

EXXON COMPANY, U.S.A.

POST OFFICE BOX 4032 . CONCORD, CA 94524-2032

ENVIRONMENTAL ENGINEERING

MARLA D. GUENSLER
ENVIRONMENTAL ENGINEER
(510) 246-8776

June 22, 1992

Exxon RAS 7-0236
6630 East 14th Street
Oakland, California

Mr. Barney Chan
Alameda County Environmental Health Department
Hazardous Materials Division
80 Swan Way, Suite 200
Oakland, California 94621

6/17/92

Dear Mr. Chan:

Attached for your review and comment is a report titled **Supplemental Site Investigation** for the above referenced site. The report, prepared by Alton Geoscience, Pleasanton, California, details results of the site investigation which was conducted to further assess the nature and extent of hydrocarbons in the subsurface.

Should you have any questions or comments, or require additional information, please do not hesitate to contact me at the above listed phone number.

Sincerely,

Marla D. Guensler

Attachment

c - w/attachment:

Mr. L. Feldman - San Francisco RWQCB
2101 Webster Street, Suite 500
Oakland, CA 94612

w/o attachment:

Mr. W. J. Ault
Mr. S. Thompson - Alton Geoscience, Pleasanton, CA

MDG:sd
2453E/70236LTR

SUPPLEMENTAL SITE INVESTIGATION

for

**Exxon RAS #7-0236
6630 East 14th Street
Oakland, California**

Project No. 30-0491-01

Prepared for:

**Exxon Company, U.S.A.
2300 Clayton Road, Suite 1250
Concord, California 94524-2032**

Prepared By:

**Alton Geoscience
5870 Stoneridge Drive, Suite 6
Pleasanton, California 94588**

June 17, 1992

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SUPPLEMENTAL SITE INVESTIGATION

**Exxon Company, U.S.A.
RAS #7-0236
6630 East 14th Street
Oakland, California**

June 17, 1992

PART I SITE DESCRIPTION AND BACKGROUND

1.0 INTRODUCTION

Exxon Company, U.S.A. (Exxon), retained Alton Geoscience to conduct this supplemental site investigation at Exxon RAS #7-0236, 6630 East 14th Street, Oakland, California. Work was performed based on the preliminary site investigation by Alton Geoscience (Alton Geoscience 1991). Refer to Figure 1, Site Vicinity Map.

All activities were conducted in accordance with regulatory requirements of the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), and the Alameda County Hazardous Materials Division (ACHMD).

2.0 SITE DESCRIPTION

The site is located at 6630 East 14th Street and occupies the city block, which consists of two parcels between 66th Avenue and Havenscourt Avenue, Oakland, California. The northern parcel belongs to Exxon and is an operating retail automotive store (RAS) with three underground, single-walled, fiberglass fuel storage tanks and one underground, fiberglass oil storage tank. The southern parcel belongs to MWM Properties and acts as an extended driveway or parking lot adjacent to Exxon RAS #7-0236.

Properties proximal to the site are a mixture of residential, commercial, and municipal developments. South of the site, across Havenscourt Boulevard, is a former service station with RWQCB-confirmed hydrocarbon releases into the subsurface. Southwest, across East 14th Street and approximately 150 feet from the site, is Havenscourt Junior High School. Oriental Auto Sales and Repair is located to the north, across 66th Avenue, and the areas west, northwest, northeast, and east are residential developments.

3.0 REGIONAL GEOLOGY AND HYDROGEOLOGY

3.1 Regional Geology

The site is approximately 19 feet above mean sea level (msl), resting on Quaternary (0 to 2 million years) clay, silt, sand, and gravel. This formation also includes minor deposits of Holocene (0 to 10 thousand years) and late Pleistocene (10 to 100 thousand years) beach sand and marine terrace deposits up to 50 meters in thickness. Underlying this Quaternary formation is the Franciscan formation of Upper Jurassic (145 to 165 million years), consisting of mainly well-indurated sandstone and shale including greenstone, chert, limestone, conglomerate, and metamorphic rock. This geologic unit is generally highly deformed and sheared with blocks of various lithologies in a matrix of clay materials (Department of Water Resources, 1968 and 1973).

3.2 Regional Hydrogeology

The site is within the Alameda Bay Plain Ground Water Basin. Ground water in this alluvial basin flows regionally to the west, towards San Francisco Bay. According to Alameda County Public Works Office, no municipal or private water supply wells are located within a 1/2-mile radius of the site. Municipal water supply in Oakland is provided by the East Bay Municipal Utilities District, which obtains its water from the Mokelumne River Project, west-central Sierra Nevada.

4.0 SUMMARY OF PRELIMINARY SITE INVESTIGATION

Alton Geoscience issued a Preliminary Site Investigation Report for Exxon RAS #7-0236 dated April 25, 1991. Three exploratory soil borings were converted to 4-inch-diameter ground water monitoring wells, MW-1, MW-2, and MW-3, completed to 25 feet below grade (fbg). The location of these wells is illustrated in Figure 2. Ground water stabilized at approximately 8 fbg with a gradient approximately 0.03 foot per foot towards the west-southwest.

The highest concentrations of adsorbed- and dissolved-phase hydrocarbons were located in MW-2, immediately downgradient from the underground fuel tanks, and in MW-3, cross gradient from the tanks. Analysis of soil samples collected during well installation detected total petroleum hydrocarbons as gasoline (TPH-G) up to 98 parts per million (ppm) in MW-2 at 11 fbg. Analysis of ground water samples detected 1,700 and 3,100 parts per billion (ppb) TPH-G in MW-2 and MW-3.

5.0 SCOPE AND PURPOSE OF WORK

This supplemental site investigation was conducted to further assess the nature and extent of hydrocarbons in the subsurface and develop a course of action for remediation.

The scope of work included the following tasks:

1. Reviewing available information, acquiring necessary permits, and locating underground utilities.
2. Drilling two offsite and two onsite exploratory borings and collecting soil samples for lithological and analytical study.
3. Converting two offsite and one onsite boring into 2-inch-diameter ground water monitoring wells, and one onsite boring into a 4-inch-diameter monitoring/recovery well.
4. Developing and sampling the newly-installed wells, monitoring and sampling existing wells, and having all wells professionally surveyed.
5. Analyzing data to evaluate subsurface conditions and preparing a technical report presenting field activities, laboratory results, findings, and conclusions.

PART II SUBSURFACE INVESTIGATION

1.0 FIELD METHODS AND PROCEDURES

1.1 Soil Borings and Sampling

Prior to commencement of drilling activities, permits to install monitoring wells were obtained from the ACHMD, and a permit to drill on the adjacent parcel was obtained from MWM Properties. In addition, an excavation permit to drill in the streets and an encroachment permit to infringe upon traffic were obtained from the City of Oakland. Copies of the permits are presented in Appendix A.

On March 26, 1992, Alton Geoscience supervised drilling and installation of two offsite 2-inch-diameter ground water monitoring wells (MW-4 and MW-5), one onsite 4-inch-diameter monitoring/recovery well (MW-6), and one onsite 2-inch-diameter monitoring well (MW-7). MW-4 and MW-5 were installed to a total depth of 25.5 fbg, while MW-6 and MW-7 were installed to a total depth of 23 fbg. Refer to Appendix B for an explanation of monitoring well construction. Soil samples were collected and preserved for laboratory analysis at a minimum sampling interval of 5 feet during drilling. Standard procedures for soil sampling are presented in Appendix C and a description of soil types encountered is presented Appendix D, Boring Logs.

1.2 Well Development and Sampling

Monitoring Wells MW-1, MW-2, and MW-3, which were developed following the preliminary site investigation, were sampled on March 23, 1992. Wells MW-4, MW-5, MW-6, and MW-7 were developed on April 3, 1992, following the supplemental site investigation, and sampled on April 6, 1992. General field procedures for monitoring well development and sampling are presented in Appendix E along with monitoring and sampling field survey forms.

1.3 Wellhead Elevation Surveying and Ground Water Level Monitoring

All wells were surveyed by Raymond F. Greenwood, Inc., a California-registered surveyor, on April 13, 1992. Top of casing elevations were measured relative to an established benchmark in the city of Oakland. Depth to ground water in each well was measured (to an accuracy of 0.01 foot) on April 6, 1992, using an electronic sounder. Survey data and water level measurements are presented in Table 1.

2.0 SITE GEOLOGY AND HYDROGEOLOGY

2.1 Site Geology

Black silty clay was encountered from grade to approximately 8 fbg, becoming increasingly moist with depth. Below the silty clay, from approximately 8 to 20 fbg, are intermittent layers of sandy clay, silty clay, and silty sand less than 3 feet thick, and lenses of clayey sand greater than 3 feet thick. These intermittent layers are moist to saturated and constitute the first aquifer encountered beneath the site. Below this water-bearing unit is a slightly moist brown clay, extending from approximately 20 fbg to the total depths drilled (23 to 25.5 fbg). The hydrogeologic cross-sections A-A' and B-B' (Figures 3 and 4) illustrate soil stratigraphy encountered beneath the site and vicinity.

2.2 Site Hydrogeology

Ground water elevations measured April 6, 1992, were used to develop the ground water elevation contour map shown in Figure 5. The general ground water gradient is approximately 0.03 foot per foot towards San Francisco Bay in a west-southwest direction. Ground water was first encountered during drilling March 26, 1992, at approximately 17 fbg and rose to approximately 9 fbg after 10 to 30 minutes. Ground water stabilized at approximately 8.50 fbg or 10.50 feet above msl as measured April 6, 1992.

PART III INVESTIGATION RESULTS

1.0 FINDINGS

Analytical results for ground water and soil samples are summarized in Tables 1 and 2. A distribution of TPH-G results in soil is illustrated in hydrogeologic cross-sections A-A' and B-B' (Figures 3 and 4). A map showing TPH-G and BTEX in each well at the site is presented in Figure 6. Findings, based on current and previous subsurface investigations, are summarized below:

- Ground water was first encountered at approximately 17 fbg in the borings and rose approximately 8 feet after 10 to 30 minutes. Average depth to stabilized ground water as measured April 6, 1992, was 8.50 fbg (10.50 feet above msl). The ground water elevation contour map (Figure 5), indicates a west-southwest ground water gradient direction with a magnitude of 0.03 foot per foot. Ground water gradient as well as ground water elevations are consistent with previous measurements collected March 15, 1991, during the preliminary site investigation.
- A consistent subsurface geology is observed in each of the borings drilled at the site. A black, silty clay occurs from grade to approximately 8 fbg. Below this silty clay, from approximately 8 to 20 fbg, are intermittent layers of sandy clay, silty clay, and silty sand including clayey sand lenses. Below these intermittent layers, from approximately 20 fbg to the depth of the borings (23 to 25.5 fbg), lies a brown clay.
- Soil analysis detected TPH-G and TPH-D at 18 and 23 ppm, approximately 15 to 15.5 fbg in MW-7 (clayey sand lens). This depth coincides with the upper part of the saturated zone (if confined). The TPH-D analysis detected light and heavy hydrocarbons in the sample, not typical of diesel. BTEX concentrations were not detected in this sample. TPH-G, TPH-D and BTEX were not detected in any of the other samples analyzed.
- Analysis of ground water samples collected from MW-2 detected TPH-G, TPH-D, and benzene concentrations at 7,100, 3,000, and 740 ppb. These concentrations have increased since ground water sampling began March 15, 1991. Ground water analysis of samples collected from MW-3 detected TPH-G and TPH-D concentrations at 640 and 440 ppb. TPH-G has decreased in MW-3 compared to the first sampling event; however, TPH-D has increased. Benzene was not detected in MW-3.
- TPH-G, TPH-D, and BTEX were not detected in ground water samples collected from MW-1, and MW-4 through MW-7. TOG and/or HVOC were not detected in ground water samples collected from the onsite wells MW-1, MW-2, MW-3, and MW-6. Offsite wells were not sampled for TOG or HVOC.

2.0 CONCLUSIONS

- Intermittent layers of sandy clay, silty clay, and silty sand including clayey sand lenses comprise the water-bearing sediments beneath the site and vicinity. The rise in water level inside each well over a relatively short period of time (10 to 30 minutes) suggest these water-bearing sediments constitute a confined or semiconfined aquifer.
- Observation of subsurface soils indicate a clay layer at approximately 20 fbg, immediately below the water-bearing sediments. At minimum, the thickness of this clay layer extends to the total depth of the borings (23 to 25 fbg) and by its lithology may act as a barrier to vertical ground water migration.
- Despite concentrations of TPH-G detected in soil from MW-7, the absence of BTEX suggests the hydrocarbons are degraded and do not originate from active sources in the vicinity. TPH-D detected in the same sample is not typical of diesel fuel and includes lighter as well as heavier hydrocarbons. The location of MW-7 is cross-gradient from known sources in the vicinity.
- TPH-G, TPH-D, and BTEX in ground water appear concentrated in a zone proximal to the existing underground storage tanks, mainly in the vicinity of MW-2 approximately 10 feet downgradient from the tanks. A source for TPH-D in ground water, increasing in wells MW-2 and MW-3, is not yet fully investigated and may represent a highly weathered gasoline.
- The absence of TPH-G, TPH-D, and BTEX in Monitoring Wells MW-1, MW-4, MW-5, MW-6, and MW-7 indicates the lateral extent of dissolved-phase hydrocarbons in ground water has been assessed, except upgradient from the underground storage tanks.
- TOG and/or HVOC was not detected in MW-1, MW-2, MW-3, or MW-6, proximal to the underground oil tank. The absence of HVOC reinforces the probability that previous detections of methylene chloride in MW-2 and MW-3 (March 15, 1991 sampling event) are an artifact of laboratory analysis. Alton Geoscience concludes that further analysis for TOG and HVOC is unwarranted.

