Ultramar

Ultramar Inc.
P.O. Box 466
525 W. Third Street
Hanford, CA 93232-0466
(209) 582-0241

Telecopy: 209-584-6113 Credit & Wholesale
209-583-3330 Administrative
209-583-3302 Information Services
209-583-3358 Accounting

March 23, 1993

Ms. Juliet Shin
Hazardous Materials Program
Department of Environmental Health
Alameda County Health Care Services
80 Swan Way, Room 200
Oakland, CA 94612

SUBJECT: BEACON STATION NO. 721, 44 LEWELLING BLVD., SAN LORENZO, CALIFORNIA

Dear Ms. Shin:

Enclosed is a copy of the Groundwater Monitoring and Sampling Report Fourth Quarter 1992 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.

Ultramar has completed the installation of the subsurface piping for the remediation system. All the necessary permits have been obtained. The consultant is in the process of installing the remediation equipment. It is anticipated that the ground-water extraction portion of the remediation system could be completely installed and ready for start up by the middle of April 1993. The vapor extraction portion of the remediation system will not be installed yet because a vapor extraction unit is not available at this time. The vapor extraction portion will be initiated when a unit becomes available. (Submitted permit. The system will be available probably next month.) ← In conversation between Terrance Fox & Juliet Shin 4/2/93

Please call if you have any questions regarding this project.

Sincerely,

ULTRAMAR INC.

Terrence A. Fox ← 209-583-5545

Terrence A. Fox
Senior Project Manager
Marketing Environmental Department

Enclosures

cc w/encl: Mr. Steven Ritchie, San Francisco Bay Region, RWQCB

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ENVIRONMENTAL PROJECT QUARTERLY STATUS REPORT

DATE REPORT SUBMITTED: March 23, 1993
QUARTER ENDING: December 31, 1992

SERVICE STATION NO.: 721
ADDRESS: 44 Lewelling Blvd., San Lorenzo, CA
COUNTY: Alameda

ULTRAMAR CONTACT: Terrence A. Fox **TEL. NO:** 209-583-5545

BACKGROUND:

In April 1987, three underground gasoline storage tanks were excavated and removed. Samples collected from beneath the former tanks indicated that hydrocarbons were present in the soil. In May 1987, three monitoring wells (MW-1 through MW-3) were installed by Conoco. Hydrocarbons were detected in soil and ground-water samples collected from the wells. In December 1988, four additional wells (MW-4 through MW-7) were installed. Dissolved-phase hydrocarbons were detected in the new wells. In September 1989, two additional wells (MW-8 and MW-9) were installed. The site has been on a monitoring program since May 1987.

In July 1990, the site was purchased by Ultramar Inc. from Conoco. The monitoring program has continued. Submitted work plan for additional assessment on March 14, 1991.

In October 1991, drilled two additional offsite wells (MW-10 and MW-11) southwest of the site and one onsite recovery well (RW-1). In November 1991, performed ground-water pump test and vapor extraction test.

In April 1992, Ultramar submitted an Interim Remediation Plan. The plan was approved in June 1992.

SUMMARY OF THIS QUARTER'S ACTIVITIES:

Performed quarterly monitoring on November 19, 1992. Submitted the necessary permit applications for construction and operation of the remediation system.

RESULT OF QUARTERLY MONITORING:

Monitoring data indicates that 0.38 feet of free product was detected in MW-3 and 0.01 feet of free product was detected in RW-1. The benzene concentration decreased in MW-1 from 3,800 ppb to 200 ppb, in MW-2 from 6.5 ppb to not detected, in MW-4 from 6.6 ppb to not detected, in MW-7 from 400 ppb to 29 ppb, and in MW-11 from 15 ppb to not detected. Benzene concentrations increased in MW-6 from 1.2 ppb to 1.3 ppb and in MW-10 from 20 ppb to 36 ppb. Benzene concentrations remained not detected in wells MW-5, MW-8, and MW-9.

PROPOSED ACTIVITY OR WORK FOR NEXT QUARTER:

ACTIVITY	ESTIMATED COMPLETION DATE
Continue quarterly ground-water monitoring	Ongoing
Install the remediation system.	April 15, 1993

AEGIS ENVIRONMENTAL, INC.

1050 Melody Lane, Suite 160, Roseville, CA 95678 ✦ 916 • 782-2110 / 916 • 969-2110 / FAX 916 • 786-7830

March 11, 1993

Mr. Terrence Fox
Environmental Specialist
Ultramar Inc.
525 West Third Street
Hanford, California 93232-0466

Subject: **Fourth Quarter 1992 Groundwater Monitoring Report**
Beacon Station #721
44 Lewelling Boulevard, San Lorenzo, California

Dear Mr. Fox:

Aegis Environmental, Inc. (Aegis), is pleased to provide Ultramar Inc., this report documenting the results of quarterly groundwater monitoring, conducted on November 19, 1992, at the subject site (Figure 1). The monitoring included measurements of depth to liquids in and total depths of twelve wells (MW-1 through MW-11, and RW-1) on and off the site (Figure 2). Groundwater samples were collected from all wells, except MW-3 and RW-1 due to floating hydrocarbons.

GROUNDWATER ELEVATIONS

Aegis personnel collected measurements of the depths to liquids in all twelve wells prior to purging and sampling on November 19, 1992. Current liquid level data, and prior 1992 data only, are summarized in Table 1. Previous groundwater level data are included in Attachment 3. All measurements of depths to liquids were made to the nearest 0.01 foot from the referenced wellhead (top-of-casing) elevations and conducted according to the Aegis standard operating procedures (SOP) included in Attachment 1. On the basis of the November 19, 1992, measurements, groundwater is estimated to flow generally to the southwest (Figure 2) at an average gradient of approximately 0.001 ft/ft. In general, groundwater levels have decreased approximately 1 foot compared to the August 1992 event.

GROUNDWATER SAMPLING AND ANALYSES

Aegis personnel collected groundwater samples from the ten wells on November 19, 1992. The samples were collected according to the Aegis SOP included in Attachment 1, and submitted under chain-of-custody to WEST Labs of Davis, California, a state-certified analytical laboratory. All samples were analyzed for concentrations of: a) total petroleum hydrocarbons, as gasoline, by modified EPA Method 8015; and b) benzene, toluene, ethylbenzene, and total xylenes by EPA Method 602. Current analytical results, and prior 1992 analytical results only, are summarized in Table 2. Figure 3 is a distribution map of benzene in groundwater based on the data summarized in Table 2. The analytical laboratory reports and chain-of-custody forms are included as Attachment 2. Previous analytical results are included in Attachment 4. Based on the current data, the benzene plume is defined in the downgradient direction.

Aegis recommends a copy of this quarterly monitoring report be forwarded to the following parties:

Ms. Pamela Evans
Hazardous Materials Program
Department of Environmental Healh
County of Alameda
80 Swan Way, Room 200
Oakland, California 94612

Mr. Steven Ritchie
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, California 94612

This report has been prepared for the sole use of Ultramar Inc. Any reliance on this report by third parties shall be at such parties' own risk. The work described herein was performed under the direct supervision of the professional geologist, registered with the State of California, whose signature appears below. If you have any questions or comments, please do not hesitate to call us at (916) 782-2110.

Sincerely,

AEGIS ENVIRONMENTAL, INC.

