



Alomedo County

Environmental Health

#### **QUARTERLY GROUNDWATER** MONITORING REPORT

(3<sup>rd</sup> Quarter, 2002)

Former E-Z Serve Location No. 100877 525 West 'A' Street Hayward, California STID No. 3580

Submitted to: Restructure Petroleum Marketing Services of California, Inc. 205 S. Hoover Boulevard, Suite 101 Tampa, Florida 33609 10/1/02

> Submitted by ATC Associates Inc. 9620 Chesapeake Drive, Suite 203 San Diego, California 92123

ATC Work Order No. 100877-C2-9 ATC Project No. 43.25827.0024 October 1, 2002

Prepared by:

Scott D. Levin **Project Scientist** 

Approved by:

Michael T. Davis, R.G. No. 7400

Senior Geologist

**DATE:** October 1, 2002

#### QUARTERLY GROUNDWATER MONITORING REPORT - THIRD QUARTER 2002

Facility: Former E-Z Serve No. 100877	Site Address: 525 West 'A' Street, Hayward, California
Responsible Party / Contact Person:	RPMS-CA / Felix Oliu, Project Manager
Consulting Co. / Contact Person:	ATC Associates Inc. / Michael T. Davis, Project Manager (858) 569-0692
ATC Project No.:	43.35827.0024
Regulatory Agency/File No.:	RWQCB

#### WORK PERFORMED THIS QUARTER [July 1, 2002 - September 30, 2002]:

- 1. Performed third quarter groundwater monitoring and sampling.
- 2. Performed feasibility studies and submitted Corrective Action Plan (CAP).
- 3. Prepared third quarter groundwater monitoring report.

#### WORK PROPOSED FOR NEXT QUARTER [October 1, 2002 – December 31, 2002]:

- 1. Perform fourth quarter groundwater monitoring and sampling.
- 2. Submit fourth quarter groundwater monitoring report.
- 3. Implement Corrective Action.

Current Phase of Project:	Assessment	(Assessment, Remediation, etc.)
Frequency of Sampling:	Quarterly	(Quarterly, etc.)
Frequency of Monitoring:	Quarterly	(Monthly, etc.)
Liquid Phase Hydrocarbons Present On Site:	No	(Yes/No)
Cumulative PSH Recovered to Date:	Unknown	(Gallons)
PSH Recovered This Quarter:	None	(Gallons)
Purge Water Removed This Quarter:	None	(Gallons)
Permits for Discharge:	None	(NDPES, POTW, etc)
Current Remediation Techniques:	None	(SVES, PSH Recovery)
Approximate Depth to Groundwater:	15.13 to 17.20	(Measured Feet)
Groundwater Gradient:	0.01 ft/ft	(Magnitude)
Groundwater Flow Direction:	West-southwesterly	(Direction)

Discussion: On August 14, 2002, ATC Associates, Incorporated (ATC) personnel gauged 11 groundwater monitor wells and one (1) groundwater extraction well (Figure 1 and 2). Depth to groundwater ranged between 15.13 (MW-13) to 17.20 (MW-2 and MW-12) feet below ground surface (bgs). Wellheads of MW-8 through MW-11 remain inaccessible. The direction of groundwater flow was calculated to be west-southwesterly with a hydraulic gradient of approximately 0.01 ft/ft (Figure 2). No measurable liquid phase hydrocarbons (PSH) were recorded in any of the 11 monitoring wells during this quarters monitoring event. Groundwater elevations and contours are illustrated on Figure 2 and historic groundwater and PSH monitoring data is presented in Table 1.

On August 14, 2002, ATC collected groundwater samples from 11 monitoring wells and 1 extraction well. ATC utilized the attached no-purge sampling procedures described in Appendix A to collect groundwater samples from MW-1, MW-1A, MW-2, MW-3, MW-4, MW-5, MW-6, MW-7, MW-12, MW-13, MW-14, and EX-1. Field logs are also included in Appendix A. Groundwater samples collected were analyzed for total petroleum hydrocarbons characterized as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and fuel oxygenates methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), and tert-butyl alcohol (TBA) by EPA Test Method 8260. TPHg concentrations were reported above the laboratory Practical Quantitation Limit (PQL) in groundwater samples collected from 9 of the 12 wells sampled. The highest TPHg, benzene, and MTBE concentrations reported were 19,000, 820, and 29  $\mu$ g/L, respectively. The highest TPHg, benzene, and MTBE concentrations were reported in groundwater samples collected from MW-2. TPHg, benzene, and MTBE concentrations are illustrated on Figure 2 and historic groundwater analytical results are presented in Tables 1 and 2. Hydrographs of groundwater elevations and analytical data are attached in Appendix B and complete laboratory analytical results and chain-of-custody documentation are attached in Appendix C.

**Recommendations:** Continue quarterly groundwater monitoring and sampling, and implement Corrective Action Plan when approved. Contract a professional electromagnetic subsurface survey to locate the wellheads of MW-8 through MW-11.

Summary of Unusual Activity: None.

Agency Directive Requirements: Corrective Action Plan.

