1918-00118

State of California
Department of Health Services

SFUND RECORDS CTR
88115131

Remedial Investigation Report
Volume 2

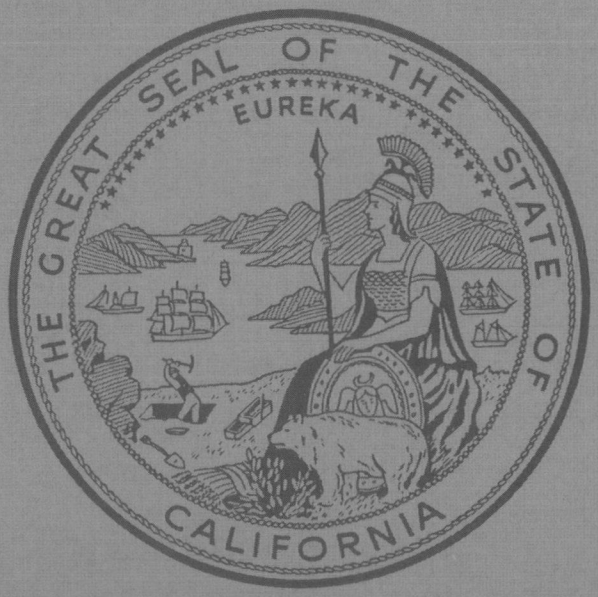
Purity Oil Sales Site, Fresno, California

Contract No. 83-81867

By:
Harding Lawson Associates
Novato, California

and

Radian Corporation
Sacramento, California



SFUND RECORDS CTR
1918-00118

Harding Lawson Associates

VOLUME 2 - APPENDIXES A, B, AND C
REMEDIAL INVESTIGATION REPORT
PURITY OIL SALES SITE
FRESNO, CALIFORNIA

Appendix A

BORING LOGS

MAJOR DIVISIONS				TYPICAL NAMES
COARSE-GRAINED SOILS (MORE THAN HALF IS LARGER THAN No. 200 SIEVE)	GRAVELS (MORE THAN HALF COARSE FRACTION IS LARGER THAN No. 4 SIEVE SIZE)	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES
			GP	POORLY GRADED GRAVELS, GRAVEL-SAND MIXTURES
		GRAVELS WITH OVER 12% FINES	GM	SILTY GRAVELS, POORLY GRADED GRAVEL-SAND-SILT MIXTURES
			GC	CLAYEY GRAVELS, POORLY GRADED GRAVEL-SAND-CLAY MIXTURES
	SANDS (MORE THAN HALF COARSE FRACTION IS SMALLER THAN No. 4 SIEVE SIZE)	CLEAN SANDS WITH LITTLE OR NO FINES	SW	WELL-GRADED SANDS, GRAVELLY SANDS
			SP	POORLY GRADED SANDS, GRAVELLY SANDS
		SANDS WITH OVER 12% FINES	SM	SILTY SANDS, POORLY GRADED SAND-SILT MIXTURES
			SC	CLAYEY SANDS, POORLY GRADED SAND-CLAY MIXTURES
FINE-GRAINED SOILS (MORE THAN HALF IS SMALLER THAN No. 200 SIEVE)	SILTS AND CLAYS (LIQUID LIMIT 50% OR LESS)		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS, OR CLAYEY SILTS WITH SLIGHT PLASTICITY
			CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
			OL	ORGANIC CLAYS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS (LIQUID LIMIT GREATER THAN 50%)		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			Pt	PEAT AND OTHER HIGHLY ORGANIC SOILS

UNIFIED SOIL CLASSIFICATION SYSTEM

Harding Lawson Associates
Engineers, Geologists
& Geophysicists

Soil Classification Chart
Purity Oil Sales Remedial Investigation
Fresno, California

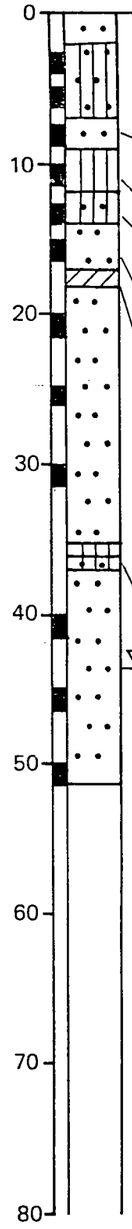
PLATE
A1

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
PM	919,032.01	JDW	4/86		

4125

Equipment 12" Hollow Stem Auger

Elevation 292.1 Date 6/20/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
5		BROWN GRAVELLY SAND (SP)(10 YR 5/2) dry	5.9	425	10				34000	5.2	< 0.05	2.78	0.73	3.7	0.05	< 0.1	3.25	
3		YELLOW-BROWN SILTY SAND (SM)(10 YR 6/6) loose, dry, fine grained	3.6	1100	15	200	460	0	27000	8.4	< 0.05	1.84	0.49	3.64	0.02	0.1	2.08	
11		GRAY AND YELLOW-BROWN SAND (SP)(10 YR 5/6) loose, dry, fine grained, laminated	4.0	500	0.3				—	—	—	—	—	—	—	—	—	
19	10		3.8	950	1.0	15	19	0	920	14.0	< 0.05	0.05	2.38	19.51	0.05	0.21	1.5	10
18		GRAY SILT (ML)(5 Y 6/2) stiff, dry	5.8	450	0.7				—	—	—	—	—	—	—	—	—	
26		YELLOW-BROWN SILTY SAND (SM)(10 YR 5/4) dense, dry, fine	7.8	425	1.0	18	25	0	3500	12.0	< 0.05	0.32	0.65	7.41	0.03	< 0.1	1.27	
10	20	YELLOW-BROWN SAND (SP)(10 YR 5/4) dense, moist, fine grained	8.4	190	0.3				3200	3.2	< 0.05	0.03	0.13	0.59	0.02	< 0.1	0.04	20
12		GRAY SILTY CLAY (CL) (2.5 YR 6/2) hard, dry	8.0	125	0.3				24000	5.3	< 0.05	0.07	0.22	1.5	0.01	< 0.1	< 0.01	
12	30	GRAY SAND (SP)(10 YR 7/2) medium dense, slightly moist color changing to LIGHT GRAY(10 YR 7/2) medium grained	7.9	190	0.1				1100	3.0	< 0.05	0.05	0.2	2.77	0.03	< 0.1	0.11	30
—		GRAY SILT (ML) (2.5 Y 6.5/2) stiff, moist	8.2	500	0.3				1900	4.6	< 0.05	0.07	1.47	13.95	0.02	< 0.1	< 0.01	
24	40	GRAY SILTY SAND (SM) (10 YR 4.5/1) dense, slightly moist	8.2	350	0.5				3600	7.1	< 0.05	0.1	0.45	4.45	0.03	< 0.1	< 0.01	40
25		LIGHT GRAY SAND (SP) (7.5 YR 4/0) dense, moist, fine grained color changing to MEDIUM GRAY (2.5 Y 4/2), saturated	7.4	450	0				9300	7.1	< 0.05	0.63	1.06	11.66	0.02	< 0.1	0.99	
18	50																	50

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 1
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A2**

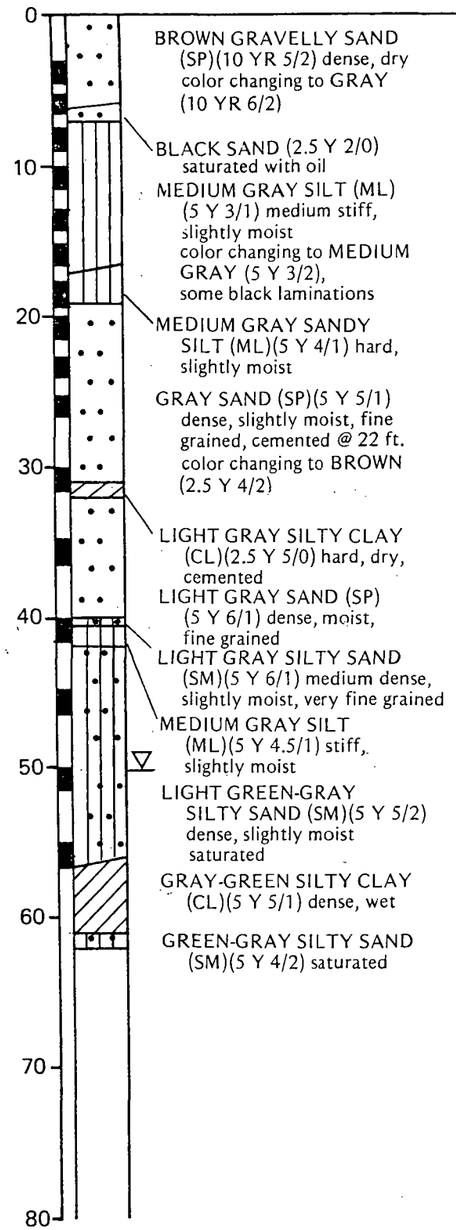
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J Wilson	10/84		

919.032.0002

4126

Equipment 12" Hollow Stem Auger

Elevation 297.0 Date 6/22/84



Blows/foot	Depth (ft)	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
24		6.2	4000	2.4				----	---	---	---	---	---	---	---	----	
18		4.0	5250	10	170	66	87	180000	330	0.67	15.93	3.17	16.7	0.1	1.31	20.61	
6		8.1	210	27.5				----	---	---	---	---	---	---	---	----	
11	10	8.3	200	35	2200	94	11	67000	82	4.5	6.04	1.35	4.44	0.02	0.11	5.01	10
9		8.3	100	85				----	---	---	---	---	---	---	---	----	
14		8.3	400	34	2600	73	8	19000	56	4.1	1.48	2.36	19.91	0.01	< 0.1	2.61	
---		8.4	350	10				----	---	---	---	---	---	---	---	----	
33	20	8.6	300	7.9	600	97	8	----	---	---	---	---	---	---	---	----	20
---		8.6	350	1.2				----	---	---	---	---	---	---	---	----	
13		9.2	220	2.4	6000	11.7	3	930	33	< 0.05	0.1	0.37	3.56	< 0.01	< 0.1	< 0.01	
21	30	8.7	225	12.9				----	---	---	---	---	---	---	---	----	30
12		8.4	90	1.8				3600	9.2	0.14	0.09	0.21	2.85	< 0.01	< 0.1	< 0.01	
9	40	8.1	290	0.9				----	---	---	---	---	---	---	---	----	40
34		8.1	150	5.8				1000	7.2	< 0.05	0.3	0.9	8.25	0.01	< 0.1	0.3	
24	50	8.1	390	65				----	---	---	---	---	---	---	---	----	50
19		8.2	150	10				----	---	---	---	---	---	---	---	----	
	60																60

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 2
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A3**

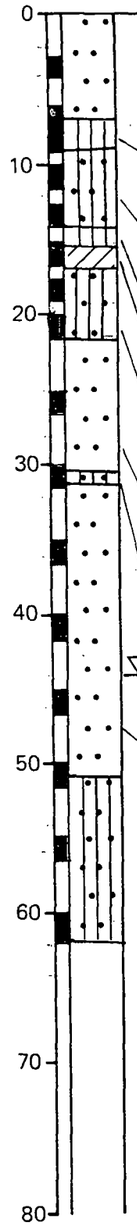
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0003

4124

Equipment 12" Hollow Stem Auger

Elevation 296.2 Date 6/23/84



BROWN GRAVELLY SAND (SP)(5 Y 3/3) dense, moist, color changing to BROWN-BLACK (2.5 Y 3/0)

BLACK SANDY SILT (ML) (2.5 Y 20) waste sludge, moist

LIGHT BROWN SILTY SAND (SM)(10 YR 5/4) dry, dense, fine grained, color changing to GREEN-GRAY (5 Y 5/1)

GREEN-GRAY SANDY SILT (ML)(5 Y 3/2) dense, dry

GREEN-GRAY SILTY CLAY (CL)(5 Y 5/2) dense, dry

BROWN-GRAY SILTY SAND (SM)(5 Y 4/2) dense, dry, cemented @ 17.5 ft., color changing to GREEN-BROWN (5 Y 5/3)

LIGHT BROWN SAND (SP)(2.5 Y 5/4) dense, dry, medium grained, color changing to GREEN-GRAY SAND (52.5 Y 6/2), very fine grained

GREEN GRAY SILTY SAND (SM)(2.5 Y 4/2) dry, dense, very fine grained

GREEN-BROWN SAND (SP)(2.5 Y 5/2) dry, dense, medium grained

GREEN-BROWN SILTY SAND (SM)(5 Y 4/2) dense, saturated, very fine grained

color changing to BROWN (10 Y 9/4)

Blows/foot	Depth (ft)	LEVEL A: pH	LEVEL A: Conductivity (µmhos)	LEVEL A: Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER: Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER: Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER: SO_2 Peak (ppm)	LEVEL B: Oil and Grease (µg/g)	LEVEL B: Lead (µg/g)	LEVEL B: Total Phenolics (µg/g)	LEVEL B: Percent Carbon	LEVEL B: Percent Hydrogen	LEVEL B: Percent Oxygen	LEVEL B: Percent Nitrogen	LEVEL B: Percent Sulfur	LEVEL B: Percent Volatile Matter	Depth (ft)
—		7.2	2500	2.5				—	—	—	—	—	—	—	—	—	
7		1.4	24000	2.5	100	103	3	—	—	—	—	—	—	—	—	—	
22		3.1	7000	14.7				26500	250	1.2	27.99	5.34	13.33	0.07	1.74	33.7	
15	10	3.3	3500	6				81000	35	2.2	5.49	1.17	5.26	0.01	0.36	7.64	10
16		6.1	1650	1	19	9.6	2.5	6900	22	< 0.05	0.28	0.62	7.01	0.01	0.24	0.11	
28		7.3	2000	0.6	14	10.3	2	—	—	—	—	—	—	—	—	—	
—		7.4	900	0.5				860	18	< 0.05	0.16	0.6	7.62	0.01	< 0.1	1.54	
19	20	8.4	410	0.2	32	13.8	2	—	—	—	—	—	—	—	—	—	20
18		8.6	375	0.3	6.5	1.6	2	2600	5.6	< 0.05	0.1	0.17	1.61	0.02	< 0.1	0.02	
28	30	8.3	700	0.3				—	—	—	—	—	—	—	—	—	30
14		8.3	258	0				2400	9.9	< 0.05	0.11	0.23	1.65	0.02	< 0.1	0.61	
32	40	8.0	250	0				—	—	—	—	—	—	—	—	—	40
13		8.0	750	0.4				24000	4.7	0.08	0.16	0.93	7.99	0.02	< 0.1	< 0.01	
20	50	7.7	650	0				—	—	—	—	—	—	—	—	—	50
—		8.4	250	0				—	—	—	—	—	—	—	—	—	
—	60																60

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 3
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A4**

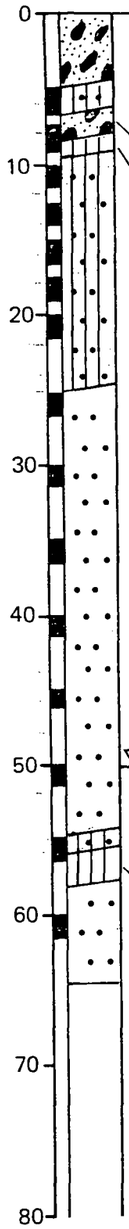
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0004

4123

Equipment 12" Hollow Stem Auger

Elevation 296.3 Date 6/26/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
		BROWN SANDY GRAVEL (GP) AND RUBBLE																
11		BROWN GRAVELLY SAND (SP) dense, slightly moist, medium grained	10	2250	0.02	18	2.2	0	----	---	---	---	---	---	---	---	----	
19			3.1	2500	20				97000	160	2.8	17.98	3.39	10.15	0.07	1.57	23.57	
40	10	BLACK SANDY GRAVEL (GP) (5 Y 2.5/1) moist, dense	6.2	2100	0	700	4	5	43000	31	< 0.05	1.03	1.23	10.36	0.02	0.42	0.74	10
15		BLACK SANDY SILT (ML) (5 Y 2.5/1) dense, moist	8.3	900	0				----	---	---	---	---	---	---	---	----	
12			8.4	850	0.04	16	1.5	0	3100	6.1	< 0.05	0.22	1.9	16.69	0.02	< 0.1	0.54	
—		BROWN SILTY SAND (SM) (10 YR 4/4) dense, dry, very fine grained, black laminations color changing to GRAY (10 YR 6/1) and BROWN-GRAY (5 Y 5/2) and BROWN (10 YR 4/4)	8.2	700	0.5				----	---	---	---	---	---	---	---	----	
—	20		8.2	575	0	10	1.8	0	----	---	---	---	---	---	---	---	----	20
23			8.4	140	0				3500	5.1	0.07	0.1	0.26	2.67	0.05	< 0.1	< 0.01	
22	30		8.4	250	3.3				----	---	---	---	---	---	---	---	----	30
26		LIGHT BROWN SAND (SP) (10 YR 5/3) dense, dry changing to LIGHT BROWN (10 YR 5/4) slightly moist, fine grained, and BROWN (10 YR 4/6) dense, saturated	8.0	135	—				1300	4.0	0.1	0.01	0.42	2.28	0.04	< 0.1	< 0.01	
17	40		8.1	210	40				----	---	---	---	---	---	---	---	----	40
25			8.1	300	140				2100	4.3	0.37	0.04	0.28	2.09	0.03	< 0.1	< 0.01	
26	50		7.6	950	2				----	---	---	---	---	---	---	---	----	50
41		BROWN SILTY SAND (SM) (5 Y 5/3) dense, saturated																
15	60	BROWN SANDY SILT (ML) (5 Y 4/2) dense, wet, saturated																
		BROWN SAND (SP)(10 Y 4/4) dense, saturated, fine grained																

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 4
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A5**

