Mobil Oil Corporation

3800 WEST ALAMEDA AVENUE, SUITE 700
BURBANK, CALIFORNIA 91505-4331

91 JAN 28 PM 12:06

January 21, 1991

Mr. ~~Gil Wistar~~ (RA)
Alameda County
Health Care Services
80 Swan Way, Room 200
Oakland, CA 94621

MOBIL OIL CORPORATION
FORMER S/S 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA
BP S/S 11116

Dear Mr. Wistar:

Enclosed for your review is the Quarterly Status Report, dated January 16, 1991, for subject location. This report covers work performed from October through December 1990.

Our consultant has completed the ground water survey. Three monitoring wells/soil borings were installed to define the extent of the soil and groundwater contamination. This report will follow under separate cover.

If you have any questions, please feel free to contact me at (818) 953-2519.

Sincerely,

David M. Noe

David M. Noe, P.E.
GW Projects Engineer

DMN/st
enclosure

cc: Mr. Peter DeSantis (w/ enclosure)
BP Oil Company
2868 Prospect Park Drive, Suite 360
Rancho Cordova, CA 95670-6020

Mr. Lester Feldman (w/ enclosure)
RWQCB -S. F. Bay Region
1800 Harrison Street, Room 700
Oakland, CA 94607

E. M. Hoepker - Benicia (w/o)

MOBIL OIL CORPORATION

ENVIRONMENTAL PROJECT
QUARTERLY STATUS REPORT

Date Report Submitted: January 16, 1991
Quarter Ending: December 1990

MOBIL Station No.: 10-KNK
Address: 7197 Village Parkway, Dublin

County: Alameda County

MOBIL Contact: Ed Hoepker Tel. No.: (707) 745-6160

Background:

On December 7, 1988, a 280-gallon waste oil tank was removed from the site. Analysis of soil samples collected from the tank cavity following removal indicated that hydrocarbon contamination was present below the tank cavity. Additional soil samples were collected on December 15 and 20, 1988 within the limits of the excavation area of contaminated soil.

On August 29, 1989, three monitoring wells were installed by Kaprealian Engineering, Inc. Analysis of soil samples collected during well installation detected up to 4,000 parts per million (ppm) of total oil and grease (TOG), up to 36 ppm of total petroleum hydrocarbons (TPH) as gasoline, and up to 17 ppm of TPH as diesel. Sampling and analysis of water from the monitoring wells indicated detectable concentrations of 6,700 parts per billion (ppb) of TOG and 140 ppb of TPH as diesel in MW-1. The water sample from MW-2 had levels of 8,100 ppb of TOG only with no other hydrocarbon compounds detected. The sample from MW-3 contained 7,000 ppb of TOG and 110 ppb of TPH as gasoline.

Ground water gradient and flow direction were determined from measurements taken on September 5, 1989 and December 29, 1989 using depth to water and wellhead elevation information. It was determined that the shallow ground water flow direction is towards the northwest, which indicates that all of the wells were installed up-gradient or cross-gradient of the former waste oil tank.

The Alameda County Department of Environmental Health, in their letter dated November 27, 1989, requested Mobil Oil to address their concerns and submit a plan of action, which was prepared by Alton Geoscience and dated January 15, 1990. A ground water monitoring well needs to be installed in a Mobil

verified down-gradient location from the former waste oil tank after the flow direction of the shallow ground water has been confirmed. Furthermore, the concentration of TPH as gasoline detected in one of the ground water samples needs to be investigated. The extent of soil contamination above 1000 ppm in the vicinity of the former waste oil tank would also need to be defined and remediated.

In August 1990, Alton Geoscience was contracted by Mobil to perform a site investigation. A review of Regional Water Quality Control Board records show that there are two other fuel release cases at this intersection being actively investigated.

Summary of this Quarter's Activities:

A qualitative shallow ground water survey was performed by installing 8 temporary wells, and collecting water samples. In addition, 3 permanent ground water monitoring wells were installed. A draft report presenting the findings and conclusions from the investigation was submitted to Mobil Oil for review in January 1991.

Result of Quarterly Monitoring:

Laboratory analysis of soil and ground water samples indicate low levels of petroleum hydrocarbon constituents.

Proposed Activity or Work for Next Quarter:

Activity	Estimated Completion Date
Submit proposal for quarterly ground water sampling, analysis and reporting	February 1, 1991

Mobil Oil Corporation

3800 WEST ALAMEDA AVENUE, SUITE 700
BURBANK, CALIFORNIA 91505-4331

March 25, 1991

Mr. Ravi Arulanantham
Alameda County
Health Care Services
80 Swan Way, Room 200
Oakland, CA 94621

MOBIL OIL CORPORATION
FORMER S/S 10-KNK
7197 VILLAGE PARKWAY
DUBLIN, CALIFORNIA
BP S/S 11116

Dear Mr. Arulanantham:

Enclosed for your review is the Quarterly Status Report, dated January 16, 1991, for subject location. This report covers work performed from October through December 1990.

No dissolved-phase BTEX or TPH ground water contamination were detected during this sampling. The dissolved phase plume therefore remains defined on site.

We will continue the sampling program and propose that coordinated sampling be conducted with adjacent gas stations to accurately determine the regional ground water gradient and the extent of the contamination.

If you have any questions, please feel free to contact me at (818) 953-2519.