#### ATTACHED:

- Table 1 Groundwater Elevations and Sample Analytical Results
- Table 2 Groundwater Sample Analytical Results for Fuel Oxygenates
- Figure 1 Vicinity Map
- Figure 2 Groundwater Summary Map (August 14, 2002)
- Appendix A ATC Groundwater Monitoring and Sampling Procedures, and Field Logs
- Appendix B Hydrographs
- Appendix C Laboratory Report and Chain-of-Custody Record

TABLES

## Table 1 Groundwater Elevations and Sample Analytical Results Former E-Z Serve Location No. 100877

525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	GWE <sup>1</sup>	PSH	TPHg	В	T	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	$(\mu g/L)$	(μg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)
MW-1	2/5/92	41.75	20.82	20.93	0.00	46,000	7,600	2,300	2,400	6,500	
	9/11/92	41.75	20.08	21.67	0.00	48,000	9,000	1,200	1,800	4,600	
	12/22/92	41.75	19.79	21.96	0.00	84,000	22,000	1,600	4,800	17,000	
	3/3/93	41.75	16.23	25.52	0.00	54,000	16,000	1,600	1,900	4,300	
	6/23/93	41.75	16.86	24.89	0.00	30,000	18,000	1,100	1,400	3,700	
	9/30/93	41.75	18.04	23.71	0.00	33,000	10,000	440	940	1,700	
	2/6/94	41.75	18.15	23.60	0.00	64,000	18,000	1,600	4,700	12,000	
	5/2/94	41.75	17.26	24.49	0.00	7,200	2,100	29	490	520	
	7/1/94	41.75	17.60	24.15	0.00	13,000	3,700	150	550	12,000	
	9/20/94	41.75	20.59	21.16	0.00	10,000	3,100	75	440	870	
	12/5/94	41.75	17.83	23.92	0.00	8,700	3,700	87	520	950	
	3/10/95	41.75	14.67	27.08	0.00						
	3/15/95	41.75	14.43	27.32	0.00	290	56	2	12	47	
	9/23/96	41.75	14.92	26.83	0.00	20,000	5,200	860	700	1,100	270
	12/4/96	41.75	15.61	26.14	0.00	17,000	3,100	64	610	1,200	280
	4/8/97 <sup>NP</sup>	41.75	13.25	28.50	0.00	2,100	430	15	52	85	100
	6/30/97	41.75	14.68	27.07	0.00	10,000	2,100	<	<	320	<
	11/25/97	41.75	15.99	25.76	0.00	16,000	2,100	23	76	240	<
	6/1/98	41.75	9.98	31.77	0.00	19,000	6,100	430	1,100	2,300	420
	6/14/01	41.75	15.05	26.70	0.00	6,000	380	8.4	260	180	<25
	11/7/01 <sup>2</sup>	41.75	16.31	25.44	0.00	12,000	1,000	30	1,000	740	11
	1/30/02	41.75	14.15	27.60	0.00	8,800	690	16	480	270	14
	5/29/02	41.75	14.55	27.20	0.00	6,400	330	13	250	260	12
	8/14/02	41.75	15.56	26.19	0.00	5,500	470	14	360	160	10
MW-1A	6/23/93	43.40	17.80	25.76	0.21						
11111 121	9/30/93	43.40									
	2/6/94	43.40	18.89	24.51	0.00	8,900	1,700	42	1,000	400	
	5/2/94	43.40	18.35	25.12	0.09						
	7/1/94	43.40	18.45	24.95	0.00	12,000	1,100	<1	920	1,100	
	9/20/94	43.40	21.72	21.85	0.22						
	12/5/94	43.40	18.87	24.58	0.07						
	3/10/95	43.40	15.83	27.57	0.00						
	3/15/95	43.40	15.55	27.89	0.05						
	9/23/96	43.40	16.00	27.41	0.01						
	12/4/96	43.40	16.55	26.85	0.00	52,000	420	140	1,000	3,500	130
	4/8/97 <sup>NP</sup>	43.40	14.15	29.25	SHEEN				-,	-,	
	6/30/97	43.40	15.57	27.83	0.00	17,000	180	<	140	1,100	<
	11/25/97	43.40	16.91	26.49	0.00	19,000	110	37	290	910	<
	6/1/98	43.40	10.78	32.62	0.00	18,000	200	17	230	820	91
	6/14/01	43.40	15.93	27.48	0.01	27,000	29	<5.0	620	520	<50
	11/7/01 <sup>2</sup>	43.40	17.32	26.08	0.00	21,000	51	<5.0	700	510	<5.0
	1/30/02	43.40	15.05	28.35	0.00	24,000	22	< 5.0	390	330	<5.0
	5/29/02	43.40	15.49	27.91	0.00	12,000	32	<5.0	550	270	<5.0
	8/14/02	43.40	16.50	26.90	0.00	14,000	22	<2.0	510	240	<2.0
MW-2	2/5/92	43.26	22.35	20.91	0.00	67,000	13,000	4,700	820	1,300	
171 77 -2	9/11/92	43.26	21.67	21.59	0.00	57,000	9,000	1,400	1,200	8,400	
	12/22/92	43.26	21.39	21.87	0.00	31,000	9,900	350	2,000	4,100	
	3/3/93	43.26	17.75	25.51	0.00	17,000	5,100	1,300	720	1,900	
	6/23/93	43.26	18.42	24.84	0.00	60,000	23,000	1,500	4,500	17,000	
	9/30/93	43.26	19.63	23.63	0.00	38,000	12,000	780	1,500	6,500	
	2/6/94	43.26	19.61	23.65	0.00	34,000	8,900	450	2,000	5,500	
	5/2/94	43.26	19.84	23.42	0.00	18,000	3,800	260	1,100	3,500	
	7/1/94	43.26	19.18	24.08	0.00	18,000	3,700	510	870	2,600	
	9/20/94	43.26	22.17	21.09	0.00	19,000	4,500	300	1,200	4,000	
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Table 1
Groundwater Elevations and Sample Analytical Results
Former E-Z Serve Location No. 100877

