | | | | | | | | |
| 4 | 1.00 | 0.13 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.31 | 0.001 | | | | | | | | |
| 6 | 4.00 | 0.36 | 0.003 | | | | | | | | |
| 7 | 8.00 | 0.04 | 0.019 | | | | | | | | |
| 8 | 16.00 | 0.03 | 0.027 | | | | | | | | |
| 15 | 32.00 | 0.03 | 0.023 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 3.5 | 5.5 | 0.32 | 0.025 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray SILTY CLAY, trace fine sand layers. | CH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S01 **Sample No.:** SH-4 **Elev./Depth:** 70.0'-72.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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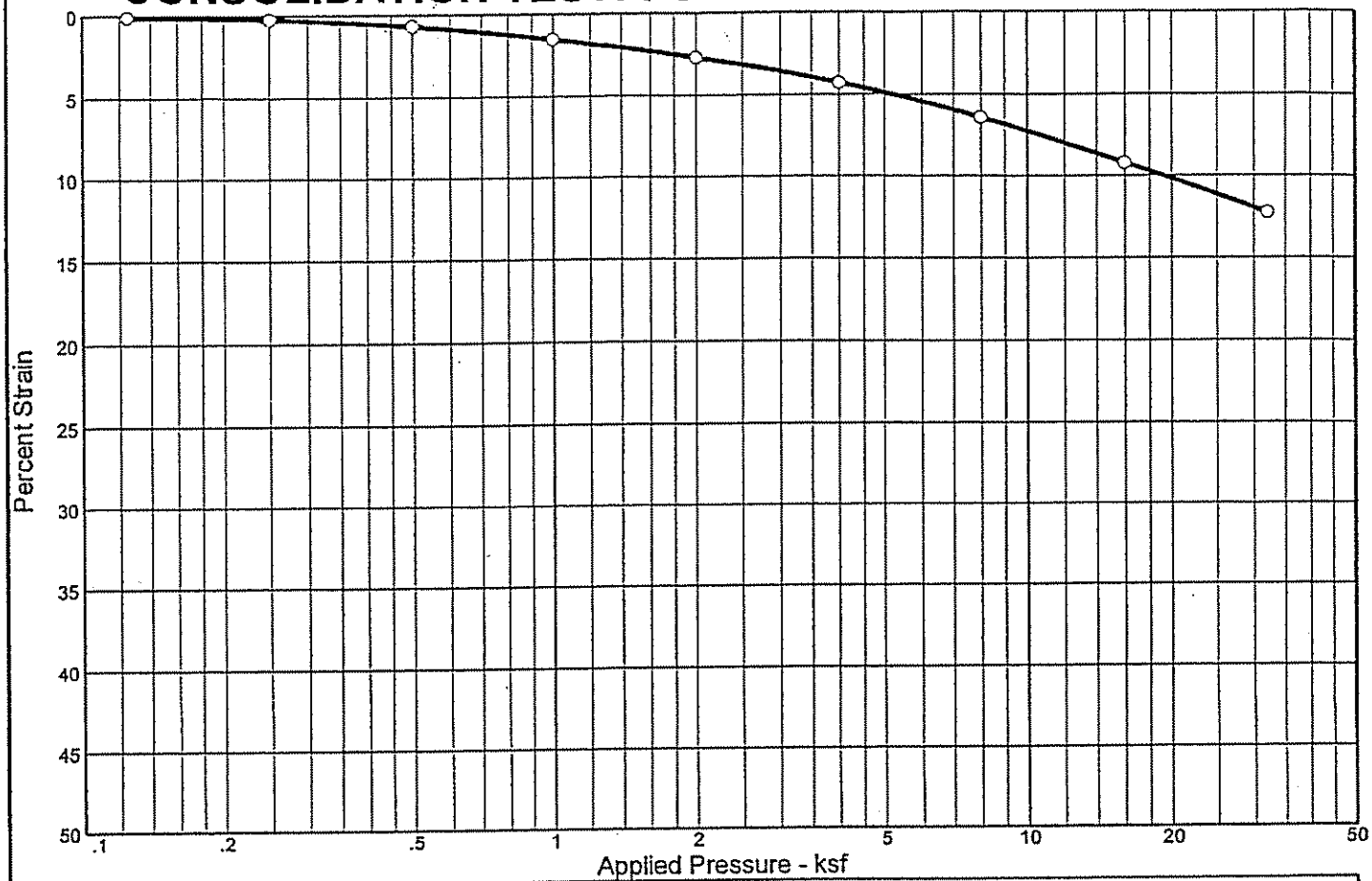
# CONSOLIDATION TEST: P3-02-S02 SH-1 HORIZONTAL




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 2.80 | 0.000 | | | | | | | | |
| 2 | 0.25 | 2.72 | 0.000 | | | | | | | | |
| 4 | 1.00 | 0.85 | 0.001 | | | | | | | | |
| 6 | 4.00 | 0.04 | 0.002 | | | | | | | | |
| 7 | 8.00 | 1.28 | 0.003 | | | | | | | | |
| 8 | 16.00 | 4.04 | 0.004 | | | | | | | | |
| 9 | 32.00 | 0.59 | 0.004 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | 60.3 | 63.3 | 71 | 38 | | 0.6 | 3.0 | 0.10 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S02 **Sample No.:** SH-1 H **Elev./Depth:** 20.0'-22.0'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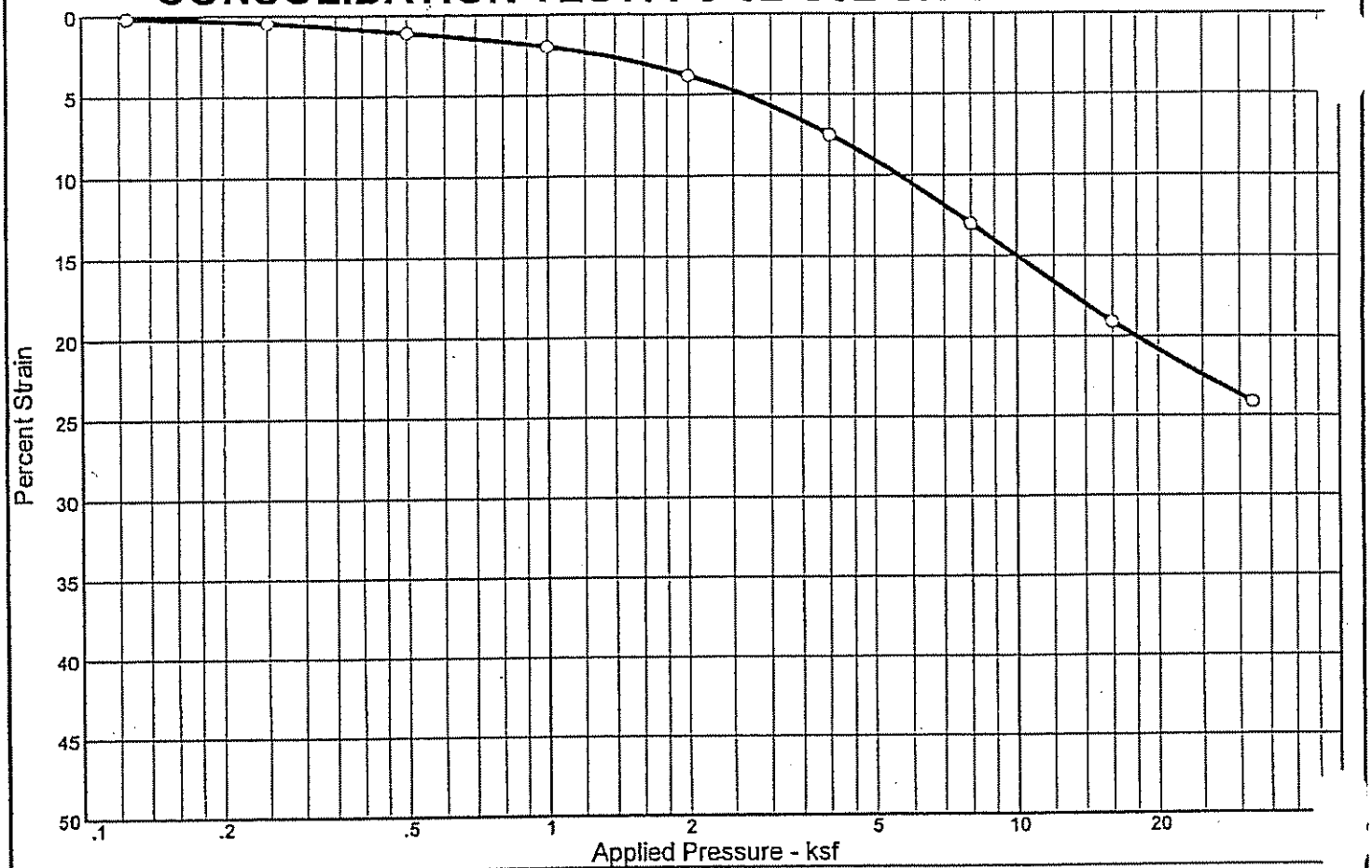
**Remarks:**

Date/Chk'd by: April 2002/DSS

Sample tested along horizontal axis

# CONSOLIDATION TEST: P3-02-S02 SH-1 VERTICAL




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.01 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.58 | 0.000 | | | | | | | | |
| 3 | 0.50 | 1.15 | 0.001 | | | | | | | | |
| 4 | 1.00 | 1.01 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.66 | 0.003 | | | | | | | | |
| 6 | 4.00 | 0.36 | 0.010 | | | | | | | | |
| 7 | 8.00 | 0.32 | 0.012 | | | | | | | | |
| 8 | 16.00 | 0.41 | 0.011 | | | | | | | | |
| 9 | 32.00 | 0.55 | 0.011 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | 60.3 | 65.3 | 71 | 38 | | 0.6 | 3.0 | 0.21 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S02 **Sample No.:** SH-1 V **Elev./Depth:** 20.0'-22.0'

**Remarks:**

DATE/Chk'd by: April 2002/L

Sample tested along vertical axis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# CONSOLIDATION TEST: P3-02-S02 SH-2

Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ ($ft^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ ($ft^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ ($ft^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 2.91 | 0.000 | | | | | | | | |
| 2 | 0.25 | 2.51 | 0.000 | | | | | | | | |
| 3 | 0.50 | 1.79 | 0.001 | | | | | | | | |
| 4 | 0.83 | 2.59 | 0.001 | | | | | | | | |
| 6 | 2.00 | 1.84 | 0.002 | | | | | | | | |
| 8 | 8.00 | 1.25 | 0.011 | | | | | | | | |
| 9 | 16.00 | 1.06 | 0.009 | | | | | | | | |
| 16 | 32.00 | 1.92 | 0.010 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | 55.8 | 64.8 | | | | 2.00 | 4.2 | 0.20 | 0.017 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray SILTY CLAY, trace fine sand, trace organics. | CH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S02 **Sample No.:** SH-2 **Elev./Depth:** 50.0'-52.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS


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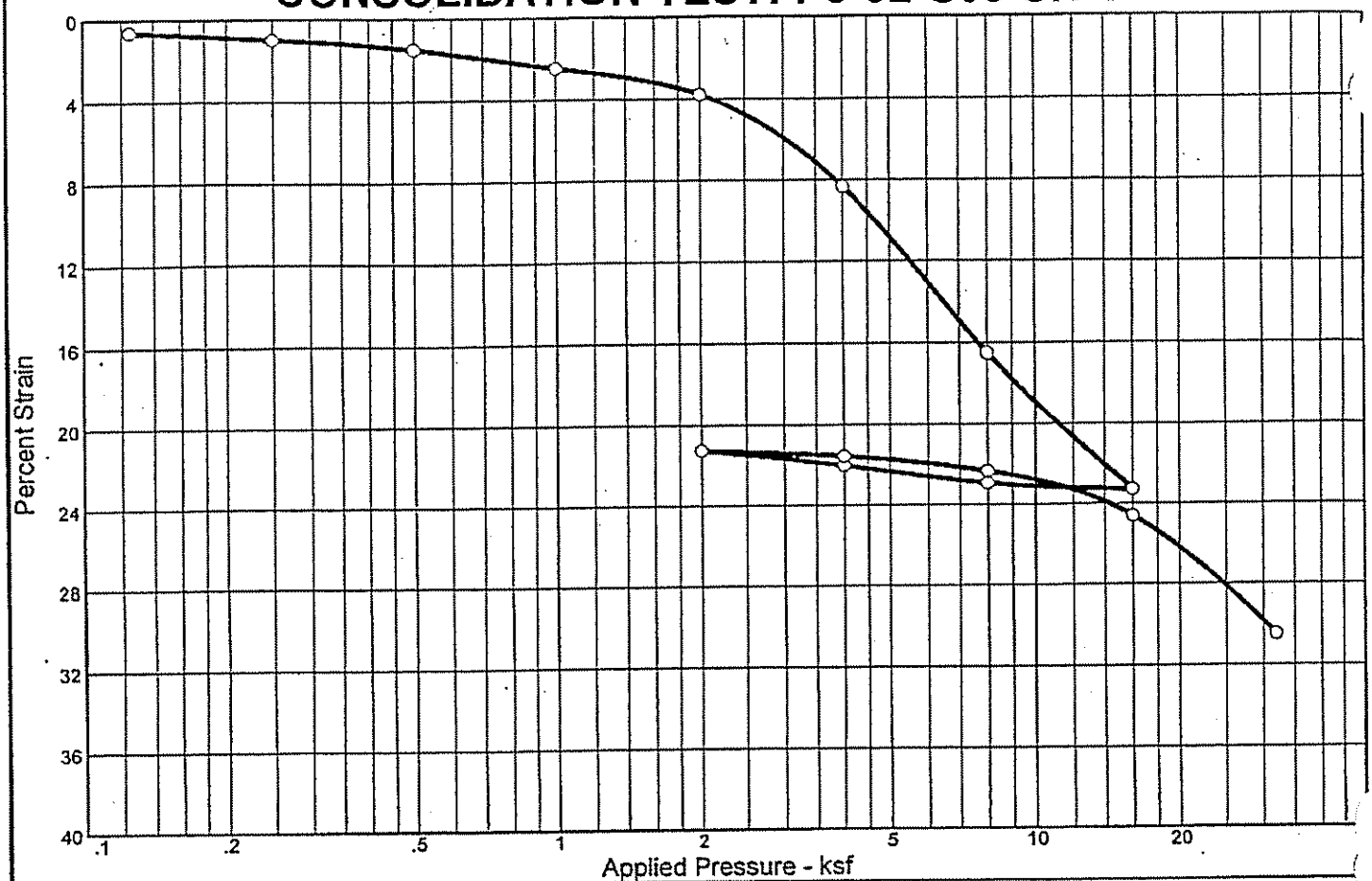
# CONSOLIDATION TEST: P3-02-S09 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.59 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.67 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.40 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.32 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.14 | 0.003 | | | | | | | | |
| 6 | 4.00 | 0.11 | 0.015 | | | | | | | | |
| 7 | 8.00 | 0.05 | 0.015 | | | | | | | | |
| 8 | 16.00 | 0.05 | 0.017 | | | | | | | | |
| 15 | 32.00 | 0.05 | 0.017 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | 65.6 | 58.7 | | | | 1.90 | 2.7 | 0.25 | 0.033 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray/black CLAYEY SILT, trace fine sand, trace to little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S09 **Sample No.:** SH-1 **Elev./Depth:** 20.0'-22.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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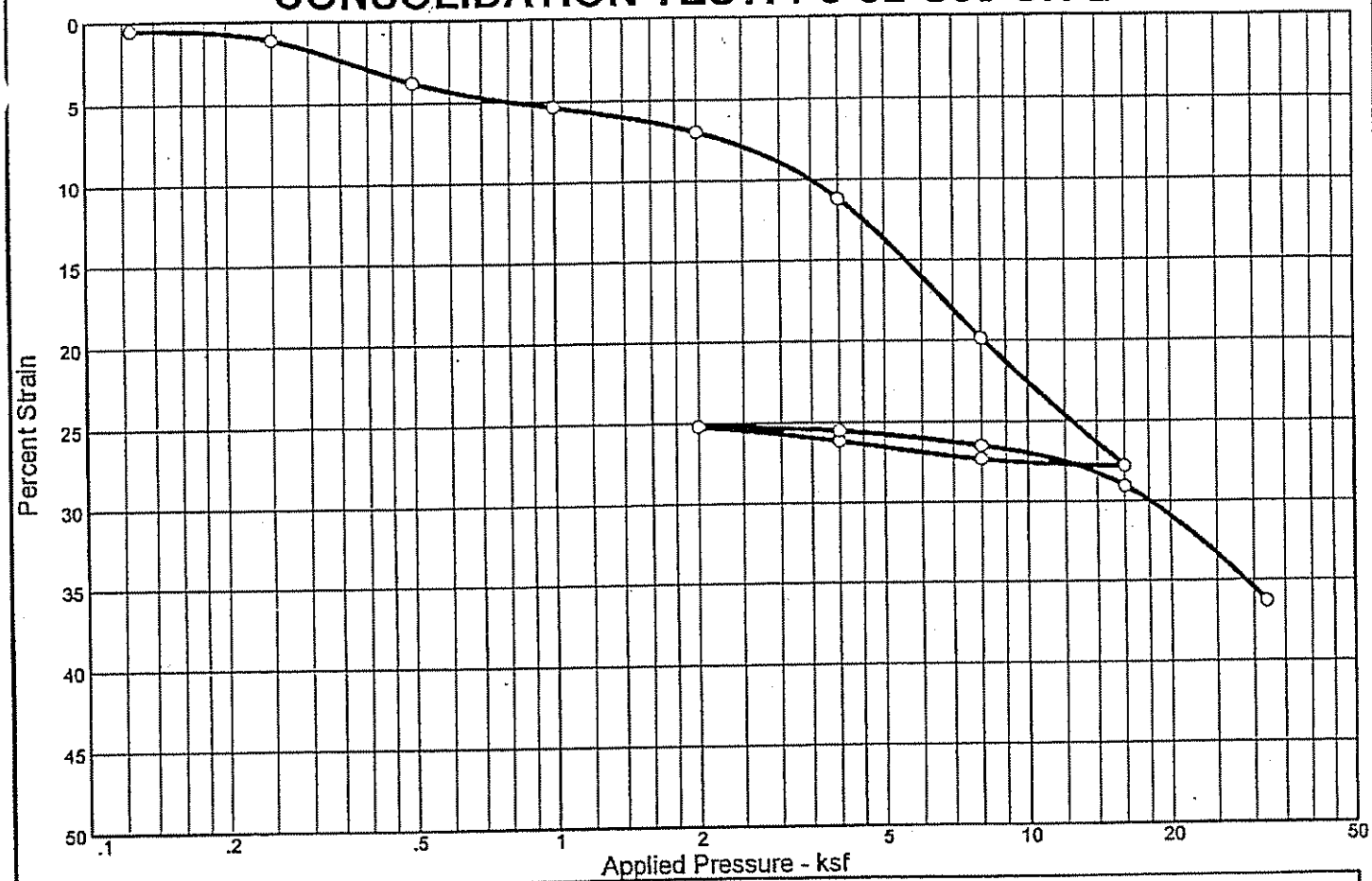
# CONSOLIDATION TEST: P3-02-S09 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.93 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.94 | 0.001 | | | | | | | | |
| 4 | 1.00 | 3.86 | 0.002 | | | | | | | | |
| 5 | 2.00 | 0.33 | 0.003 | | | | | | | | |
| 6 | 4.00 | 0.12 | 0.013 | | | | | | | | |
| 7 | 8.00 | 0.05 | 0.016 | | | | | | | | |
| 8 | 16.00 | 0.03 | 0.023 | | | | | | | | |
| 15 | 32.00 | 0.04 | 0.020 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 3.70 | 3.5 | 0.26 | 0.039 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace fine sand, little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S09 **Sample No.:** SH-2 **Elev./Depth:** 40.0'-42.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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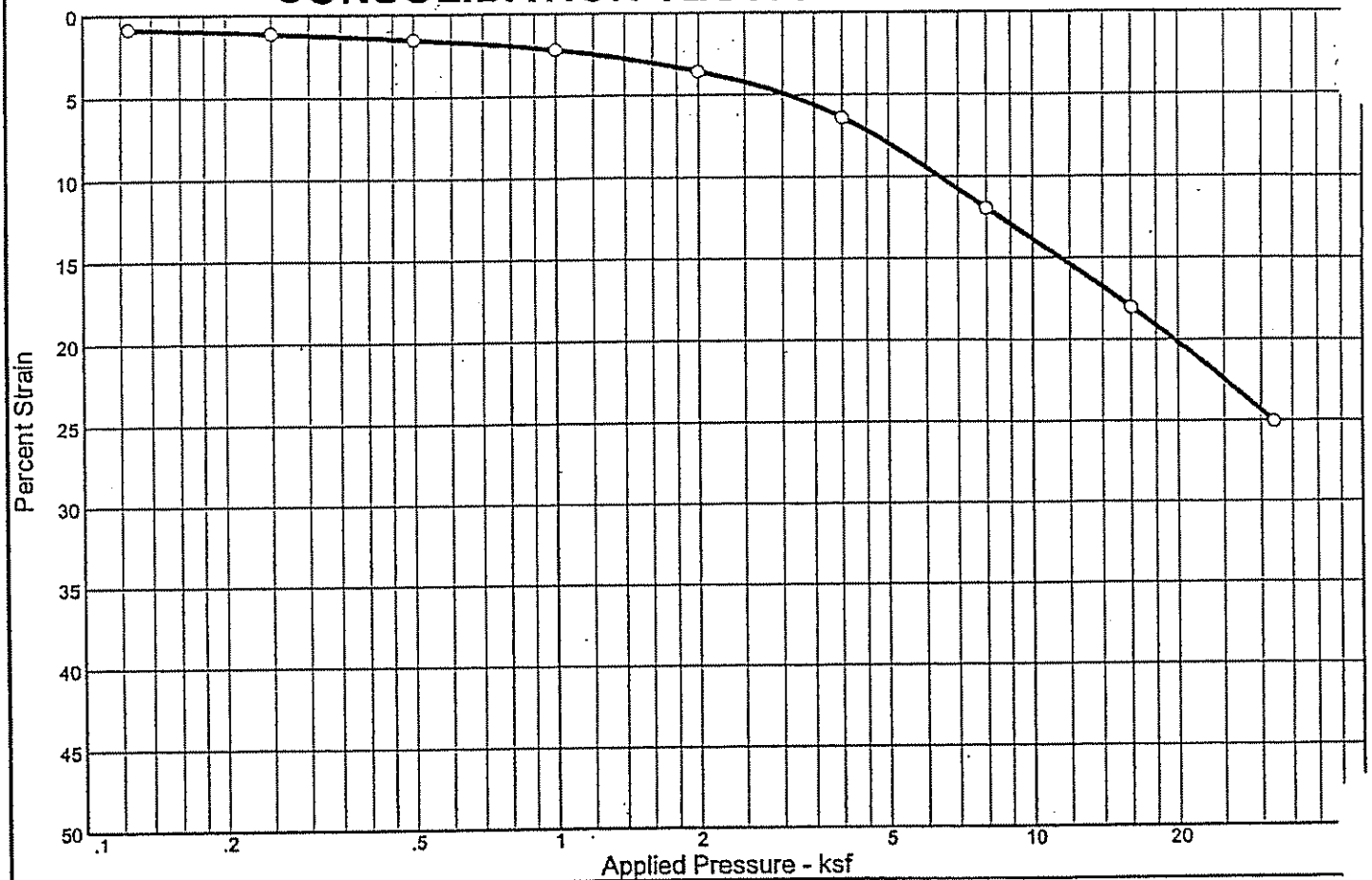
# CONSOLIDATION TEST: P3-02-S12 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 3.19 | 0.001 | | | | | | | | |
| 2 | 0.25 | 3.98 | 0.001 | | | | | | | | |
| 3 | 0.50 | 2.50 | 0.001 | | | | | | | | |
| 4 | 1.00 | 1.48 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.52 | 0.003 | | | | | | | | |
| 6 | 4.00 | 0.18 | 0.004 | | | | | | | | |
| 7 | 8.00 | 0.07 | 0.009 | | | | | | | | |
| 8 | 16.00 | 0.12 | 0.016 | | | | | | | | |
| 9 | 32.00 | 0.09 | 0.018 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 2.2 | 4.0 | 0.22 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT, little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S12 **Sample No.:** SH-1 **Elev./Depth:** 20.0'-22.0'

**Remarks:**

Date/Chk'd by: April 2002/DS: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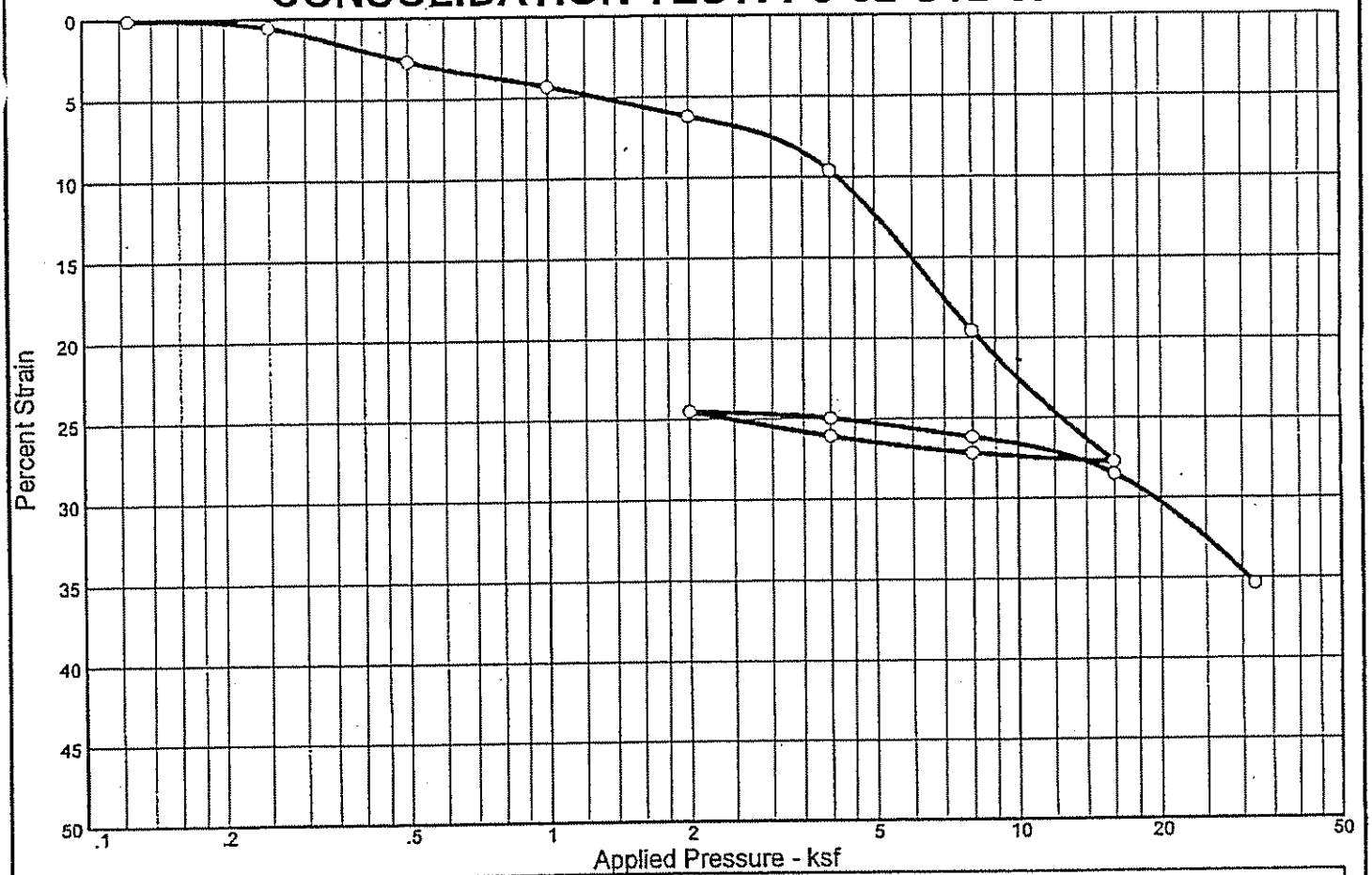
# CONSOLIDATION TEST: P3-02-S12 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.87 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.56 | 0.001 | | | | | | | | |
| 3 | 0.50 | 0.60 | 0.004 | | | | | | | | |
| 4 | 1.00 | 0.24 | 0.002 | | | | | | | | |
| 5 | 2.00 | 0.13 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.09 | 0.012 | | | | | | | | |
| 7 | 8.00 | 0.03 | 0.021 | | | | | | | | |
| 8 | 16.00 | 0.03 | 0.024 | | | | | | | | |
| 15 | 32.00 | 0.03 | 0.023 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 4.3 | 3.6 | 0.29 | 0.033 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT, trace fine sand, little organics | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S12 **Sample No.:** SH-2 **Elev./Depth:** 50.0'-52.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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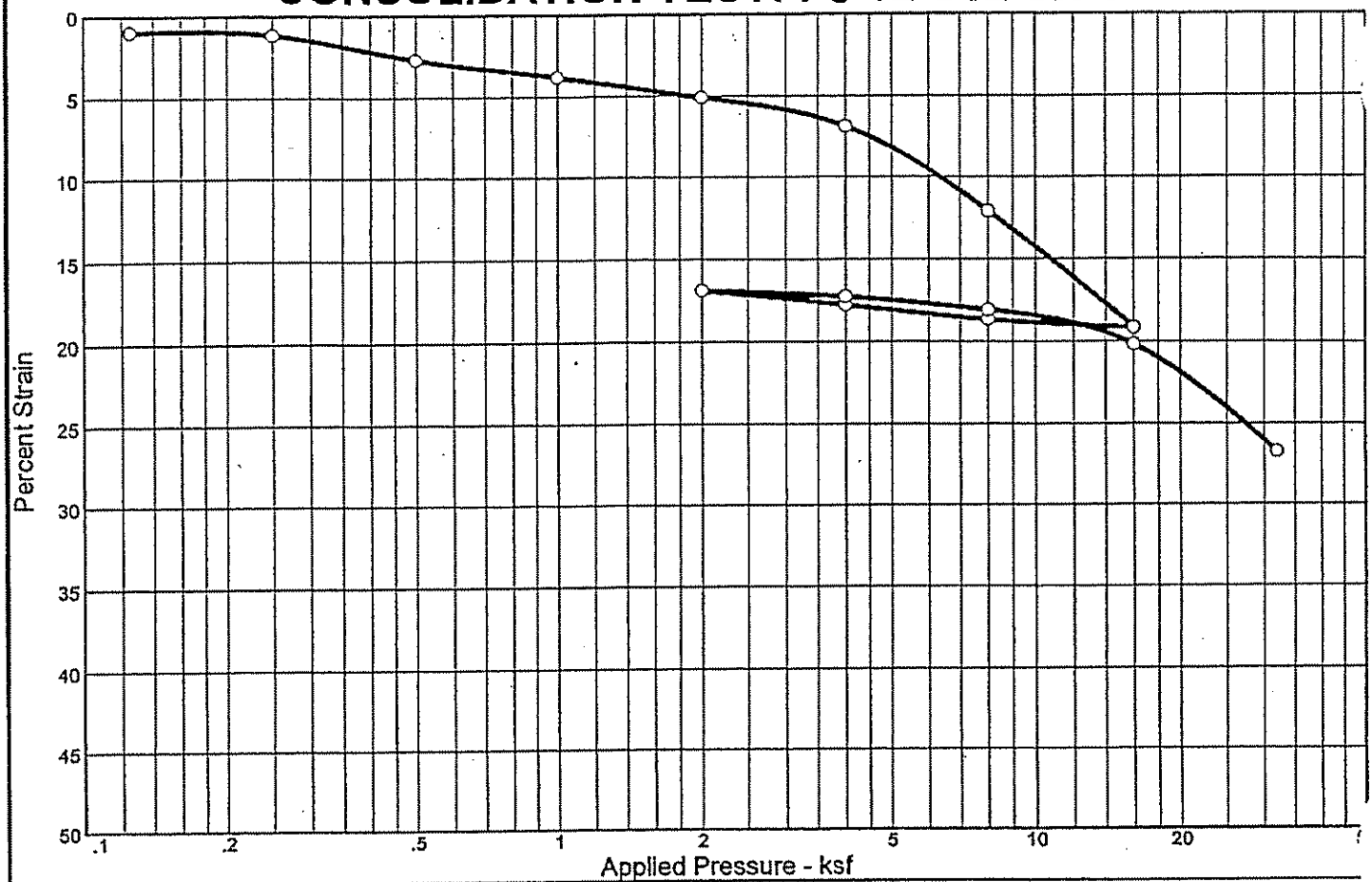
# CONSOLIDATION TEST: P3-02-S12 SH-3




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.00 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.40 | 0.000 | | | | | | | | |
| 4 | 1.00 | 2.56 | 0.001 | | | | | | | | |
| 5 | 2.00 | 2.49 | 0.002 | | | | | | | | |
| 6 | 4.00 | 2.77 | 0.003 | | | | | | | | |
| 7 | 8.00 | 0.47 | 0.012 | | | | | | | | |
| 8 | 16.00 | 0.28 | 0.018 | | | | | | | | |
| 15 | 32.00 | 0.51 | 0.014 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 5.4 | 5.5 | 0.24 | 0.022 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT and interlayered fine sand. | ML | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P3-02-S12 **Sample No.:** SH-3 **Elev./Depth:** 75.0'-77.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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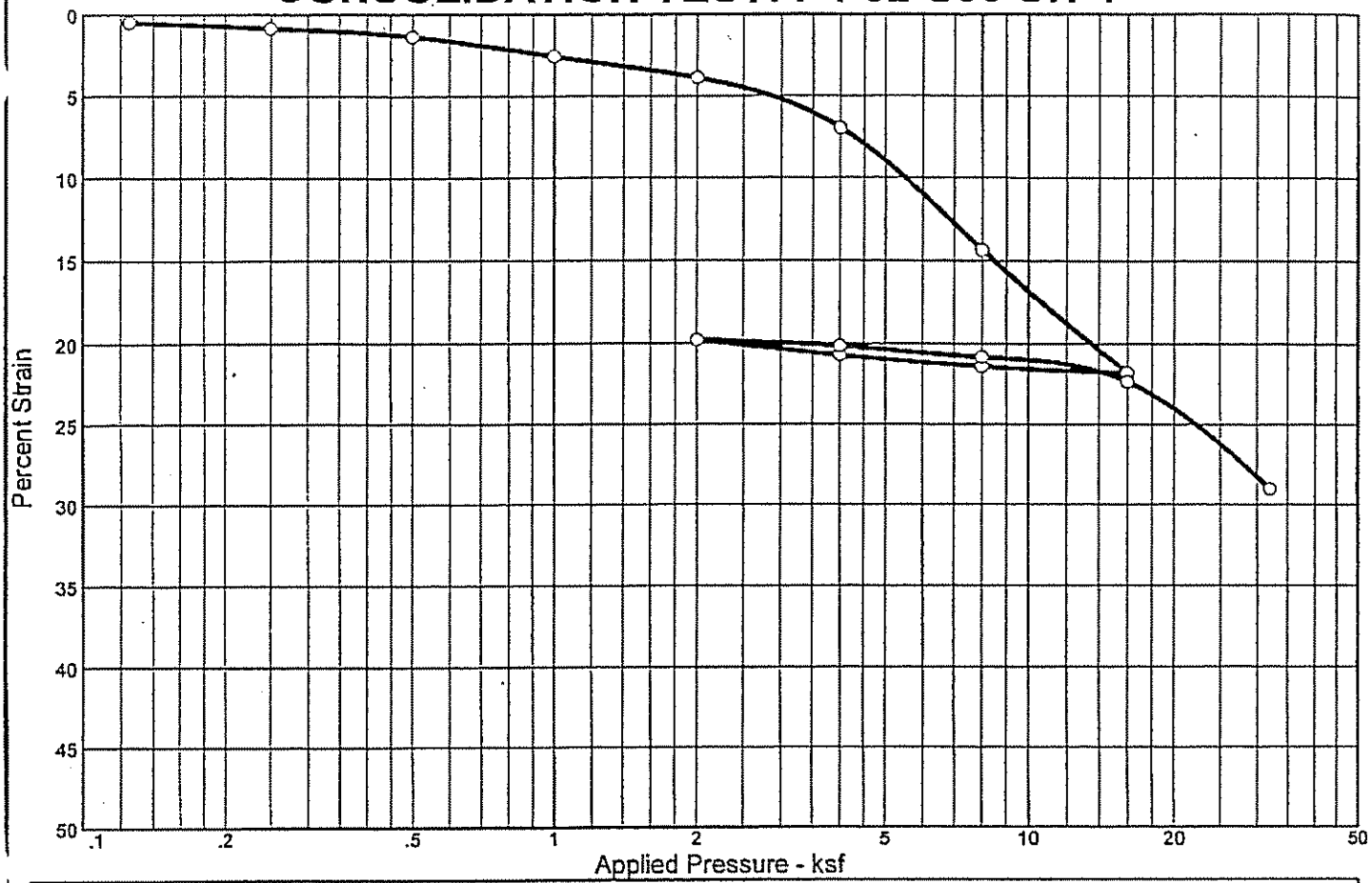
# CONSOLIDATION TEST: P4-02-S03 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.18 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.16 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.60 | 0.001 | | | | | | | | |
| 4 | 1.00 | 0.76 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.47 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.10 | 0.008 | | | | | | | | |
| 7 | 8.00 | 0.05 | 0.013 | | | | | | | | |
| 8 | 16.00 | 0.04 | 0.015 | | | | | | | | |
| 15 | 32.00 | 0.05 | 0.009 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 2.1 | 3.6 | 0.24 | 0.017 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P4-02-S03 **Sample No.:** SH-1 **Elev./Depth:** 20.0'-22.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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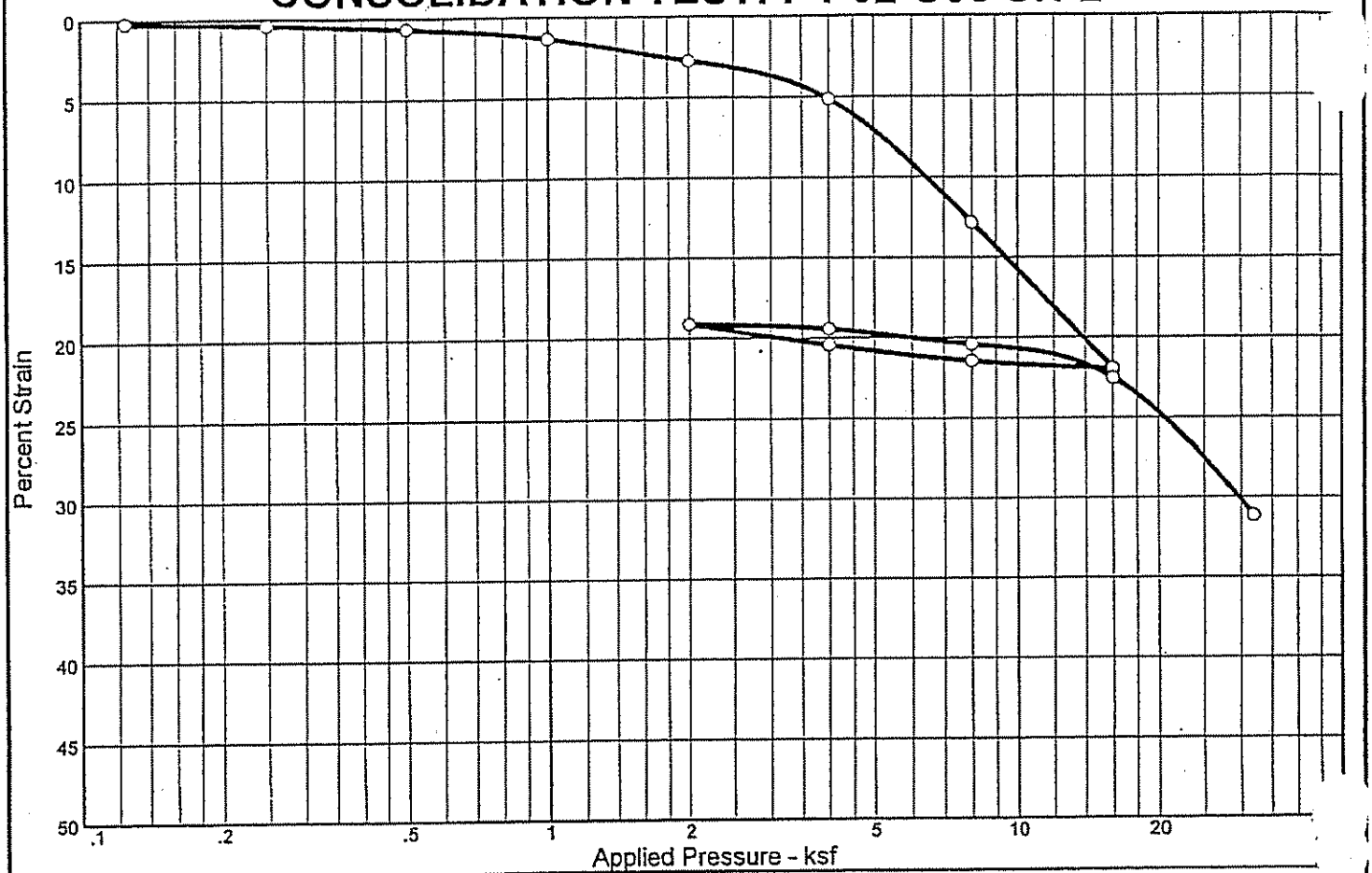
# CONSOLIDATION TEST: P4-02-S03 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.52 | 0.000 | | | | | | | | |
| 4 | 1.00 | 0.50 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.34 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.16 | 0.006 | | | | | | | | |
| 7 | 8.00 | 0.03 | 0.014 | | | | | | | | |
| 8 | 16.00 | 0.02 | 0.019 | | | | | | | | |
| 15 | 32.00 | 0.02 | 0.016 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 3.9 | 4.2 | 0.30 | 0.027 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray SILT, little clay, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P4-02-S03 **Sample No.:** SH-2 **Elev./Depth:** 40.0'-42.0'

**Remarks:**

Date/Chk'd by: April 2002/DS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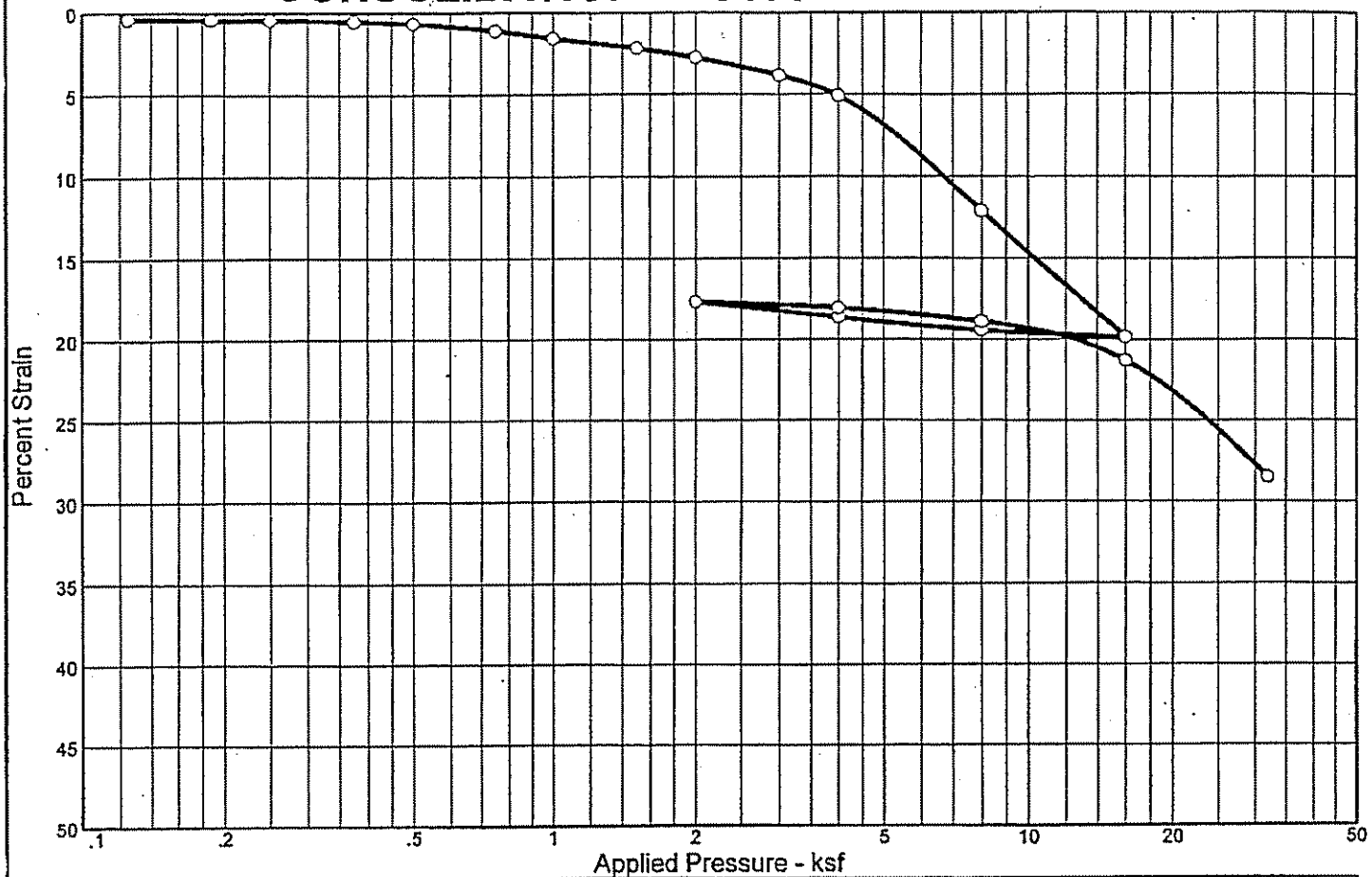
# CONSOLIDATION TEST: P5-02-S04 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.79 | 0.000 | 13 | 16.00 | 0.06 | 0.025 | | | | |
| 2 | 0.19 | 1.43 | 0.000 | 20 | 32.00 | 0.05 | 0.013 | | | | |
| 4 | 0.38 | 1.46 | 0.000 | | | | | | | | |
| 5 | 0.50 | 0.97 | 0.000 | | | | | | | | |
| 6 | 0.75 | 1.38 | 0.001 | | | | | | | | |
| 8 | 1.50 | 1.42 | 0.001 | | | | | | | | |
| 9 | 2.00 | 0.28 | 0.002 | | | | | | | | |
| 10 | 3.00 | 0.20 | 0.003 | | | | | | | | |
| 11 | 4.00 | 0.06 | 0.005 | | | | | | | | |
| 12 | 8.00 | 0.06 | 0.015 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 3.3 | 4.7 | 0.27 | 0.033 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Brown, dark gray CLAYEY SILT, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P5-02-S04 **Sample No.:** SH-1 **Elev./Depth:** 30.0'-32.0'

**Remarks:**

Date/Chk'd by:April 2002/DSS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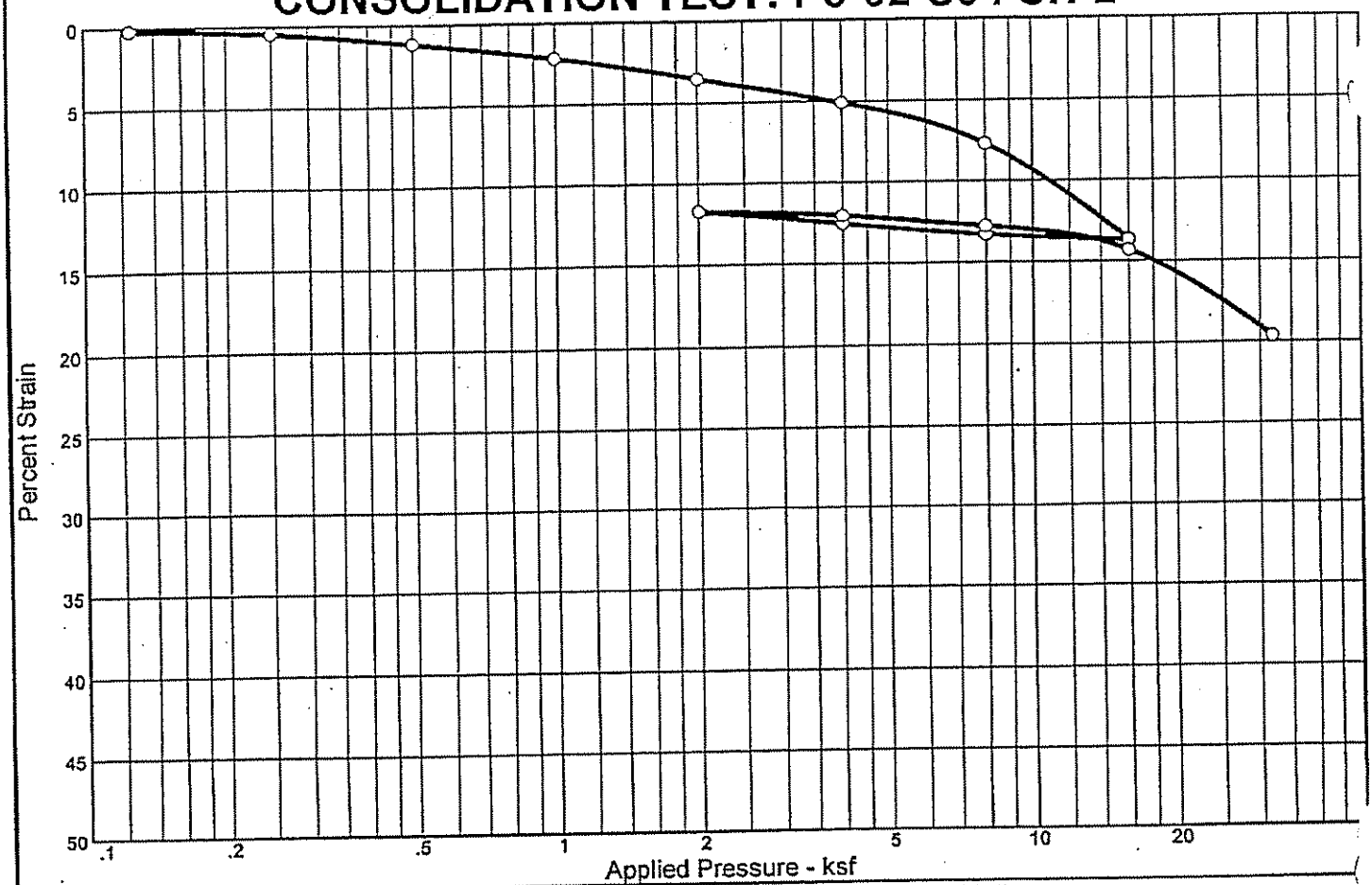
# CONSOLIDATION TEST: P5-02-S04 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.77 | 0.000 | | | | | | | | |
| 3 | 0.50 | 1.85 | 0.000 | | | | | | | | |
| 4 | 1.00 | 2.12 | 0.001 | | | | | | | | |
| 5 | 2.00 | 3.89 | 0.001 | | | | | | | | |
| 6 | 4.00 | 3.36 | 0.002 | | | | | | | | |
| 7 | 8.00 | 3.33 | 0.005 | | | | | | | | |
| 8 | 16.00 | 0.55 | 0.012 | | | | | | | | |
| 15 | 32.00 | 1.08 | 0.010 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 5.30 | 7.6 | 0.22 | 0.017 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT, very thin fine sand lenses, interlayered with silt. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P5-02-S04 **Sample No.:** SH-2 **Elev./Depth:** 80.0'-82.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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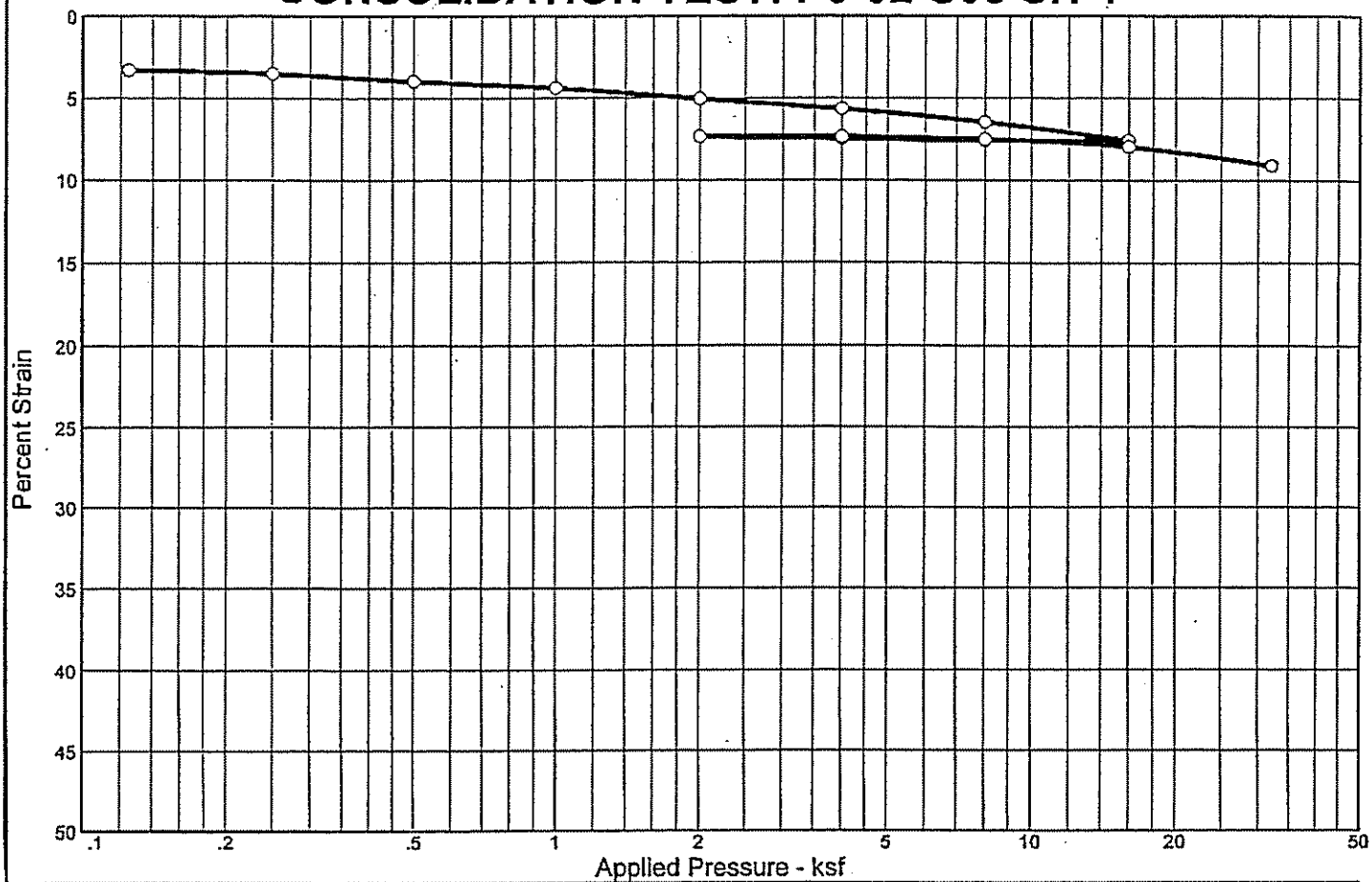
# CONSOLIDATION TEST: P5-02-S05 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 0.25 | 1.78 | 0.000 | | | | | | | | |
| 3 | 0.50 | 2.31 | 0.000 | | | | | | | | |
| 4 | 1.00 | 2.53 | 0.000 | | | | | | | | |
| 5 | 2.00 | 2.67 | 0.000 | | | | | | | | |
| 6 | 4.00 | 0.59 | 0.000 | | | | | | | | |
| 7 | 8.00 | 0.66 | 0.000 | | | | | | | | |
| 8 | 16.00 | 2.56 | 0.000 | | | | | | | | |
| 15 | 32.00 | 1.75 | 0.001 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | 36.2 | 82.5 | | | | 1.20 | 3.3 | 0.05 | 0.004 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT, trace to little fine sand, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P5-02-S05 **Sample No.:** SH-1 **Elev./Depth:** 10.0'-12.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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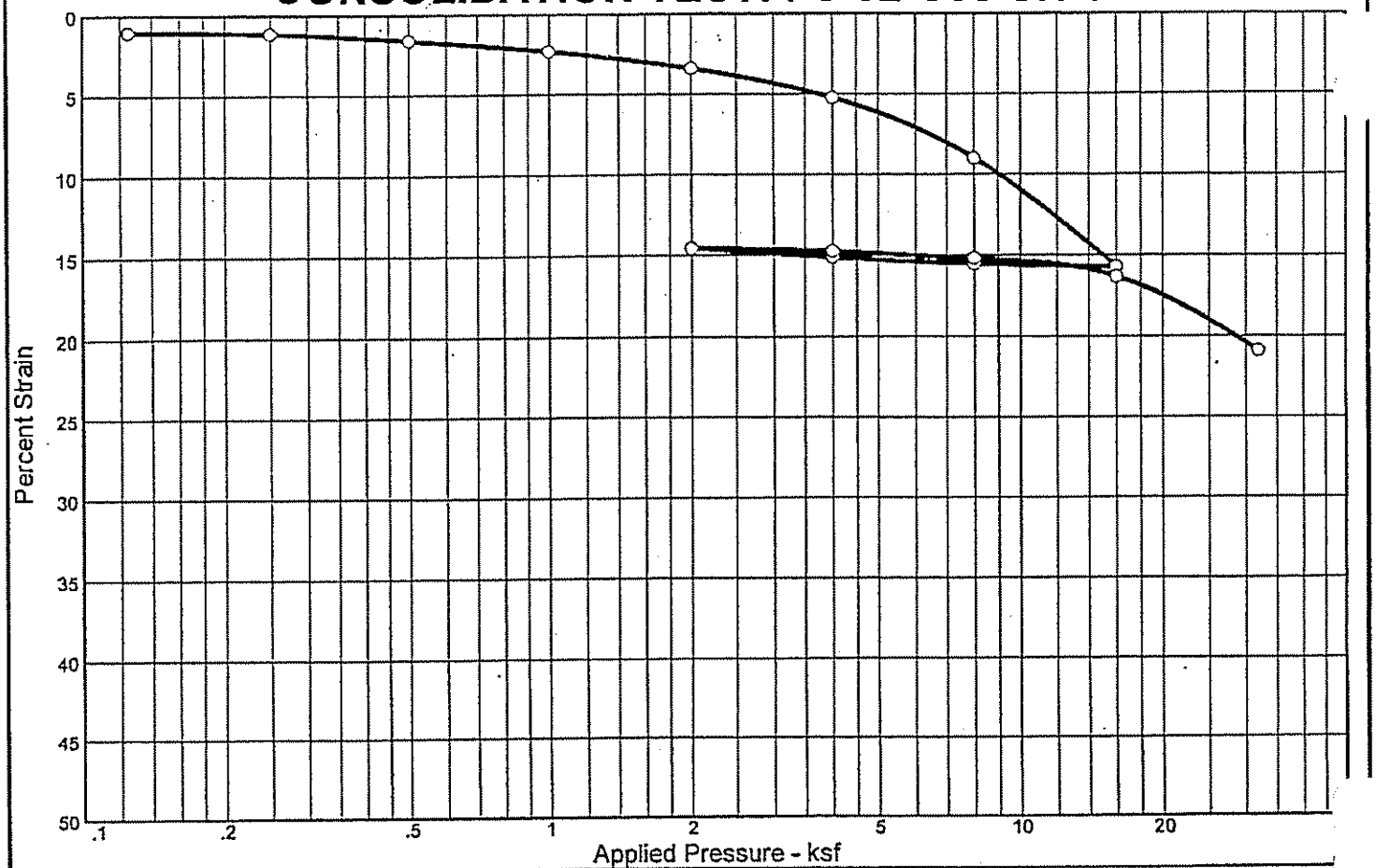
# CONSOLIDATION TEST: P5-02-S05 SH-3




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 3.75 | 0.000 | | | | | | | | |
| 3 | 0.50 | 3.64 | 0.000 | | | | | | | | |
| 7 | 8.00 | 3.19 | 0.007 | | | | | | | | |
| 8 | 16.00 | 1.44 | 0.009 | | | | | | | | |
| 15 | 32.00 | 1.03 | 0.009 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.20 | 5.3 | 0.21 | 0.017 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray/dark gray CLAYEY SILT, trace fine sand - interlayered, trace organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P5-02-S05 **Sample No.:** SH-3 **Elev./Depth:** 55.0'-57.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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# CONSOLIDATION TEST: P5-02-S10 SH-1

Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 2.60 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.33 | 0.000 | | | | | | | | |
| 3 | 0.50 | 3.78 | 0.000 | | | | | | | | |
| 4 | 1.00 | 0.22 | 0.001 | | | | | | | | |
| 5 | 2.00 | 0.17 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.10 | 0.010 | | | | | | | | |
| 7 | 8.00 | 0.07 | 0.022 | | | | | | | | |
| 9 | 32.00 | 0.05 | 0.012 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 1.7 | 6.0 | 0.31 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray CLAYEY SILT, trace to little fine sand. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P5-02-S10 **Sample No.:** SH-1 **Elev./Depth:** 15.0'-17.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec


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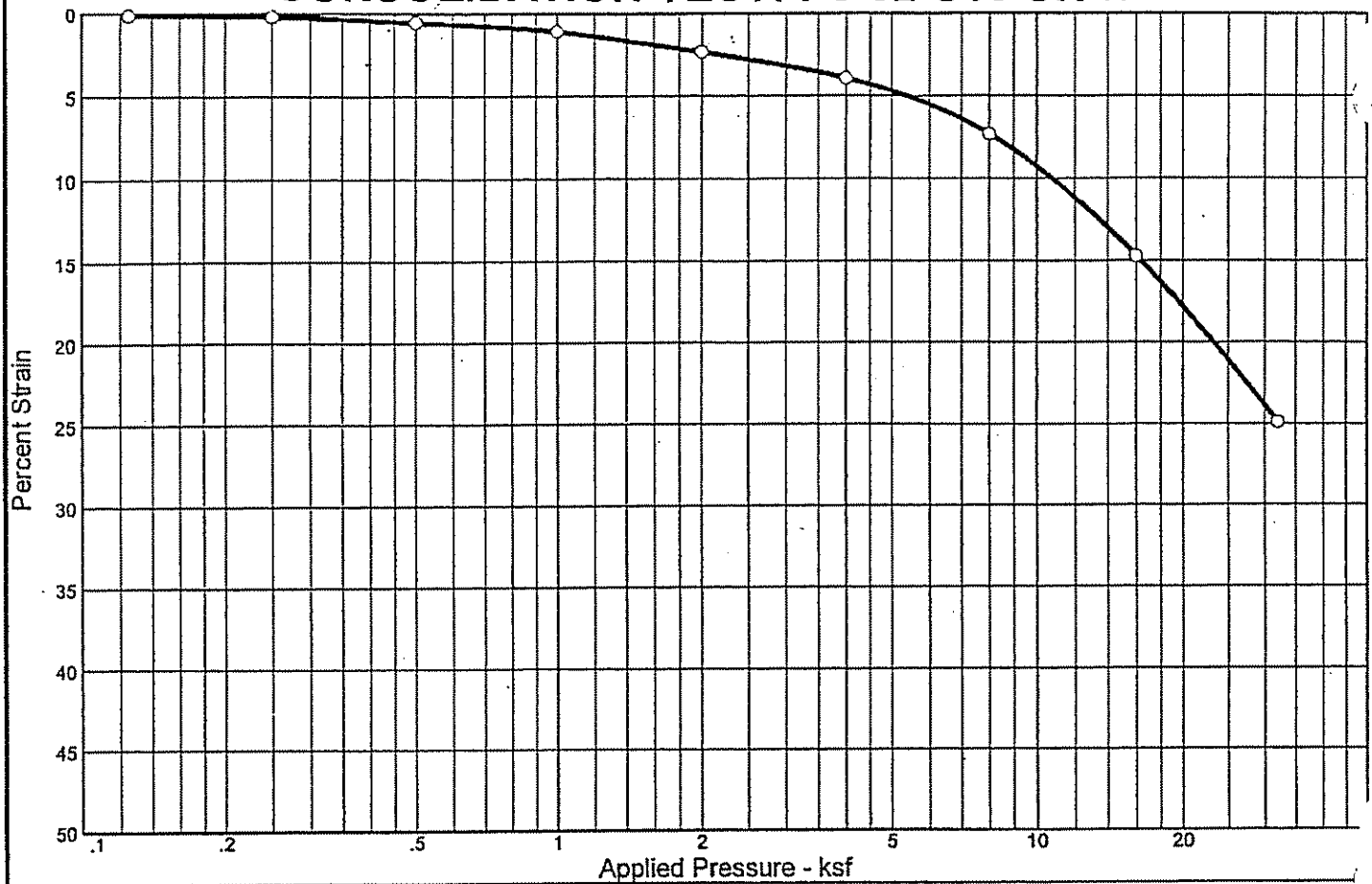
# CONSOLIDATION TEST: P5-02-S10 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.38 | 0.000 | | | | | | | | |
| 2 | 0.25 | 3.85 | 0.000 | | | | | | | | |
| 3 | 0.50 | 2.02 | 0.000 | | | | | | | | |
| 4 | 1.00 | 0.48 | 0.001 | | | | | | | | |
| 5 | 2.00 | 1.12 | 0.002 | | | | | | | | |
| 6 | 4.00 | 0.50 | 0.003 | | | | | | | | |
| 7 | 8.00 | 0.30 | 0.011 | | | | | | | | |
| 8 | 16.00 | 0.10 | 0.033 | | | | | | | | |
| 9 | 32.00 | 0.05 | 0.012 | | | | | | | | |

| Natural Saturation | Natural Moisture | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | 4.3 | 8.9 | 0.33 | | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT, interlayered with fine sand layers (0.01' thick). | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P5-02-S10 **Sample No.:** SH-2 **Elev./Depth:** 40.0'-42.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS

No unload/reload performed as requested by GeoSyntec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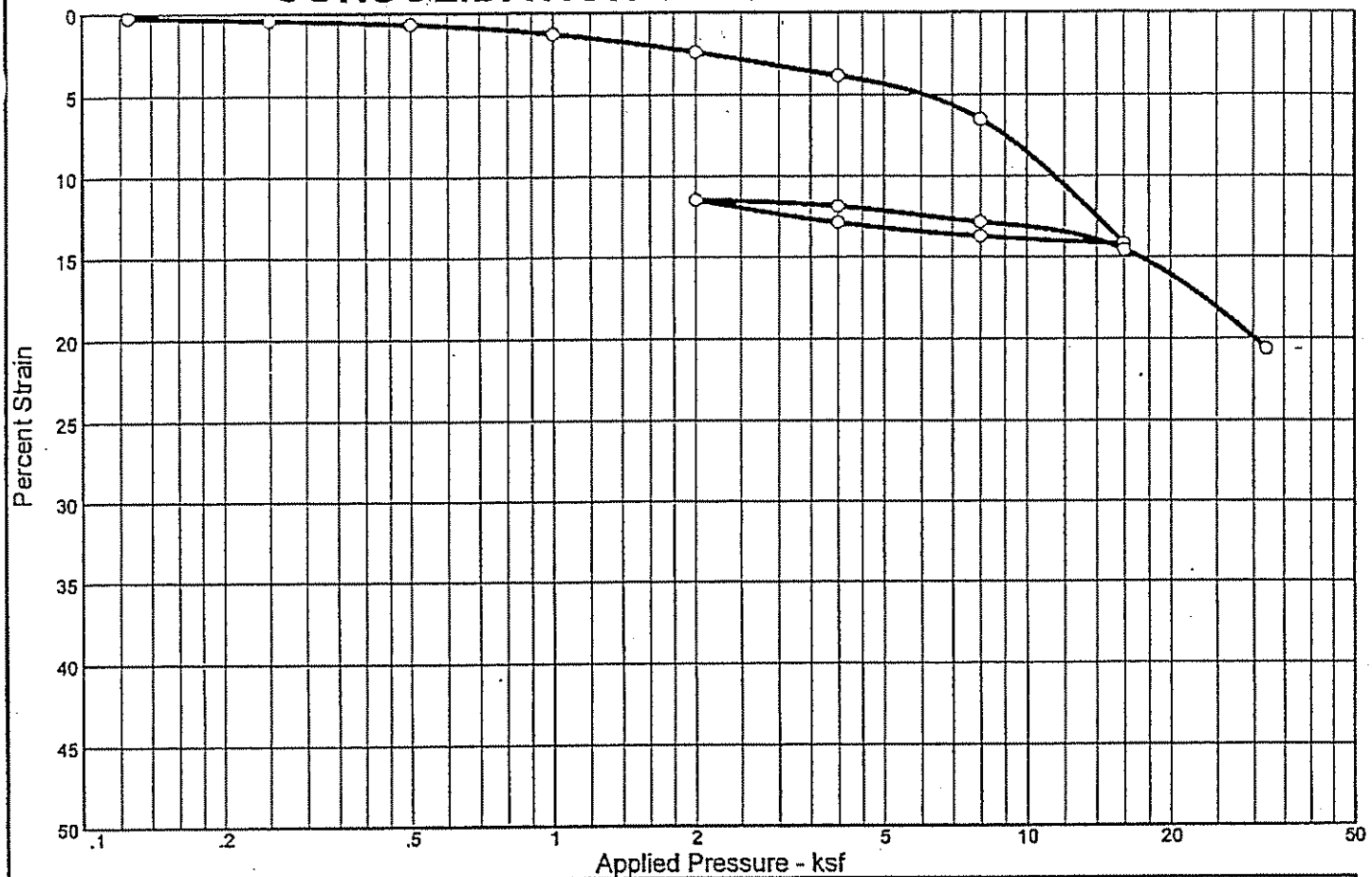
# CONSOLIDATION TEST: P5-02-S10 SH-3




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 2.44 | 0.000 | | | | | | | | |
| 2 | 0.25 | 0.97 | 0.000 | | | | | | | | |
| 3 | 0.50 | 0.33 | 0.000 | | | | | | | | |
| 4 | 1.00 | 1.06 | 0.001 | | | | | | | | |
| 5 | 2.00 | 1.02 | 0.001 | | | | | | | | |
| 6 | 4.00 | 0.94 | 0.002 | | | | | | | | |
| 7 | 8.00 | 0.70 | 0.007 | | | | | | | | |
| 8 | 16.00 | 0.18 | 0.012 | | | | | | | | |
| 15 | 32.00 | 0.15 | 0.012 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| | | | | | | 5.3 | 7.7 | 0.26 | 0.030 | |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Gray CLAYEY SILT, interlayered with trace fine sand layers (0.01' thick), little organics. | MH | |

**Project No.** 4685.GC **Client:** GEOSYNTEC

**Project:** Cherry Island Landfill Expansion

**Source:** P5-02-S10 **Sample No.:** SH-3 **Elev./Depth:** 60.0'-62.0'

**Remarks:**

Date/Chk'd by: April 2002/DSS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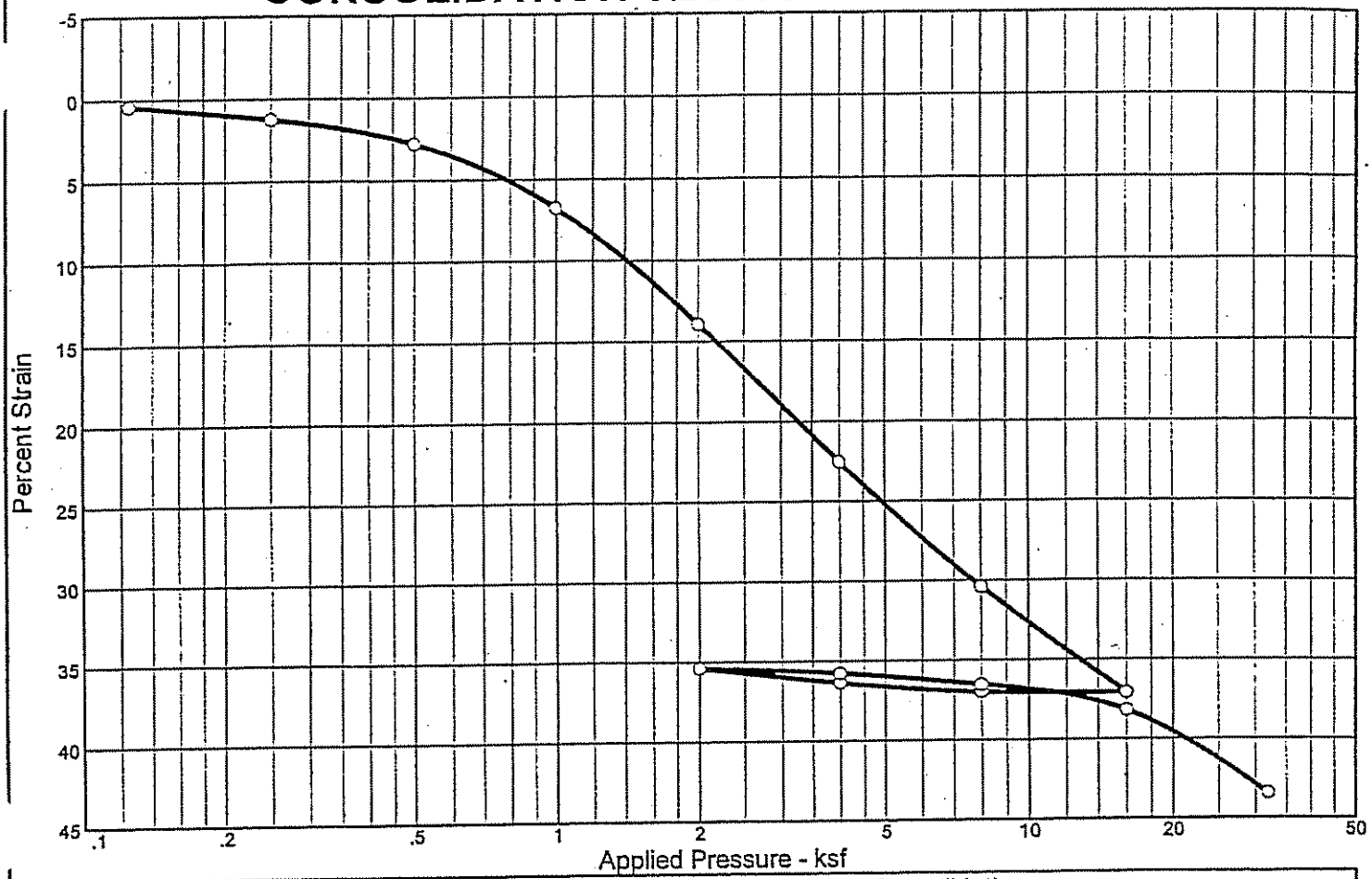
# CONSOLIDATION TEST: P4-02-S014 SH-1




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.46 | 0.001 | | | | | | | | |
| 2 | 0.25 | 0.11 | 0.001 | | | | | | | | |
| 3 | 0.50 | 0.09 | 0.003 | | | | | | | | |
| 4 | 1.00 | 0.01 | 0.014 | | | | | | | | |
| 5 | 2.00 | 0.02 | 0.023 | | | | | | | | |
| 6 | 4.00 | 0.02 | 0.022 | | | | | | | | |
| 7 | 8.00 | 0.02 | 0.019 | | | | | | | | |
| 8 | 16.00 | 0.03 | 0.021 | | | | | | | | |
| 15 | 32.00 | 0.03 | 0.016 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| --- | 83.9 | 50.4 | 99 | 53 | --- | 3.00 | 0.85 | 0.24 | 0.021 | --- |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray/black CLAYEY SILT, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC.19 **Client:** GEOSYNTEC CONSULTANTS

**Project:** CIL Phase II Site Exploration

**Source:** P4-02-S014 **Sample No.:** SH-1 **Elev./Depth:** 39.0'-41.0'

**Remarks:**

Date/Chk'd by: July 2002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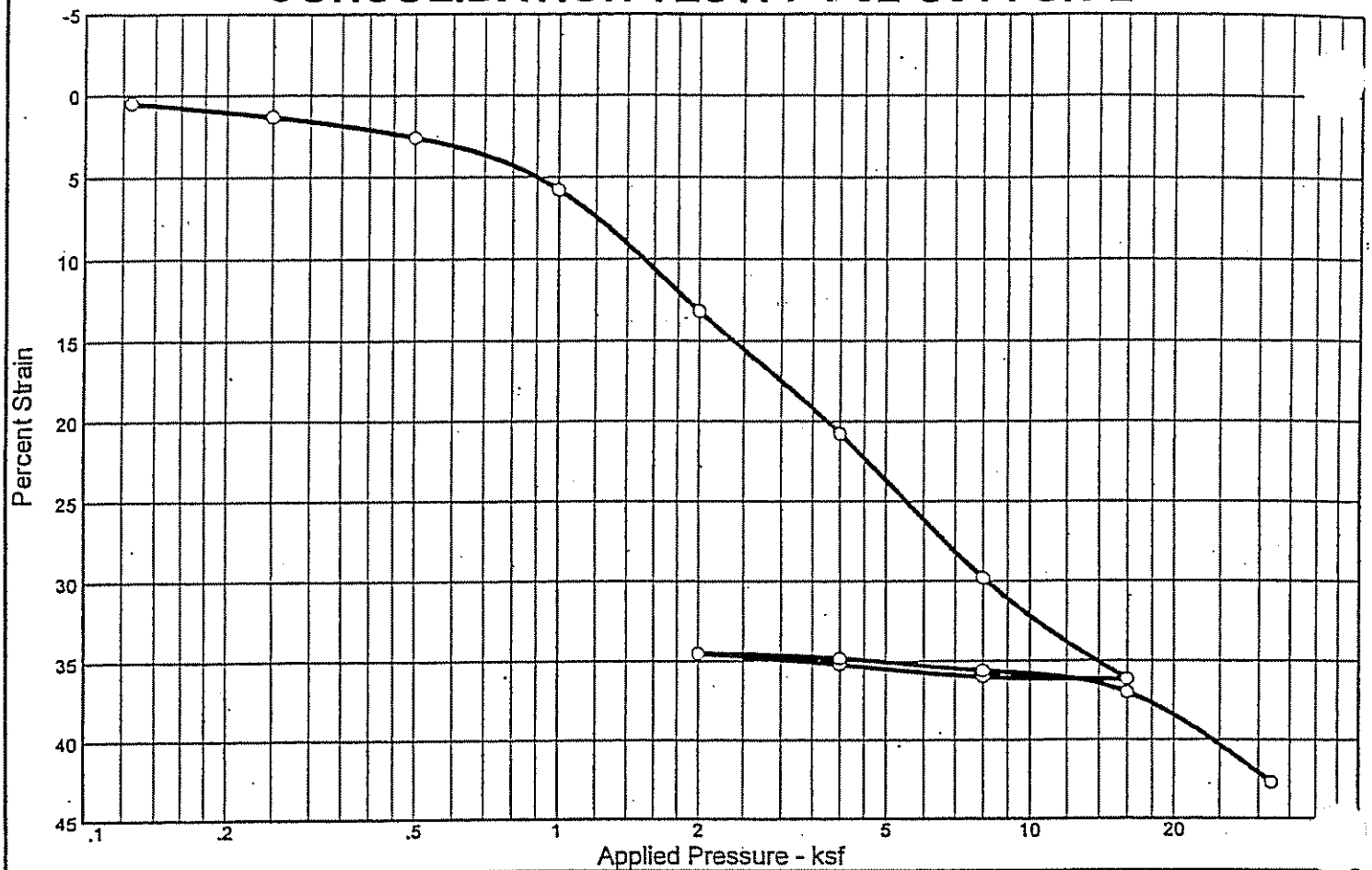
# CONSOLIDATION TEST: P4-02-S014 SH-2




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.$^2$/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 0.26 | 0.002 | | | | | | | | |
| 2 | 0.25 | 0.26 | 0.001 | | | | | | | | |
| 3 | 0.50 | 0.21 | 0.003 | | | | | | | | |
| 4 | 1.00 | 0.04 | 0.008 | | | | | | | | |
| 5 | 2.00 | 0.02 | 0.019 | | | | | | | | |
| 6 | 4.00 | 0.03 | 0.028 | | | | | | | | |
| 7 | 8.00 | 0.02 | 0.016 | | | | | | | | |
| 8 | 16.00 | 0.03 | 0.022 | | | | | | | | |
| 15 | 32.00 | 0.02 | 0.016 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| — | 90.8 | 45.8 | — | — | — | 3.50 | 0.90 | 0.24 | 0.021 | — |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray/black CLAYEY SILT, trace fine sand, trace organics. | MH | |

**Project No.** 4685.GC.19 **Client:** GEOSYNTEC CONSULTANTS

**Project:** CIL Phase II Site Exploration

**Source:** P4-02-S014 **Sample No.:** SH-2 **Elev./Depth:** 44.0'-46.0'

**Remarks:**

Date/Chk'd by: July 2002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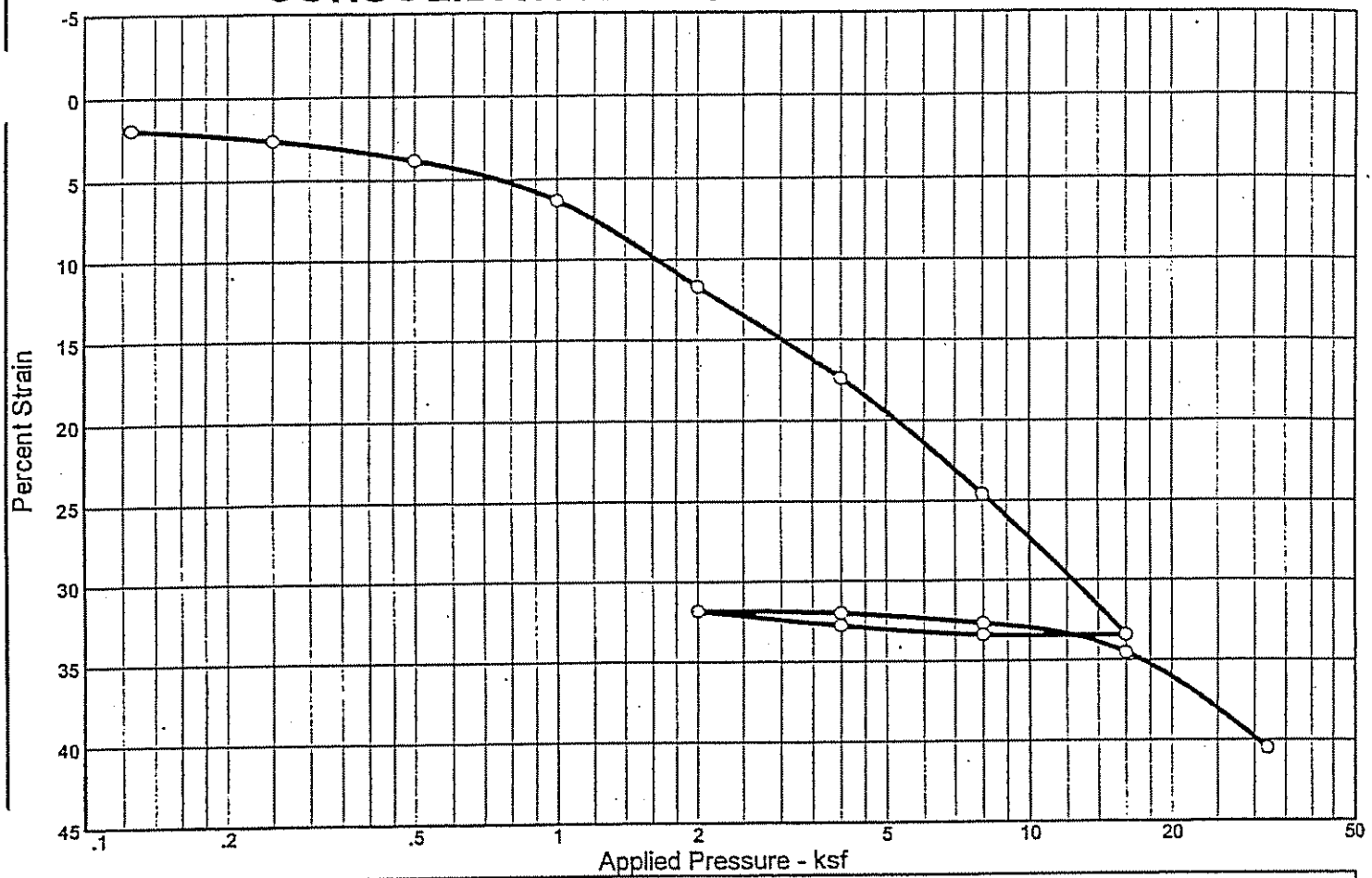
# CONSOLIDATION TEST: P4-02-S014 SH-4




Coefficients of Consolidation and Secondary Consolidation

| No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ | No. | Load (ksf) | $C_v$ (ft.2/day) | $C_\alpha$ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.13 | 1.57 | 0.001 | | | | | | | | |
| 2 | 0.25 | 0.42 | 0.001 | | | | | | | | |
| 3 | 0.50 | 1.65 | 0.003 | | | | | | | | |
| 4 | 1.00 | 0.47 | 0.005 | | | | | | | | |
| 5 | 2.00 | 0.24 | 0.010 | | | | | | | | |
| 6 | 4.00 | 0.12 | 0.016 | | | | | | | | |
| 7 | 8.00 | 0.12 | 0.020 | | | | | | | | |
| 8 | 16.00 | 0.08 | 0.015 | | | | | | | | |
| 15 | 32.00 | 0.04 | 0.014 | | | | | | | | |

| Natural | | Dry Dens. (pcf) | LL | PI | Sp. Gr. | Overburden (ksf) | $P_c'$ (ksf) | $C_c'$ | $C_r'$ | Initial Void Ratio |
|---|---|---|---|---|---|---|---|---|---|---|
| Saturation | Moisture | | | | | | | | | |
| --- | 92.8 | 45.3 | 87 | 47 | --- | 4.70 | 1.70 | 0.26 | 0.020 | --- |

| MATERIAL DESCRIPTION | USCS | AASHTO |
|---|---|---|
| Dark gray/black CLAYEY SILT, trace fine sand. | MH | |

**Project No.** 4685.GC.19 **Client:** GEOSYNTEC CONSULTANTS

**Project:** CIL Phase II Site Exploration

**Source:** P4-02-S014 **Sample No.:** SH-4 **Elev./Depth:** 54.0'-56.0'

**Remarks:**

Date/Chk'd by: July 2002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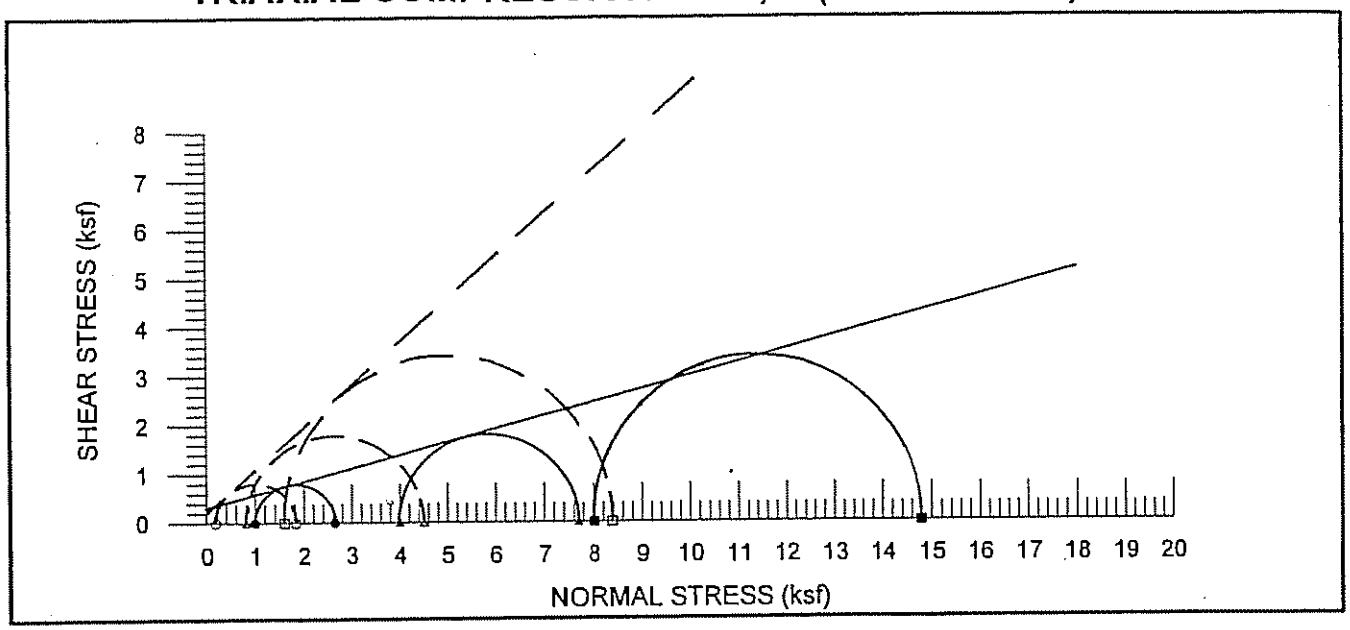
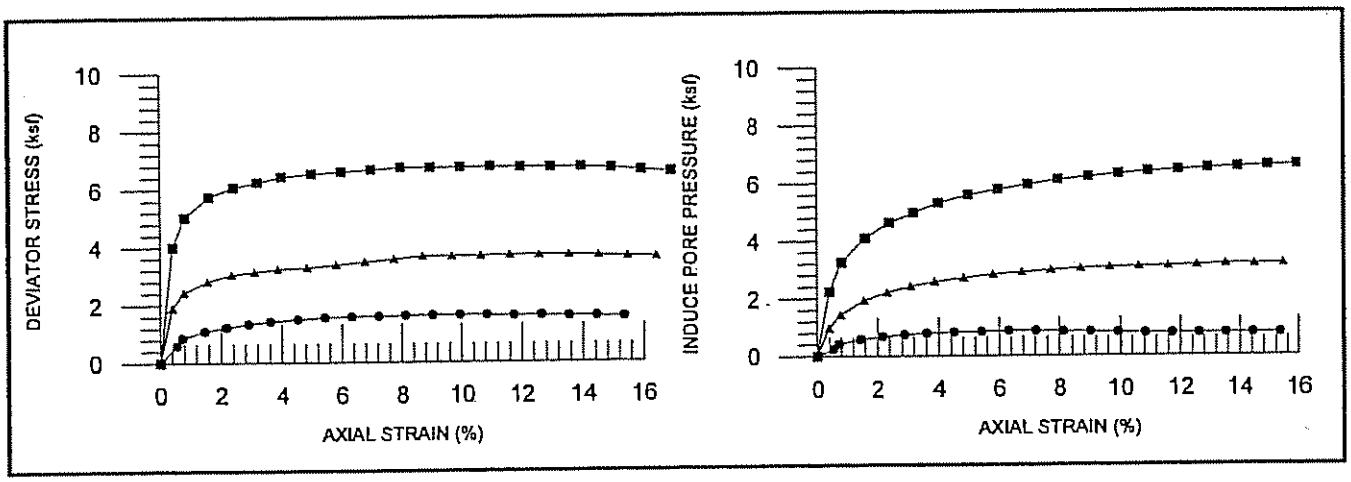
# TRIAXIAL TESTS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.350 (ksf) c' = 0.200 (ksf)

$\phi = 14.8^\circ$ $\phi' = 41.1^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 1.64 | 3.69 | 6.79 |

| | | | |
|---|---|---|---|
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 97.0% | 96.0% | 96.0% |

Failure Sketch: 1 2 3

No distinct failure plane, all samples

Sample Identification: P1-02-S06: SH-1 (15.0'-17.0')
Sample Description: Gray, black CLAYEY SILT, trace organics (roots,grass), trace fine sand.

Initial Moisture Content (%): 93.2
Dry Unit Weight (PCF): 45.2 (test 1), 48.0 (test 2), 49.3 (test 3)

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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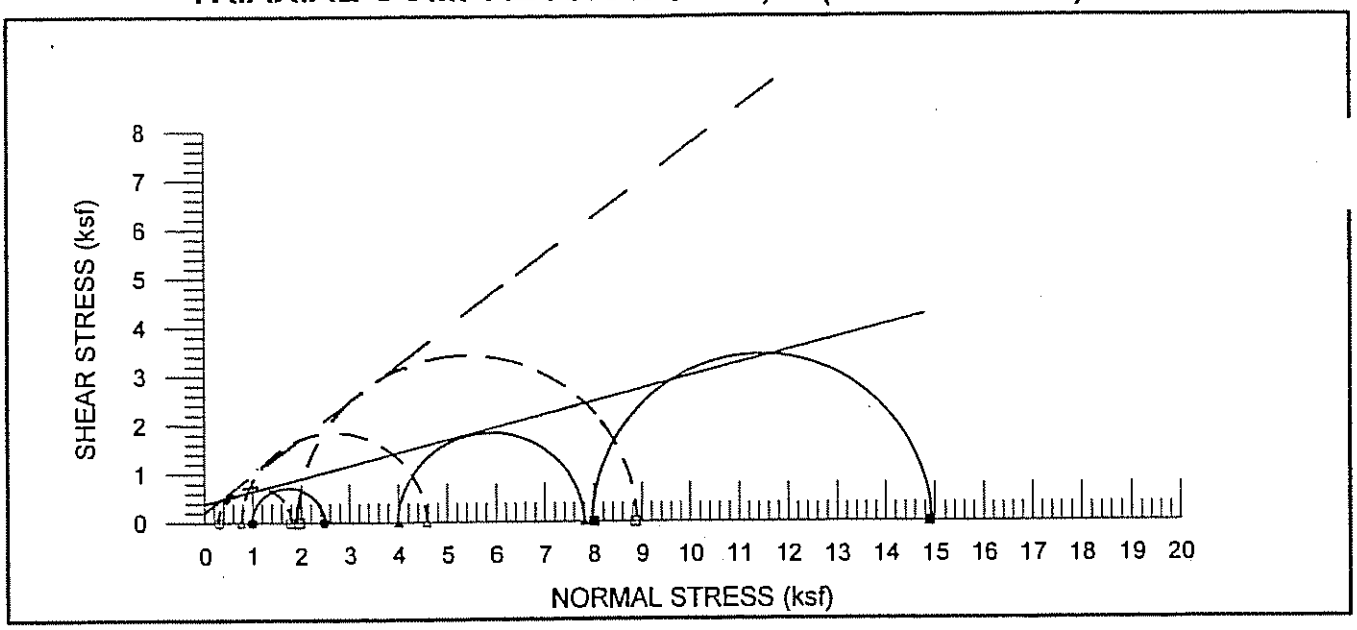
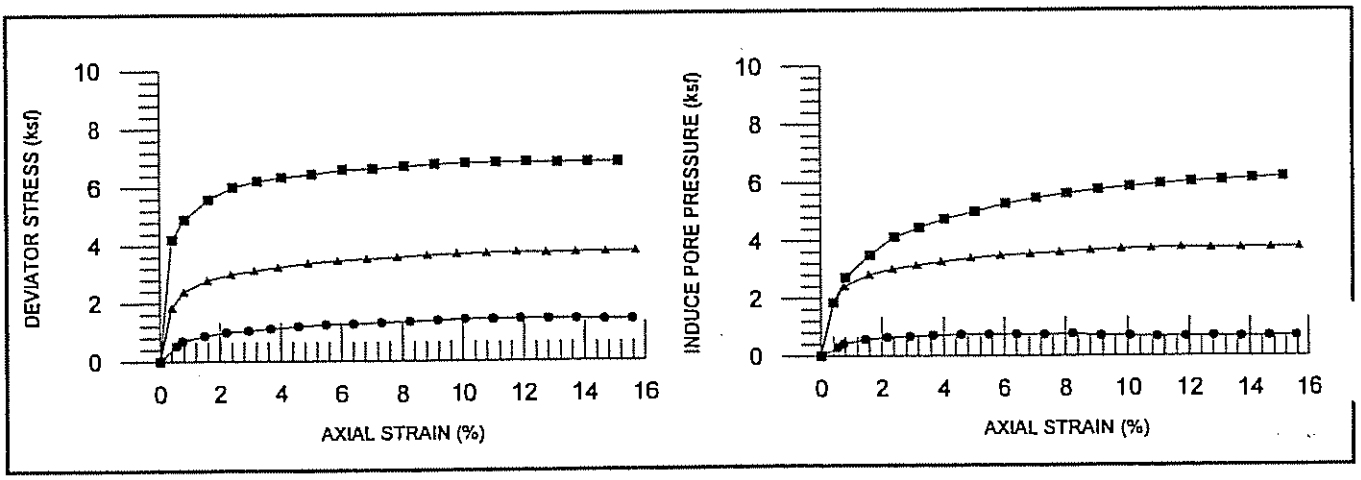
Client: GeoSyntec Consultants

Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.400 (ksf) c' = 0.200 (ksf)

$\phi = 14.9^\circ$ $\phi' = 37.2^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 1.48 | 3.81 | 6.89 |

| | | | |
|---|---|---|---|
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 99.0% | 98.0% | 96.0% |

Failure Sketch:

No distinct failure plane, all samples

1 2 3

Sample Identification: P1-02-S07: SH-1 (10.0'-12.0')
Sample Description: Dark gray CLAYEY SILT, trace fine sand, little organics.

Initial Moisture Content (%): 90.2
Dry Unit Weight (PCF): 47.7 (test 1), 47.4 (test 2), 48.3 (test 3)

Legend

- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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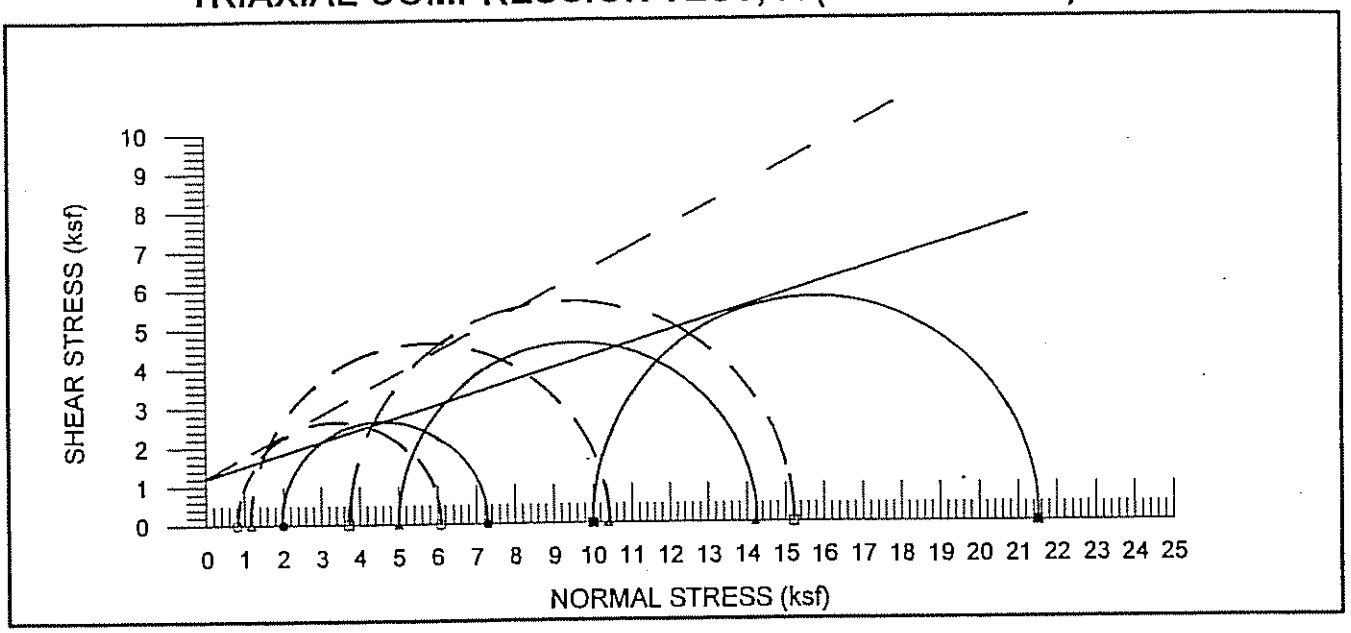
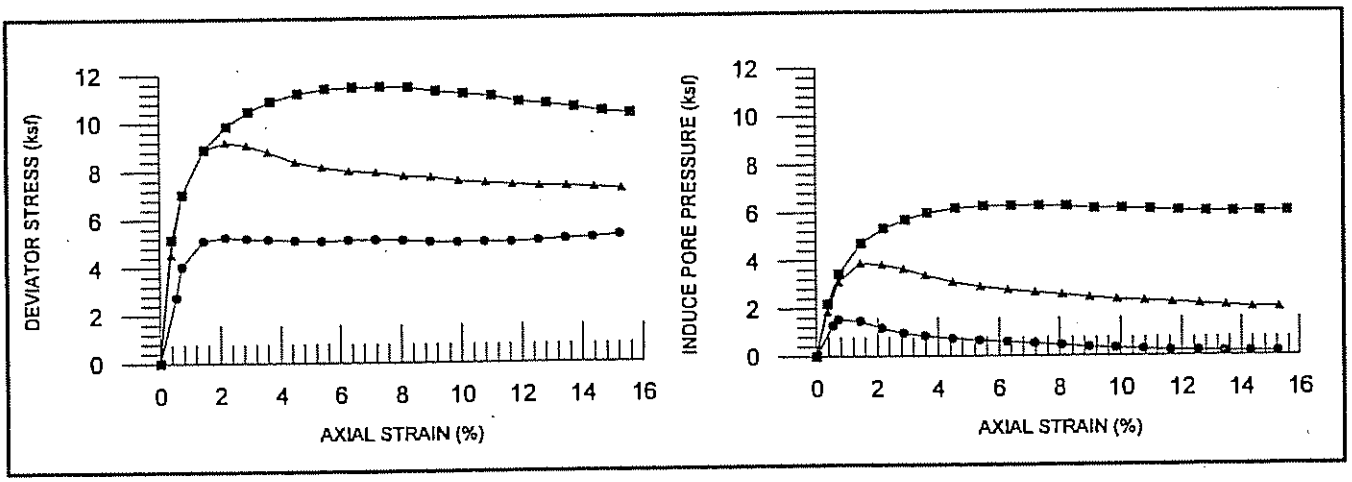
Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)



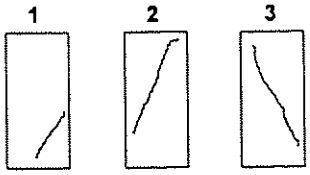

c = 1.200 (ksf) c' = 1.200 (ksf)

$\phi = 18.8^{\circ}$ $\phi' = 27.5^{\circ}$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 2.00 | 5.00 | 10.00 |
| Max. Deviator Stress (ksf): | 5.28 | 9.21 | 11.50 |

| | | | |
|---|---|---|---|
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 95.0% | 96.0% | 95.0% |

Failure Sketch:




Sample Identification: P1-02-S08: SH-2 (73.0'-75.0')
Sample Description: Light gray SILTY CLAY, trace fine sand, trace organics (fibers).

Initial Moisture Content (%): 41.6
Dry Unit Weight (PCF): 77.7 (test 1), 79.1 (test 2), 79.2 (test 3)

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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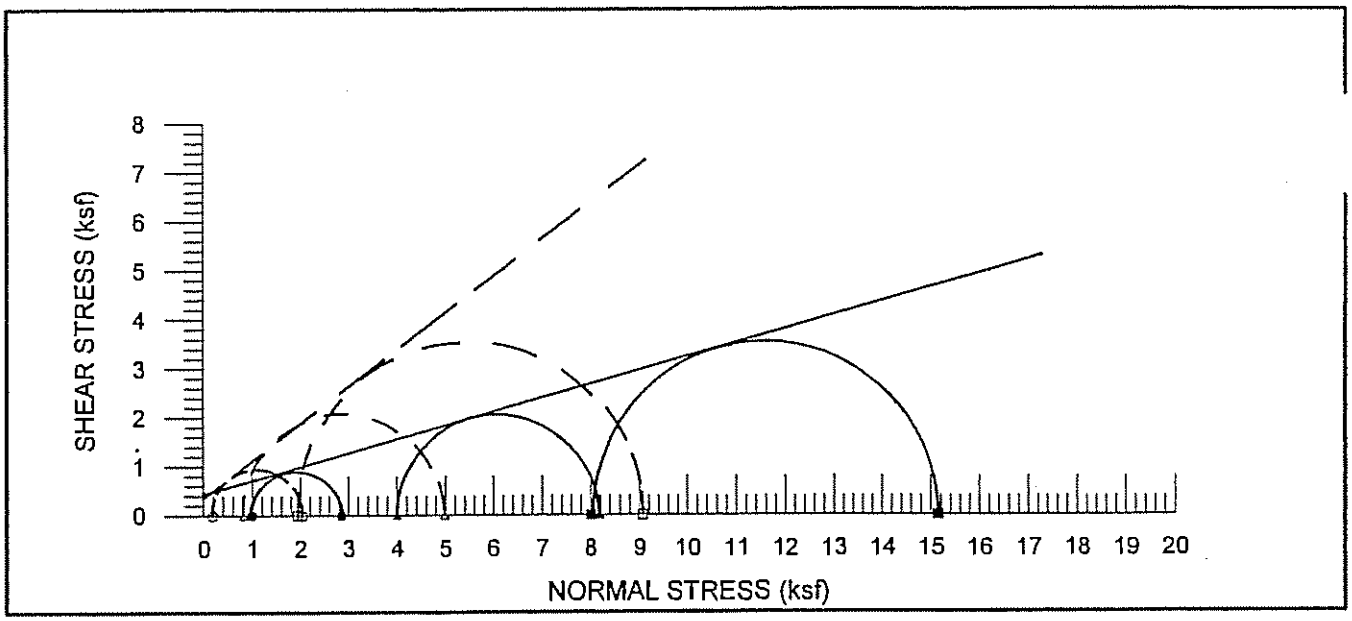
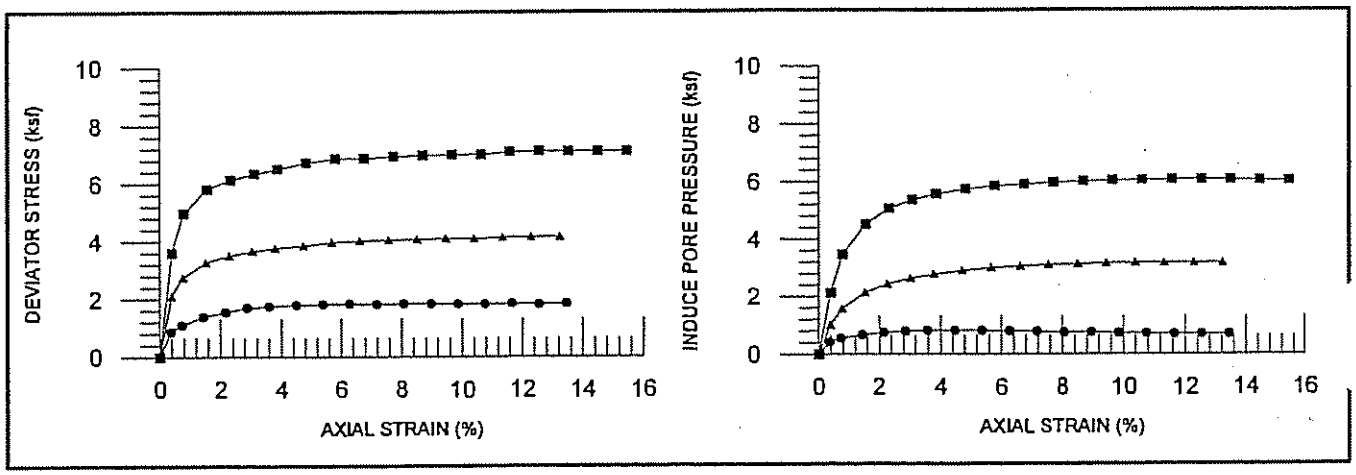
Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)



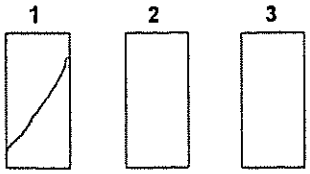

c = 0.450 (ksf) c' = 0.375 (ksf)

$\phi = 15.5^{\circ}$ $\phi' = 36.9^{\circ}$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 1.85 | 4.16 | 7.14 |
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 99.0% | 100.0% | 100.0% |

Failure Sketch:

No distinct failure plane, samples 2 & 3




Sample Identification: P3-02-S01: SH-1 (10.0'-12.0')
Sample Description: Dark gray CLAYEY SILT, trace to little micaceous fine to medium sand, little organics.

Initial Moisture Content (%): 66.9
Dry Unit Weight (PCF): 51.0 (test 1), 58.8 (test 2), 66.2 (test 3)
Liquid Limit: 78
Plastic Limit: 36
Plastic Index: 42
USCS Class: MH

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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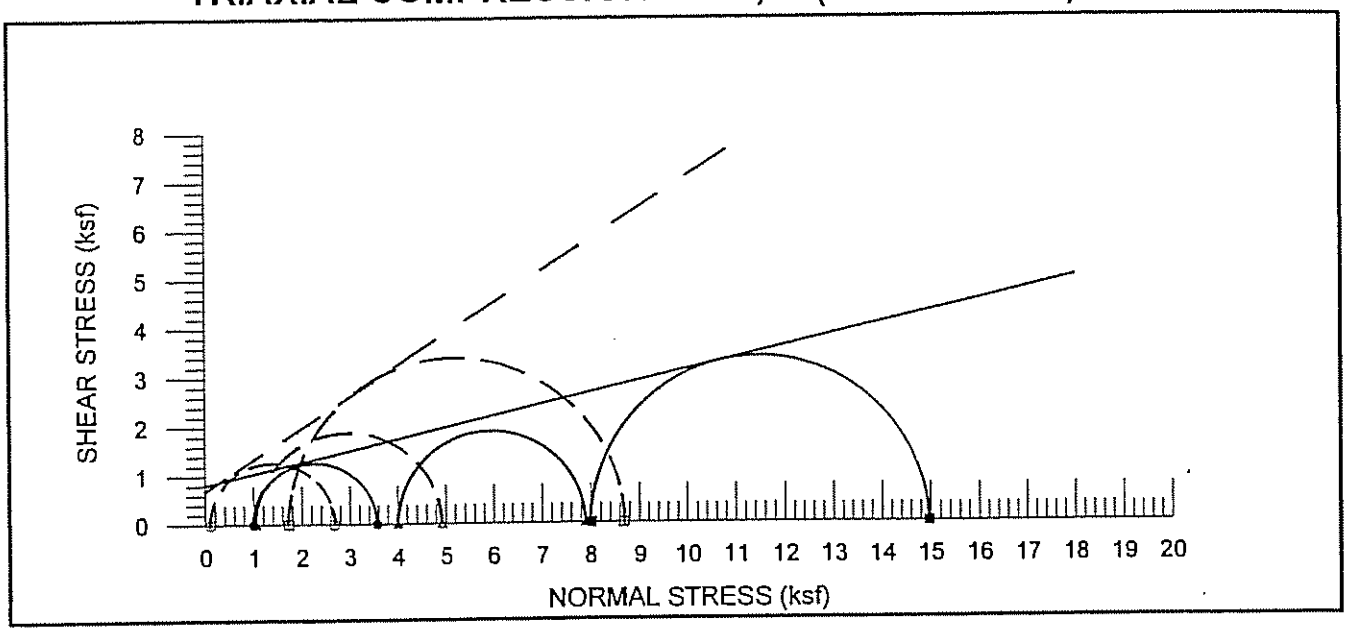
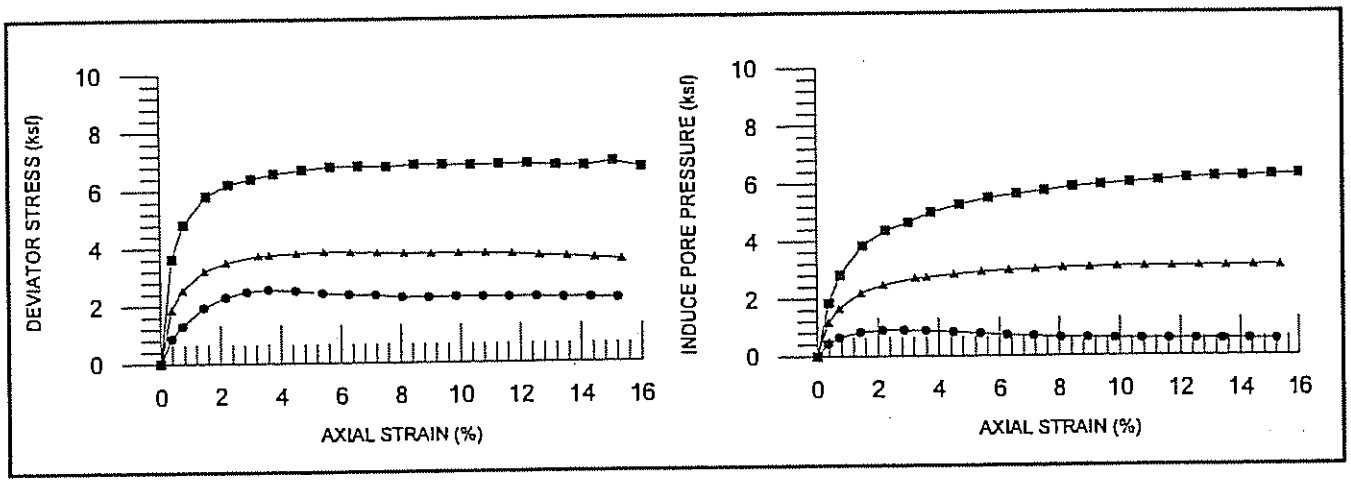
Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.825 (ksf) c' = 0.700 (ksf)

$\phi = 12.2^{\circ}$ $\phi' = 31.8^{\circ}$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 2.57 | 3.87 | 6.95 |

| | | | |
|---|---|---|---|
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 99.0% | 96.0% | 95.0% |

Failure Sketch:

No distinct failure plane, all samples

1 2 3

Sample Identification: P3-02-S01: SH-3 (40.0'-42.0')
Sample Description: Dark gray CLAYEY SILT, trace fine sand.

Initial Moisture Content (%): 70.2
Dry Unit Weight (PCF): 50.7 (test 1), 52.5 (test 2), 53.6 (test 3)

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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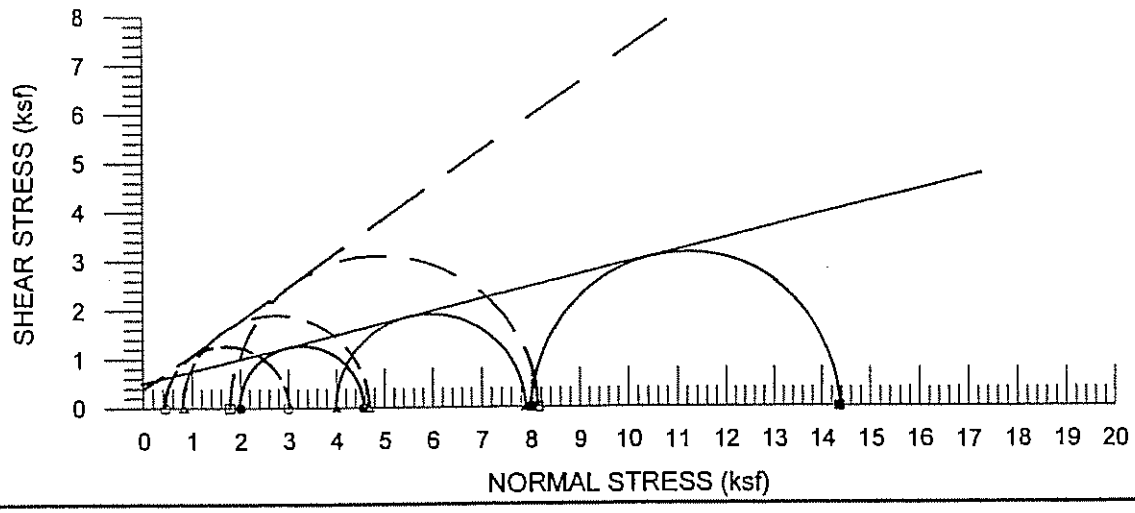
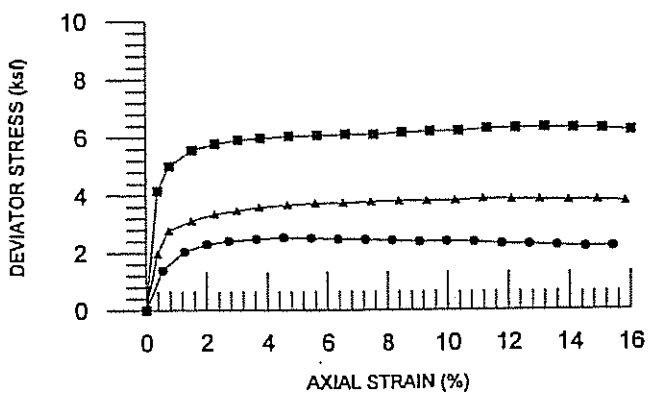
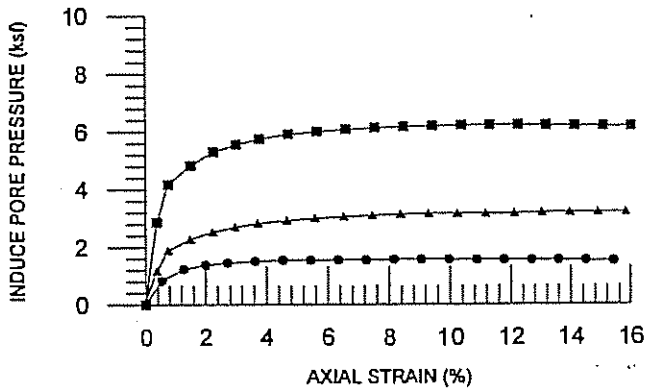
Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: April 2002

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.500 (ksf) c' = 0.400 (ksf)

$\phi = 14.0^{\circ}$ $\phi' = 34.6^{\circ}$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 2.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 2.55 | 3.87 | 6.34 |
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 99.0% | 100.0% | 98.0% |

Failure Sketch:

No distinct failure plane, all samples

1 2 3

Sample Identification: P3-02-S02: SH-1 (20.0'-22.0')
Sample Description: Dark gray CLAYEY SILT, trace fine sand, trace organics

Initial Moisture Content (%): 60.3
Dry Unit Weight (PCF): 57.9 (test 1), 58.6 (test 2), 73.4 (test 3)

Liquid Limit: 72
Plastic Limit: 33
Plasticity Index: 39
USCS Class: MH

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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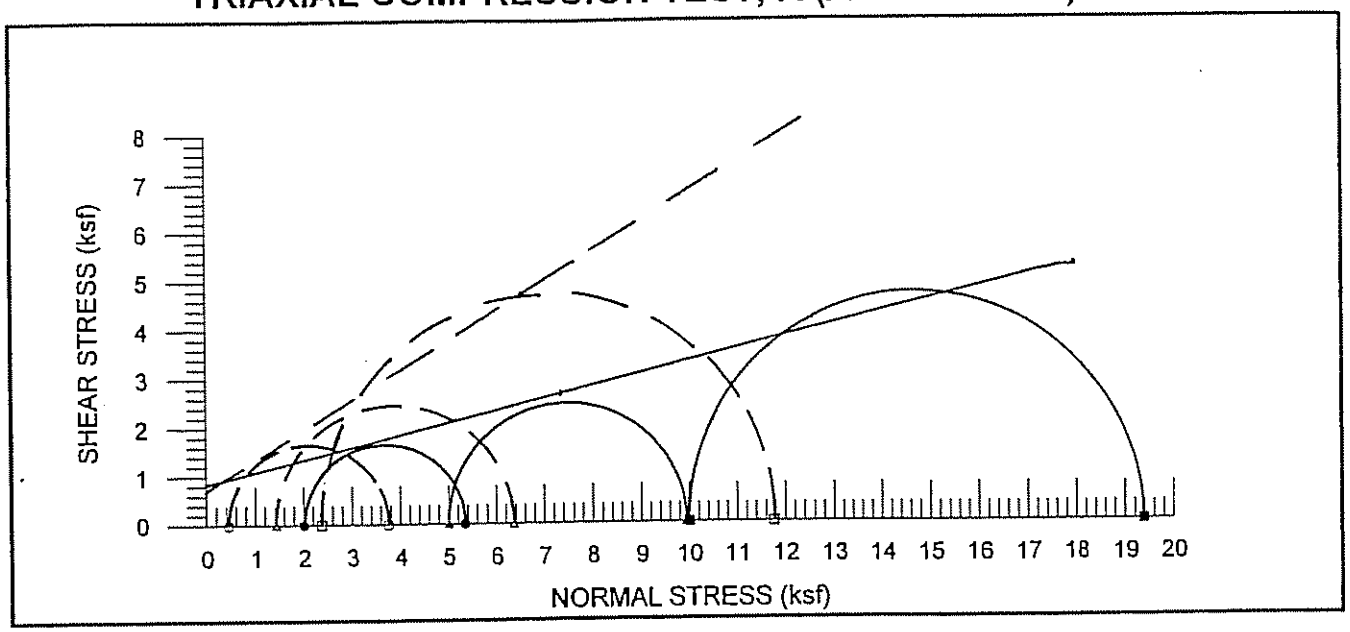
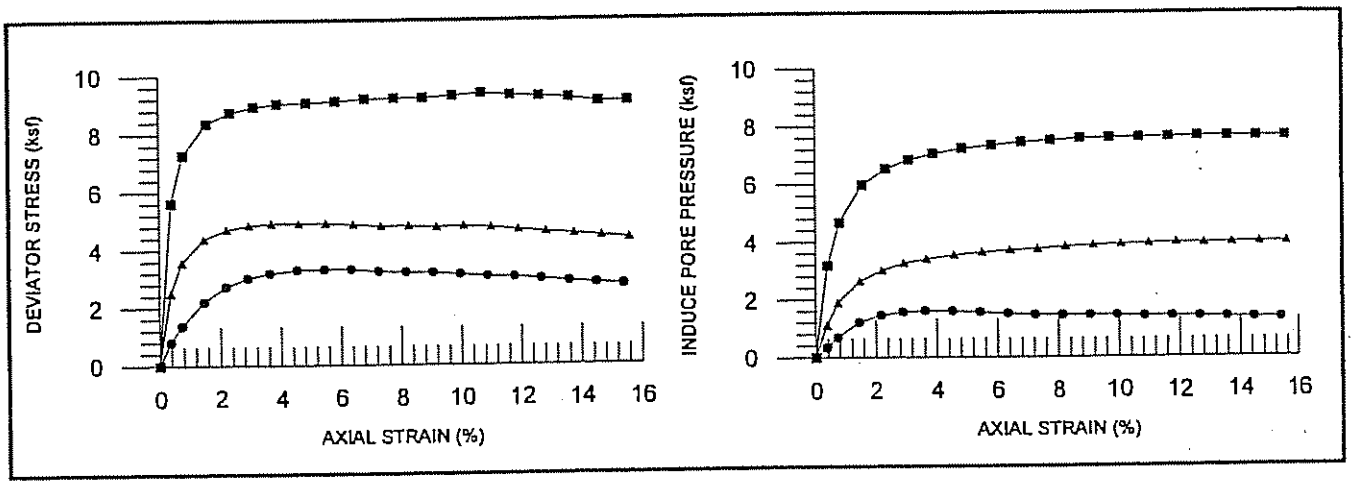
Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.850 (ksf) c' = 0.700 (ksf)

$\phi = 13.5^\circ$ $\phi' = 31.0^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 2.00 | 5.00 | 10.00 |
| Max. Deviator Stress (ksf): | 3.33 | 4.93 | 9.39 |
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 99.0% | 98.0% | 99.0% |

Failure Sketch:

No distinct failure plane, all samples

1 2 3

Sample Identification: P3-02-S02: SH-2 (50.0'-52.0')
Sample Description: Dark gray SILTY CLAY, trace fine sand, trace organics.

Initial Moisture Content (%): 56.0
Dry Unit Weight (PCF): 65.1 (test 1), 61.7 (test 2), 62.7 (test 3)

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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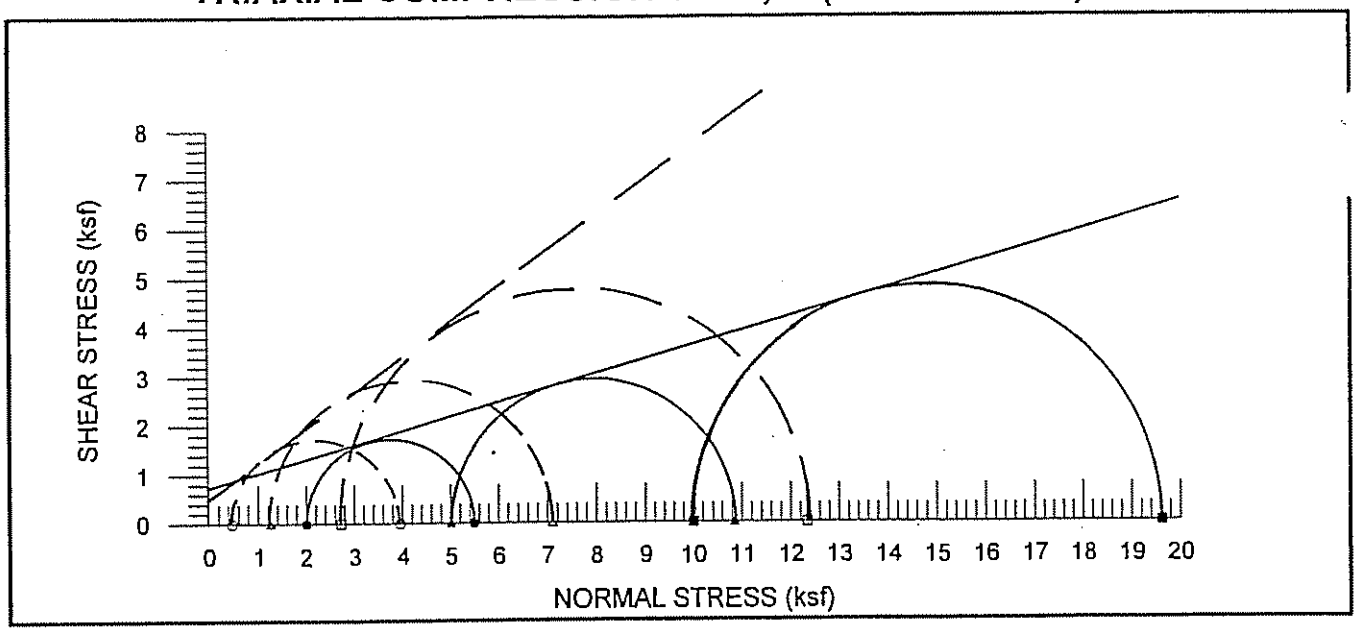
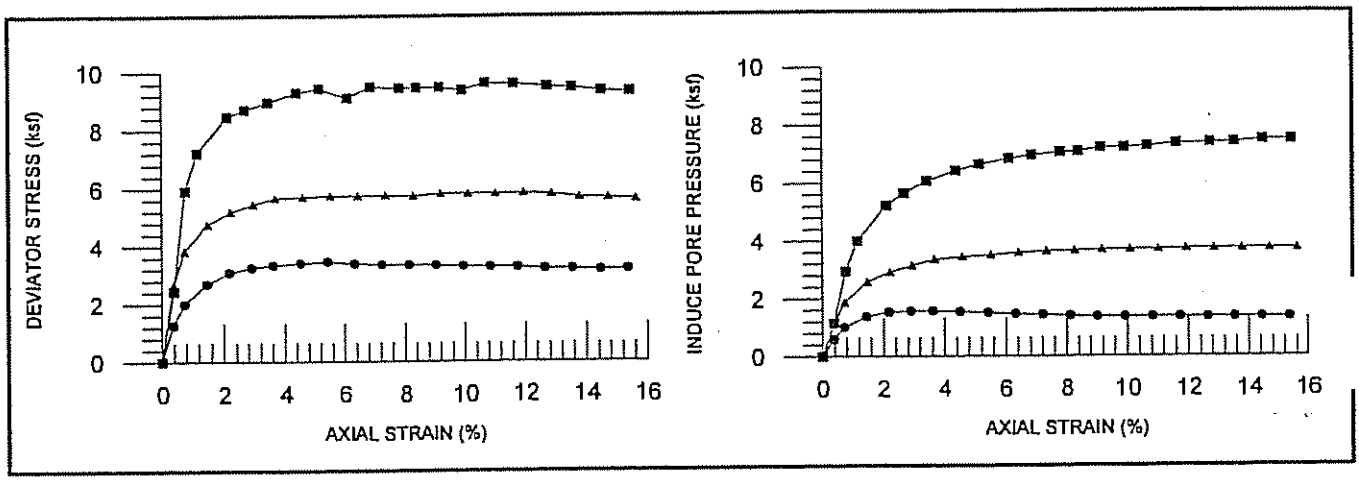
Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.750 (ksf) c' = 0.500 (ksf)

$\phi = 16.1^\circ$ $\phi' = 36.0^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 2.00 | 5.00 | 10.00 |
| Max. Deviator Stress (ksf): | 3.48 | 5.85 | 9.62 |

| | | | |
|---|---|---|---|
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 99.0% | 96.0% | 98.0% |

Failure Sketch:

No distinct failure plane, all samples

1 2 3

Sample Identification: P4-02-S03: SH-2 (40.0'-42.0')
Sample Description: Gray, dark gray CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 64.7
Dry Unit Weight (PCF): 57.1 (test 1), 59.8 (test 2), 59.2 (test 3)

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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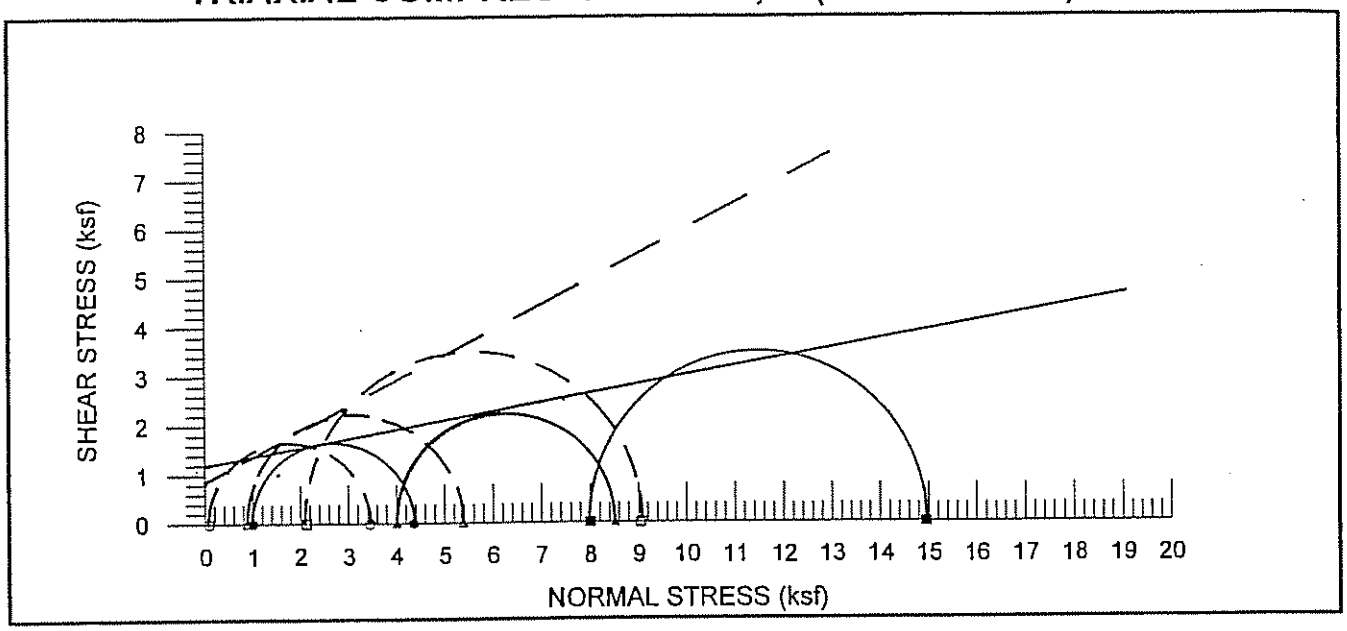
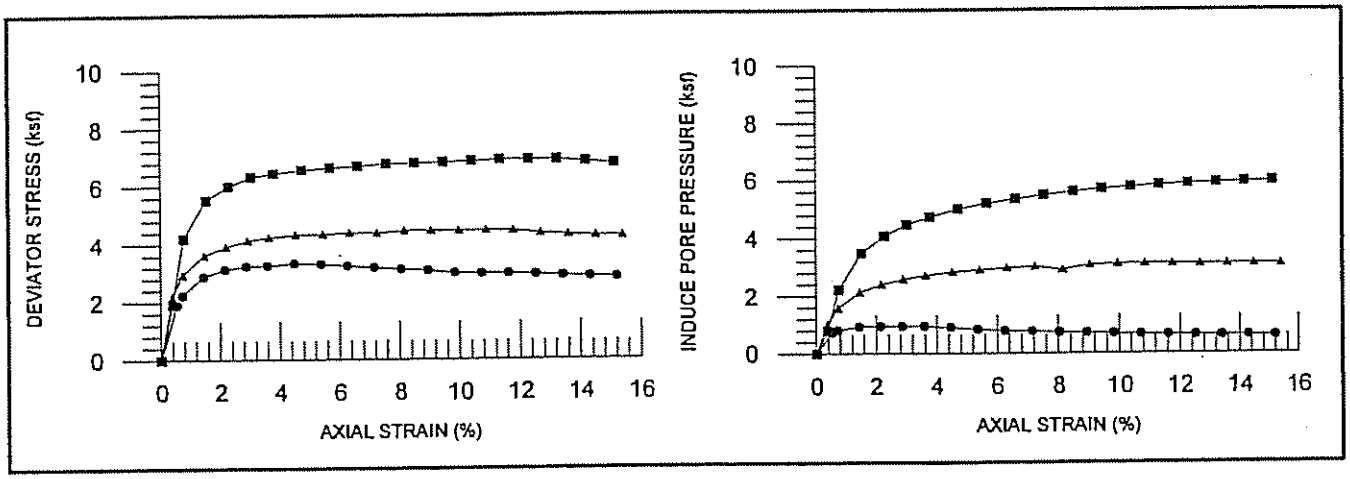
Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 1.200 (ksf) c' = 0.850 (ksf)

$\phi = 10.7^\circ$ $\phi' = 27.5^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 3.36 | 4.51 | 6.93 |

| | | | |
|---|---|---|---|
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 98.0% | 97.0% | 95.0% |

Failure Sketch:

No distinct failure plane, all samples

1 2 3

Sample Identification: P5-02-S05: SH-2 (30.0'-32.0')
Sample Description: Gray, black CLAYEY SILT, trace organics (roots,grass).

Initial Moisture Content (%): 66.6
Dry Unit Weight (PCF): 57.8 (test 1), 61.5 (test 2), 59.1 (test 3)

Legend
- ● sample 1
- ▲ sample 2
- ■ sample 3

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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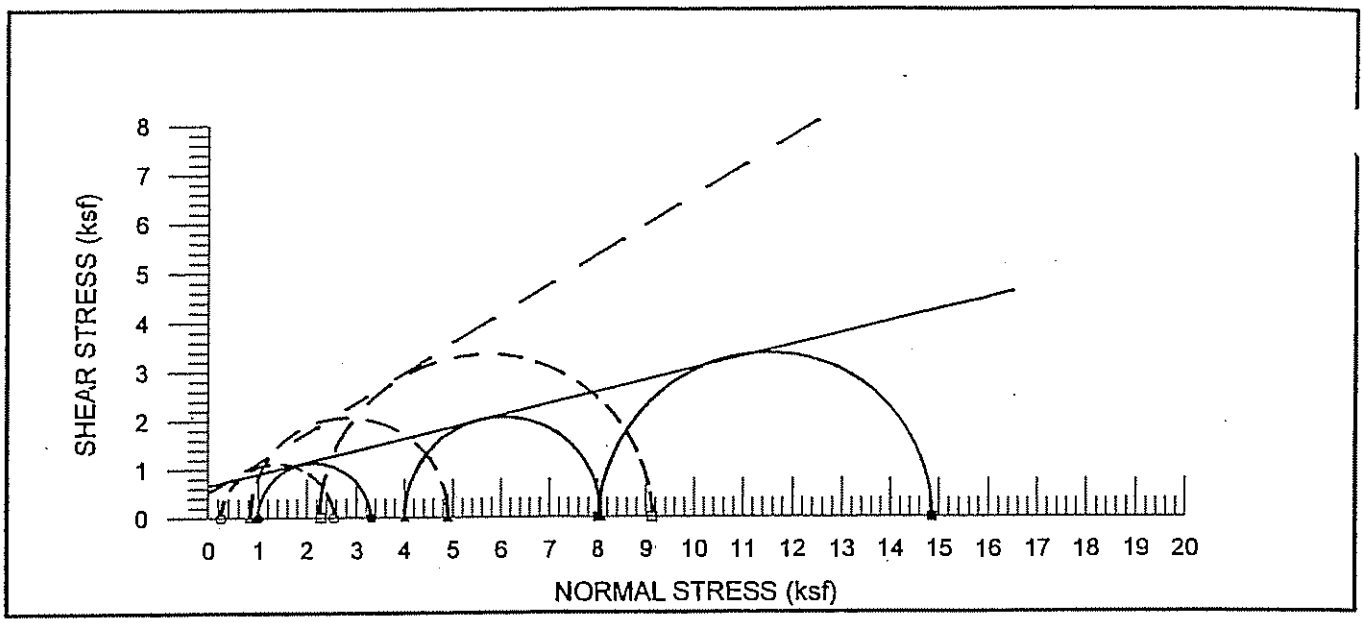
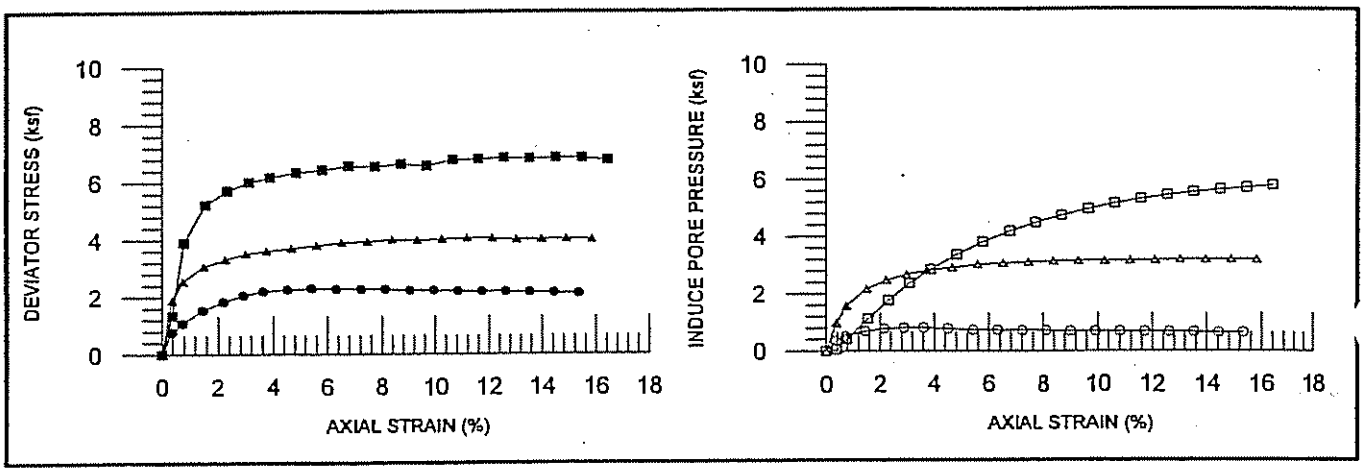
Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: April 2002/DSS

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.675 (ksf) c' = 0.575 (ksf)

$\phi = 13.8^\circ$ $\phi' = 31.2^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 2.31 | 4.07 | 6.84 |
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 96.0% | 96.0% | 97.0% |

Failure Sketch:

No distinct failure plane, All samples

1 2 3

Sample Identification: P2-02-S017: SH-3 (77.5'-79.5')
Sample Description: Dark gray CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 73.9
% Passing No. 200 Sieve: N/A
Dry Unit Weight (PCF): N/A
Liquid Limit: N/A
Plastic Limit: N/A
Plasticity Index: N/A
USCS Classification: MH

Legend
● 1 ksf
▲ 4 ksf
■ 8 ksf

Remarks: Saturation based on B - Parameter.

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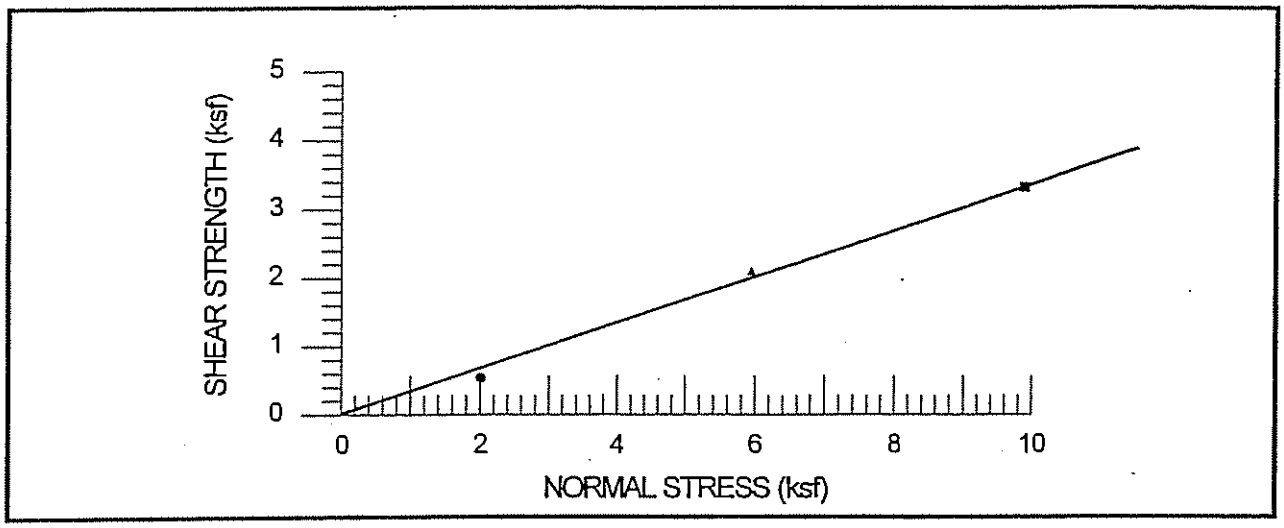
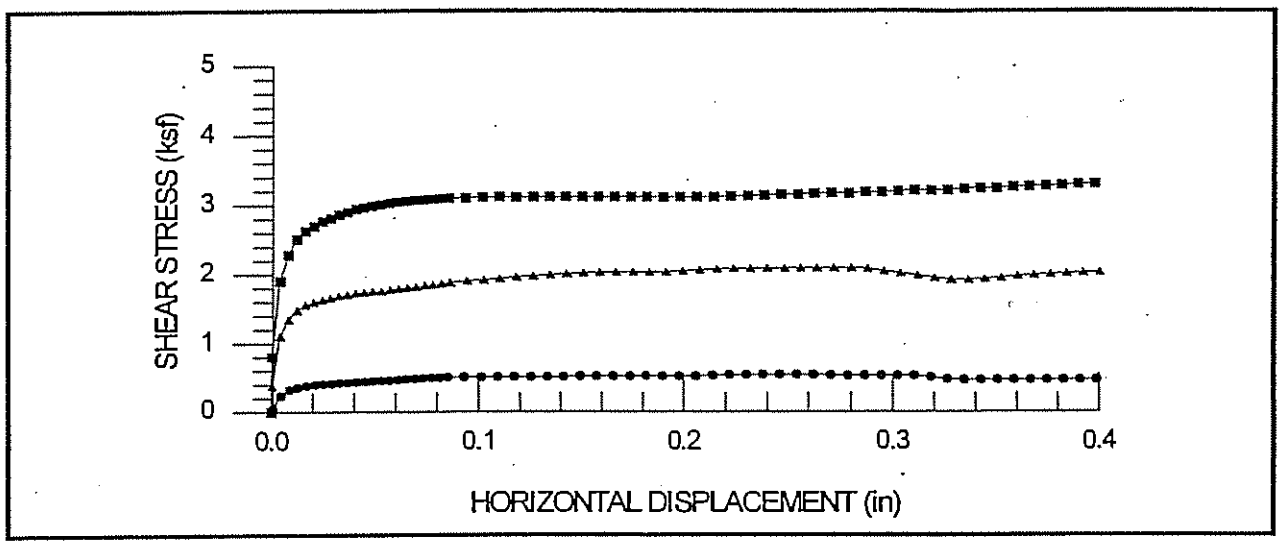
Project: Phase II Site Investigation: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: July 2002

# CONSOLIDATED UNDRAINED DIRECT SHEAR (ASTM: D3080)




c = 0.0 ksf

$\phi$ = 18.5°

| Test No. | 1 | 2 | 3 |
|---|---|---|---|
| Normal Stress (ksf): | 2.003 | 5.947 | 9.893 |
| Max. Shear Strength (ksf): | 0.542 | 2.098 | 3.308 |
| Rate of Strain (in/min): | 0.020 | 0.020 | 0.020 |
| Initial Height (in.): | 1.30 | 1.30 | 1.30 |
| Sample Area (in.): | 4.83 | 4.83 | 4.83 |

Sample Identification: P3-02-S013 SH-2 (42.0'-44.0')
Vertical sample (Horizontal shear plane)

Sample Description: Dark gray/black SILTY CLAY, trace fine sand, trace organics.

Initial Moisture Content (%): 80.3
% Passing No. 200 Sieve: 97.4
Dry Density (pcf): 49.3
Liquid Limit: 95
Plastic Limit: 38
Plastic Index: 57
USCS Class: CH

Legend
- ● Point 1
- ▲ Point 2
- ■ Point 3

Remarks: Test performed in accordance with ASTM D 3080

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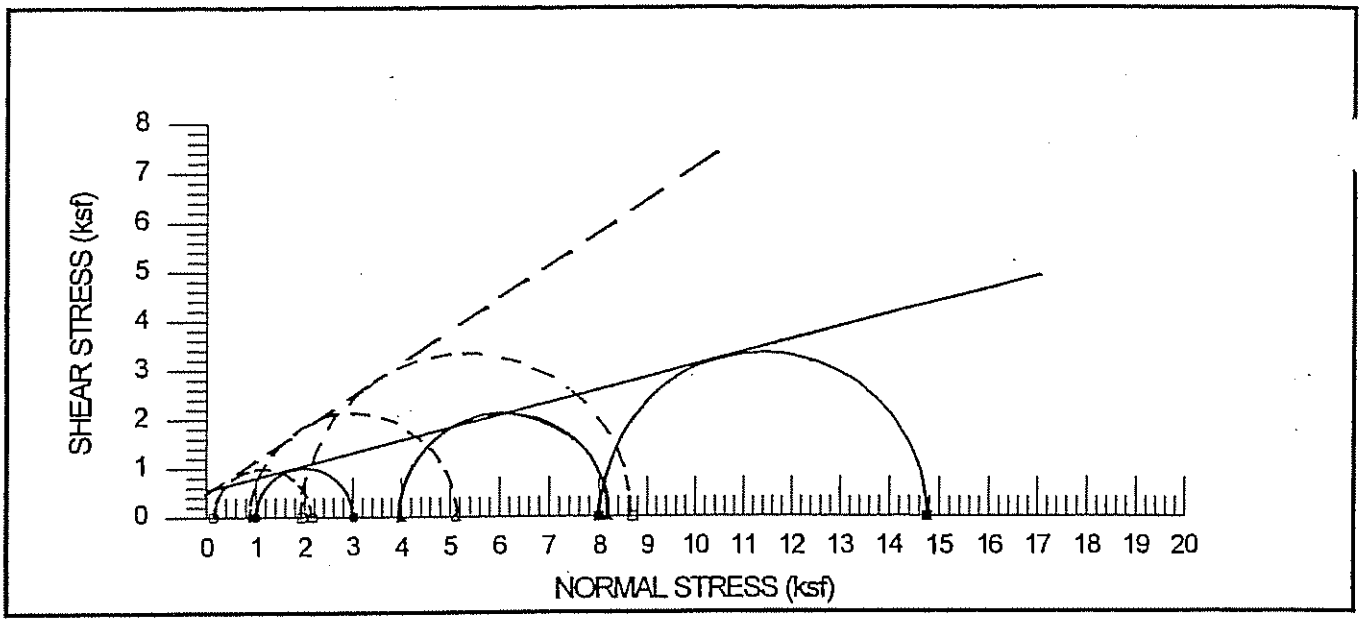
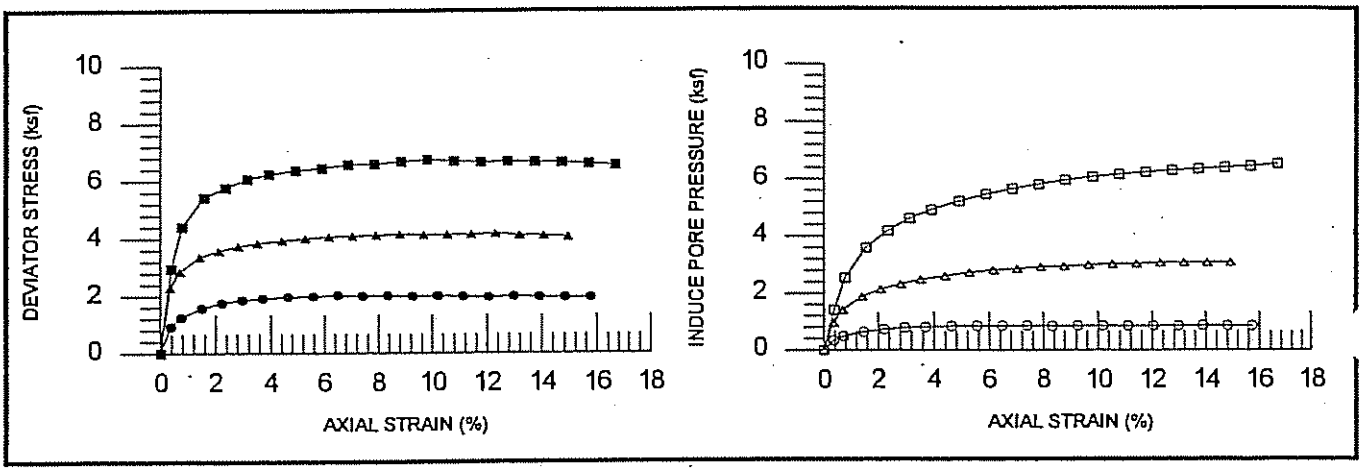
Project No.: 4685.GC

Date/Chk'd By: July 2002

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.550 (ksf) c' = 0.425 (ksf)

$\phi = 14.4^\circ$ $\phi' = 34.2^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 2.02 | 4.17 | 6.75 |
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 96.0% | 96.0% | 97.0% |

Failure Sketch:

No distinct failure plane, All samples

1 2 3

Sample Identification: P3-02-S013: SH-3 (47.5'-49.5')
Sample Description: Dark gray CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 84.6
% Passing No. 200 Sieve: N/A
Dry Unit Weight (PCF): N/A
Liquid Limit: N/A
Plastic Limit: N/A
Plasticity Index: N/A
USCS Classification: MH

Legend
● 1 ksf
▲ 4 ksf
■ 8 ksf

Remarks: Saturation based on B - Parameter.

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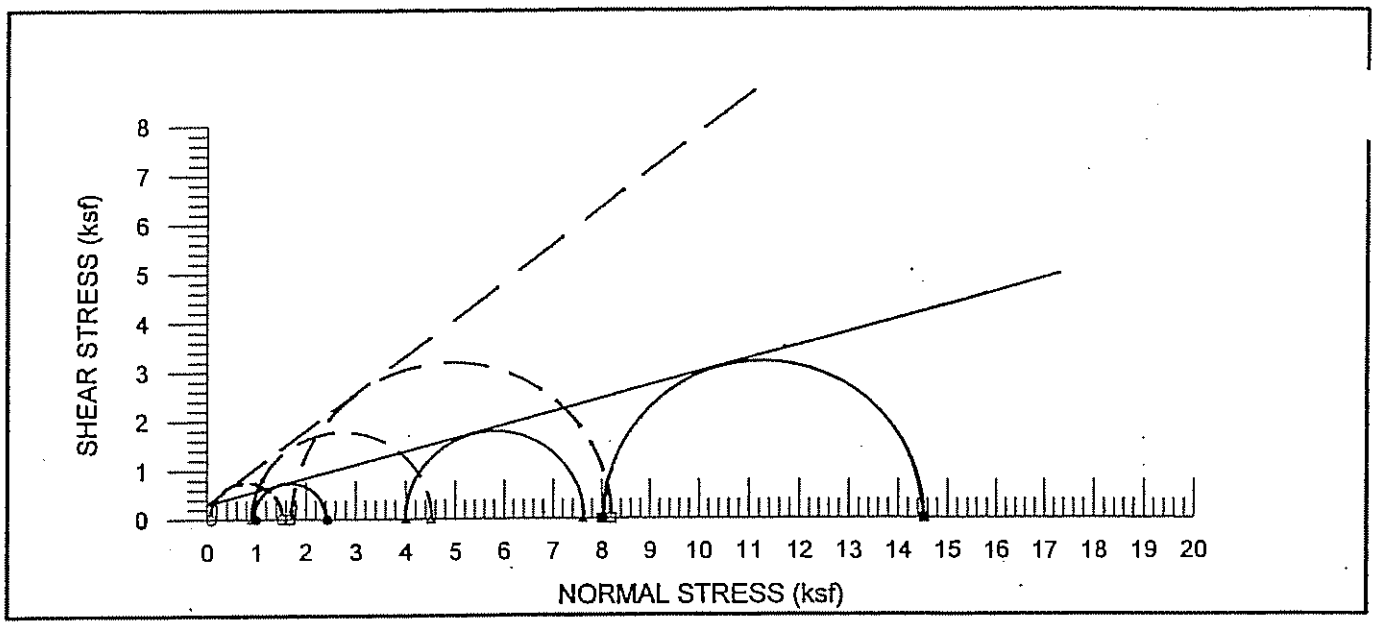
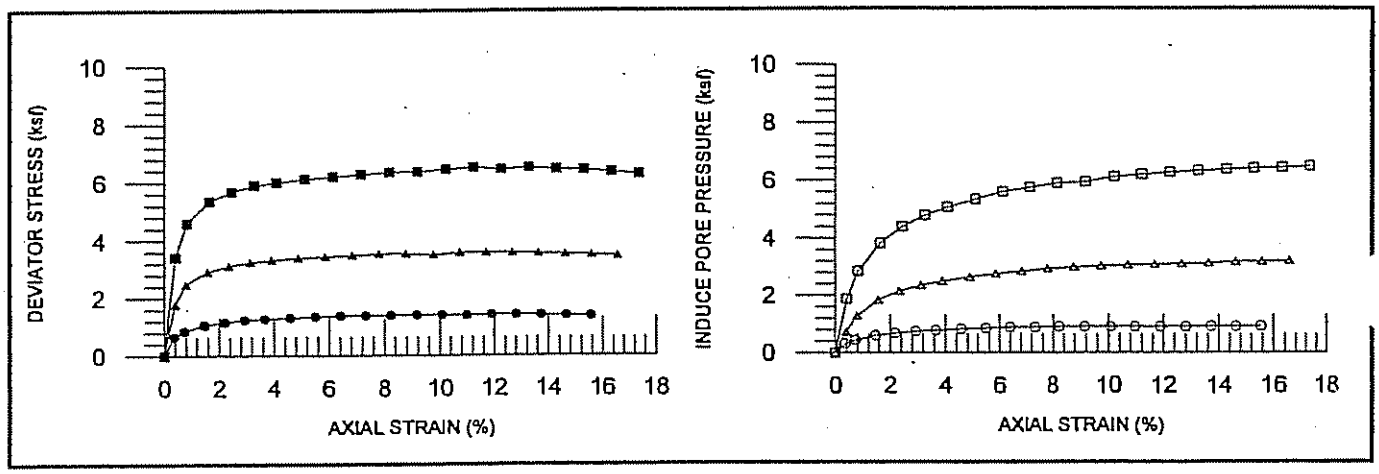
Project: Phase II Site Investigation: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: July 2002

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.275 (ksf) c' = 0.275 (ksf)

$\phi = 15.4^{\circ}$ $\phi' = 37.3^{\circ}$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 1.44 | 3.60 | 6.53 |
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 99.0% | 98.0% | 96.0% |

Failure Sketch: 1 2 3

No distinct failure plane, All samples

Sample Identification: P4-02-S014: SH-1 (39.0'-41.0')
Sample Description: Dark gray CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 83.9
% Passing No. 200 Sieve: 96.4
Dry Unit Weight (PCF): 50.4
Liquid Limit: 99
Plastic Limit: 46
Plasticity Index: 53
USCS Classification: MH

Legend
● 1 ksf
▲ 4 ksf
■ 8 ksf

Remarks: Moisture content is average of all values from shelby tube.
Saturation based on B - Parameter.

