ALTON GEOSCIENCE
THE RESULTS TEAM

January 20, 1992

Mr. Ravi Arulanantham
Alameda County Health Agency
80 Swan Way, Room 200
Oakland, California 94621

30-0095-01

Subject: Quarterly Ground Water
Monitoring and Sampling Report
Former Mobil Oil Service Station 10-KNK
7197 Village Parkway
Dublin, California

Dear Mr. Arulanantham,

The enclosed report presents the results and findings of the November 1991 quarterly ground water monitoring and sampling performed by Alton Geoscience at former Mobil Oil Service Station 10-KNK, 7197 Village Parkway, Dublin, California. Monitoring was performed in conjunction with neighboring Unocal and Shell sites.

If there are any questions or comments regarding this report, please call the undersigned at (415) 682-1582.

Sincerely,

ALTON GEOSCIENCE

Brady Nagle
Project Manager

cc: Mr. Edgar Hoepker, Mobil Oil Corporation

1000 Burnett Avenue, Suite 140
Concord, California 94520
(415) 682-1582 • FAX (415) 682-8921

QUARTERLY GROUND WATER MONITORING AND SAMPLING REPORT

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

Project No. 30-0095-01

Prepared for:

Mobil Oil Corporation
836 "B" Southampton Drive, Suite 300
Benicia, California

Prepared by:

Alton Geoscience

January 15, 1992

QUARTERLY GROUND WATER MONITORING AND SAMPLING REPORT

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

January 15, 1992

INTRODUCTION

This report presents the results and findings of the November 1991 quarterly ground water monitoring and sampling activities performed by Alton Geoscience at Mobil Oil Service Station 10-KNK, 7197 Village Parkway, Dublin, California. The site vicinity map is shown in Figure 1, and a site plan is shown in Figure 2.

FIELD PROCEDURES

On November 13, 1991, ground water Monitoring Wells MW-1, MW-2, MW-3, AW-4, AW-5, and AW-6 were monitored and sampled in accordance with the guidelines of the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) and the Alameda County Health Agency (ACHA).

To gain a better understanding of the hydrogeologic conditions in the area, on November 13, 1991, ground water monitoring at the former Mobil Oil site was conducted concurrently with monitoring of wells installed to investigate ground water quality at the former Shell and existing Unocal service stations. The former Shell service station is located across Village Parkway and southwest of the former Mobil Oil service station (see Figure 3). The existing Unocal service station is located across the intersection of Village Parkway and Amador Valley Boulevard and west of the former Mobil Oil service station. The top of the monitoring well casings at the sites were surveyed in reference to the Alameda County bench mark stamped "VL PK AM VY, 1977", located in the intersection of Village Parkway and Amador Valley Boulevard with an elevation of 337.402 above mean sea level. The survey data and ground water elevation measurements at the former Mobil Oil Corporation, former Shell Oil Company, and Unocal Oil Company sites are presented in Tables 1, 2, and 3, respectively. The ground water elevation contour map for the sites is shown in Figure 3.

Prior to purging and sampling, the ground water level in each well at the former Mobil Oil site was measured from a permanent mark on the top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to ground water at the time of sample collection and the top of casing elevation data were used to calculate the ground water elevation above mean sea level within each well.

The ground water from the former Mobil Oil site was observed for the presence of free product or sheen and samples were collected using a clean hand bailer. Prior to sample collection, each well was purged of three casing volumes or until pH, temperature, and conductivity of the ground water stabilized. Ground water samples for laboratory analysis were collected by lowering disposable Teflon bailer to just below the air-water interface in the well. The ground water samples were then transferred into clean glass containers. All samples were inverted to ensure that entrapped air was not present. Each sample was labeled with sample number, well number, sample date, and sampler's initials. The samples were stored in an iced cooler for delivery to a California-certified laboratory following proper sample preservation and chain of custody procedures. The ground water sampling field survey forms are included in Appendix A.

ANALYTICAL METHODS

Ground water samples collected from all six wells at the former Mobil Oil site were analyzed for the following constituents:

- TPH-G using EPA Methods 5030/8015
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) constituents using EPA Methods 5030/8020

In addition, the ground water samples collected from Monitoring Wells MW-1, MW-2, and MW-3 were analyzed for the following constituents:

- Total oil and grease (TOG) using EPA Method 5520DF
- TPH-D using EPA Method 3510/8015
- Halogenated volatile organic compounds (HVOCs) using EPA Method 601/8010

Laboratory reports and the chain of custody records are presented in Appendix B, and a summary of analytical results of all ground water samples is presented in Table 1.

DISCUSSION OF RESULTS

The results of the November 1991 ground water monitoring and sampling event, as well as from previous monitoring and sampling events performed by Alton Geoscience, are summarized below.

- No free product or sheen was observed in any of the monitoring wells during this or previous monitoring events.