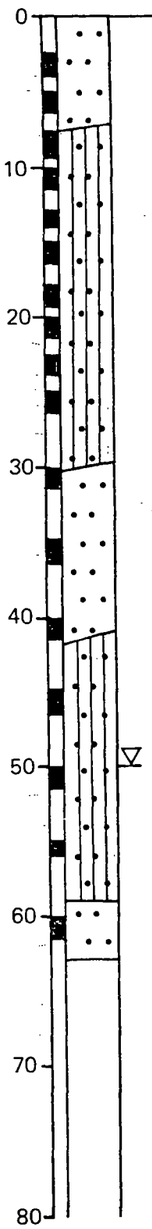
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0005

4122

Equipment 12" Hollow Stem Auger

Elevation 296.6 Date 7/3/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (µmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (µg/g)	LEVEL B Lead (µg/g)	LEVEL B Total Phenolics (µg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
14		BROWN SILTY GRAVELLY SAND (SP) AND RUBBLE (10 YR 4/4) dense, dry, fine grained	7.8	500	6				----	---	----	---	---	---	---	---	----	
29			1.6	15000	2	18	15.5	100	----	---	----	---	---	---	---	---	----	
23		color changing to BLACK-BROWN (10 YR 2/1)	1.4	25000	11				39000	980	0.3	4.11	1.66	13.05	0.07	6.21	19.13	
15	10		5.7	130	16	1800	56	3500	20000	55	1.6	1.38	0.75	6.47	0.04	1.54	4.62	10
9		BLACK SILTY SAND (SM) (10 YR 2/1) dense,	2.3	9000	14				----	---	----	---	---	---	---	---	----	
--		moist	5.6	425	17	6000	90	100	6800	25	1.2	0.03	2.43	19.58	0.03	<0.1	<0.01	
--		GRAY SILTY SAND (SM) (5 Y 6/1) dense, dry,	6.2	70	1				----	---	----	---	---	---	---	---	----	
23	20	black laminations	5.8	150	22	4300	59	18	3400	18	<0.05	0.02	0.7	6.21	0.02	<0.1	0.99	20
22		color changing to GREEN-GRAY (5 Y 3/2) and GRAY-GREEN	6.6	55	50				----	---	----	---	---	---	---	---	----	
25		(5 Y 4/2)	5.7	110	--	4500	54	20	810	5.6	<0.05	0.01	0.55	4.87	0.02	<0.1	0.14	
13	30	GREEN-GRAY SAND (SP) (5 Y 6/1) dense, dry, fine grained	6.9	0.3	--				----	---	----	---	---	---	---	---	----	30
15		color change to GRAY-GREEN (5 Y 4/2) dense, dry	7.4	35	0.5				1900	8.1	<0.05	<0.01	0.27	1.13	0.03	<0.1	<0.01	
37	40		8.2	125	--				----	---	----	---	---	---	---	---	----	40
17		GREEN SILTY SAND (SM) (5 Y 3/2) dense, moist	7.9	23	0.3				6500	13	<0.05	0.06	1.63	15.44	0.01	<0.1	0.93	
4	50		8	225	--				----	---	----	---	---	---	---	---	----	50
16		changing to DARK GREEN CLAYEY SILTY SAND (5 Y 4/2) dense, saturated																
--	60	BROWN SAND (SP) (10 YR 4/4) dense, saturated																

Harding Lawson Associates
Engineers, Geologists & Geophysicists

Log of Boring 5
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A6**

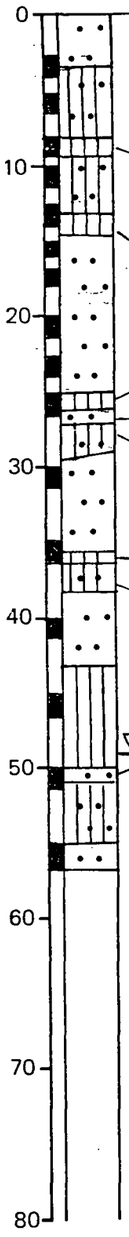
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J. Wilson	10/84		

919.032.0006

4121

Equipment 12" Hollow Stem Auger

Elevation 292.1 Date 7/3/84



Blows/foot	Depth (ft)	Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
22			BLACK GRAVELLY SAND (SP) (2.5 Y 2/0) dense, dry	8.4	450	5.5				72000	140	0.72	6.64	1.35	3.6	0.04	0.15	7.13	
12			GRAY SILTY SAND (SM)(5 Y 4.5/1) very fine grained, color changing to GREEN-GRAY (5 Y 5/2) dense, slightly moist	8.2	80	2	> 10,000	16	2	1800	13	< 0.05	0.09	0.58	5.42	< 0.01	< 0.1	< 0.01	
6				8.4	450	2				----	---	----	---	---	---	---	---	----	
8	10		GRAY SILTY (ML)(5 Y 6/1) stiff, dry																10
12			GREEN SILTY SAND (SM) (5 Y 5.5/3) medium dense, slightly moist, color changing to GREEN-GRAY (5 Y 6/3)	8.7	400	7.3	> 10,000	> 2000	2	2900	40	< 0.05	0.07	0.61	4.67	0.03	< 0.1	< 0.01	
--				8.7	950	0.8				680	13	< 0.05	0.06	2.23	18.12	0.01	< 0.1	0.07	
--			GRAY CLAYEY SILT (ML)(5 Y 5.5/3) stiff, slightly moist				> 10,000	30	3										
12	20		YELLOW-BROWN SAND (SP) (2.5 Y 5/4) hard, slightly moist, fine grained, cemented	8.9	60	0.2				----	---	----	---	---	---	---	---	----	
16			MEDIUM GRAY SILTY (ML) (5 Y 4/1)	8.7	60	0	> 10,000	26	2	2200	16	< 0.05	0.88	0.79	9.64	0.02	< 0.1	2.75	20
17			LIGHT GRAY SAND (SP)(5 Y 6/1) dense, slightly moist	8.1	150	0.3				----	---	----	---	---	---	---	---	----	
11	30		MEDIUM GRAY SILTY SAND (SM)(5 Y 5/1) dense, slightly moist, very fine grained	8.7	300	1	4,000	12.5	2	2500	6.2	< 0.05	0.21	1.09	8.75	0.01	< 0.1	< 0.01	
14			LIGHT GRAY SAND (SP) (5 Y 6/1) dense, slightly moist	8.8	35	1				6000	23	< 0.05	0.19	0.43	3.81	0.04	< 0.1	0.01	30
			GREEN-GRAY SILTY (ML) (5 Y 4/1) stiff, saturated	8.4	900	--				4100	34	< 0.05	0.23	2.12	19.27	0.04	< 0.1	0.47	
11	40		GREEN-GRAY SILTY SAND (SM)(5 Y 5/3) dense, moist	8.9	0.8	---				3300	8.5	< 0.05	0.19	0.33	1.62	0.01	< 0.1	< 0.01	40
17			GREEN-GRAY SAND (SP) (5 Y 6/2) dense, moist																
15	50		GREEN-GRAY SANDY SILT (ML)(5 Y 4/3) stiff, wet, very fine grained	7.9	1100	0.1				3100	5.2	< 0.05	0.37	1.64	16.2	0.09	< 0.1	1.41	
21			GREEN-GRAY SAND (SP) (5 Y 5/3) dense, saturated																50
			GREEN-GRAY SILTY SAND (SM)(2.5 Y 5/2) dense, saturated, fine grained																
			BROWN SAND (SP)(2.5 Y 6/4) dense, saturated																

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Log of Boring 6
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A7**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0007

4120

Equipment 12" Hollow Stem Auger

Elevation 292.5 Date 7/3/84

Blows/foot	Depth (ft) Sample		LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0	DARK BROWN SILT (ML) (10 YR 2/1) loose, moist																
14		DARK BROWN SILTY SAND (SM)(10 YR 2/1) dense, slightly moist, very fine grained color changing to GREEN-GRAY	6.9	20	3		NONE		90000	845	0.41	8.21	1.37	2.9	0.1	< 0.1	9.66	
9	5		8.4	225	—				—	—	—	—	—	—	—	—	—	5
—			9.1	600	—				2700	20	0.26	0.15	0.88	5.51	0.03	< 0.1	< 0.01	
9	10		9.4	65	0.2				—	—	—	—	—	—	—	—	—	10
—	15	cemented @ 15 ft.	9.1	300	—				—	—	—	—	—	—	—	—	—	15
	20																	20
	25																	
	30																	
	35																	
	40																	

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Log of Boring 7
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A8**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J Wilson	10/84		

919.032.0008

4119

Equipment 12" Hollow Stem Auger

Elevation 291.1 Date 7/4/84

Blows/foot	Depth (ft) Sample		LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0	BROWN SAND (SP) (2.5 Y 5/2) loose, dry																
3		BLACK SANDY SILT (ML) (2.5 Y 2/0) soft, moist, waste	7.7	450	—		NONE		—	—	—	—	—	—	—	—	—	
	5																	5
17			8.1	190	3.4				51000	660	0.31	4.82	1.55	12.46	0.06	0.12	8.53	
12		GRAY AND BLACK SILTY SAND (SM)(5 Y 4/1) (5 Y 2.5/1) dense, moist, waste	8.9	200	5.2				—	—	—	—	—	—	—	—	—	
	10	DARK GRAY SILT (ML)(5 Y 4/1) stiff, slightly moist																10
14			8.4	400	9.7				—	—	—	—	—	—	—	—	—	
		LIGHT GRAY SAND (SP) (5 Y 5.5/1) dense, slightly moist, very fine grained																
	15	DARK GRAY SILT (ML) (5 Y 4/1) stiff, slightly moist																15
17		GRAY SAND (SP)(5 Y 5/2) loose, slightly moist	9.1	750	—				80	43	4.3	0.15	0.29	3.01	0.02	< 0.1	< 0.01	
	20																	20
	25																	
	30																	
	35																	
	40																	

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Log of Boring 8
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A9**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0009

4118

Equipment 12" Hollow Stem Auger

Elevation 291.4 Date 7/5/84

Blows/foot	Depth (ft) Sample		pH	Conductivity (µmhos)	Volatiles Peak (ppm)	Total Hydrocarbon Peak (ppm)	Benzene Peak (ppm)	SO_2 Peak (ppm)	Oil and Grease (µg/g)	Lead (µg/g)	Total Phenolics (µg/g)	Percent Carbon	Percent Hydrogen	Percent Oxygen	Percent Nitrogen	Percent Sulfur	Percent Volatile Matter	Depth (ft)
			LEVEL A			DOWNHOLE FLUX CHAMBER			LEVEL B									
3	0	BROWN GRAVELLY SAND (SP) (10 YR 3/4) loose, dry, color changing to BLACK GRAVELLY SAND (10 YR 2/2) slightly moist, waste	5.6	350	4.4		NONE		46000	75	0.19	5.58	1.15	4.76	0.07	0.1	6.88	
3	5	BROWN SILTY SAND (SM) (2.5 Y 3/2) soft, slightly moist, very fine grained, waste	8.2	200	4.6				———	———	———	———	———	———	———	———	———	5
9		LIGHT GRAY SAND (SP) (2.5 Y 6/2) dense, slightly moist	7.7	700	1				10000	9.9	0.12	0.25	0.85	8.57	0.02	< 0.1	< 0.01	
21	10	GREEN-GRAY SILTY SAND (SM)(5 Y 5/2) dense, slightly moist, very fine grained	8.0	225	0.2				———	———	———							10
21	15	YELLOW-BROWN SAND (SP) (2.5 Y 5/2) dense, slightly moist, fine to very fine grained	8.2	175	0.2				———	———	———							

20

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Log of Boring 9
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A10**

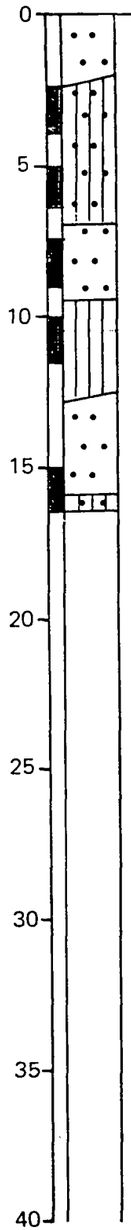
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0010

4117

Equipment 12" Hollow Stem Auger

Elevation 292.6 Date 7/6/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0	BROWN GRAVELLY SAND (SP) (10 YR 5/4) loose, dry																
9		DARK BROWN SILTY SAND (SM) (10 YR 2/2) medium dense, moist, fine, waste	3.5	400	9.8		NONE		150000	11000	42	34.15	5.49	13.48	0.35	2.03	39.77	
	5																	5
4			4.1	2000	5.1				----	---	---	---	---	---	---	---	----	
7		BROWN SAND (SP)(10 YR 3/3) medium dense, moist, fine grained	4.6	750	4.1				----	---	---	---	---	---	---	---	----	
	10	LIGHT GREEN-GRAY SILT (ML) (5 Y 6/2) stiff, slightly moist changing to MEDIUM GRAY CLAYEY SILT (ML)(2.5 Y 4.50)																10
66			4.7	1250	1.6				11000	11	< 0.05	0.19	1.84	16.34	0.03	0.13	0.06	
	15	GREEN-GRAY SAND (SP) (2.5 Y 5/2) dense, slightly moist, fine grained																15
33		YELLOW-BROWN SILTY SAND (SM)(10 YR 6/6) hard, slightly moist, cemented	6.9	550	0.8				4700	8.2	< 0.05	0.07	0.91	6.55	0.02	< 0.1	0.08	
	20																	
	25																	
	30																	
	35																	
	40																	

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Log of Boring 10
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A11**

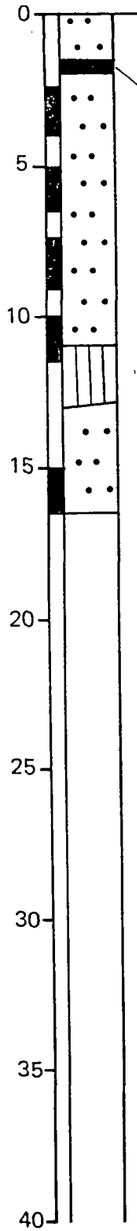
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J Wilson	10/84		

919.032.0011

4116

Equipment 12" Hollow Stem Auger

Elevation 293.0 Date 7/5/84



Blows/foot	Depth (ft)	Sample	Description	LEVEL A pH	LEVEL A Conductivity (µmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (µg/g)	LEVEL B Lead (µg/g)	LEVEL B Total Phenolics (µg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0		BROWN GRAVELLY SAND (SP) (10 YR 5/4) loose, dry																
6			BLACK TAR (2.5 Y 2/0)	6.6	1050	9.1		NONE		43000	39	0.16	3.29	0.63	3.33	0.08	0.1	2.59	
	5		DARK BROWN SAND (SP) (10 YR 3/2) medium dense, slightly moist, fine grained, waste color changing to DARK GREEN-GRAY SAND (5 Y 3/2)																5
6				7.8	300	11				----	---	---	---	---	---	---	---	---	
5				7.5	340	10.2				----	---	---	---	---	---	---	---	---	
	10																		10
15			GRAY CLAYEY SILT (ML) (5 Y 5/1) stiff, slightly moist	6.9	100	9.1				----	---	---	---	---	---	---	---	---	
	15		GREEN-GRAY SAND (SP) (5 Y 4.5/1) dense, moist, fine grained																15
15				7.6	80	16.6				21500	4.1	0.16	1.69	1.05	7.07	< 0.01	< 0.1	2.49	
	20																		
	25																		
	30																		
	35																		
	40																		

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Log of Boring 11
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A12**

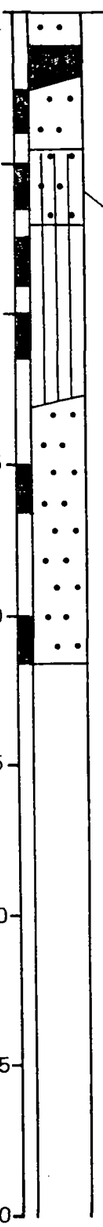
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0012

4115

Equipment 12" Hollow Stem Auger

Elevation 292.6 Date 7/6/84



Blows/foot	Depth (ft)	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0	BROWN GRAVELLY SAND (SP)(10 YR 3/2) loose, dry																
16		BLACK TARRY WASTE (2.5 Y 2/0) soft, moist	3.15	3000	7.9			NONE	77000	1300	3	6.96	1.26	5.67	0.06	0.36	9.24	
	5	DARK BROWN SAND (SP) (10 YR 2/2) loose, slightly moist, waste, changing color to BROWN SAND (10 YR 4/2) very fine grained																5
6			4	3000	12				----	----	----	----	----	----	----	----	----	
11		OLIVE-GRAY SILTY SAND (SM)(5 Y 4.5/2) soft, slightly moist, very fine, waste	5.6	2250	28				----	----	----	----	----	----	----	----	----	
	10	BLACK SILT (ML)(5 Y 2.5/1) stiff, moist, waste color changing to OLIVE-GRAY (5 Y 5/2)																10
14			6.1	1400	50				84000	25	0.19	6.67	1.85	10.27	0.05	0.31	6.54	
	15	OLIVE-BROWN AND BLACK SAND (SP)(5 Y 3/0) very dense, moist, waste, some cemented sand																15
—			5.5	1150	23				----	----	----	----	----	----	----	----	----	
	20	color changing to OLIVE-GRAY (5 Y 4.5/1) fine grained																20
30			7.3	500	20.2				18000	3.8	< 0.05	0.96	0.51	3.79	0.04	0.12	1.08	
	25																	
	30																	
	35																	
	40																	

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Log of Boring 12
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A13**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J. Wilson	10/84		

