



**Brunsing Associates, Inc.**

ENVIRONMENTAL  
PROTECTION

99 DEC 16 PM 2:11

December 13, 1999

Project No. 29.7

Mr. Larry Seto  
Senior Hazardous Materials Specialist  
Environmental Health Services  
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**Subject: Semi-Annual Groundwater Monitoring Report: Third Quarter- 1999  
Pacific Supply Company, 1735 24<sup>th</sup> Street, Oakland, California**

Dear Mr. Seto:

This report has been prepared to document groundwater monitoring performed by BACE Environmental, a division of Brunsing Associates, Inc. (BAI) at the Pacific Supply Company property at 1735 24<sup>th</sup> Street, Oakland, California. Groundwater monitoring was conducted on September 27, 1999. A brief description of the site history is included in Appendix A.

### Scope of Work

The scope of work performed during this reporting period included testing for the existence of free product, calculating groundwater elevations and groundwater flow direction, and collecting a groundwater sample from onsite monitoring well MW-2 (Plate 1). The current groundwater schedule includes: 1) annual sampling of six wells (MW-1 through MW-5, and MW-7) in the first quarter, 2) semi-annual sampling of well MW-2 (first and third quarters), 3) semi-annual water-level measurements (first and third quarters), 4) semi-annual reporting, and 5) deletion of well MW-6 from the monitoring program.

### Groundwater Elevations

The depth to groundwater in wells MW-1 through MW-5, and MW-7 were measured on September 27, 1999. The measured groundwater depths and calculated elevations relative to mean sea level (MSL) are listed in Table 1. The potentiometric surface contours and groundwater elevations are presented on

Plate 1. The groundwater flow direction near the former underground storage tank (UST) location is primarily to the north, with a gradient of approximately 0.004 foot per foot, based on the calculated groundwater elevations for wells MW-1 through MW-5. Monitoring well MW-7 continues to indicate an anomalously low groundwater elevation by a magnitude of several feet.

### Groundwater Sampling

Well MW-2 was sampled on September 27, 1999 using the methods described in Appendix B. Free product was not observed in this well or others. The groundwater sample was transported to BACE Analytical and Field Services (BAFS) for the following analyses:

- Total petroleum hydrocarbons (TPH) as gasoline by EPA Test Method 8015;
- Benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Test Method 8020.

### Groundwater Analytical Results

TPH as gasoline was reported in the groundwater sample collected from well MW-2 at a concentration of 1.5 milligrams per liter (mg/l), which is the lowest reported TPH as gasoline concentration in this well since monitoring began. BTEX constituents were also reported in the groundwater sample collected from well MW-2 at concentrations of 20, 6.8, 2.6, and 11 micrograms per liter ( $\mu\text{g/l}$ ), respectively. Groundwater samples collected from well MW-2 indicate that the TPH as gasoline concentrations in that well have been relatively stable, ranging from 1.5 to 3.4 mg/l, since July 1993.

Analytical laboratory results for the September 27, 1999 groundwater monitoring event and previous sampling events are summarized in Table 1, and the TPH as gasoline concentration reported at well MW-2 for this sampling event is presented on Plate 2. The laboratory report and Chain-of-Custody form are included as Appendix C.

### Recommendations

Based on the county's directive stated in the August 13, 1998 letter, BAI is proposing to prepare a workplan for the installation of two borings to collect grab groundwater



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samples in the verified downgradient direction. The workplan will be submitted to Larry Seto for approval, prior to starting work.

If you have any questions, please contact Tom Allan at (415) 391-6840, or Diana Dickerson at (707) 838-3027.

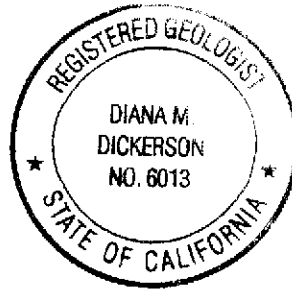
Respectfully Submitted,

*Tom Allan*

Tom Allan  
Staff Environmental Engineer

*Diana M. Dickerson*

Diana M. Dickerson R.G., R.E.A  
Senior Geologist



cc: Ms. Normita Callison, Pacific Coast Building Products, 4290 Roseville Road,  
North Highlands, California 95660