Sincerely,

David M. Noe

David M. Noe, P.E.
GW Projects Engineer

DMN/st
enclosure

cc: Mr. Rico Duazo (w/ enclosure)
RWQCB - S. F. Bay Region
1800 Harrison Street, Room 700
Oakland, CA 94607

Mr. Peter DeSantis (w/ enclosure)
BP Oil Company
2868 Prospect Park Drive, Suite 360
Rancho Cordova, CA 95670-6020

911

cc: Mr. Jack Brastad (w/o enclosure)
Shell Oil Company
1150 Bayhill Drive
San Bruno, CA 94066

Mr. Rick Sisk (w/o enclosure)
Unocal Corporation
2000 Crow Canyon Place, Suite 400
San Ramon, CA 94583

Mr. Kyle Christie (w/o enclosure)
Arco
P. O. Box 5811
San Mateo, CA 94403

Mr. Brady Nagel (w/o enclosure)
Alton Geoscience
1000 Burnett Avenue, Suite 140
Concord, CA 94520

E. M. Hoepker - Benicia (w/ enclosure)

QUARTERLY GROUND WATER
MONITORING AND SAMPLING REPORT

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

Project No. 30-095

Prepared by:

Brady Nagle
Project Geologist

Reviewed by:

Al Sevilla, P.E.
Division General Manager
R.C.E. 26392

3/31/92

March 12, 1991

QUARTERLY GROUND WATER MONITORING AND SAMPLING REPORT
for
Mobil Oil Corporation
Former Mobil Oil Service Station 10-KNK
7197 Village Parkway
Dublin, California

INTRODUCTION

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

PROJECT BACKGROUND

On December 7, 1988, a 280-gallon, single-walled, steel waste oil tank was removed from the site. Several holes up to 3/8-inch in diameter were observed in the tank. Analysis of compliance soil samples collected from below the former waste oil tank detected up to 550 parts per million (ppm) total oil and grease (TOG).

Between December 15 and 20, 1988, additional soil was excavated from the former waste oil tank cavity. Analysis of soil samples collected from the limits of excavation during this time detected up to 79 ppm of TOG (Kaprealian, 1989a).

In compliance with regulatory requirements, three monitoring wells (MW-1, MW-2, and MW-3) were installed at the site to assess the extent of hydrocarbons in the soil and/or ground water onsite. Analysis of the soil samples collected during monitoring well installation detected up to 4,000 ppm of TOG, 36 ppm of total petroleum hydrocarbons as diesel (TPH-D), and 17 ppm of total petroleum hydrocarbons as gasoline (TPH-G). Initial analysis of ground water samples from these wells detected up to 140 parts per billion (ppb) of TPH-D, 110 ppb of TPH-G, and 8,100 ppb of TOG (Kaprealian, 1989b).

In January 1991, Alton Geoscience completed a site investigation to define the extent of hydrocarbons in ground water at the site. After conducting a qualitative shallow ground water survey, three additional monitoring wells (AW-4, AW-5, and AW-6) were installed onsite, and all six wells onsite were monitored and sampled (Alton Geoscience, 1991).

FIELD PROCEDURES

On February 15, 1991, Alton Geoscience, Inc. monitored and sampled Monitoring Wells MW-1, MW-2, MW-3, AW-4, AW-5, and AW-6. All ground water monitoring and sampling were performed by Alton Geoscience, Inc. in accordance with the requirements and procedures of the RWQCB.

Prior to purging and sampling, the ground water level in each well was measured from a permanent mark on the top of the casing to the nearest 0.01 foot using an electronic sounder. The top of the monitoring well casings were surveyed in reference to the City of Dublin monument in the intersection of Village Parkway and Almador Valley Boulevard, with an elevation of 335.92 feet above mean sea level. 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 survey data and relative ground water elevation measurements at the site are presented in Table 1, while the ground water elevation contour map is shown in Figure 3.

Prior to sample collection, each well was purged of four casing volumes or until pH, temperature, and conductivity stabilized. The ground water samples were collected using a clean hand bailer and observed for the presence of free-product or sheen. Ground water samples for laboratory analysis were collected by lowering a clean 2-inch-diameter, bottom-fill, PVC bailer to just below the water level in the well. The samples were then carefully transferred from the bailer to the appropriate containers. All samples containers 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 Superior Analytical Laboratories, Inc. of Martinez, California for analysis following proper sample preservation and chain of custody procedures. The water sampling field survey forms are presented in Appendix A and the laboratory report and chain of custody forms are presented in Appendix B.

ANALYTICAL METHODS

Ground water samples collected from all six wells were analyzed for TPH-G using EPA Methods 5030/8015 and benzene, toluene, ethylbenzene, and total xylenes (BTEX) using EPA Methods 5030/8020. In addition, the ground water samples from Monitoring Wells MW-1, MW-2, and MW-3 were analyzed for total oil and grease (TOG), total petroleum hydrocarbons as diesel (TPH-D), and halogenated volatile organic compounds

(HVOC) using EPA Method 8010. The results of the ground water sample analyses are presented in Table 2. Isoconcentration contour maps were not developed for TPH-G and benzene since there were no detectable concentrations of these constituents in the ground water samples collected during this sampling event.

DISCUSSION OF RESULTS

The findings and conclusions from the February 1991 ground water sampling event are summarized below:

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

- The ground water flow direction at the site for this quarter is predominantly to the south-southwest, with a hydraulic gradient of approximately 0.008 foot per foot. These results are not consistent with the results of the November 1990 monitoring event, whereby the calculated ground water flow direction was in a predominantly southeast direction with a gradient of 0.004 foot per foot.

- TOG, TPH-G, and BTEX constituents were not detected above reported detection limits in ground water samples from any of the onsite monitoring wells.