- The ground water gradient direction was calculated using concurrent depth to water and well head elevations at the Mobil Oil, Shell, and Unocal sites (see Figure 3). The direction of the ground water gradient is predominantly to the west, with values ranging from approximately 0.008 at the Unocal site to approximately 0.003 at the Shell site.

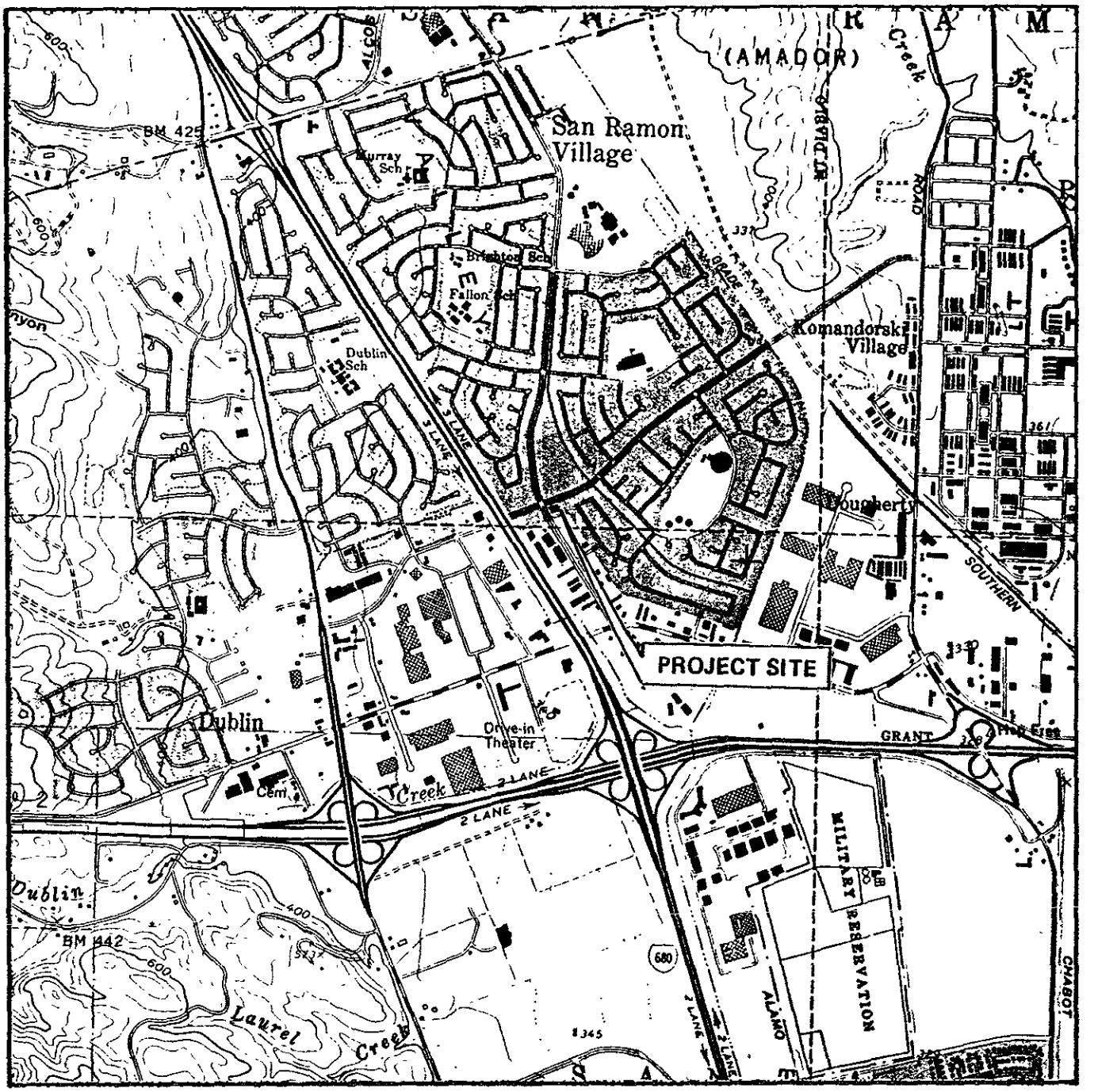
- Analysis of ground water samples collected during the November 13, 1991, sampling event detected TPH-G in AW-5 and AW-6 at concentration of 100 and 200 ppb, respectively. Analysis for BTEX constituents detected only xylenes in AW-6 at a concentration of 0.94 ppb. Monitoring Well AW-6 is constructed in a shallower water-bearing zone not encountered in the other monitoring wells onsite.

- TOG, TPH-D and HVOCs were not detected in the ground water samples collected from MW-1, MW-2, or MW-3. Previous sampling events revealed concentrations of TOG and HVOCs up to 7,500 and 45 ppb, respectively. Previously reported concentrations of TPH-D in samples from MW-1 and MW-2 were based on atypical chromatograghic patterns, and may be considered anomalous.

