Job No. 82580

PHASE I SITE CONTAMINATION INVESTIGATION REPORT and PHASE II INVESTIGATION WORKPLAN

for

SEARS AUTOMOTIVE CENTER
2633 Telegraph Avenue
Oakland, California

August 1991

prepared by the

AMERICAN ENVIRONMENTAL MANAGEMENT CORPORATION
Engineering Division
9719 Lincoln Village Drive, Suite 501
Sacramento, California 95827
(916) 364-8872

INTRODUCTION

The following Site Contamination Workplan has been prepared in response to the discovery of affected soil and groundwater at the Sears Automotive Center, 2633 Telegraph Avenue, Oakland, California.

The purpose of this document is to report the findings from the initial sampling conducted from 25 February 1991 to 28 February 1991 and to provide a workplan by which possible adversely affected soil and groundwater can be further delineated.

BACKGROUND

Sears, Roebuck and Co. had maintained seven (7) underground storage tanks (USTs) to contain oil products at its automotive service center located at 2633 Telegraph Avenue, Oakland, California (Figure 1). All of the USTs were installed in the early 1960s. American Environmental Management Corporation (AEMC) was retained by Sears to remove all of the USTs.

Two separate excavations were opened during the UST removals. Six motor oil tanks were removed from an excavation to the east of the service bays, and one waste oil tank was removed from an excavation to the west of the service bays (Figure 2). AEMC's letter report dated 12 October 1990 summarizes the tank excavation and removal activities. Due to the presence of hydrocarbon contamination in both excavations, the site characterization and remediation was divided into two separate parts, the motor oil tank area and the waste oil tank area. A Preliminary Report and Contamination Assessment Workplan dated 4 January 1991 addressing the waste oil tank area was submitted to the Alameda County Department of Health. This report addressed the scope of the field investigation to define the lateral and vertical extent of the hydrocarbon contamination at the site. The workplan was approved by ACHD (Alameda County Health Department) with concurrence from the Regional Water Quality Control Board—Bay Region.

From 25 February to 28 February 1991, an electronic cone penetrometer survey of the area in conjunction with soil and groundwater sampling was conducted to determine the general soil lithology of the area as well as provide an initial screening for possible contamination.

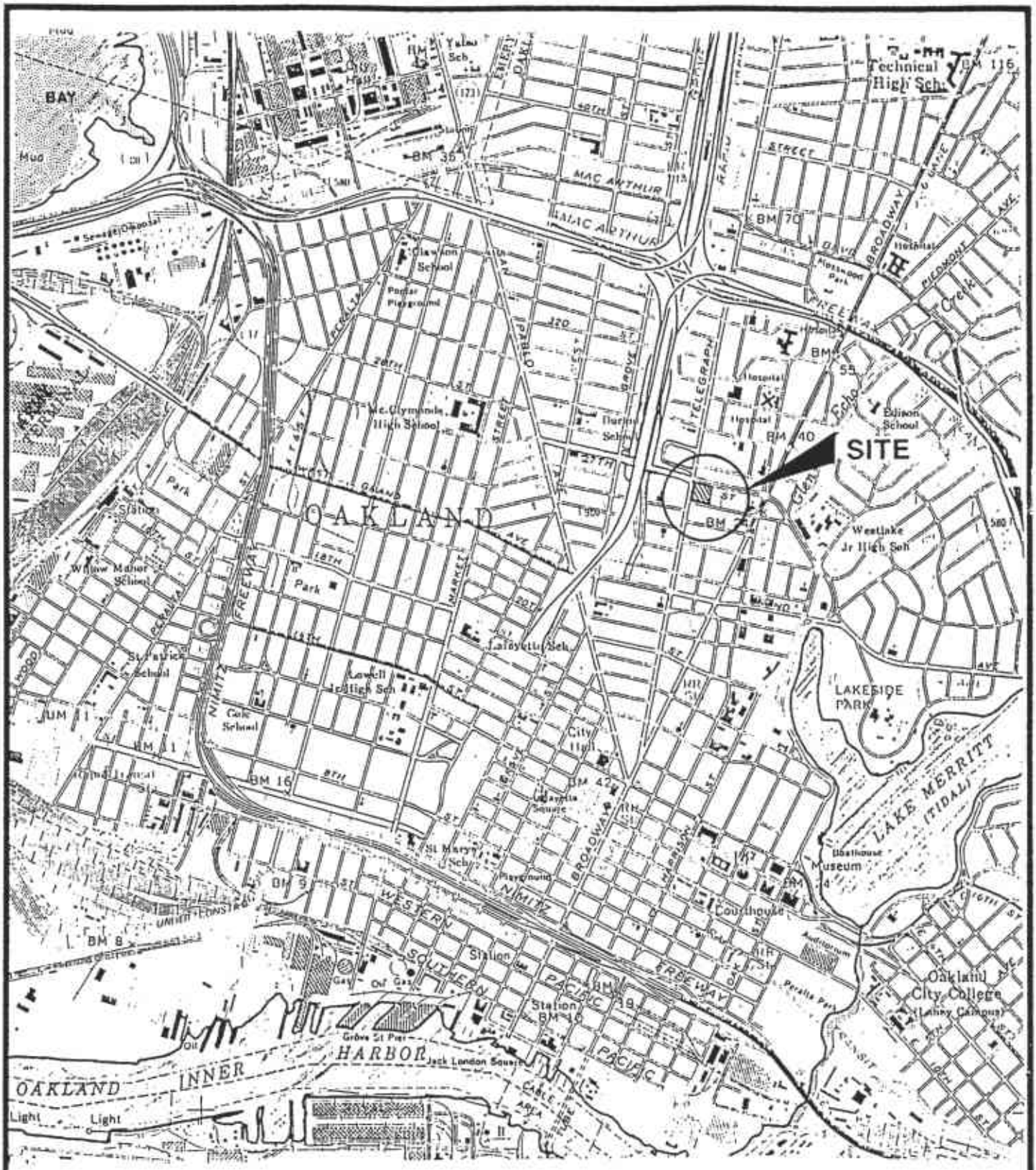

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FIGURE 1
SITE LOCATION MAP

SEARS AUTOMOTIVE - Oakland, California

DRAWN BY:	DATE:	PROJECT NO.
GPM	12/3/90	82580

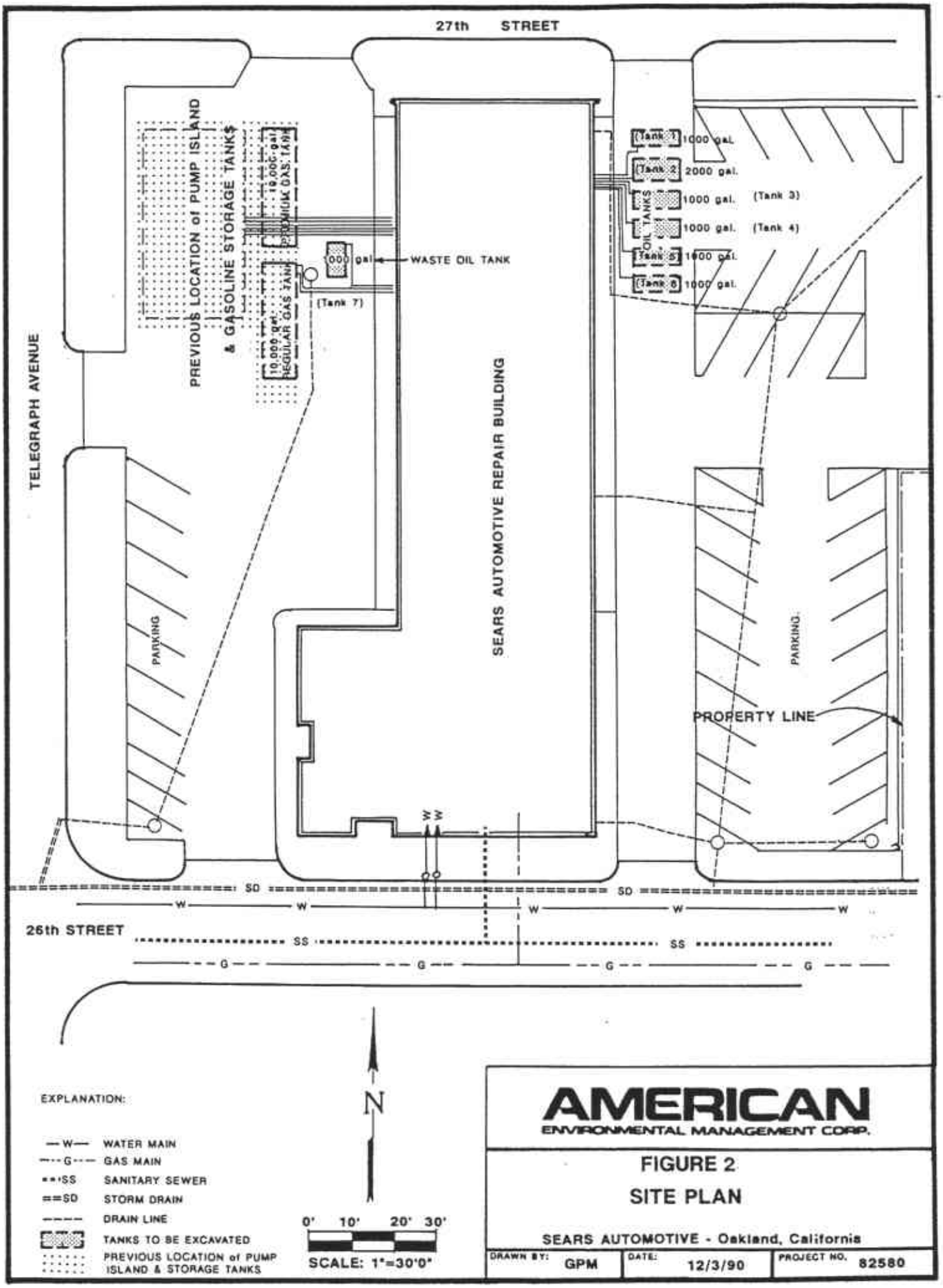

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FIGURE 2
SITE PLAN

SEARS AUTOMOTIVE - Oakland, California

DRAWN BY:	DATE:	PROJECT NO.
GPM	12/3/90	82580

INITIAL SITE SURVEY—ELECTRONIC CONE PENETROMETER

ELECTRONIC CONE PENETROMETER SURVEY—SOIL LITHOLOGY

AEMC used the electronic cone penetrometer (ECP) as a tool to characterize the soil stratigraphy beneath the Sears Oakland site. Resistance to the ECP probe penetration and probe friction was measured electronically with depth. AEMC used this data to determine changes in soil types beneath the site. AEMC completed six (6) ECP soundings, each to the depth of 36 feet below ground surface. Upon completion, all the sounding locations were surveyed to provide a base of reference. Each ECP sounding borehole was backfilled to grade with injected cement/bentonite grout to grade, in accordance with Alameda County requirements. Figure 3, ECP and Boring Locations, presents the locations for each ECP sounding. Appendix A, Cone Penetrometer Data, contains data with interpretations from site cone penetrometer activities. Figures 4 and 5 present cross-sectional diagrams of the soil stratigraphy beneath the site.

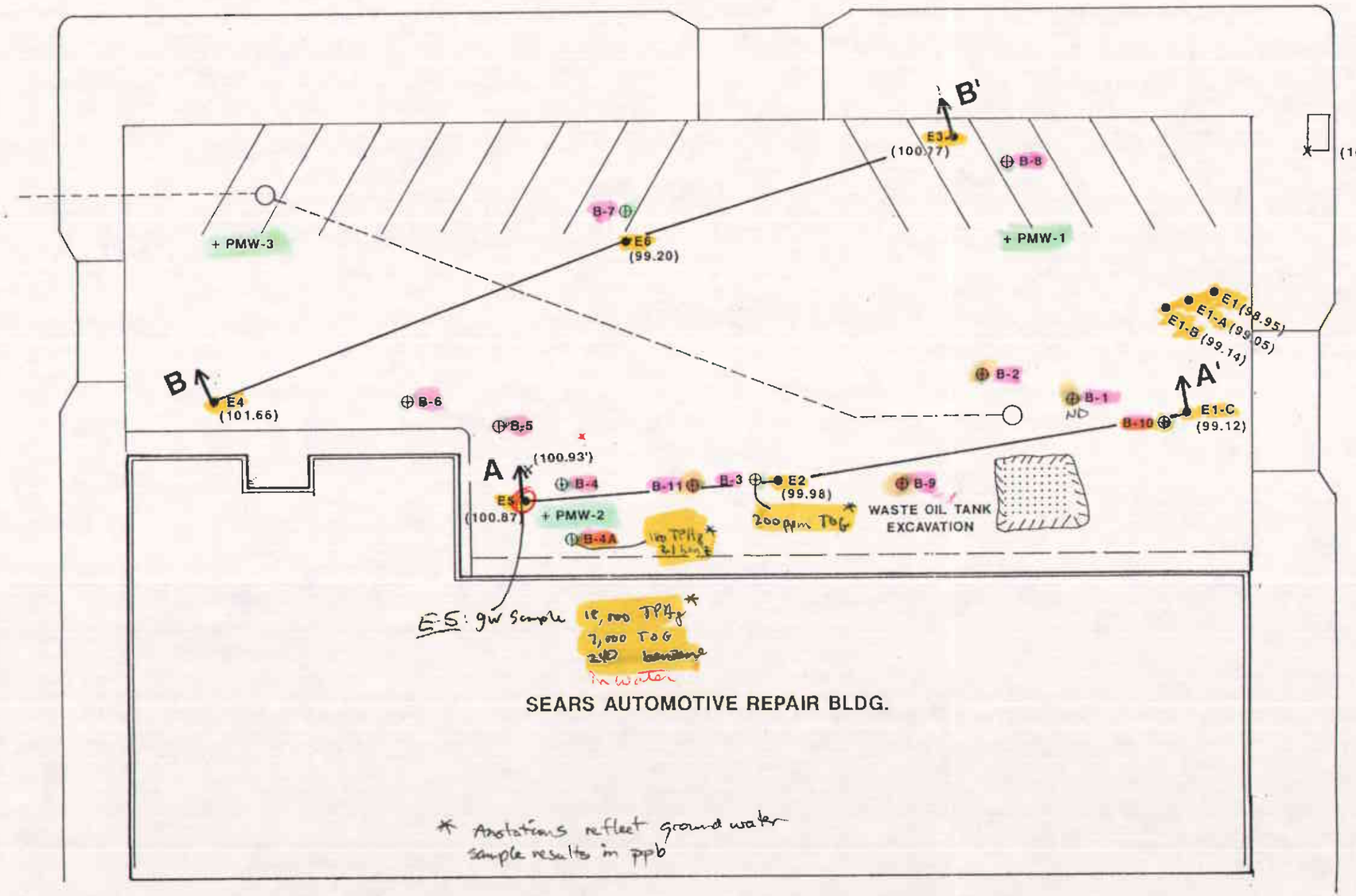
SOIL SAMPLING AND ANALYSES

AEMC conducted soil sampling adjacent to the completed ECP soundings. The purpose for the sampling effort was to determine the lateral and vertical extent of petroleum hydrocarbon and metals contamination in the soil above the uppermost groundwater.

AEMC advanced each borehole with the ECP hydraulic press and collected soil samples with the ECP retractable cone tipped sampler. Each soil sample was collected in a 1.2-inch diameter by 7.0-inch long stainless steel tube. The tubes were sealed with Teflon tape and plastic end caps. The samples were cooled to 4°C and transported to American Environmental Laboratories Corporation (State Certification No. 1233) for analyses.

The soil samples were analyzed for Total Petroleum Hydrocarbons as Gasoline and Diesel (TPH-G and TPH-D) by EPA Method 8015-m, Oil and Grease by EPA Method 9071, and

TELEGRAPH AVENUE



27th STREET

N

EXPLANATION

- E2 — ELECTRONIC CONE PENETROMETER Test Locations (ECP,CPT,CMT & E Sample Names)
- B-2 — BORING Locations
- (98.95) — ELEVATION per DATUM
- A — A' — GEOLOGICAL CROSS SECTION Location
- + PMW-1 — Proposed SOIL BORING & MONITORING WELL Locations

0 10' 20'

SCALE: 1"=20'0"

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FIGURE 3

E.C.P. & BORING Locations

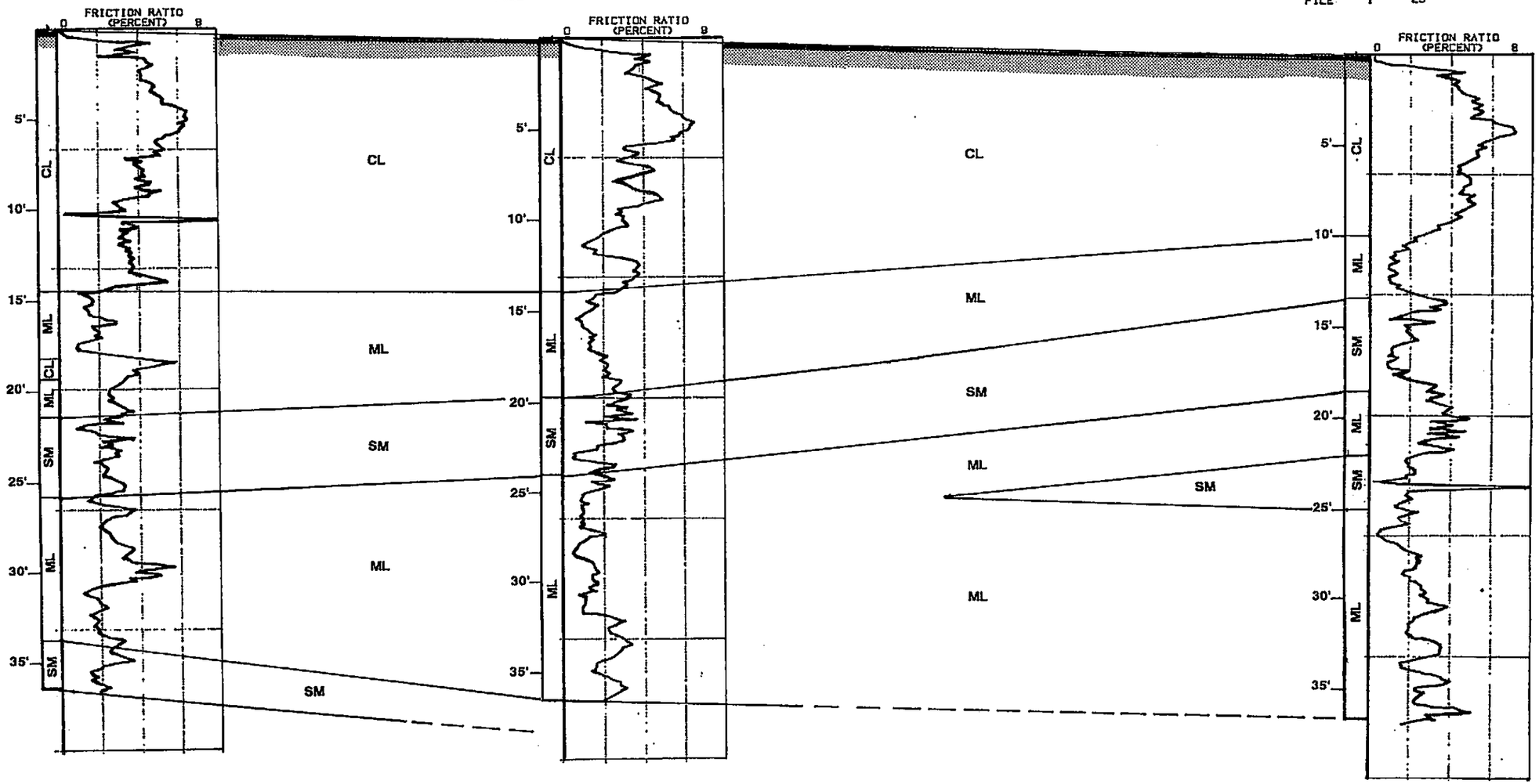
SEARS AUTOMOTIVE - Oakland, CA.

DRAWN BY:	DATE:	PROJECT NO.
GPM	8/23/91	82580

JOB # : 82580
DATE : 02/26/91 8:45
LOCATION : CPT-05
FILE : 29

JOB # : 82580
DATE : 02/25/91 12:45
LOCATION : CPT-02
FILE : 26

JOB # : 82580
DATE : 02/25/91 11:55
LOCATION : CPT-01C
FILE : 25



EXPLANATION

SM - Silty sands, sand-silt mixtures.

ML - Inorganic silts, silty or clayey fine sands or clayey silts.

CL Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays or lean clays.

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FIGURE 4

CROSS SECTION A-A'

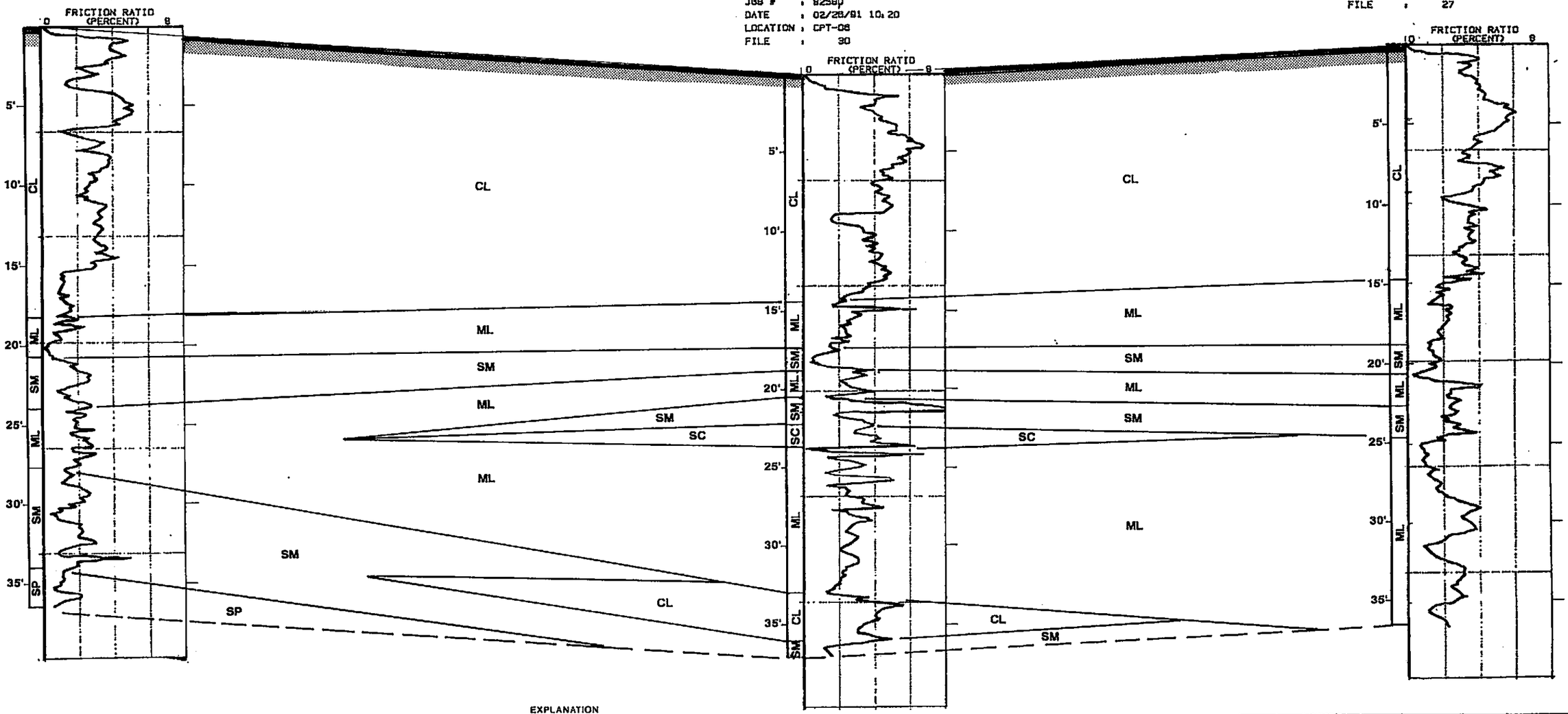
SEARS AUTOMOTIVE - Oakland, CA.

DRAWN BY:	DATE:	PROJECT NO.
GPM	8/23/91	82580

JOB # : 82580
DATE : 02/26/91 8:50
LOCATION : CPT-04
FILE : 28

JOB # : 82580
DATE : 02/26/91 10:20
LOCATION : CPT-06
FILE : 30

JOB # : 82580
DATE : 02/26/91 8:05
LOCATION : CPT-03
FILE : 27



EXPLANATION

SP-Poorly graded sands, gravelly sands with little fines.

SM-Silty sands, sand-silt mixtures.

SC-Clayey sands, sand/clay mixtures.

ML-Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays or lean clays.

CL-Inorganic silts, silty or clayey fine sands or clayey silts.

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FIGURE 5

CROSS SECTION B-B'

SEARS AUTOMOTIVE - Oakland, CA.

DRAWN BY:	DATE:	PROJECT NO.
GPM	8/23/91	82580

Lead by EPA Method ICP/AA (Total Threshold Limit Concentration). Because of the small volume of soil collected in each stainless steel tube, the Purgeable Organic Compounds analysis recommended in the workplan could not be completed. Table 1 on page 10 contains a summary of the analytical data for the soil samples. Appendix B, Soil Sampling Results, contains the laboratory results.

AEMC advanced a total of seven (7) soil sampling boreholes at the locations illustrated on Figure 3. Soil samples were collected at differing depths as noted in Table 1. Because of the resistant sand lense encountered, samples could not be gathered from a depth greater than 15 feet bgs.

Groundwater Quality Sampling

AEMC sampled groundwater using the ECP's Hydropunch II groundwater sampler. AEMC confirmed the depth to groundwater with the ECP sounding, A total of seven (7) groundwater quality samples were obtained.

The groundwater samples were analyzed for TPH-G and TPH-D by EPA Method 8015-m, and Oil and Grease by EPA Method 9071. Because of the lack of sample volume, the Purgeable Organic Compounds by EPA Method 8240 could not be performed. Groundwater analyses were performed onsite by Mobile Chem Labs, Inc. Appendix C, Groundwater Sampling Results, presents the analytical results. Table 2 on page 11 summarizes those results.

CONCLUSIONS FROM CONE PENETROMETER SURVEY

Laboratory analyses of soil samples collected from the subject site indicate that low levels of petroleum hydrocarbons and petroleum hydrocarbon constituents are present in the soil. Laboratory analyses of groundwater samples collected at the subject site suggest that low levels of petroleum hydrocarbons and petroleum hydrocarbon constituents may be present

TABLE 1

Analytical Results of [redacted]
Sears Automotive Center
Oakland, California

Waste Oil Tank Area

Sample ID	Depth (feet bgs)	TPH-G (ppm)	TPH-D (ppm)	Oil &Grease (ppm)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
[redacted]	[redacted]	<1	<10	[redacted]	<5	<5	<5	<5
B-1-2	[redacted]	<1	<10	<50	<5	<5	<5	<5
[redacted]	[redacted]	2.1	<10	[redacted]	87	150	[redacted]	160
B-2-1	5	2.2	<10	<50	100	140	[redacted]	120
B-2-2	[redacted]	1.8	<10	[redacted]	[redacted]	<5	[redacted]	<5
B-2-3	NO RECOVERY	---	---	---	---	---	---	---
B-7-1	5	<1	<10	<1	<1	26	<1	<1
B-7-2	8	<1	<10	<50	<5	220	<5	<1
B-7-3	12	2.0	<10	<50	<5	110	<5	<1
B-8-1	5	<1	<10	<50	<5	50	<5	<1
B-8-2	8	6.3	<10	<50	41	200	[redacted]	280
B-8-3	12	1.4	<10	<50	5	130	[redacted]	<1
B-9-1	5	<1	<10	<50	<5	39	<5	<1
B-9-2	[redacted]	<1	<10	<50	<5	220	<5	<1
B-9-3	[redacted]	<1	<10	[redacted]	<5	120	<5	<1
B-9-4	15	<1	<10	<50	<5	75	<5	<1
B-10-1	5	<1	<10	<50	<5	67	<5	<1
B-10-2	8	<1	<10	<50	<5	110	<5	<1
B-10-3	12	[redacted]	<10	<50	<5	210	6.4	<1
B-11-1	5	<1	<10	<50	<5	100	<5	<1
B-11-2	8	<1	<10	<50	<5	120	<5	<1
B-11-3	[redacted]	3.5	<10	[redacted]	<5	300	7.6	<1

bgs	below ground surface
TPH-G	Total Petroleum Hydrocarbons as gasoline
TPH-D	Total Petroleum Hydrocarbons as diesel
B	Benzene
T	Toluene
X	Xylenes
E	Ethylbenzene

TABLE 2

GROUNDWATER SAMPLE ANALYSES

Sample ID	TPH-G (ppb)	TPH-D (ppb)	Oil &Grease (ppm)	B (ppb)	T (ppb)	E (ppb)	X (ppb)
E5	18,000	<50	7,000	240	240		
B-1-HP	<50	<50	<5	<0.5	<0.5	<0.5	<0.5
B-3-HP	<50	<50	200	<0.5	<0.5	<0.5	<0.5
B-4A-HP	180	<50	<50	2.1	0.6	0.5	2.1
B-6-HP	<50	<50	<50	<0.5	<0.5	<0.5	<0.5
B7-HP	<50	<50	<50	<0.5	<0.5	<0.5	<0.5
B-8-HP	<50	<50	<50	<0.5	<0.5	<0.5	<0.5

TPH-G	Total Petroleum Hydrocarbons as gasoline
TPH-D	Total Petroleum Hydrocarbons as diesel
B	Benzene
T	Toluene
X	Xylenes
E	Ethylbenzene

in groundwater at the subject site. The cone penetrometer is useful in conducting initial soil and groundwater contaminant and soil stratigraphy surveys, not to provide verification of concentrations in soil or groundwater. Soil borings and monitoring wells will be used for confirmation.

PROPOSED PHASE II SOIL AND GROUNDWATER INVESTIGATION WORKPLAN

PROPOSED SOIL INVESTIGATION

To further delineate the extent of petroleum hydrocarbon and petroleum hydrocarbon constituent concentrations in the soil, AEMC proposes to conduct further soil sampling operations. Underground Service Alert (USA) will be notified prior to the start of borehole drilling operations. Please see Figure 3 for the locations of the proposed soil borings (PMW-1, PMW-2 and PMW-3). Soil sampling operations will include the completion of soil borings to a depth of approximately 25 feet using a drill rig and hollow stem auger. All auger flights will be steam cleaned before and after the completion of borehole drilling operations. Soil boring samples will be collected by removing the hollow-stem auger plug and hydraulically pushing a California modified split spoon sampler to the desired depth. Soil samples will be collected at a depth of 5 feet and at intervals of 5 feet thereafter up to and including 25 feet. Soil samples will be collected using a California modified sampler fitted with 2-inch diameter brass sleeves. Appendix D contains the site-specific Health and Safety Plan.

Samples will be collected by removing the lead 6-inch brass sleeve from the California Modified Sampler. The ends of the 6-inch tube will be covered with Teflon tape and plastic caps. The sample will then be labeled, logged on a chain-of-custody form, placed in an ice chest with ice, and transported to American Environmental Laboratories Corporation (State Certification No. 1233). The remaining brass tubes in the California Modified Sampler will then be logged for soil type using the USC (Unified Soil Classification) system, color using the USGS Rock Color Chart, moisture content, plasticity, odor, discoloration, and any other pertinent information.

SAMPLE ANALYSES

Soil sample analyses will include TPH-G and TPH-D by EPA modified 8015 and Benzene, Toluene, Xylenes, and Ethylbenzene (BTXE) by EPA method 8020.

PROPOSED GROUNDWATER INVESTIGATION

Three monitoring wells will initially be installed to determine the extent that groundwater at the subject site has been adversely impacted by petroleum hydrocarbon or petroleum hydrocarbon constituents. Figure 3 presents the locations for the proposed monitoring wells (PMW-1, PMW-2 and PMW-3). The three initially proposed soil borings will be used for monitoring wells. If it is determined that none of the three initially installed monitoring wells is in the downgradient (relative to the site) groundwater direction, then a fourth groundwater monitoring well will be installed. Following completion of the initial three or four groundwater monitoring wells and after groundwater quality sampling analyses of the downgradient well has been completed then an additional groundwater quality monitoring well may be required in the downgradient groundwater flow direction to determine a "zero contaminant" line. The addition of this well along with its location would be dependent on groundwater contaminant concentrations (if any) detected in groundwater in the initially placed downgradient well.

Top of casing elevations for each monitoring well will be determined using standard surveying methods.

PROPOSED WELL CONSTRUCTION

When the desired borehole depth is reached, blank casing, screen, filter pack, and bentonite seal will be installed in the hollow-stem auger string. After installation of construction materials, the hollow-stem auger string will be removed, leaving the

completed groundwater quality monitoring well installation in the borehole. A bentonite/cement grout slurry will then be pumped into place to ground surface.

All monitoring well screen/casing strings will be thoroughly steam cleaned before insertion in the borehole. All construction materials (filter pack, bentonite and cement) will be stockpiled away from drilling and sampling activities on polyethylene sheeting and covered to prevent contamination. All groundwater quality monitoring wells will be completed using rigid NSF-approved PVC casing and screen.

Materials to be used for constructing the groundwater quality monitoring wells will include 4-inch diameter interior/exterior flush threaded NSF-approved rigid PVC Schedule 40 well casing and well screen. Well screen perforations will be precision machine slotted. Screen slot sizes will be 0.010-inch to maximize development of the monitoring well, expedite purging of the monitoring well before sampling, and lower groundwater entrance velocities thereby minimizing volatilization and not biasing the representativeness of groundwater quality samples collected from the groundwater quality monitoring wells. A 15-foot well screen will be installed in each groundwater quality monitoring well from a depth of 5 feet above to 10 feet below the existing groundwater surface. This should adequately compensate for any annual fluctuations in the local groundwater surface. All screen/casing strings will be threaded. The use of solvent glues will not be used to assemble the screen/casing strings. Filter pack material will be clean, rounded, water-worn material, and will be installed in the annular space adjacent to the well screen to a distance of 2 feet above the top of the well screen section. Within the annular space above the filter pack material, a minimum 2-foot thick hydrated bentonite pellet seal will be placed. The remaining portion of the annular space will be sealed with a 5% bentonite/cement slurry to ground surface. To protect the monitoring wells from accidental damage or tampering, a traffic rated Christy Box with an internal locking cover will be placed over the top of each

monitoring well. The top of casing elevation for each monitoring well will be determined using standard surveying methods.

GROUNDWATER QUALITY MONITORING WELL DEVELOPMENT

Following construction and installation, the groundwater quality monitoring well will be developed to improve the hydraulic conductivity between the filter pack and aquifer material. Well development will consist of mechanically surging the groundwater quality monitoring well with a vented surge block, and bailing to remove material entering the groundwater quality monitoring well through the well screen as development operations proceed. Development operations will continue until groundwater bailed from the groundwater quality monitoring well is clear, or until pH, temperature and conductivity measurements of the development water have sufficiently stabilized.

Groundwater generated by the development operation will be placed in securely covered, clearly marked 55-gallon steel drums and securely stored onsite. Final disposition will be determined based on water sample analytical results.

PROPOSED GROUNDWATER SAMPLING PROTOCOL

Water level measurements will be collected using a Solonist water sounder before the collection of groundwater samples. Three volumes of water will be purged from each well prior to sampling. Water samples will be collected using a nylon rope and disposable polyethylene bailer. After the collection of the water sample in the disposable bailer, it will be checked for the presence of free product. Water samples will be collected in 40-mil VOAs and 1-liter amber glass jars. Enough water sample will be collected from each well to perform the required laboratory analyses and maintain proper laboratory QA/QC procedures. All samples will be properly labeled, recorded on a chain-of-custody form, placed in an ice chest and cooled with Blue Ice to 4°C for transportation to American

water samples

Environmental Laboratories Corporation (State Certification No. 1233) for analyses. Laboratory analyses will be conducted for the detection of TPH-G and TPH-D by EPA method modified 8015 and BTXE by EPA method 602.

need to check for Total Pb and halocarbons found in soil around waste oil at tank pull.

PROBLEM ASSESSMENT REPORT

Following the completion of activities related to the Phase II Site Contamination Workplan, a Problem Assessment Report will be completed that will summarize information initially developed for the Phase II Site Contamination Workplan as well as provide:

1. An accurate description of the horizontal and lateral extent of petroleum hydrocarbon and petroleum hydrocarbon constituent concentrations in soil and groundwater.

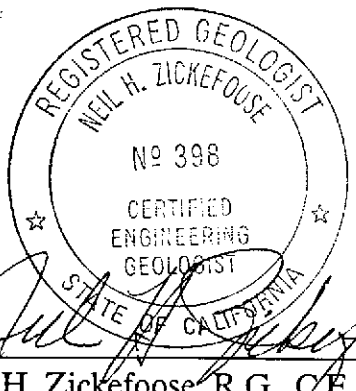
2. Groundwater data including depth, flow direction, groundwater gradient, aquifer transmissivity, and quality.

3. Proposal for remedial actions to mitigate the effects of hydrocarbon affected soil and groundwater, if present, at the site.

STANDARD OF CARE

This report has been prepared for Sears, Roebuck and Co. to summarize the Phase I Site Contamination Investigation Report and Phase II Investigation Workplan at the Sears Automotive Center, 2633 Telegraph Avenue, Oakland, California. The work performed by American Environmental Management Corporation was based on currently available information and was developed in accordance with currently acceptable engineering practices at that time and location. Other than this, no warranty is implied or extended. This report was prepared under the direction of a California Registered Geologist.