ALTON GEOSCIENCE



John De George
Geologist



Robert E. Logan, R.G. 5088
Manager, Northern California Operations

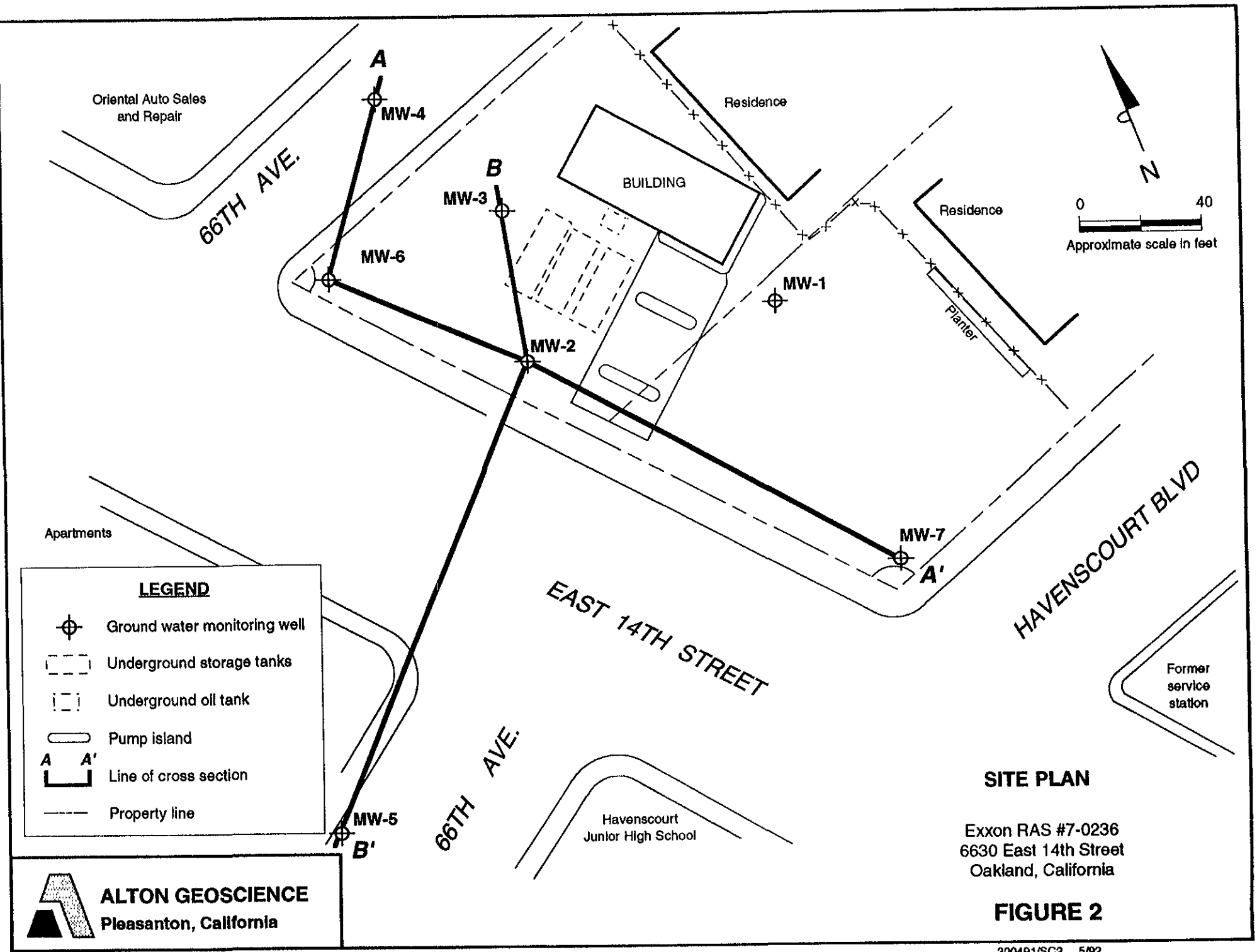
REFERENCES

Alton Geoscience, 1991. Preliminary Site Investigation Report. Report prepared for Exxon Company, U.S.A., Concord, California. April 25.

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.

Department of Water Resources. Bulletin No. 118-1, 1968 and 1973.

FIGURES



LEGEND

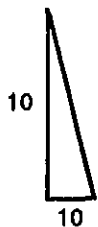
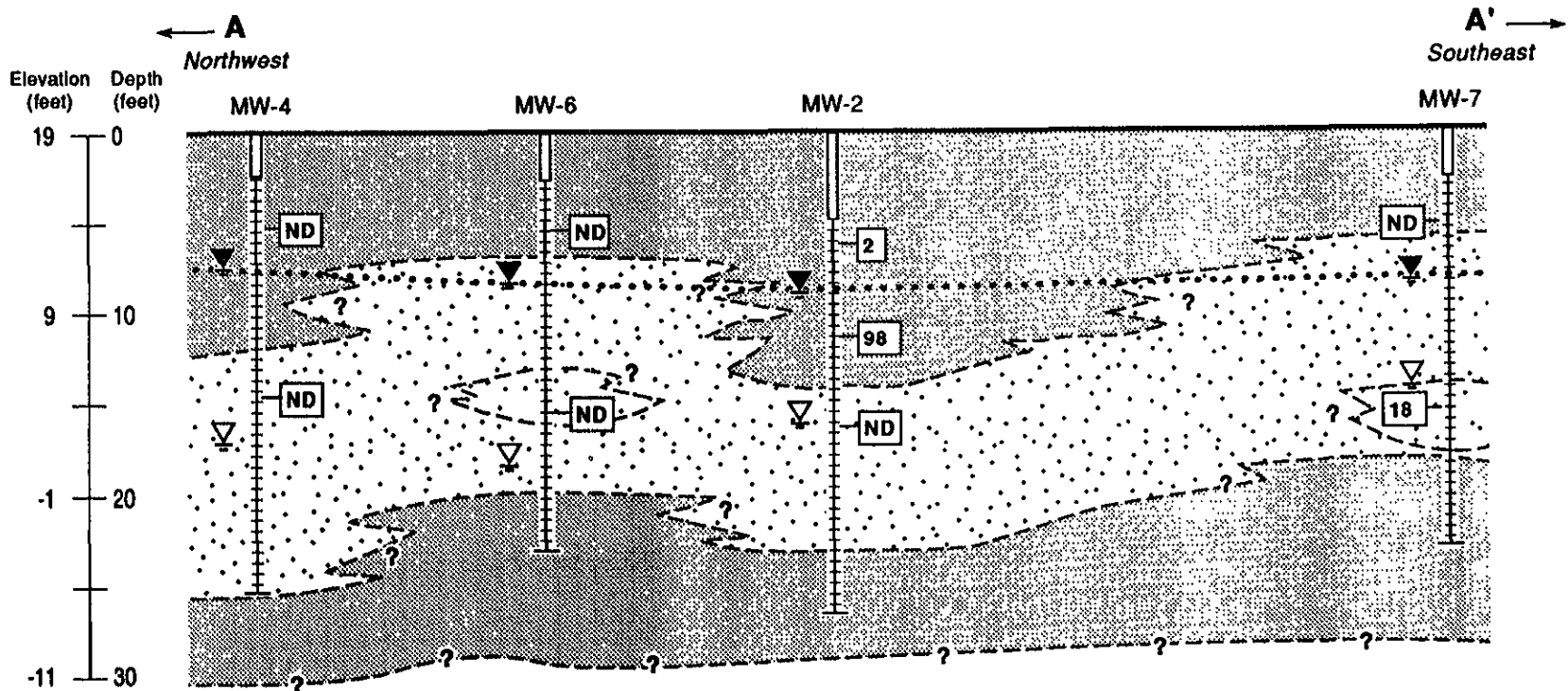
- Ground water monitoring well
- Underground storage tanks
- Underground oil tank
- Pump island
- Line of cross section
- Property line

SITE PLAN

Exxon RAS #7-0236
 6630 East 14th Street
 Oakland, California









FIGURE 2

ALTON GEOSCIENCE
 Pleasanton, California



Scale in feet
Vertical exaggeration = 4:1

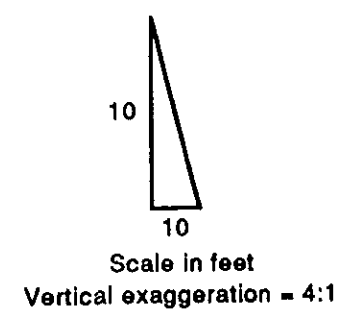
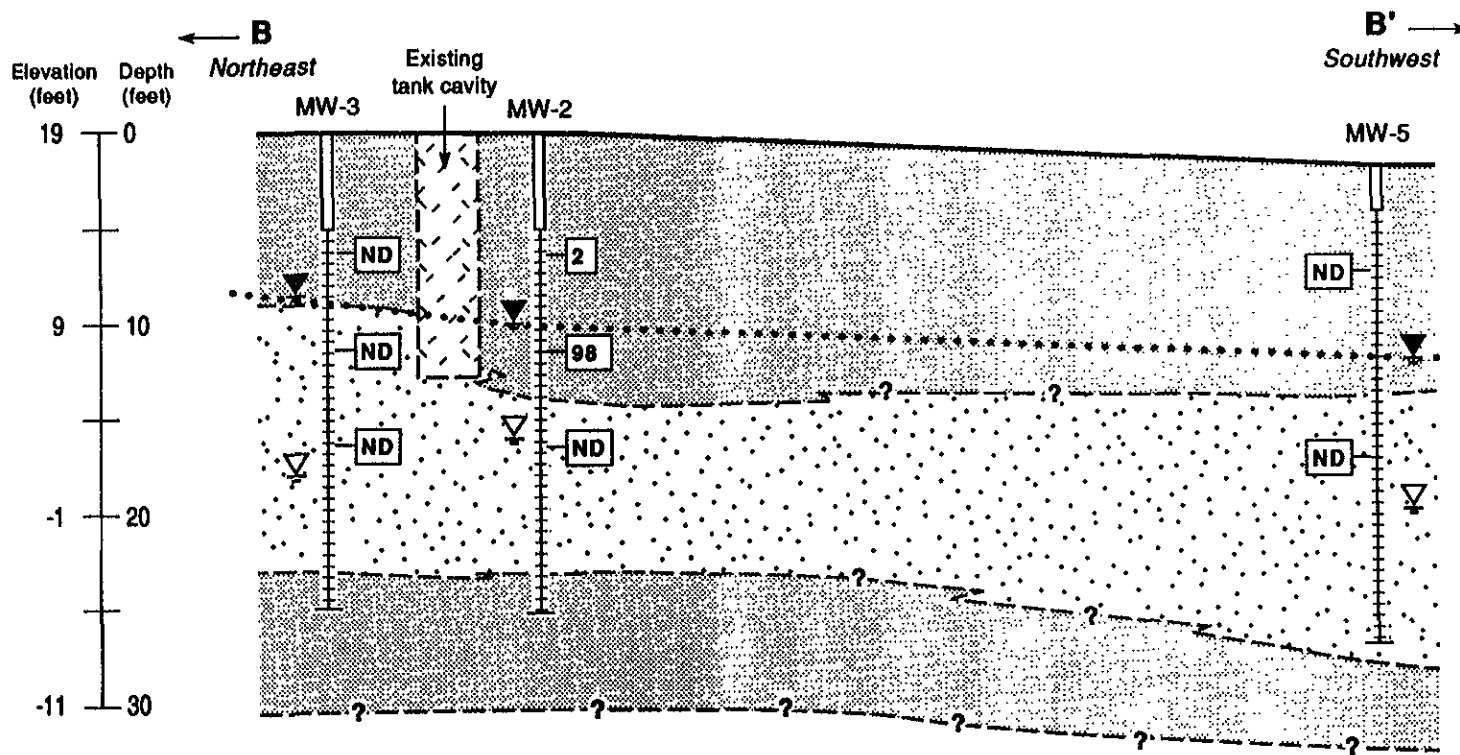
LEGEND

	Clay or Silty Clay		Blank
	Intermittent Sandy Clay, Silty Clay, Silty Sand with Clayey Sand lenses		Screened interval
	Stabilized water level as of 3/26/92		Gradational contact (inferred)
	Water level at time of drilling		Total petroleum hydrocarbons as gasoline concentrations in parts per million (ppm) ND = not detected

**HYDROGEOLOGIC
CROSS SECTION A-A'**

Exxon RAS #7-0236
6630 East 14th Street
Oakland, California

FIGURE 3



LEGEND

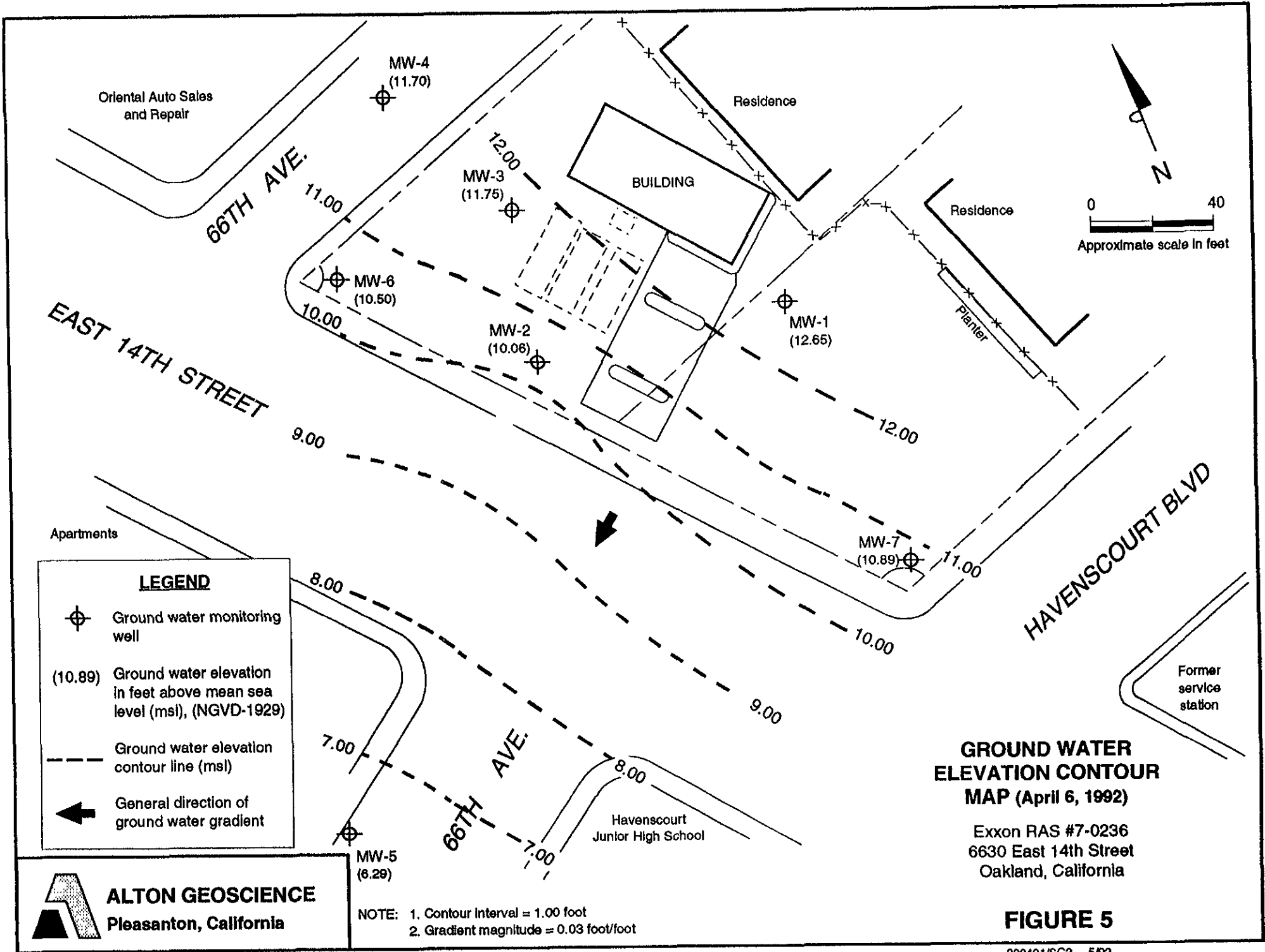
	Clay or Silty Clay		Blank
	Sandy Clay or Clayey Sand		Screened interval
	Fill		Gradational contact (inferred)
	Stabilized water level as of 3/26/92		Total petroleum hydrocarbons as gasoline concentrations in parts per million (ppm)
	Water level at time of drilling		ND = not detected

