



BP OIL

ALCO
HAZMAT

94 MAR 28 PM 2:02

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
Renton, Washington 98055-4931
(206) 251-0667

✓

March 23, 1994

Alameda County Health Care Services Agency
Attention Ms. Eva Chu
80 Swan Way, Room 200
Oakland, CA 94621

4/4/94 ⊕ do manual bail test to determine hydraulic conductivity. If it seems soil is permeable then can do cone depression test to verify AW5+6 are in same aquifer (Scott Hooten felt soil may be impermeable for pump test at this time) To be done next sampling quarter

RE: BP Oil Site No. 11116
7197 Village Parkway
Dublin, CA
StID 2043

Dear Ms. Chu:

I am writing in response to your March 10, 1994 letter. In that letter you referred concerns raised during a recent meeting with the District Attorneys office. My notes, time-line comments prepared by County, and the summary prepared by the District Attorney's Office, show that the following concerns were raised at the meeting: 1) No time-line was submitted, and that there may be insufficient information to develop a time-line at this time; 2) a pump test should be performed to verify whether clean wells are part of the same aquifer, and to assess the source and extent of water contamination next to AW-6; 3) reinstate quarterly monitoring of AW-3, -5, and 6. I would like to take this opportunity to respond to those concerns, as well as those raised in your letter.

First, I understand that upon further discussions with Mr. Scott Seery, you believe that both AW-5 and AW-6 are most likely completed in the same aquifer. You should note that I have directed our consultant, Alisto Engineering Group, to perform single-well recovery tests in wells AW-5 and AW-6 in order to identify lateral variations in hydraulic conductivity. This information should enhance our understanding of the rate of groundwater flow in the vicinity of the two wells. If the hydraulic conductivity is sufficient to sustain a continuous flow from both of the wells, such that the cone-of-depression formed during pumping would result in drawdown in an adjacent well, then a pump test may provide some beneficial information. However, this does not appear to be necessary to show that both wells are completed in the same hydro stratigraphic unit.

but should be confirmed

Second, I have directed Alisto to perform quarterly monitoring of wells AW-3, -5, and 6. Alisto will also overpurge well AW-6 to

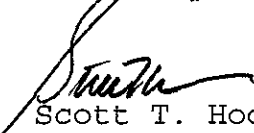
Do you think not to do pump test now

reduce the volume of hydrocarbons present in the groundwater, and collect dissolved oxygen measurements to determine if sufficient oxygen is present to sustain aerobic microbial activity. Indigenous bacteria often serves to further diminish hydrocarbon concentrations over time.

Finally, I have requested that Alisto obtain chemical data for the Arco site north of Amador Valley Boulevard, and to perform coordinated monitoring and sampling with Arco in the future. I believe that this is an appropriate initial step to assess the source and extent of groundwater of hydrocarbons detected in AW-6. After two to three quarters of joint monitoring, we will evaluate the data and determine what additional measures may be warranted, upon consultation with your office.

This letter should serve as a workplan for additional investigation as requested in you letter. Should you have any further questions, comments, or concerns, please do not hesitate to give me a call. My direct dial extension is (206) 251-0689.

Sincerely,



Scott T. Hooton
Environmental Resources Management

attachment

cc: site file
B. Nagle - ALISTO

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY

DAVID J. KEARS, Agency Director



RAFAT A. SHAHID, ASST. AGENCY DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH
State Water Resources Control Board
Division of Clean Water Programs
UST Local Oversight Program
80 Swan Way, Rm 200
Oakland, CA 94621
(510) 271-4530

StID 2043

March 10, 1994

Mr. Scott Hooton
BP Oil
295 SW 41st Street, Bldg 13, Ste N
Renton, WA 98055

**Subject: Groundwater Assessment Adjacent to AW-6 at BP #11116,
7197 Village Parkway, Dublin, CA 94568**

Dear Mr. Hooton:

I have completed review of Alisto's January 1994 Groundwater Monitoring and Sampling Report for the above referenced site. Water samples collected from monitoring well AW-6 in November 1993 show a substantial increase in the level of TPH-G and benzene, as compared to the previous quarter.

In a recent meeting (January 1994) with BP Oil, Alameda County District Attorney's Office (Michael O-Conner) and this agency (Scott Seery), it was determined that further assessment of the source and extent of water contamination next to monitoring well AW-6 is necessary. A workplan for this investigation is due within 45 days of the date of this letter, or by **April 29, 1994**.

Please be advised that this is a formal request for technical reports pursuant to Title 23, CCR, Section 2722(c). Any extensions of the stated deadlines, or modifications of the required tasks, must be confirmed in writing by this agency.

Should you have any questions about the content of this letter, please contact me at (510) 271-4530.

