



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

Telecopy: 209-585-5685 Credit  
209-583-3330 Administrative  
209-583-3302 Information Services  
209-583-3358 Accounting

December 15, 1995

Ms. Amy Leach  
Hazardous Materials Program  
Department of Environmental Health  
Alameda County Health Care Services  
1131 Harbor Bay Parkway, 2nd Floor  
Alameda, CA 94502

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

Dear Ms. Leach:

Enclosed is a copy of the Quarterly Ground Water Monitoring Report, Third Quarter 1995 and Status of Remediation System through September 1995 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 project.

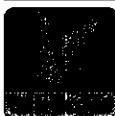
Sincerely,

**ULTRAMAR INC.**

*Terrence A. Fox*  
Terrence A. Fox  
Senior Project Manager  
Marketing Environmental Department

Enclosures

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



A Member of the Ultramar Group of Companies

**BEACON**  
#1 Quality and Service

# **Ultramar**

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## **ENVIRONMENTAL PROJECT QUARTERLY STATUS REPORT**

**DATE REPORT SUBMITTED:** December 27, 1995  
**QUARTER ENDING:** September 30, 1995

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

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

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**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.

In March 1993, installed the subsurface piping for the remediation system. Completed installation of ground-water remediation system in April 1993. Began operation in June 1993.

In April 1993, the ground-water extraction system began operation. In March 1994, the vapor extraction system began operation.



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**BEACON**  
#1 Quality and Service

Beacon Station 721  
Quarterly Status Report  
Page 2

Obtained the Permit to Operate for the vapor extraction system on June 8, 1994.

**SUMMARY OF THIS QUARTER'S ACTIVITIES:**

Performed quarterly monitoring on September 28, 1995.

Continued to operate the remediation system.

**RESULT OF QUARTERLY MONITORING:**

Monitoring data indicates that measurable free product was not detected in any well. Benzene concentrations remained not detected in wells MW-4, MW-5, and MW-9. The benzene concentration decreased in MW-1 from 1,300 ppb to 580 ppb, in MW-2 from 8.3 ppb to not detected, in MW-3 from 7,200 ppb to 5,600 ppb, in MW-7 from 7.3 ppb to 1.5 ppb, and in RW-1 from 1,600 ppb to not detected. Benzene concentrations increased in MW-6 from not detected to 0.78 ppb, in MW-10 from 9.0 ppb to 22 ppb, and in MW-11 from not detected to 4.1 ppb. MW-8 was not sampled this quarter.

As of September 23, 1995, approximately 1,018,150 gallons of ground water have been removed, treated, and discharged. Reportedly, approximately 5,958 pounds of hydrocarbons have been removed the vapor extraction system.

**PROPOSED ACTIVITY OR WORK FOR NEXT QUARTER:**

<u>ACTIVITY</u>	<u>ESTIMATED COMPLETION DATE</u>
Continue quarterly ground-water monitoring.	Ongoing
Continue operation of remediation system.	Ongoing
Install air sparging points and perform air sparging test.	October 10, 1995



3164 Gold Camp Drive  
Suite 200  
Rancho Cordova, CA 95670  
916/638-2085  
FAX: 916/638-8385

December 20, 1995

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

Subject: *Quarterly Ground Water Monitoring Report, Third Quarter 1995,  
and Status of Remediation System through September 1995*  
Beacon Station No. 721  
44 Lewelling Boulevard  
San Lorenzo, California  
Delta Project No. D093-936

Dear Mr. Fox:

Delta Environmental Consultants, Inc. (Delta), has been authorized by Ultramar Inc. to conduct quarterly ground water monitoring and perform remedial actions at the above-referenced site. The monitoring is intended to evaluate the distribution of dissolved petroleum hydrocarbon constituents in ground water in the vicinity of the subject site and evaluate the effectiveness of the remediation system currently in operation. This letter report summarizes the results of ground water monitoring activities, field sampling, and data collection performed at the site on September 28, 1995, and the remediation system status through September 1995. The site location is shown in Figure 1 and site features are illustrated in Figure 2.

Quarterly ground water monitoring conducted on September 28, 1995, included measurement of depth to water in six on-site monitoring wells (MW-1 through MW-6), five off-site monitoring wells (MW-7, and MW-9 through MW-11), and one on-site ground water recovery well (RW-1), subjective analyses of water samples to evaluate the presence or absence of free petroleum product or product sheen in the monitoring wells, and collection of ground water samples for chemical analysis. Monitoring well MW-8 was purged for sampling, but ground water in the well did not recharge sufficiently to sample. Methods used in the performance of these tasks are described in Enclosure A.

#### Water Table Elevation Measurements and Flow Direction

Depth to ground water in the monitoring wells was measured and ranged from 14.84 (MW-7) to 27.63 (RW-1) feet below the tops of well casings. Depths have decreased an average of approximately two feet since the last quarterly monitoring event in June 1995. Cumulative ground water table measurements recorded at the site are compiled in Table 1. Based on the ground water table measurements, the direction of ground water flow was toward pumping recovery well RW-1. A water table contour map prepared from the third quarter 1995 data is included as Figure 3.

Mr. Terrence A. Fox  
Ultramar Inc.  
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#### Free Petroleum Product or Product Sheen

The presence of separate phase petroleum product or product sheen in the monitoring wells was evaluated using procedures described in Enclosure A. During the September 1995 site visit, no liquid-phase petroleum hydrocarbons or product sheen was observed.

#### Ground Water Analytical Results

Ground water samples were collected from monitoring wells MW-1 through MW-11 and recovery well RW-1, using the field methods described in Enclosure A. Copies of the sampling information data sheets are included in Enclosure B.

The ground water samples were submitted to Western Environmental Science and Technology laboratory of Davis, California (a California-certified laboratory), for analysis of benzene, toluene, ethylbenzene, total xylenes, and total petroleum hydrocarbons as gasoline using EPA Methods 8020 and 8015 Modified, respectively. Benzene was below the laboratory's limits of detection in ground water samples collected from monitoring wells MW-2, MW-4, MW-5, MW-9, and RW-1. Detectable benzene concentrations ranged from 0.78 micrograms per liter ( $\mu\text{g/L}$ ) (MW-6) to 5,600  $\mu\text{g/L}$  (MW-3). A comparison of the June 1995 analytical results with the September 1995 results indicate that benzene concentrations decreased in MW-1 (1,300  $\mu\text{g/L}$  to 580  $\mu\text{g/L}$ ), MW-2 (8.3  $\mu\text{g/L}$  to < 0.50  $\mu\text{g/L}$ ), MW-3 (7,200  $\mu\text{g/L}$  to 5,600  $\mu\text{g/L}$ ), MW-7 (7.3  $\mu\text{g/L}$  to 1.5  $\mu\text{g/L}$ ), RW-1 (1,600  $\mu\text{g/L}$  to 0.50  $\mu\text{g/L}$ ), and increased in MW-6 (< 0.50  $\mu\text{g/L}$  to 0.78  $\mu\text{g/L}$ ), MW-10 (9.0  $\mu\text{g/L}$  to 22  $\mu\text{g/L}$ ), MW-11 (< 0.5 to 4.1). Utilizing the third quarter 1995 ground water monitoring data, a benzene isoconcentration contour map was constructed and is included as Figure 4. Cumulative results of the chemical analyses are summarized in Table 2, and copies of the certified analytical report with chain of custody documentation for the September 1995 sampling event are included in Enclosure C.

#### Status of Remediation System

Delta has performed operation and maintenance of the ground water treatment and soil vapor extraction (SVE) system at the site since April 1993. The ground water treatment system pumps ground water from recovery well RW-1 and is designed to remove petroleum hydrocarbon constituents through treatment in an air stripper. Treated ground water is discharged to the Oro Loma Sanitary Sewer District (Permit No. 018). The SVE system removes soil vapors under vacuum from monitoring well MW-3 and recovery well RW-1. The soil vapors removed were abated by an Anguil Remedi-Cat 500 standard cubic feet per minute catalytic oxidizer through September 1995. Delta has petitioned the Bay Area Air Quality Management District to replace the catalytic oxidizer with vapor phase GAC.

The ground water remediation system was restarted during July 1995 operation and maintenance site visit when the packing in the air stripper was replaced. The ground water remediation system was operating during the September 28, 1995 site visit. Cumulative totals for ground water treated by the remediation system are presented in Table 3.

Mr. Terrence A. Fox  
Ultramar Inc.  
December 20, 1995  
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**Remediation System Analytical Results**

Remediation system samples were collected during the third quarter 1995 site visits, and results of the chemical analyses are summarized in Table 4, and copies of the analytical reports are presented in Enclosure D.

**Remarks\Signatures**

The interpretations contained in this report represent our professional opinions, and are based in part, on information supplied by the client. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

It is recommended that copies of this letter report be forwarded to:

Mr. Steven Ritchie  
California Regional Water Quality  
Control Board, Region 2  
2101 Webster Street  
Oakland, California 94612

Ms. Amy Leech  
Alameda County Environmental  
Health Dept.  
470 27th Street, Room 322  
Oakland, California 94612

If you have any questions, please call Todd M. Galati at (916) 638-2085.

Sincerely,

**DELTA ENVIRONMENTAL CONSULTANTS, INC.**

*J. William Speth*

J. William Speth  
Staff Scientist

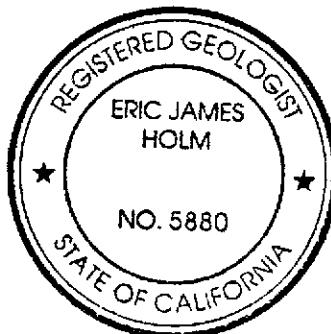
*Todd M. Galati*

Todd M. Galati  
Project Manager

*Eric J. Holm*

Eric J. Holm, R.G.  
California Registered Geologist No. 5880

JWS (LRP048.CAC)  
Enclosures



**TABLE 1**  
**GROUND WATER ELEVATIONS**

Beacon Station No. 721  
44 Lewelling Boulevard  
San Lorenzo, California

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser Elevation (ft)*</u>	<u>Depth to Water (ft)</u>	<u>Ground Water Elevation (ft)</u>	<u>Physical Observation of Free Product or Sheen</u>
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	
	02/03/93		15.91	27.76	
	06/23/93		16.21	27.46	No free product or sheen
	09/22/93		17.85	25.82	No free product or sheen
	01/24/94		17.91	25.76	
	04/07/94		16.94	26.73	No free product or sheen
	06/07/94		17.20	26.47	No free product or sheen
	09/28/94		18.73	24.94	No free product or sheen
	12/14/94		17.56	26.11	Product sheen
	03/15/95		14.92	28.75	Product sheen
	06/13/95		15.38	28.29	No free product or sheen
	09/28/95		16.75	26.92	No free product or sheen
MW-2	02/18/92	43.09	16.65	26.44	
	05/14/92		16.64	26.45	
	08/27/92		16.61	26.28	
	11/19/92		19.91	23.18	
	02/03/93		15.23	27.86	
	06/23/93		15.55	27.54	No free product or sheen
	09/22/93		17.22	25.87	No free product or sheen
	01/24/94		17.20	25.89	
	04/07/94		16.26	26.83	No free product or sheen
	06/07/94		16.46	26.63	No free product or sheen
	09/28/94		18.06	25.03	No free product or sheen
	12/14/94		16.86	26.23	No free product or sheen
	03/15/95		14.08	29.01	No free product or sheen
	06/13/95		14.67	28.42	No free product or sheen
	09/28/95		16.07	27.02	No free product or sheen

TABLE 1-Continued

## GROUND WATER ELEVATIONS

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser Elevation (ft)*</u>	<u>Depth to Water (ft)</u>	<u>Ground Water Elevation (ft)</u>	<u>Physical Observation of Free Product or Sheen</u>
MW-3	02/18/92	43.10	16.89	26.21	
	05/14/92		16.60	26.50	
	08/27/92		18.96	24.14	
	11/18/92		20.38	23.01	
	02/03/93		15.43	27.67	
	06/23/93		15.67	27.43	Product sheen
	09/22/93		17.20	25.90	No free product or sheen
	01/24/94		17.35	25.75	
	04/07/94		14.48	28.62	No free product or sheen
	06/07/94		13.37	29.73	Product sheen
	09/28/94		18.05	25.05	No free product or sheen
	12/14/94		16.92	26.18	Product sheen
	03/15/95		14.22	28.88	Product sheen
	06/13/95		14.49	28.61	Product sheen
	09/28/95		15.17	27.93	No free product or sheen
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	
	02/03/93		16.98	27.68	
	06/23/93		17.23	27.43	No free product or sheen
	09/22/93		18.83	25.83	No free product or sheen
	01/24/94		18.86	25.80	
	04/07/94		17.90	26.76	No free product or sheen
	06/07/94		18.08	26.58	No free product or sheen
	09/28/94		19.70	24.96	No free product or sheen
	12/14/94		18.55	26.11	No free product or sheen
	03/15/95		16.14	28.52	No free product or sheen
	06/13/95		16.41	28.25	No free product or sheen
	09/28/95		17.88	26.78	No free product or sheen

TABLE 1-Continued

## GROUND WATER ELEVATIONS

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser Elevation (ft)*</u>	<u>Depth to Water (ft)</u>	<u>Ground Water Elevation (ft)</u>	<u>Physical Observation of Free Product or Sheen</u>
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	
	02/03/93		15.91	27.88	
	06/23/93		16.24	27.55	No free product or sheen
	09/22/93		17.93	25.86	No free product or sheen
	01/24/94		17.82	25.97	
	04/07/94		16.91	26.88	No free product or sheen
	06/07/94		17.10	26.69	No free product or sheen
	09/28/94		18.73	25.06	No free product or sheen
	12/14/94		17.53	26.26	No free product or sheen
	03/15/95		14.96	28.83	No free product or sheen
	06/13/95		15.30	28.49	No free product or sheen
	09/28/95		16.74	27.05	No free product or sheen
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	
	02/03/93		14.60	27.87	
	06/23/93		15.00	27.47	No free product or sheen
	09/22/93		16.66	25.81	No free product or sheen
	01/24/94		16.52	25.95	
	04/07/94		15.70	26.77	No free product or sheen
	06/07/94		15.88	26.59	No free product or sheen
	09/28/94		17.51	24.96	No free product or sheen
	12/14/94		16.27	26.20	No free product or sheen
	03/15/95		13.52	28.95	No free product or sheen
	06/13/95		13.96	28.51	No free product or sheen
	09/28/95		15.61	26.86	No free product or sheen

TABLE 1-Continued

## GROUND WATER ELEVATIONS

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser Elevation (ft)*</u>	<u>Depth to Water (ft)</u>	<u>Ground Water Elevation (ft)</u>	<u>Physical Observation of Free Product or Sheen</u>
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	
	02/03/93		14.10	27.44	
	06/23/93		14.33	27.21	No free product or sheen
	09/22/93		15.92	25.62	No free product or sheen
	01/24/94		16.07	25.47	
	04/07/94		15.10	26.44	
	06/07/94		15.16	26.38	No free product or sheen
	09/28/94		16.82	24.72	No free product or sheen
	12/14/94		15.75	25.79	No free product or sheen
	03/15/95		14.00	27.54	No free product or sheen
	06/13/95		13.44	28.10	No free product or sheen
	09/28/95		14.84	26.70	No free product or sheen
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	
	02/03/93		14.87	27.39	
	06/23/93		15.18	27.08	No free product or sheen
	09/22/93		18.79	23.47	No free product or sheen
	01/24/94		17.06	25.20	
	04/07/94		15.95	26.31	No free product or sheen
	06/07/94		15.10	27.16	No free product or sheen
	09/28/94		17.63	24.63	No free product or sheen
	12/14/94		16.66	25.60	No free product or sheen
	03/15/95		14.30	27.96	No free product or sheen
	06/13/95		14.37	27.89	No free product or sheen
	09/28/95		15.62	26.64	No free product or sheen

TABLE 1-Continued

## GROUND WATER ELEVATIONS

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser Elevation (ft)*</u>	<u>Depth to Water (ft)</u>	<u>Ground Water Elevation (ft)</u>	<u>Physical Observation of Free Product or Sheen</u>
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	
	02/03/93		17.25	27.69	
	06/23/93		17.61	27.33	No free product or sheen
	09/22/93		19.18	25.76	No free product or sheen
	01/24/94		19.17	25.77	
	04/07/94		18.23	26.71	No free product or sheen
	06/07/94		18.40	26.54	No free product or sheen
	09/28/94		20.01	24.93	No free product or sheen
	12/14/94		18.88	26.06	No free product or sheen
	03/15/95		16.24	28.70	No free product or sheen
	06/13/95		16.75	28.19	No free product or sheen
	09/28/95		18.04	26.90	No free product or sheen
MW-10	02/18/92	42.34	16.63	25.71	
	05/14/92		15.25	27.09	
	08/27/92		18.35	23.99	
	11/19/92		19.43	22.91	
	02/03/93		15.01	27.33	
	06/23/93		15.30	27.04	No free product or sheen
	09/22/93		16.90	25.44	No free product or sheen
	01/24/94		NM <sup>b</sup>	NM	
	04/07/94		15.97	26.37	No free product or sheen
	06/07/94		16.04	26.30	No free product or sheen
	09/28/94		17.69	24.65	No free product or sheen
	12/14/94		16.65	25.69	No free product or sheen
	03/15/95		14.08	28.26	No free product or sheen
	06/13/95		14.49	27.85	No free product or sheen
	09/28/95		15.81	26.53	No free product or sheen

TABLE 1-Continued

## GROUND WATER ELEVATIONS

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser Elevation (ft)*</u>	<u>Depth to Water (ft)</u>	<u>Ground Water Elevation (ft)</u>	<u>Physical Observation of Free Product or Sheen</u>
MW-11	02/18/92	45.00	17.00	28.00	
	05/14/92		19.02	25.98	
	08/27/92		21.13	23.87	
	11/19/92		17.91	27.09	
	02/03/93		17.91	27.09	
	06/23/93		18.14	26.86	No free product or sheen
	09/22/93		19.63	25.37	No free product or sheen
	01/24/94		19.79	25.21	
	04/07/94		18.78	26.22	No free product or sheen
	06/07/94		18.88	26.12	No free product or sheen
	09/28/94		20.45	24.55	No free product or sheen
	12/14/94		19.45	25.55	No free product or sheen
	03/15/95		17.32	27.68	No free product or sheen
	06/13/95		17.43	27.57	No free product or sheen
	09/28/95		18.67	26.33	No free product or sheen

TABLE 1-Continued

## GROUND WATER ELEVATIONS

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date</u>	<u>Top of Riser Elevation (ft)*</u>	<u>Depth to Water (ft)</u>	<u>Ground Water Elevation (ft)</u>	<u>Physical Observation of Free Product or Sheen</u>
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	
	02/03/92		15.48	27.69	
	06/23/93		28.25	14.92	No free product or sheen
	09/22/93		17.83	25.34	No free product or sheen
	01/24/94		24.00	19.17	
	04/07/94		16.05	27.12	No free product or sheen
	06/07/94		16.00	27.17	No free product or sheen
	09/28/94		18.35	24.82	No free product or sheen
	12/14/94		19.50	23.67	No free product or sheen
	03/15/95		17.00	26.17	No free product or sheen
	06/13/95		14.95	28.22	No free product or sheen
	09/28/95		27.63	15.54	No free product or sheen

\* All top of riser elevations surveyed by Aegis Environmental, and are assumed relative to mean sea level.