ALTON GEOSCIENCE

Brady Nagle
Project Manager

Peter C. Lange, R.G. 5089
Associate, Concord Operations

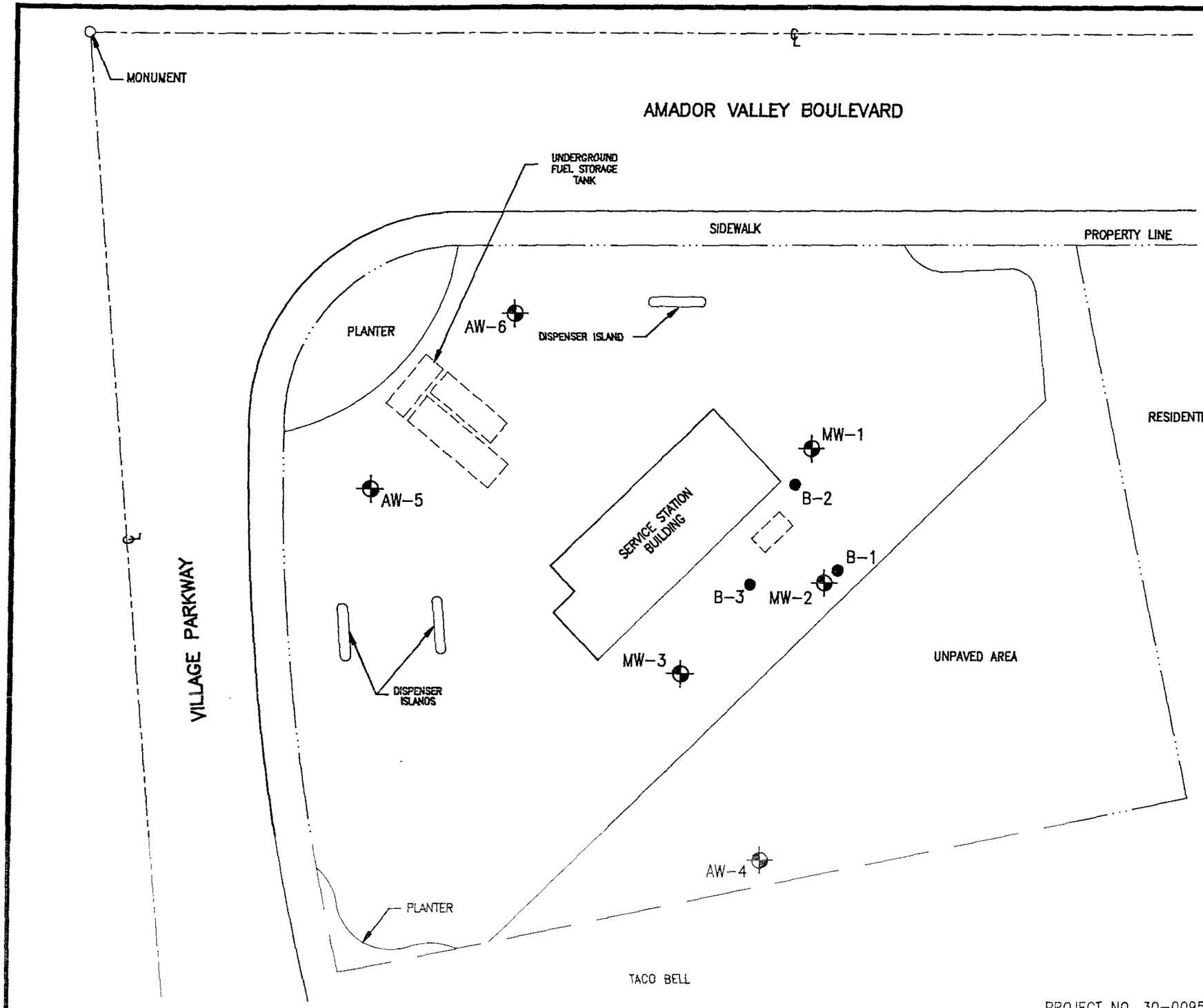


Source: U.S Geological Map, 'Dublin Quadrangle, California 7.5 minute series. 1953 Photorevised 1980.

