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CROWS LANDING
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QUARTERLY BASEWIDE GROUNDWATER REPORT
Verification Sampling and Analysis – Spring 2003
Eleventh Quarter
NASA Crows Landing Flight Facility
Crows Landing, California

Environmental Remedial Action
Contract Number N62474-98-D-2076
Contract Task Order 0086

Document Control Number 6495
Revision 0

August 14, 2003

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Naval Facilities Engineering Command
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San Diego, California 92132-5190

Submitted by:

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Eleventh Quarter
NASA Crows Landing Flight Facility
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Acronyms and Abbreviations

°C	degree(s) Centigrade
APCL	Applied Physics and Chemistry Laboratory
CPT	cone penetration testing
DWR	California Department of Water Resources – San Joaquin District
EDB	ethylene dibromide
EPA	United States Environmental Protection Agency
ft bgs	feet below ground surface
IRP	Installation Restoration Program
IT	IT Corporation
J	estimated concentration
LCS	laboratory control spike
MS	matrix spike
MSD	matrix spike duplicate
MTBE	methyl-tert butyl ether
NASA	National Aeronautics Space Administration
QC	quality control
RPD	relative percent difference
SAP	Sampling and Analysis Plan
SDG	sample delivery group
TPH	total petroleum hydrocarbon
TtEMI	Tetra Tech EM, Inc.
U	not detected
UST	underground storage tank
VOC	volatile organic compound

1.0 Introduction

Shaw Environmental, Inc. has prepared this report to present the results of quarterly basewide groundwater verification sampling and analysis that are being performed at the National Aeronautic Space Administration (NASA) Crows Landing Flight Facility in Crows Landing, California. These activities supplement field activities performed under the Final Project Plans, Verification Activities at Various Sites (Shaw Environmental Inc., 2003a). This report describes quarterly basewide groundwater monitoring activities conducted during May 2003.

The basewide groundwater monitoring program at the facility consists of collecting groundwater samples from the selected wells within the facility property once every 3 months and analyzing the samples at an off-site laboratory. Basewide water level monitoring is also being conducted to verify groundwater flow conditions. Water level measurements are recorded manually during quarterly sampling events, and continuously in selected wells by electronic water level data loggers. Review of analytical results and groundwater flow conditions will be used to verify the nature and extent of petroleum hydrocarbons and volatile organic compounds (VOCs) at various sites within the facility and to evaluate general groundwater chemistry.

1.1 Organization of the Report

This report is organized into five sections as follows:

- Section 1.0–Introduction: Presents the general approach, the site background and hydrogeologic setting, and an overview of the groundwater monitoring program.
- Section 2.0–Groundwater Monitoring Activities: Presents a summary of previous and current activities, including descriptions of water level monitoring and groundwater sampling, and supplemental information.
- Section 3.0–Current Quarterly Monitoring Results: Presents a summary of groundwater flow conditions and analytical results, as well as results of related activities and additional recent information.
- Section 4.0–Monitoring Plan and Recommendations: Presents information on the next sampling event and any recommendations for future monitoring or remediation activities at the facility.
- Section 5.0–References.

1.2 Site Background and Hydrogeologic Setting

The facility is located in Stanislaus County, California, approximately 80 miles southeast of San Francisco. It covers roughly 1,500 acres of the northwestern San Joaquin Valley between the towns of Patterson and Crows Landing and contains two runways and several support structures

(Figure 1). The facility has been in operation since 1943 and has served as an Army, Navy, Air Force, and Coast Guard training facility as well as a NASA research and development site.

Environmental investigations to determine impacts to soil and groundwater from facility activities began in 1987. As part of the investigation activities, monitoring wells were installed at selected locations where groundwater impact was suspected. The sites include Installation Restoration Program (IRP) Sites 11 and 17, Underground Storage Tank (UST) Cluster 1, UST Cluster 2, UST 109, and UST 117. To evaluate background conditions, monitoring wells were also installed at locations where groundwater impact is not suspected. The locations of the impacted sites and monitoring wells included in the spring 2003 quarterly event are shown on Figure 2.

The San Joaquin Valley overlies approximately two-thirds of the Central Valley Aquifer System, a single heterogeneous aquifer that contains water under unconfined conditions in the upper few hundred feet and grades to confined conditions with depth (Planert and Williams, 1995). At most locations, the Central Valley Aquifer System is composed of more than 50 percent fine-grained material. The largest and most continuous fine-grained unit is the Corcoran Clay Member of the Tulare Formation, which underlies much of the western San Joaquin Valley.

The facility is located along the western edge of the San Joaquin Valley, approximately 1 mile west of the San Joaquin Fault and the adjacent Coast Ranges (Chapman, et al., 1999). Surficial deposits of unconsolidated clay, silt, sand, and gravel form a complex of coalescing alluvial fan and terrace deposits that originated in the Coast Ranges and were deposited by Little Salado Creek, Salado Creek, and Crow Creek from the Pleistocene to the present (Sowers et al, 1993; Higgins and Dupras, 1993). The Corcoran Clay is located approximately 220 feet below ground surface (ft bgs) and is approximately 80 feet thick at the facility location (Hotchkiss, 1972; Page, 1986).

The water table surface generally conforms to the topography of the northwestern San Joaquin Valley and slopes from the Coast Ranges toward the San Joaquin River at an approximate gradient of 5 to 25 feet per mile (Phillips, et al., 1991; California Department of Water Resources, San Joaquin District [DWR], 1998). Depth to groundwater varies seasonally, but is approximately 80 ft bgs in the southwest portion of the facility and 40 ft bgs in the northwest portion of the facility. Monitoring wells at the facility have been installed in four designated depth zones as follows:

- Shallow zone—screened interval at or near the water table
- Mid-shallow zone—screened interval approximately 50 feet below the water table
- Mid-deep zone—screened interval approximately 125 feet below the water table
- Deep zone—screened interval approximately 200 feet below the water table

A recent review of historical reports and recently conducted deep soil borings indicate that previously installed deep zone monitoring wells are screened within the Corcoran Clay. Newly installed deep monitoring wells are screened from approximately 200 to 220 ft bgs (approximately 150 feet below the water table) in a permeable sand and gravel unit that is located directly above the Corcoran Clay. Most previously installed deep zone monitoring wells have been removed from the monitoring program and are being considered for closure.

1.3 Overview of Quarterly Monitoring Program

From 1994 through 1998, groundwater samples were collected periodically and analyzed for the chemicals of concern based on former uses of specific sites. The results of the historical basewide groundwater sampling can be found in the annual groundwater monitoring reports (Tetra Tech EM, Inc. [TtEMI], 1996, 1997, and 1998). Since March 1998, additional wells have been installed at selected sites, and samples have been collected as part of site-specific remediation technology pilot testing and site remediation activities.

The current quarterly basewide groundwater monitoring program consists of collecting groundwater samples for laboratory analysis every 3 months. Results will be used to verify the lateral and vertical distribution of petroleum hydrocarbons and VOC concentrations in groundwater at the facility. The number and frequency of sampling activities, as well as the specific laboratory analysis conducted, will be evaluated and modified periodically to obtain meaningful information to support effective evaluation of plume migration. Changes in the monitoring program will be discussed with the Regional Water Quality Control Board and documented in the quarterly reports prior to implementation.

This report contains the results of the eleventh quarterly sampling event, which was conducted from May 12, 2003 to May 15, 2003.

2.0 Groundwater Monitoring Activities

This section presents a brief summary of field methods and activities associated with groundwater monitoring and a summary of relevant previous and concurrent activities at the facility.

2.1 Summary of Previous Quarterly Monitoring Activities

Quarterly groundwater monitoring was previously performed from 1994 to 1998 (TtEMI, 1998). The monitoring program included IRP Site 11, IRP Site 17, UST Cluster 1, UST Cluster 2, UST 109, and UST 117. At least nine sets of quarterly groundwater samples were collected from these sites during this period.

The more recent quarterly groundwater monitoring program began in the fall of 2000 to evaluate and monitor current conditions. The results from these quarterly sampling events (fall 2000 through fall 2002) provide adequate information for evaluating the nature and extent of contamination at the project sites. Discrete groundwater sampling analysis, deep soil borings, and additional well installation were conducted in conjunction with the quarterly monitoring program and other ongoing activities to supplement the evaluation of the nature and extent of impacted groundwater associated with the Administration Area Plume. Selected new wells were incorporated into the quarterly monitoring program where appropriate.

A summary of the data from investigations and monitoring conducted prior to fall 2002 is included in the Second Annual Basewide Groundwater Verification Sampling and Analysis Report (IT Corporation [IT], 2002b). The annual reports also include an analysis of trends in historical and current data. Data from the two most recent quarterly sampling events are presented in the Quarterly Basewide Groundwater Report, Verification Sampling and Analysis - Fall 2002, Ninth Quarter (IT, 2003) and Quarterly Basewide Groundwater Report, Verification Sampling and Analysis- Winter 2003, Tenth Quarter (Shaw Environmental, Inc., 2003b).

2.2 Current Quarterly Monitoring Activities

Current monitoring activities consist of a groundwater elevation survey, basewide water level monitoring, and collection of groundwater samples for chemical analysis.

2.2.1 Water Level Survey

On May 7, 2003, water levels in 36 wells within the facility boundary were measured and recorded. The field notes are included in Appendix A and the results are summarized in Table 1.

2.2.2 Basewide Water Level Monitoring

In December 2000, four electronic data loggers were installed to record water levels in shallow wells throughout the facility: CL1-MW-10(S), 117-MW-05(S), CL2-MP-03B, and 11-MW-03(S). Basewide water level monitoring was expanded in February 2001 to include four additional wells: 109-MW-01(S), 11-MW-05(S), BG-MW-01(S), and CL1-MW-09(S). In September 2001, the data logger in well 11-MW-05(S) was relocated to well BG-MW-03(S) to allow for a better evaluation of regional water levels. In April 2003, data loggers were placed in four additional wells (17-MW-24(MS), 17-MW-25(S), and 17-MW-25(MS) located near the eastern property boundary and 17-MW-32(MS) (an upgradient mid-shallow well) to evaluate potential effects on groundwater levels and the potentiometeric surface of the mid-shallow interval due to pumping from a water supply well located off site. Water levels are acquired hourly and the data are downloaded monthly. Hydrographs of the data collected over the quarter from February 2003 to May 2003 for all data loggers are presented in Appendix B.

2.2.3 Groundwater Sampling

Groundwater samples were collected from the monitoring wells listed on Table 2 between May 12 and May 15, 2003. Groundwater samples could not be collected from monitoring well CL2-MP-02A or CL2-MP-05A, which were dry or very low during this sampling event. Samples were instead collected from wells CL2-MP-02B and CL2-MP-05B, which are screened at deeper intervals at the same respective locations.

Sampling was performed by Shaw personnel according to the approved Sampling and Analysis Plan (SAP) (Shaw Environmental, Inc., 2003b). All wells were sampled using 2-inch submersible pumps and micro-purging techniques. The pump intake was set at approximately the well screen midpoint and operated at a low-flow pumping rate of approximately 250 to 500 milliliters per minute. Dedicated, clean tubing was used for purging and sample collection from each well.

Water quality parameters (pH, conductivity, temperature, dissolved oxygen, and turbidity) were measured every 3 to 5 minutes while purging and were recorded on the Groundwater Monitoring Data Forms provided in Appendix A. Samples were collected after pH, conductivity, temperature, and dissolved oxygen stabilized within the criteria specified in the SAP. Samples were collected from the discharge of the pump directly into sample containers provided by the laboratory and were analyzed for the following parameters:

- VOCs including methyl-tert-butyl-ether (MTBE) and ethylene dibromide (EDB) by U.S. Environmental Protection Agency (EPA) Method 8260B
- Total petroleum hydrocarbons (TPH) as gasoline and jet propulsion fuel grade 4 by EPA Method 8015B

- TPH as diesel and motor oil by EPA Method 8015B. Samples were prepared using silica gel cleanup by EPA Method 3630C.

Quarterly groundwater samples were sent to Applied Physics and Chemistry Laboratory (APCL) in Chino, California, for all analyses. APCL is a California-certified laboratory that has successfully completed a Naval Facilities Engineering Services Center assessment. The analytical results are included in Appendix C and shown on Plates 1 through 4.

2.2.4 Supplemental Information

Additional field activities and observations are discussed below.

Additional Field Activities

An 8-hour pumping test and a 72-hour pumping test were conducted in March 2003 at 117-EX-03 to determine hydrogeologic parameters of the mid-shallow interval at UST Site 117. A constant pumping rate of 4 gallons per minute was sustained during the 72-hour pumping test, and the radius of influence was observed as far as 195 feet from the pumped well. The pumping test results indicated a transmissivity of approximately 700 square feet per day (and an estimated groundwater velocity of 0.12 to 0.6 feet per day) for the thin, discontinuous, overlapping sand beds that are present in an approximately 30 foot-thick interval at the mid-shallow level. These sand beds are interbedded with, and confined above and below by clay and silt beds. The pumping test data confirm that groundwater in these sand beds is under confined or leaky confined conditions. Based on the pumping test results, 117-EX-03 will be used for the continuation of the transitional groundwater extraction activities at UST Site 117, and extraction will be discontinued at wells 117-MW-02(S) and 117-MW-03(MS).

Discrete groundwater sampling was conducted in May 2003 to further define the extent of the Administration Area Plume near the property boundary along Bell Road. Two groundwater samples were collected from the mid-shallow interval at selected locations. These samples were analyzed for petroleum hydrocarbons and VOCs. Analytical results for the discrete groundwater samples are included in Appendix C. The data are also included on Plate 2. Cone penetration testing (CPT) data were collected during the discrete sampling to provide information about the stratigraphy of the mid-shallow zone and was used to confirm the depth of groundwater sample collection. The CPT report is included in Appendix D, and these results confirm previous continuously cored boring results. Additional discrete groundwater sampling may be conducted if necessary as data gaps are identified.

Sampling Observations

The following observations were noted during groundwater sampling:

Well	Observations
17-MW-35(D)	Water color gray with sulfur odor
117-MW-10(S)	Sulfur and hydrocarbon odor

The cause of the sulfur odor and the gray color of the water is unknown, but is potentially caused by bioactivity in the wells. Similar conditions were noted during the fall 2002 (IT, 2003) and winter 2003 sampling events (Shaw, 2003b).

Initial samples collected from wells 17-MW-32(MS), 109-MW-01, and CL1-MW-18(D) for extractable petroleum hydrocarbon analysis were lost when sample bottles broke during shipping to the laboratory. Samples were initially collected on May 14, 2003. Additional samples were collected from these wells for extractable petroleum hydrocarbon analysis on May 15, 2003 and sent to the laboratory.

Similar to what has occurred during previous sampling events, water levels dropped below the pump intake at several wells during purging. The micro-purge technique could not be effectively implemented a these wells. These wells were allowed to recharge prior to sample collection.

Extractable Petroleum Hydrocarbon Sample Preparation

Extractable petroleum hydrocarbon results from previous sampling events indicated the presence of discrete compounds in the diesel and motor-oil ranges that did not represent petroleum hydrocarbons. Further laboratory analysis indicated that these compounds may be naturally occurring organics. Starting in the winter 2001 sampling event, silica gel cleanup (EPA Method 3630C) was added to the analytical procedures to remove any naturally occurring compounds from the sample extracts prior to petroleum hydrocarbon analysis. Discrete compounds are still detected in the diesel and motor-oil ranges, as noted in the laboratory reports (Appendix C).

2.3 Wastewater Disposal

All purged groundwater was temporarily stored in mobile tanks mounted on the sampling trucks during field activities. This purge water was combined with other facility liquid waste streams in a storage tank located at the UST Cluster 1 site for proper disposal. The wastewater will be properly disposed when the storage tank is filled. Documentation of disposal of the wastewater will be included in the final report for groundwater extraction activities at UST Cluster 1.

3.0 Current Quarterly Monitoring Results

The results of groundwater level measurements and chemical analysis of groundwater samples are presented and discussed in this section.

3.1 Groundwater Level Monitoring

Groundwater elevations have been calculated based on field measurements and are presented in Table 1. These data represent water levels measured and recorded from wells throughout the facility on May 7, 2003.

3.1.1 Groundwater Flow Direction and Gradient

Groundwater elevations from May 7, 2003 were used to create a water table elevation map (Figure 3) and potentiometric surface maps (Figures 4 through 6). The maps show that the groundwater gradient is generally to the northeast, except the mid-deep zone map, which shows an apparent eastward gradient based on only three data points from wells that are not screened in a continuous permeable unit. The northeast groundwater gradient direction has been shown to be consistent for eleven consecutive quarterly monitoring events. The water level in 117-MW-08(MD) decreased by over 3 feet since the previous quarter. The decreased water level at this well causes the apparent eastward gradient on Figure 5 and may be due to local drawdown caused by pumping east of the site. The four maps also show that hydraulic head decreases with depth. The subsurface above the deep zone is dominated by clay and silt beds that act as barriers to vertical flow and cause these differences in hydraulic head with depth (Planert and Williams, 1995).

The water table surface generally conforms to surface topography (Figure 1) and has a gradient that is less steep (e.g., more gradual) than surface topography. Shallow groundwater flows to the northeast, toward the San Joaquin River. The flow direction is consistent with the regional pattern for the area between Patterson and Crows Landing (Phillips, et al., 1991; DWR, 1998). During the spring and summer, drawdown due to pumping of irrigation wells locally effects the shape of the water table, but does not cause groundwater gradient reversals as has been suggested in previous reports (TtEMI, 1998).

3.1.2 Basewide Water Level Monitoring Results

Groundwater level monitoring results from data loggers were graphed and are presented as hydrographs from February to May 2003 in Appendix B. Generally the hydrographs show steady groundwater levels from February until the last week of April and the first week of May. All the hydrographs except those from the UST Cluster 1 area show a distinctive decline in water levels,

starting approximately April 29, 2003, that appears to corresponds with the beginning of the irrigation season.

The data logger in 11-MW-03(S) was found to be damaged and could not be downloaded. This data logger is currently being repaired.

3.2 Groundwater Analytical Results

Groundwater samples were analyzed for petroleum hydrocarbons by EPA Method 8015B and VOCs by EPA Method 8260B. Groundwater analytical results for all samples are presented in Appendix C and summarized in Table 3. Although the diesel and motor oil sample extracts were prepared using silica gel cleanup procedures (EPA Method 3630C), several of the samples collected for analysis for extractable petroleum hydrocarbons still contained detectable concentrations of discrete compounds. The analytical data indicate that the compounds detected were not petroleum hydrocarbons.

Concentrations of selected petroleum hydrocarbons and related VOCs detected at Site 11 are shown on Figure 7. The results are consistent with previous results and indicate that groundwater at Site 11 is not impacted by petroleum hydrocarbons or VOCs.

Concentrations of benzene and purgeable TPH detected at UST Cluster 2 are shown on Figure 8. The extent of benzene impacted groundwater presented on Figure 8 is based on all available data for samples collected after January 1998. The spring 2003 results are consistent with recent results from the winter 2003 sampling event and indicate that the extent of groundwater impacted by VOCs at UST Cluster 2 is much smaller than what was presented in previous monitoring reports (TtEMI, 1998) and the results from the first year of the recent quarterly sampling (IT, 2002a). Purgeable TPH was detected in one well during the spring 2003 quarterly event at a concentration near the reporting limit. The concentrations are low and have not been consistently detected in the well in the past. An estimated extent of purgeable TPH impact was included on Figure 8. The release of petroleum hydrocarbons at UST Cluster 2 will be further evaluated in the closure report for UST Cluster 2.

Concentrations of selected petroleum hydrocarbons and VOCs detected at the Administration Area Plume for each depth interval are shown on Plates 1 through 4. The results for detected petroleum and nonpetroleum VOCs are relatively consistent with the results presented in the second annual report (IT, 2002b) and subsequent quarterly reports (IT, 2003; and Shaw Environmental, Inc, 2003b).

Benzene, 1,2-dichloroethane, and chloroform have consistently been detected in monitoring well 17-MW-25(MS), a mid-shallow well located on Bell Road near the eastern property boundary (Plate 2). Only chloroform has been detected in 17-MW-25(S), a shallow well at the same

location (Plate 1). These wells were installed in 2001. The data do not indicate a recent expansion of the petroleum hydrocarbon plume, but provide additional data on the actual extent of the plume. An extraction well and four piezometers were installed in December 2002 and January 2003 downgradient of UST Site 117 to evaluate the extent of the plume in the mid-shallow zone near the property boundary and to determine potential influences on the plume migration. The results of the initial sampling and analysis from the extraction well and piezometers and the most recent results from the extraction well are included on Plate 2 and provide additional information for defining the plume boundary. Additional discrete groundwater samples were collected along Bell Road to further define the Administration Area Plume. The data from the discrete sampling are included on Plate 2. A demonstration project is being planned to evaluate a treatment alternative to minimize the spread of petroleum hydrocarbons in groundwater near the property boundary.

Chloroform has been consistently detected in groundwater samples from several monitoring wells and Hydropunch® locations at UST Cluster 1. Therefore, the chloroform extent contours on the Administration Area Plume maps, which showed an isolated plume near IRP Site 17, were adjusted in the second annual report (IT, 2002b). Data from the winter and spring 2003 sampling events support the change in chloroform contour lines and provide further evidence that chloroform is present in groundwater at UST Cluster 1. Further evaluation of available data is required to determine the potential source of the chloroform at UST Cluster 1. One potential source of the chloroform is from the degradation of carbon tetrachloride, which may have been released at UST Cluster 1 and degraded over time under the conditions present. Evidence indicates that solvents (acetone, 2-butanone, etc.) were released from the dry well at UST Cluster 1 and chloroform is a biodegradation product of carbon tetrachloride, a solvent that is present in the groundwater downgradient of UST Cluster 1 in the Administration Area Plume. A discussion of potential sources of the chloroform at UST Cluster 1 was included in the Appendix D of the second annual report (IT, 2002b).

The analytical data from the spring 2003 quarterly sampling event do not indicate any significant recent changes in the nature and extent of the impacted groundwater at the facility. Trends in the data will be evaluated and included in the third annual report.

3.3 Data Quality Assessment

Thirty-three (33) primary and four field duplicate groundwater samples were collected from May 12 through May 14, 2003, and were sent to APCL for analysis.

3.3.1 Data Quality Indicators

Analytical data for this project were assessed in terms of precision, accuracy, representativeness and comparability, based on the requirements of the analytical methods and the SAP (Shaw Environmental, Inc., 2003b). A summary of qualified data is presented in Appendix C.

The analytical data were reported in three sample delivery groups (SDGs) from APCL, shown below. Two SDGs were validated at EPA Level III and one SDG, number 03-3221, was validated at EPA Level IV. The findings of the data validation process are summarized in this section.

APCL SDG: 03-3221	APCL SDG: 03-3246	APCL SDG: 03-3281
11-MW-03S	17-MW-03MS	17-MW-27MS
11-MW-04S	17-MW-18MD	17-MW-28S
17-MW-24S	17-MW-25MS	17-MW-29MS
17-MW-24MS	17-MW-25S	17-MW-33D
CL1-MW-04S	17-MW-31S	17-MW-34D
CL1-MW-05S	17-MW-32MS	17-MW-35D
CL1-MW-06S	117-MW-08MD	117-MW-10S
CL2-MW-05MS	117-MW-13S	CL1-MW-09S
CL2-MP-02B	117-MW-14MS	CL1-MW-12MD
CL2-MP-05B	109-MW-01S	CL1-MW-14MS
NASA-SW-03	CL1-MW-17MD	CL-99-55 (Field Duplicate of 17-MW-34D)
CL99-53 (Field Duplicate of 17-MW-24S)	CL1-MW-18D	TB-05
TB-01	CL-99-54 (Field Duplicate of 17-MW-03MS)	TB-06
TB-02	CL99-56 (Field Duplicate of 17-MW-31S)	
	TB-03	
	TB-04	

3.3.2 Level III Data Validation

The following laboratory quality control (QC) parameters were evaluated during Level III and Level IV validation process:

- Sample receipt, preservation and holding times (representativeness)
- Method blanks
- Surrogate standard recoveries (accuracy)
- Calibrations (initial and continuing)
- Internal standards (EPA Method 8260B only)

- Laboratory control spikes (LCSs)/laboratory control spike duplicates (precision and accuracy)
- Interference check sample and serial dilutions (EPA Methods 6010B/7000 only)
- Matrix spikes (MSs)/matrix spike duplicates (MSDs) (precision and accuracy)
- Recalculation of sample results from raw laboratory data (Level IV only)

3.3.3 Sample Receipt, Temperature, and Holding Times

All sample shipments were received at the laboratory within the EPA-specified temperature range of 2 to 6 degrees Centigrade (°C). Sample preservation was according to the EPA method requirements. All holding times were met for all analyses.

3.3.4 Method Blanks and Trip Blanks

A method blank is a matrix equivalent sample (i.e., water or soil) used to check reagent or process introduced contamination during the method preparation and analysis. Trip blanks are 40 milliliter volatile organic analysis vials of organic-free water, which are kept with the field sample containers from the time they leave the laboratory until the time they are returned to the laboratory. The purpose of trip blanks is to determine whether samples have been contaminated with VOCs during transportation or sample collection. The method blanks and trip blanks did not contain any analytes of interest at or above the method reporting limits for all analyses, with the following exceptions:

TPH as Gasoline (EPA Method 8015B)

Low levels of gasoline-range organic compounds were detected in the method blanks and trip blanks of all three SDGs and some of the associated project samples. The low concentrations of gasoline represent miscellaneous peaks in the gasoline range and not true gasoline patters. The sample results were reported as "not detected" (U) if the concentrations were less than 5 times the associated blank concentrations.

TPH as Motor Oil (EPA Method 8015B)

A low concentration of motor-oil range organic compounds was detected in the method blank for SDG 03-3221. The motor oil result for sample CL2-MP-05B was less than five times the blank concentration and was reported as not detected (U).

VOCs (EPA Method 8260B)

Methylene chloride is a common laboratory contaminant that was detected in the method blanks and trip blanks of all three SDGs. 4-Methyl-2-pentanone was also detected in all three trip blanks. Both methylene chloride and 4-methyl-2-pentanone were detected at low concentrations in associated project samples. If the concentrations of methylene chloride and 4-methyl-2-pentanone

in the samples were less than five times the associated blank concentrations the results were reported as not-detected (U).

3.3.5 Surrogate Standards

Surrogate standards are added prior to extraction and analysis for EPA Methods 8260B and 8015B to monitor the efficiency of the extraction and the accuracy of the analysis for each sample. All of the surrogate spike recoveries were within the laboratory-specified control limits for all samples.

3.3.6 Calibrations

The requirements for initial and continuing calibrations were met for all analyses, with the following exceptions for EPA Method 8260B:

- The percent relative standard deviation for tert-butyl alcohol was 33.6, which did not meet the method-specified criteria of less than 15 percent. Samples in SDGs 03-3246 were affected, and results were qualified as estimated concentrations (UJ) for this analyte. Data usability was not affected.
- The percent difference for carbon disulfide, 2-butanone, bromomethane and tert-butyl alcohol did not meet the method-specified criteria in one or more of the continuing calibration standards for all three SDGs. Samples associated with these continuing calibration standards were qualified as estimated concentrations (J/UJ) for these analytes. Data usability was not affected.

3.3.7 Internal Standards

Internal standards are usually synthetic compounds, which are similar in chemical behavior to the target analytes. They are added to samples at the time of instrument analysis and are used to quantify results through internal standard calibration procedures. Internal standard recoveries are used to correct for injection and detector variability. All internal standard areas and retention times for EPA Method 8260B were within the method-specified criteria.

3.3.8 Laboratory Control Samples

LCSs are blank matrix equivalent spiked samples that are carried through the entire method preparation and analysis. They are used to evaluate the accuracy and precision of the preparation and analysis without matrix interference. LCSs are prepared with each batch of samples for every analysis. All the LCS recoveries were within the specified control limits for all analyses.

3.3.9 Matrix Spikes and Matrix Spike Duplicates

MS and MSD are representative matrix samples spiked with known concentrations of analytes and carried through the entire method preparation and analysis. They are used to evaluate any bias introduced to the method due to matrix interferences, and to measure accuracy (percent

recovery) and precision using Relative Percent Difference (RPD) of recoveries for each analytical batch. Three site-specific groundwater samples, from wells 17-MW-28S, CL1-MW-17MD, and CL1-MW-04S, were used for MS/MSD analyses. All percent recoveries and RPDs were within the specified control limits for all analyses.

3.3.10 Field Duplicates

Four field duplicates were collected and analyzed during this sampling event. The field duplicate results are summarized in Appendix C and indicate acceptable sampling and analytical precision, with the exception of one pair 17-MW-34D and CL-99-55. The sample result (17-MW-34D) for carbon tetrachloride was 8.1 micrograms per liter, which is consistent with historical data from this well; however, carbon tetrachloride was not detected in the duplicate sample (CL-99-55). Based on this discrepancy and the historical results for well 17-MW-34(D), it is assumed that there was a field error in identifying the sample duplicate pairs. The duplicate sample CL-99-55, is most likely a duplicate of well 17-MW-35(D) and not 17-MW-34(D). Field documentation procedures will be reviewed with the Sampling Technicians prior to the August 2003 quarterly sampling event to eliminate these types of errors in the future.

3.4 Chemical Data Quality and Usability

In summary, all of the QC data are indicative of acceptable analytical method performance. The anomalies mentioned above do not invalidate the data for its intended use. All of the data are valid and usable. Copies of analytical data reports are provided in Appendix C.

4.0 Monitoring Plan and Recommendations

The results from the spring 2003 sampling event provide additional information on the nature and extent of contamination at the investigation sites. These results confirm impact to groundwater from releases of petroleum hydrocarbons, chlorinated solvents, and nonchlorinated solvents, and indicate that the extent of contamination at the Administration Area may be greater than previously assumed based on historical data available, but the extent of contamination at UST Cluster 2 may be less than previously assumed. The data do not indicate a recent expansion of the Administration Area Plume but provide additional data on the actual extent of the plume. Continued routine monitoring of petroleum hydrocarbons and VOCs is required to monitor changes in the plumes.

The monitoring wells currently included in the quarterly sampling program provide sufficient information to evaluate the changes in concentrations of compounds of concern at the individual site source areas as well as to monitor the extent of plume migration. Wells to be sampled during the Summer 2003 event are listed on Table 4 and shown on Figure 9. Two wells, 117-MW-02(S) and 117-MW-03(MS), at UST Site 117 were added to the quarterly program because transitional groundwater extraction activities have been discontinued at these wells and initiated at 117-EX-03. Two wells, 17-MW-26(S) and 17-MW-26(MS), downgradient of the former oxidation pond area of the former sewage treatment plant (part of IRP Site 11A), were added to the quarterly program in order to complete the characterization of groundwater in this area.

Sampling and analysis for perchlorates by EPA Method 314.0 will be conducted at selected wells to verify if groundwater is impacted at suspected sites. Perchlorates were historically used as a component of rocket fuels and are found in flares and commercial explosives. Perchlorates may have been stored or used at the facility due to the historical storage of munitions. The following sites and wells will be monitored for perchlorates:

Site	Wells	Comments
IRP Site 11	11-MW-03(S) 11-MW-04(S)	Ordnance and explosive material discovered on site
IRP Site 11A	17-MW-26(S) 17-MW-26(MS)	Undocumented waste disposal area
UST Cluster 2	CL2-MP-02B	The Initial Assessment Study (Naval Engineering and Environmental Support Activity, 1984) identified a former rocket assembly area that was reportedly constructed in 1952 in the general vicinity of UST Cluster 2.
Upgradient of Administration Area Plume	CL1-MW-05(S) CL1-MW-06(S)	Suspected uncontrolled waste disposal activities at former dry wells
Downgradient of Administration Area Plume	CL1-MW-04(S) 17-MW-25(S) 17-MW-25(MS)	

Additional discrete groundwater sampling and well installation may be completed to better define the current extent of the Administration Area Plume. Any additional wells that are installed may be incorporated to enhance the monitoring program. In addition, previously monitored wells may be removed from the program if it is determined that these wells no longer provide the data that were intended. Any additional changes will be discussed in subsequent quarterly monitoring reports. Regulatory agencies will be involved in decisions to make future changes to the monitoring program before they are implemented.

5.0 References

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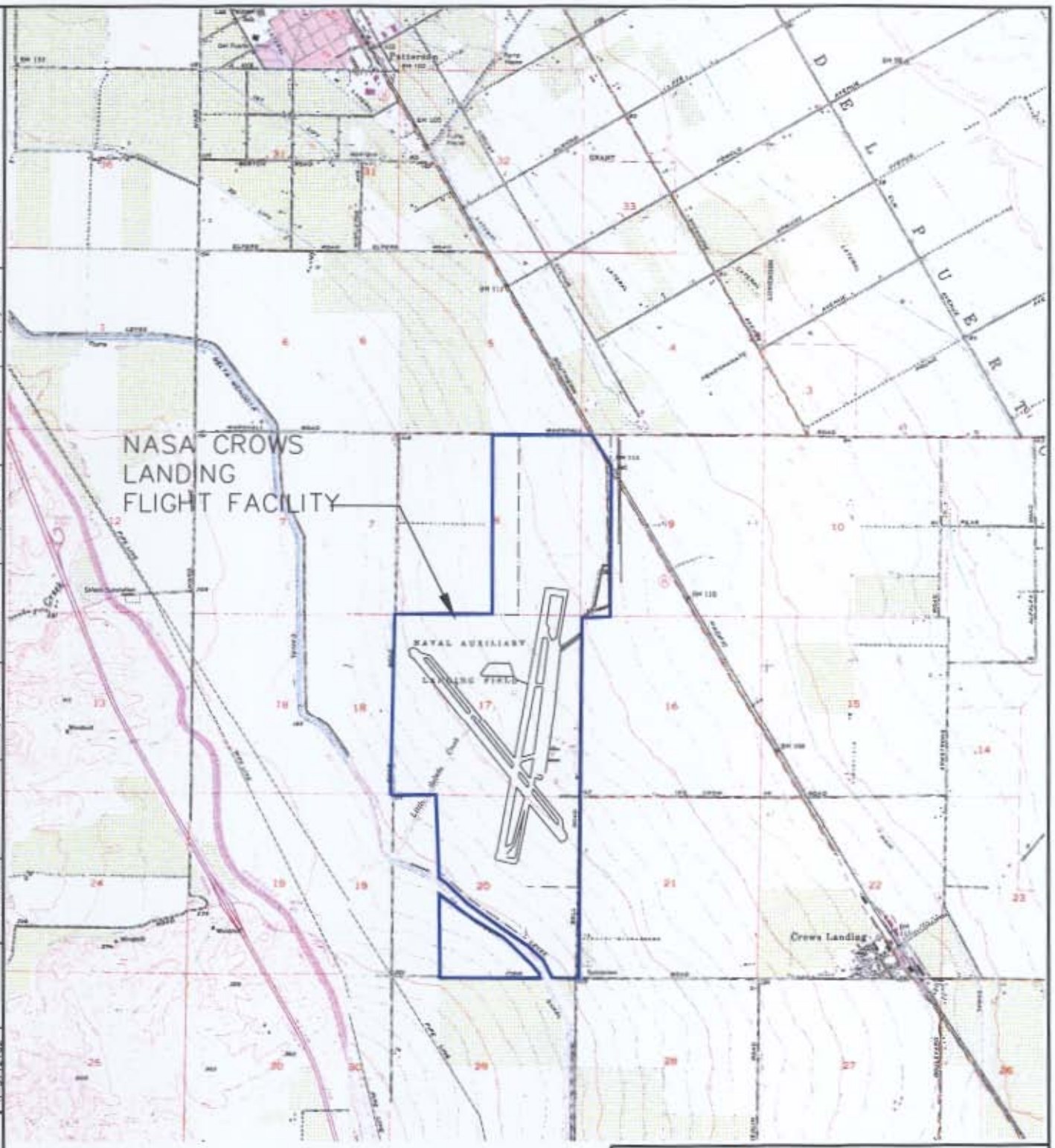
Figures

DRAWING NUMBER	APPROVED BY		CHECKED BY		DRAWN BY		OFFICE	X-REF	IMAGE
836557-A29	BH	06/2/03	DP	06/2/03	SJZ	06/2/03	Concord		h=371201 h=371202



SCALE

0 4000 8000 FEET

REFERENCE: 7.5' USGS TOPOGRAPHIC QUADRANGLES OF: PATTERSON, CA. PHOTOREVISED 1971, PHOTOINSPECTED 1978; CROWS LANDING, PHOTOREVISED 1980. ORIGINAL SCALE 1:24,000.

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FIGURE 1

FACILITY LOCATION MAP

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	OFFICE	X-REF	IMAGE
836557-B31	BH 7/31/03	TFB 7/31/03	RB 7/31/03	CONCORD	---	---

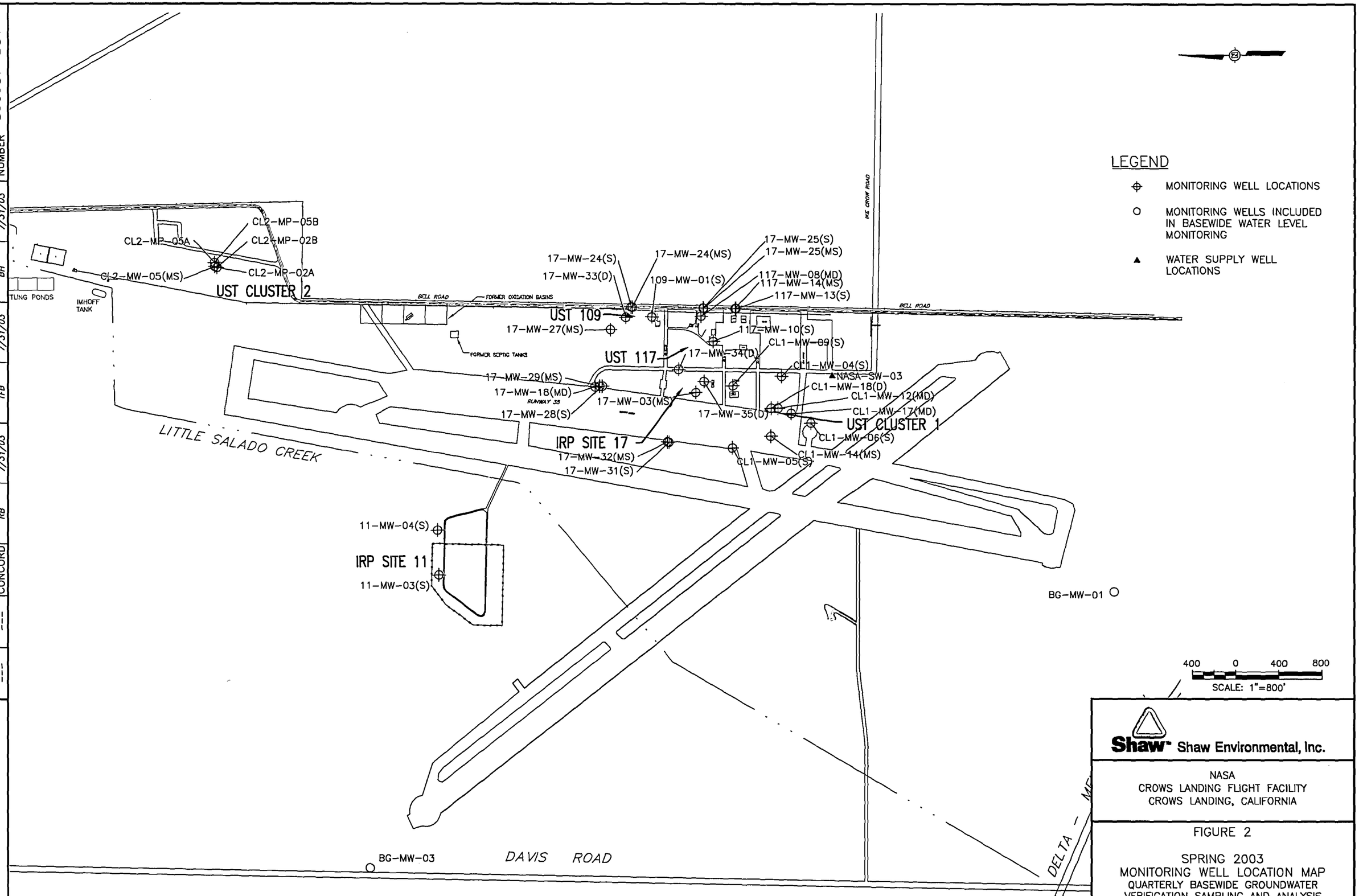

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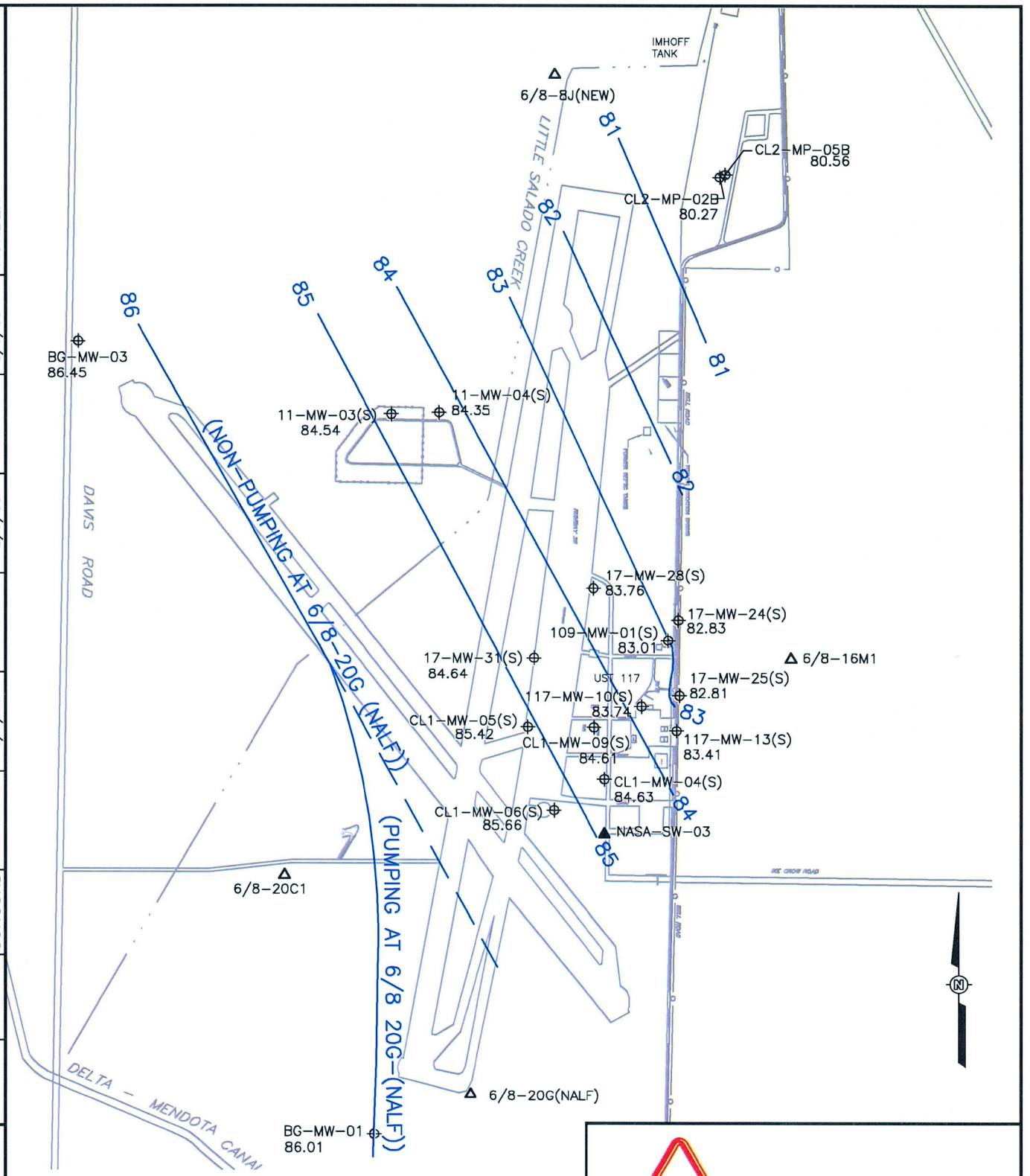
FIGURE 2

SPRING 2003
MONITORING WELL LOCATION MAP
QUARTERLY BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS



LEGEND

- ⊕ MONITORING WELL LOCATIONS (FOR QUARTERLY GROUNDWATER SAMPLING)
- ▲ WATER SUPPLY WELL
- △ AGRICULTURAL WELL
- 86.01 GROUNDWATER ELEVATIONS IN FEET ABOVE MEAN SEA LEVEL.

600 0 600 1200

SCALE: 1"=1200'

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FIGURE 3

WATER TABLE ELEVATION MAP
MAY 7, 2003

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	CONCORD	SCHAEFFER 8/7/03	TFB 8/7/03	BH 8/7/03	836557-A57

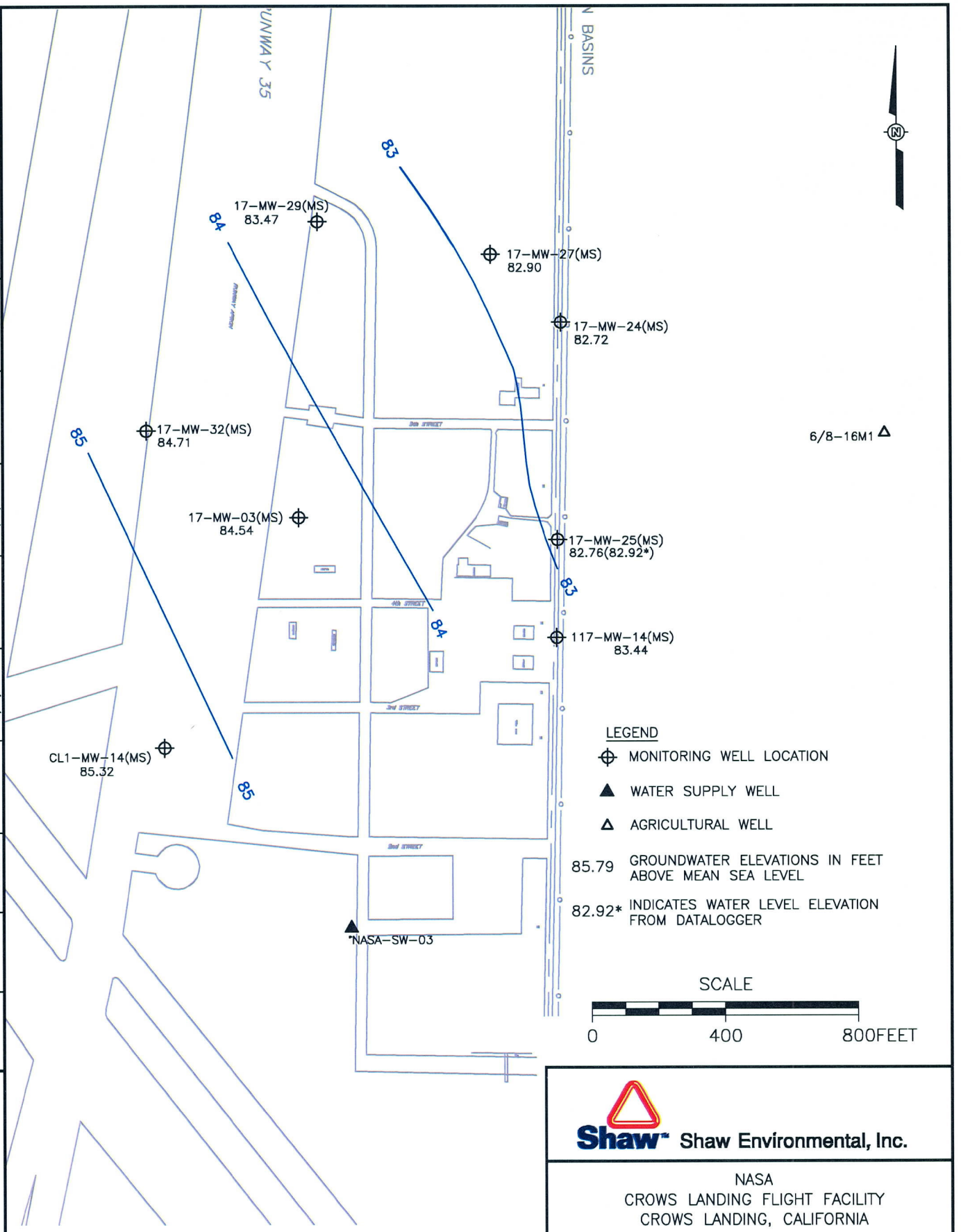

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
---	---	CONCORD	RB	8/7/03	TF	8/7/03	DSK	8/7/03	836557-A64

NOTE:
ONLY MID-SHALLOW WELLS WITH SCREEN MIDPOINTS LOCATED 45 TO 55 FEET BELOW MEASURED WATER LEVELS HAVE BEEN PLOTTED AND CONTOURED.

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FIGURE 4

POTENTIOMETRIC SURFACE MAP
BASED ON MID-SHALLOW WELLS
MAY 7, 2003

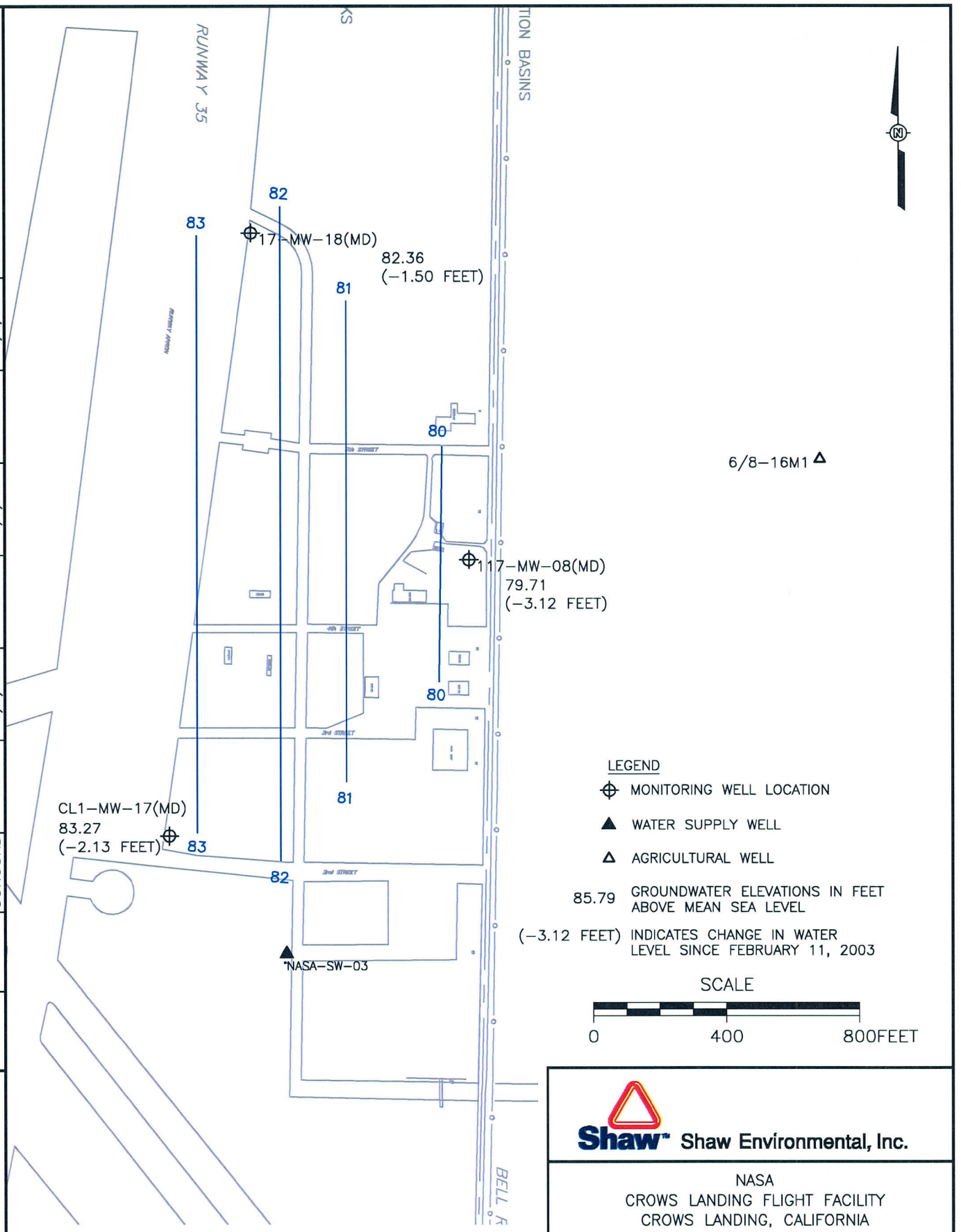

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
---	---	CONCORD	RB	8/7/03	TF	8/7/03	DSK	8/7/03	836557-A65

NOTE:
ONLY MID-DEEP WELLS SCREENED BETWEEN 160-180 FEET BELOW GROUND SURFACE (MID POINT ELEVATIONS BETWEEN -38 AND -23 FEET ABOVE MEAN SEA LEVEL) HAVE BEEN PLOTTED AND CONTOURED.

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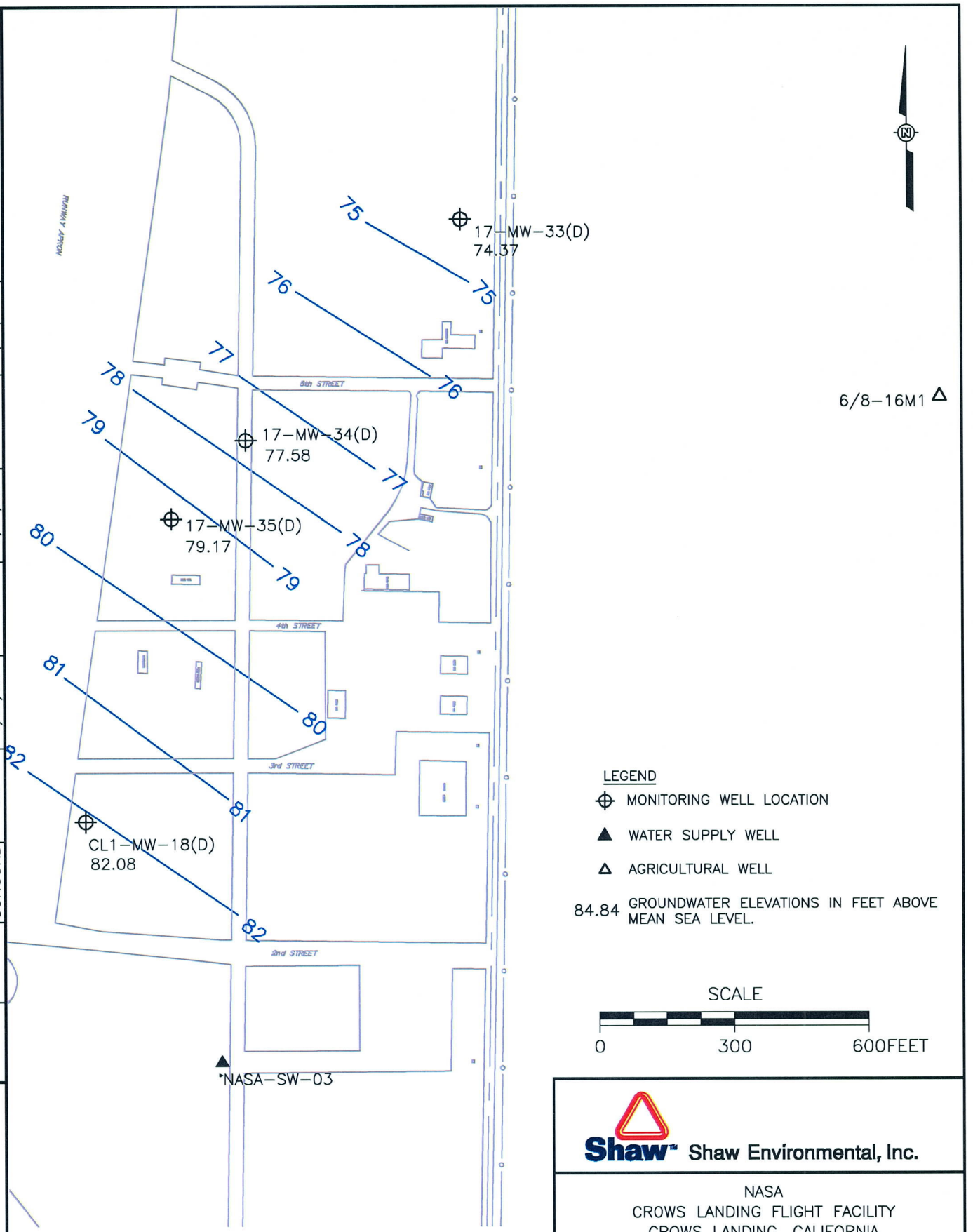
FIGURE 5

POTENTIOMETRIC SURFACE MAP
BASED ON MID-DEEP WELLS
MAY 7, 2003



NOTE:
ONLY WELLS SCREENED IN THE SAND AND GRAVEL UNIT DIRECTLY ABOVE THE CORCORAN CLAY (APPROXIMATELY 200–220 FEET BELOW GROUND SURFACE) HAVE BEEN PLOTTED AND CONTOURED.

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FIGURE 6

POTENTIOMETRIC SURFACE MAP
BASED ON DEEP WELLS
MAY 7, 2003

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
---	---	CONCORD	SJZ	7/31/03	TF	7/31/03	DSK	7/31/03	836557-A60

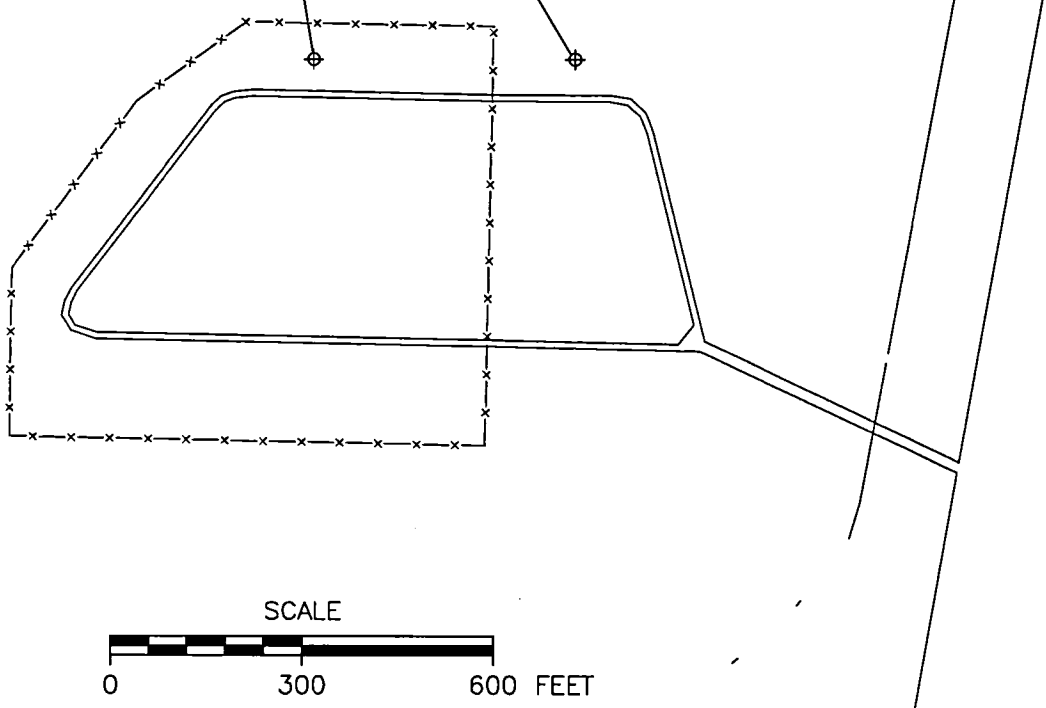
DRAWING NUMBER	APPROVED BY		CHECKED BY		DRAWN BY		OFFICE	X-REF	IMAGE
836557-A12	BH	8/7/03	TFB	8/7/03	MJV	8/7/03	Concord	bayeast	----

11-MW-03(S)

DATE	BENZ	1,2-DCA	CCL4	CF
11/12/02	0.5U	0.5U	0.5U	0.5U
02/18/03	0.5U	0.5UJ	0.5U	0.5U
05/12/03	0.5U	0.5U	0.5U	0.5U

11-MW-04(S)

DATE	BENZ	1,2-DCA	CCL4	CF
11/12/02	0.5U	0.5U	0.5U	0.5U
02/18/03	0.5U	0.5UJ	0.5U	0.5U
05/12/03	0.5U	0.5U	0.5U	0.5U



LEGEND

⌖ MONITORING WELL LOCATIONS

BENZ – BENZENE

1,2-DCA – 1,2-DICHLOROETHANE

CCL4 – CARBON TETRACHLORIDE

CF – CHLOROFORM

UNITS ARE IN MICROGRAMS PER LITER

HISTORICAL DATA (AFTER JANUARY 1998) CONSIDERED IN DEVELOPING EXTENT OF IMPACT. SEE SECOND ANNUAL BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS REPORT. 2002.

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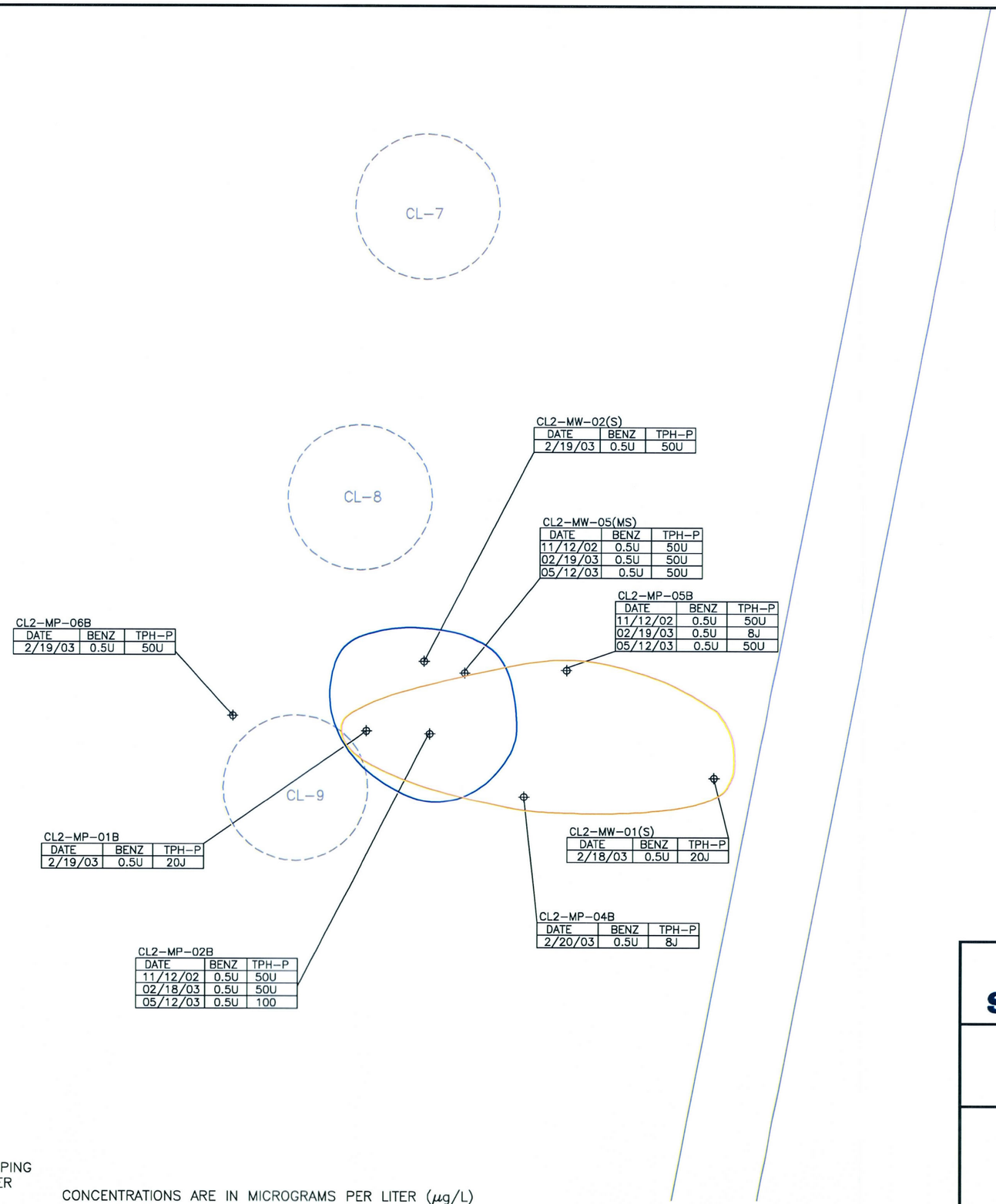
FIGURE 7

GROUNDWATER ANALYTICAL RESULTS FROM SITE 11 WELLS

IMAGE	X-REF	OFFICE	DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER
---	---	CONCORD	RB	07/22/03	TFB	06/2/03	DSK	06/2/03	836557-B34



LEGEND

- MONITORING WELL LOCATIONS
- EXTENT OF BENZENE IMPACT
- EXTENT OF PURGEABLE PETROLEUM HYDROCARBONS

N

SCALE

0 60 120

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FIGURE 8

GROUNDWATER PETROLEUM HYDROCARBON RESULTS FROM UST CLUSTER 2 WELLS

HISTORICAL DATA (AFTER JANUARY 1998) CONSIDERED IN DEVELOPING EXTENT OF IMPACT. SEE SECOND ANNUAL BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS REPORT. 2002.

CONCENTRATIONS ARE IN MICROGRAMS PER LITER ($\mu g/L$)

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	OFFICE	X-REF	IMAGE
836557-B32	BH 7/31/03	MJV 7/31/03	SCHAEFFER 7/31/03	CONCORD	---	---

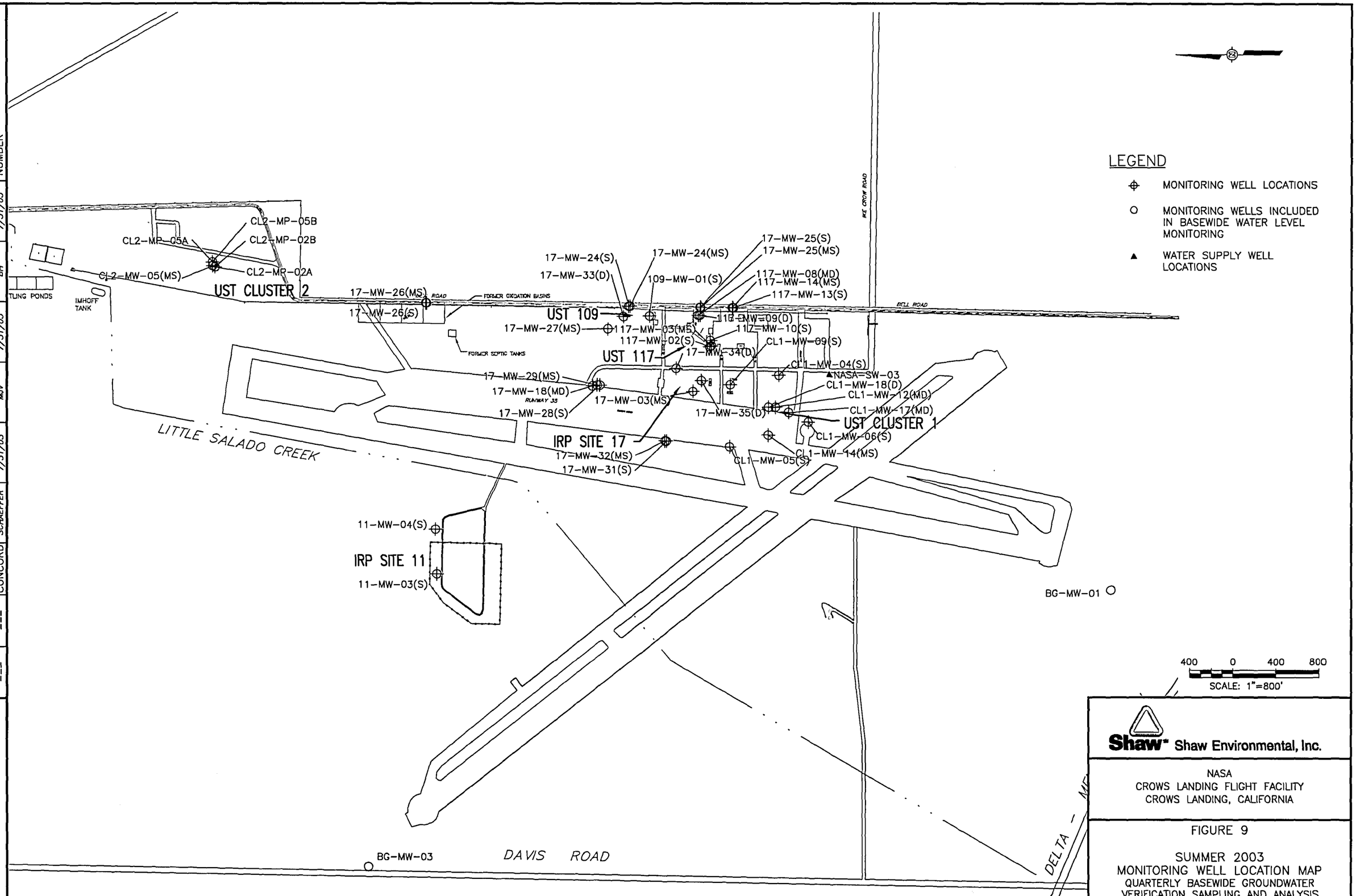

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FIGURE 9

SUMMER 2003
MONITORING WELL LOCATION MAP
QUARTERLY BASEWIDE GROUNDWATER
VERIFICATION SAMPLING AND ANALYSIS

Plates

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	CONCORD	SCHAEFFER 7/22/03	DSK 6/16/03	BH 6/16/03	836557-D21

LEGEND

- EXISTING SHALLOW (APPROXIMATELY 55 TO 75 ± FT. BGS) MONITORING WELL LOCATION
- EXISTING NESTED WELL LOCATION
- WATER SUPPLY WELL
- EXISTING EXTRACTION WELL
- WELL DRY

CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER

EXTENT OF COMPOUNDS

- CHLOROFORM
- CARBON TETRACHLORIDE
- BENZENE
- 1,2-DCA

HISTORICAL DATA (AFTER JANUARY 1998) CONSIDERED IN DEVELOPING EXTENT OF IMPACT. SEE SECOND ANNUAL BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS REPORT, 2002.

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PLATE 1

ADMINISTRATION AREA EXTENT OF GROUNDWATER IMPACT BASED ON SHALLOW SAMPLE LOCATIONS – SPRING 2003

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	OFFICE	X-REF	IMAGE
836557-D20	7/28/03	7/28/03	08/04/03	CONCORD	---	---
	BH	DSK	SCHAEFFER			

Date	Benz	1,2-DCA	CCL4	CF
11/12/02	0.5U	0.5U	0.5U	0.5U
02/19/03	0.5U	0.5U	0.5U	0.5U
05/12/03	0.5U	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	38.6	0.5U	0.5U	0.7
02/18/03	17.0	2.0	0.5U	0.7
05/13/03	14.2	1.7	0.5U	0.7

Date	Benz	1,2-DCA	CCL4	CF
2/12/03	0.5U	0.5U	0.5U	0.9

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	0.5U	0.5U	0.5U	1.2
02/18/03	0.5U	0.5U	0.5U	0.5U
05/13/03	0.5U	0.5U	0.5U	0.9

Date	Benz	1,2-DCA	CCL4	CF
1/15/03	0.5U	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
05/22/03	0.5U	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
05/22/03	0.5U	0.5U	4.8	0.5

Date	Benz	1,2-DCA	CCL4	CF
1/15/03	6.8	1.3	0.8	4.5

Date	Benz	1,2-DCA	CCL4	CF
1/16/03	45.1	8.8	0.6	4.5

Date	Benz	1,2-DCA	CCL4	CF
1/21/03	16.8	2.9	0.8	3.3
5/15/03	6.5	3.5	2.8	4.7

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	0.5U	0.5U	0.5U	0.5U
02/20/03	0.5U	0.5U	0.6	0.5U
05/14/03	0.5U	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
02/25/03	0.5U	0.5U	2.1	0.5U

Date	Benz	1,2-DCA	CCL4	CF
02/25/03	0.5U	0.5U	4.4	1.9

Date	Benz	1,2-DCA	CCL4	CF
02/27/03	2.5	0.5U	0.5U	2.6

Date	Benz	1,2-DCA	CCL4	CF
03/06/03	2.2	0.5U	3.8	11.1

Date	Benz	1,2-DCA	CCL4	CF
02/27/03	238	9.3	4.4	20.1

Date	Benz	1,2-DCA	CCL4	CF
02/24/03	0.5U	0.5U	20.6	4.0

Date	Benz	1,2-DCA	CCL4	CF
03/03/03	0.5U	0.5U	516	15.7

Date	Benz	1,2-DCA	CCL4	CF
02/26/03	0.5U	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
03/04/03	0.5U	0.5U	143	6.6

Date	Benz	1,2-DCA	CCL4	CF
02/26/02	7.6	1.0	0.5U	7.1

Date	Benz	1,2-DCA	CCL4	CF
03/04/03	3.4	6.7	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
03/06/03	9	9.6	0.5U	3.1

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	0.5U	0.5U	164	9.9
03/04/03	0.5U	0.5U	93.8	14.5
05/13/03	0.5U	0.5U	70.6	13.9

Date	Benz	1,2-DCA	CCL4	CF
02/25/03	0.6	0.5U	1.4	0.5

Date	Benz	1,2-DCA	CCL4	CF
02/26/03	5.9	21.5	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
02/24/03	0.5U	0.5U	2.4	0.5U

Date	Benz	1,2-DCA	CCL4	CF
02/26/03	19,000	272	0.5U	0.7

Date	Benz	1,2-DCA	CCL4	CF
02/24/03	1.9	0.5U	0.5U	2.2

Date	Benz	1,2-DCA	CCL4	CF
02/25/03	5.3	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
11/14/02	787	24.6	0.5U	2.1U
02/26/03	185	0.5U	0.5U	2.3
05/14/03	11	0.8	0.5U	0.6

Date	Benz	1,2-DCA	CCL4	CF
11/14/02	0.5U	0.5U	0.5U	0.5U
02/20/03	0.5U	0.5U	0.5U	0.5U
05/13/03	0.5U	0.5U	0.5U	0.5U

LEGEND

- EXISTING MID-SHALLOW (APPROXIMATELY 100 TO 110 ± 10 FT. BGS) MONITORING WELL
- EXISTING NESTED WELL LOCATION
- WATER SUPPLY WELL
- EXISTING EXTRACTION WELL
- OBSTRUCTION IN WELL

CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER

EXTENT OF COMPOUNDS

- CHLOROFORM
- CARBON TETRACHLORIDE
- BENZENE
- 1,2-DCA

SCALE

0 80 160 FEET

HISTORICAL DATA (AFTER JANUARY 1998) CONSIDERED IN DEVELOPING EXTENT OF IMPACT. SEE SECOND ANNUAL BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS REPORT, 2002.

Shaw™ Shaw Environmental, Inc.

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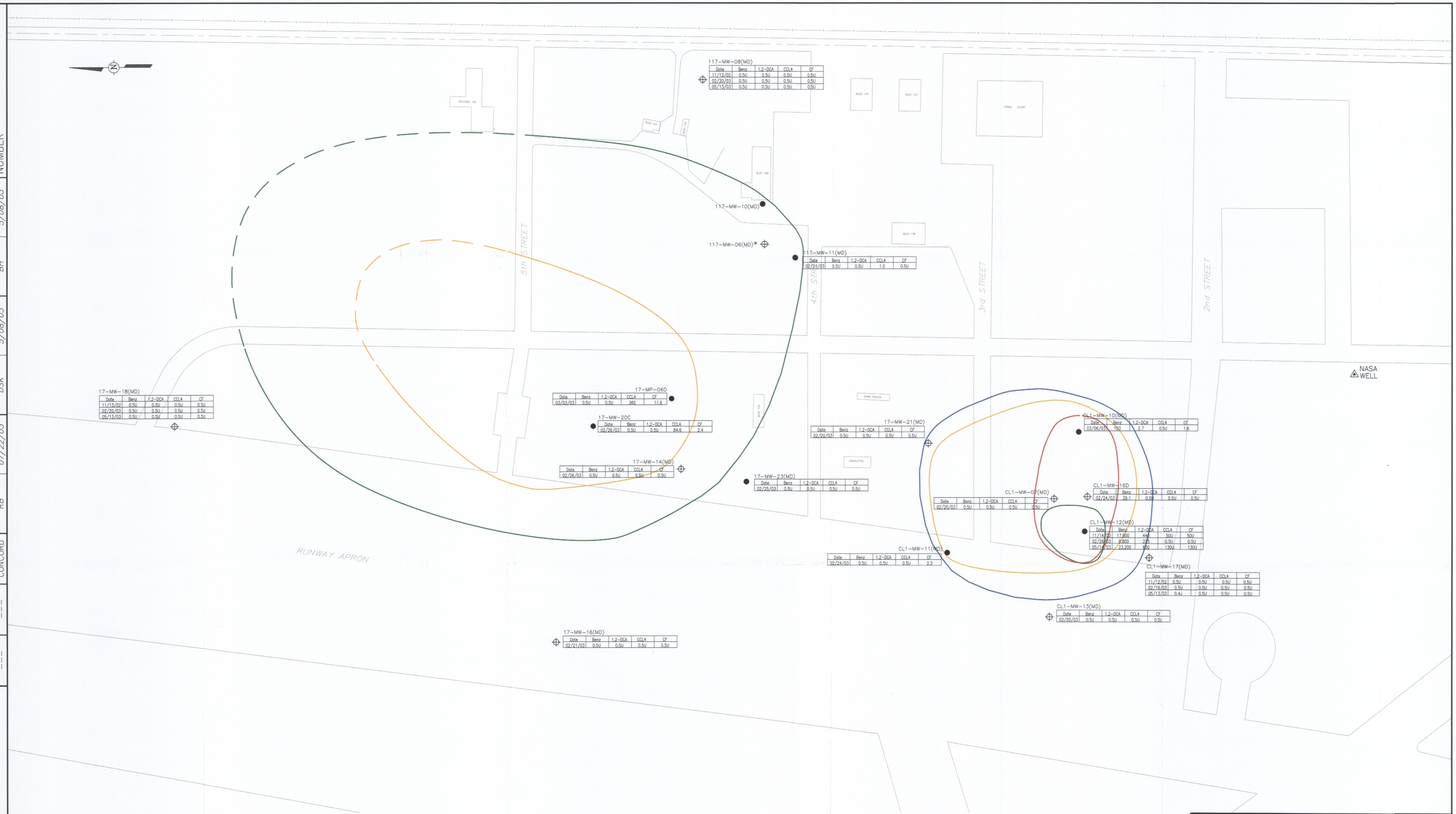
CROWS LANDING FLIGHT FACILITY
CROWS LANDING, CALIFORNIA

PLATE 2

ADMINISTRATION AREA EXTENT OF GROUNDWATER IMPACT BASED ON MID-SHALLOW SAMPLE LOCATIONS – SPRING 2003

IMAGE	X-REF	OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
---	---	CONCORD	RB 07/22/03	DSK 5/08/03	BH 5/08/03	836557-D22



117-MW-08(MD)

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	0.5U	0.5U	0.5U	0.5U
02/20/03	0.5U	0.5U	0.5U	0.5U
05/13/03	0.5U	0.5U	0.5U	0.5U

117-MW-11(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/21/03	0.5U	0.5U	1.0	0.5U

17-MW-18(MD)

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	0.5U	0.5U	0.5U	0.5U
02/20/03	0.5U	0.5U	0.5U	0.5U
05/13/03	0.5U	0.5U	0.5U	0.5U

17-MP-06D

Date	Benz	1,2-DCA	CCL4	CF
03/03/03	0.5U	0.5U	365	11.6

17-MW-20C

Date	Benz	1,2-DCA	CCL4	CF
02/26/03	0.5U	0.5U	84.6	2.4

17-MW-14(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/26/03	0.5U	0.5U	0.5U	0.5U

17-MW-23(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/25/03	0.5U	0.5U	0.5U	0.5U

17-MW-21(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/20/03	0.5U	0.5U	0.5U	0.5U

CL1-MW-10(MD)

Date	Benz	1,2-DCA	CCL4	CF
03/06/03	1.03	2.7	0.5U	1.6

CL1-MW-16D

Date	Benz	1,2-DCA	CCL4	CF
02/24/03	29.1	0.5U	0.5U	0.5U

CL1-MW-07(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/20/03	0.5U	0.5U	0.5U	0.5U

CL1-MW-12(MD)

Date	Benz	1,2-DCA	CCL4	CF
11/14/02	17,800	440	50U	50U
02/26/03	9,800	225	0.5U	0.5U
05/14/03	23,200	650	130U	130U

CL1-MW-11(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/24/03	0.5U	0.5U	0.5U	2.3

CL1-MW-17(MD)

Date	Benz	1,2-DCA	CCL4	CF
11/12/02	0.5U	0.5U	0.5U	0.5U
02/19/03	0.5U	0.5U	0.5U	0.5U
05/13/03	0.4J	0.5U	0.5U	0.5U

CL1-MW-13(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/20/03	0.5U	0.5U	0.5U	0.5U

17-MW-16(MD)

Date	Benz	1,2-DCA	CCL4	CF
02/21/03	0.5U	0.5U	0.5U	0.5U

LEGEND

- EXISTING MID-DEEP (APPROXIMATELY 160 TO 170 ± 25 FT. BGS) MONITORING WELL LOCATION
- EXISTING NESTED WELL LOCATION
- WATER SUPPLY WELL
- OBSTRUCTION IN WELL

CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER

EXTENT OF COMPOUNDS

- CHLOROFORM
- CARBON TETRACHLORIDE
- BENZENE
- 1,2 DCA

SCALE

0 80 160 FEET

HISTORICAL DATA (AFTER JANUARY 1998) CONSIDERED IN DEVELOPING EXTENT OF IMPACT. SEE SECOND ANNUAL BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS REPORT, 2002.

Shaw™ Shaw Environmental, Inc.

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CROWS LANDING FLIGHT FACILITY
CROWS LANDING, CALIFORNIA

PLATE 3

ADMINISTRATION AREA EXTENT OF GROUNDWATER IMPACT BASED ON MID-DEEP WELLS – SPRING 2003

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	OFFICE	X-REF	IMAGE
836557-D23	6/16/03 BH	6/16/03 DSK	07/22/03 RB	CONCORD	---	---

Date	Benz	1,2-DCA	CCL4	CF
11/14/02	0.5U	0.5U	0.5U	0.4J
02/21/03	0.5U	0.5U	0.5U	0.5U
05/14/03	0.5U	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	0.5U	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
11/14/02	0.5U	0.5U	10.5	0.5U
02/24/03	0.5U	0.5U	12.7	0.5U
05/14/03	0.5U	0.5U	8.1	0.5U

Date	Benz	1,2-DCA	CCL4	CF
11/14/02	0.5U	0.5U	0.4J	0.6U
02/20/03	0.5U	0.5U	0.5U	0.7
05/14/03	0.5U	0.5U	0.6	0.5U

Date	Benz	1,2-DCA	CCL4	CF
02/24/03	1.7	0.5U	0.5U	0.5U

Date	Benz	1,2-DCA	CCL4	CF
11/13/02	0.5U	0.5U	0.5U	0.5U
02/19/03	0.5U	0.5U	0.5U	0.5U
05/13/03	0.4J	0.5U	0.5U	0.5U

LEGEND

⊕ EXISTING DEEP (APPROXIMATELY 200 TO 220 ± 60 FT. BGS) MONITORING WELL LOCATION

▲ WATER SUPPLY WELL

CONCENTRATIONS ARE PRESENTED IN MICROGRAMS PER LITER

EXTENT OF COMPOUNDS

CARBON TETRACHLORIDE

BENZENE

SCALE

0 80 160 FEET

HISTORICAL DATA (AFTER JANUARY 1998) CONSIDERED IN DEVELOPING EXTENT OF IMPACT. SEE SECOND ANNUAL BASEWIDE GROUNDWATER VERIFICATION SAMPLING AND ANALYSIS REPORT. 2002.

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CROWS LANDING, CALIFORNIA

PLATE 4

ADMINISTRATION AREA EXTENT OF GROUNDWATER IMPACT BASED ON DEEP WELLS – SPRING 2003

FORMAT REVISION 2/26/99

Tables

Table 1
Well Construction and Water Level Data

Well Designation	Well Construction Data: Approximate Depth of Screened Interval (ft bgs[1])		Top of Casing Elevation (ft amsl[2])	Approximate Elevation of Screened Interval (ft amsl[2])			Water Level Data: Date	Depth to Water (ft btoc[3])	Water Level Elevation (ft amsl[2])	Height of Water Column in Well (feet)	Approximate Depth of Screen Midpoint Below Water Table (feet)
	top	bottom		top	midpoint	bottom					
BG-MW-01	84	104	167.68	84.08	74.08	64.08	11/12/2002	80.89	86.79	22.7	12.7
							02/11/2003	80.21	87.47	23.4	13.4
							05/07/2003	81.67	86.01	21.9	11.9
BG-MW-03	65	85	155.10	88.18	78.18	68.18	11/12/2002	69.34	85.76	17.6	7.6
							02/11/2003	68.32	86.78	18.6	8.6
							05/07/2003	68.65	86.45	18.3	8.3
11-MW-03(S)	50	75	141.35	91.27	78.77	66.27	11/12/2002	57.15	84.20	17.9	5.4
							02/11/2003	56.30	85.05	18.8	6.3
							05/07/2003	56.81	84.54	18.3	5.8
11-MW-04(S)	49	74	138.31	89.31	76.81	64.31	11/12/2002	54.19	84.12	19.8	7.3
							02/11/2003	53.53	84.78	20.5	8.0
							05/07/2003	53.96	84.35	20.0	7.5
17-MP-06A	35	65	141.99	106.62	91.62	76.62	02/11/2003	57.05	84.94	8.3	-6.7
17-MP-06C	99	109	141.97	42.43	37.43	32.43	02/11/2003	57.09	84.88	52.5	47.5
17-MP-06D	148	158	142.09	-6.37	-11.37	-16.37	03/06/2003	57.90	84.19	100.6	95.6
17-MW-01(S)	50	70	142.48	90.27	80.27	70.27	02/11/2003	57.90	84.58	14.3	4.3
17-MW-02(S)	49	74	142.02	93.02	80.52	68.02	02/11/2003	57.12	84.90	16.9	4.4
17-MW-03(MS)	97	107	142.09	45.05	40.05	35.05	11/12/2002	57.80	84.29	49.2	44.2
							02/11/2003	57.11	84.98	49.9	44.9
							05/07/2003	57.64	84.45	49.4	44.4
17-MW-04(S)	50	75	142.18	92.72	80.22	67.72	02/11/2003	56.91	85.27	17.5	5.0
17-MW-05(MS)	94	104	141.33	47.60	42.60	37.60	02/11/2003	57.25	84.08	46.5	41.5
17-MW-06(S)	50	75	140.51	90.91	78.41	65.91	02/11/2003	55.69	84.82	18.9	6.4
17-MW-07(MS)	114	124	140.77	27.10	22.10	17.10	02/11/2003	55.96	84.81	67.7	62.7
17-MW-08(S)	50	75	138.45	88.41	75.91	63.41	02/11/2003	53.85	84.60	21.2	8.7
17-MW-09(MS)	102	112	138.16	36.24	31.24	26.24	02/11/2003	53.88	84.28	58.0	53.0
17-MW-10(MS)	94	104	138.77	45.00	40.00	35.00	02/11/2003	54.35	84.42	49.4	44.4
17-MW-11(MS)	108.5	118.5	135.90	27.46	22.46	17.46	02/11/2003	52.05	83.85	66.4	61.4
17-MW-12(S)	50	75	143.92	94.00	81.50	69.00	02/11/2003	58.75	85.17	16.2	3.7
17-MW-13(MS)	95	105	144.00	49.42	44.42	39.42	02/11/2003	58.77	85.23	45.8	40.8
17-MW-14(MD)	170	180	141.43	-28.40	-33.40	-38.40	02/11/2003	56.92	84.51	122.9	117.9
17-MW-16(MD)	170	180	141.08	-28.25	-33.25	-38.25	02/11/2003	56.35	84.73	123.0	118.0
17-MW-18(MD)	170	180	137.57	-31.81	-36.81	-41.81	11/12/2002	54.39	83.18	125.0	120.0
							02/11/2003	53.62	83.95	125.8	120.8
							05/07/2003	55.21	82.36	124.2	119.2
17-MW-20A	45	75	140.40	95.94	80.94	65.94	02/11/2003	55.58	84.82	18.9	3.9
17-MW-20B	100	110	140.69	41.13	36.13	31.13	02/11/2003	55.72	84.97	53.8	48.8
17-MW-20C	150	160	140.77	-8.90	-13.90	-18.90	02/11/2003	56.40	84.37	103.3	98.3
17-MW-21(MD)	170	180	143.78	-25.72	-30.72	-35.72	02/11/2003	58.65	85.13	120.9	115.9
17-MW-22(D)	250	260	143.65	-105.73	-110.73	-115.73	02/11/2003	61.13	82.52	198.2	193.2
17-MW-23(S)	45	70	141.81	97.27	84.77	72.27	02/11/2003	56.62	85.19	12.9	0.4
17-MW-23(MS)	100	110	141.81	42.29	37.29	32.29	02/11/2003	56.60	85.21	52.9	47.9
17-MW-23(MD)	160	170	141.88	-17.70	-22.70	-27.70	02/11/2003	56.92	84.96	112.7	107.7
17-MW-24(S)	42	62	133.33	91.71	81.71	71.71	11/12/2002	50.37	82.96	11.3	1.3
							02/11/2003	49.98	83.35	11.6	1.6
							05/07/2003	50.50	82.83	11.1	1.1
17-MW-24(MS)	89	109	132.98	44.52	34.52	24.52	11/12/2002	50.11	82.87	58.3	48.3
							02/11/2003	49.69	83.29	58.8	48.8
							05/07/2003	50.26	82.72	58.2	48.2
17-MW-25(S)	50	70	136.20	86.41	76.41	66.41	11/12/2002	53.16	83.04	16.6	6.6
							02/11/2003	52.50	83.70	17.3	7.3
							05/07/2003	53.39	82.81	16.4	6.4
17-MW-25(MS)	89	109	136.14	47.45	37.45	27.45	11/12/2002	53.14	83.00	55.5	45.5
							02/11/2003	52.52	83.62	56.2	46.2
							05/07/2003	53.38	82.76	55.3	45.3
17-MW-27(MS)	95.0	110.0	136.61	39.03	31.53	24.03	11/12/2002	53.70	82.91	58.9	51.4
							02/11/2003	53.23	83.38	59.4	51.9
							05/07/2003	53.71	82.90	58.9	51.4

Table 1
Well Construction and Water Level Data

	Well Construction Data						Water Level Data				
Well Designation	Approximate Depth of Screened Interval (ft bgs[1])		Top of Casing Elevation (ft amsl[2])	Approximate Elevation of Screened Interval (ft amsl[2])			Date	Depth to Water (ft btoc[3])	Water Level Elevation (ft amsl[2])	Height of Water Column in Well (feet)	Approximate Depth of Screen Midpoint Below Water Table (feet)
	top	bottom		top	midpoint	bottom					
17-MW-28(S)	49.5	74.5	140.24	88.20	75.70	63.20	11/12/2002	56.70	83.54	20.3	7.8
							02/11/2003	56.26	83.98	20.8	8.3
							05/07/2003	56.48	83.76	20.6	8.1
17-MW-29(MS)	105.0	115.0	139.77	32.69	27.69	22.69	11/12/2002	56.25	83.52	60.8	55.8
							02/11/2003	55.72	84.05	61.4	56.4
							05/07/2003	56.30	83.47	60.8	55.8
17-MW-30(S)	46.0	71.0	139.01	90.38	77.88	65.38	02/11/2003	55.27	83.74	18.4	5.9
17-MW-31(S)	49.0	74.0	144.19	92.57	80.07	67.57	11/12/2002	59.59	84.60	17.0	4.5
							02/11/2003	59.20	84.99	17.4	4.9
							05/07/2003	59.55	84.64	17.1	4.6
17-MW-32(MS)	94.0	109.0	144.19	47.52	40.02	32.52	11/12/2002	59.69	84.50	52.0	44.5
							02/11/2003	59.25	84.94	52.4	44.9
			144.35				05/07/2003	59.64	84.71	52.0	44.5
17-MW-33(D)	203.0	223.0	136.79	-66.21	-76.21	-86.21	11/12/2002	58.30	78.49	164.7	154.7
							02/11/2003	56.11	80.68	166.9	156.9
							05/07/2003	62.42	74.37	160.6	150.6
17-MW-34(D)	202.8	222.8	139.54	-62.57	-72.57	-82.57	11/12/2002	58.95	80.59	163.2	153.2
							02/11/2003	57.20	82.34	164.9	154.9
							05/07/2003	61.96	77.58	160.2	150.2
17-MW-35(D)	199.0	219.0	144.38	-57.24	-67.24	-77.24	11/12/2002	62.74	81.64	158.9	148.9
							02/11/2003	61.04	83.34	160.6	150.6
							05/07/2003	65.21	79.17	156.4	146.4
109-MW-01(S)	43	68	134.22	91.64	79.14	66.64	11/12/2002	51.14	83.08	16.4	3.9
							02/11/2003	50.62	83.60	17.0	4.5
							05/07/2003	51.21	83.01	16.4	3.9
117-MW-01(S)	50	75	142.76	92.76	80.26	67.76	02/11/2003	NA	NA	NA	NA
117-MW-02(S)	50	75	142.00	92.17	79.67	67.17	02/11/2003	57.20	84.80	17.63	5.1
117-MW-03(MS)	97	107	141.78	44.45	39.45	34.45	02/11/2003	57.30	84.48	50.03	45.0
117-MW-04(S)	49	74	139.31	90.33	77.83	65.33	02/11/2003	55.10	84.21	18.88	6.4
117-MW-05(S)	50	75	138.41	88.66	76.16	63.66	02/11/2003	54.09	84.32	20.66	8.2
117-MW-07(MS)	108	118	137.85	30.02	25.02	20.02	02/11/2003	54.10	83.75	63.73	58.7
117-MW-08(MD)	170	180	136.46	-33.04	-38.04	-43.04	11/12/2002	54.88	81.58	124.62	119.6
							02/11/2003	53.63	82.83	124.87	120.9
							05/07/2003	56.75	79.71	121.75	117.8
117-MW-09(D)	260	270	136.97	-122.80	-127.80	-132.80	11/12/2002	60.01	76.96	209.76	204.8
117-MW-10(S)	50	75	140.25	90.69	78.19	65.69	11/12/2002	56.39	83.86	18.17	5.7
							02/11/2003	55.80	84.45	18.76	6.3
							05/07/2003	56.51	83.74	18.05	5.6
117-MW-10(MS)	115	125	140.29	25.75	20.75	15.75	02/11/2003	56.11	84.18	68.43	63.4
117-MW-11(S)	50	75	141.82	92.22	79.72	67.22	02/11/2003	57.30	84.52	17.30	4.8
117-MW-11(MS)	115	125	142.09	27.38	22.38	17.38	02/11/2003	57.70	84.39	67.01	62.0
117-MW-11(MD)	185	195	142.05	-42.62	-47.62	-52.62	02/11/2003	59.65	82.40	135.02	130.0
117-MW-13(S)	47.0	72.0	138.15	91.61	79.11	66.61	11/12/2002	54.73	83.42	16.81	4.3
							02/11/2003	54.03	84.12	17.51	5.0
							05/07/2003	54.74	83.41	16.80	4.3
117-MW-14(MS)	93.5	108.5	138.32	45.03	37.53	30.03	11/12/2002	54.83	83.49	53.46	46.0
							02/11/2003	54.23	84.09	54.06	46.6
							05/07/2003	54.88	83.44	53.41	45.9
MW117-4	36	56	137.57	102.03	92.03	82.03	02/11/2003	53.41	84.16	2.13	-7.9
CL1-MW-01(S)	53.5	78.5	145.07	91.86	79.36	66.86	02/11/2003	59.23	85.84	18.98	6.5
CL1-MW-02(S)	53	78	144.75	91.75	79.25	66.75	02/11/2003	59.48	85.27	18.52	6.0
CL1-MW-03(MS)	104	114	144.25	40.42	35.42	30.42	02/11/2003	58.58	85.67	55.25	50.3
CL1-MW-04(S)	50	75	143.32	93.32	80.82	68.32	11/12/2002	58.75	84.57	16.25	3.8
							02/11/2003	58.69	84.63	16.31	3.8
							05/07/2003	58.69	84.63	16.31	3.8

Table 1
Well Construction and Water Level Data

Well Designation	Well Construction Data: Approximate Depth of Screened Interval (ft bgs[1]) top	bottom	Top of Casing Elevation (ft amsl[2])	Approximate Elevation of Screened Interval (ft amsl[2]) top	midpoint	bottom	Water Level Data: Date	Depth to Water (ft btoc[3])	Water Level Elevation (ft amsl[2])	Height of Water Column in Well (feet)	Approximate Depth of Screen Midpoint Below Water Table (feet)
CL1-MW-05(S)	50	75	142.92	93.09	80.59	68.09	11/12/2002	57.69	85.23	17.14	4.6
							02/11/2003	57.20	85.72	17.63	5.1
							05/07/2003	57.50	85.42	17.33	4.8
CL1-MW-06(S)	54	79	146.55	92.72	80.22	67.72	11/12/2002	61.00	85.55	17.83	5.3
							02/11/2003	59.50	87.05	19.33	6.8
							05/07/2003	60.89	85.66	17.94	5.4
CL1-MW-07(MD)	165	175	144.95	-20.05	-25.05	-30.05	02/11/2003	59.16	85.79	115.84	110.8
CL1-MW-08(MS)	109	119	144.99	36.28	31.28	26.28	02/11/2003	59.13	85.86	59.58	54.6
CL1-MW-09(S)	45	70	143.10	98.39	85.89	73.39	11/12/2002	58.50	84.60	11.21	-1.3
							02/11/2003	58.00	85.10	11.71	-0.8
							05/07/2003	58.49	84.61	11.22	-1.3
CL1-MW-09(MS)	95	105	143.14	48.39	43.39	38.39	02/11/2003	58.02	85.12	46.73	41.7
CL1-MW-10(S)	45	70	145.88	98.80	86.30	73.80	02/11/2003	60.75	85.13	11.33	-1.2
CL1-MW-10(MS)	98.5	108.5	144.89	45.27	40.27	35.27	02/11/2003	NA	NA	NA	NA
CL1-MW-10(MD)	140	150	145.45	3.78	-1.22	-6.22	02/11/2003	NA	NA	NA	NA
CL1-MW-11(S)	45	70	143.92	99.25	86.75	74.25	02/11/2003	58.35	85.57	11.32	-1.2
CL1-MW-11(MS)	100	110	143.96	44.17	39.17	34.17	02/11/2003	58.43	85.53	51.36	46.4
CL1-MW-11(MD)	140	150	143.79	4.16	-0.84	-5.84	02/11/2003	58.37	85.42	91.26	86.3
CL1-MW-12(MS)	100	110	146.24	44.66	39.66	34.66	02/11/2003	60.72	85.52	50.86	45.9
CL1-MW-12(MD)	140	150	145.75	4.67	-0.33	-5.33	11/12/2002	61.22	84.53	89.86	84.9
							02/11/2003	60.21	85.54	90.87	85.9
							05/07/2003	62.40	83.35	88.68	83.7
CL1-MW-13(MD)	140	150	144.62	5.25	0.25	-4.76	02/11/2003	58.99	85.63	90.39	85.4
CL1-MW-14(S)	45	70	144.81	100.02	87.52	75.02	02/11/2003	58.93	85.88	10.86	-1.6
CL1-MW-14(MS)	100.5	110.5	144.82	44.53	39.53	34.53	11/12/2002	59.32	85.50	50.97	46.0
							02/11/2003	58.95	85.87	51.34	46.3
							05/07/2003	59.50	85.32	50.79	45.8
CL1-MW-16S	50	75	144.21	94.59	82.09	69.59	02/11/2003	58.80	85.41	15.83	3.3
CL1-MW-16M	90	100	144.22	54.62	49.62	44.62	02/11/2003	58.70	85.52	40.90	35.9
CL1-MW-16D	140	150	144.18	4.60	-0.40	-5.40	02/11/2003	58.68	85.50	90.90	85.9
CL1-MW-17(MD)	157.83	177.83	147.90	-12.93	-22.93	-32.93	11/12/2002	63.49	84.41	117.34	107.3
							02/11/2003	62.50	85.40	118.33	108.3
							05/07/2003	64.63	83.27	116.20	106.2
CL1-MW-18(D)	199.0	219.0	147.19	-54.81	-64.81	-74.81	11/12/2002	63.52	83.67	158.48	148.5
							02/11/2003	62.35	84.84	159.65	149.7
							05/07/2003	65.11	82.08	156.89	146.9
CL2-MP-01B	41	51	125.86	82.19	77.19	72.19	02/11/2003	44.26	81.60	9.41	4.4
CL2-MP-02A	28	38	125.58	94.66	89.66	84.66	11/12/2002	DRY	DRY	DRY	DRY
							05/07/2003	DRY	DRY	DRY	DRY
CL2-MP-02B	40.5	50.5	125.69	82.15	80.19	72.15	11/12/2002	45.20	80.49	8.34	0.3
							02/11/2003	44.21	81.48	9.33	1.3
							05/07/2003	45.42	80.27	8.12	0.1
CL2-MP-04A	28	43	125.47	94.55	89.97	79.55	02/11/2003	43.75	81.72	2.17	-8.3
CL2-MP-04B	48	58	125.46	74.50	72.46	64.50	02/11/2003	43.73	81.73	17.23	9.3
CL2-MP-05A	28	43	125.64	95.14	87.64	80.14	11/12/2002	DRY	DRY	DRY	DRY
							02/11/2003	43.60	82.04	1.90	-5.6
							05/07/2003	44.08	81.56	1.42	-6.1
CL2-MP-05B	48	58	125.15	74.69	72.15	64.69	11/12/2002	44.51	80.64	15.95	8.5
							02/11/2003	43.53	81.62	16.93	9.5
							05/07/2003	44.59	80.56	15.87	8.4
CL2-MP-06A	30	43	126.12	93.12	89.62	80.12	02/11/2003	44.13	81.99	1.87	-7.6
CL2-MP-06B	48	58	126.11	75.07	73.11	65.07	02/11/2003	44.14	81.97	16.90	8.9
CL2-MW-01(S)	29	54	121.89	92.93	80.43	67.93	02/11/2003	40.56	81.33	13.40	0.9
CL2-MW-02(S)	29	54	122.61	93.65	81.15	68.65	02/11/2003	40.95	81.66	13.01	0.5
CL2-MW-05(MS)	80	90	122.16	42.41	37.41	32.41	11/12/2002	41.53	80.63	48.22	43.2
							02/11/2003	40.48	81.68	49.27	44.3
							05/07/2003	41.65	80.51	48.10	43.1

[1]ft bgs denotes feet below ground surface.