^ Not measured.

Note: Aegis Environmental, Inc., collected data prior to 06/23/93.

TABLE 2

**GROUND WATER SAMPLE ANALYTICAL RESULTS**  
 Concentrations in micrograms per liter ( $\mu\text{g/L}$ )

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date Sampled</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Total Xylenes</u>	<u>TPH<sup>a</sup> as gasoline</u>
MW-1	02/18/92	—	—	—	—	—
	05/15/92	2,000	47	1,200	400	41,000
	08/28/92	3,800	54	850	970	110,000
	11/19/92	200	<5.0	90	140	3,600
	02/03/93	180	22	79	130	3,000
	06/23/93	2,400	74	650	510	12,000
	09/22/93	3,000	290	1,100	1,200	23,000
	01/24/94	2,400	280	1,100	1,700	18,000
	04/07/94	4,200	820	1,600	2,100	20,000
	06/07/94	1,800	510	1,100	1,600	26,000
	09/28/94	1,700	210	970	870	18,000
	12/14/94	4,400	2,400	2,300	4,300	31,000
	03/15/95	830	310	840	1,200	17,000
	06/13/95	1,300	99	1,500	1,100	22,000
	09/28/95	580	<25	780	410	8,800
MW-2	02/18/92	<0.5	<0.5	1.9	<0.5	1,600
	05/14/92	1.2	1.0	1.3	<0.5	740
	08/27/92	6.5	1.1	0.6	<0.5	1,400
	11/19/92	<0.5	<0.5	2.7	<0.5	360
	02/03/93	1.2	1.6	4.5	6.4	590
	06/23/93	<0.5	<0.5	0.52	0.50	160
	09/22/93	<0.5	0.59	1.2	0.59	290
	01/24/94	<0.5	<0.5	0.68	<0.5	330
	04/07/94	<0.5	<0.5	<0.5	4.4	490
	06/07/94	<0.5	<0.5	1.5	<0.5	550
	09/28/94	<0.5	<0.5	<0.5	<0.5	190
	12/14/94	7.2	0.84	<0.5	<0.5	1,400
	03/15/95	39	<0.5	0.53	<0.5	730
	06/13/95	8.3	<0.5	<0.5	<0.5	750 <sup>c</sup>
	09/28/95	<0.5	<0.5	<0.5	<0.5	670 <sup>c</sup>

TABLE 2-Continued

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES**  
Concentrations in micrograms per liter ( $\mu\text{g/L}$ )

Beacon Station No. 721  
44 Lewelling Boulevard  
San Lorenzo, California

Monitoring <u>Well</u>	<u>Date Sampled</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Total Xylenes</u>	<u>TPH<sup>a</sup> as gasoline</u>
MW-3	02/18/92	—	—	—	—	—
	05/15/92	6,300	5,900	1,700	6,100	160,000
	08/28/92	25,000	40,000	6,700	44,000	1,300,000
	11/19/92	—	—	—	—	—
	02/03/93	7,200	11,000	2,900	13,000	82,000
	06/23/93	3,200	5,300	2,500	9,100	61,000
	09/22/93	12,000	14,000	3,900	18,000	94,000
	01/24/94	14,000	17,000	4,200	14,000	110,000
	04/07/94	6,500	1,800	1,700	4,100	28,000
	06/07/94	6,400	2,300	1,500	3,500	27,000
	09/28/94	7,400	4,300	1,500	4,600	40,000
	12/14/94	17,000	21,000	3,900	22,000	140,000
	03/15/95	4,900	1,900	1,800	7,100	58,000
	06/13/95	7,200	2,900	1,200	4,600	44,000
	09/28/95	5,600	2,100	1,900	6,900	30,000
MW-4	02/18/92	<0.5	<0.5	12	21	5,100
	05/14/92	<0.5	5.6	1.8	2.2	4,600
	08/28/92	6.6	1.3	1.6	3.1	1,700
	11/19/92	<0.5	<0.5	<0.5	<0.5	400
	02/03/93	<0.5	<0.5	<0.5	<0.5	1,100
	06/23/93	<0.5	<0.5	<0.5	<0.5	120
	09/22/93	<0.5	<0.5	<0.5	<0.5	110
	01/24/94	<0.5	<0.5	<0.5	<0.5	260
	04/07/94	<0.5	<0.5	<0.5	<0.5	430
	06/07/94	<0.5	<0.5	<0.5	<0.5	150
	09/28/94	<0.5	<0.5	<0.5	<0.5	75
	12/14/94	<0.5	<0.5	<0.5	<0.5	160
	03/15/95	<0.5	<0.5	<0.5	<0.5	500
	06/13/95	<0.5	<0.5	<0.5	<0.5	210 <sup>c</sup>
	09/28/95	<0.5	<0.5	<0.5	<0.5	140 <sup>c</sup>

TABLE 2-Continued

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES**  
 Concentrations in micrograms per liter ( $\mu\text{g/L}$ )

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

Monitoring <u>Well</u>	<u>Date Sampled</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	Total <u>Xylenes</u>	TPH* as <u>gasoline</u>
MW-5	02/18/92	<0.5	<0.5	<0.5	<0.5	<50
	05/14/92	<0.5	<0.05	<0.5	<0.5	<50
	08/27/92	<0.5	<0.5	<0.5	<0.5	<50
	11/19/92	<0.5	<0.5	<0.5	<0.5	<50
	02/03/93	3.0	2.7	8.0	9.9	55
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	0.66	1.1	<0.5	0.6	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	<50
	04/07/94	<0.5	<0.5	<0.5	<0.5	<50
	06/07/94	<0.5	<0.5	<0.5	<0.5	<50
	09/28/94	<0.5	<0.5	<0.5	<0.5	<50
	12/14/94	<0.5	<0.5	<0.5	<0.5	<50
	03/15/95	<0.5	<0.5	<0.5	<0.5	<50
	06/13/95	<0.5	0.52	<0.5	<0.5	<50
	09/28/95	<0.5	<0.5	<0.5	<0.5	<50
MW-6	02/18/92	4.8	<0.5	<0.5	<0.5	370
	05/14/92	<0.5	<0.5	<0.5	<0.5	120
	08/27/92	1.2	<0.5	<0.5	<0.5	<50
	11/19/92	1.3	<0.5	1.0	1.1	66
	02/03/93	1.9	2.6	23	12	100
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	2.2	3.8	0.53	2.7	81
	01/24/94	<0.5	<0.5	<0.5	<0.5	98
	04/07/94	0.71	<0.5	<0.5	<0.5	150
	06/07/94	<0.5	<0.5	<0.5	<0.5	180
	09/28/94	<0.5	<0.5	<0.5	<0.5	100
	12/14/94	<0.5	<0.5	<0.5	<0.5	140
	03/15/95	<0.5	<0.5	<0.5	<0.5	110
	06/13/95	<0.5	0.87	<0.5	<0.5	150°
	09/28/95	0.78	<0.5	<0.5	<0.5	<50

TABLE 2-Continued

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES**  
 Concentrations in micrograms per liter ( $\mu\text{g/L}$ )

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

Monitoring <u>Well</u>	<u>Date Sampled</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	Total <u>Xylenes</u>	TPH* as <u>gasoline</u>
MW-7	02/18/92	16	<0.5	10	16	670
	05/14/92	44	<0.5	38	88	1,500
	08/27/92	400	5.8	290	1,400	23,000
	11/19/92	29	<0.5	10	53	330
	02/03/93	200	<0.5	110	480	2,000
	06/23/93	20	<0.5	16	16	280
	09/22/93	71	2.2	33	210	860
	01/24/94	61	<1.3	10	160	900
	04/07/94	53	<0.5	7.1	49	630
	06/07/94	55	<0.5	14	24	730
	09/28/94	21	<0.5	2.3	3.1	300
	12/14/94	19	<0.5	3.3	32	430
	03/15/95	0.88	<0.5	<0.5	<0.5	70
	06/13/95	7.3	0.79	7.6	8.9	190
	09/28/95	1.5	<0.5	1.2	0.84	60
MW-8	02/18/92	<0.5	<0.5	9.5	<0.5	1,200
	05/14/92	<0.5	<0.5	<0.5	<0.5	130
	08/28/92	<0.5	<0.5	<0.5	<0.5	140
	11/19/92	<0.5	<0.5	2.0	<0.5	320
	02/03/93	<0.5	<0.5	<0.5	<0.5	<50
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	<0.5	0.67	<0.5	<0.5	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	290
	04/07/94	<0.5	<0.5	<0.5	<0.5	<50
	06/07/94	<0.5	<0.5	<0.5	<0.5	<50
	09/28/94	<0.5	<0.5	<0.5	<0.5	<50
	12/14/94	<0.5	<0.5	<0.5	<0.5	<50
	03/15/95	<0.5	<0.5	<0.5	<0.5	<50
	06/13/95	<0.5	<0.5	<0.5	<0.5	<50
	09/28/95	NS	NS	NS	NS	NS

TABLE 2-Continued

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES**  
 Concentrations in micrograms per liter ( $\mu\text{g/L}$ )

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Monitoring Well</u>	<u>Date Sampled</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Total Xylenes</u>	<u>TPH<sup>a</sup> as gasoline</u>
MW-9	02/18/92	<0.5	<0.5	<0.5	<0.5	<50
	05/14/92	<0.5	<0.5	<0.5	<0.5	<50
	08/27/92	<0.5	<0.5	<0.5	<0.5	<50
	11/19/92	<0.5	<0.5	<0.5	1.3	<50
	02/03/93	<0.5	<0.5	<0.5	<0.5	<50
	06/23/93	<0.5	<0.5	<0.5	<0.5	<50
	09/22/93	<0.5	<0.5	<0.5	<0.5	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	<50
	04/07/94	<0.5	<0.5	<0.5	<0.5	<50
	06/07/94	<0.5	<0.5	<0.5	<0.5	<50
	09/28/94	<0.5	<0.5	<0.5	<0.5	<50
	12/14/94	<0.5	<0.5	<0.5	<0.5	<50
	03/15/95	<0.5	<0.5	<0.5	<0.5	<50
	06/13/95	<0.5	<0.5	<0.5	<0.5	<50
	09/28/95	<0.5	<0.5	<0.5	<0.5	<50
MW-10	02/18/92	110	57	440	53	18,000
	05/15/92	24	9.8	97	<0.5	8,500
	08/29/92	20	2.8	40	3.5	9,600
	11/19/92	36	21	330	31	5,700
	02/03/93	15	4.6	36	9.6	2,200
	06/23/93	21	24	540	45	8,100
	09/22/93	22	17	350	16	6,200
	01/24/94	NS <sup>b</sup>	NS	NS	NS	NS
	04/07/94	6.4	2.9	150	4.7	4,000
	06/07/94	5.6	<2.5	150	5.7	6,700
	09/28/94	2.2	2.6	110	44	5,700
	12/14/94	<1.3	<1.3	77	27	3,500
	03/15/95	<5.0	6.7	150	23	7,200
	06/13/95	9.0	48	610	130	8,400
	09/28/95	22	17	360	24	6,300

TABLE 2-Continued

**ANALYTICAL RESULTS OF GROUND WATER SAMPLES**  
Concentrations in micrograms per liter ( $\mu\text{g}/\text{L}$ )

Beacon Station No. 721  
44 Lewelling Boulevard  
San Lorenzo, California

<u>Monitoring Well</u>	<u>Date Sampled</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Total Xylenes</u>	<u>TPH<sup>a</sup> as gasoline</u>
MW-11	02/18/92	<0.5	<0.5	<0.5	<0.5	2,400
	05/15/92	<0.5	1.9	1.3	0.7	1,600
	08/27/92	15	2	0.6	1.2	2,100
	11/19/92	<0.5	<0.5	<0.5	<0.5	490
	02/03/93	<0.5	<0.5	0.55	<0.5	500
	06/23/93	<0.5	<0.5	<0.5	<0.5	350
	09/22/93	<0.5	0.65	<0.5	0.71	200
	01/24/94	<0.5	<0.5	<0.5	<0.5	450
	04/07/94	<0.5	<0.5	<0.5	<0.5	500
	06/07/94	<0.5	<0.5	<0.5	0.64	560
	09/28/94	<0.5	<0.5	<0.5	<0.5	600
	12/14/94	<0.5	<0.5	<0.5	<0.5	340
	03/15/95	<0.5	<0.5	<0.5	<0.5	340
	06/13/95	<0.5	<0.5	<0.5	<0.5	210 <sup>b</sup>
	09/28/95	4.1	0.50	<0.5	<0.5	93
RW-1	05/15/92	270	62	29	140	790
	08/29/92	1,300	200	68	810	24,000
	11/19/92	—	—	—	—	—
	02/03/93	71	35	22	110	620
	06/23/93	30	33	9.8	35	220
	09/22/93	800	400	170	910	4,100
	01/24/94	33	6.0	6.9	23	190
	04/07/94	110	57	32	260	1,500
	06/07/94	130	51	45	180	1,700
	09/28/94	54	9.2	12	29	350
	12/14/94	6.8	2.1	1.2	3.4	79
	03/15/95	NS	NS	NS	NS	NS
	04/10/95	54	11	11	69	410
	06/13/95	1,600	780	340	1,400	8,200
	09/28/95	<0.5	<0.5	<0.5	<0.5	<50

<sup>a</sup> Total petroleum hydrocarbons.

<sup>b</sup> Not sampled.

<sup>c</sup> Product is not typical gasoline.

Note: Aegis Environmental, Inc., collected data prior to 06/23/93.

**TABLE 3**  
**VOLUME OF GROUND WATER TREATED**  
by Remediation System

Beacon Station No. 721  
44 Lewelling Boulevard  
San Lorenzo, California

<u>Date</u>	Volume* (gallons)
06/21/93	2,120
07/14/93	117,367
08/14/93	210,470
09/22/93	255,241
01/24/94	399,520
03/31/94	460,075
06/21/94	597,663
09/28/94	662,894
12/14/94	723,160
03/15/95	902,621
06/30/95	929,056
09/23/95	1,018,150

\* Cumulative volume of water discharged to sanitary sewer at the indicated date.

TABLE 4

**ANALYTICAL RESULTS OF SYSTEM WATER SAMPLES**  
 Concentrations in micrograms per liter ( $\mu\text{g/L}$ )

Beacon Station No. 721  
 44 Lewelling Boulevard  
 San Lorenzo, California

<u>Sample</u>	<u>Date</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Total Xylenes</u>	<u>TPH<sup>a</sup> as gasoline</u>
Influent	12/14/94	<0.5	<0.5	<0.5	<0.5	<50
	03/22/95	<0.5	<0.5	<0.5	<0.5	<50
	04/10/95	3.9	0.57	0.65	5.5	<50
	06/13/95	NS	NS	NS	NS	NS
	08/10/95	<0.5	<0.5	<0.5	<0.5	<50
	09/14/95	<0.5	<0.5	<0.5	<0.5	490 <sup>d</sup>
Mid Carbon	12/14/94	<0.5	<0.5	<0.5	<0.5	<50
	03/22/95	<0.5	<0.5	<0.5	<0.5	<50
	04/10/95	<0.5	<0.5	<0.5	<0.5	<50
	06/13/95	NS	NS	NS	NS	NS
	08/10/95	<0.5	<0.5	<0.5	<0.5	<50
	09/14/95	<0.5	<0.5	<0.5	<0.5	<50
Effluent	05/28/93	<0.5	<0.5	<0.5	<0.5	<50
	10/01/93	<0.5	<0.5	<0.5	<0.5	<50
	01/24/94	<0.5	<0.5	<0.5	<0.5	<50
	04/07/94	<0.5	<0.5	<0.5	<0.5	<50
	05/18/94	<0.5	<0.5	<0.5	<0.5	<50
	09/28/94	NS	NS	NS	NS	NS
	12/14/94	<0.5	<0.5	<0.5	<0.5	<50
	03/22/95	<0.5	<0.5	<0.5	<0.5	<50
	04/10/95	<0.5	<0.5	<0.5	<0.5	<50
	06/13/95	NS	NS	NS	NS	NS
	07/28/95	<0.5	<0.5	<0.5	<0.5	<50
	08/10/95	<0.5	<0.5	<0.5	<0.5	<50
	09/14/95	<0.5	<0.5	<0.5	<0.5	<50

<sup>a</sup> Total petroleum hydrocarbons.

<sup>b</sup> Not sampled.

**GENERAL NOTES:**

BASE MAP FROM U.S.G.S.  
HAYWARD, CA.

7.5 MINUTE TOPOGRAPHIC  
PHOTOREVISED 1980



QUADRANGLE LOCATION



SCALE 1 : 24,000



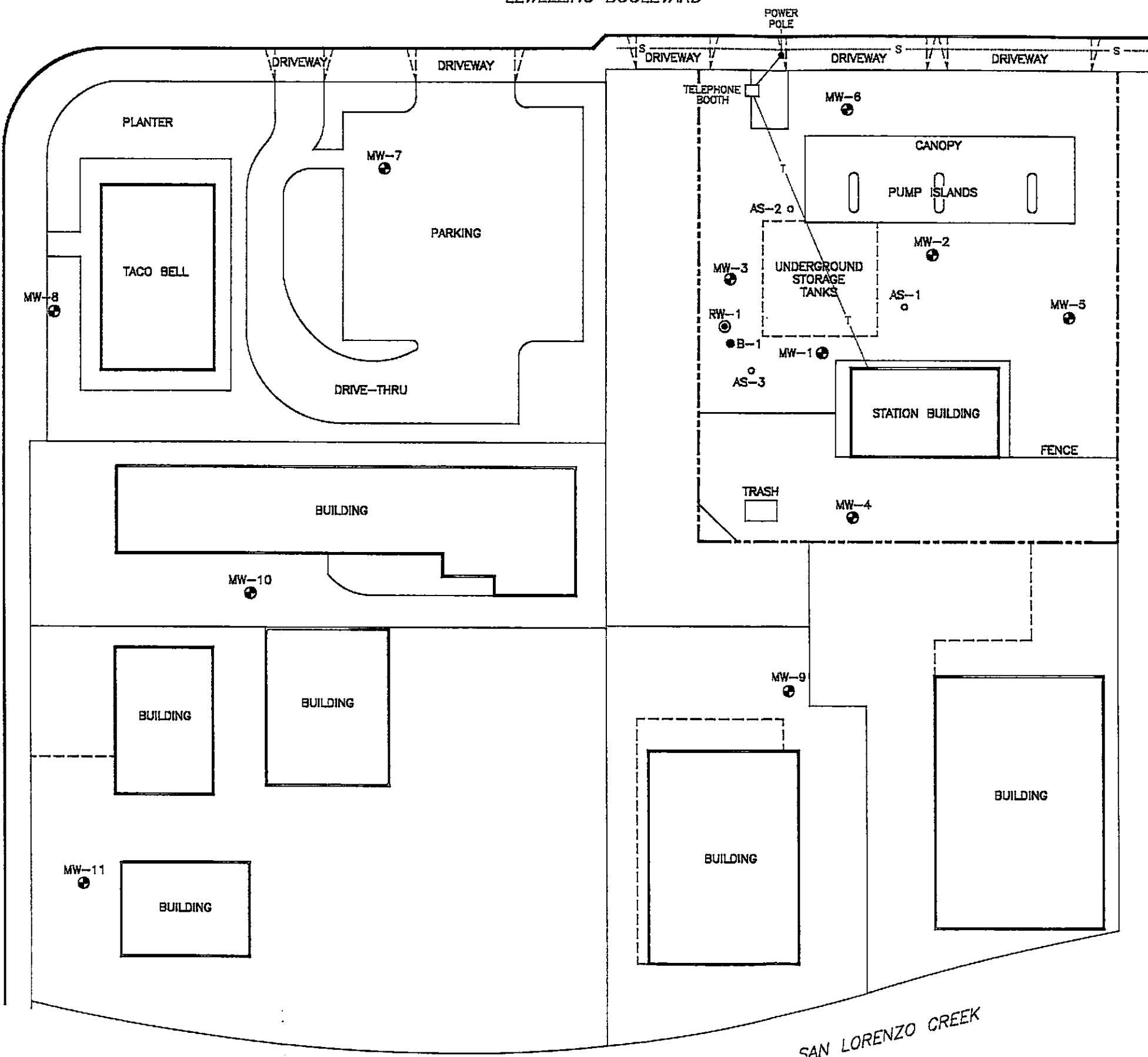
**FIGURE 1**  
**SITE LOCATION MAP**  
**BEACON STATION NO. 721**  
**44 LEWELLING BOULEVARD**  
**SAN LORENZO, CA.**

PROJECT NO. 40-93-936	DRAWN BY L.H. 11/2/92
FILE NO. _____	PREPARED BY TMG
REVISION NO. 1	REVIEWED BY J.W.C.