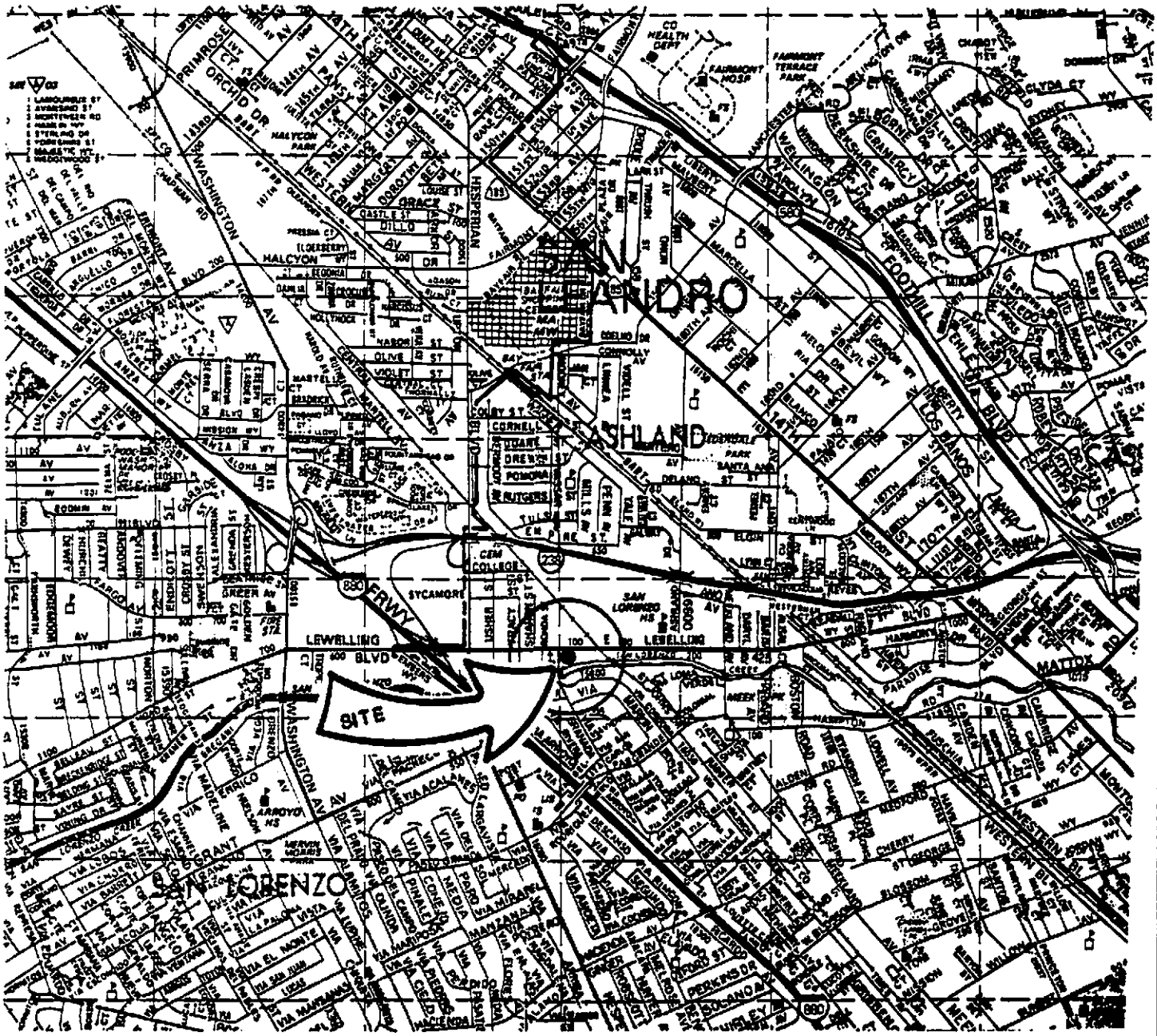
Tom E. Landwehr
Senior Geologist

Douglas I. Sheeks
Senior Geologist
CRG No. 5211

3-11-93
Date

TEL/DIS/law

Attachments



BASE MAP: THOMAS BROS. GUIDE ALAMEDA CO. 1991

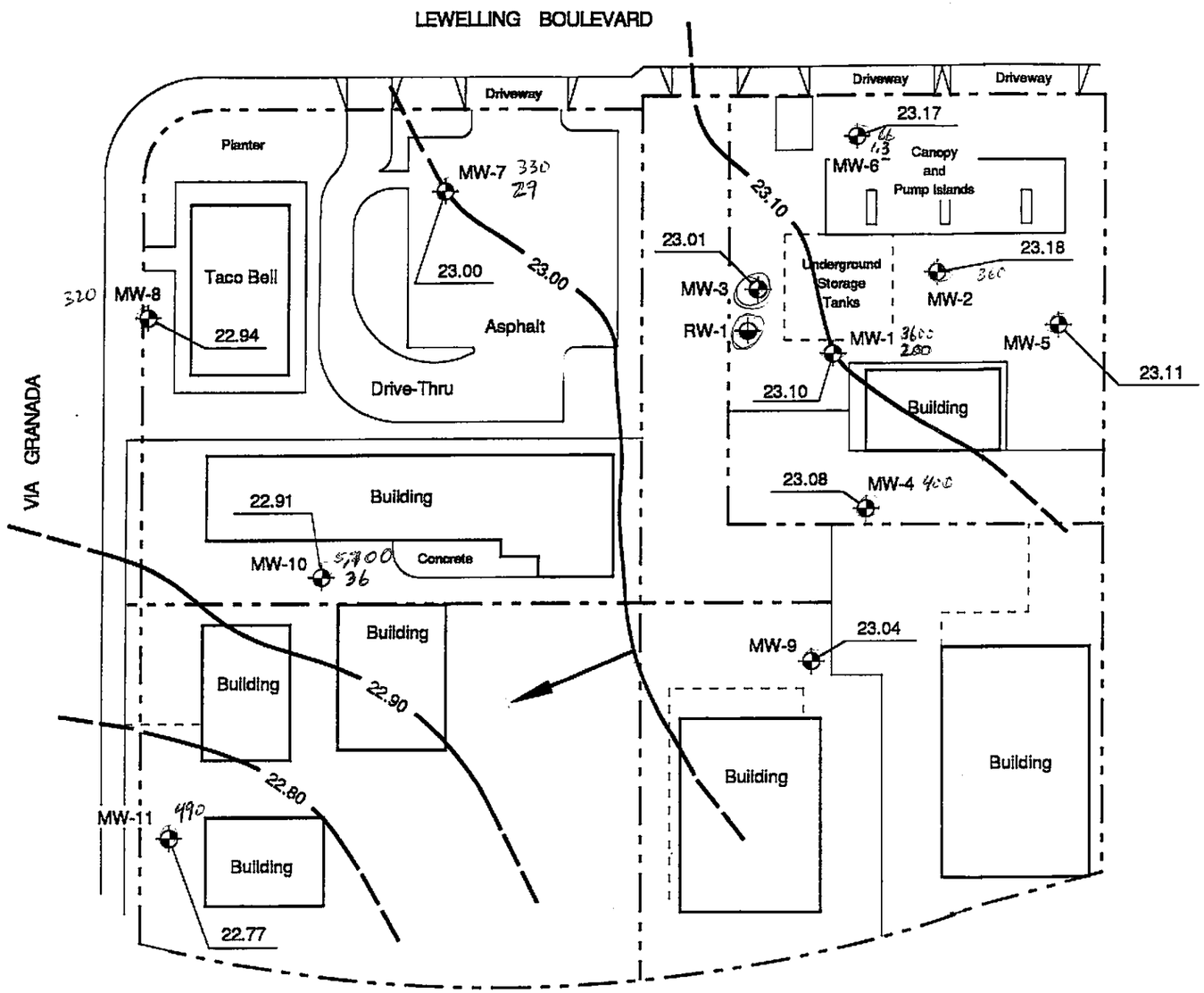
LEGEND

SITE LOCATION

0 1100 2200

SCALE IN FEET

REVIEWED BY:	SITE LOCATION MAP		
	ULTRAMAR BEACON STATION NO. 721		
APPROVED BY:	44 LEWELLING BOULEVARD	JOB #:	DRAWN BY:
	SAN LORENZO, CALIFORNIA	DATE: 1/8/92	DRAWING #: FIG. 1



LEGEND

- Monitoring Well
- Recovery Well
- Approximate Property Lines
- Potentiometric Surface Contour Line (Dashed Where Inferred)
- 23.10 Groundwater Elevation in Feet
- Estimated Direction of Groundwater Flow

Hydraulic Gradient = 0.001 ft/ft
Contour Interval = 0.1 ft

NOTES

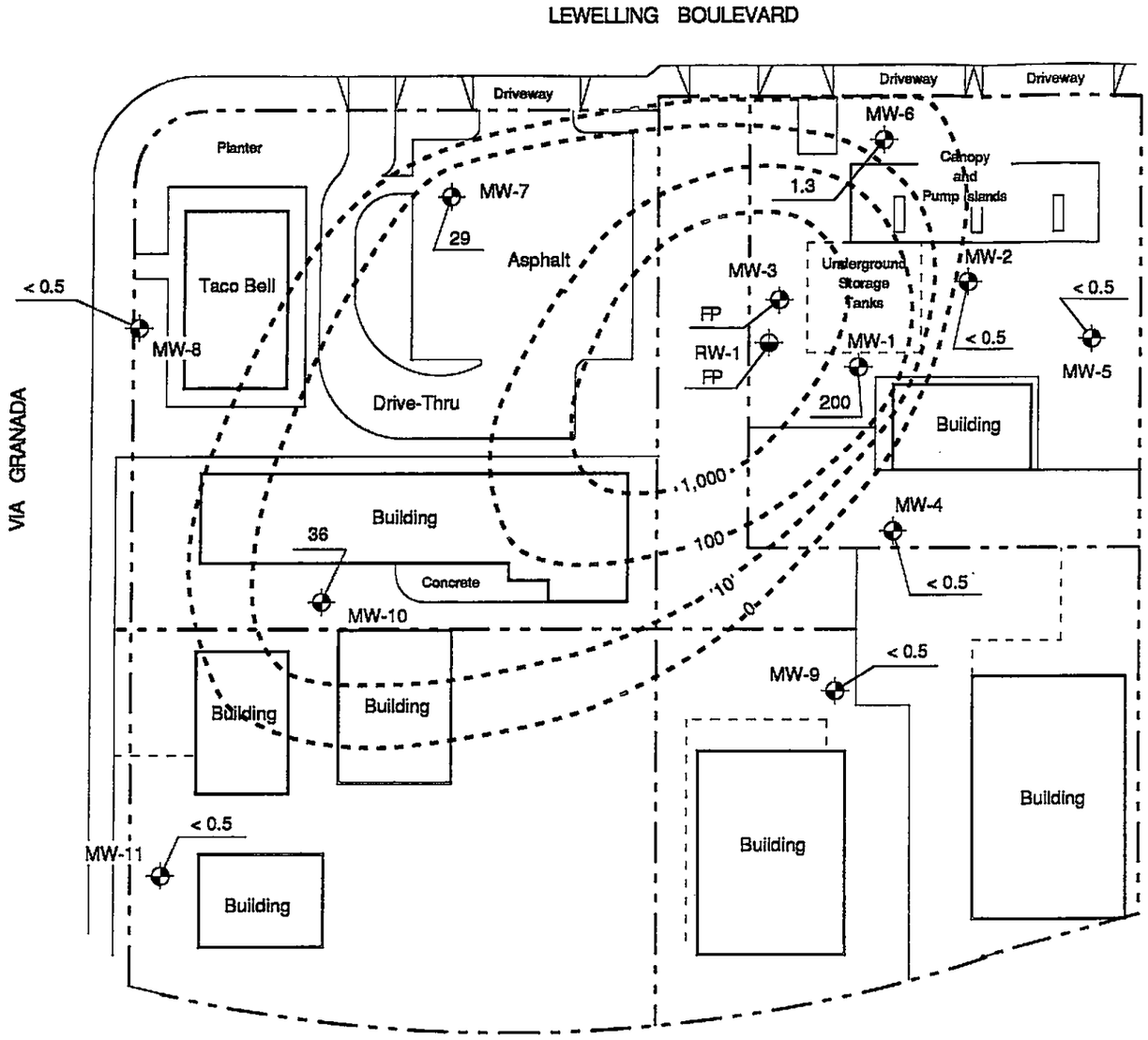
Site Sketch After Site Vicinity Map
By Resna
(January 9, 1992)

All Locations Are Approximate

0 40 80
Approximate Scale
1" = 40'

- TPHg (ppb)
- Benzene (ppb)
0 FREE PRODUCT WELLS

AEGIS ENVIRONMENTAL, INC.		POTENTIOMETRIC SURFACE MAP November 19, 1992	FIGURE 2
DRAWN BY: D. Hada	DATE: December 21, 1992	Beacon Station #721 44 Lewelling Boulevard San Lorenzo, CA	PROJECT NUMBER: 92-703
REVISED BY:	DATE:		
REVIEWED BY: DJS	DATE: 1-26-93		



LEGEND

⊕	Monitoring Well
⊕	Recovery Well
— - - —	Approximate Property Lines
200	Benzene Concentration (parts-per-billion)
- - - - -	Inferred Iso-Concentration Limits
< 0.5	Below Indicated Detection Limit
NS	Not Sampled
FP	Free Product

Contour Interval = Exponential

NOTES

Site Sketch After Site Vicinity Map
By Resna
(January 9, 1992)

All Locations Are Approximate

0 40 80
Approximate Scale
1" = 40'

AEGIS ENVIRONMENTAL, INC.		DISTRIBUTION MAP OF BENZENE IN GROUNDWATER November 19, 1992	FIGURE 3
DRAWN BY: D. Hada	DATE: December 7, 1992	Beacon Station #721 44 Lewelling Boulevard San Lorenzo, CA	PROJECT NUMBER: 92-703
REVISED BY:	DATE:		
REVIEWED BY: TL	DATE: 3/11/93		

TABLE 1

LIQUID LEVEL DATA

BEACON STATION #721
44 LEWELLING BOULEVARD, SAN LORENZO, CALIFORNIA
(Measurementsin feet)

Monitoring Well	Date	Reference Elevation (top of casing)[1]	Depth to Groundwater[1]	Groundwater Elevation[2]	Depth to Free Product[1]	Free Product Thickness	Well Depth
MW-1	02/18/92	43.67	16.42	27.25	---	---	---
	05/14/92		17.28	26.39	---	---	---
	08/27/92		19.48	24.19	---	---	---
	11/19/92		20.57	23.10	---	---	30.93
MW-2	02/18/92	43.09	16.65	26.44	---	---	---
	05/14/92		16.64	26.45	---	---	---
	08/27/92		18.81	24.28	---	---	---
	11/19/92		19.91	23.18	---	---	32.18
MW-3	02/18/92	43.10	16.89	26.21	---	---	---
	05/14/92		16.80	26.30	---	---	---
	08/27/92		18.98	24.12	---	---	---
	11/19/92		20.38	23.01*	20.00	0.38	---
MW-4	02/18/92	44.66	18.51	26.15	---	---	---
	05/14/92		18.22	26.44	---	---	---
	08/27/92		20.47	24.19	---	---	---
	11/19/92		21.58	23.08	---	---	24.43
MW-5	02/18/92	43.79	17.37	26.42	---	---	---
	05/14/92		17.29	26.50	---	---	---
	08/27/92		22.18	21.61	---	---	---
	11/19/92		20.68	23.11	---	---	28.80
MW-6	02/18/92	42.47	15.87	26.60	---	---	---
	05/14/92		16.04	26.43	---	---	---
	08/27/92		18.17	24.30	---	---	---
	11/19/92		19.30	23.17	---	---	28.54

NOTES:
[1] = Measurement and reference elevation taken from notch/mark on top north side of well casing.
[2] = Elevation referenced to mean sea level.
* = Corrected groundwater elevation - CDTW = DTW - (SP.G x LHT).
CDTW = Corrected depth to water.
DTW = Measured depth to water.
SP.G. = Specific gravity: unweathered gasoline = 0.75, diesel = 0.80.
LHT = Measured liquid hydrocarbon thickness.
--- = Not analyzed/not sampled.
Well Depth = Measurement from top of casing to bottom of well.

Aegis Environmental, Inc.
92-703/March 11, 1993

TABLE 1 (CONTINUED)

LIQUID LEVEL DATA

BEACON STATION #721
44 LEWELLING BOULEVARD, SAN LORENZO, CALIFORNIA
(Measurements in feet)

Monitoring Well	Date	Reference Elevation (top of casing)[1]	Depth to Groundwater[1]	Groundwater Elevation[2]	Depth to Free Product[1]	Free Product Thickness	Well Depth
MW-7	02/18/92	41.54	15.51	26.03	---	---	---
	05/14/92		15.41	26.13	---	---	---
	08/27/92		17.45	24.09	---	---	---
	11/19/92		18.54	23.00	---	---	24.42
MW-8	02/18/92	42.26	16.57	25.69	---	---	---
	05/14/92		16.24	26.02	---	---	---
	08/27/92		18.28	23.98	---	---	---
	11/19/92		19.32	22.94	---	---	23.01
MW-9	02/18/92	44.94	18.87	26.07	---	---	---
	05/14/92		18.55	26.39	---	---	---
	08/27/92		20.80	24.14	---	---	---
	11/19/92		21.90	23.04	---	---	23.61
MW-10	02/18/92	42.34	16.63	25.71	---	---	---
	05/14/92		15.25	27.09	---	---	---
	08/27/92		18.35	23.90	---	---	---
	11/19/92		19.43	22.91	---	---	29.61
MW-11	02/18/92	45.00	17.00	26.17	---	---	---
	05/14/92		19.02	25.98	---	---	---
	08/27/92		21.13	23.87	---	---	---
	11/19/92		22.23	22.77	---	---	29.37
RW-1	05/14/92	43.17	16.88	26.29	---	---	---
	08/27/92		19.05	24.12	---	---	---
	11/19/92		21.11	22.07*	21.10	0.01	---

NOTES:
[1] = Measurement and reference elevation taken from notch/mark on top north side of well casing.
[2] = Elevation referenced to mean sea level.
* = Corrected groundwater elevation - CDTW = DTW - (SP.G x LHT).
CDTW = Corrected depth to water.
DTW = Measured depth to water.
SP.G. = Specific gravity: unweathered gasoline = 0.75, diesel = 0.80.
LHT = Measured liquid hydrocarbon thickness.
--- = Not analyzed/not sampled.
Well Depth = Measurement from top of casing to bottom of well.