[2]ft amsl denotes feet above mean sea level.

[3]ft btoc denotes feet below top of casing.

Table 2
Selected Groundwater Monitoring Wells for Spring 2003

Well ID	Screened Interval (ft bgs)[1]	Approximate Depth of Screen Midpoint Below Water Table (feet)
	Site 11	
11-MW-03(S)	50-75	6
11-MW-04(S)	49-74	7
	Site 17	
17-MW-03(MS)	97-107	44
17-MW-18(MD)	170-180	120
17-MW-24(S)	42-62	1
17-MW-24(MS)	89-109	48
17-MW-25(S)	50-70	6
17-MW-25(MS)	89-109	45
17-MW-27(MS)	95-110	51
17-MW-28(S)	49.5-74.5	8
17-MW-29(MS)	105-115	56
17-MW-31(S)	49-74	5
17-MW-32(MS)	94-109	45
17-MW-33(D)	203-223	151
17-MW-34(D)	202.8-222.8	150
17-MW-35(D)	199-219	146
	[2]UST 109	
109-MW-01(S)	43-68	4
	UST 117	
117-MW-08(MD)	170-180	118
117-MW-10(S)	50-75	6
117-MW-13(S)	47-72	4
117-MW-14(MS)	93.5-108.5	46
	UST Cluster 1	
CL1-MW-04(S)	50-75	4
CL1-MW-05(S)	50-75	5
CL1-MW-06(S)	54-79	5
CL1-MW-09(S)	45-70	0
CL1-MW-12(MD)	140-150	84
CL1-MW-14(MS)	100.5-110.5	46
CL1-MW-17(MD)	157.83-177.83	106
CL1-MW-18(D)	199-219	147
	UST Cluster 2	
CL2-MP-02B	40.5-50.5	0
CL2-MP-05B	48-58	8
CL2-MW-05(MS)	80-90	43
	Irrigation and Domestic Supply Well	
[3]NASA Well	210-235	NA

[1] ft bgs denotes feet below ground surface.

[2]UST denotes underground storage tank.

[3]NASA denotes National Aeronautics Space Administration.

Table 3
Groundwater Analytical Data Summary, May 2003

Sample ID Aquifer Screen Interval (ft bgs)	Method	11-MW-03(S) shallow 50-75	11-MW-04(S) shallow 49-74	17-MW-03(MS) mid-shallow 97-107	CL-99-54 dup 17-MW-03(MS)	17-MW-18(MD) mid deep 170-180	17-MW-24(S) shallow 42-62	CL-99-53 dup 17-MW-24(S)	17-MW-24(MS) mid shallow 89-109	17-MW-25(S) shallow 50-70	17-MW-25(MS) mid shallow 90-110
TPH-gasoline	M8015V	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	**0.27**[a] mg/L
TPH-jet fuel	M8015V	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L
TPH-diesel	M8015E	<0.096 mg/L	<0.096 mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096 mg/L	<0.096[b] mg/L	<0.096[b] mg/L
TPH-motor oil	M8015E	<0.13 mg/L	<0.13 mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.13 mg/L	<0.13 mg/L	<0.13 mg/L	<0.096[b] mg/L	<0.096[b] mg/L
acetone	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
benzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**14.2** µg/L
bromodichloromethane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**0.6** µg/L	<0.5 µg/L
2-butanone (MEK)	8260	<10 µg/L	<10 µg/L	<10J µg/L	<10J µg/L	<10J µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10J µg/L	<10J µg/L
sec-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
tert-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**0.9** µg/L
carbon disulfide	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
carbon tetrachloride	8260	<0.5 µg/L	<0.5 µg/L	**70.6** µg/L	**88.3** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
chloroform	8260	<0.5 µg/L	<0.5 µg/L	**13.9** µg/L	**11.2** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**0.7** µg/L	**0.7** µg/L
1,2-dichloroethane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**1.7** µg/L
1.2-dichloropropane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
ethylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
isopropylbenzene (cumene)	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
methylene chloride	8260	<0.6 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.8 µg/L	<1.3 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
MIBK	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
MTBE	8260	<1[c] µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L
toluene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
trichloroethene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
xylenes	8260	**0.4J** µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L
tert-butyl alcohol	8260	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L

Table 3
Groundwater Analytical Data Summary, May 2003

Sample ID Aquifer Screen Interval (ft bgs)	Method	17-MW-27(MS) mid shallow 95-110	17-MW-28(S) shallow 49.5-74.5	17-MW-29(MS) mid shallow 105-115	17-MW-31(S) shallow 49-74	CL-99-56 dup 17-MW-31(S)	17-MW-32(MS) mid shallow 94-109	17-MW-33(D) deep 203-223	17-MW-34(D) deep 202.8-222.8	CL-99-55 dup 17-MW-34(D)	17-MW-35(D) deep 199-219
TPH-gasoline	M8015V	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L
TPH-jet fuel	M8015V	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L
TPH-diesel	M8015E	<0.096[b] mg/L	<0.096[b] mg/L	<0.096 mg/L	<0.096 mg/L	<0.096 mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L
TPH-motor oil	M8015E	<0.13[b] mg/L	<0.13[b] mg/L	<0.13 mg/L	<0.096 mg/L	<0.096 mg/L	<0.096[b] mg/L	<0.13 mg/L	<0.13 mg/L	<0.13 mg/L	<0.13[b] mg/L
acetone	8260	<10 µg/L	<10 µg/L	**12** µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
benzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
bromodichloromethane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
2-butanone (MEK)	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10J µg/L	<10J µg/L	**28J** µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
sec-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
tert-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
carbon disulfide	8260	<10J µg/L	<10J µg/L	<10J µg/L	<10 µg/L	<10 µg/L	<10 µg/L	**0.5J** µg/L	<10J µg/L	<10J µg/L	<10J µg/L
carbon tetrachloride	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**0.8** µg/L	**0.9** µg/L	<0.5 µg/L	<0.5 µg/L	**8.1** µg/L	<0.5 µg/L	**0.6** µg/L
chloroform	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
1,2-dichloroethane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
1.2-dichloropropane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
ethylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
isopropylbenzene (cumene)	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
methylene chloride	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
MIBK	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	**1J** µg/L	<10 µg/L
MTBE	8260	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L
toluene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
trichloroethene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
xylenes	8260	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L
tert-butyl alcohol	8260	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L

Table 3
Groundwater Analytical Data Summary, May 2003

Sample ID Aquifer Screen Interval (ft bgs)	Method	109-MW-01(S) shallow 43-68	117-MW-08(MD) mid deep 170-180	117-MW-10(S) shallow 50-75	117-MW-13(S) shallow 47-72	117-MW-14(MS) mid shallow 93.5-108.5	CL1-MW-04(S) shallow 50-75	CL1-MW-05(S) shallow 50-75	CL1-MW-06(S) shallow 54-79	CL1-MW-09(S) shallow 45-70	CL1-MW-12(MD) mid deep 140-150
TPH-gasoline	M8015V	<0.05 mg/L	<0.05 mg/L	**0.15**[a] mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	**0.44**[a] mg/L	**51**[a] mg/L
TPH-jet fuel	M8015V	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<2.5 mg/L
TPH-diesel	M8015E	<0.096 mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.096 mg/L	<0.096 mg/L	<0.096[b] mg/L	<0.096 mg/L	<0.096[b] mg/L	<0.48[b] mg/L
TPH-motor oil	M8015E	<0.096 mg/L	<0.096[b] mg/L	<0.13[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.13 mg/L	<0.13[b] mg/L	<0.13 mg/L	<0.13[b] mg/L	<0.67 mg/L
acetone	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<100 µg/L	<2,500 µg/L
benzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**166** µg/L	**23,200** µg/L
bromodichloromethane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
2-butanone (MEK)	8260	<10J µg/L	<10J µg/L	<10 µg/L	<10J µg/L	<10J µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<100 µg/L	<2,500 µg/L
sec-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
tert-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
carbon disulfide	8260	<10 µg/L	<10 µg/L	<10J µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<100J µg/L	<2,500J µg/L
carbon tetrachloride	8260	**0.4J** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
chloroform	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**0.9** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**13** µg/L	<130 µg/L
1,2-dichloroethane	8260	<0.5 µg/L	<0.5 µg/L	**170** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**11** µg/L	**630** µg/L
1.2-dichloropropane	8260	<0.5 µg/L	<0.5 µg/L	**0.7** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
ethylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
isopropylbenzene (cumene)	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	**3,780** µg/L
methylene chloride	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.7 µg/L	<8 µg/L	<200 µg/L
MIBK	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<100 µg/L	<2,500 µg/L
MTBE	8260	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<10 µg/L	<250 µg/L
toluene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
trichloroethene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**0.6** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<5 µg/L	<130 µg/L
xylenes	8260	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<10 µg/L	<250 µg/L
tert-butyl alcohol	8260	<20J µg/L	<20J µg/L	<48J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<200J µg/L	<5,000J µg/L

Table 3
Groundwater Analytical Data Summary, May 2003

Sample ID	Method	CL1-MW-14(MS)	CL1-MW-17(MD)	CL1-MW-18(D)	CL2-MP-02B	CL2-MP-05B	CL2-MW-05(MS)	NASA-SW-03
Aquifer		mid-shallow	mid-deep	deep	shallow	shallow	mid shallow	
Screen Interval (ft bgs)		100.5-110.5	157.83-177.83	199-219	40.5-50.5	48-58	80-90	210-235
TPH-gasoline	M8015V	**0.17**[a] mg/L	<0.05 mg/L	<0.05 mg/L	**0.1** mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L
TPH-jet fuel	M8015V	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L	<0.05 mg/L
TPH-diesel	M8015E	<0.096[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	**0.45** mg/L	<0.096[b] mg/L	<0.096 mg/L	<0.096 mg/L
TPH-motor oil	M8015E	<0.13[b] mg/L	<0.096[b] mg/L	<0.096[b] mg/L	<0.13 mg/L	<0.14 mg/L	<0.13 mg/L	<0.13 mg/L
acetone	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
benzene	8260	**11.0** µg/L	**0.4J** µg/L	**0.4J** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
bromodichloromethane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
2-butanone (MEK)	8260	<10 µg/L	<10J µg/L	<10J µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
sec-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	**0.5J**[d] µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
tert-butylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
carbon disulfide	8260	<10J µg/L	**4J** µg/L	**2J** µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
carbon tetrachloride	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
chloroform	8260	**0.6** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
1,2-dichloroethane	8260	**0.8** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
1.2-dichloropropane	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
ethylbenzene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
isopropylbenzene (cumene)	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
methylene chloride	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.8 µg/L	<1 µg/L	<0.8 µg/L	<1.1 µg/L
MIBK	8260	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L	<10 µg/L
MTBE	8260	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L
toluene	8260	<0.5 µg/L	<0.5 µg/L	**0.7** µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
trichloroethene	8260	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L	<0.5 µg/L
xylenes	8260	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L	<1 µg/L
tert-butyl alcohol	8260	**47J** µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L	<20J µg/L

Detections are bolded.
J qualifier indicates the associated numerical value is estimated.
µg/L denotes microgram(s) per liter.
mg/L denotes milligram(s) per liter.
[a] Not a gasoline or JP-4 pattern.
[b] Sample chromatogram contained some unknown peaks in Diesel and/or Motor Oil range.
[c] Re-analyzed on 5/29/03, previous reported value of 0.6 ug/L might be carry-over from previous sample.
[d] Confirmed by re-analysis on 5/29/03.

Table 4
Selected Groundwater Monitoring Wells for Summer 2003

Well ID	Screened Interval (ft bgs)[1]	Approximate Depth of Screen Midpoint Below Water Table (feet)	Monitor for Perchlorates
Site 11			
11-MW-03(S)	50-75	6	yes
11-MW-04(S)	49-74	7	yes
Site 17			
17-MW-03(MS)	97-107	44	
17-MW-18(MD)	170-180	120	
17-MW-24(S)	42-62	1	
17-MW-24(MS)	89-109	48	
17-MW-25(S)	50-70	6	yes
17-MW-25(MS)	89-109	45	yes
17-MW-26(S)	45-65	NA	yes
17-MW-26(MS)	86-106	NA	yes
17-MW-27(MS)	95-110	51	
17-MW-28(S)	49.5-74.5	8	
17-MW-29(MS)	105-115	56	
17-MW-31(S)	49-74	5	
17-MW-32(MS)	94-109	45	
17-MW-33(D)	203-223	151	
17-MW-34(D)	202.8-222.8	150	
17-MW-35(D)	199-219	146	
UST 109			
109-MW-01(S)	43-68	4	
UST 117			
117-MW-02(S)	50-75	NA	
117-MW-03(MS)	97-107	NA	
117-MW-08(MD)	170-180	118	
117-MW-10(S)	50-75	6	
117-MW-13(S)	47-72	4	
117-MW-14(MS)	93.5-108.5	46	
UST Cluster 1			
CL1-MW-04(S)	50-75	4	yes
CL1-MW-05(S)	50-75	5	yes
CL1-MW-06(S)	54-79	5	yes
CL1-MW-09(S)	45-70	0	
CL1-MW-12(MD)	140-150	84	
CL1-MW-14(MS)	100.5-110.5	46	
CL1-MW-17(MD)	157.83-177.83	106	
CL1-MW-18(D)	199-219	147	
UST Cluster 2			
CL2-MP-02A[2]	28-38	NA	
CL2-MP-02B	40.5-50.5	0	yes
CL2-MP-05A[2]	38-43	0	
CL2-MP-05B	48-58	8	
CL2-MW-05(MS)	80-90	43	
Irrigation and Domestic Supply Well			
NASA-SW-03	210-235	NA	

[1] *ft bgs denotes feet below ground surface.*

[2] *Field crew will sample B interval if dry.*

Appendix A
Groundwater Monitoring Data Forms and Sample Collection Logs

May ~~8~~ 7, 2003 Quarterly Groundwater Sampling

Notes	Well ID	Description	Screened Interval (ft bgs)	Depth to Water, feet	
ND	11-MW-03	Close to decommissioned wells where petroleum hydrocarbons were previously detected.	50 – 75	56.81	
ND	11-MW-04	Shallow well at boundary of Site 11.	49-74	53.96	
ND	109-MW-01	Shallow aquifer well inside the UST 109 soil contamination area	43-68	51.21	
ND	117-MW-08	Furthest downgradient mid-deep well at Administration Area	170-179	56.75	
DCA - 141	117-MW-10(S)	Downgradient of 117 extraction.	55-75	56.51	
ND	117-MW-13	Shallow well downgradient of chlorinated solvent plume near UST 117	47-72	54.74	
Chloroform -1	117-MW-14	Mid-shallow well downgradient of chlorinated solvent plume near UST 117	93.5-108.5	54.88	
Chloroform-5.8	17-MW-03	Well that consistently has the highest carbon tetrachloride concentrations.	97-107	57.64	CL99-54
ND	17-MW-18	Northern-most mid-deep well at Site 17 plume.	170-180	55.21	
ND	17-MW-24(MS)	Mid-shallow well downgradient of Site 17.	89-109	50.26	
ND	17-MW-24(S)	Furthest downgradient shallow well at Administration Area	43-63	50.50	
Low Levels	17-MW-25(MS)	Mid-shallow well downgradient of UST 117 and Site 17.	89-109	53.38	
ND	17-MW-25(S)	Shallow well downgradient of UST 117 and Site 17.	50-70	53.39	
ND	17-MW-27	Furthest downgradient mid-shallow well at Site 17 plume.	95-110	53.71	
ND	17-MW-28	Shallow well on northern plume boundary of Site 17.	49.5-74.5	56.48	MS/MSD
High Acetone	17-MW-29	Mid-shallow well on northern plume boundary of Site 17.	104.5-114.5	56.30	
CCl_4-4	17-MW-31	Shallow well on western plume boundary of Site 17.	49-74	59.55	CL99-56
ND	17-MW-32	Mid-shallow well on western plume boundary of Site 17.	94-109	59.64	
CCl_4-4	17-MW-33	Deep well downgradient of carbon tetrachloride source area at Site 17.	203-223	62.42	
CCl_4-5	17-MW-34	Deep well at downgradient leading edge of shallow/mid-shallow Admin Area Plume	202.8 – 222.8	61.96	CL99-55
Low Level	17-MW-35	Deep well at carbon tetrachloride source area at Site 17	199-219	65.21	

May 8, 2003 **Quarterly Groundwater Sampling**

Notes	Well ID	Description	Screened Interval (ft bgs)	Depth to Water, feet	
ND	CL1-MW-04	Downgradient (leading edge) of UST Cluster 1 plume.	50-75	58.69	
ND	CL1-MW-05	Upgradient of Administration Area plume.	50-75	57.50	
ND	CL1-MW-06	Upgradient of UST Cluster 1 and Administration Area plume.	54-79	~~68.90~~ RC 60.89	
Dirty Well	CL1-MW-09(S)	Shallow well downgradient (leading edge) of UST Cluster 1 and upgradient (leading edge) of Site 17.	45-70	58.49	
Dirty Well	CL1-MW-12(MD)	Mid-deep well near source at UST Cluster 1.	140-150	62.40	
Dirty Well	CL1-MW-14(MS)	Mid-shallow well upgradient of UST Cluster 1 source area	100.5-110.5	59.50	
ND	CL1-MW-17	Mid-deep well south of UST Cluster 1 source area	157.8-177.8	64.63	MS/MSD
ND	CL1-MW-18	Deep well located at UST Cluster 1 source area	199 – 219	65.11	
	CL2-MP-02A	Well that consistently has highest petroleum hydrocarbon concentrations at UST Cluster 2.	28-38	**If Dry sample 02B** 42.02	
ND	CL2-MP-02B		40.5 – 50.5	45.42	CL99-53
	CL2-MP-05A	Downgradient of UST Cluster 2 plume.	38-43	**If Dry sample 05B** 44.08	
ND	CL2-MP-05B		48 - 58	44.59	
ND	CL2-MW-05	Mid-shallow well near source of contamination at UST Cluster 2.	80-90	41.65	
	BG-MW-01	Background well – Water Level reading only	NO SAMPLES	81.67	
	BG-MW-03	Background well – Water Level reading only	NO SAMPLES	68.65	

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SAMPLE COLLECTION LOG

Project Name: CROWS
Well ID: 11-MW-03
Project Number: 836057
Project Location: Crows Landing TF 5/12/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	56.81	ft.	See page 50	
Depth to Bottom	74.82	ft.		
Screen Interval	50-75	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☑ Grunfos Pump
Pump Start Time: 8:10am

5/12/03

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
8:15		7.27	19.67	1,240	54.9	4.63	340	
		7.23	21.60	1.311	39.5	4.89	220	
		7.24	24.89	1,307	46.6	4.77	210	
		7.26	25.54	1,309	63.4	4.84	200	
		7.26	25.85	1.313	68.7	4.92	180	
		7.26	25.91	1.315	70.5	4.94	182	
		7.26	26.03	1,310	71.2	5.00	180	
		7.26	26.20	1,303	74.3	5.04	175	
8:34	5 Gal	7.25	26.19	1,300	77.0	5.07	165	

5/12/03

Field Test Kits Results:

5/12/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: 11-MW-03 (S) 0503
Sample Date/Time: 05-12-03 8:40
Sampler ID: Hector Merino
Weather Conditions: ☑ sunny ☐ rain ☐ overcast °F 70°
Sample Collection Method: 2" Pump

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☐	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☑	*Other please specify:*	
	TPH as diesel / m.oil – 2 AL	☒		
	TPH as gasoline / jet fuel - 2 VOA	☒		
	Metals - 1 HDPE	☐		
	Pesticide/PCB (8081A/8082) – 2 AL	☐		

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By:

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Project Number: 836557
Project Location: Crows Landing CA 95313
Well ID: 11-MW-04

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	53.96	ft.	See page 50	
Depth to Bottom	74.04	ft.		
Screen Interval	49.74	ft.		5/12/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 9:31

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
9:36		7.22	19.54	1.138	194.3	2.11	—	OFF SCALE
		7.19	20.22	1.132	166.3	1.55	650	
		7.20	21.48	1.121	158.0	1.58	400	
		7.20	22.93	1.115	162.7	1.44	190	
		7.20	23.27	1.115	162.2	1.41	140	
		7.20	23.17	1.111	159.0	1.37	100	
		7.20	23.19	1.107	157.6	1.34	101	
		7.20	23.21	1.107	155.7	1.36	110	
		7.20	23.17	1.105	154.5	1.35	100	
9:54	5 Gal	7.20	23.18	1.105	154.2	1.34	100	

5/12/03

Field Test Kits Results: 5/12/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	11-MW-04 05/03
Sample Date/Time:	5/12/03 9:58
Sampler ID:	Wherino
Weather Conditions:	☒ sunny ☐ rain ☐ overcast °F 70°
Sample Collection Method:	2" Pump
Analyses & Volume Collected:	VOC (8260B) - 3 VOA ☒
	SVOC (8270C) - 2 AL ☒
	TPH as diesel / m.oil - 2 AL ☒
	TPH as gasoline / jet fuel - 2 VOA ☒
	Metals - 1 HDPE ☐
	Pesticide/PCB (8081A/8082) - 2 AL ☐
	General Chemistry -1 HDPE ☐
	Other please specify:

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By:

DATE 0 5 1 3 0 3

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Project Number: 836537 J
Project Location: Crows Landing JF 4/15/03
Well ID: 17-MW-03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	57.64	ft.	Seepage-56	
Depth to Bottom	—	ft.	HM	
Screen Interval	97-107	ft.	05/13/03	

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 13:00

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
13:05		7.29	22.92	1.069	-148.8	1.27	19.0	
		7.16	22.35	1.079	-142.7	1.37	29.9	
		7.16	22.24	1.087	-137.2	1.30	19.6	
		7.16	22.26	1.081	-137.2	1.26	15.3	
		7.17	22.41	1.078	-132.9	1.27	93.2	
		7.17	22.58	1.075	-129.8	1.36	61.9	
13:35		7.17	22.59	1.077	-130.5	1.39	59.9	

5/13/03 HM

Field Test Kits Results: HM 5/13/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-03 5/03		CL99-54
Sample Date/Time:	5/13/03 13:40		13:45
Sampler ID:	Hector Merino		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast	80 °F	
Sample Collection Method:	2" Pump		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒	
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐	
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐	

Prepared By: [illegible]

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Project Number: 836557
Project Location: CROWS LANDING TF 5/14/03
Well ID: 17-MW-18MD

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	55.21	ft.	SEE PAGE 52	
Depth to Bottom	—	ft.		
Screen Interval	170-180	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 1533

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. ~~(µs/ms)~~ mS/cm	ORP (mV)	D.O. ~~(ppm)~~ mg/L	Turbidity NTU	Notes
Stabilization criteria	~~0.5 gal/min~~ (GAL)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	*No Criteria*	
1538	0.5	7.38	26.37	0.828	4.0	1.57	95	SC.000001
1543	1.0	7.45	27.93	1.084	14.7	2.68	—	
1546	1.5	7.46	28.09	1.096	22.4	2.83	22	
1550	2.0	7.45	27.76	1.097	29.4	2.97	—	
1554	2.5	7.46	27.27	1.095	29.4	3.06	—	
1559	3.0	7.44	27.11	1.077	29.8	3.03	9.92	
1604	3.5	7.44	27.06	1.027	28.0	2.94	---	
1608	4.0	7.43	27.37	1.014	28.8	2.85	5.03	

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-18MD (05/03)		
Sample Date/Time:	5-13-03 / 1640		
Sampler ID:	J STRACK		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 80°F		
Sample Collection Method:	~~J STRACK~~ GRUNDFOS PUMP		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
	TPH as gasoline / jet fuel - 2 VOA	☒	
	Metals - 1 HDPE	☐	
	Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: Joe Strack

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING Well ID: 17-MW-24S
Project Number: 836557
Project Location: Crows Landing F 05/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	50.50	ft.	YSI	03C1461
Depth to Bottom	—	ft.	LA MOTT	4029-1103
Screen Interval	43-63	ft.		JS 5/14/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 1434

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm² ~~(µs/ms)~~	ORP (mV)	D.O. mg/l ~~(ppm)~~	Turbidity NTU	Notes
Stabilization criteria	@400ml/min (GAL.)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1440	0.5	7.06	22.37	1.498	-1.0	1.59	3.4	CLOUDY, SLIGHT ODOR
1445	1.0	7.07	23.25	1.495	-21.3	1.47		
1450	1.5	7.08	24.00	1.494	-21.5	1.53	3.18	
1455	2.0	7.08	24.76	1.491	-12.6	1.66	—	
1500	2.5	7.08	24.94	1.489	-5.4	1.66	2.33	
1505	3.0	7.08	25.06	1.489	2.0	1.77	—	
1510	3.5	7.08	25.17	1.488	4.4	1.91	—	
1515	4.0	7.08	25.20	1.489	14.4	1.97	—	
1517	4.2	7.08	25.16	1.490	14.6	2.04	1.48	
								J.S. 5/14/03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	REG: 17-MW-24S (05/03)	F. DUP: CL-99-53 (05/03)
Sample Date/Time:	5-12-03 / 1520	5-12-03 / 1550
Sampler ID:	J. STRACK	
Weather Conditions:	☒ sunny ☐ rain ☐ overcast	75° F
Sample Collection Method:	GRUNDFOS	

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
	TPH as gasoline / jet fuel - 2 VOA	☒		
	Metals - 1 HDPE	☐		
	Pesticide/PCB (8081A/8082) - 2 AL	☐		

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: Joe Strack

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: 17-MW-24MS
Project Number: 836557
Project Location: CROWS Landing TF 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	53.38	ft.	YSI	
Depth to Bottom	—	ft.	LAMOTT	
Screen Interval	89-109	ft.	—	QS 5/14/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 1547

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm² ~~(µs/ms)~~	ORP (mV)	D.O. mg/l ~~(ppm)~~	Turbidity NTU	Notes
Stabilization criteria	@ ~400 ml/min (GAL)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1553	0.75	8.41	25.20	1.267	45.0	5.12	OVER RANGE	RECOVERY TAN NO GAS
1558	1.25	8.19	25.95	1.262	41.6	4.91	—	" "
1605	2.0	8.07	25.66	1.248	46.3	4.96	889	" "
1610	2.5	8.00	25.59	1.240	45.0	5.04	—	CLEAR
1615	2.8	7.91	25.82	1.233	50.5	5.04	379	SLOWED TO 300 ml/min
1620	3.2	7.85	25.57	1.229	57.9	5.10	—	↓
1624	3.5	7.83	25.67	1.227	60.8	5.02	334	↓
								QS 5/14/03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-24MS			
Sample Date/Time:	5-12-03 / 1630			
Sampler ID:	J STRAER			
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 75 °F			
Sample Collection Method:	GRUNDFOS			
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
	TPH as gasoline / jet fuel - 2 VOA	☒		
	Metals - 1 HDPE	☐		
	Pesticide/PCB (8081A/8082) - 2 AL	☐		

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: 17-MW-25S
Project Number: 836557
Project Location: Crows landing TF 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	53.39	ft.	SEE PAGE 52	
Depth to Bottom	—	ft.		
Screen Interval	50-70	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 1042

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm ~~(µs/ms)~~	ORP (mV)	D.O. mg/l ~~(ppm)~~	Turbidity NTU	Notes
Stabilization criteria	≈500ml/min (0.5L)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1047	0.5	7.15	26.00	2.065	15.8	2.21	50	CLEAR NO ODOR
1052	1.0	7.14	24.23	2.068	34.1	2.10	—	
1054	1.5	7.14	24.70	2.063	39.4	2.15	23	
1100	2.0	7.19	25.46	2.059	45.0	2.16	—	
1105	2.5	7.21	25.45	2.067	55.2	2.22	30	
1110	3.0	7.14	24.89	2.062	63.5	2.36	—	
1115	3.5	7.14	25.11	2.058	64.8	2.31	17	

J.S. 5-13-03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-25S (05-03)		
Sample Date/Time:	05-13-03 / 1125		
Sampler ID:	J. STRACK		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 76° F		
Sample Collection Method:	GRUNDFOS		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒	
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐	
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐	

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING Well ID: 17-MW-25MS
Project Number: 836557
Project Location: Crows Landing TF 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	53.38	ft.	SEE PAGE 52	
Depth to Bottom	—	ft.		5/14/03
Screen Interval	89-109	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 0935

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm ~~(µs/ms)~~	ORP (mV)	D.O. mg/l ~~(ppm)~~	Turbidity NTU	Notes
Stabilization criteria	~500ml/min (GAL)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
0940	0.5	7.42	23.04	1.210	-116.0	0.98	—	CLEAR, NO ODOR
0944	1.0	7.39	23.02	1.210	-95.3	0.25	24.2	
0949	1.5	7.39	23.57	1.207	-95.5	0.16	—	
0954	2.0	7.40	24.05	1.202	-97.0	0.13	14	
0959	2.5	7.41	24.66	1.204	-92.0	0.13	—	
1004	3.0	7.41	24.95	1.210	-89.6	0.13	11	
								5/14/03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-25MS (05/03)	
Sample Date/Time:	5-13-03 / 1010	
Sampler ID:	JOE STRAUK	
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 70 °F	
Sample Collection Method:	GRUNDFOS	
Analyses & Volume Collected:	VOC (8260B) - 3 VOA ☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL ☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL ☒	
	TPH as gasoline / jet fuel - 2 VOA ☒	
	Metals - 1 HDPE ☐	
	Pesticide/PCB (8081A/8082) - 2 AL ☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

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SAMPLE COLLECTION LOG

Project Name: CROWS Landing
Project Number: 836537
Project Location: CROWS LANDING TF SISKO

Well ID: 17-MW-27

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	53.71	ft.	See page 63	
Depth to Bottom	—	ft.		5/14/03
Screen Interval	95-110	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☑ Grunfos Pump
Pump Start Time: 0740

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		*+/- 0.1*	*+/- 1° C*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*No Criteria*	
07:45		6.95	17.01	1.363	28.5	4.41	277	
-		7.01	17.43	1.364	4.6	2.47	120	
-		7.07	17.82	1.362	-15.2	1.78	80.1	
		7.05	18.20	1.361	-23.0	1.29	68.1	
		7.08	18.65	1.360	-30.2	1.15	63.9	
		7.09	19.05	1.363	-31.3	1.12	55.5	
		7.10	19.22	1.364	-30.4	1.18	49.1	
		7.11	19.33	1.367	-29.3	1.32	50.0	
08:25	4 Gallons	7.11	19.34	1.367	-29.1	1.34	48.0	

Field Test Kits Results: 5/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-27 5/03
Sample Date/Time:	05/14/03 8:30
Sampler ID:	[illegible]
Weather Conditions:	☑ sunny ☐ rain ☐ overcast 68° °F
Sample Collection Method:	

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By: [illegible]

DATE 0 5 1 4 0 3

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: 17-MW-28S
Project Number: 836557
Project Location: Crows Landing TF 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	56.48	ft.	SEE PAGE 59	5-14
Depth to Bottom	—	ft.		
Screen Interval	48.5-74.5	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☐ Grunfos Pump

Pump Start Time: 1118

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. ~~(µs/ms)~~ mS/cm²	ORP (mV)	D.O. ~~(ppm)~~ mg/L	Turbidity NTU	Notes
Stabilization criteria	GAL	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1120	0.5	7.57	20.85	1.768	-9.0	14.75		CLOUDY TAN NO ODOR
1125	1.25	7.51	21.58	1.756	-6.1	5.56	22.3	
1130	2.0	7.51	22.10	1.754	1.6	5.38	—	
1135	2.5	7.51	22.83	1.753	9.6	5.28	128	
1140	3.0	7.50	23.46	1.753	14.6	5.16	—	
1145	3.5	7.50	24.27	1.750	17.7	5.05	99.3	SL. CLOUDY, NO ODOR
1150	4.0	7.50	25.20	1.755	19.6	5.05	—	
1155	4.5	7.50	24.97	1.755	21.0	4.90	90	
								05 5-14

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-28S(05/03)
Sample Date/Time:	5-14-03/1200
Sampler ID:	J. STRACK
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 80°F
Sample Collection Method:	GRUNDFOS

Analyses & Volume Collected:

VOC (8260B) - 3 VOA X2	☒	General Chemistry -1 HDPE	☐
SVOC (8270C) - 2 AL	☐	*Other please specify:*	
TPH as diesel / m.oil - 2 AL X2	☒	MS/MSD	
TPH as gasoline / jet fuel - 2 VOA X2	☒		
Metals - 1 HDPE	☐		
Pesticide/PCB (8081A/8082) - 2 AL	☐		

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: Joe Strack

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: 17-MW-29MS
Project Number: 836557
Project Location: Crows Landing CA 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	56.30	ft.	SEE PAGE 59	
Depth to Bottom	—	ft.		
Screen Interval	104.5-114.5	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 1227

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm ~~(µs/ms)~~	ORP (mV)	D.O. mg/L ~~(ppm)~~	Turbidity NTU	Notes
Stabilization criteria	(GAL)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1231	0.5	10.69	20.99	1.452	-102.6	0.63	—	CLEAR, NO ODOR
1236	1.0	10.75	21.06	1.483	-121.0	0.32	32	
1241	1.5	10.75	21.37	1.466	-123.5	0.30	—	
1246	2.0	10.34	21.41	1.416	-118.3	0.30	40	
1251	2.5	9.54	21.43	1.442	-84.1	0.37	—	
1256	3.0	8.93	21.28	1.524	-52.7	0.50	—	
1301	3.5	9.01	21.84	1.519	-49.9	0.65	—	
1306	4.0	9.16	21.93	1.492	-54.5	0.60	23	
1310	4.4	9.06	21.95	1.498	-53.6	0.54	21	

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-29MS (05/03)		
Sample Date/Time:	5-14-03 / 1310		
Sampler ID:	J. STRACK		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 80 °F		
Sample Collection Method:	GRUNDFOS		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
	TPH as gasoline / jet fuel - 2 VOA	☒	
	Metals - 1 HDPE	☐	
	Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Well ID: 17-MW-31
Project Number: 836557
Project Location: Crows Landing CA 5/15/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	59.55	ft.	See page 56	
Depth to Bottom	—	ft.	AM	5/13/03
Screen Interval	49.74	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 2:15 pm

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		*+/- 0.1*	*+/- 1° C*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*No Criteria*	
14:20		7.51	21.75	1.192	24.9	5.35	74.3	
		7.43	22.63	1.181	21.7	4.75	46.3	
		7.44	23.52	1.173	22.5	4.75	178	
		7.40	23.82	1.163	25.1	4.82	93.4	
		7.40	24.01	1.154	27.9	4.86	75.3	
		7.42	24.19	1.152	31.3	6.07	35.5	
		7.42	24.53	1.146	38.3	5.16	22.0	
14:55	4 gal	7.42	24.54	1.147	38.3	5.17	21.0	

AM 5/13/03

Field Test Kits Results: AM 5/13/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-31	CL-99-56
Sample Date/Time:	5/13/03 15:00	15:10
Sampler ID:	A Melino	
Weather Conditions:	☒ sunny ☐ rain ☐ overcast	85° F
Sample Collection Method:	2" Pump	

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / motor oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By: AM

DATE 05 13 03

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Project Number: 836557
Project Location: Crows Landing FS/ESOS
Well ID: 17-MW-32MS

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	59.64	ft.	See Page 56	
Depth to Bottom	—	ft.		
Screen Interval	94-109	ft.		

Purging Method: ☒ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 15:39

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
15:40		7.45	26.75	1.043	53.6	8.30	27.9	
		6.102	25.66	1.040	61.9	6.64	65.7	
		7.37	25.77	1.028	64.0	6.30	3.69	
		7.45	25.95	1.039	63.3	6.95	33.3	
		7.49	25.85	1.047	63.5	6.88	31.12	
16:05	4.06 Al	7.50	25.84	1.045	63.9	6.79	25.4	
								* 2 liter bottles broke during packing on 5/14/03 resample on 5/19/03 TC

Field Test Kits Results: 5/13/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-32-5/03		
Sample Date/Time:	5/13/03 16:10		
Sampler ID:	[illegible]		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 80 °F		
Sample Collection Method:	2" Pump		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒	
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐	
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐	

Prepared By: [illegible]

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SAMPLE COLLECTION LOG

Project Name: Crowslanding
Project Number: 836557
Project Location: Crowslanding
Well ID: 17-MW-32MS

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	59.64	ft.	SeaPage 70	
Depth to Bottom		ft.		5/15/03
Screen Interval	94-109	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 08:50

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
08:55		7.43	19.37	1.033	87.2	7.21	93.0	
09:00		7.40	20.27	1.032	90.8	6.87	26.4	
09:05		7.41	20.84	1.034	96.8	6.78	15.7	
09:10		7.42	20.99	1.036	97.4	6.86	16.2	
09:15		7.42	21.02	1.034	100.0	6.71	17.7	
09:20		7.42	21.05	1.032	104.6	6.92	14.1	
09:25		7.42	21.05	1.034	105.9	6.79	14.4	
09:30	4.5gal	7.42	21.06	1.033	106.9	6.73	12.5	

5/15/03

Field Test Kits Results: 5/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-32		
Sample Date/Time:	05/15/03 9:35		
Sampler ID:	[illegible]		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 65 °F		
Sample Collection Method:	2" Pump		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☐	General Chemistry -1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
	TPH as gasoline / jet fuel - 2 VOA	☐	
	Metals - 1 HDPE	☐	
	Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: [illegible]

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SAMPLE COLLECTION LOG

Project Name: Cross Landing
Project Number: 836557
Project Location: Cross Landing, FL 5/15/03
Well ID: 17-MW-33

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	62.42	ft.	Seabage 63	
Depth to Bottom	—	ft.		
Screen Interval	203-223	ft.		5/14/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 8:55

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
9:00		7.52	17.99	1.019	-218.0	2.47	15.2	
		7.49	18.48	1.030	-239.6	1.74	9.93	
		7.53	18.75	1.064	-246.8	1.45	213	
		7.67	18.99	1.115	-259.4	1.05	160	
		7.73	19.19	1.159	-253.3	0.78	162	
		7.74	19.27	1.158	-253.9	2.06	188	
		7.79	19.61	1.161	-260.3	0.63	276	
9:35	4 Gallons	7.80	19.61	1.161	-261.0	0.60	255	

Field Test Kits Results: 5/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-33 5/03
Sample Date/Time:	5/14/03 9:44
Sampler ID:	Wraine
Weather Conditions:	☐ sunny ☐ rain ☒ overcast 66° F
Sample Collection Method:	
Analyses & Volume Collected:	VOC (8260B) - 3 VOA ☒
	SVOC (8270C) - 2 AL ☐
	TPH as diesel / m.oil - 2 AL ☒
	TPH as gasoline / jet fuel - 2 VOA ☒
	Metals - 1 HDPE ☐
	Pesticide/PCB (8081A/8082) - 2 AL ☐
	General Chemistry - 1 HDPE ☐
	Other please specify:

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By:

DATE 0 5 1 4 0 3

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: 17-MW-34D
Project Number: 836557
Project Location: Crows Landing 7805/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	61.96	ft.	SEE PAGE 59	RL 5-14
Depth to Bottom	—	ft.		
Screen Interval	202.8 222.8	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 0748

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. ~~(µs/ms)~~ mS/cm	ORP (mV)	D.O. ~~(ppm)~~ mg/L	Turbidity NTU	Notes
Stabilization criteria	(6.4 L)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	*No Criteria*	
0753	0.5	11.42	18.80	1.542	-82.5	2.37	62.9	CLEAR NO ODOR
0800	1.5	9.63	19.65	1.147	-51.2	2.62	—	
0805	2.0	8.84	19.90	1.198	7.4	3.24	49.5	
0810	2.5	8.66	20.03	1.210	31.1	3.51	—	
0815	3.0	8.62	20.28	1.213	39.0	3.80	48.7	
0820	3.5	8.60	20.60	1.218	45.3	3.83	—	
0825	4.0	8.61	20.60	1.219	47.7	4.02	50.3	
							RL 5-14	

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	REG: 17-MW-34D (05/03)	FDUP:
Sample Date/Time:	REG 5-14-03 / 0830	5-14-03 / 0910
Sampler ID:	J STONER	
Weather Conditions:	☒ sunny ☐ rain ☐ overcast	70 °F
Sample Collection Method:	GRUNDFOS	

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
	TPH as gasoline / jet fuel - 2 VOA	☒		
	Metals - 1 HDPE	☐		
	Pesticide/PCB (8081A/8082) - 2 AL	☐		

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: J Stoner

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: 17-MW-35D
Project Number: 836557
Project Location: Crows Landing TF 05/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	65.21	ft.	SEE PAGE 59	
Depth to Bottom	—	ft.		
Screen Interval	199 - 219	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 0927

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm ~~(µs/ms)~~	ORP (mV)	D.O. mg/l ~~(ppm)~~	Turbidity NTU	Notes
Stabilization criteria	GAL	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
0930	0.5	7.35	19.97	1.098	-227.6	4.38	—	CLEAR, H2S ODOR
0935	1.0	7.39	20.23	1.102	-236.9	3.65	17.1	BECOMES CLOUDY
0940	1.5	7.56	20.81	1.450	-167.7	2.08	OVER RANGE	CLOUDY, V. DARK GRAY
0945	2.0	7.56	21.05	1.455	-118.3	2.95	—	
0950	2.5	7.57	21.12	1.443	-92.3	4.35	249	CLOUDY GRAY
0955	3.0	7.55	21.46	1.462	-92.0	4.65	—	
1000	3.5	7.55	22.03	1.497	-77.9	5.16	54.1	SL. CLOUDY
1005	4.0	7.54	22.20	1.504	-74.9	5.15	176	

Field Test Kits Results:

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	17-MW-35D (05/03)		
Sample Date/Time:	5-14-03 / 1010		
Sampler ID:	J. STACK		
Weather Conditions:	☒ sunny ☐ rain ☒ overcast 70 °F		
Sample Collection Method:	GRUNDFOS		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒	
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐	
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐	

Prepared By: J. Stack

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING Well ID: 109-MW-01
Project Number: 836557
Project Location: Crows Landing, CA 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	51.21	ft.	SEE PAGE 52	
Depth to Bottom		ft.		
Screen Interval	43-68	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☐ Grunfos Pump
Pump Start Time: 0815

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm (µS/ms)	ORP (mV)	D.O. mg/L (ppm)	Turbidity NTU	Notes
Stabilization criteria	<500ml/min (GAL)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	*No Criteria*	
0819	0.5	7.22	21.94	1.280	179.2	5.54	—	CLOUDY, TAN
0823	1.0	7.26	23.40	1.280	167.3	5.46	435	NO ODOR
0827	1.5	7.28	24.12	1.280	163.8	5.27	—	
0831	2.0	7.29	24.62	1.280	163.8	5.16	280	CLOUDY
0836	2.5	7.29	25.07	1.278	162.7	5.14	—	"
0841	3.0	7.29	25.33	1.279	163.1	5.02	200	"
								5/14/03
								* 2 liter bottles broke during packing on 5/14/03, resample on 5/15/03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	109-MW-01 (03/05)
Sample Date/Time:	5-13-03 / 0845
Sampler ID:	J. STRACK
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 70 °F
Sample Collection Method:	

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By: Joe Strack

DATE 05 15 03

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Project Number: 836557
Project Location: Crows Landing
Well ID: 109-MW-015

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	56.75	ft.	See Page 70	
Depth to Bottom		ft.		5/15/03
Screen Interval	43-68	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☐ Grunfos Pump
Pump Start Time: 7:40

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		*+/- 0.1*	*+/- 1° C*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*No Criteria*	
07:45		7.02	20.15	1.219	89.4	5.97	—	OFFSCALE
07:50		7.08	22.18	1.220	61.9	5.68	863	
07:55		7.11	23.48	1.218	52.0	5.35	692	
08:00		7.12	24.26	1.221	47.5	5.20	671	
08:05		7.13	24.59	1.222	45.0	5.02	610	
0810		7.14	24.01	1.220	47.2	5.03	549	
0815		7.14	23.72	1.219	49.9	5.06	510	
08:20		7.14	23.73	1.218	50.0	5.16	503	

5/15/03

Field Test Kits Results: 5/15/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: 109-MW-015
Sample Date/Time: 05/15/03 8:26
Sampler ID:
Weather Conditions: ☒ sunny ☐ rain ☐ overcast 65 °F
Sample Collection Method: 2" Pump

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☐	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☐		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Project Number: 836557
Project Location: Crows Landing TF 5/15/03
Well ID: 117-MW-08

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	56.75	ft.	See Page 56	
Depth to Bottom	—	ft.		
Screen Interval	170-179	ft.		5/13/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 10:47

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		*+/- 0.1*	*+/- 1° C*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*No Criteria*	
10:50		7.26	24.28	1.055	-102.5	1.65	3.08	
		7.24	23.88	1.046	-90.8	1.51	2.61	
		7.24	23.70	1.041	-67.9	1.95	2.47	
		7.32	23.85	1.029	-42.6	5.89	39.5	
		7.23	23.66	1.024	-30.6	4.82	6.61	
		7.23	23.33	1.033	-28.3	4.33	6.00	
11:20	3.5 Gallons	7.23	23.33	1.035	-27.4	4.21	6.05	

5/13/03

Field Test Kits Results: 5/13/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: 117-MW-08 5/03
Sample Date/Time: 05/13/03 11:33
Sampler ID: J Merino
Weather Conditions: ☒ sunny ☐ rain ☐ overcast 75 °F
Sample Collection Method: 2" Pump

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

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DATE	0	5	1	4	0	3

SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: 117-MW-10S
Project Number: 836557
Project Location: CROWS LANDING 05/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	56.51	ft.	SEE PAGE 59	
Depth to Bottom	—	ft.		DS 5-14
Screen Interval	55-75	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☑ Grunfos Pump
Pump Start Time: 1436

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. ~~(µs/ms)~~ mS/cm²	ORP (mV)	D.O. ~~(ppm)~~ mg/L	Turbidity NTU	Notes
Stabilization criteria	GAL	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1440	0.5	7.00	24.67	1.292	169.3	0.52	70	SLIGHT H2S MIL. FUEL ODOR
1444	1.0	6.98	24.78	1.286	-175.2	0.31	—	
1449	1.5	6.96	25.79	1.292	-147.5	0.26	20	
1456	2.0	6.97	26.97	1.302	-131.4	0.25	—	FLOW BLOWED ITSELF
1500	2.2	6.97	27.67	1.302	-128.0	0.27	7.81	CLEAR ODOR
							DS 5-14	

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	117-MW-10S		
Sample Date/Time:	5-14-03 1150		
Sampler ID:	J. STRACK		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast	85° F	
Sample Collection Method:	GRUNDFOS		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
	TPH as gasoline / jet fuel - 2 VOA	☒	
	Metals - 1 HDPE	☐	
	Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: Joe Strack

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING Well ID: 117-MW-13(S)
Project Number: 836557
Project Location: Crows Landing TF 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	54.74	ft.	SEE PAGE 52	0.85-13
Depth to Bottom	—	ft.		
Screen Interval	47-72	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 1231

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. ~~(µs/ms)~~ mS/cm²	ORP (mV)	~~D.O.~~ mg/L (ppm)	Turbidity NTU	Notes
Stabilization criteria	500 ml/min (6 AL)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1235	0.5	7.04	24.60	1.503	84.3	3.31	—	CLEAR, NO ODOR
1240	1.0	7.07	24.64	1.490	60.8	2.98	50	
1245	1.5	7.08	25.32	1.488	60.7	3.08	—	
1250	2.0	7.09	25.91	1.476	61.7	3.20	29	
1255	2.5	7.10	26.47	1.463	60.7	3.02	—	
1300	3.0	7.11	26.45	1.453	60.9	3.20	19	
1305	3.5	7.11	26.61	1.445	62.9	3.28	17	
								0.85-13

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	117-MW-13S (05/03)			
Sample Date/Time:	5-13-03 / 1310			
Sampler ID:	J. Streck			
Weather Conditions:	☒ sunny ☐ rain ☐ overcast		85° F	
Sample Collection Method:	GRUNDFOS			
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By: Joe Streck

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DATE	0 5 1 3 0 3

SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Project Number: 836557
Project Location: CROWS LANDING TF 5/14/03
Well ID: 117-MW-14MS

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	54.88	ft.	SEE PAGE 52	08 5-18
Depth to Bottom	—	ft.		
Screen Interval	93.5-108.5	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☐ Grunfos Pump
Pump Start Time: 1322

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (mS/cm) (µs/ms)	ORP (mV)	D.O. (mg/L) (ppm)	Turbidity NTU	Notes
Stabilization criteria	≤500ml/min	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1325	0.5	7.34	27.23	1.419	38.6	3.37	—	BUMPS AND BOOM
1330	1.0	7.41	26.80	1.475	55.9	5.03	38	
1335	1.5	7.41	27.94	1.478	63.1	4.86	—	
1339	1.75	7.43	4.6	1.491	72.6	4.70	36	PUMP SELF REZELF
1340	PURGED DRY OR PUMP OUT TEMPORARILY							
1340-1425	ALLOWED RECOVERY							
1425-1430	5.0	RESTART PUMP; ABLE TO DOUBLE EARLIER VOLUME						
1435	6.0	7.43	25.69	1.460	78.6	5.76		SLOWS SIGNIFICANTLY 500ml/min
1440	6.5	7.40	27.67	1.452	92.6	4.99		DIFFICULT TO REGULATE PUMPS FLOW
1445	7.0	7.41	26.06	1.463	93.9	6.88	19	
1449	7.4	7.41	26.47	1.461	95.0	5.57	19	
							0.2	5-13

Field Test Kits Results: ——

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	117-MW-14MS (05/03)	
Sample Date/Time:	5-13-03 / 1400	
Sampler ID:	J. STRACK	
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 85° F	
Sample Collection Method:	GRUNOFOS	
Analyses & Volume Collected:	VOC (8260B) - 3 VOA ☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL ☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL ☒	
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA ☒	
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE ☐	
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL ☐	

Prepared By: Joe Strack

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Well ID: CL1-MW-04
Project Number: 836557
Project Location: Crows Landing TF 5/15/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	53.69	ft.	Serfg 50	
Depth to Bottom	74.04	ft.		
Screen Interval	50-75	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump 5/12/03
Pump Start Time: 11:54

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
11:57		7.09	22.84	1.218	63.2	5.52	—	OFFSCALE
		7.05	22.53	1.118	77.2	4.72	—	
		7.04	22.28	1.110	61.4	4.08	—	
		7.05	22.37	1.126	35.4	3.57	—	
		7.04	22.86	1.132	19.1	3.29	—	
		7.04	22.51	1.133	9.4	3.08	—	
		7.04	22.59	1.134	4.9	3.05	—	
12:12	36 gallons	7.04	22.60	1.133	4.6	3.00	—	

5/12/03

Field Test Kits Results: 5/12/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: CL1-MW-04 5/03
Sample Date/Time: 05/12/03 12:15
Sampler ID: Hoester Meiro
Weather Conditions: ☐ sunny ☐ rain ☐ overcast 75° °F
Sample Collection Method:

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By:

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Crows Landing **SAMPLE COLLECTION LOG**

Project Name: ~~CLI-MW-05~~ Well ID: CLI-MW-05
Project Number: 836557
Project Location: Crows Landing CA 5/15/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	57.50	ft.	See page 50	
Depth to Bottom	73.50	ft.		
Screen Interval	52.75	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump 5/12/03
Pump Start Time: 10:43

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
10:46		7.46	22.00	.914	137.6	5.58	500	
		7.41	22.09	.918	138.1	5.49	550	
		7.41	23.92	.944	104.1	5.70	5.35	
		7.44	27.86	.957	78.1	4.99	190	
		7.44	26.77	.956	91.6	5.13	65	
		7.44	26.74	.955	101.8	5.13	38	
11:06	4 GAL	7.44	26.71	.956	104.4	5.21	35	

5/12/03

Field Test Kits Results: 5/12/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	CLI-MW-05 5/03		
Sample Date/Time:	5/15/03 11:12		
Sampler ID:	Dustin Morris		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 70 °F		
Sample Collection Method:	2" PUMP		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
	TPH as gasoline / jet fuel - 2 VOA	☒	
	Metals - 1 HDPE	☐	
	Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By:

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Shaw Environmental & Infrastructure, Inc.

SAMPLE COLLECTION LOG

Project Name: CRoWs Landing
Project Number: 836557
Project Location: CROWS Landing TF 5/15/03
Well ID: CLL-MW-06

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	60.89	ft.	See Page 50	
Depth to Bottom	79.12	ft.		
Screen Interval	54.79	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time 13:46

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		*+/- 0.1*	*+/- 1° C*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*No Criteria*	
13:50		7.14	23.71	2.174	18.0	4.18	—	OFFSCALE
		7.13	23.99	2.177	23.2	3.81	—	
		7.13	24.09	2.177	24.8	3.67	—	
		7.13	24.30	2.168	29.4	3.42	—	
		7.13	24.34	2.158	31.6	3.28	—	
		7.14	24.49	2.152	28.3	3.04	—	
		7.14	24.55	2.177	21.2	3.01	—	
		7.14	23.63	2.058	12.1	3.04	—	
		7.15	25.95	1.892	.03	3.27	600	µ
		7.16	27.55	1.839	10.6	3.24	~~598~~	598
14:12	6 gallons	7.16	27.51	1.837	14.7	3.31	500	

Field Test Kits Results: 5/12/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: CLL-MW-06 5/03
Sample Date/Time: 5/12/03 14:18
Sampler ID: Dexter Moore
Weather Conditions: ☒ sunny ☐ rain ☐ overcast 75° °F
Sample Collection Method: 2" Pump

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
	TPH as gasoline / jet fuel - 2 VOA	☒		
	Metals - 1 HDPE	☐		
	Pesticide/PCB (8081A/8082) - 2 AL	☐		

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By:

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SAMPLE COLLECTION LOG

Project Name: CROWS Landing
Project Number: 836557
Project Location: CROWS Landing CF 5/15/03
Well ID: CL1-MW-09S

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	58.49	ft.	See Page 63	
Depth to Bottom	—	ft.		
Screen Interval	46.70	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 10:45

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		*+/- 0.1*	*+/- 1° C*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*No Criteria*	
10:50		7.10	22.39	1.955	-57.1	2.27	—	OFFSCALE
10:55		7.10	22.34	1.957	-58.9	2.04	—	
11:00		7.10	22.44	1.956	-61.9	1.94	—	
11:05		7.11	23.43	1.975	-71.3	1.12	—	
11:10		7.12	23.99	1.979	-81.0	1.01	—	
11:15		7.14	25.15	1.981	-90.9	1.01	708	
11:20		7.15	28.39	1.999	-101.0	0.39	490	
11:25		7.16	28.38	2.001	-102.0	0.38	444	
								Well went Dry @ Time of Sampling

5/14/03

Field Test Kits Results: 5/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	CL1-MW-09S
Sample Date/Time:	05/14/03 11:28
Sampler ID:	Marino
Weather Conditions:	☐ sunny ☐ rain ☒ overcast 60°F
Sample Collection Method:	2" PURGE WATER PUMP

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By:

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Project Number: 836557
Project Location: Crows Landing CA 5/15/03
Well ID: CL1-MW-12 (MD)

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	62.40	ft.	See page 63	
Depth to Bottom	—	ft.		5/14/03
Screen Interval	140-150	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 13:35

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
13:40		7.11	24.38	1.337	-242.4	.74	214	
13:45		6.34	24.02	1.469	-244.5	.41	321	
13:50		6.78	24.70	1.509	-246.5	.26	157	
13:55		6.82	25.42	1.511	-261.3	.21	7.18	
14:00		6.81	25.74	1.505	-255.2	.22	700	
14:05		6.85	26.02	1.491	-261.8	.17	685	
14:10		6.85	26.20	1.485	-264.3	.18	671	
14:15		6.85	26.21	1.485	-255	.18	673	

5/14/03

Field Test Kits Results: 5/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: CL1-MW-12 (MD)
Sample Date/Time: 5/14/03 14:25
Sampler ID: Nesino
Weather Conditions: ☐ sunny ☐ rain ☒ overcast °F
Sample Collection Method: 2" Pump

Analyses & Volume Collected:

VOC (8260B) - 3 VOA	☐	General Chemistry -1 HDPE ☐
SVOC (8270C) - 2 AL	☐	*Other please specify:*
TPH as diesel / m.oil - 2 AL	☐	
TPH as gasoline / jet fuel - 2 VOA	☐	
Metals - 1 HDPE	☐	
Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By:

DATE 05 14 03

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SAMPLE COLLECTION LOG

Project Name: Crawfordville
Project Number: 836557
Project Location: Crows Landing FF 5/15/03
Well ID: CLI-MW-14(MS)

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	59.50	ft.	Seaflex 03	
Depth to Bottom	—	ft.		5/14/03
Screen Interval	100.5 110.5	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 12:40

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
12:45		7.34	22.12	1.821	-14.6	0.90	174	
12:50		7.02	21.67	2.052	-4.4	0.37	128	
12:55		6.98	21.54	2.081	-8.2	0.28	423	
13:00		6.98	21.67	2.067	-95.3	0.22	—	
13:05		6.95	21.92	2.075	-137.7	0.38	625	
13:10	4 Gallons	6.94	21.93	2.068	-136.6	0.40	510	

Field Test Kits Results: 5/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: CLI-MW-14(MS)
Sample Date/Time: 05/14/03 13:15
Sampler ID: [illegible]
Weather Conditions: ☐ sunny ☐ rain ☒ overcast 65°F
Sample Collection Method: 2" Pump

Analyses & Volume Collected:

VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE ☐
SVOC (8270C) - 2 AL	☐	*Other please specify:*
TPH as diesel / m.oil - 2 AL	☒	
TPH as gasoline / jet fuel - 2 VOA	☒	
Metals - 1 HDPE	☐	
Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: [illegible]

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SAMPLE COLLECTION LOG

Project Name: Crows Landing
Project Number: 836557
Project Location: Crows Landing CA 5/13/03
Well ID: CL-MW-17

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	64.63	ft.	See page 56	
Depth to Bottom	180.30	ft.		
Screen Interval	157.8-177.8	ft.		5/13/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 07:30

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
07:40		7.72	20.16	1.250	-267.6	6.02	13	
		7.70	20.48	1.244	-273.3	4.60	15	
		7.67	20.86	1.233	-277.9	3.81	60	
		7.54	21.52	1.227	-280.1	2.88	256	
		7.56	21.86	1.227	-279.2	2.52	290	
		7.57	22.23	1.234	-262.5	2.34	281	
		7.55	22.34	1.243	-239.6	2.23	330	
		7.50	22.31	1.235	-223.6	2.25	411	
		7.47	22.36	1.233	-209.8	2.27	405	
8:14	5 Gallon	7.46	22.37	1.235	-188.5	2.25	389	

5/13/03

Field Test Kits Results: 05/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: CL-MW-17 (MS/MSD) 5/3
Sample Date/Time: 5/13/03 8:20
Sampler ID: Hector Moreno
Weather Conditions: ☒ sunny ☐ rain ☐ overcast 70° °F
Sample Collection Method: 2" Pump

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
	TPH as gasoline / jet fuel - 2 VOA	☒		
	Metals - 1 HDPE	☐		
	Pesticide/PCB (8081A/8082) - 2 AL	☐		

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By:

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING Well ID: CLI-MW-18
Project Number: 836557
Project Location: CROWS Landing CA 5/13/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	65.11	ft.	See Page 54	
Depth to Bottom	—	ft.		
Screen Interval	199-219	ft.	5/13/03	

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 9:12

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
9:14		7.46	26.84	1.682	-266.5	2.78	47.6	
		7.88	26.08	1.688	-282.3	1.50	5.99	
		5.55	26.17	1.728	-277.0	1.51	19.7	
		7.93	26.00	1.745	-252.1	1.99	35.1	
		7.63	26.15	1.741	-222.4	2.51	26.6	
		7.51	26.55	1.737	-200.4	2.79	22.8	
		7.46	26.76	1.728	-166.2	3.44	18.0	
		7.45	26.88	1.728	-166.0	3.11	18.1	
9:46	4.5 Gal	7.45	26.87	1.729	-162.8	3.03	17.3	
		5/13/03						
								* 2 liter bottles broke during packing on 5/14/03, resample on 5/15/03 TF

Field Test Kits Results: 5/13/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	CLI-MW-18 5/03
Sample Date/Time:	5/13/03 9:55
Sampler ID:	[illegible]
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 70 °F
Sample Collection Method:	

Analyses & Volume Collected:				
	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By: [illegible]

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SAMPLE COLLECTION LOG

Project Name: CRAWSfordING
Project Number: 836557
Project Location: CRAWSfordING
Well ID: CLI-MW-18

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	65.11	ft.	See PAGE 70	
Depth to Bottom		ft.	HM	5/15/03
Screen Interval	199-219	ft.		

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 10:00

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
10:05		7.45	24.21	1.708	-243.6	2.04	34.0	SWITCHED PUMP
10:10								
10:15			HM		5/15/03			
11:00	Restart							
11:05		7.67	27.68	1.697	-261.3	1.45	28.1	
11:10		8.32	26.57	1.718	-262.3	.70	32.7	
11:15		7.91	26.04	1.755	-234.5	2.47	94.3	
11:20		7.75	26.04	1.762	-209.5	3.20	104.0	
11:25		7.67	26.23	1.761	-185.7	3.53	118.	
11:30		7.66	26.24	1.760	-170.1	3.63	122.	
		HM		5/14/03				

Field Test Kits Results: HM 5/14/03

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number: CLI-MW-18
Sample Date/Time: 5/15/03 11:35
Sampler ID: HMoine
Weather Conditions: ☒ sunny ☐ rain ☐ overcast 70 °F
Sample Collection Method: 2" Pump

Analyses & Volume Collected:

VOC (8260B) - 3 VOA	☐	General Chemistry -1 HDPE ☐
SVOC (8270C) - 2 AL	☐	*Other please specify:*
TPH as diesel / m.oil - 2 AL	☒	
TPH as gasoline / jet fuel - 2 VOA	☐	
Metals - 1 HDPE	☐	
Pesticide/PCB (8081A/8082) - 2 AL	☐	

HDPE - High Density Polyethylene
AL - Amber One Liter Glass Bottle
VOA - Volatile Organic Analysis Vial

Prepared By: HM

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SAMPLE COLLECTION LOG

Project Name: CROWS LANDING
Well ID: CL2-MP-02B
Project Number: 83C557
Project Location: CROWS LANDING, CA 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	45.42	ft.	YSI	03C1461
Depth to Bottom	—	ft.	LA MOTT	4029-1103
Screen Interval	40.5-50.5	ft.		5/14/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☐ Grunfos Pump
Pump Start Time: 1100

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm² (~~µs/ms~~)	ORP (mV)	D.O. mg/L (~~ppm~~)	Turbidity NTU	Notes
Stabilization criteria	~350 ml/min (GAL)	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
1105	0.5	6.85	22.36	1.616	-39.1	0.67	120	LT-GRAY, NO ODOR
1110	0.9	6.84	23.10	1.622	-45.3	0.43	40	
1115	1.3	6.85	24.44	1.633	-38.0	0.36	-	
1120	1.7	6.87	25.05	1.633	-39.1	0.43	15	CLEAR " "
1125	2.1	6.88	25.66	1.631	-34.9	0.41	9.3	
								D.L. 5/14/03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	CL2-MW-05 (05/03)			
Sample Date/Time:	5-12-03 / 1130			
Sampler ID:	J. STRACK			
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 72 °F			
Sample Collection Method:	GRUNFOS			
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By: Joe Strack

Shaw
Shaw Environmental & Infrastructure, Inc.

SAMPLE COLLECTION LOG

Project Name: CROWS LANDING Well ID: CL2-MP-05B
Project Number: 856557
Project Location: CROWS LANDING TF 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	44.59	ft.	YSI 556	03C1461
Depth to Bottom	—	ft.	LAMOTT 2020	4029-1103
Screen Interval	48-58	ft.	—	JS 5/14/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 0933

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. mS/cm² (~~µs/ms~~)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria	GAL.	+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10% mg/l	No Criteria	
0938	0.5	7.11	20.79	1.549	106.6	3.32	—	CLEAR/NO ODOR
0943	1.0	7.15	22.09	1.534	79.9	3.68	3.1	
0948	1.5	7.17	22.78	1.540	88.0	3.75		
0951	DRAWDOWN TO PUMP (PURGED NEARLY DRY) STOPPED PUMP							
1018	RESTART PUMPING							
1022	2.0	7.21	22.02	1.556	85.4	4.60	5.0	

JS 5/14/03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	CL2-MP-05B (05/03)		
Sample Date/Time:	05-12-03 / 1025		
Sampler ID:	J. STRACK		
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 68°F		
Sample Collection Method:	GRUNFOS		
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry - 1 HDPE ☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*
	TPH as diesel / m.oil - 2 AL	☒	
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒	
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐	
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐	

Prepared By: Joe Strack

Shaw
Shaw Environmental & Infrastructure, Inc.

SAMPLE COLLECTION LOG

Project Name: CROWS LANDING Well ID: CL2-MW-05
Project Number: 836557
Project Location: Crows Landing CA 5/14/03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	41.65	ft.	YSI	03C1461
Depth to Bottom	—	ft.	LAMOTT	4027-1103
Screen Interval	80-90	ft.	—	JS 5/14/03

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☒ Grunfos Pump
Pump Start Time: 1200

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. ~~(µs/ms)~~ mS/cm²	ORP (mV)	D.O. ~~(ppm)~~ mg/L	Turbidity NTU	Notes
Stabilization criteria	*500 ml/min (GAL.)*	*+/- 0.1*	*+/- 1° C*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*No Criteria*	
1205	0.5	7.21	21.13	1.435	116.9	5.20	12.5	CLEAR, NO ODOR
1210	1.0	7.14	21.56	1.526	104.9	4.77	—	
1215	1.5	7.16	21.94	1.524	97.5	4.88	17.1	
1220	2.0	7.18	22.05	1.510	98.0	4.77	—	
1225	2.5	7.19	22.17	1.497	97.3	4.67	8.90	
1230	3.0	7.19	22.34	1.482	96.5	4.57	—	
1235	3.5	7.19	22.32	1.475	96.8	4.66	7.35	

JS 5/14/03

Field Test Kits Results: —

Stabilization Criteria may change based on project specific requirements

SAMPLING INFORMATION

Sample Number:	CL2-MW-05 (05/03)			
Sample Date/Time:	5-12-03 / 1240			
Sampler ID:	J. STRACK			
Weather Conditions:	☒ sunny ☐ rain ☐ overcast 75° F			
Sample Collection Method:	GRUNDFOS			
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☒	General Chemistry -1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☒		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☒		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☐		

Prepared By: Joe Strack

Shaw
Shaw Environmental & Infrastructure, Inc.

SAMPLE COLLECTION LOG

Project Name: Crows
Project Number: 836557 JF 5/14/03
Project Location: Crows Landing
Well ID: NASA-SW-03

WELL MEASUREMENTS

			Sampling equipment/meters used	Serial or ID #
Depth to Water	—	ft.	See page 42	
Depth to Bottom	—	ft.		
Screen Interval	—	ft.	JF 5/14/03	

Purging Method: ☐ Peristaltic Pump ☐ Bailer ☐ Grunfos Pump
Pump Start Time: _____

PURGE DATA

Time	Approximate Volume	pH	Temp. (C)	Cond. (µs/ms)	ORP (mV)	D.O. (ppm)	Turbidity NTU	Notes
Stabilization criteria		+/- 0.1	+/- 1° C	+/- 3%	+/- 10%	+/- 10%	No Criteria	
	Pumping well	Not Purged						

RCondit 05/14/03

Field Test Kits Results:

Stabilization Criteria may change based on project specific requirements

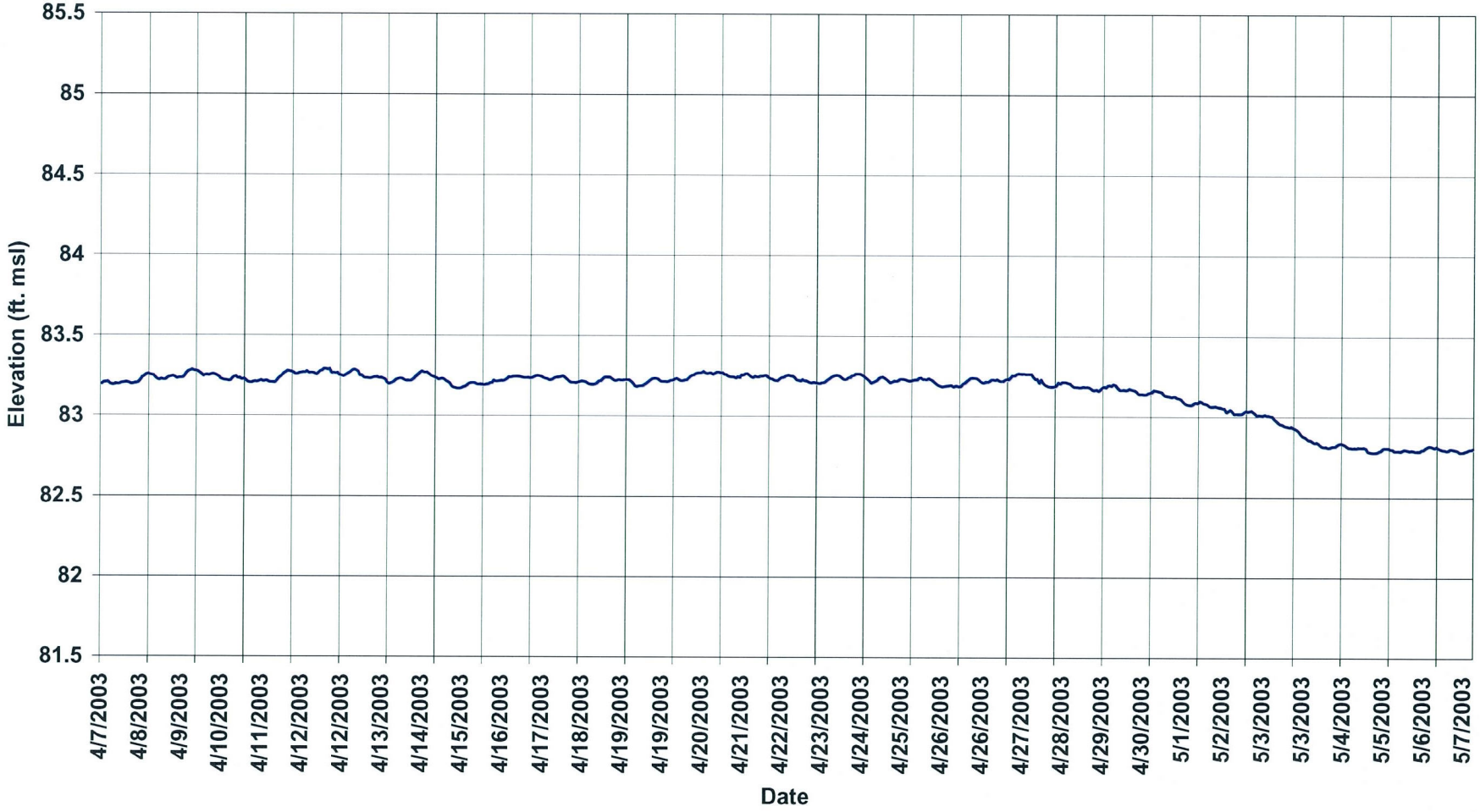
SAMPLING INFORMATION

Sample Number:	NASA - SW-03 (5/03)			
Sample Date/Time:	5/12/03 750			
Sampler ID:	R Condit			
Weather Conditions:	☑ sunny ☐ rain ☐ overcast 65 °F			
Sample Collection Method:	sample top			
Analyses & Volume Collected:	VOC (8260B) - 3 VOA	☑	General Chemistry - 1 HDPE	☐
	SVOC (8270C) - 2 AL	☐	*Other please specify:*	
	TPH as diesel / m.oil - 2 AL	☑		
HDPE - High Density Polyethylene	TPH as gasoline / jet fuel - 2 VOA	☑		
AL - Amber One Liter Glass Bottle	Metals - 1 HDPE	☐		
VOA - Volatile Organic Analysis Vial	Pesticide/PCB (8081A/8082) - 2 AL	☑		

Prepared By: R Condit

Appendix B
Basewide Water Level Monitoring Results

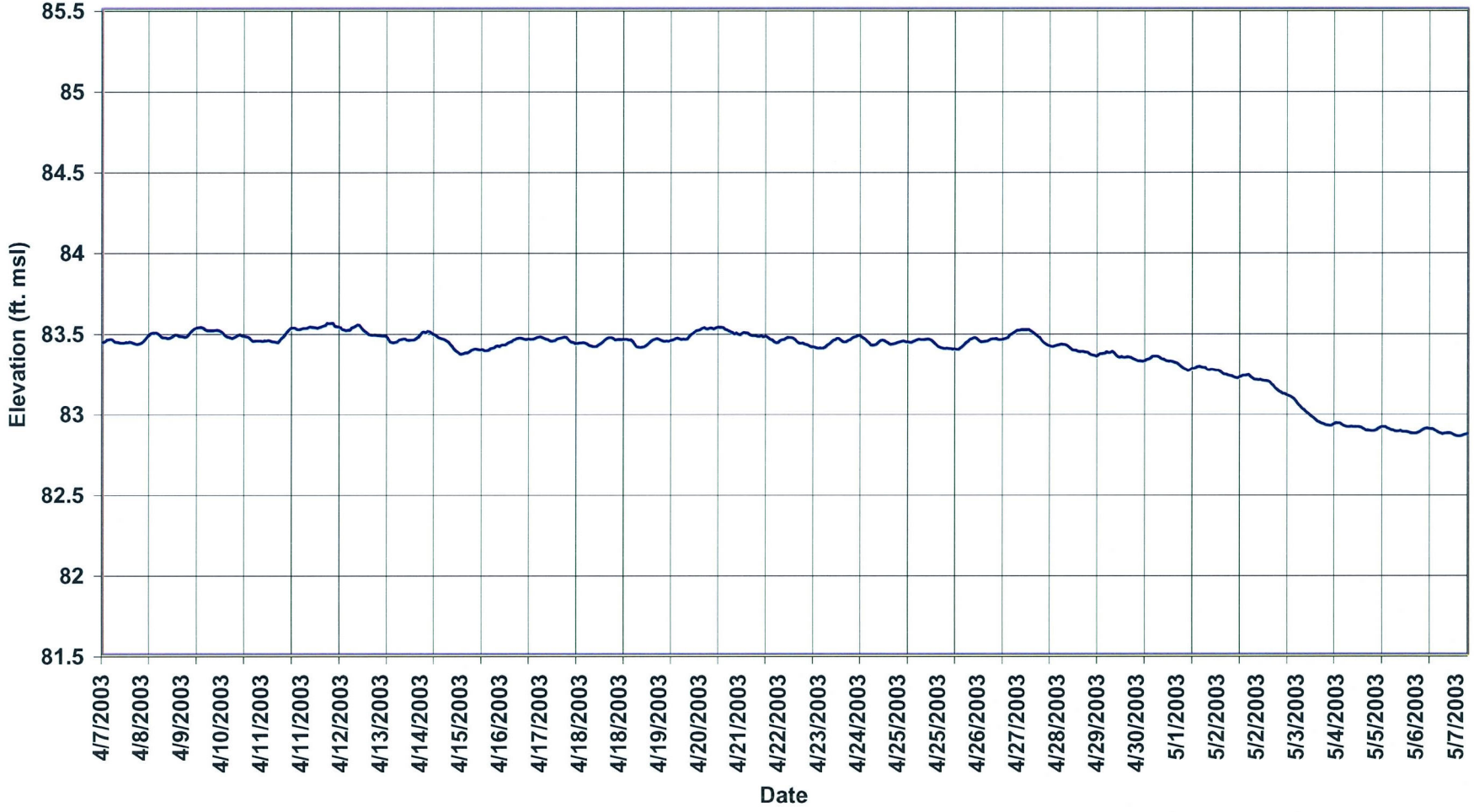
17-MW-24(MS)
Hydrograph of Groundwater Elevation



17-MW-24(MS) Groundwater Elevation

Irrigation wells pumping dates not available

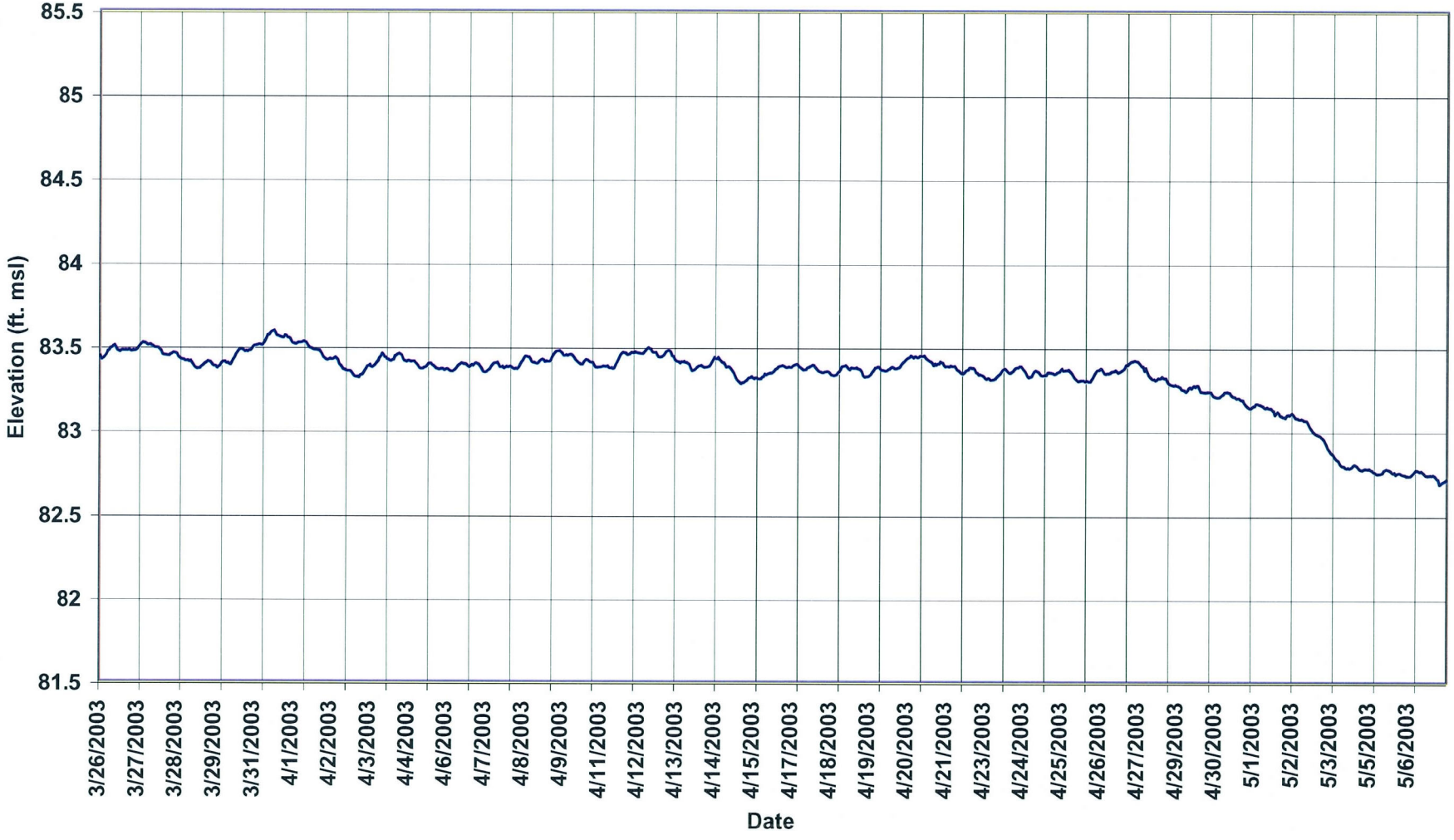
17-MW-25(S)
Hydrograph of Groundwater Elevation



17-MW-25(S) Groundwater Elevation

Irrigation wells pumping dates not available

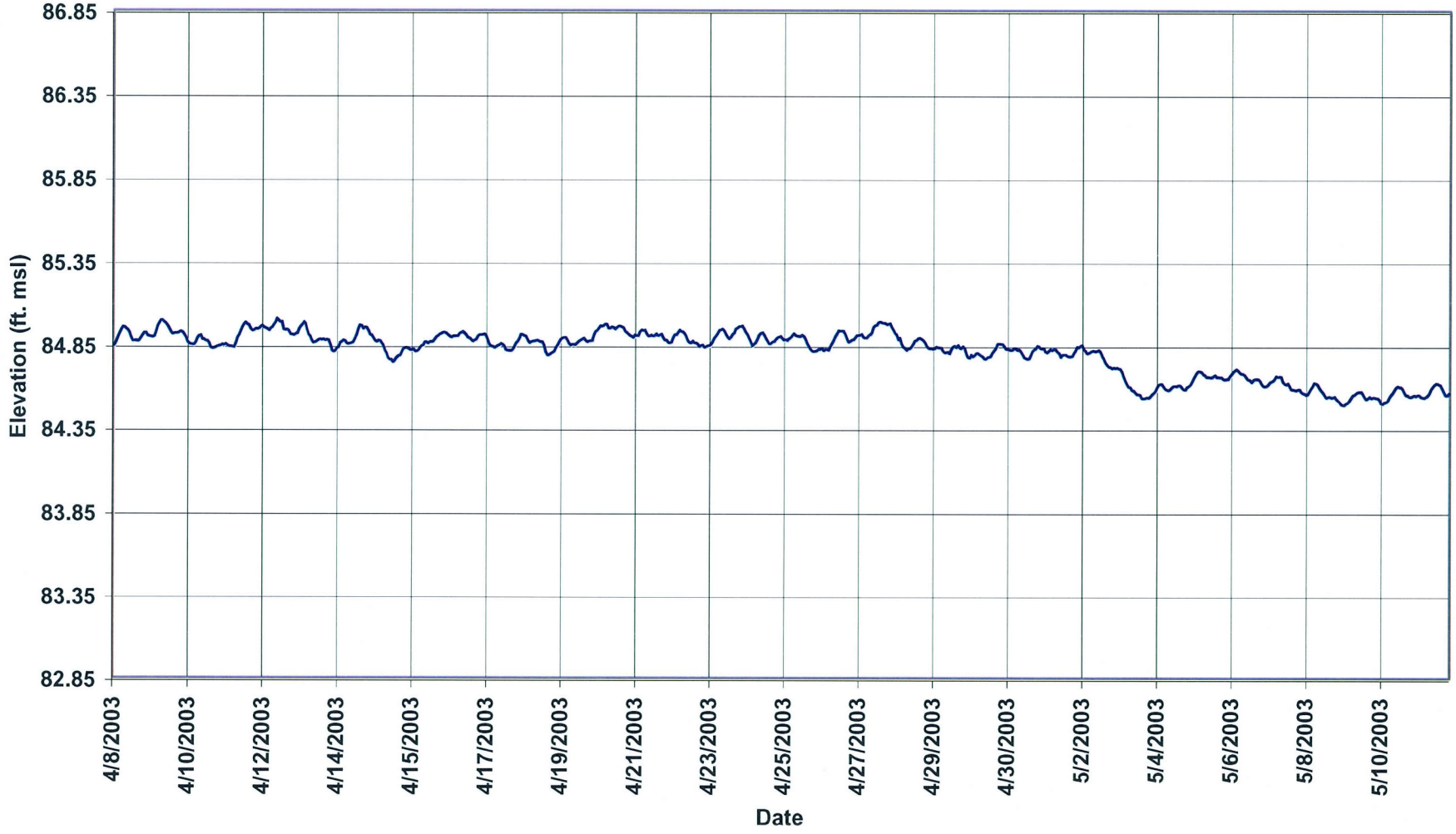
17-MW-25(MS)
Hydrograph of Groundwater Elevation



17-MW-25(MS) Groundwater Elevation

Irrigation wells pumping dates not available

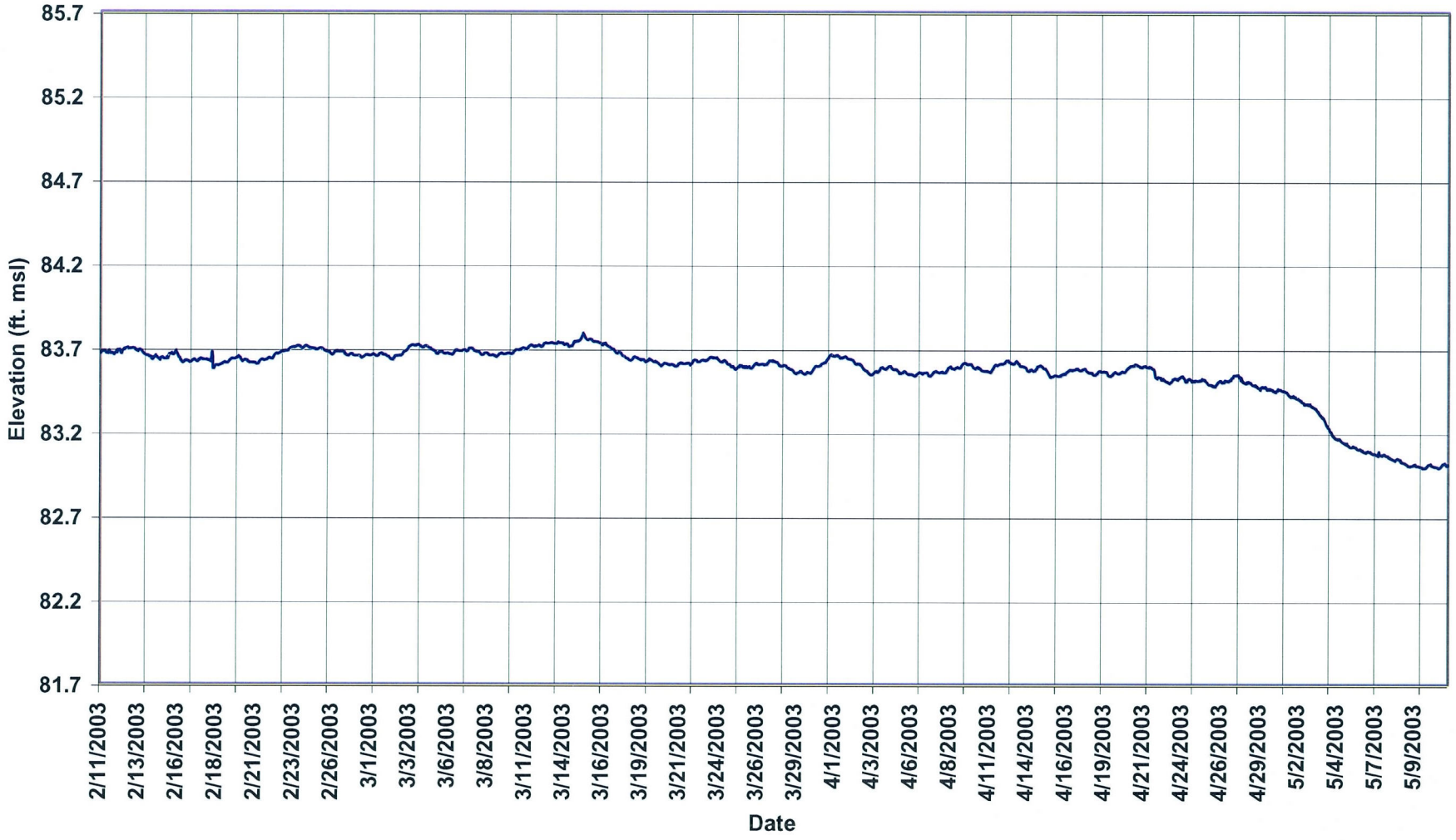
17-MW-32(MS)
Hydrograph of Groundwater Elevation



