Ultramar

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Hanford, CA 93232-0466
(209) 582-0241

ALCO HAZMAT
94 OCT 19 PM 4:

Telecopy: 209-584-6113 Credit & Wholesale
209-583-3330 Administrative
209-583-3302 Information Services
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① need to continue to delineate extent of
② frequency

October 12, 1994

Ms. Eva Chu
Department of Environmental Health
Alameda County Health Care Services
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502-6577

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

Dear Ms. Chu:

Enclosed is a copy of the ground-water monitoring report for the third quarter 1994 for the above-referenced Ultramar facility. Also included is a copy of the Quarterly Status Report which describes the work completed this quarter and the work anticipated to be completed next quarter.

Please call if you have any questions regarding this site.

Sincerely,

ULTRAMAR INC.

Terrence A. Fox

Terrence A. Fox
Senior Project Manager
Marketing Environmental Department

cc: Alameda County Local Coordinator, San Francisco Bay Region, RWQCB
Mr. Jim Ellis, Ellis Partners Inc., 351 California Street, Suite 1120, San Francisco, CA 94104

9465-1000

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ENVIRONMENTAL PROJECT QUARTERLY STATUS REPORT

DATE REPORT SUBMITTED: October 12, 1994
QUARTER ENDING: September 30, 1994

SERVICE STATION NO.: 604
ADDRESS: 1619 First Street, Livermore, CA
COUNTY: Alameda
ULTRAMAR CONTACT: Terrence A. Fox **TEL. NO:** 209-583-5545

BACKGROUND:

In November 1992, three underground storage tanks were removed. Hydrocarbons were detected and the excavation was extended to a depth of 27 feet in the southwest corner. Hydrocarbons were detected in the sample collected from the base of the overexcavation.

In May and June 1993, three monitoring wells (MW-1 through MW-3), three vapor wells (VW-1 through VW-3), and one boring. the soil plume has been defined.

The site has been placed on a quarterly monitoring program.

In March 29 and 30, 1994 four additional offsite wells (MW-4 through MW-7) were installed. Plume is not defined downgradient.

In June 1994, performed assessment on the Livermore Arcade Shopping Center Property by drilling borings and collecting ground-water samples using a Hydropunch tool.

In June 1994, performed vapor extraction and ground-water extraction tests.

SUMMARY OF THIS QUARTER'S ACTIVITIES:

Performed quarterly monitoring on August 12, 1994.

RESULT OF QUARTERLY MONITORING:

Monitoring data indicates that the benzene concentrations increased in MW-2 from 9,600 ppb to 11,000 ppb and in MW-3 from 0.75 ppb to 7.3 ppb. The benzene concentration decreased in MW-1 from 1,500 ppb to 550 ppb, in MW-5 from 1,100 ppb to 420 ppb, in MW-6 from 22,000 ppb to 12,000 ppb, and in MW-7 from 3,900 ppb to 3,800 ppb. The benzene concentration remained not detected in MW-4.

PROPOSED ACTIVITY OR WORK FOR NEXT QUARTER:

ACTIVITY	ESTIMATED COMPLETION DATE
Continue quarterly monitoring program.	
Submit RAP which includes results on additional assessment and vapor and ground-water remediation testing.	November 30, 1994

ACTON •
MICKELSON •
van DAM, INC.

Consulting Scientists, Engineers, and Geologists

October 4, 1994

Mr. Terrence A. Fox
Ultramar Inc.
525 West Third Street
Hanford, California 93230

19024.04/7

Subject: Ground Water Monitoring Report, Third Quarter 1994
Beacon Station #604--1619 West First Street, Livermore, California

Dear Mr. Fox:

Acton • Mickelson • van Dam, Inc. (AMV), has been authorized by Ultramar Inc. (Ultramar), to continue a hydrogeologic investigation of ground water conditions at Beacon Station #604, located at 1619 West First Street, Livermore, California (Figures 1 and 2). The investigation is intended to assess the distribution of petroleum hydrocarbon constituents in the ground water beneath the site. This letter report summarizes the results of ground water sampling conducted on August 12, 1994. The procedures used to purge and sample monitoring wells and measure water levels are described in Enclosure A.

Ground Water Level Measurements, Hydraulic Gradient, and Flow Direction

Depth to ground water was measured in monitoring wells MW-1 through MW-7 on August 12, 1994. Depth to ground water ranged from 41.03 (MW-1) to 45.14 (MW-6) feet below the top of respective well casings. Ground water level measurements from this sampling event, as well as previous ground water depth measurements, are presented in Table 1. Ground water elevations decreased an average of 9.11 feet between April 25 and August 12, 1994. The inferred direction of ground water flow was generally toward the northwest (Figure 3) which is consistent with previous monitoring events. Gradient was calculated to be approximately 0.03 foot per foot.

Ground Water Sample Analytical Results

Ground water samples were collected from monitoring wells MW-1 through MW-7 on August 12, 1994, using the procedures outlined in Enclosure A. Field observations and ground water sampling documentation are presented in Enclosure B. Ground water samples were submitted to a state-certified laboratory for analysis of benzene, toluene, ethylbenzene, xylenes, and total petroleum hydrocarbons as gasoline (TPHg). Ground water sample analytical results from this sampling event

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El Dorado Hills, California 95762

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Fax (916) 939-7570

and previous events are compiled in Table 2. Copies of the certified laboratory analytical reports from this sampling event are presented in Enclosure C.

Discussion

Benzene concentrations in ground water ranged from 12,000 µg/l in the sample collected from monitoring well MW-6 to less than 0.50 µg/l in a sample collected from monitoring well MW-4. Benzene concentrations reported from the August 12, 1994, ground water sample analytical results are illustrated on Figure 4.

Remarks

The opinions and conclusions contained in this letter report represent our professional opinions. These opinions are based on currently available information and were developed in accordance with currently accepted hydrogeologic and engineering practices at this time. Other than this, no warranty is implied or intended.

AMV recommends that a copy of this quarterly monitoring report be forwarded to the following:

Ms. Eva Chu
Department of Environmental Health
Alameda County Health Care Services
80 Swan Way, Room 200
Oakland, California 94612

Mr. Cecil Fox
California Regional Water Quality Control Board,
San Francisco Bay Region
2101 Webster Street, Room 500
Oakland, California 94612

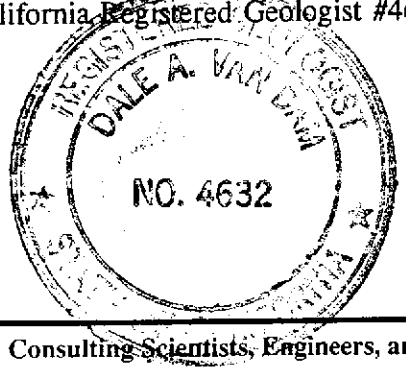
If you have any questions, please call the undersigned at (916) 939-7550.

Sincerely,

ACTON • MICKELSON • van DAM, INC.

for
Rodney C. Goss
Staff Engineer

Dale A. van Dam, R.G.
California Registered Geologist #4632



RCG:DAvD:gsh
Enclosures

TABLE 1

HISTORIAL GROUND WATER ELEVATION DATA
Beacon Station #604
1619 West First Street, Livermore, California