HYDROGEOLOGIC CROSS SECTION B-B'




Exxon RAS #7-0236
 6630 East 14th Street
 Oakland, California

FIGURE 4

ALTON GEOSCIENCE
 Pleasanton, California




LEGEND

-  Ground water monitoring well
- (10.89) Ground water elevation in feet above mean sea level (msl), (NGVD-1929)
-  Ground water elevation contour line (msl)
-  General direction of ground water gradient

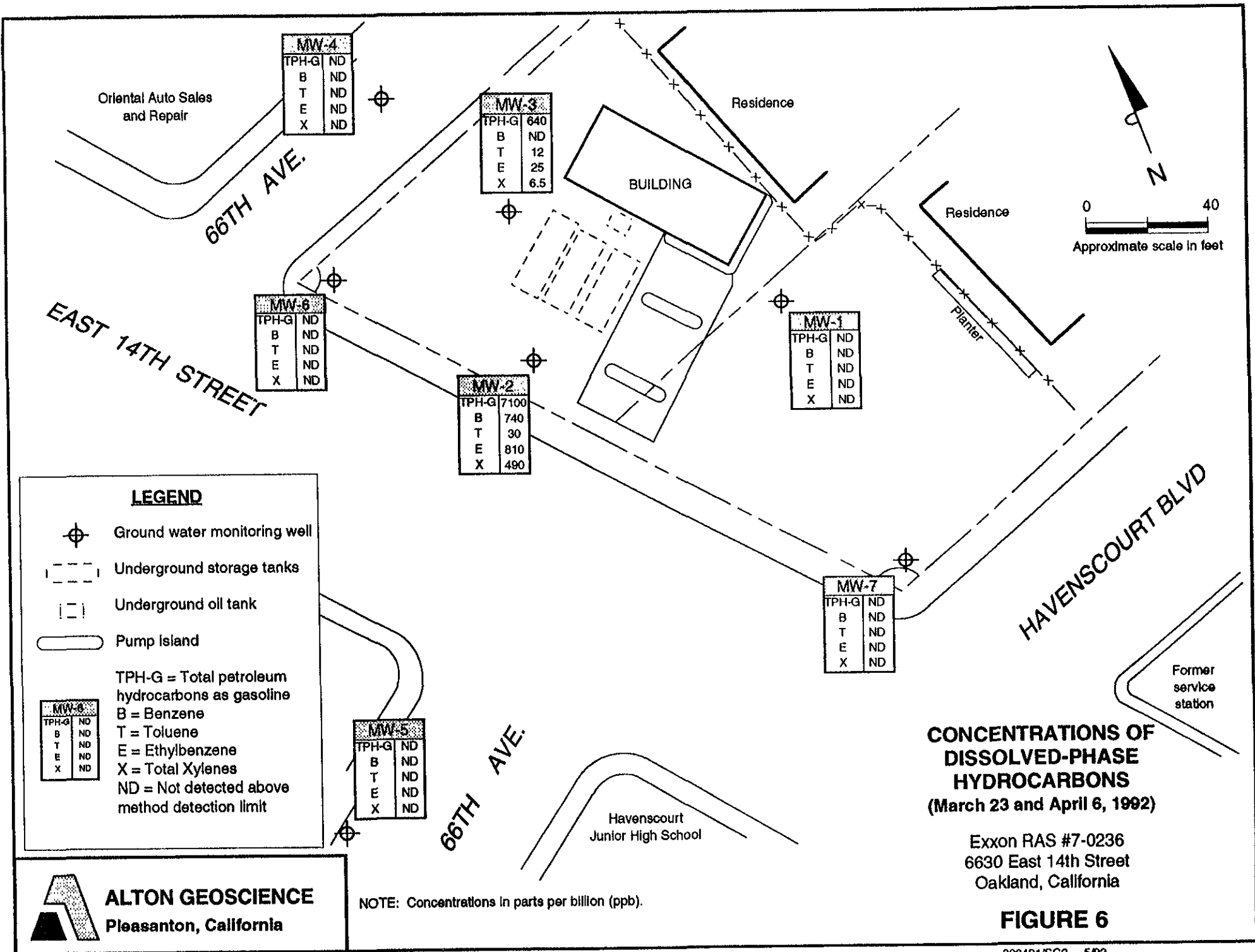
GROUND WATER ELEVATION CONTOUR MAP (April 6, 1992)

Exxon RAS #7-0236
6630 East 14th Street
Oakland, California

 **ALTON GEOSCIENCE**
Pleasanton, California

NOTE: 1. Contour interval = 1.00 foot
2. Gradient magnitude = 0.03 foot/foot

FIGURE 5



TABLES

TABLE 1

**Summary of Results of Ground Water Monitoring/Sampling
Exxon RAS #7-0236
6630 East 14th Street, Oakland, California**

CONCENTRATIONS IN PARTS PER BILLION (PPB)

WELL ID	DATE OF SAMPLING/ MONITORING	TOP OF CASING ELEVATION	DEPTH TO GROUND WATER	GROUND WATER ELEVATION	TPH-G	TPH-D	B	T	E	X	TOG	HVOC	LAB
MW-1	03/15/91	20.20	7.44	12.76	ND<50	---	ND<0.3	0.5	0.3	1.3	---	---	PACE
MW-1	01/15/92	20.20	10.60	9.60	ND<50	ND<300	ND<0.5	0.7	ND<0.5	0.9	ND<5000	ND *	PACE
MW-1	03/23/93	20.20	6.38	13.82	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<5000	ND	PACE
MW-1	04/06/92	20.20	7.55	12.65	---	---	---	---	---	---	---	---	PACE
MW-2	03/15/91	19.15	9.05	10.10	1700	120	190	2.6	12	64	ND<5000	1 **	PACE
MW-2	01/15/92	19.15	11.60	7.55	6800	1000	81	ND<10	320	170	ND<5000	ND	PACE
MW-2	03/23/93	19.15	9.42	9.73	7100	3000	740	30	810	490	ND<5000	ND	PACE
MW-2	04/06/92	19.15	9.09	10.06	---	---	---	---	---	---	---	---	PACE
MW-3	03/15/91	19.59	7.84	11.75	3100	160	2.2	1.9	100	84	ND<5000	21 **	PACE
MW-3	01/15/92	19.59	10.30	9.29	250	ND<300	0.7	6.8	1.5	1.5	ND<5000	ND	PACE
MW-3	03/23/93	19.59	6.84	12.75	640	440	ND<0.5	12	25	6.5	ND<5000	ND	PACE
MW-3	04/06/92	19.59	7.84	11.75	---	---	---	---	---	---	---	---	PACE
MW-4	04/06/92	19.46	7.76	11.70	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	04/06/92	16.95	10.66	6.29	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	04/06/92	18.79	8.29	10.50	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ND	PACE
MW-7	04/06/92	19.23	8.34	10.89	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE

EXPLANATION OF ABBREVIATIONS:

TPH-G	:total petroleum hydrocarbons as gasoline	— (EPA method 8015 modified)	PACE	:Pace Laboratory, Inc.
TPH-D	:total petroleum hydrocarbons as diesel	— (EPA method 8015 modified)	---	:not analyzed/not measured
B	:benzene	— (EPA method 8020)	ND	:not detected
T	:toluene	— (EPA method 8020)	*	:HVOC detection limits vary (see laboratory results)
E	:ethylbenzene	— (EPA method 8020)	**	:Methylene chloride
X	:xylenes	— (EPA method 8020)		
TOG	:total oil and grease	— (EPA method 5520)		
HVOC	:halogenated volatile organic compounds	— (EPA method 601)		

Note: Top of casing and ground water elevations reported in feet above mean sea level (NGVD - 1929).

TABLE 2

**Summary of Results of Soil Sampling
Exxon RAS #7-0236
6630 East 14th Street, Oakland, California**

CONCENTRATIONS IN PARTS PER MILLION (PPM)

ID	DATE OF SAMPLING	DEPTH OF SOIL SAMPLE (FEET)	TPH-G	TPH-D	B	T	E	X	LAB
MW-4	03/26/92	5 to 5.5	ND<1	ND<5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE
MW-4	03/26/92	14.5 to 15	ND<1	ND<5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE
MW-5	03/26/92	5 to 5.5	ND<1	ND<5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE
MW-5	03/26/92	15 to 15.5	ND<1	ND<5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE
MW-6	03/26/92	5 to 5.5	ND<1	ND<5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE
MW-6	03/26/92	15 to 15.5	ND<1	ND<5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE
MW-7	03/26/92	5 to 5.5	ND<1	ND<5	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE
MW-7	03/26/92	15 to 15.5	18	23	ND<0.005	ND<0.005	ND<0.005	ND<0.005	PACE

EXPLANATION OF ABBREVIATIONS:

TPH-G	:total petroleum hydrocarbons as gasoline	— (EPA method 8015 modified)
TPH-D	:total petroleum hydrocarbons as diesel	— (EPA method 8015 modified)
B	:benzene	— (EPA method 8020)
T	:toluene	— (EPA method 8020)
E	:ethylbenzene	— (EPA method 8020)
X	:xylenes	— (EPA method 8020)
PACE	:Pace Laboratory, Inc	
ND	:not detected	

APPENDIX A
PERMITS



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE • PLEASANTON, CALIFORNIA 94566 • (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

(1) LOCATION OF PROJECT 6630 East 14th ST. Oakland CA

PERMIT NUMBER 91693 LOCATION NUMBER

(2) CLIENT Name EXXON Company U.S.A. Address 1200 Smith ST. Ste 2726 Houston, TX Phone Suite 2726 Zip 77002

PERMIT CONDITIONS

Circled Permit Requirements Apply

(3) APPLICANT Name AITON GEOScience Address 5870 Stoneridge Dr. #6 Pleasanton Phone 734-8134 Zip 94588

A. GENERAL

- 1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date. 2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects. 3. Permit is void if project not begun within 90 days of approval date.

(4) DESCRIPTION OF PROJECT Water Well Construction Geotechnical Investigation Cathodic Protection General Well Destruction Contamination Monitoring

B. WATER WELLS, INCLUDING PIEZOMETERS

- 1. Minimum surface seal thickness is two inches of cement grout placed by tremie. 2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic, irrigation, and monitoring wells unless a lesser depth is specially approved.

(5) PROPOSED WATER WELL USE Domestic Industrial Irrigation Municipal Monitoring Other

C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

(6) PROPOSED CONSTRUCTION Drilling Method: Mud Rotary Air Rotary Auger Cable Other

D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

E. WELL DESTRUCTION. See attached.

DRILLER'S LICENSE NO. C-57 NO. 554979

WELL PROJECTS Drill Hole Diameter 8 in. Maximum Casing Diameter 2 in. Depth 50 ft. Surface Seal Depth 10 ft. Number 4

GEOTECHNICAL PROJECTS Number of Borings Maximum Hole Diameter in. Depth ft.

(7) ESTIMATED STARTING DATE 3-26-92 ESTIMATED COMPLETION DATE 3-31-92

(8) I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

Approved Wyman Hong Date 11 Dec 91

APPLICANT'S SIGNATURE Date 3-19-92

CITY OF OAKLAND

PERMIT TO EXCAVATE IN STREETS OR OTHER WORK AS SPECIFIED

LOCATION OF WORK: 320 E. 14th BETWEEN 11 AND 1
 (Street or Address) (Street/Ave.) (Specify)

PERMISSION TO EXCAVATE IN THE PUBLIC RIGHT-OF-WAY IS HEREBY GRANTED TO:

APPLICANT: Alton Co. Inc.

ADDRESS: 570 Stoneridge #6 Alhambra PHONE #: 734-8134

TYPE OF WORK: GAS ELECTRIC WATER TELEPHONE CABLE TV SEWER OTHER
 (Specify)

NATURE OF WORK: Gas

X9200287
 EXCU 150
 P.FEE 30
 APPL 1000
 EXCU 140.00

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 70310, Business and Professions Code. Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law, Chapter 9, commencing with Sec. 7000 of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 70310 by an applicant for a permit subjects the applicant to a civil penalty of not more than \$500:

- I, as owner of the property, do my employees with wages as their sole compensation will do the work on the structure or for intended or offered for sale (Sec. 70044, Business and Professions Code). The Contractor's License Law does not apply to an owner of property who builds or improves, alters or improves such work himself. Disregarding this exemption, provisions of such laws and rules are not included or waived, unless the building or improvement is completed within one year of completion. The owner shall have the burden of proving that he is not a contractor for the purposes of the law.
- I, as owner of the property, am exempt from the provisions of the law of the City of Oakland: (1) I am limited to the principal place of residence of approximately 12,000 sq. ft. and will be performed only to sale, and (2) I have not claimed exemption for the 12 months prior to completion of such work, and (3) I have not claimed exemption for the subdivision of more than two structures on that site during the business period, and (4) I am not a contractor for the purposes of the law.
- I, as owner of the property, am exclusively contracting with licensed contractors to construct the project. Sec. 7044, Business and Professions Code. The Contractor's License Law does not apply to an owner of property who builds or improves, alters and who contracts for such project with a contractor licensed pursuant to the Contractor's License Law.
- I am exempt under Sec. 70310, Business and Professions Code for this reason:

PERMIT VOID 90 DAYS FROM DATE OF ISSUE UNLESS EXTENSION GRANTED BY DIRECTOR OF PUBLIC WORKS.

Approximate Starting Date _____ DATE _____
 Approximate Completion Date _____ DATE _____
 HOLIDAY RESTRICTION (1 NOV - 1 JAN) YES _____ NO _____
 LIMITED OPERATION AREA 7 AM - 9 AM 12 PM - 6 PM YES (C) NO _____
 DATE STREET LAST RESURFACED DATE 11 YES _____ NO (C)
 SPECIAL PAVING DETAIL REQUIRED YES _____ NO (C)
 24-HOUR EMERGENCY PHONE NUMBER _____
 PERMIT NOT VALID WITHOUT 24 HOUR NUMBER.
 Telephone 278-3886 Forty-eight (48) HOURS BEFORE ACTUAL CONSTRUCTION.

ATTENTION

State law requires that contractor/owner call Underground Service Alert two working days before excavating to have below-ground utilities located. This permit is not valid unless applicant has secured an Inquiry Identification number issued by Underground Service Alert.

Call Toll Free: 800-842-2444 USA ID Number: _____

This permit is issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code.

This permit is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims or actions brought by any person, firm or on account of any bodily injuries, disease or illness or damage to person and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance.