A handwritten signature in cursive script, appearing to read 'eva chu'.

eva chu
Hazardous Materials Specialist

cc: Gil Jensen, Alameda County District Attorney's Office
files

bpdublin.6

DA note 1/6/94

TIMELINE COMMENTS: County Hazmat

Alameda Mecartney & Island 11270

- access prob
will replace wells*
- 1) Timeline submitted, needs revision.
-Major problem: existing wells damaged and should be replaced. Not reflected in timeline.

Alameda 1541 Park at Lincoln 11266

- 1) No timeline submitted, but this site should have one.
- 2) No recent information on effectiveness or progress of remediation underway. Is capture zone large enough? Are more capture wells needed?

✓ **Alameda Webster at Buena Vista 11104**

- 1) Timeline submitted, needs revision.
-Major problem: two year gap from feasibility study to corrective action.
- 2) Definition impeded by sewer ditch which may be serving as conduit to divert plume.

Castro Valley Castro Valley Blvd. at Stanton 02486 CO

- 1) No timeline submitted or necessary.
- 2) Thrifty is conducting remediation.
- 3) As tank owner and operator, BP should be prepared to do remediation in the event of failure by Thrifty.

Castro Valley Castro Valley Blvd. at Redwood 11105

- 1) No timeline submitted, but there should be one for this site. Soil and all monitoring wells show contamination.
- 2) Need monthly monitoring to define seasonal flow fluctuation.
- 3) Need sampling for waste oil, constituents in 3 wells.
- 4) Corrective action may be required; SWI will be required.

Dublin Dublin at Dougherty 11120

- 1) Timeline submitted, satisfactory.

Dublin 7240 Dublin 01697 ADA

Dublin Village Parkway at Amador Valley 11116

- 1) No timeline submitted. May not be enough information to develop a sensible timeline at present.
- 2) Additional investigation required: aquifer pump test to verify whether contaminated and clean wells are part of same aquifer. Further assessment of source and extent of water contamination next to AW-6.
- 3) Reinstate quarterly monitoring of AW-3, -5 and -6.

Emeryville Powell at Christie 11126

- 1) Timeline submitted, but unsatisfactory.
- 2) Major contamination here, but only one sampling event.
- 3) Extent of contamination undefined.

Oakland Bancroft at 73rd 11117

- 1) Timeline submitted. Unclear whether timeline reflects current situation. May not be enough information to develop a sensible timeline at present.
- 2) Additional investigation required.
- 3) Investigation hampered by access problems posed by City of Oakland.

Oakland Foothill at High 11109

- 1) Timeline submitted, needs revision.
-Major problem: 5 year remediation plan on timeline, 2 year plan in narrative.
- 2) Question: Is treatment plan operating?
- 3) Note a foot of free product in well, but so far no migration off-site apparent at this time.

Oakland High at Porter 11124

- 1) No timeline submitted; near closure.

Oakland MacArthur and Oakland 11102

- 1) No timeline submitted. May not be enough information to develop a sensible timeline at present.
- 2) Additional investigation required to determine source of gasoline contamination in wells MW-1 and MW-2.
- 3) Reinstate quarterly sampling and reporting.

Oakland 5425 Martin Luther King, Jr. Way 11127

- 1) No timeline submitted, but timeline would be appropriate.
- 2) Continued quarterly monitoring required.
- 3) Contamination levels low.

Oakland 35th Avenue at I-580 11132

- 1) Timeline submitted, but unsatisfactory.
- 2) Free product is migrating off site.
- 3) More recovery wells needed.
- 4) No information as to effectiveness of interim remediation.
- 5) Remediation must be more aggressive.
- 6) Extent of plume not completely defined.

Oakland 98th at Bancroft 11133

- 1) Timeline submitted, needs revision.
-Major problem: need to implement vapor and groundwater extraction and treatment system.
- 2) Free product contamination.

Oakland 98th at Las Vegas 11122

- 1) No timeline submitted.
- 2) Is closure appropriate?

San Leandro Washington at W. 152 11106

- 1) No timeline submitted, but timeline not essential at this time.
- 2) BP's request for closure premature: we need to see three more quarterly sampling confirming last results.

San Lorenzo 18501 Hesperian 11107

- 1) Timeline submitted; needs revision.
-Major problem: timeline already behind schedule due to off-site access problems.
- 2) No apparent sampling/monitoring since 11/92, no report submitted since 1/93.
- 3) ULR submitted?

BP Oil Site No. 11133, 2220 98th Ave., Oakland

Monitoring wells MW-1 and RW-1 have free product. Other monitoring wells have had up to 57,000 ppb benzene. A remedial action plan to install additional vapor extraction wells to conduct groundwater extraction and vapor extraction was approved by this Agency on March 4, 1993. To date this plan has not been implemented.

no yet implemented
- Pilot tests still pending

This site should be moved from Category B to Category A.

Timeline to closure is reasonable provided additional VEWs are installed and pilot test is performed by February 1994.

