N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT
NAS MOFFETT FIELD, CALIFORNIA

VOLUME 3
APPENDIX C

MARCH 1993

Prepared by:

IT Corporation
312 Directors Drive
Knoxville, Tennessee 37923

Submitted by:

The Hazardous Waste Remedial Actions Program
Martin Marietta Energy Systems, Inc.
Oak Ridge, Tennessee 37831-7606

for:

U.S. Department of Energy
Contract DE-AC05-840R21400

Submitted to:

Department of the Navy
Western Division
Naval Facilities Engineering Command
San Bruno, California 94066-2402

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

THIS RECORD CONTAINS MULTIPLE VOLUMES WHICH HAVE BEEN ENTERED SEPARATELY

VOLUME 1 OF 4 IS FILED AS ADMINISTRATIVE RECORD NO. **N00296.001612**

VOLUME 2 OF 4 IS FILED AS ADMINISTRATIVE RECORD NO. **N00296.001613**

VOLUME 4 OF 4 IS FILED AS ADMINISTRATIVE RECORD NO. **N00296.001615**

Table of Contents

List of Tables	iv
List of Figures	vi
Volume 2, Appendix A Contents	xii
Volume 2, Appendix B Contents	xvi
Volume 3, Appendix C Contents	xvii
Volume 4, Appendix D Contents	xxii
Volume 4, Appendix E Deleted	xxiii
List of Acronyms	xxiv
Executive Summary	ES-1
1.0 Introduction	1-1
1.1 Approach and Objectives	1-1
1.2 Report Organization	1-1
1.3 Site Description and History	1-2
1.4 Archaeological Sites	1-5
1.5 Operable Unit Definition	1-6
1.6 Possible On-Site Sources	1-7
1.6.1 Site 8 - Waste Oil Transfer Area	1-8
1.6.2 Site 9 - Oil Fuel Farm and Old NEX Gas Station	1-9
1.6.3 Site 10 - Chase Park Area and Runway	1-11
1.6.4 Site 12 - Fire Fighting Training Area	1-12
1.6.5 Site 14 - Abandoned Tanks 19, 20, 57, 67, and 68	1-13
1.6.6 Site 15 - Sump and Oil/Water Separators	1-14
1.6.7 Site 16 - Public Works Steam Cleaning Rack Sump 60	1-15
1.6.8 Site 17 - Public Works Paint Shop Sump 61	1-15
1.6.9 Site 18 - Dry Cleaners' Sump 66	1-16
1.6.10 Site 19 - Leaking Tank 14	1-16
2.0 Study Area Investigations	2-1
2.1 Previous Studies	2-1
2.2 Other Ongoing Investigations	2-5
2.3 Hydrogeological Investigations	2-10
2.4 Surface Water and Sediment Investigations	2-23
2.5 Aquifer Testing	2-23
3.0 Physical Characteristics of Moffett Field	3-1
3.1 Surface Features	3-1
3.2 Meteorology	3-1
3.3 Surface Water	3-2
3.3.1 Seawater	3-2
3.3.2 Wetlands	3-2
3.3.3 Fresh Water	3-3
3.4 Geology	3-4
3.4.1 Regional Geology	3-4
3.4.2 Local Geology	3-6
3.4.3 Depositional Environments	3-7

	3.4.4	Site-Specific Geology	3-9
	3.4.5	Conclusion/Geologic Model	3-11
3.5	Soils and Surface Sediments		3-11
3.6	Hydrogeology		3-14
	3.6.1	Regional Hydrogeology	3-14
	3.6.2	Local Hydrogeology	3-15
	3.6.3	Site Hydrogeology	3-17
	3.6.4	Groundwater Hydraulics	3-23
	3.6.5	Pump Test Results	3-25
	3.6.6	Hydrogeologic Conclusions	3-29
3.7	Ecology		3-31
4.0	Nature and Extent of Contamination		4-1
4.1	Objectives		4-1
	4.1.1	Analytical Data Treatment	4-2
	4.1.1.1	Contract Laboratory Program Laboratories	4-2
	4.1.1.2	Third Party Validation Guidelines	4-4
	4.1.1.3	IT Corporation: Phase I and II Remedial Investigations	4-4
	4.1.1.4	PRC Environmental Management, Inc.: Building 29 Area Field Investigation Technical Memorandum (PRC, 1991c)	4-8
	4.1.1.5	PRC Environmental Management, Inc.: Draft Tank and Sump Removal Summary Report (PRC, 1991e)	4-8
	4.1.1.6	PRC Environmental Management, Inc.: Site 9 Field Investigation Technical Memorandum (PRC, 1992b)	4-9
	4.1.1.7	Earth Sciences Associates (ESA): Assessment of Potential for Public/Private Wells at Moffett Field Naval Air Station to Act as Conduits for Inter-Aquifer Cross-Contamination (1986c)	4-10
4.2	Evaluation of West Side Groundwater Site Characterization Analytical Data		4-10
	4.2.1	West Side Groundwater Site Characterization Background	4-11
	4.2.1.1	Degradation of Chlorinated Solvents	4-11
	4.2.1.2	Identification of Background Wells	4-12
	4.2.2	A1-Aquifer Zone	4-14
	4.2.2.1	Chlorinated Organic Compounds	4-14
	4.2.2.2	Other Organic Compounds	4-21
	4.2.2.3	Inorganic Compounds	4-23
	4.2.3	A2-Aquifer Zone	4-26
	4.2.3.1	Chlorinated Organic Compounds	4-26

Table of Contents *(Continued)*

4.2.3.2 Other Organic Compounds 4-29
4.2.3.3 Inorganics 4-30
4.2.4 B2-Aquifer Zone 4-35
4.2.4.1 Chlorinated Organic Compounds 4-35
4.2.4.2 Other Organic Compounds 4-36
4.2.4.3 Inorganics 4-36
4.2.5 B3-Aquifer Zone 4-37
4.2.6 C-Aquifer Zone 4-37
4.2.6.1 Organic Compounds 4-37
4.2.6.2 Inorganic Compounds 4-38
4.3 Conclusions 4-38
5.0 Modeling of Flow and Contaminant Transport 5-1
5.1 Contaminant Persistence 5-1
5.2 Contaminant Migration 5-2
5.2.1 Modeling Objectives 5-3
5.2.2 Modeling Approach 5-3
5.2.3 Model Description 5-4
5.2.4 Conceptual Model: Aquifer Parameter Estimation 5-10
5.2.5 Flow Model Calibration 5-11
5.2.6 Flow Model Results 5-12
5.2.7 Transport Model 5-13
5.3 Summary of Flow and Fate and Transport Modeling 5-17
6.0 Summary and Conclusions 6-1
7.0 References 7-1
Appendix A - Water Level Measurements
Hydrographs
Potentiometric Maps
Appendix B - Analytical Data
Appendix C - Boring Logs
Geophysical Logs
Appendix D - Groundwater Flow Model
Solute Transport Model
Appendix E - Deleted
Appendix F - West Side Aquifer Test Analysis

List of Tables

Table	Title	Follows Tab
1.5-1	Potentially Contaminated Sites, by Site Number, Site Name, and Type of Waste	Tables
2.1-1	Status of Underground Tanks Being Investigated Under the IRP	
2.1-2	Status of Sumps and Ponds Being Investigated Under the IRP	
2.1-3	List of Potentially Contaminated Sites for Remedial Investigation	
2.3-1	Unified Soil Classification System	
2.3-2	Existing Monitoring Wells Used in Monthly Water Level Program	
2.3-3	Summary of Monitoring Wells Sampled and Analytical Parameters Analyzed for During Phase I and Phase II Investigation	
2.3-4	List of RI Analytical Parameters	
3.4-1	Generalized Local Geologic Column	
3.5-1	Background Inorganic Chemistry of Soils in the Moffett Field Area	
3.5-2	Inorganic Background Levels for Comparison of Soils in the Moffett Field Area	
3.6-1	Typical Depth Intervals of Hydrogeologic Units	
3.6-2	Summary of Hydraulic Parameters, Pump Test 7, Site 8	
3.6-3A	Summary of Hydraulic Parameters, Pump Tests 1, 3, 5, and 8, Site 9	
3.6-3B	Average Groundwater Velocity, West Side Aquifers	
3.6-4	Summary of Hydraulic Parameters, A1/A2 Aquitard, Site 9	
4.1-1	Methylene Chloride Groundwater Analytical Results	
4.1-1A	Acetone Groundwater Analytical Results	
4.2-1	Average Concentrations of Inorganic Species in Background Monitoring Wells	

List of Tables *(Continued)*

Table	Title	Follows Tab
4.2-2	Selected Organic Compounds - Groundwater Analysis, A1-Aquifer Zone	Tables
4.2-2A	Other Site 9 Wells, TPH and BTEX Groundwater Analytical Results (µg/L), Sample Date: July 1991	
4.2-3	Statistical Summary of Inorganics, Sites 8 and 9, A1-Aquifer Zone	
4.2-4	Selected Organic Compounds - Groundwater Analysis, A2-Aquifer Zone	
4.2-5	Statistical Summary of Inorganics, Sites 8 and 9, A2-Aquifer Zone	
4.2-6	Selected Organic Compounds - Groundwater Analysis - B2-, B3-, and C-Aquifer Zones	
4.2-7	Statistical Summary of Inorganics, B2-Aquifer Zone, Site 9	
5.2-1	Ranges of Hydraulic Conductivities for Aquifer Materials	
5.2-2	Summary of Input Data for the Calibrated MODFLOW Model	
5.2-3	Well Locations, Water Elevations, and Differences for Groundwater Flow Modeling	
5.2-4	Summary of Input Data for TCE Transport Model	
5.2-5	Comparison of Model Results and Observed Concentrations of TCE in Monitoring Wells	

List of Figures

Figure	Title	Follows Tab
1.3-1	Regional Site Location Map	Figures
1.3-2	NAS Moffett Field Boundary Map	
1.5-1	Installation Restoration Program (IRP) Sites	
1.6-1	Site 8 - Waste Oil Transfer Area	
1.6-2	Site 9 - Old Fuel Farm and Old NEX Gas Station	
1.6-3	Site 10 - Chase Park Area	
1.6-4	Site 12 - Fire Fighting Training Area	
1.6-5	Site 14 - Abandoned Tank Nos. 19, 20 and 57	
1.6-6	Site 15 - Sumps and Oil/Water Separators	
1.6-7	Site 16 - Public Works Steam Cleaning Rack, Sump No. 60	
1.6-8	Site 17 - Public Works Paint Shop Sump No. 61	
1.6-9	Site 18 - Dry Cleaner's Sump No. 66	
1.6-10	Site 19 - Leaking Tank No. 14	
2.1-1	Approximate Locations of Potential Vertical Conduit Wells	
2.3-1	Site 8 - Waste Oil Transfer Area Monitoring Well Location Map	
2.3-2	Site 9 - Old Fuel Farm and Old NEX Gas Station Monitoring Well Location Map	
2.3-3	Site 10 - Chase Park Area Monitoring Well Location Map	
2.3-4	Site 12 - Fire Fighting Training Area Monitoring Well Location Map	
2.3-5	Site 14 - Tanks 19, 20, 57, 67, and 68 Monitoring Well Location Map	
2.3-6	Site 15 - Sumps and Oil/Water Separators	

List of Figures *(Continued)*

Figure	Title	Follows Tab
2.3-7	Site 16 - Public Works Steam Cleaning Rack, Sump No. 60 Monitoring Well Location Map	Figures
2.3-8	Site 17 - Public Works Paint Shop Sump No. 61	
2.3-9	Site 18 - Dry Cleaner's Sump No. 66, Monitoring Well Location Map	
2.3-10	Middlefield-Ellis-Whisman (MEW) Area	
2.3-11	NASA-Ames Site Map	
2.3-12	Lockheed Missiles and Space Company Site Map	
2.5-1	Pump Test Locations	
3.3-1	Surface and Storm Water Drainage Map	
3.4-1	Generalized Geologic Cross Section Showing Aquifers	
3.4-2A	Conceptual Model of Paleo-Depositional Environments in the Moffett Field/Mountain View Area	
3.4-2B	Location Map for Geologic Cross Sections A-A' to D-D'	
3.4-3	Geological Cross Section A-A'	
3.4-4	Geological Cross Section B-B'	
3.4-5	Geological Cross Section C-C'	
3.4-6	Geological Cross Section D-D'	
3.4-7	Cross Section Locations E, F, G, H, I, and J	
3.4-8	Geological Cross Section E-E' for Site 9	
3.4-9	Geological Cross Section F-F' for Site 9	
3.4-10	Geological Cross Section G-G' for Site 9	

List of Figures *(Continued)*

Figure	Title	Follows Tab
3.4-11	Geological Cross Section H-H' for Site 9	Figures
3.4-12	Geological Cross Section I-I' for Site 8	
3.4-13	Geological Cross Section J-J' for Site 8	
3.4-14	Gravel/Sand Isopach Map for the A1 Aquifer Zone	
3.4-15	Gravel/Sand Isopach Map for the A2 Aquifer Zone	
3.4-16	Geomorphic and Sedimentary Characteristics of Bed-Load, Mixed-Load, and Suspended-Load Channel Segments and Their Deposits	
3.4-17	Schematic Three-Dimensional Geometry, Lateral Relationships, and Internal Bedding Architecture of Reservoir Sand Bodies	
3.5-1	General Soil Associations	
3.5-2	Background Soil Sample Location Map	
3.6-1	Moffett Field and MEW Regional Hydrogeologic Interpretation	
3.6-2	West Side Aquifer Zone Inferred Paleochannels 5-15 feet (BLS) Interval at Sites 8, 9, 12, and 14	
3.6-3	West Side Aquifer Zone Inferred Paleochannels 15-25 feet (BLS) Interval at Sites 8, 9, 12, and 14	
3.6-4	West Side Aquifer Zone Inferred Paleochannels 25-35 feet (BLS) Interval at Sites 9 and 14, and 25-45 feet (BLS) Interval at Sites 8 and 12	
3.6-5	West Side Aquifer Zone Inferred Paleochannels 30-40 feet (BLS) Interval at Sites 9 and 14, and 25-45 feet (BLS) Interval at Sites 8 and 12	
3.6-6	Sites 8 and 9, August 1991 Water Level Versus Coordinates for the A1 and A2 Aquifer Zone Monitoring Wells	
4.2-1	Anaerobic Transformation of PCE, TCE, and TCA	
4.2-2	West Side Groundwater Site Characterization Background Wells	

List of Figures *(Continued)*

Figure	Title	Follows Tab
4.2-3	West Side Aquifer PCE Groundwater Concentration Contour Map, A1 Aquifer Zone, Phase II, 2nd Quarter 1991	Figures
4.2-4A	West Side Aquifer TCE Groundwater Concentration Contour Map, A1 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-4B	Site 8 - TCE Groundwater Concentration Contour Map, A1 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-4C	MEW and Moffett Field TCE Groundwater Concentration Contour Map (ppm), A1 (A)-Aquifer, October 1986 - June 1987	
4.2-4D	MEW (Inset) TCE Groundwater Concentration Contour Map (ppm), A1 (A)-Aquifer October 1986 - June 1987	
4.2-5A	West Side Aquifer 1,2-DCE Groundwater Concentration Contour Map, A1 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-5B	MEW and Moffett Field Total 1,2-DCE Groundwater Concentration Contour Map (ppm), A1 (A)-Aquifer, October 1986 - June 1987	
4.2-5C	MEW (Inset) Total 1,2-DCE Groundwater Concentration Contour Map (ppm), A1 (A)-Aquifer, October 1986 - June 1987	
4.2-6	West Side Aquifer 1,1-DCE Groundwater Concentration Contour Map, A1 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-7A	West Side Aquifer 1,1,1-TCA Groundwater Concentration Contour Map, A1 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-7B	MEW and Moffett Field 1,1,1-TCA Groundwater Concentration Contour Map (ppm), A1 (A)-Aquifer, October 1986 - June 1987	
4.2-7C	MEW (Inset) 1,1,1-TCA Groundwater Concentration Contour Map (ppm), A1 (A)-Aquifer, October 1986 - June 1987	
4.2-8A	West Side Aquifer 1,1-DCA Groundwater Concentration Contour Map, A1 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-8B	Site 9 - TPH Groundwater Concentration Contour Map, A1 Aquifer Zone, July 1991	

List of Figures *(Continued)*

Figure	Title	Follows Tab
4.2-8C	Site 14 - TPH Groundwater Concentration Contour Map, A1 Aquifer Zone, February 1991	Figures
4.2-9	West Side Aquifer PCE Groundwater Concentration Contour Map, A2 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-10A	West Side Aquifer TCE Groundwater Concentration Contour Map, A2 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-10B	MEW and Moffett Field TCE Groundwater Concentration Contour Map (ppm), A2(B1)-Aquifer, October 1986 - June 1987	
4.2-10C	MEW (Inset) TCE Groundwater Concentration Contour Map (ppm), A2(B1)-Aquifer, October 1986 - June 1987	
4.2-11A	West Side Aquifer 1,2-DCE Groundwater Concentration Contour Map A2 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-11B	MEW and Moffett Field Total 1,2-DCE Groundwater Concentration Contour Map (ppm), A2(B1)-Aquifer, October 1986 - June 1987	
4.2-11C	MEW (Inset) Total 1,2-DCE Groundwater Concentration Contour Map (ppm), A2(B1)-Aquifer, October 1986 - June 1987	
4.2-12	West Side Aquifer 1,1-DCE Groundwater Concentration Contour Map, A2 Aquifer Zone, Phase II, 2nd Quarter, 1991	
4.2-13A	West Side Aquifer 1,1,1-TCA Groundwater Concentration Contour Map, A2 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2-13B	MEW and Moffett Field 1,1,1-TCA Groundwater Concentration Contour Map (ppm), A2(B1)-Aquifer, October 1986 - June 1987	
4.2-13C	MEW (Inset) 1,1,1-TCA Groundwater Concentration Contour Map (ppm), A2(B1)-Aquifer, October 1986 - June 1987	
4.2-14	West Side Aquifer 1,1-DCA Groundwater Concentration Contour Map, A2 Aquifer Zone, Phase II, 2nd Quarter 1991	
4.2.15	B2 Aquifer Monitoring Well Location Map	

List of Figures *(Continued)*

Figure	Title	Follows Tab
5.2-1	Generalized Geologic Cross-Sections A-A' and B-B'	Figures
5.2-2	Groundwater Flow Model Grid Showing Row and Column Identifications	
5.2-3	Location of Sand Channels in the A1 Model Aquifer	
5.2-4	Location of Sand Channels in the A2 Model Aquifer	
5.2-5	Model Water Level Contour Map for the A1 Aquifer Zone	
5.2-6	Model Water Level Contour Map for the A2 Aquifer Zone	
5.2-7	Model Water Level Contour Map for the B2 Aquifer Zone	
5.2-8	Model Water Level Contour Map for the B3 Aquifer Zone	
5.2-9	Transport Model Grid Showing Relative Location of Model Observation Points and Row and Column Identification	
5.2-10	Model TCE Concentration, No Linear Adsorption, R = 1 Source at Boundary Only	
5.2-11	Model TCE Concentration, Linear Adsorption, R = 2.02 Source at Boundary Only	
5.2-12	Model TCE Concentration, No Linear Adsorption, R = 1 Boundary and Additional Source	
5.2-13	Model TCE Concentration, Linear Adsorption, R = 2.02 Boundary and Additional Source	
5.2-14	A Aquifer, Model TCE Concentration Map, Boundary Source, Without Adsorption, R = 1	
5.2-15	A Aquifer, Model TCE Concentration Map, Boundary Source, With Adsorption, R = 2.02	
5.2-16	A Aquifer, Model TCE Concentration Map, Boundary and Additional Sources, Without Adsorption, R = 1	
5.2-17	A Aquifer, Model TCE Concentration Map, Boundary and Additional Sources, With Adsorption, R = 2.02	

VOLUME 2, APPENDIX A
WATER LEVEL MEASUREMENTS

	FOLLOWS TAB
2nd Quarter, 1990	A (Water Level Measurements)
3rd Quarter, 1990	
4th Quarter, 1990	
1st Quarter, 1991	
2nd Quarter, 1991	

HYDROGRAPHS

NUMBER		
D-1	Hydrograph of Site 01, A-Aquifer Wells	A (Hydrographs)
D-2	Hydrograph of Site 01, A-Aquifer Wells (continued)	
D-3	Hydrograph of Site 01, Leachate Wells	
D-4	Hydrograph of Site 02, A-Aquifer Wells	
D-5	Hydrograph of Site 02, Leachate Wells	
D-6	Hydrograph of Site 03, A1-Aquifer Wells	
D-7	Hydrograph of Site 03, A1-Aquifer Wells (continued)	
D-8	Hydrograph of Site 03, A2-Aquifer Wells	
D-9	Hydrograph of Site 03, B-Aquifer Wells	
D-10	Hydrograph of Site 03, C-Aquifer Wells	
D-11	Hydrograph of Site 04, A1-Aquifer Wells	
D-12	Hydrograph of Site 04, A1-Aquifer Wells (continued)	
D-13	Hydrograph of Site 04, A2-Aquifer Wells	

VOLUME 2, APPENDIX A (Continued)
HYDROGRAPHS (Continued)

NUMBER		FOLLOWS TAB
D-14	Hydrograph of Site 04, B-Aquifer Wells	A (Hydrographs)
D-15	Hydrograph of Site 04, C-Aquifer Wells	
D-16	Hydrograph of Site 05, A1-Aquifer Wells	
D-17	Hydrograph of Site 05, A1-Aquifer Wells (continued)	
D-18	Hydrograph of Site 05, A1-Aquifer Wells (continued)	
D-19	Hydrograph of Site 05, A1-Aquifer Wells (continued)	
D-20	Hydrograph of Site 05, A2-Aquifer Wells	
D-21	Hydrograph of Site 05, B-Aquifer Wells	
D-22	Hydrograph of Site 05, C-Aquifer Wells	
D-23	Hydrograph of Site 05, Free Product Wells	
D-24	Hydrograph of Site 05, Free Product Wells (continued)	
D-25	Hydrograph of Site 06, A-Aquifer Wells	
D-26	Hydrograph of Site 07, A1-Aquifer Wells	
D-27	Hydrograph of Site 07, A1-Aquifer Wells (Continued)	
D-28	Hydrograph of Site 07, A2-Aquifer Wells	
D-29	Hydrograph of Site 07, C-Aquifer Wells	
D-30	Hydrograph of Site 08, A1-Aquifer Wells	
D-31	Hydrograph of Site 08, A1-Aquifer Wells (Continued)	
D-32	Hydrograph of Site 08, A2-Aquifer Wells	
D-33	Hydrograph of Site 08, C-Aquifer Wells	

VOLUME 2, APPENDIX A (Continued)
HYDROGRAPHS (Continued)

NUMBER		FOLLOWS TAB
D-34	Hydrograph of Site 09, A1-Aquifer Wells	A (Hydrographs)
D-35	Hydrograph of Site 09, A1-Aquifer Wells (continued)	
D-36	Hydrograph of Site 09, A1-Aquifer Wells (continued)	
D-37	Hydrograph of Site 09, A1-Aquifer Wells (continued)	
D-38	Hydrograph of Site 09, A1-Aquifer Wells (continued)	
D-39	Hydrograph of Site 09, A2-Aquifer Wells	
D-40	Hydrograph of Site 09, A2-Aquifer Wells (continued)	
D-41	Hydrograph of Site 09, A2-Aquifer Wells (continued)	
D-42	Hydrograph of Site 09, A2-Aquifer Wells (continued)	
D-43	Hydrograph of Site 09, A2-Aquifer Wells (continued)	
D-44	Hydrograph of Site 09, B-Aquifer Wells	
D-45	Hydrograph of site 09, B-Aquifer Wells (continued)	
D-46	Hydrograph of Site 09, C-Aquifer Wells	
D-47	Hydrograph of Site 10, A-Aquifer Wells	
D-48	Hydrograph of Site 10, B-Aquifer Wells	
D-49	Hydrograph of Site 10, C-Aquifer Wells	
D-50	Hydrograph of Site 11, A1-Aquifer Wells	
D-51	Hydrograph of Site 12, A1-Aquifer Wells	
D-52	Hydrograph of Site 14, A1-Aquifer Wells	
D-53	Hydrograph of Site 14, A2-Aquifer Wells	
D-54	Hydrograph of Site 19, A-Aquifer Wells	

VOLUME 2, APPENDIX A (Continued)
HYDROGRAPHS (Continued)

FOLLOWS TAB

Potentiometric Surface Contour Map, A-Aquifer West, May 1990 (Potentiometric Maps)

Potentiometric Surface Contour Map, A-Aquifer East, May 1990

Potentiometric Surface Contour Map, A-Aquifer, May 1990, Sites 1 and 2

Potentiometric Surface Contour Map, A1-Aquifer, August 1990

Potentiometric Surface Contour Map, A2-Aquifer, August 1990

Potentiometric Surface Contour Map, A1-Aquifer, November/December 1990

Potentiometric Surface Contour Map, A2-Aquifer, November/December 1990

Potentiometric Surface Contour Map, A1-Aquifer, March 1991

Potentiometric Surface Contour Map, A2-Aquifer, March 1991

Potentiometric Surface Contour Map, A1-Aquifer, May 1991

Potentiometric Surface Contour Map, A2-Aquifer, May 1991

VOLUME 2, APPENDIX B
ANALYTICAL DATA

	FOLLOWS TAB
Analytical Data	B
Results of Validated Sample Analyses	Tab/Page
Site 8 - Aquifer A1	Site 8/B8-1
- Aquifer A2	/B8-14
- Aquifer C	/B8-31
Results of Validated Sample Analyses	
Site 9 - Aquifer A1	Site 9/B9-1
- Aquifer A2	/B9-84
- Aquifer B2	/B9-160
- Aquifer B3	/B9-184
- Aquifer C	/B9-186
Results of Validated Sample Analyses	
Site 12 - Aquifer A1	Site 12/B12-1
Results of Validated Sample Analyses	
Site 14 - Aquifer A1	Site 14/B14-1
- Aquifer A2	/B14-7
Results of Validated Sample Analyses	
Site CLEAN - Aquifer A1	CLEAN/BCLN-1
- Aquifer A2	/BCLN-11
Results of Validated Sample Analyses	
Site MEW - Aquifer A1	MEW/BMEW-1
- Aquifer A2	/BMEW-21
- Aquifer B2	/BMEW-37

VOLUME 3, APPENDIX C
BORING LOGS/CPT

	FOLLOWS TAB
Legend for Log of Borings and Test Pits	C (Boring Logs)
SITE 8 - WELLS (IT)	Site 8 - Wells (IT)
W8-2(A2)	
W8-3(C)	
W8-4(A1)	
W8-6(A1)	
W8-8(A1)	
W8-10(A2)	
W8-11(A2)	
W8-12(A2)	
CPT-(IT)	Site 8 - CPT (IT)
CPT8-3	
CPT8-5	
CPT8-7	
CPT8-10	
CPT8-12	
CPT8-14	
CPT8-18	
CPT8-19	
CPT8-21	
CPT - (CLEAN)	Site 8 - CPT (CLEAN)
CPT-2	
CPT-4	
CPT-5	
CPT-10	
CPT-11	
CPT-14	
CPT-20	
CPT-39	
CPT-46	
CPT-60	
SITE 9 - WELLS (IT)	Site 9 - Wells (IT)
W9-3(C)	

W9-4(B2)
W9-5(B3)
W9-7(A1)
W9-9(A2)
W9-13(A2)
W9-14(A2)
W9-15(B2)
W9-20(A2)
W9-21(A2)
W9-22(A2)
W9-23(A1)
W9-25(A2)
W9-27(A2)
W9-33(A2)
W9-34(A2)
W9-35(A1)
W9-37(A1)
W9-38(A1)
W9-39(B2)
W9-41(A2)
W9-42(A2)
PT9-3(A2)

WELLS - (CLEAN) — Site 9 - Wells (CLEAN)

W29-1(A)
W29-7(A2)
W29-10(A2)
W89-1(A)
W89-2(A)
W89-11(B1)
W89-12(B1)

WELLS - (MEW) — Site 9 - Wells (MEW)

MEW-2(C)
MEW-3(B)
MEW-3(C)
MEW-4(B)
RW-9
MEW-10(B)
MEW-12(B)
MEW-45(A)
MEW-46(A)

MEW-49(A)
MEW-54(A)
MEW-57(A)
MEW-61(A)
MEW-64(B)
MEW-65(A)
MEW-79(A)
MEW-82(A)

CPT - (IT) — Site 9 - CPT (IT)

CPT-9-5
CPT-9-6
CPT-9-9
CPT-9-11
CPT-9-21
CPT-9-22
CPT-9-25
CPT-9-26
CPT-9-32
CPT-9-36
CPT-9-39
CPT-9-40
CPT-9-44

CPT - (CLEAN) — Site 9 - CPT (CLEAN)

CPT-89-5
CPT-89-13
CPT-29-18
CPT-29-40

VOLUME 3, APPENDIX C (Continued)
GEOPHYSICAL LOGS

	FOLLOWS TAB
SITE 1	C (Geophysical Logs, Site 1)
GB-4	
GB-5	
GB-6	
SITE 2	Site 2
GB-1	
GB-2	
GB-3	
SITE 3	Site 3
GB-13	
GB-14	
GB-15	
GB-16	
GB-17	
SITE 4	Site 4
GB-18	
GB-19	
GB-20	
SITE 5	Site 5
GB-21	
GB-22	
GB-23	
SITE 6	Site 6
SITE 7	Site 7
GB-24	
SITE 8	Site 8
GB-25	
GB-26	
SITE 9	Site 9
GB-7	

VOLUME 3, APPENDIX C (Continued)
GEOPHYSICAL LOGS (Continued)

	FOLLOWS TAB
GB-8	
GB-9	
GB-10	
GB-11	
GB-12	
SITE 10	Site 10
GB-27	
GB-30	
SITE 11	Site 11
SITE 12	Site 12
SITE 13	Site 13
SITE 14	Site 14
GB-28	
SITE 15	Site 15
SITE 16	Site 16
SITE 17	Site 17
SITE 18	Site 18
SITE 19	Site 19
GB-29	

VOLUME 4, APPENDIX D
GROUNDWATER FLOW MODEL

	FOLLOWS TAB
MODFLOW Input	D, Groundwater Flow Model
MODFLOW Output	

SOLUTE TRANSPORT MODEL

	FOLLOWS TAB
Boundary Source Only, No Retardation	D, Solute Transport Model
Boundary Source Only, Retardation = 2.02	
Additional Source, Without Retardation	
Additional Source, Retardation = 2.02	

VOLUME 4, APPENDIX E
Deleted

VOLUME 4, APPENDIX F
AQUIFER TESTS

	FOLLOWS TAB
West Side Aquifer Test Analysis	F

List of Acronyms

AA	atomic absorption spectrometry
AFFF	aqueous film-forming foam
ARAR	applicable or relevant and appropriate requirements
ARPA	Advanced Research Projects Agency
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
AVGAS	aviation gasoline
BAAQMD	Bay Area Air Quality Management District
bls	below land surface
BNAs	Base, Neutral, and Acid Extractable Target Compounds
BTEX	benzene, toluene, ethyl benzene, and xylene
CA	chlorinated aliphatics
CAM	California Administrative Metals List
CA-SCL	California-Santa Clara County
CCR	California Code of Regulations
CEC	Cation Exchange Capacity
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CLEAN	Comprehensive Long-Term Environmental Action, Navy
CLP	Contract Laboratory Program
cm/s	centimeters per second
CPF	cancer potency factor
CPT	cone penetrometer test
CRQL	Contract Required Quantitation Limit
CRWQCB	California Regional Water Quality Control Board
CS	Confirmation Study
CSF	cancer slope factor
CSRS	Confirmation Study Ranking System
DCA	dichloroethane
DCE	dichloroethene
DERP	Defense Environmental Restoration Program
DHS	California Department of Health Services
DNAPL	dense nonaqueous phase liquids
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
DPDO	Defense Property Disposal Office
DQO	data quality objective
DRMO	Defense Reutilization Marketing Office
DWR	California Department of Water Resources
EM	electromagnetic
EMB	embankment samples
Energy Systems	Martin Marietta Energy Systems, Inc.

ERM	Engineering Resource Management
eV	electronvolt
ESA	Earth Science Associates, Inc.
FAS	Field Analytical Services
FS	feasibility study
GB	geophysical boreholes
GC	gas chromatograph
gpm	gallons per minute
GPR	ground penetrating radar
HAR	Hazard Assessment Rating
HAZWRAP	Hazardous Waste Remedial Actions Program
HIR	Hydrogeological Investigation Report
HLA	Harding Lawson Associates, Inc.
HP	Hydropunch®
HPLC	High Performance Liquid Chromatography
HRS	Hazard Ranking System
IAS	Initial Assessment Study
ICP	inductively coupled plasma emission spectroscopy
ID	inside diameter
ILCR	incremental lifetime cancer risk
IRP	Installation Restoration Program
IRIS	Integrated Risk Information System
IS	Inferred Sources
IT	IT Corporation
ITAS	IT Analytical Services
JP	jet fuel
K/J/C	Kennedy/Jenks/Chilton
Lockheed	Lockheed Missile and Space Company
LUFT	Leaking Underground Fuel Tank Field Manual
µg/L	micrograms/liter
µg/kg	micrograms/kilogram
MBAS	methylene blue active substances
MEK	methyl ethyl ketone (2-butanone)
MEW	Middlefield-Ellis-Whisman
mg/L	milligrams per liter
mg/kg	milligrams/kilogram
MIBK	methyl isobutyl ketone (4-methyl-2-pentanone)
MOC	Method of Characteristics
Moffett Field	Naval Air Station Moffett Field
MODFLOW	Modular 3-D Finite Difference Groundwater Flow Model
MOGAS	motor vehicle gas
MS	mass spectrometry
msl	mean sea level

mS/m	milliSiemens per meter
MV18	mountain view well
NACIP	Navy Assessment and Control of Installation Pollutants
NASA	National Aeronautics and Space Administration
NAVFAC	Naval Facilities Engineering Command
NBA	North Base Area
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEC	National Electric Corporation
NEESA	Naval Energy and Environmental Support Activities
NEX	Navy Exchange (Gas Station)
NPL	National Priorities List
NRC	U.S. Nuclear Regulatory Commission
OD	outside diameter
OU	operable unit
P-CRESOL	4-Methylphenol
PAH	polynuclear aromatic hydrocarbon compounds
PCB	polychlorinated biphenyls
PCE	tetrachloroethene
PID	photoionization detector
ppb	parts per billion
ppm	parts per million
PRP	potentially responsible party
PVC	polyvinyl chloride
QA	quality assurance
QC	quality control
QA/QC	quality assurance/quality control
QAPP	Quality Assurance Project Plan
Qobm	Quaternary older bay mud
Qybm	Quaternary younger bay mud
QR	Quarterly Report
RI	remedial investigation
Rm-Ao	Reyes-Alviso Soil Association
RME	reasonable maximum exposure
ROD	Record of Decision
RPD	relative percent difference
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SCVWD	Santa Clara Valley Water District
SDEV	standard deviation
SFBRWQCB	San Francisco Bay Regional Water Quality Control Board
SI	Site Inspection
Sp-Cv	Sunnyvale-Castro Soil Association
STLC	Soluble Threshold Limit Concentration

SVOC	semivolatile organic compound
SWAT	Solid Waste Assessment Test
SWIFT	Sandia Waste-Isolation Flow and Transport
SWIP	Survey Waste Injection Program
SWIPR	Survey Waste Injection Program Revised
TAL	Target Analyte List
TCA	trichloroethane
TCDD	tetrachlorinated dibenzo-p-dioxin
TCE	trichloroethene
TDS	total dissolved solids
TIC	tentatively identified compounds
TIP	total ionizables present
TOC	total organic carbon
TOX	total organic halogens
TPH	total petroleum hydrocarbons
TTLC	Total Threshold Limit Concentration
U.S. COE	U.S. Army Corps of Engineers
U.S. EPA	U.S. Environmental Protection Agency
U.S. FDA	U.S. Food and Drug Administration
USCS	Unified Soil Classification System
USGS	U.S. Geological Survey
UST	underground storage tank
UV	ultraviolet
VOA	volatile organic analysis
VOC	volatile organic compound
WESTDIV	Western Division of the Naval Facilities Engineering Command

VOLUME 3, APPENDIX C

BORING LOGS

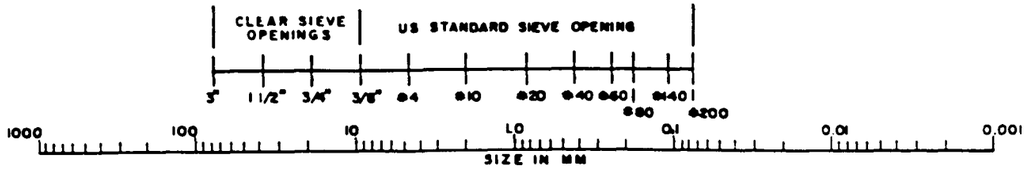
GEOPHYSICAL LOGS

VOLUME 3, APPENDIX C

BORING LOGS

DRAWN BY	F.C.R.	11-14-88	CHECKED BY	SHB	11-14-88	DRAWING NUMBER	409616-87
			APPROVED BY	SHB	11-14-88		

USCS CLASSIFICATION OF COARSE GRAINED MATERIALS



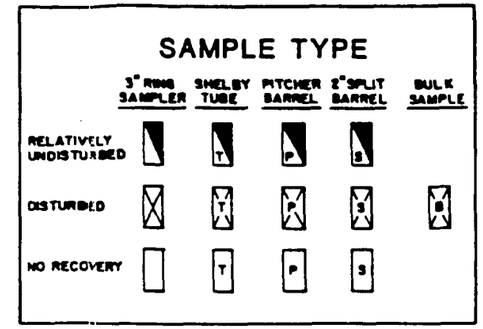
COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

USCS CLASSIFICATION FOR SOILS

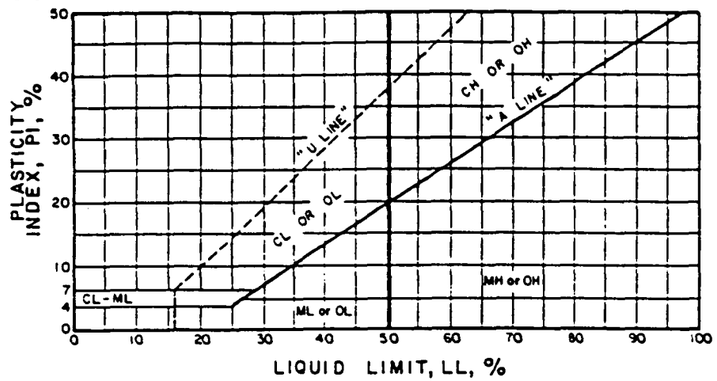
ABBREVIATIONS FOR LABORATORY TESTS

COMP — COMPACTION TEST
PI — ATTERBERG LIMITS
SA — SIEVE ANALYSIS
MA — MECHANICAL ANALYSIS
HYD — HYDROMETER ANALYSIS
CONS — CONSOLIDATION TEST

SAMPLE TYPE



USCS CLASSIFICATION OF FINE GRAINED MATERIALS



UNIFIED SOIL CLASSIFICATION SYSTEM (USCS) (ASTM D2487-83)

MAJOR DIVISIONS			GROUP SYMBOLS	GRAPHIC SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN 50% RETAINED ON NO. 200 SIEVE*	GRAVELS 50% or More of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVELS	GW		Well-graded gravels and gravel-sand mixtures, little or no fines
			GP		Poorly graded gravels and gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES	GM		Silty gravels, gravel-sand-silt mixtures
			GC		Clayey gravels, gravel-sand-clay mixtures
	SANDS More Than 50% of Coarse Fraction Passes No. 4 Sieve	CLEAN SANDS	SW		Well-graded sands and gravelly sands, little or no fines
			SP		Poorly graded sands and gravelly sands, little or no fines
		SANDS WITH FINES	SM		Silty sands, sand-silt mixtures
			SC		Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS 50% OR MORE PASSES NO. 200 SIEVE*	SILTS AND CLAYS Liquid Limit 50% or Less		ML		Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL		Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL		Organic silts or organic clays of low plasticity
	SILTS AND CLAYS Liquid Limit Greater Than 50%		MH		Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
			CH		Inorganic clays of high plasticity, fat clay
			OH		Organic clays or organic silts of medium to high plasticity
HIGHLY ORGANIC SOILS			PT		Peat, muck and other highly organic soils

* BASED ON THE MATERIAL PASSING THE 3-INCH (75-mm) SIEVE.
REFERENCE: ASTM STANDARD D2487

DENSITY OF GRANULAR SOILS

DESIGNATION	SPT BLOWS PER FOOT
VERY LOOSE	0 — 4
LOOSE	5 — 10
MEDIUM DENSITY	11 — 30
DENSE	31 — 50
VERY DENSE	OVER 50

CONSISTENCY OF COHESIVE SOIL

CONSISTENCY	FIELD IDENTIFICATION	UNCONFINED COMPRESSIVE STRENGTH q_u (TONS/SQ. FT.)
VERY SOFT	EASILY PENETRATED SEVERAL INCHES BY FIST	LESS THAN 0.25
SOFT	EASILY PENETRATED SEVERAL INCHES BY THUMB	0.25 — 0.5
MEDIUM STIFF	PENETRATED SEVERAL INCHES BY THUMB WITH MODERATE PRESSURE	0.5 — 1.0
STIFF	READILY INDENTED BY THUMB BUT PENETRATED WITH GREAT EFFORT	1.0 — 2.0
VERY STIFF	READILY INDENTED BY THUMBNAIL	2.0 — 4.0
HARD	INDENTED WITH DIFFICULTY BY THUMBNAIL	OVER 4.0

NOTES:

(1) UPPER CASE USED FOR LABORATORY VERIFIED USCS CLASSIFICATIONS.

(2) LOWER CASE USED FOR FIELD USCS CLASSIFICATIONS.

(3) DUAL USCS SYMBOL, SUCH AS (SP-SM) DENOTES 5 TO 12% OF MINOR CONSTITUENT.

(4) BORDER LINE SYMBOL, SUCH AS (CL/CH) DENOTES SOIL HAVING PROPERTIES THAT DO NOT DISTINCTLY PLACE THE SOIL IN A SPECIFIC GROUP.

(5) SUBSURFACE INFORMATION FROM BORING AND TEST PIT LOGS DEPICT CONDITIONS ONLY AT THE SPECIFIC LOCATIONS AND DATES INDICATED. SOIL CONDITIONS AND WATER LEVELS AT OTHER LOCATIONS MAY DIFFER FROM CONDITIONS AT THESE LOCATIONS. ALSO THE CONDITIONS AT THESE LOCATIONS MAY CHANGE WITH TIME.

(6) BLOW COUNTS ON LOGS ARE THE NUMBER OF BLOWS TO DRIVE THE SAMPLER 12 INCHES WITH A 140 POUND HAMMER FALLING 30 INCHES.

▽ GROUND WATER FIRST ENCOUNTERED

▼ 1-1-84 WATER LEVEL AND DATE MEASURED

LEGEND FOR LOG OF BORINGS AND TEST PITS

PREPARED FOR

NAVAL AIR STATION
MOFFETT FIELD, CALIFORNIA

IT ... Creating a Safer Tomorrow

122283

"Do Not Scale This Drawing"

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 8 – WELLS (IT)

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

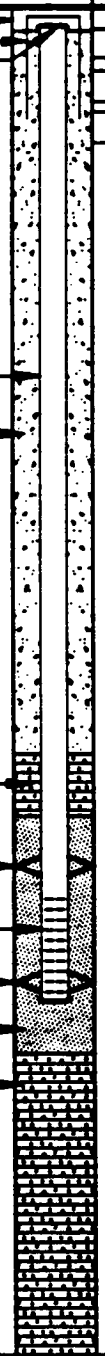
DATED 01 MARCH 1993

BORING NO. W8-2(A2)

FIELD GEOLOGIST E. Wessner
EDITED BY D.H. Cox
CHECKED BY S. Bartling
TOTAL DEPTH 65 feet

COORDINATES N 338,964.9 E 1,547,887.0
DATE BEGAN 10/24/88
DATE FINISHED 10/25/88
GROUND SURFACE EL. 7.79 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0				FILL	Asphalt.
	MD#1	6/18	2,3,2	CL	SANDY CLAY; black to dark gray, moist, very soft, low plasticity, coarse inclusions.
	MD#2	12/18	3,3,3		
5	MD#3	12/18	3,9,9		SANDY CLAY; olive gray, moist, soft, non plastic, coarse inclusions with a 1' bed of coarse to fine gravel and sand.
10					SILTY CLAY; dark gray to black, moist, stiff to soft, low plasticity, some sand stringers.
15				SC	CLAYEY SAND; fine to coarse grained, angular to subangular, poorly sorted, unconsolidated.
20				SM-SC	CLAYEY SILTY SAND; fine grained, moderately sorted, unconsolidated.
25				CL	SANDY CLAY; dusky yellow, moist, very soft, low to moderately plastic.
30				GW	SANDY GRAVEL; moist, coarse, angular to subangular, poorly sorted, unconsolidated.
				SW	SAND; fine to medium grained.
35				CL-CH	SILTY CLAY; dusky yellow, moist, very soft, medium plasticity.
40				SW	SAND; coarse, poorly sorted, subangular.
				CH	SILTY CLAY; dusky yellow, moist, soft, high plasticity.
45				GC	CLAYEY GRAVEL; wet, coarse, angular, unconsolidated.
50				CH-CL	SILTY SANDY CLAY; light gray, moist, soft, high plasticity.
				SW	SAND; medium to coarse, angular, poorly sorted.
55				CH	SILTY CLAY; dark olive brown, moist, soft, high plasticity.
				GW	SANDY GRAVEL; poorly sorted, unconsolidated, angular coarse sands, fine grained gravels.
60				CL	SILTY SANDY CLAY; dusky yellow, moist, very soft, medium plasticity.
				CH	SILTY CLAY; olive gray, moist, soft, medium to high plasticity.
65				GW	SANDY GRAVEL; fine grained gravels, angular, poorly sorted.
70					TOTAL DEPTH 65 FEET



DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

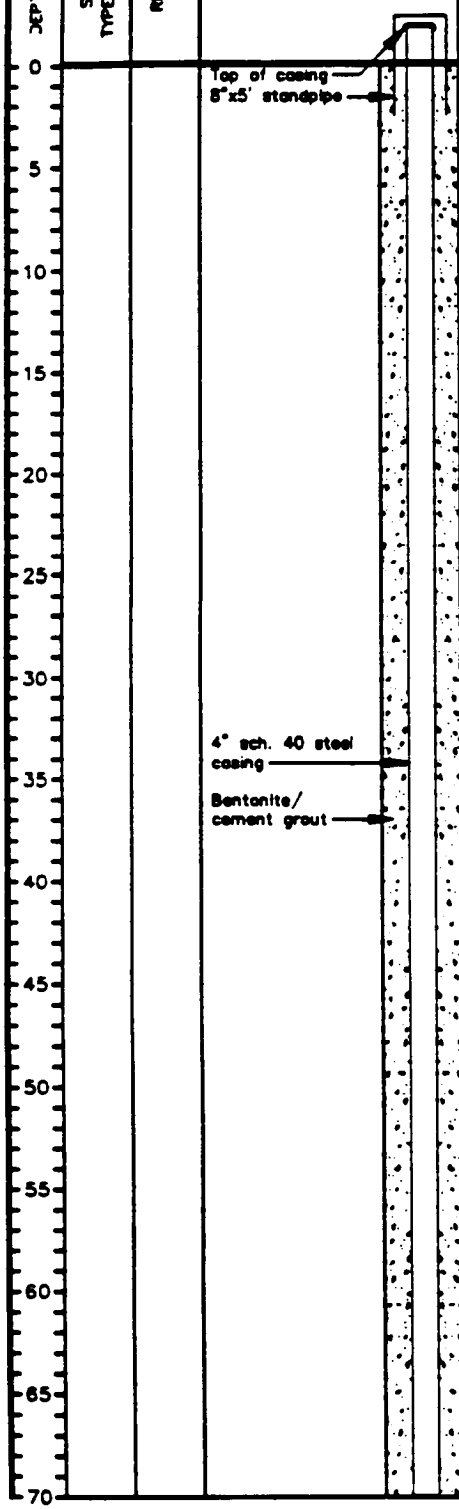
IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W8-3(C)

FIELD GEOLOGIST E. Wessner
EDITED BY D. H. Cox
CHECKED BY S.Bartling
TOTAL DEPTH 166.6 feet

COORDINATES N 338,725.9 E 1,947,848.6
DATE BEGAN 10/28/88
DATE FINISHED 11/1/88
GROUND SURFACE EL. 7.9 ft.



USCS SYMBOL	DESCRIPTION
FILL	SANDY CLAY; top soil.
CL	SILTY CLAY; dark grey, moderately moist, very soft, very high plasticity.
	SILTY, SANDY CLAY; dusky yellow, moist, very soft, medium plasticity.
	SANDY CLAY; dusky yellow, moist, very soft, low plasticity.
CL	SILTY CLAY; light dusky yellow, moist, very soft, medium plasticity, some coarse inclusions.
	SANDY CLAY; orange brown, moderately moist, very soft, high plasticity.
	SILTY CLAY; reddish brown, moderately moist, hard, low plasticity, some coarse siltstone inclusions.
	SANDY CLAY; light brown, moist, very soft, very low plasticity.
	SILTY CLAY; light grey, moist, soft, medium to low plasticity.
GC	CLAYEY GRAVEL; light grey, wet, subangular, appreciable amount of fines.
CL	SILTY CLAY; light grey, moist, soft, low plasticity, some coarse inclusions.
	SILTY CLAY; olive grey, moderately moist, soft, low to medium plasticity, sticky, coarse inclusions.
	SILTY CLAY; light grey, moist, soft, moderately plastic, coarse inclusions.
SC	CLAYEY SAND; very fine grained, wet, slurry.

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W8-3(C)

FIELD GEOLOGIST E. Wessner
EDITED BY D. H. Cox
CHECKED BY S.Bartling
TOTAL DEPTH 166.6 feet

COORDINATES N 338,725.9 E 1,847,848.6
DATE BEGAN 10/28/88
DATE FINISHED 11/1/88
GROUND SURFACE EL 7.9 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	WELL SUMMARY	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	PROFILE	DESCRIPTION
70					SC		CLAYEY SAND; wet, slurry, very fine grained.
75					CL-CH		SILTY CLAY/CLAY; light grey, moist, soft to very soft, medium plasticity, sticky.
80							
85					SC-SM		SAND/CLAYEY SAND; wet, loose, fine to medium grained, subrounded, silty clay stringers throughout.
90							
95							
100					CL		SILTY CLAY; grey, moderately moist, stiff, medium plasticity, platy.
105			4" sch. 40 steel casing; Bentonite/ cement grout		SP-CL		SAND; clean, wet, unconsolidated with silty clay stringers, very fine grained.
110					CL		SILTY CLAY; greenish grey, moist, soft to stiff, high plasticity, medium grained inclusions.
115							
120					CL-CH		SILTY CLAY / CLAY; greenish grey, moderately moist, hard, medium plasticity.
125							
130			Centralizer		ML-CL		SANDY SILTY CLAY; light grey, very soft, non plastic, slurry.
135					CL		SILTY CLAY; greenish grey, moderately moist, hard to stiff, medium plasticity, some coarse inclusions.
140							

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W8-3(C)

FIELD GEOLOGIST E. Wessner
EDITED BY D. H. Cox
CHECKED BY S.Bartling
TOTAL DEPTH 166.6 feet

COORDINATES N 338,775.9 E 1,647,848.6
DATE BEGAN 10/28/88
DATE FINISHED 11/1/88
GROUND SURFACE EL. 7.9 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	WELL SUMMARY	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	PROFILE	DESCRIPTION
140–165			Bentonite pellets 144.1 to 148.1 ft.; Centralizer; 4" .010 S.S. screen from 152 to 162 ft.; Centralizer; #1C sand; Bentonite backfill		CL		SILTY CLAY; light grey, moist, soft, medium plasticity, inclusions of firm crumbly sandy clay nodules.
155					SC		CLAYEY SAND; very wet, fine to very fine grained, some gravels; angular, fine grained.
155–160					CL		SILTY CLAY; olive green, moist, soft, medium plasticity.
160					GW		GRAVEL; wet, subangular, fine grained with fine sands.
160–165					CL		SILTY CLAY; olive grey, moist, stiff to hard, medium plasticity.
165–210			9.6"				TOTAL DEPTH 166.6 FEET

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

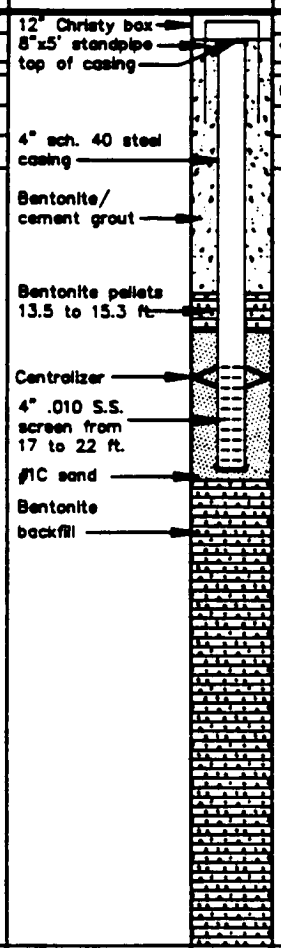
BORING NO. W8-4(A1)

FIELD GEOLOGIST S.Logan
EDITED BY D. H. Cox
CHECKED BY S. Bartling
TOTAL DEPTH 45 feet

COORDINATES N 338,701.9 E 1,547,853.3
DATE BEGAN 08/18/88
DATE FINISHED 08/18/88
GROUND SURFACE EL. 7.91 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0	MD#1	8/18	10,7,10	SM	SILTY SAND; brown with black fragments, dry, stiff to very stiff, non plastic.
	MD#2	10/18	6,11,15	ML	SANDY SILT; black, moist, very stiff, low plasticity.
5	MD#3	18/18	5,9,14		SANDY SILT; light gray, dry, stiff to very stiff, non plastic, moisture increases with depth.
	MD#4	15/18	4,8,9		
10					CLAYEY SILT; mottled light brown and light gray, moist, stiff, low to medium plasticity.
				SC	CLAYEY SAND; light and dark brown, wet, fine to medium grained.
15				ML	CLAYEY SILT; mottled light brown and light gray, moist, stiff, moisture increases with depth, mottling grades to include cream coloring with depth.
20				SC	CLAYEY SAND; saturated, medium plasticity, fine to medium grained.
25				ML-CH	CLAYEY SILT; grading to sandy silty clay, tan with light gray spots, moist, stiff to very stiff, clay has high to medium plasticity. Some fine quartz gravel..
30					
35				CH	SANDY CLAY; light brown and light gray, very moist, very soft to soft, high plasticity, sand is fine grained with trace of medium grained. SILTY CLAY; light brown and grey, moist, stiff to very stiff high plasticity, trace of sands at 40 ft.
40				ML	CLAYEY SILT; light brown with light and dark gray spots, dry to slightly moist, stiff to very stiff, low to no plasticity, trace of medium grained rounded sands throughout.
45					TOTAL DEPTH 45 FEET
50					
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Development Co.
DRILLING METHOD: Hollow Stem Auger

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

AutoCAD FILE: W8-4A(MF-27)

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

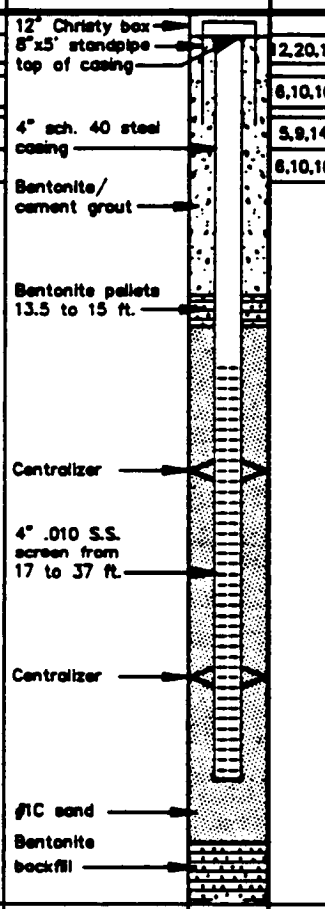
BORING NO. W8-6(A1)

FIELD GEOLOGIST S.Logan
EDITED BY D. H. Cox
CHECKED BY S. Bartling
TOTAL DEPTH 43 feet

COORDINATES N 338,988.4 E 1,547,845.8
DATE BEGAN 08/23/88
DATE FINISH 08/23/88
GROUND SURFACE EL. 7.42 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0				FILL	FILL; silty sandy gravel.
	MD#1	10/18	12,20,10	GM	SANDY SILTY GRAVEL; dark brown, dry.
	MD#2	10/18	6,10,16		
5	MD#3	15/18	5,9,14	ML	CLAYEY SILT; dark gray to black, moist, very stiff, medium plasticity, trace of sand.
	MD#4	12/18	6,10,10		
10				CH	SANDY SILTY CLAY; light brown with gray spots, moist, soft, high plasticity, sand is medium to coarse grained.
				SM	SILTY SAND; light to dark brown and gray, wet to saturated, non plastic, sand is fine to very fine grained.
15				CH	SILTY CLAY; light brown with gray spots, moist, soft, high plasticity, sand is medium to coarse grained. SILTY SANDY CLAY; light brown, moist to very moist, soft to stiff, medium to high plasticity, sand is fine to very fine grn.
20				SM-SW	SILTY SAND; black and dark brown, saturated, plastic, sand is coarse to very fine grained, rounded and subangular, trace of shell fragments, dirty, becomes cleaner with depth, well graded sands.
25				SW-SP	SAND; black and dark brown, wet to saturated, medium to very fine grained, some coarse grained, clean, fine sands and fine gravels, saturated, angular to subrounded, small fraction of silts.
30				GP	SANDY GRAVEL; brown, grey and black, coarse & med grained.
				ML	CLAYEY SILT; gray with brown spots, very moist, very soft to soft, low plasticity, trace of coarse sands.
35				SM	SILTY SAND; gray, wet to saturated, sand is fine to very fine, with trace of medium grained sand.
40				CL	SILTY CLAY; mottled grayish brown, light brown, and light gray, dry to slightly moist, very stiff to hard, medium plasticity, trace of rounded coarse sand, becomes softer and lighter in color with depth.
45					TOTAL DEPTH 43 FEET
50					
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Development Co.
DRILLING METHOD: Hollow Stem Auger

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

AutoCAD FILE W8-6A(MF-27)

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W8-8(A1)

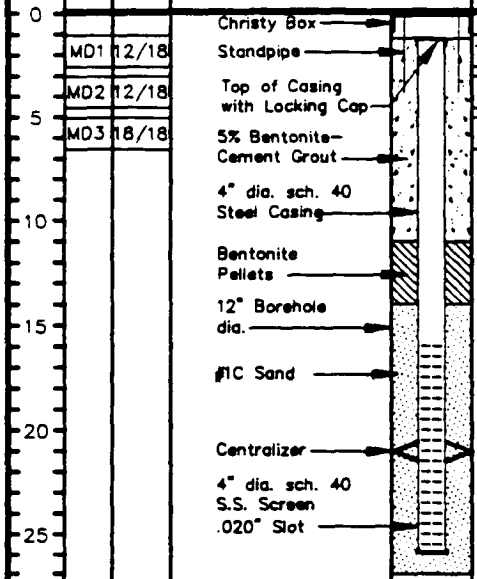
PROJ. GEOL. S. Bartling
FIELD GEOLOGIST E. Wessner
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 30 ft.

COORDINATES N ____ E ____
DATE BEGAN 5/11/90
DATE FINISHED 5/11/90
GROUND SURFACE EL ____

SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
				SILTY CLAY; top soil, dry crumbly.
MD1	12/18	7/11/16	CL	SILTY CLAY; olive black, slightly moist, medium stiff, slightly to moderately plastic.
MD2	12/18	5/7/9	CL	SILTY CLAY; dusky yellow, moderately moist, soft, high plasticity, some coarse sand inclusions.
MD3	18/18	3/3/5	CL	SILTY CLAY-CLAYEY SILT; dusky yellow, moderately moist, soft, medium plasticity, fine to medium pebble inclusions of calcite. 8.0'
			ML/SC	CLAYEY SANDY SILT; dusky yellow, moist, very soft, low plasticity, some fine pebble inclusions. 10.5'
			CL	CLAY (drill rate). Cutting returns intermittent slurry. 14.0'
			SC	SANd zone (drill rate). 16.0'
			CL	SILTY CLAY, (drill rate), soft. 20.0'
			SP	SAND, returns mixed slurry with fine grained sands. 27.0'
			CL	CLAY (drill rate). SILTY CLAY; moderately yellowish brown, moist, soft, palstic.

TOTAL DEPTH 30 FEET

WELL SUMMARY



DEPTH IN FEET: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

MF-W8-8(MF15)

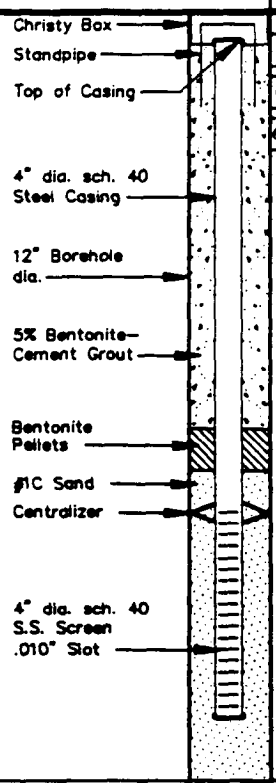
BORING NO. W8-10(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST J. Strack
EDITED BY T. Ault
CHECKED BY W. Gorber
TOTAL DEPTH 37 ft.

COORDINATES N ____ E ____
DATE BEGAN 5-8-90
DATE FINISHED 5-10-90
GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0					GRAVELLY SILTS; top dirt parking area, road fill.
	MD1	12/18	9/6/11	CL	SILTY CLAY; brownish black, slightly moist, medium stiff, slight to moderate plasticity, few coarse sand inclusions.
	MD2	16/18	6/9/12		Some mottled gray zones.
5	MD 3/4		6/11/12		SILTY CLAY; moderate yellowish brown, mottled gray, slightly to moderately moist, medium stiff, low plasticity, abundant abundant coarse sand and fine pebble inclusions. Some calcite nodules. 8.0'
10				SC	CLAYEY SAND; dark yellowish orange, moist, very soft, very fine to fine grained, moderately plastic.
					▽ Groundwater at 13 Ft. 13.0'
15				CL	SANDY CLAY Formation harden, (drill rate) at water table; returns mixed in a slurry. Some fine sands in mix. 19.0'
20					23.0'
25				SM	SILTY SAND; Fine sands in slurry..
30					Flowing sands. 34.0'
35				CL/CH	CLAY, (drill rate) SILTY CLAY; greenish black, moist, soft, high plasticity. SILTY CLAY; medium brown, moist, medium stiff, high plasticity, abundant fine pebbles.
40					TOTAL DEPTH 37 FEET
45					
50					
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W8-10(*MF14)

BORING NO. W8-11(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T.J. Strack
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 50.0 FT.

COORDINATES N ____ E ____
DATE BEGAN ____
DATE FINISHED ____
GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0					SANDY GRAVELLY CLAY TOPSOIL/FILL
	MD1	10/18	4/8/12	CL	SILTY CLAY; olive black, slightly moist, soft, medium plasticity. Changes to dark yellowish brown at 5.5 feet.
	MD2	15/18	5/8/12		
5	MD3	18/18	4/6/13		
10					SILTY CLAY; light olive brown, moist, very soft, medium plasticity. ▽ Groundwater encountered at 12.5'.
30.0'				GC	CLAYEY GRAVEL; fine to medium angular pebbles in drill cuttings, wet.
38.0'				CH	CLAY; light olive gray, moist, firm and sticky, high plasticity.
		24/24	6/8/11/11		
50					TOTAL DEPTH 50 FEET

WELL SUMMARY

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (RIG CME-75)

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

INTERNATIONAL TECHNOLOGY CORPORATION

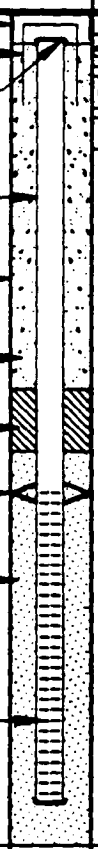
MF-W8-11(MF14)

BORING NO. W8-12(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST E. Wessner
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 40 ft.
COORDINATES N ____ E ____
DATE BEGAN 5-16-90
DATE FINISHED 5-17-90
GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0					Medium pebble FILL
	MD1	18/18	5/10/12	CL/CH	SILTY CLAY/CLAY; olive black, slightly moist, medium stiff, low plasticity. Some fine pebble inclusions.
	MD2	14/18	6/6/10		
5	MD 3/4	18/18	3/6/9		SILTY CLAY; olive gray/mottled light olive gray, slightly moist, medium stiff, low plasticity. 7.0'
				CL	SILTY CLAY; light olive brown, moderately moist, soft, high plasticity. SILTY CLAY; dusky yellow, moderately moist, soft, high plasticity, coarse sand inclusions. Moist. ▽ Groundwater encountered at 13'. Due to water table, returns from hole are a homogenous mud slurry. CPT● shows clays.
20				SC	SAND (drill rate) 21.0' 22.0'
				CL	CLAY (drill rate) 25.0'
25				CL	CLAYS (drill rate) 28.0' 30.0'
30				SP/CL	SAND (drill rate) 38.0'
				CH	CLAY (drill rate)
40					TOTAL DEPTH 40 FEET

WELL SUMMARY



●drill rate used to refine lithology.

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W8-12(+MF14)

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

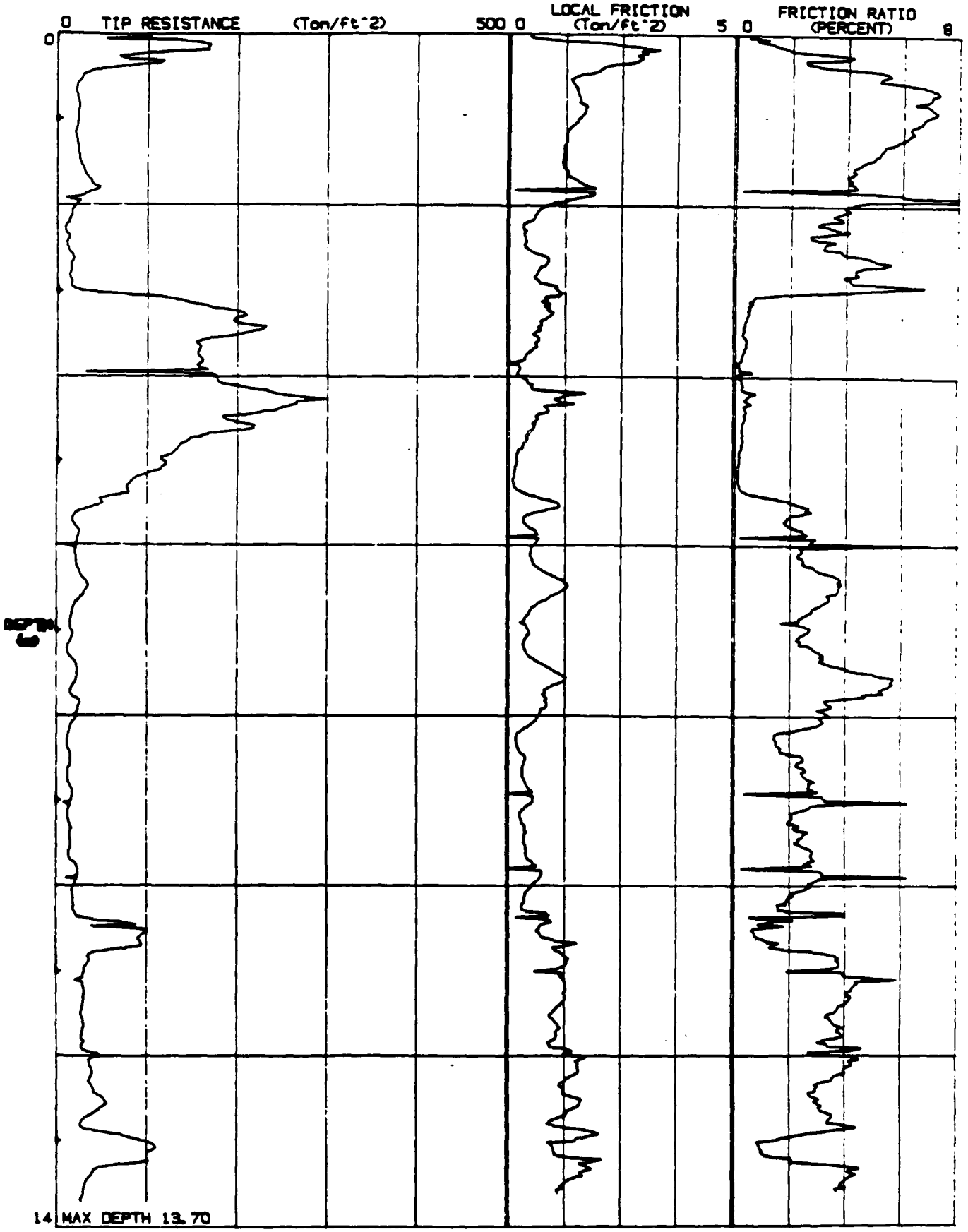
APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 8 – CPT (IT)

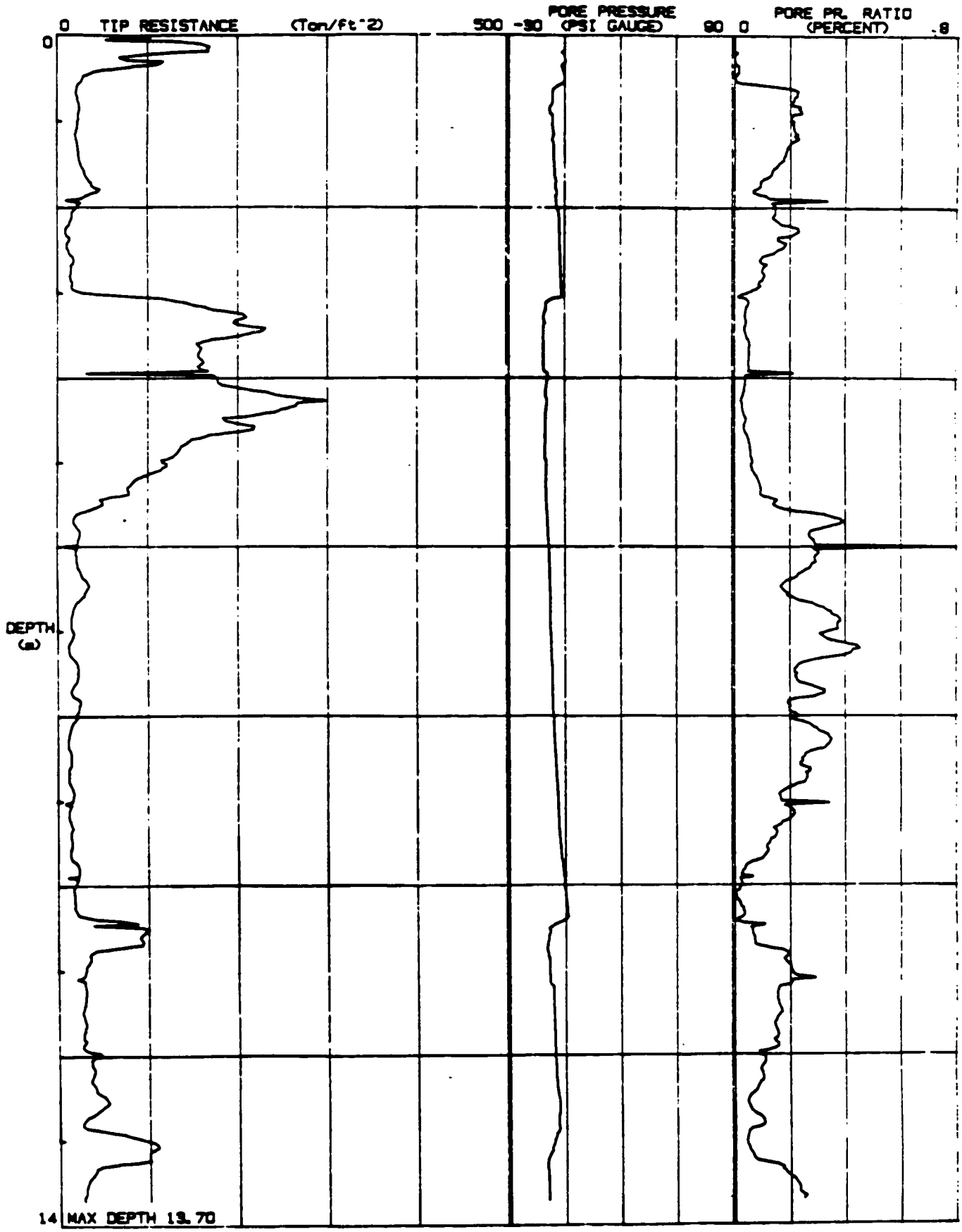
WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

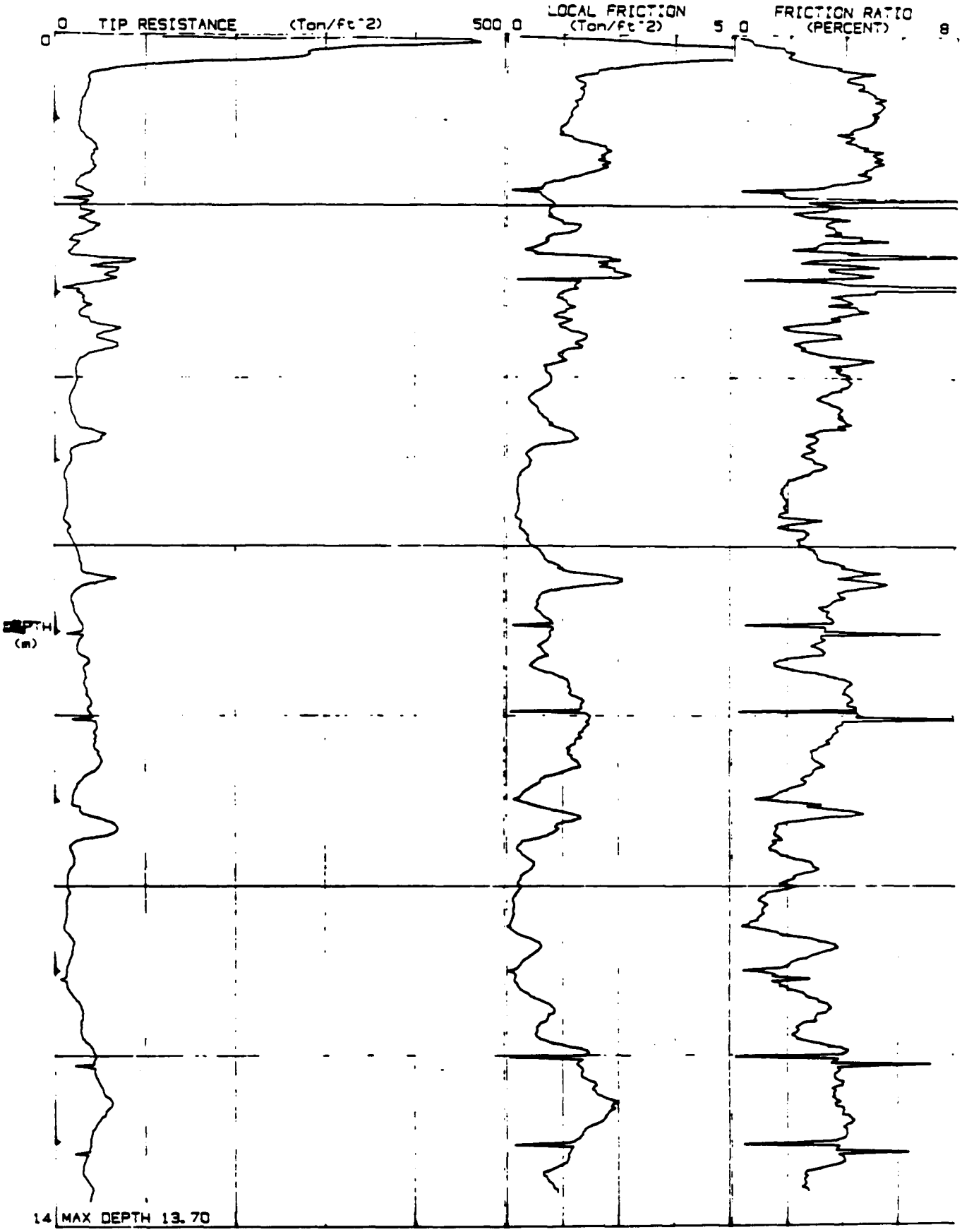
JOB # : 409700
DATE : 02/13/90
LOCATION : CPT/B-3
FILE # : 44



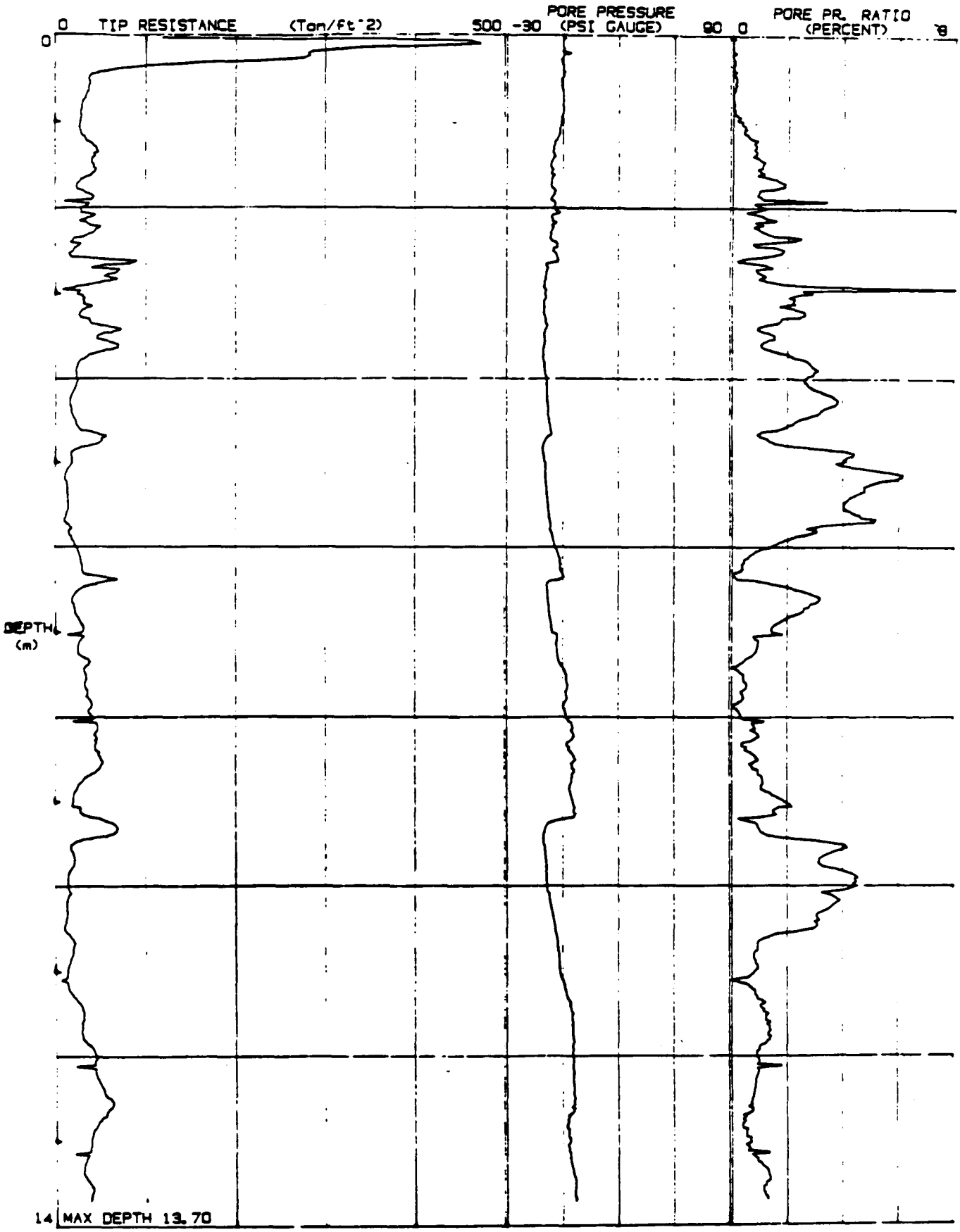
JOB # : 409700
DATE : 02/13/90
LOCATION : CPT/B-9
FILE # : 44



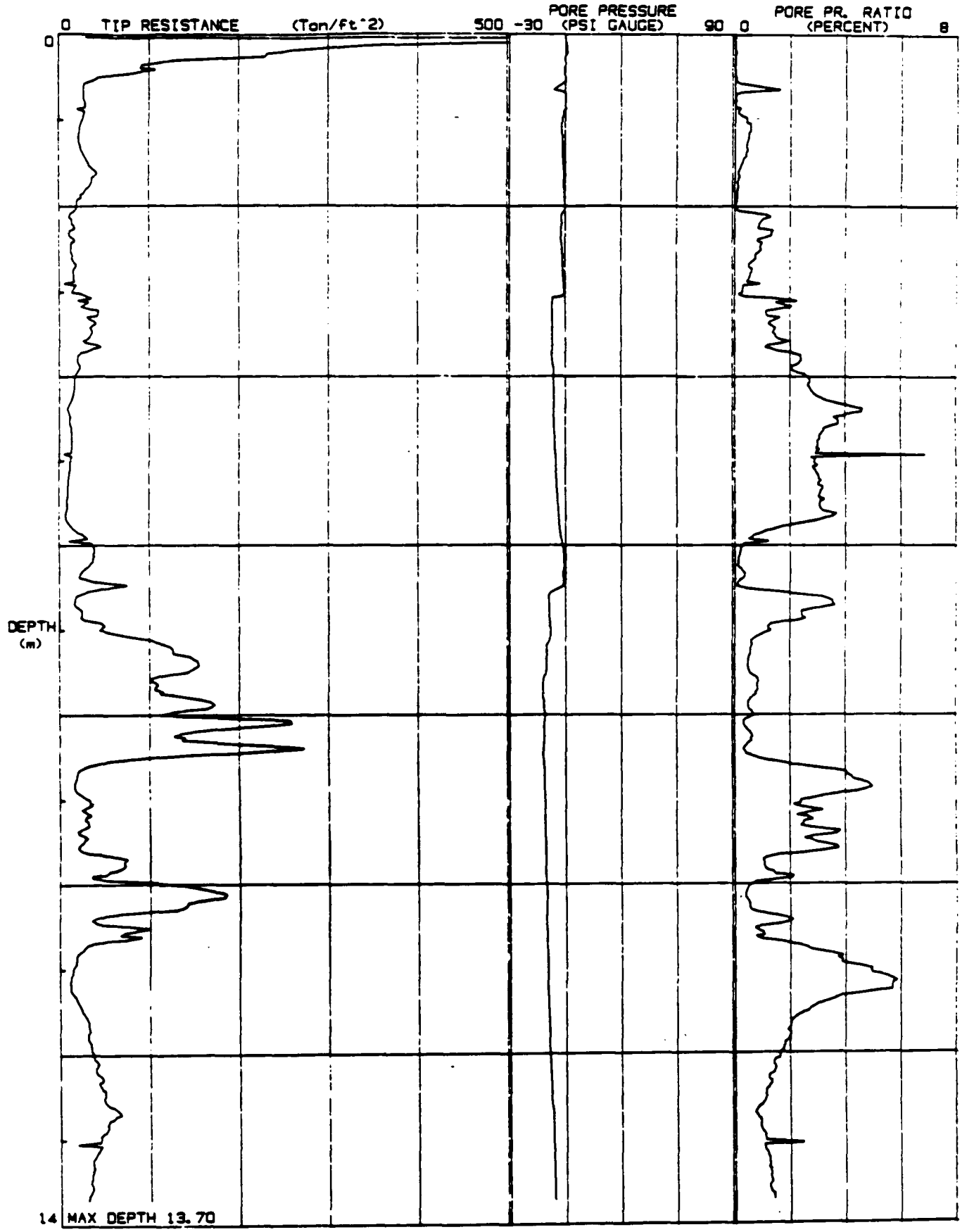
JOB # : 4C97CC
DATE : 02/08/90
LOCATION : CPT/8-5
FILE # : 36