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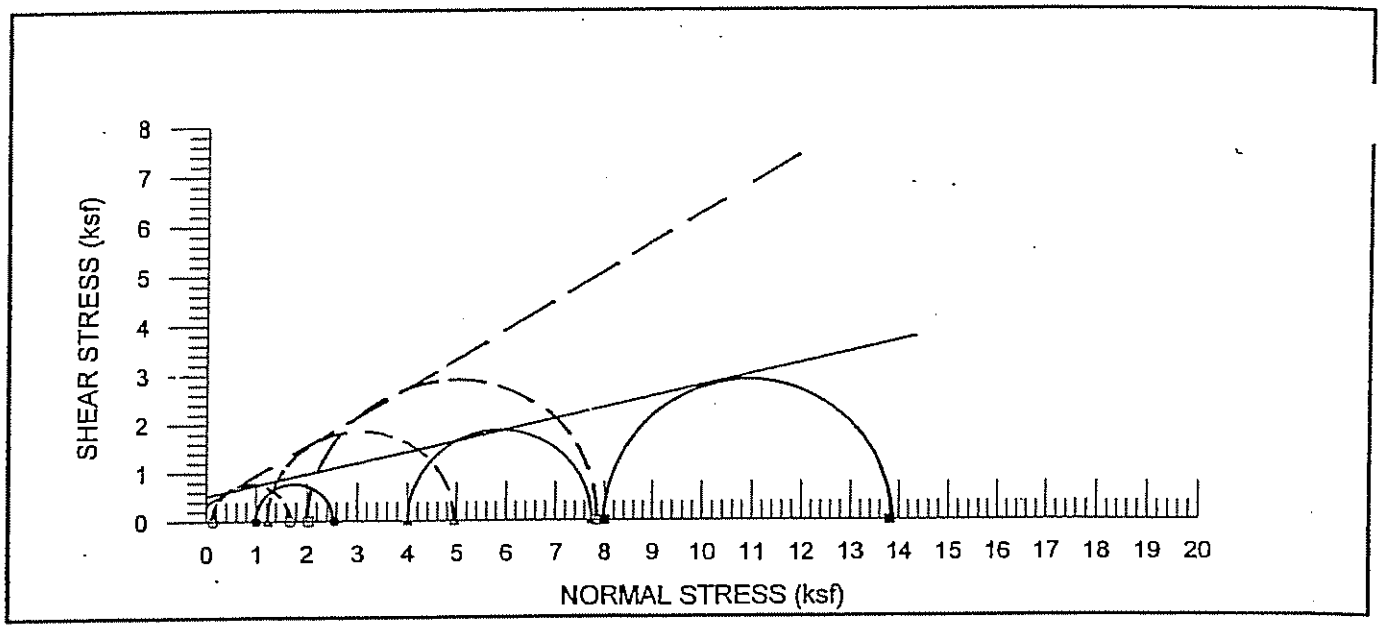
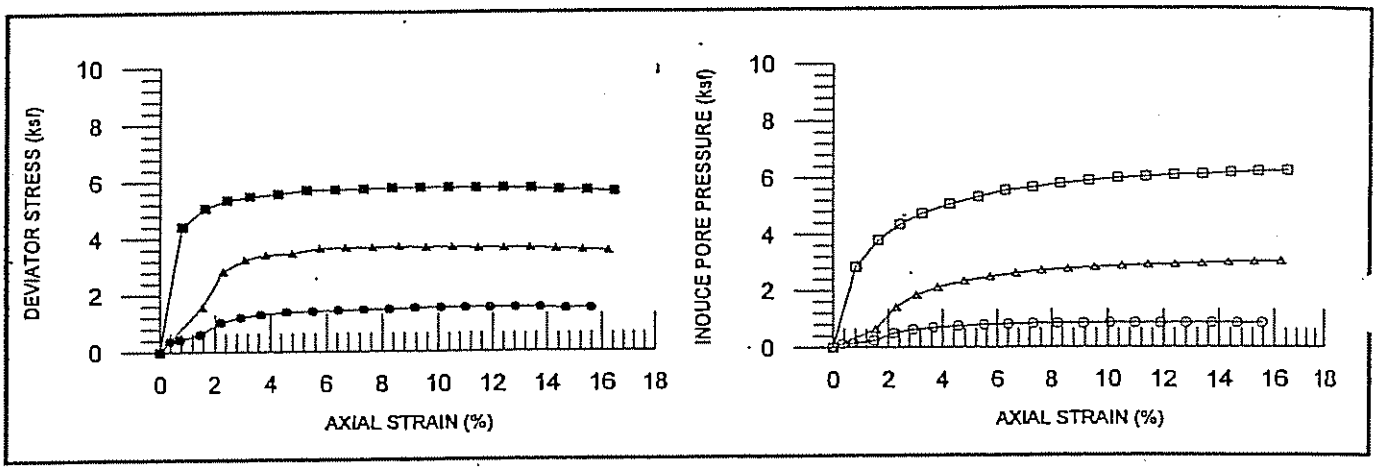
Project No.: 4685.GC Date/Chk'd By: July 2002

# TRIAXIAL COMPRESSION TEST, R (ASTM: D4767)




c = 0.500 (ksf) c' = 0.350 (ksf)

$\phi = 13.0^\circ$ $\phi' = 30.5^\circ$

| | | | |
|---|---|---|---|
| Minor Prin. Stress (ksf) : | 1.00 | 4.00 | 8.00 |
| Max. Deviator Stress (ksf): | 1.55 | 3.71 | 5.80 |
| Initial Height (in.): | 2.80 | 2.80 | 2.80 |
| Initial Diameter (in.): | 1.40 | 1.40 | 1.40 |
| Saturation: | 97.0% | 98.0% | 98.0% |

Failure Sketch:

No distinct failure plane, All samples

1 2 3

Sample Identification: P4-02-S014: SH-4 (54.0'-56.0')
Sample Description: Dark gray CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 92.8
% Passing No. 200 Sieve: 98.3
Dry Unit Weight (PCF): 45.3
Liquid Limit: 87
Plastic Limit: 40
Plasticity Index: 47
USCS Classification: MH

Legend
● 1 ksf
▲ 4 ksf
■ 8 ksf

Remarks: Saturation based on B - Parameter.

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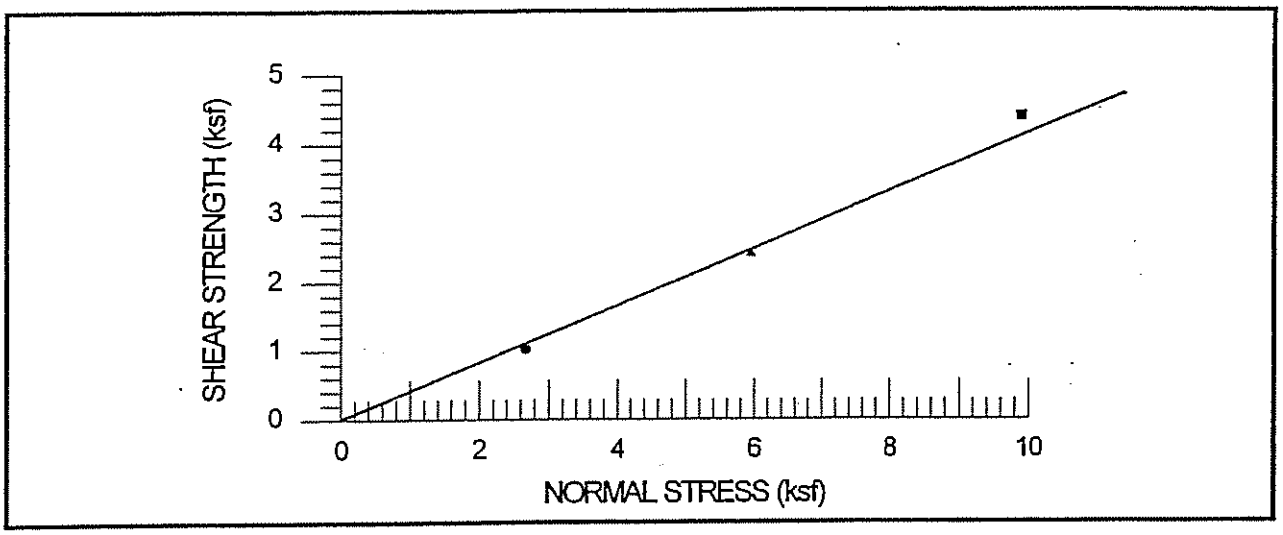
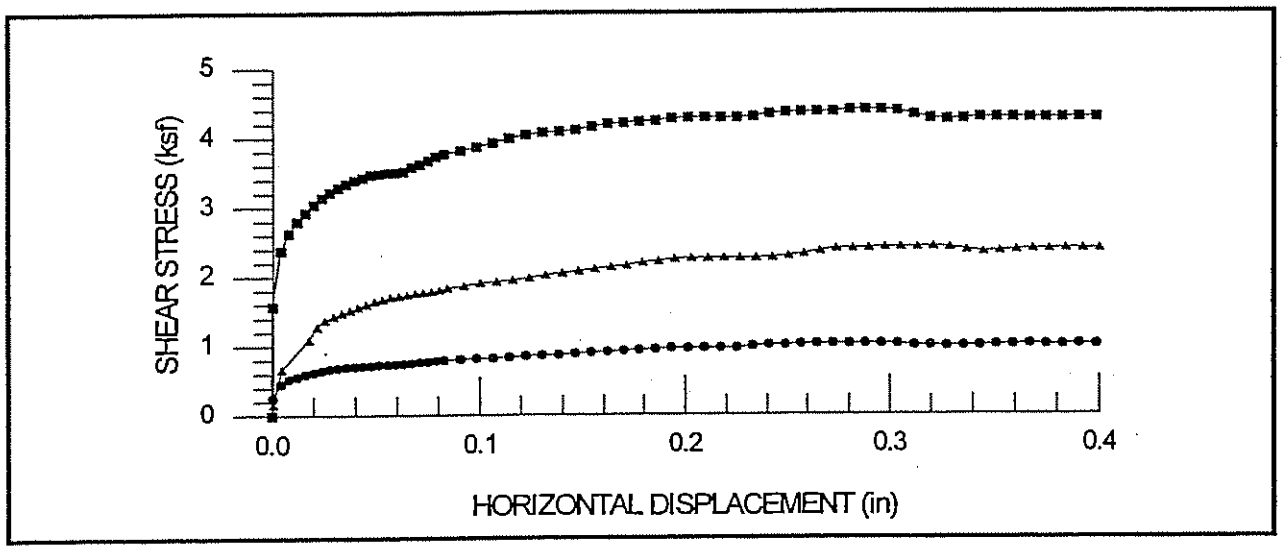
Project: Phase II Site Investigation: Cherry Island Landfill Expansion Project

Project No.: 4685.GC Date/Chk'd By: July 2002

# CONSOLIDATED DRAINED DIRECT SHEAR (ASTM: D3080)




c' = 0.0 ksf

$\phi'$ = 22.5°

| Point No. | 1 | 2 | 3 |
|---|---|---|---|
| Normal Stress (ksf): | 2.664 | 5.947 | 9.893 |
| Max. Shear Strength (ksf): | 1.025 | 2.426 | 4.399 |
| Rate of Strain (in/min): | 0.002 | 0.002 | 0.002 |
| Initial Height (in.): | 1.30 | 1.30 | 1.30 |
| Sample Area (in.): | 4.83 | 4.83 | 4.83 |

Sample Identification: P5-02-S015 SH-2 (41.0'-43.0')
Vertical sample (Horizontal shear plane)

Sample Description: Dark gray/black CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 92.7
% Passing No. 200 Sieve: 97.3
Liquid Limit: 107
Plastic Limit: 45
Plastic Index: 62
USCS Classification: MH

Legend
- ● Point 1
- ▲ Point 2
- ■ Point 3

Remarks: Test performed in accordance with ASTM D 3080

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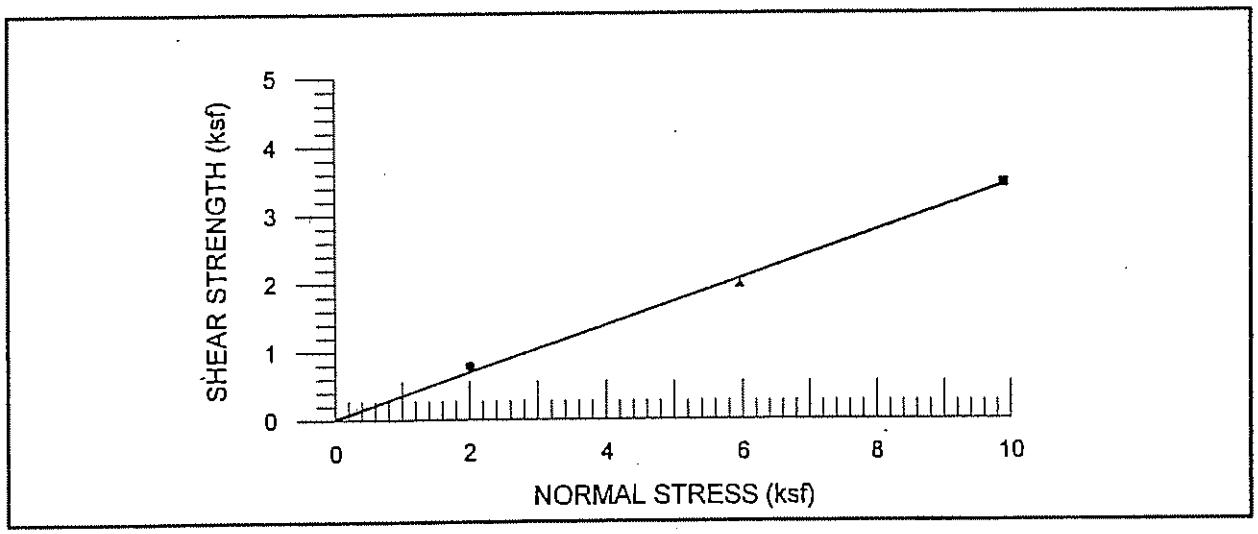
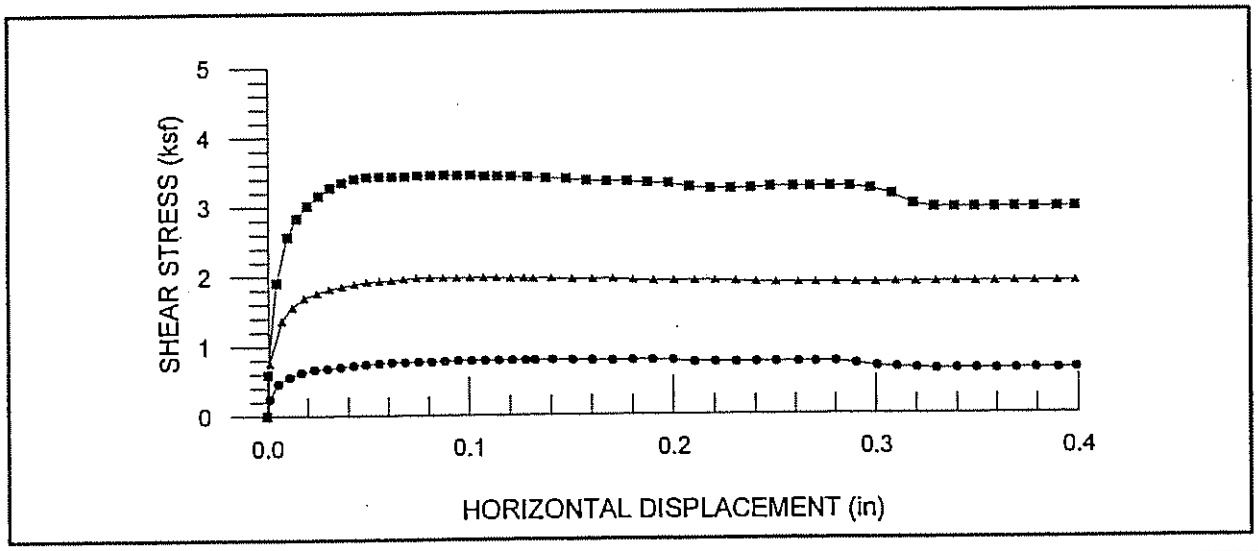
Project No.: 4685.GC Date/Chk'd By: July 2002

# CONSOLIDATED UNDRAINED DIRECT SHEAR (ASTM: D3080)




c = 0.0 ksf

$\phi$ = 19.0°

| Test No. | 1 | 2 | 3 |
|---|---|---|---|
| Normal Stress (ksf): | 2.003 | 5.947 | 9.893 |
| Max. Shear Strength (ksf): | 0.796 | 1.980 | 3.453 |
| Rate of Strain (in/min): | 0.020 | 0.020 | 0.020 |
| Initial Height (in.): | 1.30 | 1.30 | 1.30 |
| Sample Area (in.): | 4.83 | 4.83 | 4.83 |

Sample Identification: P5-02-S016 SH-3 (48.0'-50.0')
Vertical sample (Horizontal shear plane)

Sample Description: Dark gray/black CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 59.5
% Passing No. 200 Sieve: 89.1
Dry Density (pcf): 62.5
Liquid Limit: 63
Plastic Limit: 34
Plastic Index: 29
USCS Class: MH

Legend
- ● Point 1
- ▲ Point 2
- ■ Point 3

Remarks: Test performed in accordance with ASTM D 3080

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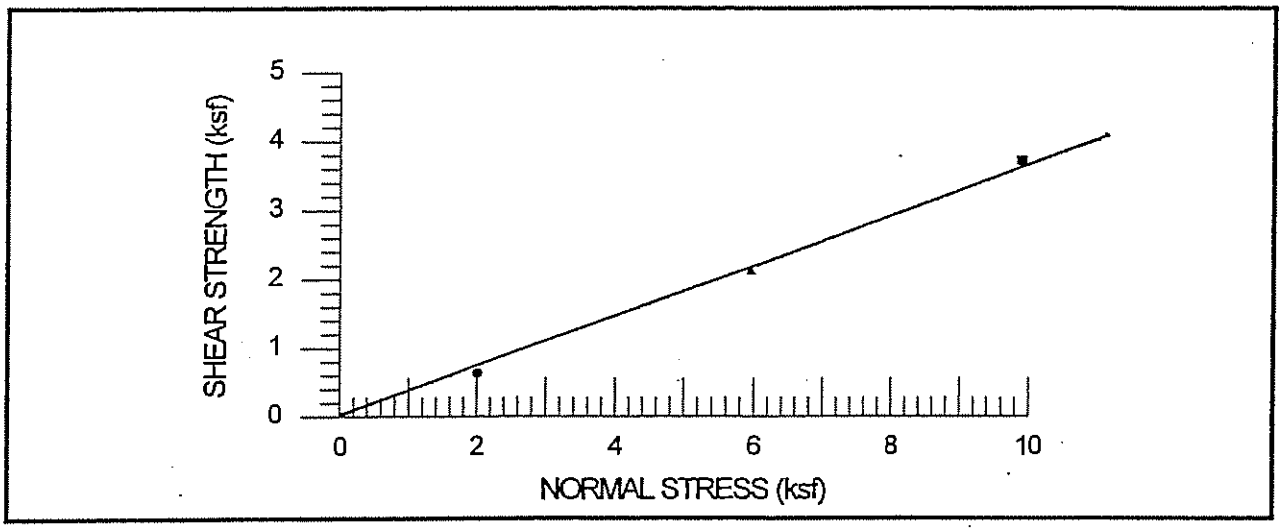
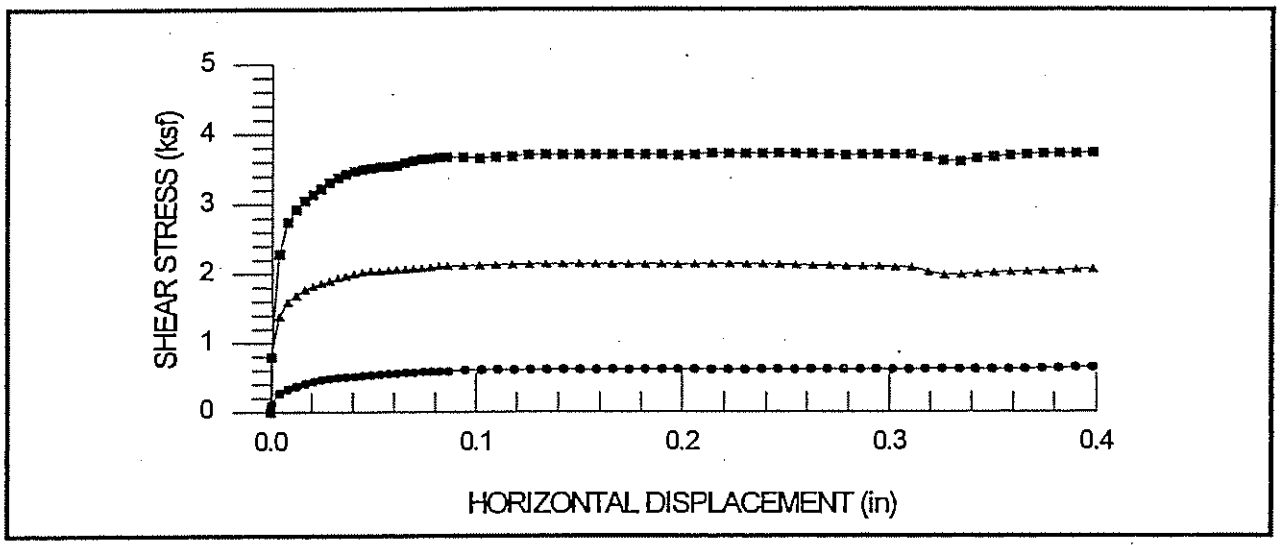
Project No.: 4685.GC

Date/Chk'd By: July 2002

# CONSOLIDATED UNDRAINED DIRECT SHEAR (ASTM: D3080)




c = 0.0 ksf

$\phi$ = 20.0°

| Test No. | 1 | 2 | 3 |
|---|---|---|---|
| Normal Stress (ksf): | 2.003 | 5.947 | 9.893 |
| Max. Shear Strength (ksf): | 0.642 | 2.140 | 3.728 |
| Rate of Strain (in/min): | 0.200 | 0.200 | 0.200 |
| Initial Height (in.): | 1.30 | 1.30 | 1.30 |
| Sample Area (in.): | 4.83 | 4.83 | 4.83 |

Sample Identification: P5-02-S015 SH-4 (51.0'-53.0')
Vertical sample (Horizontal shear plane)

Sample Description: Dark gray/black CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 87.0
% Passing No. 200 Sieve: 99.2
Liquid Limit: 102
Plastic Limit: 47
Plastic Index: 55
USCS Class: MH

Legend
- ● Point 1
- ▲ Point 2
- ■ Point 3

Remarks: Test performed in accordance with ASTM D 3080

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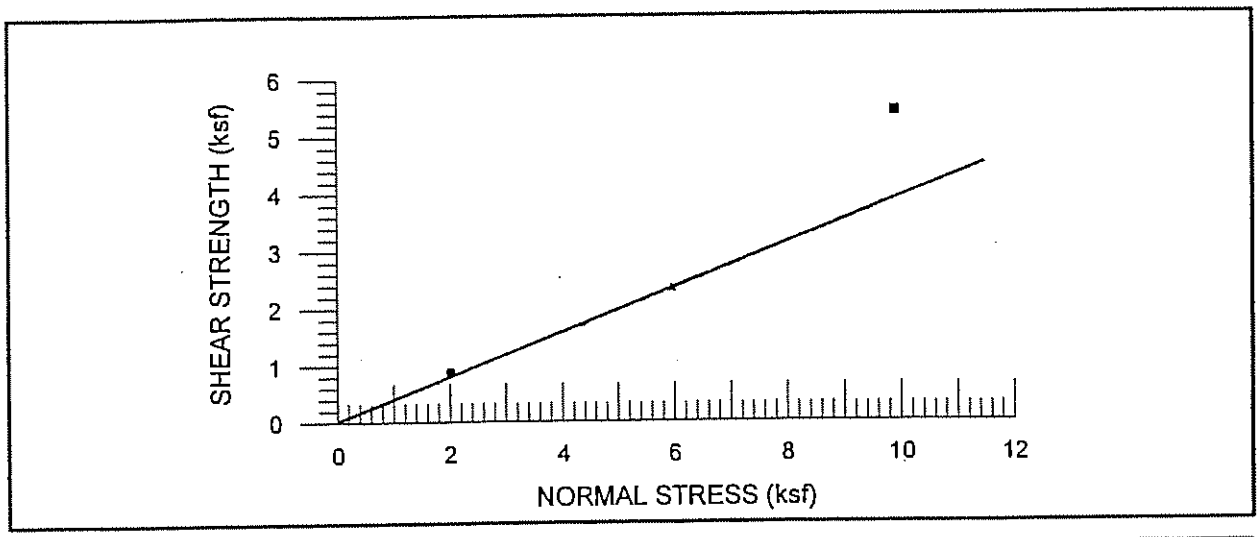
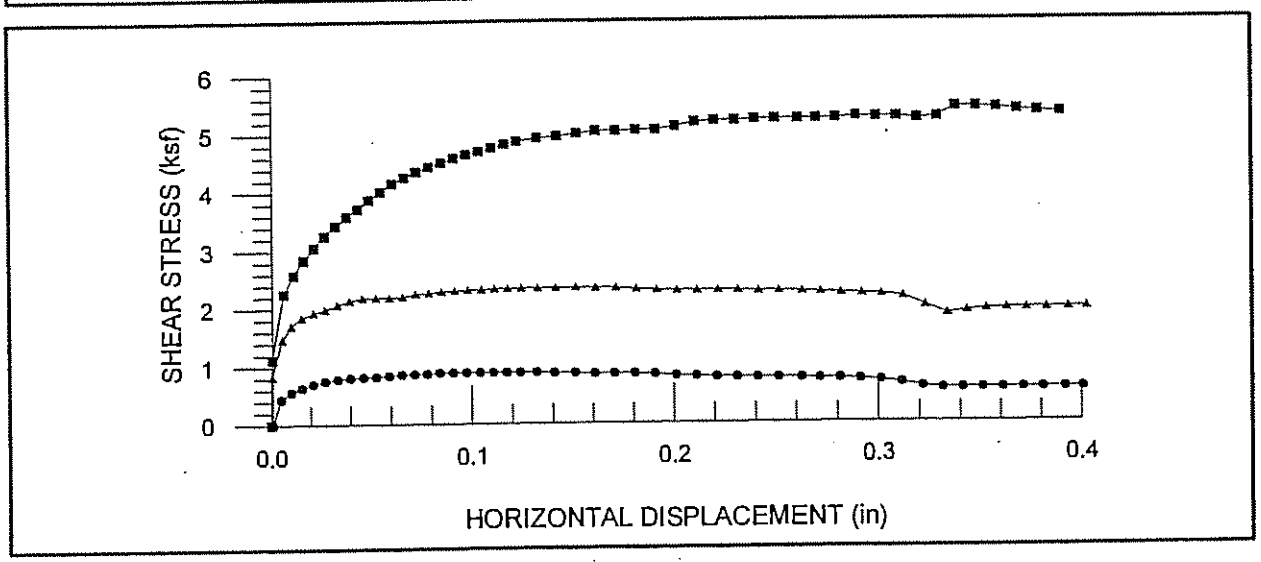
Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC

Date/Chk'd By: July 2002

# CONSOLIDATED UNDRAINED DIRECT SHEAR (ASTM: D3080)




c = 0.0 ksf

$\phi$ = 21.4°

| Test No. | 1 | 2 | 3 |
|---|---|---|---|
| Normal Stress (ksf): | 2.003 | 5.947 | 9.893 |
| Max. Shear Strength (ksf): | 0.892 | 2.354 | 5.429 |
| Rate of Strain (in/min): | 0.020 | 0.020 | 0.020 |
| Initial Height (in.): | 1.30 | 1.30 | 1.30 |
| Sample Area (in.): | 4.83 | 4.83 | 4.83 |

Sample Identification: P5-02-S016 SH-3 (48.0'-50.0')
Horizontal sample (Vertical shear plane)

Sample Description: Dark gray/black CLAYEY SILT, trace fine sand, trace organics.

Initial Moisture Content (%): 59.5
% Passing No. 200 Sieve: 89.1
Dry Density (pcf): 62.5
Liquid Limit: 63
Plastic Limit: 34
Plastic Index: 29
USCS Class: MH

Legend
- ● Point 1
- ▲ Point 2
- ■ Point 3

Remarks: Test performed in accordance with ASTM D 3080
Based on visual review, material properties of sample for test number 3 were not consistent with other samples. Sufficient sample to rerun test for this point not available.

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Project: Cherry Island Landfill Expansion Project

Project No.: 4685.GC

Date/Chk'd By: July 2002

# DIRECT SIMPLE SHEAR TESTS

# Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

Client: GeoSyntec Consultants
Project Name: Cherry Island Landfill
Project Location: Wilmington, DE

GTX#: 4066
Test Date: 07/16/02

Boring ID: SPT-9
Sample ID: SH-3

Visual Description: Moist, black clay with organics

Test Equipment: Top and bottom box (circular) = 2.62 in diameter. Load cells and LVDTs connected to data acquisition system for shear force, normal load, horizontal and vertical displacement; surface area = 5.39 $in^2$, soil height = 1 inch

Test Condition: inundated

Sample Type and Preparation:
Extruded from tube, cut, trimmed and placed into apparatus at as-received density and moisture content.

| Parameter | Point 1 | Point 2 | Point 3 | Point 4 | Point 5 |
|---|---|---|---|---|---|
| Test No. | DSS1 | DSS2 | DSS2N | DSS3 | DSS3N |
| Initial Moisture Content at 60 C, % | 35 | 68 | 59 | 88 | 53 |
| Initial Dry Density, pcf | 73 | 62 | 60 | 52 | 64 |
| Nominal Rate of Shear Strain, %/min | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| Vertical Consolidation Stress, psf | 2500 | 5000 | 5000 | 10000 | 10000 |
| Peak Shear Stress, psf | 735 | 1554 | 1534 | 2203 | 2730 |
| Final Moisture Content at 60 C, % | 77 | 59 | 75 | 62 | 62 |
| Final Moisture Content at 110 C, % | 80 | 62 | 75 | 64 | 64 |

Comments: Tested By: fy/rh Checked By: jdt

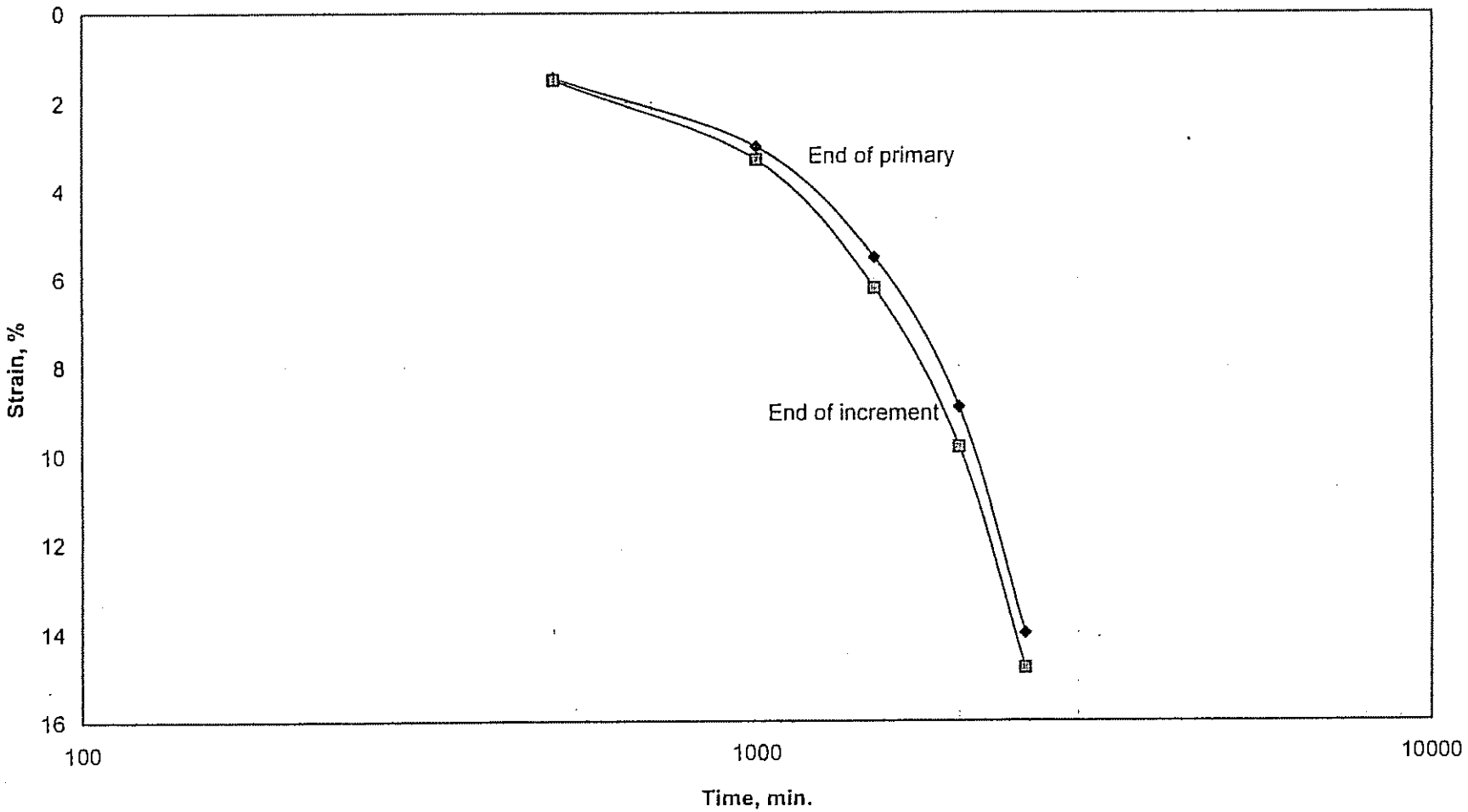
Consolidation phase plots for test DSS1, DSS2, and DSS3N are included on the following pages.

Shear Stress versus Shear Strain plots are presented in Figures 1, 2, 3, 4 and 5
Shear Stress versus Normal Stress plots are presented in Figures 6, 7, 8 , 9 and 10
Excess Pore Pressure versus Shear Strain plots are presented in Figure 11, 12, 13, 14 and 15

Notes: These results apply only to the sample tested br the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use ofthe material.

## Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

**Consolidation Phase**
**Boring ID: SPT-9 Sample No.: SH3**
**Test No. DSS1**
**Normal Load = 2500 psf**

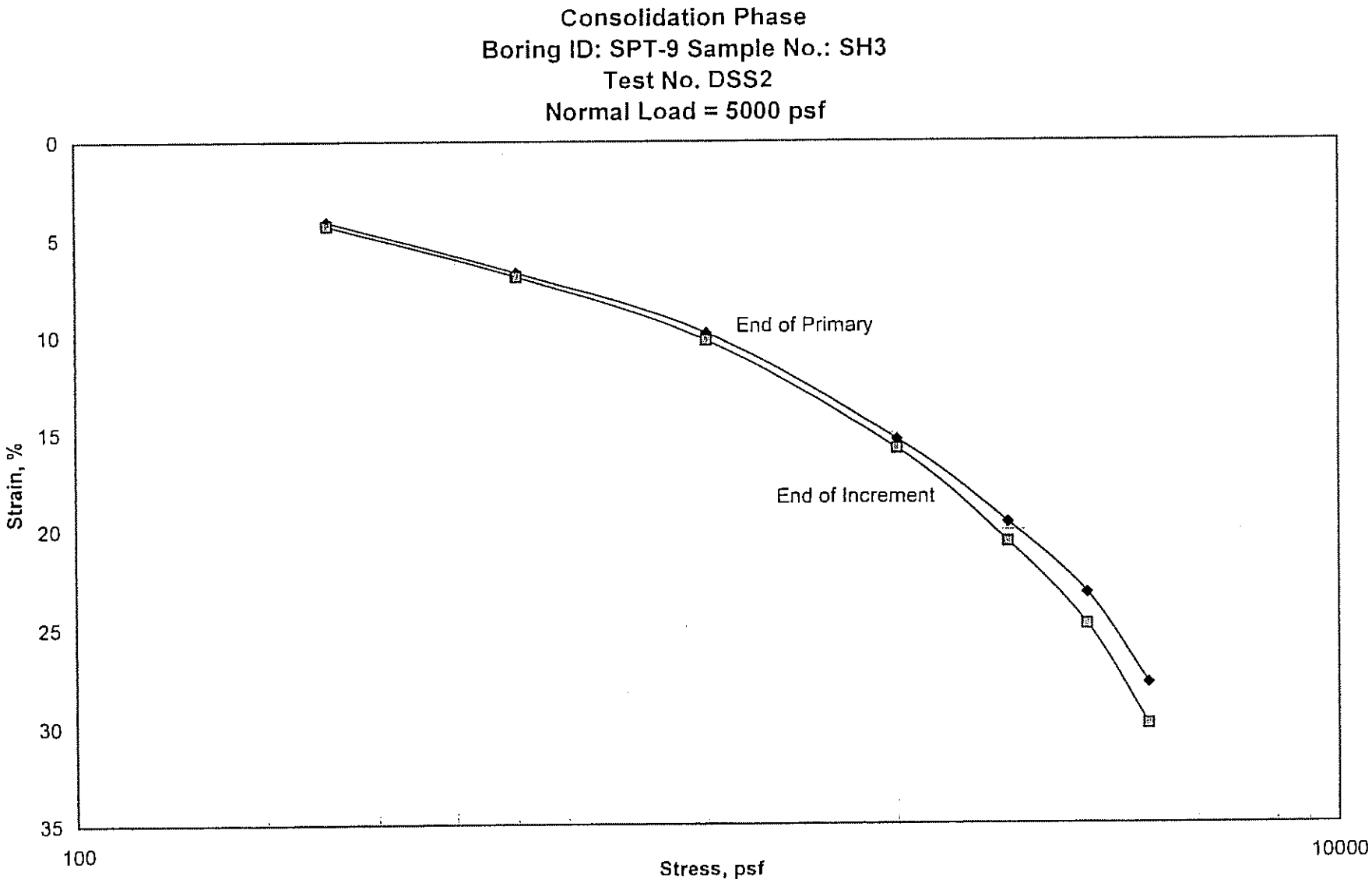



GeoTesting Express
GTX-40[illegible]

Cherry Island Landfill
Wilmingt[illegible] DE

8/1[illegible]/2002

## Consolidation Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D6528

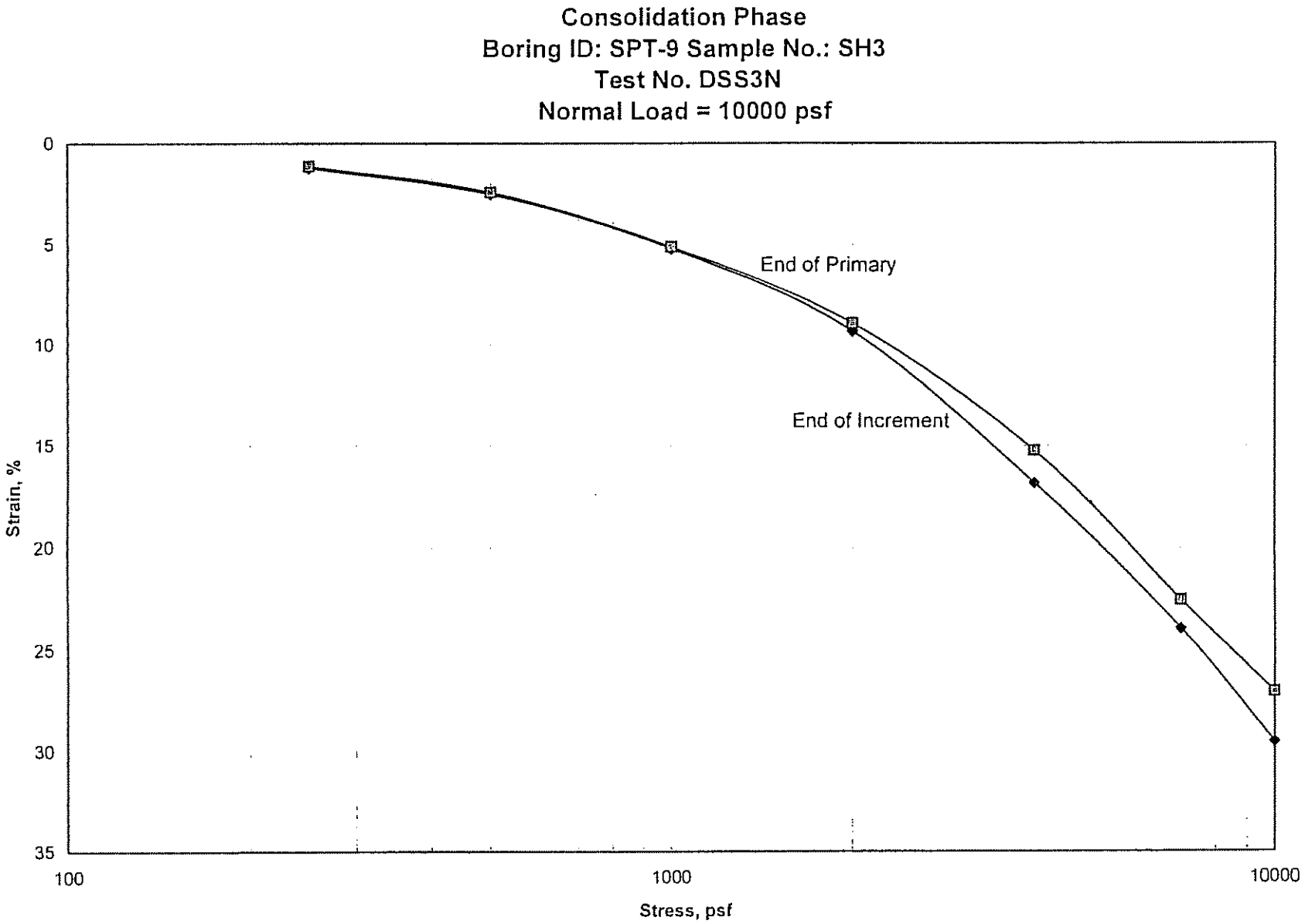



GeoTesting Express
GTX-4066

Cherry Island Landfill
Wilmimgton, DE

8/15/2002

Consolidation Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D6528

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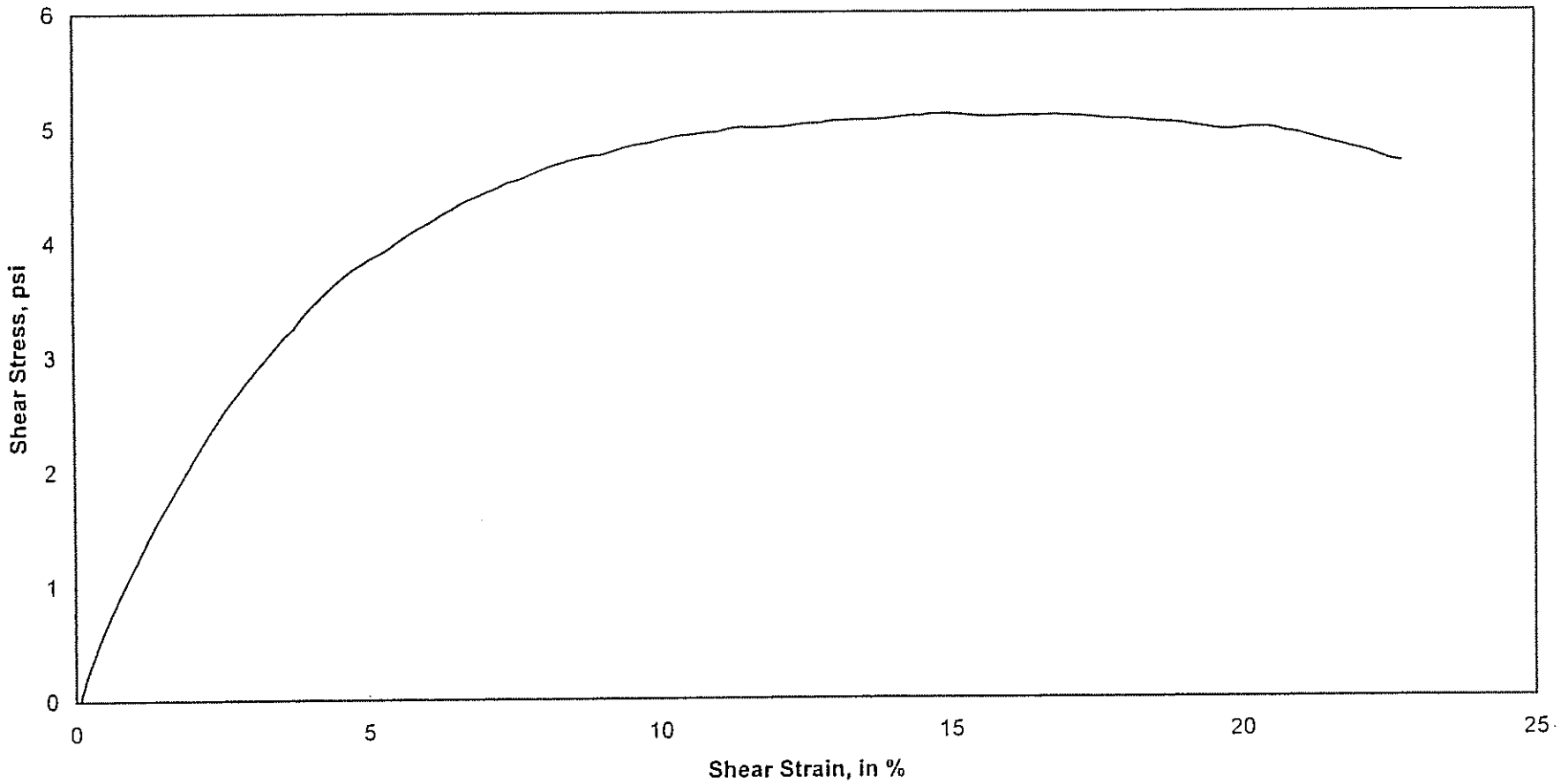
Wilmington, DE

8/15/2002

Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 1

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS1
Normal Load = 2500 psf

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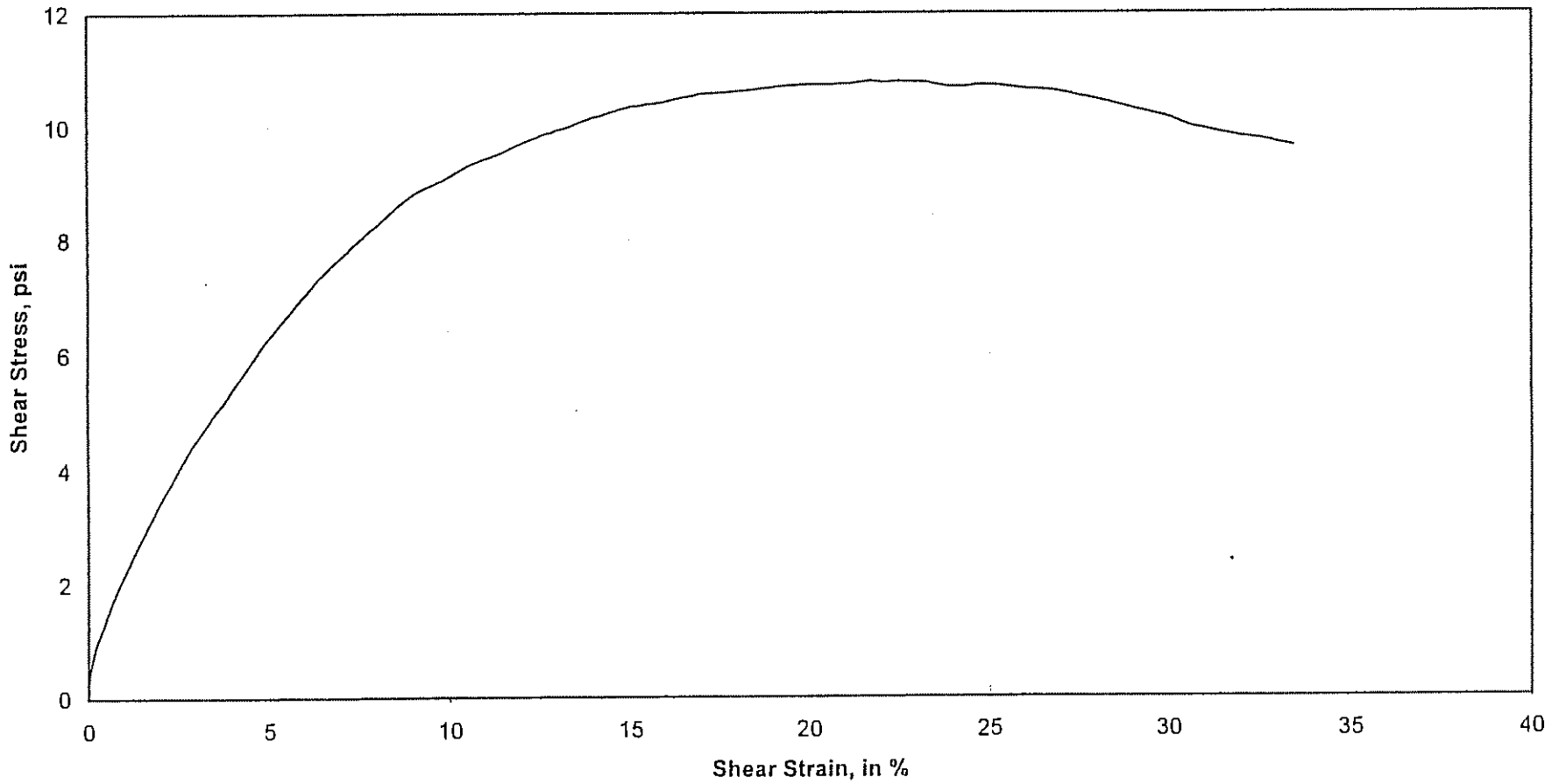
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 2

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS2
Normal Load = 5000 psf

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Cherry Island Landfill
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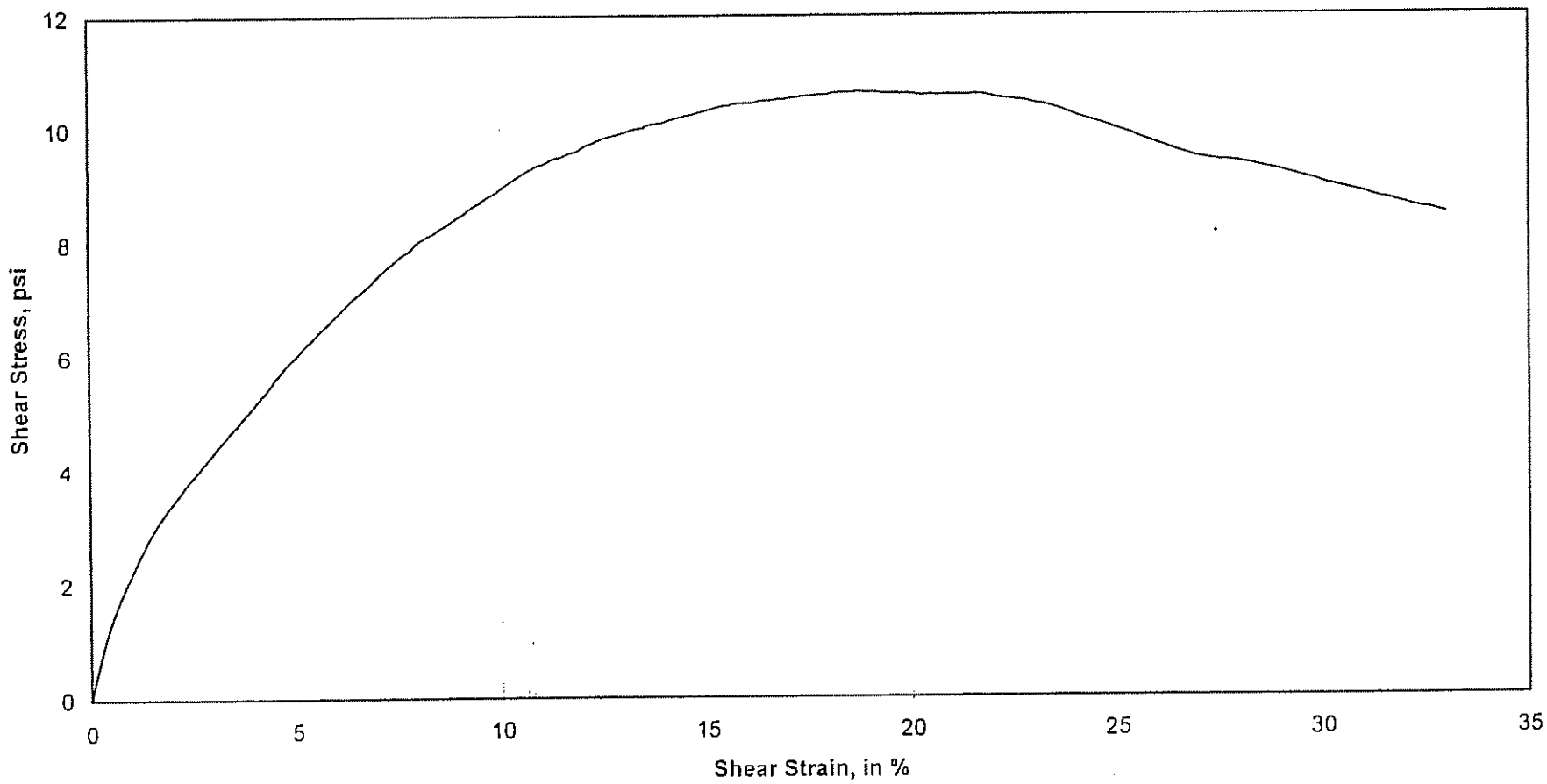
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 3

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS2N
Normal Load = 5000 psf

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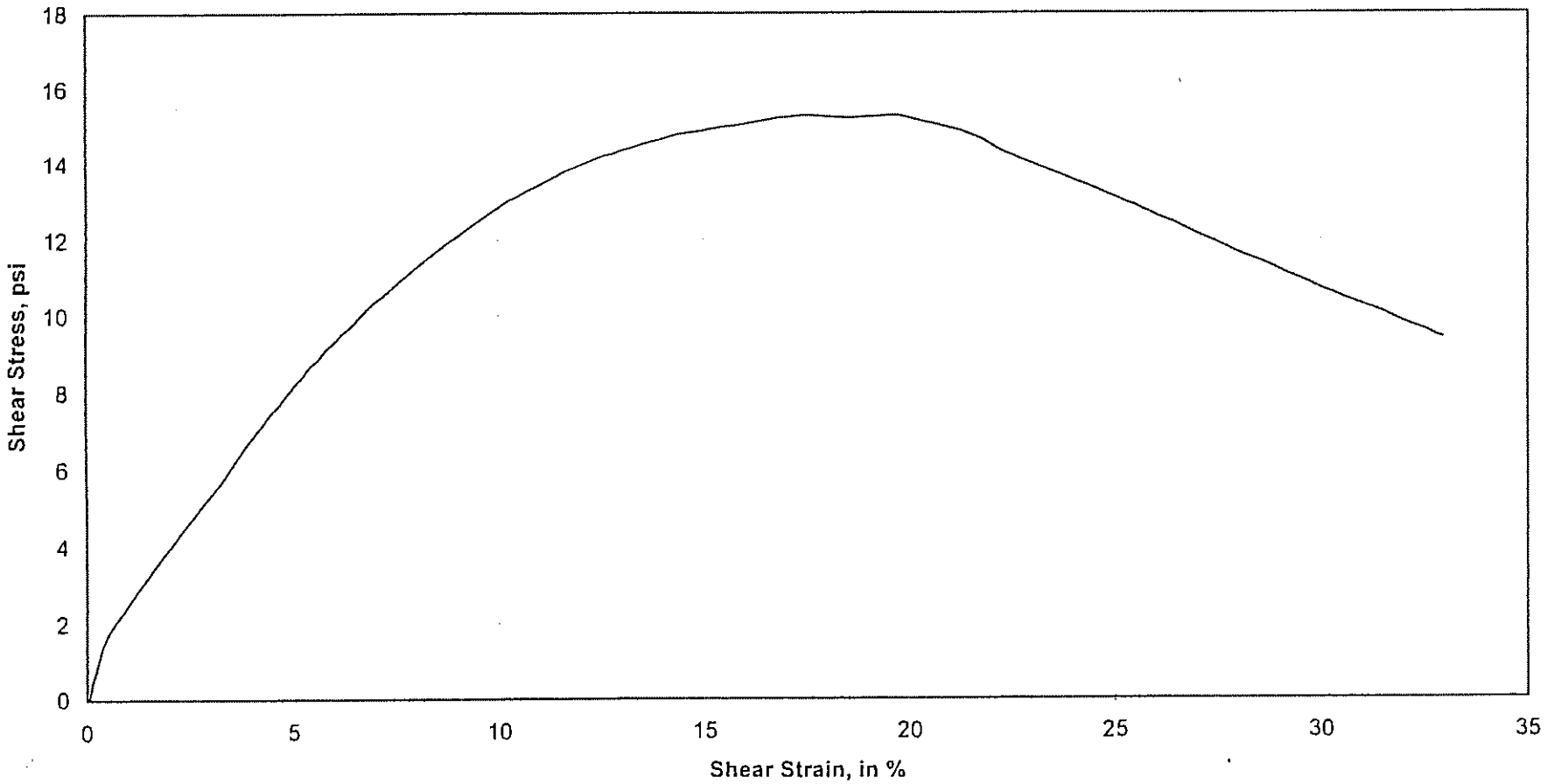
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 4

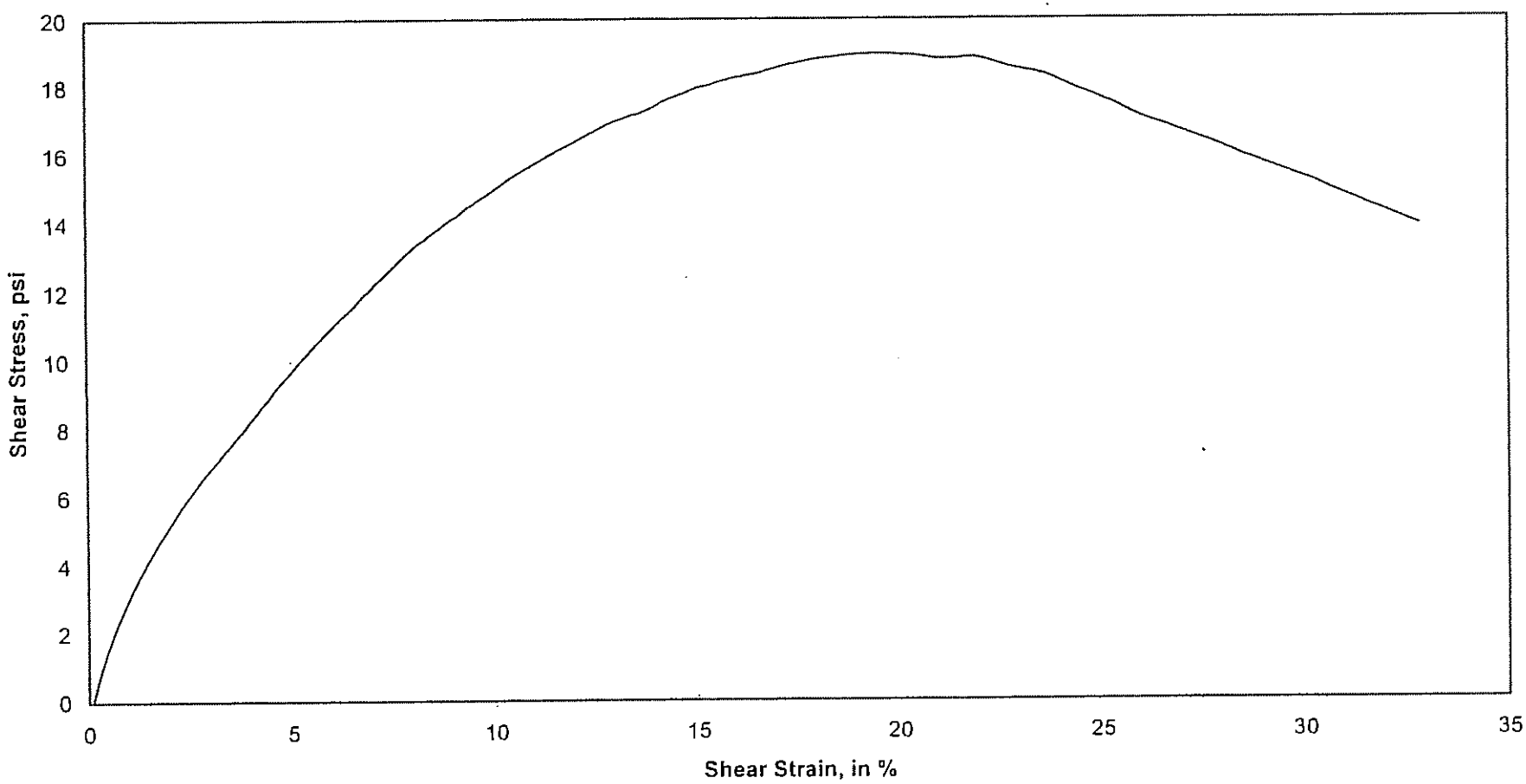
Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS3
Normal Load = 10000 psf



Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 5

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS3N
Normal Load = 10000 psf

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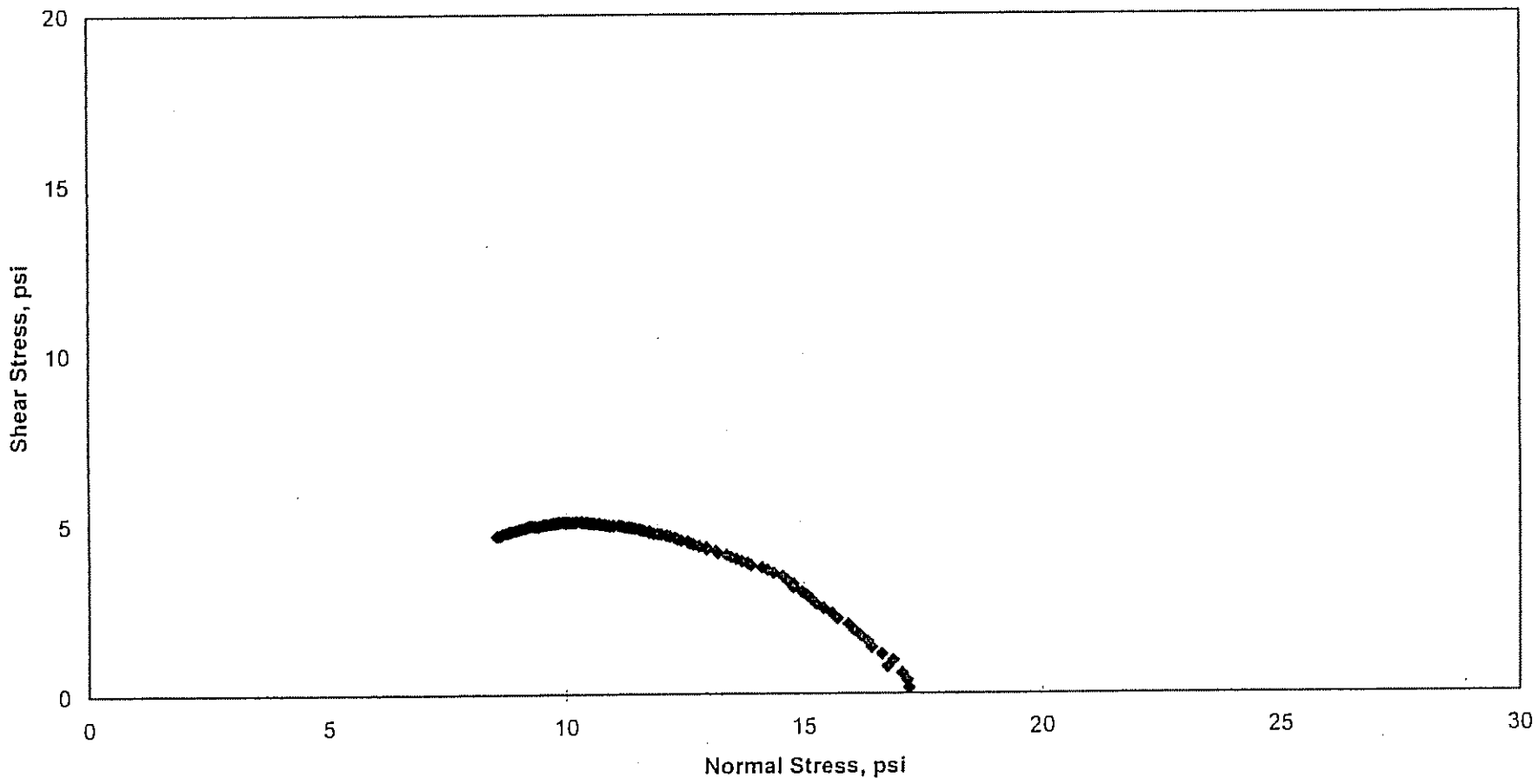
Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 6

Boring ID: SPT-9 Sample No.:SH-3
Test No. DSS1
Normal Load = 2500 psf

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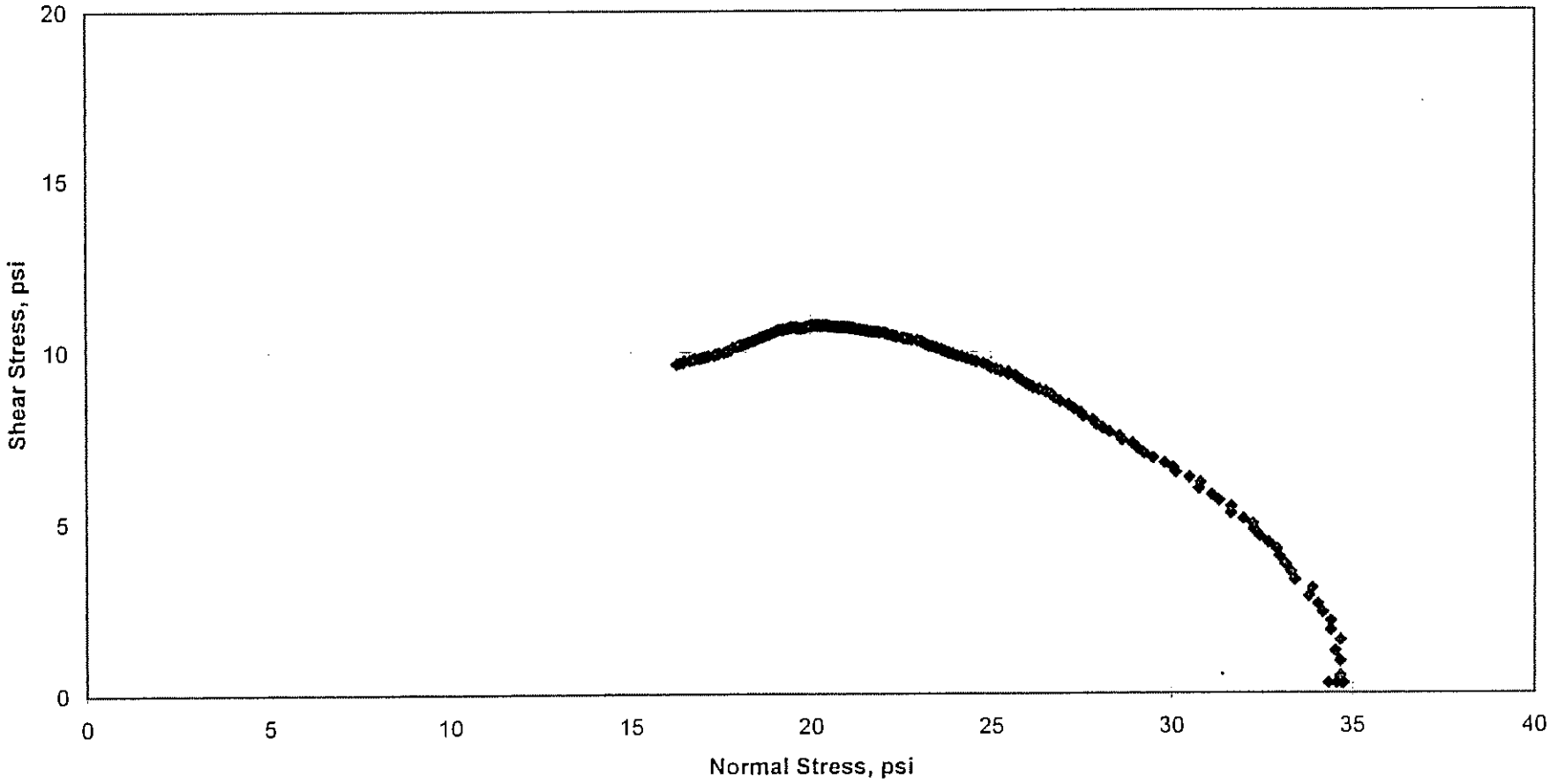
Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 7

Boring ID: SPT-9 Sample No.:SH-3
Test No. DSS2
Normal Load = 5000 psf

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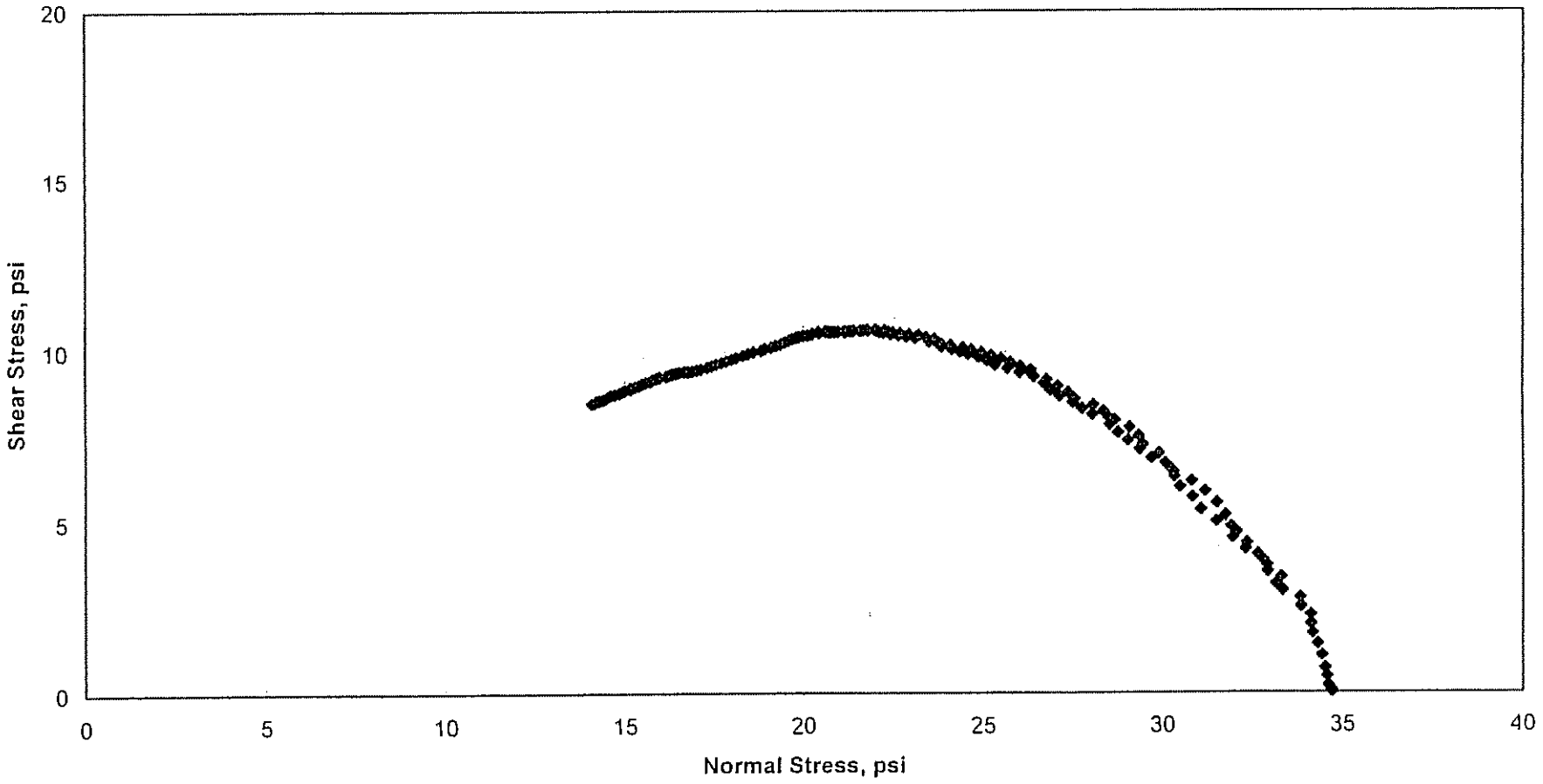
Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 8

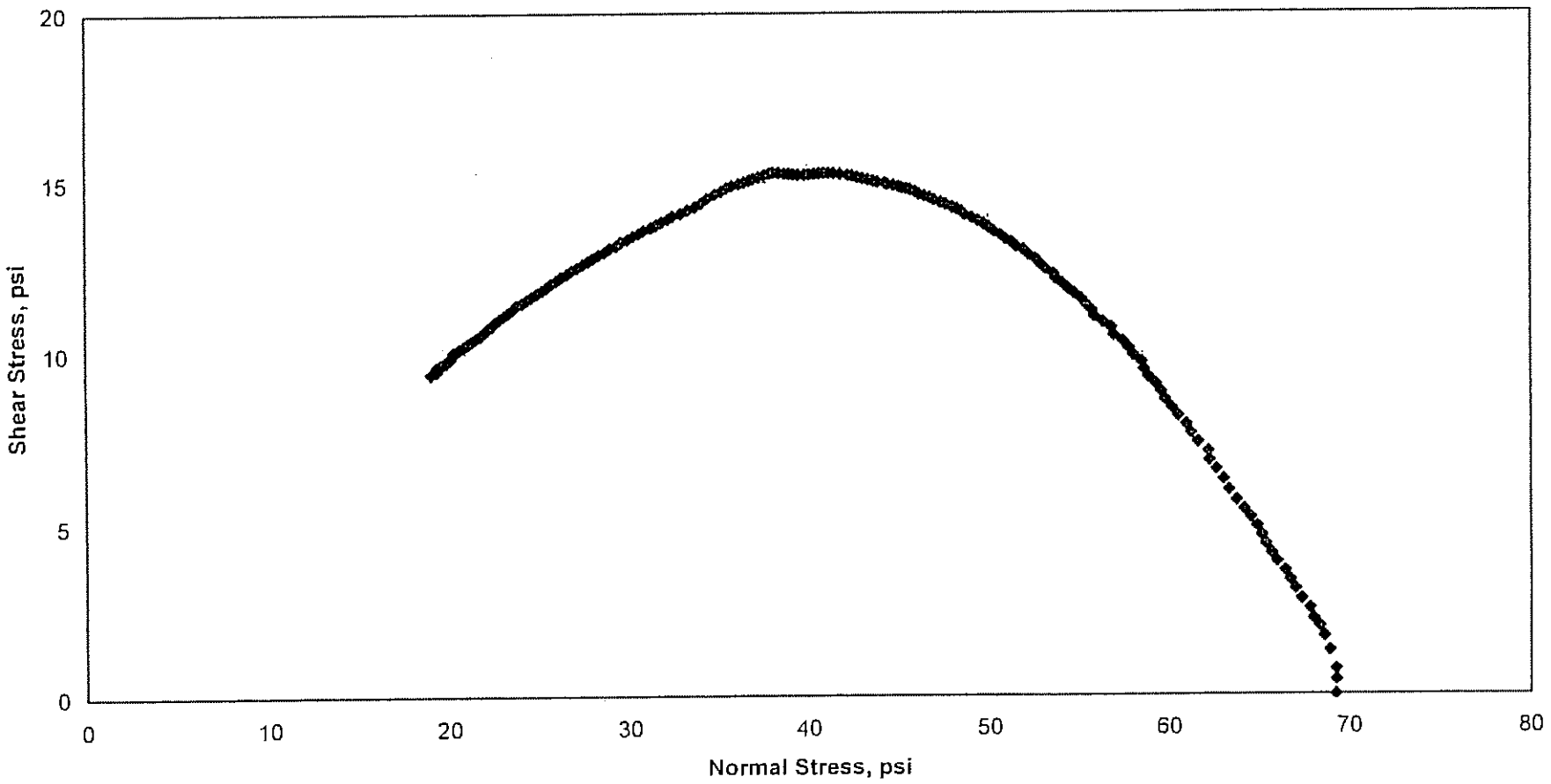
Boring ID: SPT-9 Sample No.:SH-3
Test No. DSS2N
Normal Load = 5000 psf



Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 9

Boring ID: SPT-9 Sample No.:SH-3
Test No. DSS3
Normal Load = 10000 psf

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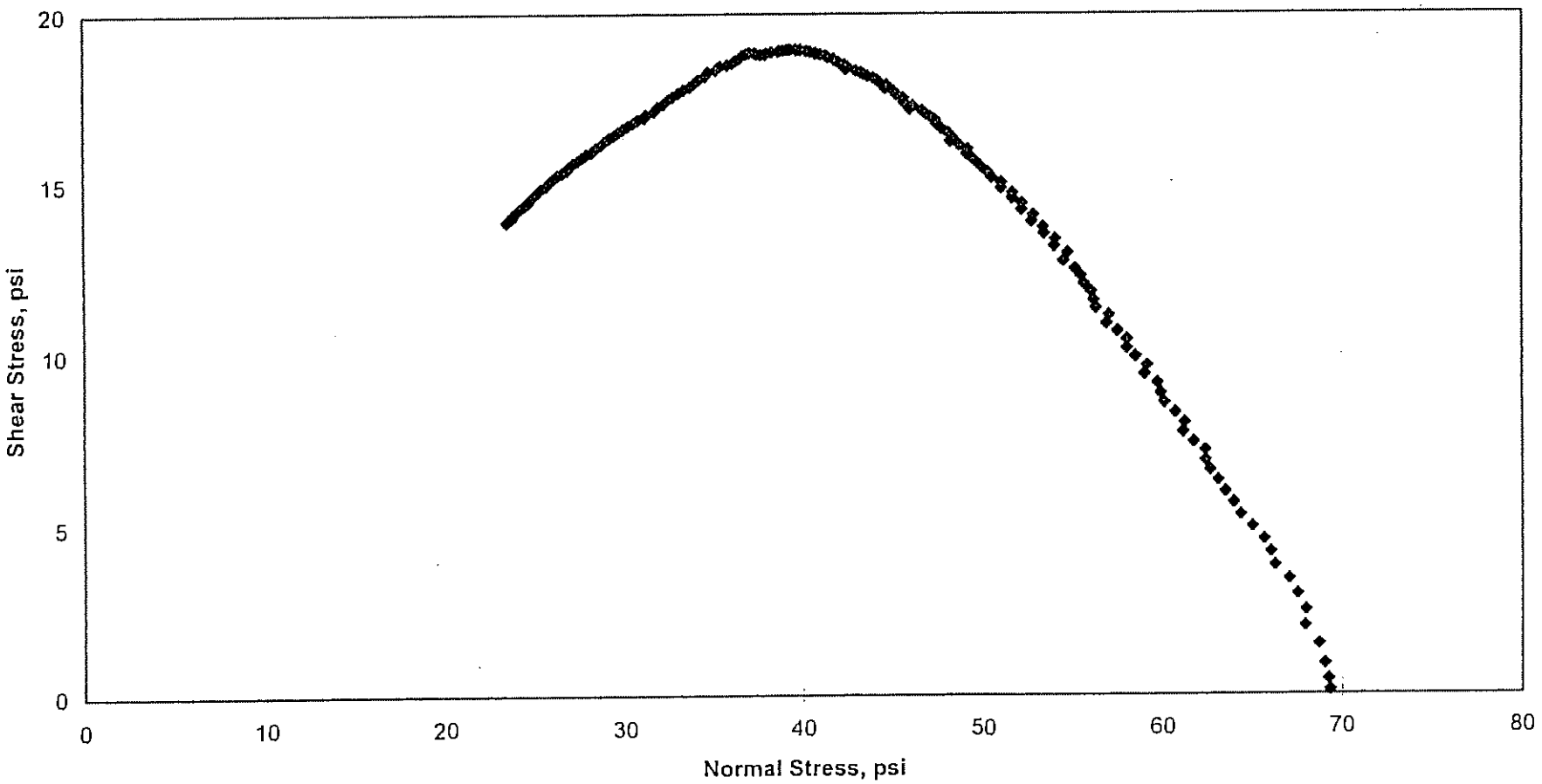
Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 10

Boring ID: SPT-9 Sample No.:SH-3
Test No. DSS3N
Normal Load = 10000 psf

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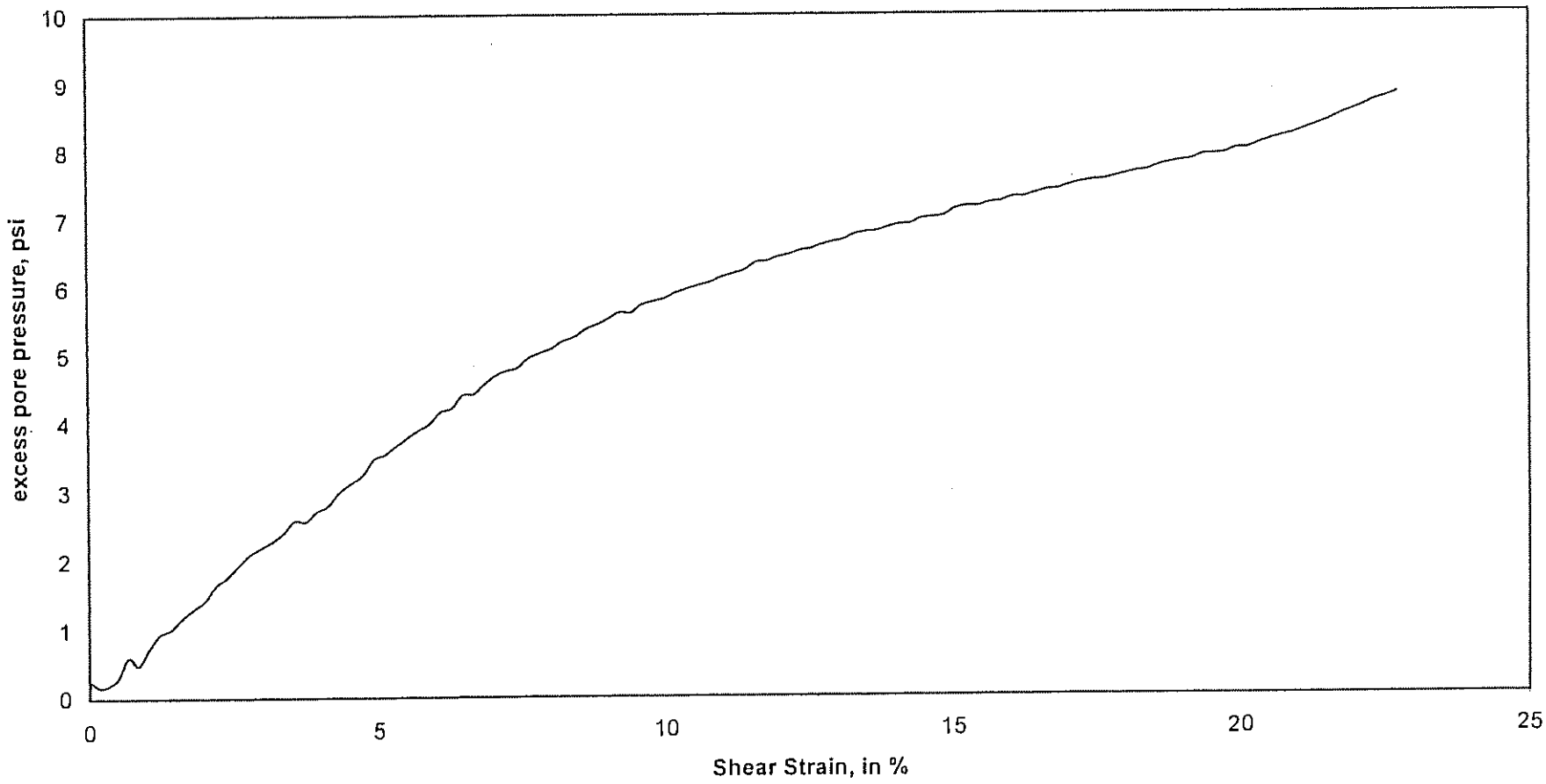
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 11

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS1
Normal Load = 2500 psf

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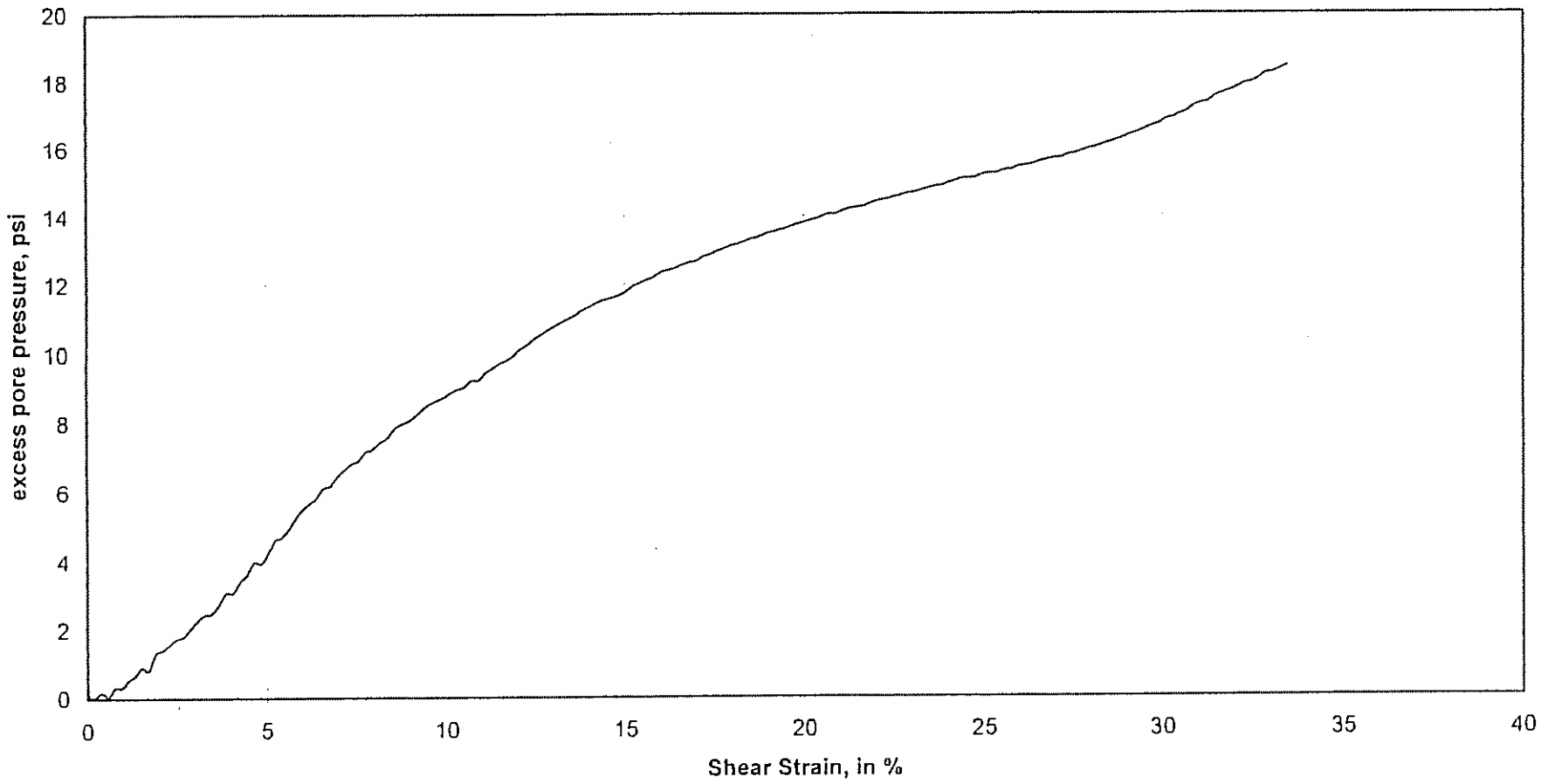
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 12

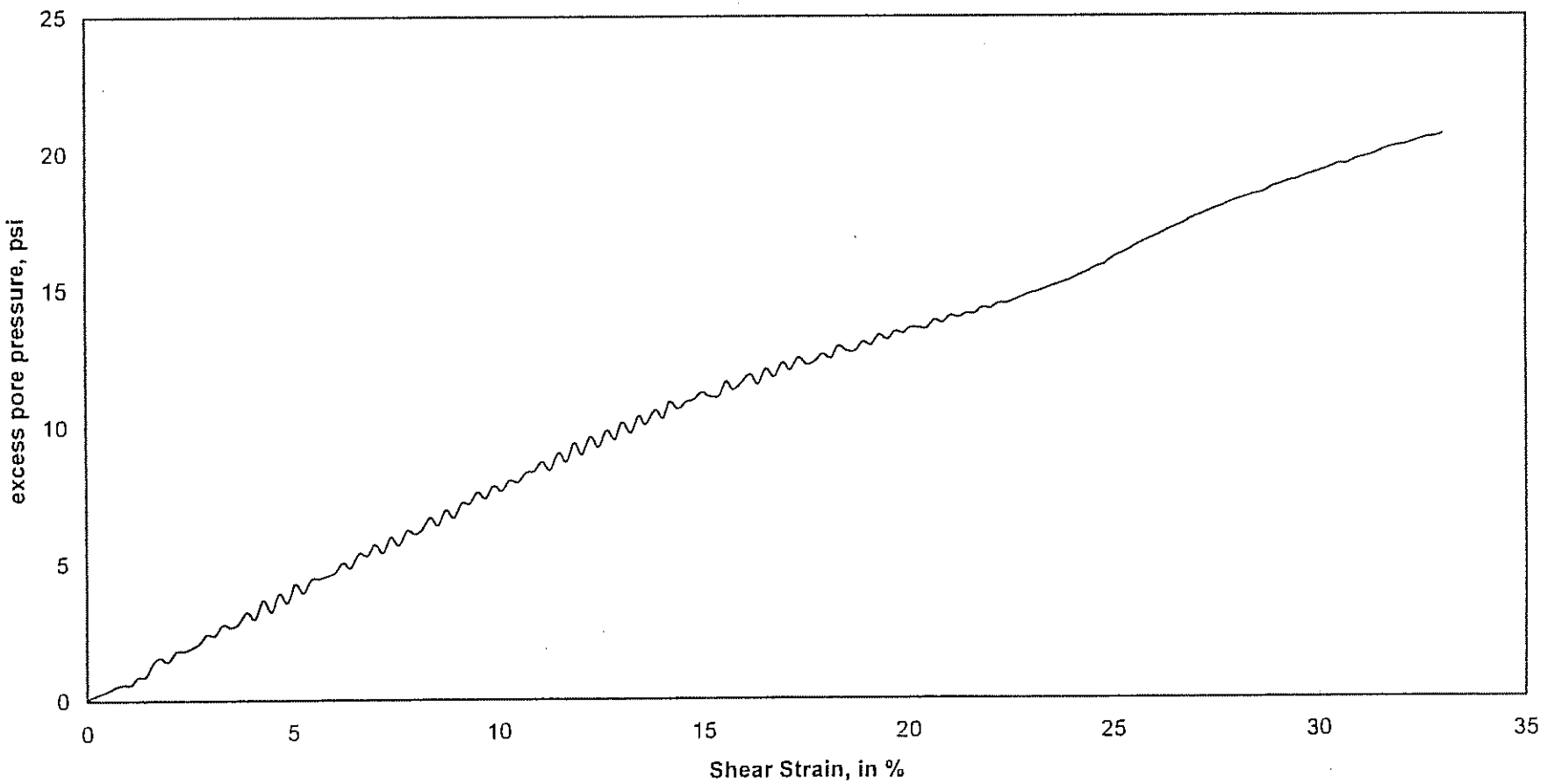
Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS2
Normal Load = 5000 psf



Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 13

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS2N
Normal Load = 5000 psf

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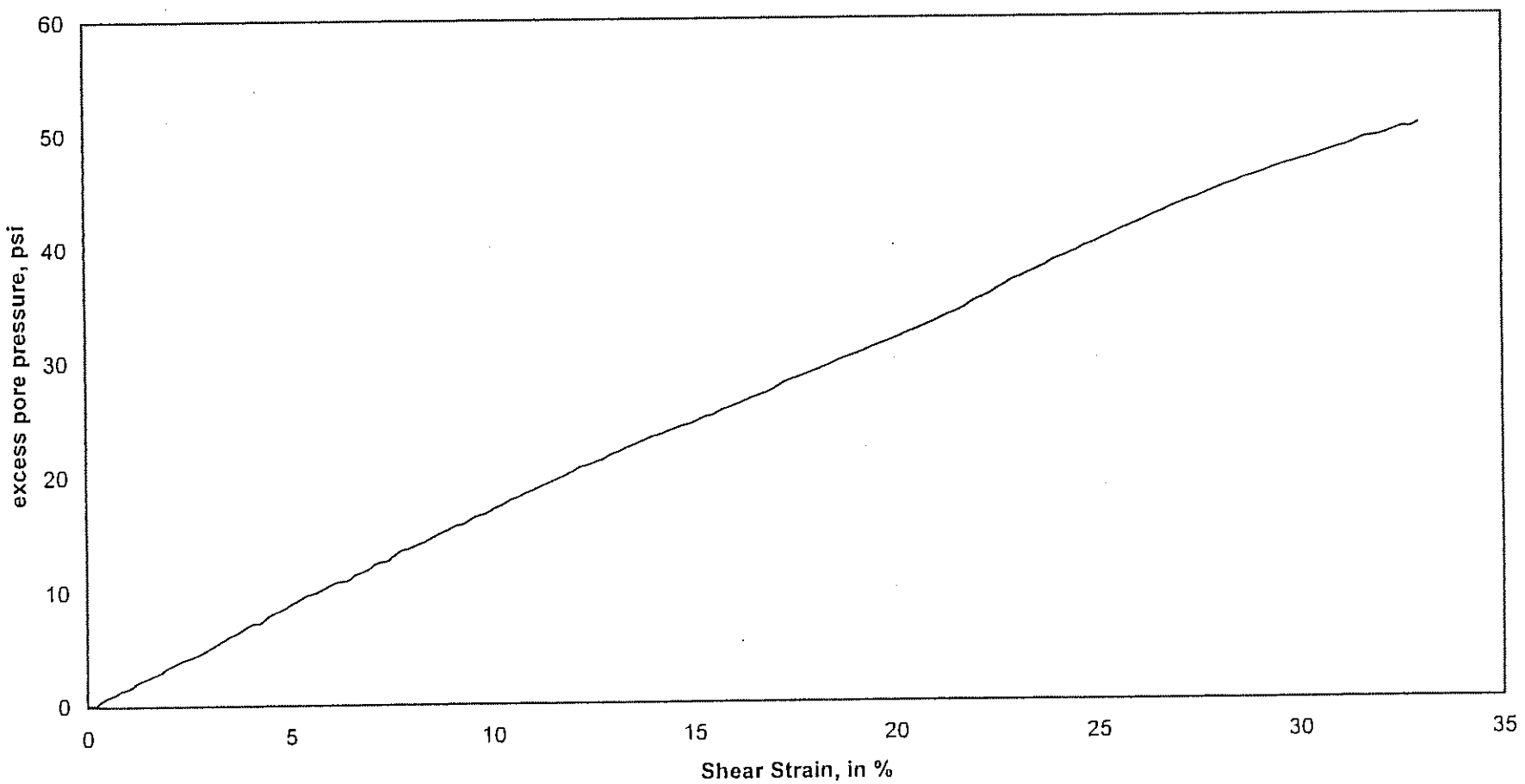
## Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 14

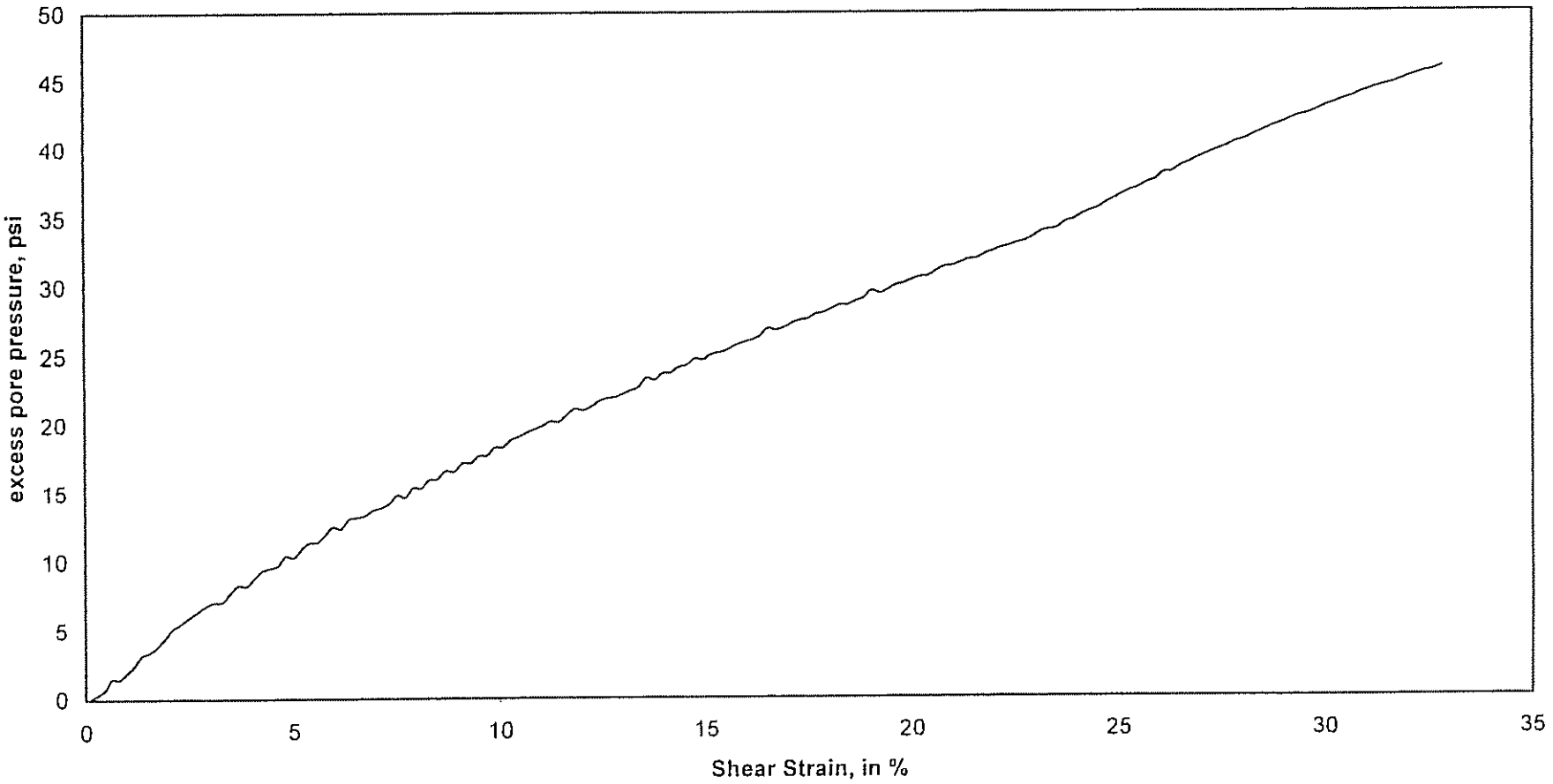
Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS3
Normal Load = 10000 psf



Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 15

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS3N
Normal Load = 10000 psf

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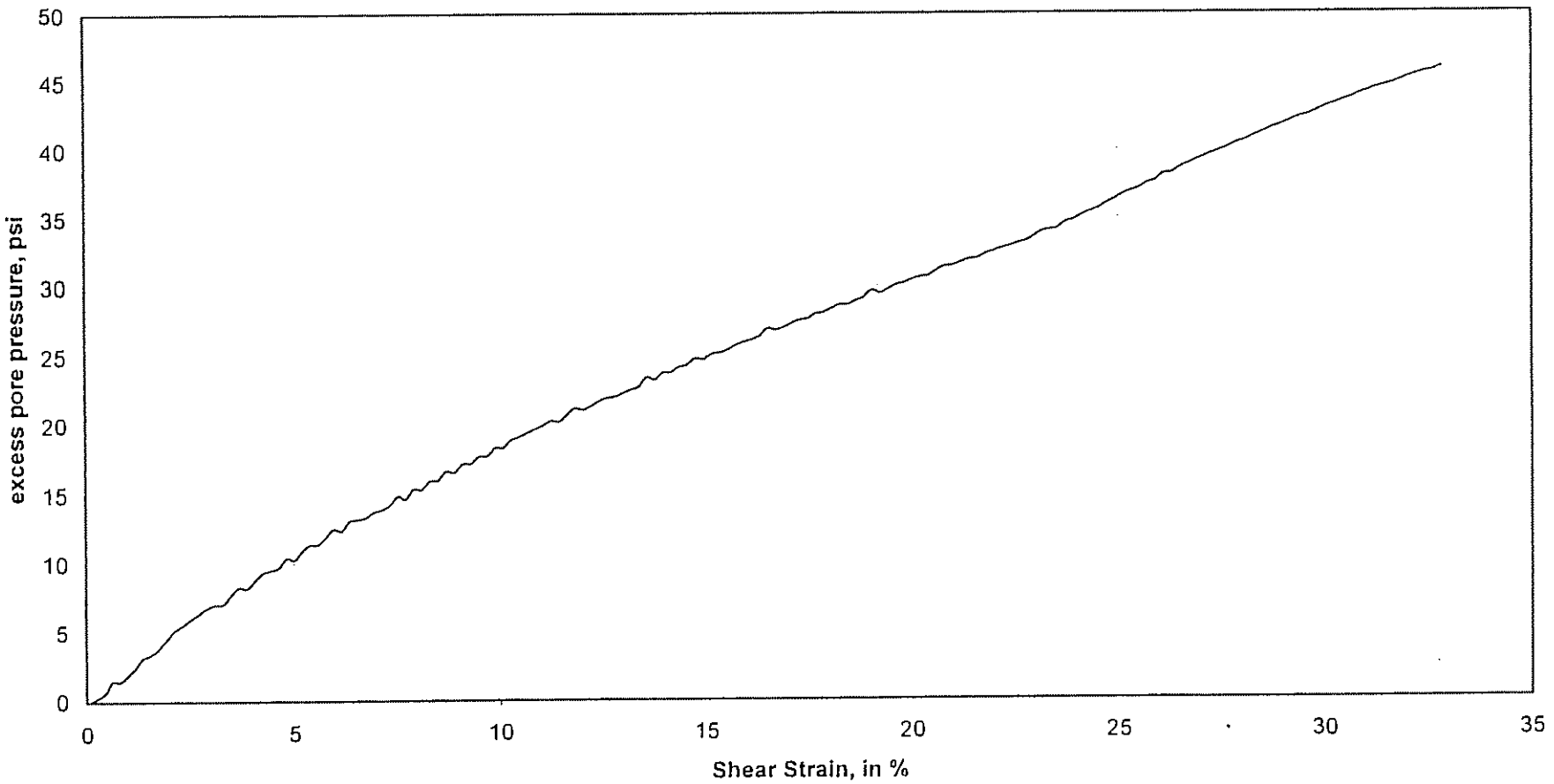
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 15

Boring ID: SPT-9 Sample No.: SH-3
Test No. DSS3N
Normal Load = 10000 psf

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# Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

Client: GeoSyntec Consultants
Project Name: Cherry Island Landfill
Project Location: Wilmington, DE

GTX#: 4066
Test Date: 07/16/02

Boring ID: SPT-10
Sample ID: SH-3

Visual Description: Moist, black clay with organics

Test Equipment: Top and bottom box (circular) = 2.62 in diameter. Load cells and LVDTs connected to data acquisition system for shear force, normal load, horizontal and vertical displacement; surface area = 5.39 $in^2$, soil height = 1 inch

Test Condition: inundated

Sample Type and Preparation:
Extruded from tube, cut, trimmed and placed into apparatus at as-received density and moisture content.

| Parameter | Point 1 | Point 2 | Point 3 | Point 4 | Point 5 |
|---|---|---|---|---|---|
| Test No. | DSS4 | DSS5 | DSS6 | DSS6N | DSS6NN |
| Initial Moisture Content at 60 C, % | 84 | 86 | 69 | 65 | 63 |
| Initial Dry Density, pcf | 56 | 53 | 64 | 64 | 66 |
| Nominal Rate of Shear Strain, %/min | 0.002 | 0.002 | 0.002 | 0.002 | 0.002 |
| Vertical Consolidation Stress, psf | 2500 | 5000 | 10000 | 10000 | 10000 |
| Peak Shear Stress, psf | 839 | 1386 | 2480 | 2514 | 1950 |
| Final Moisture Content at 60 C, % | 63 | 67 | 45 | 43 | --- |
| Final Moisture Content at 110 C, % | 63 | 69 | 45 | 47 | 47 |

Comments: Tested By: fy/rh Checked By: jdt

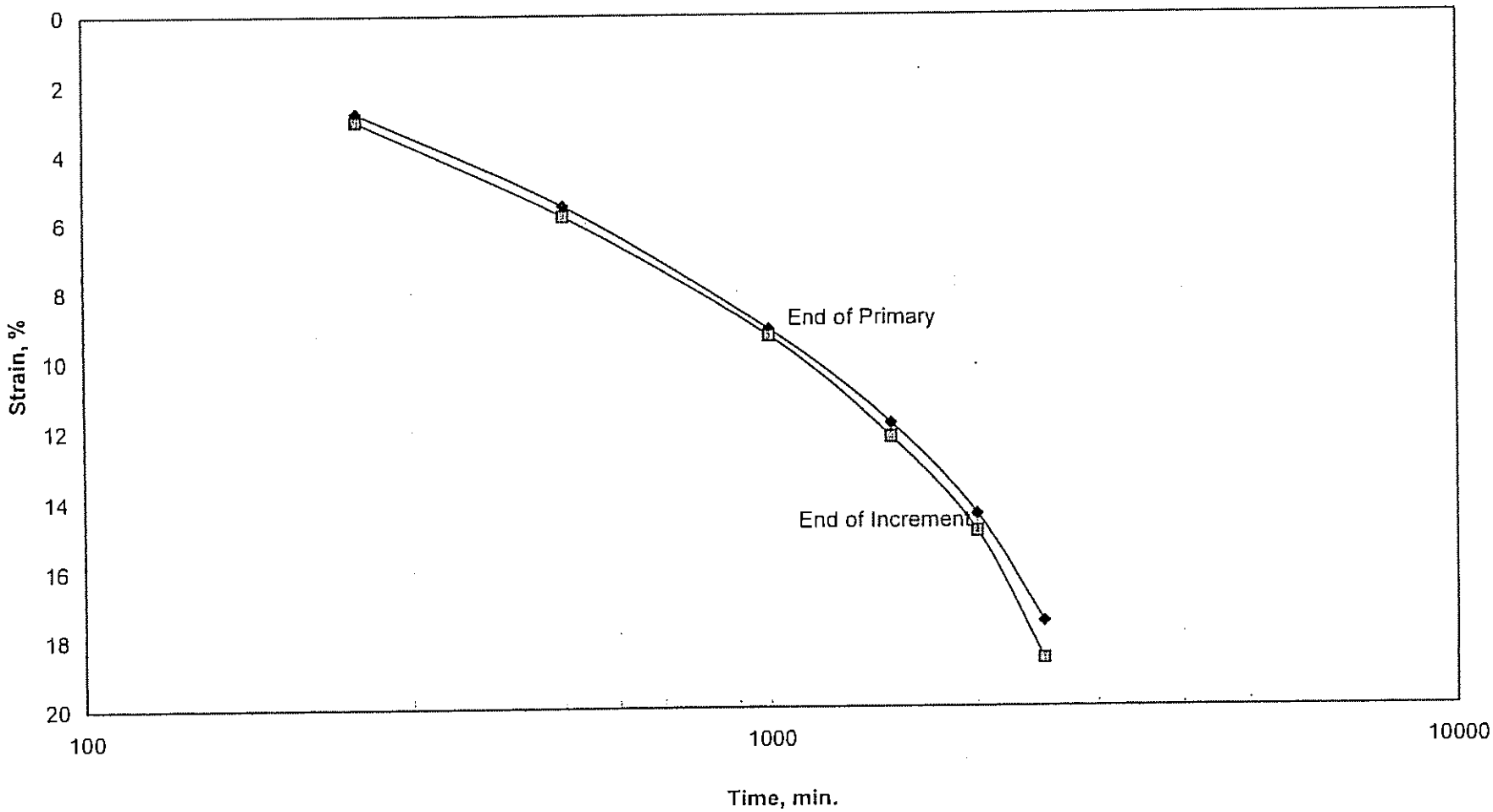
Consolidation phase plots for test DSS4, DSS5, and DSS6 are included on the following pages.

Shear Stress versus Shear Strain plots are presented in Figures 16, 17, 18, 19 and 20
Shear Stress versus Normal Stress plots are presented in Figures 21, 22, 23, 24 and 25
Excess Pore Pressure versus Shear Strain plots are presented in Figure 26, 27, 28, 29 and 30

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use ofthe material.

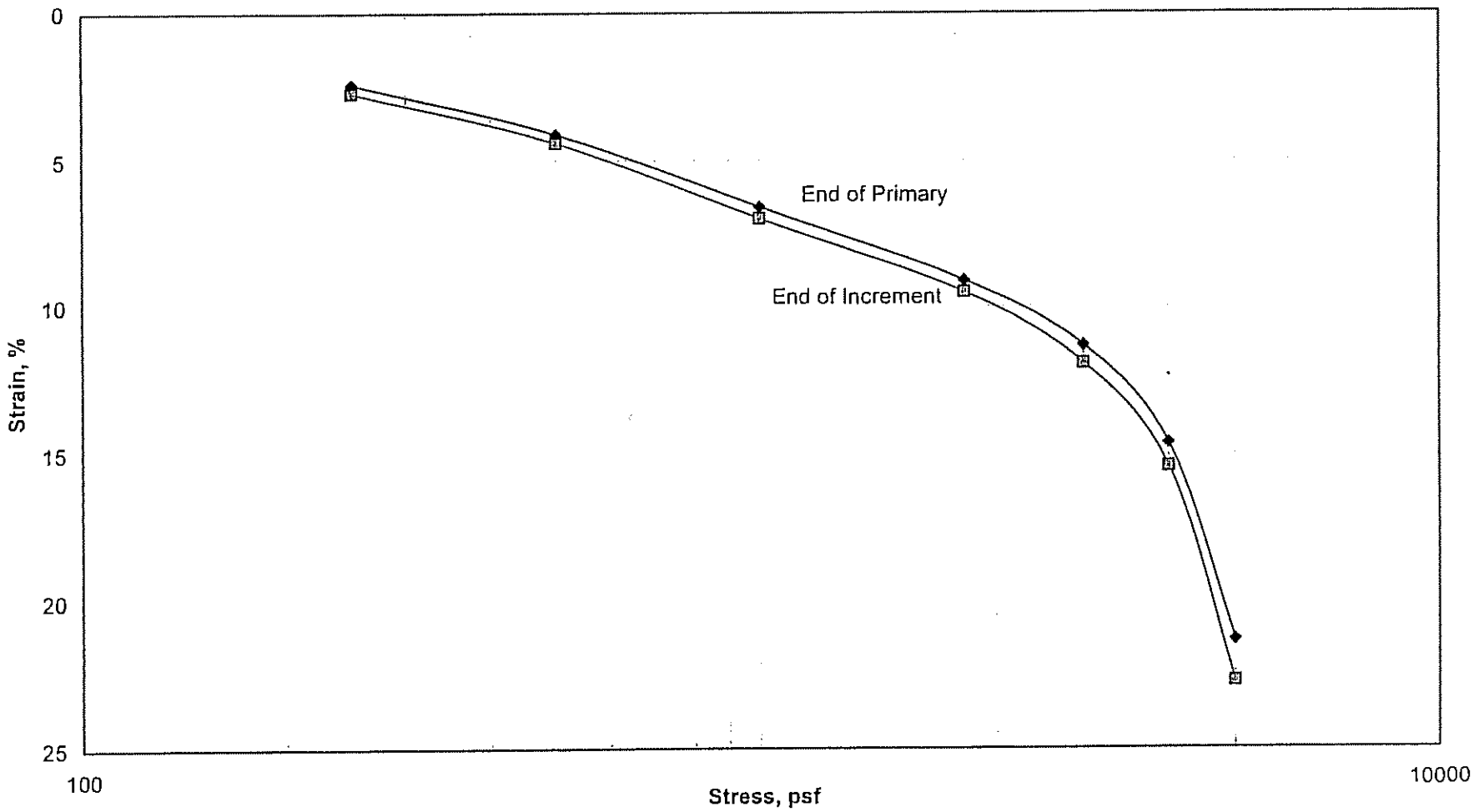
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

Consolidation Phase
Boring ID: SPT-10 Sample No.: SH3
Test No. DSS4
Normal Load = 2500 psf



## Consolidation Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D6528

Consolidation Phase
Boring ID: SPT-10 Sample No.: SH3
Test No. DSS5
Normal Load = 5000 psf

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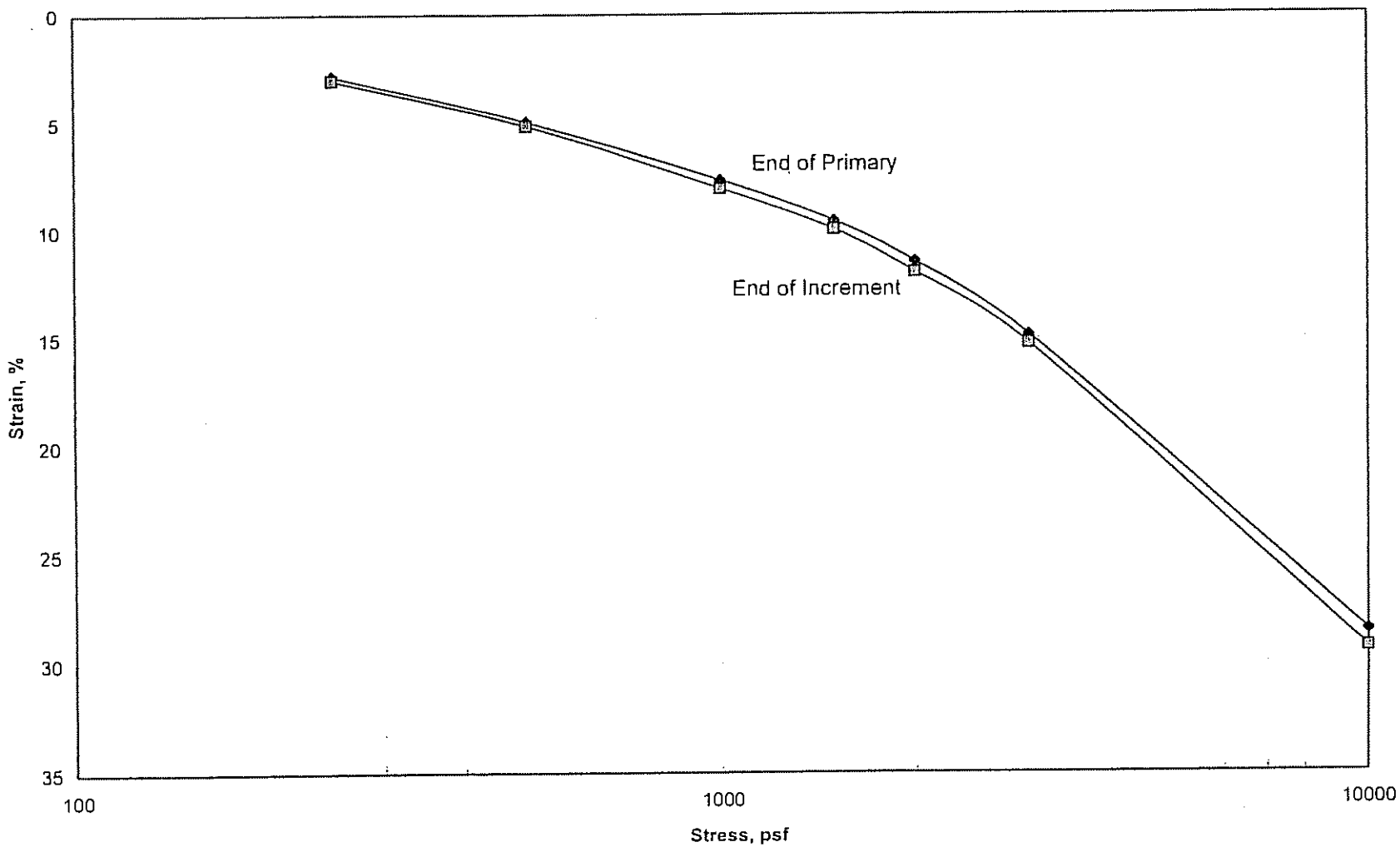
8/1[illegible]/2002

Consolidation Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D6528

Consolidation Phase
Boring ID: SPT-10 Sample No.: SH3
Test No. DSS6
Normal Load = 10000 psf

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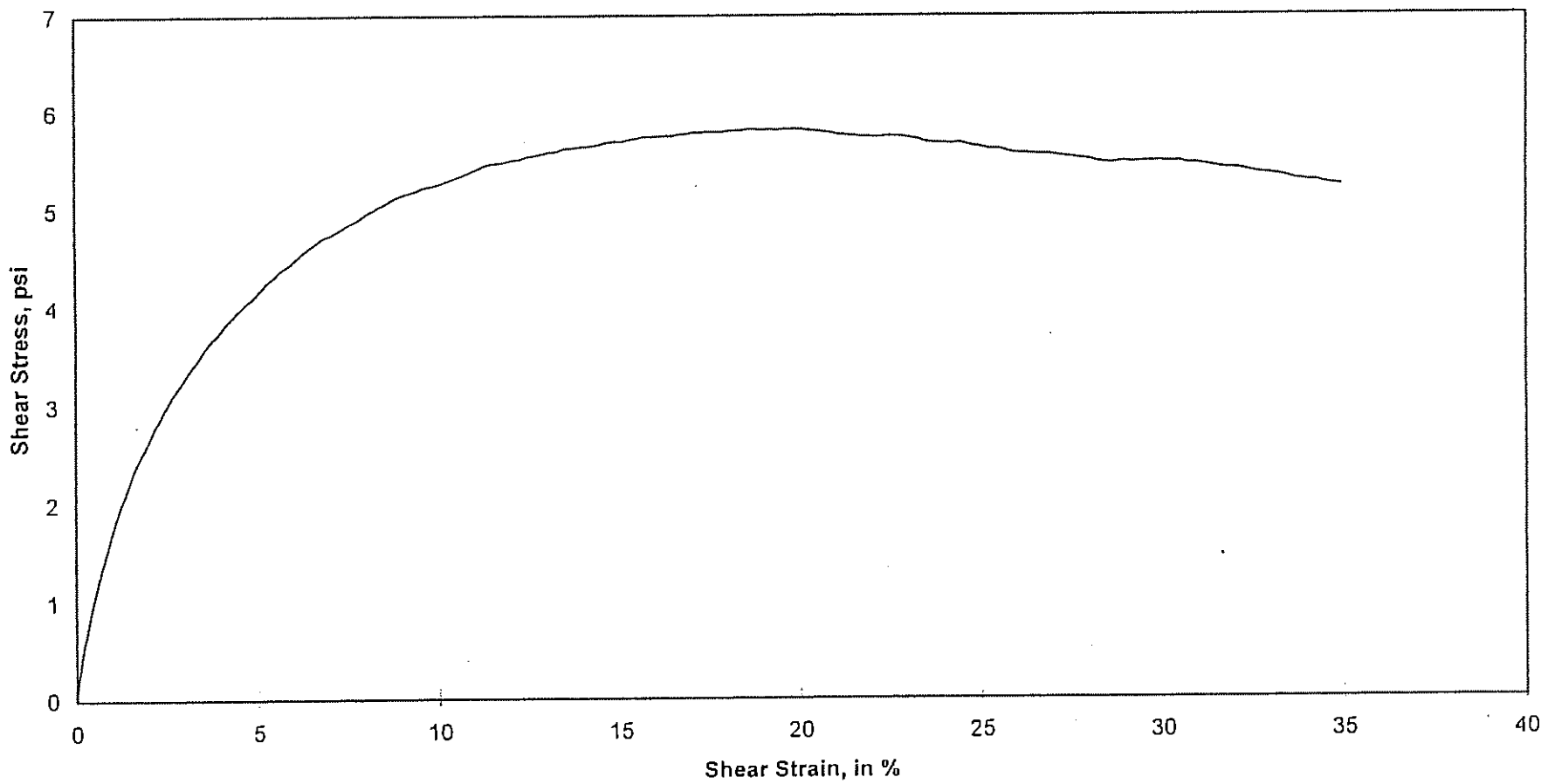
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 16

Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS4
Normal Load = 2500 psf

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Wilmington DE

8/14/2002

Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 17

Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS5
Normal Load = 5000 psf

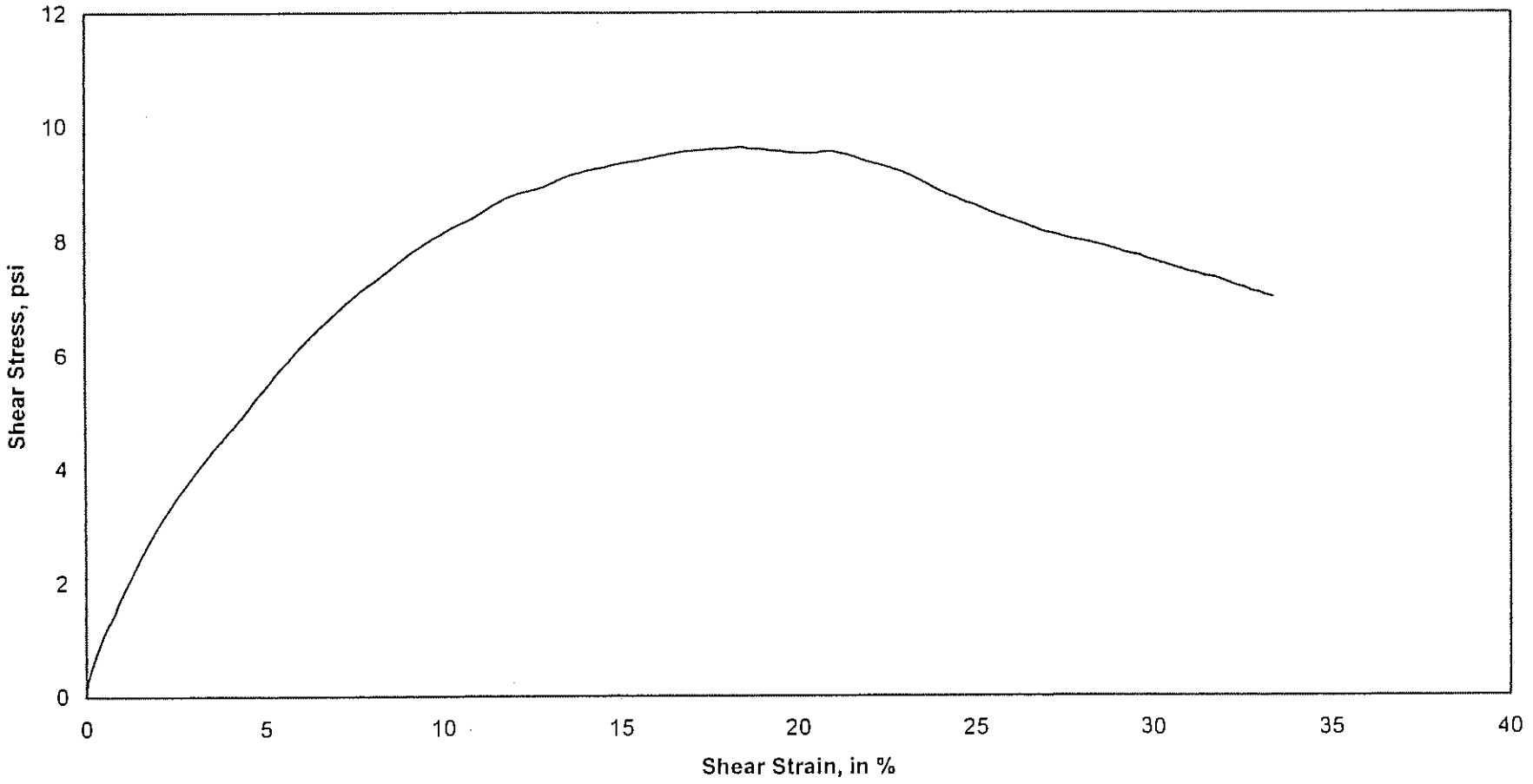


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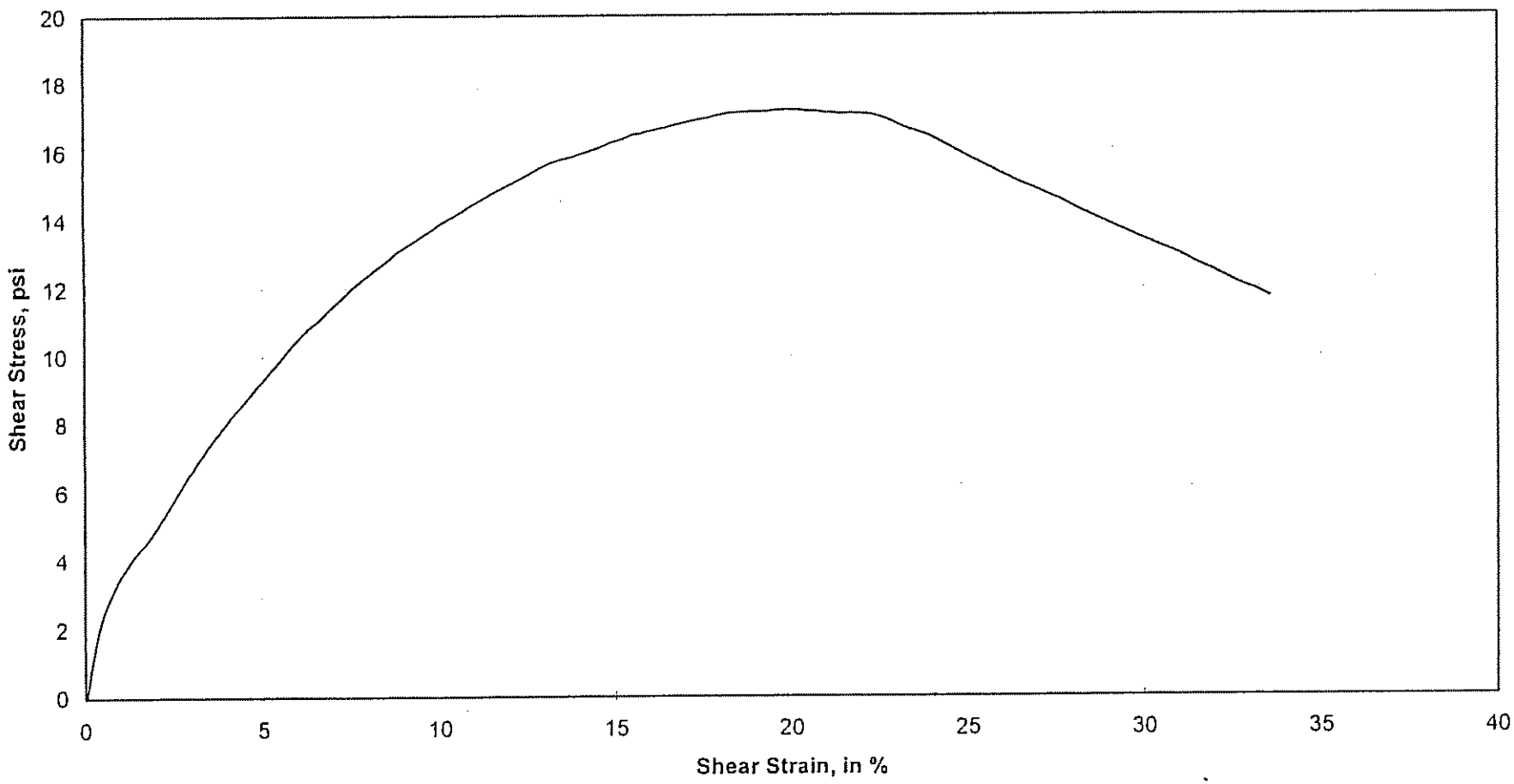
FIGURE 18

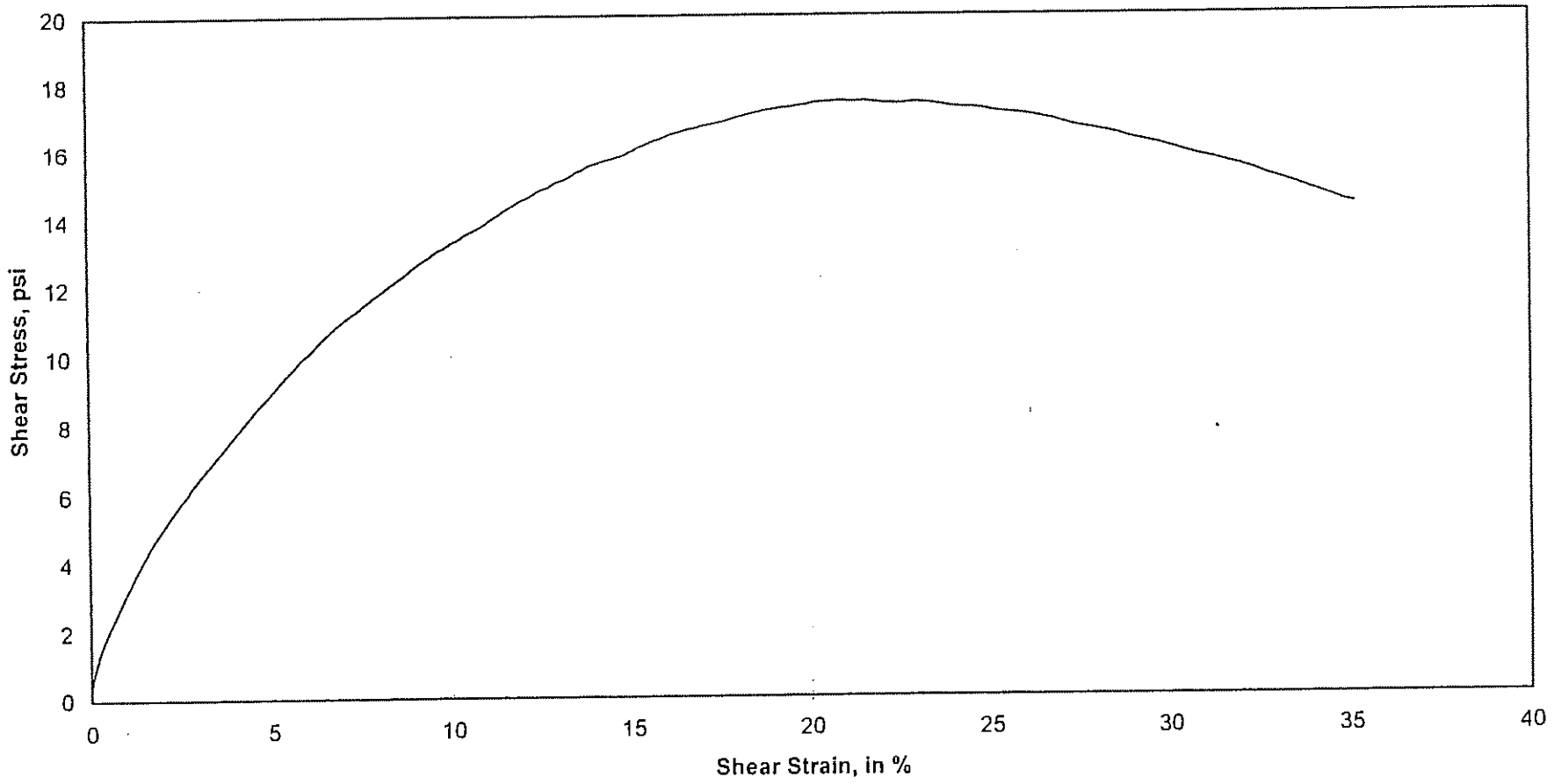
Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6
Normal Load = 10000 psf



Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 19

Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6N
Normal Load = 10000 psf , rebounded to 5000 psf

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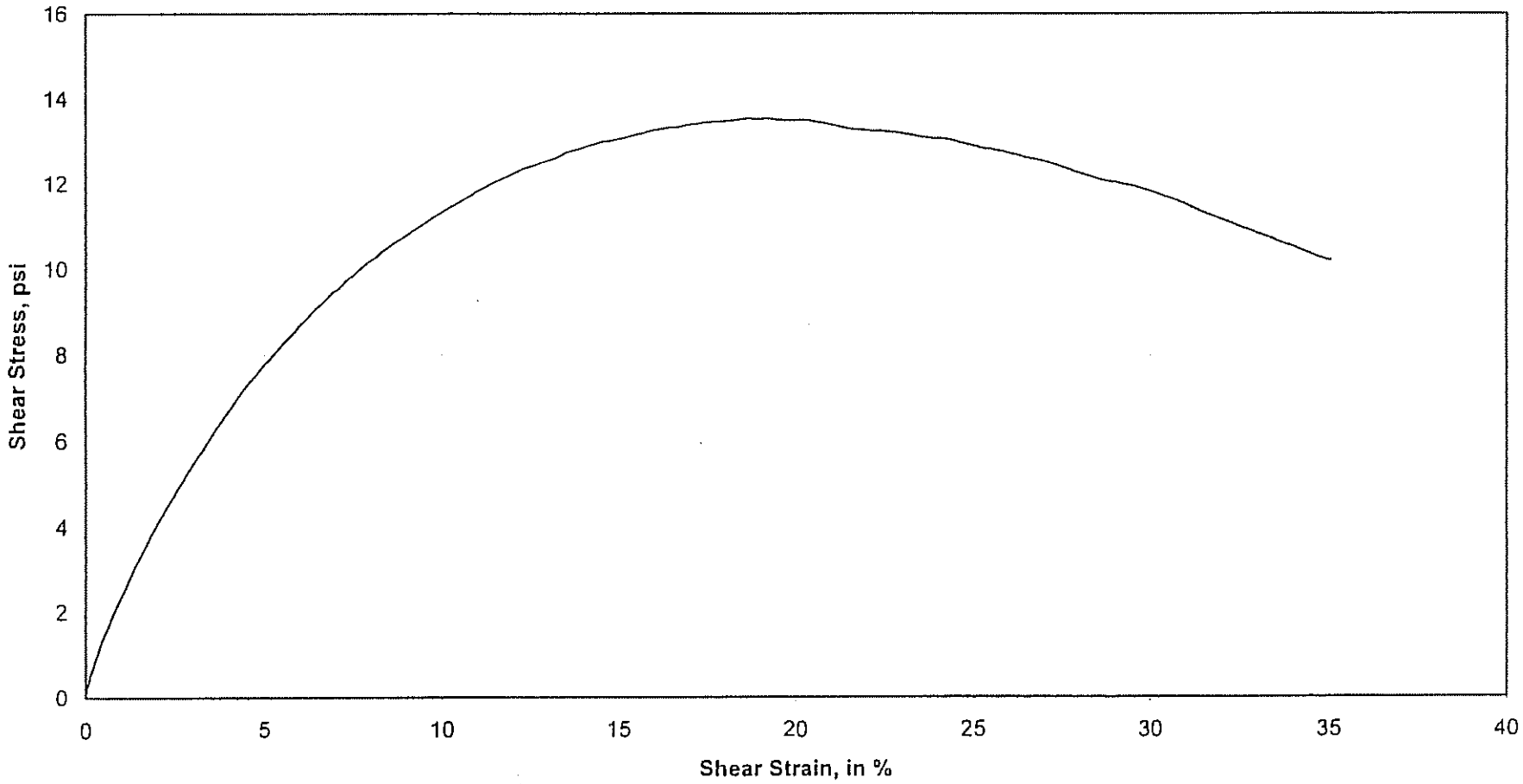
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 20

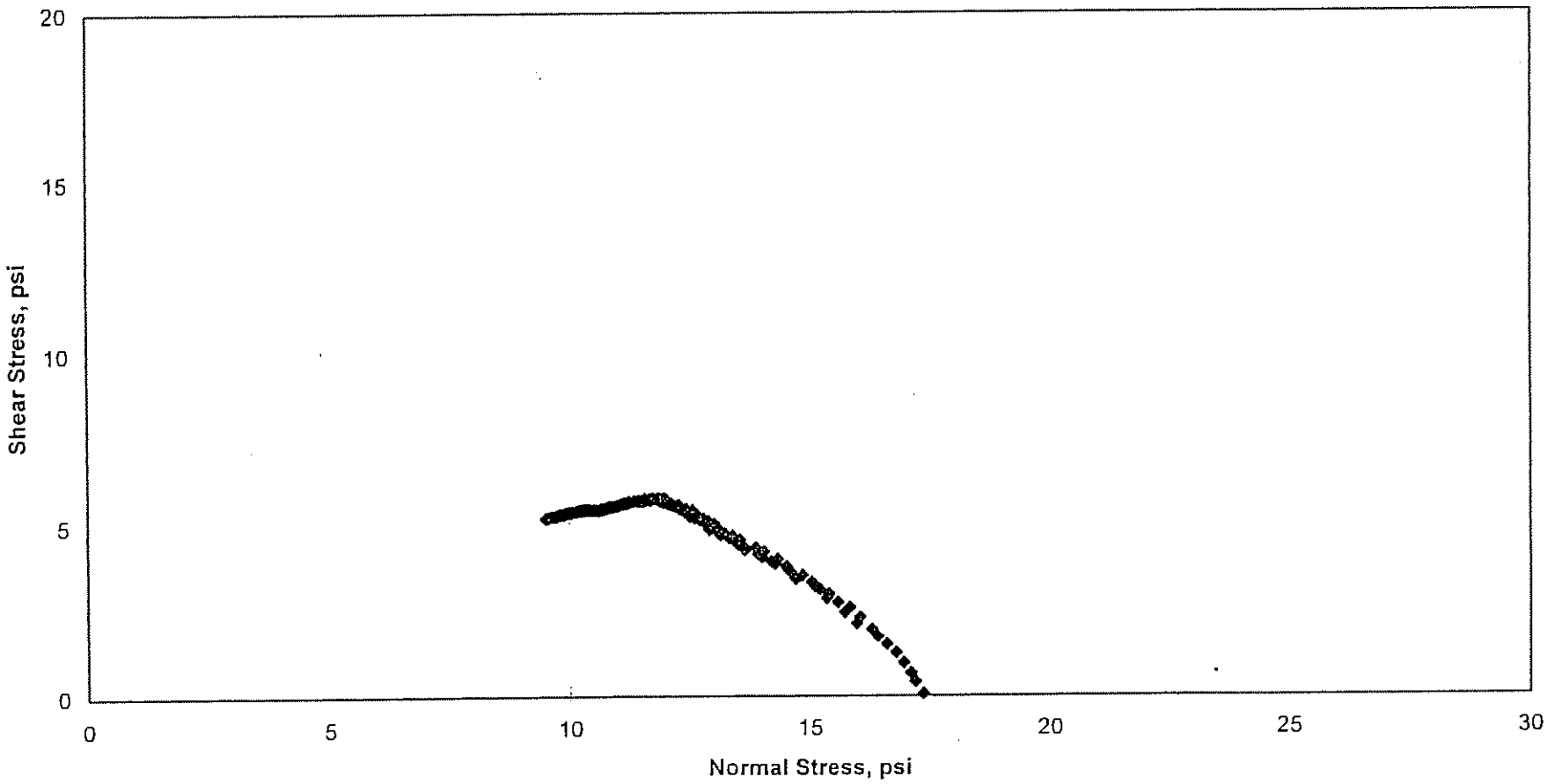
Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6NN
Normal Load = 10000 psf , rebounded to 2500 psf



Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 21

Boring ID: SPT-10 Sample No.:SH-3
Test No. DSS4
Normal Load = 2500 psf

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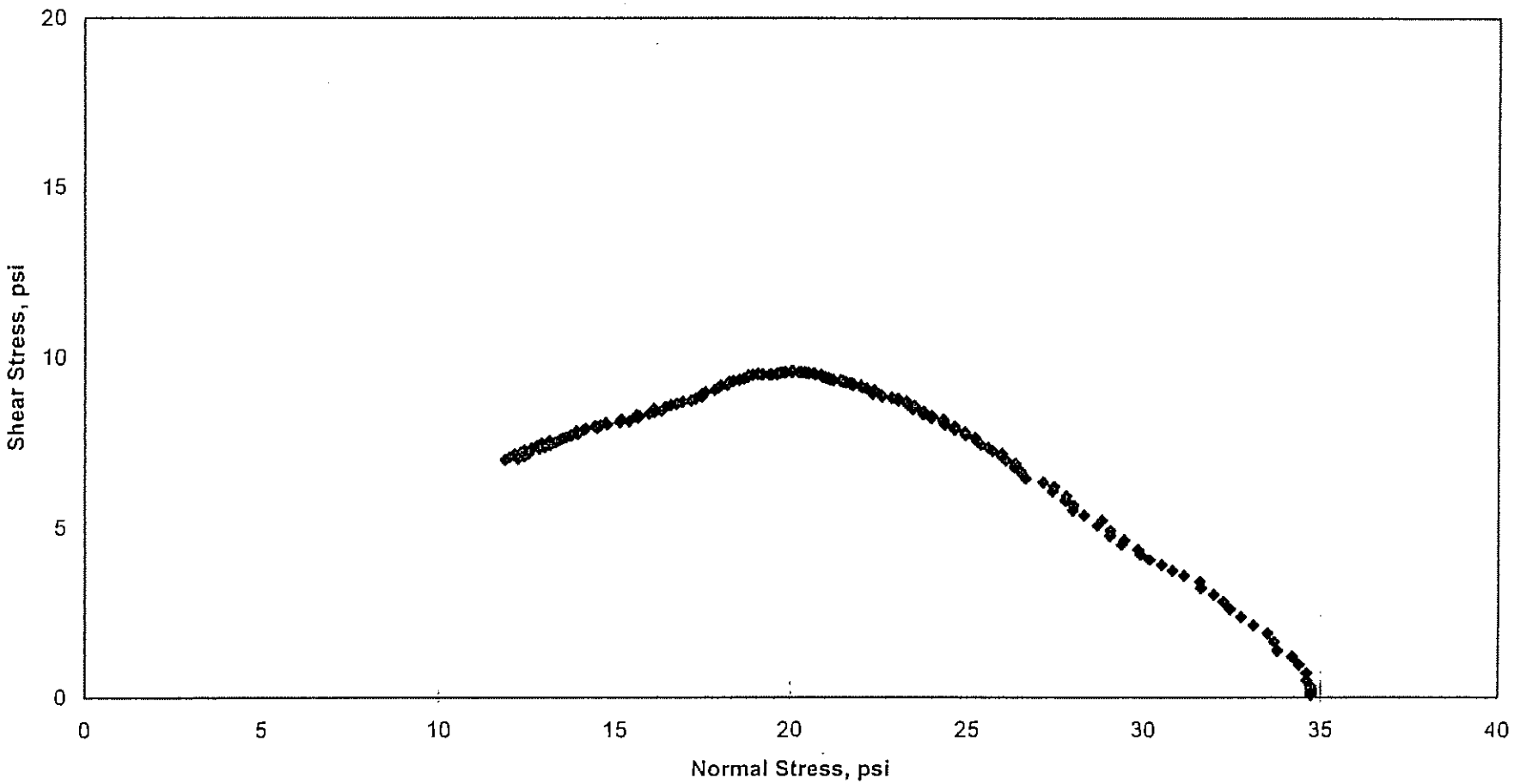
Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 22

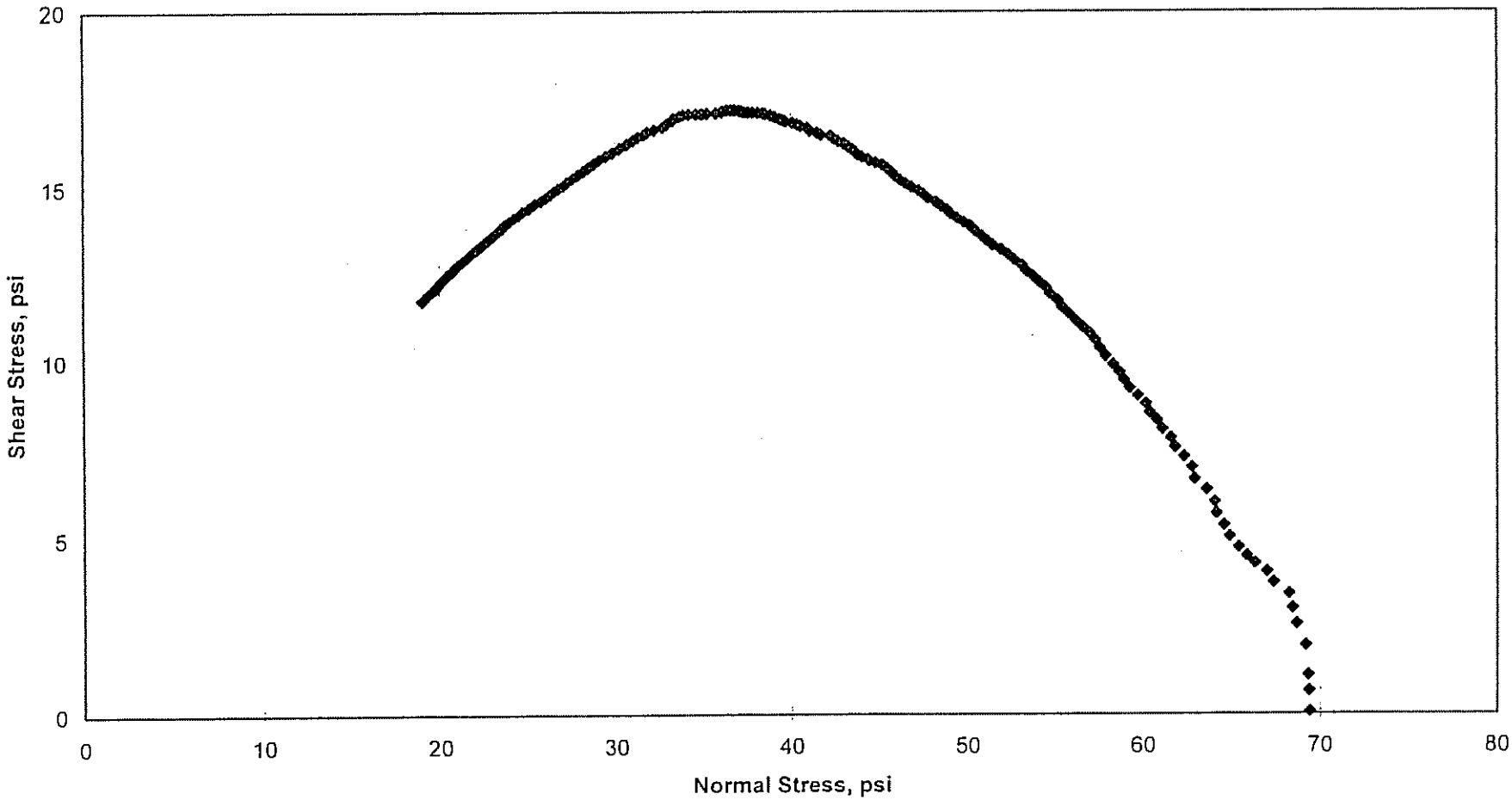
Boring ID: SPT-10 Sample No.:SH-3
Test No. DSS5
Normal Load = 5000 psf



Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 23

Boring ID: SPT-10 Sample No.:SH-3
Test No. DSS6
Normal Load = 10000 psf

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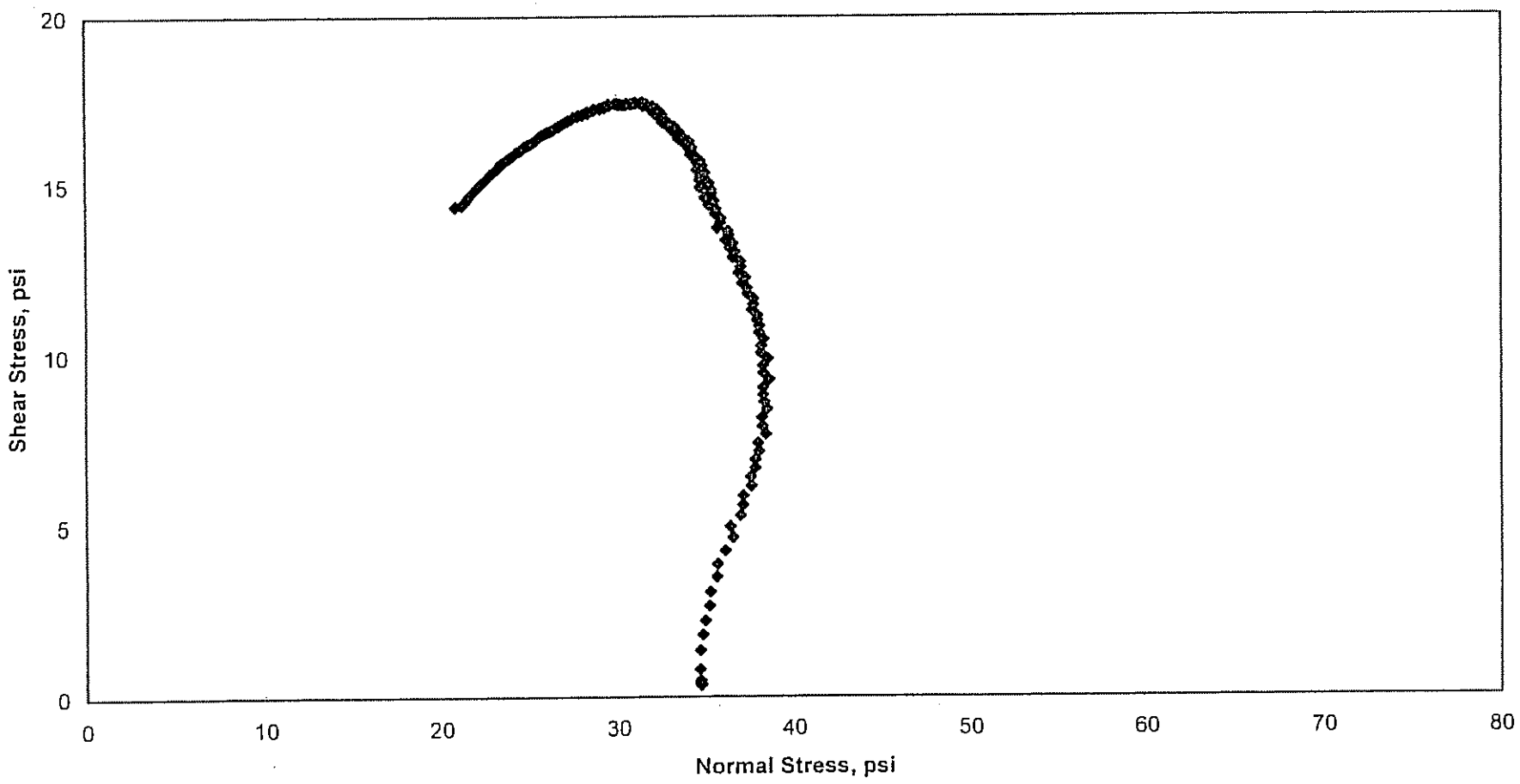
Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 24

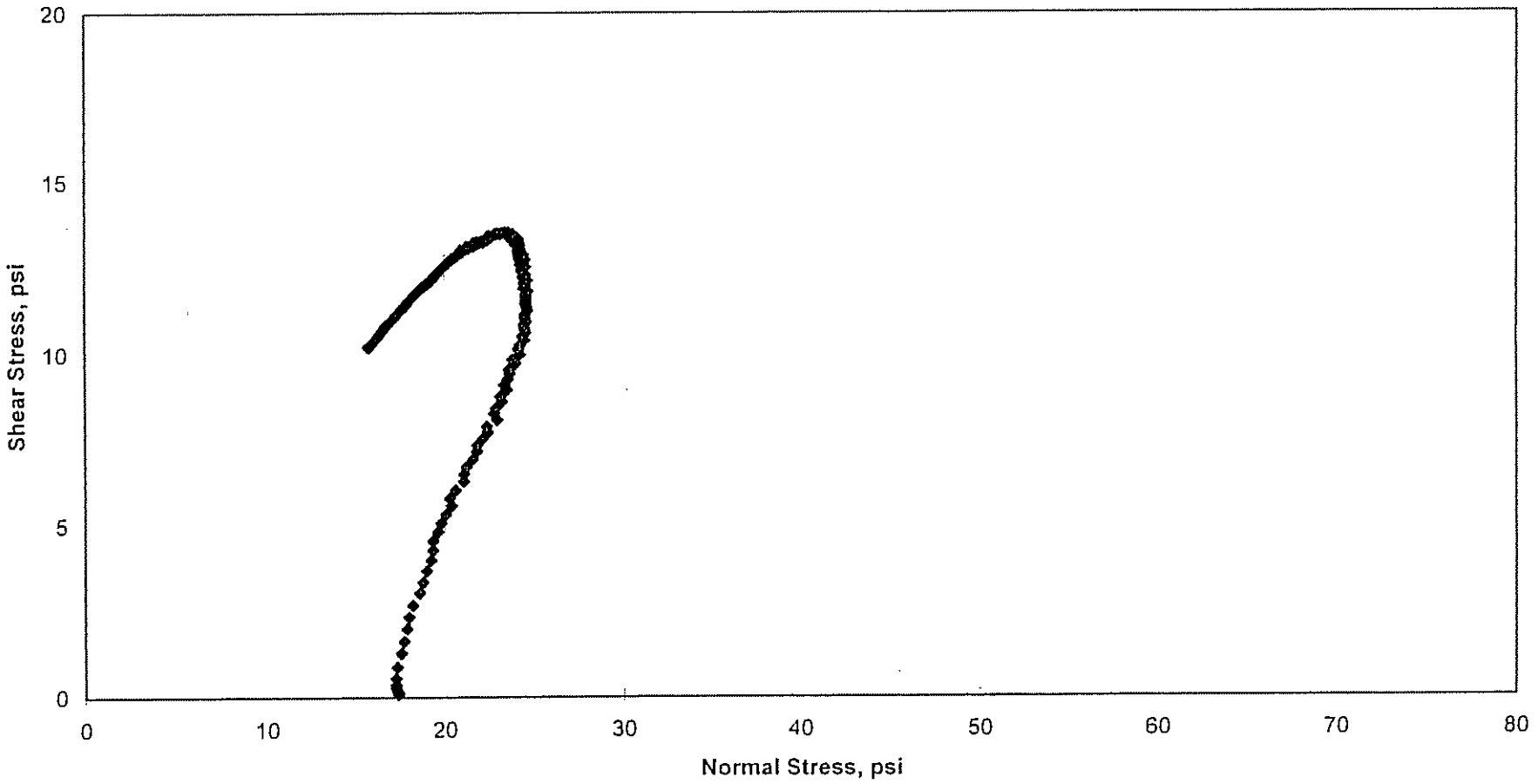
Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6N
Normal Load = 10000 psf , rebounded to 5000 psf



Consolidated Undrained Direct Sample Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 25

Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6NN
Normal Load = 10000 psf , rebounded to 2500 psf

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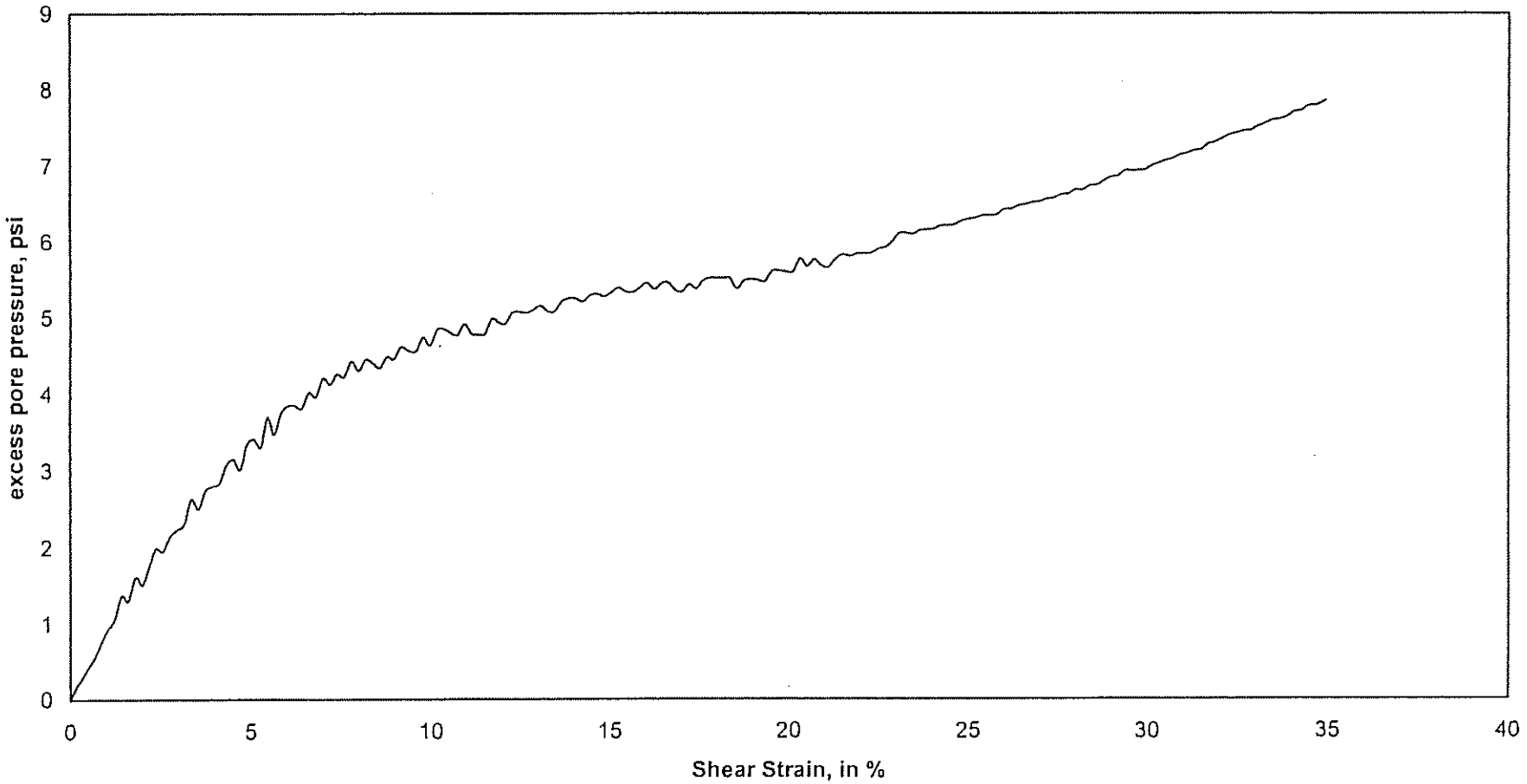
## Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 26

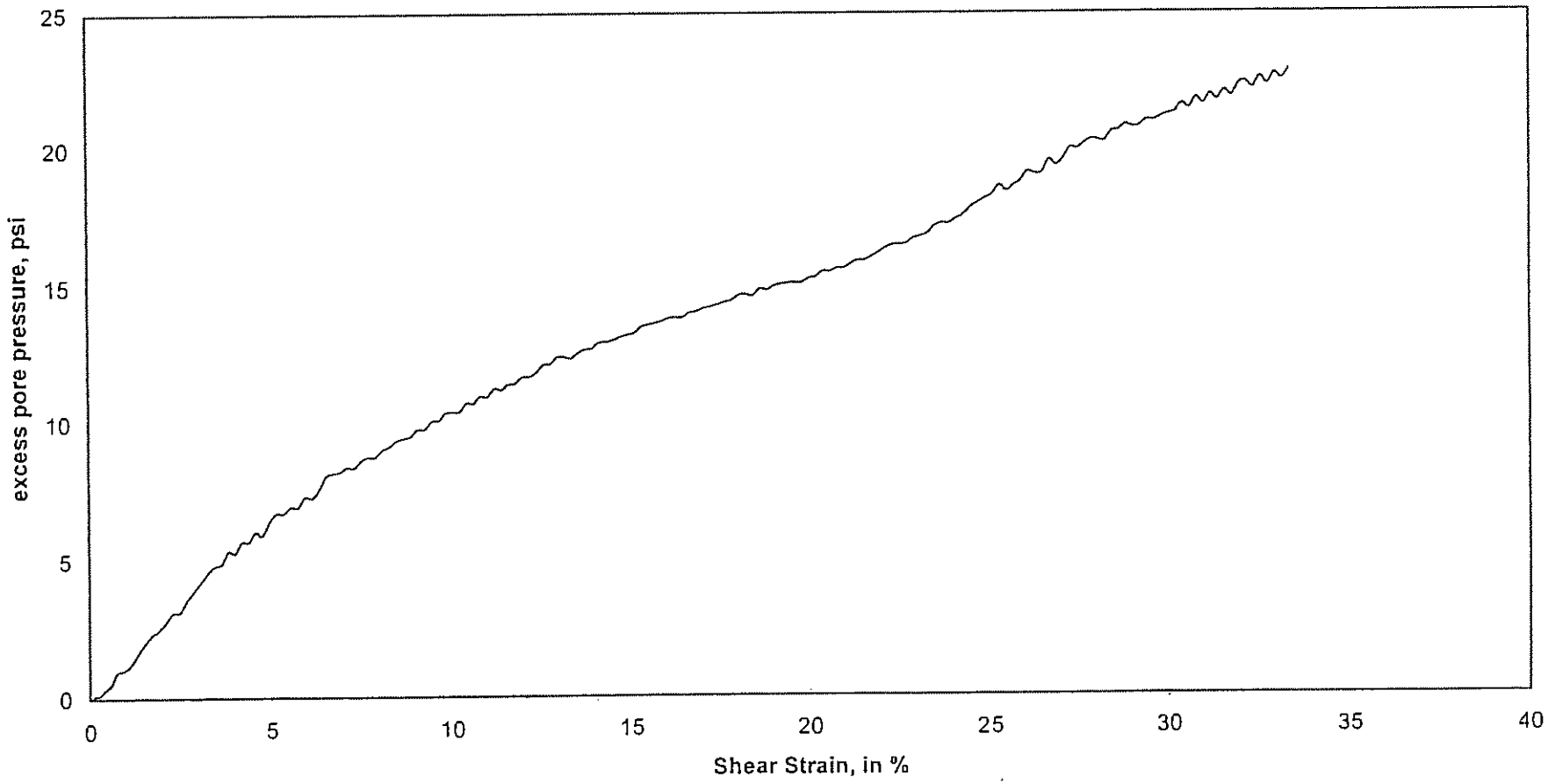
Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS4
Normal Load = 2500 psf



Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 27

Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS5
Normal Load = 5000 psf

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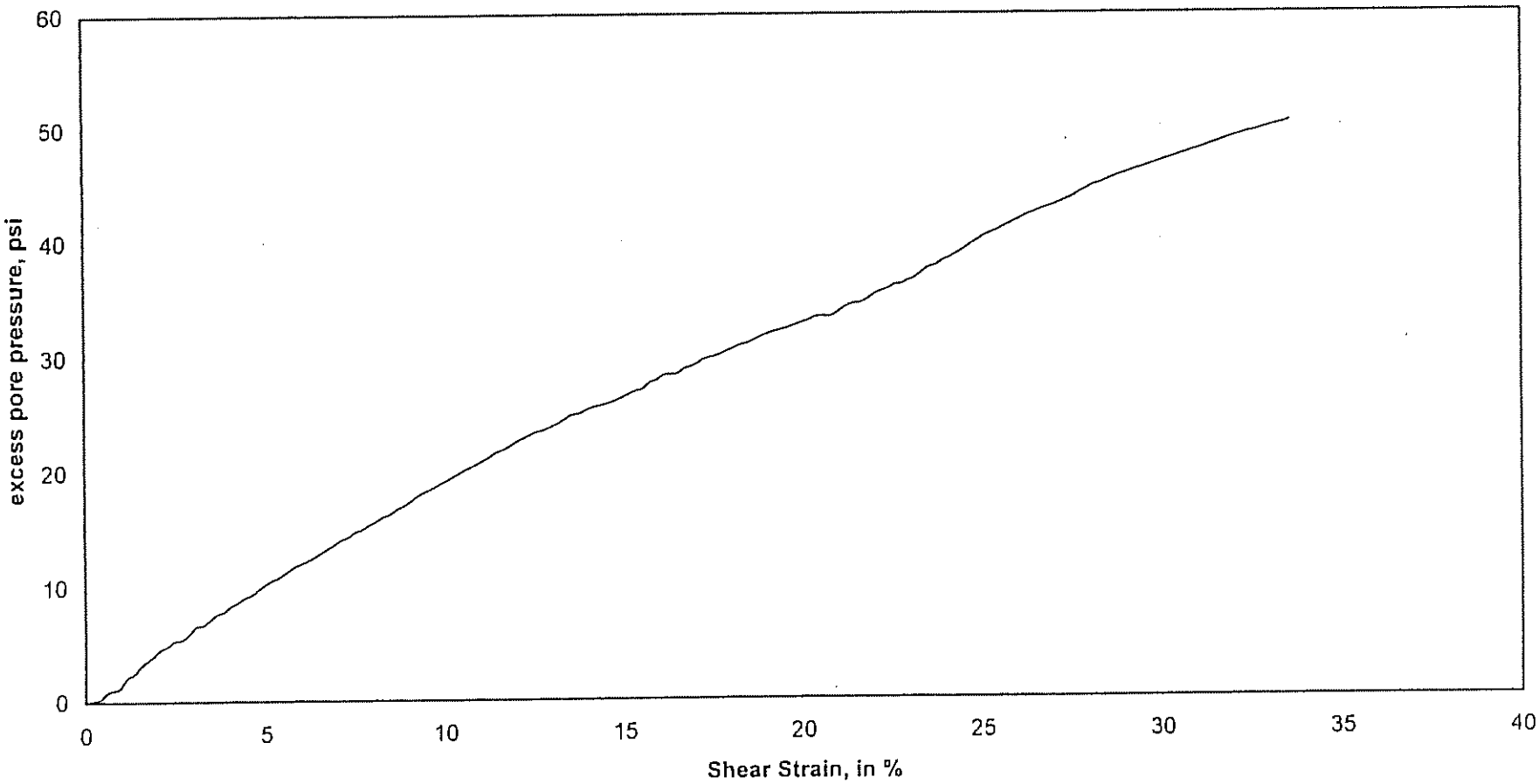
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

# FIGURE 28

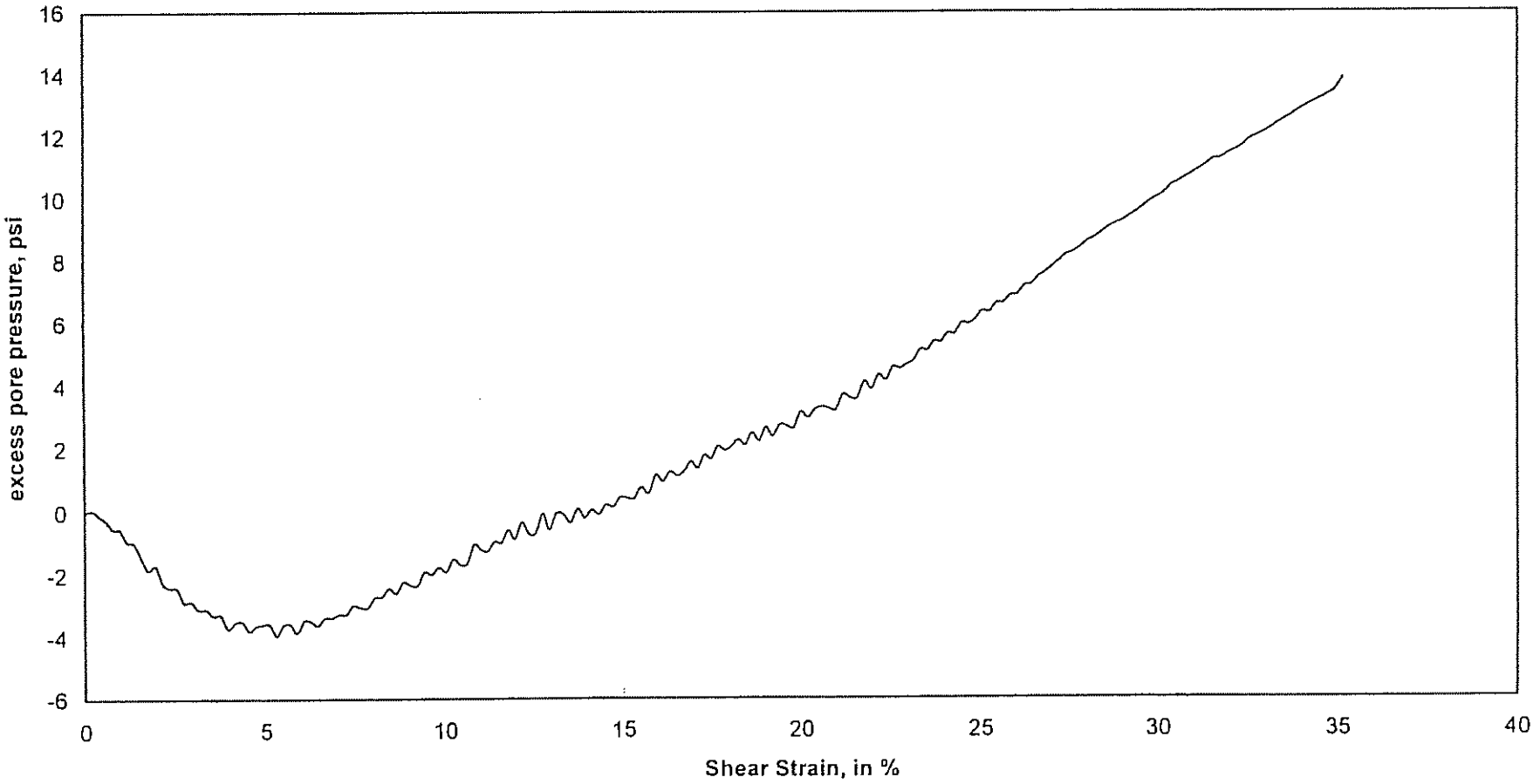
Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6
Normal Load = 10000 psf



Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 29

Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6N
Normal Load = 10000 psf , rebounded to 5000 psf

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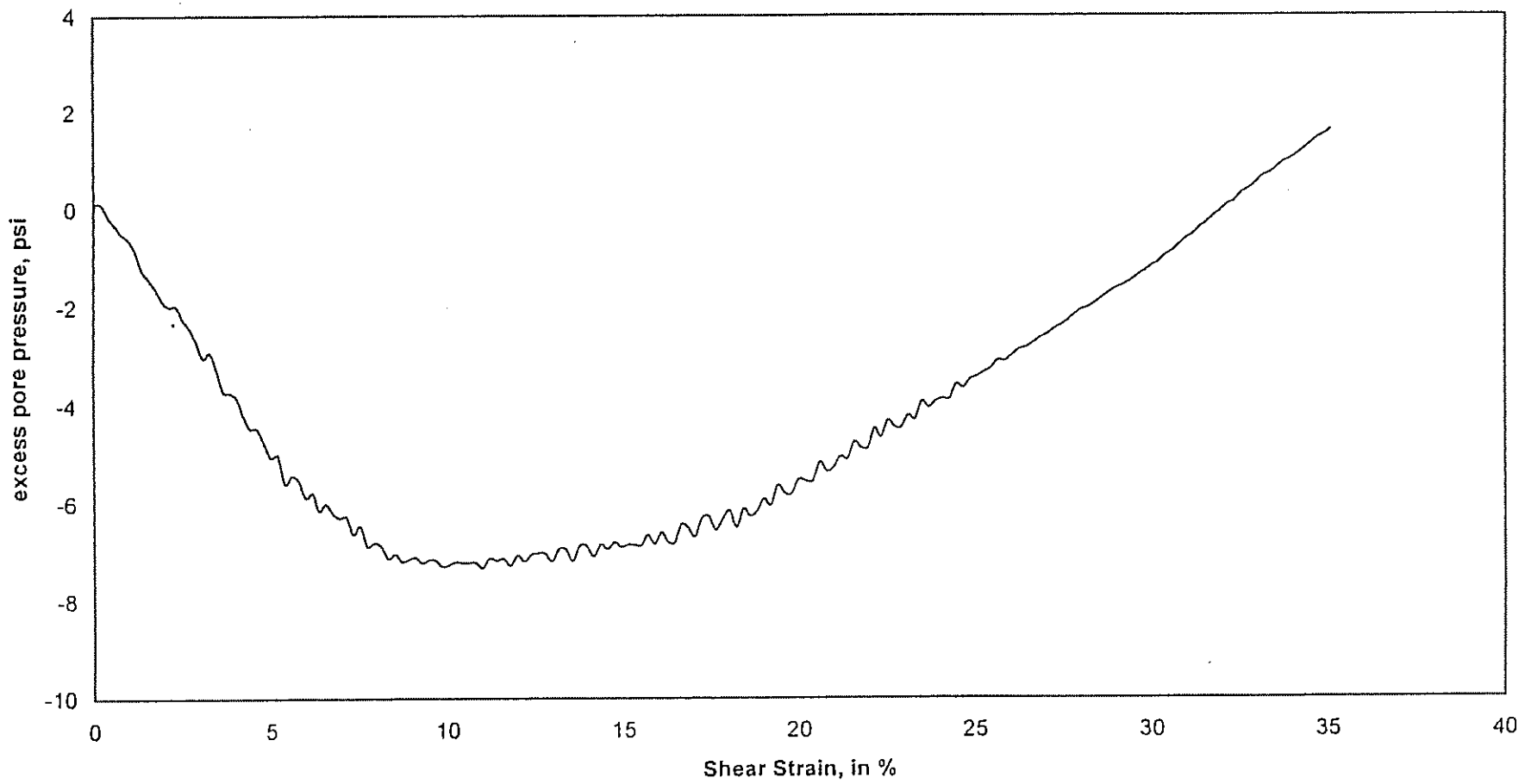
Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

FIGURE 30

Boring ID: SPT-10 Sample No.: SH-3
Test No. DSS6NN
Normal Load = 10000 psf , rebounded to 2500 psf



# INDEX TESTS

# Percent Passing the No. 200 Sieve by ASTM D 1140

| | | | |
|---|---|---|---|
| Client: | GeoSyntec | GTX #: | 4066 |
| Project Name: | Cherry Island Landfill | Test Date: | 07/01/02 |
| Project Location: | Wilmington, DE | Tested By: | tje |
| | | Checked By: | jdt |

| Boring # | Sample ID | Depth, ft | Visual Description | Percent Fines |
|---|---|---|---|---|
| SPT-9 | SH-3 | DSS1 | Moist, Black clay with organics | 99.4 |
| SPT-9 | SH-3 | DSS2 | Moist, Black clay with organics | 99.6 |
| SPT-9 | SH-3 | DSS3 | Moist, Black clay with organics | 99.0 |
| SPT-10 | SH-3 | DSS4 | Moist, Black clay with organics | 98.4 |
| SPT-10 | SH-3 | DSS5 | Moist, Black clay with organics | 99.1 |
| SPT-10 | SH-3 | DSS6 | Moist, Black clay with organics | 96.8 |

Notes. These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

# Moisture, Ash, and Organic Matter of Peat and Other Organic Soils by ASTM D 2974

| | | | |
|---|---|---|---|
| Client: | GeoSyntec | GTX #: | 4066 |
| Project Name: | Cherry Island Landfill | Test Date: | 07/01/02 |
| Project Location: | Wilmington, DE | Tested By: | tje |
| | | Checked By: | jdt |

| Boring # | Sample ID | Depth, ft | Visual Description | Moisture Content, % | Ash Content, % | Organic Matter, % |
|---|---|---|---|---|---|---|
| SPT-9 | SH-3 | DSS1 | Moist, Black clay with organics | 101 | 93.5 | 6.5 |
| SPT-9 | SH-3 | DSS2 | Moist, Black clay with organics | 73 | 93.7 | 6.3 |
| SPT-9 | SH-3 | DSS3 | Moist, Black clay with organics | 86 | 89.6 | 10.4 |
| SPT-10 | SH-3 | DSS4 | Moist, Black clay with organics | 83 | 90.1 | 9.9 |
| SPT-10 | SH-3 | DSS5 | Moist, Black clay with organics | 71 | 86.4 | 13.6 |
| SPT-10 | SH-3 | DSS6 | Moist, Black clay with organics | 62 | 91.0 | 9.0 |

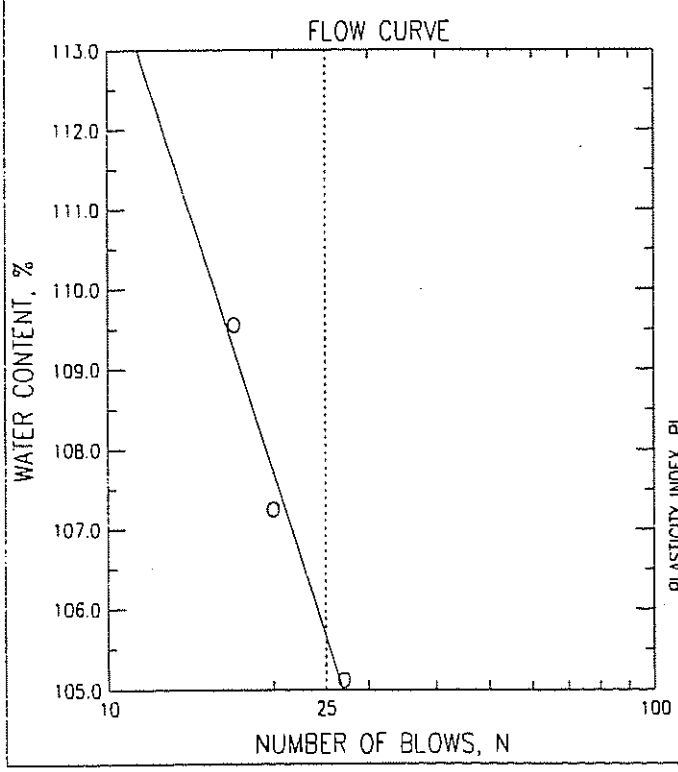
Notes: Moisture content determined by Method A & reported as a percentage of oven-dried mass; dried to constant mass at temperature of 110 °C
Ash content and organic matter determined by Method C; dried to constant mass at temperature of 440 °C

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

# ATTERBERG LIMITS

| PROJECT<br>Cherry Island Landfill | PROJECT NUMBER<br>GTX-4066 | TESTED BY<br>tje | BORING NUMBER<br>SPT-1D |
|---|---|---|---|
| LOCATION<br>Wilmington, DE | | CHECKED BY<br>jdt | SAMPLE NUMBER<br>SH-3 (OSS4) |
| SAMPLE DESCRIPTION<br>Moist, black clay with organics | | DATE<br>Wed Aug 14 2002 | FILENAME<br>SP1OSH34 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | wt2 | 9131 | 17 | | |
| WT. WET SOIL + TARE | 26.38 | 35.49 | 32.9 | | |
| WT. DRY SOIL + TARE | 21.45 | 28.39 | 26.02 | | |
| WT. WATER | 4.93 | 7.1 | 6.88 | | |
| TARE WT. | 16.76 | 21.77 | 19.74 | | |
| WT. DRY SOIL | 4.69 | 6.62 | 6.28 | | |
| WATER CONTENT, $W_N$ (%) | 105.12 | 107.25 | 109.55 | | |
| NUMBER OF BLOWS, N | 27 | 20 | 17 | | |
| ONE-POINT LIQUID LIMIT, LL | 106.10 | 104.39 | 104.56 | | |
| **PLASTIC LIMIT DETERMINATIONS** | | | | | |
| CONTAINER NUMBER | wt16 | 12 | | | |
| WT. WET SOIL + TARE | 23.52 | 27.85 | | | |
| WT. DRY SOIL + TARE | 21.42 | 25.64 | | | |
| WT. WATER | 2.1 | 2.21 | | | |
| TARE WT. | 16.71 | 20.78 | | | |
| WT. DRY SOIL | 4.71 | 4.86 | | | |
| WATER CONTENT (%) | 44.59 | 45.47 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | |
| LIQUID LIMIT, LL | 105.7 |
| PLASTIC LIMIT, PL | 45.0 |
| PLASTICITY INDEX, PI | 60.6 |
| LIQUIDITY INDEX, LI* | |
| | |

*LI = (W - PL)/PI

PLASTICITY CHART

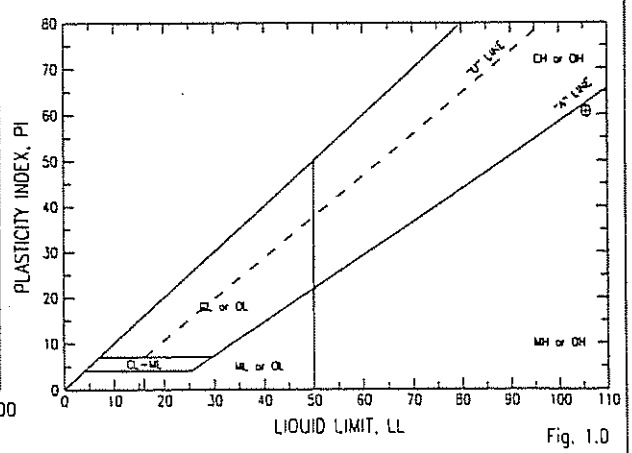
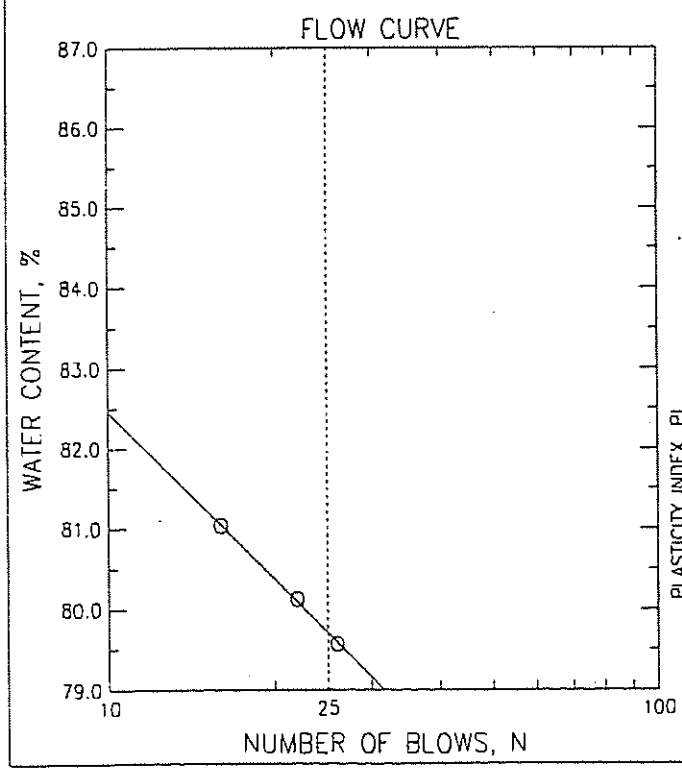



Fig. 1.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4066 | tje | SPT-10 |
| LOCATION<br>Wilmington, DE | | CHECKED BY<br>jdt | SAMPLE NUMBER<br>SH-3 (OSS5) |
| SAMPLE DESCRIPTION<br>Moist, black clay with organics | | DATE<br>Wed Aug 14 2002 | FILENAME<br>SP10SH35 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | z4 | 9132 | al13 | | |
| WT. WET SOIL + TARE | 26.99 | 34.34 | 30.4 | | |
| WT. DRY SOIL + TARE | 21.99 | 28.85 | 23.91 | | |
| WT. WATER | 5 | 5.49 | 6.49 | | |
| TARE WT. | 15.82 | 21.95 | 15.81 | | |
| WT. DRY SOIL | 6.17 | 6.9 | 8.1 | | |
| WATER CONTENT, $W_N$ (%) | 81.04 | 79.57 | 80.12 | | |
| NUMBER OF BLOWS, N | 16 | 26 | 22 | | |
| ONE-POINT LIQUID LIMIT, LL | 76.78 | 79.94 | 78.89 | | |
| PLASTIC LIMIT DETERMINATIONS | | | | | |
| CONTAINER NUMBER | 72 | 9113 | | | |
| WT. WET SOIL + TARE | 28.59 | 29.01 | | | |
| WT. DRY SOIL + TARE | 26.96 | 27.26 | | | |
| WT. WATER | 1.63 | 1.75 | | | |
| TARE WT. | 22.3 | 22.34 | | | |
| WT. DRY SOIL | 4.66 | 4.92 | | | |
| WATER CONTENT (%) | 34.98 | 35.57 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | |
| LIQUID LIMIT, LL | 79.7 |
| PLASTIC LIMIT, PL | 35.3 |
| PLASTICITY INDEX, PI | 44.4 |
| LIQUIDITY INDEX, LI* | |
| | |

*LI = (W − PL)/PI

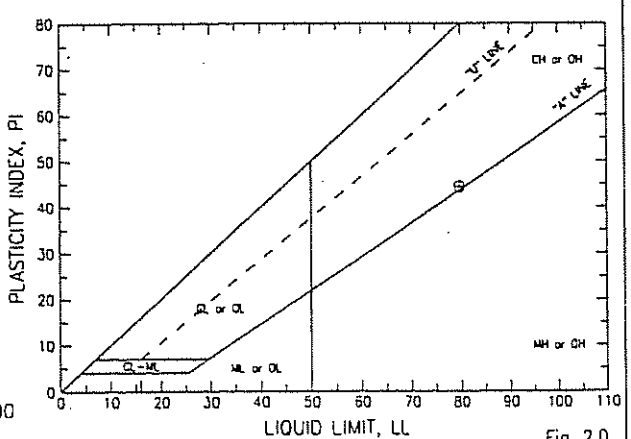
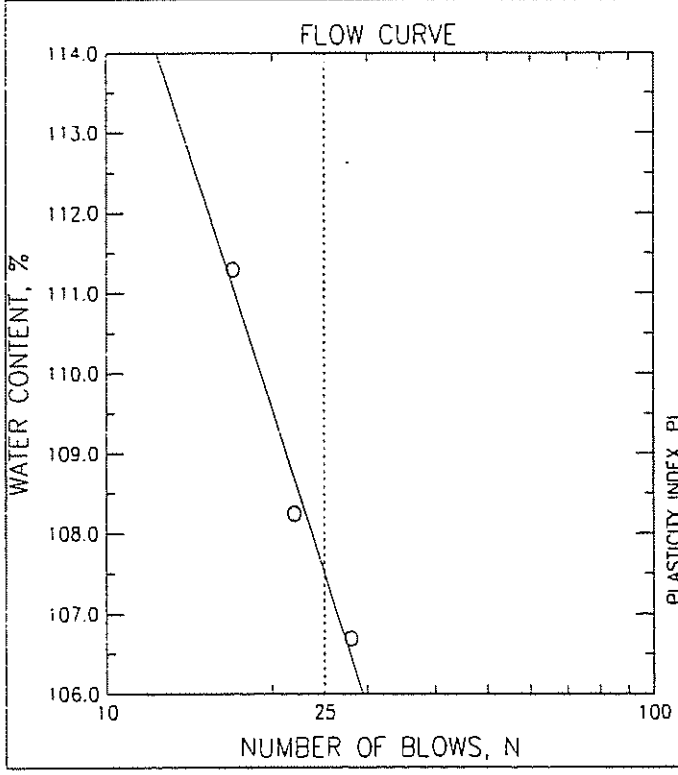



Fig. 2.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4066 | lje | SPT-10 |
| LOCATION | | CHECKED BY | SAMPLE NUMBER |
| Wilmington, DE | | jdt | SH-3 (DSS6) |
| SAMPLE DESCRIPTION | | DATE | FILENAME |
| Moist, black clay with organics | | Wed Aug 14 2002 | SP10SH36 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | k3 | 9121 | wt14 | | |
| WT. WET SOIL + TARE | 26.03 | 33.97 | 26.72 | | |
| WT. DRY SOIL + TARE | 20.61 | 27.91 | 21.47 | | |
| WT. WATER | 5.42 | 6.06 | 5.25 | | |
| TARE WT. | 15.74 | 22.23 | 16.62 | | |
| WT. DRY SOIL | 4.87 | 5.68 | 4.85 | | |
| WATER CONTENT, $W_N$ (%) | 111.29 | 106.69 | 108.25 | | |
| NUMBER OF BLOWS, N | 17 | 28 | 22 | | |
| ONE-POINT LIQUID LIMIT, LL | 106.22 | 108.16 | 106.59 | | |
| **PLASTIC LIMIT DETERMINATIONS** | | | | | |
| CONTAINER NUMBER | al17 | wt6 | | | |
| WT. WET SOIL + TARE | 22.56 | 22.87 | | | |
| WT. DRY SOIL + TARE | 20.45 | 20.86 | | | |
| WT. WATER | 2.11 | 2.01 | | | |
| TARE WT. | 15.79 | 16.54 | | | |
| WT. DRY SOIL | 4.66 | 4.32 | | | |
| WATER CONTENT (%) | 45.28 | 46.53 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | |
| LIQUID LIMIT, LL | 107.5 |
| PLASTIC LIMIT, PL | 45.9 |
| PLASTICITY INDEX, PI | 61.6 |
| LIQUIDITY INDEX, LI* | |
| | |

*LI = (W - PL)/PI

PLASTICITY CHART

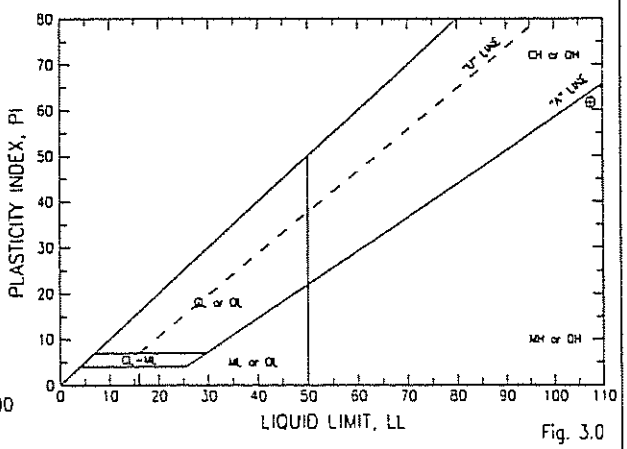
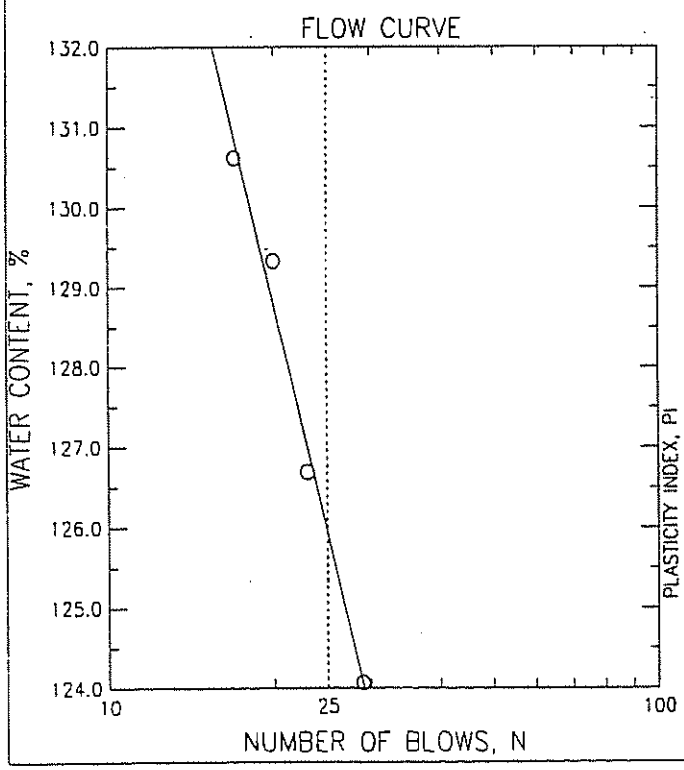



Fig. 3.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4066 | tje | SPT-9 |
| LOCATION<br>Wilmington, DE | | CHECKED BY<br>jdt | SAMPLE NUMBER<br>SH-3 (DSS1) |
| SAMPLE DESCRIPTION<br>Moist, black clay with organics | | DATE<br>Wed Aug 14 2002 | FILENAME<br>SPT9SH31 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | 9123 | 12 | wt8 | wt21 | |
| WT. WET SOIL + TARE | 33.1 | 32.83 | 25.84 | 27.44 | |
| WT. DRY SOIL + TARE | 27.12 | 26.04 | 20.55 | 21.27 | |
| WT. WATER | 5.98 | 6.79 | 5.29 | 6.17 | |
| TARE WT. | 22.3 | 20.79 | 16.5 | 16.4 | |
| WT. DRY SOIL | 4.82 | 5.25 | 4.05 | 4.87 | |
| WATER CONTENT, $W_N$ (%) | 124.07 | 129.33 | 130.62 | 126.69 | |
| NUMBER OF BLOWS, N | 29 | 20 | 17 | 23 | |
| ONE-POINT LIQUID LIMIT, LL | 126.31 | 125.89 | 124.66 | 125.42 | |
| **PLASTIC LIMIT DETERMINATIONS** | | | | | |
| CONTAINER NUMBER | z6 | wt10 | | | |
| WT. WET SOIL + TARE | 22.73 | 23.24 | | | |
| WT. DRY SOIL + TARE | 20.3 | 21.03 | | | |
| WT. WATER | 2.43 | 2.21 | | | |
| TARE WT. | 15.78 | 16.76 | | | |
| WT. DRY SOIL | 4.52 | 4.27 | | | |
| WATER CONTENT (%) | 53.76 | 51.76 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | |
| LIQUID LIMIT, LL | 125.9 |
| PLASTIC LIMIT, PL | 52.8 |
| PLASTICITY INDEX, PI | 73.2 |
| LIQUIDITY INDEX, LI* | |
| | |

*LI = (W - PL)/PI

PLASTICITY CHART

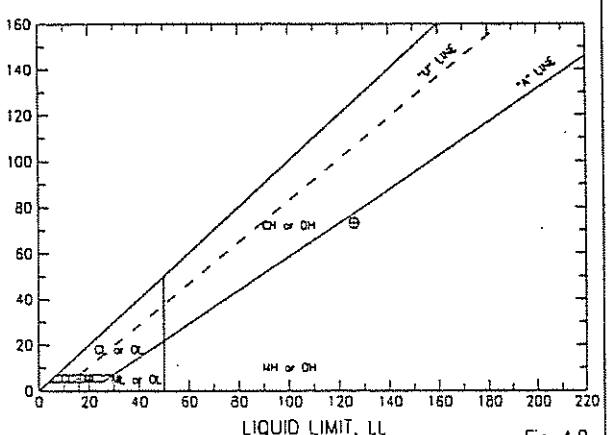


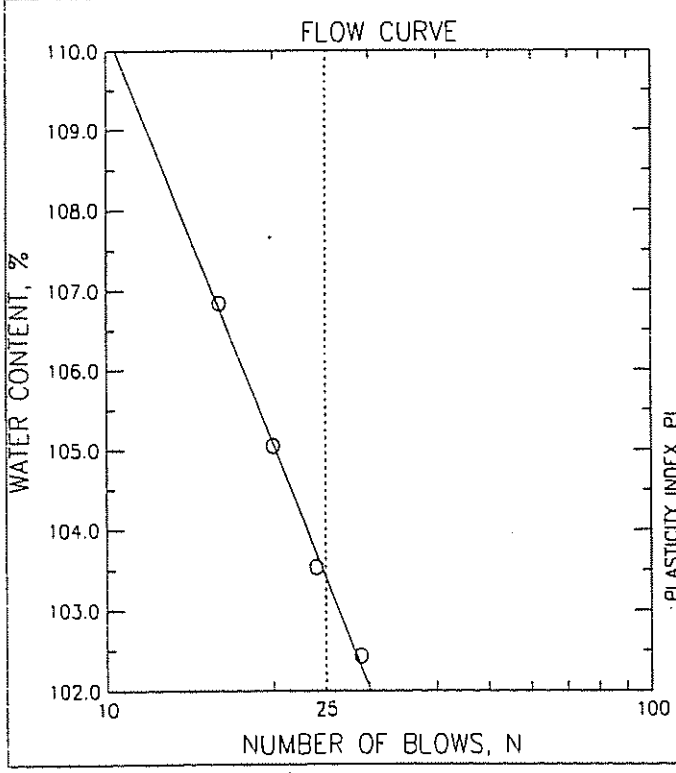

Fig. 4.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4066 | tje | SPT-9 |
| LOCATION | | CHECKED BY | SAMPLE NUMBER |
| Wilmington, DE | | jdt | SH-3 (OSS2) |
| SAMPLE DESCRIPTION | | DATE | FILENAME |
| Moist, black clay with organics | | Wed Aug 14 2002 | SPT9SH32 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | 121 | p5 | jg | 9112 | |
| WT. WET SOIL + TARE | 23.36 | 25.56 | 31.81 | 34.32 | |
| WT. DRY SOIL + TARE | 18.72 | 20.58 | 26.61 | 28.07 | |
| WT. WATER | 4.64 | 4.98 | 5.2 | 6.25 | |
| TARE WT. | 14.19 | 15.77 | 21.66 | 22.22 | |
| WT. DRY SOIL | 4.53 | 4.81 | 4.95 | 5.85 | |
| WATER CONTENT, $W_N$ (%) | 102.43 | 103.53 | 105.05 | 106.84 | |
| NUMBER OF BLOWS, N | 29 | 24 | 20 | 16 | |
| ONE-POINT LIQUID LIMIT, LL | 104.28 | 103.02 | 102.25 | 101.22 | |

| PLASTIC LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | 18 | 06 | | | |
| WT. WET SOIL + TARE | 26.75 | 17.99 | | | |
| WT. DRY SOIL + TARE | 24.82 | 15.85 | | | |
| WT. WATER | 1.93 | 2.14 | | | |
| TARE WT. | 20.3 | 10.93 | | | |
| WT. DRY SOIL | 4.52 | 4.92 | | | |
| WATER CONTENT (%) | 42.70 | 43.50 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | |
| LIQUID LIMIT, LL | 103.4 |
| PLASTIC LIMIT, PL | 43.1 |
| PLASTICITY INDEX, PI | 60.3 |
| LIQUIDITY INDEX, LI* | |
| | |

*LI = (W - PL)/PI

PLASTICITY CHART

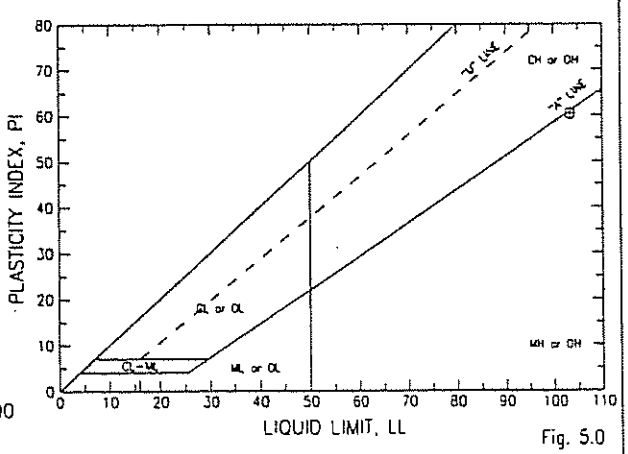
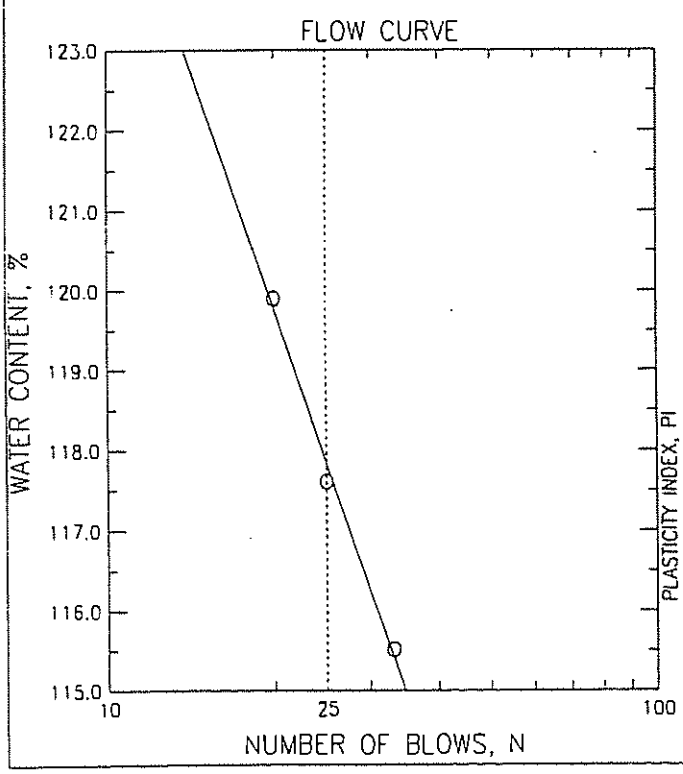



Fig. 5.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4066 | tje | SPT-9 |
| LOCATION | | CHECKED BY | SAMPLE NUMBER |
| Wilmington, DE | | jdt | SH-3 (DSS3) |
| SAMPLE DESCRIPTION | | DATE | FILENAME |
| Moist, black clay with organics | | Wed Aug 14 2002 | SPT9SH33 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | 9123 | wt21 | al5 | | |
| WT. WET SOIL + TARE | 32.61 | 29.13 | 28.88 | | |
| WT. DRY SOIL + TARE | 27.1 | 22.25 | 21.77 | | |
| WT. WATER | 5.51 | 6.88 | 7.11 | | |
| TARE WT. | 22.33 | 16.4 | 15.84 | | |
| WT. DRY SOIL | 4.77 | 5.85 | 5.93 | | |
| WATER CONTENT, $W_N$ (%) | 115.51 | 117.61 | 119.90 | | |
| NUMBER OF BLOWS, N | 33 | 25 | 20 | | |
| ONE-POINT LIQUID LIMIT, LL | 119.46 | 117.61 | 116.70 | | |
| **PLASTIC LIMIT DETERMINATIONS** | | | | | |
| CONTAINER NUMBER | al11 | 111 | | | |
| WT. WET SOIL + TARE | 21.93 | 18.93 | | | |
| WT. DRY SOIL + TARE | 19.91 | 16.76 | | | |
| WT. WATER | 2.02 | 2.17 | | | |
| TARE WT. | 15.74 | 12.32 | | | |
| WT. DRY SOIL | 4.17 | 4.44 | | | |
| WATER CONTENT (%) | 48.44 | 48.87 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | |
| LIQUID LIMIT, LL | 117.8 |
| PLASTIC LIMIT, PL | 48.7 |
| PLASTICITY INDEX, PI | 69.2 |
| LIQUIDITY INDEX, LI* | |
| | |

*LI = (W - PL)/PI

PLASTICITY CHART

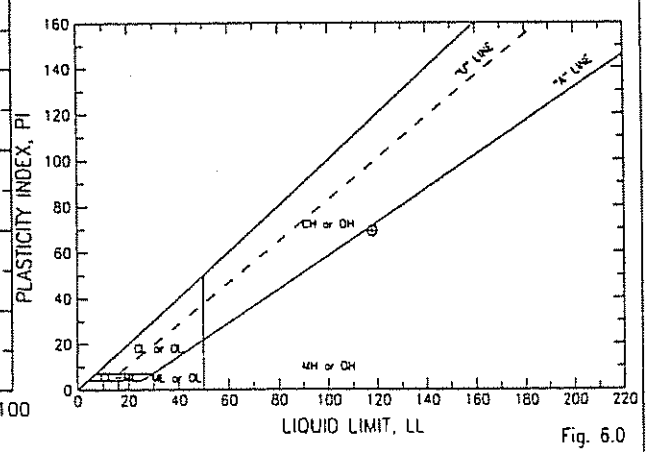



Fig. 6.0

# Geotechnical Test Report

# Cherry Island Landfill
## Wilmington, DE

Prepared for:

## GeoSyntec Consultants
### Columbia, MD

Prepared by:

**GeoTesting Express, Inc.**
Boxborough, MA

December 17, 2002

# Moisture Content by ASTM D 2216

| | | | |
|---|---|---|---|
| Client: | GeoSyntec Consultants | GTX #: | 4324 |
| Project Name: | Cherry Island Landfill | Test Date: | 11/14/02 |
| Project Location: | Wilmington, DE | Tested By: | tje |
| | | Checked By: | jdt |

| Boring # | Sample ID | Depth, ft | Visual Description | Moisture Content, % |
|---|---|---|---|---|
| P5-02 | S-18 | --- | Moist, very dark gray clay with organics | 47 |
| P5-02 | S-19 | --- | Moist, very dark gray clay with organics | 106 |
| P5-02 | S-20 | --- | Moist, very dark gray clay with organics | 67 |
| P5-02 | S021 | --- | Moist, very dark gray clay with sand and organics | 69 |

Notes These results apply only to the sample tested for the specific test conditions The test procedures employed follow accepted industry practice and the indicated test method GeoTesting Express has no specific knowledge as to conditioning origin sampling procedure or intended use of the material

# Percent Passing the No. 200 Sieve by ASTM D 1140

| | | | |
|---|---|---|---|
| Client: | GeoSyntec Consultants | GTX #: | 4324 |
| Project Name: | Cherry Island Landfill | Test Date: | 11/14/02 |
| Project Location: | Wilmington, DE | Tested By: | tje |
| | | Checked By: | jdt |

| Boring # | Sample ID | Depth, ft | Visual Description | Percent Fines |
|---|---|---|---|---|
| P5-02 | S-18 | --- | Moist, very dark gray clay with organics | 98.0 |
| P5-02 | S-19 | --- | Moist, very dark gray clay with organics | 97.0 |
| P5-02 | S-20 | --- | Moist, very dark gray clay with organics | 96.0 |
| P5-02 | S021 | --- | Moist, very dark gray clay with sand and organics | 79.0 |

Notes These results apply only to the sample tested for the specific test conditions The test procedures employed follow accepted industry practice and the indicated test method GeoTesting Express has no specific knowledge as to conditioning origin sampling procedure or intended use of the material

# Moisture, Ash, and Organic Matter of Peat and Other Organic Soils by ASTM D 2974

| | | | |
|---|---|---|---|
| Client: | GeoSyntec Consultants | GTX #: | 4324 |
| Project Name: | Cherry Island Landfill | Test Date: | 11/14/02 |
| Project Location: | Wilmington, DE | Tested By: | tje |
| | | Checked By: | jdt |

| Boring # | Sample ID | Depth, ft | Visual Description | Moisture Content, % | Ash Content, % | Organic Matter, % |
|---|---|---|---|---|---|---|
| P5-02 | S-18 | --- | Moist, very dark gray clay with organics | 47 | 93.8 | 6.2 |
| P5-02 | S-19 | --- | Moist, very dark gray clay with organics | 106 | 83.9 | 16.1 |
| P5-02 | S-20 | --- | Moist, very dark gray clay with organics | 67 | 93.7 | 6.3 |
| P5-02 | S021 | --- | Moist, very dark gray clay with sand and organics | 69 | 87.7 | 12.3 |

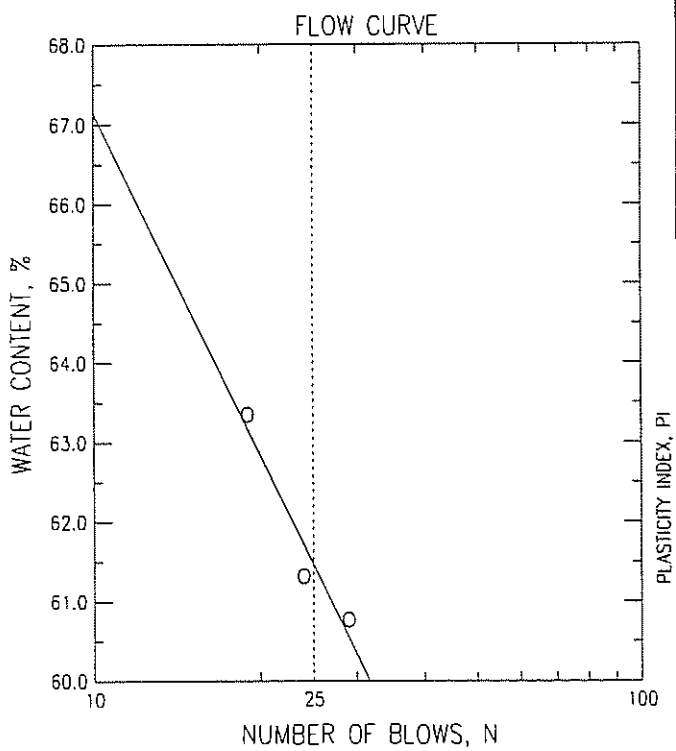
Notes: Moisture content determined by Method A & reported as a percentage of oven-dried mass; dried to constant mass at temperature of 110 C
Ash content and organic matter determined by Method C; dried to constant mass at temperature of 440 C

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

# ATTERBERG LIMITS

| PROJECT<br>Cherry Island Landfill | PROJECT NUMBER<br>GTX-4324 | TESTED BY<br>njh | BORING NUMBER<br>P5-02 |
|---|---|---|---|
| LOCATION<br>Wilmington, DE | | CHECKED BY<br>jdt | SAMPLE NUMBER<br>S-18 |
| SAMPLE DESCRIPTION<br>Wet, very dark gray clay with organics | | DATE<br>Mon Dec 09 2002 | FILENAME<br>P502S18 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | VOME | 72 | 36 | | |
| WT. WET SOIL + TARE | 33.14 | 34.56 | 33.5 | | |
| WT. DRY SOIL + TARE | 28.71 | 29.9 | 28.28 | | |
| WT. WATER | 4.43 | 4.66 | 5.22 | | |
| TARE WT. | 21.42 | 22.3 | 20.04 | | |
| WT. DRY SOIL | 7.29 | 7.6 | 8.24 | | |
| WATER CONTENT, $W_N$ (%) | 60.77 | 61.32 | 63.35 | | |
| NUMBER OF BLOWS, N | 29 | 24 | 19 | | |
| ONE-POINT LIQUID LIMIT, LL | 61.87 | 61.01 | 61.28 | | |
| **PLASTIC LIMIT DETERMINATIONS** | | | | | |
| CONTAINER NUMBER | K-2 | Z-6 | | | |
| WT. WET SOIL + TARE | 22.62 | 22.98 | | | |
| WT. DRY SOIL + TARE | 20.95 | 21.25 | | | |
| WT. WATER | 1.67 | 1.73 | | | |
| TARE WT. | 15.73 | 15.79 | | | |
| WT. DRY SOIL | 5.22 | 5.46 | | | |
| WATER CONTENT (%) | 31.99 | 31.68 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | 46.8 |
| LIQUID LIMIT, LL | 61.5 |
| PLASTIC LIMIT, PL | 31.8 |
| PLASTICITY INDEX, PI | 29.6 |
| LIQUIDITY INDEX, LI* | 0.51 |
| | |

*LI = (W - PL)/PI

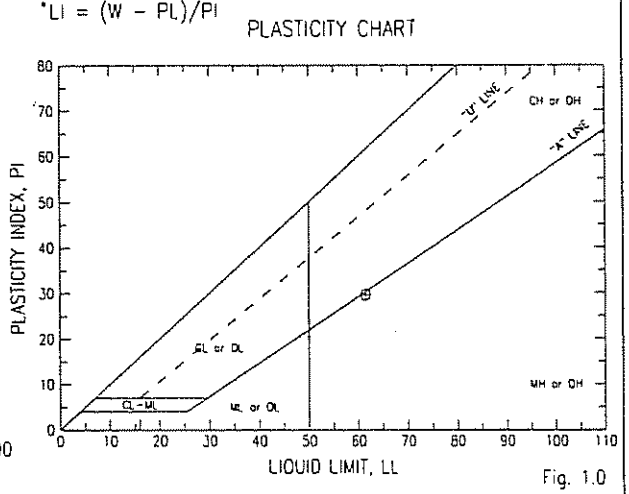
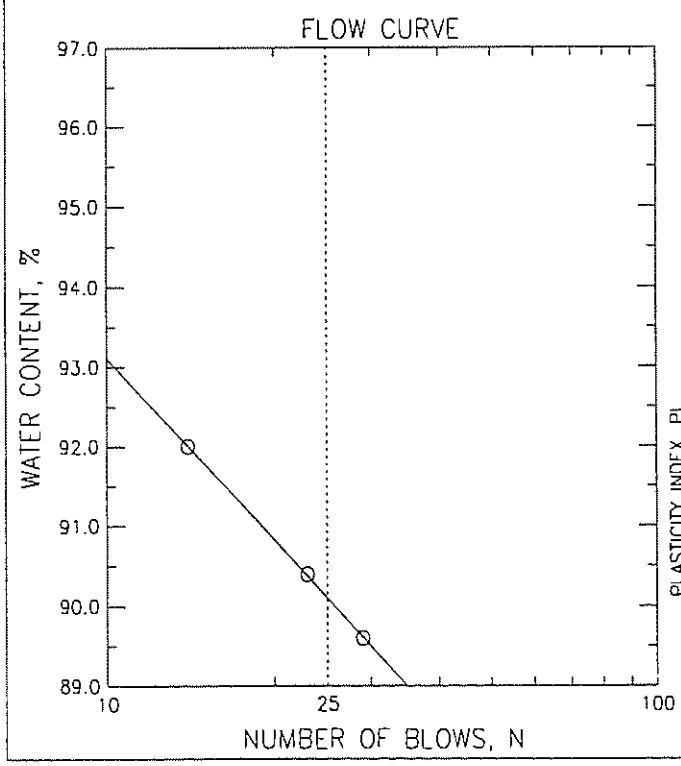



Fig. 1.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4324 | njh | P5-02 |
| LOCATION | | CHECKED BY | SAMPLE NUMBER |
| Wilmington, DE | | jdl | S-19 |
| SAMPLE DESCRIPTION | | DATE | FILENAME |
| Wet, very dark gray clay with organics | | Mon Dec 09 2002 | P502S19 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | AL-7 | OJ-1 | P-11 | | |
| WT. WET SOIL + TARE | 27.07 | 28.8 | 24.39 | | |
| WT. DRY SOIL + TARE | 21.73 | 22.59 | 20.25 | | |
| WT. WATER | 5.34 | 6.21 | 4.14 | | |
| TARE WT. | 15.77 | 15.72 | 15.75 | | |
| WT. DRY SOIL | 5.96 | 6.87 | 4.5 | | |
| WATER CONTENT, $W_N$ (%) | 89.60 | 90.39 | 92.00 | | |
| NUMBER OF BLOWS, N | 29 | 23 | 14 | | |
| ONE-POINT LIQUID LIMIT, LL | 91.22 | 89.49 | 85.77 | | |
| PLASTIC LIMIT DETERMINATIONS | | | | | |
| CONTAINER NUMBER | WT-7 | 91-23 | | | |
| WT. WET SOIL + TARE | 23.46 | 27.1 | | | |
| WT. DRY SOIL + TARE | 21.55 | 25.81 | | | |
| WT. WATER | 1.91 | 1.29 | | | |
| TARE WT. | 16.71 | 22.31 | | | |
| WT. DRY SOIL | 4.84 | 3.5 | | | |
| WATER CONTENT (%) | 39.46 | 36.86 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | 83.8 |
| LIQUID LIMIT, LL | 90.1 |
| PLASTIC LIMIT, PL | 38.2 |
| PLASTICITY INDEX, PI | 51.9 |
| LIQUIDITY INDEX, LI* | 0.88 |
| | |

*LI = (W - PL)/PI

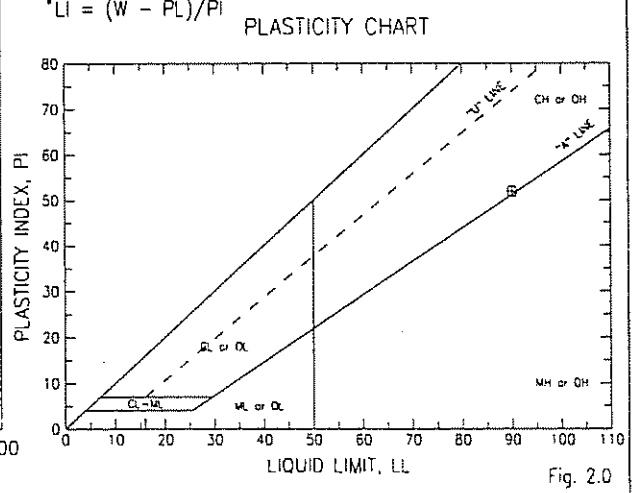


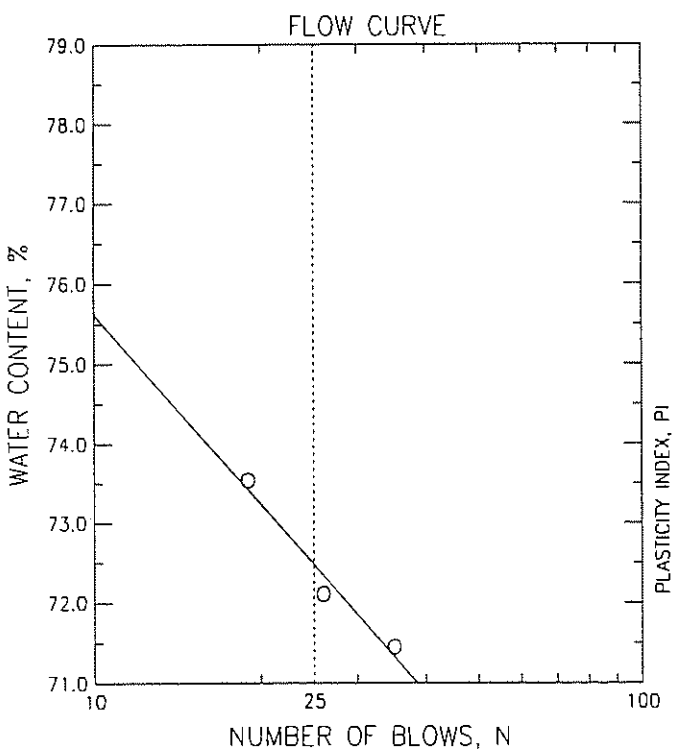

Fig. 2.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4324 | njn | P5-02 |
| LOCATION<br>Wilmington, DE | | CHECKED BY<br>jdt | SAMPLE NUMBER<br>S-20 |
| SAMPLE DESCRIPTION<br>Wet, very dark gray clay with organics | | DATE<br>Mon Dec 09 2002 | FILENAME<br>P502S20 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | AL-2 | AL-21 | P-7 | | |
| WT. WET SOIL + TARE | 26.49 | 30.88 | 26.02 | | |
| WT. DRY SOIL + TARE | 22.06 | 24.52 | 21.74 | | |
| WT. WATER | 4.43 | 6.36 | 4.28 | | |
| TARE WT. | 15.86 | 15.7 | 15.92 | | |
| WT. DRY SOIL | 6.2 | 8.82 | 5.82 | | |
| WATER CONTENT, $W_N$ (%) | 71.45 | 72.11 | 73.54 | | |
| NUMBER OF BLOWS, N | 35 | 26 | 19 | | |
| ONE-POINT LIQUID LIMIT, LL | 74.42 | 72.45 | 71.14 | | |

| PLASTIC LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | 91-19 | TARE | | | |
| WT. WET SOIL + TARE | 28.86 | 27.4 | | | |
| WT. DRY SOIL + TARE | 27.34 | 26.18 | | | |
| WT. WATER | 1.52 | 1.22 | | | |
| TARE WT. | 22.3 | 22.22 | | | |
| WT. DRY SOIL | 5.04 | 3.96 | | | |
| WATER CONTENT (%) | 30.16 | 30.81 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | 65.3 |
| LIQUID LIMIT, LL | 72.5 |
| PLASTIC LIMIT, PL | 30.5 |
| PLASTICITY INDEX, PI | 42.0 |
| LIQUIDITY INDEX, LI* | 0.83 |
| | |

*LI = (W - PL)/PI

PLASTICITY CHART

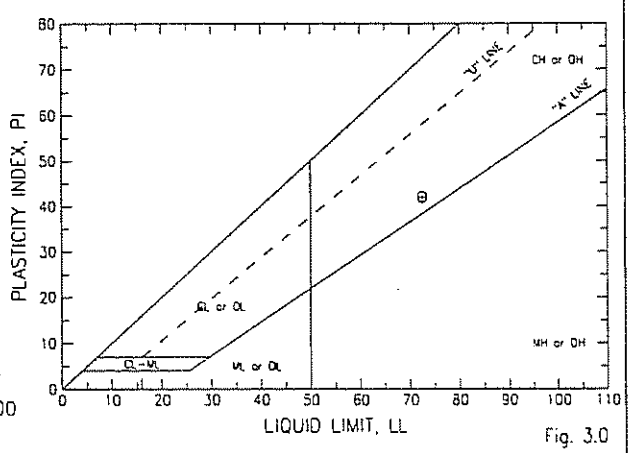
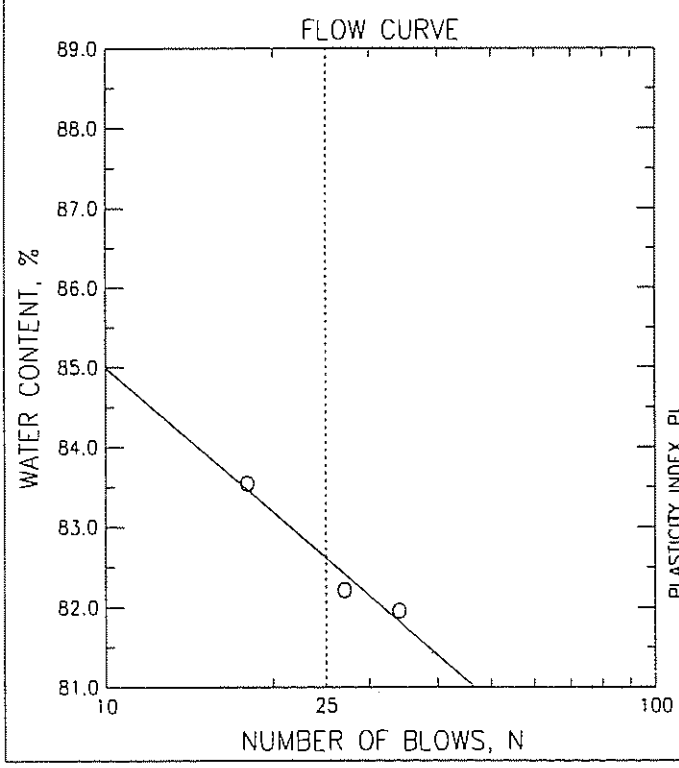



Fig. 3.0

# ATTERBERG LIMITS

| PROJECT | PROJECT NUMBER | TESTED BY | BORING NUMBER |
|---|---|---|---|
| Cherry Island Landfill | GTX-4324 | njh | P5-02 |
| LOCATION | | CHECKED BY | SAMPLE NUMBER |
| Wilmington, DE | | jdt | S-21 |
| SAMPLE DESCRIPTION | | DATE | FILENAME |
| Wet, very dark gray clay with sand and organics | | Mon Dec 09 2002 | P502S21 |

| LIQUID LIMIT DETERMINATIONS | | | | | |
|---|---|---|---|---|---|
| CONTAINER NUMBER | 21 | 91-36 | WT-10 | | |
| WT. WET SOIL + TARE | 31.16 | 31.62 | 23.99 | | |
| WT. DRY SOIL + TARE | 26.21 | 27.46 | 20.69 | | |
| WT. WATER | 4.95 | 4.16 | 3.3 | | |
| TARE WT. | 20.17 | 22.4 | 16.74 | | |
| WT. DRY SOIL | 6.04 | 5.06 | 3.95 | | |
| WATER CONTENT, $W_N$ (%) | 81.95 | 82.21 | 83.54 | | |
| NUMBER OF BLOWS, N | 34 | 27 | 18 | | |
| ONE-POINT LIQUID LIMIT, LL | 85.06 | 82.98 | 80.29 | | |
| **PLASTIC LIMIT DETERMINATIONS** | | | | | |
| CONTAINER NUMBER | WT-8 | 161 | | | |
| WT. WET SOIL + TARE | 25.35 | 21.26 | | | |
| WT. DRY SOIL + TARE | 23.16 | 18.75 | | | |
| WT. WATER | 2.19 | 2.51 | | | |
| TARE WT. | 16.48 | 11.14 | | | |
| WT. DRY SOIL | 6.68 | 7.61 | | | |
| WATER CONTENT (%) | 32.78 | 32.98 | | | |
| | | | | | |




| SUMMARY OF RESULTS | |
|---|---|
| NATURAL WATER CONTENT, W (%) | 69.7 |
| LIQUID LIMIT, LL | 82.6 |
| PLASTIC LIMIT, PL | 32.9 |
| PLASTICITY INDEX, PI | 49.7 |
| LIQUIDITY INDEX, LI* | 0.74 |
| | |

*LI = (W - PL)/PI

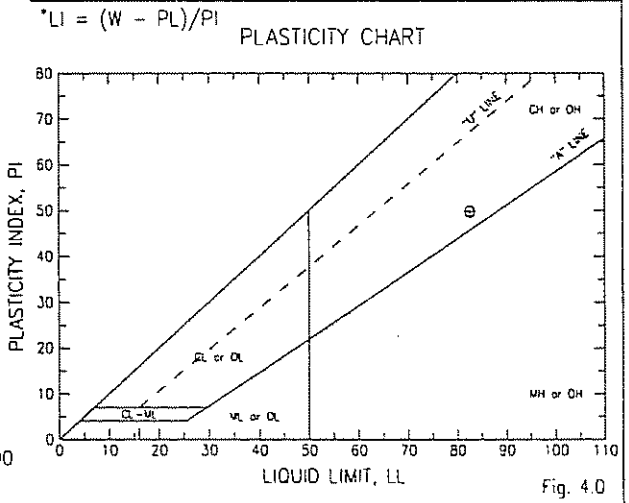



Fig. 4.0

# Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

Client: GeoSyntec Consultants
Project Name: Cherry Island Landfill
Project Location: Wilmington, DE

GTX#: 4324
Test Date: 11/11/02

Boring ID: P5-02
Sample ID: S21

Visual Description: Wet, very dark gray clay with sand and organics

Test Equipment: Top and bottom box (circular) = 2.62 in diameter. Load cells and LVDTs connected to data acquisition system for shear force, normal load, horizontal and vertical displacement; surface area = 5.39 $in^2$, soil height = 1 inch

Test Condition: inundated

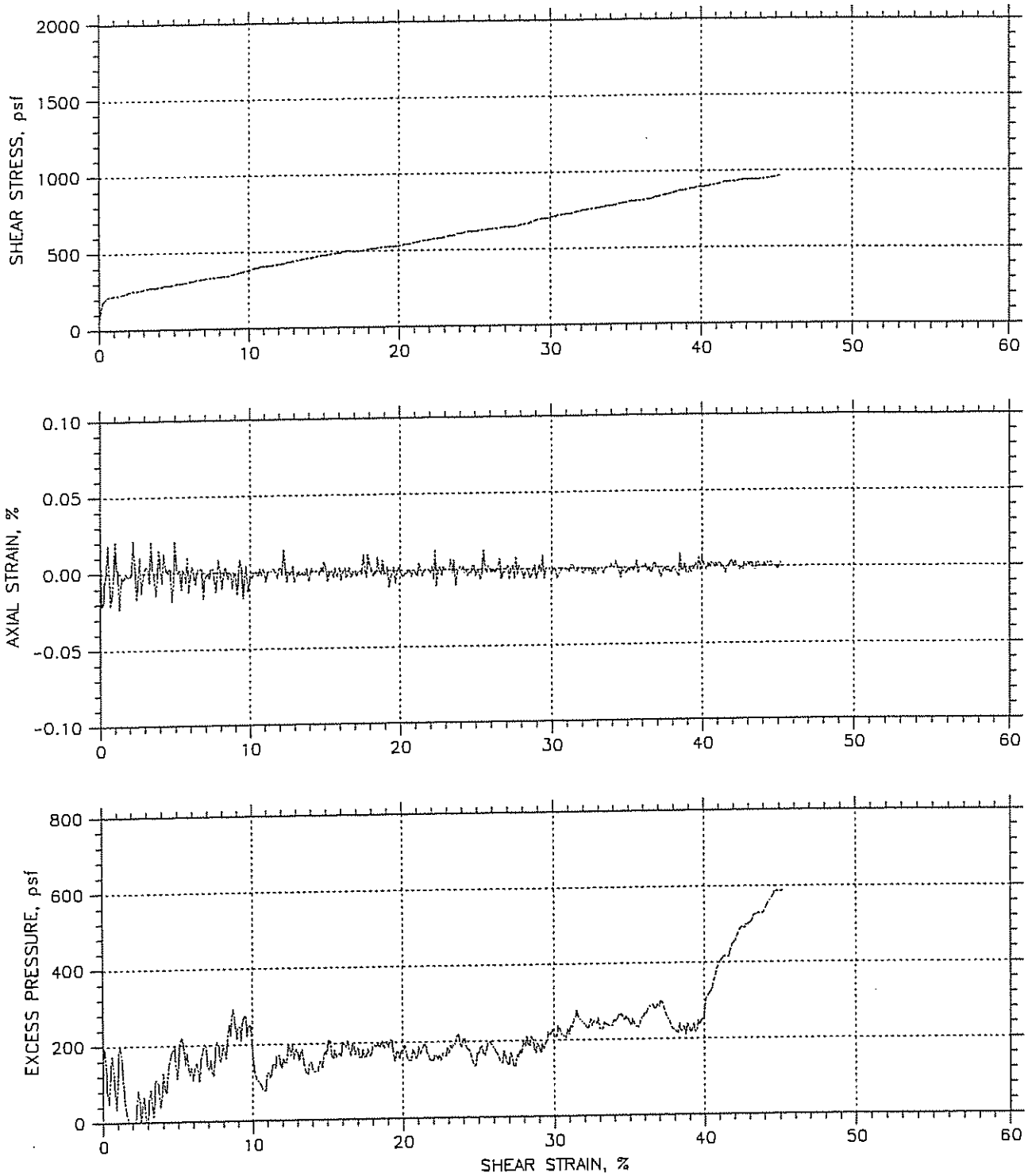
Sample Type and Preparation:
Extruded from tube, cut, trimmed and placed into apparatus at as-received density and moisture content.

| Parameter | Point 1 | Point 2 | Point 3 | Point 4 | Point 5 |
|---|---|---|---|---|---|
| Test No. | DSS1 | DSS2 | DSS3 | | |
| Initial Moisture Content, % | 68.38 | 79.44 | 77.77 | | |
| Initial Dry Density, pcf | 64.14 | 58.25 | 59.04 | | |
| Nominal Rate of Shear Strain, %/min | 0.00083 | 0.00083 | 0.00083 | | |
| Vertical Consolidation Stress, psf | 2500 | 5000 | 10000 | | |
| Peak Shear Stress, psf | 961.7 | 1489 | 2907 | | |
| Final Moisture Content , % | 53.14 | 51.16 | 48.45 | | |

Comments: Tested By: fy Checked By: jdt

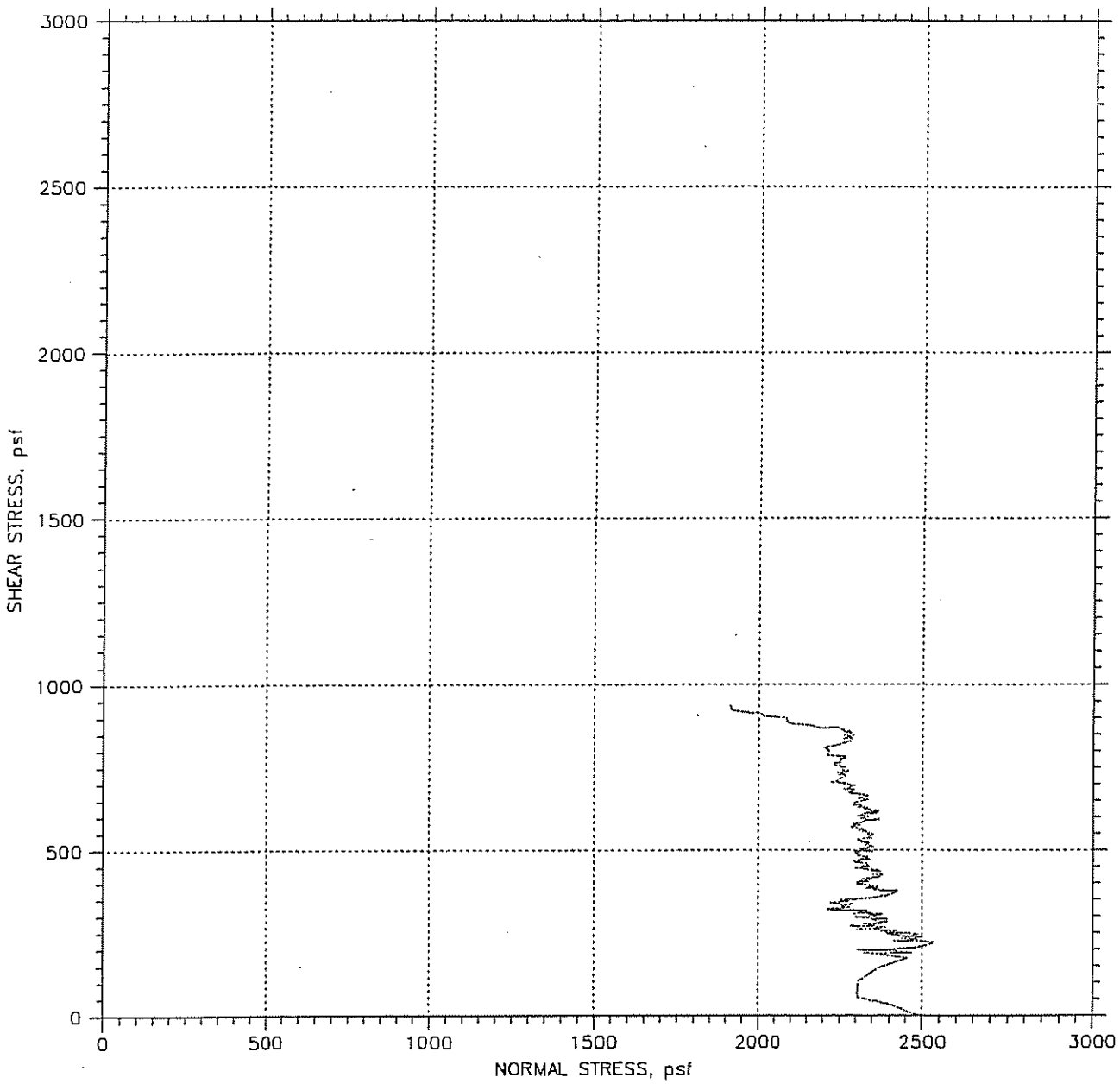
Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S21 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 11/11/2002 | Depth: --- |
| Test No.: DSS1 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with sand and organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss1.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S21 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 11/11/2002 | Depth: --- |
| Test No.: DSS1 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with sand and organics | | |
| Remarks: --- | | |
| File. F:\Gtx4324\4324dss1.dat | | |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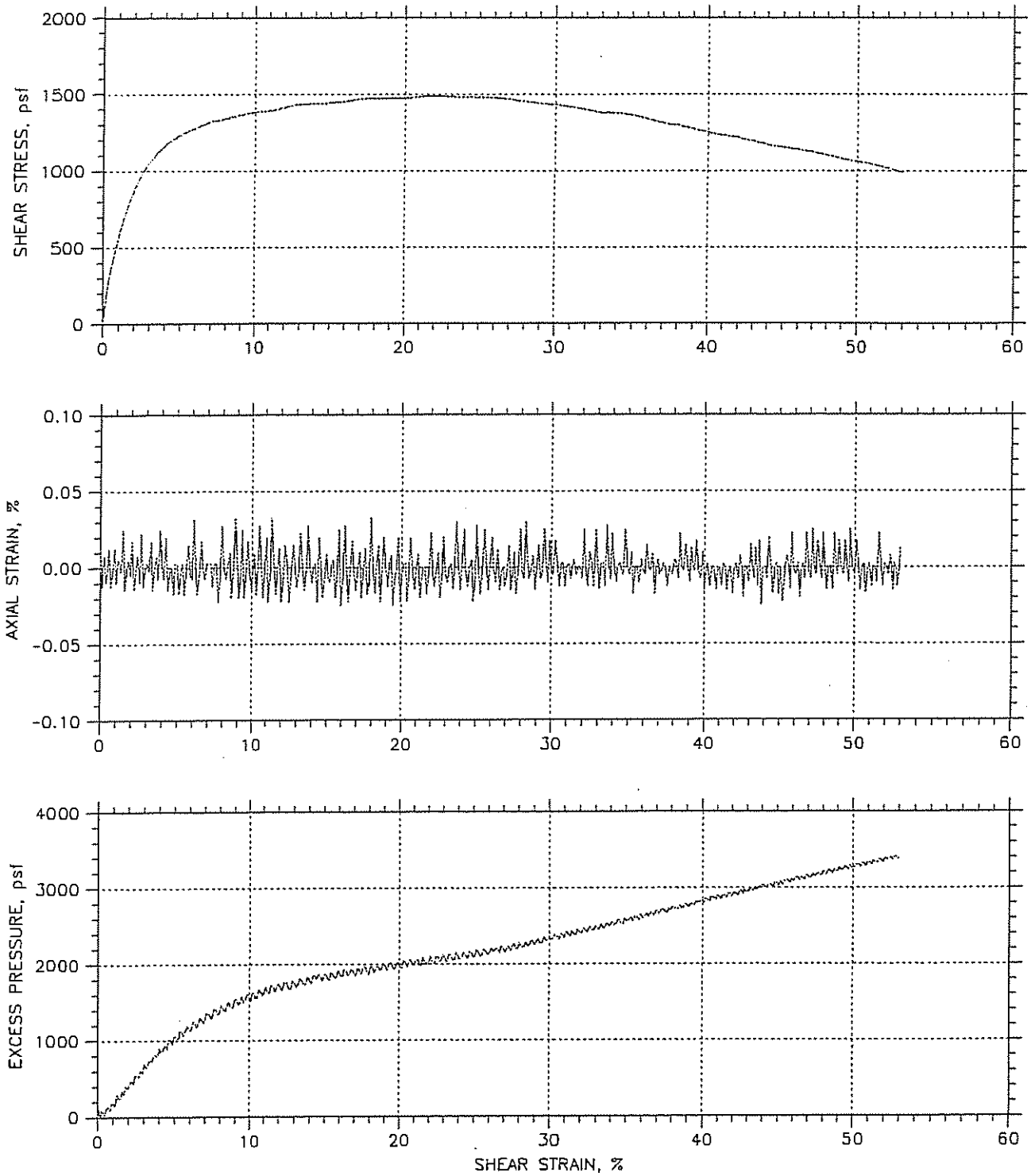
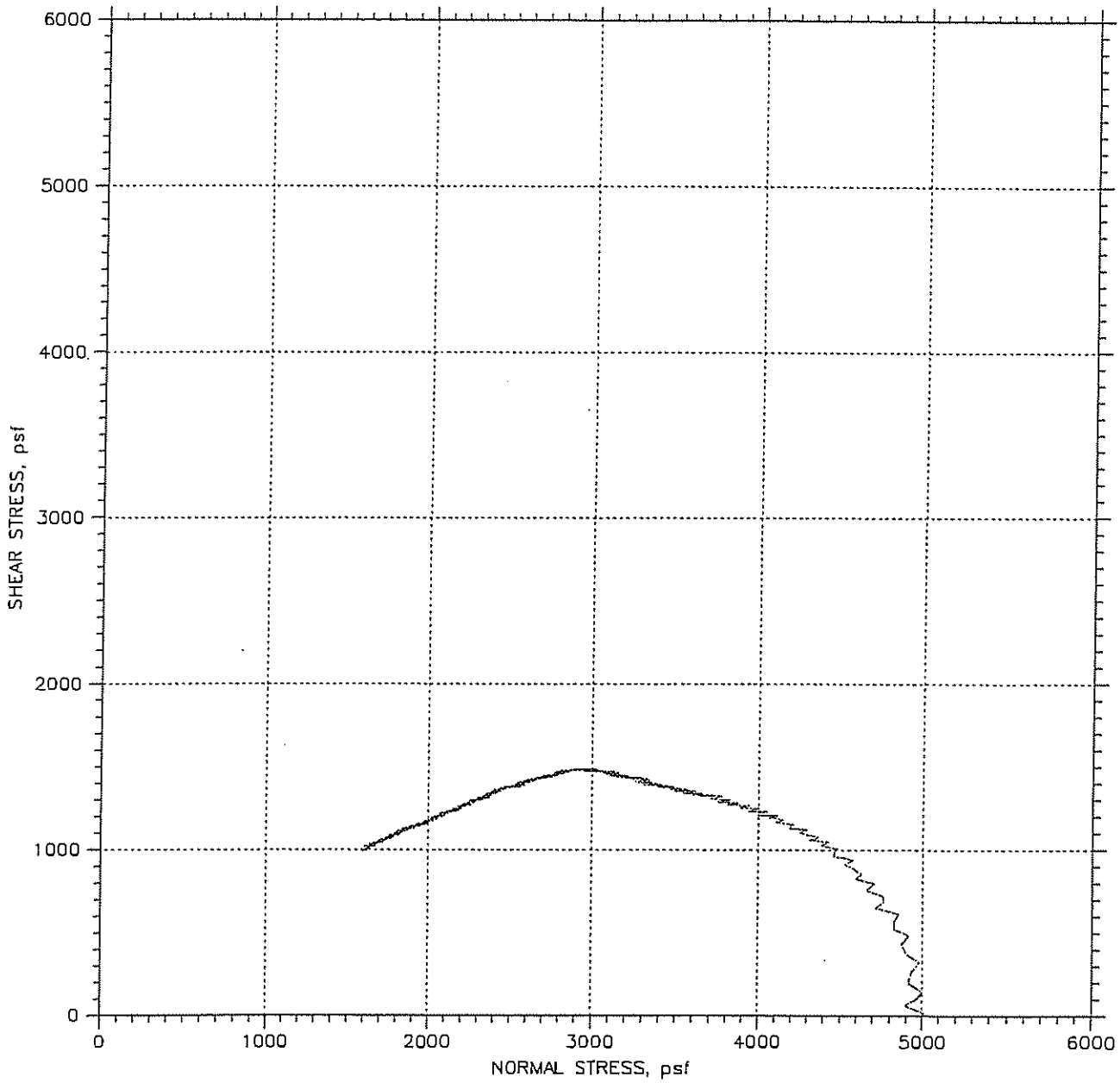
# DIRECT SIMPLE SHEAR TEST



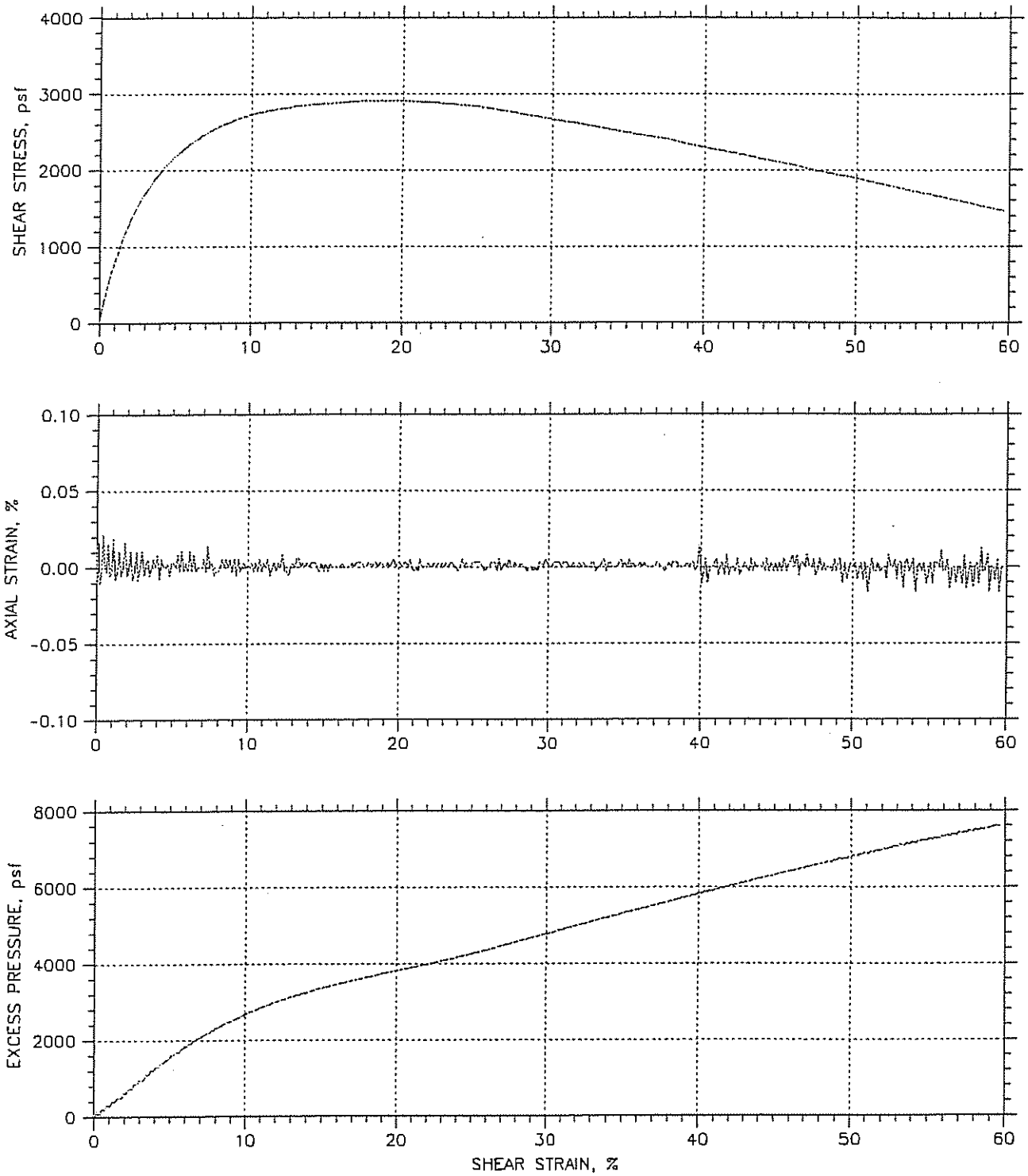

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S21 | Tested By: jdt | Checked By: jdt |
| Sample No.: --- | Test Date: 11/18/2002 | Depth: --- |
| Test No.: DSS2 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with sand and organics | | |
| Remarks: --- | | |
| File: F:\Glx4324\4324dss2.dat | | |

# DIRECT SIMPLE SHEAR TEST



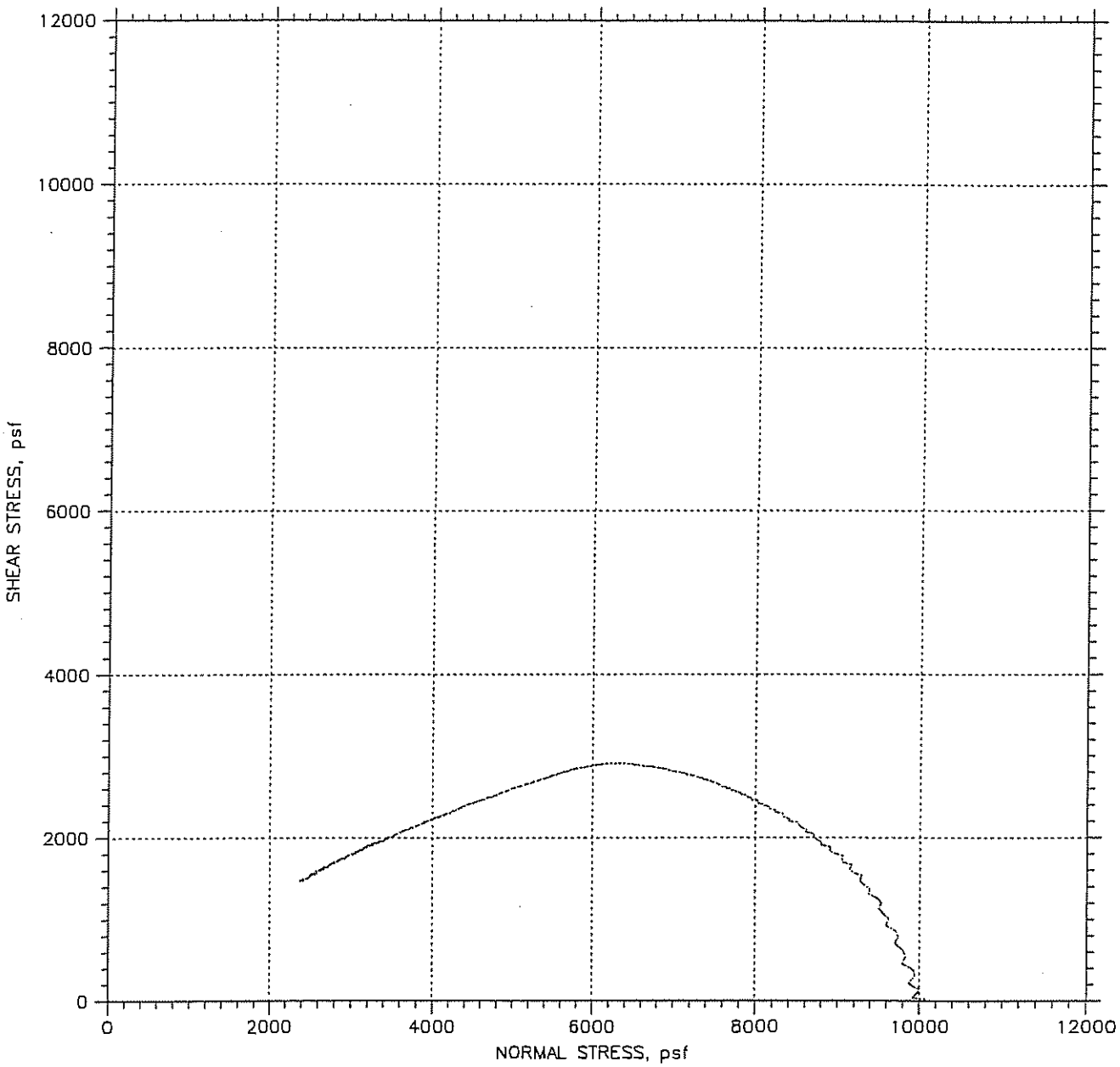

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S21 | Tested By: jdt | Checked By: jdt |
| Sample No.: --- | Test Date: 11/18/2002 | Depth: --- |
| Test No.: DSS2 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with sand and organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss2.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S21 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 12/10/2002 | Depth: --- |
| Test No.: DSS3 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with sand and organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss3.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S21 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 12/10/2002 | Depth: --- |
| Test No.: DSS3 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with sand and organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss3.dat | | |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# Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

Client: GeoSyntec Consultants
Project Name: Cherry Island Landfill
Project Location: Wilmington, DE

GTX#: 4324
Test Date: 11/20/02

Boring ID: P5-02
Sample ID: S19

Visual Description: Wet, very dark gray clay with organics

Test Equipment: Top and bottom box (circular) = 2.62 in diameter. Load cells and LVDTs connected to data acquisition system for shear force, normal load, horizontal and vertical displacement; surface area = 5.39 $in^2$, soil height = 1 inch

Test Condition: inundated

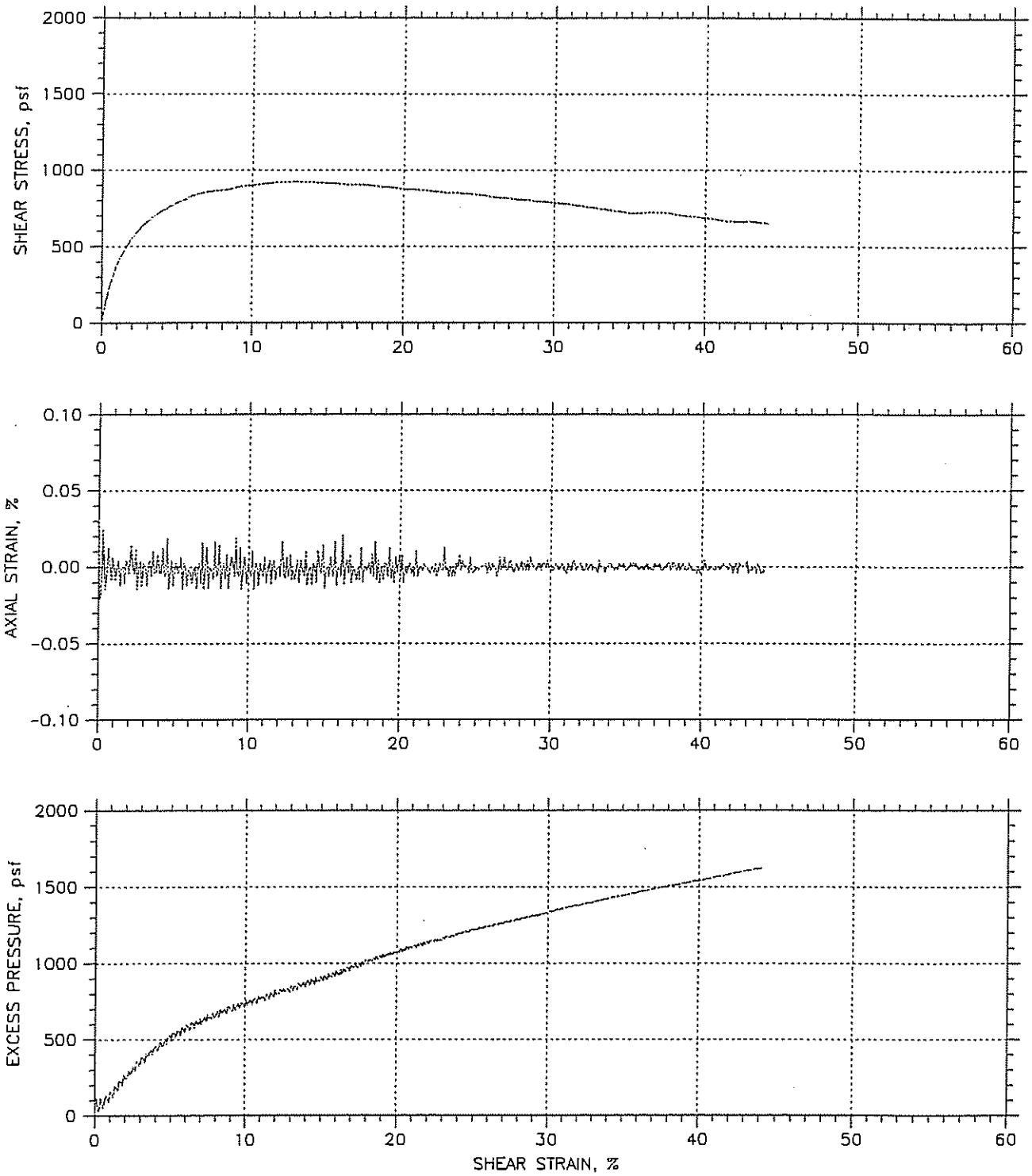
Sample Type and Preparation:
Extruded from tube, cut, trimmed and placed into apparatus at as-received density and moisture content.

| Parameter | Point 1 | Point 2 | Point 3 | Point 4 | Point 5 |
|---|---|---|---|---|---|
| Test No. | DSS4 | DSS5 | DSS6 | | |
| Initial Moisture Content, % | 93.31 | 81.61 | 90.93 | | |
| Initial Dry Density, pcf | 48.92 | 52.39 | 50.51 | | |
| Nominal Rate of Shear Strain, %/min | 0.00083 | 0.00083 | 0.00083 | | |
| Vertical Consolidation Stress, psf | 2500 | 5000 | 10000 | | |
| Peak Shear Stress, psf | 920.7 | 1454 | 2837 | | |
| Final Moisture Content , % | 88.71 | 83.26 | 63.75 | | |

Comments: Tested By: fy Checked By: jdt

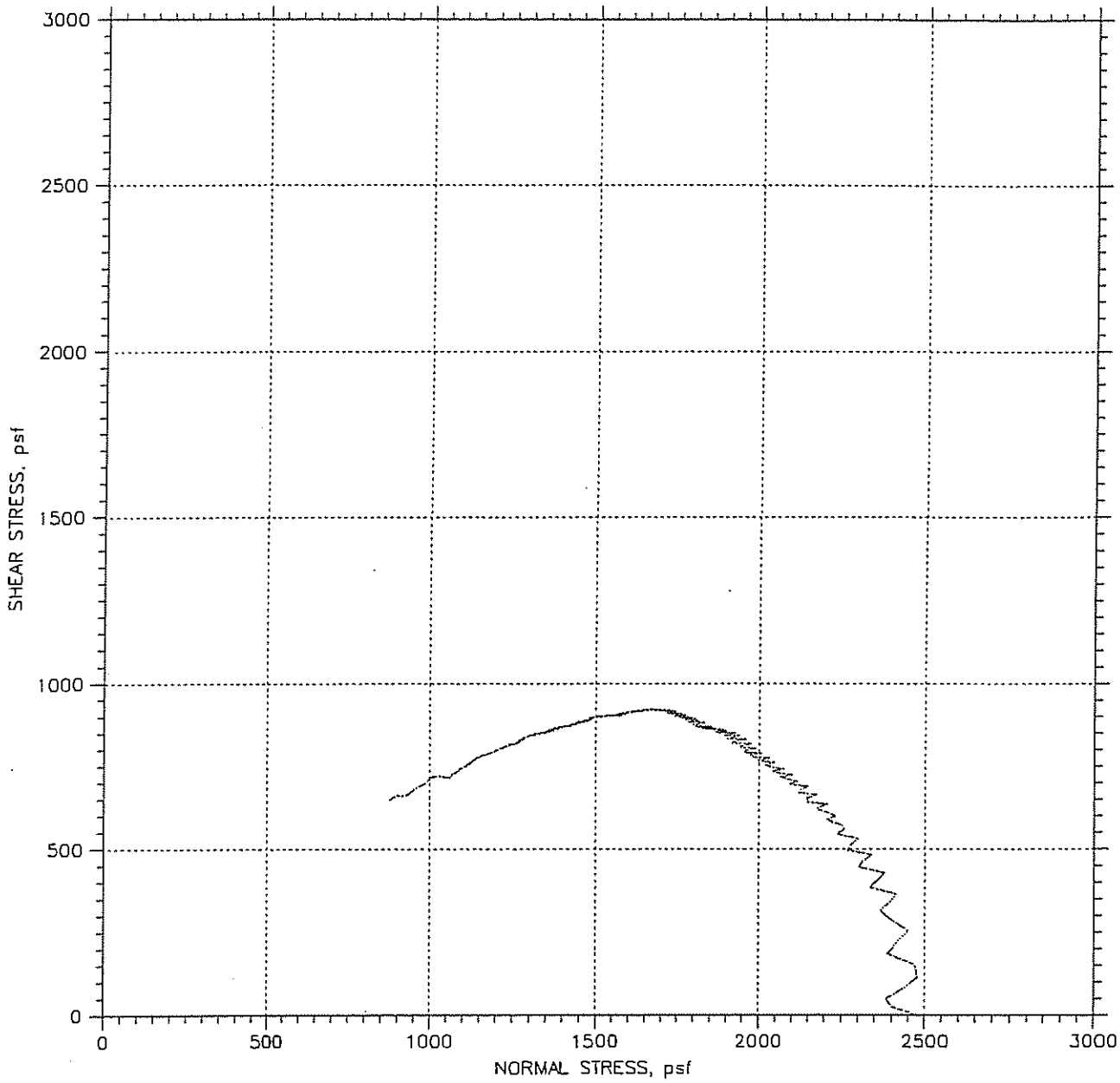
Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

# DIRECT SIMPLE SHEAR TEST



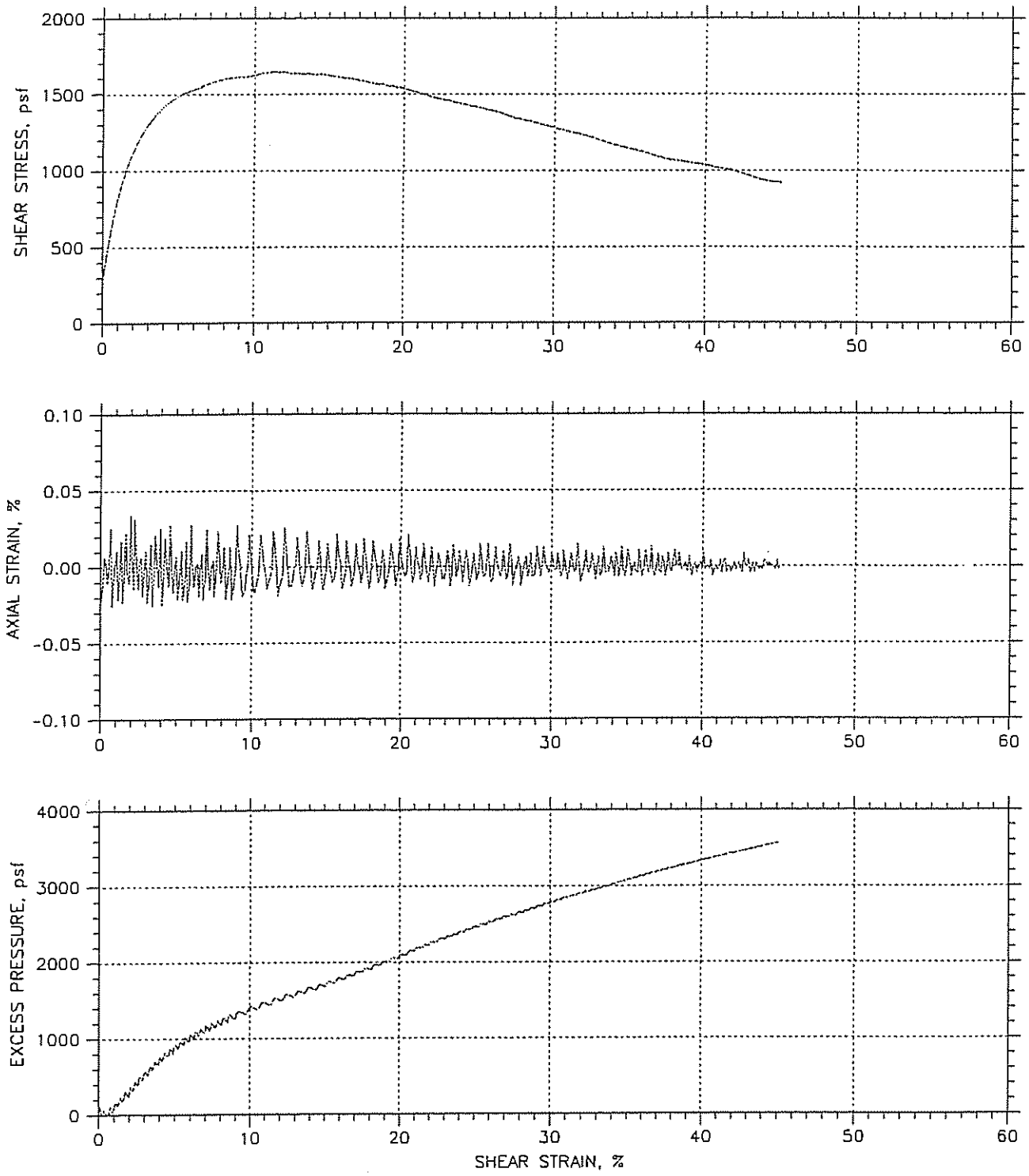

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S19 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 11/20/2002 | Depth: --- |
| Test No.: DSS4 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss4.dat | | |

# DIRECT SIMPLE SHEAR TEST



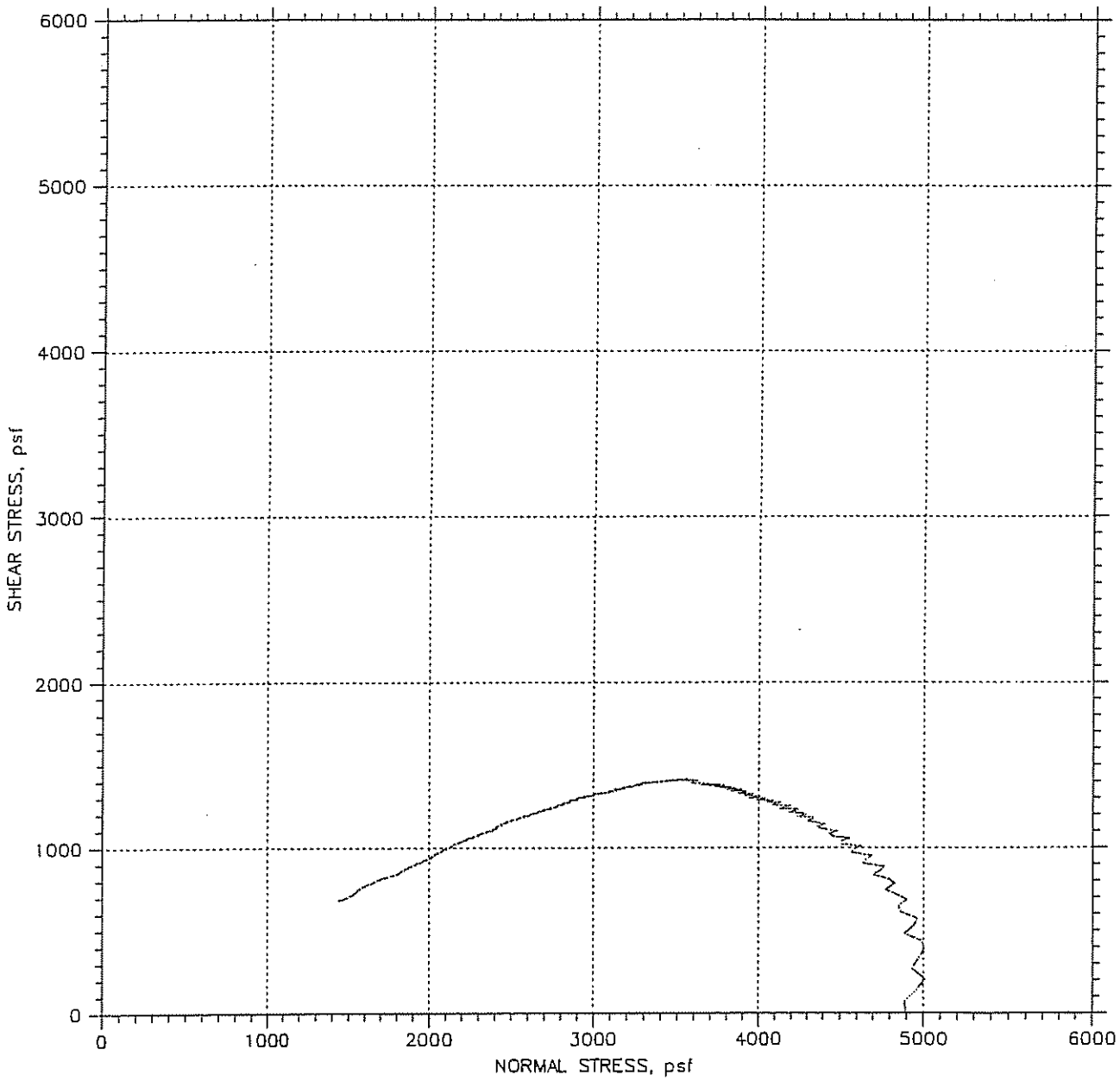

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S19 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 11/20/2002 | Depth: --- |
| Test No.: DSS4 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss4.dat | | |

# DIRECT SIMPLE SHEAR TEST



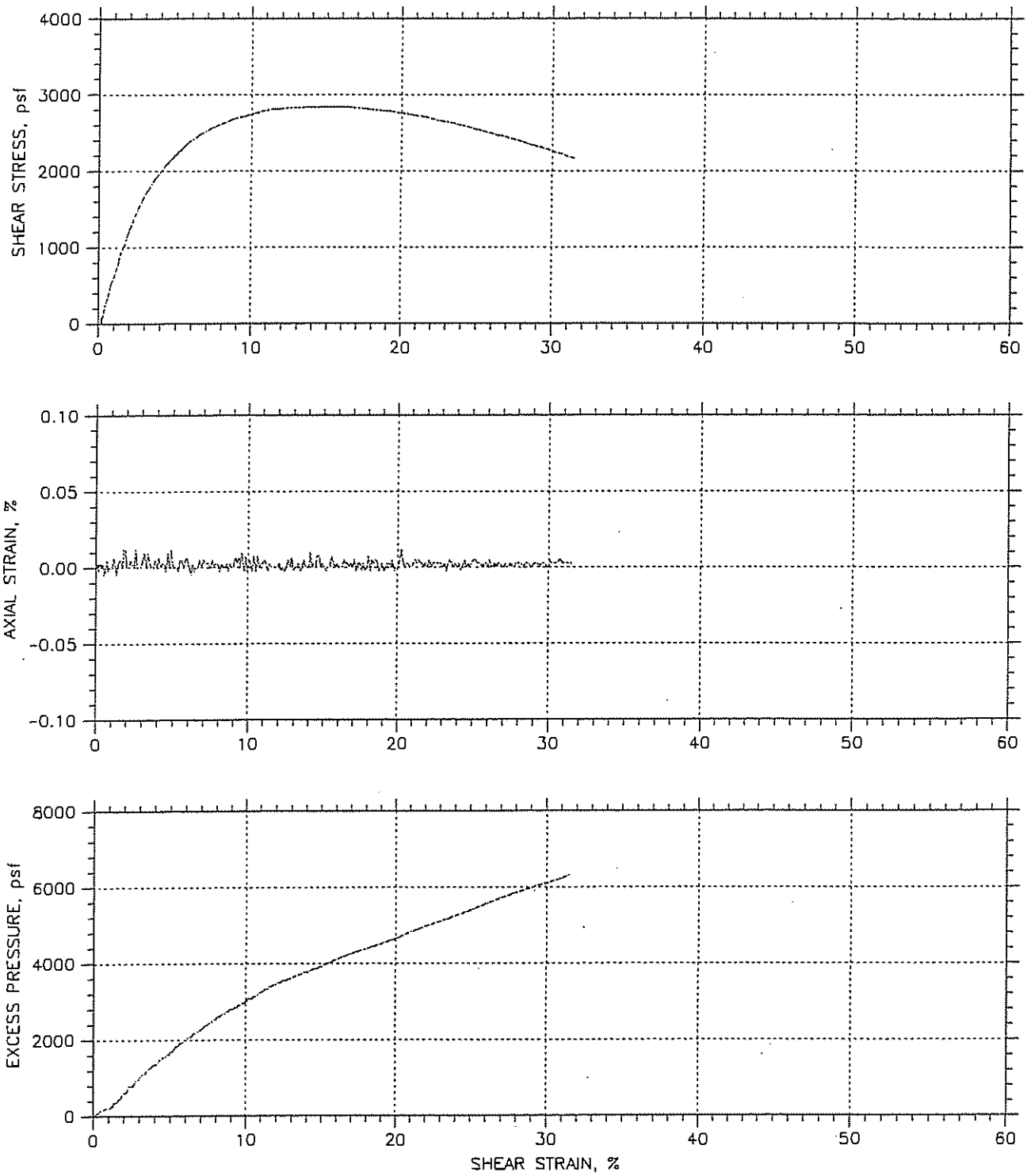

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S19 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 11/22/2002 | Depth: --- |
| Test No.: DSS5 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss5.dat | | |

# DIRECT SIMPLE SHEAR TEST



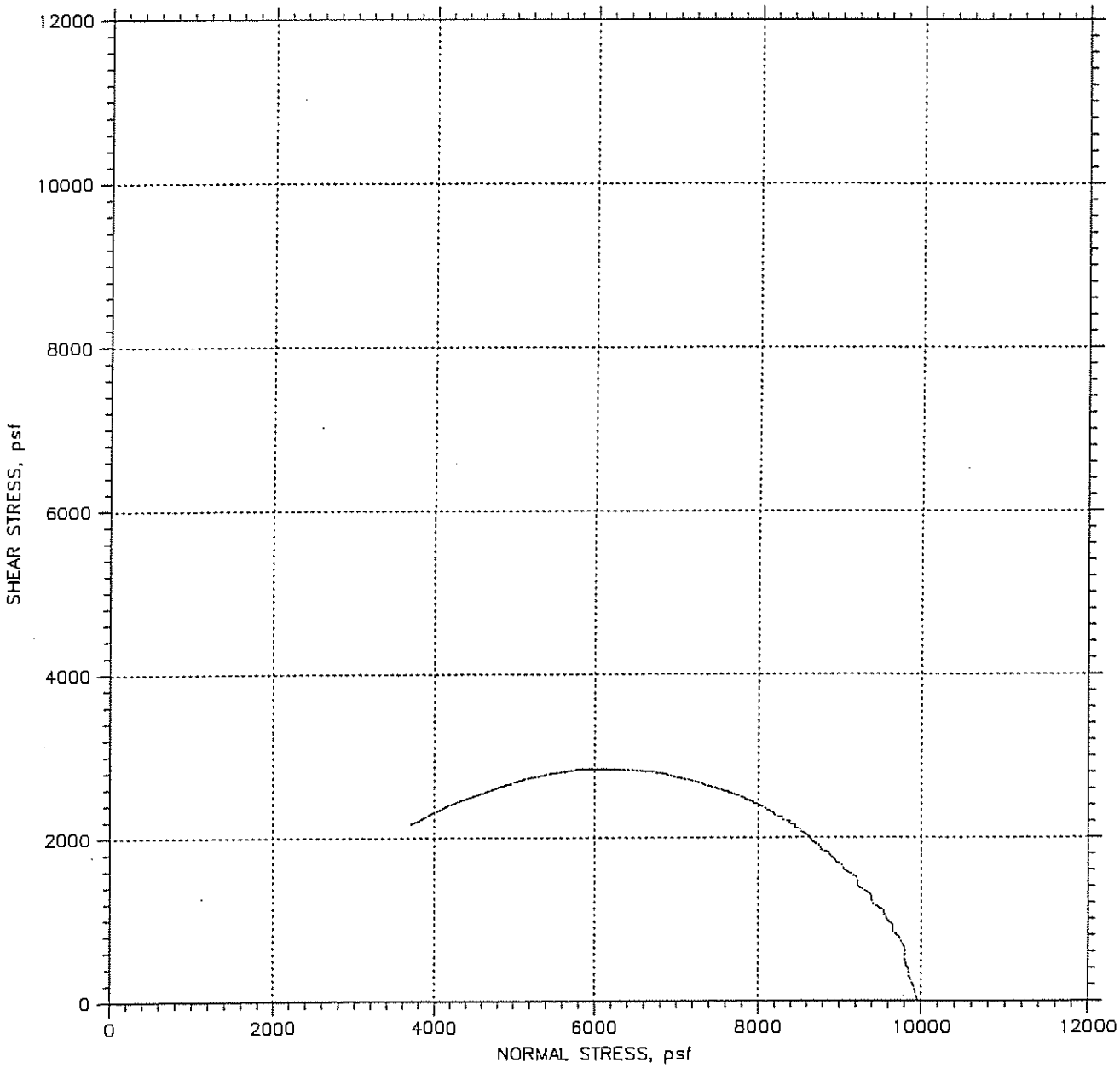

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S19 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 11/22/2002 | Depth: --- |
| Test No.: DSS5 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss5.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S19 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 12/08/2002 | Depth: --- |
| Test No.: DSS6 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss6.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S19 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 12/08/2002 | Depth: --- |
| Test No.: DSS6 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss6.dat | | |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# Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

| | | | |
|---|---|---|---|
| Client: | GeoSyntec Consultants | GTX#: | 4324 |
| Project Name: | Cherry Island Landfill | Test Date: | 11/24/02 |
| Project Location: | Wilmington, DE | | |

Boring ID: P5-02
Sample ID: S20

Visual Description: Wet, very dark gray clay with organics

Test Equipment: Top and bottom box (circular) = 2.62 in diameter. Load cells and LVDTs connected to data acquisition system for shear force, normal load, horizontal and vertical displacement; surface area = 5.39 $in^2$, soil height = 1 inch

Test Condition: inundated

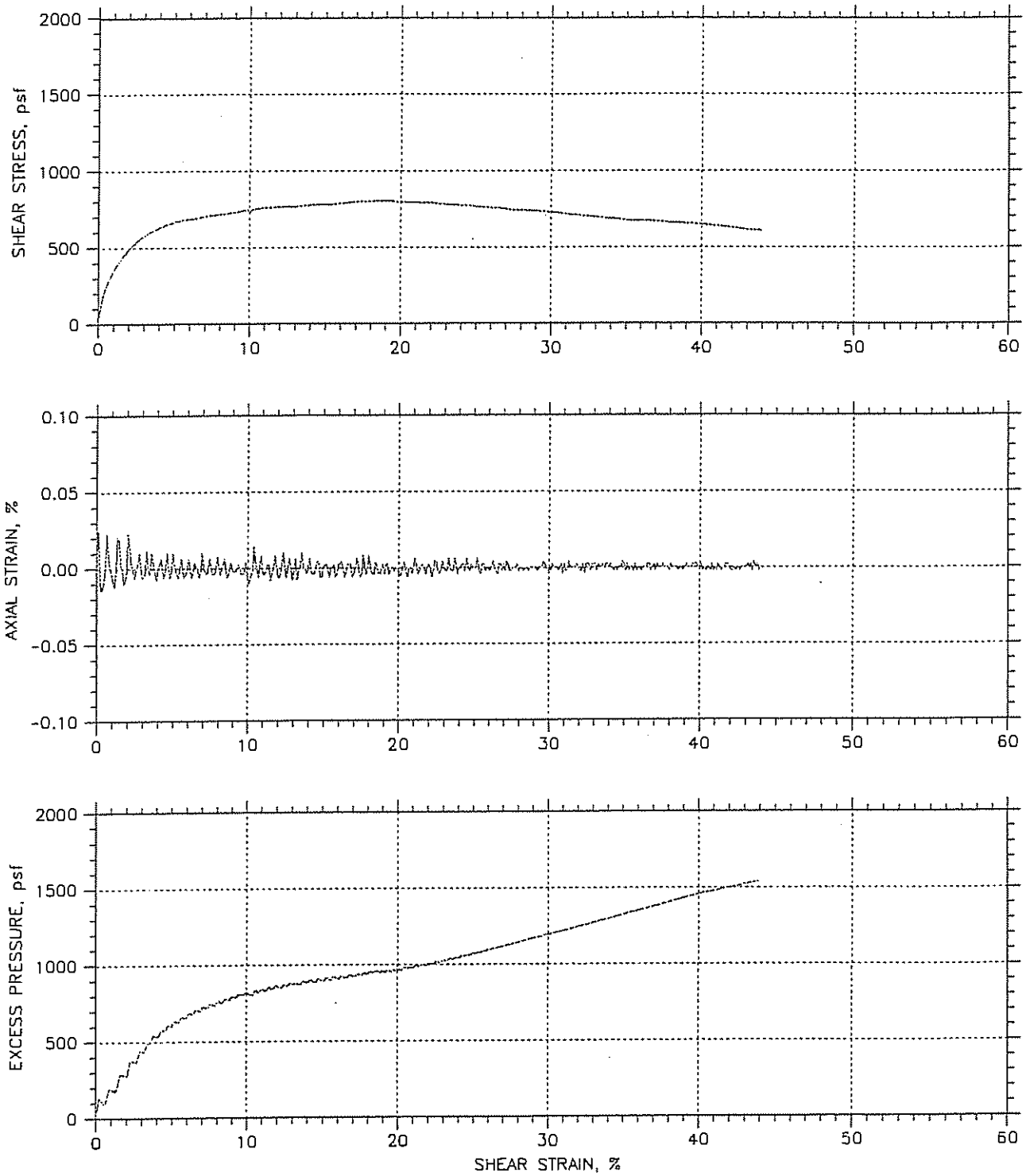
Sample Type and Preparation:
Extruded from tube, cut, trimmed and placed into apparatus at as-received density and moisture content.

| Parameter | Point 1 | Point 2 | Point 3 | Point 4 | Point 5 |
|---|---|---|---|---|---|
| Test No. | DSS7 | DSS8 | DSS9 | | |
| Initial Moisture Content, % | 63.76 | 64.05 | 64.75 | | |
| Initial Dry Density, pcf | 65.84 | 67.38 | 65.56 | | |
| Nominal Rate of Shear Strain, %/min | 0.00083 | 0.00083 | 0.00083 | | |
| Vertical Consolidation Stress, psf | 2500 | 5000 | 15000 | | |
| Peak Shear Stress, psf | 802.2 | 1420 | 3585 | | |
| Final Moisture Content , % | 61.48 | 53.78 | 44.53 | | |

Comments: Tested By: fy Checked By: jdt

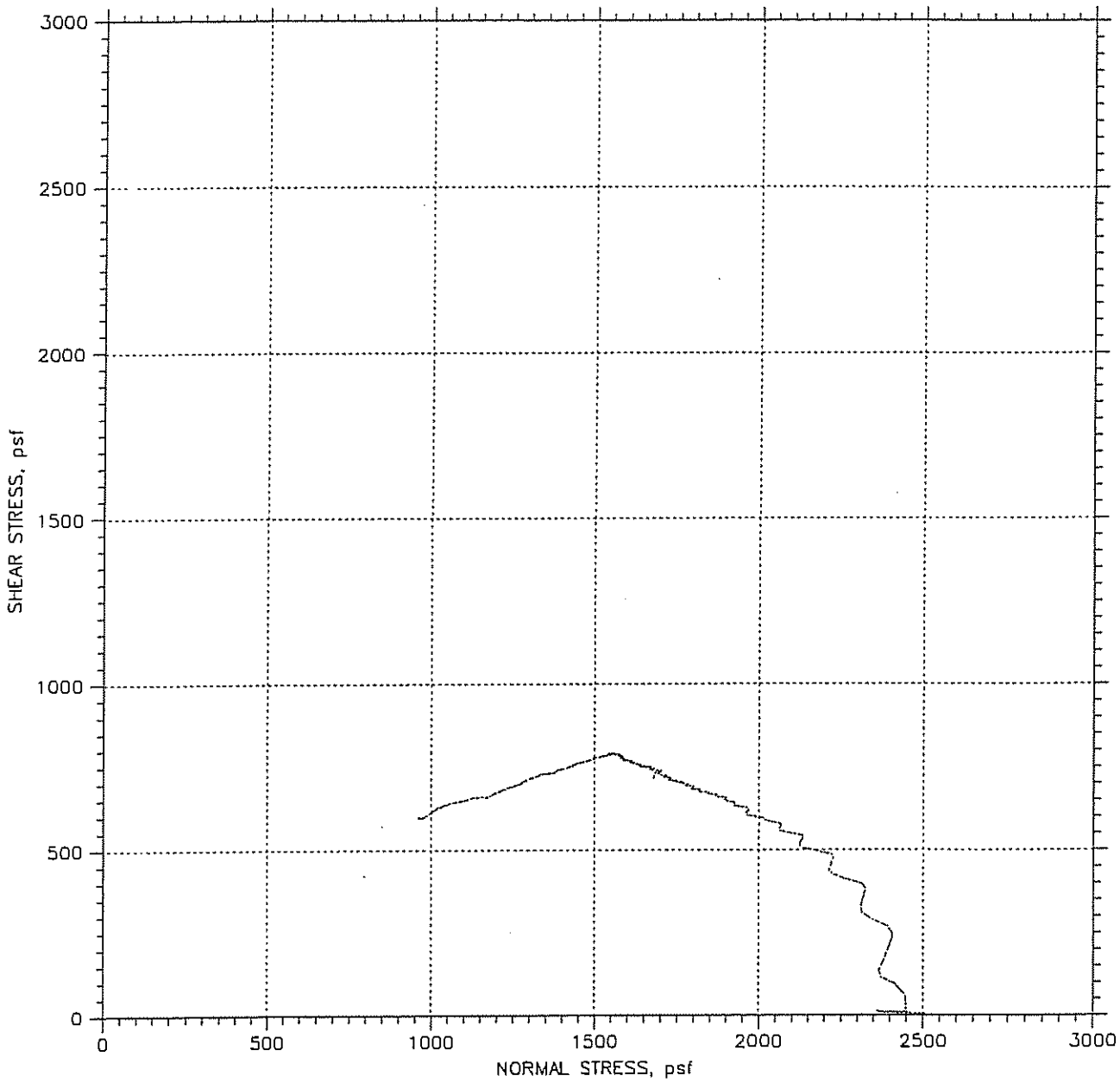
Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S20 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 11/24/2002 | Depth: --- |
| Test No.: DSS7 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Glx4324\4324dss7.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S20 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 11/24/2002 | Depth: --- |
| Test No.: DSS7 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss7.dat | | |



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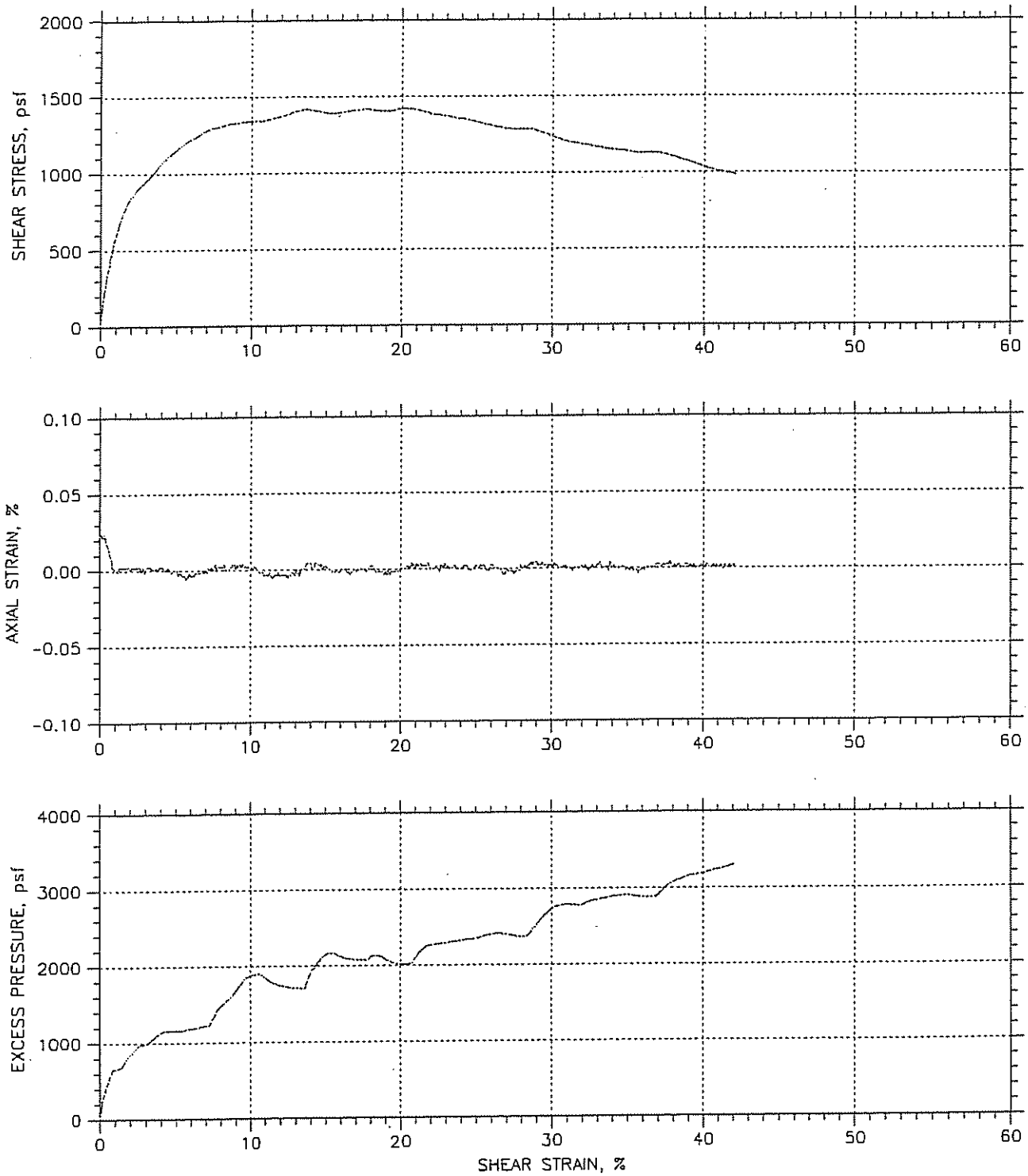
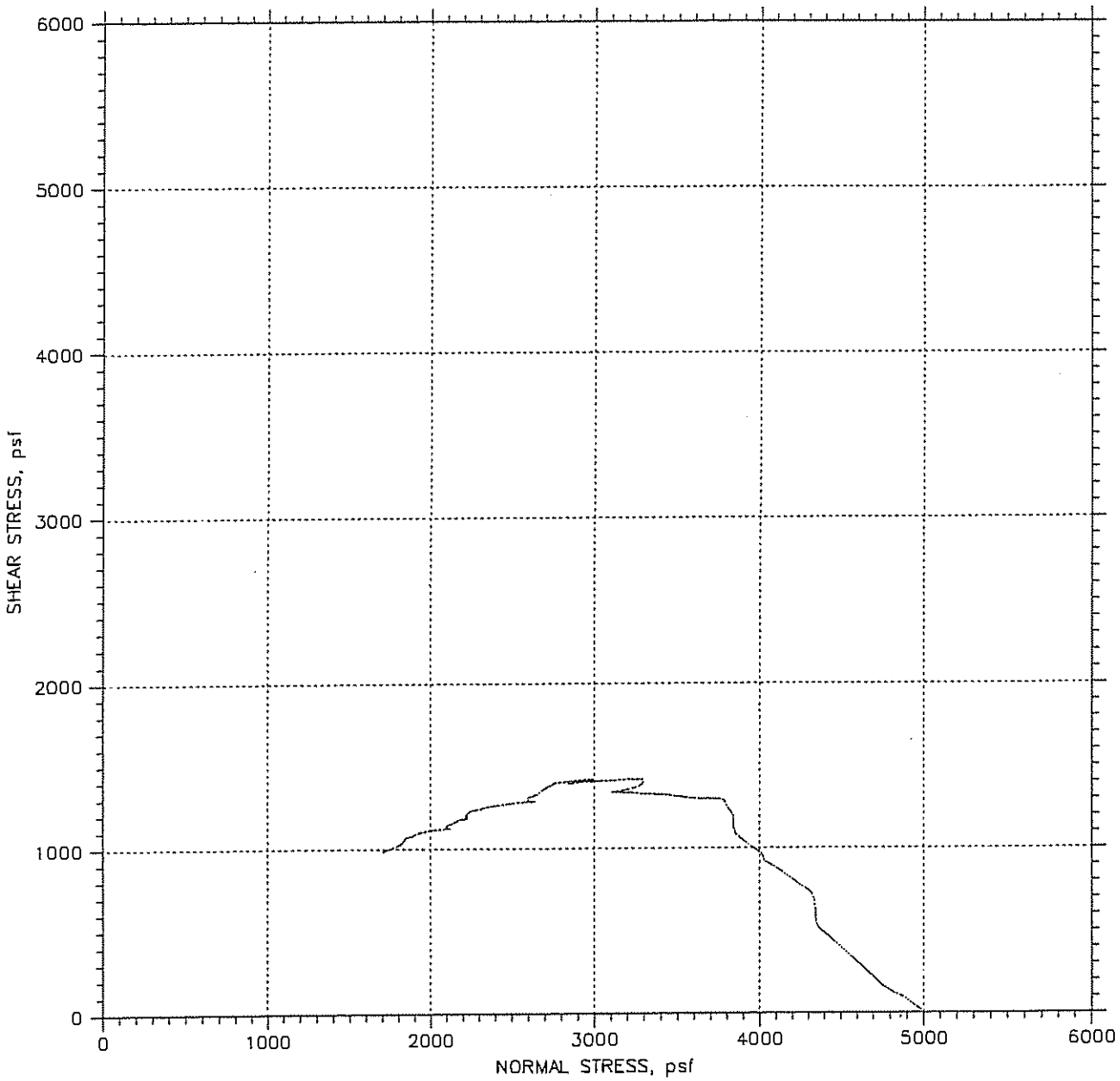
# DIRECT SIMPLE SHEAR TEST



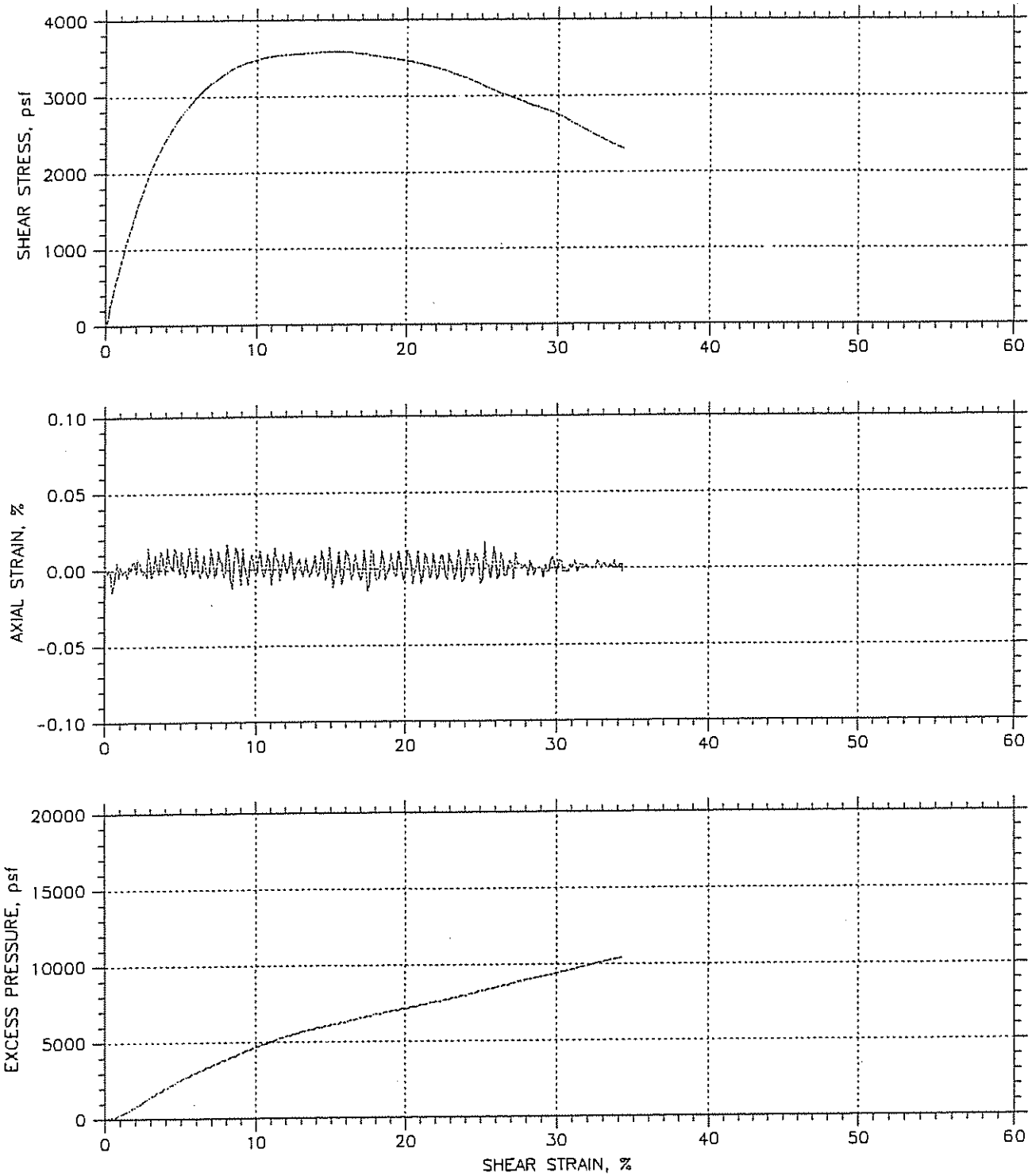

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S20 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 11/27/2002 | Depth: --- |
| Test No.: DSS8 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Glx4324\4324dss8.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S20 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 11/27/2002 | Depth: --- |
| Test No.: DSS8 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss8.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S20 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 12/11/2002 | Depth: --- |
| Test No.: DSS9 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss9 dat | | |



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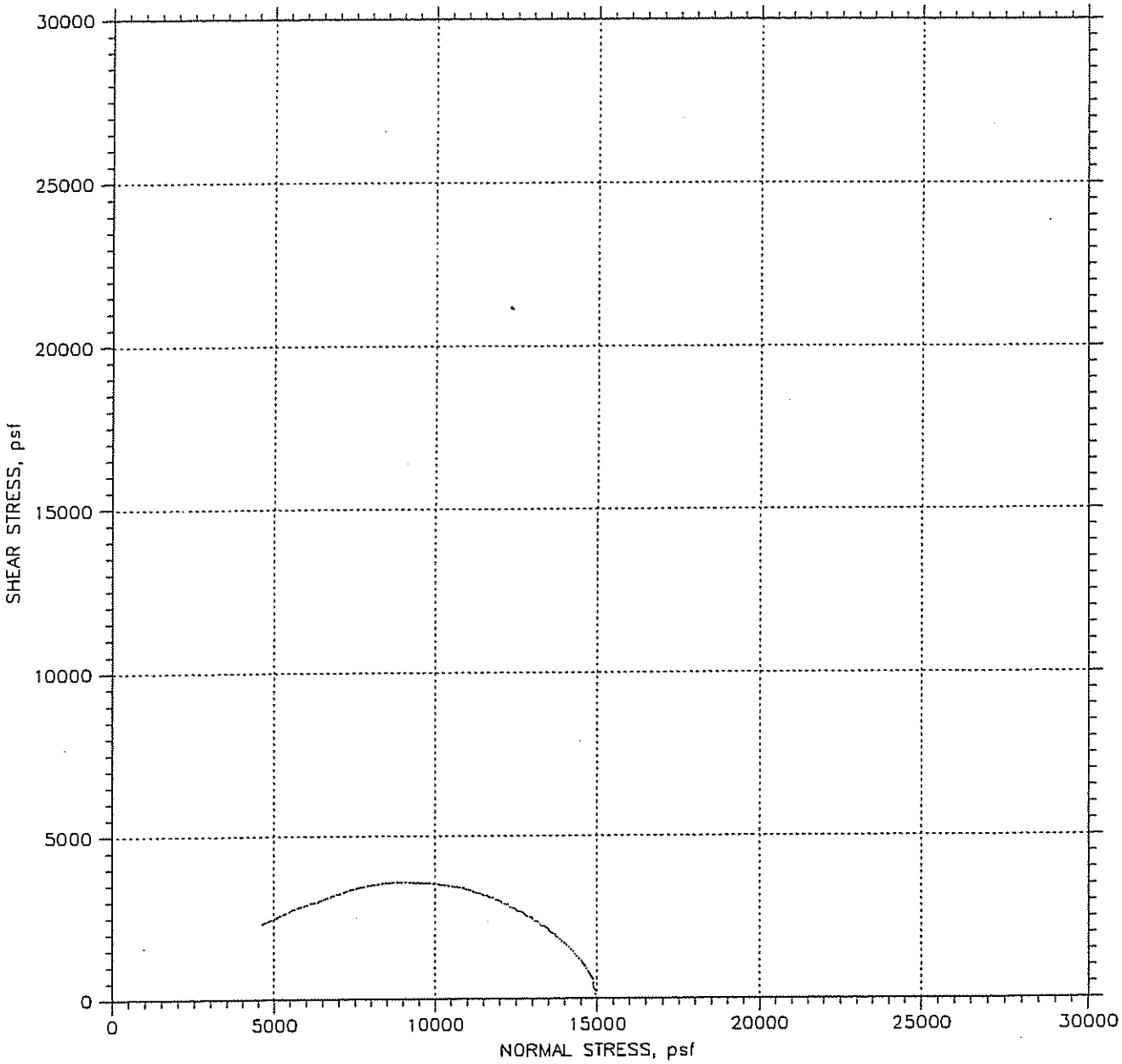
# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S20 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 12/11/2002 | Depth: --- |
| Test No.: DSS9 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324dss9.dat | | |

# Consolidated Undrained Direct Simple Shear Test of Cohesive Soil by ASTM D 6528

Client: GeoSyntec Consultants
Project Name: Cherry Island Landfill
Project Location: Wilmington, DE

GTX#: 4324
Test Date: 11/29/02

Boring ID: P5-02
Sample ID: S18

Visual Description: Wet, very dark gray clay with organics

Test Equipment: Top and bottom box (circular) = 2.62 in diameter. Load cells and LVDTs connected to data acquisition system for shear force, normal load, horizontal and vertical displacement; surface area = 5.39 $in^2$, soil height = 1 inch

Test Condition: inundated

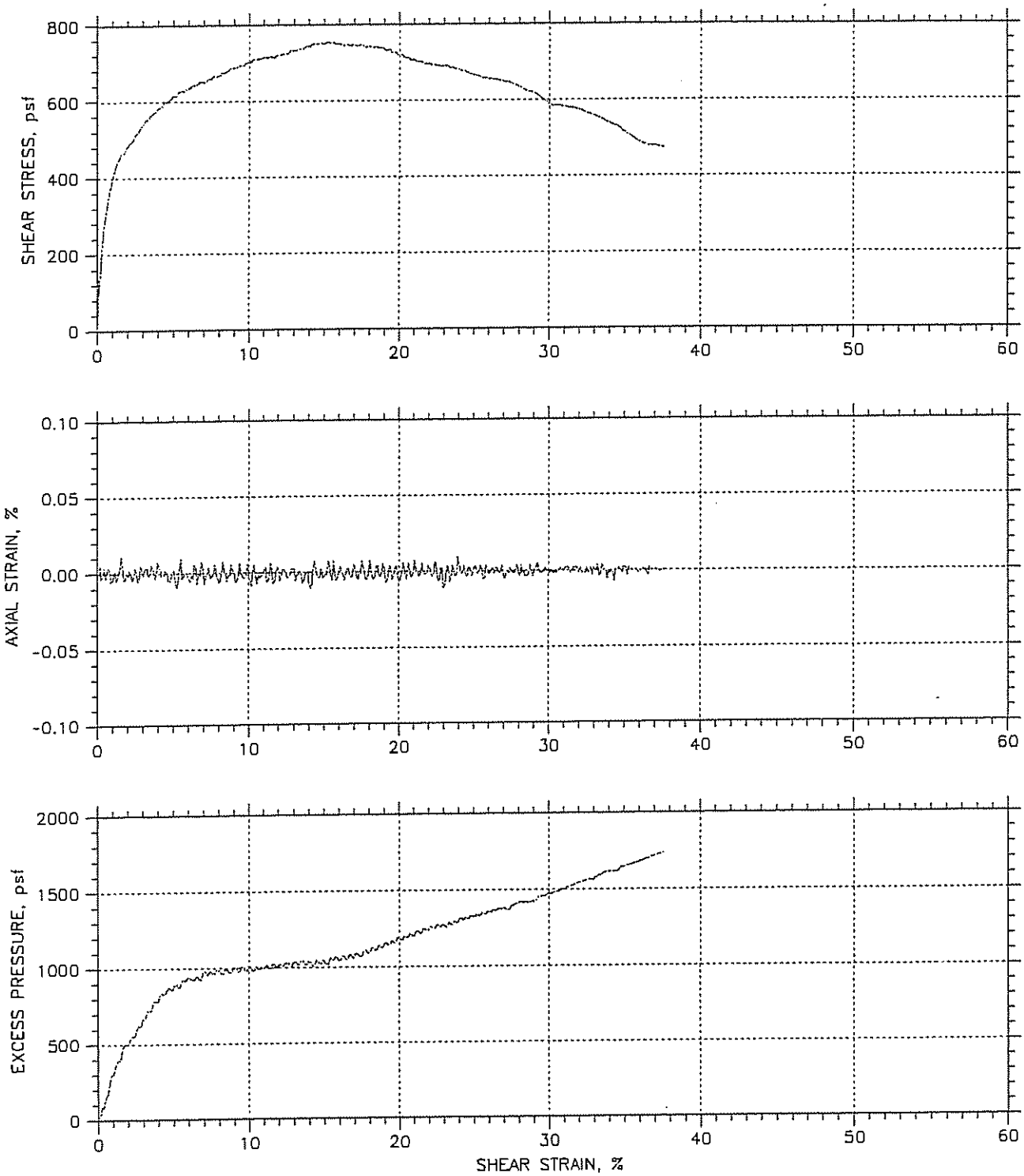
Sample Type and Preparation:
Extruded from tube, cut, trimmed and placed into apparatus at as-received density and moisture content.

| Parameter | Point 1 | Point 2 | Point 3 | Point 4 | Point 5 |
|---|---|---|---|---|---|
| Test No. | DSS10 | DSS11 | DSS12 | | |
| Initial Moisture Content, % | 47.1 | 62.11 | 72.73 | | |
| Initial Dry Density, pcf | 81.47 | 68.38 | 61.32 | | |
| Nominal Rate of Shear Strain, %/min | 0.00083 | 0.00083 | 0.00083 | | |
| Vertical Consolidation Stress, psf | 2500 | 5000 | 10000 | | |
| Peak Shear Stress, psf | 754.5 | 1498 | 2906 | | |
| Final Moisture Content , % | 42.51 | 55.82 | 59.5 | | |

Comments: Tested By: fy Checked By: jdt

Notes: These results apply only to the sample tested for the specific test conditions. The test procedures employed follow accepted industry practice and the indicated test method. GeoTesting Express has no specific knowledge as to conditioning, origin, sampling procedure or intended use of the material.

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S18 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 11/29/2002 | Depth: --- |
| Test No.: DSS10 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324ds10.dat | | |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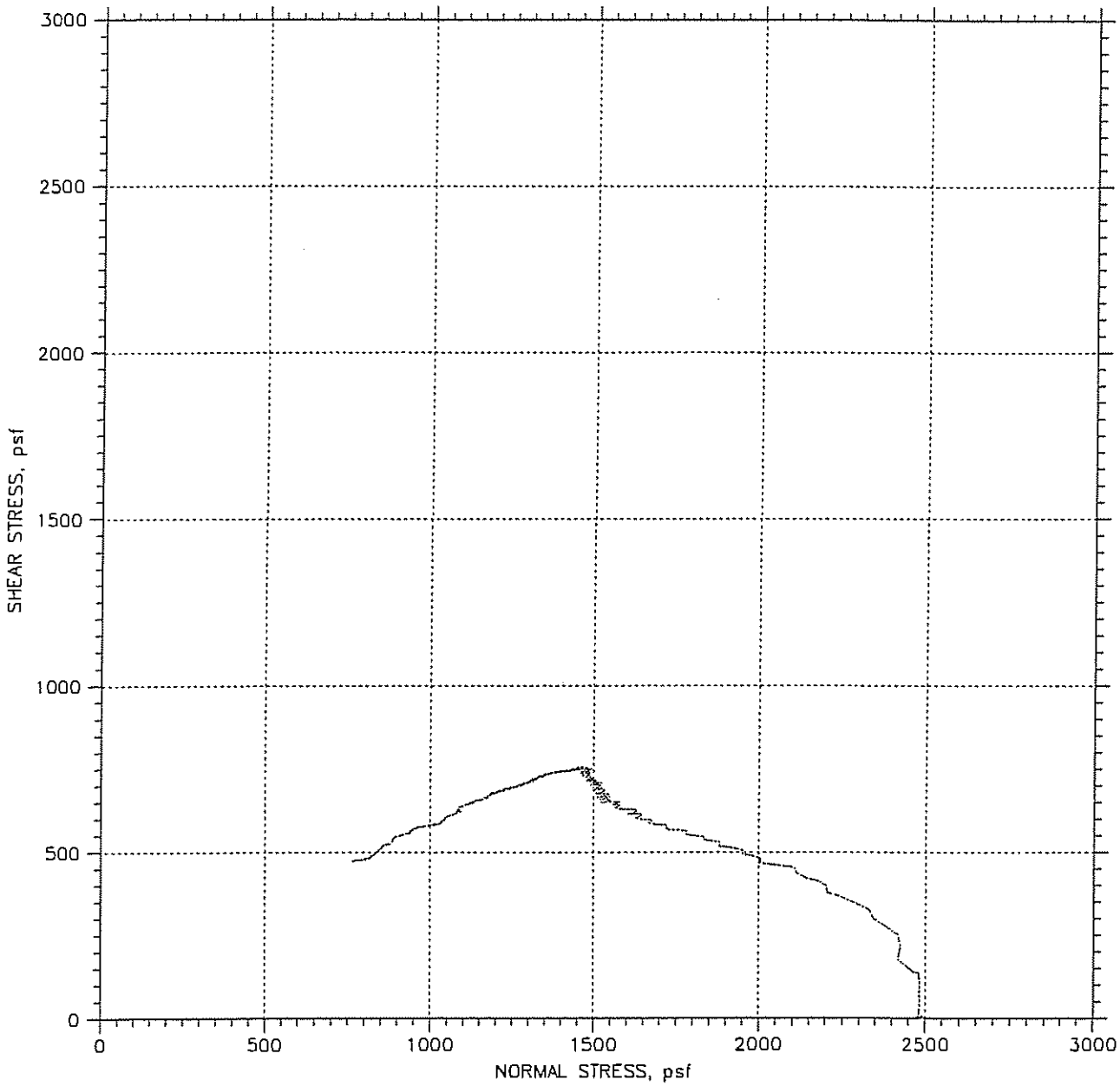
# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S18 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 11/29/2002 | Depth: --- |
| Test No.: DSS10 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324ds10.dat | | |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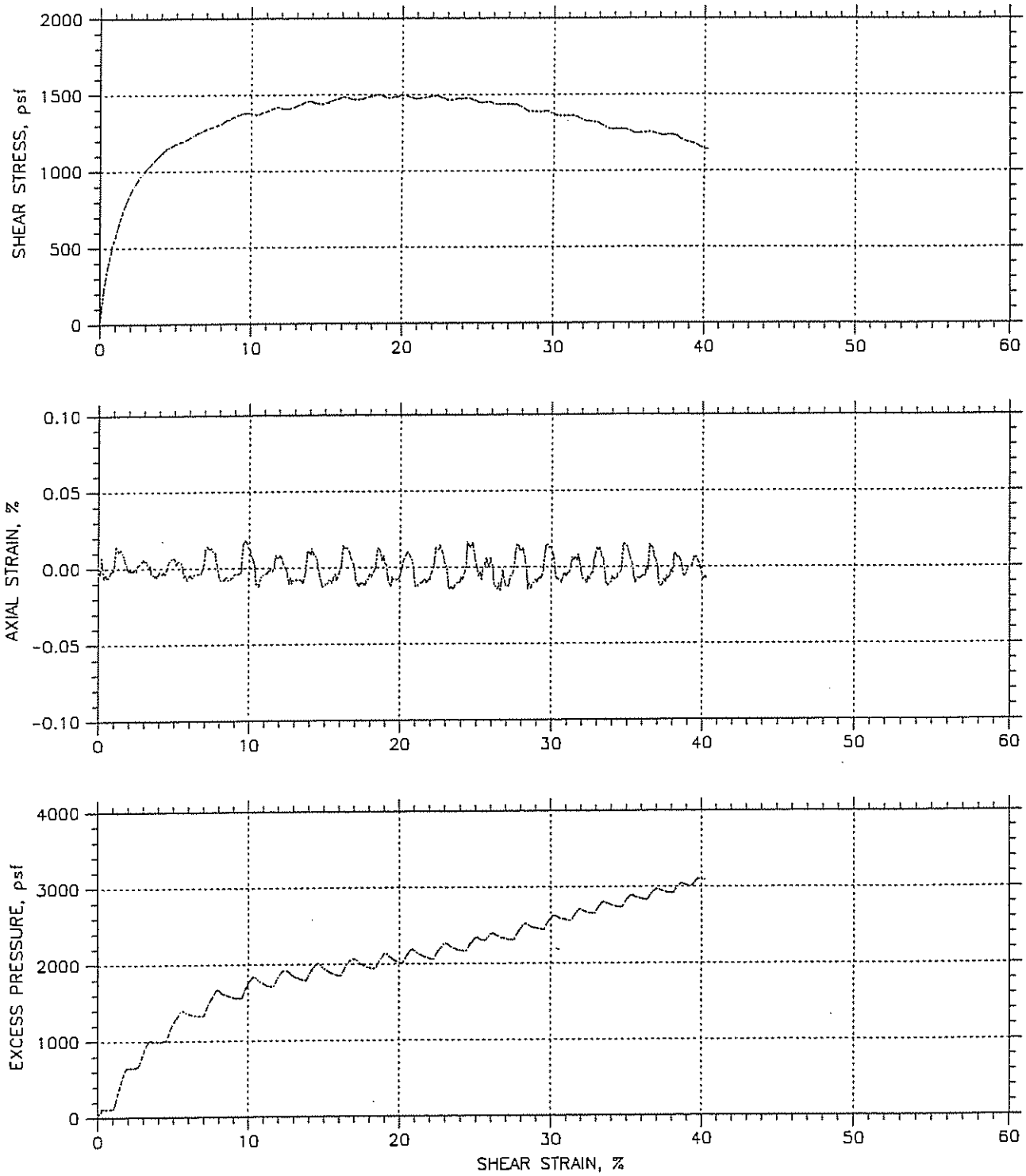
# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S18 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 12/01/2002 | Depth: --- |
| Test No.: DSS11 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324ds11.dat | | |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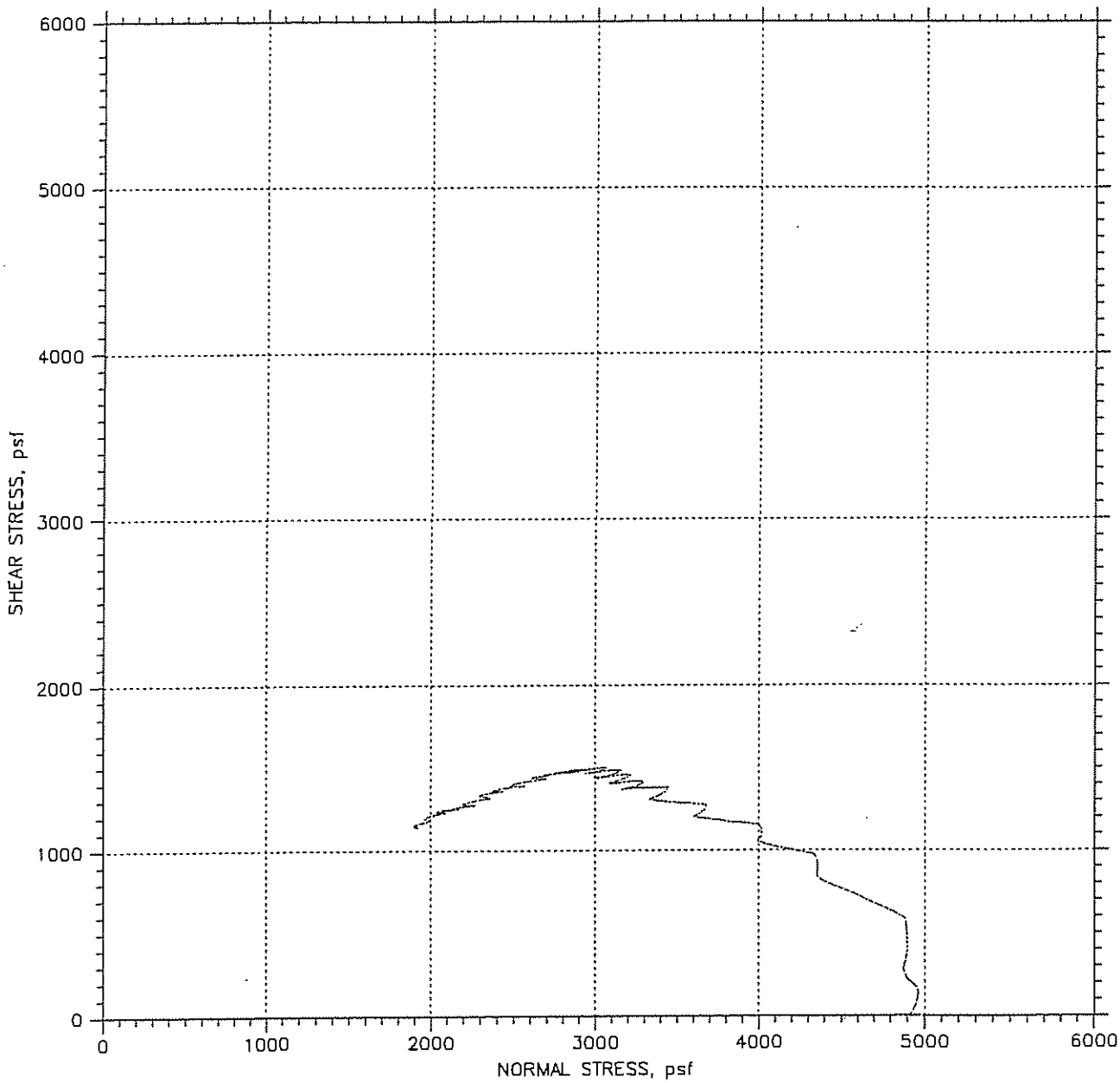
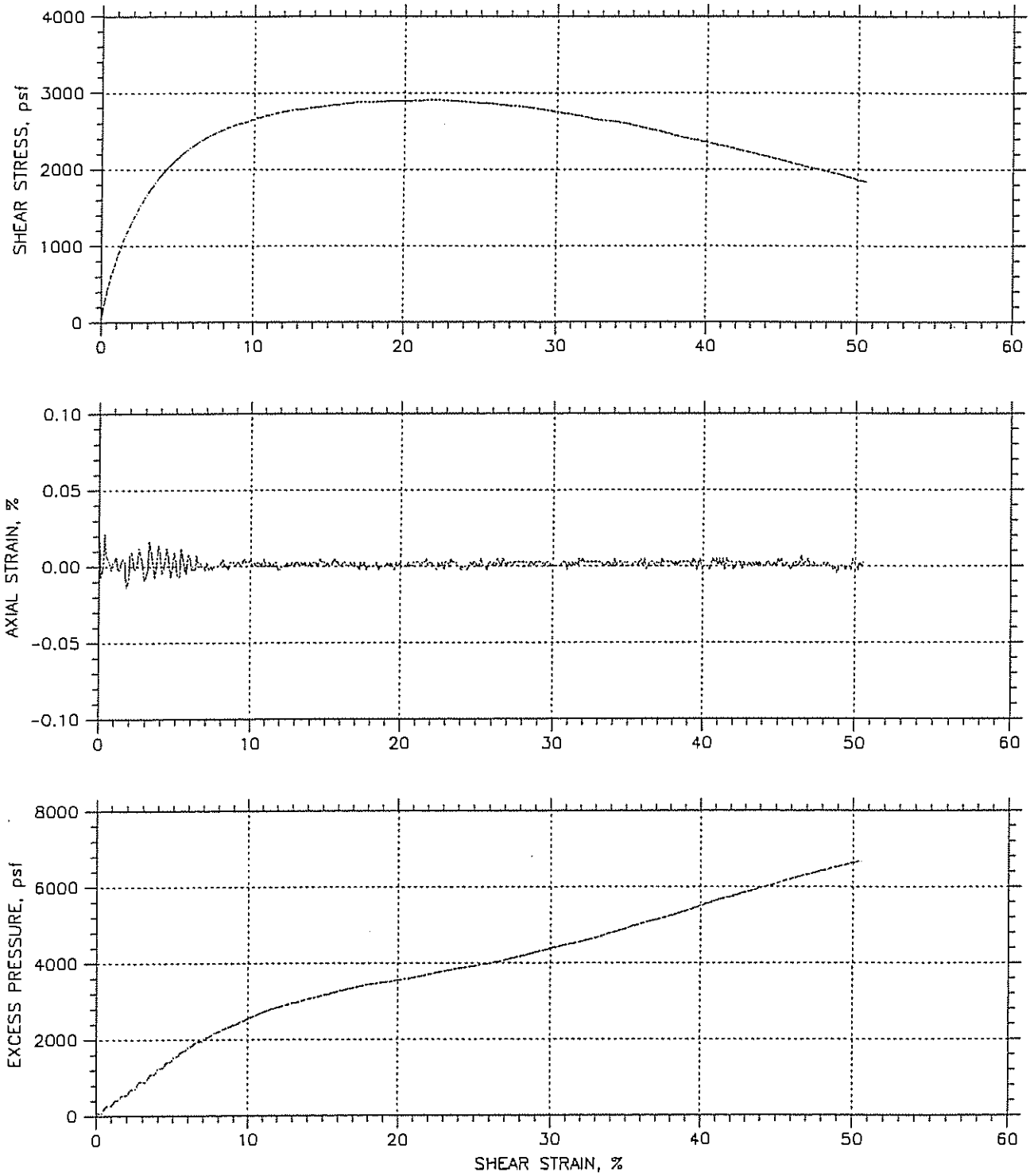
# DIRECT SIMPLE SHEAR TEST



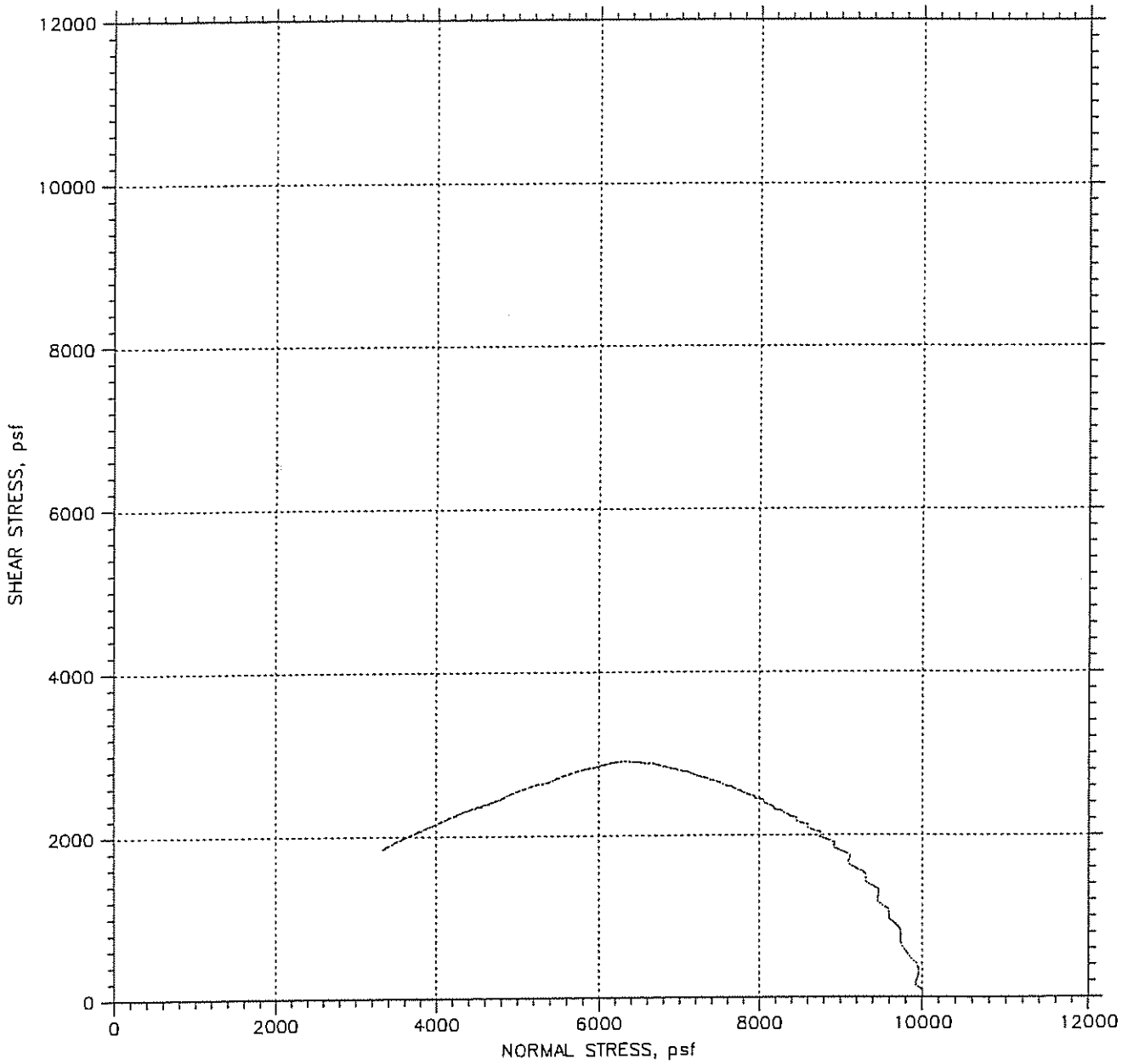

| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S18 | Tested By: md | Checked By: jdt |
| Sample No.: --- | Test Date: 12/01/2002 | Depth: --- |
| Test No.: DSS11 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324ds11.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S18 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 12/06/2002 | Depth: --- |
| Test No.: DSS12 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324ds12.dat | | |

# DIRECT SIMPLE SHEAR TEST




| | | |
|---|---|---|
| Project: Cherry Island Landfill | Location: Wilmington, DE | Project No.: 4324 |
| Boring No.: P5-02-S18 | Tested By: fy | Checked By: jdt |
| Sample No.: --- | Test Date: 12/06/2002 | Depth: --- |
| Test No.: DSS12 | Sample Type: --- | Elevation: --- |
| Description: Wet, very dark gray clay with organics | | |
| Remarks: --- | | |
| File: F:\Gtx4324\4324ds12.dat | | |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## APPENDIX E

## CONE PENETRATION DISSIPATION TESTS

ConeTec, Inc. of West Berlin, New Jersey, (ConeTec) performed ten dissipation tests between 28 January to 14 February 2002, and 39 dissipation tests between 11 and 16 April 2002. The locations of the dissipation tests were chosen by GeoSyntec.