FIGURE 1: SITE VICINITY MAP

MOBIL OIL CORPORATION
FORMER MOBIL OIL SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE PROJECT NO. 30-095



APPROXIMATE SCALE IN FEET

LEGEND:

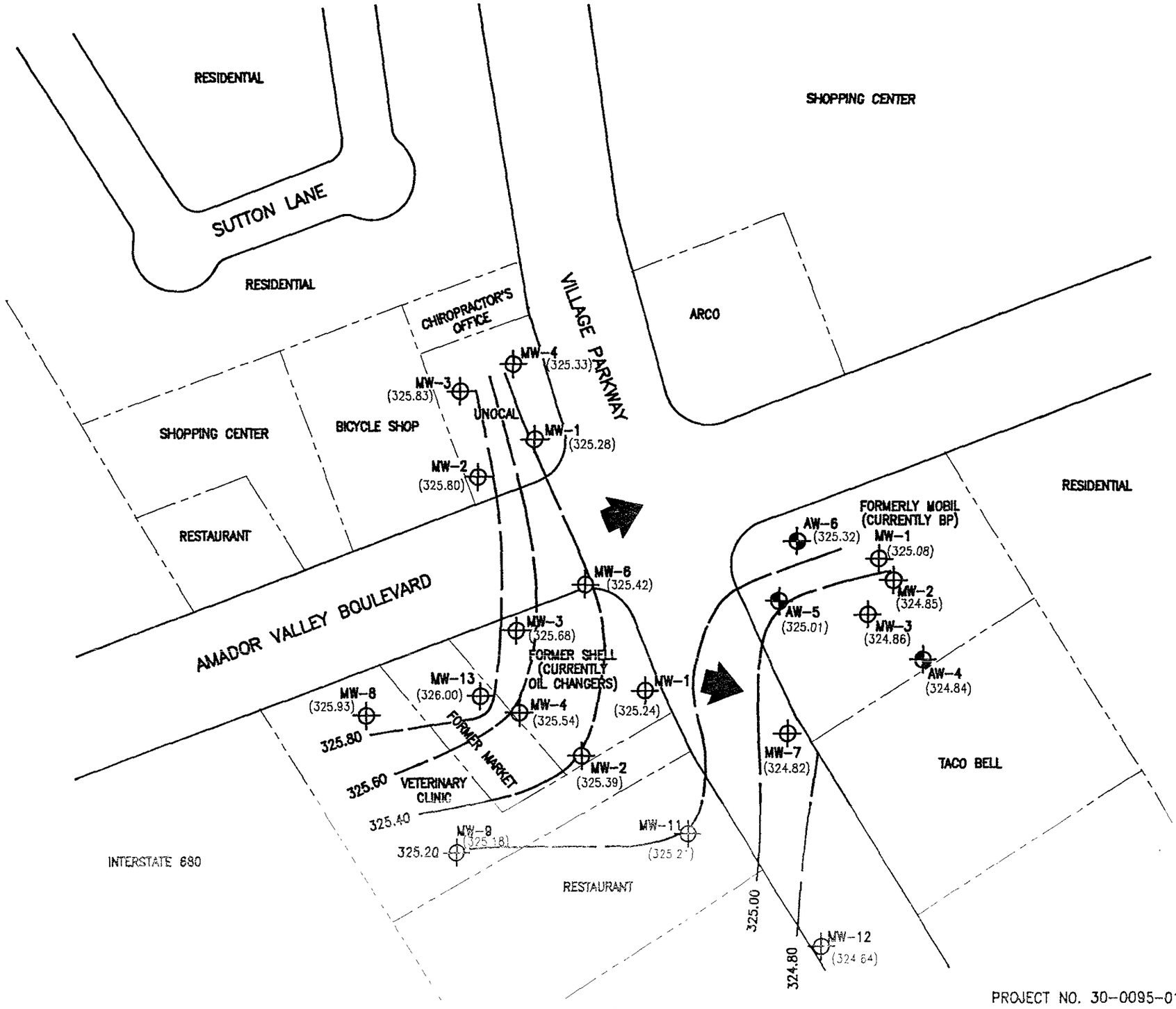
- MONITORING WELL
- SOIL BORING

PROJECT NO. 30-0095-01

FIGURE 2: SITE PLAN

FORMER MOBIL OIL
SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE
1000 Burnett Ave. Ste. 140
Concord, California



N

0 50 100

APPROXIMATE SCALE IN FEET

LEGEND:

- GROUND WATER MONITORING WELL INSTALLED BY ALTON GEOSCIENCE
- GROUND WATER MONITORING WELL INSTALLED BY OTHERS
- (324.84) GROUND WATER ELEVATION
- —325.60— GROUND WATER ELEVATION CONTOUR LINE
- GENERAL DIRECTION OF GROUND WATER GRADIENT

FIGURE 3: GROUND WATER ELEVATION CONTOUR MAP
(NOVEMBER 13, 1991)

FORMER MOBIL OIL
SERVICE STATION 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA

ALTON GEOSCIENCE
1000 Burnett Ave. Ste. 140
Concord, California

TABLE 1

SURVEY AND WATER LEVEL MONITORING DATA

Mobil Oil Corporation
Former Mobil Service Station 04-KNK
7197 Village Parkway
Dublin, California