TABLE 2

ANALYTICAL RESULTS: GROUNDWATER

BEACON STATION #721
44 LEWELLING BOULEVARD, SAN LORENZO, CALIFORNIA
(All results in parts-per-billion)

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons	Aromatic Volatile Organics			
		Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-1	02/18/92	---	---	---	---	---
	05/15/92	41,000	2,000	47	1,200	400
	08/28/92	110,000	3,800	54	850	970
	11/19/92	**3,600**	**200**	<5.0	90	140
MW-2	02/18/92	1,600	<0.5	<0.5	1.9	<0.5
	05/14/92	740	1.2	1.0	1.3	<0.5
	08/27/92	1,400	6.5	1.1	0.6	<0.5
	11/19/92	**360**	<0.5	<0.5	2.7	<0.5
MW-3	02/18/92	---	---	---	---	---
	05/15/92	160,000	6,300	5,900	1,700	6,100
	08/28/92	1,300,000	25,000	40,000	6,700	44,000
	11/19/92	---	---	---	---	---
MW-4	02/18/92	5,100	<0.5	<0.5	12	21
	05/14/92	4,600	<0.5	5.6	1.8	2.2
	08/28/92	1,700	6.6	1.3	1.6	3.1
	11/19/92	**400**	<0.5	<0.5	<0.5	<0.5
MW-5	02/18/92	<50	<0.5	<0.5	<0.5	<0.5
	05/14/92	<50	<0.5	<0.05	<0.5	<0.5
	08/27/92	<50	<0.5	<0.5	<0.5	<0.5
	11/19/92	<50	<0.5	<0.5	<0.5	<0.5
MW-6	02/18/92	370	4.8	<0.5	<0.5	<0.5
	05/14/92	120	<0.5	<0.5	<0.5	<0.5
	08/27/92	<50	1.2	<0.5	<0.5	<0.5
	11/19/92	**66**	**1.3**	<0.5	1.0	1.1
MW-7	02/18/92	670	16	<0.5	10	16
	05/14/92	1,500	44	<0.5	36	88
	08/27/92	23,000	400	5.8	290	1,400
	11/19/92	**330**	**29**	<0.5	10	63

NOTES: < = Below indicated detection limit.
--- = Not analyzed/not sampled.

TABLE 2 (CONTINUED)

ANALYTICAL RESULTS: GROUNDWATER

BEACON STATION #721
44 LEWELLING BOULEVARD, SAN LORENZO, CALIFORNIA
(All results in parts-per-billion)

Monitoring Well	Date Collected	Total Petroleum Hydrocarbons	Aromatic Volatile Organics			
		Gasoline	Benzene	Toluene	Ethyl-benzene	Total Xylenes
MW-8	02/18/92	1,200	<0.5	<0.5	9.5	<0.5
	05/14/92	130	<0.5	<0.5	<0.5	<0.5
	08/28/92	140	<0.5	<0.5	<0.5	<0.5
	11/19/92	320	<0.5	<0.5	2.0	<0.5
MW-9	02/18/92	<50	<0.5	<0.5	<0.5	<0.5
	05/14/92	<50	<0.5	<0.5	<0.5	<0.5
	08/27/92	<50	<0.5	<0.5	<0.5	<0.5
	11/19/92	<50	<0.5	<0.5	<0.5	1.3
MW-10	02/18/92	18,000	110	57	440	63
	05/15/92	8,500	24	9.8	97	<0.5
	08/28/92	9,600	20	2.8	40	3.5
	11/19/92	5,700	36	21	330	31
MW-11	02/18/92	2,400	<0.5	<0.5	<0.5	<0.5
	05/15/92	1,600	<0.5	1.9	1.3	0.7
	08/27/92	2,100	15	2	0.6	1.2
	11/19/92	490	<0.5	<0.5	<0.5	<0.5
RW-1	05/15/92	790	270	62	29	140
	08/28/92	24,000	1,300	200	68	810
	11/19/92	---	---	---	---	---

NOTES: < = Below indicated detection limit.
--- = Not analyzed/not sampled.

ATTACHMENT 1

STANDARD OPERATING PROCEDURES

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: SAMPLE IDENTIFICATION AND CHAIN-OF-CUSTODY PROCEDURES
SOP-4

Sample identification and chain-of-custody procedures ensure sample integrity, and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis is labeled to identify the job number, date, time of sample collection, a sample number unique to the sample, any in-field measurements made, sampling methodology, name(s) of on-site personnel and any other pertinent field observations also recorded on the field excavation or boring log.

Chain-of-custody forms are used to record possession of the sample from time of collection to its arrival at the laboratory. During shipment, the person with custody of the samples will relinquish them to the next person by signing the chain-of-custody form(s) and noting the date and time. The sample-control officer at the laboratory will verify sample integrity, correct preservation, confirm collection in the proper container(s), and ensure adequate volume for analysis.

If these conditions are met, the samples will be assigned unique laboratory log numbers for identification throughout analysis and reporting. The log numbers will be recorded on the chain-of-custody forms and in the legally-required log book maintained in the laboratory. The sample description, date received, client's name, and any other relevant information will also be recorded.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURES
RE: LABORATORY ANALYTICAL QUALITY ASSURANCE AND CONTROL
SOP-5

In addition to routine instrument calibration, replicates, spikes, blanks, spiked blanks, and certified reference materials are routinely analyzed at method-specific frequencies to monitor precision and bias. Additional components of the laboratory Quality Assurance/Quality Control program include:

1. Participation in state and federal laboratory accreditation/certification programs;

2. Participation in both U.S. EPA Performance Evaluation studies (WS and WP studies) and inter-laboratory performance evaluation programs;

3. Standard operating procedures describing routine and periodic instrument maintenance;

4. "Out-of-Control"/Corrective Action documentation procedures; and,

5. Multi-level review of raw data and client reports.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: GROUNDWATER PURGING AND SAMPLING
SOP-7

Prior to water sampling, each well is purged by evacuating a minimum of three wetted well-casing volumes of groundwater. When required, purging will continue until either the discharge water temperature, conductivity, or pH stabilize, a maximum of ten well-bore volumes of groundwater have been recovered, or the well is bailed dry. When practical, the groundwater sample should be collected when the water level in the well recovers to at least 80 percent of its static level.

The sampling equipment consists of either a "Teflon" bailer, PVC bailer, or stainless steel bladder pump with a "Teflon" bladder. If the sampling system is dedicated to the well, then the bailer is usually "Teflon," but the bladder pump is PVC with a polypropylene bladder. In general and depending on the intended laboratory analysis, 40-milliliter glass, volatile organic analysis (VOA) vials, with "Teflon" septa, are used as sample containers.

The groundwater sample is decanted into each VOA vial in such a manner that there is no meniscus at the top of the vial. A cap is quickly secured to the top of the vial. The vial is then inverted and gently tapped to see if air bubbles are present. If none are present, the vial is labeled and refrigerated for delivery, under strict chain-of-custody, to the analytical laboratory. Label information should include a unique sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

For quality control purposes, a duplicate water sample is collected from each well. This sample is put on hold at the laboratory. When required, a trip blank is prepared at the laboratory and placed in the transport cooler. It is labeled similar to the well samples, remains in the cooler during transport, and is analyzed by the laboratory along with the groundwater samples. In addition, a field blank may be prepared in the field when sampling equipment is not dedicated. The field blank is prepared after a pump or bailer has been either steam cleaned or properly washed, prior to use in the next well, and is analyzed along with the other samples. The field blank analysis demonstrates the effectiveness of the in-field cleaning procedures to prevent cross-contamination.

To minimize the potential for cross-contamination between wells, all well development and water sampling equipment not dedicated to a well is either steam cleaned or properly washed between use. As a second precautionary measure, wells are sampled in order of least to highest concentrations as established by available previous analytical data.

In the event the water samples cannot be submitted to the analytical laboratory on the same day they are collected (e.g., due to weekends or holidays), the samples are temporarily stored until the first opportunity for submittal either on ice in a cooler, such as when in the field, or in a refrigerator at Aegis' office.

AEGIS ENVIRONMENTAL, INC.
STANDARD OPERATING PROCEDURE
RE: MEASURING LIQUID LEVELS USING WATER LEVEL OR INTERFACE PROBE
SOP-12

Field equipment used for liquid-level gauging typically includes the measuring probe (water-level or interface), light filter(s), and product bailer(s). The field kit also includes cleaning supplies (buckets, TSP, spray bottles, and deionized water) to be used in cleaning the equipment between wells.

Prior to measurement, the probe tip is lowered into the well until it touches bottom. Using the previously established top-of-casing or top-of-box (i.e., wellhead vault) point, the probe cord (or halyard) is marked and a measuring tape (graduated in hundredths of a foot) is used to determine the distance between the probe end and the marking on the cord. This measurement is then recorded on the liquid-level data sheet as the "depth to water" (DTW).

When necessary in using the interface probe to measure liquid levels, the probe is first electrically grounded to either the metal stove pipe or another metal object nearby. When no ground is available, reproducible measurements can be obtained by clipping the ground lead to the handle of the interface probe case. After grounding the probe, the top of the well casing is fitted with a light filter to insure that sunlight does not interfere with the operation of the probe's optical mechanism.

The probe tip is then lowered into the well and submerged in the groundwater. An oscillating (beeping) tone indicates the probe is in water. The probe is slowly raised until either the oscillating tone ceases or becomes a steady tone. In either case, this is the depth-to-water indicator and the DTW measurement is made accordingly. The steady tone indicates floating hydrocarbons. In this case, the probe is slowly raised until the steady tone ceases. This is the depth-to-product (DTP) indicator and the DTP measurement is made accordingly.

The process of lowering and raising the probe must be repeated several times to ensure accurate measurements. The DTW and DTP measurements are recorded on the liquid-level data sheet. When floating product is indicated by the probe's response, a product bailer is lowered partially through the product-water interface to confirm the product on the water surface, and as further indication of product thickness, particularly in cases where the product layer is quite thin. This measurement is recorded on the data sheet as "product thickness."

In order to avoid cross-contamination of wells during the liquid-level measurement process, wells are measured in the order of "clean" to "dirty" (where such information is available). In addition, all measurement equipment is cleaned with TSP solution and thoroughly rinsed with deionized water before use, between measurements in respective wells, and at the completion of the day's use.

ATTACHMENT 2

LABORATORY REPORTS AND CHAIN-OF-CUSTODY FORMS

12-103

DEC 03 1992

Ans'd SRR/CF

December 2, 1992
Sample Log 5428

Sheila Richgels
Aegis Environmental Consultants, Inc.
1050 Melody Lane, Suite 160
Roseville, CA 95678

Subject: Analytical Results for 10 Water Samples
Identified as: Project # 92-703 (Beacon 721)
Received: 11/23/92

Dear Ms. Richgels:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on December 2, 1992 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 916-757-4650 if you have questions regarding procedures or results. The chain-of-custody document is enclosed.