17-MW-32(MS) Groundwater Elevation

Irrigation wells pumping dates not available

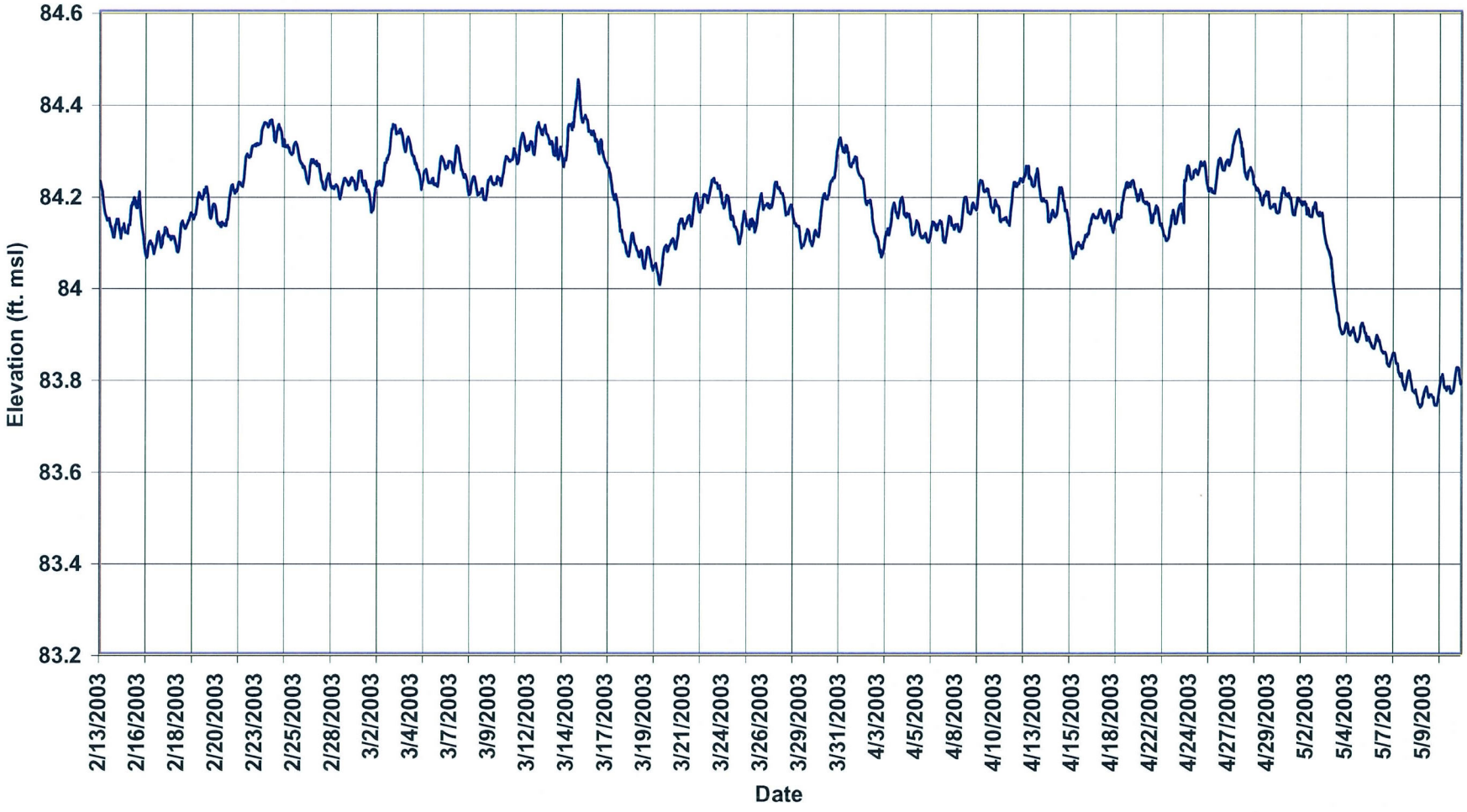
109-MW-01(S)
Hydrograph of Groundwater Elevation



109-MW-01(S) Groundwater Elevation

Irrigation wells pumping dates not available

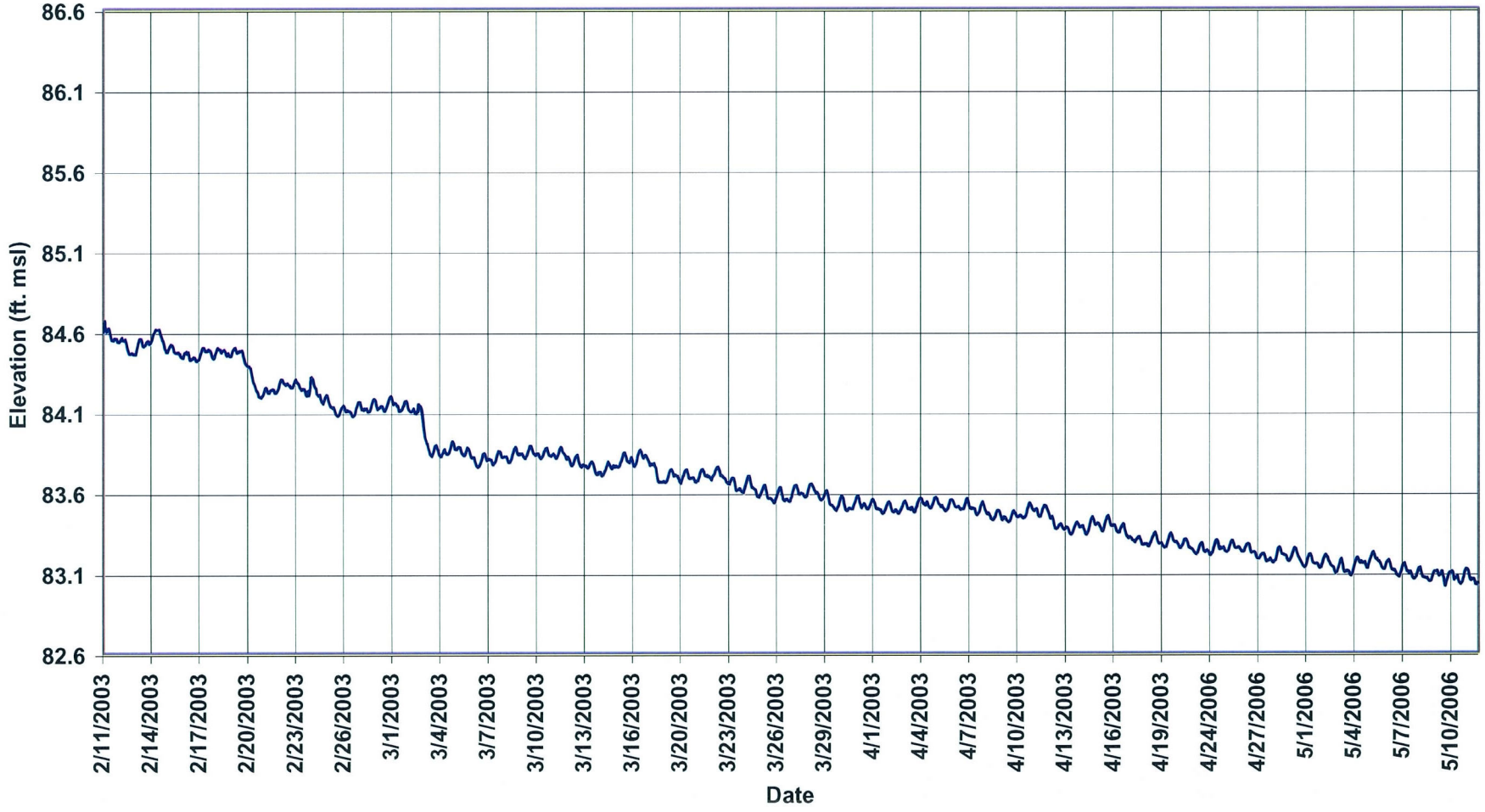
117-MW-05(S)
Hydrograph of Groundwater Elevation



117-MW-05(S) Groundwater Elevation

Irrigation wells pumping dates not available

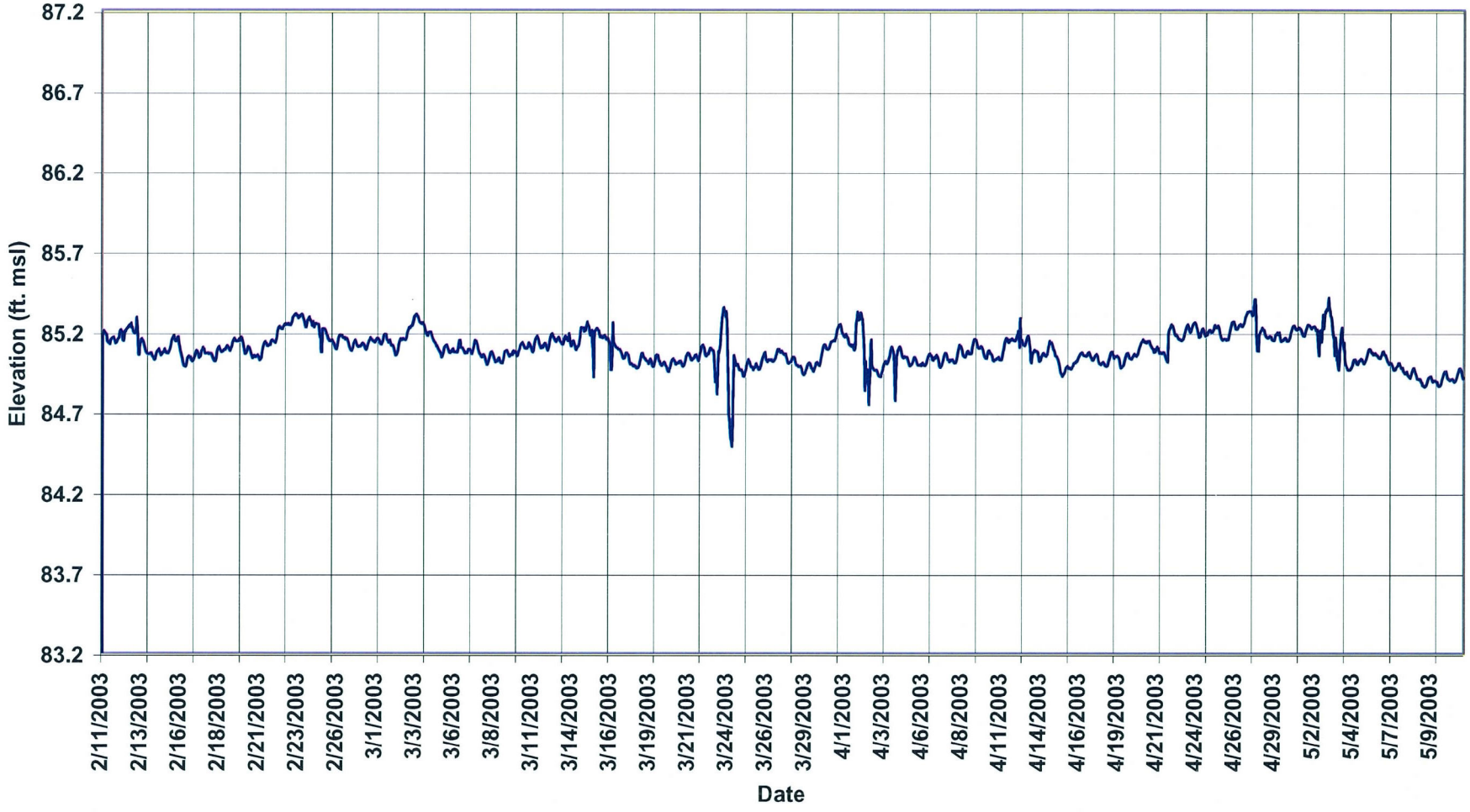
CL1-MW-09(S)
Hydrograph of Groundwater Elevation



CL1-MW-09(S) Groundwater Elevation

Irrigation wells pumping dates not available

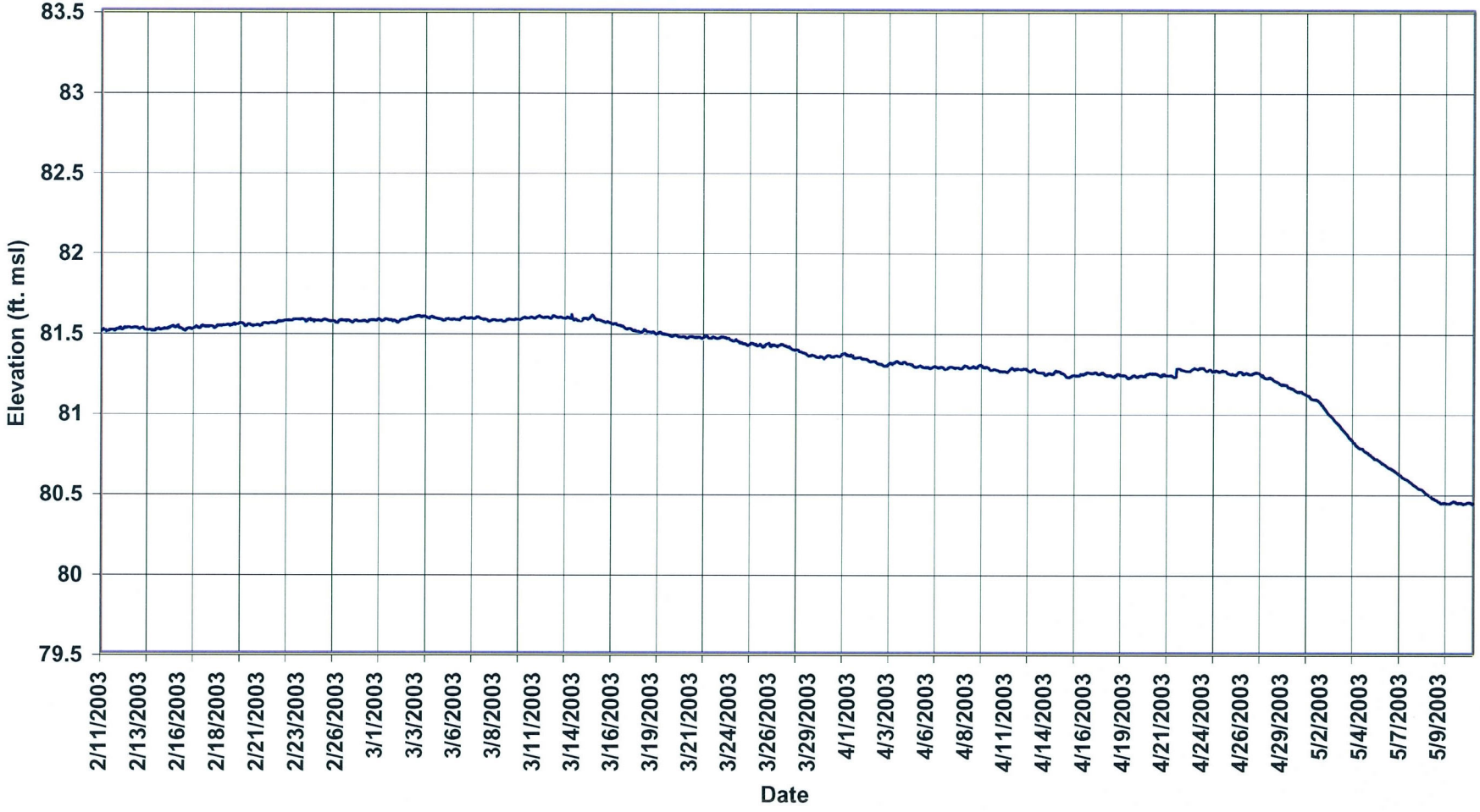
CL1-MW-10(S)
Hydrograph of Groundwater Elevation



CL1-MW-10(S) Groundwater Elevation

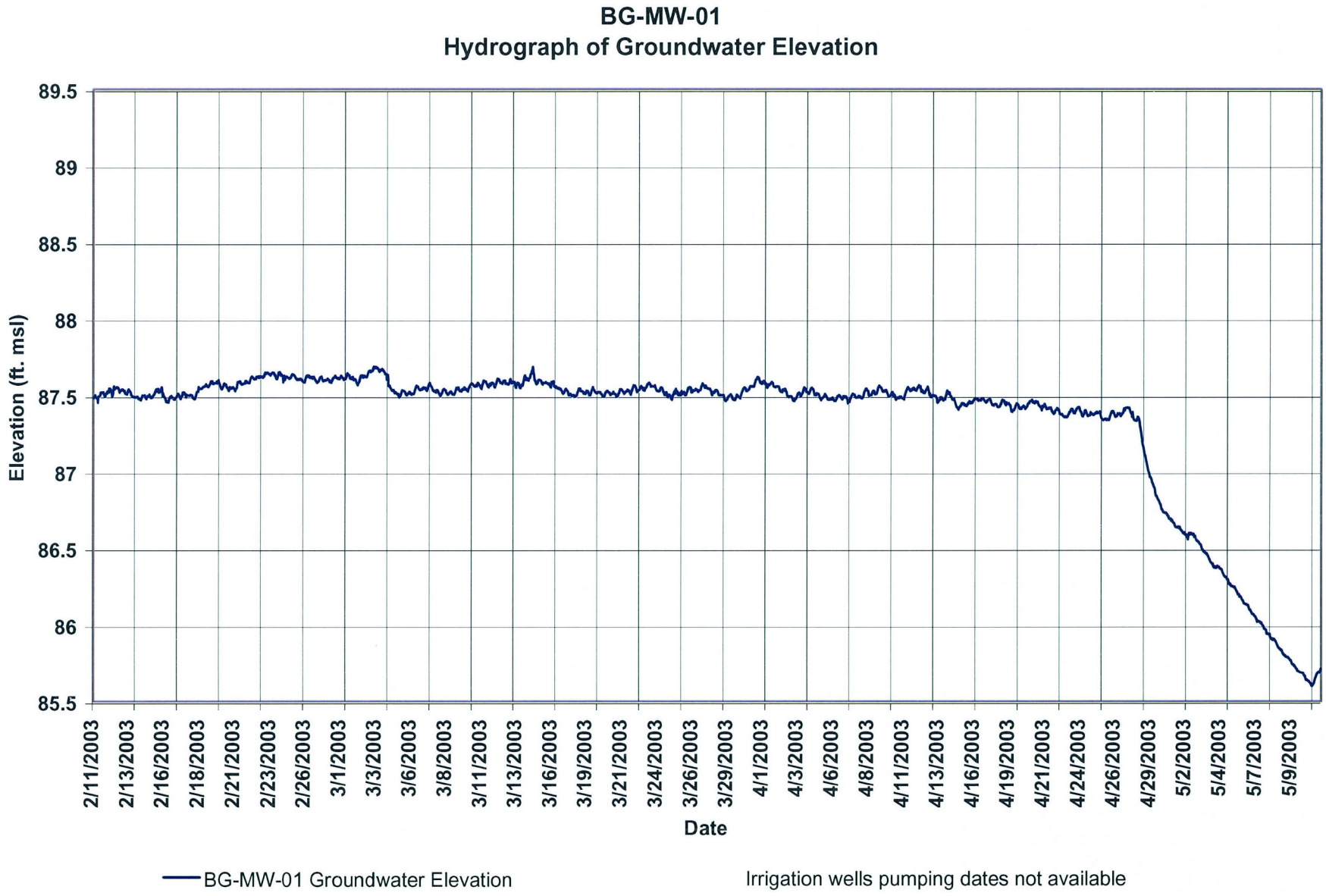
Irrigation wells pumping dates not available

CL2-MP-03(B)
Hydrograph of Groundwater Elevation

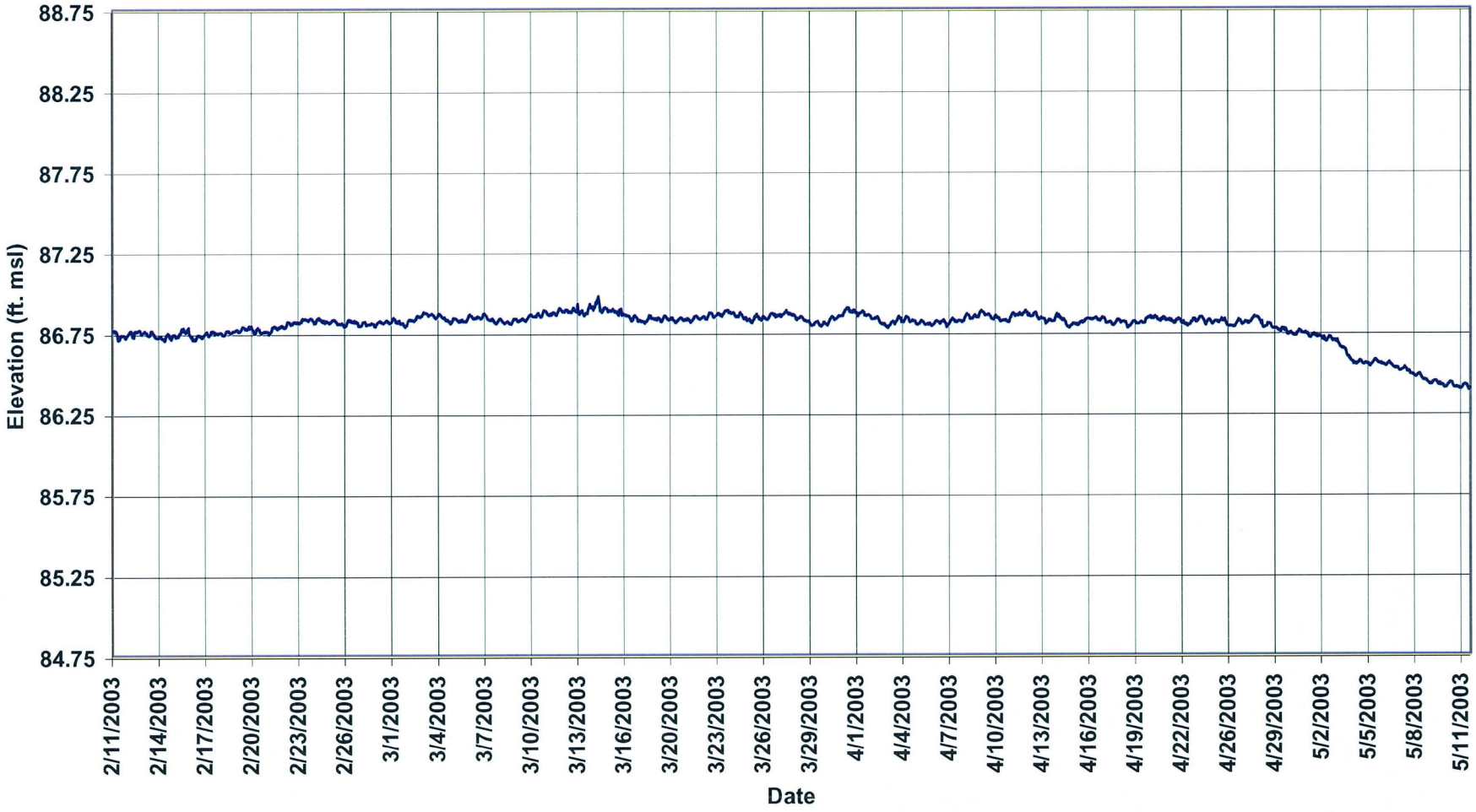


CL2-MP-03(B) Groundwater Elevation

Irrigation wells pumping dates not available


BG-MW-01
Hydrograph of Groundwater Elevation
Elevation (ft. msl)
89.5
89
88.5
88
87.5
87
86.5
86
85.5
2/11/2003
2/13/2003
2/16/2003
2/18/2003
2/21/2003
2/23/2003
2/26/2003
3/1/2003
3/3/2003
3/6/2003
3/8/2003
3/11/2003
3/13/2003
3/16/2003
3/19/2003
3/21/2003
3/24/2003
3/26/2003
3/29/2003
4/1/2003
4/3/2003
4/6/2003
4/8/2003
4/11/2003
4/13/2003
4/16/2003
4/19/2003
4/21/2003
4/24/2003
4/26/2003
4/29/2003
5/2/2003
5/4/2003
5/7/2003
5/9/2003
Date
BG-MW-01 Groundwater Elevation
Irrigation wells pumping dates not available

BG-MW-03
Hydrograph of Groundwater Elevation



BG-MW-03 Groundwater Elevation

Irrigation wells pumping dates not available

Appendix C
Laboratory Analytical Results, Certificates of Analysis, and Chain-of-Custody Records

Table C-1

Table C-1: Summary of Analytical Results, Hydropunch Groundwater Sampling, NASA Crows Landing

Sample ID		117-HP-08		117-HP-09	
Sample Date		05/22/2003		05/27/2003	
Parameter	Units	Result	Qual	Result	Qual
Total Petroleum Hydrocarbons (EPA 8015B)					
Gasoline Range Organics	mg/L	0.05	U	0.05	U
JP-4	mg/L	0.05	U	0.05	U
Diesel Range Organics	mg/L	0.096	U	0.096	U
Motor Oil Range Organics	mg/L	0.13	U	0.13	U
VOCs (EPA 8260B)					
1,1,1,2-Tetrachloroethane	ug/L	0.5	U	0.5	U
1,1,1-Trichloroethane	ug/L	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	ug/L	0.5	U	0.5	U
1,1,2-Trichloroethane	ug/L	0.5	U	0.5	U
1,1-Dichloroethane	ug/L	0.5	U	0.5	U
1,1-Dichloroethene	ug/L	0.5	U	0.5	U
1,1-Dichloropropene	ug/L	0.5	U	0.5	U
1,2,3-Trichlorobenzene	ug/L	0.5	U	0.5	U
1,2,3-Trichloropropane	ug/L	0.5	U	0.5	U
1,2,4-Trichlorobenzene	ug/L	0.5	U	0.5	U
1,2,4-Trimethylbenzene	ug/L	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	ug/L	0.5	U	0.5	U
1,2-Dibromoethane	ug/L	0.5	U	0.5	U
1,2-Dichlorobenzene	ug/L	0.5	U	0.5	U
1,2-Dichloroethane	ug/L	0.5	U	0.5	U
1,2-Dichloropropane	ug/L	0.5	U	0.5	U
1,3,5-Trimethylbenzene	ug/L	0.5	U	0.5	U
1,3-Dichlorobenzene	ug/L	0.5	U	0.5	U
1,3-Dichloropropane	ug/L	0.5	U	0.5	U
1,4-Dichlorobenzene	ug/L	0.5	U	0.5	U
2-Butanone	ug/L	10	U	10	UJ
2-Hexanone	ug/L	10	U	10	U
Acetone	ug/L	10	U	10	U
Benzene	ug/L	0.5	U	0.5	U
Bromobenzene	ug/L	0.5	U	0.5	U
Bromochloromethane	ug/L	0.5	U	0.5	U
Bromodichloromethane	ug/L	0.5	U	0.5	U
Bromoform	ug/L	0.5	U	0.5	U
Bromomethane	ug/L	0.5	U	0.5	UJ
Carbon Disulfide	ug/L	1	J	10	U
Carbon Tetrachloride	ug/L	0.5	U	4.8	
Chlorobenzene	ug/L	0.5	U	0.5	U
Chloroethane	ug/L	0.5	U	0.5	U
Chloroform	ug/L	0.5	U	0.5	
Chloromethane	ug/L	0.5	U	0.5	U
Cis-1,2-Dichloroethene	ug/L	0.5	U	0.5	U
Cis-1,3-Dichloropropene	ug/L	0.5	U	0.5	U
Cumene	ug/L	0.5	U	0.5	U
Dibromochloromethane	ug/L	0.5	U	0.5	U
Dibromomethane	ug/L	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	0.5	U	0.5	U
Ethylbenzene	ug/L	0.5	U	0.5	U

Table C-1: Summary of Analytical Results, Hydropunch Groundwater Sampling, NASA Crows Landing

Sample ID		117-HP-08		117-HP-09	
Sample Date		05/22/2003		05/27/2003	
Parameter	Units	Result	Qual	Result	Qual
Hexachlorobutadiene	ug/L	0.5	U	0.5	U
Methyl Isobutyl Ketone	ug/L	10	U	10	U
Methylene Chloride	ug/L	0.5	U	0.5	U
MTBE	ug/L	0.5	J	1	U
N-Butylbenzene	ug/L	0.5	U	0.5	U
N-Propylbenzene	ug/L	0.5	U	0.5	U
Naphthalene	ug/L	0.5	U	0.5	U
O-Chlorotoluene	ug/L	0.5	U	0.5	U
P-Chlorotoluene	ug/L	0.5	U	0.5	U
P-Cymene	ug/L	0.5	U	0.5	U
Sec-Butylbenzene	ug/L	0.5	U	0.5	U
Sec-Dichloropropane	ug/L	0.5	U	0.5	U
Styrene	ug/L	0.5	U	0.5	U
Tert-Butyl Alcohol	ug/L	20	UJ	20	U
Tert-Butylbenzene	ug/L	0.5	U	0.5	U
Tetrachloroethene	ug/L	0.5	U	0.5	U
Toluene	ug/L	0.5	U	0.5	U
Trans-1,2-Dichloroethene	ug/L	0.5	U	0.5	U
Trans-1,3-Dichloropropene	ug/L	0.5	U	0.5	U
Trichloroethene	ug/L	0.5	U	0.5	U
Trichlorofluoromethane	ug/L	0.5	U	0.5	U
Vinyl Chloride	ug/L	0.5	U	0.5	U
Xylenes(Total)	ug/L	1	U	1	U

mg/L denotes milligrams per liter
ug/l denotes microgram per liter
U qualifier indicates that the analyte was not detected at the specified detection limit
J qualifier indicates that the associated numerical value is an estimate.
UJ qualifier indicates that the analyte was not detected. However, the reported quantitation limit is an estimate.

Data Quality Assessment

Two Hydropunch® groundwater samples were collected along Bell Road at the NASA Crows Landing site on May 22 and May 27, 2003. The samples were sent to Applied Physics and Chemistry Laboratory (APCL) for the following analysis.

- Total petroleum hydrocarbons (TPH) as diesel and motor oil by U.S. Environmental Protection Agency (EPA) Method 8015B (with silica gel cleanup EPA Method 3630C)
- TPH as gasoline and jet fuel by EPA Method 8015B
- Volatile Organic Compounds (VOCs) by EPA Method 8260B
- Total Dissolved Solids (TDS) by EPA 160.1

Data Quality Indicators

Analytical data for this project were assessed in terms of precision, accuracy, representativeness and comparability, based on the requirements of the analytical methods and the *Sampling and Analysis Plan, Soil Site Verification Activities at Various Sites,* (Shaw, 2003).

The analytical data were reported in three sample delivery groups (SDGs) from APCL, show below. Two SDGs were validated at EPA Level III and one SDG, number 03-3221, was validated at EPA Level IV. The findings of the data validation process are summarized in this section.

APCL SDG: 03-3362	APCL SDG: 03-3420
117-HP-08	117-HP-09
TB-5/15/03	TB-5/27/03

Level III Data Validation

The following laboratory quality control (QC) parameters were evaluated during Level III validation process:

- Sample receipt, preservation and holding times (representativeness)
- Method blanks
- Surrogate standard recoveries (accuracy)

- Calibrations (initial and continuing)
- Internal standards (EPA Method 8260B only)
- Laboratory control spikes (LCSs)/laboratory control spike duplicates (precision and accuracy)
- Interference check sample and serial dilutions (EPA Method 6010B/7000 only)
- Matrix spikes (MSs)/matrix spike duplicates (MSDs) (precision and accuracy)

Sample Receipt, Temperature, and Holding Times

All sample shipments were received at the laboratory within the EPA-specified temperature range of 2 to 6 degrees Centigrade (°C). Sample preservation was according to the EPA method requirements. All holding times were met for all analyses.

Method Blanks and Trip Blanks

A method blank is a matrix equivalent sample used to check reagent or process introduced contamination during the method preparation and analysis. Trip blanks are 40 milliliter volatile organic analysis vials of organic-free water, which are kept with the field sample containers from the time they leave the laboratory until the time they are returned to the laboratory. The purpose of trip blanks is to determine whether samples have been contaminated with VOCs during transportation or sample collection. The method blanks and trip blanks did not contain any analytes of interest at or above the method reporting limits for all analyses, with the following exceptions:

VOC (EPA Method 8260B)

Methylene chloride and acetone are common laboratory contaminants that were detected at low concentrations in the laboratory method blanks, trip blanks and project samples. If the concentrations of methylene chloride and/or acetone detected in the project samples was less than 5 times the highest associated blank concentration, then sample results were reported as not detected (U).

TPH as gasoline (EPA Method 8015B)

Low concentrations of gasoline range organic compounds were detected in the method blanks and Trip Blanks of both SDGs and in both of the associated project samples. The sample results were less than five times the blank concentrations and were reported as "not detected" (U) at the practical quantitation limits (PQL).

Surrogate Standards

Surrogate standards are added prior to extraction and analysis for EPA Methods 8260B and 8015B to monitor the efficiency of the extraction and the accuracy of the analysis for

each sample. All of the surrogate spike recoveries were within the laboratory specified control limits for all samples.

Calibrations

The requirements for initial and continuing calibrations were met for all analyses, with the following exception for EPA Method 8260B:

- The percent difference (%D) for 2-butanone, bromomethane and tert-butyl alcohol did not meet the method specified criteria of less than 20%D in one or more of the continuing calibration standards for these two SDGs. Samples were qualified as estimated concentrations (J/UJ) for these analytes based on the associated continuing calibration standard. Data usability was not affected.

Internal Standards

Internal standards are usually synthetic compounds, which are similar in chemical behavior to the target analytes. They are added to samples at the time of instrument analysis and are used to quantify results through internal standard calibration procedures. Internal standard recoveries are used to correct for injection and detector variability. All internal standard areas and retention times for EPA Method 8260B were within the method specified criteria.

Laboratory Control Samples

Laboratory control samples are blank matrix equivalent spiked samples that are carried through the entire method preparation and analysis. They are used to evaluate the accuracy and precision of the preparation and analysis without matrix interference. LCSs are prepared with each batch of samples for every analysis. All the LCS recoveries were within the specified control limits for all analyses.

Matrix Spikes and Matrix Spike Duplicates

MS and MSD are representative matrix samples spiked with known concentrations of analytes and carried through the entire method preparation and analysis. They are used to evaluate any bias introduced to the method due to matrix interferences, and to measure accuracy (percent recovery) and precision using Relative Percent Difference (RPD) of recoveries for each analytical batch. There were no project specific MS/MSD samples associated with these two SDGs.

Chemical Data Quality and Usability

In summary, all of the QC data are indicative of acceptable analytical method performance. The anomalies mentioned above do not invalidate the data for its intended use. All of the data are valid and usable.

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

June 11, 2003

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway,
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 03-3362 and your project 836557 Crows Landing. Enclosed please find:

(1) Original Analytical Report.
(2) Original Chain of Custody.
(3) One Original and one compact disc of Level C Data Package Deliverable.
(4) One Diskette containing EDD Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-033362
Collected by: Tracy Fenger
Collected on: 05/22/03

Received: 05/23/03
Extracted: 05/27/03
Tested: 05/28-06/03/03
Reported: 06/03/03

Sample Description: Water
Project Description: 836557 Crows Landing

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 117-HP-08 03-03362-1	TB-5/15/03 03-03362-2
Dilution Factor				1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.01J	0.006J
Dilution Factor				1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05
VOLATILE ORGANICS					
Dilution Factor				1	1
ACETONE	SW8260B	µg/L	10	5J	16
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	1J	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 117-HP-08 03-03362-1	TB-5/15/03 03-03362-2
TRANS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	μg/L	0.5	<0.5	<0.5
2-HEXANONE	SW8260B	μg/L	10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	μg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	μg/L	0.5	0.3J	0.6
4-METHYL-2-PENTANONE (MIBK)	SW8260B	μg/L	10	1J	0.9J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	μg/L	1	0.5J	<1
NAPHTHALENE	SW8260B	μg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
STYRENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	μg/L	0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	μg/L	1	<1	<1
T-BUTYL ALCOHOL	SW8260B	μg/L	20	<20	<20

Component Analyzed	Method	Unit	PQL	Analysis Result 117-HP-08 03-03362-1
Dilution Factor				0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [a]
Dilution Factor				0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [b]	<0.13

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
[a] Sample chromatogram contained unknown mixture in Diesel range.
[b] MDL reported.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project:836557 Crows Landing

APCL Service ID: 03-3362

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
Fax (909)590-1498

Applied P & Ch Laboratory
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Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Crows Landing/836557

For Shaw E & I

APCL Service No: 03-3362

1. Sample Identification

The sample identifications are listed in the following table:

Shaw E & I Sample ID	APCL Sample ID
117-HP-08	03-03362-1
TB-5/15/03	03-03362-2

2. Analytical Methodology

Samples are analyzed by EPA methods

SW8260B (Volatile organics),
M8015V (Gasoline),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
M8015V (JP-4),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

(1) SW8260B:

Acetone in the amount of 15 ug/L and Methylene Chloride in the amount of 0.7 ug/L were detected in the Method Blank of batch 03G2744. Acetone and Methylene Chloride were also detected in the field samples, due to lab contamination.

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CHAIN OF CUSTODY

Ref. Document # CL1006

Page 1 of 1

Shaw

Shaw Environmental and Infrastructure Inc.

4005 Port Chicago Hwy
Concord, CA 94520

Project Manager: *Bob Hulet 925-288-9898*
(Name & phone #)

Send Report To: *Rose Condit*
Phone/Fax Number: *925-288-2151*
Address: *4005 Port Chicago Hwy*
City: *Concord, CA, 94520*

Project Number: *836557*
Project Name / Location: *Crows Landing*
Purchase Order #: *205733*

Shipment Date: 5/22/2003
Waybill Number: 1Z 71V 092 01 9043 3172
Lab Destination: *APCL* *Chino, CA*
Lab Contact Name / ph. #: *Hsin-Ye* *909-590-1828*

Sampler's Name(s): Tracy Fenger

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container type	Preservative: HCL	NaOH	HNO_3	H_2SO_4	Ice		Analyses Requested: TPH - Jet Fuel & gasoline (8015B)	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/7000)	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)	Temperature
117-HP-08	Water	05/22/03		g	GW	1	1 Liter Amber					X			X									
"	Water	05/22/03		g	GW	5	VOA	X				X		X		X								
TB-5/15/03	Trip Blank	05/22/03		g		2	VOA	X				X		X		X								
Temp Blank	Water	05/22/03		g		1	VOA					X												X

3362

5/23/03 TF

Special Instructions: Silica gel clean up for TPH-D/MO

Turnaround Time: (Standard TAT) ☐ 24-hr ☐ 48-hr ☐ 3-day ☐ 5-day ◂ Normal

Level Of QC Required: I II (III) Project Specific:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Tracy Fenger	5/22/03	1610	[signature]	5/23/03	1000

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid SOL = Other Solid
GS = Air Sample

Tables C-2 and C-3

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		109-MW-01S		11-MW-03S		11-MW-04S		117-MW-08MD		117-MW-10S		117-MW-13S		117-MW-14MS	
Sample Date		05/13/2003		05/12/2003		05/12/2003		05/13/2003		05/14/2003		05/13/2003		05/13/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Total Petroleum Hydrocarbons (EPA 8015B)															
Gasoline Range Organics	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	0.15		0.05	U	0.05	U
JP-4	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Diesel Range Organics	mg/L	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U
Motor Oil Range Organics	mg/L	0.096	U	0.13	U	0.13	U	0.096	U	0.13	U	0.096	U	0.096	U
VOCs (EPA 8260B)															
1,1,1,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	170		0.5	U	0.5	U
1,2-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.7		0.5	U	0.5	U
1,3,5-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Butanone	ug/L	10	UJ	10	U	10	U	10	UJ	10	U	10	UJ	10	UJ
2-Hexanone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	UJ
Carbon Disulfide	ug/L	10	U	10	U	10	U	10	U	10	UJ	10	U	10	U
Carbon Tetrachloride	ug/L	0.4	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.9	
Chloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		109-MW-01S		11-MW-03S		11-MW-04S		117-MW-08MD		117-MW-10S		117-MW-13S		117-MW-14MS	
Sample Date		05/13/2003		05/12/2003		05/12/2003		05/13/2003		05/14/2003		05/13/2003		05/13/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Cis-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cis-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cumene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl Isobutyl Ketone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	ug/L	0.5	U	0.6	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
MTBE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U
N-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Propylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
O-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Cymene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tert-Butyl Alcohol	ug/L	20	UJ	20	UJ	20	UJ	20	UJ	48	UJ	20	UJ	20	UJ
Tert-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.6		0.5	U
Trichlorofluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl Chloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes(Total)	ug/L	1	U	0.4	J	1	U	1	U	1	U	1	U	1	U

mg/L denotes milligrams per liter.
ug/L denotes microgram per liter.
U qualifier indicates that the analyte was not detected at the specified detection limit.
J qualifier indicates that the associated numerical value is an estimate.
UJ qualifier indicates that the analyte was not detected. However, the reported quantitation limit is an estimate.

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		17-MW-03MS		17-MW-18MD		17-MW-24MS		17-MW-24S		17-MW-25MS		17-MW-25S		17-MW-27MS	
Sample Date		05/13/2003		05/13/2003		05/12/2003		05/12/2003		05/13/2003		05/13/2003		05/14/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Total Petroleum Hydrocarbons (EPA 801		Total Petroleum Hydrocarbons (EPA 8015B)													
Gasoline Range Organics	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	0.27		0.05	U	0.05	U
JP-4	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Diesel Range Organics	mg/L	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U
Motor Oil Range Organics	mg/L	0.096	U	0.096	U	0.13	U	0.13	U	0.096	U	0.096	U	0.13	U
VOCs (EPA 8260B)		VOCs (EPA 8260B)													
1,1,1,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	1.7		0.5	U	0.5	U
1,2-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Butanone	ug/L	10	UJ	10	UJ	10	U	10	U	10	UJ	10	UJ	10	U
2-Hexanone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Benzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	14.2		0.5	U	0.5	U
Bromobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.6		0.5	U
Bromoform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon Disulfide	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	UJ
Carbon Tetrachloride	ug/L	70.6		0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	ug/L	13.9		0.5	U	0.5	U	0.5	U	0.7		0.7		0.5	U
Chloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		17-MW-03MS		17-MW-18MD		17-MW-24MS		17-MW-24S		17-MW-25MS		17-MW-25S		17-MW-27MS	
Sample Date		05/13/2003		05/13/2003		05/12/2003		05/12/2003		05/13/2003		05/13/2003		05/14/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Cis-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cis-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cumene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl Isobutyl Ketone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	ug/L	0.5	U	0.5	U	0.5	U	0.8	U	0.5	U	0.5	U	0.5	U
MTBE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U
N-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Propylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
O-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Cymene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tert-Butyl Alcohol	ug/L	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ
Tert-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.9		0.5	U	0.5	U
Tetrachloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl Chloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes(Total)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U

mg/L denotes milligrams per liter.
ug/L denotes microgram per liter.
U qualifier indicates that the analyte was not detected at the specified detection limit.
J qualifier indicates that the associated numerical value is an estimate.
UJ qualifier indicates that the analyte was not detected. However, the reported quantitation limit is an estimate.

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		17-MW-28S		17-MW-29MS		17-MW-31(S)		17-MW-32MS		17-MW-33D		17-MW-34D		17-MW-35D	
Sample Date		05/14/2003		05/14/2003		05/13/2003		05/13/2003		05/14/2003		05/14/2003		05/14/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Total Petroleum Hydrocarbons (EPA 8015B)				Total Petroleum Hydrocarbons (EPA 8015B)											
Gasoline Range Organics	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
JP-4	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Diesel Range Organics	mg/L	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U	0.096	U
Motor Oil Range Organics	mg/L	0.13	U	0.13	U	0.096	U	0.096	U	0.13	U	0.13	U	0.13	U
VOCs (EPA 8260B)				VOCs (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Butanone	ug/L	10	U	10	U	10	UJ	28	J	10	U	10	U	10	U
2-Hexanone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Acetone	ug/L	10	U	12		10	U	10	U	10	U	10	U	10	U
Benzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Carbon Disulfide	ug/L	10	UJ	10	UJ	10	U	10	U	0.5	J	10	UJ	10	UJ
Carbon Tetrachloride	ug/L	0.5	U	0.5	U	0.8		0.5	U	0.5	U	8.1		0.6	
Chlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table C-2

Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		17-MW-28S		17-MW-29MS		17-MW-31(S)		17-MW-32MS		17-MW-33D		17-MW-34D		17-MW-35D	
Sample Date		05/14/2003		05/14/2003		05/13/2003		05/13/2003		05/14/2003		05/14/2003		05/14/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Cis-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cis-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cumene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl Isobutyl Ketone	ug/L	10	U	10	U	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
MTBE	ug/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U
N-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Propylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
O-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Cymene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tert-Butyl Alcohol	ug/L	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ
Tert-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl Chloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes(Total)	ug/L	1	U	1	U	1	U	1	U	1	U	1	U	1	U

mg/L denotes milligrams per liter.
ug/L denotes microgram per liter.
U qualifier indicates that the analyte was not detected at the specified detection limit.
J qualifier indicates that the associated numerical value is an estimate.
UJ qualifier indicates that the analyte was not detected. However, the reported quantitation limit is an estimate.

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		CL1-MW-04S		CL1-MW-05S		CL1-MW-06S		CL1-MW-09S		CL1-MW-12MD		CL1-MW-14MS		CL1-MW-17MD	
Sample Date		05/12/2003		05/12/2003		05/12/2003		05/14/2003		05/14/2003		05/14/2003		05/13/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Total Petroleum Hydrocarbons (EPA 8015B)						Total Petroleum Hydrocarbons (EPA 8015B)									
Gasoline Range Organics	mg/L	0.05	U	0.05	U	0.05	U	0.44		51		0.17		0.05	U
JP-4	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	2.5	U	0.05	U	0.05	U
Diesel Range Organics	mg/L	0.096	U	0.096	U	0.096	U	0.096	U	0.48	U	0.096	U	0.096	U
Motor Oil Range Organics	mg/L	0.13	U	0.13	U	0.13	U	0.13	U	0.67	U	0.13	U	0.096	U
VOCs (EPA 8260B)						VOCs (EPA 8260B)									
1,1,1,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,1,1-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,1,2-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,1-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,1-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,1-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2,3-Trichloropropane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2-Dibromoethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,2-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	11		630		0.8		0.5	U
1,2-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,3-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,3-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
1,4-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
2-Butanone	ug/L	10	U	10	U	10	U	100	U	2500	U	10	U	10	UJ
2-Hexanone	ug/L	10	U	10	U	10	U	100	U	2500	U	10	U	10	U
Acetone	ug/L	10	U	10	U	10	U	100	U	2500	U	10	U	10	U
Benzene	ug/L	0.5	U	0.5	U	0.5	U	166		23200		11		0.4	J
Bromobenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Bromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Bromodichloromethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Bromoform	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Bromomethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Carbon Disulfide	ug/L	10	U	10	U	10	U	100	UJ	2500	UJ	10	UJ	4	J
Carbon Tetrachloride	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Chlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Chloroethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Chloroform	ug/L	0.5	U	0.5	U	0.5	U	13		130	U	0.6		0.5	U
Chloromethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		CL1-MW-04S		CL1-MW-05S		CL1-MW-06S		CL1-MW-09S		CL1-MW-12MD		CL1-MW-14MS		CL1-MW-17MD	
Sample Date		05/12/2003		05/12/2003		05/12/2003		05/14/2003		05/14/2003		05/14/2003		05/13/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Cis-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Cis-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Cumene	ug/L	0.5	U	0.5	U	0.5	U	5	U	3780		0.5	U	0.5	U
Dibromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Dibromomethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Ethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Hexachlorobutadiene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Methyl Isobutyl Ketone	ug/L	10	U	10	U	10	U	100	U	2500	U	10	U	10	U
Methylene Chloride	ug/L	0.5	U	0.5	U	0.7	U	8	U	200	U	0.5	U	0.5	U
MTBE	ug/L	1	U	1	U	1	U	10	U	250	U	1	U	1	U
N-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
N-Propylbenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Naphthalene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
O-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
P-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
P-Cymene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Sec-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Sec-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Styrene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Tert-Butyl Alcohol	ug/L	20	UJ	20	UJ	20	UJ	200	UJ	5000	UJ	47	J	20	UJ
Tert-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Tetrachloroethene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Toluene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Trans-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Trans-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Trichloroethene	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Trichlorofluoromethane	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Vinyl Chloride	ug/L	0.5	U	0.5	U	0.5	U	5	U	130	U	0.5	U	0.5	U
Xylenes(Total)	ug/L	1	U	1	U	1	U	10	U	250	U	1	U	1	U

mg/L denotes milligrams per liter.
ug/L denotes microgram per liter.
U qualifier indicates that the analyte was not detected at the specified detection limit.
J qualifier indicates that the associated numerical value is an estimate.
UJ qualifier indicates that the analyte was not detected. However, the reported quantitation limit is an estimate.

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		CL1-MW-18D		CL2-MP-02B		CL2-MP-05B		CL2-MW-05MS		NASA-SW-03	
Sample Date		05/13/2003		05/12/2003		05/12/2003		05/12/2003		05/12/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Total Petroleum Hydrocarbons (EPA 8015B)											
Gasoline Range Organics	mg/L	0.05	U	0.1		0.05	U	0.05	U	0.05	U
JP-4	mg/L	0.05	U	0.05	U	0.05	U	0.05	U	0.05	U
Diesel Range Organics	mg/L	0.096	U	0.45		0.096	U	0.096	U	0.096	U
Motor Oil Range Organics	mg/L	0.096	U	0.13	U	0.14	U	0.13	U	0.13	U
VOCs (EPA 8260B)											
1,1,1,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,1-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2,2-Tetrachloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1,2-Trichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,1-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,3-Trichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2,4-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromo-3-Chloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dibromoethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,2-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3,5-Trimethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,3-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1,4-Dichlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
2-Butanone	ug/L	10	UJ	10	U	10	U	10	U	10	U
2-Hexanone	ug/L	10	U	10	U	10	U	10	U	10	U
Acetone	ug/L	10	U	10	U	10	U	10	U	10	U
Benzene	ug/L	0.4	J	0.5	U	0.5	U	0.5	U	0.5	U
Bromobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromodichloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromoform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Bromomethane	ug/L	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U
Carbon Disulfide	ug/L	2	J	10	U	10	U	10	U	10	U
Carbon Tetrachloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chlorobenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloroform	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Chloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

Table C-2
Summary of Analytical Results, Quarterly Groundwater Monitoring, NASA Crows Landing, May 2003

Sample ID		CL1-MW-18D		CL2-MP-02B		CL2-MP-05B		CL2-MW-05MS		NASA-SW-03	
Sample Date		05/13/2003		05/12/2003		05/12/2003		05/12/2003		05/12/2003	
Parameter	Units	Result	Qual	Result	Qual	Result	Qual	Result	Qual	Result	Qual
Cis-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cis-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Cumene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromochloromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dibromomethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Dichlorodifluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Ethylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Hexachlorobutadiene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Methyl Isobutyl Ketone	ug/L	10	U	10	U	10	U	10	U	10	U
Methylene Chloride	ug/L	0.5	U	0.8	U	1	U	0.8	U	1.1	U
MTBE	ug/L	1	U	1	U	1	U	1	U	1	U
N-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
N-Propylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Naphthalene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
O-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Chlorotoluene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
P-Cymene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Sec-Butylbenzene	ug/L	0.5	U	0.5	J	0.5	U	0.5	U	0.5	U
Sec-Dichloropropane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Styrene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tert-Butyl Alcohol	ug/L	20	UJ	20	UJ	20	UJ	20	UJ	20	UJ
Tert-Butylbenzene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Tetrachloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Toluene	ug/L	0.7		0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,2-Dichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trans-1,3-Dichloropropene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichloroethene	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Trichlorofluoromethane	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Vinyl Chloride	ug/L	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
Xylenes(Total)	ug/L	1	U	1	U	1	U	1	U	1	U

mg/L denotes milligrams per liter.
ug/L denotes microgram per liter.
U qualifier indicates that the analyte was not detected at the specified detection limit.
J qualifier indicates that the associated numerical value is an estimate.
UJ qualifier indicates that the analyte was not detected. However, the reported quantitation limit is an estimate.

Table C-3: Field Duplicate Precision, May 2003, NASA Crows Landing Groundwater Sampling

Sample ID	Sample Duplicate ID	Parameter	Sample Result	Qualifier	Duplicate Results	Qualifier	Units	% RPD	Control Limit
17-MW-24S	CL99-53	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-24S	CL99-53	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-24S	CL99-53	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-24S	CL99-53	Motor Oil Range Organics	130	U	130	U	ug/l	NC	30
17-MW-24S	CL99-53	1,1,1,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,1,1-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,1,2,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,1,2-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,1-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,1-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,1-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2,3-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2,3-Trichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2,4-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2,4-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2-Dibromo-3-Chloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2-Dibromoethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,2-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,3,5-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,3-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,3-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	1,4-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	2-Butanone	10	U	10	U	ug/l	NC	30
17-MW-24S	CL99-53	2-Hexanone	10	U	10	U	ug/l	NC	30
17-MW-24S	CL99-53	Acetone	10	U	10	U	ug/l	NC	30
17-MW-24S	CL99-53	Benzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Bromobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Bromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Bromodichloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Bromoform	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Bromomethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Carbon Disulfide	10	U	10	U	ug/l	NC	30
17-MW-24S	CL99-53	Carbon Tetrachloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Chlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Chloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Chloroform	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Chloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Cis-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Cis-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Cumene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Dibromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Dibromomethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Dichlorodifluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Ethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Hexachlorobutadiene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	MTBE	1	U	1	U	ug/l	NC	30
17-MW-24S	CL99-53	Methyl Isobutyl Ketone	10	U	10	U	ug/l	NC	30
17-MW-24S	CL99-53	Methylene Chloride	0.8	U	1.3	U	ug/l	NC	30
17-MW-24S	CL99-53	N-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	N-Propylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Naphthalene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	O-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	P-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	P-Cymene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Sec-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Sec-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Styrene	0.5	U	0.5	U	ug/l	NC	30

Table C-3: Field Duplicate Precision, May 2003, NASA Crows Landing Groundwater Sampling

Sample ID	Sample Duplicate ID	Parameter	Sample Result	Qualifier	Duplicate Results	Qualifier	Units	% RPD	Control Limit
17-MW-24S	CL99-53	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-24S	CL99-53	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-24S	CL99-53	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-24S	CL99-53	Tert-Butyl Alcohol	20	UJ	20	UJ	ug/l	NC	30
17-MW-24S	CL99-53	Tert-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Tetrachloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Toluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Trans-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Trans-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Trichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Trichlorofluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Vinyl Chloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-24S	CL99-53	Xylenes(Total)	1	U	1	U	ug/l	NC	30
17-MW-03MS	CL99-54	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-03MS	CL99-54	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-03MS	CL99-54	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-03MS	CL99-54	Motor Oil Range Organics	96	U	96	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,1,1,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,1,1-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,1,2,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,1,2-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,1-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,1-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,1-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2,3-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2,3-Trichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2,4-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2,4-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2-Dibromo-3-Chloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2-Dibromoethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,2-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,3,5-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,3-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,3-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	1,4-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	2-Butanone	10	UJ	10	UJ	ug/l	NC	30
17-MW-03MS	CL99-54	2-Hexanone	10	U	10	U	ug/l	NC	30
17-MW-03MS	CL99-54	Acetone	10	U	10	U	ug/l	NC	30
17-MW-03MS	CL99-54	Benzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Bromobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Bromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Bromodichloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Bromoform	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Bromomethane	0.5	U	0.5	UJ	ug/l	NC	30
17-MW-03MS	CL99-54	Carbon Disulfide	10	U	10	U	ug/l	NC	30
17-MW-03MS	CL99-54	Carbon Tetrachloride	70.6		88.3		ug/l	22	30
17-MW-03MS	CL99-54	Chlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Chloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Chloroform	13.9		11.2		ug/l	22	30
17-MW-03MS	CL99-54	Chloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Cis-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Cis-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Cumene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Dibromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Dibromomethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Dichlorodifluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Ethylbenzene	0.5	U	0.5	U	ug/l	NC	30

Table C-3: Field Duplicate Precision, May 2003, NASA Crows Landing Groundwater Sampling

Sample ID	Sample Duplicate ID	Parameter	Sample Result	Qualifier	Duplicate Results	Qualifier	Units	% RPD	Control Limit
17-MW-24S	CL99-53	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-24S	CL99-53	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-24S	CL99-53	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-03MS	CL99-54	Hexachlorobutadiene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	MTBE	1	U	1	U	ug/l	NC	30
17-MW-03MS	CL99-54	Methyl Isobutyl Ketone	10	U	10	U	ug/l	NC	30
17-MW-03MS	CL99-54	Methylene Chloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	N-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	N-Propylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Naphthalene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	O-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	P-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	P-Cymene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Sec-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Sec-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Styrene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Tert-Butyl Alcohol	20	UJ	20	UJ	ug/l	NC	30
17-MW-03MS	CL99-54	Tert-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Tetrachloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Toluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Trans-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Trans-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Trichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Trichlorofluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Vinyl Chloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-03MS	CL99-54	Xylenes(Total)	1	U	1	U	ug/l	NC	30
17-MW-34D	CL99-55	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-34D	CL99-55	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-34D	CL99-55	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-34D	CL99-55	Motor Oil Range Organics	130	U	130	U	ug/l	NC	30
17-MW-34D	CL99-55	1,1,1,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,1,1-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,1,2,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,1,2-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,1-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,1-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,1-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2,3-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2,3-Trichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2,4-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2,4-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2-Dibromo-3-Chloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2-Dibromoethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,2-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,3,5-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,3-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,3-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	1,4-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	2-Butanone	10	U	10	U	ug/l	NC	30
17-MW-34D	CL99-55	2-Hexanone	10	U	10	U	ug/l	NC	30
17-MW-34D	CL99-55	Acetone	10	U	10	U	ug/l	NC	30
17-MW-34D	CL99-55	Benzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Bromobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Bromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Bromodichloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Bromoform	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Bromomethane	0.5	U	0.5	U	ug/l	NC	30

Table C-3: Field Duplicate Precision, May 2003, NASA Crows Landing Groundwater Sampling

Sample ID	Sample Duplicate ID	Parameter	Sample Result	Qualifier	Duplicate Results	Qualifier	Units	% RPD	Control Limit
17-MW-24S	CL99-53	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-24S	CL99-53	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-24S	CL99-53	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-34D	CL99-55	Carbon Disulfide	10	UJ	10	UJ	ug/l	NC	30
17-MW-34D	CL99-55	Carbon Tetrachloride	8.1		0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Chlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Chloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Chloroform	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Chloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Cis-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Cis-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Cumene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Dibromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Dibromomethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Dichlorodifluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Ethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Hexachlorobutadiene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	MTBE	1	U	1	U	ug/l	NC	30
17-MW-34D	CL99-55	Methyl Isobutyl Ketone	10	U	1	J	ug/l	NC	30
17-MW-34D	CL99-55	Methylene Chloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	N-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	N-Propylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Naphthalene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	O-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	P-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	P-Cymene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Sec-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Sec-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Styrene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Tert-Butyl Alcohol	20	UJ	20	UJ	ug/l	NC	30
17-MW-34D	CL99-55	Tert-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Tetrachloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Toluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Trans-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Trans-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Trichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Trichlorofluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Vinyl Chloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-34D	CL99-55	Xylenes(Total)	1	U	1	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-31(S)	CL99-56	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Motor Oil Range Organics	96	U	96	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,1,1,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,1,1-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,1,2,2-Tetrachloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,1,2-Trichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,1-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,1-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,1-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2,3-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2,3-Trichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2,4-Trichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2,4-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2-Dibromo-3-Chloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2-Dibromoethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2-Dichloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,2-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30

Table C-3: Field Duplicate Precision, May 2003, NASA Crows Landing Groundwater Sampling

Sample ID	Sample Duplicate ID	Parameter	Sample Result	Qualifier	Duplicate Results	Qualifier	Units	% RPD	Control Limit
17-MW-24S	CL99-53	Diesel Range Organics	96	U	96	U	ug/l	NC	30
17-MW-24S	CL99-53	Gasoline Range Organics	50	U	50	U	ug/l	NC	30
17-MW-24S	CL99-53	JP-4 (Jet Propulsion Fuel #4)	50	U	50	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,3,5-Trimethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,3-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,3-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	1,4-Dichlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	2-Butanone	10	UJ	10	UJ	ug/l	NC	30
17-MW-31(S)	CL99-56	2-Hexanone	10	U	10	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Acetone	10	U	10	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Benzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Bromobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Bromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Bromodichloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Bromoform	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Bromomethane	0.5	U	0.5	UJ	ug/l	NC	30
17-MW-31(S)	CL99-56	Carbon Disulfide	10	U	10	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Carbon Tetrachloride	0.8		0.9		ug/l	12	30
17-MW-31(S)	CL99-56	Chlorobenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Chloroethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Chloroform	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Chloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Cis-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Cis-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Cumene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Dibromochloromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Dibromomethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Dichlorodifluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Ethylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Hexachlorobutadiene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	MTBE	1	U	1	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Methyl Isobutyl Ketone	10	U	10	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Methylene Chloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	N-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	N-Propylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Naphthalene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	O-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	P-Chlorotoluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	P-Cymene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Sec-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Sec-Dichloropropane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Styrene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Tert-Butyl Alcohol	20	UJ	20	UJ	ug/l	NC	30
17-MW-31(S)	CL99-56	Tert-Butylbenzene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Tetrachloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Toluene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Trans-1,2-Dichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Trans-1,3-Dichloropropene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Trichloroethene	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Trichlorofluoromethane	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Vinyl Chloride	0.5	U	0.5	U	ug/l	NC	30
17-MW-31(S)	CL99-56	Xylenes(Total)	1	U	1	U	ug/l	NC	30

ug/l denotes microgram per liter.
U qualifier indicates that the analyte was not detected at the specified detection limit.
J qualifier indicates that the associated numerical value is an estimate.
UJ qualifier indicates that the analyte was not detected. However, the reported quantitation limit is an estimate.
RPD denotes relative percent difference

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

June 24, 2003

SHAW E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord, CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 03-3420 and your project 836557 Crows Landing. Enclosed please find:

(1) Original report.
(2) Oringinal Chain of Custody.
(3) One original and one compact disk of Level C Data Package Deliverable.
(4) One Diskette containing EDD Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-033420
Collected by: Tracy Fenger
Collected on: 05/27/03

Received: 05/28/03
Extracted: 05/29/03
Tested: 05/30-06/03/03
Reported: 06/05/03

Sample Description: Water
Project Description: 836557 Crows Landing

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 117-HP-09 03-03420-1	TB-5/27/03 03-03420-2
Dilution Factor				1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.03J	0.007J
Dilution Factor				1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05
VOLATILE ORGANICS					
Dilution Factor				1	1
ACETONE	SW8260B	µg/L	10	<10	11
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	4.8	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 117-HP-09 03-03420-1	TB-5/27/03 03-03420-2
TRANS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	μg/L	0.5	<0.5	<0.5
2-HEXANONE	SW8260B	μg/L	10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	μg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	μg/L	0.5	0.4J	0.6
4-METHYL-2-PENTANONE (MIBK)	SW8260B	μg/L	10	<10	0.9J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	μg/L	1	<1	<1
NAPHTHALENE	SW8260B	μg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
STYRENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	μg/L	0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	μg/L	1	<1	<1
T-BUTYL ALCOHOL	SW8260B	μg/L	20	<20	<20

Component Analyzed	Method	Unit	PQL	Analysis Result 117-HP-09 03-03420-1
Dilution Factor				0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096
Dilution Factor				0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [a]	<0.13

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
[a] MDL reported.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: 836557 Crows Landing

APCL Service ID: 03-3420

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
Fax (909)590-1498

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

Case Narrative

Project: Crows Landing/836557

For Shaw E & I

APCL Service No: 03-3420

1. Sample Identification

The sample identifications are listed in the following table:

Shaw E & I Sample ID	APCL Sample ID
117-HP-09	03-03420-1
TB-5/27/03	03-03420-2

2. Analytical Methodology

Samples are analyzed by EPA methods

SW8260B (Volatile organics),
M8015V (Gasoline),
M8015E (TPH: Diesel),
M8015E (TPH: Motor Oil),
M8015V (JP-4),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

(1) SW8260B:

Methylene Chloride in the amount of 0.6 ug/L was detected in the Method Blank of batch 03G2767. Methylene Chloride was also detected in the field samples, due to lab contamination.

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CHAIN OF CUSTODY

Ref. Document # CL1007

Page 1 of 1

Shaw

Shaw Environmental and Infrastructure Inc.

4005 Port Chicago Hwy
Concord, CA 94520

Project Manager: Bob Hulet 925-288-9898 (Name & phone #)

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2151
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Project Number: 836557
Project Name / Location: Crows Landing
Purchase Order #: 205733

Shipment Date: 5/27/2003
Waybill Number: 1Z 71V 092 01 9885 7030
Lab Destination: APCL Chino, CA
Lab Contact Name / ph. #: Hsin-Ye 909-590-1828

Sampler's Name(s): Tracy Fenger

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container type	Preservative: HCL	NaOH	HNO_3	H_2SO_4	Ice		Analyses Requested: TPH - Jet Fuel & gasoline (8015B)	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/7000)	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)	Temperature
117-HP-09	Water	05/27/03	8:00 AM	g	GW	2	1 Liter Amber					X			X									
"	Water	05/27/03	8:00 AM	g	GW	5	VOA	X				X		X		X								
TB-5/27/03	Trip Blank	05/27/03		g		2	VOA	X				X		X		X								
Temp Blank	Water	05/27/03		g		1	VOA					X												X

3420

Special Instructions: Silica gel clean up for TPH-D/MO

Turnaround Time: (Standard TAT) ☐ 24-hr ☐ 48-hr ☐ 3-day ☐ 5-day ◂ Normal

Level Of QC Required: I II (III) Project Specific:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Tracy Fenger	5/27/03	1030	[illegible]	5/28/03	1000

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid SOL = Other Solid
GS = Air Sample

APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710
Tel. (909) 590-1828 Fax (909) 590-1498

June 16, 2003

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 03-3246 and your project 836557 Crows Landing. Enclosed please find:

(1) Original report.
(2) One copy of Chain of Custody.
(3) One original and one compact disk of Level C Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-033246 Received: 05/15-16/03
Collected by: Hector Marino/Joe Strack. Extracted: 05/17/03
Collected on: 05/12-15/03 Tested: 05/20-22/03
Reported: 05/23/03
Sample Description: Water from Q2 2003 GW Sampling
Project Description: 836557 Crows Landing

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-03MS (5/03) 03-03246-1	17-MW-18MD (5/03) 03-03246-2	17-MW-25MS (5/03) 03-03246-3
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.02J	0.008J	0.27 [a]
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [b]	<0.096 [b]	<0.096 [b]
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [b]	<0.096 [b]	<0.096 [b]
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	14.2
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	0.9
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	70.6 [c]	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	13.9	<0.5	0.7
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	1.7
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-03MS (5/03) 03-03246-1	17-MW-18MD (5/03) 03-03246-2	17-MW-25MS (5/03) 03-03246-3
CIS-1,2-DICHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	μg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	μg/L	0.5	0.4J	<0.5	0.4J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	μg/L	10	1J	<10	<10
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	μg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	μg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	μg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	μg/L	20	<20	<20	<20

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-25S (5/03) 03-03246-4	17-MW-31(S) 03-03246-5	17-MW-32(MS) 03-03246-6
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.02J	<0.05	0.01J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 (b)	<0.096	<0.096 (b)
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 (b)	<0.096	<0.096 (b)
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	0.6	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	28
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	0.8	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	0.7	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-25S (5/03) 03-03246-4	17-MW-31(S) 03-03246-5	17-MW-32(MS) 03-03246-6
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	<0.5	0.3J	0.3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	2J	0.9J	1J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 109-MW-01S (5/03) 03-03246-7	117-MW-08MD (5/03) 03-03246-8	117-MW-13S (5/03) 03-03246-9
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.02J	0.02J	0.02J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096	<0.096 (b)	<0.096 (b)
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096	<0.096 (b)	<0.096 (b)
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	0.4J	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 109-MW-01S (5/03) 03-03246-7	117-MW-08MD (5/03) 03-03246-8	117-MW-13S (5/03) 03-03246-9
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	0.4J	0.3J	0.4J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	3J	1J	1J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	0.6
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

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Component Analyzed	Method	Unit	PQL	Analysis Result 117-MW-14MS (5/03) 03-03246-10	CL1-MW-17MD (5/03) 03-03246-11	CL1-MW-18D (5/03) 03-03246-12
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.01J	0.01J	0.02J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096	<0.096 (b)	<0.096 (b)
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 (b)	<0.096 (b)	<0.096 (b)
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	0.4J	0.4J
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	1J
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	4J	2J
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	0.9	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 117-MW-14MS (5/03) 03-03246-10	CL1-MW-17MD (5/03) 03-03246-11	CL1-MW-18D (5/03) 03-03246-12
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	<0.5	0.3J	<0.5
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	1J	3J	3J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	0.7
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

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Component Analyzed	Method	Unit	PQL	Analysis Result CL99-54 (5/03) 03-03246-13	Analysis Result CL99-56 (5/03) 03-03246-14
Dilution Factor				1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.02J	<0.05
Dilution Factor				1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05
Dilution Factor				0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 (b)	<0.096
Dilution Factor				0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 (b)	<0.096
VOLATILE ORGANICS					
Dilution Factor				1	1
ACETONE	SW8260B	µg/L	10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	88.3 (d)	0.9
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	11.2	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5

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Component Analyzed	Method	Unit	PQL	Analysis Result CL99-54 (5/03) 03-03246-13	CL99-56 (5/03) 03-03246-14
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	0.4J	<0.5
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	0.8J	1J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20

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Component Analyzed	Method	Unit	PQL	Analysis Result TB-03-5/13/03 03-03246-15	TB-04-5/13/03 03-03246-16
Dilution Factor				1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.009J	0.009J
Dilution Factor				1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05
VOLATILE ORGANICS					
Dilution Factor				1	1
ACETONE	SW8260B	µg/L	10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result TB-03-5/13/03 03-03246-15	TB-04-5/13/03 03-03246-16
1,1-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	μg/L	0.5	<0.5	<0.5
2-HEXANONE	SW8260B	μg/L	10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	μg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	μg/L	0.5	4.1	4.2
4-METHYL-2-PENTANONE (MIBK)	SW8260B	μg/L	10	4J	4J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	μg/L	1	<1	<1
NAPHTHALENE	SW8260B	μg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
STYRENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	μg/L	0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	μg/L	1	<1	<1
T-BUTYL ALCOHOL	SW8260B	μg/L	20	<20	<20

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Not a typical Gasoline or JP-4 pattern.
(b) Sample chromatogram contained unknown isolated peaks at Diesel/Motor Oil range.
(c) Analyzed with a dilution factor of 2.
(d) Analyzed with a dilution factor of 5.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

CHAIN OF CUSTODY

Ref. Document # CL1003

Shaw

Shaw Environmental and Infrastructure Inc.
4005 Port Chicago Hwy
Concord, CA 94520

Project Manager: Bob Hulet 925-288-9898 (Name & phone #)

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2151
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Project Number: 836557
Project Name / Location: Crows Landing
Purchase Order #: 205733

Shipment Date: 5/14/2003
Waybill Number: Pick up by Lab Courier - Golden State
Lab Destination: APCL Chino, CA
Lab Contact Name / ph. #: Hsin-Ye 909-590-1828

Sampler's Name(s): Hector Marino, Joe Strack

Sample ID Number	Sample Description	Collection Information Date	Time	Method	Matrix	# of containers	Container type	Preservative HCL	NaOH	HNO_3	H_2SO_4	Ice		TPH - Jet Fuel & gasoline (8015B)	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/7000)	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)	
CL1-MW-17MD (5/03)	Q2 2003 Groundwater sampling	05/13/03	8:20	g	GW	9	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	8:20	g	GW	4	1 Liter Amber					X			X									
109-MW-01S (5/03)	Q2 2003 Groundwater sampling	05/13/03	8:45	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	8:45	g	GW	2	1 Liter Amber					X			X									
CL1-MW-18D (5/03)	Q2 2003 Groundwater sampling	05/13/03	9:55	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	9:55	g	GW	2	1 Liter Amber					X			X									
17-MW-25MS (5/03)	Q2 2003 Groundwater sampling	05/13/03	10:10	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	10:10	g	GW	2	1 Liter Amber					X			X									
117-MW-08MD (5/03)	Q2 2003 Groundwater sampling	05/13/03	11:33	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	11:33	g	GW	2	1 Liter Amber					X			X									

Analyses Requested

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Special Instructions: Silica gel clean up for TPH-D/MO **USE CL1-MW-17MD for MS/MSD

Turnaround Time: Standard TAT ☐ 24-hr ☐ 48-hr ☐ 3-day ☐ 5-day ◂ Normal

Level Of QC Required: I II (III) Project Specific:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
[illegible]	5/14/03	0930	[illegible]	5/15/03	0930

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid SOL = Other Solid
GS = Air Sample

CHAIN OF CUSTODY (continue)

Ref. Document # CL1003

Project Number: *836557*

Shipment Date: 5/13/2003

Project Name / Location: *Crows Landing*

####

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container type	Preservative: HCL	NaOH	HNO_3	H_2SO_4	Ice		Analyses Requested: TPH - Jet Fuel & gasoline (8015B)	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/700	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)	
17-MW-25S (5/03)	Q2 2003 Groundwater sampling	05/13/03	11:25	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	11:25	g	GW	2	1 Liter Amber					X			X									
17-MW-03MS (5/03)	Q2 2003 Groundwater sampling	05/13/03	13:40	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	13:40	g	GW	2	1 Liter Amber					X			X									
117-MW-13S (5/03)	Q2 2003 Groundwater sampling	05/13/03	13:10	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	13:10	g	GW	2	1 Liter Amber					X			X									
117-MW-14MS (5/03)	Q2 2003 Groundwater sampling	05/13/03	14:00	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	14:00	g	GW	2	1 Liter Amber					X			X									
CL99-54 (5/03)	Q2 2003 Groundwater sampling	05/13/03	13:45	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	13:45	g	GW	2	1 Liter Amber					X			X									
17-MW-31(S)	Q2 2003 Groundwater sampling	05/13/03	15:00	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	15:00	g	GW	2	1 Liter Amber					X			X									
CL99-56 (5/03)	Q2 2003 Groundwater sampling	05/13/03	15:10	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	15:10	g	GW	2	1 Liter Amber					X			X									
17-MW-32(MS)	Q2 2003 Groundwater sampling	05/12/03	16:10	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	16:10	g	GW	2	1 Liter Amber					X			X									
17-MW-18MD (5/03)	Q2 2003 Groundwater sampling	05/12/03	16:40	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	16:40	g	GW	2	1 Liter Amber					X			X									
TB-03-5/13/03	Trip Blank Hector	05/12/03		g		2	voa	X				X		X		X								
TB-04-5/13/03	Trip Blank Joe	05/12/03		g		2	voa	X				X		X		X								

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APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel. (909) 590-1828 Fax (909) 590-1498

June 16, 2003

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 03-3221 and your project 836557 Crows Landing. Enclosed please find:

(1) Original report.
(2) One copy of Chain of Custody.
(3) One original and one compact disk of Level D Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-033221 Received: 05/14/03
Collected by: H. Marino/J. Strack Extracted: 05/16/03
Collected on: 05/12/03 Tested: 05/16-20/03
Revised: 05/30/03
Sample Description: Water
Project Description: 836557. Crows Landing Q2 2003.

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 11-MW-03S (05/03) 03-03221-1	11-MW-04S (05/03) 03-03221-2	17-MW-24MS (05/03) 03-03221-3
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.02J	0.009J	0.02J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096	<0.096	<0.096
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [a]	<0.13	<0.13	<0.13
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 11-MW-03S (05/03) 03-03221-1	11-MW-04S (05/03) 03-03221-2	17-MW-24MS (05/03) 03-03221-3
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	0.6	0.5	0.5
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	<10	<10	1J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1 [b]	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	0.4J	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-24S (05/03) 03-03221-4	CL1-MW-04S (05/03) 03-03221-5	CL1-MW-05S (05/03) 03-03221-6
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.01J	0.02J	0.008J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [c]	<0.096	<0.096 [c]
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [a]	<0.13	<0.13	<0.13 [d]
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-24S (05/03) 03-03221-4	CL1-MW-04S (05/03) 03-03221-5	CL1-MW-05S (05/03) 03-03221-6
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
2-HEXANONE	SW8260B	µg/L	10	< 10	< 10	< 10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	0.8	0.5J	0.5J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	2J	< 10	< 10
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	< 1	< 1	< 1
NAPHTHALENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
STYRENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
TOLUENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	< 0.5	< 0.5	< 0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	< 1	< 1	< 1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	< 20	< 20	< 20

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-MW-06S (05/03) 03-03221-7	CL2-MP-02B (05/03) 03-03221-8	CL2-MP-05B (05/03) 03-03221-9
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.02J	0.1	0.03J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096	0.45	<0.096 [c]
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [a]	<0.13	<0.13	0.14 [d]
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	0.5J [e]	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-MW-06S (05/03) 03-03221-7	CL2-MP-02B (05/03) 03-03221-8	CL2-MP-05B (05/03) 03-03221-9
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	0.7	0.8	1.0
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	<10	2J	2J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

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Component Analyzed	Method	Unit	PQL	Analysis Result CL2-MW-05MS (05/03) 03-03221-10	CL99-53 (05/03) 03-03221-11	NASA-SW-03 (05/03) 03-03221-12
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.01J	0.01J	0.02J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096	<0.096 [c]	<0.096
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [a]	<0.13	<0.13	<0.13
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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Component Analyzed	Method	Unit	PQL	Analysis Result CL2-MW-05MS (05/03) 03-03221-10	CL99-53 (05/03) 03-03221-11	NASA-SW-03 (05/03) 03-03221-12
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	0.8	1.3	1.1
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	3J	2J	3J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

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Component Analyzed	Method	Unit	PQL	Analysis Result TB-01-5/12/03 03-03221-13	TB-02-5/12/03 03-03221-14
Dilution Factor				1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.01J	0.008J
Dilution Factor				1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05
VOLATILE ORGANICS					
Dilution Factor				1	1
ACETONE	SW8260B	µg/L	10	<10	13
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result TB-01-5/12/03 03-03221-13	TB-02-5/12/03 03-03221-14
1,1-DICHLOROPROPENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
ETHYLBENZENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
HEXACHLOROBUTADIENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
2-HEXANONE	SW8260B	μg/L	10	< 10	< 10
ISOPROPYLBENZENE (CUMENE)	SW8260B	μg/L	0.5	< 0.5	< 0.5
P-ISOPROPYLTOLUENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
METHYLENE CHLORIDE	SW8260B	μg/L	0.5	2.7	< 0.5
4-METHYL-2-PENTANONE (MIBK)	SW8260B	μg/L	10	5J	1J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	μg/L	1	< 1	< 1
NAPHTHALENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
N-PROPYLBENZENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
STYRENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	< 0.5	< 0.5
TETRACHLOROETHENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
TOLUENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,2,3-TRICHLOROBENZENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,2,4-TRICHLOROBENZENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,1,1-TRICHLOROETHANE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,1,2-TRICHLOROETHANE	SW8260B	μg/L	0.5	< 0.5	< 0.5
TRICHLOROETHENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
TRICHLOROFLUOROMETHANE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,2,3-TRICHLOROPROPANE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	< 0.5	< 0.5
VINYL CHLORIDE	SW8260B	μg/L	0.5	< 0.5	< 0.5
XYLENE (TOTAL)	SW8260B	μg/L	1	< 1	< 1
T-BUTYL ALCOHOL	SW8260B	μg/L	20	< 20	< 20

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) MDL reported.
(b) Re-analyzed on 05/29/03, previous reported value of 0.6 μg/L might be carry-over from previous sample.
(c) Sample chromatogram contained some unknown peaks in Diesel range.
(d) Sample chromatogram contained some unknown peaks in Motor Oil range.
(e) Confirmed by re-analysis on 05/29/03.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level D Data Package Deliverable

General Information

Project: Crows Landing

APCL Service ID: 03-3221

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
Fax (909)590-1498

Applied P & Ch Laboratory
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Case Narrative

Project: Crows Landing. Q2 2003./836557

For Shaw E & I

APCL Service No: 03-3221

1. Sample Identification

The sample identifications are listed in the following table:

Shaw E & I Sample ID	APCL Sample ID
NASA-SW-03 (05/03)	03-03221-12
11-MW-03S (05/03)	03-03221-1
11-MW-04S (05/03)	03-03221-2
CL2-MP-05B (05/03)	03-03221-9
CL1-MW-05S (05/03)	03-03221-6
CL2-MP-02B (05/03)	03-03221-8
CL1-MW-04S (05/03)	03-03221-5
CL2-MW-05MS (05/03)	03-03221-10
CL1-MW-06S (05/03)	03-03221-7
17-MW-24S (05/03)	03-03221-4
CL99-53 (05/03)	03-03221-11
17-MW-24MS (05/03)	03-03221-3
TB-01-5/12/03	03-03221-13
TB-02-5/12/03	03-03221-14

2. Analytical Methodology

Samples are analyzed by EPA methods

SW8260B (Volatile organics),
M8015V/M8015G (Gasoline),
M8015E/M8015D (TPH: Diesel),
M8015E/M8015M (TPH: Motor Oil),
M8015V/M8015V (JP-4),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

E-mails requesting to use sample ID listed on COC as CL2-MW-05MS and level 4 deliverables E-mails requesting reanalyses on two samples.

6. Anomaly

(1) SW8260B:

Methylene Chloride in the amount of 1.8 ug/L was detected in the Method Blank of batch 03G2524. Methylene Chloride was also detected in the field samples, due to lab contamination.

Traces of MTBE and Xylene in the amounts of 0.6 ug/L and 0.4 ug/L, respectively, were detected in the sample 11-MW-03S (05/03). Per Client's request, this sample was re-analyzed on 05/29/03, three days outside of holding time. MTBE and Xylene were not detected in the reanalyses. MTBE was not reported in this package, due to suspected carryover from other sample.

Sec-Butylbenzene in the amount of 0.5 ug/L was detected in the sample CL2-MP-02B (05/03). Per Client's request, this sample was re-analyzed on 05/29/03, three days outside of holding time. Similar level of Sec-Butylbenzene was also detected in the reanalysis.

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CHAIN OF CUSTODY

Ref. Document # CL1002

Shaw

Shaw Environmental and Infrastructure Inc.

4005 Port Chicago Hwy
Concord, CA 94520

Project Manager: Bob Hulet 925-288-9898 (Name & phone #)

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2151
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Project Number: 836557
Project Name / Location: Crows Landing
Purchase Order #: 205733

Shipment Date: 5/13/2003
Waybill Number: Pick up by Lab Courier - Golden State
Lab Destination: APCL Chino, CA
Lab Contact Name / ph. #: Hsin-Ye 909-590-1828

Sampler's Name(s): Hector Marino, Joe Strack

Sample ID Number	Sample Description	Collection Information Date	Time	Method	Matrix	# of containers	Container type	Preservative HCL	NaOH	HNO_3	H_2SO_4	Ice		Analyses Requested TPH - Jet Fuel & gasoline (8015B)	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/7000)	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)	
NASA-SW-03 (05/03)	Q2 2003 Groundwater sampling	05/12/03	7:50	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	7:50	g	GW	2	1 Liter Amber					X			X									
11-MW-03S (05/03)	Q2 2003 Groundwater sampling	05/12/03	8:40	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	8:40	g	GW	2	1 Liter Amber					X			X									
11-MW-04S (05/03)	Q2 2003 Groundwater sampling	05/12/03	9:58	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	9:58	g	GW	2	1 Liter Amber					X			X									
CL2-MP-05B (05/03)	Q2 2003 Groundwater sampling	05/12/03	10:25	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	10:25	g	GW	2	1 Liter Amber					X			X									
CL1-MW-05S (05/03)	Q2 2003 Groundwater sampling	05/12/03	11:12	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	11:12	g	GW	2	1 Liter Amber					X			X									

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Special Instructions: Silica gel clean up for TPH/DMO

Turnaround Time: Standard TAT ◀ Normal ☐ 24-hr ☐ 48-hr ☐ 3-day ☐ 5-day

Level Of QC Required: I II (III) Project Specific:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Rose Condit	5/13/03		Golden State		
				5/14/03	1000

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid SOL = Other Solid
GS = Air Sample

CHAIN OF CUSTODY (continue)

Ref. Document # CL1002

Project Number: *836557*

Shipment Date: 5/13/2003

Project Name / Location: *Crows Landing*

Sample ID Number	Sample Description	Collection Information			Matrix	# of containers	Container type	Preservative						Analyses Requested										
		Date	Time	Method				HCL	NaOH	HNO_3	H_2SO_4	Ice		TPH - Jet Fuel & gasoline (8015B	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/700	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)	
CL2-MP-02B (05/03)	Q2 2003 Groundwater sampling	05/12/03	11:30	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	11:30	g	GW	2	1 Liter Amber					X			X									
CL1-MW-04S (05/03)	Q2 2003 Groundwater sampling	05/12/03	12:15	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	12:15	g	GW	2	1 Liter Amber					X			X									
CL2-MW-05MS (05/03)	Q2 2003 Groundwater sampling	05/12/03	12:40	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	12:40	g	GW	2	1 Liter Amber					X			X									
CL1-MW-06S (05/03)	Q2 2003 Groundwater sampling	05/12/03	14:18	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	14:18	g	GW	2	1 Liter Amber					X			X									
17-MW-24S (05/03)	Q2 2003 Groundwater sampling	05/12/03	15:20	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	15:20	g	GW	2	1 Liter Amber					X			X									
CL99-53 (05/03)	Q2 2003 Groundwater sampling	05/12/03	15:50	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	15:50	g	GW	2	1 Liter Amber					X			X									
17-MW-24MS (05/03)	Q2 2003 Groundwater sampling	05/12/03	16:30	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/12/03	16:30	g	GW	2	1 Liter Amber					X			X									
TB-01-5/12/03	Trip Blank Hector	05/12/03		g		2	vos	X				X		X		X								
TB-02-5/12/03	Trip Blank Joe	05/12/03		g		2	vos	X				X		X		X								

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APCL

Applied Physics & Chemistry Laboratory

13760 Magnolia Ave. Chino CA 91710

Tel. (909) 590-1828 Fax (909) 590-1498

June 16, 2003

Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120

Dear Rose,

This package contains samples in our Service ID 03-3281 and your project 836557 Crows Landing. Enclosed please find:

(1) Original report.
(2) One copy of Chain of Custody.
(3) One original and one compact disk of Level C Data Package Deliverable.

If anything is missing or you have any questions, please feel free to contact me.

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
Shaw E & I
Attention: Rose Condit
4005 Port Chicago Highway
Concord CA 94520-1120
Tel: (925)288-9898 Fax: (925)827-5927

Service ID #: 801-033281 Received: 05/16/03
Collected by: Hector M./Joe S. Extracted: 05/19/03
Collected on: 05/12-13/03 Tested: 05/19-23/03
Reported: 05/28/03
Sample Description: Water from Q2 2003 GW
Project Description: 836557 Crows Landing

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-27MS (5/03) 03-03281-1	17-MW-28S (5/03) 03-03281-2	17-MW-29MS (5/03) 03-03281-3
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.03J	0.008J	0.01J
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [a]	<0.096 [a]	<0.096
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [b]	<0.13 [a]	<0.13 [a]	<0.13
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	12
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-27MS (5/03) 03-03281-1	17-MW-28S (5/03) 03-03281-2	17-MW-29MS (5/03) 03-03281-3
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	1J	<10	<10
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-33D (5/03) 03-03281-4	17-MW-34D (5/03) 03-03281-5	17-MW-35D (5/03) 03-03281-6
Dilution Factor				1	1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.02J	0.02J	<0.05
Dilution Factor				1	1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<0.05
Dilution Factor				0.96	0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [a]	<0.096 [a]	<0.096 [a]
Dilution Factor				0.96	0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [b]	<0.13	<0.13	<0.13 [a]
VOLATILE ORGANICS						
Dilution Factor				1	1	1
ACETONE	SW8260B	µg/L	10	<10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	0.5J	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	8.1	0.6
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5

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Component Analyzed	Method	Unit	PQL	Analysis Result 17-MW-33D (5/03) 03-03281-4	17-MW-34D (5/03) 03-03281-5	17-MW-35D (5/03) 03-03281-6
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	0.3J	<0.5	<0.5
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	1J	2J	<10
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	<20	<20	<20

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Component Analyzed	Method	Unit	PQL	Analysis Result 117-MW-10S (5/03) 03-03281-7	CL1-MW-09S (5/03) 03-03281-8	CL1-MW-12MD (5/03) 03-03281-9
Dilution Factor				1	1	50
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.15 [c]	0.44 [c]	51 [c]
Dilution Factor				1	1	50
JP-4	M8015V	mg/L	0.05	<0.05	<0.05	<2.5
Dilution Factor				0.96	0.96	4.8
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 [a]	<0.096 [a]	<0.48 [d]
Dilution Factor				0.96	0.96	4.8
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 [b]	<0.13 [a]	<0.13 [a]	<0.67
VOLATILE ORGANICS						
Dilution Factor				1	10	250
ACETONE	SW8260B	µg/L	10	<10	<100	<2500
BENZENE	SW8260B	µg/L	0.5	<0.5	166	23,200 [e]
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<5	<130
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<100	<2500
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<100	<2500
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<5	<130
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	13	<130
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<5	<130
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<5	<130
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<5	<130
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	170 [f]	11	630
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<5	<130
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<5	<130
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<5	<130
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	0.7	<5	<130
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<5	<130

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Component Analyzed	Method	Unit	PQL	Analysis Result 117-MW-10S (5/03) 03-03281-7	CL1-MW-09S (5/03) 03-03281-8	CL1-MW-12MD (5/03) 03-03281-9
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
ETHYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
2-HEXANONE	SW8260B	µg/L	10	< 10	< 100	< 2500
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	< 0.5	< 5	3,780
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	< 0.5	8	200
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	< 10	< 100	< 2500
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	< 1	< 10	< 250
NAPHTHALENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
N-PROPYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
STYRENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
TETRACHLOROETHENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
TOLUENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
TRICHLOROETHENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
VINYL CHLORIDE	SW8260B	µg/L	0.5	< 0.5	< 5	< 130
XYLENE (TOTAL)	SW8260B	µg/L	1	< 1	< 10	< 250
T-BUTYL ALCOHOL	SW8260B	µg/L	20	48	< 200	< 5000

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-MW-14MS (5/03) 03-03281-10	CL99-55 (5/03) 03-03281-11
Dilution Factor				1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.17 (c)	0.01J
Dilution Factor				1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05
Dilution Factor				0.96	0.96
DIESEL RANGE ORGANICS	M8015E	mg/L	0.1	<0.096 (g)	<0.096 (a)
Dilution Factor				0.96	0.96
MOTOR OIL RANGE ORGANICS	M8015E	mg/L	0.14 (b)	<0.13 (g)	<0.13
VOLATILE ORGANICS					
Dilution Factor				1	1
ACETONE	SW8260B	µg/L	10	<10	<10
BENZENE	SW8260B	µg/L	0.5	11.0	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	0.6	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	0.8	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5

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Component Analyzed	Method	Unit	PQL	Analysis Result CL1-MW-14MS (5/03) 03-03281-10	CL99-55 (5/03) 03-03281-11
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	µg/L	0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	µg/L	0.5	<0.5	<0.5
2-HEXANONE	SW8260B	µg/L	10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	µg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	µg/L	0.5	<0.5	0.3J
4-METHYL-2-PENTANONE (MIBK)	SW8260B	µg/L	10	<10	1J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	µg/L	1	<1	<1
NAPHTHALENE	SW8260B	µg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
STYRENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	µg/L	1	<1	<1
T-BUTYL ALCOHOL	SW8260B	µg/L	20	47	<20

Applied P & Ch Laboratory
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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result TB-05-5/14/03 03-03281-12	TB-06-5/14/03 03-03281-13
Dilution Factor				1	1
GASOLINE RANGE ORGANICS	M8015V	mg/L	0.05	0.01J	0.009J
Dilution Factor				1	1
JP-4	M8015V	mg/L	0.05	<0.05	<0.05
VOLATILE ORGANICS					
Dilution Factor				1	1
ACETONE	SW8260B	µg/L	10	<10	<10
BENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMODICHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOFORM	SW8260B	µg/L	0.5	<0.5	<0.5
BROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-BUTANONE (MEK)	SW8260B	µg/L	10	<10	<10
N-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
SEC-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
TERT-BUTYLBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
CARBON DISULFIDE	SW8260B	µg/L	10	<10	<10
CARBON TETRACHLORIDE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOCHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROFORM	SW8260B	µg/L	0.5	<0.5	<0.5
CHLOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
2-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
4-CHLOROTOLUENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMO-3-CHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DIBROMOETHANE (EDB)	SW8260B	µg/L	0.5	<0.5	<0.5
DIBROMOMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,4-DICHLOROBENZENE	SW8260B	µg/L	0.5	<0.5	<0.5
DICHLORODIFLUOROMETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROETHANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,1-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
CIS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
TRANS-1,2-DICHLOROETHENE	SW8260B	µg/L	0.5	<0.5	<0.5
1,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
1,3-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5
2,2-DICHLOROPROPANE	SW8260B	µg/L	0.5	<0.5	<0.5

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APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result TB-05-5/14/03 03-03281-12	TB-06-5/14/03 03-03281-13
1,1-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
CIS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
TRANS-1,3-DICHLOROPROPENE	SW8260B	μg/L	0.5	<0.5	<0.5
ETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
HEXACHLOROBUTADIENE	SW8260B	μg/L	0.5	<0.5	<0.5
2-HEXANONE	SW8260B	μg/L	10	<10	<10
ISOPROPYLBENZENE (CUMENE)	SW8260B	μg/L	0.5	<0.5	<0.5
P-ISOPROPYLTOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
METHYLENE CHLORIDE	SW8260B	μg/L	0.5	2.4	2.4
4-METHYL-2-PENTANONE (MIBK)	SW8260B	μg/L	10	4J	4J
METHYL-T-BYTYL ETHER (MTBE)	SW8260B	μg/L	1	<1	<1
NAPHTHALENE	SW8260B	μg/L	0.5	<0.5	<0.5
N-PROPYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
STYRENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2,2-TETRACHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TETRACHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TOLUENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRICHLOROBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,1-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROETHENE	SW8260B	μg/L	0.5	<0.5	<0.5
TRICHLOROFLUOROMETHANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,3-TRICHLOROPROPANE	SW8260B	μg/L	0.5	<0.5	<0.5
1,2,4-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
1,3,5-TRIMETHYLBENZENE	SW8260B	μg/L	0.5	<0.5	<0.5
VINYL CHLORIDE	SW8260B	μg/L	0.5	<0.5	<0.5
XYLENE (TOTAL)	SW8260B	μg/L	1	<1	<1
T-BUTYL ALCOHOL	SW8260B	μg/L	20	<20	<20

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Sample chromatogram contained isolated peaks at Diesel/Motor Oil range.
(b) MDL reported.
(c) Not a typical Gasoline or JP-4 pattern.
(d) Sample chromatogram contained an isolated peak at about C11 range and an unknown mixture in Diesel range.
(e) Analyzed with a dilution factor of 1000.
(f) Analyzed with a dilution factor of 5.
(g) Unknown mixture in Diesel/Motor Oil range.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

Level C Data Package Deliverables

General Information

Project: 836557 Crows Landing

APCL Service ID: 03-3281

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino, CA 91710
Telephone (909)590-1828
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Case Narrative

Project: Crows Landing/Q2 2003 GW/836557

For Shaw E & I

APCL Service No: 03-3281

1. Sample Identification

The sample identifications are listed in the following table:

Shaw E & I Sample ID	APCL Sample ID
17-MW-27MS (5/03)	03-03281-1
17-MW-34D (5/03)	03-03281-5
CL99-55 (5/03)	03-03281-11
17-MW-33D (5/03)	03-03281-4
17-MW-35D (5/03)	03-03281-6
CL1-MW-09S (5/03)	03-03281-8
17-MW-28S (5/03)	03-03281-2
17-MW-29MS (5/03)	03-03281-3
CL1-MW-14MS (5/03)	03-03281-10
CL1-MW-12MD (5/03)	03-03281-9
117-MW-10S (5/03)	03-03281-7
TB-05-5/14/03	03-03281-12
TB-06-5/14/03	03-03281-13

2. Analytical Methodology

Samples are analyzed by EPA methods

SW8260B (Volatile organics),
M8015V/M8015G (Gasoline),
M8015E/M8015D (TPH: Diesel),
M8015E/M8015M (TPH: Motor Oil),
M8015V/M8015V (JP-4),

3. Holding Time

All samples were extracted, digested and analyzed within the holding times defined by the appropriate EPA methods of the analyses.