List of Attachments

- Table 1 - Analytical Data Summary
- Plate 1 - Groundwater Elevations, September 27, 1999
- Plate 2 - Total Petroleum Hydrocarbons as Gasoline, September 27, 1999
- Appendix A - Site History and Background
- Appendix B - Monitoring Well Sampling Protocol
- Appendix C - Analytical Laboratory Report



TABLE 1. ANALYTICAL DATA SUMMARY  
 Pacific Supply Company, 1735 24th Street, Oakland, California

Well Name	Sampling Date	Depth to Groundwater (feet)	Groundwater Elevation (feet, MSL)	TPH as gasoline mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	Lead mg/L
MW-1	10/14/88	7.99	0.88	1.1	1.1	ND	-	ND	-
MW-1	12/29/89	7.74	1.13	ND	ND	ND	ND	ND	ND (1)
MW-1	5/28/92	7.81	1.06	ND	ND	ND	ND	ND	0.003(2)
MW-1	9/3/92	7.90	0.97	ND	ND	ND	ND	ND	0.12 (2)
MW-1	11/24/92	7.90	0.97	ND	ND	ND	ND	ND	0.017 (2)
MW-1	3/9/93	7.38	1.49	ND	ND	ND	ND	ND	ND (1)
MW-1	7/21/93	7.68	1.19	ND	ND	ND	ND	ND	ND (1)
MW-1	11/3/93	7.83	1.04	ND	ND	ND	ND	ND	ND (1)
MW-1	2/1/94	7.30	1.57	ND	ND	ND	ND	ND	ND (1)
MW-1	6/2/94	7.43	1.44	ND	ND	ND	ND	ND	ND (1)
MW-1	9/1/94	7.70	1.17	ND	ND	ND	ND	ND	ND (1)
MW-1	12/13/94	6.90	1.97	ND	ND	ND	ND	ND	-
MW-1	3/7/95	7.30	1.57	0.06	3.8	ND	ND	ND	-
MW-1	6/9/95	7.87	1.00	0.09	12	0.8	0.5	1.3	-
MW-1	9/21/95	7.67	1.20	ND	4.1	ND	ND	ND	-
MW-1	12/18/95	7.15	1.72	ND	ND	ND	ND	ND	-
MW-1	2/29/96	6.74	2.13	0.09	1.4	0.5	ND	0.8	-
MW-1	7/15/96	7.76	1.11	-	-	-	-	-	-
MW-1	1/7/97	6.80	2.07	0.06	0.6	<0.5	<0.5	<0.5	-
MW-1	7/12/97	7.67	1.20	-	-	-	-	-	-
MW-1	1/26/98	6.93	1.94	<0.05	<0.5	<0.5	<0.5	1.1	-
MW-1	7/3/98	7.51	1.36	-	-	-	-	-	-
MW-1	1/13/99	7.63	1.24	<0.05	<0.5	<0.5	<0.5	<0.5	-
<b>MW-1</b>	<b>9/27/99</b>	<b>7.77</b>	<b>1.10</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>



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Well Name	Sampling Date	Depth to Groundwater (feet)	Groundwater Elevation (feet, MSL)	TPH as gasoline mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	Lead mg/L
MW-2	10/14/88	7.29	0.85	11	23	20	-	16	-
MW-2	12/29/89	6.87	1.27	4	200	6.7	ND	ND	0.22 (1)
MW-2	5/28/92	6.92	1.22	8.9	550	48	ND	13	ND (2)
MW-2	9/3/92	7.26	0.88	2.1	760	6.2	1.8	5.1	0.006 (2)
MW-2	11/24/92	7.28	0.86	4.2	370	15	3.4	9.5	ND (2)
MW-2	3/9/93	6.73	1.41	4.3	280	14	3.7	7.1	ND (1)
MW-2	7/21/93	7.02	1.12	3.4	250	9.6	2.5	11	ND(1)
MW-2	11/4/93	7.22	0.92	2.5	230	7.8	2.1	9.9	ND(1)
MW-2	2/1/94	6.93	1.21	3.4	240	17	ND	15	ND(1)
MW-2	6/2/94	6.86	1.28	3.0	150	9.8	3.0	10	ND(1)
MW-2	9/1/94	7.10	1.04	2.1	120	9.8	2.0	9.6	ND(1)
MW-2	12/13/94	6.58	1.56	2.0	200	10	2.7	11	-
MW-2	3/7/95	6.69	1.45	3.0	500	15	5.8	16	-
MW-2	6/9/95	7.00	1.14	2.1	300	14	5.8	13	-
MW-2	9/21/95	6.91	1.23	1.6	120	9.6	ND	15	-
MW-2	12/18/95	6.73	1.41	2.8	120	16	5.2	19	-
MW-2	2/29/96	6.36	1.78	1.7	170	15	2.9	17	-
MW-2	7/15/96	7.11	1.03	2.8	160	22	3.5	17	-
MW-2	1/7/97	6.40	1.74	3.0	350	25	8.1	24	-
MW-2	7/12/97	6.98	1.16	2.1	55	11	<2.5	18	-
MW-2	1/26/98	6.45	1.69	1.8	310	29	5.0	15	-
MW-2	7/3/98	6.91	1.23	1.9	85	9.3	1.8	17	-
MW-2	1/13/99	7.07	1.07	2.1	48	33	2.0	16	-
<b>MW-2</b>	<b>9/27/99</b>	<b>7.22</b>	<b>0.92</b>	<b>1.5</b>	<b>20</b>	<b>6.8</b>	<b>2.6</b>	<b>11</b>	<b>-</b>



