Chevron

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Marketing Department
Phone 510 842 9500

July 12, 1994

Ms. Jennifer Eberle
Alameda County Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94501

Re: Former Chevron Service Station #9-4816
301 14th Street, Oakland, CA

Dear Ms. Eberle:

Enclosed is the Bi-monthly Progress Report dated June 15, 1994, prepared by our consultant Weiss Associates for the above referenced site. The report presents an evaluation of the soil vapor extraction and treatment system operating at this site during April and May, 1994. The total quantity of hydrocarbons removed to date is approximately 12,591 pounds.

Construction of the remediation system modifications began on June 28 and is expected to be complete by July 8. We expect the system to be operational by the end of July, pending receipt of EBMUD permits.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-8134.

Sincerely,
CHEVRON U.S.A. PRODUCTS COMPANY

Mark A. Miller
Site Assessment and Remediation Engineer

Enclosure

cc: Mr. Kevin Graves, RWQCB - Bay Area
Mr. J.N. Robbins, CHVPK/V1156
Ms. B.C. Owen

Ms. Beth D. Castleberry
Gray, Cary, Ware & Freidenrich
400 Hamilton Avenue
Palo Alto, CA 94301-1825

Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-450-6000

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MAIL

June 15, 1994 94 JUL 15 AM 8:52

Mark Miller
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583-0804

Re: *Bi-monthly Progress Report: April and May 1994*
Former Chevron Service Station 9-4816
301 14th Street
Oakland, California
WA Job #4-582-54

Dear Mr Miller:

Weiss Associates (WA) is pleased to submit this bi-monthly report covering remediation activities occurring between April and May, 1994, for the soil vapor extraction (SVE) and emission treatment system operating at the above referenced site (Figure 1). On September 20, 1993, WA restarted the SVE system after the vapor abatement system was switched from an internal combustion engine to carbon adsorption. On October 7, 1993, we received Permit to Operate (PTO) # 8271 and permission from Bay Area Air Quality Management District (BAAQMD) to monitor the system semi-monthly. A description of the system design, operation, sampling and permit compliance are presented below.

System Operation and Sampling

System Design: The SVE and emission treatment system extracts hydrocarbon vapors from wells VEW1, VEW2, VEW3, CR1 and C5 (Figure 2). The extracted vapor is processed through a water knockout drum, a 5-hp blower and three 1,000-lb granulated activated carbon (GAC) vessels connected in series.

Sampling Dates: April 13, April 26, May 9 and May 24, 1994.

Sample Locations: Flame Ionization Detector (FID) and Photo Ionization Detector (PID) readings are taken from the carbon influent, midpoint 1 (between 1st and 2nd carbon vessels), midpoint 2 (between 2nd and 3rd carbon vessel), and effluent. FID readings are taken with a carbon filter tip to read methane and without a carbon filter tip to read total volatile organic compounds.

Operation Notes: The system operated continuously between March 30, 1994, and May 24, 1994.

Permit Compliance

Data collected during the semi-monthly visits in April and May are presented in Table 1. WA will continue bi-monthly reporting and semi-monthly monitoring activities for the activated carbon system as specified by the BAAQMD permit requirements.

If you have any questions please contact the undersigned at (510) 450-6000.

Sincerely,
Weiss Associates

Paul M. Nuti
Staff Engineer

Michael Cooke
Project Geologist

MC/PMN:pmn

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Attachments:

Figure 1 - Site Location Map
Figure 2 - Monitoring and Extraction Well Locations
Table 1 - SVE System Performance and Total Hydrocarbon Removal