VIA GRANADA

LEWELLING BOULEVARD



North

LEGEND:

- B-1 SOIL BORING LOCATION
- ◎ RW-1 RECOVERY WELL LOCATION
- MW-1 MONITORING WELL LOCATION
- AS-1 AIR SPARGING WELL LOCATION

UTILITIES

- T — TELEPHONE LINE (OVERHEAD)
- S — SEWER LINE (BURIED)

NOTE:

BASE MAP ADAPTED FROM RESNA FIGURE DATED 1/9/92  
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED



FIGURE 2  
SITE VICINITY MAP

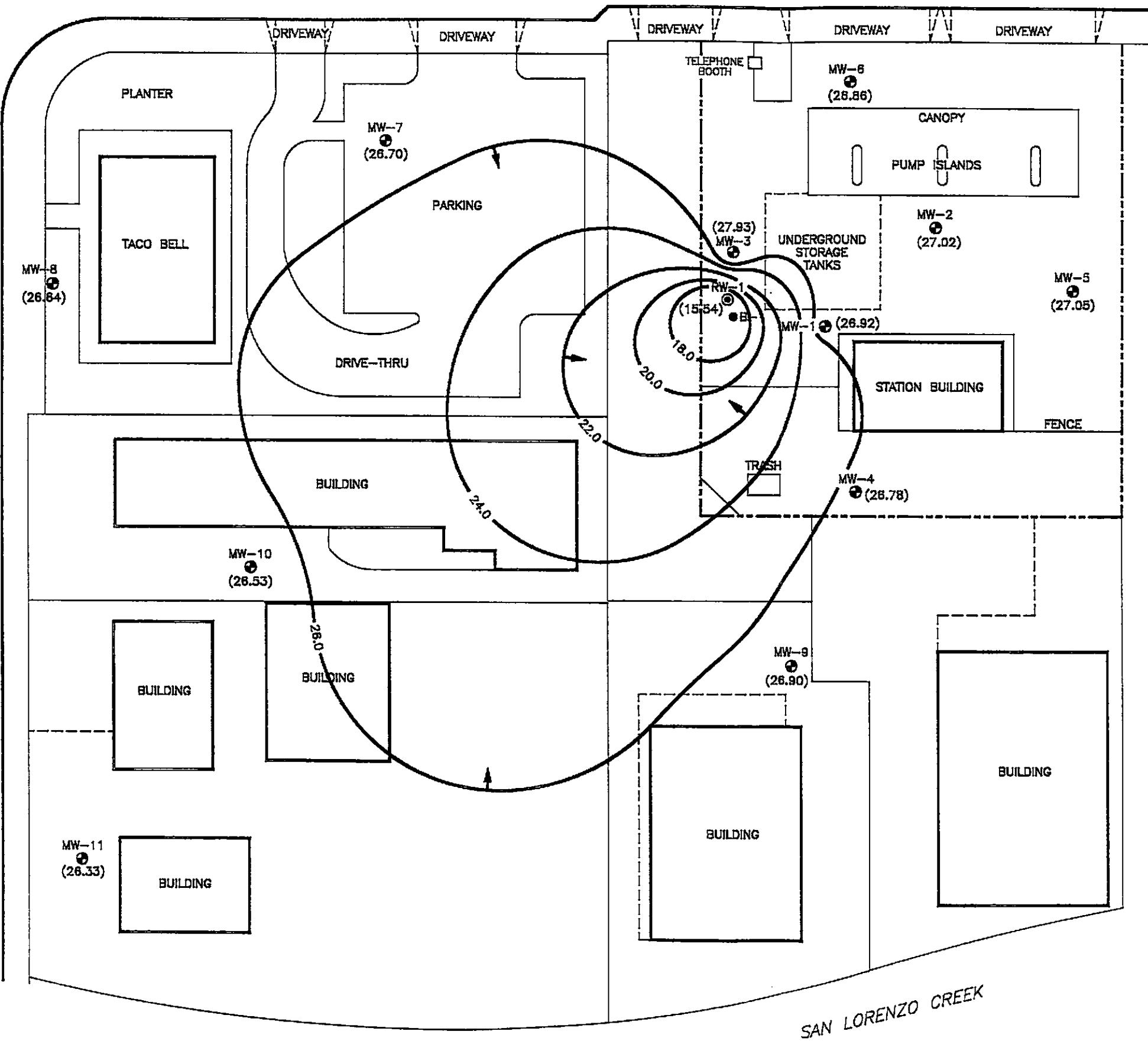
BEACON STATION NO. 721  
44 LEWELLING BOULEVARD  
SAN LORENZO, CA.

PROJECT NO. D083-838	DRAWN BY LH. 10/12/95
FILE NO. 93-936-1	PREPARED BY JWS
REVISION NO. 3	REVIEWED BY JWS



LEWELLING BOULEVARD

VIA GRANADA



North

LEGEND:

- B-1 SOIL BORING LOCATION
- ◎ RW-1 RECOVERY WELL LOCATION
- MW-1 MONITORING WELL LOCATION
- (26.92) GROUND WATER ELEVATION ASSUMED RELATIVE TO MEAN SEA LEVEL
- 26.0 — WATER TABLE CONTOUR ASSUMED RELATIVE TO MEAN SEA LEVEL
- ← GROUND WATER FLOW DIRECTION

NOTE:

BASE MAP ADAPTED FROM RESNA FIGURE DATED 1/9/92  
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED

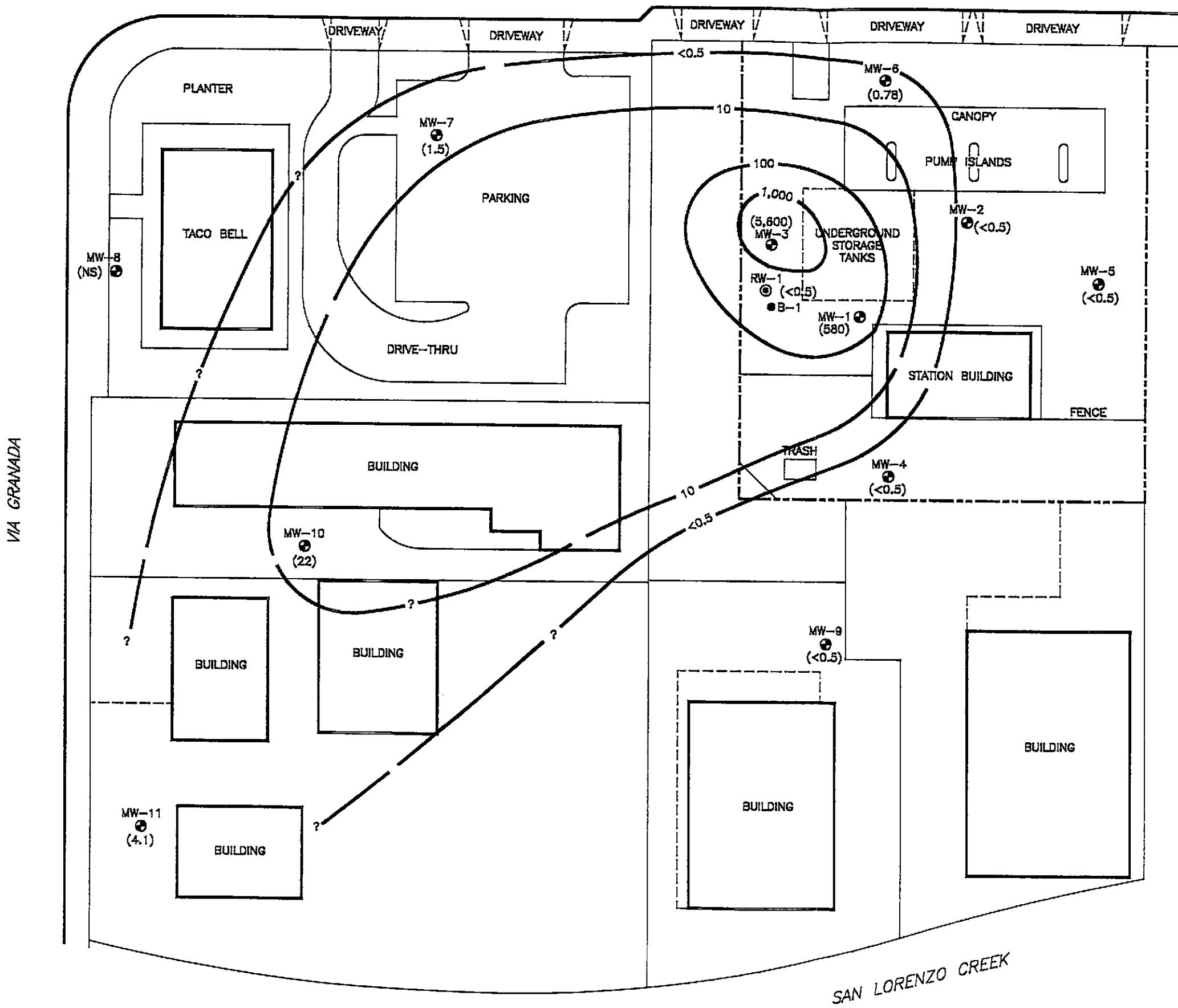


FIGURE 3  
WATER TABLE CONTOUR MAP - 9/28/95  
BEACON STATION NO. 721  
44 LEWELLING BOULEVARD  
SAN LORENZO, CA.

PROJECT NO. D083-93B	DRAWN BY JH 11/14/95
FILE NO. 93-936-1	PREPARED BY JWS
REVISION NO. 1	REVIEWED BY <i>[Signature]</i>



LEWELLING BOULEVARD



North

LEGEND:

- B-1 SOIL BORING LOCATION
- ◎ RW-1 RECOVERY WELL LOCATION
- MW-1 MONITORING WELL LOCATION
- (580) BENZENE CONCENTRATION IN MICROGRAMS PER LITER ( $\mu\text{g}/\text{L}$ )
- 10— BENZENE ISOCONCENTRATION IN  $\mu\text{g}/\text{L}$
- (NS) NOT SAMPLED

NOTE:

BASE MAP ADAPTED FROM RESNA FIGURE DATED 1/9/92  
SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED



FIGURE 4  
BENZENE ISOCONCENTRATION MAP  
9/28/95  
BEACON STATION NO. 721  
44 LEWELLING BOULEVARD  
SAN LORENZO, CA.

PROJECT NO. D093-936	DRAWN BY I.H. 10/12/95
FILE NO. 93-936-1	PREPARED BY JWS
REVISION NO. 1	REVIEWED BY <i>S. J. G.</i>



## **1.0 GROUND WATER AND FREE-FLOATING PRODUCT DEPTH ASSESSMENT**

A water/petroleum product interface probe was used to assess free product thickness and ground water depth in each well. If a free floating product layer was not measured by the interface probe, the tip of the probe was subjectively analyzed for product sheen or detectable odor. All measurements and physical observations were then recorded on separate data sheets in the field.

## **2.0 SUBJECTIVE ANALYSIS OF GROUND WATER**

Prior to the purging of ground water monitoring wells, a water sample was collected from the monitoring well for subjective analysis. The sample was retrieved by gently lowering a clean disposable bailer approximately one-half the bailer length past the air/liquid interface. The bailer was then retrieved and the sample contained within the bailer was examined for floating product levels, appearance of a petroleum product sheen, and any detectable petroleum product odor.

## **3.0 MONITORING WELL PURGING AND SAMPLING**

Monitoring wells were purged using a centrifugal pump with new disposable tubing. Monitoring wells were sampled using new dedicated disposable bailers. Ground water removed from the wells was stored in 55-gallon barrels at the site. The purge water was treated by the remediation system. After pH, temperature, and conductivity were recorded during the purging of each well. After purging, ground water levels were allowed to stabilize. Samples were collected in air-tight vials, appropriately labeled and stored on ice from the time of collection through the time of delivery to the laboratory. A chain-of-custody form was completed to document possession of the sample. Ground water samples were transported to the laboratory and analyzed within the EPA-specified holding times for the requested analyses.

**ENCLOSURE B**

Field Sampling Data Sheets

Sample ID# Mw-1 Project Name: BEACON 721 Project No. D093-736

Location (address): 44 LEWELLING BLVD. SAN LORENZO, CA.

Date Sampled: 9/28/95 Time: 1215

Willhand assembly condition:  Good  Fair  Poor (If poor, see comments)

Equipment Required: joint locks locking tape

Wall Dent 31.20 at below top of casing Casing diameter 2 inches

Date: 9/29/85 Time 0913

பெரும் விலை வாய்மை கொண்டது.

Well using volume multiplier: 0.10 for 1, 0.15 for 2, 0.20 for 3

Purging method: Submersible pump Shake None

Purging (type: \_\_\_\_\_). (new or previously used) was used to purge well volumes have been evacuated before \_\_\_\_\_.

Sampling method:  Disposable baiter Sampling port:

Sample appearance Cloudy

samples were  $\approx$  70% bone.

### GROUND WATER EVACUATION/STABILIZATION DATA

CONTENTS

4 WELL VOLUMES = 9 mL

Transportation (thermal preservation) ICE & CHEST

Book compiled by: 

Sampled by: \_\_\_\_\_

Sample ID# MW-2 Project Name: BEACON 721 Project No. 2093-936  
Location (address) 44 LEWELLING BLVD. SAN LORENZO, CA  
Date Sampled: 9/28/95 Time: 1200  
Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)  
Equipment Replaced:  bolts  locks  locking cap  
Well Depth 33.30 ft below top of casing Casing diameter 2 inches  
Depth to water (below top of casing) 16.07 ft Date: 9/28/95 Time 0917  
Well Casing Volume Multiplier: 0.16 for 1", 0.65 for 4", 1.47 for 6"  
Purging method:  Submersible pump  Bailer  Centrifugal pump  Other  
At least 4 well volumes have been evacuated before sampling.  
Tubing (type: ).  (or previously used) was used to purge well  
Sampling method:  Disposable bailer  Sampling port  
Samples collected 2 vials for BTEX/TPH<sub>x</sub> Sample appearance Clear  
Note any sampling problems none

## GROUND WATER EVACUATION/STABILIZATION DATA

Comments: \_\_\_\_\_ *- WELL VOLUNTEERED -*

4 well volumes = 11 mL

Transportation (thermal preservation) ICER ✓ CHEST  
Form completed by: \_\_\_\_\_ Sampled by: 14

Sample ID# M-111-3 Project Name: BEACON 721 Project No. D993-936

Location (address) 44 LEWELLING BLVD. SAN LORENZO, CA

Date Sampled: 9/28/95 Time: 1230

Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)

Equipment Replaced: \_\_\_\_\_ bolts      \_\_\_\_\_ locks      \_\_\_\_\_ locking cap

Well Depth 29.30 ft below top of casing Casing diameter 2 inches

Depth in water (below top of casing) 15.17 ft Date: 9/28/95 Time 0923

High Casting Volume Multipliers: 0.16 for 2", 0.63 for 4", 1.47 for 6" ✓

Wet casting volume multiplier: 0.16 for 1", 0.12 for 1/2", 0.08 for 1/4", 0.05 for 1/8", 0.03 for 1/16", 0.015 for 1/32", 0.005 for 1/64", 0.002 for 1/128", 0.001 for 1/256", 0.0005 for 1/512", 0.0002 for 1/1024", 0.0001 for 1/2048", 0.00005 for 1/4096", 0.00002 for 1/8192", 0.00001 for 1/16384", 0.000005 for 1/32768", 0.000002 for 1/65536", 0.000001 for 1/131072", 0.0000005 for 1/262144", 0.0000002 for 1/524288", 0.0000001 for 1/1048576", 0.00000005 for 1/2097152", 0.00000002 for 1/4194304", 0.00000001 for 1/8388608", 0.000000005 for 1/16777216", 0.000000002 for 1/33554432", 0.000000001 for 1/67108864", 0.0000000005 for 1/134217728", 0.0000000002 for 1/268435456", 0.0000000001 for 1/536870912", 0.00000000005 for 1/107374184", 0.00000000002 for 1/214748368", 0.00000000001 for 1/429496736", 0.000000000005 for 1/858993472", 0.000000000002 for 1/1717986944", 0.000000000001 for 1/3435973888", 0.0000000000005 for 1/6871947776", 0.0000000000002 for 1/13743895552", 0.0000000000001 for 1/27487791104", 0.00000000000005 for 1/54975582208", 0.00000000000002 for 1/109951164416", 0.00000000000001 for 1/219902328832", 0.000000000000005 for 1/439804657664", 0.000000000000002 for 1/879609315328", 0.000000000000001 for 1/1759218630656", 0.0000000000000005 for 1/3518437261312", 0.0000000000000002 for 1/7036874522624", 0.0000000000000001 for 1/14073749045248", 0.00000000000000005 for 1/28147498090496", 0.00000000000000002 for 1/56294996180992", 0.00000000000000001 for 1/112589992361984", 0.000000000000000005 for 1/225179984723968", 0.000000000000000002 for 1/450359969447936", 0.000000000000000001 for 1/900719938895872", 0.0000000000000000005 for 1/1801439877791744", 0.0000000000000000002 for 1/3602879755583488", 0.0000000000000000001 for 1/7205759511166976", 0.00000000000000000005 for 1/14411519022333952", 0.00000000000000000002 for 1/28823038044667904", 0.00000000000000000001 for 1/57646076089335808", 0.000000000000000000005 for 1/115292152178671616", 0.000000000000000000002 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All animals have been vaccinated before sampling.

At least 7 well volumes have been evaluated with 1.