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MW-3	10/14/88	8.25	0.88	3.4	ND	ND	-	2.8	-
MW-3	12/29/89	7.79	1.34	ND	ND	ND	ND	ND	0.205 (1)
MW-3	5/28/92	7.83	1.30	ND	0.8	0.5	ND	ND	0.016 (2)
MW-3	9/3/92	8.22	0.91	ND	ND	ND	ND	ND	0.033 (2)
MW-3	11/24/92	8.29	0.84	ND	ND	ND	ND	ND	0.011 (2)
MW-3	3/9/93	7.30	1.83	0.1	1.8	ND	ND	ND	ND(1)
MW-3	7/21/93	7.87	1.26	ND	ND	ND	ND	ND	ND(1)
MW-3	11/4/93	8.23	0.90	0.07	0.6	0.5	ND	ND	ND(1)
MW-3	2/1/94	7.56	1.57	ND	ND	ND	ND	ND	ND(1)
MW-3	6/2/94	7.46	1.67	0.06	ND	ND	ND	ND	ND(1)
MW-3	9/1/94	7.83	1.30	0.07	1.7	0.9	ND	ND	ND(1)
MW-3	12/13/94	7.07	2.06	0.06	1.4	ND	ND	ND	-
MW-3	3/8/95	7.27	1.86	0.06	1.5	ND	ND	ND	-
MW-3	6/9/95	7.79	1.34	0.10	5.7	ND	ND	ND	-
MW-3	9/21/95	7.87	1.26	ND	1.5	ND	ND	ND	-
MW-3	12/18/95	7.30	1.83	ND	1.3	ND	ND	ND	-
MW-3	2/29/96	6.84	2.29	ND	2.1	0.6	ND	0.7	-
MW-3	7/15/96	7.79	1.34	-	-	-	-	-	-
MW-3	1/7/97	6.62	2.51	0.05	1.0	<0.5	<0.5	<0.5	-
MW-3	7/12/97	7.83	1.30	-	-	-	-	-	-
MW-3	1/26/98	6.60	2.53	<0.05	0.8	<0.5	<0.5	<0.5	-
MW-3	7/3/98	7.48	1.65	-	-	-	-	-	-
MW-3	1/13/99	7.63	1.50	<0.05	<0.5	<0.5	<0.5	<0.5	-
<b>MW-3</b>	<b>9/27/99</b>	<b>7.94</b>	<b>1.19</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>