CONTRACTOR

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

LICENSE # 554779 CITY BUSINESS TAX # _____
 Signature of Contractor Owner or Agent _____ Date 12/26/91
 Contractor Owner

OFFICIAL USE ONLY
 UTILITY COMPANY REPORT

Supervisor 101 1176 14:30
 Completion Date _____

CITY INSPECTOR'S REPORT

BACKFILL _____ PAVING _____

Initials _____
 Hours _____
 Date _____
 Concrete _____
 Asphalt _____
 Sidewalk _____
 Size of Cut: 30 ft. 12 inches
 Paved by _____ type _____
 Bill No. _____
 Charges: Backfill _____
 Paving _____
 Paving (incl. _____
 Traffic Striping Placed _____ Date _____

APPROVED _____ Date _____
 Engineering Services _____ Date _____
 Planning _____ Date _____
 Field Services _____ Date _____
 Construction _____ Date _____
 Traffic Engineering _____ Date _____
 Electrical Engineering _____ Date _____
 DIRECTOR OF PUBLIC WORKS
 APPROVED BY: _____
 DATE: _____
 EXTENSION GRANTED BY: _____
 DATE: _____

OWNER/BUILDER

WORKER'S COMPENSATION

I have verified that the contractor has provided a copy of the Certificate of Workers' Compensation Insurance to the City of Oakland. The contractor has provided a copy of the Certificate of Workers' Compensation Insurance to the City of Oakland.

Certified copy of policy furnished to the City of Oakland.

Certified copy of policy furnished with the City of Oakland inspection report.

Signature: _____ Date: 12/26/91

(This section need not be completed if the permit is for one hundred dollars or less.)

I certify that the contractor on the work for which this permit is issued, was not employed by any person or firm, partner or agent, as a subject of the Workers' Compensation Act of California.

Signature: _____ Date: _____

NOTICE TO APPLICANT: This permit is issued pursuant to the provisions of the Business and Professions Code, and is subject to the provisions of the City of Oakland Municipal Code. The permittee shall comply with all provisions of the City of Oakland Municipal Code.

CITY OF OAKLAND

PERMIT TO EXCAVATE IN STREETS OR OTHER WORK AS SPECIFIED

LOCATION OF WORK: 1630 E. 14th BETWEEN N 10 E 14th AND _____
(Street or Address) (Street/Ave.) (Specify)

PERMISSION TO EXCAVATE IN THE PUBLIC RIGHT-OF-WAY IS HEREBY GRANTED TO:

APPLICANT: ATM

ADDRESS: 5870 Stoneridge #6, Pleasanton PHONE #: _____

TYPE OF WORK: GAS ELECTRIC WATER TELEPHONE CABLE TV SEWER OTHER
(Specify)

NATURE OF WORK: Installation of gas

X 1200290
EXCV 150.00
P.FEE 30.00
APPL 30.00
EXCV 150.00
SUBTL 180.00
724-8131

CHECK OFF
#1
OFFICIAL USE ONLY
UTILITY COMPANY REPORT 14:30 PM

I hereby affirm that I am exempt from the Contractor's License Law for the following reason (Sec. 7031.5, Business and Professions Code) Any city or county which requires a permit to construct, alter, improve, demolish, or repair any structure, prior to its issuance, also requires the applicant for such permit to file a signed statement that he is licensed pursuant to the provisions of the Contractor's License Law, Chapter 9 (commencing with Sec. 7000) of Division 3 of the Business and Professions Code, or that he is exempt therefrom and the basis for the alleged exemption. Any violation of Section 7031.5 by any applicant for a permit subjects the applicant to a civil penalty of not more than \$500.

I, as owner of the property, or my employees with wages as their sole compensation, will do the work, and the structure is not intended or offered for sale (Sec. 7044, Business and Professions Code. The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who does such work himself or through his own employees, provided that such improvements are not intended or offered for sale. If, however, the building or improvement is sold within one year of completion, the owner-builder will have the burden of proving that he did not build or improve for the purpose of sale.

I, as owner of the property, am exempt from the sale requirements of the above due to: (1) I am improving my principal place of residence or appurtenances thereon; (2) the work will be performed prior to sale; (3) I have resided in the residence for the 12 months prior to completion of the work, and (4) I have not claimed exemption in this subdivision on more than two structures more than once during any three-year period. (Sec. 7044, Business and Professions Code).

I, as owner of the property, am exclusively contracting with licensed contractors to construct the project (Sec. 7044, Business and Professions Code. The Contractor's License Law does not apply to an owner of property who builds or improves thereon, and who contracts for such projects with a contractor(s) licensed pursuant to the Contractor's License Law.

I am exempt under Sec. _____ BAPC for this reason: _____

Signature _____ Date _____

PERMIT VOID 90 DAYS FROM DATE OF ISSUE UNLESS EXTENSION GRANTED BY DIRECTOR OF PUBLIC WORKS.

Approximate Starting Date _____ DATE _____

Approximate Completion Date _____ DATE _____

HOLIDAY RESTRICTION (1 NOV - 1 JAN) YES _____ NO _____

LIMITED OPERATION AREA (7AM - 9AM/4PM - 6PM) YES NO

DATE STREET LAST RESURFACED _____ DATE 7/26/91

SPECIAL PAVING DETAIL REQUIRED YES _____ NO

24-HOUR EMERGENCY PHONE NUMBER _____

PERMIT NOT VALID WITHOUT 24 HOUR NUMBER. Telephone 273-3668 Forty-eight (48) HOURS BEFORE ACTUAL CONSTRUCTION.

ATTENTION
State law requires that contractor/owner call Underground Service Alert two working days before excavating to have below-ground utilities located. This permit is not valid unless applicant has secured an inquiry identification number issued by Underground Service Alert.
Call Toll Free: 800-642-2444 USA ID Number _____

I hereby affirm that I have a certificate of consent to self-insure, or a certificate of Workers Compensation Insurance, or a certified copy thereof (Sec. 3800, Lab. C).

Policy # 1167891-91 Company Name W.S. Smith & Co.

Certified copy is hereby furnished.

Certified copy is filed with the city building inspection department.

Signature _____ Date 12/26/91

(This section need not be completed if the permit is for one hundred dollars (\$100) or less)

I certify that in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the Workers' Compensation Law of California.

Signature _____ Date 12/26/91

NOTICE TO APPLICANT: If, after making this Certificate of Exemption, you should become subject to the Workers' Compensation provisions of the Labor Code, you must forthwith comply with such provisions or this permit shall be deemed revoked.

This permit issued pursuant to all provisions of Chapter 6, Article 2 of the Oakland Municipal Code.

This permit is granted upon the express condition that the permittee shall be responsible for all claims and liabilities arising out of work performed under the permit or arising out of permittee's failure to perform the obligations with respect to street maintenance. The permittee shall, and by acceptance of the permit agrees to defend, indemnify, save and hold harmless the City, its officers and employees, from and against any and all suits, claims or actions brought by any person or on account of any bodily injuries, disease or illness or damage to persons and/or property sustained or arising in the construction of the work performed under the permit or in consequence of permittee's failure to perform the obligations with respect to street maintenance.

CONTRACTOR

I hereby affirm that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

LICENSE # 354719 CITY BUSINESS TAX # _____

X _____ Date 12/26/91

Signature of Contractor, Owner or Agent

Agent for Contractor Owner

Supervisor _____
Completion Date _____
CITY INSPECTOR'S REPORT
BACKFILL _____ PAVING _____
Initials _____
Hours _____
Date _____
Concrete _____
Asphalt _____
Sidewalk _____
Size of Cut: Sq. Ft. _____ Inches _____
Paved by _____ Type _____
Bill No. _____
Charges Backfill _____
Paving _____
Paving Insp. _____
Traffic Striping Replaced _____ Date _____
APPROVED _____ Date _____
Engineering Services _____ Date _____
Planning _____ Date _____
Field Services _____ Date _____
Construction _____ Date _____
Traffic Engineering _____ Date _____
Electrical Engineering _____ Date _____
DIRECTOR OF PUBLIC WORKS
APPROVED _____
DATE 12/28/91
EXTENSION GRANTED _____
DATE _____

OWNER/BUILDER

WORKER'S COMPENSATION

City of Oakland
Director of Public Works
1333 Broadway, 8th Floor
Oakland, Ca. 94612

When Recorded Mail To:

Director of Public Works
City of Oakland
1333 Broadway, 8th Floor
Oakland, Ca. 94612

TAX ROLL PARCEL NUMBER
(Assessor's Reference Number)

039	3246	027	01	Space Above for Recorder's Use
MAP	BLOCK	PARCEL	SUB	

Address: 6630 East 14th Street

MINOR ENCROACHMENT PERMIT AND AGREEMENT

Alton GeoScience, Inc. acting on behave of MWM Properties, a California Partnership, owner of certain real property described in the Quitclaim Deed, recorded on September 19, 1988, in Series No. 88-237261, in the office of the Recorder, Alameda, County, California, is hereby granted a Conditional Revocable Permit to encroach into the street area of East 14th Street and 66th Street with three(3) monitoring well. The location of said encroachment and type of casting and cover used shall be as delineated in Exhibits 'A' and 'B' attached hereto and made a part hereof.

The permittee agrees to comply with and be bound by the conditions for granting an Encroachment Permit attached hereto and made a part hereof.

This agreement shall be binding upon the undersigned, the present owner(s) of the property described above, and their successors in interest thereof.

In witness whereof we have set our signature(s) this _____ day of _____, 1992.

By: Matthew A. Taylor
Matthew A. Taylor, C.E.
Alton GeoScience, Inc.

Dated: 01/31/92

By: _____
RANDALL A. LUM
Deputy Director

For
TERRY E. ROBERTS
Director of Public Works

City of Oakland
Director of Public Works
1333 Broadway, 8th Floor
Oakland, Ca. 94612

When Recorded Mail To:

Director of Public Works
City of Oakland
1333 Broadway, 8th Floor
Oakland, Ca. 94612

TAX ROLL PARCEL NUMBER
(Assessor's Reference Number)

039	3246	027	01
MAP	BLOCK	PARCEL	SUB

Space Above for Recorder's Use

Address: 6630 East 14th Street

CORPORATE ACKNOWLEDGMENT

NO 202

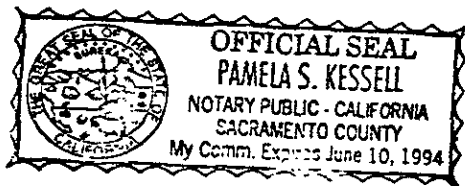
State of California
County of Sacramento } ss.

On this the 31st day of January 1992, before me,

Pamela S. Kessell
the undersigned Notary Public, personally appeared

Matthew A. Taylor

personally known to me
 proved to me on the basis of satisfactory evidence
to be the person(s) who executed the within instrument as
Civil Engineer or on behalf of the corporation therein
named, and acknowledged to me that the corporation executed it.
WITNESS my hand and official seal.



Pamela S. Kessell
Notary's Signature

7120 122

NATIONAL NOTARY ASSOCIATION • 23012 Ventura Blvd. • P.O. Box 4625 • Woodland Hills, CA 91365-4625

Dated: 01/31/92

By: Matthew A. Taylor
Matthew A. Taylor, C.E.
Alton GeoScience, Inc.

By: _____
RANDALL A. LUM
Deputy Director

For
TERRY E. ROBERTS
Director of Public Works

January 10, 1992

Jan 14, 1992

Mr. Phil Grubstick
Director of Public Works
1333 Broadway, 2nd Floor
Oakland, California 94612

Subject: Authorization to Obtain Encroachment Permit
Exxon Service Station No. 7-0236
6630 East 14th Street
Oakland, California

Dear Mr. Grubstick:

MWM Properties do hereby give Alton Geoscience permission to obtain all necessary permits and sign on MWM Properties behalf for all encroachment permitting activities for property located at 6630 East 14th Street within the City of Oakland at the above referenced location.

MWM Properties

EVA WILLIAMS
Managing Partner
10 Crest Road
San Anselmo, CA. 94960-2553
1-415-454-3044

Eva Williams

CORPORATE ACKNOWLEDGMENT

NO 222

State of California
County of Marin } SS.

On this the 14 day of January 1992, before me,

J.P. Shaw

the undersigned Notary Public, personally appeared

Eva Williams

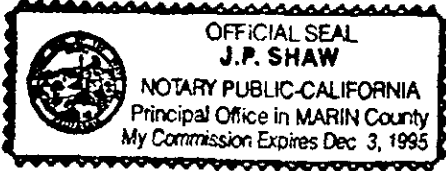
- personally known to me
 - proved to me on the basis of satisfactory evidence
- to be the person who executed the within instrument as

Managing Partner or on behalf of the corporation therein named, and acknowledged to me that the corporation executed it.

WITNESS my hand and official seal.

Notary's Signature

[Handwritten Signature]



ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to another document.

THIS CERTIFICATE
MUST BE ATTACHED
TO THE DOCUMENT
DESCRIBED AT RIGHT:

Title or Type of Document _____

Number of Pages _____ Date of Document _____

Signer(s) Other Than Named Above _____

APPENDIX B
MONITORING WELL CONSTRUCTION

MONITORING WELL CONSTRUCTION

Monitoring wells were constructed using 2-inch-diameter or 4-inch-diameter, flush-threaded, Schedule 40, PVC, blank and screened (0.020-inch slot size) casing. The annular space surrounding the screened portion of each well was backfilled with No. 3 Monterey sand (filter pack) to approximately 0.5 feet above the top of the screened section. A 0.5-foot-thick, bentonite, annular seal was placed above the filter pack and the remaining annulus was grouted to the surface with neat cement. Street-rated boxes were installed slightly above grade to minimize infiltration of surface waters. Locking, watertight well caps were installed to ensure well integrity.

Under agreement, in accordance with the encroachment permit granted by the City of Oakland, monitoring well boxes that were placed in the streets (well boxes for MW-4 and MW-5) were designed according to specifications of the Engineering and Design Services Division of the City of Oakland. Manufacturing of the well boxes was subcontracted to Phoenix Iron Works, 888 Cedar Street, Oakland, California.

APPENDIX C
SOIL SAMPLING PROCEDURES

SOIL SAMPLING PROCEDURES

Monitoring wells were drilled using 8-inch-diameter or 10-inch-diameter, continuous-flight, hollow-stem augers. To avoid cross-contamination, the augers were steam cleaned prior to drilling each boring.

Soil samples were collected for soil description, combustible gas testing, and laboratory analysis. Samples were collected at intervals of 5 feet or less from all soil borings. Soil samples were retrieved ahead of the lead auger either using an 18-inch-long split spoon sampler lined with 2-inch-diameter brass sample tube inserts, or a continuous core sampler without brass tube inserts. When using the continuous core sampler, soil cores were logged in detail throughout the boring and sections of core to be analyzed were transferred to clean brass tubes. The split spoon sampler and continuous core sampler were driven by a 30-inch free fall of a 140-pound hammer. Blow counts were recorded for three successive 6-inch intervals. The samplers and sample tubes were washed with an Alconox solution and rinsed in deionized water before each sampling event.

Upon collecting the soil sample, the brass tube was securely sealed with Teflon sheeting and polyurethane caps. The sample was labeled with identification, depth, geologist's initials, and date of collection. The sample was placed in an iced cooler prior to and during transport to a California-certified laboratory for analysis in accordance with proper chain of custody documentation.

The remaining soil recovered was described in accordance with the Unified Soil Classification System. For each soil type, field estimates of density/consistency, moisture, color, and lithology were recorded on the boring logs. Field measurements of combustible gas in selected soil samples were also included in the boring logs.