The CPT soundings were performed by ConeTec using an electro-piezo cone with a 10 $cm^2$ cross-sectional area and a 150 $cm^2$ of friction sleeve area. On one sounding, a more sensitive probe, with a 15 $cm^2$ cross-sectional area and a 225 $cm^2$ of friction sleeve area, was used. The CPT probes were advanced at a standard rate of 2 cm/sec.

As the CPT probe was advanced, pore pressure dissipations were performed at selected locations. The pore pressure at each depth of the dissipations was allowed to stabilize to an approximate static pore pressure reading. Results of the pore pressure dissipations are presented in this appendix. In general, the piezo cone was stopped at a pre-determined elevation and pore water pressure was recorded at five second intervals.

It should be noted that the notation used for by ConeTec for CPT 60 through CPT 68 is different than that used by GeoSyntec. The table below shows this relationship.

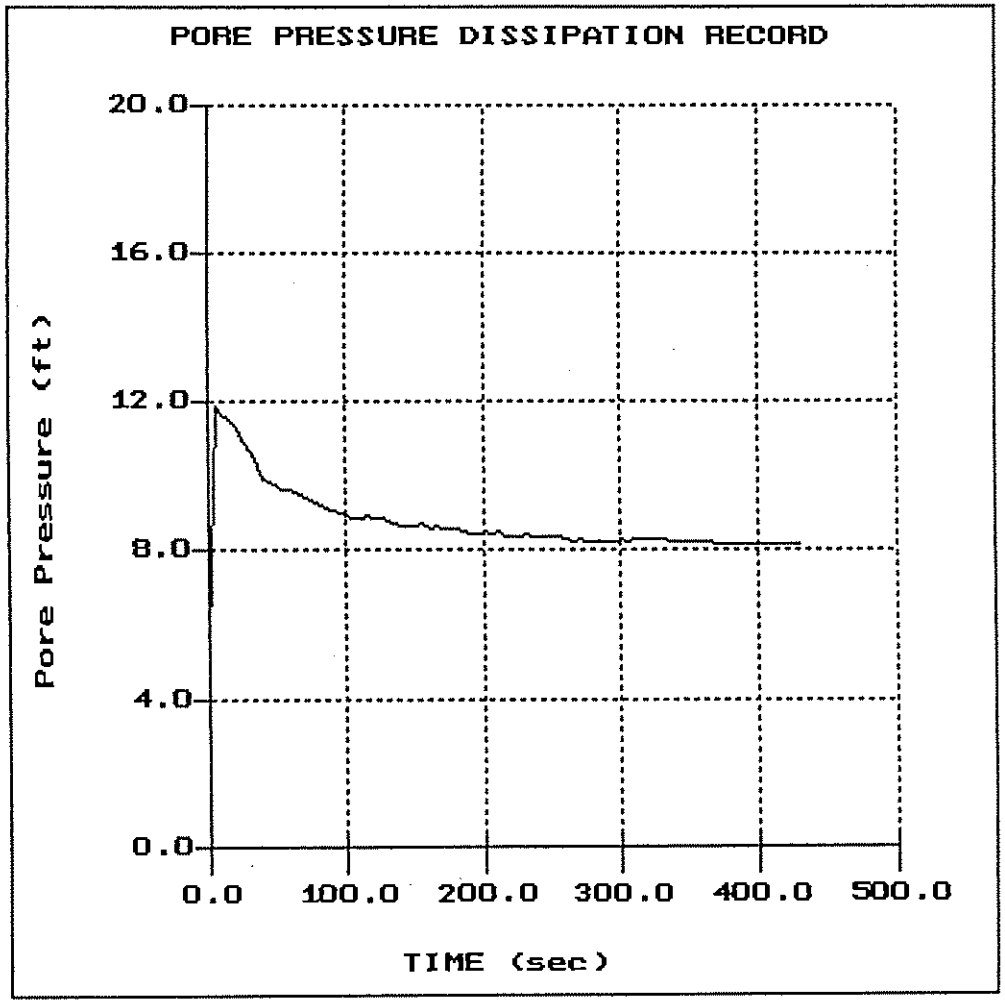
| Designation | |
|---|---|
| **ConeTec** | **GeoSyntec** |
| MSW-01 | P5-02-C060 |
| MSW-02 | P5-02-C061 |
| MSW-03 | P3-02-C062 |
| MSW-04 | P1-02-C063 |
| MSW-04A | P1-02-C064 |
| MSW-05 | P2-02-C065 |
| MSW-05A | P2-02-C066 |
| MSW-06 | P3-02-C067 |
| MSW-07 | P4-02-C068 |

# CONE PENETRATION DISSIPATION TESTS

Duffield

Hole:P3-02-C01D
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 12:05

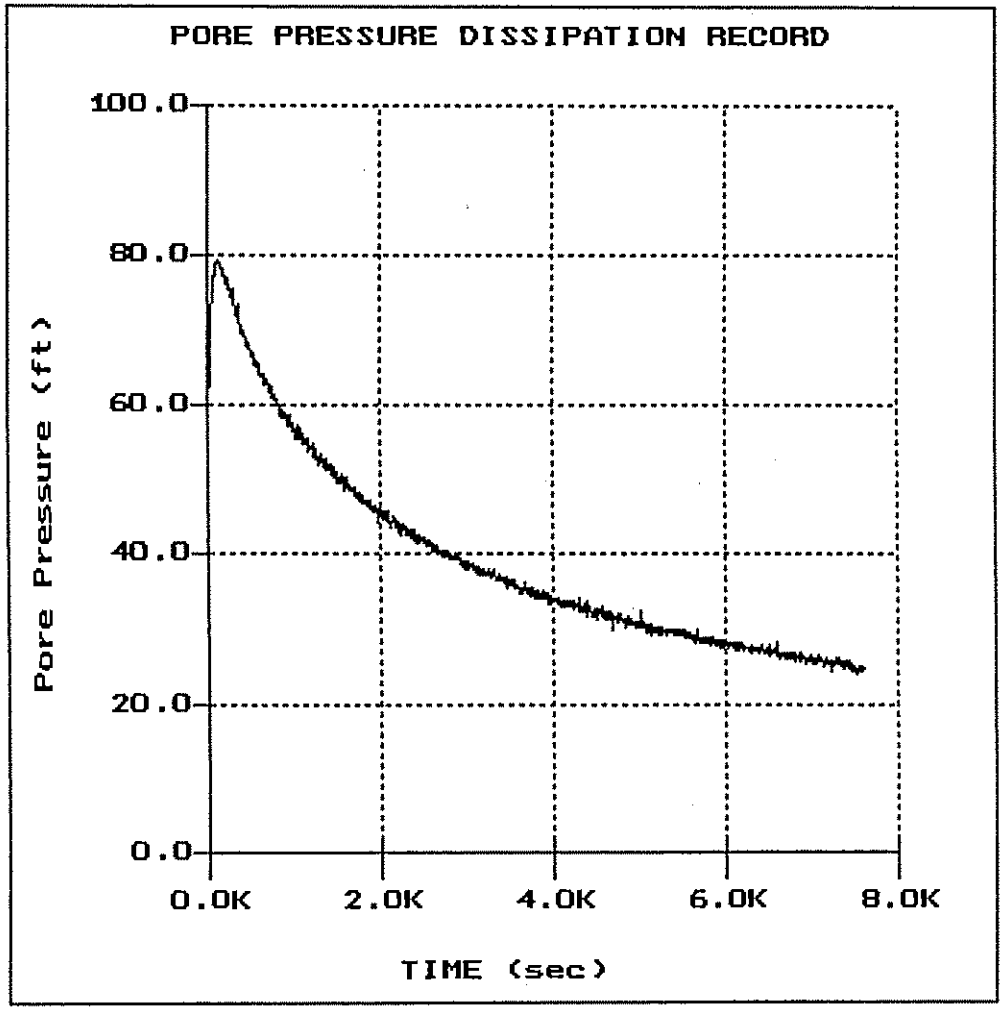



File: 703CP01D.PPD
Depth (m): 6.90
(ft): 22.64
Duration : 430.0s
U-min: 5.44 0.0s
U-max: 11.83 5.0s

Duffield

Hole:P3-02-C010
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 12:05

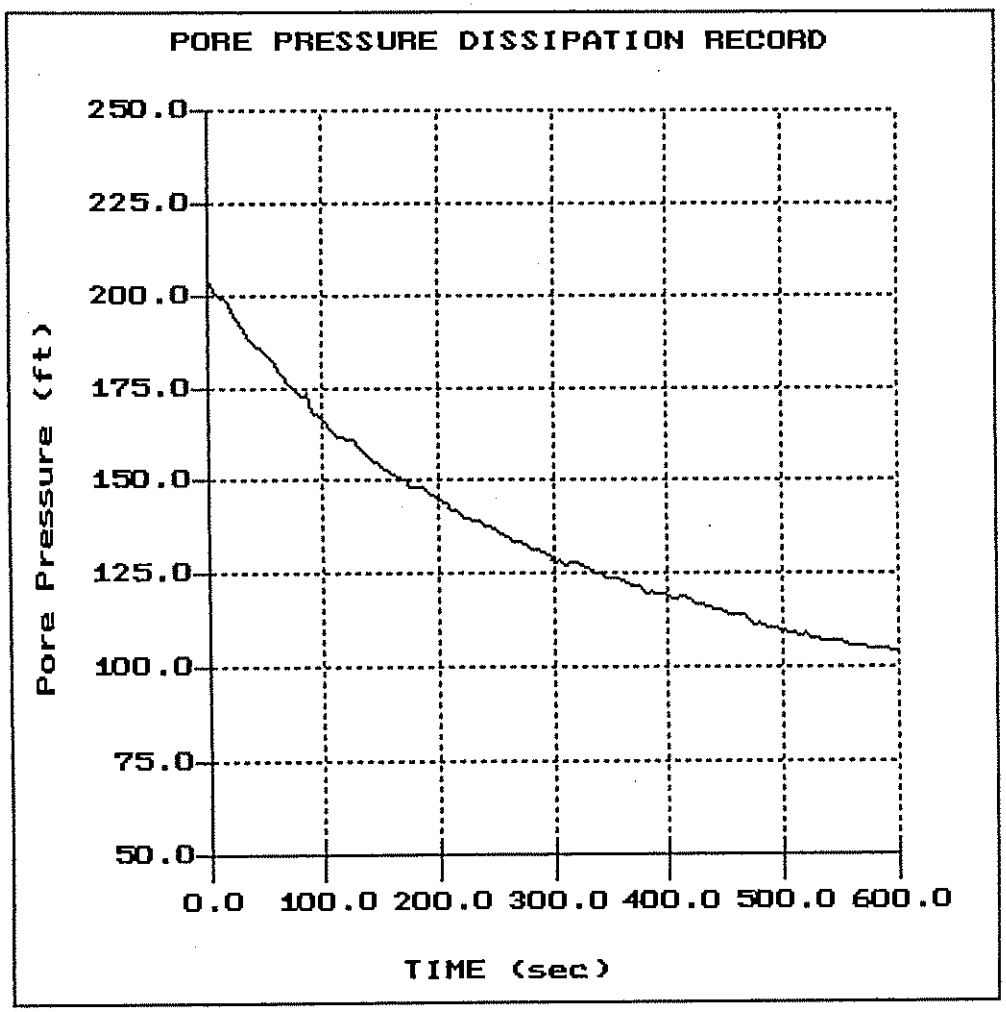



File: 703CP010.PPD
Depth (m): 7.65
(ft): 25.10
Duration : 7600.0s
U-min: 24.06 7535.0s
U-max: 79.12 130.0s

Duffield

Hole:P3-02-C010
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 12:05

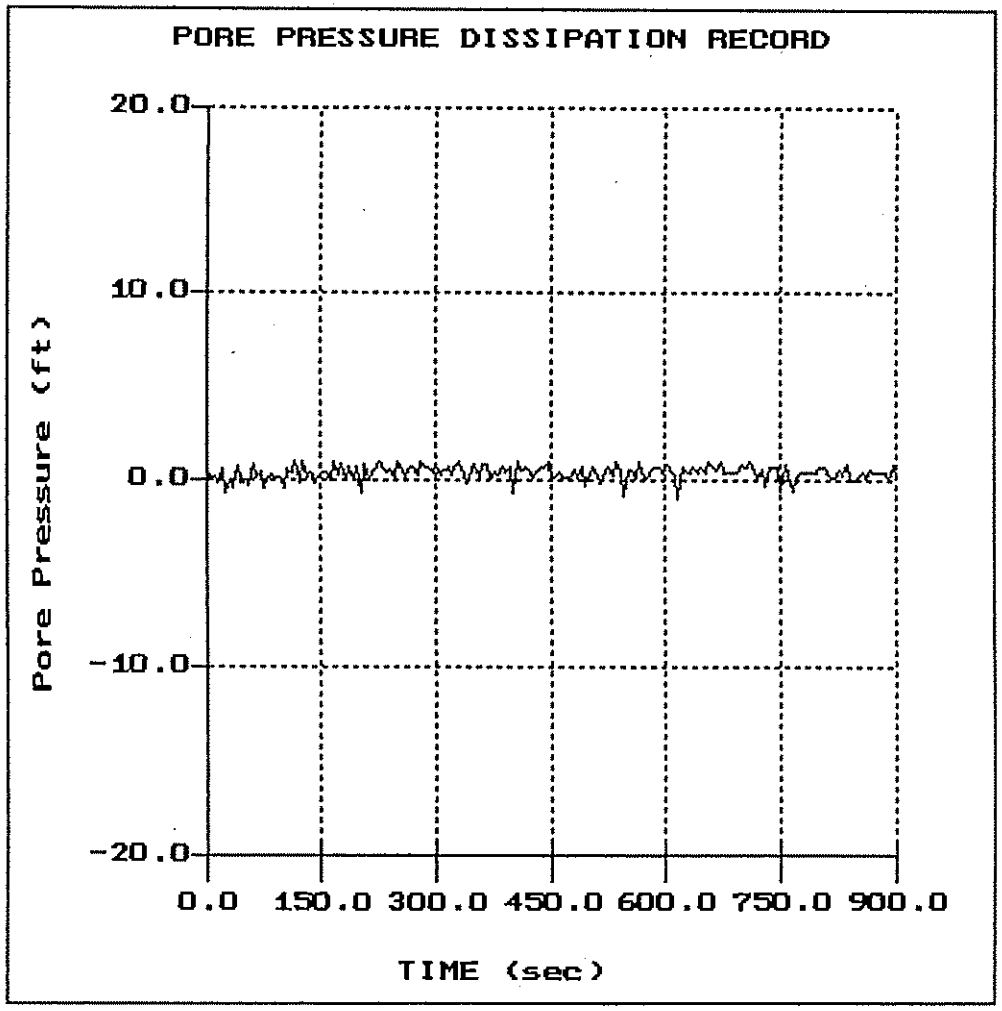



File: 703CP010.PPD
Depth (m): 16.80
(ft): 55.12
Duration : 600.0s
U-min: 104.21 600.0s
U-max: 204.52 0.0s

Duffield

Hole:P3-02-C012
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 08:10

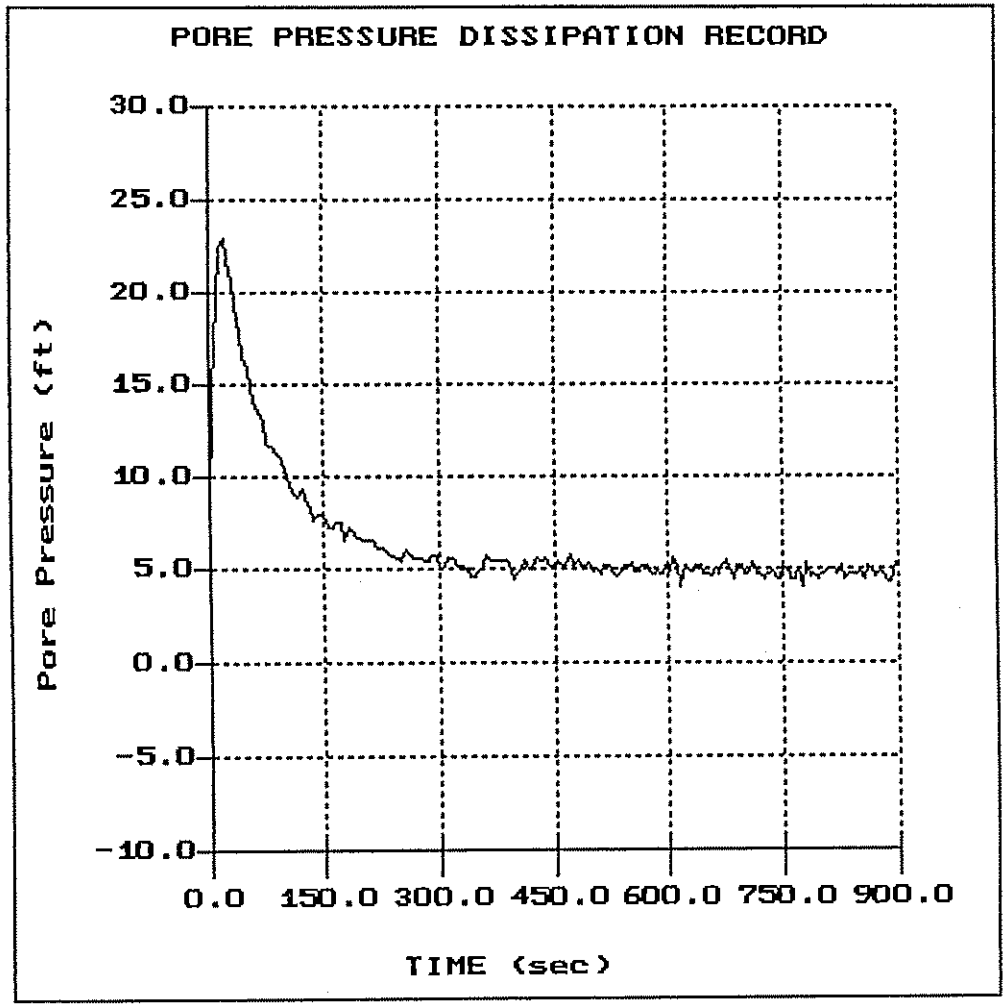



File: 703CP012.PPD
Depth (m): 1.55
(ft): 5.09
Duration : 900.0s
U-min: -0.97 615.0s
U-max: 0.94 670.0s

Duffield

Hole:P3-02-C012
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 08:10

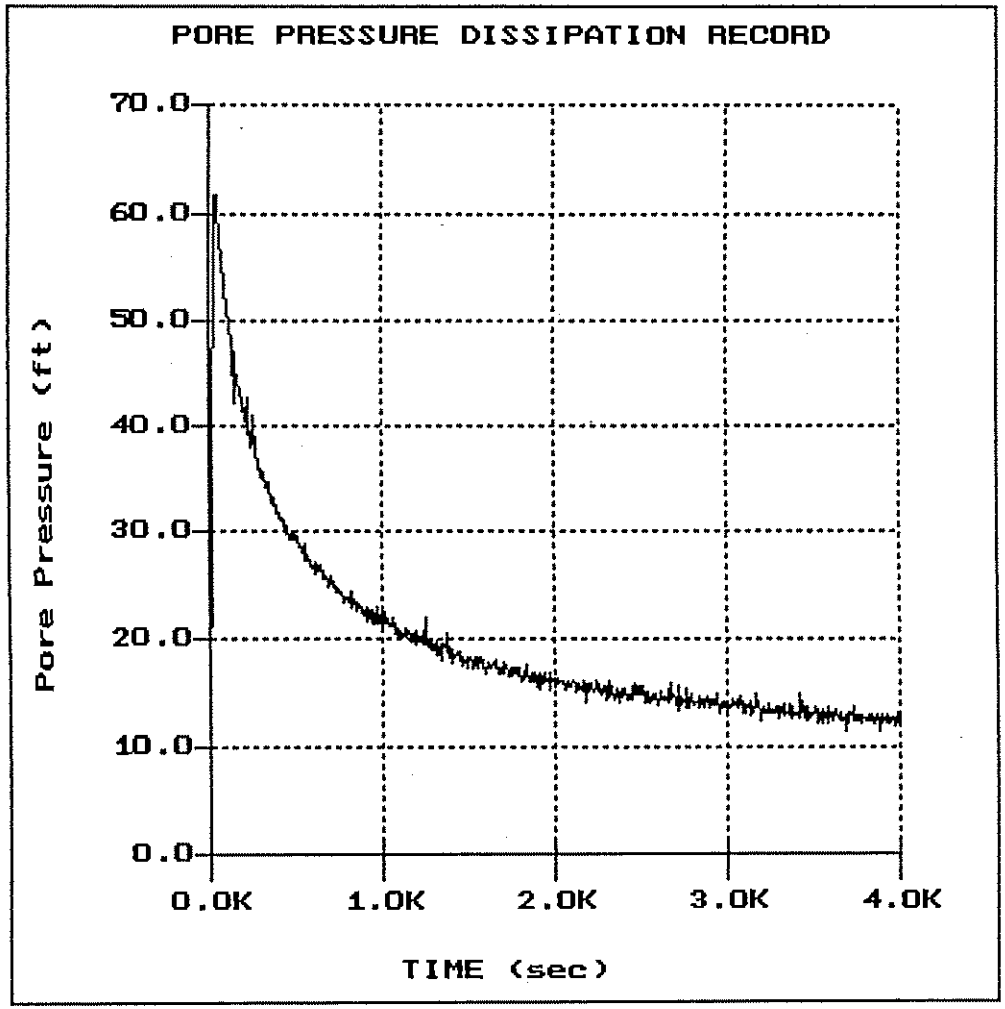



File: 703CP012.PPD
Depth (m): 3.50
(ft): 11.48
Duration : 900.0s
U-min: 4.04 775.0s
U-max: 22.90 20.0s

Duffield

Hole:P3-02-C012
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 08:10

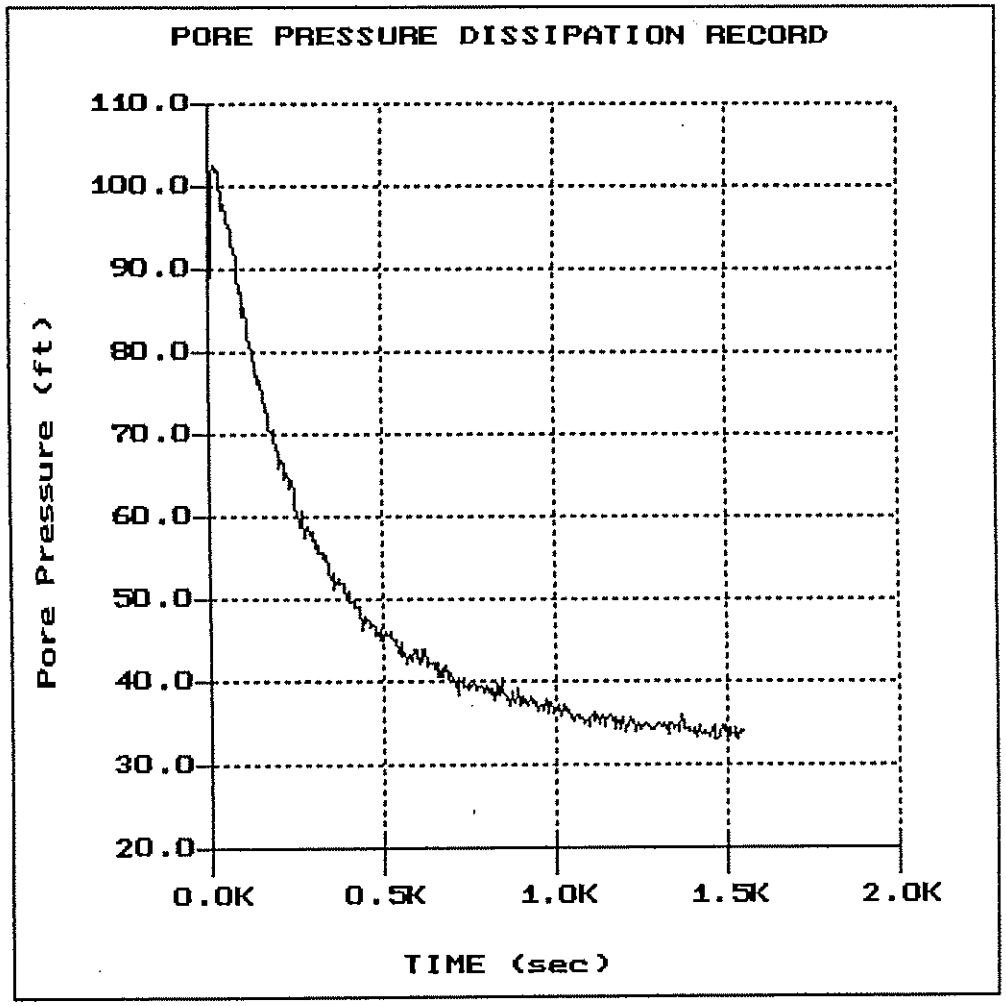



File: 703CP012.PPD
Depth (m): 4.80
(ft): 15.75
Duration : 4000.0s
U-min: 8.92 0.0s
U-max: 61.57 35.0s

Duffield

Hole:P3-02-C012
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 08:10

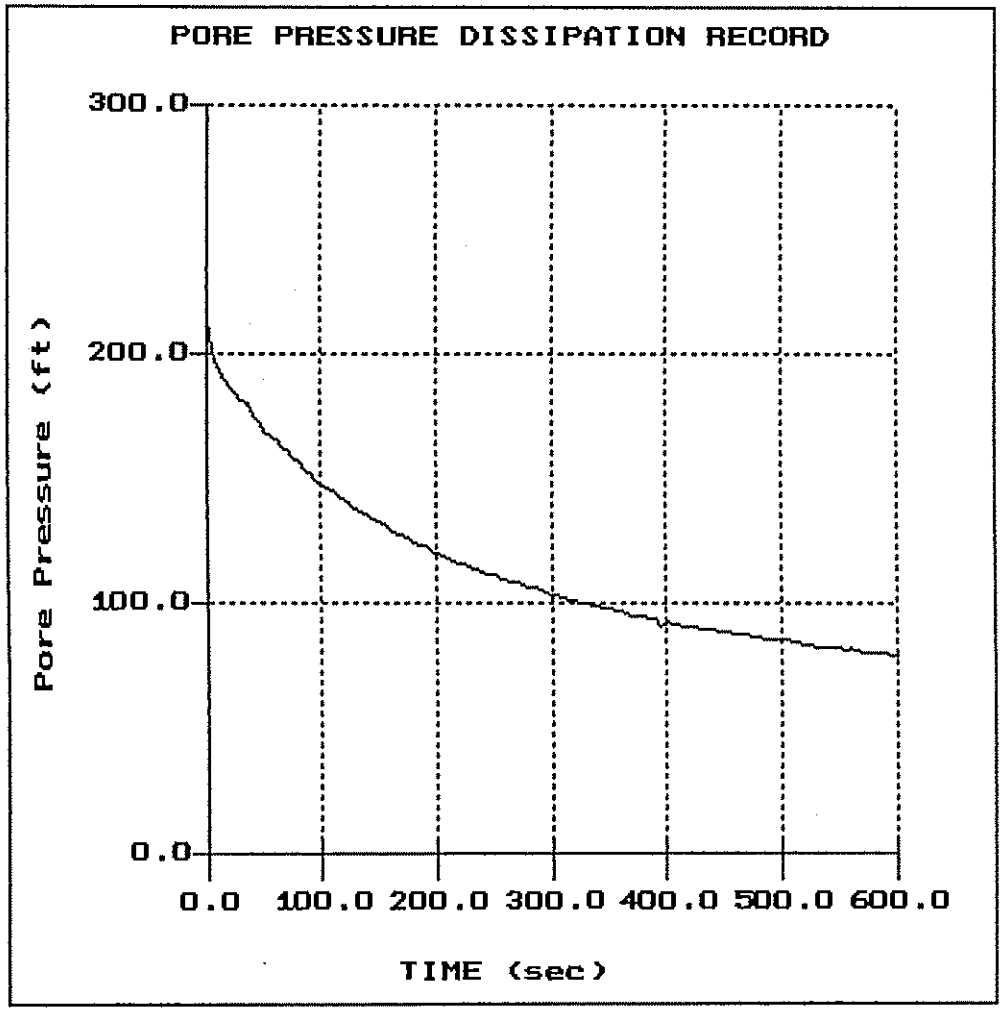



File: 703CP012.PPD
Depth (m): 12.20
(ft): 40.03
Duration : 1545.0s
U-min: 33.04 1530.0s
U-max: 102.45 15.0s

Duffield

Hole:P3-02-C012
Location:Cherry Isd. Ldfl

Cone: 20 TON AD059
Date:02:07:02 08:10

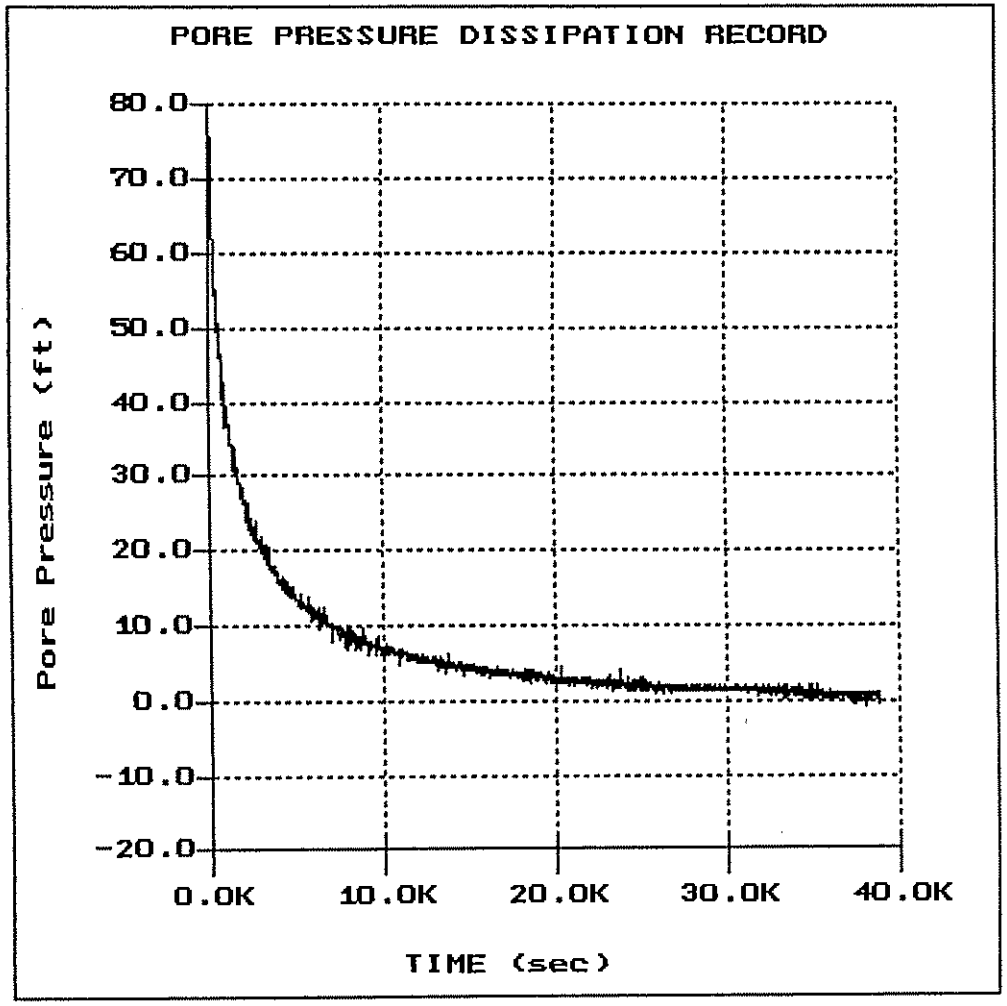



File: 703CP012.PPD
Depth (m): 15.25
(ft): 50.03
Duration : 600.0s
U-min: 78.65 600.0s
U-max: 213.62 0.0s

Duffield

Hole:P5-02-C028
Location:Cherry Isd. Ldfl

Cone: 20 TON AD120
Date:02:05:02 11:59

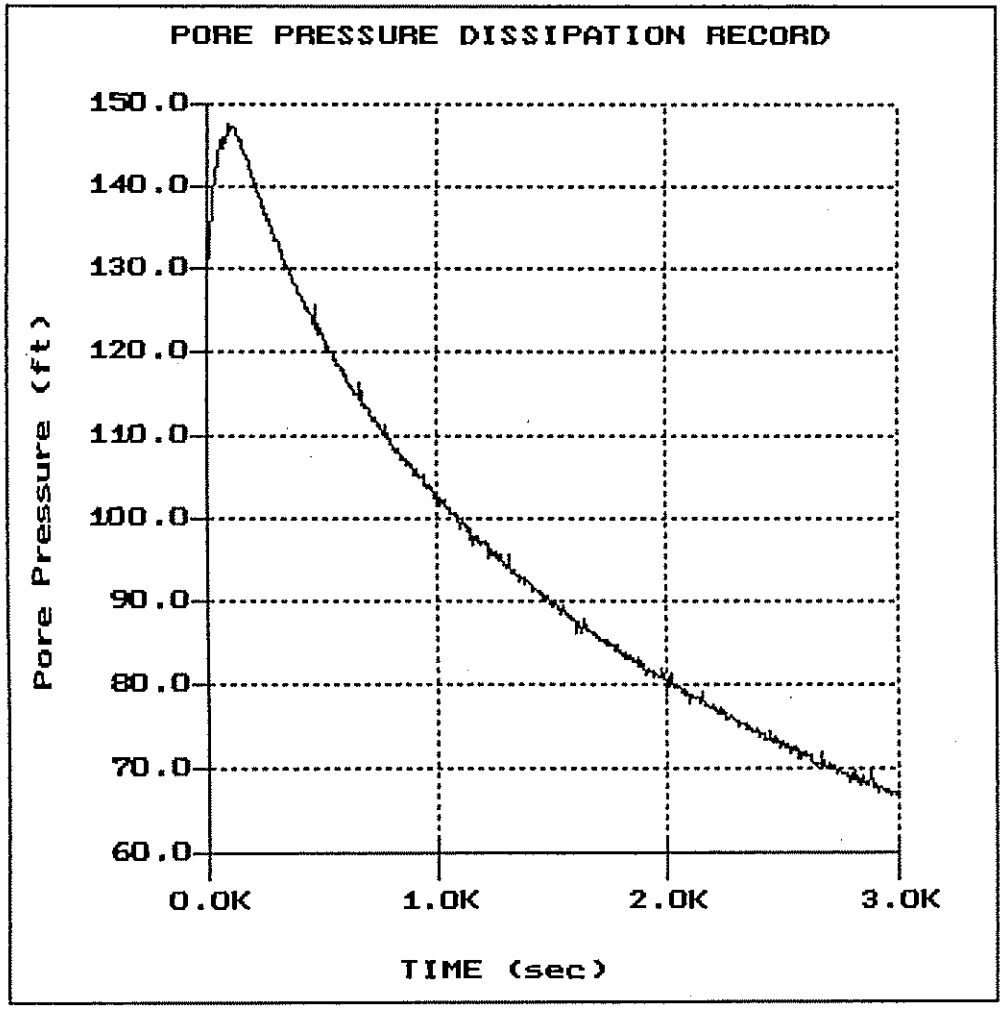



File: TEMP.PPD
Depth (m): 4.60
(ft): 15.09
Duration : 38795.0s
U-min: -0.83 38095.0s
U-max: 77.71 40.0s

Duffield

Hole:P5-02-C028
Location:Cherry Isd. Ldfl

Cone: 20 TON AD120
Date:02:05:02 11:59




File: 288.PPD
Depth (m): 13.75
(ft): 45.11
Duration : 3000.0s
U-min: 66.78 2985.0s
U-max: 147.36 95.0s

# TABLE 2 - SUMMARY OF DISSIPATION TESTS

**Conetec Inc.**
**Job No.:** 02-716
**Location:** Cherry Island Landfill Wilmington, Delaware
**Client:** GeoSyntec
**Dates:** April 11--16, 2002

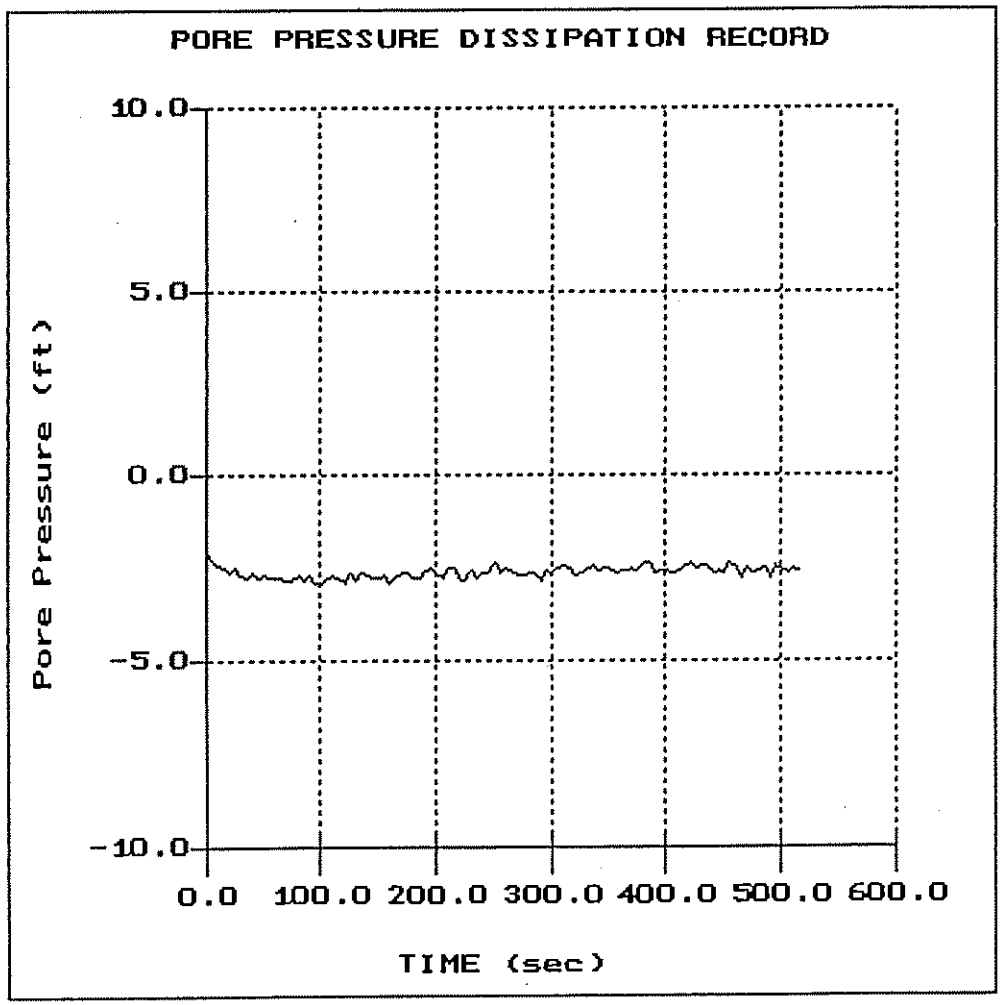
| Date | CPTU Sounding | File Name | Dissipation depth (ft) | Dissipation duration (sec) | Waste or dredge | Notes |
|---|---|---|---|---|---|---|
| 04/11/02 | MSW-01 | 716CP001.PPD | 12.14 | 365.0 | waste | |
| | C060 | | 15.09 | 360.0 | waste | |
| | | | 18.04 | 465.0 | waste | |
| | | | 21.00 | 515.0 | waste | |
| | | | 24.11 | 570.0 | waste | |
| | | | 27.07 | 3330.0 | waste | |
| | | | 30.02 | 900.0 | waste | |
| | | | 33.30 | 310.0 | waste | |
| | | | 36.09 | 1205.0 | waste | |
| | | | 39.04 | 740.0 | waste | |
| | | | 42.16 | 2340.0 | dredge | |
| | MSW-02 | 716CP002.PPD | 15.09 | 300.0 | waste | refusal in waste |
| | C061 | | 18.04 | 300.0 | waste | |
| | | | 21.00 | 300.0 | waste | |
| | | | 24.11 | 605.0 | waste | |
| | | | 27.07 | 300.0 | waste | |
| 04/12/02 | MSW-03 | 716CP003.PPD | 10.17 | 600.0 | waste | |
| | C062 | | 15.09 | 900.0 | waste | |
| | | | 20.01 | 900.0 | waste | |
| | | | 25.10 | 815.0 | waste | |
| | | | 30.02 | 5780.0 | waste | |
| | | | 35.10 | 2860.0 | waste | |
| | | | 38.06 | 900.0 | waste | |
| | | | 52.00 | 5600.0 | dredge | |
| 04/15/02 | MSW-04 | 716CP004.PPD | 10.01 | 365.0 | waste | refusal in waste |
| | C063 | | 20.01 | 300.0 | waste | |
| | MSW-4A | 716CP04A.PPD | 30.02 | 600.0 | waste | refusal in waste |
| | C064 | | 33.96 | 450.0 | waste | |

| Date | CPTU Sounding | File Name | Dissipation depth (ft) | Dissipation duration (sec) | Waste or dredge | Notes |
|---|---|---|---|---|---|---|
| | MSW-05 | 716CP005.PPD | 10.33 | 300.0 | waste | refusal in waste |
| | C065 | | 20.01 | 400.0 | waste | |
| | | | 30.02 | 240.0 | waste | |
| | | | 40.03 | 300.0 | waste | |
| | | | 50.03 | 2250.0 | waste | |
| | | | 60.04 | 215.0 | waste | |
| | | | 64.14 | 395.0 | waste | |
| | MSW-5A | 716CP05A.PPD | no tests | | | refusal in waste |
| | C066 | | | | | |
| | MSW-06 | 716CP006.PPD | 23.79 | 1510.0 | waste | |
| | C067 | | 38.00 | 4500.0 | dredge | |
| 04/16/02 | MSW-07 | 716CP007.PPD | 35.43 | 3280.0 | waste | |
| | C068 | | 52.3 | 7200.0 | dredge | |

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

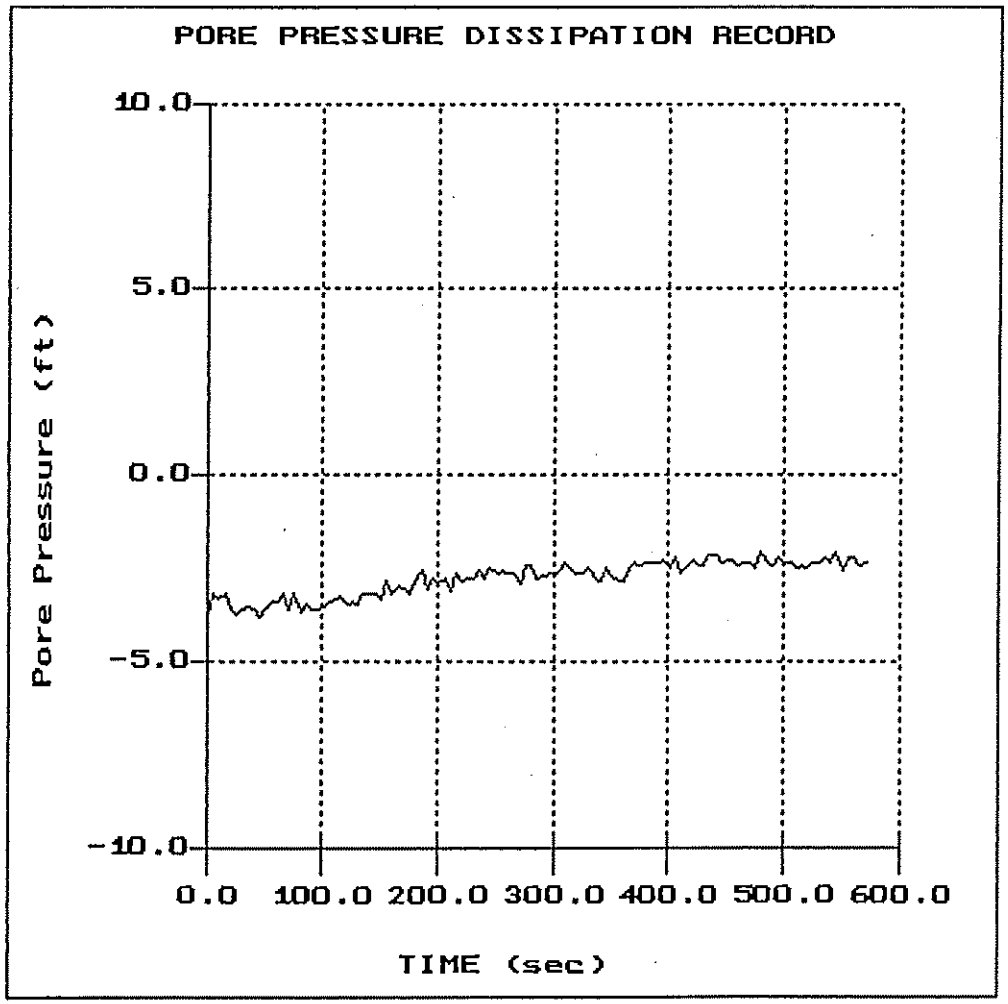



File: 716CP001.PPD
Depth (m): 6.40
(ft): 21.00
Duration : 515.0s
U-min: -2.94 120.0s
U-max: -2.09 0.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

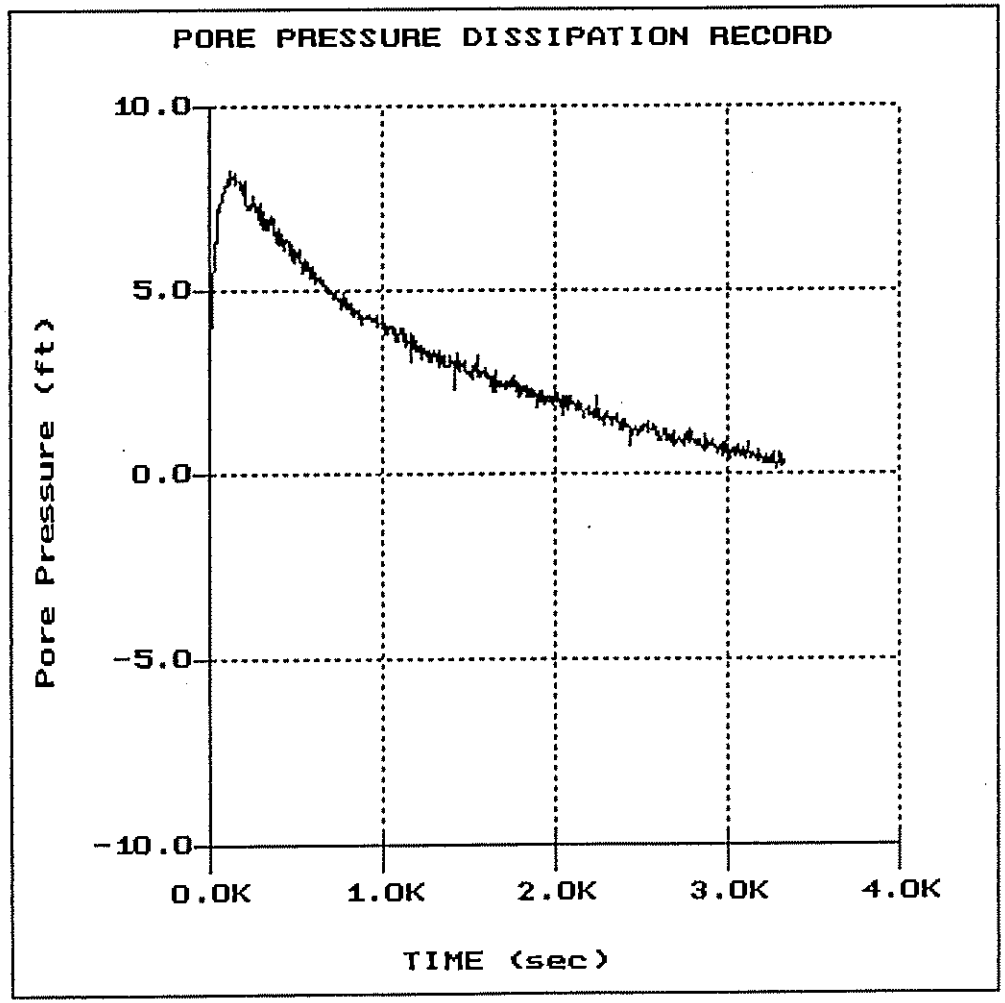



File: 716CP001.PPD
Depth (m): 7.35
(ft): 24.11
Duration : 570.0s
U-min: -3.83 45.0s
U-max: -2.05 545.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

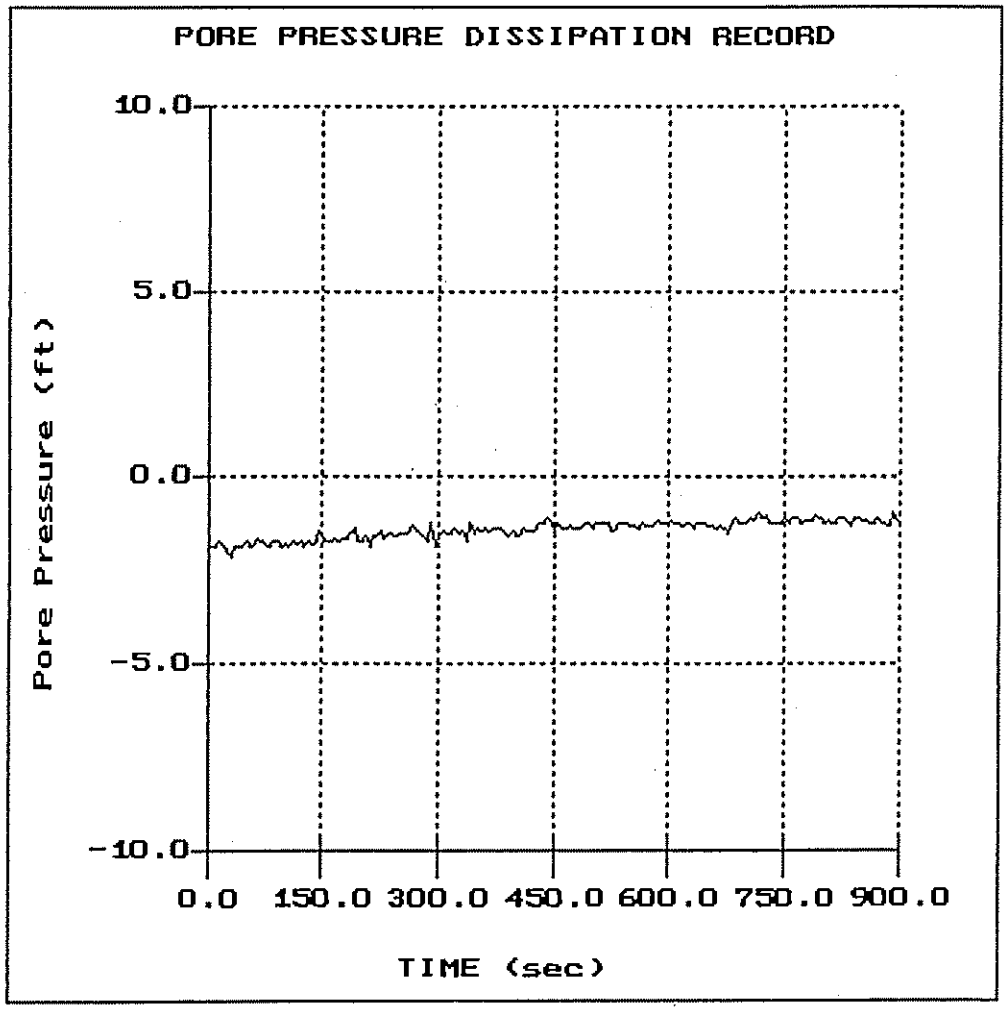



File: 716CP001.PPD
Depth (m): 8.25
(ft): 27.07
Duration : 3330.0s
U-min: 0.17 3280.0s
U-max: 8.24 125.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

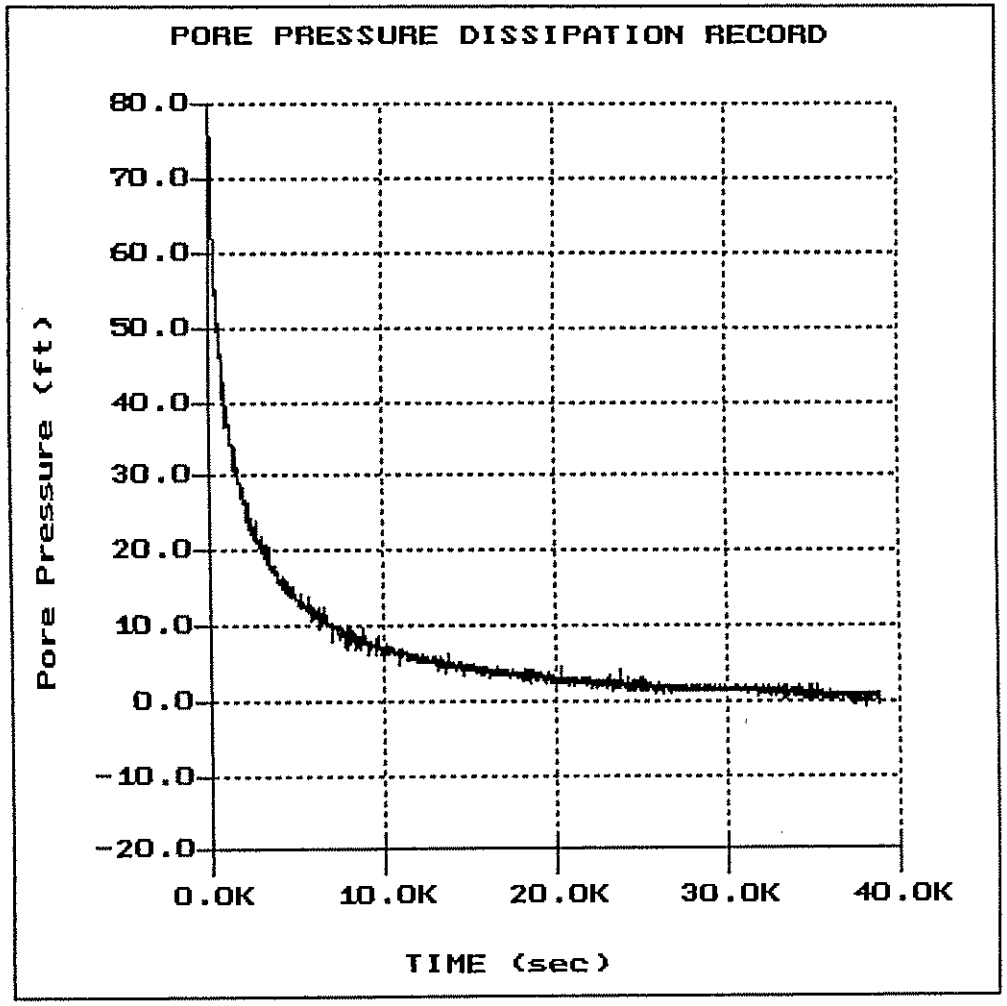



File: 716CP001.PPD
Depth (m): 9.15
(ft): 30.02
Duration : 900.0s
U-min: -2.17 30.0s
U-max: -1.00 890.0s

Duffield

Hole:P5-02-C028
Location:Cherry Isd. Ldfl

Cone: 20 TON AD120
Date:02:05:02 11:59

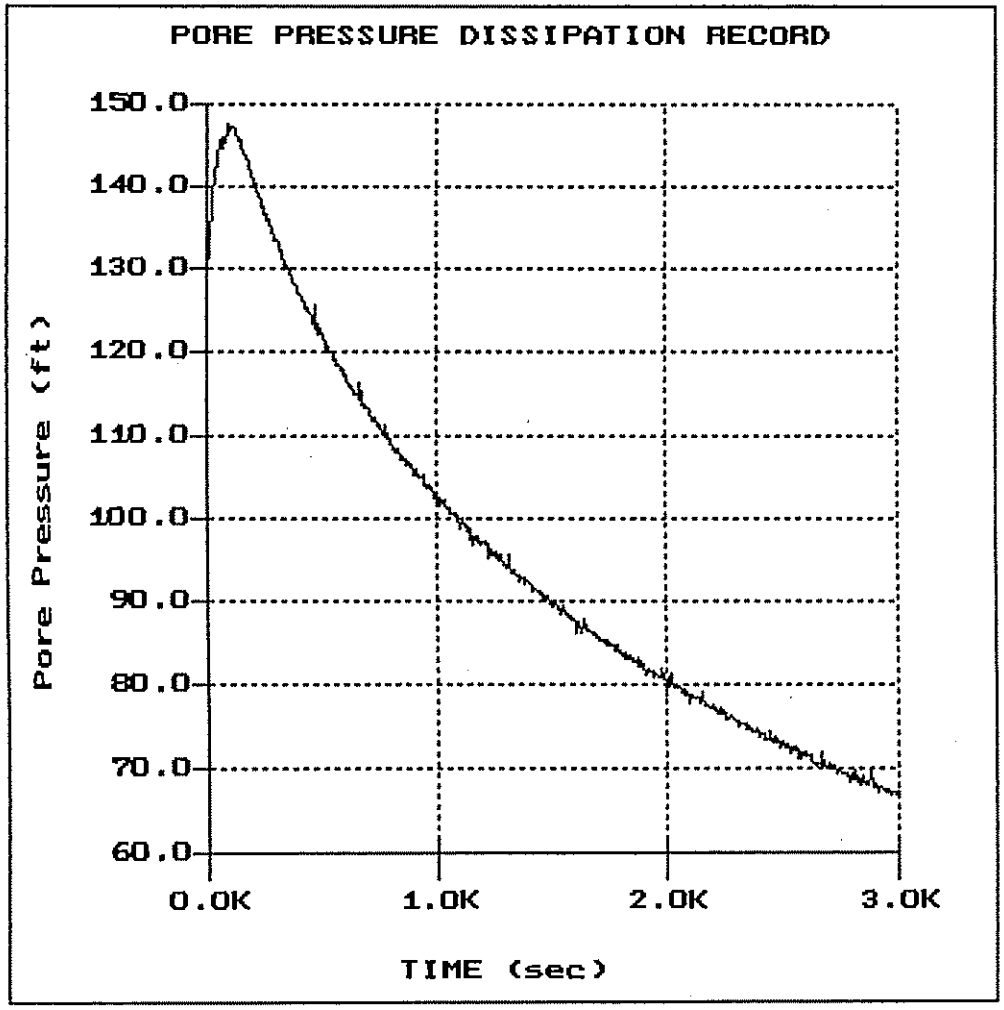



File: TEMP.PPD
Depth (m): 4.60
(ft): 15.09
Duration : 38795.0s
U-min: -0.83 38095.0s
U-max: 77.71 40.0s

Duffield

Hole:P5-02-C028
Location:Cherry Isd. Ldfl

Cone: 20 TON AD120
Date:02:05:02 11:59




File: 288.PPD
Depth (m): 13.75
(ft): 45.11
Duration : 3000.0s
U-min: 66.78 2985.0s
U-max: 147.36 95.0s

# TABLE 2 - SUMMARY OF DISSIPATION TESTS

**Conetec Inc.**
**Job No.:** 02-716
**Location:** Cherry Island Landfill Wilmington, Delaware
**Client:** GeoSyntec
**Dates:** April 11--16, 2002

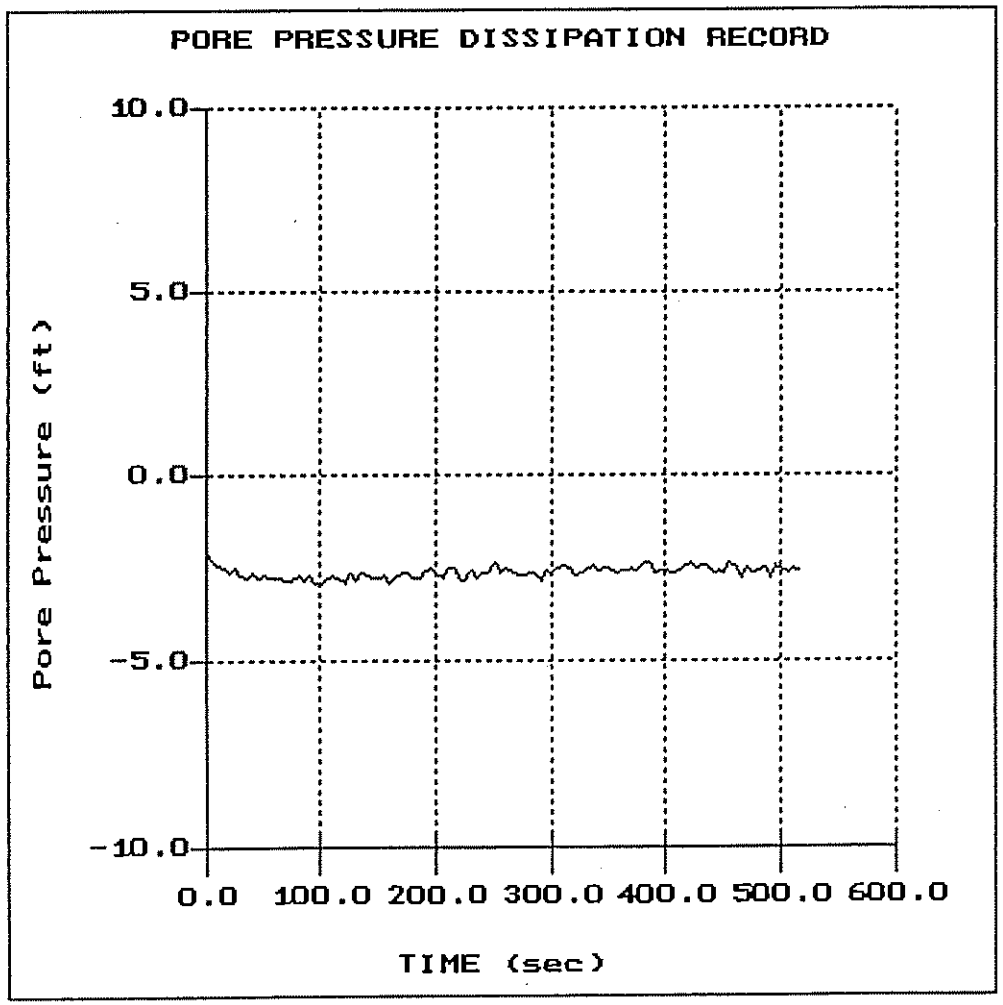
| Date | CPTU Sounding | File Name | Dissipation depth (ft) | Dissipation duration (sec) | Waste or dredge | Notes |
|---|---|---|---|---|---|---|
| 04/11/02 | MSW-01 | 716CP001.PPD | 12.14 | 365.0 | waste | |
| | C060 | | 15.09 | 360.0 | waste | |
| | | | 18.04 | 465.0 | waste | |
| | | | 21.00 | 515.0 | waste | |
| | | | 24.11 | 570.0 | waste | |
| | | | 27.07 | 3330.0 | waste | |
| | | | 30.02 | 900.0 | waste | |
| | | | 33.30 | 310.0 | waste | |
| | | | 36.09 | 1205.0 | waste | |
| | | | 39.04 | 740.0 | waste | |
| | | | 42.16 | 2340.0 | dredge | |
| | MSW-02 | 716CP002.PPD | 15.09 | 300.0 | waste | refusal in waste |
| | C061 | | 18.04 | 300.0 | waste | |
| | | | 21.00 | 300.0 | waste | |
| | | | 24.11 | 605.0 | waste | |
| | | | 27.07 | 300.0 | waste | |
| 04/12/02 | MSW-03 | 716CP003.PPD | 10.17 | 600.0 | waste | |
| | C062 | | 15.09 | 900.0 | waste | |
| | | | 20.01 | 900.0 | waste | |
| | | | 25.10 | 815.0 | waste | |
| | | | 30.02 | 5780.0 | waste | |
| | | | 35.10 | 2860.0 | waste | |
| | | | 38.06 | 900.0 | waste | |
| | | | 52.00 | 5600.0 | dredge | |
| 04/15/02 | MSW-04 | 716CP004.PPD | 10.01 | 365.0 | waste | refusal in waste |
| | C063 | | 20.01 | 300.0 | waste | |
| | MSW-4A | 716CP04A.PPD | 30.02 | 600.0 | waste | refusal in waste |
| | C064 | | 33.96 | 450.0 | waste | |

| Date | CPTU Sounding | File Name | Dissipation depth (ft) | Dissipation duration (sec) | Waste or dredge | Notes |
|---|---|---|---|---|---|---|
| | MSW-05 | 716CP005.PPD | 10.33 | 300.0 | waste | refusal in waste |
| | C065 | | 20.01 | 400.0 | waste | |
| | | | 30.02 | 240.0 | waste | |
| | | | 40.03 | 300.0 | waste | |
| | | | 50.03 | 2250.0 | waste | |
| | | | 60.04 | 215.0 | waste | |
| | | | 64.14 | 395.0 | waste | |
| | MSW-5A | 716CP05A.PPD | no tests | | | refusal in waste |
| | C066 | | | | | |
| | MSW-06 | 716CP006.PPD | 23.79 | 1510.0 | waste | |
| | C067 | | 38.00 | 4500.0 | dredge | |
| 04/16/02 | MSW-07 | 716CP007.PPD | 35.43 | 3280.0 | waste | |
| | C068 | | 52.3 | 7200.0 | dredge | |

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

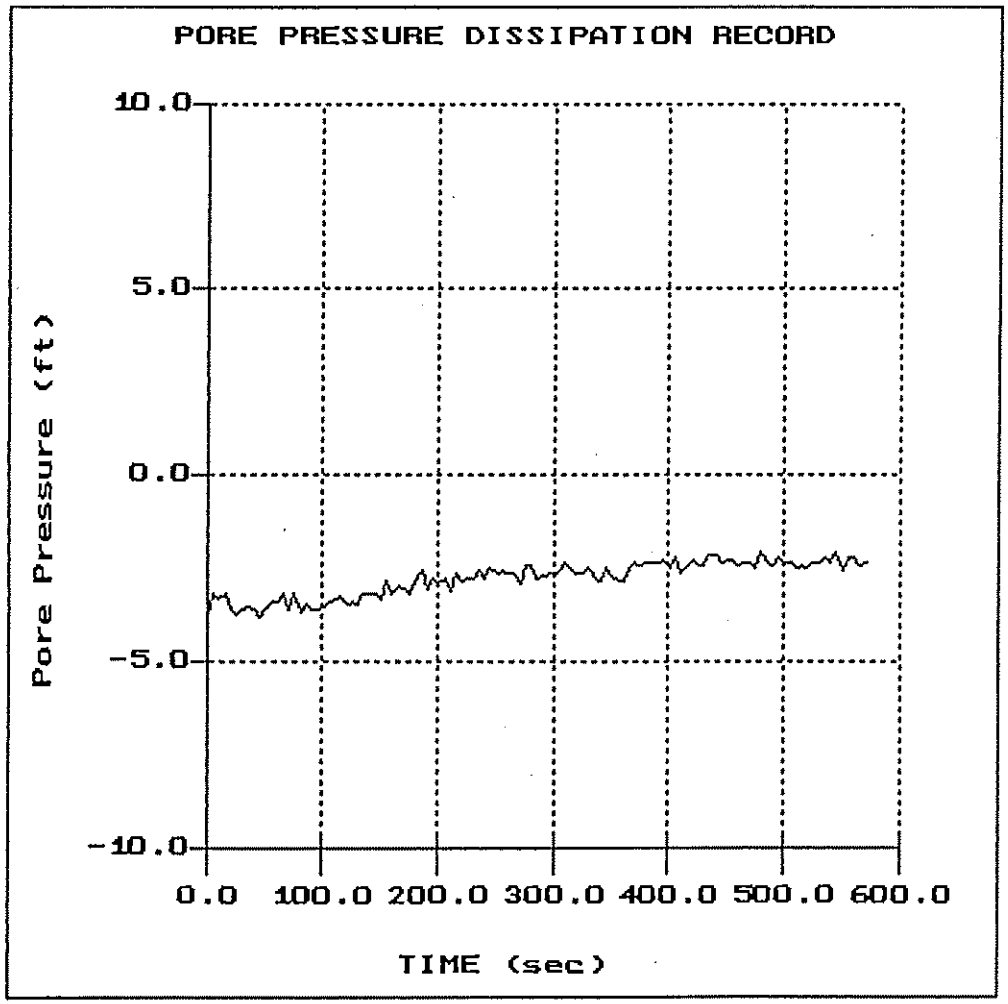



File: 716CP001.PPD
Depth (m): 6.40
(ft): 21.00
Duration : 515.0s
U-min: -2.94 120.0s
U-max: -2.09 0.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

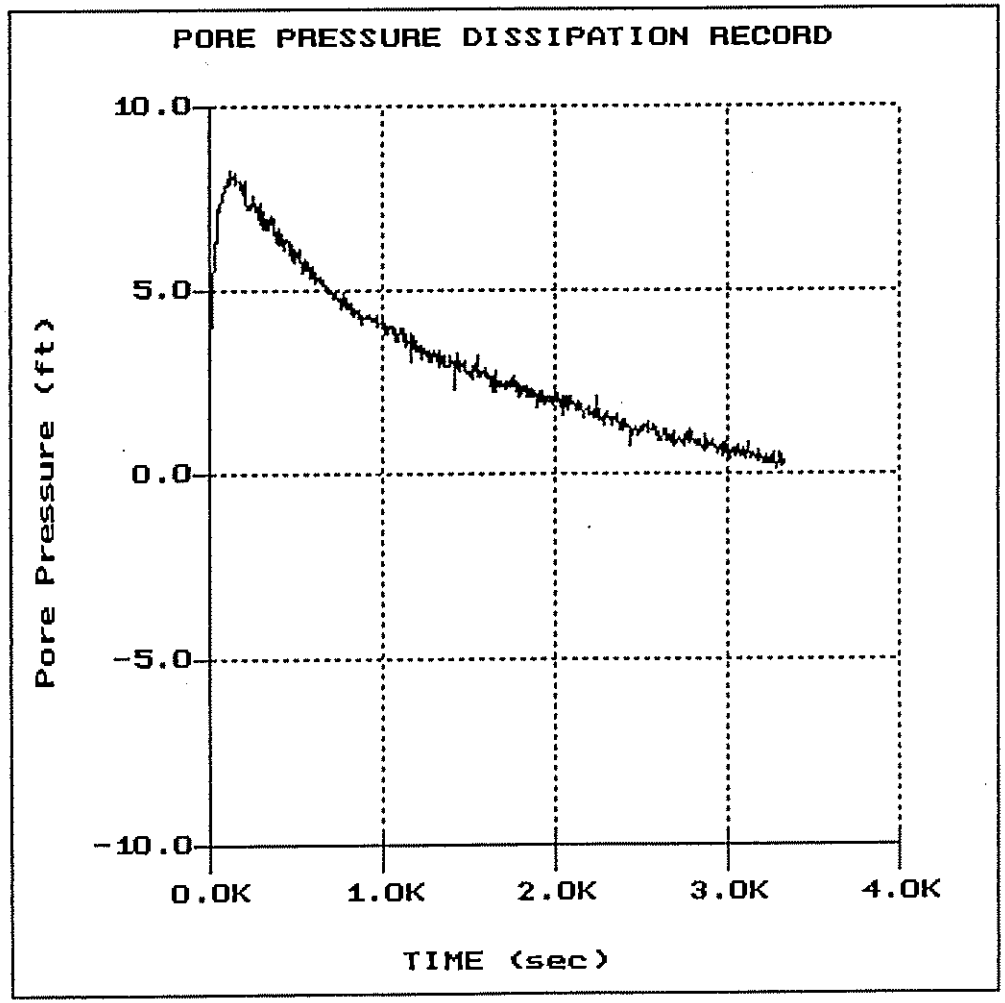



File: 716CP001.PPD
Depth (m): 7.35
(ft): 24.11
Duration : 570.0s
U-min: -3.83 45.0s
U-max: -2.05 545.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

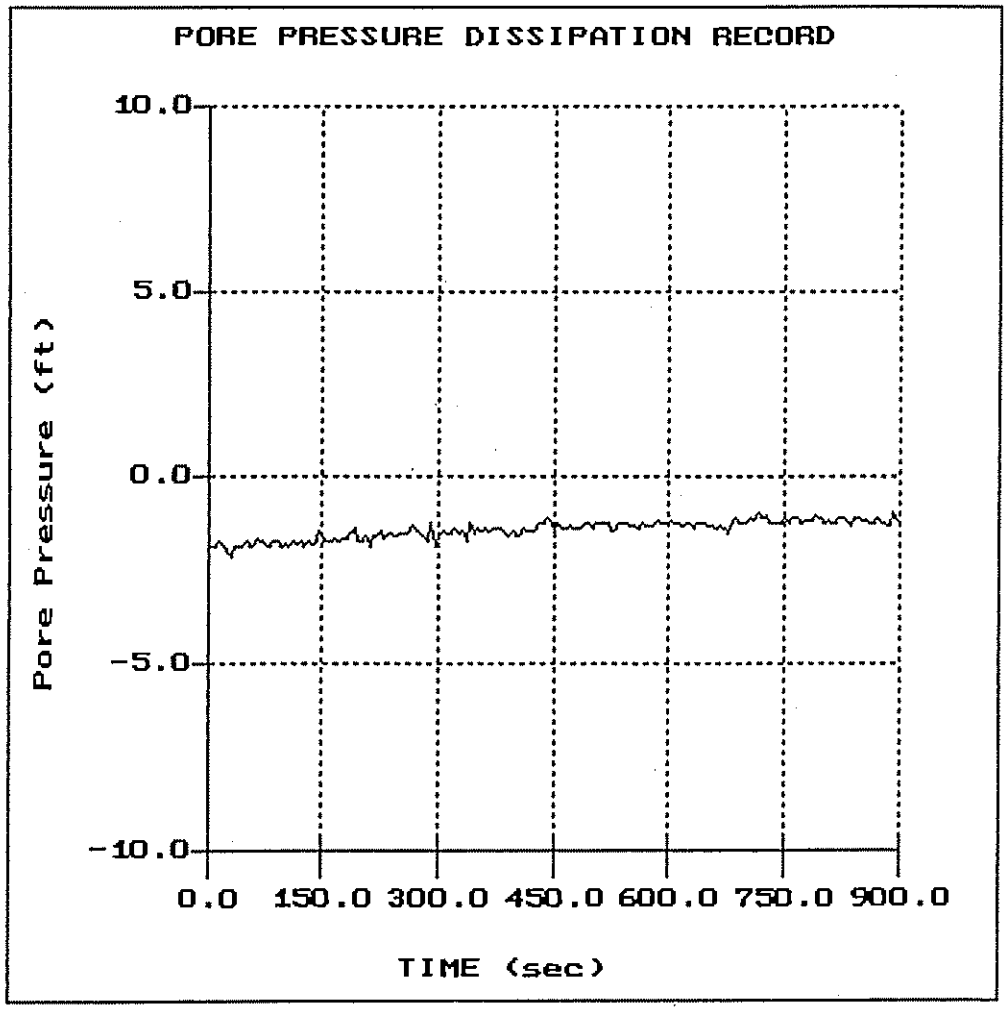



File: 716CP001.PPD
Depth (m): 8.25
(ft): 27.07
Duration : 3330.0s
U-min: 0.17 3280.0s
U-max: 8.24 125.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20



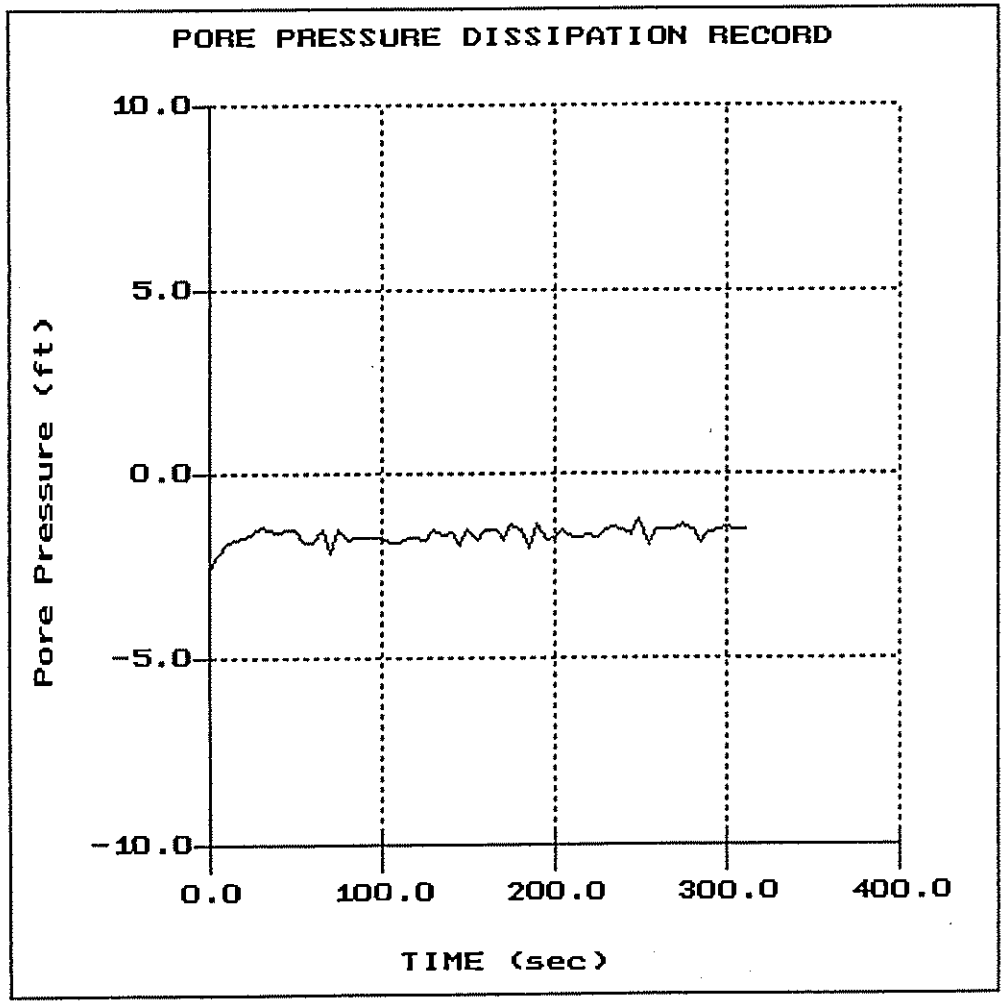

File: 716CP001.PPD
Depth (m): 9.15
(ft): 30.02
Duration : 900.0s
U-min: -2.17 30.0s
U-max: -1.00 890.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

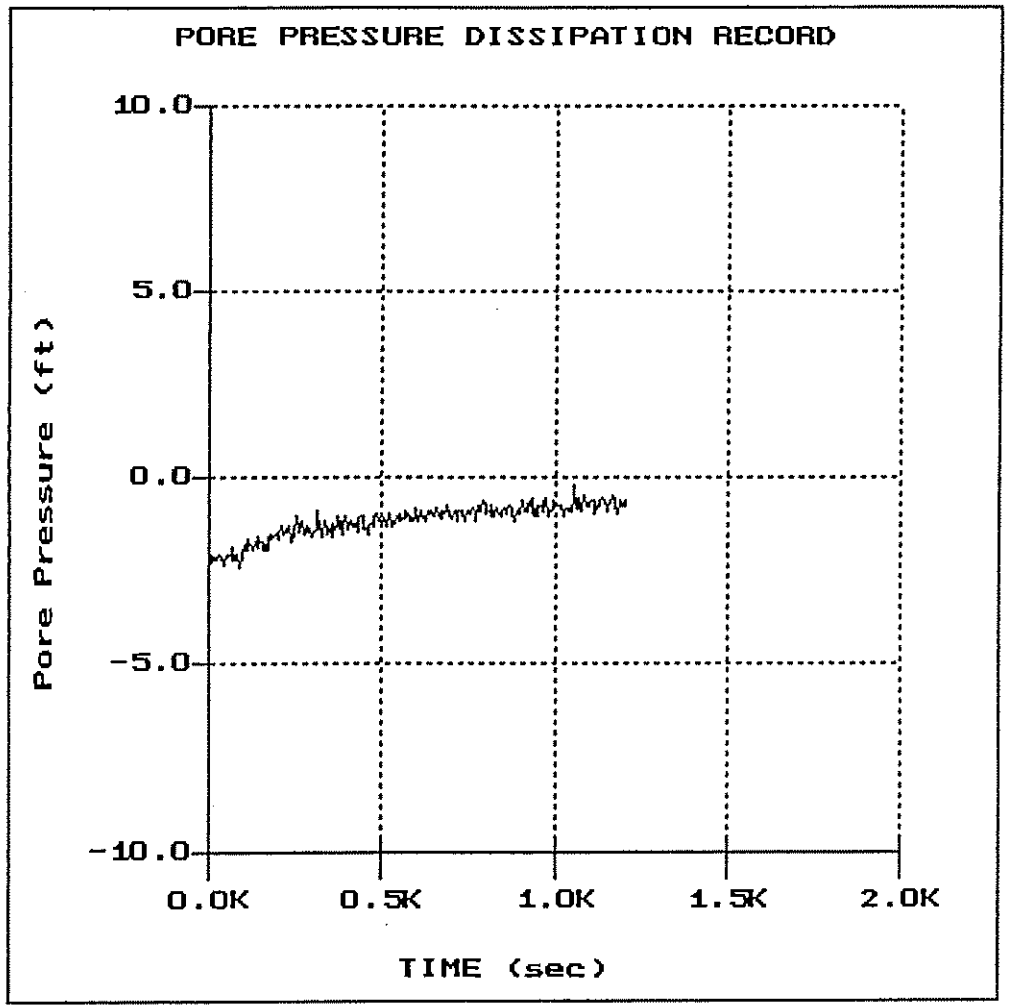
File: 716CP001.PPD
Depth (m): 10.15
(ft): 33.30
Duration : 310.0s
U-min: -2.60 0.0s
U-max: -1.24 250.0s



GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

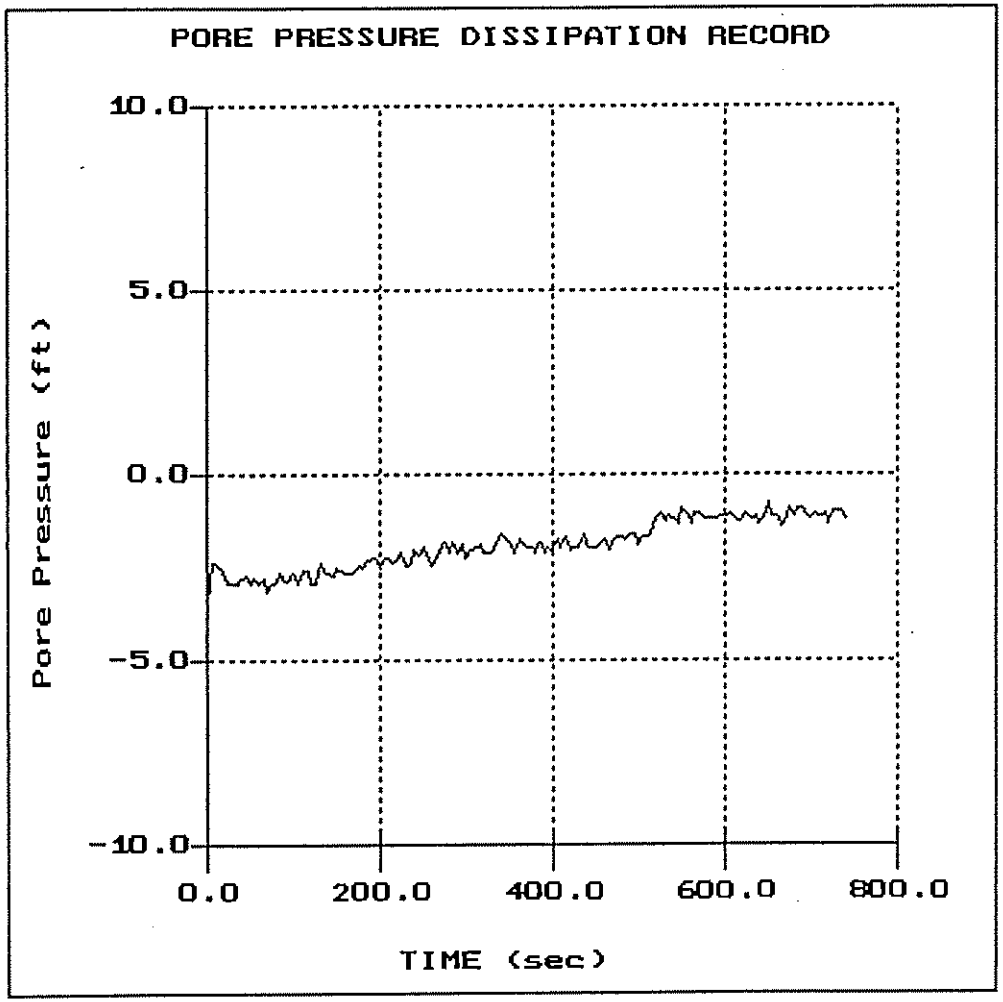



File: 716CP001.PPD
Depth (m): 11.00
(ft): 36.09
Duration : 1205.0s
U-min: -2.66 0.0s
U-max: -0.22 1055.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

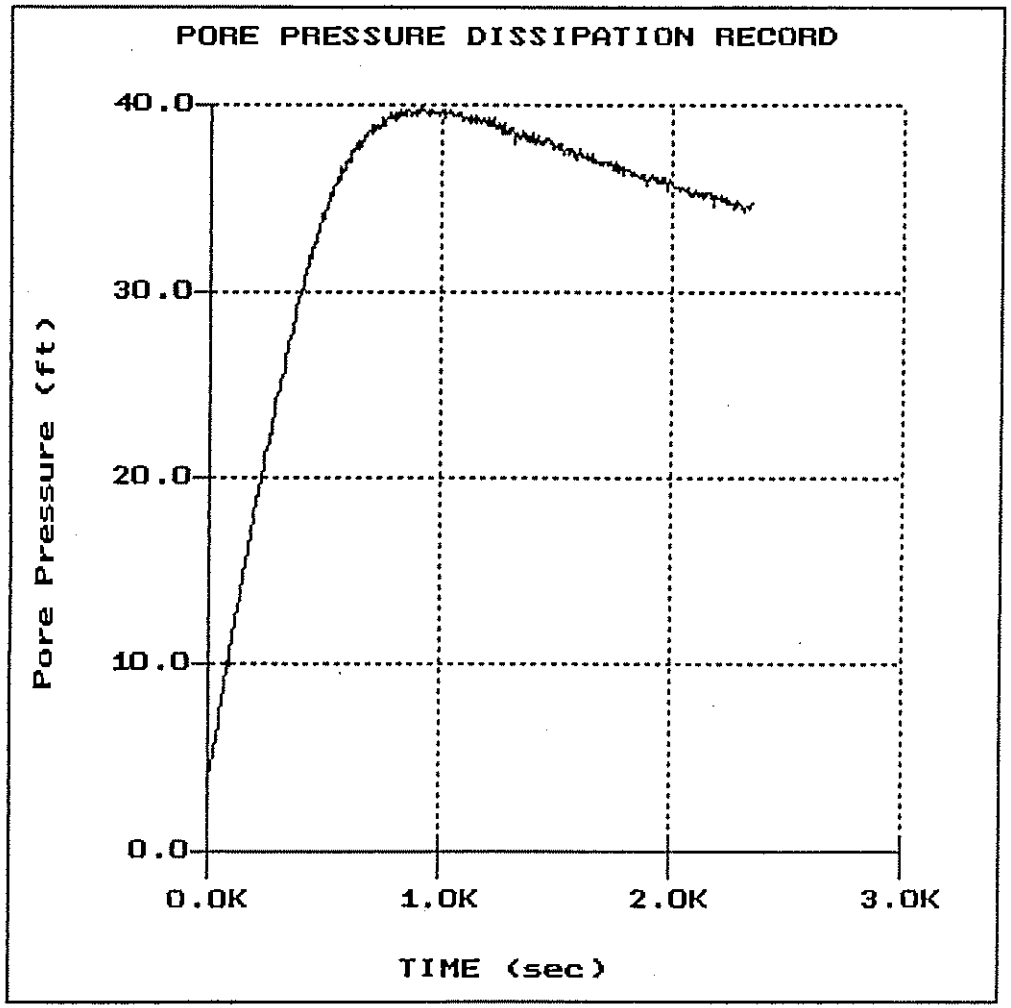



File: 716CP001.PPD
Depth (m): 11.90
(ft): 39.04
Duration : 740.0s
U-min: -3.46 0.0s
U-max: -0.74 650.0s

GeoSyntec

Hole:MSW-01
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 08:20

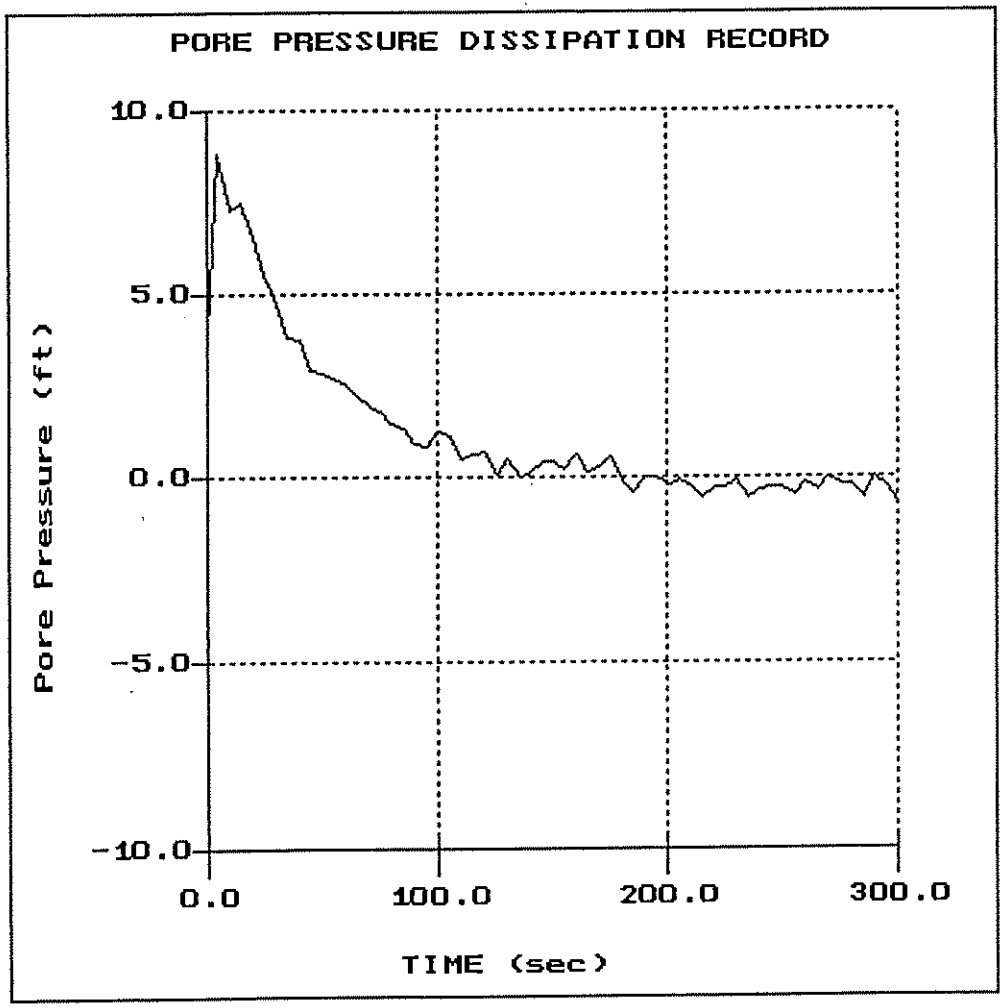



File: 716CP001.PPD
Depth (m): 12.85
(ft): 42.16
Duration : 2340.0s
U-min: 3.13 0.0s
U-max: 39.87 905.0s

GeoSyntec

Hole:MSW-02
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 12:50



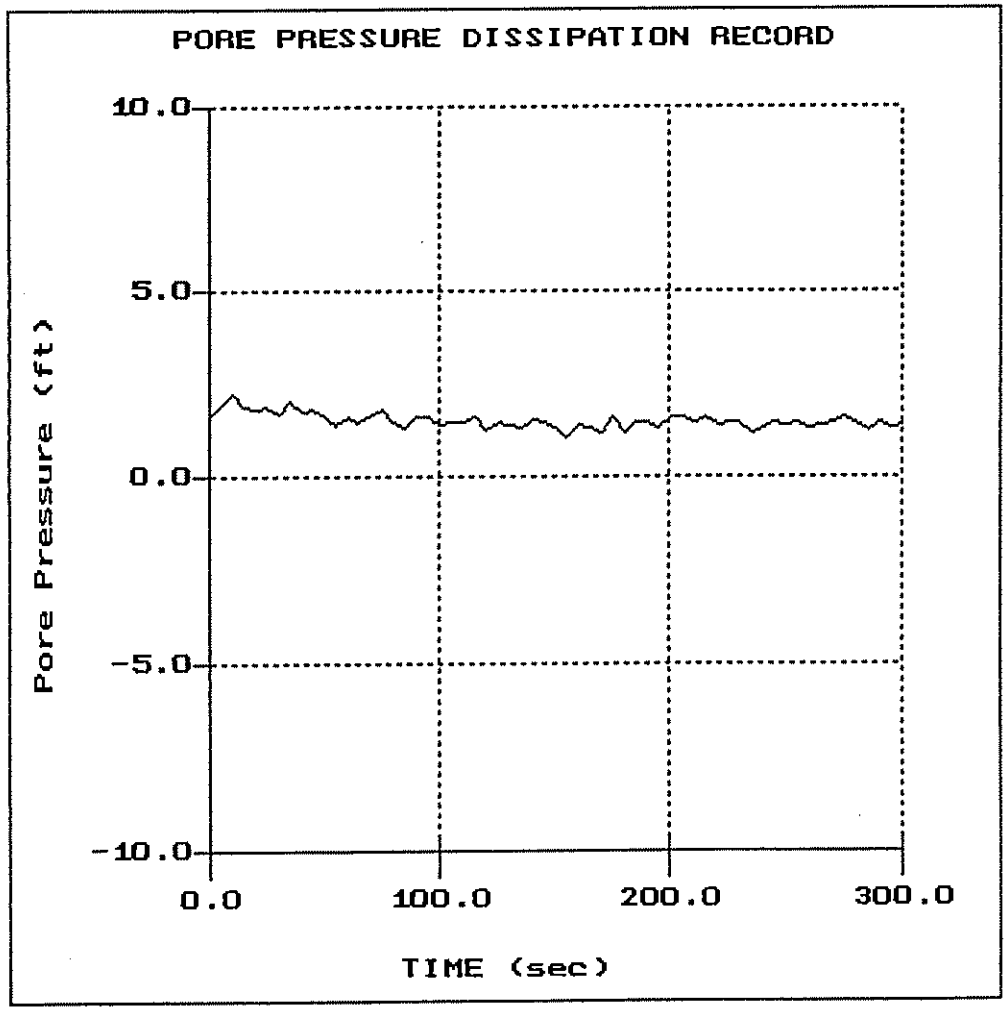

File: 716CP002.PPD
Depth (m): 4.60
(ft): 15.09
Duration : 300.0s
U-min: -0.72 300.0s
U-max: 8.81 5.0s

GeoSyntec

Hole:MSW-02
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 12:50

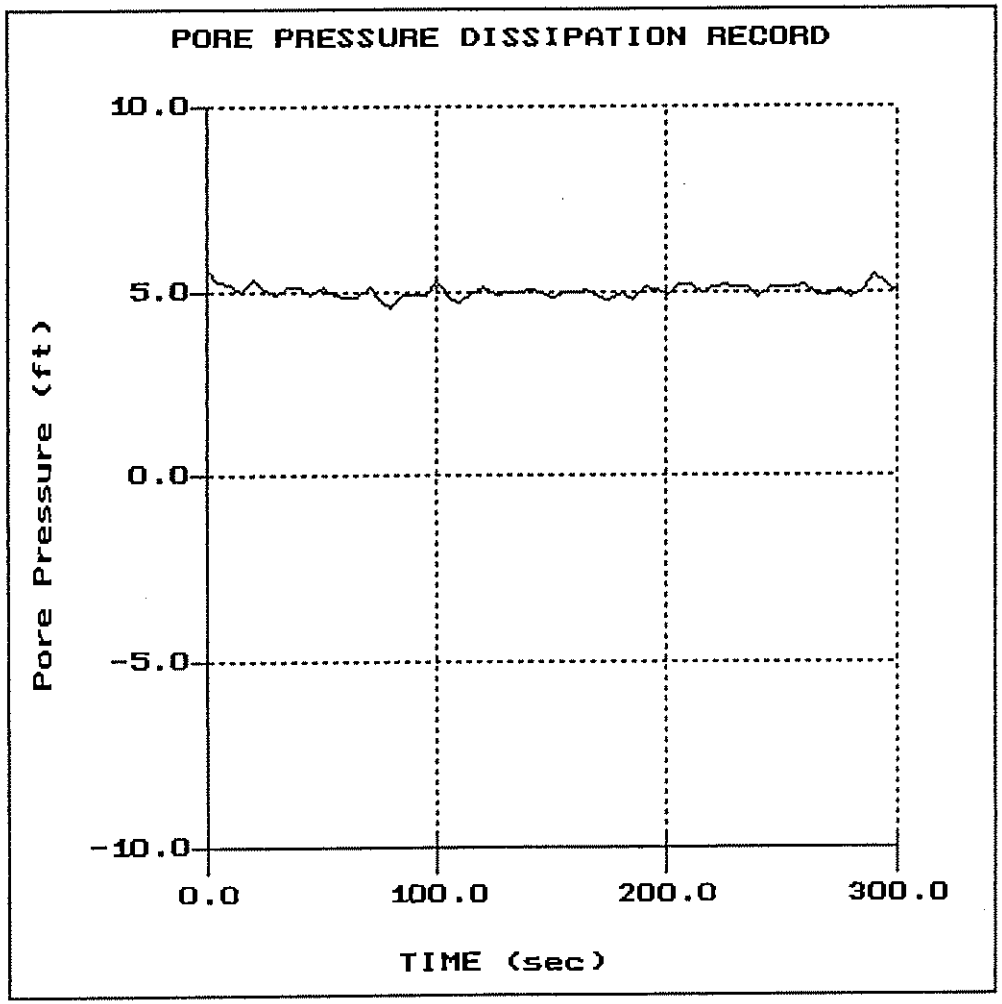
File: 716CP002.PPD
Depth (m): 5.50
(ft): 18.04
Duration : 300.0s
U-min: 1.06 155.0s
U-max: 2.23 10.0s



GeoSyntec

Hole:MSW-02
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 12:50

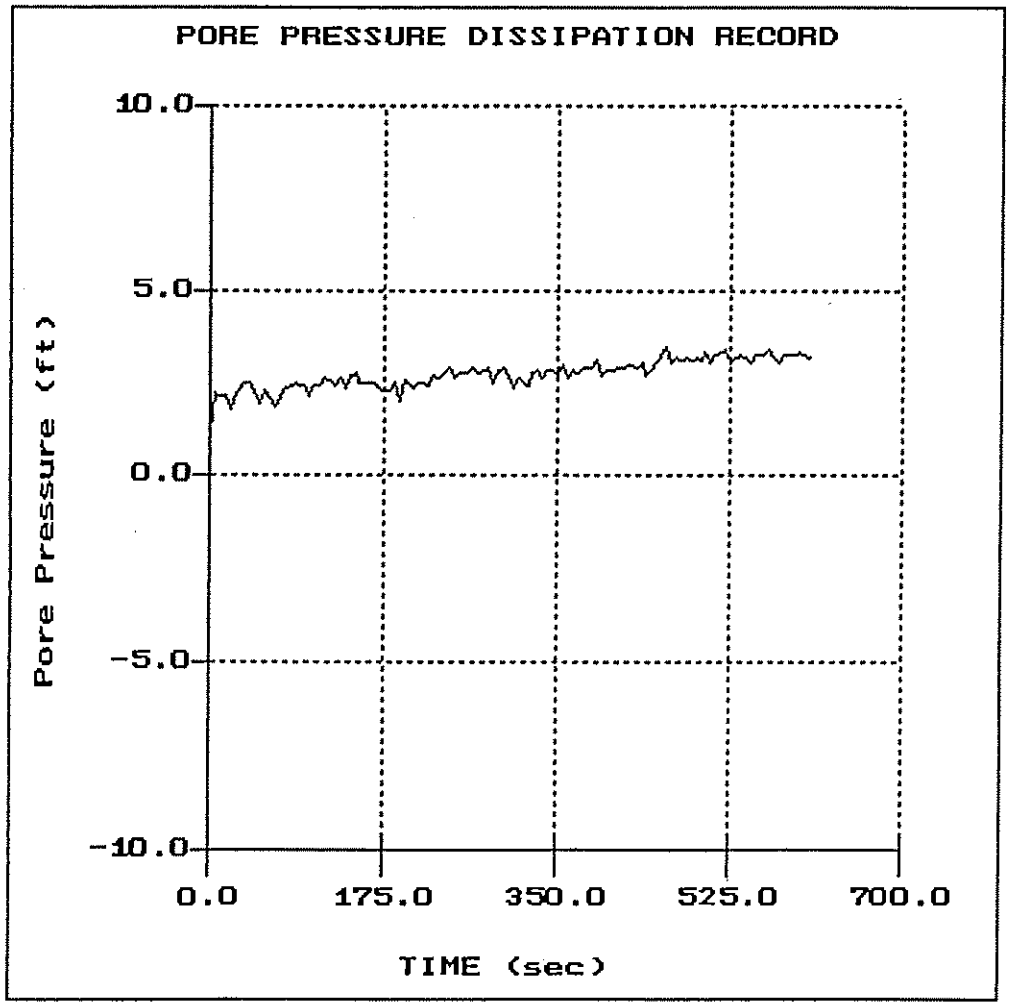



File: 716CP002.PPD
Depth (m): 6.40
(ft): 21.00
Duration : 300.0s
U-min: 4.60 80.0s
U-max: 5.63 0.0s

GeoSyntec

Hole:MSW-02
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 12:50

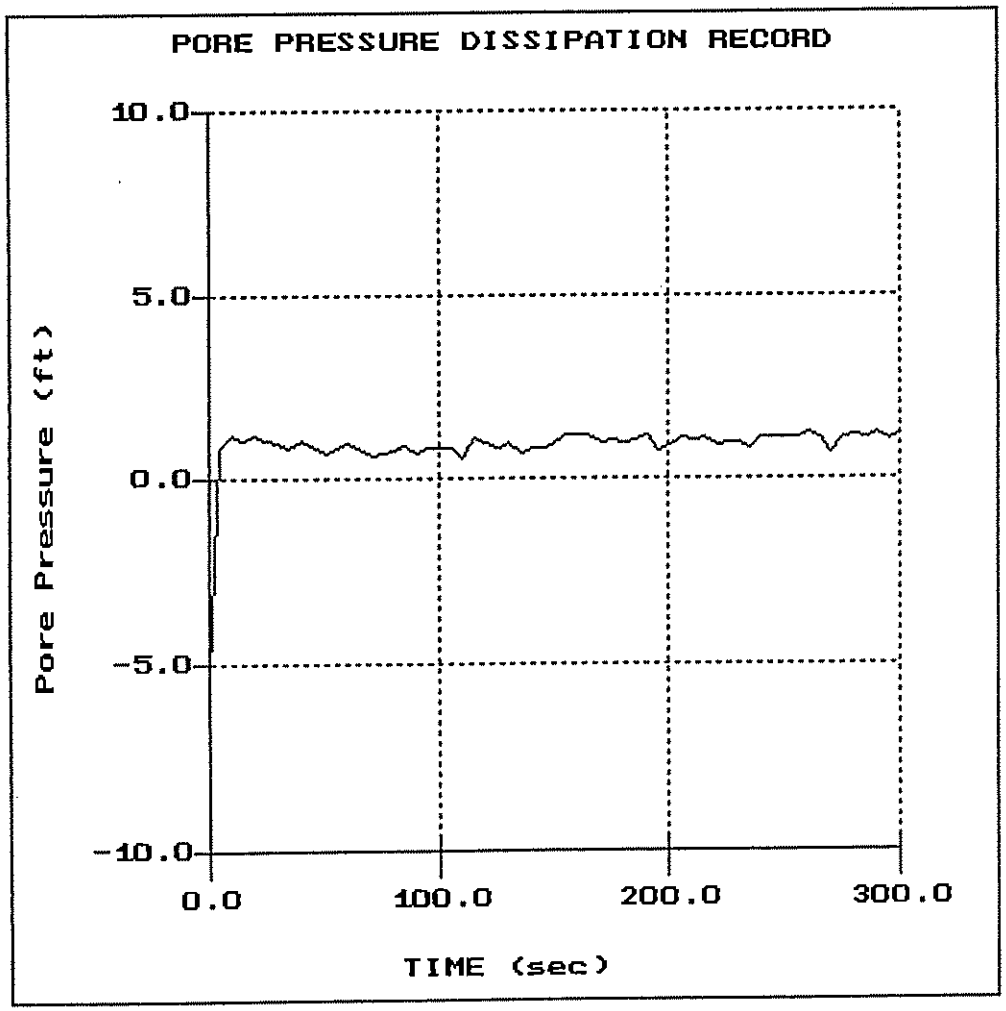



File: 716CP002.PPD
Depth (m): 7.35
(ft): 24.11
Duration : 605.0s
U-min: 1.12 0.0s
U-max: 3.46 460.0s

GeoSyntec

Hole:MSW-02
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:11:02 12:50

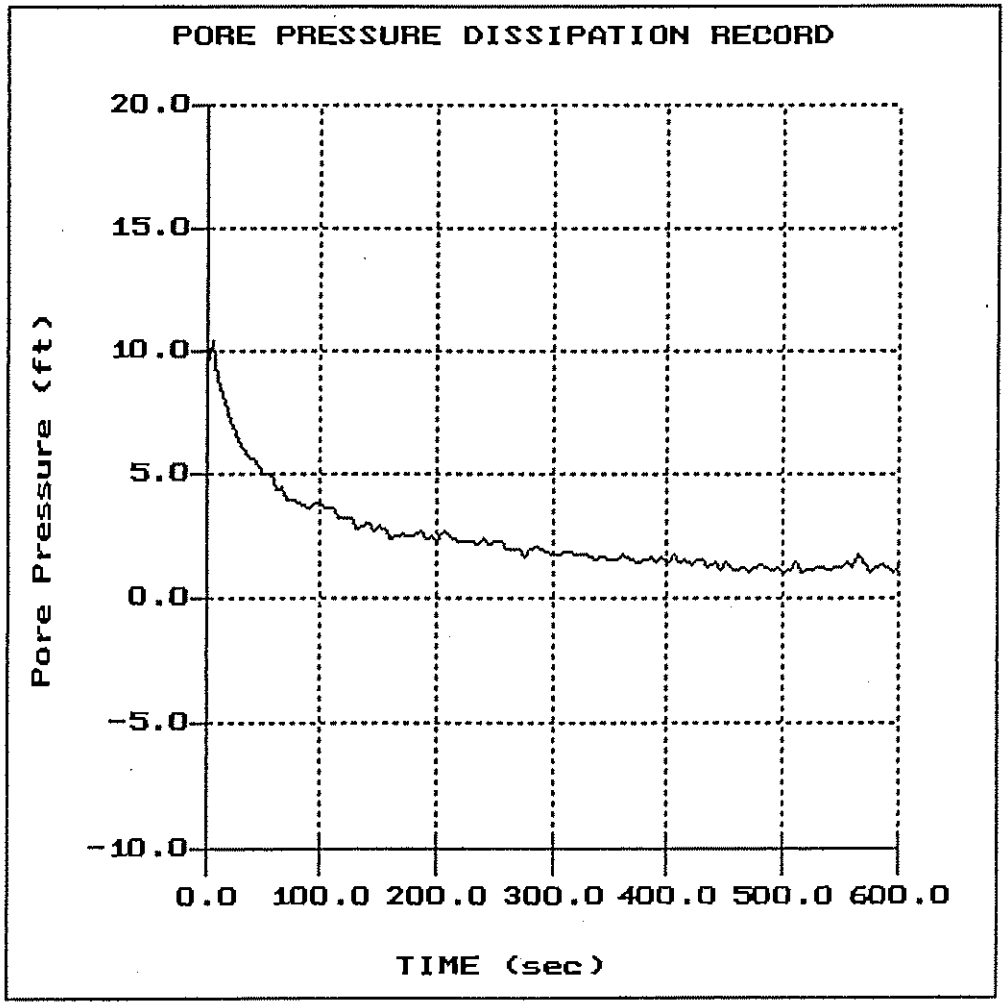



File: 716CP002.PPD
Depth (m): 8.25
(ft): 27.07
Duration : 300.0s
U-min: -5.43 0.0s
U-max: 1.28 300.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26

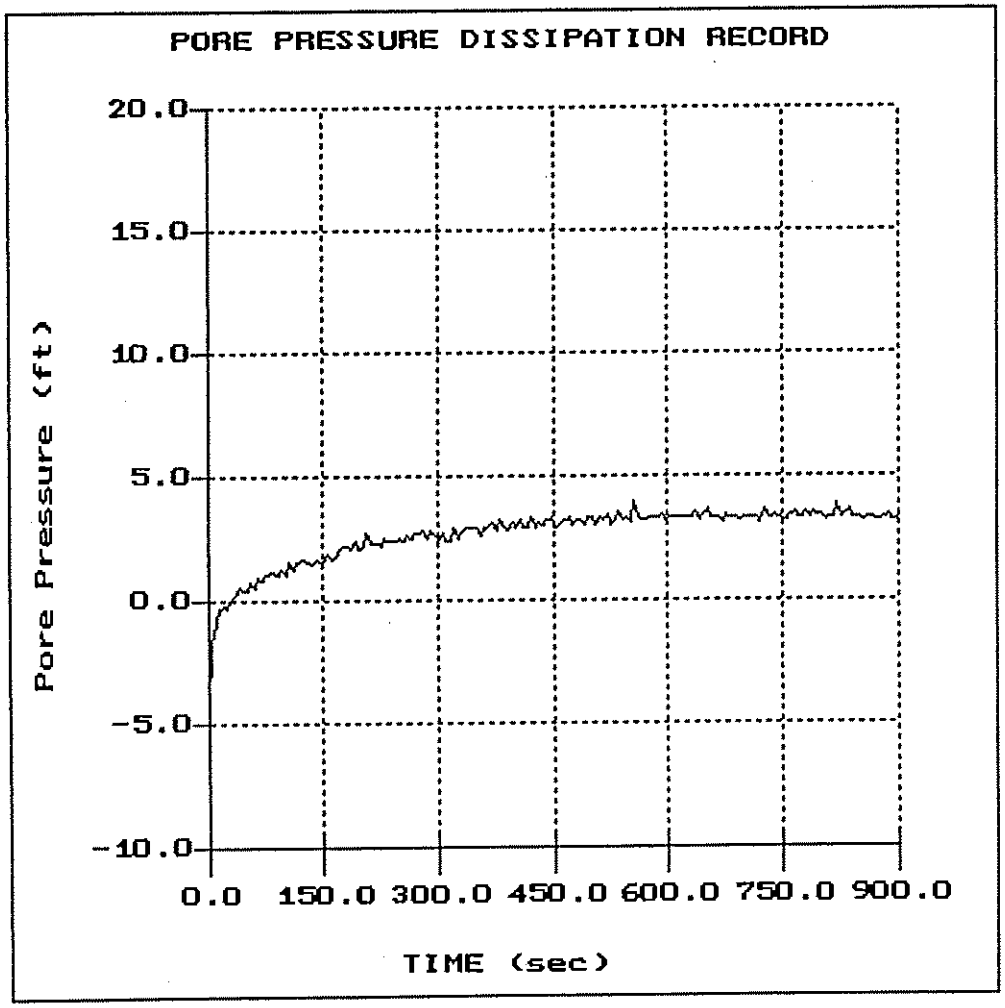



File: 716CP003.PPD
Depth (m): 3.10
(ft): 10.17
Duration : 600.0s
U-min: 0.99 595.0s
U-max: 10.42 5.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26

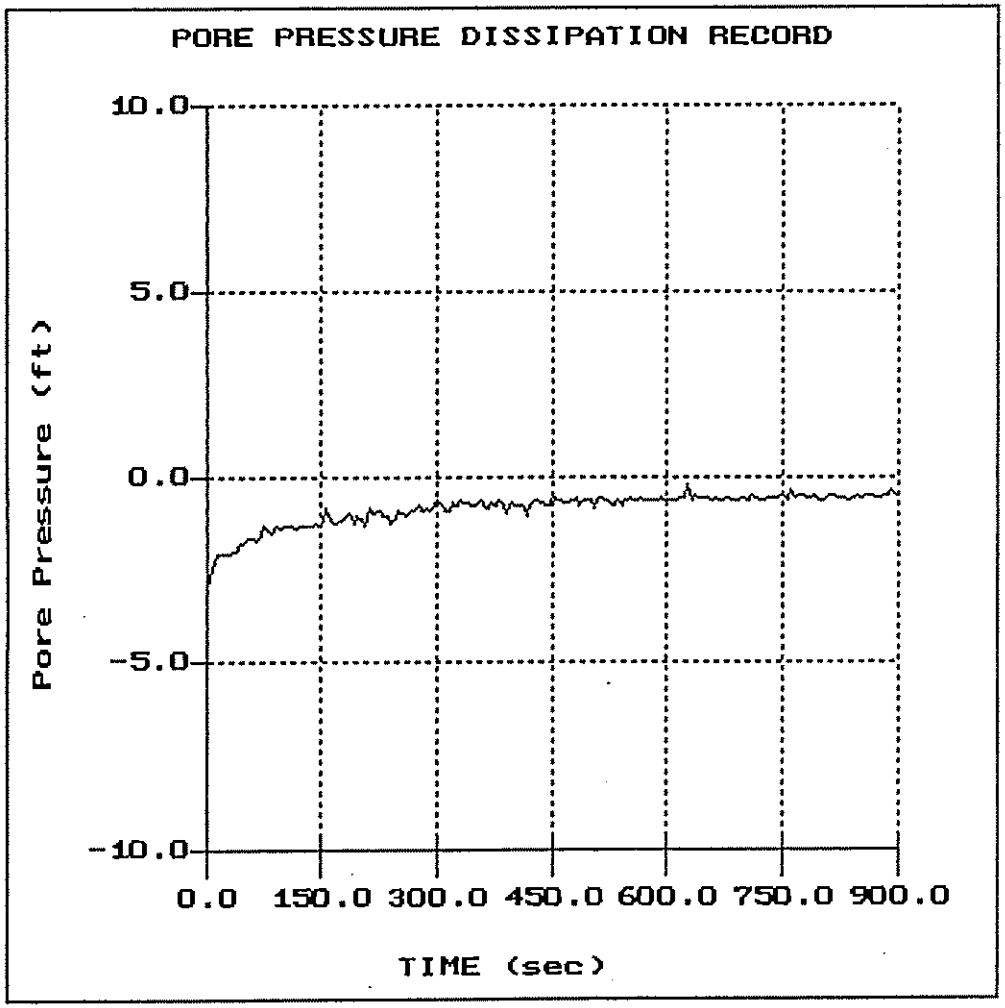



File: 716CP003.PPD
Depth (m): 4.60
(ft): 15.09
Duration : 900.0s
U-min: -4.46 0.0s
U-max: 3.99 555.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26

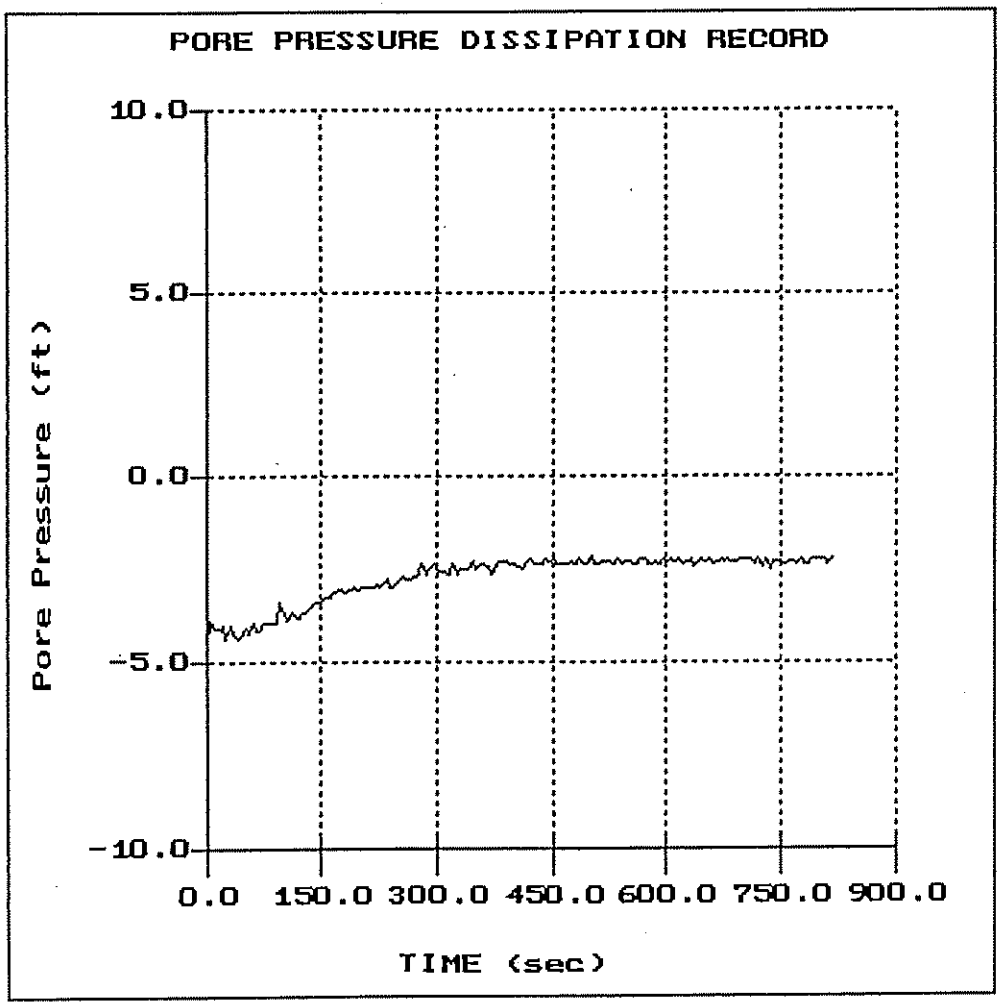



File: 716CP003.PPD
Depth (m): 6.10
(ft): 20.01
Duration : 900.0s
U-min: -3.08 0.0s
U-max: -0.22 625.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26

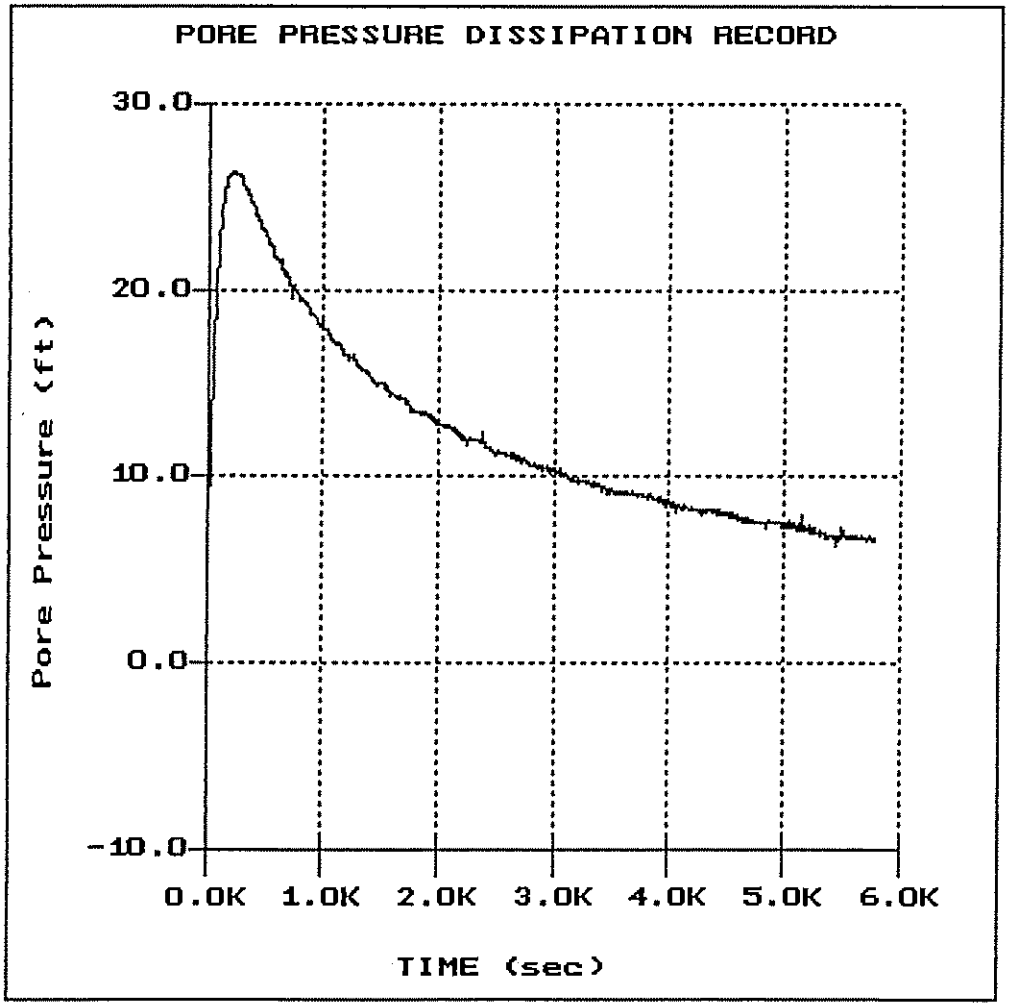



File: 716CP003.PPD
Depth (m): 7.65
(ft): 25.10
Duration : 815.0s
U-min: -4.54 0.0s
U-max: -2.15 500.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26

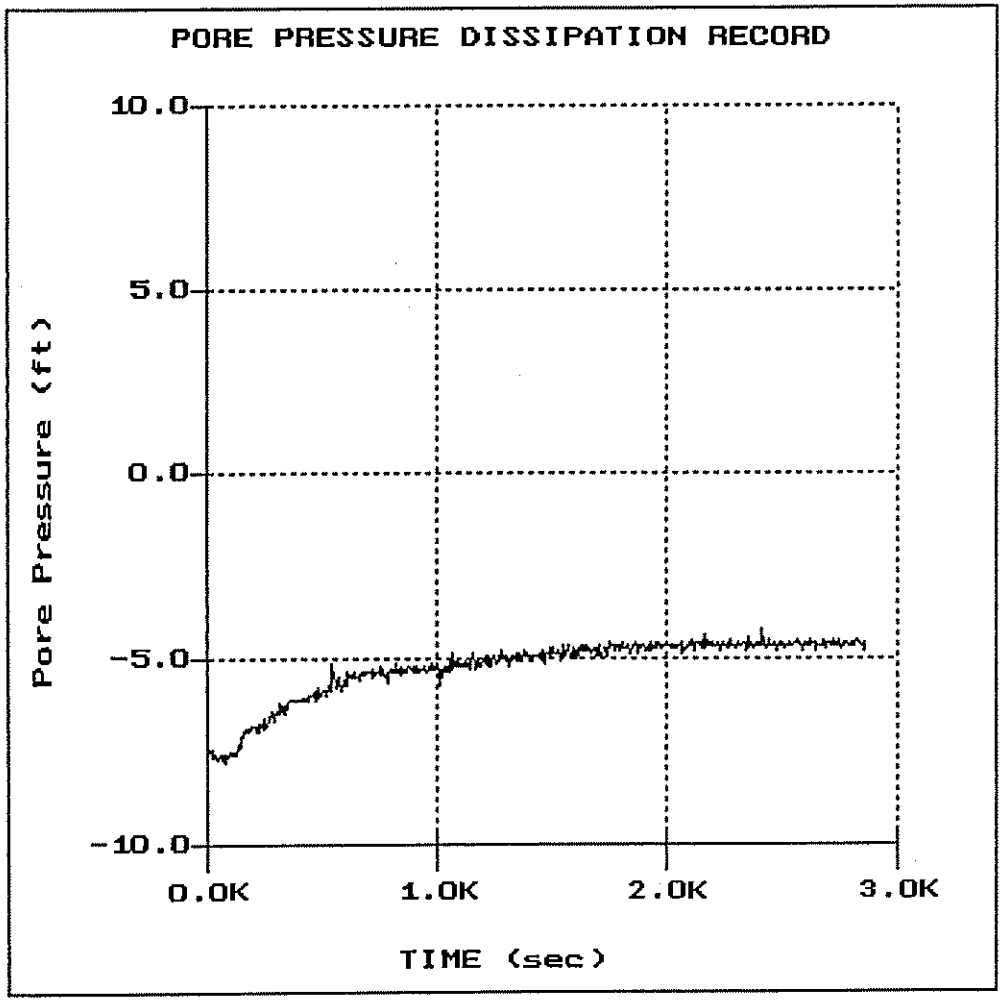



File: 716CP003.PPD
Depth (m): 9.15
(ft): 30.02
Duration : 5780.0s
U-min: 5.46 0.0s
U-max: 26.44 235.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26

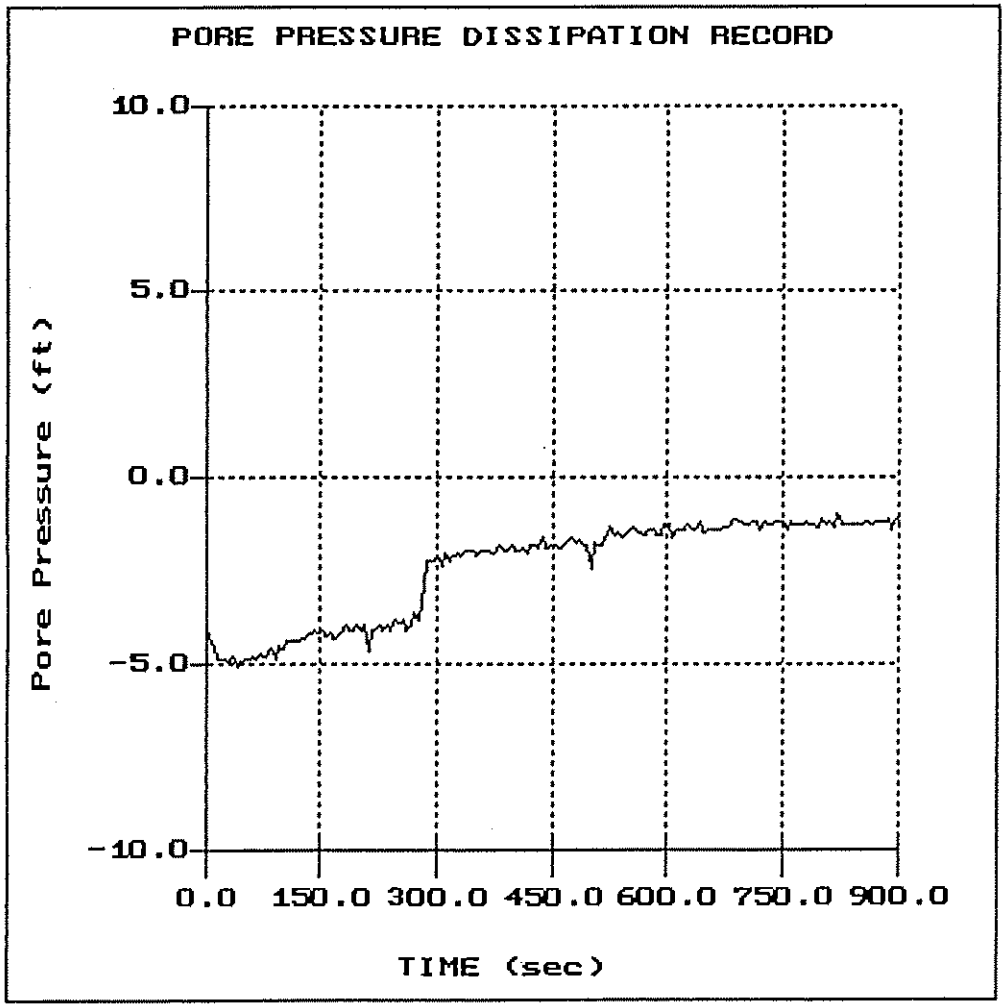



File: 716CP003.PPD
Depth (m): 10.70
(ft): 35.10
Duration : 2860.0s
U-min: -7.77 75.0s
U-max: -4.25 2410.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26



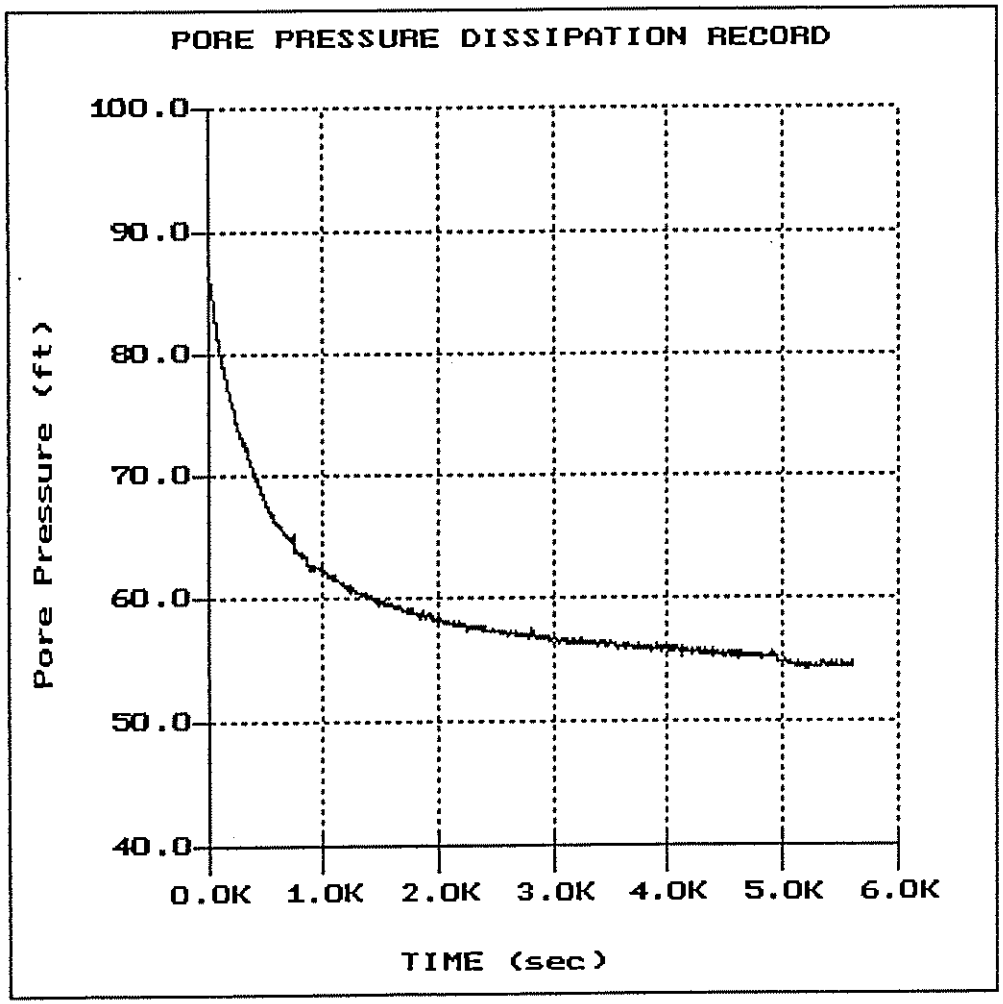

File: 716CP003.PPD
Depth (m): 11.60
(ft): 38.06
Duration : 900.0s
U-min: -5.07 40.0s
U-max: -0.99 820.0s

GeoSyntec

Hole:MSW-03
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:12:02 07:26

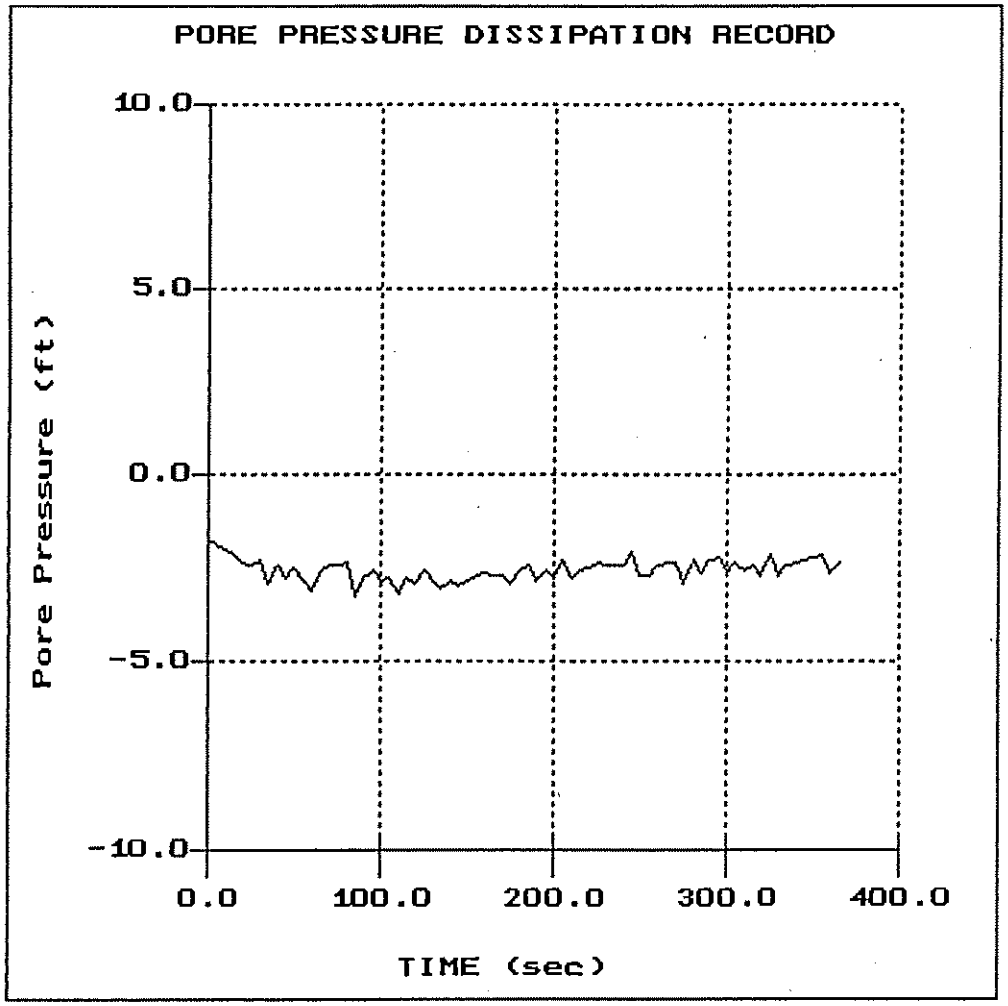
File: 716CP003.PPD
Depth (m): 15.85
(ft): 52.00
Duration : 5600.0s
U-min: 54.23 5220.0s
U-max: 85.96 10.0s



GeoSyntec

Hole:MSW-04
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 06:34

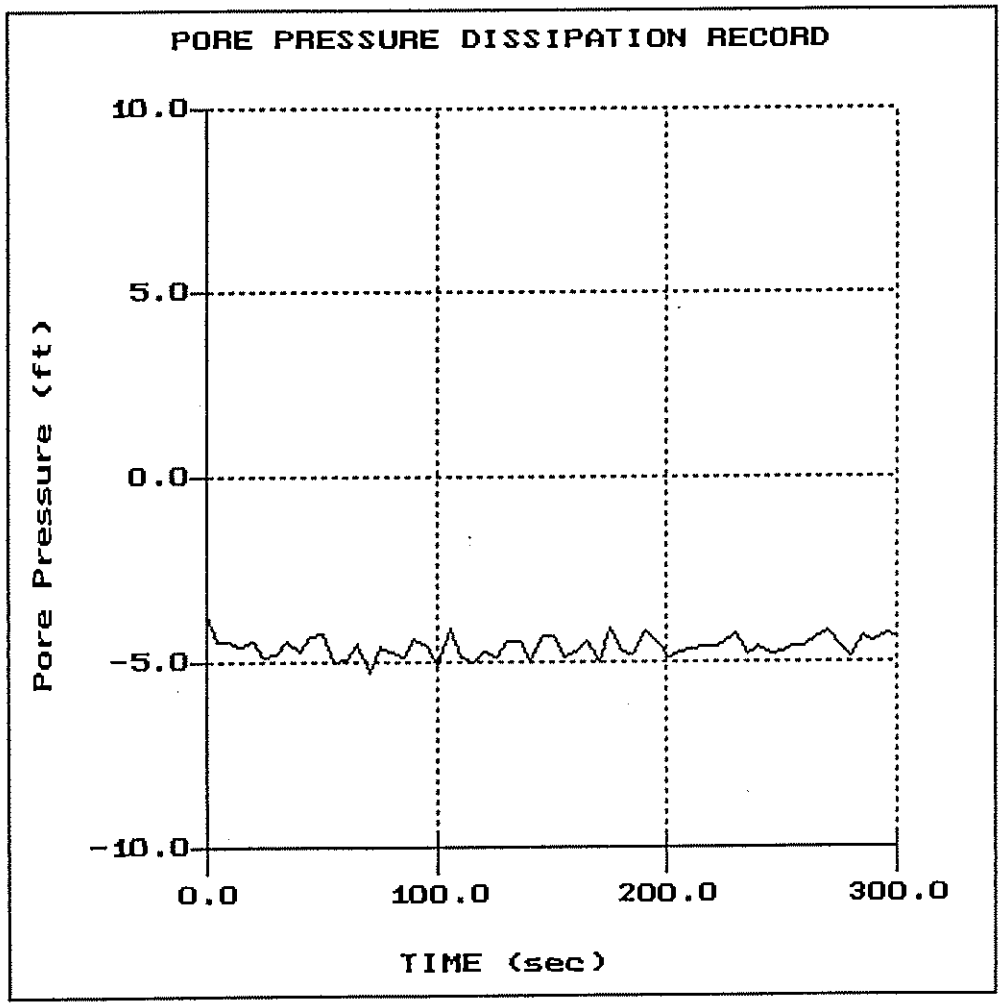



File: 716CP004.PPD
Depth (m): 3.05
(ft): 10.01
Duration : 365.0s
U-min: -3.26 85.0s
U-max: -1.71 0.0s

GeoSyntec

Hole:MSW-04
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 06:34

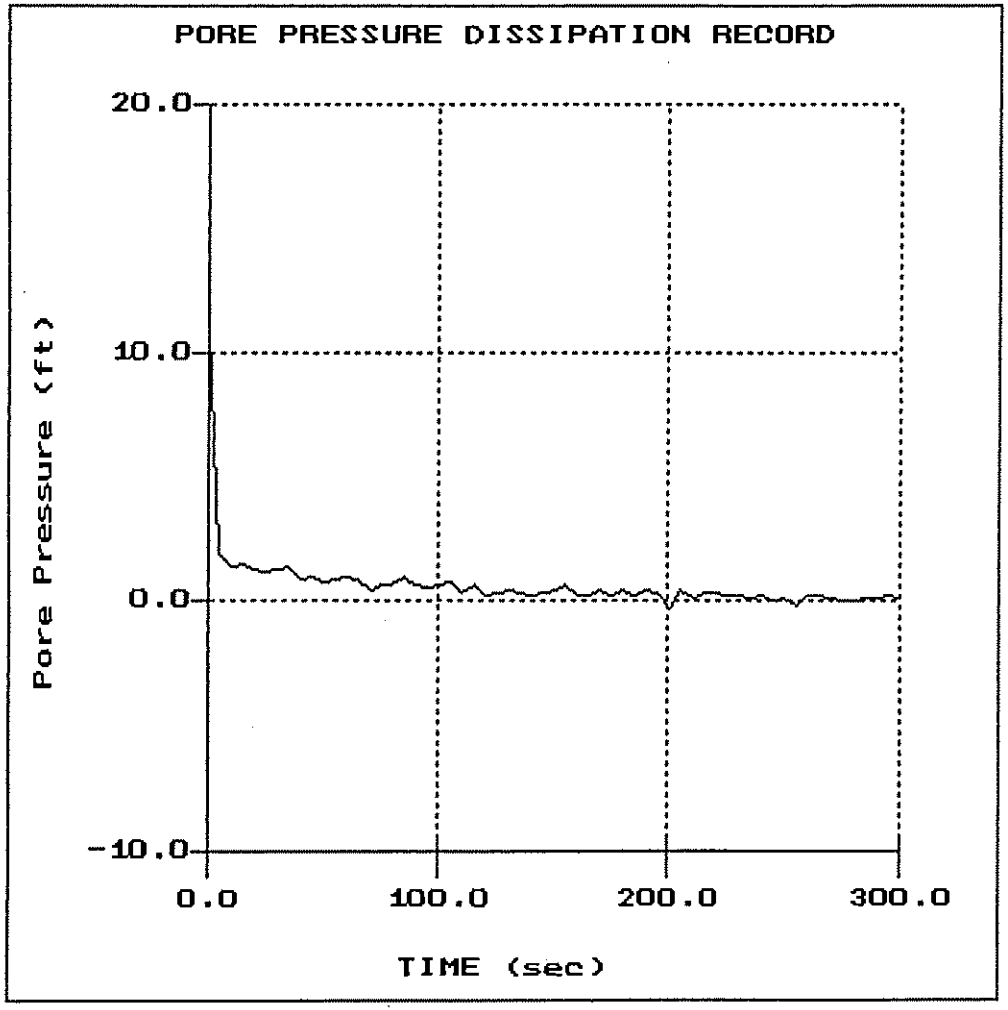



File: 716CP004.PPD
Depth (m): 6.10
(ft): 20.01
Duration : 300.0s
U-min: -5.30 70.0s
U-max: -3.66 0.0s

GeoSyntec

Hole:MSW-05
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 09:08

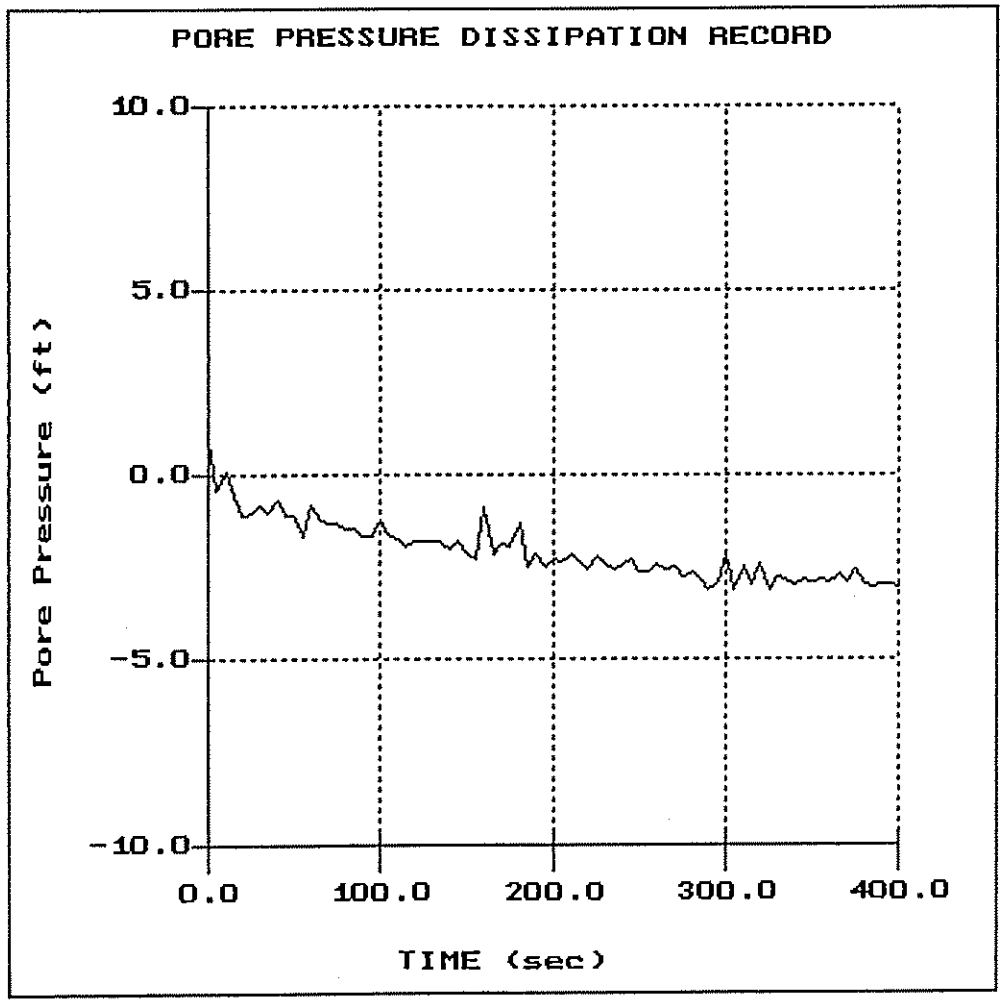



File: 716CP005.PPD
Depth (m): 3.15
(ft): 10.33
Duration : 300.0s
U-min: -0.31 200.0s
U-max: 11.00 0.0s

GeoSyntec

Hole:MSW-05
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 09:08

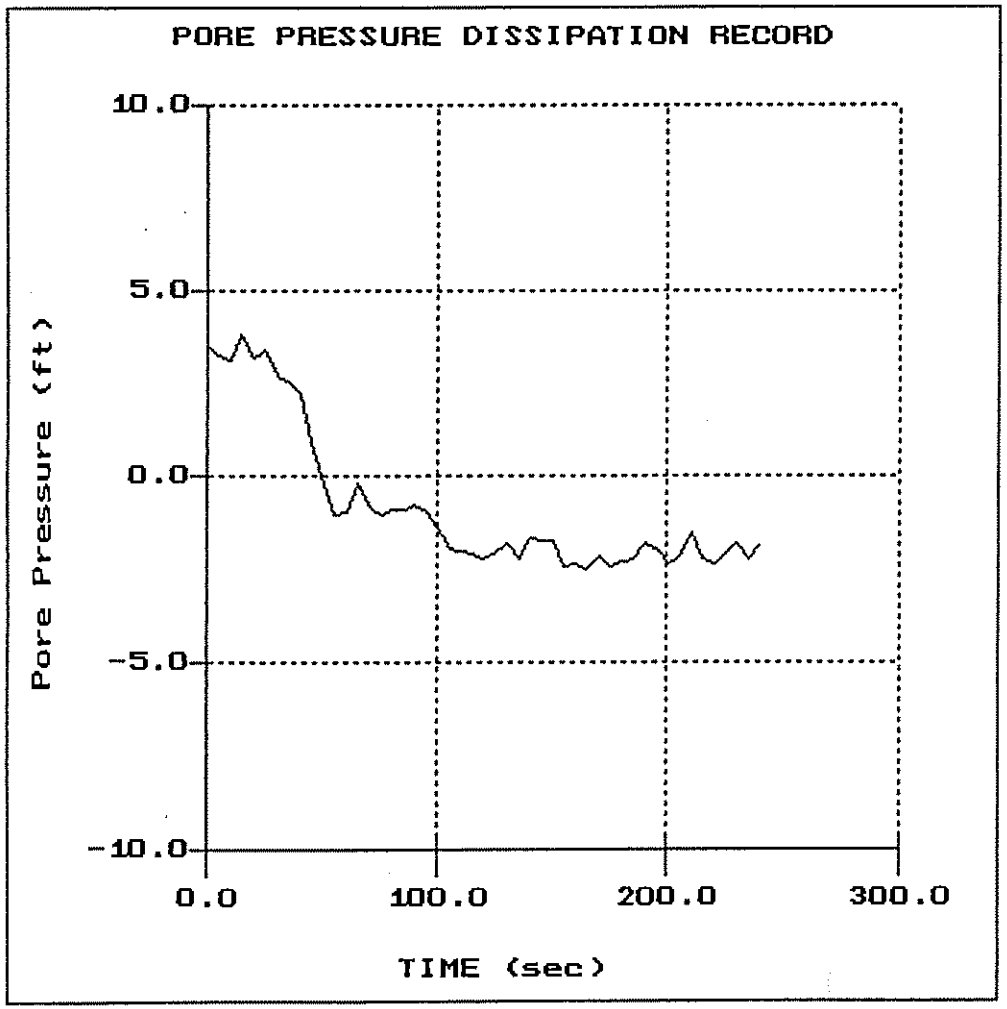



File: 716CP005.PPD
Depth (m): 6.10
(ft): 20.01
Duration : 400.0s
U-min: -3.11 325.0s
U-max: 0.97 0.0s

GeoSyntec

Hole:MSW-05
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 09:08

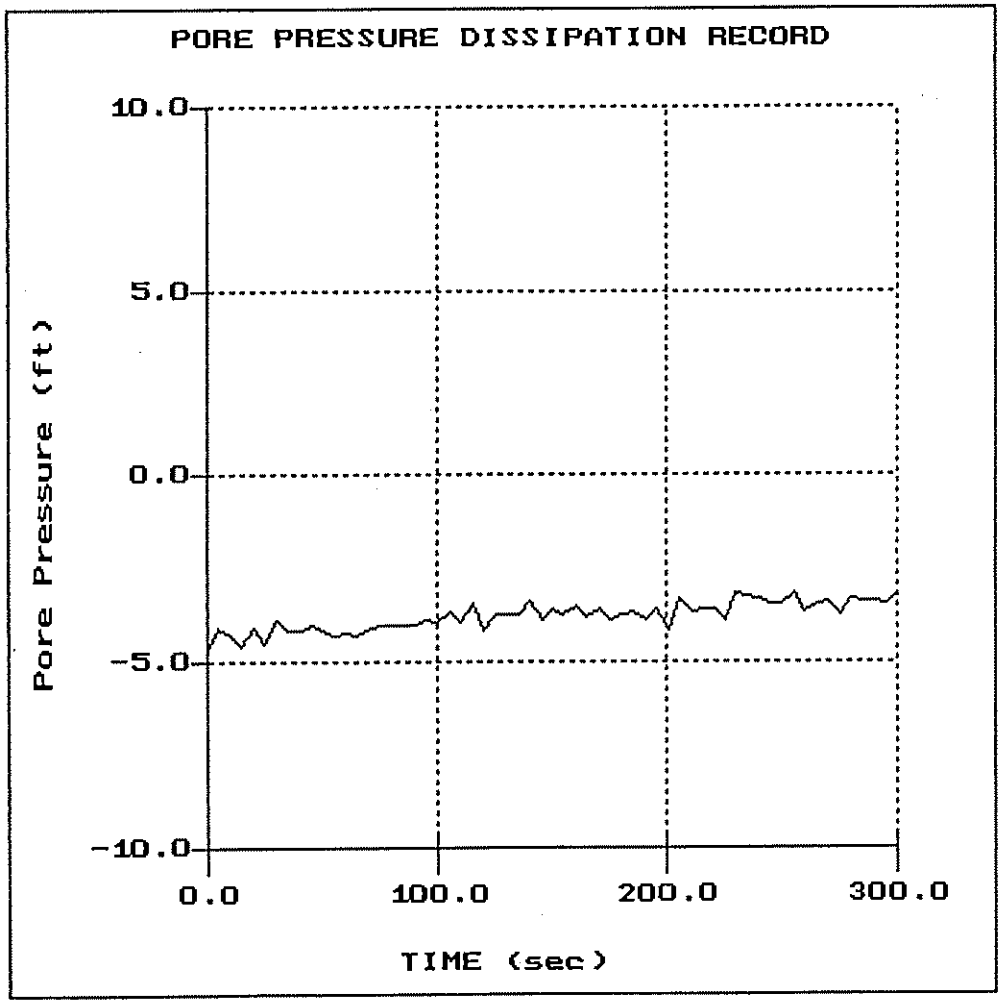



File: 716CP005.PPD
Depth (m): 9.15
(ft): 30.02
Duration : 240.0s
U-min: -2.48 165.0s
U-max: 3.81 15.0s

GeoSyntec

Hole:MSW-05
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 09:08

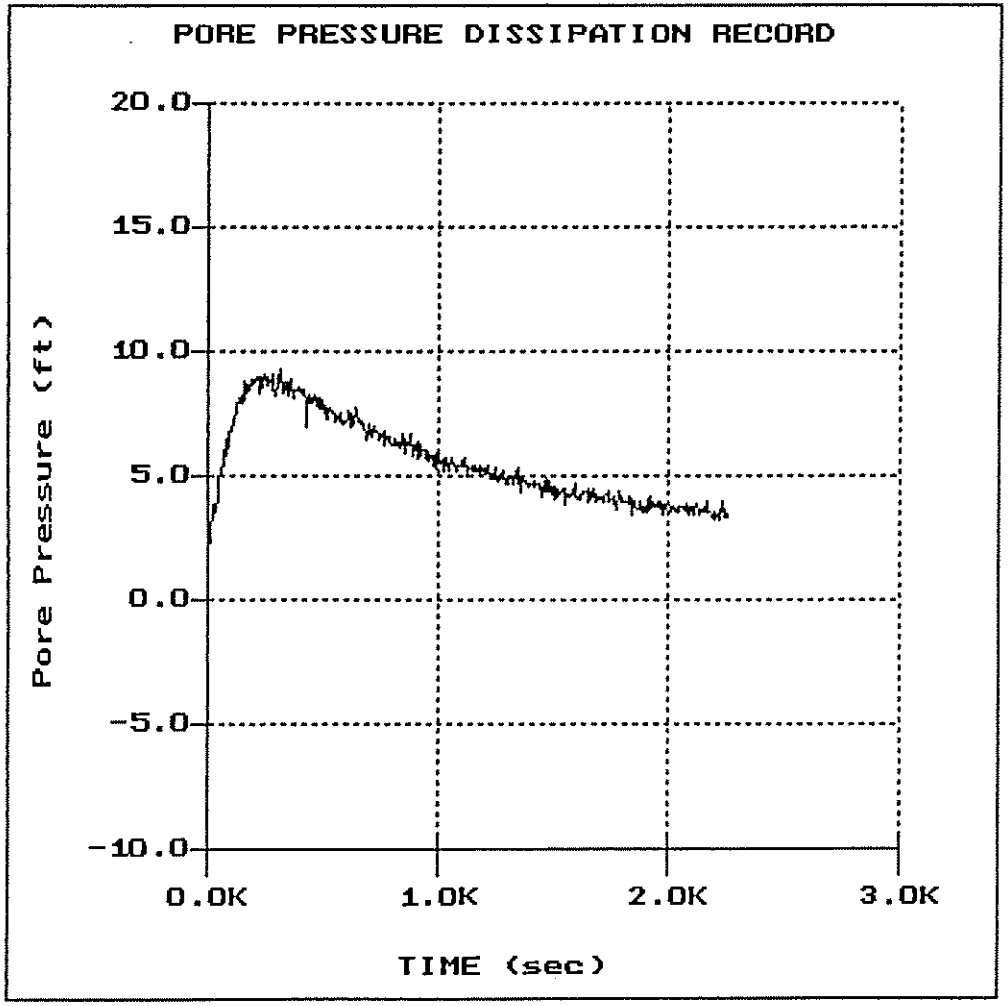



File: 716CP005.PPD
Depth (m): 12.20
(ft): 40.03
Duration : 300.0s
U-min: -4.75 0.0s
U-max: -3.21 300.0s

GeoSyntec

Hole:MSW-05
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 09:08



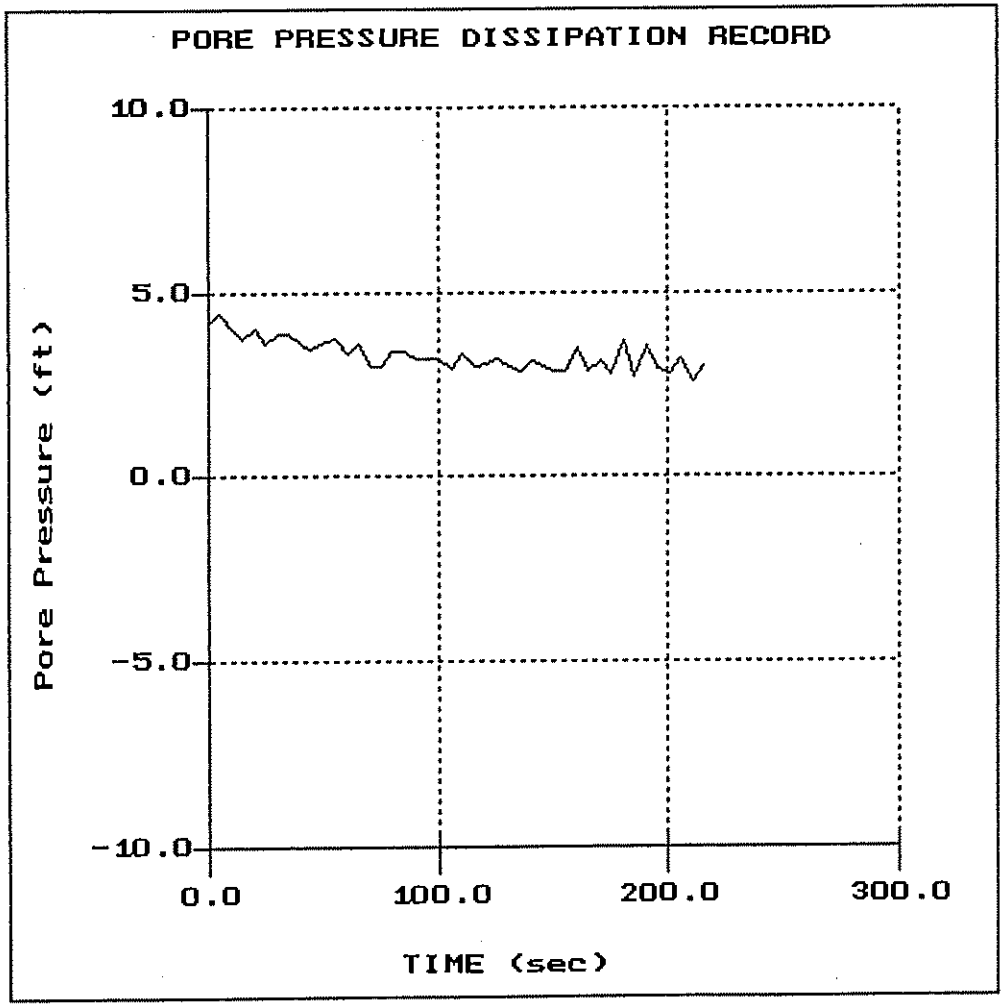

File: 716CP005.PPD
Depth (m): 15.25
(ft): 50.03
Duration : 2250.0s
U-min: 2.27 10.0s
U-max: 9.26 310.0s