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MW-4	10/14/88	8.33	0.74	4.6	1.2	ND	-	2.2	-
MW-4	12/29/89	8.08	0.99	0.5	0.7	ND	ND	ND	ND (1)
MW-4	5/28/92	8.19	0.88	0.27	8.8	1	ND	3.2	0.030 (2)
MW-4	9/3/92	8.37	0.70	0.20	4.5	4.4	ND	1.9	0.022 (2)
MW-4	11/24/92	8.28	0.79	0.14	3.2	3.2	ND	1.0	0.005 (2)
MW-4	3/9/93	7.98	1.09	0.47	10	ND	ND	2.5	ND (1)
MW-4	7/21/93	8.17	0.90	0.28	4.4	5.9	ND	ND	ND(1)
MW-4	11/4/93	8.14	0.93	0.08	1.3	1.6	ND	ND	ND(1)
MW-4	2/1/94	7.79	1.28	0.08	ND	ND	ND	ND	ND(1)
MW-4	6/2/94	7.53	1.54	0.30	3.1	2.9	ND	0.8	ND(1)
MW-4	9/1/94	7.69	1.38	0.12	1.6	ND	ND	ND	ND(1)
MW-4	12/13/94	6.70	2.37	ND	ND	ND	ND	ND	-
MW-4	3/8/95	6.83	2.24	0.09	ND	ND	ND	ND	-
MW-4	6/9/95	7.66	1.41	0.19	ND	ND	ND	ND	-
MW-4	9/21/95	7.93	1.14	0.09	ND	ND	ND	ND	-
MW-4	12/18/95	6.98	2.09	-	-	-	-	-	-
MW-4	2/29/96	6.54	2.53	0.14	1.6	1.0	ND	0.6	-
MW-4	7/15/96	7.74	1.33	-	-	-	-	-	-
MW-4	1/7/97	6.46	2.61	0.09	1.0	0.5	<0.5	<0.5	-
MW-4	7/12/97	7.82	1.25	-	-	-	-	-	-
MW-4	1/26/98	6.67	2.40	0.09	1.1	0.8	<0.5	<0.5	-
MW-4	7/3/98	7.45	1.62	-	-	-	-	-	-
MW-4	1/13/99	7.51	1.56	0.12	1.1	0.62	<0.5	0.57	-
MW-4	9/27/99	7.88	1.19	-	-	-	-	-	-



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MW-5	10/14/88	8.04	0.89	3.2	ND	ND	-	ND	-
MW-5	12/29/89	7.40	1.53	ND	ND	ND	ND	ND	ND (1)
MW-5	5/28/92	7.53	1.40	ND	ND	ND	ND	ND	0.008 (2)
MW-5	9/3/92	8.02	0.91	ND	ND	ND	ND	ND	0.034 (2)
MW-5	11/24/92	7.75	1.18	ND	ND	ND	ND	ND	0.011 (2)
MW-5	3/9/93	6.91	2.02	ND	ND	ND	ND	ND	ND (1)
MW-5	7/21/93	7.57	1.36	ND	ND	ND	ND	ND	ND(1)
MW-5	11/4/93	7.77	1.16	ND	ND	ND	ND	ND	ND(1)
MW-5	2/1/94	7.05	1.88	ND	ND	ND	ND	ND	ND(1)
MW-5	6/2/94	7.18	1.75	ND	ND	ND	ND	ND	ND(1)
MW-5	9/1/94	7.53	1.40	ND	ND	ND	ND	ND	-
MW-5	3/8/95	6.67	2.26	ND	ND	ND	ND	ND	-
MW-5	6/9/95	7.33	1.60	ND	ND	ND	ND	ND	-
MW-5	9/21/95	7.67	1.26	ND	ND	ND	ND	ND	-
MW-5	12/18/95	6.62	2.31	-	-	-	-	-	-
MW-5	2/29/96	6.16	2.77	ND	ND	ND	ND	ND	-
MW-5	7/15/96	7.47	1.46	-	-	-	-	-	-
MW-5	1/7/97	6.11	2.82	<0.05	<0.5	<0.5	<0.5	<0.5	-
MW-5	7/12/97	7.61	1.32	-	-	-	-	-	-
MW-5	1/26/98	6.17	2.76	<0.05	<0.5	<0.5	<0.5	<0.5	-
MW-5	7/3/98	7.23	1.70	-	-	-	-	-	-
MW-5	1/13/99	7.27	1.66	<0.05	<0.5	<0.5	<0.5	<0.5	-
<b>MW-5</b>	<b>9/27/99</b>	<b>7.76</b>	<b>1.17</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>





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 Pacific Supply Company, 1735 24th Street, Oakland, California