919.032.0013

4114

Equipment 12" Hollow Stem Auger

Elevation 295.0 Date 7/6/84

Blows/foot	Depth (ft) Sample		LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
17	0	BROWN GRAVELLY SAND (SP)(10 YR 3/3) loose, moist changing to VERY DARK GRAY BROWN (2.5 Y 3/2) saturated, waste	3.9	3000	20.6		NONE		----	----	----	----	----	----	----	----	----	
7	5	YELLOW-BROWN SILTY SAND (SM)(10 YR 5/4) loose, saturated, waste	1.4	20000	12.8				44000	2300	5.2	13.52	2.91	18.71	0.1	1.11	13.72	5
5		BLACK TARRY SILT (ML) (2.5 Y 2/0) very soft, saturated, waste	1.7	12000	66				----	----	----	----	----	----	----	----	----	
107	10	OLIVE-BROWN SILTY SAND (SM)(2.5 Y 4/4) dense, moist, waste	4.4	3000	21				46000	100	16	3.59	1.56	7.31	0.05	0.34	4.69	10
		OLIVE SILT (ML)(5 Y 5/3) hard, moist																
		OLIVE GRAY SAND (SP) (5 Y 4/2) very dense, slightly moist, very fine																
11	15	OLIVE GRAY SILT (ML) (5 Y 5/2) stiff, slightly moist	8.3	350	39				----	----	----	----	----	----	----	----	----	15
		BLACK SAND (SP)(2.5 Y 2/0) medium dense, slightly moist, fine grained																
75	20	color changing to OLIVE GRAY (5 Y 5/2) to VERY DARK GRAY (5 Y 3/1) and to OLIVE GRAY (5 Y 5/2) cemented @ 20.5 ft.	8.9	500	24				46000	17	12	2.53	0.8	2.51	0.04	< 0.1	1.78	20
			9	860	25				----	----	----	----	----	----	----	----	----	
	25																	
	30																	
	35																	
	40																	

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Log of Boring 13
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A14**

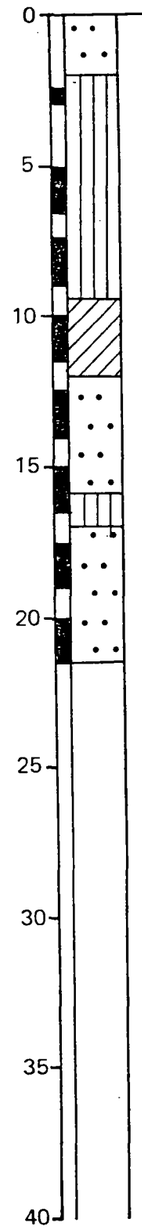
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J Wilson	10/84		

919.032.0014

4113

Equipment 12" Hollow Stem Auger

Elevation 296.8 Date 7/7/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (µmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (µg/g)	LEVEL B Lead (µg/g)	LEVEL B Total Phenolics (µg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
—		VERY DARK BROWN GRAVELLY SAND (SP)(10 YR 2/2) loose, slightly moist, waste	7.1	240	2.5		NONE		—	—	—	—	—	—	—	—	—	
		BLACK SILT (ML)(2.5 Y 2/0) soft to medium stiff, moist, waste, concrete																5
11			1.8	11000	7				270000	6500	49	27.02	5.19	36.9	0.11	2.26	49.2	
4			2.6	4500	13.6				—	—	—	—	—	—	—	—	—	
		BLACK SILTY CLAY (CL)																10
9		(2.5 Y 2/0) medium stiff, moist, waste	5.1	2500	17.5				58000	170	4.8	5.93	2.66	17.19	0.09	0.47	7.93	
9		BLACK SAND (SP)(2.5 Y 2/0) loose, slightly moist, waste	8.2	1500	26				—	—	—	—	—	—	—	—	—	
																		15
55		GRAY AND BLACK SILT (ML)(5 Y 5/1) hard, slightly moist, waste	7	850	20				—	—	—	—	—	—	—	—	—	
22		GRAY SAND (SP)(5 Y 5/1) medium dense, slightly moist changing to BLACK (2.5 Y 2/0) very dense, slightly moist, cemented @ 20 ft.	5.7	750	5.9				3400	14	0.1	0.1	0.25	3.11	0.05	<0.1	0.17	
																		20
—			7	550	38				—	—	—	—	—	—	—	—	—	

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Log of Boring 14
Purity Oil Sales Remedial Investigation
Fresno, California

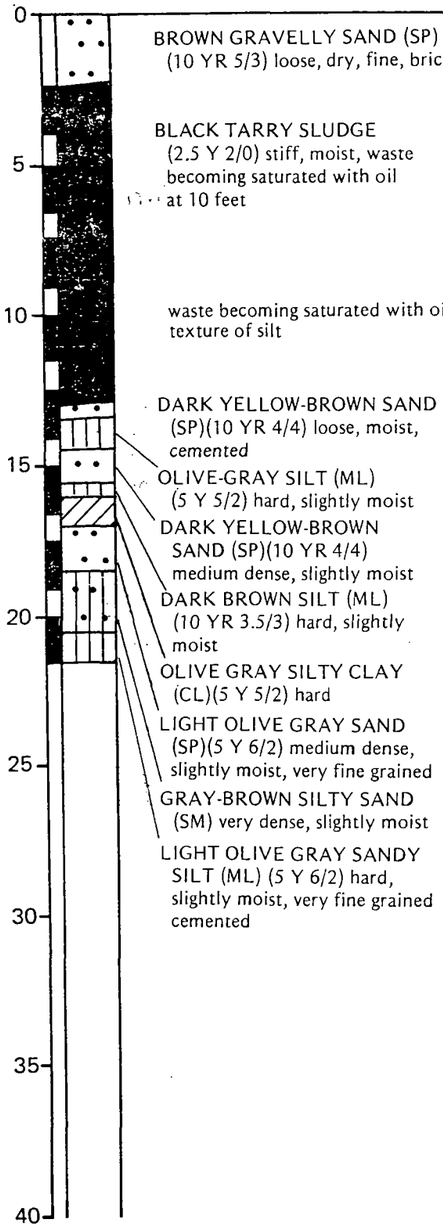
PLATE **A15**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0015

Equipment 12" Hollow Stem Auger

Elevation 295.3 Date 7/7/84



Blows/foot	Depth (ft) Sample	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
9		7.4	500	0.8		NONE		----	----	----	----	----	----	----	----	----	
5	5	3.8	300	1.4				370000	3870	1.8	38.39	6.91	0.09	0.11	0.98	39.89	5
9		6.3	250	0.3				----	----	----	----	----	----	----	----	----	
4	10	2.2	350	14.3				210000	11000	7.6	25.63	4.78	31.98	0.1	2.83	20.49	10
41		3.4	125	8.6				----	----	----	----	----	----	----	----	----	
34	15	3.7	90	4.5				65000	6.2	0.4	4.32	1.56	9.43	0.02	0.2	5.52	15
44		5.8	50	4.1				----	----	----	----	----	----	----	----	----	
25	20	7.7	80	0.9				----	----	----	----	----	----	----	----	----	20

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Log of Boring 15
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A16**

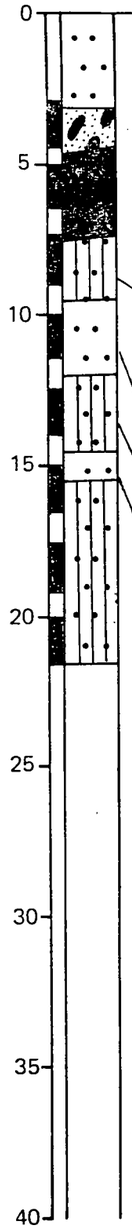
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J. Wilson	10/84		

919.032.0016

4112

Equipment 12" Hollow Stem Auger

Elevation 296.1 Date 7/7/84



Blows/foot	Depth (ft) Sample		LEVEL A pH	LEVEL A Conductivity (µmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (µg/g)	LEVEL B Lead (µg/g)	LEVEL B Total Phenolics (µg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
		LIGHT YELLOW BROWN GRAVELLY SAND (SP) (10 YR 6/4) medium dense, dry, fill, concrete																
32		DARK BROWN AND BLACK SANDY GRAVEL (GP) (2.5 YR 2/0) dense, moist, fill, oil stained	2.5	200	0.3			NONE	----	---	---	---	---	---	---	---	---	
28	5	BLACK TARRY SLUDGE (2.5 Y 2/0) stiff, moist, wood, rubble	1.9	700	5.3				210000	10000	0.86	34.95	6.74	29.69	0.25	2.7	65.31	5
8		BLACK SILTY SAND (SM) (5 Y 5/1) changing color to DARK GRAY-BROWN (2.5 Y 3/2) medium dense, slightly moist very fine grained	4	150	28				----	---	---	---	---	---	---	---	---	
5	10	VERY DARK GRAY SAND (SP) (5 Y 2.5/1) loose, slightly moist	5.6	75	21				10000	55	2.2	1.07	0.62	6.03	0.03	0.95	3.02	10
11		DARK GRAY SILTY SAND (SM) (5 Y 4/1) loose, slightly moist	5.7	100	5.3				----	---	---	---	---	---	---	---	---	
26	15	DARK GRAY SAND (SP) (2.5 Y 3/0) medium dense, slightly moist, cemented	5.3	60	39				----	---	---	---	---	---	---	---	---	15
49		OLIVE GRAY SILTY SAND (SM) (5 Y 4/2) medium-very dense, slightly moist	5.5	50	17				----	---	---	---	---	---	---	---	---	
30	20		5.8	35	13.2				5800	3	0.16	0.28	0.36	4.8	0.01	< 0.1	0.13	20

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Log of Boring 16
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A17**

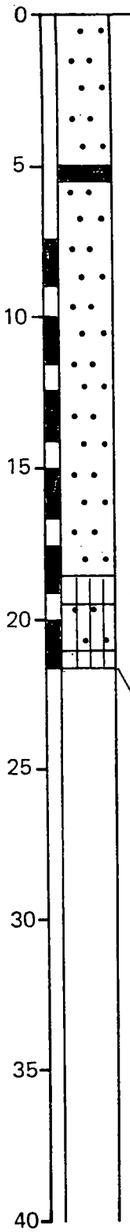
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J Wilson	10/84		

919.032.0017

4111

Equipment 12" Hollow Stem Auger

Elevation 296.3 Date 7/9/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0	YELLOW BROWN GRAVELLY SAND (SP)(10 YR 5/4) loose, dry concrete, wood																
	5	BLACK TARRY SLUDGE concrete, rubble																5
17		DARK BROWN SAND (SP) (10 YR 3/3) medium dense, slightly moist	3.3	140	6.7		NONE		45000	6.4	0.49	3.88	0.97	4.62	0.02	0.72	5.92	
7	10	color changing to DARK YELLOW-BROWN (10 YR 5/4)	3.4	75	3.1				----	----	---	---	---	---	---	---	---	10
8			3.4	140	1				----	---	---	---	---	---	---	---	---	
9	15	PALE BROWN SAND (SP) (10 YR 5/3) cemented	4.4	125	0.6				2700	11000	0.08	0.05	0.18	2.41	0.01	<0.1	0.04	15
50		GRAY-BROWN CLAYEY SILT (ML)(2.5 Y 5/2) hard, slightly moist	4.6	49	0.6				----	---	---	---	---	---	---	---	---	
44	20	YELLOW-BROWN SILTY SAND (SM)(10 YR 5/6) very dense, slightly moist, cemented 20.8–21.0'	6.3	75	0.5				----	---	---	---	---	---	---	---	---	20
	25	GRAY-BROWN CLAYEY SILT (ML)(2.5 Y 5/2) hard, dry																
	30																	
	35																	
	40																	

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Log of Boring 17
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A18**

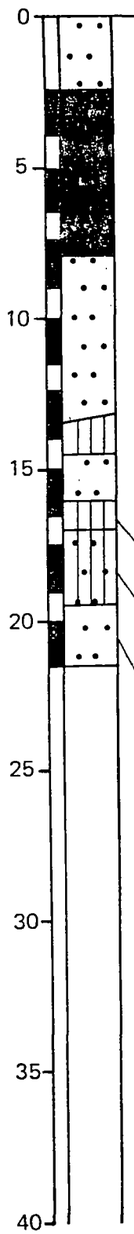
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J. Wilson	10/84		

919.032.0018

4110

Equipment 12" Hollow Stem Auger

Elevation 294.7 Date 7/10/84



Blows/foot	Depth (ft) Sample		LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0	BROWN GRAVELLY SAND (SP) loose, dry wood and concrete																
—		BLACK TARRY SLUDGE very soft, flows	1.5	2200	9.0			NONE	----	---	---	---	---	---	---	---	---	
	5																	5
4			1.1	40000	7.2				770000	17000	12	42.78	7.92	30.15	0.21	6.18	63.03	
13		YELLOW-BROWN SAND (SP) (10 YR 5/4) medium dense, slightly moist, very fine grained changing to LIGHT OLIVE - BROWN (2.5 Y 5/4) and to BROWN (10 YR 5/3)	3.2	1500	8.0				----	---	---	---	---	---	---	---	---	
	10																	10
28			4.2	800	10.1				44000	3.2	< 0.05	3.36	1.17	4.96	0.01	0.47	2.99	
23		LIGHT BROWN-GRAY CLAYEY SILT (ML)(2.5 Y 6/2) hard, slightly moist	3.7	700	1.2				----	---	---	---	---	---	---	---	---	
	15																	15
21		OLIVE SAND (SP)(5 Y 5.5/6) medium dense, slightly moist	4.4	700	0.6				----	---	---	---	---	---	---	---	---	
66		GRAY SILT (ML)(5 Y 5/1) very stiff, slightly moist, cemented 15.5 to 16.0	3.8	800	0.5				4400	3.3	< 0.05	0.05	0.78	5.33	< 0.01	< 0.1	< 0.01	
	20																	20
58		YELLOW-BROWN SILTY SAND (SM)(10 YR 5/6) very dense, slightly moist, fine grained	4.1	775	1.1				----	---	---	---	---	---	---	---	---	
		YELLOW-BROWN SAND (SP) (10 YR 5/6) very dense, slightly moist, cemented																
	25																	
	30																	
	35																	
	40																	

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Log of Boring 18
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A19**

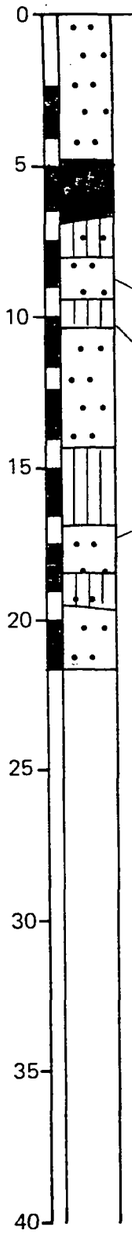
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J Wilson	10/84		

919.032.0019

4109

Equipment 12" Hollow Stem Auger

Elevation 295.7 Date 7/10/84



Blows/foot	Depth (ft) Sample		LEVEL A pH	LEVEL A Conductivity (µmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (µg/g)	LEVEL B Lead (µg/g)	LEVEL B Total Phenolics (µg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
10		BROWN GRAVELLY SAND (SP)(10 YR 5/3) dense, dry, concrete rubble	7.1	1700	4		NONE		----	---	---	---	---	---	---	---	---	
—	5	BLACK TARRY SLUDGE (2.5 YR 2/0) soft, wet	0.7	9000	17				410000	70	5.7	39.41	7.58	31.02	0.24	4.45	59.07	5
8		DARK BROWN SILTY SAND (SM)(7.5 YR 3/2) medium dense, slightly moist, waste	2.9	560	10				----	---	---	---	---	---	---	---	---	
10	10	BROWN SAND (SP)(10 YR 5/3) medium dense, slightly moist, very fine	6.7	650	1.7				4000	2.1	0.09	0.41	0.73	9.29	0.02	0.26	< 0.01	10
8		OLIVE GRAY CLAYEY SILT (ML)(5 Y 5/2) stiff, dry BROWN SAND (SP)(10 YR 5/3) medium dense, slightly moist color changing to LIGHT BROWN-GRAY (2.5 Y 6/2)	7.7	460	1				----	---	---	---	---	---	---	---	---	
9	15	GRAY-BROWN CLAYEY SILT (ML)(2.5 Y 5/2) stiff, moist	7.7	900	0.9				----	---	---	---	---	---	---	---	---	15
38		YELLOW-BROWN SAND (SP) (10 YR 5/4) dense, moist, fine grained	7.7	560	0.9				----	---	---	---	---	---	---	---	---	
—	20	DARK YELLOW-BROWN SILTY SAND (SM)(10 YR 4/6) dense, moist, fine sand YELLOW-BROWN SAND (SP) (10 YR 5/4) very dense, slightly moist, cemented	7.8	450	0.9				2700	3.2	< 0.05	0.06	0.32	4.42	0.01	< 0.1	0.78	20

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Log of Boring 19
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A20**

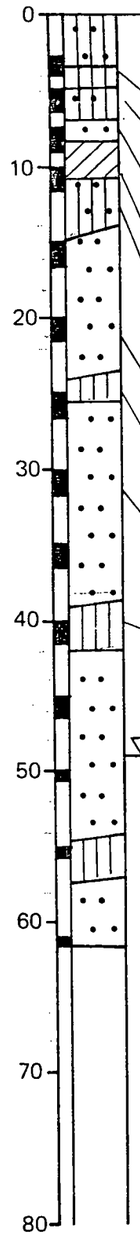
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J. Wilson	10/84		