GeoSyntec

Hole:MSW-05
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 09:08

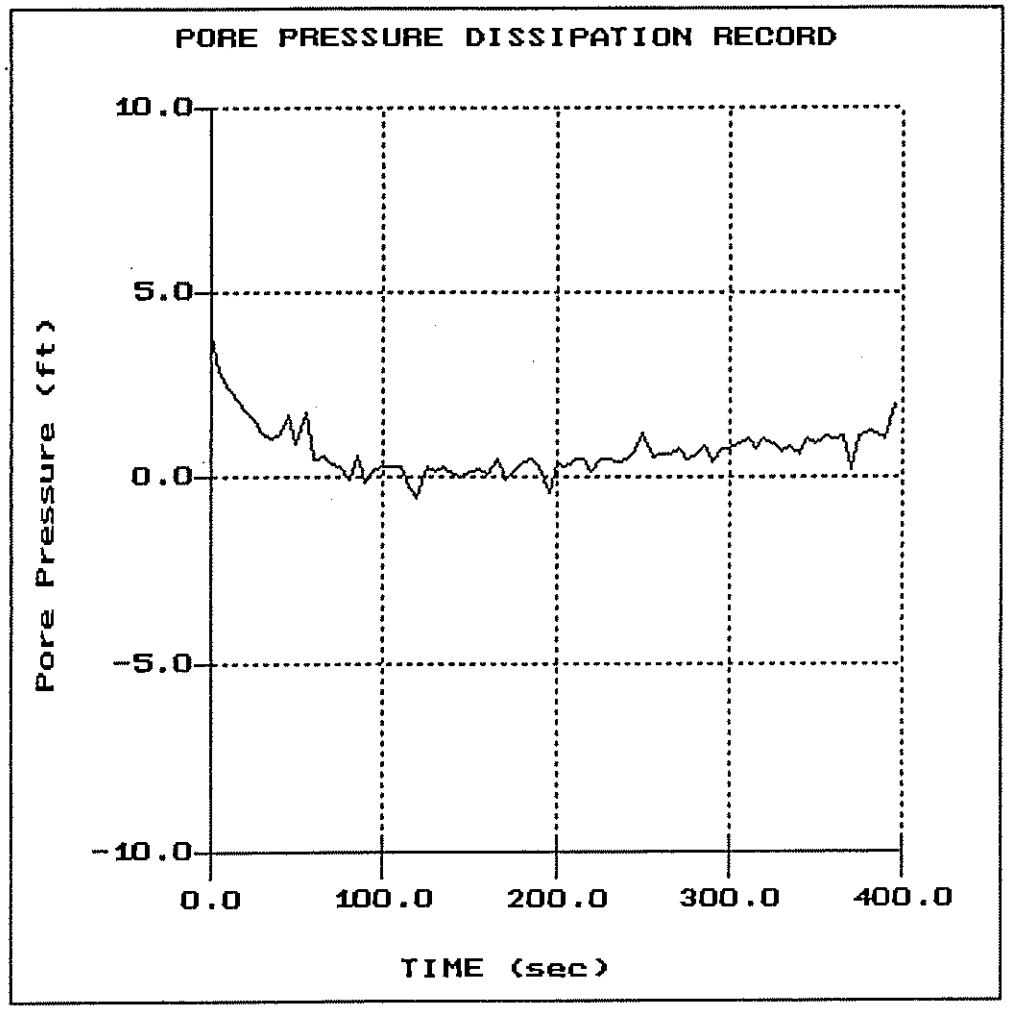
File: 716CP005.PPD
Depth (m): 18.30
(ft): 60.04
Duration : 215.0s
U-min: 2.55 210.0s
U-max: 4.42 5.0s



GeoSyntec

Hole:MSW-05
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 09:08



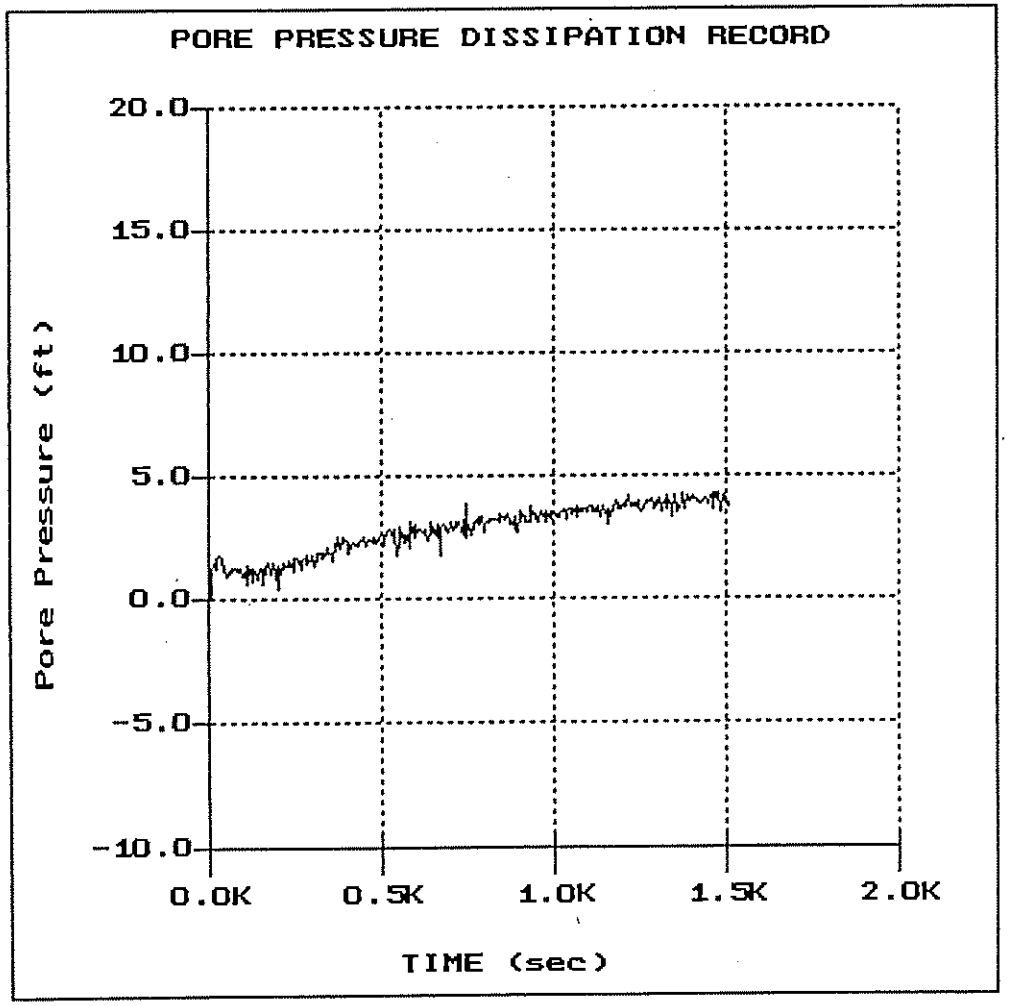

File: 716CP005.PPD
Depth (m): 19.55
(ft): 64.14
Duration : 395.0s
U-min: -0.58 120.0s
U-max: 3.88 0.0s

GeoSyntec

Hole:MSW-06
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 12:22

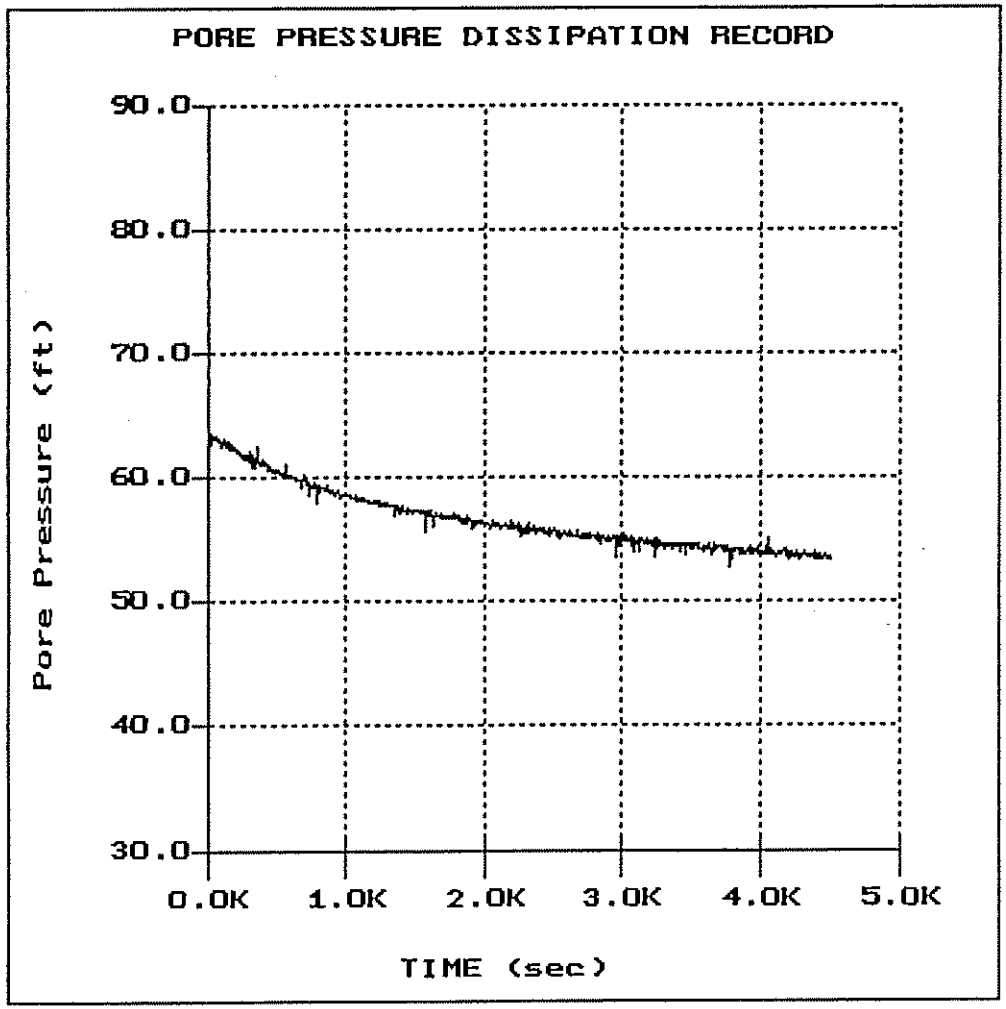
File: 716CP006.PPD
Depth (m): 7.25
(ft): 23.79
Duration : 1510.0s
U-min: 0.03 5.0s
U-max: 4.30 1460.0s



GeoSyntec

Hole:MSW-06
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:15:02 12:22

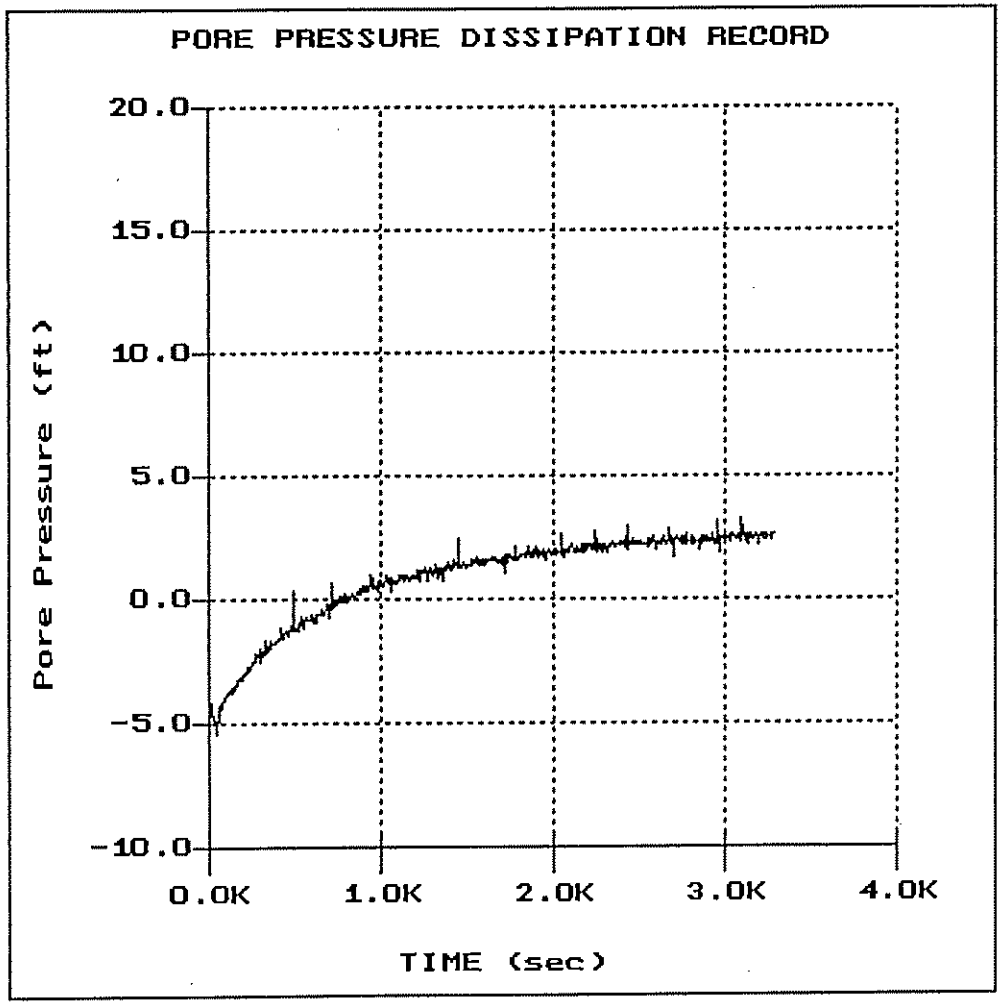



File: 716CP006.PPD
Depth (m): 11.60
(ft): 38.06
Duration : 4500.0s
U-min: 52.73 3770.0s
U-max: 63.48 20.0s

GeoSyntec

Hole:MSW-07
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:16:02 06:31

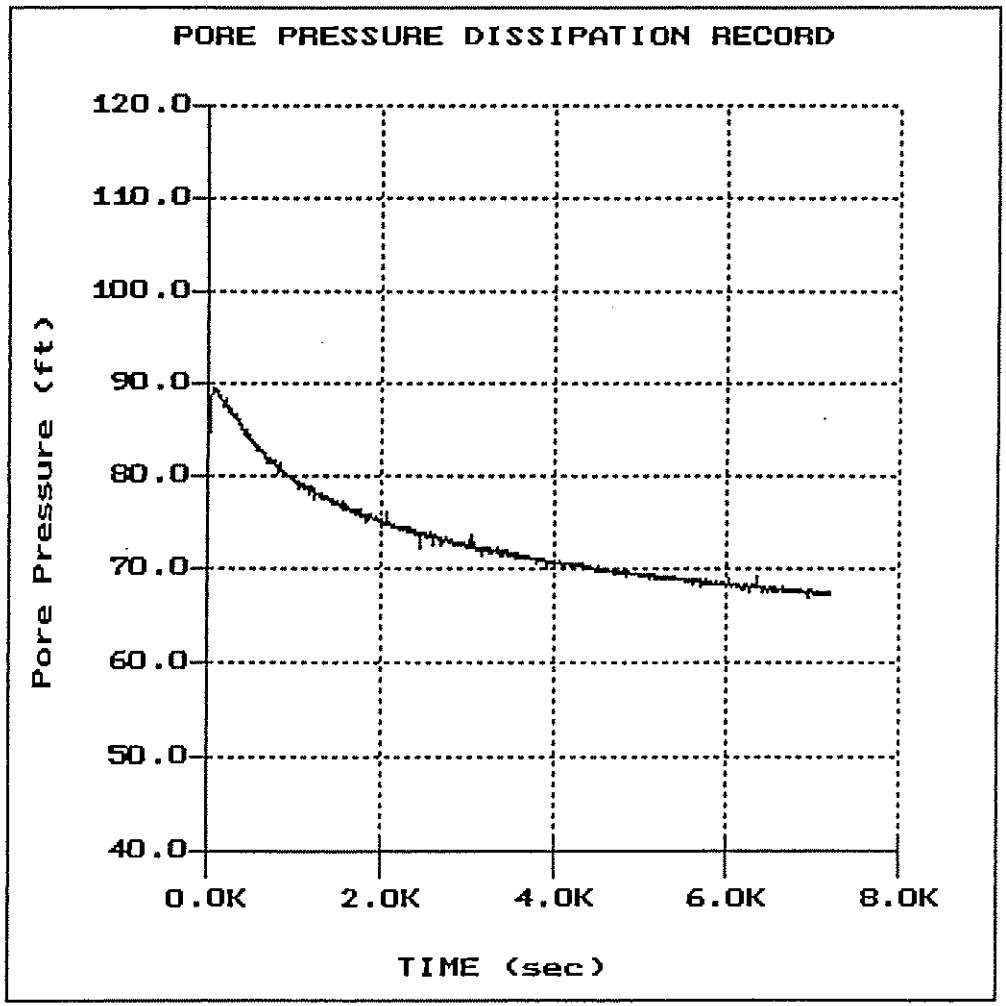



File: 716CP007.PPD
Depth (m): 10.80
(ft): 35.43
Duration : 3280.0s
U-min: -5.42 50.0s
U-max: 3.22 3095.0s

GeoSyntec

Hole:MSW-07
Location:Cherry Isd. Ldfl

Cone: 10 TON AD023
Date:04:16:02 06:31




File: 716CP007.PPD
Depth (m): 15.95
(ft): 52.33
Duration : 7200.0s
U-min: 66.93 6960.0s
U-max: 89.50 75.0s

# PIEZOMETER DATA

# PHASE I

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1_IC_09A

Show/Hide Maintenance Data

Northing

Easting

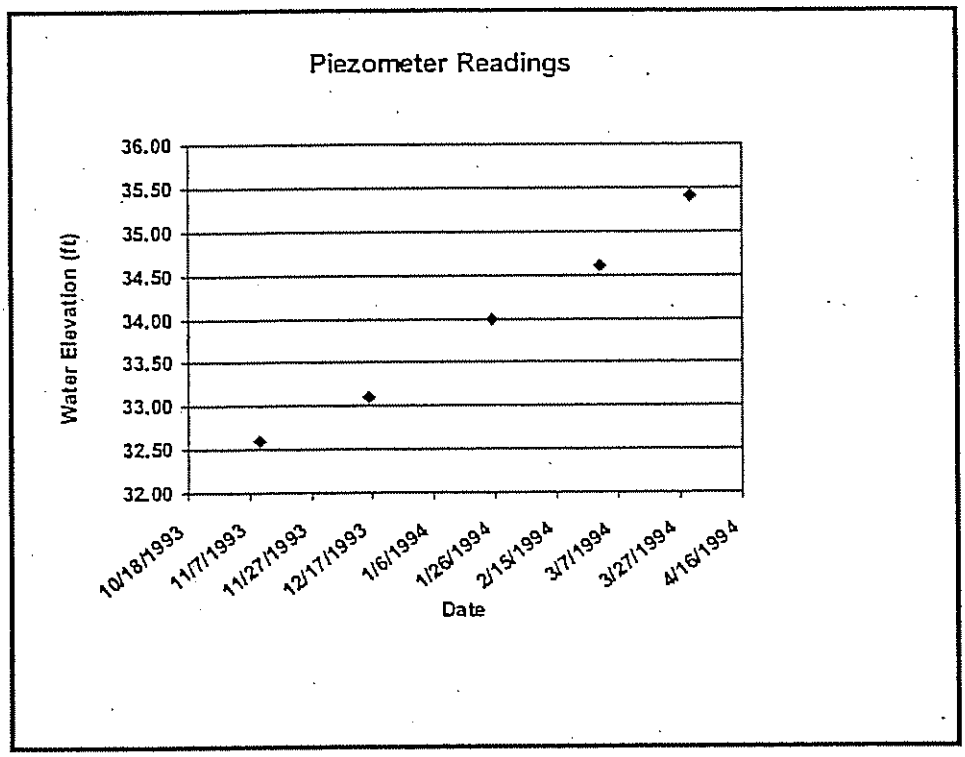
Phase

Screen El

Stratum

Readings

| | |
|---|---|
| 11/10/1993 | 32.6 |
| 12/16/1993 | 33.1 |
| 01/25/1994 | 34 |
| 03/01/1994 | 34.6 |
| 03/30/1994 | 35.4 |




## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P1_IC_09A | MAIN_TYPE | New Piezome | NOTES | PIEZOMETER WAS INSTALLED BETWEEN MARCH/APRIL 1991. NO SPECIFIC DATE WAS GIVEN |
| DATE | 4/1/1991 | Ground Surf. EL | | | |
| COUNT | | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 40 | |
| Depth of Casing (ft) | 10 | |

☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1_IC_09B

Show/Hide Maintenance Data

Northing

Easting

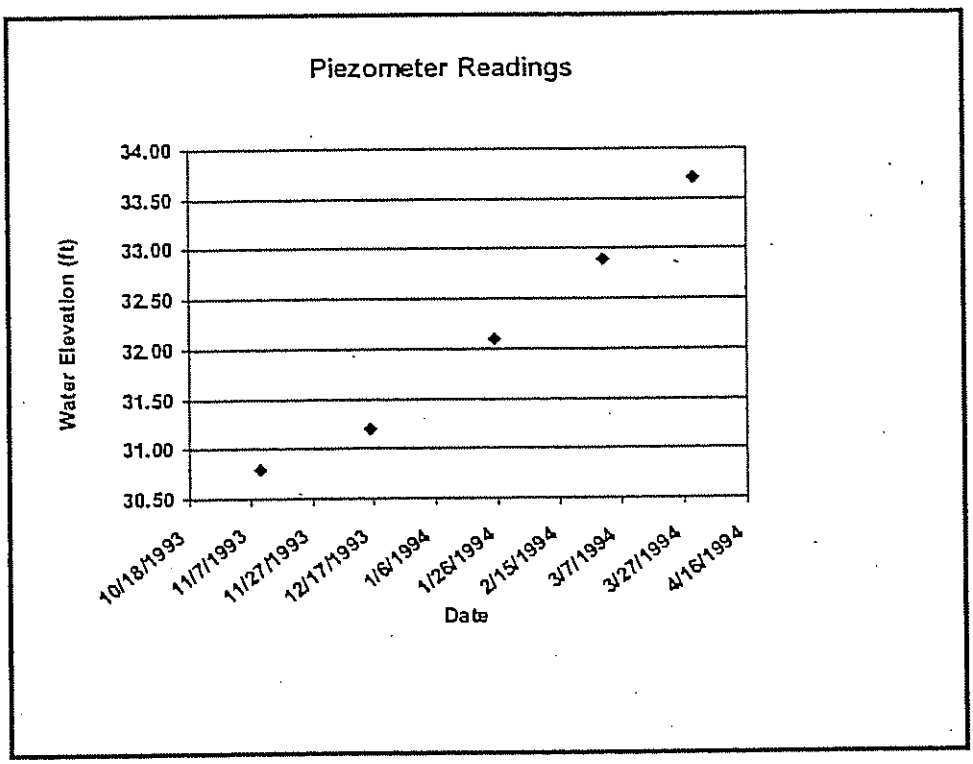
Phase

Screen El

Stratum

Readings

| | |
|---|---|
| 11/10/1993 | 30.8 |
| 12/16/1993 | 31.2 |
| 01/25/1994 | 32.1 |
| 03/01/1994 | 32.9 |
| 03/30/1994 | 33.7 |




## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P1_IC_09B | MAIN_TYPE | New Piezome | NOTES | PIEZOMETER WAS INSTALLED BETWEEN MARCH/APRIL 1991. NO SPECIFIC DATE WAS GIVEN |
| DATE | 4/1/1991 | Ground Surf. EL | | | |
| COUNT | | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 41 | |
| Depth of Casing (ft) | -3 | |

☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 10A

Show/Hide Maintenance Data

Northing

Easting

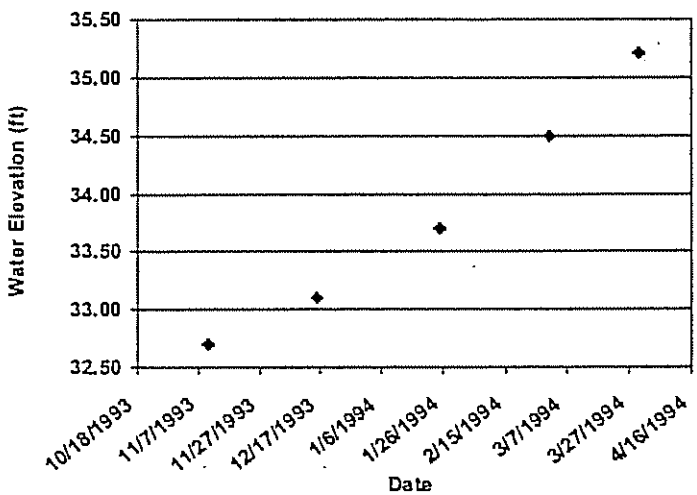
Phase

Screen El

Stratum

Readings

| | |
|---|---|
| 11/10/1993 | 32.7 |
| 12/16/1993 | 33.1 |
| 01/25/1994 | 33.7 |
| 03/01/1994 | 34.5 |
| 03/30/1994 | 35.2 |




## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | 0 |
| *Bottom* | | | | | | | 0 |
| *Diam. (in)* | | | | | | | 0 |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 10A-P

Show/Hide Maintenance Data

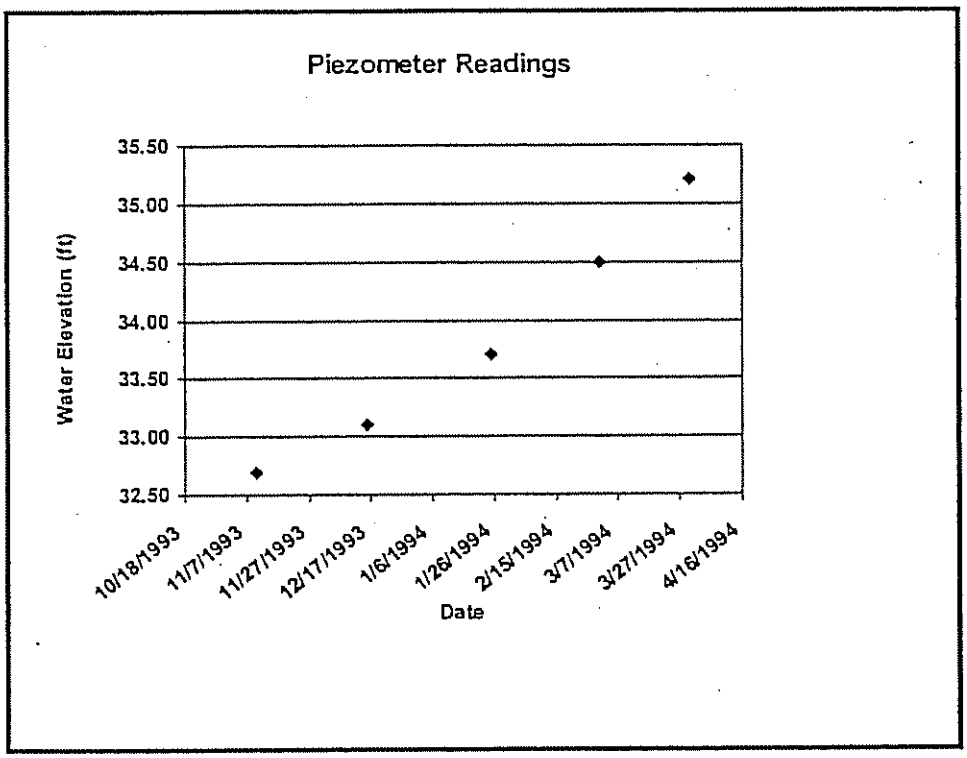
Northing

Easting

Phase

Screen El

Stratum




Readings

| | |
|---|---|
| 11/10/1993 | 32.7 |
| 12/16/1993 | 33.1 |
| 01/25/1994 | 33.7 |
| 03/01/1994 | 34.5 |
| 03/30/1994 | 35.2 |

Installation Information

Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 10B

Show/Hide Maintenance Data

Northing

Easting

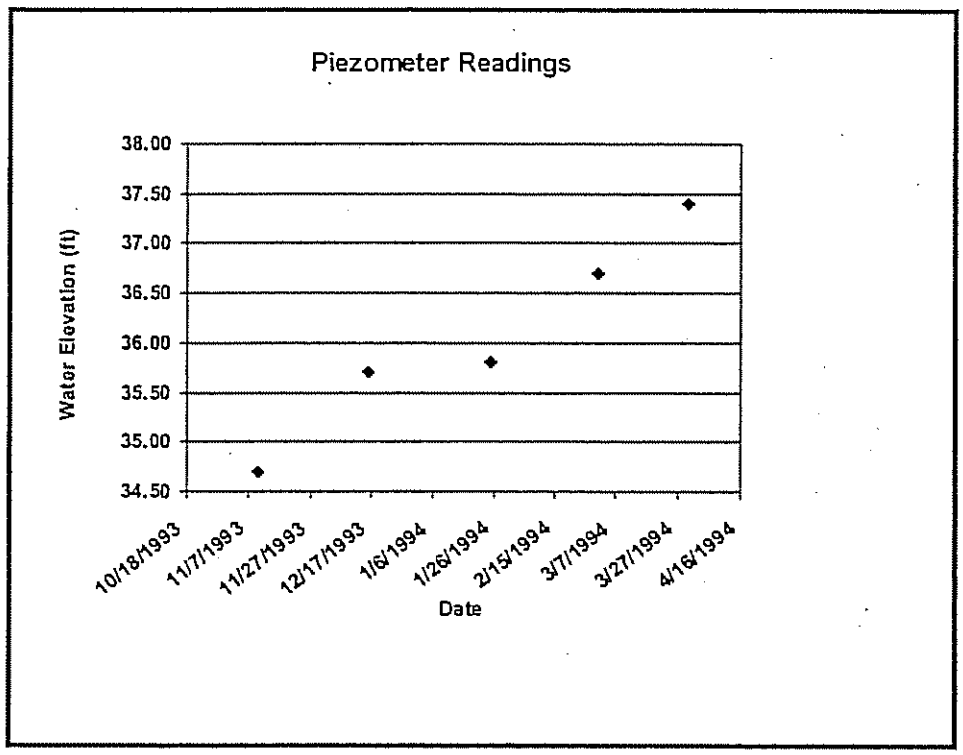
Phase

Screen El

Stratum

Readings

| | |
|---|---|
| 11/10/1993 | 34.7 |
| 12/16/1993 | 35.7 |
| 01/25/1994 | 35.8 |
| 03/01/1994 | 36.7 |
| 03/30/1994 | 37.4 |




## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | 0 |
| *Bottom* | | | | | | | 0 |
| *Diam. (in)* | | | | | | | 0 |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 10B-P

Show/Hide Maintenance Data

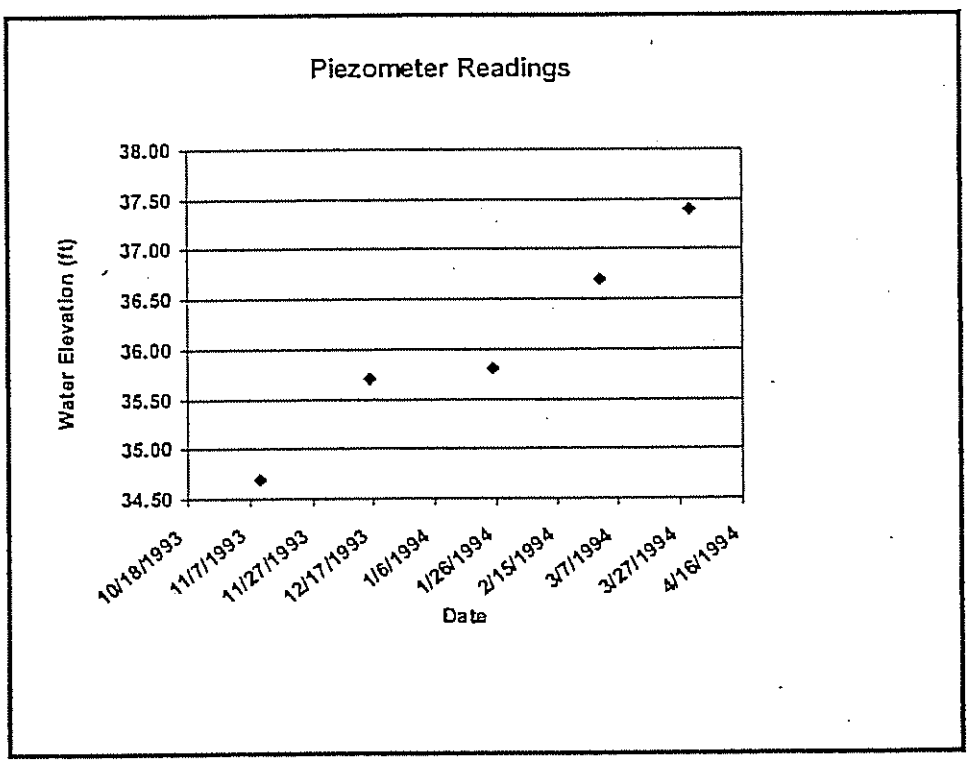
Northing

Easting

Phase

Screen El

Stratum




Readings

| | |
|---|---|
| 11/10/1993 | 34.7 |
| 12/16/1993 | 35.7 |
| 01/25/1994 | 35.8 |
| 03/01/1994 | 36.7 |
| 03/30/1994 | 37.4 |

Installation Information

Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

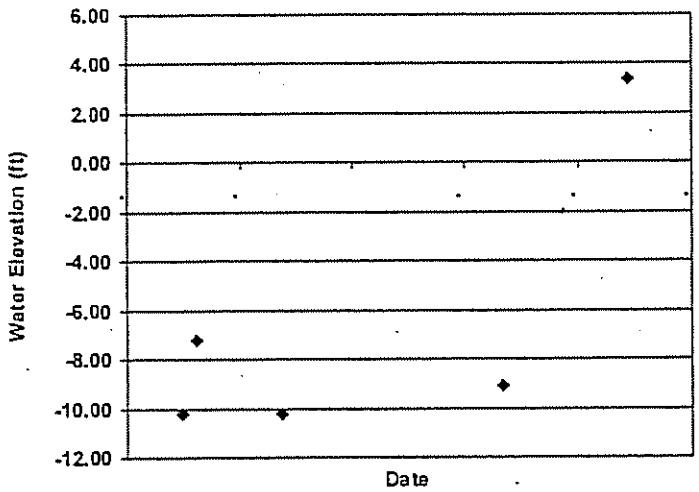
Select Piezometer: P1 PP 12A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630099 |
| Easting | 470003 |
| Phase | P1 |
| Screen El | -10.2 |
| Stratum | BL |

Readings

| | |
|---|---|
| 10/08/2001 | 3.4 |




Installation Information

Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

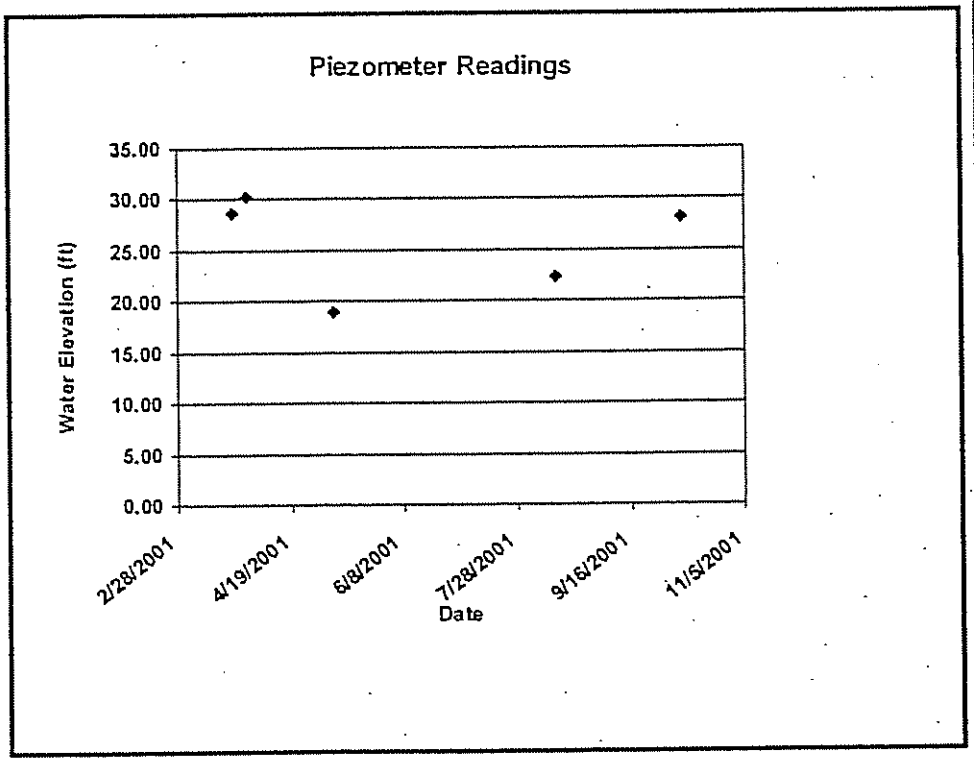
Select Piezometer: P1 PP 12B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630098 |
| Easting | 470002 |
| Phase | P1 |
| Screen El | -10.2 |
| Stratum | BL |

Readings

| | |
|---|---|
| 05/07/2001 | 18.9 |
| 03/24/2001 | 28.6 |
| 03/30/2001 | 30.2 |
| 08/14/2001 | 22.3 |
| 10/08/2001 | 28.1 |




Installation Information

Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1_PZ_09C

Show/Hide Maintenance Data

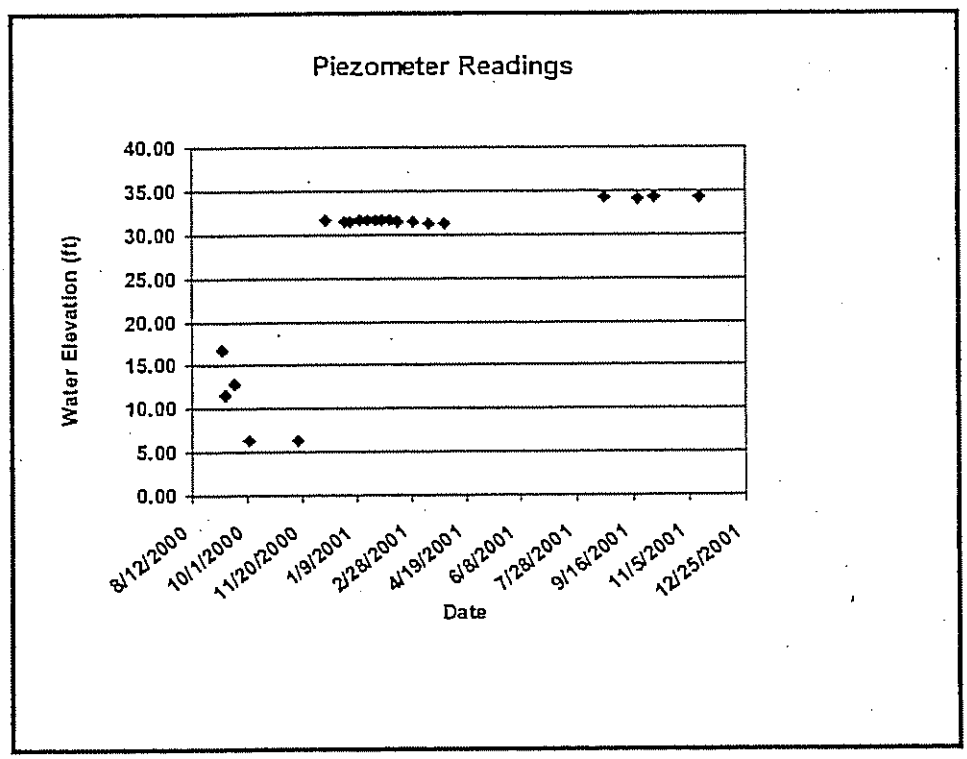
Northing

Easting

Phase

Screen El

Stratum




Readings

| | |
|---|---|
| 09/11/2000 | 11.5 |
| 11/16/2000 | 6.3 |
| 09/20/2000 | 12.8 |
| 10/02/2000 | 6.4 |
| 12/12/2000 | 31.69 |
| 12/29/2000 | 31.52 |
| 01/04/2001 | 31.43 |
| 01/12/2001 | 31.6 |
| 01/19/2001 | 31.6 |
| 01/26/2001 | 31.62 |
| 02/02/2001 | 31.55 |
| 02/09/2001 | 31.57 |
| 02/16/2001 | 31.5 |
| 03/02/2001 | 31.43 |
| 03/16/2001 | 31.31 |
| 03/30/2001 | 31.18 |
| 09/08/2000 | 16.77 |
| 08/21/2001 | 34.2 |
| 09/20/2001 | 34.1 |
| 11/13/2001 | 34.2 |
| 10/05/2001 | 34.2 |

Installation Information

Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

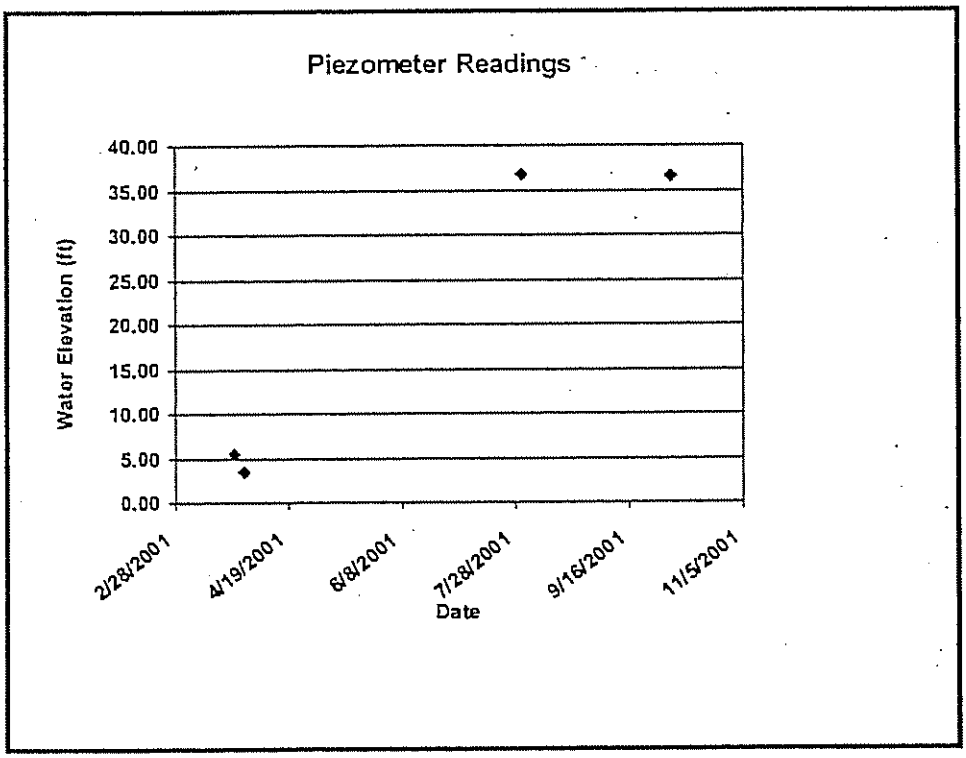
Select Piezometer: P1 PZ 12A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630105 |
| Easting | 469997 |
| Phase | P1 |
| Screen El | 18.9 |
| Stratum | BU |

Readings

| | |
|---|---|
| 03/26/2001 | 5.54 |
| 03/30/2001 | 3.53 |
| 07/31/2001 | 36.8 |
| 10/04/2001 | 36.5 |




Installation Information

Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

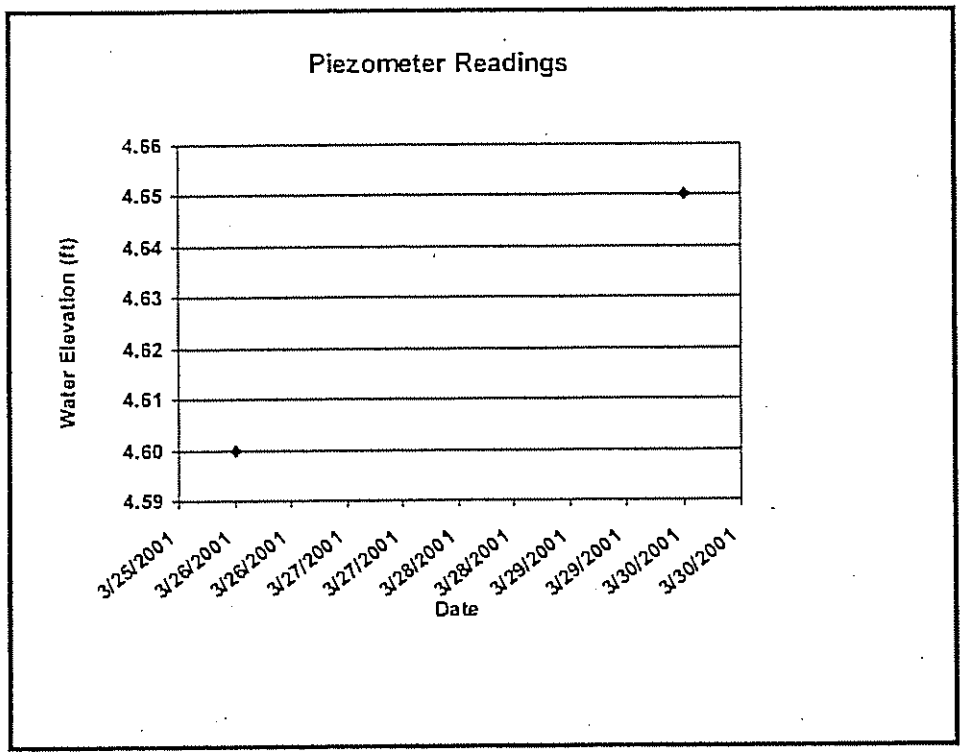
Select Piezometer: P1 PZ 12B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630106 |
| Easting | 469998 |
| Phase | P1 |
| Screen El | 2.5 |
| Stratum | BL |

Readings

| | |
|---|---|
| 03/26/2001 | 4.6 |
| 03/30/2001 | 4.65 |




Installation Information

Maintenance Data

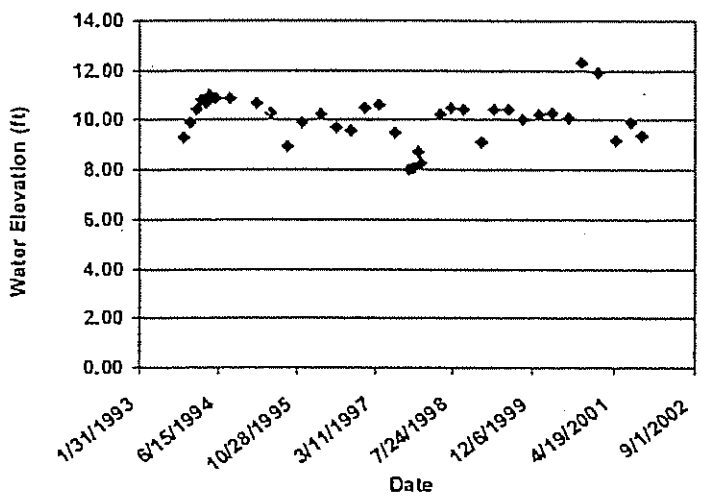
# SECTION 1

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC P3A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 630983 | | |
| Easting | 470304 | Screen El | 7 |
| Phase | P1 | Stratum | BM |




Readings

| | |
|---|---|
| 11/10/1993 | 9.3 |
| 12/16/1993 | 9.9 |
| 01/25/1994 | 10.4 |
| 03/01/1994 | 10.8 |
| 03/30/1994 | 10.7 |
| 04/19/1994 | 11 |
| 05/24/1994 | 10.9 |
| 08/24/1994 | 10.9 |
| 02/09/1995 | 10.7 |
| 05/11/1995 | 10.3 |
| 08/29/1995 | 8.9 |
| 11/27/1995 | 9.9 |
| 04/01/1996 | 10.2 |
| 07/10/1996 | 9.7 |
| 10/04/1996 | 9.6 |
| 01/02/1997 | 10.5 |
| 04/01/1997 | 10.6 |
| 07/15/1997 | 9.5 |
| 10/09/1997 | 8 |
| 11/12/1997 | 8.1 |
| 12/10/1997 | 8.7 |
| 01/03/1998 | 8.3 |
| 04/28/1998 | 10.22 |
| 04/23/2001 | 9.2 |
| 07/09/1998 | 10.5 |
| 10/02/1998 | 10.4 |
| 01/19/1999 | 9.1 |
| 04/09/1999 | 10.4 |
| 07/09/1999 | 10.4 |
| 10/07/1999 | 10 |
| 01/12/2000 | 10.2 |
| 04/03/2000 | 10.3 |
| 07/07/2000 | 10.1 |
| 10/02/2000 | 12.3 |
| 01/04/2001 | 11.94 |
| 07/31/2001 | 9.9 |

## Installation Information

Date Instrument Was Installed: 01/01/1985 *GEOLOGY*

*Ground Surface El*

*NOTES* NO EXACT DATE OF INSTALLATION AVAILABLE

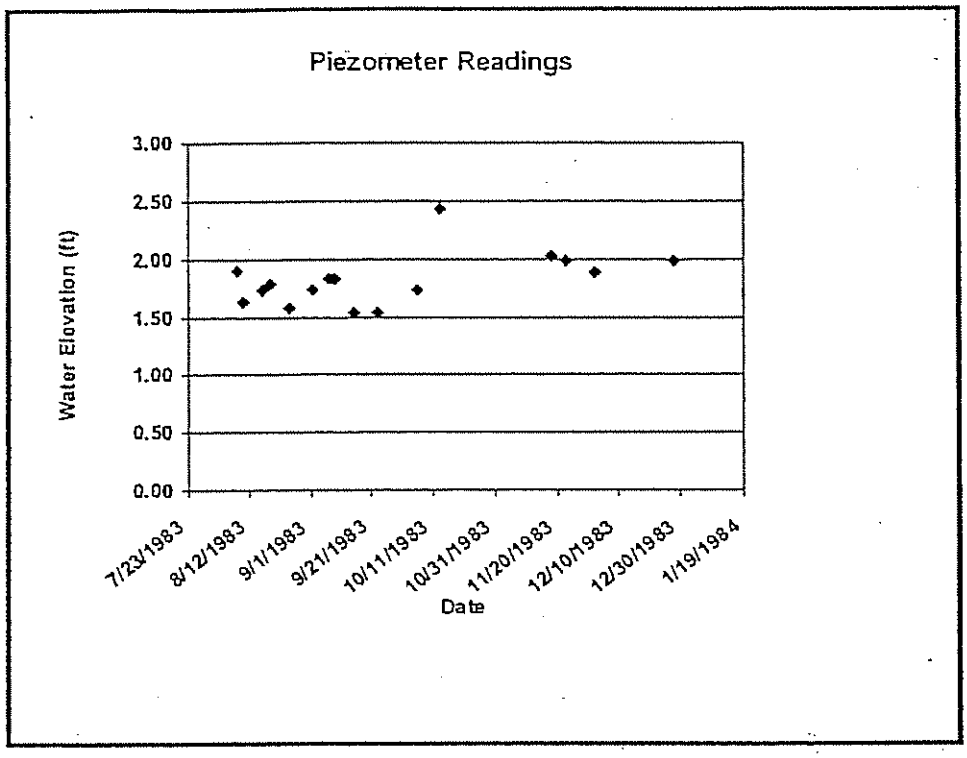
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 MW P107

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630196 |
| Easting | 469130 |
| Phase | P1 |
| Screen El | -33.7 |
| Stratum | C1 |




Readings

| | |
|---|---|
| 08/08/1983 | 1.9 |
| 08/10/1983 | 1.63 |
| 08/16/1983 | 1.73 |
| 08/19/1983 | 1.78 |
| 08/25/1983 | 1.58 |
| 09/02/1983 | 1.73 |
| 09/07/1983 | 1.83 |
| 09/09/1983 | 1.83 |
| 09/15/1983 | 1.53 |
| 09/23/1983 | 1.53 |
| 10/06/1983 | 1.73 |
| 10/13/1983 | 2.43 |
| 11/18/1983 | 2.03 |
| 11/23/1983 | 1.98 |
| 12/02/1983 | 1.88 |
| 12/28/1983 | 1.98 |

## Installation Information

Date Instrument Was Installed: 08/02/1983 *GEOLOGY* COLUMBIA

*Ground Surface El* 9.6

*NOTES*

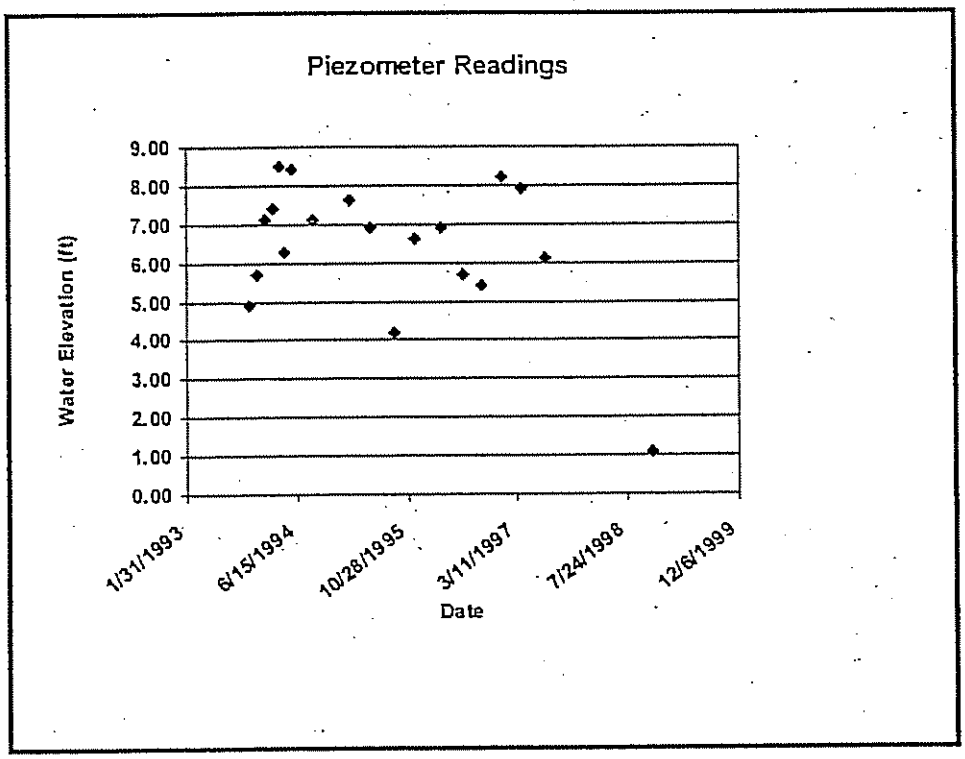
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 12.6 | 12.6 | -34.4 | -30.4 | 6.6 | | 10 |
| *Bottom* | 9.6 | -34.4 | -40.4 | -40.4 | -30.4 | | 7 |
| *Diam. (in)* | 4 | | 4 | | | | 0 |
| *Material* | STEEL | PVC | PVC .01 SLOT | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 01A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630497 |
| Easting | 469717 |
| Screen El | -9.5 |
| Phase | P1 |
| Stratum | BL |




Readings

| | |
|---|---|
| 12/16/1993 | 5.7 |
| 01/25/1994 | 7.1 |
| 03/01/1994 | 7.4 |
| 03/30/1994 | 8.5 |
| 04/19/1994 | 6.3 |
| 05/24/1994 | 8.4 |
| 08/24/1994 | 7.1 |
| 02/09/1995 | 7.6 |
| 05/11/1995 | 6.9 |
| 08/29/1995 | 4.2 |
| 11/27/1995 | 6.6 |
| 04/01/1996 | 6.9 |
| 07/10/1996 | 5.7 |
| 10/04/1996 | 5.4 |
| 01/02/1997 | 8.2 |
| 04/01/1997 | 7.9 |
| 07/15/1997 | 6.1 |
| 11/11/1998 | 1.1 |
| 11/10/1993 | 4.9 |

## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

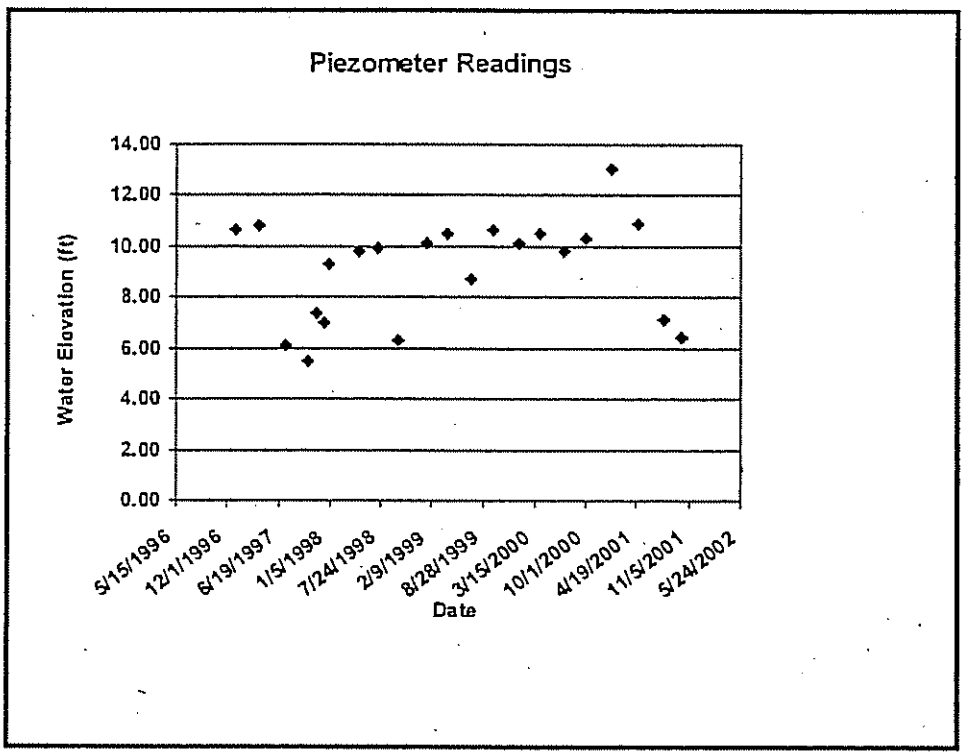
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 01C

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 630509 | | |
| Easting | 469731 | Screen El | 3.9 |
| Phase | P1 | Stratum | BM |




Readings

| | |
|---|---|
| 01/02/1997 | 10.6 |
| 04/01/1997 | 10.8 |
| 07/15/1997 | 6.1 |
| 10/09/1997 | 5.5 |
| 11/12/1997 | 7.4 |
| 12/10/1997 | 7 |
| 01/03/1998 | 9.3 |
| 04/28/1998 | 9.83 |
| 04/23/2001 | 10.9 |
| 07/09/1998 | 9.9 |
| 10/02/1998 | 6.3 |
| 01/19/1999 | 10.1 |
| 04/09/1999 | 10.5 |
| 07/09/1999 | 8.7 |
| 10/07/1999 | 10.6 |
| 01/12/2000 | 10.1 |
| 04/03/2000 | 10.5 |
| 07/07/2000 | 9.8 |
| 10/02/2000 | 10.3 |
| 01/04/2001 | 13.05 |
| 07/31/2001 | 7.1 |
| 10/04/2001 | 6.4 |

## Installation Information

Date Instrument Was Installed: 11/01/1996 *GEOLOGY*

*Ground Surface El* 20.7

*NOTES*

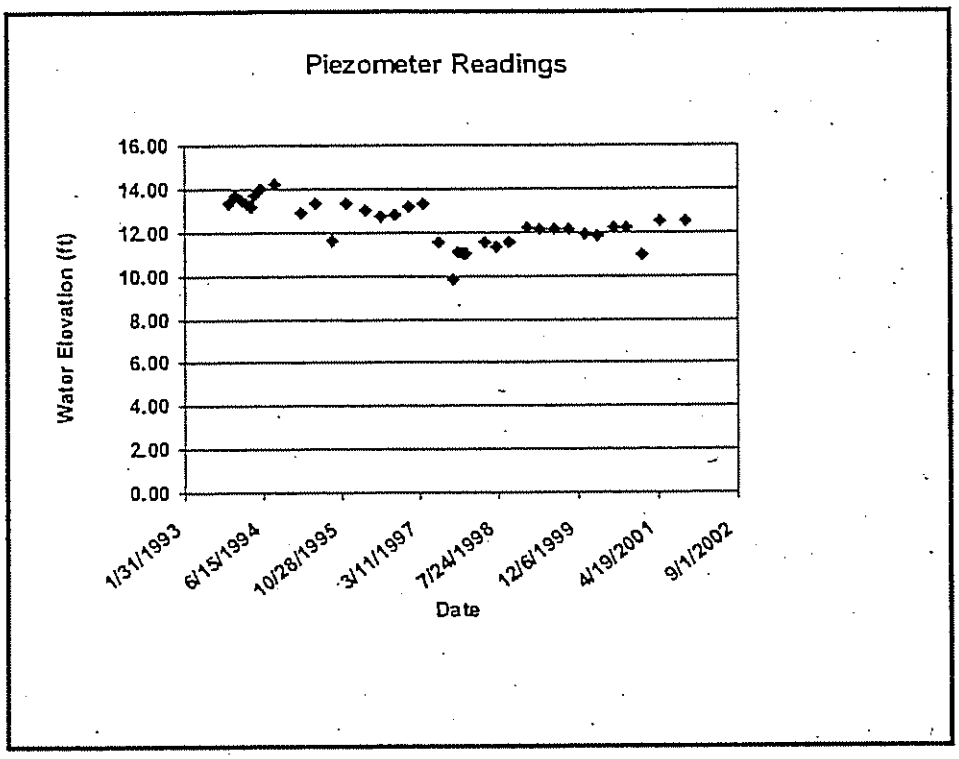
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 23.3 | 23.3 | 7.3 | 8.5 | 11.4 | 20.7 | |
| *Bottom* | 20.7 | 7.3 | 5.3 | 3.9 | 8.5 | 11.4 | |
| *Diam. (in)* | 6 | 4 | 1.5 | 6 | 6 | 6 | |
| *Material* | | PVC SCH 80 | POROUS POINT MEDIUM | WELL SAND | BENTONITE P1 PELLETS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 02A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 630717 | | |
| Easting | 470000 | Screen El | 6.3 |
| Phase | P1 | Stratum | BM |




Readings

| | |
|---|---|
| 11/10/1993 | 13.3 |
| 12/16/1993 | 13.7 |
| 01/25/1994 | 13.5 |
| 03/01/1994 | 13.3 |
| 03/30/1994 | 13.2 |
| 04/19/1994 | 13.7 |
| 05/24/1994 | 14 |
| 08/24/1994 | 14.2 |
| 02/09/1995 | 12.9 |
| 05/11/1995 | 13.3 |
| 08/29/1995 | 11.6 |
| 11/27/1995 | 13.3 |
| 04/01/1996 | 13 |
| 07/10/1996 | 12.7 |
| 10/04/1996 | 12.8 |
| 01/02/1997 | 13.2 |
| 04/01/1997 | 13.3 |
| 07/15/1997 | 11.5 |
| 10/09/1997 | 9.8 |
| 11/12/1997 | 11.1 |
| 12/10/1997 | 11 |
| 01/03/1998 | 11 |
| 04/28/1998 | 11.52 |
| 04/23/2001 | 12.5 |
| 07/09/1998 | 11.3 |
| 10/02/1998 | 11.5 |
| 01/19/1999 | 12.2 |
| 04/09/1999 | 12.1 |
| 07/09/1999 | 12.1 |
| 10/07/1999 | 12.1 |
| 01/12/2000 | 11.9 |
| 04/03/2000 | 11.8 |
| 07/07/2000 | 12.2 |
| 10/02/2000 | 12.2 |
| 01/04/2001 | 10.97 |
| 10/01/2001 | 12.5 |

## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

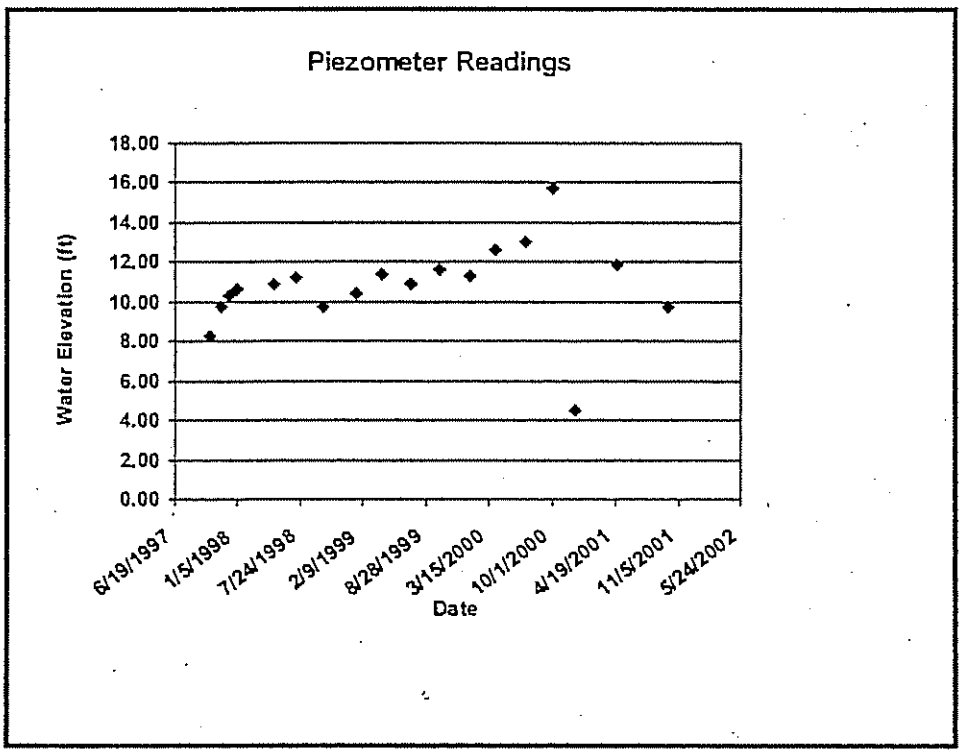
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1_IC_02C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630719 |
| Easting | 470004 |
| Screen El | -3.4 |
| Phase | P1 |
| Stratum | BL |




Readings

| | |
|---|---|
| 10/09/1997 | 8.3 |
| 11/12/1997 | 9.7 |
| 12/10/1997 | 10.3 |
| 01/03/1998 | 10.6 |
| 04/28/1998 | 10.92 |
| 04/23/2001 | 11.9 |
| 07/09/1998 | 11.2 |
| 10/02/1998 | 9.7 |
| 01/19/1999 | 10.4 |
| 04/09/1999 | 11.4 |
| 07/09/1999 | 10.9 |
| 10/07/1999 | 11.6 |
| 01/12/2000 | 11.3 |
| 04/03/2000 | 12.6 |
| 07/07/2000 | 13 |
| 12/12/2000 | 4.54 |
| 10/02/2000 | 15.7 |
| 10/01/2001 | 9.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

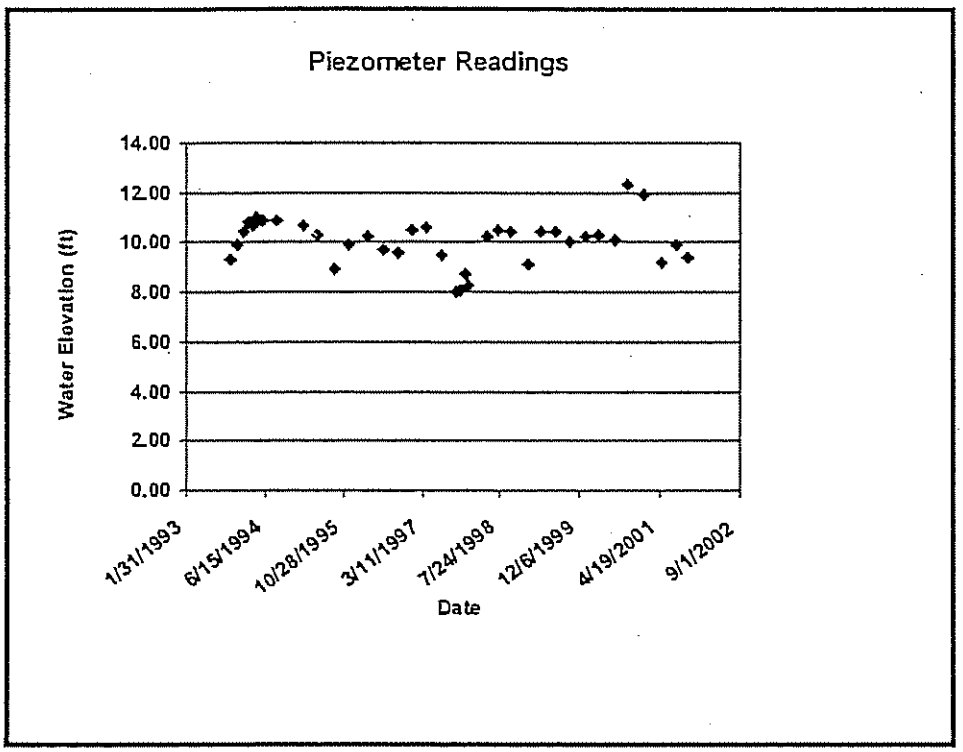
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1_IC_P3A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630983 |
| Easting | 470304 |
| Screen El | 7 |
| Phase | P1 |
| Stratum | BM |




Readings

| | |
|---|---|
| 11/10/1993 | 9.3 |
| 12/16/1993 | 9.9 |
| 01/25/1994 | 10.4 |
| 03/01/1994 | 10.8 |
| 03/30/1994 | 10.7 |
| 04/19/1994 | 11 |
| 05/24/1994 | 10.9 |
| 08/24/1994 | 10.9 |
| 02/09/1995 | 10.7 |
| 05/11/1995 | 10.3 |
| 08/29/1995 | 8.9 |
| 11/27/1995 | 9.9 |
| 04/01/1996 | 10.2 |
| 07/10/1996 | 9.7 |
| 10/04/1996 | 9.6 |
| 01/02/1997 | 10.5 |
| 04/01/1997 | 10.6 |
| 07/15/1997 | 9.5 |
| 10/09/1997 | 8 |
| 11/12/1997 | 8.1 |
| 12/10/1997 | 8.7 |
| 01/03/1998 | 8.3 |
| 04/28/1998 | 10.22 |
| 04/23/2001 | 9.2 |
| 07/09/1998 | 10.5 |
| 10/02/1998 | 10.4 |
| 01/19/1999 | 9.1 |
| 04/09/1999 | 10.4 |
| 07/09/1999 | 10.4 |
| 10/07/1999 | 10 |
| 01/12/2000 | 10.2 |
| 04/03/2000 | 10.3 |
| 07/07/2000 | 10.1 |
| 10/02/2000 | 12.3 |
| 01/04/2001 | 11.94 |
| 07/31/2001 | 9.9 |

## Installation Information

Date Instrument Was Installed: 01/01/1985 *GEOLOGY*

*Ground_Surface El*

*NOTES* NO EXACT DATE OF INSTALLATION AVAILABLE

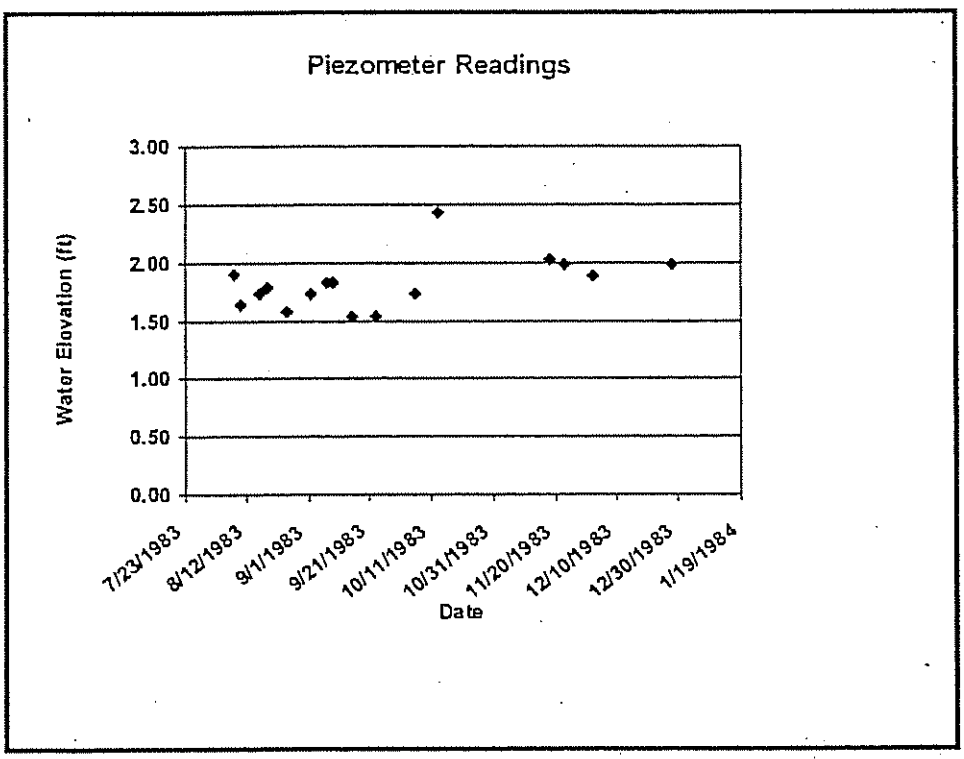
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1_MW_P107

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630196 |
| Easting | 469130 |
| Screen El | -33.7 |
| Phase | P1 |
| Stratum | C1 |




Readings

| | |
|---|---|
| 08/08/1983 | 1.9 |
| 08/10/1983 | 1.63 |
| 08/16/1983 | 1.73 |
| 08/19/1983 | 1.78 |
| 08/25/1983 | 1.58 |
| 09/02/1983 | 1.73 |
| 09/07/1983 | 1.83 |
| 09/09/1983 | 1.83 |
| 09/15/1983 | 1.53 |
| 09/23/1983 | 1.53 |
| 10/06/1983 | 1.73 |
| 10/13/1983 | 2.43 |
| 11/18/1983 | 2.03 |
| 11/23/1983 | 1.98 |
| 12/02/1983 | 1.88 |
| 12/28/1983 | 1.98 |

## Installation Information

Date Instrument Was Installed: 08/02/1983 *GEOLOGY* COLUMBIA

*Ground Surface El* 9.6

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 12.6 | 12.6 | -34.4 | -30.4 | 6.6 | | 10 |
| *Bottom* | 9.6 | -34.4 | -40.4 | -40.4 | -30.4 | | 7 |
| *Diam. (in)* | 4 | | 4 | | | | 0 |
| *Material* | STEEL | PVC | PVC .01 SLOT | | | | |

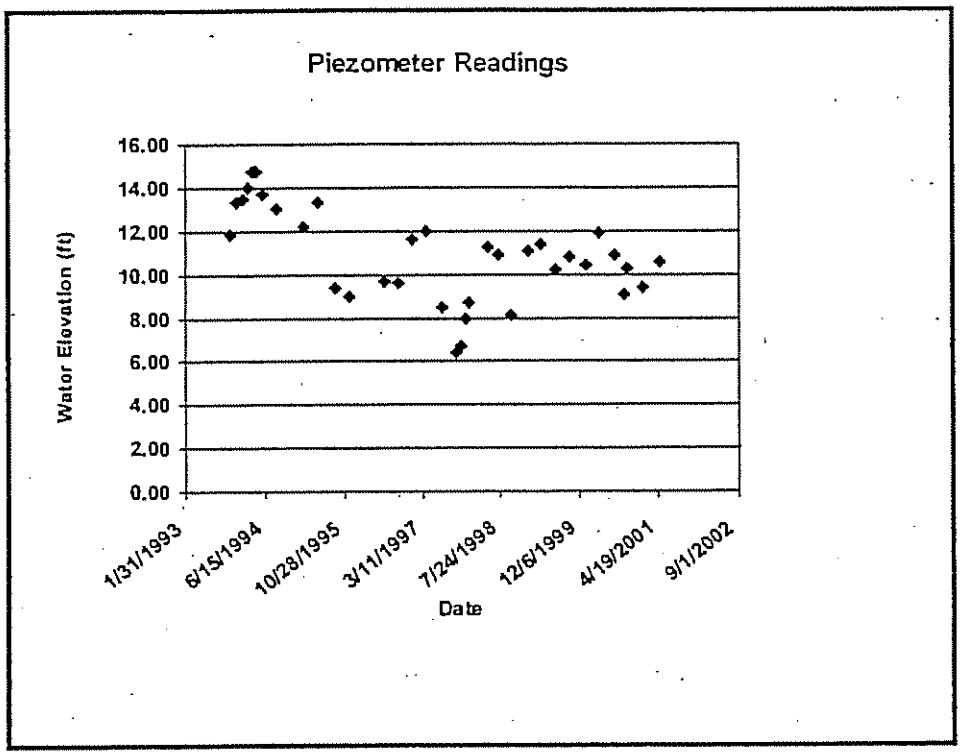
# SECTION 2

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 04B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 631189 |
| Easting | 470589 |
| Phase | P1 |
| Screen El | 4.3 |
| Stratum | BM |




Readings

| | |
|---|---|
| 11/10/1993 | 11.8 |
| 12/16/1993 | 13.3 |
| 01/25/1994 | 13.5 |
| 03/01/1994 | 14 |
| 03/30/1994 | 14.7 |
| 04/19/1994 | 14.7 |
| 05/24/1994 | 13.7 |
| 08/24/1994 | 13 |
| 02/09/1995 | 12.2 |
| 05/11/1995 | 13.3 |
| 08/29/1995 | 9.4 |
| 11/27/1995 | 9 |
| 07/10/1996 | 9.7 |
| 10/04/1996 | 9.6 |
| 01/02/1997 | 11.6 |
| 04/01/1997 | 12 |
| 07/15/1997 | 8.5 |
| 10/09/1997 | 6.4 |
| 11/12/1997 | 6.7 |
| 12/10/1997 | 8 |
| 01/03/1998 | 8.7 |
| 04/28/1998 | 11.22 |
| 04/23/2001 | 10.6 |
| 07/09/1998 | 10.9 |
| 10/02/1998 | 8.1 |
| 01/19/1999 | 11.1 |
| 04/09/1999 | 11.4 |
| 07/09/1999 | 10.2 |
| 10/07/1999 | 10.8 |
| 01/12/2000 | 10.4 |
| 04/03/2000 | 11.9 |
| 07/07/2000 | 10.9 |
| 09/11/2000 | 9.1 |
| 10/02/2000 | 10.3 |
| 01/04/2001 | 9.39 |
| 09/08/2000 | 9.06 |

## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

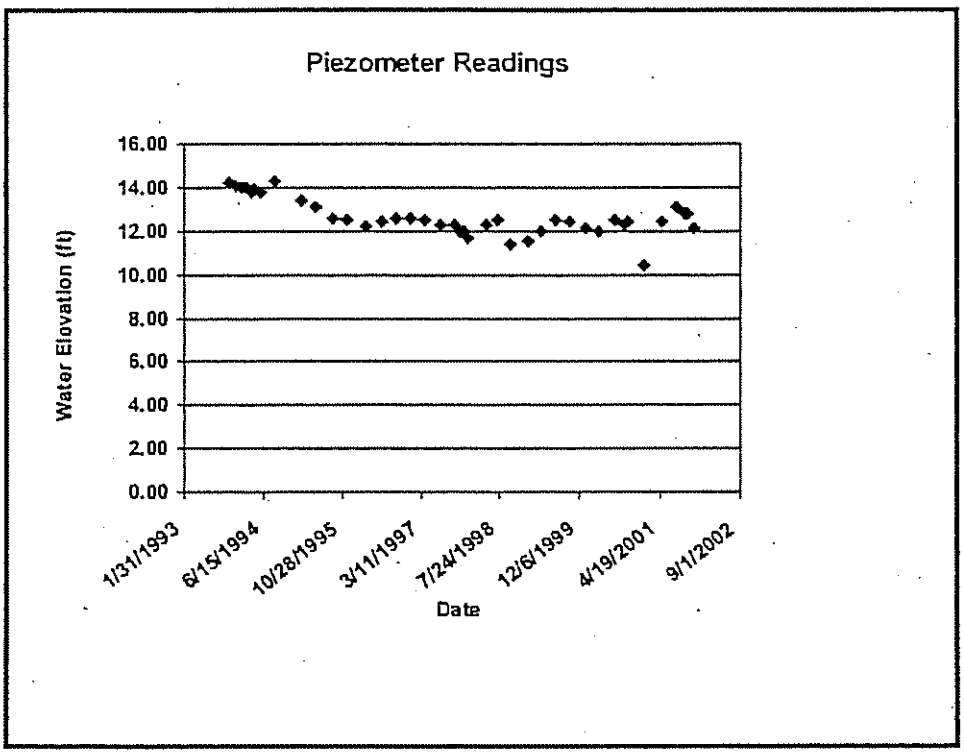
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 06B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 631091 |
| Easting | 470800 |
| Screen El | 2.1 |
| Phase | P1 |
| Stratum | BM |




Readings

| | |
|---|---|
| 11/10/1993 | 14.2 |
| 12/16/1993 | 14.1 |
| 01/25/1994 | 14 |
| 03/01/1994 | 14 |
| 03/30/1994 | 13.8 |
| 04/19/1994 | 13.9 |
| 05/24/1994 | 13.8 |
| 08/24/1994 | 14.3 |
| 02/09/1995 | 13.4 |
| 05/11/1995 | 13.1 |
| 08/29/1995 | 12.6 |
| 11/27/1995 | 12.5 |
| 04/01/1996 | 12.2 |
| 07/10/1996 | 12.4 |
| 10/04/1996 | 12.6 |
| 01/02/1997 | 12.6 |
| 04/01/1997 | 12.5 |
| 07/15/1997 | 12.3 |
| 10/09/1997 | 12.3 |
| 11/12/1997 | 12 |
| 12/10/1997 | 12 |
| 01/03/1998 | 11.7 |
| 04/28/1998 | 12.29 |
| 04/23/2001 | 12.4 |
| 07/09/1998 | 12.5 |
| 10/02/1998 | 11.4 |
| 01/19/1999 | 11.5 |
| 04/09/1999 | 12 |
| 07/09/1999 | 12.5 |
| 10/07/1999 | 12.4 |
| 01/12/2000 | 12.1 |
| 04/03/2000 | 12 |
| 07/07/2000 | 12.5 |
| 09/11/2000 | 12.3 |
| 10/02/2000 | 12.4 |
| 01/04/2001 | 10.43 |

## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

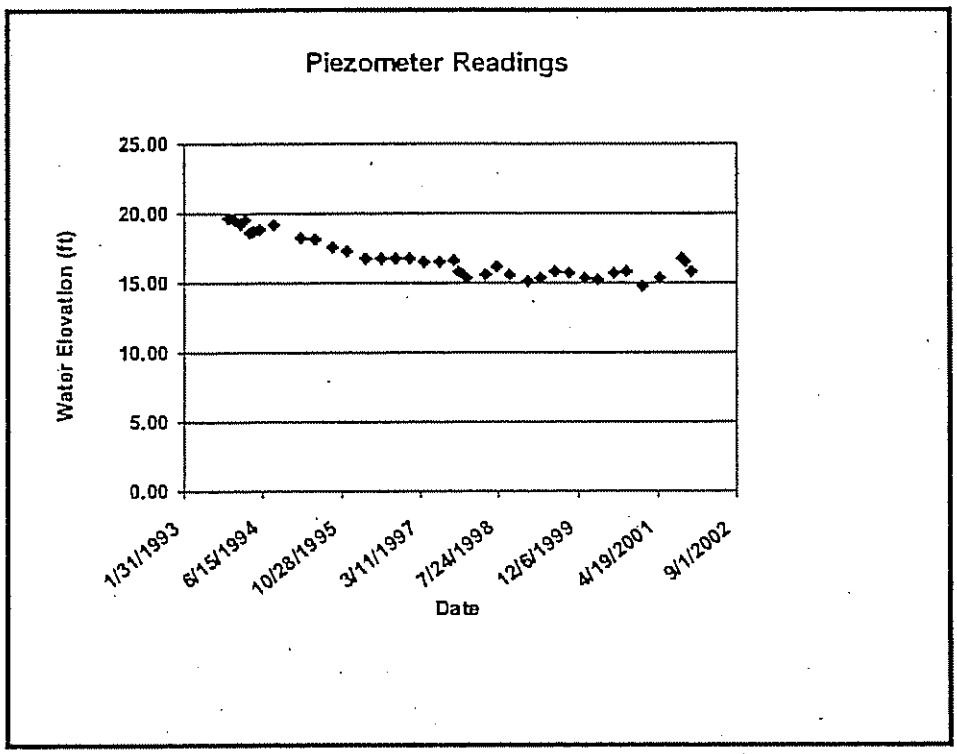
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 07B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630937 |
| Easting | 470986 |
| Screen El | -0.5 |
| Phase | P1 |
| Stratum | BM |




Readings

| | |
|---|---|
| 11/10/1993 | 19.6 |
| 12/16/1993 | 19.5 |
| 01/25/1994 | 19.2 |
| 03/01/1994 | 19.5 |
| 03/30/1994 | 18.6 |
| 04/19/1994 | 18.7 |
| 05/24/1994 | 18.8 |
| 08/24/1994 | 19.2 |
| 02/09/1995 | 18.2 |
| 05/11/1995 | 18.1 |
| 08/29/1995 | 17.6 |
| 11/27/1995 | 17.3 |
| 04/01/1996 | 16.7 |
| 07/10/1996 | 16.8 |
| 10/04/1996 | 16.8 |
| 01/02/1997 | 16.7 |
| 04/01/1997 | 16.5 |
| 07/15/1997 | 16.5 |
| 10/09/1997 | 16.6 |
| 11/12/1997 | 15.8 |
| 12/10/1997 | 15.6 |
| 01/03/1998 | 15.4 |
| 04/28/1998 | 15.53 |
| 04/23/2001 | 15.4 |
| 07/09/1998 | 16.2 |
| 10/02/1998 | 15.6 |
| 01/19/1999 | 15.1 |
| 04/09/1999 | 15.4 |
| 07/09/1999 | 15.8 |
| 10/07/1999 | 15.7 |
| 01/12/2000 | 15.3 |
| 04/03/2000 | 15.2 |
| 07/07/2000 | 15.7 |
| 10/02/2000 | 15.8 |
| 01/04/2001 | 14.81 |
| 09/20/2001 | 16.7 |

## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

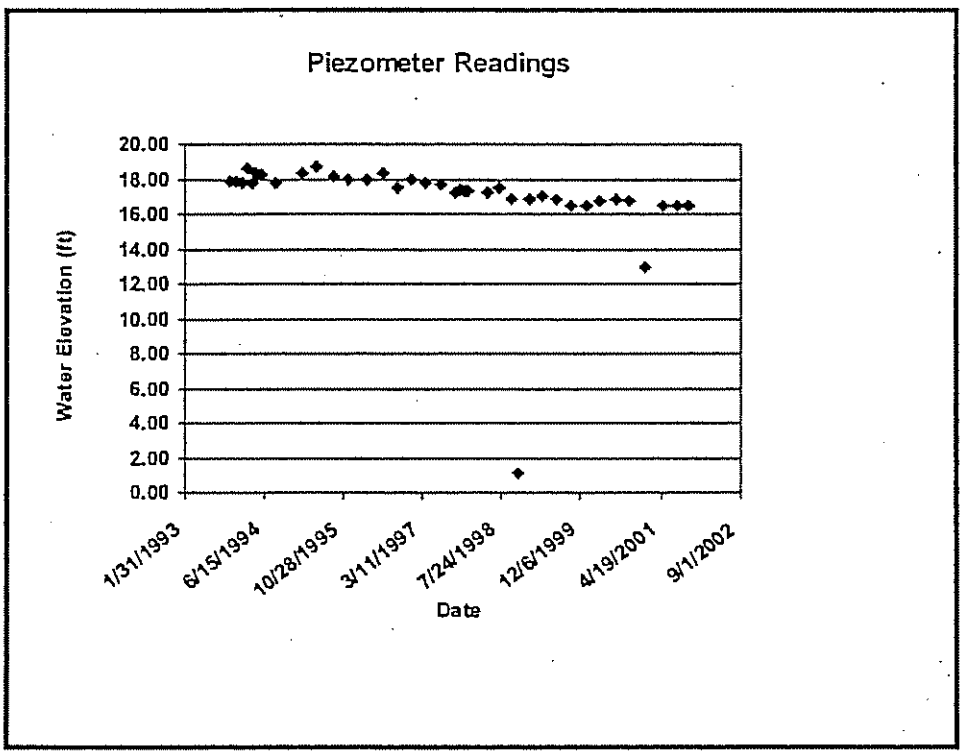
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (In)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1 IC 08B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630697 |
| Easting | 471220 |
| Phase | P1 |
| Screen El | -0.8 |
| Stratum | BM |




Readings

| | |
|---|---|
| 11/10/1993 | 17.9 |
| 12/16/1993 | 17.9 |
| 01/25/1994 | 17.8 |
| 03/01/1994 | 18.6 |
| 03/30/1994 | 17.8 |
| 04/19/1994 | 18.3 |
| 05/24/1994 | 18.2 |
| 08/24/1994 | 17.8 |
| 02/09/1995 | 18.3 |
| 05/11/1995 | 18.7 |
| 08/29/1995 | 18.1 |
| 11/27/1995 | 18 |
| 04/01/1996 | 18 |
| 07/10/1996 | 18.3 |
| 10/04/1996 | 17.5 |
| 01/02/1997 | 18 |
| 04/01/1997 | 17.8 |
| 07/15/1997 | 17.7 |
| 10/09/1997 | 17.2 |
| 11/12/1997 | 17.4 |
| 12/10/1997 | 17.3 |
| 01/03/1998 | 17.3 |
| 04/28/1998 | 17.18 |
| 11/12/1998 | 1.1 |
| 04/23/2001 | 16.5 |
| 07/09/1998 | 17.5 |
| 10/02/1998 | 16.8 |
| 01/19/1999 | 16.8 |
| 04/09/1999 | 17 |
| 07/09/1999 | 16.8 |
| 10/07/1999 | 16.5 |
| 01/12/2000 | 16.5 |
| 04/03/2000 | 16.7 |
| 07/07/2000 | 16.8 |
| 10/02/2000 | 16.7 |
| 01/04/2001 | 12.91 |

## Installation Information

Date Instrument Was Installed: 04/01/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED IN MARCH-APRIL 1991

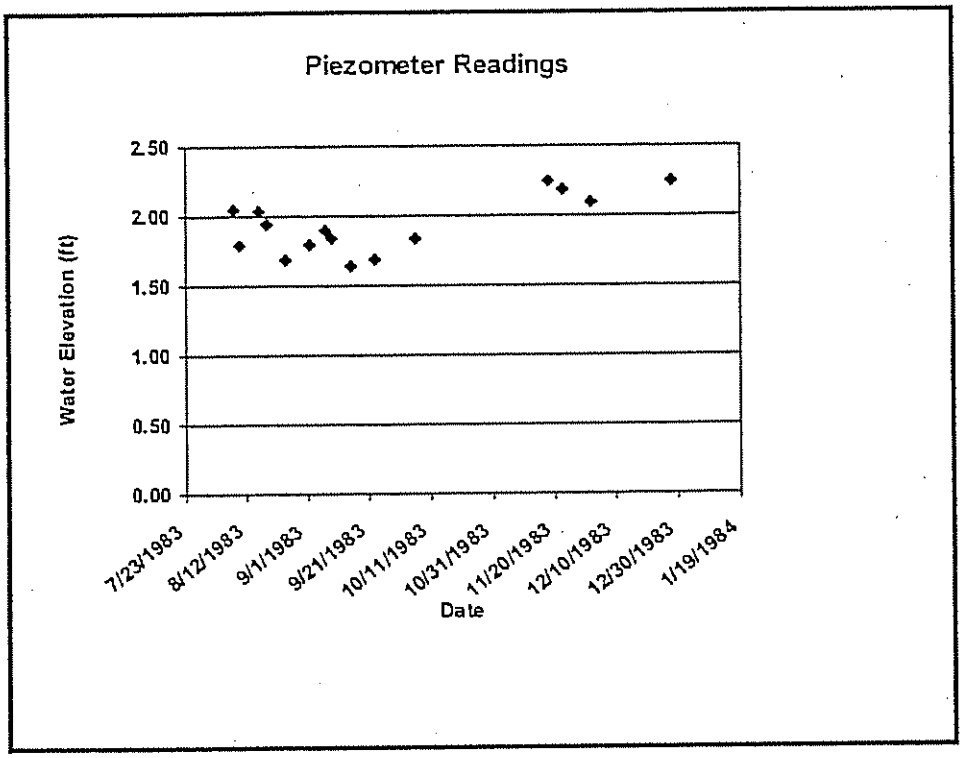
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P1_MW_P100

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 631436 |
| Easting | 470764 |
| Phase | P1 |
| Screen El | -41 |
| Stratum | P1 |




Readings

| | |
|---|---|
| 08/08/1983 | 2.05 |
| 08/10/1983 | 1.79 |
| 08/16/1983 | 2.04 |
| 08/19/1983 | 1.94 |
| 08/25/1983 | 1.69 |
| 09/02/1983 | 1.79 |
| 09/07/1983 | 1.89 |
| 09/09/1983 | 1.84 |
| 09/15/1983 | 1.64 |
| 09/23/1983 | 1.69 |
| 10/06/1983 | 1.84 |
| 11/18/1983 | 2.24 |
| 11/23/1983 | 2.19 |
| 12/02/1983 | 2.09 |
| 12/28/1983 | 2.24 |

## Installation Information

Date Instrument Was Installed: 08/03/1983 *GEOLOGY*

*Ground Surface El* 15.3

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 18.3 | 18.3 | -30.7 | -24.7 | 12.3 | | 15 |
| *Bottom* | 15.3 | -30.7 | -40.7 | -40.7 | -24.7 | | 12 |
| *Diam. (in)* | 4 | | 4 | | | | |
| *Material* | STEEL | PVC | #10 SLOT | | BENTONITE | | |

# PHASE II

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_05A

Show/Hide Maintenance Data

Northing

Easting

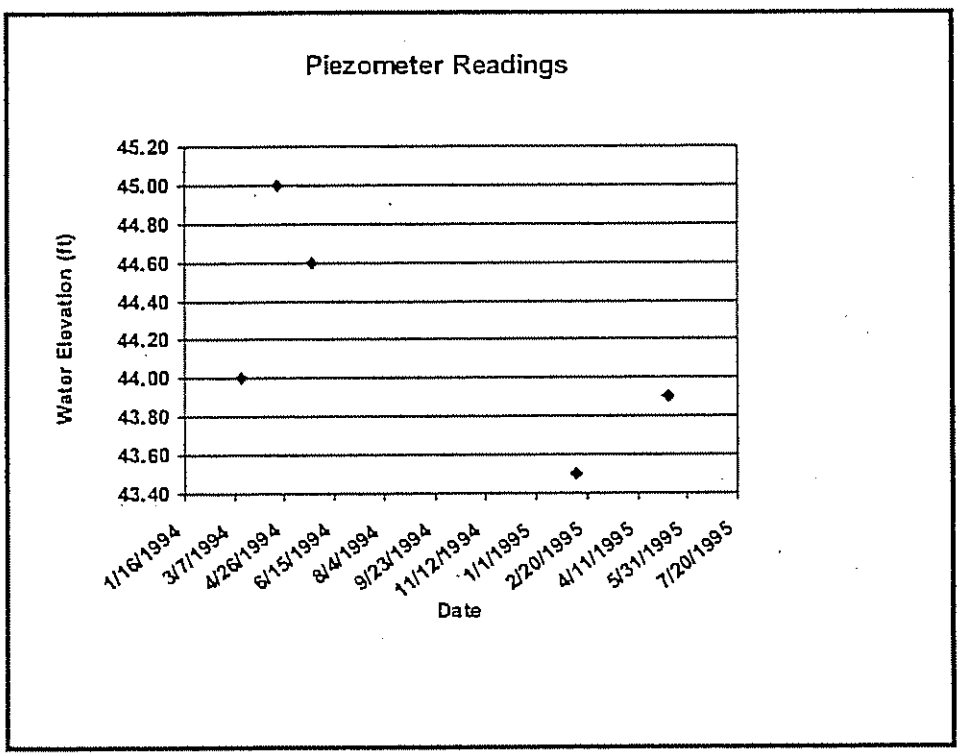
Phase

Screen El

Stratum

Readings

| | |
|---|---|
| 03/14/1994 | 44 |
| 04/19/1994 | 45 |
| 05/24/1994 | 44.6 |
| 02/09/1995 | 43.5 |
| 05/11/1995 | 43.9 |




## Installation Information

## Maintenance Data

INST_ID: P2_PZ_05A

MAIN_TYPE: New Piezome

NOTES

DATE

Ground Surf. EL

COUNT

RISER_LENGTH (ft)

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 45 | |
| Depth of Casing (ft) | -5 | |

☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_05D

Show/Hide Maintenance Data

Northing

Easting

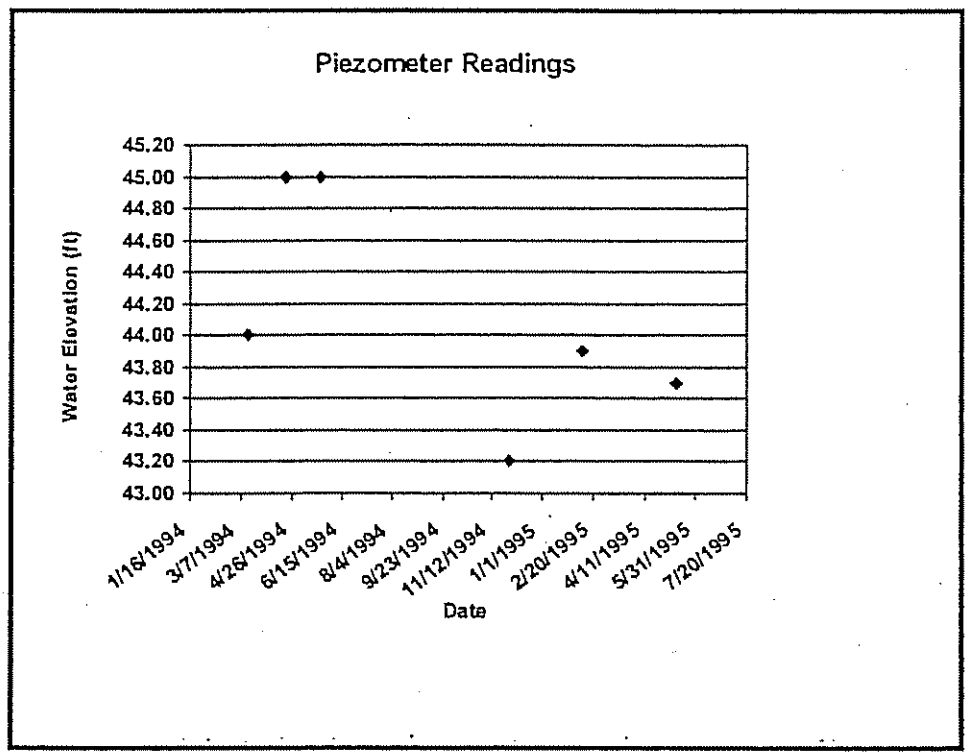
Phase

Screen El

Stratum

Readings

| | |
|---|---|
| 03/14/1994 | 44 |
| 04/19/1994 | 45 |
| 05/24/1994 | 45 |
| 11/29/1994 | 43.2 |
| 02/09/1995 | 43.9 |
| 05/11/1995 | 43.7 |




## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P2_PZ_05D | MAIN_TYPE | New Piezome | NOTES | |
| DATE | 9/10/1990 | Ground Surf. EL | | | |
| COUNT | | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 45 | |
| Depth of Casing (ft) | 14 | |

☐ Abandoned

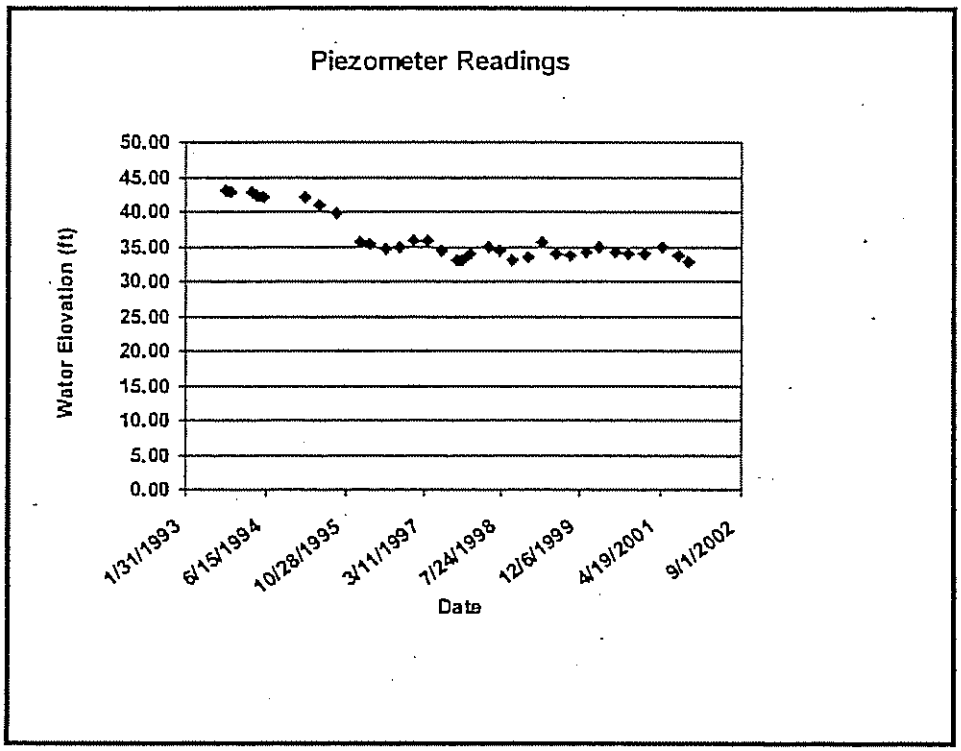
# SECTION 1

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_01A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 630281 | | |
| Easting | 472261 | Screen El | -10 |
| Phase | P2 | Stratum | BL |




Readings

| | |
|---|---|
| 10/04/1993 | 43.1 |
| 11/10/1993 | 42.9 |
| 03/14/1994 | 42.7 |
| 04/19/1994 | 42.3 |
| 05/24/1994 | 42.2 |
| 02/09/1995 | 42 |
| 05/11/1995 | 41 |
| 08/29/1995 | 39.8 |
| 01/27/1996 | 35.6 |
| 04/02/1996 | 35.4 |
| 07/10/1996 | 34.6 |
| 10/10/1996 | 35 |
| 01/02/1997 | 35.7 |
| 04/01/1997 | 35.7 |
| 07/01/1997 | 34.4 |
| 10/10/1997 | 33 |
| 11/12/1997 | 33 |
| 01/05/1998 | 33.9 |
| 04/28/1998 | 34.9 |
| 04/24/2001 | 34.8 |
| 07/09/1998 | 34.5 |
| 10/02/1998 | 33.1 |
| 01/05/1999 | 33.6 |
| 04/09/1999 | 35.6 |
| 07/09/1999 | 34 |
| 10/07/1999 | 33.7 |
| 01/12/2000 | 34.3 |
| 04/03/2000 | 35 |
| 07/07/2000 | 34.1 |
| 10/02/2000 | 33.9 |
| 01/04/2001 | 33.9 |
| 08/02/2001 | 33.8 |
| 10/05/2001 | 32.8 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

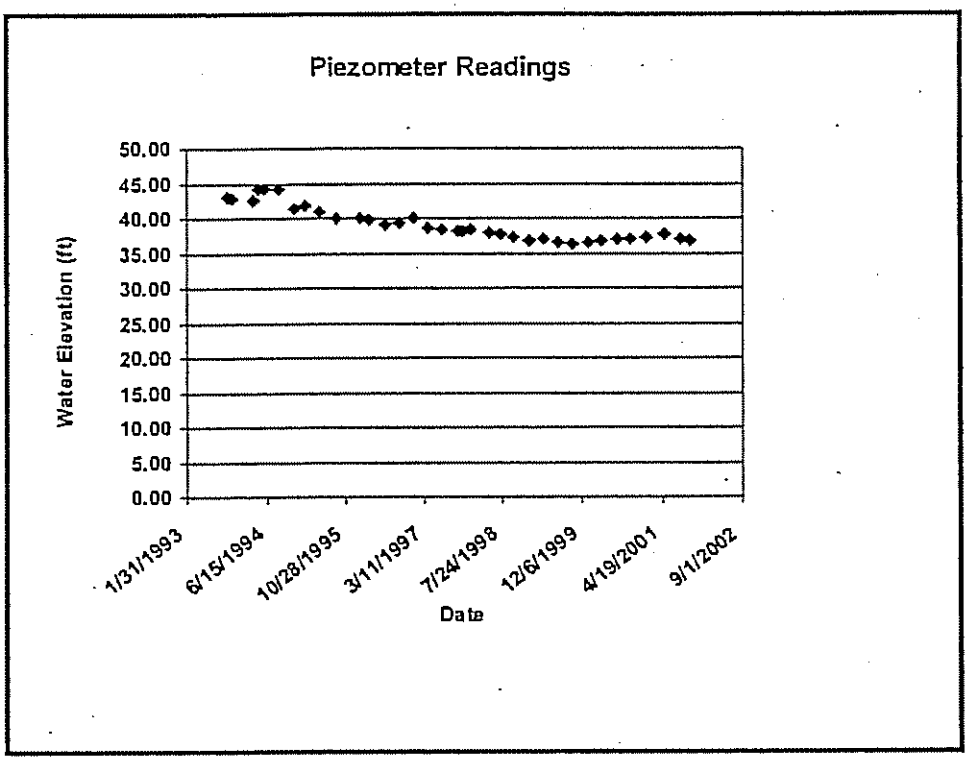
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2 PZ 01B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630281 |
| Easting | 472264 |
| Phase | P2 |
| Screen El | 0.8 |
| Stratum | BM |




Readings

| | |
|---|---|
| 10/04/1993 | 43 |
| 11/10/1993 | 42.7 |
| 03/14/1994 | 42.6 |
| 04/19/1994 | 44.3 |
| 05/24/1994 | 44.3 |
| 08/23/1994 | 44.2 |
| 11/29/1994 | 41.4 |
| 02/09/1995 | 41.9 |
| 05/11/1995 | 40.9 |
| 08/29/1995 | 40 |
| 01/27/1996 | 40.1 |
| 04/02/1996 | 39.8 |
| 07/10/1996 | 39.1 |
| 10/10/1996 | 39.4 |
| 01/02/1997 | 39.9 |
| 04/01/1997 | 38.7 |
| 07/01/1997 | 38.4 |
| 10/10/1997 | 38.1 |
| 11/12/1997 | 38.2 |
| 01/05/1998 | 38.3 |
| 04/28/1998 | 37.84 |
| 04/24/2001 | 37.6 |
| 07/09/1998 | 37.6 |
| 10/02/1998 | 37.1 |
| 01/05/1999 | 36.7 |
| 04/09/1999 | 36.9 |
| 07/09/1999 | 36.5 |
| 10/07/1999 | 36.2 |
| 01/12/2000 | 36.4 |
| 04/03/2000 | 36.8 |
| 07/07/2000 | 36.9 |
| 10/02/2000 | 37 |
| 01/04/2001 | 37.2 |
| 08/02/2001 | 36.9 |
| 10/05/2001 | 36.8 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

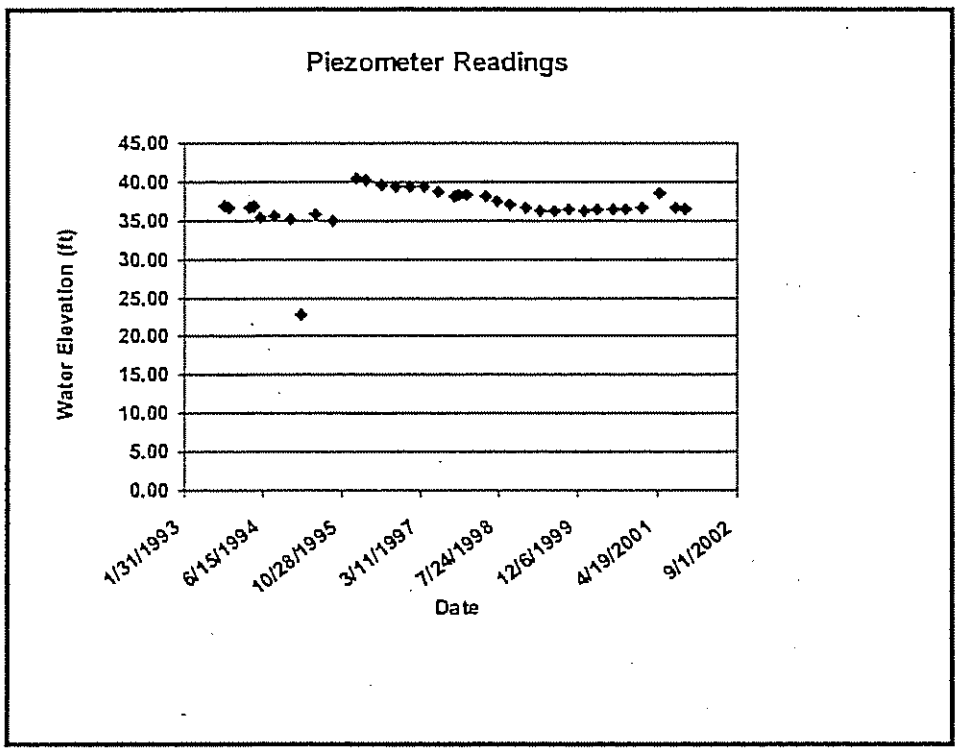
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2 PZ 01C

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 630266 | | |
| Easting | 472284 | Screen El | 19.5 |
| Phase | P2 | Stratum | BU |




Readings

| | |
|---|---|
| 10/04/1993 | 36.8 |
| 11/10/1993 | 36.6 |
| 03/14/1994 | 36.7 |
| 04/19/1994 | 36.9 |
| 05/24/1994 | 35.3 |
| 08/23/1994 | 35.6 |
| 11/29/1994 | 35.2 |
| 02/09/1995 | 22.8 |
| 05/11/1995 | 35.8 |
| 08/29/1995 | 34.9 |
| 01/27/1996 | 40.3 |
| 04/02/1996 | 40.2 |
| 07/10/1996 | 39.6 |
| 10/10/1996 | 39.4 |
| 01/02/1997 | 39.4 |
| 04/01/1997 | 39.3 |
| 07/01/1997 | 38.7 |
| 10/10/1997 | 38.1 |
| 11/12/1997 | 38.2 |
| 01/05/1998 | 38.2 |
| 04/28/1998 | 38.08 |
| 04/24/2001 | 38.5 |
| 07/09/1998 | 37.5 |
| 10/02/1998 | 37.1 |
| 01/05/1999 | 36.7 |
| 04/09/1999 | 36.2 |
| 07/09/1999 | 36.3 |
| 10/07/1999 | 36.5 |
| 01/12/2000 | 36.2 |
| 04/03/2000 | 36.4 |
| 07/07/2000 | 36.4 |
| 10/02/2000 | 36.5 |
| 01/04/2001 | 36.7 |
| 08/02/2001 | 36.7 |
| 10/05/2001 | 36.5 |

## Installation Information

Date Instrument Was Installed: 09/10/1990 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 9/7/90 AND 9/10/90

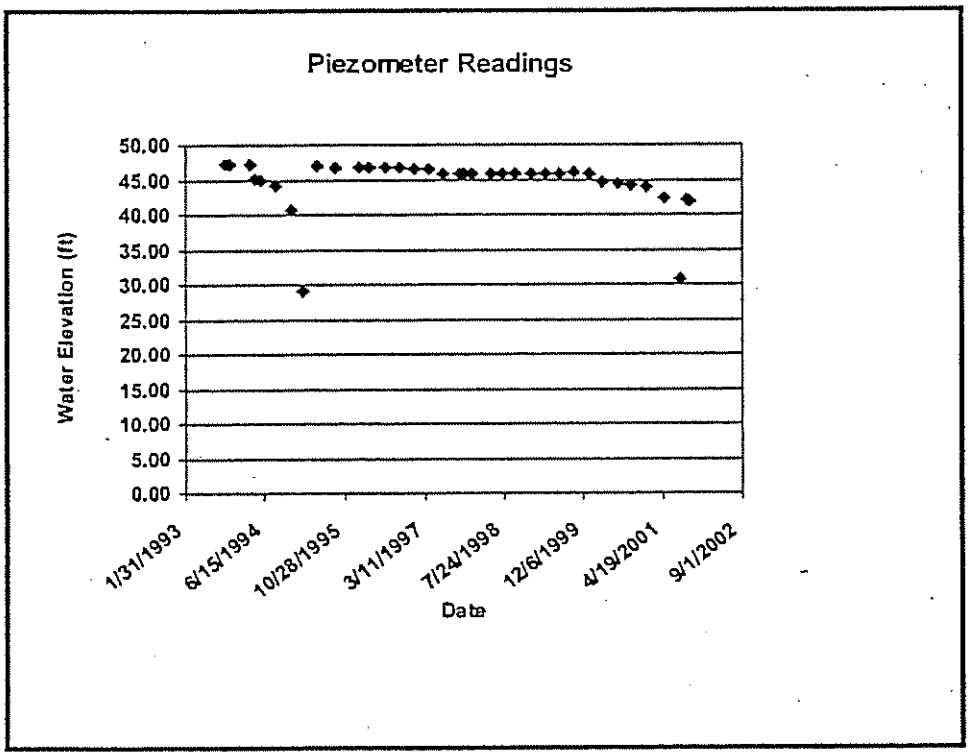
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2 PZ 01D

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630265 |
| Easting | 472288 |
| Screen El | 10.1 |
| Phase | P2 |
| Stratum | BM |




Readings

| | |
|---|---|
| 10/04/1993 | 47.2 |
| 11/10/1993 | 47.2 |
| 03/14/1994 | 47.2 |
| 04/19/1994 | 45.2 |
| 05/24/1994 | 45 |
| 08/23/1994 | 44.3 |
| 11/29/1994 | 40.7 |
| 02/09/1995 | 29.1 |
| 05/11/1995 | 46.9 |
| 04/24/2001 | 42.4 |
| 08/29/1995 | 46.8 |
| 01/27/1996 | 46.8 |
| 04/02/1996 | 46.8 |
| 07/10/1996 | 46.8 |
| 10/10/1996 | 46.8 |
| 01/02/1997 | 46.4 |
| 04/01/1997 | 46.4 |
| 07/01/1997 | 45.9 |
| 10/10/1997 | 45.8 |
| 11/12/1997 | 45.9 |
| 01/05/1998 | 45.9 |
| 04/28/1998 | 45.91 |
| 07/09/1998 | 45.9 |
| 10/02/1998 | 45.9 |
| 01/05/1999 | 45.9 |
| 04/09/1999 | 45.9 |
| 07/09/1999 | 45.9 |
| 10/07/1999 | 46 |
| 01/12/2000 | 45.7 |
| 04/03/2000 | 44.6 |
| 07/07/2000 | 44.4 |
| 10/02/2000 | 44.3 |
| 01/04/2001 | 43.9 |
| 08/02/2001 | 30.8 |
| 09/20/2001 | 42.2 |
| 10/05/2001 | 41.8 |

## Installation Information

Date Instrument Was Installed: 09/10/1990 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 9/7/90 AND 9/10/90

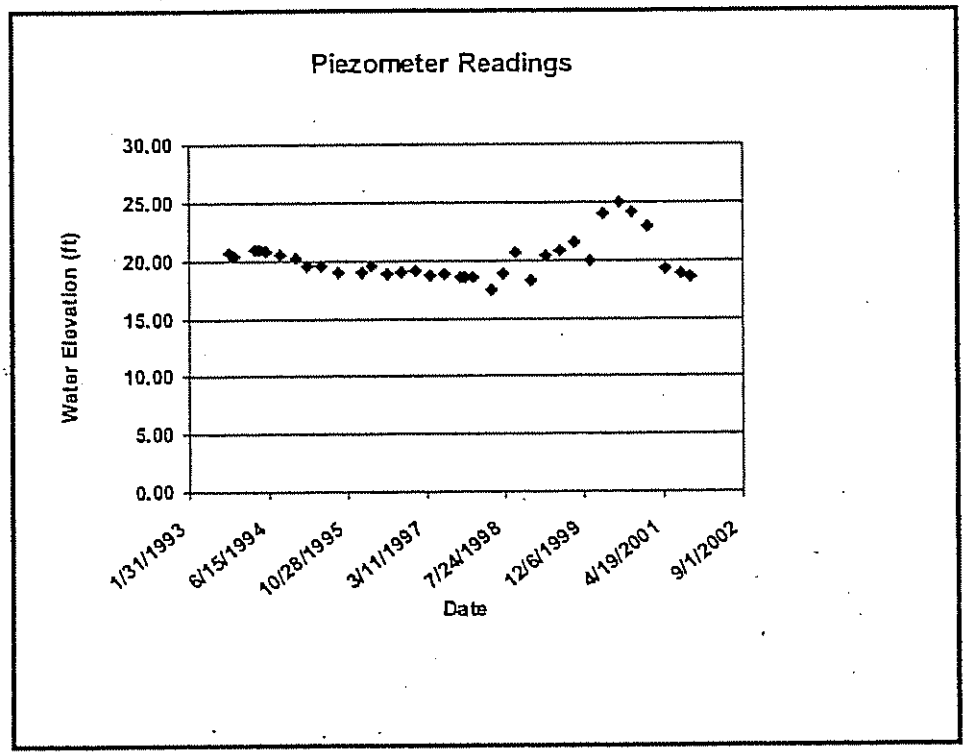
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_02A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630389 |
| Easting | 472012 |
| Phase | P2 |
| Screen El | -8.7 |
| Stratum | BL |




Readings

| | |
|---|---|
| 04/25/2001 | 19.2 |
| 10/04/1993 | 20.7 |
| 11/10/1993 | 20.4 |
| 03/14/1994 | 21 |
| 04/19/1994 | 20.9 |
| 05/24/1994 | 20.8 |
| 08/23/1994 | 20.5 |
| 11/29/1994 | 20.2 |
| 02/09/1995 | 19.6 |
| 05/11/1995 | 19.5 |
| 08/29/1995 | 19 |
| 01/27/1996 | 19 |
| 04/02/1996 | 19.5 |
| 07/10/1996 | 18.9 |
| 10/10/1996 | 19 |
| 01/02/1997 | 19.1 |
| 04/01/1997 | 18.7 |
| 07/01/1997 | 18.9 |
| 10/10/1997 | 18.6 |
| 11/12/1997 | 18.6 |
| 01/05/1998 | 18.6 |
| 04/28/1998 | 17.46 |
| 07/09/1998 | 18.8 |
| 10/02/1998 | 20.6 |
| 01/05/1999 | 18.3 |
| 04/09/1999 | 20.4 |
| 07/09/1999 | 20.8 |
| 10/07/1999 | 21.5 |
| 01/12/2000 | 19.9 |
| 04/03/2000 | 24 |
| 07/07/2000 | 25 |
| 10/02/2000 | 24.1 |
| 01/04/2001 | 22.9 |
| 08/02/2001 | 18.8 |
| 10/05/2001 | 18.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

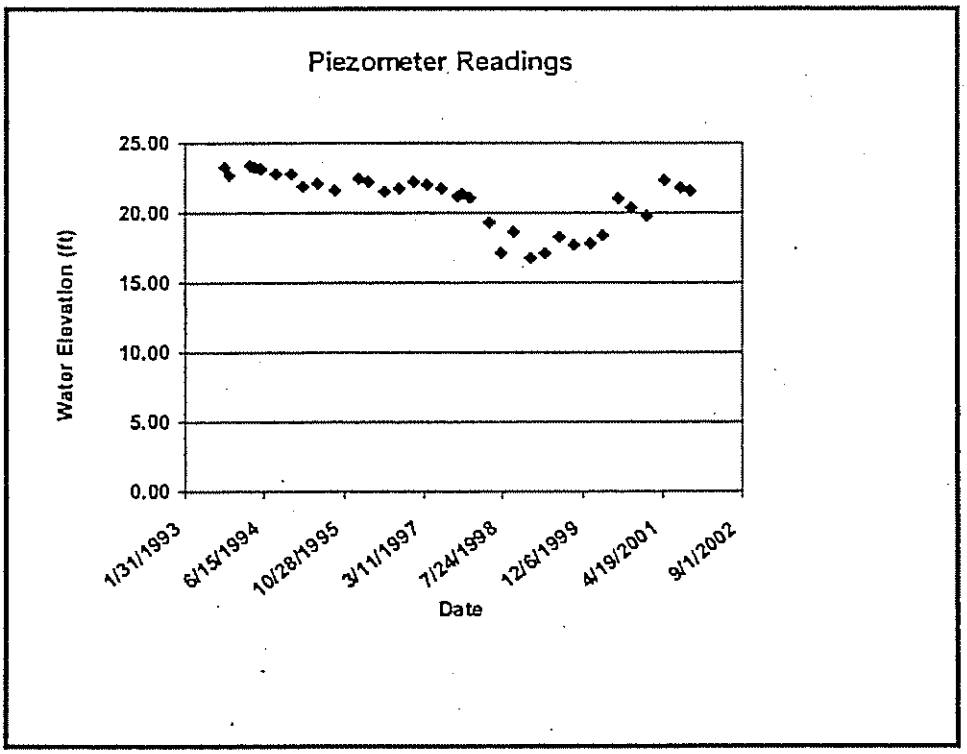
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_02B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630407 |
| Easting | 471981 |
| Phase | P2 |
| Screen El | 5.3 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 22.3 |
| 10/04/1993 | 23.2 |
| 11/10/1993 | 22.7 |
| 03/14/1994 | 23.4 |
| 04/19/1994 | 23.2 |
| 05/24/1994 | 23.1 |
| 08/23/1994 | 22.8 |
| 11/29/1994 | 22.8 |
| 02/09/1995 | 21.9 |
| 05/11/1995 | 22.1 |
| 08/29/1995 | 21.6 |
| 01/27/1996 | 22.5 |
| 04/02/1996 | 22.2 |
| 07/10/1996 | 21.5 |
| 10/10/1996 | 21.8 |
| 01/02/1997 | 22.2 |
| 04/01/1997 | 22 |
| 07/01/1997 | 21.7 |
| 10/10/1997 | 21.2 |
| 11/12/1997 | 21.4 |
| 01/05/1998 | 21.1 |
| 04/28/1998 | 19.29 |
| 07/09/1998 | 17.1 |
| 10/02/1998 | 18.6 |
| 01/05/1999 | 16.7 |
| 04/09/1999 | 17.1 |
| 07/09/1999 | 18.2 |
| 10/07/1999 | 17.7 |
| 01/12/2000 | 17.8 |
| 04/03/2000 | 18.4 |
| 07/07/2000 | 21.1 |
| 10/02/2000 | 20.3 |
| 01/04/2001 | 19.8 |
| 08/02/2001 | 21.7 |
| 10/05/2001 | 21.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

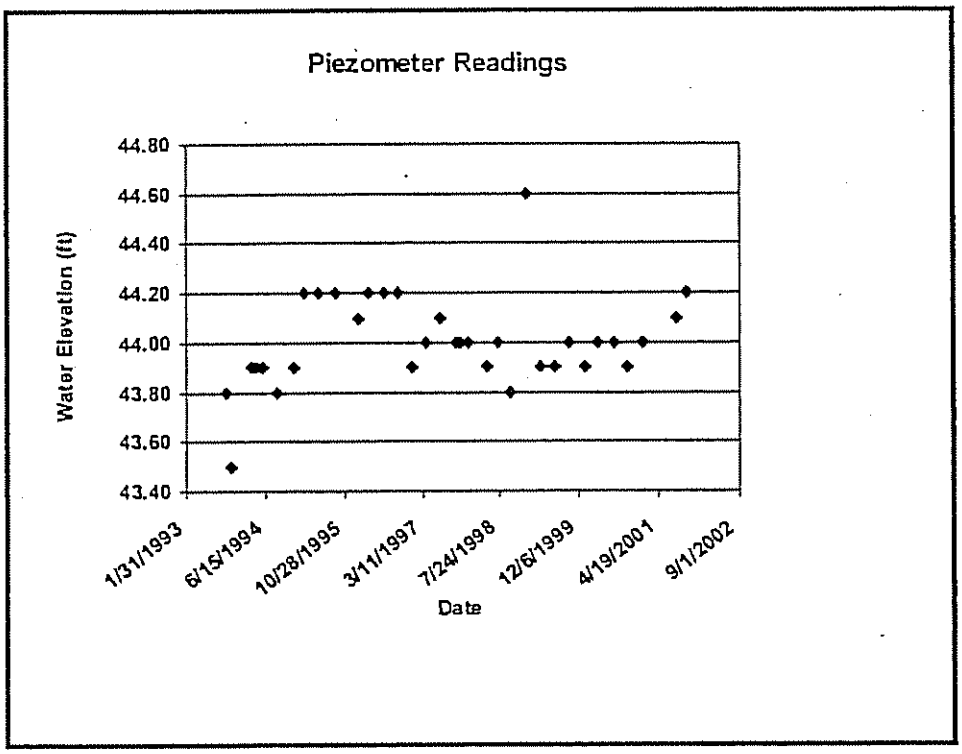
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_07A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 630325 | | |
| Easting | 472197 | Screen El | 1.4 |
| Phase | P2 | Stratum | BM |




Readings

| | |
|---|---|
| 10/04/1993 | 43.8 |
| 11/10/1993 | 43.5 |
| 03/14/1994 | 43.9 |
| 04/19/1994 | 43.9 |
| 05/24/1994 | 43.9 |
| 08/23/1994 | 43.8 |
| 11/29/1994 | 43.9 |
| 02/09/1995 | 44.2 |
| 05/11/1995 | 44.2 |
| 08/29/1995 | 44.2 |
| 01/27/1996 | 44.1 |
| 04/02/1996 | 44.2 |
| 07/10/1996 | 44.2 |
| 10/10/1996 | 44.2 |
| 01/02/1997 | 43.9 |
| 04/01/1997 | 44 |
| 07/01/1997 | 44.1 |
| 10/10/1997 | 44 |
| 11/12/1997 | 44 |
| 01/05/1998 | 44 |
| 04/28/1998 | 43.9 |
| 07/09/1998 | 44 |
| 10/02/1998 | 43.8 |
| 01/05/1999 | 44.6 |
| 04/09/1999 | 43.9 |
| 07/09/1999 | 43.9 |
| 10/07/1999 | 44 |
| 01/12/2000 | 43.9 |
| 04/03/2000 | 44 |
| 07/07/2000 | 44 |
| 10/02/2000 | 43.9 |
| 01/04/2001 | 44 |
| 08/02/2001 | 44.1 |
| 10/05/2001 | 44.2 |

## Installation Information

Date Instrument Was Installed: 10/10/1990 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 9/26/90 AND 10/10/90

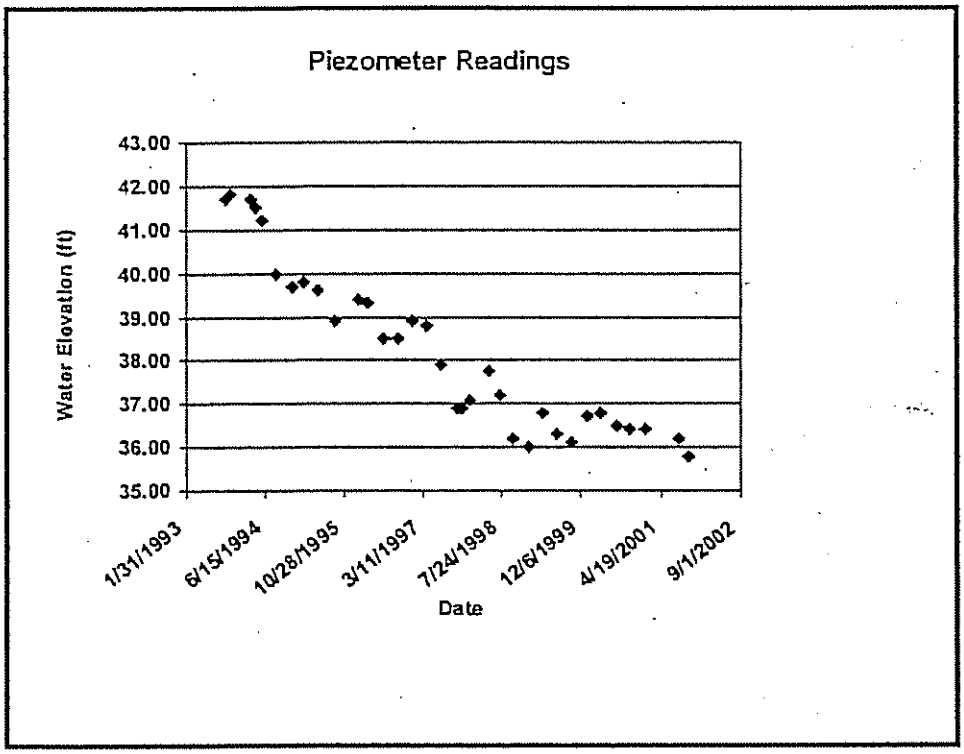
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2 PZ 07B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630332 |
| Easting | 472184 |
| Screen El | 15 |
| Phase | P2 |
| Stratum | BU |




Readings

| | |
|---|---|
| 10/04/1993 | 41.7 |
| 11/10/1993 | 41.8 |
| 03/14/1994 | 41.7 |
| 04/19/1994 | 41.5 |
| 05/24/1994 | 41.2 |
| 08/23/1994 | 40 |
| 11/29/1994 | 39.7 |
| 02/09/1995 | 39.8 |
| 05/11/1995 | 39.6 |
| 08/29/1995 | 38.9 |
| 01/27/1996 | 39.4 |
| 04/02/1996 | 39.3 |
| 07/10/1996 | 38.5 |
| 10/10/1996 | 38.5 |
| 01/02/1997 | 38.9 |
| 04/01/1997 | 38.8 |
| 07/01/1997 | 37.9 |
| 10/10/1997 | 36.9 |
| 11/12/1997 | 36.9 |
| 01/05/1998 | 37.1 |
| 04/28/1998 | 37.75 |
| 07/09/1998 | 37.2 |
| 10/02/1998 | 36.2 |
| 01/05/1999 | 36 |
| 04/09/1999 | 36.8 |
| 07/09/1999 | 36.3 |
| 10/07/1999 | 36.1 |
| 01/12/2000 | 36.7 |
| 04/03/2000 | 36.8 |
| 07/07/2000 | 36.5 |
| 10/02/2000 | 36.4 |
| 01/04/2001 | 36.4 |
| 08/02/2001 | 36.2 |
| 10/05/2001 | 35.8 |

## Installation Information

Date Instrument Was Installed: 10/10/1990 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 9/26/90 AND 10/10/90

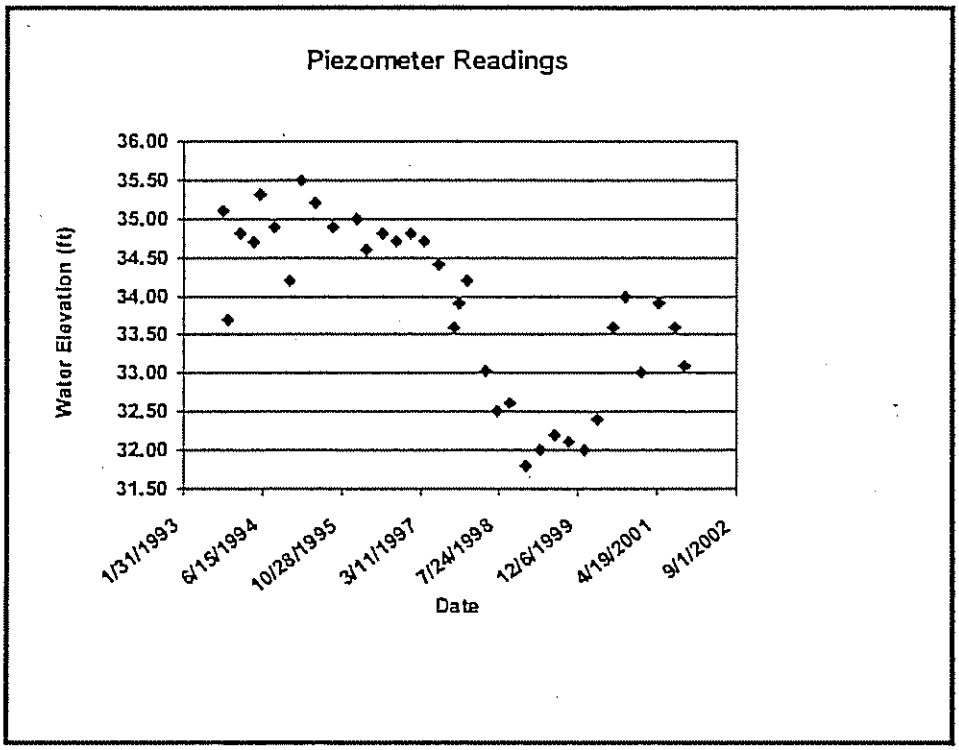
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2 PZ 08A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630356 |
| Easting | 472318 |
| Phase | P2 |
| Screen El | 8.5 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 33.9 |
| 10/04/1993 | 35.1 |
| 11/10/1993 | 33.7 |
| 01/25/1994 | 34.8 |
| 04/19/1994 | 34.7 |
| 05/24/1994 | 35.3 |
| 08/23/1994 | 34.9 |
| 11/29/1994 | 34.2 |
| 02/09/1995 | 35.5 |
| 05/11/1995 | 35.2 |
| 08/29/1995 | 34.9 |
| 01/27/1996 | 35 |
| 04/02/1996 | 34.6 |
| 07/10/1996 | 34.8 |
| 10/10/1996 | 34.7 |
| 01/02/1997 | 34.8 |
| 04/01/1997 | 34.7 |
| 07/01/1997 | 34.4 |
| 10/10/1997 | 33.6 |
| 11/12/1997 | 33.9 |
| 01/05/1998 | 34.2 |
| 04/28/1998 | 33.03 |
| 07/09/1998 | 32.5 |
| 10/02/1998 | 32.6 |
| 01/05/1999 | 31.8 |
| 04/09/1999 | 32 |
| 07/09/1999 | 32.2 |
| 10/07/1999 | 32.1 |
| 01/12/2000 | 32 |
| 04/03/2000 | 32.4 |
| 07/07/2000 | 33.6 |
| 10/02/2000 | 34 |
| 01/04/2001 | 33 |
| 08/02/2001 | 33.6 |
| 10/05/2001 | 33.1 |

## Installation Information

Date Instrument Was Installed: 01/21/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 1/17/91 AND 1/21/91

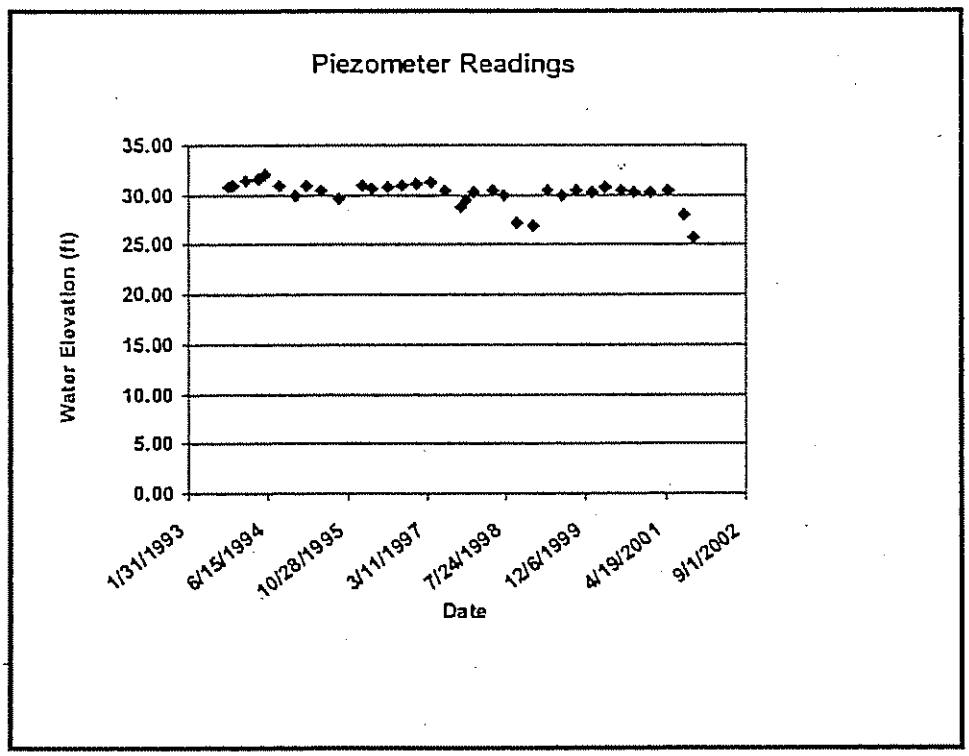
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_08B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630346 |
| Easting | 472329 |
| Screen El | 22.6 |
| Phase | P2 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 30.4 |
| 10/04/1993 | 30.8 |
| 11/10/1993 | 31 |
| 01/25/1994 | 31.4 |
| 04/19/1994 | 31.6 |
| 05/24/1994 | 32 |
| 08/23/1994 | 30.9 |
| 11/29/1994 | 30 |
| 02/09/1995 | 30.9 |
| 05/11/1995 | 30.4 |
| 08/29/1995 | 29.7 |
| 01/27/1996 | 30.9 |
| 04/02/1996 | 30.6 |
| 07/10/1996 | 30.7 |
| 10/10/1996 | 31 |
| 01/02/1997 | 31.1 |
| 04/01/1997 | 31.2 |
| 07/01/1997 | 30.5 |
| 10/10/1997 | 28.8 |
| 11/12/1997 | 29.4 |
| 01/05/1998 | 30.2 |
| 04/28/1998 | 30.42 |
| 07/09/1998 | 30 |
| 10/02/1998 | 27.2 |
| 01/05/1999 | 26.8 |
| 04/09/1999 | 30.4 |
| 07/09/1999 | 29.9 |
| 10/07/1999 | 30.5 |
| 01/12/2000 | 30.2 |
| 04/03/2000 | 30.8 |
| 07/07/2000 | 30.5 |
| 10/02/2000 | 30.3 |
| 01/04/2001 | 30.2 |
| 08/02/2001 | 28 |
| 10/05/2001 | 25.7 |

## Installation Information

Date Instrument Was Installed: 01/21/1991 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 1/17/91 AND 1/21/91

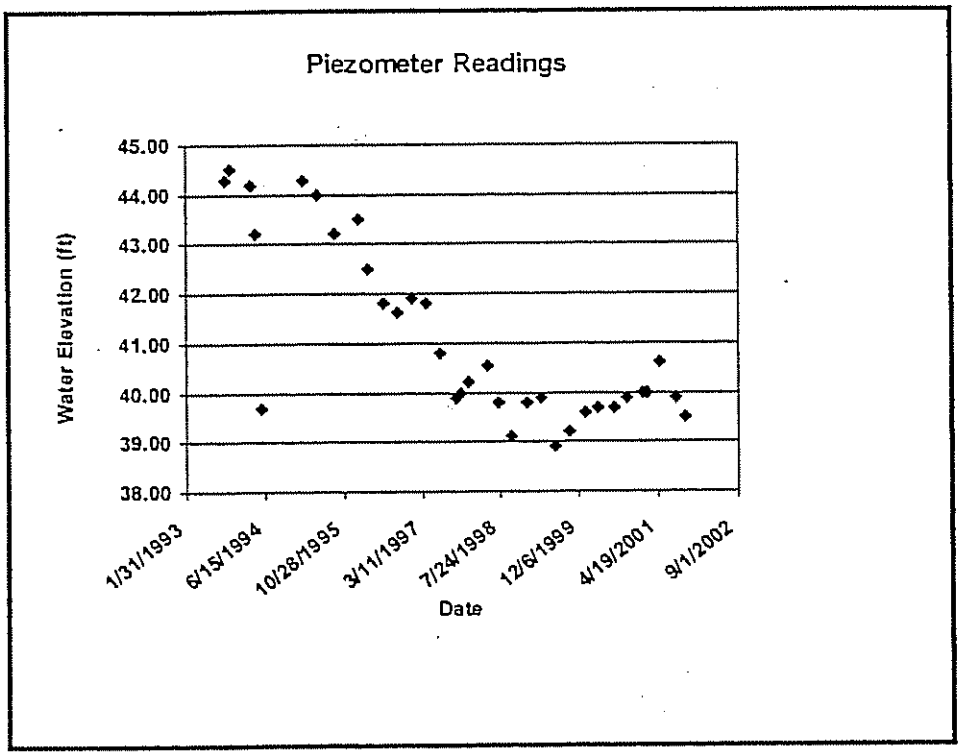
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_09A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630227 |
| Easting | 472357 |
| Phase | P2 |
| Screen El | 3.6 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/24/2001 | 40.6 |
| 10/04/1993 | 44.3 |
| 11/10/1993 | 44.5 |
| 03/14/1994 | 44.2 |
| 04/19/1994 | 43.2 |
| 05/24/1994 | 39.7 |
| 02/09/1995 | 44.3 |
| 05/11/1995 | 44 |
| 08/29/1995 | 43.2 |
| 01/27/1996 | 43.5 |
| 04/02/1996 | 42.5 |
| 07/10/1996 | 41.8 |
| 10/10/1996 | 41.6 |
| 01/02/1997 | 41.9 |
| 04/01/1997 | 41.8 |
| 07/01/1997 | 40.8 |
| 10/10/1997 | 39.9 |
| 11/12/1997 | 40 |
| 01/05/1998 | 40.2 |
| 04/28/1998 | 40.55 |
| 07/09/1998 | 39.8 |
| 10/02/1998 | 39.1 |
| 01/05/1999 | 39.8 |
| 04/09/1999 | 39.9 |
| 07/09/1999 | 38.9 |
| 10/07/1999 | 39.2 |
| 01/12/2000 | 39.6 |
| 04/03/2000 | 39.7 |
| 07/07/2000 | 39.7 |
| 10/02/2000 | 39.9 |
| 01/04/2001 | 40 |
| 02/02/2001 | 40 |
| 08/02/2001 | 39.9 |
| 10/05/2001 | 39.5 |

## Installation Information

Date Instrument Was Installed: 10/10/1990 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 9/26/90 AND 10/10/90

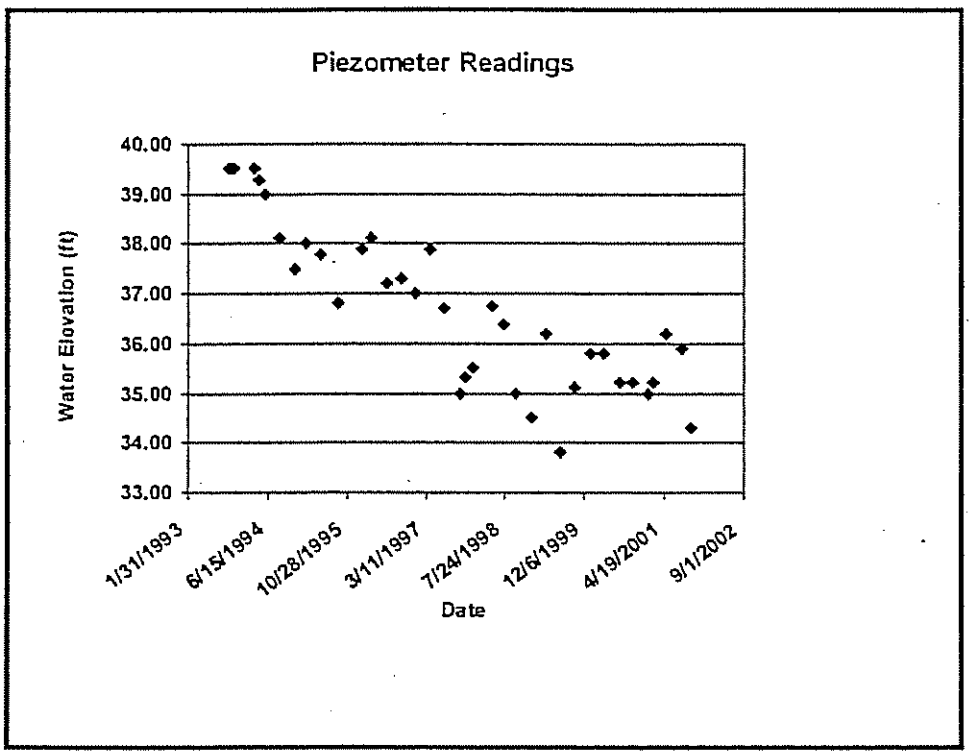
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_09B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630220 |
| Easting | 472368 |
| Phase | P2 |
| Screen El | 17 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/24/2001 | 36.2 |
| 10/04/1993 | 39.5 |
| 11/10/1993 | 39.5 |
| 03/14/1994 | 39.5 |
| 04/19/1994 | 39.3 |
| 05/24/1994 | 39 |
| 08/23/1994 | 38.1 |
| 11/29/1994 | 37.5 |
| 02/09/1995 | 38 |
| 05/11/1995 | 37.8 |
| 08/29/1995 | 36.8 |
| 01/27/1996 | 37.9 |
| 04/02/1996 | 38.1 |
| 07/10/1996 | 37.2 |
| 10/10/1996 | 37.3 |
| 01/02/1997 | 37 |
| 04/01/1997 | 37.9 |
| 07/01/1997 | 36.7 |
| 10/10/1997 | 35 |
| 11/12/1997 | 35.3 |
| 01/05/1998 | 35.5 |
| 04/28/1998 | 36.75 |
| 07/09/1998 | 36.4 |
| 10/02/1998 | 35 |
| 01/05/1999 | 34.5 |
| 04/09/1999 | 36.2 |
| 07/09/1999 | 33.8 |
| 10/07/1999 | 35.1 |
| 01/12/2000 | 35.8 |
| 04/03/2000 | 35.8 |
| 07/07/2000 | 35.2 |
| 10/02/2000 | 35.2 |
| 01/04/2001 | 35 |
| 02/02/2001 | 35.2 |
| 08/02/2001 | 35.9 |
| 10/05/2001 | 34.3 |

## Installation Information

Date Instrument Was Installed: 10/10/1990 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 9/26/90 AND 10/10/90

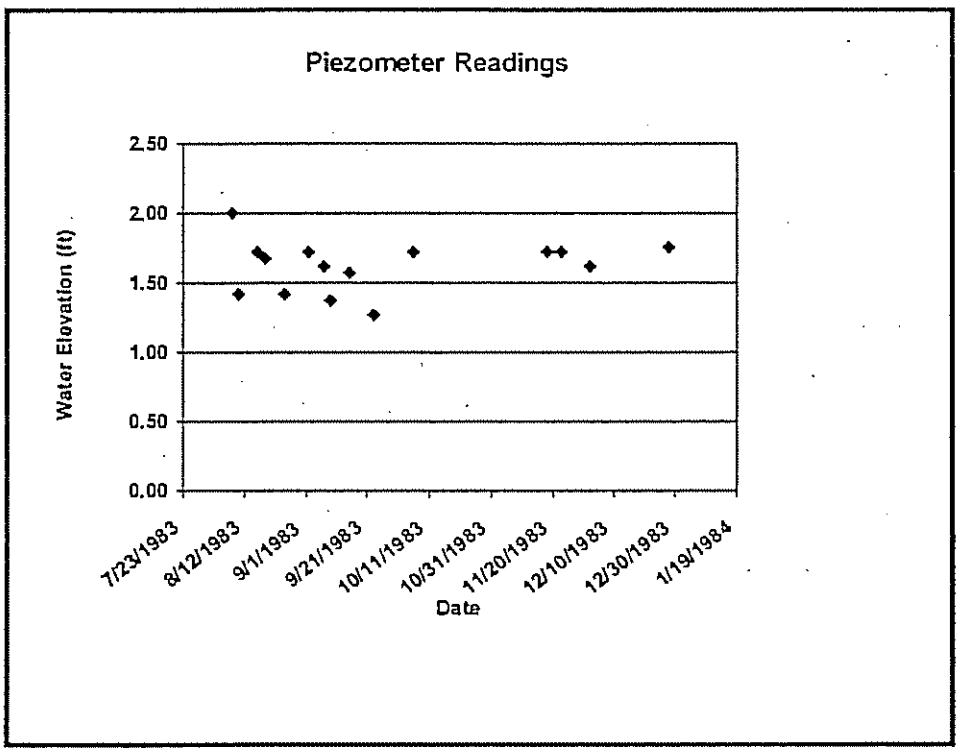
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_MW_C101

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630171 |
| Easting | 472373 |
| Screen El | -24.8 |
| Phase | P2 |
| Stratum | C1 |




Readings

| | |
|---|---|
| 08/08/1983 | 2 |
| 08/10/1983 | 1.42 |
| 08/16/1983 | 1.72 |
| 08/19/1983 | 1.67 |
| 08/25/1983 | 1.42 |
| 09/02/1983 | 1.72 |
| 09/07/1983 | 1.62 |
| 09/09/1983 | 1.37 |
| 09/15/1983 | 1.57 |
| 09/23/1983 | 1.27 |
| 10/06/1983 | 1.72 |
| 11/18/1983 | 1.72 |
| 11/23/1983 | 1.72 |
| 12/02/1983 | 1.62 |
| 12/28/1983 | 1.76 |

## Installation Information

Date Instrument Was Installed: 08/08/1983 *GEOLOGY*

*Ground Surface El* 35.2

*NOTES*

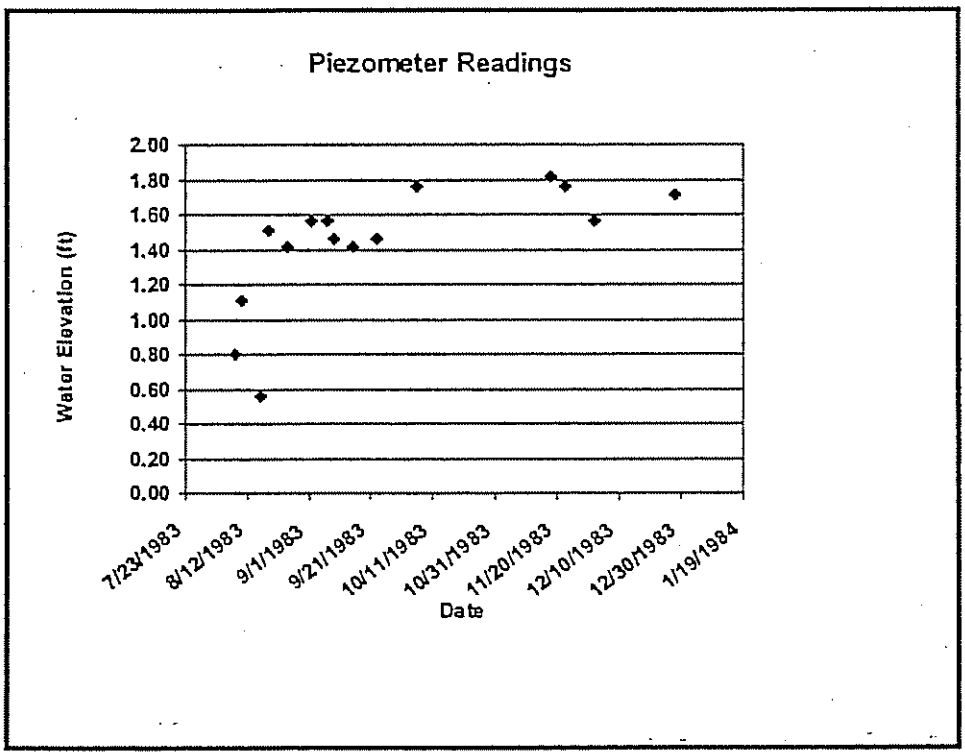
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 39.7 | 39.7 | -24.8 | -14.8 | 35.2 | | 35 |
| *Bottom* | 35.2 | -24.8 | -34.8 | -36.8 | -14.8 | | 32 |
| *Diam. (in)* | 6 | 4 | 4 | 8.75 | 8.75 | | 9 |
| *Material* | STEEL | PVC SCH 40 | PVC #10 SLOT | | BAROID QUICK GEL GROUT | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_MW_P101

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 630170 |
| Easting | 472422 |
| Screen El | -108 |
| Phase | P2 |
| Stratum | P1 |




Readings

| | |
|---|---|
| 08/08/1983 | 0.8 |
| 08/10/1983 | 1.11 |
| 08/16/1983 | 0.56 |
| 08/19/1983 | 1.51 |
| 08/25/1983 | 1.41 |
| 09/02/1983 | 1.56 |
| 09/07/1983 | 1.56 |
| 09/09/1983 | 1.46 |
| 09/15/1983 | 1.41 |
| 09/23/1983 | 1.46 |
| 10/06/1983 | 1.76 |
| 11/18/1983 | 1.81 |
| 11/23/1983 | 1.76 |
| 12/02/1983 | 1.56 |
| 12/28/1983 | 1.71 |

## Installation Information

Date Instrument Was Installed: 08/05/1983 *GEOLOGY* POTOMAC

*Ground Surface El* 46.9

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 49.4 | 49.4 | -93.6 | -88.1 | 43.9 | | 47 |
| *Bottom* | 46.9 | -93.6 | -103.6 | -103.6 | -88.1 | | 47 |
| *Diam. (in)* | 4 | | 4 | | | | 0 |
| *Material* | STEEL | PVC | PVC #10 SLOT | | BENTONITE | | |

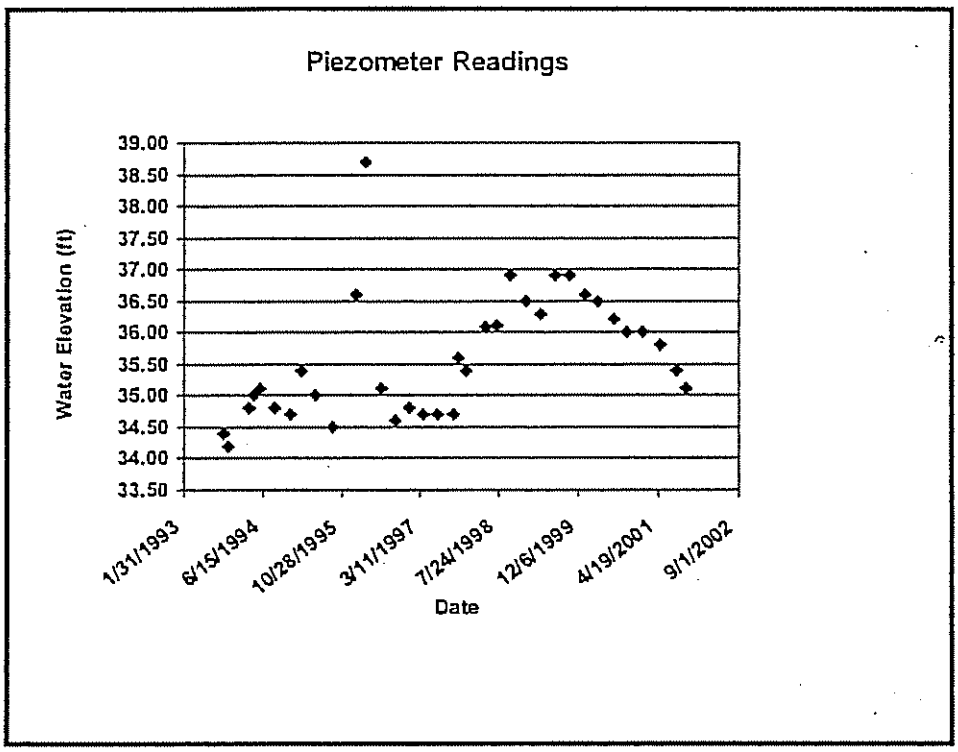
# SECTION 2

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2 PZ 06A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 628844 | | |
| Easting | 470943 | Screen El | -6 |
| Phase | P2 | Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 35.8 |
| 10/04/1993 | 34.4 |
| 11/10/1993 | 34.2 |
| 03/14/1994 | 34.8 |
| 04/19/1994 | 35 |
| 05/24/1994 | 35.1 |
| 08/23/1994 | 34.8 |
| 11/29/1994 | 34.7 |
| 02/09/1995 | 35.4 |
| 05/11/1995 | 35 |
| 08/29/1995 | 34.5 |
| 01/27/1996 | 36.6 |
| 04/02/1996 | 38.7 |
| 07/10/1996 | 35.1 |
| 10/10/1996 | 34.6 |
| 01/02/1997 | 34.8 |
| 04/01/1997 | 34.7 |
| 07/01/1997 | 34.7 |
| 10/10/1997 | 34.7 |
| 11/12/1997 | 35.6 |
| 01/05/1998 | 35.4 |
| 04/28/1998 | 36.08 |
| 07/09/1998 | 36.1 |
| 10/02/1998 | 36.9 |
| 01/05/1999 | 36.5 |
| 04/09/1999 | 36.3 |
| 07/09/1999 | 36.9 |
| 10/07/1999 | 36.9 |
| 01/12/2000 | 36.6 |
| 04/03/2000 | 36.5 |
| 07/07/2000 | 36.2 |
| 10/02/2000 | 36 |
| 01/04/2001 | 36 |
| 08/02/2001 | 35.4 |
| 10/05/2001 | 35.1 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