Well Name	Sampling Date	Depth to Groundwater (feet)	Groundwater Elevation (feet, MSL)	TPH as gasoline mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	Lead mg/L
MW-6	12/29/89	5.02	1.11	1.1	5.4	4.5	ND	ND	ND (1)
MW-6	3/9/93	5.10	1.03	2.3	2.3	2.8	ND	3.1	ND (1)
MW-6	7/21/93	5.23	0.90	0.59	ND	7.6	ND	ND	ND(1)
MW-6	11/4/93	5.25	0.88	1.5	ND	1.2	ND	0.7	ND(1)
MW-6	2/1/94	5.05	1.08	1.9	2.5	3.9	1.6	1.1	ND(1)
MW-6	6/2/94	4.49	1.64	1.3	ND	1	ND	ND	ND(1)
MW-6	9/1/94	4.53	1.60	2.2	ND	1.7	ND	ND	ND(1)
MW-6	12/13/94	4.27	1.86	0.66 (3)	ND	ND	ND	ND	-
MW-6	3/8/95	3.37	2.76	1.0 (3)	ND	ND	ND	ND	-
MW-6	6/9/95	4.40	1.73	1.5	ND	3.3	ND	ND	-
MW-6	9/21/95	4.69	1.44	0.28	ND	ND	ND	ND	-
MW-6	12/18/95	4.42	1.71	-	-	-	-	-	-

Note: Based on the February 6, 1996 letter from Jennifer Eberle, monitoring of well MW-6 is no longer required.



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Pacific Supply Company, 1735 24th Street, Oakland, California

Well Name	Sampling Date	Depth to Groundwater (feet)	Groundwater Elevation (feet, MSL)	TPH as gasoline mg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes µg/L	Lead mg/L
MW-7	12/29/89	8.35	-3.32	ND	ND	ND	ND	ND	0.235 (1)
MW-7	3/9/93	13.60	-8.57	ND	ND	ND	ND	ND	ND (1)
MW-7	7/21/93	12.59	-7.56	ND	ND	ND	ND	ND	ND(1)
MW-7	11/4/93	9.84	-4.81	ND	ND	ND	ND	ND	ND(1)
MW-7	2/1/94	10.38	-5.35	ND	ND	ND	ND	ND	ND(1)
MW-7	6/2/94	10.10	-5.07	ND	ND	ND	ND	ND	ND(1)
MW-7	9/1/94	9.63	-4.60	ND	ND	ND	ND	ND	ND(1)
MW-7	12/13/94	11.27	-6.24	ND	ND	ND	ND	ND	-
MW-7	3/7/95	9.68	-4.65	ND	ND	ND	ND	ND	-
MW-7	6/9/95	9.37	-4.34	ND	ND	ND	ND	ND	-
MW-7	9/21/95	9.43	-4.40	ND	ND	ND	ND	ND	-
MW-7	12/18/95	13.28	-8.25	-	-	-	-	-	-
MW-7	2/29/96	11.70	-6.67	ND	ND	ND	ND	ND	-
MW-7	7/15/96	11.12	-6.09	-	-	-	-	-	-
MW-7	1/7/97	14.35	-9.32	<0.05	<0.5	<0.5	<0.5	<0.5	-
MW-7	7/12/97	15.12	-10.09	-	-	-	-	-	-
MW-7	1/26/98	15.28	-10.25	<0.05	<0.5	<0.5	<0.5	<0.5	-
MW-7	7/3/98	14.10	-9.07	-	-	-	-	-	-
MW-7	1/13/99	14.55	-9.52	<0.05	<0.5	<0.5	<0.5	<0.5	-
<b>MW-7</b>	<b>9/27/99</b>	<b>14.03</b>	<b>-9.00</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>

Notes:

(1)=Organic Lead, (2)=Total Lead, and (3)=Chromatographic peak array does not match gasoline standard.