Approved by:

Joel Kiff
Senior Chemist

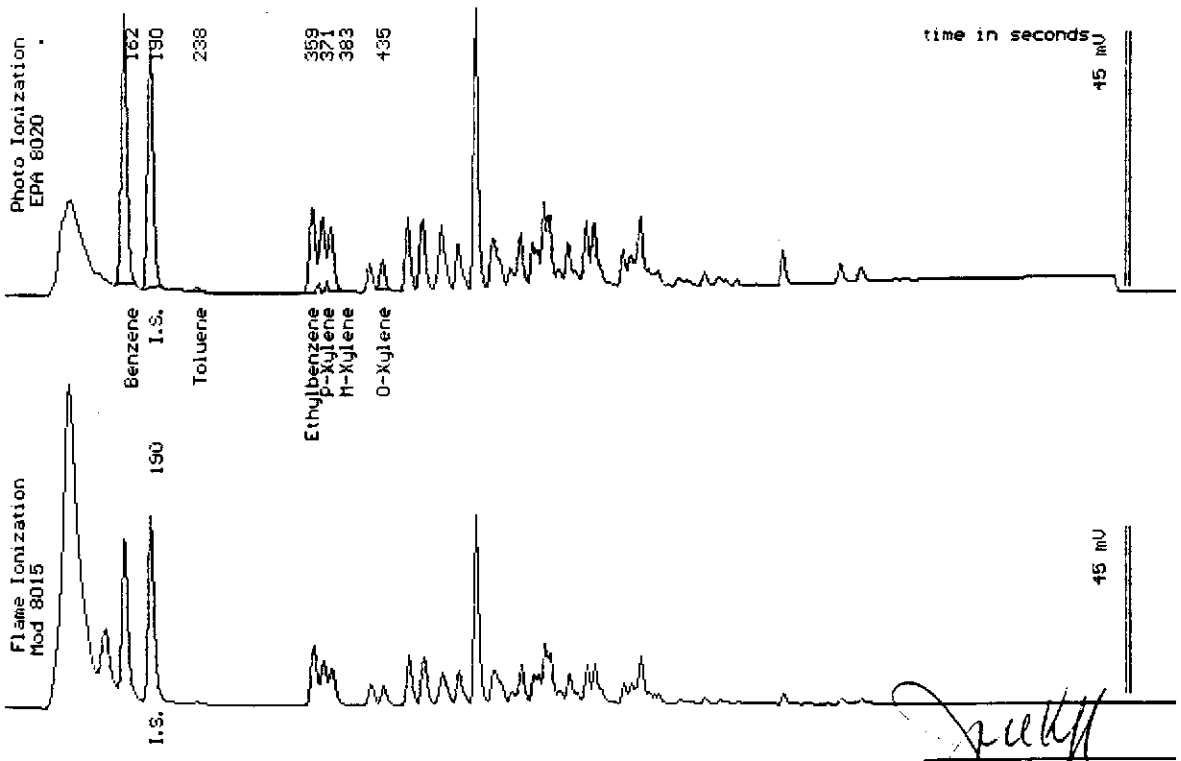
Sample Log 5428

5428-1

Sample: **MW1**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:10 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(5.0)	200
Toluene	(5.0)	<5.0
Ethylbenzene	(5.0)	90
Total Xylenes	(5.0)	140
TPH as Gasoline	(500)	3600



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Jbel Riff
Senior Chemist

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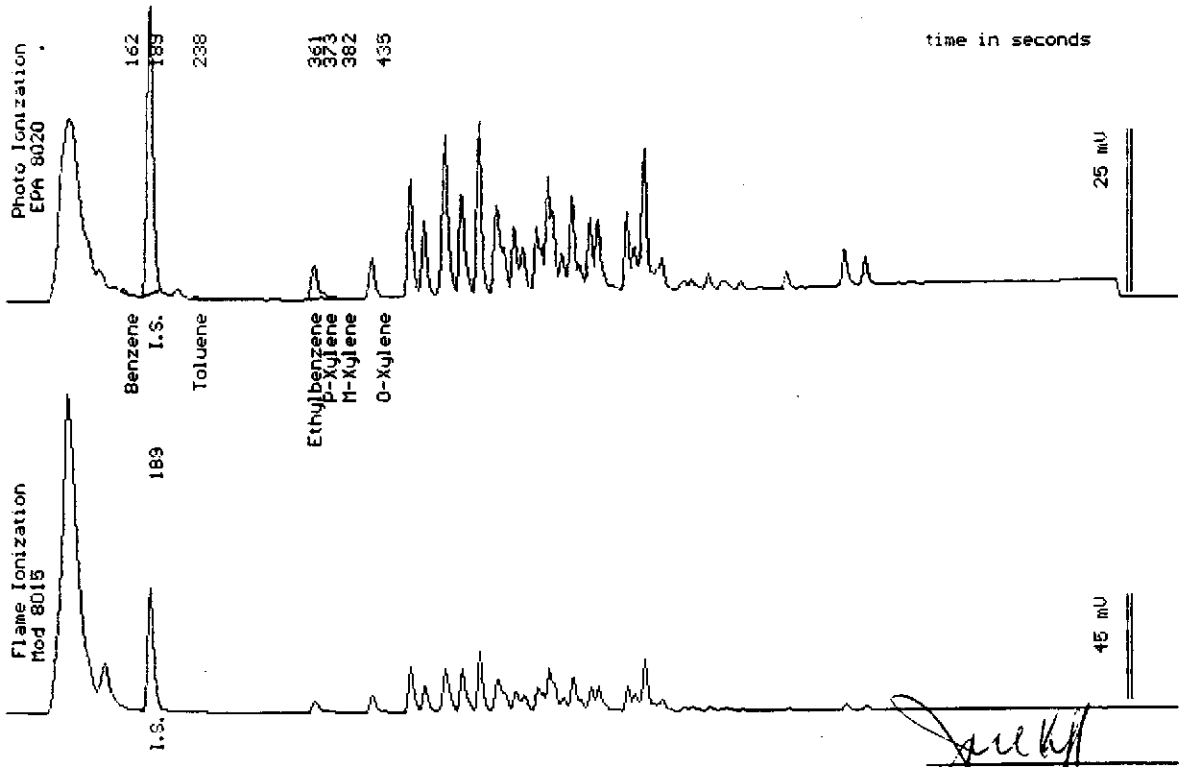
Sample Log 5428

5428-2

Sample: **MW2**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	2.7
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	360



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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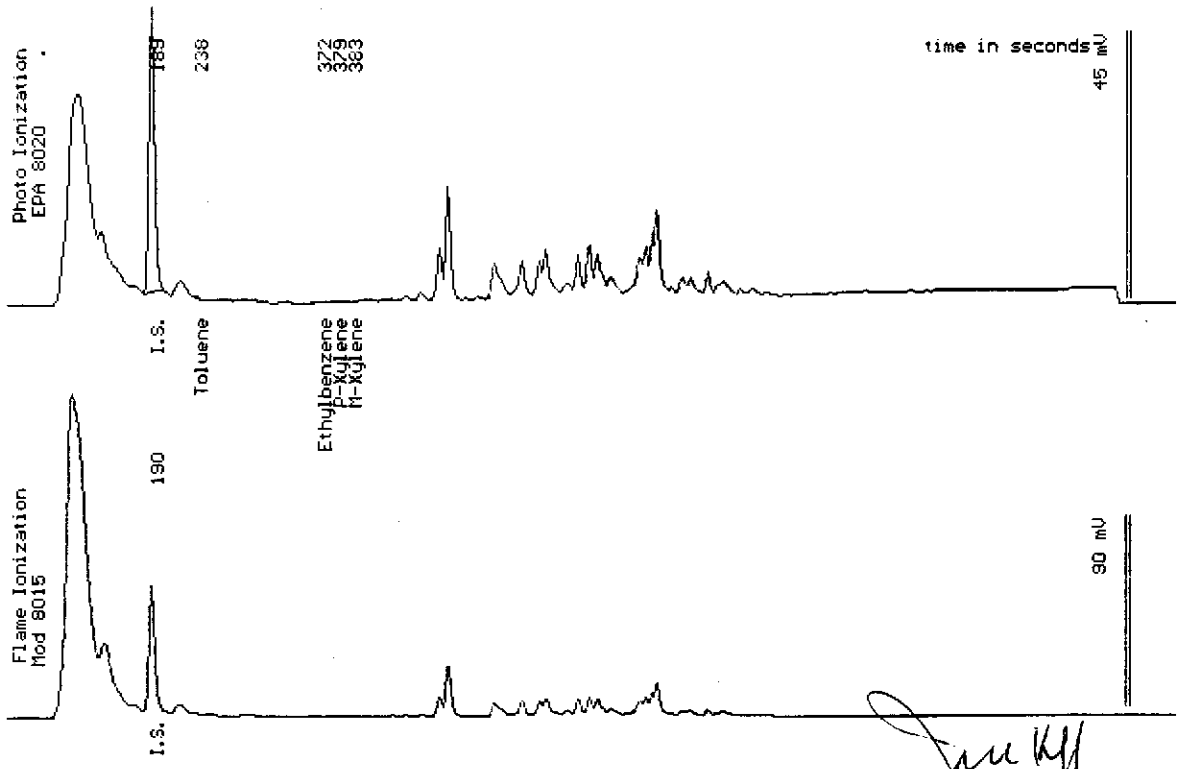
Sample Log 5428

5428-4

Sample: **MW4**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	400



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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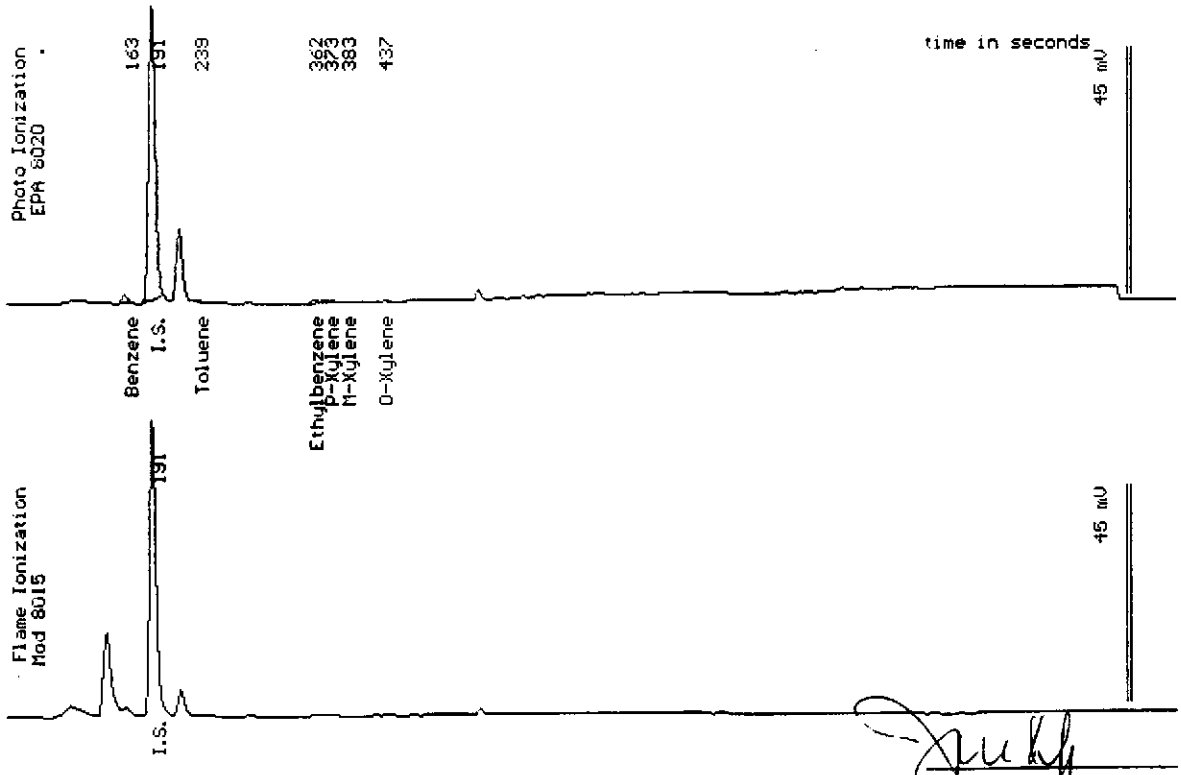
Sample Log 5428