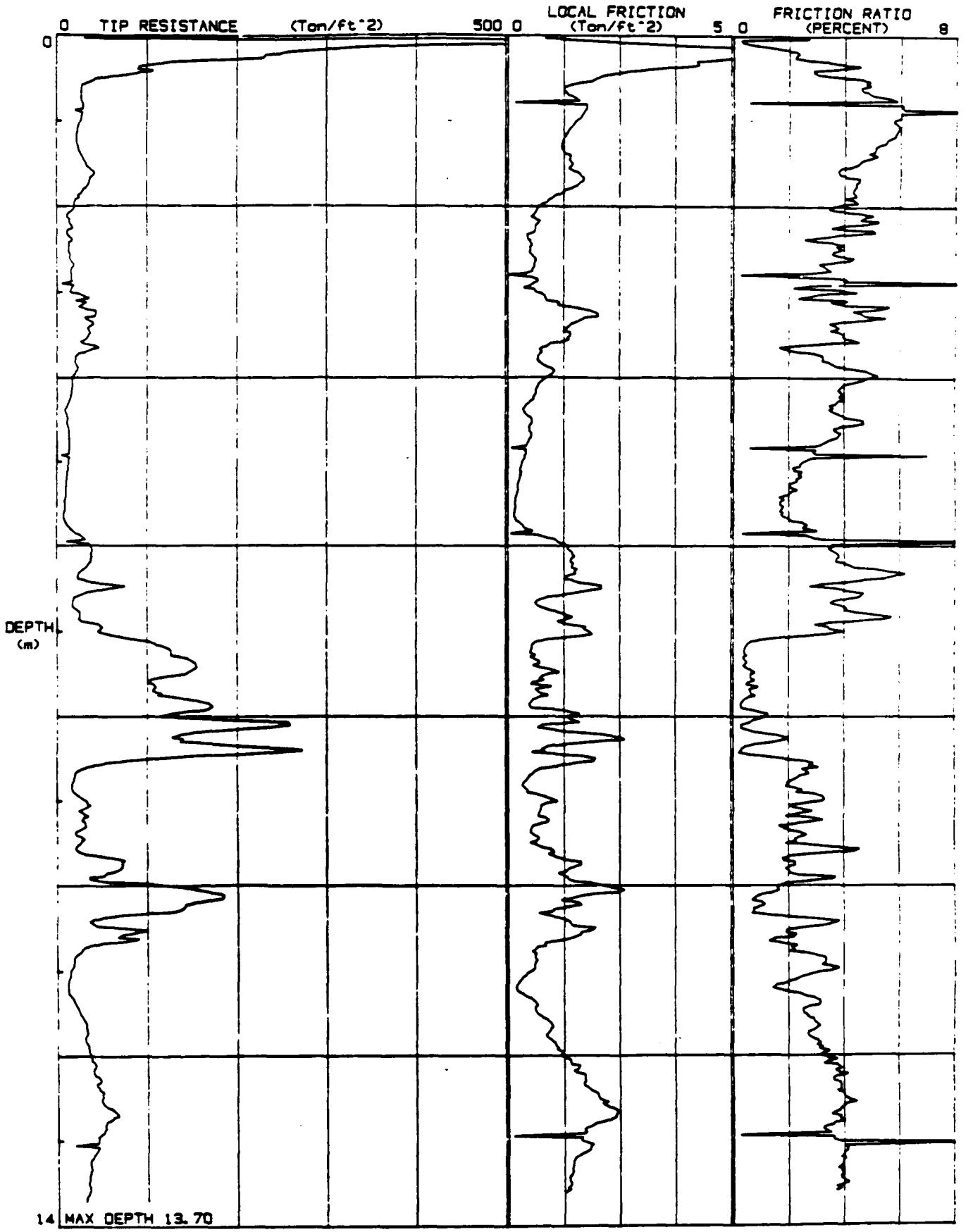
JOB # : 409700
DATE : 02/08/90
LOCATION : CPT/B-5
FILE # : 36



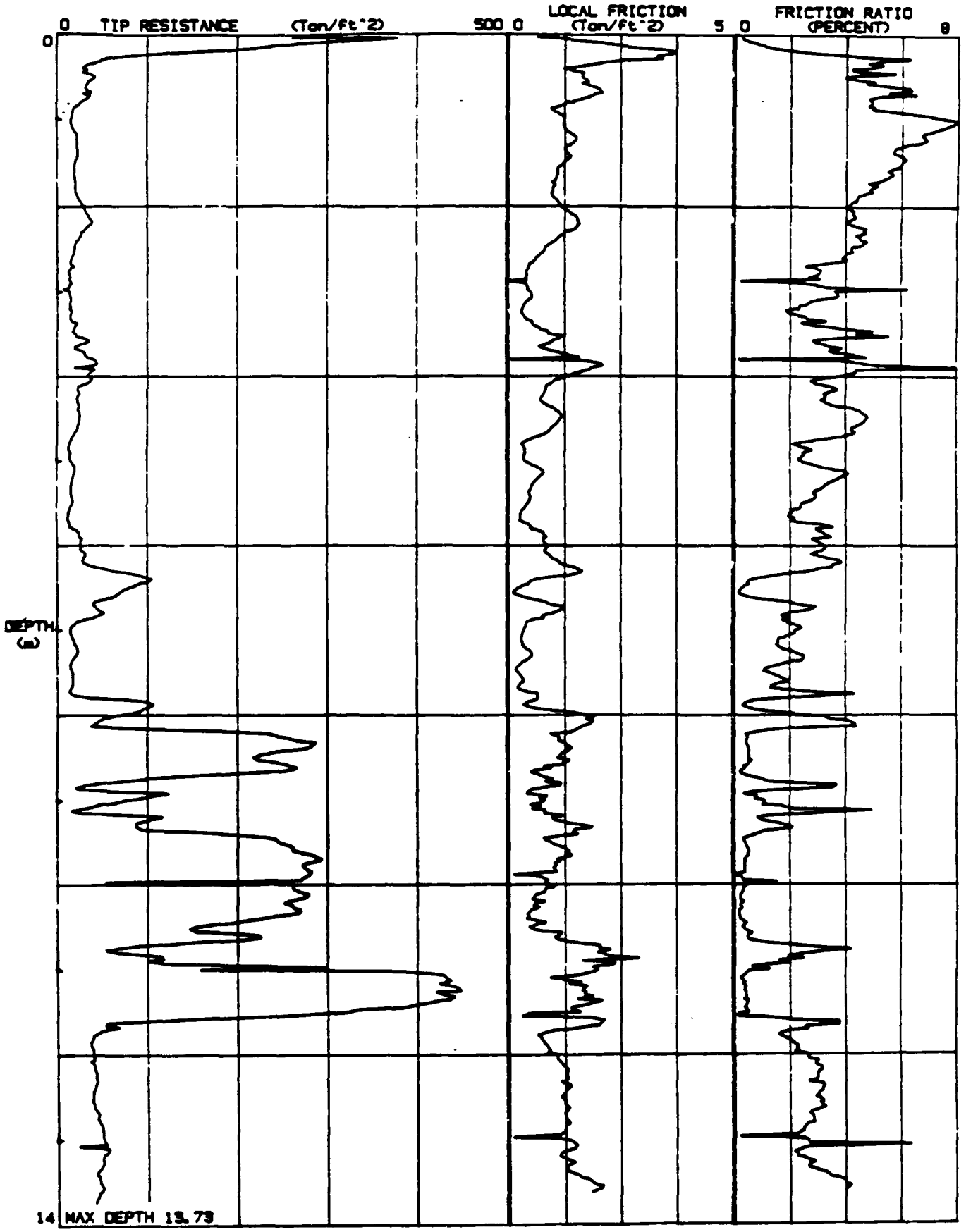
JOB # : 409700
DATE : 02/09/90
LOCATION : CPT/8-7
FILE # : 40



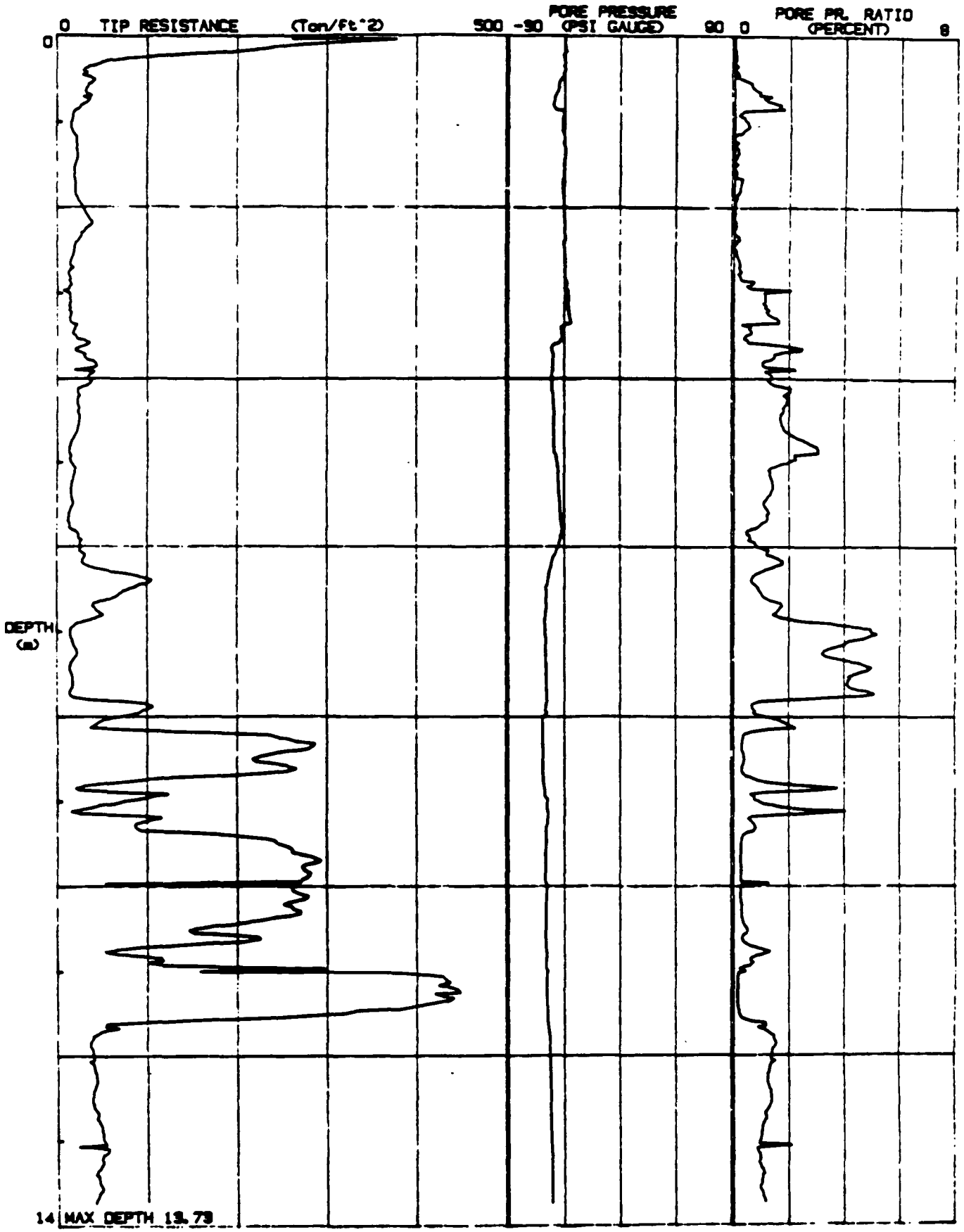
JOB # : 409700
DATE : 02/09/90
LOCATION : CPT/8-7
FILE # : 40



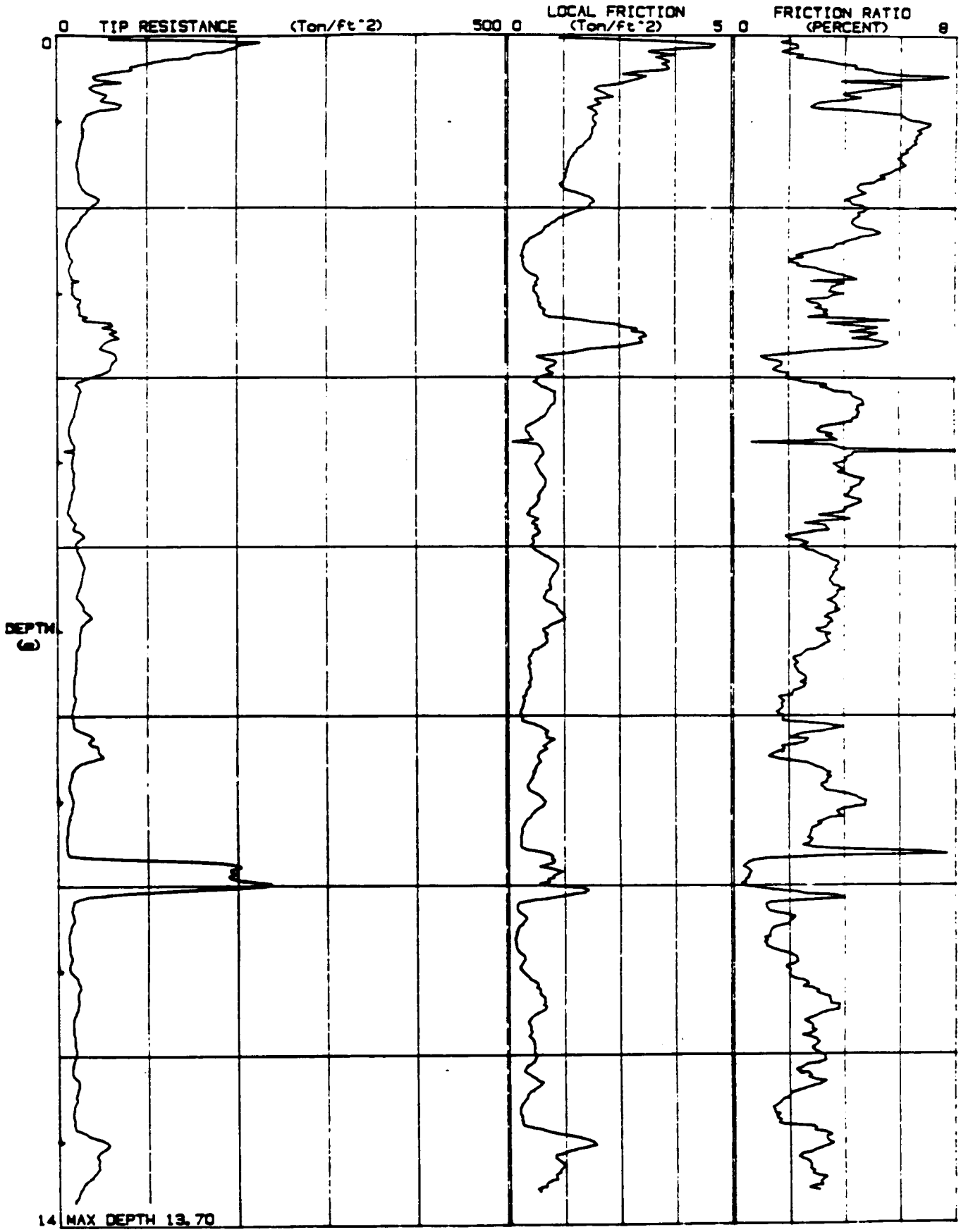
JOB # : 409700
DATE : 02/13/90
LOCATION : CPT/B-10
FILE # : 45



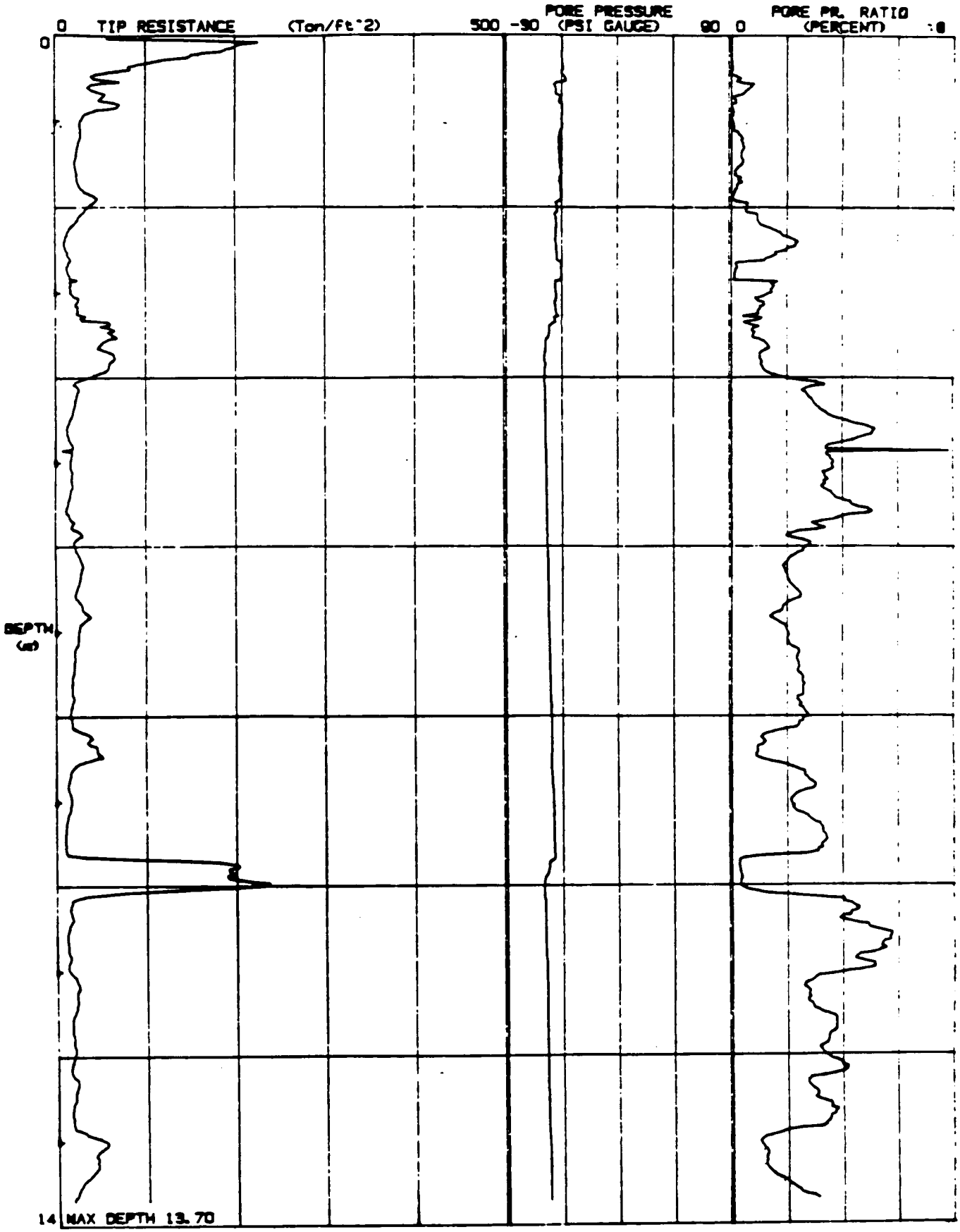
JOB # : 409700
DATE : 02/13/90
LOCATION : CPT/10-10
FILE # : 45



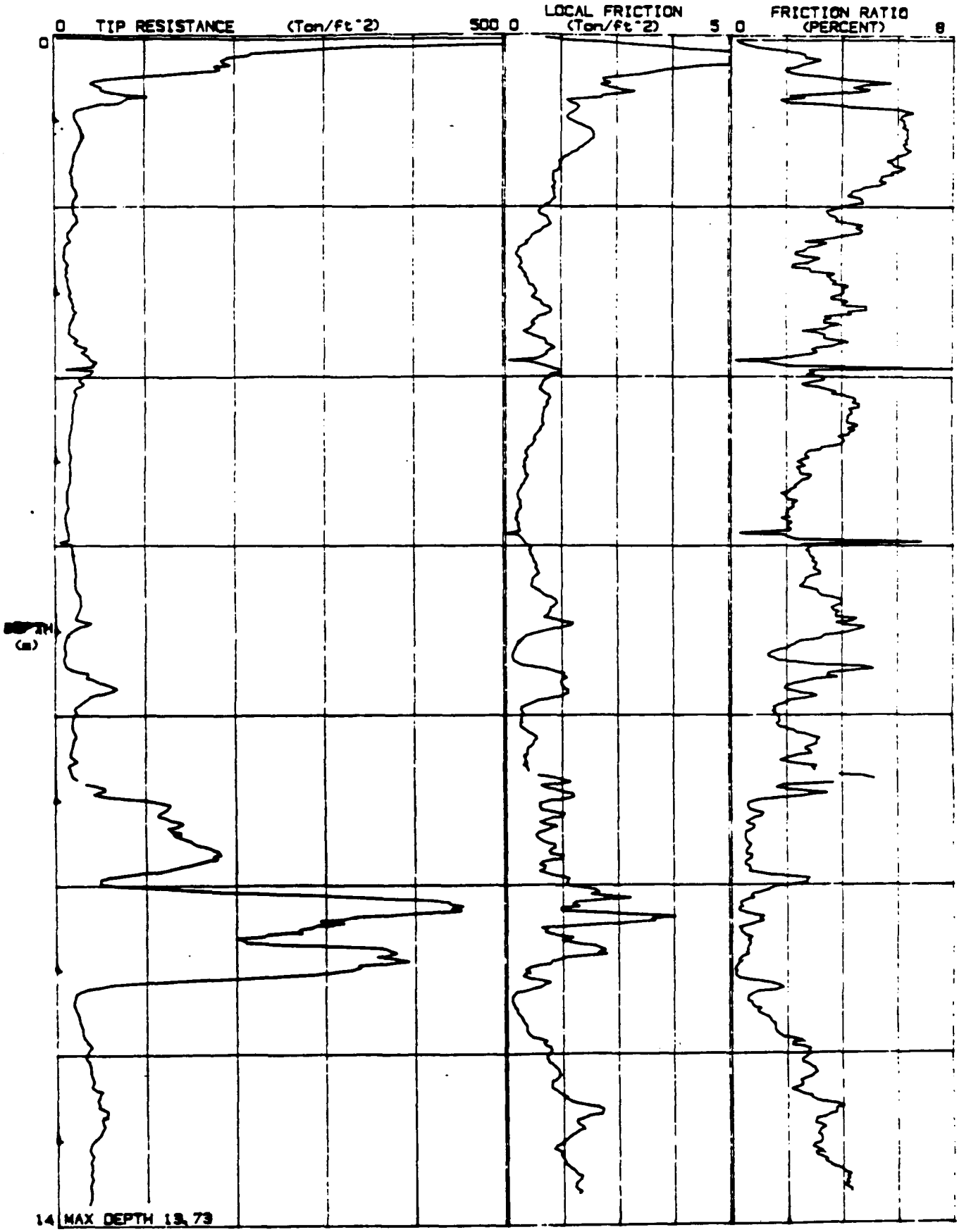
JOB # : 409700
DATE : 02/08/90
LOCATION : CPT/B-12
FILE # : 29



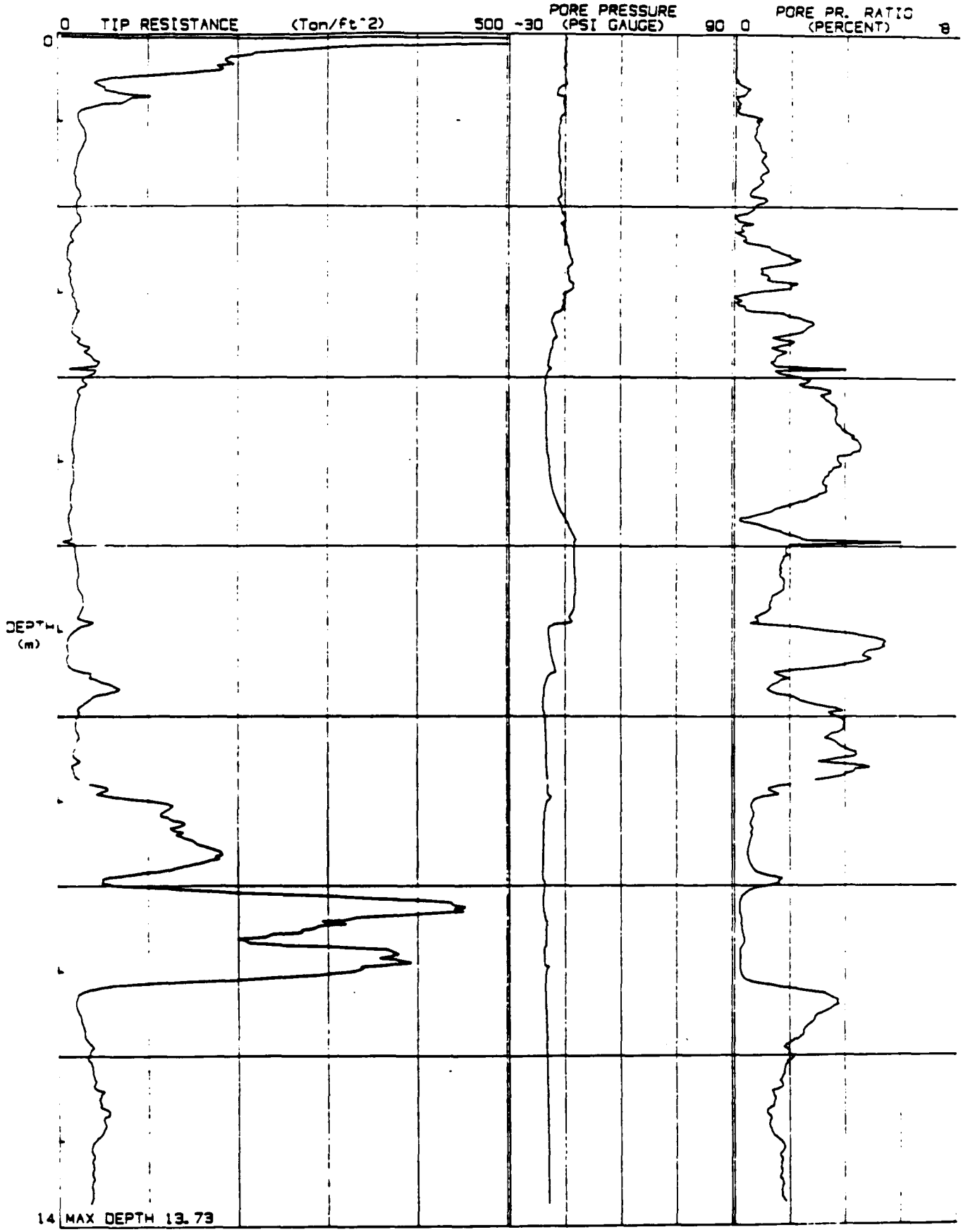
JOB # : 409700
DATE : 02/08/90
LOCATION : CPT/B-12
FILE # : 29



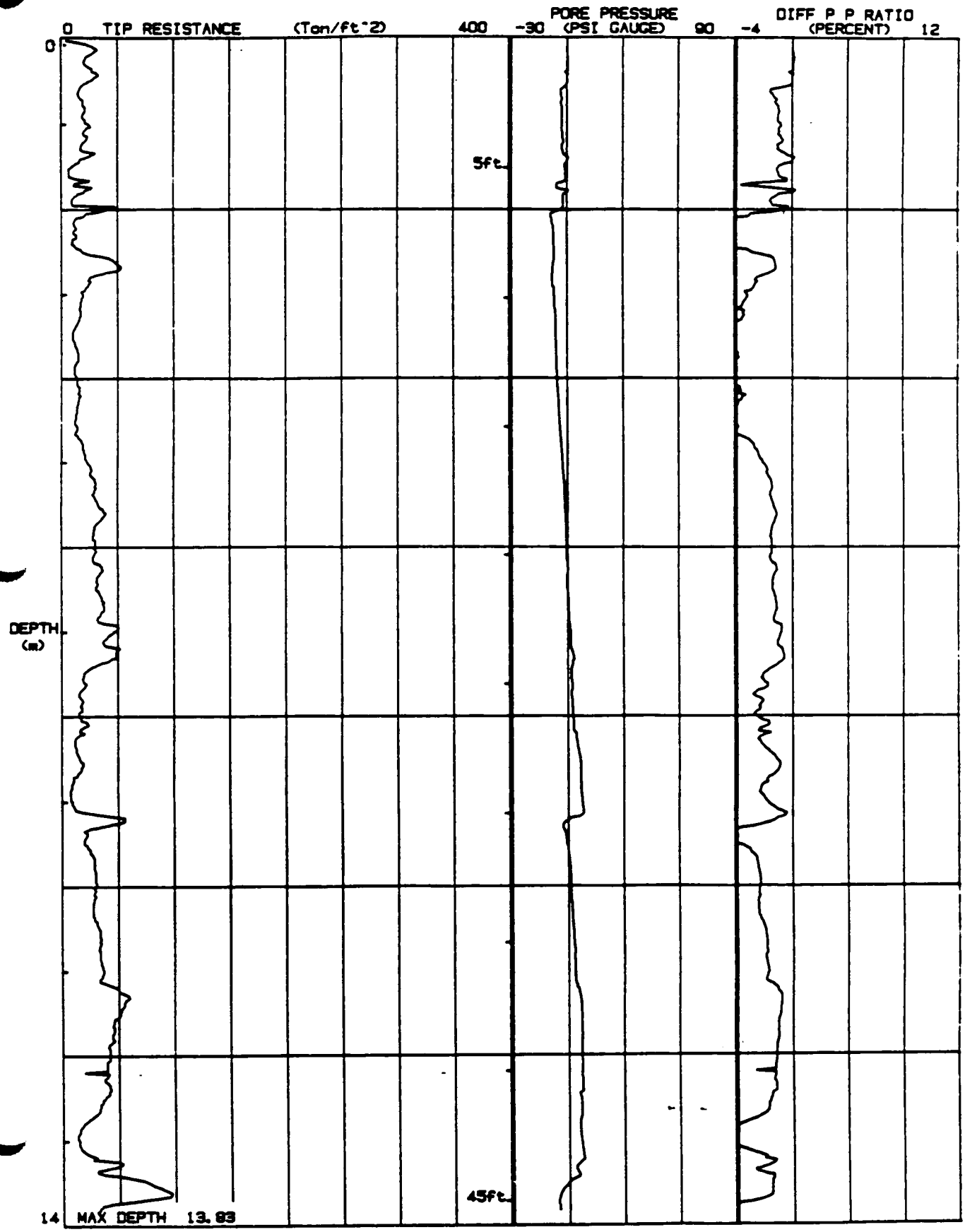
JOB # : 409700
DATE : 02/08/90
LOCATION : CPT/B-14
FILE # : 30



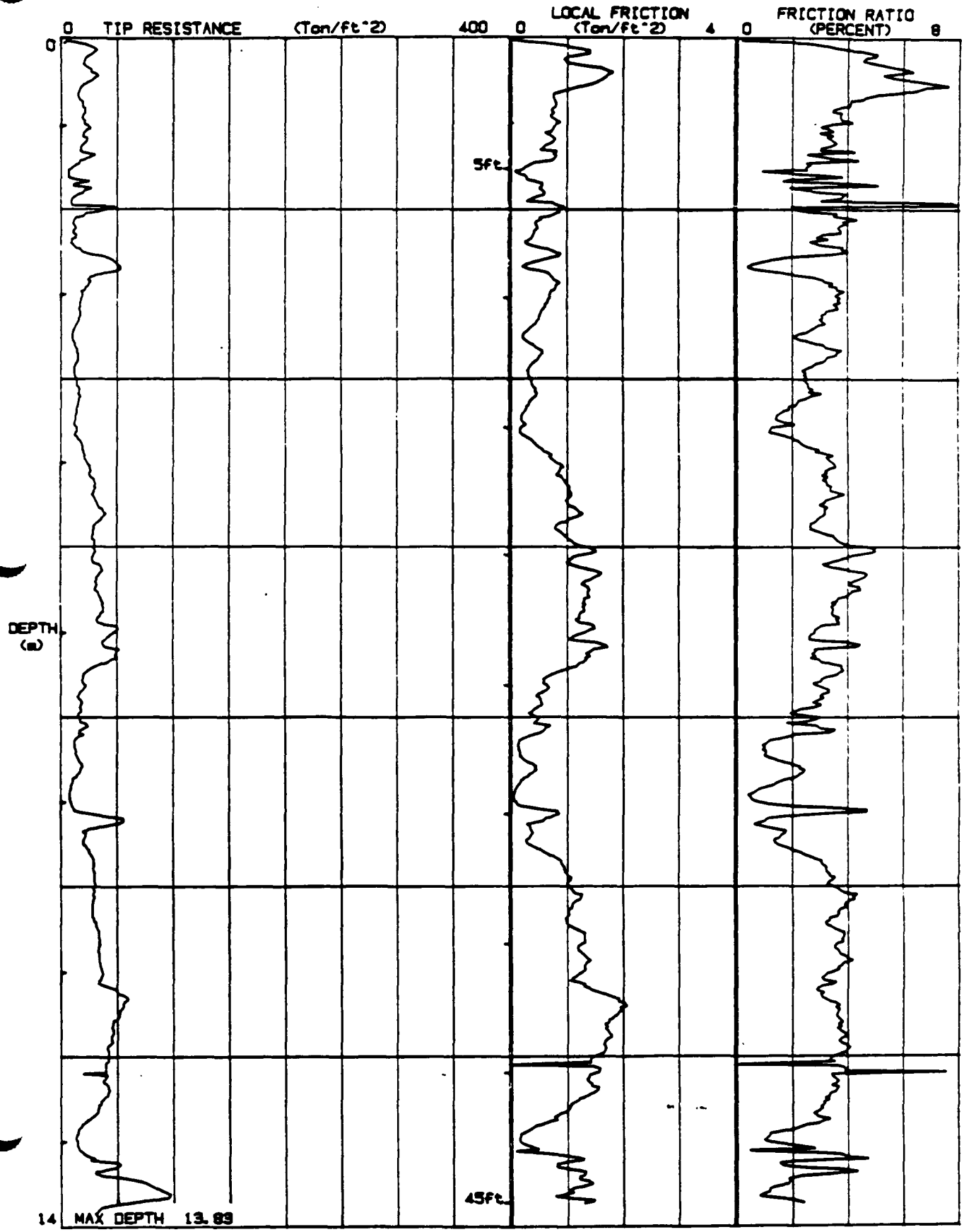
JOB # : 409700
DATE : 02/06/90
LOCATION : CPT/B-14
FILE # : 30



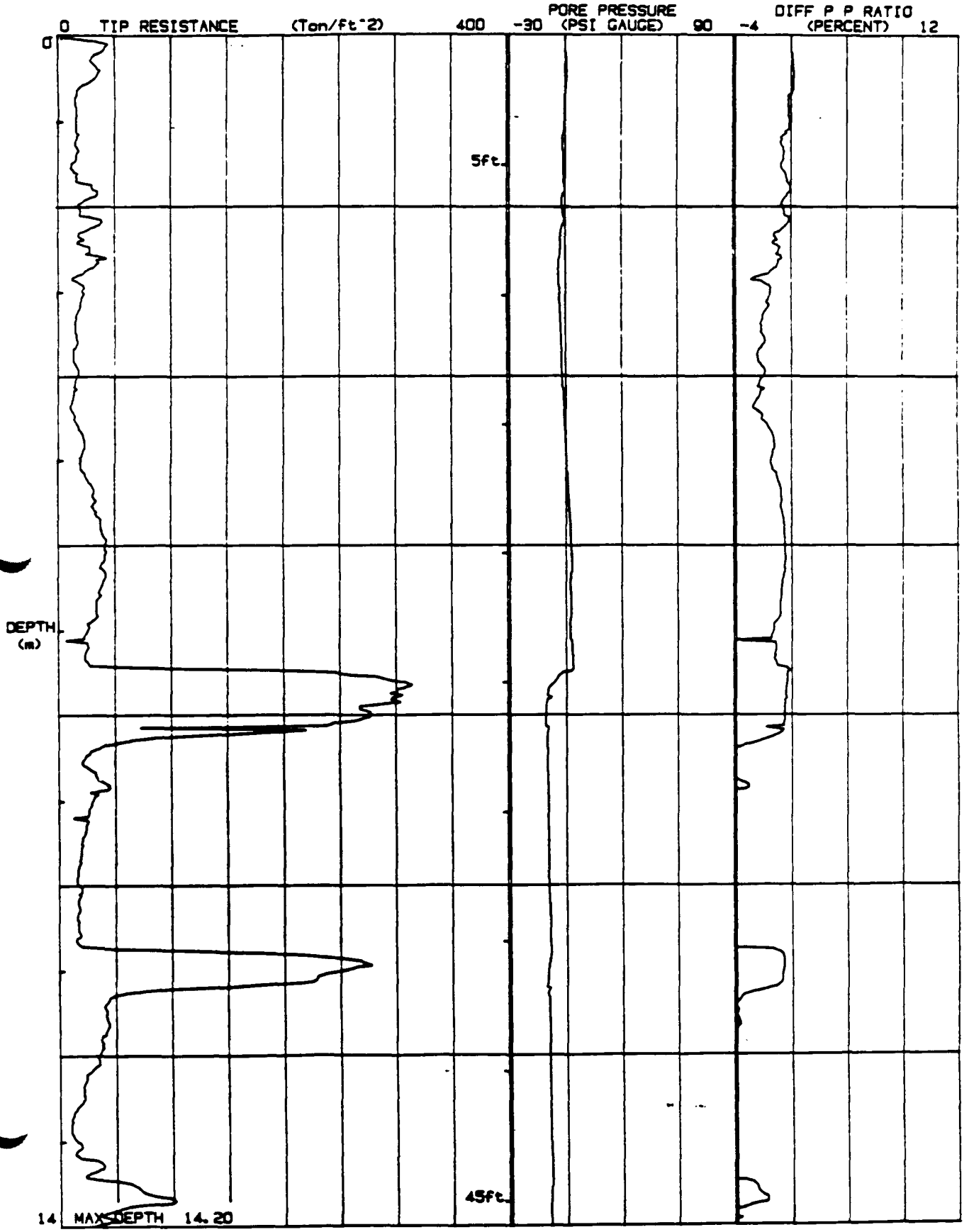
JOB # : 409700
DATE : 04/10/90/12:05
LOCATION : CPT8-18
FILE : FIL158



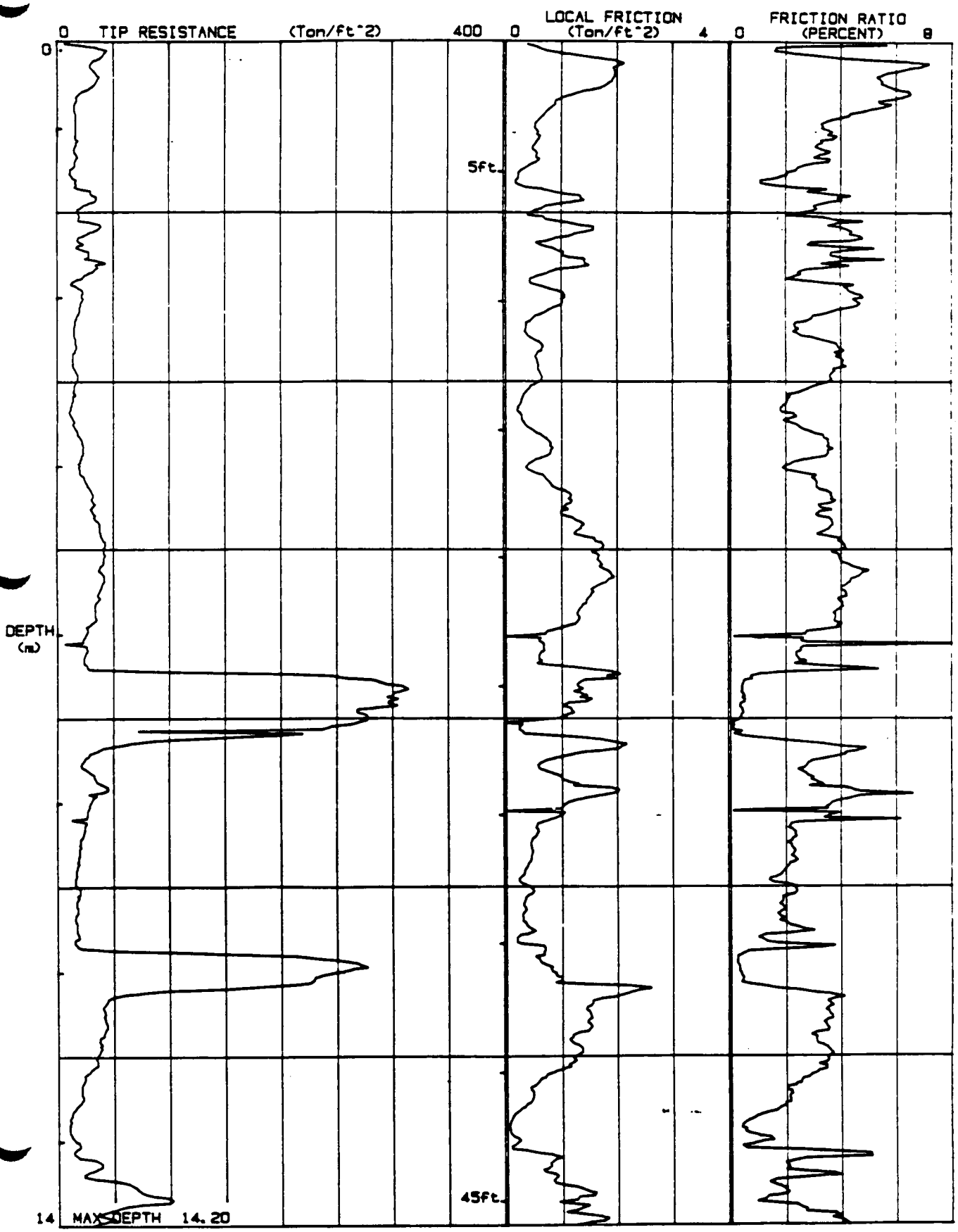
JOB # : 409700
DATE : 04/10/90/12:05
LOCATION : CPTB-18
FILE : FIL158



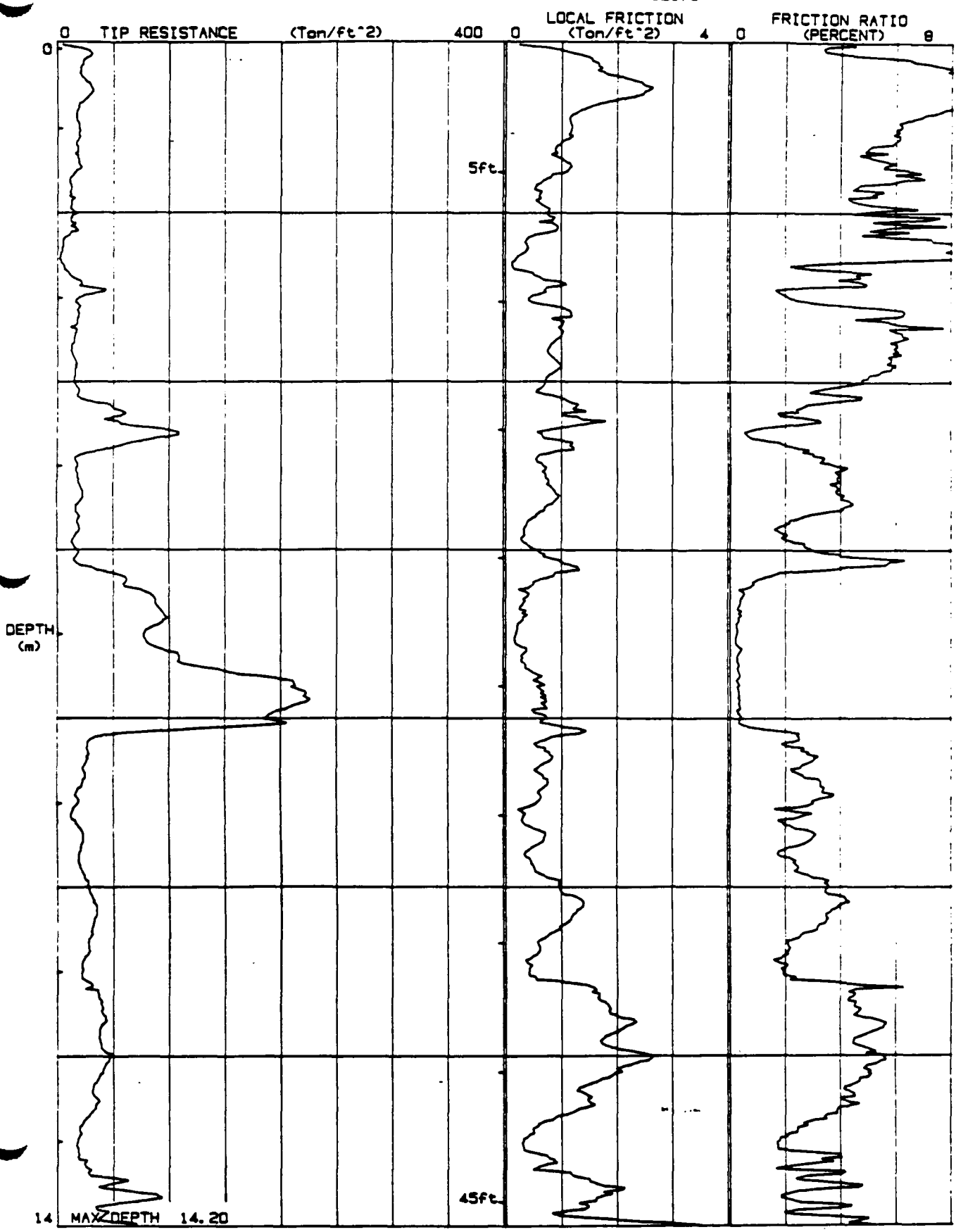
JOB # : 409700
DATE : 04/10/90/10:33
LOCATION : CPT8-19
FILE : FIL155



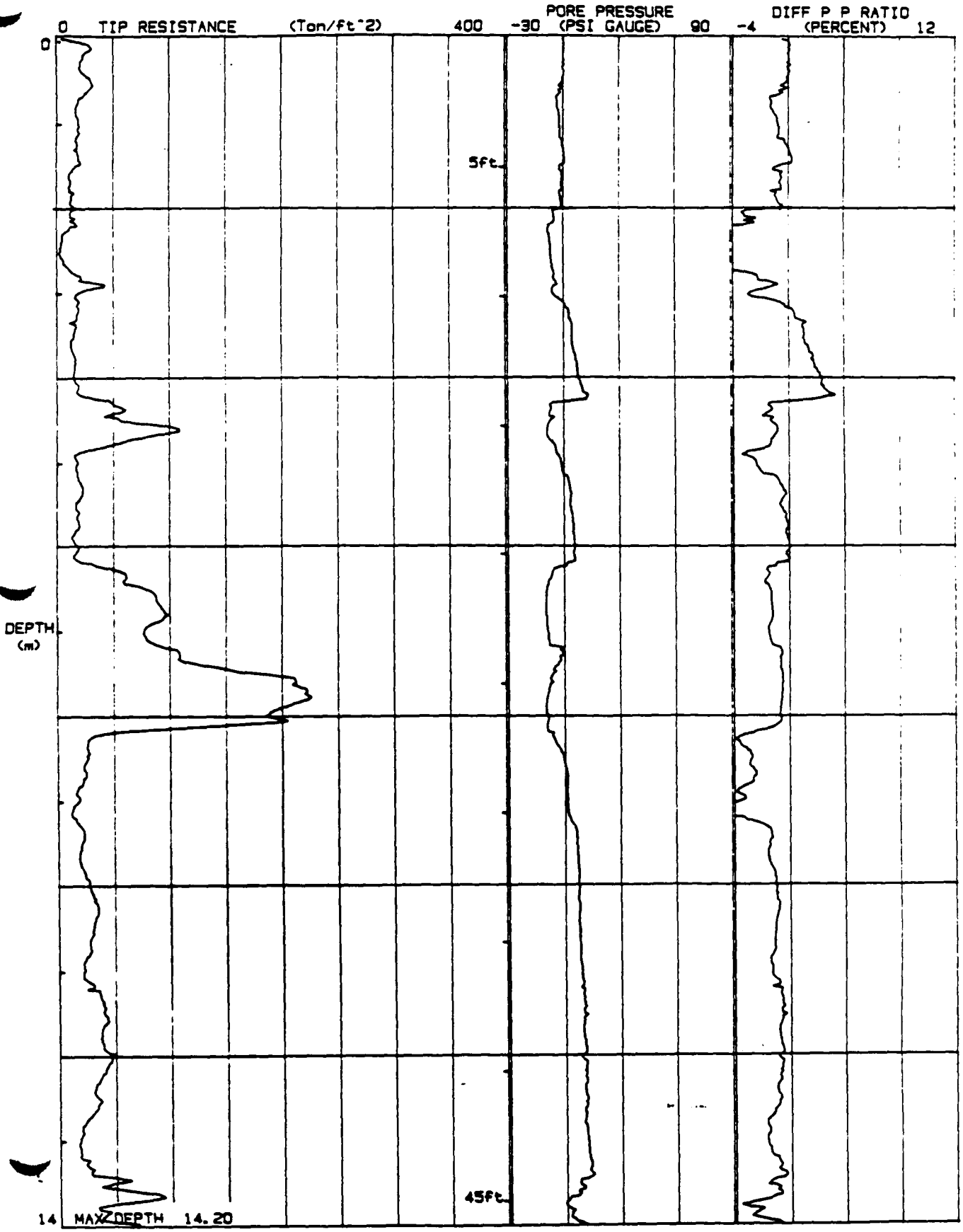
JOB # : 409700
DATE : 04/10/90/10:33
LOCATION : CPT8-19
FILE : FIL155



JOB # : 409700
DATE : 04/23/90/15:22
LOCATION : CPT8-21
FILE : FIL179



JOB # : 409700
DATE : 04/23/90/15: 22
LOCATION : CPT8-21
FILE : FIL179



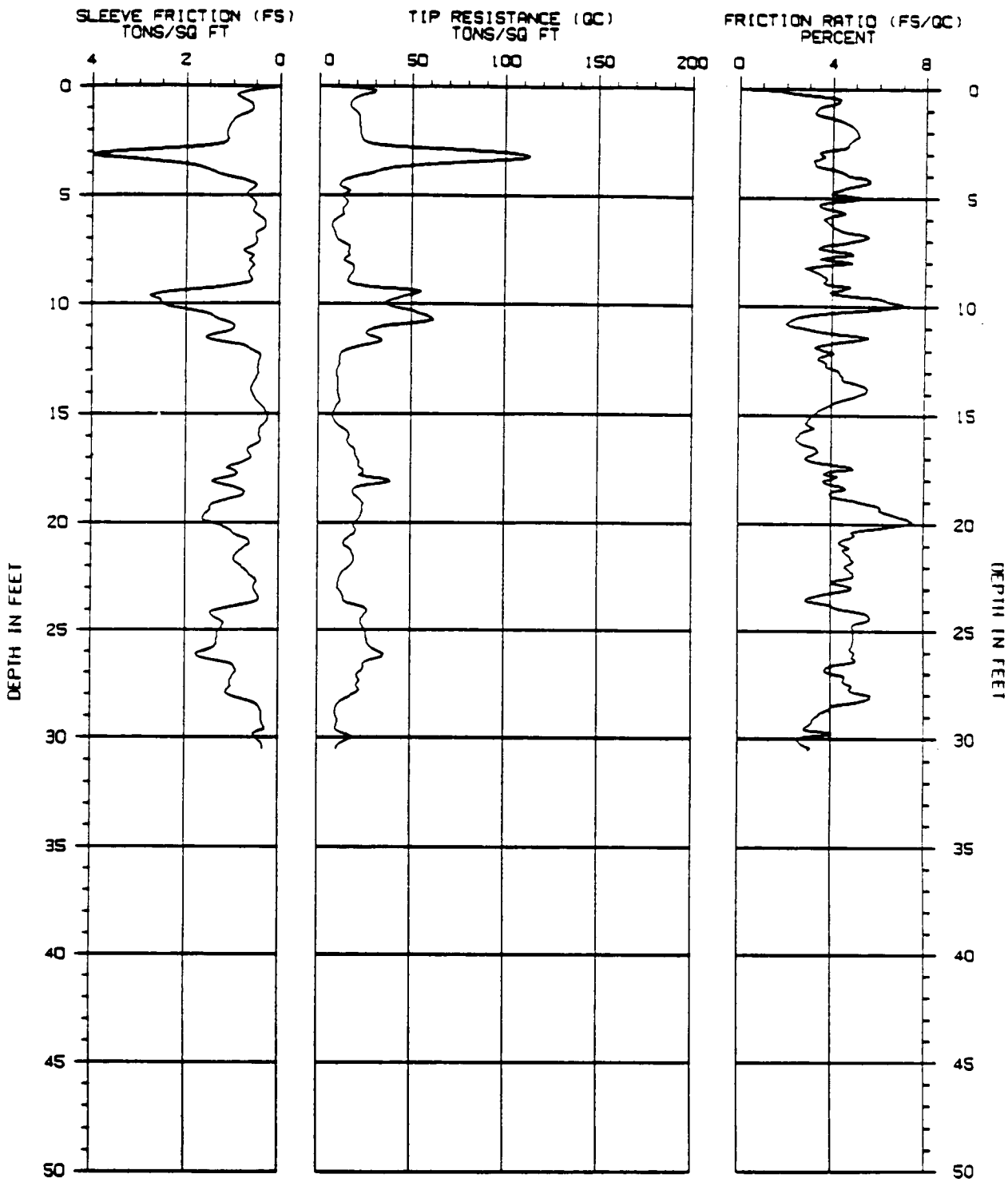
N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 8 – CPT (CLEAN)

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-2

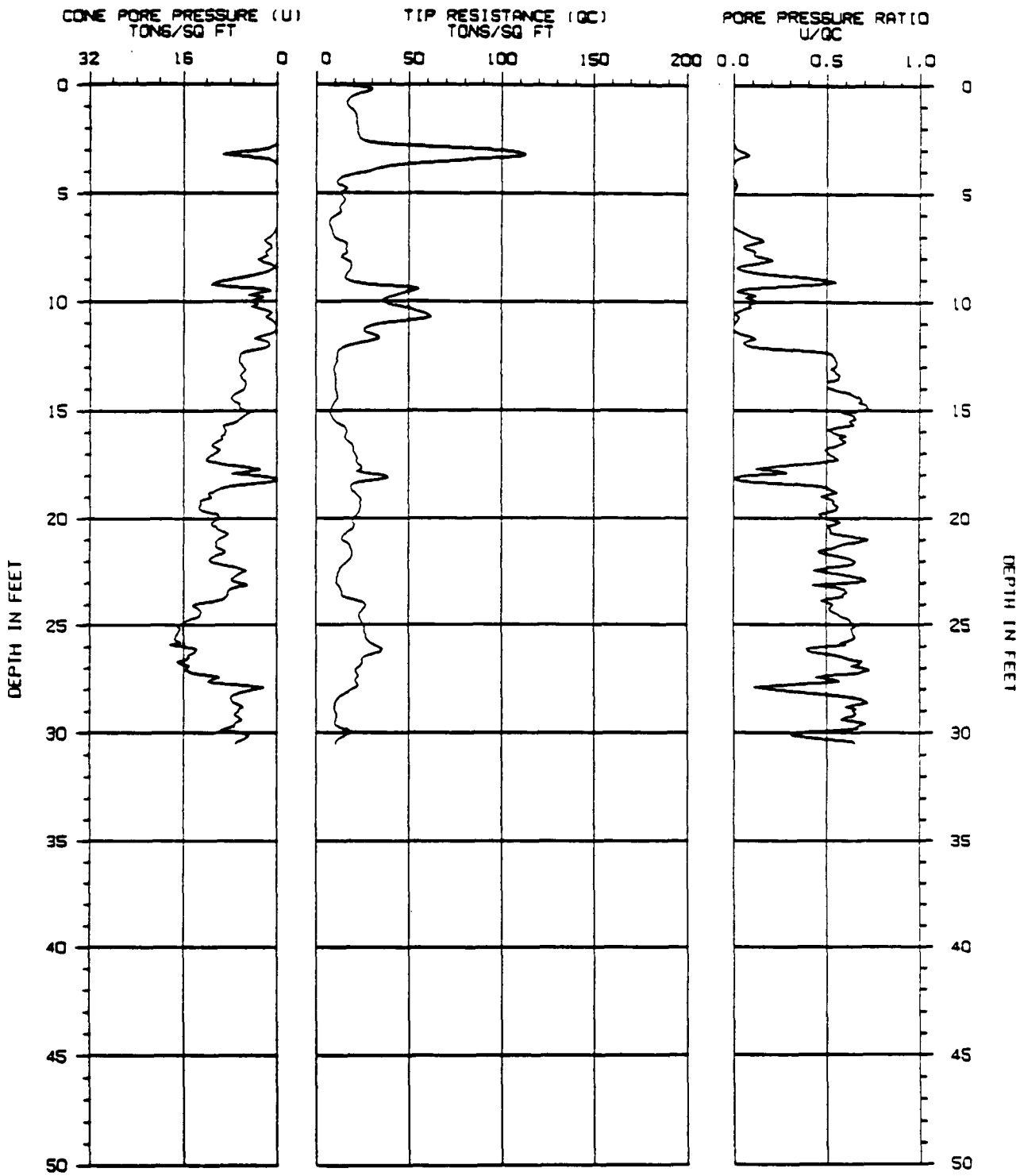
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-2

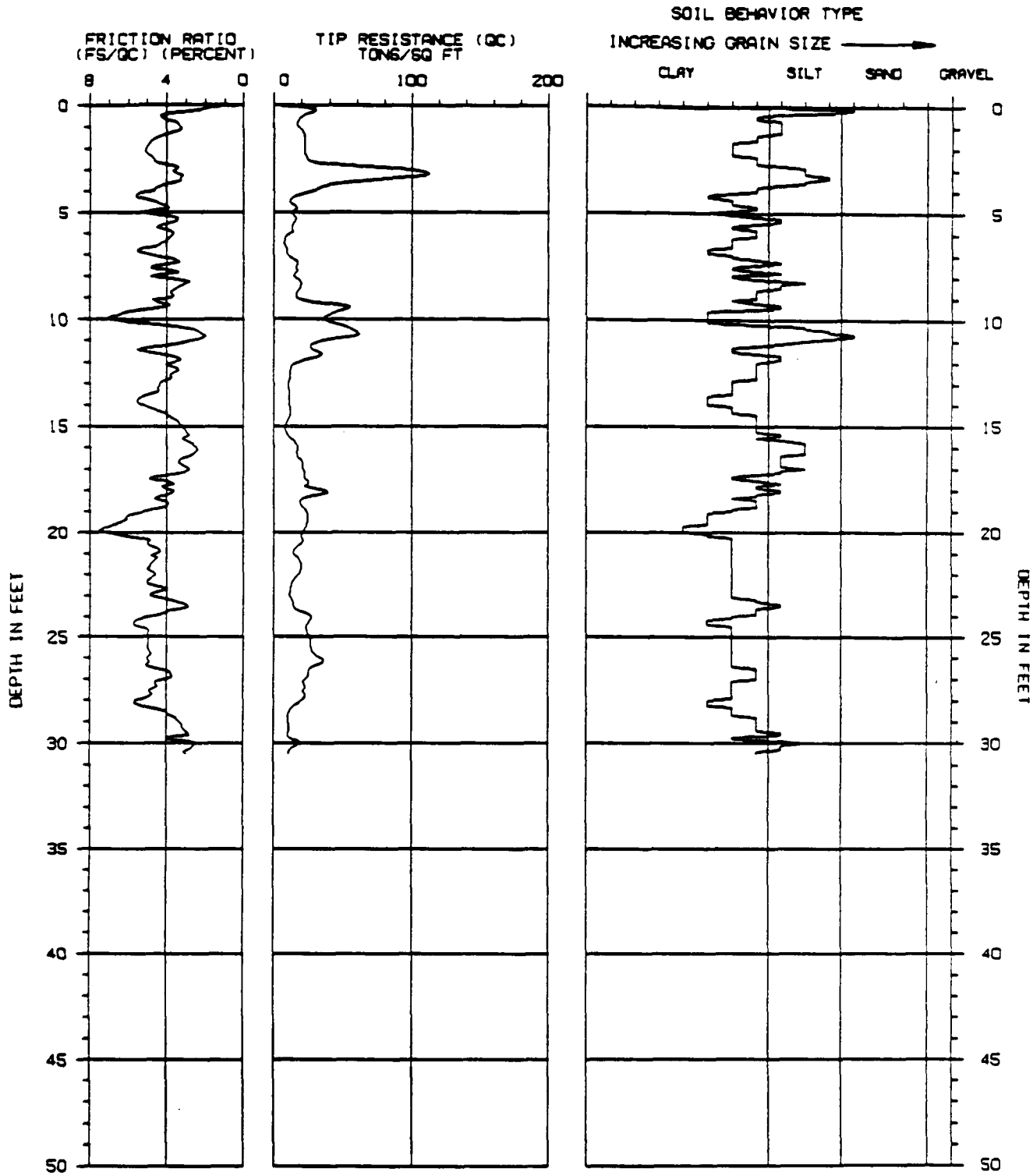
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 5.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-2

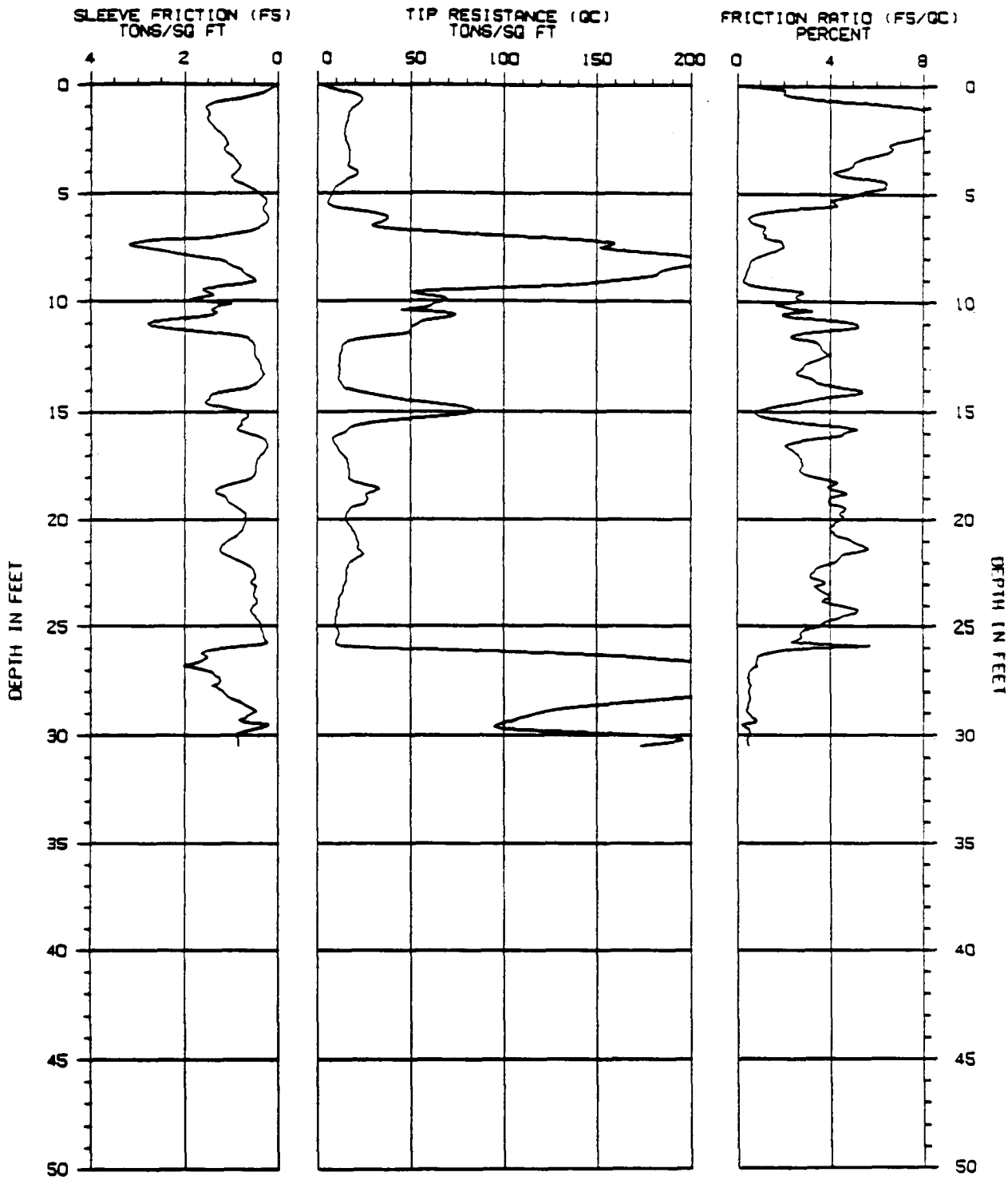
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-4

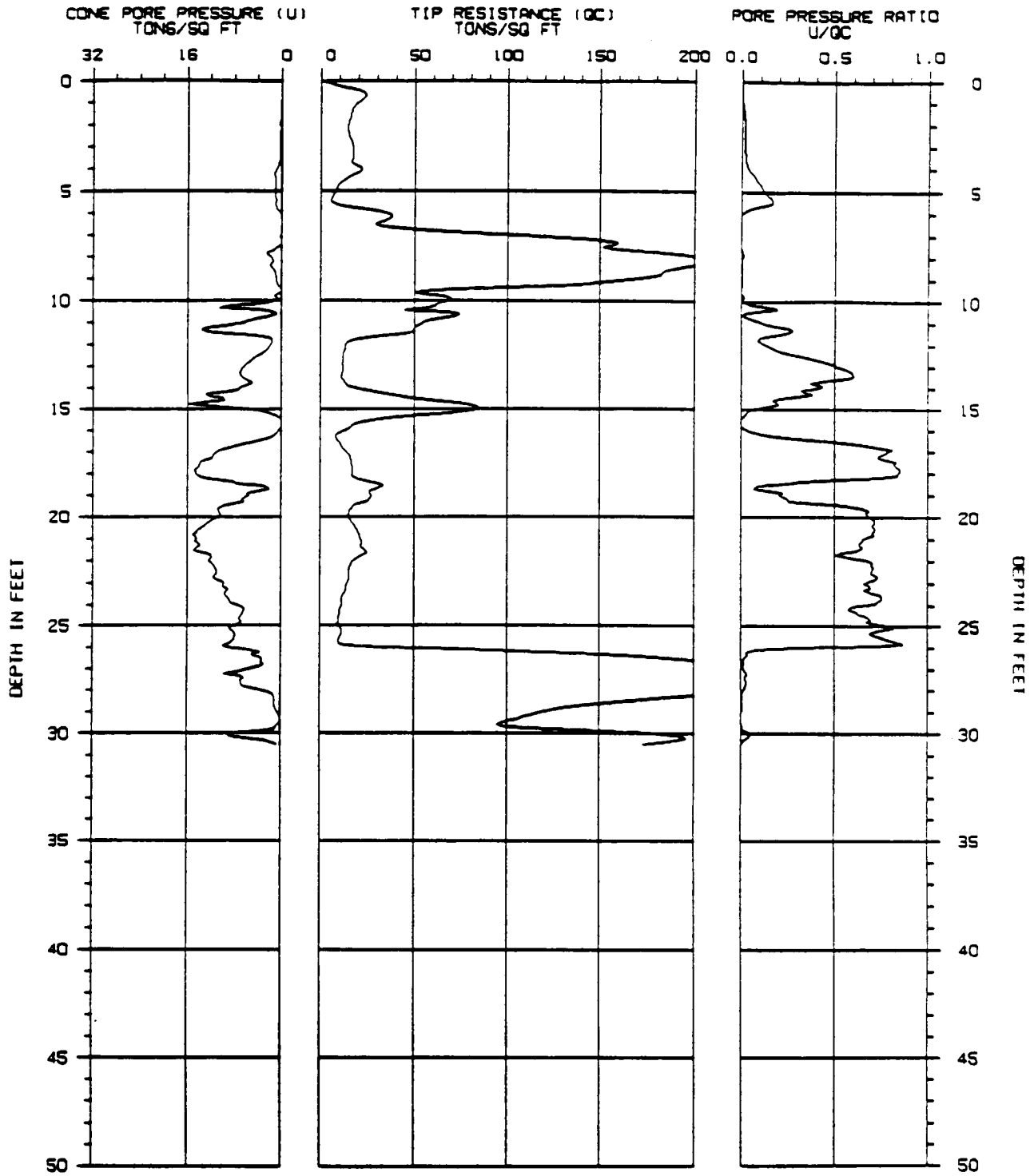
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-4

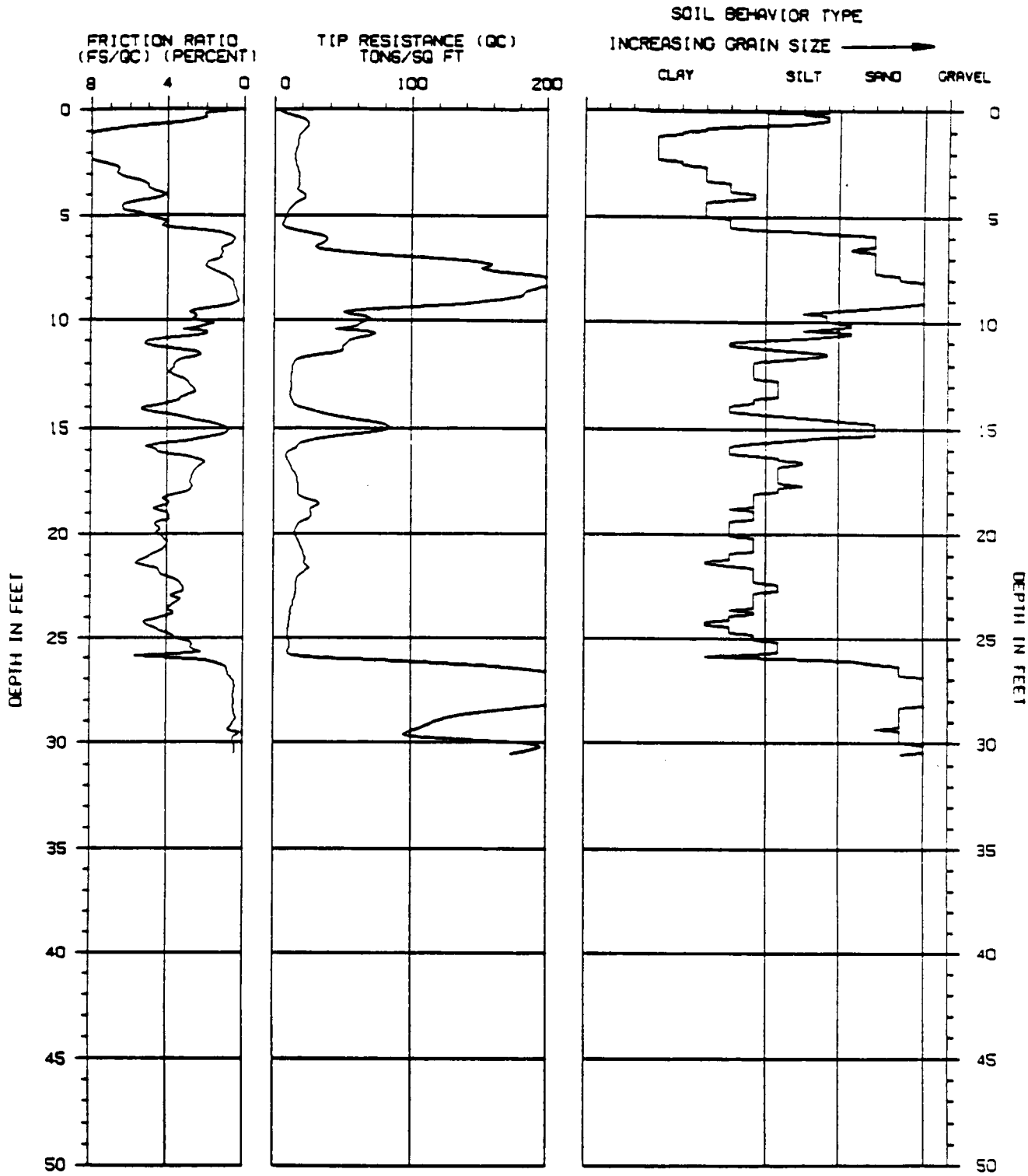
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 5.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-4

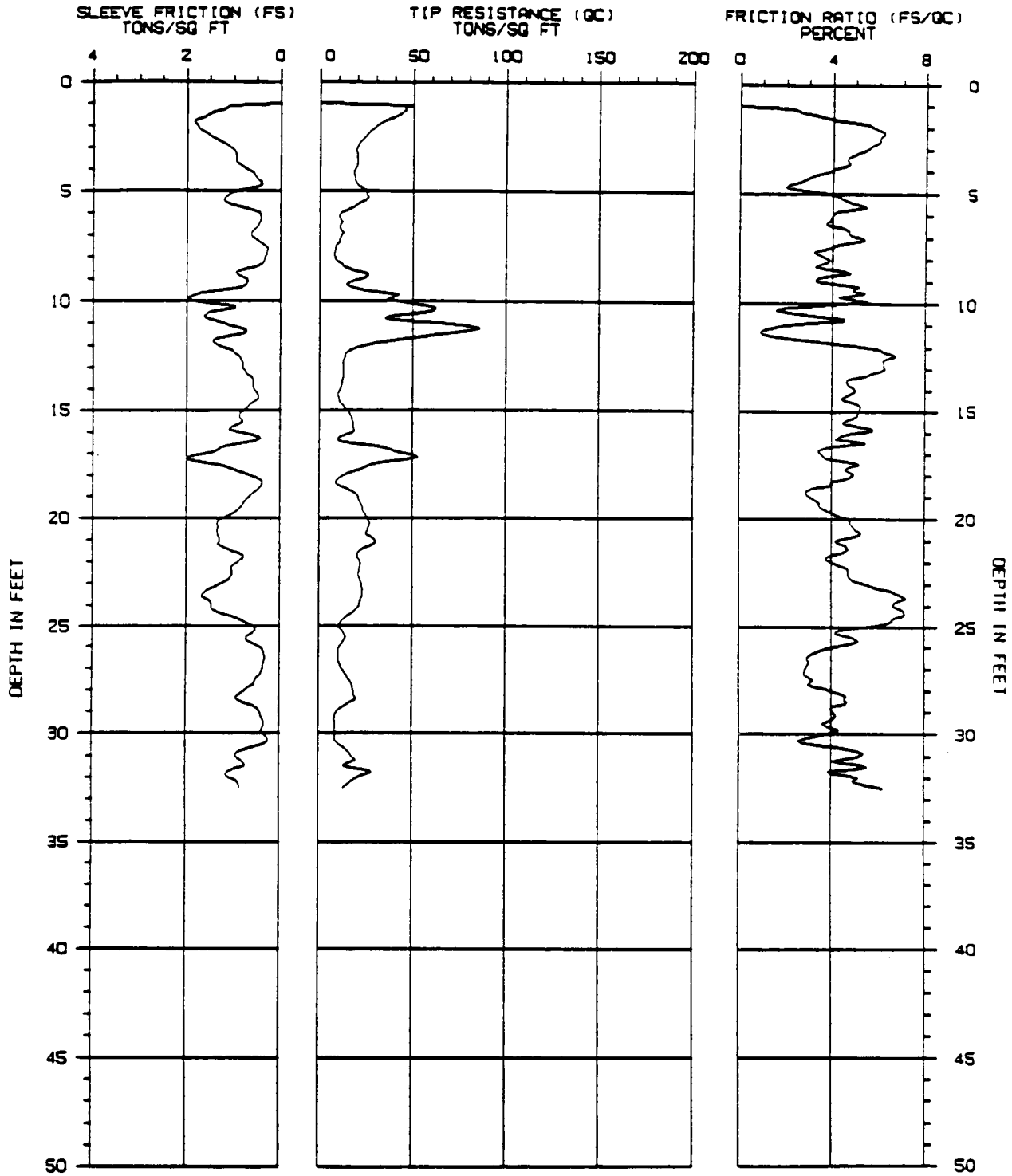
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-5

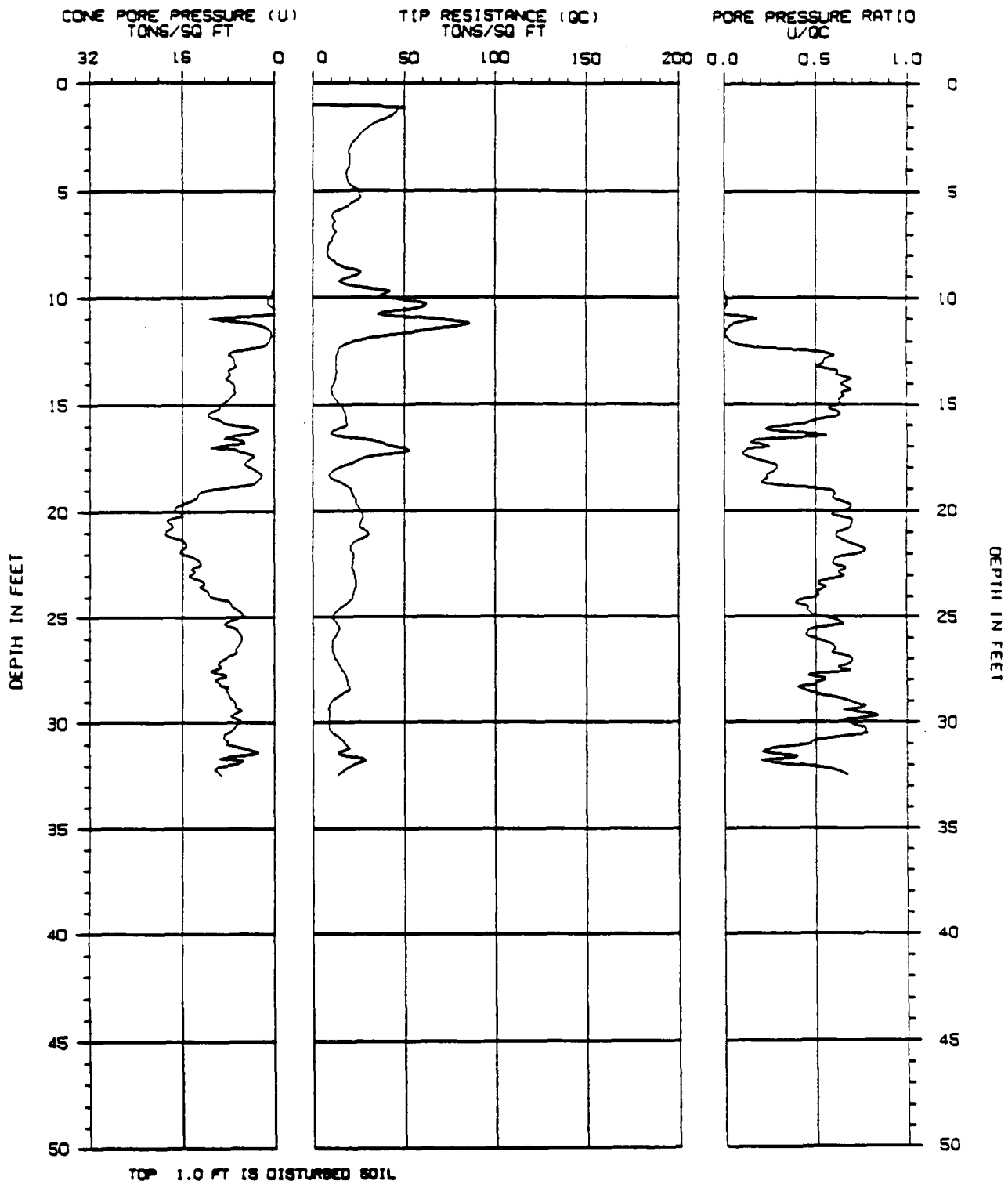
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-5

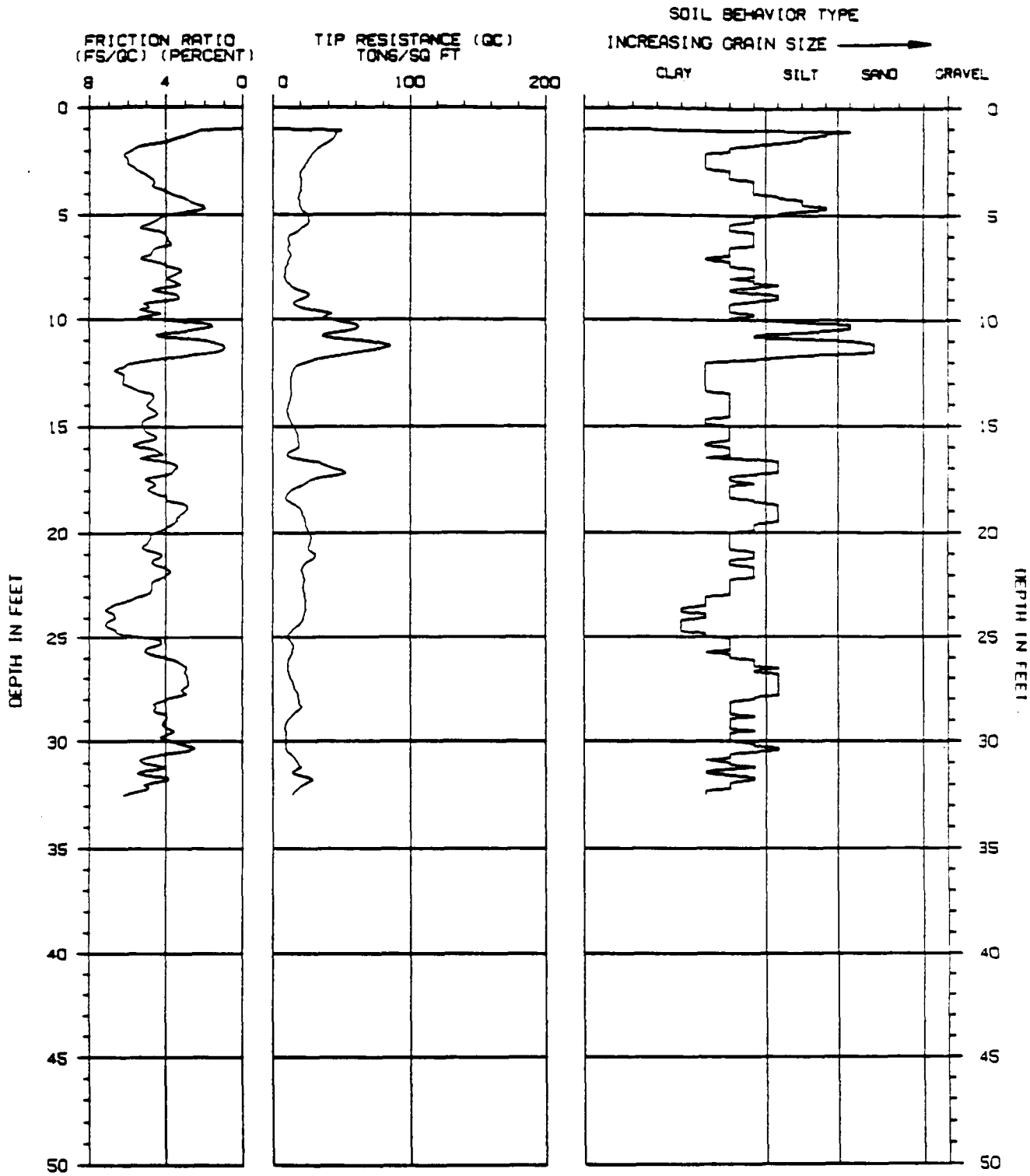
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