ND = not detected at laboratory reporting limit

µg/L = micrograms per liter

mg/L = milligrams per liter

- = not analyzed

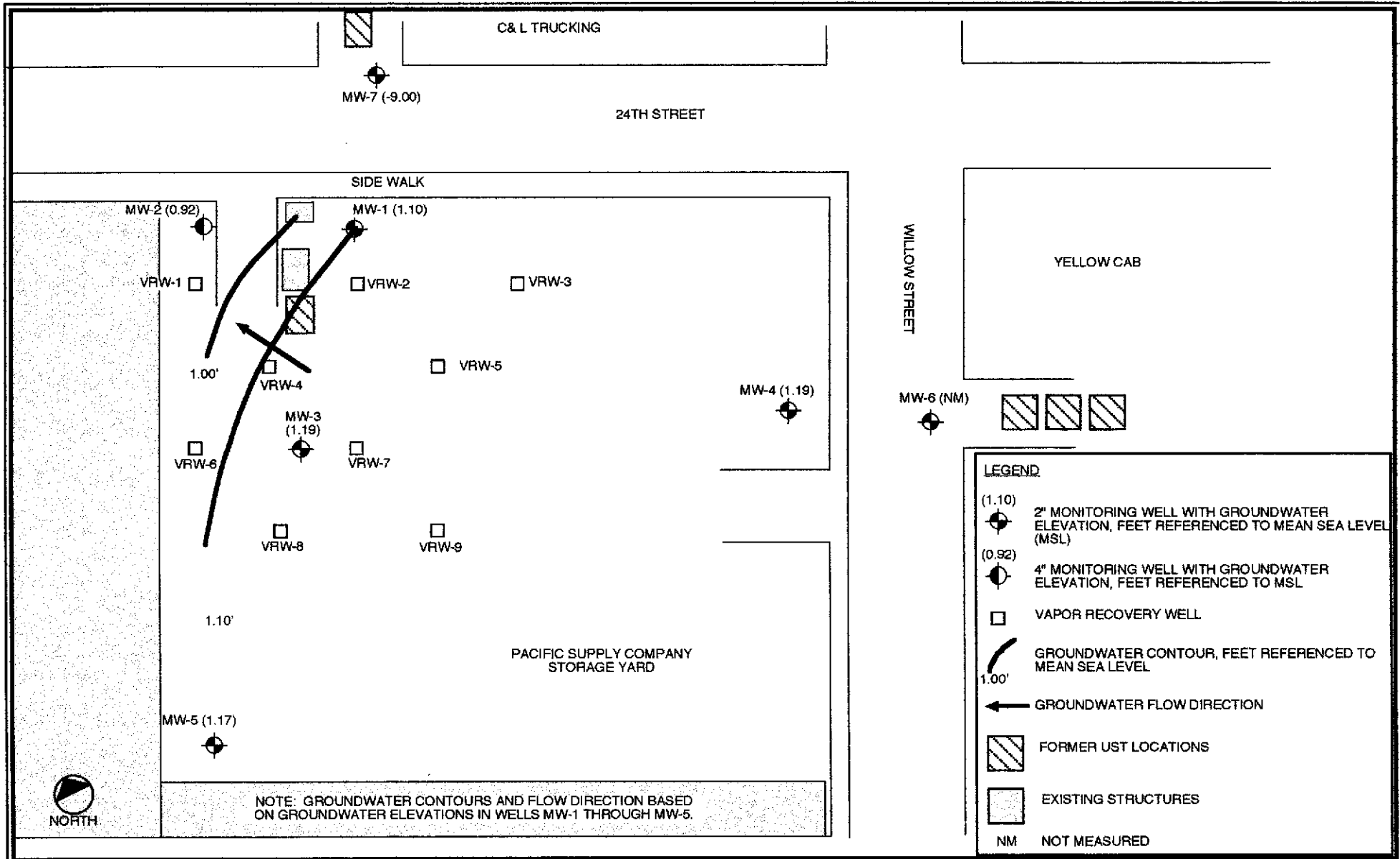
MSL = mean seal level

TPH = total petroleum hydrocarbons.

Groundwater elevations based on the following well casing elevations:

MW-1 (8.87'), MW-2 (8.14'), MW-3 (9.13'), MW-4 (9.07'), MW-5 (8.93'), MW-6 (6.13') and MW-7 (5.03').



