Ultramar

Ultramar Inc.
P.O. Box 466
525 W. Third Street
Hanford, CA 93232-0466
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May 1, 1991

Mr. Gil Wistar
Alameda County Health Care Services
Department of Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

SUBJECT: BEACON STATION NO. 604, 1619 FIRST STREET, LIVERMORE, CALIFORNIA

Dear Mr. Wistar:

In a letter from Alameda County to Ultramar Inc. (Ultramar) dated April 19, 1991, you stated that investigations at the Livermore Arcade Shopping Center in Livermore had determined that ground-water contamination is present beneath that site. Laboratory results of ground water collected at the shopping center site during the March 1990 sampling event indicated concentrations of 84 parts per million (ppm) total petroleum hydrocarbons as gasoline (TPH) and 11 ppm benzene, as well as other aromatics, were present in Monitoring Well MW-1. You also stated that the County had not received a report on our consultant's sampling of MW-1 and that due to the proximity of the above-referenced Ultramar facility to the well, hydrocarbon concentrations detected in that well, and lack of any other nearby upgradient source of gasoline that Alameda County is requiring Ultramar to initiate a subsurface investigation.

Delta Environmental Consultants (Delta) sampled MW-1 located on the shopping center property on December 11, 1990. However, Ultramar was not aware that a report of this sampling was required by the County. Laboratory results of the ground-water sample collected from MW-1 indicated similar results as those detected during the March 1990 sampling event (91 ppm TPH and 11 ppm benzene). The Official Laboratory Report is enclosed for your files.

On October 23, 1990, as part Ultramar's routine procedure prior to tank removal, a soil gas survey was performed by EVAX Technologies, Inc. (EVAX) to assess the area in the vicinity of the underground gasoline storage tanks at Beacon Station 604. Results of the survey indicate no detectable hydrocarbon vapors were present in the vicinity of the underground tanks. A copy of the EVAX report is enclosed for your review.

91 MAY -6 PM 12:11

In the Alameda County letter it is stated that Beacon Station 604 is upgradient of MW-1. However, based on the apparent ground-water flow direction presented in the Hygenetics report dated April 3, 1990, the Beacon station is actually situated cross gradient and not upgradient. Furthermore, as you stated in your letter to Ultramar, the three product tanks located at Beacon Station 604 tested "tight" in the March 1990 precision test. These facts coupled with the results of the soil gas survey suggest that the Beacon station is not the source of the hydrocarbons present beneath the shopping center property. Consequently, Ultramar will not be submitting a workplan for the assessment of Beacon Station 604 and will be unable to meet your deadline of May 24, 1991.

NOT SO IN 1980's

Based on the Hygenetics report dated April 3, 1990, which documents the installation of Monitoring Well MW-1 on the Livermore Arcade Shopping Center property, it appears that no soil samples were collected for laboratory analysis during the drilling of the well. It would seem prudent that the owner of the shopping center property be required to fully assess his site before the County requires offsite property owners to assess their properties. In the Hygenetics Environmental Site Assessment report dated February 27, 1990, it is stated that the shopping center property was a "family farm" prior to 1979. However, it appears that no attempt has been made to determine whether or not an agricultural underground fuel storage tank was ever located on the site.

During a recent site visit by Ultramar personnel, a storm drain was observed on the Livermore Arcade Shopping Center property approximately 20 feet from Monitoring Well MW-1. A leaking storm drain is another possible source of the hydrocarbons detected in the ground water beneath the shopping center property.

Ultramar representatives recently met with staff of the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). During that meeting, Tom Callaghan of the RWQCB stated that the **property owner of a site which has contamination must provide evidence that indicates that an adjacent site has contributed or is responsible for the contamination** before the RWQCB can take action against that adjacent property owner.

Ultramar would be happy to meet with Alameda County and Regional Water Quality Control Board staff to discuss this site. Please call if you have any questions.

Sincerely,

ULTRAMAR INC.

Terrence A. Fox

Terrence A. Fox
Environmental Specialist II

Enclosure: Analytical results, Subsurface Investigation report

cc w/encl: Mr. Thomas J. Callaghan, RWQCB, San Francisco Bay Region
Ms. Danielle Stefani, Livermore Fire Dept.
Rafat Shahid, Asst. Agency Director, Alameda County Environmental Health

APPL, INC.

DEC 28 1990

AGRICULTURE & PRIORITY POLLUTANTS LABORATORIES, INC.