4. Preservation

All samples were preserved and stored according to the appropriate EPA methods.

5. Tele-log

None

6. Anomaly

(1) SW8260B:

Methylene Chloride was detected in the samples CL1-MW-09S (5/03), CL1-MW-12MD (5/03) and TB-05-5/14/03 in the amounts exceeding the repoting limit. Methylene Chloride was not detected in the associated

method blank. However, Methylene Chloride is a common lab contaminant and may not be originated from the samples.

(2) M8015E:

Diesel recoveries in the MS/MSD spiked on the sample 17-MW-28S (5/03) were calculated including unknown peaks in Diesel range. Diesel was not found in the parent sample. Therefore, the value reported as unspiked concentration does not correspond to Diesel. The unspiked value only reflects contribution of unknown peaks in Diesel quantitation range, for the purpose of accurate reporting of spike recoveries.

(3) Sample receiving/COC:

COC for the sample 17-MW-27MS (5/03) listed 9 vial containers and 4 one liter amber containers. However, APCL received only 5 vials and 2 one liter amber containers. APCL performed only primary analyses for this sample.

7. Note

Silica Gel clean-up was performed in TPH analyses.

"I certify that these data are technically accurate, complete, and in compliance with the terms and conditions of the contract, for other than the conditions detailed above. Release of the data contained in the hardcopy data package and its electronic data deliverable submitted on diskette had been authorized by the Laboratory Manager or her/his designee, as verified by the following signature."

Respectfully submitted,

Regina Kirakozova
Associate QA/QC Director
Applied P & Ch Laboratory

CHAIN OF CUSTODY

Ref. Document # CL1004

Shaw

Shaw Environmental and Infrastructure Inc.

4005 Port Chicago Hwy
Concord, CA 94520

Project Manager: Bob Hulet 925-288-9898 (Name & phone #)

Send Report To: Rose Condit
Phone/Fax Number: 925-288-2151
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520

Project Number: 836557
Project Name / Location: Crows Landing
Purchase Order #: 205733

Shipment Date: 05/15/2003
Waybill Number: Pick up by Lab Courier - Golden State
Lab Destination: APCL Chino, CA
Lab Contact Name / ph. #: Hsin-Ye 909-590-1828

Sampler's Name(s): Hector Marino, Joe Strack

Sample ID Number	Sample Description	Collection Information: Date	Time	Method	Matrix	# of containers	Container type	Preservative: HCL	NaOH	HNO_3	H_2SO_4	Ice	Analyses Requested: TPH - Jet Fuel & gasoline (8015B)	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/7000)	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)
17-MW-27MS (5/03)	Q2 2003 Groundwater sampling	05/13/03	08:30	g	GW	9	VOA	X				X	X		X							
"	Q2 2003 Groundwater sampling	05/13/03	08:30	g	GW	4	1 Liter Amber					X		X								
17-MW-34D (5/03)	Q2 2003 Groundwater sampling	05/13/03	08:30	g	GW	5	VOA	X				X	X		X							
"	Q2 2003 Groundwater sampling	05/13/03	08:30	g	GW	2	1 Liter Amber					X		X								
CL99-55 (5/03)	Q2 2003 Groundwater sampling	05/13/03	09:10	g	GW	5	VOA	X				X	X		X							
"	Q2 2003 Groundwater sampling	05/13/03	09:10	g	GW	2	1 Liter Amber					X		X								
17-MW-33D (5/03)	Q2 2003 Groundwater sampling	05/13/03	09:44	g	GW	5	VOA	X				X	X		X							
"	Q2 2003 Groundwater sampling	05/13/03	09:44	g	GW	2	1 Liter Amber					X		X								
17-MW-35D (5/03)	Q2 2003 Groundwater sampling	05/13/03	10:10	g	GW	5	VOA	X				X	X		X							
"	Q2 2003 Groundwater sampling	05/13/03	10:10	g	GW	2	1 Liter Amber					X		X								

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Special Instructions: Silica gel clean up for TPH-D/MO **USE 17-MW-28S for MS/MSD

Turnaround Time: (Standard TAT) ☐ 24-hr ☐ 48-hr ☐ 3-day ☐ 5-day (Normal)

Level Of QC Required: I II (III) Project Specific:

Relinquished By:	Date:	Time:	Received By:	Date:	Time:
Tracy Kruger	5/15/03	0800	[signature]	5/16/03	0930

Method Codes
C = Composite G = Grab

Matrix Codes
DW = Drinking Water SO = Soil
GW = Ground Water SL = Sludge
WW = Waste Water CP = Chip Samples
SW = Surface Water WP = Wipe Samples
LIQ = Other Liquid SOL = Other Solid
GS = Air Sample

CHAIN OF CUSTODY (continued)

Ref. Document # CL1004

Project Number: *836557*

Shipment Date: 05/15/2003

Project Name / Location: *Crows Landing*

Sample ID Number	Sample Description	Collection Information			Matrix	# of containers	Container type	Preservative						Analyses Requested										
		Date	Time	Method				HCL	NaOH	HNO_3	H_2SO_4	Ice		TPH - Jet Fuel & gasoline (8015B)	TPH / Diesel & motor oil (8015B)	VOCs (8260B)	SVOCs (8270C)	PAHs (8270C SIM)	Metals (TTLC CAM17) (6010B/7000)	Dioxins (8290)	Pesticides (8081A)	PCB (8082)	Asbestos (ARB 435)	
CL1-MW-09S (5/03)	Q2 2003 Groundwater sampling	05/13/03	11:28	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	11:28	g	GW	2	1 Liter Amber					X			X									
17-MW-28S (5/03)	Q2 2003 Groundwater sampling	05/13/03	12:00	g	GW	9	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	12:00	g	GW	4	1 Liter Amber					X			X									
17-MW-29MS (5/03)	Q2 2003 Groundwater sampling	05/13/03	13:10	g	GW	5	VOA	X				X		X		X								
	Q2 2003 Groundwater sampling	05/13/03	13:10	g	GW	2	1 Liter Amber					X			X									
CL1-MW-14MS (5/03)	Q2 2003 Groundwater sampling	05/13/03	13:15	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	13:15	g	GW	2	1 Liter Amber					X			X									
CL1-MW-12MD (5/03)	Q2 2003 Groundwater sampling	05/13/03	14:25	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	14:25	g	GW	2	1 Liter Amber					X			X									
117-MW-10S (5/03)	Q2 2003 Groundwater sampling	05/13/03	15:10	g	GW	5	VOA	X				X		X		X								
"	Q2 2003 Groundwater sampling	05/13/03	15:10	g	GW	2	1 Liter Amber					X			X									
TB-05-5/14/03	Trip Blank Joe	05/12/03		g		2	voa	X				X		X		X								
TB-06-5/14/03	Trip Blank Hector	05/12/03		g		2	voa	X				X		X		X								

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Appendix D
Cone Penetration Test Data Report

PRECISION

Cone Penetration Test Data Report

Site:

Crows Landing
California

Prepared for:
Shaw Environmental & Infrastructure, Inc.

Prepared by:
Precision Sampling, Inc.
Richmond, CA

Field Work Dates:
May 22, 2003

Prepared By:
PRECISION SAMPLING INC.
1400 South 50th Street Richmond, CA 94804 Phone: 510-237-4575 Fax: 510-237-4574

PRECISION

CONE PENETRATION TEST DATA REPORT

Use the following hyperlinks to access the data

CPT Report Write-Up		
Tabular Data	Graphs	Dissipations
117-cpt-01	117-cpt-01 G	
117-cpt-02	117-cpt-02 G	

Thank you for choosing Precision Sampling Inc for your CPT needs. We look forward to providing you with direct push, sonic, auger, injection and CPT services in the future.

The following CPT report includes the following in its entirety:

CPT Report write-up
Tabular Data
Color graphical logs: Standard CPT and Dissipation

Please contact Chris Tatum if you have any questions. Phone: 510-237-4575,
E-mail: chris@precisionsampling.com

1.0 Introduction
1.1 Field Equipment and Procedures
1.2 Interpretation
2.0 Digital Piezocone (CPTU) Specifications

Appendix
- File Summary
- CPT Test Data
- Soil Classification Graph
- References

Prepared By:
PRECISION SAMPLING INC.
1400 South 50th Street Richmond, CA 94804 Phone: 510-237-4575 Fax: 510-237-4574

1.0 Project Summary

Location:		**Dates:**	May 22, 2003
City:	California	**Rig:**	CP-2
Client:	Shaw Environmental & Infrastru	**Contact:**	

CPT Soundings:	2	**Depths:**	120 Feet
Dissipations:		**Depths:**	

1.1 Field Equipment and Procedures

The Cone Penetration Tests were completed by Precision Sampling using a digital cone penetrometer. Borings were completed with Precisions 25-30 Ton CPT Rig. All soundings were conducted in accordance with ASTM standards (D 5778 – 95 (Reapproved 2000)).

The penetration data was collected using the following parameters:

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

These and other parameters were collected, calculated and printed in real time in the field. All data was also stored in digital format on the field laptop. And backed up at our main office.

Baseline readings were collected before and after soundings in order to monitor cone electronics. Baseline data is stored in each log file in the event it is needed. Baseline monitoring assures proper cone operation.

1.2 Interpretation

CPT measurements during cone penetration include cone bearing (q_c), sleeve friction (fs), and dynamic pore water pressure (u). Because these measurements relate to specific soil properties they can be used to identify soil types.

Soil type interpretation of the collected parameters is represented in the color tabulation in the following appendix. This interpretation is based on correlations developed by Robertson et al, 1989. In this interpretation, friction ratio (Rf) (sleeve friction divided by cone bearing) and cone bearing are used in the attached chart to identify soil types.

A general observation of the measured parameters can also be used to identify soil types. The following table can be used as a guideline for basic soil type evaluations.

	Sand	Clay
Cone Bearing (q_c)	High	Low
Friction Ratio (f_s/q_s)	Low	High
Pore water pressure (u)	Low	High

*Soil conditions may very regionally and can affect how these parameters respond.

2.0 Electronic Piezocone (CPTU) Specifications

Cone

- 20-ton digital cone (thermal sprayed tungsten carbide coating)
- Strain gauge load cell measurement
- Outside diameter: 1.6" - 1.75"
- Temperature compensated
- Calibrated against a NIST standard

Tip Resistance

- Tip area: 10-15 cm^2
- Rated Range: 33000 lb
- Apical angle: 60°
- Frequency of measurement: 2-4 cm
- Measured data: Force / base area = q_c

Friction

- Surface area: 150 cm^2
- Rated Range: 5700 lb
- Location: behind pore pressure element
- End area ratio: 0.85
- Measured independently of cone tip
- Frequency of measurement: 2-4 cm
- Measured data: Force / surface area = f_s

Pore Pressure

- Rated Range: 500 psi
- Location: Behind tip (U_2 position)
- Composition: Polypropylene porous plastic (5mm thickness)
- Saturation liquid: Silicone liquid
- Saturation method: High vacuum with heat and vibration
- Measured data: U – Measured pore pressure (while advancing)

U_o – Equilibrium pore pressure (while stopped)

- Frequency of measurement: 2-4 cm
- Pressure changes are measured with a diaphragm type electronic pressure

APPENDIX

Prepared By:
PRECISION SAMPLING INC.
1400 South 50th Street Richmond, CA 94804 Phone: 510-237-4575 Fax: 510-237-4574

CPT FILE SUMMARY

DATE	SOUNDING	TOTAL DEPTH (FT)
22-May-03	117-cpt-01	120.16
22-May-03	117-cpt-02	120.36

Prepared By:
PRECISION SAMPLING INC.
1400 South 50th Street Richmond, CA 94804 Phone: 510-237-4575 Fax: 510-237-4574

Test Id:	117-cpt-01	Date:	22-May-03
Site:	NASA	Cone Id:	2579.102XX
Location:	Crows landing		
Project:	Shaw	Soil Density(pcf):	120
Client:	Shaw		

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
0	0	0	0	0	0	0.00E+00	0.00E+00	-99		-99	0	0	-99
0.159	0	-1779.9	-1780	0	-0.56	1.33E-01	6.38E-02	-99		-99	-99	-118.7	-99
0.238	0	-1856.8	-1856.9	0	-0.61	1.98E-01	9.50E-02	-99		-99	-99	-123.8	-99
0.317	-27.51	-1949.9	-1950	1.41	-0.56	2.64E-01	1.27E-01	-99		-99	-99	-130	-99
0.396	-27.09	-1886.3	-1886.5	1.44	-0.61	3.30E-01	1.59E-01	-99		-99	-99	-125.8	-99
0.475	-26.71	-1964.7	-1964.8	1.36	-0.61	3.96E-01	1.90E-01	-99		-99	-99	-131	-99
0.553	-24.75	-1921.8	-1921.9	1.29	-0.56	4.61E-01	2.21E-01	-99		-99	-99	-128.2	-99
0.632	-18.85	-1966.2	-1966.3	0.96	-0.56	5.26E-01	2.53E-01	-99		-99	-99	-131.1	-99
0.711	-19.17	-1923.3	-1923.4	1	-0.56	5.92E-01	2.84E-01	-99		-99	-99	-128.3	-99
0.791	-26.57	-1871.5	-1871.7	1.42	-0.56	6.60E-01	3.17E-01	-99		-99	-99	-124.8	-99
0.87	-25.34	-1927.7	-1927.8	1.31	-0.56	7.25E-01	3.48E-01	-99		-99	-99	-128.6	-99
0.948	-25.12	-1574.4	-1574.5	1.6	-0.51	7.90E-01	3.79E-01	-99		-99	-99	-105	-99
1.027	-23.84	-977	-977.1	2.44	-0.17	8.55E-01	4.11E-01	-99		-99	-99	-65.19	-99
1.104	-22.15	-2088.9	-2088.9	1.06	-0.27	9.20E-01	4.42E-01	-99		-99	-99	-139.3	-99
1.184	-18.55	-2059.3	-2059.4	0.9	-0.61	9.87E-01	4.74E-01	-99		-99	-99	-137.4	-99
1.262	-13.49	-1911.5	-1911.6	0.71	-0.56	1.05E+00	5.05E-01	-99		-99	-99	-127.5	-99
1.342	-11.16	-1944	-1944	0.57	-0.07	1.12E+00	5.37E-01	-99		-99	-99	-129.7	-99
1.419	-10.44	-1921.8	-1921.8	0.54	0.22	1.18E+00	5.67E-01	-99		-99	-99	-128.2	-99
1.497	-10.55	-1926.3	-1926	0.55	1.15	1.25E+00	5.99E-01	-99		-99	-99	-128.5	0.26
1.573	-8.16	-1238.7	-1238.2	0.66	2.77	1.31E+00	6.29E-01	-99		-99	-99	-82.67	1.82
1.642	-6.27	421.6	429.6	-1.46	41.44	1.37E+00	6.57E-01	-99		-99	-99	28.02	115.9
1.718	-6.82	614.2	616	-1.11	9.16	1.43E+00	6.87E-01	-99		-99	-99	40.85	11.57
1.798	-2.51	276.8	278.2	-0.9	7.1	1.50E+00	7.19E-01	-99		-99	-99	18.36	7.23
1.876	4.1	-309.1	-308	-1.33	5.53	1.56E+00	7.50E-01	-99		-99	-99	-20.71	4.49
1.955	2.68	-642	-641.8	-0.42	1.11	1.63E+00	7.82E-01	-99		-99	-99	-42.91	0.07
2.034	1.41	-1062.2	-1061.6	-0.13	2.88	1.70E+00	8.14E-01	-99		-99	-99	-70.93	1.18
2.112	-0.15	-1396.6	-1395.8	0.01	3.81	1.76E+00	8.45E-01	-99		-99	-99	-93.22	1.9
2.193	-1.34	-1627.4	-1626.3	0.08	5.63	1.83E+00	8.77E-01	-99		-99	-99	-108.6	3.55
2.27	-4.75	-1560.8	-1559.1	0.3	8.62	1.89E+00	9.08E-01	-99		-99	-99	-104.2	6.79
2.348	-9.82	-1559.3	-1557.7	0.63	8.38	1.96E+00	9.39E-01	-99		-99	-99	-104.1	6.14
2.426	-14.09	-1646.6	-1645	0.86	8.52	2.02E+00	9.70E-01	-99		-99	-99	-109.9	5.99
2.502	-15.8	-1586	-1583.9	1	10.44	2.09E+00	1.00E+00	-99		-99	-99	-105.9	7.89
2.581	-16.97	-1769.4	-1767.2	0.96	11.57	2.15E+00	1.03E+00	-99		-99	-99	-118.1	8.83
2.66	-15.54	-1918.9	-1916.5	0.81	12.31	2.22E+00	1.06E+00	-99		-99	-99	-128.1	9.28
2.737	-14.55	-1839	-1836.6	0.79	12.16	2.28E+00	1.10E+00	-99		-99	-99	-122.8	8.71
2.814	-15.07	-1883.4	-1881.1	0.8	11.77	2.35E+00	1.13E+00	-99		-99	-99	-125.7	7.91
2.892	-17.09	-1923.3	-1921.2	0.89	11.08	2.41E+00	1.16E+00	-99		-99	-99	-128.4	6.88
2.97	-18.9	-1933.7	-1931.6	0.98	10.88	2.48E+00	1.19E+00	-99		-99	-99	-129.1	6.41
3.039	-19.12	-1746.1	-1744.9	1.1	6	2.53E+00	1.22E+00	-99		-99	-99	-116.6	2.24
3.117	-19.12	-1697.2	-1696.1	1.13	5.66	2.60E+00	1.25E+00	-99		-99	-99	-113.3	1.92
3.194	-19.49	-1769.8	-1768.7	1.1	5.56	2.66E+00	1.28E+00	-99		-99	-99	-118.2	1.77
3.273	-19.49	-1956.4	-1955.4	1	5.31	2.73E+00	1.31E+00	-99		-99	-99	-130.6	1.55
3.352	-19.5	-2049.8	-2048.8	0.95	5.07	2.79E+00	1.34E+00	-99		-99	-99	-136.8	1.35
3.43	-19.46	-2039.4	-2038.5	0.95	4.87	2.86E+00	1.37E+00	-99		-99	-99	-136.2	1.19
3.508	-19.33	-2017.2	-2016.3	0.96	4.53	2.92E+00	1.40E+00	-99		-99	-99	-134.7	0.97
3.586	-19.21	-2051.3	-2050.4	0.94	4.28	2.99E+00	1.43E+00	-99		-99	-99	-137	0.82
3.664	-18.41	-2027.5	-2026.7	0.91	4.18	3.05E+00	1.47E+00	-99		-99	-99	-135.4	0.74
3.743	-16.72	-2061.6	-2060.8	0.81	4.08	3.12E+00	1.50E+00	-99		-99	-99	-137.7	0.67
3.821	-7.64	-1972.7	-1972	0.39	4.04	3.19E+00	1.53E+00	-99		-99	-99	-131.7	0.62
3.9	-6.02	-2055.7	-2054.9	0.29	4.08	3.25E+00	1.56E+00	-99		-99	-99	-137.3	0.61
3.978	-16.56	-2009.8	-2009	0.82	3.99	3.32E+00	1.59E+00	-99		-99	-99	-134.2	0.54
4.055	-16.69	-1993.5	-1992.7	0.84	3.94	3.38E+00	1.62E+00	-99		-99	-99	-133.1	0.5
4.134	-10.18	-1729.8	-1729	0.59	4.13	3.45E+00	1.65E+00	-99		-99	-99	-115.6	0.54
4.214	0.17	-441	-440.1	-0.04	4.28	3.51E+00	1.69E+00	-99		-99	-99	-29.63	0.56
4.291	3.32	-1820.2	-1819.4	-0.18	3.84	3.58E+00	1.72E+00	-99		-99	-99	-121.6	0.4
4.37	3.46	-1855.7	-1855	-0.19	3.64	3.64E+00	1.75E+00	-99		-99	-99	-124	0.33
4.447	3.66	-1845.3	-1844.7	-0.2	3.4	3.71E+00	1.78E+00	-99		-99	-99	-123.3	0.25
4.526	3.94	-746.1	-745.5	-0.53	3.45	3.77E+00	1.81E+00	-99		-99	-99	-49.99	0.25
4.604	10.66	-315	-314.4	-3.39	3.3	3.84E+00	1.84E+00	-99		-99	-99	-21.26	0.2
4.682	18.14	-316.5	-315.9	-5.74	3	3.90E+00	1.87E+00	-99		-99	-99	-21.36	0.13
4.761	17.72	-307.6	-307.1	-5.77	3	3.97E+00	1.90E+00	-99		-99	-99	-20.77	0.12
4.838	17.44	-303.2	-302.6	-5.76	3	4.03E+00	1.94E+00	-99		-99	-99	-20.48	0.11
4.916	17.05	-304.7	-304.1	-5.61	3	4.10E+00	1.97E+00	-99		-99	-99	-20.58	0.1
4.994	16.74	507.8	508.4	3.29	3.22	4.16E+00	2.00E+00	8	Very Stiff Sand to Clayey Sand*	37	45.4	-99	0.13
5.071	16.51	513.7	514.3	3.21	3.02	4.23E+00	2.03E+00	8	Very Stiff Sand to Clayey Sand*	37	45.38	-99	0.09
5.15	16.5	516.7	517.3	3.19	3.02	4.29E+00	2.06E+00	8	Very Stiff Sand to Clayey Sand*	37	45.33	-99	0.08
5.227	16.7	519.7	520.2	3.21	2.88	4.36E+00	2.09E+00	8	Very Stiff Sand to Clayey Sand*	37	45.29	-99	0.06
5.305	17	525.6	526.1	3.23	2.63	4.42E+00	2.12E+00	8	Very Stiff Sand to Clayey Sand*	38	45.28	-99	0.02
5.383	17.37	524.1	524.6	3.31	2.58	4.49E+00	2.15E+00	8	Very Stiff Sand to Clayey Sand*	38	45.19	-99	0.02
5.461	17.81	521.1	521.7	3.41	2.78	4.55E+00	2.18E+00	8	Very Stiff Sand to Clayey Sand*	38	45.1	-99	0.03
5.54	18.19	521.1	521.7	3.49	2.97	4.62E+00	2.22E+00	8	Very Stiff Sand to Clayey Sand*	38	45.03	-99	0.05
5.619	18.37	521.1	521.7	3.52	2.63	4.68E+00	2.25E+00	8	Very Stiff Sand to Clayey Sand*	38	44.97	-99	0.01
5.696	18.29	518.2	518.8	3.53	3.07	4.75E+00	2.28E+00	8	Very Stiff Sand to Clayey Sand*	37	44.87	-99	0.05
5.774	18.03	516.7	517.3	3.49	2.97	4.81E+00	2.31E+00	8	Very Stiff Sand to Clayey Sand*	37	44.8	-99	0.03
5.851	17.87	522.6	523.2	3.42	2.78	4.88E+00	2.34E+00	8	Very Stiff Sand to Clayey Sand*	38	44.79	-99	0.01
5.93	17.84	533	533.5	3.34	2.78	4.94E+00	2.37E+00	8	Very Stiff Sand to Clayey Sand*	38	44.82	-99	0.01
6.009	17.87	547.8	548.4	3.26	3.02	5.01E+00	2.40E+00	8	Very Stiff Sand to Clayey Sand*	39	44.88	-99	0.03
6.085	18.21	568.6	569.2	3.2	3.22	5.07E+00	2.43E+00	8	Very Stiff Sand to Clayey Sand*	41	45	-99	0.04
6.164	18.73	587.8	588.4	3.18	3.17	5.14E+00	2.47E+00	8	Very Stiff Sand to Clayey Sand*	42	45.1	-99	0.03
6.24	19.36	598.2	598.9	3.23	3.37	5.20E+00	2.50E+00	8	Very Stiff Sand to Clayey Sand*	43	45.12	-99	0.05
6.318	19.96	611.6	612.2	3.26	3.17	5.27E+00	2.53E+00	8	Very Stiff Sand to Clayey Sand*	44	45.17	-99	0.03
6.387	20.48	602.7	603.2	3.4	2.78	5.32E+00	2.56E+00	8	Very Stiff Sand to Clayey Sand*	43	45.05	-99	0
6.464	21.04	614.5	615	3.42	2.73	5.39E+00	2.59E+00	8	Very Stiff Sand to Clayey Sand*	44	45.08	-99	-99
6.543	21.41	624.9	625.4	3.42	2.83	5.45E+00	2.62E+00	8	Very Stiff Sand to Clayey Sand*	45	45.1	-99	-99
6.621	21.84	633.8	634.4	3.44	3.37	5.52E+00	2.65E+00	8	Very Stiff Sand to Clayey Sand*	46	45.11	-99	0.03
6.698	22.4	638.2	638.9	3.51	3.27	5.58E+00	2.68E+00	8	Very Stiff Sand to Clayey Sand*	46	45.09	-99	0.02
6.778	22.94	638.2	638.9	3.59	3.37	5.65E+00	2.71E+00	8	Very Stiff Sand to Clayey Sand*	46	45.04	-99	0.02
6.856	23.47	645.6	646.3	3.63	3.57	5.71E+00	2.74E+00	8	Very Stiff Sand to Clayey Sand*	46	45.04	-99	0.04
6.935	24.01	659	659.6	3.64	3.27	5.78E+00	2.77E+00	8	Very Stiff Sand to Clayey Sand*	47	45.08	-99	0.01
7.014	24.59	659	659.7	3.73	3.52	5.85E+00	2.81E+00	8	Very Stiff Sand to Clayey Sand*	47	45.03	-99	0.03
7.091	25.2	660.5	661.2	3.81	3.91	5.91E+00	2.84E+00	8	Very Stiff Sand to Clayey Sand*	48	44.99	-99	0.06
7.17	25.49	659	659.8	3.86	4.11	5.98E+00	2.87E+00	8	Very Stiff Sand to Clayey Sand*	47	44.92	-99	0.07
7.248	25.66	659	659.7	3.89	3.61	6.04E+00	2.90E+00	8	Very Stiff Sand to Clayey Sand*	47	44.87	-99	0.03
7.327	25.99	654.5	655.1	3.97	3.12	6.11E+00	2.93E+00	8	Very Stiff Sand to Clayey Sand*	47	44.79	-99	-99
7.405	26.37	653.1	653.7	4.03	3.32	6.17E+00	2.96E+00	8	Very Stiff Sand to Clayey Sand*	47	44.73	-99	0
7.483	26.72	656	656.6	4.07	2.97	6.24E+00	2.99E+00	8	Very Stiff Sand to Clayey Sand*	47	44.7	-99	-99
7.561	26.73	657.5	658.1	4.06	3.07	6.30E+00	3.03E+00	8	Very Stiff Sand to Clayey Sand*	47	44.66	-99	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
7.641	26.36	666.4	667	3.95	3.17	6.37E+00	3.06E+00	8	Very Stiff Sand to Clayey Sand*	48	44.67	-99	-99
7.719	26.4	676.8	677.6	3.9	4.11	6.43E+00	3.09E+00	8	Very Stiff Sand to Clayey Sand*	49	44.7	-99	0.05
7.798	27.16	685.7	686.6	3.96	4.89	6.50E+00	3.12E+00	8	Very Stiff Sand to Clayey Sand*	49	44.71	-99	0.12
7.876	28.19	694.6	695.5	4.05	5.14	6.56E+00	3.15E+00	8	Very Stiff Sand to Clayey Sand*	50	44.73	-99	0.14
7.953	29.38	704.9	705.8	4.16	4.5	6.63E+00	3.18E+00	8	Very Stiff Sand to Clayey Sand*	51	44.75	-99	0.07
8.032	30.74	742	742.8	4.14	4.01	6.69E+00	3.21E+00	8	Very Stiff Sand to Clayey Sand*	53	44.95	-99	0.03
8.111	31.97	793.9	794.6	4.02	3.86	6.76E+00	3.24E+00	8	Very Stiff Sand to Clayey Sand*	57	45.22	-99	0.01
8.188	33.05	801.3	802.3	4.12	5.29	6.82E+00	3.28E+00	8	Very Stiff Sand to Clayey Sand*	58	45.22	-99	0.13
8.266	33.64	796.8	798.1	4.21	6.57	6.89E+00	3.31E+00	8	Very Stiff Sand to Clayey Sand*	57	45.15	-99	0.29
8.343	32.82	786.4	787.8	4.17	7.16	6.95E+00	3.34E+00	8	Very Stiff Sand to Clayey Sand*	57	45.04	-99	0.36
8.421	31.39	838.3	839.6	3.74	6.86	7.02E+00	3.37E+00	8	Very Stiff Sand to Clayey Sand*	60	45.3	-99	0.31
8.501	31.22	885.7	887	3.52	6.52	7.08E+00	3.40E+00	8	Very Stiff Sand to Clayey Sand*	64	45.51	-99	0.25
8.578	32.1	899.1	900.4	3.57	6.71	7.15E+00	3.43E+00	8	Very Stiff Sand to Clayey Sand*	65	45.54	-99	0.27
8.655	33.16	915.4	916.3	3.62	4.84	7.21E+00	3.46E+00	8	Very Stiff Sand to Clayey Sand*	66	45.58	-99	0.06
8.733	34.09	885.7	886.6	3.85	4.25	7.28E+00	3.49E+00	8	Very Stiff Sand to Clayey Sand*	64	45.39	-99	0.02
8.811	34.35	825	825.8	4.16	4.35	7.34E+00	3.52E+00	8	Very Stiff Sand to Clayey Sand*	59	45.01	-99	0.02
8.89	34.41	773.1	774	4.45	4.4	7.41E+00	3.56E+00	8	Very Stiff Sand to Clayey Sand*	56	44.66	-99	0.02
8.969	34.18	722.7	723.6	4.72	4.84	7.47E+00	3.59E+00	9	Very Stiff, Fine Grained	26	44.29	-99	0.05
9.046	32.84	688.6	689.6	4.76	5.09	7.54E+00	3.62E+00	9	Very Stiff, Fine Grained	25	44.02	-99	0.07
9.124	30.61	663.4	664.5	4.61	5.58	7.60E+00	3.65E+00	9	Very Stiff, Fine Grained	24	43.79	-99	0.1
9.201	28.47	647.1	648.1	4.39	5.24	7.67E+00	3.68E+00	9	Very Stiff, Fine Grained	23	43.63	-99	0.07
9.279	27.15	624.2	625	4.34	4.38	7.73E+00	3.71E+00	9	Very Stiff, Fine Grained	22	43.4	-99	0.01
9.358	26.19	609.3	610.1	4.29	3.94	7.80E+00	3.74E+00	9	Very Stiff, Fine Grained	22	43.24	-99	-99
9.435	25.02	572.3	573	4.37	3.3	7.86E+00	3.77E+00	9	Very Stiff, Fine Grained	21	42.88	-99	-99
9.514	23.81	533.8	534.3	4.46	2.51	7.93E+00	3.81E+00	9	Very Stiff, Fine Grained	19	42.48	-99	-99
9.592	22.47	502.7	503.1	4.47	1.97	7.99E+00	3.84E+00	9	Very Stiff, Fine Grained	18	42.13	-99	-99
9.671	20.99	483.4	483.7	4.34	1.48	8.06E+00	3.87E+00	9	Very Stiff, Fine Grained	17	41.89	-99	-99
9.748	19.99	502.7	503	3.97	1.43	8.12E+00	3.90E+00	8	Very Stiff Sand to Clayey Sand*	36	42.05	-99	-99
9.827	19.75	548.6	549	3.6	1.77	8.19E+00	3.93E+00	8	Very Stiff Sand to Clayey Sand*	39	42.46	-99	-99
9.905	20.04	588.6	589.3	3.4	3.79	8.25E+00	3.96E+00	8	Very Stiff Sand to Clayey Sand*	42	42.78	-99	-99
9.983	20.42	619.7	620.7	3.29	5.26	8.32E+00	3.99E+00	8	Very Stiff Sand to Clayey Sand*	45	43	-99	0.04
10.063	20.77	644.9	645.9	3.22	5.07	8.39E+00	4.03E+00	8	Very Stiff Sand to Clayey Sand*	46	43.16	-99	0.03
10.141	21.15	665.6	666.7	3.17	5.31	8.45E+00	4.06E+00	8	Very Stiff Sand to Clayey Sand*	48	43.28	-99	0.04
10.221	21.28	661.2	662.3	3.21	5.61	8.52E+00	4.09E+00	8	Very Stiff Sand to Clayey Sand*	48	43.21	-99	0.06
10.298	20.91	655.3	656.7	3.18	7.28	8.58E+00	4.12E+00	8	Very Stiff Sand to Clayey Sand*	47	43.13	-99	0.19
10.376	20.02	641.9	643.4	3.11	7.58	8.65E+00	4.15E+00	8	Very Stiff Sand to Clayey Sand*	46	42.98	-99	0.22
10.456	19.17	627.1	628.6	3.05	7.53	8.71E+00	4.18E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	42.83	41.23	0.21
10.534	18.5	621.2	622.6	2.97	6.99	8.78E+00	4.21E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	42.74	40.83	0.15
10.613	18.02	625.6	626.8	2.87	6.2	8.84E+00	4.25E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	42.74	41.12	0.08
10.691	17.58	656.8	657.7	2.67	4.92	8.91E+00	4.28E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	42.95	43.19	0.01
10.769	17.23	687.9	688.6	2.5	4.04	8.97E+00	4.31E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	43.14	45.26	-99
10.849	17.37	686.4	687	2.53	3.35	9.04E+00	4.34E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	43.1	45.16	-99
10.928	17.81	656.8	657.4	2.71	3.1	9.11E+00	4.37E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	42.84	43.18	-99
11.007	18.46	637.5	638.1	2.89	3.15	9.17E+00	4.40E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	42.65	41.89	-99
11.085	18.63	615.3	615.8	3.03	2.9	9.24E+00	4.43E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	42.43	40.4	-99
11.164	18.06	593.1	593.6	3.04	2.61	9.30E+00	4.47E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	42.2	38.92	-99
11.243	17.62	553.1	553.5	3.18	2.51	9.37E+00	4.50E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	41.8	36.25	-99
11.322	17.3	516	516.7	3.35	3.54	9.44E+00	4.53E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	12	41.4	33.77	-99
11.401	17.11	516	516.9	3.31	4.72	9.50E+00	4.56E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	12	41.36	33.77	-99
11.479	16.48	533.8	534.8	3.08	5.26	9.57E+00	4.59E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	41.5	34.95	0.01
11.558	15.45	548.6	549.8	2.81	6.35	9.63E+00	4.62E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	41.61	35.93	0.06
11.636	14.53	593.1	594.2	2.45	5.76	9.70E+00	4.66E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	41.99	38.89	0.02
11.716	14.22	656.8	657.8	2.16	5.17	9.76E+00	4.69E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	42.48	43.13	0
11.794	14.21	690.8	691.8	2.05	5.07	9.83E+00	4.72E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	42.71	45.4	-99
11.873	14.11	683.4	684.3	2.06	4.33	9.89E+00	4.75E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	42.62	44.9	-99
11.952	13.45	662.7	663.3	2.03	3.2	9.96E+00	4.78E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	42.42	43.51	-99
12.03	12.56	633.1	633.6	1.98	2.76	1.00E+01	4.81E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	42.15	41.54	-99
12.109	12.01	619.7	620.2	1.94	2.51	1.01E+01	4.84E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	42.01	40.64	-99
12.189	11.74	582.7	583.2	2.01	2.51	1.02E+01	4.88E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	41.65	38.17	-99
12.267	12.1	533.8	534.3	2.26	2.51	1.02E+01	4.91E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	41.15	34.91	-99
12.346	12.65	493.8	494.3	2.56	2.51	1.03E+01	4.94E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	12	40.7	32.23	-99
12.426	12.79	477.1	477.5	2.68	1.96	1.04E+01	4.97E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	11	40.47	31.12	-99
12.504	13.04	450.4	450.8	2.89	2.05	1.04E+01	5.00E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	11	40.12	29.33	-99
12.583	14.11	441.5	442	3.19	2.2	1.05E+01	5.03E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	11	39.98	28.74	-99
12.662	16.34	454.9	455.3	3.59	2.5	1.06E+01	5.07E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	11	40.11	29.62	-99
12.74	18.77	574.9	575.5	3.26	3.09	1.06E+01	5.10E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	41.34	37.62	-99
12.819	20.43	693.4	694.2	2.94	3.97	1.07E+01	5.13E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	42.3	45.52	-99
12.897	21.62	758.6	759.7	2.85	5.64	1.08E+01	5.16E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	18	42.73	49.86	0
12.975	22.69	757.1	758.3	2.99	5.74	1.08E+01	5.19E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	18	42.69	49.76	0
13.054	23.15	734.9	736.2	3.15	6.43	1.09E+01	5.22E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	18	42.5	48.27	0.02
13.132	23.28	715.7	717.2	3.25	8.2	1.09E+01	5.25E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	42.33	46.98	0.12
13.21	22.73	697.9	699.7	3.25	9.28	1.10E+01	5.28E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	42.17	45.79	0.19
13.289	21.76	678.6	680.6	3.2	10.17	1.11E+01	5.32E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	42	44.5	0.25
13.367	21.15	674.2	676.2	3.13	10.56	1.11E+01	5.35E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	41.93	44.2	0.28
13.447	20.84	662.3	664.4	3.14	11	1.12E+01	5.38E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	41.81	43.41	0.31
13.525	21.31	656.4	658.5	3.24	11.05	1.13E+01	5.41E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	41.73	43.01	0.31
13.604	22.48	665.3	667.4	3.37	10.81	1.13E+01	5.44E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	41.77	43.6	0.29
13.683	23.28	672.7	675	3.45	11.99	1.14E+01	5.47E+00	8	Very Stiff Sand to Clayey Sand*	48	41.8	-99	0.38
13.761	23.57	687.5	689.9	3.42	12.43	1.15E+01	5.50E+00	8	Very Stiff Sand to Clayey Sand*	50	41.88	-99	0.41
13.84	23.52	708.2	711	3.31	14.35	1.15E+01	5.54E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	42.01	46.45	0.59
13.919	23.41	690.5	693.4	3.38	15.09	1.16E+01	5.57E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	41.85	45.26	0.66
13.997	23.5	694.9	698.6	3.36	19.02	1.17E+01	5.60E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	41.85	45.55	1.09
14.075	23.7	709.7	713.8	3.32	21.23	1.17E+01	5.63E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	41.93	46.53	1.34
14.153	23.74	723.1	727.2	3.26	21.63	1.18E+01	5.66E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	42	47.42	1.38
14.233	23.56	711.2	715.3	3.29	21.04	1.19E+01	5.69E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	41.88	46.62	1.29
14.312	23.49	697.9	701.5	3.35	18.92	1.19E+01	5.73E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	17	41.75	45.73	1.03
14.39	24.1	675.7	678.8	3.55	16.41	1.20E+01	5.76E+00	8	Very Stiff Sand to Clayey Sand*	49	41.56	-99	0.74
14.469	24.79	653.4	656.4	3.78	15.63	1.21E+01	5.79E+00	8	Very Stiff Sand to Clayey Sand*	47	41.35	-99	0.65
14.547	25.03	644.5	647.4	3.87	14.74	1.21E+01	5.82E+00	8	Very Stiff Sand to Clayey Sand*	46	41.25	-99	0.56
14.625	25.05	634.2	636.8	3.93	13.51	1.22E+01	5.85E+00	8	Very Stiff Sand to Clayey Sand*	46	41.13	-99	0.44
14.704	25.05	634.2	636.5	3.94	12.18	1.23E+01	5.88E+00	9	Very Stiff, Fine Grained	23	41.1	-99	0.32
14.783	25.27	631.2	633.3	3.99	11	1.23E+01	5.91E+00	9	Very Stiff, Fine Grained	23	41.05	-99	0.23
14.861	25.8	622.3	624.3	4.13	10.12	1.24E+01	5.94E+00	9	Very Stiff, Fine Grained	22	40.94	-99	0.17
14.939	26.65	620.8	622.6	4.28	9.38	1.25E+01	5.98E+00	9	Very Stiff, Fine Grained	22	40.9	-99	0.12
15.017	27.51	632.7	634.5	4.34	9.23	1.25E+01	6.01E+00	9	Very Stiff, Fine Grained	23	40.98	-99	0.11
15.096	28.35	644.5	646.3	4.39	9.19	1.26E+01	6.04E+00	9	Very Stiff, Fine Grained	23	41.05	-99	0.1
15.175	29	654.9	656.2	4.42	6.48	1.27E+01	6.07E+00	9	Very Stiff, Fine Grained	24	41.11	-99	-99
15.253	29.59	663.8	664.9	4.45	5.6	1.27E+01	6.10E+00	9	Very Stiff, Fine Grained	24	41.15	-99	-99
15.331	30.08	663.8	664.8	4.52	5.2	1.28E+01	6.13E+00	9	Very Stiff, Fine Grained	24	41.12	-99	-99
15.409	30.32	657.9	658.8	4.6	4.76	1.28E+01	6.16E+00	9	Very Stiff, Fine Grained	24	41.05	-99	-99
15.487	30.39	635.6	636.5	4.78	4.46	1.29E+01	6.20E+00	9	Very Stiff, Fine Grained	23	40.84	-99	-99
15.566	30.52	614.9	615.7	4.96	4.17	1.30E+01	6.23E+00	9	Very Stiff, Fine Grained	22	40.63	-99	-99
15.645	29.13	595.6	596.4	4.89	3.78	1.30E+01	6.26E+00	9	Very Stiff, Fine Grained	21	40.43	-99	-99
15.723	27.35	577.9	578.5	4.73	3.33	1.31E+01	6.29E+00	9	Very Stiff, Fine Grained	21	40.23	-99	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
15.8	27.07	569	569.6	4.75	3.23	1.32E+01	6.32E+00	9	Very Stiff, Fine Grained	20	40.12	-99	-99
15.878	26.31	573.4	574.1	4.58	3.38	1.32E+01	6.35E+00	9	Very Stiff, Fine Grained	21	40.14	-99	-99
15.957	25.55	567.5	568.3	4.5	4.27	1.33E+01	6.38E+00	9	Very Stiff, Fine Grained	20	40.05	-99	-99
16.032	24.62	555.3	556.2	4.43	4.46	1.34E+01	6.41E+00	9	Very Stiff, Fine Grained	20	39.9	-99	-99
16.111	23.38	546.4	547.3	4.27	4.46	1.34E+01	6.44E+00	9	Very Stiff, Fine Grained	20	39.79	-99	-99
16.19	22.27	547.9	548.9	4.06	5	1.35E+01	6.48E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	20	39.77	35.63	-99
16.267	21.17	546.4	547.7	3.87	6.32	1.36E+01	6.51E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	20	39.73	35.53	-99
16.347	20.35	534.6	536	3.8	7.36	1.36E+01	6.54E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	19	39.58	34.73	0
16.425	19.53	540.5	542	3.6	7.75	1.37E+01	6.57E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	19	39.62	35.12	0.01
16.503	18.76	537.5	539	3.48	7.65	1.38E+01	6.60E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	39.56	34.92	0.01
16.582	18.42	540.5	541.9	3.4	7.06	1.38E+01	6.63E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	39.56	35.11	-99
16.661	18.25	542	543.3	3.36	6.72	1.39E+01	6.66E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	39.55	35.21	-99
16.74	18.23	552.4	553.8	3.29	7.26	1.40E+01	6.70E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	39.63	35.89	0
16.819	18.3	584.9	586.6	3.12	8.63	1.40E+01	6.73E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	39.93	38.06	0.03
16.898	18.07	610.1	611.8	2.95	8.58	1.41E+01	6.76E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	40.13	39.73	0.03
16.977	17.55	598.3	599.9	2.92	8.58	1.42E+01	6.79E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	40	38.94	0.03
17.057	16.97	571.6	573.3	2.96	8.63	1.42E+01	6.82E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	39.72	37.16	0.03
17.136	15.99	527.2	528.7	3.02	8.04	1.43E+01	6.85E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	39.24	34.19	0.01
17.215	14.69	479.8	481.6	3.05	9.17	1.44E+01	6.89E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	12	38.67	31.03	0.05
17.294	13.12	451.7	453.4	2.89	8.78	1.44E+01	6.92E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	11	38.3	29.15	0.03
17.373	11.74	433.9	435.6	2.69	8.78	1.45E+01	6.95E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	38.04	27.96	0.03
17.453	10.52	416.1	417.8	2.52	8.68	1.45E+01	6.98E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.76	26.77	0.02
17.531	9.95	410.2	412	2.42	9.12	1.46E+01	7.01E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.65	26.37	0.04
17.612	9.84	405.8	407.5	2.41	9.17	1.47E+01	7.05E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.56	26.07	0.04
17.691	9.93	407.3	409	2.43	8.83	1.47E+01	7.08E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.55	26.17	0.03
17.77	9.92	407.3	408.9	2.42	8.73	1.48E+01	7.11E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.53	26.16	0.02
17.849	9.85	398.4	400	2.46	8.54	1.49E+01	7.14E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.37	25.57	0.01
17.928	10.18	393.9	395.5	2.57	8.09	1.49E+01	7.17E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	9	37.28	25.27	0
18.007	11.14	399.8	401.5	2.78	8.39	1.50E+01	7.20E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.34	25.66	0.01
18.087	11.94	417.6	419.3	2.85	8.83	1.51E+01	7.24E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.57	26.84	0.02
18.165	12.55	428	429.7	2.92	8.83	1.51E+01	7.27E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	37.69	27.52	0.02
18.244	13.15	414.7	416	3.16	7.11	1.52E+01	7.30E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	15	37.48	26.63	-99
18.323	14.9	453.2	454.4	3.28	6.52	1.53E+01	7.33E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	16	37.98	29.19	-99
18.402	18.54	546.4	548.2	3.38	9.08	1.53E+01	7.36E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	13	39.04	35.41	0.02
18.481	23.03	635.3	637.5	3.61	11.73	1.54E+01	7.39E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	39.86	41.32	0.12
18.561	27.28	750.8	752.6	3.62	9.37	1.55E+01	7.42E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	18	40.76	49.02	0.03
18.639	31.79	826.3	827.4	3.84	5.98	1.55E+01	7.46E+00	8	Very Stiff Sand to Clayey Sand*	59	41.25	-99	-99
18.717	36.63	873.7	874.7	4.19	5.29	1.56E+01	7.49E+00	9	Very Stiff, Fine Grained	31	41.52	-99	-99
18.795	41.19	907.7	908.9	4.53	5.93	1.57E+01	7.52E+00	9	Very Stiff, Fine Grained	33	41.7	-99	-99
18.874	45.16	968.4	970	4.66	7.9	1.57E+01	7.55E+00	9	Very Stiff, Fine Grained	35	42.02	-99	-99
18.952	45.12	1064.7	1066.5	4.23	9.37	1.58E+01	7.58E+00	9	Very Stiff, Fine Grained	38	42.49	-99	0.02
19.029	42.68	1160.9	1162.7	3.67	9.42	1.59E+01	7.61E+00	8	Very Stiff Sand to Clayey Sand*	84	42.91	-99	0.02
19.107	40.99	1208.3	1210.1	3.39	9.12	1.59E+01	7.64E+00	8	Very Stiff Sand to Clayey Sand*	87	43.09	-99	0.01
19.184	39.61	1264.6	1266.6	3.13	10.7	1.60E+01	7.67E+00	8	Very Stiff Sand to Clayey Sand*	91	43.3	-99	0.06
19.262	38.69	1309	1310.8	2.95	9.52	1.61E+01	7.71E+00	8	Very Stiff Sand to Clayey Sand*	94	43.45	-99	0.02
19.339	36.87	1303.5	1304.8	2.83	6.8	1.61E+01	7.74E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	31	43.41	85.83	-99
19.418	33.46	1270.9	1272.2	2.63	6.6	1.62E+01	7.77E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	31	43.27	83.65	-99
19.495	30.2	1239.7	1241	2.43	6.45	1.63E+01	7.80E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	30	43.12	81.57	-99
19.573	28.08	1199.7	1201.1	2.34	7.09	1.63E+01	7.83E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	29	42.94	78.89	-99
19.652	26.58	1179	1180.4	2.25	7.29	1.64E+01	7.86E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	28	42.83	77.51	-99
19.729	25.18	1213.1	1214.3	2.07	6.65	1.64E+01	7.89E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	29	42.95	79.77	-99
19.807	23.94	1220.5	1221.5	1.96	5.27	1.65E+01	7.92E+00	6	Sands-Clean Sand to Silty Sand	20	42.96	-99	-99
19.885	22.5	1256.1	1256.9	1.79	4.49	1.66E+01	7.95E+00	6	Sands-Clean Sand to Silty Sand	20	43.09	-99	-99
19.963	21.28	1302	1302.9	1.63	4.39	1.66E+01	7.99E+00	6	Sands-Clean Sand to Silty Sand	21	43.25	-99	-99
20.041	21.81	1364.3	1365.1	1.6	4.29	1.67E+01	8.02E+00	6	Sands-Clean Sand to Silty Sand	22	43.46	-99	-99
20.12	24.62	1423.6	1424.4	1.73	4.44	1.68E+01	8.05E+00	6	Sands-Clean Sand to Silty Sand	23	43.66	-99	-99
20.198	28.92	1453.2	1454.2	1.99	4.78	1.68E+01	8.08E+00	6	Sands-Clean Sand to Silty Sand	23	43.74	-99	-99
20.276	33.83	1476.9	1477.9	2.29	4.88	1.69E+01	8.11E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	35	43.8	97.34	-99
20.354	39.3	1454.7	1455.7	2.7	4.93	1.70E+01	8.14E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	35	43.7	95.85	-99
20.432	44.12	1345	1346.1	3.28	5.76	1.70E+01	8.17E+00	8	Very Stiff Sand to Clayey Sand*	97	43.3	-99	-99
20.511	47.49	1302	1303.5	3.64	7.54	1.71E+01	8.20E+00	8	Very Stiff Sand to Clayey Sand*	94	43.11	-99	-99
20.589	50.11	1281.3	1282.8	3.91	8.03	1.72E+01	8.24E+00	8	Very Stiff Sand to Clayey Sand*	92	43.01	-99	-99
20.667	51.7	1216	1217.9	4.24	9.55	1.72E+01	8.27E+00	9	Very Stiff, Fine Grained	44	42.73	-99	0.01
20.745	52.2	1192.3	1194.6	4.37	12.06	1.73E+01	8.30E+00	9	Very Stiff, Fine Grained	43	42.61	-99	0.08
20.823	50.69	1184.9	1187.3	4.27	12.21	1.74E+01	8.33E+00	9	Very Stiff, Fine Grained	43	42.56	-99	0.08
20.902	47.63	1214.5	1216.5	3.92	10.24	1.74E+01	8.36E+00	8	Very Stiff Sand to Clayey Sand*	87	42.66	-99	0.02
20.981	43.72	1118.2	1120.3	3.9	10.78	1.75E+01	8.39E+00	8	Very Stiff Sand to Clayey Sand*	81	42.22	-99	0.03
21.06	39.67	1008.5	1010.4	3.93	10.09	1.76E+01	8.42E+00	8	Very Stiff Sand to Clayey Sand*	73	41.66	-99	0.02
21.137	35.91	932.9	935.3	3.84	12.51	1.76E+01	8.46E+00	8	Very Stiff Sand to Clayey Sand*	67	41.23	-99	0.09
21.216	32.25	876.5	879.2	3.67	13.74	1.77E+01	8.49E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	21	40.87	57.26	0.14
21.294	29.31	869.1	872	3.36	14.97	1.78E+01	8.52E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	21	40.81	56.76	0.19
21.374	27.73	901.7	904.6	3.07	14.77	1.78E+01	8.55E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	22	40.98	58.93	0.18
21.451	27.93	922.5	925.7	3.02	16.79	1.79E+01	8.58E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	22	41.09	60.31	0.27
21.529	29.08	977.3	980.9	2.96	18.16	1.79E+01	8.61E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	23	41.38	63.96	0.34
21.608	31.05	1011.4	1014.5	3.06	15.95	1.80E+01	8.64E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	24	41.54	66.23	0.22
21.686	34.26	1060.4	1063.5	3.22	16.15	1.81E+01	8.68E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	25	41.77	69.49	0.23
21.766	37.73	1121.2	1124.2	3.36	16	1.81E+01	8.71E+00	8	Very Stiff Sand to Clayey Sand*	81	42.04	-99	0.22
21.843	40.78	1187.9	1190.8	3.42	15.36	1.82E+01	8.74E+00	8	Very Stiff Sand to Clayey Sand*	86	42.32	-99	0.19
21.922	43.3	1207.1	1209.7	3.58	13.49	1.83E+01	8.77E+00	8	Very Stiff Sand to Clayey Sand*	87	42.39	-99	0.11
22	45.07	1232.3	1234.9	3.65	13.19	1.83E+01	8.80E+00	8	Very Stiff Sand to Clayey Sand*	89	42.48	-99	0.09
22.078	46.17	1210.1	1212.4	3.81	12.11	1.84E+01	8.83E+00	8	Very Stiff Sand to Clayey Sand*	87	42.36	-99	0.06
22.156	45.1	1146.3	1148.6	3.93	11.67	1.85E+01	8.86E+00	8	Very Stiff Sand to Clayey Sand*	83	42.07	-99	0.04
22.236	42.16	1045.5	1047.7	4.02	11.37	1.85E+01	8.89E+00	9	Very Stiff, Fine Grained	38	41.56	-99	0.03
22.314	41.14	946.2	948.4	4.34	11.13	1.86E+01	8.93E+00	9	Very Stiff, Fine Grained	34	41.01	-99	0.03
22.392	38.81	910.6	913	4.25	12.26	1.87E+01	8.96E+00	9	Very Stiff, Fine Grained	33	40.79	-99	0.06
22.47	35.49	872.1	874.7	4.06	13.29	1.87E+01	8.99E+00	9	Very Stiff, Fine Grained	31	40.53	-99	0.09
22.549	30.53	839.5	842.2	3.62	14.08	1.88E+01	9.02E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	20	40.3	54.71	0.12
22.616	28.81	769.8	772.7	3.73	14.97	1.89E+01	9.05E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	28	39.81	50.06	0.15
22.689	29.53	805.2	807.9	3.65	13.78	1.89E+01	9.08E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	40.04	52.42	0.1
22.767	30.57	830.4	833.5	3.67	15.9	1.90E+01	9.11E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	20	40.19	54.1	0.18
22.845	31.77	834.8	838.1	3.79	17.03	1.90E+01	9.14E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	30	40.2	54.39	0.23
22.923	32.84	612.7	616	5.33	17.17	1.91E+01	9.17E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	22	38.43	39.57	0.24
23.001	34.04	661.6	664.5	5.12	15.26	1.92E+01	9.20E+00	9	Very Stiff, Fine Grained	24	38.85	-99	0.15
23.08	34.6	663	665.8	5.2	14.32	1.92E+01	9.23E+00	9	Very Stiff, Fine Grained	24	38.85	-99	0.11
23.159	33.45	634.9	637.1	5.25	11.47	1.93E+01	9.26E+00	9	Very Stiff, Fine Grained	23	38.58	-99	0.02
23.237	31.57	566.8	568.9	5.55	10.78	1.94E+01	9.30E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	20	37.9	36.49	0.01
23.317	29.14	509	510.8	5.7	9.21	1.94E+01	9.33E+00	3	Clays-Clay to Silty Clay	24	-99	32.64	-99
23.397	26.5	414.2	416	6.37	9.16	1.95E+01	9.36E+00	3	Clays-Clay to Silty Clay	20	-99	26.32	-99
23.476	23.92	369.8	372.5	6.42	14.03	1.96E+01	9.39E+00	3	Clays-Clay to Silty Clay	18	-99	23.35	0.09
23.556	22.71	365.4	368	6.17	13.49	1.96E+01	9.42E+00	3	Clays-Clay to Silty Clay	18	-99	23.05	0.07
23.635	22.54	363.9	366.2	6.15	12.01	1.97E+01	9.45E+00	3	Clays-Clay to Silty Clay	17	-99	22.95	0.03
23.714	21.75	384.6	387	5.62	12.55	1.98E+01	9.49E+00	3	Clays-Clay to Silty Clay	18	-99	24.32	0.04
23.793	21.73	400.9	403.7	5.38	14.37	1.98E+01	9.52E+00	3	Clays-Clay to Silty Clay	19	-99	25.4	0.1
23.872	21.66	420.2	423	5.12	14.57	1.99E+01	9.55E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	15	35.92	26.68	0.1

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
23.951	21.75	664.5	667.8	3.26	16.73	2.00E+01	9.58E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	16	38.65	42.97	0.18
24.029	21.11	642.3	645.9	3.27	18.7	2.00E+01	9.61E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	23	38.43	41.49	0.27
24.109	19.3	639.4	643	3	18.65	2.01E+01	9.64E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	38.39	41.28	0.26
24.189	17.82	627.5	631.1	2.82	18.5	2.02E+01	9.68E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	38.26	40.49	0.25
24.269	18.19	620.1	623.5	2.92	17.81	2.02E+01	9.71E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	15	38.17	39.99	0.22
24.348	20.27	602.3	605.5	3.35	16.48	2.03E+01	9.74E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	22	37.98	38.8	0.16
24.426	20.27	483.8	487.1	4.16	17.07	2.04E+01	9.77E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	17	36.65	30.9	0.18
24.505	20.18	349.1	352.2	5.73	16.09	2.04E+01	9.80E+00	3	Clays-Clay to Silty Clay	17	-99	21.91	0.14
24.585	20.04	224.7	227.7	8.8	15.94	2.05E+01	9.83E+00	3	Clays-Clay to Silty Clay	11	-99	13.61	0.14
24.664	19.92	448.3	451.3	4.41	15.35	2.06E+01	9.87E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	16	36.12	28.52	0.11
24.743	20.04	467.5	470.6	4.26	15.9	2.06E+01	9.90E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	17	36.36	29.8	0.13
24.822	20.5	506.1	509.1	4.03	15.6	2.07E+01	9.93E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	18	36.82	32.36	0.12
24.9	21.12	584.6	587.7	3.59	16.29	2.08E+01	9.96E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	21	37.67	37.59	0.14
24.981	21.39	646.8	649.7	3.29	15.4	2.08E+01	9.99E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	23	38.25	41.73	0.11
25.06	21.19	765.2	767.6	2.76	12.45	2.09E+01	1.00E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	18	39.2	49.62	0.02
25.138	20.89	831.9	833.4	2.51	7.93	2.10E+01	1.01E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	39.65	54.06	-99
25.217	20.72	920.7	922.2	2.25	7.39	2.10E+01	1.01E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	40.2	59.98	-99
25.295	20.56	962.2	963.6	2.13	7.34	2.11E+01	1.01E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	40.42	62.74	-99
25.373	21.08	985.9	987.2	2.14	6.61	2.11E+01	1.02E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	24	40.54	64.32	-99
25.453	17.19	975.5	976.6	1.76	5.47	2.12E+01	1.02E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	40.46	63.62	-99
25.532	10.99	934.1	935.1	1.18	5.23	2.13E+01	1.02E+01	6	Sands-Clean Sand to Silty Sand	15	40.21	-99	-99
25.612	10.76	883.7	884.8	1.22	5.47	2.13E+01	1.02E+01	6	Sands-Clean Sand to Silty Sand	14	39.88	-99	-99
25.691	10.32	865.9	867.2	1.19	6.46	2.14E+01	1.03E+01	6	Sands-Clean Sand to Silty Sand	14	39.75	-99	-99
25.769	10.04	836.3	838	1.2	8.77	2.15E+01	1.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	39.54	54.32	-99
25.843	9.75	14.9	16.9	57.82	10.26	2.15E+01	1.03E+01	-99		-99	-99	-0.44	-99
25.92	8.27	37.1	38.2	21.65	5.78	2.16E+01	1.04E+01	-99		-99	-99	1.03	-99
25.998	5.4	47.4	48.4	11.15	4.9	2.17E+01	1.04E+01	-99		-99	-99	1.72	-99
26.077	2.77	44.5	45.4	6.1	4.6	2.17E+01	1.04E+01	3	Clays-Clay to Silty Clay	2	-99	1.52	-99
26.155	1.62	34.1	35	4.63	4.65	2.18E+01	1.05E+01	3	Clays-Clay to Silty Clay	2	-99	0.82	-99
26.233	1.54	16.4	17.2	8.93	4.46	2.19E+01	1.05E+01	-99		-99	-99	-0.37	-99
26.312	2.13	-34	-33.1	-6.43	4.41	2.19E+01	1.05E+01	-99		-99	-99	-3.73	-99
26.39	3.53	-62.1	-61.3	-5.76	4.46	2.20E+01	1.06E+01	-99		-99	-99	-5.61	-99
26.468	5.65	-82.8	-82	-6.89	4.41	2.21E+01	1.06E+01	-99		-99	-99	-6.99	-99
26.546	6.43	-68	-67.2	-9.57	4.41	2.21E+01	1.06E+01	-99		-99	-99	-6.01	-99
26.624	7.1	-74	-73.1	-9.72	4.6	2.22E+01	1.07E+01	-99		-99	-99	-6.41	-99
26.705	9.42	-81.4	-80.3	-11.72	5.34	2.23E+01	1.07E+01	-99		-99	-99	-6.91	-99
26.782	10.53	-68	-66.9	-15.75	6.13	2.23E+01	1.07E+01	-99		-99	-99	-6.02	-99
26.861	12.39	-23.6	-22.6	-54.79	5.29	2.24E+01	1.07E+01	-99		-99	-99	-3.07	-99
26.94	13.22	-307.9	-306.9	-4.31	5.1	2.25E+01	1.08E+01	-99		-99	-99	-22.02	-99
27.018	13.15	-310.9	-309.8	-4.24	5.78	2.25E+01	1.08E+01	-99		-99	-99	-22.23	-99
27.096	12.48	-494.5	-493.4	-2.53	5.83	2.26E+01	1.08E+01	-99		-99	-99	-34.47	-99
27.176	11.32	-473.8	-472.4	-2.4	6.86	2.27E+01	1.09E+01	-99		-99	-99	-33.09	-99
27.254	9.42	-522.6	-520.8	-1.81	9.37	2.27E+01	1.09E+01	-99		-99	-99	-36.35	-99
27.332	7.58	-516.7	-514.5	-1.47	11.24	2.28E+01	1.09E+01	-99		-99	-99	-35.96	-99
27.41	6.8	-513.7	-511.2	-1.33	13.01	2.28E+01	1.10E+01	-99		-99	-99	-35.77	0.01
27.489	6.4	-515.2	-512.6	-1.25	13.55	2.29E+01	1.10E+01	-99		-99	-99	-35.87	0.02
27.568	6.37	-497.4	-494.6	-1.29	14.53	2.30E+01	1.10E+01	-99		-99	-99	-34.69	0.04
27.646	6.8	-507.8	-504.8	-1.35	15.56	2.30E+01	1.11E+01	-99		-99	-99	-35.39	0.07
27.725	7.2	-494.5	-491.5	-1.47	15.61	2.31E+01	1.11E+01	-99		-99	-99	-34.51	0.07
27.803	7.52	-473.8	-470.8	-1.6	15.07	2.32E+01	1.11E+01	-99		-99	-99	-33.13	0.05
27.881	8.01	-458.9	-456	-1.76	15.41	2.32E+01	1.12E+01	-99		-99	-99	-32.15	0.06
27.96	8.73	-457.5	-454.3	-1.92	16.35	2.33E+01	1.12E+01	-99		-99	-99	-32.05	0.08
28.039	10.03	-469.3	-466	-2.15	16.94	2.34E+01	1.12E+01	-99		-99	-99	-32.84	0.1
28.117	11.22	-475.2	-471.6	-2.38	18.66	2.34E+01	1.13E+01	-99		-99	-99	-33.24	0.15
28.195	11.45	-473.8	-470.3	-2.43	18.12	2.35E+01	1.13E+01	-99		-99	-99	-33.15	0.13
28.273	11.26	-484.1	-480.8	-2.34	16.94	2.36E+01	1.13E+01	-99		-99	-99	-33.85	0.09
28.352	10.77	-496	-492.8	-2.19	16.4	2.36E+01	1.13E+01	-99		-99	-99	-34.64	0.08
28.432	10.14	-457.5	-454.4	-2.23	15.96	2.37E+01	1.14E+01	-99		-99	-99	-32.08	0.07
28.51	9.28	-485.6	-482.4	-1.92	16.3	2.38E+01	1.14E+01	-99		-99	-99	-33.96	0.07
28.589	8.11	-513.7	-510.6	-1.59	16.45	2.38E+01	1.14E+01	-99		-99	-99	-35.84	0.08
28.667	6.86	-537.4	-534.4	-1.28	15.76	2.39E+01	1.15E+01	-99		-99	-99	-37.42	0.06
28.745	5.98	-558.1	-555.7	-1.08	12.86	2.40E+01	1.15E+01	-99		-99	-99	-38.81	0
28.825	5.75	-558.1	-556.1	-1.03	10.45	2.40E+01	1.15E+01	-99		-99	-99	-38.81	-99
28.903	7.04	-550.7	-548.8	-1.28	10.21	2.41E+01	1.16E+01	-99		-99	-99	-38.32	-99
28.98	8.27	-500.4	-498.5	-1.66	10.11	2.42E+01	1.16E+01	-99		-99	-99	-34.97	-99
29.058	7.26	-481.2	-479.2	-1.51	10.06	2.42E+01	1.16E+01	-99		-99	-99	-33.69	-99
29.136	6.59	-493	-491.1	-1.34	9.67	2.43E+01	1.17E+01	-99		-99	-99	-34.49	-99
29.216	6.98	-488.6	-486.6	-1.43	10.26	2.44E+01	1.17E+01	-99		-99	-99	-34.19	-99
29.289	7.33	-349.4	-347.7	-2.11	8.44	2.44E+01	1.17E+01	-99		-99	-99	-24.92	-99
29.368	6.9	-451.5	-450	-1.53	7.9	2.45E+01	1.18E+01	-99		-99	-99	-31.73	-99
29.447	5.27	-592.2	-590.4	-0.89	9.27	2.45E+01	1.18E+01	-99		-99	-99	-41.12	-99
29.525	2.94	-655.9	-654.1	-0.45	9.17	2.46E+01	1.18E+01	-99		-99	-99	-45.37	-99
29.604	0.81	-666.2	-664.7	-0.12	7.95	2.47E+01	1.18E+01	-99		-99	-99	-46.06	-99
29.684	-1.15	-676.6	-675.3	0.17	6.91	2.47E+01	1.19E+01	-99		-99	-99	-46.76	-99
29.762	-2.68	-692.9	-691.5	0.39	7.21	2.48E+01	1.19E+01	-99		-99	-99	-47.85	-99
29.841	-3.56	-697.3	-695.8	0.51	8.14	2.49E+01	1.19E+01	-99		-99	-99	-48.15	-99
29.921	-4.23	-709.2	-707.5	0.6	8.83	2.49E+01	1.20E+01	-99		-99	-99	-48.94	-99
30	-4.57	-684	-682.3	0.67	8.98	2.50E+01	1.20E+01	-99		-99	-99	-47.27	-99
30.08	-4.26	-718.1	-716.4	0.6	8.83	2.51E+01	1.20E+01	-99		-99	-99	-49.54	-99
30.159	-3.88	-713.6	-711.7	0.55	9.81	2.51E+01	1.21E+01	-99		-99	-99	-49.25	-99
30.238	-3.74	-685.5	-683.6	0.55	9.81	2.52E+01	1.21E+01	-99		-99	-99	-47.38	-99
30.317	-2.62	-647	-645	0.41	10.16	2.53E+01	1.21E+01	-99		-99	-99	-44.82	-99
30.396	-0.68	-584.8	-582.9	0.12	9.67	2.53E+01	1.22E+01	-99		-99	-99	-40.68	-99
30.475	1.04	-524.1	-521.8	-0.2	11.73	2.54E+01	1.22E+01	-99		-99	-99	-36.63	-99
30.554	2.43	-552.2	-550.3	-0.44	9.96	2.55E+01	1.22E+01	-99		-99	-99	-38.51	-99
30.633	3.72	-562.6	-561.1	-0.66	7.65	2.55E+01	1.23E+01	-99		-99	-99	-39.21	-99
30.712	4.58	-512.3	-511	-0.9	6.67	2.56E+01	1.23E+01	-99		-99	-99	-35.86	-99
30.793	9.93	-507.8	-506.4	-1.96	7.01	2.57E+01	1.23E+01	-99		-99	-99	-35.56	-99
30.872	17.43	-580.4	-578.5	-3.01	9.76	2.57E+01	1.24E+01	-99		-99	-99	-40.41	-99
30.952	16.63	-567	-565.1	-2.94	10.01	2.58E+01	1.24E+01	-99		-99	-99	-39.52	-99
31.03	15.8	-518.2	-516.1	-3.06	10.75	2.59E+01	1.24E+01	-99		-99	-99	-36.27	-99
31.109	14.91	-441.2	-439	-3.4	11.19	2.59E+01	1.24E+01	-99		-99	-99	-31.14	-99
31.188	15.2	663.4	666.2	2.28	14.33	2.60E+01	1.25E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	16	37.08	42.49	0.01
31.268	16.62	701.9	703.7	2.36	9.17	2.61E+01	1.25E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	17	37.4	45.06	-99
31.346	18.07	781.9	782.9	2.31	5.19	2.61E+01	1.25E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	38.03	50.38	-99
31.424	20.1	835.2	836.3	2.4	5.88	2.62E+01	1.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	38.4	53.93	-99
31.503	23.77	903.3	904.6	2.63	6.91	2.63E+01	1.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	38.84	58.47	-99
31.582	26.31	916.6	917.9	2.87	6.82	2.63E+01	1.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	38.91	59.35	-99
31.661	26.82	903.3	904.5	2.96	6.27	2.64E+01	1.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	38.81	58.46	-99
31.74	28.15	839.6	840.7	3.35	5.54	2.65E+01	1.27E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	38.37	54.21	-99
31.819	28.88	790.7	792.2	3.65	7.45	2.65E+01	1.27E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	38.01	50.95	-99
31.897	27.84	777.4	779.7	3.57	11.73	2.66E+01	1.28E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	37.89	50.06	-99
31.977	27.66	761.1	764.5	3.62	17.23	2.67E+01	1.28E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	37.75	48.97	0.05
32.056	19.62	767.1	769.2	2.55	10.84	2.67E+01	1.28E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	18	37.78	49.36	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
32.134	8.57	836.7	839.2	1.02	13.11	2.68E+01	1.29E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	38.28	53.99	-99
32.212	9.18	927	930.2	0.99	16.94	2.68E+01	1.29E+01	6	Sands-Clean Sand to Silty Sand	15	38.86	-99	0.04
32.29	12.55	958.1	960	1.31	9.76	2.69E+01	1.29E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	39.03	62.08	-99
32.368	17.51	958.1	960.3	1.82	11.39	2.70E+01	1.30E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	39.02	62.07	-99
32.448	21.11	122	124	17.02	10.41	2.70E+01	1.30E+01	-99		-99	-99	6.33	-99
32.526	24.55	185.6	187.2	13.11	8.35	2.71E+01	1.30E+01	3	Clays-Clay to Silty Clay	9	-99	10.57	-99
32.605	27.23	136.8	138.5	19.66	8.99	2.72E+01	1.30E+01	-99		-99	-99	7.31	-99
32.684	27.82	-0.9	1.5	1805.55	12.58	2.72E+01	1.31E+01	-99		-99	-99	-1.87	-99
32.763	26.98	-82.3	-79.8	-33.82	13.07	2.73E+01	1.31E+01	-99		-99	-99	-7.31	-99
32.842	24.61	-168.2	-165.3	-14.89	15.08	2.74E+01	1.31E+01	-99		-99	-99	-13.04	0.01
32.921	20.75	-224.4	-221	-9.39	17.49	2.74E+01	1.32E+01	-99		-99	-99	-16.79	0.04
32.999	16.59	-277.7	-274.3	-6.05	17.64	2.75E+01	1.32E+01	-99		-99	-99	-20.35	0.05
33.074	13.13	-305.8	-301.8	-4.35	21.12	2.76E+01	1.32E+01	-99		-99	-99	-22.23	0.13
33.154	11.16	-342.8	-338.4	-3.3	22.89	2.76E+01	1.33E+01	-99		-99	-99	-24.7	0.18
33.233	9.97	-347.3	-342.9	-2.91	22.84	2.77E+01	1.33E+01	-99		-99	-99	-25	0.17
33.313	10.4	-354.7	-350.7	-2.97	20.88	2.78E+01	1.33E+01	-99		-99	-99	-25.5	0.12
33.392	12.44	-369.5	-365.7	-3.4	19.41	2.78E+01	1.34E+01	-99		-99	-99	-26.49	0.08
33.47	12.94	-371	-367.4	-3.52	18.32	2.79E+01	1.34E+01	-99		-99	-99	-26.59	0.06
33.549	13.04	-373.9	-369.9	-3.53	21.03	2.80E+01	1.34E+01	-99		-99	-99	-26.79	0.12
33.624	13.12	-390.2	-385.7	-3.4	23.43	2.80E+01	1.35E+01	-99		-99	-99	-27.88	0.18
33.703	12.83	-319.2	-313.9	-4.09	27.07	2.81E+01	1.35E+01	-99		-99	-99	-23.15	0.3
33.777	12.34	-341.4	-335.9	-3.68	28.3	2.82E+01	1.35E+01	-99		-99	-99	-24.63	0.34
33.855	12.78	-274.7	-269.3	-4.74	27.95	2.82E+01	1.35E+01	-99		-99	-99	-20.2	0.32
33.935	13.99	-242.2	-236.8	-5.91	27.9	2.83E+01	1.36E+01	-99		-99	-99	-18.03	0.32
34.015	14.04	-196.3	-191	-7.35	27.27	2.84E+01	1.36E+01	-99		-99	-99	-14.98	0.29
34.094	12.97	-168.2	-162.9	-7.96	27.27	2.84E+01	1.36E+01	-99		-99	-99	-13.11	0.29
34.173	11.98	-153.4	-149.1	-8.03	22.01	2.85E+01	1.37E+01	-99		-99	-99	-12.12	0.13
34.252	11.14	-144.5	-140.1	-7.95	22.5	2.85E+01	1.37E+01	-99		-99	-99	-11.53	0.14
34.33	10.43	-150.4	-147.8	-7.05	13.41	2.86E+01	1.37E+01	-99		-99	-99	-11.93	-99
34.411	9.8	-209.6	-207.9	-4.72	9.09	2.87E+01	1.38E+01	-99		-99	-99	-15.89	-99
34.49	9.22	-282.1	-280.8	-3.28	6.78	2.87E+01	1.38E+01	-99		-99	-99	-20.73	-99
34.57	8.19	-378.4	-377.1	-2.17	6.63	2.88E+01	1.38E+01	-99		-99	-99	-27.15	-99
34.649	7.62	-427.2	-426	-1.79	6.44	2.89E+01	1.39E+01	-99		-99	-99	-30.41	-99
34.729	7.84	-464.2	-462.8	-1.69	7.47	2.89E+01	1.39E+01	-99		-99	-99	-32.88	-99
34.809	8.68	-405	-403.3	-2.15	9.09	2.90E+01	1.39E+01	-99		-99	-99	-28.93	-99
34.888	11.23	-307.3	-305	-3.68	11.94	2.91E+01	1.40E+01	-99		-99	-99	-22.43	-99
34.967	15.35	-146	-143.3	-10.71	13.95	2.91E+01	1.40E+01	-99		-99	-99	-11.67	-99
35.046	21.03	-20.1	-16.7	-125.86	17.69	2.92E+01	1.40E+01	-99		-99	-99	-3.29	0.03
35.123	27.15	93.9	97.1	27.97	16.6	2.93E+01	1.41E+01	-99		-99	-99	4.31	0.01
35.202	30.69	178.2	181	16.96	14.25	2.93E+01	1.41E+01	-99		-99	-99	9.93	-99
35.281	30.89	253.7	256.9	12.02	16.65	2.94E+01	1.41E+01	3	Clays-Clay to Silty Clay	12	-99	14.96	0.01
35.359	23.95	360.3	363.8	6.58	18.32	2.95E+01	1.41E+01	3	Clays-Clay to Silty Clay	17	-99	22.06	0.04
35.437	17.09	514.3	518.3	3.3	21.08	2.95E+01	1.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	19	34.71	32.32	0.09
35.514	17.4	650.5	653.8	2.66	17.34	2.96E+01	1.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	36.17	41.39	0.02
35.592	18.13	616.4	618.4	2.93	10.46	2.97E+01	1.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	35.82	39.12	-99
35.673	19.63	569	570.7	3.44	8.45	2.97E+01	1.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	35.31	35.95	-99
35.741	21.08	788.5	789.4	2.67	4.98	2.98E+01	1.43E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	37.3	50.58	-99
35.82	23.41	714.5	715.6	3.27	6.15	2.99E+01	1.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	36.69	45.64	-99
35.899	26.24	536.9	538.2	4.88	6.84	2.99E+01	1.44E+01	3	Clays-Clay to Silty Clay	26	-99	33.8	-99
35.979	27.79	366.7	368.2	7.55	8.12	3.00E+01	1.44E+01	3	Clays-Clay to Silty Clay	18	-99	22.45	-99
36.059	27.94	248.3	249.7	11.19	7.58	3.01E+01	1.44E+01	3	Clays-Clay to Silty Clay	12	-99	14.55	-99
36.138	28.93	212.8	214.1	13.52	6.79	3.01E+01	1.45E+01	3	Clays-Clay to Silty Clay	10	-99	12.18	-99
36.216	30.38	307.5	309.1	9.83	8.41	3.02E+01	1.45E+01	3	Clays-Clay to Silty Clay	15	-99	18.49	-99
36.295	31.1	553.1	554.9	5.6	9.05	3.03E+01	1.45E+01	3	Clays-Clay to Silty Clay	27	-99	34.86	-99
36.373	33.33	766.3	768.2	4.34	9.89	3.03E+01	1.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	37.02	49.06	-99
36.453	36.84	815.1	817.5	4.51	12.24	3.04E+01	1.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	37.38	52.31	-99
36.533	39.54	665.6	669.1	5.91	17.89	3.04E+01	1.46E+01	3	Clays-Clay to Silty Clay	32	-99	42.34	0.02
36.613	41.23	533.9	537.4	7.67	17.99	3.05E+01	1.47E+01	3	Clays-Clay to Silty Clay	26	-99	33.56	0.02
36.692	39.55	474.7	479.3	8.25	23.93	3.06E+01	1.47E+01	3	Clays-Clay to Silty Clay	23	-99	29.61	0.14
36.771	35.29	365.2	369.3	9.56	21.13	3.06E+01	1.47E+01	3	Clays-Clay to Silty Clay	18	-99	22.3	0.08
36.851	30.82	291.2	295.5	10.43	22.07	3.07E+01	1.47E+01	3	Clays-Clay to Silty Clay	14	-99	17.37	0.09
36.931	27.63	224.6	228.7	12.08	21.23	3.08E+01	1.48E+01	3	Clays-Clay to Silty Clay	11	-99	12.92	0.08
37.01	24.66	177.2	180.8	13.64	18.58	3.08E+01	1.48E+01	3	Clays-Clay to Silty Clay	9	-99	9.76	0.03
37.089	21.89	192	196.4	11.14	22.85	3.09E+01	1.48E+01	3	Clays-Clay to Silty Clay	9	-99	10.74	0.11
37.169	20.45	178.7	182.8	11.18	21.33	3.10E+01	1.49E+01	3	Clays-Clay to Silty Clay	9	-99	9.85	0.07
37.248	20.37	166.9	171	11.91	21.43	3.10E+01	1.49E+01	3	Clays-Clay to Silty Clay	8	-99	9.06	0.08
37.328	20.57	171.3	175.5	11.72	21.58	3.11E+01	1.49E+01	3	Clays-Clay to Silty Clay	8	-99	9.35	0.08
37.408	25	169.8	172.8	14.47	15.14	3.12E+01	1.50E+01	3	Clays-Clay to Silty Clay	8	-99	9.24	-99
37.487	31.91	165.4	168	18.99	13.52	3.12E+01	1.50E+01	-99		-99	-99	8.94	-99
37.566	32.75	236.4	239.1	13.7	13.67	3.13E+01	1.50E+01	3	Clays-Clay to Silty Clay	11	-99	13.68	-99
37.644	33.07	272	274.1	12.06	11.31	3.14E+01	1.51E+01	3	Clays-Clay to Silty Clay	13	-99	16.04	-99
37.724	33.12	282.3	284.4	11.65	10.57	3.14E+01	1.51E+01	3	Clays-Clay to Silty Clay	14	-99	16.73	-99
37.803	33.19	949.8	951.6	3.49	9.25	3.15E+01	1.51E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	38.07	61.22	-99
37.882	32.93	949.8	951.5	3.46	8.81	3.16E+01	1.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	38.06	61.21	-99
37.962	32.41	936.4	938	3.45	8.27	3.16E+01	1.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	37.96	60.32	-99
38.042	32.41	899.5	900.9	3.6	7.23	3.17E+01	1.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	37.71	57.85	-99
38.122	31.24	890.6	892	3.5	7.28	3.18E+01	1.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	37.64	57.25	-99
38.202	28.74	821	822.2	3.5	6.35	3.18E+01	1.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	37.14	52.61	-99
38.281	25.93	819.5	820.9	3.16	6.89	3.19E+01	1.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	37.12	52.51	-99
38.36	24.2	824	825.9	2.93	10.08	3.20E+01	1.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	37.14	52.8	-99
38.439	19.74	869.9	871.8	2.26	9.89	3.20E+01	1.54E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	37.45	55.85	-99
38.518	12.62	866.9	868.6	1.45	8.81	3.21E+01	1.54E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	37.42	55.65	-99
38.599	16.19	886.1	887.5	1.82	6.84	3.22E+01	1.54E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	37.54	56.93	-99
38.677	17.83	792.9	794.1	2.25	6.4	3.22E+01	1.55E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	36.86	50.71	-99
38.757	13.68	795.9	796.9	1.72	5.56	3.23E+01	1.55E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	36.87	50.9	-99
38.836	13.04	-90.6	-89.5	-14.57	6.01	3.24E+01	1.55E+01	-99		-99	-99	-8.2	-99
38.915	13.56	-71.4	-70.4	-19.26	5.17	3.24E+01	1.56E+01	-99		-99	-99	-6.92	-99
38.987	15.18	704.1	705	2.15	4.88	3.25E+01	1.56E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	17	36.08	44.77	-99
39.065	17.2	320.8	321.7	5.35	4.68	3.26E+01	1.56E+01	3	Clays-Clay to Silty Clay	15	-99	19.22	-99
39.144	19.14	316.3	317.5	6.03	5.81	3.26E+01	1.57E+01	3	Clays-Clay to Silty Clay	15	-99	18.92	-99
39.223	20.95	320.8	322.3	6.5	7.63	3.27E+01	1.57E+01	3	Clays-Clay to Silty Clay	15	-99	19.21	-99
39.302	22.63	340	341.8	6.62	9.05	3.28E+01	1.57E+01	3	Clays-Clay to Silty Clay	16	-99	20.48	-99
39.382	24.18	388.9	390.7	6.19	9.69	3.28E+01	1.58E+01	3	Clays-Clay to Silty Clay	19	-99	23.74	-99
39.461	25.38	502.8	504.6	5.03	9.15	3.29E+01	1.58E+01	3	Clays-Clay to Silty Clay	24	-99	31.33	-99
39.54	24.8	653.8	655.3	3.78	7.73	3.30E+01	1.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	35.53	41.39	-99
39.618	23.94	835.8	837.3	2.86	7.77	3.30E+01	1.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	37.03	53.52	-99
39.697	23.93	988.3	989.7	2.42	7.33	3.31E+01	1.59E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	24	38.02	63.68	-99
39.777	23.98	1050.4	1052	2.28	8.22	3.32E+01	1.59E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	25	38.36	67.82	-99
39.857	23.21	1111.1	1112.5	2.09	7.38	3.32E+01	1.59E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	27	38.67	71.86	-99
39.936	21.97	1100.7	1102	1.99	6.55	3.33E+01	1.60E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	26	38.61	71.16	-99
40.016	21.22	1023.8	1025	2.07	6.55	3.34E+01	1.60E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	25	38.18	66.03	-99
40.096	20.71	917.2	918.5	2.25	6.55	3.34E+01	1.60E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	37.52	58.92	-99
40.175	21.4	819.5	820.8	2.61	6.35	3.35E+01	1.61E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	36.83	52.4	-99
40.256	22.77	613.8	615	3.7	6.06	3.36E+01	1.61E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	35.02	38.68	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
40.335	25.35	581.3	582.4	4.35	5.91	3.36E+01	1.61E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	34.66	36.51	-99
40.416	26.67	566.5	567.6	4.7	5.81	3.37E+01	1.62E+01	3	Clays-Clay to Silty Clay	27	-99	35.52	-99
40.494	26.75	547.2	548.5	4.88	6.65	3.37E+01	1.62E+01	3	Clays-Clay to Silty Clay	26	-99	34.23	-99
40.575	27.37	498.4	500	5.47	8.32	3.38E+01	1.62E+01	3	Clays-Clay to Silty Clay	24	-99	30.97	-99
40.655	28.83	553.1	555.9	5.19	14.21	3.39E+01	1.63E+01	3	Clays-Clay to Silty Clay	27	-99	34.62	-99
40.734	29.86	533.9	535.7	5.57	9.05	3.39E+01	1.63E+01	3	Clays-Clay to Silty Clay	26	-99	33.33	-99
40.813	28.86	452.5	453.9	6.36	7.23	3.40E+01	1.63E+01	3	Clays-Clay to Silty Clay	22	-99	27.9	-99
40.892	26.89	329.7	330.9	8.13	6.35	3.41E+01	1.64E+01	3	Clays-Clay to Silty Clay	16	-99	19.71	-99
40.972	25.66	221.6	223	11.51	6.84	3.41E+01	1.64E+01	3	Clays-Clay to Silty Clay	11	-99	12.5	-99
41.053	23.57	115.1	116.7	20.2	8.41	3.42E+01	1.64E+01	-99		-99	-99	5.39	-99
41.132	21.03	50	51.8	40.6	9.59	3.43E+01	1.65E+01	-99		-99	-99	1.05	-99
41.212	18.25	32.2	34.4	52.98	11.61	3.43E+01	1.65E+01	-99		-99	-99	-0.14	-99
41.291	15.63	10	12.7	122.93	14.06	3.44E+01	1.65E+01	-99		-99	-99	-1.63	-99
41.371	14.11	50	53	26.62	15.83	3.45E+01	1.66E+01	-99		-99	-99	1.03	-99
41.451	14.87	103.2	106.7	13.95	17.7	3.45E+01	1.66E+01	-99		-99	-99	4.58	-99
41.531	16.5	192	195.5	8.44	18.04	3.46E+01	1.66E+01	3	Clays-Clay to Silty Clay	9	-99	10.5	0
41.61	18	242.3	245.6	7.33	16.91	3.47E+01	1.66E+01	3	Clays-Clay to Silty Clay	12	-99	13.84	-99
41.688	18.85	246.8	249.4	7.56	13.47	3.47E+01	1.67E+01	3	Clays-Clay to Silty Clay	12	-99	14.14	-99
41.767	19.78	266	268.9	7.36	14.75	3.48E+01	1.67E+01	3	Clays-Clay to Silty Clay	13	-99	15.41	-99
41.847	20.97	304.5	308	6.81	17.94	3.49E+01	1.67E+01	3	Clays-Clay to Silty Clay	15	-99	17.98	-99
41.926	22.21	345.9	351.3	6.32	27.91	3.49E+01	1.68E+01	3	Clays-Clay to Silty Clay	17	-99	20.73	0.15
42.005	23.31	431.8	436.4	5.34	24.13	3.50E+01	1.68E+01	3	Clays-Clay to Silty Clay	21	-99	26.45	0.08
42.084	25.04	456.9	459.8	5.45	14.65	3.51E+01	1.68E+01	3	Clays-Clay to Silty Clay	22	-99	28.12	-99
42.164	26.59	337.1	339	7.85	9.79	3.51E+01	1.69E+01	3	Clays-Clay to Silty Clay	16	-99	20.13	-99
42.244	28.03	240.9	243.1	11.53	11.31	3.52E+01	1.69E+01	3	Clays-Clay to Silty Clay	12	-99	13.71	-99
42.321	28.94	300.2	302.3	9.57	10.93	3.53E+01	1.69E+01	3	Clays-Clay to Silty Clay	14	-99	17.66	-99
42.399	28.95	323.9	326.5	8.87	13.73	3.53E+01	1.70E+01	3	Clays-Clay to Silty Clay	16	-99	19.24	-99
42.477	26.8	304.6	307	8.73	12.31	3.54E+01	1.70E+01	3	Clays-Clay to Silty Clay	15	-99	17.95	-99
42.556	23.51	255.8	257.7	9.12	10.24	3.55E+01	1.70E+01	3	Clays-Clay to Silty Clay	12	-99	14.69	-99
42.634	21.66	158	160	13.54	10.29	3.55E+01	1.71E+01	3	Clays-Clay to Silty Clay	8	-99	8.17	-99
42.713	20.39	75.1	77.1	26.44	10.54	3.56E+01	1.71E+01	-99		-99	-99	2.63	-99
42.791	18.61	88.4	91.1	20.44	13.73	3.57E+01	1.71E+01	-99		-99	-99	3.52	-99
42.87	17.6	123.9	127.1	13.85	16.24	3.57E+01	1.72E+01	3	Clays-Clay to Silty Clay	6	-99	5.88	-99
42.949	17.29	161	164.4	10.51	17.86	3.58E+01	1.72E+01	3	Clays-Clay to Silty Clay	8	-99	8.35	-99
43.026	17.98	241	244	7.37	15.99	3.59E+01	1.72E+01	3	Clays-Clay to Silty Clay	12	-99	13.67	-99
43.104	20.27	201	204.1	9.93	16.39	3.59E+01	1.72E+01	3	Clays-Clay to Silty Clay	10	-99	11	-99
43.185	22.46	246.9	250.5	8.96	18.94	3.60E+01	1.73E+01	3	Clays-Clay to Silty Clay	12	-99	14.06	0
43.263	24.04	306.1	310.4	7.75	22.04	3.61E+01	1.73E+01	3	Clays-Clay to Silty Clay	15	-99	18	0.03
43.342	24.76	341.7	346.2	7.15	23.61	3.61E+01	1.73E+01	3	Clays-Clay to Silty Clay	16	-99	20.37	0.05
43.42	25.47	343.1	347.8	7.32	24.1	3.62E+01	1.74E+01	3	Clays-Clay to Silty Clay	16	-99	20.46	0.06
43.499	26.99	313.5	317.9	8.49	22.83	3.63E+01	1.74E+01	3	Clays-Clay to Silty Clay	15	-99	18.48	0.04
43.578	29.26	363.9	368.2	7.95	22.28	3.63E+01	1.74E+01	3	Clays-Clay to Silty Clay	17	-99	21.84	0.03
43.656	31.68	380.2	383.5	8.26	17.03	3.64E+01	1.75E+01	3	Clays-Clay to Silty Clay	18	-99	22.92	-99
43.735	33.34	423.1	426.7	7.81	18.55	3.65E+01	1.75E+01	3	Clays-Clay to Silty Clay	20	-99	25.78	-99
43.813	35.45	514.9	517.7	6.85	14.42	3.65E+01	1.75E+01	3	Clays-Clay to Silty Clay	25	-99	31.9	-99
43.89	38.62	559.4	562.1	6.87	13.88	3.66E+01	1.76E+01	3	Clays-Clay to Silty Clay	27	-99	34.85	-99
43.969	41.76	611.2	614.2	6.8	15.5	3.66E+01	1.76E+01	3	Clays-Clay to Silty Clay	29	-99	38.3	-99
44.048	41.88	640.8	643.4	6.51	13.54	3.67E+01	1.76E+01	3	Clays-Clay to Silty Clay	31	-99	40.27	-99
44.126	38.91	565.3	567.7	6.85	12.26	3.68E+01	1.77E+01	3	Clays-Clay to Silty Clay	27	-99	35.24	-99
44.205	36.53	426.1	429.2	8.51	16.24	3.68E+01	1.77E+01	3	Clays-Clay to Silty Clay	20	-99	25.95	-99
44.283	34.94	329.8	333.4	10.48	18.7	3.69E+01	1.77E+01	3	Clays-Clay to Silty Clay	16	-99	19.53	-99
44.361	32.2	249.8	254.6	12.65	24.59	3.70E+01	1.77E+01	3	Clays-Clay to Silty Clay	12	-99	14.19	0.06
44.441	28.43	196.5	201.1	14.14	23.71	3.70E+01	1.78E+01	3	Clays-Clay to Silty Clay	9	-99	10.63	0.05
44.519	25.04	180.2	184.6	13.56	22.87	3.71E+01	1.78E+01	3	Clays-Clay to Silty Clay	9	-99	9.54	0.03
44.597	23.11	196.5	200.7	11.51	21.45	3.72E+01	1.78E+01	3	Clays-Clay to Silty Clay	9	-99	10.62	0.02
44.676	22.14	178.7	183.2	12.08	23.07	3.72E+01	1.79E+01	3	Clays-Clay to Silty Clay	9	-99	9.43	0.04
44.754	21.04	153.6	158	13.32	22.97	3.73E+01	1.79E+01	3	Clays-Clay to Silty Clay	7	-99	7.75	0.03
44.834	19.56	138.8	143.6	13.62	24.99	3.74E+01	1.79E+01	3	Clays-Clay to Silty Clay	7	-99	6.76	0.06
44.913	17.79	128.4	133.1	13.37	24.5	3.74E+01	1.80E+01	3	Clays-Clay to Silty Clay	6	-99	6.06	0.05
44.991	16.32	129.9	134.4	12.14	23.66	3.75E+01	1.80E+01	3	Clays-Clay to Silty Clay	6	-99	6.16	0.04
45.069	15.29	125.4	129.9	11.78	22.92	3.76E+01	1.80E+01	3	Clays-Clay to Silty Clay	6	-99	5.86	0.03
45.147	15.39	121	125.6	12.25	24.15	3.76E+01	1.81E+01	3	Clays-Clay to Silty Clay	6	-99	5.56	0.05
45.226	6.91	128.4	133	5.2	24.1	3.77E+01	1.81E+01	3	Clays-Clay to Silty Clay	6	-99	6.05	0.05
45.306	14.07	156.5	161.2	8.73	24.25	3.78E+01	1.81E+01	3	Clays-Clay to Silty Clay	8	-99	7.92	0.05
45.383	21.64	224.7	229.6	9.43	25.53	3.78E+01	1.82E+01	3	Clays-Clay to Silty Clay	11	-99	12.46	0.07
45.459	24.06	384.6	390	6.17	28.08	3.79E+01	1.82E+01	3	Clays-Clay to Silty Clay	18	-99	23.11	0.11
45.537	25.73	531.2	537	4.79	29.76	3.80E+01	1.82E+01	3	Clays-Clay to Silty Clay	25	-99	32.89	0.14
45.603	26.57	150.6	155.1	17.14	23.2	3.80E+01	1.82E+01	-99		-99	-99	7.51	0.03
45.675	26.92	782.5	785.5	3.43	15.14	3.81E+01	1.83E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	35.76	49.63	-99
45.753	26.59	773.7	775.9	3.43	11.8	3.81E+01	1.83E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	35.67	49.04	-99
45.831	25.9	727.8	729.9	3.55	10.92	3.82E+01	1.83E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	35.28	45.97	-99
45.909	24.04	689.3	690.9	3.48	8.51	3.83E+01	1.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	34.93	43.4	-99
45.987	21.3	693.7	695.1	3.06	6.84	3.83E+01	1.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	34.96	43.69	-99
46.065	19.39	668.6	669.8	2.9	6.1	3.84E+01	1.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	34.71	42.01	-99
46.143	18.98	646.4	647.5	2.93	6.01	3.85E+01	1.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	34.48	40.53	-99
46.222	19.73	593.1	594.3	3.32	6.2	3.85E+01	1.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	33.92	36.97	-99
46.3	20.05	591.6	592.8	3.38	6.06	3.86E+01	1.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	33.89	36.87	-99
46.379	20.48	575.3	576.7	3.55	7.09	3.87E+01	1.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	33.69	35.78	-99
46.458	20.66	576.8	578.2	3.57	7.04	3.87E+01	1.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	33.7	35.87	-99
46.537	20.41	641.9	643.4	3.17	7.33	3.88E+01	1.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	34.38	40.21	-99
46.615	19.62	627.1	628.4	3.12	6.55	3.89E+01	1.87E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	34.22	39.22	-99
46.693	19.49	610.9	612	3.18	6.06	3.89E+01	1.87E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	34.04	38.13	-99
46.772	20.68	569.4	570.6	3.62	5.86	3.90E+01	1.87E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	33.57	35.36	-99
46.852	22.42	510.2	511.3	4.38	5.66	3.90E+01	1.87E+01	3	Clays-Clay to Silty Clay	24	-99	31.41	-99
46.929	22.39	465.8	466.8	4.8	5.27	3.91E+01	1.88E+01	3	Clays-Clay to Silty Clay	22	-99	28.45	-99
47.009	21.34	365.2	366.3	5.83	5.91	3.92E+01	1.88E+01	3	Clays-Clay to Silty Clay	18	-99	21.73	-99
47.088	20.25	203.9	205.6	9.85	9.05	3.92E+01	1.88E+01	3	Clays-Clay to Silty Clay	10	-99	10.98	-99
47.167	18.74	190.6	193.2	9.7	13.57	3.93E+01	1.89E+01	3	Clays-Clay to Silty Clay	9	-99	10.08	-99
47.248	16.56	153.6	156.4	10.59	14.8	3.94E+01	1.89E+01	3	Clays-Clay to Silty Clay	7	-99	7.61	-99
47.327	14.24	169.8	174	8.19	21.43	3.94E+01	1.89E+01	3	Clays-Clay to Silty Clay	8	-99	8.69	0
47.406	12.39	196.5	200.7	6.17	21.82	3.95E+01	1.90E+01	3	Clays-Clay to Silty Clay	9	-99	10.46	0.01
47.486	11.89	146.2	151.6	7.85	28.11	3.96E+01	1.90E+01	3	Clays-Clay to Silty Clay	7	-99	7.11	0.09
47.565	12.25	158	163.5	7.49	28.65	3.96E+01	1.90E+01	2	Organic Soils-Peats	11	-99	7.89	0.1
47.644	13.64	406.6	412.3	3.31	29.53	3.97E+01	1.91E+01	3	Clays-Clay to Silty Clay	20	-99	24.46	0.11
47.722	15.82	624.2	630	2.51	30.07	3.98E+01	1.91E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	34.04	38.96	0.12
47.801	17.92	813.6	816.7	2.19	16.12	3.98E+01	1.91E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	35.72	51.59	-99
47.88	21.22	921.7	923.6	2.3	10.03	3.99E+01	1.92E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	36.48	58.78	-99
47.958	25.53	955.7	957.4	2.67	9	4.00E+01	1.92E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	36.69	61.05	-99
48.039	30.38	1026.7	1028.4	2.95	8.9	4.00E+01	1.92E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	37.11	65.78	-99
48.118	33.2	991.2	992.9	3.34	8.61	4.01E+01	1.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	36.89	63.41	-99
48.197	33.75	853.6	855.4	3.95	9.69	4.02E+01	1.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	35.96	54.23	-99
48.277	32.48	649.3	651.2	4.99	9.44	4.02E+01	1.93E+01	3	Clays-Clay to Silty Clay	31	-99	40.61	-99
48.357	29.52	428.8	430.8	6.85	10.38	4.03E+01	1.93E+01	3	Clays-Clay to Silty Clay	21	-99	25.9	-99
48.437	24.79	270.5	272.6	9.09	10.77	4.04E+01	1.94E+01	3	Clays-Clay to Silty Clay	13	-99	15.34	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
48.519	19.33	243.8	246	7.86	11.11	4.04E+01	1.94E+01	3	Clays-Clay to Silty Clay	12	-99	13.56	-99
48.598	15.01	240.9	242.8	6.18	10.23	4.05E+01	1.94E+01	3	Clays-Clay to Silty Clay	12	-99	13.36	-99
48.677	12.24	243.8	245.8	4.98	9.94	4.06E+01	1.95E+01	3	Clays-Clay to Silty Clay	12	-99	13.55	-99
48.757	10.92	237.9	239.9	4.55	10.13	4.06E+01	1.95E+01	3	Clays-Clay to Silty Clay	11	-99	13.15	-99
48.836	10.52	196.5	198.5	5.3	10.57	4.07E+01	1.95E+01	3	Clays-Clay to Silty Clay	9	-99	10.39	-99
48.917	10.43	190.6	192.7	5.41	11.26	4.08E+01	1.96E+01	3	Clays-Clay to Silty Clay	9	-99	9.99	-99
48.993	10.27	225.7	228.5	4.5	14.41	4.08E+01	1.96E+01	3	Clays-Clay to Silty Clay	11	-99	12.32	-99
49.071	11.01	221.2	224.1	4.91	14.85	4.09E+01	1.96E+01	3	Clays-Clay to Silty Clay	11	-99	12.02	-99
49.151	11.55	172.3	175.2	6.6	14.65	4.10E+01	1.97E+01	3	Clays-Clay to Silty Clay	8	-99	8.76	-99
49.231	11.52	207.9	210.6	5.47	14.26	4.10E+01	1.97E+01	3	Clays-Clay to Silty Clay	10	-99	11.12	-99
49.31	11.2	151.6	154.3	7.26	13.77	4.11E+01	1.97E+01	2	Organic Soils-Peats	11	-99	7.37	-99
49.389	10.9	160.5	163.2	6.68	13.92	4.12E+01	1.98E+01	3	Clays-Clay to Silty Clay	8	-99	7.96	-99
49.469	10.38	139.7	142.2	7.3	12.88	4.12E+01	1.98E+01	3	Clays-Clay to Silty Clay	7	-99	6.57	-99
49.549	10.08	107.2	109.7	9.19	13.38	4.13E+01	1.98E+01	3	Clays-Clay to Silty Clay	5	-99	4.39	-99
49.628	9.66	90.9	93.4	10.34	13.13	4.14E+01	1.99E+01	3	Clays-Clay to Silty Clay	4	-99	3.3	-99
49.708	9.16	71.6	74	12.37	12.59	4.14E+01	1.99E+01	-99		-99	-99	2.01	-99
49.789	8.68	19.7	22.1	39.34	12.05	4.15E+01	1.99E+01	-99		-99	-99	-1.45	-99
49.869	8.28	7.9	10.3	80.25	12.49	4.16E+01	2.00E+01	-99		-99	-99	-2.24	-99
49.949	7.71	-12.8	-10.4	-74.44	12.88	4.16E+01	2.00E+01	-99		-99	-99	-3.63	-99
50.029	6.97	-5.4	-2.9	-238.5	12.98	4.17E+01	2.00E+01	-99		-99	-99	-3.14	-99
50.108	6.33	-11.4	-8.9	-71.07	12.69	4.18E+01	2.00E+01	-99		-99	-99	-3.54	-99
50.189	6.11	-15.8	-13.4	-45.44	12.25	4.18E+01	2.01E+01	-99		-99	-99	-3.84	-99
50.268	6.12	-29.1	-26.7	-22.93	12.54	4.19E+01	2.01E+01	-99		-99	-99	-4.73	-99
50.348	5.94	-36.5	-34.2	-17.38	12.15	4.20E+01	2.01E+01	-99		-99	-99	-5.23	-99
50.429	5.58	-41	-38.8	-14.39	11.36	4.20E+01	2.02E+01	-99		-99	-99	-5.53	-99
50.508	5.56	-23.2	-20.9	-26.56	11.75	4.21E+01	2.02E+01	-99		-99	-99	-4.35	-99
50.588	5.6	-8.4	-5.9	-95.36	13.03	4.22E+01	2.02E+01	-99		-99	-99	-3.37	-99
50.669	5.18	12.3	15.1	34.28	14.36	4.22E+01	2.03E+01	-99		-99	-99	-1.99	-99
50.749	5.3	55.3	58.1	9.13	14.61	4.23E+01	2.03E+01	-99		-99	-99	0.87	-99
50.829	5.86	79	81.7	7.17	14.16	4.24E+01	2.03E+01	3	Clays-Clay to Silty Clay	4	-99	2.44	-99
50.909	6.63	68.6	71.1	9.32	12.93	4.24E+01	2.04E+01	-99		-99	-99	1.75	-99
50.988	7.77	62.7	65.2	11.92	12.88	4.25E+01	2.04E+01	-99		-99	-99	1.35	-99
51.069	10.06	111.6	114	8.83	12.49	4.26E+01	2.04E+01	3	Clays-Clay to Silty Clay	5	-99	4.6	-99
51.148	12.38	202	204.3	6.06	11.85	4.26E+01	2.05E+01	3	Clays-Clay to Silty Clay	10	-99	10.62	-99
51.227	14.35	233.1	235	6.11	10.03	4.27E+01	2.05E+01	3	Clays-Clay to Silty Clay	11	-99	12.69	-99
51.307	16.64	185.7	187.2	8.89	8.02	4.28E+01	2.05E+01	3	Clays-Clay to Silty Clay	9	-99	9.53	-99
51.387	20.18	150.1	151.9	13.29	9.25	4.28E+01	2.06E+01	3	Clays-Clay to Silty Clay	7	-99	7.15	-99
51.467	24.47	188.6	190.7	12.83	10.87	4.29E+01	2.06E+01	3	Clays-Clay to Silty Clay	9	-99	9.72	-99
51.546	26.76	442	444.3	6.02	12.2	4.30E+01	2.06E+01	3	Clays-Clay to Silty Clay	21	-99	26.6	-99
51.625	27.88	630.1	632.6	4.41	12.74	4.30E+01	2.07E+01	3	Clays-Clay to Silty Clay	30	-99	39.14	-99
51.704	29.61	650.8	653.7	4.53	14.65	4.31E+01	2.07E+01	3	Clays-Clay to Silty Clay	31	-99	40.52	-99
51.782	32.48	553.1	556.4	5.84	17.11	4.32E+01	2.07E+01	3	Clays-Clay to Silty Clay	27	-99	33.99	-99
51.863	35.62	473.1	475.5	7.49	12.44	4.32E+01	2.08E+01	3	Clays-Clay to Silty Clay	23	-99	28.66	-99
51.943	32.36	427.1	429.3	7.54	11.02	4.33E+01	2.08E+01	3	Clays-Clay to Silty Clay	21	-99	25.59	-99
52.023	28.59	387.1	389.5	7.34	12.05	4.34E+01	2.08E+01	3	Clays-Clay to Silty Clay	19	-99	22.92	-99
52.102	28.82	313.1	315.7	9.13	13.77	4.34E+01	2.08E+01	3	Clays-Clay to Silty Clay	15	-99	17.98	-99
52.181	28.95	301.2	304.5	9.51	16.82	4.35E+01	2.09E+01	3	Clays-Clay to Silty Clay	14	-99	17.18	-99
52.25	28.69	277.5	280.7	10.22	16.42	4.35E+01	2.09E+01	3	Clays-Clay to Silty Clay	13	-99	15.6	-99
52.32	28.37	470.5	472.3	6.01	9.16	4.36E+01	2.09E+01	3	Clays-Clay to Silty Clay	23	-99	28.46	-99
52.398	27.89	442.4	443.8	6.28	7.54	4.37E+01	2.10E+01	3	Clays-Clay to Silty Clay	21	-99	26.58	-99
52.477	27.32	446.8	448.1	6.1	6.7	4.37E+01	2.10E+01	3	Clays-Clay to Silty Clay	21	-99	26.87	-99
52.557	26.7	400.9	402.1	6.64	6.26	4.38E+01	2.10E+01	3	Clays-Clay to Silty Clay	19	-99	23.81	-99
52.636	24.92	346.1	347.2	7.18	5.92	4.39E+01	2.11E+01	3	Clays-Clay to Silty Clay	17	-99	20.15	-99
52.716	22.01	255.8	257	8.56	6.16	4.39E+01	2.11E+01	3	Clays-Clay to Silty Clay	12	-99	14.12	-99
52.794	19.75	163.9	165.1	11.96	5.87	4.40E+01	2.11E+01	3	Clays-Clay to Silty Clay	8	-99	8	-99
52.874	18.15	116.5	118.4	15.33	9.55	4.41E+01	2.12E+01	-99		-99	-99	4.83	-99
52.954	15.27	78	80.5	18.97	12.85	4.41E+01	2.12E+01	-99		-99	-99	2.26	-99
53.033	14.43	76.6	80.6	17.91	20.81	4.42E+01	2.12E+01	-99		-99	-99	2.16	-99
53.113	13.9	107.7	110.7	12.55	15.9	4.43E+01	2.13E+01	-99		-99	-99	4.23	-99
53.193	14.53	126.9	130.3	11.14	17.81	4.43E+01	2.13E+01	3	Clays-Clay to Silty Clay	6	-99	5.51	-99
53.272	14.48	149.1	152.9	9.47	19.48	4.44E+01	2.13E+01	3	Clays-Clay to Silty Clay	7	-99	6.98	-99
53.352	14.07	138.8	142.7	9.86	20.56	4.45E+01	2.13E+01	3	Clays-Clay to Silty Clay	7	-99	6.29	-99
53.431	13.28	73.6	77.3	17.16	19.43	4.45E+01	2.14E+01	-99		-99	-99	1.94	-99
53.511	12.82	48.4	51.8	24.76	17.32	4.46E+01	2.14E+01	-99		-99	-99	0.25	-99
53.59	13.1	20.3	24	54.67	19.14	4.47E+01	2.14E+01	-99		-99	-99	-1.63	-99
53.669	13.58	82.5	86.6	15.67	21.55	4.47E+01	2.15E+01	-99		-99	-99	2.52	-99
53.749	14.97	143.2	147.4	10.15	21.94	4.48E+01	2.15E+01	3	Clays-Clay to Silty Clay	7	-99	6.56	-99
53.829	18.04	221.7	224.8	8.03	15.85	4.49E+01	2.15E+01	3	Clays-Clay to Silty Clay	11	-99	11.79	-99
53.908	21.54	298.7	301.4	7.15	13.78	4.49E+01	2.16E+01	3	Clays-Clay to Silty Clay	14	-99	16.92	-99
53.987	24.3	344.6	347.7	6.99	15.85	4.50E+01	2.16E+01	3	Clays-Clay to Silty Clay	17	-99	19.98	-99
54.065	25	349.1	350.7	7.13	8.47	4.51E+01	2.16E+01	3	Clays-Clay to Silty Clay	17	-99	20.27	-99
54.144	23.8	328.3	329.7	7.22	6.85	4.51E+01	2.17E+01	3	Clays-Clay to Silty Clay	16	-99	18.88	-99
54.225	23.97	309.1	310.4	7.72	6.7	4.52E+01	2.17E+01	3	Clays-Clay to Silty Clay	15	-99	17.59	-99
54.305	25.04	258.7	260	9.63	6.65	4.53E+01	2.17E+01	3	Clays-Clay to Silty Clay	12	-99	14.23	-99
54.384	24.32	172.8	174.8	13.91	10.19	4.53E+01	2.18E+01	3	Clays-Clay to Silty Clay	8	-99	8.5	-99
54.464	22.27	196.5	199.6	11.16	16.14	4.54E+01	2.18E+01	3	Clays-Clay to Silty Clay	9	-99	10.08	-99
54.542	18.64	437.9	442.9	4.21	25.77	4.55E+01	2.18E+01	3	Clays-Clay to Silty Clay	21	-99	26.17	0.01
54.619	14.18	802.3	807.3	1.76	25.97	4.55E+01	2.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	34.79	50.45	0.01
54.698	15	1208.1	1210.2	1.24	10.83	4.56E+01	2.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	29	37.31	77.5	-99
54.775	22.29	1476.1	1477.9	1.51	9.21	4.57E+01	2.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	35	38.48	95.37	-99
54.854	29.1	1523.5	1525.1	1.91	8.23	4.57E+01	2.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	37	38.65	98.52	-99
54.934	32.6	1194.7	1195.4	2.73	3.16	4.58E+01	2.20E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	29	37.21	76.6	-99
55.014	31.13	959.3	959.6	3.24	1.59	4.58E+01	2.20E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	35.87	60.89	-99
55.081	22.99	550.5	551.1	4.17	3.12	4.59E+01	2.20E+01	3	Clays-Clay to Silty Clay	26	-99	33.64	-99
55.16	13.82	338.7	340.7	4.06	10.24	4.60E+01	2.21E+01	3	Clays-Clay to Silty Clay	16	-99	19.52	-99
55.239	13.53	208.4	212	6.38	18.89	4.60E+01	2.21E+01	3	Clays-Clay to Silty Clay	10	-99	10.82	-99
55.319	12.35	143.2	148	8.34	24.94	4.61E+01	2.21E+01	3	Clays-Clay to Silty Clay	7	-99	6.47	0
55.398	10.73	165.4	172.3	6.23	35.41	4.62E+01	2.22E+01	3	Clays-Clay to Silty Clay	8	-99	7.95	0.13
55.471	9.75	145.7	154	6.33	42.94	4.62E+01	2.22E+01	2	Organic Soils-Peats	10	-99	6.63	0.26
55.55	10.18	204.9	215.5	4.72	55.07	4.63E+01	2.22E+01	3	Clays-Clay to Silty Clay	10	-99	10.57	0.53
55.629	11.57	233	242.9	4.76	51.34	4.64E+01	2.23E+01	3	Clays-Clay to Silty Clay	11	-99	12.44	0.44
55.709	12.95	236	246.5	5.25	54.78	4.64E+01	2.23E+01	3	Clays-Clay to Silty Clay	11	-99	12.64	0.52
55.788	14.84	270	280.4	5.29	54.04	4.65E+01	2.23E+01	3	Clays-Clay to Silty Clay	13	-99	14.9	0.5
55.867	16.93	246.3	257.9	6.57	59.69	4.66E+01	2.24E+01	3	Clays-Clay to Silty Clay	12	-99	13.32	0.64
55.947	18.49	256.7	270.4	6.84	71.14	4.66E+01	2.24E+01	3	Clays-Clay to Silty Clay	12	-99	14	0.94
56.026	19.65	304.1	316.8	6.2	66.12	4.67E+01	2.24E+01	3	Clays-Clay to Silty Clay	15	-99	17.16	0.8
56.105	21.12	329.2	341.1	6.19	61.41	4.68E+01	2.24E+01	3	Clays-Clay to Silty Clay	16	-99	18.83	0.67
56.184	23.23	378.1	390.2	5.95	63.03	4.68E+01	2.25E+01	3	Clays-Clay to Silty Clay	18	-99	22.08	0.71
56.263	25.06	385.5	398.1	6.29	65.24	4.69E+01	2.25E+01	3	Clays-Clay to Silty Clay	19	-99	22.57	0.77
56.344	26.57	388.4	400.4	6.64	62.05	4.70E+01	2.25E+01	3	Clays-Clay to Silty Clay	19	-99	22.77	0.68
56.424	27.86	400.3	411.8	6.76	59.54	4.70E+01	2.26E+01	3	Clays-Clay to Silty Clay	19	-99	23.55	0.62
56.503	29.1	398.8	412.9	7.05	73	4.71E+01	2.26E+01	3	Clays-Clay to Silty Clay	19	-99	23.45	0.98
56.583	30.37	401.8	415.4	7.31	70.55	4.72E+01	2.26E+01	3	Clays-Clay to Silty Clay	19	-99	23.64	0.9
56.662	30.67	406.2	420.8	7.29	75.75	4.72E+01	2.27E+01	3	Clays-Clay to Silty Clay	19	-99	23.93	1.05