TOP 1.0 FT IS DISTURBED SOIL

ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 6.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-5

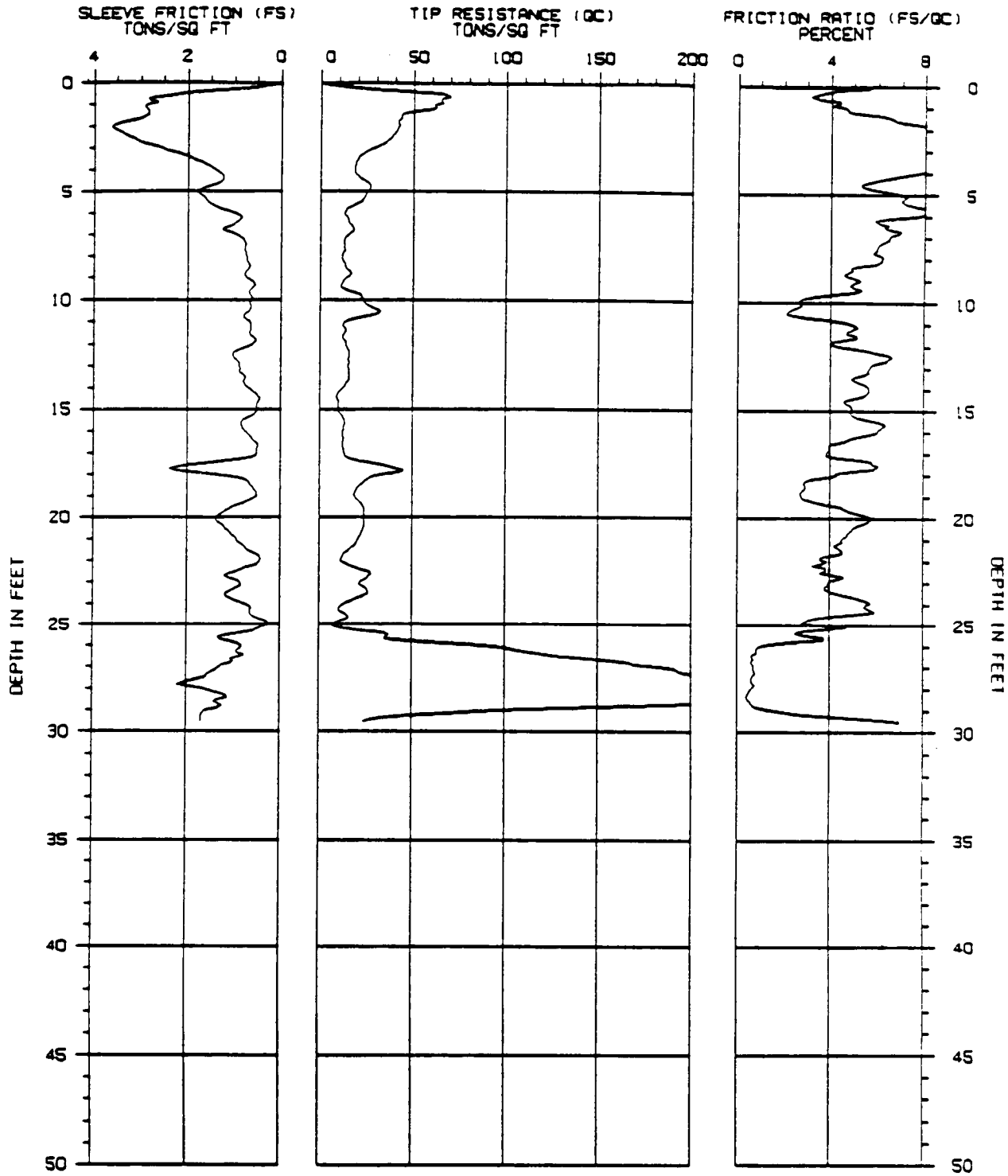
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-10

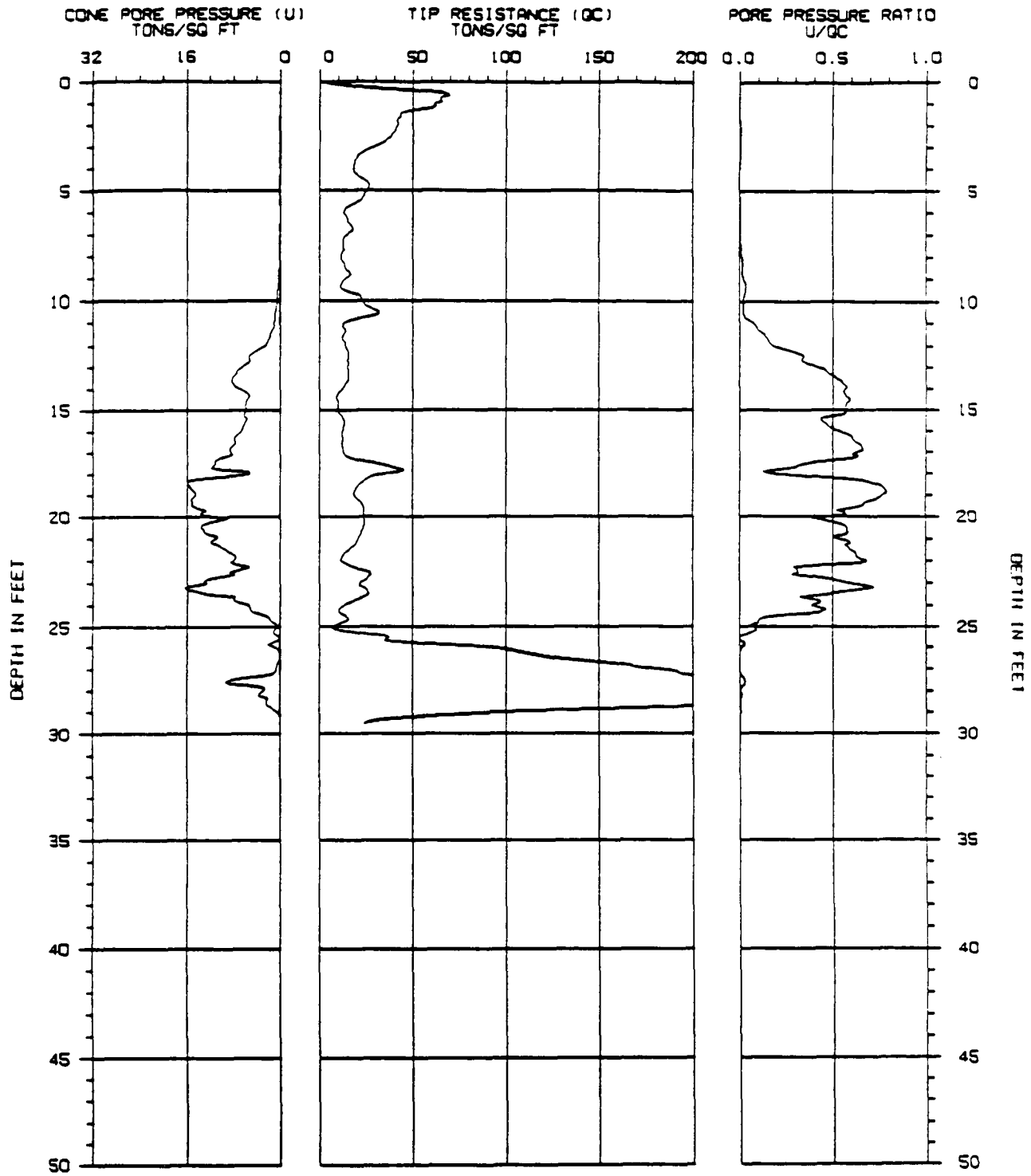
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-07-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-10

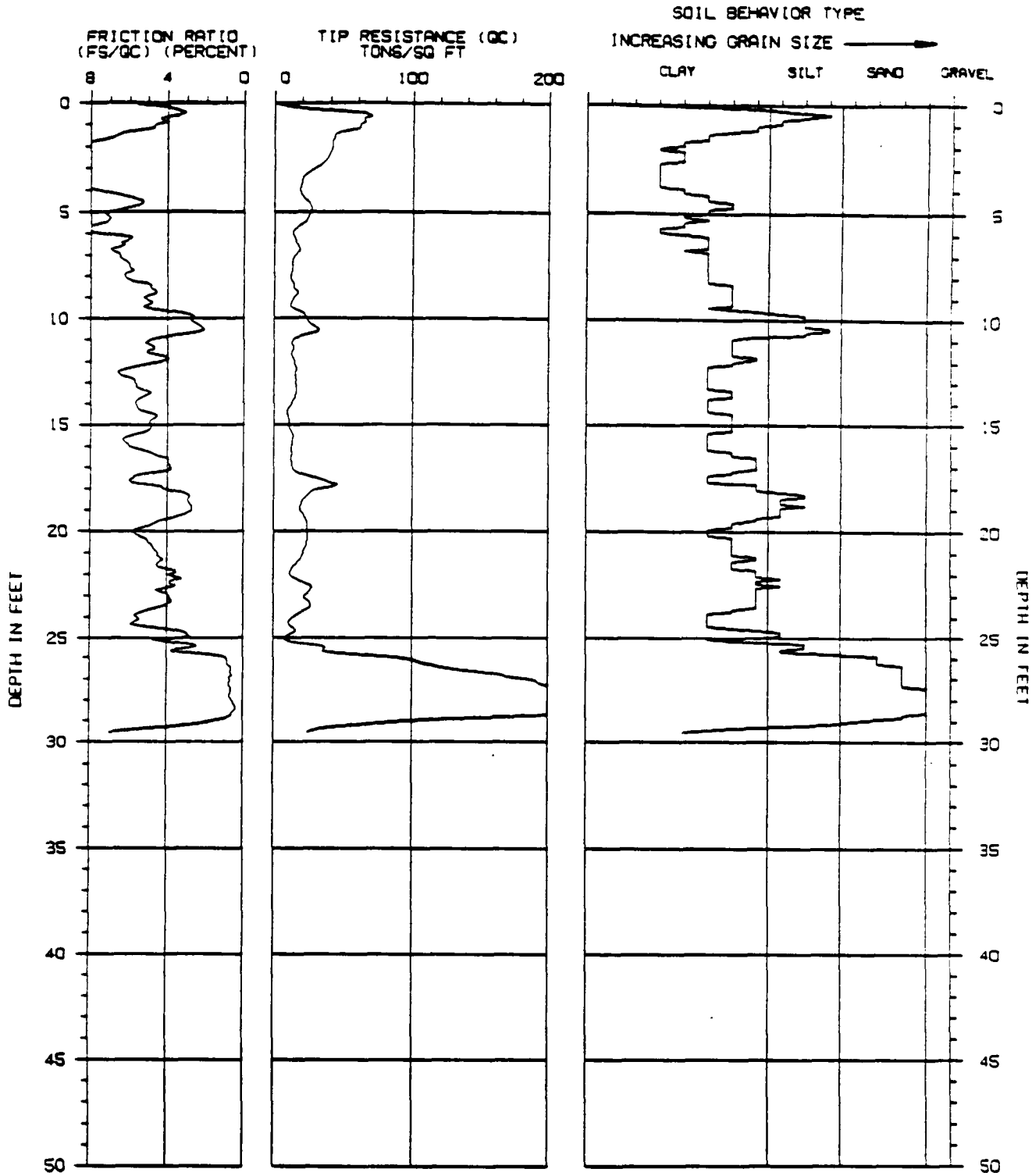
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-07-1991

THE EARTH TECHNOLOGY CORPORATION



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 5.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-10

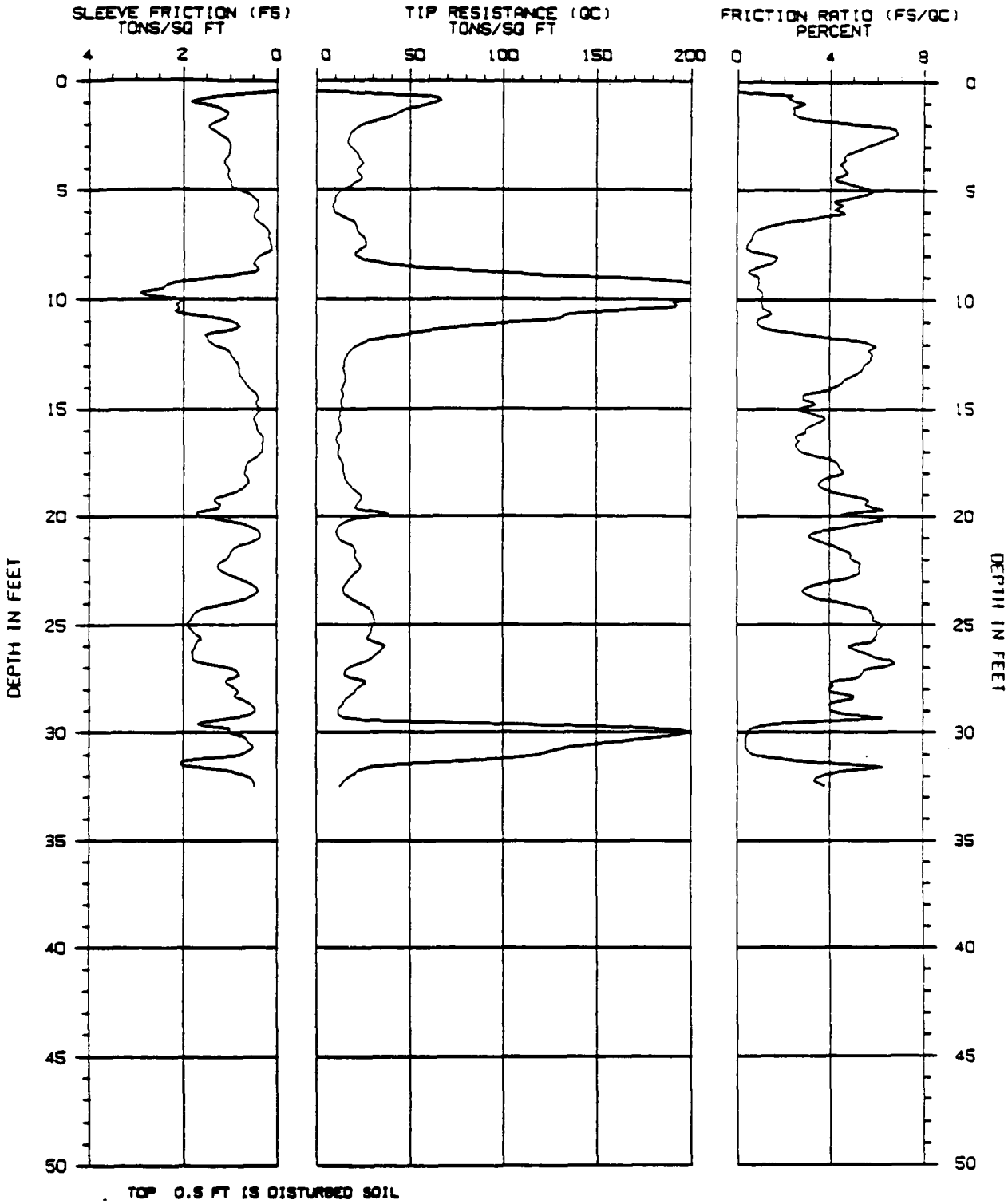
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-07-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-11

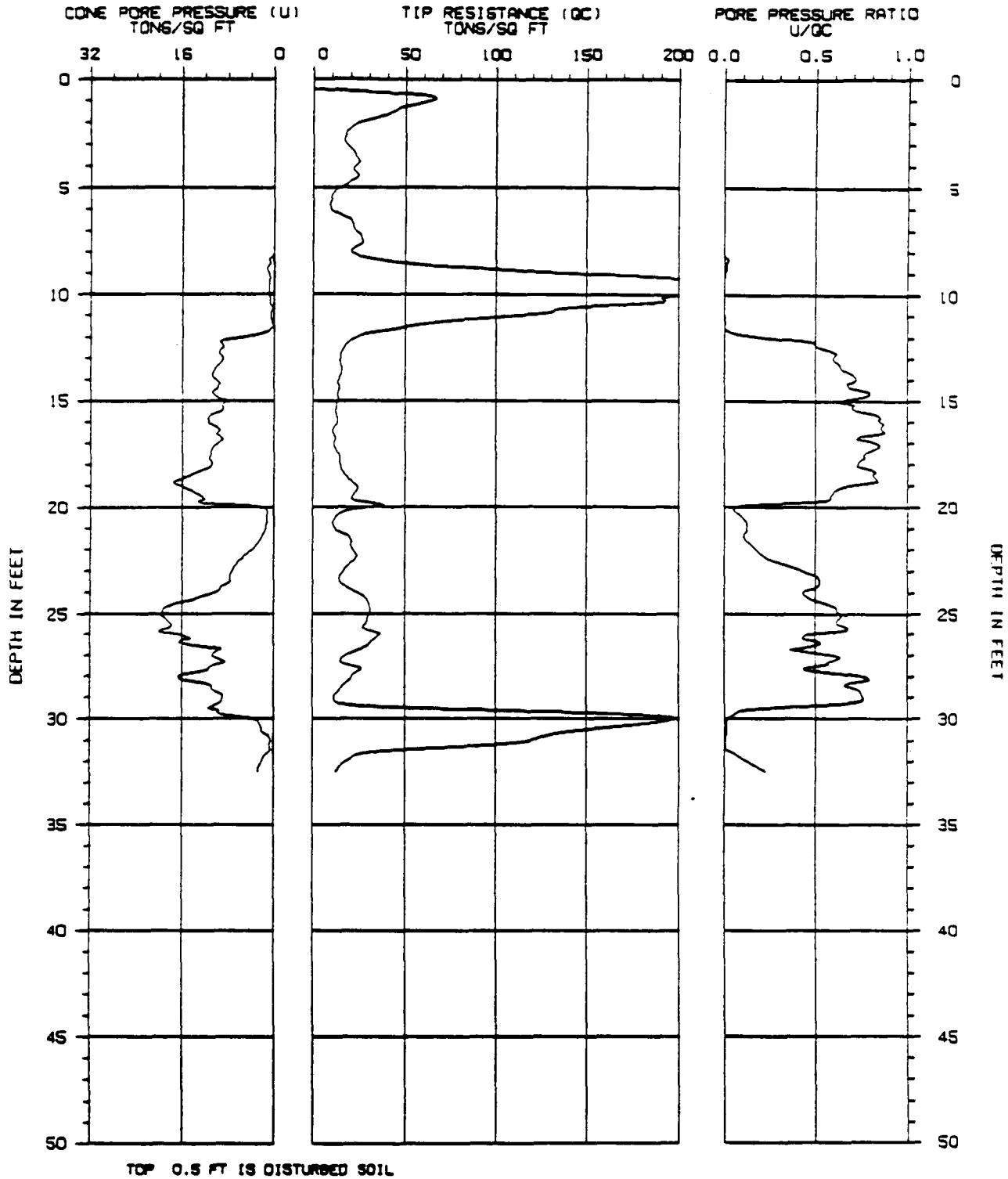
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-11

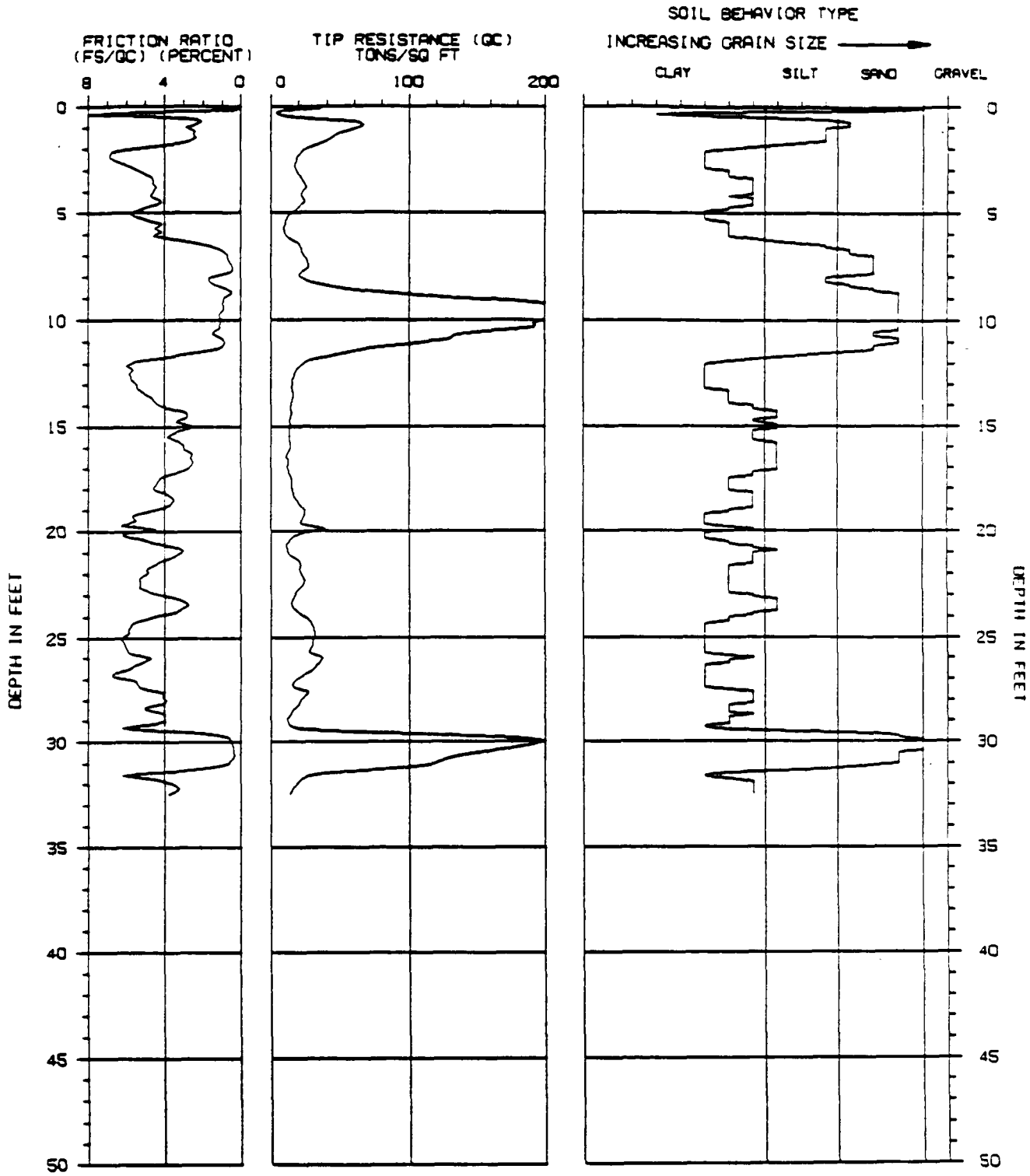
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 5.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-11

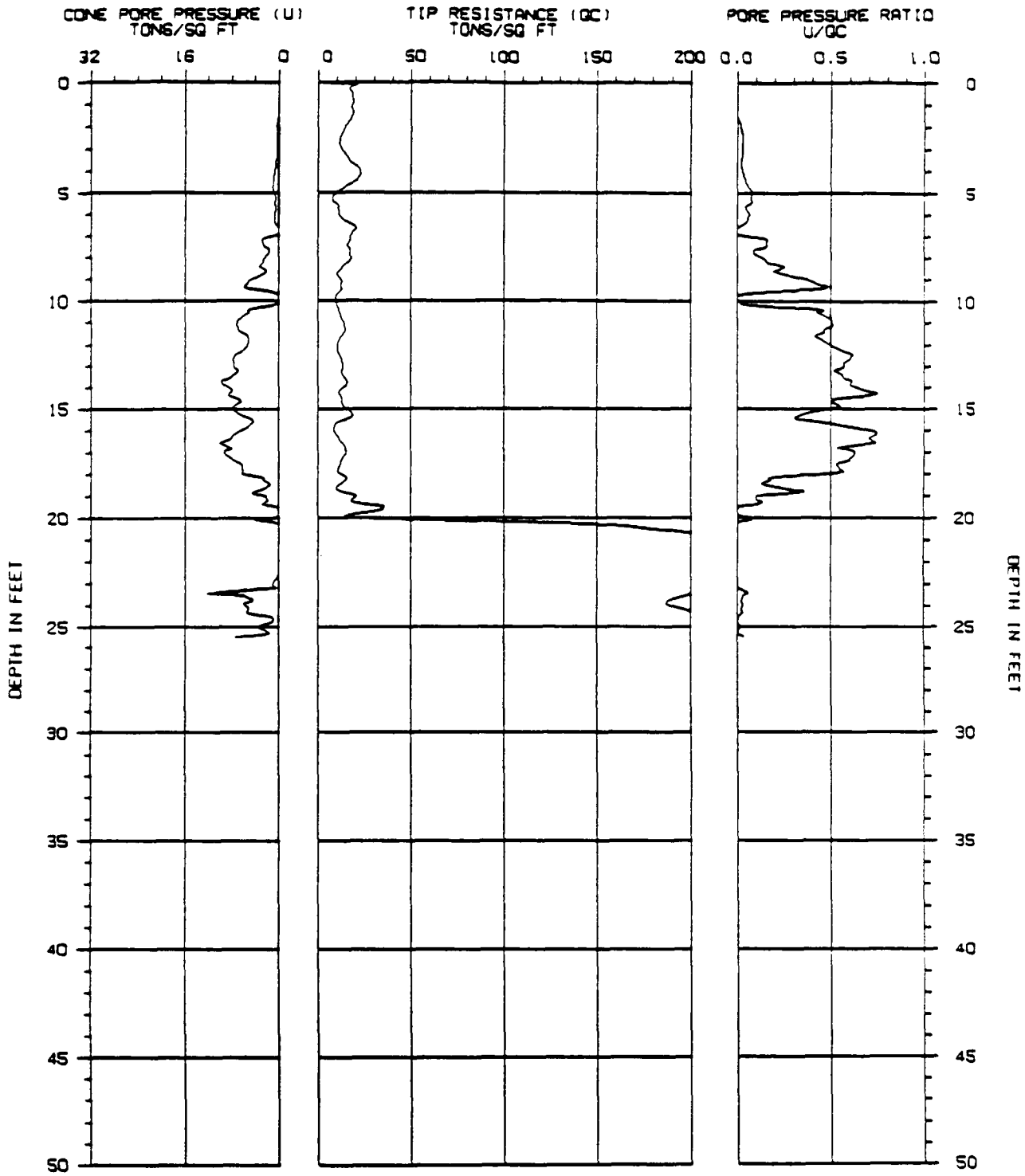
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-14

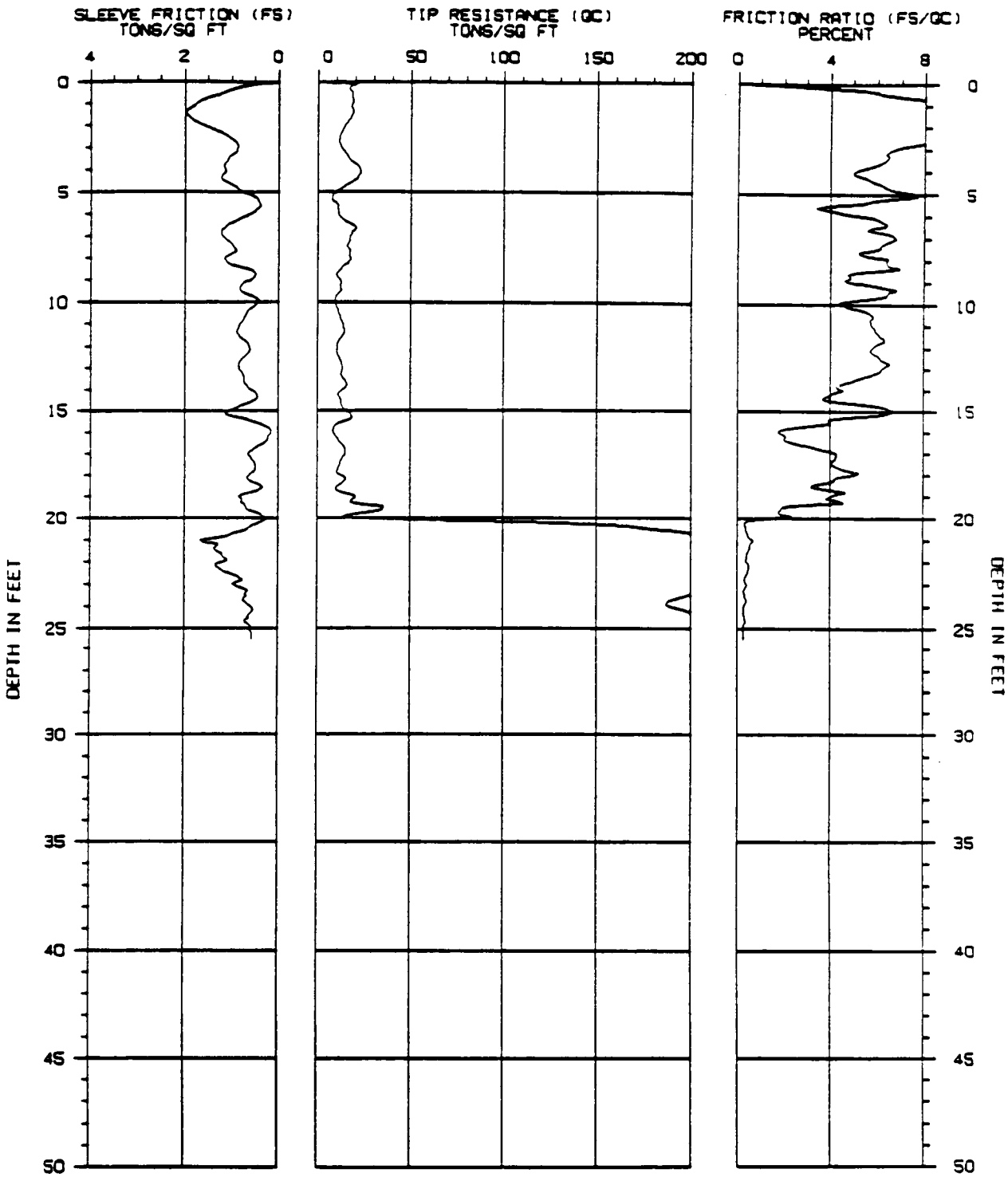
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-14

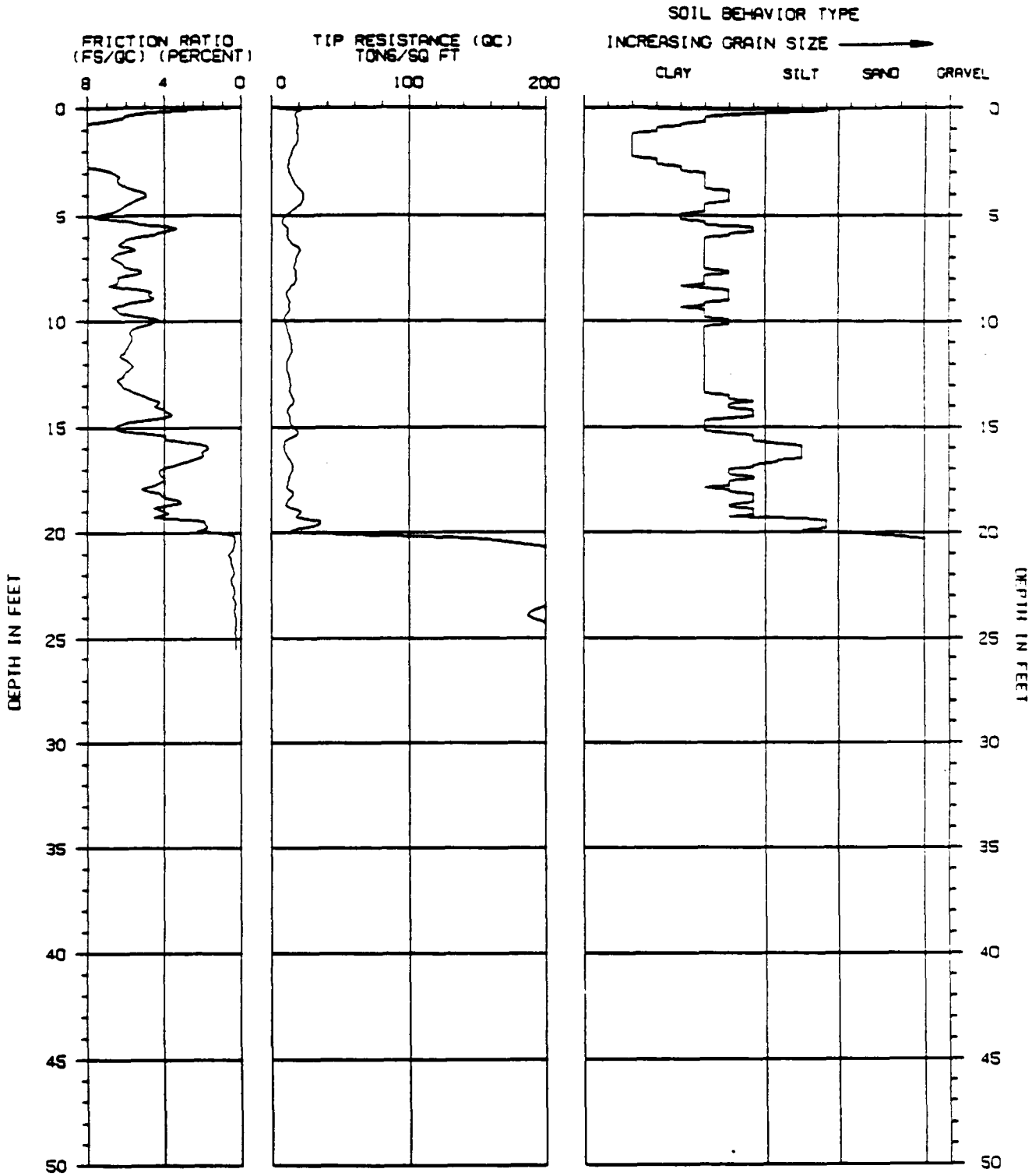
PROJECT NAME : JMM/MOFFETT NAS

PROJECT NUMBER : 9110-07002

LOCATION : SUNNYVALE

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 5.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-14

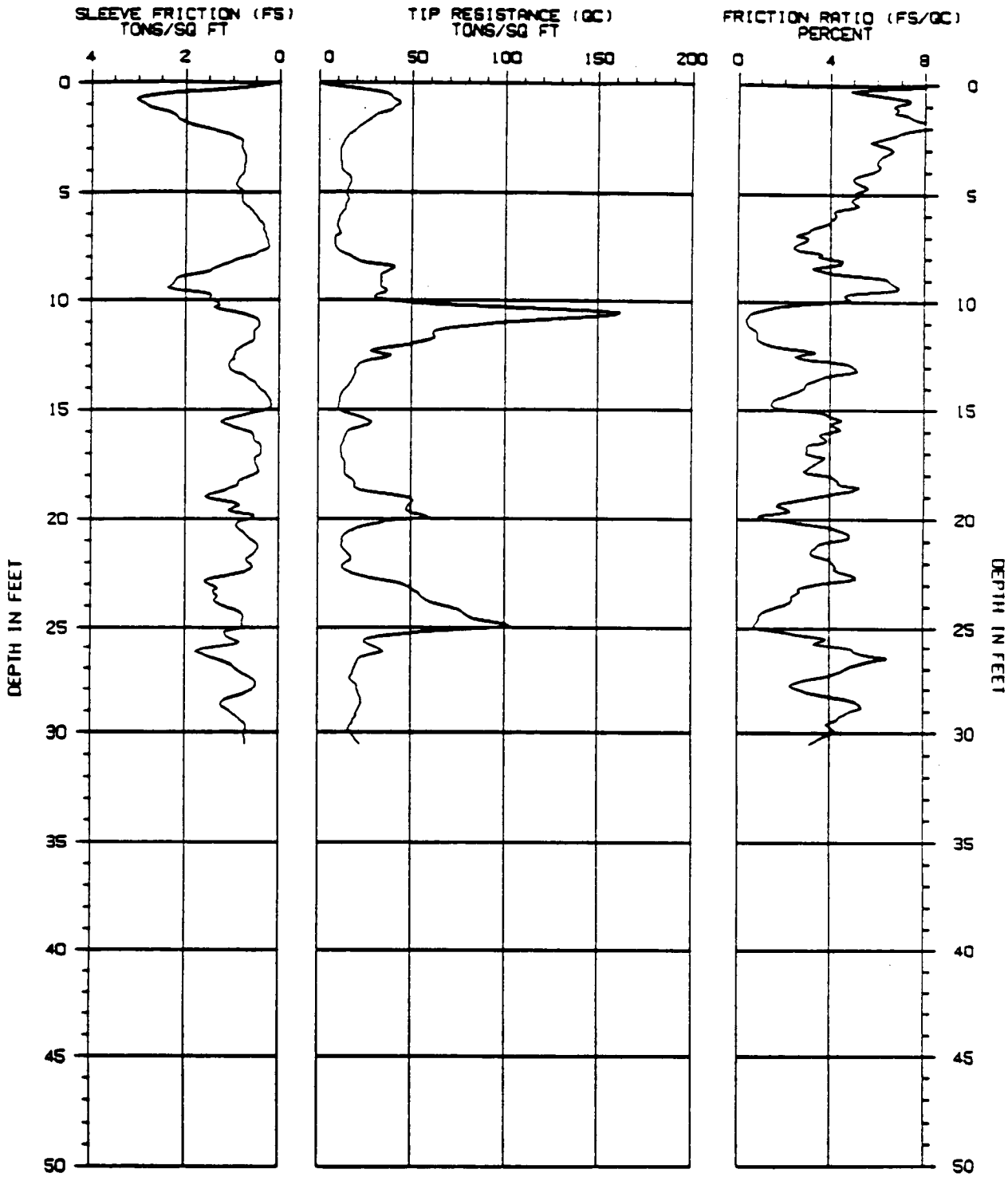
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-20

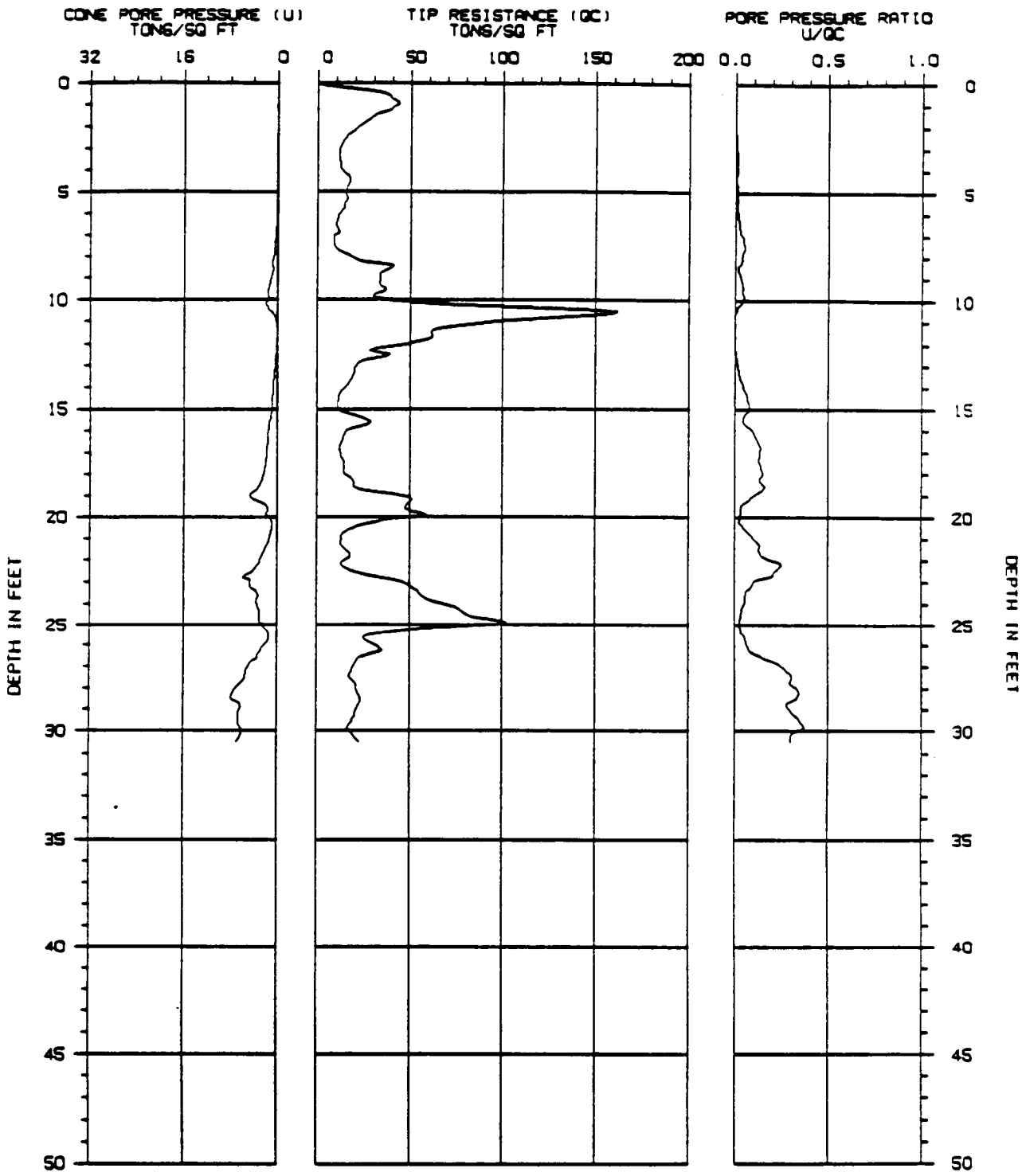
PROJECT NAME : JMM/MOFFETT NAS

PROJECT NUMBER : 9110-07002

LOCATION : SUNNYVALE

DATE : 05-06-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-20

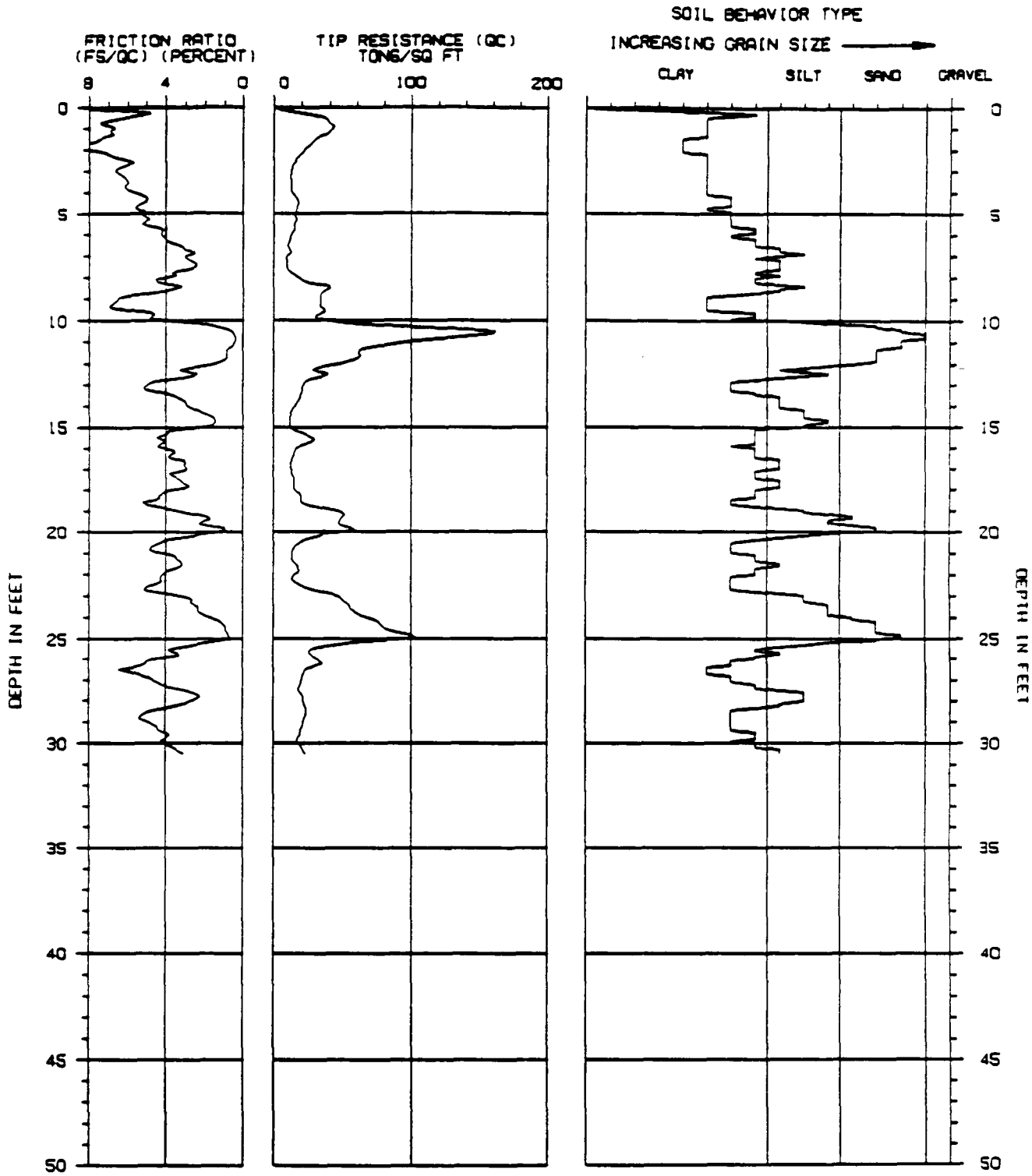
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-06-1991

THE EARTH TECHNOLOGY CORPORATION



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 6.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-20

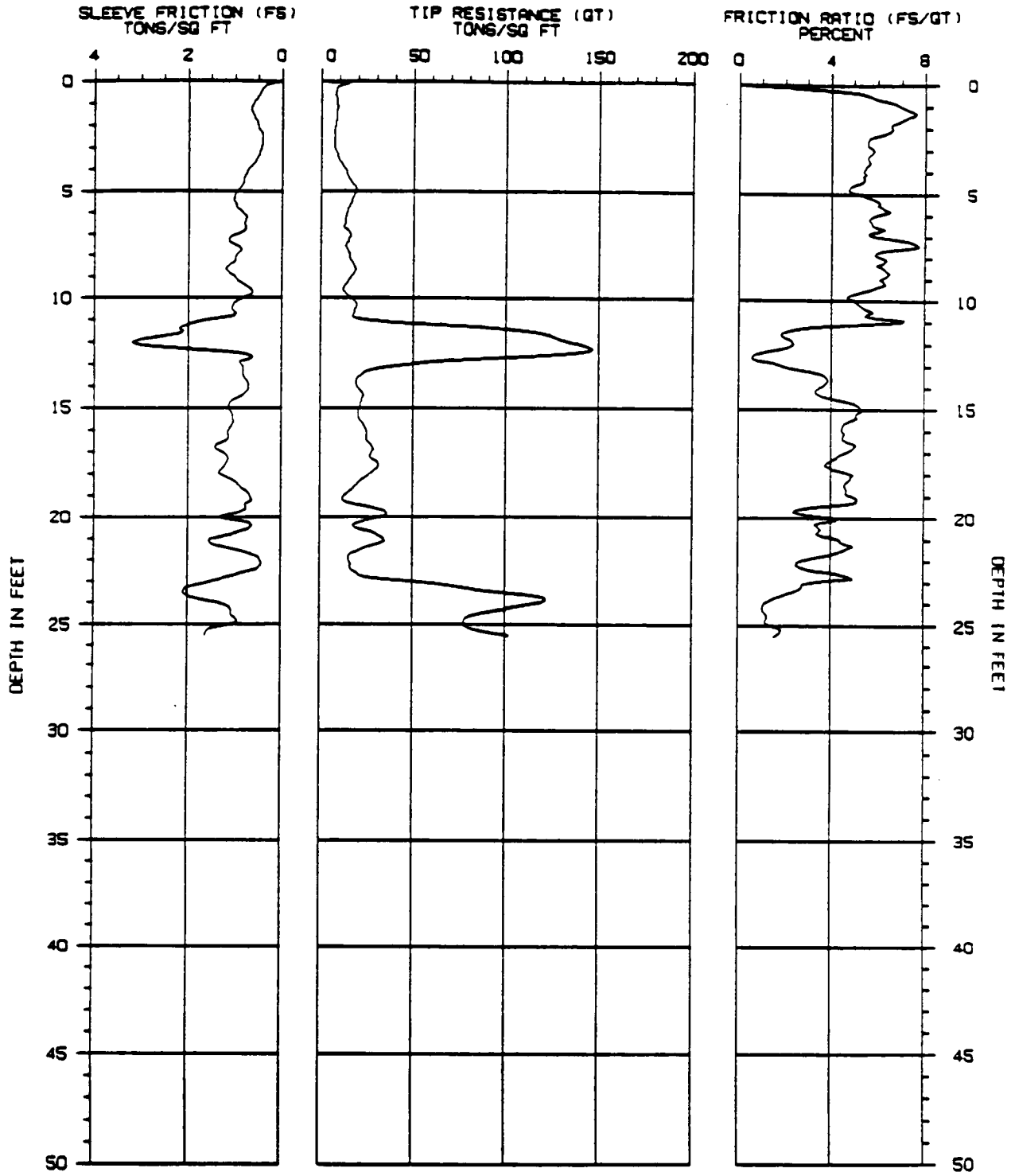
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-06-1991

THE EARTH TECHNOLOGY CORPORATION



TIP RESISTANCE CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-39

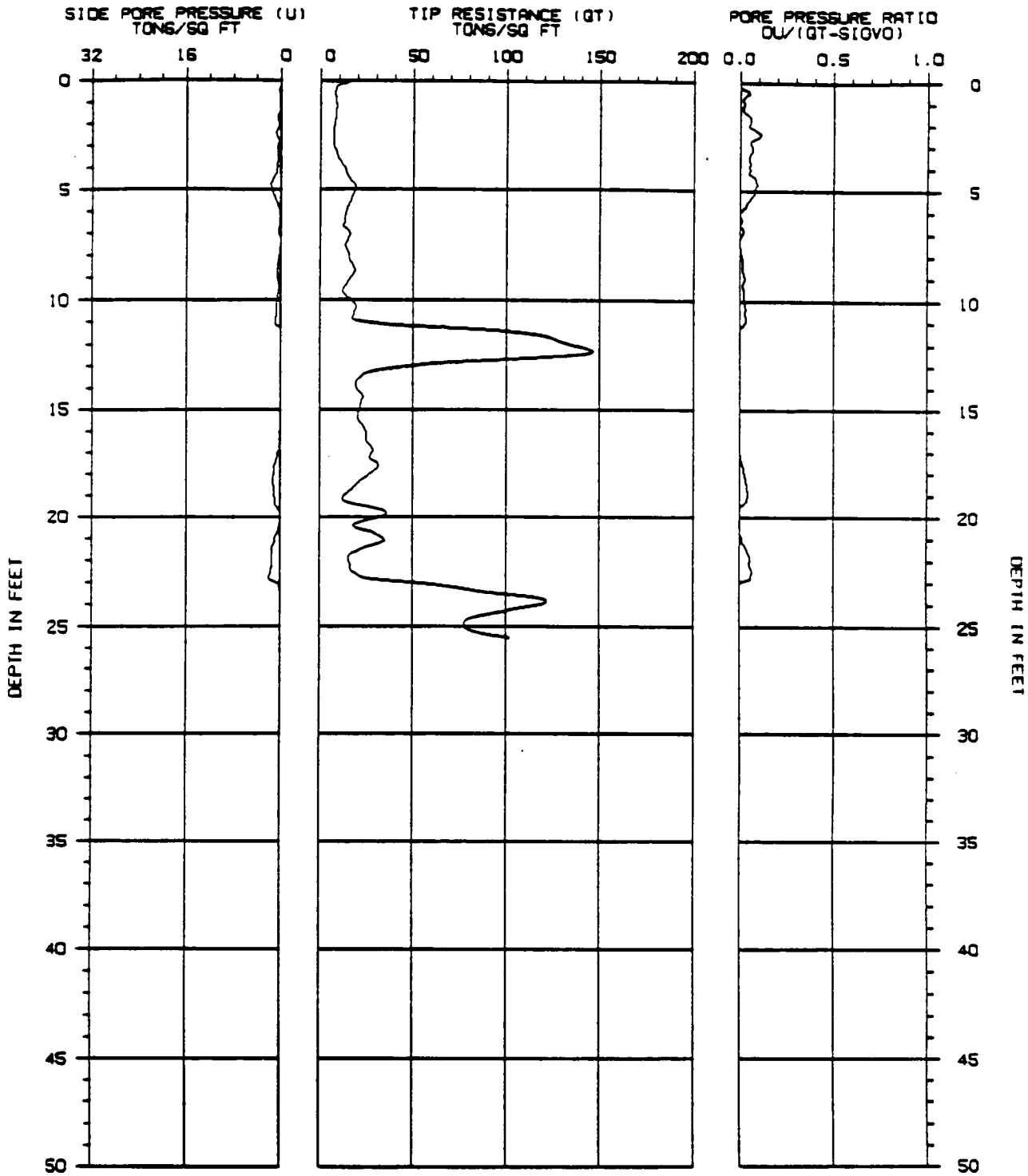
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-04-1991

THE EARTH TECHNOLOGY CORPORATION



TIP RESISTANCE CORRECTED FOR END AREA EFFECT

ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 6.0 FT

DU = U - HYDROSTATIC PWP

SIGVO = TOTAL VERTICAL STRESS

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-39

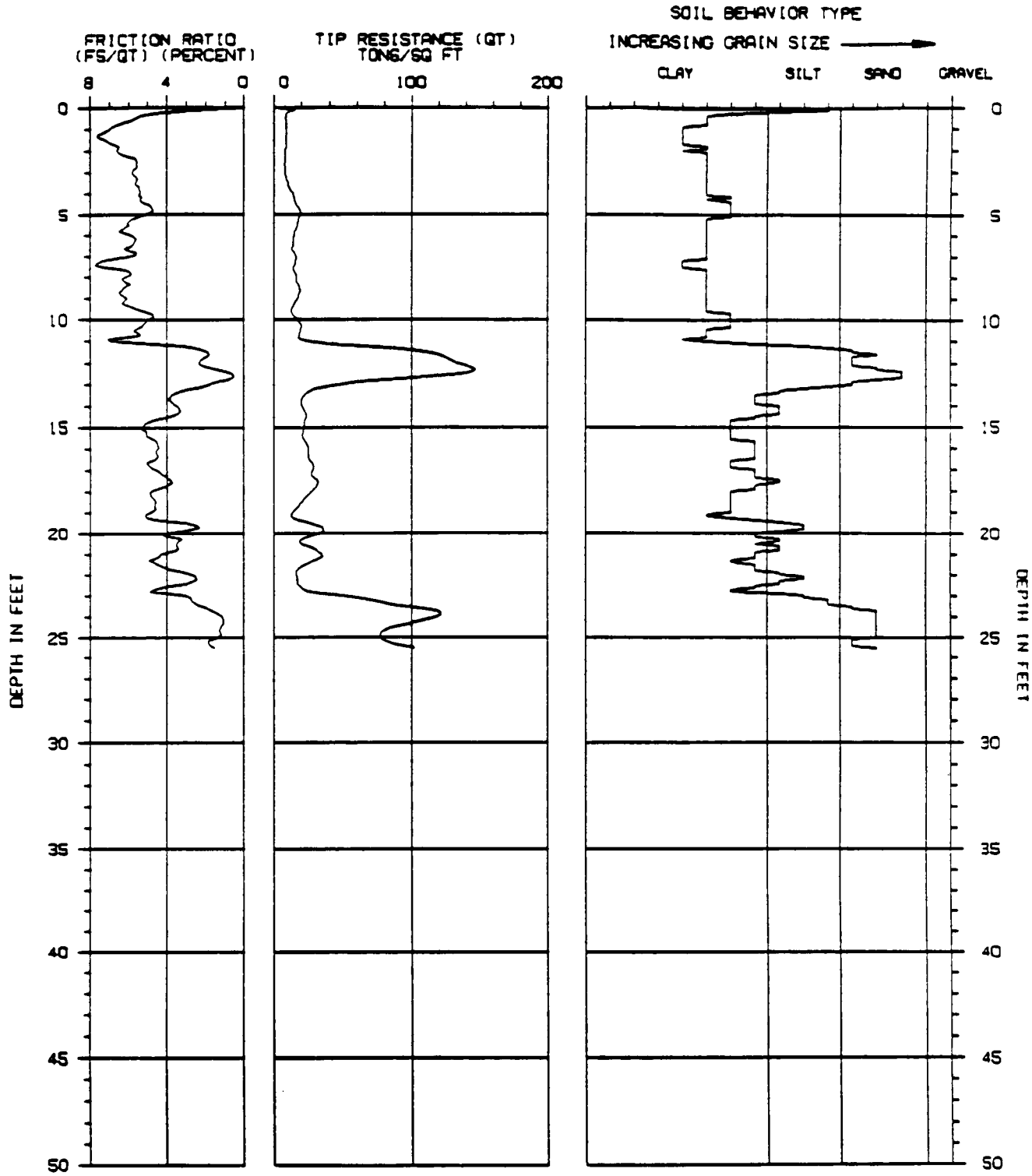
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-04-1991

THE EARTH TECHNOLOGY CORPORATION



TIP RESISTANCE CORRECTED FOR END AREA EFFECT

ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 5.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-39

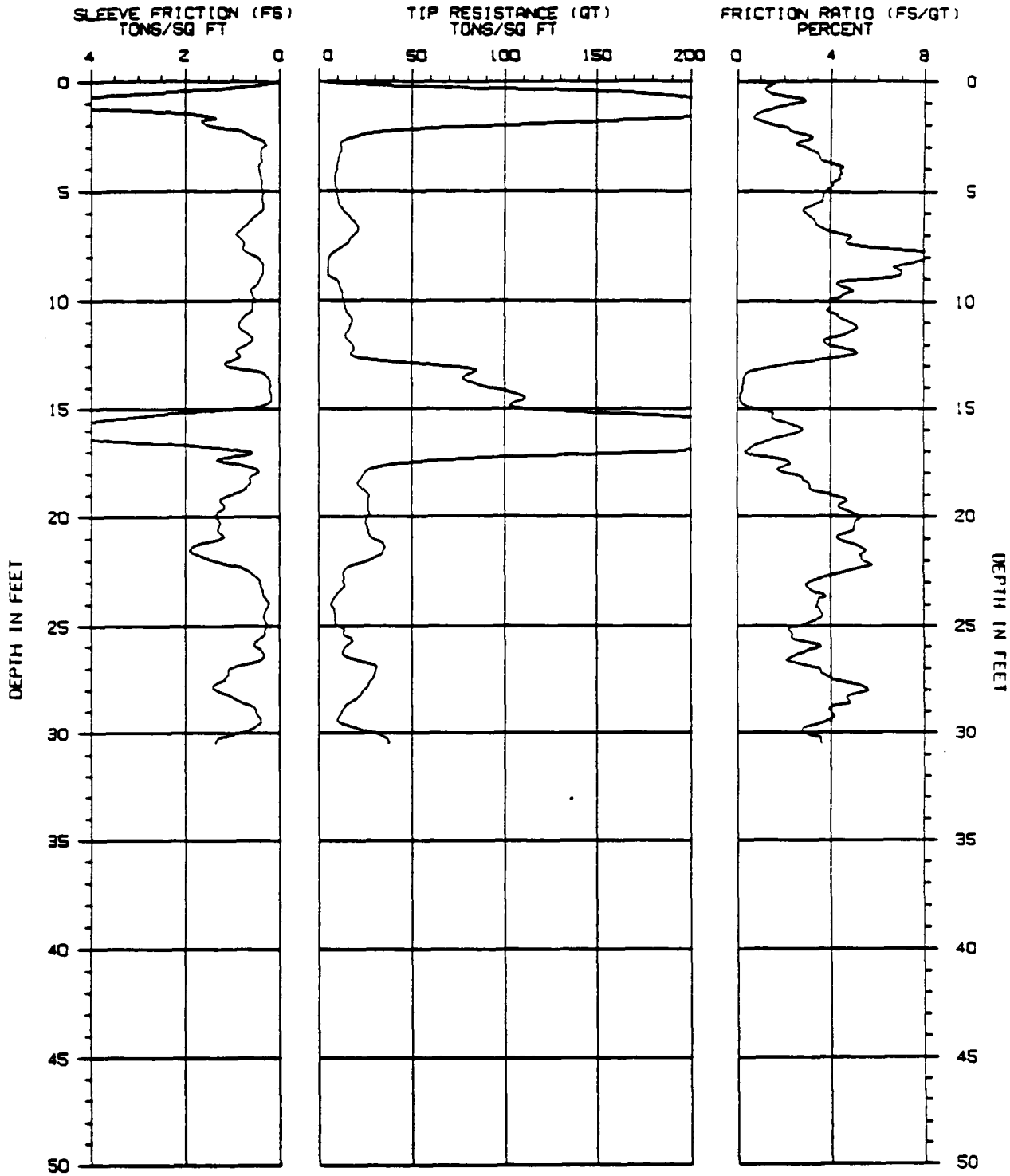
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-04-1991

THE EARTH TECHNOLOGY CORPORATION



TIP RESISTANCE CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-46

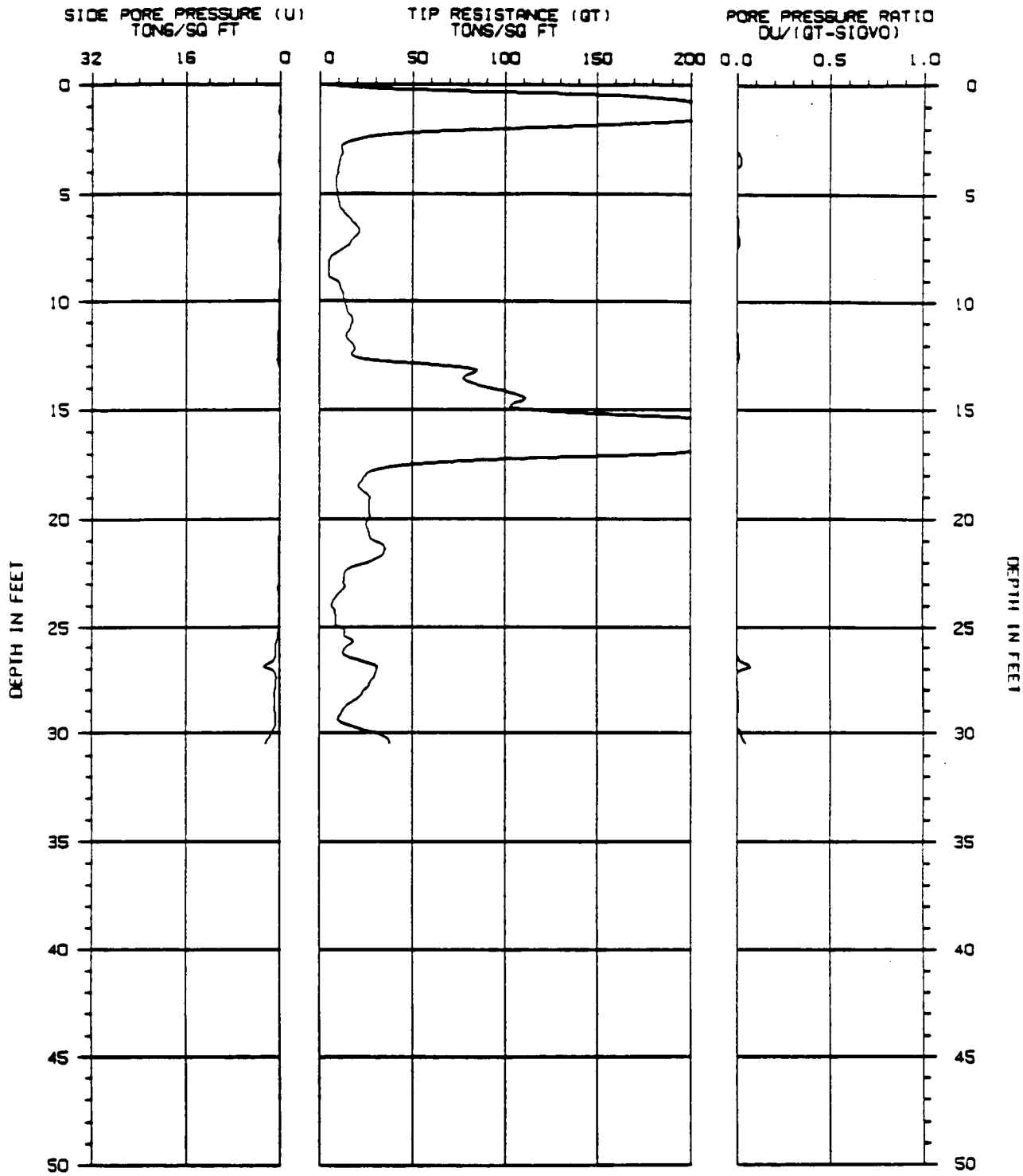
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-04-1991

THE EARTH TECHNOLOGY CORPORATION



TIP RESISTANCE CORRECTED FOR END AREA EFFECT

ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 6.0 FT

DU = U - HYDROSTATIC PWP

SIGVO = TOTAL VERTICAL STRESS

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-46

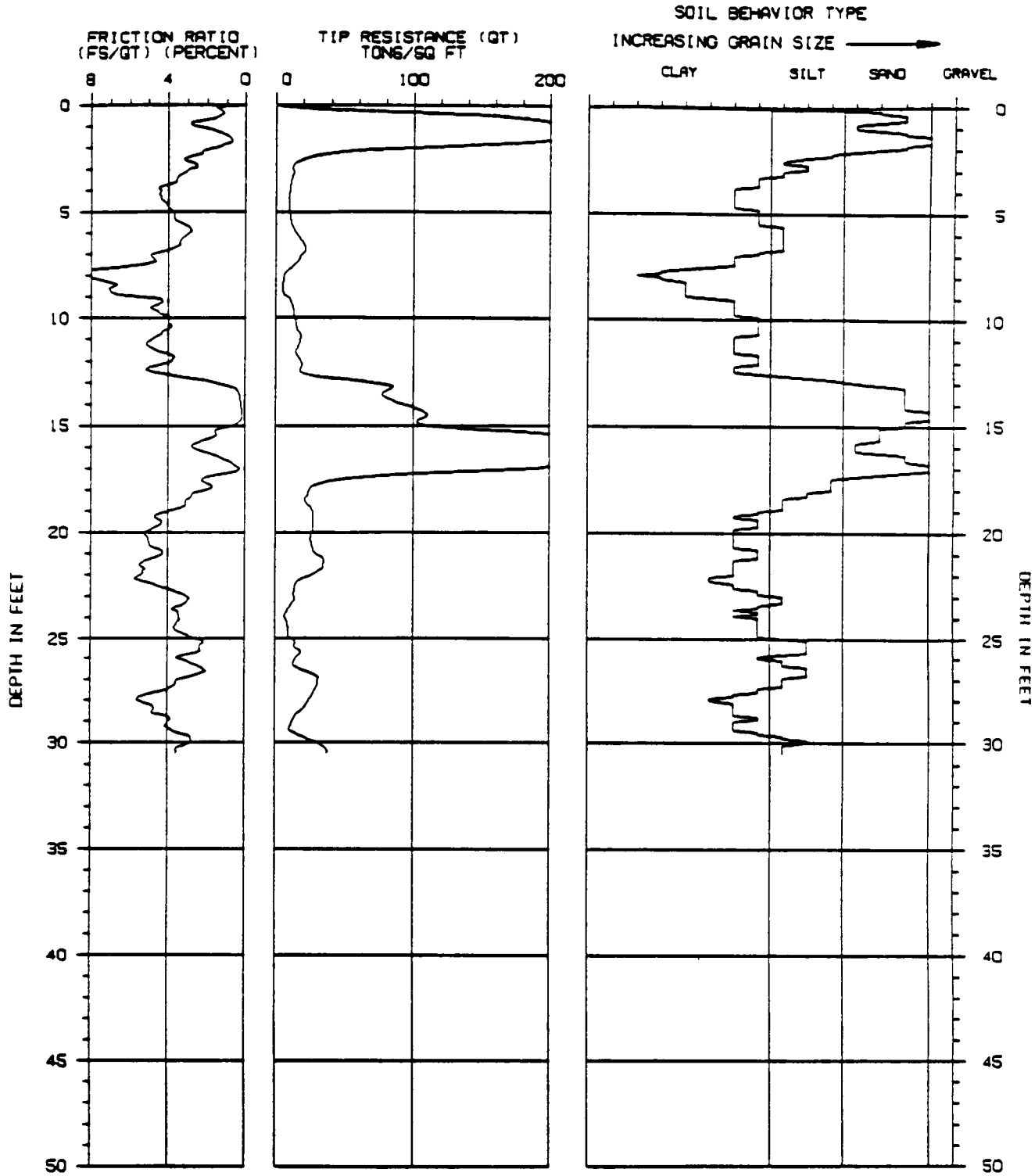
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-04-1991

THE EARTH TECHNOLOGY CORPORATION



TIP RESISTANCE CORRECTED FOR END AREA EFFECT

ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 5.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-46

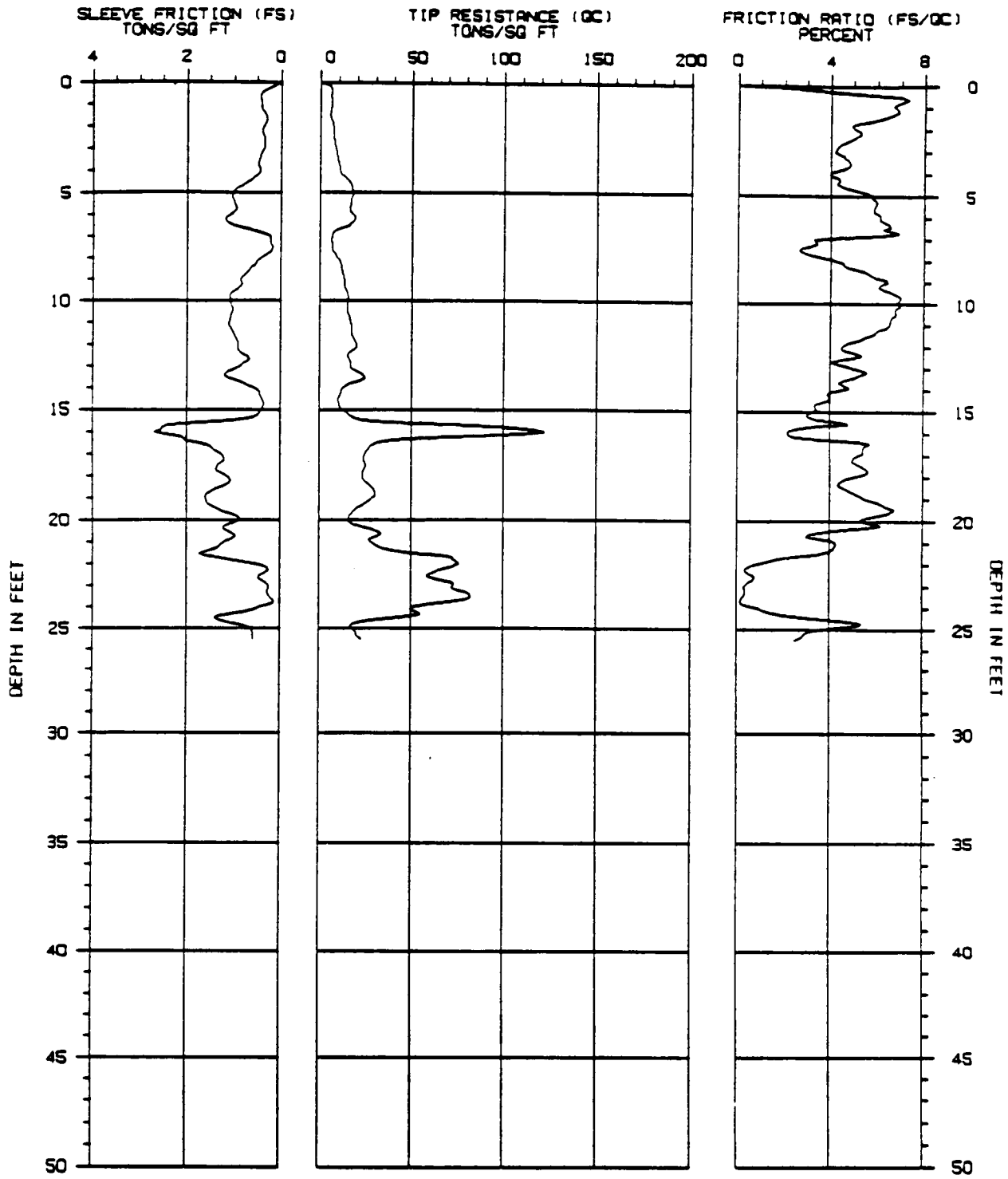
PROJECT NAME : JMM/MOFFETT NAS

PROJECT NUMBER : 9110-07002

LOCATION : SUNNYVALE

DATE : 05-04-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-60

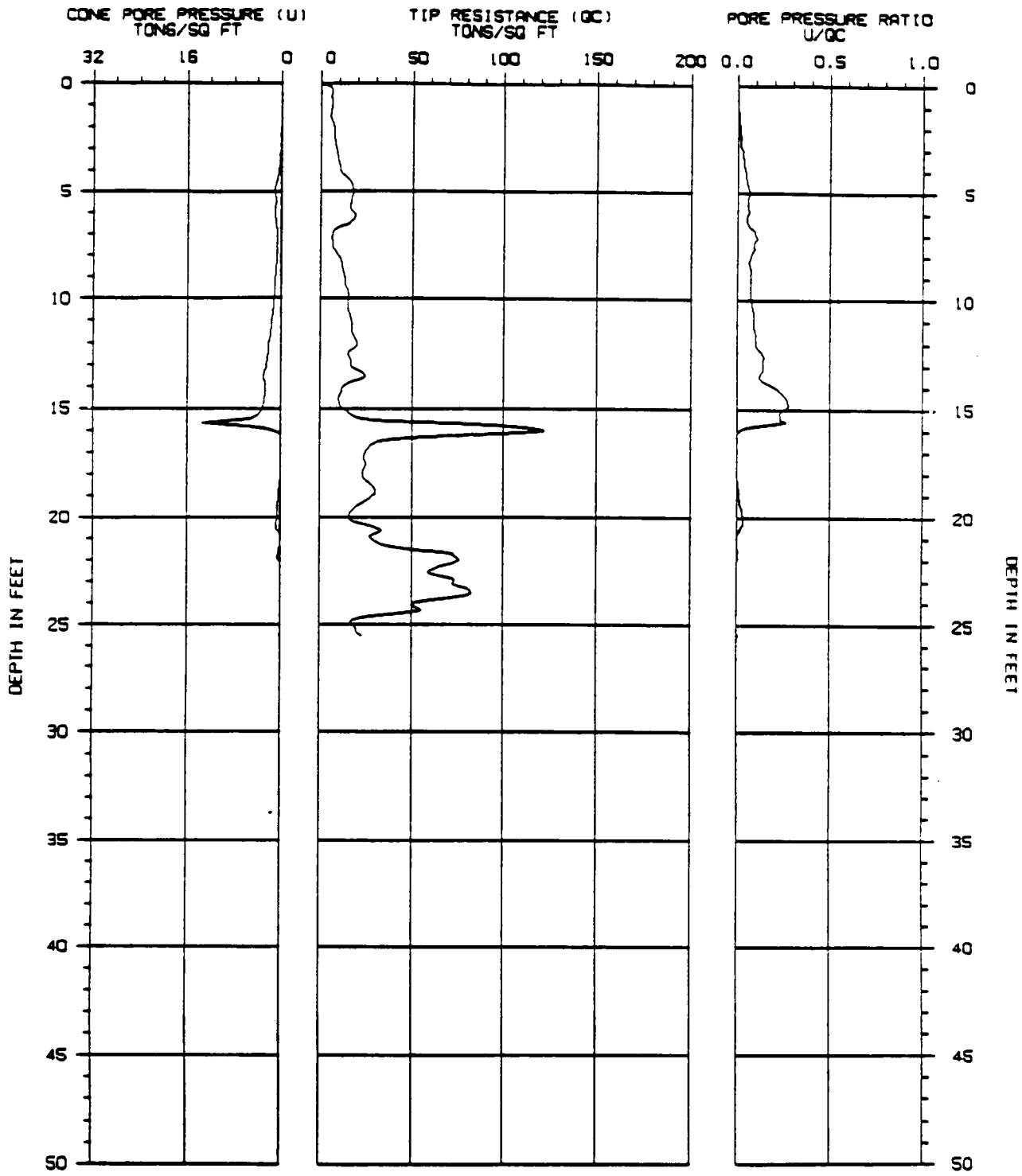
PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



CONE PENETRATION TEST

SOUNDING NUMBER: CPT-60

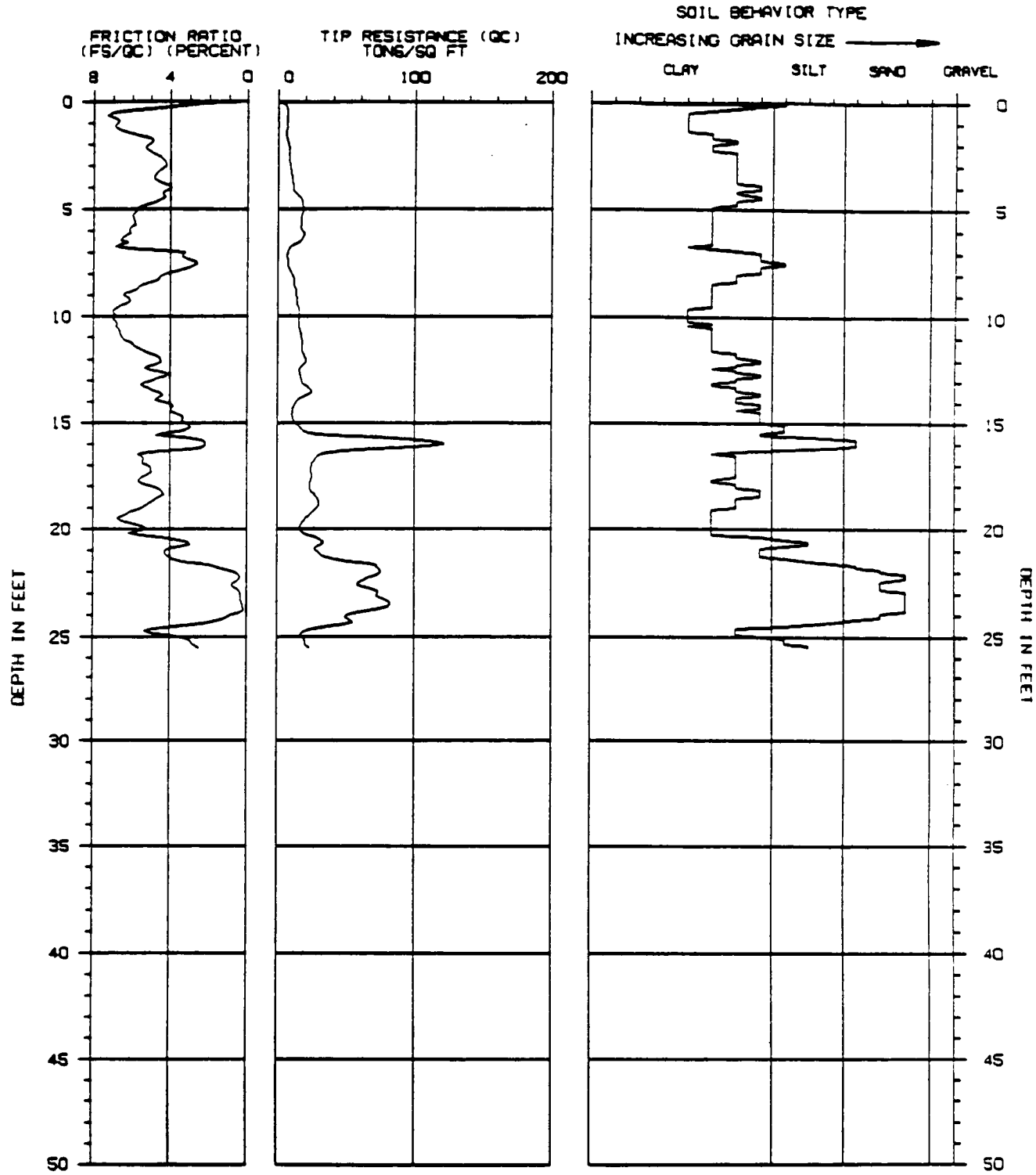
PROJECT NAME : JMM/MOFFETT NAS

PROJECT NUMBER : 9110-07002

LOCATION : SUNNYVALE

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION



ASSUMED TOTAL UNIT WT = 110 PCF

ASSUMED DEPTH OF WATER TABLE = 6.0 FT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-60

PROJECT NAME : JMM/MOFFETT NAS

LOCATION : SUNNYVALE

PROJECT NUMBER : 9110-07002

DATE : 05-08-1991

THE EARTH TECHNOLOGY CORPORATION

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 9 – WELLS (IT)

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

BORING NO. W9-3(C)

FIELD GEOLOGIST F. Wessner
EDITED BY D. Cox
CHECKED BY J. Hodsoll
TOTAL DEPTH 174.7 feet

COORDINATES N 335,811.3 E 1,548,305.4
DATE BEGAN 8/15/88
DATE FINISHED 8/18/88
GROUND SURFACE EL 20.1 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER PER (PER 6")	USCS SYMBOL	DESCRIPTION
0				FILL	FILL: sandy clay; black-dark brown.
	MD#1	6/18	5,7,9		SILTY CLAY; dark brown, slightly moist, soft, very plastic, gravel inclusions.
	MD#2	6/18	3,6,7		
5	MD#3	10/18	3,5,4		SANDY SILTY CLAY; olive gray, slightly to moderately moist, soft, slightly to moderately plastic.
10				CL-CH	SILTY CLAY; gray, moderately moist, moderately plastic.
15					
20				GW	SANDY GRAVEL: fine grained, saturated, very poorly sorted, angular gravels.
					SILTY SAND, CLAY; olive gray, moist, moderately plastic.
25					Small sand stringers throughout. SILTY CLAY; orange brown, moist, soft, moderately plastic.
30					Continued stringers of coarse angular, poorly sorted sand.
35				CL-SW	
40					SILTY CLAY; brownish gray, moist, soft to very soft, plastic. Stringers of sands
45					SILTY CLAY; light brown, moderately moist, stiff, slightly plastic.
50					SAND; fine to coarse, black to clear, unsorted, angular stringers. SILTY CLAY; brown-gray, moist, soft, moderately plastic.
55					
				SW	SAND; coarse, black and tan, subangular, poorly sorted.
60				CL	CLAY/SILTY CLAY; brown-tan, moist, soft, plastic.
65				SP-CL	CLAY/SAND; interbedded, black and tan, sand is fine to coarse, angular. No noticable, water during drilling.
70					

WELL SUMMARY:
- 12" Christy box
- 8"x5' standpipe
- 4" sch. 40 steel casing
- Bentonite/cement grout
- Centralizer

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-3(C)

FIELD GEOLOGIST F. Wessner
EDITED BY D. Cox
CHECKED BY J. Hadadi
TOTAL DEPTH 174.7 feet

COORDINATES N 338,811.3 E 1,548,306.4
DATE BEGAN 8/15/88
DATE FINISHED 8/18/88
GROUND SURFACE EL. 20.1 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	WELL SUMMARY	BLOWS ON SAMPLER PER (PER 6")	USCS SYMBOL	PROFILE	DESCRIPTION
70					CH-CL		CLAY/SILTY CLAY; gray-brown, moist, stiff, very plastic.
75					SP		Sand stringer
					CH-CL		CLAY/SILTY CLAY; gray brown, moist, soft, very plastic.
80					SP		SAND; very fine to medium grained, subround, unconsolidated inclusions of fine gravel.
85					CL-SP		SANDY SILTY CLAY; light brown, moist, very soft, moderately plastic, interbedded with fine sands.
90					SW		SANDS; very fine to medium grained, black and clear, sub-round, poorly sorted. Making water, flowing.
95							Sand is clayey silty, "flowing sands" (unconsolidated, saturated, very fine) Very loose flowing sands.
100							
105			Centralizer		CL-SW		SILTY CLAY/CLAY; gray, moist, stiff, moderatly to slightly plastic. A few sand stringers.
110							
115							SILTY CLAY; orangish brown, moist, soft, very plastic.
120							CLAY/SILTY CLAY; gray brown, moderately moist, stiff, moderately to slightly plastic. CLAY/SILTY CLAY; gray and brown, moist, soft to stiff, moderately plastic, with 1-2' sand; very fine grained, poorly sorted, subrounded, "flowing sand" with roots and fibers (organics). Making water.
125							
130					CH-CL		CLAY/SILTY CLAY; gray, moist, stiff, very plastic. Grading into very firm- CLAY/SILTY CLAY; olive gray, moderately moist, very stiff, moderate plasticity.
135							
140			Bentonite pellets				

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

AutoCAD FILE: MF-W9-3C.DWG

BORING NO. W9-3(C)

FIELD GEOLOGIST E. Wessner
EDITED BY D. Cox
CHECKED BY J. Hodgall
TOTAL DEPTH 174.7 feet

COORDINATES N 335,811.3 E 1,549,305.4
DATE BEGAN 8/15/88
DATE FINISHED 8/18/88
GROUND SURFACE EL 20.1 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	WELL SUMMARY	BLOWS ON SAMPLER PER (PER 6")	USCS SYMBOL	PROFILE	DESCRIPTION
140							CLAY/SILTY CLAY; gray, moist, stiff, plastic to very plastic.
145			Bentonite pellets 137.9 to 154.8 feet		CL-CH		
150							
155							
			Centralizer		SW		SILTY SAND; medium coarse, subangular, moderately sorted.
160			4" .010 S.S. screen from 157.2 to 167.2 feet		GW		GRAVELLY SAND; medium coarse with gravels fine grained, black-opaque, angular, poorly sorted, clean.
					CL-SW		SILTY CLAY; gray, moist to moderately moist, soft-stiff, moderately plastic, fine gravel inclusions.
165			Centralizer #1C sand				Stringers of coarse sand, black angular, moderately sorted.
170					CL-CH		CLAY/SILTY CLAY; moist to moderately moist, stiff, very plastic.
			Bentonite backfill				
175							TOTAL DEPTH 174.6 FEET
			9.6"				
180							
185							
190							
195							
200							
205							
210							

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

AutoCAD FILE: MF-W9-3C.DWG

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-4(B2)

FIELD GEOLOGIST E. Wegner
EDITED BY D. Cox
CHECKED BY J. Hadgadi
TOTAL DEPTH 94.3 feet

COORDINATES N 336,979.0 E 1,848,121.0
DATE BEGAN 7/21/88
DATE FINISHED 7/21/88
GROUND SURFACE EL 14 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0	MDØ1	10/18	3,4,10	CL	SILTY CLAY; dark gray, slightly moist, stiff, moderately plastic.
	MDØ2	10/18	5,7,11		SILTY CLAY; olive green, slightly moist, soft, moderately plastic.
5	MDØ3	18/18	3,5,7		
	MDØ4	18/18	5,5,5	CL-ML	SILTY SANDY CLAY; olive to gray, moist, soft, low plasticity, oxidized stains with few coarse sands. Adding water to drill
10					
15					SILTY CLAY; gray, moist, soft, moderately plastic.
20				GW	GRAVEL; fine gravel, black, subangular, poorly sorted.
25				CL	SILTY CLAY; brown, moderately moist, soft, slightly plastic.
30					
35				GW	SANDY GRAVEL; tan to light brown, subround, poorly sorted, fine gravel grading to coarse sandy gravel.
40				CL	SILTY SANDY CLAY; light brown, moist, soft, moderately plastic.
45				GW	SAND/GRAVEL; black and gray, subangular, poorly sorted coarse sand and fine gravel.
				CL	SILTY CLAY; light brown, moist, soft, moderately plastic.
50				SC-CL	CLAYEY SAND; tan, wet, loose, very fine grained, interbedded 1-2' with silty clays.
55					
60				CL-ML	SILTY CLAY; light brown, moist, stiff, moderately plastic, interbedded with sandy silty clay.
65					
70					

WELL SUMMARY

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

AutoCAD FILE: MFW9-4B2.DWG

IT ...Creating a Safer Tomorrow

EE LEGEND FOR LOGS AND TEST PITS
FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-4(B2)

FIELD GEOLOGIST E. Wessner
EDITED BY D. Cox
CHECKED BY J. Hadsall
TOTAL DEPTH 94.3 feet

COORDINATES N 336,979.6 E 1,548,121.6
DATE BEGAN 7/21/88
DATE FINISHED 7/21/88
GROUND SURFACE EL 14 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	WELL SUMMARY	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	PROFILE	DESCRIPTION
70							CLAY/SILTY CLAY; gray, moist, stiff, very plastic to mod. plastic.
75			Bentonite pellets 72.5 to 75.9 ft.		CH		Possibly top of B2 Aquifer.
			4" .010 S.S. screen from 78.3 to 83.3 feet		SM-SC		SILTY CLAYEY SAND; light gray, wet, very loose, grading to a coarse sand, black, moderately sorted, sub-angular.
80			Centralizer				SILTY CLAY; gray, moist, stiff, moderately plastic.
85			#1C sand		CL		
90			Bentonite backfill				
95			9.6"				TOTAL DEPTH 94.3 FEET
100							
105							
110							
115							
120							
125							
130							
135							
140							

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-5B3

FIELD GEOLOGIST E. Wagner
EDITED BY D. Cox
CHECKED BY J. Hadsell
TOTAL DEPTH 124.1 feet

COORDINATES N 336,993.2 E 1,346,115.8
DATE BEGAN 7/26/88
DATE FINISHED 7/26/88
GROUND SURFACE EL. 13.8 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER PER (PER 6")	USCS SYMBOL	DESCRIPTION
0	MD#1	10/18	2,5,8	CH	CLAY-SILTY CLAY; dark gray, slightly moist, soft, very plastic.
	MD#2	10/18	7,14,13	CL	SILTY CLAY; light gray, slightly moist, stiff, mod. plastic.
5	MD#3	18/18	4,5,7	ML	CLAYEY SILT; olive gray, moist, very soft, mod. plastic. Moisture increase.
	MD#4	12/18	7,5,2		
10				CL-CH	SILTY CLAY; brown-gray, moderately moist, very soft, plastic, mottled light gray brown.
15					
					Made connection at 20' and had water blow out after connection.
20				GM-GC	SILTY GRAVELS; wet, black, fine grained, angular, moderately sorted.
25				CL-CH	SILTY CLAY; brown-gray, moist, soft, plastic.
30				MH	CLAYEY SILT; brown, moist, soft, plastic.
35				GW	FINE GRAVEL; brown, subangular, moderately to poorly sorted.
				CH	SILTY CLAY; brown, moist, soft, plastic.
40				GW-GC	FINE GRAVEL; brown to black, angular, poorly sorted.
				CH	GRAVELLY SILTY CLAY; brown, moist, soft, plastic, inclusions of gravel.
				GW	FINE GRAVEL; wet, angular, poorly sorted.
45				CH	SILTY CLAY; brown, moist, soft, plastic, mottled with slightly platey structure.
50				GC-GW	FINE GRAVEL; poorly sorted, angular.
				ML	CLAYEY SILT; interbedded, brown, moist, soft, moderately plastic, interbedded with small fine gravel. Water producing
55					
60				CL-CH	SILTY CLAY; brown, soft, moist, very plastic, interbedded with a gray silty clay.
65					
70					

WELL SUMMARY: 12" Christy box; 8"x5' standpipe; Bentonite cement grout; 4" sch. 40 steel casing

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

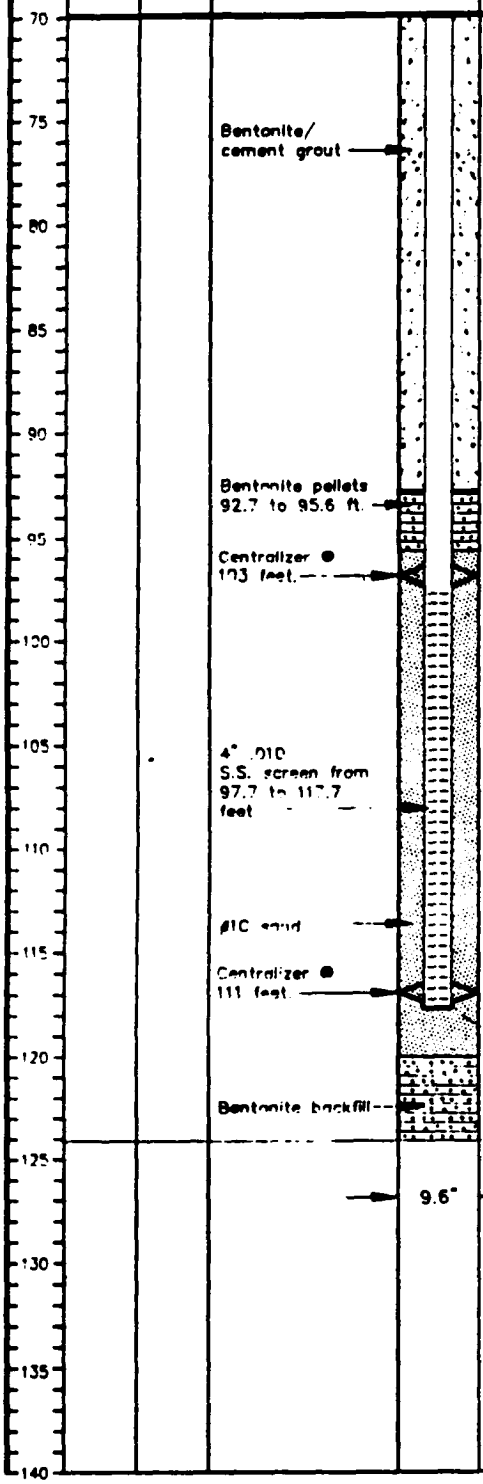
SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

AutoCAD FILE: MEW2-5B3.DWG

BORING NO. W9-5B3

FIELD GEOLOGIST E. Wessner
EDITED BY D. Cox
CHECKED BY J. Hadsall
TOTAL DEPTH 124.1 feet

COORDINATES N 338,993.2 E 1,548,115.8
DATE BEGAN 7/26/88
DATE FINISHED 7/26/88
GROUND SURFACE EL. 13.8 ft.