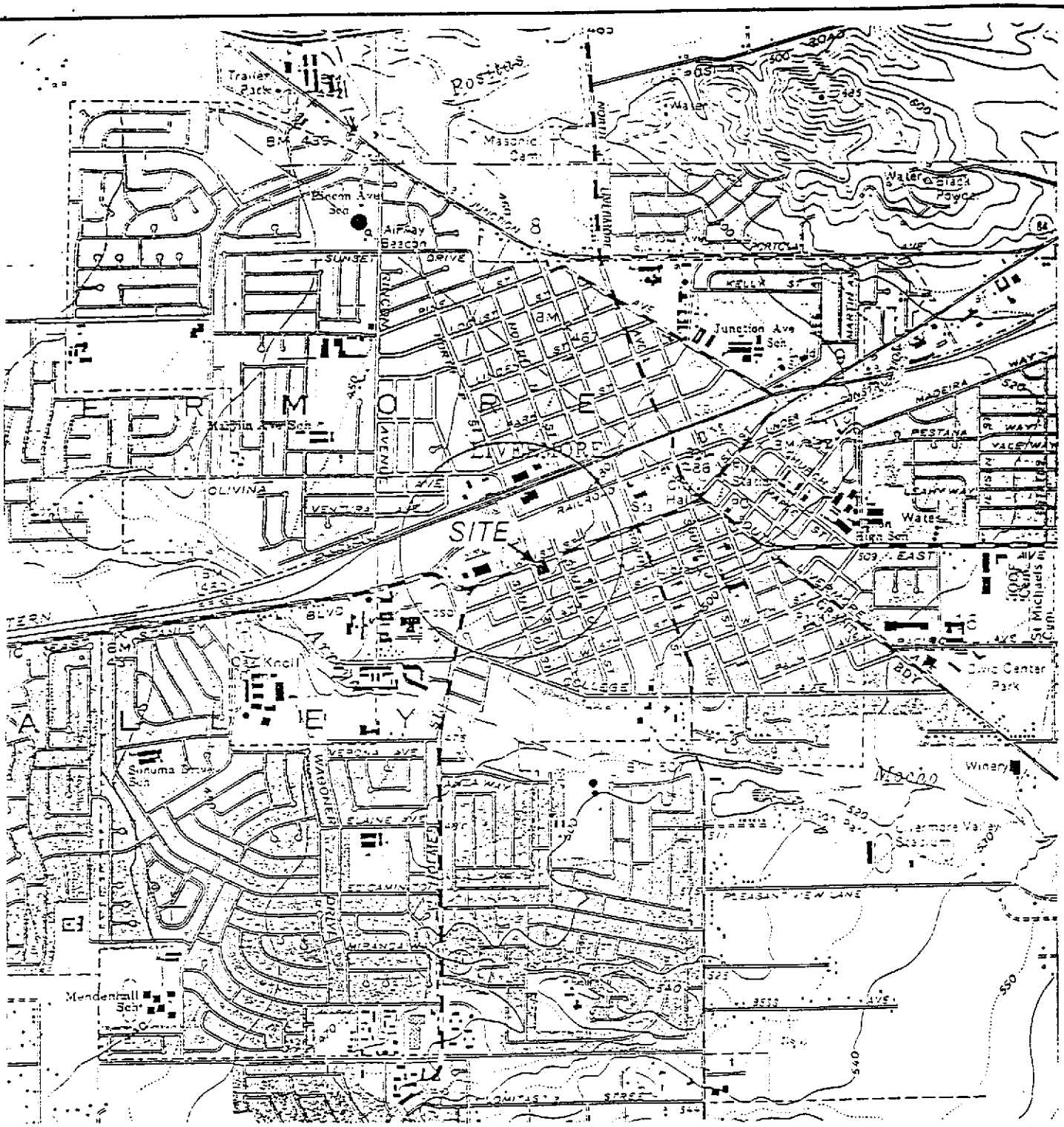
Monitoring Well	Date	Top of Riser (feet)	Depth of Water (feet)	Ground Water Elevation (feet)	Physical Observation
MW-1	06-01-93	100.00	37.50	62.50	No Product
	06-22-93		38.46	61.54	No Product
	10-06-93		42.22	57.78	No Product
	01-13-94		34.52	65.48	No Product
	03-30-94		31.93	68.07	No Product
	04-25-94		33.49	66.51	No Product
	08-12-94		41.03	58.97	No Product
MW-2	06-01-93	98.68	38.02	60.66	No Product
	06-22-93		39.07	59.61	No Product
	10-06-93		43.72	54.96	No Product
	01-13-94		35.85	62.83	No Product
	03-30-94		32.82	65.86	No Product
	04-25-94		34.76	63.92	No Product
	08-12-94		44.33	54.35	No Product
MW-3	06-01-93	97.08	36.18	61.90	No Product
	06-22-93		37.11	61.97	No Product
	10-06-93		41.15	55.93	No Product
	01-13-94		33.95	63.13	No Product
	03-30-94		30.97	66.11	No Product
	04-25-94		32.46	64.62	No Product
	08-12-94		41.72	55.36	No Product
MW-4	03-30-94	99.35	31.56	67.79	No Product
	04-25-94		32.73	66.62	No Product
	08-12-94		41.61	57.74	No Product
MW-5	03-30-94	98.37	32.07	66.30	No Product
	04-25-94		33.65	64.72	No Product
	08-12-94		42.73	55.64	No Product
MW-6	03-30-94	97.62	33.38	64.24	No Product
	04-25-94		35.49	62.13	No Product
	08-12-94		45.14	52.48	No Product
MW-7	03-30-94	98.03	31.98	66.05	No Product
	04-25-94		33.56	64.47	No Product
	08-12-94		43.35	54.68	No Product

Note: Monitoring well casing elevations were surveyed relative to an arbitrary bench mark at the top of the casing of monitoring well MW-1 with an assumed elevation of 100.00 feet.

TABLE 2

GROUND WATER SAMPLE ANALYTICAL RESULTS
Beacon Station #604
1619 West First Street, Livermore, CA
Concentrations in micrograms per liter (µg/l)

Monitoring Well	Date Sampled	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPHg*
MW-1	06-01-93	2,200	400	<50	4,900	27,000
	06-22-93	8,000	10,000	260	10,000	87,000
	10-06-93	4,700	6,500	740	5,300	40,000
	01-13-94	1,300	950	110	850	9,400
	04-25-94	1,500	1,800	290	1,700	11,000
	08-12-94	550	330	260	1,400	11,000
MW-2	06-01-93	20,000	21,000	3,300	18,000	170,000
	06-22-93	19,000	22,000	3,500	18,000	160,000
	10-06-93	17,000	17,000	3,000	15,000	110,000
	01-13-94	20,000	19,000	2,300	14,000	93,000
	04-25-94	9,600	7,300	840	7,800	41,000
	08-12-94	11,000	11,000	2,300	11,000	59,000
MW-3	06-01-93	4.6	<0.50	<0.50	1.9	270
	06-22-93	8.2	<0.50	<0.50	0.72	160
	10-06-93	57	110	24	120	740
	01-13-94	2.6	0.67	0.78	4.2	83
	04-25-94	0.75	3.2	0.50	3.6	60
	08-12-94	7.3	14	2.6	13	310
MW-4	03-30-94	4.2	15	2.5	26	120
	04-25-94	<0.50	1.8	<0.50	2.1	65
	08-12-94	<0.50	<0.50	<0.50	<0.50	<50
MW-5	03-30-94	1,300	20	<13	160	7,500
	04-25-94	1,100	41	130	740	6,500
	08-12-94	420	2.9	41	98	4,000
MW-6	03-30-94	21,000	8,600	1,700	12,000	63,000
	04-25-94	22,000	12,000	2,300	16,000	77,000
	08-12-94	12,000	8,100	2,200	16,000	65,000
MW-7	03-30-94	7,200	2,400	1,600	11,000	43,000
	04-25-94	3,900	1,000	940	6,900	30,000
	08-12-94	3,800	1,400	1,300	7,500	30,000



General Notes

BASE MAP FROM U.S.G.S
LIVERMORE, CALIFORNIA
7.5 MINUTE TOPOGRAPHIC
PHOTOREVISED 1981

QUADRANGLE LOCATION

NORTH

0 2000

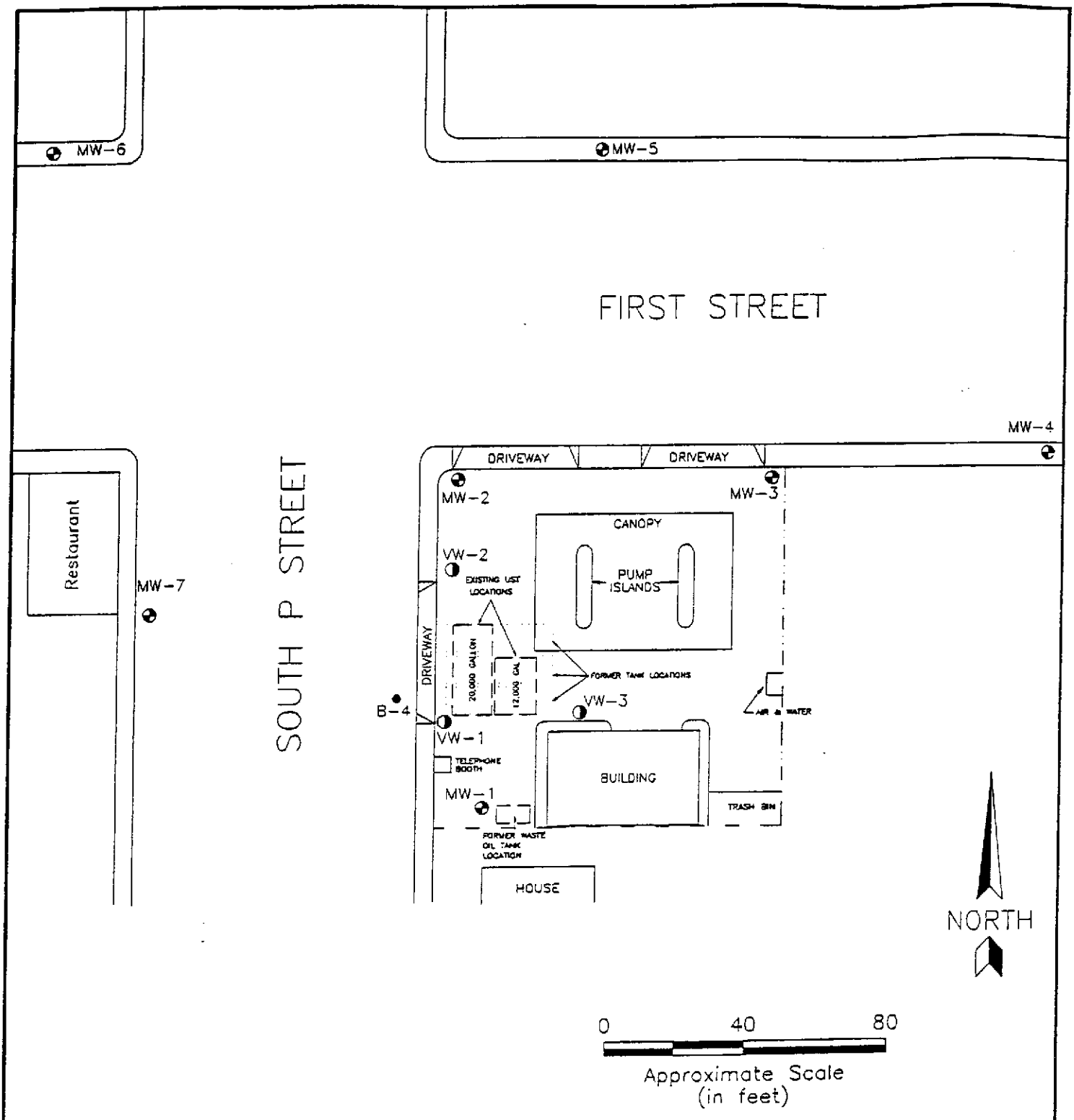
Scale
1" = 2000'

FIGURE 1

SITE LOCATION MAP
1619 WEST FIRST STREET
LIVERMORE, CA

Project No.	Drawn by:
19024.01	SAL
File No.	Prepared by:
19024F1	SAL
Revision No.	Reviewed by:

Acton • Mickelson • van Dam, Inc.
Consulting Scientists, Engineers, and Geologists
5090 Robert J. Mathews Parkway, #4
El Dorado Hills, California 95762
(916) 939-7550