APPENDIX D
BORING LOGS

ALTON GEOSCIENCE
LOG OF EXPLORATORY
BORING



PROJECT NO. 30-0491-01 DATE DRILLED 3/26/92
 CLIENT Exxon RAS #7-0236
 LOCATION 6630 E. 14th Street, Oakland, California
 LOGGED BY J. DeGeorge APPROVED BY _____

WELL NO.
MW-4

Page 1 of 1

FIELD SKETCH OF BORING LOCATION

SEE FIGURE 2

TOP OF CASING ELEVATION 19.46'

DRILLING METHOD Hollow Stem Auger HOLE DIAM. 8"
 SAMPLER TYPE Split spoon
 CASING DATA 2" Sch. 40 PVC: 2.5' Blank, 22.5' Screen
 DRILLER West Hazmat Drilling Corporation

PID (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (fbg)	Well Construction	USCS	PROFILE	DEPTH TO WATER		DATE		TIME		DESCRIPTION
							17'	7.76'	3/26/92	4/6/92	10:20 AM	12:00 PM	
			0										ASPHALT 3"/Coarse gravel subgrade
			2	2" diam. Sch. 40 PVC Casing									SILTY CLAY: black, slightly moist, very stiff; trace fine- to medium-grained sand, low plasticity.
0			4										
			6										SILTY CLAY: olive-green, slightly moist, very stiff; trace fine- to medium-grained sand, low plasticity.
			8										
0			10										SILTY CLAY: brown, moist, very stiff; very fine-grained sand, low plasticity.
			12		CL								
			14	2" diam. Sch. 40 PVC 0.020" slotting									SANDY CLAY: brown, moist, very stiff; fine- to medium-grained sand, some coarse-grained sand and trace fine gravel, low plasticity.
0			16										
			18										SANDY CLAY: brown, wet, firm; fine- to medium-grained sand, increasing coarse-grained sand and increasing fine gravel, low plasticity.
			20										
0			22										
			24	End Cap									
			26										Borehole terminated at approximately 25-1/2 feet below grade

ALTON GEOSCIENCE
LOG OF EXPLORATORY
BORING



PROJECT NO. 30-0491-01 DATE DRILLED 3/26/92

CLIENT Exxon RAS #7-0236

LOCATION 6630 E. 14th Street, Oakland, California

LOGGED BY J. DeGeorge APPROVED BY _____

WELL NO.
MW-5

Page 1 of 1

FIELD SKETCH OF BORING LOCATION

SEE FIGURE 2

TOP OF CASING ELEVATION 16.95'

DRILLING METHOD Hollow Stem Auger HOLE DIAM. 8"

SAMPLER TYPE Split spoon

CASING DATA 2" Sch. 40 PVC: 2.5' Blank, 22.5' Screen

DRILLER West Hazmat Drilling Corporation

PID (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (log)	Well Construction	USCS	PROFILE	DEPTH TO WATER		
							18'	10.66'	
							DATE	3/26/92	4/6/92
							TIME	11:50 AM	12:00 PM
							DESCRIPTION		
			0	2" diam. Sch. 40 PVC Casing			ASPHALT 3"/fine gravel subgrade		
			2				SILTY CLAY: black, slightly moist, stiff; trace fine- to medium-grained sand, low plasticity.		
0			4						
			6		CL		SILTY CLAY: brown, moist, stiff; fine- to coarse-grained sand, low plasticity.		
			8						
0			10				SANDY CLAY: brown, moist, very stiff; fine- to coarse-grained sand, low plasticity.		
			12						
			14	2" diam. Sch. 40 PVC 0.020" slotting			CLAYEY SAND: brown, wet, medium dense; medium-grained sand, trace fine-grained and coarse-grained sand and trace fine gravel.		
0			16						
			18		SC		Intermittent SANDY CLAY: brown, wet, medium dense; medium-grained sand.		
			20						
0			22						
			24	End Cap					
			26				Borehole terminated at approximately 25-1/2 feet below grade		

**ALTON GEOSCIENCE
LOG OF EXPLORATORY
BORING**



PROJECT NO. 30-0491-01 DATE DRILLED 3/26/92
 CLIENT Exxon RAS #7-0236
 LOCATION 6630 E. 14th Street, Oakland, California
 LOGGED BY J. DeGeorge APPROVED BY _____

WELL NO.
MW-6

Page 1 of 1

FIELD SKETCH OF BORING LOCATION

SEE FIGURE 2

TOP OF CASING ELEVATION 18.79'

DRILLING METHOD Hollow Stem Auger HOLE DIAM. 10"
 SAMPLER TYPE Split spoon/Continuous Core
 CASING DATA 4" Sch. 40 PVC: 2.5' Blank , 20' Screen
 DRILLER West Hazmat Drilling Corporation

PID (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (fbg)	Well Construction	USCS	PROFILE	DEPTH TO WATER		DATE		TIME		DESCRIPTION
							18.5'	8.29'	3/26/92	4/6/92	2:00 PM	12:00 PM	
			0	4" diam. Sch. 40 PVC Casing									ASPHALT 3"/fine gravel subgrade
			2										SILTY CLAY: black, slightly moist, very stiff; trace coarse-grained sand, trace fine gravel, intermittent color changes to olive-green, low plasticity.
			4										
0			6										SANDY CLAY: brown, slightly moist, very stiff; medium- to coarse-grained sand, trace fine gravel, low plasticity.
			8		CL								
0			10										SILTY CLAY: brown, slightly moist, very stiff; trace medium- to coarse-grained sand, moderate plasticity.
			12										SANDY CLAY: brown, slightly moist, very stiff; fine- to coarse-grained sand, trace fine gravel, low plasticity.
			14										CLAYEY SAND: brown, moist, medium dense; medium- to coarse-grained sand, trace fine gravel, some olive-green mottling.
0			16	4" diam. Sch. 40 PVC 0.020" slotting	SC								CLAY(6" layer): brown, slightly moist, very stiff; low plasticity.
			18										SANDY CLAY: brown, moist, stiff; fine- to coarse-grained sand, fine gravel, low plasticity.
0			20		CL								
			22	End Cap									CLAY: brown, slightly moist, very stiff; moderate to high plasticity, black wavy vertical streaks.
0			24										
			26										Borehole terminated at approximately 23 feet below grade

**ALTON GEOSCIENCE
LOG OF EXPLORATORY
BORING**



PROJECT NO. 30-0491-01 DATE DRILLED 3/26/92
 CLIENT Exxon RAS #7-0236
 LOCATION 6630 E. 14th Street, Oakland, California
 LOGGED BY J. DeGeorge APPROVED BY _____

WELL NO.
MW-7

Page 1 of 1

FIELD SKETCH OF BORING LOCATION

SEE FIGURE 2

TOP OF CASING ELEVATION 19.23'

DRILLING METHOD Hollow Stem Auger HOLE DIAM. 8"

SAMPLER TYPE Split spoon

CASING DATA 2" Sch. 40 PVC: 2.5' Blank, 20' Screen

DRILLER West Hazmat Drilling Corporation

PID (ppm)	TPH-G (ppm)	SAMPLE	DEPTH (fbg)	Well Construction	USCS	PROFILE	DEPTH TO WATER		
							14'	8.34'	
							DATE	3/26/92	4/6/92
							TIME	4:00 PM	12:00 PM
							DESCRIPTION		
			0				ASPHALT 6"/fine gravel subgrade		
			2	2" diam. Sch. 40 PVC Casing	CL		SILTY CLAY: black, slightly moist, very stiff; trace fine- to medium-grained sand, moderate plasticity.		
0			6				SILTY SAND: olive-green, slightly moist, dense; fine- to coarse-grained sand, fine gravel.		
0			10		SM				
			12		CL		SANDY CLAY: olive-green, moist, very stiff; medium- to coarse-grained sand, low plasticity.		
0			14				CLAYEY SAND: olive-green, wet, dense; medium- to coarse-grained sand.		
			16	2" diam. Sch. 40 PVC 0.020" slotting	SC				
			18				CLAY: brown, slightly moist, very stiff; moderate to high plasticity, black wavy vertical streaks.		
0			20		CL				
			22	End Cap			Borehole terminated at approximately 23 feet below grade		
			24						
			26						

LEGEND TO BORING LOG
EXXON RAS #7-0236
6630 EAST 14TH STREET
OAKLAND, CALIFORNIA
March 26, 1992

PROJECT NO. 30-0491

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

COARSE GRAINED SOILS	GRAVELS more than 1/2 of coarse fraction > No. 4 Sieve	Little or no fines		GW Well-graded gravels, gravel-sand mixtures, little or no fines
		Little or no fines		GP Poorly-graded gravels, gravel-sand mixtures
		Appreciable fines		GM Silty gravels, gravel-sand-silt mixtures
		Appreciable fines		GC Clayey gravels, gravel-sand-clay mixtures
	SANDS more than 1/2 of coarse fraction < No. 4 Sieve	Little or no fines		SW Well-graded sands, gravelly sands, little or no fines
		Little or no fines		SP Poorly-graded sands, gravelly sands, little or no fines
Appreciable fines			SM Silty sands, sand-silt mixtures	
Appreciable fines			SC Clayey sands, sand-clay mixtures	
FINE GRAINED SOILS	SILTS AND CLAYS Liquid limit < 50		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 silts and organic silty clays of low plasticity	
	SILTS AND CLAYS Liquid limit > 50		MH Inorganic silts, micaceous or diatomaceous fine sand or silty soils	
			CH Inorganic clays of high plasticity, fat clays	
			OH Organic clays of medium to high plasticity, organic silts	
HIGHLY ORGANIC SOILS			PE Peat, humus, swamp soils with high organic contents	

SYMBOL LEGEND:

- Portland Cement
- #3 Monterey Sand
- Bentonite Pellets
- Sampling Interval

- No recovery
- Sample saved for possible analysis
- Stabilized water level
- Ground water level encountered during drilling

ppm = parts per million
 fbg = feet below grade
 CGI = Combustible gas indicator
 TPH-G = Total petroleum hydrocarbons as gasoline
 msl = mean sea level



**ALTON
 GEOSCIENCE**
 Pleasanton, California

APPENDIX E

**WELL DEVELOPMENT AND GROUND WATER SAMPLING PROCEDURES
AND FIELD SURVEY FORMS**

WELL DEVELOPMENT AND GROUND WATER SAMPLING PROCEDURES AND FIELD SURVEY FORMS

All development, purging, and ground water sampling equipment was cleaned prior to use to minimize cross-contamination. All equipment in contact with ground water was triple-rinsed prior to each sampling event in successive baths consisting of an Alconox solution, tap water, and deionized water. Monitoring wells were developed by removing 10 casing volumes and purged in accordance with Regional Water Quality Control Board protocol. Prior to purging, all wells were inspected for the presence of free product using an electronic interface probe with 0.01 foot tolerance. During purging, pH, temperature, and electroconductivity were measured periodically until these parameters stabilized, indicating formation water had entered the well casing. Purged water was pumped into barrels prior to disposal or recycling at an appropriate waste disposal facility.

Prior to sampling, monitoring wells were purged of at least 4 casing volumes, or until pH, temperature, and electroconductivity parameters stabilized. Ground water samples were collected by lowering a disposable 2-inch-diameter, bottom-fill, polyethylene bailer below the water level in each well. The samples were carefully transferred from the bailer to 40-milliliter glass containers and/or 1-liter amber glass containers fitted with Teflon-sealed caps. All 40-milliliter samples were inverted to ensure that entrapped air was not present. Each sample was labeled with sample and well number, sample date, and sampler's initials. The samples remained on ice prior to and during transport to a California-certified laboratory for analysis, in accordance with proper EPA protocol and chain of custody documentation.

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # mu2 PROJECT # 30-491-02 LOCATION Exxon Station # 7.0236
6630 East 14th St DATE 3-23-92
Oakland, CA
 SAMPLING TEAM Patricia SAMPLING METHOD: BAILER PUMP
 DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER
 STEAM CLEAN

WELL DATA:

DEPTH TO WATER 9.42 ft
 TOTAL DEPTH 24.80 ft
 HT. WATER COL 15.30 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 9.99 gal
 Volumes to Purge 3 Vol
 Total Volume to Purge 29.99 gal

CHEMICAL DATA:

ST 1:45

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
	.02	7.02	1:50	clear	5.99
	.03	6.95		oil-sheen	11.98
	.03	6.93			17.97
	.03	6.94			23.96
	.03	6.97		oily	29.95

FT 2:30
 sampled 2:45

ACTUAL VOLUME PURGED 30 /gal

COMMENTS: Clean with sheen - oil greasy on top. Bad smell left
 oily substance on buckets & bails
 Temp malfunction

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # MW-4 PROJECT # 30-0491-01 LOCATION Oakland DATE 4-6-92
 SAMPLING TEAM Andy Block SAMPLING METHOD: BAILER PUMP
 DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER
 STEAM CLEAN

WELL DATA:

DEPTH TO WATER 7.76 ft
 TOTAL DEPTH 24.62 ft
 HT. WATER COL 16.86 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 2.70 gal
 Volumes to Purge x 3 Vol
 Total Volume to Purge 8.25 gal

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
60.6	0.72 ^{x1000}	6.98	1405	Lt Brown, turbid	1.75
58.7	0.68	6.98	1408	" "	3.50
58.5	0.67	6.97	1411	fine sands + silt Brown, w/ suspended	5.25
58.4	0.67	6.96	1414	" "	7.00
58.4	0.66	6.96	1418	" "	8.25

Purged: 1405-1418
 Sampled: 1425

ACTUAL VOLUME PURGED 8.25/gal

COMMENTS:

ALTON, GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # MW-5 PROJECT # 30-0491-01 LOCATION Dakland DATE 4-6-92

SAMPLING TEAM Andy Block SAMPLING METHOD: BAILER PUMP

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

WELL DATA:

DEPTH TO WATER 10.66 ft

TOTAL DEPTH 24.64 ft

HT. WATER COL 13.98 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 2.24 gal

Volumes to Purge x 3 Vol

Total Volume to Purge 6.75 gal

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
61.6	^{x1000} 0.68	7.02	1250	Lt Brown, turbid	1.5
59.7	0.67	7.00	1255	" "	3.0
58.5	0.63	6.97	1300	suspended silt + fine sand DK. Brown, very turbid	4.5
58.3	0.64	6.96	1308	" "	6.0
58.2	0.62	6.96	1315	" "	7.5

Purged: 1250-1315
Sample: 1325

ACTUAL VOLUME PURGED 7.50 gal

COMMENTS:

Well box lid needs to be filed-down to fit properly... bring crowbar to remove next. ~~file~~
sampling event.