USCS SYMBOL	DESCRIPTION
CL	SILTY CLAY; gray, stiff, moderately moist, moderately plastic, interbedded with a brown silty clay.
SC	CLAYEY SAND; coarse grain-fine gravel, subangular, mod. sorted, grading to medium to fine sand. Water bearing
ML	CLAYEY SILT; brown-light gray, moist, soft, moderately plastic.
CH	SILTY CLAY; brown, moist, soft, very plastic.
	SILTY CLAY; brown-light gray, moist to moderately moist, plastic, 1' interbedding of sand.
	SILTY CLAY; gray-brown, soft, moist, very plastic.
SC	CLAYEY SAND; fine grained, brown with black specs, well sorted, loose, wet. Making water
CH	SILTY CLAY; dark brown, moist, soft, very plastic.
SC-SM	CLAYEY SAND; fine grained, brown-gray, wet, well sorted, loose.
CH/CL	SILTY CLAY; dark brown-gray, moist, soft, very plastic.
SC-SM	CLAYEY SAND; fine grained, brown-gray, wet, moderately sorted, loose, some coarse sands. Making water
CH-CL	SILTY CLAY; dark brown gray, moist, soft.

TOTAL DEPTH 124.1 FEET

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

AutoCAD FILE: W5B-5B3.DWG

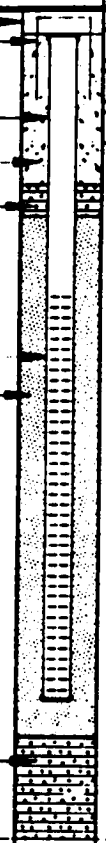
BORING NO. W9-7(A1)

FIELD GEOLOGIST W. Hopkins
EDITED BY D. Cox
CHECKED BY J. Hodsoll
TOTAL DEPTH 40 feet

COORDINATES N 338,168.7 E 1,548,103.2
DATE BEGAN 7/21/88
DATE FINISHED 7/21/88
GROUND SURFACE EL 19.66 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0	MD#1	6/18	1	FILL	FILL: sandy gravel; moderate brown, dry, medium dense.
	MD#2	5/18	1	OH	SILTY CLAY; black, moist, stiff, high plasticity.
5	MD#3	9/18	1	ML	CLAYEY SILT; light gray, moist, stiff, moderate plasticity, thin layer of pebbly sand (4-4.2 ft.)
	S	42/42		CL	SILTY CLAY; medium gray with medium brown spots, moist to wet, stiff, moderately plastic.
10	S	60/60			
15	S	40/60		ML	Ground water first encountered. CLAYEY SILT/SILT; dark gray, wet (saturated), very soft, low plasticity.
20	S	16/60		SW	PEBBLY SAND; with clay and silt, dark greenish gray, wet, medium dense.
25	S	10/60		GC	SANDY GRAVEL; with clay, gray, wet, low plasticity.
30	S	15/18		SP	SILTY SAND; medium brownish gray, wet, dense, poorly graded.
	S	0/18			
	S	0/18			
35	S	24/60		CL	SANDY CLAY; medium brown, wet, stiff, low plasticity.
40					TOTAL DEPTH 40 FEET
45					
50					
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Development Co.
DRILLING METHOD: CME 75 Hollow Stem Auger

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS
FOR EXPLANATION OF SYMBOLS AND TERMS

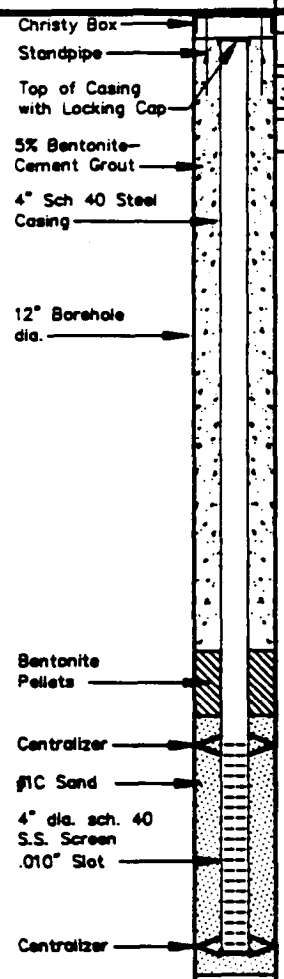
BORING NO. W9-9(A2)

PROJ. GEOL S. Bartling
FIELD GEOLOGIST C. Dorgan
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 47.5 feet

COORDINATES N ____ E ____
DATE BEGAN 5/10/90
DATE FINISHED 5/11/90
GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0					Asphalt and fill material.
	MD1	12/18	2/3/6	CL	GRAVELLY SILTY CLAY; blackish gray, stiff, dry, stiff fill material. 2.0'
	MD2	10.5/18	3/5/90	OL	SILTY CLAY; olive black, dry, very stiff. 5.0'
5	MD3	18/18	7/9/5	ML	CLAYEY SILT, medium gray, dry very stiff, trace organics. 9.5'
10				CL	SILTY CLAY; grayish olive green, medium stiff, moderately plastic. SILTY CLAY; mottled grayish olive green moderate olive brown, medium stiff, moderately plastic. SANDY GRAVELLY CLAY; grayish olive green, very loose, non-plastic to moderately plastic. 21.0'
15					
20					
25				SM	SANDY SILT; dusky yellow green, moist to wet, soft to medium stiff, moderately plastic. 27.5'
30				GP	GRAVELS
35					Increase in grain size with depth.
40					Gravels and cobbles average 1" to 2", loose. 43.0'
45				CL	SILTY CLAY, moderate yellowish brown, moist to wet, soft to medium stiff. SANDY CLAY; moderate yellowish brown, moist to wet, soft, fine to medium grained sands.
50					TOTAL DEPTH 47.5 FEET
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PAGE 1 OF 1

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-9(MF15)

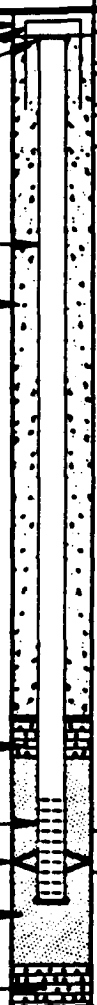
BORING NO. W9-13(A2)

FIELD GEOLOGIST E. Wessner
EDITED BY D. Cox
CHECKED BY J. Hodgell
TOTAL DEPTH 48 feet

COORDINATES N 338,192.6 E 1,948,014.9
DATE BEGAN 7/18/88
DATE FINISHED 7/19/88
GROUND SURFACE EL. 19.6 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0	MDØ1	10/18	9,5,6	CL	SILTY CLAY; reddish brown, dry, non-plastic, gravel inclusions.
	MDØ2	8/18	4,7,10		SILTY CLAY; black-dark gray, moist to moderately moist, moderately plastic.
5	MDØ3	ND	3,7,8		Color grading to a light gray.
10					SILTY CLAY; lt. gray, moist, soft, moderately plastic, platy (slickensides)
15				CH	SILTY CLAY; light gray, moist to wet, soft to very soft, plastic. ▽ 7-18-88, 15:00.
20				GC	CLAYEY GRAVELS; gray, angular, to subround, moderately sorted.
25				SC	CLAYEY SAND; rounded, fine grained, moderately sorted.
30				CH	SANDY CLAY; light gray, soft, wet, plastic, inclusions of gravel.
35				GW	GRAVEL; poorly sorted, subround.
40	MDØ4	12/12	7,10	CH	SILTY CLAY; light-reddish brown, moist, soft, plastic. Stop to take drive sample just up hole from expected aquifer. GRAVELLY SILTY CLAY; gray, moist, plastic, very soft, inclusions of gravel.
				GW	GRAVEL; poorly sorted, subrounded. B1 Aquifer
45				CH	SILTY CLAY; light brown, moist, plastic, sticky, sand inclusions.
				CL	SILTY CLAY; light brown, moderately moist, soft, moderately plastic.
50					TOTAL DEPTH 48 FEET
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-14(A2)

FIELD GEOLOGIST E. Wessner
FITTED BY D. Cox
CHECKED BY J. Hadwell
TOTAL DEPTH 54.7 feet

COORDINATES N 335,498.3 E 1,548,847.7
DATE BEGAN 8/3/88
DATE FINISHED 8/8/88
GROUND SURFACE EL 20.9 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0					3" of asphalt pavement.
	MD#1	12/18	5,5,7	CL	TOPSOIL: light gray, silty clay, slightly moist, stiff, slightly plastic.
	MD#2	12/18	3,3,6	CL	SILTY CLAY; tan-light brown, slightly moist, stiff, slightly plastic, orange oxidized layers.
5	MD#3	12/18	5,6,11	CL	SANDY SILTY CLAY; with fine gravels, orange brown, slightly moist, soft, non-plastic.
				SP	GRAVELY SAND; black and clear, fine gravels, slightly moist, sub-angular.
10				CL	SANDY CLAY; gray, moist, very soft, moderately plastic.
				CH	Graded to a silty clay, moist, very soft, very plastic.
15				CH	SILTY CLAY; orangish brown, moist, very soft, very plastic.
				GP	COARSE SAND/COARSE GRAVEL, slightly moist, angular, black-gray.
20				CL	SANDY-SILTY CLAY; light gray, moist, soft, moderately plastic. Hit water @21'
				SP-GP	COARSE SAND and FINE GRAVELS; black-tan, wet, angular.
25				CL	SILTY CLAY; light gray, moist, soft, moderately plastic. SANDY CLAY; light brown, moist-wet, very soft, moderately plastic.
				CH	CLAY-SILTY CLAY; gray, moist, soft, plastic, sticky.
30				SC	CLAYEY SAND; gray, medium-coarse grained, sub-angular. Drill bit suddenly fell to 34' but we made little water.
35				CH	SILTY CLAY; gray, moist, soft, plastic, inclusions of coarse sand. Making water
40				SW	SAND; clear-tan, fine-coarse, poorly sorted, sub-rounded, some gravels, no fines.
				CL	SILTY CLAY; gray, moist, soft, moderately plastic.
45				GW	SANDY GRAVEL; very poorly, sorted, sub angular, fine grained sand to coarse gravel. Grading into coarse gravel. Making water
50				CL	SILTY CLAY; orangish brown, moist, soft, medium plastic.
				SW	CLAYEY SILTY GRAVELLY SAND; black and brown, medium grained sand; fine gravels with fines interbedded.
55					TOTAL DEPTH 54.7 FEET
60					
65					
70					

WELL SUMMARY:

- 12" Christy-box on 8"x5' standpipe
- top of casing
- 4" sch. 40 steel casing
- Bentonite/cement grout
- Bentonite pellets 34.9 to 36.8 ft.
- 4" .010 sch. 40 S.S. screen from 39 to 49 ft.
- Centralizer
- Centralizer
- #1C sand
- Bentonite backfill
- 9.6"

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-15(B2)

FIELD GEOLOGIST E. Waganer
EDITED BY D. Cox
CHECKED BY J. Hodgsoll
TOTAL DEPTH 108 feet

COORDINATES N 335,828.0 E 1,548,605.0
DATE BEGAN 8/1/88
DATE FINISHED 8/4/88
GROUND SURFACE EL. 18.8 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	DESCRIPTION
0	MD#1	6/10	3,5,5	CL	SILTY CLAY; light brown-gray, slightly moist, soft, mod. plastic, inclusions of gravel.
	MD#2	18/18	3,7,18		SILTY CLAY; yellow brown, slight moist, soft, slightly plastic.
5	MD#3	18/18	12,24,25	SP	GRAVELLY SAND; yellow tan, slightly moist, medium grained, moderately sorted.
10				CL	SILTY CLAY; brown-light gray, moist, very soft, moderate to slightly plastic. Moisture is picking up @ 10', water table must be close but have not seen water.
15				CH MH	SILTY CLAY; light gray, moist, very soft, plastic. SILTY CLAY/CLAYEY SILT; gray, moist, very soft, plastic, inclusions of gravel. 20' connection had water in hole. ▽ Ground water first encountered.
20				SM	SILTY SAND; gray, very fine to fine grained, wet, loose, moderately sorted with some coarse sand. Mostly opaque with black minerals. Adding water to drill. Making water.
25				CH	SILTY CLAY; gray, moist, soft, plastic. SILTY SANDY CLAY; gray and orange, soft, moist, moderately plastic, gravel inclusions.
30				SC-GC	CLAYEY SAND & GRAVEL; brown-tan, moderately sorted sand and gravel, fine to very fine sand and gravels.
35				SM	SILTY SAND; brown, moist, very soft, very fine grained sand, loose.
40				GW	SANDY GRAVELS; fine gravels, coarse sands, poorly sorted, angular to sub-angular, light gray-black, clear quartz, stringers of silty clay; gray, soft, moderately plastic. Making lots of water
45					
50				CL	SILTY CLAY; reddish brown, moist, soft, moderately plastic.
55				SM	SILTY SAND/SANDY CLAY; light brown, wet, loose, fine to medium grained.
60				GW	GRAVEL; with coarse sand, black and opaque, fine gravels, angular poorly sorted.
65				CL	SILTY SANDY CLAY; brown, moist, soft, moderately plastic. Making water
70				SM-SP	SILTY SAND; light brown, wet, very fine grained, moderately sorted, loose, with some medium grained sands, black minerals.

WELL SUMMARY: 12" Christy box; 8"x5' standpipe; Bentonite/cement grout; 4" sch 40 S.S. casing

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-15(B2)

FIELD GEOLOGIST E. Wessner
EDITED BY D. Cox
CHECKED BY J. Hadsall
TOTAL DEPTH 108 feet

COORDINATES N 335,826.0 E 1,948,605.0
DATE BEGAN 8/1/88
DATE FINISHED 8/4/88
GROUND SURFACE EL. 18.8 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	WELL SUMMARY	BLOWS ON SAMPLER (PER 6")	USCS SYMBOL	PROFILE	DESCRIPTION
70					SC-CH		SILTY CLAY; gray, moist, soft, moderate to very plastic. Stinger of coarse sand at 74' angular, moderately sorted, block.
75					CL		SILTY CLAY; gray, moderately moist, stiff, slightly plastic to plastic.
80			Bentonite pellets 77.3 to 81.2 ft.		SM-SP		Fine gravels grading to a fine-medium silty sand, moderately sorted, runny, with some coarse grains of sand and gravel. Making water
85			4" .010 sch. 40 S.S. screen from 87.3 to 97.3 feet		CH-CL		SILTY CLAY; light brown, moist, soft, very plastic to moderately plastic. Drive samples from 86-89 ft.
90			Centralizer		SM-SW		SILTY SAND; fine to medium grained, opaque with black minerals, moderately sorted, loose. SILTY SAND; very fine grained to medium grained, grading to a cleaner sand with less water but still wet to 100'.
95			Centralizer				
			#1C sand				
100					CH		SILTY CLAY; gray, moist, very soft, very plastic.
105					SW-GW		Very fine grained to medium grained sands with fine gravels very poorly sorted, clear and black sands and gravel. Making water. Hole backfilled with flowing sand to 102' (base of clay)
110				9.6"			TOTAL DEPTH 108 FEET
115							
120							
125							
130							
135							
140							

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

SAMPLING METHODS: MD=California Modified
S=Split Barrel

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

AutoCAD FILE: MW2 15B2.DWG

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

BORING NO. W9-20(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault
CHECKED BY W. Gorber
TOTAL DEPTH 48 ft.

COORDINATES N ____ E ____
DATE BEGAN 3-29-90
DATE FINISHED 3-30-90
GROUND SURFACE EL. ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in)	WELL SUMMARY	BLOWS ON SAMPLER	USCS	DESCRIPTION
0			Top of Casing			TOP SOIL: light brown gray, sandy gravelly clay, dry
	MD1	16/18		5/7/12	CL	SILTY CLAY: dusky yellow, low plasticity, soft to very soft, slightly moist.
	MD2	16/18		5/7/11	SC	CLAYEY SILTY SAND: dusky yellow, gravel at base, dry to slightly moist, loose. 5.0
5	MD3	16/18		7/10/10	SW	SAND: medium gray, medium to coarse, very moist to wet, loose. 6.5'
		0/60			SC	CLAYEY SAND: light gray, very moist, very soft, medium plasticity, subangular to subrounded inclusions. 10.0'
10			4" Sch. 40 Steel Casing		SM	CLAYEY SILTY SAND: red brown, slightly to moderately moist, soft, moderately dense. 13.0'
		60/60			SC	CLAYEY SANDS: light gray, wet, soft. 15.0'
15					SP	SAND: gray, minor clay, very wet, (Very fine to fine grain). 22.0'
		0/60				
20			5% Bentonite Cement Grout			
		30/60			SC	CLAYEY SAND: light gray, very moist, very soft, low plasticity, grades to dark yellowish orange color. 26.0'
25			Grout Protection Seal: Bentonite Pellets			
		40/60			CL	SILTY CLAY: dusky yellow, moderately moist, soft, moderately plastic. 29.0'
					SC	SILTY SAND: very fine grain, moderately moist. 30.0'
30					SP	SAND: flowing. 37.0'
		0/60	#1C Sand			
35		36/60	4" dia. sch. 40 S.S. Screen .010" Slot		ML	CLAYEY SILT: dark yellowish brown, gray mottling, moderately moist, soft, moderately plastic. 39.0'
40		0/36			SM	CLAYEY SILTY SAND: light brown, wet, loose, (medium to fine grain). 43.0'
					SM	SILTY SAND: dark yellowish to orange, wet, very low plasticity, very fine grain. 44.0'
45		60/60	Native Soil		ML	CLAYEY SILT to SILTY CLAY: moderate yellowish orange, moderately moist, medium plasticity, abundant subrounded fine gravel.
50						TOTAL FEET IS 48 FEET
55						
60						
65						
70						

Continuous Core

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-20(MF13)

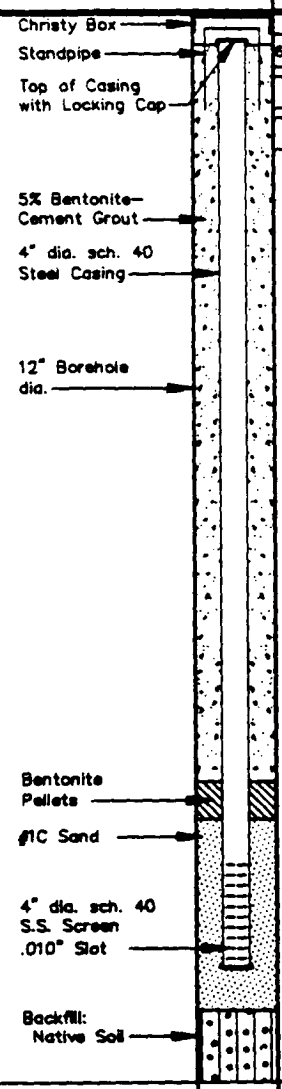
BORING NO. W9-21(A2)

PROJ. GEOL. S. Bartling — COORDINATES N ____ E ____
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault — DATE BEGAN 4-19-90
CHECKED BY W. Garber — DATE FINISHED 4-23-90
TOTAL DEPTH 51.5 ft. — GROUND SURFACE EL. ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION	
0				GM	GRAVEL; mixed with red brown soil, dry, unconsolidated.	1.5'
	MD1	11/18	6/10/12	ML	CLAYEY SILT; light olive gray, moist, firm, slightly plastic.	3.0'
	MD2	12/18	5/6/8	CL	SILTY CLAY; pale yellowish brown, slightly moist, slight plasticity (low).	5.0'
5	MD3	5/18	5/6/6	CL	SANDY CLAY; dark yellowish brown, slightly moist, soft, moderately plastic.	6.5'
				SC	CLAYEY SAND; fine grained, moderate yellowish brown, moist to very moist, very loose.	7.5'
		42/42		CL	SANDY CLAY; moderate yellowish brown, moist, very soft, medium plasticity, fine sand. Dark gray, soft, plastic. Mottled pale yellowish brown, moist, firm, plastic clay at 9.5'.	10.0'
10				CL	CLAY; dark gray, wet, firm to soft, plastic.	12.0'
		56/60		SC	CLAYEY SAND; very fine grained, dark gray, very wet, loose to very loose, (gradational contact with unit above).	14.5'
15				SP	SAND; coarse grained, light olive brown, wet, loose, some fine gravel. Flowing sand, medium to coarse grained, clean.	20.0'
		4/60				
20				SP	SAND; dark gray, very wet, no cohesion (very loose), (fine sand, rounded to sub-angular).	24.5'
		24/60		GM	SILT (gravelly); light olive brown, medium dense, non-plastic, (medium gravel, sub-rounded to sub-angular).	25.0'
25				SP	SAND.	36.0'
		0/60				
30		0/60				
35				ML	CLAYEY SILT; dusky yellow, moist, firm, low plasticity, (some reddish mottling).	37.0'
		45/60		CL	SILTY CLAY, dusky yellow, moist, soft, medium plasticity.	38.5'
				CL	SANDY CLAY; dusky yellow, moist, very soft, medium plasticity, (sand<5%).	40.0'
40		0/60		SP	SAND.	45.0'
45		50/60		CL	CLAY; grayish orange, slightly moist, firm to hard, plastic (when worked), minor silt, some fine gravel at ≈ 47'.	49.5'
50		18/18		CL	SANDY CLAY; moderate yellowish brown, soft to very soft, plastic to medium plastic, (coarse sand), zoned sand layers.	
					TOTAL DEPTH 51.5 FEET	

Continuous Core

WELL SUMMARY



DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL

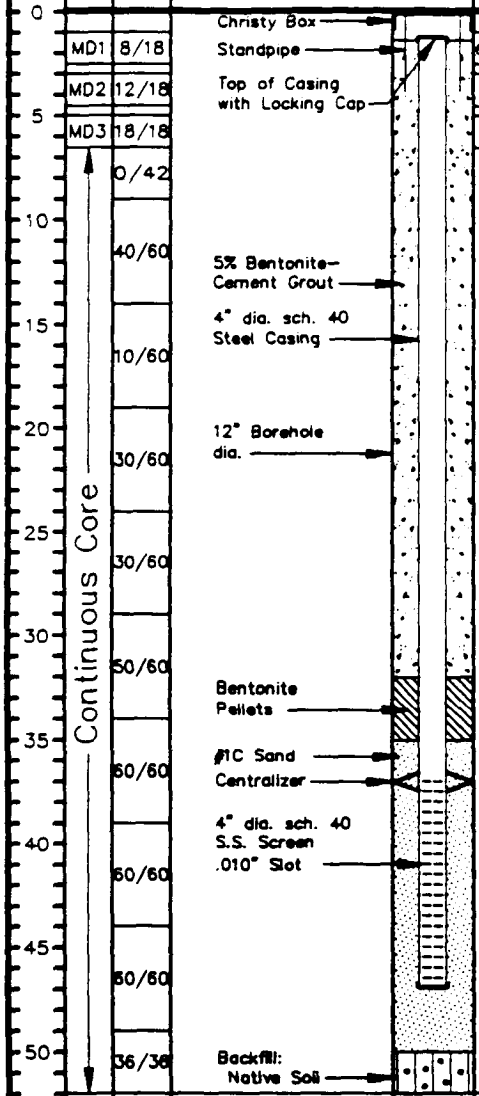
BORING NO. W9-22(A2)

PROJ. GEOL. S. Bartling — COORDINATES N ____ E ____
FIELD GEOLOGIST E. Wessner
EDITED BY T. Ault — DATE BEGAN 4-30-90
CHECKED BY W. Gorber — DATE FINISHED ____
TOTAL DEPTH 52 ft. — GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0	MD1	8/18	6/12/18	CL	SILTY CLAY; grayish black, slightly moist, soft, slightly plastic.
	MD2	12/18	2/6/11		SILTY CLAY; olive gray, slightly moist, soft, slightly plastic. 5.0'
5	MD3	18/18	6/7/7	CL	Loss of recovery. CPT log shows SILTY CLAY.
		0/42			
10		40/60		SC	CLAYEY SAND; very fine grained, dark greenish gray, moist, very soft, slightly plastic. 13.0'
				CH	SILTY CLAY/CLAY; olive gray, mottled dusky yellow, moist, very soft, plastic. 15.0'
15		10/60		CH	SILTY CLAY; dusky yellowish green, very moist, very soft, medium plasticity. 16.5'
				SM	Loss of recovery. CPT shows SAND. 20.0'
20		30/60		SM	SAND; fine to medium grained, wet, loose, grading into clayey sand with depth. 22.0'
				CL/CH	SILTY CLAY/CLAY; medium olive gray, moist, very soft, medium plasticity. 24.0'
25		30/60		SM/SC	SAND; fine to medium grained, very wet, loose. Grading into silty clay, greenish gray, moist, soft, medium plasticity. 28.0'
				CL	SILTY CLAY; dusky yellowish gray, moist to slightly moist, medium stiff, low to medium plasticity. Becomes grayish green, soft, with medium plasticity. 30.0'
30		50/60		ML	CLAYEY SILT; light olive gray, moist, very soft, low plasticity. 31.0'
				SP	SAND; fine to medium grained, wet, loose. 32.0'
				CL	SILTY CLAY; light olive brown, moderately moist, medium stiff, plastic. 34.0'
35		60/60		CL	SILTY CLAY; yellowish gray, moist, very soft, very plastic, coarse calcite inclusions. 36.0'
				ML	SANDY CLAYEY SILT; light olive brown, moderately moist, soft, slight to moderate plasticity. 37.0'
				ML	CLAYEY SILT; moderate olive brown, moist, very soft, moderately plastic. 39.0'
40		60/60		SC	CLAYEY SAND; olive brown, wet, very soft, medium pebbles. Very coarse sands, wet, loose, sub-angular. 49.0'
45		60/60			
50		36/36		CL	SILTY CLAY; moderate olive brown, wet, soft, plastic, coarse sand grains grading to fine pebbles included in matrix.
55					TOTAL DEPTH 52 FEET
60					
65					
70					

Continuous Core

WELL SUMMARY



DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-22(=MF16)

BORING NO. W9-23(A1)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 20 ft.

COORDINATES N ____ E ____
DATE BEGAN 4-17-90
DATE FINISHED 4-17-90
GROUND SURFACE EL. ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in)	WELL SUMMARY	BLOWS ON SAMPLER	USCS	PROFILE	DESCRIPTION
0			Christy Box; Standpipe; 5% Bentonite-Cement Grout; Bentonite Pellets; 4" dia. sch. 40 C.S. Casing; 12" Borehole dia.; 4" dia. sch. 40 S.S. Screen .010" Slot; #1C Sand		CL		SILTY CLAY; brownish black, dry to slightly moist, firm to hard, very slightly plastic. 2.0'
	MD1	16/18		7/9/13			
	MD2	15/18		6/8/9	ML		CLAYEY SILT; light olive gray, slightly moist, soft, non-plastic. 5.5'
5	MD3	18/18		14/18/24			
	Continuous Core	40/60			SW		GRAVELLY SAND; dark brownish yellow, dry, very loose, medium sand, some very coarse sand, fine, angular gravel. Wet at 7'. Coarse sand predominant at 9'. Gravel size increases - medium to coarse. 10.0'
10		4/60			SW		Flowing SAND; fine to coarse grained, dusky yellowish green, wet, very loose. 17.0'
15		30/60			SC		CLAYEY SAND; fine grained, grayish green, wet, loose. 18.5'
					CL		SANDY CLAY; grayish green, moist to wet, very soft, medium plasticity, some layers with no sand, very fine sand.
20							TOTAL DEPTH 20 FEET
25							
30							
35							
40							
45							
50							
55							
60							
65							
70							

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-23(*MF16)

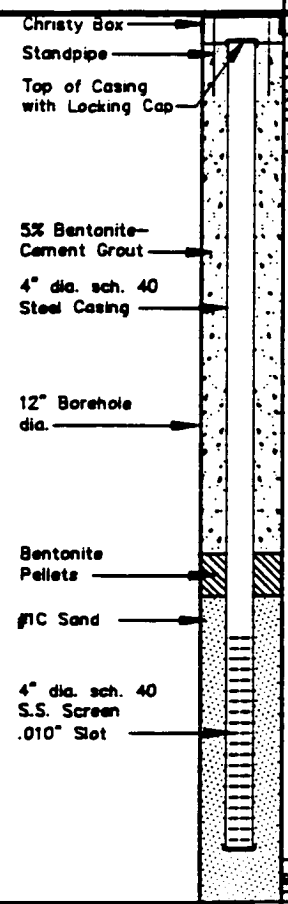
BORING NO. W9-25(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST J. Strack
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 42 ft.

COORDINATES N ____ E ____
DATE BEGAN 5-7-90
DATE FINISHED 5-8-90
GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0				ML	FILL: GRAVELLY SAND.
	MD1	12/18	4/15/27		SANDY SILT with GRAVEL FILL material; dark yellowish brown matrix, dry, firm, non-plastic. .5'
	MD2	18/18	7/12/24	CL	SILTY CLAY; medium gray, dry, firm, moderately plastic. Changes to light olive gray at ~ 4'.
5	MD3	10/18	10/13/18		
					SILTY CLAY; olive gray, moist, soft, moderately plastic.
10					SANDY CLAY; medium bluish gray, very moist, moderately plastic.
					SILTY CLAY; olive gray, moist, soft, moderately plastic.
15					▽ Groundwater encountered at ~ 16'. 16.0'
				ML	SANDY SILT; grayish green, wet, very soft, low plasticity.
20					
25					27.0'
				SM	SILTY SAND; grayish green, saturated.
30					
35					38.0'
				SP	SAND; very fine to fine grained, light olive gray, wet, dense. 40.0'
40		16/18	9/14/27	GW	GRAVEL; fine sand to coarse pebbles, wet, dusky brown matrix, loose, sub-angular grains. 40.5'
				CL	SILTY CLAY; olive gray with oxidized fractures, moist, firm, turning soft at 41.5', moderately plastic.
					TOTAL DEPTH 42 FEET
45					
50					
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-25(eMF16)

BORING NO. W9-27(A2)

FIELD GEOLOGIST E. Wessner
EDITED BY J. Hadsall
CHECKED BY J. Hadsall
TOTAL DEPTH 53.2 feet

COORDINATES N 338,676.4 E 1,548,653.8
DATE BEGAN 8/19/88
DATE FINISHED 8/22/88
GROUND SURFACE EL 16.9 ft.

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY (IN.)	WELL SUMMARY	BLOWS ON SAMPLER PER (6")	USCS SYMBOL	PROFILE	DESCRIPTION
0			12" Christy box; 8"x5' standpipe; top of casing		FILL		FILL: coarse gravels and silty clay.
5					CL		SILTY SANDY CLAY; dark gray-black, slightly moist, medium stiff, moderately plastic. SILTY CLAY; light gray to mottled brown gray, moderate to slightly moist, slightly to moderately plastic.
10			4" sch. 40 steel casing; Bentonite/cement grout		GW		GRAVELS; black and gray, very coarse to fine, angular, poorly sorted. Fuel odor, (3-4ppm in mud bin), no water.
15					CL		SILTY CLAY; brown-gray, moderately moist, medium stiff to soft, moderately plastic. Slight inflow of water.
20					SP-CH		SILTY COARSE SANDS; angular to subangular, medium grained and some gravels, poorly sorted. Stringers of silty clay, light olive gray, moist, soft, plastic.
25							
30					CH		SILTY CLAY; olive gray, moist, moderately plastic to plastic. SILTY CLAY; orange brown, moist, soft to medium stiff, plastic, mottled brown gray.
35			Bentonite pellets 33.8 to 35.8; 4" .010 S.S. screen from 37.8 to 47.8 feet				SILTY CLAY; mottled gray brown, moist, stiff, moderately plastic.
40			Centralizer		SP-CL		SANDY SILTY CLAY; with fine to medium sands, subangular, poorly sorted.
45			Centralizer; #1C sand		CL		SANDY CLAY; gray brown, wet, slightly plastic. SILTY CLAY; gray brown, moist, stiff, moderately plastic, minor sand.
50			Bentonite Backfill				
55			9.6"				TOTAL DEPTH 53.2 FEET
60							
65							
70							

DRILLING CO.: Water Development Co.
DRILLING METHOD: Air Rotary

NOTE: Redrill of W9-27(B1), (7-19-88)
No samples taken while drilling this well. Samples taken during the drilling of the original W9-27(B1-abandoned) will be used as sample data.

PROJECT NO.: 409616
CLIENT: Moffett Naval Air Station
Moffett Field, California

AutoCAD FILE MW9-27B1.DWG

IT ...Creating a Safer Tomorrow

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

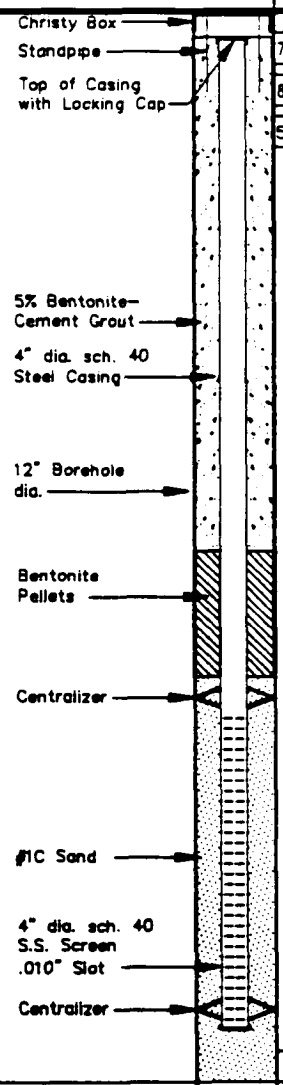
BORING NO. W9-33(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 51.5 ft.

COORDINATES N ____ E ____
DATE BEGAN 4/12/90
DATE FINISHED 4/13/90
GROUND SURFACE EL. ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0	MD1	16/18	7/18/21	CL	SILTY CLAY, brownish black to medium gray, firm, dry non-plastic to medium plastic. Increase in moisture-moist to dry at 3'. Changes to brownish color with inclusions of brownish black clay.
	MD2	11/18	8/12/16		
5	MD3	12/18	5/6/9		
		51/60		CL	SILTY CLAY, dusky yellowish green, very soft, moist low to medium plastic, silt decreasing with depth. ▽ Groundwater At 9 Ft.
10		5/60		SW	GRAVELLY SAND, dusky yellowish green, wet, very loose, grain size medium sand, fine gravel, (some clay matrix). Flowing sands
15		4/60		SP	SAND coarse to fine, very wet, no cohesion, some fine gravel. Flowing sands
				SC	CLAYEY SAND, dark grey, wet, no to little cohesion.
20				CL	CLAY, greenish gray, wet, very soft, plastic.
				ML	CLAYEY SILT, soft, medium plastic.
		60/60		SP	SILTY SANDY, light olive brown, wet, loose, fine sand, some organics.
25				CL	SILTY CLAY, light olive brown, moist, low to medium plastic, soft to firm, greenish gray at base.
		60/60		ML	CLAYEY SILT, light olive brown, moist, low plasticity, firm, mottled with gray clay at 28'.
30				CL	CLAY, medium bluish gray, mottled with olive brown, moist, medium firm, plastic.
				ML	CLAYEY SILT, light olive brown, moist, firm, low plasticity.
		60/60		SM	SILTY SAND, light olive brown, layers of silt, very wet, silt matrix, loose.
				GP/SP	GRAVELLY SAND(very coarse sand with fine gravel), olive gray, very wet, very loose gravel sub-angular.
35		45/60		GW	SAND, medium grain, moderate olive brown, no cohesion, grains sub rounded with some sub angular. Flowing sands
40		4/60			SAND AND GRAVEL (silt matrix) gravel angular, very coarse, to fine sand, silt, no cohesion, light brown. Flowing sands
45		24/60			
50	NA	18/18	NA	ML	SANDY SILT, grading to clayey silt, dusky yellow, slightly moist, firm, non-plastic to medium plastic.
					TOTAL DEPTH AT 51.5 FT.
55					
60					
65					
70					

WELL SUMMARY



DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PAGE 1 OF 1

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-33(MF19)

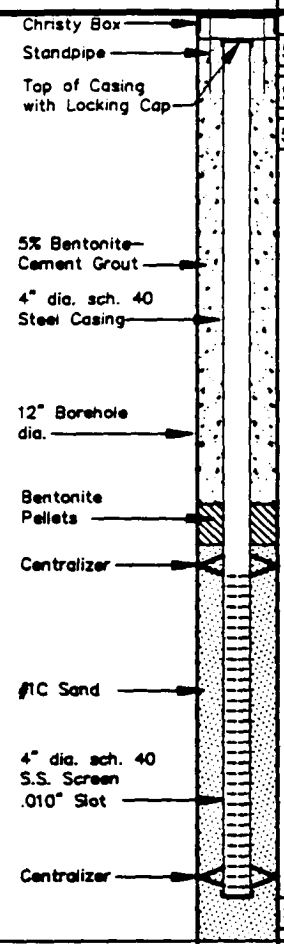
BORING NO. W9-34(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST J. Strack
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 44.6 ft.

COORDINATES N ____ E ____
DATE BEGAN 5/4/90
DATE FINISHED 5/4/90
GROUND SURFACE EL. ____

SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
MD1	18/18	5/8/10	CH	CLAYEY SAND with fine gravel fill material, dark yellowish brown, medium dense, moist.
MD2	16/18	5/10/12	CH	CLAY, grayish black, moist, high plasticity. Olive gray at 15 inches. Light olive gray at 40 inches.
MD3	14/18	5/6/11	CH	
			CL	SILTY CLAY, dusky yellowish green moist, medium plasticity, becoming wet at 16'.
			SM	SILTY SAND, grayish green, wet. Groundwater At 18 Ft.
			ML	SANDY SILT-CLAYEY SILT, wet.
			SM	SILTY SAND, wet.
			SP	GRAVELLY SAND, dusky yellowish brown, matrix, wet, loose.
	18/18	5/8/10	CL	SILTY CLAY, moderate olive brown, moist, medium plasticity.

WELL SUMMARY



TOTAL DEPTH AT 44.6 FT.

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-34(MF-19)

BORING NO. W9-35(A1)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 25.0 feet

COORDINATES N ____ E ____
DATE BEGAN 4-25-90
DATE FINISHED 4-25-90
GROUND SURFACE EL. ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	WELL SUMMARY	BLOWS ON SAMPLER	USCS	DESCRIPTION
0			Christy Box		SM	SILTY SAND:
	MD1	16/18	Standpipe	7/7/11	ML	CLAYEY SILT: light olive gray, slightly moist, low to medium plasticity, firm to soft.
	MD2	13/18	Top of Casing with Locking Cap	7/8/10	ML	CLAYEY SILT: olive gray, moist, non-plastic, firm to very firm, some fine sand layers 1-2" in clay matrix. low plasticity near base.
5	MD3	14/18	5% Bentonite-Cement Grout	3/3/3	ML	
	Continuous Core	37/60	4" dia. sch. 40 Steel Casing		SC	CLAYEY SAND: light olive brown (gradational upper contact), soft to very soft, wet, low to medium plasticity to 8', non-plastic below, (medium to fine sand-trace fine gravel), light brown streaks near base, very low clay last 4".
10			Bentonite Pellets		CH	CLAY: light olive brown, slightly moist, very firm, very plastic. 12.5'
		50/60	12" Borehole dia.		SW	SAND: light olive brown, medium rounded, fine to coarse, poorly graded, sharp contacts. 13.0'
15		20/60	#1C Sand		SP	SAND: olive brown, coarse grain, wet, very loose, subrounded to subangular, some fine to very fine gravel at 15.0', well graded. 15.0'
20			4" dia. sch. 40 S.S. Screen .010" Slot		SP	15-20' medium sand poorly graded, some very coarse sand >1%. 21.5'
		43/60			SC	CLAYEY SAND: light olive gray, fine sand, clay matrix 10-20% medium coarse, very wet.
					CL	SANDY CLAY: grayish green, medium plastic, wet, very fine sand 10-20%, soft.
25						SILTY CLAY to SILT: grayish green to grayish olive, moist to dry, plastic to non-plastic at base, firm at 24' hard at 25'.
						TOTAL DEPTH 25 FEET

30 35 40 45 50 55 60 65 70

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION:. Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-35(MF14)

BORING NO. W9-37(A1)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 21.5 feet

COORDINATES N ____ E ____
DATE BEGAN 4-10-90
DATE FINISHED 4-10-90
GROUND SURFACE EL. ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0				GC	CLAYEY GRAVEL: red brown, dry, loose. 1.5'
	MD1	16/18	6/12/21	CL	SILTY CLAY: medium light gray dark gray, slightly moist, firm, moderately plastic.
	MD2	14/18	6/12/19		5.0'
5	MD3	14/18	4/7/9	CL	SILTY CLAY: dark yellowish brown, low plasticity, slightly moist, firm. 7.0'
	Continuous Core	60/60		ML	CLAYEY SILT: olive gray (7-8'), moderate yellow brown below, slightly moist to moist, soft, low plasticity, some coarse sand inclusions near top of unit.
10					▽ Groundwater encountered at 11.0' 11.0'
		60/60		SM	SILTY SAND: dark orange yellow to light olive gray, wet, medium dense to loose, fine to very fine sand. 14.0'
				SC	CLAYEY SAND: medium dark gray, wet, loose, fine to very fine sand. 15.0'
15				CL	SILTY CLAY: dark gray, moist, firm, medium plasticity. 16.0'
		45/60		GW	SANDY GRAVEL: light olive brown, very wet, loose sand, fine to coarse gravel, some silt 16-17', coarse material sub-angular. 21.0'
20		18/18		CL	CLAY: light gray, soft, moist, moderately plastic.
					TOTAL DEPTH 21.5 FEET
25					
30					
35					
40					
45					
50					
55					
60					
65					
70					

WELL SUMMARY

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS
FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-37(MF14)

BORING NO. W9-38(A1)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 30 feet

COORDINATES N ____ E ____
DATE BEGAN 4-11-90
DATE FINISHED 4-11-90
GROUND SURFACE EL ____

SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
MD1	13/18	6/9/21	CL	SILTY CLAY: dark gray, slightly moist, firm moderately plastic.
MD2	14/18	6/9/10	CL	Sandy silty gravel at 4' (9" thick), moderate yellowish brown.
MD3	11/18	5/6/11	CL	Olive black, low plasticity, gravel inclusion. 6.0'
			ML	CLAYEY SILT: mottled greenish gray, slightly moist, soft, to very soft, non-plastic. 7.0'
	50/60		SP/SC	SILTY GRAVELLY SAND: greenish gray with yellow brown streaks, coarse sand and medium gravel, subangular, slightly moist, loose to very loose. 10.0'
			CL	SANDY CLAY: dusky yellow, wet, very soft, medium plastic. 11.0'
	47/60		SC	CLAYEY SAND: dusky yellow, wet, low plasticity, coarse to very coarse sand, very loose. 12.0'
			CL	SANDY CLAY: dusky yellowish brown, wet, soft, medium plastic. 14.0'
	47/60		GM/GW	SILTY GRAVEL: moderate brown, wet, very loose, coarse to very coarse sand turns to coarse gravel, fractures, occasional layer of medium to coarse sand. 20.0'
	5/60		SP	FLOWING SANDS: increased silt at 23' (as seen in core barrel, actual depth unknown. 23.0'
	16/60		SP	SAND: moderate yellow brown, medium to very fine, very wet, very loose, mostly medium rounded to subrounded.

Continuous Core

WELL SUMMARY: Christy Box; Standpipe; Bentonite/Cement Grout; Top of Casing; Bentonite Pellets; 4" dia. sch. 40 Steel Casing; Centralizer; #1C Sand; 4" dia. sch. 40 S.S. Screen .010" Slot; Centralizer; Backfill: Bentonite

TOTAL DEPTH 30.0 FEET

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

PAGE 1 OF 1

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

TRC INTERNATIONAL

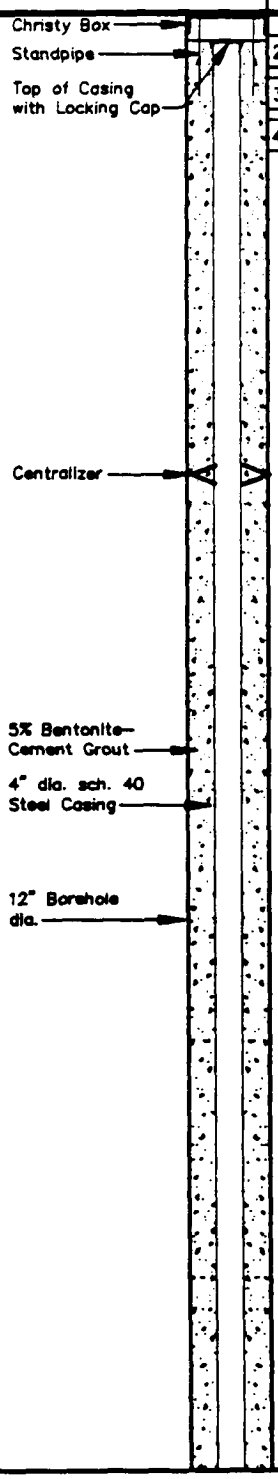
BORING NO. W9-39(B2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST C. Dorgan
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 97 ft.

COORDINATES N ____ E ____
DATE BEGAN 5/9/90
DATE FINISHED 5/9/90
GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0					Asphalt & fill material.
	MD1	15/18	2/3/4	SW	GRAVELLY SAND(Some Silts), moderate olive brown, slightly moist, loose.
				ML	CLAYEY SILT, light olive gray, dry, stiff.
	MD2	17/18	3/5/7	ML	CLAYEY SILT, olive gray, slightly moist, stiff, increase in moisture and darkness in color with depth.
5	MD3	18/18	4/3/6		
10				GP/GW	SANDY GRAVELS, (medium-coarse sands & fine gravels), loose. Grondwater At 12 Ft. ▽
15				CH	SANDY SILTY CLAY, mottled moderate olive brown, and light olive gray, moist, soft highly plastic.
20				ML	CLAYEY SILT, yellowish gray, moist, soft, moderate plasticity, increase in sands with depth.
				GC	SANDY GRAVELS, loose, coarse sands and fine-medium gravels. Clay still present.
25				CL	SANDY SILTY CLAY, moderate olive brown, moist, medium stiff, moderately plastic.
30				CL	SANDY CLAY, grayish green, wet, soft , moderate plasticity. (Sands are medium to coarse grained).
35	Grab Sample			GW	SANDY GRAVELS.(Graded sequence-coarse sands to cobbles 3"), sub-rounded loose, various minerology, many quartz rich.
40					
45				ML/SM	SANDY SILTY, highly mottled light olive gray and dark yellowish brown, soft, low plasticity, carbonate zones mottled partings.
50					
55				CH	SILTY CLAY, mottled light olive brown and dusky yellowish green, moist, soft-medium stiff. Moderately highly plastic.
60				CH	CLAY, light olive brown, wet, medium stiff, highly plastic.
65				CH	SILTY CLAY, medium bluish gray, dry-slightly moist, moderately-highly plastic when wetted.
70					

WELL SUMMARY



DRILLING CO.: Water Developement
DRILL METHOD: Air Rotory with Drive Casing

PAGE 1 OF 2

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

INTERNATIONAL

BORING NO. W9-39(B2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST C. Dorgan
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 97 ft.

COORDINATES N ____ E ____
DATE BEGAN 5/9/90
DATE FINISHED 5/9/90
GROUND SURFACE EL. ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in)	WELL SUMMARY	BLOWS ON SAMPLER	USCS	PROFILE	DESCRIPTION
70							
75			5% Bentonite-Cement Grout		CL		
					SM		SILTY SAND, grayish olive, soft. Grayish olive, wet, fine-medium gravel soft.
80			Bentonite Pellets				SAND, grayish olive, fine, loose.
85			Centralizer				
			#1C Sand		SW		Increase in sands grain size with depth.
90			4" dia. sch. 40 S.S. Screen .010" Slot				
95			Centralizer		CL/CH		SILTY CLAY, light olive gray, moist, moderately stiff, highly plastic.
	Grab Sample						TOTAL DEPTH 97 FT.
100							
105							
110							
115							
120							
125							
130							
135							
140							

DRILLING CO.: Water Developement
DRILL METHOD: Air Rotory with Drive Casing

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-39(MF-19)

BORING NO. W9-41(A2)

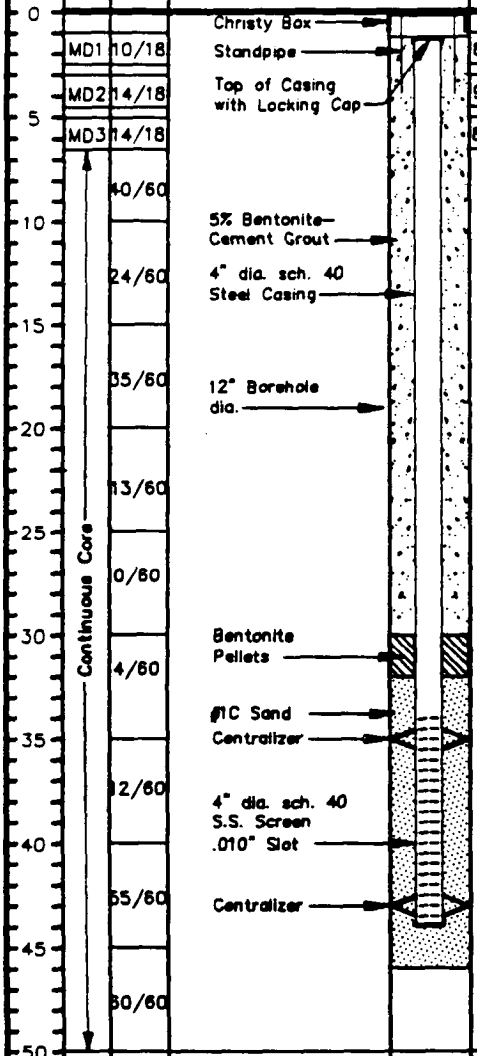
PROJ. GEOL. S. Bartling
FIELD GEOLOGIST C. Dorgan
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 50 ft.

COORDINATES N ____ E ____
DATE BEGAN 4/30/90
DATE FINISHED 5/1/90
GROUND SURFACE EL ____

DEPTH IN FEET	SAMPLE TYPE & NUMBER	RECOVERY/DRIVE (in.)	BLOWS ON SAMPLER	USCS	DESCRIPTION
0					Fill Material
	MD1	10/18	8/12/15	CL	SILTY CLAY, olive gray, slightly moist, low-medium plastic.
	MD2	14/18	9/11/16	SM/OH	SANDY SILT, dark yellowish brown, slight moisture CLAY, grayish black, low-medium plastic.
5	MD3	14/18	8/10/15	OH	CLAY, some fine gravels, grayish black, slight moisture, medium plastic when wetted. Gravels increase in size and abundance with depth, highly mottled-color lightens with depth. Groundwater At 8.5 Ft. ∇
		40/60		SM	SANDY SILT with fine gravels, wet.
10				SP	GRAVELLY SAND, medium sands and fine gravels, highly oxidized, dark yellowish brown, wet, no plasticity.
		24/60		SM	SANDY SILTS, moderate yellowish brown, wet, non-plastic.. Sands increase with depth few fine-medium gravels.
15					
		35/60		SW	SAND well graded, olive gray, wet, non-plastic(no gravels), sub-angular/sub-rounded.
20					
		13/60		GW/SM	SANDY SILT to SANDY GRAVEL, olive gray, wet, (gravels are fine grained).
25		0/60			
30		4/60			
35				SM	SANDY SILT, light olive gray, wet, fine-medium grained and coarse sands.
		12/60		CL	GRAVELLY CLAY, moderate yellowish brown, moist, very low plasticity, highly weathered gravels and coarse sands
40				CL	SILTY CLAY, grayish green, wet, medium to high plasticity, highly mottled to light brown in areas.
		55/60		CL	SANDY SILT CLAY, light olive gray, wet, moderate plasticity, highly mottled, decrease in sands with depth increase in plasticity.
45				CL	
		30/60		CL	GRAVELLY SILTY SANDY CLAY, dark yellowish brown, wet, moderate plasticity, highly mottled increase in sands and gravels with depth.
50					TOTAL DEPTH 50 FT.
55					
60					
65					
70					

Continuous Core

WELL SUMMARY



PROFILE

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-55)

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

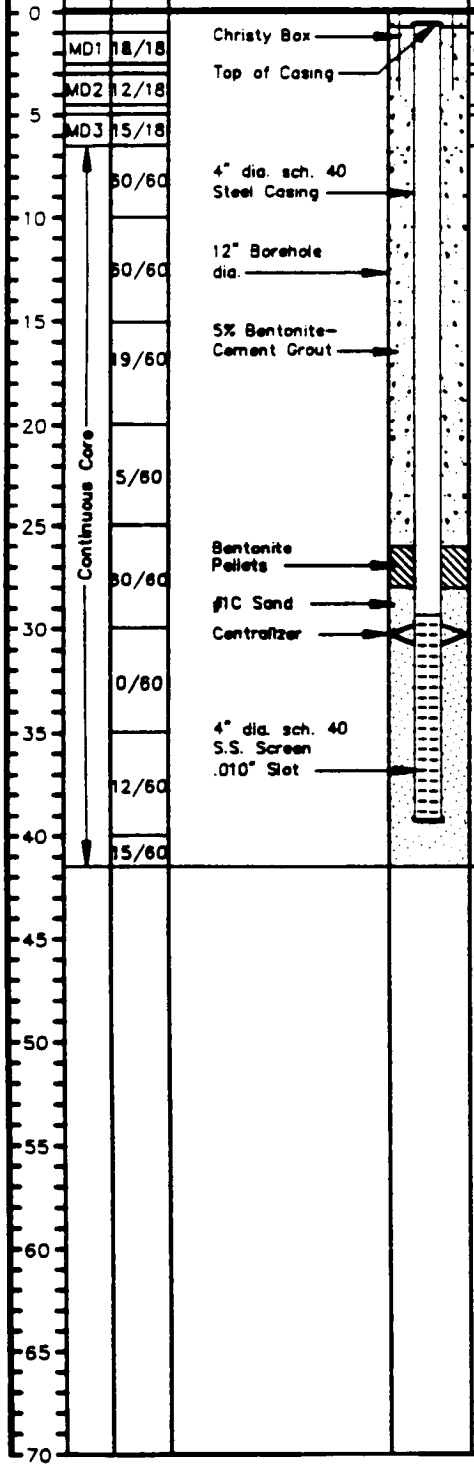
INTERNATIONAL TECHNOLOGY CORPORATION

MF-W9-41(MF-19)

BORING NO. W9-42(A2)

PROJ. GEOL. S. Bartling
FIELD GEOLOGIST T. Ault
EDITED BY T. Ault
CHECKED BY W. Garber
TOTAL DEPTH 41.5 feet

COORDINATES N ____ E ____
DATE BEGAN 4-25-90
DATE FINISHED 4-25-90
GROUND SURFACE EL. ____



USCS	DESCRIPTION	Depth
ML	CLAYEY SILT: light olive brown, slightly moist, firm to hard.	1'
ML	CLAYEY SILT: olive gray, slightly moist, slightly firm, non-plastic.	5.0'
CL	SANDY CLAY: medium bluish gray, very moist, soft, plastic, very fine sand.	6.5'
ML	SILT: moderate yellow brown, fine to very fine sand to 7.5', moist, firm, moderate to non-plastic, brown and gray mottling at intervals, gray at base, firm.	10.0'
SC	CLAYEY SAND: medium bluish gray, moist to very moist, medium dense, some plasticity near base, very fine sand, abundant clay matrix, mottled gray to moderate yellow brown at base.	14.0'
ML	SILT: moderate yellow brown, moist, medium to moderately firm, non-plastic.	15.0'
SP	SAND: moderate yellow brown, medium grain, very wet, round	15.5'
GW	SANDY GRAVEL: pale yellow brown, very wet, very loose, fine to medium gravel, medium to coarse sand <10%, clay or silt matrix <1%, sand rounded, gravel subrounded, color change to moderate yellow brown, some clay-silt matrix at 21'.	25.0'
CL	SANDY CLAY: moderate yellow brown, very wet, very soft, very plastic, very fine sand <5%, numerous white concretions, carbonate (HCl test).	28.0'
MH	SANDY SILT: moderate yellow brown, wet, non-plastic, soft.	29.5
SP	SILTY SAND: dusky yellowish orange, very wet, loose, fine sand grading to medium, poorly graded at particular depth, rounded sand.	30.0'
SP	FLOWING SANDS:	37.0'
SP	SAND: light olive gray, very wet, very loose, fine to medium grain, poorly graded, rounded to subangular sand.	40.0'
GC	GRAVELLY SANDY CLAY: moderate olive brown, soft, plastic, wet to moist.	41.0'
	GRAVELLY SANDY SILT: moderate olive brown, low to non-plastic, subangular gravel.	

TOTAL DEPTH 41.5 FEET

DRILLING CO.: Water Developement
DRILL METHOD: Hollow Stem Auger (Rig CME-75)

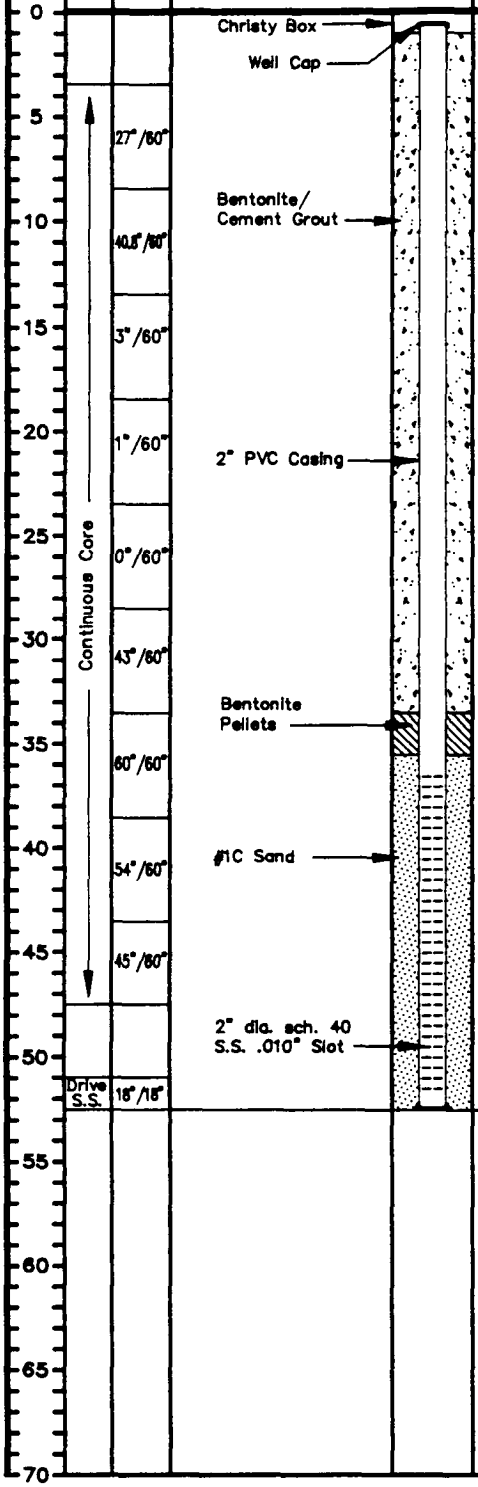
SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

PROJECT NO.: 409700
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California

BORING NO. PT9-3(A2)

FIELD GEOLOGIST D. Kessler
CHECKED BY D. Korfas
APPROVED BY D. Cox
TOTAL DEPTH 52.5 ft.

APPROXIMATE LOCATION
DATE BEGAN 10-3-91
DATE FINISHED 10-7-91
SURFACE ELEV.



USCS	DESCRIPTION	
	FILL; asphalt, crushed gravel.	0.5'
cl	FILL; Silty clay, black, moist, medium to high plasticity, small rock fragments; silty clay with gravel, black, mottled orange to light brown, moist, medium plasticity.	8.0'
	Sandy CLAY with gravel, light to gray, very moist, sand medium grained, well rounded.	8.5'
sw	Well graded SAND, trace silt, dark reddish brown, very moist, medium grained, subrounded.	11.9'
ml	SILT, trace gravel, dark gray, some mottling light brown, moist, rounded gravels.	13.5'
gm	Sandy GRAVEL with silt, dark gray, wet, rounded.	17.0'
sw	Well graded gravelly SAND, very dark grayish brown, wet, sub angular to rounded grains. Water flowing from borehole – Artesian @ 20'.	28.5'
ch	Silty CLAY, mottled brown and dark gray, moist, very stiff, high plasticity, very small rock fragments.	30.5'
sp/sw	Well graded clayey SAND, olive brown, wet, 60% sand, 40% clay, fine sand grading to coarse grain, sub angular to rounded.	33.6'
ml	Clayey SILT, trace gravel, mottled light and dark olive brown, moist, high plasticity, organics. Clayey SILT, trace gravel yellowish brown, moist, sand lenses shifting to a gray mottled brown.	39.0'
sw	Well graded SAND, dark grayish brown, wet, loose.	39.6'
mh	Clayey SILT, with gravel, gray, wet, high plasticity.	41.5'
sw	Well graded gravelly SAND, dark grayish brown, wet, subangular to rounded.	43.5'
sp	Poorly graded SAND, dark grayish brown, wet, rounded grains, fines grading to sandy gravel.	46.5
gp	Sandy GRAVEL, dark grayish brown, wet, rounded.	51.0'
ch	Silty CLAY, trace gravel, light yellowish brown, moist, high plasticity.	52.4'
sc	Clayey SAND, light gray wet, loose, well rounded grains.	