LEGEND

- VW-3 — VADOSE WELL LOCATION AND NUMBER
- MW-3 — MONITORING WELL LOCATION AND NUMBER
- B-4 — SOIL BORING LOCATION AND NUMBER
- PROPERTY BOUNDARY

FIGURE 2

SITE MAP

BEACON STATION #604
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA

Project No.	Drawn
19024.04	LMC
File No.	Prepared
FIG2	TAD
Revision	Reviewed

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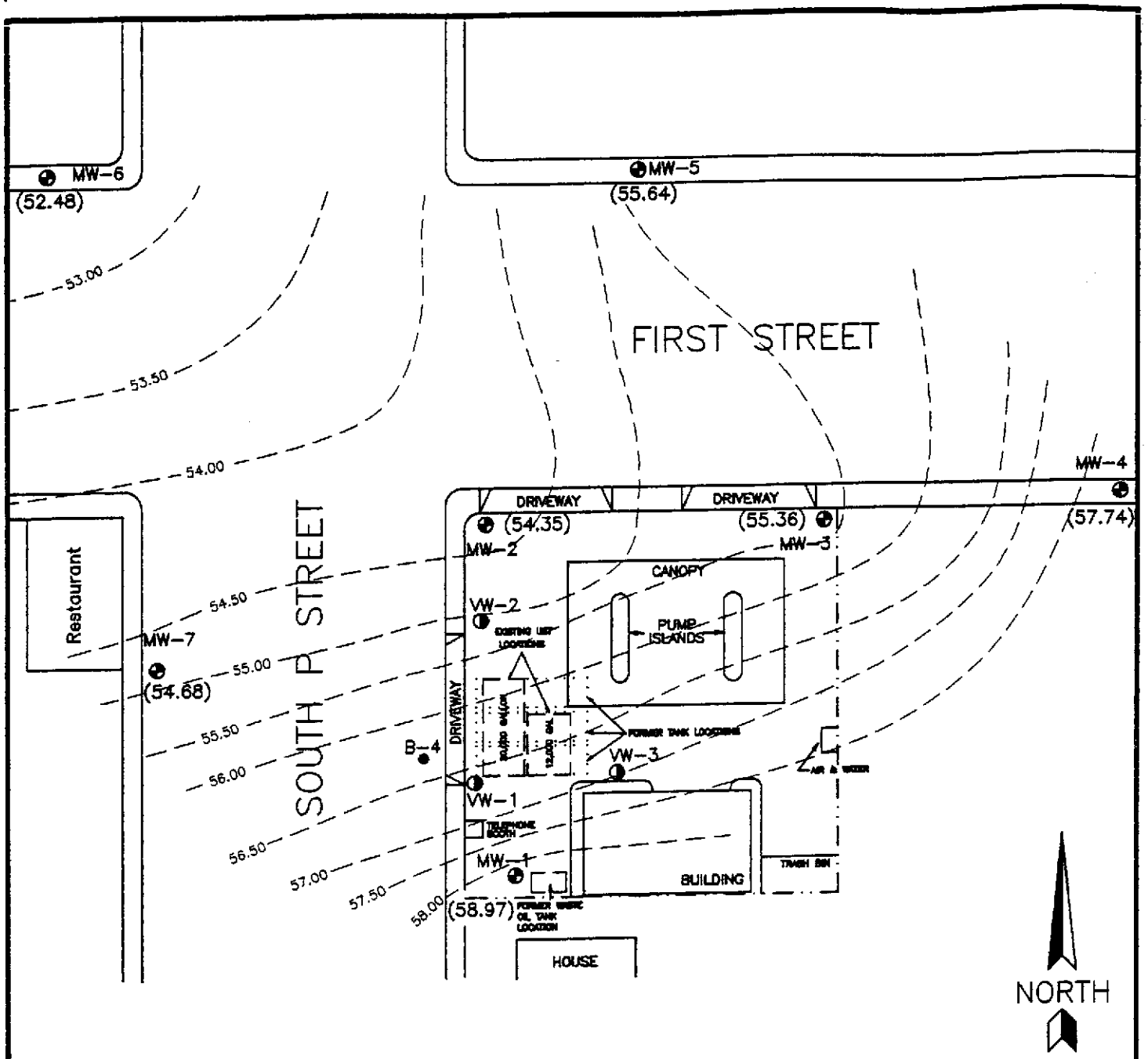

LEGEND

- VW-3 — VADOSE WELL LOCATION AND NUMBER
- MW-3 — MONITORING WELL LOCATION AND NUMBER
- B-4 — SOIL BORING LOCATION AND NUMBER
- — · · — PROPERTY BOUNDARY
- (66.05) — GROUND WATER ELEVATION (FEET)
- 68.00 — GROUND WATER ELEVATION CONTOUR WITH INFERRED DIRECTION OF FLOW

0 40 80

Approximate Scale (in feet)

FIGURE 3

GROUND WATER TABLE CONTOUR MAP (08/12/94)

BEACON STATION #604
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA

Project No.	Drawn
19024.04	LMC
File No.	Prepared
QM84WTC3	RCG
Revision	Reviewed

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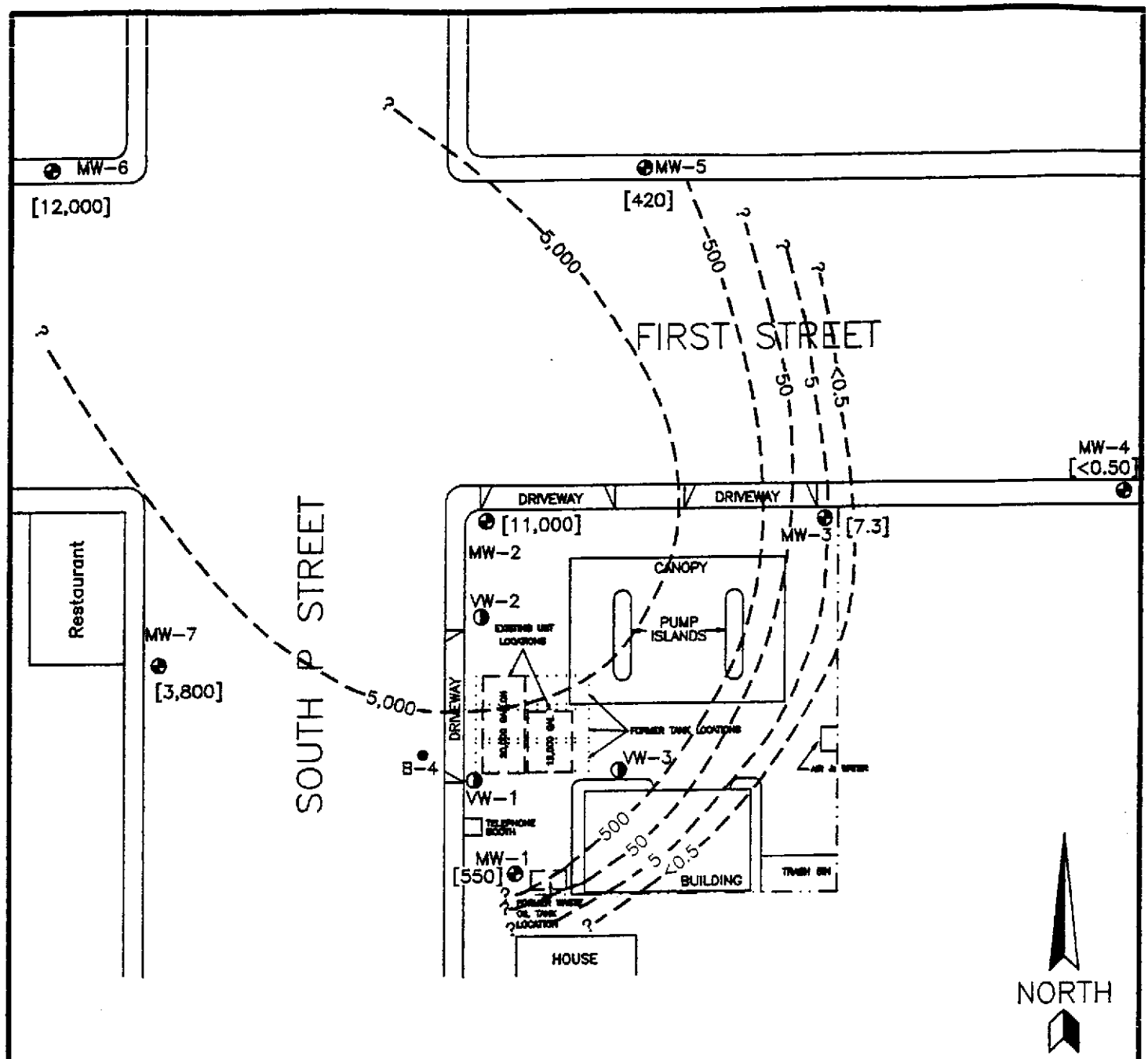

LEGEND

- VW-3 — VADOSE WELL LOCATION AND NUMBER
- MW-3 — MONITORING WELL LOCATION AND NUMBER
- B-4 — SOIL BORING LOCATION AND NUMBER
- PROPERTY BOUNDARY
- [4.2] — BENZENE CONCENTRATION IN MICROGRAMS PER/LITER
- 5 — BENZENE ISOCONCENTRATION CONTOUR IN MICROGRAMS PER/LITER

FIGURE 4
INFERRED DISTRIBUTION OF BENZENE IN GROUND WATER (08/12/94)

BEACON STATION #604
1619 WEST FIRST STREET
LIVERMORE, CALIFORNIA

Project No.	Drawn
19024.04	CCB
File No.	Prepared
QM84ICD4	RCG
Revision	Reviewed

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ENCLOSURE A

SAMPLING TECHNIQUES

ENCLOSURE A

SAMPLING TECHNIQUES

Proper sampling techniques were followed to assure that samples represented actual field conditions and that samples were labeled, preserved, and transported properly to retain sample integrity. This exhibit describes procedures followed by Acton • Mickelson • van Dam, Inc. (AMV), during collection of samples of subsurface soil and ground water. Sampling guidance documents from the American Society of Testing and Materials (ASTM), U.S. Environmental Protection Agency (EPA), and California Department of Health Services (DHS) were followed for all sampling procedures. Actual sampling procedures employed were based on field conditions and may differ from those described here.