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # MW-6 PROJECT# 30-091-01 LOCATION Oakland DATE 4-6-92

SAMPLING TEAM Andy Black SAMPLING METHOD: BAILER PUMP

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

WELL DATA:

DEPTH TO WATER 8.29 ft

TOTAL DEPTH 22.62 ft

HT. WATER COL 14.33 ft

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

Volume of Water Column 9.31 gal

Volumes to Purge x 3 Vol

Total Volume to Purge 28.00 gal

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
60.6	^{x1000} 0.88	6.99	1433	w/ many suspended solids LT Brown, turbid FINE SAND	6
58.4	0.86	6.98	1438	" "	12
58.3	0.77	6.97	1444	" "	18
58.3	0.75	6.95	1449	" "	24
58.3	0.73	6.94	1454	LT. Brown, somewhat turbid	30

purged: 1433 - 1455
sampled: 1500

ACTUAL VOLUME PURGED 30.0 gal

COMMENTS:

ALTON GEOSCIENCE, INC.
Water Sampling Field Survey

WELL # MW-7 PROJECT# 30-0491-01 LOCATION Oakland DATE 4-6-92
 SAMPLING TEAM Andy Block SAMPLING METHOD: BAILER PUMP
 DECONTAMINATION METHOD: TRIPLE RINSE W/TSP AND DEIONIZED WATER
 STEAM CLEAN

WELL DATA:

DEPTH TO WATER 8.34 ft
 TOTAL DEPTH 22.18 ft
 HT. WATER COL 13.84 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 2.21 gal
 Volumes to Purge x 3 Vol
 Total Volume to Purge 6.75 gal

CHEMICAL DATA:

T (F)	SC/umhos	pH	Time	Comments	Volume (gal)
61.1	^{x1000} 0.74	7.03	1335	w/ high suspended silts & ^{fine} sands LT Brown, turbid,	1.5
60.3	0.73	7.01	1339	" "	3.0
59.8	0.71	7.01	1342	" "	4.5
59.6	0.71	7.00	1347	" "	6.0
59.3	0.71	7.00	1350	" "	7.5

purged: 1335 - 1350
 sampled: 1400

ACTUAL VOLUME PURGED 7.75 gal

COMMENTS:

APPENDIX F

**ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS, AND
CHAIN OF CUSTODY RECORDS**

ANALYTICAL METHODS, OFFICIAL LABORATORY REPORTS AND CHAIN OF CUSTODY RECORDS

This appendix includes copies of the official laboratory reports and chain of custody records for soil and ground water samples.

All laboratory analyses of soil and ground water samples were performed by Pace Laboratory, Inc., a California-certified laboratory (California Certification No. 148).

All chemical analyses of soil and ground water samples were performed using standard test methods of the United States Environmental Protection Agency (EPA) and the California Department of Health Services (Cal-DHS).

Chain of custody protocol was followed for all samples. The chain of custody form(s) accompanies the samples from the sampling locality to the laboratory, providing a continuous record of sample possession prior to actual analysis.



REPORT OF LABORATORY ANALYSIS

Alton Geoscience
 5870 Stoneridge Drive, Suite 6
 Pleasanton, CA 94588

April 08, 1992
 PACE Project Number: 420327522

Attn: Mr. John DeGeorge

Client Reference: Exxon 7-0236

PACE Sample Number:

70 0060800

Date Collected:

03/26/92

Date Received:

03/27/92

Client Sample ID:

B-4

Parameter

Units

MDL

5-5.5

DATE ANALYZED

ORGANIC ANALYSIS

TPH GASOLINE/BTEX

TOTAL FUEL HYDROCARBONS, (LIGHT):

Purgeable Fuels, as Gasoline (EPA 8015)

PURGEABLE AROMATICS (BTXE BY EPA 8020):

Benzene

Toluene

Ethylbenzene

Xylenes, Total

TPH DIESEL, BY EPA METHOD 8015

Extractable Fuels, as Diesel

Date Extracted

Parameter	Units	MDL	5-5.5	DATE ANALYZED
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/06/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	1000	ND	04/06/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/06/92
Benzene	ug/kg wet	5.0	ND	04/06/92
Toluene	ug/kg wet	5.0	ND	04/06/92
Ethylbenzene	ug/kg wet	5.0	ND	04/06/92
Xylenes, Total	ug/kg wet	5.0	ND	04/06/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	ND	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
 Page 2

April 08, 1992
 PACE Project Number: 420327522

Client Reference: Exxon 7-0236

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0060826
 03/26/92
 03/27/92
 B-4

Units MDL 14.5-15 DATE ANALYZED

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/06/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	1000	ND	04/06/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/06/92
Benzene	ug/kg wet	5.0	ND	04/06/92
Toluene	ug/kg wet	5.0	ND	04/06/92
Ethylbenzene	ug/kg wet	5.0	ND	04/06/92
Xylenes, Total	ug/kg wet	5.0	ND	04/06/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	ND	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
 Page 3

April 08, 1992
 PACE Project Number: 420327522

Client Reference: Exxon 7-0236

PACE Sample Number:	70 0060834
Date Collected:	03/26/92
Date Received:	03/27/92
Client Sample ID:	B-5
Parameter	<u>Units</u> <u>MDL</u> <u>5-5.5</u> <u>DATE ANALYZED</u>

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/06/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	1000	ND	04/06/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/06/92
Benzene	ug/kg wet	5.0	ND	04/06/92
Toluene	ug/kg wet	5.0	ND	04/06/92
Ethylbenzene	ug/kg wet	5.0	ND	04/06/92
Xylenes, Total	ug/kg wet	5.0	ND	04/06/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	ND	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.



REPORT OF LABORATORY ANALYSIS

Mr. John DeGeorge
Page 4

April 08, 1992
PACE Project Number: 420327522

Client Reference: Exxon 7-0236

PACE Sample Number:			70 0060850	
Date Collected:			03/26/92	
Date Received:			03/27/92	
Client Sample ID:			B-5	
Parameter	<u>Units</u>	<u>MDL</u>	<u>15-15.5</u>	<u>DATE ANALYZED</u>

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/06/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	1000	ND	04/06/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/06/92
Benzene	ug/kg wet	5.0	ND	04/06/92
Toluene	ug/kg wet	5.0	ND	04/06/92
Ethylbenzene	ug/kg wet	5.0	ND	04/06/92
Xylenes, Total	ug/kg wet	5.0	ND	04/06/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	ND	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
ND Not detected at or above the MDL.

Mr. John DeGeorge
 Page 5

April 08, 1992
 PACE Project Number: 420327522

Client Reference: Exxon 7-0236

PACE Sample Number:	70 0060877
Date Collected:	03/26/92
Date Received:	03/27/92
Client Sample ID:	B-6
Parameter	<u>Units</u> <u>MDL</u> <u>5-5.5</u> <u>DATE ANALYZED</u>

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/06/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	1000	ND	04/06/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/06/92
Benzene	ug/kg wet	5.0	ND	04/06/92
Toluene	ug/kg wet	5.0	ND	04/06/92
Ethylbenzene	ug/kg wet	5.0	ND	04/06/92
Xylenes, Total	ug/kg wet	5.0	ND	04/06/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	ND	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
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April 08, 1992
 PACE Project Number: 420327522

Client Reference: Exxon 7-0236

PACE Sample Number:			70 0060885	
Date Collected:			03/26/92	
Date Received:			03/27/92	
Client Sample ID:			B-6	
<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>15-15.5</u>	<u>DATE ANALYZED</u>

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/06/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	1000	ND	04/06/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/06/92
Benzene	ug/kg wet	5.0	ND	04/06/92
Toluene	ug/kg wet	5.0	ND	04/06/92
Ethylbenzene	ug/kg wet	5.0	ND	04/06/92
Xylenes, Total	ug/kg wet	5.0	ND	04/06/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	ND	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
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April 08, 1992
 PACE Project Number: 420327522

Client Reference: Exxon 7-0236

PACE Sample Number:			70 0060893	
Date Collected:			03/26/92	
Date Received:			03/27/92	
Client Sample ID:			B-7	
<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>5-5.5</u>	<u>DATE ANALYZED</u>

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/06/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	1000	ND	04/06/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/06/92
Benzene	ug/kg wet	5.0	ND	04/06/92
Toluene	ug/kg wet	5.0	ND	04/06/92
Ethylbenzene	ug/kg wet	5.0	ND	04/06/92
Xylenes, Total	ug/kg wet	5.0	ND	04/06/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	ND	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
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April 08, 1992
 PACE Project Number: 420327522

Client Reference: Exxon 7-0236

PACE Sample Number:			70 0060915	
Date Collected:			03/26/92	
Date Received:			03/27/92	
Client Sample ID:			B-7	
<u>Parameter</u>	<u>Units</u>	<u>MDL</u>	<u>15-15.5</u>	<u>DATE ANALYZED</u>

ORGANIC ANALYSIS

TPH GASOLINE/BTEX				
TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/07/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	4000	18000	04/07/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/07/92
Benzene	ug/kg wet	20	ND	04/07/92
Toluene	ug/kg wet	20	ND	04/07/92
Ethylbenzene	ug/kg wet	20	ND	04/07/92
Xylenes, Total	ug/kg wet	20	ND	04/07/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/kg	5.0	23 (H)	04/02/92
Date Extracted			04/01/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.
 (H) Hydrocarbons greater than C22 present.

These data have been reviewed and are approved for release.

Mark A. Valentini

Mark A. Valentini, Ph.D.
 Regional Director



REPORT OF LABORATORY ANALYSIS

Mr. John DeGeorge
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QUALITY CONTROL DATA

April 08, 1992
PACE Project Number: 420327522

Client Reference: Exxon 7-0236

TPH DIESEL, BY EPA METHOD 8015

Batch: 70 11246

Samples: 70 0060800, 70 0060826, 70 0060834, 70 0060850, 70 0060877
70 0060885, 70 0060893, 70 0060915

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Extractable Fuels, as Diesel	mg/kg	5.0	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Extractable Fuels, as Diesel	mg/kg	5.0	33.3	83%	82%	1%

MDL Method Detection Limit
RPD Relative Percent Difference



REPORT OF LABORATORY ANALYSIS

Mr. John DeGeorge
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QUALITY CONTROL DATA

April 08, 1992
PACE Project Number: 420327522

Client Reference: Exxon 7-0236

TPH GASOLINE/BTEX

Batch: 70 11346

Samples: 70 0060800, 70 0060826, 70 0060834, 70 0060850, 70 0060877
70 0060885, 70 0060893

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	200	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	ug/kg wet	1.0	ND
Toluene	ug/kg wet	1.0	ND
Ethylbenzene	ug/kg wet	1.0	ND
Xylenes, Total	ug/kg wet	1.0	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	200	349	124%	119%	4%
Benzene	ug/kg wet	1.0	40.0	90%	95%	5%
Toluene	ug/kg wet	1.0	40.0	99%	103%	3%
Ethylbenzene	ug/kg wet	1.0	40.0	103%	108%	4%
Xylenes, Total	ug/kg wet	1.0	80.0	104%	109%	4%

MDL Method Detection Limit
RPD Relative Percent Difference

Mr. John DeGeorge
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QUALITY CONTROL DATA

April 08, 1992
 PACE Project Number: 420327522

Client Reference: Exxon 7-0236

TPH GASOLINE/BTEX
 Batch: 70 11389
 Samples: 70 0060915

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	200	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	ug/kg wet	1.0	ND
Toluene	ug/kg wet	1.0	ND
Ethylbenzene	ug/kg wet	1.0	ND
Xylenes, Total	ug/kg wet	1.0	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dup1 Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/kg wet	200	349	111%	103%	7%
Benzene	ug/kg wet	1.0	40.0	91%	89%	2%
Toluene	ug/kg wet	1.0	40.0	100%	97%	3%
Ethylbenzene	ug/kg wet	1.0	40.0	104%	101%	2%
Xylenes, Total	ug/kg wet	1.0	80.0	105%	102%	2%

MDL Method Detection Limit
 RPD Relative Percent Difference



EXXON COMPANY, U.S.A.
 P.O. Box 4415, Houston, TX 77210-4415
CHAIN OF CUSTODY

Novato, CA
 11 Digital Drive, 94949
 (415) 883-6100

Irvine, CA
 Alton Business Park
 30 Hughes St., Suite 206, 92718
 (714) 380-9559

Consultant Name: Alta Science
 Address: 5870 Stoneridge Drive, Pleasanton, CA
 Project Contact: John DeGeorge Project #: 30-0491-01
 Phone #: (510) 734-8134 Fax #: _____
 Consultant Work Release #: Contract No. 37900017
 Exxon Contact: Bill Wang Phone #: (510) 246-8768
 Site RAS #: 7-0236
 Site Location: 6630 East 14th St., Oakland, CA
 Laboratory Work Release #: _____

Sampled by (please print) <u>Timothy W. Quane</u>					SOIL			WATER			Remarks
Sample Signature <u>Timothy W. Quane</u>					TPH/GAS/TEX EPA 8015/8020	TPH/Oil EPA 8015	Organic Lead DHS Method	TPH/GAS/TEX EPA 8015/8020	TPH/Oil EPA 8015	Organic Lead DHS Method	
Sample Description	Collection Date/Time	Matrix	Prsv	# of Cont.							
B-4 5-5.5'	3/26/92	Soil		1	X	X		6080.0			Hold for analysis
B-4 9.5-10'	[Handwritten scribble]			1				81.8			[Handwritten scribble]
B-4 14.5-15'				1	X	X		82.6			
B-5 5-5.5'				1	X	X		83.4			
B-5 10-10.5'				1				84.2			
B-5 15-15.5'				1	X	X		85.0			
B-6 10-10.5'				1				86.9			
B-6 5-5.5'				1	X	X		87.7			
B-6 15-15.5'				1	X	X		88.5			
See Page 2											

Cooler No. <u>J/2</u>	Relinquished by/Affiliation	Accepted by/Affiliation	Date	Time
Cooler Seal Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	<u>John A.G. Cervantes - Pace</u>	<u>Cervantes - Pace</u>	<u>3/26/92</u>	<u>1170</u>
Turnaround Time (circle choice) 24 hr. 48 hr. 72 hr. 96 hr. 5 workday (standard)	<u>John A.G. Cervantes - Pace</u>	<u>Vincent Reyes - Pace</u>	<u>3/27</u>	<u>1750</u>
Shipment Method	Additional Comments:			
Shipment Date				
Distribution:	White - Original	Yellow - Exxon	Pink - Lab	Goldenrod - Consultant Field Staff

420327.022



REPORT OF LABORATORY ANALYSIS

March 31, 1992
 PACE Project Number: 420324515

Alton Geoscience
 5870 Stoneridge Dr., Ste. 6
 Pleasanton, CA 94588

Attn: Mr. Scott Thompson

Client Reference: Exxon 7-0236

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0051150
 03/23/92
 03/24/92
 MW 1

Units	MDL		DATE ANALYZED
-------	-----	--	---------------

ORGANIC ANALYSIS

TPH GASOLINE/BTEX			-	03/28/92
TOTAL FUEL HYDROCARBONS, (LIGHT):			ND	03/28/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	-	03/28/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			ND	03/28/92
Benzene	ug/L	0.5	ND	03/28/92
Toluene	ug/L	0.5	ND	03/28/92
Ethylbenzene	ug/L	0.5	ND	03/28/92
Xylenes, Total	ug/L	0.5	ND	03/28/92
TPH DIESEL, BY EPA METHOD 8015			ND	03/30/92
Extractable Fuels, as Diesel	mg/L	0.050	03/25/92	
Date Extracted				
PURGEABLE HALOCARBONS, EPA METHOD 601				
Dichlorodifluoromethane	ug/L	2.0	ND	03/25/92
Chloromethane	ug/L	2.0	ND	03/25/92
Vinyl Chloride	ug/L	2.0	ND	03/25/92
Bromomethane	ug/L	2.0	ND	03/25/92
Chloroethane	ug/L	2.0	ND	03/25/92
Trichlorofluoromethane (Freon 11)	ug/L	2.0	ND	03/25/92
1,1-Dichloroethene	ug/L	0.5	ND	03/25/92
Methylene Chloride	ug/L	2.0	ND	03/25/92
trans-1,2-Dichloroethene	ug/L	0.5	ND	03/25/92
cis-1,2-Dichloroethene	ug/L	0.5	ND	03/25/92
1,1-Dichloroethane	ug/L	0.5	ND	03/25/92
Chloroform	ug/L	0.5	ND	03/25/92
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND	03/25/92

MDL Method Detection Limit
 ND Not detected at or above the MDL.