4203 WEST SWIFT AVENUE • FRESNO, CALIFORNIA 93722 • PHONE (209) 275-2175

KCG 1/2/91

Delta Environmental
3330 Data Drive #100
Rancho Cordova, California 95670
Attn: Marty Burck

Sample Date: 12/11/90
Report Date: 12/21/90

Page 1 of 1

Sample I.D. No: Beacon Sta#604 MW-1A(121190/915)
APPL Sample No: R7631-53249WA-B

Date Received: 12/13/90
Date Extracted: 12/14/90

Test Results:**

Compound	Concentration µg/L	Detection limit µg/L
Benzene	11,000	0.5
Toluene	13,000	0.5
Ethylbenzene	2,300	0.5
Total Xylenes	13,400	0.5
TVH-Gasoline	91,000	20

* ND = None Detected

** B.T.E. & X. analyzed by EPA Method 8020 & 5030. TVH (Total Volatile Hydrocarbons) analyzed by EPA Method 5030 and GC/FID.

Tested By Nancy Morley

Checked By

BEACON

Ultramar Inc.
CHAIN OF CUSTODY REPORT

Beacon Station No.	Sampler (Print Name)			Date	Form No.
604	Timothy J. Kuntz			12-11-90	1 of 1

Project No.	Sampler (Signature)
40-89-095.02	[signature]

Project Location	Affiliation
Livermore	Delta ENV.

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)							No. of Containers	REMARKS
MW-1A(121190/915	12/11/90	915		X	X								2	

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature]	12/12	11:00	Fed Ex		
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation) Fed Ex	Date	Time	Received by: (Signature/Affiliation) [signature]	12/13/90	10:00

Report To: Marty Burck
Delta ENV. Cons. Inc.
3330 Data Dr. #100
Rancho Cordova, Ca 95670

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: TERRY FOX

WHITE: Return to Client with Report YELLOW: Laboratory Copy PINK: Originator Copy

Chilled & intact

SUBSURFACE INVESTIGATION
AT BEACON STATION NO. 604
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA

Prepared by:
EVAX TECHNOLOGIES, INC.
269 Mount Hermon Road, Suite 101
Scotts Valley, California 95066

Project Engineer:
Robert Nunes

Principal Investigator:
Matt I. Kaempf

Prepared for:
ULTRAMAR INC.
525 West Third Street
Hanford, California
93230

Project Officer:
Terry Fox

November 29,1990

Project 02310.01 November 29, 1990

TABLE OF CONTENTS

INTRODUCTION

At the request of Ultramar, Inc. (Ultramar), a subsurface investigation was conducted in the vicinity of the underground storage tank complex at the subject site. This report presents a description of the investigation procedures, the results of the limited Soil Gas Survey and Performance Test, an interpretation of the results, and conclusions based on these findings.

BACKGROUND

The subject site is an operating Beacon Service Station located on the southeast corner of West First Street and P Street in Livermore, California. There are three underground storage tanks on the site. The property also contains a station building and pump islands facing onto First Street.

PURPOSE AND SCOPE

The objectives of this investigation were to 1) determine if any hydrocarbons have impacted the soil around the storage tank complex at the subject site and 2) evaluate the feasibility of using vacuum extraction for soil remediation. These objectives were met through the completion of a limited Soil Gas Survey and Performance Test.

All data collected in this investigation are considered confidential and will not be released to a third party without the written consent of an authorized representative of Ultramar.

PROCEDURES

Limited Soil Gas Survey

The limited Soil Gas Survey was conducted on October 23, 1990 at the subject site. Six temporary vacuum probes were installed for the investigation. Placement of the temporary vacuum probes was determined in the field by the site investigator. Soil gases were analyzed for total volatile hydrocarbons (TVH) during the limited Soil Gas Survey to screen for the presence of hydrocarbon vapor and, if found, delineate the extent of TVH impacted soil at the subject site.

The temporary vacuum probes installed for the investigation were constructed of 1/2-inch diameter schedule 40 steel pipe. A point was forged on one end of each probe. A 48-inch range of 3/16-inch

perforations were drilled into each probe beginning at 3 inches from the point (Figure A). The vacuum probes were driven pneumatically into the soil to a depth of 15 feet below grade (Table 1). In locations where the soil was covered by concrete or asphalt, a 1-inch diameter hole was drilled through the surface material with an electric roto-hammer to facilitate probe installation.

After installation, a vacuum was applied to each probe or well to extract soil gas. One psi sample pressure was maintained during the analysis. Sample flow rate and instrument pressures were checked before each test. The soil gas was sampled through a 1/4-inch Teflon sample line that was connected to a stainless steel well head fitting. Use of Teflon tubing minimizes sample loss through adsorption and the possibility of distorted results from a sample line contaminated by a previous analysis.