1.0 WATER LEVEL AND LIQUID-PHASE HYDROCARBON (LPH) THICKNESS MEASUREMENTS AND GROUND WATER SAMPLING

1.1 Water Level and LPH Thickness Measurements

The static water level and/or LPH thickness in each well was measured prior to purging or sampling.

The depth to water/product was measured using an electronic interface probe. The wire of the interface probe is marked at 0.01 foot intervals. One tone is emitted from the interface probe if LPH is encountered; another tone for water. The wire of the interface probe was lowered slowly until LPH or water was encountered. At this point, the mark on the interface wire opposite the permanent reference point on the top of the well casing was read to the nearest 0.01 foot and recorded. If the first encountered substance was LPH, the probe was lowered until the tone corresponding to water was emitted. This depth was also recorded. The difference between the two depths corresponds to the LPH thickness. The interface probe was rinsed in deionized water between measurements in different wells.

A permanent reference point was marked on the well casings. The permanent reference point on the well casings was surveyed to a common reference point. All well casing riser elevations are known to within 0.01 foot.

Prior to well development, a disposable bailer was used to collect a sample of LPH, if present in a well, for subjective analysis. The sample was collected by gently lowering the bailer approximately one-half the bailer length past the air/LPH interface. The appearance (color, opacity, "freshness") was described and noted on field notes.

If LPH was encountered in the well, it was removed by bailing or pumping and the approximate volume of LPH removed was recorded. LPH thickness was then remeasured. If LPH was still present, the thickness was recorded and the well was not sampled. If LPH was not present, the well was developed, purged, and sampled as described below.

1.2 Well Evacuation and Development

After the static water level in a well was determined and prior to collection of a ground water sample, stagnant water was removed from the well casing and the surrounding gravel pack by bailing, pumping, or with a vacuum truck. At least three casing volumes of water were removed from each well from which a sample was collected. The volume of water in the casing was determined from the known elevation of the water surface, the well bottom elevation (as measured when the well is installed), and the well diameter.

If the well was bailed or pumped during purging, samples were collected and field analyzed for pH, temperature, and specific conductance. The well was considered stabilized when repeated readings of the following parameters were within the ranges indicated as follows:

- Specific conductance ±10 percent of the reading range
- pH ±0.1 pH unit
- Temperature ±0.5° C.

After stabilization, and after at least three well volumes were evacuated, a sample was collected for analysis. The field container used for well stabilization measurements, and the pH, temperature, and conductivity probes were rinsed between wells with deionized water.

All purge water was containerized and properly handled and documented for disposal. If the containers were stored on site, a label specifying the date of purging, source, and the known or suspected nature of the contents was affixed to each container.

1.3 Sample Collection, Preservation, and Handling

After purging, a new polyethylene disposable bailer was used to collect samples for analysis. The bailer was attached to a new disposable rope and lowered slowly into the water to avoid agitation of the collected sample. Containers for volatile organics analyses were filled completely so no airspace remained in the vial after sealing.

All sample containers were prewashed and prepared at the analyzing laboratory in accordance with quality assurance/quality control protocols of the laboratory. Only sample containers appropriate for the intended analyses were used.

After sample collection, the samples were placed into coolers with ice packs. Internal temperature of the cooler was maintained at approximately 4 degrees Celsius. Samples were kept in coolers during transport to the analyzing laboratory.

2.0 DECONTAMINATION AND DISPOSAL PROCEDURES

2.1 Equipment Decontamination

Sampling equipment was decontaminated as follows:

1. Prior to individual sample collection, any sampling device was cleaned in a TSP solution and rinsed twice in clean water. Any visible soil residue was removed.

2. Water sampling containers were cleaned and prepared by the respective analytical laboratories.

3. Field monitoring equipment (pH, conductivity, or temperature probes) was rinsed with clean water prior to use and between samples.

3.0 FIELD MEASUREMENTS

Field data were collected during various sampling and monitoring activities; this section describes routine procedures followed by personnel performing field measurements. The methods presented below are intended to ensure that field measurements are consistent and reproducible when performed by various individuals.

3.1 Conductivity, Temperature, and pH

Specific conductance, water temperature, and pH measurements were made when a water sample was collected. Regardless of the sample collection method, a representative water sample was placed in a transfer bottle used solely for field parameter determinations. A conventional pH meter with a combination electrode or equivalent was used for field-specific conductance measurements. Temperature measurements were performed using standard thermometers or equivalent temperature meters. Combination instruments capable of measuring two or all three of the parameters may have also been used.

All instruments were calibrated in accordance with manufacturer methods. The values for conductivity standards and pH buffers used in calibration were recorded daily in a field notebook. All probes were thoroughly cleaned and rinsed with fresh water prior to any measurements, in accordance with Section 3.1.

4.0 SAMPLE CUSTODY

This section describes standard operating procedures for sample custody and custody documentation. Sample custody procedures were followed through sample collection, transfer, analysis, and ultimate disposal. The purpose of these procedures is to assure that (1) the integrity of samples was maintained during their collection, transportation, and storage prior to analysis and (2) post-analysis sample material was properly disposed of. Sample custody is divided into field procedures and laboratory procedures, as described below.

4.1 Field Custody Procedures

Sample quantities, types, and locations were determined before the actual fieldwork commenced. As few people as possible handled samples. The field sampler was personally responsible for the care and custody of the collected samples until they were properly transferred.

4.1.1 Field Documentation

Each sample was labeled and sealed properly immediately after collection. Sample identification documents were carefully prepared so that identification and chain-of-custody records could be maintained and sample disposition could be controlled. Forms were filled out with waterproof ink. The following sample identification documents were utilized.

- Sample labels
- Field notebook
- Chain-of-custody forms

4.1.2 Sample Labels

Sample labels provide identification of samples. Preprinted sample labels were provided. Where necessary, the label was protected from water and solvents with clean label-protection tape. Each label contained the following information:

- Name of collector
- Date and time of collection
- Place of collection
- AMV project number
- Sample number
- Preservative (if any)

4.1.3 Field Notebook

Information pertinent to a field survey, measurements, and/or sampling were recorded in a bound notebook. Entries in the notebook may have included the following:

- Name and title of author, date and time of entry, and physical/environmental conditions during field activity.
- Location of sampling or measurement activity.
- Name(s) and title(s) of field crew.
- Type of sampled or measured media (e.g., soil, ground water, air, etc.)
- Sample collection or measurement method(s).
- Number and volume of sample(s) taken.
- Description of sampling point(s).
- Description of measuring reference points.
- Date and time of collection or measurement.
- Sample identification number(s).
- Sample preservative (if any).
- Sample distribution (e.g., laboratory).
- Field observations/comments.
- Field measurements data (pH, etc.).

4.1.4 Chain-of-Custody Record

A chain-of-custody record was filled out for and accompanied every sample and every shipment of samples to the analytical laboratories in order to establish the documentation necessary to trace sample possession from the time of collection. The record contained the following information:

- Sample or station number or sample I.D.
- Signature of collector, sampler, or recorder.
- Date and time of collection.
- Place of collection.
- Sample type.
- Signatures of persons involved in the chain of possession.
- Inclusive dates of possession.

The laboratory portion of the form was completed by laboratory personnel and contains the following information:

- Name of person receiving the sample.
- Laboratory sample number.
- Date and time of sample receipt.
- Analyses requested.
- Sample condition and temperature.

4.1.5 Sample Transfer and Shipment

Samples were always accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving the samples signed, dated, and noted the time on the chain-of-custody record. Samples were packaged properly for shipment and dispatched to the

appropriate laboratory for analysis. The chain-of-custody record accompanied each shipment. The method of shipment, courier name(s), and other pertinent information was entered in the chain-of-custody record.

4.2 Laboratory Custody Procedures

A designated sample custodian accepted custody of the shipped samples and verified that the information on the sample label matched that on the chain-of-custody record. Information regarding method of delivery and sample conditions was also checked on the chain-of-custody record. The custodian then entered the appropriate data into the laboratory sample tracking system. The laboratory custodian may have used the sample number on the sample label or may have assigned a unique laboratory number to each sample. The custodian then transferred the sample(s) to the proper analyst(s) or stored the sample(s) in the appropriate secure area.

Laboratory personnel are responsible for the care and custody of samples from the time they are received until the sample is exhausted. Once at the laboratory, the samples are handled in accordance with U.S. Environmental Protection Agency SW-846, Test Methods for Evaluating Solid Waste Physical/Chemical Methods, Third Edition, for the intended analyses. All data sheets, chromatographs, and laboratory records were filed as part of the permanent documentation.

4.3 Corrections to Documentation

Original data recorded in field notebooks, chain-of-custody records, and other forms were written in ink. These documents were not altered, destroyed, or discarded, even if they were illegible or contained inaccuracies that required a replacement document.

If an error was made or found on a document, the individual making the corrections did so by crossing a single line through the error, entering the correct information, and initialing and dating the change. The erroneous information was obliterated. Any subsequent error(s) discovered on a document were corrected. All corrections were initialed and dated.

4.4 Sample Storage and Disposal

Samples and extracts were retained by the analytical laboratory for 60 days after a written report was issued by the laboratory. Unless notified by the program manager, excess or unused samples were disposed of by the laboratory in an appropriate manner consistent with applicable government regulations.

DAILY FIELD REPORT

ACTON • MICKELSON • van DAM, INC.