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March 31, 1992
 PACE Project Number: 420324515

Mr. Scott Thompson
 Page 2

Client Reference: Exxon 7-0236

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0051150
 03/23/92
 03/24/92
 MW 1

ORGANIC ANALYSIS

	<u>Units</u>	<u>MDL</u>		<u>DATE ANALYZED</u>
PURGEABLE HALOCARBONS, EPA METHOD 601				
Carbon Tetrachloride	ug/L	0.5	ND	03/25/92
1,2-Dichloroethane (EDC)	ug/L	0.5	ND	03/25/92
Trichloroethene (TCE)	ug/L	0.5	ND	03/25/92
1,2-Dichloropropane	ug/L	0.5	ND	03/25/92
Bromodichloromethane	ug/L	0.5	ND	03/25/92
2-Chloroethylvinyl ether	ug/L	0.5	ND	03/25/92
cis-1,3-Dichloropropene	ug/L	0.5	ND	03/25/92
trans-1,3-Dichloropropene	ug/L	0.5	ND	03/25/92
1,1,2-Trichloroethane	ug/L	0.5	ND	03/25/92
Tetrachloroethene	ug/L	0.5	ND	03/25/92
Dibromochloromethane	ug/L	0.5	ND	03/25/92
Chlorobenzene	ug/L	0.5	ND	03/25/92
Bromoform	ug/L	0.5	ND	03/25/92
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	03/25/92
1,3-Dichlorobenzene	ug/L	0.5	ND	03/25/92
1,4-Dichlorobenzene	ug/L	0.5	ND	03/25/92
1,2-Dichlorobenzene	ug/L	0.5	ND	03/25/92
Bromochloromethane (Surrogate Recovery)			100%	03/25/92
1,4-Dichlorobutane (Surrogate Recovery)			82%	03/25/92
TOTAL OIL AND GREASE (SM 5520)				
Total Oil & Grease SM 5520	mg/L	5.0	ND	03/29/92
Date Extracted			03/27/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. Scott Thompson
Page 3

March 31, 1992
PACE Project Number: 420324515

Client Reference: Exxon 7-0236

PACE Sample Number:
Date Collected:
Date Received:
Client Sample ID:
Parameter

70 0051169
03/23/92
03/24/92
MW 2

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

TPH GASOLINE/BTEX			-	03/28/92
TOTAL FUEL HYDROCARBONS, (LIGHT):		500	7100	03/28/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L		-	03/28/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):		5.0	740	03/28/92
Benzene	ug/L	5.0	30	03/28/92
Toluene	ug/L	5.0	810	03/28/92
Ethylbenzene				
Xylenes, Total	ug/L	5.0	490	03/28/92
TPH DIESEL, BY EPA METHOD 8015			3.0	03/30/92
Extractable Fuels, as Diesel	mg/L	0.050	03/25/92	
Date Extracted				
PURGEABLE HALOCARBONS, EPA METHOD 601				
Dichlorodifluoromethane	ug/L	2.0	ND	03/25/92
Chloromethane	ug/L	2.0	ND	03/25/92
Vinyl Chloride	ug/L	2.0	ND	03/25/92
Bromomethane	ug/L	2.0	ND	03/25/92
Chloroethane	ug/L	2.0	ND	03/25/92
Trichlorofluoromethane (Freon 11)				
1,1-Dichloroethene	ug/L	0.5	ND	03/25/92
Methylene Chloride	ug/L	2.0	ND	03/25/92
trans-1,2-Dichloroethene	ug/L	0.5	ND	03/25/92
cis-1,2-Dichloroethene	ug/L	0.5	ND	03/25/92
1,1-Dichloroethane	ug/L	0.5	ND	03/25/92
Chloroform				
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND	03/25/92
Carbon Tetrachloride	ug/L	0.5	ND	03/25/92
1,2-Dichloroethane (EDC)	ug/L	0.5	ND	03/25/92
Trichloroethene (TCE)	ug/L	0.5	ND	03/25/92

MDL Method Detection Limit
ND Not detected at or above the MDL.



REPORT OF LABORATORY ANALYSIS

Mr. Scott Thompson
Page 4

March 31, 1992
PACE Project Number: 420324515

Client Reference: Exxon 7-0236

PACE Sample Number:
Date Collected:
Date Received:
Client Sample ID:
Parameter

70 0051169
03/23/92
03/24/92
MW 2

Units	MDL	DATE ANALYZED
-------	-----	---------------

ORGANIC ANALYSIS

PURGEABLE HALOCARBONS, EPA METHOD 601

1,2-Dichloropropane	ug/L	0.5	ND	03/25/92
Bromodichloromethane	ug/L	0.5	ND	03/25/92
2-Chloroethylvinyl ether	ug/L	0.5	ND	03/25/92
cis-1,3-Dichloropropene	ug/L	0.5	ND	03/25/92
trans-1,3-Dichloropropene	ug/L	0.5	ND	03/25/92
1,1,2-Trichloroethane	ug/L	0.5	ND	03/25/92
Tetrachloroethene	ug/L	0.5	ND	03/25/92
Dibromochloromethane	ug/L	0.5	ND	03/25/92
Chlorobenzene	ug/L	0.5	ND	03/25/92
Bromoform	ug/L	0.5	ND	03/25/92
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	03/25/92
1,3-Dichlorobenzene	ug/L	0.5	ND	03/25/92
1,4-Dichlorobenzene	ug/L	0.5	ND	03/25/92
1,2-Dichlorobenzene	ug/L	0.5	ND	03/25/92
Bromochloromethane (Surrogate Recovery)			92%	03/25/92
1,4-Dichlorobutane (Surrogate Recovery)			91%	03/25/92
TOTAL OIL AND GREASE (SM 5520)	mg/L	5.0	ND	03/29/92
Total Oil & Grease SM 5520			03/27/92	
Date Extracted				

MDL Method Detection Limit
ND Not detected at or above the MDL.

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Mr. Scott Thompson
 Page 5

March 31, 1992
 PACE Project Number: 420324515

Client Reference: Exxon 7-0236

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0051177
 03/23/92
 03/24/92
 MW 3

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

TPH GASOLINE/BTEX			-	03/28/92
TOTAL FUEL HYDROCARBONS, (LIGHT):				
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	640	03/28/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):				
Benzene	ug/L	0.5	ND	03/28/92
Toluene	ug/L	0.5	12	03/28/92
Ethylbenzene	ug/L	0.5	25	03/28/92
Xylenes, Total	ug/L	0.5	6.5	03/28/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/L	0.050	0.44	03/30/92
Date Extracted			03/25/92	
PURGEABLE HALOCARBONS, EPA METHOD 601				
Dichlorodifluoromethane	ug/L	2.0	ND	03/25/92
Chloromethane	ug/L	2.0	ND	03/25/92
Vinyl Chloride	ug/L	2.0	ND	03/25/92
Bromomethane	ug/L	2.0	ND	03/25/92
Chloroethane	ug/L	2.0	ND	03/25/92
Trichlorofluoromethane (Freon 11)	ug/L	2.0	ND	03/25/92
1,1-Dichloroethene	ug/L	0.5	ND	03/25/92
Methylene Chloride	ug/L	2.0	ND	03/25/92
trans-1,2-Dichloroethene	ug/L	0.5	ND	03/25/92
cis-1,2-Dichloroethene	ug/L	0.5	ND	03/25/92
1,1-Dichloroethane	ug/L	0.5	ND	03/25/92
Chloroform	ug/L	0.5	ND	03/25/92
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND	03/25/92
Carbon Tetrachloride	ug/L	0.5	ND	03/25/92
1,2-Dichloroethane (EDC)	ug/L	0.5	ND	03/25/92
Trichloroethene (TCE)	ug/L	0.5	ND	03/25/92

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. Scott Thompson
Page 6

March 31, 1992
PACE Project Number: 420324515

Client Reference: Exxon 7-0236

PACE Sample Number:
Date Collected:
Date Received:
Client Sample ID:
Parameter

70 0051177
03/23/92
03/24/92
MW 3

Units MDL _____ DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE HALOCARBONS, EPA METHOD 601

1,2-Dichloropropane	ug/L	0.5	ND	03/25/92
Bromodichloromethane	ug/L	0.5	ND	03/25/92
2-Chloroethylvinyl ether	ug/L	0.5	ND	03/25/92
cis-1,3-Dichloropropene	ug/L	0.5	ND	03/25/92
trans-1,3-Dichloropropene	ug/L	0.5	ND	03/25/92
1,1,2-Trichloroethane	ug/L	0.5	ND	03/25/92
Tetrachloroethene	ug/L	0.5	ND	03/25/92
Dibromochloromethane	ug/L	0.5	ND	03/25/92
Chlorobenzene	ug/L	0.5	ND	03/25/92
Bromoform	ug/L	0.5	ND	03/25/92
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	03/25/92
1,3-Dichlorobenzene	ug/L	0.5	ND	03/25/92
1,4-Dichlorobenzene	ug/L	0.5	ND	03/25/92
1,2-Dichlorobenzene	ug/L	0.5	ND	03/25/92
Bromochloromethane (Surrogate Recovery)			107%	03/25/92
1,4-Dichlorobutane (Surrogate Recovery)			90%	03/25/92
TOTAL OIL AND GREASE (SM 5520)	mg/L	5.0	ND	03/29/92
Total Oil & Grease SM 5520			03/27/92	
Date Extracted				

MDL Method Detection Limit
ND Not detected at or above the MDL.

These data have been reviewed and are approved for release.

David Cair for

Mark A. Valentini, Ph.D.
Regional Director



REPORT OF LABORATORY ANALYSIS

Mr. Scott Thompson
Page 7

QUALITY CONTROL DATA

March 31, 1992
PACE Project Number: 420324515

Client Reference: Exxon 7-0236

EXTRACTABLE FUELS EPA 3510/8015
Batch: 70 11062
Samples: 70 0051150, 70 0051169, 70 0051177

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Extractable Fuels, as Diesel	mg/L	0.050	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Extractable Fuels, as Diesel	mg/L	0.050	1.00	71%	67%	5%

MDL Method Detection Limit
RPD Relative Percent Difference

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Mr. Scott Thompson
 Page 8

QUALITY CONTROL DATA

March 31, 1992
 PACE Project Number: 420324515

Client Reference: Exxon 7-0236

PURGEABLES, EPA METHODS 601/602
 Batch: 70 11001
 Samples: 70 0051150, 70 0051169, 70 0051177

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Dichlorodifluoromethane	ug/L	2.0	ND
Chloromethane	ug/L	2.0	ND
Vinyl Chloride	ug/L	2.0	ND
Bromomethane	ug/L	2.0	ND
Chloroethane	ug/L	2.0	ND
Trichlorofluoromethane (Freon 11)	ug/L	2.0	ND
1,1-Dichloroethene	ug/L	0.5	ND
Methylene Chloride	ug/L	2.0	ND
trans-1,2-Dichloroethene	ug/L	0.5	ND
1,1-Dichloroethane	ug/L	0.5	ND
Chloroform	ug/L	0.5	ND
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND
Carbon Tetrachloride	ug/L	0.5	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	ND
Trichloroethene (TCE)	ug/L	0.5	ND
1,2-Dichloropropane	ug/L	0.5	ND
Bromodichloromethane	ug/L	0.5	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND
1,1,2-Trichloroethane	ug/L	0.5	ND
Tetrachloroethene	ug/L	0.5	ND
Dibromochloromethane	ug/L	0.5	ND
Chlorobenzene	ug/L	0.5	ND
Bromoform	ug/L	0.5	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND
1,3-Dichlorobenzene	ug/L	0.5	ND
1,4-Dichlorobenzene	ug/L	0.5	ND
1,2-Dichlorobenzene	ug/L	0.5	ND
Bromochloromethane (Surrogate Recovery)			95%
1,4-Dichlorobutane (Surrogate Recovery)			84%

MDL Method Detection Limit

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REPORT OF LABORATORY ANALYSIS

Mr. Scott Thompson
Page 9

QUALITY CONTROL DATA

March 31, 1992
PACE Project Number: 420324515

Client Reference: Exxon 7-0236

PURGEABLES, EPA METHODS 601/602
Batch: 70 11001
Samples: 70 0051150, 70 0051169, 70 0051177

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Benzene	ug/L	0.3	ND
Toluene	ug/L	0.3	ND
Ethylbenzene	ug/L	0.3	ND
Xylenes, Total	ug/L	0.6	ND
Fluorobenzene (Surrogate Recovery)			104%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dup1 Recv	RPD
I,1-Dichloroethane	ug/L	0.5	10.00	91%	87%	4%
Trichloroethene (TCE)	ug/L	0.5	10.00	77%	73%	5%
trans-1,3-Dichloropropene	ug/L	0.5	3.8	76%	72%	5%
Tetrachloroethene	ug/L	0.5	10.00	82%	82%	0%
Benzene	ug/L	0.3	10.00	95%	91%	4%
Toluene	ug/L	0.3	10.00	99%	95%	4%
Xylenes, Total	ug/L	0.6	20.00	106%	99%	6%

MDL Method Detection Limit
RPD Relative Percent Difference



REPORT OF LABORATORY ANALYSIS

Mr. Scott Thompson
Page 10

QUALITY CONTROL DATA

March 31, 1992
PACE Project Number: 420324515

Client Reference: Exxon 7-0236

TOTAL OIL AND GREASE (SM 5520)
Batch: 70 11060
Samples: 70 0051150, 70 0051169, 70 0051177

METHOD BLANK:

Parameter	Units mg/L	MDL 5.0	Method Blank ND
Total Oil & Grease SM 5520			

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units mg/L	MDL 10	Reference Value 20	Recv 245%	Dupl Recv 90%	RPD 92%
Total Oil & Grease SM 5520						
Total Oil & Grease SM 5520						

MDL Method Detection Limit
RPD Relative Percent Difference



REPORT OF LABORATORY ANALYSIS

Mr. Scott Thompson
Page 11

QUALITY CONTROL DATA

March 31, 1992
PACE Project Number: 420324515

Client Reference: Exxon 7-0236

TPH GASOLINE/BTEX
Batch: 70 11099
Samples: 70 0051150, 70 0051169, 70 0051177

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	276	107%	107%	0%
Benzene	ug/L	0.5	40.0	110%	110%	0%
Toluene	ug/L	0.5	40.0	108%	109%	0%
Ethylbenzene	ug/L	0.5	40.0	112%	109%	2%
Xylenes, Total	ug/L	0.5	80.0	110%	110%	0%