- Low concentrations of TPH-D were detected in the samples from two of the three monitoring wells (MW-1 and MW-2) installed near the replaced waste oil tank. The typical diesel-range pattern was not present in the chromatograph for these samples. Discussions with Superior Analytical Laboratory revealed that the chromatographic pattern is indicative of a degraded diesel or stoddard (Superior Analytical, 1991).

- Ground water samples from Monitoring Wells MW-1 and MW-2 also had detectable concentrations of methylene chloride. Methylene chloride is a common degreasing and cleaning agent (The Merck Index, 1983).

- No TPH-D or HVOCs were detected above method detection limits in the ground water sample from Monitoring Well MW-3, which is located in the calculated downgradient direction from the replaced waste oil tank.

REFERENCES

Alton Geoscience, Inc., Site Investigation Report, January 4, 1991.

California Regional Water Quality Control Board, Regional Board Staff Recommendations for Initial Evaluation and Investigation of Underground Tanks, July 1, 1988 and revised April 3, 1989.

Kaprealian Engineering, Inc., Soil Sampling Report, January 11, 1989a.

Kaprealian Engineering, Inc., Preliminary Ground Water Investigation, October 17, 1989b.

The Merck Index, Merck and Co., Inc., Rahway, New Jersey, 1983.

Superior Analytical Laboratory, Telephone conversation with Robin Paulson regarding the results of diesel analysis on ground water samples from Monitoring Wells MW-1 and MW-2, March 1, 1991.

TABLE 1

SURVEY AND WATER LEVEL MONITORING DATA

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

Elevation and Depth Measurements in feet

Well Number	Date of Measurement	Top of Casing Elevation[a]	Depth to Water Level	Water Level Elevation[b]
MW-1	10/12/90	335.19	9.92	325.27
MW-1	11/15/90		10.16	325.03
MW-1	12/11/90		9.97	325.22
MW-1	02/15/91		9.89	325.30
MW-2	10/12/90	334.60	9.60	325.00
MW-2	11/15/90		9.68	324.92
MW-2	12/11/90		9.47	325.13
MW-2	02/15/91		9.28	325.32
MW-3	10/12/90	335.15	10.08	325.07
MW-3	11/15/90		10.12	325.03
MW-3	12/11/90		9.92	325.23
MW-3	02/15/90		9.84	325.31
AW-4	11/15/90	333.44	8.51	324.93
AW-4	12/11/90		9.19	324.25
AW-4	02/15/91		8.32	325.12
AW-5	11/15/90	334.81	9.67	325.14
AW-5	12/11/90		9.44	325.37
AW-5	02/15/91		10.00	324.81
AW-6	11/15/90	334.93	9.58	325.35
AW-6	12/11/90		9.56	325.37
AW-6	02/15/91		9.66	325.27

[a]Top of casing elevations for all wells was surveyed relative to the City of Dublin monument in the intersection of Village Parkway and Amador Valley Boulevard, with an elevation of 335.92 feet above mean sea level (NGVD-1929).