Project No. 19005.10 19024.05 19024.04	Date: 8-12-94
Project Name: 494, 604	Project Location: 494, 604
Weather: Sunny Warm 90°F	Field Crew: WGR, RG

Today's Work Activities: M; 355

0600 - 0715 To 494

0715 - 0930 Restart Thermtech (catox)
Take FID Readings from each well. Observed that HC concentration with valves in final setting much higher than any one well.

0930 - 1050 To 604
setup VES test equipment w/ RG

1030 - 1630 Conduct VES pilot test on wells (vadose) VW-1, VW-2 and VW-3 (in that order). Called JCT near end of each test. Informed him that the was a very low flow coming from each well. Took bag sample for t/BTEX @ end of each test. No influence was recorded in any of the observation wells. After setting up @ VW-1 show RG QM procedures @ well MW-~~5~~1 (320). Disassemble VES test equipment and load truck. Also take 55 gal Ventsorb.

1/2 hr Lunch

1630 - 1915 Assist RG w/ QM. Take water levels @ MW-1, MW-2, MW-3 and MW-7. Begin and complete QM @ MW-1, MW-2, and MW-3. Return to MW-4, 5 and 6 to sample All three did not recharge to 80% therefore sample was taken.

1915 - 2015 To 494

2015 - 2030 @ 494 Take MW3 sample and I-1 bag sample

2030 - 2125 To west

2125 - 2135 @ west

2135 - 2300 To 59C (1/2 hr Dinner)

Signature WGR Date 8-12-94

ACTON • MICKELSON • van DAM, INC.

GROUND WATER LEVEL DATA

Project Name BEACON 604 Project Number 19024.04

Date 8/12/94 Field Crew W6R, R6. Measuring Device and Number INTERFACE PROBE

Well No.	Time	Depth to Product (feet)	Depth to Ground Water (feet)	Product Thickness (feet)	Reference Elevation (feet)	Ground Water Elevation (feet)	Physical Observations/Comments
MW-1	14:43		41.03		100.00	58.97	
MW-2	17:47		44.33		98.68	54.35	
MW-3	18:15		41.72		97.08	55.36	
MW-4	12:35		41.61		99.35	57.74	
MW-5	13:45		42.73		98.37	55.64	
MW-6	14:25		45.14		97.62	52.48	
MW-7	14:55		43.35		98.03	54.68	

Signature

ACTON • MICKELSON • van DAM, INC.

SAMPLING/DEVELOPMENT INFORMATION

Sampling/Development Point MW-1
Sample I.D.
Describe Sampling/Development Point
MONITORING WELL

Project Name Beacon #604
Project No. 19024.04
Work Order #
Date 8-12-94
Field Crew W6R, RG

Well Depth 53.5 feet below MP
Depth to Water (below MP) 41.03 feet
Discharge Rate gpm
Number of borehole volumes evacuated before sampling: 4

Casing Diameter 4" inches
Time 14:43 AM/(PM)

Sampling/Development Method:
_____ Tap
_X_ Submersible
_____ Bailer
_____ Other
_____ Centrifugal Pump

Pump intake or bailer set at _____ feet below MP.

Sample Appearance: Clear
Note any Sampling Problems: None
Note any Equipment Washing: Decon. Probe and/or Pump.
Samples Collected/Time: @ for G/BTEX

EVACUATION/STABILIZATION TEST DATA

Time	pH (units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 foot)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
16:50	7.40	3.93	73.3		10	
16:55	7.09	3.85	72.0		20	
17:05	7.13	3.69	71.8		30	
17:20	7.27	3.71	71.6		40	

Bailing Start Time @ 16:45 WL 41.03
Bailing Stop Time 17:20 WL 43.26

Comments:

Signature [signature]
Date 8/12/94

ACTON • MICKELSON • van DAM, INC.

SAMPLING/DEVELOPMENT INFORMATION

Sampling/Development Point MW-2
Sample I.D.
Describe Sampling/Development Point
MONITORING WELL

Project Name Beacon #604
Project No. 19024.04
Work Order #
Date 8-12-94
Field Crew W6R, RG

Well Depth 54 feet below MP
Depth to Water (below MP) 44.33 feet
Discharge Rate gpm
Number of borehole volumes evacuated before sampling: 4

Casing Diameter 4" inches
Time 17:47 AM/(PM)

Sampling/Development Method:
_____ Tap
_X_ Submersible
_____ Bailer
_____ Other
_____ Centrifugal Pump

Pump intake or bailer set at _____ feet below MP.

Sample Appearance: Clear
Note any Sampling Problems: None
Note any Equipment Washing: Decon. Probe and/or Pump.
Samples Collected/Time: @ for G/BTEX

EVACUATION/STABILIZATION TEST DATA

Time	pH (units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 foot)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
17:47	6.95	4.62	72.6		10	
17:51	6.92	4.70	71.5		20	
17:55	6.91	4.65	71.7		30	

Bailing Start Time 17:47 WL 44.33
Bailing Stop Time 17:55 WL 46.12

Comments:

Signature

Date 8/12/94

ACTON • MICKELSON • van DAM, INC.

SAMPLING/DEVELOPMENT INFORMATION

Sampling/Development Point MW - 3
Sample I.D.
Describe Sampling/Development Point
MONITORING WELL

Project Name Beacon #604
Project No. 19024.04
Work Order #
Date 8-12-94
Field Crew W6R, RG

Well Depth 52 feet below MP
Depth to Water (below MP) 41.72 feet
Discharge Rate gpm
Number of borehole volumes evacuated before sampling: 4

Casing Diameter 4" inches
Time 18:15 AM/(PM)

Sampling/Development Method:
_____ Tap
X Submersible
_____ Bailer
_____ Other
_____ Centrifugal Pump

Pump intake or bailer set at _____ feet below MP.

Sample Appearance: CLEAR
Note any Sampling Problems: None
Note any Equipment Washing: Decon. Probe and/or Pump.
Samples Collected/Time: @ for G/BTEX

EVACUATION/STABILIZATION TEST DATA

Time	pH (units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 foot)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
18:15	6.98	4.30	71.8		10	
18:19	6.95	4.19	71.5		20	
18:27	6.95	4.14	71.4		30	

Bailing Start Time 18:15 WL 41.72
Bailing Stop Time 18:27 WL 48.50

Comments:

Signature [signature] Date 8/12/94

ACTON • MICKELSON • van DAM, INC.

SAMPLING/DEVELOPMENT INFORMATION

Sampling/Development Point MW - 4
Sample I.D.
Describe Sampling/Development Point
MONITORING WELL

Project Name Beacon #604
Project No. 19024.04
Work Order #
Date 8-12-94
Field Crew W6R, RG

Well Depth 47 feet below MP
Depth to Water (below MP) 41.61 feet
Discharge Rate gpm
Number of borehole volumes evacuated before sampling: 4

Casing Diameter 2" inches
Time 12:35 AM (PM)

Sampling/Development Method:
_____ Tap
_____ Submersible
X Bailer (DISPOSABLE)
_____ Other
_____ Centrifugal Pump

Pump intake or bailer set at _____ feet below MP.

Sample Appearance: CLEAR
Note any Sampling Problems: None
Note any Equipment Washing: Decon. Probe and/or Pump.
Samples Collected/Time: @ for G/BTEX

EVACUATION/STABILIZATION TEST DATA

Time	pH (units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 foot)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
12:50	6.62	6.08	73.2		1	
12:58	6.84	6.03	73.6		2	

Bailing Start Time 12:40
Bailing Stop Time 1:30

WL 41.61
WL 44.51

Comments: STOPPED BAILING @ 13:30. TOOK DTW @ 17:10, 44.51 FT. OF WELL DID NOT RECHARGE TO 80%; GRABBED H_2O SAMPLE.

Signature

Date 8/12/94

ACTON • MICKELSON • van DAM, INC.

SAMPLING/DEVELOPMENT INFORMATION

Sampling/Development Point MW - 5
Sample I.D.
Describe Sampling/Development Point
MONITORING WELL

Project Name Beacon #604
Project No. 19024.04
Work Order #
Date 8-12-94
Field Crew W6R, RG

Well Depth 47 feet below MP
Depth to Water (below MP) 42.73 feet
Discharge Rate gpm
Number of borehole volumes evacuated before sampling: 4

Casing Diameter 2" inches
Time 13:45 AM/PM

Sampling/Development Method:
___ Tap
___ Submersible
X Bailer (DISPOSOLE)
___ Other
___ Centrifugal Pump

Pump intake or bailer set at ~ feet below MP.

Sample Appearance: GRAY
Note any Sampling Problems: None
Note any Equipment Washing: Decon. Probe and/or Pump.
Samples Collected/Time: @ for G/BTEX

EVACUATION/STABILIZATION TEST DATA

Time	pH (units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 foot)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
13:50	7.59	7.04	78.2		1.5	

Bailing Start Time 13:45
Bailing Stop Time 14:15

WL 42.73
WL 45.70

Comments: STOPPED BAILING @ 14:15. TOOK DTW @ 17:45, 45.70 IN WELL DID NOT RECHARGE TO 80%; GRABBED SAMPLE

Signature

Date 8/12/94

ACTON • MICKELSON • van DAM, INC.

SAMPLING/DEVELOPMENT INFORMATION

Sampling/Development Point MW-6
Sample I.D.
Describe Sampling/Development Point
MONITORING WELL

Project Name Beacon #604
Project No. 19024.04
Work Order #
Date 8-12-94
Field Crew W6R, RG

Well Depth 48 feet below MP
Depth to Water (below MP) 45.14 feet
Discharge Rate gpm
Number of borehole volumes evacuated before sampling: 4

Casing Diameter 2" inches
Time 14:25 AM (PM)

Sampling/Development Method:
_____ Tap _____ Bailer _____ Centrifugal Pump
_____ Submersible _____ Other

Pump intake or bailer set at _____ feet below MP.