Turing (type: \_\_\_\_\_), (new or previously used) was used to purge the

Sampling method:  Disposable bailey       Sampling port

Samples collected 2 VOCs FOR 3tex /TPHs Sample appearance cloudy

### GROUND WATER EVACUATION/STABILIZATION DATA

Comments: WELL VOLUMES

Transportation (thermal preservation) ICE & CHEST

Form completed by M Sampled by M

For example, if you have a table with a primary key column named "id" and a foreign key column named "parent\_id", you can use the following code to update the "parent\_id" value for all rows where "parent\_id" is null:

Sample ID# MW-4 Project Name: BEACON 721 Project No. D093-936  
 Location (address) 44 LEWELLING BLVD. SAN LORENZO, CA  
 Date Sampled: 9/28/95 Time: 1245  
 Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)  
 Equipment Replaced:  bolts  locks  locking cap  
 Well Depth 24.40 ft below top of casing Casing diameter 2 inches  
 Depth to water (below top of casing) 17.88 ft Date: 9/28/95 Time 0923  
 Well Casing Volume Multiplier: 0.16 for 2", 0.65 for 4", 1.47 for 6"  
 Purging method:  Submersible pump  Bailer  Centrifugal pump  Other  
 At least 4 well volumes have been evacuated before sampling.  
 Tubing (type:  new or previously used) was used to purge well  
 Sampling method:  Disposable bailer  Sampling port  
 Samples collected 2 VOCs FOR BTX/TPHs Sample appearance Clear  
 Note any sampling problems None.

### GROUND WATER EVACUATION/STABILIZATION DATA

Time	Temperature (°F)	pH Units	Conductance (µmhos/cm)	Water Level (Nearest 0.01 ft)	Cumulative Volume of Water Removed from Well (gallons)
					X-100
1239	76.7	7.17	10.23		0
1239	72.7	7.26	8.42		2
1240	72.5	7.06	9.79		4

Commerce

$$4 \text{ well volumes} = 4 \text{ mL}$$

Transportation (thermal preservation) ICE CHEST

From organized by

11

Sanctioned by:

Sample ID# MW-5 Project Name: BEACON 721 Project No. D093-936  
Location (address) 44 LEWELLING BLVD. SAN LORENZO, CA  
Date Sampled: 9/28/95 Time: 1145  
Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)  
Equipment Replaced:  bolts  locks  locking cap  
Well Depth 29.20 ft below top of casing Casing diameter 2 inches  
Depth to water (below top of casing) 16.74 ft Date: 9/28/95 Time 0915  
Well Casing Volume Multiplier: 0.16 for 2", 0.65 for 4", 1.47 for 6"  
Purging method:  Submersible pump  Baller  Centrifugal pump  Other  
At least 4 well volumes have been evacuated before sampling.  
Tubing (type: ). (new or previously used) was used to purge well  
Sampling method:  Disposable baller  Sampling port  
Samples collected 2 VOCs FOR BTEX/TPH<sub>2</sub> Sample appearance clear  
Note any sampling problems None

GROUND WATER EVACUATION/STABILIZATION DATA

Comments: \_\_\_\_\_ → WELL VOLUMES → \_\_\_\_\_

4 WELL VOLUMES = 8  $\mu$ L

~~Transportation (thermal preservation) ICE & CHEESE~~

Form completed by: 14 Submitted by: 14

Student Name: BEASON 721 Project No. D093-936

I mention address: 441 ELLINGEN BLVD. SAN LORENZO, CA

Date Sampled: 9/28/91 Time: 1135

Initial assembly condition:  Good  Fair  Poor (If poor, see comments)

Equipment Replaced: bolts \_\_\_\_\_ locks \_\_\_\_\_ locking cap \_\_\_\_\_

Well Depth 28.70 ft below top of casing Casing diameter 2 inches

Date: 9/28/85 Time 0917

Volume 16 Number 8 16 pp 27-0 65 pp 47-1 47 pp 67

Well Using Volume Minimiser: 0.10 for  $\sigma$ , 0.02 for  $\tau$ , 0.01 for  $\rho$

Purging method: 1 Submersible pump        Hand        Other         
    1 = pump has been activated before sampling.

At least \_\_\_\_\_ well volumes have been evacuated before \_\_\_\_\_.  
*(Leave blank if no wells were drilled)*

Tubing (type: \_\_\_\_\_). (new or previously used) was used to purge well

Sampling method:  Disposable baiter  Sampling port

Samples collected 2 VOGS FOR 3TEX/TPH Sample appearance Clear

Now am experiencing problems. now

Note any sampling problems \_\_\_\_\_

## GROUND WATER EVACUATION/STABILIZATION DATA

Советы

$$4 \text{ well volumes} = 8 \text{ mL}$$

Transportation (thermal insulation) ice & chest

From: John C. H. Smith Date: 10/10/2008

Sampled by: VJ

Sample ID# MW-7 Project Name: BEACON 721 Project No. D093-936  
 Location (address): 44 LEWELLING BLVD. SAN LORENZO, CA  
 Date Sampled: 9/28/95 Time: 1055  
 Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)  
 Equipment Replaced:  bolts  locks  locking cap  
 Well Depth 24.30 ft below top of casing Casing diameter 2 inches  
 Depth to water (below top of casing) 14.39 ft Date: 9/28/95 Time 1045  
 Well Casing Volume Multiplier: 0.16 for 2", 0.63 for 4", 1.47 for 6"  
 Purging method:  Submersible pump  Bailer  Centrifugal pump  Other  
 At least 4 well volumes have been evacuated before sampling.  
 Tubing (type: ) (new or previously used) was used to purge well  
 Sampling method:  Disposable bailer  Sampling port  
 Samples collected 2 VOCs for BTEX/TPH<sub>x</sub> Sample appearance clear  
 Note any sampling problems None

## ~~GROUND WATER EVACUATION/STABILIZATION DATA~~

Советник

4 WELL VOLUMES = 4.5 ml

Transportation (travel reservation) ICE & CARS

Digitized by יד יצחק שטרן

Searched by:

Sample ID# M-11W-8 Project Name: BEACON 721 Project No. D093-736

Present address: 44 LEWELLING BLVD. SAN LORENZO, CA

Date Sampled: 7-15-25 Time: 11:00

Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)

Equipment Replaced: \_\_\_\_\_ boins \_\_\_\_\_ locks \_\_\_\_\_ locking cap

Well Depth 23.20 ft below top of casing Casing diameter 2 inches

Depth in water (below top of casing) 5.62 ± Date: 9 / 20 / 95 Time 1015

Well Casing Volume Multiplier: 0.16 for 2", 0.65 for 4", 1.47 for 6"

Burrowing method: Submersible pump  Baileys  Centrifugal pump  Other \_\_\_\_\_

Well volumes have been evacuated before sampling.

Tubing (type: \_\_\_\_\_). (new or previously used) was used to purge well

Sampling method: ✓ Disposable baits Sampling port

Samples collected 2 years for BTEX / TPHs Sample appearance clear

Name any sampling problems ~~in soil~~ *well*

Becker 132:

## SECOND WATER EVACUATION/STABILIZATION DATA

Time	Temperature (°F)	pH Units	X <sup>100</sup> Conductance (mmhos/cm)	Water Level (Nearest 0.01 ft)	Cumulative Volume of Water Removed from Well (gallons)
1018	70.8	7.25	5.80		0
1018	70.1	7.38	3.02		2
1019	70.0	7.43	2.81		5

Comments: Well purged Dry, & wouldn't + well volumes = 5 gal  
Recharge - Check it before leaving Site & B&T  
And NO Recharge - unable to produce any (0ft)

Transportation (thermal preservation) ICE & CHEST

Form completed by: M

Searched by: J/A

Sample Date M W - 9 Project Name: BEACON 721 Project No. D093-936

Location (address) 44 LEWELLING BLVD. SAN LORENZO, CA

Date Sampled: 9/23/95 Time: 110

Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)

Equipment Replaced: \_\_\_\_\_ bolts \_\_\_\_\_ locks \_\_\_\_\_ locking cap

Well Depth 23,80 ft below top of casing Casing diameter 2 inches

Depth in water (below top of casing): 12.04 ft Date: 9 / 28 / 95 Time 1101

Well Casing Volume Multiplier: 0.16 for 2", 0.63 for 4", 1.47 for 6"

Burting method: Submersible pump Baller  Centrifugal pump  Other \_\_\_\_\_

At least 4 ml volumes have been evacuated before sampling.

Purging (Time): 1 min (New or previously used) was used to purge well

Sampling method:  Disposable tainer Sampling cost:

Sample collected 3 yrs ago from 3-5 x 1 m<sup>2</sup> Sample appearance dark

Now, my running problems done

## **GROUND WATER EVACUATION/STABILIZATION DATA**

Comments: A WELL VOLUME = 5-10 ml

Transportation (thermal preservation) ICE CHESTS

Form completed by: W.W. Sampled by: J.A.

## SAMPLING INFORMATION SHEET

**Environmental  
Consultants, Inc.**

Sample ID# MW-10 Project Name: BEACON 721 Project No. D093-936  
Location (address) 44 LEWELLING BLVD. SAN LORENZO, CA  
Date Sampled: 9/29/95 Time: 10:00  
Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)  
Equipment Replaced:  bolts  locks  locking cap  
Well Depth 29.50 ft below top of casing Casing diameter 2 inches  
Depth to water (below top of casing) 15.81 ft Date: 9/29/95 Time 1000  
Well Casing Volume Multiplier: 0.16 for 2", 0.65 for 4", 1.47 for 6"  
Purging method:  Submersible pump  Bailer  Centrifugal pump  Other  
At least 4 well volumes have been evacuated before sampling.  
Tubing (type: ) (new or previously used) was used to purge well  
Sampling method:  Disposable bailer  Sampling port  
Samples collected 2 VOCs for BTEX /TPHs Sample appearance Clear  
Note any sampling problems none

## GROUND WATER EVACUATION/STABILIZATION DATA

Time	Temperature (°F)	pE Units	X-100 Conductance (µmhos/cm)	Water Level (Nearest 0.01 ft)	Cumulative Volume of Water Removed from Well (gallons)
1002	66.1	8.43	6.00		0
1003	66.8	7.44	5.33		4.
1004	66.8	7.36	5.35		9

## Comments

4 WELL VOLUMES = 9 ML

Transportation (thermal preservation) ICE & CHEST

Form completed by: 1/1

Sampled by: KJ

Sample ID# Mw-11 Project Name: BEACON 721 Project No. D093-936

Location (address) 44 LEWELLING BLVD. SAN LORENZO, CA

Date Sampled: 9 / 28 / 95 Time: 095°

Wellhead assembly condition:  Good  Fair  Poor (If poor, see comments)

Equipment Replaced:      bolts      locks      locking cap

Well Depth 29.50 ft below top of casing Casing diameter 2 inches

Deposit in water (below top of casing) 13-167 ft Date: 9/18/95 Time 09:30

Well Casing Volume Multipliers: 0.16 for 2", 0.63 for 4", 1.47 for 6"

Pumping method: Submersible pump  Baileys  Centrifugal pump  Other

As long as A well volumes have been evacuated before sampling.

Training (time):  new or previously used) was used to purge well

Sampling method:  Disposable baiter Sampling point

Sampling interval 1 month Sample appearance clear  
Samples collected 3 years from 3Tg x / TgH<sub>2</sub>

Sampled every 1000 ft

## GROUND WATER EVACUATION/STABILIZATION DATA

Совместно

4 well volumes =  $F_{\text{gas}}$

Transportation (thermal preservation) ICE & CHEST

Form completed by: 14.1

Sampled by: MJ

## SAMPLING INFORMATION SHEET



Sample ID# RW-1 Project Name: BEACON 721 Project No. D093-936

Location (address) 44 LEWELLING BLVD, SAN LORENZO CA

Date Sampled: 9/28/93 Time: 1250

Wellhead assembly condition: Good Fair Poor (If poor, see comments)

Equipment Replaced: \_\_\_\_\_ bolts      \_\_\_\_\_ locks      \_\_\_\_\_ locking cap

Well Depth 29.50 ft below top of casing Casing diameter \_\_\_\_\_ inches

Depth to water (below top of casing) 29.63 ft Date: 9 / 18 / 95 Time 0925

Well Casing Volume Multiplier: 0.16 for 2", 0.65 for 4", 1.47 for 6"

Purging method:  Submersible pump  Bailor  Centrifugal pump  Other \_\_\_\_\_

At least well volumes have been evacuated before sampling.

Tubing (type: \_\_\_\_\_). (new or previously used) was used to purge well

Sampling method:  Disposable bailer  Sampling port

Samples collected \_\_\_\_\_ Sample appearance clear

Note any sampling problems In one

## **GROUND WATER EVACUATION/STABILIZATION DATA**

Comments: Sampled at SURFACE 4 well volumes = 50L

Transportation (thermal preservation)

Form completed by: \_\_\_\_\_ Sampled by: \_\_\_\_\_



**Ultramar Inc.**  
**CHAIN OF CUSTODY REPORT**

**BEACON**

Beacon Station No. 721	Sampler (Print Name) Troy Stoeck		ANALYSES			Date 7/27/95	Form No. 1 of 2	
Project No. DC 13-756	Sampler (Signature) <i>Troy Stoeck</i>					100-53-1018 200-100-7007		
Project Location Hanford	Affiliation Delta					No. of Containers		
Sample No./Identification	Date	Time	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)	REMARKS	
MW-11	7/26/95	0750		X X			2	
MW-10		1010						
MW-8		1035						
MW-7		1055						
MW-9		1110						
MW-6		1135						
MW-5		1145						
MW-2		1200						
Relinquished by: (Signature/Affiliation) <i>Troy Stoeck 721/1a</i>	Date 7/27/95	Time 1440	Received by: (Signature/Affiliation)				Date 7/27/95	Time 1440
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)				Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)				Date 7/28/95	Time 1440
Report To: T. Fox	Bill to: ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: T. Fox							



**Ultramar Inc.**  
**CHAIN OF CUSTODY REPORT**

**BEACON**

Beacon Station No. 771	Sampler (Print Name) T. Spec B	ANALYSES			Date 7-26-91	Form No. 7 of 7
Project No. 7003-1736	Sampler (Signature) D. H.				No. of Containers	6-27-91
Project Location in concrete	Affiliation D. H.					St. 201-77-01
Sample No./Identification MW-1	Date 7-16-91	Time 1215	Lab No. 61	BTEX	1	REMARKS
MW-3		1230		TPH (gasoline)		
MW-4		1245		TPH (diesel)		
RW-1		1250				
Relinquished by: (Signature/Affiliation) T. Spec 771		Date 7-16-91	Time 1215	Received by: (Signature/Affiliation)		
Relinquished by: (Signature/Affiliation)		Date	Time	Received by: (Signature/Affiliation)		
Relinquished by: (Signature/Affiliation)		Date	Time	Received by: (Signature/Affiliation)		
Report To: D. H.		Bill to: ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: 7-16-91				

WHITE: Return to Client with Report

YELLOW: Laboratory Copy

PINK: Original or Copy

**ENCLOSURE C**

Ground Water Sample Laboratory Report

# WEST LABORATORY

October 5, 1995  
Sample Log 13016

Todd Galati  
Delta Environmental Consultants, Inc.  
3164 Gold Camp Drive, Suite 200  
Rancho Cordova, CA 95670

Subject: Analytical Results for 11 Water Samples  
Identified as: Beacon 721 (Proj. # DO93-936)  
Received: 09/28/95

Dear Mr. Galati:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on October 5, 1995 and describes procedures used to analyze the samples.

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

# WEST LABORATORY

Sample Log 13016  
13016-01

Sample: MW-11

From : Beacon 721 (Proj. # DO93-936)

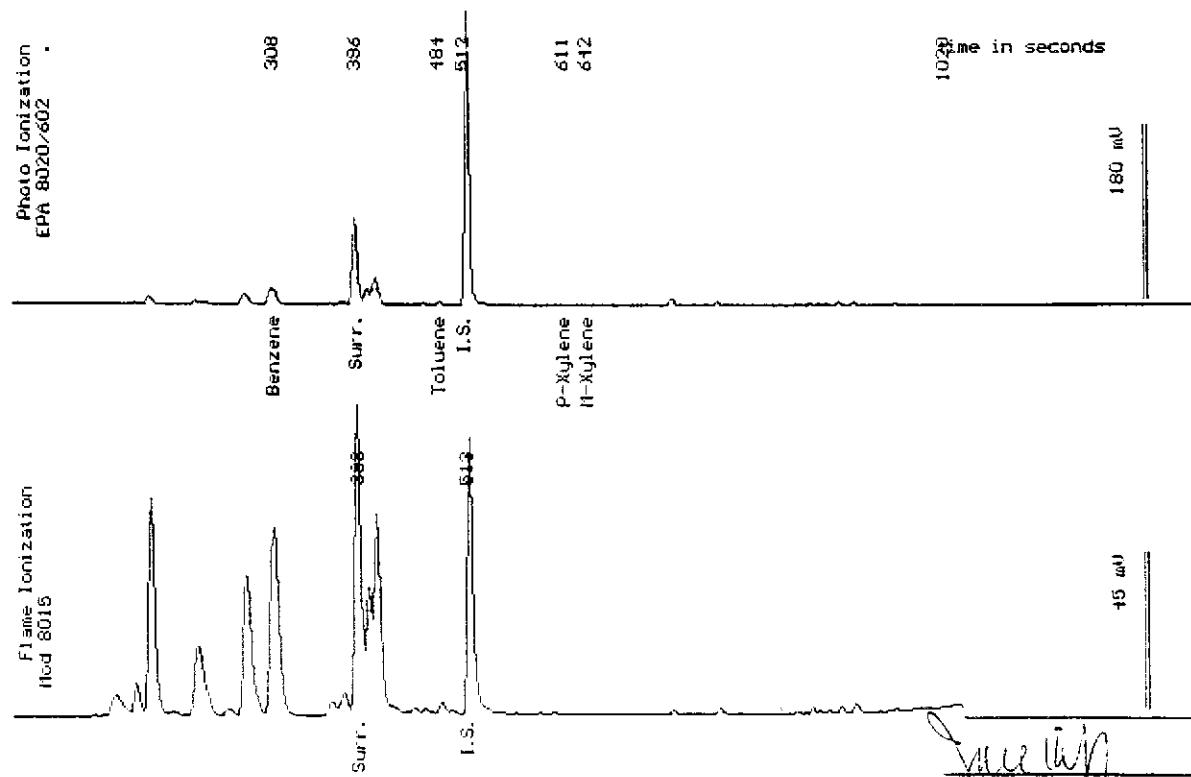
Sampled : 09/28/95

Dilution : 1:1

QC Batch : 2129Z

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	4.1
Toluene	(.50)	.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	93
Surrogate Recovery		93 %



Date Analyzed: 10-03-95  
Column : 0.53mm ID X 30m DBMAX (J&W Scientific)

Joel Kitt  
Senior Chemist

Sample Log 13016

13016-02

Sample: MW-10

From : Beacon 721 (Proj. # DO93-936)