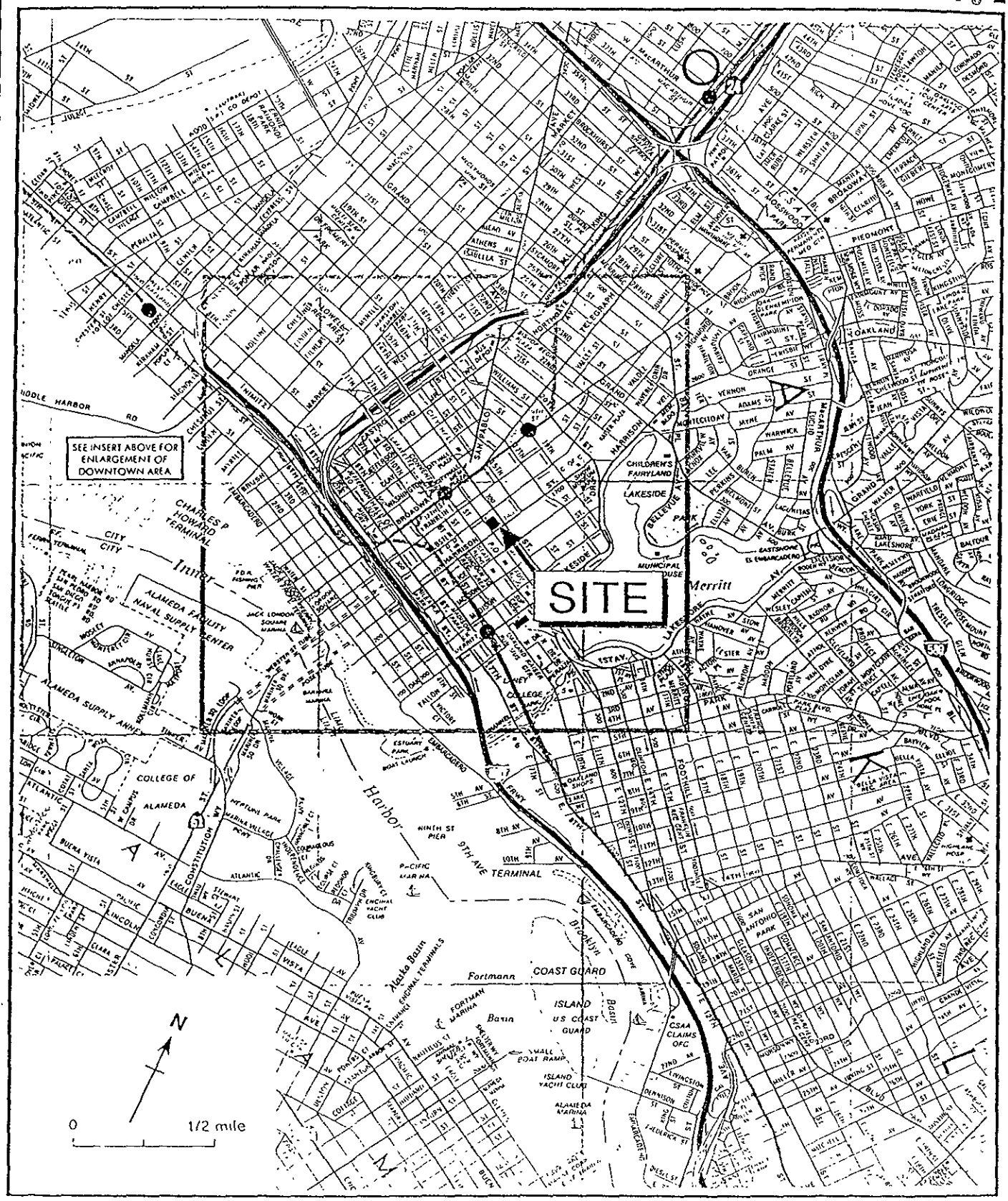

Figure 1. Site Location Map - Former Chevron Service Station #9-4816, 301 14th Street, Oakland, California