Sample Appearance: CLEAR
Note any Sampling Problems: None
Note any Equipment Washing: Decon. Probe and/or Pump.
Samples Collected/Time: @ for G/BTEX

EVACUATION/STABILIZATION TEST DATA

Time	pH (units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 foot)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
14:30	7.12	6.42	72.3		1	

Bailing Start Time 14:25 WL 45.14
Bailing Stop Time 14:45 WL

Comments: STOPPED BAILING @ 14:45 TOOK DTW @ 18:00, 47.15 & WELL DID NOT RECHARGE TO 80%; COLLECTED SAMPLES.

Signature

Date 8/12/94

ACTON • MICKELSON • van DAM, INC.

SAMPLING/DEVELOPMENT INFORMATION

Sampling/Development Point MW-7
Sample I.D.
Describe Sampling/Development Point
MONITORING WELL

Project Name Beacon #604
Project No. 19024.04
Work Order #
Date 8-12-94
Field Crew W6R, RG

Well Depth 47 feet below MP
Depth to Water (below MP) 43.35 feet
Discharge Rate gpm
Number of borehole volumes evacuated before sampling: 4

Casing Diameter 2" inches
Time 14:55 AM/PM

Sampling/Development Method:
Tap
Submersible
X Bailer (DISPOSABLE)
Other
Centrifugal Pump

Pump intake or bailer set at feet below MP.

Sample Appearance: CLEAR
Note any Sampling Problems: None
Note any Equipment Washing: Decon. Probe and/or Pump.
Samples Collected/Time: @ for G/BTEX

EVACUATION/STABILIZATION TEST DATA

Time	pH (units)	Temperature Corrected Conductance (umhos/cm)	Temperature (°C)	Water Level (nearest 0.01 foot)	Cumulative Volume of Water Removed from Well (gallons)	Pumping Rate (gpm)
15:05	7.15	5.30	74.6		1	
15 15	7.05	4.92	72.9		2.5	
15 25	7.07	4.85	73.3		3.5	
15:35	7.08	4.87	73.5		5.0	

Bailing Start Time 15:00 WL 43.35
Bailing Stop Time 15:35 WL 44.05

Comments:

Signature

Date 8/12/94

ENCLOSURE C

GROUND WATER SAMPLE ANALYTICAL RESULTS

August 17, 1994
Sample Log 10059

Jim Twiford
Acton, Mickelson & van Dam
5090 Robert J. Matthews Pkwy
El Dorado Hills, CA 95762

Subject: Analytical Results for 7 Water Samples
Identified as: Project # 19024.04 (Beacon 604)
Received: 08/12/94

Dear Mr. Twiford:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on August 17, 1994 and describes procedures used to analyze the samples.

Sample(s) were received in 40-milliliter glass vials sealed with TFE lined septae and plastic screw-caps. Each sample was transported and received under documented chain of custody and stored at 4 degrees C until analysis was performed.

Sample(s) were analyzed using the following method(s):

"BTEX" (EPA Method 602/Purge-and-Trap)
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)

Please refer to the following table(s) for summarized analytical results and contact us at 916-753-9500 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Joel Kiff
Senior Chemist

Western Environmental Science & Technology • 45133 County Road 32B • Davis, CA 95616 • 916 753-9500 • FAX: 916 757-4652

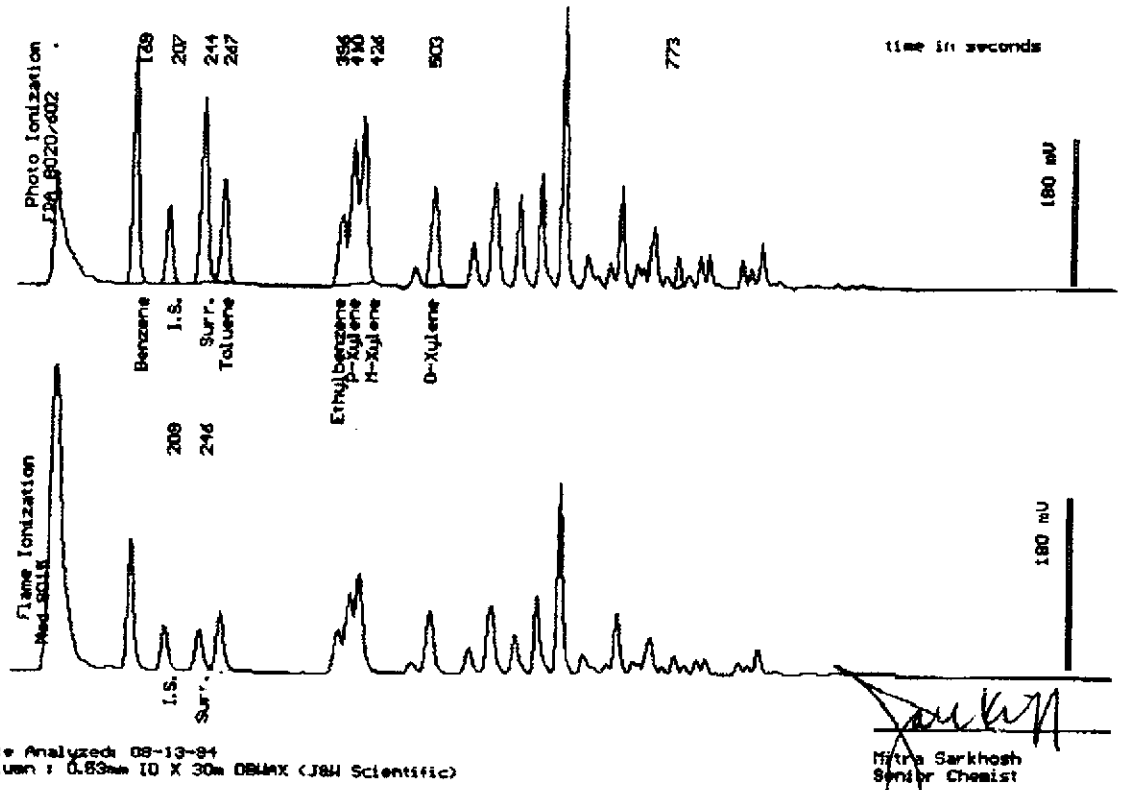
Sample Log 10059

10059-1

Sample: **MW-1**

From : Project # 19024.04 (Beacon 604)
Sampled : 08/12/94
Dilution : 1:10 QC Batch : 2101A
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(5.0)	550
Toluene	(5.0)	330
Ethylbenzene	(5.0)	260
Total Xylenes	(5.0)	1400
TPH as Gasoline	(500)	11000
Surrogate Recovery		101 %



Date Analyzed: 08-13-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

Western Environmental Science & Technology · 45133 County Road 32B · Davis, CA 95616 · 916-753-9500 · FAX: 916 757-4652

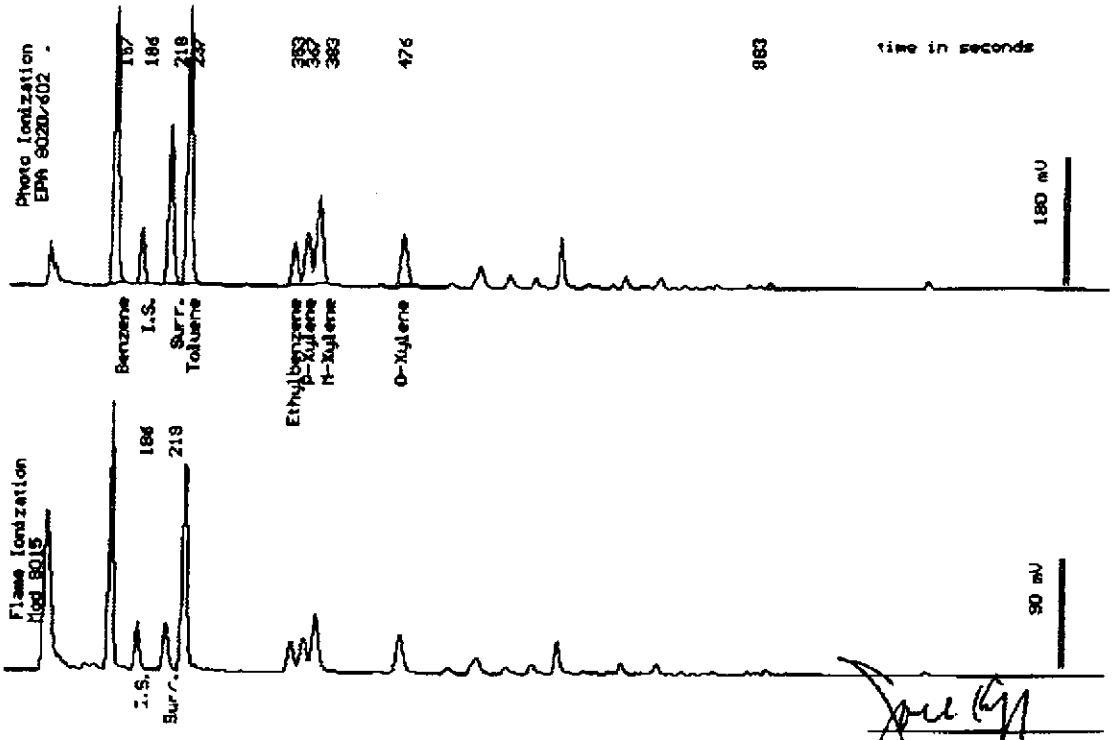
Sample Log 10059

10059-2

Sample: MW-2

From : Project # 19024.04 (Beacon 604)
Sampled : 08/12/94
Dilution : 1:100 QC Batch : 4100H
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(50)	11000
Toluene	(50)	11000
Ethylbenzene	(50)	2300
Total Xylenes	(50)	11000
TPH as Gasoline	(5000)	59000
Surrogate Recovery		105 %