AMERICAN ENVIRONMENTAL MANAGEMENT CORPORATION



Neil H. Zickefoose, R.G., C.E.G. 398
Geological Science Section Manager
Engineering Division

APPENDIX A

ELECTRIC CONE PENETROMETER DATA

TONTO
DRILLING SERVICES, INC.

ENVIRONMENTAL & GEOTECHNICAL DIVISION
2120 Blumenfeld Drive, Sacramento, California 95815
Phone: (916) 646-6611, Fax: (916) 646-1145

March 3, 1991

American Environmental
9719 Lincoln Village Drive, Suite 501
Sacramento, California 95827

Attention: Phil Walsak

Subject: CPT Interpretation
Sears Automotive
J.N. 82580
Oakland, California

362-064

Dear Mr. Walsak:

Please find enclosed CPT interpretations for measurements taken at locations CPT01C-06 at the above site on February 26, 1991, per your request.

For interpretation purposes depth to groundwater was assumed to be 4 meters based on a average measurements across the site immediately after soundings. Total unit weight was assumed to be 110 pcf. Undrained shear strength estimates are based on an Nk factor of 15.

Soil parameters are estimates based on averaged values. This data should be used only as a guide -- specific design values should be obtained by a qualified soils engineer using correlation techniques applicable to specific soil conditions and local experience.

Please call if you have questions or if we may be of further service.

Sincerely,

Mark E. Best, P.E.
Director, Insitu Testing Services

Attachments: CPT Interpretation (4-pages)
Cone Penetration Record (2-pages)
5.25" Data Disk--IBM Compatible

Interpretation. *

CONE PENETRATION RECORD

Job No: 362-064
Project: OAKLAND
Date: 2-25-91

TAPE NO:

FILE NO.	ENGINEER	CONE I.D.	LOCATION	HOLE NO.	TOTAL DEPTH IN METERS	REMARKS
22	A.E.M.	339		CPT-01	3^{05} 10	PIERCED PIPE
	-137	-1.88	1.37	-23.5		
23	"	"		CPT-01A	3^{6} 11^{81}	QFI - STOPPED DUE TO TIP & ING.
	-136	-1.90	1.39	-23.5		
24	"	"		CPT-01B	3^{7} 12^{14}	QUIT FOR TIP
	-135	-2.23	1.65	-23.5		
* 25	"	"		CPT-01C	11^{2} 36^{75}	35 10
	-135	-2.19	1.61	-23.6		
* 26	"	"		CPT-02	11^{15} 36^{58}	11
	-135	-2.15	1.59	-23.5		

CONE PENETRATION RECORD

Job No: 302-004
Project: OAKLAND
Date: 2-26-91

TAPE NO:

FILE NO.	ENGINEER	CONE I.D.	LOCATION	HOLE NO.	TOTAL DEPTH IN METERS	REMARKS
27	A.E.M.	339		CPT-03	11' 36.77	24 B
	-136	-2.13	1.57	-23.6		
28	"	"		CPT-04	11' 36.42	3/6 1/4
	-136	-2.12	1.55	-23.6		
29	"	"		CPT-05	11' 36.42	32' 9'
	-136	-2.12	1.56	-23.6		"
30	"	"		CPT-06	11' 36.42	12.6
	-136	-2.14	1.58	-23.6		

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON
On Site Loc:CPT-01C
Job No. :82580
Tot. Unit Wt. (avg) : 110 pcf

CPT Date :02/25/91 11:55
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	198.10	1.38	0.70	0.02	sand	)90	)48	38	UNDEFINED
0.50	1.64	36.80	1.47	3.98	0.07	clayey silt to silty clay	UNDFND	UNDFD	18	2.4
0.75	2.46	28.34	1.34	4.74	0.11	clay	UNDFND	UNDFD	27	1.8
1.00	3.28	23.66	1.26	5.31	0.16	clay	UNDFND	UNDFD	23	1.5
1.25	4.10	22.12	1.38	6.25	0.20	clay	UNDFND	UNDFD	21	1.4
1.50	4.92	22.64	1.39	6.16	0.25	clay	UNDFND	UNDFD	22	1.4
1.75	5.74	24.54	1.28	5.23	0.29	clay	UNDFND	UNDFD	24	1.6
2.00	6.56	23.88	1.07	4.46	0.34	clay	UNDFND	UNDFD	23	1.5
2.25	7.38	21.24	1.02	4.78	0.38	clay	UNDFND	UNDFD	20	1.3
2.50	8.20	18.50	0.89	4.83	0.43	clay	UNDFND	UNDFD	18	1.2
2.75	9.02	15.16	0.67	4.43	0.47	clay	UNDFND	UNDFD	15	.9
3.00	9.84	14.84	0.49	3.33	0.52	silty clay to clay	UNDFND	UNDFD	9	.9
3.25	10.66	14.02	0.28	2.01	0.56	clayey silt to silty clay	UNDFND	UNDFD	7	.8
3.50	11.48	13.90	0.17	1.20	0.61	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
3.75	12.30	16.88	0.17	1.02	0.65	sandy silt to clayey silt	UNDFND	UNDFD	6	1.0
4.00	13.12	22.18	0.38	1.69	0.70	sandy silt to clayey silt	UNDFND	UNDFD	8	1.4
4.25	13.94	44.28	1.50	3.39	0.73	clayey silt to silty clay	UNDFND	UNDFD	21	2.9
4.50	14.76	150.16	2.72	1.81	0.75	silty sand to sandy silt	80-90	44-46	48	UNDEFINED
4.75	15.58	258.28	5.38	2.08	0.77	sand to silty sand	)90	46-48	)50	UNDEFINED
5.00	16.40	354.00	4.15	1.17	0.79	sand	)90	46-48	)50	UNDEFINED
5.25	17.22	185.76	2.28	1.23	0.81	sand to silty sand	80-90	44-46	44	UNDEFINED
5.50	18.04	228.96	4.09	1.79	0.83	sand to silty sand	)90	44-46	)50	UNDEFINED
5.75	18.86	82.90	2.51	3.03	0.85	sandy silt to clayey silt	UNDFND	UNDFD	32	5.4
6.00	19.69	28.76	1.06	3.68	0.87	clayey silt to silty clay	UNDFND	UNDFD	14	1.8
6.25	20.51	33.02	1.27	3.84	0.89	clayey silt to silty clay	UNDFND	UNDFD	16	2.1
6.50	21.33	81.48	2.36	2.89	0.91	sandy silt to clayey silt	UNDFND	UNDFD	31	5.3
6.75	22.15	165.10	4.15	2.51	0.93	silty sand to sandy silt	80-90	42-44	)50	UNDEFINED
7.00	22.97	252.70	5.13	2.03	0.95	sand to silty sand	)90	44-46	)50	UNDEFINED
7.25	23.79	228.18	3.94	1.73	0.97	sand to silty sand	)90	44-46	)50	UNDEFINED
7.50	24.61	238.20	4.26	1.79	0.98	sand to silty sand	)90	44-46	)50	UNDEFINED
7.75	25.43	140.44	2.52	1.79	1.00	silty sand to sandy silt	70-80	42-44	45	UNDEFINED
8.00	26.25	24.82	0.29	1.18	1.02	sandy silt to clayey silt	UNDFND	UNDFD	10	1.5
8.25	27.07	21.26	0.30	1.40	1.04	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
8.50	27.89	23.22	0.58	2.49	1.06	clayey silt to silty clay	UNDFND	UNDFD	11	1.4
8.75	28.71	24.16	0.49	2.02	1.08	sandy silt to clayey silt	UNDFND	UNDFD	9	1.5
9.00	29.53	30.30	0.81	2.66	1.10	sandy silt to clayey silt	UNDFND	UNDFD	12	1.9
9.25	30.35	28.62	0.94	3.30	1.12	clayey silt to silty clay	UNDFND	UNDFD	14	1.7
9.50	31.17	28.84	0.67	2.31	1.14	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON On Site Loc:CPT-01C

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	22.48	0.52	2.32	1.16	clayey silt to silty clay	UNDFND	UNDFD	11	1.3
10.00	32.81	27.64	0.96	3.48	1.18	clayey silt to silty clay	UNDFND	UNDFD	13	1.7
10.25	33.63	35.70	0.67	1.89	1.20	sandy silt to clayey silt	UNDFND	UNDFD	14	2.2
10.50	34.45	27.78	0.95	3.42	1.22	clayey silt to silty clay	UNDFND	UNDFD	13	1.7
10.75	35.27	27.66	0.69	2.49	1.24	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7
11.00	36.09	64.30	2.27	3.54	1.26	clayey silt to silty clay	UNDFND	UNDFD	31	4.1

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) **

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON
On Site Loc:CPT-02
Job No. :82580
Tot. Unit Wt. (avg) : 110 pcf

CPT Date :02/25/91 12:45
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	221.42	1.37	0.62	0.02	sand	)90	)48	42	UNDEFINED
0.50	1.64	24.68	0.97	3.95	0.07	silty clay to clay	UNDFND	UNDFD	16	1.6
0.75	2.46	19.74	0.76	3.85	0.11	silty clay to clay	UNDFND	UNDFD	13	1.3
1.00	3.28	19.86	0.91	4.59	0.16	clay	UNDFND	UNDFD	19	1.3
1.25	4.10	21.38	1.11	5.17	0.20	clay	UNDFND	UNDFD	20	1.4
1.50	4.92	22.00	1.37	6.25	0.25	clay	UNDFND	UNDFD	21	1.4
1.75	5.74	21.26	1.17	5.49	0.29	clay	UNDFND	UNDFD	20	1.3
2.00	6.56	22.72	0.76	3.34	0.34	clayey silt to silty clay	UNDFND	UNDFD	11	1.4
2.25	7.38	14.46	0.54	3.72	0.38	silty clay to clay	UNDFND	UNDFD	9	.9
2.50	8.20	15.50	0.46	2.97	0.43	clayey silt to silty clay	UNDFND	UNDFD	7	1.0
2.75	9.02	8.72	0.38	4.38	0.47	clay	UNDFND	UNDFD	8	.5
3.00	9.84	7.34	0.22	3.05	0.52	clay	UNDFND	UNDFD	7	.4
3.25	10.66	8.52	0.24	2.79	0.56	silty clay to clay	UNDFND	UNDFD	5	.5
3.50	11.48	9.50	0.13	1.41	0.61	clayey silt to silty clay	UNDFND	UNDFD	5	.5
3.75	12.30	8.80	0.21	2.39	0.65	silty clay to clay	UNDFND	UNDFD	6	.5
4.00	13.12	11.06	0.40	3.63	0.70	clay	UNDFND	UNDFD	11	.6
4.25	13.94	12.20	0.36	2.98	0.73	silty clay to clay	UNDFND	UNDFD	8	.7
4.50	14.76	21.40	0.34	1.58	0.75	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
4.75	15.58	19.34	0.20	1.06	0.77	sandy silt to clayey silt	UNDFND	UNDFD	7	1.2
5.00	16.40	18.46	0.24	1.31	0.79	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
5.25	17.22	20.72	0.31	1.49	0.81	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
5.50	18.04	25.60	0.54	2.09	0.83	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
5.75	18.86	33.32	0.79	2.36	0.85	sandy silt to clayey silt	UNDFND	UNDFD	13	2.1
6.00	19.69	73.18	2.07	2.83	0.87	sandy silt to clayey silt	UNDFND	UNDFD	28	4.8
6.25	20.51	92.76	2.69	2.90	0.89	sandy silt to clayey silt	UNDFND	UNDFD	36	6.1
6.50	21.33	194.54	4.02	2.07	0.91	silty sand to sandy silt	80-90	44-46	)50	UNDEFINED
6.75	22.15	202.50	5.95	2.94	0.93	silty sand to sandy silt	80-90	44-46	)50	UNDEFINED
7.00	22.97	367.56	3.77	1.03	0.95	sand	)90	46-48	)50	UNDEFINED
7.25	23.79	135.56	2.48	1.83	0.97	silty sand to sandy silt	70-80	42-44	43	UNDEFINED
7.50	24.61	52.36	1.05	2.01	0.98	sandy silt to clayey silt	UNDFND	UNDFD	20	3.4
7.75	25.43	14.54	0.15	1.06	1.00	sandy silt to clayey silt	UNDFND	UNDFD	6	.8
8.00	26.25	15.86	0.15	0.96	1.02	sandy silt to clayey silt	UNDFND	UNDFD	6	.9
8.25	27.07	19.46	0.25	1.29	1.04	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
8.50	27.89	36.32	0.33	0.90	1.06	silty sand to sandy silt	(40	34-36	12	UNDEFINED
8.75	28.71	20.24	0.20	1.00	1.08	sandy silt to clayey silt	UNDFND	UNDFD	8	1.2
9.00	29.53	23.10	0.35	1.53	1.10	sandy silt to clayey silt	UNDFND	UNDFD	9	1.4
9.25	30.35	29.84	0.41	1.37	1.12	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8
9.50	31.17	34.02	0.37	1.08	1.14	silty sand to sandy silt	(40	34-36	11	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON On Site Loc:CPT-02

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	37.14	0.83	2.24	1.16	sandy silt to clayey silt	UNDFND	UNDFD	14	2.3
10.00	32.81	38.76	0.95	2.46	1.18	sandy silt to clayey silt	UNDFND	UNDFD	15	2.4
10.25	33.63	37.92	1.12	2.96	1.20	sandy silt to clayey silt	UNDFND	UNDFD	15	2.4
10.50	34.45	43.00	0.78	1.80	1.22	sandy silt to clayey silt	UNDFND	UNDFD	16	2.7
10.75	35.27	37.70	0.83	2.21	1.24	sandy silt to clayey silt	UNDFND	UNDFD	14	2.3
11.00	36.09	35.96	0.93	2.59	1.26	sandy silt to clayey silt	UNDFND	UNDFD	14	2.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON
On Site Loc:CPT-03
Job No. :82580
Tot. Unit Wt. (avg) : 110 pcf

CPT Date :02/26/91 8:05
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	215.08	1.44	0.67	0.02	sand	)90	)48	41	UNDEFINED
0.50	1.64	45.06	1.49	3.31	0.07	clayey silt to silty clay	UNDFND	UNDFD	22	2.9
0.75	2.46	39.22	1.39	3.56	0.11	clayey silt to silty clay	UNDFND	UNDFD	19	2.6
1.00	3.28	24.24	1.02	4.21	0.16	silty clay to clay	UNDFND	UNDFD	15	1.6
1.25	4.10	20.38	1.06	5.19	0.20	clay	UNDFND	UNDFD	20	1.3
1.50	4.92	20.64	1.18	5.73	0.25	clay	UNDFND	UNDFD	20	1.3
1.75	5.74	16.70	0.78	4.68	0.29	clay	UNDFND	UNDFD	16	1.0
2.00	6.56	16.48	0.62	3.77	0.34	silty clay to clay	UNDFND	UNDFD	11	1.0
2.25	7.38	14.84	0.50	3.37	0.38	silty clay to clay	UNDFND	UNDFD	9	.9
2.50	8.20	11.60	0.58	5.01	0.43	clay	UNDFND	UNDFD	11	.7
2.75	9.02	10.62	0.43	4.06	0.47	clay	UNDFND	UNDFD	10	.6
3.00	9.84	13.28	0.33	2.46	0.52	clayey silt to silty clay	UNDFND	UNDFD	6	.8
3.25	10.66	8.84	0.34	3.83	0.56	clay	UNDFND	UNDFD	8	.5
3.50	11.48	10.94	0.37	3.43	0.61	silty clay to clay	UNDFND	UNDFD	7	.6
3.75	12.30	11.52	0.41	3.55	0.65	silty clay to clay	UNDFND	UNDFD	7	.7
4.00	13.12	11.42	0.33	2.92	0.70	silty clay to clay	UNDFND	UNDFD	7	.7
4.25	13.94	9.60	0.32	3.36	0.73	clay	UNDFND	UNDFD	9	.5
4.50	14.76	21.58	0.65	3.02	0.75	clayey silt to silty clay	UNDFND	UNDFD	10	1.3
4.75	15.58	21.28	0.39	1.81	0.77	sandy silt to clayey silt	UNDFND	UNDFD	8	1.3
5.00	16.40	12.40	0.22	1.77	0.79	clayey silt to silty clay	UNDFND	UNDFD	6	.7
5.25	17.22	11.02	0.25	2.26	0.81	clayey silt to silty clay	UNDFND	UNDFD	5	.6
5.50	18.04	12.00	0.22	1.85	0.83	clayey silt to silty clay	UNDFND	UNDFD	6	.7
5.75	18.86	37.80	0.48	1.26	0.85	silty sand to sandy silt	40-50	36-38	12	UNDEFINED
6.00	19.69	84.52	1.39	1.65	0.87	silty sand to sandy silt	60-70	40-42	27	UNDEFINED
6.25	20.51	43.22	0.47	1.10	0.89	silty sand to sandy silt	40-50	36-38	14	UNDEFINED
6.50	21.33	18.44	0.49	2.65	0.91	clayey silt to silty clay	UNDFND	UNDFD	9	1.1
6.75	22.15	85.86	2.08	2.42	0.93	sandy silt to clayey silt	UNDFND	UNDFD	33	5.6
7.00	22.97	114.96	2.94	2.56	0.95	silty sand to sandy silt	70-80	40-42	37	UNDEFINED
7.25	23.79	101.12	2.37	2.34	0.97	silty sand to sandy silt	60-70	40-42	32	UNDEFINED
7.50	24.61	36.92	0.97	2.64	0.98	sandy silt to clayey silt	UNDFND	UNDFD	14	2.3
7.75	25.43	19.88	0.17	0.86	1.00	sandy silt to clayey silt	UNDFND	UNDFD	8	1.2
8.00	26.25	18.24	0.18	1.00	1.02	sandy silt to clayey silt	UNDFND	UNDFD	7	1.1
8.25	27.07	26.62	0.36	1.34	1.04	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
8.50	27.89	31.66	0.55	1.74	1.06	sandy silt to clayey silt	UNDFND	UNDFD	12	2.0
8.75	28.71	38.74	1.15	2.97	1.08	sandy silt to clayey silt	UNDFND	UNDFD	15	2.4
9.00	29.53	41.66	1.39	3.33	1.10	clayey silt to silty clay	UNDFND	UNDFD	20	2.6
9.25	30.35	38.06	1.35	3.55	1.12	clayey silt to silty clay	UNDFND	UNDFD	18	2.4
9.50	31.17	27.04	0.51	1.88	1.14	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON On Site Loc:CPT-03

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	26.36	0.38	1.45	1.16	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
10.00	32.81	27.10	0.78	2.88	1.18	clayey silt to silty clay	UNDFND	UNDFD	13	1.6
10.25	33.63	22.10	0.62	2.80	1.20	clayey silt to silty clay	UNDFND	UNDFD	11	1.3
10.50	34.45	19.98	0.57	2.83	1.22	clayey silt to silty clay	UNDFND	UNDFD	10	1.2
10.75	35.27	18.24	0.27	1.46	1.24	sandy silt to clayey silt	UNDFND	UNDFD	7	1.0
11.00	36.09	28.44	0.52	1.84	1.26	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) **

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON
On Site Loc:CPT-04
Job No. :82580
Tot. Unit Wt. (avg) : 110 pcf

CPT Date :02/26/91 8:50
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	215.34	1.50	0.70	0.02	sand	)90	)48	41	UNDEFINED
0.50	1.64	22.46	0.90	4.01	0.07	silty clay to clay	UNDFND	UNDFD	14	1.4
0.75	2.46	14.74	0.56	3.79	0.11	silty clay to clay	UNDFND	UNDFD	9	.9
1.00	3.28	13.12	0.33	2.49	0.16	clayey silt to silty clay	UNDFND	UNDFD	6	.8
1.25	4.10	10.50	0.21	1.95	0.20	clayey silt to silty clay	UNDFND	UNDFD	5	.6
1.50	4.92	13.58	0.64	4.70	0.25	clay	UNDFND	UNDFD	13	.8
1.75	5.74	18.50	0.88	4.75	0.29	clay	UNDFND	UNDFD	18	1.2
2.00	6.56	22.90	0.66	2.86	0.34	clayey silt to silty clay	UNDFND	UNDFD	11	1.5
2.25	7.38	22.72	0.54	2.40	0.38	clayey silt to silty clay	UNDFND	UNDFD	11	1.4
2.50	8.20	15.64	0.47	2.98	0.43	clayey silt to silty clay	UNDFND	UNDFD	7	1.0
2.75	9.02	10.84	0.39	3.62	0.47	clay	UNDFND	UNDFD	10	.6
3.00	9.84	11.30	0.33	2.92	0.52	silty clay to clay	UNDFND	UNDFD	7	.7
3.25	10.66	10.18	0.25	2.46	0.56	silty clay to clay	UNDFND	UNDFD	7	.6
3.50	11.48	11.26	0.36	3.21	0.61	silty clay to clay	UNDFND	UNDFD	7	.7
3.75	12.30	12.14	0.39	3.17	0.65	silty clay to clay	UNDFND	UNDFD	8	.7
4.00	13.12	12.48	0.41	3.31	0.70	silty clay to clay	UNDFND	UNDFD	8	.7
4.25	13.94	12.62	0.41	3.26	0.73	silty clay to clay	UNDFND	UNDFD	8	.7
4.50	14.76	23.56	0.77	3.25	0.75	clayey silt to silty clay	UNDFND	UNDFD	11	1.5
4.75	15.58	18.48	0.45	2.41	0.77	clayey silt to silty clay	UNDFND	UNDFD	9	1.1
5.00	16.40	10.04	0.11	1.13	0.79	clayey silt to silty clay	UNDFND	UNDFD	5	.6
5.25	17.22	9.30	0.11	1.22	0.81	clayey silt to silty clay	UNDFND	UNDFD	4	.5
5.50	18.04	8.12	0.12	1.43	0.83	clayey silt to silty clay	UNDFND	UNDFD	4	.4
5.75	18.86	13.94	0.19	1.33	0.85	sandy silt to clayey silt	UNDFND	UNDFD	5	.8
6.00	19.69	12.48	0.08	0.66	0.87	sandy silt to clayey silt	UNDFND	UNDFD	5	.7
6.25	20.51	18.62	0.05	0.28	0.89	silty sand to sandy silt	(40	32-34	6	UNDEFINED
6.50	21.33	40.60	0.63	1.55	0.91	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
6.75	22.15	64.20	1.64	2.56	0.93	sandy silt to clayey silt	UNDFND	UNDFD	25	4.2
7.00	22.97	95.70	1.27	1.33	0.95	sand to silty sand	60-70	40-42	23	UNDEFINED
7.25	23.79	80.44	1.71	2.13	0.97	silty sand to sandy silt	60-70	40-42	26	UNDEFINED
7.50	24.61	47.70	0.90	1.88	0.98	sandy silt to clayey silt	UNDFND	UNDFD	18	3.0
7.75	25.43	35.42	0.66	1.87	1.00	sandy silt to clayey silt	UNDFND	UNDFD	14	2.2
8.00	26.25	93.26	2.11	2.27	1.02	silty sand to sandy silt	60-70	40-42	30	UNDEFINED
8.25	27.07	50.24	1.04	2.07	1.04	sandy silt to clayey silt	UNDFND	UNDFD	19	3.2
8.50	27.89	49.34	0.78	1.59	1.06	silty sand to sandy silt	40-50	36-38	16	UNDEFINED
8.75	28.71	127.22	1.80	1.41	1.08	sand to silty sand	70-80	40-42	30	UNDEFINED
9.00	29.53	102.30	2.45	2.40	1.10	silty sand to sandy silt	60-70	40-42	33	UNDEFINED
9.25	30.35	38.94	0.47	1.20	1.12	silty sand to sandy silt	(40	34-36	12	UNDEFINED
9.50	31.17	29.24	0.43	1.46	1.14	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON On Site Loc:CPT-04

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	28.36	0.61	2.15	1.16	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7
10.00	32.81	22.70	0.37	1.63	1.18	sandy silt to clayey silt	UNDFND	UNDFD	9	1.3
10.25	33.63	93.02	1.87	2.01	1.20	silty sand to sandy silt	60-70	38-40	30	UNDEFINED
10.50	34.45	239.68	2.58	1.08	1.22	sand	80-90	42-44	46	UNDEFINED
10.75	35.27	278.54	2.07	0.74	1.24	sand	)90	44-46	)50	UNDEFINED
11.00	36.09	42.38	0.66	1.55	1.26	silty sand to sandy silt	(40	34-36	14	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON
On Site Loc:CPT-05
Job No. :82580
Tot. Unit Wt. (avg) : 110 pcf

CPT Date :02/26/91 9:45
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	138.96	0.96	0.69	0.02	sand	)90	)48	27	UNDEFINED
0.50	1.64	47.48	1.51	3.19	0.07	clayey silt to silty clay	UNDFND	UNDFD	23	3.1
0.75	2.46	26.74	1.17	4.37	0.11	silty clay to clay	UNDFND	UNDFD	17	1.7
1.00	3.28	21.26	0.96	4.49	0.16	clay	UNDFND	UNDFD	20	1.4
1.25	4.10	21.18	1.08	5.08	0.20	clay	UNDFND	UNDFD	20	1.3
1.50	4.92	21.28	1.36	6.38	0.25	clay	UNDFND	UNDFD	20	1.4
1.75	5.74	20.04	1.21	6.02	0.29	clay	UNDFND	UNDFD	19	1.3
2.00	6.56	17.26	0.88	5.10	0.34	clay	UNDFND	UNDFD	17	1.1
2.25	7.38	12.64	0.54	4.23	0.38	clay	UNDFND	UNDFD	12	.8
2.50	8.20	9.32	0.38	4.13	0.43	clay	UNDFND	UNDFD	9	.5
2.75	9.02	8.96	0.41	4.56	0.47	clay	UNDFND	UNDFD	9	.5
3.00	9.84	7.60	0.26	3.37	0.52	clay	UNDFND	UNDFD	7	.4
3.25	10.66	6.26	0.19	3.04	0.56	clay	UNDFND	UNDFD	6	.3
3.50	11.48	7.92	0.26	3.32	0.61	clay	UNDFND	UNDFD	8	.4
3.75	12.30	9.96	0.34	3.41	0.65	clay	UNDFND	UNDFD	10	.6
4.00	13.12	11.58	0.42	3.62	0.70	undefined	UNDFND	UNDFD	UDF	UNDEFINED
4.25	13.94	13.60	0.62	4.58	0.73	clay	UNDFND	UNDFD	13	.8
4.50	14.76	59.56	0.98	1.65	0.75	silty sand to sandy silt	50-60	40-42	19	UNDEFINED
4.75	15.58	25.80	0.42	1.62	0.77	sandy silt to clayey silt	UNDFND	UNDFD	10	1.6
5.00	16.40	35.74	0.69	1.92	0.79	sandy silt to clayey silt	UNDFND	UNDFD	14	2.3
5.25	17.22	50.78	0.95	1.87	0.81	silty sand to sandy silt	50-60	38-40	16	UNDEFINED
5.50	18.04	15.64	0.41	2.65	0.83	clayey silt to silty clay	UNDFND	UNDFD	7	.9
5.75	18.86	20.98	0.93	4.45	0.85	clay	UNDFND	UNDFD	20	1.3
6.00	19.69	24.84	0.74	2.96	0.87	clayey silt to silty clay	UNDFND	UNDFD	12	1.5
6.25	20.51	29.62	0.76	2.58	0.89	sandy silt to clayey silt	UNDFND	UNDFD	11	1.9
6.50	21.33	28.06	0.85	3.03	0.91	clayey silt to silty clay	UNDFND	UNDFD	13	1.7
6.75	22.15	40.36	0.63	1.57	0.93	silty sand to sandy silt	40-50	36-38	13	UNDEFINED
7.00	22.97	94.92	2.37	2.49	0.95	silty sand to sandy silt	60-70	40-42	30	UNDEFINED
7.25	23.79	126.12	2.97	2.36	0.97	silty sand to sandy silt	70-80	42-44	40	UNDEFINED
7.50	24.61	119.28	2.83	2.37	0.98	silty sand to sandy silt	70-80	40-42	38	UNDEFINED
7.75	25.43	109.60	3.27	2.98	1.00	sandy silt to clayey silt	UNDFND	UNDFD	42	7.2
8.00	26.25	27.32	0.62	2.27	1.02	sandy silt to clayey silt	UNDFND	UNDFD	10	1.7
8.25	27.07	26.06	0.69	2.63	1.04	clayey silt to silty clay	UNDFND	UNDFD	12	1.6
8.50	27.89	38.32	0.93	2.43	1.06	sandy silt to clayey silt	UNDFND	UNDFD	15	2.4
8.75	28.71	40.68	1.33	3.27	1.08	clayey silt to silty clay	UNDFND	UNDFD	19	2.6
9.00	29.53	45.40	1.86	4.09	1.10	clayey silt to silty clay	UNDFND	UNDFD	22	2.9
9.25	30.35	51.08	1.93	3.77	1.12	clayey silt to silty clay	UNDFND	UNDFD	24	3.2
9.50	31.17	34.92	0.55	1.57	1.14	sandy silt to clayey silt	UNDFND	UNDFD	13	2.2

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	29.38	0.58	1.98	1.16	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8
10.00	32.81	27.94	0.48	1.72	1.18	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7
10.25	33.63	27.36	0.68	2.48	1.20	sandy silt to clayey silt	UNDFND	UNDFD	10	1.7
10.50	34.45	26.42	0.76	2.87	1.22	clayey silt to silty clay	UNDFND	UNDFD	13	1.6
10.75	35.27	68.52	1.27	1.86	1.24	silty sand to sandy silt	50-60	38-40	22	UNDEFINED
11.00	36.09	112.58	2.08	1.84	1.26	silty sand to sandy silt	60-70	40-42	36	UNDEFINED

Dr - All sands (Jamiolkowski et al, 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

TONTO DRILLING SERVICES

Engineer AMERICAN ENVIRON
On Site Loc:CPT-06
Job No. :82580
Tot. Unit Wt. (avg) : 110 pcf

CPT Date :02/26/91 10:20
Cone Used :339
Water table (meters) : 4

DEPTH (meters)	(feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
0.25	0.82	225.24	0.98	0.43	0.02	sand	)90	)48	43	UNDEFINED
0.50	1.64	30.34	1.03	3.41	0.07	clayey silt to silty clay	UNDFND	UNDFD	15	2.0
0.75	2.46	26.56	1.00	3.76	0.11	silty clay to clay	UNDFND	UNDFD	17	1.7
1.00	3.28	22.00	1.05	4.77	0.16	clay	UNDFND	UNDFD	21	1.4
1.25	4.10	19.36	1.08	5.57	0.20	clay	UNDFND	UNDFD	19	1.2
1.50	4.92	20.46	1.28	6.27	0.25	clay	UNDFND	UNDFD	20	1.3
1.75	5.74	19.34	1.05	5.41	0.29	clay	UNDFND	UNDFD	19	1.2
2.00	6.56	19.82	0.88	4.47	0.34	clay	UNDFND	UNDFD	19	1.2
2.25	7.38	16.78	0.69	4.11	0.38	clay	UNDFND	UNDFD	16	1.0
2.50	8.20	12.92	0.62	4.77	0.43	clay	UNDFND	UNDFD	12	.8
2.75	9.02	23.18	0.54	2.35	0.47	clayey silt to silty clay	UNDFND	UNDFD	11	1.5
3.00	9.84	14.68	0.37	2.53	0.52	clayey silt to silty clay	UNDFND	UNDFD	7	.9
3.25	10.66	9.34	0.35	3.75	0.56	clay	UNDFND	UNDFD	9	.5
3.50	11.48	9.58	0.39	4.09	0.61	clay	UNDFND	UNDFD	9	.5
3.75	12.30	10.32	0.45	4.39	0.65	clay	UNDFND	UNDFD	10	.6
4.00	13.12	10.68	0.44	4.13	0.70	clay	UNDFND	UNDFD	10	.6
4.25	13.94	10.66	0.29	2.74	0.73	silty clay to clay	UNDFND	UNDFD	7	.6
4.50	14.76	21.32	0.60	2.82	0.75	clayey silt to silty clay	UNDFND	UNDFD	10	1.3
4.75	15.58	35.58	1.00	2.82	0.77	sandy silt to clayey silt	UNDFND	UNDFD	14	2.3
5.00	16.40	13.52	0.30	2.23	0.79	clayey silt to silty clay	UNDFND	UNDFD	6	.8
5.25	17.22	60.20	1.07	1.78	0.81	silty sand to sandy silt	50-60	38-40	19	UNDEFINED
5.50	18.04	23.30	0.16	0.68	0.83	silty sand to sandy silt	(40	34-36	7	UNDEFINED
5.75	18.86	44.14	1.36	3.08	0.85	clayey silt to silty clay	UNDFND	UNDFD	21	2.8
6.00	19.69	102.16	2.92	2.86	0.87	sandy silt to clayey silt	UNDFND	UNDFD	39	6.7
6.25	20.51	134.16	3.61	2.69	0.89	silty sand to sandy silt	70-80	42-44	43	UNDEFINED
6.50	21.33	177.44	4.45	2.51	0.91	silty sand to sandy silt	80-90	42-44	)50	UNDEFINED
6.75	22.15	182.98	6.33	3.46	0.93	sand to clayey sand (*)	UNDFND	UNDFD	)50	UNDEFINED
7.00	22.97	144.48	5.66	3.92	0.95	sand to clayey sand (*)	UNDFND	UNDFD	)50	UNDEFINED
7.25	23.79	155.88	3.23	2.07	0.97	silty sand to sandy silt	70-80	42-44	50	UNDEFINED
7.50	24.61	56.40	1.42	2.51	0.98	sandy silt to clayey silt	UNDFND	UNDFD	22	3.6
7.75	25.43	34.38	1.08	3.13	1.00	clayey silt to silty clay	UNDFND	UNDFD	16	2.2
8.00	26.25	84.74	1.77	2.09	1.02	silty sand to sandy silt	60-70	40-42	27	UNDEFINED
8.25	27.07	47.06	1.51	3.22	1.04	clayey silt to silty clay	UNDFND	UNDFD	23	3.0
8.50	27.89	20.64	0.64	3.09	1.06	clayey silt to silty clay	UNDFND	UNDFD	10	1.2
8.75	28.71	24.88	0.68	2.73	1.08	clayey silt to silty clay	UNDFND	UNDFD	12	1.5
9.00	29.53	27.60	0.71	2.57	1.10	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7
9.25	30.35	28.88	0.83	2.88	1.12	clayey silt to silty clay	UNDFND	UNDFD	14	1.8
9.50	31.17	28.46	0.68	2.41	1.14	sandy silt to clayey silt	UNDFND	UNDFD	11	1.7

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

(*) overconsolidated or cemented

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ****

DEPTH (meters)	DEPTH (feet)	Qc (avg) (tsf)	Fs (avg) (tsf)	Rf (avg) (%)	SIGV' (tsf)	SOIL BEHAVIOUR TYPE	Eq - Dr (%)	PHI deg.	SPT N	Su tsf
9.75	31.99	29.62	0.58	1.95	1.16	sandy silt to clayey silt	UNDFND	UNDFD	11	1.8
10.00	32.81	60.02	1.87	3.12	1.18	sandy silt to clayey silt	UNDFND	UNDFD	23	3.8
10.25	33.63	35.12	1.63	4.64	1.20	silty clay to clay	UNDFND	UNDFD	22	2.2
10.50	34.45	27.62	1.03	3.74	1.22	clayey silt to silty clay	UNDFND	UNDFD	13	1.7
10.75	35.27	30.46	1.19	3.91	1.24	silty clay to clay	UNDFND	UNDFD	19	1.9
11.00	36.09	80.64	1.19	1.47	1.26	silty sand to sandy silt	50-60	38-40	26	UNDEFINED

Dr - All sands (Jamiolkowski et al. 1985) PHI - Robertson and Campanella 1983 Su: Nk= 15

**** Note: For interpretation purposes the PLOTTED CPT PROFILE should be used with the TABULATED OUTPUT from CPTINTR1 (v 3.04) ***

SOUNDING DATA IN FILE 22 02/25/91 10:22

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-01

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	4	0.05	1.00	0.0	0.0	0.0	-451.8
0.10	7	0.08	1.12	0.1	0.02	-0.0	-451.8
0.15	9	0.06	0.71	-0.1	-0.02	-0.0	-451.5
0.20	10	0.14	1.40	0.1	0.03	-0.0	-452.0
0.25	17	0.28	1.63	-0.0	-0.00	-0.0	-451.7
0.30	27	0.62	2.28	0.0	0.0	0.0	-451.5
0.35	45	1.51	3.32	0.1	0.01	-0.0	-451.7
0.40	135	1.96	1.45	0.4	0.02	-0.0	-451.7
0.45	135	1.95	1.44	-0.4	-0.02	0.0	-451.7
0.50	77	1.58	2.04	-0.1	-0.00	0.0	-451.5
0.55	34	1.13	3.30	-0.1	-0.02	0.0	-451.8
0.60	22	1.32	6.09	0.1	0.01	-0.0	-451.7
0.65	39	1.27	3.27	-7.5	-1.39	0.0	-451.5
0.70	19	1.42	7.38	-5.1	-1.90	-0.0	-451.7
0.75	22	0.84	3.89	-4.6	-1.51	0.0	-451.7
0.80	16	0.56	3.53	-1.4	-0.62	-0.0	-451.8
0.85	17	0.79	4.71	0.1	0.02	0.0	-451.8
0.90	27	0.89	3.26	-8.3	-2.19	0.0	-452.0
0.95	10	0.76	7.60	-9.7	-6.98	-0.0	-451.8
1.00	11	0.36	3.35	-9.0	-6.05	-0.0	-451.7
1.05	9	0.42	4.48	-8.5	-6.51	0.0	-451.8
1.10	13	0.46	3.47	-8.4	-4.54	-0.0	-451.8
1.15	12	0.51	4.33	0.5	0.28	-0.0	-451.5
1.20	11	0.43	3.92	-1.1	-0.74	0.0	-451.8
1.25	12	0.36	3.13	-1.4	-0.84	-0.0	-451.5
1.30	10	0.39	3.97	-1.3	-0.90	0.0	-451.7
1.35	11	0.35	3.30	-1.1	-0.70	-0.0	-452.0
1.40	15	0.40	2.60	-1.6	-0.76	-0.0	-451.8
1.45	37	0.75	2.01	-2.9	-0.57	0.0	-451.5
1.50	28	0.90	3.22	-0.1	-0.01	-0.0	-451.8
1.55	26	0.98	3.80	-0.1	-0.02	0.0	-452.0
1.60	16	0.88	5.42	0.0	0.00	-0.0	-452.0
1.65	20	0.88	4.42	1.6	0.57	-0.0	-451.7
1.70	19	1.08	5.79	-0.4	-0.16	-0.0	-451.7
1.75	18	0.98	5.39	-3.3	-1.28	-0.0	-451.3
1.80	18	0.89	5.00	-2.1	-0.82	-0.0	-451.7
1.85	17	0.86	5.15	4.8	2.08	-0.0	-451.8
1.90	13	0.71	5.29	-3.2	-1.68	-0.0	-452.0
1.95	15	0.52	3.55	-2.3	-1.14	-0.0	-451.8
2.00	13	0.57	4.37	-2.3	-1.24	-0.0	-451.7