919.032.0020

4108

Equipment 12" Hollow Stem Auger

Elevation 291.5 Date 7/12/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
20		DARK BROWN SILTY SAND (SM)(10 Y 3/1) loose, dry, moist below 1.5'	9	850	32		NONE		71000	70	0.26	4.33	0.8	5.87	0.06	0.1	5.71	
10		DARK GRAY-BROWN SILT (ML)(2.5 R 4/2) moist	9.1	140	17				----	----	----	----	----	----	----	----	----	
16		OLIVE BROWN SILTY SAND (SM)(2.5 Y 4/4) medium dense, moist	4.5	50	34				----	----	----	----	----	----	----	----	----	10
41		GRAY-BROWN SAND (SP) (2.5 Y 5/2) medium dense, slightly moist	4.0	65	31.3				30000	3.7	0.28	1.54	1.47	11.8	0.01	0.46	3.92	
16		LIGHT OLIVE GRAY SILTY CLAY (CL)(5 Y 6/2) stiff, dry	8.8	125	4.1				----	----	----	----	----	----	----	----	----	
22		YELLOW-BROWN SILTY SAND (SM)(10 YR 5/6) medium dense, slightly moist	4.8	240	1.6				2400	6.7	0.07	0.11	0.31	3.15	0.01	< 0.1	< 0.01	20
40		LIGHT BROWN-GRAY SAND (SP)(2.5 Y 6/2) medium dense, slightly moist, fine grained	4	310	2.9				----	----	----	----	----	----	----	----	----	
20		GRAY-BROWN CLAYEY SILT (ML)(2.5 Y 5/2) very stiff, slightly moist, fine grained	4.4	500	1.9				1600	2.7	< 0.05	0.08	0.53	7.18	0.01	< 0.1	0.92	30
29		GRAY SAND (SP)(5 Y 6/1) very dense, slightly moist, fine to medium grained color changing to LIGHT YELLOW-BROWN	4.1	500	2.7				----	----	----	----	----	----	----	----	----	
32		GRAY-BROWN SANDY SILT (ML) (2.5 Y 5/2) very stiff, slightly moist	3.8	1000	11.9				1400	1.2	< 0.09	0.11	1.49	13.94	0.01	0.13	1.8	40
28		LIGHT OLIVE BROWN SAND (SP)(2.5 Y 5/4) dense, saturated, fine grained, color changing to OLIVE GRAY (SP)	3.6	1300	14				440	1.8	0.16	0.06	1.35	13.08	0.01	< 0.1	< 0.01	
--																		50
--		BROWN SANDY SILT (ML) (10 YR 5/3) very stiff, saturated																
--		GRAY SAND (SP)(5 Y 5/1) loose, saturated, fine grained																

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Log of Boring 20
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A21**

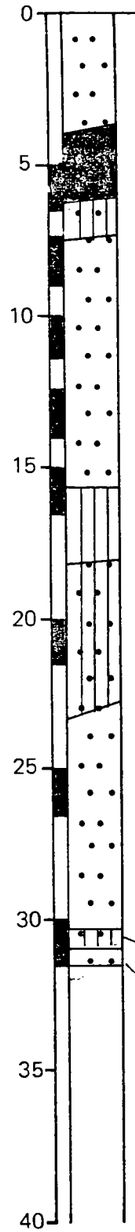
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	J. Wilber	10/84		

919.032.0021

4107

Equipment 12" Hollow Stem Auger

Elevation 296.6 Date 7/18/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
	0	DARK BROWN GRAVELLY SAND (SP)(10 Y 3/3) dense, slightly moist, concrete																
	5	BLACK TARRY SLUDGE (2.5 Y 2/0) soft, moist																5
5		DARK BROWN SILTY SAND (SP)(10 Y 3/3)	4.5	2000	1.2		NONE		170000	1900	2.1	9.89	2.01	14.6	0.09	0.91	16.04	
48		DARK BROWN SAND (SP)(10 Y 3/1) very dense, slightly moist	1.2	525	26				55000	970	2.3	5.16	2.24	19.72	0.08	5.16	18.61	
	10	color changing to LIGHT BROWN-GRAY (2.5 Y 6/2) dense, dry, cemented																10
7			4.9	140	31				15000	<10	1.5	---	---	---	---	---	---	
8		VERY DARK GRAY (5 Y 3/1) loose, slightly moist	5.5	70	24				11000	<10	0.47	---	---	---	---	---	---	
	15	GRAY (5 Y 5/1) VERY DARK GRAY SAND (5 Y 3/1), medium dense																15
29			5.8	110	11.8				15000	< 10	1.0	---	---	---	---	---	---	
		GRAY CLAYEY SILT (ML) (5 Y 5/1) very stiff, slightly moist, black laminations																
	20	GRAY-BROWN SILTY SAND (SM)(2.5 Y 5/2) medium dense, moist, fine grained																20
18			6.6	45	5.1				6800	< 10	0.15	---	---	---	---	---	---	
		OLIVE GRAY SAND (SP) (5 Y 5/2) medium dense, moist, fine grained																
	25																	25
12			6.6	32	9.2				11000	< 10	0.24	---	---	---	---	---	---	
		color changing to LIGHT GRAY (5 Y 6/1)																
	30																	30
18		DARK GRAY SILTY SAND (SM)(SM) (5 Y 4/1) cemented	6.2	26	0.5				< 100	< 10	< 0.05	---	---	---	---	---	---	
		LIGHT GRAY SAND (SP) (5 Y 6/1) medium dense, slightly moist, fine grained																
	35																	
	40																	

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Log of Boring 21
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A22**

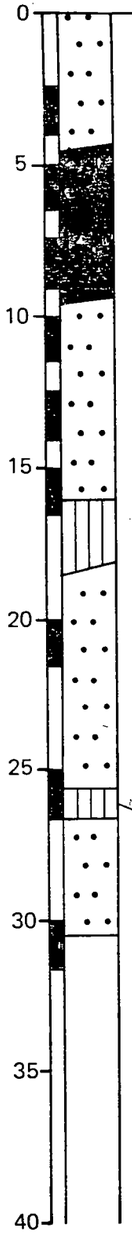
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0022

4106

Equipment 12" Hollow Stem Auger

Elevation 297.0 Date 7/20/84



Blows/foot	Depth (ft)	Description	LEVEL A: pH	LEVEL A: Conductivity (µmhos)	LEVEL A: Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER: Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER: Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER: SO_2 Peak (ppm)	LEVEL B: Oil and Grease (µg/g)	LEVEL B: Lead (µg/g)	LEVEL B: Total Phenolics (µg/g)	LEVEL B: Percent Carbon	LEVEL B: Percent Hydrogen	LEVEL B: Percent Oxygen	LEVEL B: Percent Nitrogen	LEVEL B: Percent Sulfur	LEVEL B: Percent Volatile Matter	Depth (ft)
	0	DARK BROWN GRAVELLY SAND (SP)(10 Y 4/3) dense, dry, color changing to DARK GRAY-BROWN (2.5 Y 2/0), slightly moist, waste, bricks, concrete																
33			8.3	350	2.8		NONE		25000	450	0.4	---	---	---	---	---	---	
	5																	5
28		BLACK TARRY SLUDGE (2.5 Y 2/0) medium stiff, moist, rubble to 6.7 feet, waste	2.5	460	7.7				100000	7440	6.0	10.18	3.2	19.6	0.09	1.31	13.88	
18			6.8	425	26				160000	10000	49	---	---	---	---	---	---	
	10																	10
8		BLACK SAND (SP)(2.5 Y 2/0) loose, slightly moist, waste	8.3	80	48				8300	160	1.3	---	---	---	---	---	---	
11		color changing to DARK OLIVE GRAY (5 Y 3/2), medium dense, slightly moist, fine grained and OLIVE GRAY (2.5 Y 5/2)	8.2	100	9.1				< 100	< 10	0.27	---	---	---	---	---	---	
	15																	15
19		OLIVE GRAY CLAYEY SILT (ML)(5 Y 5/2) very stiff, slightly moist	7.4	125	17.9				1500	< 10	0.14	---	---	---	---	---	---	
	20																	20
35		DARK OLIVE GRAY SAND (SP)(5 Y 3/2) dense, slightly moist	6.5	55	19.3				22000	< 10	0.79	---	---	---	---	---	---	
	25																	25
20		color changing to OLIVE GRAY (5 Y 5/2)	8.1	75	9.7				< 100	< 10	0.26	---	---	---	---	---	---	
		OLIVE GRAY CLAYEY SILT (ML)(5 Y 5/2) hard, dry																
		OLIVE GRAY SAND (SP)(5 Y 5/2) medium dense, slightly moist, color changing to LIGHT GRAY (5 Y 6/1) medium dense, slightly moist, fine grained																
	30																	30
18			8	30	19.5				1100	< 10	< 0.05	---	---	---	---	---	---	
	35																	
	40																	

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Log of Boring 22
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **A23**

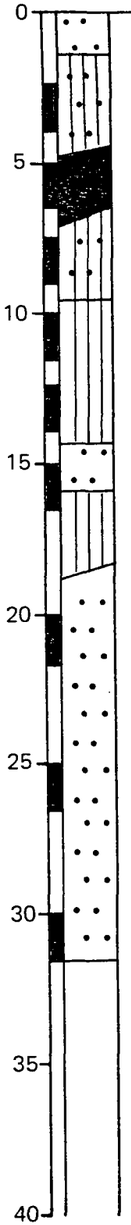
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

919.032.0023

4105

Equipment 12" Hollow Stem Auger

Elevation 294.0 Date 7/20/84



Blows/foot	Depth (ft) Sample	Description	LEVEL A pH	LEVEL A Conductivity (μmhos)	LEVEL A Volatiles Peak (ppm)	DOWNHOLE FLUX CHAMBER Total Hydrocarbon Peak (ppm)	DOWNHOLE FLUX CHAMBER Benzene Peak (ppm)	DOWNHOLE FLUX CHAMBER SO_2 Peak (ppm)	LEVEL B Oil and Grease (μg/g)	LEVEL B Lead (μg/g)	LEVEL B Total Phenolics (μg/g)	LEVEL B Percent Carbon	LEVEL B Percent Hydrogen	LEVEL B Percent Oxygen	LEVEL B Percent Nitrogen	LEVEL B Percent Sulfur	LEVEL B Percent Volatile Matter	Depth (ft)
		DARK BROWN GRAVELLY SAND (SP)(10 Y 3/3) dense, dry																
15		BLACK SILTY SAND (SM) (2.5 Y 2/0) medium dense, moist, waste, bricks, wood, plastic hose	8.1	200	6.4		NONE		12000	< 10	0.15	---	---	---	---	---	---	
57	5	BLACK TARRY SLUDGE (2.5 Y 2/0) soft to stiff, saturated, flows, rubble	1.6	225	49				100000	10000	2.4	9.89	1.61	6.07	0.11	0.27	12.14	5
5		BLACK TARRY SLUDGE AND DARK OLIVE GRAY SILTY SAND (SM) soft, wet	4.2	110	20				320000	930	1.7	9.03	1.95	8.38	0.09	0.4	14.11	
60	10	DARK BROWN CLAYEY SILT (ML)(10 Y 4/3) hard, dry, color changing to OLIVE GRAY and DARK GRAY-BROWN	2.3	110	10				33500	1700	0.79	5.39	1.81	27.38	0.07	5.37	21.05	10
30			4.5	120	26				93000	87	15	---	---	---	---	---	---	
16	15	LIGHT BROWN-GRAY SAND (SP)(2.5 Y 6/2)	8.9	110	13				21000	< 10	3.6	---	---	---	---	---	---	15
		DARK OLIVE GRAY SILT (ML) (5 Y 5/2) slightly moist, very fine grained																
30	20	VERY DARK GRAY-BROWN SAND (SP)(2.5 Y 3/2) dense, slightly moist, cemented color changing to OLIVE GRAY (5 Y 4/2) fine grained	8.1	100	21				16000	< 10	3.3	---	---	---	---	---	---	20
15	25		8.9	120	2				500	< 10	1.6	---	---	---	---	---	---	25
15	30	color changing to DARK GRAY (2.5 Y 4/0)	9	100	2.3				1400	< 10	1.1	---	---	---	---	---	---	30
	35																	
	40																	

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Log of Boring 23
Purity Oil Sales Remedial Investigation
Fresno, California

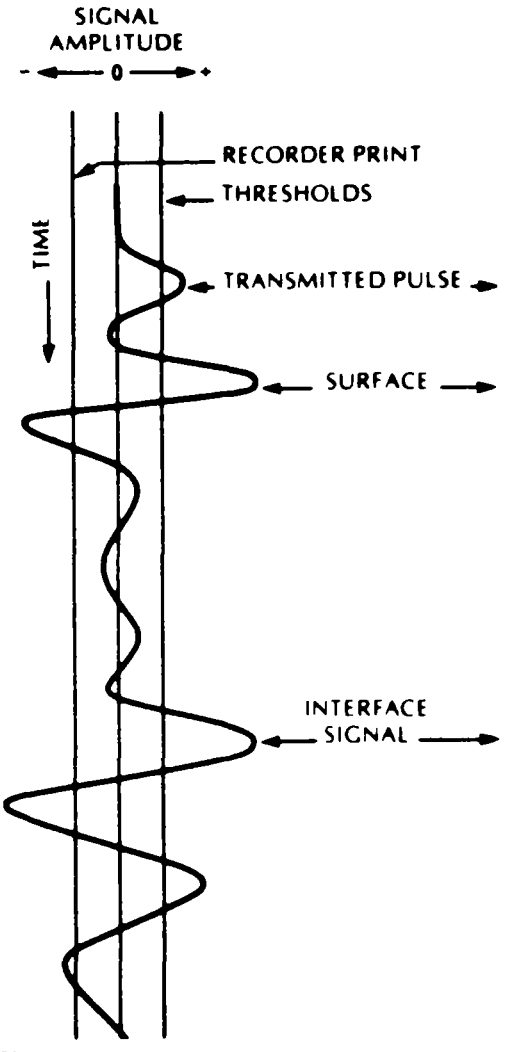
PLATE **A24**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	JWilson	10/84		

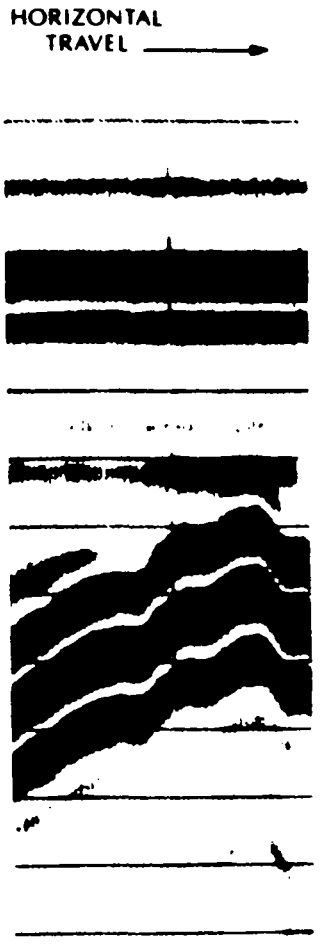
919.032.0024

Appendix B

GEOPHYSICS

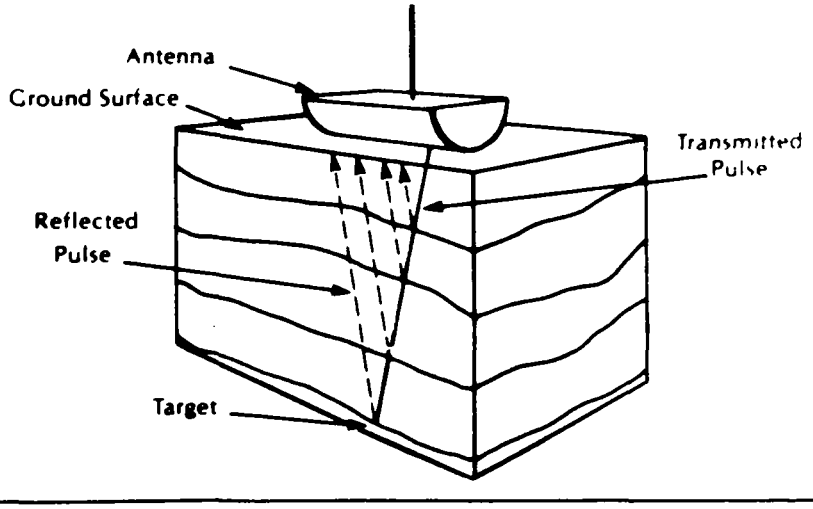


Sketch of a single radar pulse and reflections as seen by the receiver



Example of profile information as displayed by GPR recorder

RADAR RECORDING UNIT



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Block Diagram and Example
of Impulse Radar Profile Data
Purity Oil Sales Remedial Investigation
Fresno, California

B1

DRAWN	JOB NUMBER	APPROVED	DATE
JGL	919,032.01		11/84

919.032.0025

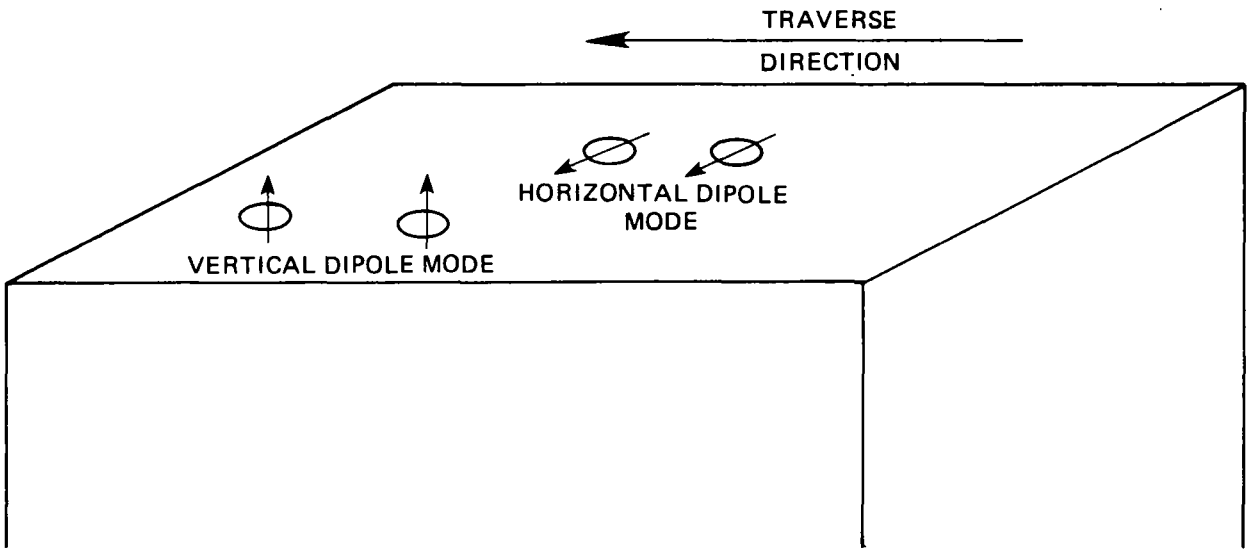

Diagram of EM34-3 showing the vertical and horizontal dipole modes.