TOTAL DEPTH 52.5 FEET

DRILLING CO.: Water Development Corporation
DRILLER: R. Williamson
DRILLING METHOD: Hollow Stem Auger – 8" O.D.
SAMPLING METHOD: See Log
CLIENT: Moffett Naval Air Station
LOCATION: Moffett Field, California
PROJECT NO.: 409729

PT9-3(MF42)

SEE LEGEND FOR LOGS AND TEST PITS FOR EXPLANATION OF SYMBOLS AND TERMS

INTERNATIONAL TECHNOLOGY CORPORATION

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 9 – WELLS (CLEAN)

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

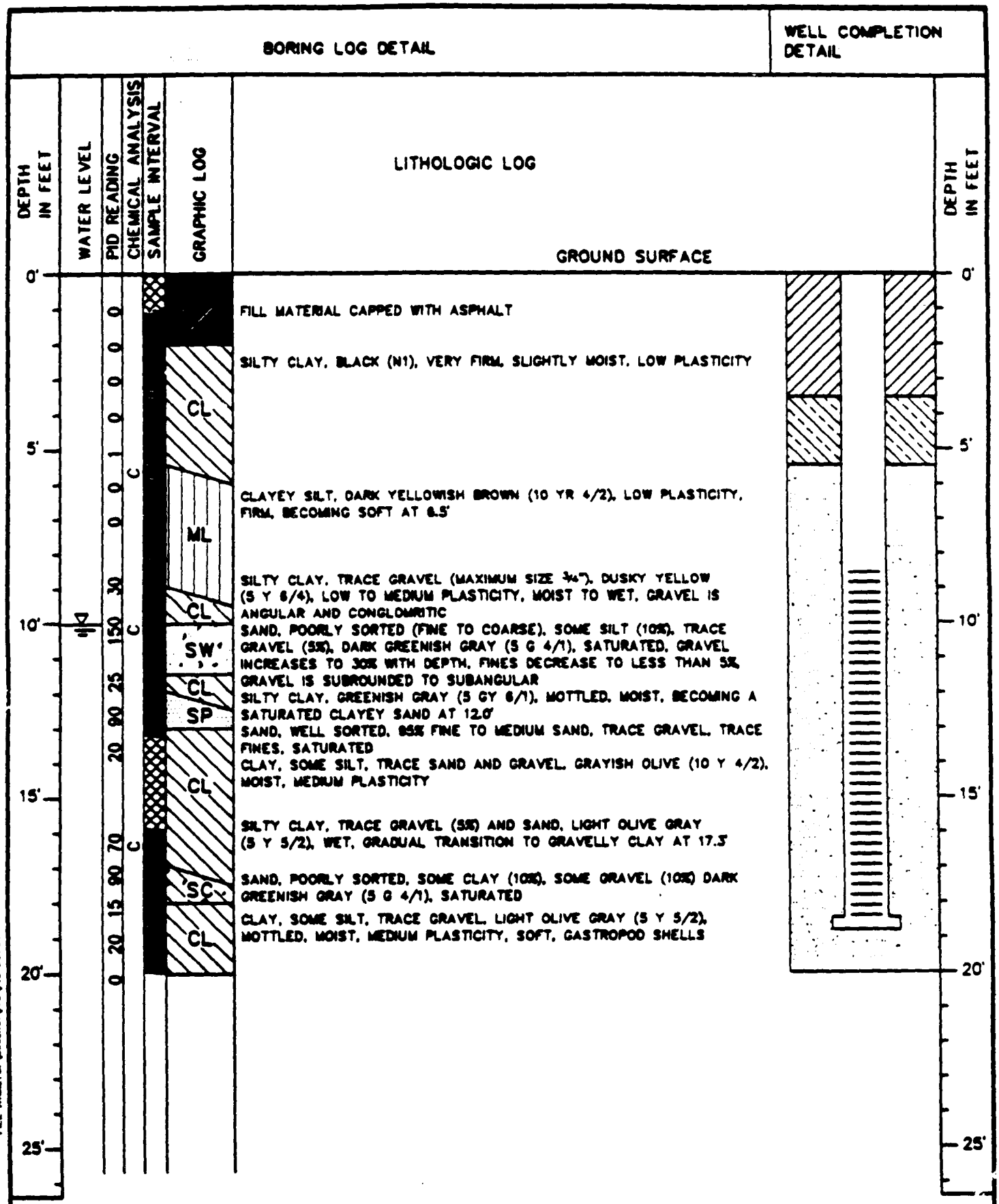


FIGURE D-1
NAS MOFFETT FIELD BUILDING 29 AREA
W29-1(A)

SCALE: AS SHOWN

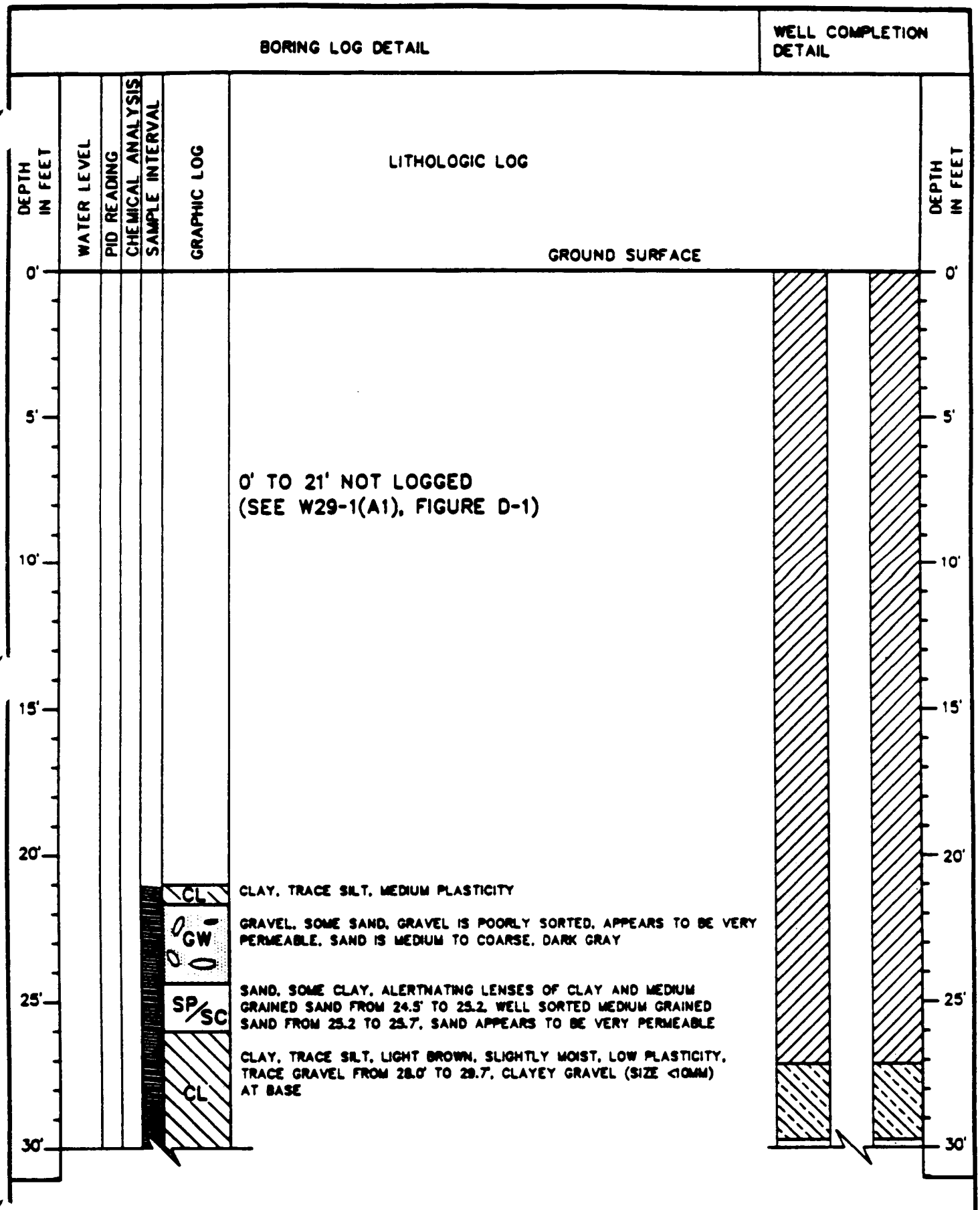


FIGURE D-7
NAS MOFFETT FIELD BUILDING 29 AREA
W29-7(A2)

SCALE: AS SHOWN

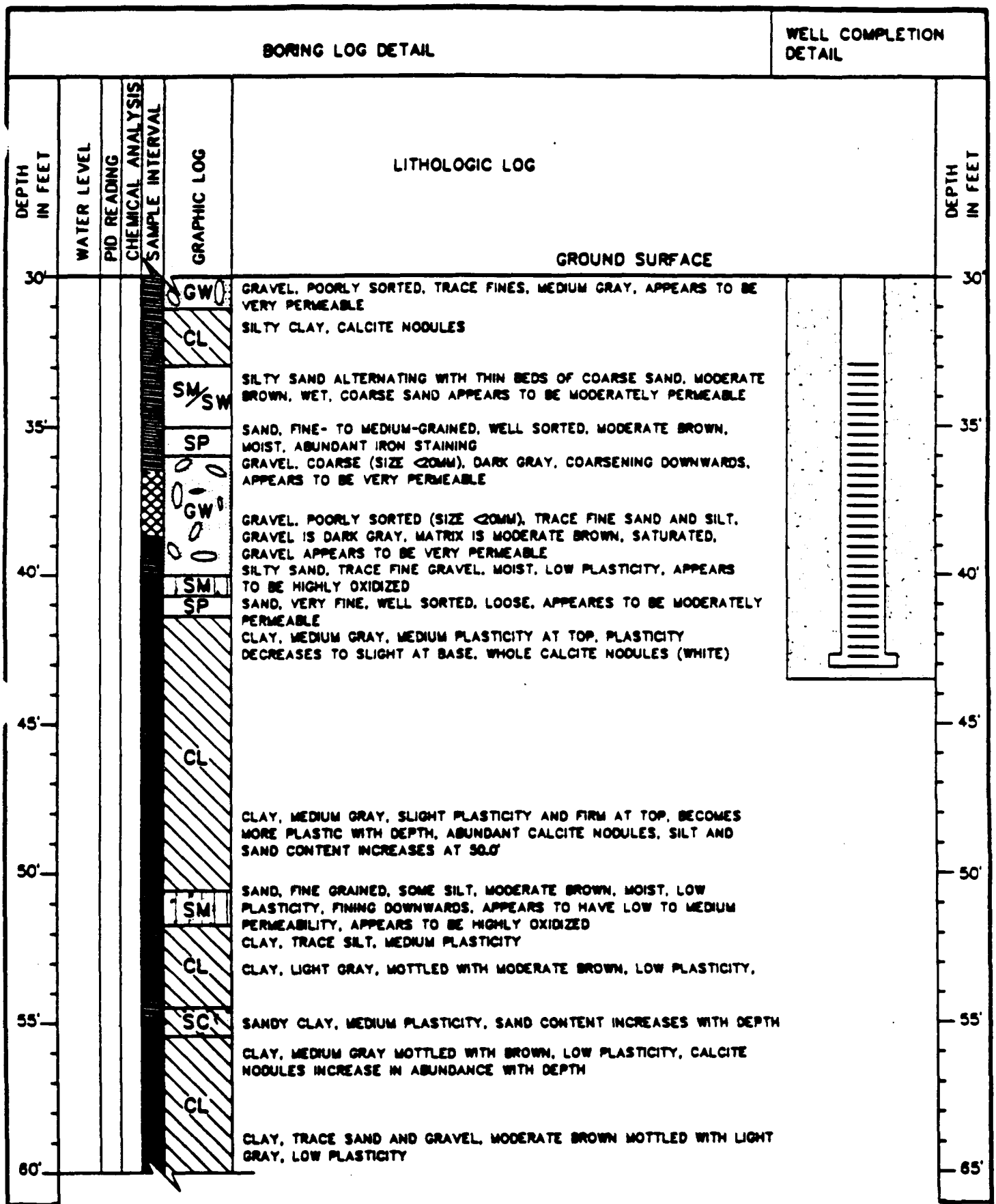


FIGURE D-7 (CONT.)
NAS MOFFETT FIELD BUILDING 29 AREA
W29-7(A2)

SCALE: AS SHOWN

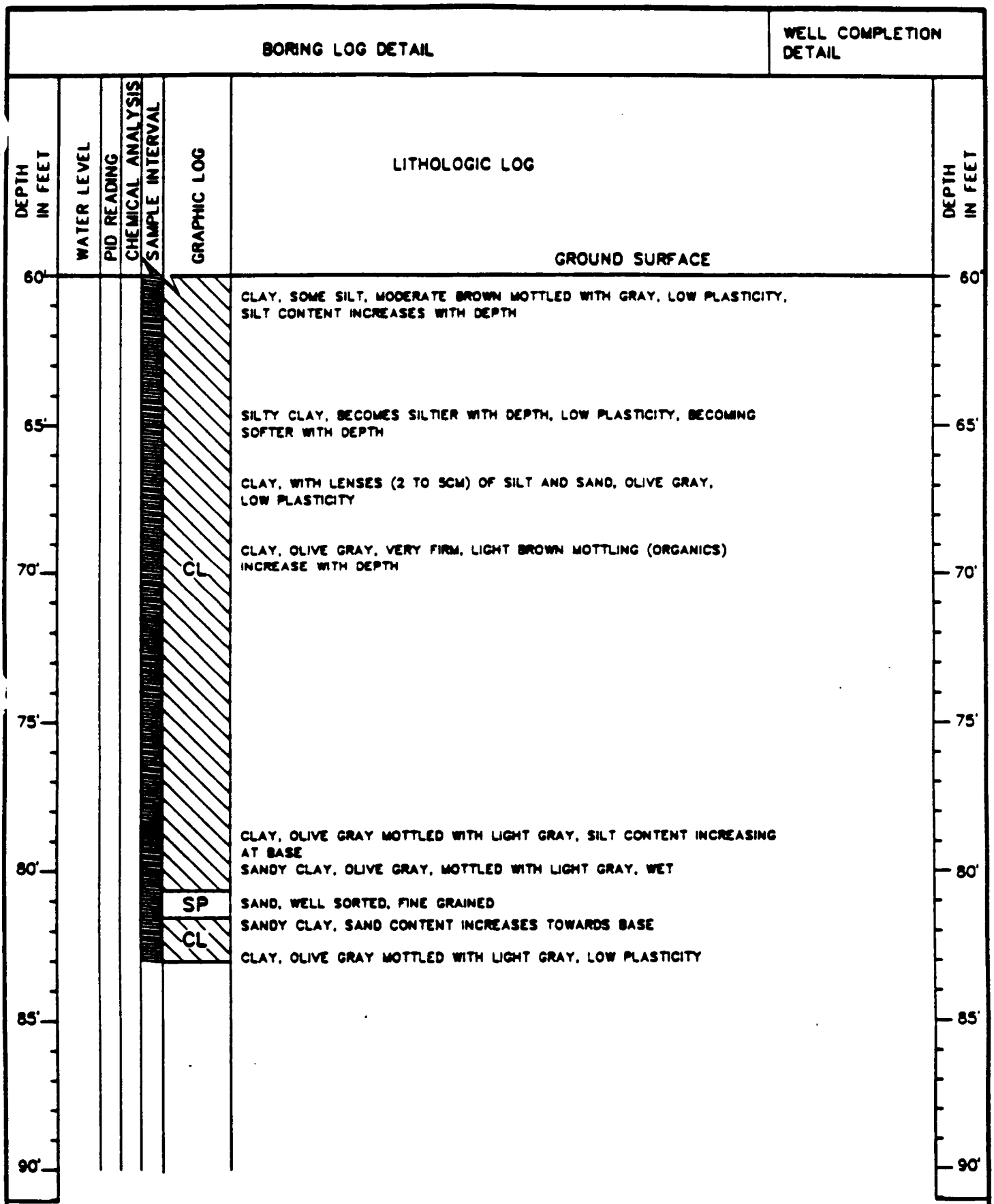


FIGURE D-7 (CONT.)
NAS MOFFETT FIELD BUILDING 29 AREA
W29-7(A2)

SCALE: AS SHOWN

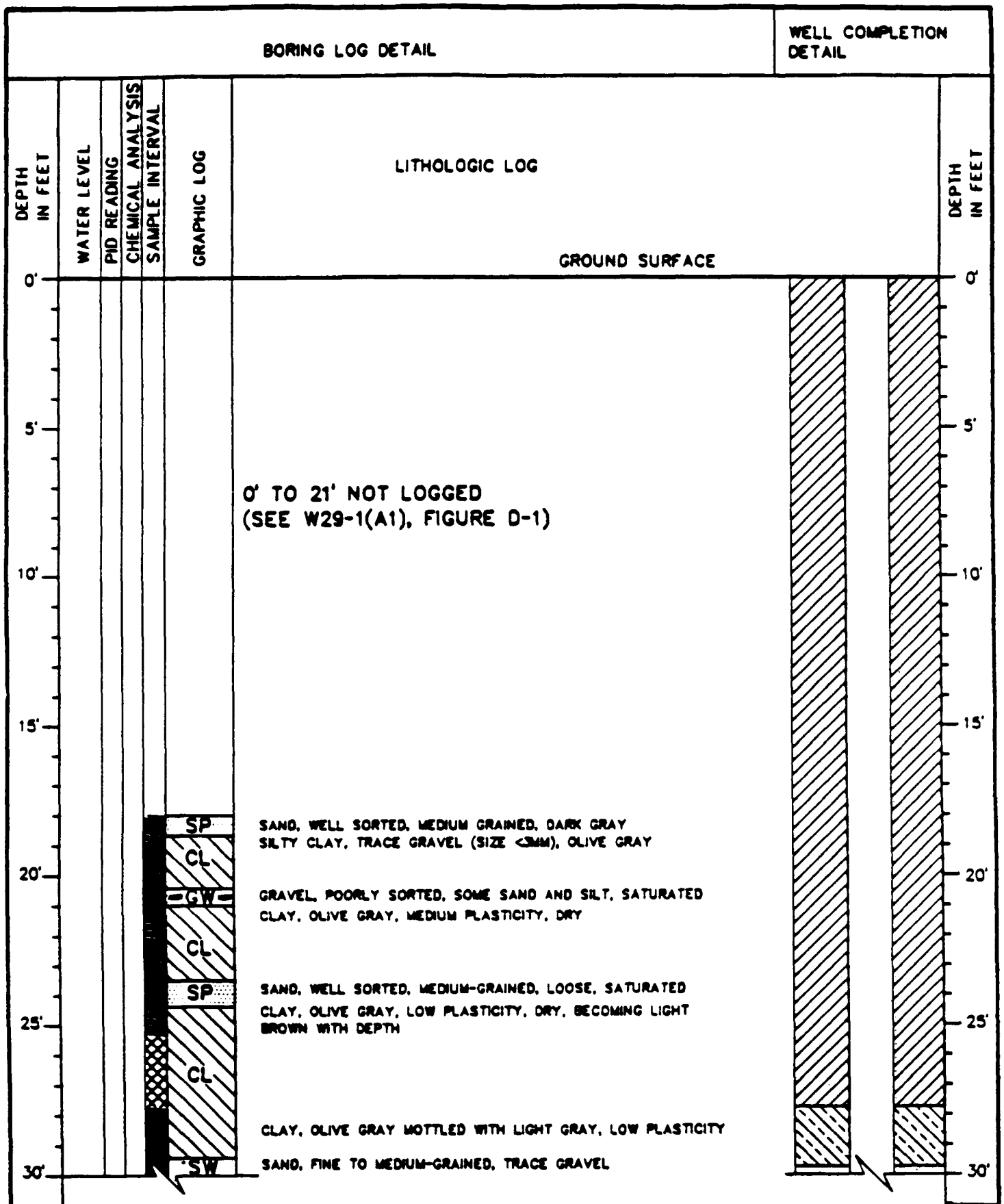


FIGURE D-10
NAS MOFFETT FIELD BUILDING 29 AREA
W29-10(A2)

SCALE: AS SHOWN

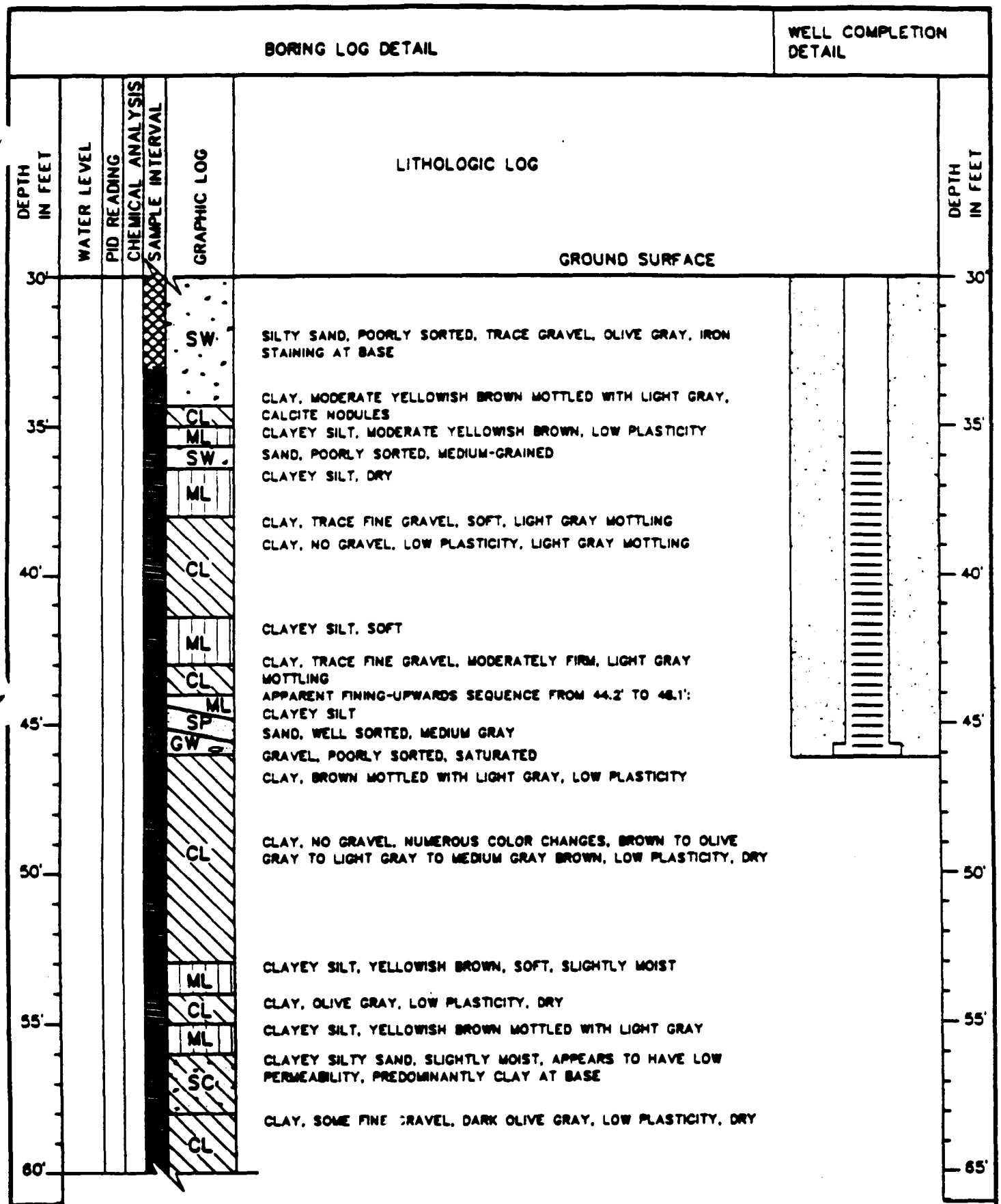


FIGURE D-10 (CONT.)
NAS MOFFETT FIELD BUILDING 29 AREA
W29-10(A2)

SCALE: AS SHOWN

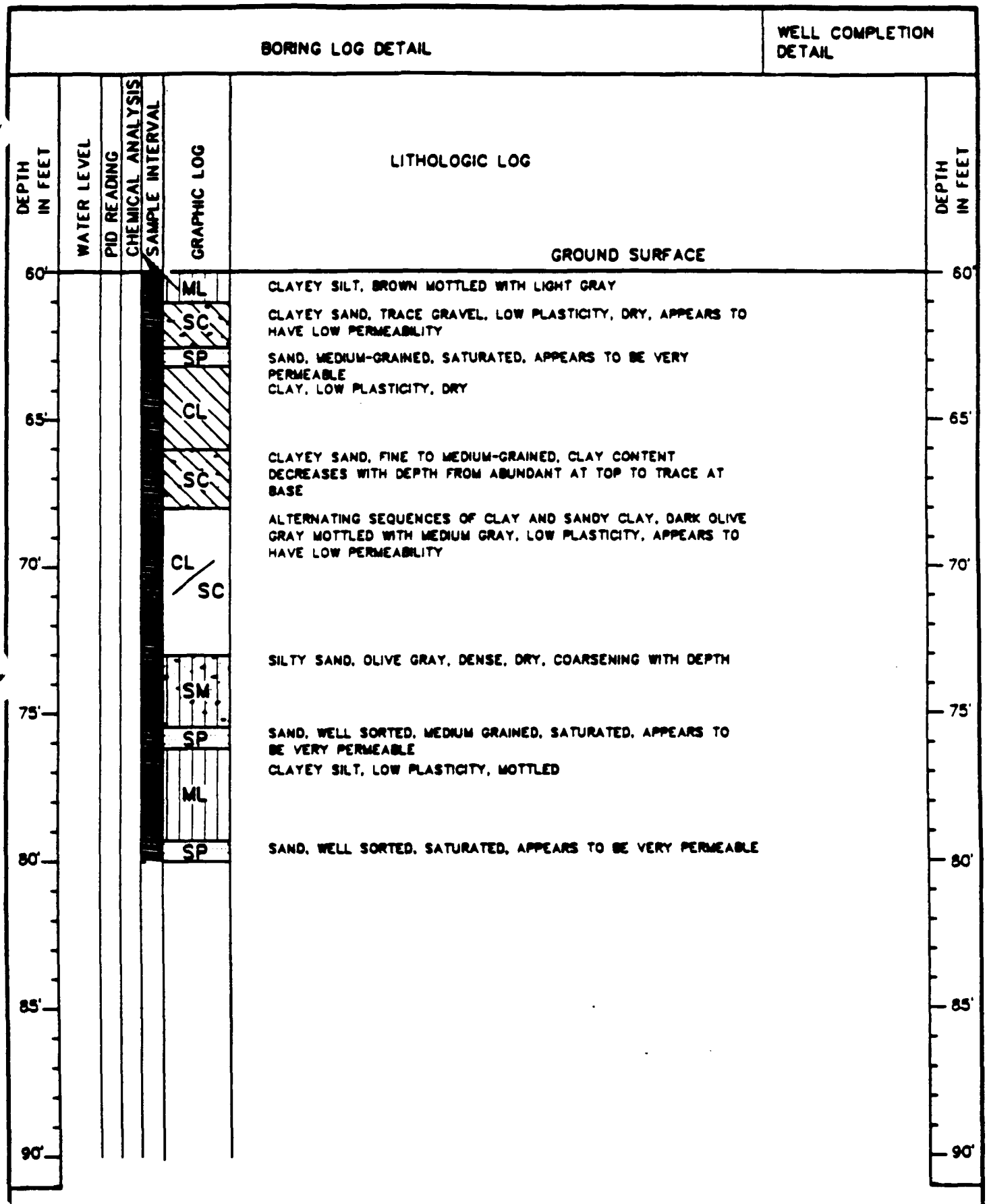


FIGURE D-10 (CONT.)
NAS MOFFETT FIELD BUILDING 29 AREA
W29-10(A2)

SCALE: AS SHOWN

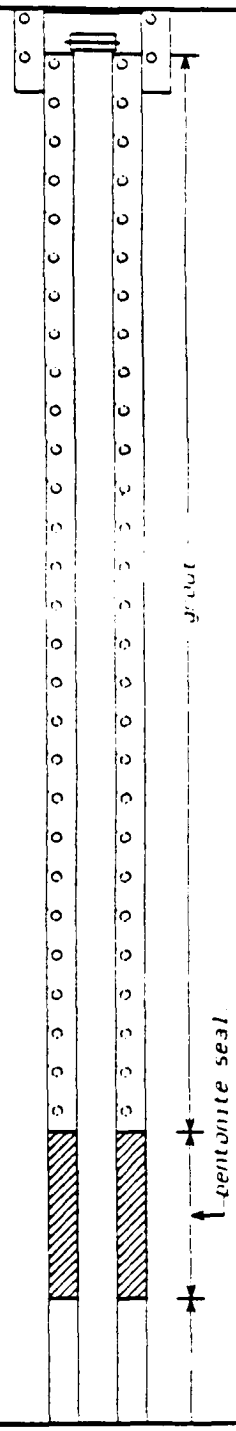
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.

365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER *WB9-1 (A)* CLIENT *US NAVY*
DATE STARTED *11/07/90* COMPLETED *11/09/90* PROJECT *NAS MOFFETT FIELD IS 8 and 9*
ELEVATION *37.32 FEET, Top of Box* GEOLOGIST *CHRIS PETERSEN*

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
		100%	6	0.0		CL	CLAY loamy, dry, dark clay.
1			8				
			9				
2		95%	7	0.0			
			9				CLAY, stiff, dry, grey, curious white interbedding - resistent clay.
3			9				
		100%	8	0.0			
4			9				CLAY, silty, light grey, mottled, ferrous staining.
			17				
5		80%	5	0.0			
			7				CLAY, silty, light grey, friable, dry, minor ferrous staining, calcite.
6			10				
		80%	7	0.0			
7			10				CLAY, very stiff, slightly silty, calcite veins, brown mottling.
			15				
8							
9							
10		100%		0.0			
							CLAY, very dark grey, stiff.
11							
							CLAY, very dark grey, grading into grey silty clay.
12						ML	SILT, with minor sand and gravel.
13						CL	CLAY, silty with ferrous stains, very mottled at base, moist. Silt decreases toward base.
14							
15		100%		0.0			
16							CLAY, silty, light grey, mottled, very moist downward fining to very stiff, grey clay, plastic.

WELL DIAGRAM



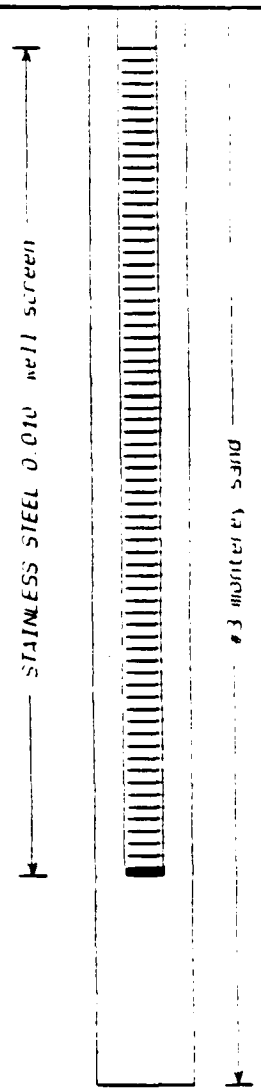
METHOD OF DRILLING *HOLLOW STEM AUGER* WELL COMPLETION DEPTH *29.8 FEET*
HOLE DIAMETER *12 INCHES* WELL DIAMETER *4 INCHES*
TOTAL DEPTH *30 FEET* WELL MATERIAL *LOW CARBON STEEL/STAINLESS STEEL*

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER W89-1(A) CLIENT US NAVY
DATE STARTED 11/07/90 COMPLETED 11/09/90 PROJECT NAS MOFFETT FIELD IS 8 and 9
ELEVATION 37.32 FEET, Top of Box GEOLOGIST CHRIS PETERSEN

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
18						CL	CLAY, grey, stiff, coarsening downward to light brown silt.
19						ML	SILT, sandy, dark brown, moist - not saturated, friable.
20		100%		0.0			SILT, sandy, dark brown, very moist, friable.
21							
22						CL	Abrupt change from sandy SILT to silty CLAY, fining downward to very dark grey clay with minor gravel.
23						GC	
24							
25		20%		0.0			Sample is a slurry of sandy gravel fining upward to a silty clay. The bottom 4 feet of sand and gravel (?) washed out.
26							
27							
28							
29							
30							
31							
32							
33							

WELL DIAGRAM



LOG OF WELL W89-1(A) (continued)

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

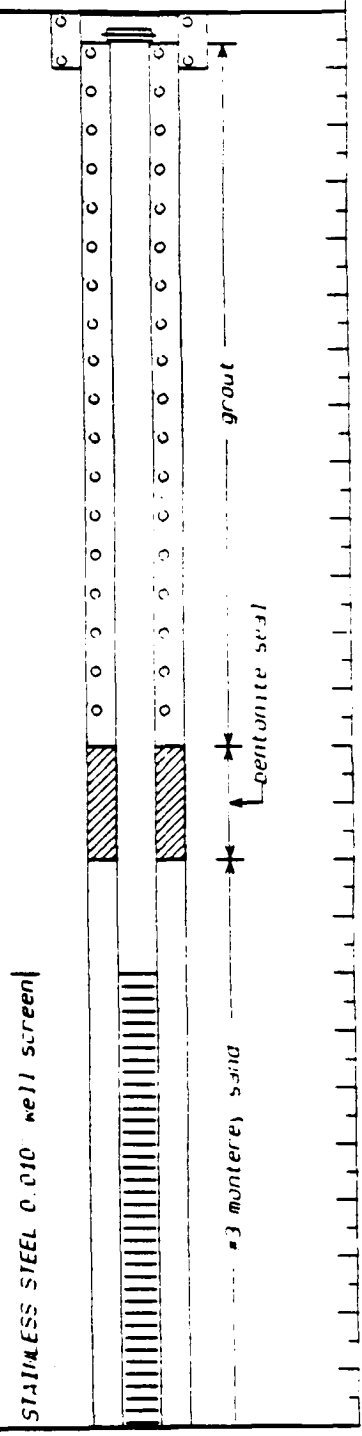
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER W89-2 (A)
DATE STARTED 11/08/90 COMPLETED 11/08/90
ELEVATION 34.96 FEET, Top of Box

CLIENT US NAVY
PROJECT NAS MOFFETT FIELD IS 8 and 9
GEOLOGIST CHRIS PETERSEN

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
1		100%	6 7 10	0.0		ML	CLAY, silty, dry, friable, roothairs, dark grey.
2		100%	5 7 9	0.0		CL	
3							Same as above, but some small calcite nodules.
4		100%	11 7 11	0.0			
5							CLAY, grey, friable with ferrous staining, calcite nodules, very stiff.
6		100%	7 8 10	0.0			
7		100%	7 7 11	0.0			
8							
9		100%	5 7 9	0.0			CLAY, grey to slightly green, low moisture, calcite nodules.
10		100%		0.0			CLAY, dark grey, stiff.
11							
12							CLAY, light grey with ferrous stains, coarsening downward.
13							CLAY, silty and sandy, ferrous stains abundant.
14							
15		80%		0.0			No recovery.
16						CL	CLAY, very plastic, iron staining.
17							CLAY gravelly, with minor silt, iron staining, very stiff, coarsening downward.
18							
19							CLAY, alternating sequences of clayey, sandy layers.
20		100%		0.0			
21							CLAY, gravelly, light brown, abundant iron staining, moderately stiff.
22							CLAY, dark grey, abrupt change, no iron stains.
23							
24		100%		0.0		SW	SAND, well sorted, wet.

WELL DIAGRAM



METHOD OF DRILLING HOLLOW STEM AUGER
HOLE DIAMETER 12 INCHES
TOTAL DEPTH 30 FEET

WELL COMPLETION DEPTH 30 FEET
WELL DIAMETER 4 INCHES
WELL MATERIAL LOW CARBON STEEL/STAINLESS STEEL

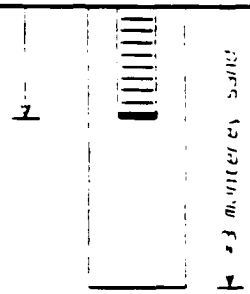
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER W89-2 (A)
DATE STARTED 11/08/90 COMPLETED 11/08/90
ELEVATION 34.96 FEET, Top of Box

CLIENT US NAVY
PROJECT NAS MOFFETT FIELD IS 8 and 9
GEOLOGIST CHRIS PETERSEN

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 in	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
26		60%		0.0		SW / CL	CLAY, grey, well graded sequence from grey clay to silts, gravelly, clay mix, dark greyish green.
27						GP	GRAVEL, sandy, poorly sorted, very wet, brown gravels up to quarter inch in size.
28							No sample recovery.
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							
41							
42							
43							
44							
45							
46							
47							
48							
49							

WELL DIAGRAM



LOG OF WELL W89-2 (A) (continued)

JAMES M. MONTGOMERY CONSULTING ENGINEERS, INC.

365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-1/W89-11 (B1) CLIENT US NAVY
DATE STARTED 11/14/90 COMPLETED 12/7/90 PROJECT NAS MOFFETT FIELD IS 3 and 9
ELEVATION 37.44 FEET, Top of Box GEOLOGIST CRAIG STEVENS

DEPTH feet	SAMPLE	RECOVERY	BLOWS 6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
1		100%		0.0		CL	Where sample recovery was low or non-existent, lithologic descriptions were based on cuttings carried up with return mud.	
2							CLAY, silty, dark brown, loamy, dry, low PI, rootlets.	
3								
4								
5		50%		0.0			CLAY, silt, gray-green, streaks of whitish clay and oxidized iron, dense, dry, medium plasticity.	
6								
7								
8								
9		60%		0.0			Same as above.	
10								
11								
12								
13							Increase in sand (2-3%), some gravel (2-4 mm) at 12 - 13 feet.	
14		60%		0.0		ML CL		
15							CLAY, silty/clay SILT, some fine sand and gravel (2-4 mm), gray-green, wet, low plasticity, streaks of oxidized material, some rootlets.	
16								
17								
18								
19		5%		0.0				
20							Same as above with some coarser sand (5%).	
21								
22								
23								
24		0%				SW	SAND, well graded, some fine gravel (based on cuttings in drilling fluid).	
25								

METHOD OF DRILLING MUD ROTARY WELL COMPLETION DEPTH 62 FEET
HOLE DIAMETER 10 INCHES WELL DIAMETER 4 INCHES
TOTAL DEPTH 103 FEET WELL MATERIAL LOW CARBON STEEL/STAINLESS STEEL

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-1/W89-11 (B1) CLIENT US NAVY
DATE STARTED 11/14/90 COMPLETED 12/7/90 PROJECT NAS MOFFETT FIELD IS 8 and 9
ELEVATION 37.44 FEET, Top of Box GEOLOGIST CRAIG STEVENS

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
28		0%				SW	SAND, well graded, some fine gravel (this is based on cuttings in drilling fluid).	
29							Same as above.	
30								
31								
32								
33								
34		0%					0% recovery, still in sandy layer, cuttings suggest this zone may also be SW.	
35								
36								
37								
38								
39		0%					May be a GRAVEL zone, cuttings in drilling fluid range from very fine sand to gravels, well graded.	
40								
41								
42								
43								
44		0%					Same as above.	
45								
46								
47								
48								
49		5%		0.0		CL	CLAY, gravelly, some silt, tan, wet, soft, gravel fragments up to 1/4 inch in size.	
50								
51								

LOG OF WELL TH89-1/W89-11 (B1) (continued)

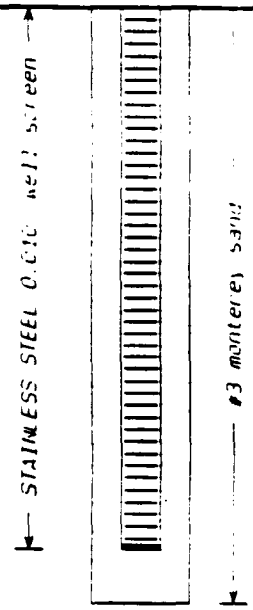
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-1/W89-11 (B1)
DATE STARTED 11/14/90 COMPLETED 12/7/90
ELEVATION 37.44 FEET, Top of Box

CLIENT US NAVY
PROJECT NAS MOFFETT FIELD IS 8 and 9
GEOLOGIST CRAIG STEVENS

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
53						CL	
54		45%		0.0			CLAY, silty, some gravel (<5%), blue-gray, some organic matter (wood or root fragments), low to moderate plasticity, wet, dense.
55							
56							
57							
58							
59		20%		0.0			Same as above.
60							
61							
62							No recovery.
63							
64		10%		0.0			
65							
66							
67							
68						CL	CLAY, silty, brown, some gravel, soft.
69		25%		0.0			
70							CLAY, silty, some sand and gravel (<5%), blue-gray, dense, low to moderate plasticity, may be interbedded with sandy or gravelly units.
71							
72							
73							
74		75%		0.0			CLAY, silty, tan-brown, very little sand, soft to somewhat dense, low to moderate plasticity, wet.
75							
76							
77							

WELL DIAGRAM



JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-1/W89-11 (B1) CLIENT US NAVY
DATE STARTED 11/14/90 COMPLETED 12/7/90 PROJECT NAS MOFFETT FIELD IS 8 and 9
ELEVATION 37.44 FEET, Top of Box GEOLOGIST CRAIG STEVENS

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 in	HNU PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
79	X	40%		0.0		CL	Same as above but color changes from tan-brown near the top of the sample to more of a blue-gray near the bottom (83.5).	
80								
81								
82								
83								
84		5%		0.0			Same as above, blue-gray.	
85								
86								
87								
88								
89		0%					No recovery.	
90								
91								
92								
93								
94		0%						
95								
96								
97								
98								
99		75%		0.0		CL	CLAY, silty, gray-green, dense, moderate plasticity, zones of oxidation iron staining.	
100								
101							CLAY, silty, gray-green, dense, moderate plasticity, moist.	
102								
103								

LOG OF WELL TH89-1/W89-11 (B1) (continued)

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-2/W89-12 (B1)
DATE STARTED 11/16/90 COMPLETED 12/04/90
ELEVATION 35.28 FEET, Top of Box

CLIENT US NAVY
PROJECT NAS MOFFETT FIELD IS 8 and 9
GEOLOGIST CRAIG STEVENS/CHRIS PETERSEN

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
		100%	6 7 10	0.0		CL	CLAY, silty, dry, friable, roothairs, dark grey.
		100%	5 7 9	0.0			Same as above, but some small calcite nodules.
		100%	11 7 11	0.0			CLAY, grey, friable with ferrous staining, calcite nodules, very stiff.
		100%	7 8 10	0.0			
		100%	7 7 11	0.0			
		100%	5 7 9	0.0			CLAY, grey to slightly green, low moisture, calcite nodules.
		100%		0.0			CLAY, dark grey, stiff.
							CLAY, light grey with ferrous stains, coarsening downward.
							CLAY, silty and sandy, ferrous stains abundant.
		80%		0.0			No recovery
						CL	CLAY, very plastic, iron staining.
							CLAY, gravelly, with minor silt, iron staining, very stiff, coarsening downward.
							CLAY, alternating sequences of clayey, sandy layers.
		100%		0.0			CLAY, gravelly, light brown, abundant iron staining, moderately stiff.
							CLAY, dark grey, abrupt change, no iron stains.
						SW	SAND, well sorted, wet.
		60%		0.0		CL	CLAY, silty, dark gray, stiff, moderately plastic.

WELL DIAGRAM

METHOD OF DRILLING MUD ROTARY
HOLE DIAMETER 10 INCHES
TOTAL DEPTH 104 FEET

WELL COMPLETION DEPTH 65 FEET
WELL DIAMETER 4 INCHES
WELL MATERIAL LOW CARBON STEEL/STAINLESS STEEL

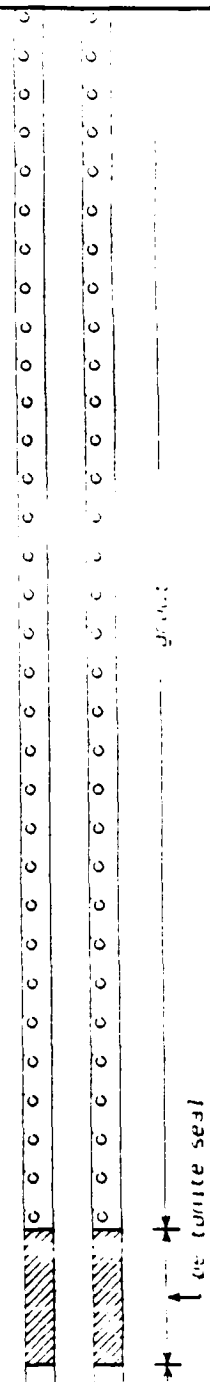
JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-2/W89-12 (B1)
DATE STARTED 11/16/90 COMPLETED 12/04/90
ELEVATION 35.28 FEET, Top of Box

CLIENT US NAVY
PROJECT NAS MOFFETT FIELD IS 3 and 9
GEOLOGIST CRAIG STEVENS/CHRIS PETERSEN

DEPTH feet	SAMPLE	RECOVERY	BLOWS 6 IN	HNU PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
						CL	CLAY, silty, gravelly, dark gray-green.
						GW	GRAVEL, sandy, well graded, brown, up to 1/4 inch.
29							no recovery
30		50%		0.0		CL	CLAY, silty, dark gray-green, moderate plasticity, wet, soft.
31						ML	SILT, clayey, green-brown, mottled with iron oxide, stiff, wet.
32						CL	CLAY, silty, green-brown, moderate plasticity, soft, wet.
33							
34		5%		0.0		GW	GRAVEL, sandy, multicolored, well graded, clasts to 1.5 inches long and down to granular size.
35							
36							
37							
38							
39		0%				SW/SP	SAND with trace clay and gravel, fine to very coarse sand (this description is based on cuttings coming up the drill pipe).
40							
41							
42							
43							
44		0%					
45							
46							
47							
48							
49		0%					
50							
51							

WELL DIAGRAM



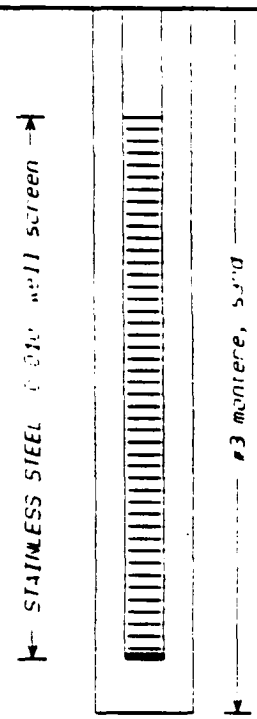
LOG OF WELL TH89-2/W89-12 (B1) (continued)

JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-2/W89-12 (B1) CLIENT US NAVY
DATE STARTED 11/16/90 COMPLETED 12/04/90 PROJECT NAS MOFFETT FIELD IS 8 and 9
ELEVATION 35.28 FEET, Top of Box GEOLOGIST CRAIG STEVENS/CHRIS PETERSEN

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU-PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION
53						SW/SP	SAND, well graded to poorly graded, fine, coarse and very coarse sands, trace gravel, trace clay, particles are multicolored (description from cuttings).
54		0%					
55							
56							
57							
58							
59		0%					
60							
61							
62							
63							
64		0%				GW/SW	GRAVEL, very coarse sand.
65							
66							
67							
68							
69		0%					
70							Same as above.
71							
72							
73							
74		0%				SW/SP	
75							
76							
77							Very fine to moderate SAND (description from cuttings).

WELL DIAGRAM



JAMES M. MONTGOMERY
CONSULTING ENGINEERS, INC.
365 LENNON LANE, WALNUT CREEK, CALIFORNIA, 94598 / (415) 975-3400

BORING/WELL NUMBER TH89-2/W89-12 (B1) CLIENT US NAVY
DATE STARTED 11/16/90 COMPLETED 12/04/90 PROJECT NAS MOFFETT FIELD IS 3 and 9
ELEVATION 35.29 FEET, Top of Box GEOLOGIST CRAIG STEVENS/CHRIS PETERSEN

DEPTH feet	SAMPLE	RECOVERY	BLOWS/6 IN	HNU PID	GRAPHIC LOG	SOIL CLASS	GEOLOGIC DESCRIPTION	WELL DIAGRAM
79	X	0%				SW SP		
80							Very fine to moderate SAND (description from cuttings).	
81								
82								
83								
84		0%						
85							same as above.	
86								
87								
88								
89		0%						
90							same as above.	
91								
92								
93								
94		0%						
95							same as above.	
96								
97								
98								
99		20%		0.0				
100							same as above.	
101								
102								
103						CL	CLAY, silty, gray-green, stiff, low plasticity, trace gravel and sand.	

LOG OF WELL TH89-2/W89-12 (B1) (continued)

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 9 – WELLS (MEW)

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

Canonie

Boring Log

PRELIMINARY

PROJECT No. CE 82-023
BORING No. 2C
PAGE 1 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION N 334,695 E 1,548,307 SURFACE ELEV. 28.6
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
0													(FILL MATERIAL).	
												4.0		
5	1	PB*	4.5	7.0				30	CL		3.0		VERY STIFF BROWN SILTY CLAY, SOME FINE TO COARSE GRAVEL.	
									CL		2.0	8.0		
	2	PB	7.0	9.5				30	SM&GM				GRAY SILTY FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.	
10									SM&GM			10.0		
	3	PB	9.5	12.0				30	CL		2.0		VERY STIFF BROWN MOTTLED GRAY SILTY CLAY.	
	4	PB	12.0	14.5				30	CL		2.0			
15												14.5		
	5	PB	14.5	17.0				30	SW&GW				GRAY FINE TO COARSE SAND AND FINE TO COARSE GRAVEL (WET).	
	6	PB	17.0	19.5				30	SW&GW					
20	7	PB	19.5	22.0				30	SW&GW					
	8	PB	22.0	24.5				6	SW&GW					
25	9	PB	24.5	27.0				6	SW&GW					
												27.5	(BROWN SANDY SILTY CLAY).	
	10	PB	27.0	29.5				6	SW&GW			28.5		
30	11	PB	29.5	32.0				6	SW&GW				GRAY FINE TO COARSE SAND AND FINE TO COARSE GRAVEL (WET).	
												32.0		
	12	PB	32.0	34.5				18	CL		0.5			
35	13	PB	34.5	37.0				30	CL		1.0		MEDIUM STIFF TO VERY STIFF GRAY SILTY CLAY.	
	14	PB	37.0	39.5				30	CL		1.5			
40	15	PB	39.5	42.0				30	CL		2.5			

Rev. 5-84

*PB-PITCHER BARREL

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C
PAGE 2 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	6-12	12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
40														
	16	PB	42.0	44.5				30	CL		2.5			
45											3.0			
	17	PB	44.5	47.0				30	CL		1.5		MEDIUM STIFF TO VERY STIFF GRAY SILTY CLAY.	
	18	PB	47.0	49.5				30	CL		2.0			
50									CL		2.0			
	19	PB	49.5	52.0				30				50.5		
									SM				GRAY SILTY FINE SAND.	
									SM			53.0		
	20	PB	52.0	54.5				30	CL		2.5			
55														
	21	PB	54.5	57.0				30	CL		1.25			
	22	PB	57.0	59.5				30	CL		3.25		STIFF TO VERY STIFF GRAY AND BROWN SILTY CLAY, SOME FINE GRAVEL.	
60														
	23	PB	59.5	62.0				30	CL		3.0			
	24	PB	62.0	64.5				30	CL		2.0			
65									SW			64.5	BROWN FINE TO COARSE SAND (WET).	
	25	PB	64.5	67.0				30				65.5		
									CL		2.0			
	26	PB	67.0	69.5				30	CL		2.5			
70													VERY STIFF BROWN FINE SANDY SILTY CLAY.	
	27	PB	69.5	72.0				30	CL		2.0			
	28	PB	72.0	74.5				30	CL		2.5			
75												74.5		
	29	PB	74.5	77.0				30	SW					
	30	PB	77.0	79.5				30	SW				BROWN FINE TO COARSE SAND, SOME FINE GRAVEL (WET).	
80														
	31	PB	79.5	82.0				30	SW					

Rev. 5-88

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C
PAGE 3 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	6-12	12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
80														
									CL		2.0	82.5		
	32	PB	82.0	84.5				30	CL		2.5			
85														
	33	PB	84.5	87.0				30	CL		3.0			
	34	PB	87.0	89.5				30	CL		4.5			
90														
	35	PB	89.5	92.0				30	CL		4.5			
	36	PB	92.0	94.5				30	CL		2.5		STIFF TO HARD GRAY MOTTLED BROWN SILTY CLAY.	
95														
	37	PB	94.5	97.0				30	CL		2.0			
	38	PB	97.0	99.5				30	CL		2.0			
100														
	39	PB	100.0	102.0				0						
	40	PB	102.0	104.0				24	CL		1.5			
105									CL		2.0			
	41	PB	104.5	106.5				30				105.5	BROWN SILTY FINE SAND.	
									SM			107.0		
	42	PB	106.5	109.0				30	CL		3.0		VERY SITFF GRAY SILTY CLAY.	
												109.0		
110													BROWN FINE TO COARSE SAND (WET).	
	43	PB	109.0	111.5				30	SW			111.0		
	44	PB	111.5	114.0				30	CL		3.0		VERY STIFF BROWN SILTY CLAY.	
115									CL		2.5			
	45	PB	114.0	116.5				30	SW			115.5		
												116.5	BROWN SILTY FINE SAND.	
	46	PB	116.5	119.0				30	CL		3.5		VERY STIFF BROWN MOTTLED GRAY SILTY CLAY.	
120														
	47	PB	119.0	121.5				30	CL		3.0			

Rev. 5-85

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C
PAGE 4 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
120														
	48	PB	121.5	124.0				30	CL SM		3.0	123.0		
125														
	49	PB	124.0	126.5				24	SM					
	50	PB	126.5	129.0				30	SM				GRAY SILTY FINE SAND.	
130														
	51	PB	129.0	133.0				0				133.0		
135	52	PB	133.0	135.5				12	CL		2.5			
	53	PB	135.5	138.0				18	CL		3.5			
140	54	PB	138.0	142.0				48	CL		3.5		VERY STIFF GRAY SILTY CLAY.	
	55	PB	142.0	146.0				48	CL		3.5			
145														
	56	PB	146.0	150.0				48	CL		3.0			
150														
	57	PB	150.0	154.0				48	CL		2.5			
155														
	58	PB	154.0	158.0				48	CL		3.0			
160	59	PB	158.0	162.0				48	CL		3.0			

Rev. 5-85

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C
PAGE 5 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
160												162.0		
	60	PB	162.0	166.0				48	CL		2.8			
165													VERY STIFF BROWN SILTY CLAY.	
	61	PB	166.0	170.0				48						
									CL		3.0			
170														
									CL		3.0			
	62	PB	170.0	174.0				48				171.5	BROWN FINE TO COARSE SAND.	
									SW			173.0		
									CL		2.5			
175														
	63	PB	174.0	178.0				48	CL		3.5			
													VERY STIFF GRAY SILTY CLAY.	
180	64	PB	178.0	182.0				48	CL		3.5			
									CL		3.0	183.0		
	65	PB	182.0	186.0				48						
185									SP				BROWN FINE SAND (WET).	
									SP					
	66	PB	186.0	190.0				48	CL		2.0	187.5		
190														
	67	PB	190.0	194.0				36	CL		3.5			
													VERY STIFF GRAY SILTY CLAY.	
195	68	PB	194.0	198.0				48	CL		2.25			
												196.5		
									SW&GW				BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.	
200	69	PB	198.0	202.0				48	SW&GW					
												200.5		
									CL		4.0			

Rev. 5-85

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C
PAGE 6 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
200												200.5		
									CL		4.0	202.0	VERY STIFF BROWN SILTY CLAY.	
									SW&GW			202.5	BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.	
	70	PB	202.0	206.0				36	CL		2.5			
205														
													VERY STIFF GRAY SILTY CLAY.	
	71	PB	206.0	210.0				48	CL		2.5			
210												210.0		
													BOTTOM OF BORING AT 210.0 FEET.	

NOTES:
1. BORING DRILLED USING MUD ROTARY METHOD.
2. UPON COMPLETION BORING WAS CONVERTED TO OBSERVATION WELL 55B. SEE 55B OBSERVATION WELL DETAILS.

Rev. 6-80

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-6.2

BORING NO. 3B (10L)

BY HCW DATE 4/12/82

SURFACE ELEV. * (PROJECT DATUM)

*AERO-GEODETIC: USGS ELEV. 35.4

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)				
									Asphalt
									(CL) Dark gray-brown CLAY
						5			(brown,silty)
									(minor sand and fine gravel)
						10			(GW) Coarse sandy fine GRAVEL
						15			
									(fine to medium)
						20			(medium)
						25			(CL) Blue-gray silty to fine sandy CLAY
						30			
									(fine to coarse sand)
						35			
						40			

REMARKS:

Well construction details attached.

EMCON ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-6.2 BORING NO. 3B (10L)

BY HCW DATE 4/12/82 SURFACE ELEV.

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)				
						45			
						50			
						55			(sandy to fine gravelly)
						60			(light brown)
						65			(SP-GP) Green-brown coarse SAND and GRAVEL
						70			(CL-SC) Brown fine sandy CLAY to clayey fine SAND
						75			(CL) Brown silty to fine sandy CLAY
						80			BOTTOM OF BORING

REMARKS:

EMCON ASSOCIATES

Canonie

Boring Log

PRELIMINARY

PROJECT No. CE 82-023
BORING No. 3C
PAGE 1 OF 5

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 8-7-85 FINISH 8-12-85

DEPTH	SAMPLE No.	SAMPLE TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
0												2.0	(FILL MATERIAL)	
	1	PB*	2.0	4.5				30	CL		3.0		STIFF TO VERY STIFF BROWN SILTY CLAY.	
5														
	2	PB	5.0	7.5				30	CL		1.0			
	3	PB	7.5	10.0				30	CL		1.5			
10									CL		1.0			
	4	PB	10.0	12.5				30	SM			11.5	BROWN SILTY FINE SAND.	
	5	PB	12.5	15.0				30	SM			14.0		
15									CL				GRAY FINE SANDY SILTY CLAY.	
	6	PB	15.0	17.5				30	CL			17.5		
	7	PB	17.5	20.0				30	SC				GRAY CLAYEY FINE SAND.	
20														
	8	PB	20.0	22.5				30	SC					
	9	PB	22.5	25.0				30	SC					
25												25.0	STIFF GRAY SILTY CLAY.	
	10	PB	25.0	27.5				30	CL		1.0	27.5		
	11	PB	27.5	30.0				30	CL		2.0		STIFF BROWN SILTY CLAY, SOME FINE TO COARSE SAND.	
30														
	12	PB	30.0	32.5				30	CL		2.0			
	13	PB	32.5	35.0				30	CL		1.0			
35														
	14	PB	35.0	37.5				30	CL		1.5	37.5		
	15	PB	37.5	40.0				30	SC				BROWN CLAYEY FINE TO COARSE SAND, WET.	
40														

Rev. 5-68

*PB-PITCHER BARREL

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 3C
PAGE 2 OF 5

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 8-7-85 FINISH 8-12-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
40														
	16	PB	40.0	42.5				18	SC				BROWN FINE TO COARSE SAND, SOME FINE TO COARSE GRAVEL, SOME CLAY, WET.	
	17	PB	42.5	46.0				12	SC&GC					
45														
	18	PB	46.0	50.0				36	SC					
50												50.0		
	19	PB	50.0	54.0				48	CL		1.0			
55														
	20	PB	54.0	58.0				24	CL		2.0			
60	21	PB	58.0	62.0				48	CL		2.5		MEDIUM STIFF TO VERY STIFF BROWN SILTY CLAY.	
	22	PB	62.0	66.0				48	CL		1.0			
65														
									CL		0.7			
	23	PB	66.0	70.0				48				68.0		
									SC				BROWN CLAYEY FINE TO COARSE SAND.	
70												70.0		
													VERY STIFF BROWN SILTY CLAY.	
	24	PB	70.0	74.0				48	CL		2.5			
												72.5		
									SC			74.0	BROWN CLAYEY FINE SAND.	
75									CL		2.5			
	25	PB	74.0	78.0				48						
									CL		1.0			
													STIFF TO VERY STIFF BROWN SILTY CLAY.	
80	26	PB	78.0	82.0				48	CL		3.5			

Rev. 5-85

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 3C
PAGE 3 OF 5

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 8-7-85 FINISH 8-12-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
80														
	27	PB	82.0	86.0				48	CL		1.5		STIFF TO VERY STIFF BROWN SILTY CLAY.	
85														
	28	PB	86.0	90.0				48	CL		1.5			
90														
	29	PB	90.0	94.0				48	CL		2.0			
												94.0		
95													BROWN CLAYEY FINE SAND.	
	30	PB	94.0	98.0				48	SC					
												97.0		
									CL		1.5			
100	31	PB	98.0	102.0				48	CL		1.5			
													STIFF TO VERY STIFF GRAY SILTY CLAY.	
	32	PB	102.0	106.0				48	CL		3.0			
105														
									CL		2.5			
	33	PB	106.0	110.0				48				108.0		
									SM				BROWN SILTY FINE SAND.	
110												110.0		
	34	PB	110.0	114.0				48	CL		1.0			
													MEDIUM STIFF TO VERY STIFF GRAY SILTY CLAY. 4-IN. FINE SAND LAYER AT 110.0 FT.	
115														
	35	PB	114.0	118.0				48	CL		2.5			
									CL		0.5	119.0		
120	36	PB	118.0	122.0				36					BROWN FINE TO COARSE SAND, WET.	
									SW					

Rev. 5-85

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 3C
PAGE 4 OF 5

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 8-7-85 FINISH 8-12-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	6-12	12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
120												122.0		
									CL		2.0	123.0	STIFF BROWN SILTY CLAY.	
	37	PB	122.0	126.0				48	SP				GRAY FINE SAND, WET.	
125												126.0		
	38	PB	126.0	130.0				48	CL		2.5		VERY STIFF GRAY SILTY CLAY.	
130												130.0		
									CL			131.0	BROWN SILTY CLAY.	
	39	PB	130.0	134.0				48	CL		3.0		4 INCH GRAY SAND LAYER AT 131.0 FT.	
135	40	PB	134.0	138.0				48	CL		2.5			
140	41	PB	138.0	142.0				48	CL		2.5			
	42	PB	142.0	146.0				48	CL		2.0			
145													VERY STIFF GRAY SILTY CLAY.	
	43	PB	146.0	150.0				48	CL		3.0			
150	44	PB	150.0	154.0				48	CL		3.0			
155	45	PB	154.0	158.0				48	CL		2.0			
160	46	PB	158.0	162.0				48	CL		3.0			

Rev. 5-86

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. 3C
PAGE 5 OF 5

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION
SURFACE ELEV.
DRILLER ALL TERRAIN DRILLING
DATE: START 8-7-85 FINISH 8-12-85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
160												162.0		
													BOTTOM OF BORING AT 162.0 FT.	
165													NOTES:	
													1. BORING DRILLED USING MUD ROTARY METHOD.	
													2. UPON COMPLETION, BORING WAS BACKFILLED WITH CEMENT-BENTONITE GROUT FROM 162.0 FT. TO GROUND SURFACE.	

Rev. 5-85

LOG OF EXPLORATORY BORING

SHEET 1 of 2

PROJECT NUMBER 505-0.2 BORING NO. 4B

BY HCW DATE 6/15/82 SURFACE ELEV. * (PROJECT DATUM)

*AERO-GEODETIC: USGS ELEV. 27.4

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Strength (TSF)	Penetration (Blows/Ft.)				
									(CL) Dark Brown CLAY with trace of fine sand - damp
									(gray-brown)
						5			(minor silt to fine sand and trace of fine gravel)
						10			(SM) Green-gray silty fine SAND with minor fine gravel - moist to wet
									(SW) Brown fine gravelly medium to coarse SAND with 1" to 2" thick silt and fine gravel inter-layers
						15			
						20			(gray, silty, fine-grained, no gravel)
									(CL) Gray silty CLAY with trace fine gravel - damp to moist
						25			(GC) Brown fine sandy clayey fine GRAVEL - wet
									(CL) Brown sandy and fine gravelly CLAY - damp
						30			
						35			(green-gray, silty with minor sand)
									(reddish brown, silty, with minor coarse sand and fine gravel)
					25	40			(decrease in sand and gravel content)

REMARKS:

EMCON ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-0.2 BORING NO. 4B

BY HCW DATE 6/15/82 SURFACE ELEV. *

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Strength (TSF)	Penetration (Blows/Ft.)				
									(brown, trace fine sand and fine gravel)
						45			
					20				(gray, minor rootlets)
									(gray-green)
						50			
									(decrease in silt content)
					44				
						55			
									(brown, increase in fine to medium sand content)
									(GC) Brown very clayey coarse sandy fine GRAVEL - wet
					60	60			(GP/SW) Brown-green fine GRAVEL and clayey fine gravelly medium to coarse SAND - wet
									(CL) Brown silty CLAY - damp
						65			
									BOTTOM OF BORING
						70			

REMARKS: Boring was converted to a ground-water monitoring well by the installation of 64' of 4" steel casing, the lower 10' of which is a stainless steel well screen. The annular space was backfilled with #2 aquarium sand to a depth of 50'. A bentonite-concrete seal was placed in the annular space from 50' to the surface.

EMCON ASSOCIATES

Canonie

Boring Log

PRELIMINARY

PROJECT No. CES 82-023
BORING No. RW-9
PAGE 1 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-08-85 FINISH 7-09-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
												0.5	ASPHALT	
	1	MS*	3.5	5.0	6	13	19	18	OL		4.0		VERY STIFF GRAY ORGANIC SILTY CLAY.	
5														
	2	PB*	7.0	11.0				36	OL SW&GW		2.5	9.0		
10														
	3	PB	11.0	15.0				0					GRAY MOTTLED BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.	
15	4	MS	15.0	16.5	7	17	17	9	SW&GW					
	5	MS	17.5	19.0	7	18	22	8	SW&GW					
20	6	MS	20.0	21.5	8	19	11	10	SW&GW			21.5		
	7	MS	22.5	24.0	2	3	5	18	CL		1.5			
25	8	PB	24.0	28.0				48	CL		1.75			
30	9	PB	28.0	32.0				6	CL		4.0		MEDIUM STIFF TO VERY STIFF GRAY SILTY CLAY, SOME FINE TO COARSE SAND.	
	10	MS	32.0	33.5	8	9	15	18	CL		1.0			
35	11	MS	34.5	36.0	3	5	7	18	CL		1.5			
	12	MS	37.0	38.5	4	6	8	18	CL		1.5			
40	13	MS	39.5	41.0	4	17	12	18	CL		1.75			

Rev. 9-85

*MS-MODIFIED SPOON
*PB-PITCHER BARREL

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. RW-9
PAGE 2 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-08-85 FINISH 7-09-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
40														
	14	MS	42.0	43.5	2	3	5	18	CL		2.0			
45														
	15	MS	44.5	46.0	8	9	12	18	CL		0.75			
	16	MS	47.0	48.5	4	6	8	18	CL		1.5		MEDIUM STIFF TO VERY STIFF GRAY SILTY CLAY, SOME FINE TO COARSE SAND.	
50														
	17	MS	49.5	51.0	4	6	8	18	CL		1.0			
	18	PB	52.0	56.0				16	CL		1.0			
55												56.0		
	19	PB	56.0	60.0				48	CL		4.0		VERY STIFF GRAY SILTY CLAY.	
60												60.0		
	20	PB	60.0	64.0				48	CL		1.5		STIFF GRAY FINE TO COARSE SANDY SILTY CLAY.	
65												64.0		
	21	PB	64.0	68.0				48	SW			67.0	GRAY FINE TO COARSE SAND.	
									CL		2.5		VERY STIFF BROWN SILTY CLAY, SOME FINE TO COARSE SAND.	
70									CL					
	22	PB	68.0	72.0				48			2.5	70.5		
									SC				BROWN FINE TO COARSE SAND, SOME CLAY.	
	23	PB	72.0	76.0				48	SC			74.0		
75									CL		1.5		STIFF BROWN SILTY CLAY.	
												76.0		
									SM			78.0	BROWN SILTY SAND.	
	24	PB	76.0	80.0				48						
80									CL		1.5		STIFF GRAY SILTY CLAY.	
												80.5		
													CONTINUED.	

Rev. 5-85

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. RW-9
PAGE 3 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-08-85 FINISH 7-09-85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
80									SP		1.5	80.5	GRAY FINE SAND.	
												81.5		
	25	PB	80.0	84.0				48	CL				VERY STIFF GRAY SILTY CLAY, SOME FINE SAND.	
85									CL		3.0			
												85.5	GRAY FINE SAND.	
	26	PB	84.0	88.0				48	SP			86.5		
									CL		2.5			
90														
	27	PB	88.0	92.0				48	CL		2.75			
													STIFF TO HARD BROWN SILTY CLAY, SOME FINE SAND.	
95	28	PB	92.0	96.0				48	CL		4.5			
	29	PB	96.0	100.0				48	CL		1.5			
100												100.0		
													BOTTOM OF BORING AT 100.0 FEET.	

NOTES:
1. BORING DRILLED USING MUD ROTARY METHOD.
2. UPON COMPLETION BORING WAS REAMED USING BUCKET RIG AND RECOVERY WELLS RW-9A, RW-9B(1), RW-9B(2) WERE INSTALLED. SEE RECOVERY WELL DETAILS.

Rev. 5-88

Canonie

Boring Log

PRELIMINARY

PROJECT No. CES 82-023
BORING No. 10B
PAGE 1 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION N 332,145 E 1,547,882 SURFACE ELEV. 44.0
DRILLER ALL TERRAIN DRILLING DATE: START 3/15/85 FINISH 3/19/85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
0												0.5	(ASPHALT)	
												3.0	(SAND AND GRAVEL)	
5	1	MS*	3.5	5.0	9	15	19	18	CL		2.8		VERY STIFF BROWN SILTY CLAY.	
												7.0		
10	2	MS	8.5	10.0	6	10	16	18	CL		2.6		VERY STIFF GRAY SILTY CLAY, TRACE OF WOOD FRAGMENTS.	
									CL			14.0		
15	3	MS	13.5	15.0	6	13	14	12	SW&GW				BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, TRACE OF CLAY. (COBBLES)	
									SW&GW	8.3				
20	4	MS	18.5	20.0	20	28	32	18	ML			19.5		
25	5	MS	23.5	25.0	9	14	23	18	ML	21.1			GRAY CLAYEY SANDY SILT.	
									ML					
30	6	MS	28.5	30.0	6	14	28	18	CL			29.5	TAN SILTY CLAY, TRACE OF SAND, SAND SEAMS.	
35	7	MS	33.5	35.0	9	12	18	18	CL		1.5	34.5	STIFF GRAY SILTY CLAY.	
	8	MS	35.0	36.5	8	12	24	18	CL		0.8	35.5	MEDIUM STIFF TAN SILTY CLAY.	
												36.2		
	9	MS	36.5	38.0	9	23	30	18	CL-ML	23.5	2.75		VERY STIFF GRAY SILTY CLAY, TRACE OF ROOTS, 2 INCHES SAND AT 37.3 FT.	
	10	MS	38.0	39.5	16	24	41	18	CL		2.4	39.0		
40									SC				BROWN CLAYEY SAND AND GRAVEL.	
	11	MS	39.5	41.0	9	12	13	18	CL		0.8	40.5		

*MODIFIED SPOON

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. 10B
PAGE 2 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION N 332,145 E 1,547,882 SURFACE ELEV. 44.0
DRILLER ALL TERRAIN DRILLING DATE: START 3/15/85 FINISH 3/19/85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
40												41.0	MEDIUM STIFF TAN SILTY CLAY.	
	12	MS	41.0	42.5	13	13	20	18	SC&GC			41.7	GRAY SAND AND GRAVEL, SOME CLAY.	
									SW&CL	20.2			BROWN FINE TO COARSE SANDY CLAY,	
	13	MS	42.5	44.0	8	28	28	18	SC&GC	11.8		43.6	TRACE OF GRAVEL.	
45	14	MS	44.0	45.5	15	34	42	18	SC&GC					
	15	MS	45.5	47.0	6	35	50	18	SC&GC					
	16	MS	47.0	47.9	34	50/5		10	SC&GC				BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, SOME CLAY.	
50	17	MS	48.5	50.0	20	41	49	12	SW&GW	9.7				
	18	MS	50.0	50.4	50/5			5	SC&GC					
									SC&GC			52.0		
	19	MS	51.5	53.0	10	9	11	14	CL		1.2			
	20	MS	53.0	54.5	3	12	15	18	CL	23.2	1.75		STIFF BROWN SILTY CLAY, TRACE OF FINE TO COARSE SAND.	
55														
	21	MS	54.5	56.0	17	27	32	18	CL		1.0			
	22	MS	56.0	57.0	12	50		12	CL			56.8		
	23	MS	57.5	58.3	32	50/4		10	SW&GW				BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, SILTY CLAY SEAMS.	
60	24	MS	59.0	59.4	70/5			5	SC	15.0				
	25	MS	60.5	61.7	12	31	50/3	14	SW&GW					
	26	MS	62.0	62.8	40	51/3		9	SC&GC			62.5		
65	27	MS	63.5	65.0	10	14	18	18	SC&GC				BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL, SOME CLAY.	
	28	MS	65.0	66.5	28	33	39	18	SC&GC			66.1		
									CL					
	29	MS	66.5	68.0	8	18	27	16	CL		1.0		STIFF GRAY SILTY CLAY, TRACE OF ROOTS, TRACE OF SHELLS, SANDY SEAMS.	
	30	MS	68.0	69.5	8	12	18	18	CL	23.1	1.25			
70														
	31	MS	69.5	71.0	10	20	21	18	CL		1.25			
	32	MS	71.0	72.5	13	19	21	12	CL		1.25	72.0		
	33	MS	72.5	74.0	18	24	35	18	CL		1.5	73.5	STIFF GRAY SANDY CLAY, TRACE OF GRAVEL.	
75	34	MS	74.0	75.5	14	27	36	14	CL		1.75		STIFF GRAY SILTY CLAY, TRACE OF SAND, TRACE OF ROOTS.	
	35	MS	75.5	77.0	14	22	23	18	CL		1.75	76.5	STIFF GRAY SANDY CLAY, TRACE OF ROOTS, TRACE OF GRAVEL.	
	36	MS	77.0	78.5	20	30	35	15	CL			78.0		
									ML				GRAY SANDY CLAYEY SILT.	
80	37	MS	78.5	79.5	16	50		12	ML			79.5		

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. 10B
PAGE 3 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION N 332,145 E 1,547,882 SURFACE ELEV. 44.0
DRILLER ALL TERRAIN DRILLING DATE: START 3/15/85 FINISH 3/19/85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
80	38	MS	80.0	81.5	17	22	30	18	SC		.	81.0	GRAY CLAYEY FINE TO COARSE SAND.	
									ML				VERY STIFF DARK GRAY CLAYEY SILT,	
	39	MS	81.5	83.0	12	41	45	18	ML		2.1	83.0	TRACE OF SAND.	
	40	MS	83.0	84.5	21	32	50	18	SM			84.0	DARK GRAY SILTY FINE SAND.	
85									CL				VERY STIFF GRAY SILTY CLAY, SAND	
	41	MS	84.5	86.0	18	30	48	18	CL		2.25	86.0	SEAMS.	
	42	MS	86.0	87.5	12	40	41	12	SW					
	43	MS	87.5	88.5	32	50		12	SC	16.3	.		GRAY FINE TO COARSE SAND, TRACE OF SILT, 3-INCHES CLAY AT 88 FT.	
90												90.2		
	44	MS	90.0	91.4	28	42	50/5	16	SW		2.0			
									CL					
	45	MS	91.5	93.0	16	28	35	18	CL		2.5			
	46	MS	93.0	94.5	15	25	31	16	CL		2.0		STIFF TO VERY STIFF GRAY SILTY	
95													CLAY, TRACE OF SAND, 4-INCH SAND	
	47	MS	94.5	96.0	16	21	25	18	CL		1.6		AT 91.5 FT.	
	48	MS	96.0	97.5	26	37	37	18	CL	18.3	2.75			
	49	MS	97.5	99.0	23	35	39	18	CL		2.0	99.0		
100													BOTTOM OF BORING AT 99.0 FT.	

NOTES:
1. BORING DRILLED USING 8-INCH HOLLOW STEM AUGERS.
2. UPON COMPLETION, BORING WAS CONVERTED TO A 2-INCH PVC OBSERVATION WELL WITH 5 FT. OF SCREEN FROM 85.0 TO 90.0 FT. SEE 10B(2) OBSERVATION WELL DETAILS.

Canonie

PRELIMINARY

Boring Log

PROJECT No. CES 82-023
BORING No. 128
PAGE 1 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION N 333,426 E 1,547,826 SURFACE ELEV. 37.2
DRILLER ALL TERRAIN DRILLING DATE: START 6-10-85 FINISH 6-10-85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
0												0.5	ASPHALT.	
5													(CLAY)	
10														
15														
20														
25														
30												30.0		
	1	MS*	30.0	31.5	3	4	5	18	ML					
	2	MS	32.5	34.0	4	6	10	18	ML					
35	3	MS	35.0	36.5	6	6	9	18	ML				GRAY CLAYEY SILT, SOME FINE SAND.	
	4	MS	37.5	39.0	7	9	12	18	ML			39.0		
40												40.0	(BROWN FINE TO COARSE SAND, AND FINE GRAVEL).	

Rev. 5-85

*MS-MODIFIED SPOON

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. 12B
PAGE 2 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 6-10-85 FINISH 6-10-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	6-12	12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
40	5	MS	40.0	41.5	9	8	6	18	ML				GRAY CLAYEY SILT, SOME FINE SAND.	
												42.0		
	6	MS	42.5	44.0	7	9	9	18	CL				BROWN SILTY CLAY, SOME FINE TO COARSE SAND.	
45	7	MS	45.0	46.5	5	7	8	18	CL			45.5		
	8	MS	47.5	49.0	4	7	9	18	CL				GRAY SILTY CLAY, SOME FINE SAND.	
50	9	MS	50.0	51.5	5	6	8	18	CL			50.5		
	10	MS	52.5	54.0	7	10	17	18	CL				BROWN SILTY CLAY, SOME FINE SAND.	
55												54.5		
	11	MS	55.0	56.5	17	22	25	14	SW&GP			57.0	BROWN FINE TO COARSE SAND AND FINE GRAVEL.	
	12	MS	57.5	59.0	7	9	13	18	ML				BROWN/GRAY CLAYEY SILT, SOME FINE SAND, 3-IN. FINE SAND LAYER AT 58.0 FEET.	
60												59.5		
	13	MS	60.0	61.5	6	9	11	18	CL				BROWN SILTY CLAY, SOME FINE TO COARSE SAND.	
	14	MS	62.5	64.0	5	7	7	5	CL					
65												65.0		
	15	MS	65.0	66.5	11	22	33	14	SW&GP				BROWN FINE TO COARSE SAND AND FINE GRAVEL.	
	16	MS	67.5	68.5	36	74	-	12	SW&GP					
70												69.5		
	17	MS	70.0	71.5	6	9	17	18	CL				BROWN SILTY CLAY, SOME FINE TO COARSE SAND.	
	18	MS	72.5	74.0	8	8	12	18	CL					
75												74.5		
	19	MS	75.0	76.5	5	7	9	18	CL				BROWN/GRAY SILTY CLAY.	
												76.5	BOTTOM OF BORING AT 76.5 FEET.	
80													(CONTINUED)	

Rev. 5-85

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. 12B
PAGE 3 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION N 333,426 E 1,547,826 SURFACE ELEV. 37.2
DRILLER ALL TERRAIN DRILLING DATE: START 6-10-85 FINISH 6-10-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	6-12	12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
													NOTES:	
													1. BORING WAS DRILLED USING MUD ROTARY METHOD.	
													2. UPON COMPLETION, BORING WAS BACKFILLED WITH CEMENT/ BENTONITE GROUT FROM 76.5 FEET TO GROUND SURFACE.	
													3. 4-INCH DIAMETER PVC OBSERVATION WELL INSTALLED IN ADJACENT BORING WITH 5 FT. OF SCREEN FROM 65.0 FT. TO 70.0 FT. SEE 12B(1) OBSERVATION WELL DETAILS.	

Rev. 5-85

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-9.1 BORING NO. 45A (18BP)

BY SMM DATE 2/26/82 SURFACE ELEV. 78.0* (PROJECT DATUM)

*AERO-GEODETIC: USGS ELEV. 43.7

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)				
									Asphalt
									(CL) Brown CLAY - damp, stiff to very stiff
						5			
									(SW) Brown to tan gravelly medium to coarse SAND - moist to wet, medium dense, slightly clayey
					27	10			
						15			(GW) Brown sandy coarse GRAVEL - wet, dense, some cobbles up to 4"
					10	20			(CL) Interlayered tan silty CLAY and fine sandy CLAY - wet, stiff
					36	25			(SC) Blue gray clayey fine SAND - wet, dense
					9				(CL) Blue CLAY - moist, stiff
									BOTTOM OF BORING

REMARKS: Boring was converted to a monitoring well by the installation of 25' of 2" PVC casing. The lower 12' of casing was slotted and the annular space backfilled with pea-gravel. A bentonite-concrete seal was placed in the annular space from 13' to the surface.

EMCON ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-6.2 BORING NO. 46A (15L)

BY DM DATE 4/16/82 SURFACE ELEV. * (PROJECT DATUM)

*AERO-GEODETIC: USGS ELEV. 42.1

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)				
									(CL) Dark brown silty CLAY - damp
						5			
						10			
						15	▽		
									(SP) Gray-brown gravelly medium to fine SAND with trace of silt - wet
					11			■	
						20			
									(SM) Brown silty fine SAND - moist
					28			■	
						25			
					12			■	
						30			(CL) Blue-gray silty CLAY - damp to moist
					14			■	
						35			BOTTOM OF BORING

REMARKS: Boring converted to a monitoring well by the installation of 34' of 2" PVC casing, the lower 20' of which was slotted. The annular space was backfilled with gravel to within 14' of the ground surface at which point a concrete surface seal was installed.

EMCON ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-6.1 BORING NO. 49A (8L)

BY SMM DATE 2/17/82 SURFACE ELEV. (PROJECT DATUM) 75.7*

*AERO-GEODETIC: USGS ELEV. 41.5

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)				
									Asphalt
									(CL) Brown CLAY - damp, hard, some orange silty zones
					41	5			
					27	10			(moist, very stiff)
							▼		
					37	15			(GM) Brown coarse sandy GRAVEL - wet, dense, some silt
						20			
					>50	25			(ML) Blue gray clayey SILT - moist to wet, very stiff to hard
									(GM) Brown sandy GRAVEL - wet, dense
					19	30			(CL) Blue CLAY - wet, very stiff
									BOTTOM OF BORING

REMARKS: Boring was converted to a monitoring well by the installation of 30' of 2" PVC casing. The lower 15' of casing was slotted and the annular space backfilled with pea-gravel to a depth of 10'. A bentonite and concrete seal was placed in the annular space from 10' to the surface.

EMCON ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-5.1 BORING NO. 54A (1M)

BY HCW DATE 2/22/82 SURFACE ELEV. 74.1* (Project data)

*AERO-GEODETIC: USGS ELEV. 40.3

CLASSIFICATION DATA			FIELD DATA						
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)	Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
									(CL) Dark brown CLAY - damp
									(brown)
						5			
									(stiff)
					14	10			(silty)
					15		▼		(very sandy and gravelly, locally moist)
						15	▽		(SM/SP) Brown silty fine SAND and gray fine to medium SAND - damp to wet
					30	20			
									(SP/ML) Brown gravelly medium to coarse SAND with interbedded sandy silt - wet
					38	25			
									(GP) Brown fine to medium GRAVEL with minor interbeds of silty fine sand - wet
					37	30			
									(interlayered blue-gray clay)
					52	35			
									(CL) Blue-gray sandy CLAY - damp
					12	40			BOTTOM OF BORING

REMARKS: Boring converted to a monitoring well by the installation of 40' of 2" PVC casing. The lower 26' of casing was slotted and the annular space filled with pea-gravel. A bentonite and concrete seal was placed in the annular space from 14' to the surface.

EMCON ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-6.1 BORING NO. 57A (3L)

BY SMM DATE 2/16/82 SURFACE ELEV. (PROJECT DATUM) 73.6*

*AERO-GEODETIC: USGS ELEV. 39.4

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)				
									Asphalt
					14	5			(CL) Tan to brown silty CLAY - damp, stiff, some fine to medium gravel
					23	10			(gray, very stiff)
					26	15			(SM) Gray silty SAND - wet, medium dense, some fine rounded gravel
					>50	20			(GC) Gray clayey sandy GRAVEL - wet, very dense
					27	25			(SP) Gray fine to medium SAND - wet, medium dense
					22	30			(CL) Blue CLAY - moist to wet, medium dense, some gravelly lenses
						35			BOTTOM OF BORING

REMARKS:

Boring was converted to a monitoring well by the installation of 35' of 2" PVC casing. The lower 20' of casing was slotted and the annular space filled with pea-gravel to a depth of 12'. A bentonite and concrete seal was placed in the annular space from 12' to the surface.

EMCON ASSOCIATES

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-6.2 BORING NO. 61A (14L)

BY LP DATE 4/6/82 SURFACE ELEV. * (PROJECT DATUM)

*AERO-GEODETIC: USGS ELEV. 37.7

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Strength (TSF)	Penetration (Blows/Ft.)				
									Asphalt and Base Rock
									(CL) Dark brown silty CLAY - moist
					7	5			(mottled, brown)
									(sandy)
					11	10			(very moist)
					14	15			(CL/SM) Interlayered gray very sandy CLAY and silty SAND - wet
					17	20			(SM/SP) Interlayered brown silty SAND and gravelly coarse SAND - wet
						25			
					6	30			(CL) Light blue-green silty CLAY with trace of very sandy clay, root holes - moist
									BOTTOM OF BORING
						35			

REMARKS: Boring converted to a monitoring well by the installation of 31' of 2" PVC casing, the lower 15' of which was slotted. The annular space was backfilled with gravel to within 10' of the ground surface at which point a concrete surface seal was installed.

EMCON ASSOCIATES

Canonie

Boring Log

PRELIMINARY

PROJECT No. CES 82-023
BORING No. 64B
PAGE 1 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CA
BORING LOCATION N 332,697 E 1,549,518 SURFACE ELEV.
DRILLER ALL TERRAIN DRILLING DATE: START 7-17-85 FINISH 7-18-85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
5														
10														
15														
20														
25														
30													FOR SOIL DESCRIPTIONS FROM 30.0 FT. TO 70.0 FT., SEE BORING LOG 14B.	
35														
40														

Rev. 5-85

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. 64B
PAGE 2 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CA
BORING LOCATION N 332,697 E 1,549,518 SURFACE ELEV.
DRILLER ALL TERRAIN DRILLING DATE: START 7-17-85 FINISH 7-18-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	6-12	12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
45													FOR SOIL DESCRIPTIONS TO 70.0 FT. SEE BORING LOG 14B.	
50														
55														
60														
65														
70													(CLAY)	
	1	MS	70.0	71.5	10	9	14	18	CL		1.5	70.0	STIFF BROWN SILTY CLAY, TRACE OF FINE TO COARSE SAND.	
	2	MS	72.5	74.0	16	18	21	18	CL		1.0			
75												75.0		
	3	MS	75.0	76.5	12	13	16	18	CL		1.0	77.0	STIFF GRAY MOTTLED BROWN SANDY SILTY CLAY.	
													STIFF GRAY SILTY CLAY.	
	4	MS	77.5	79.0	18	35	36	18	CL/SP		1.0	78.3		
80													BROWN FINE TO MEDIUM SAND.	
	5	MS	80.0	81.5	19	20	21	18	SP/CL			80.3		

Rev. 5-85

Canonie

Boring Log

PROJECT No. CES 82-023
BORING No. 64B
PAGE 3 OF 3

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CA
BORING LOCATION N 332,697 E 1,549,518 SURFACE ELEV.
DRILLER ALL TERRAIN DRILLING DATE: START 7-17-85 FINISH 7-18-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
											2.0	80.3	VERY STIFF BROWN SILTY CLAY, SOME FINE SAND.	
												81.0	BROWN FINE TO MEDIUM SAND.	
	6	MS	82.5	84.0	16	28	34	18	SP			83.9		
85														
	7	MS	85.0	86.5	16	21	25	18	CL		2.5			
	8	MS	87.5	89.0	13	19	24	16	CL		2.5		VERY STIFF GRAY SILTY CLAY, TRACE OF FINE TO MEDIUM SAND.	
90														
	9	MS	90.0	91.5	12	17	21	11	CL		3.25			
												92.0	STIFF BROWN MOTTLED GRAY SILTY CLAY, SOME FINE TO COARSE SAND.	
	10	MS	92.5	94.0	12	25	35	16	CL		2.0			
95												94.5	TRACE OF ROOTS.	
	11	MS	95.0	96.5	9	12	25	18	CL		0.5		MEDIUM STIFF TO VERY STIFF BROWN MOTTLED GRAY SILTY CLAY.	
	12	MS	97.5	99.0	13	19	26	18	CL		2.5	99.0		
100													SOFT BROWN SANDY SILTY CLAY.	
	13	MS	100.0	101.5	13	19	27	18	CL		0.5			
												101.5	BOTTOM OF BORING AT 101.5 FT.	
105													NOTES:	

1. BORING DRILLED USING MUD ROTARY METHOD.

2. UPON COMPLETION, BORING WAS CONVERTED TO 4-INCH DIAMETER PVC OBSERVATION WELL. SEE 64B(3) OBSERVATION WELL DETAILS.

Rev. 5-85

LOG OF EXPLORATORY BORING

PROJECT NUMBER 505-0.2 BORING NO. 65A

BY HCW DATE 6/14/82 SURFACE ELEV. * (PROJECT DATUM)

*AERO-GEODETIC: USGS ELEV. 27.4

CLASSIFICATION DATA			FIELD DATA			Depth in Ft.	Ground Water Levels	Samples	DESCRIPTION
% Fines (-No.200)	Liquid Limit	Plasticity Index		Compressive Stength (TSF)	Penetration (Blows/Ft.)				
									(CL) Dark brown CLAY with trace of fine sand - damp
									(gray-brown)
					12	5			(minor [illegible] to fine sand and trace [illegible] fine gravel)
					15	10			(SM) Green-gray silty fine SAND with minor fine gravel - moist to wet
					27	15			(SW) Brown fine gravelly medium to coarse SAND with 1" to 2" thick silt and fine gravel inter-layers - wet
					17	20			(gray, silty, fine-grained, no gravel)
									(CL) Gray silty CLAY with trace fine gravel - damp to moist
					55	25			(GC) Brown fine sandy clayey fine GRAVEL - wet
					20	30			(CL) Brown sandy and fine gravelly CLAY - damp
					14	35			(green-gray, silty with minor sand)
									BOTTOM OF BORING
						40			

REMARKS: Boring was converted to a ground-water monitoring well by installation of 34' of 4" PVC casing. The lower 5' of casing is unslotted with a 10' section of slotted casing above. The annular space was backfilled with gravel to a depth of 7'. A bentonite-concrete seal was placed in the annular space from 7' to the surface.

EMCON ASSOCIATES

Canonie

Boring Log

PRELIMINARY

PROJECT No. CES 82-023
BORING No. 79A
PAGE 1 OF 2

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CA
BORING LOCATION N 333,420 E 1,547,825 SURFACE ELEV.
DRILLER ALL TERRAIN DRILLING DATE: START 7-29-85 FINISH 7-29-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	6-12	12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
												0.3	ASPHALT.	
													(FILL MATERIAL)	
5												5.0		
	1	MS*	5.0	6.5	10	19	20	18	CL		3.0			
													VERY STIFF BROWN SILTY CLAY.	
	2	MS	7.5	9.0	13	14	19	18	CL		3.0			
10												10.0		
	3	MS	10.0	11.5	10	16	14	18	CL		3.5		VERY STIFF GRAY SILTY CLAY, SOME MEDIUM TO COARSE SAND.	
												12.5		
	4	MS	12.5	14.0	4	4	4	18	SM				GRAY SILTY FINE TO COARSE SAND, WET.	
15														
	5	MS	15.0	16.5	4	6	8	18	SM/SC			15.5	GRAY MOTTLED BROWN CLAYEY FINE TO MEDIUM SAND.	
	6	MS	16.5	18.0	10	23	41	18	SC/SW			17.5		
	7	MS	18.0	19.5	21	25	19	15	SW				GRAY FINE TO COARSE SAND, TRACE OF FINE GRAVEL.	
20														
	8	MS	19.5	21.0	6	8	18	18	SW/ML			20.5		
													GRAY FINE SANDY SILT, WET.	
	9	MS	22.0	23.5	11	10	9	18	ML		0.75			
												23.5		
25														
	10	PB*	23.5	27.5				48	CL		0.75		MEDIUM STIFF GRAY FINE SANDY SILTY CLAY, TRACE OF ROOTS, TRACE OF SHELLS.	
30	11	PB	27.5	31.5				0						
												31.5		
	12	PB	31.5	35.5				40	CL		0.75		MEDIUM STIFF GRAY MOTTLED BROWN FINE SANDY SILTY CLAY, TRACE OF ROOTS.	
35												34.5		
	13	PB	35.5	39.5				0					GRAY FINE SANDY SILTY CLAY, TRACE OF ROOTS. (SILTY CLAY)	
40												39.5		
													BOTTOM OF BORING AT 39.5 FT.	

Rev. 5-86

*MS-MODIFIED SPOON

Canonie

Boring Log

PROJECT No. CES 82-023

BORING No. 79A

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CA

BORING LOCATION N 333,420 E 1,547,825 SURFACE ELEV.

DRILLER ALL TERRAIN DRILLING DATE: START 7-29-85 FINISH 7-29-85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
													NOTES: 1. BORING DRILLED USING MUD ROTARY METHOD. 2. UPON COMPLETION, BORING WAS CONVERTED TO 4-INCH DIAMETER PVC OBSERVATION WELL. SEE 79A OBSERVATION WELL DETAILS.	