22 : CPT-01 : 02/25/91 10:22

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	15	0.62	4.05	-1.8	-0.85	-0.0	-451.7
2.10	17	0.66	3.89	-1.7	-0.70	-0.0	-451.7
2.15	19	1.35	7.19	-0.9	-0.33	-0.0	-451.8
2.20	128	2.42	1.89	-0.0	-0.00	0.0	-452.0
2.25	71	1.34	1.87	-0.1	-0.01	0.2	-451.7
2.30	63	2.48	3.90	0.7	0.08	0.2	-451.7
2.35	150	1.99	1.33	0.0	0.0	0.5	-451.5
2.40	91	1.35	1.48	-0.1	-0.00	0.6	-451.7
2.45	50	0.74	1.47	0.0	0.0	0.6	-451.7
2.50	29	0.47	1.63	-0.3	-0.06	0.7	-451.5
2.55	12	0.42	3.61	-0.1	-0.02	0.7	-451.8
2.60	7	0.35	4.85	-0.1	-0.09	0.7	-451.7
2.65	9	0.31	3.51	0.7	0.53	0.7	-451.3
2.70	10	0.31	3.09	-0.3	-0.17	0.7	-451.7
2.75	12	0.41	3.49	-1.6	-0.97	0.7	-451.5
2.80	12	0.06	0.50	-0.6	-0.35	0.7	-451.3
2.85	28	-0.09	0.31	0.9	0.24	0.7	-451.5
2.90	146	2.05	1.40	-0.1	-0.00	1.0	-451.5
2.95	135	2.49	1.84	-0.2	-0.00	1.9	-451.7

PORE PRESSURE DECAY (5 SEC)

-0.1	-0.0	-0.1	-0.2	-0.1	-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
-0.1	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.1	-0.2
-0.1	-0.1	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.3	-0.1	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2
-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.2	-0.3	-0.2	-0.3	-0.2	-0.2	-0.2	-0.2	-0.3
-0.2	-0.3	-0.2	-0.3	-0.3	-0.3	-0.2	-0.3	-0.3	-0.2	-0.3	-0.3	-0.3	-0.4	-0.3	-0.3	-0.3	-0.2
-0.3	-0.3	-0.3	-0.2	-0.4	-0.3	-0.3	-0.3	-0.3									

3.00	15	?0000000000000000??0000000000000000?	0.0	0.00	2.5	-451.5
3.05	9	?0000000000000000??0000000000000000?	0.2	0.14	2.6	-451.3

WRITE # RODS USED ___

SOUNDING DATA IN FILE 23 02/25/91 10:45

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-01A

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	86	0.29	0.33	0.1	0.00	0.0	-452.0
0.10	570	0.61	0.10	0.1	0.00	0.0	-451.7
0.15	320	1.50	0.47	0.0	0.01	0.0	-451.8
0.20	172	2.01	1.16	-0.4	-0.01	0.0	-451.7
0.25	118	2.67	2.25	2.2	0.13	0.0	-451.7
0.30	121	3.27	2.70	0.2	0.01	0.0	-452.0
0.35	137	3.22	2.35	1.0	0.05	0.0	-452.1
0.40	139	3.01	2.16	3.4	0.17	-0.0	-451.8
0.45	139	1.86	1.33	1.7	0.08	0.0	-451.8
0.50	100	1.57	1.55	-0.6	-0.04	0.0	-451.5
0.55	48	1.57	3.27	-2.3	-0.34	-0.0	-452.0
0.60	29	1.06	3.71	-0.9	-0.23	0.0	-452.0
0.65	27	1.77	6.45	-0.1	-0.03	-0.0	-451.5
0.70	135	5.66	4.17	1.2	0.06	0.0	-451.8
0.75	97	3.40	3.52	0.3	0.01	-0.0	-452.0
0.80	363	2.56	0.70	-2.0	-0.03	-0.0	-452.0
0.85	255	5.47	2.14	-5.5	-0.15	0.4	-451.8
0.90	150	3.89	2.59	-3.3	-0.15	0.8	-451.3
0.95	101	2.26	2.23	-1.9	-0.13	1.1	-451.8
1.00	54	1.40	2.58	-4.2	-0.54	1.3	-451.7
1.05	20	1.18	5.82	-3.2	-1.14	1.3	-451.8
1.10	22	0.35	1.59	-3.1	-0.98	1.3	-451.3
1.15	20	0.34	1.67	-2.9	-1.01	1.3	-451.7
1.20	19	0.46	2.38	-3.2	-1.18	1.2	-451.5
1.25	18	0.51	2.81	-3.4	-1.34	1.2	-451.7
1.30	17	0.43	2.48	-3.5	-1.45	1.2	-451.8
1.35	15	0.31	2.11	-3.7	-1.79	1.2	-451.8
1.40	15	0.15	0.98	-3.5	-1.66	1.2	-451.7
1.45	15	0.18	1.21	-3.1	-1.45	1.2	-451.8
1.50	17	0.28	1.64	-2.8	-1.16	1.0	-451.7
1.55	18	0.41	2.28	-2.9	-1.16	1.0	-451.8
1.60	19	0.36	1.96	-3.2	-1.25	1.0	-451.3
1.65	16	0.07	0.44	-3.7	-1.72	1.0	-451.8
1.70	18	0.43	2.43	-3.0	-1.21	1.0	-451.8
1.75	33	1.38	4.13	-6.6	-1.40	1.0	-451.5
1.80	30	2.15	7.18	-6.7	-1.61	1.0	-451.8
1.85	142	3.53	2.48	-7.3	-0.36	1.8	-451.7
1.90	33	2.67	8.19	-7.6	-1.68	2.4	-451.7
1.95	12	0.50	4.21	-7.6	-4.58	2.6	-451.7
2.00	15	0.33	2.26	2.6	1.26	2.7	-451.3

23 : CPT-01A : 02/25/91 10:45

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	15	0.29	1.88	2.7	1.25	2.8	-451.3
2.10	19	0.36	1.92	2.1	0.80	2.8	-451.3
2.15	24	1.86	7.81	1.5	0.44	2.8	-451.3
2.20	53	1.88	3.54	-4.6	-0.62	2.9	-451.7
2.25	36	1.29	3.53	-0.6	-0.11	3.0	-451.3
2.30	36	1.01	2.82	-1.7	-0.34	3.0	-451.5
2.35	27	1.13	4.17	-2.7	-0.72	3.0	-451.5
2.40	27	0.43	1.63	-1.9	-0.50	3.0	-451.0
2.45	36	0.31	0.86	-2.3	-0.46	3.0	-451.3
2.50	48	0.85	1.77	-0.4	-0.06	3.0	-451.0
2.55	38	1.03	2.74	-0.3	-0.04	2.9	-451.5
2.60	19	0.31	1.67	-0.5	-0.19	2.8	-451.7
2.65	9	0.17	1.81	0.3	0.24	2.8	-451.3
2.70	9	0.04	0.39	0.9	0.63	2.7	-451.3
2.75	15	0.99	6.50	1.3	0.63	2.7	-451.3
2.80	149	0.67	0.44	-1.1	-0.05	2.7	-451.3
2.85	69	0.09	0.13	0.1	0.00	2.8	-451.2
2.90	12	0.12	0.95	-0.0	-0.00	2.8	-451.5
2.95	14	0.07	0.52	-0.0	-0.01	2.9	-451.5
3.00	12	-0.19	1.61	0.4	0.22	3.0	-451.5
QUIT FOR	INCLINATION						
?00000?	35	0.12	0.34	-0.3	-6.73	3.3	-468.6
3.05	32	0.21	0.65	0.3	0.07	3.0	-451.7
3.10	60	0.29	0.48	-0.3	-0.03	3.2	-451.3
3.15	36	0.85	2.37	0.3	0.07	3.4	-451.3
3.20	43	1.61	3.71	1.1	0.17	3.5	-451.3
3.25	137	1.31	0.95	0.0	0.0	6.4	-451.0
3.30	24	1.38	5.62	-0.1	-0.03	9.0	-450.9
3.35	14	0.12	0.85	-0.1	-0.02	8.8	-450.4
3.40	4	-0.32	8.80	0.0	0.04	8.9	-450.6
3.45	6	-0.27	4.59	-0.1	-0.04	8.9	-450.3
3.50	23	-0.24	1.04	-0.7	-0.21	8.8	-450.4
3.55	42	?0000000000000000??0000000000000000?		-1.2	-0.20	8.7	-450.4
3.60	419	?0000000000000000??0000000000000000?		0.1	0.00	8.7	-450.7

WRITE # RODS USED ___

SOUNDING DATA IN FILE 24 02/25/91 11:05

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-01B

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	12	1.14	9.16	-0.1	-0.04	0.0	-451.7
0.10	127	1.40	1.09	0.4	0.02	0.0	-451.8
0.15	121	1.58	1.30	0.5	0.03	0.0	-452.0
0.20	131	2.05	1.56	-0.5	-0.02	0.0	-452.0
0.25	98	2.23	2.26	0.4	0.02	0.0	-451.8
0.30	128	2.24	1.74	2.3	0.12	0.0	-451.7
0.35	139	1.76	1.26	2.8	0.14	0.0	-452.0
0.40	123	1.58	1.28	3.3	0.19	0.0	-451.7
0.45	95	1.94	2.05	2.9	0.21	0.0	-451.7
0.50	68	1.14	1.66	2.5	0.25	0.0	-451.8
0.55	82	1.31	1.59	3.8	0.32	0.0	-451.3
0.60	104	1.92	1.84	-2.5	-0.17	0.0	-451.5
0.65	45	1.81	4.06	-7.6	-1.23	0.0	-451.7
0.70	27	1.54	5.68	-6.0	-1.58	0.0	-451.5
0.75	26	1.26	4.87	-3.9	-1.09	0.0	-451.3
0.80	29	1.07	3.69	-3.9	-0.96	0.0	-451.3
0.85	24	0.98	4.07	-3.9	-1.17	0.0	-451.3
0.90	32	0.73	2.28	-3.8	-0.86	0.0	-451.7
0.95	29	0.55	1.88	-3.8	-0.93	0.0	-451.5
1.00	221	0.92	0.41	-2.5	-0.08	0.1	-451.5
1.05	187	1.21	0.64	-1.1	-0.04	0.1	-451.7
1.10	138	0.82	0.59	-1.0	-0.05	0.1	-452.0
1.15	89	1.21	1.35	-0.5	-0.03	0.1	-451.7
1.20	32	1.01	3.10	-0.7	-0.14	0.1	-451.8
1.25	18	0.92	5.17	0.0	0.00	0.2	-451.3
1.30	32	0.83	2.60	0.9	0.20	0.2	-451.8
1.35	22	0.98	4.43	-1.5	-0.48	0.2	-451.8
1.40	14	0.73	5.09	-0.1	-0.06	0.2	-452.1
1.45	20	0.70	3.40	0.1	0.03	0.2	-451.8
1.50	23	0.83	3.52	-2.1	-0.64	0.2	-452.1
1.55	20	0.80	4.08	-1.8	-0.66	0.2	-452.0
1.60	14	0.62	4.38	-1.1	-0.55	0.2	-451.8
1.65	12	0.50	4.33	-0.1	-0.08	0.2	-451.5
1.70	13	0.46	3.63	-0.0	-0.00	0.2	-451.7
1.75	12	0.51	4.38	0.2	0.10	0.2	-452.0
1.80	15	0.65	4.49	-0.0	-0.00	0.2	-451.8
1.85	12	0.68	5.70	-0.3	-0.15	0.2	-451.7
1.90	13	0.63	4.77	-0.1	-0.05	0.2	-451.8
1.95	13	0.64	4.81	0.1	0.04	0.2	-451.8
2.00	25	0.60	2.34	-0.5	-0.14	0.2	-451.3

24 : CPT-01B : 02/25/91 11:05

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	21	0.92	4.44	0.1	0.02	0.2	-452.0
2.10	33	1.00	3.01	-1.0	-0.21	0.2	-451.8
2.15	28	1.30	4.59	-0.0	-0.0	0.2	-451.7
2.20	28	1.05	3.70	-0.8	-0.19	0.2	-451.8
2.25	17	0.96	5.59	0.1	0.05	0.2	-451.7
2.30	15	0.73	4.93	-0.1	-0.02	0.2	-451.3
2.35	12	0.42	3.39	0.2	0.09	0.2	-451.8
2.40	16	1.27	7.88	0.3	0.15	0.2	-452.0
2.45	47	1.25	2.66	-1.3	-0.19	0.2	-451.8
2.50	16	1.45	9.08	0.1	0.02	0.2	-451.3
2.55	27	1.33	5.00	-0.3	-0.08	0.2	-451.5
2.60	19	1.06	5.47	0.2	0.08	0.2	-451.8
2.65	29	1.19	4.08	-0.3	-0.08	0.2	-451.8
2.70	22	1.37	6.24	0.2	0.05	0.2	-451.7
2.75	10	1.22	12.62	-0.3	-0.17	0.1	-451.8
2.80	14	0.35	2.44	-0.6	-0.29	0.1	-451.5
2.85	9	0.41	4.54	-0.1	-0.02	0.1	-452.0
2.90	18	0.42	2.36	-0.3	-0.11	0.1	-451.8
2.95	6	0.39	6.71	-0.1	-0.04	0.1	-451.8
3.00	5	0.30	5.55	-0.8	-1.02	0.1	-451.8
3.05	5	0.08	1.61	-0.9	-1.26	0.1	-452.0
3.10	11	0.95	8.69	-0.5	-0.32	0.1	-451.5
3.15	122	0.51	0.41	-1.7	-0.09	0.3	-451.5
3.20	103	1.75	1.69	-0.0	-0.00	0.6	-451.8
3.25	54	1.23	2.27	-0.3	-0.03	0.6	-451.8
3.30	18	1.30	7.12	-0.1	-0.03	0.3	-452.0
3.35	112	1.03	0.91	-0.1	-0.00	0.3	-451.5
3.40	138	2.70	1.95	0.1	0.00	0.2	-452.0
3.45	16	2.71	17.25	0.1	0.04	0.2	-451.8
3.50	48	0.60	1.26	-0.0	-0.0	0.2	-451.7
3.55	11	0.59	5.54	-2.5	-1.72	0.1	-452.0
3.60	5	0.69	14.83	-3.7	-5.66	0.1	-452.0
QUIT FOR ?000000?	TIP RESISTANCE 1155	1.16	0.10	2.0	-0.19	1.0	-468.6
3.65	4	?0000000000000000??0000000000000000?		-1.7	-2.83	0.1	-452.0
3.70	109	?0000000000000000??0000000000000000?		-0.7	-0.04	0.3	-451.3

WRITE # RODS USED ___

SOUNDING DATA IN FILE 25 02/25/91 11:55

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-01C

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	139	0.32	0.23	0.2	0.01	0.0	-451.3
0.10	423	0.82	0.19	-0.1	-0.00	-0.0	-451.7
0.15	242	1.42	0.58	0.1	0.00	0.0	-451.5
0.20	124	2.24	1.80	-0.0	-0.00	0.0	-451.3
0.25	63	2.09	3.33	0.2	0.02	0.0	-451.3
0.30	40	1.85	4.63	1.1	0.20	0.0	-451.3
0.35	44	1.45	3.28	24.7	4.01	0.0	-451.7
0.40	38	1.40	3.66	-2.7	-0.51	0.0	-451.8
0.45	32	1.37	4.32	-7.1	-1.61	0.0	-451.8
0.50	30	1.27	4.19	-8.4	-1.99	0.0	-451.3
0.55	29	1.26	4.37	-8.7	-2.18	0.0	-451.8
0.60	29	1.30	4.42	-8.5	-2.09	0.0	-451.7
0.65	29	1.36	4.66	-9.1	-2.24	0.0	-451.7
0.70	28	1.40	5.02	-8.3	-2.12	0.0	-451.8
0.75	27	1.41	5.27	-8.4	-2.27	0.0	-451.7
0.80	26	1.32	5.01	-7.9	-2.15	0.0	-451.3
0.85	23	1.27	5.50	-7.6	-2.37	0.0	-451.5
0.90	24	1.24	5.07	-7.5	-2.22	0.0	-451.3
0.95	22	1.25	5.59	-7.4	-2.39	0.0	-451.7
1.00	22	1.21	5.42	-7.8	-2.50	0.0	-452.0
1.05	23	1.13	4.93	-7.1	-2.22	0.0	-451.3
1.10	21	1.30	6.06	-6.7	-2.25	0.0	-452.0
1.15	23	1.44	6.28	-7.0	-2.19	0.0	-451.7
1.20	21	1.49	6.97	-5.9	-2.00	0.0	-452.0
1.25	22	1.54	7.09	-5.5	-1.81	0.0	-451.3
1.30	21	1.50	7.11	-5.2	-1.76	0.0	-451.7
1.35	21	1.46	6.83	-5.0	-1.67	0.0	-451.7
1.40	23	1.40	6.07	-5.0	-1.57	0.0	-451.3
1.45	24	1.35	5.61	-4.8	-1.43	0.0	-451.3
1.50	24	1.26	5.31	-4.8	-1.46	0.0	-451.5
1.55	23	1.30	5.61	-4.1	-1.27	-0.0	-452.0
1.60	25	1.31	5.17	-4.2	-1.18	0.0	-451.8
1.65	25	1.31	5.19	-3.5	-1.00	0.0	-451.7
1.70	24	1.27	5.27	-3.2	-0.94	0.0	-451.3
1.75	25	1.23	4.94	-3.0	-0.86	0.0	-451.8
1.80	25	1.19	4.70	-2.8	-0.78	0.0	-452.0
1.85	26	1.11	4.32	-2.9	-0.82	0.0	-451.7
1.90	23	1.03	4.37	-2.6	-0.79	0.0	-451.7
1.95	23	1.00	4.29	-2.4	-0.73	0.0	-451.5
2.00	22	1.01	4.61	-2.2	-0.71	0.0	-451.7

25 : CPT-01C : 02/25/91 11:55

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	21	1.05	4.88	-1.9	-0.63	0.0	-451.7
2.10	22	1.06	4.87	-1.9	-0.62	0.0	-451.5
2.15	21	1.04	4.93	-1.9	-0.64	0.0	-451.2
2.20	21	0.98	4.63	-1.8	-0.62	0.0	-451.3
2.25	21	0.94	4.56	-1.9	-0.64	0.0	-451.3
2.30	21	0.91	4.40	-1.6	-0.57	0.0	-451.7
2.35	18	0.92	5.10	-1.3	-0.53	0.0	-451.8
2.40	19	0.92	4.87	-1.5	-0.58	0.0	-451.3
2.45	19	0.90	4.78	-1.9	-0.71	0.0	-451.5
2.50	16	0.82	5.08	-1.8	-0.77	0.0	-451.7
2.55	15	0.74	4.82	-1.5	-0.68	0.0	-452.0
2.60	15	0.66	4.48	-1.3	-0.63	0.0	-451.7
2.65	15	0.62	4.18	-1.1	-0.50	0.0	-451.5
2.70	15	0.65	4.47	-0.7	-0.35	0.0	-451.7
2.75	16	0.69	4.17	-0.8	-0.32	0.0	-451.7
2.80	16	0.63	3.92	-0.6	-0.28	0.0	-451.2
2.85	15	0.52	3.37	-0.3	-0.16	0.0	-451.3
2.90	14	0.48	3.42	-0.1	-0.02	0.0	-451.8
2.95	15	0.46	3.07	0.1	0.02	0.0	-451.2
3.00	14	0.38	2.80	0.4	0.19	0.0	-451.8
3.05	15	0.34	2.26	0.7	0.34	0.0	-451.5
3.10	13	0.30	2.33	1.3	0.70	0.0	-451.8
3.15	14	0.27	1.95	1.9	0.96	0.0	-451.8
3.20	16	0.25	1.61	4.7	2.16	0.0	-451.5
3.25	13	0.25	1.93	5.8	3.20	0.0	-451.7
3.30	16	0.20	1.23	6.3	2.84	0.0	-451.2
3.35	14	0.18	1.28	7.3	3.63	0.0	-451.7
3.40	14	0.15	1.09	8.1	4.11	0.0	-451.5
3.45	11	0.16	1.40	9.9	6.27	0.0	-451.7
3.50	14	0.13	0.98	11.0	5.81	0.0	-451.5
3.55	13	0.12	0.89	12.8	6.86	0.0	-451.3
3.60	14	0.15	1.07	15.2	7.71	0.0	-451.5
3.65	16	0.22	1.38	18.0	8.31	0.0	-451.5
3.70	20	0.19	0.94	20.6	7.54	0.0	-451.7
3.75	22	0.19	0.88	20.4	6.82	0.0	-451.5
3.80	20	0.21	1.05	26.8	9.66	0.0	-451.7
3.85	21	0.32	1.52	34.4	11.88	0.0	-451.8
3.90	23	0.32	1.40	39.9	12.60	0.0	-451.7
3.95	23	0.44	1.89	41.4	12.93	0.0	-451.5
4.00	24	0.59	2.45	41.3	12.26	0.0	-451.7
4.05	27	0.76	2.85	41.7	11.30	0.0	-451.7
4.10	30	1.14	3.78	42.9	10.23	0.0	-451.8
4.15	38	1.44	3.83	3.5	0.67	0.0	-451.8
4.20	55	1.64	3.00	7.0	0.92	0.0	-451.8
4.25	72	2.53	3.48	1.3	0.12	0.0	-451.7
4.30	106	2.28	2.14	-5.3	-0.35	0.0	-452.0
4.35	145	2.09	1.44	-9.2	-0.45	0.0	-451.8
4.40	161	1.56	0.97	-10.5	-0.47	0.1	-451.7
4.45	127	3.99	3.14	-11.5	-0.65	0.1	-451.8

PORE PRESSURE DECAY (5 SEC)	-11.5	-11.3	-11.0	-10.5	-9.7	-8.9	-7.6	-6.2	-4.6	-3.2	-1.9	-0.8	-0.1	0.3

25 : CPT-01C : 02/25/91 11:55

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.6 0.7	0.7 0.8	0.8 0.8	0.9 1.0 1.0	1.1 1.1	1.2 1.2	1.2 1.2	1.3 1.2 1.4
1.3 1.3	1.4 1.4	1.3 1.3	1.3 1.4 1.3	1.3			
4.50	212	3.68	1.73	-11.7	-0.39	0.1	-451.3
4.55	195	3.67	1.88	-10.0	-0.36	0.1	-451.3
4.60	261	4.75	1.82	-12.0	-0.33	0.1	-451.3
4.65	226	4.68	2.07	-12.7	-0.40	0.1	-451.3
4.70	270	5.87	2.17	-12.7	-0.33	0.1	-451.7
4.75	341	7.91	2.31	-12.6	-0.26	0.1	-451.5
4.80	392	6.12	1.56	-12.6	-0.23	0.1	-451.7
4.85	417	4.69	1.12	-12.5	-0.21	0.1	-451.3
4.90	332	3.66	1.10	-11.7	-0.25	0.1	-451.7
4.95	335	3.65	1.08	-12.3	-0.26	0.1	-451.2
5.00	294	2.63	0.89	-12.4	-0.30	0.1	-451.7
5.05	231	3.18	1.37	-12.7	-0.39	0.1	-451.2
5.10	207	1.70	0.82	-12.7	-0.44	0.1	-451.3
5.15	147	1.22	0.82	-12.7	-0.62	0.1	-451.7
5.20	137	1.28	0.93	-12.3	-0.64	0.1	-451.3
5.25	206	4.01	1.94	-12.4	-0.43	0.1	-451.3
5.30	285	3.20	1.12	-12.1	-0.30	0.1	-451.7
5.35	337	4.81	1.42	-12.1	-0.25	0.2	-451.2
5.40	239	4.42	1.84	-12.0	-0.36	0.2	-451.7
5.45	166	4.20	2.53	-11.7	-0.50	0.2	-451.7
5.50	118	3.84	3.25	-11.4	-0.69	0.2	-451.5
5.55	141	4.25	3.00	-11.3	-0.57	0.2	-451.7
5.60	137	3.86	2.81	-11.6	-0.60	0.2	-451.5
5.65	69	2.47	3.59	-11.7	-1.22	0.2	-451.5
5.70	37	1.11	3.00	-11.8	-2.30	0.2	-451.7
5.75	30	0.88	2.89	-11.7	-2.78	0.2	-451.7
5.80	31	1.03	3.31	-11.8	-2.73	0.2	-451.7
5.85	28	1.13	4.04	-11.7	-3.00	0.2	-451.8
5.90	28	1.06	3.79	-11.8	-3.03	0.2	-451.5
5.95	27	0.98	3.59	-11.8	-3.09	0.3	-451.3
6.00	30	1.09	3.68	-11.9	-2.89	0.3	-451.3
6.05	31	1.53	4.91	-11.8	-2.73	0.2	-451.8
6.10	42	1.28	3.02	-11.9	-2.01	0.2	-451.7
6.15	30	1.24	4.09	-11.8	-2.78	0.3	-451.5
6.20	35	1.04	2.99	-11.8	-2.42	0.3	-451.5
6.25	26	1.25	4.72	-11.6	-3.14	0.3	-451.7
6.30	41	1.18	2.87	-11.6	-2.05	0.3	-451.3
6.35	28	1.23	4.40	-11.7	-3.00	0.3	-451.7
6.40	64	1.76	2.73	-11.6	-1.29	0.3	-451.3
6.45	143	3.44	2.40	-12.0	-0.60	0.3	-451.5
6.50	132	4.19	3.18	-12.1	-0.66	0.3	-451.2
6.55	104	4.35	4.17	-12.0	-0.82	0.3	-451.3
6.60	127	4.60	3.62	-11.8	-0.67	0.3	-451.5
6.65	168	3.94	2.34	-11.9	-0.51	0.4	-451.7
6.70	210	4.04	1.91	-12.0	-0.41	0.4	-451.3
6.75	216	3.82	1.76	-12.0	-0.39	0.4	-451.5
6.80	213	4.02	1.88	-12.2	-0.41	0.4	-451.3
6.85	248	4.74	1.91	-12.1	-0.35	0.4	-451.5

25 : CPT-01C : 02/25/91 11:55

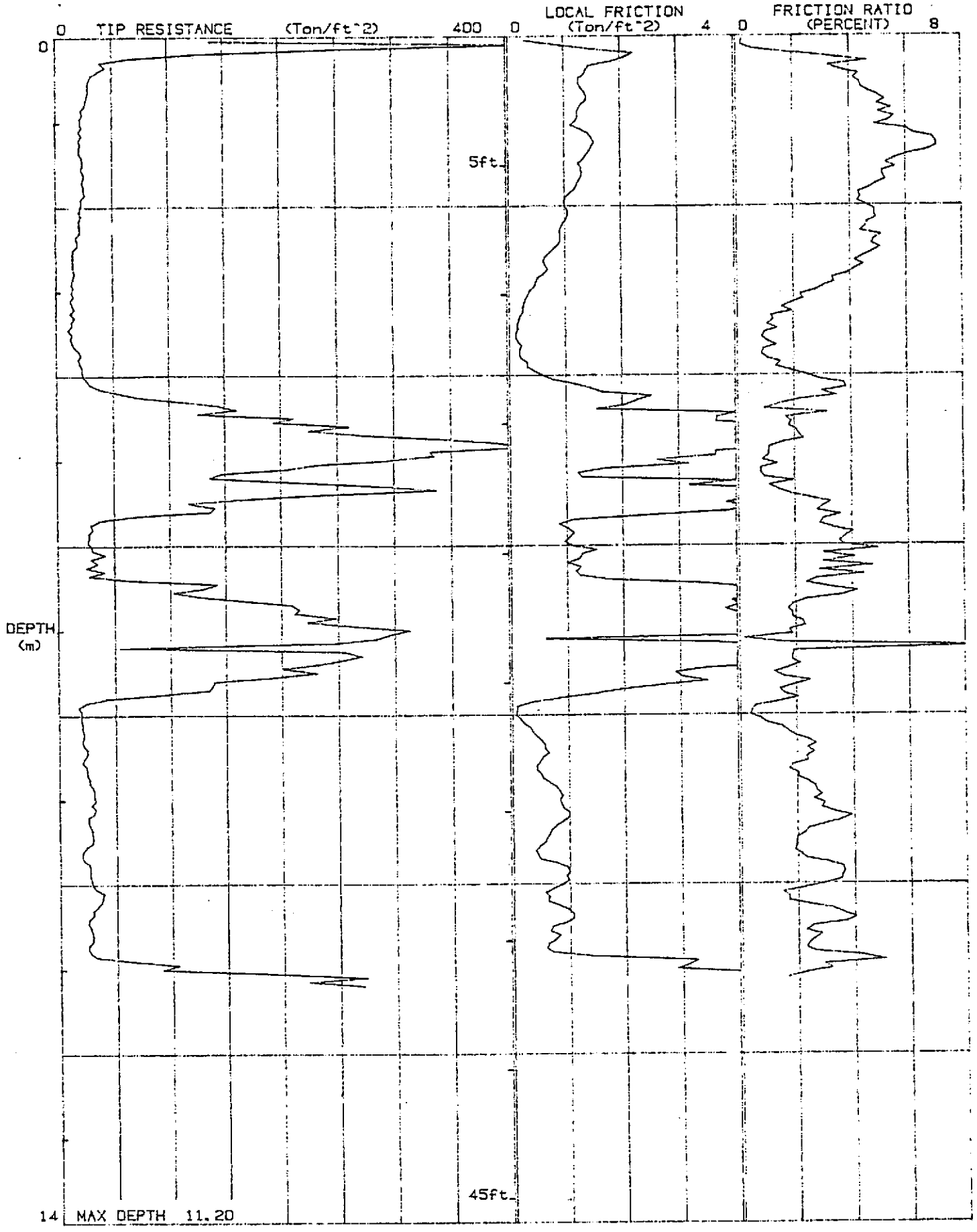
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
6.90	224	5.03	2.25	-12.0	-0.38	0.4	-451.5
6.95	266	6.21	2.33	-12.1	-0.32	0.4	-451.0
7.00	313	5.63	1.79	-12.1	-0.27	0.4	-451.5
7.05	296	5.55	1.87	-11.9	-0.28	0.4	-451.3
7.10	284	0.62	0.21	-12.0	-0.30	0.4	-451.2
7.15	249	3.69	1.48	-12.0	-0.34	0.4	-451.3
7.20	55	4.94	8.93	-12.3	-1.60	0.4	-451.8
7.25	256	4.92	1.92	-12.2	-0.34	0.4	-451.0
7.30	271	5.13	1.89	-12.1	-0.32	0.4	-451.3
7.35	254	4.78	1.87	-12.0	-0.34	0.4	-451.5
7.40	233	4.95	2.12	-12.2	-0.37	0.4	-451.3
7.45	202	3.51	1.73	-12.3	-0.43	0.4	-451.5
7.50	231	2.93	1.26	-12.2	-0.38	0.4	-451.5
7.55	196	3.03	1.55	-12.3	-0.45	0.4	-451.5
7.60	140	3.47	2.47	-12.7	-0.65	0.4	-451.2
7.65	138	2.68	1.94	-12.8	-0.66	0.4	-451.2
7.70	135	1.94	1.44	-12.6	-0.67	0.4	-451.8
7.75	94	1.47	1.57	-12.8	-0.97	0.3	-451.7
7.80	42	0.85	2.05	-12.9	-2.23	0.3	-451.2
7.85	24	0.34	1.41	-12.9	-3.89	0.3	-451.5
7.90	18	0.10	0.55	-12.9	-5.04	0.3	-451.8
7.95	20	0.09	0.43	-13.0	-4.60	0.3	-451.5
8.00	20	0.08	0.40	-12.9	-4.63	0.3	-451.2
8.05	20	0.15	0.74	-12.9	-4.69	0.3	-451.8
8.10	21	0.21	0.96	-12.9	-4.34	0.3	-451.2
8.15	21	0.32	1.51	-12.9	-4.41	0.3	-451.8
8.20	22	0.37	1.71	-12.8	-4.20	0.3	-451.7
8.25	22	0.43	1.94	-12.9	-4.15	0.3	-451.2
8.30	21	0.52	2.41	-12.8	-4.31	0.4	-451.7
8.35	22	0.58	2.66	-12.8	-4.21	0.4	-451.8
8.40	25	0.59	2.39	-12.9	-3.77	0.4	-451.3
8.45	25	0.65	2.59	-12.9	-3.73	0.4	-451.3
8.50	23	0.55	2.36	-12.8	-3.93	0.4	-451.7
8.55	21	0.50	2.40	-12.8	-4.38	0.4	-451.7
8.60	24	0.44	1.85	-12.8	-3.91	0.4	-451.7
8.65	25	0.44	1.76	-12.9	-3.71	0.4	-451.8
8.70	25	0.51	2.06	-12.9	-3.77	0.4	-451.7
8.75	27	0.55	2.08	-13.0	-3.53	0.4	-451.7
8.80	27	0.66	2.41	-12.8	-3.37	0.4	-451.3
8.85	30	0.78	2.64	-12.9	-3.14	0.4	-451.8
8.90	31	0.84	2.69	-13.0	-2.98	0.4	-451.5
8.95	31	0.89	2.86	-12.9	-2.97	0.4	-451.7
9.00	32	0.85	2.62	-13.0	-2.89	0.4	-452.0
9.05	29	0.87	2.96	-12.8	-3.13	0.4	-451.8
9.10	32	0.91	2.89	-12.8	-2.92	0.4	-451.7
9.15	31	1.01	3.29	-12.9	-3.02	0.4	-451.8
9.20	26	1.01	3.90	-12.8	-3.54	0.4	-451.8
9.25	26	0.91	3.54	-12.9	-3.64	0.4	-451.3
9.30	27	0.79	2.95	-12.8	-3.45	0.4	-451.3
9.35	29	0.70	2.39	-12.8	-3.16	0.4	-451.2