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
56.742	29.74	409.2	423.6	7.02	74.77	4.73E+01	2.27E+01	3	Clays-Clay to Silty Clay	20	-99	24.13	1.02
56.821	28.94	398.8	413.2	7	74.82	4.74E+01	2.27E+01	3	Clays-Clay to Silty Clay	19	-99	23.43	1.02
56.9	28.09	385.5	402.5	6.98	87.94	4.74E+01	2.28E+01	3	Clays-Clay to Silty Clay	19	-99	22.54	1.41
56.98	27.05	381	399.4	6.77	95.21	4.75E+01	2.28E+01	3	Clays-Clay to Silty Clay	18	-99	22.24	1.64
57.058	25.49	382.5	399.9	6.37	89.8	4.76E+01	2.28E+01	3	Clays-Clay to Silty Clay	18	-99	22.33	1.46
57.139	23.95	379.6	396	6.05	85.04	4.76E+01	2.29E+01	3	Clays-Clay to Silty Clay	18	-99	22.13	1.31
57.219	23.53	388.4	405.8	5.8	89.71	4.77E+01	2.29E+01	3	Clays-Clay to Silty Clay	19	-99	22.72	1.45
57.298	24.22	388.4	407.1	5.95	96.44	4.78E+01	2.29E+01	3	Clays-Clay to Silty Clay	19	-99	22.71	1.66
57.377	24.9	382.5	400.2	6.22	91.52	4.78E+01	2.30E+01	3	Clays-Clay to Silty Clay	18	-99	22.31	1.5
57.456	25.79	376.6	394.2	6.54	91.33	4.79E+01	2.30E+01	3	Clays-Clay to Silty Clay	18	-99	21.91	1.49
57.535	26.44	385.5	401.1	6.59	80.67	4.80E+01	2.30E+01	3	Clays-Clay to Silty Clay	19	-99	22.5	1.16
57.615	26.26	385.5	400.4	6.56	77.42	4.80E+01	2.31E+01	3	Clays-Clay to Silty Clay	19	-99	22.5	1.06
57.694	25.16	373.6	390.3	6.45	86.07	4.81E+01	2.31E+01	3	Clays-Clay to Silty Clay	18	-99	21.7	1.31
57.774	24.13	355.9	374	6.45	93.78	4.81E+01	2.31E+01	3	Clays-Clay to Silty Clay	17	-99	20.52	1.55
57.852	23.41	341.1	361	6.49	103.17	4.82E+01	2.31E+01	3	Clays-Clay to Silty Clay	16	-99	19.52	1.86
57.931	22.52	335.1	357.2	6.3	114.22	4.83E+01	2.32E+01	3	Clays-Clay to Silty Clay	16	-99	19.12	2.23
58.011	21.28	341.1	363.8	5.85	117.81	4.83E+01	2.32E+01	3	Clays-Clay to Silty Clay	16	-99	19.52	2.36
58.091	20.81	364.7	383.3	5.43	95.9	4.84E+01	2.32E+01	3	Clays-Clay to Silty Clay	18	-99	21.09	1.6
58.17	21.32	357.3	374.2	5.7	87.45	4.85E+01	2.33E+01	3	Clays-Clay to Silty Clay	17	-99	20.59	1.33
58.249	22.46	341.1	361.5	6.21	105.77	4.85E+01	2.33E+01	3	Clays-Clay to Silty Clay	16	-99	19.5	1.92
58.327	23.14	333.7	352.8	6.56	98.89	4.86E+01	2.33E+01	3	Clays-Clay to Silty Clay	16	-99	19	1.69
58.407	22.51	304.1	321.8	7	92.11	4.87E+01	2.34E+01	3	Clays-Clay to Silty Clay	15	-99	17.03	1.47
58.487	21.77	324.8	342.2	6.36	90.34	4.87E+01	2.34E+01	3	Clays-Clay to Silty Clay	16	-99	18.4	1.41
58.565	22.08	336.6	354.2	6.23	90.88	4.88E+01	2.34E+01	3	Clays-Clay to Silty Clay	16	-99	19.19	1.42
58.644	23.13	336.6	356.5	6.49	103.17	4.89E+01	2.35E+01	3	Clays-Clay to Silty Clay	16	-99	19.18	1.81
58.723	25.07	354.4	371.8	6.74	90.34	4.89E+01	2.35E+01	3	Clays-Clay to Silty Clay	17	-99	20.36	1.4
58.802	26.68	354.4	370.3	7.21	82.19	4.90E+01	2.35E+01	3	Clays-Clay to Silty Clay	17	-99	20.36	1.15
58.871	27.62	291.4	303.2	9.11	60.97	4.91E+01	2.36E+01	3	Clays-Clay to Silty Clay	14	-99	16.16	0.59
58.95	28.32	303.3	315.8	8.97	65.1	4.91E+01	2.36E+01	3	Clays-Clay to Silty Clay	15	-99	16.94	0.69
59.026	32.04	298.8	311.8	10.27	67.11	4.92E+01	2.36E+01	3	Clays-Clay to Silty Clay	14	-99	16.64	0.74
59.105	35.8	267.7	282.4	12.67	76.26	4.93E+01	2.36E+01	3	Clays-Clay to Silty Clay	13	-99	14.56	0.97
59.183	34.26	230.6	247	13.87	84.87	4.93E+01	2.37E+01	3	Clays-Clay to Silty Clay	11	-99	12.09	1.21
59.26	31.42	212.9	229.2	13.71	84.48	4.94E+01	2.37E+01	3	Clays-Clay to Silty Clay	10	-99	10.9	1.2
59.339	27.73	202.5	220.5	12.57	93.18	4.95E+01	2.37E+01	3	Clays-Clay to Silty Clay	10	-99	10.2	1.45
59.415	24.48	770.1	789.9	3.1	102.23	4.95E+01	2.38E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	33.98	48.04	1.74
59.494	19.17	767.2	789.5	2.43	115.42	4.96E+01	2.38E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	33.95	47.84	2.17
59.573	14.06	780.5	805.3	1.75	128.2	4.96E+01	2.38E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	34.05	48.73	2.62
59.651	13.66	785	810.9	1.68	134.45	4.97E+01	2.39E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	34.08	49.02	2.84
59.729	14.17	804.2	831	1.71	138.44	4.98E+01	2.39E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	34.23	50.3	2.98
59.807	14.69	816.1	841.4	1.75	131.2	4.98E+01	2.39E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	34.31	51.08	2.71
59.885	14.95	374.4	397	3.77	116.84	4.99E+01	2.40E+01	3	Clays-Clay to Silty Clay	18	-99	21.63	2.19
59.964	15.13	378.9	401.6	3.77	117.63	5.00E+01	2.40E+01	3	Clays-Clay to Silty Clay	18	-99	21.93	2.21
60.043	15.57	371.5	393.1	3.96	111.97	5.00E+01	2.40E+01	3	Clays-Clay to Silty Clay	18	-99	21.43	2.02
60.119	16.32	358.1	379.2	4.3	109.17	5.01E+01	2.41E+01	3	Clays-Clay to Silty Clay	17	-99	20.53	1.92
60.199	17.43	370	387.9	4.49	92.94	5.02E+01	2.41E+01	3	Clays-Clay to Silty Clay	18	-99	21.32	1.41
60.276	18.4	344.8	360.2	5.11	80.1	5.02E+01	2.41E+01	3	Clays-Clay to Silty Clay	17	-99	19.64	1.04
60.356	19.19	303.3	317.8	6.04	75.43	5.03E+01	2.41E+01	3	Clays-Clay to Silty Clay	15	-99	16.87	0.91
60.435	19.7	289.9	302.9	6.5	67.31	5.04E+01	2.42E+01	3	Clays-Clay to Silty Clay	14	-99	15.97	0.7
60.513	19.67	275.1	287.4	6.84	63.87	5.04E+01	2.42E+01	3	Clays-Clay to Silty Clay	13	-99	14.98	0.62
60.592	19.18	261.8	273.2	7.02	58.95	5.05E+01	2.42E+01	3	Clays-Clay to Silty Clay	13	-99	14.09	0.5
60.669	18.06	224.7	236.6	7.64	61.31	5.06E+01	2.43E+01	3	Clays-Clay to Silty Clay	11	-99	11.61	0.56
60.747	16.32	206.9	218.1	7.48	58.06	5.06E+01	2.43E+01	2	Organic Soils-Peats	15	-99	10.42	0.48
60.827	13.85	239.5	249.5	5.55	51.82	5.07E+01	2.43E+01	3	Clays-Clay to Silty Clay	11	-99	12.59	0.35
60.905	12.11	257.3	267.4	4.53	52.01	5.08E+01	2.44E+01	3	Clays-Clay to Silty Clay	12	-99	13.77	0.35
60.983	11.74	257.3	267.8	4.38	54.33	5.08E+01	2.44E+01	3	Clays-Clay to Silty Clay	12	-99	13.77	0.4
61.061	11.25	257.3	268.6	4.19	58.41	5.09E+01	2.44E+01	3	Clays-Clay to Silty Clay	12	-99	13.76	0.48
61.139	10.46	264.7	276.2	3.79	59.29	5.10E+01	2.45E+01	3	Clays-Clay to Silty Clay	13	-99	14.25	0.5
61.218	10.24	266.2	277.2	3.7	56.79	5.10E+01	2.45E+01	3	Clays-Clay to Silty Clay	13	-99	14.35	0.45
61.298	10.98	266.2	278.3	3.95	62.54	5.11E+01	2.45E+01	3	Clays-Clay to Silty Clay	13	-99	14.34	0.57
61.375	11.7	266.2	278.9	4.2	65.69	5.12E+01	2.46E+01	3	Clays-Clay to Silty Clay	13	-99	14.34	0.64
61.454	12.39	278.1	290.4	4.27	63.82	5.12E+01	2.46E+01	3	Clays-Clay to Silty Clay	13	-99	15.12	0.59
61.532	13.85	279.6	290.9	4.76	58.9	5.13E+01	2.46E+01	3	Clays-Clay to Silty Clay	13	-99	15.22	0.48
61.611	16.56	310.7	322.2	5.14	59.88	5.13E+01	2.46E+01	3	Clays-Clay to Silty Clay	15	-99	17.29	0.5
61.689	19.9	383.3	396.2	5.02	66.57	5.14E+01	2.47E+01	3	Clays-Clay to Silty Clay	18	-99	22.13	0.65
61.766	22.85	553.8	565.2	4.04	59.1	5.15E+01	2.47E+01	3	Clays-Clay to Silty Clay	27	-99	33.49	0.48
61.843	25.3	645.6	653.8	3.87	42.37	5.15E+01	2.47E+01	3	Clays-Clay to Silty Clay	31	-99	39.61	0.17
61.92	28.28	718.3	722.9	3.91	24.08	5.16E+01	2.48E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	33.25	44.44	-99
61.998	31.94	651.6	655.3	4.87	19.06	5.17E+01	2.48E+01	3	Clays-Clay to Silty Clay	31	-99	39.99	-99
62.075	33.96	505	508.9	6.67	20.23	5.17E+01	2.48E+01	3	Clays-Clay to Silty Clay	24	-99	30.22	-99
62.154	32.51	413.2	415.9	7.82	14.04	5.18E+01	2.49E+01	3	Clays-Clay to Silty Clay	20	-99	24.09	-99
62.233	29.37	362.8	366.1	8.02	16.79	5.19E+01	2.49E+01	3	Clays-Clay to Silty Clay	17	-99	20.73	-99
62.313	29.76	278.4	283	10.52	23.62	5.19E+01	2.49E+01	3	Clays-Clay to Silty Clay	13	-99	15.1	-99
62.393	31.05	356.9	363.5	8.54	33.99	5.20E+01	2.50E+01	3	Clays-Clay to Silty Clay	17	-99	20.33	0.05
62.47	33.58	629.4	637.4	5.27	41.65	5.21E+01	2.50E+01	3	Clays-Clay to Silty Clay	30	-99	38.49	0.15
62.549	37.29	614.6	618.6	6.03	20.82	5.21E+01	2.50E+01	3	Clays-Clay to Silty Clay	29	-99	37.5	-99
62.628	40.55	743.4	746.7	5.43	17.43	5.22E+01	2.51E+01	3	Clays-Clay to Silty Clay	36	-99	46.08	-99
62.706	43.47	761.1	764.1	5.69	15.56	5.23E+01	2.51E+01	3	Clays-Clay to Silty Clay	37	-99	47.26	-99
62.786	46.43	839.6	842.9	5.51	16.89	5.23E+01	2.51E+01	3	Clays-Clay to Silty Clay	40	-99	52.49	-99
62.866	48.12	850	853.2	5.64	16.59	5.24E+01	2.52E+01	3	Clays-Clay to Silty Clay	41	-99	53.17	-99
62.945	46.55	861.8	864.2	5.39	12.52	5.25E+01	2.52E+01	3	Clays-Clay to Silty Clay	41	-99	53.96	-99
63.025	41.86	770	772	5.42	10.16	5.25E+01	2.52E+01	3	Clays-Clay to Silty Clay	37	-99	47.83	-99
63.104	39.16	670.8	672.6	5.82	9.27	5.26E+01	2.52E+01	3	Clays-Clay to Silty Clay	32	-99	41.22	-99
63.184	38.48	601.2	603.6	6.37	12.37	5.27E+01	2.53E+01	3	Clays-Clay to Silty Clay	29	-99	36.57	-99
63.264	35.59	590.9	594.7	5.98	19.98	5.27E+01	2.53E+01	3	Clays-Clay to Silty Clay	28	-99	35.88	-99
63.342	28.95	590.9	593.8	4.87	15.46	5.28E+01	2.53E+01	3	Clays-Clay to Silty Clay	28	-99	35.87	-99
63.422	23.89	490.2	492.8	4.85	13.45	5.29E+01	2.54E+01	3	Clays-Clay to Silty Clay	24	-99	29.15	-99
63.502	21.98	420.6	424.5	5.18	20.38	5.29E+01	2.54E+01	3	Clays-Clay to Silty Clay	20	-99	24.51	-99
63.582	20.61	382.1	388.7	5.3	34.53	5.30E+01	2.54E+01	3	Clays-Clay to Silty Clay	18	-99	21.94	0.05
63.662	17.87	361.4	368	4.86	34.38	5.31E+01	2.55E+01	3	Clays-Clay to Silty Clay	17	-99	20.55	0.05
63.742	15.27	322.9	328.3	4.65	28.04	5.31E+01	2.55E+01	3	Clays-Clay to Silty Clay	15	-99	17.98	0
63.822	14.09	300.6	306.8	4.59	31.83	5.32E+01	2.55E+01	3	Clays-Clay to Silty Clay	14	-99	16.5	0.03
63.901	14.84	299.2	305.1	4.86	30.5	5.33E+01	2.56E+01	3	Clays-Clay to Silty Clay	14	-99	16.39	0.01
63.981	16.27	245.9	252.6	6.44	34.73	5.33E+01	2.56E+01	3	Clays-Clay to Silty Clay	12	-99	12.84	0.05
64.061	15.09	262.2	267.7	5.64	28.58	5.34E+01	2.56E+01	3	Clays-Clay to Silty Clay	13	-99	13.92	0
64.14	13.39	253.3	259.2	5.16	30.7	5.35E+01	2.57E+01	3	Clays-Clay to Silty Clay	12	-99	13.32	0.01
64.22	11.29	251.8	259.2	4.35	38.26	5.35E+01	2.57E+01	3	Clays-Clay to Silty Clay	12	-99	13.22	0.09
64.299	11.55	519.8	527.5	2.19	39.74	5.36E+01	2.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	19	30.8	31.08	0.11
64.379	11.45	547.9	555.5	2.06	39.35	5.37E+01	2.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	31.16	32.95	0.1
64.459	12.78	584.9	592.2	2.16	37.82	5.37E+01	2.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	31.6	35.41	0.08
64.54	13	362.8	370.3	3.51	38.9	5.38E+01	2.58E+01	3	Clays-Clay to Silty Clay	17	-99	20.6	0.1
64.619	13.47	385	392.6	3.43	39.25	5.39E+01	2.59E+01	3	Clays-Clay to Silty Clay	18	-99	22.08	0.1
64.699	13.9	327.3	332.5	4.18	26.72	5.39E+01	2.59E+01	3	Clays-Clay to Silty Clay	16	-99	18.23	-99
64.778	13.42	275.5	282.8	4.75	38.02	5.40E+01	2.59E+01	3	Clays-Clay to Silty Clay	13	-99	14.77	0.08
64.858	12.8	247.3	255.3	5.01	40.97	5.41E+01	2.59E+01	3	Clays-Clay to Silty Clay	12	-99	12.89	0.12

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
64.939	12.36	247.3	255.3	4.84	41.41	5.41E+01	2.60E+01	3	Clays-Clay to Silty Clay	12	-99	12.88	0.13
65.018	12.7	266.6	275	4.62	43.42	5.42E+01	2.60E+01	3	Clays-Clay to Silty Clay	13	-99	14.16	0.15
65.097	13.78	297.7	305.7	4.51	41.26	5.43E+01	2.60E+01	3	Clays-Clay to Silty Clay	14	-99	16.23	0.12
65.176	14.25	302.1	309.8	4.6	39.64	5.43E+01	2.61E+01	3	Clays-Clay to Silty Clay	15	-99	16.52	0.1
65.246	13.52	302.5	307	4.41	23.41	5.44E+01	2.61E+01	3	Clays-Clay to Silty Clay	15	-99	16.54	-99
65.327	12.72	267	272.8	4.66	30.04	5.44E+01	2.61E+01	3	Clays-Clay to Silty Clay	13	-99	14.17	0.01
65.405	13.53	247.7	254.9	5.31	36.96	5.45E+01	2.62E+01	3	Clays-Clay to Silty Clay	12	-99	12.88	0.07
65.486	14.63	241.8	250.3	5.85	43.88	5.46E+01	2.62E+01	3	Clays-Clay to Silty Clay	12	-99	12.48	0.16
65.565	15.39	255.1	264.3	5.82	47.32	5.46E+01	2.62E+01	3	Clays-Clay to Silty Clay	12	-99	13.37	0.21
65.645	15.84	289.1	298.2	5.31	46.78	5.47E+01	2.63E+01	3	Clays-Clay to Silty Clay	14	-99	15.63	0.2
65.725	16.95	354.2	364.3	4.65	52.28	5.48E+01	2.63E+01	3	Clays-Clay to Silty Clay	17	-99	19.96	0.29
65.803	18.12	410.4	420.3	4.31	50.95	5.48E+01	2.63E+01	3	Clays-Clay to Silty Clay	20	-99	23.71	0.26
65.883	19.03	428.2	437.8	4.35	49.63	5.49E+01	2.64E+01	3	Clays-Clay to Silty Clay	21	-99	24.89	0.24
65.962	20.34	417.8	425.8	4.78	41.53	5.50E+01	2.64E+01	3	Clays-Clay to Silty Clay	20	-99	24.19	0.12
66.041	22.79	406	414.4	5.5	43.29	5.50E+01	2.64E+01	3	Clays-Clay to Silty Clay	19	-99	23.4	0.14
66.122	25.16	407.5	416.3	6.04	45.65	5.51E+01	2.65E+01	3	Clays-Clay to Silty Clay	20	-99	23.49	0.18
66.203	26.77	416.4	424.4	6.31	41.53	5.52E+01	2.65E+01	3	Clays-Clay to Silty Clay	20	-99	24.08	0.12
66.283	28.08	411.9	418.7	6.71	35	5.52E+01	2.65E+01	3	Clays-Clay to Silty Clay	20	-99	23.78	0.04
66.362	29.35	397.1	404.8	7.25	39.76	5.53E+01	2.65E+01	3	Clays-Clay to Silty Clay	19	-99	22.79	0.09
66.441	30.16	392.7	401.9	7.5	47.71	5.54E+01	2.66E+01	3	Clays-Clay to Silty Clay	19	-99	22.49	0.2
66.521	28.87	397.1	406.5	7.1	48.35	5.54E+01	2.66E+01	3	Clays-Clay to Silty Clay	19	-99	22.78	0.21
66.601	27.35	406	415.9	6.58	51.15	5.55E+01	2.66E+01	3	Clays-Clay to Silty Clay	19	-99	23.37	0.26
66.679	26.84	404.5	415.6	6.46	57.19	5.56E+01	2.67E+01	3	Clays-Clay to Silty Clay	19	-99	23.26	0.36
66.759	25.78	400.1	412.3	6.25	63.27	5.56E+01	2.67E+01	3	Clays-Clay to Silty Clay	19	-99	22.96	0.47
66.838	24.48	395.6	407.9	6	63.37	5.57E+01	2.67E+01	3	Clays-Clay to Silty Clay	19	-99	22.66	0.47
66.918	24.14	397.1	408.6	5.91	59.25	5.58E+01	2.68E+01	3	Clays-Clay to Silty Clay	19	-99	22.76	0.39
66.998	23.7	397.1	409.3	5.79	63.08	5.58E+01	2.68E+01	3	Clays-Clay to Silty Clay	19	-99	22.75	0.46
67.078	23.36	403	415.5	5.62	64.45	5.59E+01	2.68E+01	3	Clays-Clay to Silty Clay	19	-99	23.14	0.49
67.157	23.22	416.4	427.5	5.43	57.82	5.60E+01	2.69E+01	3	Clays-Clay to Silty Clay	20	-99	24.03	0.36
67.236	22.5	423.7	435	5.17	58.17	5.60E+01	2.69E+01	3	Clays-Clay to Silty Clay	20	-99	24.51	0.37
67.316	23.02	419.3	430.7	5.34	58.9	5.61E+01	2.69E+01	3	Clays-Clay to Silty Clay	20	-99	24.21	0.38
67.396	24.39	431.1	442.2	5.52	57.28	5.62E+01	2.70E+01	3	Clays-Clay to Silty Clay	21	-99	25	0.35
67.475	24.29	414.9	425.5	5.71	55.27	5.62E+01	2.70E+01	3	Clays-Clay to Silty Clay	20	-99	23.91	0.31
67.554	24.31	407.5	418.1	5.81	55.12	5.63E+01	2.70E+01	3	Clays-Clay to Silty Clay	20	-99	23.41	0.31
67.633	23.75	437.1	448.4	5.3	58.66	5.64E+01	2.71E+01	3	Clays-Clay to Silty Clay	21	-99	25.38	0.37
67.712	22.97	463.7	475.4	4.83	60.77	5.64E+01	2.71E+01	3	Clays-Clay to Silty Clay	22	-99	27.15	0.41
67.792	22.79	466.6	478.4	4.76	60.67	5.65E+01	2.71E+01	3	Clays-Clay to Silty Clay	22	-99	27.34	0.4
67.873	21.09	453.3	464.4	4.54	57.09	5.66E+01	2.72E+01	3	Clays-Clay to Silty Clay	22	-99	26.45	0.34
67.952	18.51	398.6	410.1	4.51	59.3	5.66E+01	2.72E+01	3	Clays-Clay to Silty Clay	19	-99	22.8	0.38
68.032	16.91	369	380.9	4.44	61.75	5.67E+01	2.72E+01	3	Clays-Clay to Silty Clay	18	-99	20.82	0.42
68.11	15.44	342.4	354.5	4.35	62.88	5.68E+01	2.72E+01	3	Clays-Clay to Silty Clay	16	-99	19.04	0.44
68.189	14.11	326.1	338.7	4.16	65.09	5.68E+01	2.73E+01	3	Clays-Clay to Silty Clay	16	-99	17.95	0.48
68.271	12.07	332	343.6	3.51	59.84	5.69E+01	2.73E+01	3	Clays-Clay to Silty Clay	16	-99	18.34	0.38
68.349	11.57	320.2	332.3	3.48	62.78	5.70E+01	2.73E+01	3	Clays-Clay to Silty Clay	15	-99	17.55	0.43
68.428	12.81	302.5	315.1	4.07	65.24	5.70E+01	2.74E+01	3	Clays-Clay to Silty Clay	15	-99	16.36	0.48
68.508	14.35	303.9	317.1	4.52	68.13	5.71E+01	2.74E+01	3	Clays-Clay to Silty Clay	15	-99	16.46	0.53
68.587	16.33	314.3	328	4.98	71.18	5.72E+01	2.74E+01	3	Clays-Clay to Silty Clay	15	-99	17.14	0.59
68.661	17.97	348.5	361.4	4.97	67.11	5.72E+01	2.75E+01	3	Clays-Clay to Silty Clay	17	-99	19.42	0.51
68.74	19.96	428.4	444.2	4.49	81.89	5.73E+01	2.75E+01	3	Clays-Clay to Silty Clay	21	-99	24.74	0.82
68.819	22.52	526.1	540.8	4.16	75.9	5.74E+01	2.75E+01	3	Clays-Clay to Silty Clay	25	-99	31.25	0.69
68.898	24.69	517.2	532.7	4.63	79.98	5.74E+01	2.76E+01	3	Clays-Clay to Silty Clay	25	-99	30.65	0.77
68.978	26.44	521.7	538	4.91	84.84	5.75E+01	2.76E+01	3	Clays-Clay to Silty Clay	25	-99	30.95	0.88
69.056	28.32	552.8	568.7	4.98	82.53	5.76E+01	2.76E+01	3	Clays-Clay to Silty Clay	27	-99	33.01	0.82
69.137	30.09	539.4	555.4	5.42	82.88	5.76E+01	2.77E+01	3	Clays-Clay to Silty Clay	26	-99	32.12	0.83
69.216	31.25	538	554.3	5.64	84.74	5.77E+01	2.77E+01	3	Clays-Clay to Silty Clay	26	-99	32.02	0.87
69.296	30.3	549.8	566.7	5.35	87.45	5.78E+01	2.77E+01	3	Clays-Clay to Silty Clay	26	-99	32.8	0.93
69.376	30.83	564.6	581.9	5.3	89.56	5.78E+01	2.78E+01	3	Clays-Clay to Silty Clay	27	-99	33.79	0.97
69.456	31.86	582.4	601.4	5.3	98.4	5.79E+01	2.78E+01	3	Clays-Clay to Silty Clay	28	-99	34.97	1.18
69.535	32.45	635.7	656.4	4.94	107.44	5.80E+01	2.78E+01	3	Clays-Clay to Silty Clay	31	-99	38.51	1.41
69.614	33.21	647.5	663.3	5.01	81.8	5.80E+01	2.79E+01	3	Clays-Clay to Silty Clay	31	-99	39.3	0.79
69.693	35.02	659.3	673.6	5.2	74.08	5.81E+01	2.79E+01	3	Clays-Clay to Silty Clay	32	-99	40.08	0.63
69.773	38.7	634.2	649.7	5.96	80.18	5.81E+01	2.79E+01	3	Clays-Clay to Silty Clay	30	-99	38.4	0.75
69.853	41.05	635.7	649.5	6.32	71.68	5.82E+01	2.79E+01	3	Clays-Clay to Silty Clay	31	-99	38.5	0.58
69.932	40.54	628.2	642.2	6.31	72.41	5.83E+01	2.80E+01	3	Clays-Clay to Silty Clay	30	-99	38	0.59
70.012	39.1	629.7	641.7	6.09	62	5.83E+01	2.80E+01	3	Clays-Clay to Silty Clay	30	-99	38.09	0.39
70.09	37.05	603.1	614.7	6.03	60.03	5.84E+01	2.80E+01	3	Clays-Clay to Silty Clay	29	-99	36.31	0.36
70.17	33.93	591.2	603.3	5.62	62.39	5.85E+01	2.81E+01	3	Clays-Clay to Silty Clay	28	-99	35.52	0.4
70.251	31.65	551.3	562.9	5.62	60.23	5.85E+01	2.81E+01	3	Clays-Clay to Silty Clay	26	-99	32.85	0.36
70.331	30.02	484.7	496.2	6.05	59.89	5.86E+01	2.81E+01	3	Clays-Clay to Silty Clay	23	-99	28.4	0.35
70.411	29.16	409.2	420.7	6.93	59.64	5.87E+01	2.82E+01	3	Clays-Clay to Silty Clay	20	-99	23.37	0.35
70.49	28.39	349.9	362.1	7.84	62.88	5.87E+01	2.82E+01	3	Clays-Clay to Silty Clay	17	-99	19.41	0.4
70.57	27.07	317.4	330.4	8.19	67.5	5.88E+01	2.82E+01	3	Clays-Clay to Silty Clay	15	-99	17.24	0.48
70.65	28.11	312.9	327.4	8.59	74.72	5.89E+01	2.83E+01	3	Clays-Clay to Silty Clay	15	-99	16.94	0.62
70.73	30.7	351.4	367.2	8.36	81.5	5.89E+01	2.83E+01	3	Clays-Clay to Silty Clay	17	-99	19.5	0.76
70.81	33.84	431.4	447.2	7.57	82.19	5.90E+01	2.83E+01	3	Clays-Clay to Silty Clay	21	-99	24.82	0.77
70.888	37.37	508.3	521.8	7.16	69.91	5.91E+01	2.84E+01	3	Clays-Clay to Silty Clay	24	-99	29.95	0.52
70.967	41.1	579.4	590.9	6.95	59.49	5.91E+01	2.84E+01	3	Clays-Clay to Silty Clay	28	-99	34.68	0.34
71.047	44.25	675.6	683.8	6.47	42.45	5.92E+01	2.84E+01	3	Clays-Clay to Silty Clay	32	-99	41.09	0.09
71.126	46.16	770.4	777	5.94	34.63	5.93E+01	2.85E+01	3	Clays-Clay to Silty Clay	37	-99	47.41	0.02
71.204	46.72	869.5	874.4	5.34	25.35	5.93E+01	2.85E+01	3	Clays-Clay to Silty Clay	42	-99	54.01	-99
71.281	46.04	961.3	964.9	4.77	18.62	5.94E+01	2.85E+01	3	Clays-Clay to Silty Clay	46	-99	60.13	-99
71.359	43.85	982	984.6	4.45	13.17	5.95E+01	2.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	34.37	61.51	-99
71.44	41.92	967.2	969.5	4.32	11.69	5.95E+01	2.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	34.26	60.51	-99
71.518	41.17	939.1	941.1	4.37	10.07	5.96E+01	2.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	34.07	58.63	-99
71.597	35.19	931.7	933.4	3.77	8.94	5.97E+01	2.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	34.01	58.14	-99
71.676	26.37	921.4	923	2.86	8.65	5.97E+01	2.87E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	33.93	57.44	-99
71.755	26.58	930.2	931.9	2.85	8.45	5.98E+01	2.87E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	33.98	58.03	-99
71.834	29.22	968.7	970.2	3.01	7.81	5.99E+01	2.87E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	34.24	60.59	-99
71.913	31.91	1001.3	1002.7	3.18	7.27	5.99E+01	2.88E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	34.44	62.76	-99
71.992	33.52	1063.2	1064.3	3.15	5.49	6.00E+01	2.88E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	34.82	66.88	-99
72.071	34.73	1046.9	1047.8	3.32	4.6	6.01E+01	2.88E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	34.72	65.79	-99
72.15	36.43	996.6	997.5	3.65	4.6	6.01E+01	2.89E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	34.39	62.43	-99
72.228	37.71	980.3	981.1	3.84	4.36	6.02E+01	2.89E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	34.28	61.34	-99
72.308	37.66	947.7	948.6	3.97	4.41	6.03E+01	2.89E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	34.05	59.16	-99
72.386	37.5	956.6	957.4	3.92	4.21	6.03E+01	2.90E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	34.11	59.75	-99
72.465	37.95	989.2	990	3.83	4.11	6.04E+01	2.90E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	34.32	61.92	-99
72.544	39.44	1032.1	1032.8	3.82	3.62	6.05E+01	2.90E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	34.58	64.78	-99
72.622	41.11	1033.6	1034.1	3.98	2.79	6.05E+01	2.91E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	34.58	64.87	-99
72.702	42.56	1021.7	1022.2	4.16	2.34	6.06E+01	2.91E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	34.5	64.08	-99
72.782	43.91	958.1	958.5	4.58	2.44	6.07E+01	2.91E+01	3	Clays-Clay to Silty Clay	46	-99	59.83	-99
72.861	44.95	887	887.5	5.06	2.79	6.07E+01	2.91E+01	3	Clays-Clay to Silty Clay	43	-99	55.09	-99
72.941	44.9	888.5	889.1	5.05	3.03	6.08E+01	2.92E+01	3	Clays-Clay to Silty Clay	43	-99	55.18	-99
73.021	44.85	946.2	946.8	4.74	3.13	6.09E+01	2.92E+01	3	Clays-Clay to Silty Clay	45	-99	59.02	-99
73.098	44.81	1029.1	1029.8	4.35	3.33	6.09E+01	2.92E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	34.52	64.55	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
73.177	43.11	1140.2	1140.9	3.78	3.42	6.10E+01	2.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	35.16	71.95	-99
73.256	41.24	1286.8	1287.4	3.2	3.13	6.11E+01	2.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	46	35.91	81.72	-99
73.334	41.15	1371.2	1371.6	3	2.39	6.11E+01	2.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	36.3	87.34	-99
73.413	43.11	1504.4	1505	2.86	2.79	6.12E+01	2.94E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	54	36.86	96.22	-99
73.49	45.41	1673.2	1673.6	2.71	1.9	6.12E+01	2.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	40	37.49	107.47	-99
73.569	45.55	1873.1	1873.5	2.43	2	6.13E+01	2.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	45	38.15	120.79	-99
73.649	45.38	2058.2	2058.7	2.2	2.44	6.14E+01	2.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	49	38.69	133.12	-99
73.729	46.68	2296.6	2297.2	2.03	2.98	6.14E+01	2.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	39.31	149.01	-99
73.808	46.87	2506.9	2507.4	1.87	2.74	6.15E+01	2.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	39.79	163.02	-99
73.874	44.31	2502.4	2502.8	1.77	1.85	6.16E+01	2.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	39.78	162.72	-99
73.953	38.53	2438.7	2439.1	1.58	1.75	6.16E+01	2.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	59	39.63	158.47	-99
74.033	32.84	2289.2	2289.6	1.43	1.95	6.17E+01	2.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	39.27	148.5	-99
74.112	29.2	2139.6	2140.2	1.36	2.98	6.18E+01	2.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	51	38.88	138.53	-99
74.192	26.9	2013.8	2014.8	1.34	5	6.18E+01	2.97E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	38.52	130.13	-99
74.271	25.79	1905.7	1907	1.35	6.62	6.19E+01	2.97E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	46	38.19	122.92	-99
74.351	26.29	1768	1769.2	1.49	6.13	6.20E+01	2.97E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	42	37.75	113.74	-99
74.432	28.1	1608.1	1608.8	1.75	3.82	6.20E+01	2.98E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	39	37.17	103.07	-99
74.513	30.33	1394.9	1395.5	2.17	3.42	6.21E+01	2.98E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	33	36.3	88.85	-99
74.592	32.32	1214.2	1214.8	2.66	2.79	6.22E+01	2.98E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	44	35.44	76.8	-99
74.672	34.36	1076.5	1077.1	3.19	2.84	6.22E+01	2.99E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	34.67	67.62	-99
74.75	37.29	974.4	974.9	3.83	3.08	6.23E+01	2.99E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	34.02	60.8	-99
74.83	41.97	815.9	816.6	5.14	3.77	6.24E+01	2.99E+01	3	Clays-Clay to Silty Clay	39	-99	50.24	-99
74.91	42.43	802.6	803.7	5.28	5.83	6.24E+01	3.00E+01	3	Clays-Clay to Silty Clay	39	-99	49.34	-99
74.988	39.66	876.6	878.5	4.51	9.71	6.25E+01	3.00E+01	3	Clays-Clay to Silty Clay	42	-99	54.28	-99
75.067	40.65	955.1	956.8	4.25	9.03	6.26E+01	3.00E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	33.86	59.5	-99
75.145	42.03	980.3	981.9	4.28	8.34	6.26E+01	3.01E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	34.02	61.18	-99
75.223	45.14	845.5	847.9	5.32	12.02	6.27E+01	3.01E+01	3	Clays-Clay to Silty Clay	41	-99	52.19	-99
75.301	45.47	707.8	712.5	6.38	24.64	6.28E+01	3.01E+01	3	Clays-Clay to Silty Clay	34	-99	43	-99
75.379	46.59	712.2	718.7	6.48	33.67	6.28E+01	3.02E+01	3	Clays-Clay to Silty Clay	34	-99	43.29	0
75.456	49.19	805.4	812.7	6.05	37.8	6.29E+01	3.02E+01	3	Clays-Clay to Silty Clay	39	-99	49.5	0.03
75.532	50.73	1193	1203.8	4.21	56.2	6.29E+01	3.02E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	35.25	75.33	0.23
75.608	55.93	1567.2	1576.1	3.55	46.29	6.30E+01	3.02E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	56	36.93	100.28	0.11
75.686	63.43	1873.4	1876.5	3.38	16.1	6.31E+01	3.03E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	67	37.98	120.69	-99
75.762	70.07	2022.8	2025.6	3.46	14.72	6.31E+01	3.03E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	73	38.42	130.64	-99
75.839	80.53	2191.4	2195	3.67	18.7	6.32E+01	3.03E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	79	38.88	141.88	-99
75.915	92.71	2354.1	2357	3.93	15.02	6.33E+01	3.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	85	39.28	152.73	-99
75.99	99.59	2636.7	2640	3.77	17.28	6.33E+01	3.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	95	39.91	171.56	-99
76.067	103.59	2900	2903.1	3.57	16.15	6.34E+01	3.04E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	70	40.43	189.11	-99
76.148	105.29	3086.4	3089.1	3.41	14.28	6.35E+01	3.05E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	74	40.77	201.53	-99
76.227	101.37	2787.6	2789.7	3.63	10.84	6.35E+01	3.05E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	67	40.2	181.6	-99
76.305	99.08	2672.2	2677	3.7	24.84	6.36E+01	3.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	96	39.96	173.91	-99
76.382	99.81	2583.4	2588.3	3.86	25.33	6.37E+01	3.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	93	39.77	167.99	-99
76.461	100.05	2621.9	2627	3.81	26.21	6.37E+01	3.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	94	39.85	170.54	-99
76.54	96.17	2762.4	2765.4	3.48	15.61	6.38E+01	3.06E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	66	40.13	179.91	-99
76.618	86.5	2586.4	2588.8	3.34	12.61	6.39E+01	3.07E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	62	39.76	168.17	-99
76.697	75.41	2366	2369	3.18	15.41	6.39E+01	3.07E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	57	39.25	153.47	-99
76.774	69.55	2552.4	2555.9	2.72	18.45	6.40E+01	3.07E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	61	39.67	165.89	-99
76.851	65.02	2684	2687.1	2.42	15.9	6.40E+01	3.07E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	64	39.95	174.67	-99
76.93	50.3	2726.9	2729.3	1.84	12.46	6.41E+01	3.08E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	65	40.03	177.52	-99
77.009	32.54	2644.1	2645.6	1.23	7.8	6.42E+01	3.08E+01	6	Sands-Clean Sand to Silty Sand	42	39.85	-99	-99
77.087	28.34	2558.3	2559.6	1.11	6.72	6.42E+01	3.08E+01	6	Sands-Clean Sand to Silty Sand	41	39.67	-99	-99
77.165	28.9	2459.2	2459.9	1.17	3.97	6.43E+01	3.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	59	39.44	159.66	-99
77.244	31.99	2324.6	2325.1	1.38	2.94	6.44E+01	3.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	56	39.11	150.68	-99
77.318	37.38	2241.8	2242.1	1.67	1.31	6.44E+01	3.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	38.9	145.16	-99
77.392	44.79	2256.6	2256.7	1.98	0.43	6.45E+01	3.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	38.93	146.14	-99
77.469	52.88	2315.9	2315.8	2.28	-0.31	6.46E+01	3.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	56	39.07	150.09	-99
77.547	58.65	2286.2	2285.5	2.57	-4.04	6.46E+01	3.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	39	148.11	-99
77.626	62.5	2289.2	2288.3	2.73	-4.54	6.47E+01	3.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	39	148.3	-99
77.704	68.71	2307	2306.2	2.98	-4	6.48E+01	3.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	39.04	149.48	-99
77.781	77.25	2487.6	2487	3.11	-3.26	6.48E+01	3.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	39.46	161.52	-99
77.858	84.78	2668.3	2667.9	3.18	-1.83	6.49E+01	3.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	64	39.84	173.56	-99
77.937	86.65	2392.8	2392.4	3.62	-2.32	6.50E+01	3.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	86	39.23	155.19	-99
78.003	80.83	1997.5	1997	4.05	-2.72	6.50E+01	3.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	72	38.18	128.83	-99
78.083	67.87	1603.6	1603.1	4.23	-3.06	6.51E+01	3.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	58	36.87	102.57	-99
78.163	57.95	1168.3	1167.9	4.96	-2.37	6.51E+01	3.13E+01	3	Clays-Clay to Silty Clay	56	-99	73.55	-99
78.242	51.37	961	961.2	5.34	0.72	6.52E+01	3.13E+01	3	Clays-Clay to Silty Clay	46	-99	59.72	-99
78.321	43.95	767.1	767.6	5.73	2.93	6.53E+01	3.13E+01	3	Clays-Clay to Silty Clay	37	-99	46.79	-99
78.402	35.22	644.2	644.8	5.46	3.08	6.53E+01	3.14E+01	3	Clays-Clay to Silty Clay	31	-99	38.59	-99
78.482	28.37	614.6	615.2	4.61	3.33	6.54E+01	3.14E+01	3	Clays-Clay to Silty Clay	29	-99	36.61	-99
78.561	25.09	570.1	570.8	4.4	3.28	6.55E+01	3.14E+01	3	Clays-Clay to Silty Clay	27	-99	33.64	-99
78.641	22.98	521.3	521.9	4.4	3.18	6.55E+01	3.15E+01	3	Clays-Clay to Silty Clay	25	-99	30.38	-99
78.72	21.23	490.2	490.8	4.33	3.18	6.56E+01	3.15E+01	3	Clays-Clay to Silty Clay	24	-99	28.3	-99
78.802	19.87	447.2	447.8	4.44	3.18	6.57E+01	3.15E+01	3	Clays-Clay to Silty Clay	21	-99	25.44	-99
78.877	18.65	416.8	417.3	4.47	2.95	6.57E+01	3.16E+01	3	Clays-Clay to Silty Clay	20	-99	23.4	-99
78.956	17.64	384.2	384.9	4.58	3.64	6.58E+01	3.16E+01	3	Clays-Clay to Silty Clay	18	-99	21.23	-99
79.037	17.16	397.5	398.2	4.31	3.54	6.59E+01	3.16E+01	3	Clays-Clay to Silty Clay	19	-99	22.11	-99
79.115	16.12	363.5	364.2	4.43	3.49	6.59E+01	3.17E+01	3	Clays-Clay to Silty Clay	17	-99	19.84	-99
79.195	15.32	385.7	386.4	3.97	3.45	6.60E+01	3.17E+01	3	Clays-Clay to Silty Clay	19	-99	21.31	-99
79.276	13.92	323.6	324.2	4.29	3.35	6.61E+01	3.17E+01	3	Clays-Clay to Silty Clay	16	-99	17.17	-99
79.356	12.77	319.2	319.8	3.99	3.54	6.61E+01	3.17E+01	3	Clays-Clay to Silty Clay	15	-99	16.87	-99
79.436	12.45	320.6	321.3	3.87	3.45	6.62E+01	3.18E+01	3	Clays-Clay to Silty Clay	15	-99	16.96	-99
79.515	12.32	332.5	333.2	3.7	3.49	6.63E+01	3.18E+01	3	Clays-Clay to Silty Clay	16	-99	17.75	-99
79.594	11.76	245.2	245.9	4.78	3.4	6.63E+01	3.18E+01	3	Clays-Clay to Silty Clay	12	-99	11.93	-99
79.675	11.56	190.5	191.1	6.05	3.2	6.64E+01	3.19E+01	2	Organic Soils-Peats	14	-99	8.27	-99
79.755	11.06	162.4	163	6.79	3.15	6.65E+01	3.19E+01	3	Clays-Clay to Silty Clay	8	-99	6.4	-99
79.835	10.69	196.4	197	5.43	3.05	6.65E+01	3.19E+01	2	Organic Soils-Peats	14	-99	8.66	-99
79.914	10.69	169.8	170.4	6.27	3	6.66E+01	3.20E+01	3	Clays-Clay to Silty Clay	8	-99	6.88	-99
79.993	11.93	183.1	183.7	6.49	3	6.67E+01	3.20E+01	3	Clays-Clay to Silty Clay	9	-99	7.76	-99
80.074	13.69	163.9	164.5	8.32	2.95	6.67E+01	3.20E+01	3	Clays-Clay to Silty Clay	8	-99	6.48	-99
80.154	16.5	282.2	282.9	5.83	3.49	6.68E+01	3.21E+01	3	Clays-Clay to Silty Clay	14	-99	14.36	-99
80.232	19.48	456.7	457.5	4.26	4.33	6.69E+01	3.21E+01	3	Clays-Clay to Silty Clay	22	-99	25.99	-99
80.312	22.16	578	578.9	3.83	4.62	6.69E+01	3.21E+01	3	Clays-Clay to Silty Clay	28	-99	34.07	-99
80.39	24.46	529.2	530	4.62	4.18	6.70E+01	3.22E+01	3	Clays-Clay to Silty Clay	25	-99	30.81	-99
80.471	25.65	459.7	460.5	5.57	4.57	6.71E+01	3.22E+01	3	Clays-Clay to Silty Clay	22	-99	26.17	-99
80.551	27.65	415.3	416.3	6.64	5.41	6.71E+01	3.22E+01	3	Clays-Clay to Silty Clay	20	-99	23.21	-99
80.63	31.42	603.1	604.5	5.2	7.13	6.72E+01	3.23E+01	3	Clays-Clay to Silty Clay	29	-99	35.73	-99
80.708	33.43	793.9	795.3	4.2	7.18	6.73E+01	3.23E+01	3	Clays-Clay to Silty Clay	38	-99	48.44	-99
80.787	32.43	770.2	771.8	4.2	7.91	6.73E+01	3.23E+01	3	Clays-Clay to Silty Clay	37	-99	46.86	-99
80.867	32.16	660.8	662.4	4.86	8.21	6.74E+01	3.24E+01	3	Clays-Clay to Silty Clay	32	-99	39.56	-99
80.948	33.54	585.4	587.8	5.71	12.53	6.75E+01	3.24E+01	3	Clays-Clay to Silty Clay	28	-99	34.53	-99
81.019	36.97	687.2	690.3	5.36	16.02	6.75E+01	3.24E+01	3	Clays-Clay to Silty Clay	33	-99	41.31	-99
81.097	40.67	708	711.5	5.72	18.19	6.76E+01	3.24E+01	3	Clays-Clay to Silty Clay	34	-99	42.69	-99
81.175	43.16	762.9	766.8	5.63	20.21	6.77E+01	3.25E+01	3	Clays-Clay to Silty Clay	37	-99	46.35	-99
81.255	43.99	752.5	754.3	5.83	9.22	6.77E+01	3.25E+01	3	Clays-Clay to Silty Clay	36	-99	45.66	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
81.334	43.52	699.1	701.1	6.21	10.2	6.78E+01	3.25E+01	3	Clays-Clay to Silty Clay	34	-99	42.09	-99
81.413	43.35	638.2	640.7	6.77	13.16	6.78E+01	3.26E+01	3	Clays-Clay to Silty Clay	31	-99	38.02	-99
81.492	41.47	584.7	587.7	7.06	15.48	6.79E+01	3.26E+01	3	Clays-Clay to Silty Clay	28	-99	34.45	-99
81.57	37.21	562.5	565.5	6.58	15.62	6.80E+01	3.26E+01	3	Clays-Clay to Silty Clay	27	-99	32.97	-99
81.648	33.83	552.1	555.1	6.09	15.57	6.80E+01	3.27E+01	3	Clays-Clay to Silty Clay	26	-99	32.27	-99
81.729	29.22	552.1	555.1	5.26	15.82	6.81E+01	3.27E+01	3	Clays-Clay to Silty Clay	26	-99	32.26	-99
81.807	26.74	540.2	543.2	4.92	15.72	6.82E+01	3.27E+01	3	Clays-Clay to Silty Clay	26	-99	31.47	-99
81.886	28.37	528.3	531	5.34	14.2	6.82E+01	3.28E+01	3	Clays-Clay to Silty Clay	25	-99	30.67	-99
81.964	27.57	486.7	489.5	5.63	14.29	6.83E+01	3.28E+01	3	Clays-Clay to Silty Clay	23	-99	27.89	-99
82.043	27.12	467.4	470.1	5.77	13.85	6.84E+01	3.28E+01	3	Clays-Clay to Silty Clay	22	-99	26.6	-99
82.121	26.26	262.7	264.8	9.92	10.92	6.84E+01	3.29E+01	3	Clays-Clay to Silty Clay	13	-99	12.95	-99
82.197	25.31	431.6	433.8	5.83	11.36	6.85E+01	3.29E+01	3	Clays-Clay to Silty Clay	21	-99	24.21	-99
82.275	24.58	381.2	383.3	6.41	10.82	6.86E+01	3.29E+01	3	Clays-Clay to Silty Clay	18	-99	20.84	-99
82.353	24.17	336.8	338.7	7.14	10.03	6.86E+01	3.29E+01	3	Clays-Clay to Silty Clay	16	-99	17.88	-99
82.432	23.12	283.4	285.1	8.11	8.8	6.87E+01	3.30E+01	3	Clays-Clay to Silty Clay	14	-99	14.32	-99
82.511	21.11	252.3	253.9	8.31	8.26	6.88E+01	3.30E+01	3	Clays-Clay to Silty Clay	12	-99	12.24	-99
82.589	18.34	216.8	218.3	8.4	7.77	6.88E+01	3.30E+01	3	Clays-Clay to Silty Clay	10	-99	9.86	-99
82.668	16.17	200.5	202	8.01	7.72	6.89E+01	3.31E+01	3	Clays-Clay to Silty Clay	10	-99	8.77	-99
82.749	14.25	166.4	167.9	8.49	7.67	6.90E+01	3.31E+01	3	Clays-Clay to Silty Clay	8	-99	6.5	-99
82.827	11.88	162	163.4	7.27	7.58	6.90E+01	3.31E+01	3	Clays-Clay to Silty Clay	8	-99	6.2	-99
82.906	10.23	145.7	147.1	6.96	7.38	6.91E+01	3.32E+01	3	Clays-Clay to Silty Clay	7	-99	5.11	-99
82.985	9.75	142.7	144.1	6.77	7.03	6.92E+01	3.32E+01	3	Clays-Clay to Silty Clay	7	-99	4.9	-99
83.063	8.54	136.8	138.2	6.18	7.23	6.92E+01	3.32E+01	3	Clays-Clay to Silty Clay	7	-99	4.5	-99
83.144	7.62	147.2	148.6	5.13	7.28	6.93E+01	3.33E+01	2	Organic Soils-Peats	11	-99	5.19	-99
83.222	7.99	162	163.4	4.89	7.23	6.94E+01	3.33E+01	2	Organic Soils-Peats	12	-99	6.17	-99
83.301	8.72	178.3	179.7	4.85	7.48	6.94E+01	3.33E+01	2	Organic Soils-Peats	13	-99	7.26	-99
83.38	9.54	170.9	172.4	5.53	7.77	6.95E+01	3.34E+01	2	Organic Soils-Peats	12	-99	6.76	-99
83.459	10.58	173.8	175.4	6.03	8.21	6.96E+01	3.34E+01	2	Organic Soils-Peats	13	-99	6.95	-99
83.54	10.59	228.6	230.3	4.6	8.66	6.96E+01	3.34E+01	3	Clays-Clay to Silty Clay	11	-99	10.6	-99
83.619	12.16	243.4	245.1	4.96	8.71	6.97E+01	3.35E+01	3	Clays-Clay to Silty Clay	12	-99	11.58	-99
83.698	15.46	258.3	259.9	5.95	8.76	6.98E+01	3.35E+01	3	Clays-Clay to Silty Clay	12	-99	12.57	-99
83.777	19.26	258.3	260	7.41	9.05	6.98E+01	3.35E+01	3	Clays-Clay to Silty Clay	12	-99	12.56	-99
83.855	24.4	344.2	346.2	7.05	10.33	6.99E+01	3.35E+01	3	Clays-Clay to Silty Clay	17	-99	18.29	-99
83.934	28.29	544.2	546.5	5.18	11.8	7.00E+01	3.36E+01	3	Clays-Clay to Silty Clay	26	-99	31.62	-99
84.013	30.61	716	718	4.26	10.13	7.00E+01	3.36E+01	3	Clays-Clay to Silty Clay	34	-99	43.07	-99
84.092	35.43	716	717.8	4.94	9.49	7.01E+01	3.36E+01	3	Clays-Clay to Silty Clay	34	-99	43.06	-99
84.17	38.55	827.1	829.1	4.65	10.03	7.01E+01	3.37E+01	3	Clays-Clay to Silty Clay	40	-99	50.46	-99
84.249	35.57	754.5	756.4	4.7	9.84	7.02E+01	3.37E+01	3	Clays-Clay to Silty Clay	36	-99	45.62	-99
84.328	32.85	643.4	644.8	5.09	7.08	7.03E+01	3.37E+01	3	Clays-Clay to Silty Clay	31	-99	38.21	-99
84.408	31.99	559	560.4	5.71	7.18	7.03E+01	3.38E+01	3	Clays-Clay to Silty Clay	27	-99	32.58	-99
84.488	28.73	442	443.6	6.48	8.66	7.04E+01	3.38E+01	3	Clays-Clay to Silty Clay	21	-99	24.77	-99
84.567	24.06	369.4	371.3	6.48	10.08	7.05E+01	3.38E+01	3	Clays-Clay to Silty Clay	18	-99	19.93	-99
84.646	20.63	317.5	319.1	6.47	8.26	7.05E+01	3.39E+01	3	Clays-Clay to Silty Clay	15	-99	16.46	-99
84.725	21.86	280.5	282.4	7.74	9.89	7.06E+01	3.39E+01	3	Clays-Clay to Silty Clay	13	-99	13.99	-99
84.804	25.68	289.4	291.6	8.8	11.75	7.07E+01	3.39E+01	3	Clays-Clay to Silty Clay	14	-99	14.58	-99
84.884	27.32	397.5	400.2	6.83	13.92	7.07E+01	3.40E+01	3	Clays-Clay to Silty Clay	19	-99	21.78	-99
84.961	34.04	668.6	671.6	5.07	15.49	7.08E+01	3.40E+01	3	Clays-Clay to Silty Clay	32	-99	39.85	-99
85.038	46.34	1043.4	1046.2	4.43	14.7	7.09E+01	3.40E+01	3	Clays-Clay to Silty Clay	50	-99	64.84	-99
85.114	55.26	1361.9	1364.5	4.05	13.23	7.09E+01	3.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	35.33	86.06	-99
85.193	59.73	1373.8	1375.5	4.34	9.25	7.10E+01	3.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	35.38	86.85	-99
85.26	61.28	1414.8	1416.2	4.33	7.16	7.11E+01	3.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	51	35.56	89.59	-99
85.34	60.81	1164.8	1167.4	5.21	13.05	7.11E+01	3.41E+01	3	Clays-Clay to Silty Clay	56	-99	72.92	-99
85.417	59.3	1397.1	1401.2	4.23	21.2	7.12E+01	3.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	50	35.47	88.39	-99
85.495	57.47	1763.9	1768.8	3.25	25.33	7.13E+01	3.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	64	36.9	112.85	-99
85.574	56.76	2034.6	2036.7	2.79	10.94	7.13E+01	3.42E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	49	37.75	130.89	-99
85.651	59.15	2213.6	2215.1	2.67	7.46	7.14E+01	3.43E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	53	38.24	142.82	-99
85.73	61.76	2167.8	2169.4	2.85	8.29	7.14E+01	3.43E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	52	38.11	139.76	-99
85.809	62.98	2096.8	2098.2	3	7.46	7.15E+01	3.43E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	50	37.91	135.02	-99
85.888	65.44	2050.9	2052.7	3.19	9.47	7.16E+01	3.44E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	74	37.77	131.96	-99
85.968	67.09	1935.5	1937.7	3.46	11.34	7.16E+01	3.44E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	70	37.42	124.26	-99
86.048	68.48	1818.7	1822.3	3.76	18.7	7.17E+01	3.44E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	65	37.04	116.46	-99
86.127	66.99	1798	1799.6	3.72	8.44	7.18E+01	3.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	65	36.97	115.08	-99
86.207	61.15	1691.5	1693.5	3.61	10.55	7.18E+01	3.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	61	36.59	107.97	-99
86.284	56.81	1682.6	1685.1	3.37	12.96	7.19E+01	3.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	61	36.55	107.38	-99
86.364	58.06	1607.1	1608.8	3.61	8.44	7.20E+01	3.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	58	36.27	102.34	-99
86.444	53.67	1463.6	1465.2	3.66	8.24	7.20E+01	3.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	53	35.68	92.77	-99
86.524	45.2	1216.6	1218.2	3.71	8.1	7.21E+01	3.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	44	34.51	76.3	-99
86.604	37.98	880.8	881.8	4.31	4.76	7.22E+01	3.46E+01	3	Clays-Clay to Silty Clay	42	-99	53.91	-99
86.685	30.35	568.7	569.9	5.33	6.38	7.22E+01	3.47E+01	3	Clays-Clay to Silty Clay	27	-99	33.1	-99
86.765	23.79	426.7	428	5.56	6.82	7.23E+01	3.47E+01	3	Clays-Clay to Silty Clay	20	-99	23.63	-99
86.846	17.94	392.7	394.2	4.55	7.75	7.24E+01	3.47E+01	3	Clays-Clay to Silty Clay	19	-99	21.35	-99
86.926	13.36	411.9	413.7	3.23	9.37	7.24E+01	3.48E+01	3	Clays-Clay to Silty Clay	20	-99	22.63	-99
87.006	11.18	373.5	375.5	2.98	10.35	7.25E+01	3.48E+01	3	Clays-Clay to Silty Clay	18	-99	20.06	-99
87.086	10.65	389.7	391.9	2.72	11.48	7.26E+01	3.48E+01	3	Clays-Clay to Silty Clay	19	-99	21.14	-99
87.165	10.23	373.5	375.9	2.72	12.46	7.26E+01	3.49E+01	3	Clays-Clay to Silty Clay	18	-99	20.05	-99
87.245	10.11	380.9	383.3	2.64	12.76	7.27E+01	3.49E+01	3	Clays-Clay to Silty Clay	18	-99	20.54	-99
87.325	10.83	357.2	359.8	3.01	13.59	7.28E+01	3.49E+01	3	Clays-Clay to Silty Clay	17	-99	18.96	-99
87.404	10.45	315.8	318.6	3.28	14.72	7.28E+01	3.50E+01	3	Clays-Clay to Silty Clay	15	-99	16.19	-99
87.484	9.6	311.3	314.3	3.06	15.41	7.29E+01	3.50E+01	3	Clays-Clay to Silty Clay	15	-99	15.9	-99
87.563	9.64	283.2	286.1	3.37	15.07	7.30E+01	3.50E+01	3	Clays-Clay to Silty Clay	14	-99	14.02	-99
87.644	9.84	315.8	318.7	3.09	15.07	7.30E+01	3.51E+01	3	Clays-Clay to Silty Clay	15	-99	16.18	-99
87.726	10.01	351.3	354.4	2.82	16.05	7.31E+01	3.51E+01	3	Clays-Clay to Silty Clay	17	-99	18.54	-99
87.805	10.39	422.3	425.6	2.44	17.08	7.32E+01	3.51E+01	3	Clays-Clay to Silty Clay	20	-99	23.27	-99
87.885	10.78	420.8	424.2	2.54	17.86	7.32E+01	3.52E+01	3	Clays-Clay to Silty Clay	20	-99	23.17	-99
87.965	11.09	481.4	485.1	2.29	19.19	7.33E+01	3.52E+01	3	Clays-Clay to Silty Clay	23	-99	27.21	-99
88.044	11.67	512.5	516.5	2.26	20.56	7.34E+01	3.52E+01	3	Clays-Clay to Silty Clay	25	-99	29.28	-99
88.125	11.9	522.9	527.3	2.26	23.22	7.34E+01	3.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	19	28.59	29.96	-99
88.205	12.88	542.1	546.8	2.36	24.59	7.35E+01	3.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	28.85	31.24	-99
88.285	13.72	559.8	564.8	2.43	25.72	7.36E+01	3.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	29.08	32.42	-99
88.365	13.64	562.8	568	2.4	26.95	7.36E+01	3.54E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	29.11	32.61	-99
88.432	13.68	574.6	580	2.36	27.88	7.37E+01	3.54E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	29.25	33.4	-99
88.514	13.8	595.3	600.9	2.3	28.62	7.38E+01	3.54E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	29.5	34.77	-99
88.595	14.13	523.1	529.2	2.67	31.24	7.38E+01	3.54E+01	3	Clays-Clay to Silty Clay	25	-99	29.95	-99
88.674	14.78	557.2	564.3	2.62	36.94	7.39E+01	3.55E+01	3	Clays-Clay to Silty Clay	27	-99	32.22	-99
88.754	15.97	586.8	594.4	2.69	39.35	7.40E+01	3.55E+01	3	Clays-Clay to Silty Clay	28	-99	34.19	0
88.834	18.42	577.9	586.1	3.14	42.2	7.40E+01	3.55E+01	3	Clays-Clay to Silty Clay	28	-99	33.59	0.01
88.913	21.39	632.7	641	3.34	42.79	7.41E+01	3.56E+01	3	Clays-Clay to Silty Clay	30	-99	37.24	0.02
88.993	22.26	666.7	675.5	3.3	45.29	7.42E+01	3.56E+01	3	Clays-Clay to Silty Clay	32	-99	39.5	0.03
89.073	23.6	754.1	762	3.1	41.12	7.42E+01	3.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	31.12	45.32	0.01
89.153	24.73	765.9	774	3.2	41.66	7.43E+01	3.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	31.22	46.11	0.01
89.235	25.6	740.8	749.8	3.41	46.92	7.44E+01	3.57E+01	3	Clays-Clay to Silty Clay	36	-99	44.43	0.04
89.315	26.53	686	695.5	3.81	49.42	7.44E+01	3.57E+01	3	Clays-Clay to Silty Clay	33	-99	40.77	0.06
89.395	26.45	628.2	639.4	4.14	57.53	7.45E+01	3.58E+01	3	Clays-Clay to Silty Clay	30	-99	36.92	0.13
89.475	25.51	650.5	661.9	3.85	59.44	7.46E+01	3.58E+01	3	Clays-Clay to Silty Clay	31	-99	38.39	0.15

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
89.555	24.53	654.9	665.7	3.68	56.1	7.46E+01	3.58E+01	3	Clays-Clay to Silty Clay	31	-99	38.68	0.12
89.634	24.18	665.3	675.6	3.58	53.7	7.47E+01	3.59E+01	3	Clays-Clay to Silty Clay	32	-99	39.37	0.09
89.715	24.13	643.1	653.2	3.69	52.47	7.48E+01	3.59E+01	3	Clays-Clay to Silty Clay	31	-99	37.89	0.08
89.795	24.64	651.9	661.2	3.73	48.14	7.48E+01	3.59E+01	3	Clays-Clay to Silty Clay	31	-99	38.47	0.05
89.875	25.32	632.7	642.4	3.94	50.06	7.49E+01	3.60E+01	3	Clays-Clay to Silty Clay	30	-99	37.19	0.06
89.955	25.42	614.9	624.4	4.07	49.03	7.50E+01	3.60E+01	3	Clays-Clay to Silty Clay	30	-99	36	0.05
90.035	25.35	594.2	602.6	4.21	43.43	7.50E+01	3.60E+01	3	Clays-Clay to Silty Clay	29	-99	34.61	0.02
90.116	25.66	601.6	609.4	4.21	40.19	7.51E+01	3.61E+01	3	Clays-Clay to Silty Clay	29	-99	35.1	0
90.196	26.38	623.8	631.9	4.17	42.1	7.52E+01	3.61E+01	3	Clays-Clay to Silty Clay	30	-99	36.58	0.01
90.275	27.74	569	576.1	4.81	36.8	7.52E+01	3.61E+01	3	Clays-Clay to Silty Clay	27	-99	32.92	-99
90.355	28.35	495	500.7	5.66	29.48	7.53E+01	3.61E+01	3	Clays-Clay to Silty Clay	24	-99	27.98	-99
90.434	27.78	529.1	534.1	5.2	25.94	7.54E+01	3.62E+01	3	Clays-Clay to Silty Clay	25	-99	30.25	-99
90.515	27.22	514.3	519.2	5.24	25.55	7.54E+01	3.62E+01	3	Clays-Clay to Silty Clay	25	-99	29.26	-99
90.595	26.44	502.4	507.3	5.21	25.1	7.55E+01	3.62E+01	3	Clays-Clay to Silty Clay	24	-99	28.46	-99
90.662	25.57	506.9	512.6	4.99	29.82	7.56E+01	3.63E+01	3	Clays-Clay to Silty Clay	24	-99	28.75	-99
90.742	25.57	549.8	556.3	4.6	33.5	7.56E+01	3.63E+01	3	Clays-Clay to Silty Clay	26	-99	31.61	-99
90.821	26.77	606	613.1	4.37	36.65	7.57E+01	3.63E+01	3	Clays-Clay to Silty Clay	29	-99	35.36	-99
90.901	27.28	705.2	713.2	3.82	41.12	7.58E+01	3.64E+01	3	Clays-Clay to Silty Clay	34	-99	41.96	0
90.981	28.22	767.4	775.2	3.64	40.28	7.58E+01	3.64E+01	3	Clays-Clay to Silty Clay	37	-99	46.11	0
91.061	30.45	724.5	730.2	4.17	29.62	7.59E+01	3.64E+01	3	Clays-Clay to Silty Clay	35	-99	43.24	-99
91.14	34.37	691.9	697.2	4.93	27.31	7.60E+01	3.65E+01	3	Clays-Clay to Silty Clay	33	-99	41.06	-99
91.219	39.15	691.9	698.6	5.61	34.44	7.60E+01	3.65E+01	3	Clays-Clay to Silty Clay	33	-99	41.06	-99
91.299	43.4	800	808.3	5.37	43.28	7.61E+01	3.65E+01	3	Clays-Clay to Silty Clay	38	-99	48.26	0.01
91.378	47.66	1106.4	1116.9	4.27	54.19	7.62E+01	3.66E+01	3	Clays-Clay to Silty Clay	53	-99	68.68	0.09
91.454	46.28	1541.6	1552.5	2.98	56.35	7.62E+01	3.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	55	35.66	97.69	0.11
91.53	44.75	2003.5	2010.9	2.23	38.47	7.63E+01	3.66E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	37.25	128.48	-99
91.606	48.72	2520.1	2524.3	1.93	21.86	7.63E+01	3.66E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	38.6	162.92	-99
91.686	53.16	2967.2	2970.1	1.79	15.28	7.64E+01	3.67E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	71	39.52	192.72	-99
91.761	55.55	3263.2	3266.1	1.7	15.08	7.65E+01	3.67E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	78	40.05	212.45	-99
91.839	55.92	3532.6	3535.3	1.58	13.76	7.65E+01	3.67E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	85	40.48	230.41	-99
91.916	55.95	3822.8	3825.5	1.46	14.05	7.66E+01	3.68E+01	6	Sands-Clean Sand to Silty Sand	61	40.91	-99	-99
91.994	56.77	3988.6	3991.5	1.42	15.18	7.67E+01	3.68E+01	6	Sands-Clean Sand to Silty Sand	64	41.13	-99	-99
92.072	58.95	4055.2	4058	1.45	14.59	7.67E+01	3.68E+01	6	Sands-Clean Sand to Silty Sand	65	41.21	-99	-99
92.149	60.77	4067	4069.6	1.49	13.41	7.68E+01	3.69E+01	6	Sands-Clean Sand to Silty Sand	65	41.23	-99	-99
92.229	61.57	4084.8	4087.2	1.51	12.43	7.69E+01	3.69E+01	6	Sands-Clean Sand to Silty Sand	65	41.24	-99	-99
92.307	60.68	4074.4	4076.7	1.49	11.84	7.69E+01	3.69E+01	6	Sands-Clean Sand to Silty Sand	65	41.23	-99	-99
92.387	59.12	4024.1	4026.2	1.47	10.91	7.70E+01	3.70E+01	6	Sands-Clean Sand to Silty Sand	64	41.16	-99	-99
92.468	57.57	3883.5	3885.5	1.48	10.56	7.71E+01	3.70E+01	6	Sands-Clean Sand to Silty Sand	62	40.96	-99	-99
92.547	56.23	3722.1	3724.2	1.51	10.81	7.71E+01	3.70E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	89	40.73	243	-99
92.626	54.78	3571.1	3573.1	1.53	10.22	7.72E+01	3.71E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	86	40.49	232.93	-99
92.705	52.6	3482.3	3484.2	1.51	9.92	7.73E+01	3.71E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	84	40.35	227	-99
92.783	50.16	3477.9	3479.7	1.44	9.48	7.73E+01	3.71E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	83	40.34	226.7	-99
92.862	51.33	3560.8	3562.5	1.44	8.94	7.74E+01	3.71E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	85	40.47	232.23	-99
92.94	50.77	3692.5	3694.7	1.37	11.25	7.75E+01	3.72E+01	6	Sands-Clean Sand to Silty Sand	59	40.66	-99	-99
93.017	47.9	3775.4	3777.5	1.27	10.81	7.75E+01	3.72E+01	6	Sands-Clean Sand to Silty Sand	60	40.77	-99	-99
93.095	44.52	3893.8	3896.1	1.14	11.54	7.76E+01	3.72E+01	6	Sands-Clean Sand to Silty Sand	62	40.94	-99	-99
93.171	43.09	3984.1	3986.2	1.08	10.46	7.76E+01	3.73E+01	6	Sands-Clean Sand to Silty Sand	64	41.06	-99	-99
93.25	43.98	4013.7	4015.8	1.1	10.71	7.77E+01	3.73E+01	6	Sands-Clean Sand to Silty Sand	64	41.09	-99	-99
93.316	44.52	3548.5	3552.5	1.25	21.05	7.78E+01	3.73E+01	6	Sands-Clean Sand to Silty Sand	57	40.42	-99	-99
93.385	44.83	4081.8	4084.6	1.1	14.85	7.78E+01	3.74E+01	6	Sands-Clean Sand to Silty Sand	65	41.17	-99	-99
93.451	44.86	4138	4140.3	1.08	11.8	7.79E+01	3.74E+01	6	Sands-Clean Sand to Silty Sand	66	41.24	-99	-99
93.52	44.84	3736.6	3739	1.2	12.49	7.79E+01	3.74E+01	6	Sands-Clean Sand to Silty Sand	60	40.69	-99	-99
93.596	48.11	3318.8	3321	1.45	11.31	7.80E+01	3.74E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	80	40.03	216.06	-99
93.675	55.41	3200.3	3203.7	1.73	17.46	7.81E+01	3.75E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	77	39.83	208.15	-99
93.752	60.12	3173.7	3176.9	1.89	16.97	7.81E+01	3.75E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	76	39.78	206.37	-99
93.832	62.96	3247.7	3250.4	1.94	13.62	7.82E+01	3.75E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	78	39.9	211.3	-99
93.91	74.78	3284.8	3288	2.27	16.62	7.83E+01	3.76E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	79	39.96	213.77	-99
93.987	89.56	3262.5	3267.6	2.74	26.45	7.83E+01	3.76E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	78	39.92	212.28	-99
94.063	96.99	3584	3590.3	2.7	32.85	7.84E+01	3.76E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	86	40.43	233.71	-99
94.138	100.02	4184	4189	2.39	25.77	7.85E+01	3.77E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	100	41.26	273.7	-99
94.215	64.49	4184	4195.4	1.54	59.29	7.85E+01	3.77E+01	6	Sands-Clean Sand to Silty Sand	67	41.26	-99	0.12
94.295	27.49	3930.7	3937.3	0.7	34.37	7.86E+01	3.77E+01	6	Sands-Clean Sand to Silty Sand	63	40.92	-99	-99
94.372	34.8	4114.3	4117	0.85	13.82	7.86E+01	3.78E+01	6	Sands-Clean Sand to Silty Sand	66	41.16	-99	-99
94.447	43.23	4330.6	4333	1	12.2	7.87E+01	3.78E+01	6	Sands-Clean Sand to Silty Sand	69	41.43	-99	-99
94.524	50.89	4449.1	4451.4	1.14	11.85	7.88E+01	3.78E+01	6	Sands-Clean Sand to Silty Sand	71	41.57	-99	-99
94.604	58.51	4481.7	4487.6	1.3	30.29	7.88E+01	3.78E+01	6	Sands-Clean Sand to Silty Sand	72	41.6	-99	-99
94.68	66.36	4631.4	4638.5	1.43	37.02	7.89E+01	3.79E+01	6	Sands-Clean Sand to Silty Sand	74	41.77	-99	-99
94.758	73.23	4567.7	4574.7	1.6	36.24	7.90E+01	3.79E+01	6	Sands-Clean Sand to Silty Sand	73	41.69	-99	-99
94.836	75.74	4545.4	4551.5	1.66	31.12	7.90E+01	3.79E+01	6	Sands-Clean Sand to Silty Sand	73	41.66	-99	-99
94.914	72.9	4489.1	4494.5	1.62	27.73	7.91E+01	3.80E+01	6	Sands-Clean Sand to Silty Sand	72	41.59	-99	-99
94.99	67.6	4418	4423	1.53	25.47	7.92E+01	3.80E+01	6	Sands-Clean Sand to Silty Sand	71	41.51	-99	-99
95.068	62.76	4298	4302.7	1.46	24.14	7.92E+01	3.80E+01	6	Sands-Clean Sand to Silty Sand	69	41.35	-99	-99
95.144	57.99	4154.3	4158.3	1.39	20.7	7.93E+01	3.81E+01	6	Sands-Clean Sand to Silty Sand	66	41.17	-99	-99
95.225	52.55	3969.2	3972.8	1.32	18.59	7.94E+01	3.81E+01	6	Sands-Clean Sand to Silty Sand	64	40.92	-99	-99
95.304	49.76	3755.9	3759.2	1.32	17.46	7.94E+01	3.81E+01	6	Sands-Clean Sand to Silty Sand	60	40.61	-99	-99
95.383	46.79	3501	3504.2	1.34	16.47	7.95E+01	3.82E+01	6	Sands-Clean Sand to Silty Sand	56	40.23	-99	-99
95.462	43.58	3247.7	3250.5	1.34	14.36	7.96E+01	3.82E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	78	39.8	211.21	-99
95.541	44.47	2918.9	2921.5	1.52	13.67	7.96E+01	3.82E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	70	39.2	189.28	-99
95.622	45.79	2504.1	2506.6	1.83	13.03	7.97E+01	3.83E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	38.31	161.63	-99
95.693	46.17	1942.6	1945	2.37	12.1	7.97E+01	3.83E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	47	36.8	124.19	-99
95.762	45.77	2184.1	2187.6	2.09	18.44	7.98E+01	3.83E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	52	37.5	140.29	-99
95.839	45.5	1751.5	1754.8	2.59	16.97	7.99E+01	3.83E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	63	36.16	111.44	-99
95.917	45.29	1350.1	1352.6	3.35	13.18	7.99E+01	3.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	34.51	84.67	-99
95.997	40.29	1163.4	1166.2	3.46	14.51	8.00E+01	3.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	33.54	72.23	-99
96.076	36.18	1156	1158.8	3.12	14.7	8.01E+01	3.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	33.49	71.73	-99
96.156	36.21	1096.7	1100.5	3.29	19.62	8.01E+01	3.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	33.14	67.77	-99
96.223	38.02	1151.5	1156.4	3.29	25.22	8.02E+01	3.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	33.46	71.42	-99
96.301	42.98	1147.1	1153.5	3.73	33.24	8.03E+01	3.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	33.43	71.12	-99
96.378	51.14	1240.4	1249	4.09	44.35	8.03E+01	3.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	33.94	77.34	0.01
96.454	55.94	1486.3	1496.1	3.74	50.35	8.04E+01	3.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	54	35.09	93.73	0.04
96.532	57.69	1893.7	1904.5	3.03	55.75	8.04E+01	3.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	68	36.59	120.89	0.08
96.609	65.26	2250.7	2258.9	2.89	42.14	8.05E+01	3.86E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	37.62	144.68	0
96.685	66.06	2464.1	2471	2.67	35.7	8.06E+01	3.87E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	59	38.15	158.9	-99
96.761	66.61	2798.9	2804.9	2.37	31.03	8.06E+01	3.87E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	67	38.89	181.22	-99
96.837	73.64	3065.5	3071	2.4	28.57	8.07E+01	3.87E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	74	39.4	198.99	-99
96.916	86.41	3030	3035.2	2.85	27.24	8.08E+01	3.88E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	73	39.33	196.61	-99
96.991	92.98	3232.9	3239.3	2.87	32.99	8.08E+01	3.88E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	78	39.69	210.14	-99
97.069	89.56	3541.2	3547.1	2.52	30.52	8.09E+01	3.88E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	85	40.19	230.69	-99
97.142	86.66	3979.2	3984.6	2.17	27.91	8.10E+01	3.89E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	96	40.82	259.89	-99
97.218	85.38	4247.1	4251.5	2.01	22.51	8.10E+01	3.89E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	102	41.17	277.74	-99
97.292	79.42	4349.2	4354.2	1.82	25.9	8.11E+01	3.89E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	104	41.29	284.54	-99
97.369	71.8	4495.8	4500	1.6	21.97	8.11E+01	3.90E+01	6	Sands-Clean Sand to Silty Sand	72	41.47	-99	-99
97.447	63.85	4563.8	4567	1.4	16.32	8.12E+01	3.90E+01	6	Sands-Clean Sand to Silty Sand	73	41.54	-99	-99
97.525	53.59	4571.2	4574.1	1.17	14.85	8.13E+01	3.90E+01	6	Sands-Clean Sand to Silty Sand	73	41.55	-99	-99