Rev. 9-68

Canonie

Boring Log

PRELIMINARY

PROJECT No. CE 82-023
BORING No. 2C (MEW-82(A))
PAGE 1 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION N 334,695 E 1,548,307 SURFACE ELEV. 28.6
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
0													(FILL MATERIAL).	
												4.0		
5	1	PB*	4.5	7.0				30	CL		3.0		VERY STIFF BROWN SILTY CLAY, SOME FINE TO COARSE GRAVEL.	
									CL		2.0	8.0		
	2	PB	7.0	9.5				30	SM&GM				GRAY SILTY FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.	
10									SM&GM			10.0		
	3	PB	9.5	12.0				30	CL		2.0		VERY STIFF BROWN MOTTLED GRAY SILTY CLAY.	
	4	PB	12.0	14.5				30	CL		2.0			
15												14.5		
	5	PB	14.5	17.0				30	SW&GW				GRAY FINE TO COARSE SAND AND FINE TO COARSE GRAVEL (WET).	
	6	PB	17.0	19.5				30	SW&GW					
20	7	PB	19.5	22.0				30	SW&GW					
	8	PB	22.0	24.5				6	SW&GW					
25	9	PB	24.5	27.0				6	SW&GW					
												27.5	(BROWN SANDY SILTY CLAY).	
	10	PB	27.0	29.5				6	SW&GW			28.5		
30	11	PB	29.5	32.0				6	SW&GW				GRAY FINE TO COARSE SAND AND FINE TO COARSE GRAVEL (WET).	
												32.0		
	12	PB	32.0	34.5				18	CL		0.5		MEDIUM STIFF TO VERY STIFF GRAY SILTY CLAY.	
35	13	PB	34.5	37.0				30	CL		1.0			
	14	PB	37.0	39.5				30	CL		1.5			
40	15	PB	39.5	42.0				30	CL		2.5			

Rev. 5-85

*PB-PITCHER BARREL

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C (MEW-P2(A))
PAGE 2 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
40														
	16	PB	42.0	44.5				30	CL		2.5			
45											3.0			
	17	PB	44.5	47.0				30	CL		1.5		MEDIUM STIFF TO VERY STIFF GRAY SILTY CLAY.	
	18	PB	47.0	49.5				30	CL		2.0			
50									CL		2.0			
	19	PB	49.5	52.0				30				50.5		
									SM				GRAY SILTY FINE SAND.	
									SM			53.0		
	20	PB	52.0	54.5				30	CL		2.5			
55														
	21	PB	54.5	57.0				30	CL		1.25			
	22	PB	57.0	59.5				30	CL		3.25		STIFF TO VERY STIFF GRAY AND BROWN SILTY CLAY, SOME FINE GRAVEL.	
60														
	23	PB	59.5	62.0				30	CL		3.0			
	24	PB	62.0	64.5				30	CL		2.0			
65									SW			64.5	BROWN FINE TO COARSE SAND (WET).	
	25	PB	64.5	67.0				30				65.5		
									CL		2.0			
	26	PB	67.0	69.5				30	CL		2.5			
70													VERY STIFF BROWN FINE SANDY SILTY CLAY.	
	27	PB	69.5	72.0				30	CL		2.0			
	28	PB	72.0	74.5				30	CL		2.5			
75												74.5		
	29	PB	74.5	77.0				30	SW					
													BROWN FINE TO COARSE SAND, SOME FINE GRAVEL (WET).	
	30	PB	77.0	79.5				30	SW					
80														
	31	PB	79.5	82.0				30	SW					

Rev. 5-80

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C (MEW-82(A))
PAGE 3 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
80														
									CL		2.0	82.5		
	32	PB	82.0	84.5				30	CL		2.5			
85														
	33	PB	84.5	87.0				30	CL		3.0			
	34	PB	87.0	89.5				30	CL		4.5			
90														
	35	PB	89.5	92.0				30	CL		4.5			
	36	PB	92.0	94.5				30	CL		2.5		STIFF TO HARD GRAY MOTTLED BROWN SILTY CLAY.	
95														
	37	PB	94.5	97.0				30	CL		2.0			
	38	PB	97.0	99.5				30	CL		2.0			
100														
	39	PB	100.0	102.0				0						
	40	PB	102.0	104.0				24	CL		1.5			
105									CL		2.0			
	41	PB	104.5	106.5				30				105.5	BROWN SILTY FINE SAND.	
									SM			107.0		
	42	PB	106.5	109.0				30	CL		3.0		VERY SITFF GRAY SILTY CLAY.	
												109.0		
110													BROWN FINE TO COARSE SAND (WET).	
	43	PB	109.0	111.5				30	SW			111.0		
	44	PB	111.5	114.0				30	CL		3.0			
													VERY STIFF BROWN SILTY CLAY.	
115									CL		2.5			
	45	PB	114.0	116.5				30	SW			115.5		
												116.5	BROWN SILTY FINE SAND.	
	46	PB	116.5	119.0				30	CL		3.5			
													VERY STIFF BROWN MOTTLED GRAY SILTY CLAY.	
120														
	47	PB	119.0	121.5				30	CL		3.0			

Rev. 5-85

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C (MEW-S2(A))
PAGE 4 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
120														
	48	PB	121.5	124.0				30	CL SM		3.0	123.0		
125														
	49	PB	124.0	126.5				24	SM					
	50	PB	126.5	129.0				30	SM				GRAY SILTY FINE SAND.	
130														
	51	PB	129.0	133.0				0				133.0		
135	52	PB	133.0	135.5				12	CL		2.5			
	53	PB	135.5	138.0				18	CL		3.5			
140	54	PB	138.0	142.0				48	CL		3.5		VERY STIFF GRAY SILTY CLAY.	
	55	PB	142.0	146.0				48	CL		3.5			
145														
	56	PB	146.0	150.0				48	CL		3.0			
150														
	57	PB	150.0	154.0				48	CL		2.5			
155														
	58	PB	154.0	158.0				48	CL		3.0			
160	59	PB	158.0	162.0				48	CL		3.0			

Rev. 5-85

Canonie

Boring Log

PROJECT No. CE 82-023
BORING No. 2C (MW-82A)
PAGE 5 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA
BORING LOCATION _____ SURFACE ELEV. _____
DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	TYPE	INTERVAL FROM	INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO
160												162.0		
	60	PB	162.0	166.0				48	CL		2.8			
165													VERY STIFF BROWN SILTY CLAY.	
	61	PB	166.0	170.0				48	CL		3.0			
170									CL		3.0			
	62	PB	170.0	174.0				48	SW			171.5 173.0	BROWN FINE TO COARSE SAND.	
175									CL		2.5			
	63	PB	174.0	178.0				48	CL		3.5		VERY STIFF GRAY SILTY CLAY.	
180	64	PB	178.0	182.0				48	CL		3.5			
	65	PB	182.0	186.0				48	CL		3.0	183.0		
185									SP				BROWN FINE SAND (WET).	
	66	PB	186.0	190.0				48	SP CL		2.0	187.5		
190														
	67	PB	190.0	194.0				36	CL		3.5		VERY STIFF GRAY SILTY CLAY.	
195	68	PB	194.0	198.0				48	CL		2.25	196.5		
									SW&GW				BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.	
200	69	PB	198.0	202.0				48	SW&GW			200.5		
									CL		4.0			

Rev. 8-80

Canonie

Boring Log

PROJECT No. CE 82-023

BORING No. 2C (MEW-82(A))

PAGE 6 OF 6

PROJECT NAME FAIRCHILD CAMERA AND INSTRUMENT CORPORATION, MOUNTAIN VIEW, CALIFORNIA

BORING LOCATION _____ SURFACE ELEV. _____

DRILLER ALL TERRAIN DRILLING DATE: START 7-30-85 FINISH 8-05-85

DEPTH	SAMPLE No.	SAMPLE TYPE	SAMPLE INTERVAL FROM	SAMPLE INTERVAL TO	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	RECOVERY IN INCHES	U.S.C.S. SOIL TYPE	PERCENT MOISTURE	qu TSF	CONTACT DEPTH	SOIL DESCRIPTION AND REMARKS	PIEZO.
200												200.5		
									CL		4.0	202.0	VERY STIFF BROWN SILTY CLAY.	
									SW&GW			202.5	BROWN FINE TO COARSE SAND AND FINE TO COARSE GRAVEL.	
	70	PB	202.0	206.0				36	CL		2.5			
205														
													VERY STIFF GRAY SILTY CLAY.	
	71	PB	206.0	210.0				48	CL		2.5			
210												210.0		

BOTTOM OF BORING AT 210.0 FEET.

NOTES:

1. BORING DRILLED USING MUD ROTARY METHOD.
2. UPON COMPLETION BORING WAS CONVERTED TO OBSERVATION WELL 55B. SEE 55B OBSERVATION WELL DETAILS.

Rev. 8-83

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

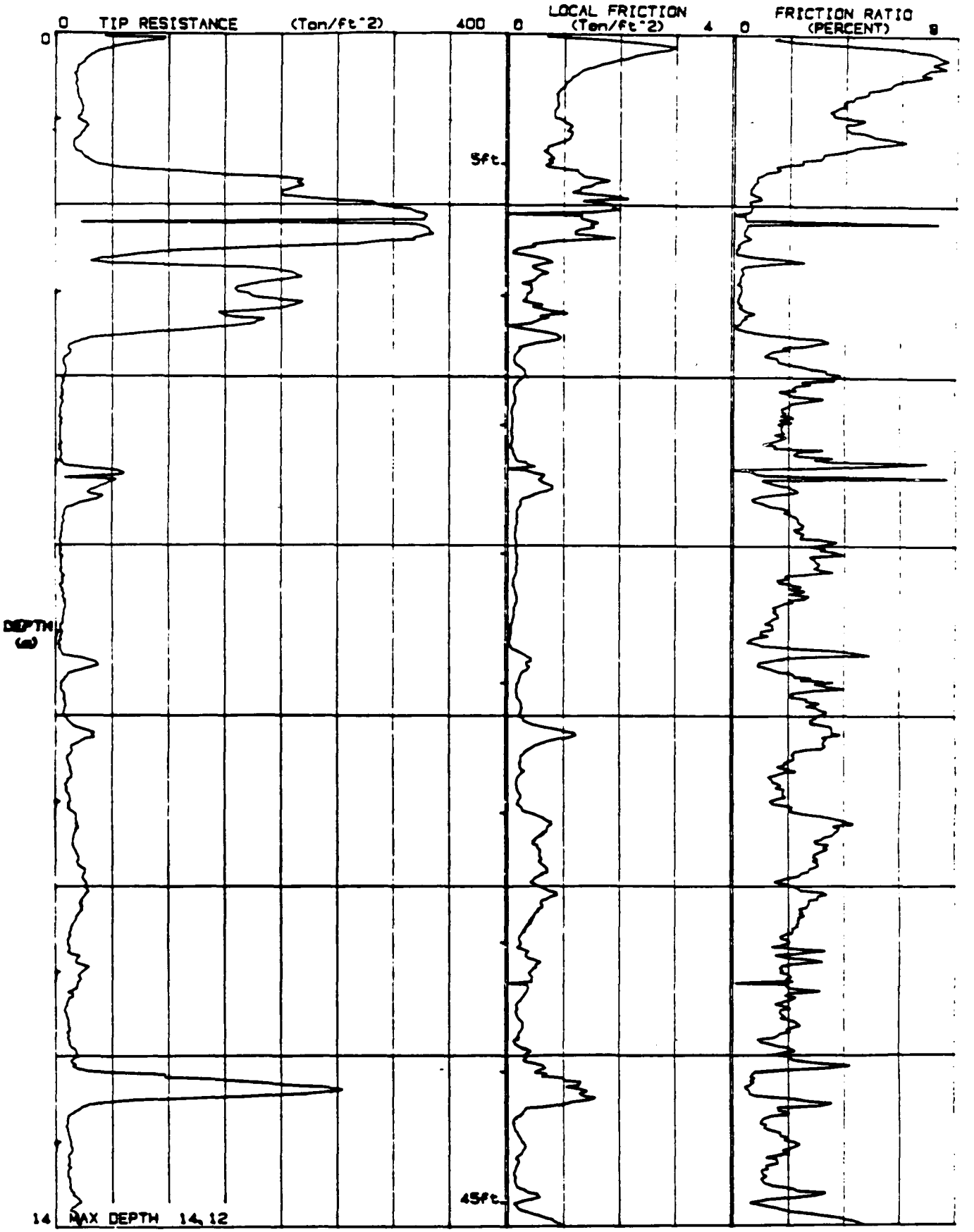
APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 9 – CPT (IT)

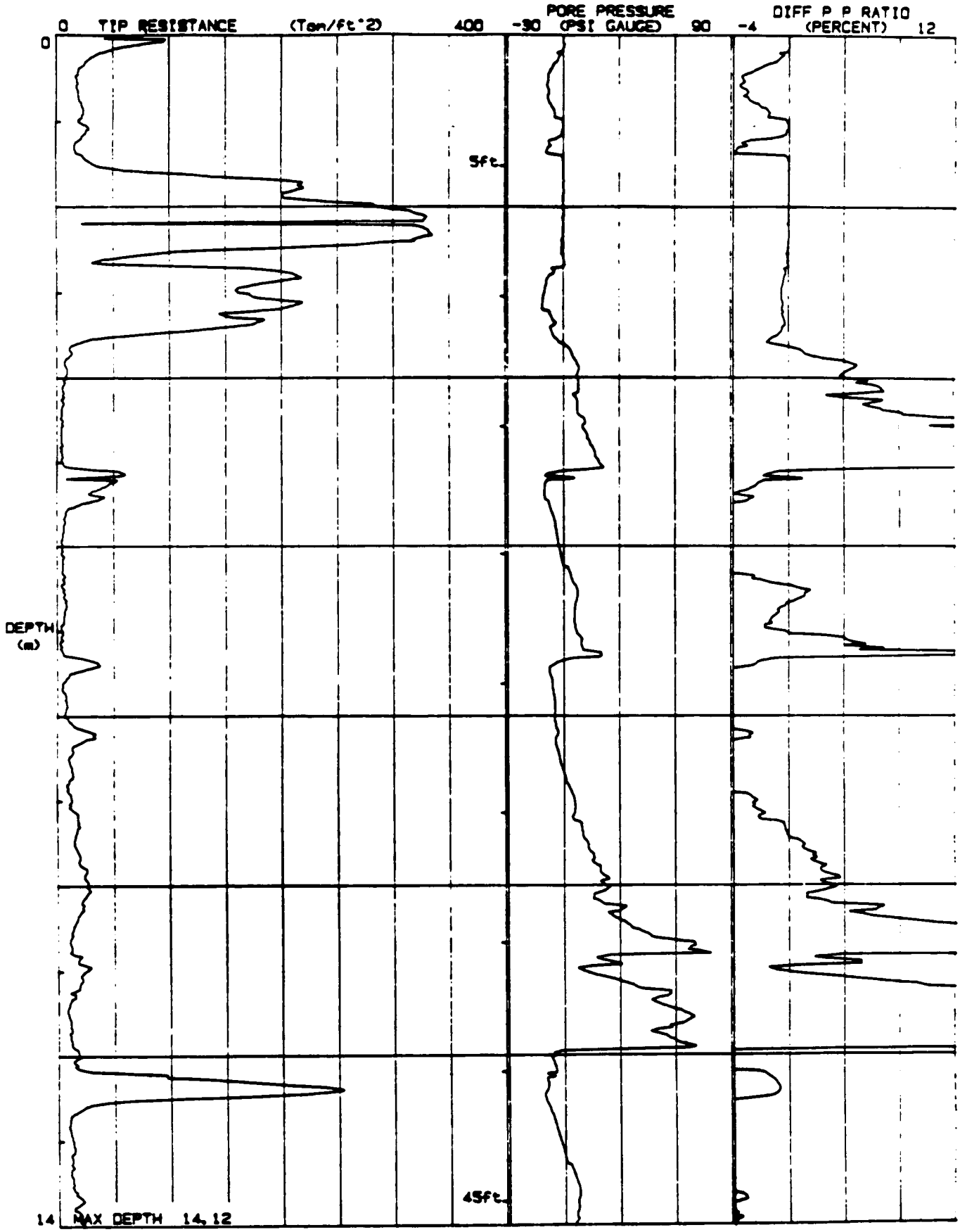
WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

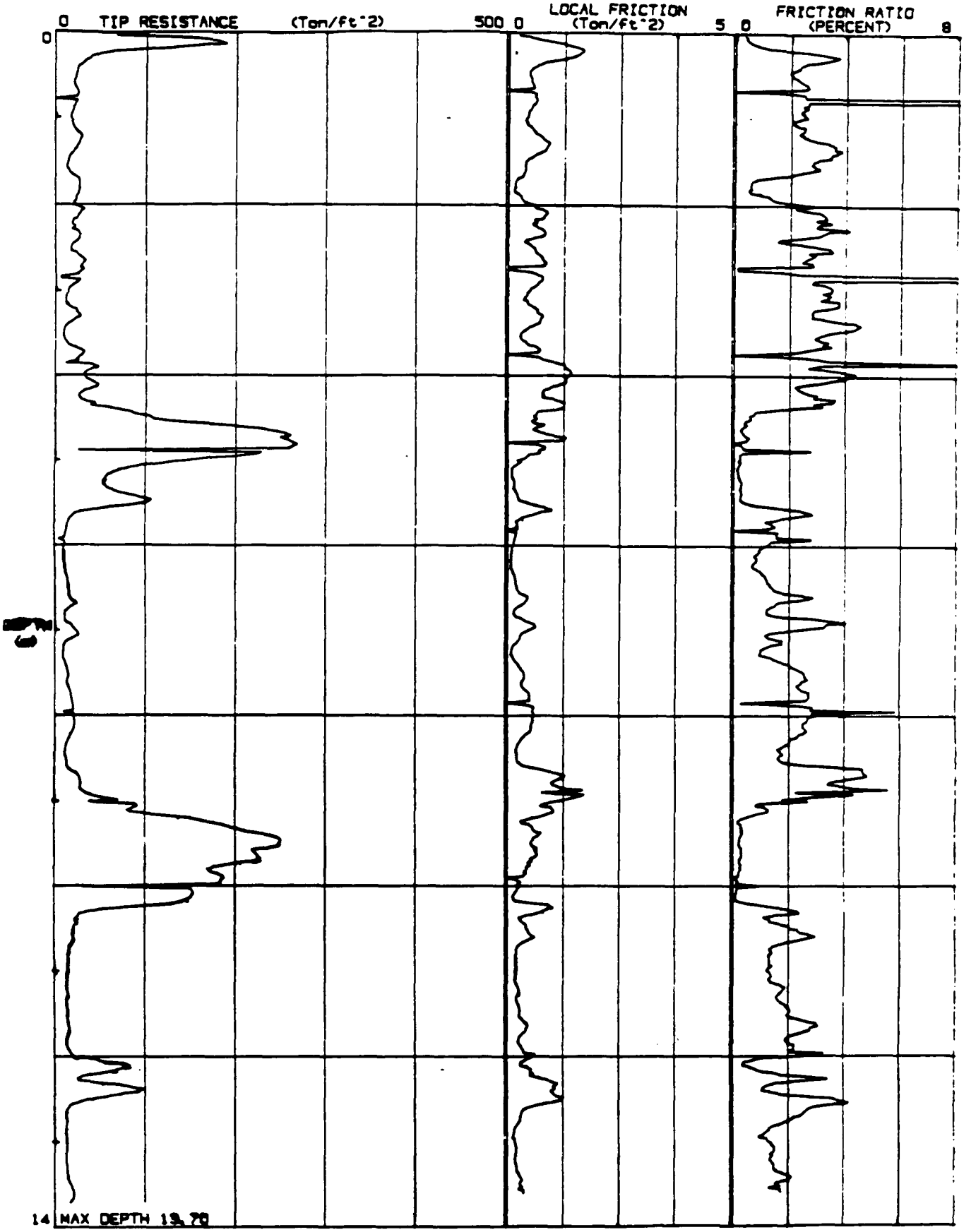
JOB # : 409700
DATE : 03/15/90/15:50
LOCATION : CPT9-5
FILE : FIL129



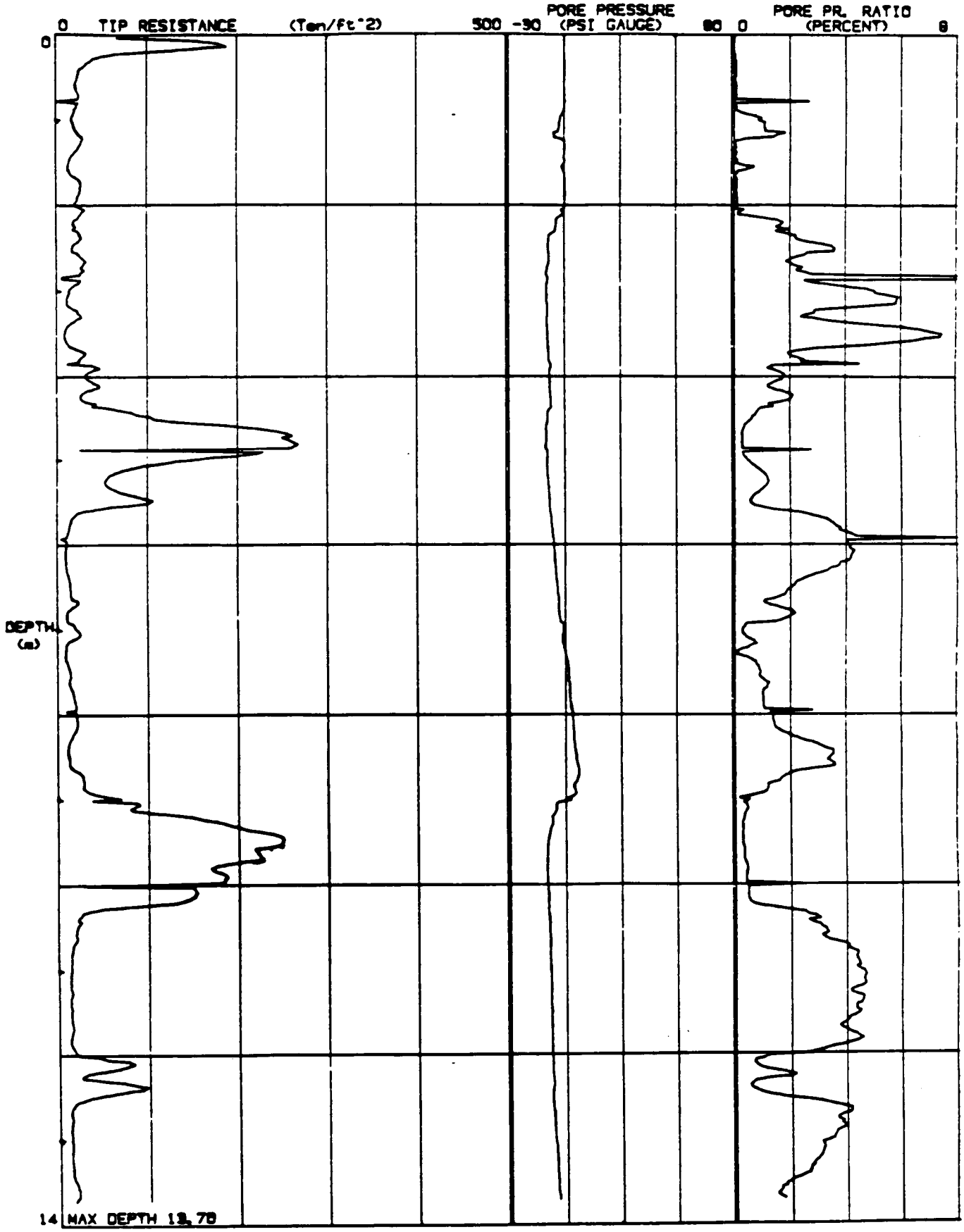
JOB # : 409700
DATE : 09/15/90/15:50
LOCATION : CPT9-5
FILE : FIL129



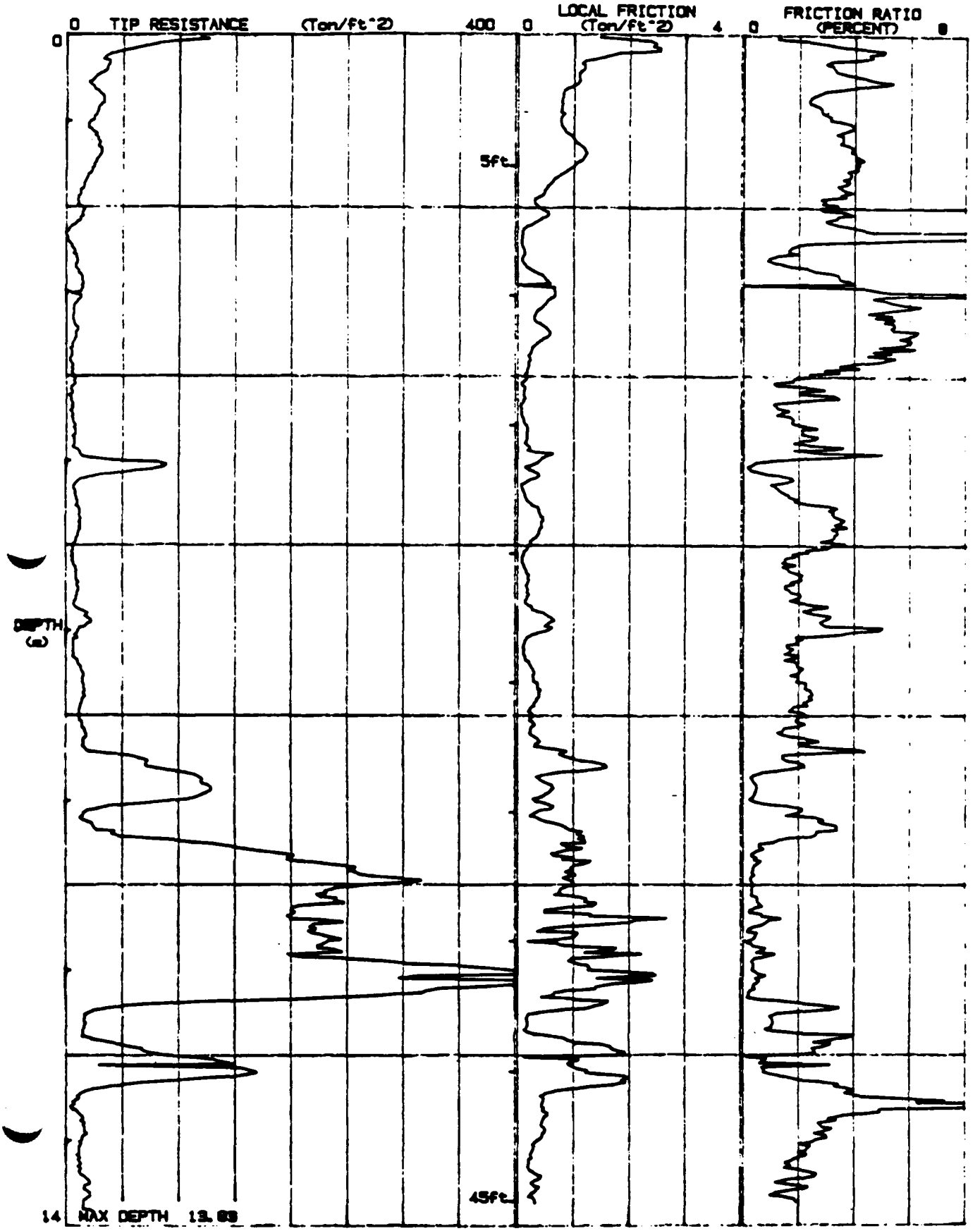
JOB # : 409700
DATE : 01/29/90
LOCATION : CPT/S-8
FILE # : 14



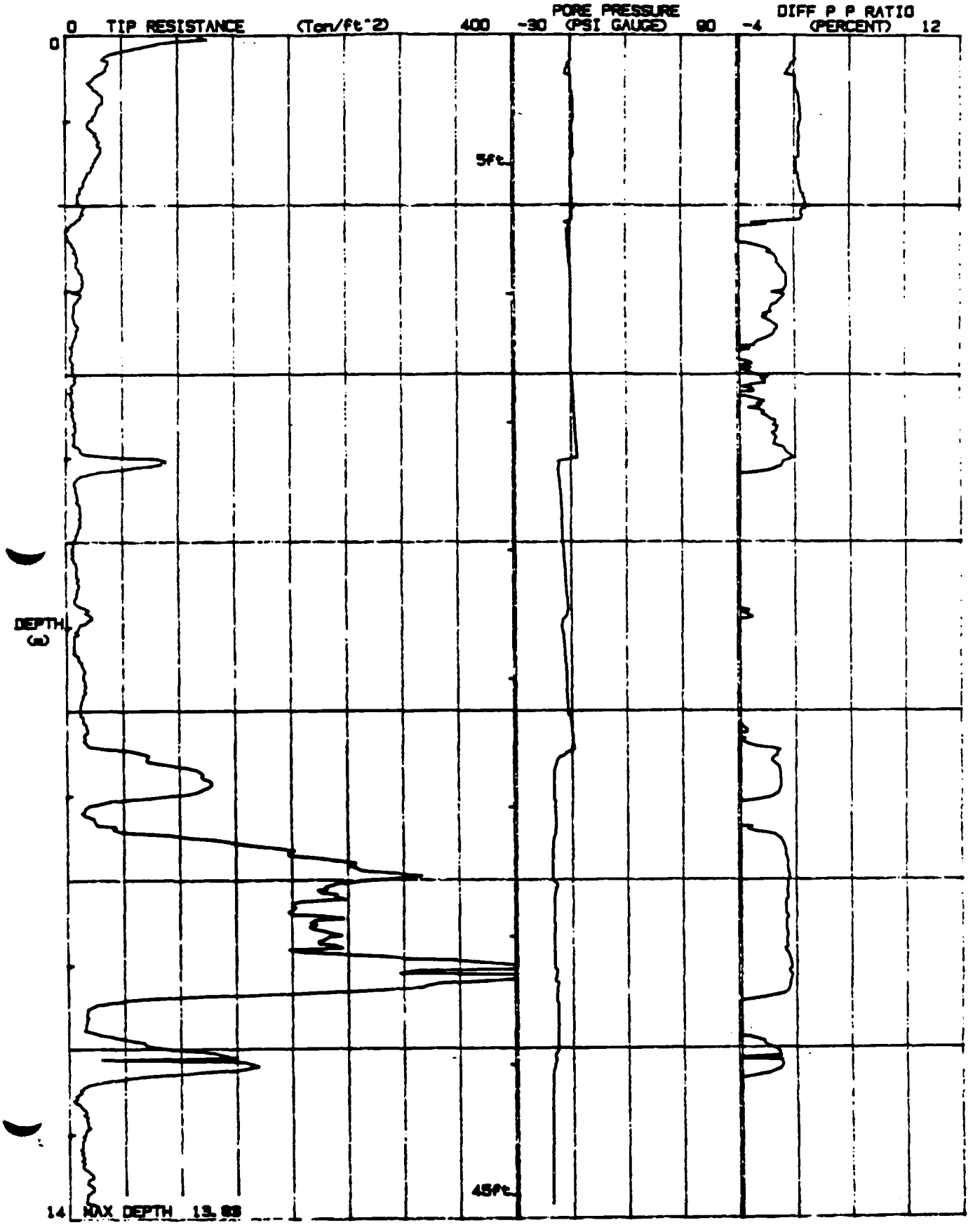
JOB # : 409700
DATE : 01/29/90
LOCATION : CPT/9-8
FILE # : 14



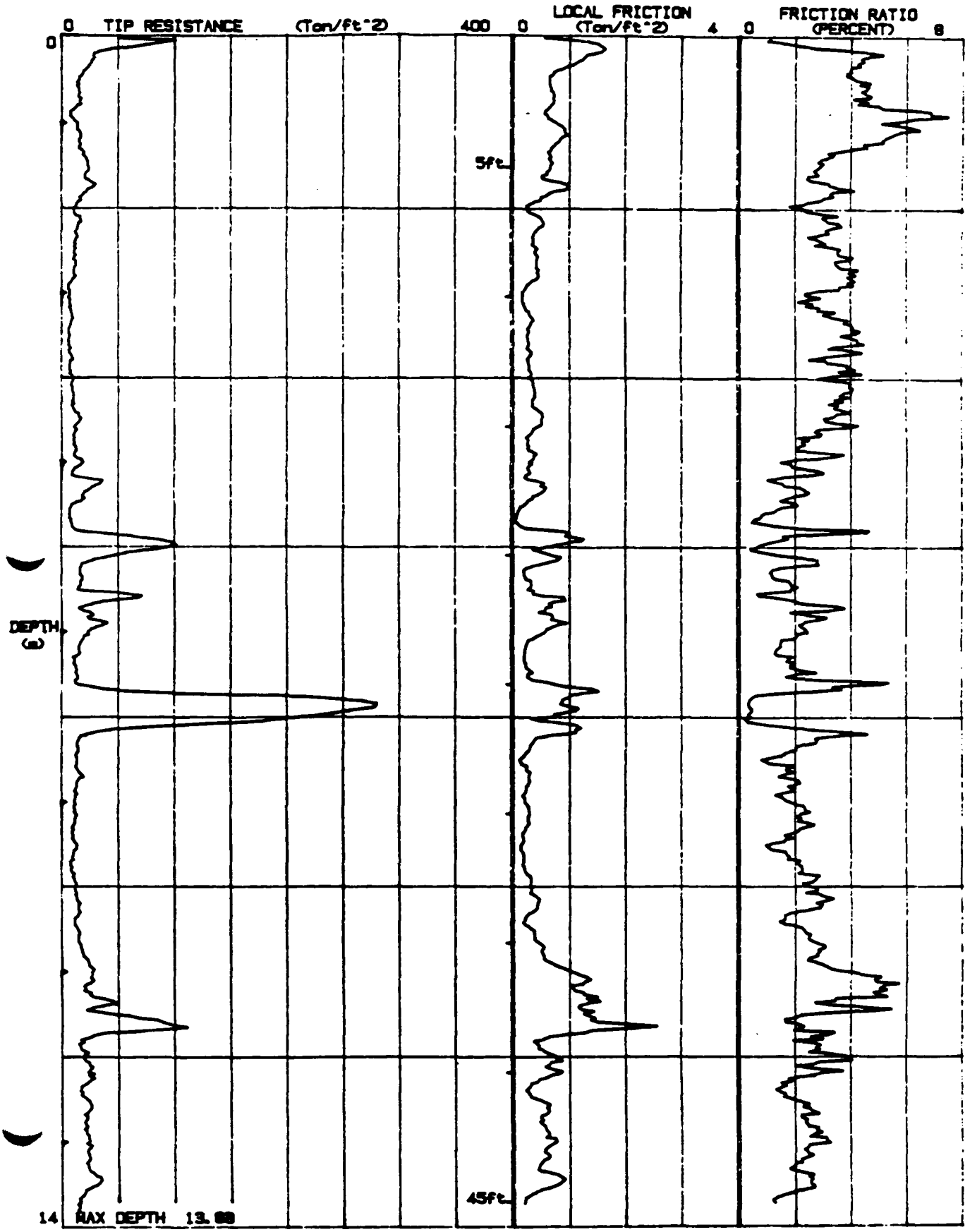
JOB # : 409700
DATE : 03/19/90/17:45
LOCATION : CPT9-9
FILE : FIL137



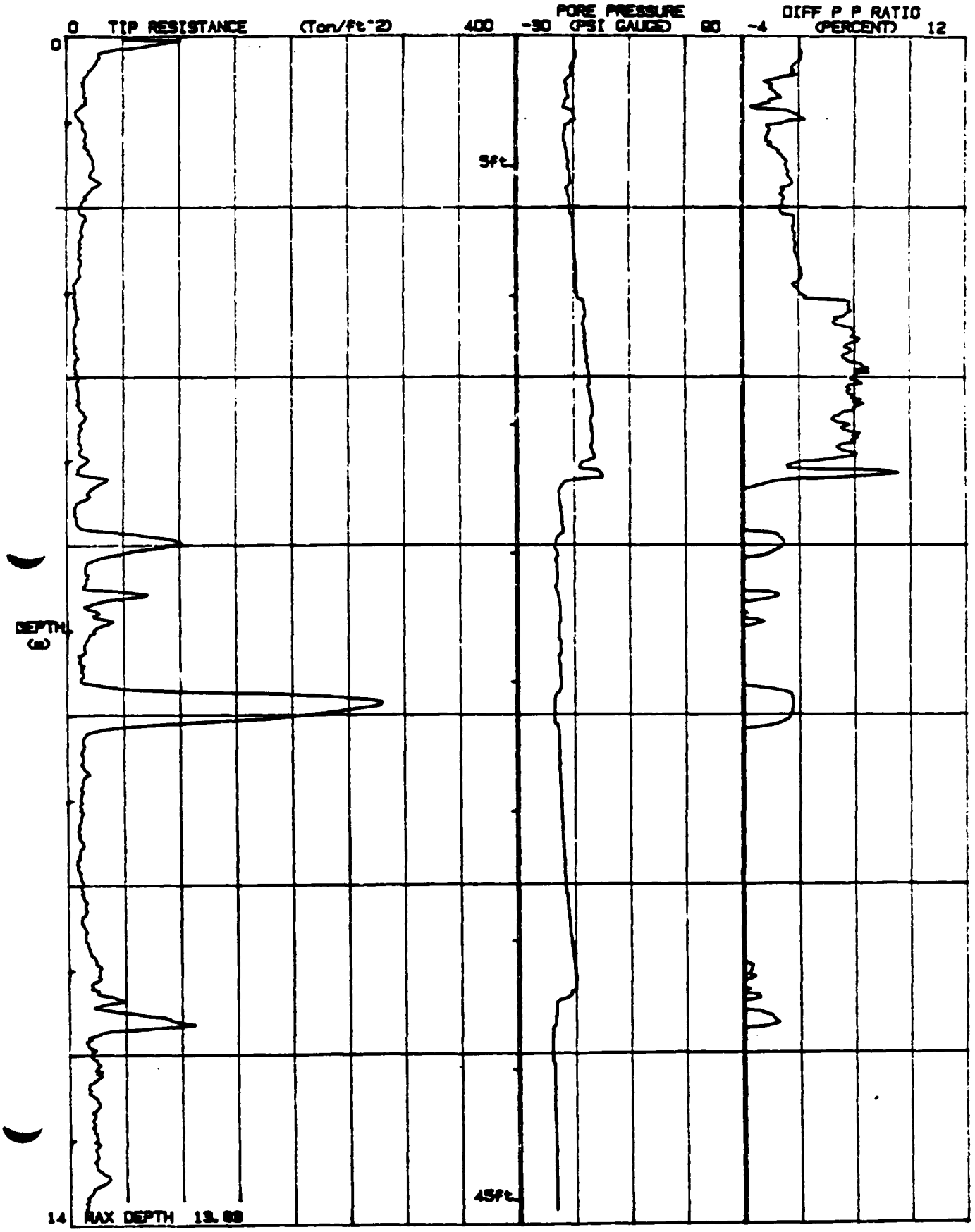
JOB # : 409700
DATE : 03/19/90/17:45
LOCATION : CPT9-9
FILE : FIL137



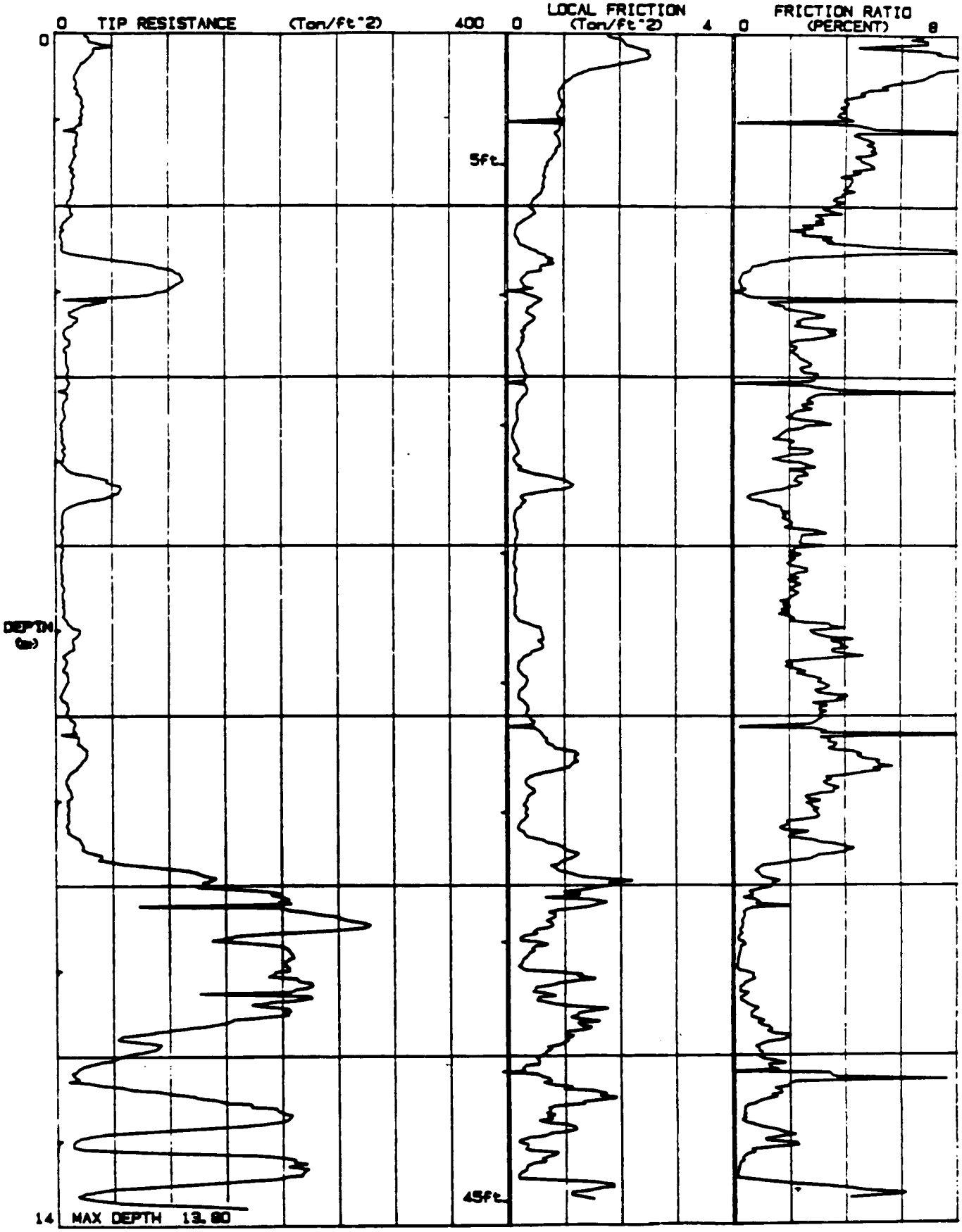
JOB # : 409700
DATE : 09/19/90/16:18
LOCATION : CPT9-11
FILE : FIL138



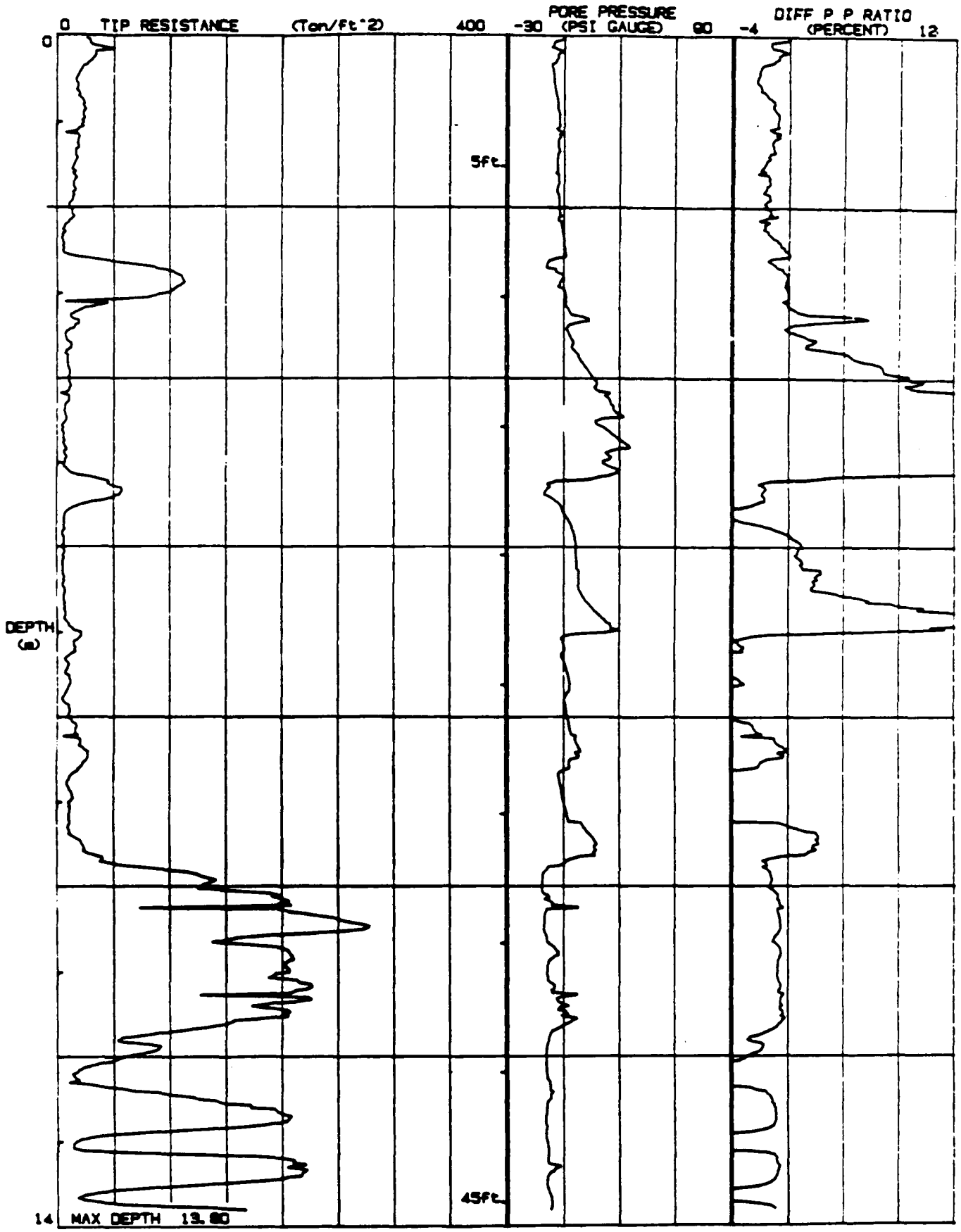
JOB # : 409700
DATE : 08/19/90/15:18
LOCATION : CPT9-11
FILE : FIL138



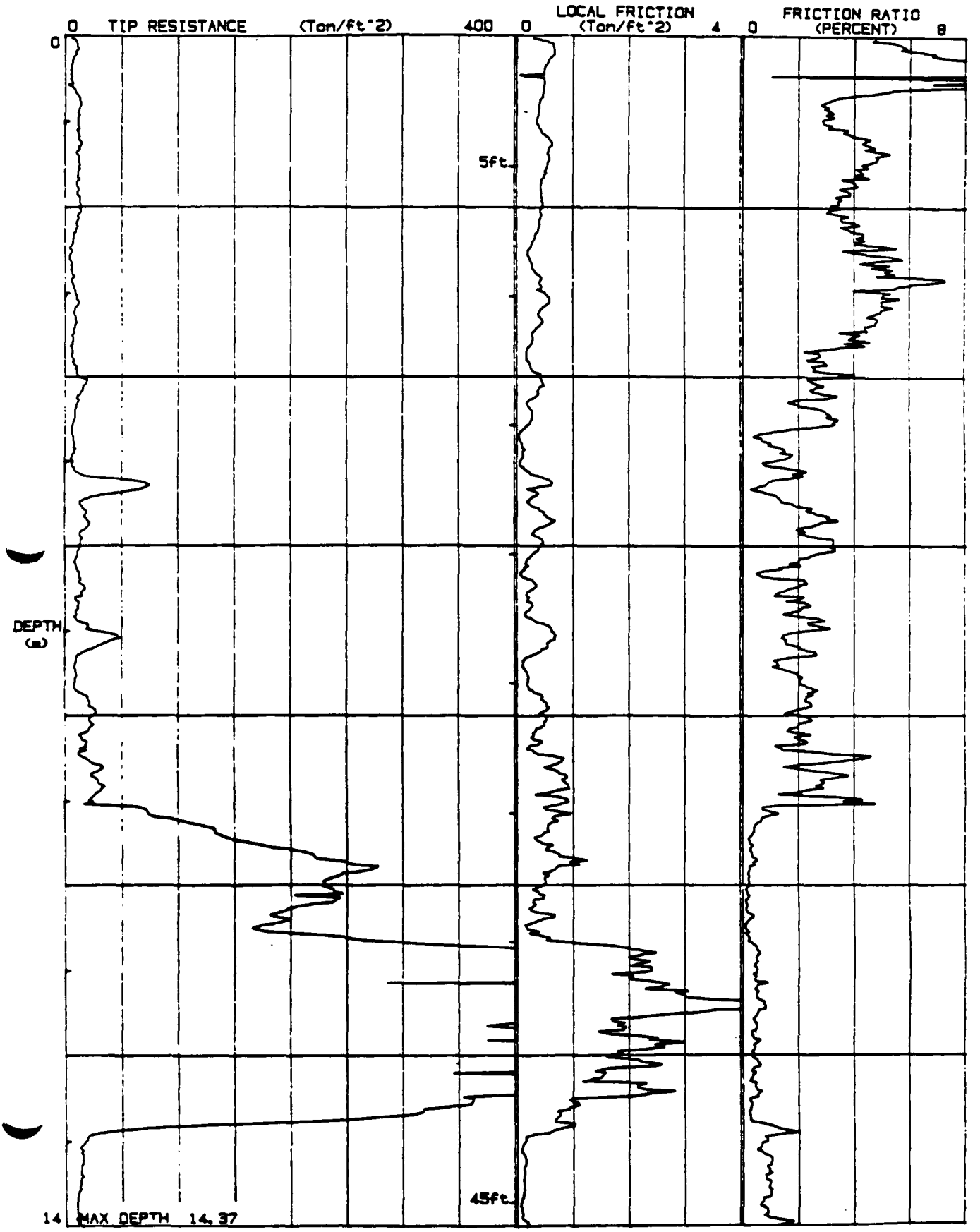
JOB # : 409700
DATE : 03/08/90/11:08
LOCATION : CPT/9-21
FILE : FIL111



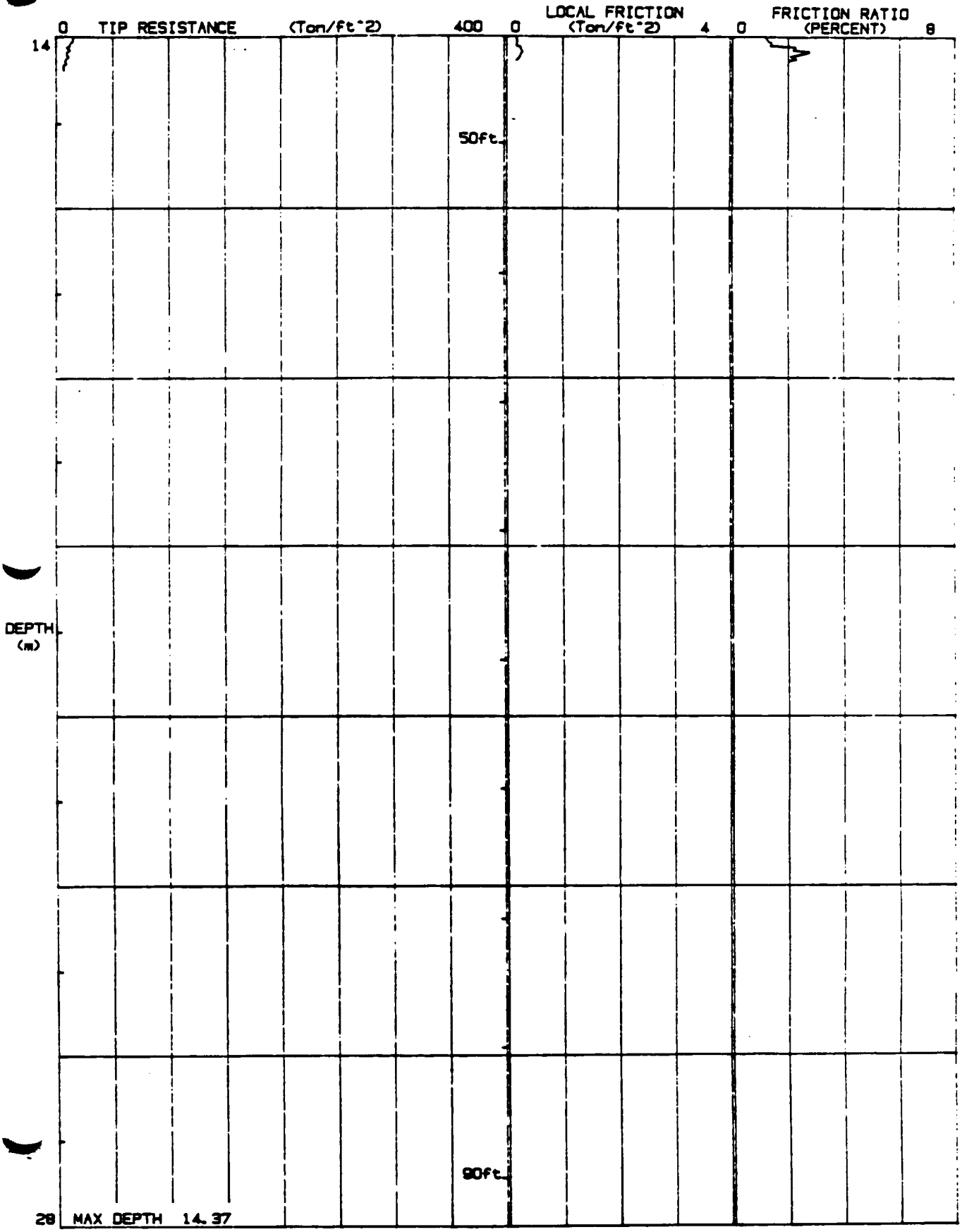
JOB # : 409700
DATE : 09/08/90/11:08
LOCATION : CPT/9-21
FILE : FIL111



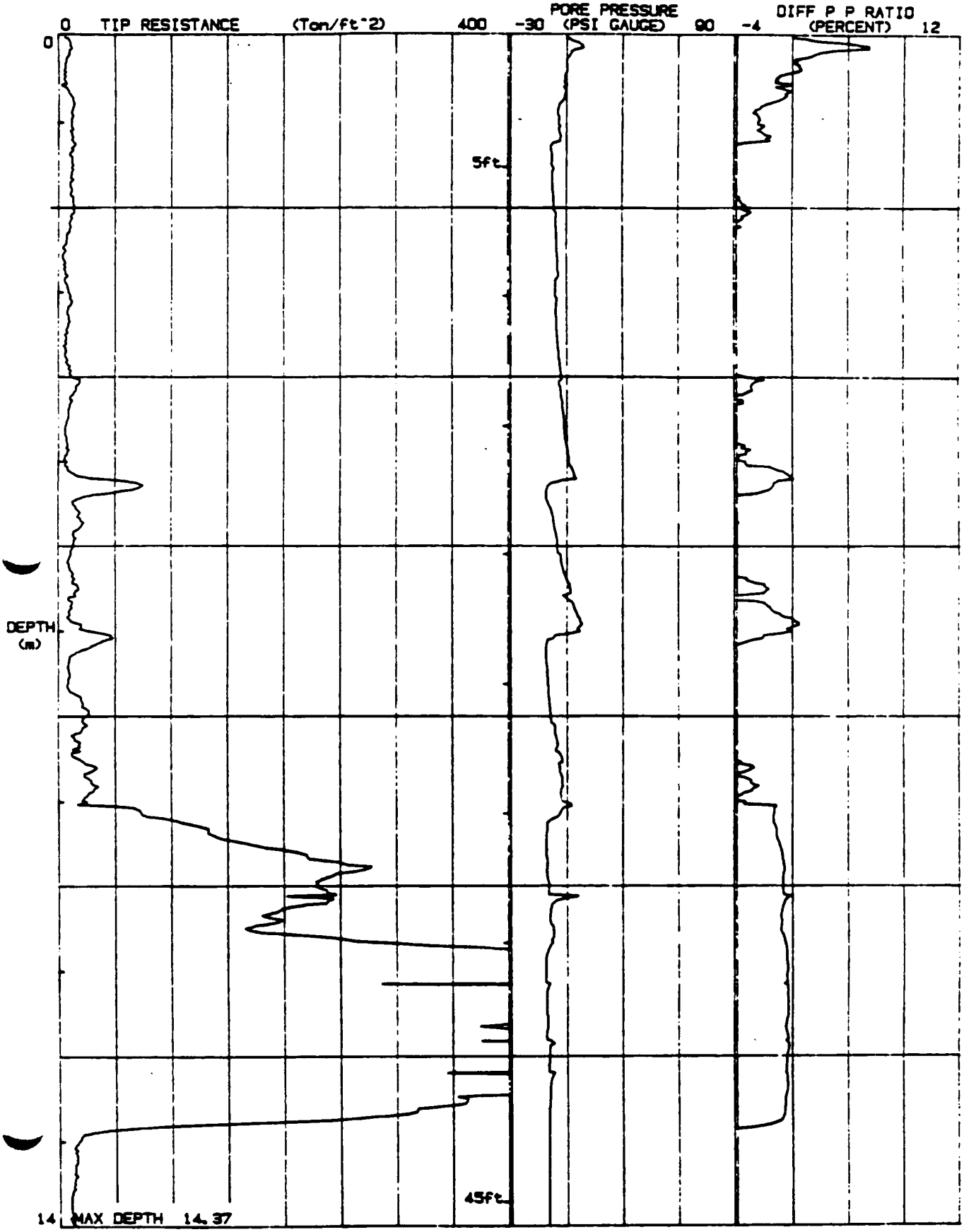
JOB # : 409700
DATE : 03/19/90/11:17
LOCATION : CPT9-22
FILE : FIL134



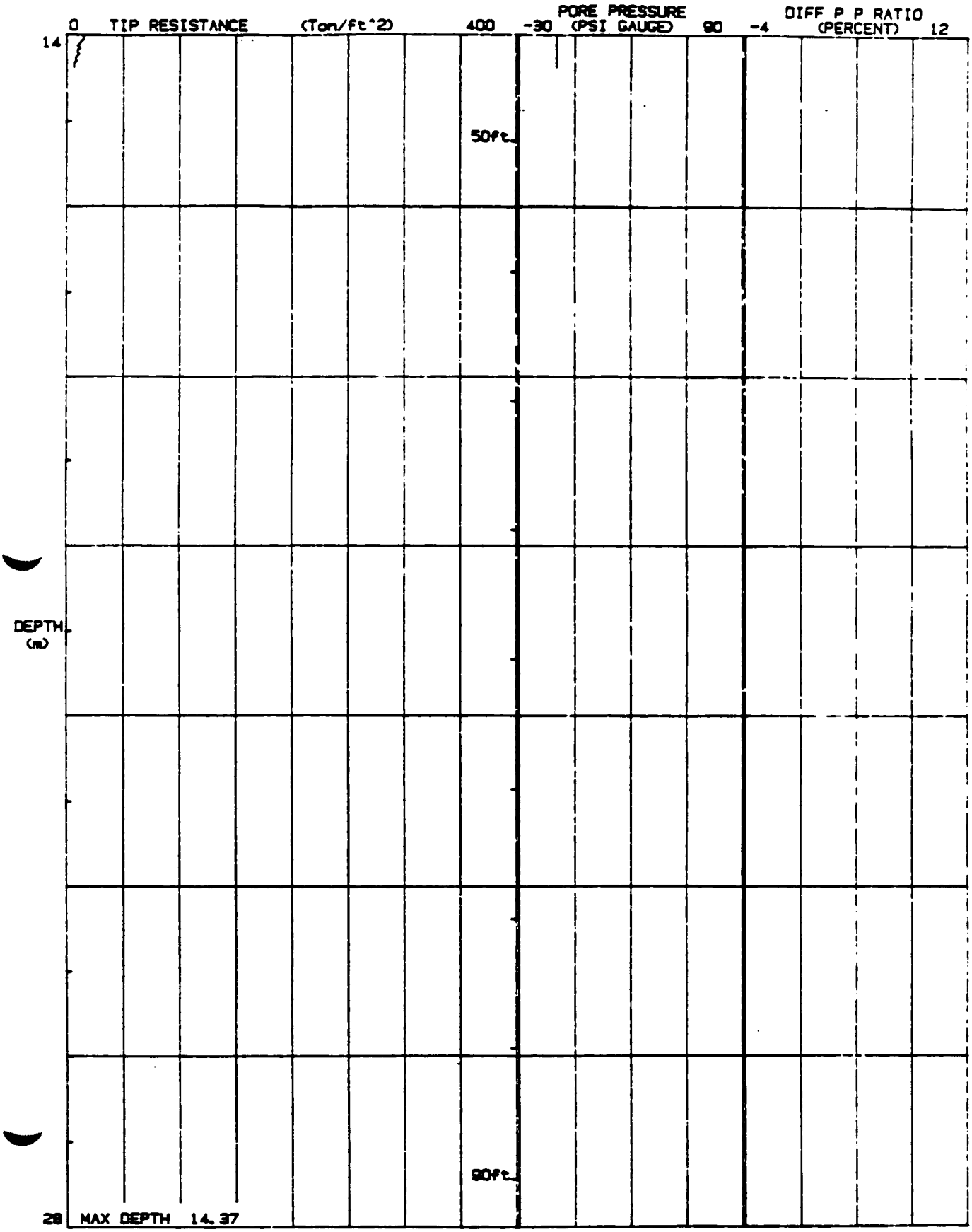
JOB # : 409700
DATE : 03/19/90/11:17
LOCATION : CPT9-22
FILE : FIL134



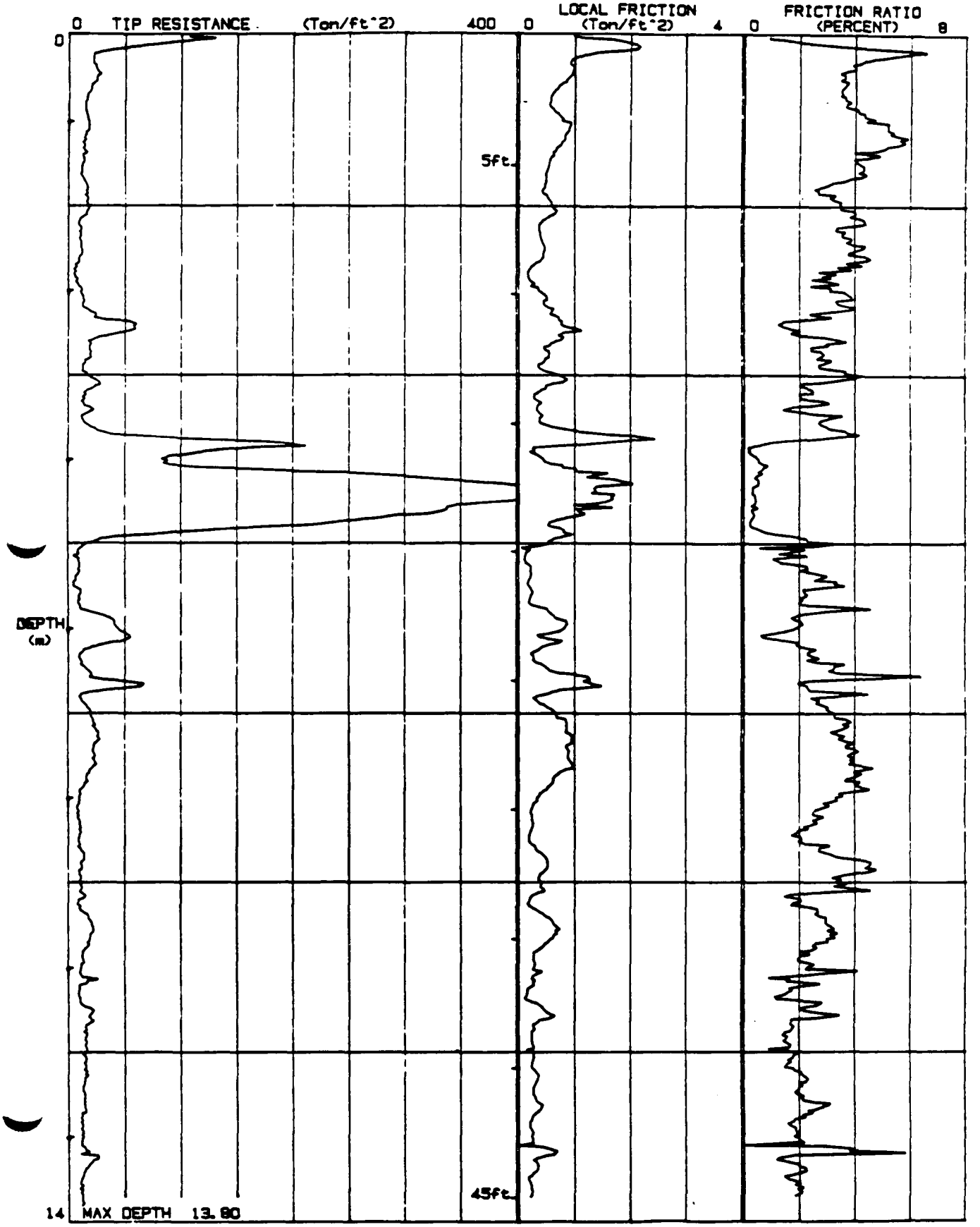
JOB # : 409700
DATE : 03/19/90/11:17
LOCATION : CPT9-22
FILE : FIL134



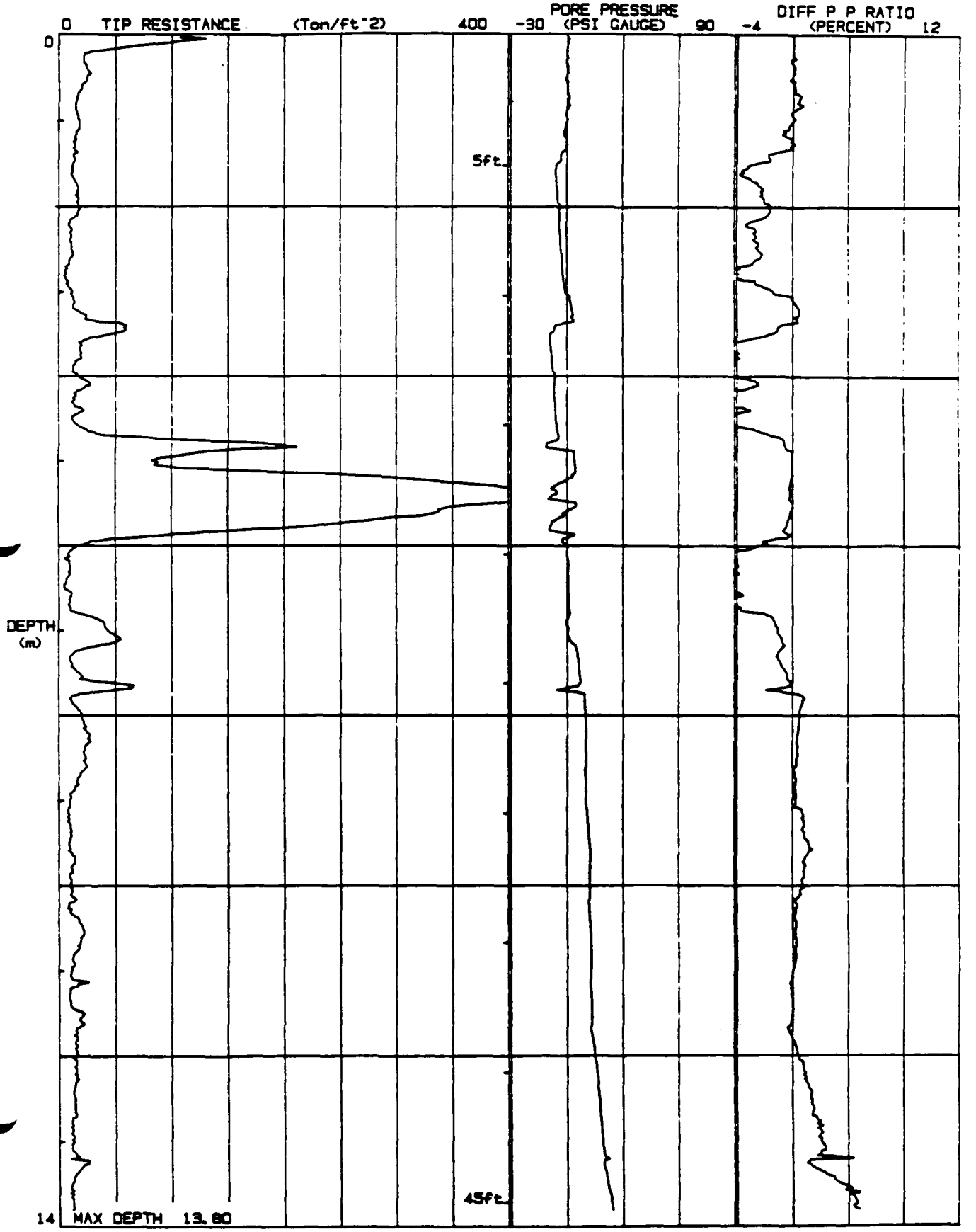
JOB # : 409700
DATE : 03/19/90/11:17
LOCATION : CPT9-22
FILE : FIL134



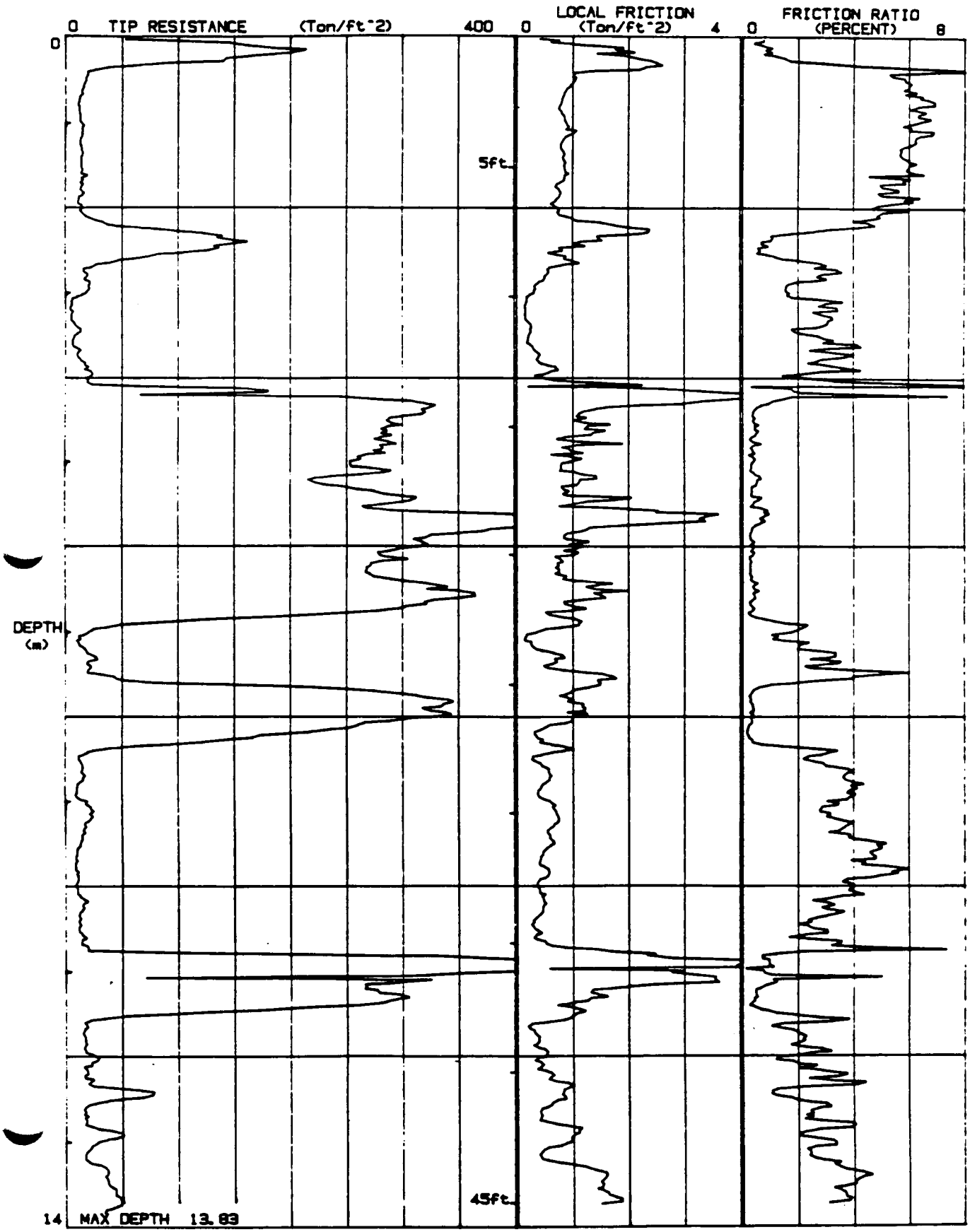
JOB # : 409700
DATE : 03/19/90/11:17
LOCATION : CPT9-25
FILE : FIL133



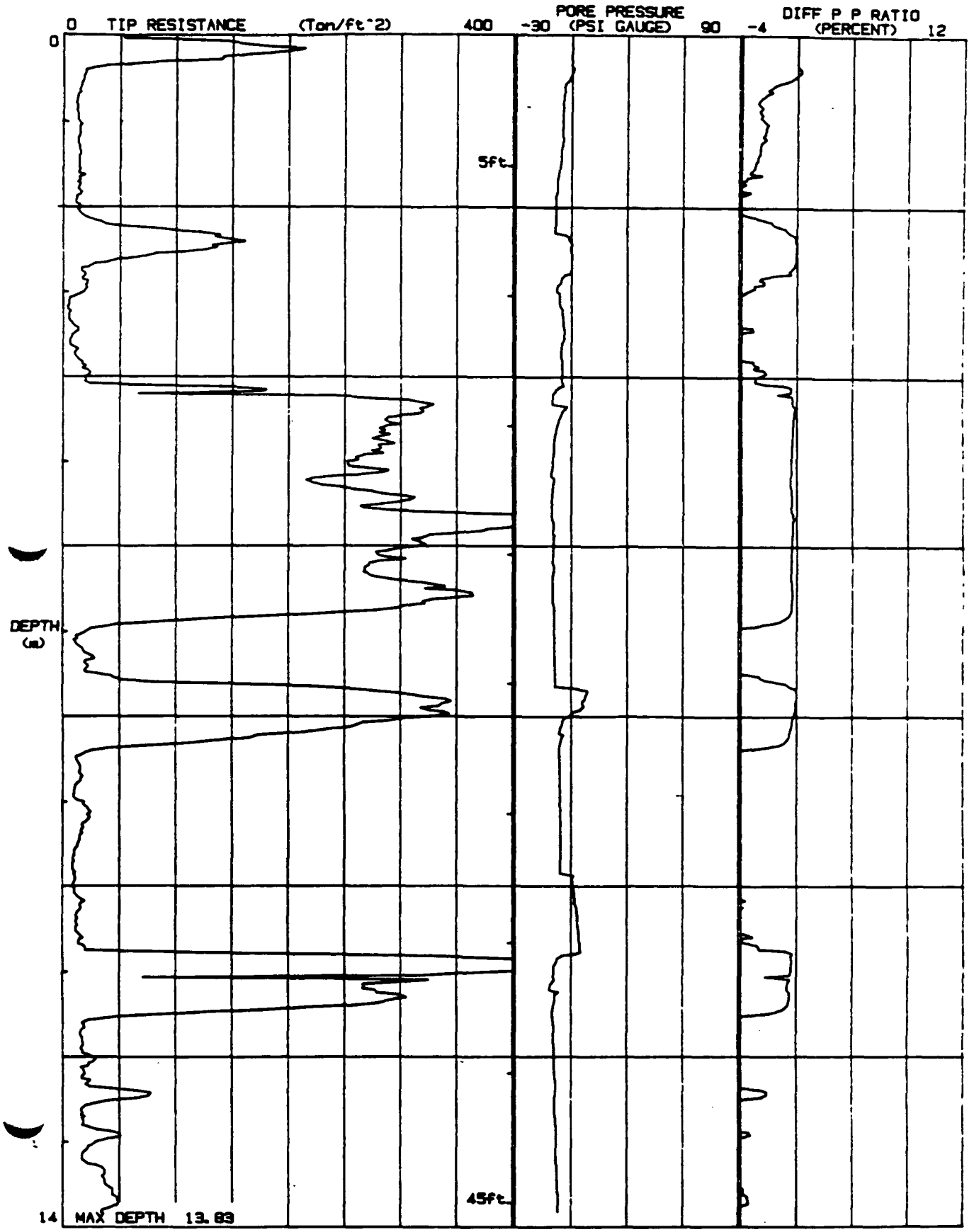
JOB # : 409700
DATE : 03/19/90/11:17
LOCATION : CPT9-25
FILE : FIL133



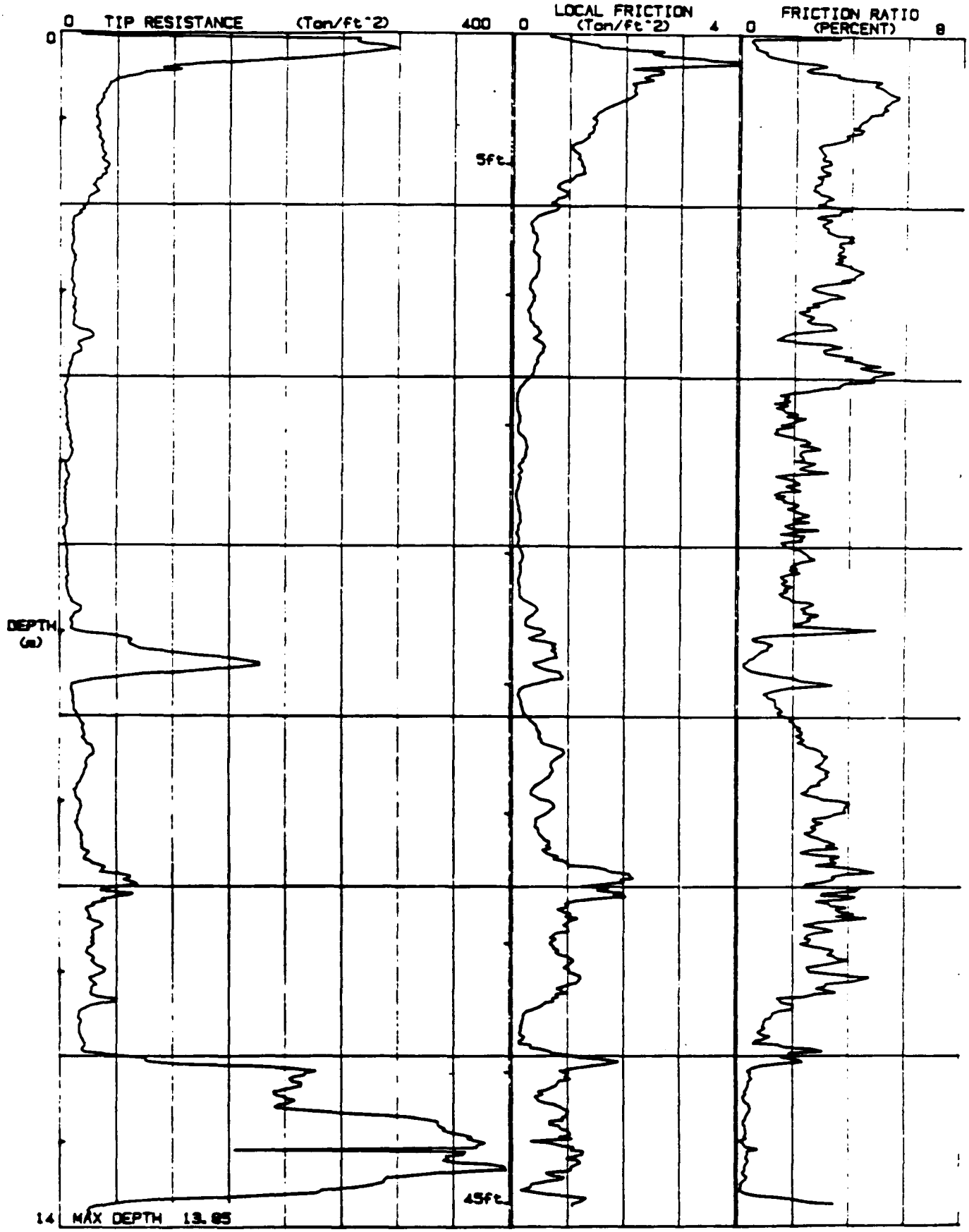
JOB # : 409700
DATE : 03/21/90/07:53
LOCATION : CPT9-28
FILE : FIL138



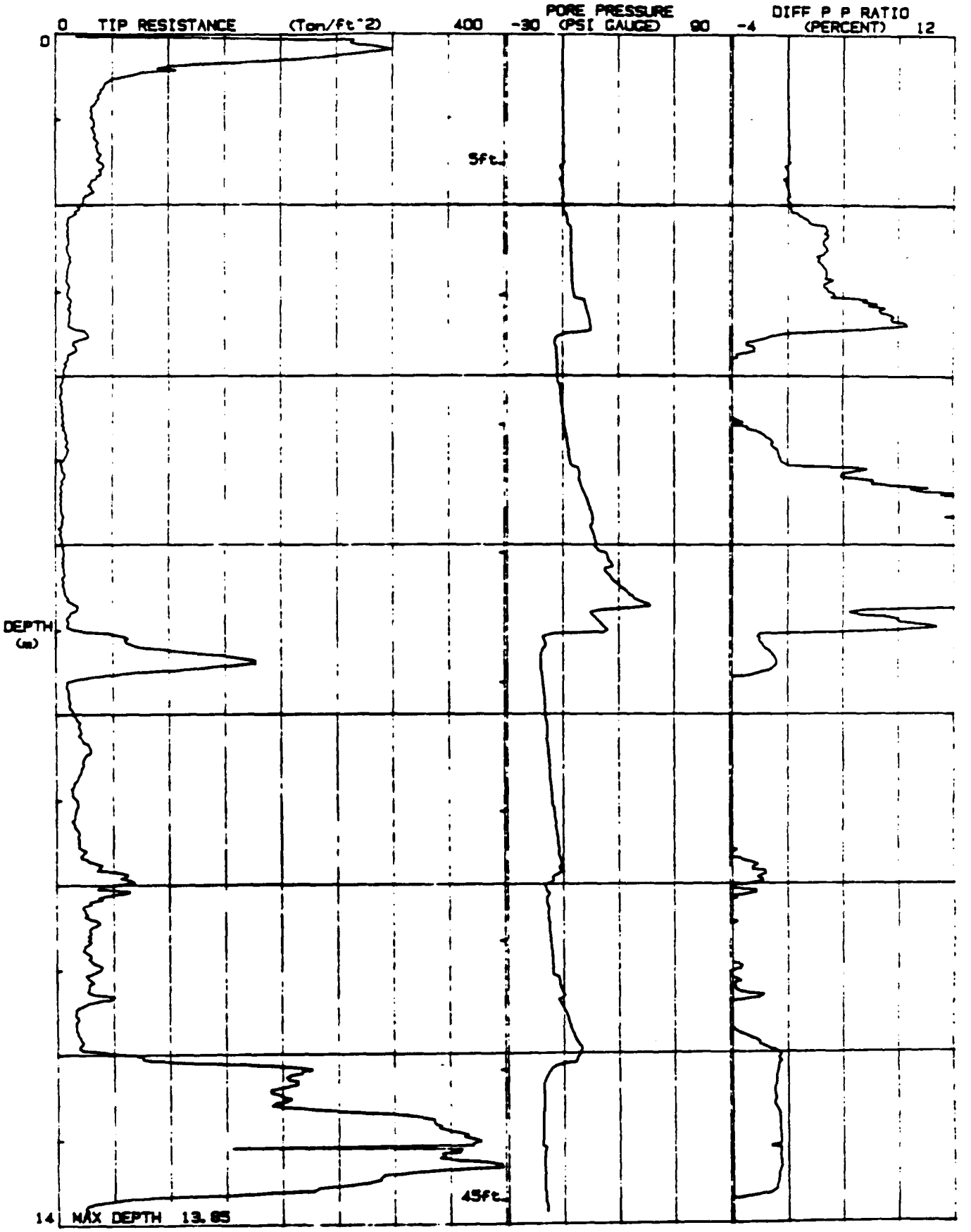
JOB # : 409700
DATE : 03/21/90/07:53
LOCATION : CPT9-28
FILE : FIL138