5428-5

Sample: **MW5**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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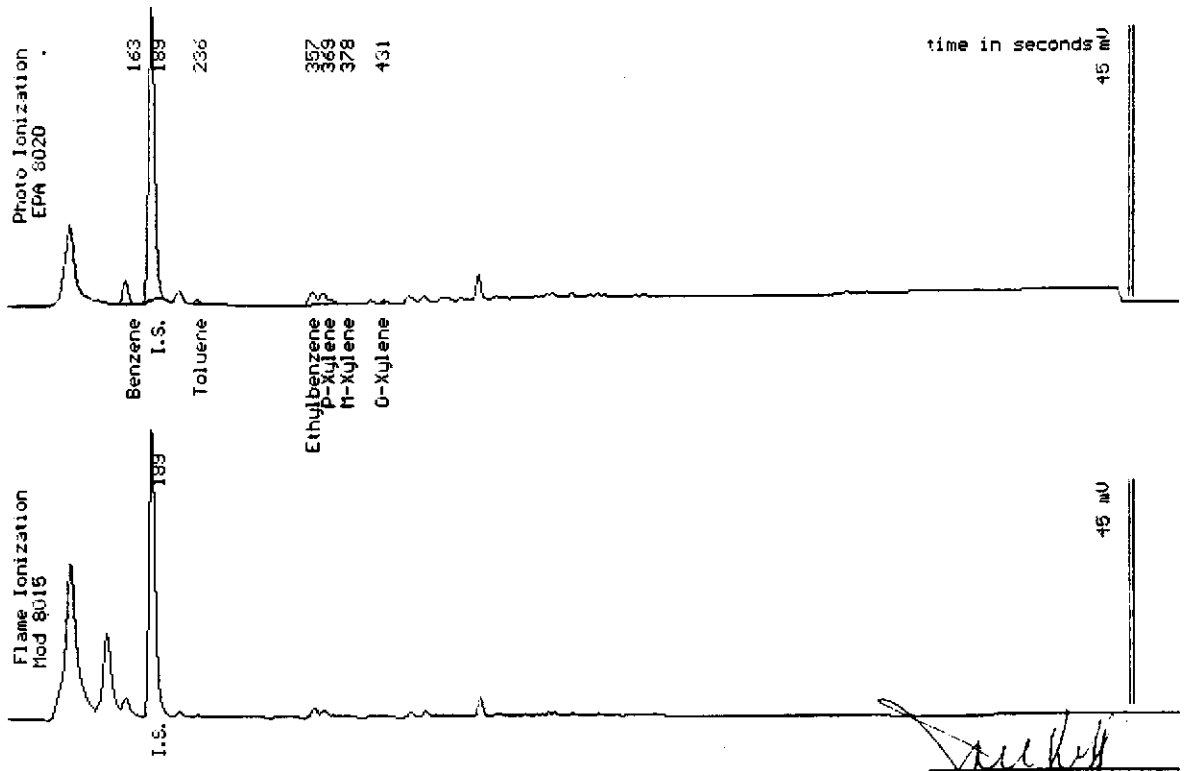
Sample Log 5428

5428-6

Sample: **MW6**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	1.3
Toluene	(.50)	<.50
Ethylbenzene	(.50)	1.0
Total Xylenes	(.50)	1.1
TPH as Gasoline	(50)	66



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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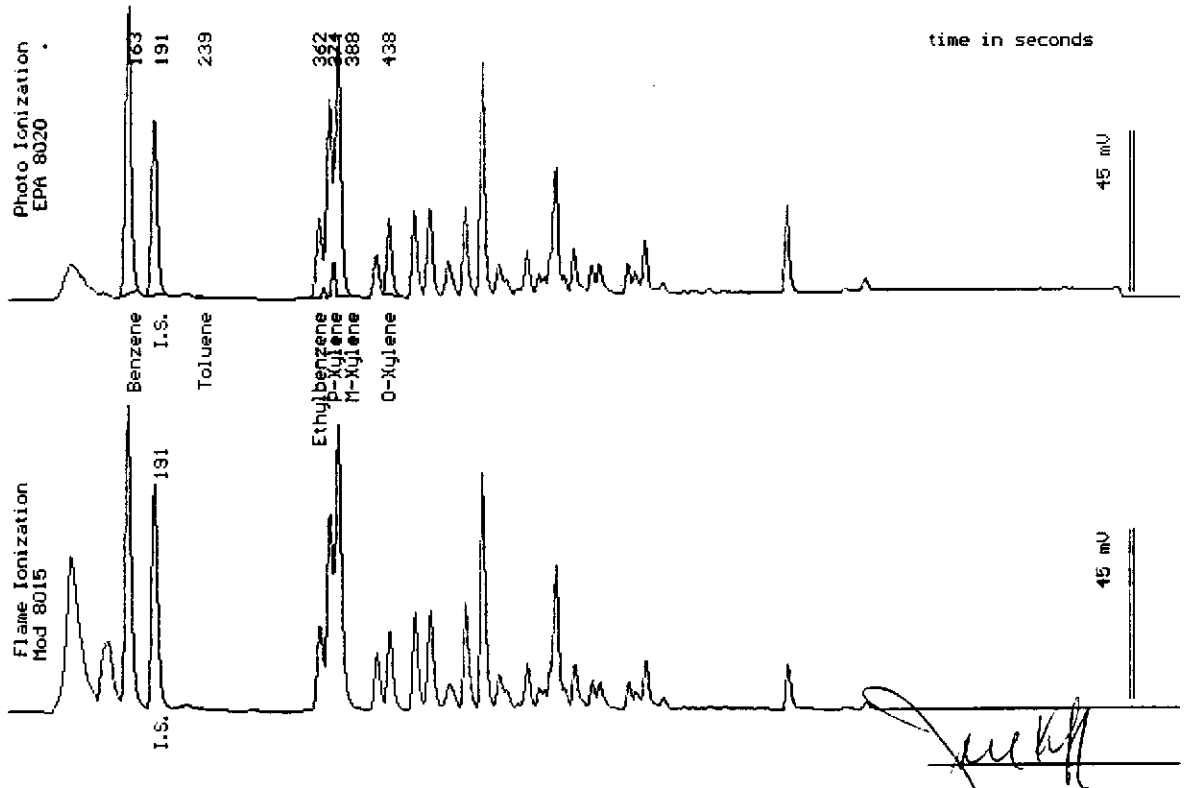
Sample Log 5428

5428-7

Sample: **MW7**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	29
Toluene	(.50)	<.50
Ethylbenzene	(.50)	10
Total Xylenes	(.50)	63
TPH as Gasoline	(50)	330



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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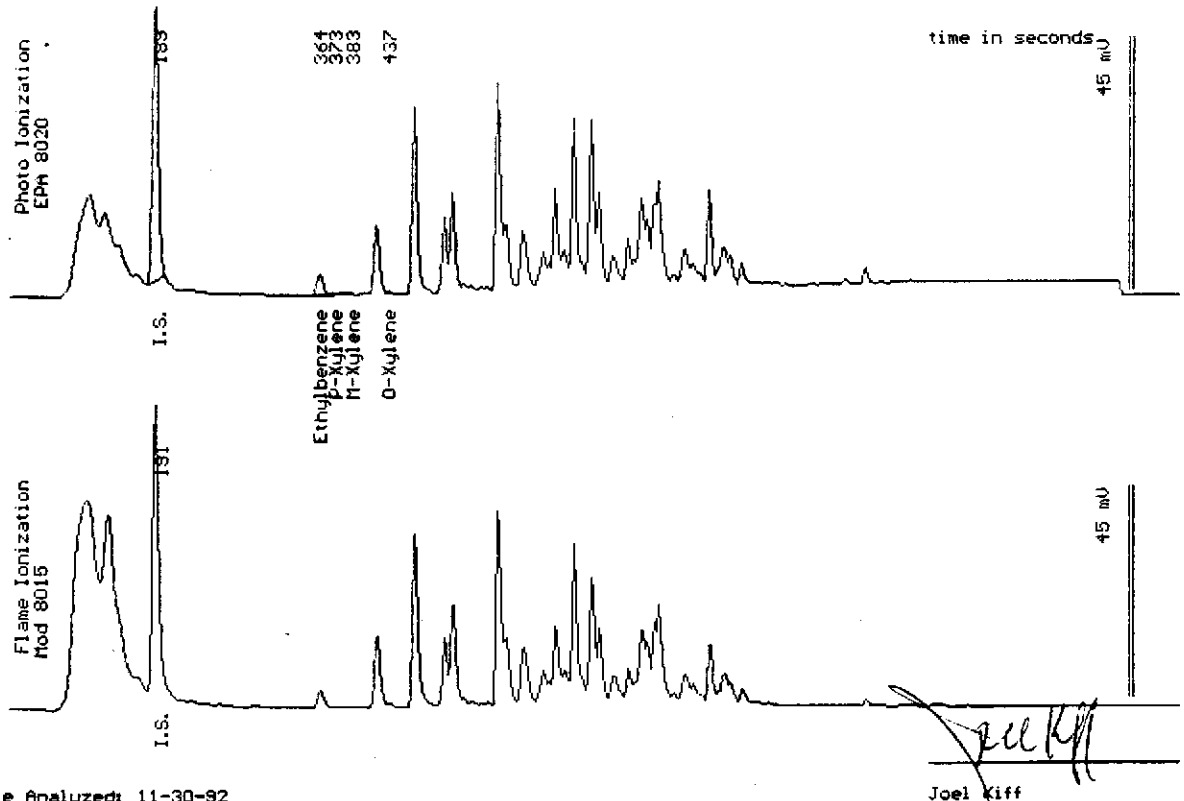
Sample Log 5428

5428-3

Sample: **MW8**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	2.0
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	320



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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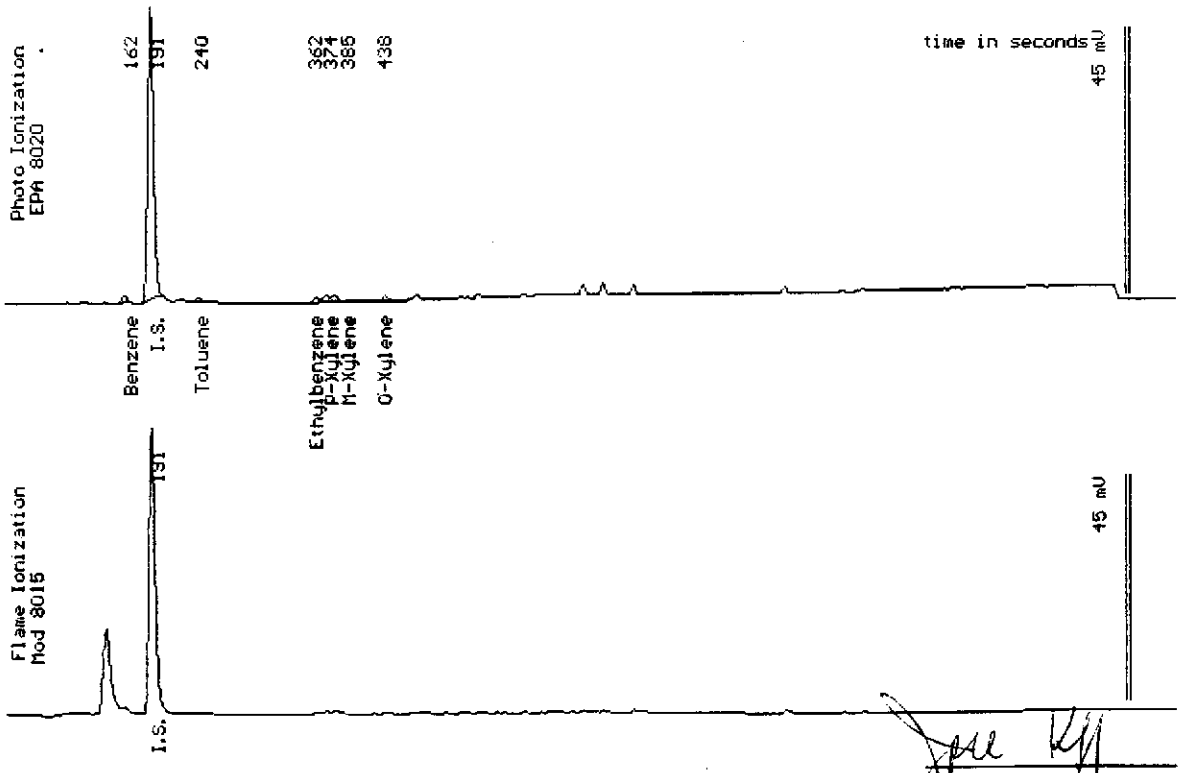
Sample Log 5428

5428-8

Sample: **MW9**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	1.3
TPH as Gasoline	(50)	<50