Leak checks were performed on the sample line before the analysis. Filters were used extensively throughout the system to remove foreign material from the sample pathway. The sample line was connected to a diaphragm pump located in a mobile laboratory. The extracted soil gas was analyzed using a Beckman Model 400 Total Hydrocarbon Analyzer equipped with a Flame Ionization Detector (FID). The Beckman Model 400 was calibrated using certified standards of propane in nitrogen. The instrument was recalibrated periodically throughout the day using certified standards.

Performance Test → To determine capture radius

The Performance Test was conducted on October 23, 1990 at the subject site. A portable skid containing a vacuum pump, flow meters, and vacuum gauges was used on site. A vacuum line was connected to a temporary vacuum probe to create an extraction point. Probes P-2, and P-5 were used as extraction points (Figure 1). A set volume of air was pumped from each extraction point. Each extraction point was tested for 30 minutes.

Soil gases extracted during the Performance Test were continuously monitored for the presence of TVH using the Beckman Hydrocarbon Analyzer equipped with the FID. A 1/4-inch Teflon sample line was connected from the diaphragm pump located in the mobile laboratory to a sampling port on the Performance skid.

The information from the Performance Test was used to determine the capture radius, the distance at which the pressure differential created by a vacuum pump is measured, in the lateral plane. The capture radius was noted by recording the vacuum gradient in neighboring probes in inches of water (" H_2O). This procedure was performed at various flow rates at two of the probes. The detection limit for the vacuum gradient was 0.005" H_2O. The effluent from the extraction points was routed

through two cylinders in series, each containing 200 pounds of vapor phase activated carbon. The carbon adsorbs organic vapors from the air stream, preventing discharge of contaminants into the atmosphere.

RESULTS

Limited Soil Gas Survey

Results indicate that there were no detectable levels of TVH at the probe locations tested during the limited Soil Gas Survey (Table 1).

The results of the continuous FID monitoring of extracted soil gas during the Performance Test also show no detectable levels of TVH at the extraction points.

Performance Test

Extraction volumes from the vacuum probes ranged from 15.0 to 17.0 standard cubic feet per minute (scfm) with vacuums ranging from 1.5 to 3.0 inches of mercury ("Hg). A maximum capture radius of 23 feet was noted in the lateral plane. The results of the Performance Test are given in Table 1.

CONCLUSIONS

The results of the limited Soil Gas Survey and continuous FID monitoring during the Performance Test indicate that no detectable levels of hydrocarbons are present in the soil at the probe locations tested at the subject site.

The high flow rates observed during the Performance Test would suggest that the soil gas extracted during testing was a good representation of the overall soil gas contained in the near vicinity of the test area.

TABLE 1. Limited Soil Gas Survey, Beacon Station #604, 1619 West First Street, Livermore, California, 10/23/90.

LOCATION	DEPTH (feet)	TVH (ppm)	FLOW RATE (cfh)
P-1	11-15	ND	20+
P-2	11-15	ND	20+
P-3	11-15	ND	20+
P-4	11-15	ND	20+
P-5	11-15	ND	20+
P-6	11-15	ND	20+

LOCATION - Vacuum probe locations as indicated on Figure 1.
DEPTH - Perforated range of probe at sampling location.
TVH - Total volatile hydrocarbons as propane (C_3H_8) on a volume/volume basis.
FLOW RATE - Volumetric flow rate in cubic feet per hour extracted at the extraction point.
ppm - Parts per million.
cfh - Cubic feet per hour.
[redacted] Below detection limit of [redacted]