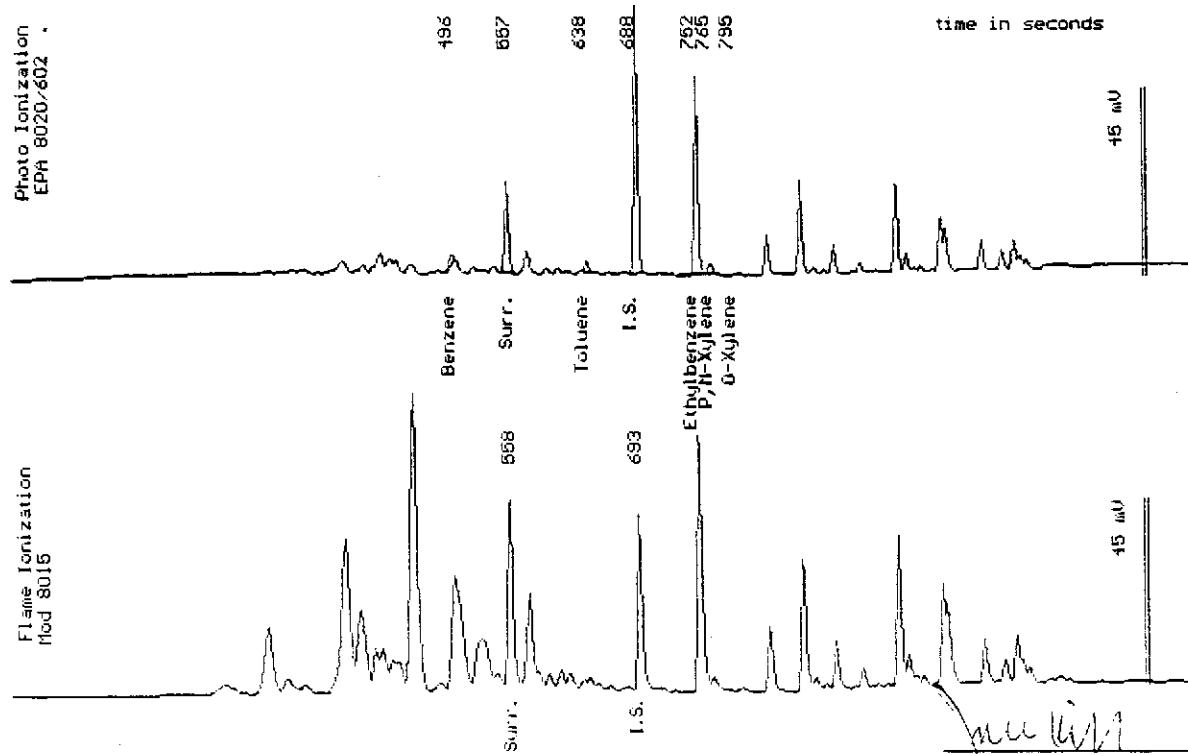
Sampled : 09/28/95

Dilution : 1:10

QC Batch : 6158T

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(5.0)	22
Toluene	(5.0)	17
Ethylbenzene	(5.0)	360
Total Xylenes	(5.0)	24
TPH as Gasoline	(500)	6300
Surrogate Recovery		86 %



Date Analyzed: 10-03-95  
Column : 0.45mm ID X 75m DBURX (J&W Scientific)

Joe Kiff  
Senior Chemist

Sample Log 13016  
13016-03

Sample: MW-7

From : Beacon 721 (Proj. # D093-936)

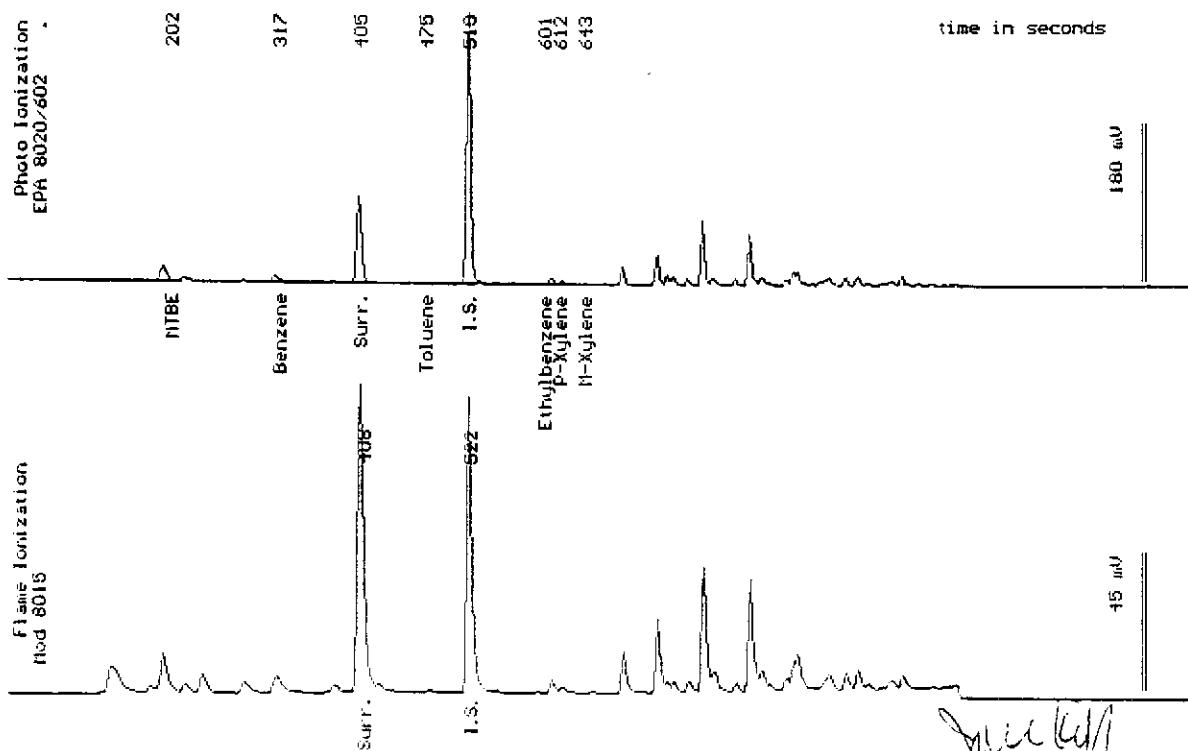
Sampled : 09/28/95

Dilution : 1:1

QC Batch : 2130K

### **Matrix : Water**

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	1.5
Toluene	(.50)	<.50
Ethylbenzene	(.50)	1.2
Total Xylenes	(.50)	.84
TPH as Gasoline	(50)	60
Surrogate Recovery		99 %



Date Analyzed: 10-06-95  
Column : 0.53mm ID X 30m RTX-1301 (Restek)

Joel Kiff  
Senior Chemist

# WEST LABORATORY

Sample Log 13016

13016-04

Sample: MW-9

From : Beacon 721 (Proj. # DO93-936)

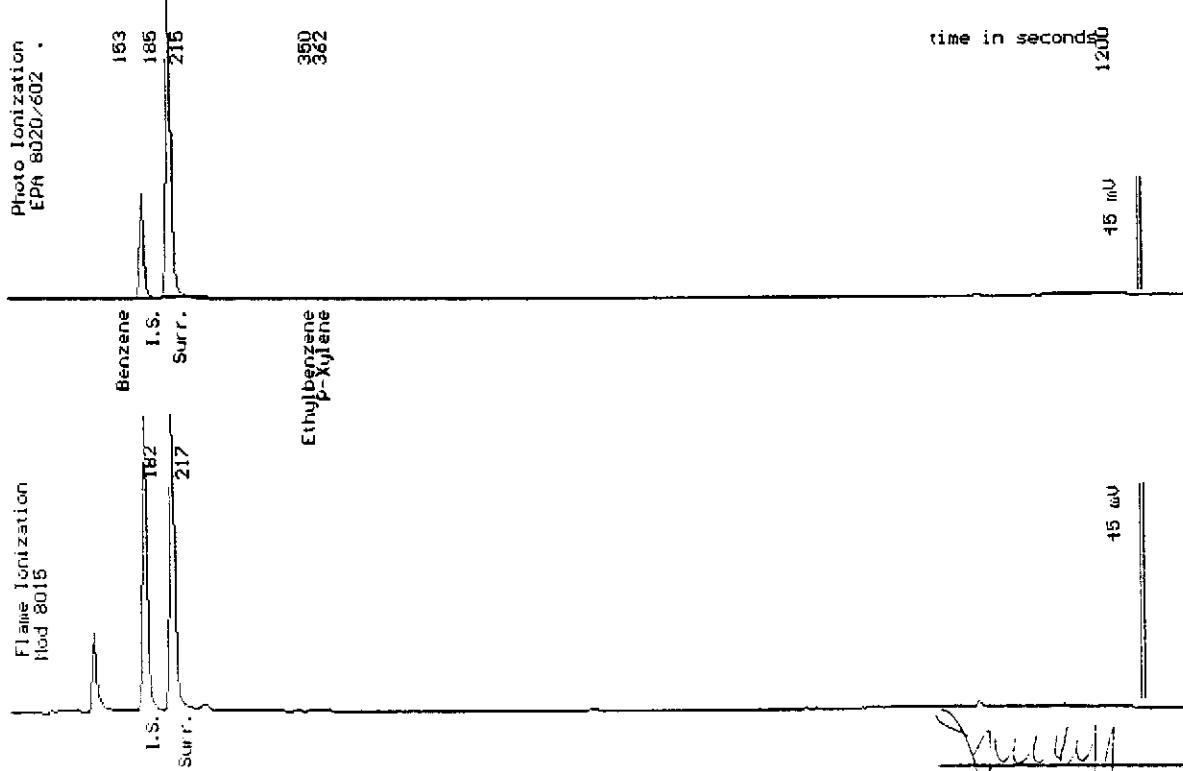
Sampled : 09/28/95

Dilution : 1:1

QC Batch : 4132S

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	( .50 )	<.50
Toluene	( .50 )	<.50
Ethylbenzene	( .50 )	<.50
Total Xylenes	( .50 )	<.50
TPH as Gasoline	( 50 )	<50
Surrogate Recovery		99 %



Date Analyzed: 10-03-95  
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
Senior Chemist

Sample Log 13016

13016-05

Sample: MW-6

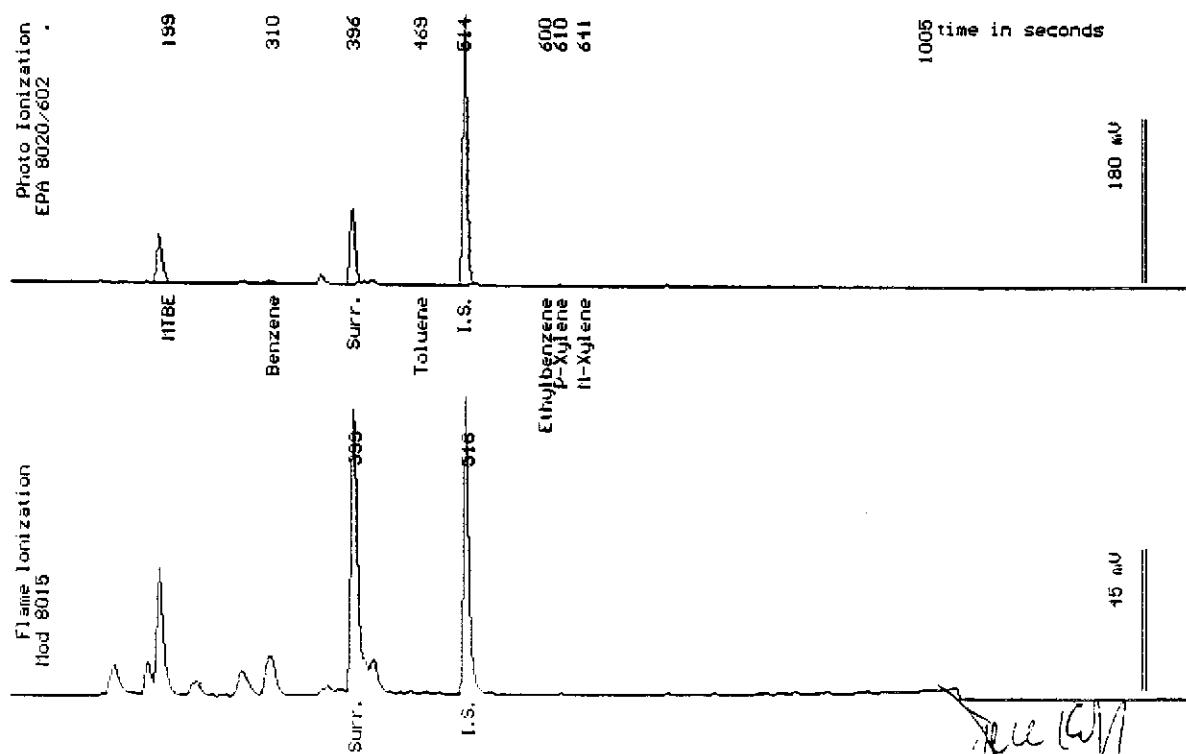
From : Beacon 721 (Proj. # DO93-936)  
Sampled : 09/28/95

Dilution : 1:1

QC Batch : 2130K

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	.78
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		95 %



Date Analyzed: 10-06-95  
Column : 0.53mm ID X 60m RTX-1301 (Restek)

Joel Hitt  
Senior Chemist

*Joel Hitt*

Sample Log 13016

13016-06

Sample: MW-5

From : Beacon 721 (Proj. # D093-936)

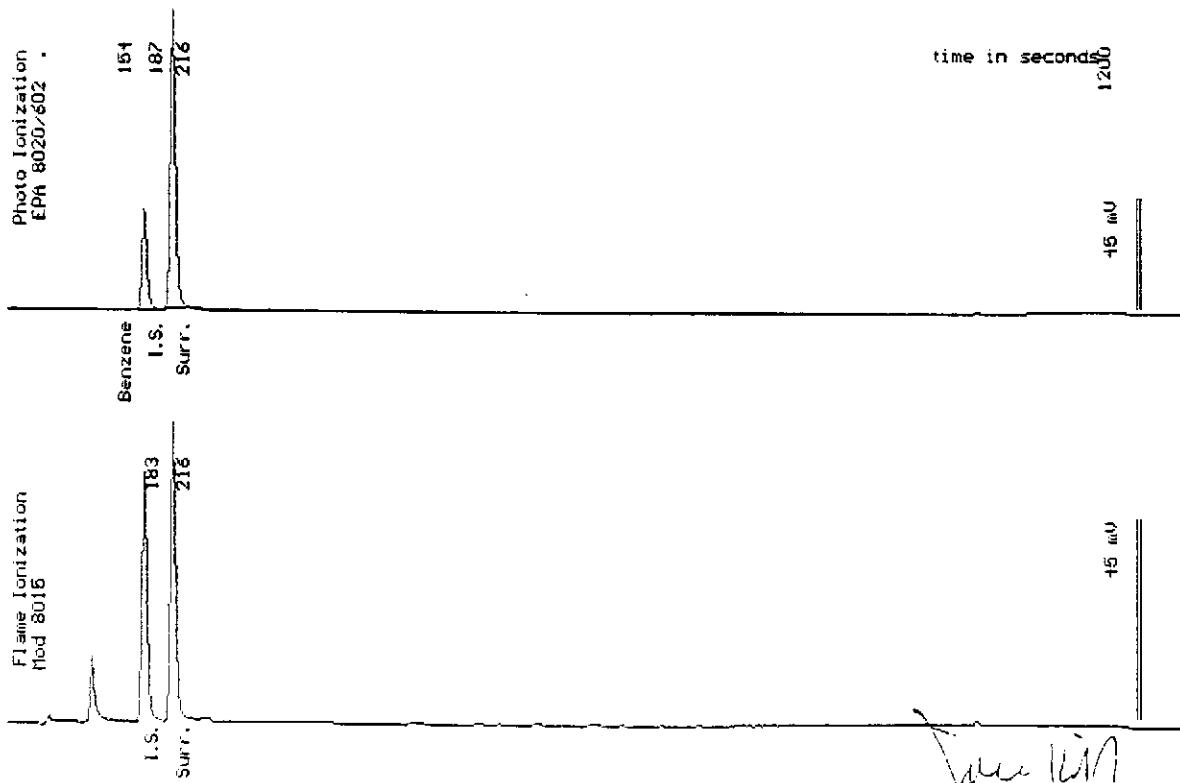
Sampled : 09/28/95

Dilution : 1:1

QC Batch : 4132S

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	( .50 )	<.50
Toluene	( .50 )	<.50
Ethylbenzene	( .50 )	<.50
Total Xylenes	( .50 )	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		93 %



Date Analyzed: 10-03-95  
 Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
Senior Chemist

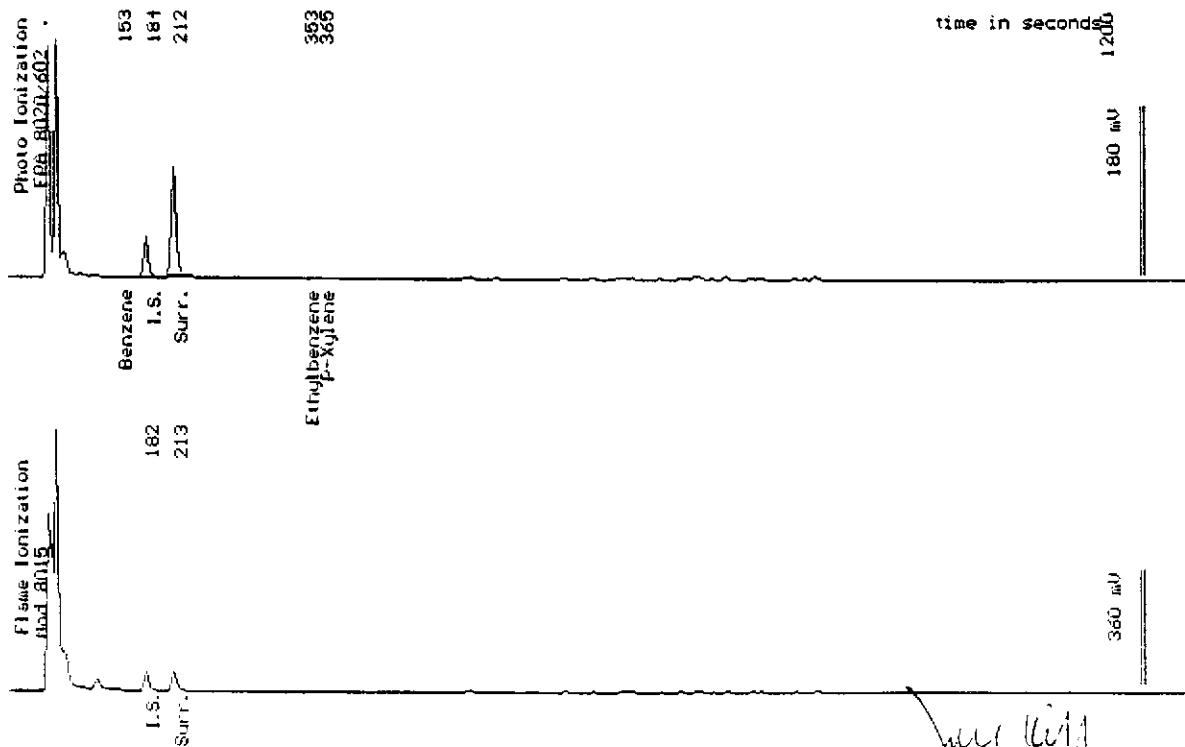
Sample Log 13016

13016-07

Sample: MW-2

From : Beacon 721 (Proj. # DO93-936)  
Sampled : 09/28/95Dilution : 1:1 QC Batch : 4132S  
Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	( .50)	<.50
Toluene	( .50)	<.50
Ethylbenzene	( .50)	<.50
Total Xylenes	( .50)	<.50
TPH as Gasoline	(50)	670 *
Surrogate Recovery		93 %
* Product is not typical gasoline.		