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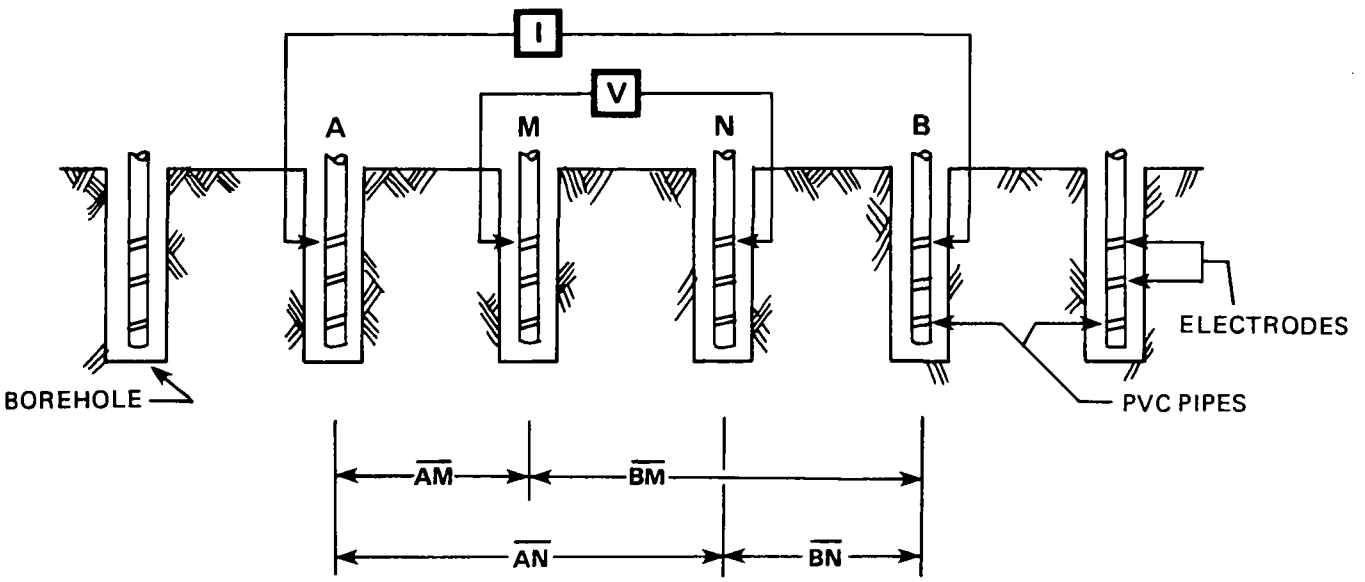
EM34 Coil Orientation
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE
B2

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JLB	919,032.01	JDW	9/84		

919.032.0026



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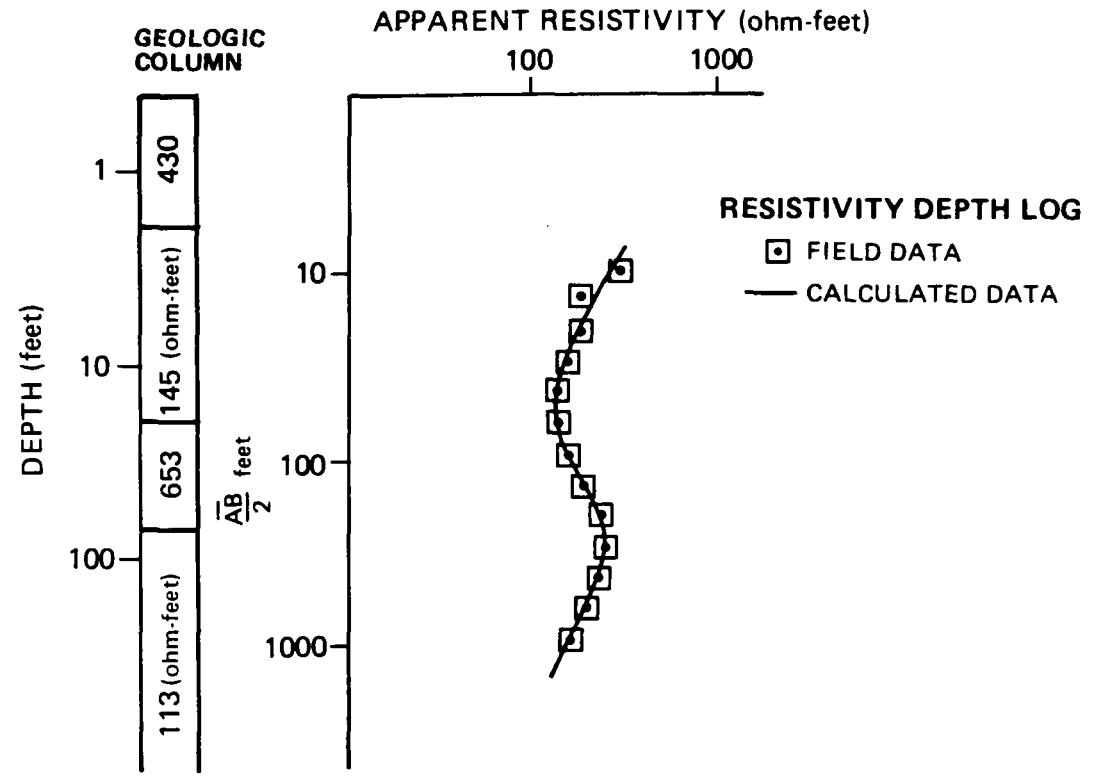
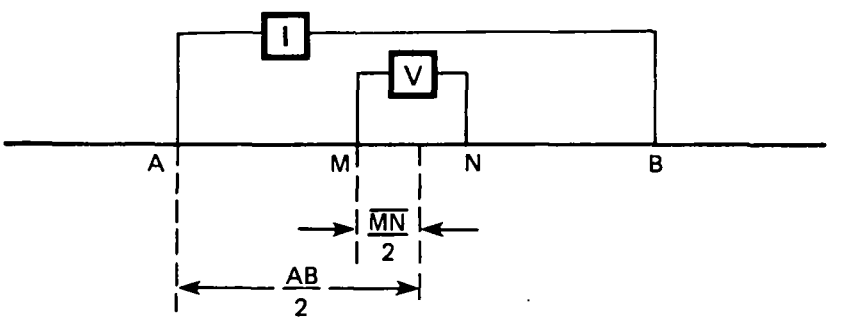
Cross-Hole Wenner Array
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE
B3

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JK	919,032.01	gdw	9/84		

919.032.0030





SCHLUMBERGER ARRAY

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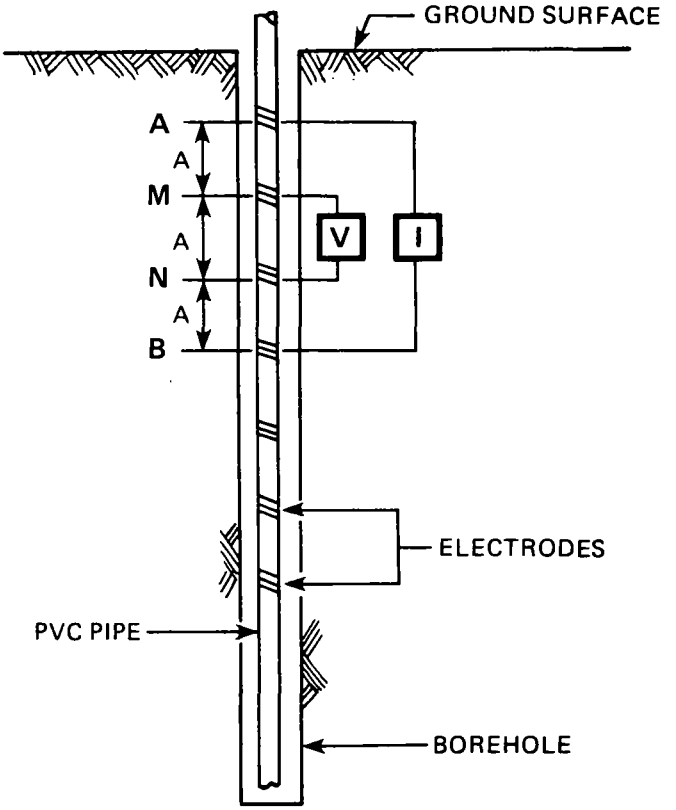
VES Sounding
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE
B4

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	gpw	9/84		

919.032.0031



DOWNHOLE WENNER ARRAY

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Downhole Wenner Array
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE
B5

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	SDW	9/84		

919.032.0032

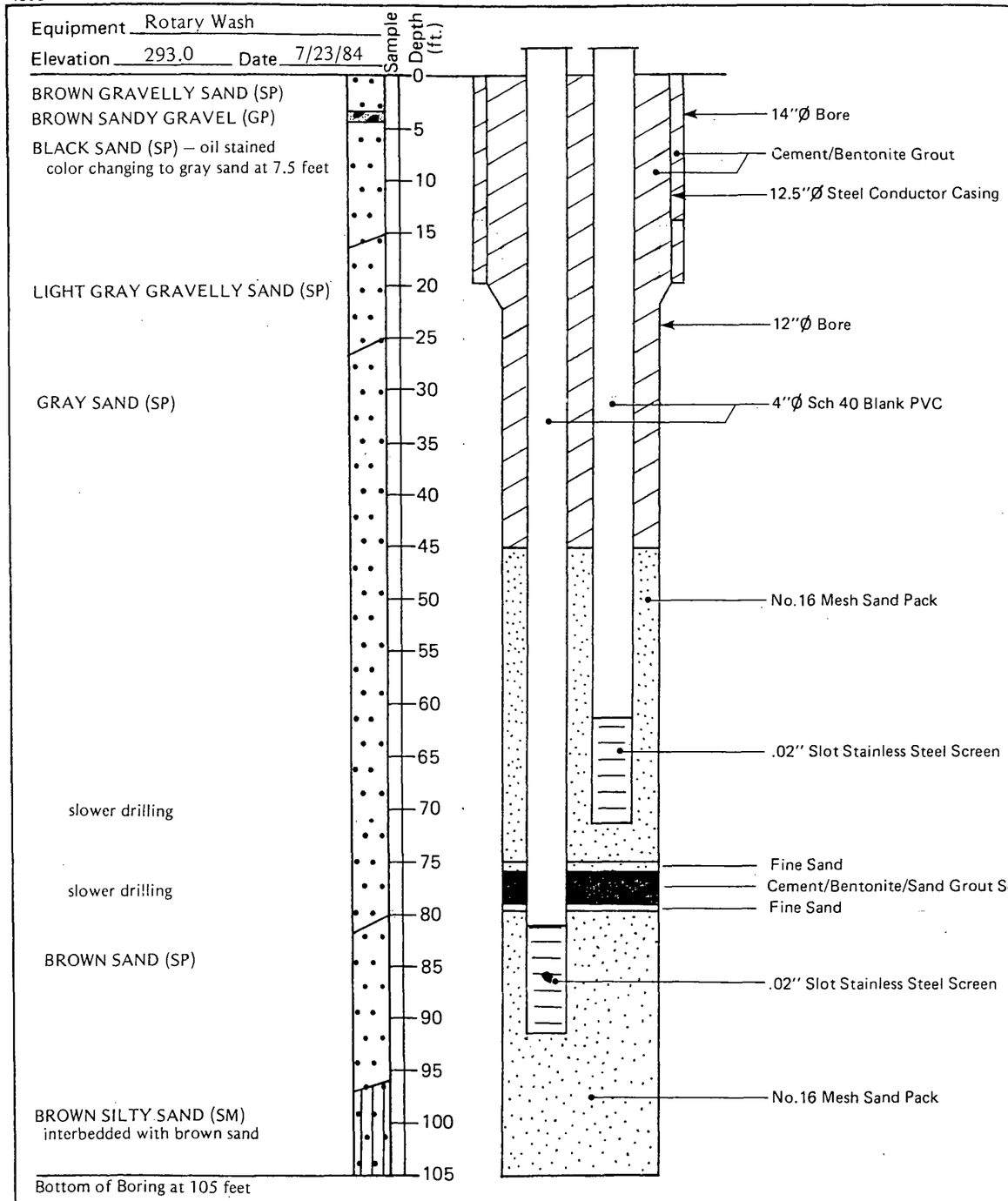
Appendix C

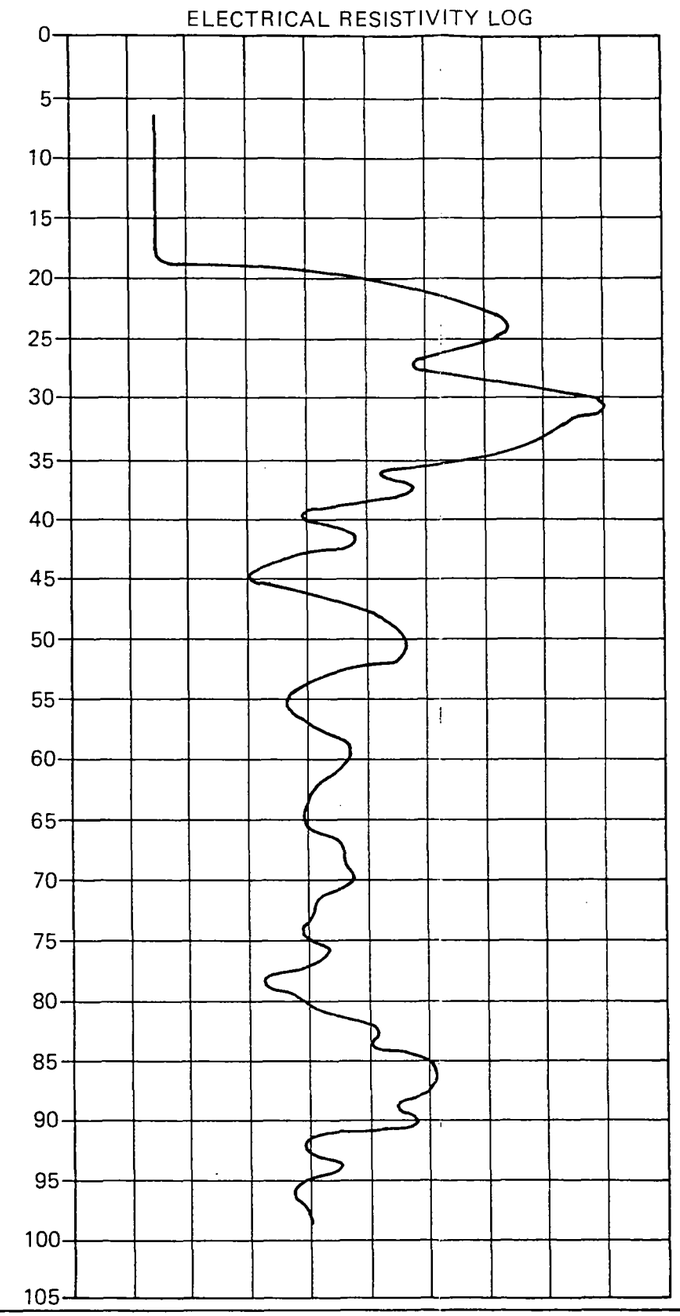
GEOLOGIC LOGS AND WELL COMPLETION DIAGRAMS

4098

Equipment Rotary Wash

Elevation 293.0 Date 7/23/84





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Geologic Log and Well Completion Diagram for Monitoring Wells W-1 Shallow and Deep
Purity Oil Sales Remedial Investigation
Fresno, California