7197 Village Parkway, Dublin 94568 * 11116

Requested BP to conduct investigations to determine the source of elevated levels of TPH-G and BTEX (as 7,900 ppb TPH-G and 900 ppb benzene) in monitoring well AW-6, and the preferential pathways which may cause the contamination to migrate off-site in the downgradient direction. BP has refused to do this investigation. BP contends that monitoring well AW-5 is downgradient from AW-6 and screened in the same aquifer. Boring logs do not show this to be the case. BP should conduct an aquifer pump test by January 1994 to show the aquifer in AW-5 and 6 are connected.

CA needed
① Further assess. of EW impact near AW-6. source?
② quarterly monitoring of AW-3, 5, 6. *

No timeline to closure has been submitted for this site.

BP Oil No. 11120, 6400 Dublin Blvd., CA 94568

✓ Total of six monitoring wells have been installed. Agency has not received report documenting installation of monitoring wells MW-5, MW-6, and MW-7 which occurred in April 1993.

received 12/10

EW extraction appropriate? - may not be necessary

Timeline to closure submitted. Future plans include the installation of a ground water recovery system. After two more quarters of sampling it can then be re-evaluated if remediation is required at this site. It is uncertain if levels of contaminants would warrant groundwater recovery system.

NOT BP site:

Desert Petroleum, 2008 First St., Livermore, CA 94550

Final Notice of Violation issued October 28, 1993 for not submitting SWI to delineate extent of soil and groundwater contamination. Only one monitoring well on site. Latest sampling episode in September 1993 exhibited 1,900 ppb TPH-G and 311 ppb benzene. Company has filed bankruptcy.

BP update (eva)

BP Oil Site No. 11133, 2220 98th Ave., Oakland

Monitoring wells MW-1 and RW-1 have free product. Other monitoring wells have had up to 57,000 ppb benzene. A remedial action plan to install additional vapor extraction wells to conduct groundwater extraction and vapor extraction was approved by this Agency on March 4, 1993. To date this plan has not been implemented.

This site should be moved from Category B to **Category A**.

Timeline to closure is reasonable provided additional VEWs are installed and pilot test is performed by February 1994.

7197 Village Parkway, Dublin 94568 * 11116

CAP needed

Requested BP to conduct investigations to determine the source of elevated levels of TPH-G and BTEX (as 7,900 ppb TPH-G and 900 ppb benzene) in monitoring well AW-6, and the preferential pathways which may cause the contamination to migrate off-site in the downgradient direction. **BP has refused to do this investigation.** BP contends that monitoring well AW-5 is downgradient from AW-6 and screened in the same aquifer. Boring logs do not show this to be the case. BP should conduct an aquifer pump test by January 1994 to show the aquifer in AW-5 and 6 are connected.

*No timeline to closure has been submitted for this site.

BP Oil No. 11120, 6400 Dublin Blvd., CA 94568

Total of six monitoring wells have been installed. Agency has *received* not received report documenting installation of monitoring wells MW-5, MW-6, and MW-7 which occurred in April 1993. *12/10*

Timeline to closure submitted. Future plans include the installation of a ground water recovery system. After two more quarters of sampling it can then be re-evaluated if remediation is required at this site. It is uncertain if levels of contaminants would warrant groundwater recovery system.

NOT BP site:

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MONUMENT

- ▲ qualitative shallow a.w. survey boring
- soil boring
- ⊕ monitoring well

AMADOR

VALLEY

BOULEVARD

UNDERGROUND FUEL STORAGE TANKS

STAD 27-15

SIDEWALK

VILLAGE

PLANTED AREA

DISPENSER ISLAND

CENTERLINE

TW-7

11,000 / 250

SERVICE STATION BUILDING

TW-5

TW-8

REPLACED UNDERGROUND WASTE OIL TANK

MW-1

B-2

TW-2

A

B-3

MW-2

B-1

DISPENSER ISLANDS

MW-3

B'