Date Analyzed: 10-03-95  
Column : 0.53mm ID x 30m DBWAX (J&W Scientific)Joel Kiff  
Senior Chemist

A handwritten signature in black ink that reads "Joel Kiff". Below the signature, the text "Senior Chemist" is written in a smaller, printed-style font.

Sample Log 13016

13016-08

Sample: MW-1

From : Beacon 721 (Proj. # DO93-936)

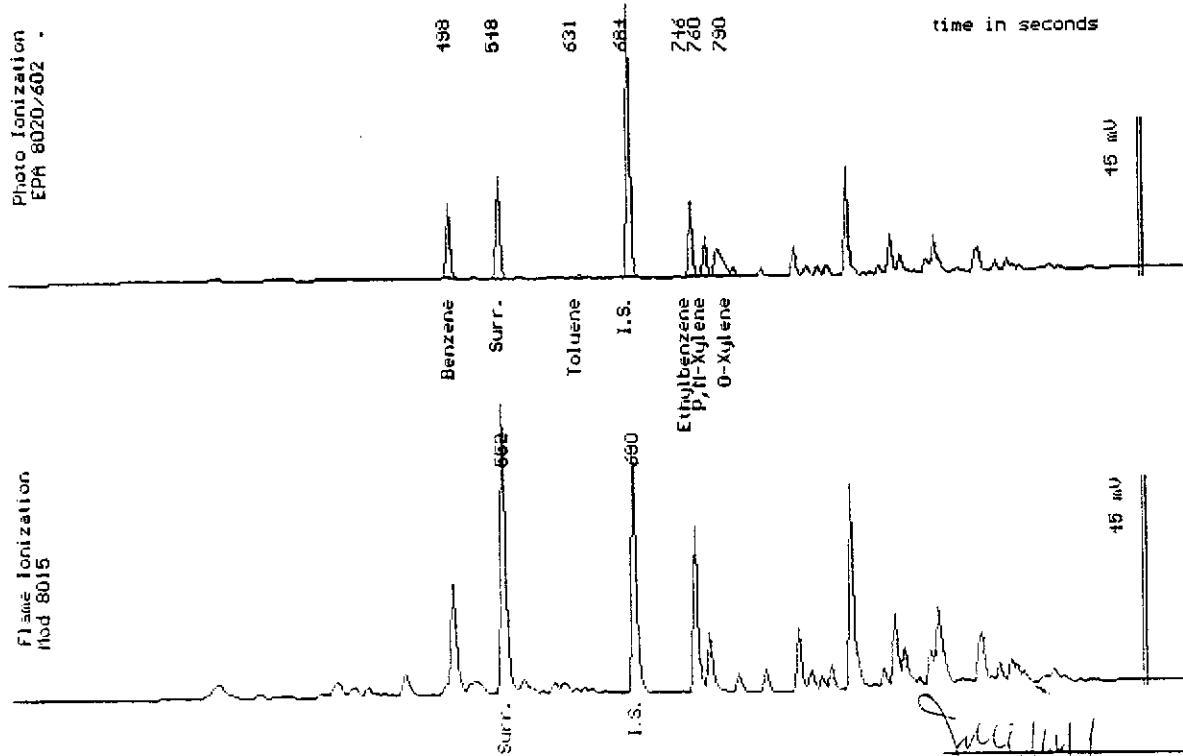
Sampled : 09/28/95

Dilution : 1:50

QC Batch : 6158T

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(25)	580
Toluene	(25)	<25
Ethylbenzene	(25)	780
Total Xylenes	(25)	410
TPH as Gasoline	(2500)	8800
Surrogate Recovery		88 %



Date Analyzed: 10-03-95  
Column : 0.45mm ID X 75m DBURX (J&W Scientific)

Sample Log 13016

13016-09

Sample: MW-3

From : Beacon 721 (Proj. # DO93-936)

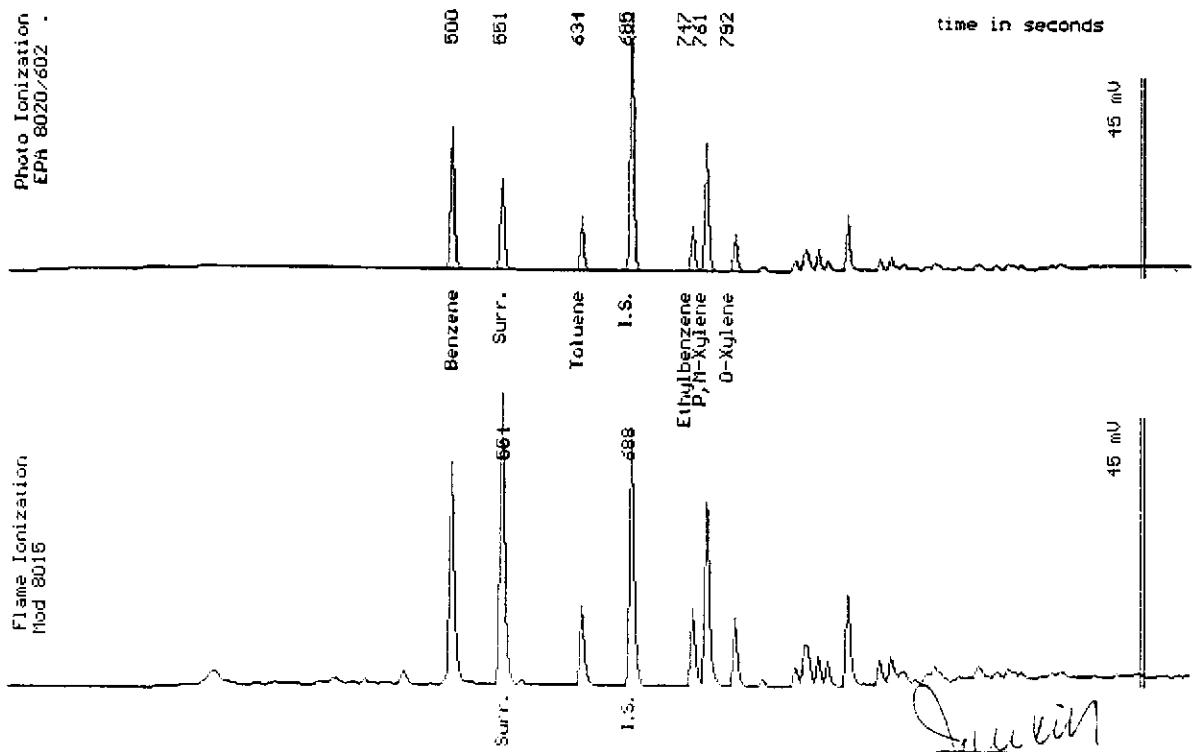
Sampled : 09/28/95

Dilution : 1:250

QC Batch : 6158T

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(130)	5600
Toluene	(130)	2100
Ethylbenzene	(130)	1900
Total Xylenes	(130)	6900
TPH as Gasoline	(13000)	30000
Surrogate Recovery		85 %



Date Analyzed: 10-03-95  
Column : 0.45mm ID x 75m DBURX (J&W Scientific)

Joel Kiff  
Senior Chemist

Sample Log 13016

13016-10

Sample: MW-4

From : Beacon 721 (Proj. # DO93-936)

Sampled : 09/28/95

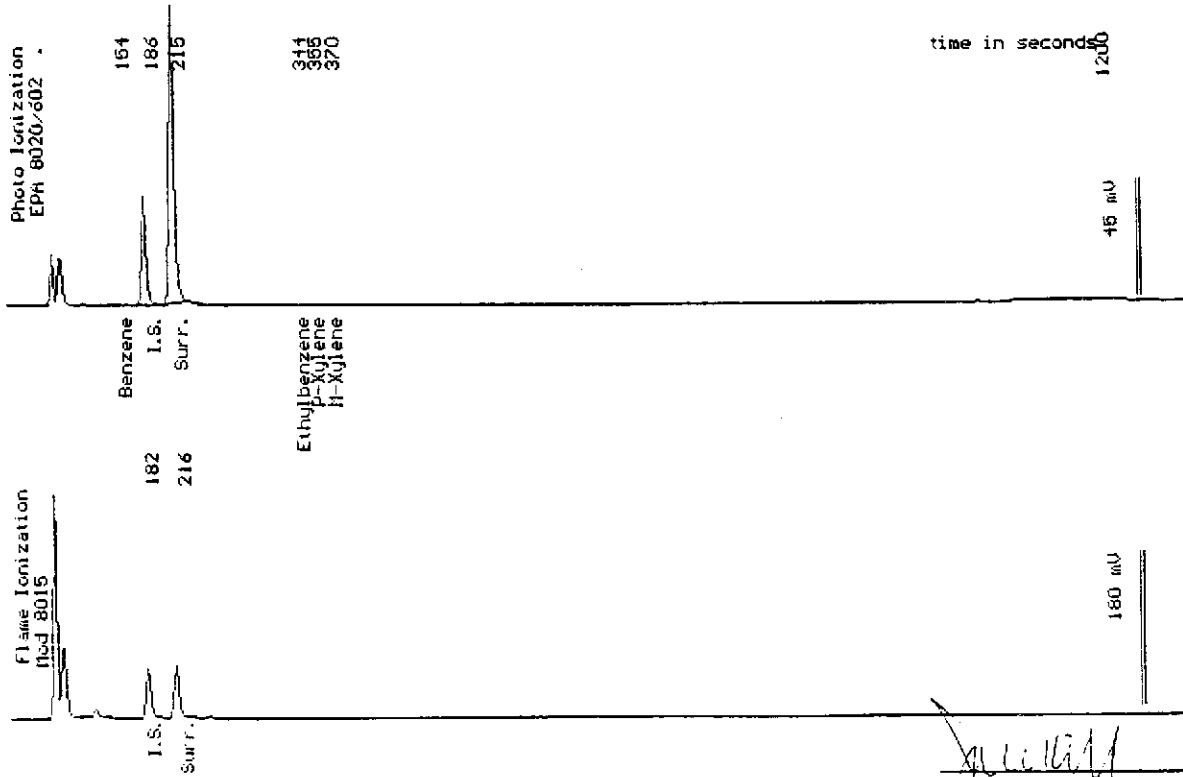
Dilution : 1:1

QC Batch : 4132S

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	140 *
Surrogate Recovery		100 %

\* Product is not typical gasoline.



Date Analyzed: 10-03-95  
 Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joe Kiff  
 Senior Chemist

Sample Log 13016

13016-11

Sample: RW-1

From : Beacon 721 (Proj. # DO93-936)

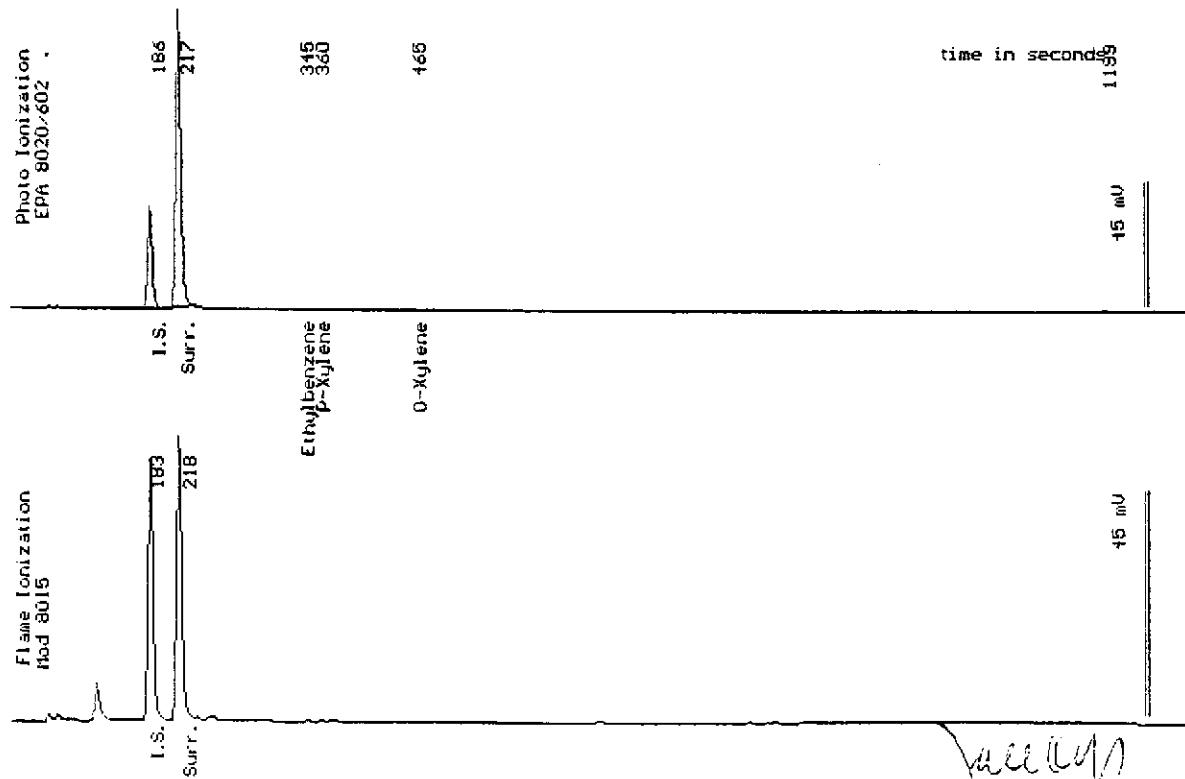
Sampled : 09/28/95

Dilution : 1:1

QC Batch : 4132W

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		100 %



Date Analyzed: 10-05-95  
 Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
Senior Chemist



**Ultramar Inc.**  
**CHAIN OF CUSTODY REPORT**

**BEACON**

Beacon Station No. 721	Sampler (Print Name) Jay Steward	ANALYSES			Date 9-28-95	Form No. 1 of 2
Project No. DXA3-956	Sampler (Signature) Kerry Price	BTEX	TPH (gasoline)	TPH (diesel)		
Project Location San Lorenzo	Affiliation Delta				No. of Containers	6 sets 6 sets St. Notified 7/17
Sample No./Identification MW-11	Date 9-28-95	Time 0950	Lab No.			REMARKS
MW-10		1000				
MW-8		1050				NO SAMPLE FOR MW 8
MW-7		1055				
MW-9		1100				
MW-6		1135				
MW-5		1145				
MW-2		1200				
Relinquished by: (Signature/Affiliation) Kerry Price 9x17a	Date 9-28-95	Time 1400	Received by: (Signature/Affiliation)		Date 9-28-95	Time 1400
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)		Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)		Date	Time
Report To: Todd Califf	Bill to:	ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: T. Fox				

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32 8003 1/90

Box 13013



**Ultramar Inc.**  
**CHAIN OF CUSTODY REPORT**

**BEACON**

Beacon Station No. 721	Sampler (Print Name) Terry Fox, SS	ANALYSES						Date 9-28-95	Form No. C of C	
		BTEX	TPH (gasoline)	TPH (diesel)						
Project No. 12093-936	Sampler (Signature) Terry Fox								WEST COAST Stratford - TWT	
Project Location San Joaquin	Affiliation Dilig									
Sample No./Identification MW-1	Date 9-28-95	Time 1215	Lab No.	X					REMARKS 1	
MW-3		1230		/	/				1	
MW-4		1245		/						
RW-1	✓	1250		/	/					
Relinquished by: (Signature/Affiliation) Terry Fox, D.O.H.	Date 9-28-95	Time 1200	Received by: (Signature/Affiliation)						Date 9-28-95	Time 1440
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)						Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)						Date 9-28-95	Time 1440
Report To: Terry Galati			Bill to:	ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: T. Fox						

WHITE: Return to Client with Report

YELLOW: Laboratory Copy

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32-8003-190

**ENCLOSURE D**

Remediation System Analytical Results

August 2, 1995  
Sample Log 12601

Todd Galati  
Delta Environmental Consultants, Inc.  
3164 Gold Camp Drive, Suite 200  
Rancho Cordova, CA 95670

Subject: Analytical Results for 1 Water Sample  
Identified as: Beacon 721 (Proj. # DO93-936)  
Received: 07/31/95

Dear Mr. Galati:

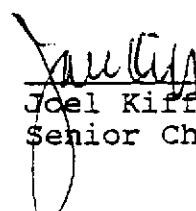
Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on August 2, 1995 and describes procedures used to analyze the samples.