Date Analyzed: 08-15-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

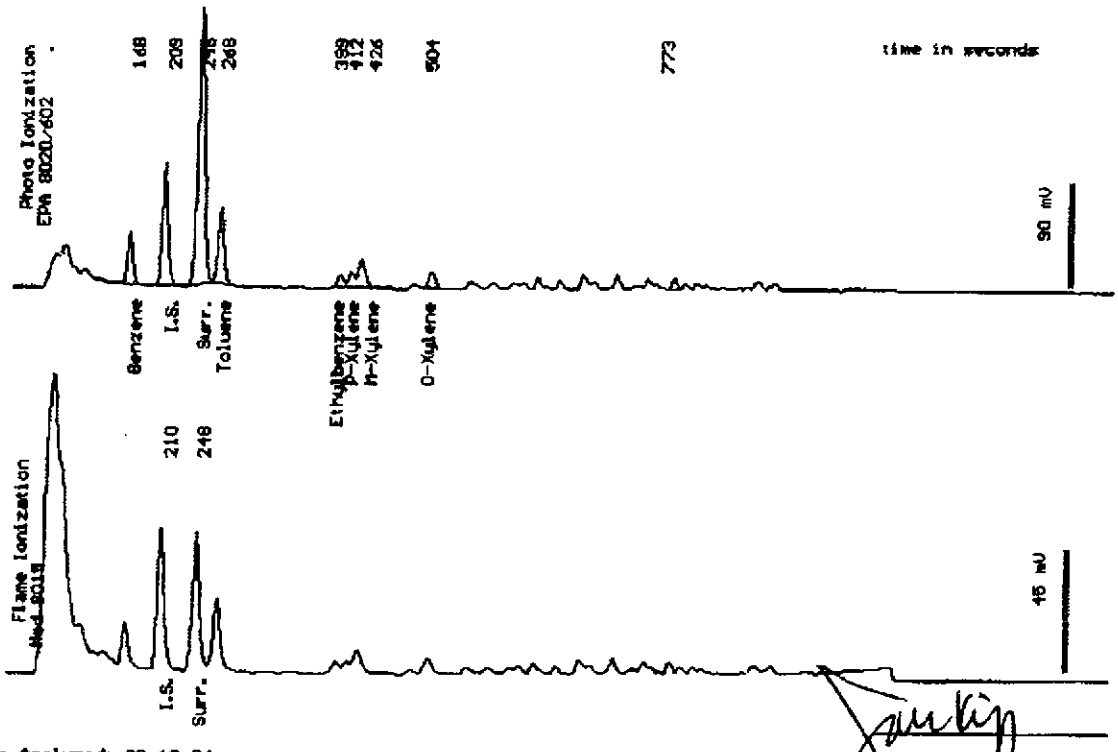
Sample Log 10059

10059-3

Sample: MW-3

From : Project # 19024.04 (Beacon 604)
Sampled : 08/12/94
Dilution : 1:1 QC Batch : 2101A
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	7.3
Toluene	(.50)	14
Ethylbenzene	(.50)	2.6
Total Xylenes	(.50)	13
TPH as Gasoline	(50)	310
Surrogate Recovery		100 %



Date Analyzed: 08-13-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

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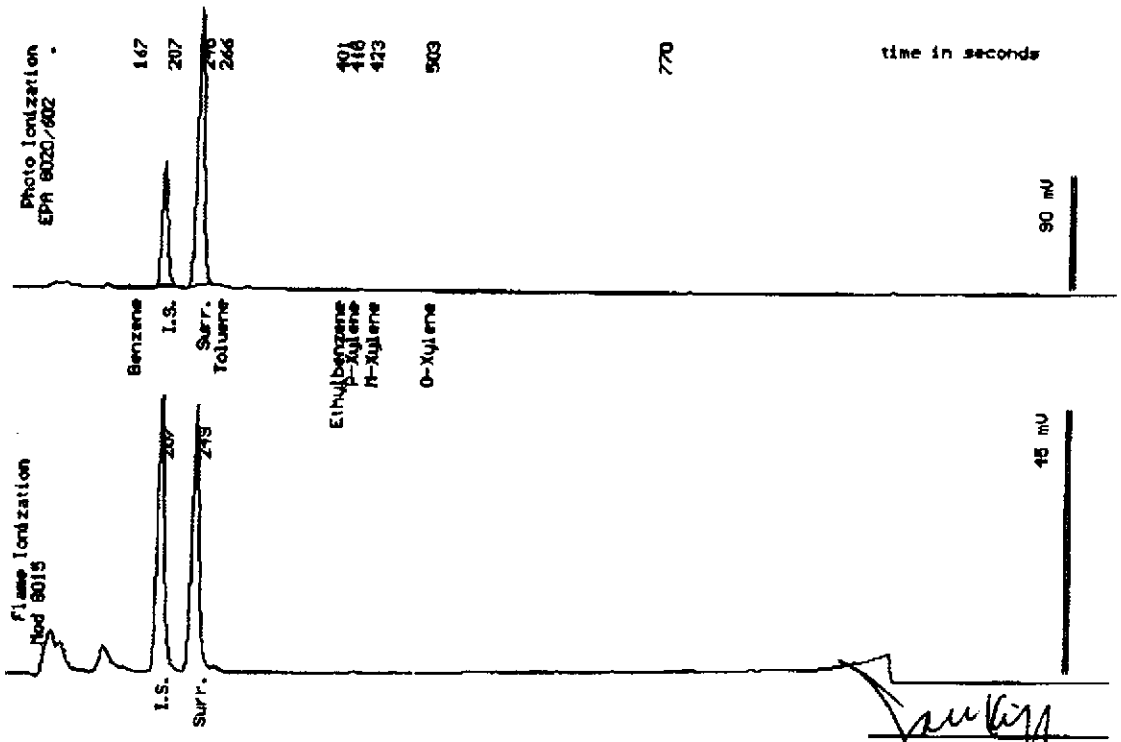
Sample Log 10059

10059-4

Sample: MW-4

From : Project # 19024.04 (Beacon 604)
Sampled : 08/12/94
Dilution : 1:1 QC Batch : 2101A
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		102 %



Date Analyzed: 08-13-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

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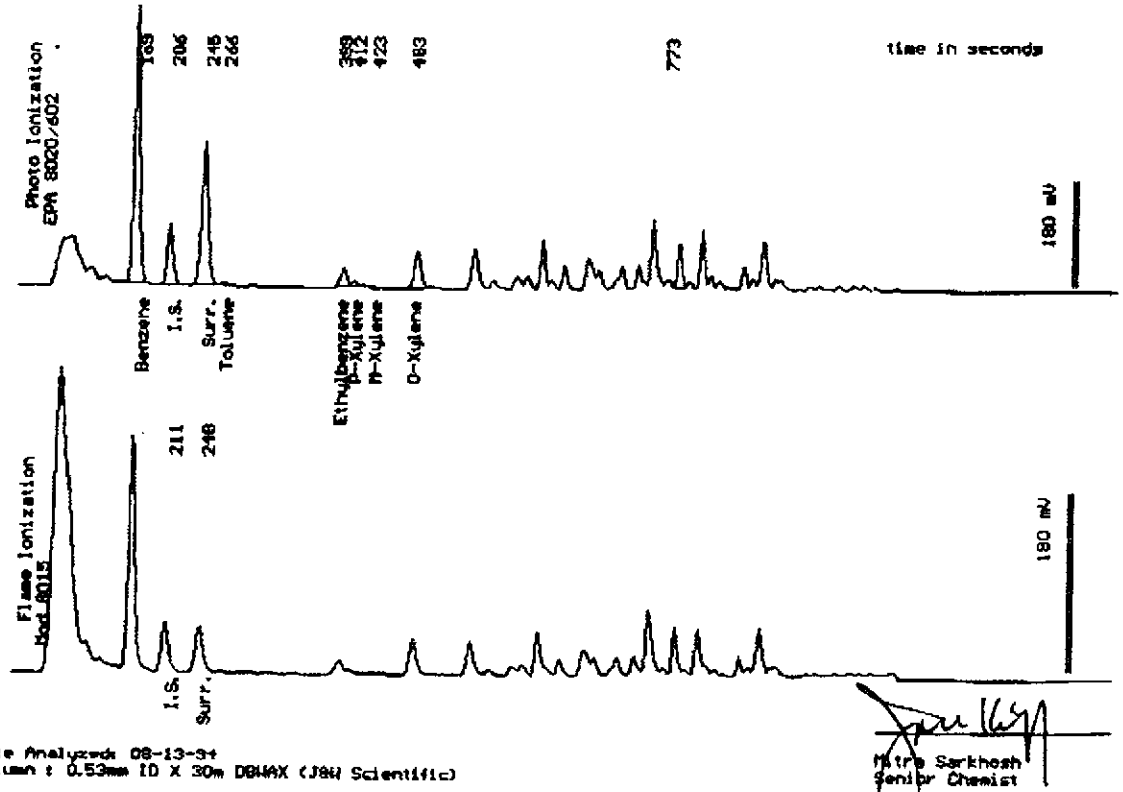
Sample Log 10059

10059-8

Sample: MW-5

From : Project # 19024.04 (Beacon 604)
Sampled : 08/12/94
Dilution : 1:5 QC Batch : 2101A
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(2.5)	420
Toluene	(2.5)	2.9
Ethylbenzene	(2.5)	41
Total Xylenes	(2.5)	98
TPH as Gasoline	(250)	4000
Surrogate Recovery		102 %