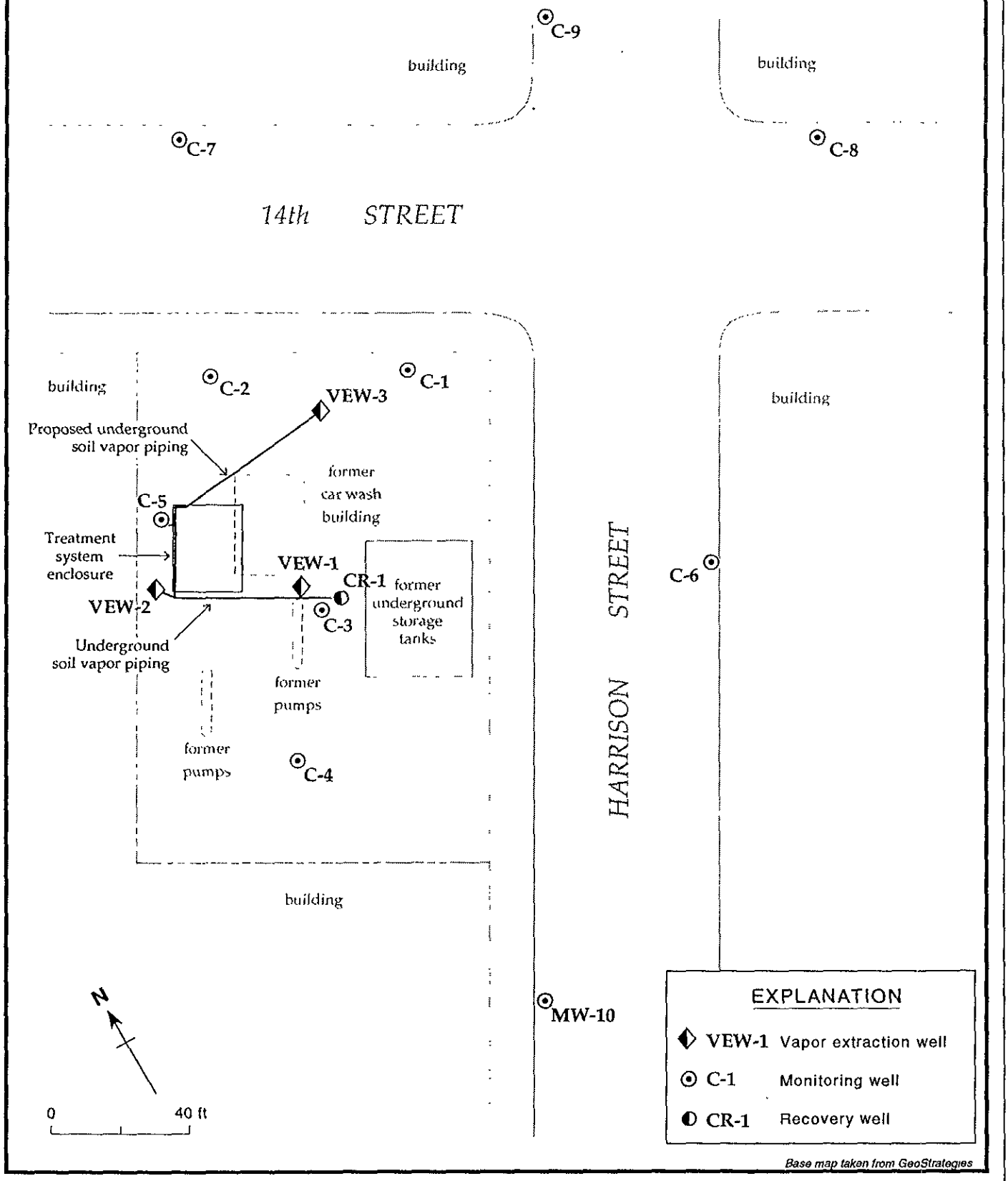

Figure 2. Monitoring and Extraction Well Locations - Former Chevron Service Station #9-4816, 301 14th Street, Oakland, California

Table 1. SVE System Performance and Total Hydrocarbon Removal, Former Chevron SS#9-4816, 301 14th Street, Oakland, California