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

## Sample Log 12601

12601-01

## Sample: effluent

From : Beacon 721 (Proj. # DO93-936)

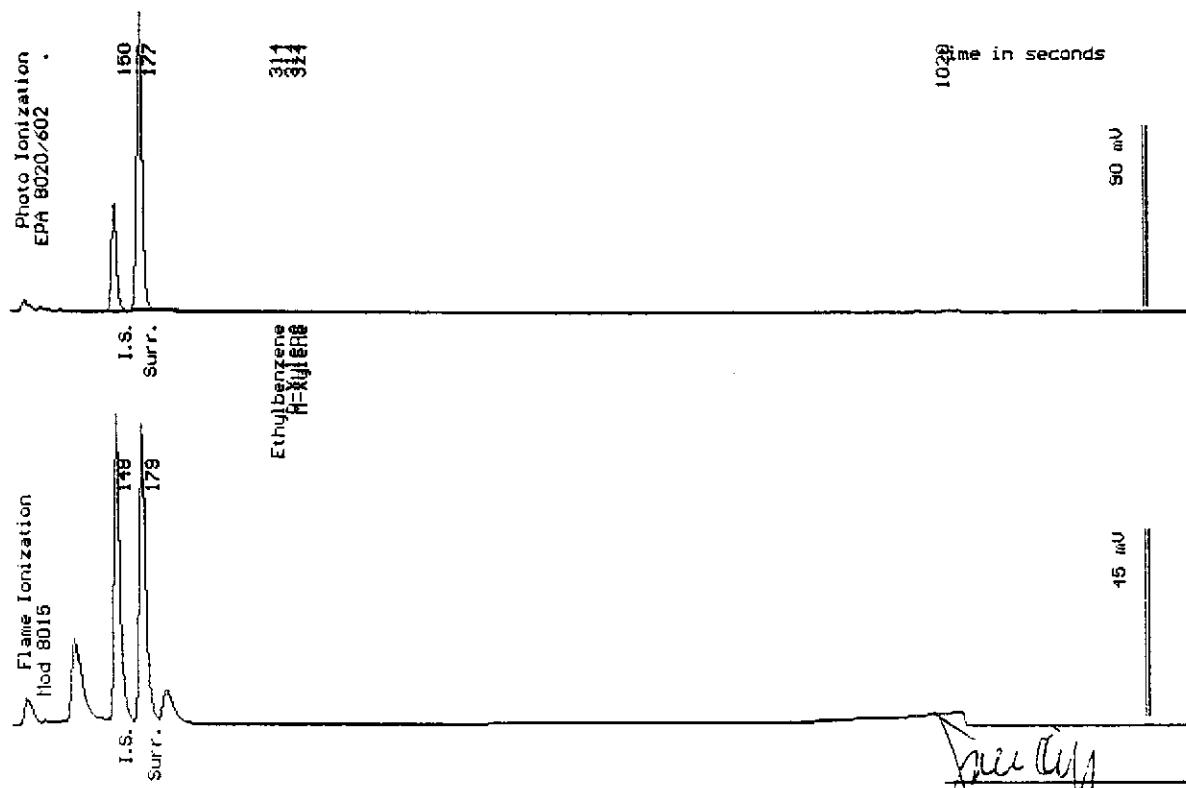
Sampled : 07/28/95

Dilution : 1:1

QC Batch : 2125G

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		100 %



Date Analyzed: 08-02-95  
 Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
 Senior Chemist



ANALYTICAL LABORATORY

1910 S STREET SACRAMENTO, CALIFORNIA 95814 • 916-447-2946 • FAX 916-447-8321

August 8, 1995

Western Environmental Science  
& Technology  
1046 Olive Drive, Suite 3  
Davis, CA 95616  
Attn: Leslie Biddle

P.O. #: 12601  
Project #: 00-93-936  
Project Name: Beacon 721

Anlab I.D. AE14896

Client Code: 315

SAMPLE DESCRIPTION: EFFLUENT

Matrix: WW

Sample collection date: 07/28/95

Time: 08:00

Lab submittal date: 07/31/95

Time: 13:39

Turn-Around-Time: TYPE 10

Sample Disposal: LAB

TEST PARAMETER	UNITS	TEST RESULT	DETECTION LIMIT
COD by EPA 410.4	mg/l	ND	20

ND = Not Detected

Date Analyzed: 08/02/95

Report Approved By:  
ELAP ID #: 1468

*Patty Bucknell*

:1ki

## **ANLAB QA/QC REPORT**

AE14896

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

LCS = LAB CONTROL SAMPLE

\* DUP = DUPLICATE SAMPLE    X=SAMPLE OR MATRIX SPIKE RESULT    Y=DUPLICATE OR MATRIX SPIKE DUP RESULT    ((ABS(X-Y))/((X+Y)/2))\*100



**Ultramar Inc.**  
**CHAIN OF CUSTODY REPORT**

**BEACON**

Beacon Station No. 721	Sampler (Print Name) Martin W. Morgan	ANALYSES						Date 7/28/95	Form No. / of /
Project No. D093-93b	Sampler (Signature) <i>M.W. Morgan</i>							West Labs 916 753 9500	
Project Location San Lorenzo, CA	Affiliation Delta							STANDARD	
Sample No./Identification effluent	Date 7/28/95	Time 0825	Lab No.	BTEX	TPH (gasoline)	TPH (diesel)	COP	No. of Containers 4	REMARKS 11/1/91 AT 1203 OC JG
Relinquished by: (Signature/Affiliation) Mr. W. M. Morgan / Delta	Date 7/31/95	Time 0830	Received by: (Signature/Affiliation) Always Delta	Date 7/31/95	Time 0830				
Relinquished by: (Signature/Affiliation) Morgan / Delta	Date	Time	Received by: (Signature/Affiliation) Sid Paden	Date 7/31/95	Time 1130				
Relinquished by: (Signature/Affiliation) Sid Paden	Date 7/31/95	Time 1203	Received by: (Signature/Affiliation) TODD GALATTI	Date 7/31/95	Time 1203				
Report To: TODD GALATTI	Bill to: ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: Terry Fox								
Phone 916 638 2085 Fax 8365									

WHITE: Return to Client with Report

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August 15, 1995  
Sample Log 12677

23

Todd Galati  
Delta Environmental Consultants, Inc.  
3164 Gold Camp Drive, Suite 200  
Rancho Cordova, CA 95670

Subject: Analytical Results for 3 Water Samples  
Identified as: Beacon 721 (Proj. # DO93-936)  
Received: 08/10/95

Dear Mr. Galati:

Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on August 15, 1995 and describes procedures used to analyze the samples.

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:

  
\_\_\_\_\_  
Stewart Podolsky  
Senior Chemist

Sample Log 12677

12677-03

## Sample: influent

From : Beacon 721 (Proj. # DO93-936)

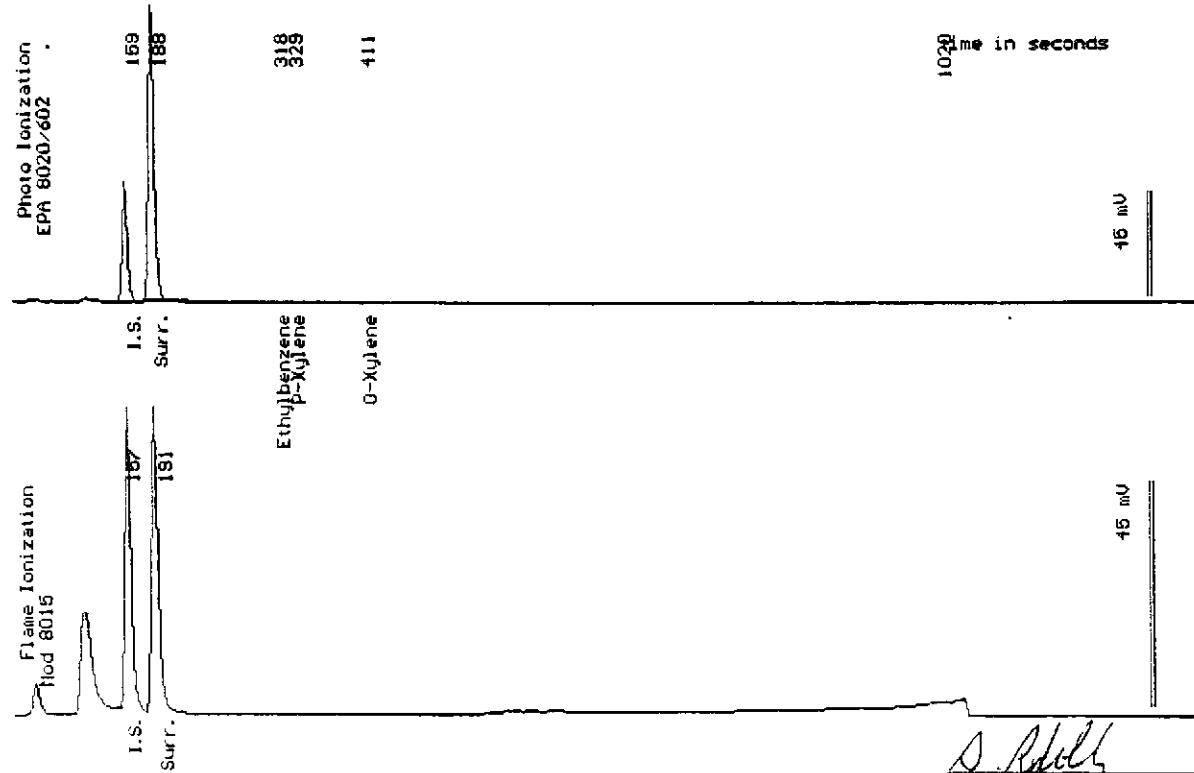
Sampled : 08/10/95

Dilution : 1:1

QC Batch : 2126B

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	( .50)	<.50
Toluene	( .50)	<.50
Ethylbenzene	( .50)	<.50
Total Xylenes	( .50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		95 %



Date Analyzed: 08-15-95  
 Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
Senior Chemist

Sample Log 12677  
12677-02

Sample: MID

From : Beacon 721 (Proj. # DO93-936)

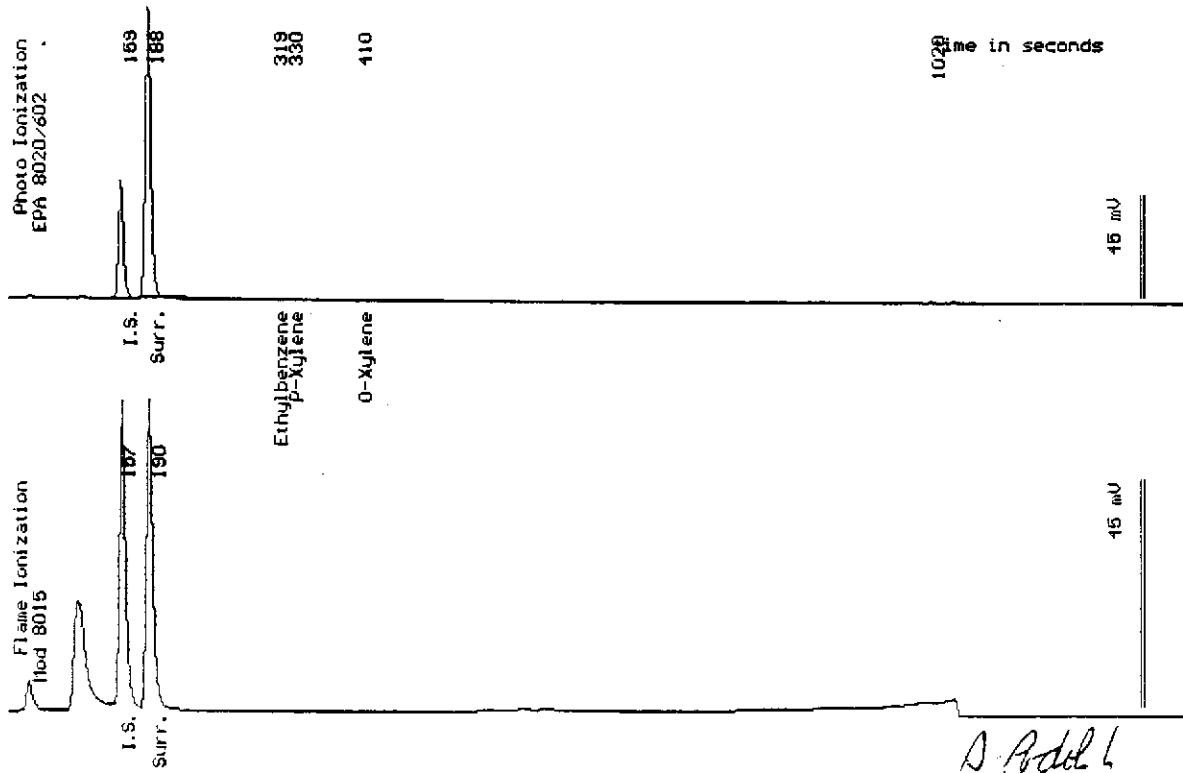
Sampled : 08/10/95

Dilution : 1:1

QC Batch : 2126B

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		96 %



Date Analyzed: 08-15-95  
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
Senior Chemist

## Sample: effluent

From : Beacon 721 (Proj. # DO93-936)

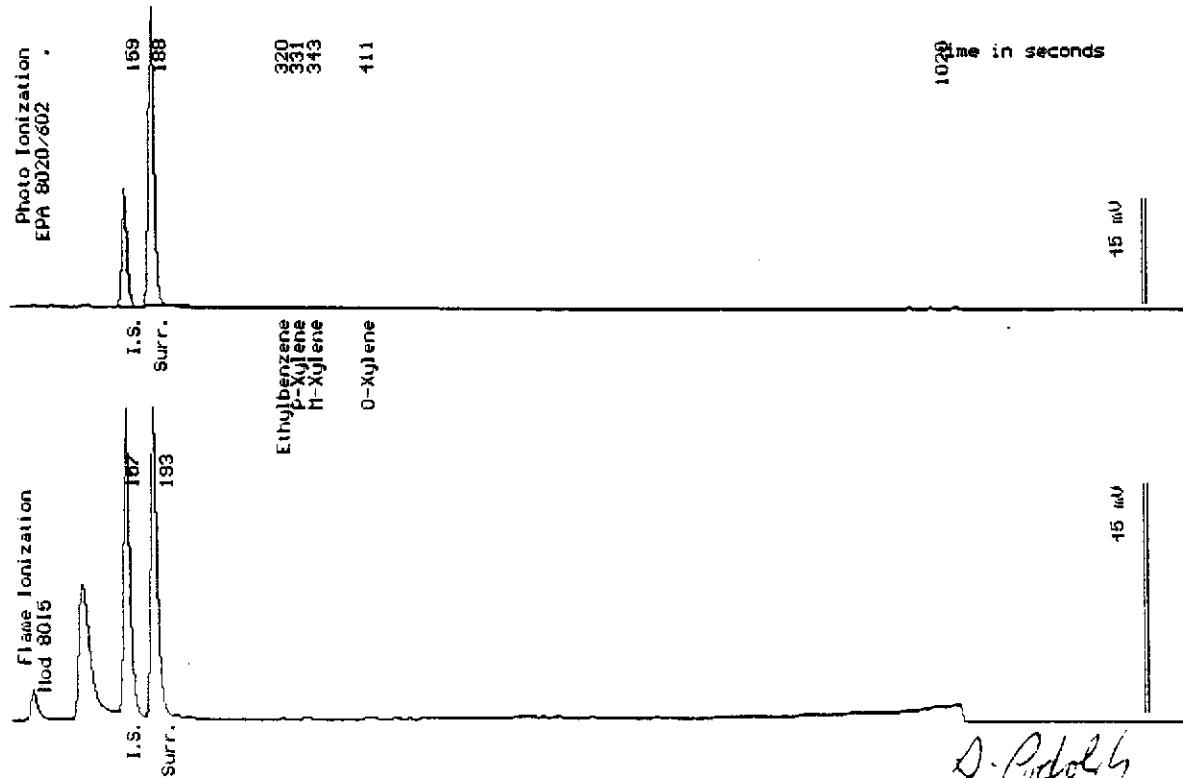
Sampled : 08/10/95

Dilution : 1:1

QC Batch : 2126B

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		96 %



Date Analyzed: 08-15-95  
 Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
 Senior Chemist



ANALYTICAL LABORATORY

1910 S STREET SACRAMENTO, CALIFORNIA 95814 • 916-447-2946 • FAX 916-447-8321

August 21, 1995

Western Environmental Science & Technology  
1046 Olive Drive, Suite 3  
Davis, CA 95616  
Attn: L. Biddle

P.O.#: 12677  
Project#: D093-0936  
Project Name: Beacon 721

Anlab I.D. AE15884

Client Code: 315

SAMPLE DESCRIPTION: EFFLUENT

Matrix: W

Sample collection date: 08/10/95

Time: 08:15

Lab submittal date: 08/10/95

Time: 12:27

Turn-Around-Time: TYPE 10

Sample Disposal: LAB

TEST PARAMETER	UNITS	TEST RESULT	DETECTION LIMIT
COD by EPA 410.4	mg/l	ND	3
Tot. Suspended Solids, EPA 160.2	mg/l	ND	3

ND = Not Detected

Date Analyzed: EPA 410.4 08/11/95  
EPA 160.2 08/16/95

Report Approved By: Patty Anchell  
ELAP ID #: 1468

:rdm

## **ANLAB QA/QC REPORT**

AE15884

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

**LCS = LAB CONTROL SAMPLE**

% DUP RPD: X=sample or matrix spike result Y=DUPLICATE OR MATRIX SPIKE DUP RESULT ((ABS(X-Y))/((X+Y)/2)\*100)



**Ultramar Inc.**  
**CHAIN OF CUSTODY REPORT**

X  
**BEACON**

Beacon Station No. 721	Sampler (Print Name) Martin W. Morgan	Sampler (Signature) M.W. Morgan	ANALYSES						Date 8/10/95	Form No. 1 of 1
			BTEX	TPH (gasoline)	TPH (diesel)	COD	TSS	Oil		
Project No. D093-936	Affiliation Delta Environ. Cons.								No. of Containers 4	REMARKS West Labs 916 753 9500
Project Location San Lorenzo, CA										
Sample No./Identification effluent	Date 8/10/95	Time 0815	Lab No.	X X	X X					
MID	8/10/95	0818		X X					2	
influent	8/10/95	0820		X X					2	
Relinquished by: (Signature/Affiliation) M.W. Morgan / Delta	Date 8/10/95	Time 1225	Received by: (Signature/Affiliation)						Date 8/10/95	Time 1225
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)						Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)						Date	Time
Report To: Todd Galati			Bill to: ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: Terry Fox						8/10/95	1225
Phone 916 638 2085 Fax 8385										

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YELLOW: Laboratory Copy

PINK: Originator Copy

32-6003 1/90

September 21, 1995  
Sample Log 12918

Todd Galati  
Delta Environmental Consultants, Inc.  
3164 Gold Camp Drive, Suite 200  
Rancho Cordova, CA 95670

OCT 12

Subject: Analytical Results for 2 Air Samples and 3 Water Samples  
Identified as: Beacon 721 (Proj. # D093-936)  
Received: 09/14/95

Dear Mr. Galati:

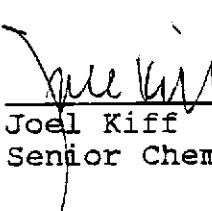
Analysis of the sample(s) referenced above has been completed. This report is written to confirm results communicated on September 21, 1995 and describes procedures used to analyze the samples.

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

"BTEX" (EPA Method 8020/Purge-and-Trap)  
"BTEX" (EPA Method 602/Purge-and-Trap)  
"TPH as Gasoline" (Modified EPA Method 8015/Purge-and-Trap)  
"Total Suspended Solids" (EPA Method 160.2)

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

Sample Log 12918

12918-03

## Sample: Influent

From : Beacon 721 (Proj. # D093-936)

Sampled : 09/14/95

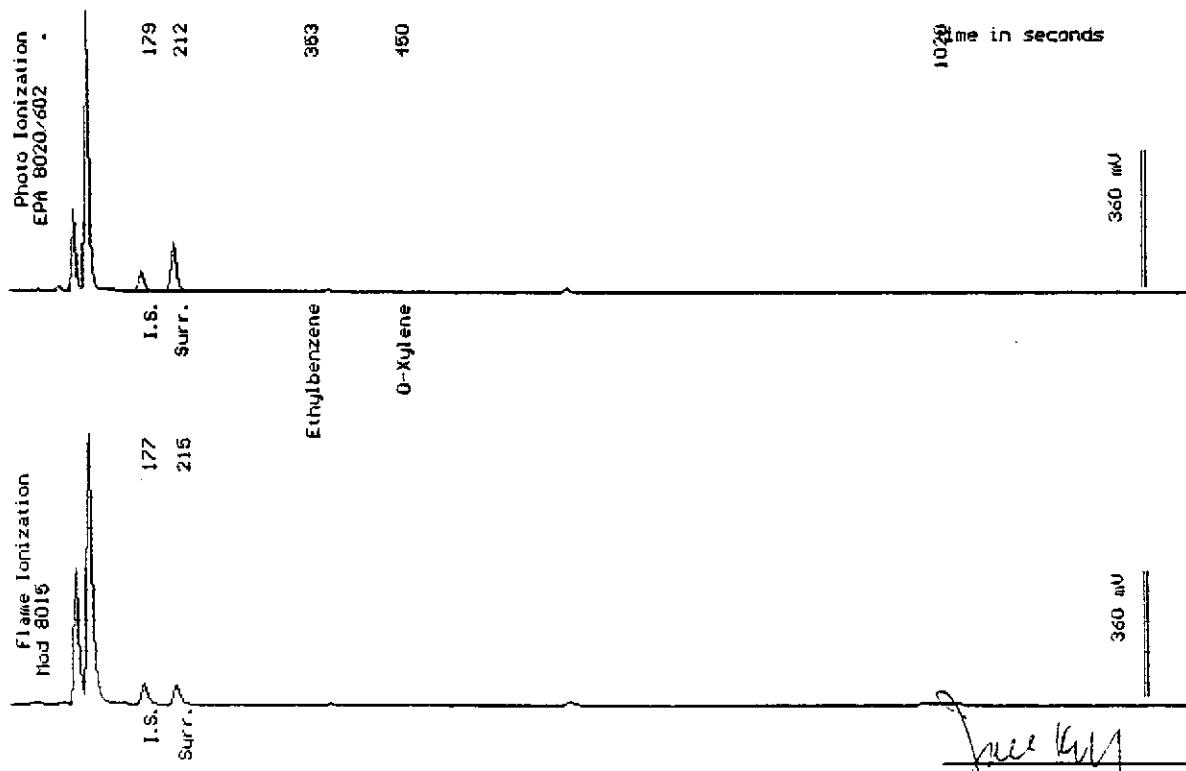
Dilution : 1:1

QC Batch : 2128U

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	490 *
Surrogate Recovery		100 %

\* Product is not typical gasoline.