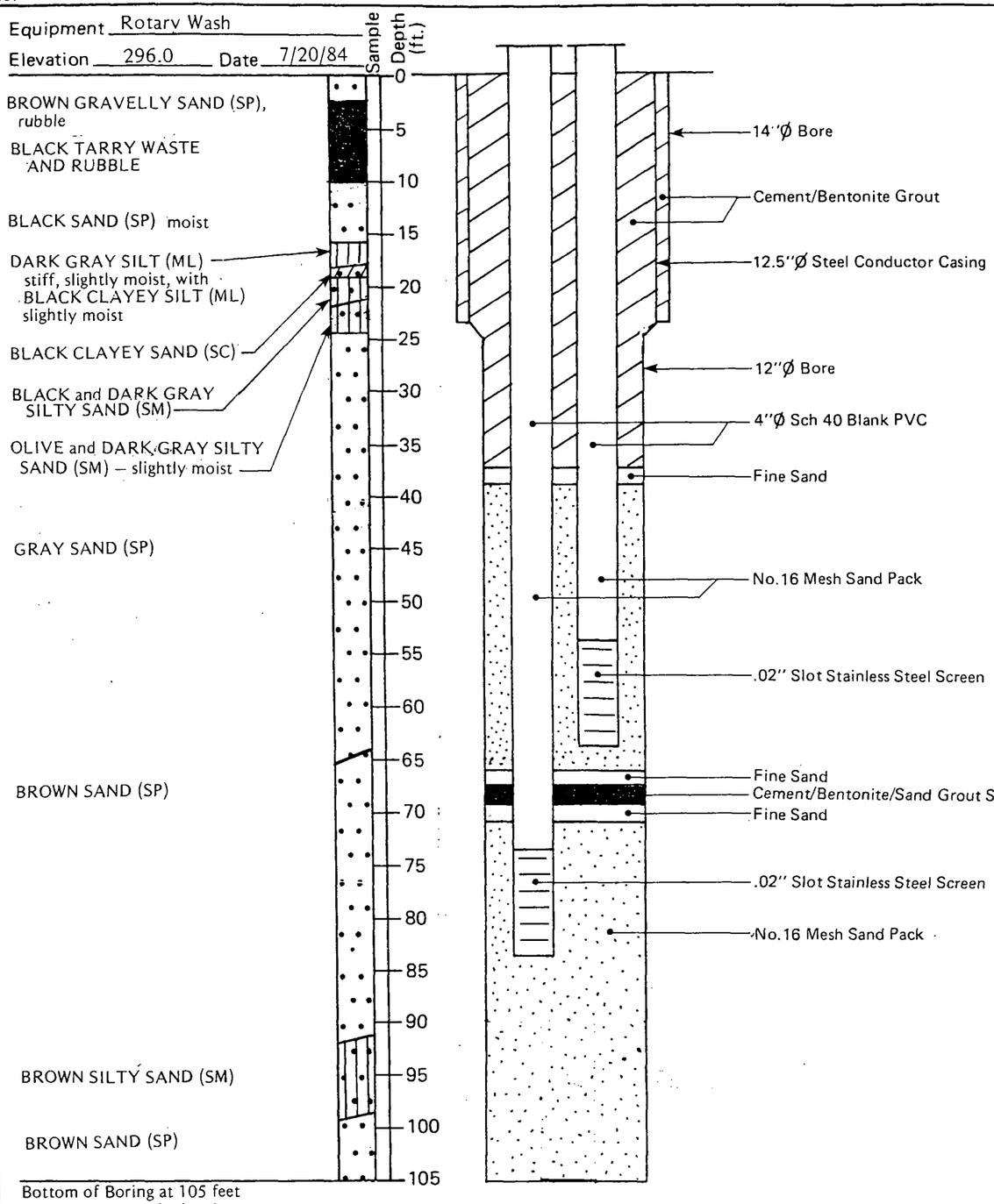
PLATE **C1**

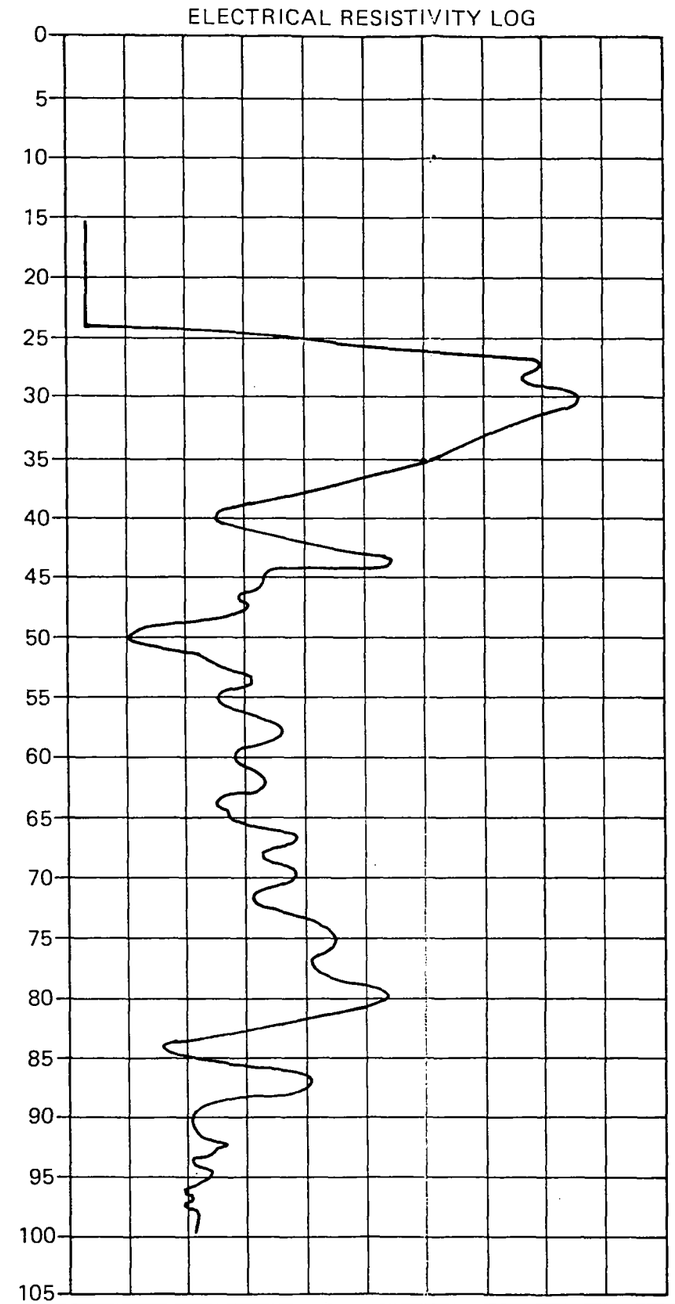
DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

4097

Equipment Rotary Wash

Elevation 296.0 Date 7/20/84





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Geologic Log and Well Completion Diagram for Monitoring Wells W-2 Shallow and Deep
Purity Oil Sales Remedial Investigation
Fresno, California

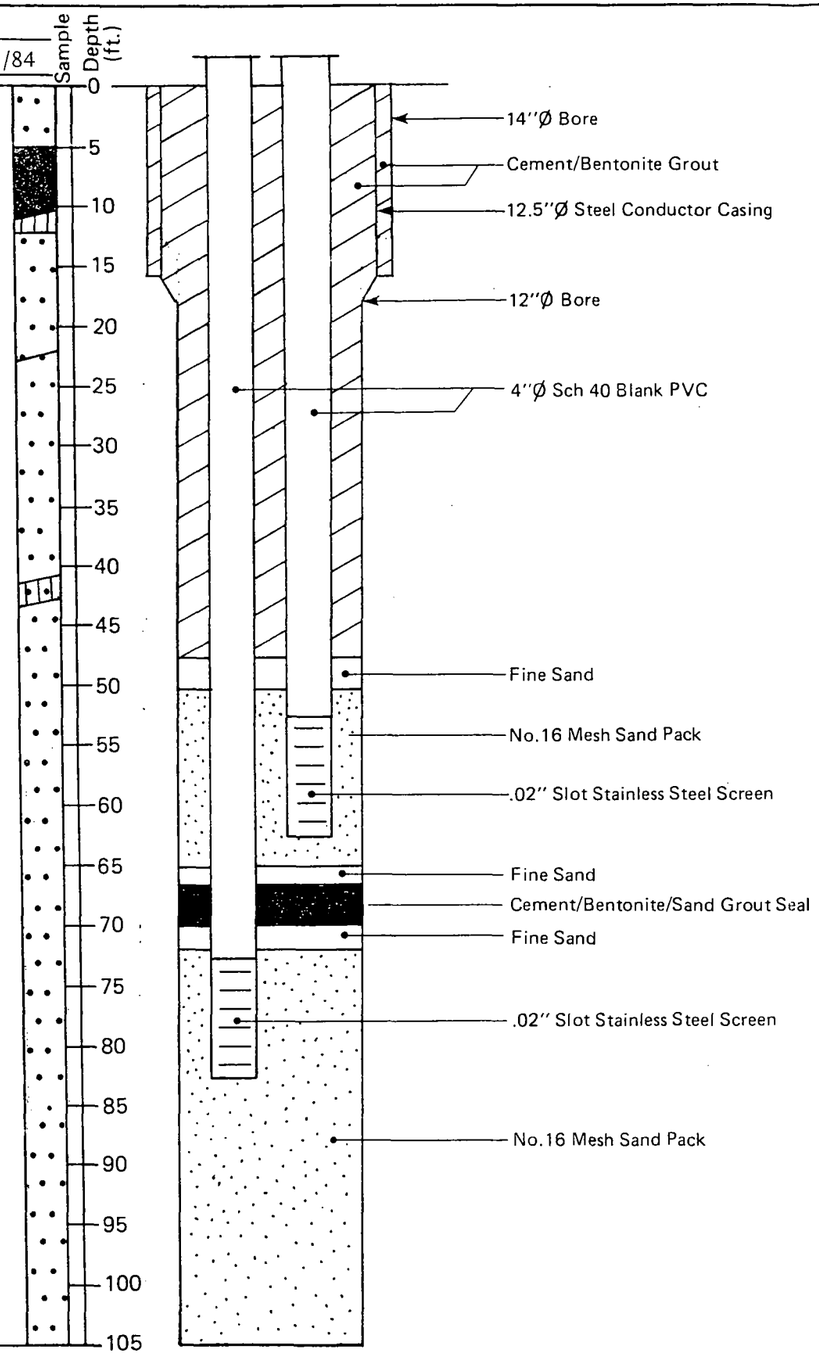
PLATE **C2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01		10/84		

4096

Equipment Rotary Wash

Elevation 296.0 Date 7/21/84



BROWN GRAVELLY SAND (SP)
rubble and concrete

BLACK TARRY SLUDGE
AND RUBBLE saturated at 7.5 feet

OLIVE-GRAY SILT (ML)
with black tarry sludge,
slightly moist

GRAY–BROWN SAND (SP)
slightly moist, very fine grained

BROWN SAND (SP) very loose,
medium grained

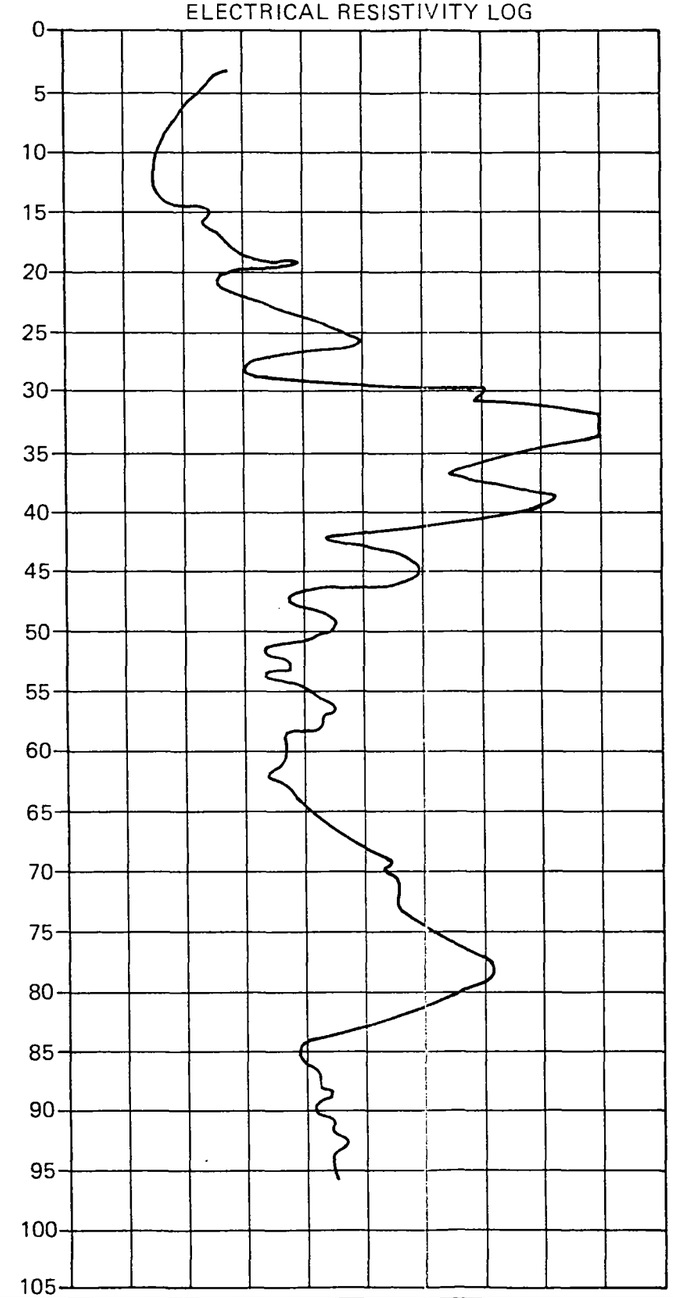
BROWN SILTY SAND (SM)

LIGHT GRAY SAND (SP)
changing to brown sand at 56.5 feet

slower drilling

Bottom of Boring 105 feet

ELECTRICAL RESISTIVITY LOG



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Geologic Log and Well Completion Diagram for Monitoring Wells W-3 Shallow and Deep
Purity Oil Sales Remedial Investigation
Fresno, California

PLATE **C3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED	DATE
JGL	919,032.01	JCW	10/84		

4093

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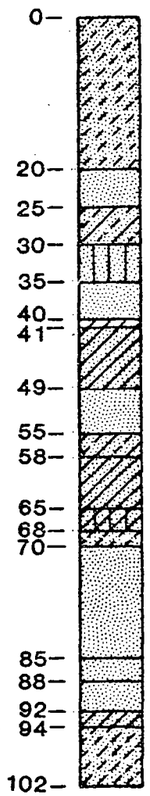
Consulting Engineers
Woodland, California 95695

Monitoring Well No. 4

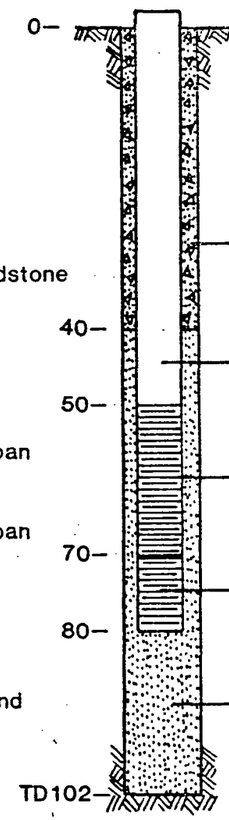
Purity Oil Sales, Inc.
Fresno, California

LITHOLOGY



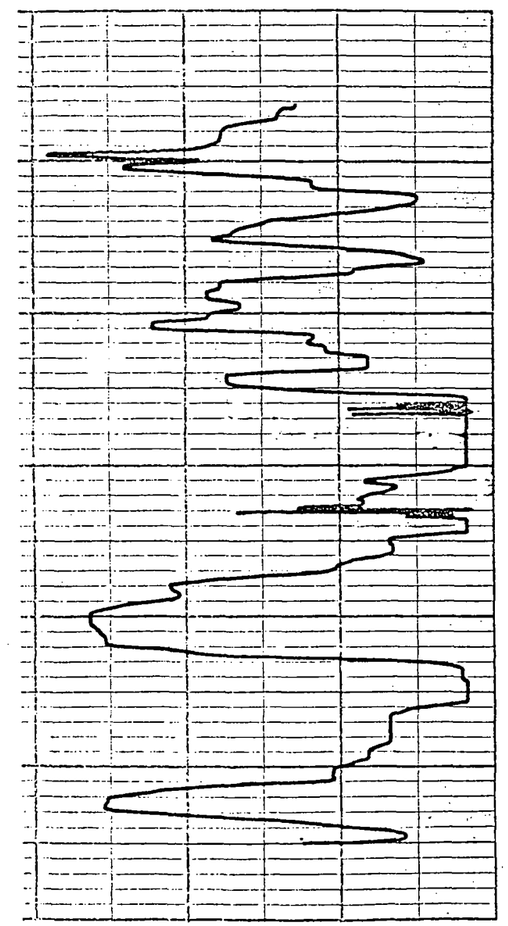
Red silt & sand
Clean grey white med. sand
Red silt & sand w/ grey clay
Clean white sand w/ red brown sandstone
Clean white sand
Blue grey clay
Brown clay w/ coarse red sand
Brown sand
Fine brown sand w/ silt & blue hardpan
Brown sand w/ blue hardpan
Brown sandstone w/ blue grey hardpan
Light brown sand w/ silt
White grey sand
Brown sand
Brown sand w/ coarse red brown sand
Red clay w/ coarse red brown sand
Red silt w/ sand (brown)

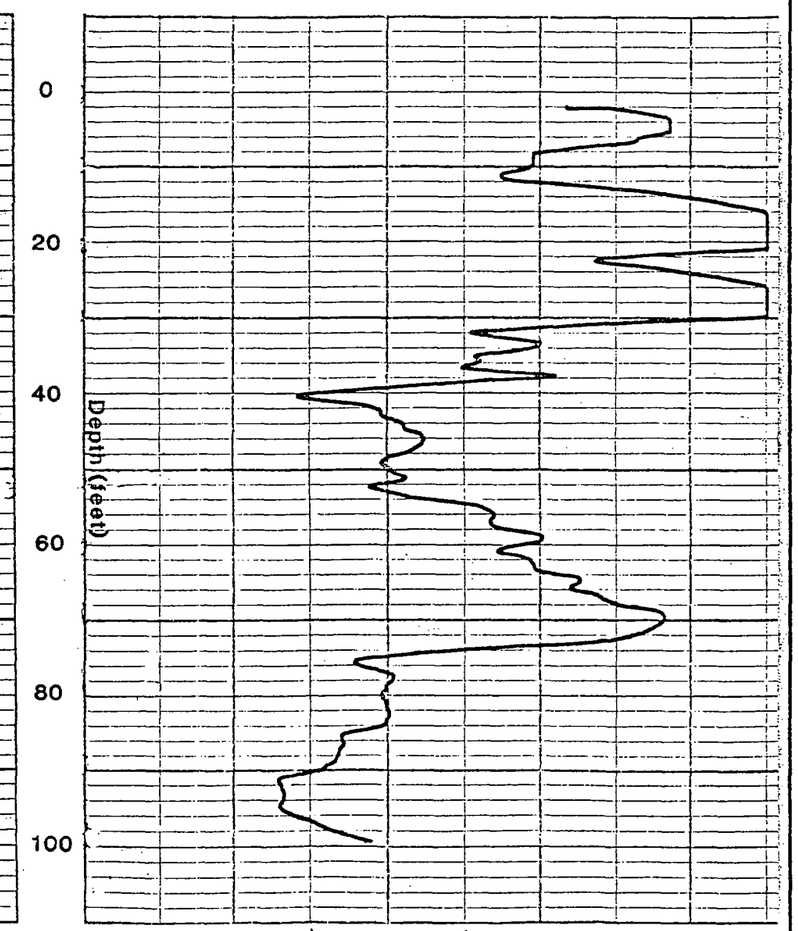
WELL PROFILE



Neat Cement
Blank Well Casing Sch. 40 Hydrophilic (4")
Sch. 40 Hydrophilic Well Screen (4") w/ 0.040 slot
Stainless Steel Well Screen (4") w/ 0.040 slot
Gravel Envelope Monterey Sand #8