[b]Water level elevation in feet above mean sea level

TABLE 2

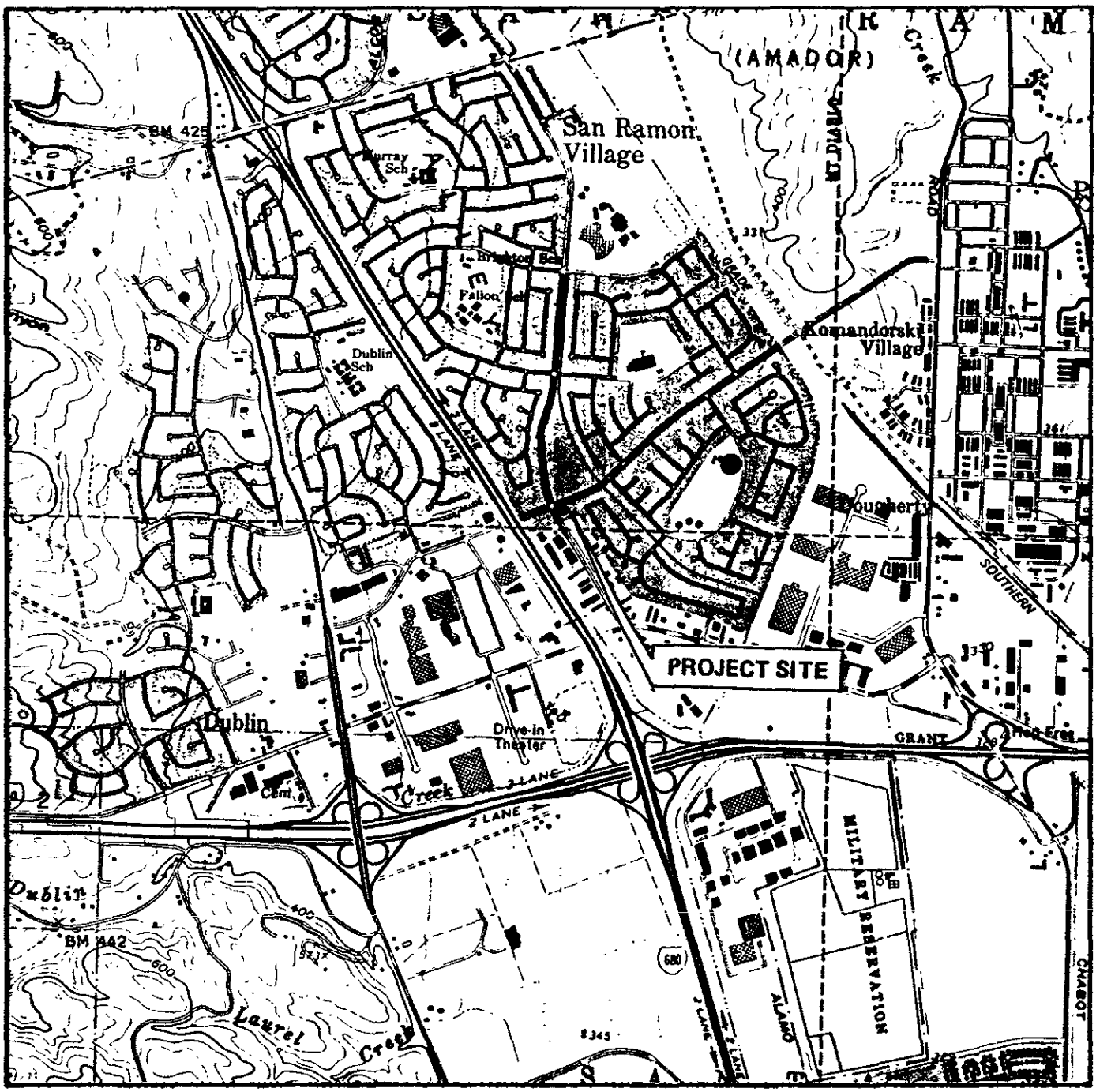
SUMMARY OF ANALYTICAL RESULTS OF GROUND WATER SAMPLES

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

Concentrations in Parts Per Billion

Well Number	Date of Sampling	TPH[a] as Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH as Diesel	TOG[b]	Methylene Chloride[c]
MW-1	10/12/90	ND[d]<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND
MW-1	11/15/90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--[e]	--	--
MW-1	02/15/91	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	50[f]	ND<5,000	41
MW-2	10/12/90	93	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<50	ND<5,000	ND
MW-2	11/15/90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
MW-2	02/15/91	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	60[f]	ND<5,000	45
MW-3	10/12/90	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	76	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
MW-3	02/15/91	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	ND<50	ND<5,000	ND
AW-4	11/15/90	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--	--
AW-4	02/15/91	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--
AW-5	11/15/90	ND<50	1.3	ND<0.5	ND<0.5	1.0	--	--	--
AW-5	02/15/91	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--
AW-6	11/15/90	230	25	ND<0.5	ND<0.5	0.8	--	--	--
AW-6	02/15/91	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--	--

[a]Represents total petroleum hydrocarbons
[b]Represents total oil and grease
[c]Methylene chloride was detected using EPA Method 8010. No other constituents were detected using this method above method detection limits.
[d]Represents not detected above the reported detection limits
[e]Represents not analyzed
[f]Typical diesel chromographic pattern not present



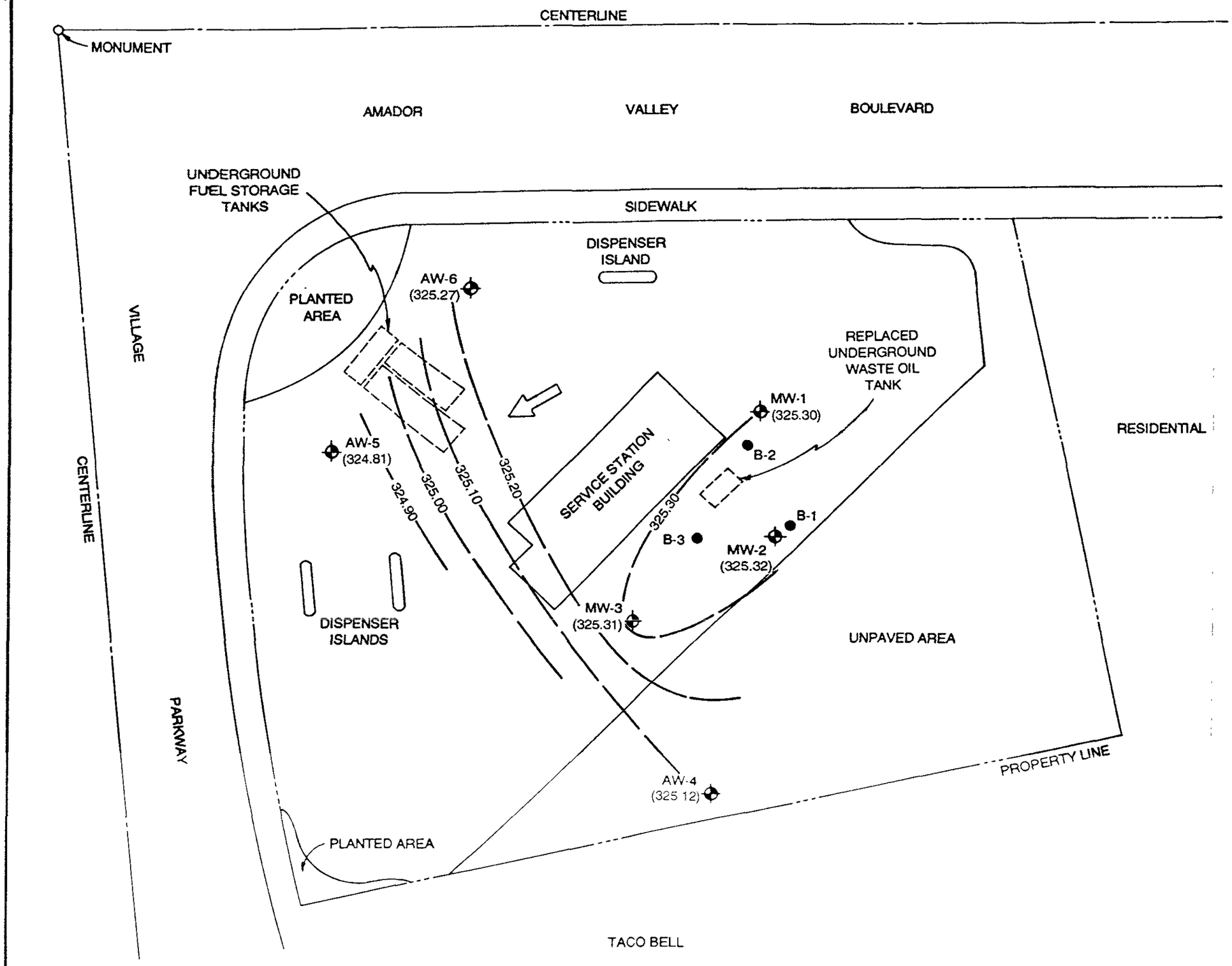
Source: U S Geological Map, Dublin Quadrangle, California 7.5 minute series. 1953 Photorevised 1980