Date Analyzed: 09-20-95  
 Column : 0.53mm ID X 30m DBMAX (J&W Scientific)

Joel Kiff  
Senior Chemist

**WEST LABORATORY**

Sample Log 12918

12918-02

Sample: Mid

From : Beacon 721 (Proj. # D093-936)

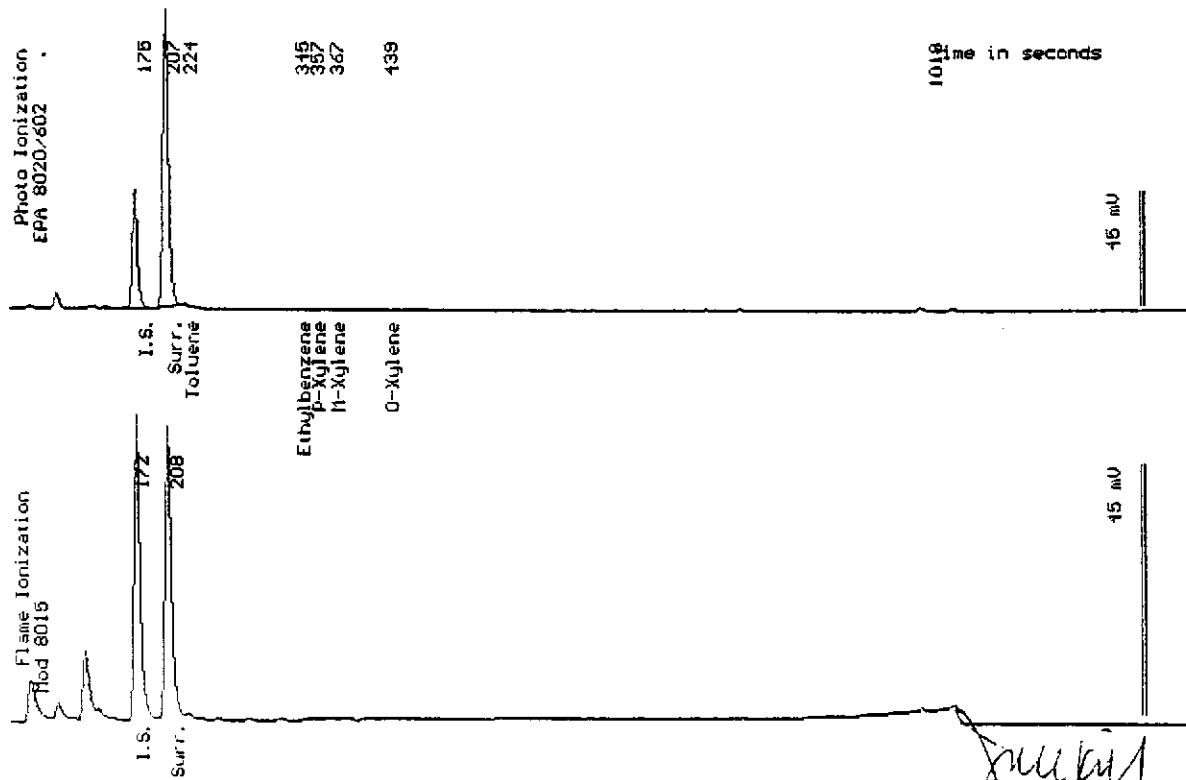
Sampled : 09/14/95

Dilution : 1:1

QC Batch : 2128Q

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	( .50 )	<.50
Toluene	( .50 )	<.50
Ethylbenzene	( .50 )	<.50
Total Xylenes	( .50 )	<.50
TPH as Gasoline	( 50 )	<50
Surrogate Recovery		104 %



Date Analyzed: 09-19-95  
Column : 0.53mm ID X 30m DBMAX (J&W Scientific)

Joel Kiff  
Senior Chemist

Sample Log 12918

12918-01

## Sample: Effluent

From : Beacon 721 (Proj. # D093-936)

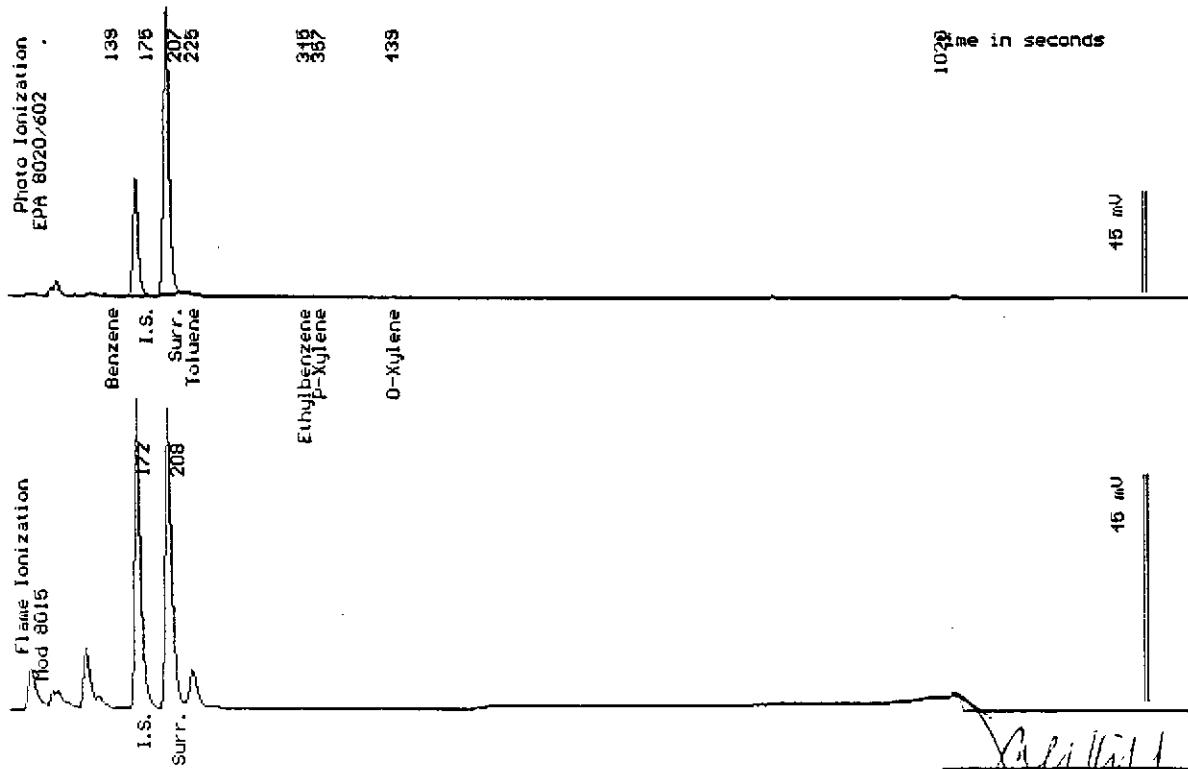
Sampled : 09/14/95

Dilution : 1:1

QC Batch : 2128Q

Matrix : Water

Parameter	(MRL) $\mu\text{g/L}$	Measured Value $\mu\text{g/L}$
Benzene	(.50)	<.50
Toluene	(.50)	<.50
Ethylbenzene	(.50)	<.50
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		104 %



Date Analyzed: 09-19-95  
 Column : 0.53mm ID X 30m DBMAX (J&W Scientific)

Joel Kiff  
 Senior Chemist

Sample Log 12918

12918-04

## Sample: Effluent Air

From : Beacon 721 (Proj. # D093-936)

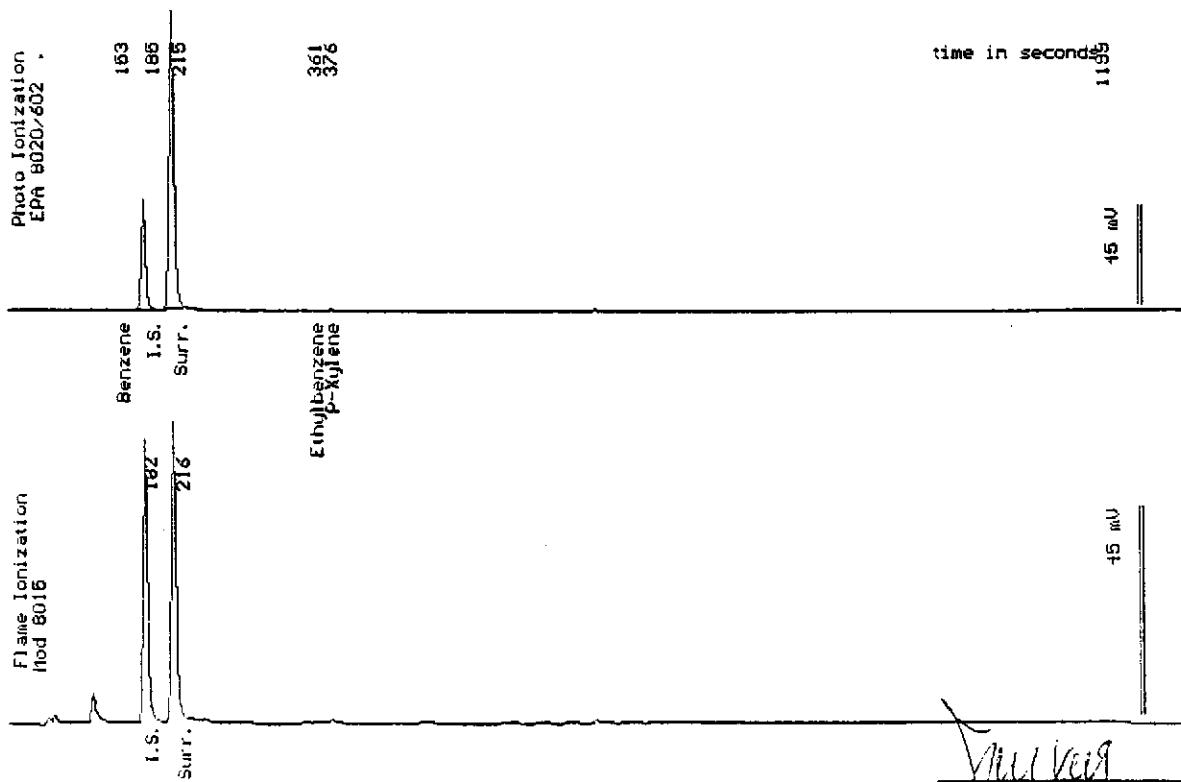
Sampled : 09/14/95

Dilution : 1:1

QC Batch : 4131G

Matrix : Air

Parameter	(MRL) Molar ppm	Measured Value Molar ppm
Benzene	(.050)	<.050
Toluene	(.050)	<.050
Ethylbenzene	(.050)	<.050
Total Xylenes	(.050)	<.050
TPH as Gasoline	(5.0)	<5.0
Surrogate Recovery		102 %



Date Analyzed: 09-15-95  
 Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Joel Kiff  
 Senior Chemist

*[Signature]*

Sample Log 12918

12918-05

## Sample: Influent Air

From : Beacon 721 (Proj. # D093-936)

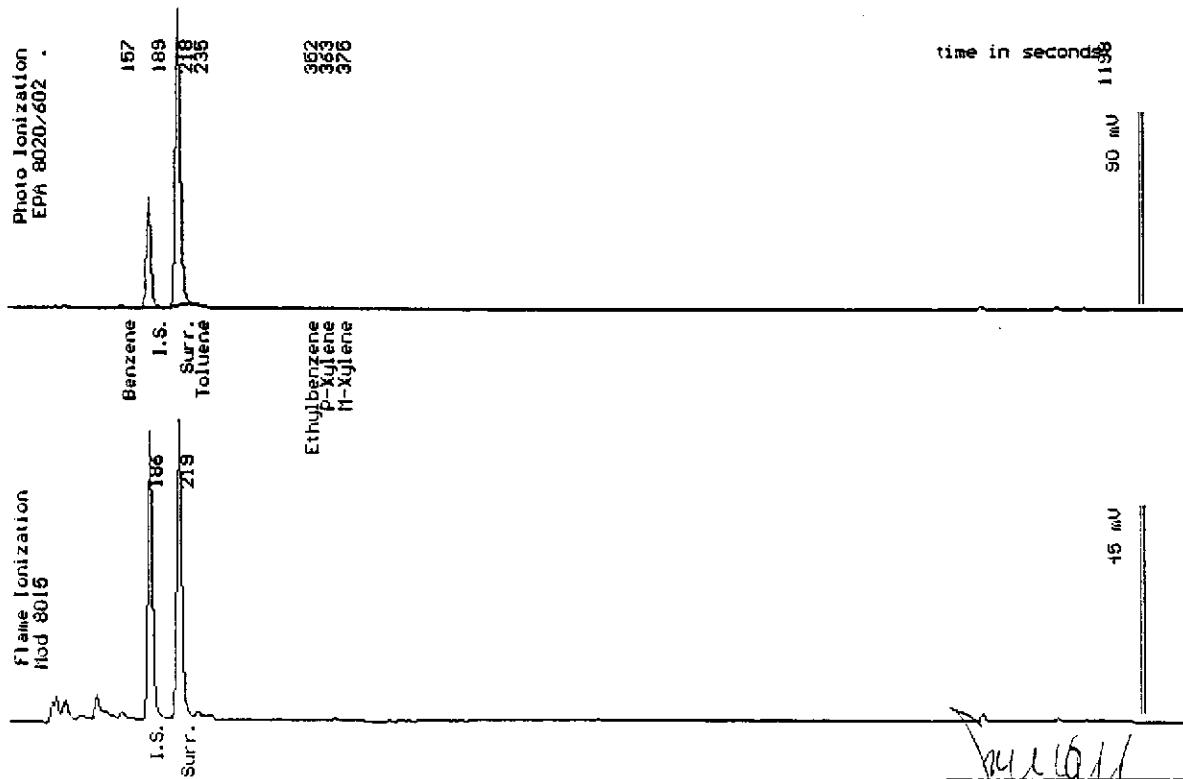
Sampled : 09/14/95

Dilution : 1:1

QC Batch : 4131F

Matrix : Air

Parameter	(MRL) Molar ppm	Measured Value Molar ppm
Benzene	(.050)	<.050
Toluene	(.050)	<.050
Ethylbenzene	(.050)	<.050
Total Xylenes	(.050)	<.050
TPH as Gasoline	(5.0)	<5.0
Surrogate Recovery		97 %



Date Analyzed: 09-14-95  
Column : 0.53mm ID X 30m DBMAX (Jew Scientific)

Joel Kiff  
Senior Chemist

*[Signature]*

September 21, 1995  
Sample Log 12918

From : Beacon 721 (Project # D093-936)  
Date Sampled : 09/14/95  
Matrix : Water  
Duplicate Sample : 12918-01

Date Received : 09/14/95  
Units : mg/L

**Total Suspended Solids EPA Method 160.2**

<u>West ID</u>	<u>Sample ID</u>	<u>Result</u>	<u>MRL</u>	<u>Blank</u>	<u>% RPD</u>	<u>Date Analyzed</u>
12918-01	Effluent	<3.0	3.0	<3.0	0	09/20/95

MRL = Method Reporting Limit

RPD = Relative Percent Difference between a sample and its duplicate.

The RPD Limits are  $\pm$  20 %.

Michelle L. Anderson  
Inorganics Supervisor



ANALYTICAL LABORATORY

1910 S STREET SACRAMENTO, CALIFORNIA 95814 • 916-447-2946 • FAX 916-447-8321

September 28, 1995

Western Environmental Science  
  & Technology  
1046 Olive Drive, Suite 3  
Davis, CA 95616

P.O. #: 12918  
PROJECT #: D093-936  
PROJECT NAME: Beacon 721

Anlab I.D. AE19277

SAMPLE DESCRIPTION: EFFLUENT  
Sample collection date: 09/14/95  
Lab submittal date: 09/14/95  
Turn-Around-Time: TYPE 10

Client Code: 315  
Matrix: WW  
Time: 11:26  
Time: 13:15  
Sample Disposal: LAB

TEST PARAMETER	UNITS	TEST RESULT	DETECTION LIMIT
CO <sub>2</sub> by EPA 410.4	mg/l	ND	20

ND = Not Detected

Date Analyzed: 09/19/95

Report Approved By: Patty Buckwal  
ELAP ID #: 1468

:k1h

## **ANLAB QA/QC REPORT**

AE19277

This report is applicable only to the sample received by the laboratory. The liability of the laboratory is limited to the amount paid for this report. This report is for the exclusive use of the client to whom it is addressed and upon the condition that the client assumes all liability for the further distribution of the report or its contents.

LCS = LAB CONTROL SAMPLE  
% Dup RPD; X=SAMPLE OR MATRIX SPIKE RESULT Y=DUPLICATE OR MATRIX SPIKE DUP RESULT  $((\text{ABS}(X-Y))/((X+Y)/2)) * 100$



**Ultramar Inc.**  
**CHAIN OF CUSTODY REPORT**

**BEACON**

Beacon Station No. 721	Sampler (Print Name) Martin W. Morgan	ANALYSES						Date 9/14/95	Form No. of 1	
Project No. D093-936	Sampler (Signature) M.W. Morgan	BTEX	TPH (gasoline)	TPH (diesel)	COD	TN	NOX	No. of Containers	WEST LABS 916 753 9500	
Project Location San Lorenzo, CA	Affiliation Delta Env. Cons.							STANDARD TAT		
Sample No./Identification effluent	Date 9/14/95	Time 1126	Lab No.	XX	XX			4	REMARKS	
MID	9/14/95	1130		XX				2		
influent	9/14/95	1132		XX				2		
effluent Air	9/14/95	1113		XX				1		
influent Air	9/14/95	1114		XX				1		
Relinquished by: (Signature/Affiliation) M.W. Morgan / Delta	Date 9/14/95	Time 1315	Received by: (Signature/Affiliation)					Date	Time	
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)					Date	Time	
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)					Date 9/14/95	Time 1315	
Report To: TODD GALATI (DEUTN)				Bill to: ULTRAMAR INC. 525 West Third Street Hanford, CA 93230 Attention: Terry Fox						
Phone 916 638 2085 FAX 8385										

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32-8003 1/90

# 12918