ELECTRIC LOG





- 50mv +
Spontaneous Potential

25ohm
Point Resistivity

PLATE
C4

Revised 11-1-84

4092

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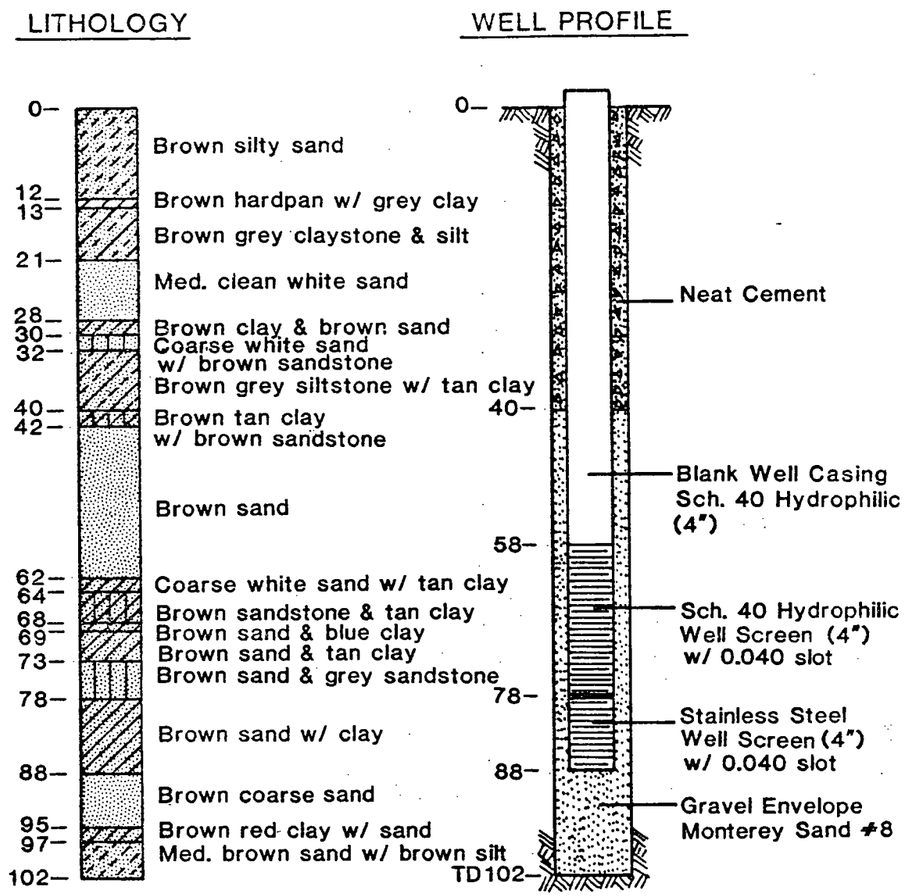
Woodland, California 95695