Date Analyzed: 08-13-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

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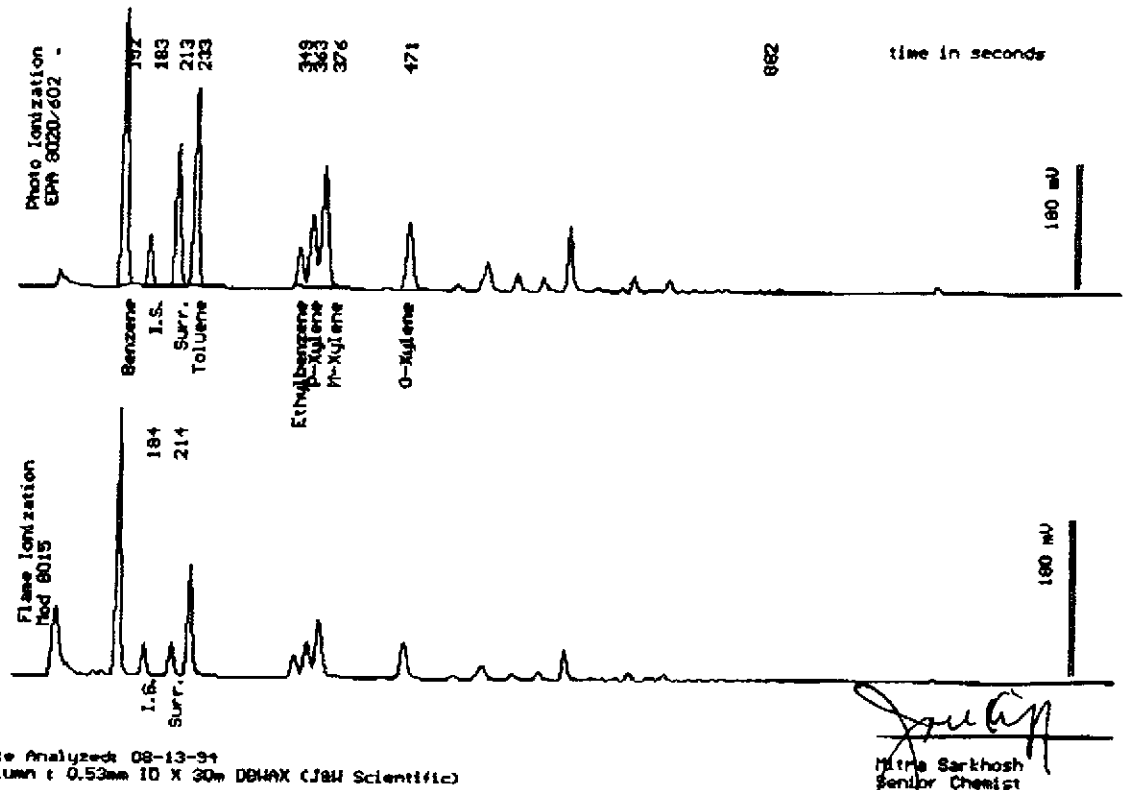
Sample Log 10059

10059-6

Sample: MW-6

From : Project # 19024.04 (Beacon 604)
Sampled : 08/12/94
Dilution : 1:100 QC Batch : 4100E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(50)	12000
Toluene	(50)	8100
Ethylbenzene	(50)	2200
Total Xylenes	(50)	16000
TPH as Gasoline	(5000)	65000
Surrogate Recovery		100 %



Date Analyzed 08-13-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

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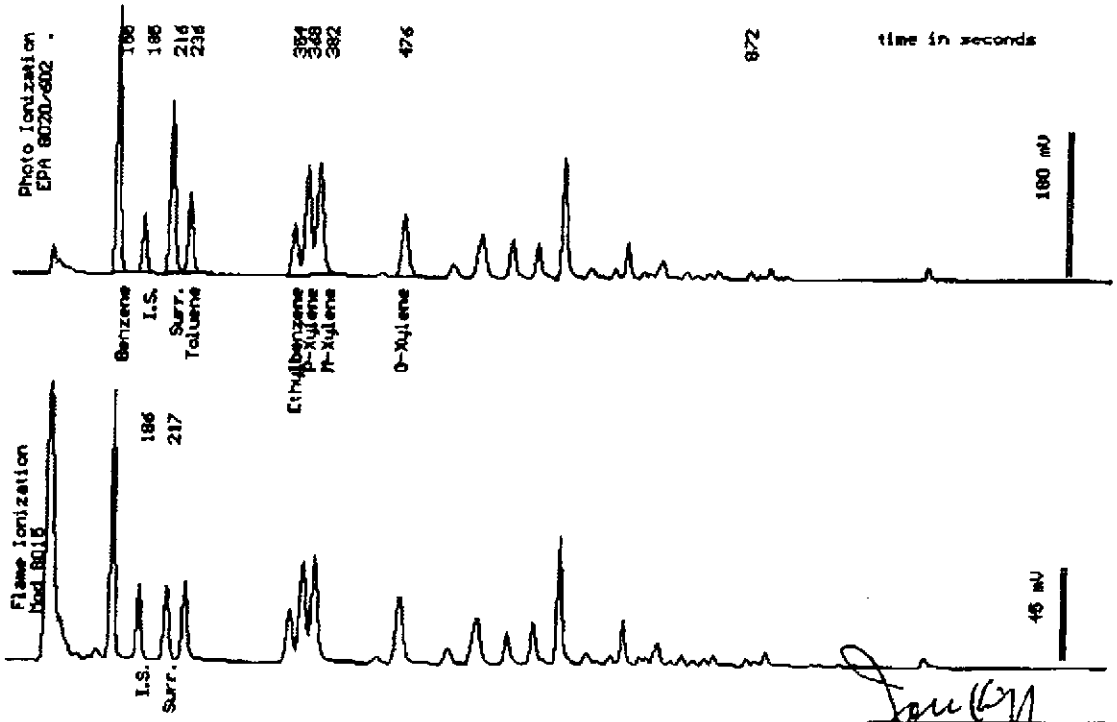
Sample Log 10059

10059-7

Sample: MW-7

From : Project # 19024.04 (Beacon 604)
Sampled : 08/12/94
Dilution : 1:50 QC Batch : 4100E
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(25)	3800
Toluene	(25)	1400
Ethylbenzene	(25)	1300
Total Xylenes	(25)	7500
TPH as Gasoline	(2500)	30000
Surrogate Recovery		101 %



Date Analyzed: 08-13-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

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10059

Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No. #604	Sampler (Print Name) ROD GOSS	ANALYSES	Date 8/12/94	Form No. 1 of 2
Project No. 19024.04	Sampler (Signature) [signature]			
Project Location 1619 W. FIRST ST. LIVERMORE, CA.	Affiliation AMV, INC.			

	Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS: STANDARD TAT
10059-1	MW-1	8/12/94	17:30		X	X								3 VOAs 40ml HCl PRES.
-2	MW2	8/12/94	18:00		X	X								" " " "
-3	MW3	8/12/94	18:30		X	X								" " " "
-4	MW4	8/12/94	17:15		X	X								" " " "
-5	MW5	8/12/94	19:15		X	X								" " " "
-6	MW6	8/12/94	19:00		X	X								" " " "
-7	MW7	8/12/94	16:00		X	X								" " " "

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature] / AMV	8/12/94	21:31			
	8/12/94	21:31	[signature]		

Report To: JIM TWIFORD
AMV, INC.

Bill To: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: T. FOX

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

32-8003 1/90

PROJ # 9411

GCL
Environmental Science and Engineering
A BDM International Company

☒ Albuquerque
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Albuquerque, NM 87102
(505) 842-0001
FAX: (505) 842-0595

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Lanham, MD 20706-4325
(301) 459-9677
FAX: (301) 459-3064

☐ NASA-WSTF
PO Drawer MM
Las Cruces, NM 88004
(505) 524-5353
FAX: (505) 524-5315

№ 8043

Chain of Custody

Date 7-7-94 Page 1 Of 1

Lab Name: K-PRIME, INC.
Address: 4197 LAKESIDE DR. SUITE 170
RICHMOND, CA 94806
Telephone:

Samplers (SIGNATURES): Pat Montano

Analysis Request

Sample Number	Matrix	Location	Halogenated Volatiles 601/8010	Aromatic Volatiles 602/8020	Phenols, Sub Phenols 604/8040	Pesticides/PCB 608/8080	Polynuclear Aromatic Hydrocarbons 610/8310	Volatile Compounds GC/MS 624/8240	Base/Neu/Acid Compounds GC/MS 625/8270	Total Organic Carbon (TOC) 415/9060	Total Organic Halides (TOX) 9020	Petroleum Hydrocarbons 418.1	TPH/BTEX Modified 8015	TCLP- Vol., Semi-Vol. Herbicides, Pesticides	TCLP- Metals	RCRA Metals(8)	Priority Pollutant Metals (13)	CAM Metals (18) TTLC/STLC	Flash Point	Corrosivity	Reactivity	Oil & Grease	Cyanide Total/Amenable	Chemical Oxygen Demand (COD)	TPH-G, BTEX		SAMPLE ID #		Number of Containers
9407071230	H_2O	HP-1																							1		5038		3
9407071620	SOIL	HP-1																							1		5039		1
~~94070~~																													

Project Information
Project: LIVERMORE (BTEX)
Project Director: MONTANO
Charge Code No. 3062.001
Shipping ID. No.
Via: Pick-up

Sample Receipt
Total No. of Containers
Chain of Custody Seals
Rec'd Good Condition/Cold
Conforms to Record
Lab No.

Special Instructions/Comments:

Relinquished By 1.
(Signature) Patrick Montano (Time) 1730
(Printed Name) PATRICK MONTANO (Date) 7-8-94
(Company) GCL

Relinquished By 2.
(Signature) (Time)
(Printed Name) (Date)
(Company)

Relinquished By 3.
(Signature) (Time)
(Printed Name) (Date)
(Company)

Received By 1.
(Signature) [signature] (Time) 17:30
(Printed Name) ARMINDO BARBOSA (Date) 7/8/94
(Company) K PRIME

Received By 2.
(Signature) (Time)
(Printed Name) (Date)
(Company)

Received By (Laboratory) 3.
(Signature) (Time)
(Printed Name) (Date)
(Laboratory)

Distribution: White, Canary-Laboratory • Pink, GCL