25 : CPT-01C : 02/25/91 11:55

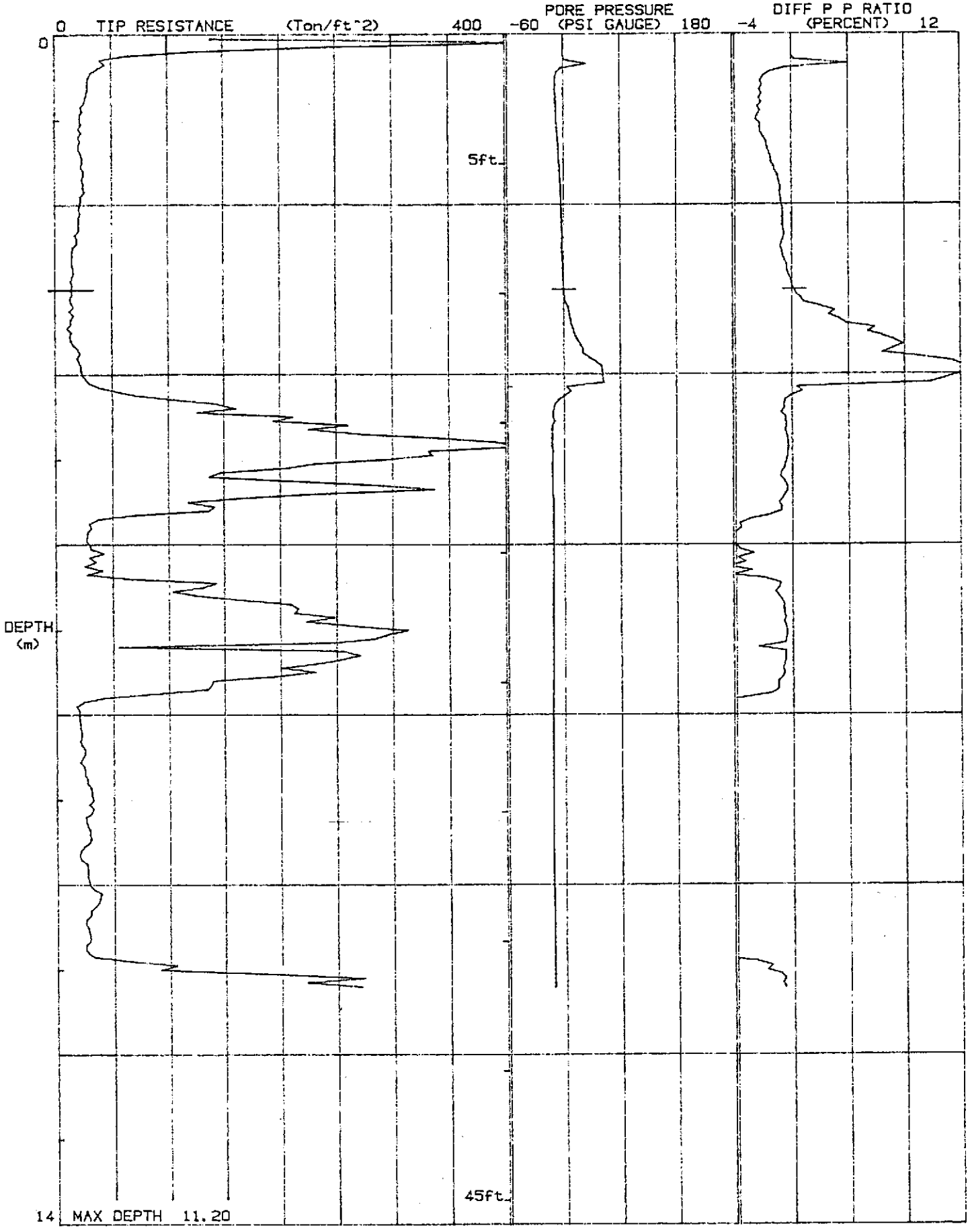
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
9.40	29	0.66	2.27	-12.8	-3.18	0.4	-451.5
9.45	30	0.61	2.01	-13.1	-3.10	0.4	-451.7
9.50	29	0.58	1.96	-12.9	-3.16	0.4	-451.3
9.55	24	0.48	1.97	-12.9	-3.78	0.4	-451.5
9.60	21	0.41	1.92	-12.7	-4.33	0.4	-451.3
9.65	20	0.44	2.14	-12.9	-4.54	0.4	-451.8
9.70	21	0.48	2.30	-12.9	-4.42	0.4	-451.7
9.75	26	0.79	3.10	-12.9	-3.63	0.4	-451.3
9.80	27	0.97	3.60	-12.8	-3.43	0.4	-451.7
9.85	27	1.01	3.65	-12.9	-3.36	0.4	-451.0
9.90	27	0.96	3.59	-12.6	-3.40	0.4	-451.7
9.95	28	0.99	3.54	-12.8	-3.30	0.5	-451.7
10.00	29	0.89	3.02	-12.6	-3.07	0.5	-451.3
10.05	32	0.73	2.29	-12.7	-2.86	0.5	-451.2
10.10	39	0.58	1.50	-12.7	-2.36	0.5	-451.7
10.15	38	0.64	1.69	-12.5	-2.38	0.5	-451.5
10.20	37	0.62	1.68	-12.6	-2.46	0.5	-451.5
10.25	34	0.81	2.39	-12.5	-2.67	0.6	-451.5
10.30	30	0.98	3.25	-12.3	-2.91	0.6	-451.3
10.35	30	1.07	3.62	-12.5	-3.04	0.6	-451.5
10.40	26	1.07	4.03	-12.4	-3.38	0.6	-451.8
10.45	25	0.95	3.72	-12.4	-3.51	0.6	-451.7
10.50	27	0.69	2.53	-12.4	-3.28	0.6	-451.8
10.55	28	0.66	2.31	-12.4	-3.15	0.6	-451.2
10.60	29	0.82	2.81	-12.4	-3.06	0.6	-451.5
10.65	29	0.75	2.59	-12.3	-3.04	0.6	-451.7
10.70	26	0.63	2.40	-12.3	-3.37	0.6	-451.5
10.75	25	0.59	2.30	-12.3	-3.49	0.6	-451.2
10.80	27	0.69	2.58	-12.3	-3.33	0.6	-451.2
10.85	32	1.38	4.30	-12.3	-2.74	0.6	-451.2
10.90	64	3.27	5.06	-12.2	-1.35	0.6	-451.7
10.95	106	3.13	2.94	-12.3	-0.83	0.7	-451.2
11.00	92	2.92	3.16	-12.3	-0.95	0.7	-451.5
11.05	189	4.38	2.31	-12.0	-0.45	0.7	-451.5
11.10	274	4.58	1.67	-12.4	-0.32	0.7	-451.0
11.15	223	?0000000000000000??	0000000000000000?	-12.2	-0.39	0.7	-451.0
11.20	271	?0000000000000000??	0000000000000000?	-12.0	-0.32	0.7	-451.3

WRITE # RODS USED ___

JOB # : 82580
DATE : 02/25/91 11:55
LOCATION : CPT-01C
FILE : 25



JOB # : 82580
DATE : 02/25/91 11:55
LOCATION : CPT-01C
FILE : 25



SOUNDING DATA IN FILE 26 02/25/91 12:45

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-02

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	408	0.36	0.08	0.1	0.00	0.0	-451.7
0.10	338	1.36	0.40	0.0	0.00	0.0	-451.7
0.15	197	1.68	0.85	0.1	0.00	0.0	-451.7
0.20	107	1.81	1.69	0.0	0.00	-0.0	-451.3
0.25	57	1.66	2.90	0.0	0.0	0.0	-451.5
0.30	34	1.48	4.34	0.0	0.0	0.0	-451.5
0.35	32	1.16	3.62	-2.1	-0.46	0.0	-451.2
0.40	22	0.94	4.34	-2.3	-0.75	0.0	-451.2
0.45	17	0.62	3.66	-1.6	-0.65	0.0	-451.7
0.50	18	0.66	3.56	-1.5	-0.57	0.0	-451.5
0.55	23	0.76	3.33	-3.4	-1.07	0.0	-451.5
0.60	25	0.79	3.19	-6.8	-1.99	0.0	-451.2
0.65	20	0.78	3.98	-6.9	-2.53	0.0	-451.5
0.70	17	0.74	4.39	-6.6	-2.81	0.0	-451.8
0.75	15	0.73	4.93	-6.3	-3.03	0.0	-451.2
0.80	16	0.76	4.77	-6.1	-2.75	0.0	-451.7
0.85	21	0.88	4.18	-5.8	-1.99	-0.0	-451.0
0.90	22	0.98	4.44	-5.7	-1.85	0.0	-451.8
0.95	21	1.00	4.81	-5.4	-1.88	0.0	-451.5
1.00	20	0.94	4.77	-5.1	-1.86	0.0	-451.7
1.05	20	0.95	4.71	-5.1	-1.83	-0.0	-451.8
1.10	21	1.03	4.84	-5.1	-1.71	0.0	-451.2
1.15	20	1.09	5.29	-5.1	-1.79	0.0	-451.7
1.20	22	1.19	5.40	-4.3	-1.41	0.0	-451.2
1.25	23	1.28	5.54	-4.2	-1.32	0.0	-451.7
1.30	23	1.37	6.00	-4.2	-1.30	0.0	-451.7
1.35	23	1.38	6.11	-4.0	-1.28	0.0	-451.5
1.40	21	1.40	6.52	-3.9	-1.30	0.0	-451.7
1.45	22	1.39	6.32	-3.9	-1.29	0.0	-452.0
1.50	21	1.34	6.29	-3.9	-1.30	0.0	-452.1
1.55	22	1.30	6.06	-3.8	-1.27	0.0	-451.7
1.60	21	1.26	5.88	-3.8	-1.27	0.0	-451.7
1.65	23	1.21	5.35	-4.0	-1.28	0.0	-451.7
1.70	20	1.09	5.52	-3.8	-1.39	0.0	-451.7
1.75	21	0.97	4.61	-3.8	-1.30	0.0	-451.0
1.80	23	0.77	3.31	-3.9	-1.19	0.0	-451.2
1.85	27	0.82	3.00	-3.8	-0.99	0.0	-451.8
1.90	24	0.89	3.68	-1.4	-0.40	0.0	-451.7
1.95	20	0.75	3.73	-1.0	-0.36	0.0	-451.7
2.00	19	0.55	2.95	-1.1	-0.40	0.0	-451.5

26 : CPT-02 : 02/25/91 12:45

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	15	0.41	2.72	-1.1	-0.51	0.0	-451.3
2.10	13	0.46	3.48	-1.2	-0.64	0.0	-451.8
2.15	14	0.57	4.04	-1.4	-0.72	0.0	-451.3
2.20	14	0.64	4.53	-1.7	-0.85	0.0	-451.5
2.25	16	0.60	3.86	-1.7	-0.76	0.0	-451.2
2.30	17	0.59	3.43	-1.5	-0.61	0.0	-451.3
2.35	22	0.60	2.74	-1.5	-0.50	0.0	-451.0
2.40	18	0.44	2.48	-1.5	-0.60	0.0	-451.3
2.45	11	0.33	3.07	-1.2	-0.82	0.0	-451.7
2.50	10	0.34	3.37	-1.1	-0.79	0.0	-451.3
2.55	10	0.35	3.62	-1.1	-0.78	0.0	-451.3
2.60	9	0.38	4.41	-0.9	-0.75	0.0	-451.3
2.65	9	0.42	4.77	-1.0	-0.75	0.0	-451.3
2.70	9	0.42	4.94	-0.9	-0.73	0.0	-451.3
2.75	8	0.33	4.19	-0.6	-0.51	0.0	-451.3
2.80	7	0.28	3.82	-0.6	-0.61	0.0	-451.7
2.85	8	0.23	2.79	-0.6	-0.48	0.0	-451.3
2.90	7	0.21	2.89	-0.3	-0.29	0.0	-451.7
2.95	7	0.19	2.69	-0.3	-0.34	0.0	-451.7
3.00	7	0.22	3.01	-0.2	-0.14	0.0	-451.2
3.05	9	0.27	2.95	-0.2	-0.14	0.0	-451.2
3.10	9	0.27	3.05	-0.2	-0.12	0.0	-451.2
3.15	8	0.23	3.12	0.0	0.0	0.0	-451.3
3.20	8	0.20	2.56	-0.2	-0.12	0.0	-451.7
3.25	9	0.21	2.27	-0.3	-0.24	0.0	-451.7
3.30	10	0.20	1.90	-0.2	-0.13	0.0	-451.3
3.35	10	0.17	1.65	-0.1	-0.06	0.0	-450.9
3.40	10	0.12	1.28	-0.1	-0.02	0.0	-451.2
3.45	9	0.10	1.02	0.1	0.02	0.0	-451.0
3.50	8	0.08	1.05	0.1	0.09	0.0	-451.3
3.55	7	0.12	1.65	0.3	0.24	0.0	-451.5
3.60	10	0.16	1.56	0.3	0.17	0.0	-451.2
3.65	9	0.19	2.10	0.4	0.34	0.0	-451.2
3.70	9	0.26	2.99	0.5	0.39	0.0	-451.2
3.75	9	0.33	3.64	0.5	0.39	0.0	-451.7
3.80	10	0.39	3.74	0.6	0.42	0.0	-451.2
3.85	11	0.42	3.62	0.7	0.42	0.0	-451.2
3.90	11	0.40	3.52	0.7	0.45	0.0	-451.0
3.95	11	0.41	3.75	0.9	0.57	0.0	-451.3
4.00	11	0.38	3.50	1.1	0.74	0.0	-451.5
4.05	11	0.38	3.37	1.2	0.73	0.0	-451.2
4.10	12	0.37	3.01	1.2	0.71	0.0	-451.2
4.15	11	0.35	3.17	1.4	0.89	0.0	-451.5
4.20	13	0.36	2.84	1.7	0.95	0.0	-451.2
4.25	14	0.35	2.58	1.8	0.95	-0.0	-451.7
4.30	16	0.27	1.69	2.1	0.93	0.0	-451.8
4.35	17	0.26	1.55	2.0	0.86	0.0	-451.5
4.40	23	0.27	1.18	2.3	0.73	0.0	-451.3
4.45	26	0.46	1.77	2.6	0.71	0.0	-451.7
4.50	26	0.43	1.66	2.5	0.70	0.0	-451.3

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
4.55	25	0.35	1.40	2.4	0.69	0.0	-451.7
4.60	22	0.26	1.19	2.1	0.68	0.0	-451.8
4.65	20	0.17	0.82	2.1	0.74	0.0	-451.3
4.70	15	0.11	0.70	2.7	1.25	0.0	-451.7
4.75	14	0.14	0.96	2.8	1.39	0.0	-451.5
4.80	16	0.17	1.02	2.9	1.28	0.0	-451.5
4.85	17	0.19	1.11	3.2	1.32	0.0	-451.3
4.90	19	0.25	1.32	3.5	1.34	0.0	-451.8
4.95	19	0.31	1.62	3.4	1.27	0.0	-451.8
5.00	21	0.29	1.39	3.7	1.28	0.0	-451.2
5.05	20	0.30	1.50	3.9	1.30	0.0	-451.5
5.10	20	0.27	1.33	3.9	1.35	0.0	-451.5
5.15	19	0.27	1.42	4.1	1.54	0.0	-451.7
5.20	23	0.31	1.37	5.5	1.75	0.0	-451.0
5.25	21	0.39	1.82	5.8	1.96	0.0	-451.7
5.30	23	0.52	2.20	6.1	1.86	0.0	-451.2
5.35	26	0.50	1.95	6.2	1.73	0.0	-451.0
5.40	27	0.52	1.91	6.4	1.71	0.0	-451.3
5.45	24	0.54	2.21	6.8	2.00	0.0	-451.7
5.50	28	0.60	2.17	6.6	1.69	0.0	-451.0
5.55	35	0.71	2.05	6.5	1.34	0.0	-451.2
5.60	32	0.74	2.27	6.6	1.45	0.0	-451.3
5.65	36	0.71	1.94	6.7	1.32	0.0	-451.7
5.70	29	0.82	2.85	2.5	0.63	0.0	-451.3
5.75	34	0.96	2.80	2.9	0.61	0.0	-451.5
5.80	50	1.34	2.66	3.4	0.48	0.0	-451.5
5.85	80	1.95	2.43	4.1	0.36	0.0	-451.2
5.90	101	2.53	2.50	2.4	0.16	0.0	-451.0
5.95	72	2.43	3.37	-7.8	-0.77	0.0	-451.7
6.00	63	2.11	3.35	-7.6	-0.86	0.0	-451.0
6.05	76	2.24	2.95	-7.1	-0.67	0.0	-451.7
6.10	102	2.22	2.18	-7.1	-0.50	0.0	-451.5
6.15	86	2.78	3.22	-7.8	-0.64	0.0	-451.7
6.20	100	2.75	2.76	-7.2	-0.51	0.0	-451.3
6.25	101	3.47	3.44	-7.8	-0.55	0.0	-451.5
6.30	119	2.36	1.98	-9.1	-0.55	0.0	-451.8
6.35	144	5.35	3.69	-8.9	-0.44	0.0	-451.5
6.40	304	3.60	1.18	-9.1	-0.21	0.0	-451.3
6.45	227	4.88	2.15	-9.4	-0.29	0.0	-451.2
PORE PRESSURE DECAY (5 SEC)		-9.9 -9.8 -9.7 -9.7 -9.6 -9.6 -9.6 -9.6 -9.6 -9.5 -9.4 -9.4 -9.4 -9.5 -9.4 -9.4 -9.4 -9.3 -9.4 -9.3 -9.4					
6.50	178	3.93	2.20	-9.9	-0.39	0.0	-451.5
6.55	157	5.37	3.42	-10.1	-0.46	0.0	-451.2
6.60	197	5.36	2.71	-9.3	-0.33	0.0	-451.5
6.65	204	6.23	3.04	-9.1	-0.32	0.0	-451.2
6.70	190	5.81	3.05	-9.0	-0.34	0.0	-451.7
6.75	263	6.95	2.63	-8.4	-0.22	0.0	-451.5
6.80	356	6.20	1.74	-8.7	-0.17	0.0	-451.0
6.85	378	6.50	1.72	-8.9	-0.16	0.1	-451.5
PORE PRESSURE DECAY (5 SEC)		-9.2 -9.3 -9.4 -9.4 -9.5 -9.6 -9.7 -9.7 -9.7 -9.7 -9.7 -9.5 -9.2 -9.0					

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
-8.8 -8.4 -8.3 -8.0	-7.6 -7.2	-6.8 -6.3 -5.8	-5.4 -4.6	-4.1 -3.5	-2.8 -2.1	-1.4 -0.9 -0.5	
0.0 0.2 0.5 0.7	0.8 0.9	1.0 1.2 1.3	1.5 1.6	1.8 1.9	2.0 2.1	2.2 2.4 2.5	
2.6 2.7 2.7 2.8	2.9 2.9	3.1 3.2 3.3	3.3 3.3	3.4 3.4	3.5 3.5	3.6 3.6 3.7	
3.7 3.8 3.8 3.9	3.9 4.0	4.0 4.0 4.0	4.0 4.1	4.0 4.0	4.0 4.0	4.1 4.1 4.1	
4.1							
6.90	392	2.17	0.55	-9.1	-0.16	0.1	-451.3
6.95	391	2.37	0.60	-9.1	-0.16	0.1	-451.7
7.00	321	1.63	0.50	-9.6	-0.21	0.1	-451.5
7.05	237	3.41	1.43	-11.2	-0.33	0.1	-451.2
7.10	103	2.68	2.59	-12.5	-0.87	0.1	-451.3
7.15	99	2.52	2.54	-12.1	-0.87	0.1	-451.7
7.20	128	2.36	1.84	-11.8	-0.66	0.1	-451.5
7.25	110	1.41	1.27	-11.8	-0.77	0.1	-451.2
7.30	61	1.19	1.94	-12.1	-1.42	0.1	-451.3
7.35	58	1.49	2.55	-11.8	-1.45	0.1	-451.2
7.40	76	1.11	1.45	-12.0	-1.13	0.1	-451.3
7.45	43	0.99	2.31	-11.9	-1.98	0.1	-451.3
7.50	24	0.49	2.06	-11.8	-3.59	0.1	-451.5
7.55	15	0.19	1.28	-11.8	-5.64	0.1	-451.7
7.60	13	0.12	0.92	-11.7	-6.34	0.1	-451.3
7.65	14	0.13	0.92	-11.6	-6.08	0.1	-451.3
7.70	16	0.15	0.92	-11.8	-5.13	0.1	-451.2
7.75	14	0.17	1.23	-11.6	-5.90	0.1	-451.5
7.80	15	0.14	0.89	-11.7	-5.58	0.1	-451.2
7.85	16	0.15	0.91	-11.7	-5.18	0.1	-451.0
7.90	15	0.15	1.00	-11.6	-5.66	0.1	-451.7
7.95	16	0.14	0.89	-11.7	-5.28	0.1	-451.2
8.00	17	0.18	1.06	-11.7	-4.85	0.1	-451.3
8.05	19	0.17	0.89	-11.6	-4.37	0.1	-451.5
8.10	18	0.19	1.05	-11.7	-4.73	0.1	-451.3
8.15	18	0.16	0.84	-11.6	-4.51	0.1	-451.2
8.20	19	0.26	1.36	-11.4	-4.31	0.1	-451.3
8.25	23	0.49	2.10	-11.3	-3.52	0.1	-451.3
8.30	37	0.49	1.34	-11.4	-2.23	0.1	-451.5
8.35	39	0.42	1.07	-11.3	-2.06	0.1	-451.3
8.40	42	0.33	0.77	-11.2	-1.90	0.1	-451.3
8.45	34	0.23	0.68	-11.2	-2.38	0.1	-451.3
8.50	30	0.16	0.54	-11.3	-2.73	0.1	-451.3
8.55	23	0.10	0.43	-11.3	-3.44	0.1	-451.3
8.60	18	0.11	0.61	-11.1	-4.33	0.1	-451.5
8.65	18	0.19	1.06	-11.2	-4.43	0.1	-451.8
8.70	21	0.29	1.39	-11.0	-3.83	0.1	-451.7
8.75	20	0.31	1.51	-11.0	-3.87	0.1	-451.8
8.80	21	0.32	1.54	-11.0	-3.80	0.1	-451.8
8.85	23	0.36	1.59	-11.1	-3.51	0.1	-451.3
8.90	20	0.35	1.71	-10.8	-3.80	0.1	-451.7
8.95	24	0.34	1.45	-10.9	-3.34	0.1	-451.8
9.00	28	0.39	1.39	-10.7	-2.74	0.1	-451.5
9.05	29	0.49	1.72	-10.8	-2.71	0.1	-451.8
9.10	29	0.48	1.67	-10.7	-2.67	0.1	-451.8

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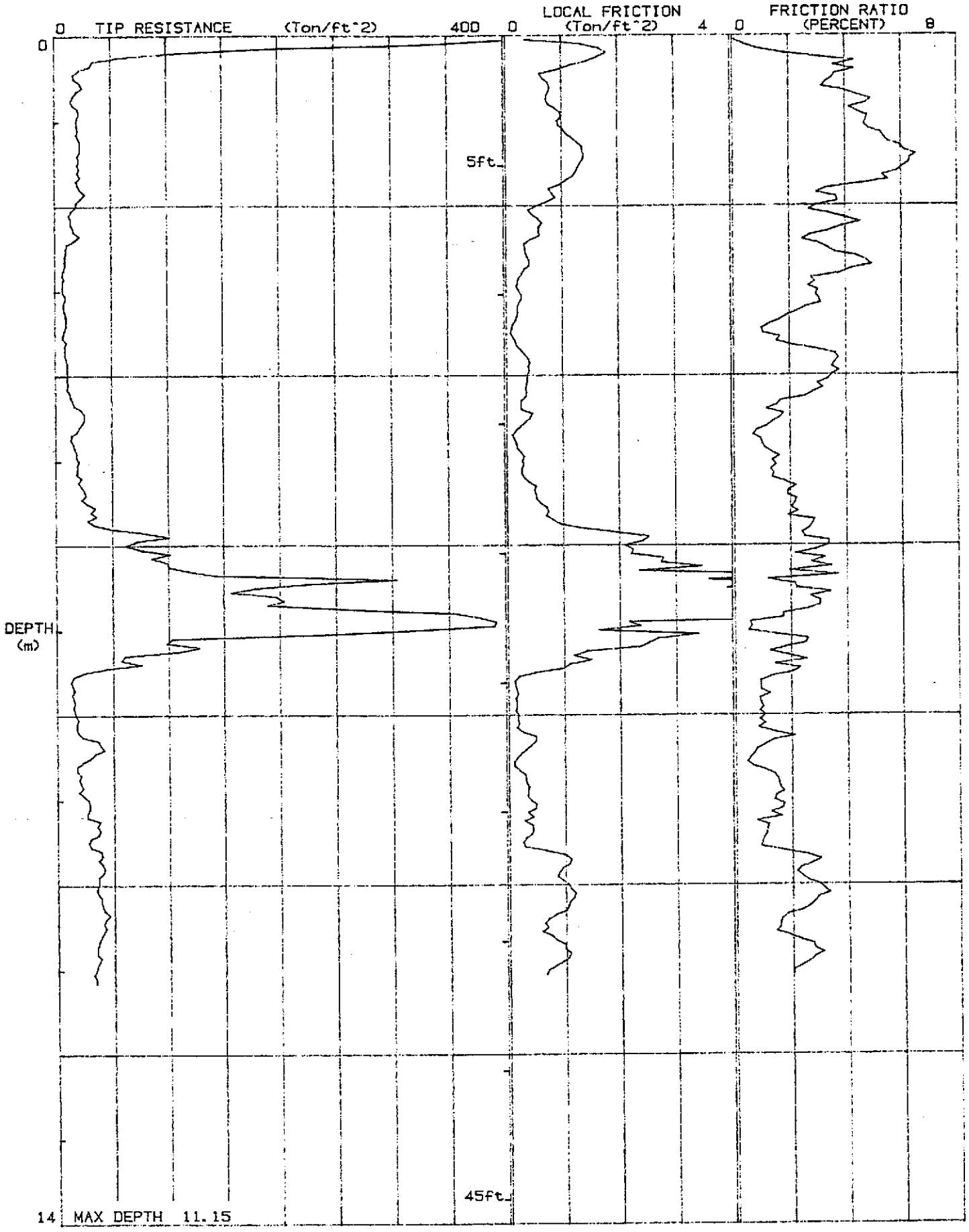
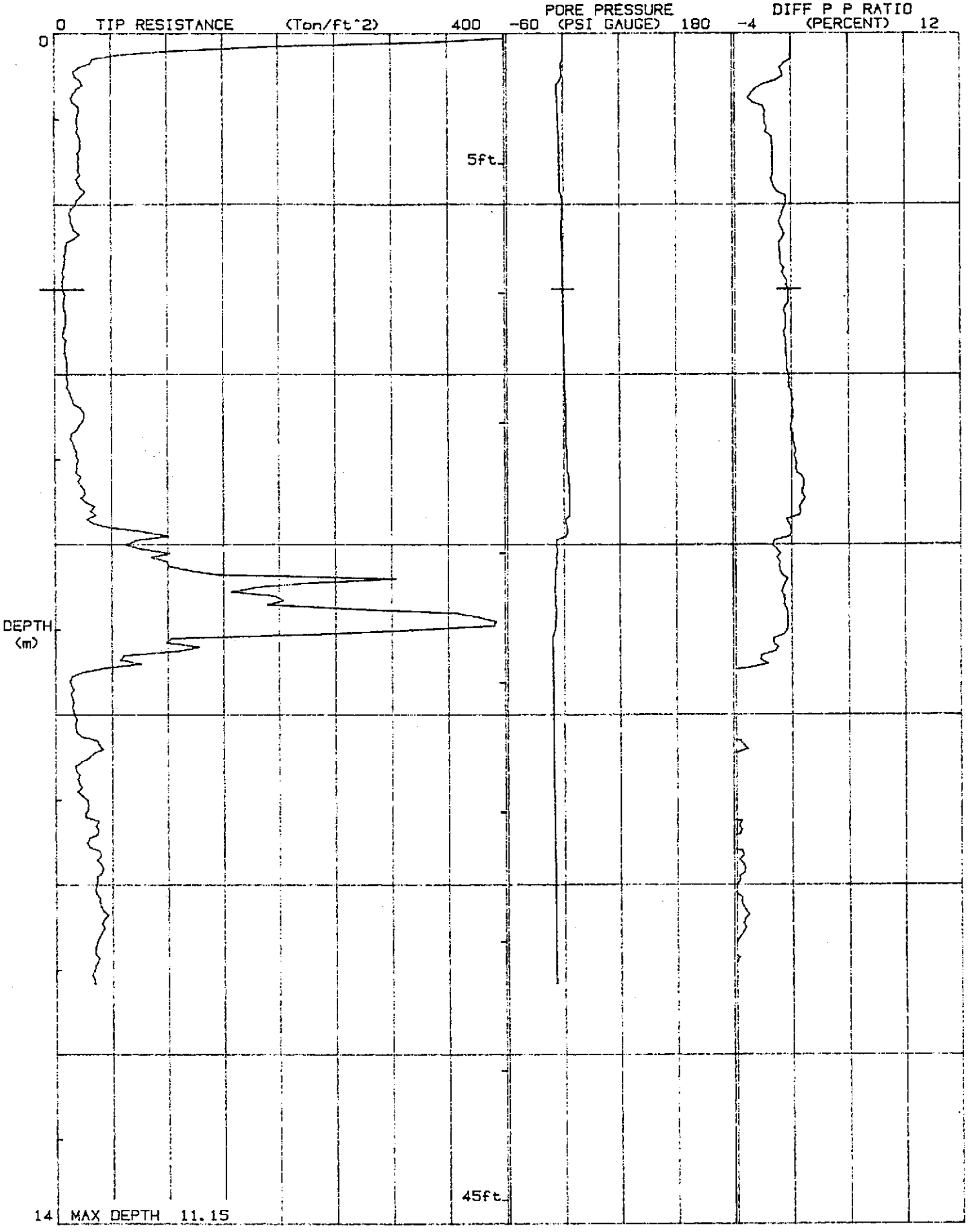
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
9.15	27	0.35	1.28	-10.5	-2.78	0.1	-451.2
9.20	27	0.43	1.62	-10.4	-2.80	0.1	-451.2
9.25	38	0.29	0.76	-10.4	-1.95	0.1	-451.0
9.30	36	0.42	1.16	-10.3	-2.02	0.1	-451.5
9.35	38	0.43	1.13	-10.2	-1.93	0.1	-451.0
9.40	37	0.41	1.10	-10.2	-1.97	0.1	-451.5
9.45	30	0.31	1.00	-10.2	-2.40	0.1	-451.3
9.50	28	0.26	0.93	-10.2	-2.60	0.1	-451.3
9.55	30	0.28	0.91	-10.2	-2.43	0.1	-451.3
9.60	39	0.66	1.69	-10.1	-1.84	0.1	-451.3
9.65	40	1.02	2.55	-10.1	-1.80	0.1	-451.3
9.70	37	1.11	3.01	-9.8	-1.92	0.1	-451.7
9.75	40	1.09	2.73	-9.9	-1.78	0.1	-451.3
9.80	42	0.96	2.31	-9.9	-1.71	0.1	-451.5
9.85	41	0.90	2.17	-9.9	-1.72	0.1	-451.2
9.90	37	0.87	2.34	-9.8	-1.88	0.1	-451.3
9.95	37	0.96	2.55	-9.7	-1.86	0.1	-451.3
10.00	36	1.07	2.97	-9.8	-1.95	0.1	-451.2
10.05	35	1.11	3.14	-9.7	-1.98	0.1	-451.3
10.10	36	1.18	3.32	-9.6	-1.95	0.1	-451.5
10.15	39	1.16	2.93	-9.8	-1.78	0.1	-451.2
10.20	39	1.09	2.79	-9.7	-1.77	0.2	-451.2
10.25	40	1.06	2.64	-9.4	-1.68	0.2	-451.7
10.30	42	1.02	2.39	-9.4	-1.59	0.2	-451.3
10.35	46	0.84	1.83	-9.5	-1.48	0.2	-451.2
10.40	43	0.70	1.63	-9.5	-1.60	0.2	-451.3
10.45	41	0.64	1.57	-9.3	-1.64	0.2	-451.5
10.50	43	0.68	1.57	-9.4	-1.57	0.2	-451.2
10.55	41	0.59	1.43	-9.3	-1.62	0.2	-451.3
10.60	39	0.75	1.91	-9.4	-1.72	0.2	-451.2
10.65	37	0.84	2.28	-9.3	-1.81	0.2	-451.3
10.70	36	0.99	2.74	-9.3	-1.85	0.2	-451.3
10.75	35	0.99	2.79	-9.2	-1.86	0.2	-451.3
10.80	35	1.08	3.08	-9.2	-1.88	0.2	-451.3
10.85	38	1.07	2.80	-9.1	-1.71	0.2	-451.2
10.90	37	0.97	2.62	-9.2	-1.77	0.2	-451.2
10.95	35	0.84	2.36	-9.2	-1.86	0.2	-451.2
11.00	34	0.70	2.05	-9.2	-1.92	0.2	-451.2
11.05	32	0.66	2.03	-9.0	-2.00	0.2	-451.2
11.10	34	?0000000000000000??	0000000000000000?	-9.1	-1.95	0.2	-451.2
11.15	34	?0000000000000000??	0000000000000000?	-9.1	-1.95	0.2	-451.3

WRITE # RODS USED ___

JOB # : 82580
DATE : 02/25/91 12:45
LOCATION : CPT-02
FILE : 26



JOB # : 82580
DATE : 02/25/91 12:45
LOCATION : CPT-02
FILE : 26



SOUNDING DATA IN FILE 27 02/26/91 8:05

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-03

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	557	0.59	0.10	0.2	0.00	0.0	-451.3
0.10	252	0.73	0.28	0.2	0.00	0.0	-451.7
0.15	142	1.63	1.14	-0.2	-0.01	0.0	-451.7
0.20	77	2.30	3.00	0.6	0.05	0.0	-451.8
0.25	48	1.95	4.06	-0.1	-0.00	0.0	-451.7
0.30	38	1.50	3.96	3.4	0.64	0.0	-451.5
0.35	51	1.46	2.85	6.8	0.94	0.0	-451.7
0.40	47	1.69	3.61	-4.2	-0.63	0.0	-451.7
0.45	44	1.49	3.39	-7.5	-1.24	0.0	-451.7
0.50	46	1.33	2.91	-8.3	-1.30	0.0	-451.5
0.55	48	1.39	2.91	-0.2	-0.03	0.0	-451.7
0.60	43	1.53	3.54	-0.1	-0.00	0.0	-452.0
0.65	39	1.47	3.73	-0.9	-0.16	0.0	-451.5
0.70	35	1.37	3.96	-2.1	-0.44	0.0	-452.0
0.75	31	1.22	3.86	-3.4	-0.77	0.0	-451.7
0.80	27	1.12	4.10	-3.8	-0.99	0.0	-451.7
0.85	26	1.04	4.03	-3.9	-1.10	0.0	-451.8
0.90	23	0.97	4.18	-3.8	-1.19	0.0	-451.7
0.95	22	0.98	4.43	-3.6	-1.17	0.0	-452.0
1.00	23	0.99	4.33	-3.5	-1.11	0.0	-451.3
1.05	23	0.98	4.33	-3.5	-1.12	0.0	-452.0
1.10	21	1.02	4.74	-3.3	-1.11	0.0	-451.8
1.15	19	1.07	5.72	-3.2	-1.22	0.0	-452.1
1.20	20	1.07	5.45	-3.0	-1.12	0.0	-451.8
1.25	20	1.16	5.87	-3.0	-1.08	0.0	-452.3
1.30	20	1.24	6.14	-3.0	-1.07	0.0	-452.1
1.35	22	1.25	5.72	-2.9	-0.94	0.0	-451.3
1.40	22	1.21	5.55	-2.9	-0.96	0.0	-452.0
1.45	20	1.15	5.78	-3.0	-1.08	0.0	-452.0
1.50	19	1.06	5.46	-3.1	-1.13	0.0	-452.0
1.55	18	0.95	5.22	-2.9	-1.17	0.0	-452.3
1.60	18	0.89	5.07	-3.1	-1.24	0.0	-452.3
1.65	17	0.82	4.81	-2.9	-1.24	0.0	-452.3
1.70	15	0.67	4.39	-2.8	-1.31	0.0	-452.4
1.75	16	0.59	3.77	-2.4	-1.08	0.0	-451.7
1.80	17	0.61	3.70	-2.2	-0.95	0.0	-452.0
1.85	17	0.72	4.22	-2.0	-0.85	0.0	-451.7
1.90	18	0.68	3.87	-1.9	-0.76	0.0	-451.7
1.95	16	0.59	3.70	-1.7	-0.78	0.0	-451.7
2.00	15	0.50	3.25	-1.6	-0.74	0.0	-451.8

27 : CPT-03 : 02/26/91 8:05

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	17	0.52	3.08	-1.4	-0.61	0.0	-451.8
2.10	15	0.55	3.53	-1.5	-0.70	0.0	-451.7
2.15	15	0.53	3.50	-0.3	-0.14	0.0	-452.1
2.20	15	0.42	2.85	-0.4	-0.22	0.0	-452.0
2.25	13	0.50	3.97	-0.1	-0.02	0.0	-451.8
2.30	12	0.60	4.99	-0.2	-0.09	0.0	-452.3
2.35	11	0.62	5.38	-0.2	-0.12	0.0	-452.1
2.40	12	0.56	4.63	-0.1	-0.06	0.0	-451.8
2.45	12	0.56	4.87	-0.2	-0.13	0.0	-451.7
2.50	11	0.56	5.24	-0.4	-0.29	0.0	-451.8
2.55	12	0.53	4.32	-0.3	-0.19	0.0	-452.3
2.60	11	0.50	4.32	-0.2	-0.13	0.0	-451.8
2.65	11	0.44	4.20	-0.3	-0.18	0.0	-451.8
2.70	10	0.36	3.63	-0.7	-0.47	0.0	-452.3
2.75	9	0.32	3.64	-0.3	-0.24	0.0	-451.7
2.80	10	0.33	3.46	-0.5	-0.34	0.0	-452.0
2.85	10	0.33	3.21	-0.3	-0.21	0.0	-452.3
2.90	20	0.37	1.89	-0.1	-0.01	0.0	-452.4
2.95	18	0.34	1.91	-0.4	-0.14	0.0	-451.8
3.00	9	0.26	2.79	-0.4	-0.29	0.0	-452.0
3.05	8	0.28	3.49	0.2	0.14	0.0	-452.0
3.10	8	0.34	4.06	0.3	0.26	0.0	-451.8
3.15	8	0.36	4.45	1.1	1.00	0.0	-452.0
3.20	10	0.36	3.49	1.0	0.68	0.0	-451.8
3.25	10	0.36	3.73	1.0	0.75	0.0	-451.5
3.30	11	0.36	3.38	1.2	0.79	0.0	-451.8
3.35	11	0.38	3.41	1.3	0.86	0.0	-451.8
3.40	11	0.37	3.34	1.4	0.93	0.0	-451.7
3.45	10	0.39	3.87	1.6	1.16	0.0	-451.8
3.50	12	0.37	3.18	1.8	1.08	0.0	-451.7
3.55	10	0.39	3.74	2.3	1.57	0.0	-451.8
3.60	12	0.42	3.43	2.3	1.35	0.0	-451.7
3.65	12	0.41	3.38	2.2	1.29	0.0	-451.2
3.70	12	0.42	3.45	2.2	1.29	0.0	-451.7
3.75	11	0.41	3.79	2.4	1.61	0.0	-451.8
3.80	12	0.40	3.25	2.3	1.38	0.0	-451.7
3.85	12	0.34	2.91	2.5	1.54	0.0	-451.8
3.90	10	0.28	2.91	2.7	2.00	0.0	-452.0
3.95	12	0.31	2.52	2.8	1.68	0.0	-451.8
4.00	12	0.35	3.00	3.0	1.87	0.0	-452.0
4.05	12	0.39	3.32	2.9	1.80	0.0	-451.8
4.10	10	0.34	3.34	2.8	1.98	0.0	-452.0
4.15	9	0.27	3.11	3.4	2.83	0.0	-451.8
4.20	9	0.29	3.16	3.3	2.58	0.0	-451.8
4.25	8	0.33	3.90	3.7	3.17	0.0	-452.1
4.30	11	0.36	3.31	3.9	2.57	0.0	-452.0
4.35	16	0.67	4.27	4.3	1.96	0.0	-452.0
4.40	30	0.62	2.07	-5.5	-1.32	0.0	-451.8
4.45	20	0.70	3.56	-9.5	-3.46	0.0	-451.7
4.50	32	0.91	2.86	-9.4	-2.12	0.0	-451.8