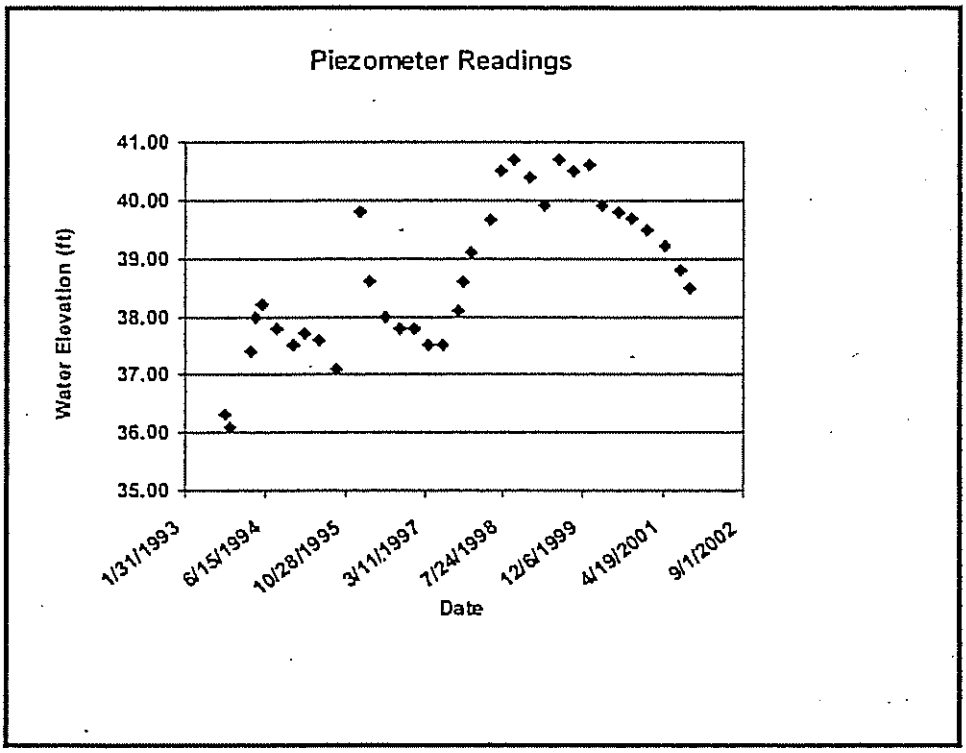
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2 PZ 06B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628826 |
| Easting | 470944 |
| Phase | P2 |
| Screen El | 11.1 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 39.2 |
| 10/04/1993 | 36.3 |
| 11/10/1993 | 36.1 |
| 03/14/1994 | 37.4 |
| 04/19/1994 | 38 |
| 05/24/1994 | 38.2 |
| 08/23/1994 | 37.8 |
| 11/29/1994 | 37.5 |
| 02/09/1995 | 37.7 |
| 05/11/1995 | 37.6 |
| 08/29/1995 | 37.1 |
| 01/27/1996 | 39.8 |
| 04/02/1996 | 38.6 |
| 07/10/1996 | 38 |
| 10/10/1996 | 37.8 |
| 01/02/1997 | 37.8 |
| 04/01/1997 | 37.5 |
| 07/01/1997 | 37.5 |
| 10/10/1997 | 38.1 |
| 11/12/1997 | 38.6 |
| 01/05/1998 | 39.1 |
| 04/28/1998 | 39.67 |
| 07/09/1998 | 40.5 |
| 10/02/1998 | 40.7 |
| 01/05/1999 | 40.4 |
| 04/09/1999 | 39.9 |
| 07/09/1999 | 40.7 |
| 10/07/1999 | 40.5 |
| 01/12/2000 | 40.6 |
| 04/03/2000 | 39.9 |
| 07/07/2000 | 39.8 |
| 10/02/2000 | 39.7 |
| 01/04/2001 | 39.5 |
| 08/02/2001 | 38.8 |
| 10/05/2001 | 38.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

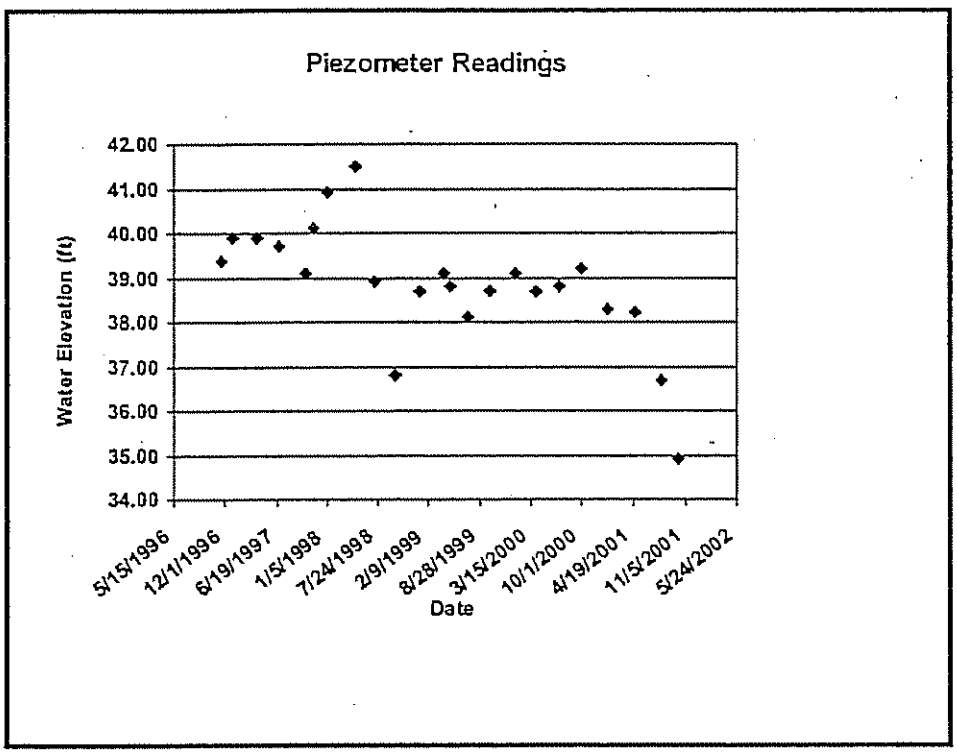
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_12A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 629229 | | |
| Easting | 470992 | Screen El | 30.7 |
| Phase | P2 | Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 38.2 |
| 11/14/1996 | 39.4 |
| 01/02/1997 | 39.9 |
| 04/01/1997 | 39.9 |
| 07/01/1997 | 39.7 |
| 10/10/1997 | 39.1 |
| 11/12/1997 | 40.1 |
| 01/05/1998 | 40.9 |
| 04/28/1998 | 41.5 |
| 07/09/1998 | 38.9 |
| 10/02/1998 | 36.8 |
| 01/05/1999 | 38.7 |
| 04/09/1999 | 39.1 |
| 05/06/1999 | 38.8 |
| 07/09/1999 | 38.1 |
| 10/07/1999 | 38.7 |
| 01/12/2000 | 39.1 |
| 04/03/2000 | 38.7 |
| 07/07/2000 | 38.8 |
| 10/02/2000 | 39.2 |
| 01/04/2001 | 38.3 |
| 08/01/2001 | 36.7 |
| 10/05/2001 | 34.9 |

## Installation Information

Date Instrument Was Installed: 10/30/1996 *GEOLOGY*

*Ground Surface El*

*NOTES* INSTALLED BETWEEN 10/28/96 AND 10/30/96

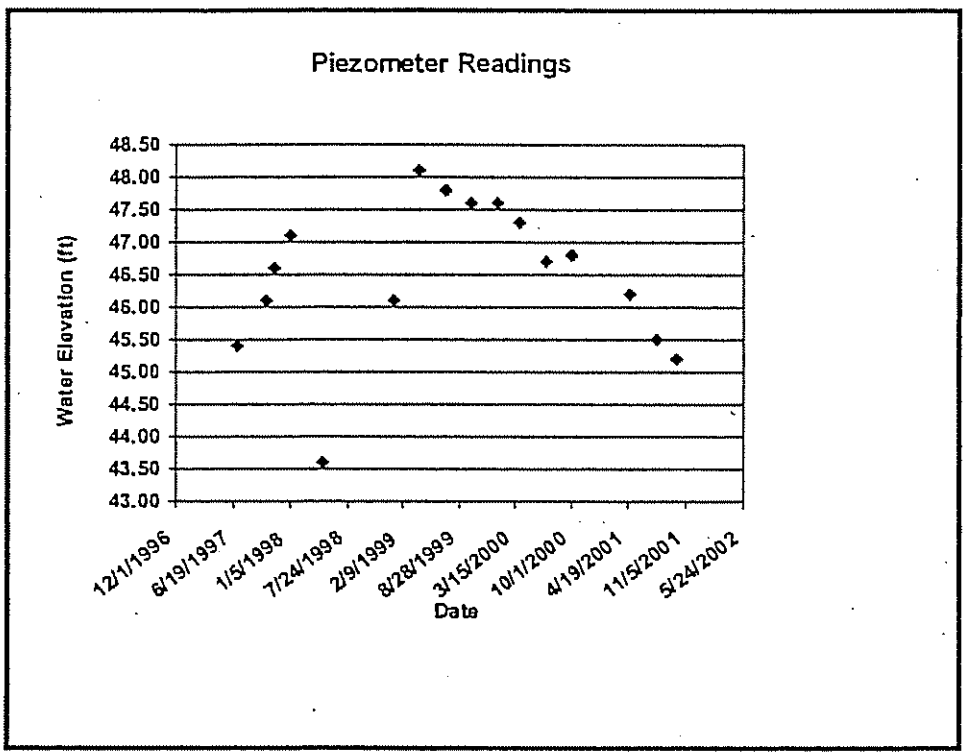
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 43.7 | 41 | 28.7 | 34.2 | 36.5 | 41 | |
| *Bottom* | 41 | 28.7 | 30.7 | 28 | 34.2 | 36.5 | |
| *Diam. (in)* | 6 | 0.75 | 1.5 | 6 | 6 | 6 | |
| *Material* | | PVC SCH 40 | POROUS POINT MEDIUM | WELL SAND | BENTONITE P1 PELLETS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P2_PZ_12B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629242 |
| Easting | 470993 |
| Screen El | 2.7 |
| Phase | P2 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 46.2 |
| 07/01/1997 | 45.4 |
| 10/10/1997 | 46.1 |
| 11/12/1997 | 46.5 |
| 01/05/1998 | 47.1 |
| 04/28/1998 | 43.6 |
| 01/05/1999 | 46.1 |
| 04/09/1999 | 48.1 |
| 07/09/1999 | 47.8 |
| 10/07/1999 | 47.6 |
| 01/12/2000 | 47.6 |
| 04/03/2000 | 47.3 |
| 07/07/2000 | 46.7 |
| 10/02/2000 | 46.8 |
| 08/01/2001 | 45.5 |
| 10/05/2001 | 45.2 |

## Installation Information

Date Instrument Was Installed: 10/30/1996 *GEOLOGY*

*Ground Surface El* 41

*NOTES* INSTALLED BETWEEN 10/28/96 AND 10/30/96

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 44.1 | 44.1 | | 5.9 | 9.4 | 41 | |
| *Bottom* | 41 | | | 1 | 5.9 | 9.4 | |
| *Diam. (in)* | 6 | 0.75 | 1.5 | 6 | 6 | 6 | |
| *Material* | | PVC SCH 80 | POROUS POINT MEDIUM | WELL SAND | BENTONITE P1 PELLETS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

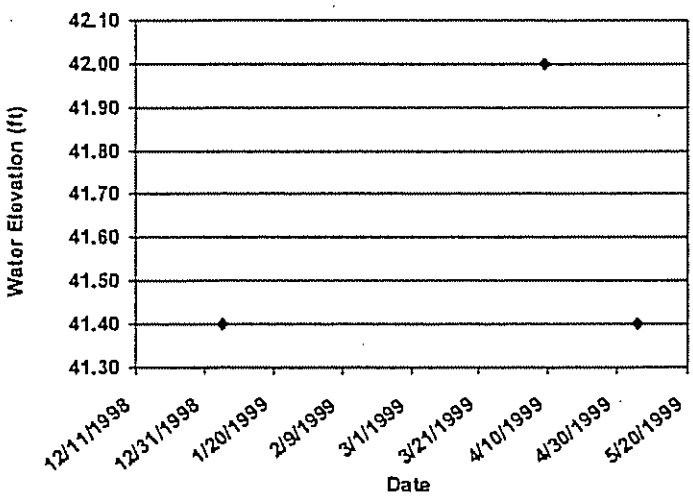
Select Piezometer: P2 PZ 12C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629258 |
| Easting | 470995 |
| Phase | P2 |
| Screen El | 8 |
| Stratum | BM |

Readings

| | |
|---|---|
| 01/05/1999 | 41.4 |
| 04/09/1999 | 42 |
| 05/06/1999 | 41.4 |




## Installation Information

Date Instrument Was Installed: 03/27/1997 *GEOLOGY*

*Ground Surface El* 40

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 42 | 42 | 6 | 11.2 | 15 | 40 | |
| *Bottom* | 40 | 6 | 8 | 5.8 | 11.2 | 15 | |
| *Diam. (in)* | 6 | 0.75 | | 1.5 | 6 | 6 | |
| *Material* | | PVC SCH 80 | | POROUS POINT 24" LONG | BENTONITE P1 PELLETS | | |

# PHASE III

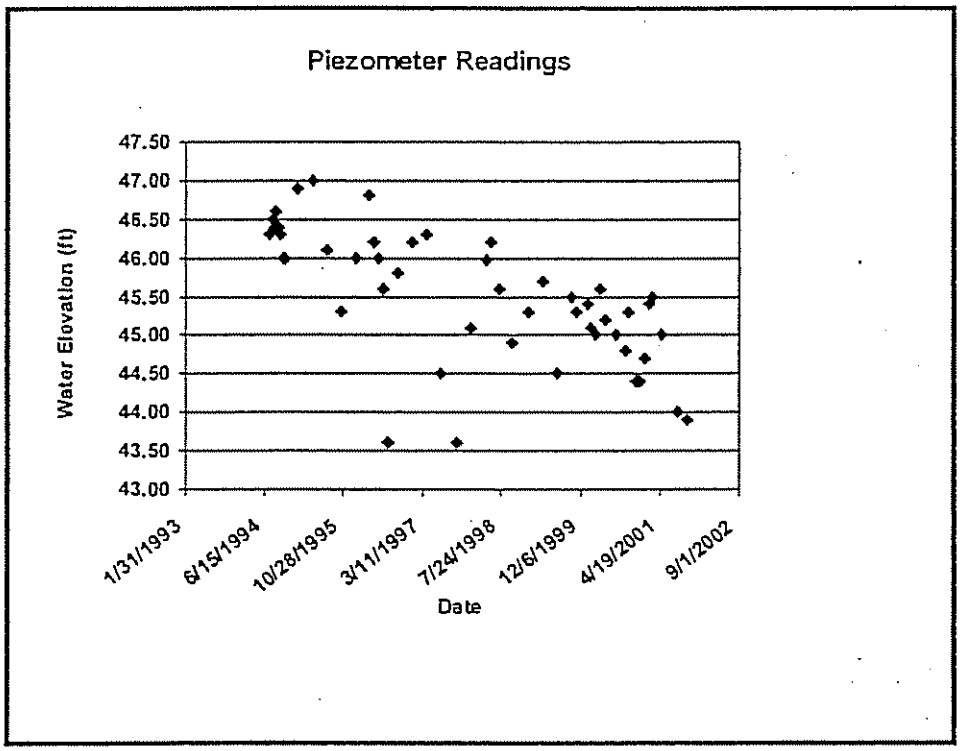
# SECTION 1

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_01A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629954 |
| Easting | 472552 |
| Screen El | 28.1 |
| Phase | P3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 45 |
| 08/09/1996 | 43.6 |
| 10/10/1996 | 45.8 |
| 01/07/1997 | 46.2 |
| 04/04/1997 | 46.3 |
| 04/05/1997 | 46.3 |
| 07/08/1997 | 44.5 |
| 10/09/1997 | 43.6 |
| 01/06/1998 | 45.1 |
| 04/20/1998 | 45.98 |
| 07/19/1994 | 46.3 |
| 08/01/1994 | 46.5 |
| 08/18/1994 | 46.4 |
| 08/30/1994 | 46.6 |
| 09/29/1994 | 46.3 |
| 10/11/1994 | 46 |
| 10/24/1994 | 46 |
| 01/09/1995 | 46.9 |
| 04/19/1995 | 47 |
| 07/27/1995 | 46.1 |
| 10/24/1995 | 45.3 |
| 01/19/1996 | 46 |
| 04/04/1996 | 46.8 |
| 05/10/1996 | 46.2 |
| 06/10/1996 | 46 |
| 07/05/1996 | 45.6 |
| 09/13/1994 | 46.4 |
| 10/25/1994 | 46 |
| 05/20/1998 | 46.2 |
| 07/08/1998 | 45.6 |
| 10/02/1998 | 44.9 |
| 01/05/1999 | 45.3 |
| 04/08/1999 | 45.7 |
| 07/09/1999 | 44.5 |
| 10/08/1999 | 45.5 |
| 11/05/1999 | 45.3 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

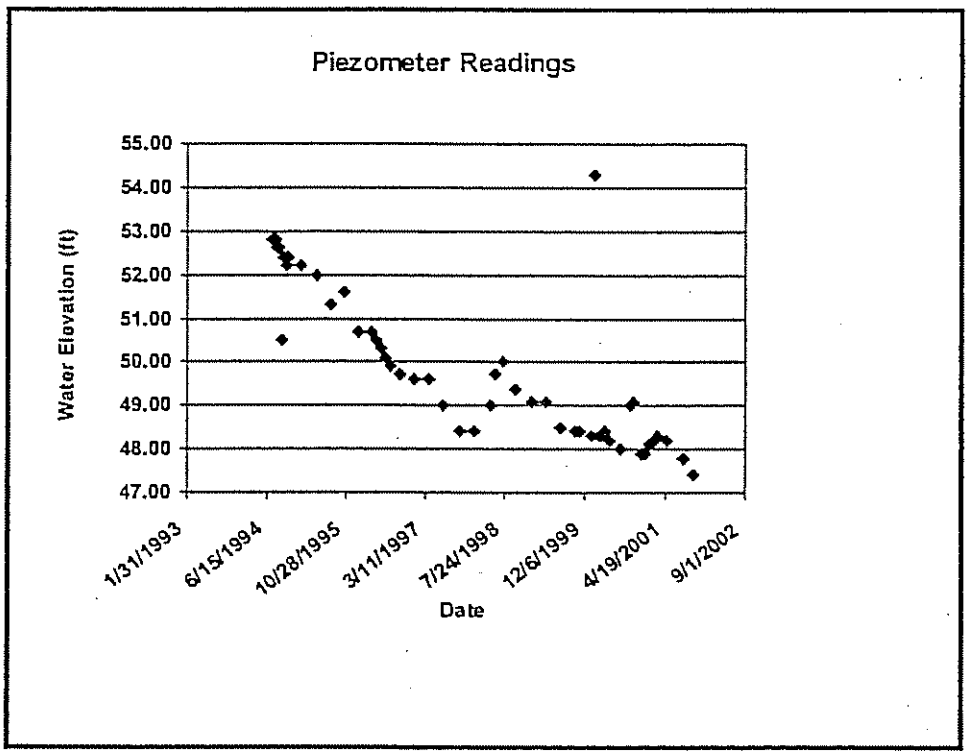
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_01B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629950 |
| Easting | 472555 |
| Phase | P3 |
| Screen El | 12.7 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 48.2 |
| 07/19/1994 | 52.8 |
| 08/01/1994 | 52.8 |
| 08/18/1994 | 52.6 |
| 08/30/1994 | 52.6 |
| 09/29/1994 | 52.4 |
| 10/11/1994 | 52.2 |
| 10/25/1994 | 52.4 |
| 01/09/1995 | 52.2 |
| 04/19/1995 | 52 |
| 07/27/1995 | 51.3 |
| 10/24/1995 | 51.6 |
| 01/19/1996 | 50.7 |
| 04/04/1996 | 50.7 |
| 05/10/1996 | 50.5 |
| 06/10/1996 | 50.3 |
| 06/11/1996 | 50.3 |
| 07/05/1996 | 50.1 |
| 07/06/1996 | 50.1 |
| 08/09/1996 | 49.9 |
| 10/10/1996 | 49.7 |
| 01/07/1997 | 49.6 |
| 04/04/1997 | 49.6 |
| 04/05/1997 | 49.6 |
| 07/08/1997 | 49 |
| 10/09/1997 | 48.4 |
| 01/06/1998 | 48.4 |
| 04/20/1998 | 49.02 |
| 09/13/1994 | 50.5 |
| 05/20/1998 | 49.7 |
| 07/08/1998 | 50 |
| 10/02/1998 | 49.4 |
| 01/05/1999 | 49.1 |
| 04/08/1999 | 49.1 |
| 07/09/1999 | 48.5 |
| 10/08/1999 | 48.4 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

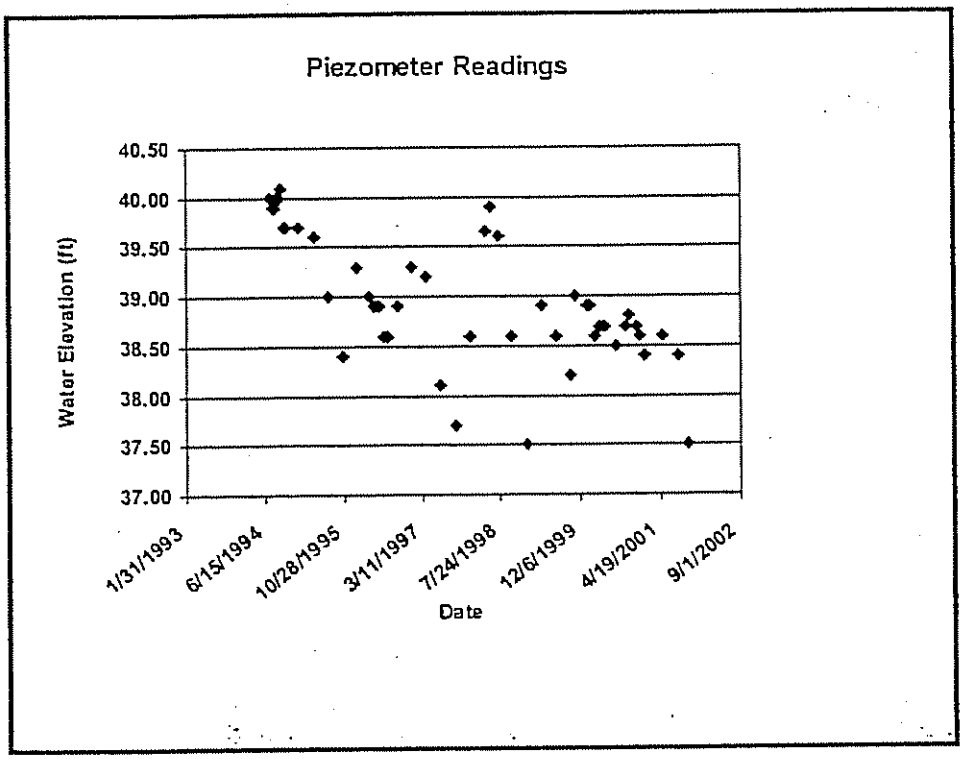
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_02A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629776 |
| Easting | 472805 |
| Phase | P3 |
| Screen El | 22.1 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 38.6 |
| 07/19/1994 | 40 |
| 08/01/1994 | 39.9 |
| 08/18/1994 | 39.9 |
| 08/30/1994 | 40 |
| 09/29/1994 | 40.1 |
| 10/11/1994 | 39.7 |
| 10/25/1994 | 39.7 |
| 01/09/1995 | 39.7 |
| 04/19/1995 | 39.6 |
| 07/27/1995 | 39 |
| 10/24/1995 | 38.4 |
| 01/19/1996 | 39.3 |
| 04/04/1996 | 39 |
| 05/10/1996 | 38.9 |
| 06/10/1996 | 38.9 |
| 07/05/1996 | 38.6 |
| 08/09/1996 | 38.6 |
| 10/10/1996 | 38.9 |
| 01/07/1997 | 39.3 |
| 04/04/1997 | 39.2 |
| 04/05/1997 | 39.2 |
| 07/08/1997 | 38.1 |
| 10/09/1997 | 37.7 |
| 01/06/1998 | 38.6 |
| 04/20/1998 | 39.65 |
| 09/13/1994 | 40 |
| 05/20/1998 | 39.9 |
| 07/08/1998 | 39.6 |
| 10/02/1998 | 38.6 |
| 01/05/1999 | 37.5 |
| 04/08/1999 | 38.9 |
| 07/09/1999 | 38.6 |
| 10/08/1999 | 38.2 |
| 11/05/1999 | 39 |
| 01/11/2000 | 38.9 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

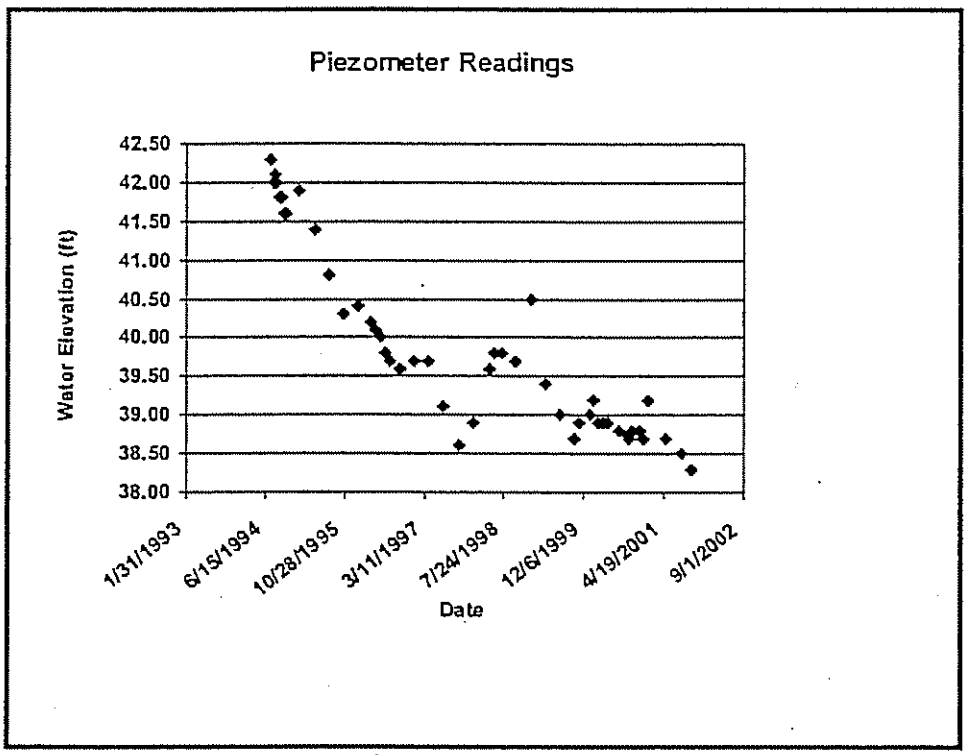
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_02B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629773 |
| Easting | 472810 |
| Screen El | 11.1 |
| Phase | P3 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 38.7 |
| 07/19/1994 | 42.3 |
| 08/01/1994 | 42 |
| 08/18/1994 | 42.1 |
| 08/30/1994 | 42 |
| 09/29/1994 | 41.8 |
| 10/11/1994 | 41.6 |
| 10/25/1994 | 41.6 |
| 01/09/1995 | 41.9 |
| 04/19/1995 | 41.4 |
| 07/27/1995 | 40.8 |
| 10/24/1995 | 40.3 |
| 01/19/1996 | 40.4 |
| 04/04/1996 | 40.2 |
| 05/10/1996 | 40.1 |
| 06/10/1996 | 40 |
| 06/11/1996 | 40 |
| 07/05/1996 | 39.8 |
| 07/06/1996 | 39.8 |
| 08/09/1996 | 39.7 |
| 10/10/1996 | 39.6 |
| 01/07/1997 | 39.7 |
| 04/04/1997 | 39.7 |
| 04/05/1997 | 39.7 |
| 07/08/1997 | 39.1 |
| 10/09/1997 | 38.6 |
| 01/06/1998 | 38.9 |
| 04/20/1998 | 39.6 |
| 09/13/1994 | 41.8 |
| 05/20/1998 | 39.8 |
| 07/08/1998 | 39.8 |
| 10/02/1998 | 39.7 |
| 01/05/1999 | 40.5 |
| 04/08/1999 | 39.4 |
| 07/09/1999 | 39 |
| 10/08/1999 | 38.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

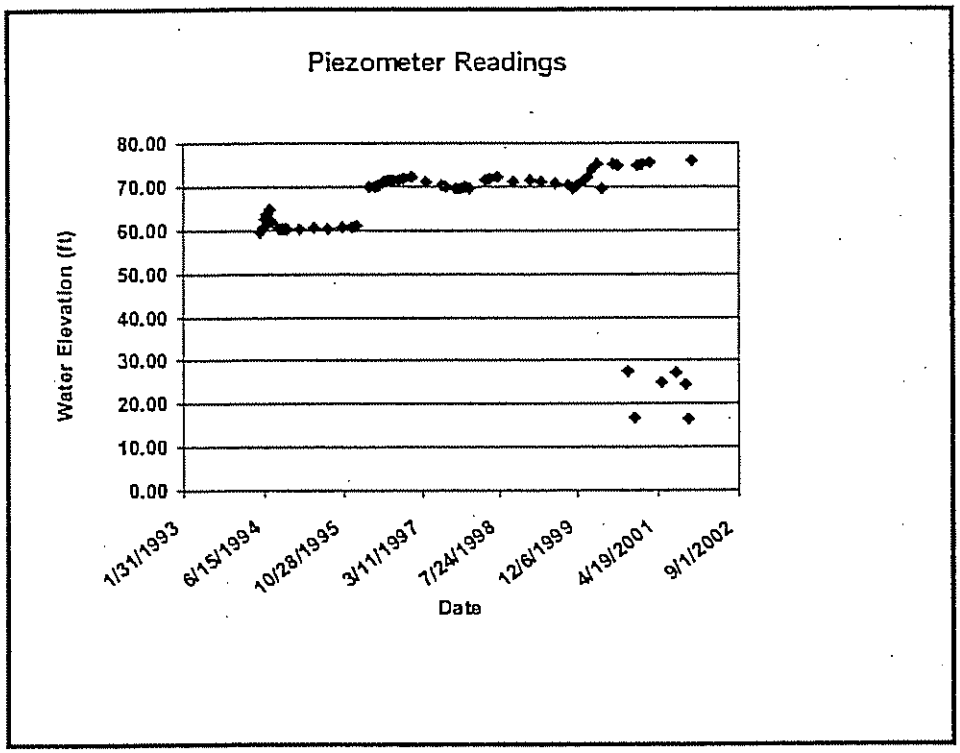
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 102B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629552 |
| Easting | 472550 |
| Phase | P3 |
| Screen El | 13.9 |
| Stratum | BU |




Readings

| | |
|---|---|
| 05/07/2001 | 24.8 |
| 05/20/1994 | 59.6 |
| 06/02/1994 | 60.5 |
| 06/17/1994 | 62.6 |
| 06/30/1994 | 63.5 |
| 07/18/1994 | 64.7 |
| 08/02/1994 | 61.9 |
| 08/16/1994 | 61.4 |
| 08/30/1994 | 61.2 |
| 09/14/1994 | 60.3 |
| 09/30/1994 | 60.3 |
| 10/27/1994 | 60.1 |
| 11/05/1994 | 60.1 |
| 01/24/1995 | 60.1 |
| 04/19/1995 | 60.5 |
| 07/27/1995 | 60.1 |
| 10/24/1995 | 60.5 |
| 12/18/1995 | 60.7 |
| 01/19/1996 | 61 |
| 04/04/1996 | 70 |
| 05/21/1996 | 70 |
| 06/11/1996 | 70.2 |
| 07/06/1996 | 71.1 |
| 08/10/1996 | 71.6 |
| 09/10/1996 | 71.6 |
| 10/11/1996 | 71.6 |
| 11/15/1996 | 71.8 |
| 01/07/1997 | 72.1 |
| 04/05/1997 | 71.1 |
| 07/09/1997 | 70.2 |
| 08/08/1997 | 70 |
| 10/15/1997 | 69.7 |
| 11/15/1997 | 69.7 |
| 12/08/1997 | 70 |
| 01/09/1998 | 69.7 |
| 04/20/1998 | 71.4 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

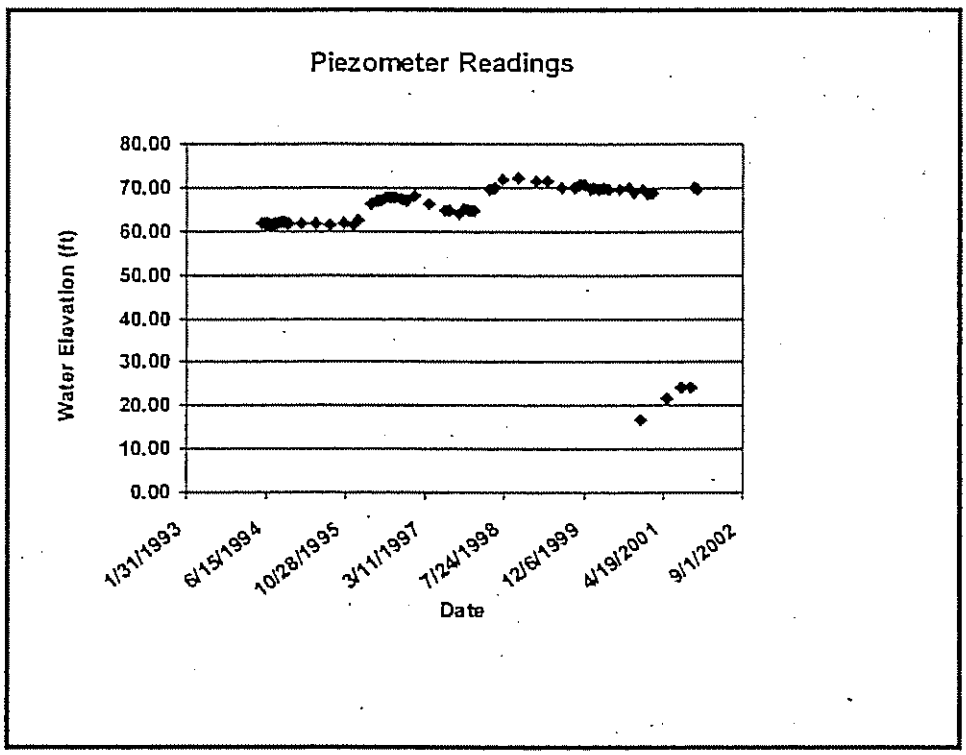
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_101A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 629500 | | |
| Easting | 472550 | Screen El | 13.1 |
| Phase | P3 | Stratum | BM |




Readings

| | |
|---|---|
| 05/07/2001 | 21.4 |
| 05/20/1994 | 61.8 |
| 06/02/1994 | 61.8 |
| 06/17/1994 | 61.8 |
| 06/30/1994 | 61.8 |
| 07/18/1994 | 61.1 |
| 08/02/1994 | 61.8 |
| 08/16/1994 | 61.6 |
| 08/30/1994 | 61.8 |
| 09/14/1994 | 62.3 |
| 09/30/1994 | 62 |
| 10/27/1994 | 61.8 |
| 11/05/1994 | 61.6 |
| 01/24/1995 | 61.6 |
| 04/19/1995 | 61.8 |
| 07/27/1995 | 61.3 |
| 10/24/1995 | 61.8 |
| 12/18/1995 | 61.3 |
| 01/19/1996 | 62.5 |
| 04/04/1996 | 66.4 |
| 05/21/1996 | 66.9 |
| 06/11/1996 | 67.1 |
| 07/06/1996 | 67.8 |
| 08/10/1996 | 67.8 |
| 09/10/1996 | 67.6 |
| 10/11/1996 | 67.3 |
| 11/15/1996 | 66.9 |
| 01/07/1997 | 68 |
| 04/05/1997 | 66.4 |
| 07/09/1997 | 64.6 |
| 08/08/1997 | 64.8 |
| 10/15/1997 | 64.1 |
| 11/15/1997 | 65 |
| 12/08/1997 | 64.8 |
| 01/09/1998 | 64.6 |
| 04/20/1998 | 69.6 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

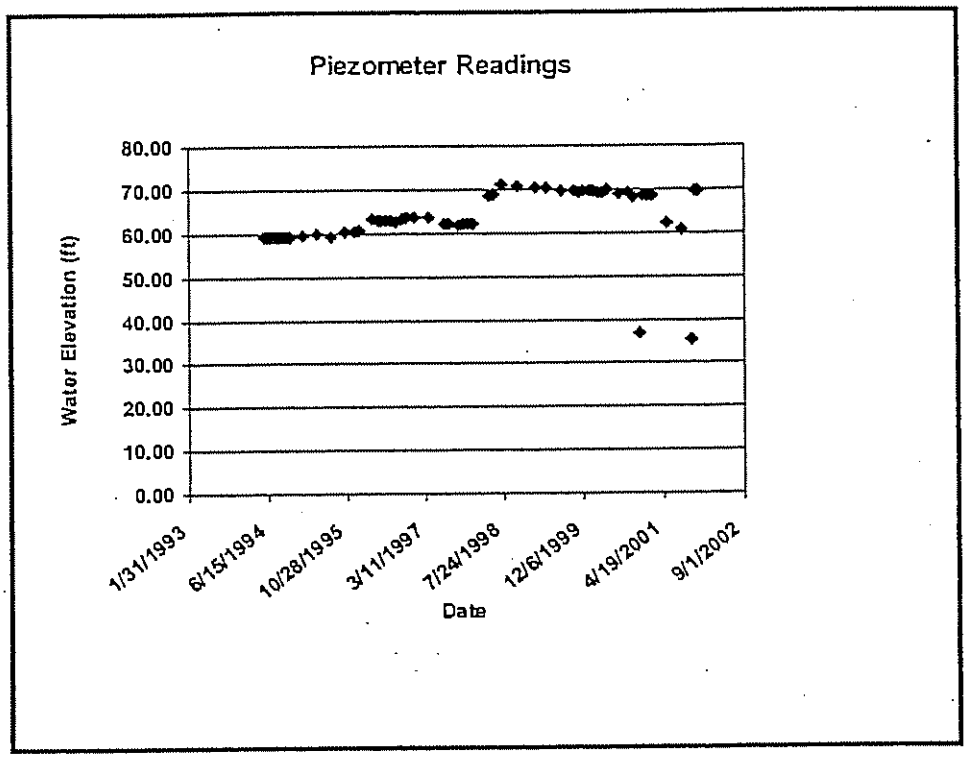
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_101B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629502 |
| Easting | 472550 |
| Phase | P3 |
| Screen El | 30 |
| Stratum | BU |




Readings

| | |
|---|---|
| 05/07/2001 | 62.3 |
| 05/20/1994 | 59.1 |
| 06/02/1994 | 59.3 |
| 06/17/1994 | 59.3 |
| 06/30/1994 | 59.1 |
| 07/18/1994 | 59.1 |
| 08/02/1994 | 59.3 |
| 08/16/1994 | 59.1 |
| 08/30/1994 | 59.3 |
| 09/14/1994 | 59.3 |
| 09/30/1994 | 59.3 |
| 10/27/1994 | 59.3 |
| 11/05/1994 | 59.3 |
| 01/24/1995 | 59.5 |
| 04/19/1995 | 60 |
| 07/27/1995 | 59.3 |
| 10/24/1995 | 60.2 |
| 12/18/1995 | 60.2 |
| 01/19/1996 | 60.5 |
| 04/04/1996 | 63.2 |
| 05/21/1996 | 63 |
| 06/11/1996 | 63 |
| 07/06/1996 | 63 |
| 08/10/1996 | 63 |
| 09/10/1996 | 62.5 |
| 10/11/1996 | 63.2 |
| 11/15/1996 | 63.5 |
| 01/07/1997 | 63.7 |
| 04/05/1997 | 63.7 |
| 07/09/1997 | 62.1 |
| 08/08/1997 | 62.3 |
| 10/15/1997 | 61.6 |
| 11/15/1997 | 62.3 |
| 12/08/1997 | 62.1 |
| 01/09/1998 | 62.3 |
| 04/20/1998 | 68.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

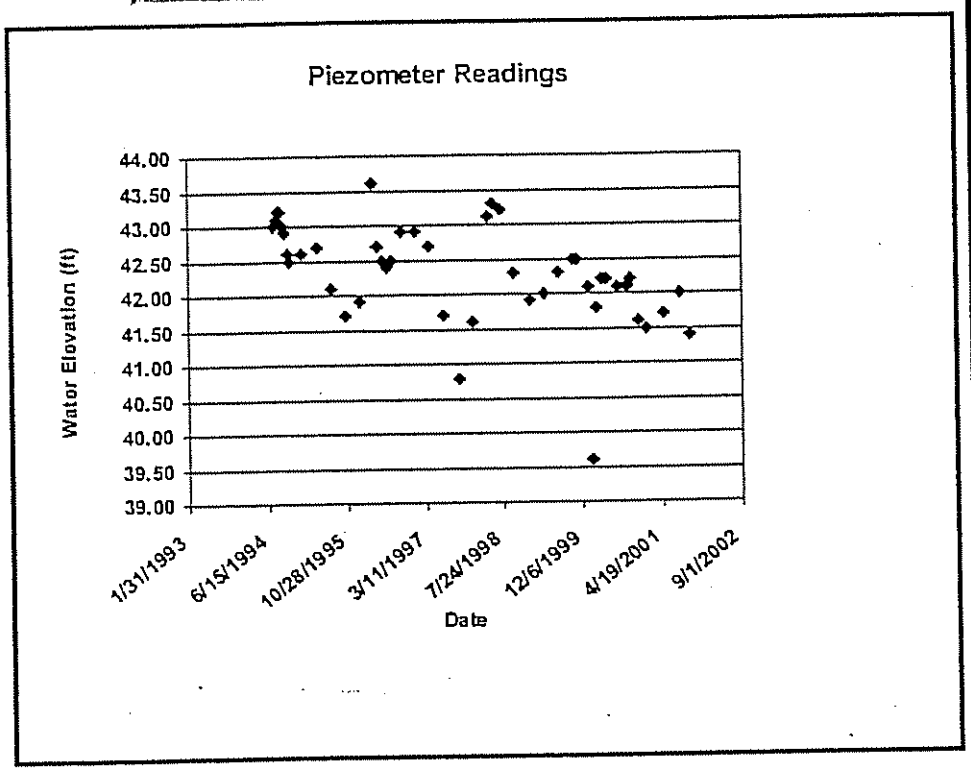
# SECTION 2

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_03A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629531 |
| Easting | 473004 |
| Phase | P3 |
| Screen El | 28.4 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 41.7 |
| 07/19/1994 | 43 |
| 08/01/1994 | 43.1 |
| 08/18/1994 | 43.2 |
| 08/30/1994 | 43.2 |
| 09/29/1994 | 42.9 |
| 10/11/1994 | 42.6 |
| 10/25/1994 | 42.5 |
| 01/09/1995 | 42.6 |
| 04/19/1995 | 42.7 |
| 07/27/1995 | 42.1 |
| 10/24/1995 | 41.7 |
| 01/19/1996 | 41.9 |
| 04/04/1996 | 43.6 |
| 05/10/1996 | 42.7 |
| 06/10/1996 | 42.5 |
| 06/11/1996 | 42.5 |
| 07/05/1996 | 42.4 |
| 07/06/1996 | 42.4 |
| 08/09/1996 | 42.5 |
| 10/10/1996 | 42.9 |
| 01/07/1997 | 42.9 |
| 04/04/1997 | 42.7 |
| 04/05/1997 | 42.7 |
| 07/08/1997 | 41.7 |
| 10/09/1997 | 40.8 |
| 01/06/1998 | 41.6 |
| 04/20/1998 | 43.11 |
| 09/13/1994 | 43 |
| 05/20/1998 | 43.3 |
| 07/08/1998 | 43.2 |
| 10/02/1998 | 42.3 |
| 01/05/1999 | 41.9 |
| 04/08/1999 | 42 |
| 07/09/1999 | 42.3 |
| 10/08/1999 | 42.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

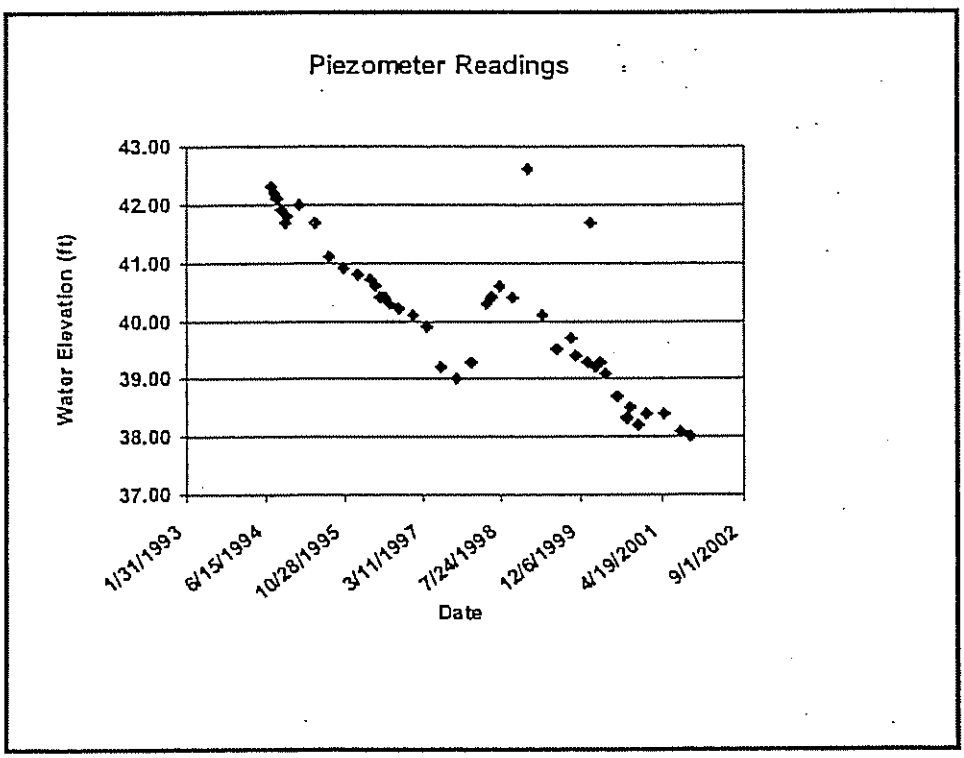
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_03B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629536 |
| Easting | 473000 |
| Phase | P3 |
| Screen El | 12.4 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 38.4 |
| 07/19/1994 | 42.3 |
| 08/01/1994 | 42.2 |
| 08/18/1994 | 42.1 |
| 08/30/1994 | 42.1 |
| 09/29/1994 | 41.9 |
| 10/11/1994 | 41.7 |
| 10/25/1994 | 41.8 |
| 01/09/1995 | 42 |
| 04/19/1995 | 41.7 |
| 07/27/1995 | 41.1 |
| 10/24/1995 | 40.9 |
| 01/19/1996 | 40.8 |
| 04/04/1996 | 40.7 |
| 05/10/1996 | 40.6 |
| 06/10/1996 | 40.4 |
| 06/11/1996 | 40.4 |
| 07/05/1996 | 40.4 |
| 08/09/1996 | 40.3 |
| 10/10/1996 | 40.2 |
| 01/07/1997 | 40.1 |
| 04/04/1997 | 39.9 |
| 04/05/1997 | 39.9 |
| 07/08/1997 | 39.2 |
| 10/09/1997 | 39 |
| 01/06/1998 | 39.3 |
| 04/20/1998 | 40.28 |
| 09/13/1994 | 41.9 |
| 05/20/1998 | 40.4 |
| 07/08/1998 | 40.6 |
| 10/02/1998 | 40.4 |
| 01/05/1999 | 42.6 |
| 04/08/1999 | 40.1 |
| 07/09/1999 | 39.5 |
| 10/08/1999 | 39.7 |
| 11/05/1999 | 39.4 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

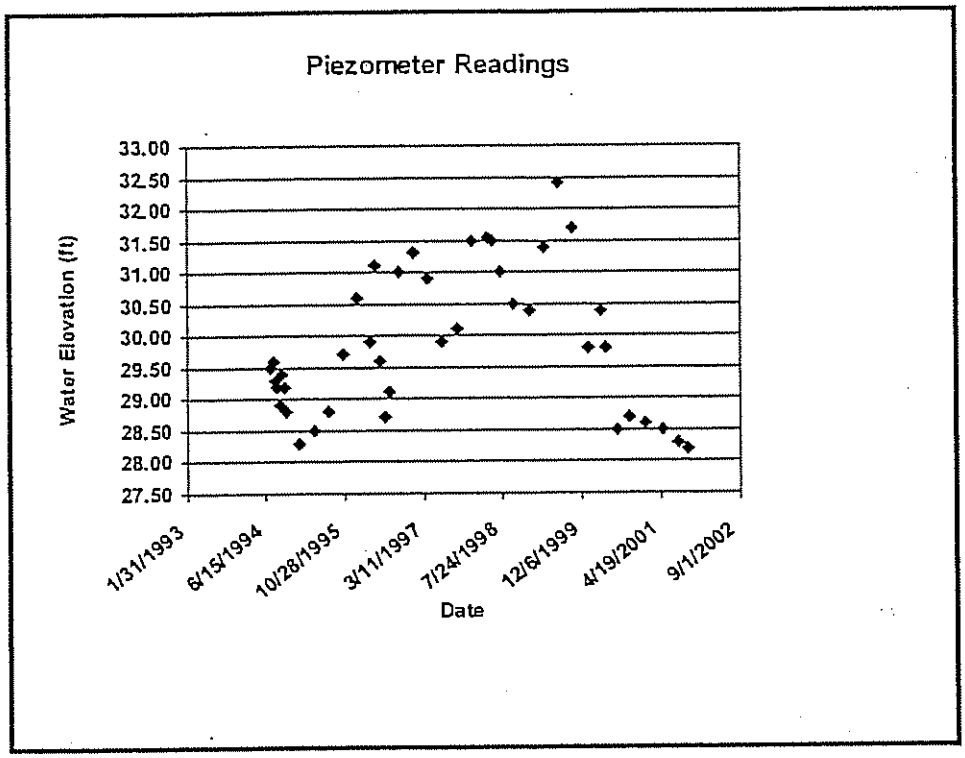
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 04A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629355 |
| Easting | 473225 |
| Phase | P3 |
| Screen El | 24.2 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 28.5 |
| 07/19/1994 | 29.5 |
| 08/01/1994 | 29.6 |
| 08/18/1994 | 29.3 |
| 08/30/1994 | 29.2 |
| 09/29/1994 | 29.4 |
| 10/11/1994 | 29.2 |
| 10/25/1994 | 28.8 |
| 01/09/1995 | 28.3 |
| 04/19/1995 | 28.5 |
| 07/27/1995 | 28.8 |
| 10/24/1995 | 29.7 |
| 01/19/1996 | 30.6 |
| 04/04/1996 | 29.9 |
| 05/10/1996 | 31.1 |
| 06/10/1996 | 29.6 |
| 06/11/1996 | 29.6 |
| 07/05/1996 | 28.7 |
| 08/09/1996 | 29.1 |
| 10/10/1996 | 31 |
| 01/07/1997 | 31.3 |
| 04/04/1997 | 30.9 |
| 04/05/1997 | 30.9 |
| 07/08/1997 | 29.9 |
| 10/09/1997 | 30.1 |
| 01/06/1998 | 31.5 |
| 04/20/1998 | 31.54 |
| 09/13/1994 | 28.9 |
| 05/20/1998 | 31.5 |
| 07/08/1998 | 31 |
| 10/02/1998 | 30.5 |
| 01/05/1999 | 30.4 |
| 04/08/1999 | 31.4 |
| 07/09/1999 | 32.4 |
| 10/08/1999 | 31.7 |
| 01/11/2000 | 29.8 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

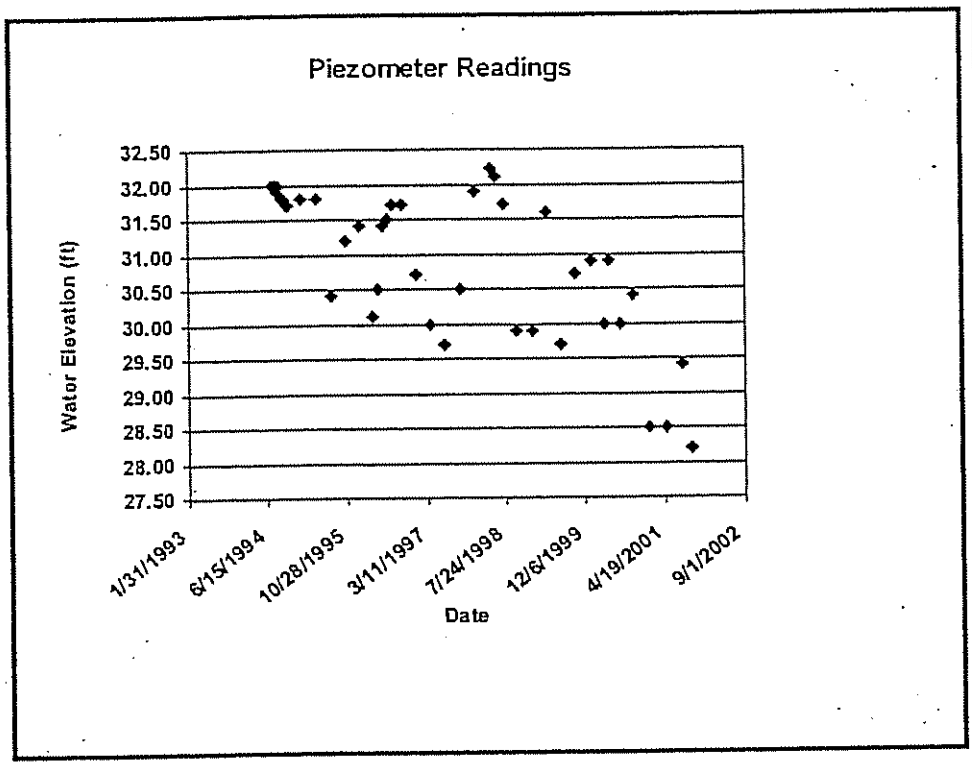
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 04B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629351 |
| Easting | 473229 |
| Phase | P3 |
| Screen El | 12.6 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 28.5 |
| 07/19/1994 | 32 |
| 08/01/1994 | 32 |
| 08/18/1994 | 31.9 |
| 08/30/1994 | 32 |
| 09/29/1994 | 31.8 |
| 10/11/1994 | 31.7 |
| 10/25/1994 | 31.7 |
| 01/09/1995 | 31.8 |
| 04/19/1995 | 31.8 |
| 07/27/1995 | 30.4 |
| 10/24/1995 | 31.2 |
| 01/19/1996 | 31.4 |
| 04/04/1996 | 30.1 |
| 05/10/1996 | 30.5 |
| 06/10/1996 | 31.4 |
| 06/11/1996 | 31.4 |
| 07/05/1996 | 31.5 |
| 07/06/1996 | 31.5 |
| 08/09/1996 | 31.7 |
| 10/10/1996 | 31.7 |
| 01/07/1997 | 30.7 |
| 04/04/1997 | 30 |
| 04/05/1997 | 30 |
| 07/08/1997 | 29.7 |
| 10/09/1997 | 30.5 |
| 01/06/1998 | 31.9 |
| 04/20/1998 | 32.22 |
| 09/13/1994 | 31.8 |
| 05/20/1998 | 32.1 |
| 07/08/1998 | 31.7 |
| 10/02/1998 | 29.9 |
| 01/05/1999 | 29.9 |
| 04/08/1999 | 31.6 |
| 07/09/1999 | 29.7 |
| 10/08/1999 | 30.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

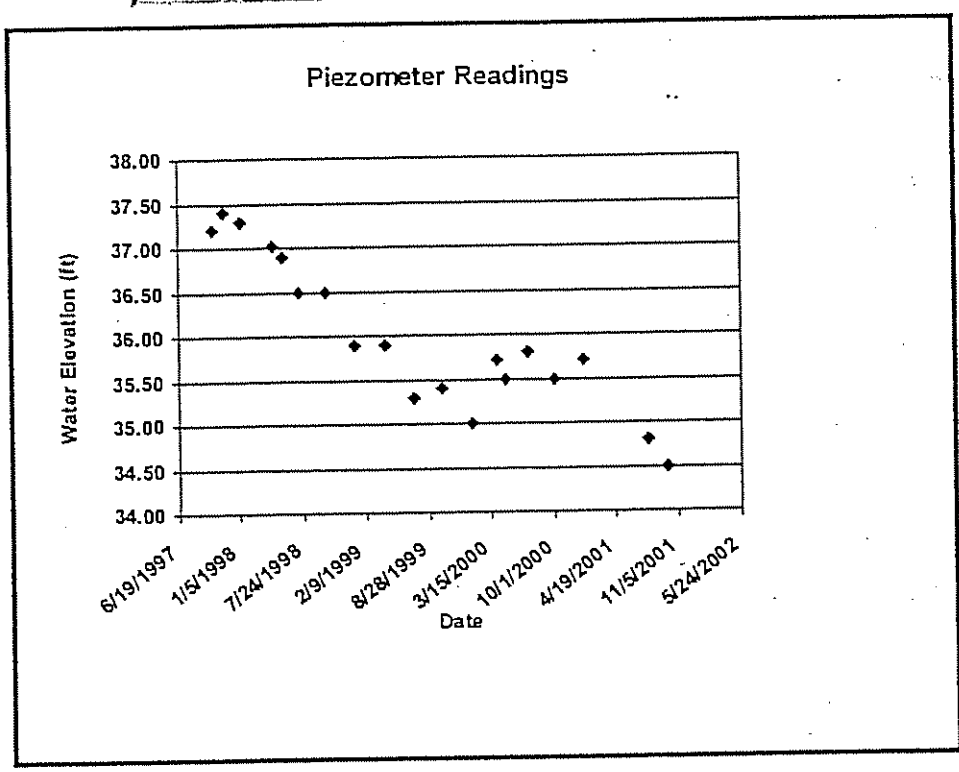
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 013

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629365 |
| Easting | 473215 |
| Phase | P3 |
| Screen El | 3 |
| Stratum | BM |




Readings

| | |
|---|---|
| 10/09/1997 | 37.2 |
| 11/12/1997 | 37.4 |
| 11/15/1997 | 37.4 |
| 04/20/1998 | 37.01 |
| 01/06/1998 | 37.3 |
| 05/20/1998 | 36.9 |
| 07/08/1998 | 36.5 |
| 10/02/1998 | 36.5 |
| 01/05/1999 | 35.9 |
| 04/08/1999 | 35.9 |
| 07/09/1999 | 35.3 |
| 10/08/1999 | 35.4 |
| 01/11/2000 | 35 |
| 04/04/2000 | 35.7 |
| 05/01/2000 | 35.5 |
| 07/10/2000 | 35.8 |
| 10/03/2000 | 35.5 |
| 01/05/2001 | 35.7 |
| 08/02/2001 | 34.8 |
| 10/05/2001 | 34.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

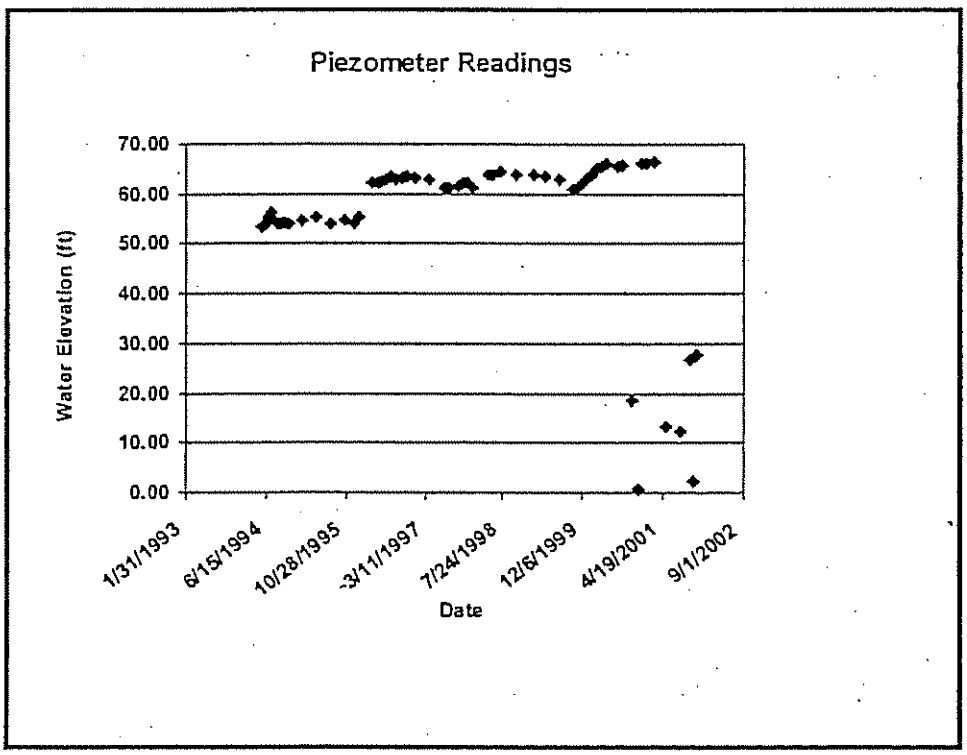
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_102A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 629250 | | |
| Easting | 472550 | Screen El | -3 |
| Phase | P3 | Stratum | BL |




Readings

| | |
|---|---|
| 05/07/2001 | 13.4 |
| 05/20/1994 | 53.5 |
| 06/02/1994 | 54 |
| 06/17/1994 | 54.2 |
| 06/30/1994 | 55.4 |
| 07/18/1994 | 56.3 |
| 08/02/1994 | 54.7 |
| 08/16/1994 | 54.5 |
| 08/30/1994 | 54.2 |
| 09/14/1994 | 54 |
| 09/30/1994 | 54.5 |
| 10/27/1994 | 54 |
| 11/05/1994 | 54 |
| 01/24/1995 | 54.7 |
| 04/19/1995 | 55.2 |
| 07/27/1995 | 54.2 |
| 10/24/1995 | 54.7 |
| 12/18/1995 | 54 |
| 01/19/1996 | 55.4 |
| 04/04/1996 | 62.1 |
| 05/21/1996 | 62.1 |
| 06/11/1996 | 62.5 |
| 07/06/1996 | 63 |
| 08/10/1996 | 63.5 |
| 09/10/1996 | 63 |
| 10/11/1996 | 63.2 |
| 11/15/1996 | 63.5 |
| 01/07/1997 | 63.2 |
| 04/05/1997 | 62.8 |
| 07/09/1997 | 61.2 |
| 08/08/1997 | 61.2 |
| 10/15/1997 | 61.6 |
| 11/15/1997 | 62.3 |
| 12/08/1997 | 62.3 |
| 01/09/1998 | 61.2 |
| 04/20/1998 | 63.9 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

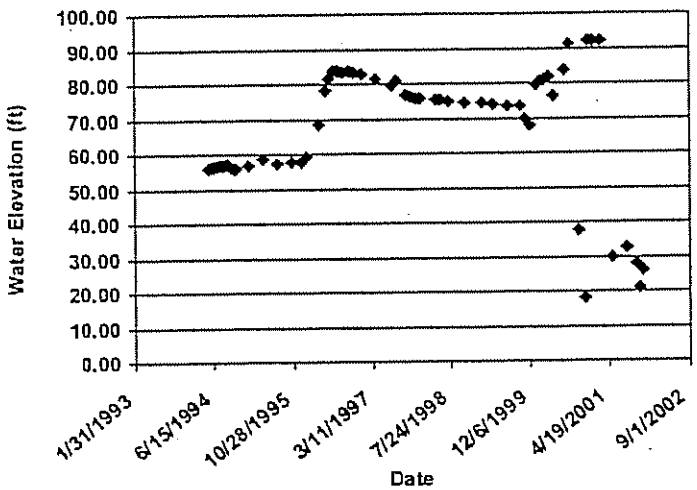
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 103A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629000 |
| Easting | 472550 |
| Phase | P3 |
| Screen El | 13 |
| Stratum | BM |




Readings

| | |
|---|---|
| 05/07/2001 | 29.9 |
| 05/20/1994 | 55.9 |
| 06/02/1994 | 56.2 |
| 06/17/1994 | 56.2 |
| 06/30/1994 | 56.4 |
| 07/18/1994 | 56.6 |
| 08/02/1994 | 56.8 |
| 08/16/1994 | 56.8 |
| 08/30/1994 | 56.6 |
| 09/14/1994 | 57.1 |
| 09/30/1994 | 56.4 |
| 10/27/1994 | 55.7 |
| 11/05/1994 | 55.7 |
| 01/24/1995 | 56.6 |
| 04/19/1995 | 58.7 |
| 07/27/1995 | 57.1 |
| 10/24/1995 | 57.8 |
| 12/18/1995 | 57.5 |
| 01/19/1996 | 59.2 |
| 04/04/1996 | 68.4 |
| 05/21/1996 | 78.3 |
| 06/11/1996 | 81.3 |
| 07/06/1996 | 83.8 |
| 08/10/1996 | 83.8 |
| 09/10/1996 | 83.4 |
| 10/11/1996 | 83.6 |
| 11/15/1996 | 83.2 |
| 01/07/1997 | 82.7 |
| 04/05/1997 | 81.5 |
| 07/09/1997 | 79.7 |
| 08/08/1997 | 80.8 |
| 10/15/1997 | 76.9 |
| 11/15/1997 | 76.2 |
| 12/08/1997 | 76 |
| 01/09/1998 | 75.8 |
| 04/20/1998 | 75.3 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

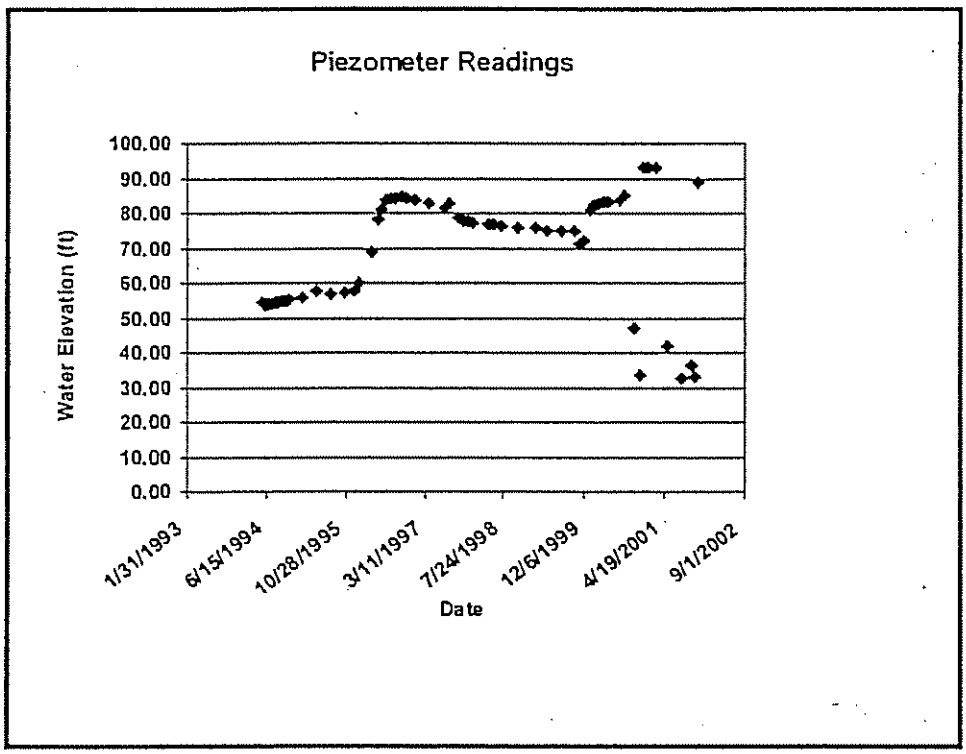
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 103B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629002 |
| Easting | 472550 |
| Screen El | 29.9 |
| Phase | P3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 05/07/2001 | 41.9 |
| 05/20/1994 | 54.4 |
| 06/02/1994 | 53.7 |
| 06/17/1994 | 53.9 |
| 06/30/1994 | 54.1 |
| 07/18/1994 | 54.1 |
| 08/02/1994 | 54.4 |
| 08/16/1994 | 54.4 |
| 08/30/1994 | 54.6 |
| 09/14/1994 | 54.8 |
| 09/30/1994 | 54.8 |
| 10/27/1994 | 54.8 |
| 11/05/1994 | 55.3 |
| 01/24/1995 | 56 |
| 04/19/1995 | 57.8 |
| 07/27/1995 | 56.7 |
| 10/24/1995 | 57.4 |
| 12/18/1995 | 57.8 |
| 01/19/1996 | 60.1 |
| 04/04/1996 | 68.9 |
| 05/21/1996 | 78.1 |
| 06/11/1996 | 81.1 |
| 07/06/1996 | 83.9 |
| 08/10/1996 | 84.4 |
| 09/10/1996 | 84.4 |
| 10/11/1996 | 84.6 |
| 11/15/1996 | 84.4 |
| 01/07/1997 | 83.7 |
| 04/05/1997 | 83 |
| 07/09/1997 | 81.6 |
| 08/08/1997 | 82.7 |
| 10/15/1997 | 78.4 |
| 11/15/1997 | 77.7 |
| 12/08/1997 | 77.7 |
| 01/09/1998 | 77.2 |
| 04/20/1998 | 76.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

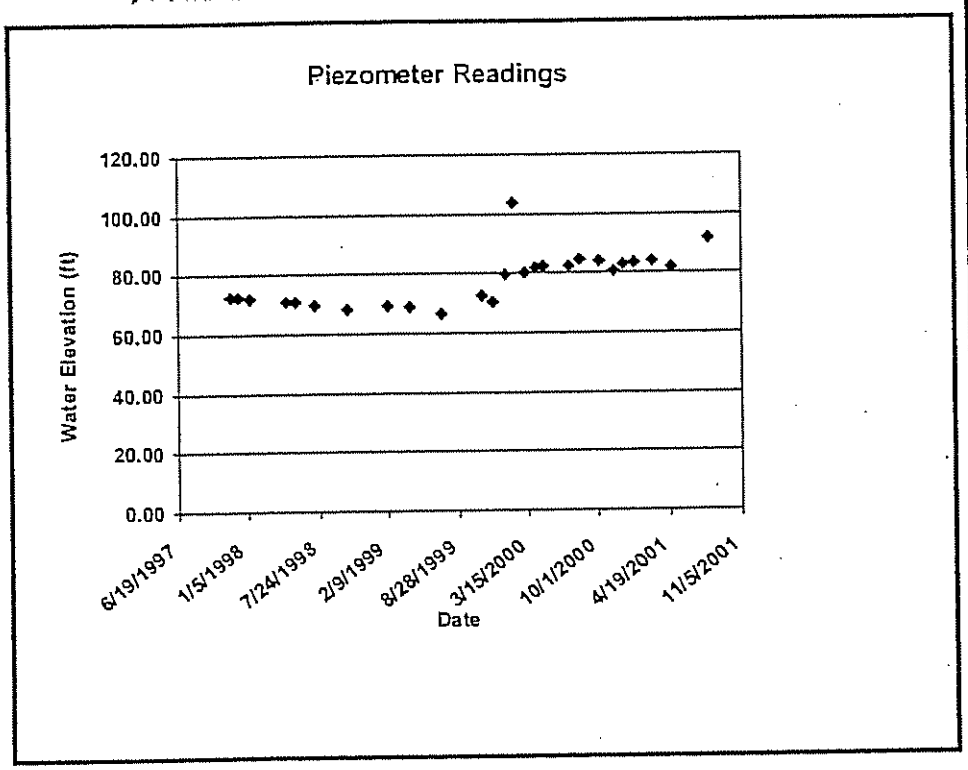
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_103D

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629004 |
| Easting | 472550 |
| Phase | P3 |
| Screen El | 32 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/27/2001 | 81.6 |
| 11/15/1997 | 72.4 |
| 12/08/1997 | 72.4 |
| 01/09/1998 | 72.2 |
| 04/20/1998 | 71 |
| 05/20/1998 | 70.8 |
| 07/10/1998 | 69.8 |
| 10/13/1998 | 68 |
| 02/08/1999 | 69.2 |
| 04/13/1999 | 68.7 |
| 07/12/1999 | 66.6 |
| 11/05/1999 | 72.8 |
| 12/08/1999 | 70.5 |
| 01/13/2000 | 79.5 |
| 02/03/2000 | 103.5 |
| 03/07/2000 | 80 |
| 04/06/2000 | 81.6 |
| 05/01/2000 | 82.3 |
| 07/12/2000 | 82.5 |
| 08/11/2000 | 84.6 |
| 10/06/2000 | 84.2 |
| 11/16/2000 | 80.5 |
| 12/13/2000 | 82.8 |
| 01/12/2001 | 83.2 |
| 03/02/2001 | 83.9 |
| 08/07/2001 | 91.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

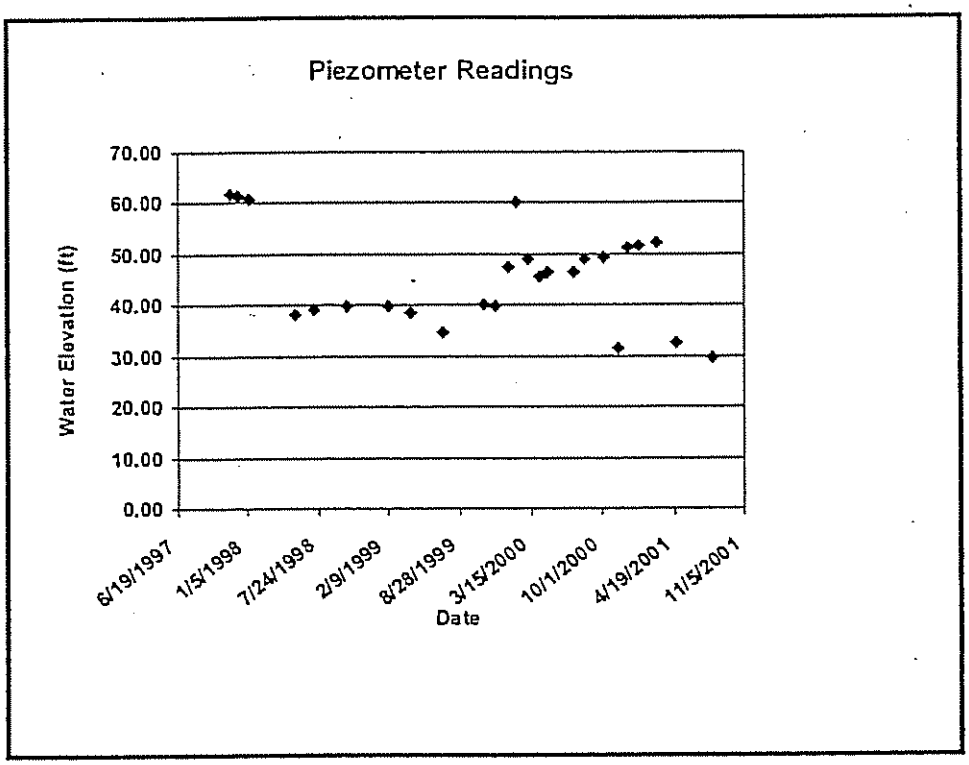
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_103E

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629006 |
| Easting | 472550 |
| Phase | P3 |
| Screen El | -4 |
| Stratum | BL |




Readings

| | |
|---|---|
| 04/27/2001 | 32.5 |
| 11/15/1997 | 61.6 |
| 12/08/1997 | 61.4 |
| 01/09/1998 | 60.9 |
| 05/20/1998 | 38.1 |
| 07/10/1998 | 39 |
| 10/13/1998 | 39.7 |
| 02/08/1999 | 39.7 |
| 04/13/1999 | 38.5 |
| 07/12/1999 | 34.8 |
| 11/05/1999 | 40.1 |
| 12/08/1999 | 39.9 |
| 01/13/2000 | 47.3 |
| 02/03/2000 | 60 |
| 03/07/2000 | 49.1 |
| 04/06/2000 | 45.5 |
| 05/01/2000 | 46.4 |
| 07/12/2000 | 46.6 |
| 08/11/2000 | 48.9 |
| 10/06/2000 | 49.4 |
| 11/16/2000 | 31.6 |
| 12/13/2000 | 51.2 |
| 01/12/2001 | 51.5 |
| 03/02/2001 | 52.1 |
| 08/07/2001 | 29.46 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

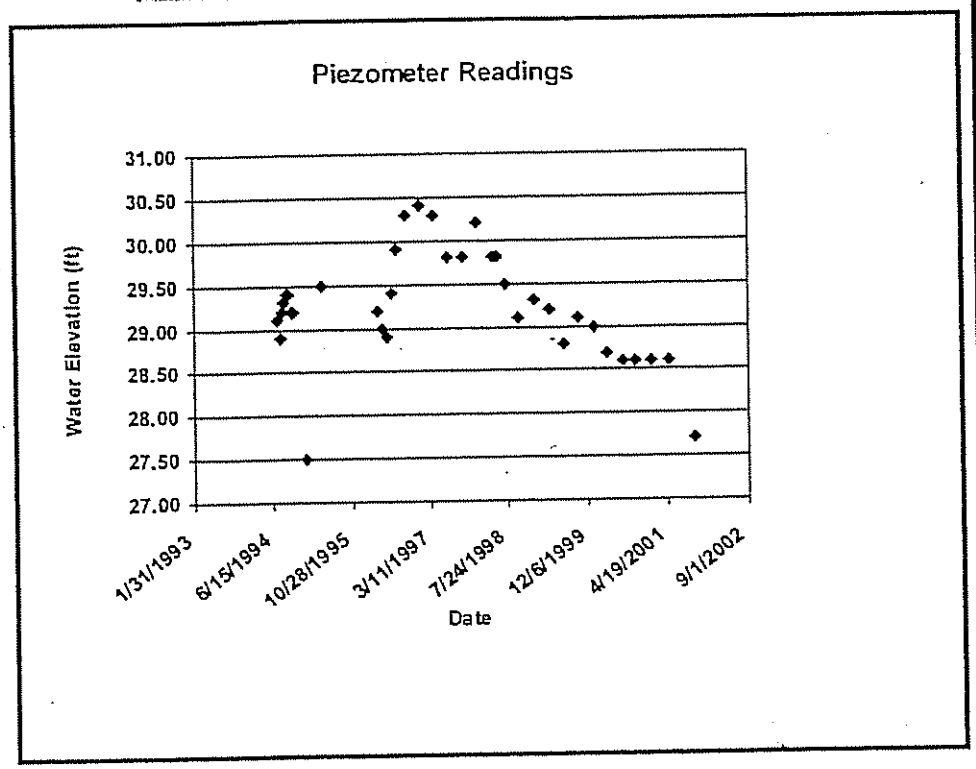
# SECTION 3

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 IC 005

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629210 |
| Easting | 473573 |
| Phase | P3 |
| Screen El | 5.5 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 28.6 |
| 07/19/1994 | 29.1 |
| 08/01/1994 | 28.9 |
| 08/18/1994 | 29.2 |
| 08/30/1994 | 29.3 |
| 10/11/1994 | 29.2 |
| 01/09/1995 | 27.5 |
| 04/19/1995 | 29.5 |
| 04/04/1996 | 29.2 |
| 05/10/1996 | 29 |
| 06/10/1996 | 28.9 |
| 06/11/1996 | 28.9 |
| 07/05/1996 | 29.4 |
| 07/06/1996 | 29.4 |
| 08/09/1996 | 29.9 |
| 10/10/1996 | 30.3 |
| 01/07/1997 | 30.4 |
| 04/04/1997 | 30.3 |
| 04/05/1997 | 30.3 |
| 07/08/1997 | 29.8 |
| 10/09/1997 | 29.8 |
| 01/06/1998 | 30.2 |
| 04/20/1998 | 29.81 |
| 09/13/1994 | 29.4 |
| 09/29/1994 | 29.4 |
| 10/25/1994 | 29.2 |
| 05/20/1998 | 29.8 |
| 07/08/1998 | 29.5 |
| 10/02/1998 | 29.1 |
| 01/05/1999 | 29.3 |
| 04/08/1999 | 29.2 |
| 07/09/1999 | 28.8 |
| 10/08/1999 | 29.1 |
| 01/11/2000 | 29 |
| 04/04/2000 | 28.7 |
| 07/10/2000 | 28.6 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

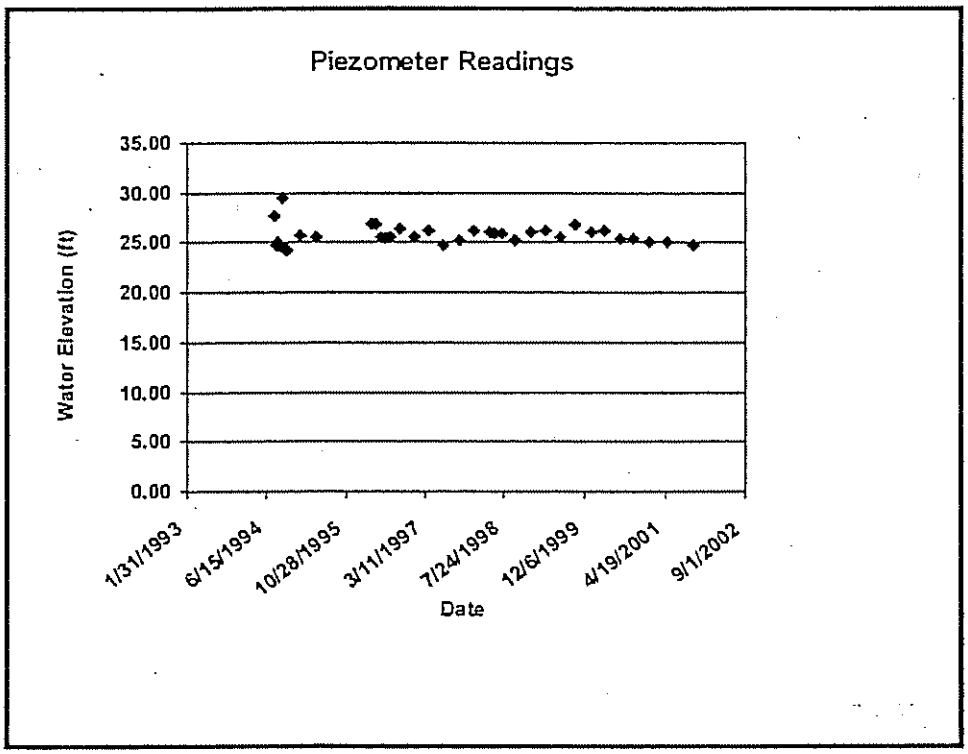
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_IC_05A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629212 |
| Easting | 473570 |
| Screen El | 19.7 |
| Phase | P3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 25.1 |
| 08/01/1994 | 27.7 |
| 08/18/1994 | 24.8 |
| 08/30/1994 | 25 |
| 09/29/1994 | 29.4 |
| 10/11/1994 | 24.3 |
| 10/25/1994 | 24.2 |
| 01/09/1995 | 25.7 |
| 04/19/1995 | 25.5 |
| 04/04/1996 | 26.9 |
| 05/10/1996 | 26.8 |
| 06/10/1996 | 25.5 |
| 06/11/1996 | 25.5 |
| 07/05/1996 | 25.4 |
| 07/06/1996 | 25.4 |
| 08/09/1996 | 25.6 |
| 10/10/1996 | 26.3 |
| 01/07/1997 | 25.5 |
| 04/04/1997 | 26.2 |
| 04/05/1997 | 26.2 |
| 07/08/1997 | 24.8 |
| 10/09/1997 | 25.3 |
| 01/06/1998 | 26.2 |
| 04/20/1998 | 25.98 |
| 09/13/1994 | 24.6 |
| 05/20/1998 | 25.9 |
| 07/08/1998 | 25.9 |
| 10/02/1998 | 25.3 |
| 01/05/1999 | 26.1 |
| 04/08/1999 | 26.2 |
| 07/09/1999 | 25.6 |
| 10/08/1999 | 26.9 |
| 01/11/2000 | 26.1 |
| 04/04/2000 | 26.2 |
| 07/10/2000 | 25.4 |
| 10/03/2000 | 25.4 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

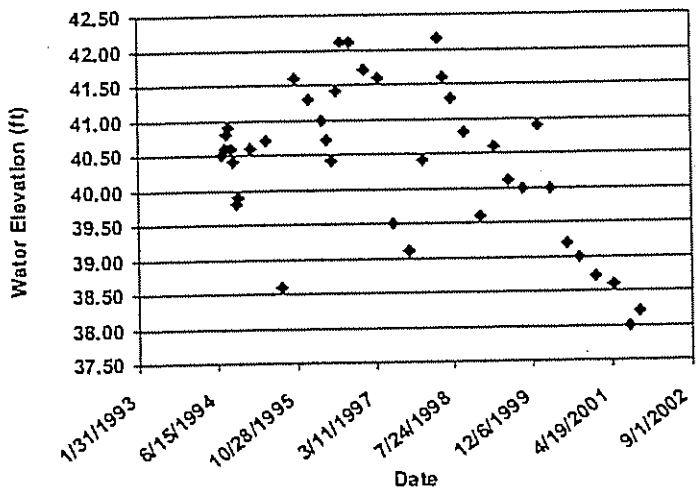
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_05A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629148 |
| Easting | 473455 |
| Phase | P3 |
| Screen El | 28.8 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 38.6 |
| 07/19/1994 | 40.5 |
| 08/01/1994 | 40.6 |
| 08/18/1994 | 40.8 |
| 08/30/1994 | 40.9 |
| 09/29/1994 | 40.4 |
| 10/11/1994 | 39.8 |
| 10/25/1994 | 39.9 |
| 01/09/1995 | 40.6 |
| 04/19/1995 | 40.7 |
| 07/27/1995 | 38.6 |
| 10/24/1995 | 41.6 |
| 01/19/1996 | 41.3 |
| 04/04/1996 | 41 |
| 05/10/1996 | 40.7 |
| 06/10/1996 | 40.4 |
| 07/05/1996 | 41.4 |
| 07/06/1996 | 41.4 |
| 08/09/1996 | 42.1 |
| 10/10/1996 | 42.1 |
| 01/07/1997 | 41.7 |
| 04/04/1997 | 41.6 |
| 04/05/1997 | 41.6 |
| 07/08/1997 | 39.5 |
| 10/09/1997 | 39.1 |
| 01/06/1998 | 40.4 |
| 04/20/1998 | 42.15 |
| 09/13/1994 | 40.6 |
| 05/20/1998 | 41.6 |
| 07/08/1998 | 41.3 |
| 10/02/1998 | 40.8 |
| 01/05/1999 | 39.6 |
| 04/08/1999 | 40.6 |
| 07/09/1999 | 40.1 |
| 10/08/1999 | 40 |
| 01/11/2000 | 40.9 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

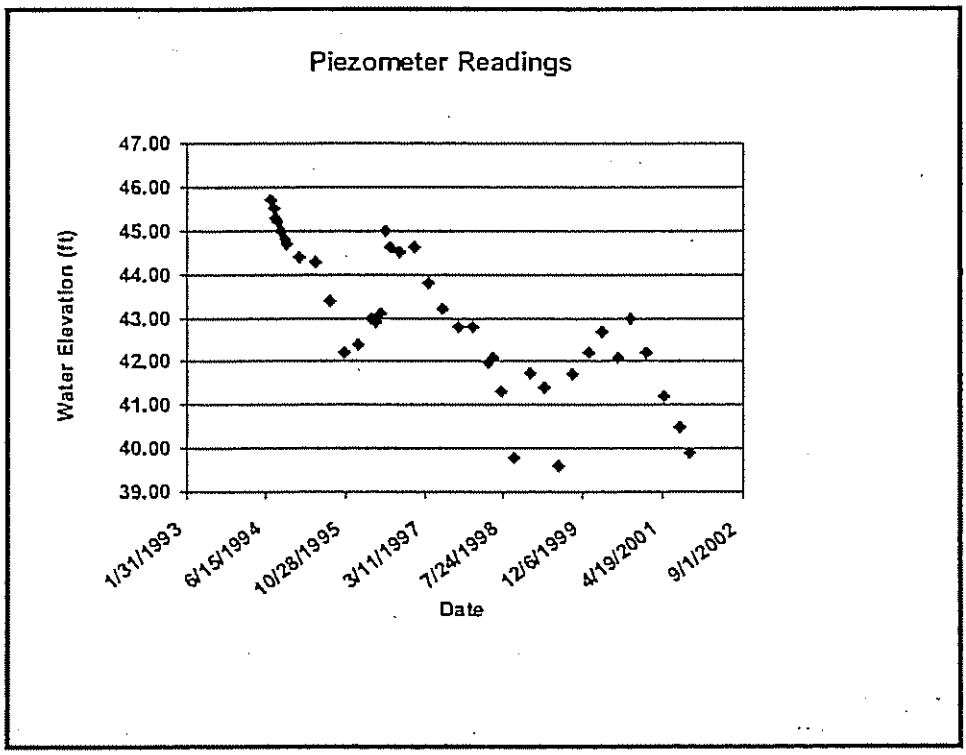
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_05B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629151 |
| Easting | 473450 |
| Screen El | 13.9 |
| Phase | P3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 41.2 |
| 07/19/1994 | 45.7 |
| 08/01/1994 | 45.5 |
| 08/18/1994 | 45.3 |
| 08/30/1994 | 45.2 |
| 09/29/1994 | 45 |
| 10/11/1994 | 44.8 |
| 10/25/1994 | 44.7 |
| 01/09/1995 | 44.4 |
| 04/19/1995 | 44.3 |
| 07/27/1995 | 43.4 |
| 10/24/1995 | 42.2 |
| 01/19/1996 | 42.4 |
| 04/04/1996 | 43 |
| 05/10/1996 | 42.9 |
| 06/10/1996 | 43.1 |
| 06/11/1996 | 43.1 |
| 07/05/1996 | 45 |
| 07/06/1996 | 45 |
| 08/09/1996 | 44.6 |
| 10/10/1996 | 44.5 |
| 01/07/1997 | 44.6 |
| 04/04/1997 | 43.8 |
| 04/05/1997 | 43.8 |
| 07/08/1997 | 43.2 |
| 10/09/1997 | 42.8 |
| 01/06/1998 | 42.8 |
| 04/20/1998 | 41.98 |
| 09/13/1994 | 45 |
| 05/20/1998 | 42.1 |
| 07/08/1998 | 41.3 |
| 10/02/1998 | 39.8 |
| 01/05/1999 | 41.7 |
| 04/08/1999 | 41.4 |
| 07/09/1999 | 39.6 |
| 10/08/1999 | 41.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

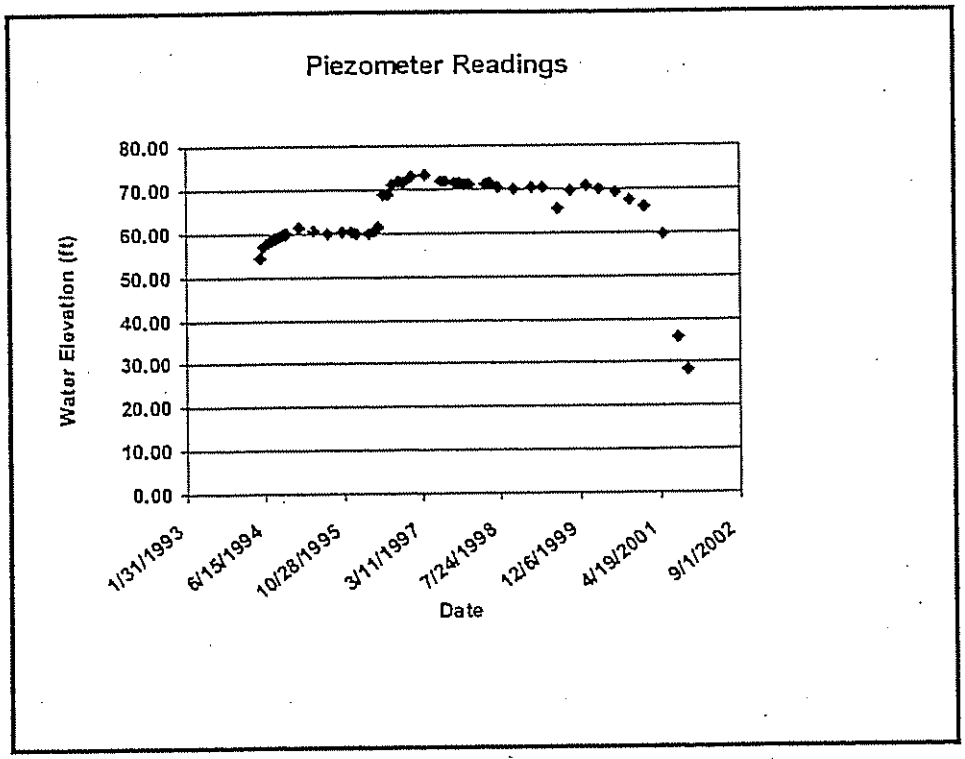
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_104A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628900 |
| Easting | 473300 |
| Phase | P3 |
| Screen El | 15 |
| Stratum | BM |




Readings

| | |
|---|---|
| 05/03/2001 | 59.5 |
| 05/20/1994 | 54.2 |
| 06/02/1994 | 57 |
| 06/17/1994 | 57.2 |
| 06/30/1994 | 57.7 |
| 07/18/1994 | 58.2 |
| 08/02/1994 | 58.4 |
| 08/16/1994 | 58.8 |
| 08/30/1994 | 58.8 |
| 09/14/1994 | 59.3 |
| 09/30/1994 | 59.5 |
| 10/27/1994 | 59.8 |
| 11/05/1994 | 60 |
| 01/24/1995 | 61.4 |
| 04/19/1995 | 60.7 |
| 07/27/1995 | 60 |
| 10/24/1995 | 60.2 |
| 12/18/1995 | 60.2 |
| 01/19/1996 | 60 |
| 04/04/1996 | 60 |
| 05/21/1996 | 60.7 |
| 06/11/1996 | 61.4 |
| 07/06/1996 | 69 |
| 08/10/1996 | 68.8 |
| 09/10/1996 | 71.1 |
| 10/11/1996 | 71.8 |
| 11/15/1996 | 71.5 |
| 01/07/1997 | 72.9 |
| 04/05/1997 | 73.4 |
| 07/09/1997 | 72 |
| 08/08/1997 | 72 |
| 10/15/1997 | 71.3 |
| 11/15/1997 | 71.3 |
| 12/08/1997 | 71.1 |
| 01/09/1998 | 71.1 |
| 04/20/1998 | 71.1 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

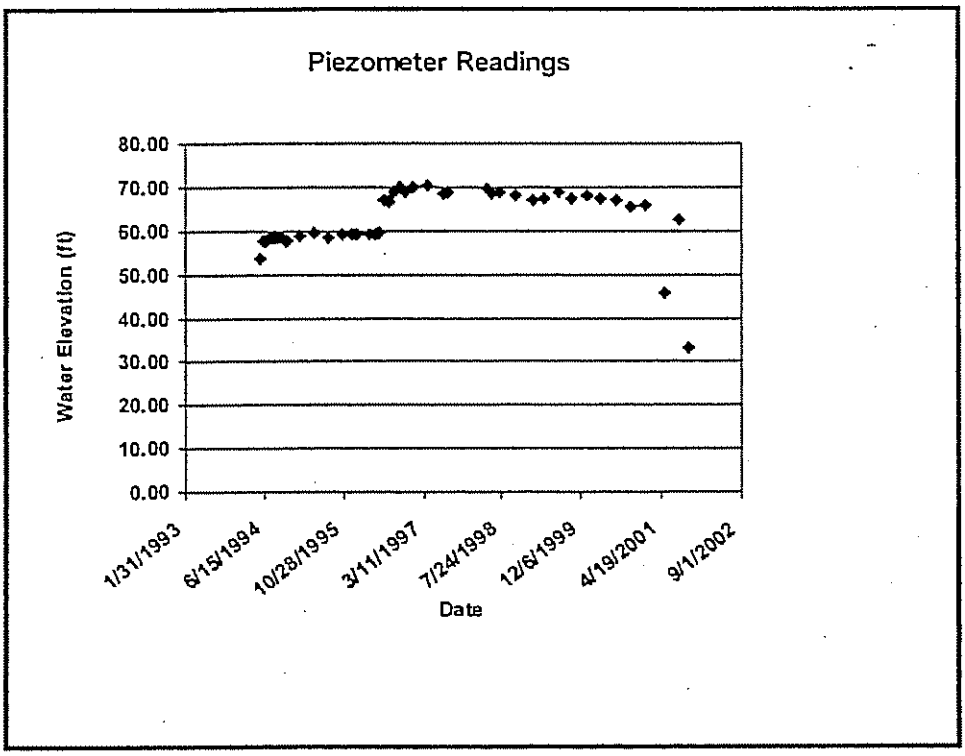
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_104B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628902 |
| Easting | 473300 |
| Phase | P3 |
| Screen El | 32 |
| Stratum | BU |




Readings

| | |
|---|---|
| 05/03/2001 | 45.9 |
| 05/20/1994 | 53.5 |
| 06/02/1994 | 57.6 |
| 06/17/1994 | 57.6 |
| 06/30/1994 | 57.8 |
| 07/18/1994 | 58.3 |
| 08/02/1994 | 58.5 |
| 08/16/1994 | 58.8 |
| 08/30/1994 | 58.5 |
| 09/14/1994 | 58.5 |
| 09/30/1994 | 58.5 |
| 10/27/1994 | 57.6 |
| 11/05/1994 | 57.8 |
| 01/24/1995 | 58.8 |
| 04/19/1995 | 59.5 |
| 07/27/1995 | 58.5 |
| 10/24/1995 | 59.2 |
| 12/18/1995 | 59.2 |
| 01/19/1996 | 59.2 |
| 04/04/1996 | 59 |
| 05/21/1996 | 59.2 |
| 06/11/1996 | 59.5 |
| 07/06/1996 | 66.8 |
| 08/10/1996 | 66.6 |
| 09/10/1996 | 68.9 |
| 10/11/1996 | 69.8 |
| 11/15/1996 | 68.9 |
| 01/07/1997 | 69.8 |
| 04/05/1997 | 70.3 |
| 07/09/1997 | 68.5 |
| 08/08/1997 | 68.7 |
| 04/20/1998 | 69.4 |
| 05/20/1998 | 68.5 |
| 07/10/1998 | 68.7 |
| 10/13/1998 | 68 |
| 02/08/1999 | 67.1 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

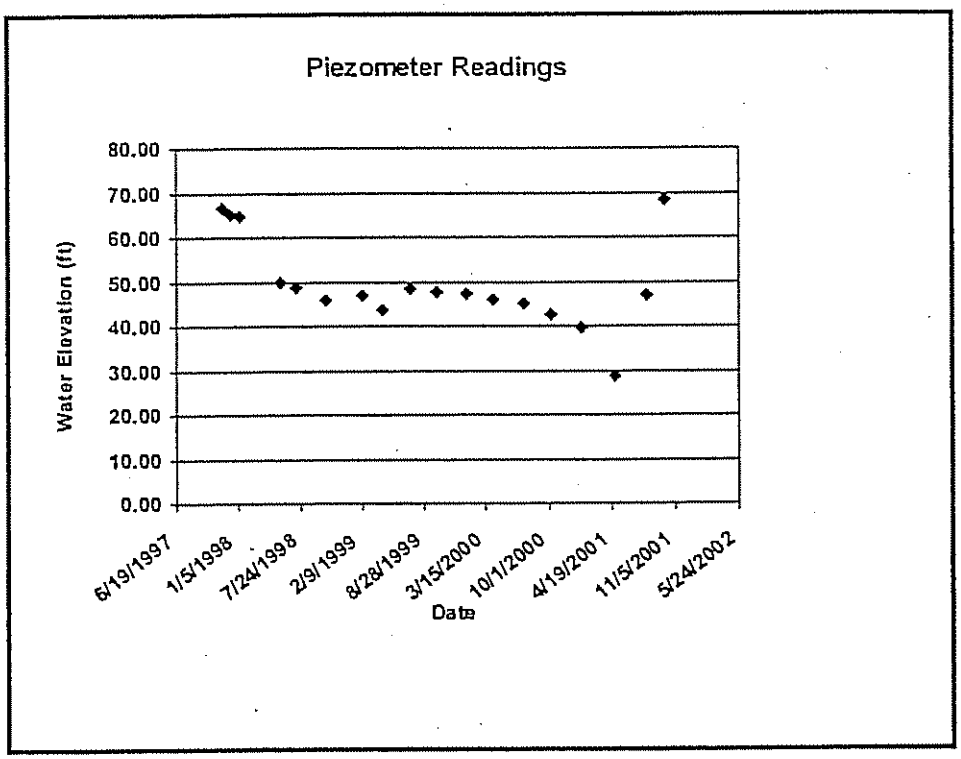
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_104D

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628904 |
| Easting | 473300 |
| Phase | P3 |
| Screen El | 32 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/30/2001 | 28.8 |
| 11/15/1997 | 66.4 |
| 12/08/1997 | 65 |
| 01/09/1998 | 64.8 |
| 05/20/1998 | 49.8 |
| 07/10/1998 | 48.9 |
| 10/13/1998 | 45.9 |
| 02/08/1999 | 46.8 |
| 04/13/1999 | 43.6 |
| 07/12/1999 | 48.2 |
| 10/07/1999 | 47.7 |
| 01/13/2000 | 47.3 |
| 04/06/2000 | 45.7 |
| 07/12/2000 | 45.2 |
| 10/06/2000 | 42.4 |
| 01/12/2001 | 39.7 |
| 08/07/2001 | 47 |
| 10/02/2001 | 68.3 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

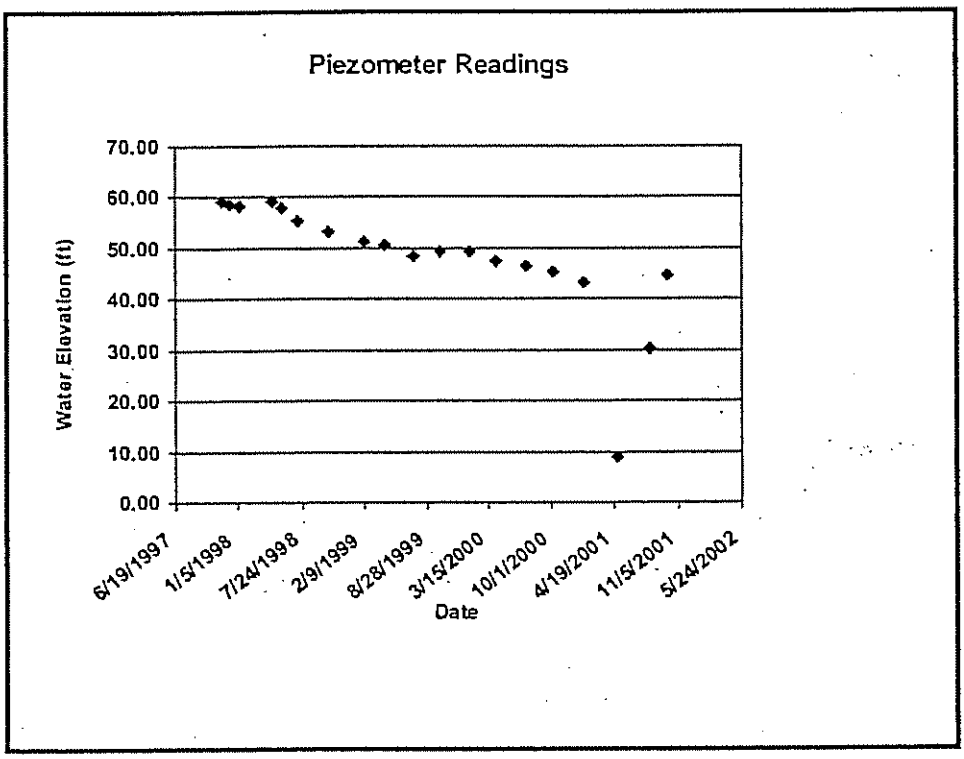
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 104E

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628906 |
| Easting | 473300 |
| Phase | P3 |
| Screen El | -4 |
| Stratum | BL |




Readings

| | |
|---|---|
| 04/30/2001 | 8.9 |
| 11/15/1997 | 59.2 |
| 12/08/1997 | 58.5 |
| 01/09/1998 | 58.3 |
| 04/20/1998 | 59.2 |
| 05/20/1998 | 57.8 |
| 07/10/1998 | 55.3 |
| 10/13/1998 | 53 |
| 02/08/1999 | 51.1 |
| 04/13/1999 | 50.7 |
| 07/12/1999 | 48.3 |
| 10/07/1999 | 49.3 |
| 01/13/2000 | 49.3 |
| 04/06/2000 | 47.4 |
| 07/12/2000 | 46.5 |
| 10/06/2000 | 45.1 |
| 01/12/2001 | 43.3 |
| 08/07/2001 | 30.1 |
| 10/02/2001 | 44.4 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

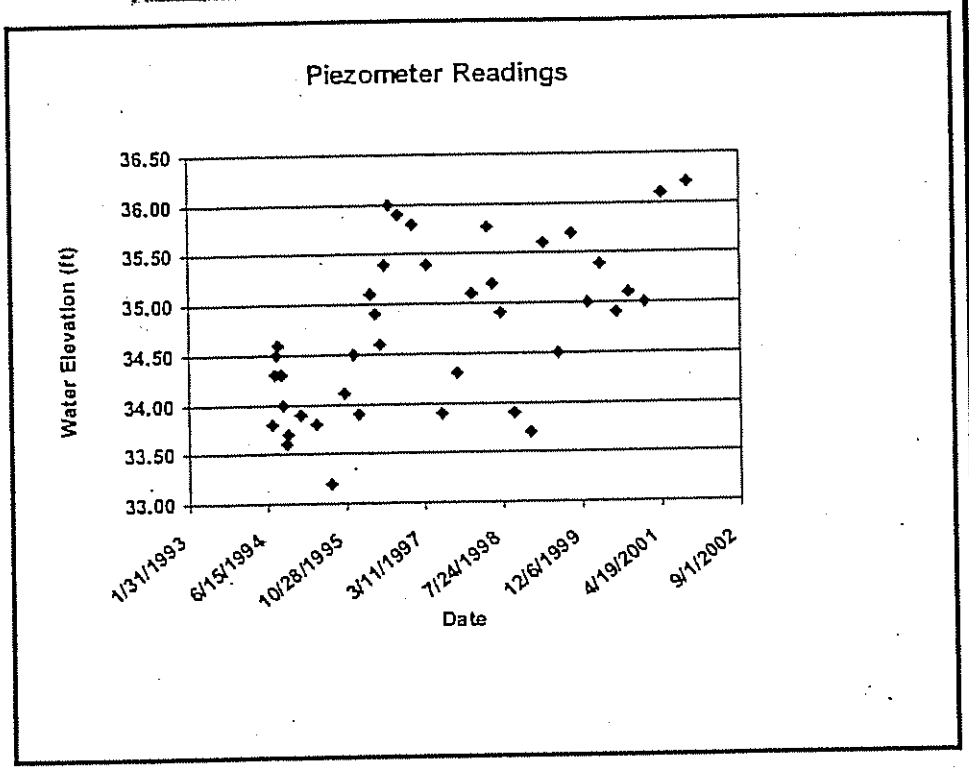
# SECTION 4

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 06A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629036 |
| Easting | 473729 |
| Phase | P3 |
| Screen El | 23.9 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 36.1 |
| 07/19/1994 | 33.8 |
| 08/01/1994 | 34.3 |
| 08/18/1994 | 34.5 |
| 08/30/1994 | 34.6 |
| 09/29/1994 | 34 |
| 10/11/1994 | 33.6 |
| 10/25/1994 | 33.7 |
| 01/09/1995 | 33.9 |
| 04/19/1995 | 33.8 |
| 07/27/1995 | 33.2 |
| 10/24/1995 | 34.1 |
| 12/18/1995 | 34.5 |
| 01/19/1996 | 33.9 |
| 04/04/1996 | 35.1 |
| 05/10/1996 | 34.9 |
| 06/10/1996 | 34.6 |
| 06/11/1996 | 34.6 |
| 07/05/1996 | 35.4 |
| 07/06/1996 | 35.4 |
| 08/09/1996 | 36 |
| 10/10/1996 | 35.9 |
| 01/07/1997 | 35.8 |
| 04/04/1997 | 35.4 |
| 07/08/1997 | 33.9 |
| 10/09/1997 | 34.3 |
| 01/06/1998 | 35.1 |
| 04/20/1998 | 35.76 |
| 09/13/1994 | 34.3 |
| 05/20/1998 | 35.2 |
| 07/08/1998 | 34.9 |
| 10/02/1998 | 33.9 |
| 01/05/1999 | 33.7 |
| 04/08/1999 | 35.6 |
| 07/09/1999 | 34.5 |
| 10/08/1999 | 35.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

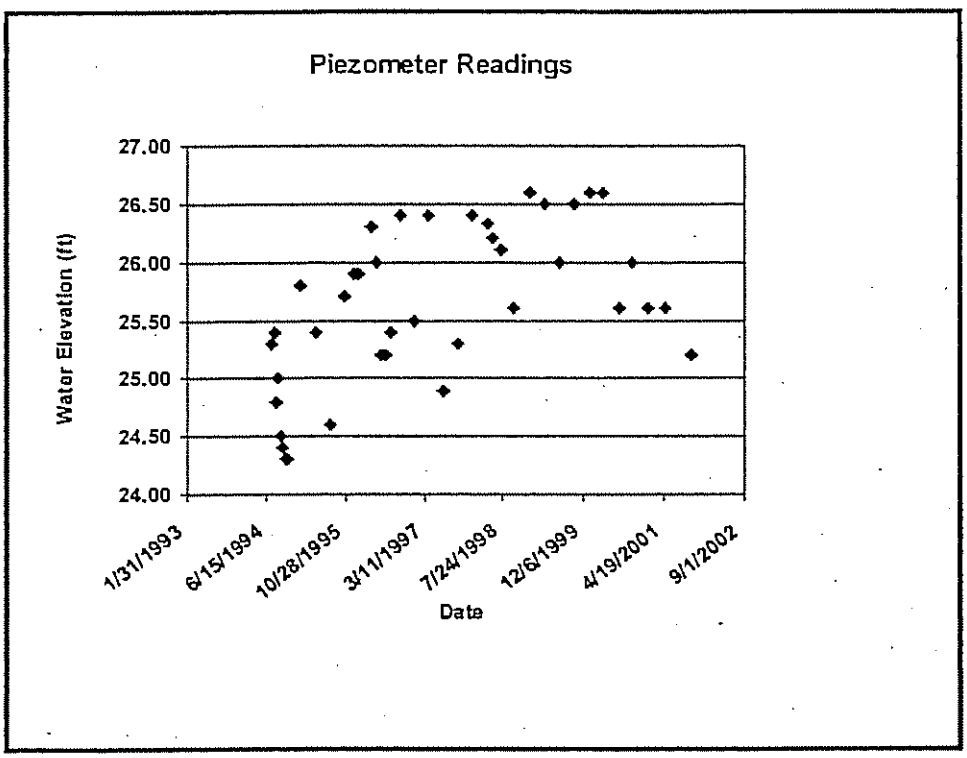
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 06B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 629033 |
| Easting | 473734 |
| Phase | P3 |
| Screen El | 14.4 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 25.6 |
| 07/19/1994 | 25.3 |
| 08/01/1994 | 25.4 |
| 08/18/1994 | 24.8 |
| 08/30/1994 | 25 |
| 09/29/1994 | 24.4 |
| 10/11/1994 | 24.3 |
| 10/25/1994 | 24.3 |
| 01/09/1995 | 25.8 |
| 04/19/1995 | 25.4 |
| 07/27/1995 | 24.6 |
| 10/24/1995 | 25.7 |
| 12/18/1995 | 25.9 |
| 01/19/1996 | 25.9 |
| 04/04/1996 | 26.3 |
| 05/10/1996 | 26 |
| 06/10/1996 | 25.2 |
| 07/05/1996 | 25.2 |
| 07/06/1996 | 25.2 |
| 08/09/1996 | 25.4 |
| 10/10/1996 | 26.4 |
| 01/07/1997 | 25.5 |
| 04/04/1997 | 26.4 |
| 04/05/1997 | 26.4 |
| 07/08/1997 | 24.9 |
| 07/09/1997 | 24.9 |
| 10/09/1997 | 25.3 |
| 01/06/1998 | 26.4 |
| 04/20/1998 | 26.33 |
| 09/13/1994 | 24.5 |
| 05/20/1998 | 26.2 |
| 07/08/1998 | 26.1 |
| 10/02/1998 | 25.6 |
| 01/05/1999 | 26.6 |
| 04/08/1999 | 26.5 |
| 07/09/1999 | 26 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

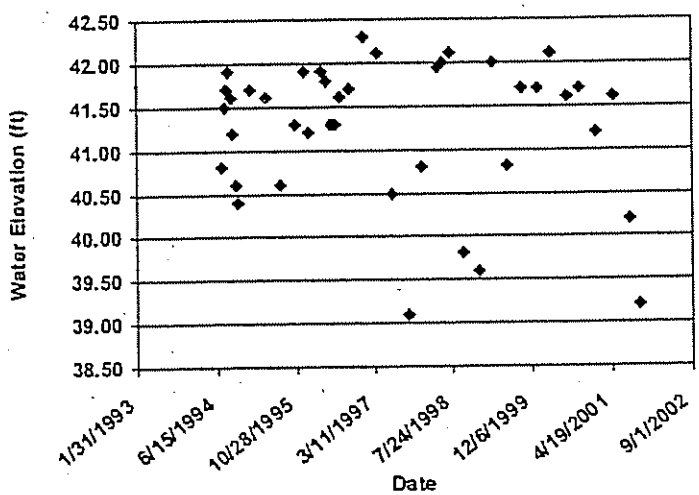
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 07A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628882 |
| Easting | 473994 |
| Phase | P3 |
| Screen El | 28.7 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 41.6 |
| 07/19/1994 | 40.8 |
| 08/01/1994 | 41.5 |
| 08/18/1994 | 41.7 |
| 08/30/1994 | 41.9 |
| 09/29/1994 | 41.2 |
| 10/11/1994 | 40.6 |
| 10/25/1994 | 40.4 |
| 01/09/1995 | 41.7 |
| 04/19/1995 | 41.6 |
| 07/27/1995 | 40.6 |
| 10/24/1995 | 41.3 |
| 12/18/1995 | 41.9 |
| 01/19/1996 | 41.2 |
| 04/04/1996 | 41.9 |
| 05/10/1996 | 41.8 |
| 06/10/1996 | 41.3 |
| 06/11/1996 | 41.3 |
| 07/05/1996 | 41.3 |
| 07/06/1996 | 41.3 |
| 08/09/1996 | 41.6 |
| 10/10/1996 | 41.7 |
| 01/07/1997 | 42.3 |
| 04/04/1997 | 42.1 |
| 07/08/1997 | 40.5 |
| 10/09/1997 | 39.1 |
| 01/06/1998 | 40.8 |
| 04/20/1998 | 41.95 |
| 09/13/1994 | 41.6 |
| 05/20/1998 | 42 |
| 07/08/1998 | 42.1 |
| 10/02/1998 | 39.8 |
| 01/05/1999 | 39.6 |
| 04/08/1999 | 42 |
| 07/09/1999 | 40.8 |
| 10/08/1999 | 41.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

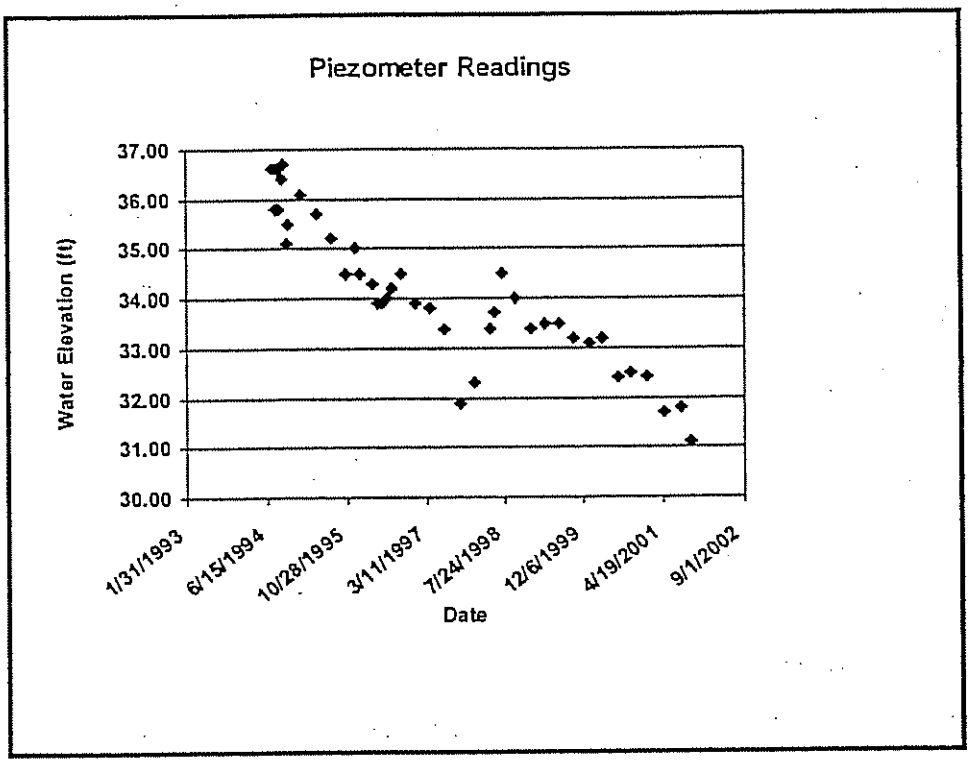
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 07B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628885 |
| Easting | 473990 |
| Phase | P3 |
| Screen El | 14.6 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 31.7 |
| 07/19/1994 | 36.6 |
| 08/01/1994 | 35.8 |
| 08/18/1994 | 36.6 |
| 08/30/1994 | 35.8 |
| 09/29/1994 | 36.7 |
| 10/11/1994 | 35.1 |
| 10/25/1994 | 35.5 |
| 01/09/1995 | 36.1 |
| 04/19/1995 | 35.7 |
| 07/27/1995 | 35.2 |
| 10/24/1995 | 34.5 |
| 12/18/1995 | 35 |
| 01/19/1996 | 34.5 |
| 04/04/1996 | 34.3 |
| 05/10/1996 | 33.9 |
| 06/10/1996 | 33.9 |
| 06/11/1996 | 33.9 |
| 07/05/1996 | 34 |
| 07/06/1996 | 34 |
| 08/09/1996 | 34.2 |
| 10/10/1996 | 34.5 |
| 01/07/1997 | 33.9 |
| 04/04/1997 | 33.8 |
| 07/08/1997 | 33.4 |
| 10/09/1997 | 31.9 |
| 01/06/1998 | 32.3 |
| 04/20/1998 | 33.39 |
| 09/13/1994 | 36.4 |
| 05/20/1998 | 33.7 |
| 07/08/1998 | 34.5 |
| 10/02/1998 | 34 |
| 01/05/1999 | 33.4 |
| 04/08/1999 | 33.5 |
| 07/09/1999 | 33.5 |
| 10/08/1999 | 33.2 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

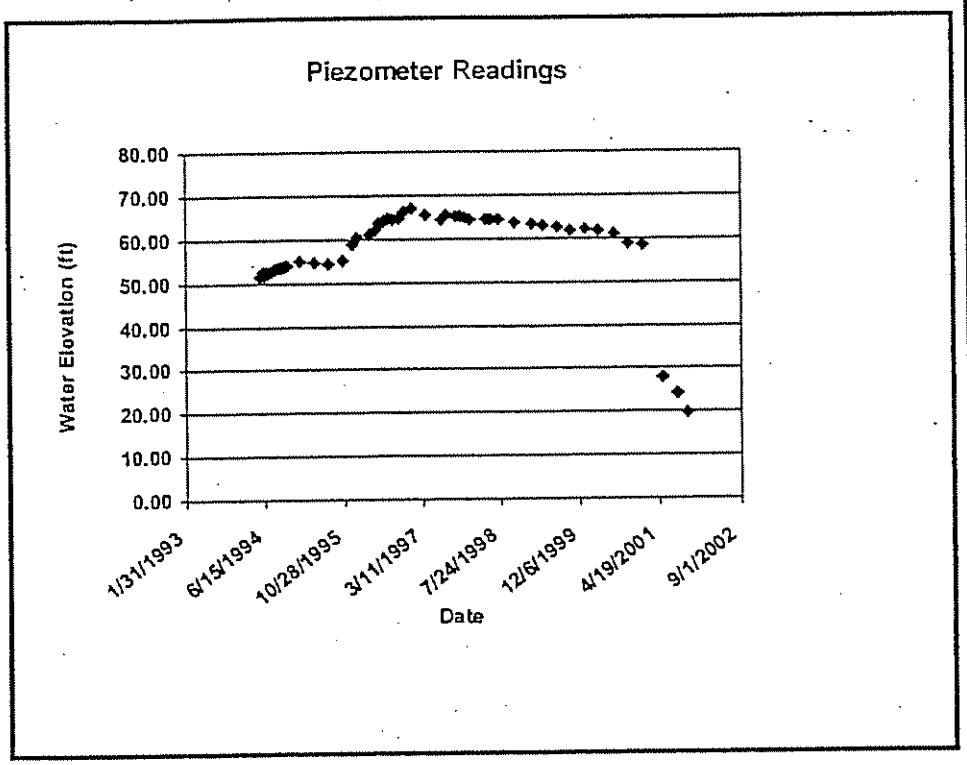
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 105A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 628700 | | |
| Easting | 473300 | Screen El | -3 |
| Phase | P3 | Stratum | BL |




Readings

| | |
|---|---|
| 05/03/2001 | 27.9 |
| 05/20/1994 | 51.5 |
| 06/02/1994 | 52.6 |
| 06/17/1994 | 51.9 |
| 06/30/1994 | 52.4 |
| 07/18/1994 | 52.6 |
| 08/02/1994 | 52.8 |
| 08/16/1994 | 53.1 |
| 08/30/1994 | 53.1 |
| 09/14/1994 | 53.5 |
| 09/30/1994 | 53.5 |
| 10/27/1994 | 53.8 |
| 11/05/1994 | 54 |
| 01/24/1995 | 54.9 |
| 04/19/1995 | 54.7 |
| 07/27/1995 | 54.2 |
| 10/24/1995 | 54.9 |
| 12/18/1995 | 58.8 |
| 01/19/1996 | 60.2 |
| 04/04/1996 | 60.9 |
| 05/21/1996 | 62.3 |
| 06/11/1996 | 63.5 |
| 07/06/1996 | 63.9 |
| 08/10/1996 | 64.8 |
| 09/10/1996 | 64.4 |
| 10/11/1996 | 64.8 |
| 11/15/1996 | 66.2 |
| 01/07/1997 | 66.9 |
| 04/05/1997 | 65.5 |
| 07/09/1997 | 64.4 |
| 08/08/1997 | 65.5 |
| 10/15/1997 | 65.3 |
| 11/15/1997 | 65.1 |
| 12/08/1997 | 64.8 |
| 01/09/1998 | 64.4 |
| 04/20/1998 | 64.4 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

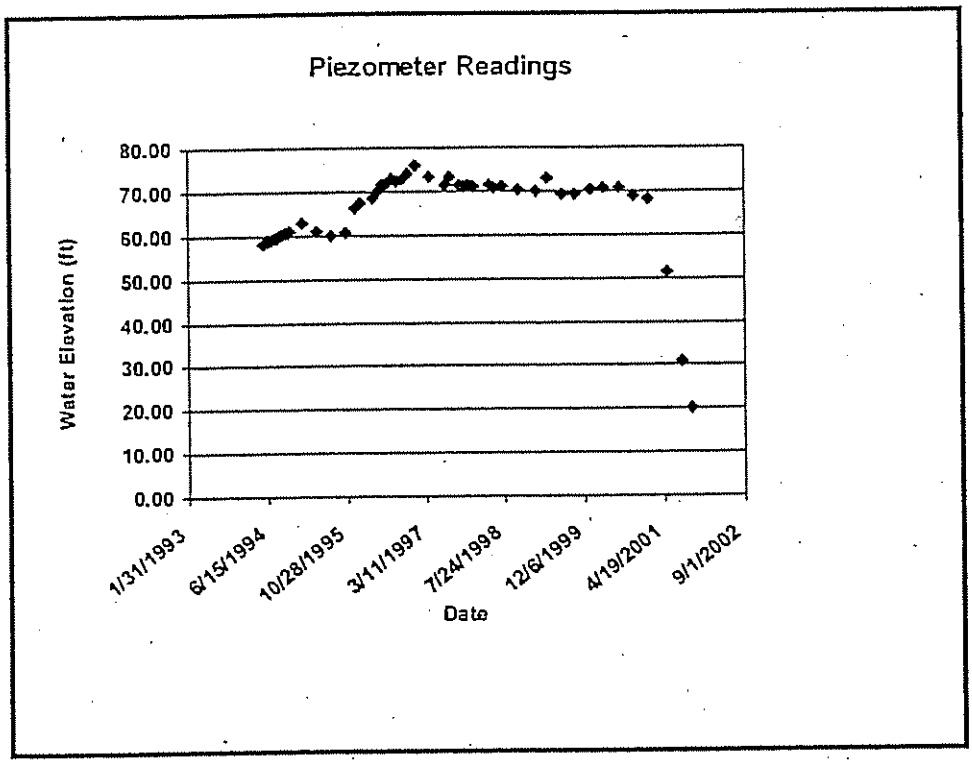
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 105B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628702 |
| Easting | 473300 |
| Phase | P3 |
| Screen El | 13 |
| Stratum | BM |




Readings

| | |
|---|---|
| 05/03/2001 | 51.3 |
| 05/20/1994 | 58 |
| 06/02/1994 | 58.7 |
| 06/17/1994 | 58.7 |
| 06/30/1994 | 58.9 |
| 07/18/1994 | 59.2 |
| 08/02/1994 | 59.4 |
| 08/16/1994 | 59.6 |
| 08/30/1994 | 59.8 |
| 09/14/1994 | 60.3 |
| 09/30/1994 | 60.5 |
| 10/27/1994 | 60.8 |
| 11/05/1994 | 61 |
| 01/24/1995 | 62.8 |
| 04/19/1995 | 61 |
| 07/27/1995 | 59.8 |
| 10/24/1995 | 60.5 |
| 12/18/1995 | 66.1 |
| 01/19/1996 | 67.5 |
| 04/04/1996 | 68.6 |
| 05/21/1996 | 70.5 |
| 06/11/1996 | 71.6 |
| 07/06/1996 | 71.8 |
| 08/10/1996 | 73 |
| 09/10/1996 | 72.3 |
| 10/11/1996 | 72.8 |
| 11/15/1996 | 74.2 |
| 01/07/1997 | 75.8 |
| 04/05/1997 | 73.2 |
| 07/09/1997 | 71.6 |
| 08/08/1997 | 73.2 |
| 10/15/1997 | 71.6 |
| 11/15/1997 | 70.9 |
| 12/08/1997 | 71.6 |
| 01/09/1998 | 71.2 |
| 04/20/1998 | 71.6 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

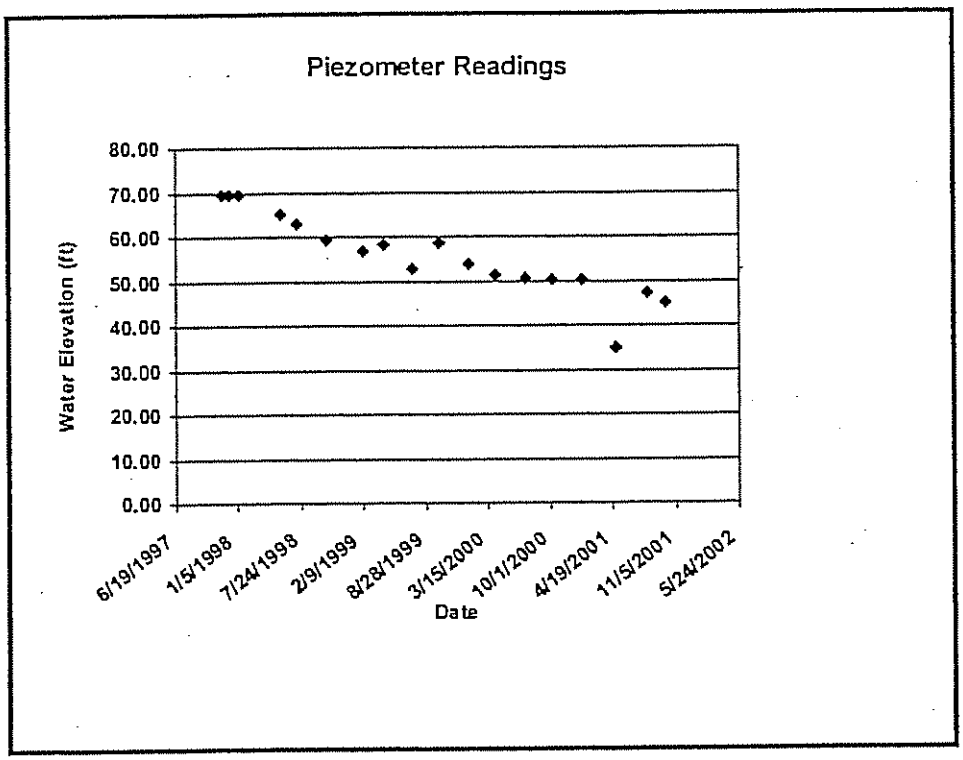
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 105D

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628704 |
| Easting | 473300 |
| Phase | P3 |
| Screen El | 31 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/27/2001 | 34.9 |
| 11/15/1997 | 69.3 |
| 12/08/1997 | 69.3 |
| 01/09/1998 | 69.3 |
| 05/20/1998 | 65.2 |
| 07/10/1998 | 62.8 |
| 10/13/1998 | 59.4 |
| 02/08/1999 | 56.8 |
| 04/13/1999 | 58.2 |
| 07/12/1999 | 52.9 |
| 10/07/1999 | 58.7 |
| 01/13/2000 | 53.8 |
| 04/06/2000 | 51.3 |
| 07/12/2000 | 50.4 |
| 10/06/2000 | 50.2 |
| 01/12/2001 | 50.2 |
| 08/07/2001 | 47.38 |
| 10/02/2001 | 45.1 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# SECTION 5

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

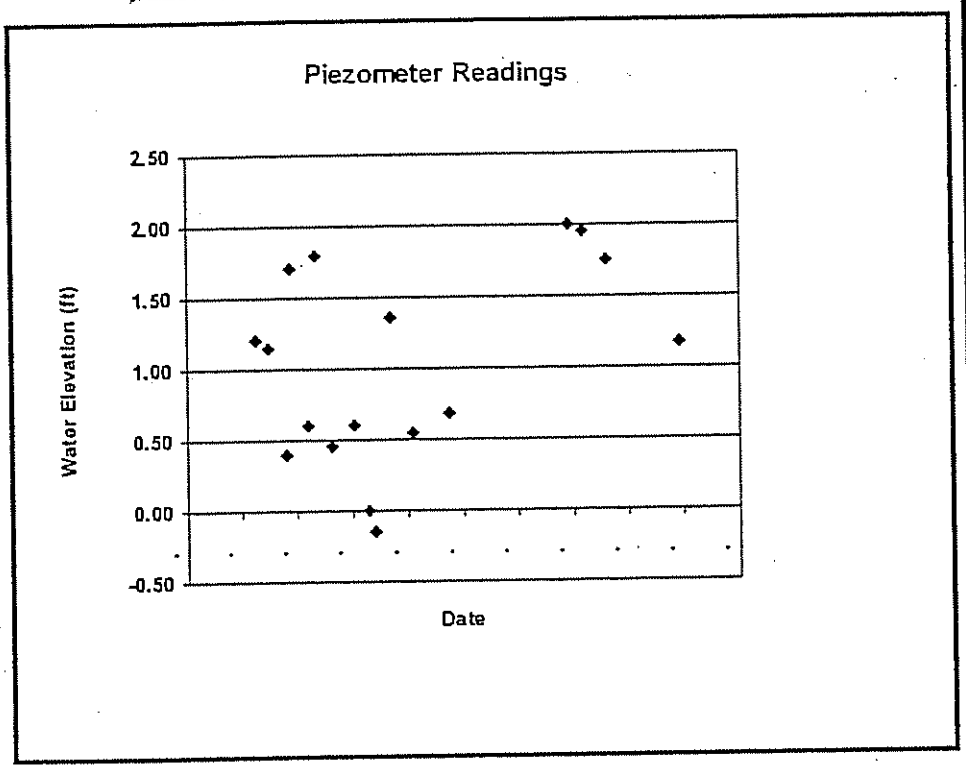
Select Piezometer: P3 MW C102

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628872 |
| Easting | 474268 |
| Phase | P3 |
| Screen El | -19.7 |
| Stratum | C1 |

Readings

| | |
|---|---|
| 07/28/1983 | 1.2 |
| 08/02/1983 | 1.15 |
| 08/08/1983 | 0.4 |
| 08/10/1983 | 1.7 |
| 08/16/1983 | 0.6 |
| 08/19/1983 | 1.8 |
| 08/25/1983 | 0.45 |
| 09/02/1983 | 0.6 |
| 09/15/1983 | 1.35 |
| 09/23/1983 | 0.55 |
| 10/06/1983 | 0.68 |
| 11/18/1983 | 2 |
| 11/23/1983 | 1.95 |
| 12/02/1983 | 1.75 |
| 12/28/1983 | 1.17 |




## Installation Information

Date Instrument Was Installed: 07/13/1983 *GEOLOGY*

*Ground Surface El* 26.3

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 29.5 | 29.5 | -19.7 | -13.7 | 23.3 | | 26 |
| *Bottom* | 26.3 | -19.7 | -29.7 | -43.7 | -13.7 | | 23 |
| *Diam. (in)* | 6 | 4 | 4 | 8.75 | 8.75 | | 9 |
| *Material* | STEEL | PVC SCH 40 | PVC #10 SLOT PVC | | BAROID QUICK GEL GROUT | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

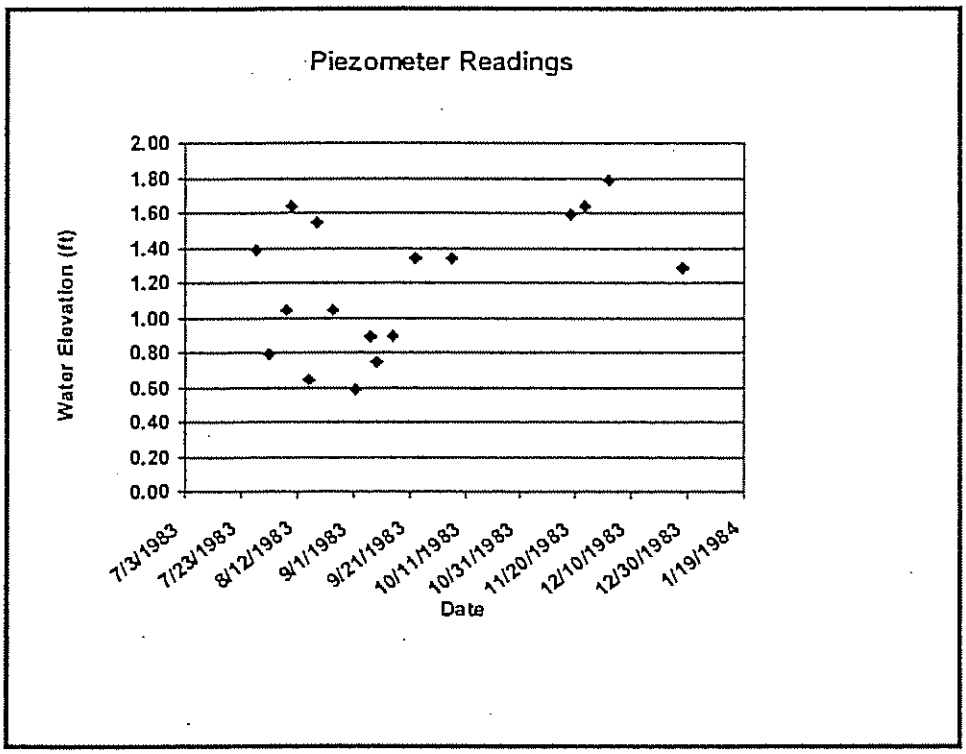
Select Piezometer: P3_MW_P102

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628864 |
| Easting | 474313 |
| Screen El | -128.7 |
| Phase | P3 |
| Stratum | P1 |

Readings

| | |
|---|---|
| 07/28/1983 | 1.39 |
| 08/02/1983 | 0.79 |
| 08/08/1983 | 1.04 |
| 08/10/1983 | 1.64 |
| 08/16/1983 | 0.64 |
| 08/19/1983 | 1.54 |
| 08/25/1983 | 1.04 |
| 09/09/1983 | 0.74 |
| 09/15/1983 | 0.89 |
| 09/23/1983 | 1.34 |
| 10/06/1983 | 1.34 |
| 11/18/1983 | 1.59 |
| 11/23/1983 | 1.64 |
| 12/02/1983 | 1.79 |
| 12/28/1983 | 1.28 |
| 09/02/1983 | 0.59 |
| 09/07/1983 | 0.89 |




## Installation Information

Date Instrument Was Installed: 07/12/1983 *GEOLOGY*

*Ground Surface El* 26

*NOTES*

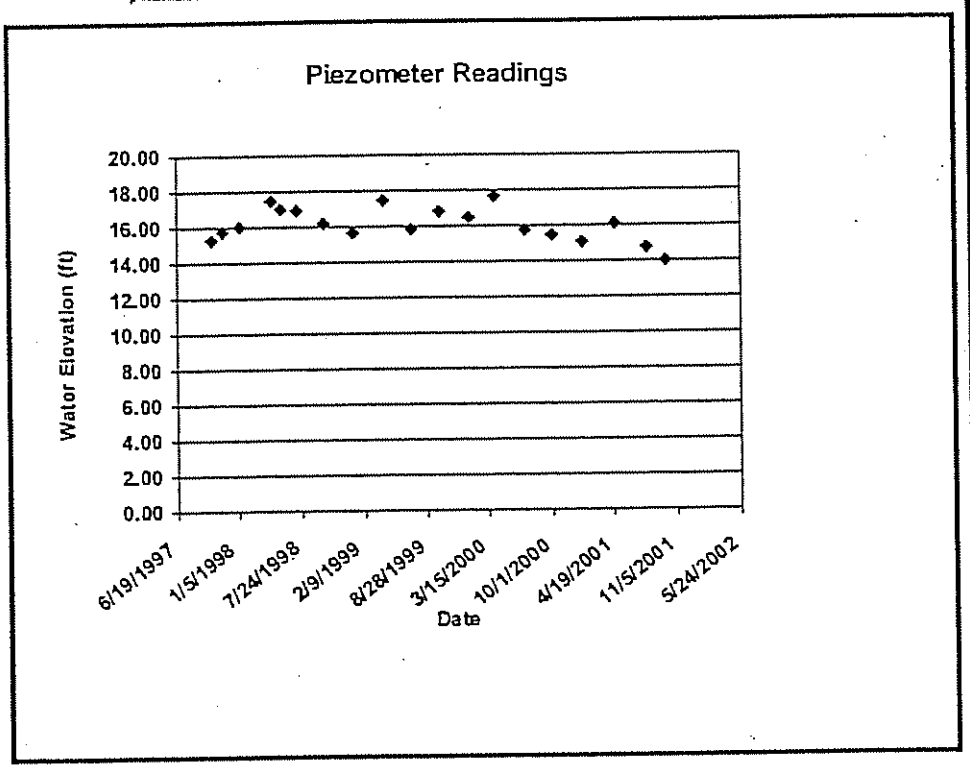
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 28 | 28 | -129 | -119 | 23 | | 26 |
| *Bottom* | 26 | -129 | -139 | -139 | -119 | | 23 |
| *Diam. (in)* | 4 | | 4 | | | | |
| *Material* | STEEL | PVC | PVC .01 SLOT SIZE | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_012

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628500 |
| Easting | 474075 |
| Phase | P3 |
| Screen El | 3 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 16.1 |
| 11/12/1997 | 15.7 |
| 11/15/1997 | 15.7 |
| 01/06/1998 | 16 |
| 04/20/1998 | 17.5 |
| 10/09/1997 | 15.3 |
| 05/20/1998 | 17 |
| 07/08/1998 | 16.9 |
| 10/02/1998 | 16.2 |
| 01/05/1999 | 15.6 |
| 04/08/1999 | 17.5 |
| 07/09/1999 | 15.8 |
| 10/08/1999 | 16.8 |
| 01/11/2000 | 16.5 |
| 04/04/2000 | 17.6 |
| 07/10/2000 | 15.7 |
| 10/03/2000 | 15.5 |
| 01/05/2001 | 15.1 |
| 08/03/2001 | 14.7 |
| 10/05/2001 | 14 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

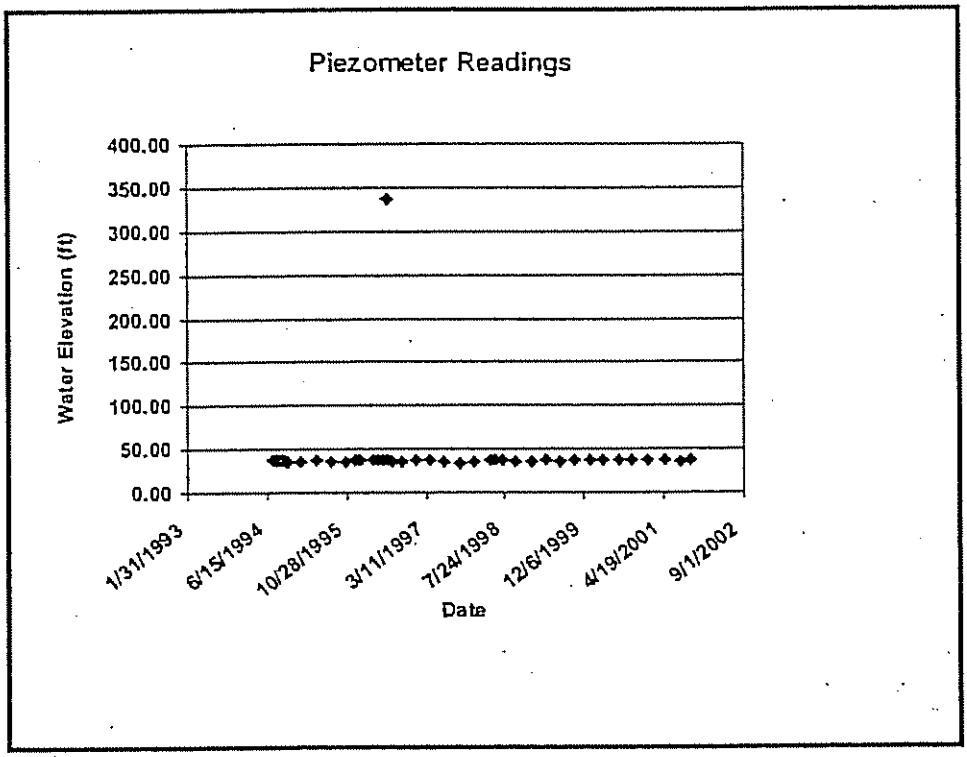
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_08A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628773 |
| Easting | 474151 |
| Phase | P3 |
| Screen El | 25.8 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 36.3 |
| 07/19/1994 | 36.3 |
| 08/01/1994 | 36.3 |
| 08/18/1994 | 36.4 |
| 08/30/1994 | 36.5 |
| 09/29/1994 | 36.4 |
| 10/11/1994 | 36.1 |
| 10/25/1994 | 36 |
| 01/09/1995 | 36.2 |
| 04/19/1995 | 36.8 |
| 07/27/1995 | 36.2 |
| 10/24/1995 | 35.7 |
| 12/18/1995 | 36.6 |
| 01/19/1996 | 36.9 |
| 04/04/1996 | 37 |
| 05/10/1996 | 36.9 |
| 06/10/1996 | 36.6 |
| 07/05/1996 | 36.3 |
| 07/06/1996 | 336.3 |
| 08/09/1996 | 35.8 |
| 08/10/1996 | 35.8 |
| 10/10/1996 | 36.1 |
| 01/07/1997 | 37.1 |
| 04/04/1997 | 37 |
| 07/08/1997 | 35.5 |
| 10/09/1997 | 34.2 |
| 01/06/1998 | 35.5 |
| 04/20/1998 | 37.22 |
| 09/13/1994 | 36.4 |
| 05/20/1998 | 37.3 |
| 07/08/1998 | 36.9 |
| 10/02/1998 | 35.2 |
| 01/05/1999 | 34.5 |
| 04/08/1999 | 37 |
| 07/09/1999 | 36.1 |
| 10/08/1999 | 36.3 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

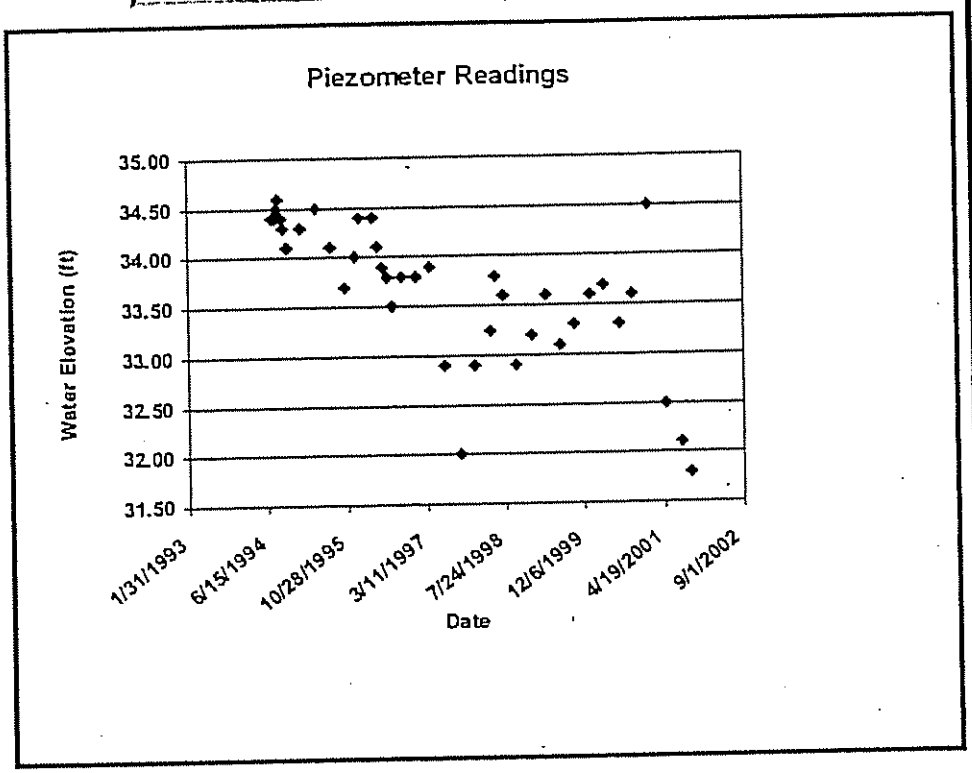
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_08B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628767 |
| Easting | 474152 |
| Phase | P3 |
| Screen El | 16.3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 32.5 |
| 07/19/1994 | 34.4 |
| 08/01/1994 | 34.4 |
| 08/18/1994 | 34.5 |
| 08/30/1994 | 34.6 |
| 09/29/1994 | 34.3 |
| 10/11/1994 | 34.1 |
| 10/25/1994 | 34.1 |
| 01/09/1995 | 34.3 |
| 04/19/1995 | 34.5 |
| 07/27/1995 | 34.1 |
| 10/24/1995 | 33.7 |
| 12/18/1995 | 34 |
| 01/19/1996 | 34.4 |
| 04/04/1996 | 34.4 |
| 05/10/1996 | 34.1 |
| 06/10/1996 | 33.9 |
| 06/11/1996 | 33.9 |
| 07/05/1996 | 33.8 |
| 07/06/1996 | 33.8 |
| 08/09/1996 | 33.5 |
| 10/10/1996 | 33.8 |
| 01/07/1997 | 33.8 |
| 04/04/1997 | 33.9 |
| 07/08/1997 | 32.9 |
| 10/09/1997 | 32 |
| 01/06/1998 | 32.9 |
| 04/20/1998 | 33.24 |
| 09/13/1994 | 34.4 |
| 05/20/1998 | 33.8 |
| 07/08/1998 | 33.6 |
| 10/02/1998 | 32.9 |
| 01/05/1999 | 33.2 |
| 04/08/1999 | 33.6 |
| 07/09/1999 | 33.1 |
| 10/08/1999 | 33.3 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

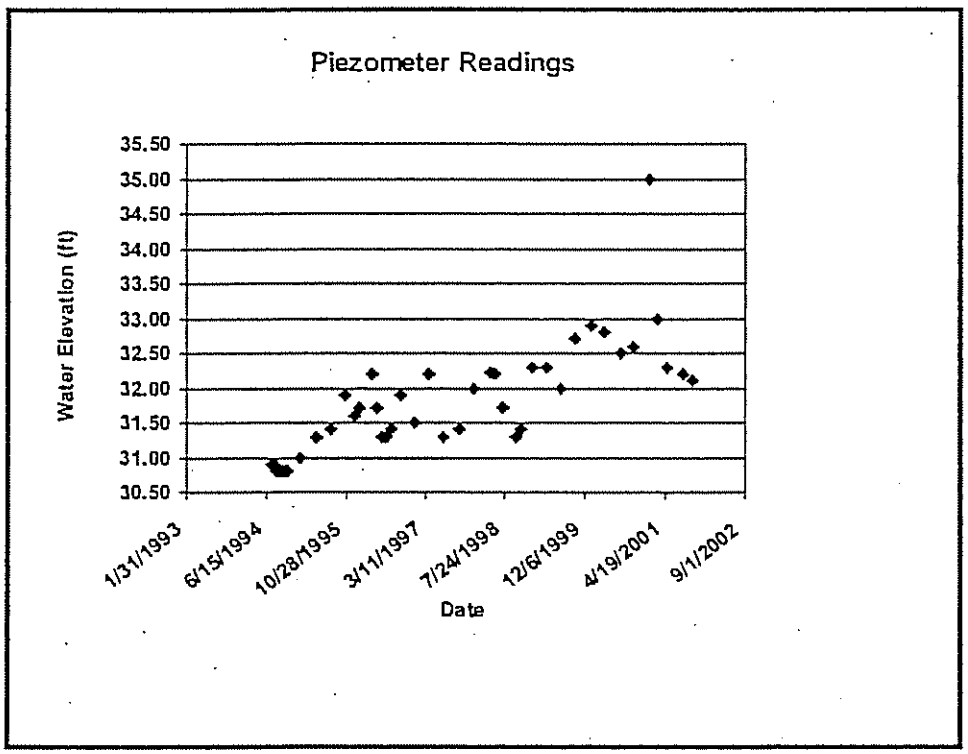
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_09A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628585 |
| Easting | 474148 |
| Phase | P3 |
| Screen El | 28.6 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 32.3 |
| 07/19/1994 | 30.9 |
| 08/01/1994 | 30.9 |
| 08/18/1994 | 30.8 |
| 08/30/1994 | 30.8 |
| 09/29/1994 | 30.8 |
| 10/11/1994 | 30.8 |
| 10/25/1994 | 30.8 |
| 01/09/1995 | 31 |
| 04/19/1995 | 31.3 |
| 07/27/1995 | 31.4 |
| 10/24/1995 | 31.9 |
| 12/18/1995 | 31.6 |
| 01/19/1996 | 31.7 |
| 04/04/1996 | 32.2 |
| 05/10/1996 | 31.7 |
| 06/10/1996 | 31.3 |
| 06/11/1996 | 31.3 |
| 07/05/1996 | 31.3 |
| 07/06/1996 | 31.3 |
| 08/09/1996 | 31.4 |
| 10/10/1996 | 31.9 |
| 01/07/1997 | 31.5 |
| 04/04/1997 | 32.2 |
| 07/08/1997 | 31.3 |
| 10/09/1997 | 31.4 |
| 01/06/1998 | 32 |
| 04/20/1998 | 32.23 |
| 09/13/1994 | 30.8 |
| 05/20/1998 | 32.2 |
| 07/08/1998 | 31.7 |
| 10/02/1998 | 31.3 |
| 11/02/1998 | 31.4 |
| 01/05/1999 | 32.3 |
| 04/08/1999 | 32.3 |
| 07/09/1999 | 32 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

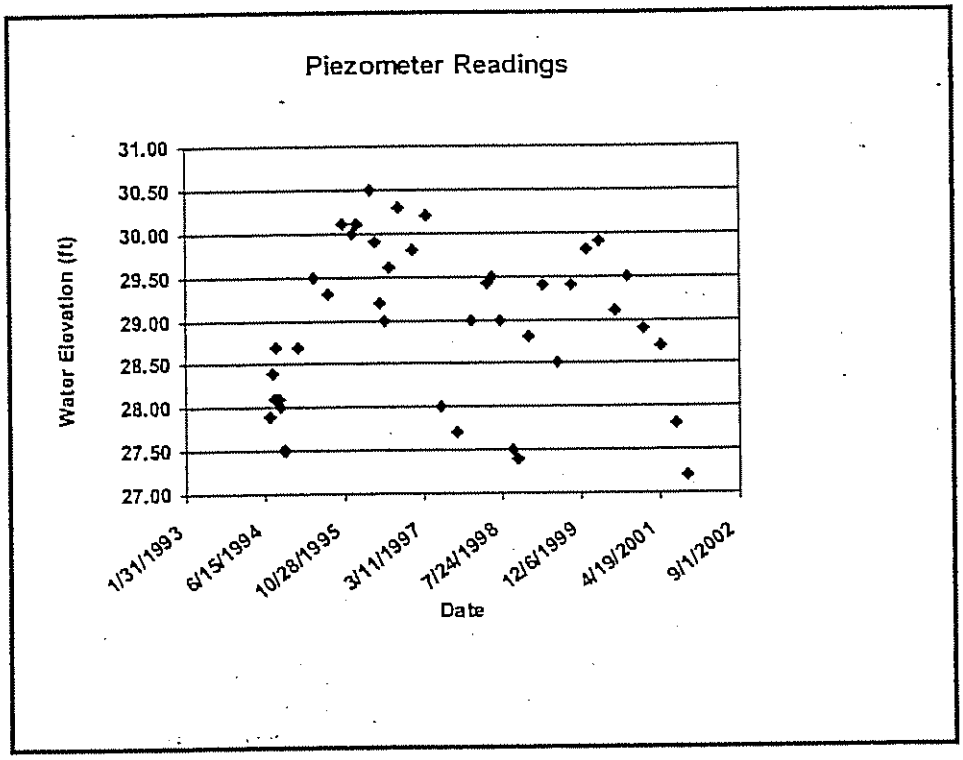
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_09B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628579 |
| Easting | 474145 |
| Screen El | 15.1 |
| Phase | P3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 28.7 |
| 07/19/1994 | 27.9 |
| 08/01/1994 | 28.4 |
| 08/18/1994 | 28.1 |
| 08/30/1994 | 28.7 |
| 09/29/1994 | 28 |
| 10/11/1994 | 27.5 |
| 10/25/1994 | 27.5 |
| 01/09/1995 | 28.7 |
| 04/19/1995 | 29.5 |
| 07/27/1995 | 29.3 |
| 10/24/1995 | 30.1 |
| 12/18/1995 | 30 |
| 01/19/1996 | 30.1 |
| 04/04/1996 | 30.5 |
| 05/10/1996 | 29.9 |
| 06/10/1996 | 29.2 |
| 06/11/1996 | 29.2 |
| 07/05/1996 | 29 |
| 07/06/1996 | 29 |
| 08/09/1996 | 29.6 |
| 10/10/1996 | 30.3 |
| 01/07/1997 | 29.8 |
| 04/04/1997 | 30.2 |
| 07/08/1997 | 28 |
| 10/09/1997 | 27.7 |
| 01/06/1998 | 29 |
| 04/20/1998 | 29.41 |
| 09/13/1994 | 28.1 |
| 05/20/1998 | 29.5 |
| 07/08/1998 | 29 |
| 10/02/1998 | 27.5 |
| 11/02/1998 | 27.4 |
| 01/05/1999 | 28.8 |
| 04/08/1999 | 29.4 |
| 07/09/1999 | 28.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

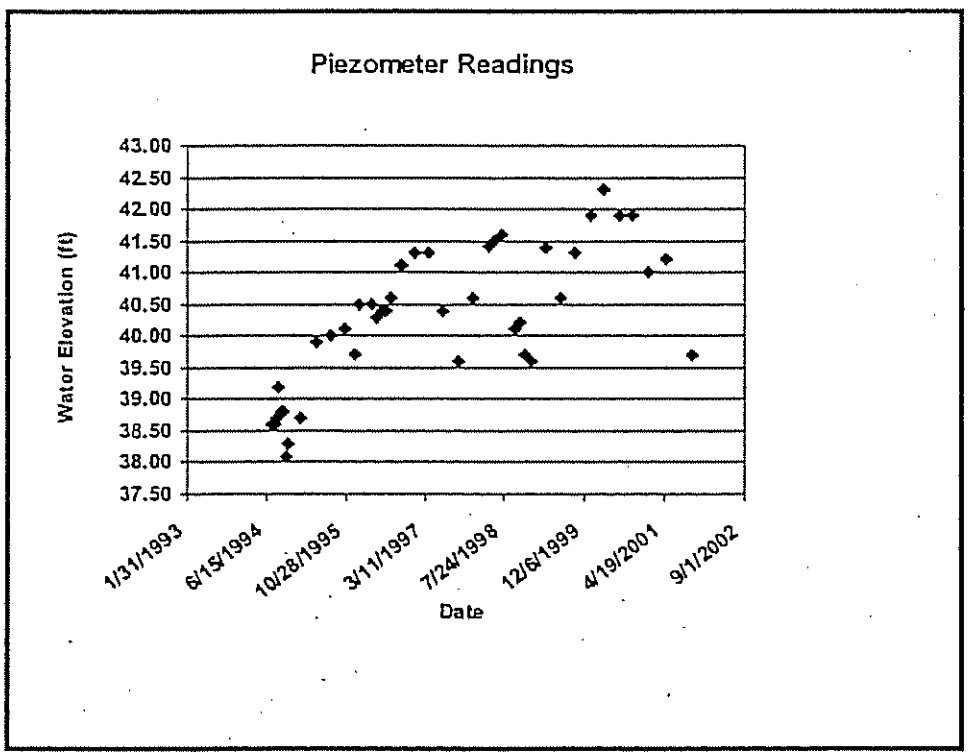
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_10A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628404 |
| Easting | 474053 |
| Screen El | 29.2 |
| Phase | P3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/24/2001 | 41.2 |
| 07/19/1994 | 38.6 |
| 08/01/1994 | 38.6 |
| 08/18/1994 | 38.7 |
| 08/30/1994 | 39.2 |
| 09/29/1994 | 38.8 |
| 10/11/1994 | 38.1 |
| 10/25/1994 | 38.3 |
| 01/09/1995 | 38.7 |
| 04/19/1995 | 39.9 |
| 07/27/1995 | 40 |
| 10/24/1995 | 40.1 |
| 12/18/1995 | 39.7 |
| 01/19/1996 | 40.5 |
| 04/04/1996 | 40.5 |
| 05/10/1996 | 40.3 |
| 06/10/1996 | 40.4 |
| 06/11/1996 | 40.4 |
| 07/05/1996 | 40.4 |
| 07/06/1996 | 40.4 |
| 08/09/1996 | 40.6 |
| 08/10/1996 | 40.6 |
| 10/10/1996 | 41.1 |
| 10/11/1996 | 41.1 |
| 01/07/1997 | 41.3 |
| 04/04/1997 | 41.3 |
| 07/08/1997 | 40.4 |
| 10/09/1997 | 39.6 |
| 01/06/1998 | 40.6 |
| 04/20/1998 | 41.42 |
| 09/13/1994 | 38.8 |
| 05/20/1998 | 41.5 |
| 07/08/1998 | 41.6 |
| 10/02/1998 | 40.1 |
| 11/02/1998 | 40.2 |
| 12/01/1998 | 39.7 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

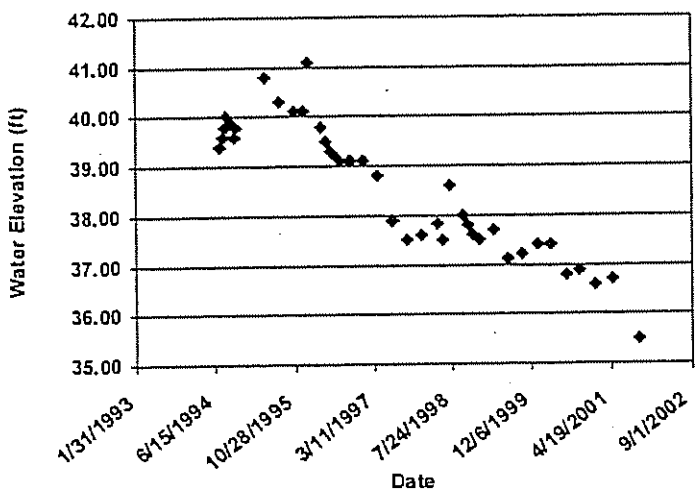
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 10B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628410 |
| Easting | 474056 |
| Phase | P3 |
| Screen El | 15.9 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/24/2001 | 36.7 |
| 07/19/1994 | 39.4 |
| 08/01/1994 | 39.6 |
| 08/18/1994 | 39.8 |
| 08/30/1994 | 40 |
| 09/29/1994 | 39.9 |
| 10/11/1994 | 39.6 |
| 10/25/1994 | 39.8 |
| 04/19/1995 | 40.8 |
| 07/27/1995 | 40.3 |
| 10/24/1995 | 40.1 |
| 12/18/1995 | 40.1 |
| 01/19/1996 | 41.1 |
| 04/04/1996 | 39.8 |
| 05/10/1996 | 39.5 |
| 06/10/1996 | 39.3 |
| 06/11/1996 | 39.3 |
| 07/05/1996 | 39.2 |
| 07/06/1996 | 39.2 |
| 08/09/1996 | 39.1 |
| 08/10/1996 | 39.1 |
| 10/10/1996 | 39.1 |
| 10/11/1996 | 39.1 |
| 01/07/1997 | 39.1 |
| 04/04/1997 | 38.8 |
| 04/05/1997 | 38.8 |
| 07/08/1997 | 37.9 |
| 07/09/1997 | 37.9 |
| 10/09/1997 | 37.5 |
| 01/06/1998 | 37.6 |
| 04/20/1998 | 37.83 |
| 09/13/1994 | 39.9 |
| 05/20/1998 | 37.5 |
| 07/08/1998 | 38.6 |
| 10/02/1998 | 38 |
| 11/02/1998 | 37.8 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