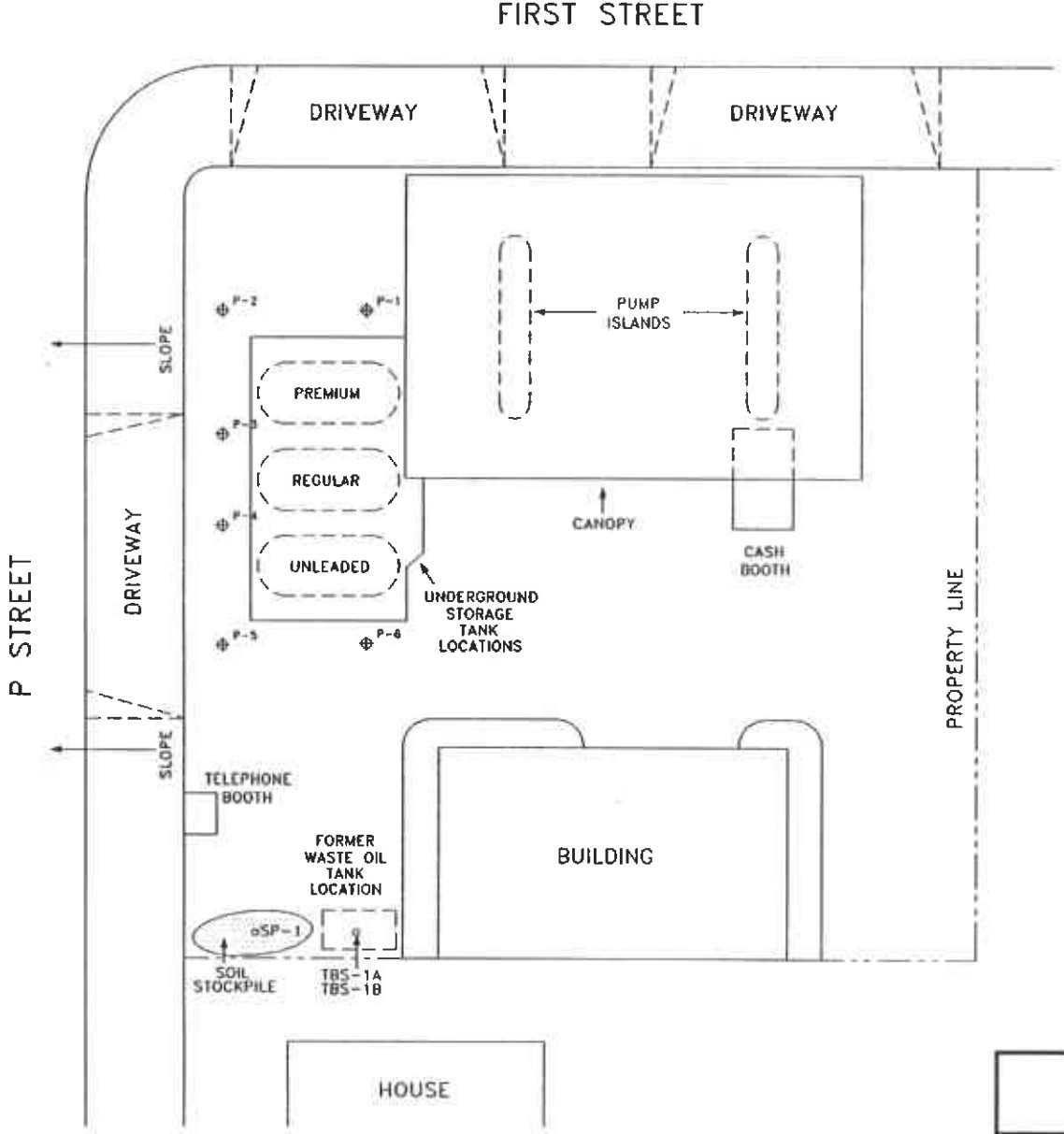
TABLE 2. Performance Test Data, Beacon Station #604, 1619 West First Street, Livermore, California, 10/23/90.

LOCATION		INFLU-ENCE ("H_2O)	EXTR RATE (scfm)	PERF DEPTH (feet)	[redacted] (feet)	EXTR VAC ("Hg)	TIME (min)
EXTRC>	P-2	--	17.0	11-15	0	3.0	0
	P-1	-0.02		11-15	15		0
	P-3	-0.025		11-15	11		0
	P-4	-0.01		11-15	23		0
	P-5	ND		11-15	37		0
EXTRC>	P-2	--	16.0	11-15	0	2.5	10
	P-1	-0.02		11-15	15		10
	P-3	-0.02		11-15	11		10
	P-4	-0.01		11-15	23		10
	P-5	ND		11-15	37		10
EXTRC>	P-2	--	16.0	11-15	0	2.5	20
	P-1	-0.015		11-15	15		20
	P-3	-0.02		11-15	11		20
	P-4	-0.015		11-15	23		20
	P-5	ND		11-15	37		20
EXTRC>	P-2	--	15.0	11-15	0		30
	P-1	-0.02		11-15	15		30
	P-3	-0.02		11-15	11		30
	[redacted]				23		30
	P-5	ND		11-15	37		30
EXTRC>	P-5	--	15.0	11-15	0	2.0	0
	[redacted]						
	P-4	ND		11-15	14		0
	P-3	ND		11-15	26		0
	P-2	ND		11-15	37		0
EXTRC>	P-5	--	16.0	11-15	0	1.5	10
	P-6	-0.02		11-15	18		10
	P-4	-0.005		11-15	14		10
	P-3	ND		11-15	26		10
	P-2	ND		11-15	37		10

TABLE 1. cont. Performance Test Data, Beacon Station #604, 1619 West First Street, Livermore, California, 10/23/90.