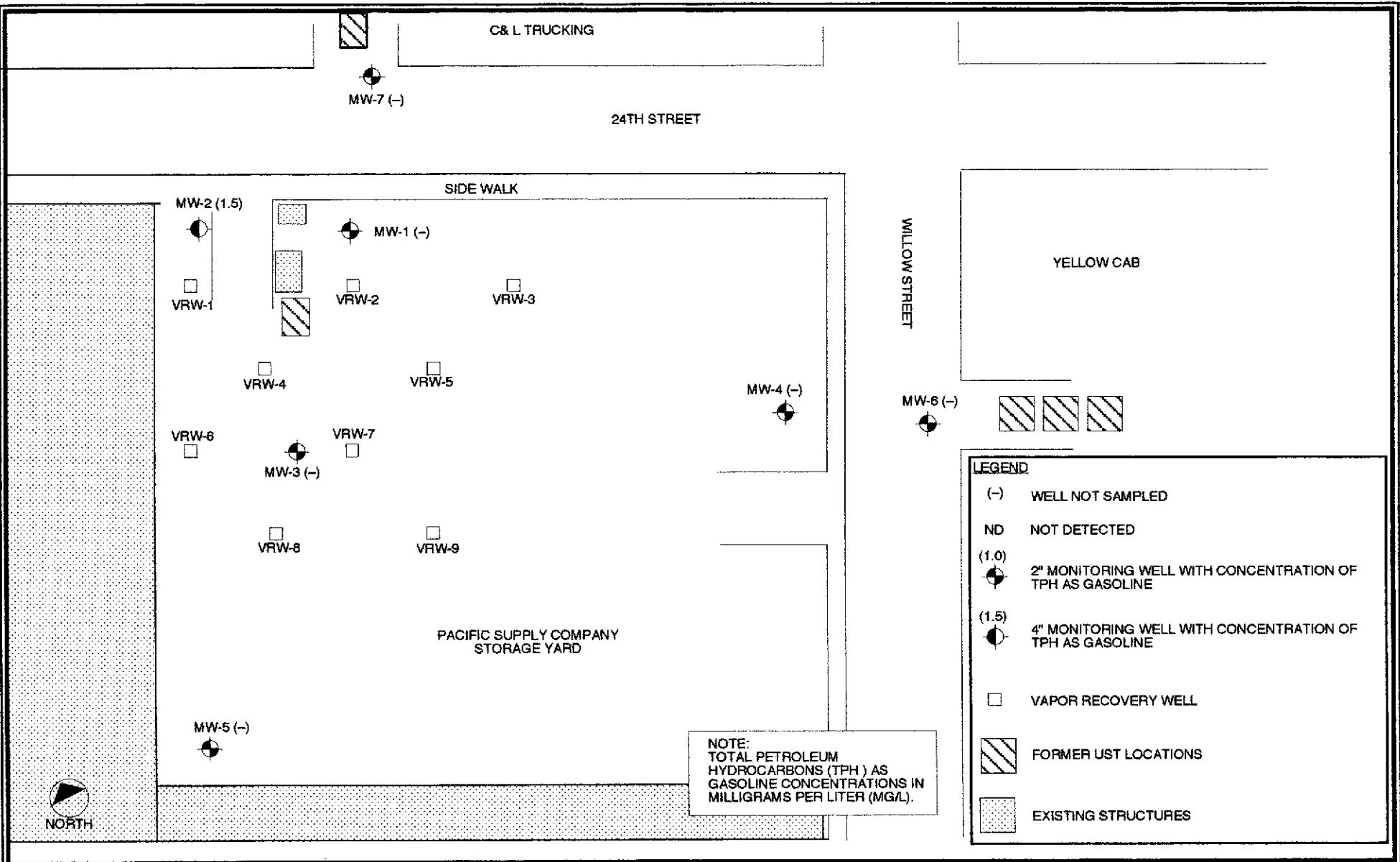


NOTE: GROUNDWATER CONTOURS AND FLOW DIRECTION BASED ON GROUNDWATER ELEVATIONS IN WELLS MW-1 THROUGH MW-5.

PROJECT NUMBER: 29.7		
PACIFIC SUPPLY COMPANY		
OAKLAND, CALIFORNIA		
DRAWING NUMBER: 29.7-01		
DRAWN BY:	TFA	10/19/99
APPROVED BY:	DMD	
SCALE: 1 inch = 50 Feet		

**BACE Environmental**  
*A Division of*  
**Brunsing Associates, Inc.**

**PLATE 1**  
**GROUNDWATER ELEVATIONS**  
 SEPTEMBER 27, 1999  
 PACIFIC SUPPLY COMPANY  
 1735 24TH STREET  
 OAKLAND, CALIFORNIA



NOTE:  
 TOTAL PETROLEUM  
 HYDROCARBONS (TPH) AS  
 GASOLINE CONCENTRATIONS IN  
 MILLIGRAMS PER LITER (MG/L).