Elevation and Depth Measurements in Feet
Above Mean Sea Level

Concentration in Parts per Billions

Well Number	Date of Sampling	Top of Casing Elevation	Depth to Water Level	Water Level Elevation	TPH-G	B	T	E	X	TPH-D	TOG	HVOC
MW-1	10/12/90	335.17	9.92	325.25	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND
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	--	--	--
MW-1	12/11/90	335.17	9.97	325.20	--	--	--	--	--	--	--	--
MW-1	02/15/91	335.17	9.89	325.28	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	50*	ND<5,000	41**
MW-1	05/14/91	335.17	8.43	326.74	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	7,500	ND
MW-1	08/23/91	335.17	9.98	325.19	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
MW-1	11/13/91	335.17	10.09	325.08	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
MW-2	10/12/90	334.58	9.60	324.98	93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND
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	--	--	--
MW-2	12/11/90	334.58	9.47	325.11	--	--	--	--	--	--	--	--
MW-2	02/15/91	334.58	9.28	325.30	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	60*	ND<5,000	45**
MW-2	05/14/91	334.58	7.74	326.84	130*	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	6,000	ND
MW-2	08/23/91	334.58	9.81	324.77	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
MW-2	11/13/91	334.58	9.73	324.85	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
MW-3	10/12/90	335.13	10.08	325.05	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND
MW-3	11/15/90	335.13	10.12	325.01	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
MW-3	12/11/90	335.13	9.92	325.21	--	--	--	--	--	--	--	--
MW-3	02/15/90	335.13	9.84	325.29	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
MW-3	05/14/91	335.13	8.40	326.73	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
MW-3	08/23/91	335.13	10.27	324.86	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
MW-3	11/13/91	335.13	10.27	324.86	ND<30	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
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	--	--	--
AW-4	12/11/90	333.41	9.19	324.22	--	--	--	--	--	--	--	--
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	--	--	--
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	--	--	--
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	--	--	--
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	--	--	--

TABLE 1

SURVEY AND WATER LEVEL MONITORING DATA

Mobil Oil Corporation
Former Mobil Service Station 04-KNK
7197 Village Parkway
Dublin, California

Elevation and Depth Measurements in Feet
Above Mean Sea Level

Concentration in Parts per Billions

Well Number	Date of Sampling	Top of Casing Elevation	Depth to Water Level	Water Level Elevation	TPH-G	B	T	E	X	TPH-D	TOG	HVOC
AW-5	11/15/90	334.81	9.67	325.14	ND<50	1.3	ND<0.5	ND<0.5	1.0	--	--	--
AW-5	12/11/90	334.81	9.44	325.37	--	--	--	--	--	--	--	--
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	--	--	--
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	--	--	--
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	--	--	--
AW-5	11/13/91	334.81	9.80	325.01	100	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--
AW-6	11/15/90	334.90	9.58	325.32	230	25	ND<0.5	ND<0.5	0.8	--	--	--
AW-6	12/11/90	334.90	9.58	325.32	--	--	--	--	--	--	--	--
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	--	--	--
AW-6	05/14/91	334.90	8.38	326.52	90	2	ND<0.3	ND<0.3	ND<0.3	--	--	--
AW-6	08/23/91	334.90	9.61	325.29	57	ND<0.5	0.7	1.3	4.6	--	--	--
AW-6	11/13/91	334.90	9.58	325.32	200	ND<0.3	ND<0.3	ND<0.3	0.94	--	--	--

TPH-G :Total Petroleum Hydrocarbons as Gasoline
B :Benzene
T :Toluene
E :Ethylbenzene
X :Xylenes
TPH-D :Total Petroleum Hydrocarbons as Diesel

TOG :Total Oil and Grease
HVOC :Halogenated Volatile Organic Compounds
* :Typical chromographic pattern not present.
** :Methylene Chloride
--- :Not Analyzed
ND :Not detected above reported detection limit.
SEQ :Sequoia Analytical Lab

APPENDIX A

WATER SAMPLING FORMS

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # MW-1 Project # 30-0095-01 Location Dublin Date 11/13/91

Sampling Team BB Sampling Method: Bailer ✓ Pump ___

Type of Pump or Bailer Used Disposable

Decon Method:
Triple rinsed w/Alconox and Deionized Water ✓ or Steam Cleaned ___.

Well Data:
Depth to Water 10.09 ft
Total Well Depth 26.68 ft
Water Col. Height 16.59 ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column 2.6
Purge Factor 3
Total Vol. to Purge 7.9

ST 11:44

Chemical Data: X1000

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
75.0	8.56	7.37	11:46	CLEAR	1.58
72.8	8.53	7.24	11:47	" "	3.16
71.5	8.59	7.26	11:49	" "	4.74
70.3	7.79	7.13	11:52	" "	6.32
70.3	8.73	6.91	11:54	" "	7.9

Sample 2:00 Actual Volume Purged 8.4

Comments:

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

ell # MW-2 Project # 30-008-01 Location Dublin Date 11/13/91

ampling Team DB Sampling Method: Bailer ✓ Pump ___
ype of Pump or Bailer Used Disposable

econ Method:
riple rinsed w/Alconox and Deionized Water ✓ or Steam Cleaned ___.