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
4.55	41	0.75	1.83	-10.0	-1.77	0.0	-451.3
4.60	21	0.34	1.56	-11.2	-3.75	0.0	-451.8
4.65	14	0.32	2.29	-11.4	-5.93	0.0	-452.1
4.70	17	0.28	1.60	-11.1	-4.64	0.0	-451.3
4.75	13	0.26	1.93	-11.0	-5.95	0.0	-451.8
4.80	13	0.22	1.66	-10.9	-5.99	0.0	-451.8
4.85	13	0.18	1.35	-10.8	-5.81	0.0	-452.3
4.90	14	0.16	1.19	-10.6	-5.56	0.0	-451.5
4.95	11	0.28	2.46	-10.7	-6.82	0.0	-452.3
5.00	10	0.26	2.48	-10.4	-7.18	0.0	-451.7
5.05	13	0.28	2.14	-9.5	-5.27	0.0	-452.1
5.10	11	0.27	2.46	-9.2	-6.07	0.0	-452.3
5.15	11	0.23	2.14	-8.7	-5.78	0.0	-452.6
5.20	9	0.21	2.29	-8.5	-6.51	0.0	-452.0
5.25	11	0.25	2.25	-8.5	-5.57	0.0	-452.0
5.30	12	0.24	2.02	-8.4	-5.12	0.0	-451.7
5.35	11	0.22	2.02	-8.1	-5.44	0.0	-451.8
5.40	13	0.22	1.73	-7.9	-4.48	0.0	-451.8
5.45	12	0.20	1.64	-7.8	-4.68	0.0	-451.7
5.50	13	0.23	1.82	-7.7	-4.37	0.0	-452.0
5.55	19	0.37	1.91	-7.4	-2.79	0.0	-452.0
5.60	31	0.42	1.36	-7.2	-1.66	0.0	-452.0
5.65	42	0.45	1.08	-7.2	-1.25	0.0	-451.8
5.70	44	0.56	1.27	-7.2	-1.19	0.0	-451.7
5.75	54	0.59	1.09	-7.2	-0.96	0.0	-451.7
5.80	70	1.01	1.44	-7.3	-0.75	0.0	-451.5
5.85	80	1.13	1.41	-8.9	-0.79	0.0	-451.8
5.90	93	1.46	1.57	-9.4	-0.72	0.0	-451.7
5.95	96	1.80	1.87	-10.5	-0.78	0.0	-452.1
6.00	84	1.58	1.86	-11.0	-0.93	0.0	-452.1
6.05	60	0.70	1.16	-11.5	-1.36	0.0	-451.8
6.10	50	0.81	1.61	-11.4	-1.63	0.0	-452.1
6.15	54	0.61	1.12	-10.7	-1.41	0.1	-451.8
6.20	31	0.20	0.64	-11.1	-2.58	0.1	-451.5
6.25	20	0.05	0.23	-11.1	-3.90	0.1	-451.7
6.30	16	0.12	0.77	-11.0	-5.08	0.1	-451.3
6.35	18	0.27	1.49	-10.9	-4.28	0.1	-452.0
6.40	18	0.40	2.26	-10.9	-4.46	0.1	-451.7
6.45	17	0.71	4.16	-10.7	-4.50	0.1	-451.2
6.50	24	0.94	3.97	-10.7	-3.25	0.1	-451.7
6.55	42	1.00	2.37	-10.8	-1.84	0.1	-451.2
6.60	68	1.62	2.39	-10.9	-1.15	0.1	-451.7
6.65	104	2.22	2.13	-11.1	-0.77	0.1	-451.8
6.70	120	2.69	2.23	-12.0	-0.71	0.1	-451.3
6.75	95	2.86	2.99	-12.1	-0.91	0.2	-451.7
6.80	98	2.62	2.66	-12.3	-0.89	0.2	-451.7
6.85	98	2.27	2.32	-12.3	-0.90	0.2	-451.5
6.90	119	2.78	2.34	-12.3	-0.74	0.2	-451.2
6.95	118	3.37	2.84	-12.5	-0.75	0.2	-451.5
7.00	142	3.64	2.57	-12.4	-0.62	0.2	-451.5

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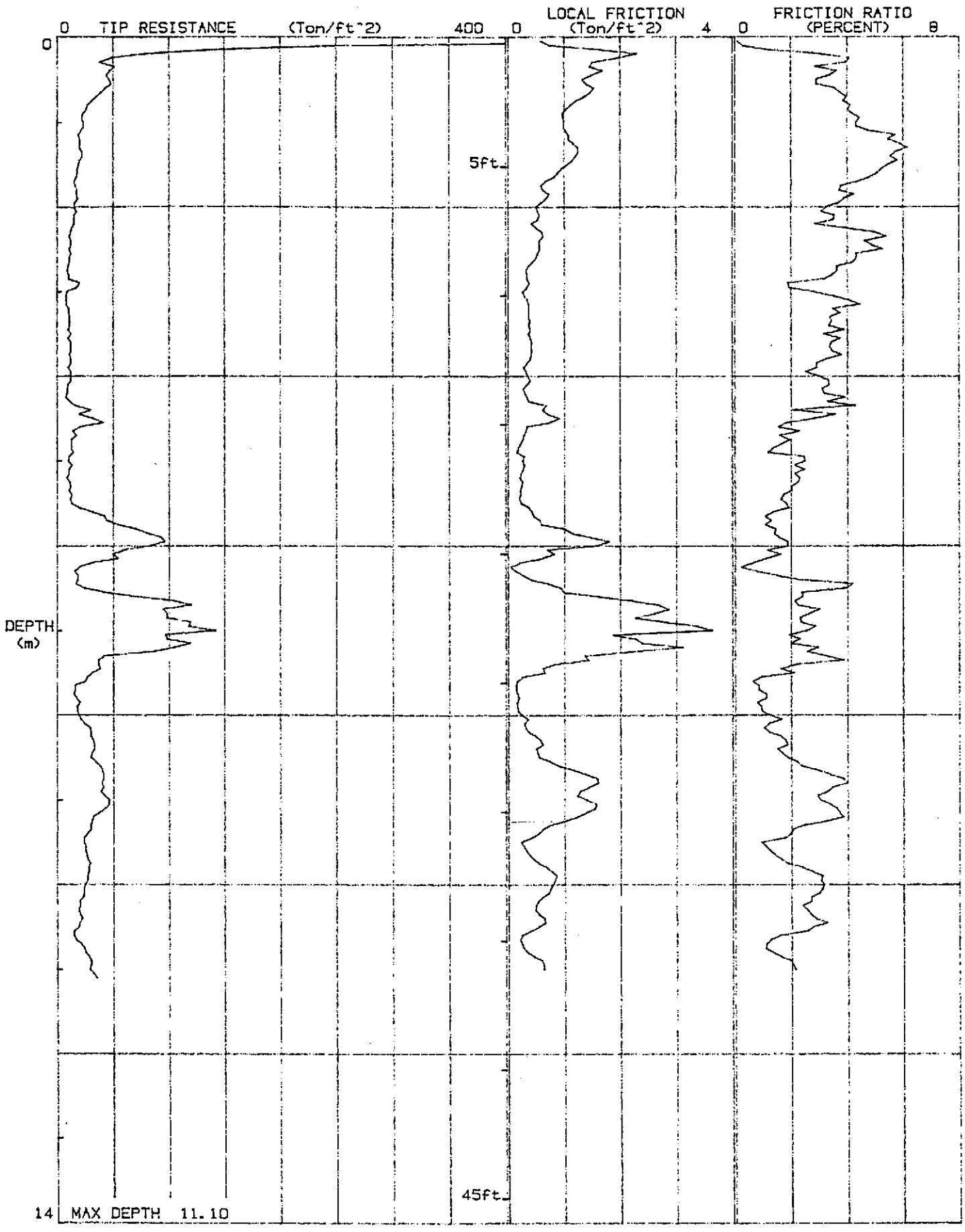
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
7.05	97	1.87	1.93	-12.3	-0.91	0.2	-451.7
7.10	98	2.27	2.30	-12.2	-0.89	0.2	-451.8
7.15	119	2.38	1.99	-12.2	-0.73	0.2	-451.7
7.20	105	3.11	2.95	-12.3	-0.84	0.2	-451.5
7.25	86	2.21	2.57	-12.3	-1.03	0.2	-451.5
7.30	42	1.36	3.23	-12.2	-2.08	0.2	-451.7
7.35	37	1.43	3.88	-12.4	-2.42	0.2	-451.5
7.40	37	0.82	2.19	-12.3	-2.36	0.2	-451.5
7.45	38	0.62	1.63	-12.2	-2.31	0.2	-452.0
PORE PRESSURE DECAY (5 SEC)	-12.3	-12.2	-12.2	-12.1	-12.1	-12.1	-12.1	-12.1	-12.1	-12.0	-11.9	-11.8	-11.8	-11.9
-11.9	-11.8	-11.7	-11.6	-11.6	-11.5	-11.6	-11.6	-11.5	-11.5	-11.5	-11.4	-11.4	-11.4	-11.3	-11.4	-11.2	-11.1
-11.1	-11.1																
7.50	31	0.64	2.09	-12.4	-2.90	0.2	-451.3
7.55	27	0.25	0.93	-12.4	-3.28	0.2	-451.8
7.60	25	0.16	0.64	-11.1	-3.17	0.2	-451.8
7.65	16	0.14	0.84	-11.0	-4.86	0.2	-451.7
7.70	16	0.14	0.85	-11.0	-4.91	0.2	-451.5
7.75	15	0.16	1.10	-10.8	-5.28	0.2	-451.7
7.80	17	0.18	1.09	-10.9	-4.69	0.2	-451.8
7.85	20	0.16	0.80	-10.8	-3.94	0.2	-451.7
7.90	18	0.16	0.93	-10.8	-4.41	0.2	-451.5
7.95	18	0.17	0.95	-10.7	-4.28	0.2	-451.8
8.00	19	0.24	1.23	-10.6	-3.98	0.2	-451.7
8.05	21	0.34	1.64	-10.6	-3.71	0.3	-451.8
8.10	24	0.29	1.22	-10.5	-3.14	0.3	-451.8
8.15	29	0.38	1.05	-10.3	-2.58	0.3	-452.0
8.20	30	0.36	1.19	-10.2	-2.44	0.3	-451.7
8.25	30	0.48	1.62	-10.2	-2.45	0.3	-451.8
8.30	32	0.57	1.79	-10.2	-2.29	0.3	-451.7
8.35	33	0.61	1.86	-10.2	-2.24	0.3	-451.7
8.40	33	0.50	1.51	-10.1	-2.22	0.3	-451.7
8.45	31	0.52	1.68	-10.1	-2.33	0.3	-451.5
8.50	30	0.55	1.84	-10.0	-2.41	0.3	-451.5
8.55	34	0.74	2.18	-9.9	-2.09	0.3	-451.5
8.60	38	0.89	2.35	-10.0	-1.90	0.3	-451.8
8.65	40	1.16	2.92	-9.8	-1.77	0.3	-451.3
8.70	41	1.38	3.35	-9.8	-1.70	0.3	-451.7
8.75	41	1.58	3.83	-9.7	-1.68	0.3	-451.7
8.80	40	1.60	3.99	-9.6	-1.71	0.3	-451.8
8.85	41	1.44	3.47	-9.6	-1.67	0.3	-451.5
8.90	39	1.28	3.29	-9.6	-1.78	0.3	-451.8
8.95	42	1.23	2.93	-9.6	-1.66	0.3	-451.3
9.00	46	1.39	3.02	-9.6	-1.49	0.3	-451.5
9.05	46	1.56	3.36	-9.6	-1.48	0.3	-451.3
9.10	43	1.55	3.60	-9.6	-1.60	0.3	-451.8
9.15	38	1.39	3.70	-9.3	-1.77	0.3	-452.0
9.20	32	1.23	3.83	-9.4	-2.10	0.3	-451.7
9.25	31	1.02	3.28	-9.5	-2.20	0.3	-451.2
9.30	30	0.74	2.45	-9.6	-2.29	0.3	-451.5
9.35	30	0.61	2.05	-9.4	-2.27	0.3	-451.2

27 : CPT-03 : 02/26/91 8:05

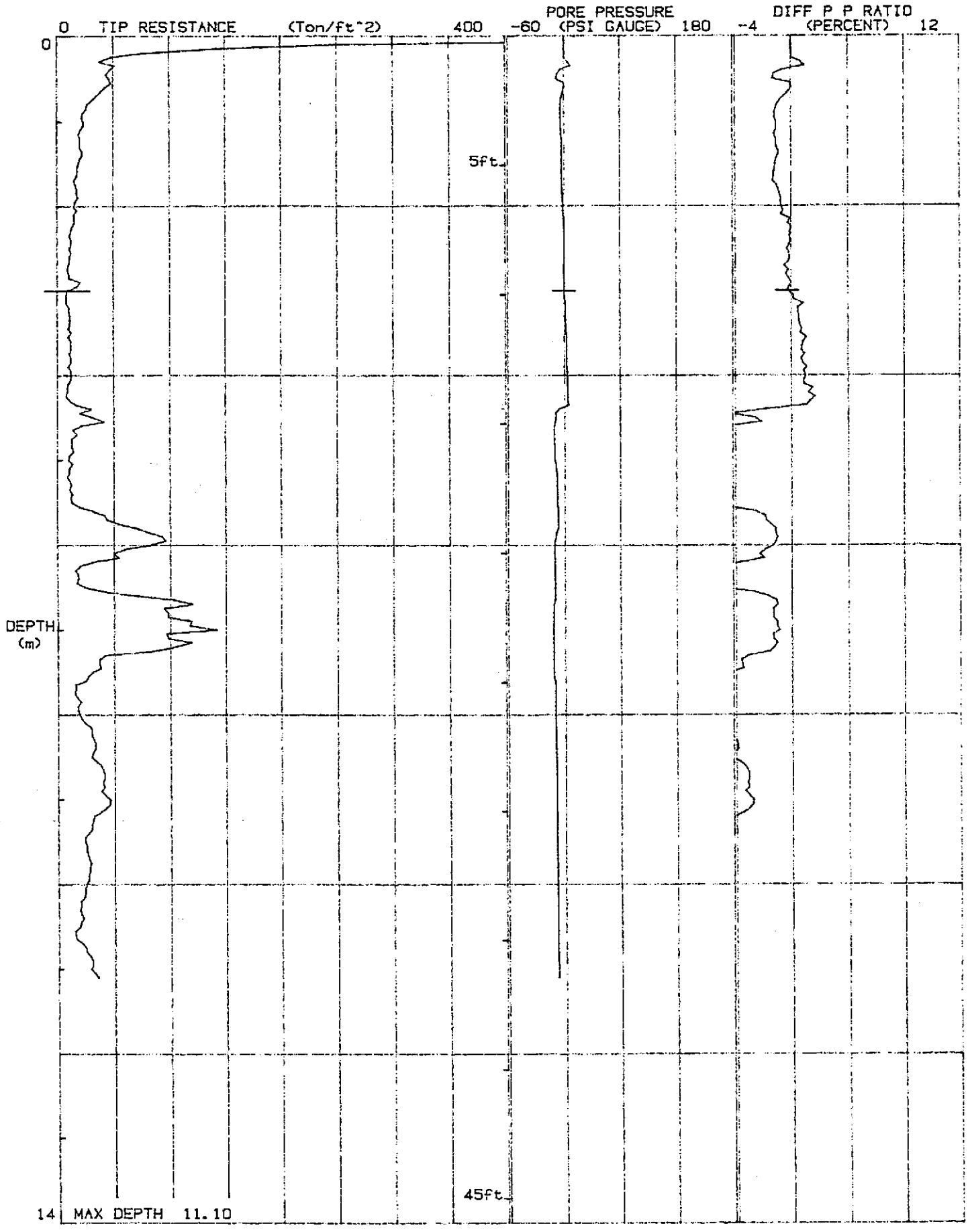
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
9.40	27	0.54	1.97	-9.6	-2.51	0.3	-451.5
9.45	24	0.42	1.77	-9.5	-2.84	0.3	-451.5
9.50	24	0.23	0.94	-9.5	-2.82	0.3	-451.5
9.55	25	0.27	1.08	-9.5	-2.76	0.3	-451.7
9.60	25	0.31	1.23	-9.3	-2.66	0.3	-451.8
9.65	26	0.37	1.40	-9.3	-2.55	0.3	-451.3
9.70	27	0.44	1.63	-9.3	-2.46	0.4	-452.0
9.75	29	0.53	1.85	-9.3	-2.34	0.4	-451.7
9.80	28	0.67	2.39	-9.2	-2.34	0.4	-451.7
9.85	28	0.77	2.74	-9.1	-2.34	0.4	-451.8
9.90	27	0.85	3.09	-9.2	-2.39	0.4	-451.8
9.95	27	0.83	3.06	-9.3	-2.47	0.4	-451.7
10.00	25	0.79	3.15	-9.1	-2.60	0.4	-452.0
10.05	24	0.75	3.10	-9.1	-2.71	0.4	-452.0
10.10	24	0.72	3.00	-9.1	-2.73	0.4	-451.5
10.15	23	0.61	2.71	-9.0	-2.87	0.4	-451.8
10.20	20	0.53	2.68	-9.0	-3.25	0.4	-451.8
10.25	20	0.49	2.41	-9.0	-3.22	0.4	-451.3
10.30	19	0.48	2.55	-9.0	-3.46	0.4	-451.7
10.35	20	0.53	2.68	-8.8	-3.21	0.4	-451.8
10.40	22	0.63	2.86	-9.0	-2.95	0.4	-451.5
10.45	20	0.65	3.25	-8.9	-3.19	0.4	-451.8
10.50	19	0.54	2.77	-8.9	-3.30	0.5	-451.8
10.55	15	0.39	2.56	-8.9	-4.23	0.5	-451.8
10.60	15	0.24	1.59	-8.9	-4.19	0.5	-451.8
10.65	16	0.21	1.27	-8.9	-3.88	0.5	-451.7
10.70	21	0.23	1.11	-8.7	-3.03	0.5	-451.3
10.75	24	0.26	1.08	-8.7	-2.64	0.5	-451.8
10.80	25	0.33	1.31	-8.6	-2.47	0.5	-451.8
10.85	28	0.44	1.60	-8.5	-2.21	0.5	-452.0
10.90	30	0.59	1.97	-8.5	-2.03	0.5	-451.5
10.95	30	0.62	2.06	-8.3	-1.99	0.5	-451.5
11.00	29	0.63	2.13	-8.2	-2.00	0.5	-451.8
11.05	32	?0000000000000000??	0000000000000000?	-8.3	-1.83	0.5	-451.0
11.10	35	?0000000000000000??	0000000000000000?	-8.1	-1.67	0.5	-451.7

WRITE # RODS USED ___

JOB # : 82580
DATE : 02/26/91 8:05
LOCATION : CPT-03
FILE : 27



JOB # : 82580
DATE : 02/26/91 8:05
LOCATION : CPT-03
FILE : 27



SOUNDING DATA IN FILE 28 02/26/91 8:50

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-04

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEG F)
0.05	435	0.63	0.14	0.1	0.00	0.0	-451.7
0.10	403	1.38	0.34	0.1	0.00	0.0	-452.0
0.15	141	2.03	1.43	0.0	0.00	-0.0	-451.8
0.20	63	1.77	2.81	-0.0	-0.00	0.0	-451.7
0.25	35	1.69	4.89	0.2	0.03	0.0	-451.7
0.30	29	1.19	4.15	0.7	0.17	0.0	-451.8
0.35	25	0.99	3.88	0.0	0.0	0.0	-451.8
0.40	21	0.80	3.82	-1.1	-0.36	0.0	-452.0
0.45	20	0.77	3.87	-1.0	-0.35	0.0	-452.0
0.50	18	0.76	4.34	-1.0	-0.41	0.0	-452.0
0.55	14	0.69	4.80	-1.0	-0.50	0.0	-451.7
0.60	15	0.59	3.97	-1.2	-0.55	0.0	-451.5
0.65	15	0.56	3.64	-1.4	-0.67	-0.0	-451.8
0.70	14	0.53	3.78	-2.3	-1.14	0.0	-452.0
0.75	15	0.42	2.79	-2.9	-1.40	0.0	-451.5
0.80	18	0.36	2.04	-1.6	-0.66	0.0	-451.5
0.85	13	0.36	2.75	0.2	0.12	0.0	-451.8
0.90	11	0.36	3.27	-0.1	-0.04	0.0	-452.0
0.95	11	0.31	2.81	-0.8	-0.51	0.0	-451.8
1.00	13	0.25	1.88	-0.6	-0.33	-0.0	-451.8
1.05	12	0.18	1.50	0.1	0.07	0.0	-451.8
1.10	12	0.17	1.40	0.0	0.00	0.0	-451.8
1.15	11	0.16	1.53	0.1	0.03	0.0	-451.7
1.20	9	0.21	2.21	0.0	0.0	0.0	-451.8
1.25	9	0.31	3.56	0.2	0.12	0.0	-451.7
1.30	10	0.44	4.27	0.1	0.06	0.0	-451.5
1.35	13	0.57	4.51	0.4	0.20	0.0	-451.8
1.40	14	0.65	4.58	0.4	0.20	0.0	-451.7
1.45	15	0.72	4.85	0.5	0.23	0.0	-451.8
1.50	16	0.81	5.01	0.5	0.20	0.0	-451.7
1.55	19	0.89	4.62	0.4	0.13	0.0	-451.7
1.60	18	0.91	5.10	0.5	0.19	0.0	-451.8
1.65	18	0.92	5.03	0.4	0.17	0.0	-451.7
1.70	18	0.86	4.79	0.4	0.15	0.0	-451.8
1.75	19	0.83	4.25	0.4	0.14	0.0	-451.8
1.80	20	0.82	4.01	0.4	0.15	0.0	-451.5
1.85	20	0.87	4.42	0.6	0.20	0.0	-451.8
1.90	21	0.79	3.72	0.4	0.14	0.0	-451.5
1.95	23	0.48	2.09	0.5	0.16	0.0	-451.7
2.00	31	0.32	1.05	0.7	0.14	0.0	-451.8

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	35	0.55	1.56	0.2	0.03	0.0	-451.8
2.10	29	0.58	2.03	0.0	0.0	0.0	-452.0
2.15	19	0.53	2.81	0.1	0.02	0.0	-451.7
2.20	15	0.53	3.56	0.2	0.09	0.0	-451.8
2.25	17	0.54	3.26	0.2	0.09	0.0	-451.8
2.30	19	0.53	2.80	0.2	0.09	0.0	-451.7
2.35	19	0.36	1.95	0.2	0.09	0.0	-451.5
2.40	14	0.40	2.90	0.3	0.17	0.0	-451.8
2.45	13	0.50	3.82	0.4	0.22	0.0	-451.7
2.50	14	0.53	3.91	0.4	0.22	0.0	-451.7
2.55	12	0.46	3.79	0.6	0.33	0.0	-452.0
2.60	11	0.43	3.85	1.1	0.72	0.0	-451.8
2.65	11	0.39	3.74	1.2	0.81	0.0	-452.1
2.70	11	0.36	3.39	1.2	0.79	0.0	-452.0
2.75	10	0.32	3.24	1.3	0.97	0.0	-452.0
2.80	12	0.32	2.67	1.2	0.73	0.0	-451.5
2.85	12	0.37	2.98	1.3	0.74	-0.0	-451.7
2.90	11	0.36	3.13	1.4	0.88	0.0	-451.5
2.95	10	0.32	3.09	1.4	0.93	0.0	-451.7
3.00	10	0.28	2.71	1.4	1.00	0.0	-451.5
3.05	10	0.26	2.65	1.7	1.22	0.0	-451.5
3.10	10	0.26	2.50	1.9	1.32	0.0	-451.7
3.15	10	0.26	2.57	2.1	1.48	0.0	-452.0
3.20	11	0.22	2.01	2.0	1.28	0.0	-451.8
3.25	10	0.25	2.61	2.2	1.61	0.0	-451.8
3.30	11	0.29	2.48	2.1	1.30	-0.0	-452.1
3.35	11	0.33	2.86	2.2	1.37	0.0	-451.8
3.40	10	0.38	3.67	2.5	1.72	0.0	-452.0
3.45	11	0.42	3.64	2.3	1.44	-0.0	-452.0
3.50	12	0.40	3.44	2.4	1.49	0.0	-452.0
3.55	12	0.39	3.22	2.6	1.50	0.0	-451.7
3.60	12	0.40	3.26	2.6	1.47	0.0	-451.8
3.65	11	0.38	3.40	2.6	1.67	0.0	-451.8
3.70	13	0.39	3.05	2.6	1.49	0.0	-451.5
3.75	12	0.36	2.93	2.7	1.56	0.0	-451.7
3.80	11	0.37	3.36	2.7	1.77	0.0	-452.1
3.85	12	0.41	3.47	2.8	1.67	0.0	-452.0
3.90	14	0.46	3.37	2.7	1.45	0.0	-451.7
3.95	13	0.44	3.26	2.6	1.42	0.0	-451.8
4.00	12	0.38	3.06	2.8	1.60	0.0	-451.7
4.05	13	0.38	2.90	2.8	1.54	0.0	-452.0
4.10	13	0.39	3.05	2.8	1.58	0.0	-452.1
4.15	14	0.43	3.16	3.2	1.67	0.0	-451.7
4.20	12	0.44	3.57	3.2	1.89	0.0	-452.0
4.25	11	0.41	3.68	3.4	2.17	0.0	-451.8
4.30	12	0.36	2.99	3.3	1.96	0.0	-451.8
4.35	12	0.43	3.53	3.4	2.04	-0.0	-452.1
4.40	16	0.71	4.34	3.4	1.52	0.0	-451.5
4.45	35	1.13	3.23	3.5	0.73	0.0	-451.8
4.50	43	1.21	2.84	-3.1	-0.52	0.0	-451.5

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
4.55	39	1.19	3.07	-8.6	-1.59	0.0	-452.0
4.60	23	0.65	2.86	-11.9	-3.78	0.0	-451.8
4.65	11	0.16	1.44	-12.1	-7.76	0.0	-451.8
4.70	10	0.11	1.08	-12.0	-8.76	0.0	-452.0
4.75	10	0.11	1.18	-11.9	-8.93	0.0	-451.5
4.80	11	0.12	1.04	-11.9	-7.75	0.0	-451.7
4.85	11	0.14	1.22	-11.9	-7.49	0.0	-451.8
4.90	10	0.12	1.20	-11.9	-8.66	0.0	-451.8
4.95	8	0.10	1.13	-11.7	-9.93	0.0	-451.8
5.00	9	0.10	1.05	-11.8	-9.20	0.0	-451.8
5.05	9	0.09	0.97	-11.8	-9.05	0.0	-451.3
5.10	8	0.12	1.49	-11.7	-10.37	0.0	-451.8
5.15	10	0.10	0.96	-11.5	-8.23	0.0	-451.8
5.20	9	0.11	1.24	-11.4	-9.32	0.0	-451.7
5.25	10	0.15	1.45	-11.5	-8.02	0.0	-451.5
5.30	9	0.16	1.80	-11.3	-9.20	0.0	-451.7
5.35	9	0.14	1.58	-11.4	-9.57	0.0	-451.7
5.40	7	0.12	1.62	-11.3	-10.98	0.0	-452.0
5.45	7	0.10	1.35	-11.3	-10.86	0.0	-451.8
5.50	8	0.06	0.76	-11.2	-9.57	0.0	-452.0
5.55	12	0.24	2.06	-11.3	-6.89	0.0	-451.7
5.60	20	0.18	0.90	-11.2	-4.05	0.0	-452.0
5.65	15	0.09	0.60	-11.1	-5.27	0.0	-451.7
5.70	9	0.22	2.39	-11.1	-8.54	0.0	-451.8
5.75	14	0.19	1.41	-11.0	-5.84	0.0	-451.8
5.80	13	0.07	0.56	-11.0	-6.02	0.0	-452.0
5.85	10	0.07	0.70	-11.0	-8.27	0.0	-451.5
5.90	9	0.09	0.94	-10.9	-8.47	0.0	-451.7
5.95	12	0.12	1.05	-10.9	-6.72	0.0	-451.8
6.00	19	0.06	0.32	-10.9	-4.17	0.0	-451.8
6.05	16	0.05	0.30	-10.8	-4.97	0.0	-451.8
6.10	21	0.00	0.00	-10.7	-3.72	0.0	-451.7
6.15	17	0.04	0.22	-10.6	-4.45	0.0	-451.3
6.20	17	0.06	0.32	-10.5	-4.33	0.0	-451.8
6.25	22	0.11	0.51	-10.4	-3.37	0.0	-451.3
6.30	25	0.13	0.50	-10.3	-2.92	0.0	-452.0
6.35	24	0.31	1.25	-10.2	-3.00	0.0	-451.8
6.40	36	0.73	2.03	-10.3	-2.07	0.0	-451.5
6.45	49	0.77	1.56	-10.3	-1.50	0.0	-451.7
6.50	69	1.23	1.78	-10.2	-1.07	0.0	-451.7
6.55	75	1.67	2.23	-10.4	-1.00	0.0	-451.8
6.60	55	1.51	2.75	-10.6	-1.38	0.1	-451.7
6.65	62	1.62	2.59	-10.5	-1.21	0.1	-451.7
6.70	65	1.75	2.70	-10.5	-1.16	0.1	-452.0
6.75	65	1.68	2.59	-10.6	-1.17	0.1	-452.0
6.80	81	1.57	1.94	-10.8	-0.95	0.1	-451.7
6.85	91	1.38	1.51	-11.0	-0.86	0.1	-451.7

PORE PRESSURE DECAY (5 SEC)

-11.8	-11.8	-11.7	-11.6	-11.4	-11.3	-11.2	-11.1	-11.0	-10.9	-10.9	-10.6	-10.5	-10.4	-10.2	-10.2	-10.1
-9.9	-9.9	-9.8	-9.7	-9.7	-9.6	-9.4	-9.3	-9.1	-9.0	-8.8	-8.7	-8.7	-8.5	-8.4	-8.3	-8.2
-8.0	-7.7	-7.5	-7.4	-7.3	-7.2	-7.0	-6.9	-6.6	-6.3	-6.2	-6.1	-5.9	-5.7	-5.4	-5.2	

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
-5.0	-4.7 -4.5 -4.3	-4.0 -3.7	-3.6 -3.3 -3.2	-2.9 -2.6	-2.3 -2.1	-1.9 -1.5	-1.3 -1.0 -0.8
-0.7	-0.5 -0.2 0.2	0.3 0.5	0.7 0.9 1.1	1.2 1.5	1.6 1.7	1.9 1.9	2.0 2.2 2.5
2.7	2.8 2.9 2.9	2.9 2.9	3.0 3.0 3.1	3.2 3.1	3.2 3.3	3.3	
6.90	103	0.81	0.79	-11.2	-0.78	0.1	-452.0
6.95	105	1.09	1.03	-11.8	-0.80	0.1	-452.0
7.00	99	1.49	1.51	-9.0	-0.64	0.1	-452.0
7.05	90	1.09	1.21	-10.1	-0.80	0.1	-451.8
7.10	79	1.40	1.75	-10.6	-0.96	0.1	-451.8
7.15	73	1.88	2.56	-11.0	-1.08	0.1	-451.8
7.20	80	2.16	2.70	-12.1	-1.09	0.1	-452.0
7.25	80	2.03	2.54	-12.2	-1.09	0.1	-451.7
7.30	58	0.77	1.32	-12.1	-1.48	0.1	-451.8
7.35	28	0.69	2.43	-12.0	-3.05	0.1	-451.8
7.40	34	0.80	2.34	-12.1	-2.56	0.1	-451.8
7.45	53	0.92	1.73	-12.0	-1.64	0.1	-451.5
7.50	65	1.31	2.02	-11.9	-1.32	0.1	-451.8
7.55	45	0.83	1.84	-11.9	-1.90	0.1	-451.8
7.60	28	0.51	1.81	-12.0	-3.07	0.1	-451.3
7.65	25	0.73	2.90	-12.0	-3.44	0.1	-451.8
7.70	39	0.60	1.55	-11.9	-2.19	0.1	-451.5
7.75	40	0.64	1.59	-12.0	-2.12	0.1	-451.8
7.80	39	1.01	2.61	-11.8	-2.20	0.1	-451.5
7.85	76	1.71	2.23	-11.6	-1.09	0.1	-452.0
7.90	101	2.71	2.69	-11.9	-0.85	0.1	-451.7
7.95	97	2.70	2.79	-11.8	-0.88	0.1	-451.8
8.00	154	2.44	1.58	-11.9	-0.55	0.1	-451.5
8.05	124	2.17	1.74	-12.3	-0.71	0.1	-451.7
8.10	49	1.46	2.96	-12.8	-1.85	0.1	-451.8
8.15	25	0.60	2.36	-12.3	-3.47	0.1	-451.7
8.20	27	0.48	1.77	-12.4	-3.34	0.1	-451.7
8.25	25	0.48	1.89	-12.3	-3.50	0.1	-452.0
8.30	30	0.61	2.06	-12.4	-3.01	0.1	-451.8
8.35	46	0.87	1.86	-12.5	-1.93	0.1	-451.7
8.40	60	0.71	1.18	-12.4	-1.49	0.1	-451.7
8.45	55	0.76	1.36	-12.4	-1.60	0.1	-452.0
8.50	56	0.98	1.76	-12.2	-1.57	0.1	-451.8
8.55	93	1.45	1.56	-12.2	-0.94	0.1	-452.0
8.60	133	1.55	1.16	-12.2	-0.66	0.1	-451.8
8.65	144	1.48	1.02	-12.3	-0.61	0.1	-451.7
8.70	142	2.01	1.41	-12.4	-0.62	0.1	-451.7
8.75	124	2.49	2.01	-12.3	-0.71	0.1	-451.8
8.80	103	2.54	2.45	-12.2	-0.84	0.1	-451.8
8.85	103	2.75	2.66	-12.2	-0.84	0.1	-452.0
8.90	99	2.52	2.54	-12.3	-0.89	0.1	-451.7
8.95	110	2.21	2.01	-12.2	-0.79	0.1	-451.8
9.00	96	2.24	2.33	-12.2	-0.91	0.1	-451.8
9.05	66	0.96	1.46	-12.3	-1.34	0.1	-451.7
9.10	39	0.70	1.79	-12.3	-2.27	0.1	-451.7
9.15	32	0.29	0.88	-12.2	-2.70	0.1	-451.8
9.20	28	0.27	0.96	-12.3	-3.12	0.1	-451.3