Monitoring Well No. 5

Purity Oil Sales, Inc.
Fresno, California



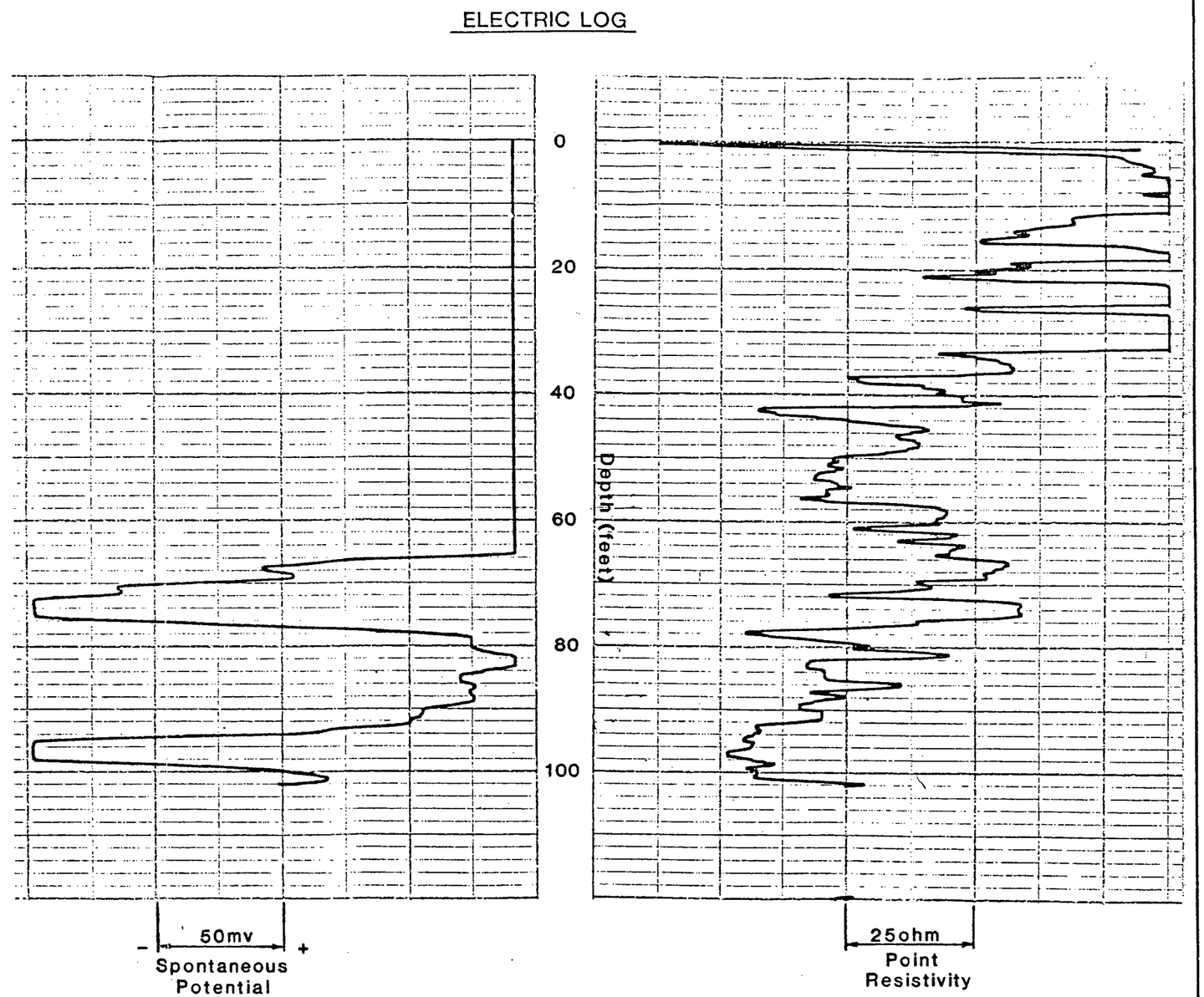


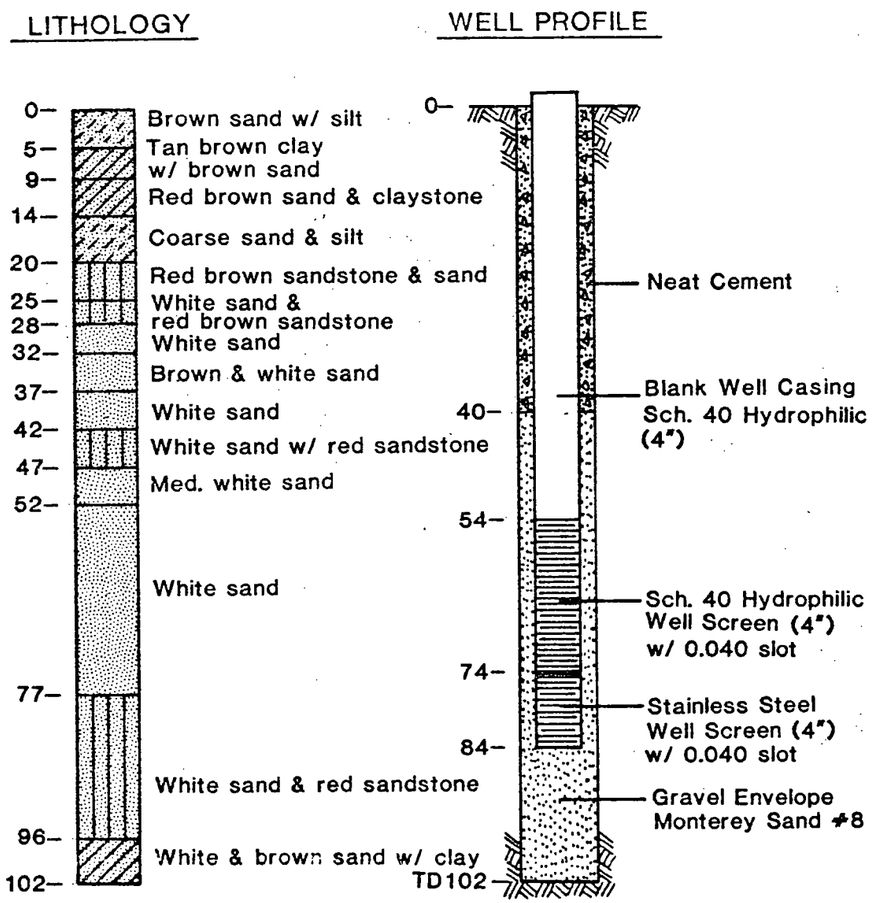
PLATE
C5
Revised 11-1-84

4091

LUHDORFF & SCALMANINI
Consulting Engineers

Monitoring Well No. 6

Purity Oil Sales, Inc.
Fresno, California



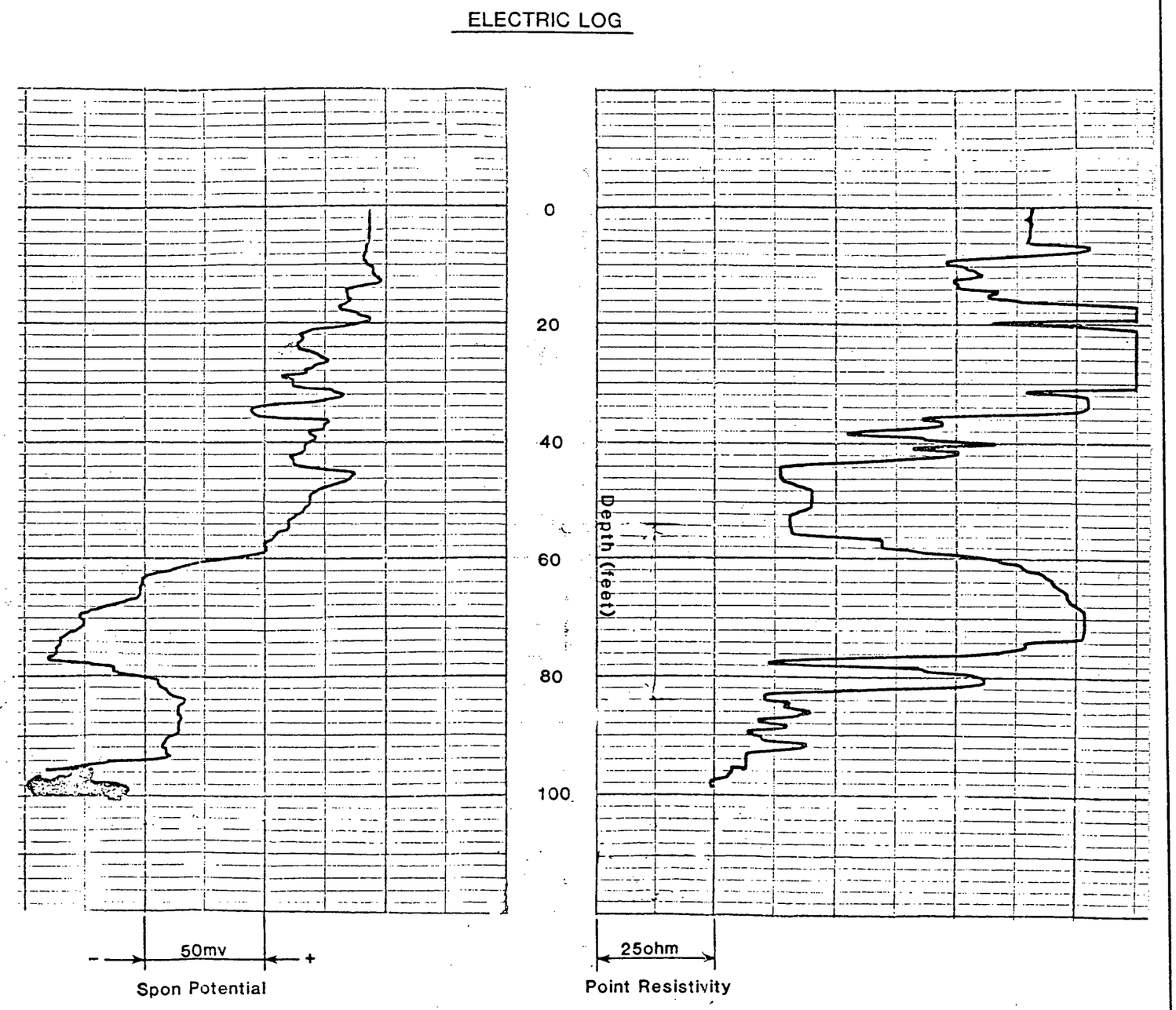


PLATE
C6

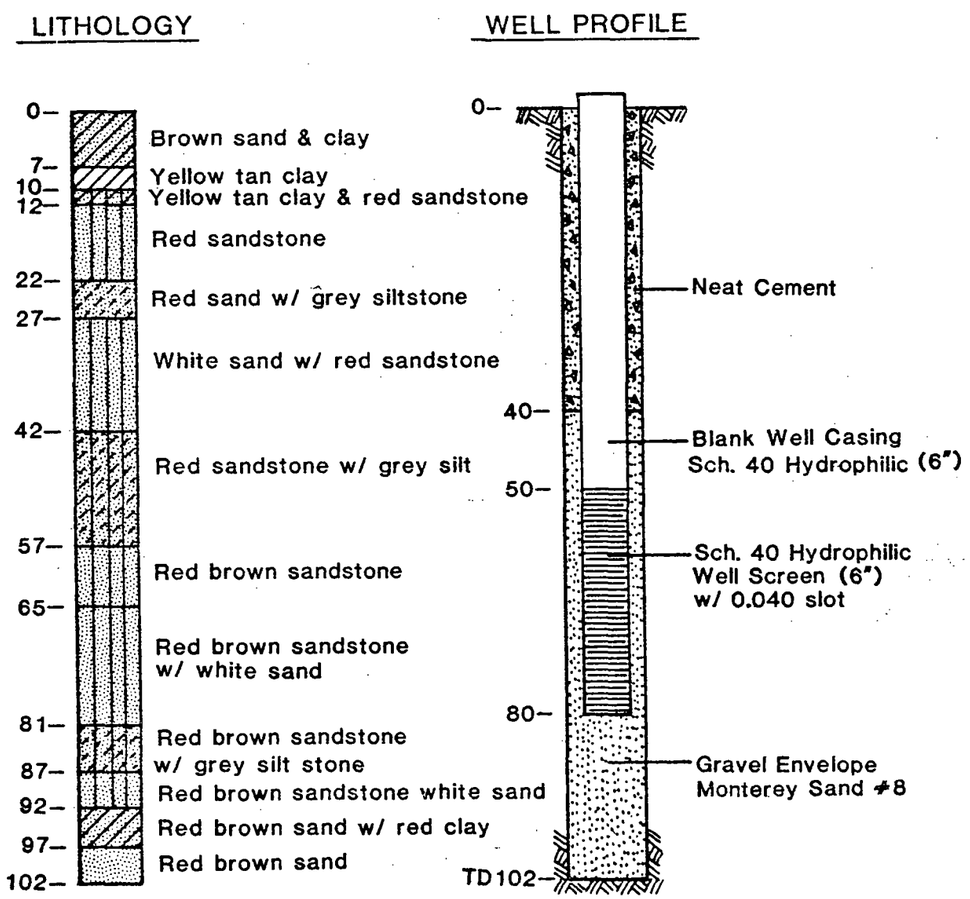
Revised 11-1-84

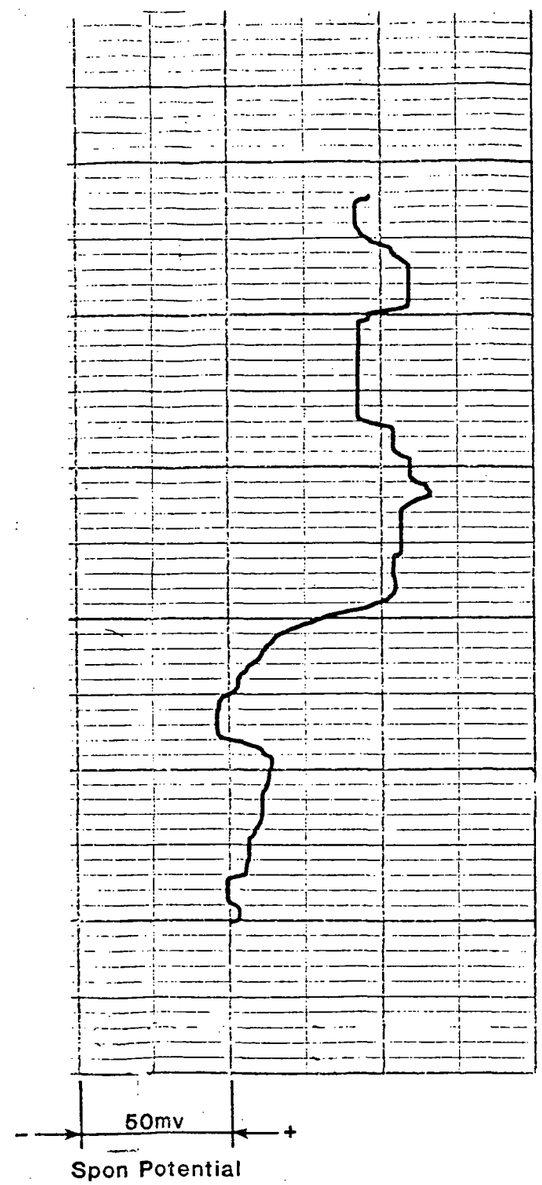
4090

LUHDORFF & SCALMANINI
Consulting Engineers

Monitoring Well No. 7

Purity Oil Sales, Inc.
Fresno, California





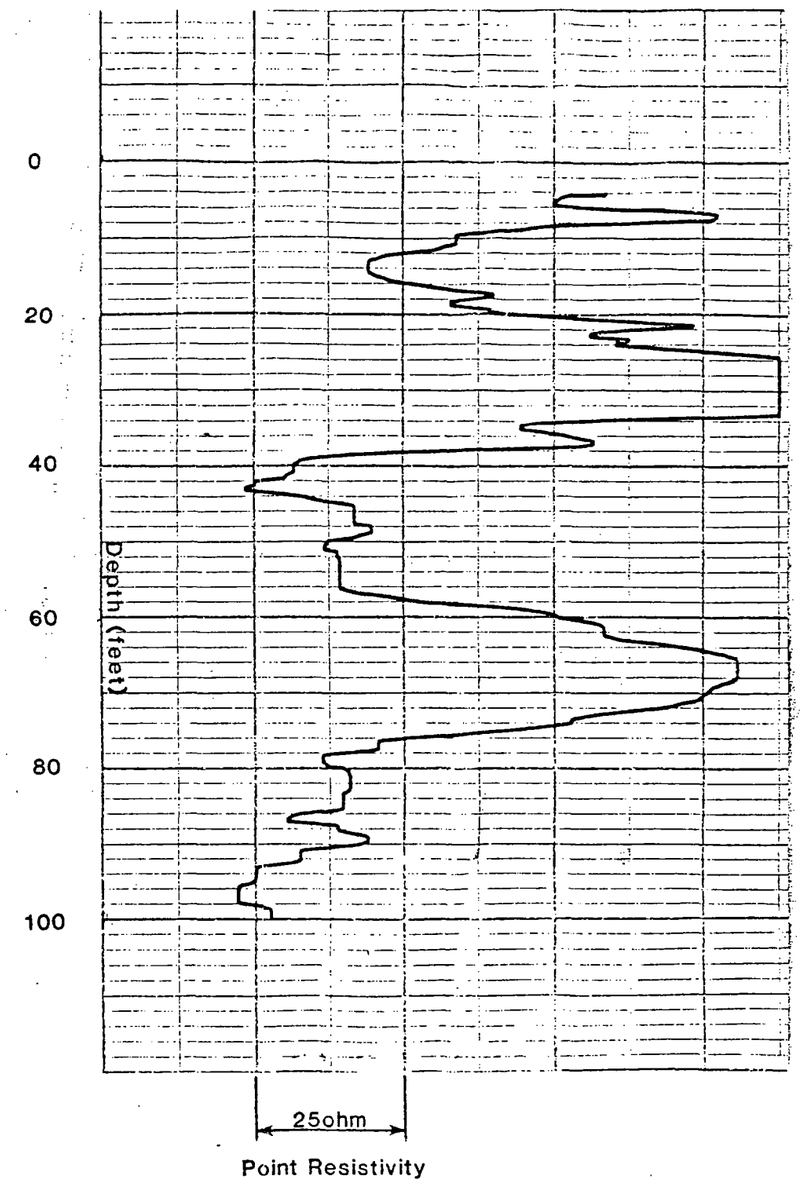


PLATE
C7

Revised 11-1-84

4089

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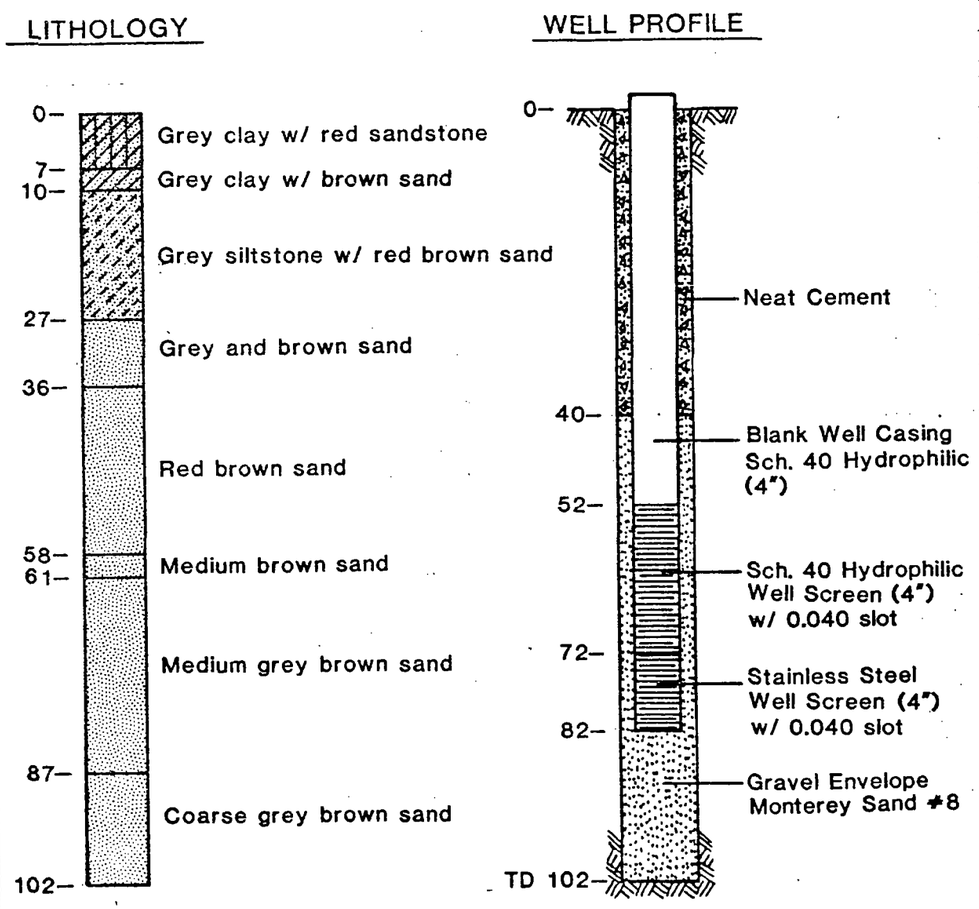
Consulting Engineers

Monitoring Well No. 8

Purity Oil Sales, Inc.
Fresno, California



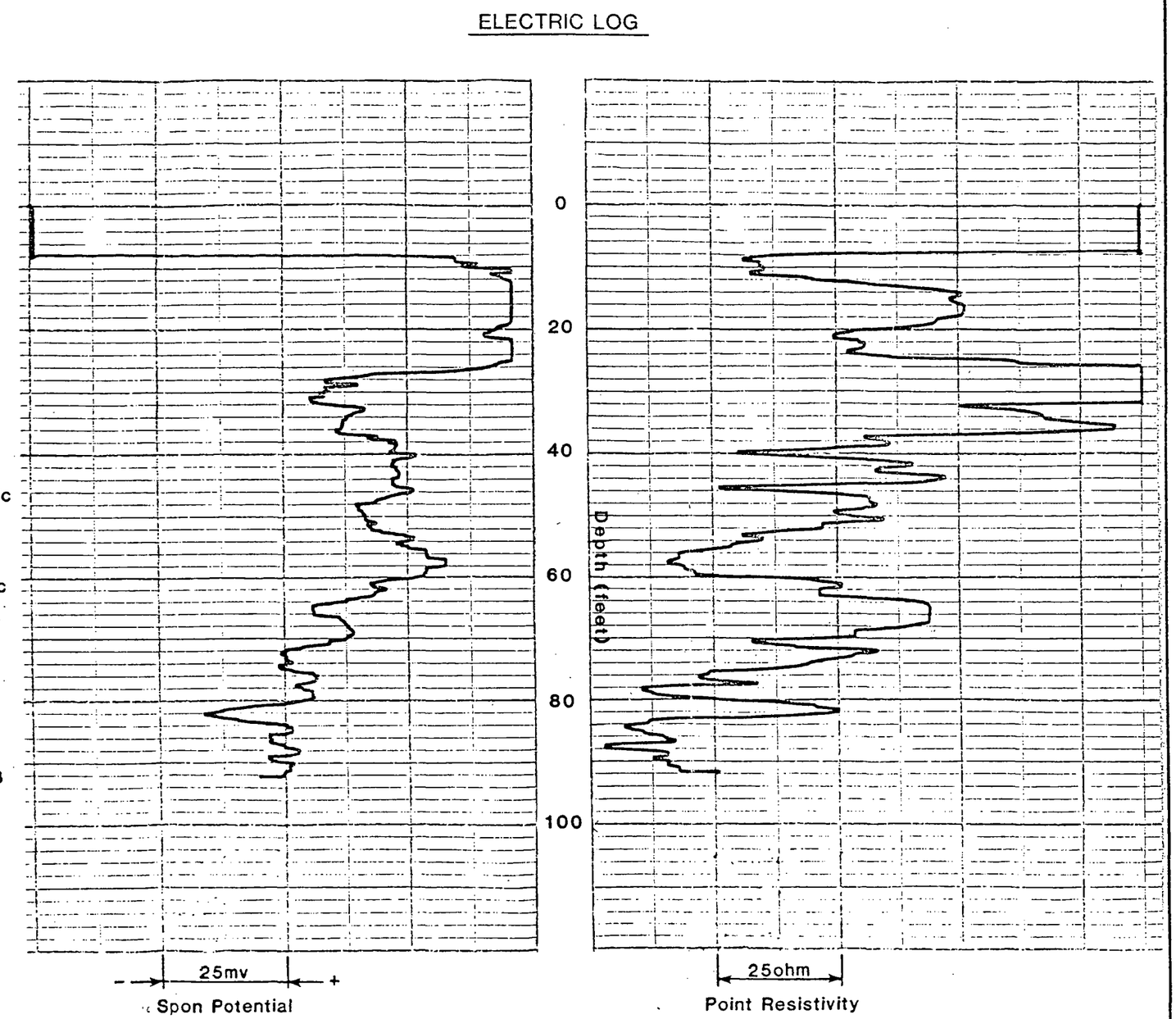


PLATE
C8

Revised 11-1-84

4088

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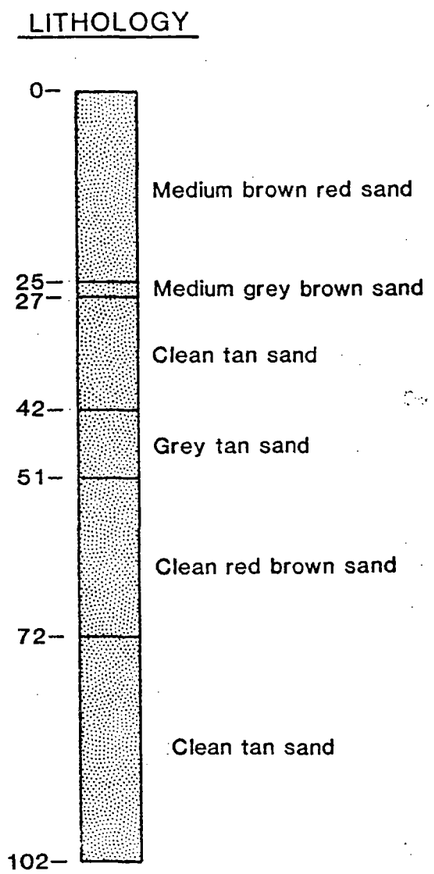
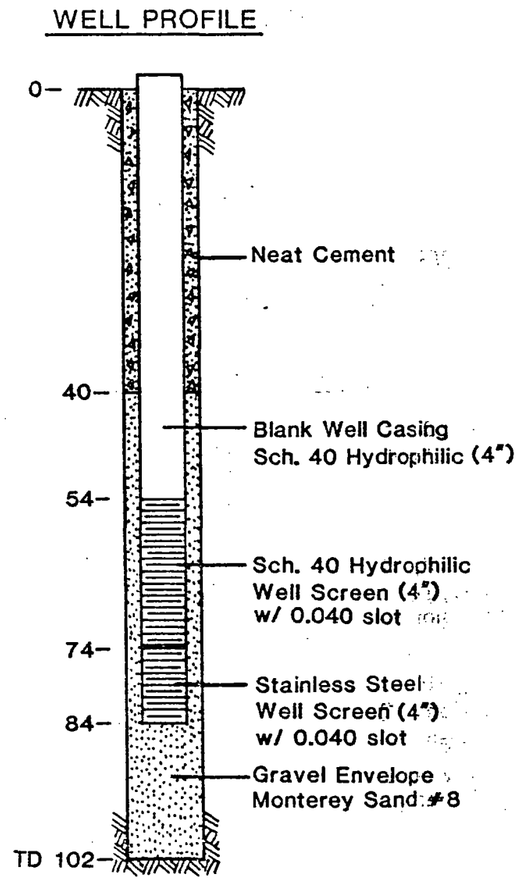
Consulting Engineers
Woodland, California 95695

Monitoring Well No. 9

Purity Oil Sales, Inc.
Fresno, California





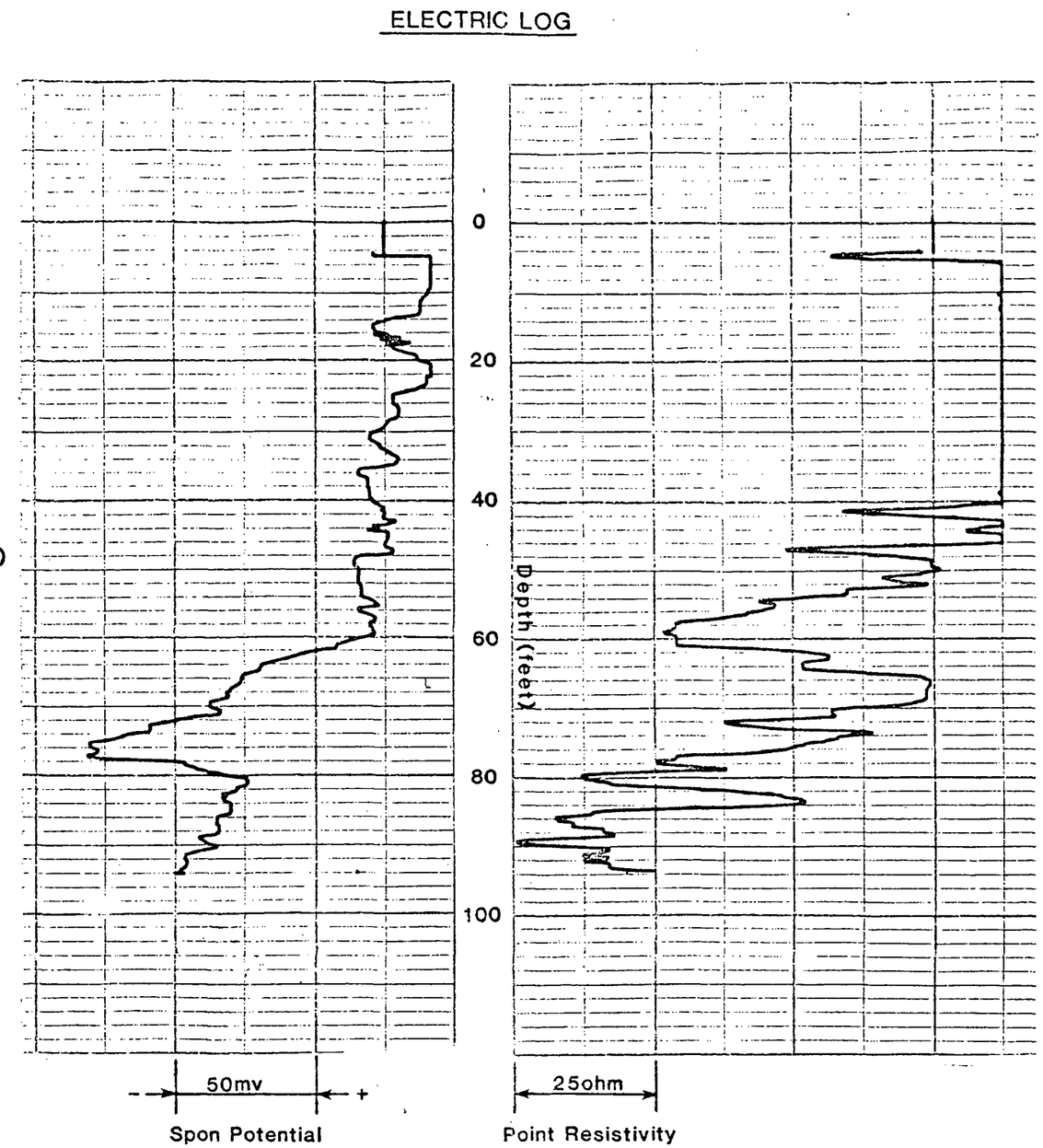


PLATE
C9

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