ell Data:
epth to Water 9.23 ft
otal Well Depth 25.45 ft
ater Col. Height 15.72 ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column 2.5
Purge Factor 5
Total Vol. to Purge 2.5

ST 12:00

hemical Data: X1000

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
68.9	9.67	7.66	12:03	CLEAR	1.5
68.8	9.21	7.47	12:05	" "	3
68.3	9.26	7.43	12:07	" "	4.5
68.4	9.77	7.37	12:10	" "	6
68.2	10.06	7.49	12:12	" "	7.5
			Sample 2:15	Actual Volume Purged	8

mments:

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

ell # MW-3 Project # 30-6095-01 Location Dublin Date 1/13/95

ampling Team DB Sampling Method: Bailer ✓ Pump ___

ype of Pump or Bailer Used Disposable

econ Method:
riple rinsed w/Alconox and Deionized Water ✓ or Steam Cleaned ___.

ell Data:
epth to Water 10.27 ft
otal Well Depth 25.30 ft
ater Col. Height 15.03 ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column 2.4
Purge Factor 3
Total Vol. to Purge 7.2

ST 12:20

hemical Data: X1000

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
70.8	9.53	7.70	12:23	CLEAR	1.44
70.1	9.28	7.41	12:26	" "	2.88
70.4	9.40	7.33	12:28	" "	4.32
70.5	9.47	7.43	12:30	" "	5.76
70.3	9.94	7.49	12:33	" "	7.2

Sample at 2:30 Actual Volume Purged 7.7

uments:

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # AW-4 Project # 30-0055-01 Location Dublin Date 11/13/90

Sampling Team DB Sampling Method: Bailer ✓ Pump ___

Type of Pump or Bailer Used Disposable

Decon Method:
Triple rinsed w/Alconox and Deionized Water ✓ or Steam Cleaned ___.

Well Data:
Depth to Water 8.57 ft
Total Well Depth 24.10 ft
Water Col. Height 15.53 ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column 16.5
Purge Factor 3
Total Vol. to Purge 49.7

ST 12:39

Chemical Data: X 1000

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
66.7	5.50	8.10	12:45	CLEAR	9.94
65.5	5.39	7.95	12:49	"	19.88
64.9	5.43	7.79	12:52	"	29.82
65.2	7.83	7.70	12:56	"	39.76
65.3	8.05	7.61	12:59	"	49.7
			2:45	Actual Volume Purged	50.2

Comments:

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # AW-5 Project # 30-695-01 Location Dublin Date 11/13/91

Sampling Team DB Sampling Method: Bailer ✓ Pump ___

Type of Pump or Bailer Used Disposable

Decon Method:
Triple rinsed w/Alconox and Deionized Water ✓ or Steam Cleaned ___.

Well Data:
Depth to Water 9.80 ft
Total Well Depth 32.94 ft
Water Col. Height 23.14 ft

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column 15
Purge Factor 3
Total Vol. to Purge 45

ST 1:05

Chemical Data: X Lood

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
76.4	2.97	8.51	1:08	CLEAR	9
73.3	2.20	8.14	1:11	" "	18
71.7	2.43	7.81	1:15	" "	27
69.2	2.13	7.96	1:43	" "	36
68.6	2.26	7.94	1:46	" "	45
			2:53	Actual Volume Purged	45.5

Comments: well went Dry at 27.41' on AW-6
BACK ON WELL AT 1:40

ALTON GEOSCIENCE

Ground Water Monitoring Well Development
or Sampling Field Survey Forms

Well # MW-6 Project # 30-6095-01 Location Dublin Date 4/13/91

Sampling Team DB Sampling Method: Bailer ✓ Pump ___

Type of Pump or Bailer Used Disposable

Recon Method:
Triple rinsed w/Alconox and Deionized Water ✓ or Steam Cleaned ___.

Well Data:
Depth to Water 9.58 ft
Total Well Depth 16.58 ft
Water Col. Height 7 ft

ST 1:23

Conversion	
diam.	gal/ft
2 in.	x 0.16
3 in.	x 0.36
4 in.	x 0.65
6 in.	x 1.44

Vol. of Water Column 4.5
Purge Factor 3
Total Vol. to Purge 13.6

Chemical Data: X1000

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
71.1	2.28	8.02	1:25	CLEAR	2.72
73.0	2.33	7.87	1:27	" "	5.44
73.4	2.22	7.91	1:30	" "	8.16
74.1	2.06	7.94	1:33	" "	10.88
74.1	2.00	7.98	1:36	" "	13.6
			3:15	Actual Volume Purged	14.1

Comments:

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience	Client Project ID:	Mobil#10-KNK/7197 Village Pkwy., Dublin	Sampled: Nov 13, 1991
1000 Burnett Avenue, Suite 140	Matrix Descript:	Water	Received: Nov 14, 1991
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Analyzed: Nov 15, 1991
Attention: Brady Nagle	First Sample #:	111-0616	Reported: Nov 21, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS with BTEX DISTINCTION (EPA 8015/8020)

Sample Number	Sample Description	Low/Medium B.P. Hydrocarbons µg/L (ppb)	Benzene µg/L (ppb)	Toluene µg/L (ppb)	Ethyl Benzene µg/L (ppb)	Xylenes µg/L (ppb)
111-0616	MW-1	N.D.	N.D.	N.D.	N.D.	N.D.
111-0617	MW-2	N.D.	N.D.	N.D.	N.D.	N.D.
111-0618	MW-3	N.D.	N.D.	N.D.	N.D.	N.D.
111-0619	AW-4	N.D.	N.D.	N.D.	N.D.	N.D.
111-0620	AW-5	100	N.D.	N.D.	N.D.	N.D.
111-0621	AW-6	200	N.D.	N.D.	N.D.	0.94
Detection Limits:		30	0.30	0.30	0.30	0.30

Low to Medium Boiling Point Hydrocarbons are quantitated against a gasoline standard
Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

Please Note.
The above samples do not appear to contain gasoline

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience	Client Project ID:	Mobil#10-KNK/7197 Village Pkwy., Dublin	Sampled:	Nov 13, 1991
1000 Burnett Avenue, Suite 140	Matrix Descript:	Water	Received:	Nov 14, 1991
Concord, CA 94520	Analysis Method:	EPA 3510/8015	Extracted:	Nov 15, 1991
Attention: Brady Nagle	First Sample #:	111-0616	Analyzed:	Nov 18, 1991
			Reported:	Nov 21, 1991

TOTAL PETROLEUM FUEL HYDROCARBONS (EPA 8015)

Sample Number	Sample Description	High B.P. Hydrocarbons µg/L (ppb)
111-0616	MW-1	N.D.
111-0617	MW-2	N.D.
111-0618	MW-3	N.D.

Detection Limits:	50

High Boiling Point Hydrocarbons are quantitated against a diesel fuel standard
Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience	Client Project ID:	Mobil#10-KNK/7197 Village Pkwy., Dublin	Sampled:	Nov 13, 1991
1000 Burnett Avenue, Suite 140	Matrix Descript:	Water	Received:	Nov 14, 1991
Concord, CA 94520	Analysis Method:	SM 5520 B&F (Gravimetric)	Extracted:	Nov 15, 1991
Attention: Brady Nagle	First Sample #:	111-0616	Analyzed:	Nov 18, 1991
			Reported:	Nov 21, 1991

TOTAL RECOVERABLE PETROLEUM OIL

Sample Number	Sample Description	Oil & Grease mg/L (ppm)
111-0616	MW-1	N.D.
111-0617	MW-2	N.D.
111-0618	MW-3	N.D.

Detection Limits:	5.0

Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

1110616 ALG <3>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience	Client Project ID:	Mobil# 10-KNK/7197 Village Pkwy., Dublin	Sampled:	Nov 13, 1991
1000 Burnett Avenue, Suite 140	Sample Descript:	Water, MW-1	Received:	Nov 14, 1991
Concord, CA 94520	Analysis Method:	EPA 5030/8010	Analyzed:	Nov 21, 1991
Attention: Brady Nagle	Lab Number:	111-0616	Reported:	Nov 21, 1991

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

Julia R. Malesteln
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience	Client Project ID:	Mobil#10-KNK/7197 Village Pkwy., Dublin	Sampled:	Nov 13, 1991
1000 Burnett Avenue, Suite 140	Sample Descript:	Water, MW-2	Received:	Nov 14, 1991
Concord, CA 94520	Analysis Method:	EPA 5030/8010	Analyzed:	Nov 21, 1991
Attention: Brady Nagle	Lab Number:	111-0617	Reported:	Nov 21, 1991

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

1110616 ALG <5>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience	Client Project ID:	Mobil#10-KNK/7197 Village Pkwy., Dublin	Sampled:	Nov 13, 1991
1000 Burnett Avenue, Suite 140	Sample Descript:	Water, MW-3	Received:	Nov 14, 1991
Concord, CA 94520	Analysis Method:	EPA 5030/8010	Analyzed:	Nov 21, 1991
Attention: Brady Nagle	Lab Number:	111-0618	Reported:	Nov 21, 1991

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	1.0	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	1.0	N.D.
trans-1,3-Dichloropropene	1.0	N.D.
Methylene chloride	2.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	1.0	N.D.
Vinyl chloride	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection

SEQUOIA ANALYTICAL

Julia B. Nakeltein
Project Manager

1110616 ALG <6>

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
1000 Burnett Avenue, Suite 140
Concord, CA 94520
Attention: Brady Nagle