N

0 1000 2000

SCALE IN FEET

FIGURE 1 VICINITY MAP



N

0 15 30

SCALE IN FEET

LEGEND

- GROUND WATER MONITORING WELL
- SOIL BORING
- (325.30) GROUND WATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 325.00 GROUND WATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 0.1 FEET)
- ESTIMATED GROUND WATER FLOW DIRECTION

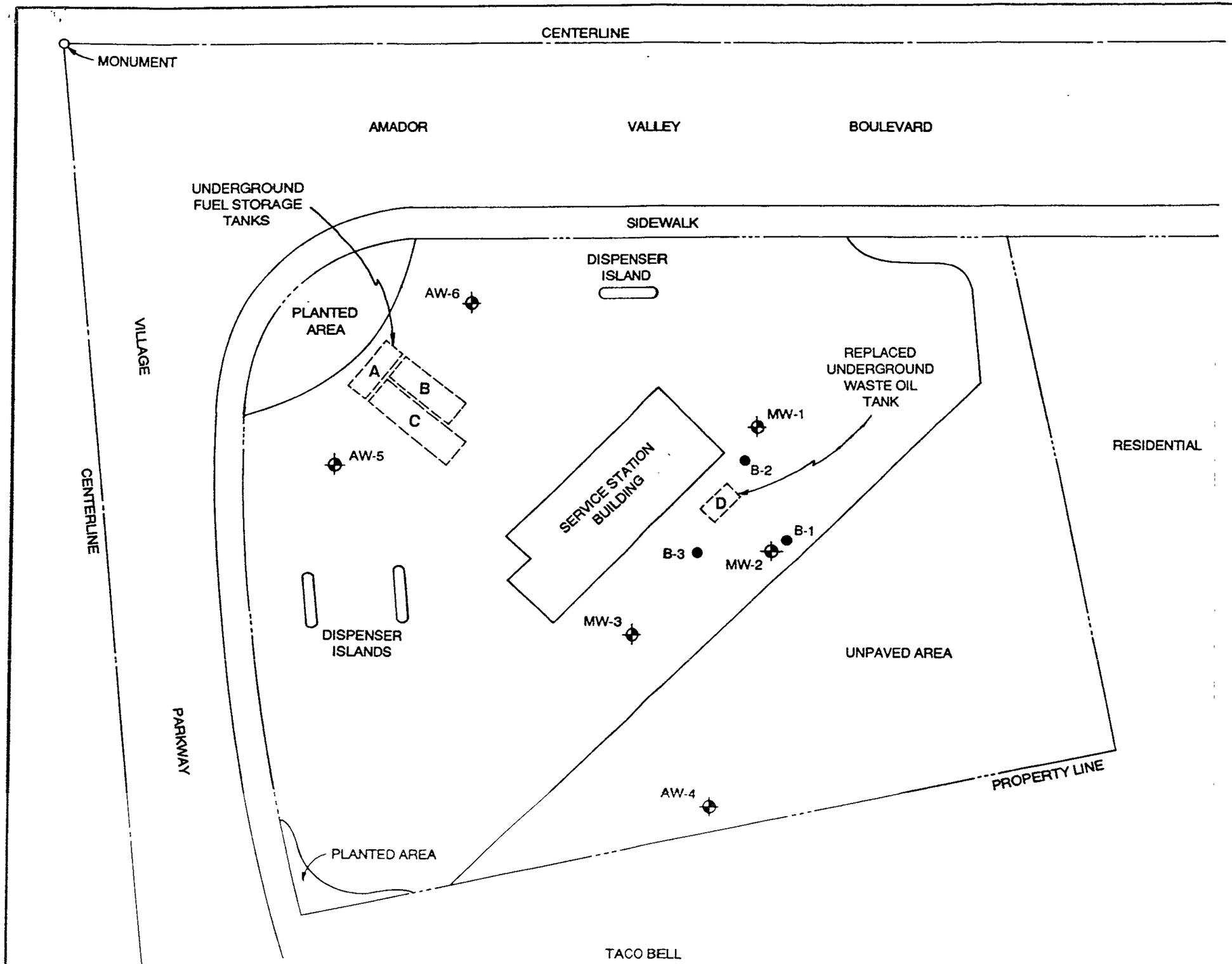
FIGURE 3

GROUND WATER ELEVATION CONTOUR MAP
(FEBRUARY 15, 1991)