**LEGEND**

- (-) WELL NOT SAMPLED
- ND NOT DETECTED
- (1.0) 2" MONITORING WELL WITH CONCENTRATION OF TPH AS GASOLINE
- (1.5) 4" MONITORING WELL WITH CONCENTRATION OF TPH AS GASOLINE
- VAPOR RECOVERY WELL
- FORMER UST LOCATIONS
- EXISTING STRUCTURES

PROJECT NUMBER: 29.7		
PACIFIC SUPPLY COMPANY		
OAKLAND, CALIFORNIA		
DRAWING NUMBER: 29.7-01		
REVISED BY:	TFA	10/19/99
APPROVED BY:	DMD	
SCALE: 1 Inch = 50 Feet		

**BACE Environmental**  
*A Division of*  
**Brunsing Associates, Inc.**

**PLATE 2**  
**TOTAL PETROLEUM HYDROCARBONS**  
**AS GASOLINE**  
 SEPTEMBER 27, 1999  
**PACIFIC SUPPLY COMPANY**  
 1735 24TH STREET  
 OAKLAND, CALIFORNIA

**APPENDIX A**  
**Site History and Background**



## Site History and Background

Monitoring wells MW-1 through MW-5 were constructed in September 1988 as the first phase of a soil and groundwater investigation. Monitoring wells MW-6 and MW-7 were constructed on December 19, 1989 during Phase II of the same investigation. The construction and sampling of these wells are documented in BAI's Report of Findings, dated March 23, 1990.

Vapor recovery wells VRW-1 through VRW-9 were constructed in August 1993 as part of a vapor recovery system. Installation of these wells were documented in a February 7, 1994 report. A vapor extraction system was installed in the Fall of 1993 and began operation on December 26, 1993. This system consisted of an internal combustion engine with a spray aeration tank for treatment of groundwater and activated carbon treatment of groundwater prior to discharge. The internal combustion unit and spray aeration unit was manufactured by Remediation Service International (RSI), under the trade name Spray Aeration Vapor Extraction (SAVE) system.

On June 28, 1996, the treatment system was shut down with the concurrence of Pacific Supply Company. Prior to shut down, the system had destroyed an estimated 6,550 pounds of petroleum hydrocarbons since start of operations on December 26, 1993. After shut down, the water in the water tank was treated and discharged to the sanitary sewer under the existing permit and the inside of the tank was cleaned on July 15, 1996.

The permit with the Bay Area Air Quality Management District (BAAQMD) expired on September 1, 1996, and was not renewed. The water discharge permit was discontinued on July 31, 1996. The total volume of water discharged to the sanitary sewer was 151,089 gallons. In December 1996, the shut down and decommissioning of the system was authorized by Jennifer Eberle of the Alameda County Department of Health Services. Decommissioning of the system hardware is complete.



**APPENDIX B**  
**Monitoring Well Sampling Protocol**



## Monitoring Well Sampling Protocol

Prior to purging of each monitoring well, the groundwater level is measured and a single bailer full of water is retrieved from the well to check for floating product. The monitoring well is then purged until a minimum of three casing volumes of water are removed, water is relatively clear of sediment, and pH, conductivity, and temperature measurements of the water stabilizes. If wells go dry during purging, the wells are allowed to recover to 80 percent of original water level prior to sampling.

A single groundwater sample is collected from each monitoring well following re-equilibration of each well after purging. Individual log sheets are maintained throughout the sampling operations. The following information is recorded:

- Sample number
- Date and time sampled and purged
- Sampling location
- Types of sampling equipment used
- Name of sampler(s)
- Volume of water purged.

The sample is collected in the following manner:

- A hand-operated, factory-sealed, disposable, polyethylene bailer with sampling port is used for collecting all water samples.
- The sample container(s) are obtained directly from the analytical laboratory. Sample bottles, bottle caps, and septa are protected from solvent contact, dust or other contamination between time of receipt by the field sampler and time of actual usage at the sampling site.

The sample container is labeled with a self-adhesive tag. Field personnel label the tag, using waterproof ink, with the following information:

- Project number
- Sample number
- Date and time sample is obtained
- Initials of sample collector(s).

Following collection, the sample is immediately stored on blue ice in an appropriate container. A Chain-of-Custody Record is completed with the following information:

- Date the sample was taken
- Sample number and the number of containers





- Analyses required
- Remarks including preservatives added and any special conditions.

The original copy of the Chain-of-Custody Record accompanies the sample containers to a California-certified laboratory. The duplicate copy is retained by the BAI representative who sampled the well.

Sampling equipment is cleaned both before and after their use at the sampling location. Thermometers, pH electrodes, and conductivity probes are also cleaned.

The following cleaning procedures are used:

- Scrub with a detergent-potable water solution or other solutions deemed appropriate using a hard bristle brush
- Rinse with potable water
- Double-rinse with organic-free or deionized water



**APPENDIX C**  
**Analytical Laboratory Report**