Client Project ID: Mobil#10-KNK/7197 Village Pkwy., Dublin

QC Sample Group: 1110616-9

Reported: Nov 21, 1991

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl-Benzene	Xylenes	Diesel	Oil and Grease
Method:	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA 8015/8020	EPA8015	SM5520
Analyst:	R.H./J.F.	R.H./J.F.	R.H./J.F.	R.H./J.F.	A. Tuzon	D. Newcomb
Reporting Units:	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L
Date Analyzed:	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991	Nov 15, 1991	Nov 18, 1991	Nov 15, 1991
QC Sample #:	Matrix Blank	Matrix Blank	Matrix Blank	Matrix Blank	BLK111591	Matrix Blank
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Spike Conc. Added:	20	20	20	60	300	100
Conc. Matrix Spike:	17	16	16	53	250	93
Matrix Spike % Recovery:	85	80	80	88	83	93
Conc. Matrix Spike Dup.:	16	15	15	52	230	92
Matrix Spike Duplicate % Recovery:	80	75	75	87	77	92
Relative % Difference:	6.0	6.4	6.4	1.2	9.7	1.0

Laboratory blank contained the following analytes None Detected

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

$$\%\ \text{Recovery} = \frac{\text{Conc. of M.S. - Conc. of Sample}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference} = \frac{\text{Conc. of M.S. - Conc. of M.S.D.}}{(\text{Conc. of M.S. + Conc. of M.S.D.}) / 2} \times 100$$

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

Alton Geoscience
1000 Burnett Avenue, Suite 140
Concord, CA 94520
Attention: Brady Nagle

Client Project ID: Mobil#10-KNK/7197 Village Pkwy., Dublin
Method (units): EPA 8010 (µg/L purged)
Analyst(s): M. Nguyen
QC Sample #: BLK112191

Q.C. Sample Dates
Analyzed: Nov 21, 1991
Reported: Nov 21, 1991

QUALITY CONTROL DATA REPORT

Analyte	Sample Conc.	Spike Conc. Added	Conc. Matrix Spike	Matrix Spike % Recovery	Conc. Matrix Spike Duplicate	Matrix Spike Duplicate % Recovery	Relative % Difference
1,1-Dichloro-ethene	N.D.	10	10	100	12	120	18
Trichloroethene	N.D.	10	12	120	13	130	8.0
Benzene	N.D.	10	10	100	11	110	9.5
Toluene	N.D.	10	11	110	11	110	0
Chlorobenzene	N.D.	10	11	110	11	110	0

SEQUOIA ANALYTICAL

Julia R. Malerstein
Project Manager

% Recovery	$\frac{\text{Conc of M S - Conc of Sample}}{\text{Spike Conc Added}}$	x 100
Relative % Difference	$\frac{\text{Conc of M.S. - Conc of M S D.}}{\text{(Conc of M S. + Conc of M S D.) / 2}}$	x 100

Mobil Chain of Custody

SEQUOIA ANALYTICAL

Redwood City: (415) 364-9600
Concord: (510) 686-9600
Sacramento: (916) 921-9600

Consulting Firm Name: Alton Geoscience	Site SS #: 10-KNK	Phase of Work:
Address: 1000 Burnett Ave #140	Mobil Site Address: 7197 Village Pkwy Dublin	☐ A. Emrg. Response
City: Concord State: CA Zip Code: 94520	Mobil Engineer: Ed Hoepker	☐ B. Site Assessment
Telephone: (510) 682 1582 FAX #: 682-8921	Consultant Project #: 30-0095-01	☐ C. Remediation
Project Contact: Brady Nagle Sampled by:	Sequoia's Work Order Release #:	☒ D. Monitoring
		☐ E. OGC/Claims

Turnaround Time: ☐ Standard TAT (5 - 10 Working Days)
☐ Other _____

Analyses Requested

Client Sample I.D.	Date/Time Sampled	Matrix Description	# of Containers	Sequoia's Sample #	TPH Gas/BTEX	TPH Diesel	TRPH by I.R. EPA 418.1	Oil & Grease EPA 413.2 5520	HVOC EPA 8010				Comments
1. MW-1	11/13/91 2:05		10		X	X		X	X				110616AJ
2. MW-2	11/13/91 2:15		10										617AJ
3. MW-3	11/13/91 2:30		12										618AL
4. AW-4	11/13/91 2:45		3										619AC
5. AW-5	11/13/91 2:53		3										620
6. AW-6	11/13/91 3:15		3										621
7.													
8.													
9.													
10.			41										

Relinquished By:	Date: 11/13/91	Time: 9:58	Received By: Brady Nagle	Date: 11/13/91	Time: 5:00
Relinquished By: Brady Nagle	Date: 11/14/91	Time: 10:10	Received By: Kevin VanLandingham	Date: 11-14-91	Time: 1010AM
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Method of Shipment

Page ___ of ___