Date Analyzed: 11-30-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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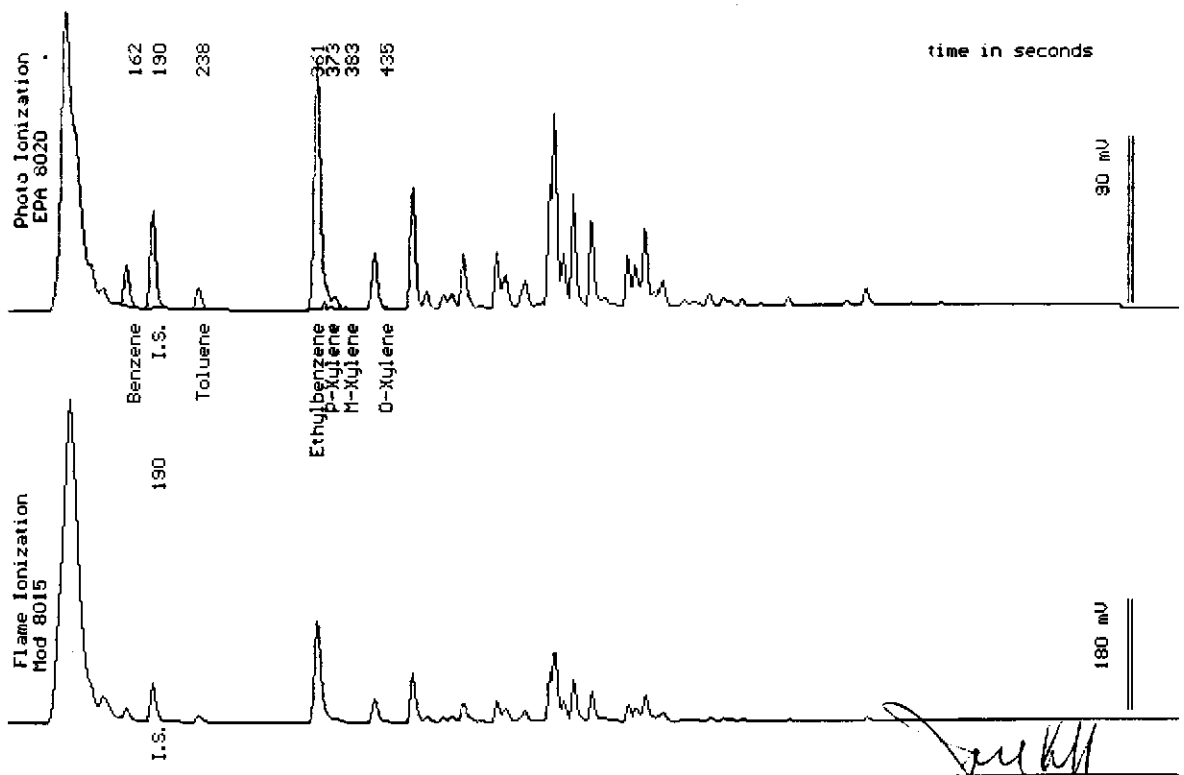
Sample Log 5428

5428-9

Sample: **MW10**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:5 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(2.5)	36
Toluene	(2.5)	21
Ethylbenzene	(2.5)	330
Total Xylenes	(2.5)	31
TPH as Gasoline	(250)	5700



Date Analyzed: 12-01-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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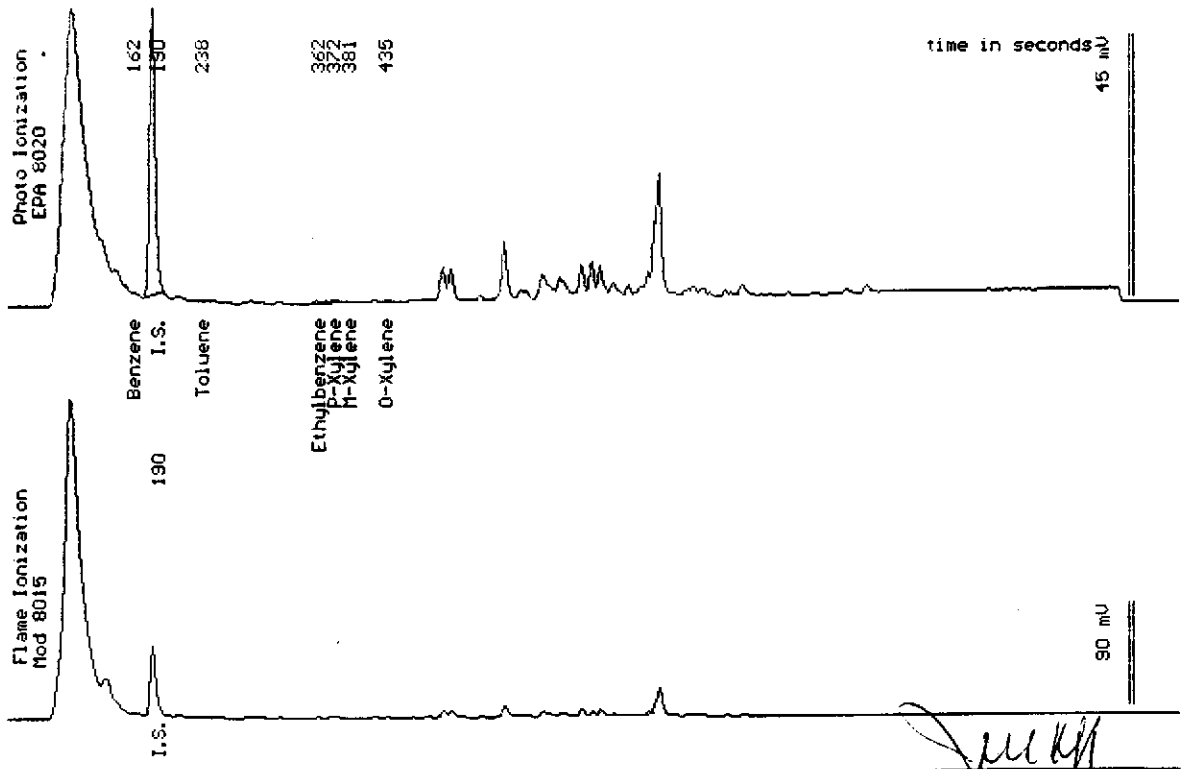
Sample Log 5428

5428-10

Sample: **MW11**

From : Project # 92-703 (Beacon 721)
Sampled : 11/19/92
Dilution : 1:1 QC Batch : 4067D
Matrix : Water

Parameter	(MDL) ug/L	Measured Value ug/L
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	490



Date Analyzed: 12-01-92
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff
Senior Chemist

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

West Davis
916 756-3500

Ultramar Inc.
CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	ANALYSES										Date	Form No.
721	Mike Nunley											11/23/92	1 of 2
Project No.	**Sampler (Signature)**											P/S use TPH Regional Detection Limits	
92-705	Mike Nunley												
Project Location	**Affiliation**												
44 Auxiliary Blvd Suisun City, CA													
Sample No./Identification	**Date**	**Time**	**Lab No.**	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS
MW1	11-11-92	1:45		X	X							2	
MW2		2:10											
MW3		2:25											
MW4		2:28											
MW5		2:23											
MW6		2:38											
MW7		3:51											
MW8		4:20											

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Mike Nunley	11/23/92	4:50			
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
			(WEST)	11/23/92	16:50

Report To:

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

RECEIVED
NOV 25 1992

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

32-8003 1/90

West-Davis
916 753-9500

Ultramar Inc.

CHAIN OF CUSTODY REPORT

BEACON

Beacon Station No.	Sampler (Print Name)	Date	Form No.
721	Mike [illegible]	11-23-92	2 of 2

Project No.: 92-703

Sampler (Signature): [signature]

Project Location: 44 Lewelling Blvd. San Lorenzo, CA

Affiliation: Aegis Environmental

Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)						No. of Containers	REMARKS
mw10	11-19-92	2:52		X	X							2	Pls use Tri-Regional Detection Limits
mw11	↓	3:20		↓	↓							↓	

Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
[signature]	11-23	4:50			
			[signature] (WEST)	11/23/92	16:50

Report To: **Sheila Richgels**
Aegis Environmental
1050 Melody Lane, Suite 160
Roseville, CA 95678

Bill to: ULTRAMAR INC.
525 West Third Street
Hanford, CA 93230
Attention: Terry Fox

RECEIVED

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

32-8003 1/90

ATTACHMENT 3

HISTORICAL WATER LEVEL DATA

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-1	43.67	03/10/88	17.12	26.55	---
		06/14/88	18.05	25.62	-0.93
		12/05/88	19.48	24.19	-1.43
		03/08/89	18.07	25.60	1.41
		06/22/89	18.60	25.07	-0.53
		09/27/89	19.98	23.69	-1.38
		12/29/89	20.45	23.22	-0.47
		03/29/90	19.31	24.36	1.14
		06/21/90	19.69	23.98	-0.38
		09/25/90*	21.88	22.51	-1.47
		12/18/90*	20.89	23.12	0.61
		03/28/91	17.77	25.90	2.78
		06/25/91	18.60	25.07	-0.83
		09/17/91	20.14	23.53	-1.54
		11/05/91	20.40	23.27	-0.26
		02/18/92	16.42	27.25	3.98
		05/14/92	17.28	26.39	-0.86
MW-2	43.09	03/10/88	16.43	26.66	---
		06/14/88	17.35	25.74	-0.92
		12/05/88	18.79	24.30	-1.44
		03/08/89	17.31	25.78	1.48
		06/22/89	17.92	25.17	-0.61
		09/27/89	19.27	23.82	-1.35
		12/29/89	19.75	23.34	-0.48
		03/29/90	18.62	24.47	1.13
		06/21/90	19.12	23.97	-0.50
		09/25/90	20.54	22.55	-1.42
		12/18/90	20.30	22.79	0.24
		03/28/91	16.94	26.15	3.36
		06/25/91	17.95	25.14	-1.01
		09/17/91	19.50	23.59	-1.55
		11/05/91	19.73	23.36	-0.23
		02/18/92	16.65	26.44	3.08
		05/14/92	16.64	26.45	0.01
MW-3	43.10	03/10/88	16.68	26.42	---
		06/14/88	17.59	25.51	-0.91
		12/05/88	18.96	24.14	-1.37
		03/08/89	17.60	25.50	1.36
		06/22/89	18.11	24.99	-0.51

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-3 Cont'd		09/27/89	19.47	23.63	-1.36
		12/29/89*	19.97	23.13	-0.50
		3/29/90*	17.60	25.53	2.40
		06/21/90	19.35	23.75	-1.78
		9/25/90*	20.72	22.41	-1.34
		12/18/90*	21.42	22.00	-0.41
		03/28/91	17.45	25.85	3.85
		06/25/91	18.12	25.01	-0.84
		9/17/91*	19.55	23.55	-1.46
		11/05/91	19.98	23.12	-0.43
		02/18/92	16.89	26.21	3.09
		05/14/92	16.80	26.30	0.09
MW-4	44.66	12/05/88	20.47	24.19	---
		03/08/89	19.03	25.63	1.44
		06/22/89	19.57	25.09	-0.54
		09/27/89	20.98	23.68	-1.41
		12/29/89	21.43	23.23	-0.45
		03/29/90	20.29	24.37	1.14
		06/21/90	20.78	23.88	-0.49
		09/25/90	22.24	22.42	-1.46
		12/18/90	22.18	22.48	0.06
		03/28/91	18.79	25.87	3.39
		06/25/91	19.59	25.07	-0.80
		09/17/91	21.15	23.51	-1.56
		11/05/91	21.41	23.25	-0.26
		02/18/92	18.51	26.15	2.90
		05/14/92	18.22	26.44	0.29
MW-5	43.79	12/05/88	19.48	24.31	---
		03/08/89	18.00	25.79	1.48
		06/22/89	18.60	25.19	-0.60
		09/27/89	20.00	23.79	-1.40
		12/29/89	20.43	23.36	-0.43
		03/29/90	19.24	24.55	1.19
		06/21/90	19.82	23.97	-0.58
		09/25/90	21.23	22.56	-1.41
		12/18/90	21.04	22.75	0.19
		03/28/91	17.69	26.10	3.35
		06/25/91	18.62	25.17	-0.93

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-5 (Con't)		09/17/91	20.23	23.56	-1.61
		11/05/91	20.43	23.36	-0.20
		02/18/92	17.37	26.42	3.06
		05/14/92	17.29	26.50	0.08
MW-6	42.47	12/05/88	17.99	24.48	---
		03/08/89	16.75	25.72	-1.24
		06/22/89	17.30	25.17	-0.55
		09/27/89	18.64	23.83	-1.34
		12/29/89	19.16	23.31	-0.52
		03/29/90	18.04	24.43	1.12
		06/21/90	18.53	23.94	-0.49
		09/25/90	19.91	22.56	-1.38
		12/18/90	20.61	21.86	-0.70
		03/28/91	16.29	26.18	4.32
		06/25/91	17.36	25.11	-1.07
		09/17/91	18.89	23.58	-1.53
		11/05/91	19.07	23.40	-0.18
		02/18/92	15.87	26.60	3.20
		05/14/92	16.04	26.43	-0.17
MW-7	41.54	12/05/88	17.61	23.93	---
		03/08/89	16.27	25.27	1.34
		06/22/89	16.72	24.82	-0.45
		09/27/89	17.99	23.55	-1.27
		12/29/89	18.54	23.00	-0.55
		03/29/90	17.43	24.11	1.11
		06/21/90	17.88	23.66	-0.45
		09/25/90	19.12	22.42	-1.24
		12/18/90	19.16	22.38	-0.04
		03/28/91	16.04	25.50	3.12
		06/25/91	16.66	24.88	-0.62
		09/17/91	17.99	23.55	-1.33
		11/05/91	18.33	23.21	-0.34
		02/18/92	15.51	26.03	2.82
		05/14/92	15.41	26.13	0.10
MW-8	42.26	09/27/89	18.89	23.37	---
		12/29/89	19.45	22.81	-0.56
		03/29/90	18.39	23.87	1.06