MDL Method Detection Limit
RPD Relative Percent Difference



REPORT OF LABORATORY ANALYSIS

Alton Geoscience
 5870 Stoneridge Drive, Suite 6
 Pleasanton, CA 94588

April 15, 1992
 PACE Project Number: 420408505

Attn: Mr. John DeGeorge

Client Reference: Exxon 7-0236

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0071054
 04/06/92
 04/08/92
 MW-5

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

TPH GASOLINE/BTEX			-	04/10/92
TOTAL FUEL HYDROCARBONS, (LIGHT):			ND	04/10/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	-	04/10/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			ND	04/10/92
Benzene	ug/L	0.5	ND	04/10/92
Toluene	ug/L	0.5	ND	04/10/92
Ethylbenzene	ug/L	0.5	ND	04/10/92
Xylenes, Total	ug/L	0.5	ND	04/10/92
TPH DIESEL, BY EPA METHOD 8015			ND	04/14/92
Extractable Fuels, as Diesel	mg/L	0.050	04/11/92	
Date Extracted				

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
 Page 2

April 15, 1992
 PACE Project Number: 420408505

Client Reference: Exxon 7-0236

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0071062
 04/06/92
 04/08/92
 MW-7

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

TPH GASOLINE/BTEX			-	04/10/92
TOTAL FUEL HYDROCARBONS, (LIGHT):			ND	04/10/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	-	04/10/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			ND	04/10/92
Benzene	ug/L	0.5	ND	04/10/92
Toluene	ug/L	0.5	ND	04/10/92
Ethylbenzene	ug/L	0.5	ND	04/10/92
Xylenes, Total	ug/L	0.5	ND	04/10/92
TPH DIESEL, BY EPA METHOD 8015			ND	04/14/92
Extractable Fuels, as Diesel	mg/L	0.050	04/11/92	
Date Extracted				

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
 Page 3

April 15, 1992
 PACE Project Number: 420408505

Client Reference: Exxon 7-0236

PACE Sample Number:
 Date Collected:
 Date Received:
 Client Sample ID:
 Parameter

70 0071070
 04/06/92
 04/08/92
 MW-4

Units MDL _____ DATE ANALYZED

ORGANIC ANALYSIS

TPH GASOLINE/BTEX			-	04/10/92
TOTAL FUEL HYDROCARBONS, (LIGHT):				
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	04/10/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/10/92
Benzene	ug/L	0.5	ND	04/10/92
Toluene	ug/L	0.5	ND	04/10/92
Ethylbenzene	ug/L	0.5	ND	04/10/92
Xylenes, Total	ug/L	0.5	ND	04/10/92
TPH DIESEL, BY EPA METHOD 8015				
Extractable Fuels, as Diesel	mg/L	0.050	ND	04/14/92
Date Extracted			04/11/92	

MDL Method Detection Limit
 ND Not detected at or above the MDL.

Mr. John DeGeorge
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April 15, 1992
PACE Project Number: 420408505

Client Reference: Exxon 7-0236

PACE Sample Number:	70 0071089
Date Collected:	04/06/92
Date Received:	04/08/92
Client Sample ID:	MW-6
<u>Parameter</u>	<u>Units</u> <u>MDL</u> <u>DATE ANALYZED</u>

ORGANIC ANALYSIS

TPH GASOLINE/BTEX

TOTAL FUEL HYDROCARBONS, (LIGHT):			-	04/10/92
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND	04/10/92
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-	04/10/92
Benzene	ug/L	0.5	ND	04/10/92
Toluene	ug/L	0.5	ND	04/10/92
Ethylbenzene	ug/L	0.5	ND	04/10/92
Xylenes, Total	ug/L	0.5	ND	04/10/92

TPH DIESEL, BY EPA METHOD 8015

Extractable Fuels, as Diesel	mg/L	0.050	ND	04/14/92
Date Extracted			04/11/92	

PURGEABLE HALOCARBONS, EPA METHOD 601

Dichlorodifluoromethane	ug/L	2.0	ND	04/09/92
Chloromethane	ug/L	2.0	ND	04/09/92
Vinyl Chloride	ug/L	2.0	ND	04/09/92
Bromomethane	ug/L	2.0	ND	04/09/92
Chloroethane	ug/L	2.0	ND	04/09/92
Trichlorofluoromethane (Freon 11)	ug/L	2.0	ND	04/09/92
1,1-Dichloroethene	ug/L	0.5	ND	04/09/92
Methylene Chloride	ug/L	2.0	ND	04/09/92
trans-1,2-Dichloroethene	ug/L	0.5	ND	04/09/92
cis-1,2-Dichloroethene	ug/L	0.5	ND	04/09/92
1,1-Dichloroethane	ug/L	0.5	ND	04/09/92
Chloroform	ug/L	0.5	ND	04/09/92
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND	04/09/92
Carbon Tetrachloride	ug/L	0.5	ND	04/09/92
1,2-Dichloroethane (EDC)	ug/L	0.5	ND	04/09/92
Trichloroethene (TCE)	ug/L	0.5	ND	04/09/92

MDL Method Detection Limit
ND Not detected at or above the MDL.



REPORT OF LABORATORY ANALYSIS

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April 15, 1992
PACE Project Number: 420408505

Client Reference: Exxon 7-0236

PACE Sample Number:
Date Collected:
Date Received:
Client Sample ID:
Parameter

70 0071089
04/06/92
04/08/92
MW-6

Units MDL DATE ANALYZED

ORGANIC ANALYSIS

PURGEABLE HALOCARBONS, EPA METHOD 601

1,2-Dichloropropane	ug/L	0.5	ND	04/09/92
Bromodichloromethane	ug/L	0.5	ND	04/09/92
2-Chloroethylvinyl ether	ug/L	0.5	ND	04/09/92
cis-1,3-Dichloropropene	ug/L	0.5	ND	04/09/92
trans-1,3-Dichloropropene	ug/L	0.5	ND	04/09/92
1,1,2-Trichloroethane	ug/L	0.5	ND	04/09/92
Tetrachloroethene	ug/L	0.5	ND	04/09/92
Dibromochloromethane	ug/L	0.5	ND	04/09/92
Chlorobenzene	ug/L	0.5	ND	04/09/92
Bromoform	ug/L	0.5	ND	04/09/92
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND	04/09/92
1,3-Dichlorobenzene	ug/L	0.5	ND	04/09/92
1,4-Dichlorobenzene	ug/L	0.5	ND	04/09/92
1,2-Dichlorobenzene	ug/L	0.5	ND	04/09/92
Bromochloromethane (Surrogate Recovery)			96%	04/09/92
1,4-Dichlorobutane (Surrogate Recovery)			95%	04/09/92

MDL Method Detection Limit
ND Not detected at or above the MDL.

These data have been reviewed and are approved for release.

Mark A. Valentini for

Mark A. Valentini, Ph.D.
Regional Director

Mr. John DeGeorge
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QUALITY CONTROL DATA

April 15, 1992
PACE Project Number: 420408505

Client Reference: Exxon-7-0236

HALOGENATED VOLATILE COMPOUNDS EPA 8010
Batch: 70 11451
Samples: 70 0071089

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Dichlorodifluoromethane	ug/L	2.0	ND
Chloromethane	ug/L	2.0	ND
Vinyl Chloride	ug/L	2.0	ND
Bromomethane	ug/L	2.0	ND
Chloroethane	ug/L	2.0	ND
Trichlorofluoromethane (Freon 11)	ug/L	2.0	ND
1,1-Dichloroethene	ug/L	0.5	ND
Methylene Chloride	ug/L	2.0	ND
trans-1,2-Dichloroethene	ug/L	0.5	ND
cis-1,2-Dichloroethene	ug/L	0.5	ND
1,1-Dichloroethane	ug/L	0.5	ND
Chloroform	ug/L	0.5	ND
1,1,1-Trichloroethane (TCA)	ug/L	0.5	ND
Carbon Tetrachloride	ug/L	0.5	ND
1,2-Dichloroethane (EDC)	ug/L	0.5	ND
Trichloroethene (TCE)	ug/L	0.5	ND
1,2-Dichloropropane	ug/L	0.5	ND
Bromodichloromethane	ug/L	0.5	ND
2-Chloroethylvinyl ether	ug/L	0.5	ND
cis-1,3-Dichloropropene	ug/L	0.5	ND
trans-1,3-Dichloropropene	ug/L	0.5	ND
1,1,2-Trichloroethane	ug/L	0.5	ND
Tetrachloroethene	ug/L	0.5	ND
Dibromochloromethane	ug/L	0.5	ND
Chlorobenzene	ug/L	0.5	ND
Bromoform	ug/L	0.5	ND
1,1,2,2-Tetrachloroethane	ug/L	0.5	ND
1,3-Dichlorobenzene	ug/L	0.5	ND
1,4-Dichlorobenzene	ug/L	0.5	ND
1,2-Dichlorobenzene	ug/L	0.5	ND
Bromochloromethane (Surrogate Recovery)			97%

MDL Method Detection Limit

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Mr. John DeGeorge
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QUALITY CONTROL DATA

April 15, 1992
 PACE Project Number: 420408505

Client Reference: Exxon 7-0236

HALOGENATED VOLATILE COMPOUNDS EPA 8010
 Batch: 70 11451
 Samples: 70 0071089

METHOD BLANK:

Parameter	Units	MDL	Method Blank
1,4-Dichlorobutane (Surrogate Recovery)			88%

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
1,1-Dichloroethane	ug/L	0.5	10.00	80%	71%	11%
Trichloroethene (TCE)	ug/L	0.5	10.00	68%	75%	9%
trans-1,3-Dichloropropene	ug/L	0.5	3.8	70%	83%	16%
Tetrachloroethene	ug/L	0.5	10.00	80%	89%	10%

MDL Method Detection Limit
 RPD Relative Percent Difference



REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

April 15, 1992
PACE Project Number: 420408505

Client Reference: Exxon 7-0236

TPH DIESEL, BY EPA METHOD 8015
Batch: 70 11543

Samples: 70 0071054, 70 0071062, 70 0071070, 70 0071089

METHOD BLANK:

Parameter	Units	MDL	Method Blank
Extractable Fuels, as Diesel	mg/L	0.050	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Extractable Fuels, as Diesel	mg/L	0.050	1.00	66%	68%	2%

MDL Method Detection Limit
RPD Relative Percent Difference

Mr. John DeGeorge
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QUALITY CONTROL DATA

April 15, 1992
 PACE Project Number: 420408505

Client Reference: Exxon 7-0236

TPH GASOLINE/BTEX
 Batch: 70 11493
 Samples: 70 0071054

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			-
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			-
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	354	111%	107%	3%
Benzene	ug/L	0.5	40.0	106%	104%	1%
Toluene	ug/L	0.5	40.0	107%	103%	3%
Ethylbenzene	ug/L	0.5	40.0	108%	103%	4%
Xylenes, Total	ug/L	0.5	80.0	108%	105%	2%

MDL Method Detection Limit
 RPD Relative Percent Difference



REPORT OF LABORATORY ANALYSIS

Mr. John DeGeorge
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QUALITY CONTROL DATA

April 15, 1992
PACE Project Number: 420408505

Client Reference: Exxon 7-0236

TPH GASOLINE/BTEX

Batch: 70 11509
Samples: 70 0071062, 70 0071070, 70 0071089

METHOD BLANK:

Parameter	Units	MDL	Method Blank
TOTAL FUEL HYDROCARBONS, (LIGHT):			
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	ND
PURGEABLE AROMATICS (BTXE BY EPA 8020):			
Benzene	ug/L	0.5	ND
Toluene	ug/L	0.5	ND
Ethylbenzene	ug/L	0.5	ND
Xylenes, Total	ug/L	0.5	ND

LABORATORY CONTROL SAMPLE AND CONTROL SAMPLE DUPLICATE:

Parameter	Units	MDL	Reference Value	Recv	Dupl Recv	RPD
Purgeable Fuels, as Gasoline (EPA 8015)	ug/L	50	358	98%	97%	1%
Benzene	ug/L	0.5	40.0	102%	98%	4%
Toluene	ug/L	0.5	40.0	107%	103%	3%
Ethylbenzene	ug/L	0.5	40.0	107%	102%	4%
Xylenes, Total	ug/L	0.5	80.0	109%	104%	4%

MDL Method Detection Limit
RPD Relative Percent Difference



EXXON COMPANY, U.S.A.
 P.O. Box 4415, Houston, TX 77210-4415
CHAIN OF CUSTODY

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 11 Digital Drive, 94949
 (415) 883-6100

Irvine, CA
 Alton Business Park
 30 Hughes St., Suite 206, 92718
 (714) 380-9559

Consultant Name: ALTON GEOSCIENCE
 Address: 5870 Stoneridge Dr. Pleasanton, CA 94588 Street 6
 Project Contact: John De George Project # 30-0491
 Phone #: 510-734-8134 Fax # 510-734-8420
 Consultant Work Release #: CONTACT # 37900017
 Exxon Contact: Bill Wang Phone #: 510-246-8768
 Site RAS #: 7-0236
 Site Location: 6630 E. 14th St. Oakland, CA
 Laboratory Work Release #: ---

Sampled by (please print) <u>ANDREW BLOCK</u>					SOIL			WATER			Total Oil & Grease SM 5520	HALD CARBONS (8010)	Remarks
Sampler Signature <u>Andrew Block</u>		Date Sampled <u>4-6-92</u>			TPH/GAS/BTEX EPA 8015/8020	TPH/Lead EPA 8015	Organic Lead DHS Method	TPH/GAS/BTEX EPA 8015/602	TPH/Lead EPA 8015	Organic Lead DHS Method			
Sample Description	Collection Date/Time	Matrix	Prsv	# of Cont.									
MW-5	4/6/92/1325	W	Yes	5				X	X			7/10.1	3x 30 mL (HCL) 2x LITER (NONE)
MW-7	4/6/92/1400	W	Yes	5				X	X			06.2	3x 30 mL 2x LITER
MW-4	4/6/92/1425	W	Yes	5				X	X			07.1	3x 30 mL 2x LITER
MW-6	4/6/92/1500	W	Yes	8				X	X		X	08.9	6x 30 mL 2x LITER

REC'D LIT.
 w/fez
 sample +
 container
 cracked
 (SM) 4/8/92

Cooler No. <u>111613</u>	Relinquished by/Affiliation	Accepted by/Affiliation	Date	Time
Cooler Seal Intact <input type="checkbox"/> Yes <input type="checkbox"/> No	<u>Andrew Block / ALTON</u>	<u>Bill Wang - Exxon</u>	<u>4/8/92</u>	<u>1300</u>
Turnaround Time (circle choice) 24 hr. 48 hr. 72 hr. 96 hr. <u>5 workday (standard)</u>	<u>via courier</u>	<u>Bill Wang - Exxon</u>	<u>4/8</u>	<u>1430</u>
Shipment Method	Additional Comments:			
Shipment Date				
Distribution:	White - Original	Yellow - Exxon	Pink - Lab	Goldenrod - Consultant Field Staff