LOCATION	INFLUENCE ("H_2O)	EXTR RATE (scfm)	PERF DEPTH (feet)	CAPTURE RADIUS (feet)	EXTR VAC ("Hg)	TIME (min)
EXTRC> P-5	--	16.0	11-15	0	1.5	20
P-6	-0.015		11-15	18		20
P-4	-0.005		11-15	14		20
P-3	ND		11-15	26		20
P-2	ND		11-15	37		20
EXTRC> P-5	--	16.5	11-15	0	1.5	30
P-6	-0.025		11-15	18		30
P-4	-0.015		11-15	14		30
P-3	ND		11-15	26		30
P-2	ND		11-15	37		30

LOCATION - Vacuum probe location as given on Figure 1.
EXTRC> - Indicates probe used as extraction point.
INFLUENCE - Negative pressure differential in the soil at the point of testing.
EXTR RATE - Volumetric flow rate in standard cubic feet per minute (scfm) extracted from the extraction point.
PERF DEPTH - Perforated depth below surface grade.
CAPTURE RADIUS - Distance from extraction point.
EXTR VAC - Extraction vacuum in inches of mercury.
TIME - Time interval from 0 that extraction point has been tested.
ND - Influence was not detected during testing.



N

LEGEND:

o TBS-1A SOIL SAMPLE LOCATION

SURFACE COVER REPORTEDLY CONCRETE

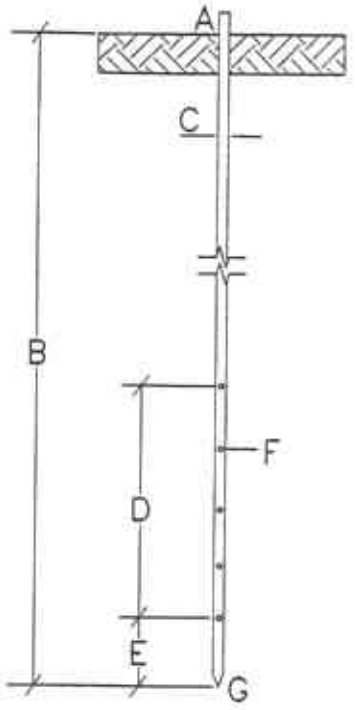
0 20

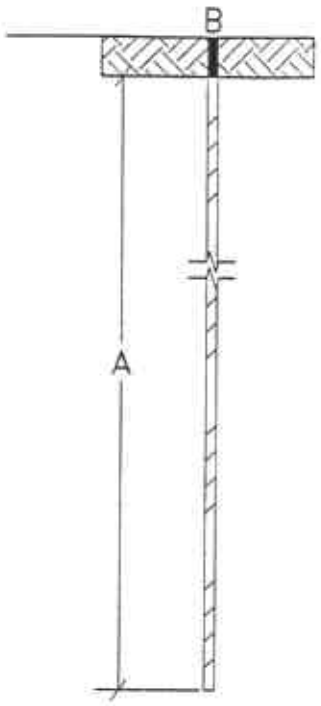
SCALE
(APPROX. ONLY)

SITE MAP
BEACON STATION #604
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA

EVAX TECHNOLOGIES, INC.
269 MOUNT HERMON RD., SUITE 101
SCOTTS VALLEY, CA 95066
PHONE (408)438-7511 FAX (408)438-7515

Drawn by: Bryan Anderson	Designed by: Bob Numan
Assisted by: Jules Adams	Approved by:
File name: 02310DD1	Job number: 02310
File date: 10-24-90	Date: 10-24-90
Scale	Page 7 of





VACUUM PROBE DETAIL

A) CASING: SCHEDULE 40 STEEL PIPE
B) LENGTH: AS SPECIFIED IN REPORT
C) DIAMETER: 1/2 INCH
D) PERFORATED LENTH: AS SPECIFIED IN REPORT
E) TIP TO PERFORATIONS: 3 INCHES
F) PERFORATIONS: 3/16 INCH DIA.
G) FORGED TIP

PROBE HOLE CLOSURE DETAIL

A) CEMENT SLURRY SEAL
B) ASPHALT OR CONCRETE SURFACE SEAL

DETAIL OF TEMPORARY VACUUM PROBE AND PROBE HOLE CLOSURE

EVAX TECHNOLOGIES, INC.
269 MOUNT HERMON RD., SUITE 101
SCOTTS VALLEY, CA 95066
PHONE (408)438-7511
FAX (408)438-7515

Drawn by:	Job number:	File name: DETAIL19	Figure number: A
	Date: 10/3/90	Fax date: 10/3/90	Page