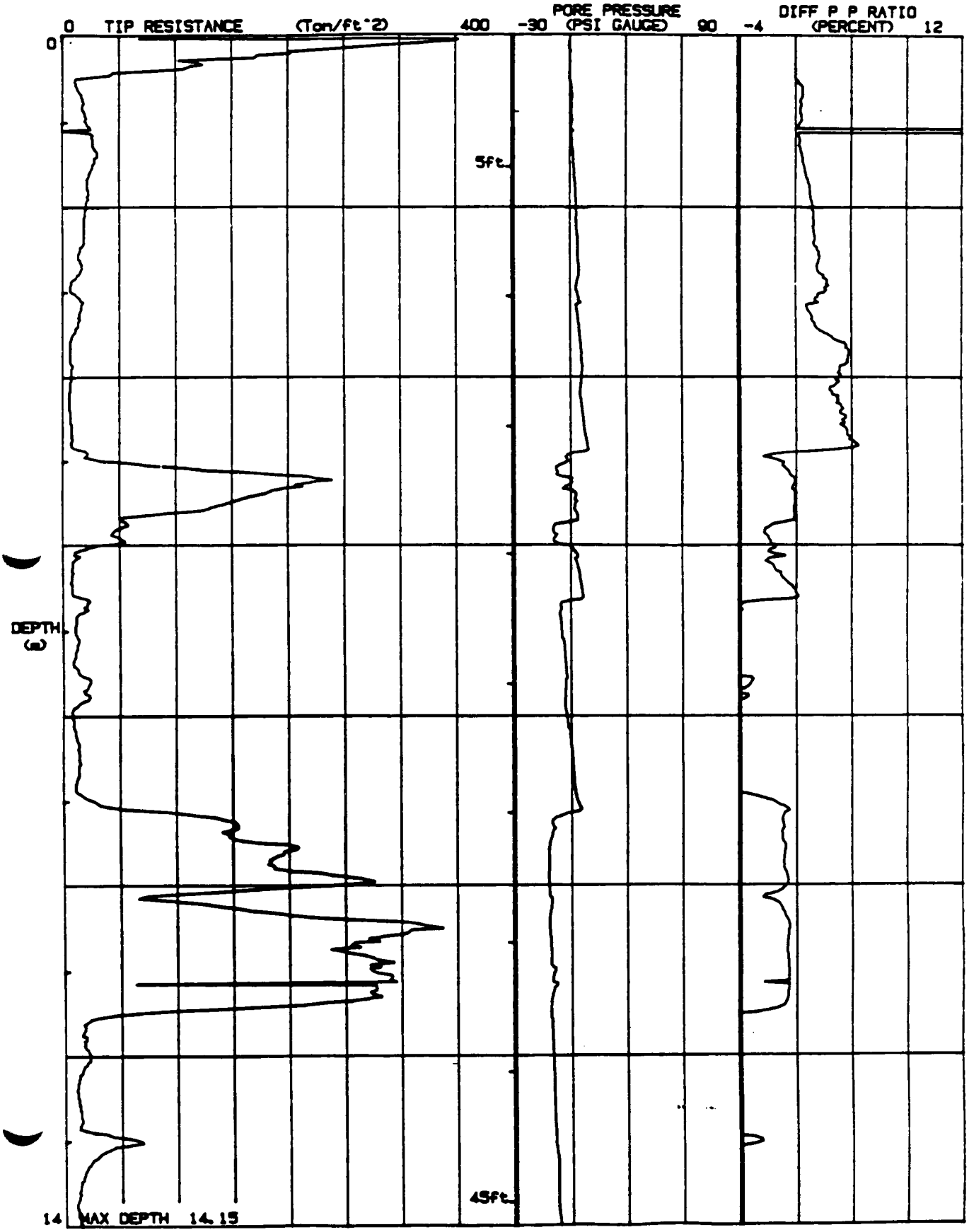
JOB # : 409700
DATE : 03/16/90 12:42
LOCATION : CPT/B-32
FILE : FIL131



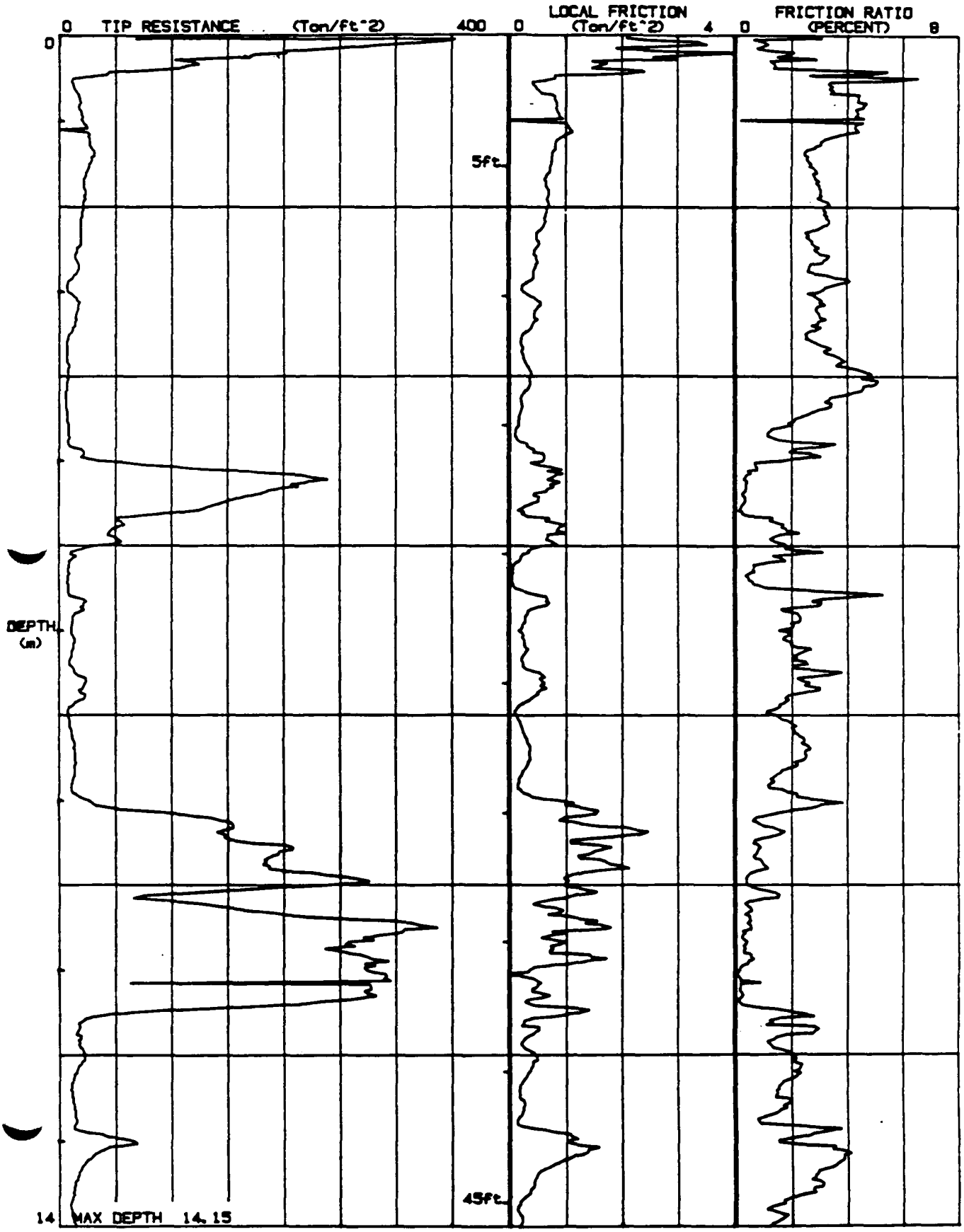
JOB # : 409700
DATE : 03/16/90 12:42
LOCATION : CPT/9-32
FILE : FIL131



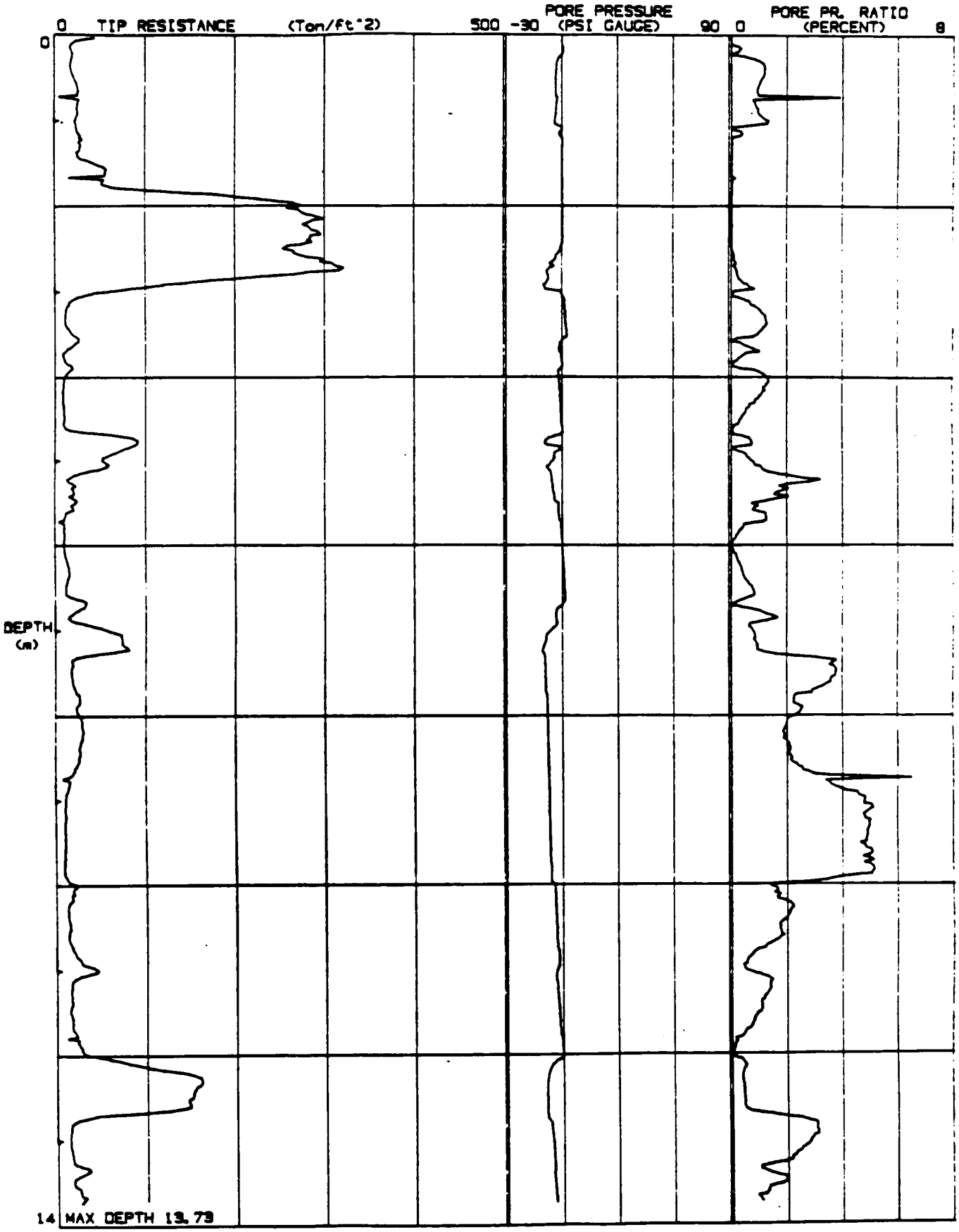
JOB # : 409700
DATE : 04/04/90/14:08
LOCATION : CPT9-38
FILE : FIL148



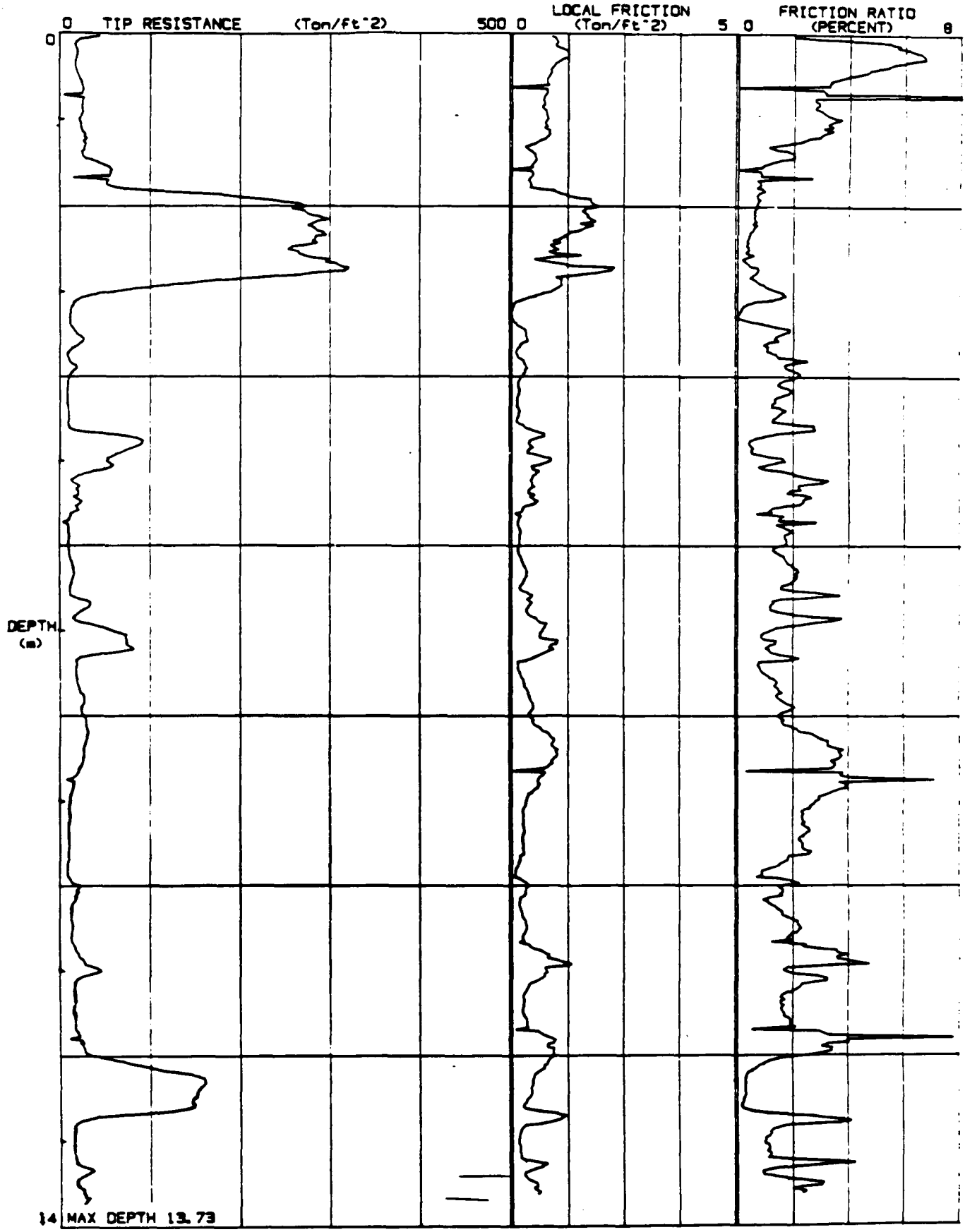
JOB # : 409700
DATE : 04/04/90/14:06
LOCATION : CPT9-36
FILE : FIL148



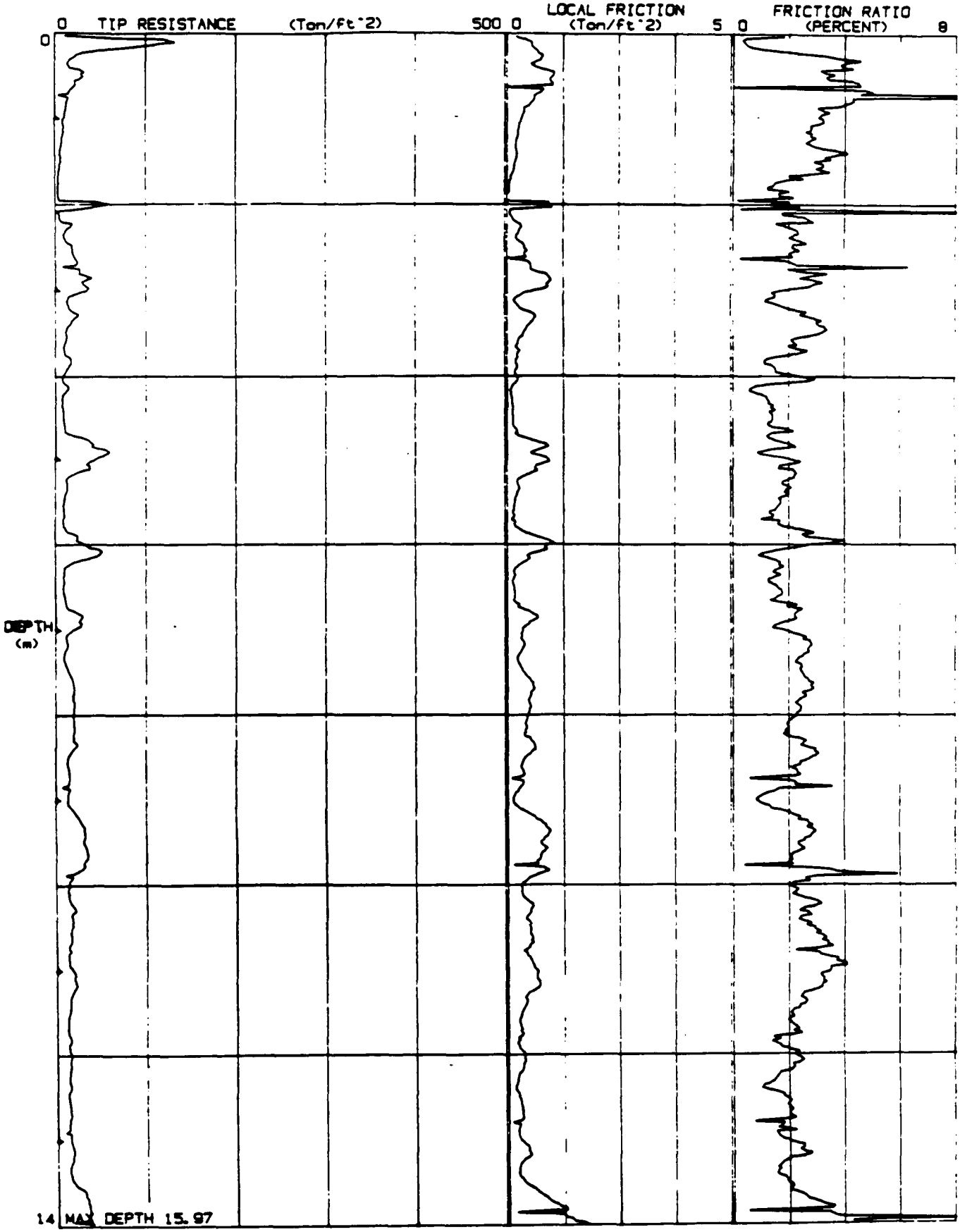
JOB # : 409700
DATE : 01/29/90
LOCATION : CPT/9-39
FILE # : 18



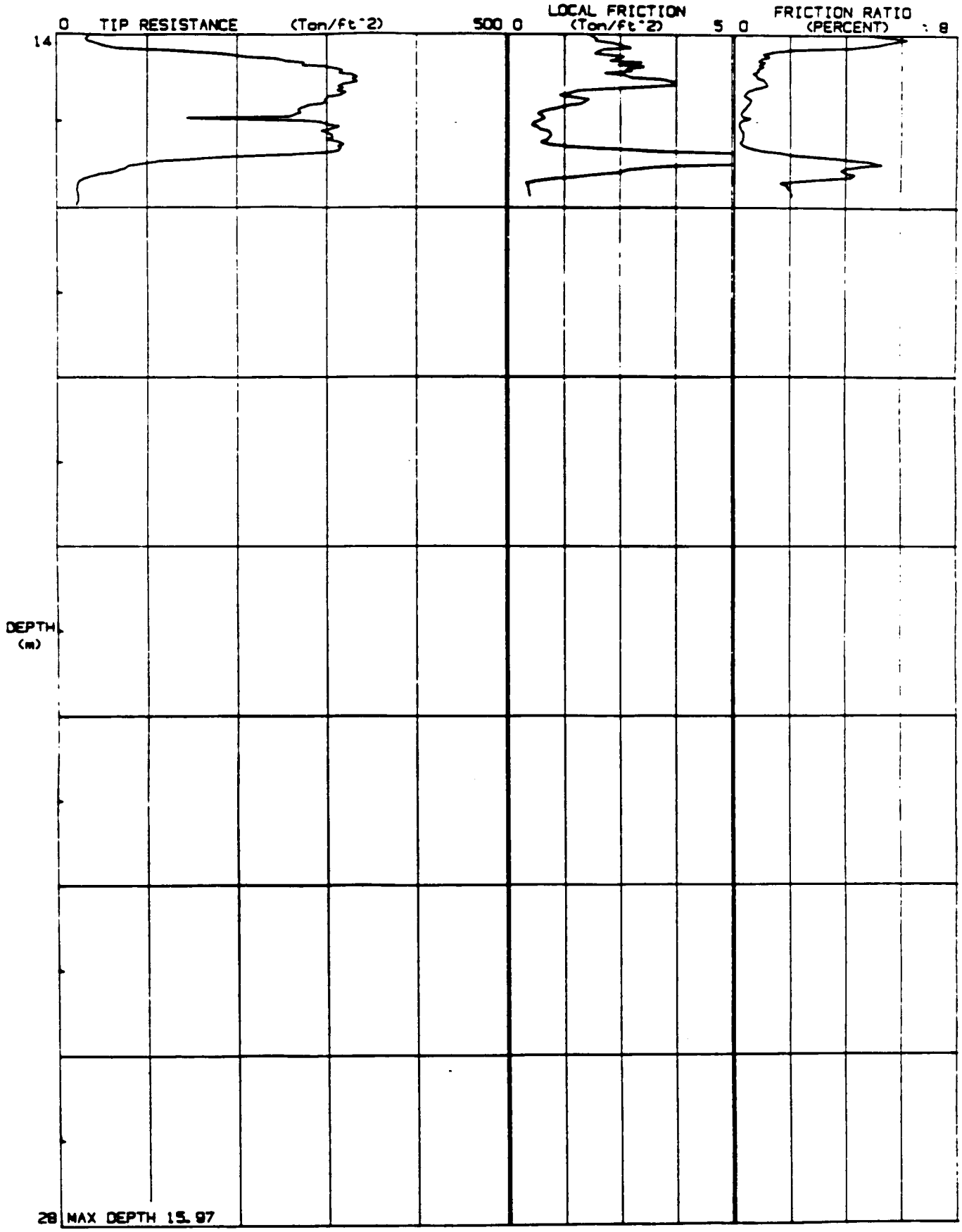
JOB # : 409700
DATE : 01/29/90
LOCATION : CPT/9-39
FILE # : 13



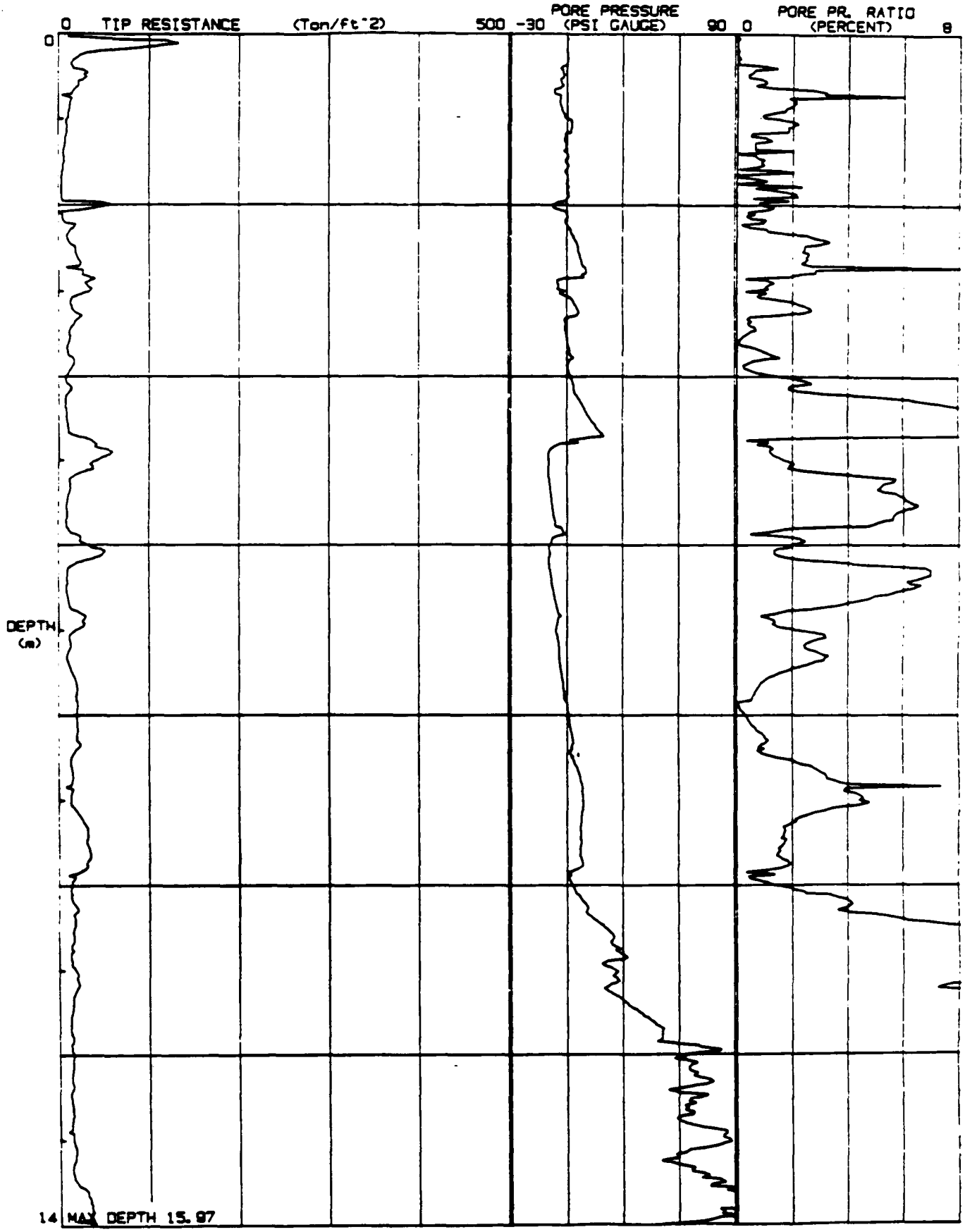
JOB # : 409700
DATE : 01/31/90
LOCATION : CPT/9-40
FILE # : 18



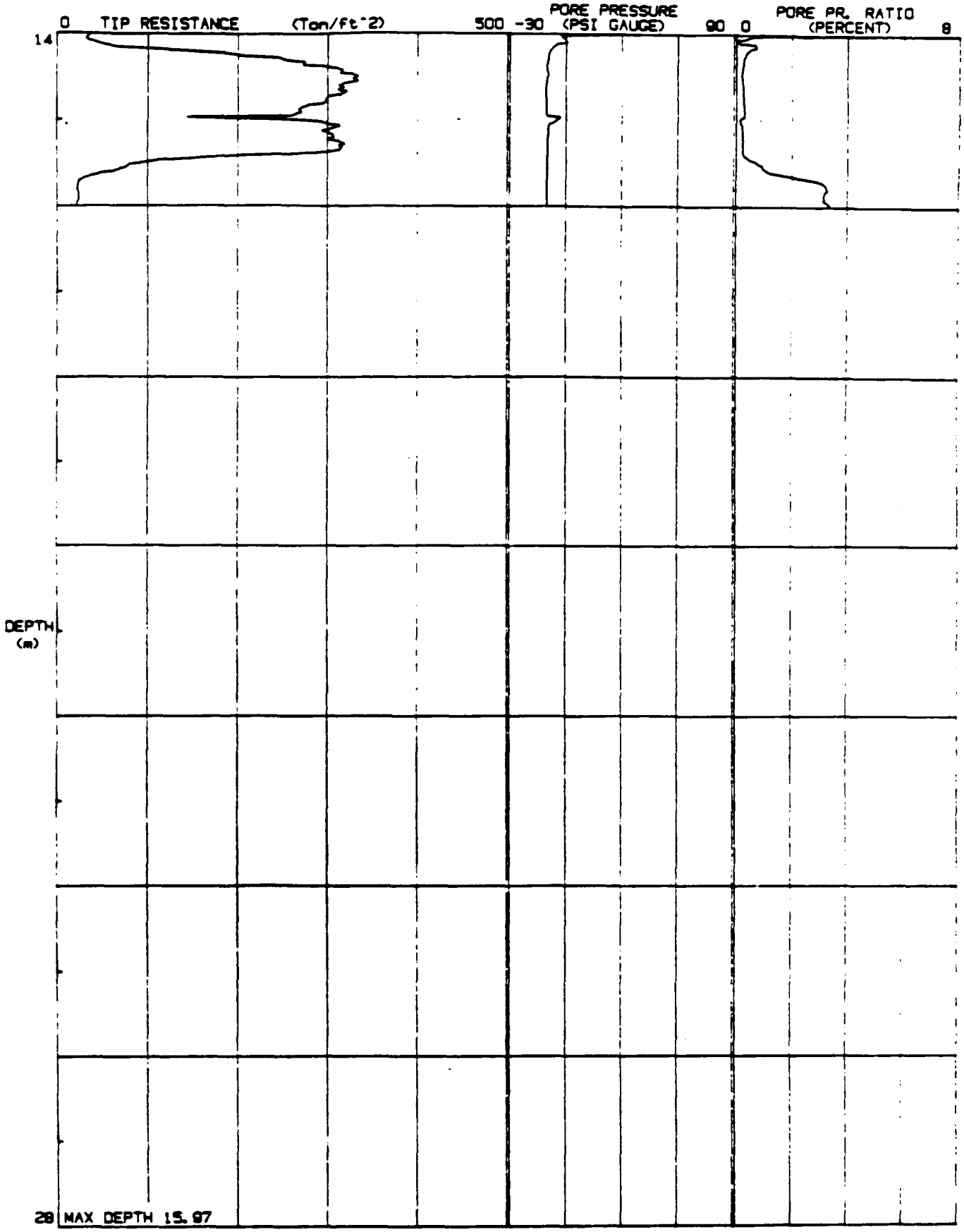
JOB # : 409700
DATE : 01/31/90
LOCATION : CPT/9-40
FILE # : 18



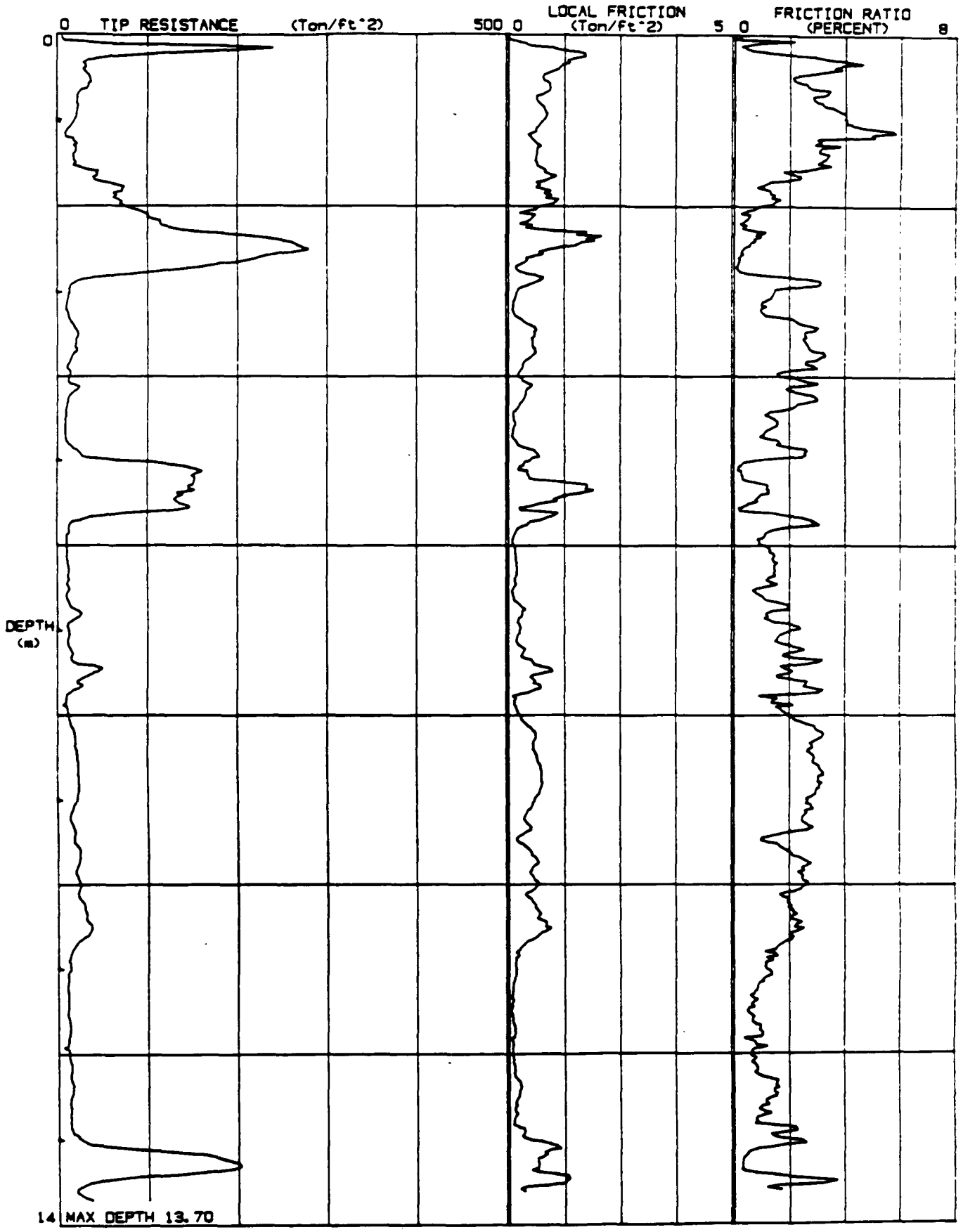
JOB # : 409700
DATE : 01/31/90
LOCATION : CPT/9-40
FILE # : 18



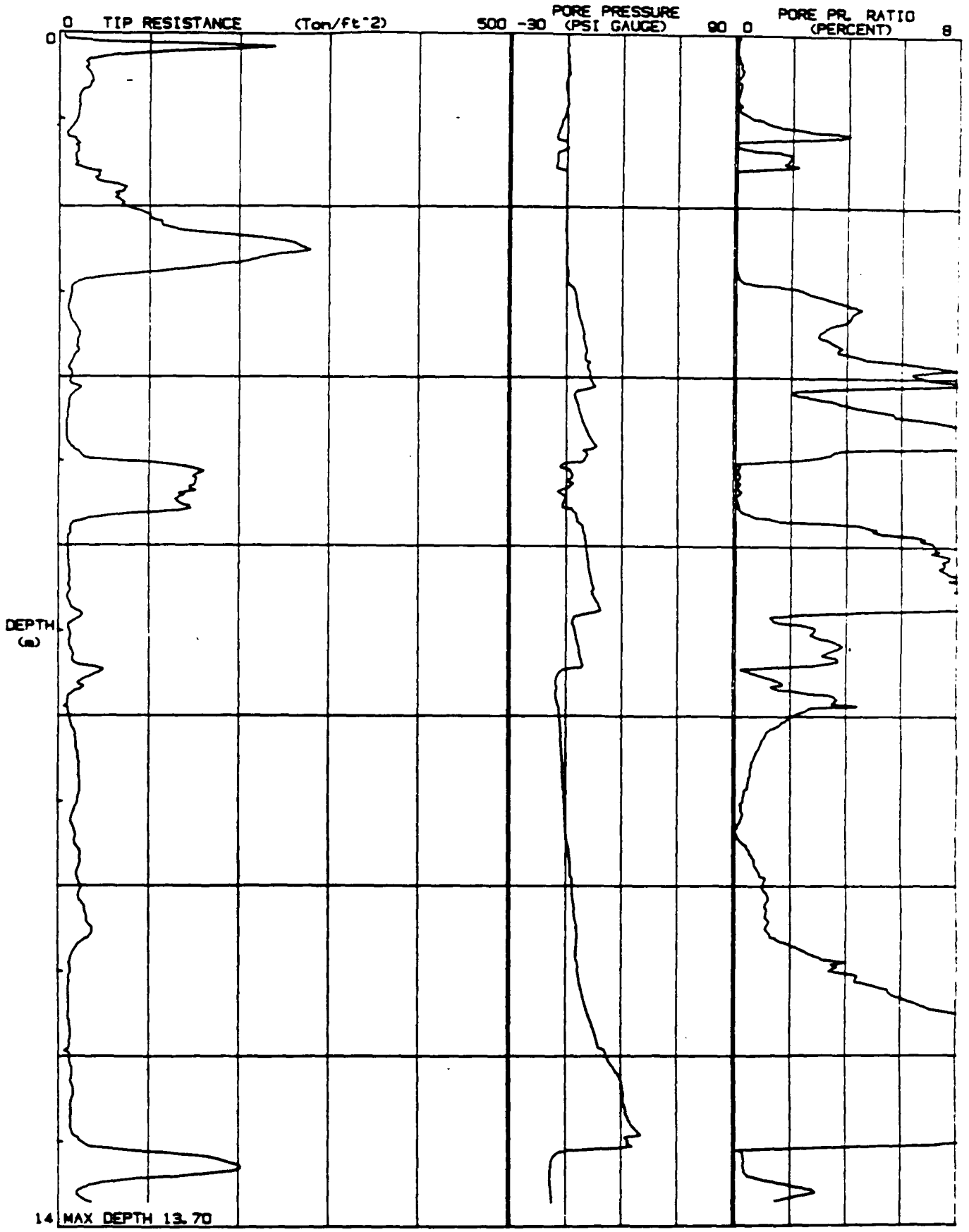
JOB # : 409700
DATE : 01/31/90
LOCATION : CPT/9-40
FILE # : 18



JOB # : 409700
DATE : 01/22/90
LOCATION : CPT/H9-44
FILE # : 4



JOB # : 405700
DATE : 01/22/90
LOCATION : CPT/HB-44
FILE # : 4



N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

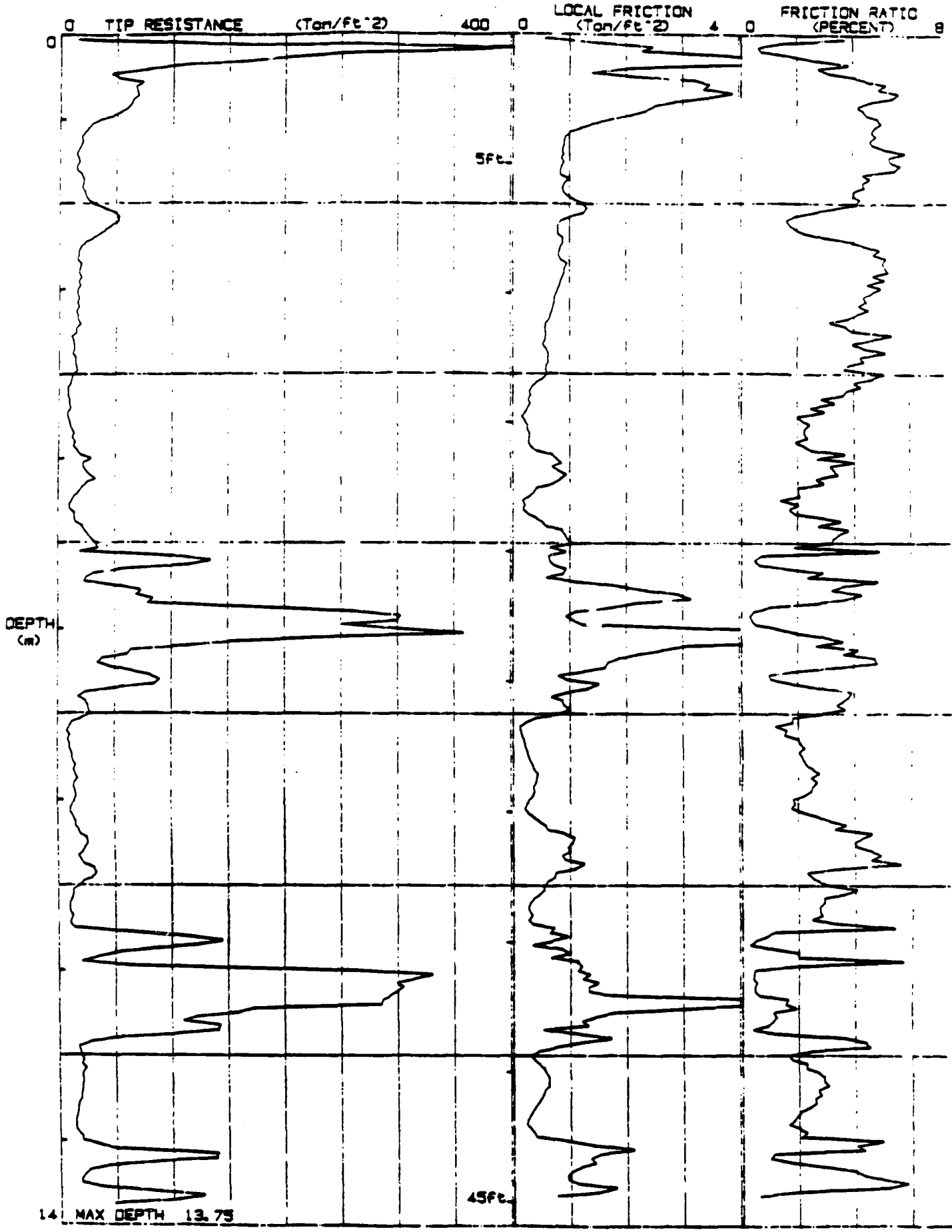
APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 9 – CPT (CLEAN)

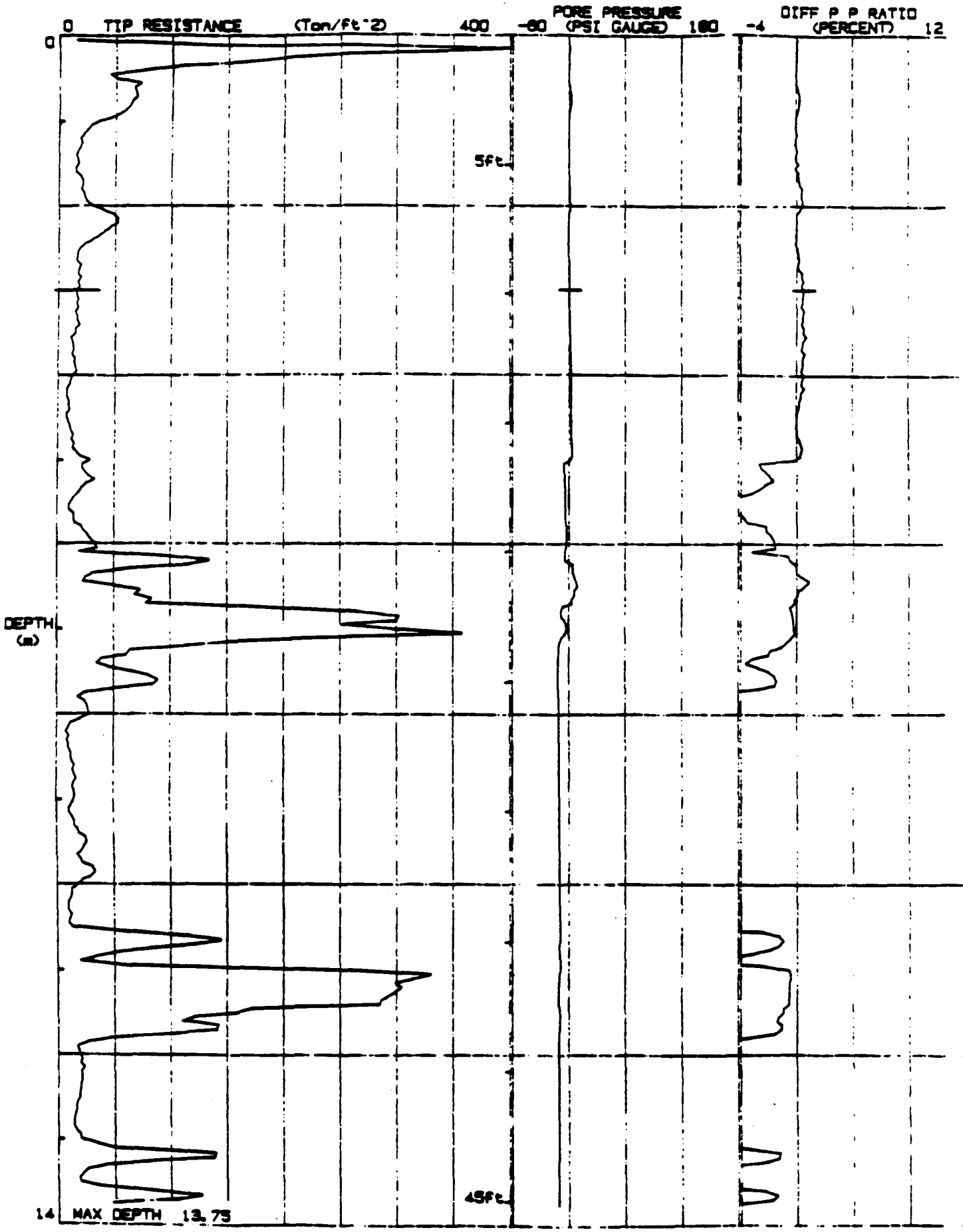
WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

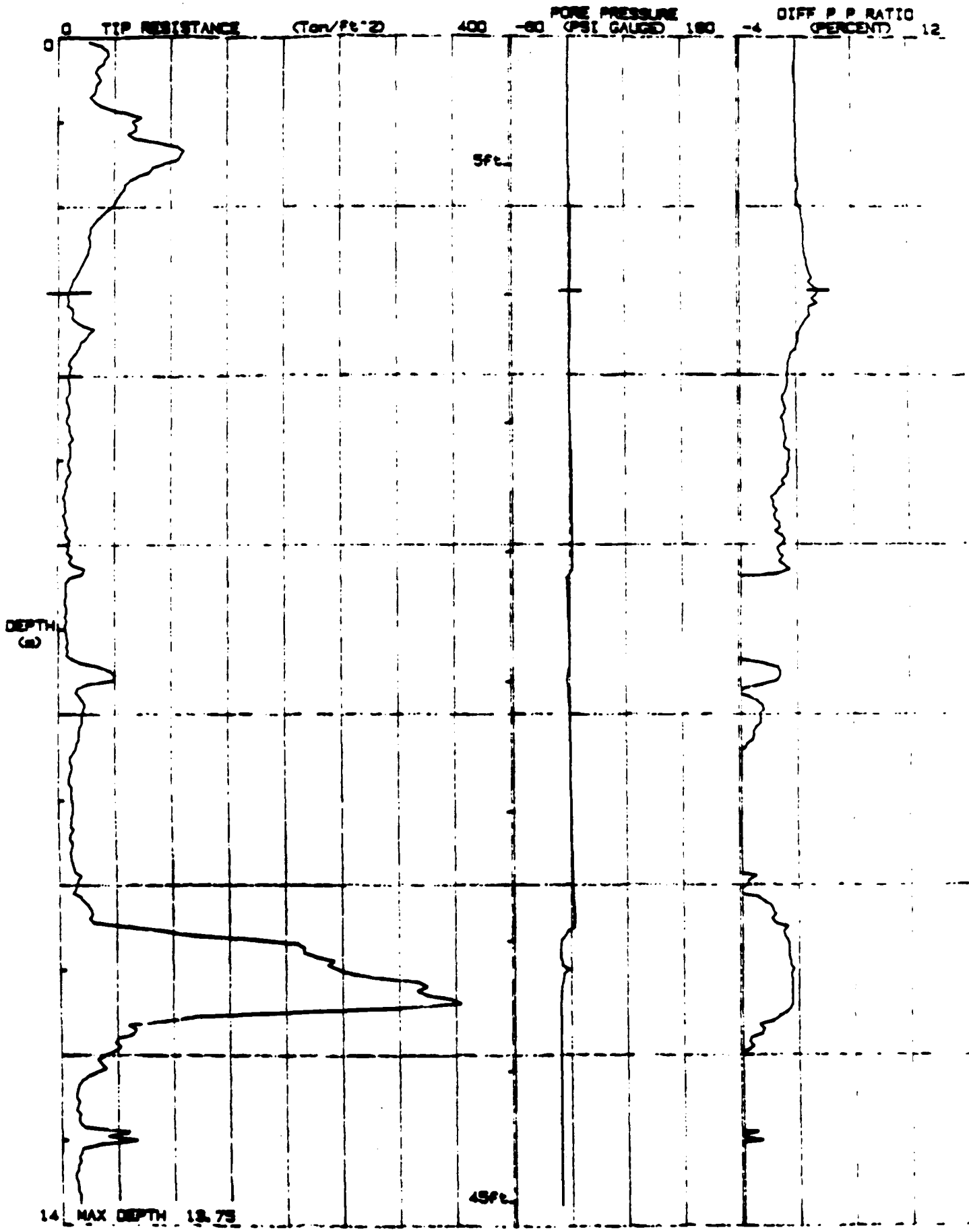
JOB # : 2738.0182
DATE : 10/29/90 15:27
LOCATION : CPT-89-5
FILE : FIL004



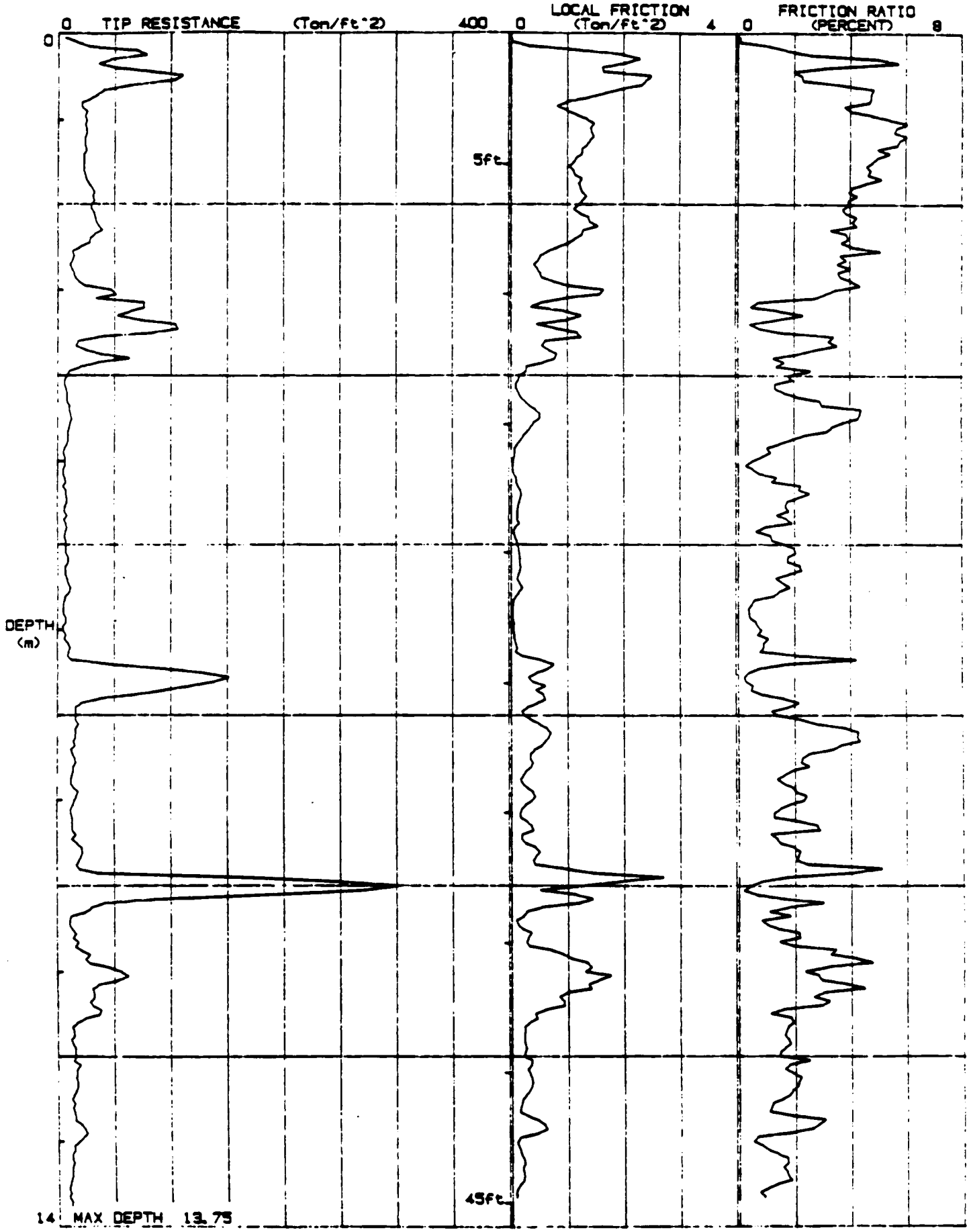
JOB # : 2738.0182
DATE : 10/29/90 15:27
LOCATION : CPT-88-5
FILE : FIL004



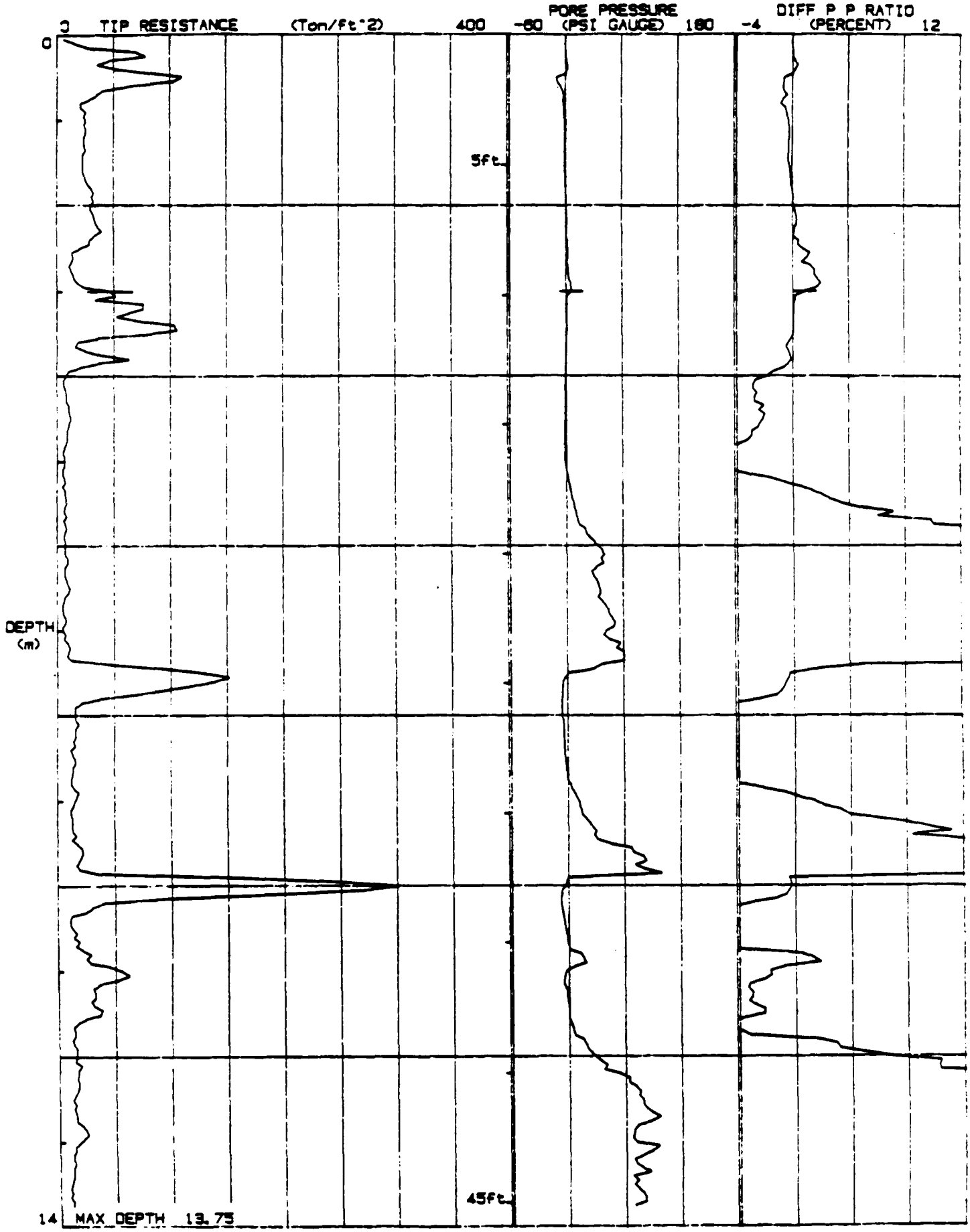
JOB # : 2738.0162
DATE : 10/31/90 12:43
LOCATION : CPT-69-13
FILE : FIL010



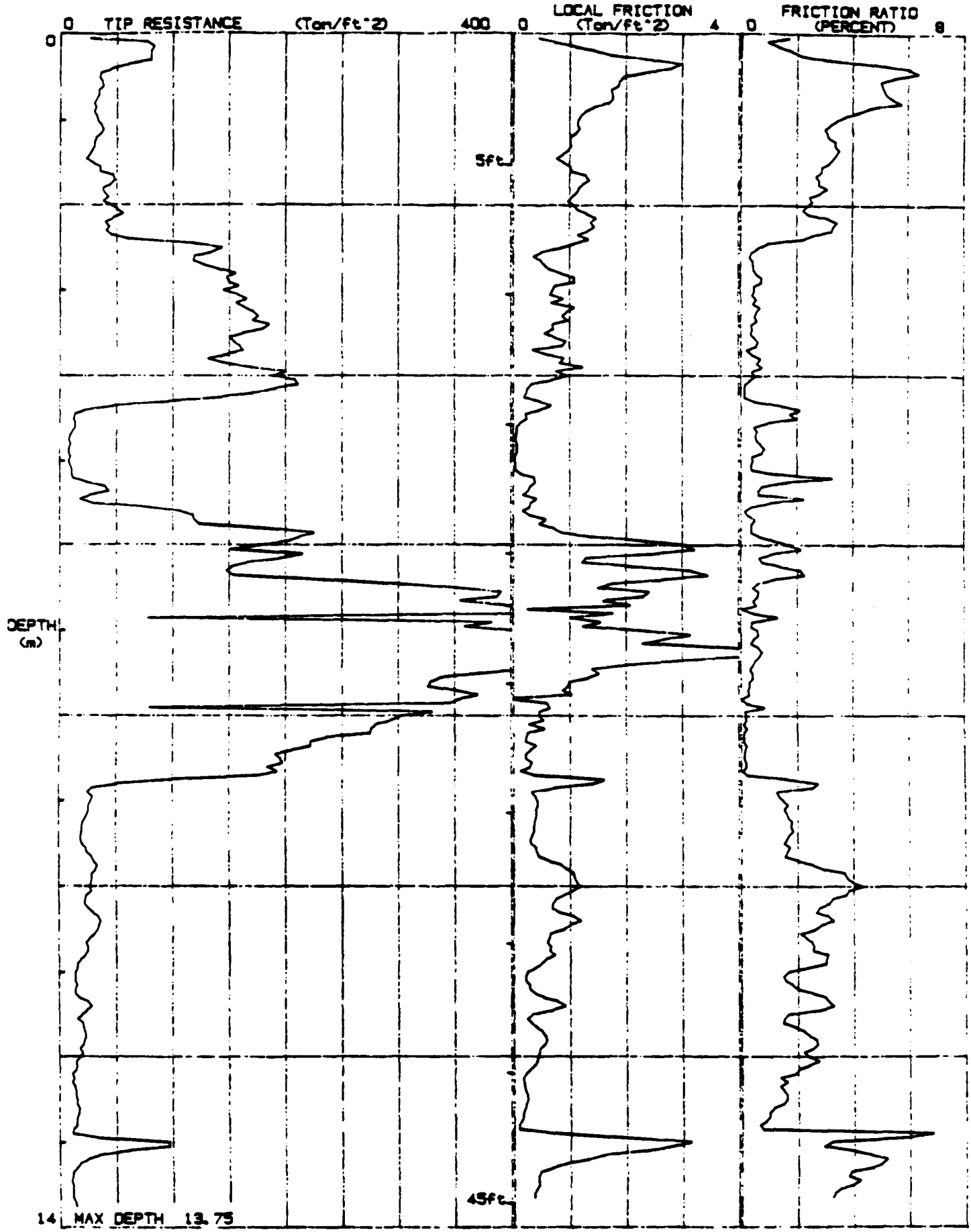
JOB # : 2738.0030
DATE : 11/27/90 15:18
LOCATION : CPT29-18
FILE : FIL029



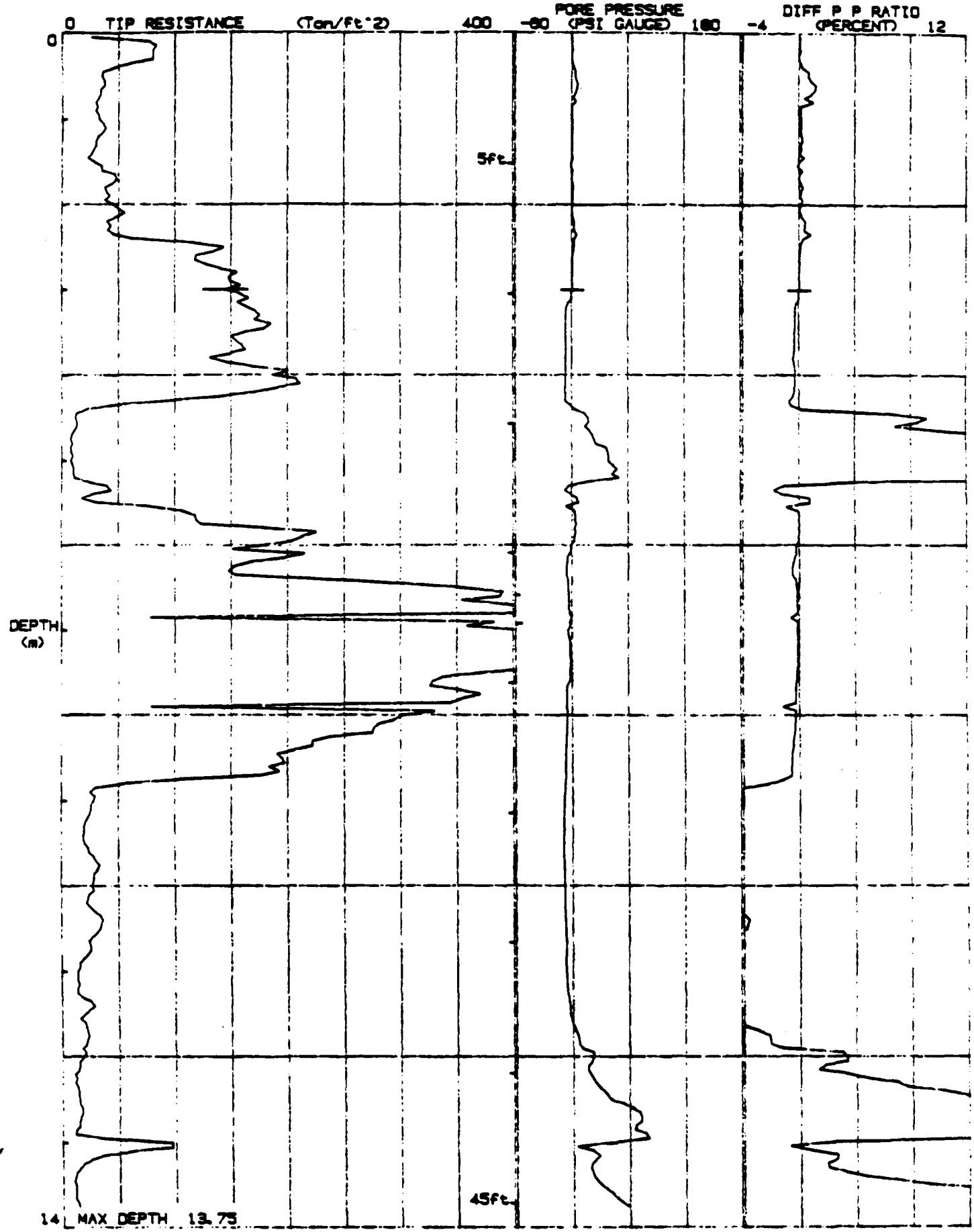
JOB # : 2738.0030
DATE : 11/27/90 15:18
LOCATION : CPT29-18
FILE : FIL029



JOB # : 2738.0090
DATE : 11/27/90 17:49
LOCATION : CPT29-40
FILE : FIL025



JOB # : 2738.0030
DATE : 11/27/90 17:49
LOCATION : CPT29-40
FILE : FIL025



VOLUME 3, APPENDIX C

GEOPHYSICAL LOGS

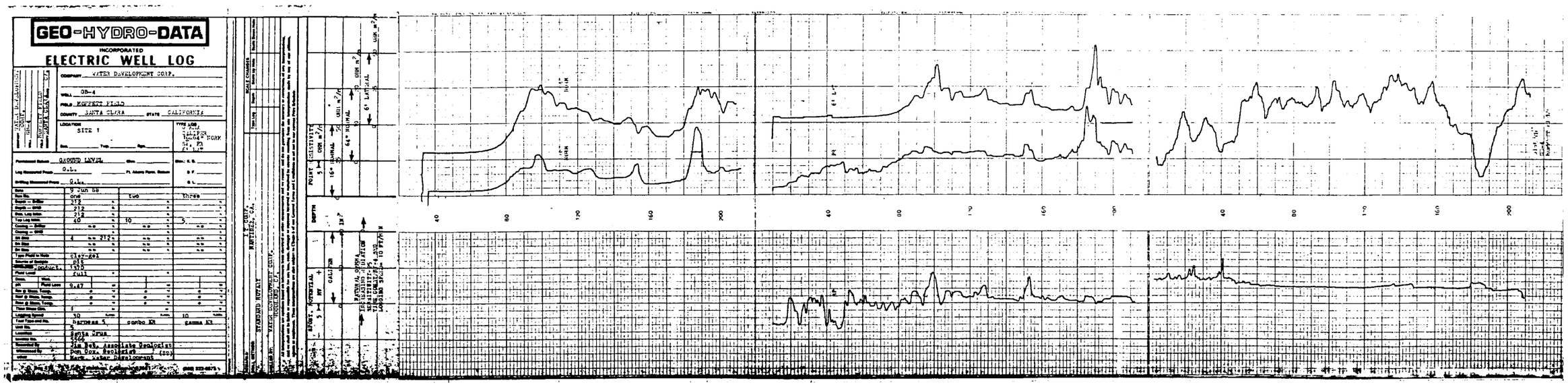
N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

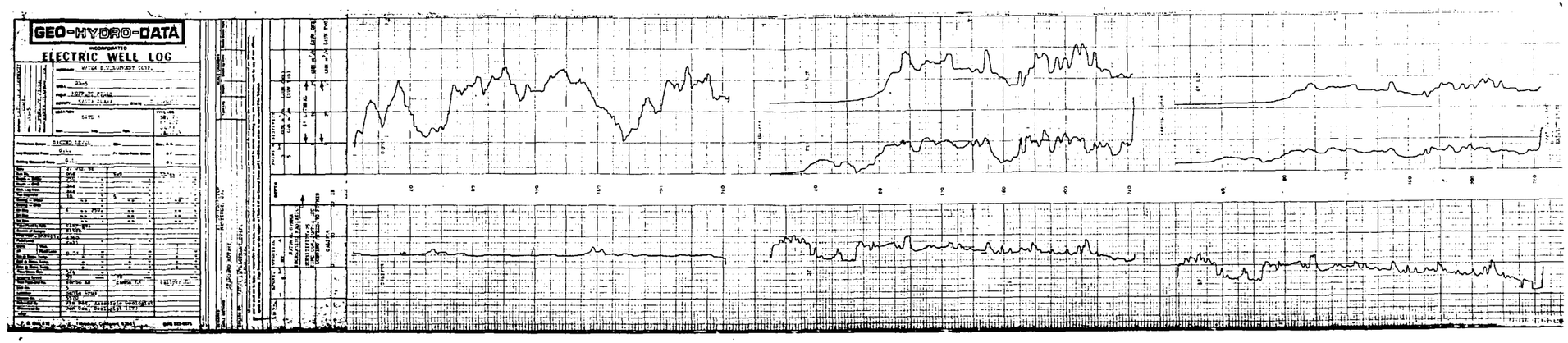
APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

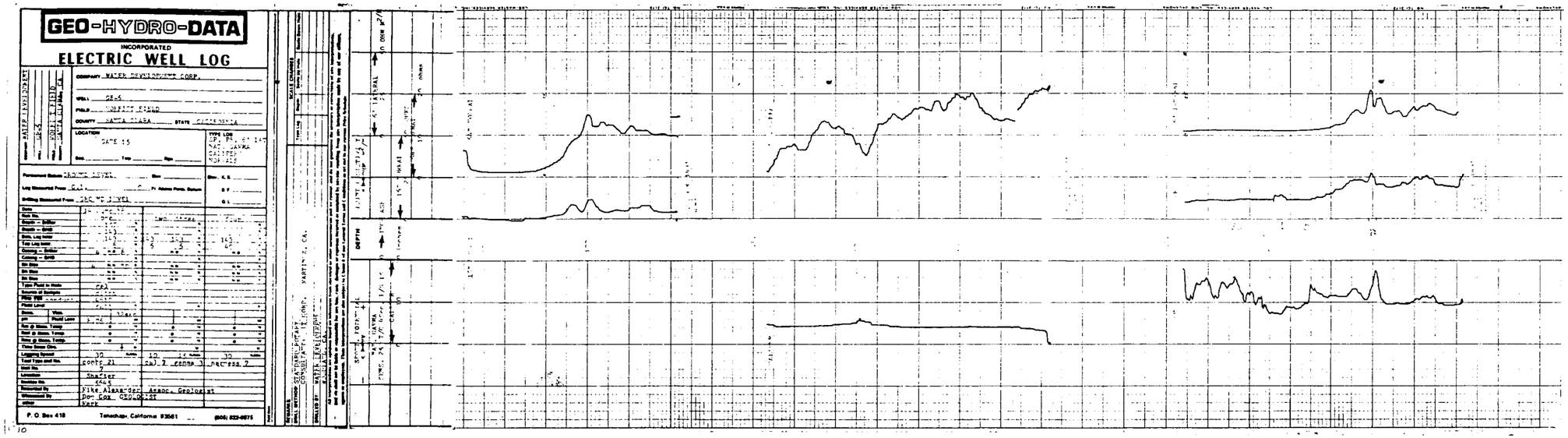
SITE 1

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY WATER DEVELOPMENT CORP.
WELL OB-4
FIELD MOFFETT FIELD
COUNTY SANTA CLARA
STATE CALIFORNIA
LOCATION SITE 1
TYPE LOG
Permanent Datum GROUND LEVEL
Log Measured From G.L.
Drilling Measured From G.L.
Date 9 JUN 88
Run No. one two three
Depth — Driller 212
Depth — GHD 212
Depth — Log Inter. 212
Top Log Inter. 40 10 5
Casing — Driller
Casing — GHD
Bit Size 4 4.5 212
Bit Size
Bit Size
Type Fluid in Hole CLAY-GEL
Source of Sample PIT
Density and Viscosity 1170
Fluid Level full
pH Fluid Loss 9.67
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Time Since Circ. 5
Logging Speed 10 10
Tool Type and No. Harness 5 gamma X3
Unit No. 5
Location Santa Cruz
Recorded By 6506
Witnessed By Jim Bell, Associate Geologist
Witnessed By Don Cox, Geologist
Mark, Water Development
POINT RESISTANCE OHM m²/m
16" NORMAL
64" NORMAL
6" LATERAL
SPONT. POTENTIAL
DEPTH
GALVANIC
NATURAL GAMMA RADIOACTIVITY
STANDARD ROTARY
WATER DEVELOPMENT CORP.
MOUNTAIN VIEW, CA.


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY WATER DEVELOPMENT CORP.
WELL GE-4
FIELD MONTEREY PARK
COUNTY SANTA CLARA STATE CALIFORNIA
LOCATION
SEC 15
TYPE LOG
Permanent Datum GROUND LEVEL
Log Measured From G.L.
Drilling Measured From GROUND LEVEL
Date
Run No.
Depth — Driller
Depth — GHD
Btm. Log Inter
Top Log Inter
Casing — Driller
Casing — GHD
Bit Size
Bit Size
Bit Size
Type Fluid in Hole
Source of Sample
Rm @ Meas. Temp
Rmf @ Meas. Temp
Rmc @ Meas. Temp
Time Since Circ.
Logging Speed
Tool Type and No.
Unit No.
Location
Recorded By
Witnessed By
P. O. Box 418
Tehachapi, California 93561
(805) 822-0875
DEPTH
SPONT. POTENTIAL
RESISTIVITY
SCALE CHANGES
DRILLED BY WATER DEVELOPMENT
MARTIN Z. CA.

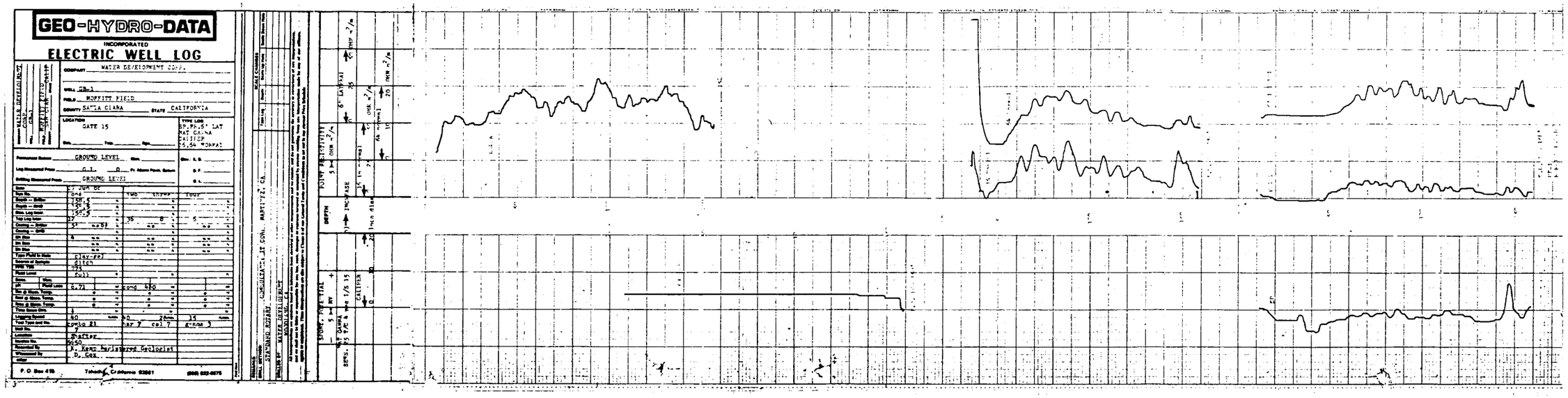
N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 2

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY WATER DEVELOPMENT CORP.
WELL CB-1
FIELD MOFFITT FIELD
COUNTY SANTA CLARA
STATE CALIFORNIA
LOCATION
GATE 15
TYPE LOG
SP,Pt,6" LAT
SAN JUAN CAPISTRANO
GROUND LEVEL
GROUND LEVEL
27 JUN 80
One
Two
Three
Four
135.5
135.5
135.5
35
8
5
clay-pol
ditch
75%
full
6.71
Bond 450
40
20
15
Combo 23
Bar 7
Cal 7
Gamma 3
Shafter
5650
R. Kemp Registered Geologist
P.O. Box 415
Tehachapi, California 93561
(805) 822-6675
STANDARD ROTARY
CONSOLIDATED ENG. CORP. PASADENA, CA.
WATER DEVELOPMENT
MOJAVE, CA.
DEPTH
POINT RESISTIVITY
6" LATERAL
SPONT. POTENTIAL
CALIPER

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

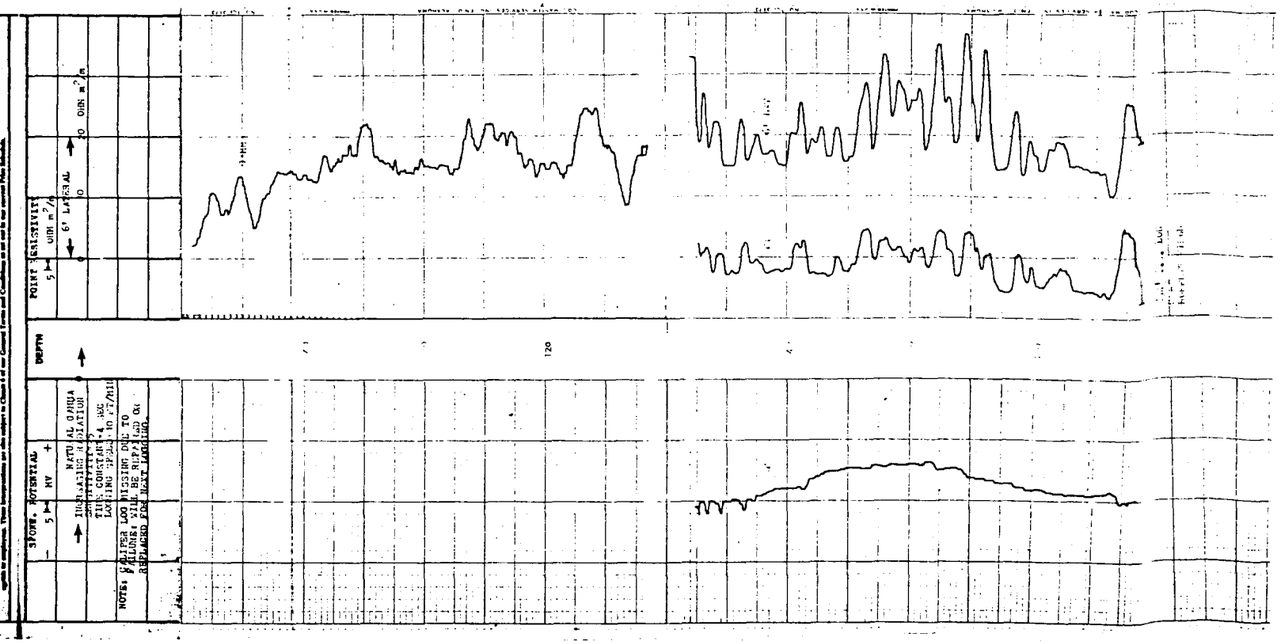
Company	WATER DEVELOPMENT CORP.
Well	GB-2
Field	HOFFETT FIELD
County	SANTA CLARA
State	CALIFORNIA
Location	
Type Log	SP, FR 64' LAT GAMMA
Permanent Datum	GROUND LEVEL
Log Measured From	G.L.
Drilling Measured From	G.L.

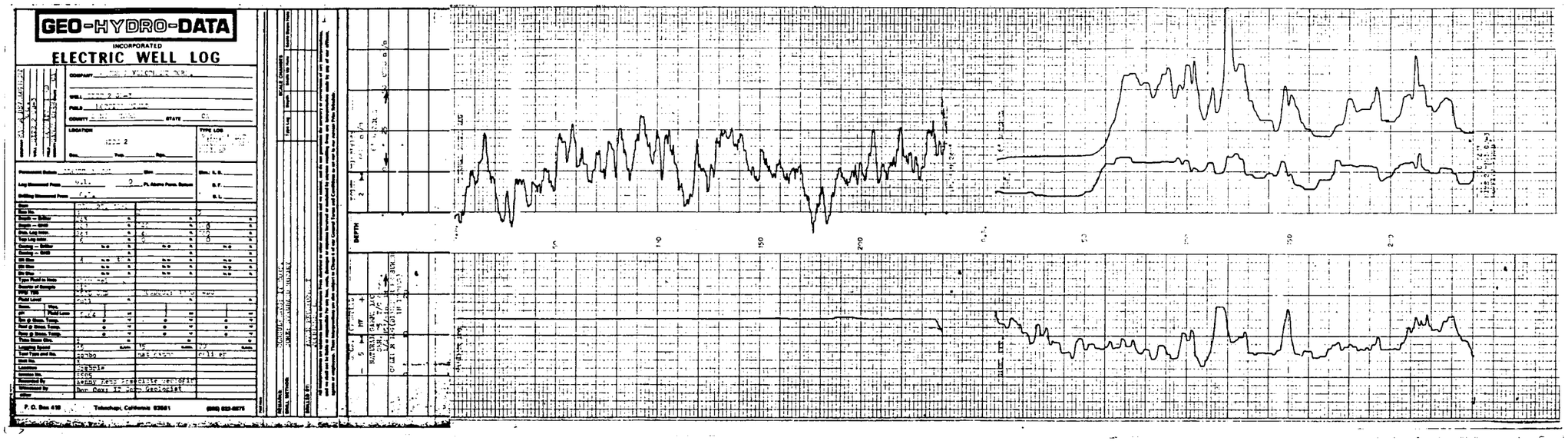
Date	30 JUN 88		
Run No.	ONE	TWO	
Depth — Driller	154		
Depth — Logger	154		
Btm. Log Inter.	154		
Top Log Inter.	10	5	
Casing — Driller			
Casing — Logger			
Bit Size	4	156	
Type Fluid in Hole	clay-gel		
Source of Sample	pit		
RM @ Meas. Temp.	.670		
Fluid Level	full		
Density / Viscosity			
pH / Fluid Loss	6.32		
Rm @ Meas. Temp.			
Rmf @ Meas. Temp.			
Rmc @ Meas. Temp.			
Time Since Circ.	1		
Logging Speed	30	10	
Tool Type and No.	combo KA	same KA	
Unit No.	5		
Location	Santa Cruz		
Invoice No.	5709		
Recorded By	Jim Bat, Associate Geologist		
Witnessed By	Don Cox, It Cdrn.		

P. O. Box 418 Tehachapi, California 93561 (805) 822-8875

Scale Changes: Depth Scale Hole; Depth Scale Log; Type Log

Equipment: Small Methods; Drilling Method: STANDARD ROTARY; Drilled by: WATER DEVELOPMENT CORP.




GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
P.O. Box 419
Tehachapi, California 93561
(805) 822-5878
DEPTH

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 3

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL-LOG

COMPANY U.S. NAVY
WELL GB-11 WELL 2
FIELD MOFFETT FIELD
COUNTY SANTA CLARA STATE CALIFORNIA

LOCATION: Sec. Twp. Rge.