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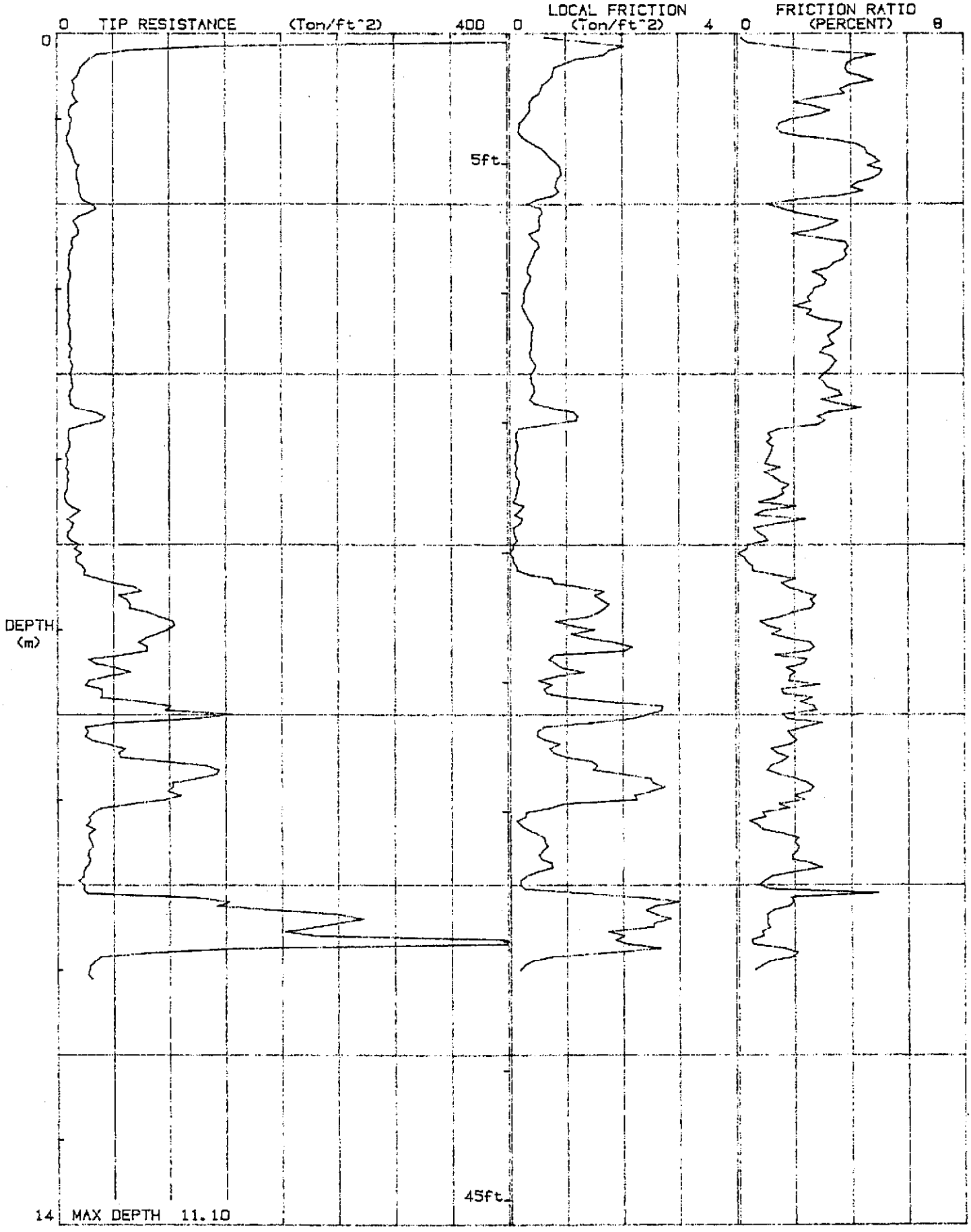
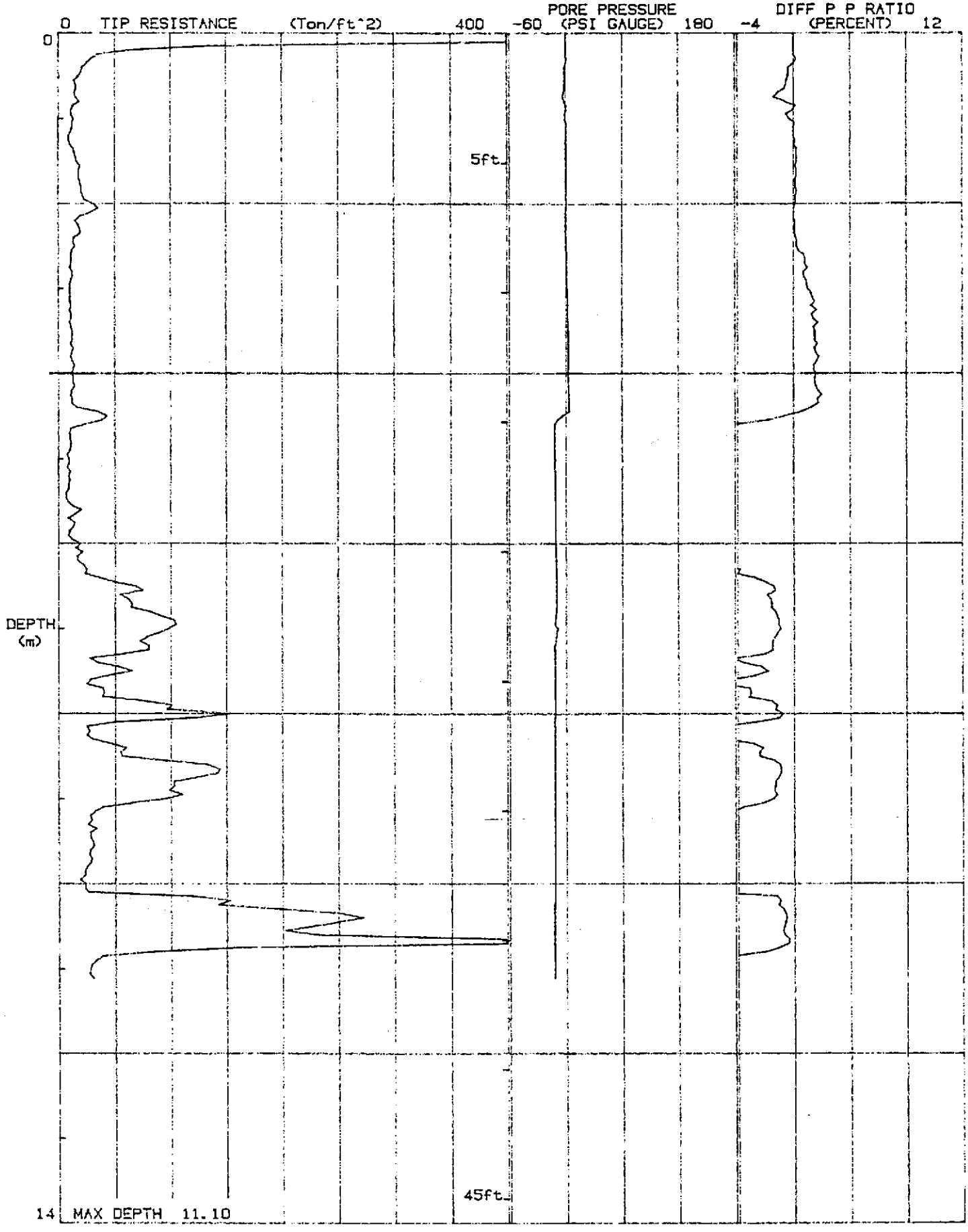
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
9.25	29	0.12	0.39	-12.1	-2.96	0.1	-451.7
9.30	26	0.18	0.70	-12.3	-3.41	0.1	-451.7
9.35	33	0.29	0.86	-12.1	-2.61	0.1	-451.7
9.40	28	0.46	1.61	-12.2	-3.10	0.1	-451.8
9.45	28	0.60	2.12	-12.1	-3.09	0.1	-451.8
9.50	30	0.61	2.01	-12.1	-2.89	0.1	-452.0
9.55	31	0.66	2.14	-12.3	-2.84	0.1	-451.8
9.60	28	0.58	2.11	-12.2	-3.18	0.1	-452.0
9.65	27	0.51	1.93	-12.1	-3.29	0.1	-451.7
9.70	29	0.55	1.93	-12.3	-3.09	0.1	-451.5
9.75	28	0.73	2.58	-12.1	-3.07	0.1	-452.0
9.80	25	0.74	2.96	-12.2	-3.51	0.1	-451.8
9.85	23	0.47	2.00	-12.2	-3.76	0.1	-451.8
9.90	23	0.28	1.20	-12.3	-3.79	0.1	-451.5
9.95	19	0.18	0.95	-12.2	-4.62	0.1	-451.8
10.00	23	0.18	0.76	-12.3	-3.83	0.2	-451.5
10.05	23	0.25	1.08	-12.2	-3.89	0.2	-451.8
10.10	26	1.27	4.94	-12.2	-3.42	0.2	-451.8
10.15	121	2.28	1.88	-12.1	-0.72	0.2	-451.8
10.20	153	2.99	1.95	-12.5	-0.58	0.2	-451.8
10.25	143	2.57	1.80	-13.0	-0.65	0.2	-451.7
10.30	197	2.41	1.22	-13.0	-0.47	0.2	-451.7
10.35	252	2.58	1.02	-12.9	-0.36	0.2	-451.8
10.40	272	2.84	1.04	-12.8	-0.33	0.2	-452.0
10.45	250	2.56	1.02	-12.9	-0.37	0.2	-451.7
10.50	228	2.53	1.11	-13.0	-0.41	0.2	-451.3
10.55	203	1.74	0.85	-13.0	-0.46	0.2	-451.7
10.60	229	2.02	0.88	-13.1	-0.41	0.2	-451.8
10.65	399	1.87	0.46	-13.0	-0.23	0.2	-451.7
10.70	399	2.08	0.51	-13.1	-0.23	0.2	-451.8
10.75	162	2.66	1.64	-13.0	-0.57	0.2	-451.8
10.80	84	1.76	2.09	-12.8	-1.10	0.1	-451.7
10.85	38	0.74	1.94	-12.7	-2.39	0.1	-452.0
10.90	33	0.37	1.11	-12.7	-2.79	0.1	-451.7
10.95	29	0.24	0.83	-12.7	-3.16	0.1	-451.7
11.00	28	0.17	0.59	-12.7	-3.22	0.1	-451.5
11.05	27	?0000000000000000??0000000000000000?		-12.8	-3.47	0.1	-451.8
11.10	30	?0000000000000000??0000000000000000?		-12.7	-3.02	0.1	-451.8

WRITE # RODS USED ___

JOB # : 82580
DATE : 02/26/91 8:50
LOCATION : CPT-04
FILE : 28



JOB # : 92580
DATE : 02/26/91 8:50
LOCATION : CPT-04
FILE : 28



SOUNDING DATA IN FILE 29 02/26/91 9:45

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-05

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	309	0.38	0.12	0.0	0.0	0.0	-451.7
0.10	193	0.61	0.31	-0.0	-0.00	0.0	-451.7
0.15	113	1.30	1.14	-0.1	-0.00	0.0	-451.8
0.20	52	1.20	2.32	0.0	0.0	0.0	-451.7
0.25	28	1.30	4.66	0.0	0.0	0.0	-452.0
0.30	31	1.10	3.52	0.3	0.06	0.0	-451.5
0.35	36	1.03	2.88	-8.0	-1.60	0.0	-451.7
0.40	42	1.68	3.96	-8.0	-1.35	0.0	-451.8
0.45	85	1.84	2.16	-9.2	-0.77	0.0	-451.7
0.50	43	1.92	4.44	-9.8	-1.63	0.0	-451.8
0.55	34	1.50	4.45	-9.6	-2.05	0.0	-451.7
0.60	27	1.27	4.77	-10.6	-2.85	0.0	-451.8
0.65	25	1.09	4.32	-10.9	-3.12	0.0	-451.5
0.70	25	1.01	4.01	-10.9	-3.12	0.0	-451.5
0.75	23	0.98	4.21	-10.9	-3.38	0.0	-451.8
0.80	23	0.96	4.16	-10.8	-3.35	0.0	-451.7
0.85	24	0.98	4.13	-10.8	-3.28	0.0	-451.8
0.90	21	0.98	4.76	-10.8	-3.78	0.0	-451.5
0.95	19	0.92	4.82	-10.7	-4.03	0.0	-451.3
1.00	20	0.94	4.69	-10.8	-3.90	0.0	-451.8
1.05	21	0.98	4.68	-10.7	-3.70	0.0	-451.8
1.10	21	1.04	4.98	-10.7	-3.70	0.0	-451.8
1.15	20	1.06	5.24	-10.6	-3.76	0.0	-452.0
1.20	22	1.13	5.16	-10.5	-3.44	0.0	-451.7
1.25	22	1.18	5.33	-10.4	-3.39	0.0	-451.7
1.30	21	1.28	6.17	-10.3	-3.56	0.0	-452.0
1.35	21	1.35	6.47	-10.2	-3.52	0.0	-451.8
1.40	22	1.40	6.39	-10.3	-3.39	0.0	-451.3
1.45	22	1.39	6.34	-10.4	-3.41	0.0	-451.7
1.50	21	1.37	6.48	-10.3	-3.49	0.0	-451.7
1.55	22	1.33	6.03	-10.3	-3.34	0.0	-451.7
1.60	20	1.28	6.33	-10.2	-3.61	0.0	-451.7
1.65	20	1.20	6.10	-10.1	-3.68	0.0	-451.8
1.70	19	1.15	6.06	-10.2	-3.85	0.0	-451.7
1.75	19	1.07	5.54	-10.2	-3.81	0.0	-451.8
1.80	19	1.00	5.33	-10.1	-3.85	0.0	-451.3
1.85	18	0.91	4.89	-10.0	-3.90	0.0	-451.8
1.90	17	0.85	4.93	-10.0	-4.16	0.0	-452.0
1.95	17	0.86	5.08	-10.1	-4.26	0.0	-451.5
2.00	15	0.77	5.25	-9.9	-4.84	0.0	-451.5

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	13	0.64	4.75	-10.0	-5.36	0.0	-452.0
2.10	13	0.67	5.12	-9.9	-5.46	0.0	-452.0
2.15	17	0.58	3.41	-9.8	-4.18	0.0	-451.8
2.20	11	0.46	4.12	-9.4	-6.12	0.0	-451.8
2.25	9	0.33	3.78	-9.3	-7.59	0.0	-451.8
2.30	8	0.33	4.02	-9.3	-8.05	0.0	-452.0
2.35	9	0.38	4.27	-9.3	-7.42	0.0	-451.7
2.40	10	0.41	4.17	-9.4	-6.76	0.0	-451.5
2.45	10	0.42	4.28	-9.3	-6.88	0.0	-451.3
2.50	10	0.38	3.90	-9.3	-6.86	0.0	-451.5
2.55	8	0.38	4.63	-9.4	-8.22	0.0	-451.8
2.60	8	0.37	4.59	-9.3	-8.32	0.0	-452.0
2.65	10	0.40	3.88	-9.3	-6.53	0.0	-451.7
2.70	9	0.45	5.15	-9.2	-7.56	0.0	-452.0
2.75	10	0.45	4.64	-9.3	-6.83	0.0	-451.7
2.80	8	0.36	4.54	-9.2	-8.27	0.0	-451.7
2.85	8	0.26	3.28	-9.3	-8.52	0.0	-451.8
2.90	8	0.22	2.78	-9.3	-8.22	0.0	-451.7
2.95	8	0.23	3.00	-9.2	-8.66	0.0	-451.7
3.00	6	0.21	3.18	-9.1	-10.18	0.0	-452.0
3.05	6	0.21	3.38	-8.6	-10.22	0.0	-451.8
3.10	8	0.02	0.21	-8.8	-7.69	0.0	-451.8
3.15	7	0.23	3.50	-8.6	-9.30	0.0	-452.0
3.20	2	0.24	10.75	-8.5	-27.24	0.0	-452.0
3.25	8	0.25	3.13	-8.6	-7.71	0.0	-451.3
3.30	7	0.27	3.93	-8.5	-8.91	0.0	-452.0
3.35	8	0.25	3.11	-8.5	-7.54	0.0	-451.7
3.40	7	0.24	3.39	-8.6	-8.59	0.0	-451.8
3.45	8	0.26	3.26	-8.6	-7.71	0.0	-452.0
3.50	9	0.29	3.03	-8.6	-6.59	0.0	-451.2
3.55	9	0.34	3.53	-8.6	-6.49	0.0	-451.8
3.60	11	0.33	3.01	-8.5	-5.60	0.0	-451.8
3.65	9	0.32	3.52	-8.4	-6.51	0.0	-452.4
3.70	10	0.34	3.40	-8.5	-6.12	0.0	-451.7
3.75	10	0.37	3.65	-8.4	-5.96	0.0	-451.7
3.80	12	0.41	3.50	-8.4	-5.26	0.0	-451.7
3.85	11	0.41	3.76	-8.4	-5.51	0.0	-451.8
3.90	12	0.42	3.50	-8.4	-5.11	0.0	-451.8
3.95	12	0.43	3.61	-8.3	-4.99	0.0	-451.5
4.00	12	0.44	3.75	-8.3	-5.16	0.0	-451.7
4.05	12	0.43	3.46	-8.3	-4.82	0.0	-451.8
4.10	11	0.44	3.85	-8.2	-5.12	0.0	-452.3
4.15	13	0.59	4.50	-8.2	-4.49	0.0	-451.7
4.20	13	0.71	5.26	-8.1	-4.34	0.0	-451.5
4.25	17	0.94	5.39	-8.1	-3.34	0.0	-452.0
4.30	42	1.26	2.99	-8.1	-1.38	0.0	-452.0
4.35	50	1.12	2.23	-10.8	-1.55	0.0	-451.8
4.40	68	0.63	0.92	-11.0	-1.16	0.0	-451.8
4.45	69	0.82	1.19	-9.4	-0.98	0.0	-452.0
4.50	69	1.08	1.56	-3.1	-0.31	0.0	-451.3

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
4.55	55	0.95	1.73	-6.6	-0.86	0.0	-452.3
4.60	31	0.53	1.69	-7.7	-1.77	0.0	-451.7
4.65	16	0.21	1.28	-6.8	-2.97	0.0	-452.0
4.70	13	0.18	1.41	-6.6	-3.65	0.0	-451.8
4.75	14	0.21	1.53	-6.6	-3.43	0.0	-451.7
4.80	13	0.24	1.84	-6.7	-3.75	0.0	-451.8
4.85	14	0.39	2.71	-6.5	-3.28	0.0	-452.0
4.90	22	0.62	2.84	-6.4	-2.09	0.0	-451.8
4.95	50	0.82	1.64	-6.3	-0.90	0.0	-452.0
5.00	80	1.36	1.70	-6.2	-0.55	0.0	-451.7
5.05	88	1.74	1.97	-6.3	-0.51	0.0	-452.0
5.10	79	1.48	1.88	-6.3	-0.57	0.0	-451.7
5.15	48	1.01	2.10	-6.5	-0.97	0.0	-451.3
5.20	25	0.38	1.54	-6.8	-1.99	0.0	-451.7
5.25	15	0.14	0.94	-6.5	-3.19	0.0	-451.7
5.30	12	0.10	0.83	-6.5	-3.94	0.0	-451.7
5.35	11	0.11	0.94	-6.5	-4.13	0.0	-451.5
5.40	14	0.31	2.16	-6.5	-3.27	0.0	-451.7
5.45	20	0.62	3.14	-6.5	-2.38	0.0	-451.7
5.50	21	0.94	4.44	-6.4	-2.16	0.0	-451.5
5.55	18	1.04	5.88	-6.3	-2.54	0.0	-451.8
5.60	19	0.95	5.00	-6.3	-2.37	0.0	-451.7
5.65	21	0.90	4.25	-6.1	-2.06	0.0	-451.7
5.70	25	0.91	3.69	-6.3	-1.83	0.0	-452.0
5.75	22	0.86	3.85	-6.2	-2.00	0.0	-451.8
5.80	23	0.79	3.40	-6.3	-1.94	0.0	-451.5
5.85	22	0.73	3.25	-6.2	-1.98	0.0	-451.8
5.90	24	0.71	2.97	-6.2	-1.86	0.0	-451.7
5.95	26	0.71	2.74	-6.2	-1.70	0.0	-451.5
6.00	28	0.73	2.55	-6.2	-1.56	0.0	-451.5
6.05	31	0.77	2.50	-6.1	-1.42	0.0	-451.7
6.10	31	0.76	2.48	-6.0	-1.42	0.0	-451.8
6.15	30	0.78	2.62	-6.0	-1.45	0.0	-452.0
6.20	30	0.74	2.46	-6.0	-1.44	0.0	-451.5
6.25	27	0.77	2.83	-5.9	-1.54	0.0	-452.1
6.30	30	0.94	3.09	-5.9	-1.39	0.0	-451.7
6.35	28	1.03	3.65	-5.7	-1.45	0.0	-451.8
6.40	28	0.86	3.11	-5.9	-1.52	0.0	-451.7
6.45	26	0.80	3.10	-5.8	-1.61	0.0	-452.0
6.50	28	0.61	2.18	-5.8	-1.49	0.0	-451.3
6.55	25	0.79	3.14	-5.7	-1.63	0.0	-451.8
6.60	51	0.65	1.27	-5.8	-0.82	0.0	-451.5
6.65	54	0.43	0.79	-6.0	-0.79	0.0	-451.7
6.70	36	0.62	1.71	-5.7	-1.13	0.0	-451.7
6.75	36	0.68	1.91	-5.7	-1.14	0.0	-451.7
6.80	34	1.26	3.76	-5.6	-1.19	0.0	-451.7
6.85	94	1.99	2.11	-5.5	-0.41	0.0	-451.7
6.90	123	3.11	2.52	-6.1	-0.35	0.0	-451.7
6.95	143	3.00	2.10	-6.0	-0.30	0.0	-452.0
7.00	81	2.49	3.05	-5.9	-0.52	0.0	-452.0

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DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
7.05	105	2.96	2.81	-5.4	-0.36	0.0	-451.8
7.10	129	3.84	2.97	-6.4	-0.35	0.0	-451.7
7.15	126	2.73	2.16	-6.5	-0.37	0.0	-451.5
7.20	131	2.23	1.70	-6.3	-0.34	0.0	-451.5
7.25	139	3.10	2.22	-7.0	-0.36	0.0	-451.7
7.30	120	2.82	2.35	-10.0	-0.59	0.0	-451.5
7.35	104	2.40	2.29	-10.5	-0.72	0.0	-451.5
7.40	105	2.26	2.14	-10.3	-0.70	0.0	-452.0
7.45	135	2.92	2.16	-10.3	-0.55	0.0	-451.8
7.50	132	3.73	2.83	-10.3	-0.56	0.0	-451.8
7.55	135	4.30	3.18	-10.4	-0.55	0.0	-451.8
7.60	138	4.38	3.16	-10.6	-0.55	0.0	-451.3
7.65	120	3.79	3.16	-10.6	-0.63	0.0	-451.5
7.70	100	2.93	2.91	-10.6	-0.75	0.0	-451.7
7.75	55	0.94	1.71	-10.7	-1.40	0.0	-451.3
7.80	29	0.44	1.55	-10.6	-2.67	0.0	-451.8
7.85	25	0.33	1.33	-10.8	-3.12	0.0	-451.8
7.90	26	0.50	1.94	-10.7	-2.95	0.0	-452.0
7.95	29	0.79	2.66	-10.8	-2.63	0.0	-451.7
8.00	28	1.03	3.72	-10.6	-2.76	0.0	-452.0
8.05	27	0.96	3.54	-10.7	-2.82	0.0	-451.7
8.10	25	0.79	3.16	-10.7	-3.05	0.0	-452.0
8.15	25	0.59	2.33	-10.7	-3.04	0.0	-451.5
8.20	25	0.53	2.13	-10.7	-3.13	0.0	-452.0
8.25	28	0.56	1.98	-10.7	-2.74	0.0	-451.7
8.30	31	0.63	2.01	-10.7	-2.45	0.0	-451.7
8.35	37	0.82	2.21	-10.8	-2.08	0.0	-451.5
8.40	40	0.99	2.45	-10.6	-1.89	0.0	-451.8
8.45	42	1.09	2.61	-10.6	-1.82	0.0	-452.0
8.50	41	1.12	2.72	-10.6	-1.86	0.0	-452.0
8.55	43	1.25	2.88	-10.7	-1.77	0.0	-451.3
8.60	40	1.30	3.27	-10.5	-1.90	0.0	-452.0
8.65	41	1.48	3.59	-10.7	-1.86	0.0	-451.7
8.70	40	1.37	3.42	-10.5	-1.88	0.0	-452.0
8.75	39	1.24	3.19	-10.6	-1.96	0.0	-451.8
8.80	37	1.11	3.04	-10.6	-2.08	0.0	-451.8
8.85	37	1.27	3.42	-10.6	-2.06	0.0	-451.3
8.90	37	1.46	3.97	-10.6	-2.07	0.0	-452.0
8.95	40	2.26	5.70	-10.7	-1.93	0.0	-451.7
9.00	77	3.19	4.13	-10.6	-0.99	0.0	-451.7
9.05	79	2.99	3.78	-10.8	-0.98	0.0	-452.0
9.10	50	2.50	5.00	-10.5	-1.50	0.0	-451.7
9.15	44	1.53	3.50	-10.5	-1.73	0.0	-452.0
9.20	41	1.48	3.60	-10.7	-1.87	0.0	-451.8
9.25	42	1.14	2.72	-10.5	-1.80	0.0	-451.7
9.30	42	0.81	1.94	-10.5	-1.80	0.0	-452.1
9.35	31	0.42	1.33	-10.6	-2.45	0.0	-451.5
9.40	34	0.36	1.07	-10.6	-2.24	0.0	-451.5
9.45	33	0.51	1.56	-10.5	-2.31	0.0	-452.1
9.50	35	0.63	1.80	-10.5	-2.15	0.0	-451.7

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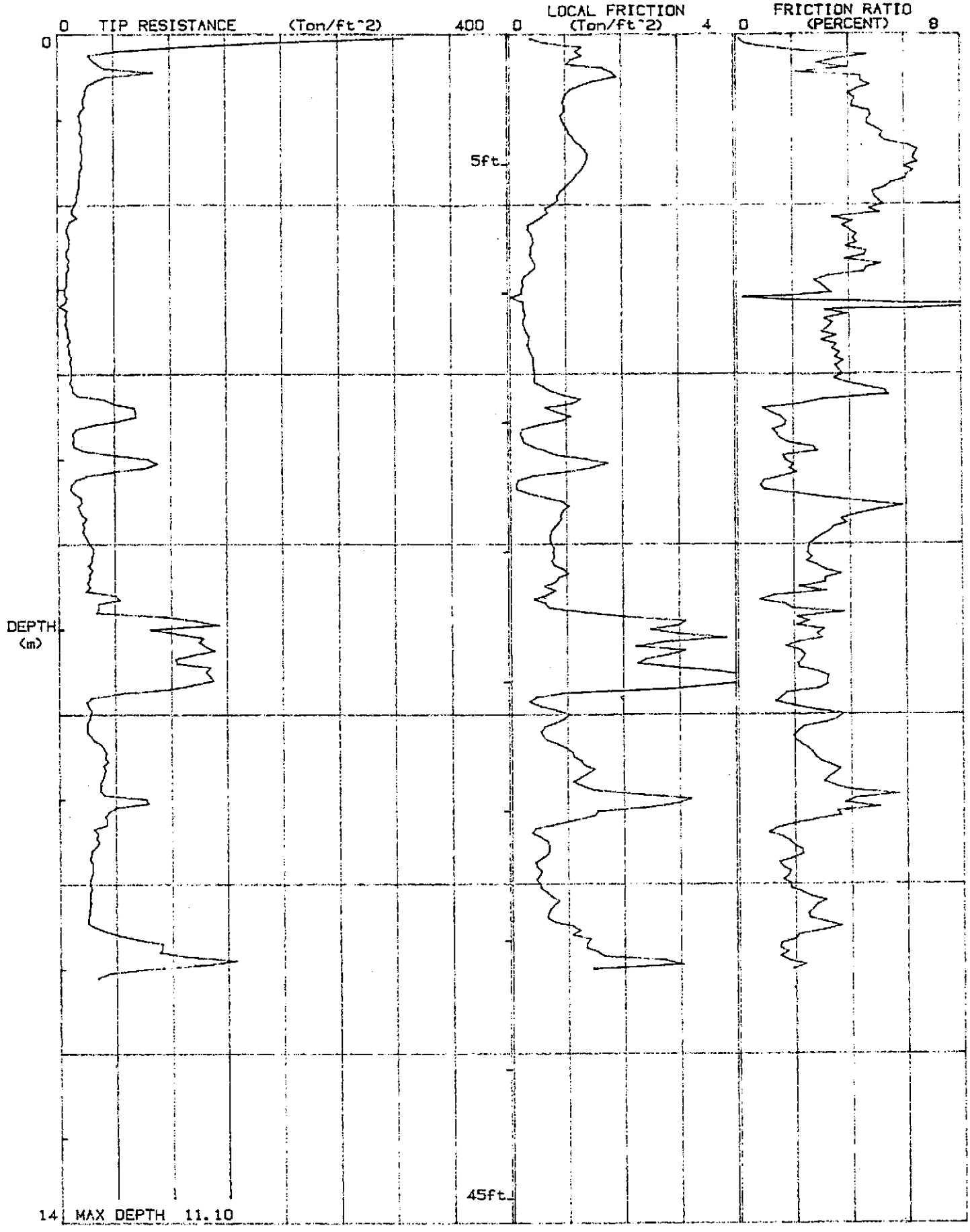
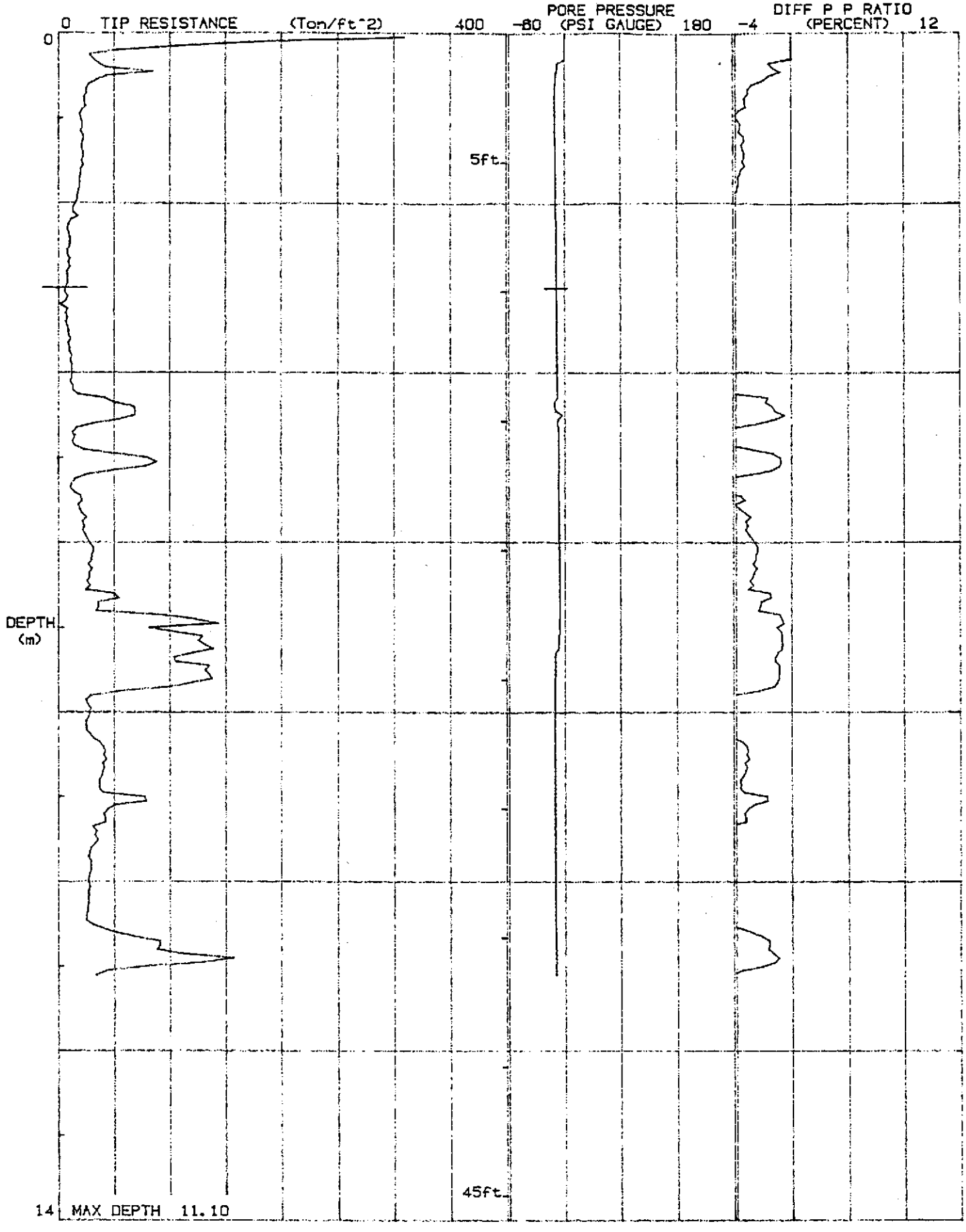
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
9.55	33	0.66	1.98	-10.6	-2.30	0.0	-451.3
9.60	29	0.66	2.25	-10.5	-2.58	0.0	-451.8
9.65	28	0.64	2.27	-10.5	-2.69	0.0	-452.0
9.70	27	0.53	1.92	-10.5	-2.78	0.0	-452.1
9.75	29	0.42	1.44	-10.5	-2.61	0.0	-451.5
9.80	29	0.44	1.55	-10.4	-2.60	0.0	-451.8
9.85	29	0.52	1.81	-10.3	-2.58	0.0	-451.8
9.90	28	0.49	1.77	-10.4	-2.68	0.0	-452.0
9.95	27	0.43	1.58	-10.3	-2.71	0.0	-451.8
10.00	27	0.50	1.83	-10.4	-2.71	0.0	-451.8
10.05	28	0.51	1.82	-10.4	-2.68	0.0	-451.7
10.10	27	0.61	2.21	-10.5	-2.73	0.0	-451.3
10.15	27	0.70	2.54	-10.4	-2.74	0.0	-451.8
10.20	27	0.83	3.07	-10.3	-2.75	0.0	-451.8
10.25	27	0.75	2.76	-10.5	-2.77	0.0	-451.7
10.30	26	0.68	2.62	-10.5	-2.92	0.0	-451.5
10.35	26	0.64	2.46	-10.4	-2.88	0.0	-451.5
10.40	25	0.63	2.49	-10.4	-2.95	0.0	-452.0
10.45	25	0.75	3.05	-10.4	-3.01	0.0	-451.8
10.50	30	1.09	3.60	-10.3	-2.43	0.0	-451.5
10.55	40	1.21	3.00	-10.1	-1.81	0.0	-451.7
10.60	52	1.08	2.09	-10.2	-1.41	0.0	-451.7
10.65	69	1.39	2.01	-10.1	-1.04	0.0	-452.1
10.70	91	1.34	1.48	-10.0	-0.79	0.0	-451.8
10.75	91	1.33	1.46	-10.1	-0.79	0.0	-451.8
10.80	89	1.52	1.70	-9.9	-0.80	0.0	-452.0
10.85	112	1.64	1.46	-9.9	-0.63	0.0	-452.0
10.90	157	2.73	1.74	-9.9	-0.45	0.0	-451.5
10.95	130	3.04	2.33	-10.1	-0.55	0.0	-451.3
11.00	75	1.44	1.93	-10.0	-0.96	0.0	-451.5
11.05	43	?0000000000000000??	0000000000000000?	-9.9	-1.67	0.0	-451.8
11.10	34	?0000000000000000??	0000000000000000?	-9.9	-2.07	0.0	-451.8

WRITE # RODS USED ___

JOB # : 82580
DATE : 02/26/91 9:45
LOCATION : CPT-05
FILE : 29



JOB # : 82580
DATE : 02/26/91 9:45
LOCATION : CPT-05
FILE : 29



30 : CPT-06 : 02/26/91 10:20

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
2.05	20	0.76	3.78	-1.2	-0.43	-0.0	-451.7
2.10	17	0.71	4.07	-1.0	-0.40	-0.0	-451.8
2.15	17	0.74	4.41	-0.9	-0.36	-0.0	-451.2
2.20	16	0.63	4.04	-0.8	-0.38	-0.0	-451.2
2.25	14	0.62	4.34	-0.7	-0.36	-0.0	-451.3
2.30	14	0.67	4.81	-0.9	-0.43	-0.0	-451.8
2.35	14	0.62	4.50	-0.7	-0.38	-0.0	-451.3
2.40	12	0.56	4.58	-0.5	-0.30	-0.0	-451.8
2.45	12	0.61	4.96	-0.5	-0.28	-0.0	-451.3
2.50	12	0.63	5.01	-0.5	-0.28	-0.0	-451.5
2.55	13	0.63	4.74	-0.5	-0.26	-0.0	-451.3
2.60	12	0.56	4.54	-0.3	-0.15	-0.0	-451.8
2.65	24	0.49	1.99	-0.1	-0.02	-0.0	-451.3
2.70	36	0.57	1.60	-0.1	-0.02	-0.0	-451.3
2.75	30	0.47	1.55	0.1	0.01	-0.0	-451.3
2.80	27	0.49	1.81	-0.1	-0.02	-0.0	-451.8
2.85	19	0.44	2.34	-0.0	-0.00	-0.0	-451.3
2.90	11	0.35	3.27	-0.3	-0.20	-0.0	-451.7
2.95	9	0.28	3.31	0.4	0.29	-0.0	-451.8
3.00	9	0.30	3.39	0.4	0.29	-0.0	-451.7
3.05	8	0.32	4.03	0.5	0.41	-0.0	-451.7
3.10	9	0.34	3.92	0.3	0.26	-0.0	-451.5
3.15	10	0.34	3.33	0.4	0.29	-0.0	-451.3
3.20	9	0.38	4.09	0.6	0.41	-0.0	-451.8
3.25	11	0.37	3.52	0.6	0.39	-0.0	-451.3
3.30	10	0.39	3.95	0.9	0.63	-0.0	-451.8
3.35	11	0.41	3.70	0.9	0.58	-0.0	-451.5
3.40	9	0.40	4.42	1.0	0.78	-0.0	-452.0
3.45	9	0.37	4.28	1.0	0.83	-0.0	-451.8
3.50	9	0.39	4.20	0.9	0.73	-0.0	-451.8
3.55	9	0.35	3.68	1.1	0.78	-0.0	-451.5
3.60	9	0.37	4.23	1.2	0.97	-0.0	-451.8
3.65	10	0.48	4.65	1.3	0.94	-0.0	-452.0
3.70	12	0.52	4.38	1.0	0.62	-0.0	-451.5
3.75	11	0.54	4.87	1.1	0.72	-0.0	-452.0
3.80	11	0.50	4.53	1.2	0.78	-0.0	-451.7
3.85	10	0.46	4.65	1.2	0.85	-0.0	-451.8
3.90	10	0.43	4.29	1.3	0.90	-0.0	-451.8
3.95	11	0.41	3.60	1.2	0.78	-0.0	-451.3
4.00	11	0.42	3.68	1.2	0.77	-0.0	-451.2
4.05	11	0.38	3.32	1.3	0.79	-0.0	-451.5
4.10	10	0.33	3.31	1.3	0.95	-0.0	-451.8
4.15	11	0.29	2.65	1.4	0.92	-0.0	-451.8
4.20	10	0.23	2.23	1.8	1.26	-0.0	-451.7
4.25	11	0.23	2.16	1.8	1.22	-0.0	-451.8
4.30	13	0.31	2.42	2.0	1.11	-0.0	-452.0
4.35	17	0.28	1.60	2.2	0.89	-0.0	-451.5
4.40	14	0.23	1.66	2.1	1.08	-0.0	-451.2
4.45	13	0.84	6.36	2.2	1.18	-0.0	-451.5
4.50	50	1.34	2.71	-1.6	-0.23	-0.0	-451.3

SOUNDING DATA IN FILE 30 02/26/91 10:20

ENGINEER : AMERICAN ENVIRON LOCATION : CPT-06

CONE ID : 339 JOB # : 82580

Tonto Drilling Services Inc.