PARKWAY

TW-3

TW-4

AW-4

TW-1

6,100 / 94

PROPERTY LINE

PLANTED AREA

ppb TPH-G / Benzene

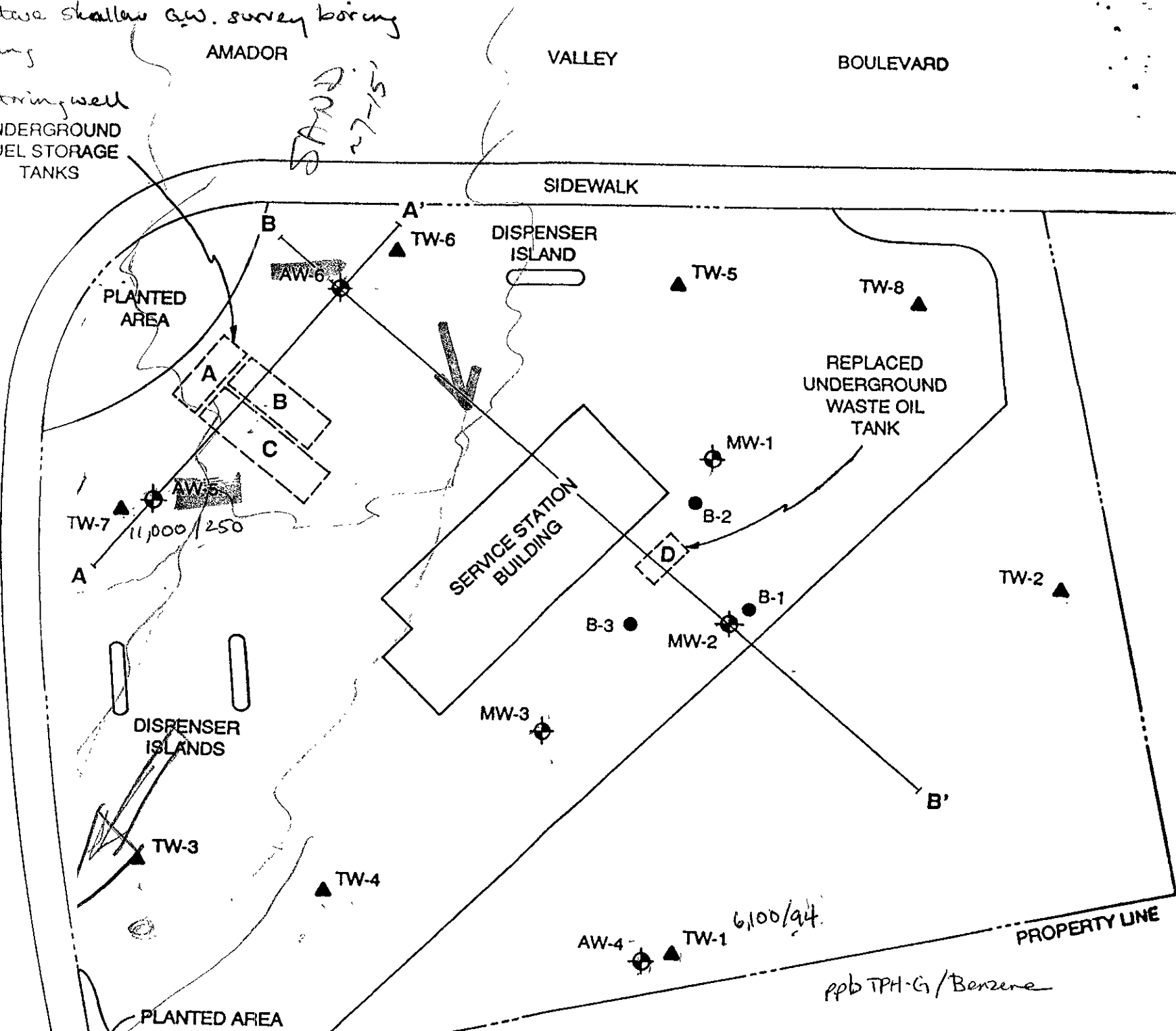


TABLE 2
 Summary of Results of Ground Water Monitoring and Sampling
 Former Mobil Station 04-KNK
 7197 Village Parkway
 Dublin, California

Concentration in parts per billion (ppb)

WELL ID	DATE OF SAMPLING	TOP OF CASING ELEVATION	DEPTH TO WATER (FEET)	GROUND WATER ELEVATION	TPH-G	TPH-D	TOG	B	T	E	X	HVOC	LAB
AW-4	11/15/90	333.41	8.51	324.90	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	AI
AW-4	12/11/90	333.41	9.19	324.22	--	--	--	--	--	--	--	--	NA
AW-4	02/15/91	333.41	8.32	325.09	ND<50	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SAL
AW-4	05/14/91	333.41	6.97	326.44	ND<50	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SAL
AW-4	08/23/91	333.41	8.59	324.82	ND<50	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	AI
AW-4	11/13/91	333.41	8.57	324.84	ND<30	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SEQ
AW-4	02/25/92	333.41	6.26	327.15	ND<30	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SEQ
AW-4	04/15/92	333.41	7.05	326.36	--	--	--	--	--	--	--	--	NA
AW-5	11/15/90	334.81	9.67	325.14	ND<50	--	--	1.3	ND<0.5	ND<0.5	1.0	--	AI
AW-5	12/11/90	334.81	9.44	325.37	--	--	--	--	--	--	--	--	NA
AW-5	02/15/91	334.81	10.00	324.81	ND<50	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SAL
AW-5	05/14/91	334.81	8.64	326.17	ND<50	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SAL
AW-5	08/23/91	334.81	9.58	325.23	ND<50	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	AI
AW-5	11/13/91	334.81	9.80	325.01	100	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SEQ
AW-5	02/25/92	334.81	7.89	326.92	ND<30	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SEQ
AW-5	04/15/92	334.81	8.54	326.27	--	--	--	--	--	--	--	--	NA
AW-6	11/15/90	334.90	9.58	325.32	230	--	--	25	ND<0.5	ND<0.5	0.8	--	AI
AW-6	12/11/90	334.90	9.58	325.32	--	--	--	--	--	--	--	--	NA
AW-6	02/15/91	334.90	9.66	325.24	ND<50	--	--	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	SAL
AW-6	05/14/91	334.90	8.38	326.52	90	--	--	2	ND<0.3	ND<0.3	ND<0.3	--	SAL
AW-6	08/23/91	334.90	9.61	325.29	57	--	--	ND<0.5	0.7	1.3	4.6	--	AI
AW-6	11/13/91	334.90	9.58	325.32	200	--	--	ND<0.5	0.7	1.3	4.6	--	SEQ
AW-6	02/25/92	334.90	8.00	326.90	19000	--	--	8000	4700	600	2400	--	SEQ
AW-6	03/05/92	334.90	7.98	326.92	14000	--	--	5200	2500	550	2200	--	SEQ
AW-6	04/15/92	334.90	8.33	326.57	1100	--	--	400	ND<3.0	30	ND<3.0	--	SEQ