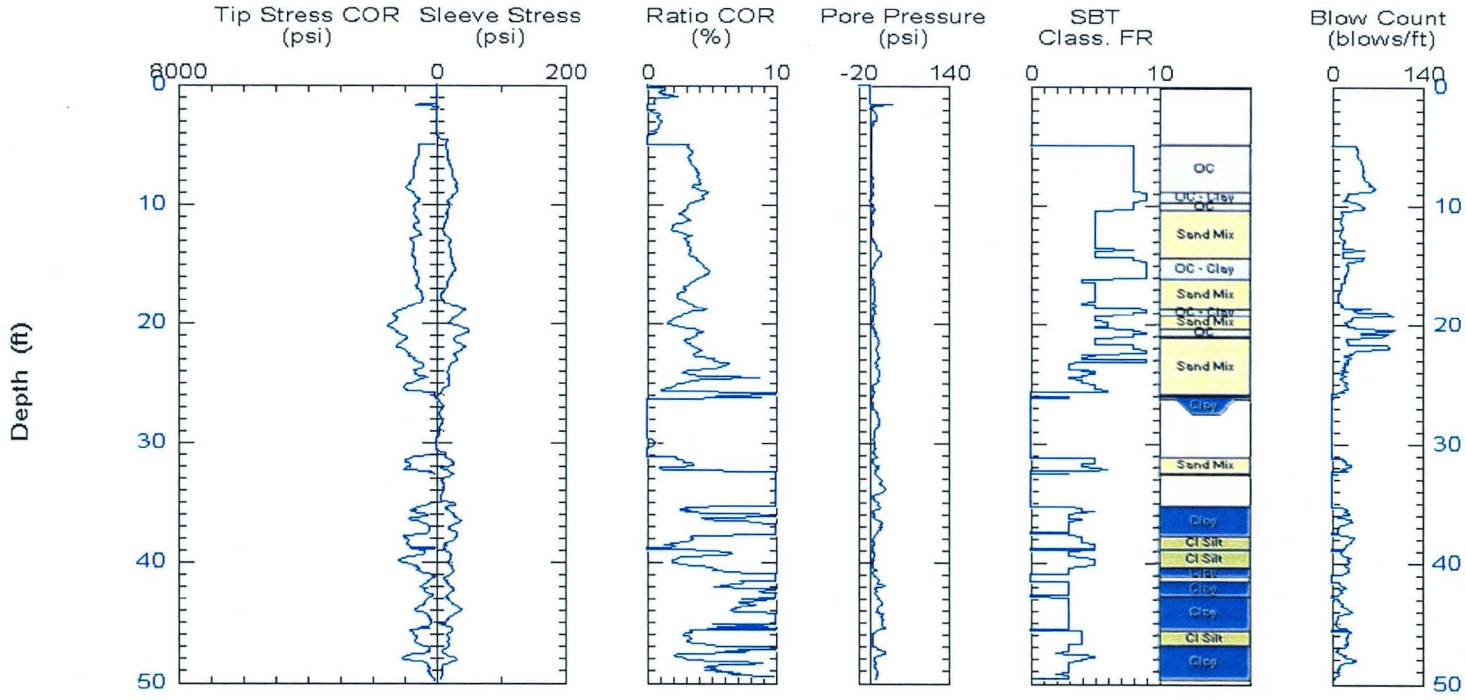
Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
97.604	55.37	4494.3	4495.6	1.23	7.04	8.13E+01	3.90E+01	6	Sands-Clean Sand to Silty Sand	72	41.45	-99	-99
97.681	62.23	4566.8	4568.1	1.36	6.69	8.14E+01	3.91E+01	6	Sands-Clean Sand to Silty Sand	73	41.53	-99	-99
97.759	67.27	4731.1	4732.5	1.42	7.28	8.15E+01	3.91E+01	6	Sands-Clean Sand to Silty Sand	76	41.72	-99	-99
97.837	70.73	4902.7	4904.2	1.44	7.77	8.15E+01	3.91E+01	6	Sands-Clean Sand to Silty Sand	78	41.9	-99	-99
97.915	73.51	5342.3	5343.6	1.38	6.89	8.16E+01	3.92E+01	6	Sands-Clean Sand to Silty Sand	85	42.34	-99	-99
97.99	75.28	5593.9	5596.6	1.35	13.96	8.17E+01	3.92E+01	6	Sands-Clean Sand to Silty Sand	90	42.57	-99	-99
98.066	73.53	5743.4	5745.7	1.28	12.29	8.17E+01	3.92E+01	6	Sands-Clean Sand to Silty Sand	92	42.7	-99	-99
98.143	70.85	5811.4	5813.4	1.22	10.08	8.18E+01	3.93E+01	6	Sands-Clean Sand to Silty Sand	93	42.76	-99	-99
98.223	66.87	5475.5	5477.9	1.22	12.69	8.19E+01	3.93E+01	6	Sands-Clean Sand to Silty Sand	88	42.45	-99	-99
98.302	40.34	5188.4	5192.5	0.78	21.33	8.19E+01	3.93E+01	6	Sands-Clean Sand to Silty Sand	83	42.17	-99	-99
98.381	19.77	5010.8	5013.3	0.39	13.13	8.20E+01	3.94E+01	6	Sands-Clean Sand to Silty Sand	80	41.98	-99	-99
98.46	26.91	4985.6	4987.5	0.54	9.84	8.21E+01	3.94E+01	6	Sands-Clean Sand to Silty Sand	80	41.95	-99	-99
98.537	36.78	5152.9	5154.7	0.71	9.59	8.21E+01	3.94E+01	6	Sands-Clean Sand to Silty Sand	82	42.12	-99	-99
98.614	49.51	5413.3	5415.5	0.91	11.21	8.22E+01	3.95E+01	6	Sands-Clean Sand to Silty Sand	87	42.37	-99	-99
98.682	62.99	5154.3	5159.2	1.22	25.06	8.22E+01	3.95E+01	6	Sands-Clean Sand to Silty Sand	82	42.11	-99	-99
98.756	78.12	6057.1	6063	1.29	30.52	8.23E+01	3.95E+01	6	Sands-Clean Sand to Silty Sand	97	42.94	-99	-99
98.835	94.9	6381.2	6388.7	1.49	38.77	8.24E+01	3.95E+01	6	Sands-Clean Sand to Silty Sand	102	43.2	-99	-99
98.903	108.97	6555.9	6563	1.66	36.95	8.24E+01	3.96E+01	6	Sands-Clean Sand to Silty Sand	105	43.33	-99	-99
98.973	121.16	6766	6773	1.79	36.21	8.25E+01	3.96E+01	6	Sands-Clean Sand to Silty Sand	108	43.48	-99	-99
99.049	129.22	6906.6	6913.6	1.87	36.21	8.25E+01	3.96E+01	6	Sands-Clean Sand to Silty Sand	111	43.58	-99	-99
99.126	131.88	7029.4	7036.4	1.87	35.82	8.26E+01	3.97E+01	6	Sands-Clean Sand to Silty Sand	112	43.67	-99	-99
99.206	130.34	7076.8	7083.8	1.84	36.31	8.27E+01	3.97E+01	6	Sands-Clean Sand to Silty Sand	113	43.7	-99	-99
99.282	128.89	7047.2	7054.3	1.83	37	8.27E+01	3.97E+01	6	Sands-Clean Sand to Silty Sand	113	43.67	-99	-99
99.357	129.45	7013.2	7019.5	1.84	32.92	8.28E+01	3.97E+01	6	Sands-Clean Sand to Silty Sand	112	43.64	-99	-99
99.434	94.26	7017.6	7023.4	1.34	29.88	8.29E+01	3.98E+01	6	Sands-Clean Sand to Silty Sand	112	43.64	-99	-99
99.508	67.7	6952.5	6957.2	0.97	24.57	8.29E+01	3.98E+01	6	Sands-Clean Sand to Silty Sand	111	43.59	-99	-99
99.585	68.33	6822.2	6826.5	1	22.02	8.30E+01	3.98E+01	6	Sands-Clean Sand to Silty Sand	109	43.49	-99	-99
99.662	67.76	6622.5	6626.4	1.02	20.5	8.31E+01	3.99E+01	6	Sands-Clean Sand to Silty Sand	106	43.34	-99	-99
99.739	71.01	6407.9	6410.6	1.11	14.06	8.31E+01	3.99E+01	6	Sands-Clean Sand to Silty Sand	103	43.17	-99	-99
99.813	73.4	4613.3	4617.8	1.59	23.34	8.32E+01	3.99E+01	6	Sands-Clean Sand to Silty Sand	74	41.47	-99	-99
99.882	75.03	5806.4	5811	1.29	24.03	8.32E+01	4.00E+01	6	Sands-Clean Sand to Silty Sand	93	42.67	-99	-99
99.955	79.16	6583	6588	1.2	25.7	8.33E+01	4.00E+01	6	Sands-Clean Sand to Silty Sand	105	43.3	-99	-99
100.033	85.27	6371.1	6376.1	1.34	25.85	8.34E+01	4.00E+01	6	Sands-Clean Sand to Silty Sand	102	43.13	-99	-99
100.112	88.36	5981.3	5986.5	1.48	27.13	8.34E+01	4.00E+01	6	Sands-Clean Sand to Silty Sand	96	42.81	-99	-99
100.191	83.91	5484.8	5489.8	1.53	25.9	8.35E+01	4.01E+01	6	Sands-Clean Sand to Silty Sand	88	42.36	-99	-99
100.268	71.29	4972	4976.1	1.43	21.62	8.36E+01	4.01E+01	6	Sands-Clean Sand to Silty Sand	80	41.84	-99	-99
100.347	58.89	4425.1	4428.5	1.33	17.83	8.36E+01	4.01E+01	6	Sands-Clean Sand to Silty Sand	71	41.22	-99	-99
100.428	51.84	3857.4	3860.4	1.34	15.66	8.37E+01	4.02E+01	6	Sands-Clean Sand to Silty Sand	62	40.47	-99	-99
100.511	51.21	3197.9	3200.2	1.6	11.88	8.38E+01	4.02E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	77	39.43	207.61	-99
100.59	53.89	2621.3	2623.5	2.05	11.14	8.38E+01	4.02E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	63	38.28	169.17	-99
100.671	52.39	2016.6	2019.3	2.59	14.19	8.39E+01	4.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	36.72	128.85	-99
100.752	50.16	1564.6	1567.3	3.2	13.94	8.40E+01	4.03E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	56	35.14	98.71	-99
100.832	48.34	1194	1197.6	4.04	18.71	8.40E+01	4.03E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	33.39	74	-99
100.908	45.97	1174.3	1179	3.9	24.55	8.41E+01	4.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	33.27	72.68	-99
100.982	41.81	1023	1028.8	4.06	29.96	8.42E+01	4.04E+01	3	Clays-Clay to Silty Clay	49	-99	62.59	-99
101.059	37.45	1020.1	1026	3.65	30.6	8.42E+01	4.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	32.32	62.39	-99
101.137	35.31	1085.3	1091.7	3.23	32.96	8.43E+01	4.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	32.74	66.74	-99
101.214	35.49	1094.2	1100.2	3.23	31	8.43E+01	4.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	32.78	67.32	-99
101.292	36.22	1166.9	1173.4	3.09	33.65	8.44E+01	4.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	33.21	72.16	-99
101.37	39.44	1392.3	1398.8	2.82	33.7	8.45E+01	4.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	50	34.36	87.19	-99
101.45	49.64	1441.2	1447.6	3.43	33.31	8.45E+01	4.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	52	34.57	90.44	-99
101.528	61.62	1591	1596.9	3.86	30.75	8.46E+01	4.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	57	35.2	100.42	-99
101.605	68.17	1709.6	1718.1	3.97	44.28	8.47E+01	4.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	62	35.64	108.33	0
101.682	67.68	2112.9	2123.7	3.19	55.65	8.47E+01	4.07E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	76	36.94	135.21	0.06
101.758	65.48	2296.8	2306.3	2.84	49.16	8.48E+01	4.07E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	37.44	147.47	0.02
101.835	37.53	2725.3	2736.2	1.37	56.29	8.49E+01	4.07E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	65	38.44	176.03	0.06
101.91	24.69	2894.4	2901.4	0.85	36.21	8.49E+01	4.08E+01	6	Sands-Clean Sand to Silty Sand	46	38.78	-99	-99
101.988	24.08	3032.3	3036.6	0.79	22.09	8.50E+01	4.08E+01	6	Sands-Clean Sand to Silty Sand	49	39.04	-99	-99
102.067	29.47	2645.3	2648.8	1.11	18.3	8.51E+01	4.08E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	63	38.25	170.68	-99
102.134	34.87	2250.8	2254.1	1.55	17.07	8.51E+01	4.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	37.29	144.38	-99
102.201	37.82	2138.1	2140.5	1.77	12.03	8.52E+01	4.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	51	36.98	136.86	-99
102.281	37.73	1674.2	1676.4	2.25	11.24	8.52E+01	4.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	40	35.47	105.93	-99
102.362	34.86	1437.1	1439.1	2.42	10.6	8.53E+01	4.09E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	52	34.5	90.12	-99
102.442	31.23	1189.6	1192.1	2.62	12.81	8.54E+01	4.10E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	33.26	73.61	-99
102.521	27.86	961.3	964.9	2.89	18.67	8.54E+01	4.10E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	31.82	58.39	-99
102.603	23.32	906.5	910.5	2.56	20.88	8.55E+01	4.10E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	31.42	54.73	-99
102.684	17.59	862	866.2	2.03	21.62	8.56E+01	4.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	31.06	51.76	-99
102.764	13.57	847.2	851.4	1.59	21.81	8.56E+01	4.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.94	50.77	-99
102.843	13.44	833.9	838.1	1.6	22.01	8.57E+01	4.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.82	49.88	-99
102.922	13.75	817.6	821.9	1.67	22.5	8.58E+01	4.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.68	48.79	-99
103.003	13.87	795.3	799.8	1.73	23.24	8.58E+01	4.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.48	47.3	-99
103.083	11.29	785	789.5	1.43	23.58	8.59E+01	4.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.38	46.6	-99
103.162	10.77	783.5	788.1	1.37	23.73	8.60E+01	4.13E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.36	46.5	-99
103.242	12.89	770.1	774.8	1.66	23.93	8.60E+01	4.13E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.24	45.61	-99
103.321	12.89	762.7	767.3	1.68	23.73	8.61E+01	4.13E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	30.16	45.11	-99
103.401	12.88	752.4	757	1.7	24.08	8.62E+01	4.14E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	30.06	44.41	-99
103.467	12.74	636.7	641.2	1.99	23.25	8.62E+01	4.14E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	28.86	36.7	-99
103.542	12.48	770.3	774.9	1.61	23.84	8.63E+01	4.14E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.22	45.6	-99
103.623	12.28	770.3	774.9	1.58	24.29	8.64E+01	4.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.21	45.59	-99
103.702	12.27	770.3	775	1.58	24.73	8.64E+01	4.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.21	45.59	-99
103.782	12.16	770.3	775.1	1.57	25.12	8.65E+01	4.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.2	45.58	-99
103.862	12.17	777.7	782.5	1.55	25.12	8.66E+01	4.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.26	46.07	-99
103.942	12.44	785.1	789.9	1.57	25.02	8.66E+01	4.16E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.32	46.56	-99
104.021	13.05	777.7	782.6	1.67	25.32	8.67E+01	4.16E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.25	46.07	-99
104.102	13.52	780.6	785.6	1.72	25.66	8.68E+01	4.16E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.27	46.26	-99
104.183	13.75	786.6	791.6	1.74	25.96	8.68E+01	4.17E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.32	46.65	-99
104.263	13.84	799.9	804.9	1.72	25.91	8.69E+01	4.17E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.43	47.54	-99
104.343	14.25	823.7	828.8	1.72	26.5	8.70E+01	4.17E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.63	49.11	-99
104.423	15.08	865.2	870.6	1.73	27.93	8.70E+01	4.18E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.97	51.88	-99
104.503	15.09	886	891.5	1.69	28.62	8.71E+01	4.18E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	31.13	53.26	-99
104.584	15.29	869.7	875.1	1.75	28.42	8.72E+01	4.18E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	31	52.17	-99
104.663	15.62	856.3	862	1.81	29.45	8.72E+01	4.19E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.88	51.27	-99
104.743	15.71	831.1	836.8	1.88	29.55	8.73E+01	4.19E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.67	49.59	-99
104.824	16.03	808.8	814.6	1.97	30.1	8.74E+01	4.19E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.47	48.1	-99
104.904	16.05	816.2	822.2	1.95	31.03	8.74E+01	4.20E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.53	48.59	-99
104.985	15.44	853.3	859.4	1.8	31.47	8.75E+01	4.20E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.84	51.06	-99
105.066	14.84	860.8	866.8	1.71	31.38	8.76E+01	4.20E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.89	51.55	-99
105.145	14.38	822.2	828.6	1.74	33.44	8.76E+01	4.21E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.57	48.97	-99
105.226	13.77	807.3	814	1.69	34.48	8.77E+01	4.21E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.43	47.98	-99
105.305	13.63	802.9	809.5	1.68	34.28	8.78E+01	4.21E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.39	47.68	-99
105.386	14.91	804.4	811	1.84	34.48	8.78E+01	4.22E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.4	47.77	-99
105.466	16.03	804.4	811.1	1.98	35.07	8.79E+01	4.22E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.39	47.77	-99
105.545	14.81	805.9	812.6	1.82	35.07	8.80E+01	4.22E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.4	47.86	-99
105.625	14.26	795.5	802.4	1.78	35.61	8.80E+01	4.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.3	47.16	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
105.704	13.85	783.6	790.5	1.75	35.66	8.81E+01	4.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.19	46.37	-99
105.782	13.67	815.8	822.5	1.66	34.89	8.82E+01	4.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.47	48.51	-99
105.861	14.63	802.4	809.6	1.81	37.3	8.82E+01	4.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.35	47.61	-99
105.941	15.93	805.4	812.6	1.96	37.25	8.83E+01	4.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.37	47.81	-99
106.021	15.56	805.4	812.5	1.91	36.71	8.84E+01	4.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.36	47.8	-99
106.088	14.83	806.9	813.8	1.82	36.02	8.84E+01	4.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.37	47.9	-99
106.168	14.48	824.7	831.4	1.74	35.04	8.85E+01	4.25E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.52	49.08	-99
106.248	14.02	808.3	815.2	1.72	35.28	8.85E+01	4.25E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.37	47.99	-99
106.327	14.08	795	802.1	1.76	36.86	8.86E+01	4.25E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.25	47.09	-99
106.407	14.14	780.2	787.4	1.8	37.55	8.87E+01	4.26E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.11	46.1	-99
106.489	14.42	768.3	775.8	1.86	38.97	8.87E+01	4.26E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30	45.31	-99
106.568	14.3	760.9	768.5	1.86	39.27	8.88E+01	4.26E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	29.93	44.81	-99
106.647	14.11	756.5	764	1.85	39.07	8.89E+01	4.27E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	29.88	44.51	-99
106.728	14.2	757.9	765.4	1.86	38.73	8.89E+01	4.27E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	29.89	44.6	-99
106.807	14.43	771.3	778.9	1.85	39.61	8.90E+01	4.27E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.01	45.49	-99
106.888	14.6	792	799.8	1.82	40.4	8.91E+01	4.28E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.19	46.86	-99
106.966	14.68	811.3	819.3	1.79	41.48	8.91E+01	4.28E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.35	48.14	-99
107.046	14.43	814.3	822.4	1.75	42.12	8.92E+01	4.28E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.37	48.34	-99
107.126	14.45	806.9	815	1.77	42.02	8.93E+01	4.29E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.3	47.84	-99
107.206	15.48	799.4	807.5	1.92	41.58	8.93E+01	4.29E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.23	47.34	-99
107.288	16.18	792	800.1	2.02	41.58	8.94E+01	4.29E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.16	46.84	-99
107.368	15.33	786.1	794.4	1.93	42.91	8.95E+01	4.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.1	46.44	-99
107.448	14.79	796.5	804.6	1.84	42.17	8.95E+01	4.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.19	47.13	-99
107.528	14.7	803.9	811.9	1.81	41.58	8.96E+01	4.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.25	47.62	-99
107.594	15.25	783.1	791.4	1.93	42.71	8.97E+01	4.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.06	46.23	-99
107.675	16.5	781.7	790.2	2.09	44.04	8.97E+01	4.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	30.04	46.13	-99
107.756	18.92	800.9	809.5	2.34	44.19	8.98E+01	4.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	30.21	47.41	-99
107.835	24.23	835	843.7	2.87	45.07	8.99E+01	4.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.5	49.68	-99
107.914	32.17	1001.1	1010.5	3.18	48.81	8.99E+01	4.32E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.75	60.74	0
107.991	39.81	1346.5	1357.1	2.93	55.06	9.00E+01	4.32E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	48	33.73	83.77	0.03
108.07	45.09	1648.9	1659.1	2.72	53	9.01E+01	4.32E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	59	35.03	103.92	0.02
108.149	49.13	1767.5	1775.1	2.77	39.32	9.01E+01	4.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	64	35.46	111.83	-99
108.229	53.99	1696.4	1704.6	3.17	42.66	9.02E+01	4.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	61	35.2	107.08	-99
108.308	60	1657.8	1670.1	3.59	63.72	9.03E+01	4.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	60	35.05	104.5	0.09
108.385	64.36	1829.8	1846.6	3.49	87.34	9.03E+01	4.34E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	66	35.66	115.96	0.3
108.462	66.78	2121.8	2136.6	3.13	76.56	9.04E+01	4.34E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	76	36.57	135.43	0.19
108.54	66.17	2489.5	2498.3	2.65	45.42	9.05E+01	4.34E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	37.53	159.94	-99
108.616	60.71	2915	2920.2	2.08	26.97	9.05E+01	4.35E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	70	38.45	188.3	-99
108.692	53.68	3220.4	3224.5	1.66	21.66	9.06E+01	4.35E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	77	39.02	208.65	-99
108.768	50.26	3496.1	3499.2	1.44	16.29	9.06E+01	4.35E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	84	39.49	227.03	-99
108.845	52.84	3616.2	3619.2	1.46	15.51	9.07E+01	4.35E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	87	39.67	235.03	-99
108.924	61.32	3500.5	3503.3	1.75	14.08	9.08E+01	4.36E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	84	39.48	227.32	-99
108.992	70.04	2762.1	2765.4	2.53	17.09	9.08E+01	4.36E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	66	38.12	178.09	-99
109.059	77.47	3128.2	3131	2.47	14.53	9.09E+01	4.36E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	75	38.84	202.49	-99
109.14	82.18	2646.5	2648.8	3.1	11.63	9.10E+01	4.37E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	95	37.86	170.37	-99
109.218	81.27	2101.1	2103.3	3.86	11.29	9.10E+01	4.37E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	76	36.47	134	-99
109.297	75.34	1641.6	1643.9	4.58	11.63	9.11E+01	4.37E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	59	34.93	103.37	-99
109.375	65.98	1354.1	1356.2	4.87	10.7	9.12E+01	4.38E+01	3	Clays-Clay to Silty Clay	65	-99	84.2	-99
109.454	54.23	1112.5	1114.8	4.86	11.98	9.12E+01	4.38E+01	3	Clays-Clay to Silty Clay	53	-99	68.09	-99
109.534	41.87	983.6	986.1	4.25	13.3	9.13E+01	4.38E+01	3	Clays-Clay to Silty Clay	47	-99	59.49	-99
109.611	31.68	900.6	903.7	3.51	16.11	9.13E+01	4.38E+01	3	Clays-Clay to Silty Clay	43	-99	53.95	-99
109.69	25.49	876.9	880.2	2.9	17.14	9.14E+01	4.39E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.72	52.36	-99
109.768	24.1	876.9	880.3	2.74	17.78	9.15E+01	4.39E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.72	52.36	-99
109.846	24.96	888.7	892.3	2.8	18.76	9.15E+01	4.39E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.81	53.15	-99
109.925	26.12	974.7	978.5	2.67	19.85	9.16E+01	4.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	31.44	58.87	-99
110.003	27.52	1020.6	1024.5	2.69	19.99	9.17E+01	4.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	31.75	61.93	-99
110.08	29.24	1048.8	1052.9	2.78	21.32	9.17E+01	4.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	31.93	63.8	-99
110.157	31.28	1109.5	1113.9	2.81	22.31	9.18E+01	4.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	40	32.31	67.85	-99
110.234	32.17	1194	1198.5	2.68	22.99	9.19E+01	4.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	32.8	73.48	-99
110.312	30.56	1140.7	1145.3	2.67	24.13	9.19E+01	4.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	32.49	69.92	-99
110.391	26.85	1063.6	1068.2	2.51	23.93	9.20E+01	4.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	32.01	64.77	-99
110.468	27.58	989.5	993.9	2.78	22.6	9.21E+01	4.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.51	59.83	-99
110.546	28.99	927.3	931.6	3.11	22.4	9.21E+01	4.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	31.06	55.68	-99
110.624	27.21	888.7	893.4	3.05	24.37	9.22E+01	4.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.76	53.1	-99
110.703	25.31	868	872.8	2.9	24.91	9.23E+01	4.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.59	51.71	-99
110.772	24.6	744.5	749	3.28	23.12	9.23E+01	4.43E+01	3	Clays-Clay to Silty Clay	36	-99	43.48	-99
110.851	24.53	974.1	978.9	2.51	24.79	9.24E+01	4.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	31.38	58.78	-99
110.93	24.94	981.5	986.3	2.53	25.18	9.24E+01	4.44E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	31.43	59.27	-99
111.009	26.03	990.4	995.3	2.62	25.82	9.25E+01	4.44E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.48	59.86	-99
111.088	26.79	1068.9	1074	2.49	26.56	9.26E+01	4.44E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	32	65.09	-99
111.167	28.28	1092.5	1098.1	2.58	28.63	9.26E+01	4.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	32.14	66.66	-99
111.248	29.39	1028.9	1033.6	2.84	24.79	9.27E+01	4.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	31.73	62.41	-99
111.328	29.19	937	942	3.1	25.48	9.28E+01	4.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	31.08	56.28	-99
111.408	28.11	903	908	3.1	26.02	9.28E+01	4.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.82	54.01	-99
111.487	26.17	882.2	887.2	2.95	25.87	9.29E+01	4.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.65	52.62	-99
111.567	24.44	888.2	893	2.74	25.18	9.30E+01	4.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.69	53.01	-99
111.647	23.8	817.1	822.2	2.9	26.31	9.30E+01	4.47E+01	3	Clays-Clay to Silty Clay	39	-99	48.27	-99
111.729	23.24	836.3	841.8	2.76	28.28	9.31E+01	4.47E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.26	49.55	-99
111.809	22.48	848.2	853.7	2.63	28.72	9.32E+01	4.47E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.35	50.33	-99
111.889	21.6	848.2	853.5	2.53	27.74	9.32E+01	4.48E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.35	50.33	-99
111.969	21.88	845.2	850.6	2.57	27.64	9.33E+01	4.48E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.32	50.13	-99
112.049	22.99	826	831.4	2.77	27.99	9.34E+01	4.48E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.15	48.84	-99
112.13	23.4	824.5	829.9	2.82	28.28	9.34E+01	4.49E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	30.13	48.74	-99
112.21	23.96	826	831.5	2.88	28.58	9.35E+01	4.49E+01	3	Clays-Clay to Silty Clay	40	-99	48.83	-99
112.289	25.21	824.5	830.1	3.04	29.17	9.36E+01	4.49E+01	3	Clays-Clay to Silty Clay	40	-99	48.73	-99
112.369	25.62	830.4	836.1	3.06	29.61	9.36E+01	4.50E+01	3	Clays-Clay to Silty Clay	40	-99	49.12	-99
112.448	26.09	851.1	856.9	3.04	29.8	9.37E+01	4.50E+01	3	Clays-Clay to Silty Clay	41	-99	50.5	-99
112.527	27	871.9	877.5	3.08	29.31	9.38E+01	4.50E+01	3	Clays-Clay to Silty Clay	42	-99	51.87	-99
112.6	28.02	864.8	870.3	3.22	28.53	9.38E+01	4.50E+01	3	Clays-Clay to Silty Clay	42	-99	51.4	-99
112.679	28.37	892.9	898.8	3.16	30.45	9.39E+01	4.51E+01	3	Clays-Clay to Silty Clay	43	-99	53.27	-99
112.758	28.63	897.4	903.1	3.17	29.86	9.40E+01	4.51E+01	3	Clays-Clay to Silty Clay	43	-99	53.56	-99
112.836	29.54	876.6	882.4	3.35	29.71	9.40E+01	4.51E+01	3	Clays-Clay to Silty Clay	42	-99	52.17	-99
112.917	30.78	875.1	881.4	3.49	32.12	9.41E+01	4.52E+01	3	Clays-Clay to Silty Clay	42	-99	52.07	-99
112.996	34.49	915.1	921.8	3.74	34.58	9.42E+01	4.52E+01	3	Clays-Clay to Silty Clay	44	-99	54.73	-99
113.076	37.11	1072.1	1079.4	3.44	37.92	9.42E+01	4.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	31.9	65.19	-99
113.155	39.29	1255.7	1264	3.11	42.93	9.43E+01	4.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	32.96	77.43	-99
113.233	42.37	1381.5	1388.4	3.05	35.46	9.44E+01	4.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	50	33.59	85.81	-99
113.3	43.44	1411.2	1417.3	3.06	31.73	9.44E+01	4.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	51	33.72	87.78	-99
113.38	41.09	1383	1390.1	2.96	36.79	9.45E+01	4.54E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	50	33.58	85.9	-99
113.459	36.75	1347.5	1353.9	2.71	33.25	9.46E+01	4.54E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	33.41	83.53	-99
113.538	32.43	1270.5	1276.2	2.54	29.81	9.46E+01	4.54E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	46	33.01	78.39	-99
113.617	31.61	1140.2	1146.6	2.76	33.3	9.47E+01	4.55E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	32.28	69.7	-99
113.698	32.04	1039.5	1046.4	3.06	35.81	9.48E+01	4.55E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	31.65	62.98	-99
113.778	32.07	1082.4	1091.3	2.94	45.78	9.48E+01	4.55E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	31.92	65.84	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
113.858	30.6	1190.5	1200.2	2.55	50.06	9.49E+01	4.55E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	32.56	73.04	0
113.937	28.86	1237.9	1248.6	2.31	55.36	9.50E+01	4.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	32.82	76.2	0.02
114.017	29.83	1233.5	1245.6	2.39	62.88	9.50E+01	4.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	44	32.79	75.9	0.06
114.095	32.84	1239.4	1252.6	2.62	68.34	9.51E+01	4.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	32.82	76.29	0.09
114.175	35.59	1248.3	1261.6	2.82	69.22	9.52E+01	4.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	32.86	76.88	0.1
114.254	37.53	1266	1279	2.93	66.86	9.52E+01	4.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	46	32.95	78.06	0.08
114.333	38.85	1288.3	1301.1	2.99	66.52	9.53E+01	4.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	46	33.06	79.53	0.08
114.412	41.73	1359.3	1372.3	3.04	66.96	9.53E+01	4.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	33.41	84.27	0.08
114.49	46.18	1353.4	1363.9	3.39	54.23	9.54E+01	4.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	33.38	83.87	0.01
114.57	49.48	1383	1396.3	3.54	68.98	9.55E+01	4.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	50	33.52	85.84	0.1
114.65	52.35	1501.5	1513.6	3.46	62.83	9.55E+01	4.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	54	34.05	93.73	0.06
114.728	53.58	1587.4	1596	3.36	44.7	9.56E+01	4.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	57	34.4	99.45	-99
114.794	52.81	1566.6	1574	3.36	38.02	9.57E+01	4.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	56	34.31	98.06	-99
114.873	51.46	1474.8	1483.5	3.47	45.09	9.57E+01	4.60E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	53	33.92	91.94	-99
114.951	49.49	1363.8	1371.7	3.61	41.06	9.58E+01	4.60E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	33.4	84.53	-99
115.031	47.53	1248.3	1257.9	3.78	49.96	9.59E+01	4.60E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	32.81	76.83	0
115.111	62.92	1187.6	1199.1	5.25	59.93	9.59E+01	4.60E+01	3	Clays-Clay to Silty Clay	57	-99	72.78	0.04
115.177	62.55	1229	1241.5	5.04	64.7	9.60E+01	4.61E+01	3	Clays-Clay to Silty Clay	59	-99	75.54	0.07
115.243	60.95	1300.1	1313.7	4.64	70.65	9.60E+01	4.61E+01	3	Clays-Clay to Silty Clay	62	-99	80.27	0.11
115.321	58.24	1408.2	1422.1	4.1	71.78	9.61E+01	4.61E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	51	33.59	87.47	0.11
115.399	55.16	1510.4	1521.4	3.63	57.28	9.62E+01	4.62E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	54	34.04	94.28	0.02
115.465	54.58	1748	1755.8	3.11	40.14	9.62E+01	4.62E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	63	34.98	110.12	-99
115.546	53.2	1501.8	1508	3.53	31.83	9.63E+01	4.62E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	54	34	93.7	-99
115.624	47.49	1190.3	1196.5	3.97	31.97	9.64E+01	4.63E+01	3	Clays-Clay to Silty Clay	57	-99	72.93	-99
115.702	41.74	1077.6	1083.6	3.85	30.69	9.64E+01	4.63E+01	3	Clays-Clay to Silty Clay	52	-99	65.41	-99
115.78	37.44	1083.6	1090.8	3.43	37.58	9.65E+01	4.63E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	31.81	65.8	-99
115.858	33.22	1088	1095.6	3.03	39.36	9.66E+01	4.63E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	31.83	66.1	-99
115.937	29.39	1059.8	1069.2	2.75	48.36	9.66E+01	4.64E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	31.65	64.21	-99
116.018	26.19	1052.4	1061.5	2.47	47.28	9.67E+01	4.64E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	31.6	63.72	-99
116.097	24.67	1010.9	1020.7	2.42	50.63	9.68E+01	4.64E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.32	60.94	0
116.177	23.89	961.9	972.3	2.46	53.43	9.68E+01	4.65E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	30.97	57.67	0.01
116.256	22.95	926.3	937.3	2.45	56.78	9.69E+01	4.65E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.7	55.3	0.02
116.336	21.97	913	923.8	2.38	55.8	9.70E+01	4.65E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.59	54.4	0.02
116.406	21.67	905.6	916.4	2.36	56.09	9.70E+01	4.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.53	53.9	0.02
116.485	21.89	889.3	900.1	2.43	55.94	9.71E+01	4.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.4	52.81	0.02
116.565	21.98	889.3	900	2.44	55.7	9.71E+01	4.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.39	52.81	0.01
116.645	21.85	902.6	913.6	2.39	57.18	9.72E+01	4.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.49	53.69	0.02
116.724	21.85	927.8	939.2	2.33	58.7	9.73E+01	4.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.68	55.37	0.03
116.805	22.48	930.8	942.2	2.39	59.34	9.73E+01	4.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	30.7	55.56	0.03
116.885	23.86	927.8	939.3	2.54	59.49	9.74E+01	4.68E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.67	55.36	0.03
116.953	25.1	941.2	953.3	2.63	62.64	9.75E+01	4.68E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	30.77	56.25	0.05
117.032	26.79	963.4	974.6	2.75	57.91	9.75E+01	4.68E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	30.93	57.73	0.02
117.112	29	972.3	982.6	2.95	53.24	9.76E+01	4.68E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	30.99	58.31	0.01
117.192	31.26	982.7	992.7	3.15	51.91	9.77E+01	4.69E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	31.05	59	0
117.274	32.87	966.4	976.2	3.37	51.02	9.77E+01	4.69E+01	3	Clays-Clay to Silty Clay	46	-99	57.91	0
117.341	33.1	964.9	974.4	3.4	49.4	9.78E+01	4.69E+01	3	Clays-Clay to Silty Clay	46	-99	57.81	-99
117.409	32.86	953	962.8	3.41	50.43	9.78E+01	4.70E+01	3	Clays-Clay to Silty Clay	46	-99	57.01	-99
117.489	32.33	969.4	979.2	3.3	51.12	9.79E+01	4.70E+01	3	Clays-Clay to Silty Clay	47	-99	58.1	0
117.569	31.44	988.6	998.5	3.15	50.87	9.80E+01	4.70E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.07	59.38	-99
117.638	30	987.1	997.1	3.01	51.76	9.80E+01	4.71E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.06	59.27	0
117.706	28.79	996	1006.1	2.86	51.86	9.81E+01	4.71E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.12	59.86	0
117.774	28.78	1000.5	1010.4	2.85	51.22	9.82E+01	4.71E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.14	60.16	0
117.842	28.93	990.1	1000.1	2.89	51.71	9.82E+01	4.71E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.07	59.46	0
117.91	28.65	966.4	976.3	2.93	51.61	9.83E+01	4.72E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	30.9	57.87	0
117.978	28.78	950.1	959.9	3	50.87	9.83E+01	4.72E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	30.77	56.78	-99
118.047	29.47	957.5	967.1	3.05	49.94	9.84E+01	4.72E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	30.82	57.27	-99
118.117	29.33	944.1	954	3.07	51.12	9.84E+01	4.73E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	30.72	56.38	-99
118.185	30.18	947.1	957.3	3.15	52.94	9.85E+01	4.73E+01	3	Clays-Clay to Silty Clay	45	-99	56.57	0
118.253	29.78	975.3	985.7	3.02	54.12	9.85E+01	4.73E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	30.94	58.45	0.01
118.321	30.03	1007.9	1018.7	2.95	55.9	9.86E+01	4.73E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.16	60.62	0.01
118.387	29.98	1033.1	1044.4	2.87	58.21	9.87E+01	4.74E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	31.33	62.3	0.02
118.456	28.94	1037.6	1048.2	2.76	54.96	9.87E+01	4.74E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	31.36	62.59	0.01
118.525	28.27	1024.2	1034.9	2.73	55.01	9.88E+01	4.74E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	31.26	61.7	0.01
118.593	27.86	991.6	1001.4	2.78	51.02	9.88E+01	4.74E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	31.03	59.52	-99
118.66	26.73	926.3	936.6	2.85	53.24	9.89E+01	4.75E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.56	55.16	0
118.728	26.29	886.3	897.3	2.93	57.18	9.89E+01	4.75E+01	3	Clays-Clay to Silty Clay	43	-99	52.49	0.02
118.796	26.13	892.2	903.3	2.89	57.57	9.90E+01	4.75E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.28	52.88	0.02
118.864	25.84	890.7	902.4	2.86	60.37	9.91E+01	4.76E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	30.27	52.78	0.03
118.931	25.35	871.2	881.3	2.88	52.31	9.91E+01	4.76E+01	3	Clays-Clay to Silty Clay	42	-99	51.48	0
119.012	25.8	951.3	962.1	2.68	56.39	9.92E+01	4.76E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	30.72	56.81	0.01
119.09	26.47	960.2	968.9	2.73	45.43	9.92E+01	4.76E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	30.78	57.39	-99
119.156	27.11	946.8	956.5	2.83	50.2	9.93E+01	4.77E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	30.68	56.5	-99
119.223	27.34	926.1	936.6	2.92	54.57	9.94E+01	4.77E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	30.52	55.11	0.01
119.29	27.25	895	905.8	3.01	56.1	9.94E+01	4.77E+01	3	Clays-Clay to Silty Clay	43	-99	53.04	0.01
119.356	25.77	884.6	895.5	2.88	56.44	9.95E+01	4.77E+01	3	Clays-Clay to Silty Clay	42	-99	52.34	0.01
119.424	23.91	862.4	873.7	2.74	58.7	9.95E+01	4.78E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	30.01	50.86	0.02
119.492	22.38	857.9	869.3	2.57	58.9	9.96E+01	4.78E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	29.96	50.56	0.02
119.559	20.82	859.4	870.7	2.39	58.31	9.96E+01	4.78E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	29.97	50.65	0.02
119.626	20.17	847.5	859.3	2.35	61.16	9.97E+01	4.79E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	29.87	49.86	0.03
119.693	20.46	849	861.1	2.38	62.49	9.97E+01	4.79E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	29.88	49.95	0.04
119.76	20.53	846.1	858.1	2.39	62.2	9.98E+01	4.79E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	29.85	49.75	0.04
119.826	0	837.2	849.2	0	62.34	9.99E+01	4.79E+01	-99		-99	-99	49.15	0.04
119.894	0	856.4	868.5	0	62.64	9.99E+01	4.80E+01	-99		-99	-99	50.43	0.04
119.961	0	862.4	874.4	0	62.39	1.00E+02	4.80E+01	-99		-99	-99	50.83	0.04
120.028	0	875.7	888	0	63.67	1.00E+02	4.80E+01	-99		-99	-99	51.71	0.04
120.095	0	871.2	883.5	0	63.67	1.00E+02	4.80E+01	-99		-99	-99	51.41	0.04
120.162	0	860.9	873.4	0	65.1	1.00E+02	4.81E+01	-99		-99	-99	50.72	0.05

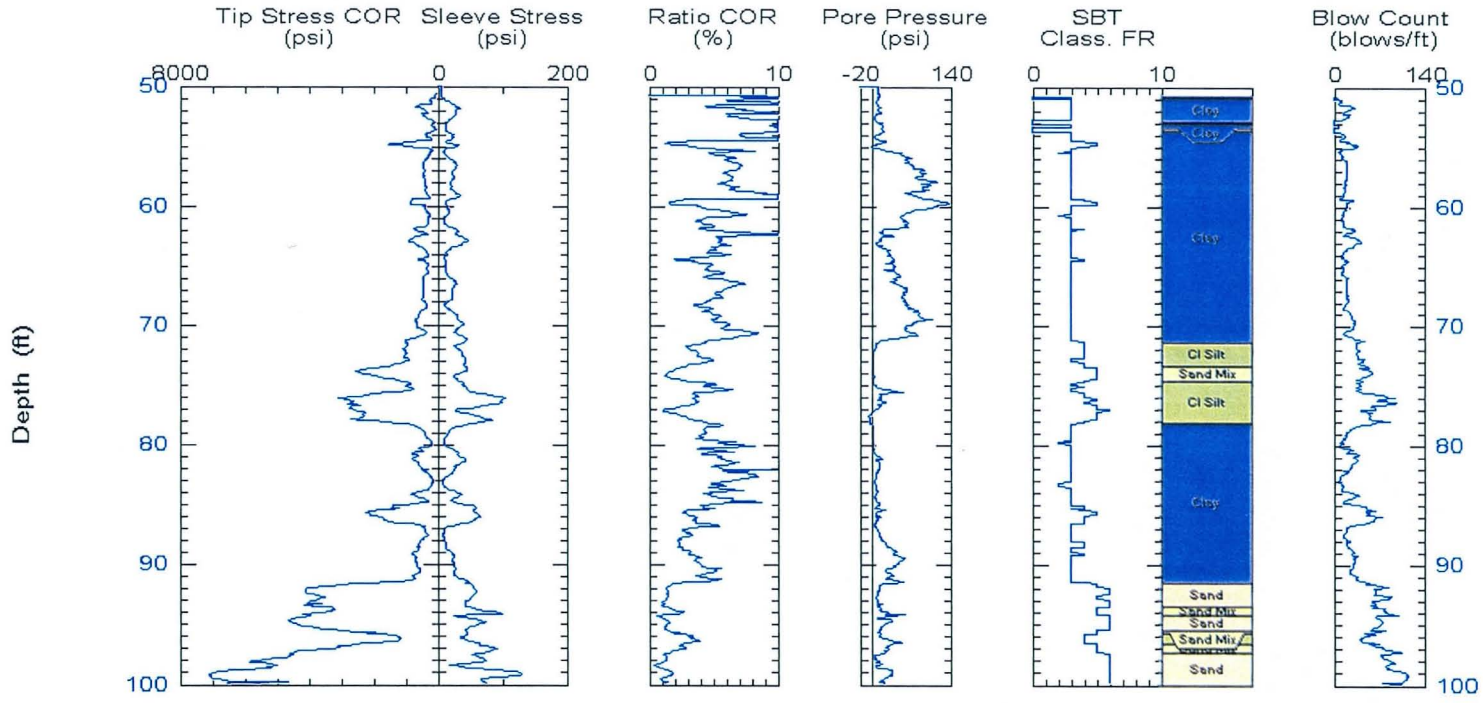
Applied Research Associates

Test ID: 117-cpt-01 **Project: Shaw** **Date: 22/May/2003**



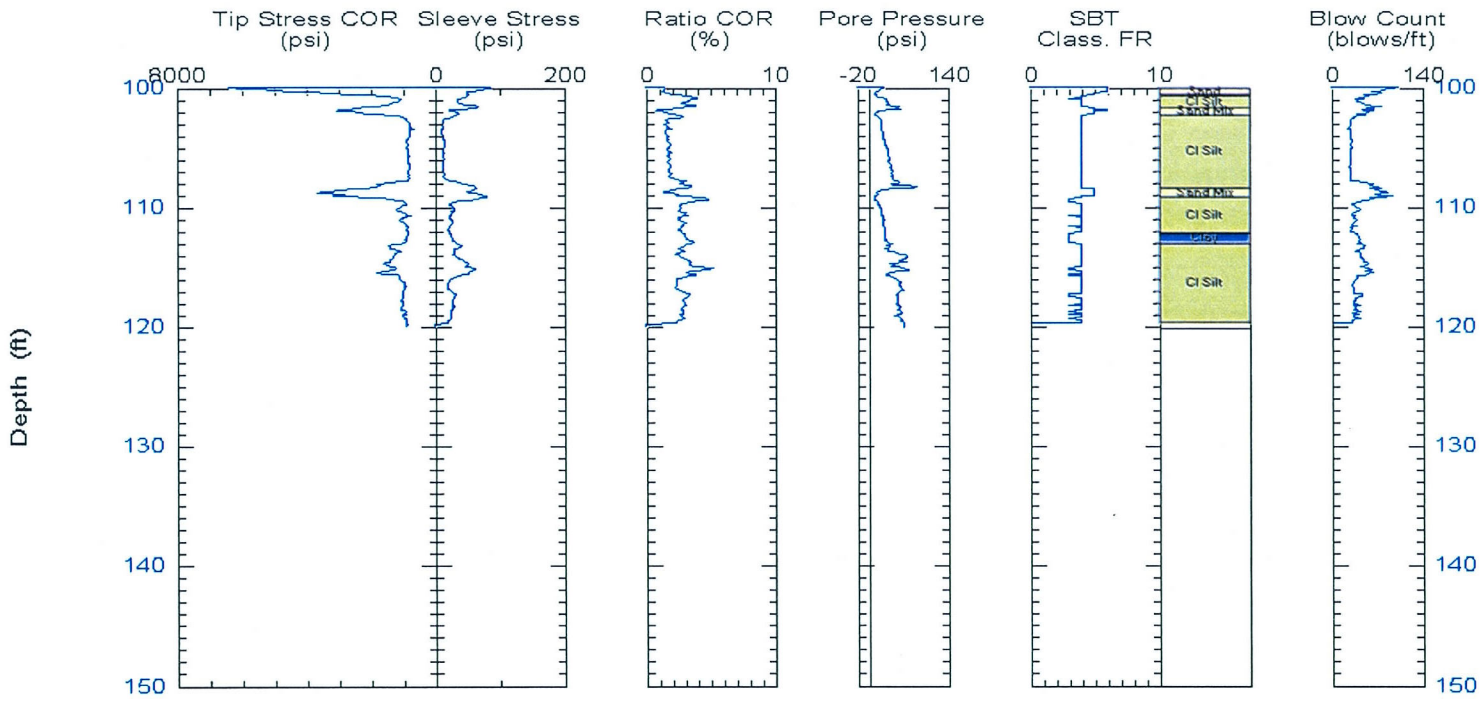
Applied Research Associates

Test ID: 117-cpt-01 **Project: Shaw** **Date: 22/May/2003**



Applied Research Associates

Test ID: 117-cpt-01 **Project: Shaw** **Date: 22/May/2003**



Test Id:	117-cpt-02	Date:	22-May-03
Site:	NASA	Cone Id:	2579.102XX
Location:	Crows landing		
Project:	Shaw	Soil Density(pcf):	120
Client:	Shaw		