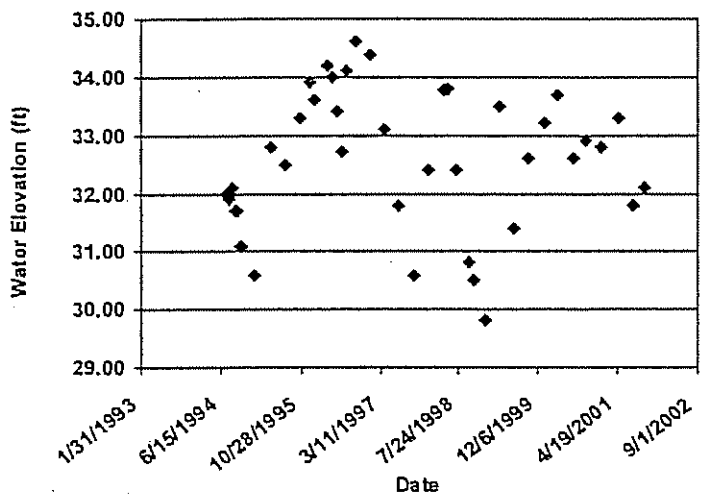
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3 PZ 11A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628253 |
| Easting | 474028 |
| Phase | P3 |
| Screen El | 28.6 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 33.3 |
| 07/19/1994 | 32 |
| 08/01/1994 | 31.9 |
| 08/18/1994 | 32 |
| 08/30/1994 | 32.1 |
| 09/29/1994 | 31.7 |
| 10/11/1994 | 31.1 |
| 10/25/1994 | 31.1 |
| 01/09/1995 | 30.6 |
| 04/19/1995 | 32.8 |
| 07/27/1995 | 32.5 |
| 10/24/1995 | 33.3 |
| 12/18/1995 | 33.9 |
| 01/19/1996 | 33.6 |
| 04/04/1996 | 34.2 |
| 05/10/1996 | 34 |
| 06/10/1996 | 33.4 |
| 07/05/1996 | 32.7 |
| 08/09/1996 | 34.1 |
| 10/10/1996 | 34.6 |
| 01/07/1997 | 34.4 |
| 04/04/1997 | 33.1 |
| 07/08/1997 | 31.8 |
| 10/09/1997 | 30.6 |
| 01/06/1998 | 32.4 |
| 04/20/1998 | 33.78 |
| 09/13/1994 | 31.7 |
| 05/20/1998 | 33.8 |
| 07/08/1998 | 32.4 |
| 10/02/1998 | 30.8 |
| 11/02/1998 | 30.5 |
| 01/05/1999 | 29.8 |
| 04/08/1999 | 33.5 |
| 07/09/1999 | 31.4 |
| 10/08/1999 | 32.6 |
| 01/11/2000 | 33.2 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

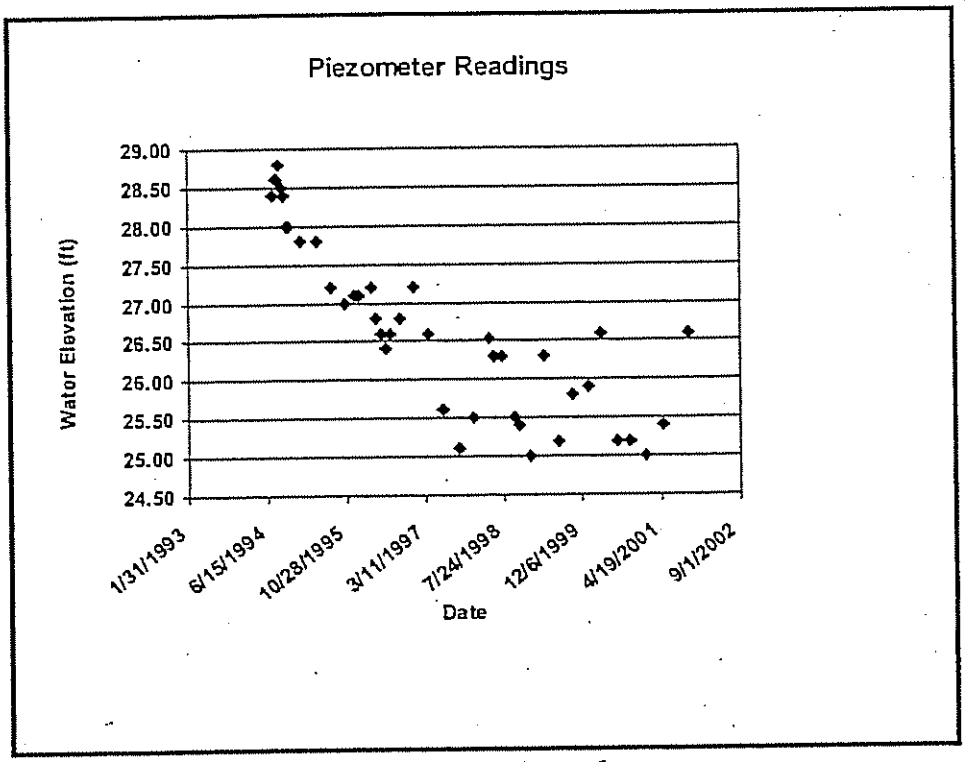
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P3_PZ_11B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628258 |
| Easting | 474030 |
| Phase | P3 |
| Screen El | 15.3 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 25.4 |
| 07/19/1994 | 28.4 |
| 08/01/1994 | 28.6 |
| 08/18/1994 | 28.6 |
| 08/30/1994 | 28.8 |
| 09/29/1994 | 28.4 |
| 10/11/1994 | 28 |
| 10/25/1994 | 28 |
| 01/09/1995 | 27.8 |
| 04/19/1995 | 27.8 |
| 07/27/1995 | 27.2 |
| 10/24/1995 | 27 |
| 12/18/1995 | 27.1 |
| 01/19/1996 | 27.1 |
| 04/04/1996 | 27.2 |
| 05/10/1996 | 26.8 |
| 06/10/1996 | 26.6 |
| 07/05/1996 | 26.4 |
| 08/09/1996 | 26.6 |
| 10/10/1996 | 26.8 |
| 01/07/1997 | 27.2 |
| 04/04/1997 | 26.6 |
| 07/08/1997 | 25.6 |
| 10/09/1997 | 25.1 |
| 01/06/1998 | 25.5 |
| 04/20/1998 | 26.53 |
| 09/13/1994 | 28.5 |
| 05/20/1998 | 26.3 |
| 07/08/1998 | 26.3 |
| 10/02/1998 | 25.5 |
| 11/02/1998 | 25.4 |
| 01/05/1999 | 25 |
| 04/08/1999 | 26.3 |
| 07/09/1999 | 25.2 |
| 10/08/1999 | 25.8 |
| 01/11/2000 | 25.9 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# PHASE IV

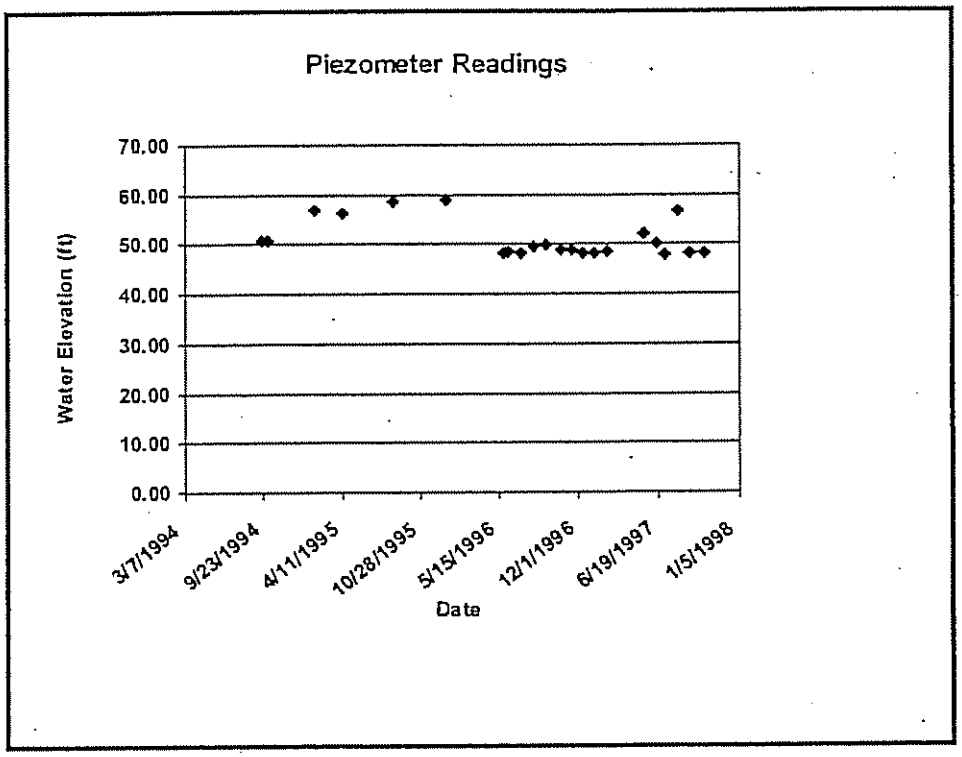
# SECTION 1

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_23A

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 628715 | | |
| Easting | 472109 | Screen El | 24.8 |
| Phase | P4 | Stratum | BU |




Readings

| | |
|---|---|
| 09/21/1994 | 50.9 |
| 10/06/1994 | 50.9 |
| 01/31/1995 | 57 |
| 04/11/1995 | 56.4 |
| 08/18/1995 | 58.5 |
| 01/03/1996 | 58.8 |
| 05/24/1996 | 48.3 |
| 06/07/1996 | 48.4 |
| 07/10/1996 | 48.2 |
| 08/09/1996 | 49.6 |
| 09/10/1996 | 49.7 |
| 10/18/1996 | 48.9 |
| 11/15/1996 | 49 |
| 12/12/1996 | 48.3 |
| 01/08/1997 | 48.2 |
| 02/12/1997 | 48.5 |
| 05/13/1997 | 52 |
| 06/13/1997 | 50.1 |
| 07/03/1997 | 48 |
| 08/07/1997 | 56.8 |
| 09/03/1997 | 48.1 |
| 10/07/1997 | 48.1 |

## Installation Information

## Maintenance Data

| | | | |
|---|---|---|---|
| INST_ID | P4_PZ_23A | MAIN_TYPE | Abandoned |
| DATE | 11/6/1997 | Ground Surf. EL | |
| COUNT | | RISER_LENGTH (ft) | |

NOTES

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | | |
| Depth of Casing (ft) | | |

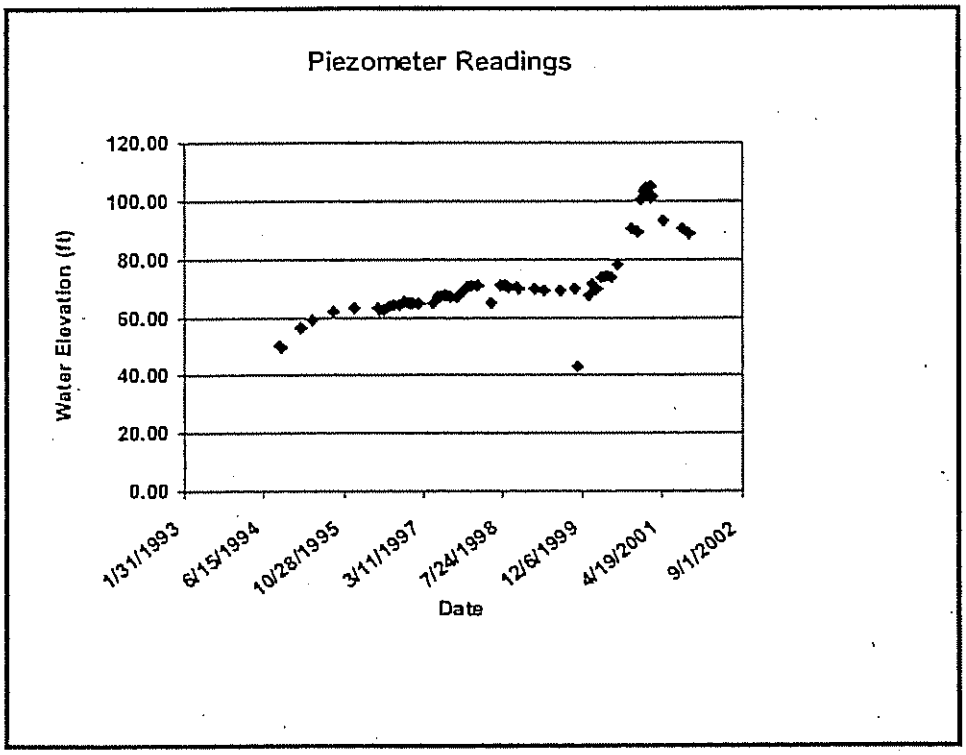
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_23B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628711 |
| Easting | 472113 |
| Screen El | 6.2 |
| Phase | P4 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/19/2001 | 101.9 |
| 01/26/2001 | 104.6 |
| 02/02/2001 | 101.3 |
| 02/09/2001 | 104.8 |
| 02/16/2001 | 101.8 |
| 04/26/2001 | 93.4 |
| 09/21/1994 | 50.3 |
| 10/06/1994 | 49.6 |
| 01/31/1995 | 56.3 |
| 04/11/1995 | 59.2 |
| 08/18/1995 | 62.2 |
| 01/03/1996 | 62.8 |
| 05/24/1996 | 62.8 |
| 06/07/1996 | 62.7 |
| 07/10/1996 | 62.7 |
| 08/09/1996 | 63.9 |
| 09/10/1996 | 64.3 |
| 10/18/1996 | 64.3 |
| 11/15/1996 | 65.4 |
| 12/12/1996 | 64.7 |
| 01/08/1997 | 64.7 |
| 02/12/1997 | 64.8 |
| 05/13/1997 | 64.5 |
| 06/13/1997 | 67.2 |
| 07/03/1997 | 67.1 |
| 08/07/1997 | 67.3 |
| 09/03/1997 | 66.8 |
| 10/07/1997 | 66.9 |
| 11/15/1997 | 68.9 |
| 12/09/1997 | 70.2 |
| 01/08/1998 | 71.1 |
| 02/20/1998 | 71 |
| 05/06/1998 | 65 |
| 07/10/1998 | 70.7 |
| 08/05/1998 | 70.8 |
| 09/02/1998 | 70.3 |

## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P4_PZ_23B | MAIN_TYPE | | NOTES | OVERFLOWING SO THE CASING WAS EXTENDED FOR 7.2' |
| DATE | 7/1/1997 | Ground Surf. EL | | | |
| COUNT | 0 | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

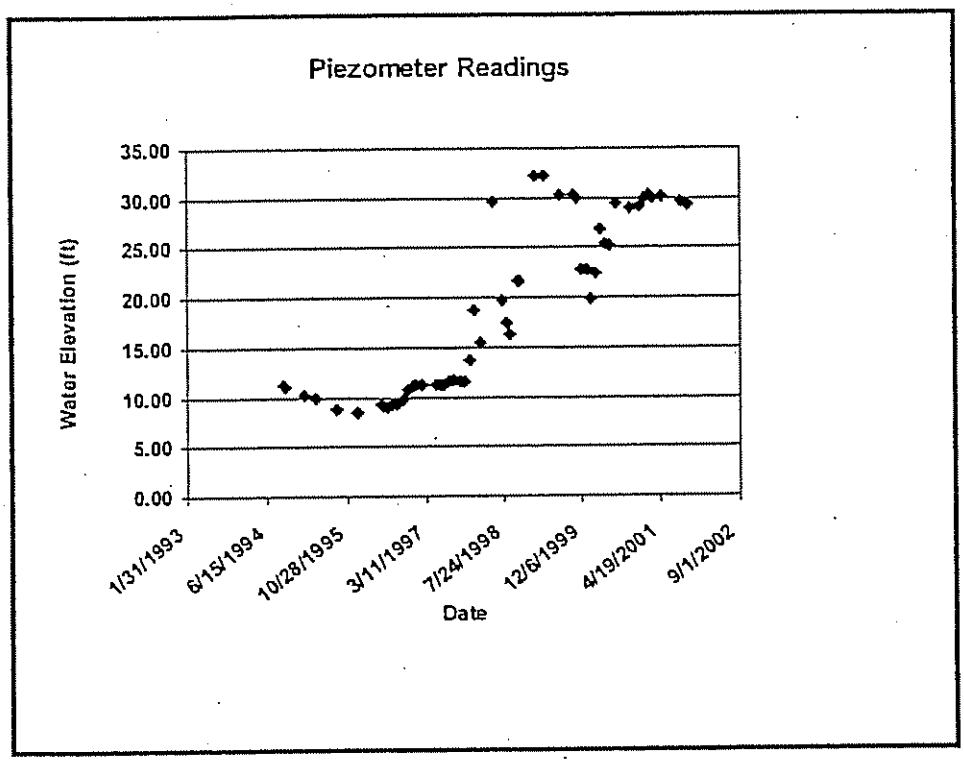
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_23C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628707 |
| Easting | 472105 |
| Phase | P4 |
| Screen El | -14 |
| Stratum | BL |




Readings

| | |
|---|---|
| 02/09/2001 | 30.2 |
| 03/02/2001 | 29.9 |
| 04/26/2001 | 30.1 |
| 09/21/1994 | 11.2 |
| 10/06/1994 | 11.1 |
| 01/31/1995 | 10.3 |
| 04/11/1995 | 9.9 |
| 08/18/1995 | 8.8 |
| 01/03/1996 | 8.5 |
| 05/24/1996 | 9.3 |
| 06/07/1996 | 9.1 |
| 07/10/1996 | 9 |
| 08/09/1996 | 9.3 |
| 09/10/1996 | 9.3 |
| 10/18/1996 | 9.7 |
| 11/15/1996 | 10.7 |
| 12/12/1996 | 11 |
| 01/08/1997 | 11.3 |
| 02/12/1997 | 11.3 |
| 05/13/1997 | 11.2 |
| 06/13/1997 | 11.2 |
| 07/03/1997 | 11.2 |
| 08/07/1997 | 11.5 |
| 09/03/1997 | 11.8 |
| 10/07/1997 | 11.6 |
| 11/15/1997 | 11.6 |
| 12/09/1997 | 13.7 |
| 01/08/1998 | 18.8 |
| 02/20/1998 | 15.5 |
| 05/06/1998 | 29.7 |
| 07/10/1998 | 19.7 |
| 08/05/1998 | 17.4 |
| 09/02/1998 | 16.3 |
| 10/13/1998 | 21.6 |
| 11/02/1998 | 21.6 |
| 02/08/1999 | 32.2 |

## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P4_PZ_23C | MAIN_TYPE | Other Comm | NOTES | 4/12/96 PIEZOMETER NOT ACCESSIBLE |
| DATE | 4/12/1996 | Ground Surf. EL | | | |
| COUNT | | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | | |
| Depth of Casing (ft) | | |

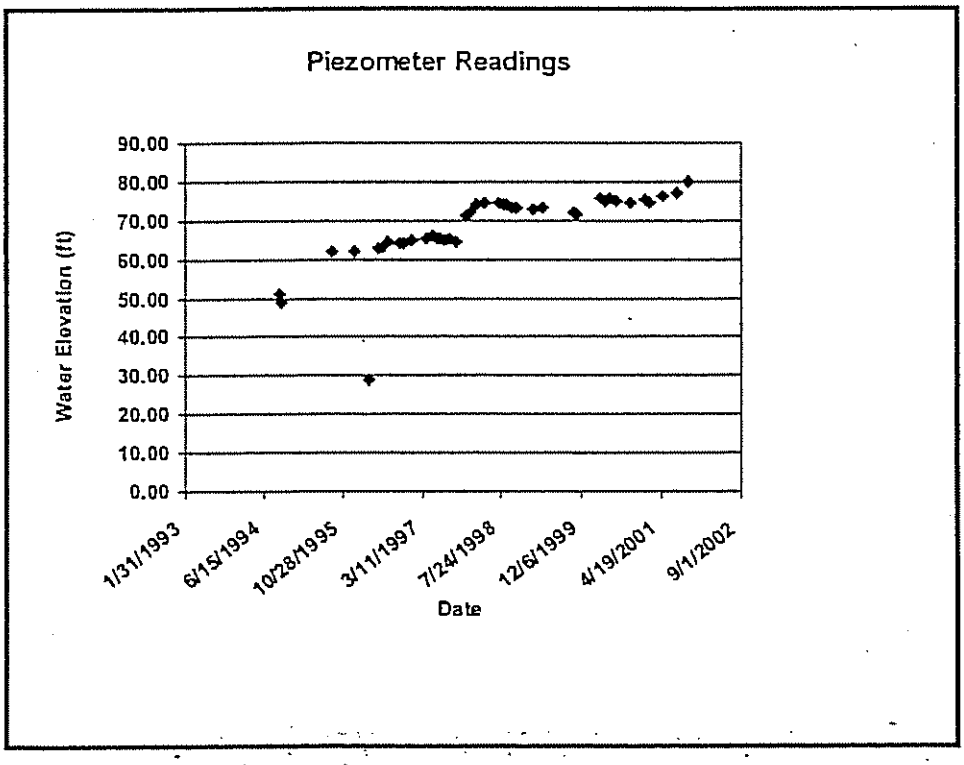
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_24A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628446 |
| Easting | 471894 |
| Phase | P4 |
| Screen El | 23.7 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/26/2001 | 76.2 |
| 09/21/1994 | 50.9 |
| 10/06/1994 | 48.9 |
| 08/18/1995 | 62 |
| 01/05/1996 | 62 |
| 04/12/1996 | 28.8 |
| 06/07/1996 | 62.6 |
| 07/10/1996 | 63.4 |
| 08/09/1996 | 64.4 |
| 10/18/1996 | 64.2 |
| 11/15/1996 | 64.2 |
| 01/08/1997 | 65 |
| 04/07/1997 | 65.2 |
| 05/13/1997 | 66.1 |
| 06/10/1997 | 65.5 |
| 07/03/1997 | 65.5 |
| 08/07/1997 | 65 |
| 09/03/1997 | 65.1 |
| 10/07/1997 | 64.6 |
| 12/09/1997 | 71 |
| 01/08/1998 | 72.1 |
| 02/20/1998 | 74.1 |
| 04/15/1998 | 74.5 |
| 07/10/1998 | 74.4 |
| 08/05/1998 | 73.9 |
| 09/02/1998 | 74 |
| 10/02/1998 | 73.3 |
| 11/02/1998 | 73.2 |
| 02/08/1999 | 73 |
| 04/08/1999 | 73.1 |
| 10/15/1999 | 71.9 |
| 11/05/1999 | 71.5 |
| 04/05/2000 | 75.8 |
| 05/01/2000 | 74.9 |
| 06/05/2000 | 75.9 |
| 07/11/2000 | 74.8 |

## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P4_PZ_24A | MAIN_TYPE | | NOTES | DECRESE IN ELEVATION FOR 4.0' |
| DATE | 7/1/1997 | Ground Surf. EL | | | |
| COUNT | 0 | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

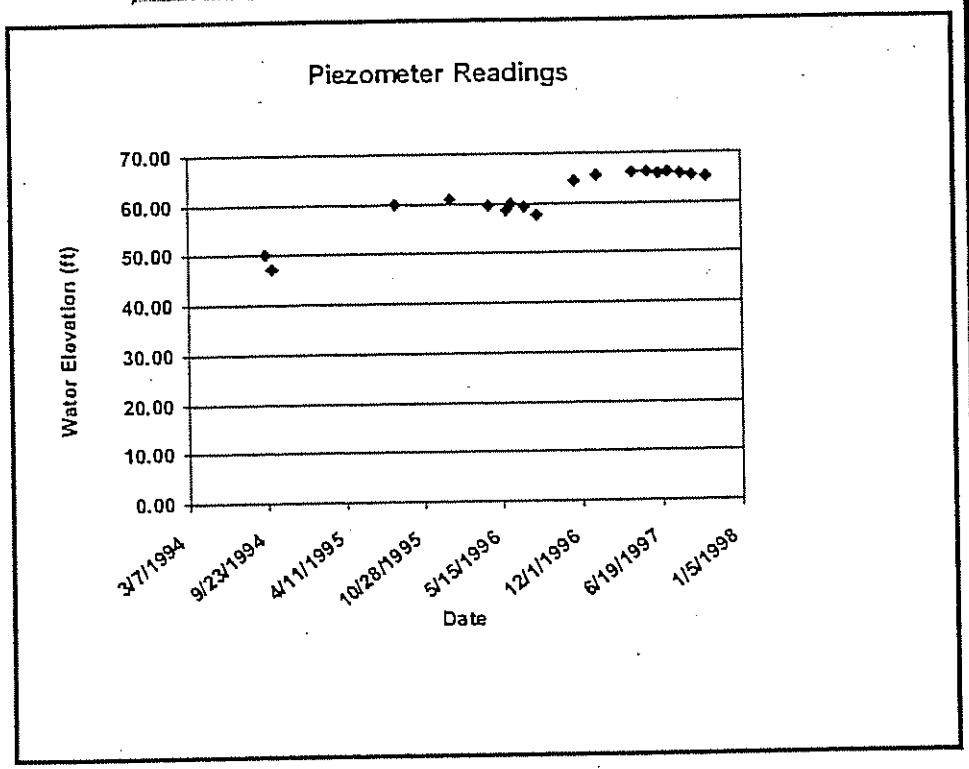
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_24B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628450 |
| Easting | 471888 |
| Phase | P4 |
| Screen El | 4.9 |
| Stratum | BM |




Readings

| | |
|---|---|
| 09/21/1994 | 50.3 |
| 10/06/1994 | 47.2 |
| 08/18/1995 | 59.9 |
| 01/05/1996 | 61 |
| 04/12/1996 | 59.6 |
| 05/24/1996 | 58.7 |
| 06/07/1996 | 60 |
| 07/10/1996 | 59.4 |
| 08/09/1996 | 57.6 |
| 11/15/1996 | 64.4 |
| 01/08/1997 | 65.5 |
| 04/07/1997 | 66.1 |
| 05/13/1997 | 66.2 |
| 06/10/1997 | 65.9 |
| 07/03/1997 | 66.2 |
| 08/07/1997 | 65.7 |
| 09/03/1997 | 65.5 |
| 10/07/1997 | 65.2 |

## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P4_PZ_24B | MAIN_TYPE | | NOTES | 0.1 INCREASE IN ELEVATION |
| DATE | 7/1/1997 | Ground Surf. EL | | | |
| COUNT | 0 | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

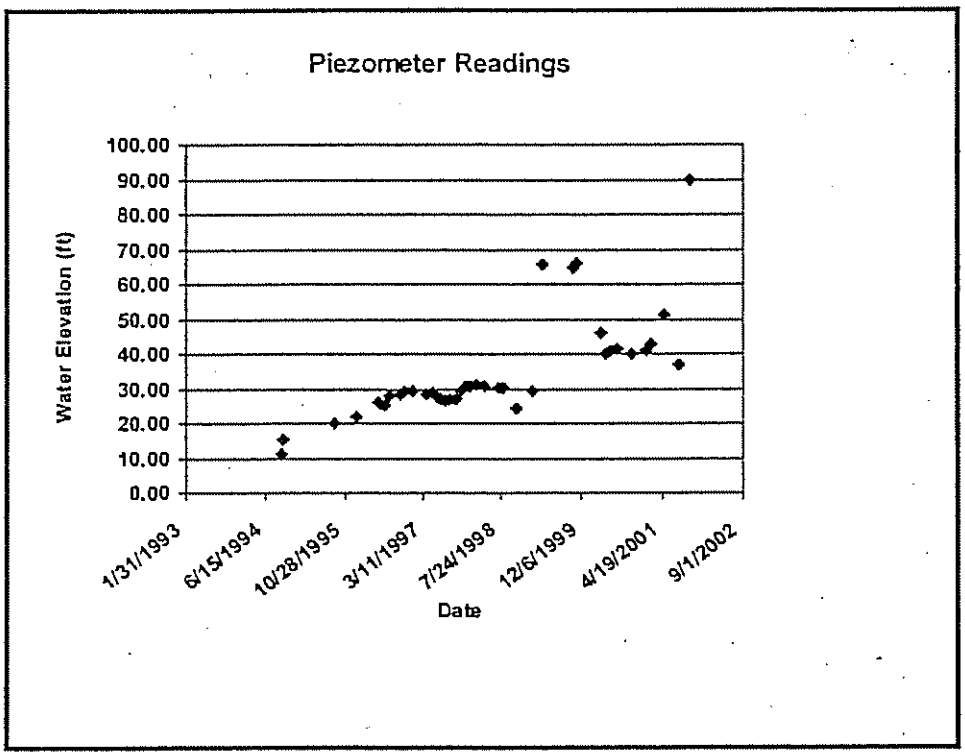
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_24C

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 628446 | | |
| Easting | 471886 | Screen El | -14 |
| Phase | P4 | Stratum | BL |




Readings

| | |
|---|---|
| 04/26/2001 | 51.2 |
| 09/21/1994 | 11.2 |
| 10/06/1994 | 15.3 |
| 08/18/1995 | 19.9 |
| 01/05/1996 | 21.9 |
| 05/24/1996 | 26.1 |
| 06/07/1996 | 25.6 |
| 07/10/1996 | 25.3 |
| 08/09/1996 | 27.8 |
| 10/18/1996 | 28.2 |
| 11/15/1996 | 29.3 |
| 01/08/1997 | 29.1 |
| 04/07/1997 | 28.5 |
| 05/13/1997 | 28.7 |
| 06/10/1997 | 27.4 |
| 07/03/1997 | 27 |
| 08/07/1997 | 26.6 |
| 09/03/1997 | 26.8 |
| 10/07/1997 | 27 |
| 11/15/1997 | 29.2 |
| 12/09/1997 | 30.5 |
| 01/08/1998 | 30.5 |
| 02/20/1998 | 31.1 |
| 04/15/1998 | 30.76 |
| 07/10/1998 | 30.2 |
| 08/05/1998 | 30.3 |
| 11/02/1998 | 24.1 |
| 02/08/1999 | 29.4 |
| 04/08/1999 | 65.7 |
| 10/15/1999 | 64.7 |
| 11/05/1999 | 66.2 |
| 04/05/2000 | 46.2 |
| 05/01/2000 | 39.9 |
| 06/05/2000 | 41 |
| 07/11/2000 | 41.3 |
| 10/06/2000 | 40.2 |

## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P4_PZ_24C | MAIN_TYPE | | NOTES | DECREASE IN ELEVATION OF APPROXIMATELY 1.5' |
| DATE | 7/1/1997 | Ground Surf. EL | | | |
| COUNT | 0 | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

☐ Abandoned

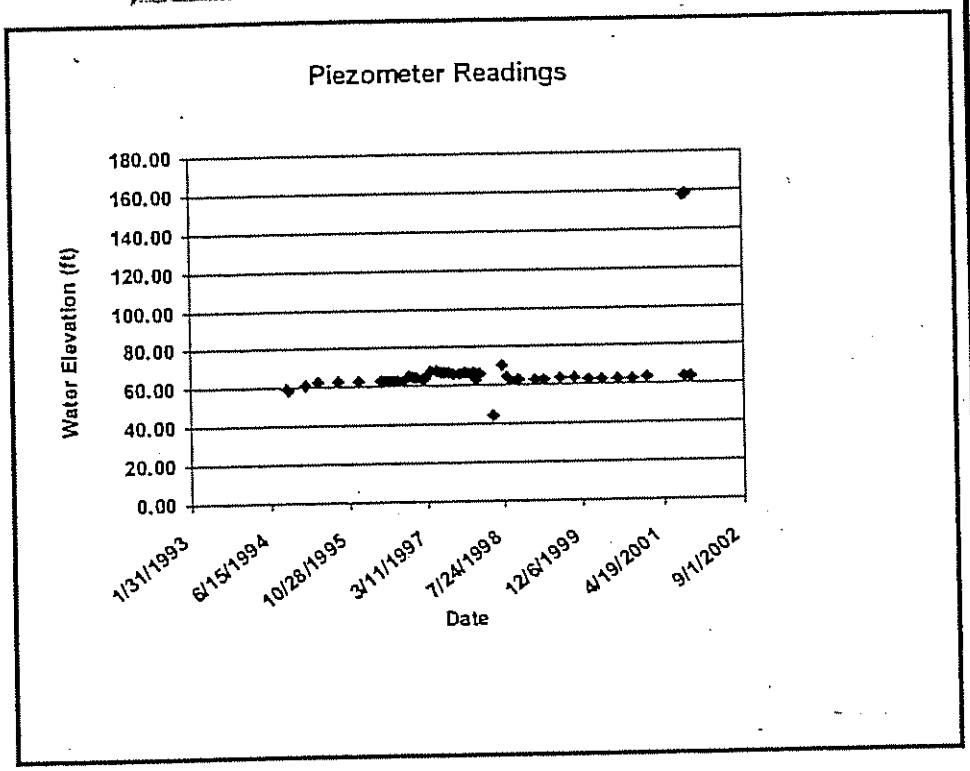
# SECTION 2

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_25A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628184 |
| Easting | 473232 |
| Phase | P4 |
| Screen El | 22.2 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 63.7 |
| 09/21/1994 | 59.5 |
| 10/06/1994 | 59 |
| 01/24/1995 | 61.3 |
| 04/11/1995 | 62.7 |
| 08/18/1995 | 62.4 |
| 01/03/1996 | 62.6 |
| 05/21/1996 | 62.4 |
| 06/07/1996 | 62.7 |
| 07/10/1996 | 62.4 |
| 08/09/1996 | 62.9 |
| 09/10/1996 | 62.9 |
| 10/12/1996 | 62.9 |
| 11/15/1996 | 65.3 |
| 12/12/1996 | 64.7 |
| 01/08/1997 | 64.8 |
| 02/12/1997 | 63.8 |
| 03/07/1997 | 64.1 |
| 04/07/1997 | 67.5 |
| 05/13/1997 | 67.4 |
| 06/13/1997 | 67.1 |
| 07/03/1997 | 67.1 |
| 08/07/1997 | 66.8 |
| 09/03/1997 | 66 |
| 10/07/1997 | 66.5 |
| 11/15/1997 | 66.6 |
| 12/09/1997 | 66.5 |
| 01/08/1998 | 66.8 |
| 02/20/1998 | 66.3 |
| 05/06/1998 | 44.3 |
| 07/10/1998 | 70 |
| 08/05/1998 | 64.7 |
| 09/02/1998 | 63 |
| 10/13/1998 | 63.1 |
| 11/02/1998 | 63.2 |
| 01/19/1998 | 63.1 |

## Installation Information

## Maintenance Data

| | | | |
|---|---|---|---|
| INST_ID | P4_PZ_25A | MAIN_TYPE | |
| DATE | 7/1/1997 | Ground Surf. EL | |
| COUNT | 0 | RISER_LENGTH (ft) | |

NOTES: DECREASE IN ELEVATION OF APPROXIMATELY 0.4' TO 1.6'

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

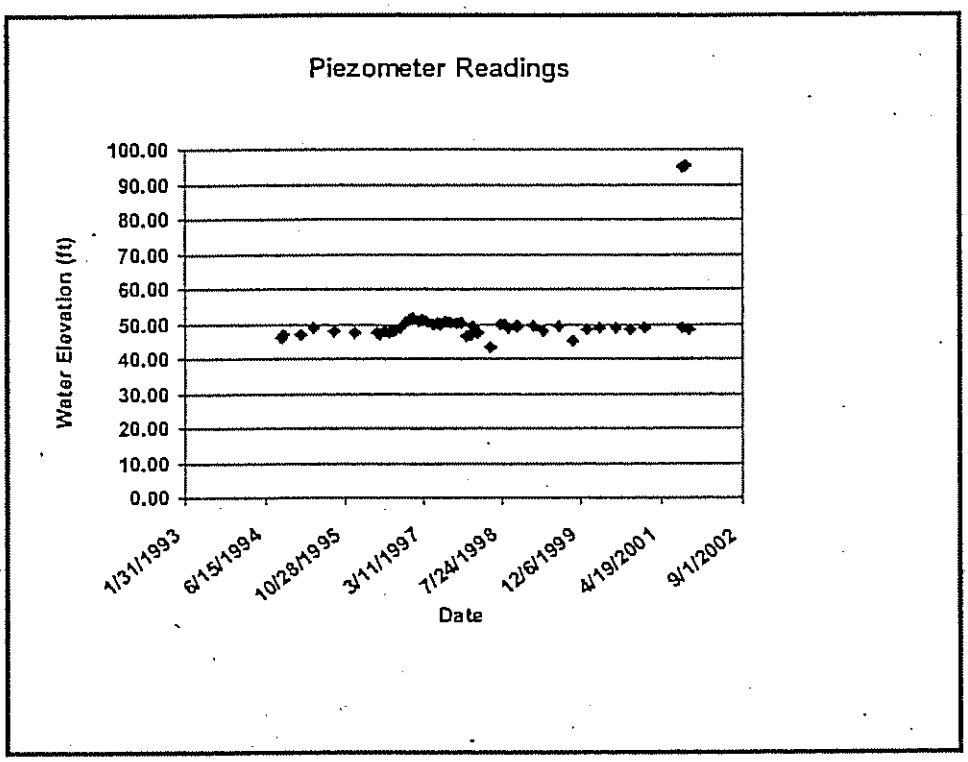
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_25B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628175 |
| Easting | 473237 |
| Phase | P4 |
| Screen El | 3.7 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 49 |
| 09/21/1994 | 46.1 |
| 10/06/1994 | 46.8 |
| 01/24/1995 | 46.8 |
| 04/11/1995 | 48.9 |
| 08/18/1995 | 48 |
| 01/03/1996 | 47.5 |
| 05/21/1996 | 47.3 |
| 06/07/1996 | 47 |
| 07/10/1996 | 47.7 |
| 08/09/1996 | 47.6 |
| 09/10/1996 | 47.8 |
| 10/12/1996 | 48.9 |
| 11/15/1996 | 50.1 |
| 12/12/1996 | 51.2 |
| 01/08/1997 | 51.4 |
| 02/12/1997 | 50.6 |
| 03/07/1997 | 51.3 |
| 04/07/1997 | 50.9 |
| 05/13/1997 | 50 |
| 06/13/1997 | 50.4 |
| 07/03/1997 | 50 |
| 08/07/1997 | 50.8 |
| 09/03/1997 | 50.4 |
| 10/07/1997 | 50.2 |
| 11/15/1997 | 50.4 |
| 12/09/1997 | 46.4 |
| 01/08/1998 | 47.1 |
| 02/20/1998 | 47.6 |
| 05/06/1998 | 43.4 |
| 07/10/1998 | 49.6 |
| 08/05/1998 | 49.7 |
| 09/02/1998 | 49 |
| 10/13/1998 | 49.3 |
| 11/02/1998 | 49.1 |
| 01/19/1998 | 49.2 |

## Installation Information

## Maintenance Data

| | | | |
|---|---|---|---|
| INST_ID | P4_PZ_25B | MAIN_TYPE | |
| DATE | 7/1/1997 | Ground Surf. EL | |
| COUNT | 0 | RISER_LENGTH (ft) | |

NOTES: DECREASE IN ELEVATION OF APPROXIMATELY 0.4' TO 1.6'

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

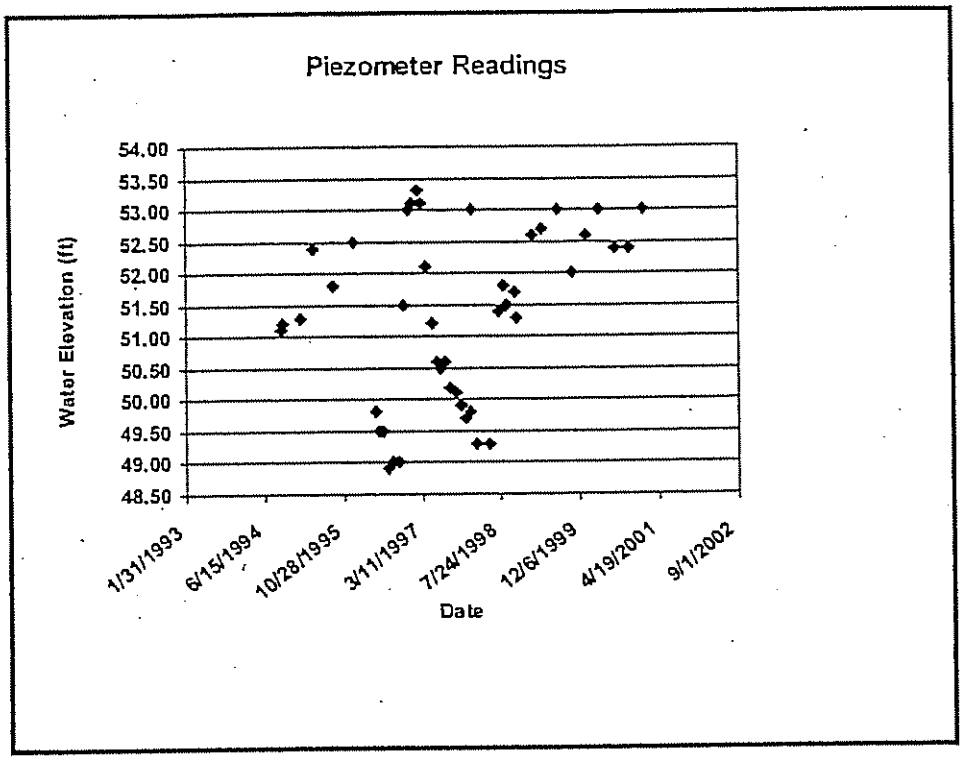
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_25C

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 628183 | | |
| Easting | 473225 | Screen El | -13.6 |
| Phase | P4 | Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 53 |
| 09/21/1994 | 51.1 |
| 10/06/1994 | 51.2 |
| 01/24/1995 | 51.3 |
| 04/11/1995 | 52.4 |
| 08/18/1995 | 51.8 |
| 01/03/1996 | 52.5 |
| 05/21/1996 | 49.8 |
| 06/07/1996 | 49.5 |
| 07/10/1996 | 49.5 |
| 08/09/1996 | 48.9 |
| 09/10/1996 | 49 |
| 10/12/1996 | 49 |
| 11/15/1996 | 51.5 |
| 12/12/1996 | 53 |
| 01/08/1997 | 53.1 |
| 02/12/1997 | 53.3 |
| 03/07/1997 | 53.1 |
| 04/07/1997 | 52.1 |
| 05/13/1997 | 51.2 |
| 06/13/1997 | 50.6 |
| 07/03/1997 | 50.5 |
| 08/07/1997 | 50.6 |
| 09/03/1997 | 50.2 |
| 10/07/1997 | 50.1 |
| 11/15/1997 | 49.9 |
| 12/09/1997 | 49.7 |
| 01/08/1998 | 49.8 |
| 02/20/1998 | 49.3 |
| 05/06/1998 | 49.3 |
| 07/10/1998 | 51.4 |
| 08/05/1998 | 51.8 |
| 09/02/1998 | 51.5 |
| 10/13/1998 | 51.7 |
| 11/02/1998 | 51.3 |
| 01/19/1998 | 53 |

## Installation Information

## Maintenance Data

| | | | |
|---|---|---|---|
| INST_ID | P4_PZ_25C | MAIN_TYPE | |
| DATE | 7/1/1997 | Ground Surf. EL | |
| COUNT | 0 | RISER_LENGTH (ft) | |

NOTES: DECREASE IN ELEVATION OF APPROXIMATELY 0.4' TO 1.6'

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

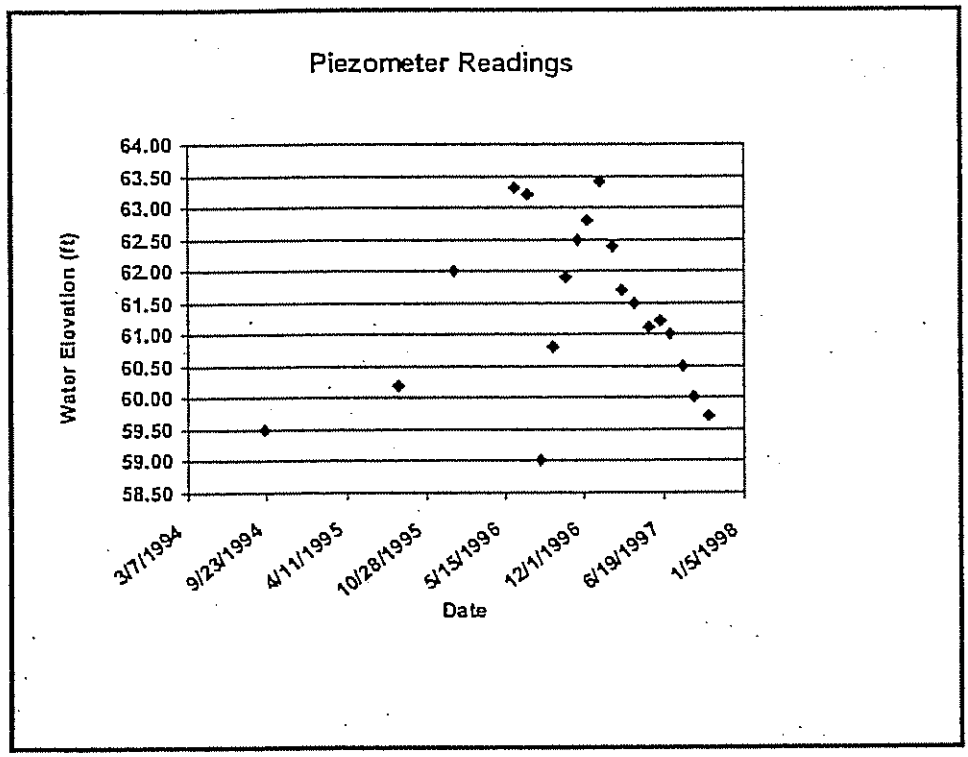
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_26A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627776 |
| Easting | 473072 |
| Phase | P4 |
| Screen El | 26 |
| Stratum | BU |




Readings

| | |
|---|---|
| 09/21/1994 | 59.5 |
| 08/18/1995 | 60.2 |
| 01/05/1996 | 62 |
| 06/07/1996 | 63.3 |
| 07/10/1996 | 63.2 |
| 08/09/1996 | 59 |
| 09/10/1996 | 60.8 |
| 10/12/1996 | 61.9 |
| 11/15/1996 | 62.5 |
| 12/06/1996 | 62.8 |
| 01/08/1997 | 63.4 |
| 02/12/1997 | 62.4 |
| 03/07/1997 | 61.7 |
| 04/07/1997 | 61.5 |
| 05/13/1997 | 61.1 |
| 06/10/1997 | 61.2 |
| 07/03/1997 | 61 |
| 08/07/1997 | 60.5 |
| 09/03/1997 | 60 |
| 10/07/1997 | 59.7 |

## Installation Information

## Maintenance Data

| | | | |
|---|---|---|---|
| INST_ID | P4_PZ_26A | MAIN_TYPE | |
| DATE | 7/1/1997 | Ground Surf. EL | |
| COUNT | 0 | RISER_LENGTH (ft) | |

NOTES: MINOR VARIATIONS IN ELEVATION- 0.5' OR LESS

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

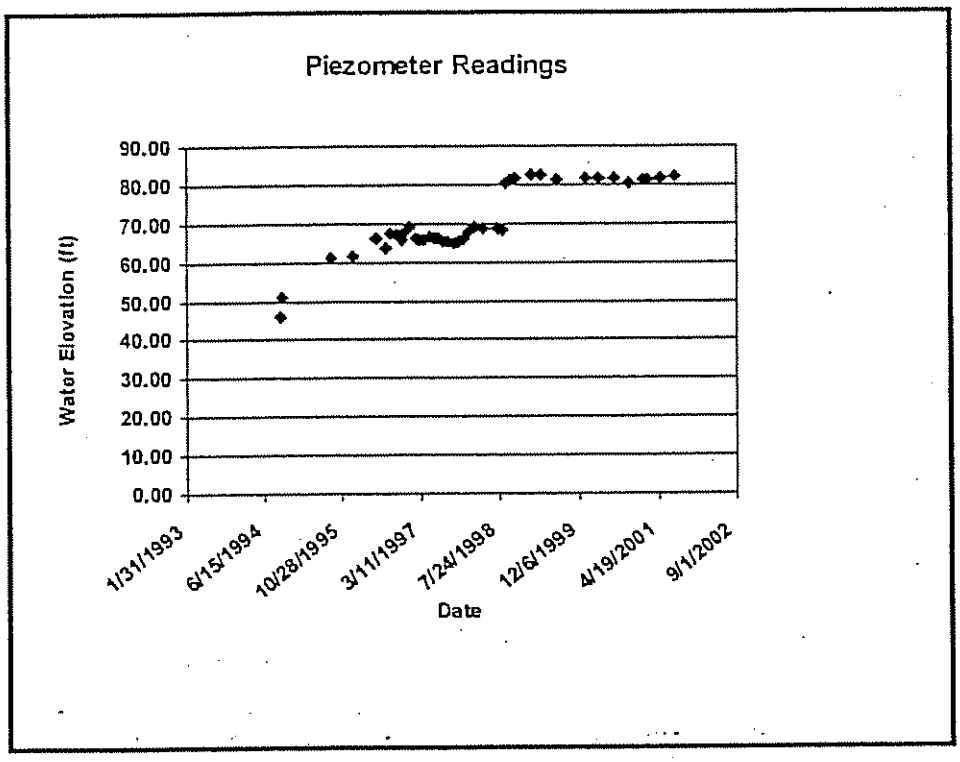
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_26B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627781 |
| Easting | 473067 |
| Phase | P4 |
| Screen El | 8 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/26/2001 | 81.8 |
| 09/21/1994 | 46.1 |
| 10/06/1994 | 51 |
| 08/18/1995 | 61.1 |
| 01/05/1996 | 61.5 |
| 06/07/1996 | 66.3 |
| 08/09/1996 | 63.5 |
| 09/10/1996 | 67.3 |
| 10/12/1996 | 66.9 |
| 11/15/1996 | 65.7 |
| 12/06/1996 | 67.7 |
| 01/08/1997 | 69 |
| 02/12/1997 | 66.1 |
| 03/07/1997 | 65.8 |
| 04/07/1997 | 65.7 |
| 05/13/1997 | 66.5 |
| 06/10/1997 | 66 |
| 07/03/1997 | 66 |
| 08/07/1997 | 65.5 |
| 09/03/1997 | 65.4 |
| 10/07/1997 | 65 |
| 11/15/1997 | 65.5 |
| 12/09/1997 | 66.1 |
| 01/08/1998 | 67.9 |
| 02/20/1998 | 69.1 |
| 04/15/1998 | 68.52 |
| 07/10/1998 | 68.6 |
| 08/05/1998 | 68.1 |
| 09/02/1998 | 80.4 |
| 10/02/1998 | 81.3 |
| 11/02/1998 | 81.5 |
| 02/08/1999 | 82.5 |
| 04/08/1999 | 82.4 |
| 07/12/1999 | 81.3 |
| 01/13/2000 | 81.7 |
| 04/05/2000 | 81.5 |

## Installation Information

## Maintenance Data

| | | | |
|---|---|---|---|
| INST_ID | P4_PZ_26B | MAIN_TYPE | |
| DATE | 7/1/1997 | Ground Surf. EL | |
| COUNT | 0 | RISER_LENGTH (ft) | |

NOTES: MINOR VARIATIONS IN ELEVATION- 0.5' OR LESS

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

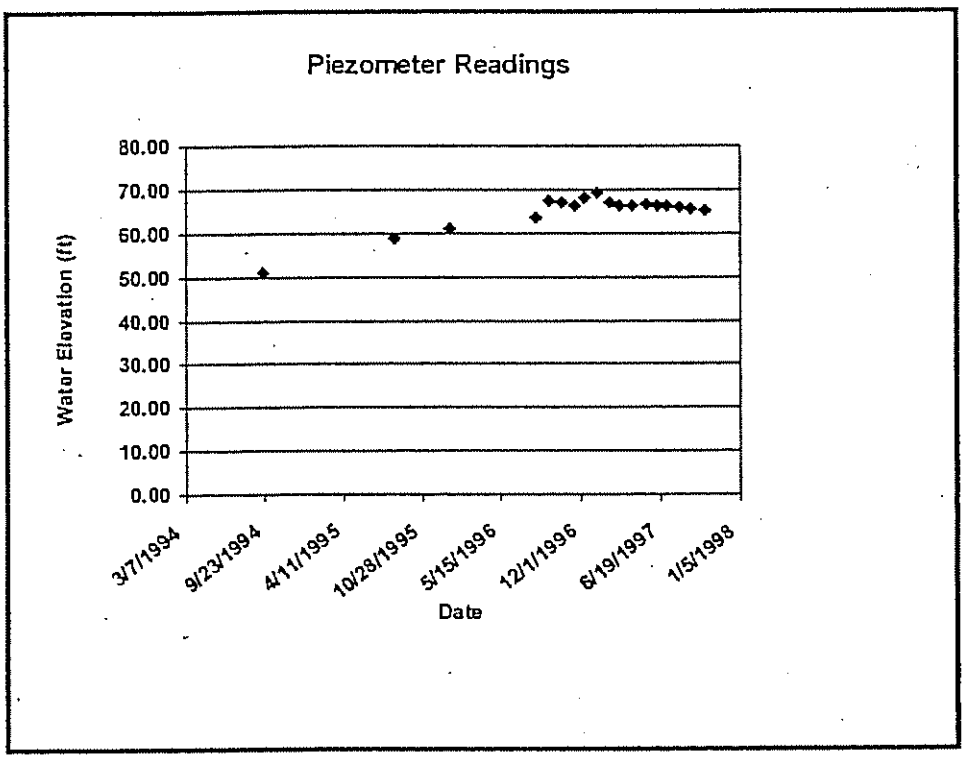
☐ Abandoned

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_26C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627777 |
| Easting | 473065 |
| Phase | P4 |
| Screen El | -7 |
| Stratum | BL |




Readings

| | |
|---|---|
| 09/21/1994 | 51.1 |
| 08/18/1995 | 58.8 |
| 01/05/1996 | 61 |
| 08/09/1996 | 63.5 |
| 09/10/1996 | 67.5 |
| 10/12/1996 | 67 |
| 11/15/1996 | 66.1 |
| 12/06/1996 | 68 |
| 01/08/1997 | 69.3 |
| 02/12/1997 | 66.8 |
| 03/07/1997 | 66.3 |
| 04/07/1997 | 66.2 |
| 05/13/1997 | 66.7 |
| 06/10/1997 | 66.2 |
| 07/03/1997 | 66.2 |
| 08/07/1997 | 65.7 |
| 09/03/1997 | 65.6 |
| 10/07/1997 | 65.2 |

## Installation Information

## Maintenance Data

| | | | | | |
|---|---|---|---|---|---|
| INST_ID | P4_PZ_26C | MAIN_TYPE | | NOTES | MINOR VARIATIONS IN ELEVATION- 0.5' OR LESS |
| DATE | 7/1/1997 | Ground Surf. EL | | | |
| COUNT | 0 | RISER_LENGTH (ft) | | | |

| | Before Modification | After Modification |
|---|---|---|
| Top of Casing (EL) | 0 | 0 |
| Depth of Casing (ft) | 0 | 0 |

☐ Abandoned

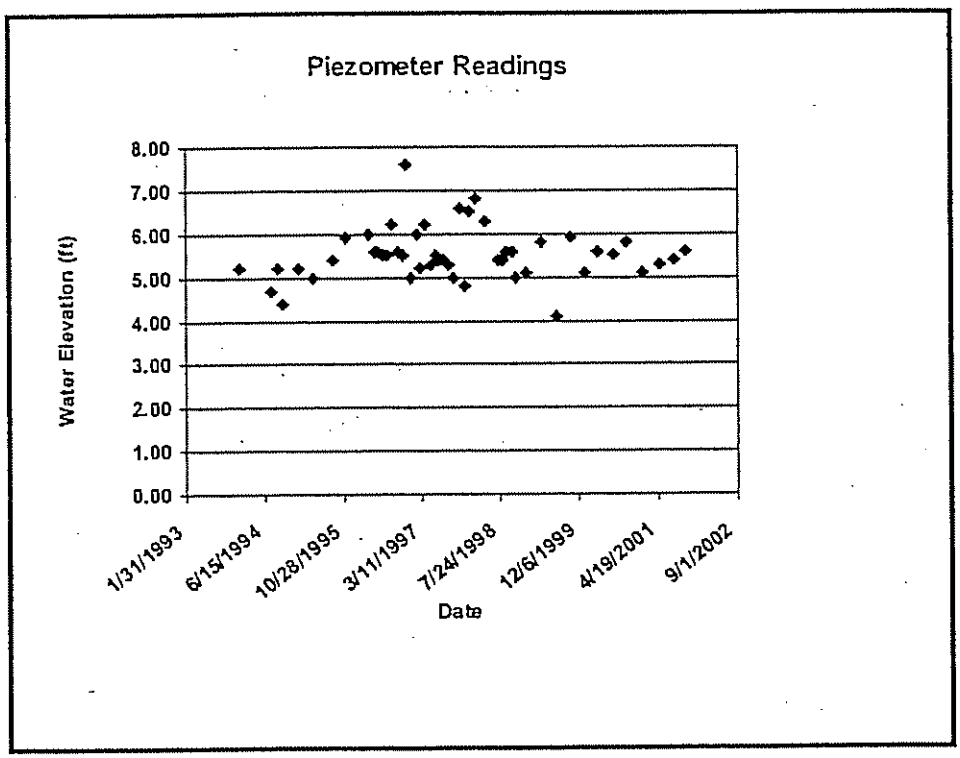
# SECTION 3

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 002

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628057 |
| Easting | 474053 |
| Phase | P4 |
| Screen El | -5 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 5.3 |
| 07/29/1994 | 4.7 |
| 08/31/1994 | 5.2 |
| 10/06/1994 | 4.4 |
| 01/11/1994 | 5.2 |
| 04/11/1995 | 5 |
| 08/18/1995 | 5.4 |
| 11/05/1995 | 5.9 |
| 04/11/1996 | 6 |
| 05/21/1996 | 5.6 |
| 07/10/1996 | 5.5 |
| 08/09/1996 | 5.5 |
| 09/10/1996 | 6.2 |
| 10/12/1996 | 5.6 |
| 06/10/1997 | 5.5 |
| 07/02/1997 | 5.4 |
| 08/07/1997 | 5.4 |
| 09/03/1997 | 5.3 |
| 10/06/1997 | 5 |
| 11/14/1997 | 6.6 |
| 12/11/1997 | 4.8 |
| 01/09/1998 | 6.5 |
| 02/20/1998 | 6.8 |
| 04/20/1998 | 6.3 |
| 01/11/1995 | 5.2 |
| 06/07/1996 | 5.6 |
| 11/15/1996 | 5.5 |
| 12/06/1996 | 7.6 |
| 01/08/1997 | 5 |
| 02/12/1997 | 6 |
| 03/07/1997 | 5.2 |
| 04/07/1997 | 6.2 |
| 05/13/1997 | 5.3 |
| 07/10/1998 | 5.4 |
| 08/05/1998 | 5.4 |
| 09/02/1998 | 5.6 |

## Installation Information

Date Instrument Was Installed: 10/14/1993 *GEOLOGY*

*Ground Surface El* 32

*NOTES*

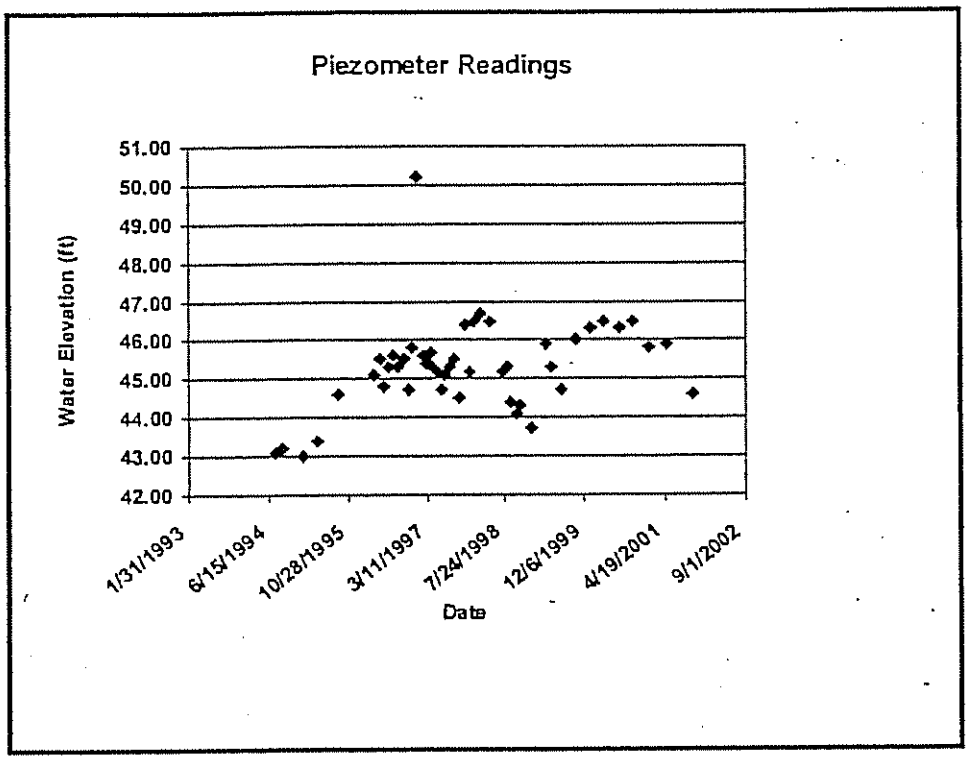
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 34 | 34 | 3 | 9.5 | 11 | 32 | |
| *Bottom* | 32 | 3 | -7 | -8 | 9.5 | 11 | |
| *Diam. (in)* | 4 | 2 | 2 | 6 | 6 | 6 | |
| *Material* | STEEL SCHEDULE 40 | PVC SCHEDULE 40 | #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 004

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627933 |
| Easting | 473852 |
| Phase | P4 |
| Screen El | 29.8 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 45.9 |
| 01/11/1995 | 43 |
| 04/11/1995 | 43.4 |
| 08/18/1995 | 44.6 |
| 04/11/1996 | 45.1 |
| 05/21/1996 | 45.5 |
| 06/07/1996 | 44.8 |
| 07/10/1996 | 45.3 |
| 08/09/1996 | 45.6 |
| 09/10/1996 | 45.3 |
| 10/12/1996 | 45.5 |
| 11/15/1996 | 44.7 |
| 12/06/1996 | 45.8 |
| 01/08/1997 | 50.2 |
| 02/12/1997 | 45.6 |
| 03/07/1997 | 45.4 |
| 04/07/1997 | 45.7 |
| 06/10/1997 | 44.7 |
| 07/02/1997 | 45.1 |
| 08/07/1997 | 45.3 |
| 09/03/1997 | 45.5 |
| 10/06/1997 | 44.5 |
| 11/14/1997 | 46.4 |
| 12/11/1997 | 45.2 |
| 01/09/1998 | 46.5 |
| 02/20/1998 | 46.7 |
| 04/20/1998 | 46.5 |
| 07/29/1994 | 43.1 |
| 08/31/1994 | 43.2 |
| 03/28/1997 | 45.4 |
| 04/02/1997 | 45.7 |
| 04/14/1997 | 45.3 |
| 05/13/1997 | 45.2 |
| 07/10/1998 | 45.2 |
| 08/05/1998 | 45.3 |
| 09/02/1998 | 44.4 |

## Installation Information

Date Instrument Was Installed: 01/03/1994

*GEOLOGY*

*Ground Surface El* 52.3

*NOTES*

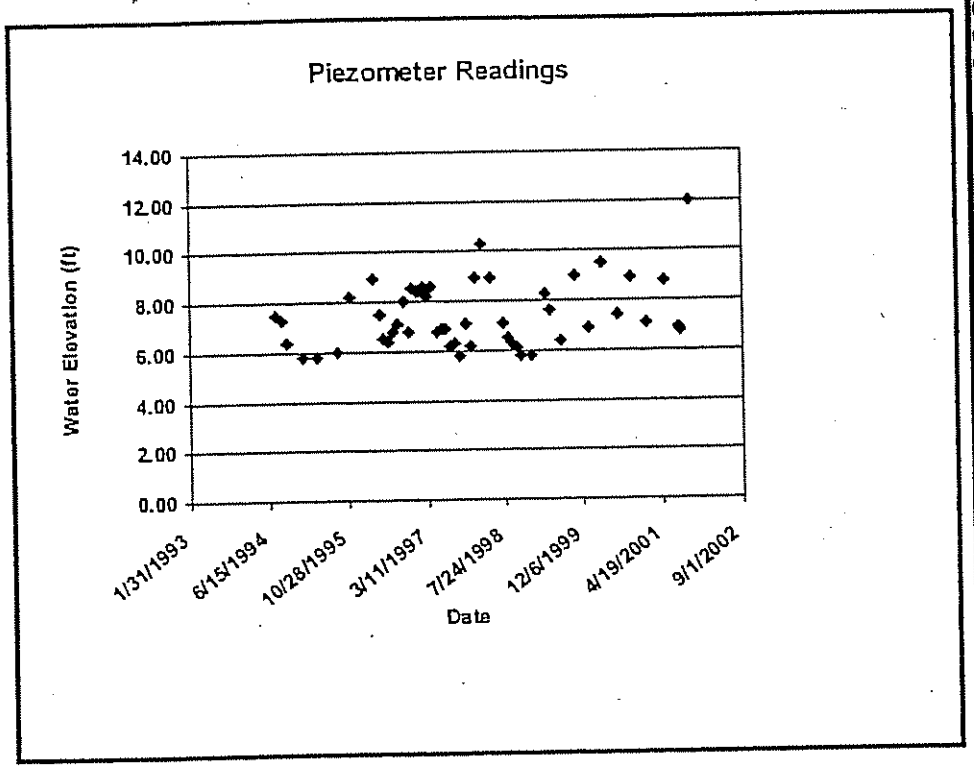
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 54.3 | 54.3 | 37.8 | 43.3 | 46.3 | 52.3 | |
| *Bottom* | 52.3 | 37.8 | 27.8 | 24.8 | 43.3 | 46.3 | |
| *Diam. (in)* | 4 | 2 | 2 | 6 | 6 | 6 | |
| *Material* | STEEL SCHEDULE 40 | | PVC WELL SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_005

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627918 |
| Easting | 473944 |
| Phase | P4 |
| Screen El | 6 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 8.8 |
| 10/06/1994 | 6.4 |
| 01/11/1995 | 5.8 |
| 04/11/1995 | 5.8 |
| 08/18/1995 | 6 |
| 11/05/1995 | 8.2 |
| 04/11/1996 | 8.9 |
| 05/21/1996 | 7.5 |
| 06/07/1996 | 6.5 |
| 07/10/1996 | 6.4 |
| 08/09/1996 | 6.8 |
| 09/10/1996 | 7.1 |
| 10/12/1996 | 8 |
| 11/15/1996 | 6.8 |
| 12/06/1996 | 8.5 |
| 01/08/1997 | 8.4 |
| 02/12/1997 | 8.6 |
| 03/07/1997 | 8.2 |
| 04/07/1997 | 8.6 |
| 06/10/1997 | 6.9 |
| 07/02/1997 | 6.9 |
| 08/07/1997 | 6.2 |
| 09/03/1997 | 6.3 |
| 10/06/1997 | 5.8 |
| 11/14/1997 | 7.1 |
| 12/11/1997 | 6.2 |
| 01/09/1998 | 8.9 |
| 02/20/1998 | 10.3 |
| 04/20/1998 | 8.9 |
| 07/29/1994 | 7.5 |
| 08/31/1994 | 7.3 |
| 05/13/1997 | 6.8 |
| 07/10/1998 | 7.1 |
| 08/05/1998 | 6.5 |
| 09/02/1998 | 6.3 |
| 10/08/1998 | 6.1 |

## Installation Information

Date Instrument Was Installed: 10/20/1993 *GEOLOGY*

*Ground Surface El* 37

*NOTES*

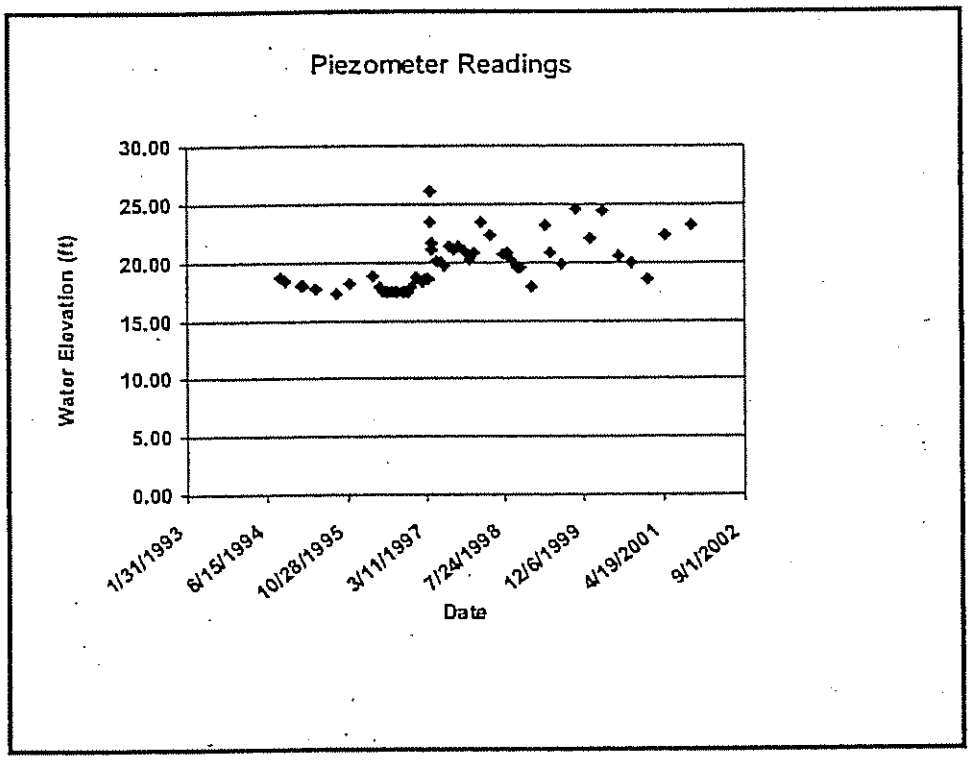
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 39 | 39 | 14 | 21 | 24 | 37 | |
| *Bottom* | 37 | 14 | 4 | 1 | 21 | 24 | |
| *Diam. (in)* | 4 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL SCH 40 | PVC SCHEDULE 40 | #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_007

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627800 |
| Easting | 473854 |
| Phase | P4 |
| Screen El | 16 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 22.3 |
| 10/06/1994 | 18.4 |
| 01/24/1995 | 18 |
| 04/11/1995 | 17.7 |
| 08/18/1995 | 17.3 |
| 11/05/1995 | 18.1 |
| 04/11/1996 | 18.8 |
| 05/21/1996 | 17.9 |
| 06/07/1996 | 17.4 |
| 07/10/1996 | 17.4 |
| 08/09/1996 | 17.4 |
| 09/10/1996 | 17.4 |
| 10/12/1996 | 17.5 |
| 11/15/1996 | 17.4 |
| 12/06/1996 | 17.8 |
| 01/08/1997 | 18.7 |
| 02/12/1997 | 18.3 |
| 03/07/1997 | 18.6 |
| 04/07/1997 | 23.4 |
| 06/10/1997 | 19.9 |
| 07/02/1997 | 19.7 |
| 08/07/1997 | 21.3 |
| 09/03/1997 | 21.1 |
| 10/06/1997 | 21.4 |
| 11/14/1997 | 20.9 |
| 12/11/1997 | 20.2 |
| 01/09/1998 | 20.8 |
| 02/20/1998 | 23.5 |
| 04/20/1998 | 22.3 |
| 08/31/1994 | 18.7 |
| 03/28/1997 | 18.5 |
| 04/02/1997 | 26.1 |
| 04/14/1997 | 21.6 |
| 04/17/1997 | 21.1 |
| 01/11/1995 | 18 |
| 05/13/1997 | 20.1 |

## Installation Information

Date Instrument Was Installed: 01/05/1994 *GEOLOGY*

*Ground Surface El* 48

*NOTES*

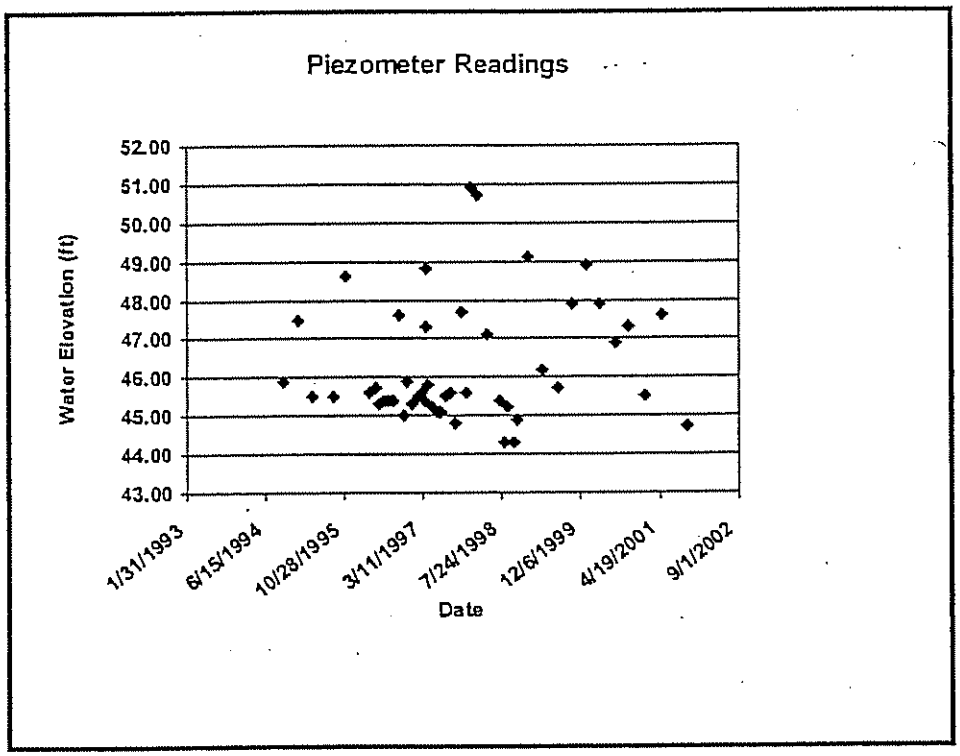
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 50 | 50 | 24 | 30 | 33 | 48 | |
| *Bottom* | 48 | 24 | 14 | 13 | 30 | 33 | |
| *Diam. (in)* | 4 | 2 | 2 | 6 | 6 | 6 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 011

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627694 |
| Easting | 473769 |
| Phase | P4 |
| Screen El | 30 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 47.6 |
| 10/06/1994 | 45.9 |
| 01/11/1995 | 47.5 |
| 04/11/1995 | 45.5 |
| 08/18/1995 | 45.5 |
| 11/05/1995 | 48.6 |
| 04/11/1996 | 45.6 |
| 05/21/1996 | 45.7 |
| 06/07/1996 | 45.3 |
| 07/10/1996 | 45.4 |
| 08/09/1996 | 45.4 |
| 09/10/1996 | 45.4 |
| 10/12/1996 | 47.6 |
| 11/15/1996 | 45 |
| 12/06/1996 | 45.9 |
| 01/08/1997 | 45.3 |
| 02/12/1997 | 45.5 |
| 03/07/1997 | 45.6 |
| 04/07/1997 | 47.3 |
| 06/10/1997 | 45.1 |
| 07/02/1997 | 45.1 |
| 08/07/1997 | 45.5 |
| 09/03/1997 | 45.6 |
| 10/06/1997 | 44.8 |
| 11/14/1997 | 47.7 |
| 12/11/1997 | 45.6 |
| 01/09/1998 | 50.9 |
| 02/20/1998 | 50.7 |
| 04/20/1998 | 47.1 |
| 03/28/1997 | 45.4 |
| 04/02/1997 | 48.8 |
| 04/14/1997 | 45.8 |
| 05/13/1997 | 45.2 |
| 07/10/1998 | 45.4 |
| 08/05/1998 | 44.3 |
| 09/02/1998 | 45.2 |

## Installation Information

Date Instrument Was Installed: 01/03/1994 *GEOLOGY*

*Ground Surface El* 52

*NOTES*

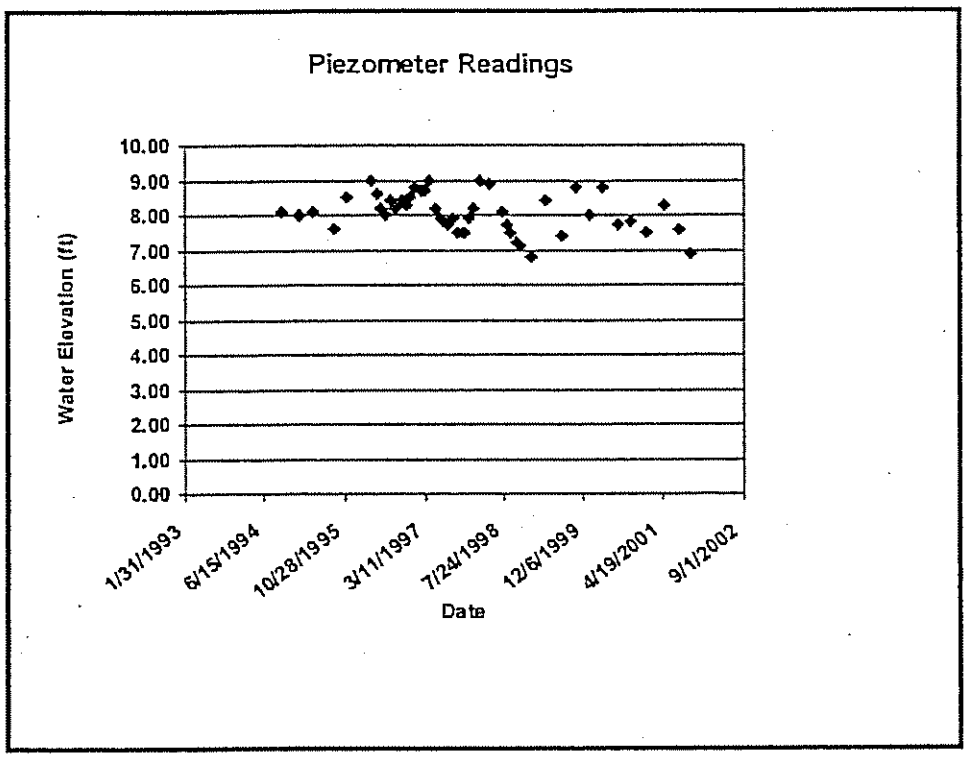
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 54 | 54 | 38 | 46 | 49 | 52 | |
| *Bottom* | 52 | 38 | 28 | 27 | 46 | 46 | |
| *Diam. (in)* | 4 | 2 | 2 | 6 | 6 | 6 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_012

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627641 |
| Easting | 473858 |
| Phase | P4 |
| Screen El | 6 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 8.3 |
| 10/06/1994 | 8.1 |
| 01/24/1995 | 8 |
| 04/11/1995 | 8.1 |
| 08/18/1995 | 7.6 |
| 11/05/1995 | 8.5 |
| 04/11/1996 | 9 |
| 05/21/1996 | 8.6 |
| 06/07/1996 | 8.2 |
| 07/10/1996 | 8 |
| 08/09/1996 | 8.4 |
| 09/10/1996 | 8.2 |
| 10/12/1996 | 8.4 |
| 11/15/1996 | 8.3 |
| 12/06/1996 | 8.5 |
| 01/08/1997 | 8.8 |
| 02/12/1997 | 8.7 |
| 03/07/1997 | 8.7 |
| 04/07/1997 | 9 |
| 06/10/1997 | 7.9 |
| 07/02/1997 | 7.8 |
| 08/07/1997 | 7.7 |
| 09/03/1997 | 7.9 |
| 10/06/1997 | 7.5 |
| 11/14/1997 | 7.5 |
| 12/11/1997 | 7.9 |
| 01/09/1998 | 8.2 |
| 02/20/1998 | 9 |
| 04/20/1998 | 8.9 |
| 01/11/1995 | 8 |
| 05/13/1997 | 8.2 |
| 07/10/1998 | 8.1 |
| 08/05/1998 | 7.7 |
| 09/02/1998 | 7.5 |
| 10/08/1998 | 7.2 |
| 11/02/1998 | 7.1 |

## Installation Information

Date Instrument Was Installed: 10/19/1993 *GEOLOGY*

*Ground Surface El* 37.8

*NOTES*

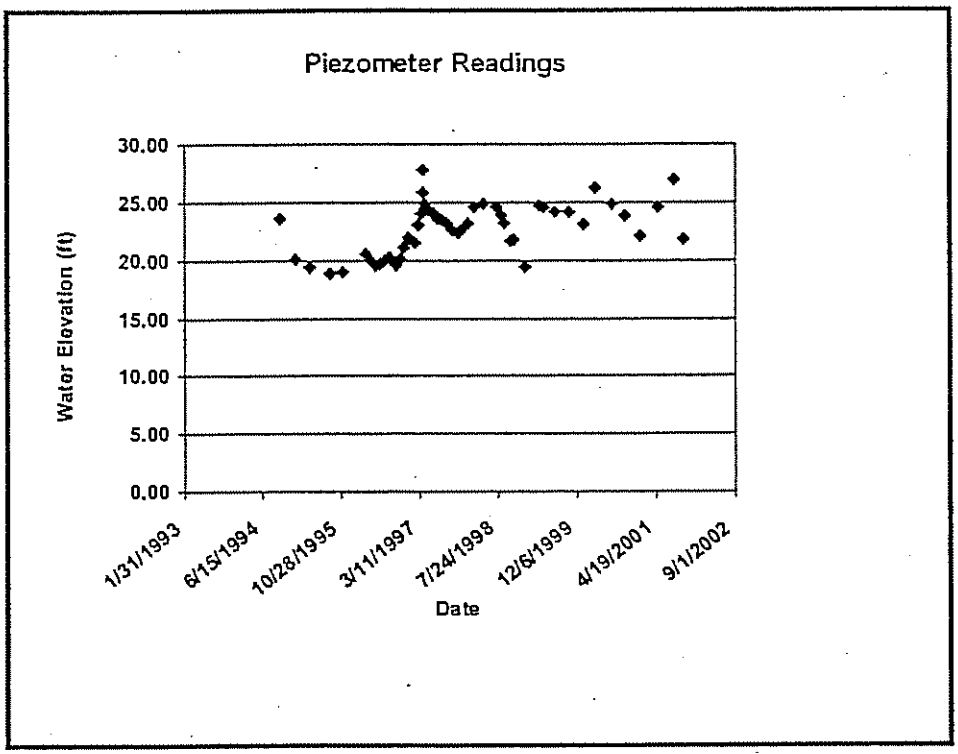
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 39.8 | 39.8 | 14 | 21.8 | 24.8 | 37.8 | |
| *Bottom* | 37.8 | 14 | 4 | 2.8 | 21.8 | 24.8 | |
| *Diam. (in)* | 4 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 014

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 627529 | | |
| Easting | 473764 | Screen El | 16 |
| Phase | P4 | Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 24.5 |
| 10/06/1994 | 23.6 |
| 01/11/1995 | 20.1 |
| 04/11/1995 | 19.4 |
| 08/18/1995 | 18.9 |
| 11/05/1995 | 19 |
| 04/11/1996 | 20.5 |
| 05/21/1996 | 19.8 |
| 06/07/1996 | 19.6 |
| 07/10/1996 | 19.7 |
| 08/09/1996 | 19.9 |
| 09/10/1996 | 20.2 |
| 10/12/1996 | 19.6 |
| 11/15/1996 | 20.1 |
| 12/06/1996 | 21.1 |
| 01/08/1997 | 21.9 |
| 02/12/1997 | 21.5 |
| 03/07/1997 | 23 |
| 04/07/1997 | 25.8 |
| 06/10/1997 | 24 |
| 07/02/1997 | 23.6 |
| 08/07/1997 | 23.4 |
| 09/03/1997 | 23.2 |
| 10/06/1997 | 22.6 |
| 11/14/1997 | 22.3 |
| 12/11/1997 | 22.8 |
| 01/09/1998 | 23.1 |
| 02/20/1998 | 24.5 |
| 04/20/1998 | 24.9 |
| 03/28/1997 | 24 |
| 04/02/1997 | 27.7 |
| 04/14/1997 | 24.8 |
| 04/17/1997 | 24.4 |
| 05/13/1997 | 24.3 |
| 07/10/1998 | 24.5 |
| 08/05/1998 | 23.9 |

## Installation Information

Date Instrument Was Installed: 01/05/1994 *GEOLOGY*

*Ground Surface El* 47

*NOTES*

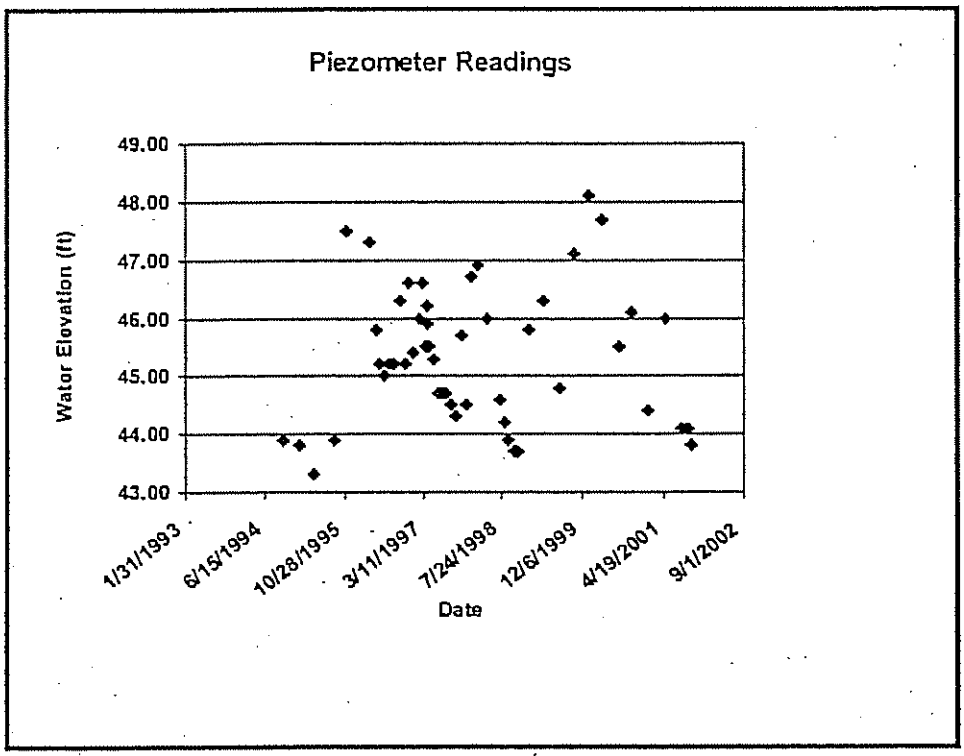
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 49 | 49 | 24 | 37 | 40 | 47 | |
| *Bottom* | 47 | 24 | 14 | 13 | 37 | 40 | |
| *Diam. (in)* | 4 | 2 | 2 | 6 | 6 | 6 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 017

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627374 |
| Easting | 473664 |
| Screen El | 30 |
| Phase | P2 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 46 |
| 10/06/1994 | 43.9 |
| 01/11/1995 | 43.8 |
| 04/11/1995 | 43.3 |
| 08/18/1995 | 43.9 |
| 11/05/1995 | 47.5 |
| 04/11/1996 | 47.3 |
| 05/21/1996 | 45.8 |
| 06/07/1996 | 45.2 |
| 07/10/1996 | 45 |
| 08/09/1996 | 45.2 |
| 09/10/1996 | 45.2 |
| 10/12/1996 | 46.3 |
| 11/15/1996 | 45.2 |
| 12/06/1996 | 46.6 |
| 01/08/1997 | 45.4 |
| 02/12/1997 | 46 |
| 03/07/1997 | 46.6 |
| 04/07/1997 | 45.9 |
| 06/10/1997 | 44.7 |
| 07/02/1997 | 44.7 |
| 08/07/1997 | 44.7 |
| 09/03/1997 | 44.5 |
| 10/06/1997 | 44.3 |
| 11/14/1997 | 45.7 |
| 12/11/1997 | 44.5 |
| 01/09/1998 | 46.7 |
| 02/20/1998 | 46.9 |
| 04/20/1998 | 46 |
| 03/28/1997 | 45.5 |
| 04/02/1997 | 46.2 |
| 04/14/1997 | 45.5 |
| 05/13/1997 | 45.3 |
| 07/10/1998 | 44.6 |
| 08/05/1998 | 44.2 |
| 09/02/1998 | 43.9 |

## Installation Information

Date Instrument Was Installed: 01/17/1994 *GEOLOGY*

*Ground Surface El* 51

*NOTES*

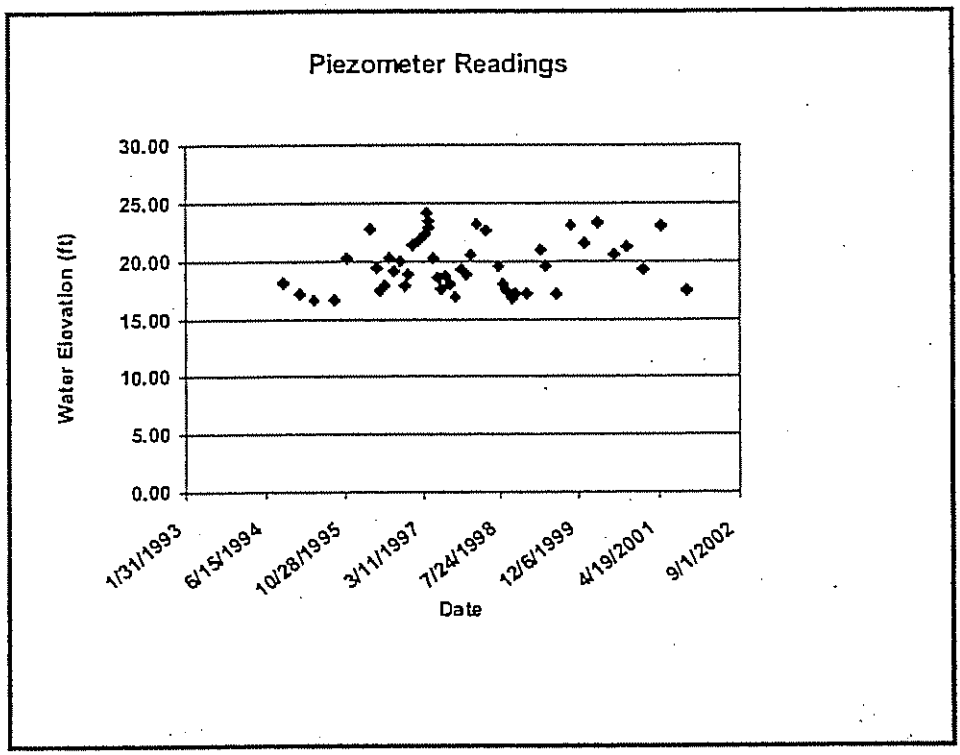
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 53 | 53 | 38 | 46 | 49 | 51 | |
| *Bottom* | 51 | 38 | 28 | 27 | 46 | 49 | |
| *Diam. (in)* | 4 | 2 | 2 | 6 | 6 | 6 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 021

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627225 |
| Easting | 473676 |
| Phase | P4 |
| Screen El | 16 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 23 |
| 10/06/1994 | 18.1 |
| 01/11/1995 | 17.1 |
| 04/11/1995 | 16.6 |
| 08/18/1995 | 16.6 |
| 11/05/1995 | 20.3 |
| 04/11/1996 | 22.8 |
| 05/21/1996 | 19.4 |
| 06/07/1996 | 17.5 |
| 07/10/1996 | 17.8 |
| 08/09/1996 | 20.2 |
| 09/10/1996 | 19.1 |
| 10/12/1996 | 20 |
| 11/15/1996 | 17.9 |
| 12/06/1996 | 18.8 |
| 01/08/1997 | 21.3 |
| 02/12/1997 | 21.8 |
| 03/07/1997 | 22 |
| 04/07/1997 | 24.2 |
| 06/10/1997 | 18.6 |
| 07/02/1997 | 17.6 |
| 08/07/1997 | 18.7 |
| 09/03/1997 | 18 |
| 10/06/1997 | 16.9 |
| 11/14/1997 | 19.3 |
| 12/11/1997 | 18.8 |
| 01/09/1998 | 20.5 |
| 02/20/1998 | 23.1 |
| 04/20/1998 | 22.6 |
| 03/28/1997 | 22.3 |
| 04/02/1997 | 24.2 |
| 04/14/1997 | 23.4 |
| 04/17/1997 | 22.9 |
| 05/13/1997 | 20.3 |
| 07/10/1998 | 19.5 |
| 08/05/1998 | 18 |

## Installation Information

Date Instrument Was Installed: 10/20/1993 *GEOLOGY*

*Ground Surface El* 46

*NOTES*

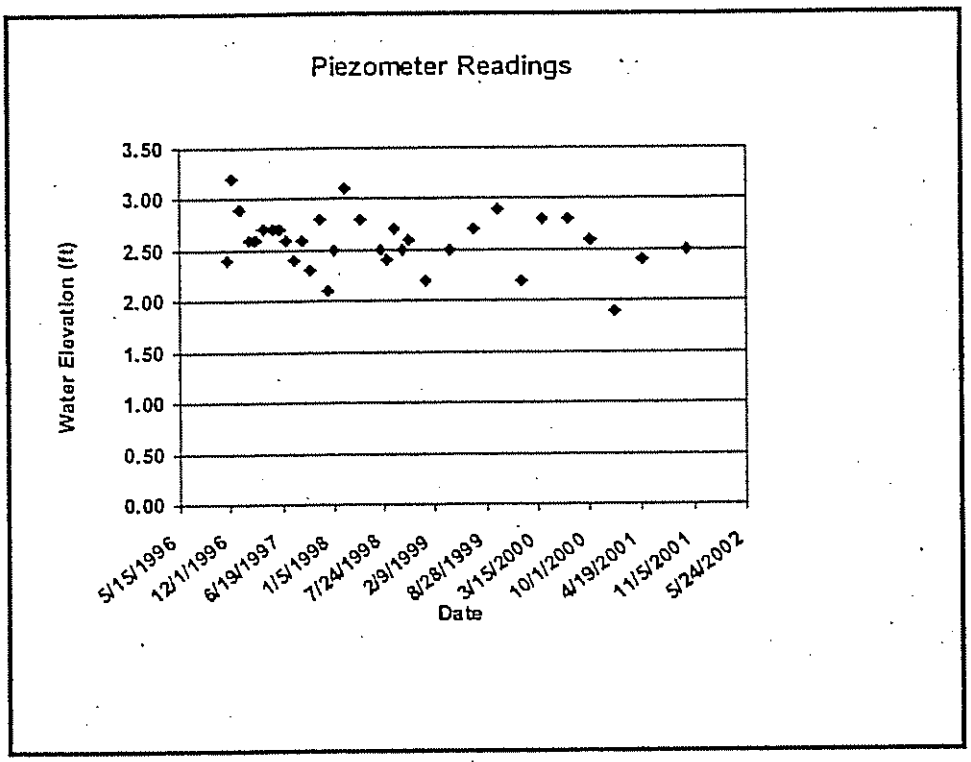
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 48 | 48 | 24 | 29.5 | 31.5 | 46 | |
| *Bottom* | 46 | 24 | 14 | 13 | 29.5 | 31.5 | |
| *Diam. (in)* | 4 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_027

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627931 |
| Easting | 473945 |
| Phase | P4 |
| Screen El | -35.8 |
| Stratum | BL |




Readings

| | |
|---|---|
| 04/25/2001 | 2.4 |
| 11/15/1996 | 2.4 |
| 12/06/1996 | 3.2 |
| 01/08/1997 | 2.9 |
| 02/12/1997 | 2.6 |
| 03/07/1997 | 2.6 |
| 04/07/1997 | 2.7 |
| 06/10/1997 | 2.7 |
| 07/02/1997 | 2.6 |
| 08/07/1997 | 2.4 |
| 09/03/1997 | 2.6 |
| 10/06/1997 | 2.3 |
| 11/14/1997 | 2.8 |
| 12/11/1997 | 2.1 |
| 01/09/1998 | 2.5 |
| 02/20/1998 | 3.1 |
| 04/20/1998 | 2.8 |
| 05/13/1997 | 2.7 |
| 07/10/1998 | 2.5 |
| 08/05/1998 | 2.4 |
| 09/02/1998 | 2.7 |
| 10/08/1998 | 2.5 |
| 11/02/1998 | 2.6 |
| 01/05/1999 | 2.2 |
| 04/08/1999 | 2.5 |
| 07/12/1999 | 2.7 |
| 10/11/1999 | 2.9 |
| 01/13/2000 | 2.2 |
| 04/05/2000 | 2.8 |
| 07/11/2000 | 2.8 |
| 10/04/2000 | 2.6 |
| 01/08/2001 | 1.9 |
| 10/04/2001 | 2.5 |

## Installation Information

Date Instrument Was Installed: 11/06/1996 *GEOLOGY*

*Ground Surface El* 36.7

*NOTES* INSTALLED BETWEEN 11/4/97 AND 11/6/97

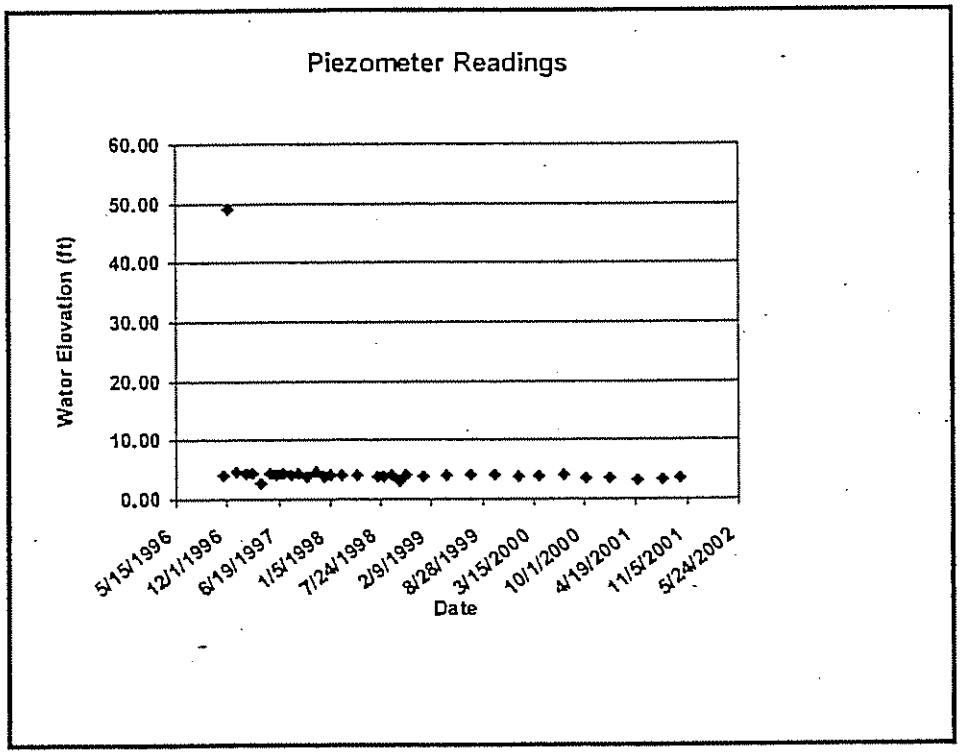
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 38.7 | 38.7 | -33.8 | -32.8 | -29.8 | 36.7 | |
| *Bottom* | 36.7 | -33.8 | -35.8 | -36.8 | -32.8 | -29.8 | |
| *Diam. (in)* | 6 | 0.75 | 1.5 | 6 | 6 | 6 | |
| *Material* | | PVC SCH 80 | POROUS POINT | WELL SAND | BENTONITE P1 PELLETS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_028

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 627671 | | |
| Easting | 473845 | Screen El | -39 |
| Phase | P4 | Stratum | C1 |




Readings

| | |
|---|---|
| 04/25/2001 | 3.2 |
| 11/15/1996 | 4.2 |
| 12/06/1996 | 49 |
| 01/08/1997 | 4.6 |
| 02/12/1997 | 4.3 |
| 03/07/1997 | 4.3 |
| 04/07/1997 | 2.7 |
| 06/10/1997 | 4.2 |
| 07/02/1997 | 4.4 |
| 08/07/1997 | 4.1 |
| 09/03/1997 | 4.3 |
| 10/06/1997 | 3.9 |
| 11/14/1997 | 4.6 |
| 12/11/1997 | 3.8 |
| 01/09/1998 | 4.1 |
| 02/20/1998 | 4.2 |
| 04/20/1998 | 4.1 |
| 05/13/1997 | 4.5 |
| 07/10/1998 | 3.8 |
| 08/05/1998 | 3.7 |
| 09/02/1998 | 4.1 |
| 10/08/1998 | 3 |
| 11/02/1998 | 4.2 |
| 01/05/1999 | 3.7 |
| 04/08/1999 | 4 |
| 07/12/1999 | 4.2 |
| 10/11/1999 | 4.2 |
| 01/13/2000 | 3.8 |
| 04/05/2000 | 3.9 |
| 07/11/2000 | 4 |
| 10/04/2000 | 3.5 |
| 01/08/2001 | 3.6 |
| 07/30/2001 | 3.3 |
| 10/04/2001 | 3.6 |

## Installation Information

Date Instrument Was Installed: 11/06/1996 *GEOLOGY*

*Ground Surface El* 39

*NOTES* INSTALLED BETWEEN 11/4/97 AND 11/6/97

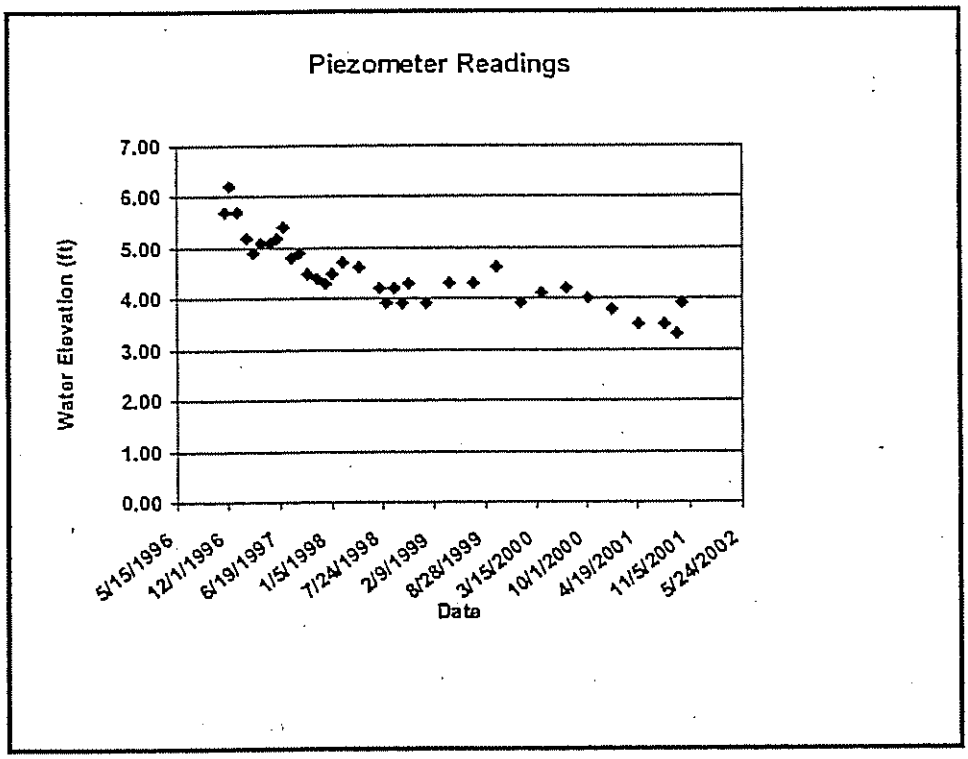
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 41.5 | 41.5 | -37 | -33.8 | -30.8 | 39 | |
| *Bottom* | 39 | -37 | -39 | -40 | -33.8 | -30.8 | |
| *Diam. (in)* | 6 | 0.75 | 1.5 | 6 | 6 | 6 | |
| *Material* | | PVC SCH 80 | POROUS POINT | WELL SAND | BRNTONITE P1 PELLETS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 029

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627279 |
| Easting | 473716 |
| Phase | P4 |
| Screen El | -39.6 |
| Stratum | C1 |




Readings

| | |
|---|---|
| 04/25/2001 | 3.5 |
| 11/15/1996 | 5.7 |
| 12/06/1996 | 6.2 |
| 01/08/1997 | 5.7 |
| 02/12/1997 | 5.2 |
| 03/07/1997 | 4.9 |
| 04/07/1997 | 5.1 |
| 06/10/1997 | 5.2 |
| 07/02/1997 | 5.4 |
| 08/07/1997 | 4.8 |
| 09/03/1997 | 4.9 |
| 10/06/1997 | 4.5 |
| 11/14/1997 | 4.4 |
| 12/11/1997 | 4.3 |
| 01/09/1998 | 4.5 |
| 02/20/1998 | 4.7 |
| 04/20/1998 | 4.6 |
| 05/13/1997 | 5.1 |
| 07/10/1998 | 4.2 |
| 08/05/1998 | 3.9 |
| 09/02/1998 | 4.2 |
| 10/08/1998 | 3.9 |
| 11/02/1998 | 4.3 |
| 01/05/1999 | 3.9 |
| 04/08/1999 | 4.3 |
| 07/12/1999 | 4.3 |
| 10/11/1999 | 4.6 |
| 01/13/2000 | 3.9 |
| 04/05/2000 | 4.1 |
| 07/11/2000 | 4.2 |
| 10/04/2000 | 4 |
| 01/08/2001 | 3.8 |
| 07/30/2001 | 3.5 |
| 09/20/2001 | 3.3 |
| 10/04/2001 | 3.9 |

## Installation Information

Date Instrument Was Installed: 11/06/1996 *GEOLOGY*

*Ground Surface El* 40.37

*NOTES* INSTALLED BETWEEN 11/4/97 AND 11/6/97

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 42.87 | 42.87 | -37.63 | -34.13 | -30.63 | 40.37 | |
| *Bottom* | 40.37 | -37.63 | -39.63 | -40.63 | -34.13 | -30.63 | |
| *Diam. (in)* | 6 | 0.75 | 1.5 | 6 | 6 | 6 | |
| *Material* | | PVC SCH 80 | POROUS POINT | WELL SAND | BENTONITE P1 PELLETS | | |

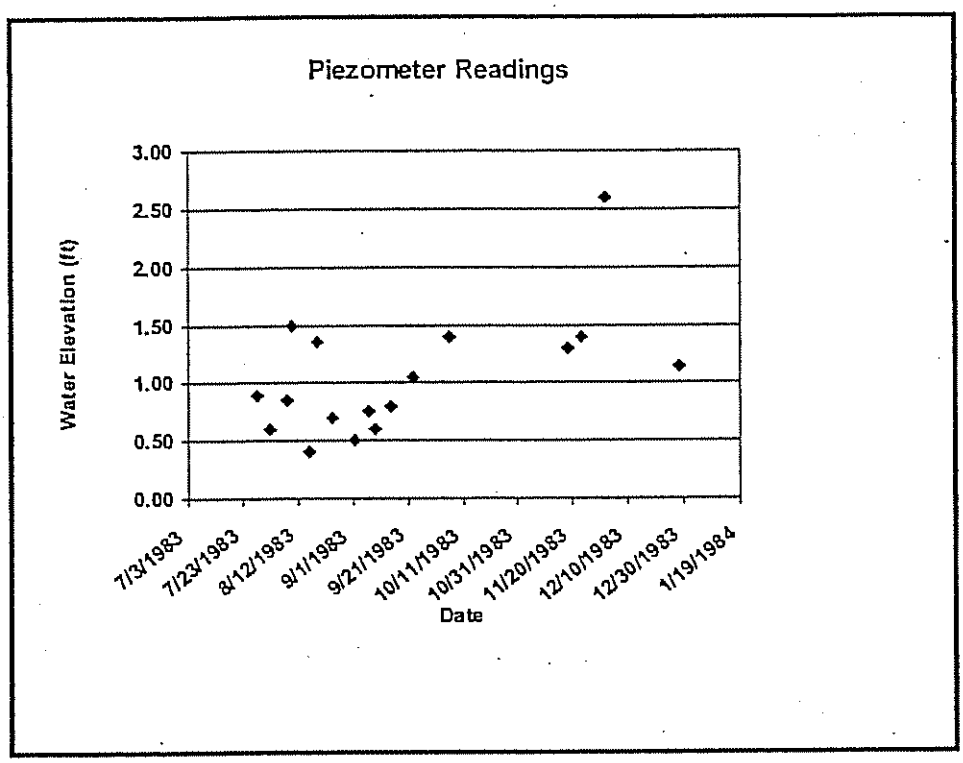
# SECTION 4

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_MW_P108

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627451 |
| Easting | 473871 |
| Phase | P4 |
| Screen El | -153 |
| Stratum | P1 |




Readings

| | |
|---|---|
| 07/28/1983 | 0.9 |
| 08/02/1983 | 0.6 |
| 08/08/1983 | 0.85 |
| 08/10/1983 | 1.5 |
| 08/16/1983 | 0.4 |
| 08/19/1983 | 1.35 |
| 08/25/1983 | 0.7 |
| 09/02/1983 | 0.5 |
| 09/07/1983 | 0.75 |
| 09/09/1983 | 0.6 |
| 09/15/1983 | 0.8 |
| 09/23/1983 | 1.05 |
| 10/06/1983 | 1.4 |
| 11/18/1983 | 1.3 |
| 11/23/1983 | 1.4 |
| 12/02/1983 | 2.6 |
| 12/28/1983 | 1.14 |

## Installation Information

Date Instrument Was Installed: 07/18/1983 *GEOLOGY*

*Ground Surface El*

*NOTES*

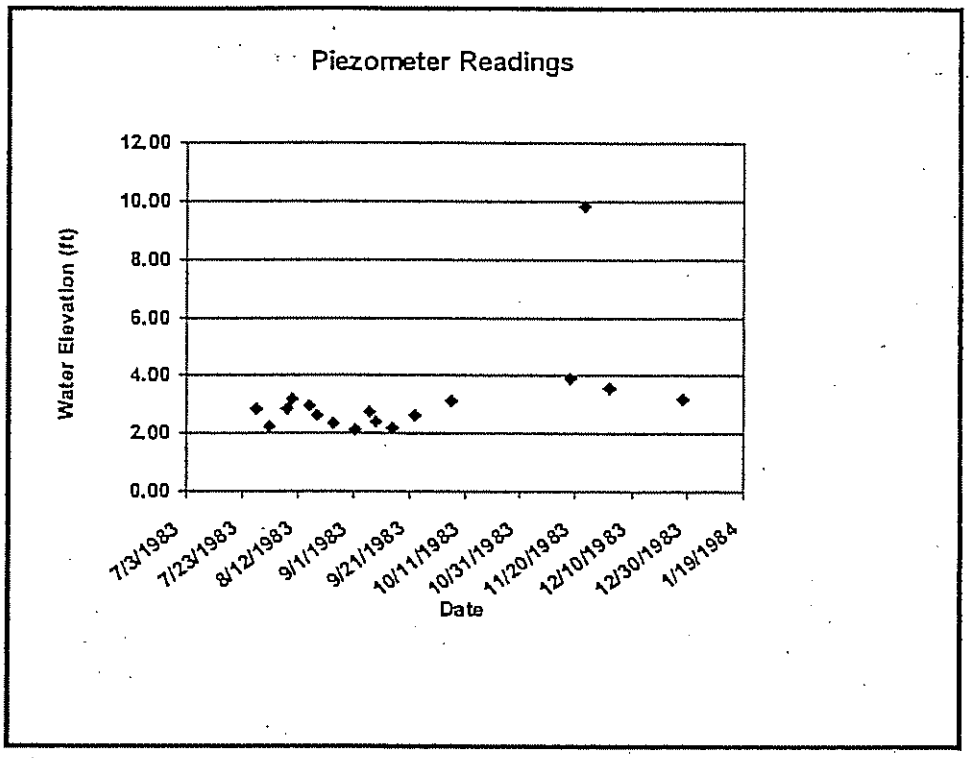
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 30.3 | 30.3 | -142.7 | -132.7 | 24.3 | | 27 |
| *Bottom* | 27.3 | -142.7 | 152.7 | -152.7 | -132.7 | | 24 |
| *Diam. (in)* | 4 | | 4 | | | | |
| *Material* | STEEL | PVC | PVC .01 SLOT | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_MW_UC108

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627437 |
| Easting | 473867 |
| Phase | P4 |
| Screen El | -38 |
| Stratum | BM |




Readings

| | |
|---|---|
| 07/28/1983 | 2.82 |
| 08/02/1983 | 2.22 |
| 08/08/1983 | 2.87 |
| 08/10/1983 | 3.17 |
| 08/16/1983 | 2.97 |
| 08/19/1983 | 2.62 |
| 08/25/1983 | 2.32 |
| 09/02/1983 | 2.12 |
| 09/07/1983 | 2.72 |
| 09/09/1983 | 2.42 |
| 09/15/1983 | 2.17 |
| 09/23/1983 | 2.62 |
| 10/06/1983 | 3.12 |
| 11/18/1983 | 3.92 |
| 11/23/1983 | 9.82 |
| 12/02/1983 | 3.57 |
| 12/28/1983 | 3.19 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

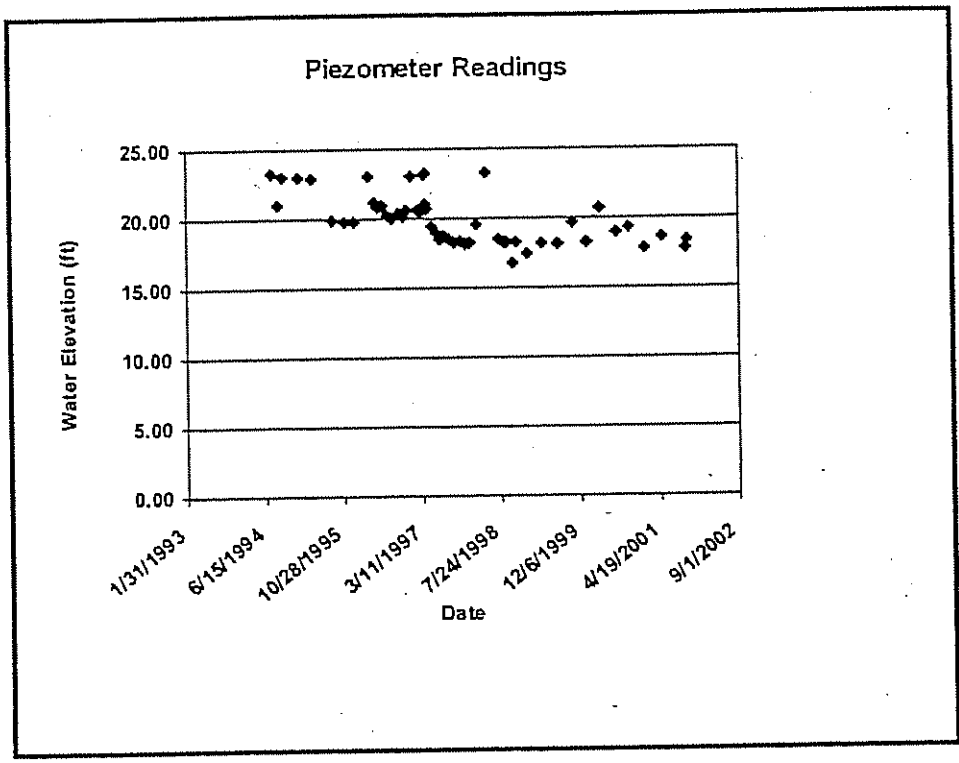
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_001

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628077 |
| Easting | 473948 |
| Phase | P4 |
| Screen El | 16 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/25/2001 | 18.6 |
| 03/28/1997 | 23.1 |
| 04/02/1997 | 23.2 |
| 04/14/1997 | 20.7 |
| 10/06/1994 | 23 |
| 01/11/1995 | 23 |
| 04/11/1995 | 22.9 |
| 08/18/1995 | 19.9 |
| 11/05/1995 | 19.8 |
| 01/05/1996 | 19.8 |
| 04/11/1996 | 23 |
| 05/21/1996 | 21.2 |
| 06/07/1996 | 20.8 |
| 07/10/1996 | 20.9 |
| 08/09/1996 | 20.2 |
| 09/10/1996 | 20 |
| 10/12/1996 | 20.3 |
| 11/15/1996 | 20.1 |
| 12/06/1996 | 20.6 |
| 01/08/1997 | 23 |
| 02/12/1997 | 20.6 |
| 03/07/1997 | 20.5 |
| 04/07/1997 | 21 |
| 06/10/1997 | 18.9 |
| 07/02/1997 | 18.5 |
| 08/07/1997 | 18.7 |
| 09/03/1997 | 18.5 |
| 10/06/1997 | 18.2 |
| 11/14/1997 | 18.4 |
| 12/11/1997 | 18.1 |
| 01/09/1998 | 18.3 |
| 02/20/1998 | 19.5 |
| 04/20/1998 | 23.2 |
| 07/29/1994 | 23.3 |
| 08/31/1994 | 21.1 |
| 05/13/1997 | 19.4 |

## Installation Information

Date Instrument Was Installed: 01/06/1994 *GEOLOGY*

*Ground Surface El* 47

*NOTES*

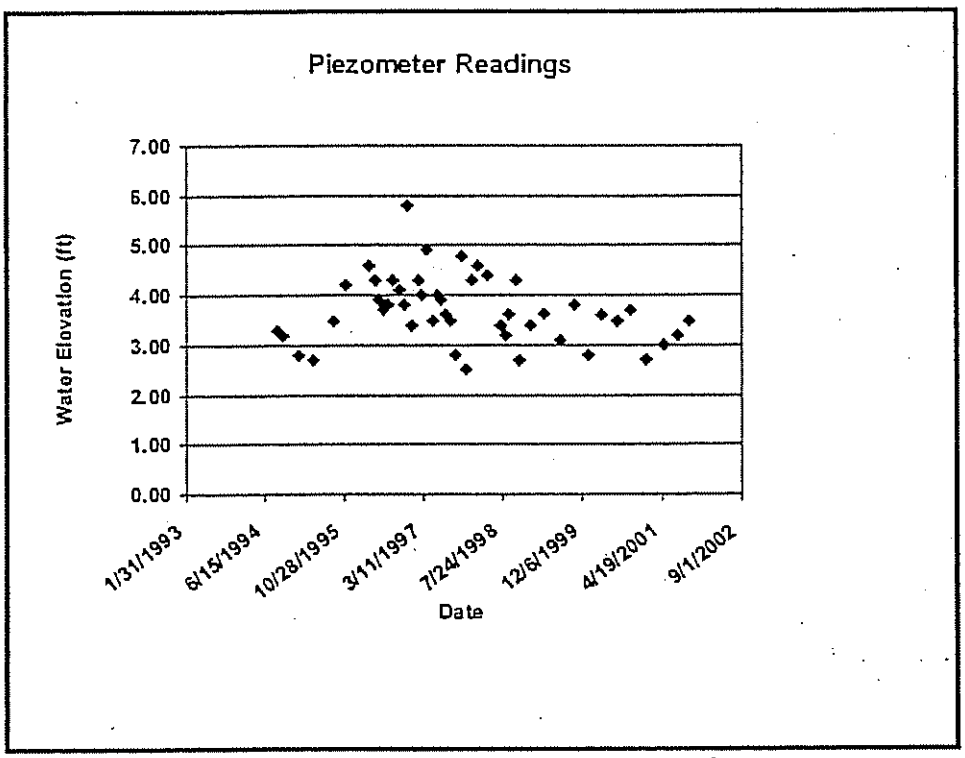
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 49 | 49 | 24 | 31 | 32 | 47 | |
| *Bottom* | 47 | 24 | 14 | 13 | 29 | 32 | |
| *Diam. (in)* | 4 | 2 | 2 | 6 | 6 | 6 | |
| *Material* | STEEL SCHEDULE 40 | PVC SCHEDULE 40 | | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4_PZ_008

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627772 |
| Easting | 473956 |
| Phase | P4 |
| Screen El | -5 |
| Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 3 |
| 10/06/1994 | 3.2 |
| 01/11/1995 | 2.8 |
| 04/11/1995 | 2.7 |
| 08/18/1995 | 3.5 |
| 11/05/1995 | 4.2 |
| 04/11/1996 | 4.6 |
| 05/21/1996 | 4.3 |
| 06/07/1996 | 3.9 |
| 07/10/1996 | 3.7 |
| 08/09/1996 | 3.8 |
| 09/10/1996 | 4.3 |
| 10/12/1996 | 4.1 |
| 11/15/1996 | 3.8 |
| 12/06/1996 | 5.8 |
| 01/08/1997 | 3.4 |
| 02/12/1997 | 4.3 |
| 03/07/1997 | 4 |
| 04/07/1997 | 4.9 |
| 06/10/1997 | 4 |
| 07/02/1997 | 3.9 |
| 08/07/1997 | 3.6 |
| 09/03/1997 | 3.5 |
| 10/06/1997 | 2.8 |
| 11/14/1997 | 4.8 |
| 12/11/1997 | 2.5 |
| 01/09/1998 | 4.3 |
| 02/20/1998 | 4.6 |
| 04/20/1998 | 4.4 |
| 08/31/1994 | 3.3 |
| 05/13/1997 | 3.5 |
| 07/10/1998 | 3.4 |
| 08/05/1998 | 3.2 |
| 09/02/1998 | 3.6 |
| 10/08/1998 | 4.3 |
| 11/02/1998 | 2.7 |

## Installation Information

Date Instrument Was Installed: 10/18/1993 *GEOLOGY*

*Ground Surface El* 30.5

*NOTES*

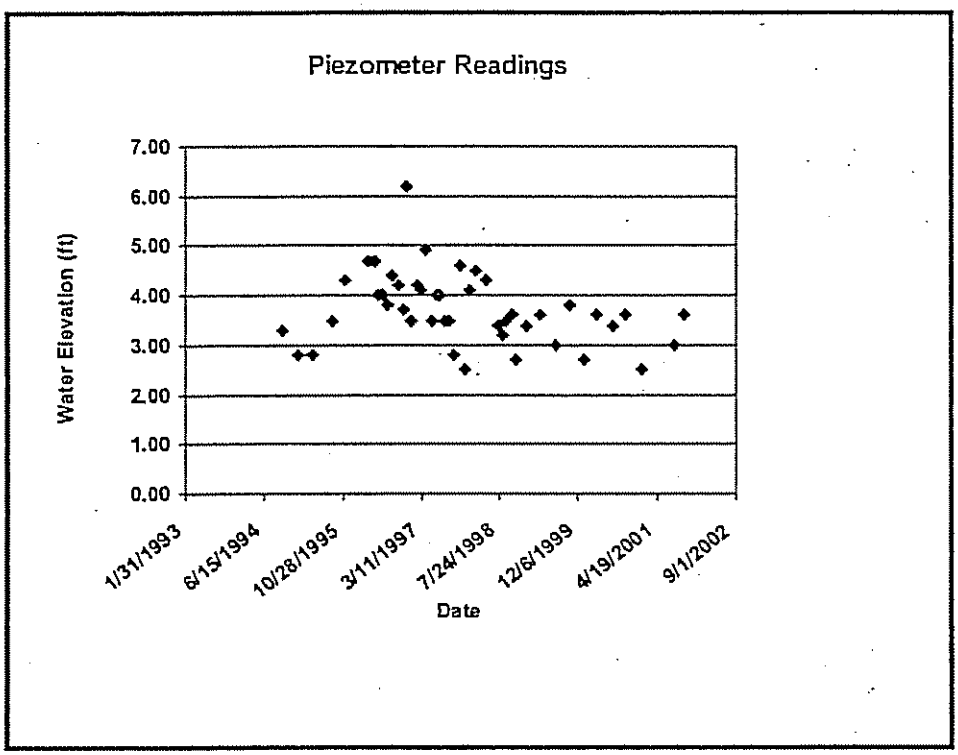
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 32.5 | 32.5 | 3 | 9 | 12 | 30.5 | |
| *Bottom* | 30.5 | 3 | -7 | -8 | 9 | 12 | |
| *Diam. (in)* | 4 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 015

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 627494 | | |
| Easting | 473872 | Screen El | -5 |
| Phase | P4 | Stratum | BM |




Readings

| | |
|---|---|
| 10/06/1994 | 3.3 |
| 01/11/1995 | 2.8 |
| 04/11/1995 | 2.8 |
| 08/18/1995 | 3.5 |
| 11/05/1995 | 4.3 |
| 04/11/1996 | 4.7 |
| 05/21/1996 | 4.7 |
| 06/07/1996 | 4 |
| 07/10/1996 | 4 |
| 08/09/1996 | 3.8 |
| 09/10/1996 | 4.4 |
| 10/12/1996 | 4.2 |
| 11/15/1996 | 3.7 |
| 12/06/1996 | 6.2 |
| 01/08/1997 | 3.5 |
| 02/12/1997 | 4.2 |
| 03/07/1997 | 4.1 |
| 04/07/1997 | 4.9 |
| 06/10/1997 | 4 |
| 07/02/1997 | 4 |
| 08/07/1997 | 3.5 |
| 09/03/1997 | 3.5 |
| 10/06/1997 | 2.8 |
| 11/14/1997 | 4.6 |
| 12/11/1997 | 2.5 |
| 01/09/1998 | 4.1 |
| 02/20/1998 | 4.5 |
| 04/20/1998 | 4.3 |
| 05/13/1997 | 3.5 |
| 07/10/1998 | 3.4 |
| 08/05/1998 | 3.2 |
| 09/02/1998 | 3.5 |
| 10/08/1998 | 3.6 |
| 11/02/1998 | 2.7 |
| 01/05/1999 | 3.4 |
| 04/08/1999 | 3.6 |

## Installation Information

Date Instrument Was Installed: 10/18/1993 *GEOLOGY*

*Ground Surface El* 31

*NOTES*

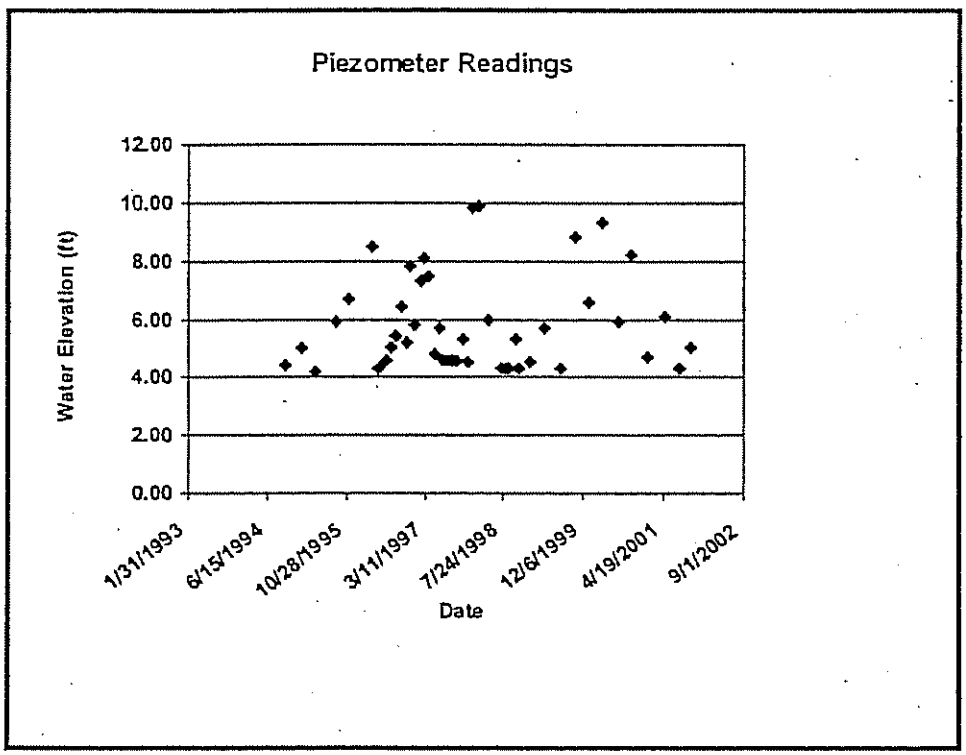
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 33 | 33 | 3 | 14 | 17 | 31 | |
| *Bottom* | 31 | 3 | -7 | -8 | 14 | 17 | |
| *Diam. (in)* | 4 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 019

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 627340 | | |
| Easting | 473774 | Screen El | 6 |
| Phase | P4 | Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 6.1 |
| 10/06/1994 | 4.4 |
| 01/11/1995 | 5 |
| 04/11/1995 | 4.2 |
| 08/18/1995 | 5.9 |
| 11/05/1995 | 6.7 |
| 04/11/1996 | 8.5 |
| 05/21/1996 | 4.3 |
| 06/07/1996 | 4.4 |
| 07/10/1996 | 4.6 |
| 08/09/1996 | 5 |
| 09/10/1996 | 5.4 |
| 10/12/1996 | 6.4 |
| 11/15/1996 | 5.2 |
| 12/06/1996 | 7.8 |
| 01/08/1997 | 5.8 |
| 02/12/1997 | 7.3 |
| 03/07/1997 | 8.1 |
| 04/07/1997 | 7.5 |
| 06/10/1997 | 5.7 |
| 07/02/1997 | 4.6 |
| 08/07/1997 | 4.6 |
| 09/03/1997 | 4.6 |
| 10/06/1997 | 4.6 |
| 11/14/1997 | 5.3 |
| 12/11/1997 | 4.5 |
| 01/09/1998 | 9.8 |
| 02/20/1998 | 9.9 |
| 04/20/1998 | 6 |
| 05/13/1997 | 4.8 |
| 07/10/1998 | 4.3 |
| 08/05/1998 | 4.3 |
| 09/02/1998 | 4.3 |
| 10/08/1998 | 5.3 |
| 11/02/1998 | 4.3 |
| 01/05/1999 | 4.5 |

## Installation Information

Date Instrument Was Installed: 10/19/1993 *GEOLOGY*

*Ground Surface El* 37.3

*NOTES*

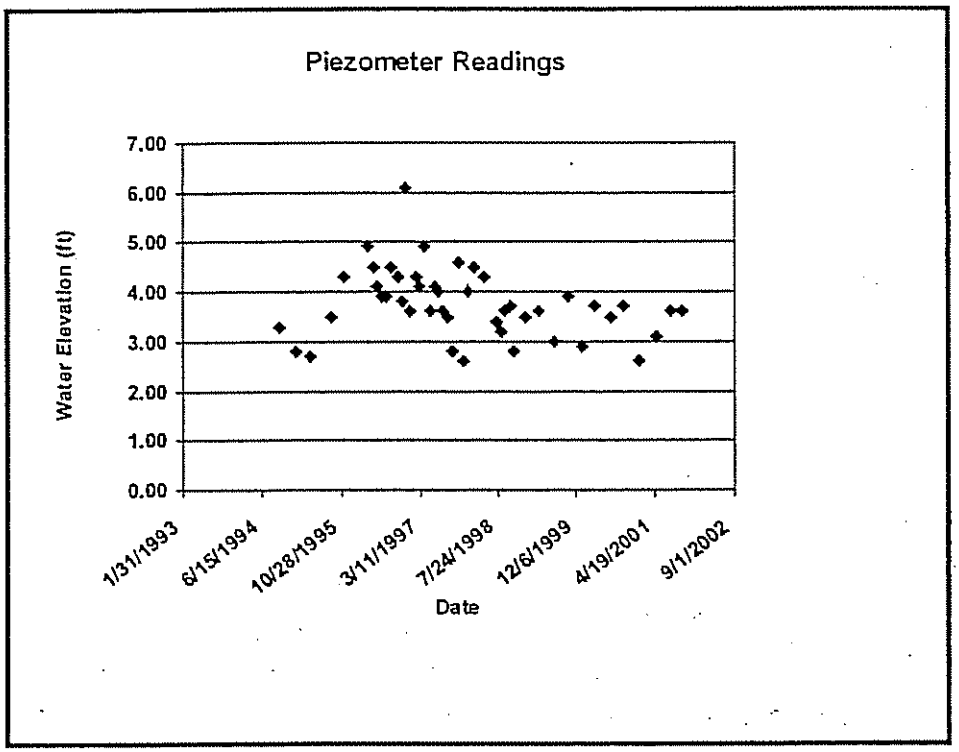
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 39.3 | 39.3 | 14 | 21.3 | 24.3 | 37.3 | |
| *Bottom* | 37.3 | 14 | 4 | 3 | 21.3 | 24.3 | |
| *Diam. (in)* | 4 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P4 PZ 022

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 627192 | | |
| Easting | 473774 | Screen El | -5 |
| Phase | P4 | Stratum | BM |




Readings

| | |
|---|---|
| 04/25/2001 | 3.1 |
| 10/06/1994 | 3.3 |
| 01/11/1995 | 2.8 |
| 04/11/1995 | 2.7 |
| 08/18/1995 | 3.5 |
| 11/05/1995 | 4.3 |
| 04/11/1996 | 4.9 |
| 05/21/1996 | 4.5 |
| 06/07/1996 | 4.1 |
| 07/10/1996 | 3.9 |
| 08/09/1996 | 3.9 |
| 09/10/1996 | 4.5 |
| 10/12/1996 | 4.3 |
| 11/15/1996 | 3.8 |
| 12/06/1996 | 6.1 |
| 01/08/1997 | 3.6 |
| 02/12/1997 | 4.3 |
| 03/07/1997 | 4.1 |
| 04/07/1997 | 4.9 |
| 06/10/1997 | 4.1 |
| 07/02/1997 | 4 |
| 08/07/1997 | 3.6 |
| 09/03/1997 | 3.5 |
| 10/06/1997 | 2.8 |
| 11/14/1997 | 4.6 |
| 12/11/1997 | 2.6 |
| 01/09/1998 | 4 |
| 02/20/1998 | 4.5 |
| 04/20/1998 | 4.3 |
| 05/13/1997 | 3.6 |
| 07/10/1998 | 3.4 |
| 08/05/1998 | 3.2 |
| 09/02/1998 | 3.6 |
| 10/08/1998 | 3.7 |
| 11/02/1998 | 2.8 |
| 01/05/1999 | 3.5 |

## Installation Information

Date Instrument Was Installed: 10/19/1993 *GEOLOGY*

*Ground Surface El* 31

*NOTES* INSTALLED BETWEEN 10/18/93 AND 10/19/93

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 33 | 33 | 3 | 11 | 14 | 31 | |
| *Bottom* | 31 | 3 | -7 | -11 | 11 | 14 | |
| *Diam. (in)* | 4 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL SCH 40 | PVC SCH 40 | | | BENTONITE CHIPS | | |

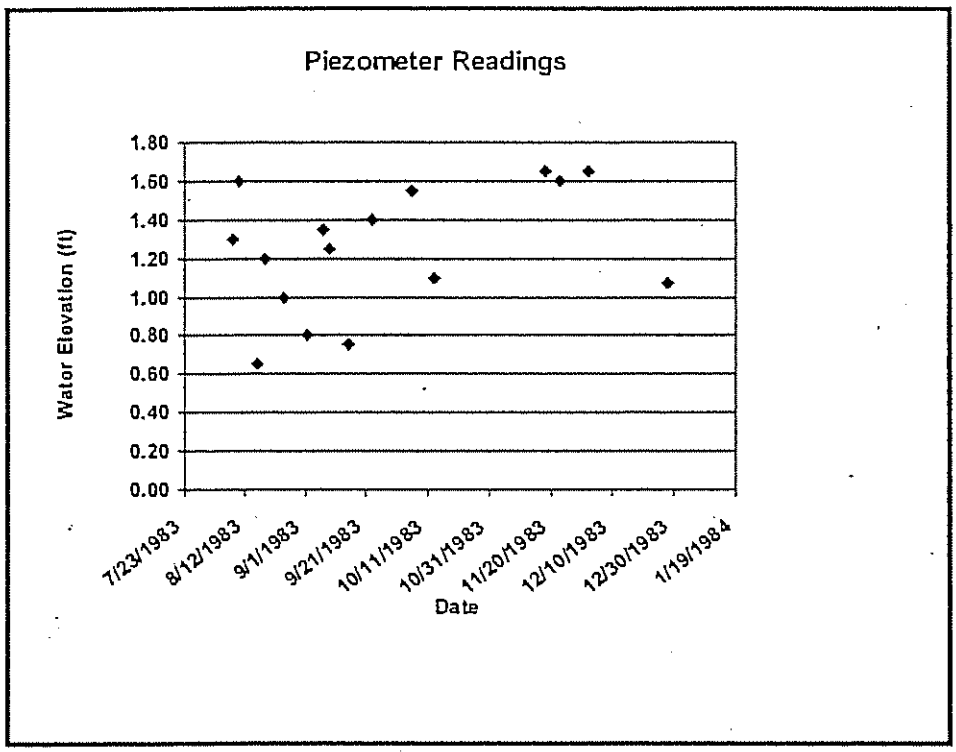
# PHASE V

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 MW P104

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627307 |
| Easting | 470249 |
| Screen El | -133.8 |
| Phase | P5 |
| Stratum | P1 |




Readings

| | |
|---|---|
| 08/08/1983 | 1.3 |
| 08/10/1983 | 1.6 |
| 08/16/1983 | 0.65 |
| 08/19/1983 | 1.2 |
| 08/25/1983 | 1 |
| 09/02/1983 | 0.8 |
| 09/07/1983 | 1.35 |
| 09/09/1983 | 1.25 |
| 09/15/1983 | 0.75 |
| 09/23/1983 | 1.4 |
| 10/06/1983 | 1.55 |
| 10/13/1983 | 1.1 |
| 11/18/1983 | 1.65 |
| 11/23/1983 | 1.6 |
| 12/02/1983 | 1.65 |
| 12/28/1983 | 1.07 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY* POTOMAC

*Ground Surface El* 15

*NOTES*

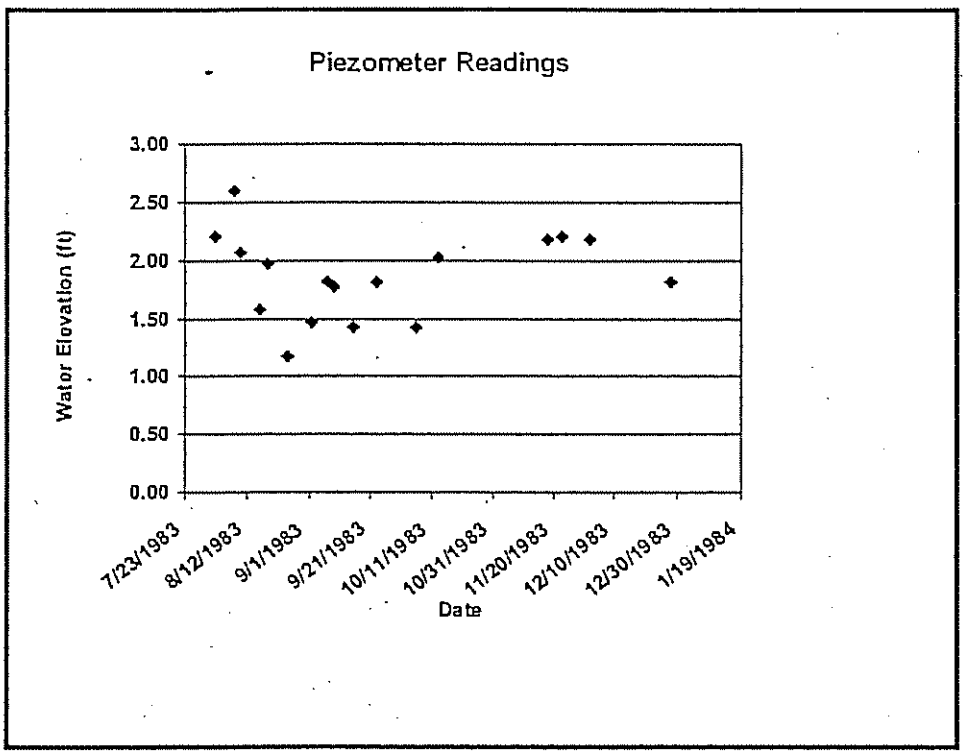
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 17.6 | 17.6 | -129 | -120 | 12 | | 15 |
| *Bottom* | 15 | -129 | -139 | -139 | -120 | | 12 |
| *Diam. (in)* | 4 | | 4 | | | | 0 |
| *Material* | STEEL | PVC | PVC .01 SLOT | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_MW_P103

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628667 |
| Easting | 468016 |
| Screen El | -84.9 |
| Phase | P5 |
| Stratum | C1 |




Readings

| | |
|---|---|
| 08/02/1983 | 2.2 |
| 08/10/1983 | 2.07 |
| 08/16/1983 | 1.57 |
| 08/19/1983 | 1.97 |
| 08/25/1983 | 1.17 |
| 09/02/1983 | 1.47 |
| 09/07/1983 | 1.82 |
| 09/09/1983 | 1.77 |
| 09/15/1983 | 1.42 |
| 09/23/1983 | 1.82 |
| 10/06/1983 | 1.42 |
| 10/13/1983 | 2.02 |
| 11/18/1983 | 2.17 |
| 11/23/1983 | 2.2 |
| 12/02/1983 | 2.17 |
| 12/28/1983 | 1.82 |
| 08/08/1983 | 2.6 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

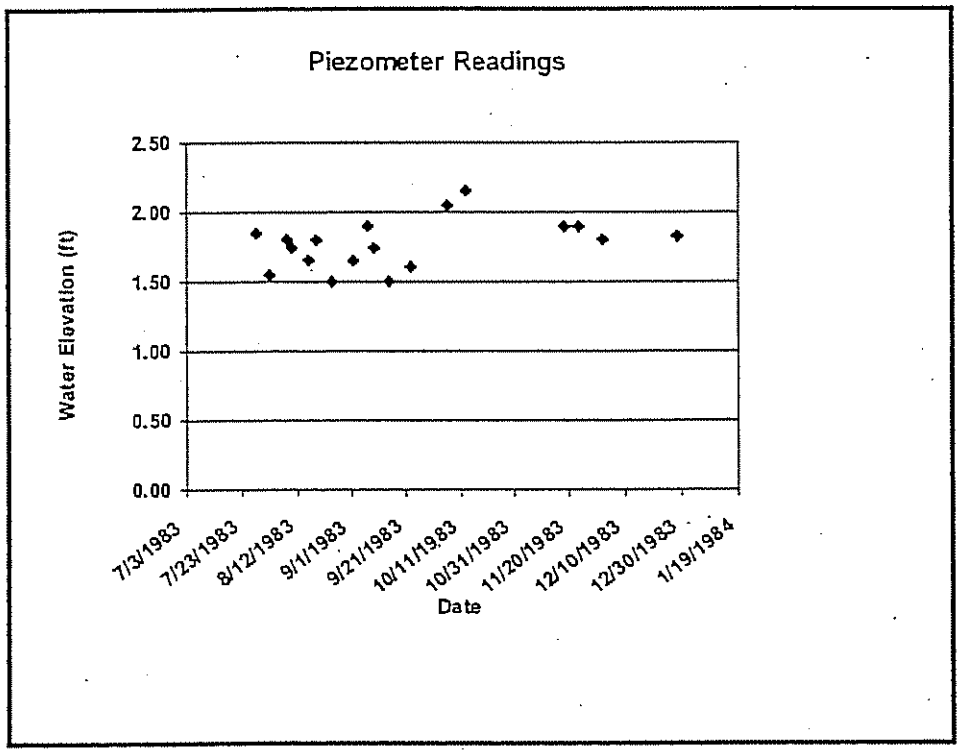
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | 0 |
| *Bottom* | | | | | | | 0 |
| *Diam. (in)* | | | | | | | 0 |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_MW_LC104

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627284 |
| Easting | 470194 |
| Screen El | 10 |
| Phase | P5 |
| Stratum | BL |




Readings

| | |
|---|---|
| 07/28/1983 | 1.85 |
| 08/02/1983 | 1.55 |
| 08/08/1983 | 1.8 |
| 08/10/1983 | 1.75 |
| 08/16/1983 | 1.65 |
| 08/19/1983 | 1.8 |
| 08/25/1983 | 1.5 |
| 09/02/1983 | 1.65 |
| 09/07/1983 | 1.9 |
| 09/09/1983 | 1.75 |
| 09/15/1983 | 1.5 |
| 09/23/1983 | 1.6 |
| 10/06/1983 | 2.05 |
| 10/13/1983 | 2.15 |
| 11/18/1983 | 1.9 |
| 11/23/1983 | 1.9 |
| 12/02/1983 | 1.8 |
| 12/28/1983 | 1.82 |

## Installation Information

Date Instrument Was Installed: 07/27/1983 *GEOLOGY*

*Ground Surface El*

*NOTES*

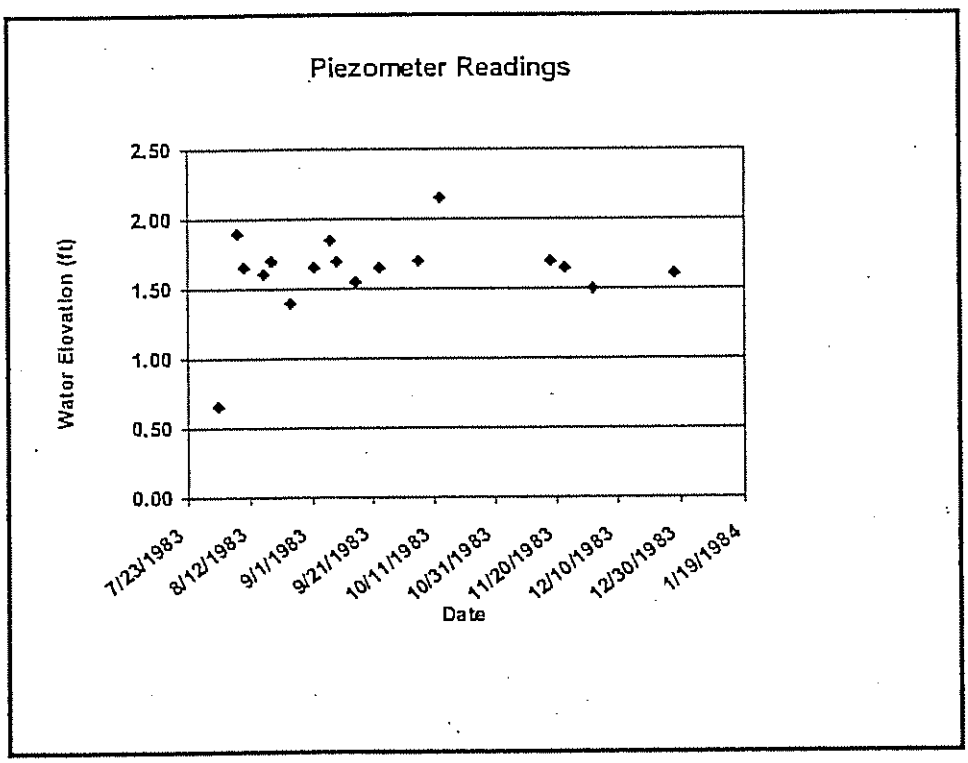
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 13.3 | 0 | -53 | -40 | -3 | | 0 |
| *Bottom* | | -53 | -58 | -60 | -40 | | -3 |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_MW_C103

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628634 |
| Easting | 467988 |
| Phase | P5 |
| Screen El | -30.9 |
| Stratum | BM |




Readings

| | |
|---|---|
| 08/02/1983 | 0.55 |
| 08/08/1983 | 1.9 |
| 08/10/1983 | 1.65 |
| 08/16/1983 | 1.6 |
| 08/19/1983 | 1.7 |
| 08/25/1983 | 1.4 |
| 09/02/1983 | 1.65 |
| 09/07/1983 | 1.85 |
| 09/09/1983 | 1.7 |
| 09/15/1983 | 1.55 |
| 09/23/1983 | 1.65 |
| 10/06/1983 | 1.7 |
| 10/13/1983 | 2.15 |
| 11/18/1983 | 1.7 |
| 11/23/1983 | 1.65 |
| 12/02/1983 | 1.5 |
| 12/28/1983 | 1.61 |

## Installation Information

Date Instrument Was Installed: 07/29/1983 *GEOLOGY*

*Ground Surface El* 11.1

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 14.8 | 14.8 | -30.9 | -13.9 | 8.8 | | 11 |
| *Bottom* | 11.1 | -30.9 | -35.9 | -38.9 | -13.9 | | 9 |
| *Diam. (in)* | 6 | 4 | 4 | 8.75 | 8.75 | | 9 |
| *Material* | STEEL | PVC SCH 40 | PVC SCH 40, #10 SLOT | | BAROID QUICK GEL GROUT | | |

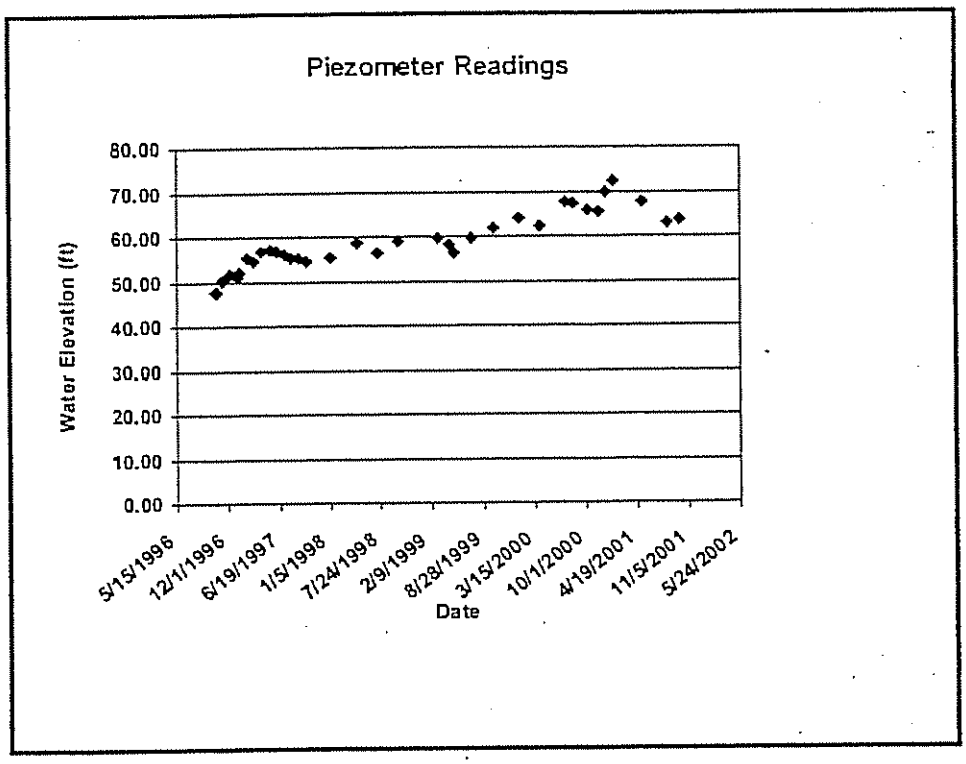
# SECTION 1

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_01A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628290 |
| Easting | 471470 |
| Phase | P5 |
| Screen El | 27 |
| Stratum | BU |




Readings

| | |
|---|---|
| 12/13/2000 | 69.9 |
| 01/12/2001 | 72.2 |
| 05/03/2001 | 67.6 |
| 03/07/1997 | 54.5 |
| 04/08/1997 | 56.8 |
| 05/14/1997 | 57 |
| 06/09/1997 | 56.8 |
| 07/10/1997 | 56.1 |
| 08/07/1997 | 55.4 |
| 09/06/1997 | 55.4 |
| 10/08/1997 | 54.5 |
| 01/09/1998 | 55.4 |
| 04/20/1998 | 58.6 |
| 10/10/1996 | 47.8 |
| 10/16/1996 | 47.8 |
| 11/07/1996 | 50.1 |
| 11/13/1996 | 50.1 |
| 12/06/1996 | 51.7 |
| 01/10/1997 | 51.9 |
| 01/03/1997 | 51 |
| 02/12/1997 | 55.2 |
| 07/10/1998 | 56.3 |
| 10/02/1998 | 58.8 |
| 03/01/1999 | 59.8 |
| 04/13/1999 | 58.2 |
| 05/04/1999 | 56.5 |
| 07/12/1999 | 59.5 |
| 10/06/1999 | 61.8 |
| 01/13/2000 | 63.9 |
| 04/06/2000 | 62.1 |
| 07/12/2000 | 67.8 |
| 08/11/2000 | 67.4 |
| 10/06/2000 | 66 |
| 11/16/2000 | 65.5 |
| 08/10/2001 | 62.77 |
| 10/02/2001 | 63.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

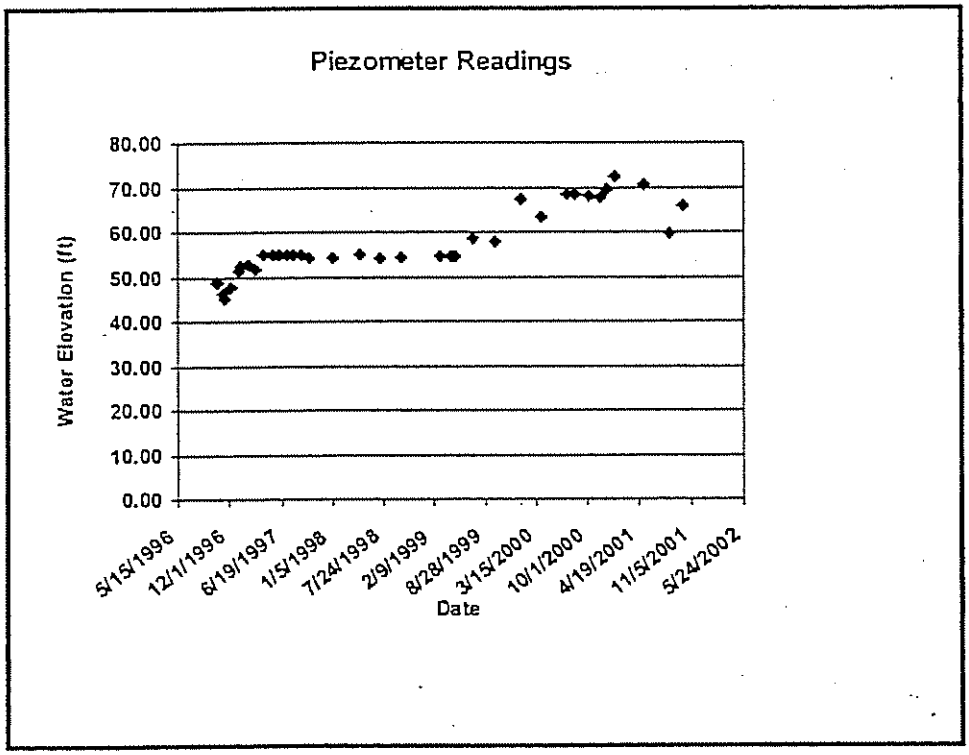
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_01B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628291 |
| Easting | 471472 |
| Phase | P5 |
| Screen El | 7 |
| Stratum | BM |




Readings

| | |
|---|---|
| 12/13/2000 | 69.5 |
| 01/12/2001 | 72.5 |
| 05/03/2001 | 70.7 |
| 03/07/1997 | 51.5 |
| 04/08/1997 | 55 |
| 05/14/1997 | 55 |
| 06/09/1997 | 55 |
| 07/10/1997 | 55 |
| 08/07/1997 | 54.8 |
| 09/06/1997 | 54.8 |
| 10/08/1997 | 54.3 |
| 01/09/1998 | 54.3 |
| 04/20/1998 | 55 |
| 10/10/1996 | 48.8 |
| 10/16/1996 | 48.8 |
| 11/07/1996 | 46.2 |
| 11/13/1996 | 45.1 |
| 12/06/1996 | 47.8 |
| 01/10/1997 | 52.5 |
| 01/03/1997 | 51.1 |
| 02/12/1997 | 52.9 |
| 07/10/1998 | 54.3 |
| 10/02/1998 | 54.3 |
| 03/01/1999 | 54.5 |
| 04/13/1999 | 54.5 |
| 05/04/1999 | 54.5 |
| 07/12/1999 | 58.7 |
| 10/06/1999 | 58 |
| 01/13/2000 | 57.2 |
| 04/06/2000 | 63.1 |
| 07/12/2000 | 68.2 |
| 08/11/2000 | 68.2 |
| 10/06/2000 | 67.9 |
| 11/16/2000 | 67.5 |
| 08/10/2001 | 59.62 |
| 10/02/2001 | 65.9 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

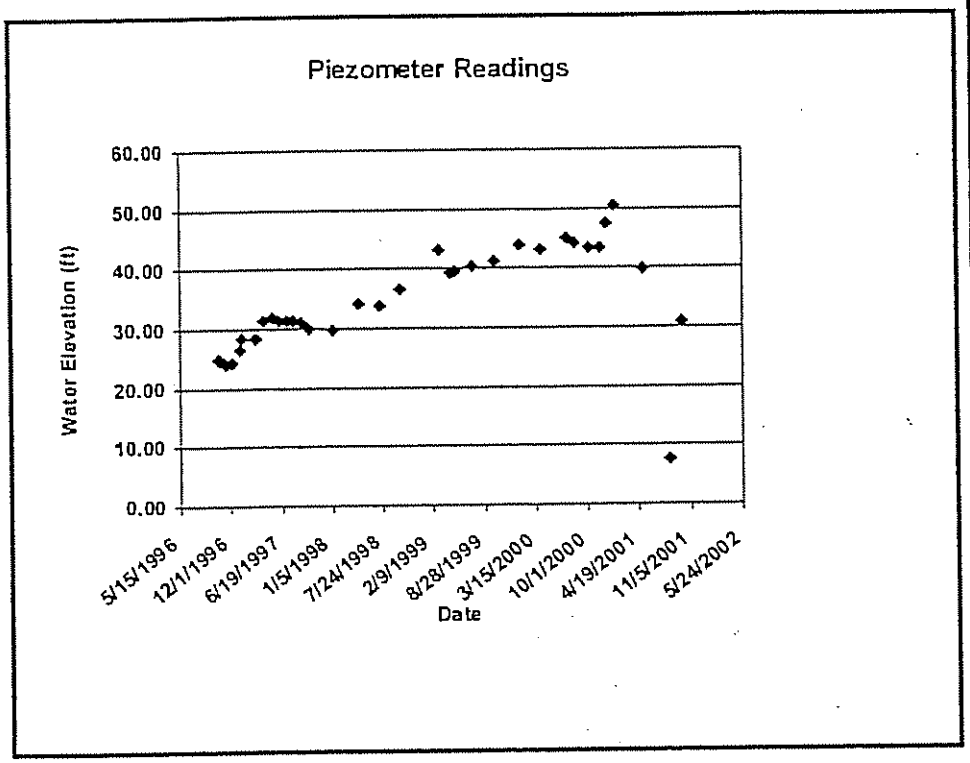
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_01C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628293 |
| Easting | 471473 |
| Phase | P5 |
| Screen El | -13 |
| Stratum | BL |