Date		Exraction Well ID	Hours of Operation (a)	Total Well Gas Flow Rate (scfm)		Influent Conc. ppmv (b)	Removal Rate #TPH-G/hr (c)		Interval Average #TPH-G/hr	Interval Hours	Interval TPH-G Pounds Removed (d	Cumulative Total Pounds TPH-G Removed
12-Mar-92		CR1/C5	5	4.9	>	46,000	3.01		0.00	5	15	15
13-Mar-92		CR1/C5	24	4.9	>	47,000	3.08		3.05	24	73	88
16-Mar-92		CR1/C5	96	4.9	>	50,000	3.28		3.18	72	229	317
14-Apr-92		CR1/C5	792	5.1		2,550	0.17		1.72	696	1,200	1,517
12-May-92		CR1/C5	1,464	2.7		6,500	0.23		0.20	672	137	1,654
17-Jun-92	e	CR1/C5/VEW1/VEW2	2,328	8.0		6,500	0.70	e	0.46	864	402	2,056
19-Jun-92		CR1/C5/VEW1/VEW2	2,376	25.6		2,100	0.72		0.71	48	34	2,090
20-Jul-92		CR1/C5/VEW1/VEW2	3,120	31.0		900	0.37		0.55	744	406	2,496
24-Aug-92		VEW1/VEW2	3,960	31.4		900	0.38		0.38	840	315	2,811
21-Sep-92		VEW1/VEW2	4,632	37.6		15,740	7.91		4.14	672	2,785	5,597
16-Oct-92	g	VEW1/VEW2	5,232	40.0		15,740	8.42		8.16	600	4,898	10,495
02-Nov-92	h	VEW1/VEW2	5,232	30.2		1,330	0.54		4.48	0	0	10,495
09-Nov-92	g	VEW1/VEW2	5,400	NM		NM	0.00		0.27	168	45	10,540
16-Nov-92	h	VEW1/VEW2	5,400	NM		NM	0.00		0.00	0	0	10,540
23-Nov-92	g	VEW1/VEW2	5,568	35.5		450	0.21		0.11	168	18	10,558
15-Dec-92	h	VEW1/VEW2	5,568	33.0		450	0.20		0.21	0	0	10,558
11-Jan-93		VEW1/VEW2/CR1	6,216	30.0		450	0.18		0.19	648	123	10,681
08-Feb-93		VEW1/VEW2/CR1	6,888	18.0		251	0.06		0.12	672	81	10,762
18-Mar-93		VEW1/VEW2/CR1	7,800	20.1		200	0.05		0.06	912	52	10,814
13-Apr-93		VEW1/VEW3/CR1/C5	8,424	12.5		515	0.09		0.07	624	44	10,857

--- Table 1 continues on next page ---

Table 1. SVE System Performance and Total Hydrocarbon Removal, Former Chevron SS#9-4816, 301 14th Street, Oakland, California