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Summary of Results of Ground Water Monitoring and Sampling
Former Mobil Station 04-KNK
7197 Village Parkway
Dublin, California

Concentration in parts per billion (ppb)

WELL ID	DATE OF SAMPLING	TOP OF CASING ELEVATION	DEPTH TO WATER (FEET)	GROUND WATER ELEVATION	TPH-G	TPH-D	TOG	B	T	E	X	HVOC	LAB
MW-1	10/12/90	335.17	9.92	325.25	ND<50	ND<50	ND<5000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND#	AI
MW-1	11/15/90	335.17	10.16	325.01	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	AI
MW-1	12/11/90	335.17	9.97	325.20	--	--	--	--	--	--	--	--	NA
MW-1	02/15/91	335.17	9.89	325.28	ND<50	50*	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	41*	SAL
MW-1	05/14/91	335.17	8.43	326.74	ND<50	ND<50	7500	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SAL
MW-1	08/23/91	335.17	9.98	325.19	ND<50	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	AI
MW-1	11/13/91	335.17	10.09	325.08	ND<30	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-1	02/25/92	335.17	8.28	326.89	ND<30	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-1	04/15/92	335.17	8.50	326.67	--	--	--	--	--	--	--	--	NA
MW-2	09/06/89	334.58	9.04	325.54	ND<50	ND<50	8100	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-2	10/12/90	334.58	9.60	324.98	93	ND<50	ND<5000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND#	AI
MW-2	11/15/90	334.58	9.68	324.90	ND<50	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	AI
MW-2	12/11/90	334.58	9.47	325.11	--	--	--	--	--	--	--	--	NA
MW-2	02/15/91	334.58	9.28	325.30	ND<50	60**	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	45*	SAL
MW-2	05/14/91	334.58	7.74	326.84	130**	ND<50	6000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SAL
MW-2	08/23/91	334.58	9.81	324.77	ND<50	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	AI
MW-2	11/13/91	334.58	9.73	324.85	ND<30	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-2	02/25/92	334.58	7.55	327.03	ND<30	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-2	04/15/92	334.58	8.00	326.58	--	--	--	--	--	--	--	--	NA
MW-3	09/06/89	335.13	8.90	326.23	110	ND<50	7000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-3	10/12/90	335.13	10.08	325.05	ND<50	ND<50	ND<5000	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND#	AI
MW-3	11/15/90	335.13	10.12	325.01	76	--	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	AI
MW-3	12/11/90	335.13	9.92	325.21	--	--	--	--	--	--	--	--	NA
MW-3	02/15/90	335.13	9.84	325.29	ND<50	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SAL
MW-3	05/14/91	335.13	8.40	326.73	ND<50	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SAL
MW-3	08/23/91	335.13	10.27	324.86	ND<50	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	AI
MW-3	11/13/91	335.13	10.27	324.86	ND<30	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-3	02/25/92	335.13	8.15	326.98	ND<30	ND<50	ND<5000	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND#	SEQ
MW-3	04/15/92	335.13	8.63	326.50	--	--	--	--	--	--	--	--	NA