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
MW-8 (Con't)		06/21/90	18.80	23.46	-0.41
		09/25/90	20.10	22.16	-1.30
		12/18/90	20.13	22.13	-0.03
		03/28/91	17.14	25.12	2.99
		06/25/91	17.45	24.81	-0.31
		09/17/91	18.81	23.45	-1.36
		11/05/91	19.14	23.12	-0.33
		02/18/92	16.57	25.69	2.57
		05/14/92	16.24	26.02	0.33
MW-9	44.94	09/27/89	21.38	23.56	---
		12/29/89	21.76	23.18	-0.38
		03/29/90	20.58	24.36	1.18
		06/21/90	21.11	23.83	-0.53
		09/25/90	22.60	22.34	-1.49
		12/18/90	22.56	22.38	0.04
		03/28/91	19.13	25.81	3.43
		06/25/91	19.90	25.04	-0.77
		09/17/91	21.49	23.45	-1.59
		11/05/91	21.75	23.19	-0.26
		02/18/92	18.87	26.07	2.88
		05/14/92	18.55	26.39	0.32
MW-10	42.34	11/05/91	19.28	23.06	---
		02/18/92	16.63	25.71	2.65
		05/14/92	15.25	27.09	1.38
MW-11	45.00	11/05/91	22.11	22.89	---
		02/18/92	17.00	26.17	3.28
		05/14/92	19.02	25.98	-0.19

TABLE 2

SUMMARY OF GROUNDWATER ELEVATION DATA

Well Number	Top of Well Casing (famsl)	Date Sampled	Depth to Water (feet)	Groundwater Surface Elevation (famsl)	Elevation Change Since Previous Measurement (feet)
RW-1		05/14/92	16.88	26.29	---

NOTE: All available water elevation data were recalculated to present wellhead elevations as reported by Ronald R. Archer, Surveyor, on November 6, 1991

1. famsl = feet above mean sea level
2. * = groundwater elevations for these quarters were corrected for the presence of floating gasoline product using the equation:
   GWE = WE -[DTW-(PT x 0.8)]

Where:
- GWE = Groundwater elevation in feet above mean sea level
- WE = Well elevation at top of casing
- DTW = Depth to water from top of casing in feet
- PT = Product thickness in feet
- 0.8 = Assumed difference in specific gravities between water and gasoline

ATTACHMENT 4

HISTORICAL ANALYTICAL DATA

TABLE 1

SUMMARY OF GROUNDWATER ANALYSES AND MONITORING DATA
(May 14-15, 1992)

Sample Number	Date Collected	TPHG ppb	Benzene ppb	Toluene ppb	Ethyl Benzene ppb	Total Xylenes ppb	Well Elevation famsl	DTW[1] feet	Water[1] Elevation famsl
MW-1	5/15/92	41,000	2,000	47	200	400	43.67	17.28	26.39
MW-2	5/14/92	740	1.2	1.0	1.3	ND	43.09	16.64	26.45
MW-3	5/15/92	160,000	6,300	5,900	1,700	6,100	43.10	16.80	26.30
MW-4	5/14/92	4,600	ND	5.6	1.8	2.2	44.66	18.22	26.44
MW-5	5/14/92	ND	ND	ND	ND	ND	43.79	17.29	26.50
MW-6	5/14/92	120	ND	ND	ND	ND	42.47	16.04	26.43
MW-7	5/14/92	1,500	44	ND	36	88	41.54	15.41	26.13
MW-8	5/14/92	130	ND	ND	ND	ND	42.26	16.24	26.02
MW-9	5/14/92	ND	ND	ND	ND	ND	44.94	18.55	26.39
MW-10	5/15/92	8,500	24	9.8	97	ND	42.34	15.25	27.09
MW-11	5/15/92	1,600	ND	1.9	1.3	0.7	45.00	19.02	25.98[1]
RW-1	5/15/92	790	270	62	29	140	43.17	16.88	26.29
BB-1	5/15/92	ND	ND	ND	ND	ND	---	---	---

ppb Parts per billion
famsl Feet above mean sea level
ND None detected
DTW Depth to water
--- No data available
* Water elevation not used for groundwater elevation contour map
NS Not sampled
1 Data from 5/14/92
BB-1 Bailer blank

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-1	05/29/87	490	150	930	3,790	18,050	
	07/14/87	560	120	950	3,270	14,750	
	08/17/87	630	40	320	1,130	12,860	
	09/01/87	558	84	562	1,942	14,269	
	12/10/87	200	138	273	777	14,000	
	03/10/88	70	40	340	940	7,300	
	06/14/88	290	ND	330	790	34,000	
	12/05/88	100	16	140	310	4,000	
	03/08/89	670	20	580	1,200	9,100	Sheen
	06/22/89	1,000	20	1,200	2,200	12,000	Sheen
	09/27/89	960	9	260	360	6,800	
	12/29/89	210	33	1,200	250	4,800	
	03/29/90	1,100	42	510	1,800	14,000	
	06/21/90	1,400	ND	160	130	7,900	
	09/25/90	NS	NS	NS	NS	NS	0.9 ft free-product
	12/18/90	NS	NS	NS	NS	NS	0.4 ft free-product
	03/28/91	230	75	570	2,000	26,000	Sheen
	06/25/91	970	35	300	610	22,000	
	09/17/91	490	150	250	370	16,000	
	11/05/91	420	45	410	780	35,000	Sheen
	02/18/92	NS	NS	NS	NS	NS	Sheen
	05/15/92	2,000	47	200	400	41,000	Sheen
MW-2	05/29/87	113	14	46	58	4,870	
	07/14/87	103	25	34	48	2,207	
	08/17/87	37.6	10.9	8.2	11.1	756	
	09/01/87	75.3	14.2	16.4	27.6	1,482	
	12/10/87	28	40.6	38.1	100.3	1,800	
	03/10/88	9.2	3.1	7.3	2.6	1,200	
	06/14/88	ND	ND	2.2	5.7	500	
	12/05/88	ND	1.3	5.6	3.6	500	
	03/08/89	ND	1.3	3.5	3.7	730	
	06/22/89	ND	ND	ND	ND	570	
	09/27/89	3.8	0.64	2.9	54	420	
	12/29/89	6.7	2	5.7	2.9	270	
	03/29/90	10	0.88	10	3.3	420	
	06/21/90	ND	ND	4	ND	650	
	09/25/90	ND	1.5	3.5	1.5	680	
	12/18/90	ND	1.7	2.2	0.6	500	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-2 (cont)	03/28/91	ND	2.2	2.7	1.1	730	
	06/25/91	ND	ND	ND	1.2	610	
	09/17/91	ND	ND	2.5	1.2	820	
	11/05/91	ND	ND	1.1	ND	700	
	02/18/92	ND	ND	1.9	ND	1600	
	05/14/92	1.2	1.0	1.3	ND	740	
MW-3	05/29/87	5,400	3,900	1,700	5,200	40,300	
	07/14/87	6,880	7,080	1,580	4,770	30,320	
	08/17/87	5,930	4,180	1,240	3,370	25,620	
	09/01/87	8,540	6,660	1,020	3,740	38,210	
	12/10/87	4,240	2,350	890	1,860	25,000	
	03/10/88	3,210	950	940	950	13,400	
	06/14/88	5,900	7,600	450	4,600	54,000	
	12/05/88	4,200	2,400	1,000	3,100	19,000	
	03/08/89	11,000	9,400	2,300	9,900	53,000	Sheen
	06/22/89	16,000	5,900	2,100	6,600	60,000	Sheen
	09/27/89	8,100	2,800	1,200	4,300	34,000	
	12/29/89	NS	NS	NS	NS	NS	0.02 ft free-product
	03/29/90	NS	NS	NS	NS	NS	0.04 ft free-product
	06/21/90	19,000	22,000	22,000	120,000	2,100,000	
	09/25/90	NS	NS	NS	NS	NS	0.04 ft free-product
	12/18/90	NS	NS	NS	NS	NS	0.42 ft free-product
	03/28/91	NS	NS	NS	NS	NS	0.25 ft free-product
	06/25/91	NS	NS	NS	NS	NS	0.02 ft free-product
	09/17/91	NS	NS	NS	NS	NS	0.44 ft free-product
	11/05/91	NS	NS	NS	NS	NS	Sheen
	02/18/92	NS	NS	NS	NS	NS	Sheen
	05/15/92	6,300	5,900	1,700	6,100	160,000	Sheen
MW-4	12/05/88	ND	ND	2.3	6.5	4,500	
	03/08/89	ND	ND	ND	ND	3,900	
	06/22/89	ND	ND	ND	ND	1,500	
	09/27/89	11	ND	ND	ND	1,200	
	12/29/89	ND	2.1	2.3	ND	920	
	03/29/90	ND	ND	8	ND	870	
	06/21/90	ND	ND	ND	ND	1,500	
	09/25/90	ND	11	4.6	6	3,100	
	12/18/90	ND	4.4	15	6.3	3,600	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-4 (Con't)	03/28/91	8.9	4.4	4.4	2.2	2,000	
	06/25/91	ND	5.4	1.7	ND	2,000	
	09/17/91	ND	ND	0.8	ND	2,300	
	11/05/91	ND	ND	3.2	1.1	3,500	
	02/18/92	ND	ND	12	21	5,100	
	05/14/92	ND	5.6	1.8	2.2	4,600	
MW-5	12/05/88	ND	0.78	0.23	0.92	3.9	
	03/08/89	2.7	6.7	2.7	15	58	
	06/22/89	0.91	ND	ND	ND	5	
	09/27/89	1.3	ND	ND	ND	5.3	
	12/29/89	ND	ND	ND	ND	ND	
	03/29/90	ND	ND	ND	ND	ND	
	06/21/90	ND	ND	ND	ND	12	
	09/25/90	ND	ND	ND	ND	ND	
	12/18/90	ND	ND	ND	ND	ND	
	03/28/91	ND	ND	ND	ND	ND	
	06/25/91	ND	ND	ND	ND	ND	
	09/17/91	ND	ND	ND	ND	ND	
	11/05/91	ND	ND	ND	ND	ND	
	02/18/92	ND	ND	ND	ND	ND	
	05/14/92	ND	ND	ND	ND	ND	
MW-6	12/05/88	4	1.3	0.63	1.3	190	
	03/08/89	2.2	ND	ND	1.1	23	
	06/22/89	0.82	2.6	0.18	1.2	57	
	09/27/89	0.2	0.24	ND	ND	2.1	
	12/29/89	ND	ND	ND	ND	ND	
	03/29/90	2.1	ND	ND	ND	12	
	06/21/90	ND	ND	ND	ND	ND	
	09/25/90	1.4	ND	ND	ND	98	
	12/18/90	2.2	ND	ND	ND	200	
	03/28/91	3.5	ND	ND	ND	140	
	06/25/91	ND	ND	ND	ND	95	
	09/17/91	ND	ND	ND	ND	ND	
	11/05/91	ND	ND	ND	ND	130	
	02/18/92	4.8	ND	ND	ND	370	
	05/14/92	ND	ND	ND	ND	120	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-7	12/05/88	140	150	40	370	1,500	
	03/08/89	730	72	180	370	2,400	
	06/22/89	570	43	180	220	2,000	
	09/27/89	420	5.9	140	28	1,400	
	12/29/89	87	3.5	18	15	150	
	03/29/90	110	40	53	150	530	
	06/21/90	620	34	290	400	4,100	
	09/25/90	49	2.4	30	42	750	
	12/18/90	74	4.5	25	69	510	
	03/28/91	53	0.8	24	24	500	
	06/25/91	23	ND	32	37	570	
	09/17/91	79	1	89	100	1,400	
	11/05/91	52	ND	76	58	1,100	
	02/18/92	16	ND	10	16	670	
	05/14/92	44	ND	36	88	1,500	
MW-8	09/27/89	ND	ND	16	ND	4,200	
	12/29/89	ND	3.2	18	ND	2,800	
	03/29/90	ND	ND	19	ND	2,600	
	06/21/90	ND	ND	13	ND	4,600	
	09/25/90	2.3	22	16	26	4,500	
	12/18/90	0.7	6	9.7	2.3	1,100	
	03/28/91	2.6	4.6	3.2	3.1	1,600	
	06/25/91	ND	ND	2.5	1.3	760	
	09/17/91	ND	ND	13	3.9	1,900	
	11/05/91	ND	ND	15	ND	1,400	
	02/18/92	ND	ND	9.5	ND	1,200	
	05/14/92	ND	ND	ND	ND	130	
MW-9	09/27/89	ND	ND	ND	ND	25	
	12/29/89	ND	ND	ND	2.5	11	
	03/29/90	ND	ND	ND	ND	ND	
	06/21/90	ND	ND	ND	ND	ND	
	09/25/90	ND	ND	ND	ND	ND	
	12/18/90	ND	ND	ND	ND	100	
	03/28/91	ND	ND	ND	ND	ND	
	06/25/91	ND	ND	ND	ND	ND	
	09/17/91	ND	ND	ND	ND	ND	