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

ALTON GEOSCIENCE PROJECT NO. 30-095

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520



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0 15 30

SCALE IN FEET

LEGEND

- GROUND WATER MONITORING WELL
- SOIL BORING

UNDERGROUND TANK CAPACITIES AND CONTENTS

A: 6,000 GAL. UNLEADED PREMIUM
B: 8,000 GAL. UNLEADED REGULAR
C: 10,000 GAL. LEADED REGULAR
D: 3,000 GAL. WASTE OIL (REPLACEMENT)

FIGURE 2

SITE PLAN

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

ALTON GEOSCIENCE PROJECT NO 30-095

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520

APPENDIX A

WATER SAMPLING FORMS

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # MW-1 PROJECT# 30-095 LOCATION Dublin DATE 2/15/91

SAMPLING TEAM L. Buenvenida SAMPLING METHOD: BAILER X PUMP ___

DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER X
STEAM CLEAN ___

WELL DATA:

DEPTH TO WATER 9.89 ft

TOTAL DEPTH 25.84 ft

HT. WATER COL 15.95 ft

CONVERSION	
diam	gal/ft
2 in	X0.16
3 in	X0.36
4 in	X0.65
6 in	X1.44

Volume of Water Column 2.55 gal

Volumes to Purge X 4 Vol

Total Volume to Purge 10.20 gal

BEGIN 1407

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
62.6	5.44	7.06	1409	Clear	2
60.5	5.16	6.96	1412	Cloudy	4
59.3	5.02	6.85	1414	Cloudy	6
57.8	4.94	6.87	1417	Cloudy	8

Sampled 1425 ACTUAL VOLUME PURGED 10.20 /gal

COMMENTS: Meter X 1000

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # MW-2 PROJECT# 30-095 LOCATION Dublin DATE 2/15/91

SAMPLING TEAM L. Buenvenida SAMPLING METHOD: BAILER x PUMP ___

DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER x
STEAM CLEAN ___

WELL DATA:

DEPTH TO WATER 9.28 ft

TOTAL DEPTH 25.62 ft

HT. WATER COL 16.34 ft

CONVERSION	
diam	gal/ft
2 in	X0.16
3 in	X0.36
4 in	X0.65
6 in	X1.44

Volume of Water Column 2.61 gal

Volumes to Purge X 4 Vol

Total Volume to Purge 10.44 gal

BEGIN 1322

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
60.5	5.94	7.29	1324	Clear	2
59.2	5.98	7.10	1326	Clear	4
58.4	5.91	7.06	1328	Clear	6
58.9	5.78	7.21	1333	Clear	8
58.2	5.70	7.29	1338	Clear	10

Sampled 1356

ACTUAL VOLUME PURGED 10.5 /gal

COMMENTS: Meter X 1000

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # MW-3 PROJECT# 30-095 LOCATION Dublin DATE 2/15/91

SAMPLING TEAM L. Buenvenida SAMPLING METHOD: BAILER X PUMP ___

DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER X
STEAM CLEAN ___

WELL DATA:

DEPTH TO WATER 9.84 ft

TOTAL DEPTH 25.39 ft

HT. WATER COL 15.55 ft

CONVERSION	
diam	gal/ft
(2 in)	X0.16
3 in	X0.36
4 in	X0.65
6 in	X1.44

Volume of Water Column 2.49 gal

Volumes to Purge X 4 Vol

Total Volume to Purge 9.96 gal

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
62.2	5.59	7.03	1203	Cloudy	2
61.2	5.31	6.91	1205	Lt. Grey	4
60.9	5.11	6.94	1207	Lt. Grey	6
57.9	5.25	7.15	1221	Cloudy	8
58.9	5.24	6.90	1221	Cloudy	10

SAMPLED 1250 ACTUAL VOLUME PURGED 10 /gal

COMMENTS: Meter X 1000

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # AW-4 PROJECT# 30-095 LOCATION Dublin DATE 2/15/91

SAMPLING TEAM L. Buenvenida SAMPLING METHOD: BAILER X PUMP ___

DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER X
STEAM CLEAN ___

WELL DATA:

DEPTH TO WATER 8.32 ft

TOTAL DEPTH 34.31 ft

HT. WATER COL 25.89 ft

CONVERSION	
diam	gal/ft
2 in	X0.16
3 in	X0.36
4 in	X0.65
6 in	X1.44

Volume of Water Column 16.83 gal

Volumes to Purge X 4 Vol

Total Volume to Purge 67.32 gal

BEGIN 1551

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
60.2	4.17	7.75	1554	Clear	12
59.6	4.16	7.57	1557	Clear	24
59.6	4.42	7.50	1559	Clear	36
58.4	4.47	7.63	1602	Clear	48
58.2	4.62	7.65	1606	Clear	60

SAMPLED 1612 **ACTUAL VOLUME PURGED** 67.5 /gal

COMMENTS: Meter X 1000

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # AW-5 PROJECT# 30-095 LOCATION Dublin DATE 2/15/91

SAMPLING TEAM L. Buenvenida SAMPLING METHOD: BAILER X PUMP ___

DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER X
STEAM CLEAN ___

WELL DATA:

DEPTH TO WATER 10.00 ft

TOTAL DEPTH 32.07 ft

HT. WATER COL 22.07 ft

CONVERSION	
diam	gal/ft
2 in	X0.16
3 in	X0.36
4 in	X0.65
6 in	X1.44

Volume of Water Column 14.35 gal

Volumes to Purge X 4 Vol

Total Volume to Purge 57.40 gal

BEGIN 1511

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
58.8	1.77	7.66	1513	Clear	10
59.1	1.55	7.51	1516	Clear	20
57.7	2.49	7.79	1523	Clear	30
58.6	3.63	7.74	1527	Clear	40
59.7	3.71	7.73	1531	Clear	50

SAMPLED 1627 **ACTUAL VOLUME PURGED** /gal

COMMENTS: Meter X 1000 - slow producer

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # AW-6 **PROJECT#** 30-095 **LOCATION** Dublin **DATE** 2/15/91

SAMPLING TEAM L. Buenvenida **SAMPLING METHOD: BAILER** X **PUMP** ___

DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER X
STEAM CLEAN ___

WELL DATA:

DEPTH TO WATER 9.66 **ft**

TOTAL DEPTH 16.74 **ft**

HT. WATER COL 7.08 **ft**

CONVERSION	
diam	gal/ft
2 in	X0.16
3 in	X0.36
4 in	X0.65
6 in	X1.44

Volume of Water Column 4.60 **gal**

Volumes to Purge X 4 **Vol**

Total Volume to Purge 18.40 **gal**

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
58.5	2.20	7.55	1447	Clear	3
60.0	2.24	7.74	1449	Clear	6
60.4	2.02	7.72	1451	Clear	9
60.9	1.70	7.72	1453	Clear	12
61.2	1.78	7.70	1455	Clear	15

SAMPLED 1458 **ACTUAL VOLUME PURGED** 18.5 **/gal**

COMMENTS: Meter X 1000 - slow producer

APPENDIX B

LABORATORY REPORTS AND CHAIN OF CUSTODY

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 82501
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-095

DATE RECEIVED: 02/19/91
DATE REPORTED: 02/27/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/L) Gasoline Range
1	MW-1	ND<0.05
2	MW-2	ND<0.05
3	MW-3	ND<0.05
4	AW-4	ND<0.05
5	AW-5	ND<0.05
6	AW-6	ND<0.05

mg/L - parts per million (ppm)

Method Detection Limit for Gasoline in Water: 0.05 mg/L

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = <15
MS/MSD Average Recovery = 99%: Duplicate RPD = 15

Richard Srna, Ph.D.

Laboratory Manager

MAR - 4 1991

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORIES, INC.
825 ARNOLD, STE. 114 • MARTINEZ, CALIFORNIA 94553 • (415) 229-1512
DOHS #319
DOHS #220

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 82501
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-095

DATE RECEIVED: 02/19/91
DATE REPORTED: 02/27/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L) Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW-1	ND<0.3	ND<0.3	ND<0.3	ND<0.3
2	MW-2	ND<0.3	ND<0.3	ND<0.3	ND<0.3
3	MW-3	ND<0.3	ND<0.3	ND<0.3	ND<0.3
4	AW-4	ND<0.3	ND<0.3	ND<0.3	ND<0.3
5	AW-5	ND<0.3	ND<0.3	ND<0.3	ND<0.3
6	AW-6	ND<0.3	ND<0.3	ND<0.3	ND<0.3

ug/L - parts per billion (ppb)

Method Detection Limit in Water: 0.3 ug/L

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 92%: Duplicate RPD = <3

Richard Srna, Ph.D.

Laboratory Manager

MAR - 4 1991

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CERTIFICATE OF ANALYSIS

LABORATORY NO.: 82501
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-095

DATE RECEIVED: 02/19/91
DATE REPORTED: 02/27/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (mg/L) Diesel Range
1	MW-1	0.05 *
2	MW-2	0.06 *
3	MW-3	ND<0.05

* Typical diesel chromatographic pattern not present.

Method Detection Limit for Diesel in Water: 0.05 mg/L

QAQC Summary:

Daily Standard run at 200mg/L: RPD Diesel = 3
MS/MSD Average Recovery = 112%: Duplicate RPD = 12

Richard Srna, Ph.D.

Laboratory Manager

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DOHS #319
DOHS #220

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 82501
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-095

DATE RECEIVED: 02/19/91
DATE REPORTED: 02/27/91

ANALYSIS FOR TOTAL OIL AND GREASE
by Standard Method 5520F

LAB #	Sample Identification	Concentration (mg/L) Oil & Grease
1	MW-1	ND<5
2	MW-2	ND<5
3	MW-3	ND<5

Method Detection Limit for Oil and Grease in Water: 5mg/L

QAQC Summary: Duplicate RPD : 11

Richard Srna, Ph.D.
Laboratory Director

MAR - 5 1991

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SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE. UNIT I · SAN FRANCISCO. CA 94124 · PHONE (415) 647-2081 DOHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53212-1
CLIENT: ALTON GEOSCIENCE
JOB NO.: 30-095

DATE SAMPLED: 02/15/91
DATE RECEIVED: 02/19/91
DATE ANALYZED: 02/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-1

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	41
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15
MS/MSD average recovery = 91 % :MS/MSD RPD =< 3 %

Richard Srna, Ph.D.

Cecilia G Jongsma (for)
Laboratory Director

FEB 2 8 1991

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE. UNIT I · SAN FRANCISCO. CA 94124 · PHONE (415) 647-2081 DOHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53212-2
CLIENT: ALTON GEOSCIENCE
JOB NO.: 30-095

DATE SAMPLED: 02/15/91
DATE RECEIVED: 02/19/91
DATE ANALYZED: 02/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-2

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	45
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15
MS/MSD average recovery = 91 % :MS/MSD RPD =< 3 %

Richard Srna, Ph.D.