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
0	0	0	0	0	0	0.00E+00	0.00E+00	-99		-99	0	0	-99
0.153	0	19.1	19.1	0	0	1.28E-01	6.12E-02	-99		-99	-99	1.27	-99
0.234	0	8.7	8.8	0	0.05	1.95E-01	9.36E-02	-99		-99	-99	0.57	-99
0.313	0.05	11.7	11.7	0.45	0.1	2.61E-01	1.25E-01	6	Sands-Clean Sand to Silty Sand	0	40.32	-99	-99
0.393	0.02	4.3	4.3	0.5	0.25	3.27E-01	1.57E-01	5	Sand Mixtures-Silty Sand to Sandy Silt	0	32.87	0.26	0.12
0.471	0.01	1.3	1.3	1.11	0.1	3.93E-01	1.89E-01	3	Clays-Clay to Silty Clay	0	-99	0.06	-99
0.55	0.03	1.3	1.4	2.48	0.15	4.59E-01	2.20E-01	3	Clays-Clay to Silty Clay	0	-99	0.06	-99
0.629	1.73	2.8	2.8	61.77	-0.05	5.24E-01	2.52E-01	-99		-99	-99	0.15	-99
0.709	5.96	1.3	1.3	451.93	-0.05	5.91E-01	2.84E-01	-99		-99	-99	0.05	-99
0.788	9.97	10.2	10.2	97.37	0.1	6.57E-01	3.15E-01	-99		-99	-99	0.64	-99
0.867	15.28	10.2	10.2	149.46	0	7.23E-01	3.47E-01	-99		-99	-99	0.63	-99
0.943	17.52	374.9	375	4.67	0.39	7.86E-01	3.77E-01	8	Very Stiff Sand to Clayey Sand*	27	51.09	-99	-99
1.022	21.26	1162.1	1162.6	1.83	2.51	8.52E-01	4.09E-01	-99		-99	-99	77.42	3.29
1.088	31.27	1335.6	1336.1	2.34	2.8	9.07E-01	4.35E-01	-99		-99	-99	88.98	3.58
1.166	35.17	1344.5	1345	2.61	3	9.72E-01	4.67E-01	-99		-99	-99	89.57	3.57
1.243	32.83	1559.4	1560.2	2.1	4.03	1.04E+00	4.97E-01	-99		-99	-99	103.89	5.27
1.318	34.27	2130.2	2130.7	1.61	2.9	1.10E+00	5.27E-01	-99		-99	-99	141.94	2.72
1.394	36.58	2567.5	2568	1.42	2.41	1.16E+00	5.58E-01	-99		-99	-99	171.09	1.75
1.466	44.11	2342.2	2342.2	1.88	0.1	1.22E+00	5.87E-01	-99		-99	-99	156.06	-99
1.533	48.08	2248.8	2248.6	2.14	-1.13	1.28E+00	6.13E-01	-99		-99	-99	149.83	-99
1.611	39.68	2113.9	2113.6	1.88	-1.18	1.34E+00	6.45E-01	-99		-99	-99	140.84	-99
1.691	30.74	1755.1	1754.8	1.75	-1.62	1.41E+00	6.76E-01	-99		-99	-99	116.91	-99
1.771	31.84	1344.5	1343.7	2.37	-3.74	1.48E+00	7.08E-01	-99		-99	-99	89.53	-99
1.851	32.16	816.7	816.1	3.94	-3.3	1.54E+00	7.40E-01	-99		-99	-99	54.34	-99
1.932	30	678.8	678.2	4.42	-3	1.61E+00	7.73E-01	8	Very Stiff Sand to Clayey Sand*	49	50.63	-99	-99
2.007	25.76	482.2	482.1	5.34	-0.11	1.67E+00	8.03E-01	9	Very Stiff, Fine Grained	17	49.14	-99	-99
2.085	22.44	433.3	433.3	5.18	-0.01	1.74E+00	8.34E-01	9	Very Stiff, Fine Grained	16	48.54	-99	-99
2.164	20.71	377.1	377.1	5.49	0.29	1.80E+00	8.66E-01	9	Very Stiff, Fine Grained	14	47.8	-99	-99
2.242	17.75	347.5	347.5	5.11	0.48	1.87E+00	8.97E-01	9	Very Stiff, Fine Grained	13	47.3	-99	-99
2.321	14.95	326.7	326.8	4.58	0.48	1.93E+00	9.28E-01	8	Very Stiff Sand to Clayey Sand*	24	46.87	-99	-99
2.399	12.81	307.5	307.6	4.17	0.53	2.00E+00	9.60E-01	8	Very Stiff Sand to Clayey Sand*	22	46.46	-99	-99
2.476	11.91	286.8	286.9	4.15	0.48	2.06E+00	9.91E-01	8	Very Stiff Sand to Clayey Sand*	21	46	-99	-99
2.555	11.61	261.6	261.7	4.44	0.48	2.13E+00	1.02E+00	8	Very Stiff Sand to Clayey Sand*	19	45.43	-99	-99
2.636	10.4	249.8	249.8	4.16	0.48	2.20E+00	1.05E+00	8	Very Stiff Sand to Clayey Sand*	18	45.07	-99	-99
2.713	10.24	237.9	238	4.3	0.38	2.26E+00	1.09E+00	8	Very Stiff Sand to Clayey Sand*	17	44.7	-99	-99
2.792	11.19	234.9	235	4.76	0.29	2.33E+00	1.12E+00	9	Very Stiff, Fine Grained	8	44.5	-99	-99
2.869	11.14	226.1	226.1	4.92	0.24	2.39E+00	1.15E+00	9	Very Stiff, Fine Grained	8	44.18	-99	-99
2.948	11.09	226.1	226.1	4.9	0.24	2.46E+00	1.18E+00	9	Very Stiff, Fine Grained	8	44.05	-99	-99
3.022	11.07	192	192	5.77	0.09	2.52E+00	1.21E+00	9	Very Stiff, Fine Grained	7	43.12	-99	-99
3.096	11.12	244.1	244.1	4.55	-0.15	2.58E+00	1.24E+00	9	Very Stiff, Fine Grained	9	44.19	-99	-99
3.174	11.26	241.2	241.2	4.67	-0.15	2.65E+00	1.27E+00	9	Very Stiff, Fine Grained	9	44.01	-99	-99
3.253	11.46	238.2	238.2	4.81	-0.15	2.71E+00	1.30E+00	9	Very Stiff, Fine Grained	9	43.82	-99	-99
3.332	11.54	238.2	238.2	4.85	-0.2	2.78E+00	1.33E+00	9	Very Stiff, Fine Grained	9	43.71	-99	-99
3.411	11.6	241.2	241.1	4.81	-0.2	2.84E+00	1.36E+00	9	Very Stiff, Fine Grained	9	43.65	-99	-99
3.49	11.66	248.6	248.6	4.69	-0.2	2.91E+00	1.40E+00	9	Very Stiff, Fine Grained	9	43.69	-99	-99
3.569	11.69	257.5	257.4	4.54	-0.2	2.97E+00	1.43E+00	9	Very Stiff, Fine Grained	9	43.75	-99	-99
3.65	11.72	256	256	4.58	-0.15	3.04E+00	1.46E+00	9	Very Stiff, Fine Grained	9	43.61	-99	-99
3.729	11.85	259	258.9	4.58	-0.15	3.11E+00	1.49E+00	9	Very Stiff, Fine Grained	9	43.56	-99	-99
3.808	12.01	263.4	263.4	4.56	-0.1	3.17E+00	1.52E+00	9	Very Stiff, Fine Grained	9	43.54	-99	-99
3.889	12.22	269.3	269.3	4.54	-0.15	3.24E+00	1.56E+00	9	Very Stiff, Fine Grained	10	43.55	-99	-99
3.968	12.48	273.8	273.7	4.56	-0.15	3.31E+00	1.59E+00	9	Very Stiff, Fine Grained	10	43.53	-99	-99
4.047	12.73	275.3	275.2	4.63	-0.15	3.37E+00	1.62E+00	9	Very Stiff, Fine Grained	10	43.46	-99	-99
4.127	13	279.7	279.7	4.65	-0.15	3.44E+00	1.65E+00	9	Very Stiff, Fine Grained	10	43.44	-99	-99
4.206	13.27	282.7	282.6	4.69	-0.1	3.51E+00	1.68E+00	9	Very Stiff, Fine Grained	10	43.4	-99	-99
4.287	13.44	290.1	290	4.63	-0.1	3.57E+00	1.72E+00	9	Very Stiff, Fine Grained	10	43.43	-99	-99
4.366	13.73	294.5	294.5	4.66	-0.05	3.64E+00	1.75E+00	9	Very Stiff, Fine Grained	11	43.42	-99	-99
4.445	13.96	299	299	4.67	0	3.70E+00	1.78E+00	9	Very Stiff, Fine Grained	11	43.4	-99	-99
4.525	14.18	304.9	304.9	4.65	0.04	3.77E+00	1.81E+00	9	Very Stiff, Fine Grained	11	43.41	-99	-99
4.606	14.38	307.8	307.9	4.67	0.04	3.84E+00	1.84E+00	9	Very Stiff, Fine Grained	11	43.37	-99	-99
4.685	14.46	313.8	313.8	4.61	0	3.90E+00	1.87E+00	9	Very Stiff, Fine Grained	11	43.38	-99	-99
4.764	14.69	322.7	322.7	4.55	0	3.97E+00	1.91E+00	9	Very Stiff, Fine Grained	12	43.44	-99	-99
4.843	15.01	325.6	325.6	4.61	0.04	4.04E+00	1.94E+00	9	Very Stiff, Fine Grained	12	43.4	-99	-99
4.922	15.22	328.6	328.6	4.63	0.04	4.10E+00	1.97E+00	9	Very Stiff, Fine Grained	12	43.37	-99	-99
5.002	15.43	328.6	328.6	4.7	0.04	4.17E+00	2.00E+00	9	Very Stiff, Fine Grained	12	43.29	-99	-99
5.081	15.66	330.1	330.1	4.74	0.04	4.23E+00	2.03E+00	9	Very Stiff, Fine Grained	12	43.23	-99	-99
5.16	15.72	330.1	330.1	4.76	0.04	4.30E+00	2.06E+00	9	Very Stiff, Fine Grained	12	43.15	-99	-99
5.239	15.66	325.6	325.6	4.81	0.04	4.37E+00	2.10E+00	9	Very Stiff, Fine Grained	12	43.01	-99	-99
5.319	15.53	322.7	322.7	4.81	0.04	4.43E+00	2.13E+00	9	Very Stiff, Fine Grained	12	42.88	-99	-99
5.4	15.5	322.7	322.7	4.8	0.09	4.50E+00	2.16E+00	9	Very Stiff, Fine Grained	12	42.81	-99	-99
5.479	15.54	327.1	327.1	4.75	0.09	4.57E+00	2.19E+00	9	Very Stiff, Fine Grained	12	42.8	-99	-99
5.557	15.72	333	333	4.72	0.04	4.63E+00	2.22E+00	9	Very Stiff, Fine Grained	12	42.82	-99	-99
5.637	16.02	341.9	341.9	4.69	0.04	4.70E+00	2.26E+00	9	Very Stiff, Fine Grained	12	42.88	-99	-99
5.715	16.11	350.8	350.8	4.59	0.09	4.76E+00	2.29E+00	9	Very Stiff, Fine Grained	13	42.94	-99	-99
5.795	15.37	361.2	361.2	4.26	0.04	4.83E+00	2.32E+00	9	Very Stiff, Fine Grained	13	43.02	-99	-99
5.875	14.54	365.6	365.6	3.98	0.09	4.90E+00	2.35E+00	8	Very Stiff Sand to Clayey Sand*	26	43.01	-99	-99
5.953	15.09	364.1	364.1	4.14	0.04	4.96E+00	2.38E+00	8	Very Stiff Sand to Clayey Sand*	26	42.93	-99	-99
6.032	15.37	356.7	356.7	4.31	0.04	5.03E+00	2.41E+00	9	Very Stiff, Fine Grained	13	42.75	-99	-99
6.112	14.63	337.5	337.5	4.34	0	5.09E+00	2.45E+00	9	Very Stiff, Fine Grained	12	42.4	-99	-99
6.188	12.99	306.3	306.4	4.24	0.33	5.16E+00	2.48E+00	9	Very Stiff, Fine Grained	11	41.83	-99	-99
6.267	11.52	297.4	297.5	3.87	0.48	5.22E+00	2.51E+00	8	Very Stiff Sand to Clayey Sand*	21	41.61	-99	-99
6.347	10.32	254.4	254.5	4.06	0.18	5.29E+00	2.54E+00	9	Very Stiff, Fine Grained	9	40.71	-99	-99
6.426	9.53	210	209.9	4.54	-0.26	5.36E+00	2.57E+00	9	Very Stiff, Fine Grained	8	39.58	-99	-99
6.505	9.02	195.1	195	4.62	-0.65	5.42E+00	2.60E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	7	39.09	12.65	-99
6.584	9.03	193.7	193.6	4.67	-0.41	5.49E+00	2.63E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	7	38.98	12.54	-99
6.663	9.68	193.7	193.6	5	-0.11	5.55E+00	2.67E+00	9	Very Stiff, Fine Grained	7	38.91	-99	-99
6.743	11.27	199.6	199.6	5.65	-0.01	5.62E+00	2.70E+00	9	Very Stiff, Fine Grained	7	39.02	-99	-99
6.822	12.75	210	209.9	6.07	-0.11	5.69E+00	2.73E+00	9	Very Stiff, Fine Grained	8	39.24	-99	-99
6.902	13.82	221.8	221.8	6.23	-0.16	5.75E+00	2.76E+00	9	Very Stiff, Fine Grained	8	39.48	-99	-99
6.982	14.51	221.8	221.9	6.54	0.43	5.82E+00	2.79E+00	9	Very Stiff, Fine Grained	8	39.42	-99	-99
7.061	15.16	217.4	217.4	6.97	-0.01	5.88E+00	2.82E+00	9	Very Stiff, Fine Grained	8	39.24	-99	-99
7.14	15.73	217.4	217.3	7.24	-0.51	5.95E+00	2.86E+00	9	Very Stiff, Fine Grained	8	39.18	-99	-99
7.221	15.95	223.3	223.1	7.15	-0.85	6.02E+00	2.89E+00	9	Very Stiff, Fine Grained	8	39.27	-99	-99
7.3	16.35	236.7	236.4	6.92	-1.29	6.08E+00	2.92E+00	9	Very Stiff, Fine Grained	9	39.53	-99	-99
7.379	17.47	258.9	258.6	6.76	-1.59	6.15E+00	2.95E+00	9	Very Stiff, Fine Grained	9	39.98	-99	-99
7.457	18.81	284.1	284	6.62	-0.8	6.22E+00	2.98E+00	9	Very Stiff, Fine Grained	10	40.43	-99	-99
7.537	20.45	313.8	314	6.51	1.12	6.28E+00	3.02E+00	9	Very Stiff, Fine Grained	11	40.91	-99	-99
7.619	22.11	331.6	331.7	6.67	0.82	6.35E+00	3.05E+00	9	Very Stiff, Fine Grained	12	41.15	-99	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
7.697	23.62	330.1	330.1	7.16	-0.06	6.41E+00	3.08E+00	9	Very Stiff, Fine Grained	12	41.07	-99	-99
7.776	25.32	337.5	337.4	7.5	-0.41	6.48E+00	3.11E+00	9	Very Stiff, Fine Grained	12	41.14	-99	-99
7.855	26.46	349.3	349.2	7.58	-0.75	6.55E+00	3.14E+00	9	Very Stiff, Fine Grained	13	41.27	-99	-99
7.934	26.45	356.8	356.6	7.42	-1	6.61E+00	3.17E+00	9	Very Stiff, Fine Grained	13	41.33	-99	-99
8.012	25.64	361.2	361	7.1	-1.15	6.68E+00	3.21E+00	9	Very Stiff, Fine Grained	13	41.34	-99	-99
8.093	24.36	352.3	352.1	6.92	-1.2	6.74E+00	3.24E+00	9	Very Stiff, Fine Grained	13	41.15	-99	-99
8.171	23.01	341.9	341.7	6.73	-1.25	6.81E+00	3.27E+00	9	Very Stiff, Fine Grained	12	40.94	-99	-99
8.251	22.22	333	332.8	6.68	-1.29	6.88E+00	3.30E+00	9	Very Stiff, Fine Grained	12	40.74	-99	-99
8.329	22.28	328.6	328.3	6.79	-1.34	6.94E+00	3.33E+00	9	Very Stiff, Fine Grained	12	40.62	-99	-99
8.41	22.83	327.1	326.8	6.99	-1.44	7.01E+00	3.36E+00	9	Very Stiff, Fine Grained	12	40.54	-99	-99
8.49	23.72	328.6	328.3	7.22	-1.49	7.08E+00	3.40E+00	9	Very Stiff, Fine Grained	12	40.52	-99	-99
8.568	25	341.9	341.6	7.32	-1.64	7.14E+00	3.43E+00	9	Very Stiff, Fine Grained	12	40.68	-99	-99
8.647	26	374.6	374.2	6.95	-1.69	7.21E+00	3.46E+00	9	Very Stiff, Fine Grained	13	41.13	-99	-99
8.725	26.6	408.7	408.4	6.51	-1.54	7.27E+00	3.49E+00	9	Very Stiff, Fine Grained	15	41.54	-99	-99
8.805	26.94	432.4	432.1	6.23	-1.44	7.34E+00	3.52E+00	9	Very Stiff, Fine Grained	16	41.79	-99	-99
8.884	26.94	433.9	433.6	6.21	-1.25	7.40E+00	3.55E+00	9	Very Stiff, Fine Grained	16	41.76	-99	-99
8.963	27.49	427.9	427.7	6.43	-1.29	7.47E+00	3.59E+00	9	Very Stiff, Fine Grained	15	41.64	-99	-99
9.041	28.61	429.4	429.2	6.67	-1.39	7.54E+00	3.62E+00	9	Very Stiff, Fine Grained	15	41.62	-99	-99
9.12	28.77	436.8	436.6	6.59	-1.34	7.60E+00	3.65E+00	9	Very Stiff, Fine Grained	16	41.66	-99	-99
9.199	27.23	447.2	447.1	6.09	-0.85	7.67E+00	3.68E+00	9	Very Stiff, Fine Grained	16	41.74	-99	-99
9.267	25.55	456	456	5.6	0.19	7.72E+00	3.71E+00	9	Very Stiff, Fine Grained	16	41.8	-99	-99
9.345	24.1	447.1	447.2	5.39	0.34	7.79E+00	3.74E+00	9	Very Stiff, Fine Grained	16	41.65	-99	-99
9.423	22.72	404.1	404.2	5.62	0.29	7.85E+00	3.77E+00	9	Very Stiff, Fine Grained	15	41.07	-99	-99
9.501	20.55	341.9	341.9	6.01	0.09	7.92E+00	3.80E+00	9	Very Stiff, Fine Grained	12	40.12	-99	-99
9.579	17.46	307.8	307.8	5.67	-0.35	7.98E+00	3.83E+00	9	Very Stiff, Fine Grained	11	39.48	-99	-99
9.658	14.48	275.3	275.2	5.26	-0.5	8.05E+00	3.86E+00	9	Very Stiff, Fine Grained	10	38.8	-99	-99
9.735	11.73	244.1	244.1	4.8	-0.5	8.11E+00	3.89E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	38.06	15.74	-99
9.814	9.27	213	212.9	4.35	-0.55	8.18E+00	3.93E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	8	37.2	13.66	-99
9.892	7.73	189.3	189.2	4.09	-0.59	8.24E+00	3.96E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	7	36.44	12.07	-99
9.97	7.05	177.5	177.4	3.97	-0.59	8.31E+00	3.99E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	6	35.99	11.28	-99
10.05	7.1	173	172.9	4.1	-0.55	8.38E+00	4.02E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	6	35.79	10.98	-99
10.129	7.79	176	175.9	4.43	-0.55	8.44E+00	4.05E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	6	35.84	11.17	-99
10.208	9.14	190.8	190.7	4.79	-0.59	8.51E+00	4.08E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	7	36.3	12.15	-99
10.287	10.76	201.2	201.1	5.35	-0.55	8.57E+00	4.12E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	7	36.57	12.84	-99
10.365	12.31	220.4	220.3	5.59	-0.59	8.64E+00	4.15E+00	3	Clays-Clay to Silty Clay	11	-99	14.12	-99
10.443	12.97	245.6	245.5	5.28	-0.45	8.70E+00	4.18E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	37.68	15.8	-99
10.523	12.52	269.3	269.5	4.65	0.63	8.77E+00	4.21E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	38.18	17.37	-99
10.6	11.87	297.5	297.6	3.99	0.59	8.83E+00	4.24E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	38.71	19.24	-99
10.679	11.02	300.4	300.5	3.67	0.44	8.90E+00	4.27E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	38.73	19.44	-99
10.758	9.76	282.7	282.7	3.45	0.39	8.97E+00	4.30E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	38.33	18.25	-99
10.837	8.41	263.4	263.5	3.19	0.34	9.03E+00	4.34E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	37.88	16.96	-99
10.916	7.17	238.2	238.3	3.01	0.34	9.10E+00	4.37E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	37.24	15.28	-99
10.996	6.08	221.9	222	2.74	0.34	9.16E+00	4.40E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	5	36.76	14.18	-99
11.074	5.18	190.8	190.8	2.71	0.04	9.23E+00	4.43E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	7	35.79	12.11	-99
11.153	4.71	164.2	164.1	2.87	-0.1	9.29E+00	4.46E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	6	34.8	10.32	-99
11.231	4.63	146.4	146.3	3.16	-0.15	9.36E+00	4.49E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	5	34.02	9.13	-99
11.311	4.91	131.6	131.5	3.74	-0.15	9.43E+00	4.52E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	5	33.27	8.14	-99
11.391	5.55	122.7	122.7	4.52	-0.1	9.49E+00	4.56E+00	3	Clays-Clay to Silty Clay	6	-99	7.55	-99
11.469	6.57	118.2	118.2	5.55	-0.05	9.56E+00	4.59E+00	3	Clays-Clay to Silty Clay	6	-99	7.24	-99
11.548	7.99	133	133	6	0	9.62E+00	4.62E+00	3	Clays-Clay to Silty Clay	6	-99	8.23	-99
11.626	9.66	179	179	5.4	-0.05	9.69E+00	4.65E+00	3	Clays-Clay to Silty Clay	9	-99	11.28	-99
11.706	11.25	221.9	221.9	5.07	-0.1	9.76E+00	4.68E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	8	36.38	14.14	-99
11.786	12.23	244.1	244.1	5.01	-0.1	9.82E+00	4.72E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	36.92	15.62	-99
11.864	12.97	273.8	273.8	4.74	0.04	9.89E+00	4.75E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	37.57	17.59	-99
11.943	13.28	288.6	288.9	4.6	1.62	9.95E+00	4.78E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	37.84	18.58	-99
12.022	12.93	281.2	281.5	4.59	1.72	1.00E+01	4.81E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	37.65	18.08	-99
12.1	11.98	276.7	277.1	4.32	1.96	1.01E+01	4.84E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	37.51	17.78	-99
12.18	11.3	281.2	281.6	4.01	2.21	1.02E+01	4.87E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	37.57	18.07	-99
12.259	10.37	371.5	372.1	2.79	2.6	1.02E+01	4.90E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	9	39.15	24.09	-99
12.336	11.01	586.4	587	1.88	3.24	1.03E+01	4.93E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	41.62	38.4	-99
12.413	15.04	817.5	818	1.84	2.6	1.03E+01	4.97E+00	6	Sands-Clean Sand to Silty Sand	13	43.3	-99	-99
12.489	20.62	943.4	943.9	2.19	2.55	1.04E+01	5.00E+00	6	Sands-Clean Sand to Silty Sand	15	43.98	-99	-99
12.569	27.69	964.1	964.6	2.87	2.55	1.05E+01	5.03E+00	8	Very Stiff Sand to Clayey Sand*	69	44.05	-99	-99
12.644	33.76	944.6	945.1	3.57	2.19	1.05E+01	5.06E+00	8	Very Stiff Sand to Clayey Sand*	68	43.92	-99	-99
12.723	38.15	900.2	900.7	4.24	2.54	1.06E+01	5.09E+00	8	Very Stiff Sand to Clayey Sand*	65	43.65	-99	-99
12.803	40.23	826.1	826.6	4.87	2.39	1.07E+01	5.12E+00	9	Very Stiff, Fine Grained	30	43.2	-99	-99
12.881	40.28	781.6	782.2	5.15	2.83	1.07E+01	5.15E+00	9	Very Stiff, Fine Grained	28	42.89	-99	-99
12.96	38.44	737.2	737.7	5.21	2.69	1.08E+01	5.18E+00	9	Very Stiff, Fine Grained	27	42.56	-99	-99
13.039	34.42	689.8	690.2	4.99	2.44	1.09E+01	5.22E+00	9	Very Stiff, Fine Grained	25	42.18	-99	-99
13.118	29.65	646.8	647.2	4.58	2.29	1.09E+01	5.25E+00	9	Very Stiff, Fine Grained	23	41.81	-99	-99
13.197	25.69	593.5	593.9	4.33	2.19	1.10E+01	5.28E+00	9	Very Stiff, Fine Grained	21	41.33	-99	-99
13.275	22.59	537.1	537.5	4.2	2	1.11E+01	5.31E+00	9	Very Stiff, Fine Grained	19	40.76	-99	-99
13.355	19.61	494.2	494.5	3.97	1.65	1.11E+01	5.34E+00	9	Very Stiff, Fine Grained	18	40.27	-99	-99
13.435	16.79	455.7	456	3.68	1.6	1.12E+01	5.37E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	16	39.79	29.63	-99
13.514	14.28	414.2	414.5	3.45	1.6	1.13E+01	5.41E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	10	39.22	26.86	-99
13.593	12.55	380.1	380.4	3.3	1.46	1.13E+01	5.44E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	9	38.69	24.58	-99
13.672	11.58	347.5	347.7	3.33	1.31	1.14E+01	5.47E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	13	38.14	22.41	-99
13.751	10.89	322.3	322.5	3.38	1.26	1.15E+01	5.50E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	12	37.66	20.72	-99
13.831	10.13	297.1	297.3	3.41	1.26	1.15E+01	5.53E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	37.14	19.04	-99
13.91	9.89	286.7	287	3.45	1.26	1.16E+01	5.56E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	36.89	18.34	-99
13.989	10.46	285.2	285.5	3.66	1.31	1.17E+01	5.60E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	36.83	18.24	-99
14.068	11.67	310.4	310.7	3.75	1.41	1.17E+01	5.63E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	37.3	19.91	-99
14.147	13.14	349	349.2	3.76	1.46	1.18E+01	5.66E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	13	37.96	22.48	-99
14.226	14.43	394.9	395.2	3.65	1.65	1.19E+01	5.69E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	14	38.65	25.54	-99
14.307	15.13	440.8	441.2	3.43	1.95	1.19E+01	5.72E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	11	39.25	28.59	-99
14.385	15.54	467.5	467.9	3.32	2.14	1.20E+01	5.75E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	11	39.55	30.37	-99
14.464	15.96	495.7	496.1	3.22	2.34	1.21E+01	5.79E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	12	39.84	32.24	-99
14.542	16.53	507.5	508	3.25	2.29	1.21E+01	5.82E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	12	39.95	33.03	-99
14.621	17.38	519.4	519.8	3.34	2.44	1.22E+01	5.85E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	12	40.04	33.81	-99
14.701	18.73	489.7	490.3	3.82	2.73	1.23E+01	5.88E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	18	39.69	31.83	-99
14.779	20.06	474.9	475.5	4.22	2.83	1.23E+01	5.91E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	17	39.48	30.84	-99
14.859	20.9	474.9	475.4	4.4	2.64	1.24E+01	5.94E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	17	39.45	30.84	-99
14.938	21.22	492.7	493.2	4.3	2.49	1.25E+01	5.98E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	18	39.63	32.02	-99
15.016	21.49	501.6	502.1	4.28	2.44	1.25E+01	6.01E+00	9	Very Stiff, Fine Grained	18	39.7	-99	-99
15.097	21.78	537.1	537.7	4.05	2.78	1.26E+01	6.04E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	19	40.05	34.97	-99
15.175	22.22	560.9	561.4	3.96	2.64	1.27E+01	6.07E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	20	40.26	36.55	-99
15.254	22.35	583.1	583.6	3.83	2.59	1.27E+01	6.10E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	21	40.45	38.02	-99
15.333	21.8	575.7	576.1	3.78	2.39	1.28E+01	6.13E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	21	40.35	37.53	-99
15.412	21.09	543.1	543.5	3.88	2.14	1.28E+01	6.17E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	20	40	35.35	-99
15.493	20.11	470.5	470.9	4.27	2.19	1.29E+01	6.20E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	17	39.16	30.5	-99
15.573	18.77	390.5	390.9	4.8	2.1	1.30E+01	6.23E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	14	38.06	25.16	-99
15.652	17.12	340.1	340.5	5.03	2.19	1.30E+01	6.26E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	12	37.21	21.8	-99
15.731	15.38	292.7	293.1	5.25	2.14	1.31E+01	6.29E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	36.27	18.64	-99
15.811	13.61	295.6	296	4.6	2.1	1.32E+01	6.32E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	36.3	18.83	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
15.889	12.24	307.5	307.9	3.98	2.19	1.32E+01	6.36E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	36.51	19.62	-99
15.955	11.62	335.6	335.9	3.46	1.87	1.33E+01	6.38E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	12	37.01	21.49	-99
16.035	11.45	306	306.4	3.74	1.91	1.34E+01	6.41E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	11	36.42	19.51	-99
16.114	11.43	285.3	285.7	4	2.11	1.34E+01	6.45E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	35.96	18.13	-99
16.193	11.11	263.1	263.6	4.22	2.31	1.35E+01	6.48E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	35.43	16.64	-99
16.272	10.57	251.3	251.7	4.2	2.31	1.36E+01	6.51E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	35.1	15.85	-99
16.351	10.06	254.3	254.7	3.95	2.26	1.36E+01	6.54E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	9	35.15	16.04	-99
16.43	9.69	266.1	266.6	3.63	2.45	1.37E+01	6.57E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	35.4	16.83	-99
16.508	9.42	272	272.5	3.46	2.55	1.38E+01	6.60E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	35.51	17.22	-99
16.587	8.99	277.9	278.4	3.23	2.6	1.38E+01	6.64E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	35.62	17.61	-99
16.668	8.54	283.8	284.3	3.01	2.6	1.39E+01	6.67E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	35.72	18	-99
16.747	9.71	277.9	278.4	3.49	2.7	1.40E+01	6.70E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	35.56	17.6	-99
16.826	13.12	285.3	285.8	4.59	2.8	1.40E+01	6.73E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	10	35.69	18.09	-99
16.906	16.88	331.2	331.7	5.09	2.95	1.41E+01	6.76E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	12	36.58	21.14	-99
16.984	20.91	523.4	524	3.99	3.19	1.42E+01	6.79E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	19	39.25	33.95	-99
17.062	25.77	828.1	828.7	3.11	3.29	1.42E+01	6.83E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	20	41.73	54.26	-99
17.141	30.43	1029.2	1029.5	2.96	1.67	1.43E+01	6.86E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	25	42.83	67.66	-99
17.219	35.69	1107.6	1108	3.22	2.26	1.44E+01	6.89E+00	8	Very Stiff Sand to Clayey Sand*	80	43.18	-99	-99
17.297	40.23	1054.3	1054.8	3.81	2.31	1.44E+01	6.92E+00	8	Very Stiff Sand to Clayey Sand*	76	42.91	-99	-99
17.376	41.46	959.7	960.1	4.32	2.36	1.45E+01	6.95E+00	9	Very Stiff, Fine Grained	35	42.4	-99	-99
17.455	41.89	873.9	874.5	4.79	3.04	1.46E+01	6.98E+00	9	Very Stiff, Fine Grained	31	41.89	-99	-99
17.536	41.59	868	868.7	4.79	3.49	1.46E+01	7.01E+00	9	Very Stiff, Fine Grained	31	41.83	-99	-99
17.614	40.17	813.3	814.1	4.93	4.56	1.47E+01	7.05E+00	9	Very Stiff, Fine Grained	29	41.47	-99	-99
17.693	39.17	847.3	848.4	4.62	5.94	1.47E+01	7.08E+00	9	Very Stiff, Fine Grained	31	41.66	-99	-99
17.771	38.85	881.3	882.5	4.4	6.33	1.48E+01	7.11E+00	9	Very Stiff, Fine Grained	32	41.84	-99	-99
17.849	38.3	910.9	912	4.2	6.04	1.49E+01	7.14E+00	9	Very Stiff, Fine Grained	33	41.99	-99	-99
17.929	38.26	865	866.1	4.42	5.6	1.49E+01	7.17E+00	9	Very Stiff, Fine Grained	31	41.7	-99	-99
18.007	37.75	751.2	752.2	5.02	5.4	1.50E+01	7.20E+00	9	Very Stiff, Fine Grained	27	40.92	-99	-99
18.086	36.68	697.9	699	5.25	5.5	1.51E+01	7.24E+00	9	Very Stiff, Fine Grained	25	40.5	-99	-99
18.165	34.72	647.6	648.7	5.35	5.5	1.51E+01	7.27E+00	9	Very Stiff, Fine Grained	23	40.06	-99	-99
18.243	32.59	592.9	594	5.49	5.45	1.52E+01	7.30E+00	9	Very Stiff, Fine Grained	21	39.55	-99	-99
18.324	31.02	561.9	562.9	5.51	5.35	1.53E+01	7.33E+00	9	Very Stiff, Fine Grained	20	39.22	-99	-99
18.402	29.07	591.4	592.4	4.91	5.1	1.53E+01	7.36E+00	9	Very Stiff, Fine Grained	21	39.48	-99	-99
18.48	26.96	635.8	636.8	4.23	5.1	1.54E+01	7.39E+00	9	Very Stiff, Fine Grained	23	39.87	-99	-99
18.559	25.03	733.4	734.4	3.41	5.15	1.55E+01	7.42E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	18	40.63	47.86	-99
18.636	23.58	791.1	791.9	2.98	4.42	1.55E+01	7.45E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	41.02	51.7	-99
18.714	21.9	865	865.8	2.53	3.93	1.56E+01	7.49E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	21	41.47	56.63	-99
18.793	19.95	956.7	957.4	2.08	3.63	1.57E+01	7.52E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	23	41.98	62.74	-99
18.87	17.55	1020.3	1021	1.72	3.34	1.57E+01	7.55E+00	6	Sands-Clean Sand to Silty Sand	16	42.29	-99	-99
18.948	15.54	1058.8	1059.4	1.47	3.24	1.58E+01	7.58E+00	6	Sands-Clean Sand to Silty Sand	17	42.46	-99	-99
19.026	14.59	1069.1	1069.7	1.36	3.14	1.59E+01	7.61E+00	6	Sands-Clean Sand to Silty Sand	17	42.49	-99	-99
19.104	14.55	1057.3	1057.8	1.38	2.95	1.59E+01	7.64E+00	6	Sands-Clean Sand to Silty Sand	17	42.41	-99	-99
19.173	15.21	955.2	955.8	1.59	2.7	1.60E+01	7.67E+00	6	Sands-Clean Sand to Silty Sand	15	41.87	-99	-99
19.244	16.46	1063.8	1064.3	1.55	2.76	1.60E+01	7.70E+00	6	Sands-Clean Sand to Silty Sand	17	42.41	-99	-99
19.325	18.4	1086.1	1086.7	1.69	3.01	1.61E+01	7.73E+00	6	Sands-Clean Sand to Silty Sand	17	42.49	-99	-99
19.404	20.68	1136.6	1137.2	1.82	2.91	1.62E+01	7.76E+00	6	Sands-Clean Sand to Silty Sand	18	42.71	-99	-99
19.485	22.91	1208	1208.5	1.9	3.01	1.62E+01	7.79E+00	6	Sands-Clean Sand to Silty Sand	19	42.99	-99	-99
19.564	25.25	1310.5	1311.1	1.93	3.2	1.63E+01	7.83E+00	6	Sands-Clean Sand to Silty Sand	21	43.38	-99	-99
19.643	28.3	1407.1	1407.7	2.01	3.2	1.64E+01	7.86E+00	6	Sands-Clean Sand to Silty Sand	23	43.72	-99	-99
19.724	31.36	1494.8	1495.4	2.1	3.3	1.64E+01	7.89E+00	6	Sands-Clean Sand to Silty Sand	24	43.99	-99	-99
19.803	35.77	1572.1	1572.7	2.27	3.25	1.65E+01	7.92E+00	6	Sands-Clean Sand to Silty Sand	25	44.22	-99	-99
19.884	39.93	1537.9	1538.5	2.6	3.3	1.66E+01	7.95E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	37	44.09	101.42	-99
19.966	42.67	1368.5	1369.1	3.12	3.55	1.66E+01	7.99E+00	8	Very Stiff Sand to Clayey Sand*	99	43.5	-99	-99
20.046	43.99	1274.8	1275.5	3.45	3.7	1.67E+01	8.02E+00	8	Very Stiff Sand to Clayey Sand*	92	43.12	-99	-99
20.128	43.13	1228.8	1229.6	3.51	4.53	1.68E+01	8.05E+00	8	Very Stiff Sand to Clayey Sand*	88	42.92	-99	-99
20.207	41.1	1194.6	1195.5	3.44	4.68	1.68E+01	8.08E+00	8	Very Stiff Sand to Clayey Sand*	86	42.75	-99	-99
20.289	37.3	1135.1	1136.1	3.28	4.73	1.69E+01	8.12E+00	8	Very Stiff Sand to Clayey Sand*	82	42.47	-99	-99
20.369	31.34	1099.5	1100.4	2.85	4.53	1.70E+01	8.15E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	26	42.29	72.17	-99
20.451	25.99	1053.4	1054.2	2.47	3.94	1.70E+01	8.18E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	25	42.04	69.09	-99
20.53	21.86	979.1	979.8	2.23	3.65	1.71E+01	8.21E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	23	41.64	64.13	-99
20.611	18.87	916.7	917.3	2.06	3.06	1.72E+01	8.24E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	22	41.27	59.97	-99
20.692	17.09	863.2	863.8	1.98	3.2	1.72E+01	8.28E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	21	40.92	56.4	-99
20.773	15.9	821.6	822.1	1.93	2.96	1.73E+01	8.31E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	20	40.63	53.62	-99
20.854	16.07	805.2	805.8	1.99	2.71	1.74E+01	8.34E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	40.5	52.52	-99
20.935	17.26	788.9	789.4	2.19	2.81	1.75E+01	8.37E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	40.37	51.43	-99
21.016	19.81	793.3	793.8	2.5	2.66	1.75E+01	8.41E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	40.38	51.72	-99
21.095	24.03	793.3	793.9	3.03	2.71	1.76E+01	8.44E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	40.36	51.72	-99
21.176	28.65	790.4	790.9	3.62	2.81	1.77E+01	8.47E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	40.32	51.51	-99
21.258	32.55	808.2	808.8	4.02	3.25	1.77E+01	8.50E+00	9	Very Stiff, Fine Grained	29	40.42	-99	-99
21.338	36.03	818.6	819.2	4.4	3.15	1.78E+01	8.54E+00	9	Very Stiff, Fine Grained	29	40.47	-99	-99
21.418	38.26	799.3	799.9	4.78	3.3	1.79E+01	8.57E+00	9	Very Stiff, Fine Grained	29	40.32	-99	-99
21.498	38.95	733.9	734.6	5.3	3.55	1.79E+01	8.60E+00	9	Very Stiff, Fine Grained	26	39.82	-99	-99
21.579	37.84	705.7	706.4	5.36	3.84	1.80E+01	8.63E+00	9	Very Stiff, Fine Grained	25	39.58	-99	-99
21.645	35.67	707.1	708	5.04	4.39	1.80E+01	8.66E+00	9	Very Stiff, Fine Grained	25	39.58	-99	-99
21.725	31.96	671.5	672.4	4.75	4.88	1.81E+01	8.69E+00	9	Very Stiff, Fine Grained	24	39.26	-99	-99
21.805	28.44	641.8	642.8	4.42	5.23	1.82E+01	8.72E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	23	38.99	41.57	-99
21.886	26.63	613.5	614.6	4.33	5.42	1.82E+01	8.75E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	22	38.71	39.69	-99
21.966	25.92	582.3	583.4	4.44	5.67	1.83E+01	8.79E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	21	38.38	37.6	-99
22.046	25.96	598.7	599.8	4.33	5.97	1.84E+01	8.82E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	22	38.52	38.69	-99
22.128	27.68	609.1	610.2	4.54	5.97	1.84E+01	8.85E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	22	38.6	39.37	-99
22.208	31.51	629.9	631	4.99	5.97	1.85E+01	8.88E+00	9	Very Stiff, Fine Grained	23	38.77	-99	-99
22.287	34.46	680.4	681.6	5.06	6.01	1.86E+01	8.92E+00	9	Very Stiff, Fine Grained	24	39.19	-99	-99
22.367	36.84	732.4	733.6	5.02	6.11	1.86E+01	8.95E+00	9	Very Stiff, Fine Grained	26	39.59	-99	-99
22.449	38.83	809.7	810.9	4.79	6.16	1.87E+01	8.98E+00	9	Very Stiff, Fine Grained	29	40.13	-99	-99
22.526	40.74	876.7	877.9	4.64	5.94	1.88E+01	9.01E+00	9	Very Stiff, Fine Grained	32	40.55	-99	-99
22.606	42.83	915.2	916.3	4.67	5.8	1.88E+01	9.04E+00	9	Very Stiff, Fine Grained	33	40.76	-99	-99
22.685	43.97	931.5	932.6	4.72	5.45	1.89E+01	9.07E+00	9	Very Stiff, Fine Grained	34	40.84	-99	-99
22.765	43.21	927.1	928	4.66	4.96	1.90E+01	9.11E+00	9	Very Stiff, Fine Grained	33	40.79	-99	-99
22.845	41.57	931.5	932.4	4.46	4.71	1.90E+01	9.14E+00	9	Very Stiff, Fine Grained	34	40.8	-99	-99
22.925	39.11	971.5	972.4	4.02	4.62	1.91E+01	9.17E+00	9	Very Stiff, Fine Grained	35	41.01	-99	-99
23.005	35.47	1018.9	1019.8	3.48	4.52	1.92E+01	9.20E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	24	41.24	66.65	-99
23.085	31.29	1051.5	1052.3	2.97	4.27	1.92E+01	9.23E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	25	41.39	68.82	-99
23.165	27.4	1069.3	1070.1	2.56	4.03	1.93E+01	9.27E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	26	41.47	70	-99
23.245	24.2	1082.6	1083.4	2.23	3.98	1.94E+01	9.30E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	26	41.51	70.88	-99
23.326	22.08	1094.5	1095.2	2.02	3.93	1.94E+01	9.33E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	26	41.55	71.67	-99
23.406	20.8	1112.3	1113	1.87	3.83	1.95E+01	9.36E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	27	41.62	72.85	-99
23.487	20.44	1063.4	1064.1	1.92	3.68	1.96E+01	9.40E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	26	41.36	69.59	-99
23.567	20.6	961.1	961.9	2.14	3.68	1.96E+01	9.43E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	23	40.8	62.77	-99
23.648	21.49	876.7	877.4	2.45	3.68	1.97E+01	9.46E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	21	40.28	57.13	-99
23.729	22.68	810	810.7	2.8	3.58	1.98E+01	9.49E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	39.82	52.68	-99
23.809	23.54	731.5	732.2	3.22	3.49	1.98E+01	9.52E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	18	39.23	47.45	-99
23.89	23.68	641.2	641.8	3.69	3.44	1.99E+01	9.56E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	23	38.45	41.42	-99
23.969	23.53	549.3	550	4.28	3.58	2.00E+01	9.59E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	20	37.53	35.29	-99
24.05	23.07	484.1	484.9	4.76	3.73	2.00E+01	9.62E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	17	36.75	30.94	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
24.116	22.07	451.5	452.3	4.88	3.93	2.01E+01	9.65E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	16	36.31	28.76	-99
24.196	20.14	424.9	425.7	4.73	4.03	2.02E+01	9.68E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	15	35.91	26.98	-99
24.277	18.15	386.4	387.1	4.69	4.08	2.02E+01	9.71E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	14	35.29	24.41	-99
24.357	16.92	352.3	353	4.79	3.83	2.03E+01	9.74E+00	3	Clays-Clay to Silty Clay	17	-99	22.13	-99
24.438	16.24	356.7	357.5	4.54	4.17	2.04E+01	9.78E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	13	34.75	22.42	-99
24.519	16.42	396.7	397.5	4.13	3.98	2.04E+01	9.81E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	14	35.4	25.09	-99
24.597	16.96	475.2	476	3.56	3.83	2.05E+01	9.84E+00	4	Silt Mixtures-Clayey Silt to Silty Clay	17	36.5	30.32	-99
24.678	16.84	595.2	595.9	2.83	3.29	2.06E+01	9.87E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	14	37.83	38.31	-99
24.757	16.66	801.2	801.8	2.08	3.34	2.06E+01	9.90E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	19	39.52	52.03	-99
24.837	16.18	1005.6	1006.2	1.61	3.39	2.07E+01	9.94E+00	5	Sand Mixtures-Silty Sand to Sandy Silt	24	40.76	65.66	-99
24.917	15.26	1174.5	1175.1	1.3	3.44	2.08E+01	9.97E+00	6	Sands-Clean Sand to Silty Sand	19	41.58	-99	-99
24.997	14.2	1232.2	1232.9	1.15	3.19	2.08E+01	1.00E+01	6	Sands-Clean Sand to Silty Sand	20	41.81	-99	-99
25.078	13.08	1201.1	1201.7	1.09	3.14	2.09E+01	1.00E+01	6	Sands-Clean Sand to Silty Sand	19	41.66	-99	-99
25.158	12.29	1161.1	1161.7	1.06	2.99	2.10E+01	1.01E+01	6	Sands-Clean Sand to Silty Sand	19	41.46	-99	-99
25.238	12.39	1107.8	1108.4	1.12	2.95	2.10E+01	1.01E+01	6	Sands-Clean Sand to Silty Sand	18	41.2	-99	-99
25.32	13.39	1075.2	1075.8	1.24	2.85	2.11E+01	1.01E+01	6	Sands-Clean Sand to Silty Sand	17	41.02	-99	-99
25.386	13.64	1041.1	1041.7	1.31	2.8	2.12E+01	1.02E+01	6	Sands-Clean Sand to Silty Sand	17	40.83	-99	-99
25.466	13.07	1011.5	1012.1	1.29	2.85	2.12E+01	1.02E+01	6	Sands-Clean Sand to Silty Sand	16	40.66	-99	-99
25.547	14.55	1002.6	1003.2	1.45	2.95	2.13E+01	1.02E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	24	40.59	65.42	-99
25.627	15.91	1011.5	1012.1	1.57	2.85	2.14E+01	1.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	24	40.62	66.01	-99
25.707	17.73	1027.8	1028.4	1.72	2.85	2.14E+01	1.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	25	40.69	67.09	-99
25.788	20.14	1056	1056.4	1.91	2.31	2.15E+01	1.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	25	40.82	68.96	-99
25.867	21.72	1066.3	1066.7	2.04	2.11	2.16E+01	1.04E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	26	40.86	69.65	-99
25.946	22.5	1093	1093.4	2.06	2.36	2.16E+01	1.04E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	26	40.98	71.42	-99
26.026	24.02	1162.6	1163.1	2.06	2.5	2.17E+01	1.04E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	41.29	76.06	-99
26.104	26.03	1285.6	1286.1	2.02	2.65	2.18E+01	1.04E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	31	41.81	84.25	-99
26.183	26.84	1408.5	1409.1	1.9	2.75	2.18E+01	1.05E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	34	42.27	92.45	-99
26.262	26.91	1541.9	1542.4	1.74	2.8	2.19E+01	1.05E+01	6	Sands-Clean Sand to Silty Sand	25	42.72	-99	-99
26.34	25.64	1633.7	1634.2	1.57	2.8	2.20E+01	1.05E+01	6	Sands-Clean Sand to Silty Sand	26	43	-99	-99
26.419	23.75	1651.5	1652	1.44	2.55	2.20E+01	1.06E+01	6	Sands-Clean Sand to Silty Sand	26	43.04	-99	-99
26.498	22.36	1647	1647.5	1.36	2.55	2.21E+01	1.06E+01	6	Sands-Clean Sand to Silty Sand	26	43.01	-99	-99
26.578	20.73	1587.8	1588.3	1.31	2.65	2.22E+01	1.06E+01	6	Sands-Clean Sand to Silty Sand	25	42.81	-99	-99
26.658	18.85	1482.6	1483.1	1.27	2.45	2.22E+01	1.07E+01	6	Sands-Clean Sand to Silty Sand	24	42.44	-99	-99
26.737	17.45	1347.8	1348.3	1.29	2.4	2.23E+01	1.07E+01	6	Sands-Clean Sand to Silty Sand	22	41.93	-99	-99
26.818	16.25	1201.1	1201.6	1.35	2.36	2.24E+01	1.07E+01	6	Sands-Clean Sand to Silty Sand	19	41.3	-99	-99
26.898	15.08	1069.3	1069.7	1.41	2.36	2.24E+01	1.08E+01	6	Sands-Clean Sand to Silty Sand	17	40.66	-99	-99
26.977	13.95	967.1	967.5	1.44	2.31	2.25E+01	1.08E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	40.09	62.97	-99
27.058	12.89	887.1	887.5	1.45	2.21	2.26E+01	1.08E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	39.6	57.64	-99
27.137	12.28	816	816.4	1.5	2.16	2.26E+01	1.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	39.11	52.89	-99
27.217	12.13	747.8	748.2	1.62	2.11	2.27E+01	1.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	18	38.59	48.34	-99
27.297	12.04	681.2	681.6	1.77	2.16	2.28E+01	1.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	16	38.03	43.89	-99
27.376	12.01	632.3	632.7	1.9	2.06	2.28E+01	1.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	15	37.57	40.63	-99
27.455	12	586.4	586.7	2.04	2.01	2.29E+01	1.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	14	37.11	37.56	-99
27.537	11.75	565.6	566	2.08	1.96	2.30E+01	1.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	14	36.87	36.18	-99
27.616	11.36	573	573.4	1.98	1.91	2.30E+01	1.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	14	36.93	36.67	-99
27.695	10.86	552.3	552.6	1.96	1.91	2.31E+01	1.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	13	36.69	35.28	-99
27.775	10.53	558.2	558.6	1.88	1.86	2.32E+01	1.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	13	36.74	35.67	-99
27.854	10.39	618.9	619.3	1.68	1.81	2.32E+01	1.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	15	37.34	39.72	-99
27.934	10.37	685.6	686	1.51	1.91	2.33E+01	1.12E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	16	37.93	44.16	-99
28.012	10.08	790.8	791.1	1.27	1.86	2.33E+01	1.12E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	38.75	51.16	-99
28.092	9.63	832.3	832.6	1.16	1.81	2.34E+01	1.12E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	39.02	53.92	-99
28.171	9.05	851.5	851.9	1.06	1.72	2.35E+01	1.13E+01	6	Sands-Clean Sand to Silty Sand	14	39.14	-99	-99
28.251	8.7	784.9	785.2	1.11	1.72	2.35E+01	1.13E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	19	38.65	50.75	-99
28.332	8.74	722.6	723	1.21	1.62	2.36E+01	1.13E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	17	38.16	46.6	-99
28.412	8.63	654.5	654.8	1.32	1.57	2.37E+01	1.14E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	16	37.56	42.05	-99
28.492	9.7	577.5	577.8	1.68	1.57	2.37E+01	1.14E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	14	36.79	36.91	-99
28.572	11.72	527.1	527.4	2.22	1.47	2.38E+01	1.14E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	13	36.21	33.55	-99
28.651	13.98	460.4	460.7	3.03	1.62	2.39E+01	1.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	17	35.36	29.1	-99
28.732	15.34	430.8	431.1	3.56	1.67	2.39E+01	1.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	16	34.92	27.12	-99
28.813	16.24	401.2	401.5	4.04	1.67	2.40E+01	1.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	14	34.44	25.14	-99
28.892	16.42	389.3	389.7	4.21	2.01	2.41E+01	1.16E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	14	34.23	24.35	-99
28.971	16.29	367.1	367.6	4.43	2.4	2.41E+01	1.16E+01	3	Clays-Clay to Silty Clay	18	-99	22.86	-99
29.052	17.59	392.3	392.8	4.48	2.5	2.42E+01	1.16E+01	3	Clays-Clay to Silty Clay	19	-99	24.54	-99
29.118	19.03	350.8	351.3	5.42	2.55	2.43E+01	1.17E+01	3	Clays-Clay to Silty Clay	17	-99	21.77	-99
29.199	19.95	476.7	477.2	4.18	2.55	2.43E+01	1.17E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	17	35.46	30.16	-99
29.28	20.15	493	493.5	4.08	2.26	2.44E+01	1.17E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	18	35.65	31.24	-99
29.359	19.36	475.2	475.7	4.07	2.21	2.45E+01	1.17E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	17	35.4	30.05	-99
29.439	18.61	433.8	434.2	4.29	2.5	2.45E+01	1.18E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	16	34.81	27.28	-99
29.52	18.78	421.9	422.4	4.45	2.36	2.46E+01	1.18E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	15	34.61	26.49	-99
29.599	19.58	444.1	444.7	4.4	2.7	2.47E+01	1.18E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	16	34.92	27.96	-99
29.679	20.12	496	496.5	4.05	2.75	2.47E+01	1.19E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	18	35.6	31.42	-99
29.759	19.13	546.4	546.8	3.5	2.4	2.48E+01	1.19E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	36.18	34.77	-99
29.839	17.76	599.7	600.1	2.96	2.26	2.49E+01	1.19E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	36.74	38.32	-99
29.92	17.77	719.7	720.1	2.47	2.4	2.49E+01	1.20E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	17	37.81	46.32	-99
29.999	16.97	850	850.5	2	2.31	2.50E+01	1.20E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	38.77	55	-99
30.079	15.93	900.4	900.9	1.77	2.5	2.51E+01	1.20E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	39.08	58.36	-99
30.16	14.79	907.8	908.2	1.63	1.91	2.51E+01	1.21E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	39.11	58.85	-99
30.239	14.19	878.2	878.6	1.62	1.96	2.52E+01	1.21E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	38.91	56.87	-99
30.319	15.06	824.9	825.2	1.83	2.01	2.53E+01	1.21E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	20	38.53	53.31	-99
30.401	17.19	750.8	751.2	2.29	2.01	2.53E+01	1.22E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	18	37.97	48.36	-99
30.481	18.12	664.9	665.2	2.72	1.96	2.54E+01	1.22E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	16	37.23	42.63	-99
30.562	18.81	630.8	631.2	2.98	2.06	2.55E+01	1.22E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	36.9	40.35	-99
30.641	19.68	660.4	660.8	2.98	2.06	2.55E+01	1.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	37.16	42.33	-99
30.721	20.21	667.8	668.3	3.02	2.7	2.56E+01	1.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	37.21	42.81	-99
30.803	18.82	710.8	711.4	2.65	2.99	2.57E+01	1.23E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	17	37.57	45.67	-99
30.883	17.31	744.9	745.4	2.32	2.85	2.57E+01	1.24E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	18	37.83	47.94	-99
30.963	15.87	755.2	755.7	2.1	2.4	2.58E+01	1.24E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	18	37.9	48.63	-99
31.032	16.43	737.5	737.9	2.23	2.16	2.59E+01	1.24E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	18	37.74	47.44	-99
31.103	18.72	857.5	857.9	2.18	2.16	2.59E+01	1.24E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	38.61	55.44	-99
31.183	21.12	884.1	884.5	2.39	2.11	2.60E+01	1.25E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	38.77	57.21	-99
31.263	22.36	887.1	887.5	2.52	2.16	2.61E+01	1.25E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	38.78	57.4	-99
31.343	23.32	872.3	872.7	2.67	2.36	2.61E+01	1.25E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	21	38.66	56.41	-99
31.422	25.3	896	896.4	2.82	2.21	2.62E+01	1.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	38.8	57.99	-99
31.502	28.31	953.7	954.2	2.97	2.26	2.63E+01	1.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	39.15	61.83	-99
31.583	31.04	1072.2	1072.7	2.89	2.31	2.63E+01	1.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	26	39.79	69.73	-99
31.663	33	1164.1	1164.5	2.83	2.21	2.64E+01	1.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	40.23	75.85	-99
31.742	33.6	1285.6	1286.1	2.61	2.65	2.65E+01	1.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	31	40.76	83.94	-99
31.821	34.84	1324.1	1324.7	2.63	2.99	2.65E+01	1.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	32	40.91	86.5	-99
31.9	36.6	1290	1290.6	2.84	2.9	2.66E+01	1.28E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	31	40.75	84.23	-99
31.98	37.55	1269.3	1269.8	2.96	2.65	2.67E+01	1.28E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	30	40.65	82.84	-99
32.061	35.36	1241.1	1241.6	2.85	2.65	2.67E+01	1.28E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	30	40.52	80.96	-99
32.14	33.63	1178.9	1179.4	2.85	2.6	2.68E+01	1.29E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	40.22	76.81	-99
32.22	36.26	1039.7	1040.1	3.49	2.26	2.69E+01	1.29E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	25	39.51	67.52	-99
32.301	39.49	860.4	860.9	4.59	2.7	2.69E+01	1.29E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	38.41	55.57	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
32.38	41.06	816	816.6	5.03	3.14	2.70E+01	1.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	38.09	52.6	-99
32.448	41.24	863.2	863.9	4.77	3.73	2.70E+01	1.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	38.4	55.74	-99
32.527	40.5	824.6	825.3	4.91	3.78	2.71E+01	1.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	38.12	53.17	-99
32.607	38.78	794.9	795.7	4.87	4.03	2.72E+01	1.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	37.89	51.18	-99
32.687	36.42	751.9	752.7	4.84	4.13	2.72E+01	1.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	37.55	48.31	-99
32.767	33.73	774.1	775	4.35	4.27	2.73E+01	1.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	37.71	49.79	-99
32.846	32.15	751.9	752.7	4.27	4.37	2.74E+01	1.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	37.52	48.3	-99
32.926	31.23	734.1	735	4.25	4.57	2.74E+01	1.32E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	37.36	47.11	-99
33.005	30.24	702.9	703.9	4.3	5.01	2.75E+01	1.32E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	37.09	45.03	-99
33.071	29.57	729.6	730.6	4.05	5.16	2.76E+01	1.32E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	37.3	46.8	-99
33.151	29.12	723.7	724.7	4.02	5.21	2.76E+01	1.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	37.24	46.4	-99
33.231	28.34	695.5	696.5	4.07	5.16	2.77E+01	1.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	36.98	44.52	-99
33.311	27.78	716.3	717.3	3.87	5.46	2.78E+01	1.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	37.15	45.9	-99
33.391	27.76	754.8	755.9	3.67	5.46	2.78E+01	1.34E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	37.45	48.47	-99
33.47	28.29	786	787.1	3.59	5.55	2.79E+01	1.34E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	37.67	50.54	-99
33.551	29.3	789	790.1	3.71	5.65	2.80E+01	1.34E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	37.68	50.73	-99
33.63	30.79	781.5	782.6	3.93	5.6	2.80E+01	1.35E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	37.61	50.23	-99
33.711	33.16	768.2	769.2	4.31	5.26	2.81E+01	1.35E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	37.49	49.34	-99
33.79	35.29	747.4	748.4	4.72	4.96	2.82E+01	1.35E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	37.32	47.95	-99
33.872	36.35	707.4	708.2	5.13	4.57	2.82E+01	1.36E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	36.97	45.28	-99
33.952	37.26	661.4	662.2	5.63	4.47	2.83E+01	1.36E+01	3	Clays-Clay to Silty Clay	32	-99	42.2	-99
34.033	37.49	637.6	638.4	5.87	4.18	2.84E+01	1.36E+01	3	Clays-Clay to Silty Clay	31	-99	40.62	-99
34.113	37.46	625.7	626.5	5.98	3.98	2.84E+01	1.37E+01	3	Clays-Clay to Silty Clay	30	-99	39.82	-99
34.193	38.13	621.3	622.1	6.13	4.03	2.85E+01	1.37E+01	3	Clays-Clay to Silty Clay	30	-99	39.52	-99
34.273	38.78	682.1	682.9	5.68	4.18	2.86E+01	1.37E+01	3	Clays-Clay to Silty Clay	33	-99	43.57	-99
34.353	38.41	759.3	760.1	5.05	4.22	2.86E+01	1.37E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	37.31	48.71	-99
34.433	37.88	797.9	798.8	4.74	4.62	2.87E+01	1.38E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	37.59	51.28	-99
34.513	37.83	858.7	859.7	4.4	4.96	2.88E+01	1.38E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	38.01	55.33	-99
34.592	39.71	934.4	935.4	4.25	5.11	2.88E+01	1.38E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	38.49	60.37	-99
34.673	43.05	983.4	984.4	4.37	5.26	2.89E+01	1.39E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	38.77	63.63	-99
34.753	44.81	1042.7	1043.8	4.29	5.8	2.90E+01	1.39E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	39.1	67.58	-99
34.833	46.45	1060.5	1061.6	4.38	5.55	2.90E+01	1.39E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	39.18	68.77	-99
34.913	48.26	1004.1	1005.2	4.8	5.26	2.91E+01	1.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	38.85	65	-99
34.993	49.36	903.2	904.3	5.46	5.26	2.92E+01	1.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	38.23	58.27	-99
35.073	48.09	803.8	804.7	5.98	4.67	2.92E+01	1.40E+01	3	Clays-Clay to Silty Clay	39	-99	51.64	-99
35.154	43.91	679.2	680.1	6.46	4.86	2.93E+01	1.41E+01	3	Clays-Clay to Silty Clay	33	-99	43.32	-99
35.235	37.58	619.8	620.8	6.05	5.26	2.94E+01	1.41E+01	3	Clays-Clay to Silty Clay	30	-99	39.36	-99
35.314	32.19	553	554	5.81	5.21	2.94E+01	1.41E+01	3	Clays-Clay to Silty Clay	27	-99	34.91	-99
35.395	28.12	554.5	555.5	5.06	5.26	2.95E+01	1.42E+01	3	Clays-Clay to Silty Clay	27	-99	35	-99
35.474	25.24	594.6	595.7	4.24	5.8	2.96E+01	1.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	35.62	37.67	-99
35.549	23.05	559	560.1	4.11	6	2.96E+01	1.42E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	35.22	35.29	-99
35.621	21.64	623.1	624.2	3.47	5.81	2.97E+01	1.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	35.89	39.56	-99
35.7	20.89	596.4	597.5	3.5	5.91	2.98E+01	1.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	35.6	37.77	-99
35.78	20.98	590.4	591.6	3.55	6.06	2.98E+01	1.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	35.52	37.37	-99
35.859	22.45	637.9	639.2	3.51	6.5	2.99E+01	1.43E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	35.99	40.54	-99
35.94	24.06	801.1	802.5	3	7.05	3.00E+01	1.44E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	37.36	51.41	-99
36.018	26.41	924.2	925.7	2.85	7.29	3.00E+01	1.44E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	38.19	59.62	-99
36.098	29.55	977.6	979.1	3.02	7.59	3.01E+01	1.44E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	23	38.51	63.17	-99
36.179	32.84	1013.3	1014.7	3.24	7.54	3.02E+01	1.45E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	24	38.7	65.54	-99
36.258	35.59	977.6	979	3.64	6.95	3.02E+01	1.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	38.48	63.16	-99
36.339	37.73	921.3	922.5	4.09	6.5	3.03E+01	1.45E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	38.12	59.4	-99
36.42	37.89	839.7	840.9	4.51	6.4	3.04E+01	1.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	37.56	53.95	-99
36.5	36.51	764	765.3	4.77	6.6	3.04E+01	1.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	36.98	48.91	-99
36.581	34.77	691.3	692.6	5.02	6.7	3.05E+01	1.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	36.36	44.06	-99
36.661	32.89	660.2	661.4	4.97	6.6	3.06E+01	1.47E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	36.07	41.97	-99
36.741	30.53	623.1	624.3	4.89	6.26	3.06E+01	1.47E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	35.69	39.5	-99
36.822	28.32	577.1	578.2	4.9	5.86	3.07E+01	1.47E+01	3	Clays-Clay to Silty Clay	28	-99	36.43	-99
36.903	26.85	525.2	526.1	5.1	5.08	3.08E+01	1.48E+01	3	Clays-Clay to Silty Clay	25	-99	32.96	-99
36.983	25.85	513.3	514.2	5.03	4.68	3.08E+01	1.48E+01	3	Clays-Clay to Silty Clay	25	-99	32.17	-99
37.063	25.27	498.5	499.3	5.06	4.39	3.09E+01	1.48E+01	3	Clays-Clay to Silty Clay	24	-99	31.17	-99
37.143	24.53	504.4	505.2	4.85	4.24	3.10E+01	1.49E+01	3	Clays-Clay to Silty Clay	24	-99	31.56	-99
37.225	23.49	520.7	521.5	4.5	4.29	3.10E+01	1.49E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	19	34.47	32.65	-99
37.305	22.44	532.6	533.4	4.21	4.19	3.11E+01	1.49E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	19	34.6	33.43	-99
37.385	21.22	550.4	551.2	3.85	4.09	3.12E+01	1.50E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	34.8	34.61	-99
37.466	19.56	569.7	570.4	3.43	3.94	3.12E+01	1.50E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	35.01	35.9	-99
37.546	18.52	632	632.7	2.93	3.75	3.13E+01	1.50E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	35.65	40.05	-99
37.626	17.92	654.2	654.9	2.74	3.7	3.14E+01	1.51E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	35.85	41.52	-99
37.707	18.14	663.1	663.8	2.73	3.7	3.14E+01	1.51E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	35.92	42.11	-99
37.787	18.91	637.9	638.6	2.96	3.55	3.15E+01	1.51E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	35.66	40.43	-99
37.868	20.26	586	586.7	3.45	3.5	3.16E+01	1.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	35.12	36.96	-99
37.948	21.26	563.7	564.4	3.77	3.4	3.16E+01	1.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	34.86	35.47	-99
38.029	21.81	507.4	508	4.29	3.45	3.17E+01	1.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	18	34.17	31.71	-99
38.111	21.96	479.2	479.9	4.58	3.55	3.18E+01	1.52E+01	3	Clays-Clay to Silty Clay	23	-99	29.83	-99
38.191	21.82	433.2	433.9	5.03	3.65	3.18E+01	1.53E+01	3	Clays-Clay to Silty Clay	21	-99	26.76	-99
38.271	21.59	402	402.7	5.36	3.65	3.19E+01	1.53E+01	3	Clays-Clay to Silty Clay	19	-99	24.68	-99
38.35	21.22	388.7	389.4	5.45	3.8	3.20E+01	1.53E+01	3	Clays-Clay to Silty Clay	19	-99	23.78	-99
38.431	20.8	388.7	389.4	5.34	3.89	3.20E+01	1.54E+01	3	Clays-Clay to Silty Clay	19	-99	23.78	-99
38.511	20.31	385.7	386.4	5.25	3.84	3.21E+01	1.54E+01	3	Clays-Clay to Silty Clay	19	-99	23.57	-99
38.591	19.79	378.3	379	5.22	3.94	3.22E+01	1.54E+01	3	Clays-Clay to Silty Clay	18	-99	23.07	-99
38.671	19.99	393.1	393.9	5.08	3.94	3.22E+01	1.55E+01	3	Clays-Clay to Silty Clay	19	-99	24.06	-99
38.751	19.59	430.2	431	4.55	4.09	3.23E+01	1.55E+01	3	Clays-Clay to Silty Clay	21	-99	26.53	-99
38.831	19.64	464.3	465.2	4.22	4.48	3.24E+01	1.55E+01	3	Clays-Clay to Silty Clay	22	-99	28.8	-99
38.912	20.44	473.2	474.1	4.31	4.58	3.24E+01	1.56E+01	3	Clays-Clay to Silty Clay	23	-99	29.39	-99
38.986	21.53	544.7	545.5	3.95	4.13	3.25E+01	1.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	34.47	34.14	-99
39.066	23.22	575.7	576.5	4.03	3.84	3.26E+01	1.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	34.81	36.21	-99
39.146	25.3	568.3	569.1	4.45	3.74	3.26E+01	1.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	34.71	35.71	-99
39.226	26.63	559.4	560.2	4.75	3.74	3.27E+01	1.57E+01	3	Clays-Clay to Silty Clay	27	-99	35.12	-99
39.306	27.68	584.6	585.3	4.73	3.74	3.28E+01	1.57E+01	3	Clays-Clay to Silty Clay	28	-99	36.79	-99
39.385	28.88	642.3	643.1	4.49	3.98	3.28E+01	1.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	35.45	40.63	-99
39.465	30.18	713.4	714.2	4.23	4.18	3.29E+01	1.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	36.09	45.37	-99
39.546	31.27	766.6	767.4	4.08	4.03	3.30E+01	1.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	36.52	48.91	-99
39.626	31.41	845.1	845.9	3.71	4.08	3.30E+01	1.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	37.1	54.14	-99
39.706	30.91	920.6	921.3	3.35	4.08	3.31E+01	1.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	37.6	59.16	-99
39.787	29.85	956.1	956.9	3.12	4.23	3.32E+01	1.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	37.81	61.53	-99
39.866	29.55	942.8	943.6	3.13	4.28	3.32E+01	1.60E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	37.71	60.64	-99
39.947	29.11	893.9	894.7	3.25	3.89	3.33E+01	1.60E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	37.39	57.38	-99
40.026	27.67	888	888.7	3.11	3.84	3.34E+01	1.60E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	37.33	56.98	-99
40.107	27.47	902.8	903.5	3.04	3.74	3.34E+01	1.60E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	37.42	57.96	-99
40.188	30.12	925	925.7	3.25	3.79	3.35E+01	1.61E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	37.55	59.43	-99
40.267	33.52	967.9	968.7	3.46	3.93	3.36E+01	1.61E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	35	37.81	62.29	-99
40.347	36.17	1061.2	1062	3.41	4.13	3.36E+01	1.61E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	38.34	68.5	-99
40.426	37.59	1121.8	1122.6	3.35	4.13	3.37E+01	1.62E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	40	38.65	72.54	-99
40.506	38.29	1157.4	1158.2	3.31	4.38	3.38E+01	1.62E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	38.82	74.91	-99
40.587	38.65	1118.9	1119.7	3.45	4.23	3.38E+01	1.62E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	40	38.61	72.34	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
40.667	37.52	1018.2	1019	3.68	3.98	3.39E+01	1.63E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	38.05	65.62	-99
40.747	34.1	883.6	884.3	3.86	3.84	3.40E+01	1.63E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	37.2	56.64	-99
40.828	29.9	694.1	694.9	4.3	3.79	3.40E+01	1.63E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	35.71	44.01	-99
40.908	26.21	515.1	515.8	5.08	3.74	3.41E+01	1.64E+01	3	Clays-Clay to Silty Clay	25	-99	32.06	-99
40.989	23.03	420.3	421	5.47	3.64	3.42E+01	1.64E+01	3	Clays-Clay to Silty Clay	20	-99	25.75	-99
41.069	19.46	392.2	392.9	4.95	3.39	3.42E+01	1.64E+01	3	Clays-Clay to Silty Clay	19	-99	23.87	-99
41.15	16.24	350.8	351.4	4.62	3.3	3.43E+01	1.65E+01	3	Clays-Clay to Silty Clay	17	-99	21.1	-99
41.23	15.02	340.4	341.1	4.4	3.3	3.44E+01	1.65E+01	3	Clays-Clay to Silty Clay	16	-99	20.4	-99
41.309	14.94	361.1	361.8	4.13	3.3	3.44E+01	1.65E+01	3	Clays-Clay to Silty Clay	17	-99	21.78	-99
41.389	15.85	407	407.7	3.89	3.3	3.45E+01	1.66E+01	3	Clays-Clay to Silty Clay	20	-99	24.84	-99
41.471	17.18	478.1	478.7	3.59	3.15	3.46E+01	1.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	17	33.21	29.57	-99
41.549	18.63	592	592.6	3.14	3.25	3.46E+01	1.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	34.59	37.16	-99
41.628	20.56	664.5	665.1	3.09	3.2	3.47E+01	1.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	35.31	41.99	-99
41.707	23.02	729.6	730.3	3.15	3.44	3.48E+01	1.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	35.89	46.33	-99
41.788	25.78	759.2	759.9	3.39	3.44	3.48E+01	1.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	36.12	48.29	-99
41.868	26.46	732.6	733.2	3.61	3.3	3.49E+01	1.68E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	35.89	46.51	-99
41.948	25.5	680.8	681.4	3.74	3.3	3.50E+01	1.68E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	35.42	43.06	-99
42.029	26.28	596.5	597.1	4.4	3.3	3.50E+01	1.68E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	34.57	37.43	-99
42.108	26.4	488.4	489.1	5.4	3.54	3.51E+01	1.68E+01	3	Clays-Clay to Silty Clay	23	-99	30.22	-99
42.188	25.16	469.2	469.9	5.35	3.59	3.52E+01	1.69E+01	3	Clays-Clay to Silty Clay	23	-99	28.93	-99
42.265	23.11	548.7	549.4	4.21	3.7	3.52E+01	1.69E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	33.99	34.23	-99
42.346	22.05	581.3	582.1	3.79	3.95	3.53E+01	1.69E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	34.35	36.4	-99
42.424	22.92	610.9	611.8	3.75	4.25	3.54E+01	1.70E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	34.66	38.37	-99
42.505	24.94	655.4	656.2	3.8	4	3.54E+01	1.70E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	35.1	41.33	-99
42.585	25.02	665.8	666.5	3.75	3.56	3.55E+01	1.70E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	35.18	42.02	-99
42.664	24.64	628.7	629.4	3.91	3.51	3.56E+01	1.71E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	34.81	39.54	-99
42.745	24.71	553.1	553.8	4.46	3.65	3.56E+01	1.71E+01	3	Clays-Clay to Silty Clay	27	-99	34.5	-99
42.825	23.97	539.8	540.6	4.43	4	3.57E+01	1.71E+01	3	Clays-Clay to Silty Clay	26	-99	33.61	-99
42.904	22.96	588.7	589.5	3.89	4.34	3.58E+01	1.72E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	34.35	36.86	-99
42.986	22.74	646.5	647.4	3.51	4.49	3.58E+01	1.72E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	34.94	40.71	-99
43.066	22.78	673.2	674	3.38	4.2	3.59E+01	1.72E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	35.18	42.49	-99
43.147	23.33	696.9	697.6	3.34	3.75	3.60E+01	1.73E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	35.39	44.06	-99
43.228	24.99	618.3	619	4.04	3.61	3.60E+01	1.73E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	34.62	38.82	-99
43.308	25.79	556.1	556.8	4.63	3.61	3.61E+01	1.73E+01	3	Clays-Clay to Silty Clay	27	-99	34.67	-99
43.39	25.87	541.3	542	4.77	3.8	3.62E+01	1.74E+01	3	Clays-Clay to Silty Clay	26	-99	33.67	-99
43.47	26.07	530.9	531.7	4.9	3.9	3.62E+01	1.74E+01	3	Clays-Clay to Silty Clay	25	-99	32.98	-99
43.549	27.44	538.3	539.2	5.09	4.39	3.63E+01	1.74E+01	3	Clays-Clay to Silty Clay	26	-99	33.47	-99
43.63	28.65	551.6	552.6	5.18	4.93	3.64E+01	1.75E+01	3	Clays-Clay to Silty Clay	26	-99	34.35	-99
43.709	28.54	560.5	561.5	5.08	5.18	3.64E+01	1.75E+01	3	Clays-Clay to Silty Clay	27	-99	34.94	-99
43.791	27.81	516.1	517	5.38	4.79	3.65E+01	1.75E+01	3	Clays-Clay to Silty Clay	25	-99	31.97	-99
43.872	26.97	480.5	481.5	5.6	5.13	3.66E+01	1.76E+01	3	Clays-Clay to Silty Clay	23	-99	29.6	-99
43.952	26.96	493.8	494.9	5.45	5.57	3.66E+01	1.76E+01	3	Clays-Clay to Silty Clay	24	-99	30.48	-99
44.032	26.85	501.3	502.3	5.35	5.57	3.67E+01	1.76E+01	3	Clays-Clay to Silty Clay	24	-99	30.97	-99
44.112	27.21	522	523.1	5.2	5.47	3.68E+01	1.76E+01	3	Clays-Clay to Silty Clay	25	-99	32.35	-99
44.191	28.57	516.1	517.1	5.53	5.47	3.68E+01	1.77E+01	3	Clays-Clay to Silty Clay	25	-99	31.95	-99
44.272	30.05	553.1	554.2	5.42	5.43	3.69E+01	1.77E+01	3	Clays-Clay to Silty Clay	27	-99	34.42	-99
44.352	30.04	538.3	539.4	5.57	5.43	3.70E+01	1.77E+01	3	Clays-Clay to Silty Clay	26	-99	33.42	-99
44.433	27.57	492.4	493.4	5.59	5.18	3.70E+01	1.78E+01	3	Clays-Clay to Silty Clay	24	-99	30.36	-99
44.513	23.73	399	400	5.93	5.28	3.71E+01	1.78E+01	3	Clays-Clay to Silty Clay	19	-99	24.13	-99
44.593	21.73	376.8	377.8	5.75	5.62	3.72E+01	1.78E+01	3	Clays-Clay to Silty Clay	18	-99	22.64	-99
44.674	20.84	450.9	452.1	4.61	6.46	3.72E+01	1.79E+01	3	Clays-Clay to Silty Clay	22	-99	27.58	-99
44.755	19.77	505.7	507	3.9	6.85	3.73E+01	1.79E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	18	33.08	31.23	-99
44.835	18.77	474.6	475.6	3.95	5.43	3.74E+01	1.79E+01	3	Clays-Clay to Silty Clay	23	-99	29.15	-99
44.916	18.18	406.4	407.4	4.46	5.03	3.74E+01	1.80E+01	3	Clays-Clay to Silty Clay	20	-99	24.6	-99
44.994	17.82	400.5	401.5	4.44	5.33	3.75E+01	1.80E+01	3	Clays-Clay to Silty Clay	19	-99	24.2	-99
45.06	16.89	373.8	374.9	4.5	5.62	3.76E+01	1.80E+01	3	Clays-Clay to Silty Clay	18	-99	22.42	-99
45.142	14.54	323.4	324.5	4.48	5.72	3.76E+01	1.81E+01	3	Clays-Clay to Silty Clay	16	-99	19.05	-99
45.222	12.7	278.9	280	4.53	5.62	3.77E+01	1.81E+01	3	Clays-Clay to Silty Clay	13	-99	16.08	-99
45.302	11.33	250.8	251.9	4.5	5.62	3.78E+01	1.81E+01	3	Clays-Clay to Silty Clay	12	-99	14.2	-99
45.382	9.96	222.6	223.7	4.45	5.72	3.78E+01	1.82E+01	3	Clays-Clay to Silty Clay	11	-99	12.32	-99
45.459	8.89	195.9	197.1	4.51	5.82	3.79E+01	1.82E+01	3	Clays-Clay to Silty Clay	9	-99	10.54	-99
45.527	8.3	241.2	242.3	3.43	5.6	3.79E+01	1.82E+01	3	Clays-Clay to Silty Clay	12	-99	13.55	-99
45.608	7.88	233.8	234.9	3.36	5.85	3.80E+01	1.82E+01	3	Clays-Clay to Silty Clay	11	-99	13.05	-99
45.688	7.9	236.7	237.9	3.32	5.99	3.81E+01	1.83E+01	3	Clays-Clay to Silty Clay	11	-99	13.24	-99
45.767	8.2	254.5	255.7	3.21	6.14	3.81E+01	1.83E+01	3	Clays-Clay to Silty Clay	12	-99	14.43	-99
45.848	9.37	303.4	304.6	3.08	6.29	3.82E+01	1.83E+01	3	Clays-Clay to Silty Clay	15	-99	17.68	-99
45.927	10.77	327.1	328.4	3.28	6.48	3.83E+01	1.84E+01	3	Clays-Clay to Silty Clay	16	-99	19.26	-99
46.008	11.65	307.8	309.1	3.77	6.44	3.83E+01	1.84E+01	3	Clays-Clay to Silty Clay	15	-99	17.97	-99
46.088	12.84	290.1	291.3	4.41	6.19	3.84E+01	1.84E+01	3	Clays-Clay to Silty Clay	14	-99	16.78	-99
46.167	14.43	303.4	304.6	4.74	6.19	3.85E+01	1.85E+01	3	Clays-Clay to Silty Clay	15	-99	17.66	-99
46.249	15.87	346.4	347.6	4.57	6.44	3.85E+01	1.85E+01	3	Clays-Clay to Silty Clay	17	-99	20.52	-99
46.329	17.44	404.1	405.4	4.3	6.48	3.86E+01	1.85E+01	3	Clays-Clay to Silty Clay	19	-99	24.37	-99
46.41	20.04	494.5	495.8	4.04	6.78	3.87E+01	1.86E+01	3	Clays-Clay to Silty Clay	24	-99	30.39	-99
46.49	23.27	583.4	584.7	3.98	6.88	3.87E+01	1.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	33.77	36.31	-99
46.569	26.08	630.8	632.1	4.13	6.93	3.88E+01	1.86E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	34.27	39.47	-99
46.65	28.04	608.6	609.8	4.6	6.58	3.89E+01	1.87E+01	3	Clays-Clay to Silty Clay	29	-99	37.98	-99
46.73	29.01	595.2	596.4	4.86	6.14	3.89E+01	1.87E+01	3	Clays-Clay to Silty Clay	29	-99	37.09	-99
46.81	29.6	608.6	609.8	4.85	6.39	3.90E+01	1.87E+01	3	Clays-Clay to Silty Clay	29	-99	37.97	-99
46.891	29.43	607.1	608.4	4.84	6.63	3.91E+01	1.88E+01	3	Clays-Clay to Silty Clay	29	-99	37.87	-99
46.971	28.36	573	574.3	4.94	6.53	3.91E+01	1.88E+01	3	Clays-Clay to Silty Clay	28	-99	35.59	-99
47.051	27.09	506.4	507.6	5.34	6.34	3.92E+01	1.88E+01	3	Clays-Clay to Silty Clay	24	-99	31.14	-99
47.117	26.08	456	457.2	5.7	6.34	3.93E+01	1.89E+01	3	Clays-Clay to Silty Clay	22	-99	27.78	-99
47.197	24.89	421.9	423.3	5.88	7.17	3.93E+01	1.89E+01	3	Clays-Clay to Silty Clay	20	-99	25.51	-99
47.277	24.03	424.9	426.3	5.64	7.37	3.94E+01	1.89E+01	3	Clays-Clay to Silty Clay	20	-99	25.7	-99
47.357	24.1	430.8	432.3	5.58	7.62	3.95E+01	1.89E+01	3	Clays-Clay to Silty Clay	21	-99	26.09	-99
47.436	24.54	460.4	461.9	5.31	7.42	3.95E+01	1.90E+01	3	Clays-Clay to Silty Clay	22	-99	28.06	-99
47.517	23.88	476.7	478.1	4.99	7.32	3.96E+01	1.90E+01	3	Clays-Clay to Silty Clay	23	-99	29.14	-99
47.597	21.59	490.1	491.4	4.39	7.07	3.97E+01	1.90E+01	3	Clays-Clay to Silty Clay	24	-99	30.03	-99
47.677	19.57	507.8	509.2	3.84	7.12	3.97E+01	1.91E+01	3	Clays-Clay to Silty Clay	24	-99	31.21	-99
47.757	18.35	596.7	598.2	3.07	7.52	3.98E+01	1.91E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	33.74	37.13	-99
47.836	18.95	670.8	672.2	2.82	7.22	3.99E+01	1.91E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	34.49	42.06	-99
47.916	20.21	690.1	691.2	2.92	6.19	3.99E+01	1.92E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	34.66	43.34	-99
47.998	19.59	658.9	660.1	2.97	5.85	4.00E+01	1.92E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	34.35	41.26	-99
48.078	19.96	621.9	623	3.2	5.75	4.01E+01	1.92E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	33.97	38.79	-99
48.158	20.2	604.1	605.2	3.34	5.8	4.01E+01	1.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	33.77	37.6	-99
48.237	20.61	638.2	639.5	3.22	6.53	4.02E+01	1.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	34.11	39.87	-99
48.317	21.42	718.2	719.5	2.98	6.78	4.03E+01	1.93E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	34.86	45.2	-99
48.396	21.17	900.4	901.8	2.35	7.42	4.03E+01	1.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	22	36.27	57.34	-99
48.474	20.58	1146.3	1147.6	1.79	6.53	4.04E+01	1.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	37.71	73.73	-99
48.552	21.58	1427.8	1429	1.51	6.24	4.05E+01	1.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	34	38.98	92.49	-99
48.63	23.99	1701.8	1703.1	1.41	6.39	4.05E+01	1.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	41	39.96	110.75	-99
48.709	27.15	1855.9	1857.1	1.46	6.34	4.06E+01	1.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	45	40.43	121.02	-99
48.789	30.26	1844.1	1845.2	1.64	5.89	4.07E+01	1.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	44	40.39	120.23	-99
48.869	34.13	1848.5	1849.6	1.85	5.79	4.07E+01	1.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	44	40.39	120.52	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
48.948	38.32	1804	1805.1	2.12	5.79	4.08E+01	1.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	43	40.25	117.55	-99
49.028	40.18	1667.6	1668.7	2.41	5.79	4.09E+01	1.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	40	39.8	108.45	-99
49.109	42.79	1474.8	1476	2.9	5.84	4.09E+01	1.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	35	39.1	95.59	-99
49.189	43.61	1381.4	1382.5	3.15	5.69	4.10E+01	1.97E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	33	38.72	89.36	-99
49.269	45.64	1264.3	1265.5	3.61	6.33	4.11E+01	1.97E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	46	38.19	81.55	-99
49.349	49.73	1331	1332.2	3.73	6.33	4.11E+01	1.97E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	48	38.48	85.99	-99
49.429	52.74	1464.5	1465.9	3.6	7.47	4.12E+01	1.98E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	53	39.02	94.88	-99
49.51	52.49	1543	1544.6	3.4	8.25	4.13E+01	1.98E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	37	39.31	100.12	-99
49.59	50.84	1446.7	1448.2	3.51	7.91	4.13E+01	1.98E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	52	38.93	93.69	-99
49.672	50.03	1150.1	1151.8	4.34	8.89	4.14E+01	1.99E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	37.59	73.91	-99
49.752	49.25	914.3	916.3	5.37	10.37	4.15E+01	1.99E+01	3	Clays-Clay to Silty Clay	44	-99	58.19	-99
49.833	44.36	752.7	754.6	5.88	9.88	4.15E+01	1.99E+01	3	Clays-Clay to Silty Clay	36	-99	47.41	-99
49.914	36.1	626.6	628.5	5.74	9.78	4.16E+01	2.00E+01	3	Clays-Clay to Silty Clay	30	-99	39	-99
49.994	29.11	533.2	535	5.44	9.43	4.17E+01	2.00E+01	3	Clays-Clay to Silty Clay	26	-99	32.77	-99
50.076	23.91	463.5	465.2	5.14	8.89	4.17E+01	2.00E+01	3	Clays-Clay to Silty Clay	22	-99	28.12	-99
50.154	21.14	417.6	419.2	5.04	8.7	4.18E+01	2.01E+01	3	Clays-Clay to Silty Clay	20	-99	25.05	-99
50.236	19.15	389.4	391	4.9	8.3	4.19E+01	2.01E+01	3	Clays-Clay to Silty Clay	19	-99	23.17	-99
50.318	17.97	376	377.6	4.76	8.25	4.19E+01	2.01E+01	3	Clays-Clay to Silty Clay	18	-99	22.27	-99
50.398	17.65	359.7	361.3	4.89	8.2	4.20E+01	2.02E+01	3	Clays-Clay to Silty Clay	17	-99	21.18	-99
50.478	17.94	358.2	359.8	4.99	8.2	4.21E+01	2.02E+01	3	Clays-Clay to Silty Clay	17	-99	21.08	-99
50.558	18.03	362.7	364.3	4.95	8.2	4.21E+01	2.02E+01	3	Clays-Clay to Silty Clay	17	-99	21.37	-99
50.638	18.61	358.2	359.8	5.17	7.86	4.22E+01	2.03E+01	3	Clays-Clay to Silty Clay	17	-99	21.07	-99
50.719	19.72	382	383.4	5.14	7.42	4.23E+01	2.03E+01	3	Clays-Clay to Silty Clay	18	-99	22.65	-99
50.799	21.08	445.7	447.2	4.71	7.42	4.23E+01	2.03E+01	3	Clays-Clay to Silty Clay	21	-99	26.89	-99
50.879	22.35	497.6	499.1	4.48	7.51	4.24E+01	2.04E+01	3	Clays-Clay to Silty Clay	24	-99	30.35	-99
50.959	23.62	542.1	543.6	4.34	7.56	4.25E+01	2.04E+01	3	Clays-Clay to Silty Clay	26	-99	33.31	-99
51.039	25.07	570.3	571.7	4.38	7.12	4.25E+01	2.04E+01	3	Clays-Clay to Silty Clay	27	-99	35.18	-99
51.121	26.53	591	592.3	4.48	6.23	4.26E+01	2.05E+01	3	Clays-Clay to Silty Clay	28	-99	36.56	-99
51.201	27.88	601.4	602.5	4.63	5.55	4.27E+01	2.05E+01	3	Clays-Clay to Silty Clay	29	-99	37.25	-99
51.282	28.46	613.3	614.3	4.63	5.15	4.27E+01	2.05E+01	3	Clays-Clay to Silty Clay	29	-99	38.04	-99
51.362	28.41	608.8	609.8	4.66	5.1	4.28E+01	2.05E+01	3	Clays-Clay to Silty Clay	29	-99	37.74	-99
51.441	28.56	565.8	566.9	5.04	5.3	4.29E+01	2.06E+01	3	Clays-Clay to Silty Clay	27	-99	34.87	-99
51.524	29.78	545.1	546.1	5.45	5.45	4.29E+01	2.06E+01	3	Clays-Clay to Silty Clay	26	-99	33.48	-99
51.605	30.66	509.5	510.6	6.01	5.55	4.30E+01	2.06E+01	3	Clays-Clay to Silty Clay	24	-99	31.1	-99
51.684	31.07	487.3	488.3	6.36	5.6	4.31E+01	2.07E+01	3	Clays-Clay to Silty Clay	23	-99	29.61	-99
51.764	31.63	515.4	516.5	6.12	5.74	4.31E+01	2.07E+01	3	Clays-Clay to Silty Clay	25	-99	31.49	-99
51.845	32.08	579.2	580.3	5.53	5.89	4.32E+01	2.07E+01	3	Clays-Clay to Silty Clay	28	-99	35.73	-99
51.913	32.18	590.2	591.2	5.44	5.47	4.33E+01	2.08E+01	3	Clays-Clay to Silty Clay	28	-99	36.46	-99
51.99	31.92	947.4	948.4	3.37	5.33	4.33E+01	2.08E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	36.14	60.27	-99
52.068	32.07	1148.9	1150	2.79	5.33	4.34E+01	2.08E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	37.3	73.7	-99
52.148	33.14	1313.5	1314.5	2.52	5.52	4.35E+01	2.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	32	38.08	84.67	-99
52.227	34.38	1528.4	1529.5	2.25	5.87	4.35E+01	2.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	37	38.95	98.99	-99
52.307	34.38	1762.5	1763.7	1.95	5.87	4.36E+01	2.09E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	42	39.75	114.6	-99
52.387	32.05	1890	1891.1	1.69	5.62	4.37E+01	2.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	45	40.13	123.09	-99
52.466	29.19	1938.9	1940	1.5	5.52	4.37E+01	2.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	47	40.26	126.35	-99
52.547	25.83	1912.2	1913.2	1.35	5.23	4.38E+01	2.10E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	46	40.18	124.56	-99
52.626	23.62	1802.6	1803.6	1.31	5.18	4.39E+01	2.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	43	39.84	117.25	-99
52.707	25.09	1627.7	1628.6	1.54	4.93	4.39E+01	2.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	39	39.26	105.58	-99
52.789	29.87	1396.5	1397.4	2.14	4.93	4.40E+01	2.11E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	34	38.37	90.16	-99
52.87	33.73	1126.7	1127.7	2.99	4.88	4.41E+01	2.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	37.09	72.18	-99
52.952	34.33	928.1	929	3.69	4.74	4.41E+01	2.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	35.9	58.93	-99
53.032	34.61	799.2	800.1	4.33	4.93	4.42E+01	2.12E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	34.95	50.33	-99
53.113	37.41	834.7	835.8	4.48	5.62	4.43E+01	2.13E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	30	35.22	52.7	-99
53.192	40.85	902.9	904.1	4.52	6.36	4.43E+01	2.13E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	35.7	57.24	-99
53.272	42.64	953.3	954.8	4.47	7.74	4.44E+01	2.13E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	36.03	60.59	-99
53.352	44.33	1067.4	1068.6	4.15	6.06	4.45E+01	2.13E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	36.71	68.2	-99
53.431	42.74	1060	1061.1	4.03	5.62	4.45E+01	2.14E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	36.66	67.7	-99
53.51	40.65	1174.1	1175.4	3.46	6.36	4.46E+01	2.14E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	37.27	75.3	-99
53.589	40.27	1436.5	1437.7	2.8	6.36	4.47E+01	2.14E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	34	38.45	92.79	-99
53.669	39.17	1780.3	1781.5	2.2	6.11	4.47E+01	2.15E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	43	39.66	115.71	-99
53.746	36.22	2122.7	2123.9	1.71	6.21	4.48E+01	2.15E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	51	40.63	138.53	-99
53.824	32.83	2472.5	2473.7	1.33	6.21	4.49E+01	2.15E+01	6	Sands-Clean Sand to Silty Sand	40	41.44	-99	-99
53.901	30.61	2611.8	2613	1.17	5.97	4.49E+01	2.16E+01	6	Sands-Clean Sand to Silty Sand	42	41.72	-99	-99
53.981	30.16	2736.3	2737.4	1.1	5.92	4.50E+01	2.16E+01	6	Sands-Clean Sand to Silty Sand	44	41.96	-99	-99
54.061	31.96	2743.7	2744.8	1.16	5.87	4.51E+01	2.16E+01	6	Sands-Clean Sand to Silty Sand	44	41.96	-99	-99
54.14	35.02	2770.4	2771.5	1.26	5.82	4.51E+01	2.17E+01	6	Sands-Clean Sand to Silty Sand	44	42.01	-99	-99
54.218	38.64	2877.1	2878.3	1.34	5.97	4.52E+01	2.17E+01	6	Sands-Clean Sand to Silty Sand	46	42.2	-99	-99
54.297	42.31	2972	2973.1	1.42	6.11	4.53E+01	2.17E+01	6	Sands-Clean Sand to Silty Sand	48	42.36	-99	-99
54.376	45.36	3060.9	3062.1	1.48	6.21	4.53E+01	2.18E+01	6	Sands-Clean Sand to Silty Sand	49	42.5	-99	-99
54.456	47.58	3117.2	3118.4	1.53	6.26	4.54E+01	2.18E+01	6	Sands-Clean Sand to Silty Sand	50	42.59	-99	-99
54.535	48.92	3152.8	3154	1.55	6.31	4.55E+01	2.18E+01	6	Sands-Clean Sand to Silty Sand	50	42.64	-99	-99
54.614	49.48	3149.8	3151	1.57	6.31	4.55E+01	2.19E+01	6	Sands-Clean Sand to Silty Sand	50	42.63	-99	-99
54.692	49.48	3154.3	3155.5	1.57	6.26	4.56E+01	2.19E+01	6	Sands-Clean Sand to Silty Sand	50	42.63	-99	-99
54.771	49.27	3145.4	3146.6	1.57	6.31	4.56E+01	2.19E+01	6	Sands-Clean Sand to Silty Sand	50	42.6	-99	-99
54.851	48.78	3127.6	3128.8	1.56	6.26	4.57E+01	2.19E+01	6	Sands-Clean Sand to Silty Sand	50	42.57	-99	-99
54.93	45.09	3108.3	3109.5	1.45	6.31	4.58E+01	2.20E+01	6	Sands-Clean Sand to Silty Sand	50	42.53	-99	-99
55.008	40.67	3111.3	3112.5	1.31	6.31	4.58E+01	2.20E+01	6	Sands-Clean Sand to Silty Sand	50	42.53	-99	-99
55.087	40.95	3084.6	3085.8	1.33	6.36	4.59E+01	2.20E+01	6	Sands-Clean Sand to Silty Sand	49	42.47	-99	-99
55.165	41.15	3049	3050.3	1.35	6.36	4.60E+01	2.21E+01	6	Sands-Clean Sand to Silty Sand	49	42.41	-99	-99
55.245	41.1	3031.2	3032.5	1.36	6.31	4.60E+01	2.21E+01	6	Sands-Clean Sand to Silty Sand	48	42.37	-99	-99
55.32	40.92	2953.2	2954.4	1.38	5.99	4.61E+01	2.21E+01	6	Sands-Clean Sand to Silty Sand	47	42.23	-99	-99
55.398	40.84	2957.7	2958.8	1.38	5.99	4.62E+01	2.22E+01	6	Sands-Clean Sand to Silty Sand	47	42.23	-99	-99
55.478	40.89	2913.2	2914.3	1.4	5.99	4.62E+01	2.22E+01	6	Sands-Clean Sand to Silty Sand	47	42.14	-99	-99
55.557	40.96	2833.1	2834.3	1.45	6.04	4.63E+01	2.22E+01	6	Sands-Clean Sand to Silty Sand	45	41.99	-99	-99
55.636	40.41	2766.4	2767.6	1.46	6.09	4.64E+01	2.23E+01	6	Sands-Clean Sand to Silty Sand	44	41.86	-99	-99
55.715	39.83	2678.9	2680.1	1.49	6.04	4.64E+01	2.23E+01	6	Sands-Clean Sand to Silty Sand	43	41.68	-99	-99
55.794	39.46	2692.2	2693.4	1.47	5.94	4.65E+01	2.23E+01	6	Sands-Clean Sand to Silty Sand	43	41.7	-99	-99
55.874	38.69	2600.3	2601.5	1.49	5.94	4.66E+01	2.24E+01	6	Sands-Clean Sand to Silty Sand	42	41.51	-99	-99
55.953	38.27	2683.3	2684.5	1.43	5.94	4.66E+01	2.24E+01	6	Sands-Clean Sand to Silty Sand	43	41.67	-99	-99
56.031	38.89	2632.9	2634.1	1.48	5.99	4.67E+01	2.24E+01	6	Sands-Clean Sand to Silty Sand	42	41.56	-99	-99
56.112	39.14	2713	2714.2	1.44	6.04	4.68E+01	2.24E+01	6	Sands-Clean Sand to Silty Sand	43	41.71	-99	-99
56.191	37.85	2659.6	2660.8	1.42	5.99	4.68E+01	2.25E+01	6	Sands-Clean Sand to Silty Sand	43	41.6	-99	-99
56.271	35.63	2548.4	2549.5	1.4	5.89	4.69E+01	2.25E+01	6	Sands-Clean Sand to Silty Sand	41	41.36	-99	-99
56.352	32.22	2429.8	2430.9	1.33	5.79	4.70E+01	2.25E+01	6	Sands-Clean Sand to Silty Sand	39	41.1	-99	-99
56.431	27.53	2237	2238.1	1.23	5.64	4.70E+01	2.26E+01	6	Sands-Clean Sand to Silty Sand	36	40.65	-99	-99
56.512	23.85	1904.9	1905.9	1.25	5.4	4.71E+01	2.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	46	39.75	123.85	-99
56.593	20.75	1836.6	1837.6	1.13	5.1	4.72E+01	2.26E+01	6	Sands-Clean Sand to Silty Sand	29	39.54	-99	-99
56.673	19.95	1489.7	1490.6	1.34	5	4.72E+01	2.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	36	38.33	96.16	-99
56.754	20.94	1351.7	1352.7	1.55	4.91	4.73E+01	2.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	32	37.76	86.96	-99
56.835	24.01	1259.8	1260.7	1.9	4.81	4.74E+01	2.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	30	37.33	80.83	-99
56.915	27.38	1058.2	1059.1	2.59	5	4.74E+01	2.28E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	25	36.26	67.38	-99
56.997	33.2	1007.7	1008.7	3.29	4.81	4.75E+01	2.28E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	35.95	64.02	-99
57.077	37.24	912.8	913.8	4.07	5.05	4.76E+01	2.28E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	35.33	57.68	-99
57.157	40.77	862.4	863.5	4.72	5.4	4.76E+01	2.29E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	34.96	54.32	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
57.238	42.8	773.4	774.5	5.53	5.55	4.77E+01	2.29E+01	3	Clays-Clay to Silty Clay	37	-99	48.38	-99
57.317	40.52	748.2	749.4	5.41	5.99	4.78E+01	2.29E+01	3	Clays-Clay to Silty Clay	36	-99	46.7	-99
57.398	37.68	881.7	882.9	4.27	6.19	4.78E+01	2.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	35.07	55.59	-99
57.477	34.84	872.8	874.2	3.99	7.17	4.79E+01	2.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	35	54.99	-99
57.557	32.73	1055.2	1056.7	3.1	7.71	4.80E+01	2.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	36.18	67.15	-99
57.635	29.81	1280.6	1281.7	2.33	5.79	4.80E+01	2.31E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	31	37.34	82.17	-99
57.717	27.43	1236.1	1237.2	2.22	5.5	4.81E+01	2.31E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	30	37.12	79.2	-99
57.798	28.63	1356.2	1357.3	2.11	5.5	4.82E+01	2.31E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	33	37.67	87.2	-99
57.879	33.14	1420	1421.1	2.33	5.69	4.82E+01	2.32E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	34	37.93	91.45	-99
57.958	36.87	1461.5	1462.6	2.52	5.64	4.83E+01	2.32E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	35	38.09	94.21	-99
58.038	39.67	1418.5	1419.5	2.79	5.45	4.84E+01	2.32E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	34	37.91	91.34	-99
58.118	37.49	1265.7	1266.8	2.96	5.35	4.84E+01	2.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	46	37.22	81.15	-99
58.186	33.89	995.9	996.9	3.4	5.45	4.85E+01	2.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	35.75	63.16	-99
58.251	29.84	810.5	811.6	3.68	5.4	4.85E+01	2.33E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	34.44	50.8	-99
58.333	24.6	626.6	627.7	3.92	5.74	4.86E+01	2.33E+01	3	Clays-Clay to Silty Clay	30	-99	38.54	-99
58.413	21.37	546.6	547.9	3.9	6.97	4.87E+01	2.34E+01	3	Clays-Clay to Silty Clay	26	-99	33.19	-99
58.494	18.24	499.1	500.8	3.64	8.5	4.88E+01	2.34E+01	3	Clays-Clay to Silty Clay	24	-99	30.02	-99
58.575	15.72	497.6	499.4	3.15	8.99	4.88E+01	2.34E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	18	31.15	29.92	-99
58.645	15.12	575	577.5	2.62	12.93	4.89E+01	2.35E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	32.13	35.07	-99
58.725	16.29	661.1	663.6	2.45	13.32	4.89E+01	2.35E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	33.05	40.81	-99
58.805	17.55	661.1	663.8	2.64	14.11	4.90E+01	2.35E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	33.05	40.8	-99
58.885	18.18	674.4	677.3	2.68	15.05	4.91E+01	2.36E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	33.17	41.69	-99
58.966	18.79	659.6	662.5	2.84	15.2	4.91E+01	2.36E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	33.01	40.7	-99
59.046	21.38	702.6	705.5	3.03	15.05	4.92E+01	2.36E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	33.42	43.56	-99
59.126	24.33	650.7	653.6	3.72	15.2	4.93E+01	2.37E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	32.9	40.09	-99
59.207	25.53	647.7	650.7	3.92	15.49	4.93E+01	2.37E+01	3	Clays-Clay to Silty Clay	31	-99	39.89	-99
59.287	26.57	659.6	662.4	4.01	14.75	4.94E+01	2.37E+01	3	Clays-Clay to Silty Clay	32	-99	40.68	-99
59.367	26.82	616.5	619.4	4.33	14.7	4.95E+01	2.38E+01	3	Clays-Clay to Silty Clay	30	-99	37.8	-99
59.448	26.61	570.5	573.5	4.64	15.54	4.95E+01	2.38E+01	3	Clays-Clay to Silty Clay	27	-99	34.73	-99
59.53	26.28	552.7	555.7	4.73	15.29	4.96E+01	2.38E+01	3	Clays-Clay to Silty Clay	27	-99	33.54	-99
59.61	24.3	551.2	554.2	4.38	15.39	4.97E+01	2.38E+01	3	Clays-Clay to Silty Clay	26	-99	33.44	-99
59.691	21.95	534.9	537.9	4.08	15.49	4.97E+01	2.39E+01	3	Clays-Clay to Silty Clay	26	-99	32.34	-99
59.77	21.31	537.9	540.8	3.94	15.39	4.98E+01	2.39E+01	3	Clays-Clay to Silty Clay	26	-99	32.54	-99
59.851	21.78	546.8	549.7	3.96	15.2	4.99E+01	2.39E+01	3	Clays-Clay to Silty Clay	26	-99	33.13	-99
59.933	23.99	560.1	563.1	4.26	15.29	4.99E+01	2.40E+01	3	Clays-Clay to Silty Clay	27	-99	34.01	-99
60.013	25.66	634.3	637.2	4.03	14.6	5.00E+01	2.40E+01	3	Clays-Clay to Silty Clay	30	-99	38.96	-99
60.093	27.94	735.3	737.9	3.79	13.82	5.01E+01	2.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	33.6	45.68	-99
60.172	31.24	800.6	802.9	3.89	11.9	5.01E+01	2.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	29	34.15	50.03	-99
60.253	32.26	754.6	756.7	4.26	11.01	5.02E+01	2.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	33.76	46.96	-99
60.319	31.15	680.4	682.4	4.56	10.61	5.03E+01	2.41E+01	3	Clays-Clay to Silty Clay	33	-99	42.01	-99
60.4	29.94	560.1	562	5.33	9.88	5.03E+01	2.42E+01	3	Clays-Clay to Silty Clay	27	-99	33.99	-99
60.481	27.02	468.1	470	5.75	9.88	5.04E+01	2.42E+01	3	Clays-Clay to Silty Clay	22	-99	27.85	-99
60.561	24.25	429.5	431.8	5.62	11.65	5.05E+01	2.42E+01	3	Clays-Clay to Silty Clay	21	-99	25.27	-99
60.641	22.13	456.2	458.6	4.82	12.34	5.05E+01	2.43E+01	3	Clays-Clay to Silty Clay	22	-99	27.05	-99
60.722	20.77	490.4	492.8	4.21	12.58	5.06E+01	2.43E+01	3	Clays-Clay to Silty Clay	24	-99	29.32	-99
60.803	20.93	527.5	529.9	3.95	12.63	5.07E+01	2.43E+01	3	Clays-Clay to Silty Clay	25	-99	31.79	-99
60.883	21.09	534.9	537.3	3.93	12.54	5.07E+01	2.44E+01	3	Clays-Clay to Silty Clay	26	-99	32.28	-99
60.964	19.9	514.1	516.5	3.85	12.44	5.08E+01	2.44E+01	3	Clays-Clay to Silty Clay	25	-99	30.89	-99
61.044	20.51	477	479.4	4.28	12.34	5.09E+01	2.44E+01	3	Clays-Clay to Silty Clay	23	-99	28.41	-99
61.124	21.42	468.1	470.5	4.55	12.29	5.09E+01	2.45E+01	3	Clays-Clay to Silty Clay	22	-99	27.81	-99
61.206	23.54	474	476.7	4.94	13.52	5.10E+01	2.45E+01	3	Clays-Clay to Silty Clay	23	-99	28.2	-99
61.286	25.65	536.4	538.9	4.76	13.27	5.11E+01	2.45E+01	3	Clays-Clay to Silty Clay	26	-99	32.35	-99
61.365	25.18	600.2	602.6	4.18	12.54	5.11E+01	2.46E+01	3	Clays-Clay to Silty Clay	29	-99	36.6	-99
61.445	26.15	604.7	606.8	4.31	11.3	5.12E+01	2.46E+01	3	Clays-Clay to Silty Clay	29	-99	36.9	-99
61.526	28.96	652.2	654.3	4.43	10.96	5.13E+01	2.46E+01	3	Clays-Clay to Silty Clay	31	-99	40.06	-99
61.605	29.51	776.8	779.2	3.79	12.44	5.13E+01	2.46E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	33.8	48.37	-99
61.683	27.28	1006.9	1009.3	2.7	12.29	5.14E+01	2.47E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	35.45	63.7	-99
61.762	27.85	1183.5	1185.5	2.35	10.02	5.15E+01	2.47E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	36.45	75.47	-99
61.842	28.84	1245.9	1247.6	2.31	8.99	5.15E+01	2.47E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	30	36.75	79.62	-99
61.921	29.88	1265.2	1266.7	2.36	8.1	5.16E+01	2.48E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	30	36.84	80.9	-99
61.998	31.66	1344.5	1345.5	2.35	5.31	5.17E+01	2.48E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	32	37.2	86.19	-99
62.078	33.63	1294.1	1294.9	2.6	4.23	5.17E+01	2.48E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	31	36.96	82.82	-99
62.158	33.41	1080.6	1081.3	3.09	3.74	5.18E+01	2.49E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	39	35.85	68.59	-99
62.238	31.16	911.6	912.3	3.42	3.49	5.19E+01	2.49E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	34.77	57.31	-99
62.319	28.17	760.4	761	3.7	3.44	5.19E+01	2.49E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	33.59	47.23	-99
62.4	26.04	619.5	620.3	4.2	3.94	5.20E+01	2.50E+01	3	Clays-Clay to Silty Clay	30	-99	37.84	-99
62.482	25.33	509.8	510.9	4.96	5.51	5.21E+01	2.50E+01	3	Clays-Clay to Silty Clay	24	-99	30.52	-99
62.562	24.55	459.4	460.6	5.33	6.05	5.21E+01	2.50E+01	3	Clays-Clay to Silty Clay	22	-99	27.15	-99
62.643	23.57	489.1	490.3	4.81	6.45	5.22E+01	2.51E+01	3	Clays-Clay to Silty Clay	23	-99	29.12	-99
62.724	24.1	603.2	604.4	3.99	6.2	5.23E+01	2.51E+01	3	Clays-Clay to Silty Clay	29	-99	36.73	-99
62.804	24.96	720.3	721.4	3.46	5.61	5.23E+01	2.51E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	33.18	44.53	-99
62.885	24.21	640.3	641.4	3.77	5.66	5.24E+01	2.52E+01	3	Clays-Clay to Silty Clay	31	-99	39.19	-99
62.965	23.35	483.1	484.2	4.82	5.56	5.25E+01	2.52E+01	3	Clays-Clay to Silty Clay	23	-99	28.71	-99
63.046	21.61	420.9	421.9	5.12	5.56	5.25E+01	2.52E+01	3	Clays-Clay to Silty Clay	20	-99	24.56	-99
63.127	20.43	392.7	394	5.18	6.49	5.26E+01	2.53E+01	3	Clays-Clay to Silty Clay	19	-99	22.67	-99
63.207	19.71	443.1	444.5	4.43	7.28	5.27E+01	2.53E+01	3	Clays-Clay to Silty Clay	21	-99	26.03	-99
63.287	17.76	509.8	511.3	3.47	7.38	5.27E+01	2.53E+01	3	Clays-Clay to Silty Clay	24	-99	30.47	-99
63.368	16	508.3	509.7	3.14	7.23	5.28E+01	2.54E+01	3	Clays-Clay to Silty Clay	24	-99	30.37	-99
63.448	16.84	487.6	489	3.44	7.23	5.29E+01	2.54E+01	3	Clays-Clay to Silty Clay	23	-99	28.98	-99
63.531	17.91	502.4	503.9	3.55	7.48	5.29E+01	2.54E+01	3	Clays-Clay to Silty Clay	24	-99	29.96	-99
63.611	17.28	529.1	530.6	3.26	7.58	5.30E+01	2.54E+01	3	Clays-Clay to Silty Clay	25	-99	31.74	-99
63.691	16.06	471.3	472.7	3.4	7.13	5.31E+01	2.55E+01	3	Clays-Clay to Silty Clay	23	-99	27.88	-99
63.772	15.64	457.9	459.4	3.4	7.43	5.31E+01	2.55E+01	3	Clays-Clay to Silty Clay	22	-99	26.99	-99
63.852	16.2	469.8	471.4	3.44	8.17	5.32E+01	2.55E+01	3	Clays-Clay to Silty Clay	23	-99	27.77	-99
63.933	16.41	481.7	483.2	3.4	8.17	5.33E+01	2.56E+01	3	Clays-Clay to Silty Clay	23	-99	28.56	-99
64.014	15.34	484.6	486.2	3.16	7.97	5.33E+01	2.56E+01	3	Clays-Clay to Silty Clay	23	-99	28.75	-99
64.094	14.67	466.8	468.3	3.13	7.63	5.34E+01	2.56E+01	3	Clays-Clay to Silty Clay	22	-99	27.56	-99
64.175	14.85	428.3	429.8	3.45	7.82	5.35E+01	2.57E+01	3	Clays-Clay to Silty Clay	21	-99	24.99	-99
64.255	15.24	414.9	416.5	3.66	8.07	5.36E+01	2.57E+01	3	Clays-Clay to Silty Clay	20	-99	24.09	-99
64.337	15.77	441.6	443.3	3.56	8.41	5.36E+01	2.57E+01	3	Clays-Clay to Silty Clay	21	-99	25.87	-99
64.419	16.1	466.8	468.5	3.44	8.41	5.37E+01	2.58E+01	3	Clays-Clay to Silty Clay	22	-99	27.54	-99
64.498	15.6	489.1	490.7	3.18	8.27	5.38E+01	2.58E+01	3	Clays-Clay to Silty Clay	23	-99	29.02	-99
64.579	16.24	532.1	533.7	3.04	8.31	5.38E+01	2.58E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	19	30.93	31.88	-99
64.658	17.15	563.2	564.8	3.04	8.41	5.39E+01	2.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	20	31.32	33.95	-99
64.739	19.02	573.6	575.3	3.31	8.95	5.40E+01	2.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	31.43	34.64	-99
64.82	23.62	601.7	603.5	3.91	9.05	5.40E+01	2.59E+01	3	Clays-Clay to Silty Clay	29	-99	36.51	-99
64.901	27.91	604.7	606.5	4.6	9.15	5.41E+01	2.60E+01	3	Clays-Clay to Silty Clay	29	-99	36.71	-99
64.981	29.62	628.4	630.1	4.7	8.71	5.42E+01	2.60E+01	3	Clays-Clay to Silty Clay	30	-99	38.28	-99
65.061	32.52	607.7	609.3	5.34	8.41	5.42E+01	2.60E+01	3	Clays-Clay to Silty Clay	29	-99	36.9	-99
65.142	35.61	576.5	578.3	6.16	8.95	5.43E+01	2.61E+01	3	Clays-Clay to Silty Clay	28	-99	34.82	-99
65.209	37.48	592.2	594	6.31	9.42	5.43E+01	2.61E+01	3	Clays-Clay to Silty Clay	28	-99	35.86	-99
65.288	38.15	629.3	631.2	6.04	9.86	5.44E+01	2.61E+01	3	Clays-Clay to Silty Clay	30	-99	38.33	-99
65.369	39.06	651.6	653.4	5.98	9.67	5.45E+01	2.62E+01	3	Clays-Clay to Silty Clay	31	-99	39.81	-99
65.449	41.86	644.1	646	6.48	9.57	5.45E+01	2.62E+01	3	Clays-Clay to Silty Clay	31	-99	39.31	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
65.529	43.34	639.7	641.5	6.76	9.52	5.46E+01	2.62E+01	3	Clays-Clay to Silty Clay	31	-99	39.01	-99
65.609	42.28	621.9	623.7	6.78	9.57	5.47E+01	2.62E+01	3	Clays-Clay to Silty Clay	30	-99	37.81	-99
65.688	41.43	636.7	638.6	6.49	9.67	5.47E+01	2.63E+01	3	Clays-Clay to Silty Clay	31	-99	38.8	-99
65.769	40.88	642.7	644.6	6.34	9.91	5.48E+01	2.63E+01	3	Clays-Clay to Silty Clay	31	-99	39.19	-99
65.848	39.84	642.7	644.6	6.18	10.16	5.49E+01	2.63E+01	3	Clays-Clay to Silty Clay	31	-99	39.19	-99
65.928	38.11	626.3	628.3	6.07	10.01	5.49E+01	2.64E+01	3	Clays-Clay to Silty Clay	30	-99	38.09	-99
66.009	36.24	608.5	610.5	5.94	10.11	5.50E+01	2.64E+01	3	Clays-Clay to Silty Clay	29	-99	36.9	-99
66.09	34.75	599.6	601.7	5.78	10.41	5.51E+01	2.64E+01	3	Clays-Clay to Silty Clay	29	-99	36.3	-99
66.171	33.23	614.5	616.5	5.39	10.6	5.51E+01	2.65E+01	3	Clays-Clay to Silty Clay	29	-99	37.29	-99
66.251	32.04	616	618	5.19	10.5	5.52E+01	2.65E+01	3	Clays-Clay to Silty Clay	30	-99	37.38	-99
66.33	31.19	636.7	638.8	4.88	10.6	5.53E+01	2.65E+01	3	Clays-Clay to Silty Clay	31	-99	38.76	-99
66.411	30.59	642.7	644.7	4.75	10.65	5.53E+01	2.66E+01	3	Clays-Clay to Silty Clay	31	-99	39.15	-99
66.492	29.98	647.1	649.2	4.62	10.65	5.54E+01	2.66E+01	3	Clays-Clay to Silty Clay	31	-99	39.45	-99
66.571	29.26	626.3	628.4	4.66	10.75	5.55E+01	2.66E+01	3	Clays-Clay to Silty Clay	30	-99	38.06	-99
66.652	28.53	602.6	604.7	4.72	10.9	5.55E+01	2.67E+01	3	Clays-Clay to Silty Clay	29	-99	36.47	-99
66.732	27.49	586.3	588.4	4.67	11.05	5.56E+01	2.67E+01	3	Clays-Clay to Silty Clay	28	-99	35.38	-99
66.812	25.65	571.5	573.6	4.47	10.95	5.57E+01	2.67E+01	3	Clays-Clay to Silty Clay	27	-99	34.39	-99
66.893	24.18	558.1	560.2	4.32	10.9	5.57E+01	2.68E+01	3	Clays-Clay to Silty Clay	27	-99	33.49	-99
66.973	23.88	562.6	564.7	4.23	11.09	5.58E+01	2.68E+01	3	Clays-Clay to Silty Clay	27	-99	33.78	-99
67.053	23.58	613	615.2	3.83	11.34	5.59E+01	2.68E+01	3	Clays-Clay to Silty Clay	29	-99	37.14	-99
67.132	23.2	666.4	668.6	3.47	11.59	5.59E+01	2.69E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	32.21	40.7	-99
67.212	23.18	727.2	729.4	3.18	11.49	5.60E+01	2.69E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	32.79	44.75	-99
67.292	23.45	740.5	742.8	3.16	11.69	5.61E+01	2.69E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	32.9	45.63	-99
67.373	24.65	713.9	716.2	3.44	12.03	5.61E+01	2.70E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	32.65	43.85	-99
67.453	26.12	675.3	677.6	3.85	11.98	5.62E+01	2.70E+01	3	Clays-Clay to Silty Clay	32	-99	41.27	-99
67.533	26.73	636.7	639	4.18	11.83	5.63E+01	2.70E+01	3	Clays-Clay to Silty Clay	31	-99	38.7	-99
67.613	26.85	624.9	627.1	4.28	11.78	5.63E+01	2.71E+01	3	Clays-Clay to Silty Clay	30	-99	37.9	-99
67.694	27.23	636.7	639	4.26	11.88	5.64E+01	2.71E+01	3	Clays-Clay to Silty Clay	31	-99	38.69	-99
67.775	27.74	653	655.4	4.23	12.13	5.65E+01	2.71E+01	3	Clays-Clay to Silty Clay	31	-99	39.77	-99
67.854	28.05	687.2	689.5	4.07	12.18	5.66E+01	2.71E+01	3	Clays-Clay to Silty Clay	33	-99	42.04	-99
67.935	27.4	706.4	708.7	3.87	11.93	5.66E+01	2.72E+01	3	Clays-Clay to Silty Clay	34	-99	43.32	-99
68.014	26.68	687.2	689.4	3.87	11.69	5.67E+01	2.72E+01	3	Clays-Clay to Silty Clay	33	-99	42.03	-99
68.095	26.17	657.5	659.7	3.97	11.64	5.68E+01	2.72E+01	3	Clays-Clay to Silty Clay	32	-99	40.05	-99
68.176	25.84	618.9	621.2	4.16	11.69	5.68E+01	2.73E+01	3	Clays-Clay to Silty Clay	30	-99	37.47	-99
68.256	25.7	593.7	596	4.31	11.83	5.69E+01	2.73E+01	3	Clays-Clay to Silty Clay	28	-99	35.79	-99
68.337	25.28	581.8	584.1	4.33	11.59	5.70E+01	2.73E+01	3	Clays-Clay to Silty Clay	28	-99	34.99	-99
68.417	24.71	532.9	535.1	4.62	11.24	5.70E+01	2.74E+01	3	Clays-Clay to Silty Clay	26	-99	31.73	-99
68.498	24.92	484	486.1	5.13	11.05	5.71E+01	2.74E+01	3	Clays-Clay to Silty Clay	23	-99	28.46	-99
68.566	23.87	403.9	405.9	5.88	10.75	5.71E+01	2.74E+01	3	Clays-Clay to Silty Clay	19	-99	23.11	-99
68.645	21.11	418.9	420.8	5.02	10.07	5.72E+01	2.75E+01	3	Clays-Clay to Silty Clay	20	-99	24.11	-99
68.726	18.95	378.9	380.8	4.98	10.12	5.73E+01	2.75E+01	3	Clays-Clay to Silty Clay	18	-99	21.44	-99
68.805	17.5	352.3	354.2	4.94	10.17	5.73E+01	2.75E+01	3	Clays-Clay to Silty Clay	17	-99	19.66	-99
68.885	15.81	325.6	327.6	4.83	10.17	5.74E+01	2.76E+01	3	Clays-Clay to Silty Clay	16	-99	17.88	-99
68.966	14.27	301.9	303.8	4.7	9.88	5.75E+01	2.76E+01	3	Clays-Clay to Silty Clay	14	-99	16.3	-99
69.046	13.29	287.1	289	4.6	9.58	5.75E+01	2.76E+01	3	Clays-Clay to Silty Clay	14	-99	15.31	-99
69.128	13.02	273.8	275.7	4.72	9.53	5.76E+01	2.77E+01	3	Clays-Clay to Silty Clay	13	-99	14.41	-99
69.207	12.88	266.4	268.3	4.8	9.58	5.77E+01	2.77E+01	3	Clays-Clay to Silty Clay	13	-99	13.92	-99
69.288	12.92	266.4	268.3	4.82	9.48	5.77E+01	2.77E+01	3	Clays-Clay to Silty Clay	13	-99	13.91	-99
69.37	13.14	267.9	269.7	4.87	9.48	5.78E+01	2.78E+01	3	Clays-Clay to Silty Clay	13	-99	14.01	-99
69.451	13.81	281.2	283	4.88	9.48	5.79E+01	2.78E+01	3	Clays-Clay to Silty Clay	13	-99	14.89	-99
69.532	15.68	290.1	291.9	5.37	9.34	5.79E+01	2.78E+01	3	Clays-Clay to Silty Clay	14	-99	15.48	-99
69.612	18.63	327.1	328.9	5.67	9.39	5.80E+01	2.78E+01	3	Clays-Clay to Silty Clay	16	-99	17.94	-99
69.691	22.14	404.1	405.9	5.45	9.53	5.81E+01	2.79E+01	3	Clays-Clay to Silty Clay	19	-99	23.07	-99
69.773	25.32	537.3	539.1	4.7	9.48	5.81E+01	2.79E+01	3	Clays-Clay to Silty Clay	26	-99	31.94	-99
69.852	28.01	700	701.9	3.99	9.53	5.82E+01	2.79E+01	3	Clays-Clay to Silty Clay	34	-99	42.79	-99
69.932	30.94	929.4	931.2	3.32	8.9	5.83E+01	2.80E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	34.14	58.08	-99
70.011	33.68	1111.5	1113.1	3.03	8.16	5.83E+01	2.80E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	40	35.28	70.21	-99
70.09	35.74	1226.9	1228.5	2.91	7.96	5.84E+01	2.80E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	44	35.89	77.9	-99
70.171	37.67	1258	1259.4	2.99	7.42	5.85E+01	2.81E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	36.04	79.97	-99
70.252	39.5	1231.4	1232.7	3.2	6.88	5.85E+01	2.81E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	44	35.9	78.19	-99
70.332	41.86	1187	1188.2	3.52	6.34	5.86E+01	2.81E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	35.66	75.22	-99
70.412	44.47	1120.4	1121.5	3.97	6	5.87E+01	2.82E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	40	35.29	70.78	-99
70.492	47.84	1030.1	1031.2	4.64	6	5.87E+01	2.82E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	34.75	64.76	-99
70.573	50.52	969.4	970.6	5.21	6.05	5.88E+01	2.82E+01	3	Clays-Clay to Silty Clay	47	-99	60.71	-99
70.653	51.97	966.4	967.6	5.37	5.95	5.89E+01	2.83E+01	3	Clays-Clay to Silty Clay	46	-99	60.5	-99
70.732	52.49	1031.6	1032.7	5.08	5.95	5.89E+01	2.83E+01	3	Clays-Clay to Silty Clay	50	-99	64.84	-99
70.811	51.42	1192.9	1194	4.31	5.95	5.90E+01	2.83E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	35.65	75.59	-99
70.889	48.61	1352.7	1353.8	3.59	5.65	5.91E+01	2.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	36.42	86.24	-99
70.97	44.06	1388.2	1389.2	3.17	5.11	5.91E+01	2.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	50	36.57	88.61	-99
71.051	39.32	1293.5	1294.4	3.04	4.82	5.92E+01	2.84E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	47	36.13	82.29	-99
71.131	35.68	1147	1147.9	3.11	4.62	5.93E+01	2.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	35.38	72.51	-99
71.212	33	948.7	949.6	3.48	4.57	5.93E+01	2.85E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	34.16	59.29	-99
71.292	31.2	737	738	4.23	4.77	5.94E+01	2.85E+01	3	Clays-Clay to Silty Clay	35	-99	45.18	-99
71.373	29.91	602.4	603.3	4.96	5.06	5.95E+01	2.86E+01	3	Clays-Clay to Silty Clay	29	-99	36.19	-99
71.454	28.33	518	519	5.46	5.36	5.96E+01	2.86E+01	3	Clays-Clay to Silty Clay	25	-99	30.56	-99
71.534	31.59	460.3	461.4	6.85	5.9	5.96E+01	2.86E+01	3	Clays-Clay to Silty Clay	22	-99	26.71	-99
71.614	38.94	427.7	429	9.08	6.44	5.97E+01	2.87E+01	3	Clays-Clay to Silty Clay	21	-99	24.54	-99
71.694	39.85	414.4	415.7	9.59	6.69	5.98E+01	2.87E+01	3	Clays-Clay to Silty Clay	20	-99	23.64	-99
71.774	38.41	381.9	383.1	10.03	6.34	5.98E+01	2.87E+01	3	Clays-Clay to Silty Clay	18	-99	21.47	-99
71.854	36.12	384.8	386	9.36	6	5.99E+01	2.87E+01	3	Clays-Clay to Silty Clay	18	-99	21.66	-99
71.923	34.47	654.8	656.1	5.25	6.68	5.99E+01	2.88E+01	3	Clays-Clay to Silty Clay	31	-99	39.66	-99
72.002	33.2	706.7	708.1	4.69	7.37	6.00E+01	2.88E+01	3	Clays-Clay to Silty Clay	34	-99	43.11	-99
72.082	32.74	736.4	737.9	4.44	7.86	6.01E+01	2.88E+01	3	Clays-Clay to Silty Clay	35	-99	45.09	-99
72.161	33.07	663.7	665.2	4.97	7.47	6.01E+01	2.89E+01	3	Clays-Clay to Silty Clay	32	-99	40.24	-99
72.243	30.98	528.8	530.1	5.84	7.02	6.02E+01	2.89E+01	3	Clays-Clay to Silty Clay	25	-99	31.24	-99
72.322	28.8	427.9	429.4	6.71	7.32	6.03E+01	2.89E+01	3	Clays-Clay to Silty Clay	21	-99	24.51	-99
72.402	25.21	601.4	603.1	4.18	8.5	6.03E+01	2.90E+01	3	Clays-Clay to Silty Clay	29	-99	36.07	-99
72.48	23.1	1264.3	1266.1	1.82	9.58	6.04E+01	2.90E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	30	35.87	80.26	-99
72.558	23.25	1913.8	1915.4	1.21	8.74	6.05E+01	2.90E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	46	38.35	123.55	-99
72.637	23.94	2235.5	2237	1.07	7.61	6.05E+01	2.91E+01	6	Sands-Clean Sand to Silty Sand	36	39.24	-99	-99
72.715	24.65	2425.3	2426.8	1.02	7.66	6.06E+01	2.91E+01	6	Sands-Clean Sand to Silty Sand	39	39.69	-99	-99
72.794	27.1	2575.1	2576.6	1.05	7.66	6.07E+01	2.91E+01	6	Sands-Clean Sand to Silty Sand	41	40.02	-99	-99
72.875	32.43	2440.2	2441.6	1.33	7.22	6.07E+01	2.92E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	59	39.71	158.63	-99
72.955	38.21	2266.7	2268	1.68	6.92	6.08E+01	2.92E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	39.29	147.06	-99
73.036	43.06	2204.4	2205.7	1.95	6.63	6.09E+01	2.92E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	53	39.13	142.9	-99
73.116	47.12	2118.4	2119.7	2.22	6.58	6.09E+01	2.93E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	51	38.9	137.16	-99
73.196	50.07	2105	2106.4	2.38	6.97	6.10E+01	2.93E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	51	38.85	136.27	-99
73.277	51.93	2180.7	2182	2.38	7.07	6.11E+01	2.93E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	52	39.05	141.31	-99
73.357	51.02	2275.6	2276.9	2.24	7.07	6.11E+01	2.93E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	39.28	147.63	-99
73.435	48.35	2455	2456.4	1.97	7.22	6.12E+01	2.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	59	39.71	159.59	-99
73.513	44.28	2595.9	2597.1	1.71	6.63	6.13E+01	2.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	62	40.01	168.97	-99
73.592	41.38	2707.1	2708.3	1.53	6.38	6.13E+01	2.94E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	65	40.24	176.38	-99
73.67	40.45	2942.8	2944	1.37	5.99	6.14E+01	2.95E+01	6	Sands-Clean Sand to Silty Sand	47	40.69	-99	-99
73.749	40.35	3214.2	3215.3	1.25	5.69	6.15E+01	2.95E+01	6	Sands-Clean Sand to Silty Sand	51	41.16	-99	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
73.827	41.41	3377.3	3378.4	1.23	5.6	6.15E+01	2.95E+01	6	Sands-Clean Sand to Silty Sand	54	41.42	-99	-99
73.906	42.81	3332.8	3333.8	1.28	5.15	6.16E+01	2.96E+01	6	Sands-Clean Sand to Silty Sand	53	41.34	-99	-99
73.986	44.27	3144.5	3145.5	1.41	4.91	6.17E+01	2.96E+01	6	Sands-Clean Sand to Silty Sand	50	41.02	-99	-99
74.065	43.21	2950.3	2951.1	1.46	4.41	6.17E+01	2.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	71	40.67	192.57	-99
74.146	38.27	2833.1	2833.9	1.35	4.02	6.18E+01	2.97E+01	6	Sands-Clean Sand to Silty Sand	45	40.45	-99	-99
74.226	31.44	2724.9	2725.6	1.15	3.87	6.19E+01	2.97E+01	6	Sands-Clean Sand to Silty Sand	44	40.23	-99	-99
74.306	26.21	2575.1	2575.8	1.02	3.68	6.19E+01	2.97E+01	6	Sands-Clean Sand to Silty Sand	41	39.91	-99	-99
74.387	22.36	2352.7	2353.3	0.95	3.33	6.20E+01	2.98E+01	6	Sands-Clean Sand to Silty Sand	38	39.39	-99	-99
74.467	20.33	2152.5	2153.1	0.94	2.89	6.21E+01	2.98E+01	6	Sands-Clean Sand to Silty Sand	34	38.88	-99	-99
74.548	22.69	2042.8	2043.3	1.11	2.84	6.21E+01	2.98E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	49	38.57	132.04	-99
74.628	22.55	2047.2	2047.7	1.1	2.69	6.22E+01	2.99E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	49	38.58	132.33	-99
74.708	20.9	2019	2019.6	1.03	2.79	6.23E+01	2.99E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	38.49	130.45	-99
74.788	25.45	2020.5	2021	1.26	2.54	6.23E+01	2.99E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	38.49	130.55	-99
74.866	28.09	2042.8	2043.2	1.37	2.4	6.24E+01	3.00E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	49	38.55	132.02	-99
74.941	30.34	1928.6	1929.1	1.57	2.79	6.25E+01	3.00E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	46	38.21	124.41	-99
75.013	31.64	2261.6	2262.1	1.4	2.43	6.25E+01	3.00E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	39.12	146.61	-99
75.091	30.56	2343	2343.4	1.3	1.84	6.26E+01	3.00E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	56	39.32	152.03	-99
75.171	28.39	2446.7	2447	1.16	1.55	6.26E+01	3.01E+01	6	Sands-Clean Sand to Silty Sand	39	39.56	-99	-99
75.249	26.18	2532.6	2532.8	1.03	1.3	6.27E+01	3.01E+01	6	Sands-Clean Sand to Silty Sand	41	39.74	-99	-99
75.329	25.33	2489.6	2489.7	1.02	0.32	6.28E+01	3.01E+01	6	Sands-Clean Sand to Silty Sand	40	39.64	-99	-99
75.409	26.75	2431.9	2431.9	1.1	0.03	6.28E+01	3.02E+01	6	Sands-Clean Sand to Silty Sand	39	39.5	-99	-99
75.489	27.52	2303.1	2303.1	1.2	-0.07	6.29E+01	3.02E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	39.19	149.34	-99
75.57	26.68	2183.1	2183.1	1.22	-0.37	6.30E+01	3.02E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	52	38.88	141.34	-99
75.65	28.93	1969.9	1969.8	1.47	-0.47	6.30E+01	3.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	47	38.28	127.12	-99
75.731	34.68	1796.7	1796.6	1.93	-0.66	6.31E+01	3.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	43	37.73	115.57	-99
75.813	42.02	1709.3	1709.2	2.46	-0.76	6.32E+01	3.03E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	41	37.43	109.74	-99
75.892	51.87	1798.2	1798	2.88	-0.71	6.32E+01	3.04E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	43	37.72	115.66	-99
75.974	62.81	1863.3	1863.2	3.37	-0.56	6.33E+01	3.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	67	37.93	120	-99
76.053	66.97	1826.3	1826.2	3.67	-0.27	6.34E+01	3.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	66	37.8	117.53	-99
76.133	66.86	1780.4	1780.5	3.75	0.61	6.34E+01	3.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	64	37.65	114.46	-99
76.214	64.71	1815.9	1816.1	3.56	0.66	6.35E+01	3.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	65	37.76	116.83	-99
76.292	66.81	1975.8	1976.2	3.38	1.84	6.36E+01	3.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	71	38.25	127.48	-99
76.359	69.96	2159.4	2160.1	3.24	3.32	6.36E+01	3.05E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	52	38.76	139.72	-99
76.438	66.3	2132.8	2133.3	3.11	2.58	6.37E+01	3.06E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	51	38.68	137.94	-99
76.519	57.02	1799.6	1799.8	3.17	1.11	6.38E+01	3.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	65	37.68	115.72	-99
76.602	49.98	1539	1539.3	3.25	1.16	6.38E+01	3.06E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	55	36.74	98.35	-99
76.684	47.37	1213.3	1213.6	3.9	1.4	6.39E+01	3.07E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	44	35.26	76.63	-99
76.752	46.15	1007.5	1007.9	4.58	2.38	6.40E+01	3.07E+01	3	Clays-Clay to Silty Clay	48	-99	62.9	-99
76.833	43.8	835.7	836.3	5.24	3.17	6.40E+01	3.07E+01	3	Clays-Clay to Silty Clay	40	-99	51.45	-99
76.914	39.64	705.4	706.1	5.61	3.66	6.41E+01	3.08E+01	3	Clays-Clay to Silty Clay	34	-99	42.75	-99
76.995	33.58	693.6	694.3	4.84	3.66	6.42E+01	3.08E+01	3	Clays-Clay to Silty Clay	33	-99	41.96	-99
77.076	29.3	618.1	618.7	4.73	3.56	6.42E+01	3.08E+01	3	Clays-Clay to Silty Clay	30	-99	36.92	-99
77.155	26.04	621	621.7	4.19	3.76	6.43E+01	3.09E+01	3	Clays-Clay to Silty Clay	30	-99	37.12	-99
77.233	23.89	671.4	672.1	3.56	3.81	6.44E+01	3.09E+01	3	Clays-Clay to Silty Clay	32	-99	40.47	-99
77.313	21.8	634.3	635.1	3.43	4.1	6.44E+01	3.09E+01	3	Clays-Clay to Silty Clay	30	-99	37.99	-99
77.392	21.22	638.8	639.6	3.32	4.3	6.45E+01	3.10E+01	3	Clays-Clay to Silty Clay	31	-99	38.29	-99
77.473	21.48	723.2	724.1	2.97	4.74	6.46E+01	3.10E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	31.79	43.91	-99
77.553	22.42	687.7	688.7	3.26	5.18	6.46E+01	3.10E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	25	31.44	41.54	-99
77.632	22.71	733.5	734.6	3.09	5.48	6.47E+01	3.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	26	31.88	44.59	-99
77.711	23.06	754.3	755.4	3.05	5.58	6.48E+01	3.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	27	32.06	45.97	-99
77.789	24.25	782.4	783.5	3.1	5.58	6.48E+01	3.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	32.3	47.84	-99
77.855	24.98	785.4	786.4	3.18	5.53	6.49E+01	3.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	28	32.32	48.03	-99
77.932	26.08	738	739	3.53	5.38	6.49E+01	3.12E+01	3	Clays-Clay to Silty Clay	35	-99	44.87	-99
78.012	27.48	712.8	713.9	3.85	5.33	6.50E+01	3.12E+01	3	Clays-Clay to Silty Clay	34	-99	43.19	-99
78.09	27.36	687.7	688.7	3.97	5.28	6.51E+01	3.12E+01	3	Clays-Clay to Silty Clay	33	-99	41.51	-99
78.171	26.61	658	659.1	4.04	5.28	6.51E+01	3.13E+01	3	Clays-Clay to Silty Clay	32	-99	39.53	-99
78.247	25.32	595.8	596.9	4.24	5.23	6.52E+01	3.13E+01	3	Clays-Clay to Silty Clay	29	-99	35.38	-99
78.32	23.68	688.8	689.8	3.43	5.19	6.53E+01	3.13E+01	3	Clays-Clay to Silty Clay	33	-99	41.57	-99
78.4	22.37	671	672	3.33	5.29	6.53E+01	3.14E+01	3	Clays-Clay to Silty Clay	32	-99	40.38	-99
78.48	21.01	659.2	660.2	3.18	5.39	6.54E+01	3.14E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	24	31.07	39.59	-99
78.561	19.05	639.9	641	2.97	5.43	6.55E+01	3.14E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	30.85	38.3	-99
78.64	17.38	647.3	648.4	2.68	5.68	6.55E+01	3.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	30.93	38.79	-99
78.719	16.28	641.4	642.6	2.53	5.83	6.56E+01	3.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	30.86	38.39	-99
78.785	15.83	629.6	630.8	2.51	6.07	6.57E+01	3.15E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	23	30.72	37.6	-99
78.866	15.77	594.1	595.3	2.65	6.07	6.57E+01	3.16E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	21	30.3	35.22	-99
78.947	16.39	571.9	573	2.86	5.88	6.58E+01	3.16E+01	3	Clays-Clay to Silty Clay	27	-99	33.74	-99
79.027	17.71	515.7	516.7	3.43	5.43	6.59E+01	3.16E+01	3	Clays-Clay to Silty Clay	25	-99	29.99	-99
79.108	19.42	468.4	469.4	4.14	5.14	6.59E+01	3.16E+01	3	Clays-Clay to Silty Clay	22	-99	26.83	-99
79.19	20.61	443.2	444.1	4.64	4.8	6.60E+01	3.17E+01	3	Clays-Clay to Silty Clay	21	-99	25.15	-99
79.271	20.77	392.9	393.8	5.27	4.6	6.61E+01	3.17E+01	3	Clays-Clay to Silty Clay	19	-99	21.79	-99
79.353	19.95	378.1	379	5.26	4.5	6.61E+01	3.17E+01	3	Clays-Clay to Silty Clay	18	-99	20.8	-99
79.433	18.78	355.9	356.8	5.26	4.55	6.62E+01	3.18E+01	3	Clays-Clay to Silty Clay	17	-99	19.32	-99
79.513	17.73	353	353.9	5.01	4.65	6.63E+01	3.18E+01	3	Clays-Clay to Silty Clay	17	-99	19.11	-99
79.594	18.03	379.6	380.5	4.74	4.75	6.63E+01	3.18E+01	3	Clays-Clay to Silty Clay	18	-99	20.88	-99
79.675	20.42	425.5	426.4	4.79	4.9	6.64E+01	3.19E+01	3	Clays-Clay to Silty Clay	20	-99	23.94	-99
79.755	24.61	527.5	528.5	4.66	5.04	6.65E+01	3.19E+01	3	Clays-Clay to Silty Clay	25	-99	30.74	-99
79.836	29.91	675.5	676.4	4.42	4.99	6.65E+01	3.19E+01	3	Clays-Clay to Silty Clay	32	-99	40.59	-99
79.914	35.73	802.7	803.6	4.45	4.6	6.66E+01	3.20E+01	3	Clays-Clay to Silty Clay	39	-99	49.07	-99
79.995	44.19	915.1	915.9	4.82	4.21	6.67E+01	3.20E+01	3	Clays-Clay to Silty Clay	44	-99	56.56	-99
80.075	53.84	1037.9	1038.7	5.18	4.16	6.67E+01	3.20E+01	3	Clays-Clay to Silty Clay	50	-99	64.74	-99
80.155	61.76	1250.9	1251.7	4.93	4.4	6.68E+01	3.21E+01	3	Clays-Clay to Silty Clay	60	-99	78.94	-99
80.232	68.09	1523.1	1523.9	4.47	4.5	6.69E+01	3.21E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	55	36.39	97.08	-99
80.31	73.1	1870.7	1871.6	3.91	4.8	6.69E+01	3.21E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	67	37.62	120.25	-99
80.388	76.46	2207.9	2208.9	3.46	4.8	6.70E+01	3.22E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	79	38.59	142.73	-99
80.465	78.65	2404.7	2405.5	3.27	4.45	6.71E+01	3.22E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	58	39.07	155.84	-99
80.545	78.95	2367.7	2368.5	3.33	3.96	6.71E+01	3.22E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	57	38.98	153.37	-99
80.624	75.96	2239	2239.7	3.39	3.67	6.72E+01	3.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	81	38.65	144.79	-99
80.705	71.01	2083.7	2084.4	3.41	3.52	6.73E+01	3.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	75	38.23	134.43	-99
80.783	65.31	1910.6	1911.3	3.42	3.47	6.73E+01	3.23E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	69	37.71	122.89	-99
80.864	59.85	1781.9	1782.6	3.36	3.57	6.74E+01	3.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	64	37.29	114.3	-99
80.933	54.85	1669.5	1670.1	3.28	3.18	6.74E+01	3.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	60	36.9	106.8	-99
81.014	48.01	1486.1	1486.6	3.23	2.54	6.75E+01	3.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	53	36.18	94.57	-99
81.093	40.99	1302.6	1303.1	3.15	2.29	6.76E+01	3.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	47	35.35	82.34	-99
81.173	34.77	1017.2	1017.6	3.42	2.34	6.76E+01	3.25E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	33.76	63.3	-99
81.254	29.24	789.4	789.8	3.7	2.15	6.77E+01	3.25E+01	3	Clays-Clay to Silty Clay	38	-99	48.11	-99
81.336	25.01	647.3	647.7	3.86	2.1	6.78E+01	3.25E+01	3	Clays-Clay to Silty Clay	31	-99	38.64	-99
81.415	21.11	577.8	578.3	3.65	2.34	6.79E+01	3.26E+01	3	Clays-Clay to Silty Clay	28	-99	34	-99
81.495	19.68	486.1	486.6	4.05	2.59	6.79E+01	3.26E+01	3	Clays-Clay to Silty Clay	23	-99	27.88	-99
81.575	19.04	416.6	417.2	4.56	3.03	6.80E+01	3.26E+01	3	Clays-Clay to Silty Clay	20	-99	23.24	-99
81.655	18.53	373.7	374.3	4.95	3.13	6.81E+01	3.27E+01	3	Clays-Clay to Silty Clay	18	-99	20.38	-99
81.724	18	398.9	399.6	4.5	3.42	6.81E+01	3.27E+01	3	Clays-Clay to Silty Clay	19	-99	22.05	-99
81.804	17.18	376.7	377.4	4.55	3.66	6.82E+01	3.27E+01	3	Clays-Clay to Silty Clay	18	-99	20.57	-99
81.884	16.16	360.4	361.2	4.47	3.91	6.82E+01	3.28E+01	3	Clays-Clay to Silty Clay	17	-99	19.48	-99
81.963	15.59	357.5	358.3	4.35	4.2	6.83E+01	3.28E+01	3	Clays-Clay to Silty Clay	17	-99	19.28	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
82.042	15.06	378.2	379	3.97	4.45	6.84E+01	3.28E+01	3	Clays-Clay to Silty Clay	18	-99	20.65	-99
82.123	14.98	398.9	399.8	3.75	4.69	6.84E+01	3.29E+01	3	Clays-Clay to Silty Clay	19	-99	22.03	-99
82.202	16.87	416.7	417.7	4.04	5.09	6.85E+01	3.29E+01	3	Clays-Clay to Silty Clay	20	-99	23.21	-99
82.283	19.52	551.4	552.5	3.53	5.53	6.86E+01	3.29E+01	3	Clays-Clay to Silty Clay	26	-99	32.19	-99
82.36	20.68	860.9	862	2.4	6.02	6.86E+01	3.29E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	32.56	52.82	-99
82.44	23.8	1171.8	1172.8	2.03	5.23	6.87E+01	3.30E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	28	34.58	73.54	-99
82.52	30.18	1315.5	1316.2	2.29	3.81	6.88E+01	3.30E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	32	35.31	83.11	-99
82.6	33.33	1250.3	1251	2.66	3.56	6.88E+01	3.30E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	34.98	78.76	-99
82.681	35.01	1013.4	1014	3.45	3.07	6.89E+01	3.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	36	33.62	62.97	-99
82.762	34.43	835.7	836.2	4.12	2.73	6.90E+01	3.31E+01	3	Clays-Clay to Silty Clay	40	-99	51.12	-99
82.842	32.28	597.3	597.9	5.4	2.97	6.90E+01	3.31E+01	3	Clays-Clay to Silty Clay	29	-99	35.22	-99
82.909	30.5	544	544.7	5.6	3.51	6.91E+01	3.32E+01	3	Clays-Clay to Silty Clay	26	-99	31.66	-99
82.989	28.14	490.7	491.5	5.73	4.3	6.92E+01	3.32E+01	3	Clays-Clay to Silty Clay	24	-99	28.1	-99
83.071	24.35	504	505	4.82	5.14	6.92E+01	3.32E+01	3	Clays-Clay to Silty Clay	24	-99	28.99	-99
83.151	24.04	549.9	551.1	4.36	5.77	6.93E+01	3.33E+01	3	Clays-Clay to Silty Clay	26	-99	32.04	-99
83.232	25.14	677.3	678.4	3.71	5.77	6.94E+01	3.33E+01	3	Clays-Clay to Silty Clay	33	-99	40.53	-99
83.313	26.94	742.4	743.5	3.62	5.68	6.94E+01	3.33E+01	3	Clays-Clay to Silty Clay	36	-99	44.87	-99
83.394	29.24	763.2	764.2	3.83	5.43	6.95E+01	3.34E+01	3	Clays-Clay to Silty Clay	37	-99	46.24	-99
83.474	30.67	726.1	727.1	4.22	4.79	6.96E+01	3.34E+01	3	Clays-Clay to Silty Clay	35	-99	43.77	-99
83.555	32.3	689.1	690.2	4.68	5.53	6.96E+01	3.34E+01	3	Clays-Clay to Silty Clay	33	-99	41.3	-99
83.635	35.04	820.9	822.1	4.26	6.12	6.97E+01	3.35E+01	3	Clays-Clay to Silty Clay	39	-99	50.08	-99
83.713	36.72	1143.7	1145	3.21	6.95	6.98E+01	3.35E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	41	34.32	71.6	-99
83.792	35.81	1536.1	1537.3	2.33	6.51	6.98E+01	3.35E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	37	36.18	97.75	-99
83.871	34.35	1860.4	1861.2	1.85	4.55	6.99E+01	3.36E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	45	37.33	119.36	-99
83.95	34.51	1990.6	1991.4	1.73	4.1	7.00E+01	3.36E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	37.73	128.05	-99
84.028	36.35	2024.7	2025.5	1.79	4.01	7.00E+01	3.36E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	49	37.82	130.31	-99
84.108	38.8	1999.5	2000.2	1.94	3.66	7.01E+01	3.36E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	37.74	128.63	-99
84.19	40.81	1913.6	1914.4	2.13	3.71	7.02E+01	3.37E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	46	37.48	122.9	-99
84.27	41.97	1814.4	1815.2	2.31	3.81	7.02E+01	3.37E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	44	37.15	116.28	-99
84.349	43.44	1764.1	1764.9	2.46	3.91	7.03E+01	3.37E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	42	36.98	112.92	-99
84.429	45.77	1743.4	1744.1	2.62	3.86	7.04E+01	3.38E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	42	36.9	111.53	-99
84.508	47.18	1696	1696.7	2.78	3.51	7.04E+01	3.38E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	61	36.73	108.37	-99
84.589	46.6	1706.4	1707	2.73	3.27	7.05E+01	3.38E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	41	36.76	109.06	-99
84.669	37.98	1679.7	1680.3	2.26	3.22	7.06E+01	3.39E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	40	36.66	107.28	-99
84.749	28.05	1610.1	1610.7	1.74	3.22	7.06E+01	3.39E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	39	36.4	102.63	-99
84.828	31.39	1573.1	1573.7	1.99	3.27	7.07E+01	3.39E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	38	36.25	100.16	-99
84.907	37.15	1555.3	1555.9	2.39	3.07	7.08E+01	3.40E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	37	36.17	98.97	-99
84.989	42.7	1510.9	1511.4	2.83	2.63	7.08E+01	3.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	54	35.99	96.01	-99
85.059	46.87	1446.9	1447.4	3.24	2.59	7.09E+01	3.40E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	52	35.71	91.74	-99
85.138	50.02	1337.3	1337.7	3.74	2.19	7.10E+01	3.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	48	35.21	84.42	-99
85.218	51.9	1165.4	1165.8	4.45	2.24	7.10E+01	3.41E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	34.33	72.96	-99
85.296	56.53	1073.5	1074	5.26	2.44	7.11E+01	3.41E+01	3	Clays-Clay to Silty Clay	52	-99	66.83	-99
85.376	59.47	1043.9	1044.5	5.69	2.88	7.12E+01	3.42E+01	3	Clays-Clay to Silty Clay	50	-99	64.85	-99
85.455	54.3	1000.9	1001.4	5.42	2.54	7.12E+01	3.42E+01	3	Clays-Clay to Silty Clay	48	-99	61.98	-99
85.536	44.18	820.2	820.5	5.38	1.85	7.13E+01	3.42E+01	3	Clays-Clay to Silty Clay	39	-99	49.93	-99
85.616	35.32	639.4	639.7	5.52	1.75	7.14E+01	3.43E+01	3	Clays-Clay to Silty Clay	31	-99	37.87	-99
85.697	28.85	469	469.4	6.15	2.19	7.14E+01	3.43E+01	3	Clays-Clay to Silty Clay	23	-99	26.5	-99
85.777	23.11	399.3	399.9	5.78	2.78	7.15E+01	3.43E+01	3	Clays-Clay to Silty Clay	19	-99	21.86	-99
85.858	17.91	391.9	392.6	4.56	3.18	7.16E+01	3.43E+01	3	Clays-Clay to Silty Clay	19	-99	21.36	-99
85.936	15.48	455.7	456.3	3.39	3.52	7.16E+01	3.44E+01	3	Clays-Clay to Silty Clay	22	-99	25.6	-99
86.017	15.69	523.8	524.6	2.99	4.01	7.17E+01	3.44E+01	3	Clays-Clay to Silty Clay	25	-99	30.14	-99
86.097	16.82	583.1	583.9	2.88	4.41	7.18E+01	3.44E+01	3	Clays-Clay to Silty Clay	28	-99	34.09	-99
86.177	18.46	630.5	631.4	2.92	4.46	7.18E+01	3.45E+01	3	Clays-Clay to Silty Clay	30	-99	37.25	-99
86.256	20.28	655.7	656.6	3.09	4.6	7.19E+01	3.45E+01	3	Clays-Clay to Silty Clay	31	-99	38.92	-99
86.336	22.54	677.9	678.8	3.32	4.8	7.20E+01	3.45E+01	3	Clays-Clay to Silty Clay	33	-99	40.4	-99
86.416	24.69	710.5	711.5	3.47	5	7.20E+01	3.46E+01	3	Clays-Clay to Silty Clay	34	-99	42.57	-99
86.498	25.99	756.4	757.5	3.43	5.19	7.21E+01	3.46E+01	3	Clays-Clay to Silty Clay	36	-99	45.62	-99
86.577	26.68	771.3	772.3	3.45	5.24	7.22E+01	3.46E+01	3	Clays-Clay to Silty Clay	37	-99	46.61	-99
86.657	27.55	787.6	788.6	3.49	5.29	7.22E+01	3.47E+01	3	Clays-Clay to Silty Clay	38	-99	47.69	-99
86.736	28.37	781.6	782.7	3.62	5.49	7.23E+01	3.47E+01	3	Clays-Clay to Silty Clay	38	-99	47.29	-99
86.815	28.91	787.6	788.7	3.67	5.98	7.24E+01	3.47E+01	3	Clays-Clay to Silty Clay	38	-99	47.68	-99
86.896	29.17	793.5	794.6	3.67	5.98	7.24E+01	3.48E+01	3	Clays-Clay to Silty Clay	38	-99	48.07	-99
86.976	29.04	800.9	802.1	3.62	5.98	7.25E+01	3.48E+01	3	Clays-Clay to Silty Clay	38	-99	48.56	-99
87.056	28.6	796.5	797.6	3.59	6.08	7.26E+01	3.48E+01	3	Clays-Clay to Silty Clay	38	-99	48.26	-99
87.135	28.54	790.5	791.7	3.6	6.18	7.26E+01	3.49E+01	3	Clays-Clay to Silty Clay	38	-99	47.86	-99
87.214	28.6	781.6	782.8	3.65	6.18	7.27E+01	3.49E+01	3	Clays-Clay to Silty Clay	38	-99	47.26	-99
87.287	28.66	771.3	772.5	3.71	6.13	7.27E+01	3.49E+01	3	Clays-Clay to Silty Clay	37	-99	46.57	-99
87.368	29.03	784.6	785.8	3.69	6.23	7.28E+01	3.50E+01	3	Clays-Clay to Silty Clay	38	-99	47.45	-99
87.447	29.16	797.9	799.2	3.65	6.27	7.29E+01	3.50E+01	3	Clays-Clay to Silty Clay	38	-99	48.34	-99
87.527	29.34	793.5	794.7	3.69	6.32	7.29E+01	3.50E+01	3	Clays-Clay to Silty Clay	38	-99	48.04	-99
87.607	29.81	796.5	797.7	3.74	6.37	7.30E+01	3.50E+01	3	Clays-Clay to Silty Clay	38	-99	48.23	-99
87.687	30.21	790.5	791.8	3.82	6.37	7.31E+01	3.51E+01	3	Clays-Clay to Silty Clay	38	-99	47.83	-99
87.756	30.27	787.6	788.8	3.84	6.32	7.31E+01	3.51E+01	3	Clays-Clay to Silty Clay	38	-99	47.63	-99
87.836	30.18	777.2	778.4	3.88	6.37	7.32E+01	3.51E+01	3	Clays-Clay to Silty Clay	37	-99	46.93	-99
87.916	30.69	771.3	772.5	3.97	6.42	7.33E+01	3.52E+01	3	Clays-Clay to Silty Clay	37	-99	46.53	-99
87.996	31.06	769.8	771	4.03	6.42	7.33E+01	3.52E+01	3	Clays-Clay to Silty Clay	37	-99	46.43	-99
88.076	30.98	760.9	762.1	4.07	6.47	7.34E+01	3.52E+01	3	Clays-Clay to Silty Clay	37	-99	45.83	-99
88.156	30.47	763.9	765.1	3.98	6.42	7.35E+01	3.53E+01	3	Clays-Clay to Silty Clay	37	-99	46.03	-99
88.228	29.48	750.8	752	3.92	6.39	7.35E+01	3.53E+01	3	Clays-Clay to Silty Clay	36	-99	45.15	-99
88.307	28.81	761.2	762.4	3.78	6.68	7.36E+01	3.53E+01	3	Clays-Clay to Silty Clay	37	-99	45.84	-99
88.387	29.32	747.8	749.1	3.91	6.78	7.37E+01	3.54E+01	3	Clays-Clay to Silty Clay	36	-99	44.94	-99
88.467	29.07	730	731.4	3.97	6.93	7.37E+01	3.54E+01	3	Clays-Clay to Silty Clay	35	-99	43.76	-99
88.547	28.89	716.7	718	4.02	6.83	7.38E+01	3.54E+01	3	Clays-Clay to Silty Clay	34	-99	42.86	-99
88.627	29.54	722.6	723.9	4.08	6.63	7.39E+01	3.55E+01	3	Clays-Clay to Silty Clay	35	-99	43.25	-99
88.707	30.65	703.4	704.6	4.35	6.48	7.39E+01	3.55E+01	3	Clays-Clay to Silty Clay	34	-99	41.96	-99
88.787	31.74	690.1	691.3	4.59	6.63	7.40E+01	3.55E+01	3	Clays-Clay to Silty Clay	33	-99	41.07	-99
88.867	31.84	681.2	682.4	4.67	6.63	7.41E+01	3.56E+01	3	Clays-Clay to Silty Clay	33	-99	40.47	-99
88.936	31.01	666.3	667.6	4.64	6.63	7.41E+01	3.56E+01	3	Clays-Clay to Silty Clay	32	-99	39.48	-99
89.016	29.48	642.6	643.9	4.58	6.63	7.42E+01	3.56E+01	3	Clays-Clay to Silty Clay	31	-99	37.9	-99
89.097	28.12	641.2	642.4	4.38	6.63	7.43E+01	3.56E+01	3	Clays-Clay to Silty Clay	31	-99	37.79	-99
89.177	26.63	623.4	624.7	4.26	6.53	7.43E+01	3.57E+01	3	Clays-Clay to Silty Clay	30	-99	36.61	-99
89.258	25.68	617.5	618.7	4.15	6.58	7.44E+01	3.57E+01	3	Clays-Clay to Silty Clay	30	-99	36.21	-99
89.338	24.99	621.9	623.2	4.01	6.58	7.45E+01	3.57E+01	3	Clays-Clay to Silty Clay	30	-99	36.5	-99
89.419	23.89	607.1	608.4	3.93	6.58	7.45E+01	3.58E+01	3	Clays-Clay to Silty Clay	29	-99	35.5	-99
89.499	23.49	608.6	609.8	3.85	6.53	7.46E+01	3.58E+01	3	Clays-Clay to Silty Clay	29	-99	35.6	-99
89.579	24	605.6	606.9	3.95	6.53	7.47E+01	3.58E+01	3	Clays-Clay to Silty Clay	29	-99	35.4	-99
89.658	24.42	616	617.3	3.96	6.73	7.47E+01	3.59E+01	3	Clays-Clay to Silty Clay	30	-99	36.08	-99
89.74	24.73	620.4	621.7	3.98	6.58	7.48E+01	3.59E+01	3	Clays-Clay to Silty Clay	30	-99	36.38	-99
89.821	24.76	623.4	624.6	3.96	6.39	7.49E+01	3.59E+01	3	Clays-Clay to Silty Clay	30	-99	36.57	-99
89.902	26.57	627.8	629.1	4.22	6.44	7.49E+01	3.60E+01	3	Clays-Clay to Silty Clay	30	-99	36.86	-99
89.981	29.72	641.2	642.4	4.63	6.48	7.50E+01	3.60E+01	3	Clays-Clay to Silty Clay	31	-99	37.75	-99
90.061	31.26	650.1	651.3	4.8	6.53	7.51E+01	3.60E+01	3	Clays-Clay to Silty Clay	31	-99	38.33	-99
90.14	31.61	781.9	783.2	4.04	6.63	7.51E+01	3.61E+01	3	Clays-Clay to Silty Clay	38	-99	47.12	-99
90.221	31.23	740.4	741.6	4.21	6.19	7.52E+01	3.61E+01	3	Clays-Clay to Silty Clay	36	-99	44.35	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
90.301	31.57	704.9	706	4.47	6.04	7.53E+01	3.61E+01	3	Clays-Clay to Silty Clay	34	-99	41.97	-99
90.382	31.99	673.8	674.9	4.74	6.14	7.53E+01	3.62E+01	3	Clays-Clay to Silty Clay	32	-99	39.9	-99
90.462	31.29	616	617.2	5.07	6.29	7.54E+01	3.62E+01	3	Clays-Clay to Silty Clay	30	-99	36.04	-99
90.542	29.58	596.7	597.9	4.95	6.34	7.55E+01	3.62E+01	3	Clays-Clay to Silty Clay	29	-99	34.75	-99
90.623	28.31	607.1	608.3	4.65	6.34	7.55E+01	3.63E+01	3	Clays-Clay to Silty Clay	29	-99	35.44	-99
90.704	26.8	598.2	599.4	4.47	6.39	7.56E+01	3.63E+01	3	Clays-Clay to Silty Clay	29	-99	34.84	-99
90.783	26.07	604.1	605.4	4.31	6.39	7.57E+01	3.63E+01	3	Clays-Clay to Silty Clay	29	-99	35.23	-99
90.863	25.49	590.8	592	4.31	6.24	7.57E+01	3.64E+01	3	Clays-Clay to Silty Clay	28	-99	34.34	-99
90.943	24.64	574.5	575.7	4.28	6.24	7.58E+01	3.64E+01	3	Clays-Clay to Silty Clay	28	-99	33.25	-99
91.023	24.34	555.2	556.5	4.37	6.34	7.59E+01	3.64E+01	3	Clays-Clay to Silty Clay	27	-99	31.96	-99
91.105	24.77	562.7	563.9	4.39	6.34	7.59E+01	3.64E+01	3	Clays-Clay to Silty Clay	27	-99	32.45	-99
91.183	26.88	574.5	575.7	4.67	6.29	7.60E+01	3.65E+01	3	Clays-Clay to Silty Clay	28	-99	33.23	-99
91.263	32.51	596.7	597.9	5.44	6.34	7.61E+01	3.65E+01	3	Clays-Clay to Silty Clay	29	-99	34.71	-99
91.343	40	672.3	673.5	5.94	6.29	7.61E+01	3.65E+01	3	Clays-Clay to Silty Clay	32	-99	39.74	-99
91.422	47.33	841.2	842.4	5.62	6.29	7.62E+01	3.66E+01	3	Clays-Clay to Silty Clay	40	-99	51	-99
91.498	53.37	1300.1	1301.3	4.1	6.21	7.63E+01	3.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	47	34.57	81.59	-99
91.577	57.52	1435	1436.1	4.01	5.87	7.63E+01	3.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	52	35.2	90.58	-99
91.656	59.24	1652.9	1654.2	3.58	6.85	7.64E+01	3.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	60	36.07	105.1	-99
91.734	58.65	1950.8	1952.2	3	7.2	7.64E+01	3.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	70	37.08	124.96	-99
91.811	57.37	2256.1	2257.5	2.54	7.25	7.65E+01	3.67E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	37.94	145.31	-99
91.889	58.27	2511	2512.3	2.32	6.66	7.66E+01	3.68E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	38.56	162.3	-99
91.967	60.18	2853.4	2854.5	2.11	5.97	7.66E+01	3.68E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	68	39.29	185.12	-99
92.046	58.87	3172	3173.1	1.86	5.62	7.67E+01	3.68E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	76	39.88	206.36	-99
92.123	56.91	3336.6	3337.7	1.71	5.67	7.68E+01	3.69E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	80	40.15	217.32	-99
92.202	58.6	3354.3	3355.5	1.75	5.97	7.68E+01	3.69E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	81	40.18	218.5	-99
92.282	62.73	3427	3428.2	1.83	6.31	7.69E+01	3.69E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	82	40.29	223.34	-99
92.36	66.98	3674.5	3675.7	1.82	6.21	7.70E+01	3.69E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	88	40.67	239.83	-99
92.439	69.51	3913.1	3914.2	1.78	5.67	7.70E+01	3.70E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	94	41	255.74	-99
92.516	70.11	4099.9	4100.9	1.71	5.43	7.71E+01	3.70E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	98	41.25	268.18	-99
92.596	70.67	4133.9	4134.9	1.71	5.13	7.72E+01	3.70E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	99	41.29	270.45	-99
92.675	70.94	4258.4	4259.5	1.67	5.28	7.72E+01	3.71E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	102	41.44	278.75	-99
92.752	72.72	4464.5	4465.5	1.63	5.38	7.73E+01	3.71E+01	6	Sands-Clean Sand to Silty Sand	71	41.69	-99	-99
92.832	79.07	4420	4421	1.79	5.33	7.74E+01	3.71E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	106	41.63	289.51	-99
92.925	89.45	4591.9	4593.2	1.95	6.51	7.74E+01	3.72E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	110	41.82	300.97	-99
93.003	94.89	4694.2	4695.3	2.02	5.67	7.75E+01	3.72E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	113	41.94	307.78	-99
93.082	98.21	5052.9	5053.7	1.94	4.44	7.76E+01	3.72E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	121	42.31	331.69	-99
93.149	103.83	4952.1	4952.9	2.1	4.05	7.76E+01	3.73E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	119	42.21	324.96	-99
93.226	97.59	5272.2	5273.1	1.85	4.39	7.77E+01	3.73E+01	6	Sands-Clean Sand to Silty Sand	84	42.53	-99	-99
93.304	90.77	5129.9	5130.8	1.77	4.29	7.78E+01	3.73E+01	6	Sands-Clean Sand to Silty Sand	82	42.38	-99	-99
93.38	90.57	5384.9	5385.9	1.68	5.62	7.78E+01	3.74E+01	6	Sands-Clean Sand to Silty Sand	86	42.63	-99	-99
93.46	89.38	5012.8	5014.1	1.78	6.56	7.79E+01	3.74E+01	6	Sands-Clean Sand to Silty Sand	80	42.25	-99	-99
93.528	89.98	4876.5	4877.8	1.84	7	7.79E+01	3.74E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	117	42.11	319.9	-99
93.598	97.39	4838	4839.2	2.01	6.26	7.80E+01	3.74E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	116	42.06	317.33	-99
93.677	107.1	4869.1	4870.4	2.2	6.7	7.81E+01	3.75E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	117	42.09	319.4	-99
93.754	113.44	4929.8	4931.2	2.3	7.2	7.81E+01	3.75E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	118	42.15	323.45	-99
93.833	125.69	4845.4	4846.9	2.59	8.08	7.82E+01	3.75E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	116	42.06	317.81	-99
93.913	138.19	4615.6	4617.4	2.99	9.26	7.83E+01	3.76E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	111	41.8	302.49	-99
93.99	143.87	4639.3	4642.3	3.1	15.36	7.83E+01	3.76E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	111	41.82	304.07	-99
94.066	139.1	4922.4	4925.3	2.82	14.72	7.84E+01	3.76E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	118	42.12	322.94	-99
94.143	122.59	4898.7	4900.9	2.5	11.08	7.85E+01	3.77E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	118	42.09	321.35	-99
94.219	97.26	4719.4	4721.2	2.06	9.56	7.85E+01	3.77E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	113	41.9	309.39	-99
94.297	69.34	4480.8	4482.6	1.55	9.31	7.86E+01	3.77E+01	6	Sands-Clean Sand to Silty Sand	72	41.62	-99	-99
94.378	43.74	4079.1	4080.8	1.07	8.67	7.87E+01	3.78E+01	6	Sands-Clean Sand to Silty Sand	65	41.11	-99	-99
94.459	33.66	3508.5	3510	0.96	7.74	7.87E+01	3.78E+01	6	Sands-Clean Sand to Silty Sand	56	40.29	-99	-99
94.541	36.49	2906.7	2908.2	1.25	7.34	7.88E+01	3.78E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	70	39.23	188.53	-99
94.622	34.17	2262	2263.4	1.51	7	7.89E+01	3.79E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	54	37.78	145.54	-99
94.704	34.11	1772.9	1774.2	1.92	6.66	7.89E+01	3.79E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	43	36.3	112.93	-99
94.772	33.2	726.4	727.6	4.56	6.03	7.90E+01	3.79E+01	3	Clays-Clay to Silty Clay	35	-99	43.16	-99
94.84	31.99	1404.4	1405.6	2.28	6.18	7.90E+01	3.79E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	51	34.84	88.36	-99
94.909	31.07	1256.4	1257.6	2.47	6.23	7.91E+01	3.80E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	34.12	78.49	-99
94.988	29.98	1062.4	1063.7	2.82	6.62	7.92E+01	3.80E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	33.01	65.55	-99
95.067	27.29	923.3	924.7	2.95	7.11	7.92E+01	3.80E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	32.06	56.27	-99
95.146	24.3	875.9	877.5	2.77	7.95	7.93E+01	3.81E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	32	31.7	53.11	-99
95.226	23.38	933.7	935.3	2.5	8.29	7.94E+01	3.81E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	32.13	56.95	-99
95.304	23.42	944	945.6	2.48	8.44	7.94E+01	3.81E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	34	32.2	57.64	-99
95.384	24.56	910	911.8	2.69	9.57	7.95E+01	3.82E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	33	31.94	55.37	-99
95.463	27.52	862.6	864.7	3.18	10.8	7.96E+01	3.82E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	31	31.57	52.2	-99
95.542	33.21	843.4	845.6	3.93	11.58	7.96E+01	3.82E+01	3	Clays-Clay to Silty Clay	40	-99	50.92	-99
95.623	41.35	871.5	873.9	4.73	12.52	7.97E+01	3.83E+01	3	Clays-Clay to Silty Clay	42	-99	52.79	-99
95.702	35.1	1029.9	1032.3	3.4	12.67	7.98E+01	3.83E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	37	32.75	63.34	-99
95.779	26.92	1331.9	1334.3	2.02	12.37	7.98E+01	3.83E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	32	34.44	83.47	-99
95.857	28.14	1574.6	1577	1.78	12.32	7.99E+01	3.83E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	38	35.49	99.65	-99
95.934	29.3	1814.5	1816.8	1.61	11.93	7.99E+01	3.84E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	44	36.37	115.63	-99
96.01	31.06	2117.9	2120.3	1.46	12.42	8.00E+01	3.84E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	51	37.3	135.86	-99
96.082	33.51	2365.5	2366.9	1.42	7.22	8.01E+01	3.84E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	57	37.95	152.36	-99
96.159	36.33	2724	2725.5	1.33	7.47	8.01E+01	3.85E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	65	38.77	176.26	-99
96.238	38.8	2804	2805.5	1.38	7.52	8.02E+01	3.85E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	67	38.93	181.59	-99
96.318	41.97	2838.1	2839.5	1.48	7.47	8.03E+01	3.85E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	68	38.99	183.85	-99
96.396	44.93	2875.1	2876.5	1.56	7.37	8.03E+01	3.86E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	69	39.06	186.32	-99
96.475	48.45	2977.3	2978.7	1.63	7.22	8.04E+01	3.86E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	71	39.26	193.13	-99
96.553	54.19	3128.4	3129.8	1.73	7.27	8.05E+01	3.86E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	75	39.53	203.2	-99
96.632	60.42	3278.1	3279.5	1.84	7.42	8.05E+01	3.87E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	79	39.79	213.17	-99
96.711	56.61	3375.8	3377.3	1.68	7.42	8.06E+01	3.87E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	81	39.95	219.68	-99
96.789	46.15	3438	3439.5	1.34	7.32	8.07E+01	3.87E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	83	40.04	223.83	-99
96.869	46.22	3463.2	3464.7	1.33	7.42	8.07E+01	3.88E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	83	40.08	225.5	-99
96.946	46.14	3435.1	3436.5	1.34	7.12	8.08E+01	3.88E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	82	40.03	223.62	-99
97.024	44.42	3455.8	3457.2	1.28	7.22	8.09E+01	3.88E+01	6	Sands-Clean Sand to Silty Sand	55	40.06	-99	-99
97.096	44.63	3007.8	3009.2	1.48	7.08	8.09E+01	3.88E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	72	39.28	195.13	-99
97.17	47.76	3428.8	3430.2	1.39	6.89	8.10E+01	3.89E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	82	40.01	223.19	-99
97.248	53.68	3553.4	3554.7	1.51	7.13	8.10E+01	3.89E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	85	40.2	231.49	-99
97.325	62.91	3743.1	3744.5	1.68	7.23	8.11E+01	3.89E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	90	40.48	244.13	-99
97.403	75.17	3922.5	3923.9	1.92	7.38	8.12E+01	3.90E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	94	40.73	256.09	-99
97.48	84.24	4002.6	4004	2.1	7.58	8.12E+01	3.90E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	96	40.84	261.42	-99
97.559	89.45	4072.2	4074	2.2	9	8.13E+01	3.90E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	98	40.93	266.06	-99
97.638	91.36	4170.1	4171.6	2.19	7.77	8.14E+01	3.91E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	100	41.05	272.58	-99
97.714	87.79	4147.8	4149.3	2.12	7.72	8.14E+01	3.91E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	100	41.02	271.09	-99
97.791	77.68	4189.3	4190.8	1.85	7.77	8.15E+01	3.91E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	101	41.07	273.86	-99
97.869	65.32	4235.3	4236.9	1.54	8.27	8.16E+01	3.92E+01	6	Sands-Clean Sand to Silty Sand	68	41.12	-99	-99
97.946	56.41	4168.6	4170.1	1.35	7.77	8.16E+01	3.92E+01	6	Sands-Clean Sand to Silty Sand	67	41.03	-99	-99
98.025	51.42	4082.6	4084.1	1.26	7.58	8.17E+01	3.92E+01	6	Sands-Clean Sand to Silty Sand	65	40.91	-99	-99
98.104	32.95	3980.3	3981.8	0.83	7.53	8.18E+01	3.92E+01	6	Sands-Clean Sand to Silty Sand	64	40.77	-99	-99
98.182	18.82	3901.7	3903.2	0.48	7.58	8.18E+01	3.93E+01	6	Sands-Clean Sand to Silty Sand	62	40.66	-99	-99
98.26	22.52	3846.9	3848.4	0.59	7.63	8.19E+01	3.93E+01	6	Sands-Clean Sand to Silty Sand	62	40.58	-99	-99
98.336	29.94	3820.2	3821.7	0.78	7.63	8.20E+01	3.93E+01	6	Sands-Clean Sand to Silty Sand	61	40.54	-99	-99