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
0.05	535	0.66	0.12	0.1	0.00	-0.0	-451.3
0.10	227	0.81	0.35	-0.0	-0.00	-0.0	-451.5
0.15	140	0.75	0.53	0.0	0.0	-0.0	-451.8
0.20	112	1.31	1.16	0.0	0.00	-0.0	-451.3
0.25	111	1.35	1.20	0.0	0.00	-0.0	-451.3
0.30	64	1.56	2.45	0.1	0.01	-0.0	-451.3
0.35	34	1.14	3.38	0.1	0.01	-0.0	-451.8
0.40	19	1.01	5.35	0.1	0.05	-0.0	-451.2
0.45	18	0.74	4.10	0.2	0.06	-0.0	-451.3
0.50	17	0.72	4.13	0.2	0.09	-0.0	-451.7
0.55	20	0.81	4.02	0.3	0.10	-0.0	-451.8
0.60	27	0.87	3.24	0.7	0.17	-0.0	-451.7
0.65	29	1.01	3.50	1.0	0.25	-0.0	-451.8
0.70	28	1.12	3.96	1.0	0.25	-0.0	-452.3
0.75	29	1.17	4.11	0.9	0.21	-0.0	-452.1
0.80	26	1.15	4.47	-2.6	-0.72	-0.0	-452.0
0.85	24	1.04	4.37	-2.9	-0.86	-0.0	-452.3
0.90	21	1.01	4.70	-2.9	-0.97	-0.0	-452.1
0.95	20	1.03	5.24	-2.7	-0.98	-0.0	-451.8
1.00	19	1.01	5.22	-2.6	-0.96	-0.0	-451.7
1.05	18	0.92	5.22	-2.5	-1.02	-0.0	-451.7
1.10	19	0.92	4.78	-2.6	-0.98	-0.0	-451.8
1.15	18	1.06	5.75	-2.5	-0.97	-0.0	-451.7
1.20	20	1.19	6.06	-2.3	-0.83	-0.0	-452.0
1.25	22	1.31	5.95	-2.4	-0.79	-0.0	-451.3
1.30	20	1.34	6.72	-2.3	-0.83	-0.0	-451.8
1.35	19	1.26	6.77	-2.2	-0.83	-0.0	-451.7
1.40	21	1.24	5.86	-2.4	-0.81	-0.0	-451.3
1.45	21	1.28	6.11	-2.2	-0.74	-0.0	-451.7
1.50	22	1.29	5.93	-2.4	-0.77	-0.0	-451.7
1.55	23	1.23	5.38	-2.3	-0.72	-0.0	-451.2
1.60	20	1.16	5.70	-2.3	-0.81	-0.0	-451.8
1.65	19	1.09	5.82	-2.3	-0.86	-0.0	-451.8
1.70	19	0.94	5.03	-2.3	-0.87	-0.0	-451.2
1.75	16	0.82	5.06	-1.9	-0.86	-0.0	-451.7
1.80	18	0.77	4.32	-1.8	-0.72	-0.0	-451.5
1.85	19	0.85	4.56	-1.7	-0.65	-0.0	-451.7
1.90	21	0.93	4.50	-1.8	-0.63	-0.0	-451.2
1.95	20	0.99	4.95	-1.7	-0.62	-0.0	-451.7
2.00	22	0.89	3.99	-1.7	-0.54	-0.0	-451.8

30 : CPT-06 : 02/26/91 10:20

DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
4.55	52	1.71	3.28	-11.5	-1.58	-0.0	-451.5
4.60	57	1.62	2.84	-12.0	-1.51	-0.0	-451.7
4.65	38	0.94	2.49	-12.3	-2.35	-0.0	-451.7
4.70	17	0.46	2.66	-12.6	-5.20	-0.0	-451.3
4.75	14	0.28	2.04	-12.6	-6.58	-0.0	-451.3
4.80	13	0.30	2.23	-12.4	-6.72	-0.0	-451.3
4.85	14	0.33	2.40	-12.4	-6.52	-0.0	-451.5
4.90	13	0.32	2.37	-12.3	-6.65	-0.0	-451.2
4.95	12	0.32	2.61	-12.2	-7.17	-0.0	-451.8
5.00	15	0.24	1.59	-12.1	-5.77	-0.0	-451.5
5.05	18	0.48	2.57	-12.2	-4.76	-0.0	-451.5
5.10	34	0.50	1.47	-12.0	-2.55	-0.0	-451.7
5.15	88	1.25	1.41	-12.0	-0.97	-0.0	-452.0
5.20	101	2.00	1.97	-12.0	-0.85	-0.0	-451.8
5.25	59	1.14	1.93	-12.0	-1.46	-0.0	-451.5
5.30	33	0.33	1.01	-11.9	-2.61	-0.0	-451.2
5.35	29	0.15	0.50	-11.8	-2.94	-0.0	-451.2
5.40	21	0.12	0.54	-11.9	-3.99	-0.0	-451.7
5.45	18	0.07	0.39	-11.7	-4.78	-0.0	-452.0
5.50	16	0.12	0.78	-11.8	-5.37	-0.0	-451.3
5.55	15	0.25	1.65	-11.7	-5.62	-0.0	-451.8
5.60	20	0.79	3.99	-11.7	-4.25	-0.0	-451.3
5.65	52	1.45	2.77	-11.7	-1.60	-0.0	-451.7
5.70	59	2.13	3.58	-11.9	-1.44	-0.0	-451.5
5.75	74	2.19	2.95	-11.9	-1.15	-0.0	-452.0
5.80	85	1.75	2.06	-12.1	-1.02	-0.0	-451.5
5.85	85	2.08	2.45	-12.1	-1.02	-0.0	-451.7
5.90	131	3.30	2.50	-12.2	-0.66	-0.0	-451.3
5.95	120	3.75	3.13	-12.4	-0.74	-0.0	-451.3
6.00	90	3.71	4.10	-12.3	-0.97	-0.0	-451.2
6.05	104	3.16	3.03	-12.3	-0.84	-0.0	-451.7
6.10	160	1.98	1.23	-12.0	-0.54	-0.0	-451.7
6.15	213	4.23	1.98	-12.2	-0.41	-0.0	-451.5
6.20	135	4.71	3.49	-12.5	-0.66	-0.0	-451.8
6.25	59	3.96	6.75	-12.6	-1.54	-0.0	-451.3
6.30	34	2.57	7.54	-12.8	-2.69	-0.0	-451.5
6.35	26	2.69	10.20	-12.8	-3.50	-0.0	-451.3
6.40	139	3.26	2.34	-12.9	-0.66	0.0	-451.5
6.45	368	6.46	1.75	-12.8	-0.25	0.0	-451.7
6.50	320	7.25	2.26	-12.8	-0.28	0.1	-451.5
6.55	218	7.37	3.38	-12.6	-0.41	0.1	-451.7
6.60	215	7.57	3.51	-12.5	-0.41	0.1	-451.7
6.65	165	6.54	3.96	-12.5	-0.54	0.1	-451.3
6.70	171	5.94	3.46	-12.4	-0.51	0.2	-451.2
6.75	146	4.25	2.91	-12.4	-0.61	0.2	-451.3
6.80	164	4.75	2.90	-12.4	-0.54	0.2	-451.2
6.85	121	4.99	4.12	-12.6	-0.74	0.2	-451.2
6.90	144	6.25	4.34	-12.3	-0.61	0.2	-451.8
6.95	160	6.03	3.77	-12.3	-0.55	0.3	-451.3
7.00	135	6.28	4.66	-12.4	-0.66	0.3	-451.8

30 : CPT-06 : 02/26/91 10:20

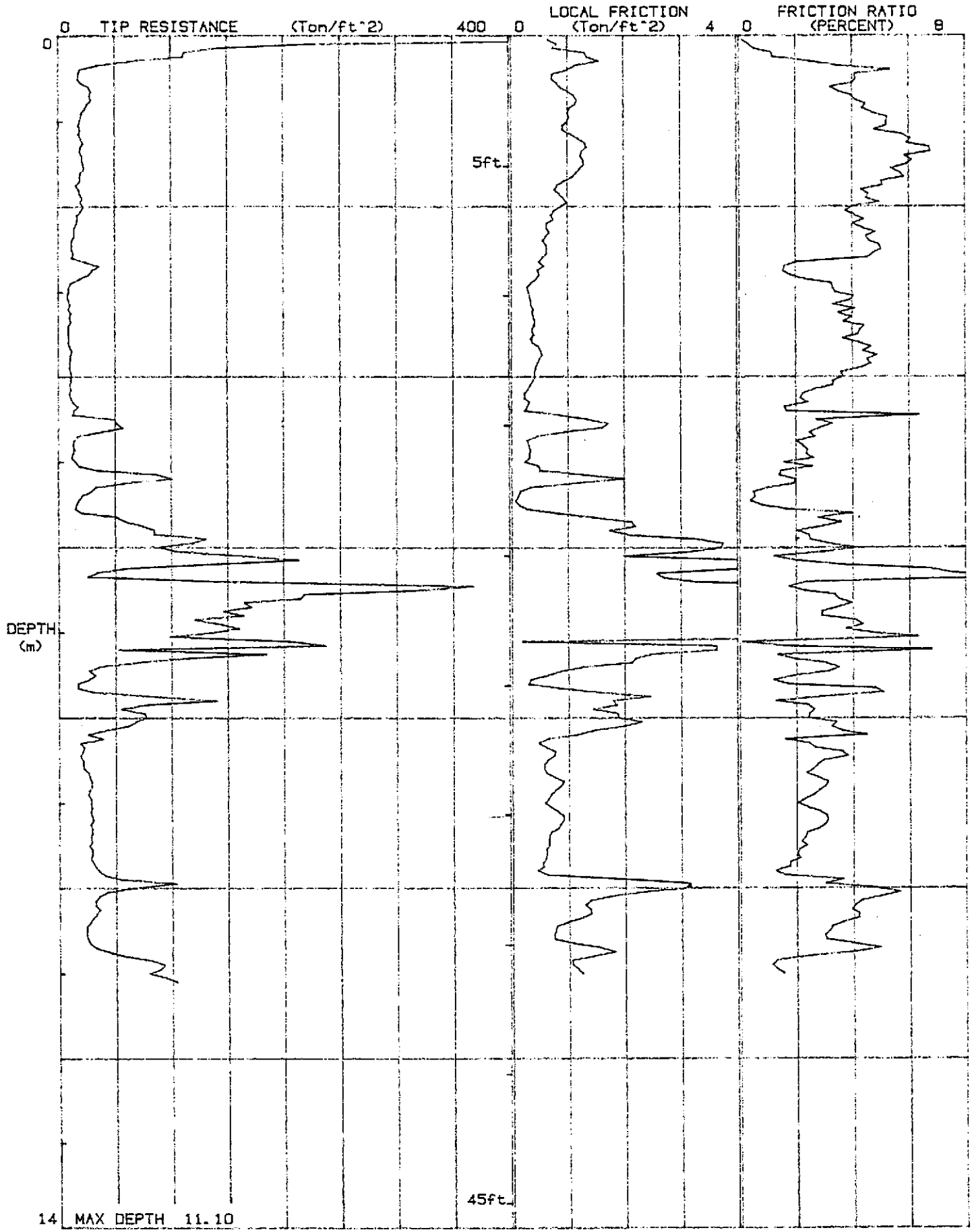
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
7.05	99	6.22	6.28	-12.3	-0.89	0.3	-451.7
7.10	205	0.18	0.08	-12.4	-0.43	0.3	-451.7
7.15	237	3.63	1.53	-12.5	-0.37	0.3	-451.7
7.20	53	3.63	6.79	-12.8	-1.71	0.3	-451.2
7.25	185	2.47	1.33	-12.5	-0.48	0.3	-451.7
7.30	116	2.19	1.88	-12.6	-0.78	0.3	-451.5
7.35	70	2.12	3.03	-12.7	-1.30	0.3	-451.7
7.40	36	1.27	3.50	-12.8	-2.53	0.3	-451.3
7.45	27	0.87	3.16	-12.7	-3.33	0.3	-452.0
7.50	32	0.63	1.94	-12.8	-2.83	0.3	-451.5
7.55	27	0.33	1.20	-12.8	-3.40	0.3	-452.1
7.60	17	0.29	1.72	-12.8	-5.56	0.3	-452.3
7.65	17	0.82	4.82	-12.8	-5.43	0.3	-451.8
7.70	30	1.50	5.06	-13.0	-3.14	0.3	-451.8
7.75	82	2.45	3.00	-13.0	-1.14	0.4	-451.8
7.80	140	1.80	1.28	-12.8	-0.65	0.3	-451.7
7.85	76	1.85	2.43	-12.9	-1.21	0.3	-451.8
7.90	55	1.44	2.62	-12.8	-1.68	0.3	-452.0
7.95	76	1.87	2.46	-12.9	-1.22	0.3	-451.8
8.00	77	1.89	2.43	-12.8	-1.18	0.3	-451.8
8.05	68	2.30	3.40	-12.9	-1.37	0.3	-451.5
8.10	61	2.00	3.26	-12.9	-1.51	0.3	-451.7
8.15	41	1.47	3.59	-12.8	-2.25	0.4	-451.3
8.20	26	1.18	4.48	-12.8	-3.50	0.4	-451.7
8.25	39	0.63	1.58	-13.1	-2.38	0.4	-452.4
8.30	19	0.47	2.44	-12.8	-4.77	0.4	-452.0
8.35	22	0.59	2.64	-13.1	-4.23	0.4	-451.7
8.40	21	0.76	3.63	-13.0	-4.46	0.4	-452.3
8.45	19	0.74	3.80	-12.9	-4.77	0.4	-452.6
8.50	21	0.63	2.96	-13.1	-4.43	0.4	-451.8
8.55	21	0.57	2.75	-13.0	-4.50	0.4	-452.3
8.60	22	0.57	2.60	-12.9	-4.28	0.4	-452.0
8.65	26	0.60	2.35	-13.0	-3.65	0.4	-451.3
8.70	27	0.74	2.74	-13.0	-3.48	0.4	-452.1
8.75	29	0.91	3.09	-13.0	-3.18	0.4	-451.7
8.80	29	0.87	3.03	-13.1	-3.29	0.4	-451.5
8.85	27	0.77	2.81	-13.0	-3.44	0.4	-451.7
8.90	26	0.69	2.63	-13.0	-3.56	0.4	-452.1
8.95	28	0.64	2.31	-13.0	-3.37	0.4	-451.8
9.00	28	0.58	2.05	-13.0	-3.29	0.4	-451.8
9.05	29	0.68	2.37	-13.0	-3.24	0.5	-451.7
9.10	28	0.80	2.81	-12.9	-3.27	0.5	-451.5
9.15	29	0.90	3.06	-13.1	-3.21	0.5	-451.5
9.20	30	0.91	3.09	-13.1	-3.17	0.5	-451.7
9.25	28	0.86	3.01	-12.8	-3.24	0.5	-451.5
9.30	29	0.81	2.80	-13.0	-3.23	0.5	-451.5
9.35	29	0.68	2.36	-12.8	-3.21	0.5	-451.5
9.40	28	0.65	2.31	-12.9	-3.32	0.5	-451.5
9.45	29	0.64	2.18	-13.0	-3.18	0.5	-451.3
9.50	27	0.64	2.34	-12.8	-3.36	0.5	-451.7

30 : CPT-06 : 02/26/91 10:20

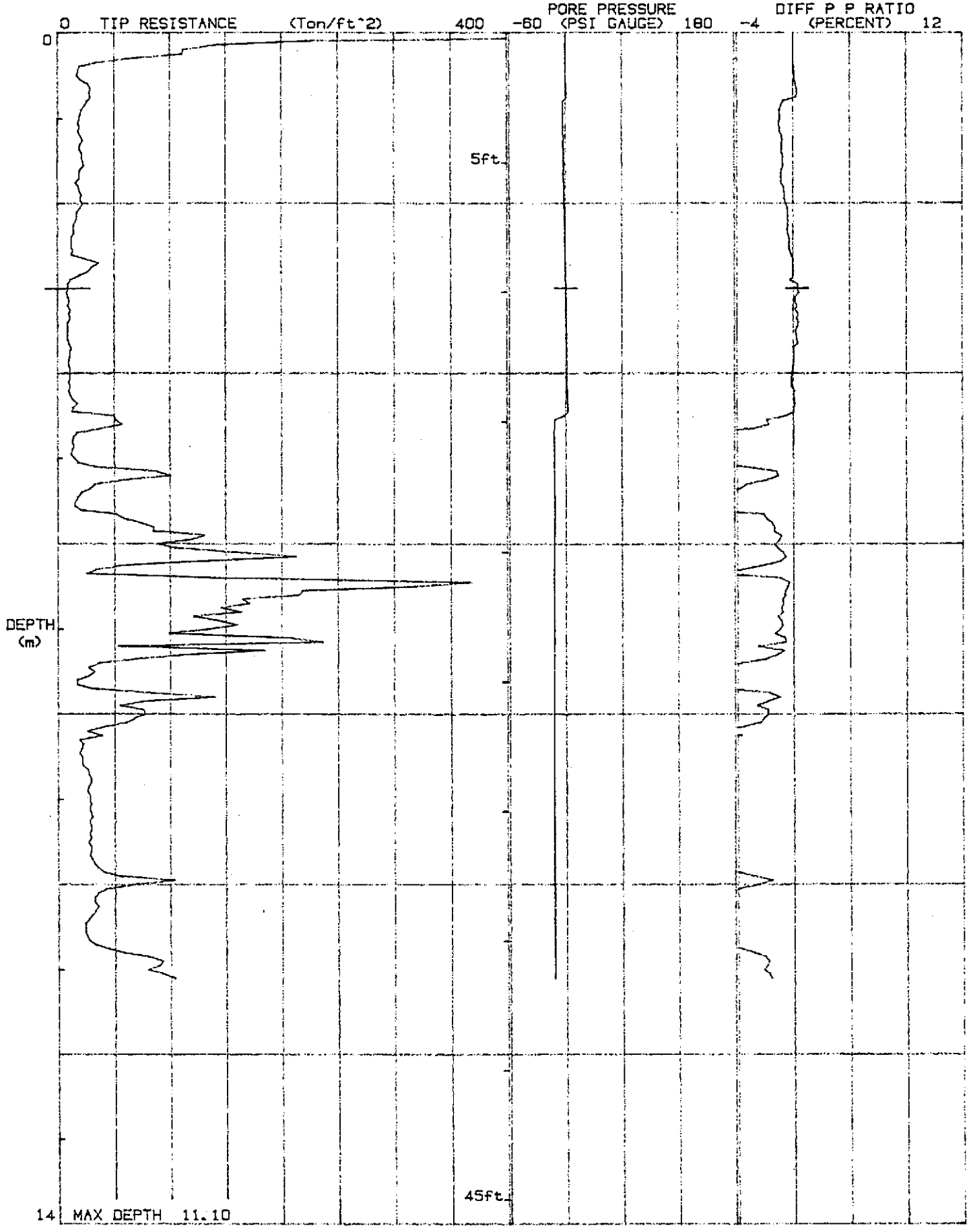
DEPTH (METERS)	TIP RESISTANCE (Ton/ft^2)	LOCAL FRICTION (Ton/ft^2)	FRICTION RATIO (PERCENT)	PORE PRESSURE (PSI GAUGE)	DIFF P P RATIO (PERCENT)	INCLINATION (DEGREES)	TEMPERATURE (DEF F)
9.55	29	0.60	2.09	-13.0	-3.24	0.5	-451.8
9.60	29	0.60	2.03	-12.9	-3.17	0.5	-451.3
9.65	28	0.59	2.10	-12.8	-3.28	0.5	-451.7
9.70	30	0.54	1.76	-12.8	-3.03	0.5	-451.5
9.75	32	0.55	1.74	-12.9	-2.92	0.5	-451.3
9.80	35	0.45	1.25	-12.9	-2.60	0.5	-451.8
9.85	40	0.61	1.54	-12.9	-2.32	0.5	-451.7
9.90	54	1.98	3.64	-12.8	-1.68	0.5	-451.3
9.95	104	3.16	3.02	-12.9	-0.88	0.5	-451.2
10.00	66	3.17	4.80	-12.9	-1.40	0.5	-451.5
10.05	42	2.36	5.63	-12.7	-2.17	0.5	-451.3
10.10	35	1.75	4.98	-12.7	-2.61	0.5	-451.7
10.15	32	1.38	4.28	-12.7	-2.82	0.5	-451.7
10.20	32	1.29	4.07	-12.7	-2.87	0.5	-451.8
10.25	35	1.37	3.95	-12.8	-2.64	0.5	-451.3
10.30	33	1.39	4.18	-12.7	-2.75	0.5	-451.2
10.35	30	1.24	4.18	-12.7	-3.08	0.5	-451.7
10.40	27	0.98	3.63	-12.8	-3.39	0.5	-451.3
10.45	24	0.78	3.24	-12.7	-3.78	0.5	-451.2
10.50	24	0.76	3.16	-12.7	-3.78	0.5	-451.7
10.55	24	0.73	2.99	-12.7	-3.75	0.5	-451.7
10.60	25	0.75	3.03	-12.8	-3.73	0.5	-451.7
10.65	27	1.10	4.00	-12.8	-3.35	0.5	-451.3
10.70	32	1.56	4.94	-12.6	-2.88	0.5	-451.8
10.75	44	1.82	4.09	-12.7	-2.06	0.5	-451.8
10.80	58	1.44	2.48	-12.8	-1.58	0.5	-451.3
10.85	82	1.05	1.28	-12.7	-1.11	0.5	-451.2
10.90	93	1.06	1.13	-12.6	-0.97	0.5	-452.0
10.95	90	1.15	1.27	-12.7	-1.01	0.5	-451.2
11.00	80	1.23	1.52	-12.7	-1.13	0.5	-451.5
11.05	94	?0000000000000000??	0000000000000000?	-12.5	-0.95	0.5	-451.3
11.10	104	?0000000000000000??	0000000000000000?	-12.5	-0.86	0.5	-451.7

WRITE # RODS USED ___

JOB # : 82580
DATE : 02/26/91 10:20
LOCATION : CPT-06
FILE : 30



JOB # : 82580
DATE : 02/26/91 10:20
LOCATION : CPT-06
FILE : 30



APPENDIX B

SOIL SAMPLING RESULTS

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

AEMC Lincoln Village
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

05/02/91

Attn : Phil Walsack

Re: *Project :* Sears, Oakland
Project No. : 82580
*Chain of Custody number :*24665,66
Date Samples Received : 03/01/91 *Job No.:* 82580
No. Samples Received : 16 *AELC Lab No. :* L6096A

These samples were received by American Environmental Laboratories in a chilled, intact state, and accompanied by valid chain of custody documentation.

The following analyses were performed on the above referenced project:

No. of Samples	*Analysis*
16	Lead by EPA Method 6010

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

George Hampton

Laboratory Director

3249 Fitzgerald Road • Rancho Cordova, CA 95742 • Fax (916) 638-4510 • (916) 638-7301

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village Dr., Ste. 501
Sacramento, CA 95827
Attn: Phillip Walsack
Project Manager

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Description	Detection Limit ppm	SOIL Graivmetric Waste Oil as Petroleum Oil ppm
	Project # 82580 Sears - Oakland 2633 Telegraph Ave.		
M021004	B-1-1	50	100
M021005	B-1-2	50	<50
M021006	B-1-3	50	300
M021007	B-2-1	50	<50
M021008	B-2-2	50	300

QA/QC: Freon Blank is none detected.

Note: Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 503e

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021004	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-1-1 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

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Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021005	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-1-2 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	<1.0
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	<0.005
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021006	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-1-3 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	2.1
Benzene	0.005	0.087
Toluene	0.005	0.15
Xylenes	0.005	0.16
Ethylbenzene	0.005	0.038

QA/QC: Sample blank is none detected
Duplicate Deviation is 6.7%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021007	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-2-1 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	2.2
Benzene	0.005	0.10
Toluene	0.005	0.14
Xylenes	0.005	0.12
Ethylbenzene	0.005	0.030

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021008	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-2-2 SOIL

ANALYSIS

	Detection Limit	Sample Results
	ppm	ppm
Total Petroleum Hydrocarbons as Gasoline	1.0	1.8
Benzene	0.005	<0.005
Toluene	0.005	<0.005
Xylenes	0.005	0.094
Ethylbenzene	0.005	<0.005

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village Dr., Ste 501
Sacramento, CA 95827
Attn: David Oliver
Project Manager

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sear Automotive
2633 Telegraph Ave - Oakland
Project No.: 82580

Sample Number	Description	Detection Limit ppm	SOIL Total Petroleum Hydrocarbons as Diesel ppm
M021004	B-1-1	10	<10
M021005	B-1-2	10	<10
M021006	B-1-3	10	<10
M021007	B-2-1	10	<10
M021008	B-2-2	10	<10

QA/QC: Sample blank is none detected
Duplicate Deviation on M021006 is 4.3%
Spike Recovery on M021004 is 101%

Note: Analysis was performed using EPA method 3550 and TPH LUFT.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons/BTXE, EPA Method 8015/8020
Purge and Trap, EPA Method 5030

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/04/91 & 03/05/91
Date Analyzed: 03/04/91 & 03/05/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7031, 7033
Matrix: Soil

Sample I.D. Client	AEMC	Batch #	Benzene (ug/kg)	Toluene (ug/kg)	Ethyl-benzene (ug/kg)	Xylenes, total (ug/kg)	TPH as Gasoline (mg/kg)
B-7-1	L6096-1	7031	ND	26	ND	ND	ND
B-7-2	L6096-2	7031	ND	220	ND	ND	ND
B-7-3	L6096-3	7031	ND	110	ND	ND	2.0
B-8-1	L6096-4	7031	ND	50	ND	ND	ND
B-8-2	L6096-5	7031	41	200	170	280	6.3
B-8-3	L6096-6	7031	5.0	130	30	ND	1.4
Method Blank	L6096-MB	7031	ND	ND	ND	ND	ND
B-9-1	L6096-7	7033	ND	39	ND	ND	ND
B-9-2	L6096-8	7033	ND	220	ND	ND	ND
B-9-3	L6096-9	7033	ND	120	ND	ND	ND
B-9-4	L6096-10	7033	ND	75	ND	ND	ND
B-10-1	L6096-11	7033	ND	67	ND	ND	ND
B-10-2	L6096-12	7033	ND	110	ND	ND	ND
B-10-3	L6096-13	7033	ND	210	6.4	ND	1.8
B-11-1	L6096-14	7033	ND	100	ND	ND	ND
B-11-2	L6096-15	7033	ND	120	ND	ND	ND
B-11-3	L6096-16	7033	ND	300	7.6	ND	3.5
Method Blank	L6096-MB	7033	ND	ND	ND	ND	ND
REPORTING LIMIT*			5.0	5.0	5.0	10	1.0

*Unless otherwise indicated in parentheses

ND = Not Detected at or above indicated Reporting Limit.

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons, EPA Method 8015
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/08/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096

Matrix: Soil

Sample I.D. Client	AEMC	Batch #	TPH as Diesel (mg/kg)
B-7-1	L6096-1	7012	ND
B-7-2	L6096-2	7012	ND
B-7-3	L6096-3	7012	ND
B-8-1	L6096-4	7012	ND
B-8-2	L6096-5	7012	ND
B-8-3	L6096-6	7012	ND
B-9-1	L6096-7	7012	ND
B-9-2	L6096-8	7012	ND
Method Blank	L6096-MB	7012	ND
REPORTING LIMIT*			10

*Unless otherwise indicated in parentheses

ND = Not Detected at or above indicated Reporting Limit.

3249 Fitzgerald Road • Rancho Cordova, CA 95742 • Fax (916) 638-4510 • (916) 638-7301

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Lead, TTLC, EPA Method 6010

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Digested: 04/25/91
Date Analyzed: 04/27/91
Date Reported: 05/02/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096A
Batch No.: 52387
Matrix: Soil

Sample I.D. Client	AEMC	Concentration (mg/kg)
B-7-1	L6096A-1	ND
B-7-2	L6096A-2	ND
B-7-3	L6096A-3	ND
B-8-1	L6096A-4	ND
B-8-2	L6096A-5	ND
B-8-3	L6096A-6	ND
B-9-1	L6096A-7	ND
B-9-2	L6096A-8	ND
Method Blank	L6096A-MB	ND
Reporting Limit*		5.0

*Unless otherwise indicated within parentheses.
ND = Not Detected at or above indicated Reporting Limit.

AMERICAN ENVIRONMENTAL LABORATORIES CORP.

CHAIN OF CUSTODY

L 6096
LOG NO. 24665

CLIENT NAME: Sears
ADDRESS: Telegraph Ave
PROJECT NAME: Sears, Oakland
PROJECT MANAGER: Walsacke PHONE #
SAMPLED BY: Walsacke
JOB DESCRIPTION:
SITE LOCATION: Oakland

CLIENT JOB NUMBER: 82580

DESTINATION LABORATORY:
- [x] AELC 3249 FITZGERALD RD. RANCHO CORDOVA, CA. 95742
- [ ] OTHER

FIELD CONDITIONS: raining
COMPOSITE:
SPECIAL INSTRUCTIONS: Conserve Sample

DATE	TIME	SAMPLE IDENTIFICATION	SAMPLE DEPTH	SAMPLE METHOD	CONTAINER TYPE	CONTAINER NO.	CONTAINER TYPE	PRESERVATIVES	1203 D/F	TPH-D	TPH-G	BTEX	TURN AROUND TIME: 24 HOURS	48 HOURS	1 WEEK	2 WEEKS	NOTE / FIELD READINGS
2-28	1245	B-7-1	5>5.5	CPT	Soil	1	tube	3	X	X	X	X				X	
	1300	B-7-2	8>8.5						X	X	X	X				X	
	1310	B-7-3	12>12.5						X	X	X	X				X	
	1210	B-8-1	5>5.5						X	X	X	X				X	
	1220	B-8-2	8>8.5						X	X	X	X				X	
	1230	B-8-3	12-12.5						X	X	X	X				X	
	1330	B-9-1	5>5.5						X	X	X	X				X	
	1345	B-9-2	8>8.5						X	X	X	X				X	
	1395	B-9-3	12>12.5						X	X	X	X				X	
	1405	B-9-4	15>15.5						X	X	X	X				X	
	1425	B-10-1	5>5.5						X	X	X	X				X	
"	1440	B-10-2	8>8.5	"	"	"	"	"	X	X	X	X				X	

SUSPECTED CONSTITUENTS

SAMPLE RETENTION TIME

PRESERVATIVES: (1) HCL (2) HNO_3 (3) COLD (4)

RELINQUISHED BY (SIGN)	PRINT NAME/COMPANY	DATE/TIME	REC'D BY (SIGN)	PRINT NAME/COMPANY
[illegible] Walsacke	American/Walsacke	3-1-91 / 1000	Mike Westdal	MIKE WESTDAL/AELC

REC'D AT LAB BY: Mike Westdal DATE/TIME: 3/1/91 1000 CONDITIONS/COMMENTS: REC'D cold.

SHIPPED VIA: [ ] FED X [ ] UPS [ ] OTHER _____ AIRBILL #

LAB

AMERICAN ENVIRONMENTAL LABORATORIES CORP.

CHAIN OF CUSTODY

L6096
LOG NO. 24666

CLIENT NAME: Sears
ADDRESS: Telegraph Ave-
PROJECT NAME: Sears, Oakland
PROJECT MANAGER: Walbach PHONE #
SAMPLED BY: Walbach
JOB DESCRIPTION: C. Assessment
SITE LOCATION: Oakland

CLIENT JOB NUMBER: 82580

DESTINATION LABORATORY
- ☐ AELC 3249 FITZGERALD RD. RANCHO CORDOVA, CA. 95742
- ☐ OTHER

FIELD CONDITIONS: Raining
COMPOSITE:
SPECIAL INSTRUCTIONS: Conserve Sample

DATE	TIME	SAMPLE IDENTIFICATION	SAMPLE DEPTH	SAMPLE METHOD	CONTAINER TYPE	CONTAINER NO.	CONTAINER TYPE	PRESERVATIVES	ANALYSIS REQUESTED: O&G-9071	TPH-D	TPH-G	BTEX	TURN AROUND TIME: 24 HOURS	48 HOURS	1 WEEK	2 WEEKS	NOTE / FIELD READINGS
2-28	1445	B-10-3	12 > 12.5	CPT	Soil	1	Tube	3	X	X	X	X				X	
(	1510	B-11-1	5 > 5.5	(	(	(	(	(	X	X	X	X				X	
(	1515	B-11-2	8 > 8.5	(	(	(	(	(	X	X	X	X				X	
↓	1520	B-11-3	12 > 12.5	↓	↓	↓	↓	↓	X	X	X	X				X	

SUSPECTED CONSTITUENTS
SAMPLE RETENTION TIME
PRESERVATIVES: (1) HCL (2) HNO_3 (3) COLD (4)

RELINQUISHED BY (SIGN)	PRINT NAME/COMPANY	DATE/TIME	REC'D BY (SIGN)	PRINT NAME/COMPANY
Phil Walbach	AEHR	3-1-91 / 1000	Mike Westdal	MIKE WESTDAL/AELC

REC'D AT LAB BY: Mike Westdal DATE/TIME: 3/1/91 1000 CONDITIONS/COMMENTS: REC'D COLD

SHIPPED VIA ☐ FED X ☐ UPS ☐ OTHER _____ AIRBILL #

LAB

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Oil & Grease, EPA Method 9071
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/11/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7053, 7054
Matrix: Soil

Sample I.D. Client	AEMC	Total Oil & Grease (mg/kg)
B-7-1	L6096-1	ND
B-7-2	L6096-2	ND
B-7-3	L6096-3	ND
B-8-1	L6096-4	ND
B-8-2	L6096-5	ND
B-8-3	L6096-6	ND
B-9-1	L6096-7	ND
B-9-2	L6096-8	ND
Method Blank	L6096-MB	ND
B-9-3	L6096-9	400
B-9-4	L6096-10	ND
B-10-1	L6096-11	ND
B-10-2	L6096-12	ND
B-10-3	L6096-13	ND
B-11-1	L6096-14	ND
B-11-2	L6096-15	ND
B-11-3	L6096-16	930
Method Blank	L6096-MB	ND
Reporting Limit*		50

* Unless otherwise indicated within parentheses.
ND = Not Detected at or above indicated Reporting Limit.

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons/BTXE, EPA Method 8015/8020
Purge and Trap, EPA Method 5030

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/04/91 & 03/05/91
Date Analyzed: 03/04/91 & 03/05/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7031, 7033
Matrix: Soil

Sample I.D. Client	AEMC	o-Chlorotoluene Conc. (ug/kg)	Surrogate Recovery % Recovery
B-7-1	L6096-1	100	88%
B-7-2	L6096-2	100	77%
B-7-3	L6096-3	100	NR
B-8-1	L6096-4	100	62%
B-8-2	L6096-5	100	NR
B-8-3	L6096-6	100	NR
Method Blank	L6096-MB	100	82%
B-9-1	L6096-7	100	87%
B-9-2	L6096-8	100	79%
B-9-3	L6096-9	100	81%
B-9-4	L6096-10	100	79%
B-10-1	L6096-11	100	72%
B-10-2	L6096-12	100	75%
B-10-3	L6096-13	100	NR
B-11-1	L6096-14	100	81%
B-11-2	L6096-15	100	73%
B-11-3	L6096-16	100	NR
Method Blank	L6096-MB	100	87%

ND = Not Detected at or above indicated Reporting Limit.
NR = Not Reportable; See report cover letter for explanation.

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons, EPA Method 8015
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/08/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096

Matrix: Soil

Sample I.D. Client	AEMC	Batch #	TPH as Diesel (mg/kg)
B-9-3	L6096-9	7013	ND
B-9-4	L6096-10	7013	ND
B-10-1	L6096-11	7013	ND
B-10-2	L6096-12	7013	ND
B-10-3	L6096-13	7013	ND
B-11-1	L6096-14	7013	ND
B-11-2	L6096-15	7013	ND
B-11-3	L6096-16	7013	ND
Method Blank	L6096-MB	7013	ND
REPORTING LIMIT*			10

*Unless otherwise indicated in parentheses

ND = Not Detected at or above indicated Reporting Limit.

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CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Lead, TTLC, EPA Method 6010

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Digested: 04/25/91
Date Analyzed: 04/27/91
Date Reported: 05/02/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096A
Batch No.: 52388
Matrix: Soil

Sample I.D. Client	AEMC	Concentration (mg/kg)
B-9-3	L6096A-9	ND
B-9-4	L6096A-10	ND
B-10-1	L6096A-11	ND
B-10-2	L6096A-12	ND
B-10-3	L6096A-13	ND
B-11-1	L6096A-14	ND
B-11-2	L6096A-15	ND
B-11-32	L6096A-16	ND
Method Blank	L6096A-MB	ND

Reporting Limit* 5.0

*Unless otherwise indicated within parentheses.
ND = Not Detected at or above indicated Reporting Limit.