Readings

| | |
|---|---|
| 12/13/2000 | 47.5 |
| 01/12/2001 | 50.5 |
| 05/03/2001 | 39.9 |
| 03/07/1997 | 28.5 |
| 04/08/1997 | 31.5 |
| 05/14/1997 | 31.8 |
| 06/09/1997 | 31.5 |
| 07/10/1997 | 31.3 |
| 08/07/1997 | 31.3 |
| 09/06/1997 | 31.1 |
| 10/08/1997 | 29.9 |
| 01/09/1998 | 29.7 |
| 04/20/1998 | 34.1 |
| 10/10/1996 | 24.8 |
| 10/16/1996 | 24.8 |
| 11/07/1996 | 24.4 |
| 11/13/1996 | 23.9 |
| 12/06/1996 | 24.4 |
| 01/10/1997 | 28.3 |
| 01/03/1997 | 26.5 |
| 07/10/1998 | 33.8 |
| 10/02/1998 | 36.6 |
| 03/01/1999 | 43.1 |
| 04/13/1999 | 39.2 |
| 05/04/1999 | 39.6 |
| 07/12/1999 | 40.5 |
| 10/06/1999 | 41.2 |
| 01/13/2000 | 43.8 |
| 04/06/2000 | 43.1 |
| 07/12/2000 | 44.9 |
| 08/11/2000 | 44.2 |
| 10/06/2000 | 43.3 |
| 11/16/2000 | 43.3 |
| 08/10/2001 | 7.77 |
| 10/02/2001 | 30.9 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

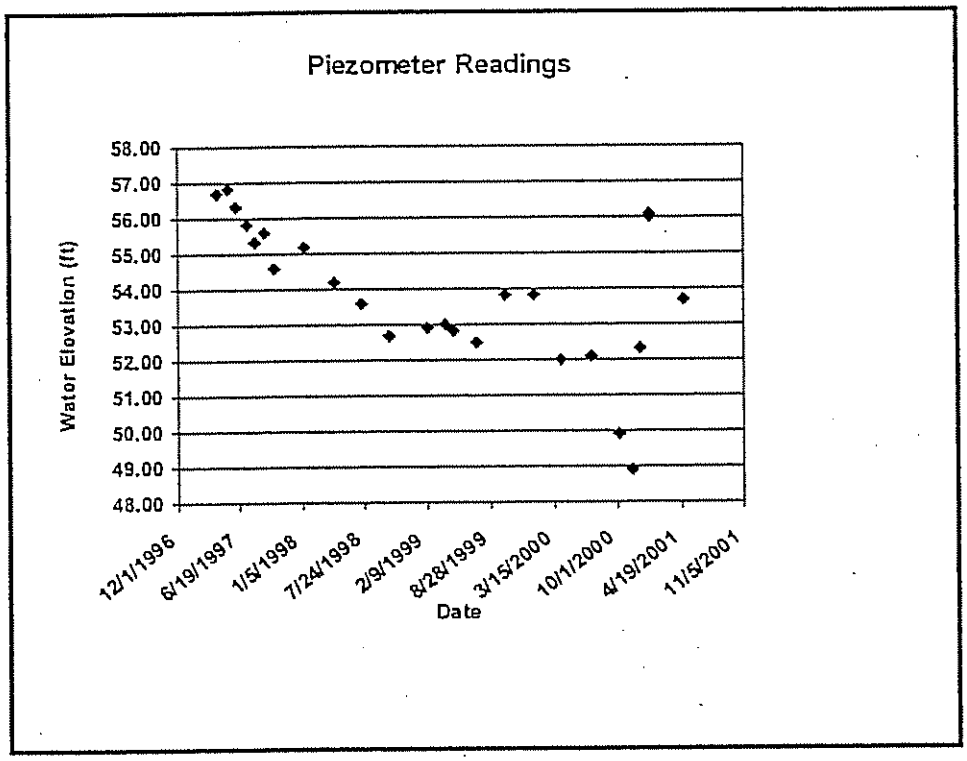
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_14A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628295 |
| Easting | 471451 |
| Phase | P5 |
| Screen El | 27 |
| Stratum | BU |




Readings

| | |
|---|---|
| 12/12/2000 | 52.3 |
| 01/12/2001 | 56.1 |
| 04/25/2001 | 53.7 |
| 04/08/1997 | 56.7 |
| 05/14/1997 | 56.8 |
| 06/09/1997 | 56.3 |
| 07/10/1997 | 55.8 |
| 08/07/1997 | 55.3 |
| 09/06/1997 | 55.6 |
| 10/07/1997 | 54.6 |
| 01/09/1998 | 55.2 |
| 04/15/1998 | 54.2 |
| 07/10/1998 | 53.6 |
| 10/13/1998 | 52.7 |
| 02/11/1999 | 52.9 |
| 04/06/1999 | 53 |
| 05/04/1999 | 52.8 |
| 07/12/1999 | 52.5 |
| 10/12/1999 | 53.8 |
| 01/13/2000 | 53.8 |
| 04/07/2000 | 52 |
| 07/11/2000 | 52.1 |
| 10/05/2000 | 49.9 |
| 11/16/2000 | 48.9 |
| 01/09/2001 | 56 |

## Installation Information

Date Instrument Was Installed: 09/24/1996 *GEOLOGY*

*Ground Surface El* 46.4

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 59.9 | 59.9 | 37 | 42 | 43.2 | 46.4 | |
| *Bottom* | 46.4 | 37 | 27 | 25.9 | 42 | 43.2 | |
| *Diam. (in)* | 16 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | SDR 7.3 HDPE | PVC SCH 40 | PVC SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

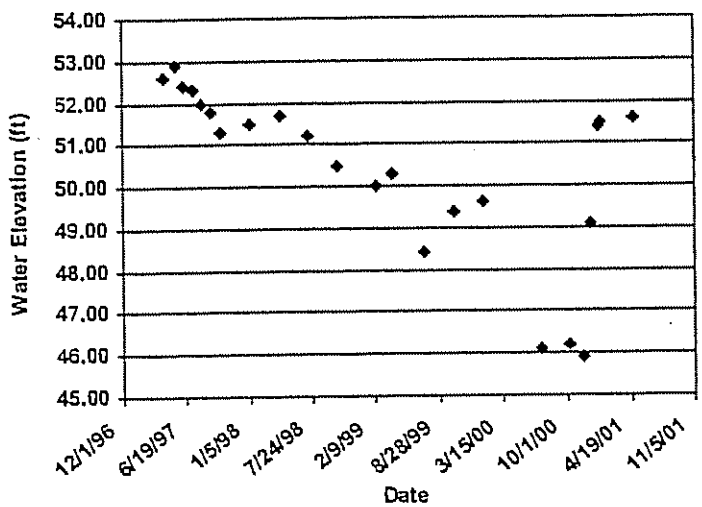
Select Piezometer: P5 PZ 14B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628283 |
| Easting | 471468 |
| Phase | P5 |
| Screen El | 7.8 |
| Stratum | BU |

Readings

| | |
|---|---|
| 12/12/2000 | 49.1 |
| 01/12/2001 | 51.5 |
| 04/25/2001 | 51.6 |
| 04/08/1997 | 52.6 |
| 05/14/1997 | 52.9 |
| 06/09/1997 | 52.4 |
| 07/10/1997 | 52.3 |
| 08/07/1997 | 52 |
| 09/06/1997 | 51.8 |
| 10/07/1997 | 51.3 |
| 01/09/1998 | 51.5 |
| 04/15/1998 | 51.7 |
| 07/10/1998 | 51.2 |
| 10/13/1998 | 50.5 |
| 02/11/1999 | 50 |
| 04/06/1999 | 50.3 |
| 07/12/1999 | 48.4 |
| 10/12/1999 | 49.4 |
| 01/13/2000 | 49.6 |
| 07/11/2000 | 46.1 |
| 10/05/2000 | 46.2 |
| 11/16/2000 | 45.9 |
| 01/09/2001 | 51.4 |




## Installation Information

Date Instrument Was Installe: 09/24/1996

*Ground Surface El*: 46.9

*GEOLOGY*:

*NOTES*:

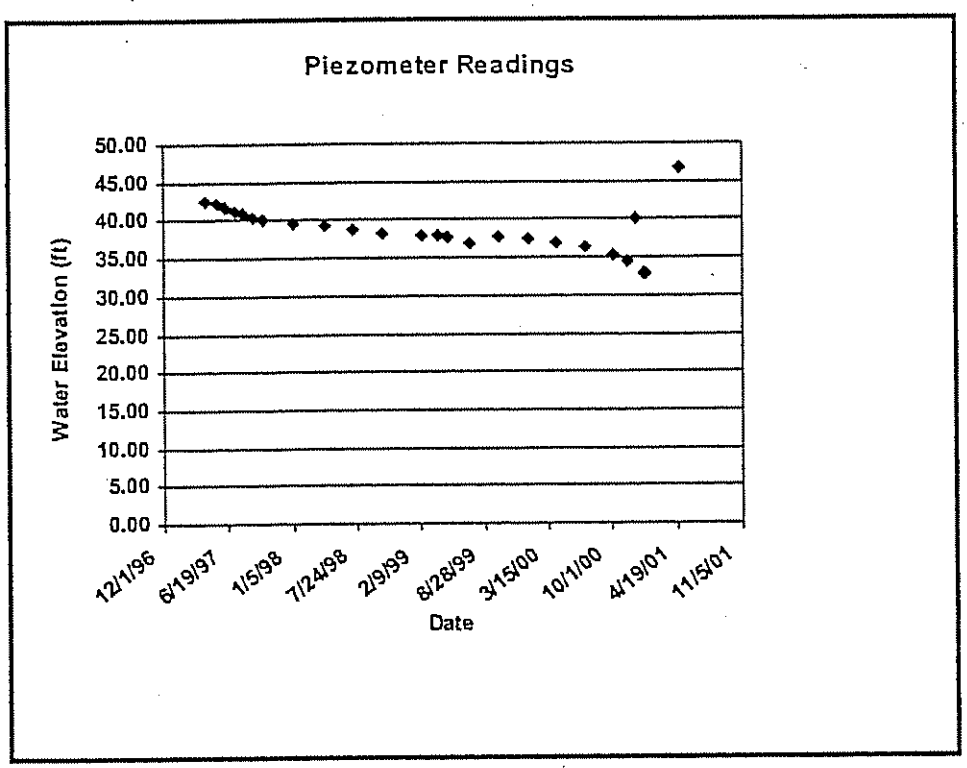
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 60.4 | 60.4 | 17.8 | 22.9 | 24 | 46.9 | |
| *Bottom* | 46.9 | 17.8 | 7.8 | 5.9 | 22.9 | 24 | |
| *Diam. (in)* | 16 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | SDR 7.3 HDPE | PVC SCH 40 | PVC SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PZ 14C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 628273 |
| Easting | 471484 |
| Phase | P5 |
| Screen El | -13 |
| Stratum | BM |




Readings

| | |
|---|---|
| 12/12/2000 | 40.1 |
| 01/12/2001 | 32.8 |
| 04/25/2001 | 46.7 |
| 04/08/1997 | 42.4 |
| 05/14/1997 | 42.2 |
| 06/09/1997 | 41.7 |
| 07/10/1997 | 41.3 |
| 08/07/1997 | 40.8 |
| 09/06/1997 | 40.5 |
| 10/07/1997 | 40.1 |
| 01/09/1998 | 39.6 |
| 04/15/1998 | 39.4 |
| 07/10/1998 | 38.9 |
| 10/13/1998 | 38.3 |
| 02/11/1999 | 38 |
| 04/06/1999 | 38 |
| 05/04/1999 | 37.8 |
| 07/12/1999 | 37 |
| 10/12/1999 | 37.7 |
| 01/13/2000 | 37.3 |
| 04/07/2000 | 36.77 |
| 07/11/2000 | 36.3 |
| 10/05/2000 | 35.2 |
| 11/16/2000 | 34.6 |
| 01/09/2001 | 32.8 |

## Installation Information

Date Instrument Was Installe: 09/25/1996

*Ground Surface El*: 47.5

*GEOLOGY*:

*NOTES*:

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 61 | 61 | -3 | 3 | 4 | 47.5 | |
| *Bottom* | 47.5 | -3 | -13 | -14.5 | 3 | 4 | |
| *Diam. (in)* | 16 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | SDR 7.3 HDPE | PVC SCH 40 | PVC SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

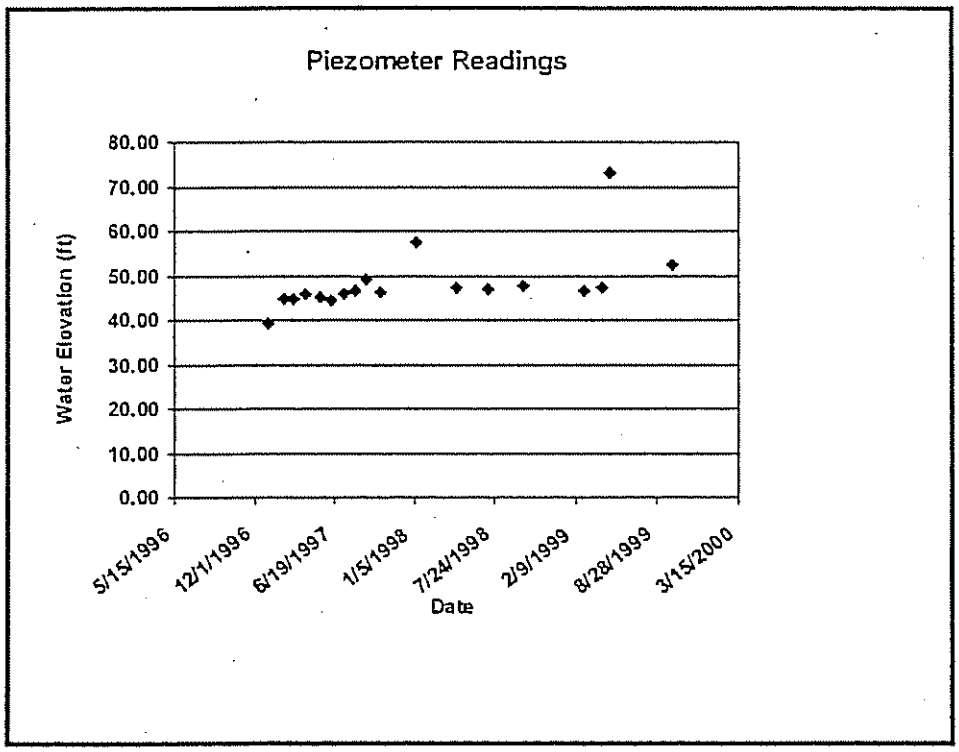
# SECTION 2

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_02A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627700 |
| Easting | 471620 |
| Screen El | 28 |
| Phase | P5 |
| Stratum | BU |




Readings

| | |
|---|---|
| 03/07/1997 | 44.6 |
| 04/08/1997 | 46 |
| 05/14/1997 | 45.1 |
| 06/09/1997 | 44.4 |
| 07/10/1997 | 45.8 |
| 08/07/1997 | 46.7 |
| 09/06/1997 | 49 |
| 10/08/1997 | 46.2 |
| 01/09/1998 | 57.5 |
| 04/20/1998 | 47.2 |
| 01/03/1997 | 39.3 |
| 02/12/1997 | 44.6 |
| 07/10/1998 | 46.9 |
| 10/02/1998 | 47.6 |
| 03/01/1999 | 46.7 |
| 04/13/1999 | 47.4 |
| 05/04/1999 | 73.2 |
| 10/06/1999 | 52.5 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

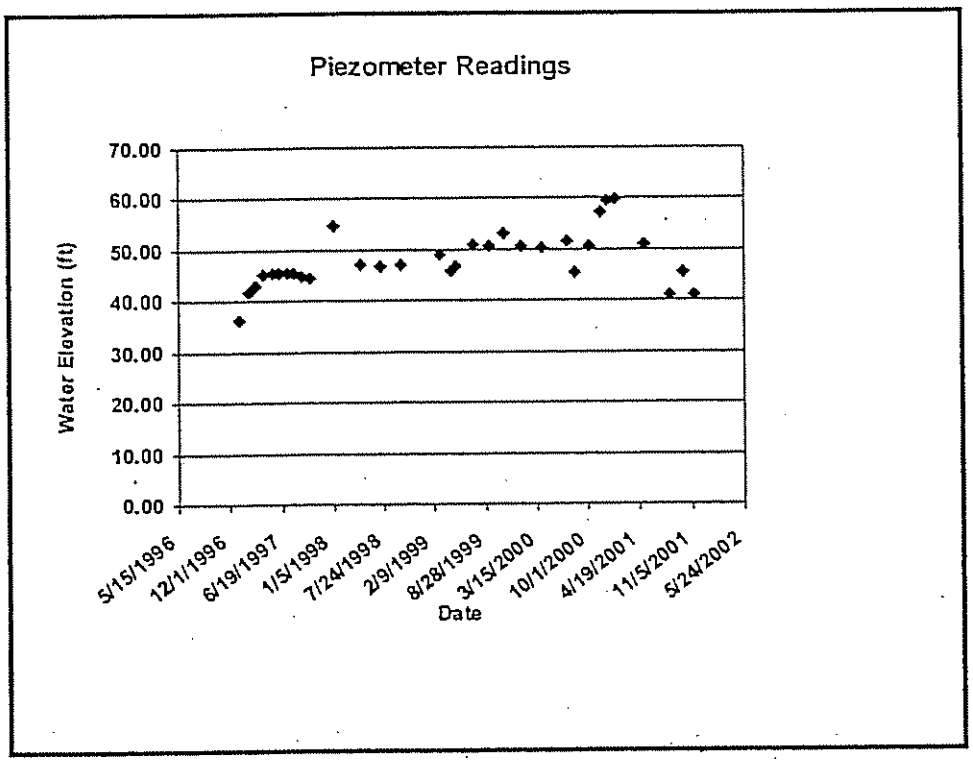
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_02B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627702 |
| Easting | 471622 |
| Phase | P5 |
| Screen El | 8 |
| Stratum | BM |




Readings

| | |
|---|---|
| 12/13/2000 | 59.5 |
| 01/12/2001 | 59.9 |
| 05/03/2001 | 50.9 |
| 03/07/1997 | 42.8 |
| 04/08/1997 | 45.2 |
| 05/14/1997 | 45.4 |
| 06/09/1997 | 45.4 |
| 07/10/1997 | 45.6 |
| 08/07/1997 | 45.4 |
| 09/06/1997 | 44.9 |
| 10/08/1997 | 44.7 |
| 01/09/1998 | 54.6 |
| 04/20/1998 | 47 |
| 01/03/1997 | 36.4 |
| 02/12/1997 | 41.7 |
| 07/10/1998 | 46.8 |
| 10/02/1998 | 47 |
| 03/01/1999 | 49.1 |
| 04/13/1999 | 45.8 |
| 05/04/1999 | 46.8 |
| 07/12/1999 | 50.9 |
| 09/14/1999 | 50.7 |
| 11/05/1999 | 53 |
| 01/13/2000 | 50.7 |
| 04/06/2000 | 50.2 |
| 07/12/2000 | 51.4 |
| 08/11/2000 | 45.6 |
| 10/06/2000 | 50.7 |
| 11/16/2000 | 57.2 |
| 08/10/2001 | 41 |
| 11/14/2001 | 41 |
| 10/02/2001 | 45.6 |

## Installation Information

Date Instrument Was Installed:

*Ground Surface El*

*GEOLOGY*

*NOTES*

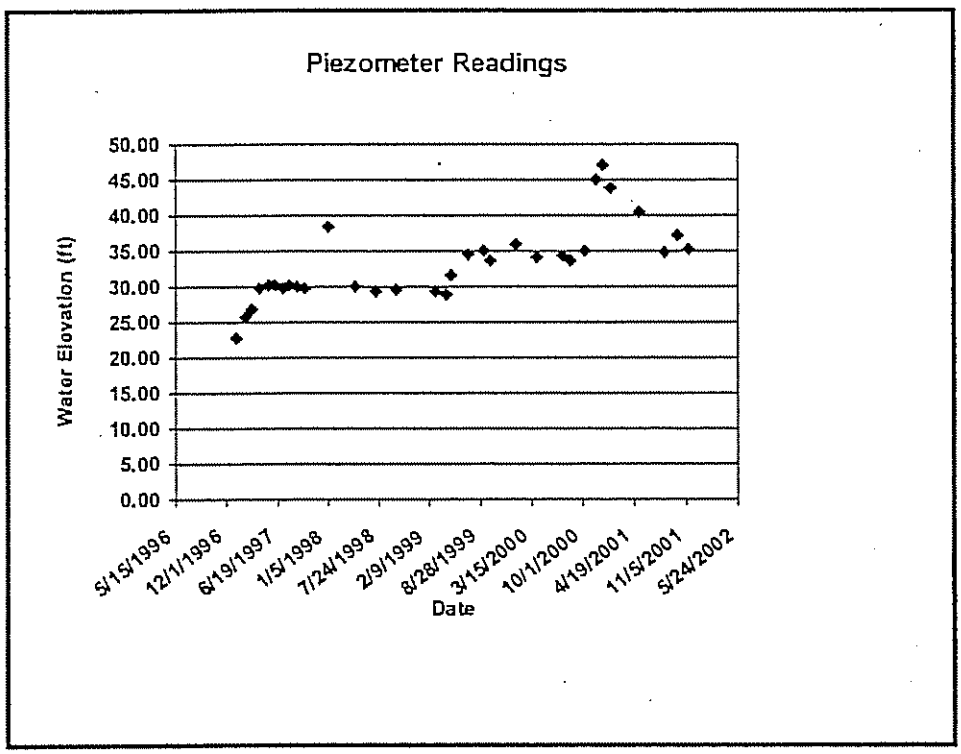
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PP 02C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627704 |
| Easting | 471624 |
| Phase | P5 |
| Screen El | -12 |
| Stratum | BL |




Readings

| | |
|---|---|
| 12/13/2000 | 47.1 |
| 01/12/2001 | 43.8 |
| 05/03/2001 | 40.4 |
| 03/07/1997 | 26.8 |
| 04/08/1997 | 29.8 |
| 05/14/1997 | 30.2 |
| 06/09/1997 | 30.2 |
| 07/10/1997 | 29.8 |
| 08/07/1997 | 30.2 |
| 09/06/1997 | 30 |
| 10/08/1997 | 29.8 |
| 01/09/1998 | 38.5 |
| 04/20/1998 | 30 |
| 01/03/1997 | 22.8 |
| 02/12/1997 | 25.6 |
| 07/10/1998 | 29.3 |
| 10/02/1998 | 29.5 |
| 03/01/1999 | 29.3 |
| 04/13/1999 | 28.8 |
| 05/04/1999 | 31.6 |
| 07/12/1999 | 34.6 |
| 09/14/1999 | 35.1 |
| 10/06/1999 | 33.7 |
| 01/13/2000 | 36 |
| 04/06/2000 | 34.2 |
| 07/12/2000 | 34.4 |
| 08/11/2000 | 33.7 |
| 10/06/2000 | 35.1 |
| 11/16/2000 | 45 |
| 08/10/2001 | 34.85 |
| 11/14/2001 | 35.3 |
| 10/02/2001 | 37.2 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PP 02D

Show/Hide Maintenance Data

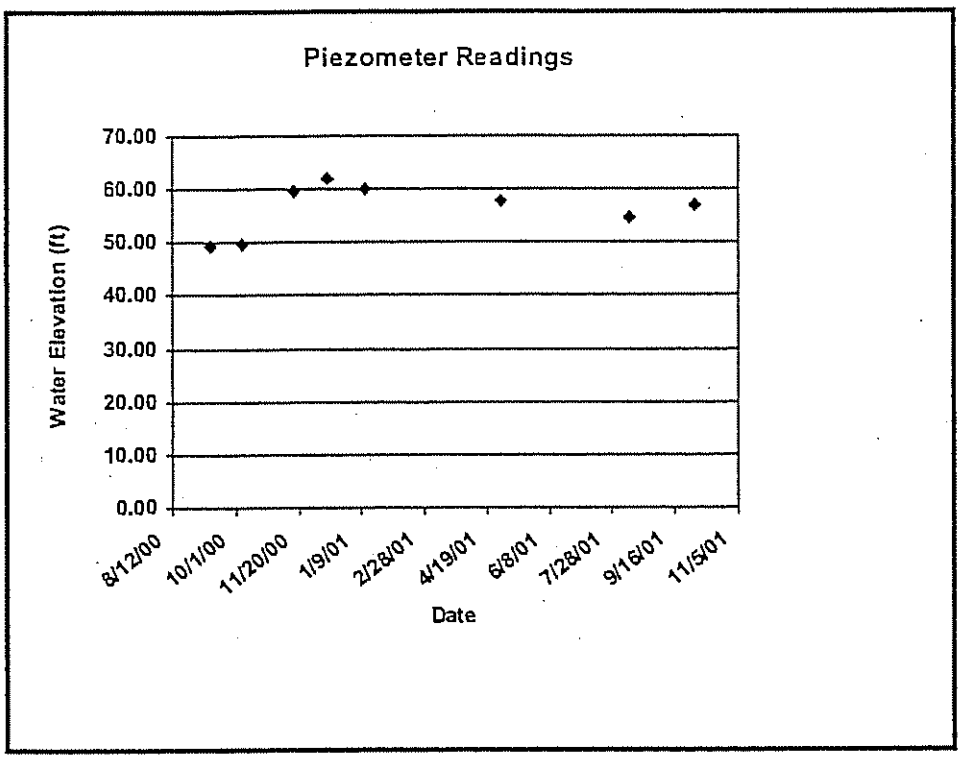
Northing

Easting

Phase

Screen El

Stratum




Readings

| | |
|---|---|
| 12/13/2000 | 62.1 |
| 01/12/2001 | 60 |
| 04/30/2001 | 57.7 |
| 09/11/2000 | 49.4 |
| 10/06/2000 | 49.9 |
| 11/16/2000 | 59.8 |
| 08/10/2001 | 54.7 |
| 10/02/2001 | 57 |

Installation Information

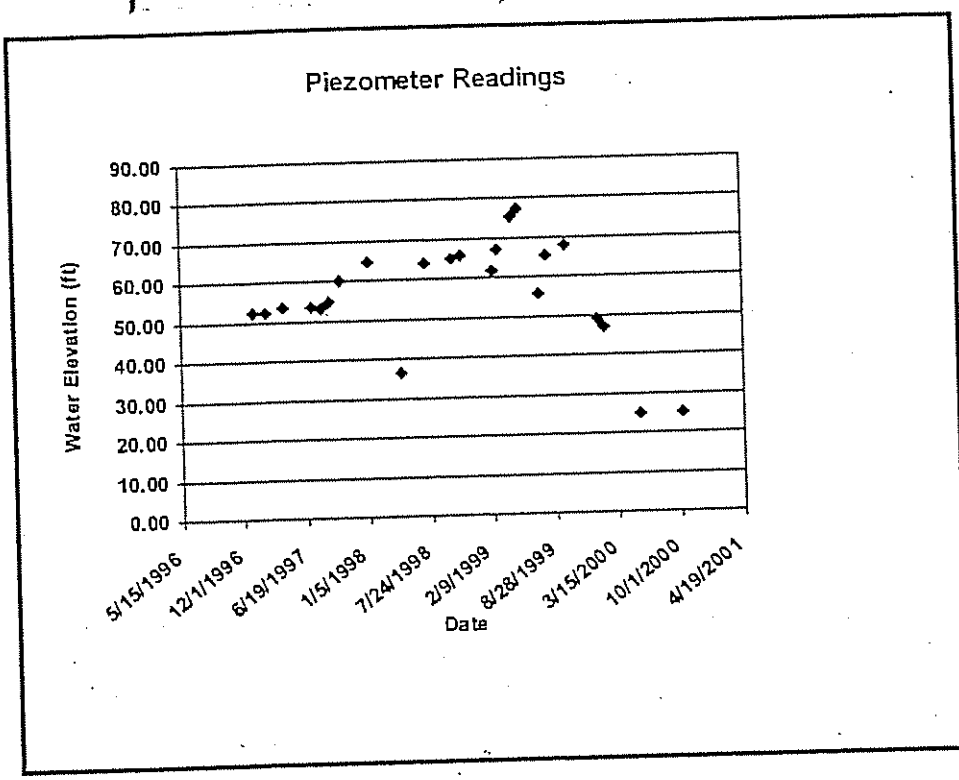
Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_06A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627780 |
| Easting | 472400 |
| Phase | P5 |
| Screen El | 25 |
| Stratum | BU |




Readings

| | |
|---|---|
| 04/11/1997 | 53.6 |
| 07/10/1997 | 53.4 |
| 08/07/1997 | 53.2 |
| 09/06/1997 | 55 |
| 10/08/1997 | 60.1 |
| 01/09/1998 | 64.7 |
| 04/20/1998 | 36.3 |
| 01/03/1997 | 52.5 |
| 02/12/1997 | 52.5 |
| 07/10/1998 | 64.2 |
| 10/02/1998 | 64.9 |
| 11/02/1998 | 65.8 |
| 02/11/1999 | 61.7 |
| 03/01/1999 | 67 |
| 04/13/1999 | 75.3 |
| 05/04/1999 | 77.2 |
| 07/12/1999 | 55.5 |
| 08/04/1999 | 65.4 |
| 10/06/1999 | 67.9 |
| 01/13/2000 | 49.2 |
| 02/03/2000 | 46.9 |
| 05/22/2000 | 25 |
| 10/06/2000 | 25 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

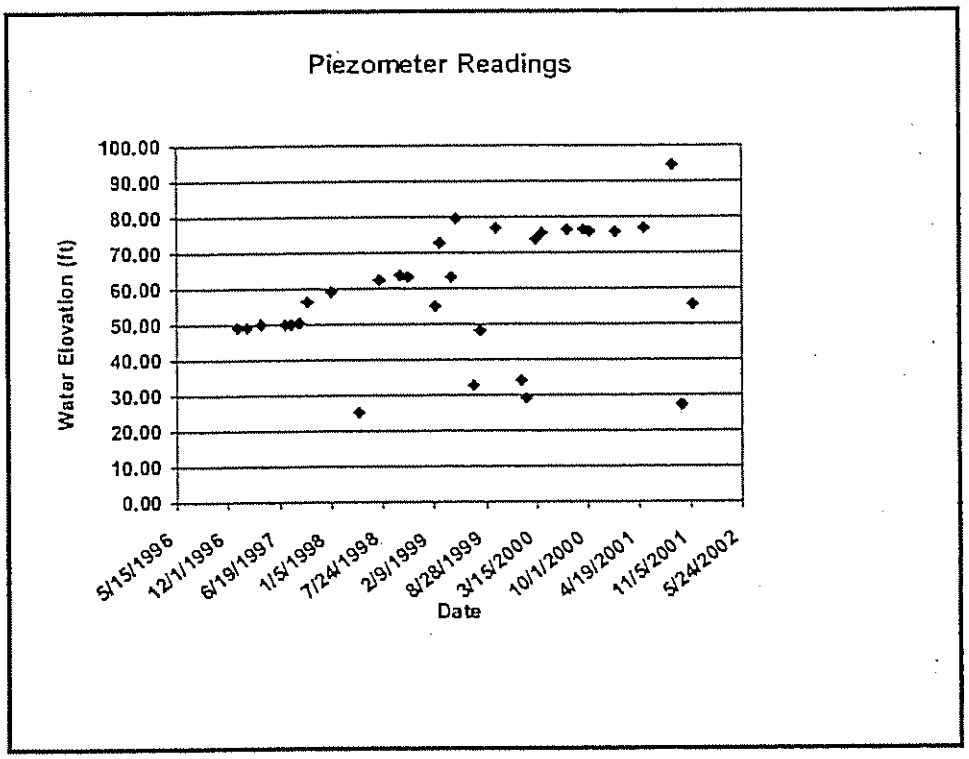
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_06B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627782 |
| Easting | 472402 |
| Phase | P5 |
| Screen El | 2 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 76.1 |
| 05/02/2001 | 77 |
| 04/11/1997 | 50.2 |
| 07/10/1997 | 49.8 |
| 08/07/1997 | 49.8 |
| 09/06/1997 | 50.5 |
| 10/08/1997 | 56.5 |
| 01/09/1998 | 59.2 |
| 04/20/1998 | 24.8 |
| 01/03/1997 | 49.3 |
| 02/12/1997 | 49.3 |
| 07/10/1998 | 62.5 |
| 10/02/1998 | 63.8 |
| 11/02/1998 | 63.4 |
| 02/11/1999 | 54.8 |
| 03/01/1999 | 72.8 |
| 04/13/1999 | 63.2 |
| 05/04/1999 | 79.5 |
| 07/12/1999 | 32.7 |
| 08/04/1999 | 48.4 |
| 10/06/1999 | 76.8 |
| 01/13/2000 | 34.1 |
| 02/03/2000 | 29.2 |
| 03/07/2000 | 73.8 |
| 04/06/2000 | 75.6 |
| 07/12/2000 | 76.3 |
| 09/11/2000 | 76.5 |
| 10/06/2000 | 75.8 |
| 08/22/2001 | 94.77 |
| 11/14/2001 | 55.3 |
| 10/02/2001 | 27.2 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

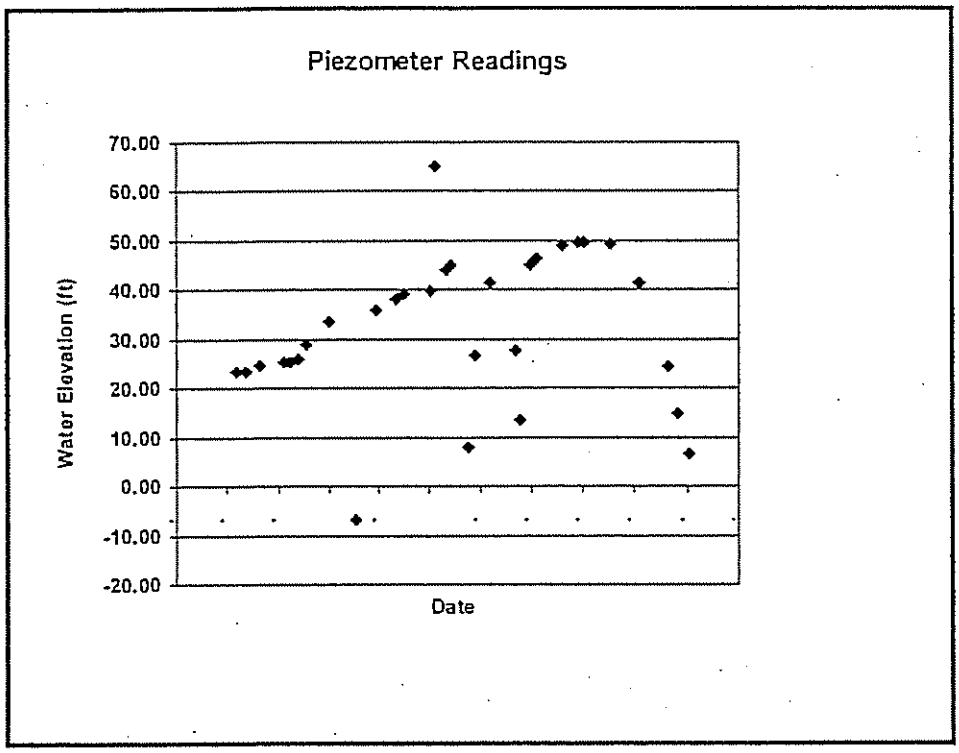
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_06C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627784 |
| Easting | 472404 |
| Screen El | -21 |
| Phase | P5 |
| Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 49.4 |
| 05/02/2001 | 41.5 |
| 04/11/1997 | 24.7 |
| 07/10/1997 | 25.4 |
| 08/07/1997 | 25.4 |
| 09/06/1997 | 26.1 |
| 10/08/1997 | 28.8 |
| 01/09/1998 | 33.5 |
| 01/03/1997 | 23.3 |
| 02/12/1997 | 23.3 |
| 07/10/1998 | 35.8 |
| 10/02/1998 | 38.3 |
| 11/02/1998 | 39 |
| 02/11/1999 | 39.7 |
| 03/01/1999 | 65.1 |
| 04/13/1999 | 44.1 |
| 05/04/1999 | 45 |
| 07/12/1999 | 7.8 |
| 08/04/1999 | 26.8 |
| 10/06/1999 | 41.5 |
| 01/13/2000 | 27.5 |
| 02/03/2000 | 13.4 |
| 03/07/2000 | 45.2 |
| 04/06/2000 | 46.2 |
| 07/12/2000 | 48.9 |
| 09/11/2000 | 49.6 |
| 10/06/2000 | 49.6 |
| 08/22/2001 | 24.23 |
| 11/14/2001 | 6.7 |
| 10/02/2001 | 14.8 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PP 06D

Show/Hide Maintenance Data

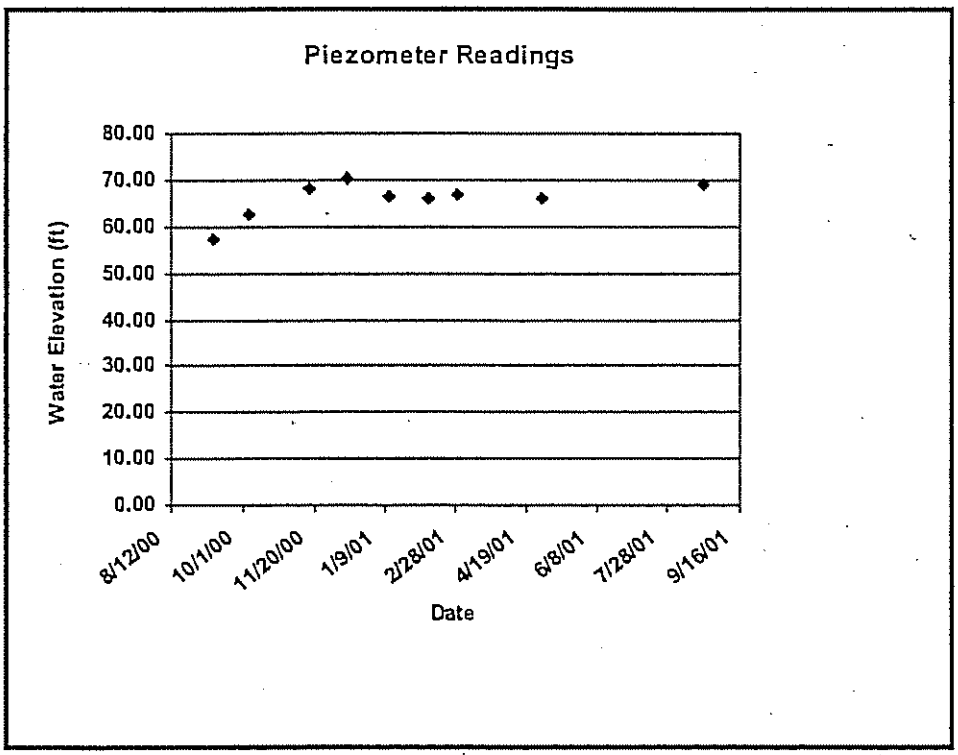
Northing

Easting

Screen El

Phase

Stratum




Readings

| | |
|---|---|
| 12/13/2000 | 70.3 |
| 01/12/2001 | 66.4 |
| 02/09/2001 | 66.2 |
| 03/02/2001 | 66.8 |
| 04/30/2001 | 66 |
| 09/11/2000 | 57.4 |
| 10/06/2000 | 62.5 |
| 11/16/2000 | 68.2 |
| 08/22/2001 | 69 |

## Installation Information

## Maintenance Data

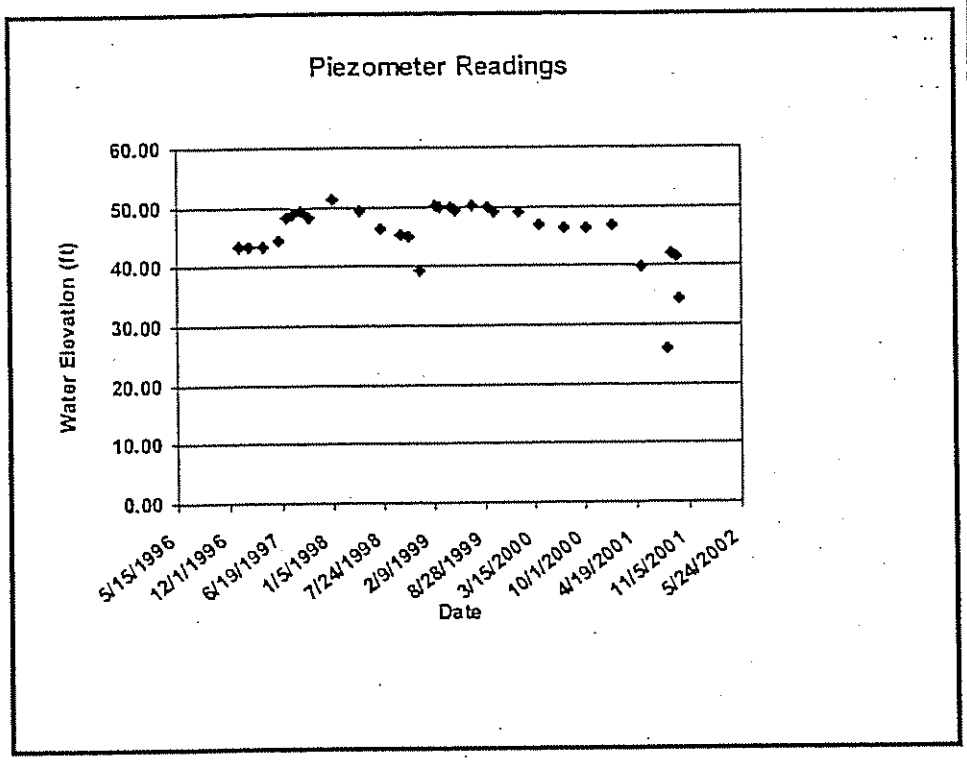
# SECTION 3

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_09A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627030 |
| Easting | 472760 |
| Phase | P5 |
| Screen El | 23 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 46.8 |
| 05/03/2001 | 39.9 |
| 04/11/1997 | 43.3 |
| 06/09/1997 | 44.5 |
| 07/10/1997 | 48.2 |
| 08/07/1997 | 48.8 |
| 09/06/1997 | 49.3 |
| 10/08/1997 | 48.4 |
| 01/09/1998 | 51.4 |
| 04/20/1998 | 49.5 |
| 01/03/1997 | 43.3 |
| 02/12/1997 | 43.3 |
| 07/10/1998 | 46.3 |
| 10/02/1998 | 45.4 |
| 11/02/1998 | 44.9 |
| 12/16/1998 | 39.4 |
| 02/11/1999 | 50.2 |
| 03/01/1999 | 49.8 |
| 04/13/1999 | 49.8 |
| 05/04/1999 | 49.3 |
| 07/12/1999 | 50.2 |
| 09/14/1999 | 49.8 |
| 10/06/1999 | 49.1 |
| 01/13/2000 | 49.1 |
| 04/06/2000 | 47 |
| 07/12/2000 | 46.3 |
| 10/06/2000 | 46.5 |
| 08/09/2001 | 26 |
| 08/31/2001 | 41.9 |
| 09/19/2001 | 41.5 |
| 10/02/2001 | 34.3 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

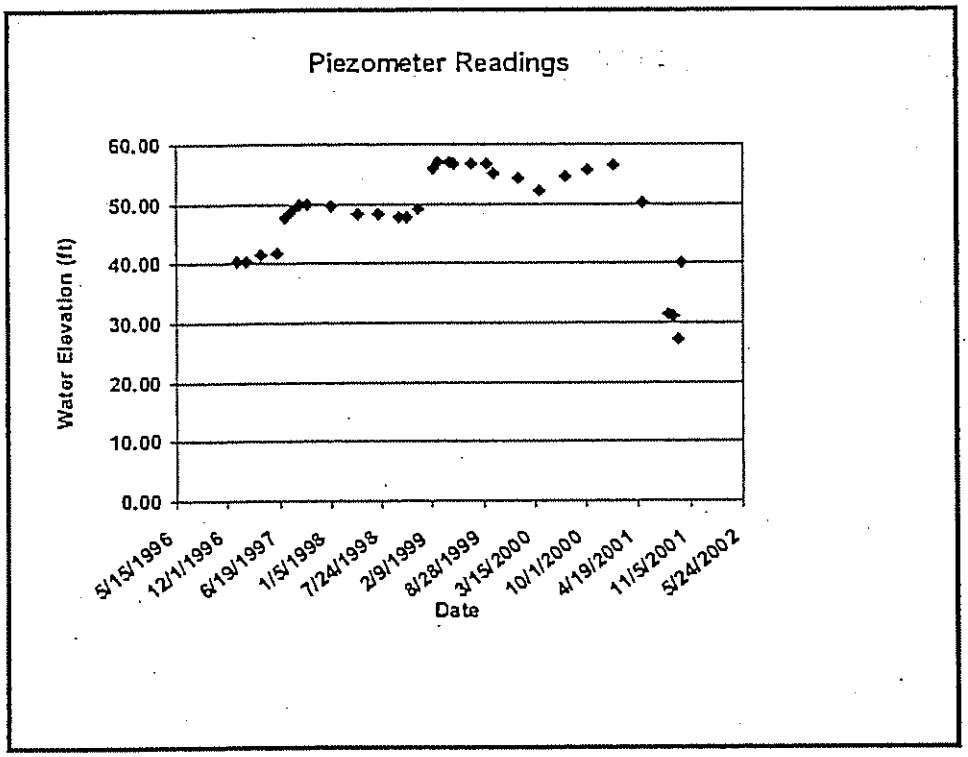
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PP 09B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627032 |
| Easting | 472762 |
| Phase | P5 |
| Screen El | -2 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 56.4 |
| 05/03/2001 | 50.2 |
| 04/11/1997 | 41.4 |
| 06/09/1997 | 41.8 |
| 07/10/1997 | 47.6 |
| 08/07/1997 | 48.8 |
| 09/06/1997 | 49.9 |
| 10/08/1997 | 49.9 |
| 01/09/1998 | 49.7 |
| 04/20/1998 | 48.3 |
| 01/03/1997 | 40.5 |
| 02/12/1997 | 40.5 |
| 07/10/1998 | 48.3 |
| 10/02/1998 | 47.6 |
| 11/02/1998 | 47.8 |
| 12/16/1998 | 49 |
| 02/11/1999 | 55.9 |
| 03/01/1999 | 57.1 |
| 04/13/1999 | 57.1 |
| 05/04/1999 | 56.8 |
| 07/12/1999 | 56.6 |
| 09/14/1999 | 56.8 |
| 10/06/1999 | 55 |
| 01/13/2000 | 54.3 |
| 04/06/2000 | 52 |
| 07/12/2000 | 54.5 |
| 10/06/2000 | 55.7 |
| 08/09/2001 | 31.46 |
| 08/31/2001 | 31 |
| 09/19/2001 | 27.3 |
| 10/02/2001 | 40.2 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

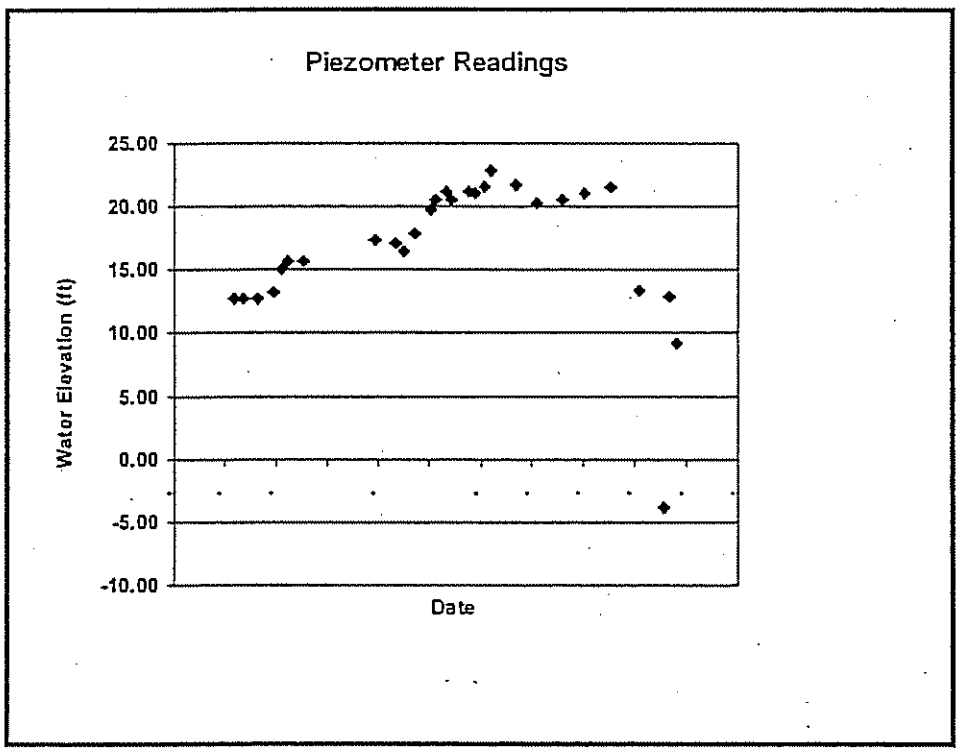
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PP 09C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627034 |
| Easting | 472764 |
| Phase | P5 |
| Screen El | -27 |
| Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 21.5 |
| 05/03/2001 | 13.4 |
| 04/11/1997 | 12.7 |
| 06/09/1997 | 13.2 |
| 07/10/1997 | 15 |
| 08/07/1997 | 15.7 |
| 10/08/1997 | 15.7 |
| 01/03/1997 | 12.7 |
| 02/12/1997 | 12.7 |
| 07/10/1998 | 17.3 |
| 10/02/1998 | 17.1 |
| 11/02/1998 | 16.4 |
| 12/16/1998 | 17.8 |
| 02/11/1999 | 19.8 |
| 03/01/1999 | 20.5 |
| 04/13/1999 | 21.2 |
| 05/04/1999 | 20.5 |
| 07/12/1999 | 21.2 |
| 08/04/1999 | 21.1 |
| 09/14/1999 | 21.5 |
| 10/06/1999 | 22.8 |
| 01/13/2000 | 21.7 |
| 04/06/2000 | 20.3 |
| 07/12/2000 | 20.5 |
| 10/06/2000 | 21 |
| 08/31/2001 | 12.9 |
| 10/02/2001 | 9.2 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

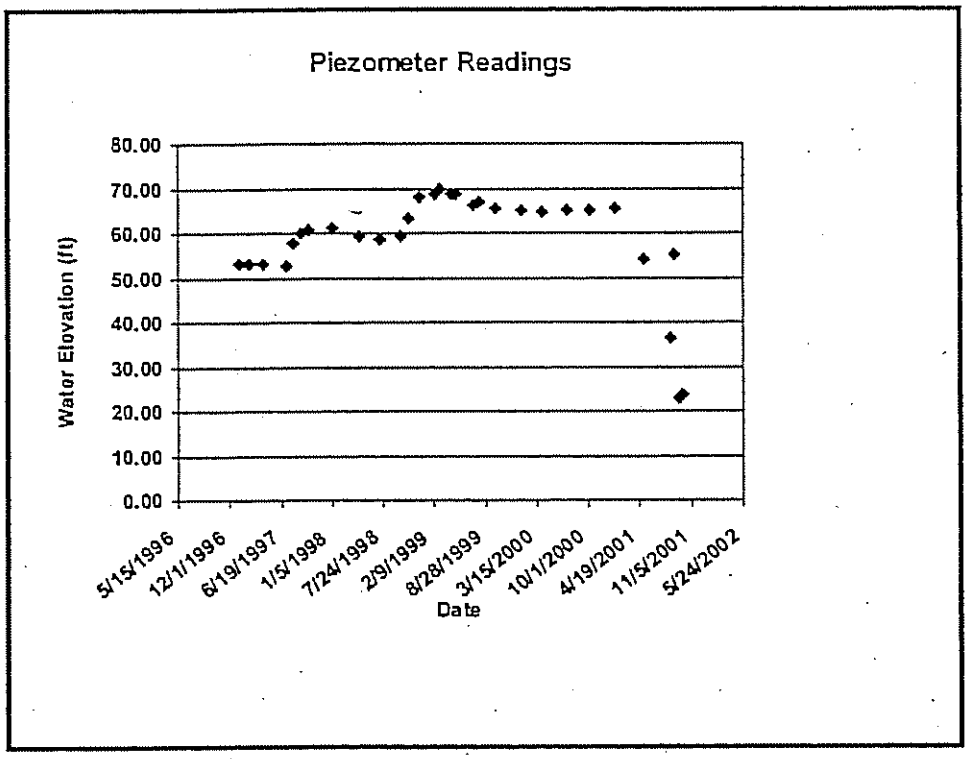
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_10A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627260 |
| Easting | 473150 |
| Phase | P5 |
| Screen El | 22 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 65.4 |
| 05/03/2001 | 54.3 |
| 04/11/1997 | 53.2 |
| 07/10/1997 | 52.7 |
| 08/07/1997 | 58 |
| 09/06/1997 | 60.1 |
| 10/08/1997 | 60.8 |
| 01/09/1998 | 61.2 |
| 04/20/1998 | 59.4 |
| 01/03/1997 | 53.2 |
| 02/12/1997 | 53.2 |
| 07/10/1998 | 58.7 |
| 10/02/1998 | 59.2 |
| 11/02/1998 | 63.3 |
| 12/16/1998 | 67.9 |
| 02/11/1999 | 68.8 |
| 03/01/1999 | 70 |
| 04/13/1999 | 68.8 |
| 05/04/1999 | 68.6 |
| 07/12/1999 | 66.3 |
| 08/04/1999 | 66.8 |
| 10/06/1999 | 65.4 |
| 01/13/2000 | 65.2 |
| 04/06/2000 | 64.9 |
| 07/12/2000 | 65.2 |
| 10/06/2000 | 65.2 |
| 08/10/2001 | 36.54 |
| 08/31/2001 | 55.2 |
| 09/19/2001 | 22.9 |
| 10/02/2001 | 23.6 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

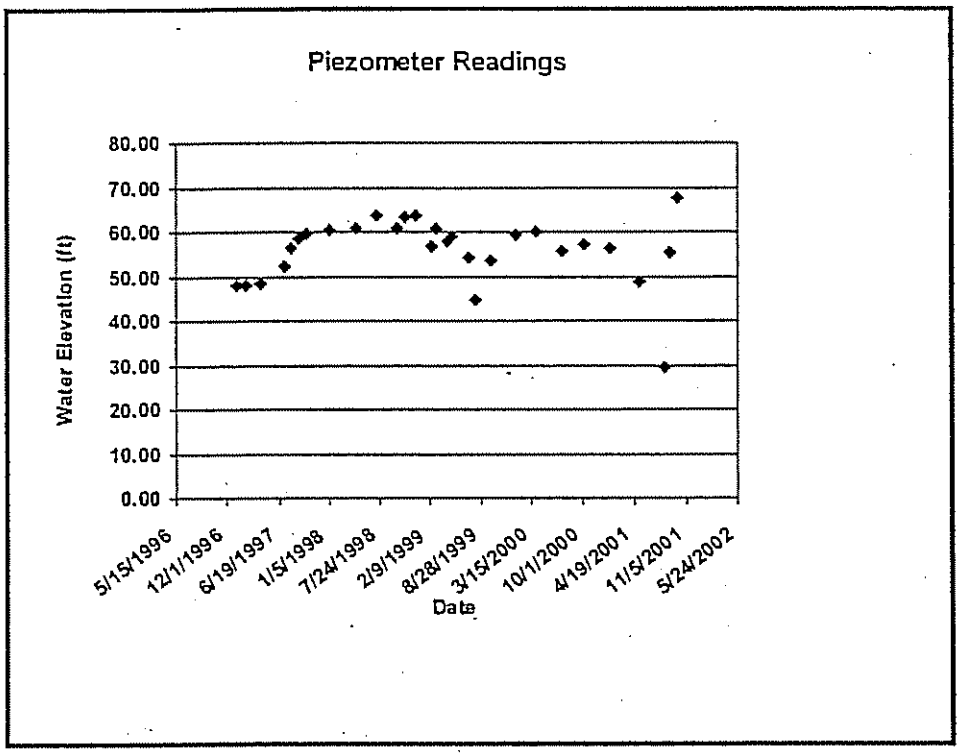
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_10B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627262 |
| Easting | 473152 |
| Screen El | -3 |
| Phase | P5 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 56.5 |
| 05/03/2001 | 48.9 |
| 04/11/1997 | 48.5 |
| 07/10/1997 | 52.2 |
| 08/07/1997 | 56.5 |
| 09/06/1997 | 58.6 |
| 10/08/1997 | 59.8 |
| 01/09/1998 | 60.5 |
| 04/20/1998 | 60.9 |
| 01/03/1997 | 48 |
| 02/12/1997 | 48 |
| 07/10/1998 | 63.5 |
| 10/02/1998 | 60.9 |
| 11/02/1998 | 63.2 |
| 12/16/1998 | 63.5 |
| 02/11/1999 | 56.8 |
| 03/01/1999 | 60.9 |
| 04/13/1999 | 57.7 |
| 05/04/1999 | 58.8 |
| 07/12/1999 | 54.2 |
| 08/04/1999 | 44.8 |
| 10/06/1999 | 53.5 |
| 01/13/2000 | 59.3 |
| 04/06/2000 | 60 |
| 07/12/2000 | 55.6 |
| 10/06/2000 | 57 |
| 08/10/2001 | 29.31 |
| 08/31/2001 | 55.4 |
| 10/02/2001 | 67.6 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

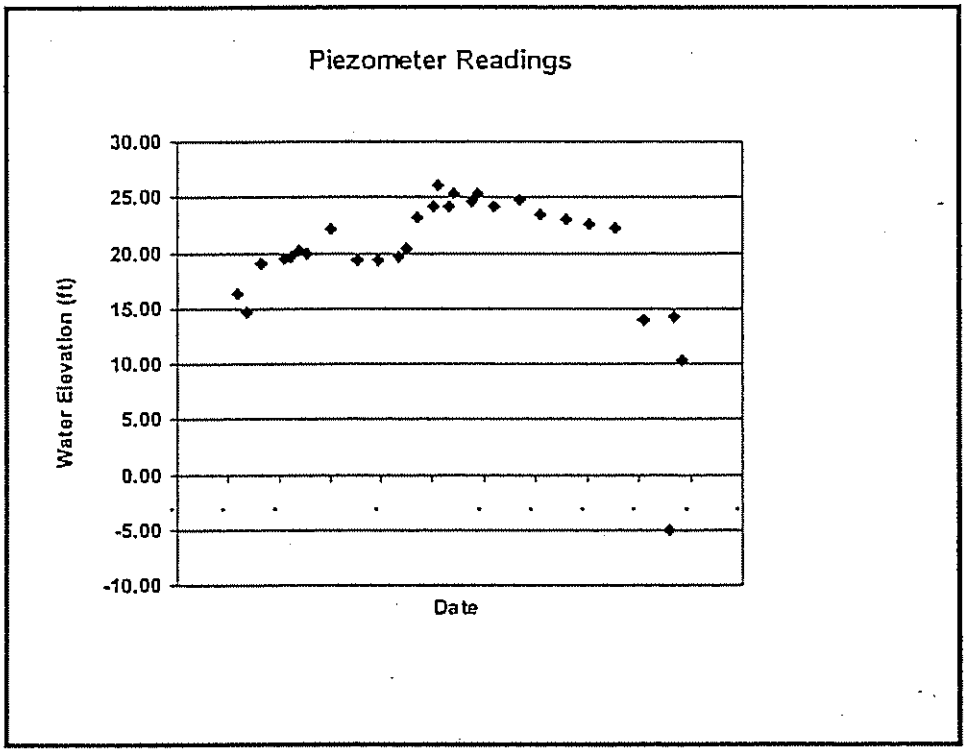
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_10C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626264 |
| Easting | 473154 |
| Screen El | -27 |
| Phase | P5 |
| Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 22.3 |
| 05/03/2001 | 14 |
| 04/11/1997 | 19.1 |
| 07/10/1997 | 19.5 |
| 08/07/1997 | 19.7 |
| 09/06/1997 | 20.2 |
| 10/08/1997 | 20 |
| 01/09/1998 | 22.1 |
| 04/20/1998 | 19.3 |
| 01/03/1997 | 16.3 |
| 02/12/1997 | 14.7 |
| 07/10/1998 | 19.3 |
| 10/02/1998 | 19.7 |
| 11/02/1998 | 20.4 |
| 12/16/1998 | 23.2 |
| 02/11/1999 | 24.1 |
| 03/01/1999 | 26 |
| 04/13/1999 | 24.1 |
| 05/04/1999 | 25.3 |
| 07/12/1999 | 24.6 |
| 08/04/1999 | 25.3 |
| 10/06/1999 | 24.1 |
| 01/13/2000 | 24.8 |
| 04/06/2000 | 23.4 |
| 07/12/2000 | 23 |
| 10/06/2000 | 22.5 |
| 08/31/2001 | 14.2 |
| 10/02/2001 | 10.3 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

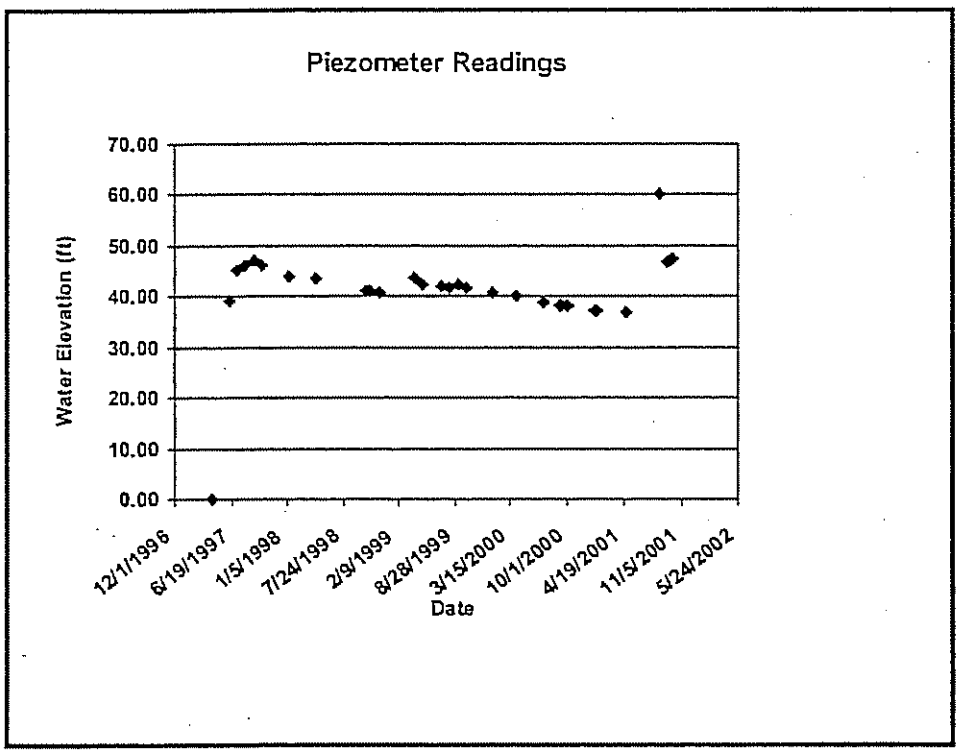
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_15A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627016 |
| Easting | 472740 |
| Phase | P5 |
| Screen El | 23.1 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 37.3 |
| 04/25/2001 | 37 |
| 06/09/1997 | 39 |
| 07/10/1997 | 45.3 |
| 08/07/1997 | 46 |
| 09/06/1997 | 47 |
| 10/07/1997 | 46 |
| 01/09/1998 | 44 |
| 04/15/1998 | 43.5 |
| 10/13/1998 | 41 |
| 11/02/1998 | 40.9 |
| 12/01/1998 | 40.7 |
| 04/06/1999 | 43.5 |
| 05/04/1999 | 42.4 |
| 07/12/1999 | 42.1 |
| 08/09/1999 | 41.7 |
| 09/10/1999 | 42.3 |
| 10/12/1999 | 41.7 |
| 01/13/2000 | 40.8 |
| 04/07/2000 | 40.03 |
| 07/11/2000 | 38.9 |
| 09/11/2000 | 38.1 |
| 10/05/2000 | 38.2 |
| 09/08/2000 | 38.11 |
| 01/09/2001 | 37.3 |
| 08/21/2001 | 60.2 |
| 09/20/2001 | 46.9 |
| 10/04/2001 | 47.3 |

## Installation Information

Date Instrument Was Installed: 12/04/1996 *GEOLOGY*

*Ground Surface El* 47.1

*NOTES*

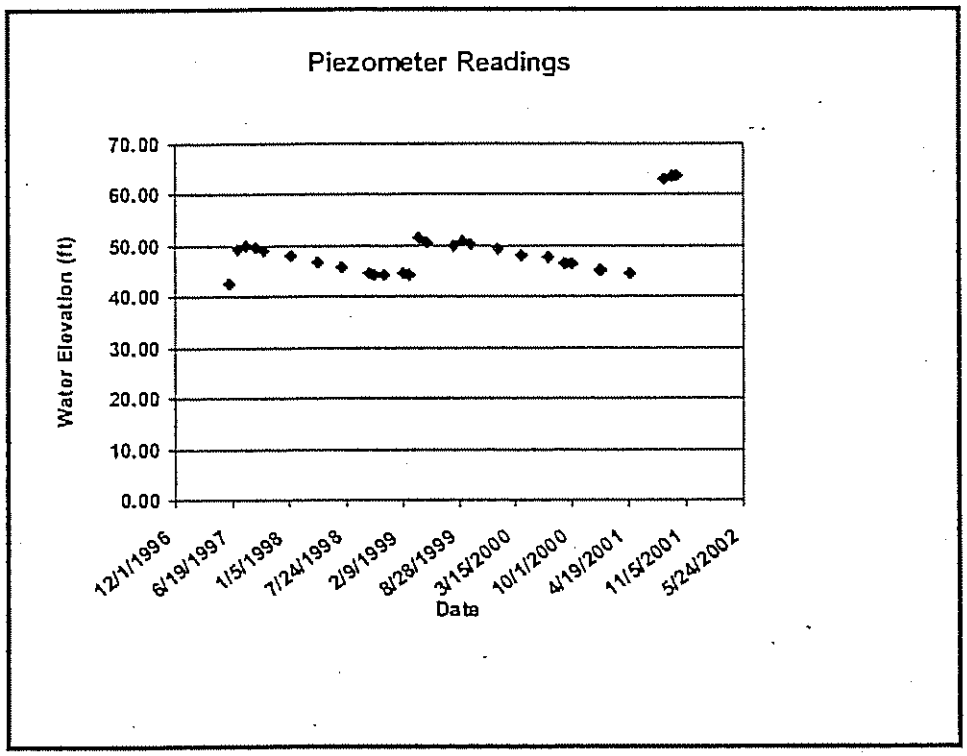
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 60.6 | 60.6 | 33.1 | 38.6 | 40.1 | 47.1 | |
| *Bottom* | 47.1 | 33.1 | 23.1 | 22.1 | 38.6 | 40.1 | |
| *Diam. (in)* | 16 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | SDR 7.3 HDPE | PVC SCH 40 | PVC SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PZ 15B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627005 |
| Easting | 472758 |
| Phase | P5 |
| Screen El | -2.2 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 45.3 |
| 04/25/2001 | 44.7 |
| 06/09/1997 | 42.6 |
| 07/10/1997 | 49.2 |
| 08/07/1997 | 49.8 |
| 09/06/1997 | 49.6 |
| 10/07/1997 | 48.9 |
| 01/09/1998 | 48 |
| 04/15/1998 | 46.8 |
| 07/10/1998 | 45.9 |
| 10/13/1998 | 44.4 |
| 11/02/1998 | 44.2 |
| 12/01/1998 | 44.2 |
| 02/11/1999 | 44.4 |
| 03/01/1999 | 44.2 |
| 04/06/1999 | 51.4 |
| 05/04/1999 | 50.7 |
| 08/09/1999 | 50 |
| 09/10/1999 | 51 |
| 10/12/1999 | 50.4 |
| 01/13/2000 | 49.2 |
| 04/07/2000 | 48.15 |
| 07/11/2000 | 47.6 |
| 09/11/2000 | 46.3 |
| 10/05/2000 | 46.4 |
| 09/08/2000 | 46.32 |
| 01/09/2001 | 45.3 |
| 08/21/2001 | 62.9 |
| 09/20/2001 | 63.7 |
| 10/04/2001 | 63.7 |

## Installation Information

Date Instrument Was Installed: 12/04/1996 *GEOLOGY*

*Ground Surface El* 47.2

*NOTES*

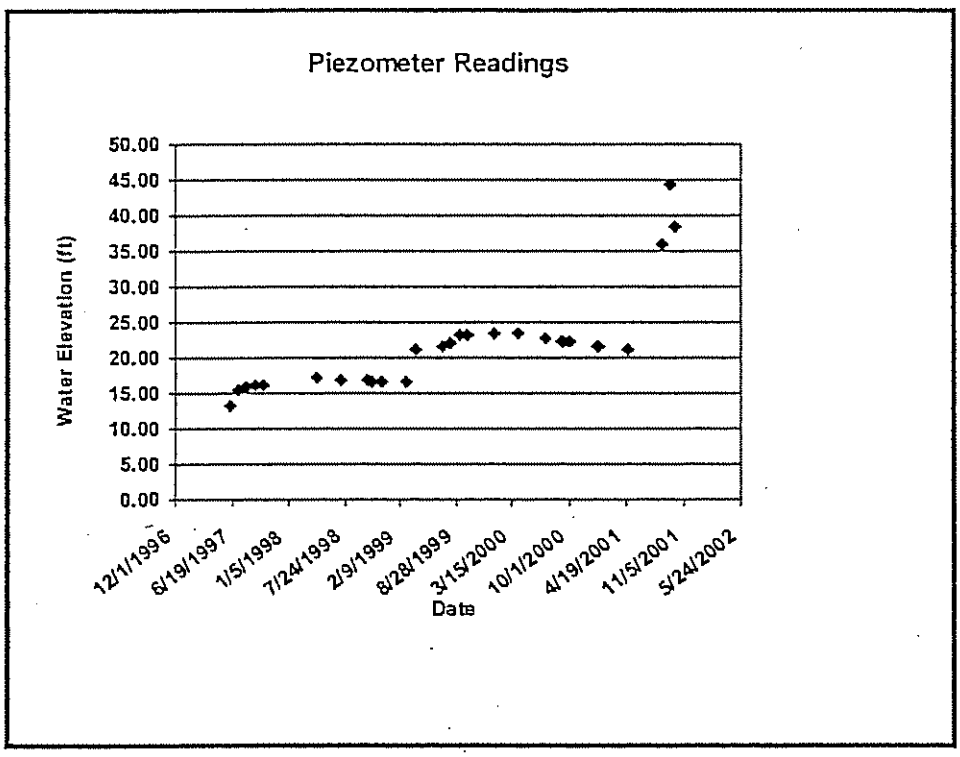
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 61 | 61 | 7.8 | 13.2 | 14.7 | 47.2 | |
| *Bottom* | 47.2 | 7.8 | -2.2 | -3.3 | 13.2 | 14.7 | |
| *Diam. (in)* | 16 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | SDR 7.3 HDPE | PVC SCH 40 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_15C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626994 |
| Easting | 472775 |
| Screen El | -27.2 |
| Phase | P5 |
| Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 21.6 |
| 04/25/2001 | 21.2 |
| 06/09/1997 | 13.1 |
| 07/10/1997 | 15.4 |
| 08/07/1997 | 15.9 |
| 09/06/1997 | 16.2 |
| 10/07/1997 | 16.2 |
| 04/15/1998 | 17.3 |
| 07/10/1998 | 16.8 |
| 10/13/1998 | 16.8 |
| 11/02/1998 | 16.6 |
| 12/01/1998 | 16.5 |
| 03/01/1999 | 16.5 |
| 04/06/1999 | 21.1 |
| 07/12/1999 | 21.6 |
| 08/09/1999 | 22.1 |
| 09/10/1999 | 23.1 |
| 10/12/1999 | 23.2 |
| 01/13/2000 | 23.4 |
| 04/07/2000 | 23.32 |
| 07/11/2000 | 22.8 |
| 09/11/2000 | 22.3 |
| 10/05/2000 | 22.3 |
| 09/08/2000 | 22.32 |
| 01/09/2001 | 21.6 |
| 08/21/2001 | 35.8 |
| 09/20/2001 | 44.3 |
| 10/04/2001 | 38.3 |

## Installation Information

Date Instrument Was Installed: 12/03/1996 *GEOLOGY*

*Ground Surface El* 47.5

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 61.1 | 61.1 | -17.2 | -11.5 | -10 | 47.5 | |
| *Bottom* | 47.5 | -17.2 | -27.2 | -28.5 | -11.5 | -10 | |
| *Diam. (in)* | 16 | 2 | 2 | 8 | 8 | 8 | |
| *Material* | SDR 7.3 HDPE | PVC SCH 40 | PVC SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

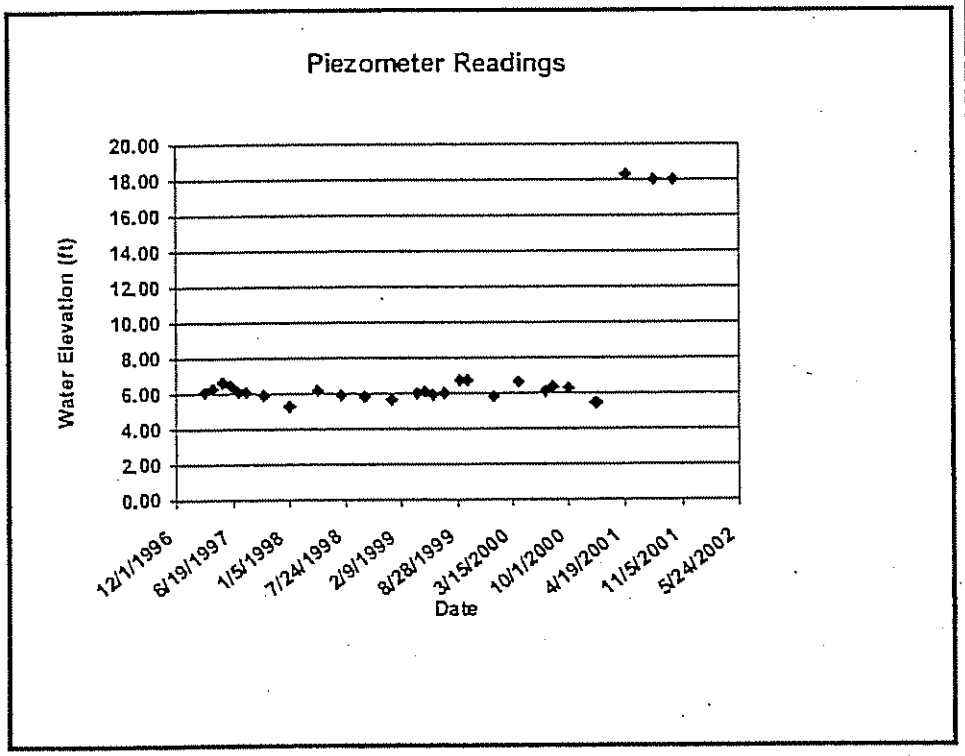
# SECTION 4

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PZ 08A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626903 |
| Easting | 471727 |
| Phase | P5 |
| Screen El | 1 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 5.5 |
| 04/24/2001 | 18.3 |
| 03/10/1997 | 6.1 |
| 04/08/1997 | 6.3 |
| 05/14/1997 | 6.6 |
| 06/09/1997 | 6.5 |
| 07/10/1997 | 6.1 |
| 08/07/1997 | 6.1 |
| 10/06/1997 | 5.9 |
| 01/07/1998 | 5.3 |
| 04/15/1998 | 6.22 |
| 07/10/1998 | 5.9 |
| 10/01/1998 | 5.8 |
| 01/05/1999 | 5.6 |
| 04/06/1999 | 6 |
| 05/04/1999 | 6.1 |
| 06/02/1999 | 5.9 |
| 07/12/1999 | 6 |
| 09/07/1999 | 6.7 |
| 10/06/1999 | 6.7 |
| 01/08/2000 | 5.8 |
| 04/05/2000 | 6.6 |
| 07/11/2000 | 6.1 |
| 08/10/2000 | 6.4 |
| 10/05/2000 | 6.3 |
| 01/09/2001 | 5.5 |
| 07/31/2001 | 18 |
| 10/04/2001 | 18 |

## Installation Information

Date Instrument Was Installed: 10/02/1996 *GEOLOGY*

*Ground Surface El* 47

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 48.5 | 48.5 | 11 | 17.5 | 19.5 | 47 | |
| *Bottom* | 47 | 11 | 1 | 0 | 17.5 | 19.5 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

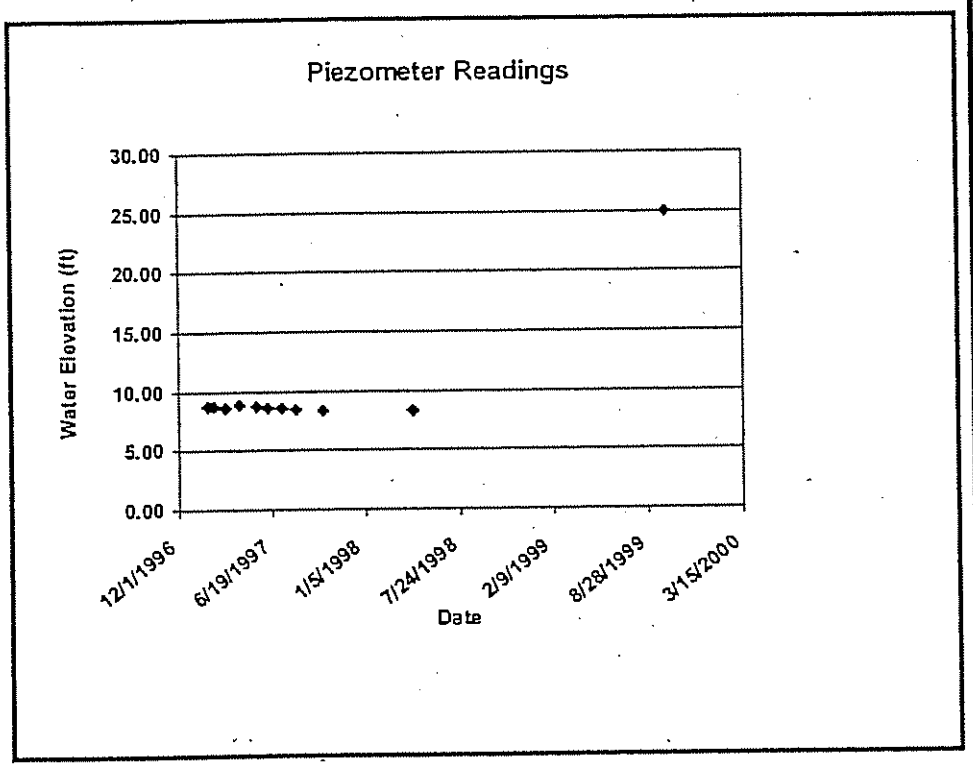
Select Piezometer: P5_PZ_09B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627110 |
| Easting | 471499 |
| Phase | P5 |
| Screen El | 6 |
| Stratum | BM |

Readings

| | |
|---|---|
| 01/31/1997 | 8.7 |
| 02/12/1997 | 8.7 |
| 03/10/1997 | 8.6 |
| 04/08/1997 | 8.8 |
| 05/14/1997 | 8.7 |
| 06/09/1997 | 8.6 |
| 07/10/1997 | 8.6 |
| 08/07/1997 | 8.5 |
| 10/06/1997 | 8.3 |
| 04/15/1998 | 8.28 |
| 10/06/1999 | 25 |




## Installation Information

Date Instrument Was Installed: 09/30/1996 *GEOLOGY*

*Ground Surface El* 48

*NOTES*

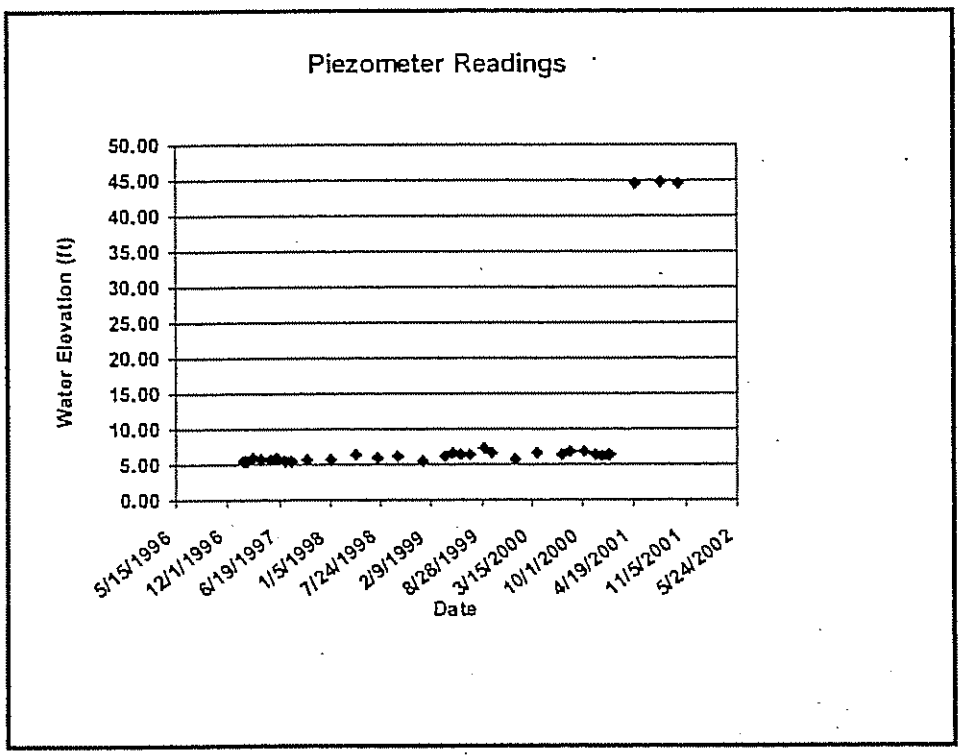
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 49.5 | 49.5 | 16 | 23 | 24 | 48 | |
| *Bottom* | 48 | 16 | 6 | 5 | 23 | 24 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_10B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627281 |
| Easting | 471378 |
| Screen El | -14 |
| Phase | P5 |
| Stratum | BM |




Readings

| | |
|---|---|
| 12/12/2000 | 6.1 |
| 01/12/2001 | 6.3 |
| 04/24/2001 | 44.5 |
| 01/31/1997 | 5.4 |
| 02/12/1997 | 5.4 |
| 03/10/1997 | 5.9 |
| 04/08/1997 | 5.7 |
| 05/14/1997 | 5.6 |
| 06/09/1997 | 5.9 |
| 07/10/1997 | 5.5 |
| 08/07/1997 | 5.4 |
| 10/06/1997 | 5.6 |
| 01/07/1998 | 5.6 |
| 04/15/1998 | 6.37 |
| 07/10/1998 | 5.8 |
| 10/01/1998 | 6.1 |
| 01/05/1999 | 5.5 |
| 04/06/1999 | 6.1 |
| 05/04/1999 | 6.6 |
| 06/02/1999 | 6.3 |
| 07/12/1999 | 6.4 |
| 09/07/1999 | 7.2 |
| 10/06/1999 | 6.6 |
| 01/08/2000 | 5.6 |
| 04/05/2000 | 6.5 |
| 07/11/2000 | 6.4 |
| 08/10/2000 | 6.8 |
| 10/05/2000 | 6.8 |
| 11/16/2000 | 6.3 |
| 01/09/2001 | 6.3 |
| 08/01/2001 | 44.7 |
| 10/04/2001 | 44.6 |

## Installation Information

Date Instrument Was Installed: 10/01/1996 *GEOLOGY*

*Ground Surface El* 49

*NOTES*

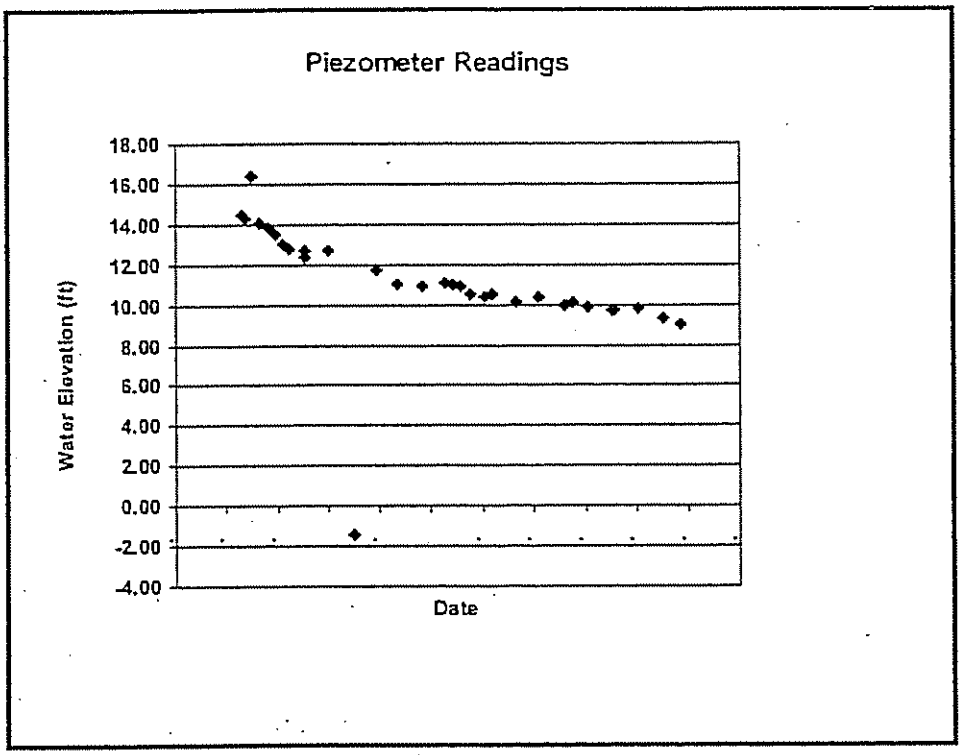
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 50.5 | 50.5 | -4 | 3 | 4.5 | 49 | |
| *Bottom* | 49 | -4 | -14 | -15 | 3 | 4.5 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_11B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627095 |
| Easting | 471299 |
| Phase | P5 |
| Screen El | -11 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 9.7 |
| 04/25/2001 | 9.8 |
| 01/31/1997 | 14.5 |
| 02/12/1997 | 14.3 |
| 03/10/1997 | 16.4 |
| 04/08/1997 | 14.1 |
| 05/14/1997 | 13.8 |
| 06/09/1997 | 13.5 |
| 07/10/1997 | 13 |
| 08/07/1997 | 12.8 |
| 10/06/1997 | 12.4 |
| 10/07/1997 | 12.7 |
| 01/07/1998 | 12.7 |
| 07/10/1998 | 11.7 |
| 10/01/1998 | 11 |
| 01/05/1999 | 10.9 |
| 04/06/1999 | 11.1 |
| 05/04/1999 | 11 |
| 06/02/1999 | 10.9 |
| 07/12/1999 | 10.5 |
| 09/07/1999 | 10.4 |
| 10/06/1999 | 10.5 |
| 01/08/2000 | 10.1 |
| 04/05/2000 | 10.4 |
| 07/11/2000 | 10 |
| 08/10/2000 | 10.1 |
| 10/05/2000 | 9.9 |
| 01/09/2001 | 9.7 |
| 07/31/2001 | 9.3 |
| 10/04/2001 | 9 |

## Installation Information

Date Instrument Was Installed: 09/26/1996 *GEOLOGY*

*Ground Surface El* 23

*NOTES*

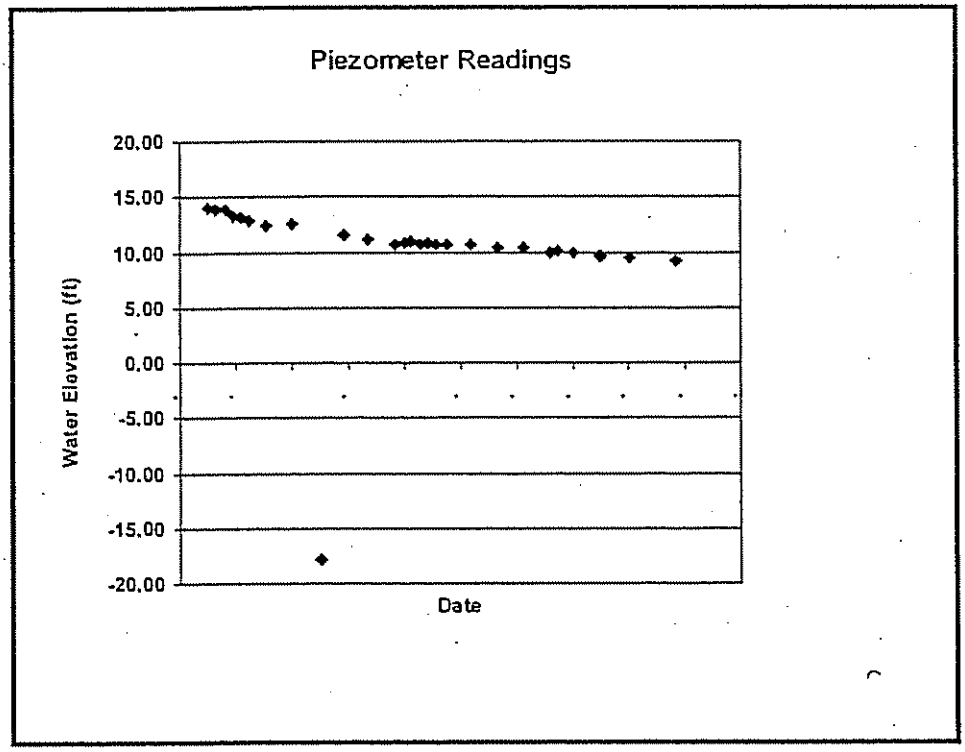
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 24.5 | 24.5 | -1 | 4.5 | 5.6 | 23 | |
| *Bottom* | 23 | -1 | -11 | -12 | 4.5 | 5.6 | |
| *Diam. (In)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, #6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PZ 12B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626691 |
| Easting | 471727 |
| Screen El | -28 |
| Phase | P5 |
| Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 9.7 |
| 04/25/2001 | 9.5 |
| 03/10/1997 | 14 |
| 04/08/1997 | 13.9 |
| 05/14/1997 | 13.9 |
| 06/09/1997 | 13.3 |
| 07/10/1997 | 13.1 |
| 08/07/1997 | 12.8 |
| 10/06/1997 | 12.4 |
| 01/07/1998 | 12.5 |
| 07/10/1998 | 11.5 |
| 10/01/1998 | 11.1 |
| 01/05/1999 | 10.7 |
| 02/08/1999 | 10.8 |
| 03/02/1999 | 11 |
| 04/06/1999 | 10.7 |
| 05/04/1999 | 10.8 |
| 06/02/1999 | 10.7 |
| 07/12/1999 | 10.6 |
| 10/06/1999 | 10.6 |
| 01/08/2000 | 10.3 |
| 04/05/2000 | 10.4 |
| 07/11/2000 | 9.9 |
| 08/10/2000 | 10.1 |
| 10/05/2000 | 9.9 |
| 01/09/2001 | 9.7 |
| 10/04/2001 | 9.2 |

## Installation Information

Date Instrument Was Installed: 09/27/1996 *GEOLOGY*

*Ground Surface El* 22.5

*NOTES*

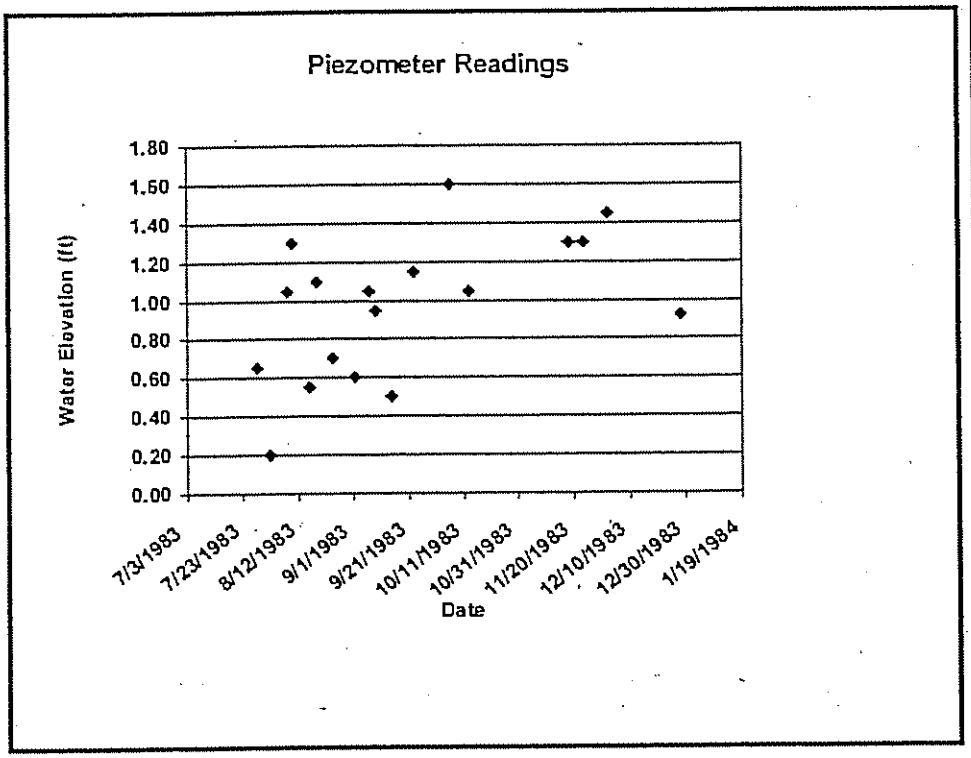
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 24 | 24 | -18 | -12.5 | -10.5 | 22.5 | |
| *Bottom* | 22.5 | -18 | -28 | -29.5 | -12.5 | -10.5 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_MW_P105

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626673 |
| Easting | 471754 |
| Phase | P5 |
| Screen El | -152 |
| Stratum | P1 |




Readings

| | |
|---|---|
| 07/28/1983 | 0.65 |
| 08/02/1983 | 0.2 |
| 08/08/1983 | 1.05 |
| 08/10/1983 | 1.3 |
| 08/16/1983 | 0.55 |
| 08/19/1983 | 1.1 |
| 08/25/1983 | 0.7 |
| 09/02/1983 | 0.6 |
| 09/07/1983 | 1.05 |
| 09/09/1983 | 0.95 |
| 09/15/1983 | 0.5 |
| 09/23/1983 | 1.15 |
| 10/06/1983 | 1.6 |
| 10/13/1983 | 1.05 |
| 11/18/1983 | 1.3 |
| 11/23/1983 | 1.3 |
| 12/02/1983 | 1.45 |
| 12/28/1983 | 0.92 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El* 22

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 24.6 | 24.6 | -142 | -128 | 19 | | 22 |
| *Bottom* | 22 | -142 | -152 | -152 | -128 | | 19 |
| *Diam. (in)* | 4 | | | | | | |
| *Material* | STEEL | PVC | | | | | |

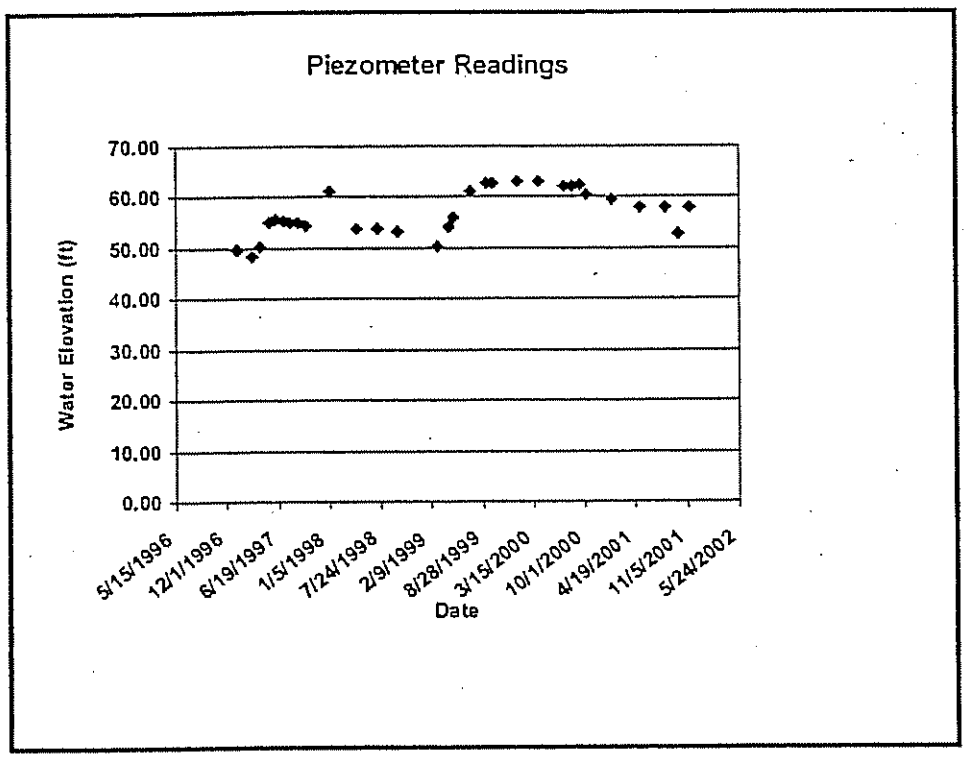
# SECTION 5

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PP 03A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627010 |
| Easting | 471920 |
| Screen El | 25 |
| Phase | P5 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 59.6 |
| 05/03/2001 | 57.8 |
| 03/07/1997 | 48.5 |
| 04/08/1997 | 50.4 |
| 05/14/1997 | 55.2 |
| 06/09/1997 | 55.7 |
| 07/10/1997 | 55.5 |
| 08/07/1997 | 55.2 |
| 09/06/1997 | 55 |
| 10/08/1997 | 54.5 |
| 01/09/1998 | 61 |
| 04/20/1998 | 53.8 |
| 01/03/1997 | 49.5 |
| 01/10/1997 | 49.5 |
| 07/10/1998 | 53.8 |
| 10/02/1998 | 53.2 |
| 03/01/1999 | 50.2 |
| 04/13/1999 | 54.1 |
| 05/04/1999 | 55.9 |
| 07/12/1999 | 61.2 |
| 09/14/1999 | 62.8 |
| 10/06/1999 | 62.8 |
| 01/13/2000 | 63.1 |
| 04/06/2000 | 63.1 |
| 07/12/2000 | 62.2 |
| 08/11/2000 | 61.9 |
| 09/11/2000 | 62.4 |
| 10/06/2000 | 60.5 |
| 08/10/2001 | 58 |
| 11/14/2001 | 58 |
| 10/02/2001 | 52.9 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

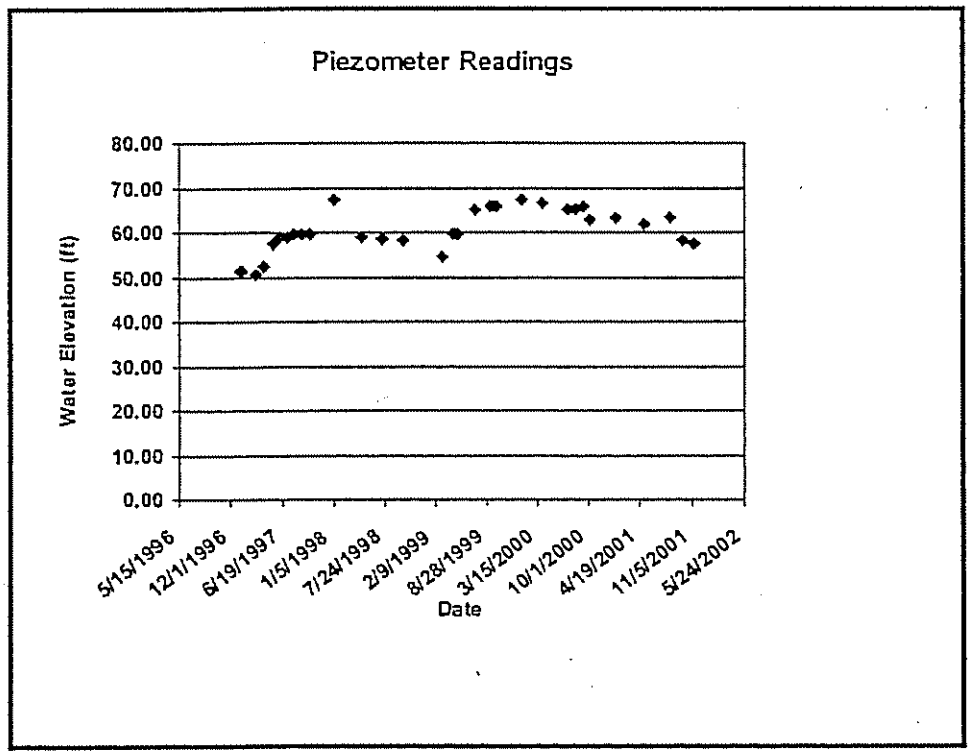
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PP_03B

Show/Hide Maintenance Data

| | | | |
|---|---|---|---|
| Northing | 627012 | | |
| Easting | 471922 | Screen El | 2 |
| Phase | P5 | Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 63.4 |
| 05/03/2001 | 62 |
| 03/07/1997 | 50.7 |
| 04/08/1997 | 52.5 |
| 06/09/1997 | 58.8 |
| 07/10/1997 | 59 |
| 08/07/1997 | 59.5 |
| 09/06/1997 | 59.5 |
| 10/08/1997 | 59.5 |
| 01/09/1998 | 67.1 |
| 04/20/1998 | 59 |
| 01/03/1997 | 51.2 |
| 01/10/1997 | 51.2 |
| 05/14/1997 | 57.4 |
| 07/10/1998 | 58.5 |
| 10/02/1998 | 58.1 |
| 03/01/1999 | 54.4 |
| 04/13/1999 | 59.5 |
| 05/04/1999 | 59.5 |
| 07/12/1999 | 65 |
| 09/14/1999 | 65.9 |
| 10/06/1999 | 65.9 |
| 01/13/2000 | 67.3 |
| 04/06/2000 | 66.4 |
| 07/12/2000 | 65.2 |
| 08/11/2000 | 65.2 |
| 09/11/2000 | 65.7 |
| 10/06/2000 | 62.9 |
| 08/10/2001 | 63.2 |
| 11/14/2001 | 57.6 |
| 10/02/2001 | 58.1 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

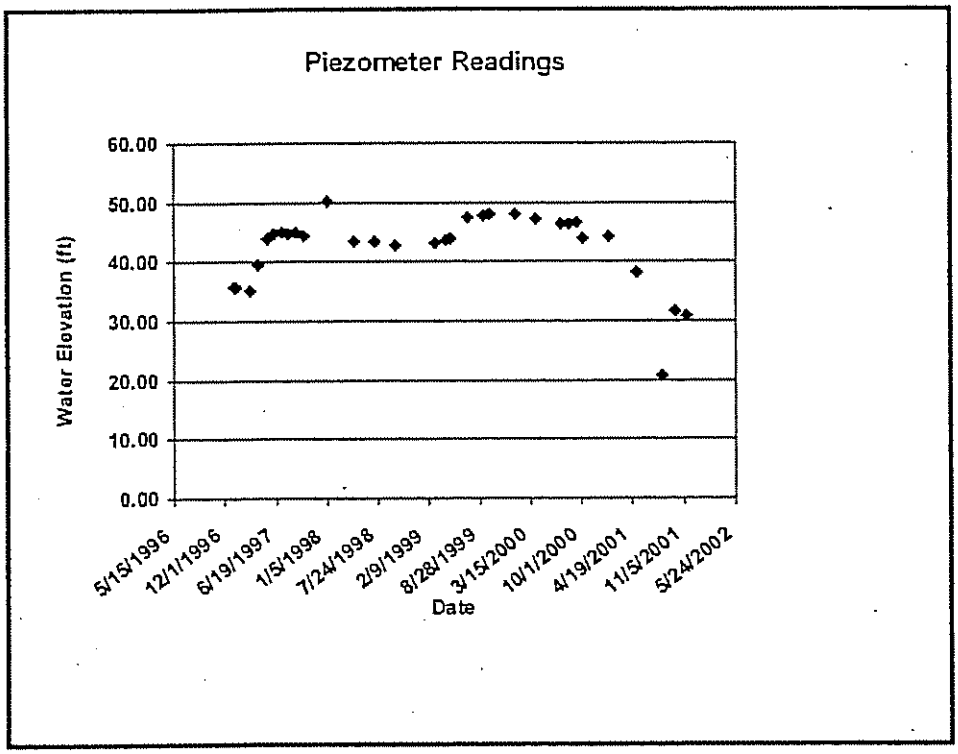
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PP 03C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627014 |
| Easting | 471924 |
| Phase | P5 |
| Screen El | -21 |
| Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 44.1 |
| 05/03/2001 | 38.1 |
| 03/07/1997 | 35.3 |
| 04/08/1997 | 39.5 |
| 05/14/1997 | 43.8 |
| 06/09/1997 | 44.8 |
| 07/10/1997 | 45 |
| 08/07/1997 | 44.8 |
| 09/06/1997 | 45 |
| 10/08/1997 | 44.5 |
| 01/09/1998 | 50.1 |
| 04/20/1998 | 43.4 |
| 01/03/1997 | 35.8 |
| 01/10/1997 | 35.8 |
| 07/10/1998 | 43.4 |
| 10/02/1998 | 42.9 |
| 03/01/1999 | 43.2 |
| 04/13/1999 | 43.6 |
| 05/04/1999 | 43.8 |
| 07/12/1999 | 47.5 |
| 09/14/1999 | 47.8 |
| 10/06/1999 | 48 |
| 01/13/2000 | 48 |
| 04/06/2000 | 47.1 |
| 07/12/2000 | 46.4 |
| 08/11/2000 | 46.4 |
| 09/11/2000 | 46.6 |
| 10/06/2000 | 43.8 |
| 08/10/2001 | 20.77 |
| 11/14/2001 | 30.7 |
| 10/02/2001 | 31.6 |

## Installation Information

Date Instrument Was Installed:

*GEOLOGY*

*Ground Surface El*

*NOTES*

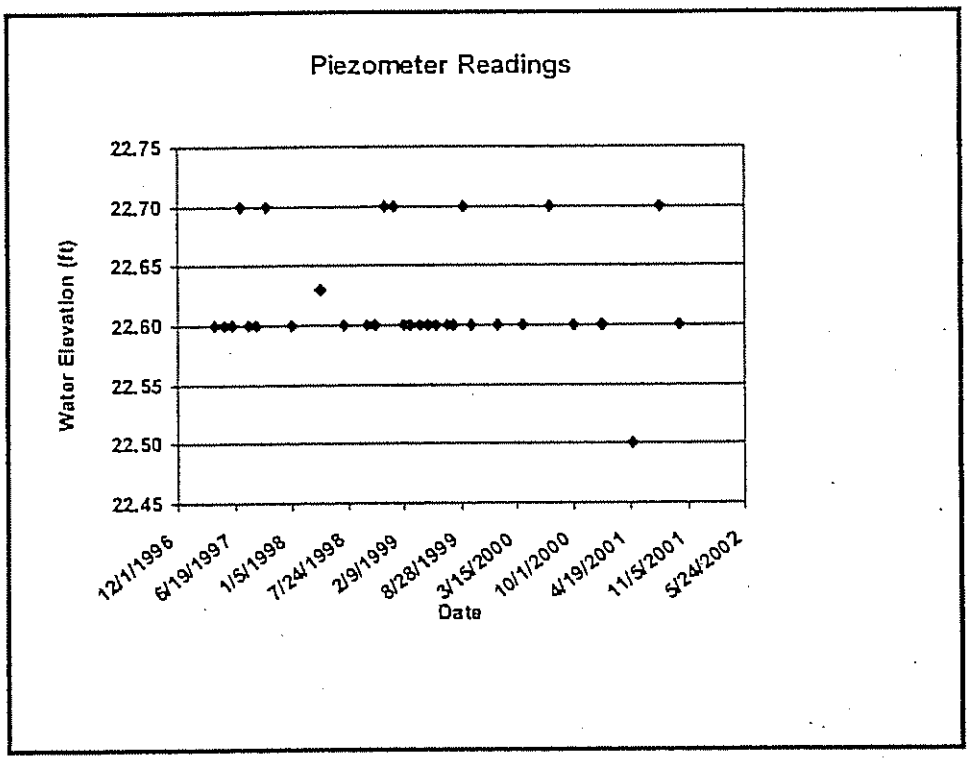
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | | | | | | | |
| *Bottom* | | | | | | | |
| *Diam. (in)* | | | | | | | |
| *Material* | | | | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_05A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626494 |
| Easting | 472454 |
| Screen El | 22.1 |
| Phase | P5 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 22.6 |
| 04/24/2001 | 22.5 |
| 04/11/1997 | 22.6 |
| 05/14/1997 | 22.6 |
| 06/09/1997 | 22.6 |
| 07/10/1997 | 22.7 |
| 08/07/1997 | 22.6 |
| 09/05/1997 | 22.6 |
| 10/06/1997 | 22.7 |
| 01/07/1998 | 22.6 |
| 04/15/1998 | 22.63 |
| 07/10/1998 | 22.6 |
| 10/01/1998 | 22.6 |
| 11/02/1998 | 22.6 |
| 12/01/1998 | 22.7 |
| 01/05/1999 | 22.7 |
| 02/08/1999 | 22.6 |
| 03/02/1999 | 22.6 |
| 04/06/1999 | 22.6 |
| 05/04/1999 | 22.6 |
| 06/02/1999 | 22.6 |
| 07/12/1999 | 22.6 |
| 08/04/1999 | 22.6 |
| 09/07/1999 | 22.7 |
| 10/06/1999 | 22.6 |
| 01/08/2000 | 22.6 |
| 04/05/2000 | 22.6 |
| 07/11/2000 | 22.7 |
| 10/05/2000 | 22.6 |
| 01/09/2001 | 22.6 |
| 08/01/2001 | 22.7 |
| 10/04/2001 | 22.6 |

## Installation Information

Date Instrument Was Installed: 11/19/1996 *GEOLOGY*

*Ground Surface El* 46.8

*NOTES*

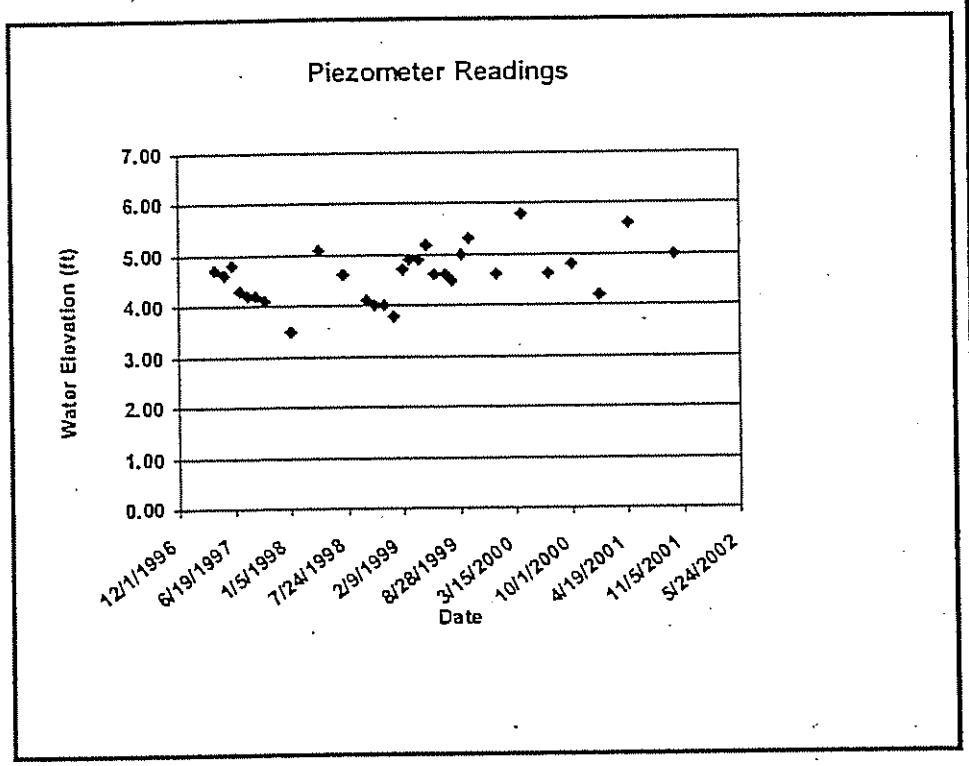
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 48.3 | 48.3 | 32.1 | 37.3 | 38.3 | 46.8 | |
| *Bottom* | 46.8 | 32.1 | 22.1 | 20.8 | 37.3 | 38.3 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_05B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626489 |
| Easting | 472463 |
| Phase | P5 |
| Screen El | -3 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 4.2 |
| 04/24/2001 | 5.6 |
| 04/11/1997 | 4.7 |
| 05/14/1997 | 4.6 |
| 06/09/1997 | 4.8 |
| 07/10/1997 | 4.3 |
| 08/07/1997 | 4.2 |
| 09/05/1997 | 4.2 |
| 10/06/1997 | 4.1 |
| 01/07/1998 | 3.5 |
| 04/15/1998 | 5.09 |
| 07/10/1998 | 4.6 |
| 10/01/1998 | 4.1 |
| 11/02/1998 | 4 |
| 12/01/1998 | 4 |
| 01/05/1999 | 3.8 |
| 02/08/1999 | 4.7 |
| 03/02/1999 | 4.9 |
| 04/06/1999 | 4.9 |
| 05/04/1999 | 5.2 |
| 06/02/1999 | 4.6 |
| 07/12/1999 | 4.6 |
| 08/04/1999 | 4.5 |
| 09/07/1999 | 5 |
| 10/06/1999 | 5.3 |
| 01/08/2000 | 4.6 |
| 04/05/2000 | 5.8 |
| 07/11/2000 | 4.6 |
| 10/05/2000 | 4.8 |
| 01/09/2001 | 4.2 |
| 10/04/2001 | 5 |

## Installation Information

Date Instrument Was Installed: 11/20/1996 *GEOLOGY*

*Ground Surface El* 47

*NOTES*

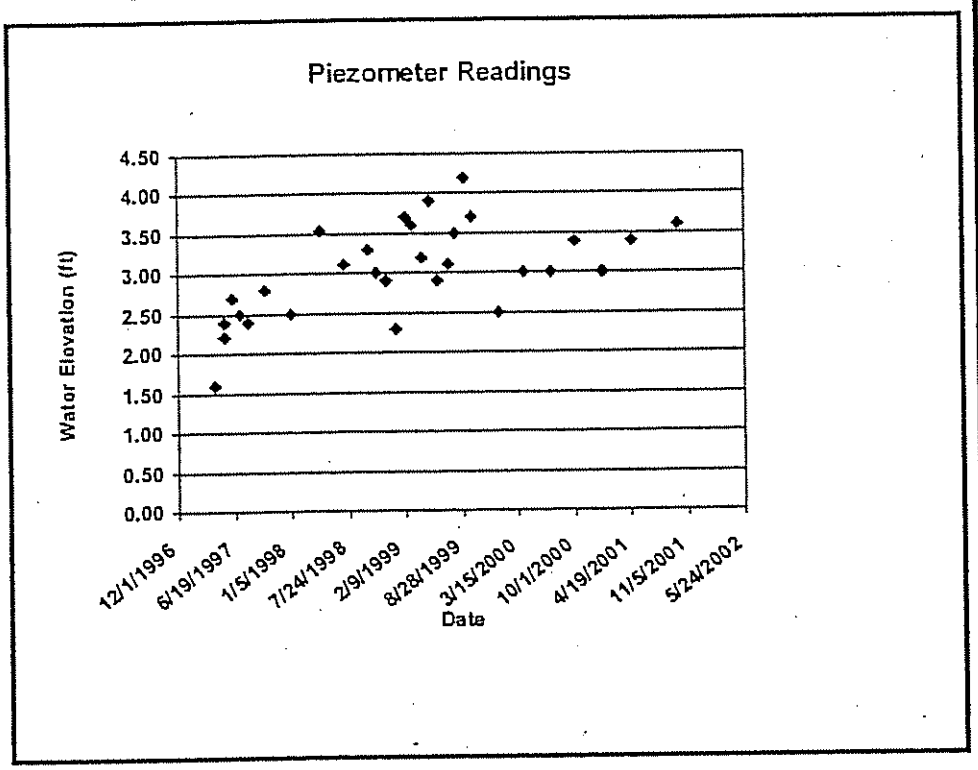
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 48.5 | 48.5 | 7 | 13 | 14 | 47 | |
| *Bottom* | 47 | 7 | -3 | -4 | 13 | 14 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_06A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626612 |
| Easting | 472249 |
| Phase | P5 |
| Screen El | -2.8 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 3 |
| 04/24/2001 | 3.4 |
| 04/11/1997 | 1.6 |
| 05/14/1997 | 2.2 |
| 05/16/1997 | 2.4 |
| 06/09/1997 | 2.7 |
| 07/10/1997 | 2.5 |
| 08/07/1997 | 2.4 |
| 10/06/1997 | 2.8 |
| 01/07/1998 | 2.5 |
| 04/15/1998 | 3.54 |
| 07/10/1998 | 3.1 |
| 10/01/1998 | 3.3 |
| 11/02/1998 | 3 |
| 12/01/1998 | 2.9 |
| 01/05/1999 | 2.3 |
| 02/08/1999 | 3.7 |
| 03/02/1999 | 3.6 |
| 04/06/1999 | 3.2 |
| 05/04/1999 | 3.9 |
| 06/02/1999 | 2.9 |
| 07/12/1999 | 3.1 |
| 08/04/1999 | 3.5 |
| 09/07/1999 | 4.2 |
| 10/06/1999 | 3.7 |
| 01/08/2000 | 2.5 |
| 04/05/2000 | 3 |
| 07/11/2000 | 3 |
| 10/05/2000 | 3.4 |
| 01/09/2001 | 3 |
| 10/04/2001 | 3.6 |

## Installation Information

Date Instrument Was Installed: 11/18/1996 *GEOLOGY*

*Ground Surface El* 46

*NOTES*

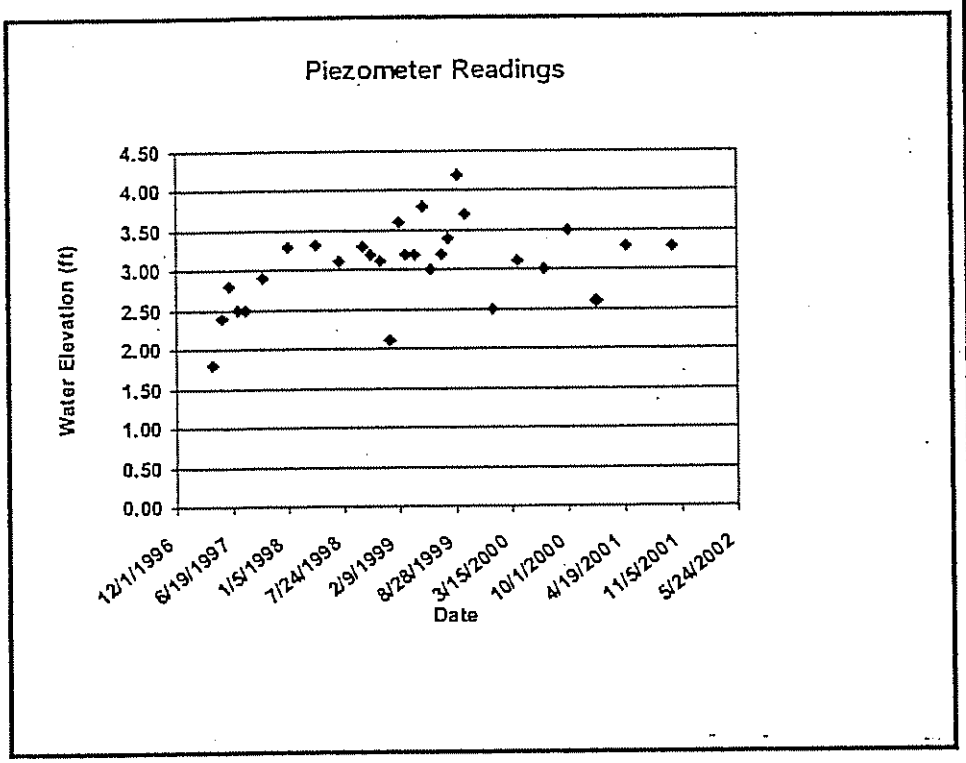
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 47.5 | 47.5 | 7.2 | 16 | 18 | 46 | |
| *Bottom* | 46 | 7.2 | -2.8 | -4 | 16 | 18 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_06B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626607 |
| Easting | 472257 |
| Phase | P5 |
| Screen El | -28 |
| Stratum | BL |




Readings

| | |
|---|---|
| 01/12/2001 | 2.6 |
| 04/24/2001 | 3.3 |
| 04/11/1997 | 1.8 |
| 05/14/1997 | 2.4 |
| 05/16/1997 | 2.4 |
| 06/09/1997 | 2.8 |
| 07/10/1997 | 2.5 |
| 08/07/1997 | 2.5 |
| 10/06/1997 | 2.9 |
| 01/07/1998 | 3.3 |
| 04/15/1998 | 3.32 |
| 07/10/1998 | 3.1 |
| 10/01/1998 | 3.3 |
| 11/02/1998 | 3.2 |
| 12/01/1998 | 3.1 |
| 01/05/1999 | 2.1 |
| 02/08/1999 | 3.6 |
| 03/02/1999 | 3.2 |
| 04/06/1999 | 3.2 |
| 05/04/1999 | 3.8 |
| 06/02/1999 | 3 |
| 07/12/1999 | 3.2 |
| 08/04/1999 | 3.4 |
| 09/07/1999 | 4.2 |
| 10/06/1999 | 3.7 |
| 01/08/2000 | 2.5 |
| 04/05/2000 | 3.1 |
| 07/11/2000 | 3 |
| 10/05/2000 | 3.5 |
| 01/09/2001 | 2.6 |
| 10/04/2001 | 3.3 |

## Installation Information

Date Instrument Was Installed: 11/19/1996 *GEOLOGY*

*Ground Surface El* 46

*NOTES*

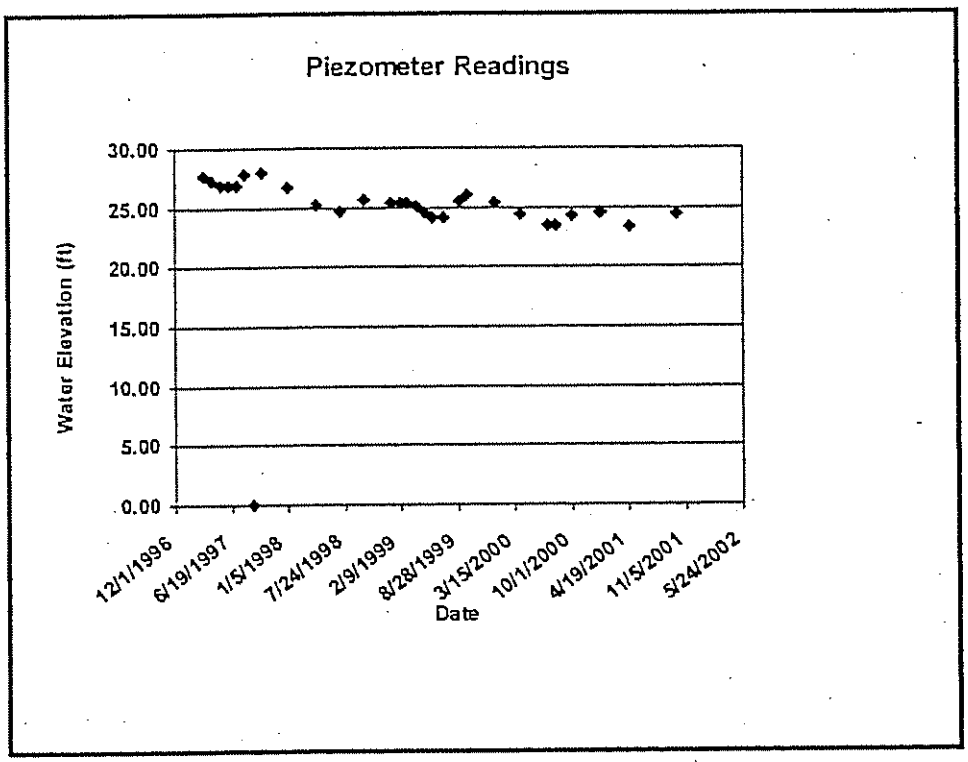
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 47.5 | 47.5 | -18 | -12 | -10 | 46 | |
| *Bottom* | 46 | -18 | -28 | -29 | -12 | -10 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_07A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626754 |
| Easting | 471987 |
| Phase | P5 |
| Screen El | 22.5 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 24.5 |
| 04/24/2001 | 23.3 |
| 03/10/1997 | 27.7 |
| 04/08/1997 | 27.3 |
| 05/14/1997 | 26.9 |
| 06/09/1997 | 26.8 |
| 07/10/1997 | 26.9 |
| 08/07/1997 | 27.8 |
| 10/06/1997 | 27.9 |
| 01/07/1998 | 26.7 |
| 04/15/1998 | 25.2 |
| 07/10/1998 | 24.7 |
| 10/01/1998 | 25.7 |
| 01/05/1999 | 25.4 |
| 02/08/1999 | 25.3 |
| 03/02/1999 | 25.3 |
| 04/06/1999 | 25.1 |
| 05/04/1999 | 24.5 |
| 06/02/1999 | 24.2 |
| 07/12/1999 | 24.1 |
| 09/07/1999 | 25.5 |
| 10/06/1999 | 26 |
| 01/08/2000 | 25.4 |
| 04/05/2000 | 24.4 |
| 07/11/2000 | 23.5 |
| 08/10/2000 | 23.5 |
| 10/05/2000 | 24.3 |
| 01/09/2001 | 24.5 |
| 10/04/2001 | 24.4 |

## Installation Information

Date Instrument Was Installed: 11/15/1996 *GEOLOGY*

*Ground Surface El* 47

*NOTES*

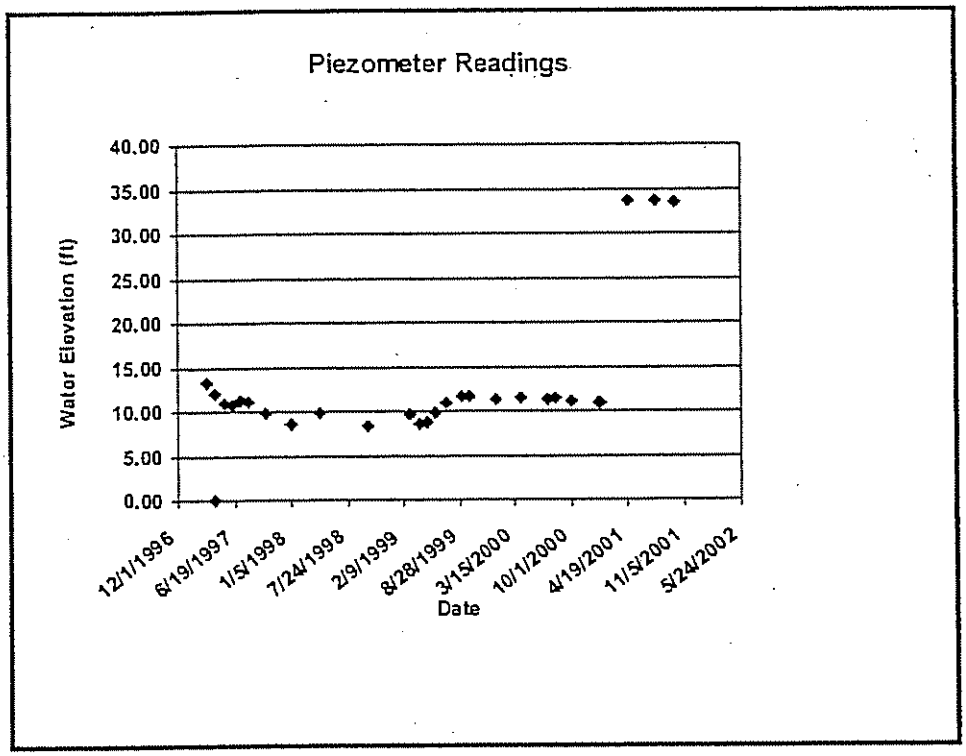
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 48.5 | 48.5 | 32.5 | 39.5 | 41.5 | 47 | |
| *Bottom* | 47 | 32.5 | 22.5 | 21.5 | 39.5 | 41.5 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 PZ 07B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626749 |
| Easting | 471995 |
| Phase | P5 |
| Screen El | -0.5 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 11 |
| 04/24/2001 | 33.7 |
| 03/10/1997 | 13.2 |
| 04/08/1997 | 12 |
| 05/14/1997 | 11 |
| 06/09/1997 | 10.8 |
| 07/10/1997 | 11.2 |
| 08/07/1997 | 11.1 |
| 10/06/1997 | 9.9 |
| 01/07/1998 | 8.6 |
| 04/15/1998 | 9.85 |
| 10/01/1998 | 8.4 |
| 03/02/1999 | 9.7 |
| 04/06/1999 | 8.5 |
| 05/04/1999 | 8.8 |
| 06/02/1999 | 9.9 |
| 07/12/1999 | 11 |
| 09/07/1999 | 11.7 |
| 10/06/1999 | 11.7 |
| 01/08/2000 | 11.3 |
| 04/05/2000 | 11.4 |
| 07/11/2000 | 11.3 |
| 08/10/2000 | 11.5 |
| 10/05/2000 | 11.1 |
| 01/09/2001 | 11 |
| 07/31/2001 | 33.6 |
| 10/04/2001 | 33.5 |

## Installation Information

Date Instrument Was Installed: 11/15/1996 *GEOLOGY*

*Ground Surface El* 47

*NOTES*

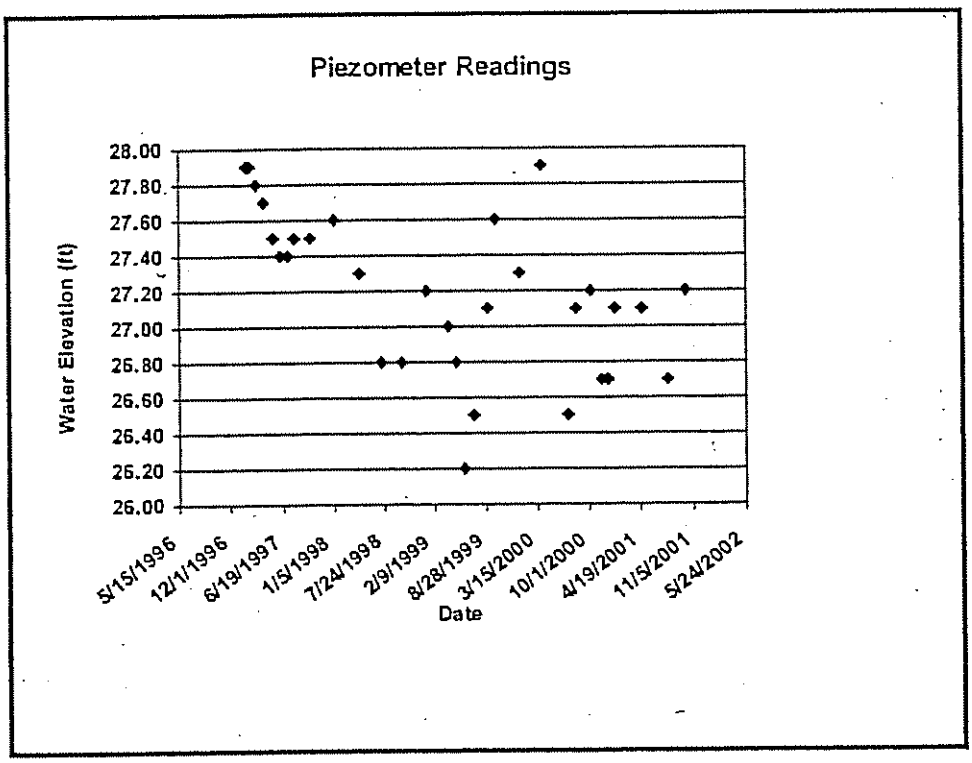
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 48.5 | 48.5 | 9.5 | 15.5 | 17 | 47 | |
| *Bottom* | 47 | 9.5 | -0.5 | -1.5 | 15.5 | 17 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_09A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626381 |
| Easting | 472458 |
| Phase | P5 |
| Screen El | 26 |
| Stratum | BU |




Readings

| | |
|---|---|
| 12/12/2000 | 26.7 |
| 01/12/2001 | 27.1 |
| 04/24/2001 | 27.1 |
| 01/31/1997 | 27.9 |
| 02/12/1997 | 27.9 |
| 03/10/1997 | 27.8 |
| 04/08/1997 | 27.7 |
| 05/14/1997 | 27.5 |
| 06/09/1997 | 27.4 |
| 07/10/1997 | 27.4 |
| 08/07/1997 | 27.5 |
| 10/06/1997 | 27.5 |
| 01/07/1998 | 27.6 |
| 04/15/1998 | 27.3 |
| 07/10/1998 | 26.8 |
| 10/01/1998 | 26.8 |
| 01/05/1999 | 27.2 |
| 04/06/1999 | 27 |
| 05/04/1999 | 26.8 |
| 06/02/1999 | 26.2 |
| 07/12/1999 | 26.5 |
| 09/07/1999 | 27.1 |
| 10/06/1999 | 27.6 |
| 01/08/2000 | 27.3 |
| 04/05/2000 | 27.9 |
| 07/11/2000 | 26.5 |
| 08/10/2000 | 27.1 |
| 10/05/2000 | 27.2 |
| 11/16/2000 | 26.7 |
| 01/09/2001 | 27.1 |
| 08/01/2001 | 26.7 |
| 10/04/2001 | 27.2 |

## Installation Information

Date Instrument Was Installed: 09/30/1996 *GEOLOGY*

*Ground Surface El* 48.2

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 49.7 | 49.7 | 36 | 41.4 | 44.2 | 48.2 | |
| *Bottom* | 48.2 | 36 | 26 | 24.7 | 41.4 | 44.2 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

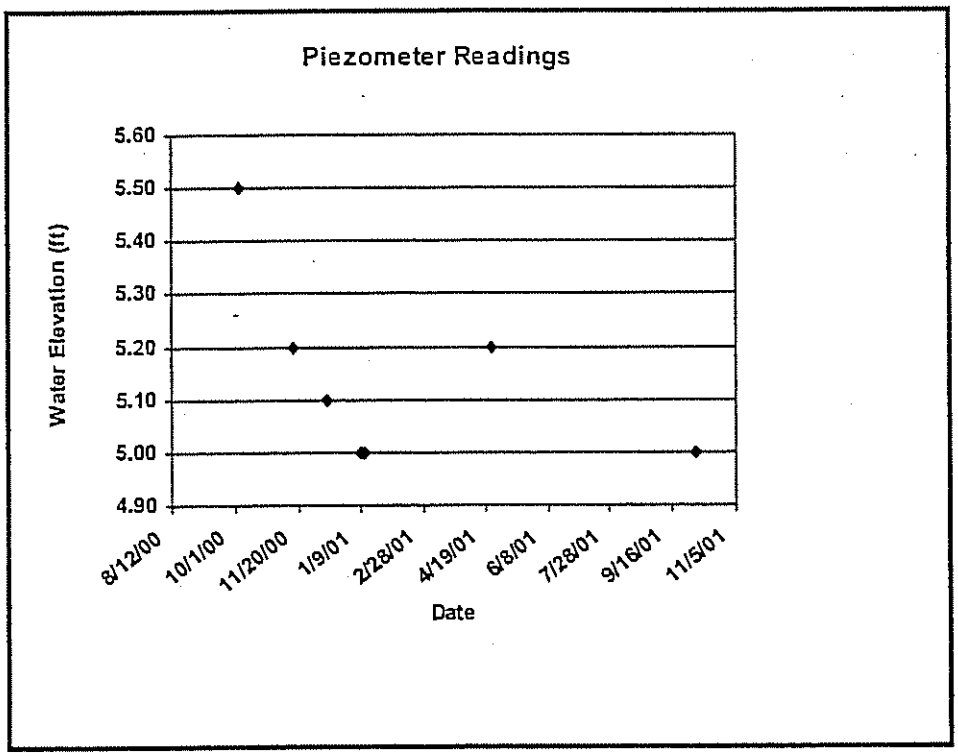
Select Piezometer: P5 PZ 09C

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 627111 |
| Easting | 471498 |
| Phase | P5 |
| Screen El | 4.2 |
| Stratum | BM |

Readings

| | |
|---|---|
| 12/12/2000 | 5.1 |
| 01/12/2001 | 5 |
| 04/24/2001 | 5.2 |
| 10/05/2000 | 5.5 |
| 11/16/2000 | 5.2 |
| 01/09/2001 | 5 |
| 10/04/2001 | 5 |




Installation Information

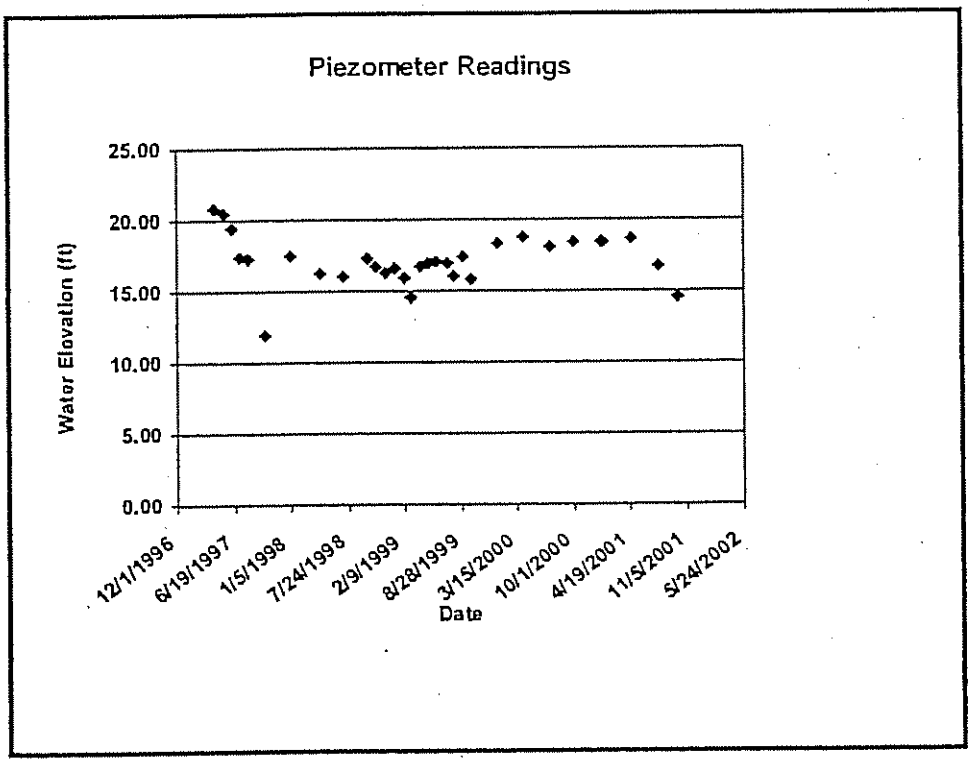
Maintenance Data

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_13A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626401 |
| Easting | 472309 |
| Phase | P5 |
| Screen El | 5 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 18.4 |
| 04/25/2001 | 18.6 |
| 04/11/1997 | 20.8 |
| 05/14/1997 | 20.5 |
| 06/09/1997 | 19.4 |
| 07/10/1997 | 17.4 |
| 08/07/1997 | 17.3 |
| 10/06/1997 | 11.9 |
| 01/07/1998 | 17.5 |
| 04/15/1998 | 16.28 |
| 07/10/1998 | 16 |
| 10/01/1998 | 17.3 |
| 11/02/1998 | 16.7 |
| 12/01/1998 | 16.3 |
| 01/05/1999 | 16.6 |
| 02/08/1999 | 15.9 |
| 03/02/1999 | 14.6 |
| 04/06/1999 | 16.7 |
| 05/04/1999 | 16.9 |
| 06/02/1999 | 17.1 |
| 07/12/1999 | 16.9 |
| 08/04/1999 | 16 |
| 09/07/1999 | 17.4 |
| 10/06/1999 | 15.8 |
| 01/08/2000 | 18.3 |
| 04/05/2000 | 18.8 |
| 07/11/2000 | 18.1 |
| 10/05/2000 | 18.4 |
| 01/09/2001 | 18.4 |
| 08/01/2001 | 16.7 |
| 10/04/2001 | 14.6 |

## Installation Information

Date Instrument Was Installed: 09/27/1996 *GEOLOGY*

*Ground Surface El* 26.2

*NOTES*

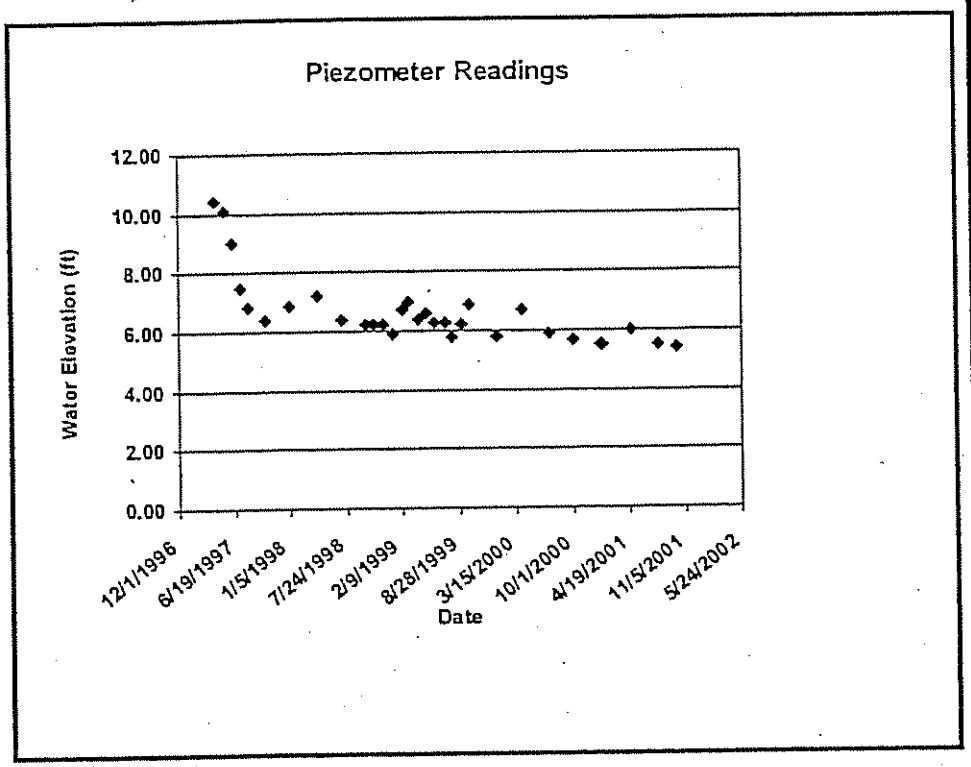
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 27.7 | 27.7 | 15 | 20.2 | 22.2 | 26.2 | |
| *Bottom* | 26.2 | 15 | 5 | 3.2 | 20.2 | 22.2 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, #5 SLOT | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_13B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626406 |
| Easting | 472301 |
| Phase | P5 |
| Screen El | -13 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 5.5 |
| 04/25/2001 | 6 |
| 04/11/1997 | 10.4 |
| 05/14/1997 | 10.1 |
| 06/09/1997 | 9 |
| 07/10/1997 | 7.5 |
| 08/07/1997 | 6.8 |
| 10/06/1997 | 6.4 |
| 01/07/1998 | 6.9 |
| 04/15/1998 | 7.19 |
| 07/10/1998 | 6.4 |
| 10/01/1998 | 6.2 |
| 11/02/1998 | 6.2 |
| 12/01/1998 | 6.2 |
| 01/05/1999 | 5.9 |
| 02/08/1999 | 6.7 |
| 03/02/1999 | 7 |
| 04/06/1999 | 6.4 |
| 05/04/1999 | 6.6 |
| 06/02/1999 | 6.3 |
| 07/12/1999 | 6.3 |
| 08/04/1999 | 5.8 |
| 09/07/1999 | 6.2 |
| 10/06/1999 | 6.9 |
| 01/08/2000 | 5.8 |
| 04/05/2000 | 6.7 |
| 07/11/2000 | 5.9 |
| 10/05/2000 | 5.7 |
| 01/09/2001 | 5.5 |
| 08/01/2001 | 5.5 |
| 10/04/2001 | 5.4 |

## Installation Information

Date Instrument Was Installed: 09/30/1996 *GEOLOGY*

*Ground Surface El* 25.3

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 26.8 | 26.8 | -3 | 2.3 | 4.1 | 25.3 | |
| *Bottom* | 25.3 | -3 | -13 | -14.2 | 2.3 | 4.1 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

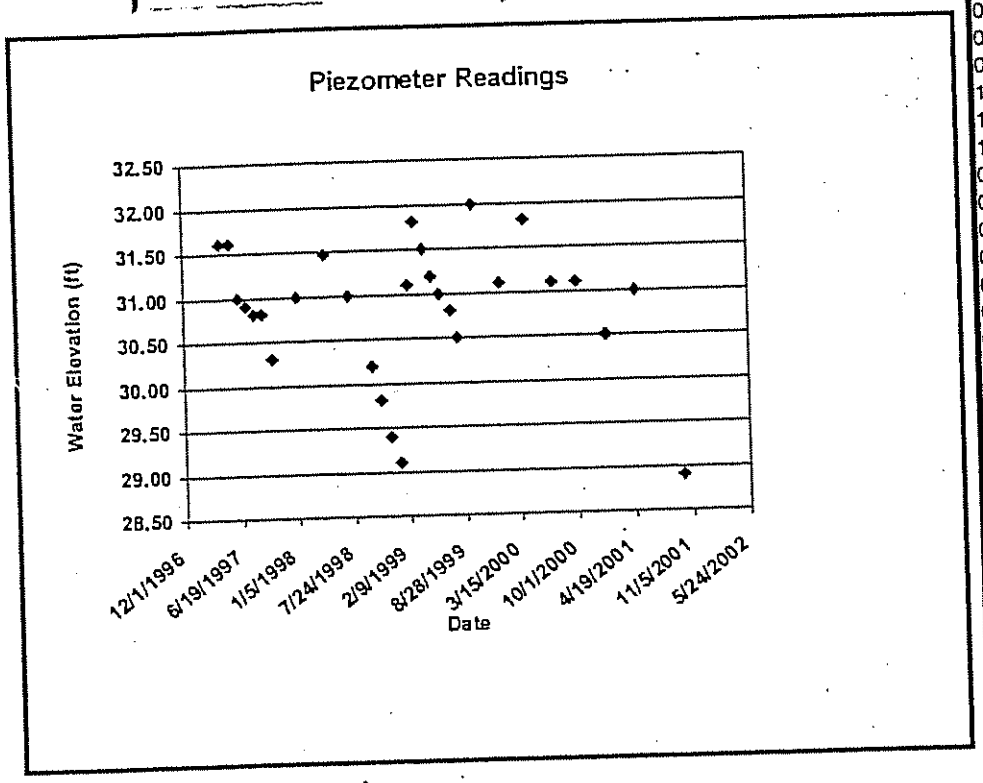
# SECTION 7

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_03A

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626520 |
| Easting | 473395 |
| Phase | P5 |
| Screen El | 22 |
| Stratum | BU |




Readings

| | |
|---|---|
| 01/12/2001 | 30.5 |
| 04/24/2001 | 31 |
| 04/11/1997 | 31.6 |
| 05/14/1997 | 31.6 |
| 06/09/1997 | 31 |
| 07/10/1997 | 30.9 |
| 08/07/1997 | 30.8 |
| 09/05/1997 | 30.8 |
| 10/06/1997 | 30.3 |
| 01/07/1998 | 31 |
| 04/15/1998 | 31.46 |
| 07/10/1998 | 31 |
| 10/01/1998 | 30.2 |
| 11/02/1998 | 29.8 |
| 12/01/1998 | 29.4 |
| 01/05/1999 | 29.1 |
| 02/08/1999 | 31.1 |
| 03/02/1999 | 31.8 |
| 04/06/1999 | 31.5 |
| 05/04/1999 | 31.2 |
| 06/02/1999 | 31 |
| 07/12/1999 | 30.8 |
| 08/04/1999 | 30.5 |
| 10/06/1999 | 32 |
| 01/08/2000 | 31.1 |
| 04/05/2000 | 31.8 |
| 07/11/2000 | 31.1 |
| 10/05/2000 | 31.1 |
| 01/09/2001 | 30.5 |
| 10/04/2001 | 28.9 |

## Installation Information

Date Instrument Was Installed: 11/21/1996

*GEOLOGY*

*Ground Surface El* 41

*NOTES*

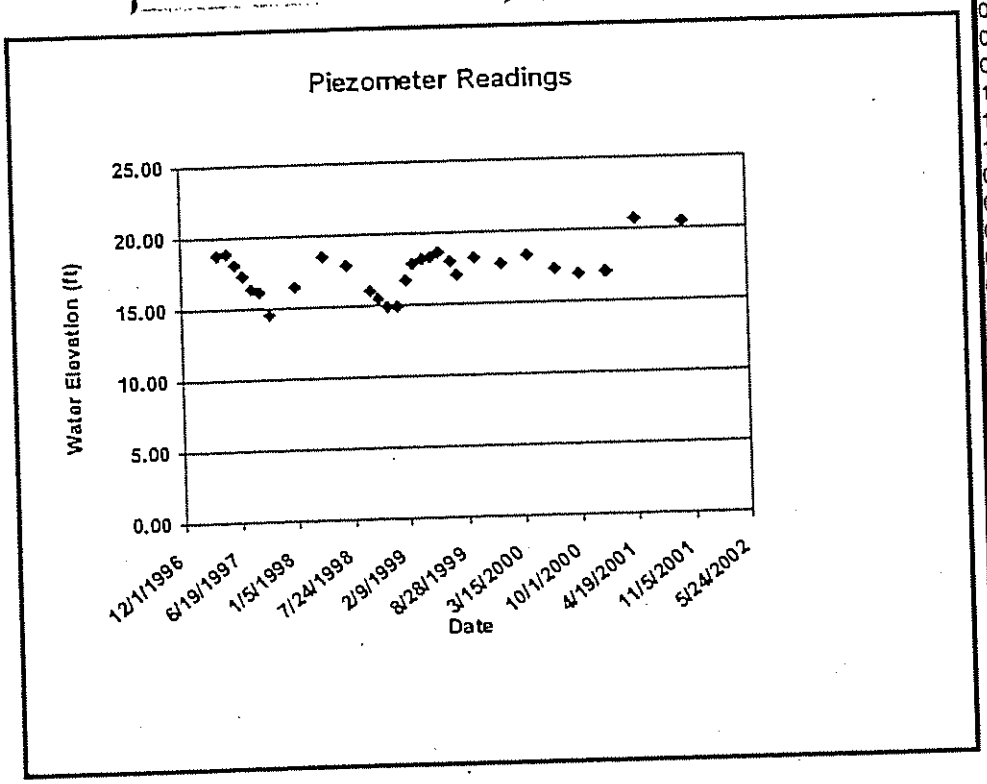
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 42.5 | 42.5 | 32 | 35.5 | 38 | 41 | |
| *Bottom* | 41 | 32 | 22 | 21 | 35.5 | 38 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | | | BENTONITE CHIPS | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_PZ_03B

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626528 |
| Easting | 473400 |
| Phase | P5 |
| Screen El | -3 |
| Stratum | BM |




Readings

| | |
|---|---|
| 01/12/2001 | 17.1 |
| 04/24/2001 | 20.7 |
| 04/11/1997 | 18.7 |
| 05/14/1997 | 18.9 |
| 06/09/1997 | 18.1 |
| 07/10/1997 | 17.3 |
| 08/07/1997 | 16.4 |
| 09/05/1997 | 16.1 |
| 10/06/1997 | 14.6 |
| 01/07/1998 | 16.5 |
| 04/15/1998 | 18.48 |
| 07/10/1998 | 17.8 |
| 10/01/1998 | 16 |
| 11/02/1998 | 15.4 |
| 12/01/1998 | 14.9 |
| 01/05/1999 | 14.9 |
| 02/08/1999 | 16.7 |
| 03/02/1999 | 17.8 |
| 04/06/1999 | 18.2 |
| 05/04/1999 | 18.3 |
| 06/02/1999 | 18.6 |
| 07/12/1999 | 17.9 |
| 08/04/1999 | 17.1 |
| 10/06/1999 | 18.2 |
| 01/08/2000 | 17.7 |
| 04/05/2000 | 18.3 |
| 07/11/2000 | 17.3 |
| 10/05/2000 | 16.9 |
| 01/09/2001 | 17.1 |
| 10/04/2001 | 20.5 |

## Installation Information

Date Instrument Was Installed: 11/21/1996

*GEOLOGY*

*Ground Surface El* 41

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 42.5 | 42.5 | 7 | 14 | 17 | 41 | |
| *Bottom* | 41 | 7 | -3 | -4 | 14 | 17 | |
| *Diam. (in)* | 6 | 0.75 | 2 | 8 | 8 | 8 | |
| *Material* | STEEL | PVC SCH 80 | PVC SCH 40, # 6 SLOT | | BENTONITE CHIPS | | |

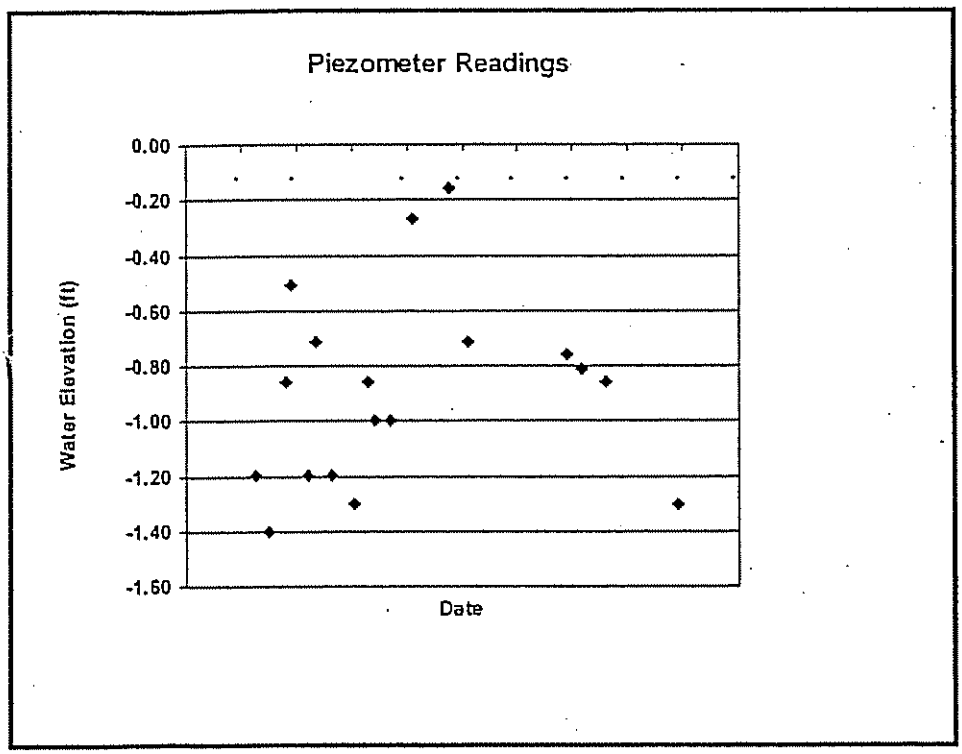
# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5 MW P106

Show/Hide Maintenance Data

Readings

| | | | |
|---|---|---|---|
| Northing | 626339 | | |
| Easting | 473472 | Screen El | -137 |
| Phase | P5 | Stratum | P1 |




## Installation Information

Date Instrument Was Installed: 07/21/1983 GEOLOGY

*Ground Surface El* 28

*NOTES*

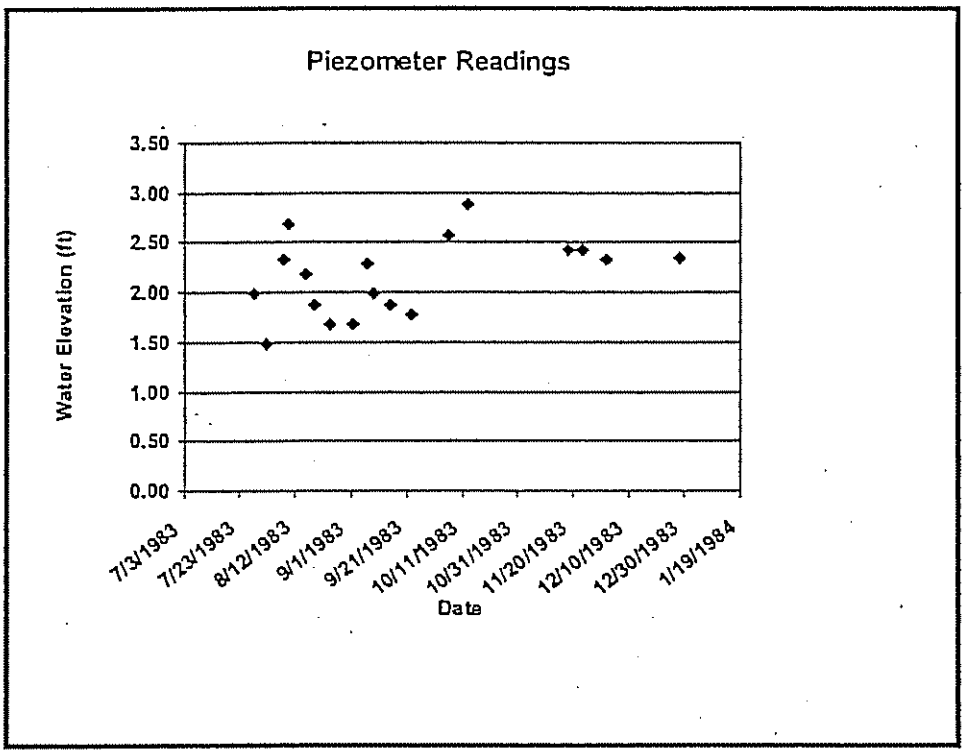
| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 30.1 | 30.1 | -127 | -110 | 25 | | 28 |
| *Bottom* | 28 | -127 | -137 | -137 | -127 | | 25 |
| *Diam. (in)* | 4 | | 4 | | | | |
| *Material* | STEEL | PVC | PVC .01 SLOT | | | | |

# DSWA NSWMC-2 Cherry Island Landfill - Piezometer Report

Select Piezometer: P5_MW_UC106

Show/Hide Maintenance Data

| | |
|---|---|
| Northing | 626324 |
| Easting | 473450 |
| Screen El | -32.4 |
| Phase | P5 |
| Stratum | BL |




Readings

| | |
|---|---|
| 07/28/1983 | 1.98 |
| 08/02/1983 | 1.48 |
| 08/08/1983 | 2.33 |
| 08/10/1983 | 2.68 |
| 08/16/1983 | 2.18 |
| 08/19/1983 | 1.88 |
| 08/25/1983 | 1.68 |
| 09/02/1983 | 1.68 |
| 09/07/1983 | 2.28 |
| 09/09/1983 | 1.98 |
| 09/15/1983 | 1.88 |
| 09/23/1983 | 1.78 |
| 10/06/1983 | 2.58 |
| 10/13/1983 | 2.88 |
| 11/18/1983 | 2.43 |
| 11/23/1983 | 2.43 |
| 12/02/1983 | 2.33 |
| 12/28/1983 | 2.35 |

## Installation Information

Date Instrument Was Installed: 07/20/1983 *GEOLOGY* COLUMBIA

*Ground Surface El* 27.6

*NOTES*

| | *Surface Casing* | *Riser Pipe* | *Screen* | *Sand Pack* | *Seal* | *Backfill* | *Surf. Concrete* |
|---|---|---|---|---|---|---|---|
| *Top* | 30.2 | 30.2 | -6.4 | -1.4 | 24.6 | | 28 |
| *Bottom* | 27.6 | -6.4 | -16.4 | -32.4 | -1.4 | | 25 |
| *Diam. (in)* | 6 | 4 | 4 | 8.75 | 8.75 | | 9 |
| *Material* | STEEL | PVC SCH 40 | PVC SCH 40, #10 SLOT | | BAROID QUICK GEL GROUT | | CEMENT GROUT |