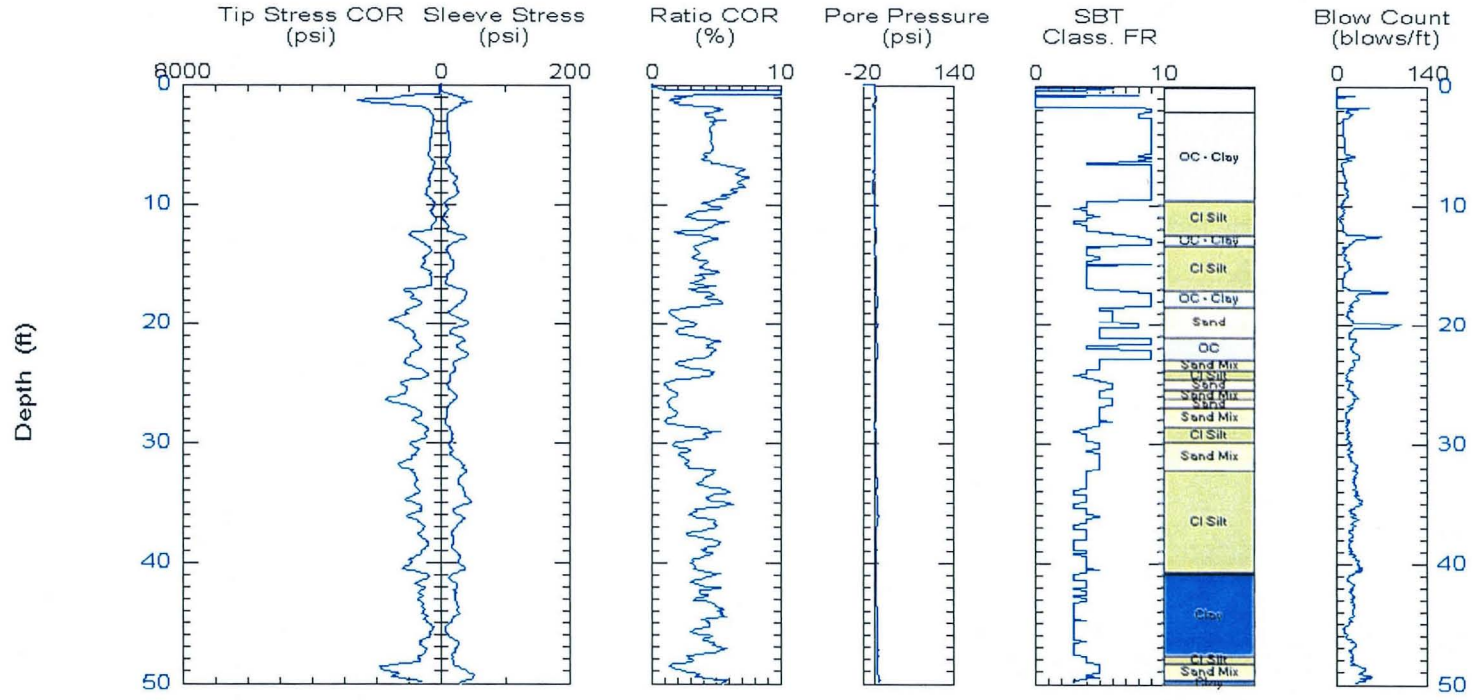
Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
98.415	37.7	3808.3	3809.9	0.99	7.92	8.20E+01	3.94E+01	6	Sands-Clean Sand to Silty Sand	61	40.52	-99	-99
98.485	42.91	4025.6	4026.8	1.07	5.86	8.21E+01	3.94E+01	6	Sands-Clean Sand to Silty Sand	64	40.81	-99	-99
98.562	47.98	3994.5	3995.8	1.2	6.79	8.21E+01	3.94E+01	6	Sands-Clean Sand to Silty Sand	64	40.77	-99	-99
98.639	52.76	3864.2	3865.6	1.36	7.04	8.22E+01	3.95E+01	6	Sands-Clean Sand to Silty Sand	62	40.58	-99	-99
98.717	55.12	3742.8	3744.1	1.47	6.99	8.23E+01	3.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	90	40.4	244.03	-99
98.796	53.42	3671.7	3672.9	1.45	6.45	8.23E+01	3.95E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	88	40.29	239.29	-99
98.876	49.19	3615.4	3616.6	1.36	6.15	8.24E+01	3.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	87	40.2	235.53	-99
98.955	44.61	3511.7	3512.9	1.27	6.1	8.25E+01	3.96E+01	6	Sands-Clean Sand to Silty Sand	56	40.04	-99	-99
99.033	42.42	3419.9	3421.1	1.24	6.2	8.25E+01	3.96E+01	6	Sands-Clean Sand to Silty Sand	55	39.89	-99	-99
99.112	43.27	3374	3375.1	1.28	5.86	8.26E+01	3.96E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	81	39.81	219.43	-99
99.19	45.15	3416.9	3418.1	1.32	5.91	8.27E+01	3.97E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	82	39.87	222.28	-99
99.268	47.62	3538.4	3539.5	1.35	5.96	8.27E+01	3.97E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	85	40.06	230.38	-99
99.346	33.6	3661.3	3662.5	0.92	6.06	8.28E+01	3.97E+01	6	Sands-Clean Sand to Silty Sand	59	40.25	-99	-99
99.423	11.81	3634.6	3635.8	0.32	6.2	8.29E+01	3.98E+01	6	Sands-Clean Sand to Silty Sand	58	40.2	-99	-99
99.501	14.6	3470.2	3471.5	0.42	6.25	8.29E+01	3.98E+01	6	Sands-Clean Sand to Silty Sand	56	39.94	-99	-99
99.58	21.59	3280.7	3281.9	0.66	6.35	8.30E+01	3.98E+01	6	Sands-Clean Sand to Silty Sand	52	39.62	-99	-99
99.66	32.59	2934.1	2935.3	1.11	6.3	8.31E+01	3.99E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	70	38.99	190.07	-99
99.736	45.41	2039.7	2040.6	2.23	4.62	8.31E+01	3.99E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	49	36.84	130.44	-99
99.813	56.46	2481.5	2482.5	2.27	5.26	8.32E+01	3.99E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	60	38.01	159.89	-99
99.893	70.7	2078.3	2079.4	3.4	5.81	8.32E+01	4.00E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	75	36.95	133	-99
99.973	75.06	1910.8	1911.9	3.93	5.95	8.33E+01	4.00E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	69	36.43	121.83	-99
100.053	69.3	1480.9	1482.1	4.68	6.4	8.34E+01	4.00E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	53	34.84	93.16	-99
100.133	64.86	1319.3	1320.9	4.91	8.76	8.34E+01	4.01E+01	3	Clays-Clay to Silty Clay	63	-99	82.39	-99
100.215	61.32	1002	1003.9	6.11	9.64	8.35E+01	4.01E+01	3	Clays-Clay to Silty Clay	48	-99	61.23	-99
100.294	55.65	890.8	893.1	6.23	11.96	8.36E+01	4.01E+01	3	Clays-Clay to Silty Clay	43	-99	53.82	-99
100.374	47.77	935.3	937.7	5.09	12.55	8.36E+01	4.02E+01	3	Clays-Clay to Silty Clay	45	-99	56.78	-99
100.453	40.3	1002	1004.5	4.01	12.94	8.37E+01	4.02E+01	3	Clays-Clay to Silty Clay	48	-99	61.22	-99
100.532	36.3	987.2	989.6	3.67	12.3	8.38E+01	4.02E+01	3	Clays-Clay to Silty Clay	47	-99	60.23	-99
100.598	37.6	895.3	897.6	4.19	11.91	8.38E+01	4.02E+01	3	Clays-Clay to Silty Clay	43	-99	54.1	-99
100.679	39.14	754.4	756.7	5.17	11.61	8.39E+01	4.03E+01	3	Clays-Clay to Silty Clay	36	-99	44.7	-99
100.759	39.29	687.7	690.1	5.69	12.2	8.40E+01	4.03E+01	3	Clays-Clay to Silty Clay	33	-99	40.25	-99
100.839	41.29	729.2	731.7	5.64	12.99	8.40E+01	4.03E+01	3	Clays-Clay to Silty Clay	35	-99	43.01	-99
100.91	44.31	778.2	780.7	5.68	13.23	8.41E+01	4.04E+01	3	Clays-Clay to Silty Clay	37	-99	46.27	-99
100.983	46.94	1170.2	1172.2	4	10.38	8.42E+01	4.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	33.25	72.4	-99
101.061	49.01	1253.1	1255	3.9	9.94	8.42E+01	4.04E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	33.69	77.93	-99
101.14	52.13	1356.8	1358.6	3.84	9.55	8.43E+01	4.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	34.2	84.83	-99
101.218	53.45	1259	1260.9	4.24	9.79	8.44E+01	4.05E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	45	33.71	78.31	-99
101.298	50.43	1056.1	1058.1	4.77	9.89	8.44E+01	4.05E+01	3	Clays-Clay to Silty Clay	51	-99	64.78	-99
101.381	46.94	856.2	858.2	5.47	10.38	8.45E+01	4.06E+01	3	Clays-Clay to Silty Clay	41	-99	51.45	-99
101.461	42.31	751.1	753.4	5.62	12.4	8.46E+01	4.06E+01	3	Clays-Clay to Silty Clay	36	-99	44.43	-99
101.542	38.23	758.5	760.9	5.02	12.74	8.46E+01	4.06E+01	3	Clays-Clay to Silty Clay	36	-99	44.92	-99
101.619	38.59	1051.7	1054.5	3.66	14.56	8.47E+01	4.07E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	38	32.49	64.47	-99
101.695	44.22	1540.5	1543.5	2.86	15.98	8.48E+01	4.07E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	55	34.98	97.05	-99
101.774	53.22	1924	1926.5	2.76	12.69	8.48E+01	4.07E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	69	36.36	122.61	-99
101.854	55.63	1993.6	1995.3	2.79	8.76	8.49E+01	4.07E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	72	36.58	127.25	-99
101.934	50.74	1696	1697.6	2.99	8.42	8.50E+01	4.08E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	61	35.57	107.4	-99
102.015	53.98	1362.7	1364.4	3.96	8.76	8.50E+01	4.08E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	34.18	85.18	-99
102.095	57.35	1105	1106.9	5.18	9.69	8.51E+01	4.08E+01	3	Clays-Clay to Silty Clay	53	-99	68	-99
102.175	59.9	1108	1110.6	5.39	13.53	8.52E+01	4.09E+01	3	Clays-Clay to Silty Clay	53	-99	68.19	-99
102.251	62.45	1249.7	1252.8	4.98	16.15	8.52E+01	4.09E+01	3	Clays-Clay to Silty Clay	60	-99	77.63	-99
102.329	58.92	1491.3	1494.7	3.94	17.48	8.53E+01	4.09E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	54	34.74	93.74	-99
102.408	54.09	1446.9	1448.8	3.73	9.9	8.53E+01	4.10E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	52	34.54	90.77	-99
102.49	52.32	1043.7	1045.7	5	10.25	8.54E+01	4.10E+01	3	Clays-Clay to Silty Clay	50	-99	63.89	-99
102.571	53.51	865.9	868.4	6.16	13.34	8.55E+01	4.10E+01	3	Clays-Clay to Silty Clay	42	-99	52.03	-99
102.651	52.72	923.7	926.7	5.69	15.95	8.55E+01	4.11E+01	3	Clays-Clay to Silty Clay	44	-99	55.87	-99
102.73	48.06	1194.9	1198.3	4.01	17.82	8.56E+01	4.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	33.27	73.95	-99
102.808	43.61	1587.7	1591.1	2.74	17.82	8.57E+01	4.11E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	57	35.1	100.13	-99
102.885	40.67	1984.9	1988	2.05	16.49	8.57E+01	4.12E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	48	36.49	126.61	-99
102.963	39.52	2451.7	2454.5	1.61	14.38	8.58E+01	4.12E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	59	37.75	157.73	-99
103.042	39.09	2788.2	2790.4	1.4	11.77	8.59E+01	4.12E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	67	38.5	180.15	-99
103.121	37.6	2961.6	2963.8	1.27	11.62	8.59E+01	4.13E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	71	38.85	191.71	-99
103.199	35.29	3115.7	3117.9	1.13	11.33	8.60E+01	4.13E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	75	39.13	201.98	-99
103.278	34.83	3281.7	3283.8	1.06	10.79	8.61E+01	4.13E+01	6	Sands-Clean Sand to Silty Sand	53	39.42	-99	-99
103.356	35.69	3406.2	3408.3	1.05	10.54	8.61E+01	4.13E+01	6	Sands-Clean Sand to Silty Sand	54	39.63	-99	-99
103.437	32.7	3470	3472	0.94	10.49	8.62E+01	4.14E+01	6	Sands-Clean Sand to Silty Sand	56	39.73	-99	-99
103.516	28.32	3547	3549.1	0.8	10.54	8.63E+01	4.14E+01	6	Sands-Clean Sand to Silty Sand	57	39.84	-99	-99
103.595	30.56	3603.3	3605.4	0.85	10.64	8.63E+01	4.14E+01	6	Sands-Clean Sand to Silty Sand	58	39.93	-99	-99
103.674	34.56	3647.8	3649.8	0.95	10.49	8.64E+01	4.15E+01	6	Sands-Clean Sand to Silty Sand	58	39.99	-99	-99
103.753	38.23	3708.6	3710.6	1.03	10.64	8.65E+01	4.15E+01	6	Sands-Clean Sand to Silty Sand	59	40.08	-99	-99
103.826	40.97	3383.6	3385.9	1.21	11.78	8.65E+01	4.15E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	81	39.56	219.81	-99
103.899	43.02	3751.5	3753.6	1.15	11	8.66E+01	4.16E+01	6	Sands-Clean Sand to Silty Sand	60	40.13	-99	-99
103.978	44.07	3812.3	3814.3	1.16	10.75	8.67E+01	4.16E+01	6	Sands-Clean Sand to Silty Sand	61	40.22	-99	-99
104.055	43.81	3843.4	3845.4	1.14	10.5	8.67E+01	4.16E+01	6	Sands-Clean Sand to Silty Sand	61	40.26	-99	-99
104.133	42.86	3801.9	3803.9	1.13	10.21	8.68E+01	4.17E+01	6	Sands-Clean Sand to Silty Sand	61	40.2	-99	-99
104.214	40.1	3686.2	3688.1	1.09	9.81	8.68E+01	4.17E+01	6	Sands-Clean Sand to Silty Sand	59	40.02	-99	-99
104.294	36.73	3520.1	3522	1.04	9.77	8.69E+01	4.17E+01	6	Sands-Clean Sand to Silty Sand	56	39.76	-99	-99
104.373	34.4	3359.9	3361.7	1.02	9.62	8.70E+01	4.18E+01	6	Sands-Clean Sand to Silty Sand	54	39.49	-99	-99
104.454	33.04	3186.4	3188.2	1.04	9.47	8.70E+01	4.18E+01	6	Sands-Clean Sand to Silty Sand	51	39.19	-99	-99
104.533	32.89	3070.7	3072.5	1.07	9.47	8.71E+01	4.18E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	74	38.97	198.9	-99
104.614	33.88	3018.8	3020.5	1.12	9.27	8.72E+01	4.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	72	38.87	195.44	-99
104.696	36.09	3023.2	3025	1.19	9.03	8.73E+01	4.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	73	38.88	195.73	-99
104.775	39.75	3092.9	3094.7	1.28	9.03	8.73E+01	4.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	74	39	200.37	-99
104.853	44.52	3094.4	3096.2	1.44	9.08	8.74E+01	4.19E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	74	39	200.47	-99
104.932	50.79	3066.2	3068	1.66	9.22	8.74E+01	4.20E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	74	38.94	198.58	-99
105.011	55.7	3051.4	3053.2	1.82	9.27	8.75E+01	4.20E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	73	38.91	197.59	-99
105.092	58.48	2981.7	2983.6	1.96	9.72	8.76E+01	4.20E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	72	38.78	192.94	-99
105.171	50.54	2870.4	2872.3	1.76	9.57	8.76E+01	4.21E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	69	38.55	185.52	-99
105.25	37.26	2797.8	2799.5	1.33	9.22	8.77E+01	4.21E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	67	38.4	180.67	-99
105.329	35.84	2790.3	2792.1	1.28	8.93	8.78E+01	4.21E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	67	38.38	180.17	-99
105.407	39.23	2879.3	2881	1.36	8.63	8.78E+01	4.22E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	69	38.56	186.1	-99
105.487	42.62	3024.7	3026.5	1.41	9.17	8.79E+01	4.22E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	73	38.84	195.79	-99
105.56	44.32	2752.2	2754	1.61	9.53	8.80E+01	4.22E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	66	38.29	177.61	-99
105.641	44.03	3021.8	3023.5	1.46	8.8	8.80E+01	4.23E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	73	38.82	195.58	-99
105.72	42.1	3004	3005.4	1.4	7.27	8.81E+01	4.23E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	72	38.78	194.39	-99
105.8	40.7	2915.1	2916.4	1.4	6.83	8.82E+01	4.23E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	70	38.61	188.46	-99
105.88	45.68	2732.9	2734.1	1.67	5.99	8.82E+01	4.24E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	66	38.23	176.31	-99
105.959	56.04	2564	2565	2.18	4.81	8.83E+01	4.24E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	62	37.85	165.05	-99
106.025	63.52	2331.4	2332.3	2.72	4.47	8.84E+01	4.24E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	56	37.28	149.54	-99
106.106	68.45	2064.8	2065.6	3.31	4.17	8.84E+01	4.24E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	74	36.54	131.76	-99
106.187	69.51	1937.4	1938.2	3.59	4.13	8.85E+01	4.25E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	70	36.15	123.26	-99
106.267	68.35	1835.2	1836.2	3.72	5.16	8.86E+01	4.25E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	66	35.81	116.44	-99
106.346	65.41	1925.5	1926.9	3.39	6.88	8.86E+01	4.25E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	69	36.1	122.46	-99
106.424	63.17	2132.9	2135	2.96	10.81	8.87E+01	4.26E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	77	36.72	136.28	-99
106.504	58.73	2300.3	2301.7	2.55	6.83	8.88E+01	4.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	37.17	147.44	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
106.582	52.28	2330	2330.9	2.24	5.06	8.88E+01	4.26E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	56	37.25	149.41	-99
106.663	46.86	2298.9	2299.8	2.04	4.86	8.89E+01	4.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	55	37.16	147.33	-99
106.743	42.26	1903.3	1904.2	2.22	4.67	8.90E+01	4.27E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	46	36	120.96	-99
106.81	40.81	1362.6	1363.6	2.99	5.26	8.90E+01	4.27E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	33.88	84.91	-99
106.877	39.66	971.5	972.8	4.08	6.58	8.91E+01	4.28E+01	3	Clays-Clay to Silty Clay	47	-99	58.83	-99
106.957	36.81	761.2	762.7	4.83	8.06	8.91E+01	4.28E+01	3	Clays-Clay to Silty Clay	37	-99	44.8	-99
107.024	32.18	645.6	647.2	4.97	8.06	8.92E+01	4.28E+01	3	Clays-Clay to Silty Clay	31	-99	37.09	-99
107.104	24.15	584.9	586.5	4.12	8.5	8.93E+01	4.28E+01	3	Clays-Clay to Silty Clay	28	-99	33.04	-99
107.183	17.02	558.2	559.9	3.04	8.94	8.93E+01	4.29E+01	3	Clays-Clay to Silty Clay	27	-99	31.26	-99
107.265	13.23	561.2	562.9	2.35	9.14	8.94E+01	4.29E+01	3	Clays-Clay to Silty Clay	27	-99	31.45	-99
107.345	11.99	550.8	552.6	2.17	9.29	8.95E+01	4.29E+01	3	Clays-Clay to Silty Clay	26	-99	30.76	-99
107.426	11.62	549.3	551.2	2.11	9.53	8.95E+01	4.30E+01	3	Clays-Clay to Silty Clay	26	-99	30.65	-99
107.506	11.62	544.9	546.7	2.13	9.63	8.96E+01	4.30E+01	3	Clays-Clay to Silty Clay	26	-99	30.35	-99
107.585	11.83	536	537.9	2.2	9.78	8.97E+01	4.30E+01	3	Clays-Clay to Silty Clay	26	-99	29.76	-99
107.667	12.12	553.8	555.7	2.18	9.98	8.97E+01	4.31E+01	3	Clays-Clay to Silty Clay	27	-99	30.94	-99
107.748	12.34	613	614.9	2.01	9.98	8.98E+01	4.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	28.29	34.88	-99
107.829	13.05	620.4	622.4	2.1	9.98	8.99E+01	4.31E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	22	28.37	35.37	-99
107.908	15.09	583.4	585.3	2.58	9.88	8.99E+01	4.32E+01	3	Clays-Clay to Silty Clay	28	-99	32.9	-99
107.988	21.04	580.4	582.4	3.61	10.12	9.00E+01	4.32E+01	3	Clays-Clay to Silty Clay	28	-99	32.7	-99
108.068	26.12	590.8	592.7	4.41	9.93	9.01E+01	4.32E+01	3	Clays-Clay to Silty Clay	28	-99	33.38	-99
108.15	25.6	672.3	674.2	3.8	9.98	9.01E+01	4.33E+01	3	Clays-Clay to Silty Clay	32	-99	38.81	-99
108.229	31.5	857.5	859.4	3.67	10.22	9.02E+01	4.33E+01	3	Clays-Clay to Silty Clay	41	-99	51.15	-99
108.307	39.54	1069.3	1071.3	3.69	10.37	9.03E+01	4.33E+01	3	Clays-Clay to Silty Clay	51	-99	65.27	-99
108.386	42.3	1204.1	1206.2	3.51	11.01	9.03E+01	4.34E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	43	32.97	74.25	-99
108.467	44.37	1029.3	1031.6	4.3	11.99	9.04E+01	4.34E+01	3	Clays-Clay to Silty Clay	49	-99	62.59	-99
108.534	44.46	879.7	881.4	5.04	8.84	9.04E+01	4.34E+01	3	Clays-Clay to Silty Clay	42	-99	52.61	-99
108.603	42.13	826.6	828.3	5.09	8.98	9.05E+01	4.34E+01	3	Clays-Clay to Silty Clay	40	-99	49.07	-99
108.676	37.25	719.8	721.7	5.16	9.67	9.06E+01	4.35E+01	3	Clays-Clay to Silty Clay	35	-99	41.95	-99
108.757	30.96	669.4	671.4	4.61	10.85	9.06E+01	4.35E+01	3	Clays-Clay to Silty Clay	32	-99	38.58	-99
108.836	26.23	613	615.3	4.26	11.93	9.07E+01	4.35E+01	3	Clays-Clay to Silty Clay	29	-99	34.82	-99
108.918	24.5	581.8	584.2	4.19	12.42	9.08E+01	4.36E+01	3	Clays-Clay to Silty Clay	28	-99	32.74	-99
108.999	24.33	599.6	602.1	4.04	12.72	9.08E+01	4.36E+01	3	Clays-Clay to Silty Clay	29	-99	33.92	-99
109.08	24.23	593.7	596.2	4.06	13.01	9.09E+01	4.36E+01	3	Clays-Clay to Silty Clay	28	-99	33.52	-99
109.16	23.29	574.4	577	4.04	13.31	9.10E+01	4.37E+01	3	Clays-Clay to Silty Clay	28	-99	32.23	-99
109.241	23.14	581.8	584.5	3.96	13.6	9.10E+01	4.37E+01	3	Clays-Clay to Silty Clay	28	-99	32.72	-99
109.322	21.99	635.2	637.9	3.45	13.65	9.11E+01	4.37E+01	3	Clays-Clay to Silty Clay	30	-99	36.28	-99
109.405	20.2	595.2	597.9	3.38	13.95	9.12E+01	4.38E+01	3	Clays-Clay to Silty Clay	29	-99	33.6	-99
109.474	19.98	564	566.6	3.53	13.36	9.12E+01	4.38E+01	3	Clays-Clay to Silty Clay	27	-99	31.52	-99
109.554	19.61	550.7	553.2	3.54	13.11	9.13E+01	4.38E+01	3	Clays-Clay to Silty Clay	26	-99	30.63	-99
109.636	18.99	547.7	550.3	3.45	13.31	9.14E+01	4.39E+01	3	Clays-Clay to Silty Clay	26	-99	30.42	-99
109.717	19.55	547.7	550.3	3.55	13.06	9.14E+01	4.39E+01	3	Clays-Clay to Silty Clay	26	-99	30.42	-99
109.797	20.69	577.4	579.9	3.57	12.72	9.15E+01	4.39E+01	3	Clays-Clay to Silty Clay	28	-99	32.39	-99
109.878	21.76	583.3	585.8	3.71	12.67	9.16E+01	4.40E+01	3	Clays-Clay to Silty Clay	28	-99	32.78	-99
109.958	22.75	586.3	588.7	3.86	12.32	9.16E+01	4.40E+01	3	Clays-Clay to Silty Clay	28	-99	32.98	-99
110.039	23.64	581.8	584.2	4.05	12.13	9.17E+01	4.40E+01	3	Clays-Clay to Silty Clay	28	-99	32.68	-99
110.105	24.17	572.9	575.3	4.2	12.32	9.18E+01	4.40E+01	3	Clays-Clay to Silty Clay	28	-99	32.08	-99
110.186	24.09	550.7	553.1	4.36	12.18	9.18E+01	4.41E+01	3	Clays-Clay to Silty Clay	26	-99	30.59	-99
110.266	23.38	532.9	535.2	4.37	11.98	9.19E+01	4.41E+01	3	Clays-Clay to Silty Clay	26	-99	29.4	-99
110.346	22.78	524	526.4	4.33	12.18	9.20E+01	4.41E+01	3	Clays-Clay to Silty Clay	25	-99	28.8	-99
110.425	23.01	553.7	556.1	4.14	12.52	9.20E+01	4.42E+01	3	Clays-Clay to Silty Clay	27	-99	30.78	-99
110.507	23.13	583.3	585.8	3.95	12.62	9.21E+01	4.42E+01	3	Clays-Clay to Silty Clay	28	-99	32.75	-99
110.587	23.54	611.5	613.9	3.83	12.57	9.22E+01	4.42E+01	3	Clays-Clay to Silty Clay	29	-99	34.62	-99
110.667	24.77	624.9	627.2	3.95	12.13	9.22E+01	4.43E+01	3	Clays-Clay to Silty Clay	30	-99	35.51	-99
110.747	26.67	595.2	597.6	4.46	12.23	9.23E+01	4.43E+01	3	Clays-Clay to Silty Clay	29	-99	33.53	-99
110.828	27.12	574.4	576.8	4.7	12.18	9.24E+01	4.43E+01	3	Clays-Clay to Silty Clay	28	-99	32.14	-99
110.91	26.1	553.7	556	4.69	12.08	9.24E+01	4.44E+01	3	Clays-Clay to Silty Clay	27	-99	30.75	-99
110.991	24.18	546.3	548.6	4.41	12.32	9.25E+01	4.44E+01	3	Clays-Clay to Silty Clay	26	-99	30.25	-99
111.072	22.51	552.2	554.6	4.06	12.72	9.26E+01	4.44E+01	3	Clays-Clay to Silty Clay	27	-99	30.64	-99
111.152	20.59	561.1	563.5	3.65	12.62	9.26E+01	4.45E+01	3	Clays-Clay to Silty Clay	27	-99	31.23	-99
111.232	18.84	556.6	559	3.37	12.37	9.27E+01	4.45E+01	3	Clays-Clay to Silty Clay	27	-99	30.93	-99
111.313	16.69	541.8	544.2	3.07	12.32	9.28E+01	4.45E+01	3	Clays-Clay to Silty Clay	26	-99	29.94	-99
111.395	16.67	521	523.4	3.19	12.32	9.28E+01	4.46E+01	3	Clays-Clay to Silty Clay	25	-99	28.55	-99
111.475	17	498.8	501.2	3.39	12.37	9.29E+01	4.46E+01	3	Clays-Clay to Silty Clay	24	-99	27.06	-99
111.555	16.36	486.9	489.3	3.34	12.52	9.30E+01	4.46E+01	3	Clays-Clay to Silty Clay	23	-99	26.26	-99
111.635	15.99	497.3	499.7	3.2	12.52	9.30E+01	4.47E+01	3	Clays-Clay to Silty Clay	24	-99	26.95	-99
111.701	15.83	473.6	476	3.33	12.47	9.31E+01	4.47E+01	3	Clays-Clay to Silty Clay	23	-99	25.37	-99
111.768	16.13	495.7	498	3.24	12.18	9.31E+01	4.47E+01	3	Clays-Clay to Silty Clay	24	-99	26.83	-99
111.848	17.45	506	508.4	3.43	12.47	9.32E+01	4.47E+01	3	Clays-Clay to Silty Clay	24	-99	27.52	-99
111.928	18.68	517.9	520.3	3.59	12.57	9.33E+01	4.48E+01	3	Clays-Clay to Silty Clay	25	-99	28.31	-99
112.009	20.41	559.4	561.8	3.63	12.62	9.33E+01	4.48E+01	3	Clays-Clay to Silty Clay	27	-99	31.07	-99
112.089	24.45	648.3	650.8	3.76	12.86	9.34E+01	4.48E+01	3	Clays-Clay to Silty Clay	31	-99	36.99	-99
112.168	27.5	800.9	803.4	3.42	13.11	9.35E+01	4.49E+01	3	Clays-Clay to Silty Clay	38	-99	47.16	-99
112.249	30.52	895.7	898.3	3.4	13.45	9.35E+01	4.49E+01	3	Clays-Clay to Silty Clay	43	-99	53.48	-99
112.328	36.01	1033.5	1036	3.48	13.01	9.36E+01	4.49E+01	3	Clays-Clay to Silty Clay	50	-99	62.66	-99
112.408	41.63	1155	1157.6	3.6	13.45	9.37E+01	4.50E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	32.44	70.76	-99
112.489	44.89	1230.6	1233.3	3.64	14.19	9.37E+01	4.50E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	44	32.86	75.79	-99
112.57	45.15	1138.7	1141.2	3.96	12.77	9.38E+01	4.50E+01	3	Clays-Clay to Silty Clay	55	-99	69.66	-99
112.65	42.74	1049.8	1052.2	4.06	12.27	9.39E+01	4.51E+01	3	Clays-Clay to Silty Clay	50	-99	63.73	-99
112.731	42.25	1112.1	1114.8	3.79	13.95	9.39E+01	4.51E+01	3	Clays-Clay to Silty Clay	53	-99	67.88	-99
112.809	39.53	1381.8	1384.7	2.85	15.08	9.40E+01	4.51E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	50	33.61	85.85	-99
112.89	36.33	1303.2	1305.9	2.78	13.7	9.41E+01	4.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	47	33.22	80.61	-99
112.971	38.49	1162.5	1164.8	3.3	12.13	9.41E+01	4.52E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	42	32.45	71.22	-99
113.052	41.49	989.1	991.7	4.18	13.36	9.42E+01	4.52E+01	3	Clays-Clay to Silty Clay	47	-99	59.66	-99
113.133	42.25	915	917.9	4.6	14.98	9.43E+01	4.53E+01	3	Clays-Clay to Silty Clay	44	-99	54.71	-99
113.212	40.23	947.6	950.6	4.23	15.52	9.43E+01	4.53E+01	3	Clays-Clay to Silty Clay	45	-99	56.88	-99
113.291	38.22	1356.6	1359.9	2.81	17.39	9.44E+01	4.53E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	49	33.46	84.14	-99
113.37	42.03	1974.5	1978.2	2.12	19.26	9.45E+01	4.54E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	47	35.86	125.33	-99
113.446	51.35	2524.2	2527.4	2.03	16.6	9.45E+01	4.54E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	61	37.35	161.98	-99
113.525	62.56	2817.6	2819.9	2.22	11.93	9.46E+01	4.54E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	68	38	181.53	-99
113.603	74.35	2900.6	2902.7	2.56	11.05	9.47E+01	4.54E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	70	38.16	187.06	-99
113.681	82.3	2887.2	2889.5	2.85	11.88	9.47E+01	4.55E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	69	38.13	186.17	-99
113.762	86.65	2691.6	2694.3	3.22	13.8	9.48E+01	4.55E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	97	37.72	173.12	-99
113.84	95.58	2780.5	2783.6	3.43	16.11	9.49E+01	4.55E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	100	37.9	179.04	-99
113.918	108.53	2968.7	2972	3.65	16.8	9.49E+01	4.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	107	38.28	191.59	-99
113.997	112.93	2802.8	2805.8	4.02	15.57	9.50E+01	4.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	101	37.94	180.52	-99
114.076	104.23	2491.6	2493.8	4.18	11.24	9.51E+01	4.56E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	90	37.24	159.77	-99
114.156	87.39	2411.6	2413.8	3.62	11.54	9.51E+01	4.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	87	37.04	154.43	-99
114.236	71.73	2319.7	2322.6	3.09	14.93	9.52E+01	4.57E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	84	36.8	148.3	-99
114.313	64.18	2349.3	2354.6	2.73	27.42	9.53E+01	4.57E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	56	36.87	150.27	-99
114.379	62.1	2433.8	2439.2	2.55	27.91	9.53E+01	4.58E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	58	37.08	155.9	-99
114.458	57.89	2315.3	2318	2.5	14.04	9.54E+01	4.58E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	56	36.78	147.99	-99
114.538	49.85	2076.7	2079.2	2.4	13.06	9.55E+01	4.58E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	50	36.11	132.08	-99
114.619	40.49	1832.2	1834.5	2.21	12.08	9.55E+01	4.59E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	44	35.32	115.78	-99
114.699	42.2	1581.8	1584	2.66	11.29	9.56E+01	4.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	57	34.38	99.08	-99

Depth (ft)	Sleeve Stress (psi)	Tip Stress UNC (psi)	Tip Stress COR (psi)	Ratio COR (%)	Pore Pressure (psi)	Overburden (psi)	Eff. Overburden (psi)	Class. FR (Rob. 1990)	Class. FR (Rob. 1990)	Blow Count (blows/ft)	Friction Angle (deg)	Su (psi)	OCR
114.779	50.81	1315.1	1317.4	3.86	12.03	9.57E+01	4.59E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	47	33.17	81.29	-99
114.858	50.63	1252.8	1255.5	4.03	13.85	9.57E+01	4.59E+01	3	Clays-Clay to Silty Clay	60	-99	77.14	-99
114.937	52.26	1159.5	1162.4	4.5	15.18	9.58E+01	4.60E+01	3	Clays-Clay to Silty Clay	56	-99	70.91	-99
115.005	52.77	627.8	631.5	8.36	19.17	9.58E+01	4.60E+01	3	Clays-Clay to Silty Clay	30	-99	35.47	-99
115.086	51.4	1144	1148.1	4.48	21.38	9.59E+01	4.60E+01	3	Clays-Clay to Silty Clay	55	-99	69.87	-99
115.165	48.15	1072.8	1076.3	4.47	18.13	9.60E+01	4.61E+01	3	Clays-Clay to Silty Clay	51	-99	65.12	-99
115.245	44.36	970.4	973.9	4.56	17.69	9.60E+01	4.61E+01	3	Clays-Clay to Silty Clay	47	-99	58.29	-99
115.325	41.91	850.3	853.8	4.91	18.08	9.61E+01	4.61E+01	3	Clays-Clay to Silty Clay	41	-99	50.28	-99
115.403	39.99	782.1	785.6	5.09	18.38	9.62E+01	4.62E+01	3	Clays-Clay to Silty Clay	38	-99	45.73	-99
115.482	39.01	730.2	733.9	5.32	19.17	9.62E+01	4.62E+01	3	Clays-Clay to Silty Clay	35	-99	42.26	-99
115.562	38.45	696.1	699.9	5.49	20.05	9.63E+01	4.62E+01	3	Clays-Clay to Silty Clay	33	-99	39.98	-99
115.642	40.94	761.3	765.4	5.35	21.28	9.64E+01	4.63E+01	3	Clays-Clay to Silty Clay	37	-99	44.33	-99
115.721	47.41	931.9	936.2	5.06	22.37	9.64E+01	4.63E+01	3	Clays-Clay to Silty Clay	45	-99	55.7	-99
115.799	55.08	1157.3	1161.8	4.74	23.1	9.65E+01	4.63E+01	3	Clays-Clay to Silty Clay	56	-99	70.72	-99
115.876	63.32	1452.5	1456.8	4.35	22.42	9.66E+01	4.64E+01	3	Clays-Clay to Silty Clay	70	-99	90.39	-99
115.954	71.69	1764	1768	4.06	20.69	9.66E+01	4.64E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	64	35.01	111.16	-99
116.032	78.57	2066.5	2070.5	3.79	20.45	9.67E+01	4.64E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	74	36	131.32	-99
116.108	83.52	2343.9	2347.8	3.56	20	9.68E+01	4.64E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	84	36.77	149.81	-99
116.186	84.27	2640.5	2644.1	3.19	18.67	9.68E+01	4.65E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	95	37.48	169.58	-99
116.262	81.12	2824.5	2827.9	2.87	17.69	9.69E+01	4.65E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	68	37.87	181.84	-99
116.34	75.48	2989.1	2992.1	2.52	15.43	9.70E+01	4.65E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	72	38.2	192.81	-99
116.418	81.25	3020.2	3022.8	2.69	13.31	9.70E+01	4.66E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	72	38.26	194.88	-99
116.498	82.34	2983.2	2985.5	2.76	12.13	9.71E+01	4.66E+01	5	Sand Mixtures-Silty Sand to Sandy Silt	72	38.18	192.4	-99
116.58	76.47	2551.5	2553.7	2.99	11.05	9.72E+01	4.66E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	92	37.25	163.63	-99
116.646	72.45	2109.6	2111.3	3.43	9.17	9.72E+01	4.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	76	36.09	134.16	-99
116.712	70.03	1646.8	1648.1	4.25	6.57	9.73E+01	4.67E+01	4	Silt Mixtures-Clayey Silt to Silty Clay	59	34.53	103.3	-99
116.778	62.15	1204.8	1206.1	5.15	6.57	9.73E+01	4.67E+01	3	Clays-Clay to Silty Clay	58	-99	73.83	-99
116.846	53.82	980.8	982.4	5.48	8.04	9.74E+01	4.67E+01	3	Clays-Clay to Silty Clay	47	-99	58.9	-99
116.911	45.35	868.1	869.8	5.21	8.88	9.74E+01	4.68E+01	3	Clays-Clay to Silty Clay	42	-99	51.38	-99
116.977	37.27	820.6	822.5	4.53	9.77	9.75E+01	4.68E+01	3	Clays-Clay to Silty Clay	39	-99	48.21	-99
117.058	30.22	758.3	760.5	3.97	11.14	9.76E+01	4.68E+01	3	Clays-Clay to Silty Clay	36	-99	44.05	-99
117.139	26.79	700.5	702.8	3.81	11.64	9.76E+01	4.69E+01	3	Clays-Clay to Silty Clay	34	-99	40.19	-99
117.205	24.91	690.1	692.4	3.6	11.93	9.77E+01	4.69E+01	3	Clays-Clay to Silty Clay	33	-99	39.5	-99
117.286	22.89	664.9	667.3	3.43	12.28	9.77E+01	4.69E+01	3	Clays-Clay to Silty Clay	32	-99	37.81	-99
117.366	21.86	647.1	649.5	3.36	12.62	9.78E+01	4.70E+01	3	Clays-Clay to Silty Clay	31	-99	36.62	-99
117.447	21.54	629.3	631.8	3.41	12.92	9.79E+01	4.70E+01	3	Clays-Clay to Silty Clay	30	-99	35.43	-99
117.526	21.14	624.9	627.4	3.37	13.11	9.79E+01	4.70E+01	3	Clays-Clay to Silty Clay	30	-99	35.13	-99
117.606	21.03	636.7	639.3	3.29	13.16	9.80E+01	4.70E+01	3	Clays-Clay to Silty Clay	31	-99	35.91	-99
117.674	21.13	662.5	665.1	3.18	13.38	9.81E+01	4.71E+01	3	Clays-Clay to Silty Clay	32	-99	37.63	-99
117.75	21.31	674.4	677.1	3.15	13.87	9.81E+01	4.71E+01	3	Clays-Clay to Silty Clay	32	-99	38.42	-99
117.829	21.51	695.1	697.9	3.08	14.07	9.82E+01	4.71E+01	3	Clays-Clay to Silty Clay	33	-99	39.8	-99
117.908	21.49	698.1	700.8	3.07	14.22	9.83E+01	4.72E+01	3	Clays-Clay to Silty Clay	34	-99	39.99	-99
117.988	21.67	711.4	714.2	3.03	14.27	9.83E+01	4.72E+01	3	Clays-Clay to Silty Clay	34	-99	40.87	-99
118.067	22.32	723.3	726.1	3.07	14.32	9.84E+01	4.72E+01	3	Clays-Clay to Silty Clay	35	-99	41.66	-99
118.148	23.19	718.9	721.6	3.21	14.37	9.85E+01	4.73E+01	3	Clays-Clay to Silty Clay	35	-99	41.36	-99
118.229	24.37	732.2	735	3.32	14.42	9.85E+01	4.73E+01	3	Clays-Clay to Silty Clay	35	-99	42.24	-99
118.308	25.52	745.5	748.3	3.41	14.46	9.86E+01	4.73E+01	3	Clays-Clay to Silty Clay	36	-99	43.13	-99
118.388	24.64	732.2	735	3.35	14.61	9.87E+01	4.74E+01	3	Clays-Clay to Silty Clay	35	-99	42.24	-99
118.467	23.6	744.1	746.9	3.16	14.66	9.87E+01	4.74E+01	3	Clays-Clay to Silty Clay	36	-99	43.02	-99
118.548	23.29	763.3	766.2	3.04	14.96	9.88E+01	4.74E+01	3	Clays-Clay to Silty Clay	37	-99	44.3	-99
118.63	23.2	742.6	745.5	3.11	15.4	9.89E+01	4.75E+01	3	Clays-Clay to Silty Clay	36	-99	42.91	-99
118.71	24.68	726.3	729.3	3.38	15.65	9.89E+01	4.75E+01	3	Clays-Clay to Silty Clay	35	-99	41.82	-99
118.791	26.86	708.5	711.5	3.78	15.6	9.90E+01	4.75E+01	3	Clays-Clay to Silty Clay	34	-99	40.63	-99
118.871	27.06	696.6	699.6	3.87	15.45	9.91E+01	4.76E+01	3	Clays-Clay to Silty Clay	33	-99	39.84	-99
118.951	28.9	689.2	692.1	4.18	15.1	9.91E+01	4.76E+01	3	Clays-Clay to Silty Clay	33	-99	39.34	-99
119.033	31.42	687.7	690.6	4.55	15.01	9.92E+01	4.76E+01	3	Clays-Clay to Silty Clay	33	-99	39.24	-99
119.101	32.29	684.2	686.9	4.7	14.05	9.93E+01	4.76E+01	3	Clays-Clay to Silty Clay	33	-99	39	-99
119.169	31.53	666.4	669.2	4.71	14.69	9.93E+01	4.77E+01	3	Clays-Clay to Silty Clay	32	-99	37.81	-99
119.237	29.85	657.5	660.4	4.52	15.23	9.94E+01	4.77E+01	3	Clays-Clay to Silty Clay	32	-99	37.21	-99
119.318	27.68	657.5	660.4	4.19	15.18	9.94E+01	4.77E+01	3	Clays-Clay to Silty Clay	32	-99	37.2	-99
119.397	25.24	636.7	639.7	3.95	15.67	9.95E+01	4.78E+01	3	Clays-Clay to Silty Clay	31	-99	35.81	-99
119.478	23.11	610	613.1	3.77	15.77	9.96E+01	4.78E+01	3	Clays-Clay to Silty Clay	29	-99	34.03	-99
119.56	21.59	584.8	587.9	3.67	15.77	9.96E+01	4.78E+01	3	Clays-Clay to Silty Clay	28	-99	32.35	-99
119.64	20.57	565.5	568.5	3.62	15.48	9.97E+01	4.79E+01	3	Clays-Clay to Silty Clay	27	-99	31.06	-99
119.72	20.08	552.2	555.2	3.62	15.43	9.98E+01	4.79E+01	3	Clays-Clay to Silty Clay	27	-99	30.16	-99
119.801	19.69	512.1	515.2	3.82	15.62	9.98E+01	4.79E+01	3	Clays-Clay to Silty Clay	25	-99	27.49	-99
119.881	19.03	501.8	504.8	3.77	15.77	9.99E+01	4.80E+01	3	Clays-Clay to Silty Clay	24	-99	26.79	-99
119.962	17.42	495.8	498.8	3.49	15.67	1.00E+02	4.80E+01	3	Clays-Clay to Silty Clay	24	-99	26.39	-99
120.042	0	513.6	516.6	0	15.67	1.00E+02	4.80E+01	-99		-99	-99	27.57	-99
120.121	0	522.5	525.5	0	15.67	1.00E+02	4.81E+01	-99		-99	-99	28.16	-99
120.201	0	534.4	537.4	0	15.67	1.00E+02	4.81E+01	-99		-99	-99	28.95	-99
120.281	0	584.8	587.9	0	15.97	1.00E+02	4.81E+01	-99		-99	-99	32.31	-99
120.356	0	592.2	595.3	0	15.77	1.00E+02	4.81E+01	-99		-99	-99	32.8	-99

Applied Research Associates

Test ID: 117-cpt-02 **Project: Shaw** **Date: 22/May/2003**



Applied Research Associates

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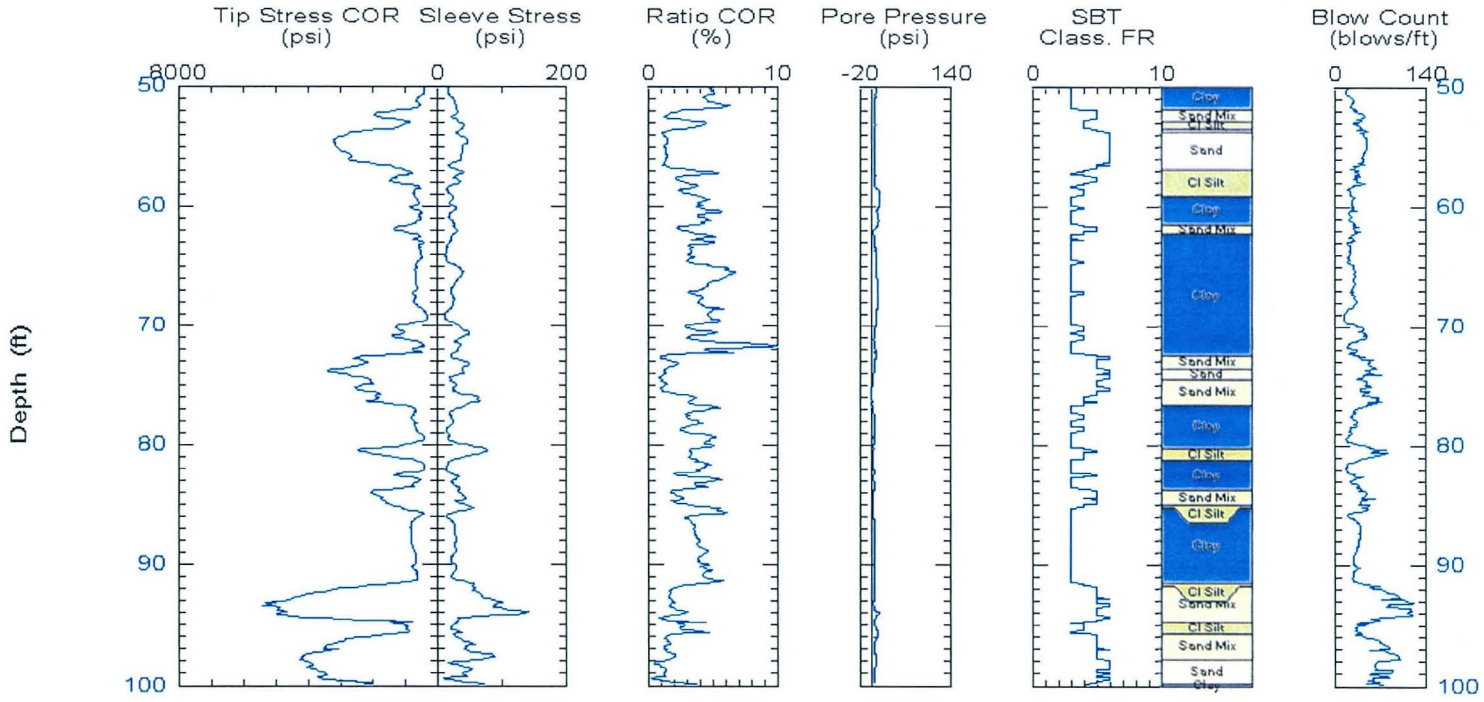

Applied Research Associates

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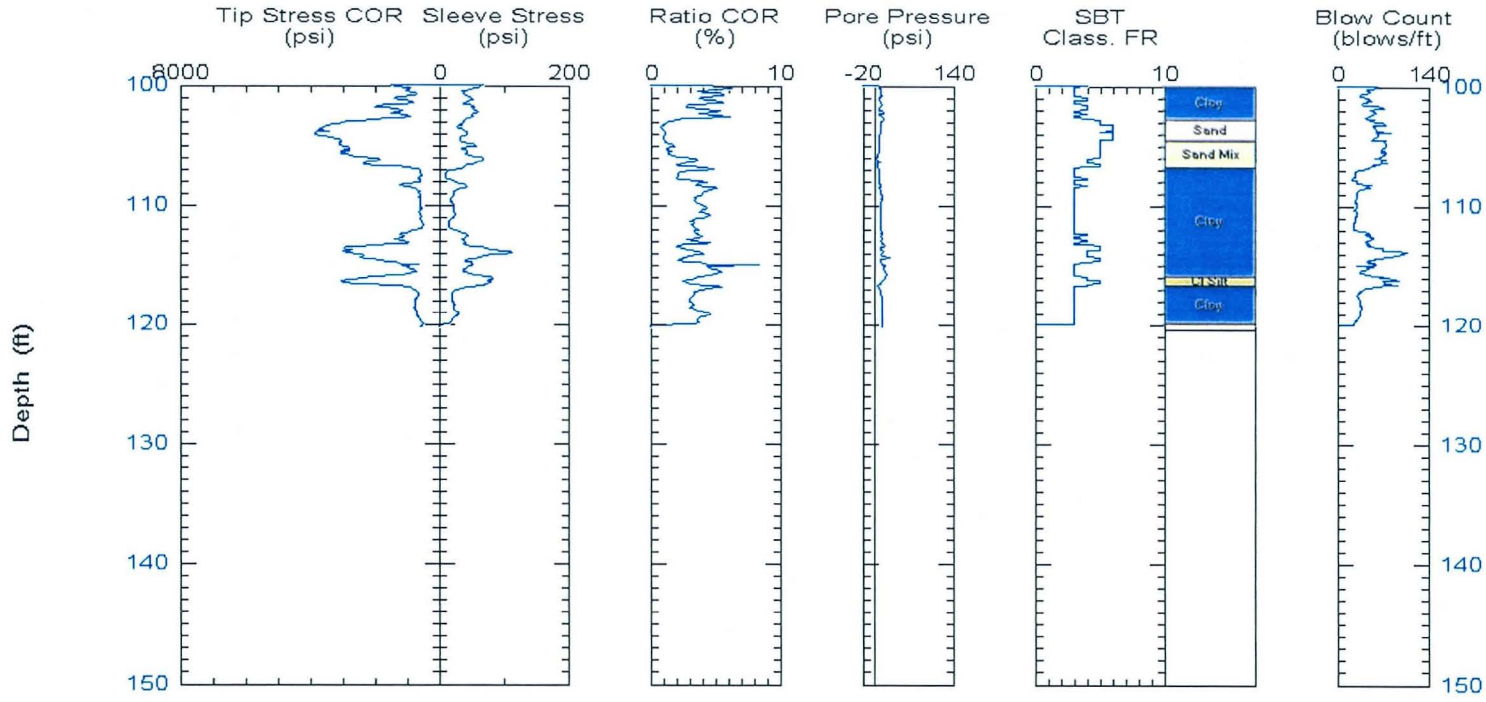
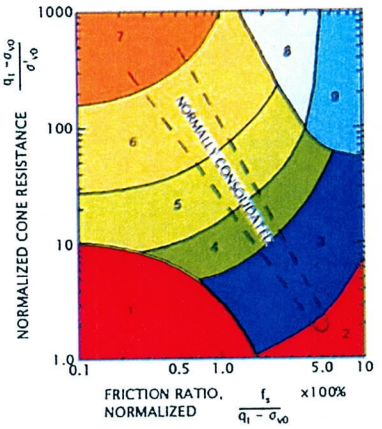


CPT Soil Classification Legend

Zone	Q_t/N	Description
1	2	Sensitive, Fine Grained
2	1	Organic Soils-Peats
3	1.5	Clays-Clay to Silty Clay
4	2	Silt Mixtures-Clayey Silt to Silty Clay
5	3	Sand Mixtures-Silty Sand to Sandy Silt
6	4.5	Sands-Clean Sand to Silty Sand
7	6	Gravelly Sand to Sand
8	1	Very Stiff Sand to Clayey Sand*
9	2	Very Stiff, Fine Grained*

(*) Heavily Overconsolidated or Cemented

Normalized Friction Ratio Classification Chart



(Ref. Robertson, 1990)

Coefficient of Permeability (cm/s)

Zone	Description	Permeability
1	Sensitive Fines	10^{-5}
2	Organic Soils-Peats	10^{-5}
3	Clays	10^{-7}
4	Silt Mixtures	10^{-6}
5	Sand Mixtures	10^{-4}
6	Sands	10^{-2}
7	Gravelly Sands	10^{-1}
8	Very Stiff Sands	10^{-5}
9	Very Stiff Fines	10^{-6}

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