Date		Exraction Well ID	Hours of Operation (a)	Total Well Gas Flow Rate (scfm)	Influent Conc. ppmv (b)	Removal Rate #TPH-G/hr (c)	Interval Average #TPH-G/hr	Interval Hours	Interval TPH-G Pounds Removed (d	Cumulative Total Pounds TPH-G Removed
********** SVE System switched from internal combustion engine to carbon absorption for emission abatement **********										
20-Sep-93		VEW1/VEW2/VEW3/CR1/C5	8,784	38.6	21,900	11.30	11.30	1	11.3	10,869
21-Sep-93		VEW1/VEW2/VEW3/CR1/C5	8,808	41.0	5,418	2.97	7.13	24	171.2	11,040
22-Sep-93		VEW1/VEW2/VEW3/CR1/C5	8,832	40.1	839	0.45	1.71	24	41.0	11,081
23-Sep-93		VEW1/VEW2/VEW3/CR1/C5	8,856	41.0	671	0.37	0.41	24	9.8	11,091
24-Sep-93		VEW1/VEW2/VEW3/CR1/C5	8,880	39.3	622	0.33	0.35	24	8.3	11,099
27-Sep-93		VEW1/VEW2/VEW3/CR1/C5	8,952	41.5	540	0.30	0.31	72	22.5	11,122
28-Sep-93		VEW1/VEW2/VEW3/CR1/C5	8,976	43.2	191	0.11	0.20	24	4.9	11,126
29-Sep-93		VEW1/VEW2/VEW3/CR1/C5	9,000	42.9	146	0.08	0.10	24	2.3	11,129
03-Nov-93	h	VEW1/VEW2/VEW3/CR1/C5	9,840	41.3	204	0.11	0.10	840	84.0	11,213
17-Nov-93		VEW1/VEW2/VEW3/CR1/C5	10,176	34.4	140	0.06	0.10	336	33.6	11,246
01-Dec-93	i	VEW1/VEW2/VEW3/CR1/C5	10,512	31.0	90	0.04	0.10	336	33.6	11,280
22-Dec-93	j	VEW1/VEW2/VEW3/CR1/C5	11,016	34.4	38	0.02	0.03	504	15.1	11,295
12-Jan-94		VEW1/VEW2/VEW3/CR1/C5	11,520	31.1	960	0.40	0.21	504	105.0	11,400
26-Jan-94	k	VEW1/VEW2/VEW3/CR1/C5	11,856	NM	NM	---	---	---	---	11,400
08-Feb-94		VEW1/VEW2/VEW3/CR1/C5	12,168	42.3	6,800	3.85	2.12	2	4.2	11,404
22-Feb-94	i	VEW1/VEW2/VEW3/CR1/C5	12,504	18.3	271	0.07	1.96	336	657.1	12,061
30-Mar-94	l	VEW1/VEW3/CR1/C5	13,368	27.2	2,200	0.80	0.43	864	374.2	12,436
13-Apr-94		VEW1/VEW3/CR1/C5	13,704	21.4	73	0.02	0.41	336	137.9	12,574
26-Apr-94		VEW1/VEW3/CR1/C5	14,016	17	62	0.01	0.02	312	5.4	12,579
09-May-94	m	VEW1/VEW2/VEW3/CR1/C5	14,328	15	82	0.02	0.02	312	4.7	12,584
24-May-94		VEW1/VEW2/VEW3/CR1/C5	14,688	18	92	0.02	0.02	360	6.9	12,591

--- Table 1 continues on next page ---

Notes:

a = Total hours of engine operation equals engine hours on computer printout minus 3050 hours.

b = Measured by flame ionization detector (FID). If no FID reading was taken, concentrations are assumed to be equal to the most recent reading.

c = removal rate (lbs/hr) = total well gas flow (scfm) * influent concentration (ppmv)/1,000,000 * 86 lbs TPH-G/lb-mole * 60 min/hr * 1lb-mole/386 ft^3

d = Interval TPH-G Pounds Removed is the average between the last interval average removal rate reading and the current reading (#TPH-G/hr) times the number of hours between reading

e = First day of system operation with the two new vapor extraction wells (installed June 11, 1992).

f = Calculated estimates based on concentrations in samples collected June 12, 1992.

g = System shutdown upon departure to re-equilibrate subsurface vapors.

h = System restarted.

i = System shutdown due to breakthrough of the second carbon vessel.

j = Carbon in first vessel changed by Westates on December 15, 1993. System restarted.

k = System shut down due to ground water pump test.

l = System Restart. Carbon in first vessel changed by Westates. Shut off VEW2 to increase influent concentrations.

m = Well VEW-2 turned back on.

scfm = Standard cubic feet per minute.

ppmv = Parts per million by volume.

TPH-G = Total petroleum hydrocarbons as gasoline.

NM = Not Measured