Cecilia G Joaquin (for)
Laboratory Director

FEB 28 1991

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE. UNIT I · SAN FRANCISCO. CA 94124 · PHONE (415) 647-2081 DOHS #1332

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 53212-3
CLIENT: ALTON GEOSCIENCE
JOB NO.: 30-095

DATE SAMPLED: 02/15/91
DATE RECEIVED: 02/19/91
DATE ANALYZED: 02/25/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-3

Compound	MDL (ug/L)	RESULTS (ug/l)
Chloromethane/Vinyl Chloride	1.0	ND
Bromomethane/Chloroethane	1.0	ND
Trichlorofluoromethane	0.5	ND
1,1-Dichloroethene	0.5	ND
Methylene Chloride	0.5	ND
trans-1,2-Dichloroethene	0.5	ND
1,1-Dichloroethane	0.5	ND
Chloroform	0.5	ND
1,1,1-Trichloroethane	0.5	ND
Carbon tetrachloride	0.5	ND
1,2-Dichloroethane	0.5	ND
Trichloroethylene	0.5	ND
1,2-Dichloropropane	0.5	ND
Bromodichloromethane	0.5	ND
Cis-1,3-Dichloropropene	0.5	ND
trans-1,3-Dichloropropene	0.5	ND
1,1,2-Trichloroethane	0.5	ND
Tetrachloroethene	0.5	ND
Dibromochloromethane	0.5	ND
Chlorobenzene	0.5	ND
Bromoform	0.5	ND
1,1,2,2-Tetrachloroethane	0.5	ND
1,3-Dichlorobenzene	0.5	ND
1,2-Dichlorobenzene	0.5	ND
1,4-Dichlorobenzene	0.5	ND
Cis-1,2-Dichloroethene	0.5	ND

MDL = Method Detection Limit
ug/l = parts per billion (ppb)
QA/QC Summary: Daily Standard %DIFF = <15
MS/MSD average recovery = 91 % :MS/MSD RPD =< 3 %

Richard Srna, Ph.D.

Cecilia G Jorquera (for)
Laboratory Director

ALTON GEOSCIENCE
1096 BURNETT AVE., STE. 146
CONCORD, CA 94520 (415) 682-1582

MAR 1 1991

CHAIN of CUSTODY RECORD

PAGE 1 of 1

DATE: 2/19/91 DUE BY: 2/26/91
LABORATORY: Superior

PROJECT NUMBER / MANAGER: Brady Nagle SAMPLERS SIGNATURE: Brad Nagle for Larry Kuenvenida

PROJECT NAME / ADDRESS: FORMER Mobil 10-KNK, 7197 Village Parkway, Dublin

REMARKS OR SPECIAL INSTRUCTIONS:
HCL Preserved VOAs

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATRIX	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP	TYPE & NUMBER OF CONTAINERS	ANALYSIS: TPH-G w/BTEX	ANALYSIS: TPH-Diesel	ANALYSIS: TOG 5520	ANALYSIS: EPA 8010	ANALYSIS	ANALYSIS	ANALYSIS
	2/15/91 1425	MW-1	WATER	X		10	X	X	X	X			
	" 1356	MW-2	"	X		10	X	X	X	X			
	" 1250	MW-3	"	X		10	X	X	X	X			
	" 1612	AW-4	"	X		3	X						
	" 1627	AW-5	"	X		3	X						
	" 1458	AW-6	"	X		3	X						

CHAIN OF CUSTODY

	SIGNATURE	INCLUSIVE DATES/TIMES	SIGNATURE	INCLUSIVE DATES/TIMES
1.	Brad Nagle	14:25 2/19/91	4. Dana Madsen	
2.	Dana Madsen	14:37 2/19/91	5.	
3.			Kristin Kotelnikova	2/19/91 1437

53212

FEB 28 1991

ALTON GEOSCIENCE
1988 BURNETT AVE., STE. 140
CONCORD, CA 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 1 of 1

DATE: 2/19/91 DUE BY: 2/26/91
LABORATORY: Superior

PROJECT NUMBER / MANAGER: Brady Nagle SAMPLERS SIGNATURE: Brad Nagle for Larry Buenvenida

PROJECT NAME / ADDRESS: FORMER Mobil 10-KNK, 7197 Village Parkway, Dublin

REMARKS OR SPECIAL INSTRUCTIONS:
HCL Preserved VOAs

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATRIX	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP	TYPE & NUMBER OF CONTAINERS	ANALYSIS: TPH-G w/BTEX	ANALYSIS: TPH-Diesel	ANALYSIS: TOG 5520	ANALYSIS: EPA 8010	ANALYSIS	ANALYSIS	ANALYSIS
	2/15/91 1425	MW-1	WATER	X		10	X	X	X	X			
	" 1356	MW-2	"	X		10	X	X	X	X			
	" 1250	MW-3	"	X		10	X	X	X	X			
	" 1612	AW-4	"	X		3	X						
	" 1627	AW-5	"	X		3	X						
	" 1458	AW-6	"	X		3	X						

CHAIN OF CUSTODY

	SIGNATURE	INCLUSIVE DATES/TIMES		SIGNATURE	INCLUSIVE DATES/TIMES	
1.	Brad Nagle	14:25	2/19/91	4. Laura Manchester		
2.	Laura Manchester	14:37	2/19/91	5.		