?
Injection point

TABLE 3

**SUMMARY OF ANALYTICAL RESULTS OF GROUND WATER SAMPLES
FROM QUALITATIVE SHALLOW GROUND WATER SURVEY**

**Former Mobil Service Station 10-KNK
7197 Village Parkway
Dublin, California**

Concentrations in Parts Per Billion

Well Number	TPH ^a as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Diesel	TOG ^b	HVOC ^c
Date of Sampling - October 12, 1990								
MW-1	ND ^d <50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
MW-2	93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
MW-3	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5	ND
TW-1	6,100	94	490	92	590	-- ^e	ND<5	--
TW-2	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<5	--
TW-3	ND<50	0.8	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-4	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-5	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-6	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
TW-7	11,000 ^f ?	250	580	344	1,700	--	--	--
TW-8	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--

^aRepresents Total Petroleum Hydrocarbons

^bRepresents Total Oil and Grease

^cRepresents Halogenated Volatile Organic Compounds - Refer to Laboratory Reports for Detection limits

^dNot detected above the given detection limits

^eNot analyzed

^fEstimated value below detection limits

TABLE 2

SUMMARY OF ANALYTICAL RESULTS OF SOIL SAMPLES

Former Mobil Oil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Concentrations in Parts Per Million

Boring Number	Depth in Feet	TPH ^a as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Diesel	TOG ^b	HVOC ^c
Date of Sampling - October 12, 1990									
B-1	11-11.5	ND ^d <0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-1	16-16.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-1	21-21.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-2	11-11.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-2	16-16.5	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
B-2	22.5-23	ND<0.5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	ND<10	ND<30	ND
Date of Sampling - November 6, 1990									
B-3	10.5-11	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<10	ND<20	ND
B-3	16-16.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	0.013	ND<10	ND<20	ND
B-3	21-21.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	ND<10	ND<20	ND
AW-4	6-6.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--- ^f	--	--
AW-4	21-21.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-5	6-6.5	6.0	0.25	0.018	0.033	0.088	--	--	--
AW-5	11-11.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-5	16-16.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-5	21-21.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--
AW-6	6-6.5	ND<1.0	ND<0.003	ND<0.003	ND<0.003	ND<0.003	--	--	--

^aRepresents Total Petroleum Hydrocarbons^bRepresents Total Oil and Grease^cRepresents Halogenated Volatile Organic Compounds - Refer to Laboratory Reports for Detection limits^dNot Detected above the reported detection limits^eNot Analyzed

HISTORICAL GROUNDWATER DATA FOR MW AW-6 - SS# 04-KNK - Dublin, California

DATE	DEPTH TO GW	TPH _g	BENZENE	TOLUENE	ETHYLBENZENE	TOTAL XYLENES
11/15/90	9.58 ft.	230	25	ND < 0.5	ND < 0.5	0.8
2/15/91	9.66	ND < 50	ND < 0.3	ND < 0.3	ND < 0.3	ND < 0.3
5/14/91	8.38	90	2	ND < 0.3	ND < 0.3	ND < 0.3
8/23/91	9.61	57	ND < 0.5	0.7	1.3	4.6
11/13/91	9.58	200	ND < 0.5	0.7	1.3	4.6
2/25/92	8.00	19,000	8000	4700	600	2400
3/5/92	7.98	14,000	5200	2500	550	2200
4/15/92	8.33	1100	400	ND < 0.3	30	ND < 0.3

* All concentrations shown in parts per billion (ppb)

ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY
BORING



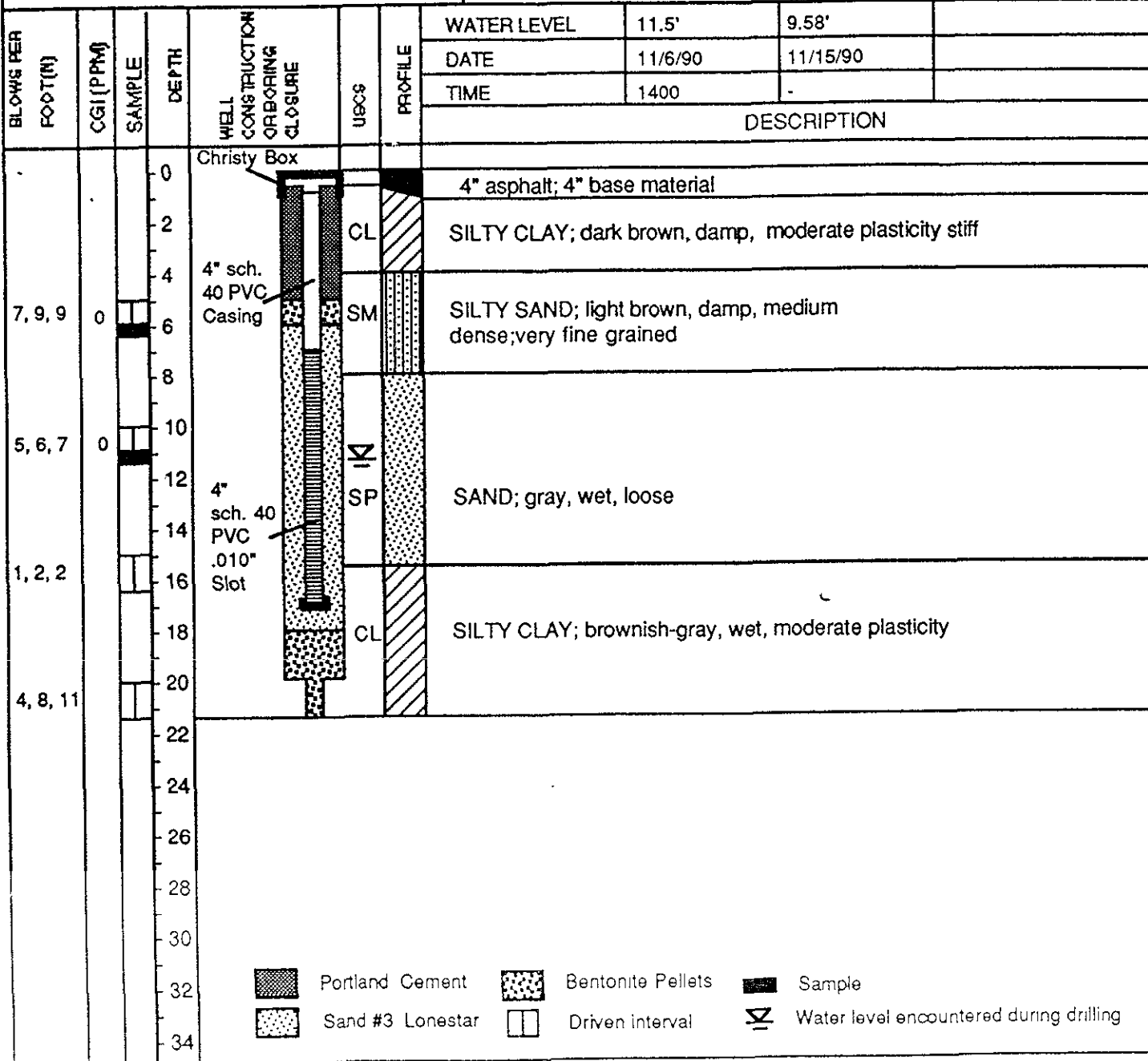
PROJECT NO. 30-095 DATE DRILLED 11/6/90
 CLIENT Mobil Oil Corporation
 LOCATION 7197 Village Pkwy, Dublin
 LOGGED BY B. Nagle APPROVED BY _____

BORING NO.
AW-6
WELL NO.
AW-6

FIELD SKETCH OF BORING LOCATION

TOP OF CASING ELEVATION 334.93

DRILLING METHOD Hollow stem auger HOLE DIAM. 10"
 SAMPLER TYPE Modified split spoon
 CASING DATA Perforations: 7-17"
 DRILLER West Hazmat



ALTON GEOSCIENCE, Inc.
LOG OF EXPLORATORY
BORING



PROJECT NO. 30-095 DATE DRILLED 11/6/90
CLIENT Mobil Oil Corporation
LOCATION 7197 Village Pkwy, Dublin
LOGGED BY B. Nagle APPROVED BY _____