TYPE LOG: SP, PR, 6" LATERAL, CALIPER, NAT GAMMA

Permanent Datum GROUND LEVEL Elev.
Log Measured From G.L. 0 Ft. Above Perm. Datum
Drilling Measured From GROUND LEVEL

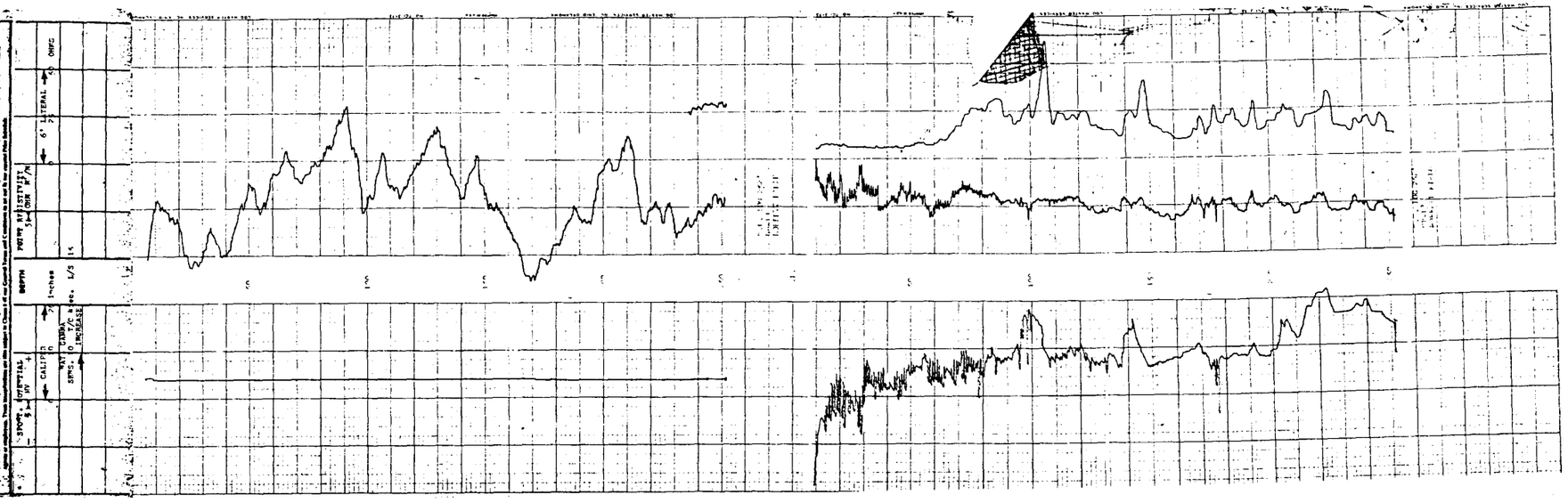
Date	21 August 88		
Run No.	One	Two	Three
Depth — Driller	257 ft	ft	ft
Depth — Logger	252 ft	ft	ft
Btm. Log Inter.	252 ft	ft	ft
Top Log Inter.	10 ft	5 ft	5 ft
Casing — Driller	4½ @ 8 ft	@ ft	@ ft
Casing — Logger	ft	ft	ft
Bit Size	8 in PD ft	in ft	in ft
Bit Size	in ft	in ft	in ft
Bit Size	in ft	in ft	in ft
Type Fluid in Hole	gel		
Density or Sample	clich		
PH/ Viscosity	800		
Fluid Level	full ft	ft	ft
Source: Rm / Rmf / Rmc			
Rm @ Meas. Temp.	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	@ °F	@ °F	@ °F
Time Since Circ.	1 hr	hr	hr
Logging Speed	30 feet/hr.	16 feet/hr.	16 feet/hr.
Tool Type and No.	combo 21	cal 7	gamma 3
Unit No.	7		
Location	Shafter		
Invoice No.	5749		
Recorded By	Mike Alexander Assoc. Geologist		
Witnessed By	Joel Nadeau Jr. Geologist		
other			

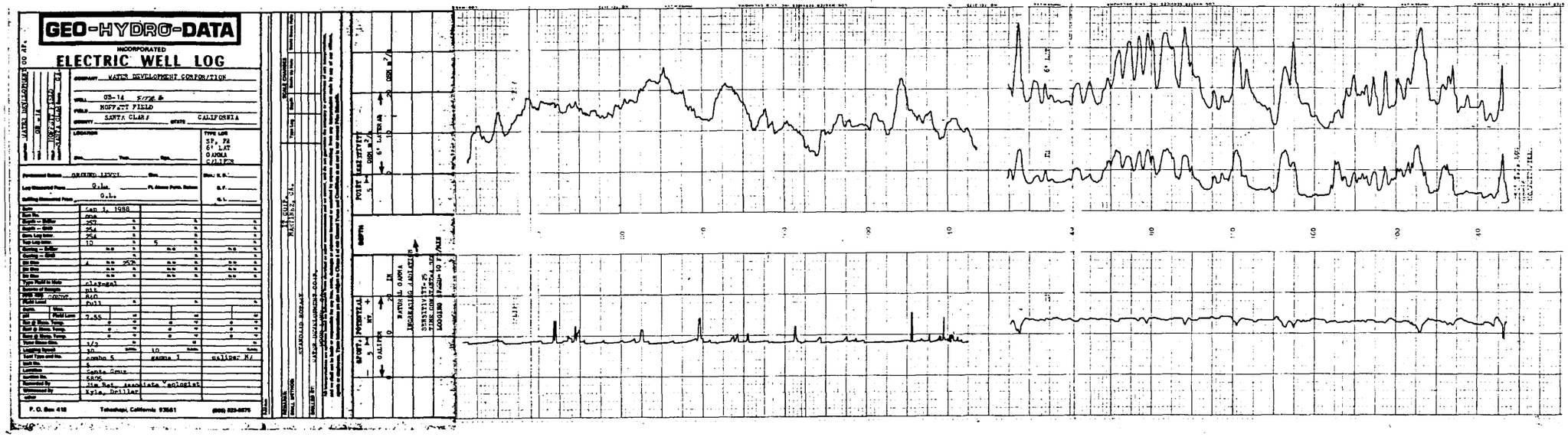
P. O. Box 416 Tehachapi, California 93561 (805) 822-5875

SCALE CHANGES: Type Log | Depth | Date Made | Date by Hole

REMARKS: STANDARD ROTARY SP CONTACT, IT CORPORATION. WATER DEVELOPMENT CORP.

RECORDED BY: Mike Alexander
WITNESSED BY: Joel Nadeau




GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY WATER DEVELOPMENT CORPORATION
WELL 03-14 SITE B
FIELD MOFFETT FIELD
COUNTY SANTA CLARA STATE CALIFORNIA
LOCATION
TYP. FR
61' LAT
0 ANGLE
CALIFOR
Permanent Datum GROUND LEVEL
Log Measured From G.L.
Drilling Measured From G.L.
Date Jan 1, 1988
Run No. ONE
Depth — Driller 257
Depth — Gage 254
Gage Log Inter. 254
Top Log Inter. 10
Casing — Driller
Casing — Gage
Bit Size 4 3/4
Type Fluid in Hole clay-gel
Source of Sample pit
Rm @ Meas. Temp. 7.55
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Time Since Circ. 1/2
Logging Speed 30 10
Tool Type and No. gamma 5 gamma 3 caliper N/
Unit No. 5
Location Santa Cruz
Witnessed By Kyle, Driller
P. O. Box 418 Tehachapi, California 93561 (805) 823-6575
STANDARD ROTARY
WATER DEVELOPMENT CORP.
POINT RESISTIVITY
DEPTH
SPONT. POTENTIAL
CALIPER
NATURAL GAMMA
INCREASING ANALYSIS
SENSITIVITY 37-25
TIME CONSTANT 1.0
LOGGING SPEED-10 FT/MIN

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

COMPANY: THE WATER DEVELOPMENT CORP. (17)
MOFFETT FIELD
WELL: GOLF SCOTT 3
FIELD: GOLF COURSE
COUNTY: SANTA CLARA STATE: CALIFORNIA

LOCATION: GOLF COURSE

TYPE LOG: SP, 16" LAT., NAT. GAMMA, CALIPER

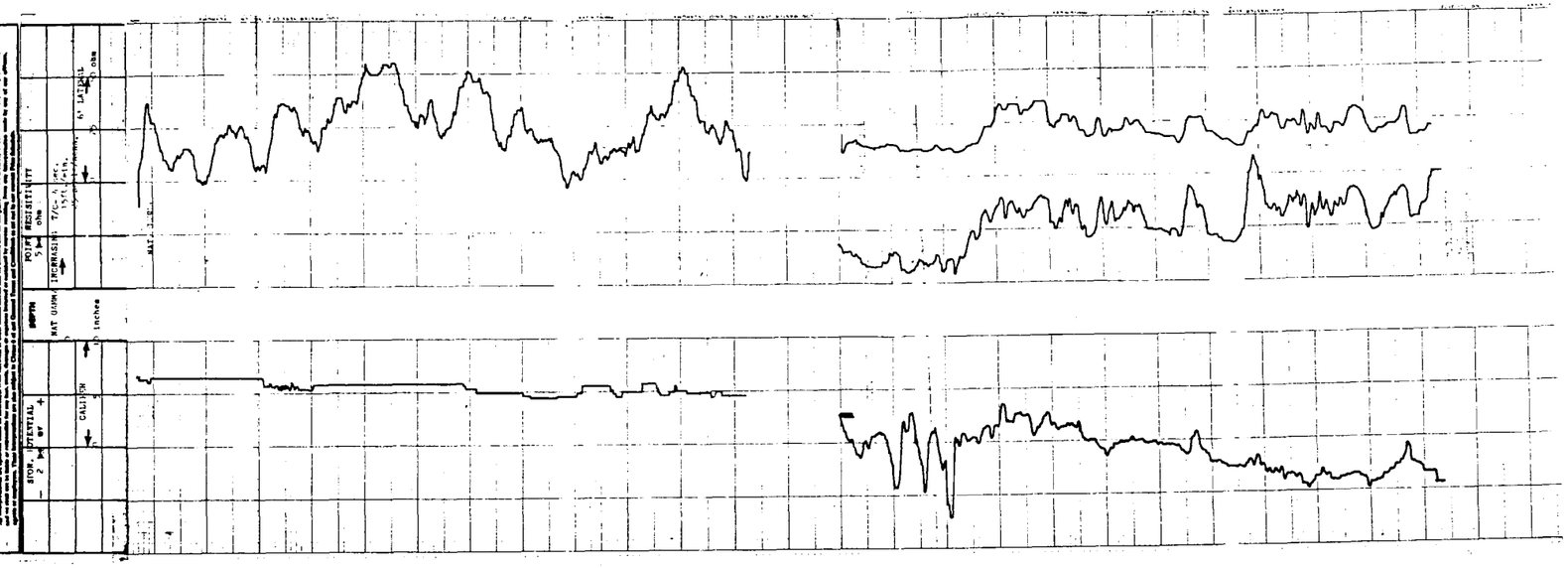
GROUND LEVEL

Log Measured From: G.L. 0 Ft. Above Perm. Datum
Drilling Measured From: G.L.

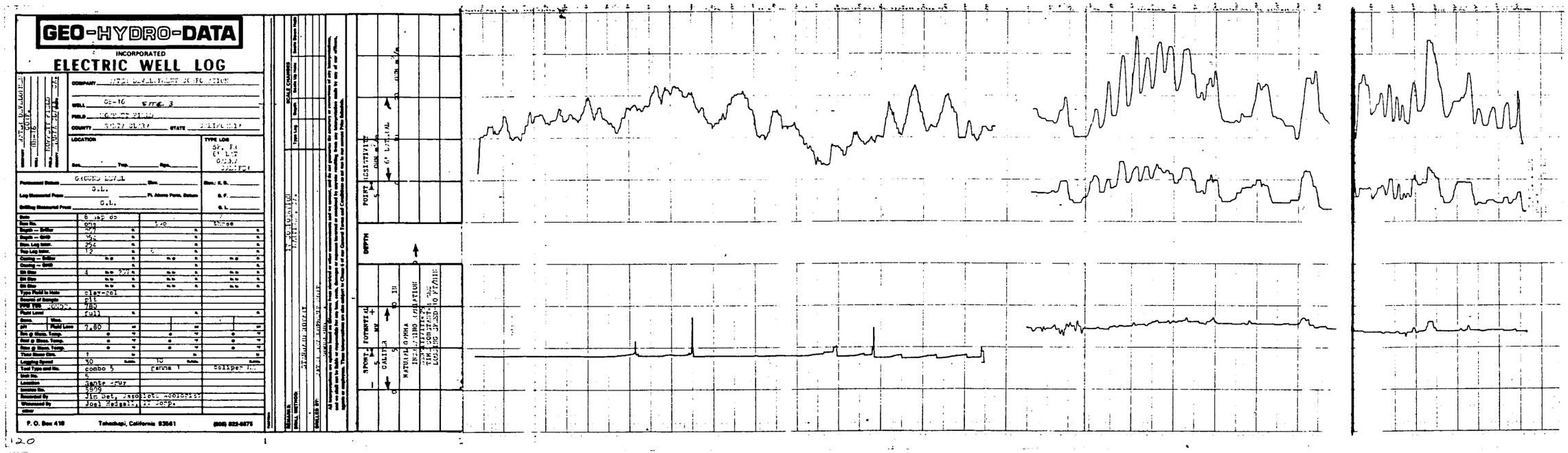
Date	1- FEB-78		
Run No.	ONE		
Depth — Driller	240	n	n
Depth — Logger	236	n	n
Btm. Log Inter.	236	n	n
Top Log Inter.	4	n	n
Casing — Driller	n.a	n.a	n.a
Casing — Logger		n	n
Bit Size	6 n.a.ld	n.a	n.a
Bit Size	n.a	n.a	n.a
Bit Size	n.a	n.a	n.a
Type Fluid in Hole	WAT-GEL		
Source of Sample	PIT		
RM @ MT			
Fluid Level	8	n	n
Density / Visc.			
pH / Fluid Loss	9.5 cc	cc	cc
Rm @ Meas. Temp.	.70 @ 70 °F	@ °F	@ °F
Rmf @ Meas. Temp.	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	@ °F	@ °F	@ °F
Time Since Circ.	12 hr	hr	hr
Logging Speed	33 & 55 ft/hr	ft/hr	ft/hr
Tool Type and No.	ALL-OIL		
Unit No.	2		
Location	STOCKTON, CA.		
Inventory No.	5229		
Recorded By	D. BRANDLEIN (ASSOCIATE GEOLOGIST)		
Witnessed By	JOE BARNETT (17)		
Other	STAN TUR (LEN)		

P. O. Box 416 Tehachapi, California 93561 (805) 822-5673

SCALE CHANGES: 1" CONC.-CONCENTRIC 1"/L
DRILL METHOD: ROTARY
RECORDED BY: THE WATER DEVELOPMENT CORP.



19


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY
WELL 02-16 SITE 3
FIELD
COUNTY
STATE
LOCATION
TYPE LOG
Permanent Datum GROUND LEVEL
Log Measured From G.L.
Drilling Measured From G.L.
Date 8 sep 85
Run No. one two three
Depth — Driller 297
Depth — GHD 295
Btm. Log Inter. 294
Top Log Inter. 12
Casing — Driller
Casing — GHD
Bit Size 4 3/4
Type Fluid in Hole clay-pol
Source of Sample pit
Fluid Level full
pH 7.80
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Time Since Circ. 1 hr
Logging Speed 30 10
Tool Type and No. combo 5 gamma 1 caliper
Unit No. 5
Location santa cruz
Witnessed By Jim Det, Resolute Geologist
Witnessed By Joel Hedgell, Jr. Corp.
P. O. Box 418 Tehachapi, California 93561 (805) 823-6876
SCALE CHANGES
Time Log Depth Scale Up Hole Scale Down Hole
RECORDED BY
DRILL METHOD
DRILLED BY
POINT RESISTANCE
DEPTH
SPONT. POTENTIAL
CALIPER
NATURAL GAMMA
TIME CONSTANT
LOGGING SPEED

120

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

COMPANY	WATER DEVELOPMENT CORP.
WELL	GS-17 STA 3
FIELD	KOPPETT FIELD
COUNTY	SANTA CLARA STATE CALIFORNIA

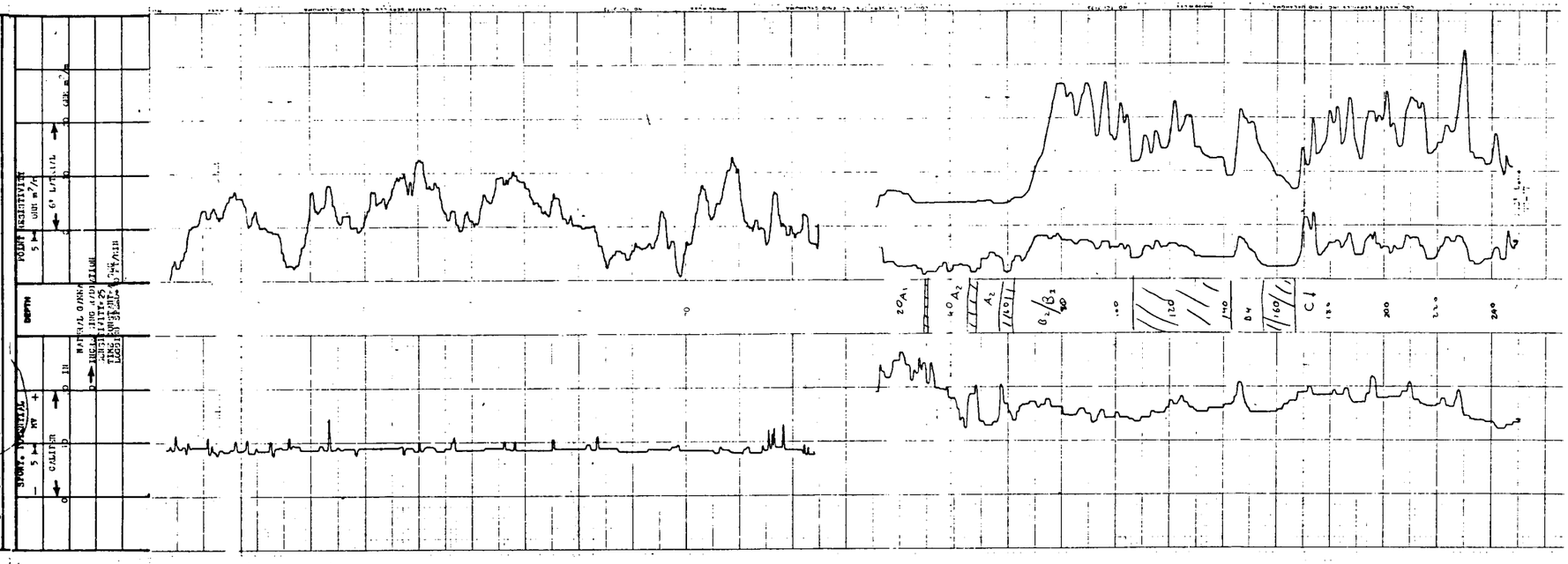
LOCATION: Sec. ____ Twp. ____ Rge. ____

TYPE LOG: SP, PI, 64" LAT, GAMMA, CALIPER

Permanent Datum	GROUND LEVEL	Elev.	Elev.: K.B.
Log Measured From	G.L.	Ft. Above Perm. Datum	D.F.
Drilling Measured From	G.L.		G.L.

Date	11 Sep 86		Three
Run No.	004	TWO	
Depth — Driller	257		
Depth — GWD	250		
Btm. Log Inter.	250		
Top Log Inter.	10	5	
Casing — Driller			
Casing — GWD			
Bit Size	7 257		
Bit Size			
Bit Size			
Type Fluid in Hole	clay-cal		
Source of Sample	flush		
RM @ Meas. Temp.	2.60		
Fluid Level	full		
pH / Fluid Loss	9.56		
Rm @ Meas. Temp.			
Rmf @ Meas. Temp.			
Rmc @ Meas. Temp.			
Time Since Circ.	1		
Logging Speed	30	10	
Tool Type and No.	combo 5	gamma 1	caliper 1
Unit No.	5		
Location	Santa Cruz		
Income No.	5904		
Recorded By	Jim Ast, Associate Geologist		
Witnessed By	Ernest, II GWD, Kenny, GWD		

P. O. Box 418 Tehachapi, California 93561 (805) 822-8575



N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 4

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

COMPANY	WATER DEVELOPMENT CORPORATION
WELL	GB-18 R.T.K. 4
FIELD	MOFFETT FIELD
COUNTY	SANTA CLARA
STATE	CALIFORNIA

LOCATION: Sec. ___ Twp. ___ Rge. ___

TYPE LOG: SP, RN 64' LAT GAMMA CALIPER

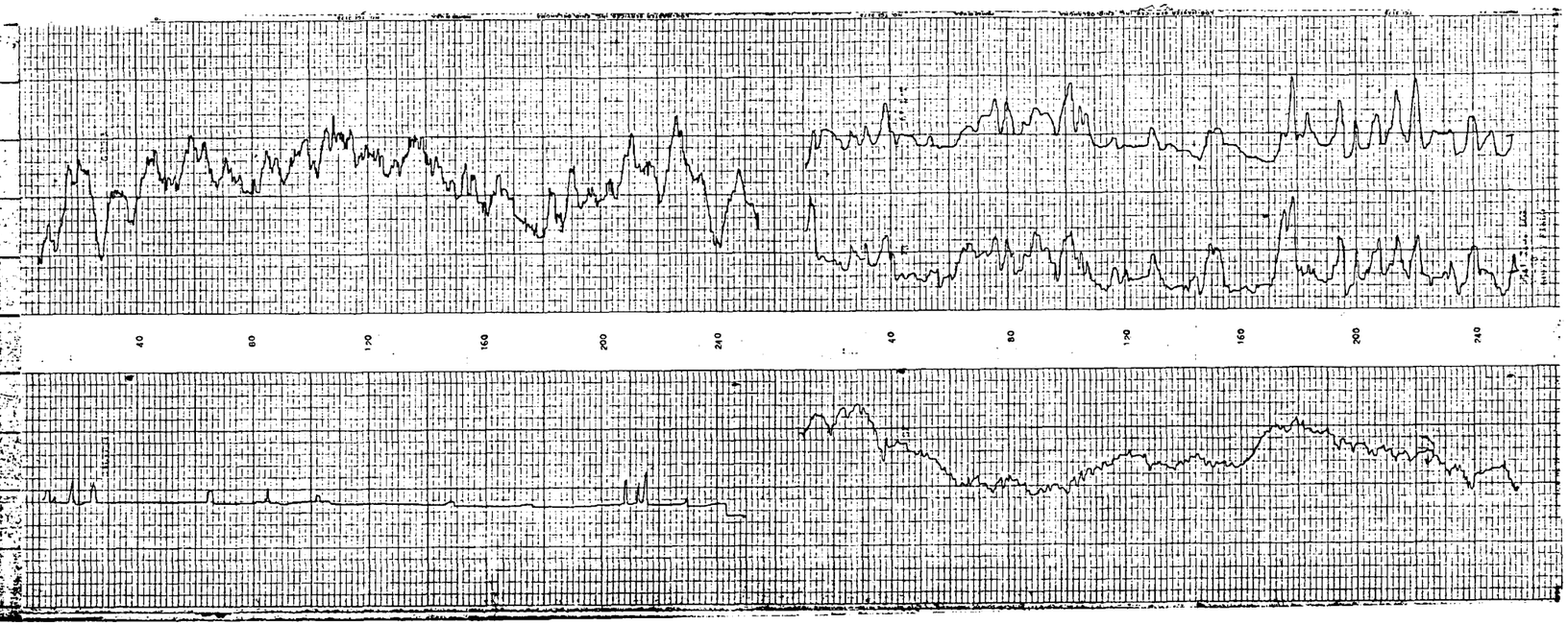
Permanent Datum	GROUND LEVEL	Elev.	Elev.: K.B.
Log Measured From	G.L.	Ft. Above Perm. Datum	D.F.
Drilling Measured From	G.L.		G.L.

Date	29 Sep 68		
Run No.	one	two	three
Depth — Driller	274 ft	ft	ft
Depth — Grid	274 ft	ft	ft
Depth — Log Inter.	264 ft	ft	ft
Top Log Inter.	11 ft	5 ft	ft
Casing — Driller	no ft	no ft	no ft
Casing — Grid	ft	ft	ft
Bit Size	4 no 5 3/4 ft	no ft	no ft
Bit Size	no ft	no ft	no ft
Bit Size	no ft	no ft	no ft
Type Fluid in Hole	clay-gel		
Source of Sample	pit		
RM @ Meas. Temp.	.498 @ 75		
Rmf @ Meas. Temp.	full ft	ft	ft
Rmc @ Meas. Temp.	8.75 @	@	@
Rm @ Bhct. Temp.	@	@	@
Rmf @ Bhct. Temp.	@	@	@
Rmc @ Bhct. Temp.	@	@	@
Time Since Circ.	1/2 hr	hr	hr
Logging Speed	35 fpm	10 fpm	fpm
Tool Type and No.	combo 5	gamma 1	caliper 3
Unit No.	5		
Location	Santa Cruz		
Service No.	5820		
Recorded By	Jim Bev, Associate Geologist		
Witnessed By	Joel Hadsell, Geologist		

P.O. Box 418 Tehachapi, California 93561 (805) 822-6575

STANDARD ROTARY

WATER DEVELOPMENT CORP.



GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

COMPANY: WATER DEVELOPMENT CORPORATION

WELL: 32-19 5784

FIELD: HOPPER FIELD

COUNTY: SANTA CLARA STATE: CALIFORNIA

LOCATION

Sec. ____ Twp. ____ Rge. ____

TYPE LOG: Res. Int. / Res. Lat. / Spont. / Caliper

Permanent Datum: GROUND LEVEL Elev. ____ Elev.: K.B. ____

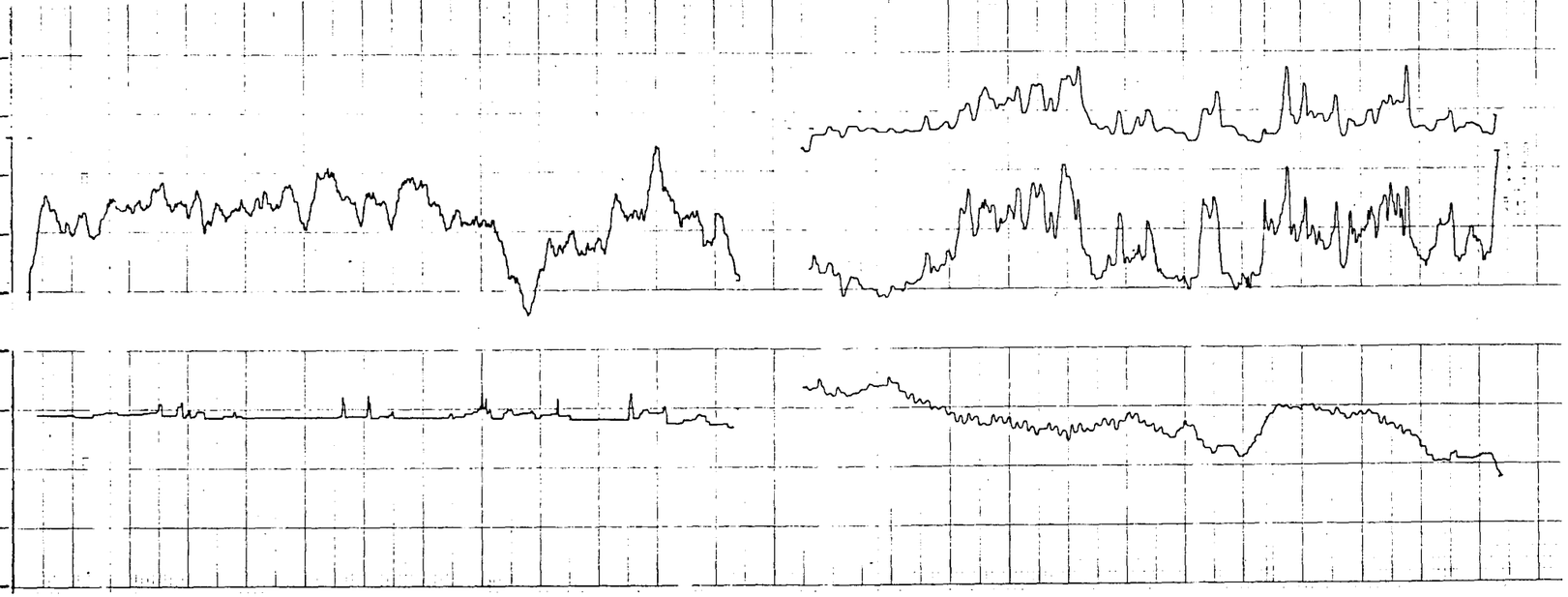
Log Measured From: G.L. ____ Ft. Above Perm. Datum: D.F. ____

Drilling Measured From: G.L. ____ G.L. ____

Date	26 Sep 88		
Run No.	one	two	three
Depth — Driller	250		
Depth — GHD	228		
Bott. Log Inter.	228		
Top Log Inter.	10'	6	
Casing — Driller	no	no	no
Casing — GHD			
Bit Size	4 no 257'	no	no
Bit Size	no	no	no
Bit Size	no	no	no
Type Fluid in Hole	clay-gel		
Source of Sample	pit		
RM @ Meas. Temp.	.74		
Fluid Level	full		
Rmf @ Meas. Temp.			
pH / Fluid Loss	9.34		
Rmc @ Meas. Temp.			
Time Since Circ.	1		
Logging Speed	30	10	
Tool Type and No.	combo 5	gamma 1	caliper 3
Unit No.	5		
Location	Santa Cruz		
Recorded By	5814		
Witnessed By	Jim Bat, Associate Geologist		
	Joel Kelsall, IT Corp.		

P. O. Box 418 Tehachapi, California 93561 (805) 822-4873

RESISTIVITY / SPONT. POTENTIAL / DEPTH / FLUID RESISTIVITY



GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

Company	WATER DEVELOPMENT CORPORATION
Well	28-19 5764
Field	HOOPER FIELD
County	SANTA CLARA
State	CALIFORNIA
Location	Sec. ____ Twp. ____ Rge. ____
Type Log	IE, Ra, GR, LAT, SPXX, 2 LIFT
Permanent Datum	GROUND LEVEL
Elev.	
Elev. K.B.	
Log Measured From	G.L.
Pt. Above Perm. Datum	
D.F.	
Drilling Measured From	G.L.
G.L.	

Date	20 Sep 88		
Run No.	One	Two	Three
Depth — Driller	252		
Depth — Logger	248		
Btm. Log Inter.	248		
Top Log Inter.	70	6	
Casing — Driller	n.a.	n.a.	n.a.
Casing — Logger			
Bit Size	4 n.a. 257	n.a.	n.a.
Bit Size	n.a.	n.a.	n.a.
Bit Size	n.a.	n.a.	n.a.
Type Fluid in Hole	clay-gel		
Source of Sample	pit		
RM @ Meas. Temp.	.74		
Fluid Level	full		
Density / Visc.			
pH / Fluid Loss	9.34		
Rm @ Meas. Temp.			
Rmf @ Meas. Temp.			
Rmc @ Meas. Temp.			
Time Since Circ.	1		
Logging Speed	30	30	
Tool Type and No.	combo 5	gamma 1	caliper 3
Unit No.	5		
Location	Santa Cruz		
Witness No.	5814		
Recorded By	Jim Sat, Associate Geologist		
Witnessed By	Joel Randall, IT Corp.		
other			

P. O. Box 418 Tehachapi, California 93561 (805) 822-8675

Rebuilt

Remarks

Drill Method

Drilled By

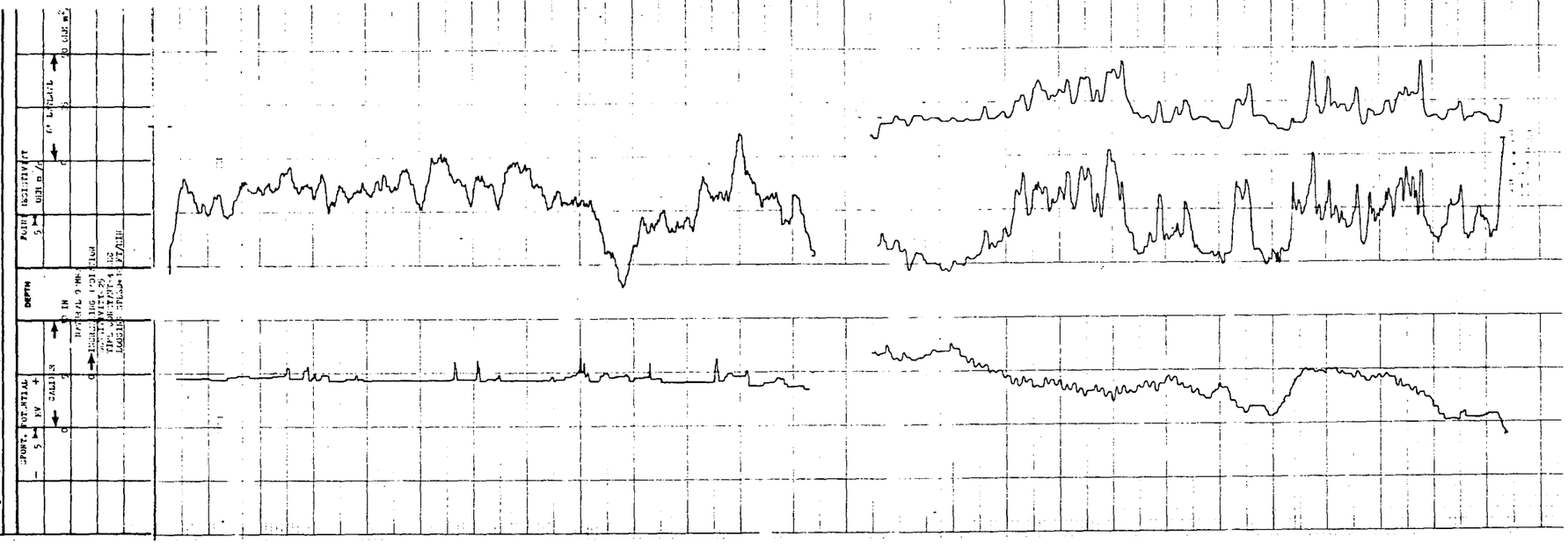
Scale Changes

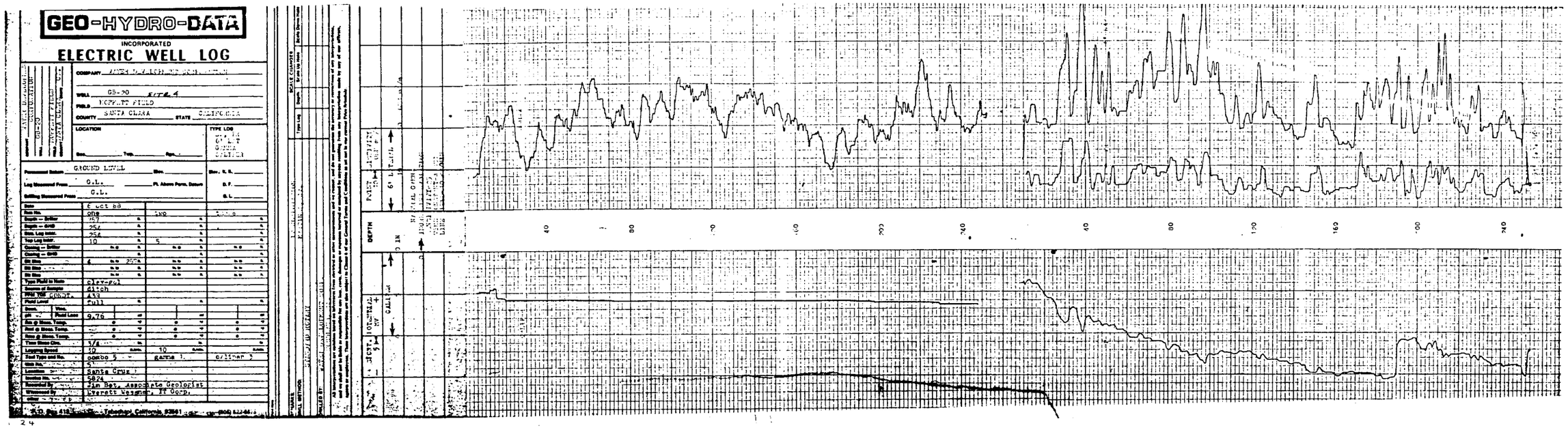
Depth

Time Log

Scale Up Inch

Scale Down Inch




GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY
WELL GS-20 SITE 4
FIELD MOFFETT FIELD
COUNTY SANTA CLARA STATE CALIFORNIA
LOCATION
TYPE LOG
GROUND LEVEL
G.L.
G.L.
Date 6 Oct 88
Run No. one two
Depth — Driller 267 ft
Depth — GHD 264 ft
Bot. Log Inter. 264 ft
Top Log Inter. 10 ft 5 ft
Casing — Driller ft
Casing — GHD 264 ft
Bit Size 6 in 255 ft
Type Fluid in Hole clay-gel
Source of Sample ditch
Rm @ Meas. Temp. 9.70 ohm
Time Since Circ. 3/4 hr
Logging Speed 10 fpm 10 fpm
Fuel Type and No. combo 5 gamma 1 cylinder 3
Unit No. 5
Location Santa Cruz
Invoice No. 5824
Recorded By Jim Bet, Associate Geologist
Witnessed By Everett Wagner, IT Corp.
DEPTH
NORMAL DEPTH
GALLONS
POTENTIAL MV
24

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 5

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

COMPANY [illegible]

WELL [illegible] SITE 5

FIELD HONDO FIELD

COUNTY SANTA CLARA STATE CALIFORNIA

LOCATION

Sec. ____ Twp. ____ Rge. ____

TYPE LOG
SP, RN
64" LAT
GRAD
SHORT

Permanent Datum GROUND LEVEL Elev. ____ Elev.: K. B. ____

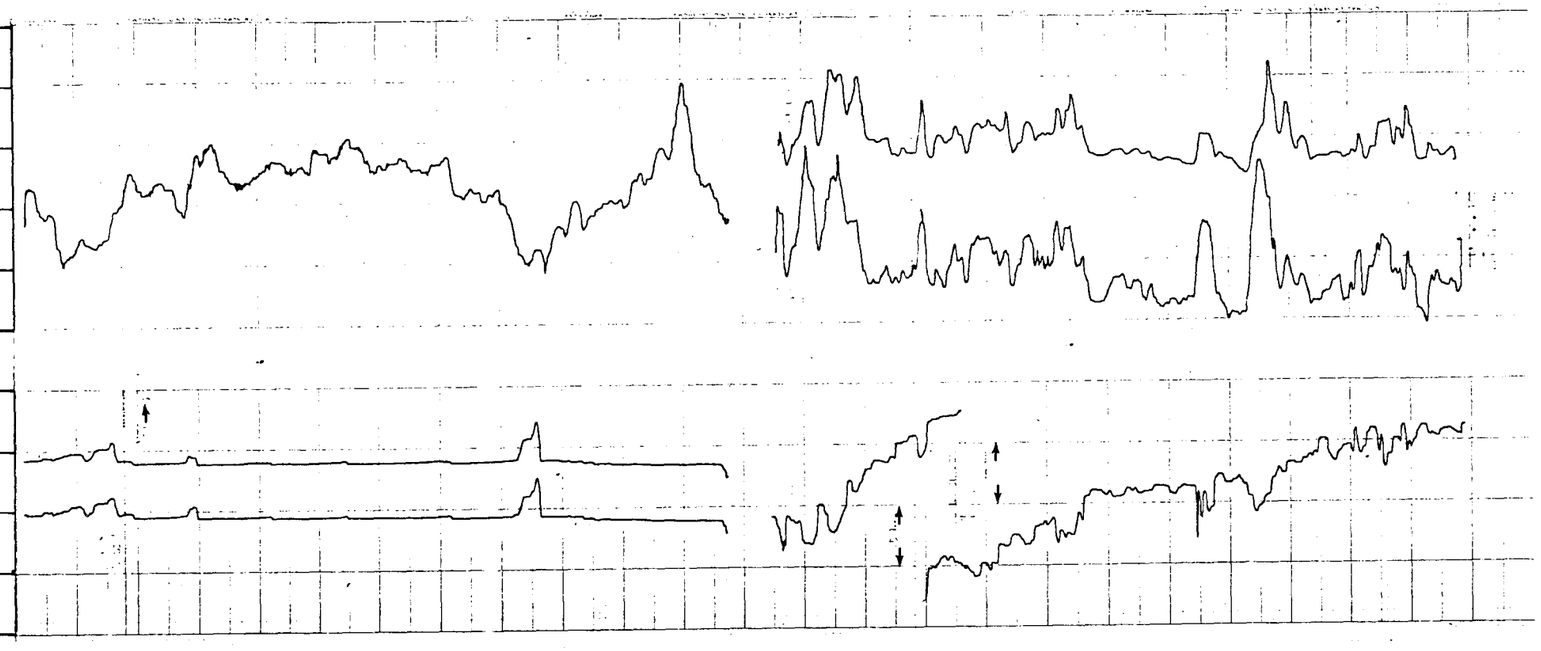
Log Measured From Gr. Lev. ____ Ft. Above Perm. Datum D. F. ____

Drilling Measured From Gr. Lev. G. L. ____

Date	5 Jul 68							
Run No.	one			two			three	
Depth — Driller	238	ft			ft			ft
Depth — GWD	238	ft			ft			ft
Btm. Log Inter.	238	ft			ft			ft
Top Log Inter.	10	ft	5		ft			ft
Casing — Driller		ft		ft	ft		ft	ft
Casing — GWD		ft			ft			ft
Bit Size	7	in	8.0	in	ft	in	in	ft
Bit Size		in		in	ft	in	in	ft
Bit Size		in		in	ft	in	in	ft
Type Fluid in Hole	city-wtr							
Source of Sample	ditch							
RM @ Meas. Temp.	.343							
Fluid Level	full	ft			ft			ft
Source	Meas.							
pH / Fluid Loss	9.E7	cc			cc			cc
Rm @ Meas. Temp.		@ °F		@	°F		@	°F
Rmf @ Meas. Temp.		@ °F		@	°F		@	°F
Rmc @ Meas. Temp.		@ °F		@	°F		@	°F
Time Since Circ.	1	hr			hr			hr
Logging Speed	30	f.p.m.		10	f.p.m.			f.p.m.
Tool Type and No.	combo 5			combo 5			caliper 1	
Unit No.	5							
Location	Santa Cruz							
Operator No.	6705							
Recorded By	Jim Ret, Associate Geologist							
Witnessed By	Don Cox, II WCPD							
other								

P. O. Box 418 Tehachapi, California 93561 (805) 822-9575

26



NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 6

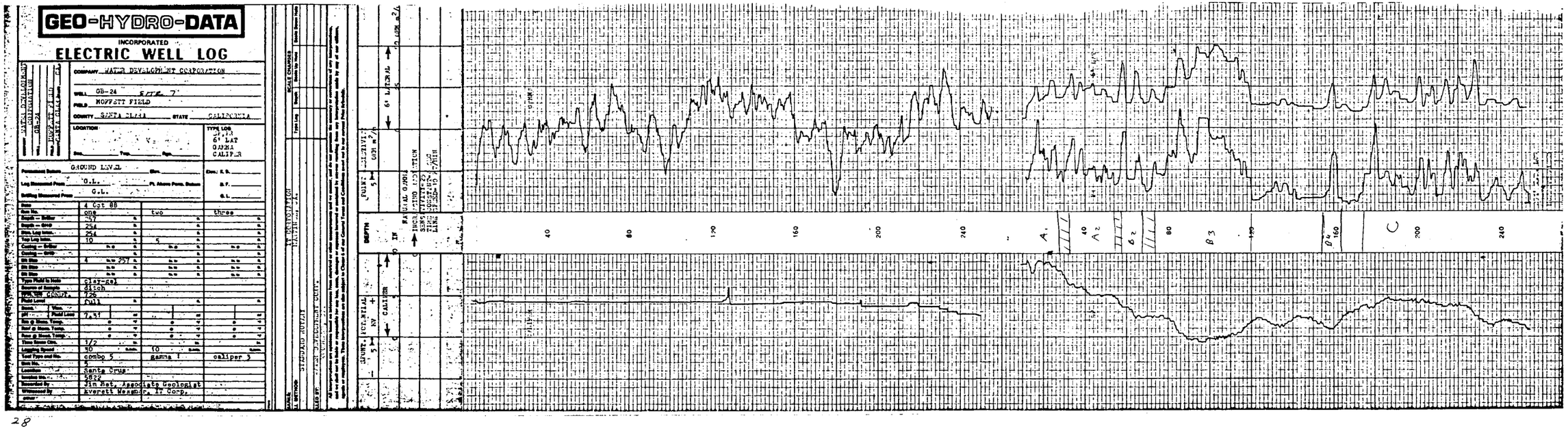
N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 7

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY WATER DEVELOPMENT CORPORATION
WELL GB-24 EXTR. 7
FIELD MOFFETT FIELD
COUNTY SANTA CLARA STATE CALIFORNIA
LOCATION
TYPE LOG
6' LAT
GAMMA
CALIPER
GROUND LEVEL
G.L.
Log Measured From G.L.
Drilling Measured From G.L.
Date 4 Oct 88
Run No. one two three
Depth — Driller 257
Depth — Logger 254
Btm. Log Interval 254
Top Log Interval 10 5
Casing — Driller no
Casing — Logger
Bit Size 4 no 257
Type Fluid in Hole Clay-gel
Source of Sample ditch
Rm @ Meas. Temp. 7.51
Time Since Circ. 1/2
Logging Speed 30 10
Tool Type and No. combo 5 gamma 1 caliper 3
Recorded By Jim Bat, Associate Geologist
Witnessed By Everett Meander, AT Corp.
DEPTH
IN
NATURAL GAMMA
CALIPER
6' LATERAL
40
80
120
160
200
240
A1
A2
B2
B3
C

28

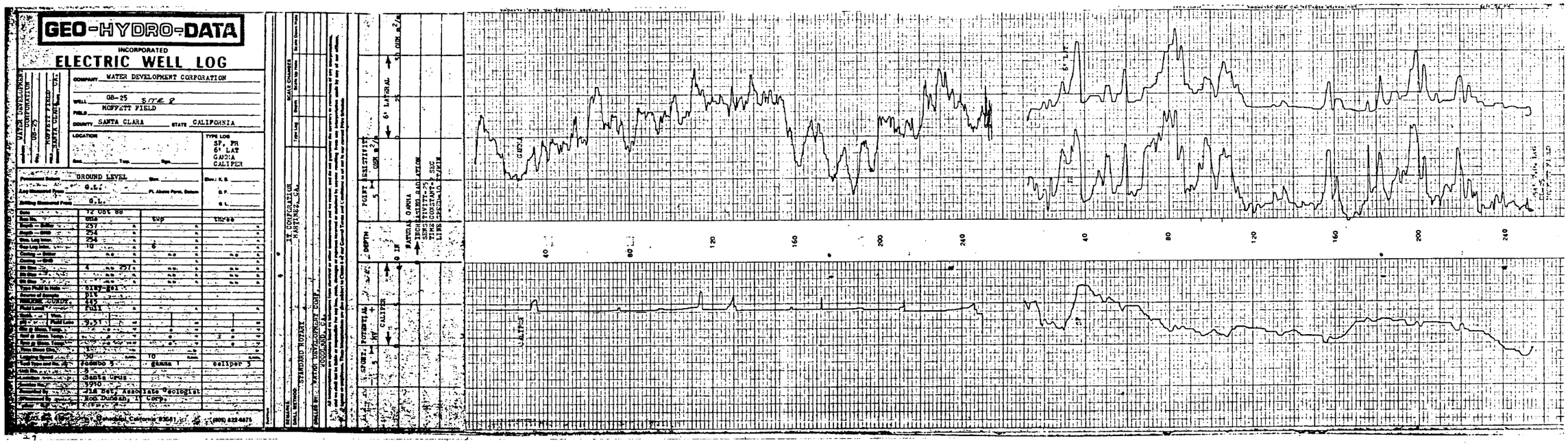
N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 8

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY WATER DEVELOPMENT CORPORATION
WELL OB-25 SITE 2
FIELD MOFFETT FIELD
COUNTY SANTA CLARA STATE CALIFORNIA
LOCATION
TYPE LOG SP, PR 64' LAT GAMMA CALIPER
Permanent Datum GROUND LEVEL Elev.
Log Measured From G.L. Ft. Above Perm. Datum
Drilling Measured From G.L.
Elev.: K.B.
D.F.
G.L.
Date 12 Oct 88
Run No. One Two Three
Depth — Driller 257
Depth — Logger 254
Btm. Log Interval 254
Top Log Interval 10
Casing — Driller
Casing — Logger
Bit Size 4 7¾
Type Fluid in Hole Water
Source of Sample pit
RM @ Meas. Temp. .445
RMF @ Meas. Temp. .221
RMC @ Meas. Temp.
Source of RMF RMC
Rm @ Meas. Temp. 9.51
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Time Since Circ.
Logging Speed 30 10
Tool Type and No. Pocedo 5 gamma 1 caliper 3
Unit No. 8
Location Santa Cruz
Recorded by Jim Self, Associate Geologist
Witnessed by Mac Duncan, II Corp.
Pocedo Corporation, Oxnard, California 93561 (805) 622-4875
SCALE CHANGES
Type Log Depth Scale Up Hole Scale Down Hole
FIELD STUDIES
JK COMPLETION
MARTINEZ, CA.
STANDARD NUTATE
WATER DEVELOPMENT CORP.
FOOTHILL, CA.
DEPTH
FEET 5
0 IN
GAMMA
BATCH
TECH
SENS
TIME CONSTANT
LIFE
CPS
SEC
CALIPER
SP MV
SPONT. POTENTIAL
RESISTIVITY OHM M²/M
64" LATERAL
25
50 OHM M²/M
64" LAT.
CALIPER
40
80
120
160
200
240

GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY WATER DEVELOPMENT CORPORATION
WELL GB-26 SITE P
FIELD MOFFETT FIELD
COUNTY SANTA CLARA STATE CALIFORNIA
TYPE LOG SP, FR 6' LAT GAMMA CALIPER
GROUND LEVEL
G.L.
10 Oct 88
one
two
three
1500
Santa Cruz
Jim Bell, Associate Geologist
Ron Duncan, IT Corp.
(805) 622-6975
IT CORPORATION
MARTINEZ, CA.
STANDARD REPORT
SATCO DEVELOPMENT CORPORATION
HOOKLAND
DEPTH
SP
NATURAL GAMMA
INCHES
SENSITIVITY-25
TIME CONSTANT-2.0S
LINE SPEED-10 FPM
POINT RESISTIVITY
OHM M²/M
6' LATERAL
50 OHM M
MONT. POTENTIAL
MV
CALIPER
6' LAT
SP
CALIPER
40
80
120
160
200
240
MOFFETT FIELD

30

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 9

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

WATER DEVELOPMENT CORP. — WELL GB-7 — MOFFETT FIELD — SANTA CLARA, CALIF.

COMPANY: THE WATER DEVELOPMENT CORPORATION

WELL: GB-7 SITE 9

FIELD: MOFFETT FIELD

COUNTY: SANTA CLARA STATE: CALIFORNIA

LOCATION: Sec. ____ Twp. ____ Rge. ____

TYPE LOG: SP PR 64" LAT. NAT. GAMMA CALIPER

Permanent Datum: GROUND LEVEL Elev. ____ Elev.: K.B. ____

Log Measured From: G.L. 0 Ft. Above Perm. Datum D.F. ____

Drilling Measured From: G.L. G.L. ____

Date	19 JULY 86		
Run No.	ONE		
Depth — Driller	260		
Depth — Grid	259		
Depth Log Inter.	257		
Top Log Inter.	2		
Casing — Driller	no	no	no
Casing — Grid			
Bit Size	4	no	no
Bit Size	no	no	no
Bit Size	no	no	no
Type Fluid in Hole	CLAY-GEL		
Source of Sample	PIT		
Rm @ Meas. Temp.	CONTINUOUS		
Rmf @ Meas. Temp.	FULL		
Rmc @ Meas. Temp.			
Fluid Level			
Source	Meas.	Calc.	
pH / Fluid Loss	9.65		
Rm @ Meas. Temp.			
Rmf @ Meas. Temp.			
Rmc @ Meas. Temp.			
Time Since Circ.	2		
Logging Speed	35&15		
Tool Type and No.	COMB-18,N. G.,L,CAL-4		
Unit No.	2		
Location	STOCKTON, CA.		
Location No.			
Recorded By	D.L. SANDOLTZER (ASSOCIATE GEOLOGIST)		
Witnessed By	C. WALLACE(ITD		
other	DRILLER		

P. O. Box 418 Tehachapi, California 93561 (805) 822-6875

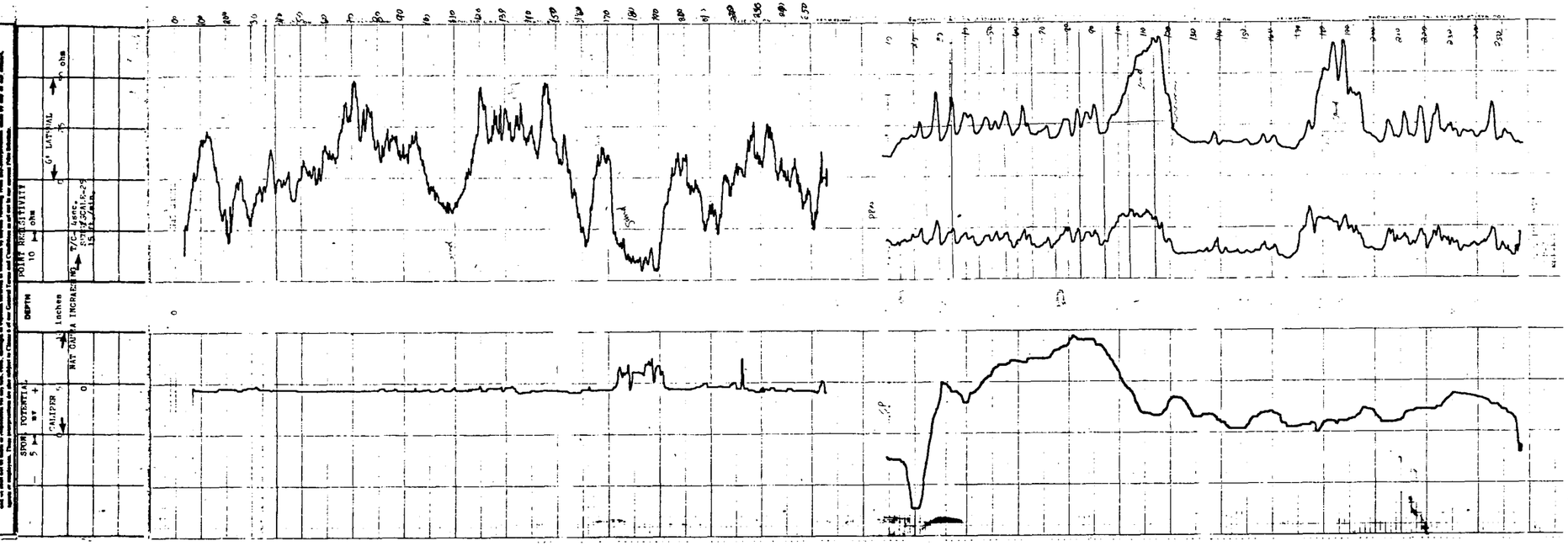
SCALE CHANGES: Type Log — Depth — Scale Before Change — Scale Since Change

FIELD: ITT CONSULTANTS, MARINE, CA.

REAL VIEWER: STOW

RECORDED BY: THE WATER DEVELOPMENT CORP. WORK INT. DEVELOPMENT

All conclusions and opinions expressed in this report are based on interpretations from electrical or other measurements, and we can make no guarantee as to accuracy of any conclusions or opinions. The responsibility for use, further, or Change of use of Electrical Logs and Charts lies with the Client, and Geo-Hydro-Data, Inc. will not be liable for any of these actions.



GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

Company	WATER DEVELOPMENT CORPORATION
Well	GB-C S/T# 9
Field	MOFFETT FIELD
County	SANTA CLARA State CALIFORNIA
Location	Sec. Twp. Rge.
Type Log	SP, RN 64' LAT SHORT CALIPER
Permanent Datum	GROUND LEVEL Elev. Elev.: K.B.
Log Measured From	G.L. Ft. Above Perm. Datum D.F.
Drilling Measured From	G.L. G.L.

Date	15 JUL 88		
Run No.	one	two	three
Depth — Driller	367		
Depth — Logger	363		
Btm. Log Inter.	363		
Top Log Inter.	10	5	
Casing — Driller	no	no	no
Casing — Logger			
Bit Size	4 3/4	no	no
Bit Size	no	no	no
Bit Size	no	no	no
Type Fluid in Hole	clay-gel		
Source of Sample	pit		
RM @ Meas. Temp.	499		
Rmf @ Meas. Temp.	full		
Rmc @ Meas. Temp.			
pH / Fluid Loss	9.66		
Rm @ Meas. Temp.			
Rmf @ Meas. Temp.			
Rmc @ Meas. Temp.			
Time Since Circ.	2		
Logging Speed	50	10	
Tool Type and No.	combo 5	gamma 1	caliper 9
Unit No.	5		
Location	Santa Cruz		
Invoice No.	9711		
Recorded By	Jim Bat, Associate Geologist		
Witnessed By	Gary Wallace, WT Corp.		
other	D. Shannholtzer, GHD		

P. O. Box 418 Tehachapi, California 93561 (805) 823-6676

Field Data

Type Log | Depth | Date Time Hole | Date Down Hole

SCALE CHANGES

WATER DEVELOPMENT CORPORATION
MATTHEW, CA.

STANDARD ROTARY

DRILLED BY: KAMPE DRILLING CORP.
MOODLAND, CA.

All interpretations are opinions based on the inferences from electrical or other measurements and we cannot, and do not, guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Clause 4 of our General Terms and Conditions as set forth in our current Price Schedule.

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

Water Development Corporation
Well: 09-9
Field: Newport Field
County: Santa Cruz
State: California

COMPANY: WATER DEVELOPMENT CORPORATION
WELL: 09-9 Zone 9
FIELD: NEWPORT FIELD
COUNTY: SANTA CRUZ STATE: CALIFORNIA

LOCATION
Sec. Twp. Rge.

TYPE LOG: SP, Fl, Cal, LT, Gamma, Caliper

Permanent Datum: GROUND LEVEL Elev.
Log Measured From: G.L. Ft. Above Perm. Datum
Drilling Measured From: G.L.
Elev.: K.B. D.F. G.L.

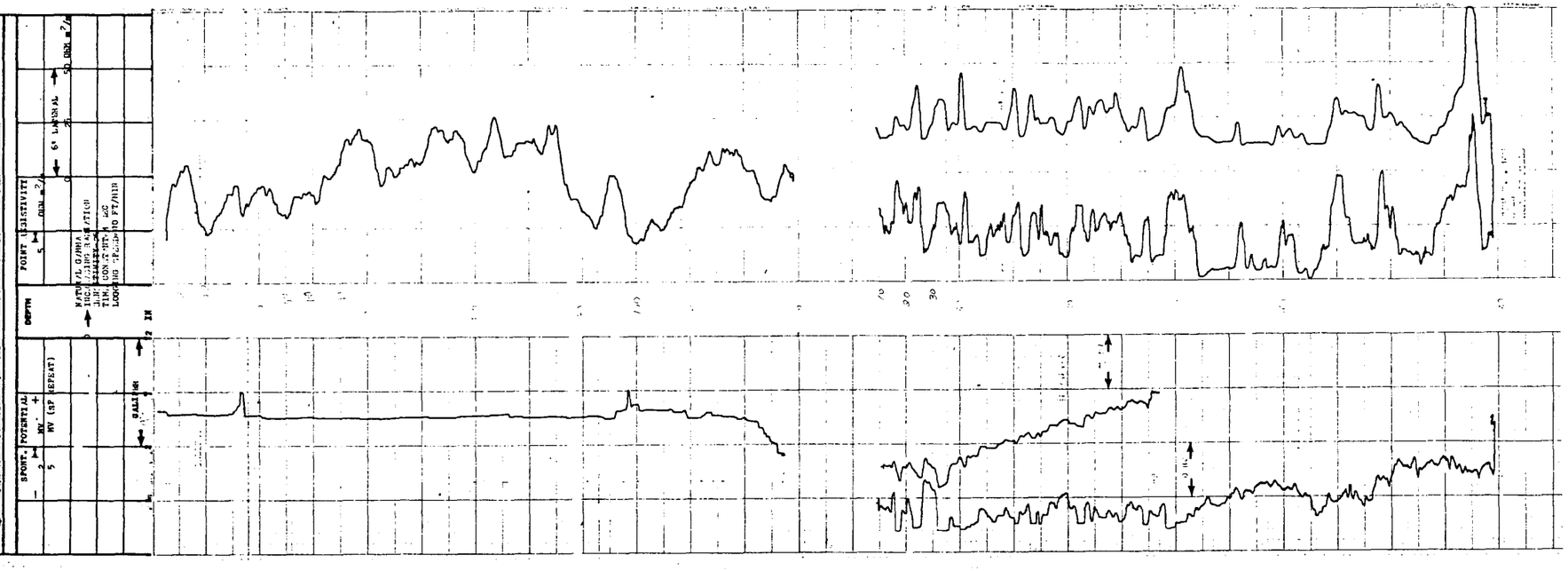
Date	12 Jul 85						
Run No.	one		two			three	
Depth — Driller	243	ft		ft			ft
Depth — Logger	238	ft		ft			ft
Btm. Log Inter.	238	ft		ft			ft
Top Log Inter.	10	ft	5	ft			ft
Casing — Driller	5	@ 6.5 ft	@	ft	@	ft	ft
Casing — Logger		ft		ft			ft
Bit Size	4	@ 243 ft	@	ft	@	ft	ft
Bit Size	@	ft	@	ft	@	ft	ft
Bit Size	@	ft	@	ft	@	ft	ft
Type Fluid in Hole	clay-gel						
Source of Sample	pit						
RM @ Meas. Temp.	.602 @ 80°F						
Rmf @ Meas. Temp.	full	ft		ft			ft
Rmc @ Meas. Temp.							
pH / Fluid Loss	9.38	cc		cc			cc
Rm @ Meas. Temp.	@	°F	@	°F	@	°F	°F
Rmf @ Meas. Temp.	@	°F	@	°F	@	°F	°F
Rmc @ Meas. Temp.	@	°F	@	°F	@	°F	°F
Time Since Circ.	1	hr		hr		hr	hr
Logging Speed	30	feet/min	30	feet/min			feet/min
Tool Type and No.	gamma 5		gamma 5		caliper 5		
Unit No.	5						
Location	Santa Cruz						
Operator No.	5708						
Recorded By	Jim Rat, associate geologist						
Witnessed By	Bill Hopkins, DT						
other	Stan, Driller						

P. O. Box 416 Tehachapi, California 93561 (805) 822-6675

SCALE CHANGES: Depth | Scale Down Hole | Scale Up Hole | Type Log

RECORDED: WATER DEVELOPMENT CORP.
DRILL METHOD: STANDARD ROTARY
DRILLER BY: WATER DEVELOPMENT CORP.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Client's or our General Terms and Conditions as set forth in our current Price Schedule.



13

GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG
COMPANY US NAVY
WELL GP-10 SITE 9
FIELD NOTHING FIELD
COUNTY SAN BERNARDINO
STATE CA
LOCATION
TYPE LOG
Permanent Datum GROUND SURFACE
Elev.
Elev.: K.B.
Log Measured From G.L.
0
Ft. Above Perm. Datum
D.F.
Drilling Measured From G.L.
G.L.
Date
Run No.
Depth — Driller
Depth — Grid
Btm. Log Inter.
Top Log Inter.
Casing — Driller
Casing — Grid
Bit Size
Type Fluid in Hole
Source of Sample
PH2 Tab
Fluid Level
Density
Viscosity
pH
Fluid Loss
Rm @ Meas. Temp.
Rmf @ Meas. Temp.
Rmc @ Meas. Temp.
Time Since Circ.
Logging Speed
Tool Type and No.
Unit No.
Location
Recorded By
Witnessed By
other
Cambria
Henry Renz Associate Geologist
D. Miller
P. O. Box 418
Tehachapi, California 93561
(805) 822-8675
SCALE CHANGES
Type Log
Depth
Scale Up Time
Scale Down Time
REMARKS:
FLUID METHOD:
RIG:
DRILLED BY:
DATE:
DEPTH
FOLIAR RESISTIVITY
OHMS m²/m
STOP
START
CALIPER
TIME

GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG

COMPANY: WATER DEVELOPMENT CORP.
WELL: GE-11 SIDE 0
FIELD: MONTEREY PARK
COUNTY: SANTA CLARA STATE: CA

LOCATION: Sec. ___ Twp. ___ Rge. ___
TYPE LOG: Induction Induction Induction Induction

Permanent Datum: Ground Level Elev. ___ Elev.: K.B. ___
Log Measured From: G.L. 0 Ft. Above Perm. Datum D.F. ___
Drilling Measured From: G.L. G.L. ___

Date	JULY 26, 1966		
Run No.	1	2	3
Depth — Driller	265		
Depth — Logm.	265		
Btm. Log Inter.	265		
Top Log Inter.	8	0	2
Casing — Driller	no	no	no
Casing — Logm.			
Bit Size	4 no 42	no	no
Bit Size	no	no	no
Bit Size	no	no	no
Type Fluid in Hole	clay gel		
Source of Sample	pit		
RM@ TMP	65		
Fluid Level	full		
Source	Visc. / Fluid Loss		
pH	9.42		
Rm @ Meas. Temp.			
Rmf @ Meas. Temp.			
Rmc @ Meas. Temp.			
Time Since Circ.	1		
Logging Speed	20 fpm	20 fpm	20 fpm
Tool Type and No.	combo	dit comp.	caliper
Unit No.	1		
Location	Gambria		
Operator No.	5689		
Witnessed By	Larry Bene Westside Geologist		
Witnessed By	Driller		
other			

P. O. Box 418 Tehachapi, California 93561 (805) 822-6675

Scale Changes: Type Log | Depth | Scale Down to

Remarks: [illegible]
Drill Method: ROTARY
Drilled By: [illegible]

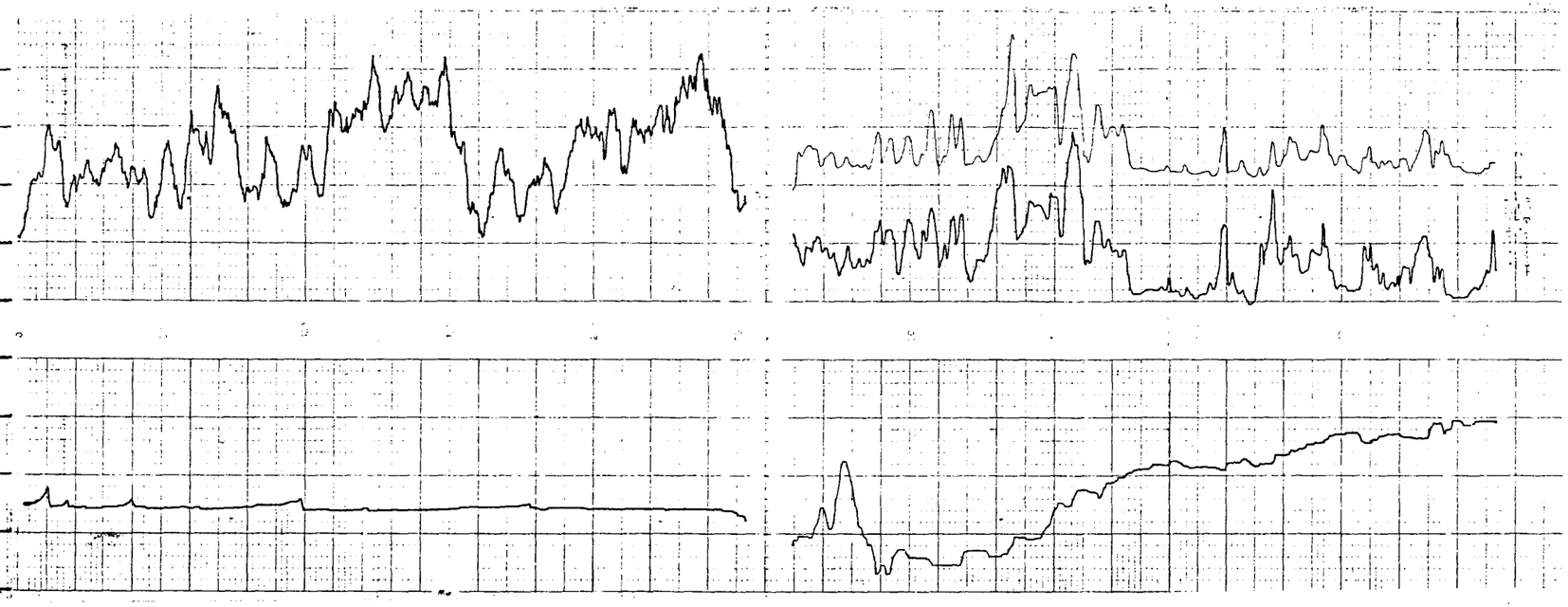
All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to Charges of Our Current Terms and Conditions as set out in our current Price Schedule.

FORMATION — DESCRIPTION IS GENERAL, NOT GEOLOGIC. SAND INCLUDES GRAVELS. SAND OR ELECTRICAL PROPERTIES, SHOULD BE INTERPRETED. ADDITIONAL DATA IS ALSO CONSIDERED IF AVAILABLE.

YIELD — SHADING INDICATES AREAS OF PROBABLE YIELD. THE INDICATED YIELD IS VISUALLY RELATIVE, BASED ON ELECTRICAL PROPERTIES.

WATER QUALITY — ppm TDS

DEPTH — Scale 1" = 50 ft. — Scale 1" = 10 ft.



GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

WATER DEVELOPMENT CORP.
WELL GB-12
FIELD MOFFETT FIELD
COUNTY SANTA CLARA CA.

COMPANY WATER DEVELOPMENT CORPORATION
WELL GB-12 #72 9
FIELD MOFFETT FIELD
COUNTY SANTA CLARA STATE CALIFORNIA

LOCATION
Sec. ____ Twp. ____ Rge. ____

TYPE LOG
SP, RR,
6' LATERAL
CALIPER
NAT. GAMMA

Permanent Datum GROUND LEVEL Elev. ____ Elev.: K.B. ____
Log Measured From G.L. 0 Ft. Above Perm. Datum D.F. ____
Drilling Measured From GROUND LEVEL G.L. ____

Date	3 August 88		
Run No.	one	two	three
Depth — Driller	251 ft	ft	ft
Depth — GHD	250 ft	ft	ft
Btm. Log Inter.	250 ft	ft	ft
Top Log Inter.	10 ft	5 ft	ft
Casing — Driller	n.a. ft	n.a. ft	n.a. ft
Casing — GHD	ft	ft	ft
Bit Size	4 n.a. TD ft	n.a. ft	n.a. ft
Bit Size	n.a. ft	n.a. ft	n.a. ft
Bit Size	n.a. ft	n.a. ft	n.a. ft
Type Fluid in Hole	gel		
Source of Sample	ditch		
PH/R Visc.	325		
Fluid Level	full ft	ft	ft
Meas. — Time			
Meas. — Fluid Loss			
Rm @ Meas. Temp.	@ °F	@ °F	@ °F
Rmf @ Meas. Temp.	@ °F	@ °F	@ °F
Rmc @ Meas. Temp.	@ °F	@ °F	@ °F
Time Since Circ.	1 hr.	hr.	hr.
Logging Speed	30 ft/min.	15 ft/min.	15 ft/min.
Tool Type and No.	combo 21	cal 3	gamma 3
Unit No.	7		
Location	Shafter		
Invoice No.	5735		
Recorded By	Mike Alexander	Assoc.Geologist	
Witnessed By	Scott H		

P.O. Box 4[illegible] Tehachapi, California 93561 (805) 822-8675

REMARKS
DRILL METHOD: STANDARD CORE
CONSULTANT: WATER DEVELOPMENT CORP.
DRILLED BY: WATER DEVELOPMENT CORP.
MADRAS, CA.

All interpretations are opinions based on inferences from electrical or other measurements and we cannot, and do not guarantee the accuracy or correctness of any interpretations, and we shall not be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretations made by any of our officers, agents or employees. These interpretations are also subject to Terms & of our Current Terms and Conditions as set out in our current Price Schedule.

SCALE CHANGES
Type Log | Depth | Scale Down Hole | Scale Up Hole

FORMATION

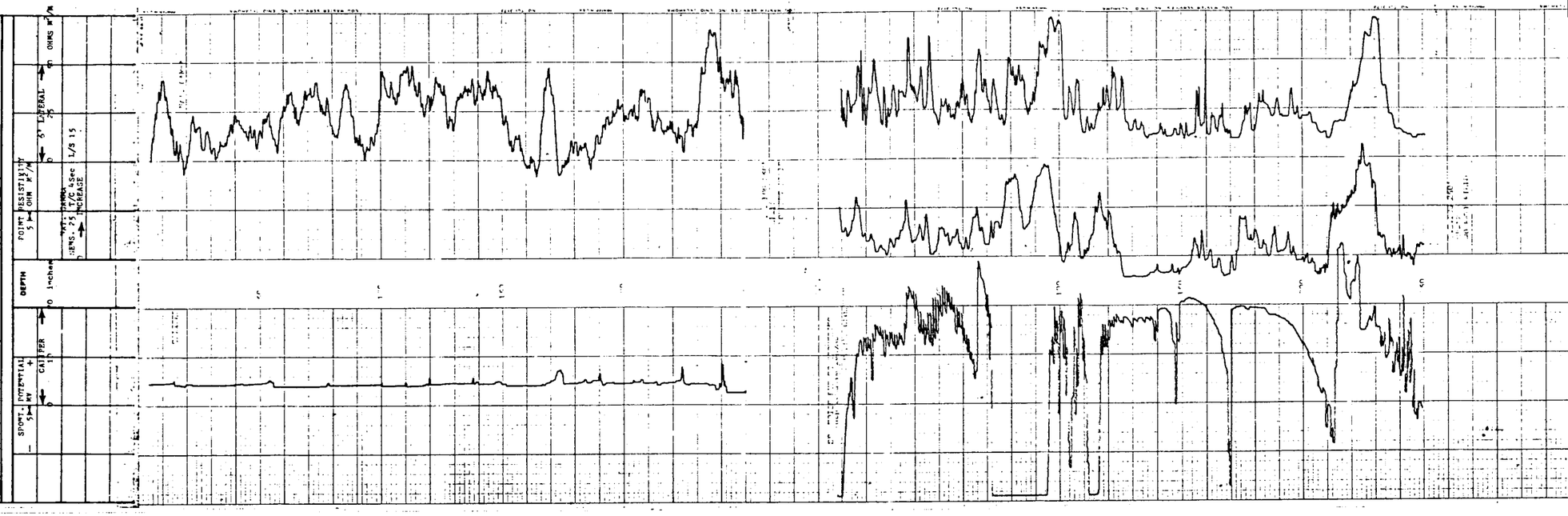
DESCRIPTION IN GENERAL, NOT GEOLOGIC, SAND BEDS MAY BE EXPECTED WHERE SHALE IS NOT PRESENT INDICATED BY THE LOG. ADDITIONAL DATA IS ALSO CONSIDERED IF AVAILABLE.

YIELD

SHADING INDICATED AREAS OF PROBABLE YIELD.

THE INDICATED YIELD IS VIRTUALLY RELATIVE, BEING GREATER AS SHADING AREA INCREASES.

WATER QUALITY
ppm TDS



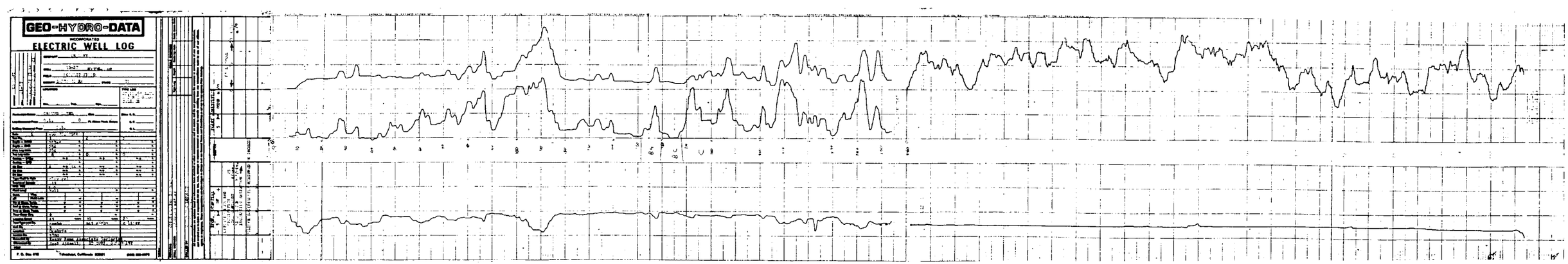
N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

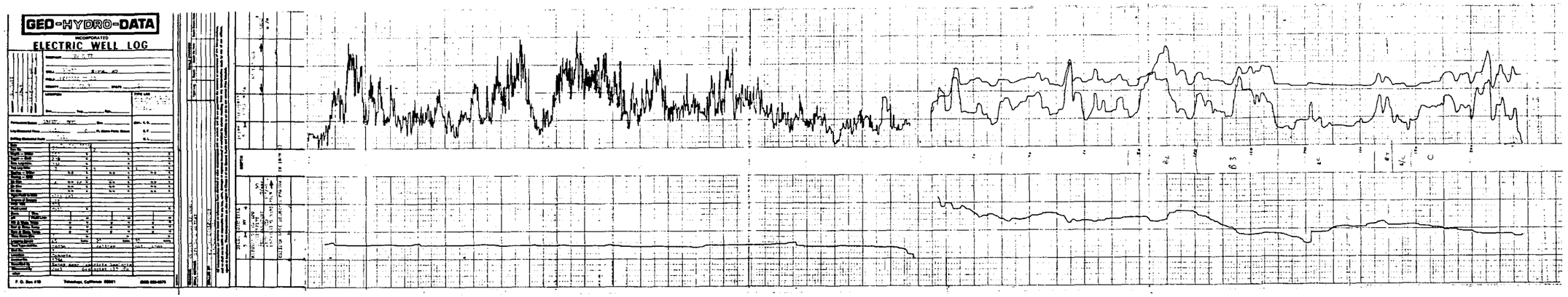
APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 10

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993


GEO-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG


GED-HYDRO-DATA
INCORPORATED
ELECTRIC WELL LOG

NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 11

NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 12

NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 13

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 14

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

Company	WATER DEVELOPMENT CORPORATION
Well	03-28 SITE 14
Field	MOFFETT FIELD
County	SANTA CLARA
State	CALIFORNIA
Location	
Type Log	SP, EM, 61' LATERAL, 16" NORM., CALIPER
Permanent Datum	GROUND LEVEL
Elev.	
Elev. K.B.	
Log Measured From	Grd.
Ft. Above Perm. Datum	
D.F.	
Drilling Measured From	Grd.
G.L.	

Date	9 Dec 82		
Run No.	one	two	three
Depth — Driller	260		
Depth — Logger	259		
Btm. Log Inter.	259		
Top Log Inter.	10	6	
Casing — Driller			
Casing — Logger			
Bit Size	4	260	
Dr. Size			
Dr. Size			
Dr. Size			
Type Fluid in Hole	clay-gel		
Source of Sample	pit		
RM @ Meas. Temp.	.249		
Rmf @ Meas. Temp.	.211		
Rmc @ Meas. Temp.			
Time Since Circ.	1		
Logging Speed	30	10	
Tool Type and No.	combo 5	extra 1	caliper 5
Unit No.	5		
Location	Santa Cruz		
Engineer No.	6721		
Recorded by	Jim Sar, Associate Geologist		
Witnessed by	Scott Logan, Drill Chief		
other	Geo. Water Development		

F. O. Box 418 Tehachapi California 93561 (805) 822-8879

Scale Changes: Type Log, Depth, Scale Up Hole, Scale Down Hole

Remarks:

Shell Method:

Standard Operating Procedure

Recorded By: Geophysicist

All conclusions and opinions based on interpretations from electrical or other measurements are the opinions, and do not guarantee its correctness or completeness or any interpretations, and we shall not be responsible for any loss, damage or expense arising therefrom, whether such interpretations are given by officers or employees of this company or not, and we make no representation or warranty as to any of our opinions, reports or conclusions. These interpretations are also subject to Clause 4 of our Current Terms and Conditions as set out in our current Price Schedule.

NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 15

NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 16

NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 17

NO GEOPHYSICAL LOGGING WAS CONDUCTED AT SITE 18

N00296.001614
MOFFETT FIELD
SSIC NO. 5090.3

APPENDIX C – BORING LOGS
GEOPHYSICAL LOGS

SITE 19

WEST SIDE GROUNDWATER SITE CHARACTERIZATION REPORT

DATED 01 MARCH 1993

GEO-HYDRO-DATA

INCORPORATED

ELECTRIC WELL LOG

COMPANY	WATER DEVELOPMENT CORPORATION
WELL	GB-29 SITE 19
FIELD	MOFFETT FIELD
COUNTY	SANTA CLARA
STATE	CALIFORNIA
LOCATION	SITE 19
Sec.	Twp.	Rge.
TYPE LOG	64' LR, 64' LAT, GAMMA, CALIPER
Permanent Datum	GROUND LEVEL
Elev.	
Log Measured From	G.L.
Ft. Above Perm. Datum	
Elev.: K.B.	
D.F.	
Drilling Measured From	G.L.
G.L.	

Date	15 Aug 88		three
Run No.	ONE	two	
Depth — Driller	250		
Depth — Logger	250		
Btm. Log Inter.	250		
Top Log Inter.	10	5	
Casing — Driller			
Casing — Logger			
Bit Size	4	250	
Type Fluid in Hole	Clay-gel		
Source of Sample	Pitch		
Rm @ Meas. Temp.	.055		
Rmf @ Meas. Temp.	Full		
Rmc @ Meas. Temp.			
Source Rmf / Rmc			
Rm @ Bhct. Temp.	10.05		
Max. Rec. Temp.			
Equip. Location			
Recorded By			
Witnessed By			
Run Bhct. Gm.	1		
Logging Speed	30	10	
Tool Type and No.	combo 5	gamma 1	caliper 5
Unit No.	5		
Location	Santa Cruz		
Operator No.	5725		
Recorded By	Jim Bat, Associate Geologist		
Witnessed By	Dan Coz, Geologist (IT Corp)		
Other	Kyle, Water Development		

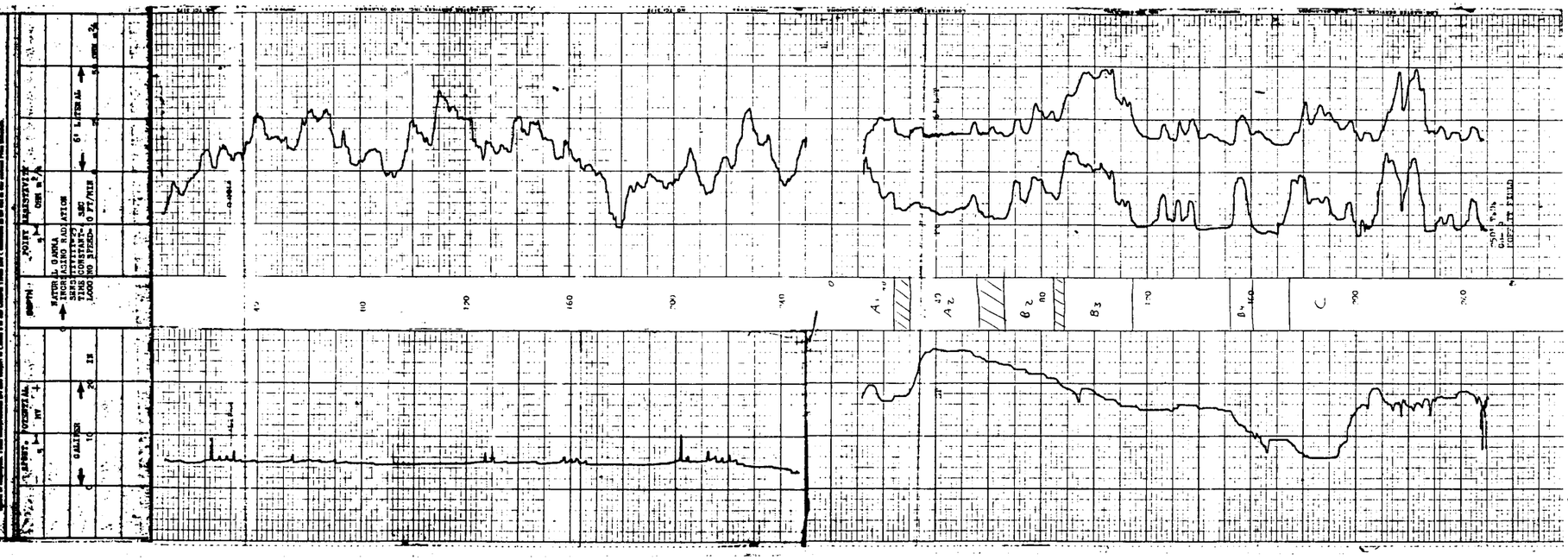
P. O. Box 418 Tehachapi, California 93561 (805) 822-8675

WATER DEVELOPMENT CORPORATION GB-29 MOFFETT FIELD SANTA CLARA, CA.

TYPE LOG: Depth: Scale Meters Scale Feet

SCALE CHANGES: Depth: Scale Meters Scale Feet

IT CORPORATION MARTINEZ, CA.

STANDARD ROTARY

WATER DEVELOPMENT CORP.