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APPENDIX C

GROUNDWATER SAMPLING RESULTS

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village Dr., Ste 501
Sacramento, CA 95827
Attn: David Oliver
Project Manager

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sear Automotive
2633 Telegraph Ave - Oakland
Project No.: 82580

Sample Number	Description	Detection Limit ppb	SOIL Total Petroleum Hydrocarbons as Diesel ppb
M021003	E-5	50	<50
M021009	B-1-HP	50	<50
M021010	B-3-HP	50	<50

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA method 3510 and TPH LUFT.
(ppb) = (µg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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82580/011662

American Environmental
9719 Lincoln Village Dr., Ste 501
Sacramento, CA 95827
Attn: David Oliver
Project Manager

Date Sampled: 02-28-91
Date Received: 02-28-91
Date Reported: 02-28-91

Sample Number	Description	Detection Limit	SOIL Total Petroleum Hydrocarbons as Diesel
		ppb	ppb
	Sear Automotive 2633 Telegraph Ave - Oakland Project No.: 82580		
M021011	B-4A-HP	50	<50
M021012	B-6-HP	50	<50
M021013	B-7-HP	50	<50
M021014	B-8-HP	50	<50

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA method 3510 and TPH LUFT.
(ppb) = (µg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village Dr., Ste. 501
Sacramento, CA 95827
Attn: Phillip Walsack
Project Manager

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Description	Detection Limit ppm	WATER Graivmetric Waste Oil as Petroleum Oil ppm
		Project # 82580 Sears - Oakland 2633 Telegraph Ave.	
M021003	E-5	500	7,000
M021009	B-1-HP	5.0	<5.0
M021010	B-3-HP	5.0	200

QA/QC: Freon Blank is none detected.

Note: Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 503e

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village Dr., Ste. 501
Sacramento, CA 95827
Attn: Phillip Walsack
Project Manager

Date Sampled: 02-28-91
Date Received: 02-28-91
Date Reported: 02-28-91

Sample Number	Description	Detection Limit ppm	WATER Graivmetric Waste Oil as Petroleum Oil ppm
	Project # 82580 Sears - Oakland 2633 Telegraph Ave.		
M021011	B-4A-HP	5.0	<5.0
M021012	B-6-HP	5.0	<5.0
M021013	B-7-HP	5.0	<5.0
M021014	B-8-HP	5.0	<5.0

QA/QC: Freon Blank is none detected.
Spike Recovery on M021013 is 94%
Duplicate Deviation on M021013 is 1.05%

Note: Analysis was performed using EPA extraction method 3550 with Trichlorotrifluoroethane as solvent, and gravimetric determination by standard methods 503e

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

1678 Reliez Valley Road
Lafayette, CA 94549 • (415) 945-1266

CHAIN OF CUSTODY

SAMPLER: ~~Phil Wallach~~ (signature)

DATE/TIME OF COLLECTION: _____

TURNAROUND TIME: _____

SAMPLE DESCRIPTION AND PROJECT NUMBER: Sears Oakland 82580

SAMPLE #	ANALYSIS	~~GRAB~~ OR COMP.	NUMBER OF CONTAINERS	SOIL/ WATER
E-5	TPH-G BTEX TPH-D O&G; Chem	G	4 VOAs	H_2O
B-1-1	O&G TPH-D TPH-G BTEX	G	1" tube	S
B-1-2	O&G TPH-D TPH-G BTEX	G	"	S
B-1-3	O&G TPH-D TPH-G BTEX	G	"	S
B-2-1	TPH-G BTEX TPH-D O&G	G	"	S
B-2-2	O&G TPH-D	G	Hold Jar	S
~~B-2-3~~	No Sample	-o-	-o-	-o-

RELINQUISHED BY*	TIME/DATE	RECEIVED BY*	TIME/DATE
1. Phil Wallach	0800 2-27-91		08:15 2-27-91
2.			
3.			
4.			

* STATE AFFILIATION NEXT TO SIGNATURE

REMARKS: _____

Phone (916) 782 2110
FAX (916) 786-7830

~~AEGIS Environmental Consultants, Inc.~~

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
801 Riverside, Suite C
Roseville, CA 95678

American Environmental

Site Address: Sears Oakland

AEGIS Project #:

Shipped By:

Shipped To:

Project Manager Walsh, Phil

For Shell Projects Only

WIC:

AFE:

CT/DL:

Shell Engineer:

Hazardous Materials Suspected? (yes/no)

	Sampling Point	Location	Time Field ID#	Date	Sample Type	No. of Containers	Analysis Required
MO21 009	B-1-HP	- " -	0830	2-27-91	H_2O	2 Ambers 2 VOA	TPH-G BTEX TPH-D C;G
010	B-3-HP	- " -	1130	2-27-91	H_2O	1 Amber 3 VOAs	O&G TPH-D TPH-G BTEX
011	B-4A-HP	Rem 2/25/90	1600	2-27-91	H_2O	2 Ambers 2 VOAs	O&G TPH-D TPH-G BTEX

Sampler(s) (signature)

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
	Phil Walsh 2-27-91		2-27-91	All Day	

Sealed for shipment by: (signature) Date/Time: Shipment Method:

Received for Lab by: (signature) Joyce Disharoon Date/Time: 2-27-91 16:30 Comments:

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

Phone (916) 782 2110
FAX (916) 786-7830

AEGIS Environmental Consultants, Inc.

Sample Identification/Field Chain of Custody Record

Send results to:
Aegis Environmental
801 Riverside, Suite C
Roseville, CA 95678

Site Address: Sears Oakland

AEGIS Project #:

Shipped By:

Shipped To:

Project Manager

For Shell Projects Only

WIC:

AFE:

CT/DL:

Shell Engineer:

Hazardous Materials Suspected? (yes/no)

Sampling Point	Location	Time Field ID#	Date	Sample Type	No. of Containers	Analysis Required
B-6-HP		0805	2-28-91	H_2O	2 VOAs 2 Amber	TPH-G O&G TPH-D BTEX
B-7-HP		1000	2-28-91	H_2O	2 VOA 2 Amber	TPHG O&G TPH-D BTEX
B-8-HP		1100	2-28-91	H_2O	"	" " "

Sampler(s) (signature)

Field ID	Relinquished By (signature)	Received By (signature)	Date/Time		Comments
	[signature]		2-28-91	1300	

Sealed for shipment by: (signature) Date/Time: Shipment Method:

Received for Lab by: (signature) Joyce Deshazeau Date/Time: 3/28/91 1300 Comments:

Receiving Laboratory: Please return original form after signing for receipt of samples.

White/Original Yellow/Lab Copy Pink/File Copy

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021003	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. E-5 WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	18,000
Benzene	0.5	240
Toluene	0.5	240
Xylenes	0.5	180
Ethylbenzene	0.5	74

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
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82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021009	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-1-HP WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected
Spike Recovery is 92%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-27-91
Date Received: 02-27-91
Date Reported: 02-27-91

Sample Number	Sample Description
M021010	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-3-HP WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-28-91
Date Received: 02-28-91
Date Reported: 02-28-91

Sample Number	Sample Description
M021012	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-6-HP WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-28-91
Date Received: 02-28-91
Date Reported: 02-28-91

Sample Number	Sample Description
M021011	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-4A-HP WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	180
Benzene	0.5	2.1
Toluene	0.5	0.6
Xylenes	0.5	2.1
Ethylbenzene	0.5	0.5

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

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Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-28-91
Date Received: 02-28-91
Date Reported: 02-28-91

Sample Number	Sample Description
M021013	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-7-HP WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

MOBILE CHEM LABS INC.

5021 Blum Road, Suite 3 • Martinez, CA 94553
Phone (415) 372-3700 • Fax (415) 372-6955

82580/011662

American Environmental
9719 Lincoln Village, Suite 501
Sacramento, CA 95827
Attn: Philip Walsack
Project Geologist

Date Sampled: 02-28-91
Date Received: 02-28-91
Date Reported: 02-28-91

Sample Number	Sample Description
M021014	Project # 82580 Sears Automotive-Oakland 2633 Telegraph Ave. B-8-HP WATER

ANALYSIS

	Detection Limit	Sample Results
	ppb	ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Sample blank is none detected
Spike Recovery is 103%
Duplicate Deviation is 2.9%

Note: Analysis was performed using EPA methods 5030 and TPH LUFT with method 8020 used for BTX distinction.
(ppm) = (mg/kg)

MOBILE CHEM LABS

for Ronald G. Evans
Lab Director

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Oil & Grease, EPA Method 9071
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/11/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7053
Matrix: Soil

Analyte	Spike Conc. (mg/kg)	MS %Rec	MSD %Rec	Duplicate RPD
Total Oil & Grease	1,540	93%	93%	0%

MS = Matrix Spike
MSD = Matrix Spike Duplicate
% REC = Percent Recovery
RPD = Relative Percent Difference

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Oil & Grease, EPA Method 9071
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/11/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7054
Matrix: Soil

Analyte	Spike Conc. (mg/kg)	MS %Rec	MSD %Rec	Duplicate RPD
Total Oil & Grease	1,160	92%	95%	3%

MS = Matrix Spike
MSD = Matrix Spike Duplicate
% REC = Percent Recovery
RPD = Relative Percent Difference

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons/BTXE, EPA Method 8015/8020
Purge and Trap, EPA Method 5030

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/05/91
Date Analyzed: 03/05/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096

Analyte	LCS Conc. (ug/L)	LCS %Rec
Benzene	20	99%
Toluene	20	108%

LCS = Laboratory Control Standards
% REC = Percent Recovery

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ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons/BTXE, EPA Method 8015/8020
Purge and Trap, EPA Method 5030

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/05/91
Date Analyzed: 03/05/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7033
Matrix: Soil

Surrogate	Spike Conc. (ug/kg)	MS %Rec	MSD %Rec
o-Chlorotoluene	100	106%	100%

Analyte	Spike Conc. (ug/kg)	MS %Rec	MSD %Rec	Duplicate RPD
Benzene	100	93%	82%	13%
Toluene	100	NR	NR	--
Ethylbenzene	100	96%	84%	13%
Xylenes, Total	300	97%	87%	11%

MS = Matrix Spike
MSD = Matrix Spike Duplicate
% REC = Percent Recovery
RPD = Relative Percent Difference

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons/BTXE, EPA Method 8015/8020
Purge and Trap, EPA Method 5030

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/04/91
Date Analyzed: 03/04/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096

Analyte	LCS Conc. (mg/L)	LCS %Rec
Gasoline	0.8	107%

LCS = Laboratory Control Standards
% REC = Percent Recovery

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons/BTXE, EPA Method 8015/8020
Purge and Trap, EPA Method 5030

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/04/91
Date Analyzed: 03/04/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7031
Matrix: Soil

Analyte	Spike Conc. (mg/kg)	MS %Rec	MSD %Rec	Duplicate RPD
Gasoline	4.0	105%	103%	2%

MS = Matrix Spike
MSD = Matrix Spike Duplicate
% Rec = Percent Recovery
RPD = Relative Percent Difference

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons, EPA Method 8015
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/08/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096

Analyte	LCS Conc. (mg/L)	LCS %Rec
Diesel	1,000	95%

LCS = Laboratory Control Standards
% Rec = Percent Recovery

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons, EPA Method 8015
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/08/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7013
Matrix: Soil

Analyte	Spike Conc. (mg/kg)	MBS %Rec	MBSD %Rec	Duplicate RPD
Diesel	100	98%	99%	1%

MBS = Method Blank Spike
MBSD = Method Blank Spike Duplicate
% Rec = Percent Recovery
RPD = Relative Percent Difference

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Total Petroleum Hydrocarbons, EPA Method 8015
Shaker, DOHS Luft Method

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Extracted: 03/08/91
Date Analyzed: 03/08/91
Date Reported: 03/11/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096
Batch No.: 7012
Matrix: Soil

Analyte	Spike Conc. (mg/kg)	MBS %Rec	MBSD %Rec	Duplicate RPD
Diesel	100	91%	101%	10%

MBS - Method Blank Spike
MBSD - Method Blank Spike Duplicate
% Rec - Percent Recovery
RPD - Relative Percent Difference

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

AEMC Lincoln Village
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

03/12/91

Attn : Phil Walsack

Re: *Project :* Sears, Oakland
Project No. : 82580
*Chain of Custody number :*24665,66
Date Samples Received : 03/01/91 *Job No.:* 82580
No. Samples Received : 16 *AELC Lab No. :* L6096

These samples were received by American Environmental Laboratories in a chilled, intact state, and accompanied by valid chain of custody documentation.

The following analyses were performed on the above referenced project:

No. of Samples	*Analysis*
16	TPH Volatiles by LUFT Method
16	TPH Extractables by LUFT Method
16	BTEX by LUFT Method
16	EPA 9071 Oil and Grease

Method 8020 surrogate standard recovery data could not be generated for a number of samples due to the presence of significant concentrations of gasoline in these samples.

Method 8020 matrix spike (Toluene) recovery data could not be generated for batch 7033 due to the presence of a significant concentration of toluene in the sample selected for spiking.

Analytical results are attached to this letter. Please call if we can provide additional assistance.

Sincerely,

George Hampton

Laboratory Director

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Lead, TTLC, EPA Method 6010

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: NA
Date Received: NA
Date Digested: 04/25/91
Date Analyzed: 04/27/91
Date Reported: 05/02/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096A (9-16)

Element	LCS Conc. (mg/L)	LCS %Rec
Pb (Lead)	0.50	104%

LCS = Laboratory Control Standards
% Rec = Percent Recovery
NA = Not Applicable

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Lead, TTLC, EPA Method 6010

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Digested: 04/25/91
Date Analyzed: 04/27/91
Date Reported: 05/02/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096A
Batch No.: 52388
Matrix: Soil

Element	Spike Conc. (mg/kg)	MS %Rec	MSD %Rec	Duplicate RPD
Pb (Lead)	25	92%	101%	9%

MS = Matrix Spike
MSD = Matrix Spike Duplicate
% Rec = Percent Recovery
RPD = Relative Percent Difference

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Lead, TTLC, EPA Method 6010

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: NA
Date Received: NA
Date Digested: 04/25/91
Date Analyzed: 04/27/91
Date Reported: 05/02/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096A (1-8)

Element	LCS Conc. (mg/L)	LCS %Rec
Pb (Lead)	0.50	109%

LCS - Laboratory Control Standards
% Rec - Percent Recovery
NA - Not Applicable

AMERICAN
ENVIRONMENTAL LABORATORIES CORP.

CA DOHS ELAP Accreditation/Registration Number 1233

ANALYSIS REPORT: Lead, TTLC, EPA Method 6010

CLIENT: AEMC
9719 Lincoln Village Dr. #501
Sacramento, CA 95827

Project No.:
Contact: P. Walsack
Phone:

Project: Sears, Oakland

AEMC Contact: G. Hampton

Date Sampled: 02/28/91
Date Received: 03/01/91
Date Digested: 04/25/91
Date Analyzed: 04/27/91
Date Reported: 05/02/91

Job No.: 82580
COC Log No.: 24665

AEMC I.D.: L6096A
Batch No.: 52387
Matrix: Soil

Element	Spike Conc. (mg/kg)	MS %Rec	MSD %Rec	Duplicate RPD
Pb (Lead)	25	91%	88%	3%

MS = Matrix Spike
MSD = Matrix Spike Duplicate
% Rec = Percent Recovery
RPD = Relative Percent Difference

APPENDIX D

HEALTH AND SAFETY PLAN

Job No. 82580

HEALTH & SAFETY PLAN
for
SEARS, ROEBUCK AND CO.
AUTOMOTIVE CENTER
2633 Telegraph Avenue
Oakland, California

28 August 1991

prepared by the

AMERICAN ENVIRONMENTAL MANAGEMENT CORPORATION
Engineering Division
9719 Lincoln Village Drive, Suite 501
Sacramento, California 95827
(916) 364-8872

AMERICAN
ENVIRONMENTAL MANAGEMENT CORP

HEALTH AND SAFETY PLAN

American Environmental Management Corporation's (AEMC) Health and Safety Program is designed to meet the requirements of 29 CFR 1910.120.

The objective of this Health and Safety Plan is to establish health and safety guidelines for the Sears/Oakland contamination assessment. The project will consist of installing approximately three to five soil borings, collecting soil samples for laboratory analyses, installing three to five monitoring wells in the soil borings, collecting and analyzing groundwater samples from the monitoring wells, if necessary, backfilling and resurfacing of the excavation, and general site cleanup following the completion of site operations. General information pertaining to the site is provided in Table 1.

TABLE 1

GENERAL INFORMATION
HEALTH AND SAFETY PLAN

SEARS AUTOMOTIVE CENTER
Oakland, California

Site: Sears Automotive Center
Location: Oakland, California
Background Review: Removal of underground stroage tanks revealed the presence of petroleum hydrocarbon and petroleum hydrocarbon constituents in the tank excavations. Subsequent cone penetrometer sampling revealed the presence of petroleum hydrocarbons and related constituents in groundwater and soil.

Site/Hazard Overview

Apparent Hazard:	low
Type of Facility:	automotive center
Status of Facility:	active
Waste Types:	liquid and solid
Waste Characteristics:	toxic, ignitable, and volatile
Hazard Type:	vapors and contact

CHARACTERIZATION OF WASTE PRODUCTS

The chemicals of concern onsite are petroleum hydrocarbons and related constituents. The constituents of gasoline typically include benzene, toluene, xylenes, ethylbenzene, and organic lead, and are central nervous system (CNS) depressants. In addition, leaded and unleaded gasoline contain antiknock ingredients such as tetraethyl lead or aromatic hydrocarbons which may cause CNS, kidney or liver damage or cancer. Waste motor oil often includes concentrations of metals, solvents and various types of oil. A summary of the health effects is given in Appendix I.

SITE SAFETY WORKPLAN

GENERAL

Operations that will be conducted on the site include completion of three to five soil borings, collection of soil samples in the soil borings, installation of three to five monitoring wells in the soil borings and general site cleanup. The procedures for collection of soil samples are described in Appendix II.

The Site Safety Officer, in concert with the AEMC Industrial Hygienist, will assess the hazard of inhalation of vapors or particulate matter according to meteorological conditions and the phase of site operations, and will determine when and in what areas of the site personnel will be required to wear respirators.

Onsite personnel are trained to be aware of the potential for heat stress during site operations. The combination of overexertion, protective clothing, and high ambient temperatures could cause heat stress which can lead to dehydration if body liquids and minerals are not replaced. Rest periods and replacement of body fluids by potable drinking water and electrolyte containing beverages are required to prevent heat stress during site operations.

HEALTH AND SAFETY RESPONSIBILITIES FOR KEY PERSONNEL

The Project Manager and the Site Safety Officer will be responsible for planning and coordinating all activities onsite and will ensure that a Tailgate Safety Meeting form, completed and signed by an AEMC Industrial Hygienist, is obtained before work begins. They will also ensure that the Tailgate Safety Meeting form is signed daily by each employee onsite and that the Health and Safety Plan is reviewed before work begins by all site operations personnel.

The Site Safety Officer will be responsible for implementing all facets of the Health and Safety Plan during site operations, including briefing all participants in the Health and Safety Plan requirements, ensuring that all necessary permits are onsite, enforcing the use of hearing protection where required, establishing the exclusion zone, and determining actions to be taken in case of an emergency onsite. The Site Safety Officer will bring all real or potential health and safety problems to the attention of the Project Manager and the AEMC Health and Safety Department.

The Project Manager, in consultation with the Site Safety Officer and the AEMC Industrial Hygienist, will be responsible for determining all site-specific health and safety decisions and will oversee their implementation.

WORKER TRAINING REQUIREMENTS

As required by 29 CFR 1910.120, all site operations personnel shall provide evidence of health and safety training prior to entering the site. Evidence is generally demonstrated by a Certificate of Training. In addition, no visitors will be allowed inside the exclusion zone if compliance with 29 CFR 1910.120 cannot be demonstrated.

MEDICAL SURVEILLANCE REQUIREMENTS

As required by 29 CFR 1910.120, all site operations personnel shall participate in a medical surveillance (Occupational Health) monitoring program. Documentation will be required from all site operations personnel to demonstrate this compliance.

DOCUMENTATION

Compliance with the Health and Safety Plan review requirement will be documented on a sign-off sheet during the safety briefing attendance meetings which will be scheduled at the

beginning of field operations and which will be reviewed at the beginning of each day during the conduct of site operations. A sign-off sheet is presented in Appendix III.

This meeting, also known as the Tailgate Safety Meeting, will be conducted by the Project Manager or the Site Operations Supervisor. This meeting must be attended by all AEMC employees and subcontractors working on the project that day.

GENERAL SAFETY REQUIREMENTS

The following general safety requirements shall be followed by all site operations personnel, or qualified visitors, working and/or entering the site during the conduct of the site operations.

- No site operations personnel or visitors will be allowed onsite without the prior knowledge and consent of the Site Safety Officer.
- There will be no activities conducted onsite without sufficient backup personnel. At a minimum, two persons must be present on the site during the conduct of the site operations. A trained AEMC supervisor, as required by 29 CFR 1910.120, must be present onsite at all times during the conduct of site operations.
- All site operations personnel shall immediately bring to the attention of the Site Safety Officer or Project Manager any unsafe condition or practice associated with the site operations activities that they are unable to correct themselves.
- There will be no smoking, eating, chewing gum, drinking or tobacco consumption inside the Exclusion Zone.
- Hands shall be thoroughly cleaned prior to smoking, eating or other activities outside the Exclusion Zone.
- Site operations personnel must avoid unnecessary contamination, including walking through known or suspected "hot spots" or contaminated puddles, kneeling or sitting on the ground, leaning against potentially contaminated barrels or equipment.
- Respiratory devices will not be worn with beards, long sideburns, or under any other conditions that prevent a proper seal while the respirator is being worn.
- Contact lenses will not be worn with respirators in use.
- All excavations will be done in accordance with the CAL/OSHA Excavation and Trenching Safety requirements.

EXCLUSION ZONE

An Exclusion Zone will be established immediately around the soil excavation area and clearly marked (as needed).

The following activities will be conducted in the Exclusion Zone:

- Equipment staging
- Well digging
- Soil sampling
- Groundwater sampling and monitoring

PERSONNEL PROTECTION EQUIPMENT

The level of protection will be Level D with upgrade to Level C if appropriate. Level C includes the following equipment:

- Hard hat
- Nitrile (green) gloves
- Disposable Tyvek coveralls over work clothes
- Disposable PVC booties over steel toed safety boots
- NIOSH-approved full face respirator (or half-face respirator with goggles) equipped with high-efficiency combination cartridges for toxic particulates, organic vapors, and acid gases.
- Earplugs or earmuffs (while working on or around operating equipment)

Level D includes the following equipment:

- Hard hat
- Routine work clothes
- Steel toed safety boots
- Protective eyewear
- Nitrile (green) gloves (when handling soil, during testing, sampling, shovelling, etc.)

- Earplugs or earmuffs (while working on or around operating equipment)

DECONTAMINATION

Decontamination consists of contamination-reduction phases and personal hygiene for site operations. The following decontamination procedures will be used:

- Maximize the use of disposable clothing for personal protection (latex surgical gloves, Tyvek coveralls and PVC booties).
- Remove disposable PVC booties, Tyvek coveralls, outer gloves and inner gloves and dispose of them in a clean unused garbage bag(s).
- Remove respirator, remove cartridges and discard them. Return respirator to storeroom at the end of the job. All respirators will be properly washed, sanitized, tagged and stored.
- The garbage bag(s) holding disposable items from the site operations will be placed in securely covered, clearly marked 55-gallon steel drums and placed in an area of the site at the direction of the Site Engineer. Final disposition will be in accordance with site remedial action.
- Wash hands and face with soap immediately upon exiting the Exclusion Zone.
- After departing the site, site operations personnel should shower as soon as possible.
- After departing the site, fabric work clothes and undergarments should be washed as soon as possible using routine wash method.
- Each piece of equipment (tools and all vehicles taken inside the exclusion zone) must be decontaminated before it leaves the operation site. This must be done in an area designated for equipment decontamination. Large items of equipment, such as backhoes, vehicles and trucks, should be subjected to decontamination by high pressure water washes or steam. A special solution, such as Liqui-Nox, a 1% to 2% TSP solution, or Bola Degreaser, may have to be used on sampling equipment or heavily soiled items. All wash and rinse water must be contained (on Visqueen for large equipment, in 5-gallon buckets for tools), collected, and disposed of as required.
- For decontamination of personnel involved in an accident, refer to the Emergency Procedures section of this document (page D-9).

PHYSICAL HAZARDS

The physical hazards associated with operating a drill rig are as follows:

- Moving machine parts

- Heavy equipment
- Noise
- Exposure to contaminated particulate matter while moving drill cuttings
- Possible contact with gas or power lines during excavating

All personnel operating the drill rig must be very familiar with its operating procedures and the safety precautions to be taken. They must know how to shut it off in case of an emergency.

Noise levels for drill rig operators may be expected to exceed 85 decibels on the A-weighted scale. Therefore, heavy equipment operators will wear disposable earplugs or earmuffs with a Noise Reduction Rating (NRR) of at least 25 decibels. A hearing conservation program, in conformance with OSHA requirements, will be in effect throughout the duration of the project.

Care will be used when moving drill cuttings to avoid creating a dust. An air purifying respirator may be required while performing any operation where sufficient dust may be generated.

The Project Manager shall investigate all excavation areas for gas and power lines before drilling. This includes contacting the Underground Service Alert organization at (800) 642-2444. No drilling will occur in any area where such lines are found.

EMERGENCY INFORMATION

A description of local resources available in case of emergency is presented on Table 2.

EMERGENCY PROCEDURES

If an injury should occur on the site and involves exposure to gross contamination, the local emergency contacts (Table 2) will be notified of the incident and of the potential contaminants involved. Before being transported to the medical care facility, the victim will undergo a gross washdown using clear water after removal of all contaminated clothing. This will reduce the chance of spreading contaminants to the emergency vehicle and local hospital.

If an accident should occur onsite which results in a minor injury (e.g., cuts or bruises), a first aid kit and portable eye wash unit will be available for treatment.

If an accident should occur onsite which results in a major trauma (e.g., fractured bones or severe lacerations), the local emergency telephone number (911) will be used to contact emergency services. The victim will not be transported in any vehicle other than a fully-equipped emergency vehicle.

SAFETY EQUIPMENT CHECKLIST

A Safety Equipment Checklist is presented on Table 3.

TABLE 2

EMERGENCY INFORMATION
LOCAL RESOURCES

HEALTH AND SAFETY PLAN

SEARS AUTOMOTIVE CENTER
Oakland, California

Ambulance:		911
Hospital Emergency Room:	Providence Hospital	415-874-8010
The route to the hospital is:	Go north on Telegraph Avenue to 30th Street . Go right on 30th Street 3 blocks to Summit Street . Go left on Summit Street. Hospital is on corner of 30th Street and Summit Street. See Appendix IV for map.	
Local Police:		911
Local Fire Department		911
AEMC 24-Hour Emergency*		(800) 332-2362

* An AEMC Manager, Industrial Hygienist, and Hazardous Materials Dispatcher can be reached 24 hours a day at this number.

TABLE 3

SAFETY EQUIPMENT CHECKLIST

HEALTH AND SAFETY PLAN

SEARS AUTOMOTIVE CENTER
Oakland, California

PERSONAL PROTECTION

Full face respirator
Half-face respirator
High efficiency combination cartridges for toxic particulates, organic vapors, and acid gasses
Safety boots—Industrial grade work boots with steel toe
Tyvek coveralls
Safety glasses
Goggles
Hard hat
PVC rain gear
Nitrile (green) gloves
Latex gloves
PVC booties

MONITORING AND SURVEILLANCE

MicroTip

MISCELLANEOUS

First aid kit
Drinking water
Eye wash kit
Fire extinguisher
Ear plugs or earmuffs

PERSONAL DECONTAMINATION EQUIP.

Clear water
5-gallon plastic buckets
Liqui-Nox
Hand soap
Plastic garbage bags
Paper hand towels

NOTE: All items except MicroTip will be brought to the site in duplicate.

APPENDIX I

HEALTH EFFECTS OF WASTE PRODUCTS

APPENDIX I

HEALTH EFFECTS OF WASTE PRODUCTS

BENZENE

Benzene is a colorless liquid with an aromatic odor. Benzene may potentially create an explosion hazard. Benzene is incompatible with strong oxidizers, chlorine, and bromine with iron. Benzene is irritating to the eyes, nose, and respiratory system. Prolonged exposure may result in giddiness, headache, nausea, staggering gait, fatigue, bone marrow depression, or abdominal pain. Routes of entry include inhalation, absorption, ingestion, and skin or eye contact. The target organs are blood, the central nervous system (CNS), skin, bone marrow, eyes, and respiratory system. Benzene is carcinogenic.

TOLUENE

Toluene is a colorless liquid with an aromatic odor like benzene. Toluene may potentially create an explosion hazard. Toluene is incompatible with strong oxidizers. Prolonged exposure may result in fatigue, confusion, euphoria, dizziness, headache, dilation of pupils, lacrimation, insomnia, dermatitis, or photophobia. Routes of entry are inhalation, absorption, ingestion, and skin or eye contact. The target organs are the CNS, liver, kidneys, and skin.

XYLENES

There are three isomers of xylenes; ortho, meta and para. Each is a colorless liquid with an aromatic odor. Xylene may potentially create an explosion hazard. Xylene is incompatible with strong oxidizers. Xylene is irritating to the eyes, nose, and throat. Prolonged exposure may result in dizziness, excitement, drowsiness, staggering gait, corneal vacuolization, vomiting, abdominal pain, and dermatitis. Routes of entry are inhalation, absorption,

ingestion, skin or eye contact. The target organs are the CNS, eyes, gastrointestinal tract, blood, liver, kidneys, and skin.

ETHYLBENZENE

Ethylbenzene is a colorless liquid with an aromatic odor. Ethylbenzene may potentially create an explosion hazard. Ethylbenzene is incompatible with strong oxidizers. Ethylbenzene is irritating to the eyes and mucous membranes. Prolonged exposure may result in headache, dermatitis, narcosis, or coma. Routes of entry include inhalation, ingestion, and skin or eye contact. The target organs are the eyes, upper respiratory system, skin, and CNS.

ORGANIC LEAD

Organic lead (tetraethyl lead) is a colorless liquid with a slight musty odor. It is a gasoline anti-knock additive. It is toxic by inhalation, ingestion, and skin absorption. The target organs are the liver, CNS, kidneys and skin. Lead is concentrated largely in bone tissues, and in the soft tissues and blood in minor amounts. Children and fetuses are especially susceptible to lead poisoning. Organic lead is a suspected teratogen.

WASTE OIL

Motor lubricating oil has a very low hazard rating in its initial form. The oral toxicity of unused motor oil and its additives tend to be very low because of their low vapor pressures. Inhalation does not present a problem, except if misting occurs or a heavily oil-contaminated dust is present. Frequent and prolonged direct skin contact may produce skin irritation and dermatitis in certain hypersensitive individuals.

Used motor oil is considered to be more toxic than unused oil. In the used form, the oil may contain relatively low levels of certain metals such as sodium, iron, zinc, boron,

chromium, aluminum, silicon, copper, silver and lead, and certain transformation products resulting from elevated temperature and pressure in an operating engine. These metals and transformation products would not be considered hazardous unless an oil mist was generated, a heavily oil-contaminated dust was present, the oil was ingested into the stomach, or if significant skin contact occurred. Waste oil is a mutagen and a California Proposition 65 listed carcinogen.

Although it has a low hazard rating, waste oil, as a common good personal hygiene practice, should be handled with care, avoiding skin contact and breathing vapors or contaminated dust. This is because waste oil is sometimes found to contain toxic compounds such as PCBs and various solvents.

APPENDIX II

SOIL BORING PROCEDURES

APPENDIX II

SOIL BORING PROCEDURES

Soil borings will be made using a truck-mounted 8-inch, hollow-stem auger drill rig. An AEMC geologist will maintain a continuous log of the soils penetrated and note soil type, color, and obvious contamination. Soils will be classified in accordance with the Unified Soil Classification System (USCS).

Relatively undisturbed soil samples will be collected in each hollow stem auger boring at approximately 5- to 10-foot intervals using a California modified split spoon sampler. The sampler will be driven 18 inches ahead of the drill bit using a 140-pound hammer with a 30-inch drop. The number of blows necessary to drive the sampler will be recorded on the boring logs as a qualitative measure of the soil's density and cohesion. The split spoon sampler will be fitted with 6-inch long, 2.5-inch diameter brass sleeves. Upon retrieval of the sampler from the borehole, soils will be screened for organic vapor emissions using a Microtip portable photo-ionization detector (PID). The samples will be monitored by recording peak readings while separating the brass sleeves in the sampler. Organic vapor emissions will be recorded in volumetric parts per million (ppm).

After vapor monitoring, the exposed ends of the sleeves will be covered with Teflon sheeting, fitted with plastic end caps, sealed with electrical tape and labeled. Sample labels will include the following information: (1) boring number; (2) sample number; (3) date; (4) collector initials; (5) owner; and (6) location. Soil samples will be stored in an ice chest cooled with Blue Ice. Samples will be delivered under Chain-of-Custody to American Environmental Laboratory Corporation (AELC) for analysis.

Before advancing each boring, the downhole drilling equipment (auger sections) will be steam cleaned to help prevent cross-contamination from the previous borings. Sampling equipment will be cleaned between each use by washing in a Liqui-Nox solution followed

by rinsing first with tap water and then with distilled water. Excess soil cuttings will be placed on the ground on top of polyethylene sheeting, covered, and left on the site. All rinsate generated by steam cleaning and sampler cleaning operations will be contained, gathered, placed in marked 55-gallon drums, and securely stored onsite. Upon completion, borings will be backfilled from bottom to surface with a cement grout containing approximately 5% bentonite.

APPENDIX III

SITE SAFETY (TAILGATE) MEETING ATTENDANCE SHEET

SITE SAFETY (TAILGATE) MEETING ATTENDANCE SHEET

CONTAMINATION ASSESSMENT
SEARS AUTOMOTIVE CENTER
Oakland, California

DATE: ______________________________

TIME OF BRIEFING: ______________________________

BRIEFING GIVEN BY: ______________________________

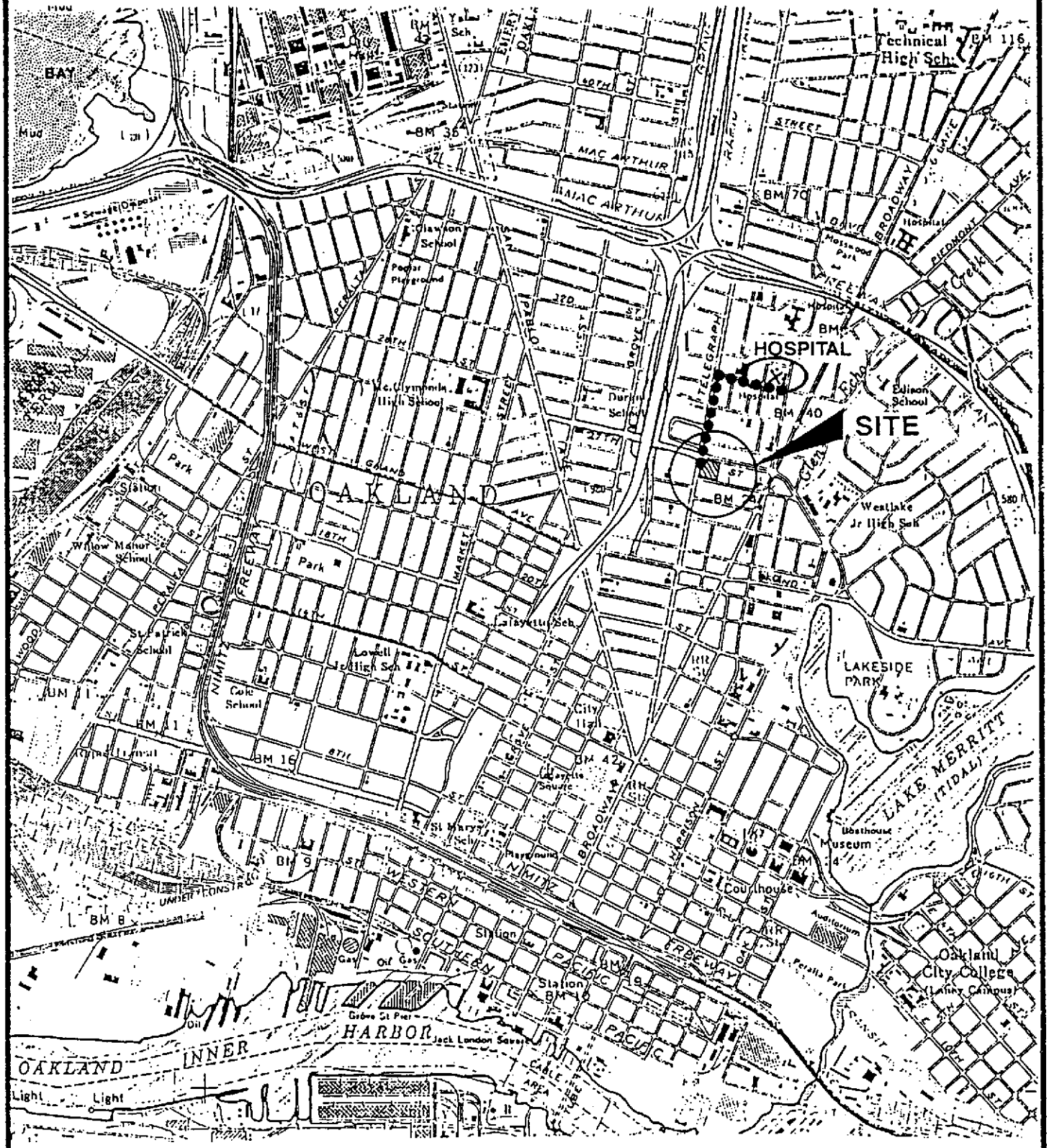
COMPANY: ______________________________

TITLE: ______________________________

SIGNATURE: ______________________________

ATTENDEES

COMPANY OR AGENCY	NAME	FUNCTION	SIGNATURE



U.S.G.S.
Oakland West
QUADRANGLE LOCATION
7.5 MIN. SERIES

1000' 0' 1000' 2000'

SCALE: 1"=2000-ft.

N

AMERICAN
ENVIRONMENTAL MANAGEMENT CORP.

MEDICAL EMERGENCY ROUTE

SEARS AUTOMOTIVE - Oakland, California

DRAWN BY:	DATE:	PROJECT NO.
GPM		82580