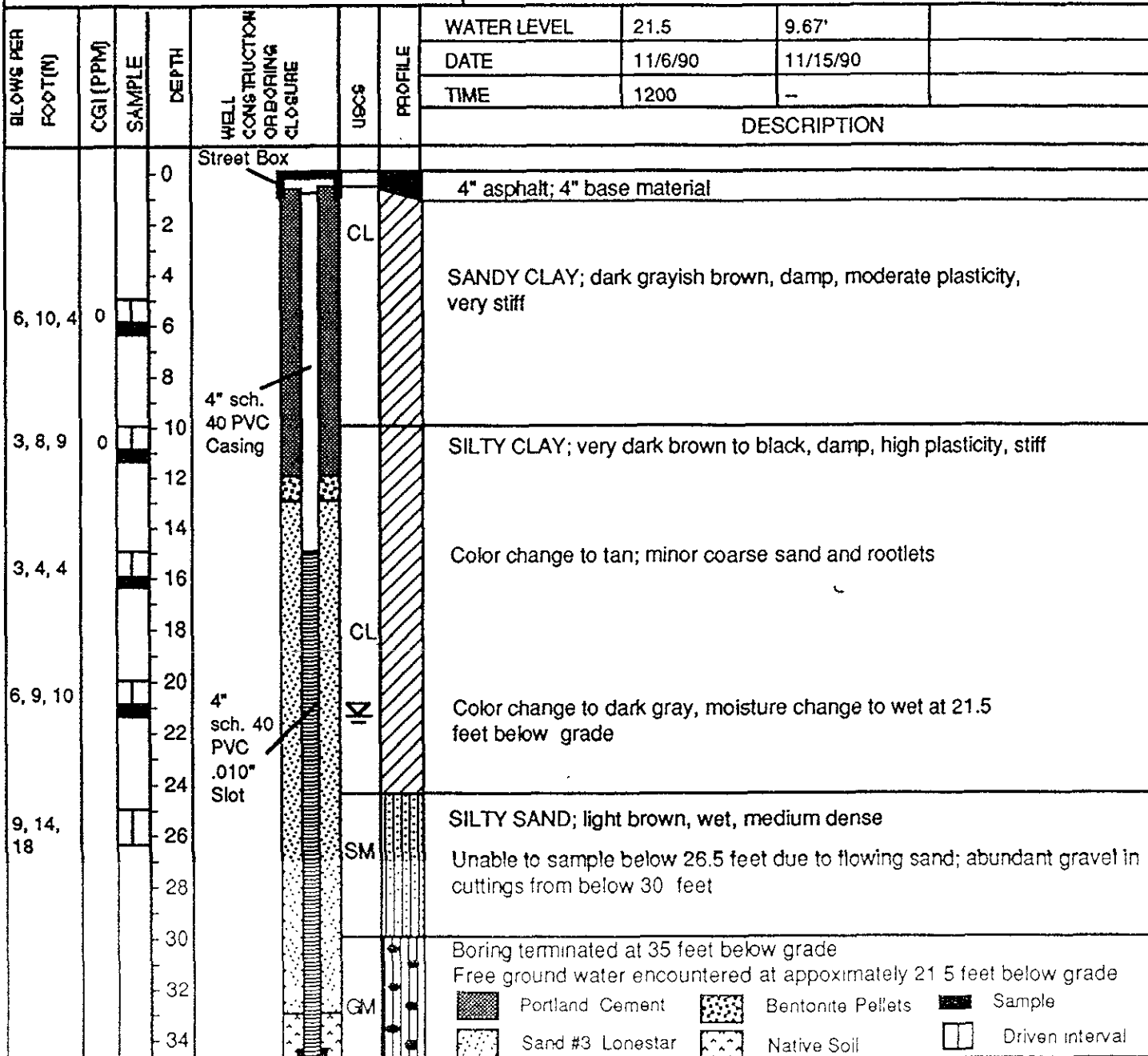
BORING NO.
AW-5
WELL NO.
AW-5

Page 1 of 1

FIELD SKETCH OF BORING LOCATION

DRILLING METHOD Hollow stem auger HOLE DIAM. 10"
SAMPLER TYPE Modified split spoon
CASING DATA Perforations: 15-35'
DRILLER West Hazmat

TOP OF CASING ELEVATION 334.81





ensco
environmental
services, inc.

EXPLORATORY BORING LOG

PROJECT NAME: FORMER SHELL STATION
7194 AMADOR VALLEY
BLVD., DUBLIN, CA

BORING NO. MW-7

DATE DRILLED: 8/11-12/88

PROJECT NUMBER: 1826G

LOGGED BY: RAG

DEPTH (ft.)	SAMPLE No	BLOWS/FOOT 140 ft/lps.	UNIFIED SOIL CLASSIFICATION	SOIL DESCRIPTION	WATER LEVEL	OVA READING ppm
1				Asphalt - 3", baserock -11"		
2			CL	SANDY CLAY, dark grayish brown (10YR 4/2), fine grained sands up to 40%, no petroleum odor, moderate plasticity, stiff, moist		
3			CH	SILTY CLAY, very dark grayish brown (10YR 3/2), some fine to medium grained sands, no petroleum odor, moderately high plasticity, stiff, moist		
4						
5	MW-7-1	9	SC	CLAYEY SAND, light brownish gray (10YR 6/2), fine grained sands up to 50%, rounded gravels up to 0.5" across, no petroleum odor, stiff, moist		0
6						
7	MW-7-2	7	CL	SANDY CLAY, light brown (10YR 5/3), fine to medium sands up to 40%, rounded gravels up to 0.5" across, no petroleum odor, stiff, moist	▼	0
8	MW-7-3	9		SILTY CLAY, very dark gray (10YR 3/1) 8/26/88, with light gray to white claystone/ Groundwater		
9			CL	siltstone fragments, roots and root holes, level - 7.94 ft.		0
10	MW-7-4	14		no petroleum odor, moderate plasticity, stiff, moist to very moist, some root holes contain "free" water		0
11	MW-7-5	11				
12			CL	SILTY CLAY, mottled gray to strong brown (7.5YR 5/0 to 7.5YR 5/6), roots and root holes, no petroleum odor, moderate plasticity, stiff, moist, some root holes contain "free" water		
13						
14				8/11/88, Groundwater encountered - 14 ft.	▽	
15						
16						0
17	MW-7-6	12				
18				Bottom of boring =17 feet		
19						
20						
21						

SUPERVISED AND APPROVED BY R.G./C.E.G. *RAG*