TABLE 3

SUMMARY OF GROUNDWATER ANALYTICAL RESULTS

Well No.	Date Sampled	Benzene (ppb)	Toluene (ppb)	Ethyl Benzene (ppb)	Xylenes (ppb)	TPHG (ppb)	Comments
MW-9 (Con't)	11/05/91	ND	ND	ND	ND	ND	
	02/18/92	ND	ND	ND	ND	ND	
	05/14/92	ND	ND	ND	ND	ND	
MW-10	11/05/91	29	140	500	320	27,000	
	02/18/92	110	57	440	63	18,000	
	05/15/92	24	9.8	97	ND	8,500	
MW-11	11/05/91	ND	ND	ND	ND	890	
	02/18/92	ND	ND	ND	ND	2,400	
	05/15/92	ND	1.9	1.3	0.7	1,600	
RW-1	11/13/91	74	68	7	99	1,600	
	05/15/92	270	62	29	140	790	

1. TPHG Total petroleum hydrocarbons as gasoline
2. ND - Not detected
3. NS - Not sampled
4. Samples prior to December 1988 collected by Applied GeoSystems
5. Sample from December 1988 through December 1990 collected by DuPont Environmental
6. Sample from March 1991 through September 1991 collected by Groundwater Technology

ATTACHMENT 5

FIELD DATA SHEETS

AEGIS ENVIRONMENTAL, INC.
GROUNDWATER/LIQUID LEVEL DATA
(measurements in feet)

Project Address: Beacon - 44 Lewelling, San Lorenzo - 721 Date: 11-17-92

Recorded by: Mike Denney Project No.: 92-703

Well No.	Time	Measured Total Depth	Depth to Gr. Water	Depth to Product	Product Thickness	Comments (TOC/TOB) (product skimmer in well)
MW-1	1:26	30.93	20.57	N/A	N/A	
MW-2	1:53	32.18	19.91	"	"	
MW-3	1:49	N/A	20.38	20.00	.38	
MW-4	1:56	24.43	21.58	"	"	
MW-5	1:59	28.80	20.68	"	"	
MW-6	2:01	28.54	19.30	"	"	
MW-7	2:06	24.42	18.54	"	"	
MW-8	2:10	23.01	19.32	"	"	
MW-9	2:16	23.61	21.70	"	"	
MW-10	2:20	29.61	19.43	"	"	
MW-11	2:24	29.37	22.23	"	"	
RW-1	1:47	N/A	21.11	21.10	.01	

Notes:

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Texaco

Site: 44 Lewelling Blvd

Project No: 92-703

Well Designation: MW 1

Purging Equipment:

___ 2" PVC bailer

___ 4" PVC bailer

X Submersible pump

___ Dedicated bailer

Sampled with disposal bailer or other: ___
Well recharged to 80% recovery.

Well Diameter:	2" X	3" ___	4" ___	6" ___	8" ___	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 40.95

Depth to water: 20.57

Calculated purge: 7Gal

Actual purge: 2gal

Start purge: 1:29

Sampling time: 1:43

Sampling Date: 11-17-93

Time	Temp.	E.C.	pH	Turbidity	Volume
1:33	Dry	2 gal			

Sample appearance: Cloudy

QC samples collected at this well: ___

Lock: 3757

Remarks: ___

Signature: Mike Weaver

Review: [signature]

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Brand

Site: 44 Llewellyn Blvd

Project No: 92-703

Well Designation: MW-2

Purging Equipment:

___ 2" PVC bailer
___ 4" PVC bailer
X Submersible pump
___ Dedicated bailer

Sampled with disposal bailer or other: ___
Well recharged to 80% recovery.

Well Diameter: 2" X 3" ___ 4" ___ 6" ___ 8" ___

Purge Vol. Multiplier: 0.163 0.367 0.653 1.47 2.61 gal/ft.

Depth of well: 32.18

Depth to water: 17.71

Calculated purge: 8 gal

Actual purge: 5 gal

Start purge: 1:53

Sampling time: 2:18

Sampling Date: 11/5/92

Time	Temp.	E.C.	pH	Turbidity	Volume
2:02	Dry	5 gal			

Sample appearance: clear

QC samples collected at this well: ___

Lock: 3753

Remarks: ___

Signature [signature]

Review [signature]

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Tosco
Site: 401 Lewelling Blvd

Project No: 92703
Well Designation: MW-4

Purging Equipment: X 2" PVC bailer ____ Submersible pump
____ 4" PVC bailer ____ Dedicated bailer

Sampled with disposal bailer or other: ____
Well recharged to 80% recovery.

Well Diameter:	2" X	3" ___	4" ___	6" ___	8" ___	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 24.90
Depth to water: 21.57

Calculated purge: 2 gal
Actual purge: Dry 2.60 gal

Start purge: 2:07 Sampling time: 2:29 Sampling Date: ____

Time	Temp.	E.C.	pH	Turbidity	Volume
2:07	Dry	2 Gallons			

Sample appearance: Clear

QC samples collected at this well: ____ Lock: 3753

Remarks: ____

Signature Mike Werner Review

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Baccal

Site: 2411 Lewelling Blvd

Project No: 92-703

Well Designation: MW-3

Purging Equipment:

____ 2" PVC bailer

____ 4" PVC bailer

X Submersible pump

____ Dedicated bailer

Sampled with disposal bailer or other: ____

Well recharged to 80% recovery.

Well Diameter:	2" X	3" __	4" __	6" __	8" __	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 28.80

Depth to water: 20.68

Calculated purge: 6 gal

Actual purge: 2 gal

Start purge: 2:07

Sampling time: 2:23

Sampling Date: 11-19-92

Time	Temp.	E.C.	pH	Turbidity	Volume
209	Dry	2 gal			

Sample appearance: cloudy

QC samples collected at this well: ____

Lock: 3753

Remarks: ____

Signature: Mike [illegible]

Review: [signature]

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Texaco
Site: 44 Hollywood Blvd

Project No: 92-703
Well Designation: MW-6

Purging Equipment:

___ 2" PVC bailer
___ 4" PVC bailer
X Submersible pump
___ Dedicated bailer

Sampled with disposal bailer or other: ___
Well recharged to 80% recovery.

Well Diameter:	2" X	3" ___	4" ___	6" ___	8" ___	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 23.54
Depth to water: 10.30

Calculated purge: 7gal
Actual purge: 2½ gal

Start purge: 2:17
Sampling time: 2:28
Sampling Date: 11-12-92

Time	Temp.	E.C.	pH	Turbidity	Volume
2:13	Dry	2½ gal			

Sample appearance: Some Turbid

QC samples collected at this well: ___

Lock: 3757

Remarks: ___

Signature Mike Worley

Review [signature]

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Beacon
Site: 441 Lewelling Blvd

Project No: 92-707
Well Designation: MW 7

Purging Equipment:

____ 2" PVC bailer
____ 4" PVC bailer
X Submersible pump
____ Dedicated bailer

Sampled with disposal bailer or other: ____
Well recharged to 80% recovery.

Well Diameter:	2" X	3" ___	4" ___	6" ___	8" ___	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 24.42
Depth to water: 18.50

Calculated purge: 5 gal
Actual purge: 3 gal

Start purge: 2:26
Sampling time: [illegible]
Sampling Date: 11-6-9[illegible]

Time	Temp.	E.C.	pH	Turbidity	Volume
3:25	Dry 3 gal				

Sample appearance: Clear

QC samples collected at this well: ____

Lock: 3753

Remarks: ____

Signature Mike Warner

Review [signature]

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Beacon
Site: 44 [illegible] Blvd

Project No: 92-703
Well Designation: MW-1

Purging Equipment: X 2" PVC bailer
___ 4" PVC bailer
___ Submersible pump
___ Dedicated bailer

Sampled with disposal bailer or other: ___
Well recharged to 80% recovery.

Well Diameter: 2" X | 3" ___ | 4" ___ | 6" ___ | 8" ___
Purge Vol. Multiplier: 0.163 | 0.367 | 0.653 | 1.47 | 2.61 gal/ft.

Depth of well: 23.0[illegible]
Depth to water: 16.2[illegible]

Calculated purge: 3 gal
Actual purge: 1 [illegible]

Start purge: 3:11
Sampling time: 3:35
Sampling Date: 11-[illegible]

Time	Temp.	E.C.	pH	Turbidity	Volume
3:12	Dry	1331			

Sample appearance: Sm Cloudy

QC samples collected at this well: ___

Lock: 3753

Remarks: ___

Signature [signature]

Review [signature]

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Beacon
Site: 441 Lowell St. Blvd

Project No: 92-702
Well Designation: MW 9

Purging Equipment:
X 2" PVC bailer
___ 4" PVC bailer
___ Submersible pump
___ Dedicated bailer

Sampled with disposal bailer or other: ___
Well recharged to 80% recovery.

Well Diameter:	2" X	3" ___	4" ___	6" ___	8" ___	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 23.10
Depth to water: 21.90

Calculated purge: 2 gal
Actual purge: 1 1/2 gal

Start purge: 3:39
Sampling time: 4:20
Sampling Date: 11-19-92

Time	Temp.	E.C.	pH	Turbidity	Volume
3:41	Dry	1/2 gal			

Sample appearance: Some Clear

QC samples collected at this well: ___

Lock: 3752

Remarks: ___

Signature: Mike McInerney

Review:

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Barclay
Site: 44 Lewelling Blvd

Project No: 92-703
Well Designation: MW10

Purging Equipment:

___ 2" PVC bailer
___ 4" PVC bailer
X Submersible pump
___ Dedicated bailer

Sampled with disposal bailer or other: ___
Well recharged to 80% recovery.

Well Diameter:	2" X	3" ___	4" ___	6" ___	8" ___	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 29.6
Depth to water: 12.45

Calculated purge: 8 gal
Actual purge: 9 gal

Start purge: 2:42
Sampling time: 2:52
Sampling Date: 11-17-92

Time	Temp.	E.C.	pH	Turbidity	Volume
2:45	64.6	8.30	5.32		4
2:46	65.0	7.12	4.70		2
2:47	65.3	6.82	4.67		2
2:48	65.0	6.77	4.50		1

Sample appearance: Clear

QC samples collected at this well: ___

Lock: 3753

Remarks: ___

Signature: Mike Nearney
Review: [signature]

AEGIS ENVIRONMENTAL, INC.

SAMPLING INFORMATION SHEET

Client: Bracon
Site: 401 Lowell Blvd

Project No: 92-709
Well Designation: MW11

Purging Equipment:
___ 2" PVC bailer
___ 4" PVC bailer
X Submersible pump
___ Dedicated bailer

Sampled with disposal bailer or other: ___
Well recharged to 80% recovery.

Well Diameter:	2" X	3" ___	4" ___	6" ___	8" ___	
Purge Vol. Multiplier:	0.163	0.367	0.653	1.47	2.61	gal/ft.

Depth of well: 29.55
Depth to water: 22.25

Calculated purge: 5 gal
Actual purge: 5 gal

Start purge: 2:56 Sampling time: 3:20 Sampling Date: 11-20-92

Time	Temp.	E.C.	pH	Turbidity	Volume
2:58	61.0	7.12	5.70		3
2:59	62.0	6.36	5.64		1
2:59	62.9	6.99	5.22		1

Sample appearance: Sm. Silt

QC samples collected at this well: ___

Lock: 3752

Remarks: ___

Signature Mike Wesney Review