Former E-Z Serve Location No. 1008//
525 West 'A' Street, Hayward, California

Well	<b>Sampling</b>	TOC	DTW	$\mathbf{GWE}^1$	PSH	ТРНд	В	${f T}$	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(μg/L)	(μg/L)	(µg/L)	(μg/L)	(μg/L)
/MW-2	£ 12/6/94	43.26	19.37	23.89	0.00	22,000	4,700	340	1,400	4,500	
(Cont.)	3/10/95	43.26	16.33	26.93	0.00						
(1111,	3/15/95	43.26	16.89	26.37	0.00	29,000	5,600	350	1,900	6,300	
	9/23/96	43.26	16.61	26.65	0.00	29,000	3,700	150	1,000	4,300	860
	12/4/96	43.26	17.19	26.07	0.00	31,000	3,800	140	2,000	5,100	690
	4/8/97 <sup>NP</sup>	43.26	14.86	28.40	0.00	20,000	2,500	80	1,300	3,400	880
	6/30/97	43.26	16.28	26.98	0.00	41,000	2,700	130	1,200	4,000	890
	11/25/97	43.26	17.56	25.70	0.00	51,000	2,900	140	1,800	7,000	1,200
	6/1/98	43.26	11.58	31.68	0.00	33,000	2,700	130	1,800	5,700	610
	6/14/01	43.26	16.63	26.63	0.00	18,000	860	14	1,100	2,200	<100
	11/7/01 <sup>2</sup>	43.26	17.85	25.41	0.00	20,000	880	20	1,100	2,600	21
	1/30/02	43.26	15.65	27.61	0.00	19,000	880	19	1,100	2,400	56
	5/29/02	43,26	16.12	27.14	0.00	8,100	2 <del>9</del> 0	16	560	1,400	32
	8/14/02	43.26	17.20	26.06	0.00	19,000	820	21	1,200	2,600	29
	0/14/02	45.20	17.20	20.00	0.00	15,000			2,200	2,000	
MW-3	2/5/92	43.89	21.85	22.04	0.00	16,000	2,700	410	<1	3,400	
141 44 - 3	9/11/92	43.89	21.13	22.76	0.00	43,000	7,600	1,600	1,400	4,100	
	12/22/92	43.89	20.88	23.01	0.00	29,000	8,800	1,200	1,500	3,700	
	3/3/93	43.89	17.29	26.60	0.00	17,000	5,000	1,500	680	1,700	
	6/23/93	43.89	17.29	26.00	0.00	5,700	3,000	120	560	790	
	9/30/93	43.89	19.18	24.71	0.00	21,000	7,000	2,100	970	2,600	
	2/6/94	43.89	19.18	24.71	0.00	24,000	7,000 7,200	1,600	990	3,200	<del></del>
		43.89	18.30	25.59	0.00	10,000	2,200	440	470	1,200	
	5/2/94			25.26	0.00	8,200	2,200	370	350	930	<del></del>
	7/1/94	43.89	18.63 21.64	22.25	0.00			360	380	1,000	
	9/20/94	43.89			0.00	7,200	2,000	400	440		
	12/6/94	43.89	19.15	24.74		9,000	2,300			1,100	
	3/10/95	43.89	16.33	27.56	0.00	4 200	000	47		700	
	3/15/95	43.89	16.89	27.00	0.00	4,300	980	47	370	780	
	9/23/96	43.89	16.11	27.78	0.00	10,000	950	20	700	780	80
	12/4/96	43.89	16.63	27.26	0.00	13,000	1,100	25	1,000	1,100	67
	4/8/97 <sup>NP</sup>	43.89	14.25	29.64	0.00	3,800	210	4.6	270	280	56
	6/30/97	43.89	15.70	28.19	0.00	3,500	280	<	32	180	<
	11/25/97	43.89	16.99	26.90	0.00	6,800	230	<	370	290	130
	6/1/98	43.89		<del></del>							<del></del>
	6/14/01	43.89	16.02	27.87	0.00	2,100	9	<0.5	78	43	<5.0
	11/7/01 <sup>2</sup>	43.89	17.33	26.56	0.00	7,700	75	<5.0	410	150	<5.0
	1/30/02	43.89	15.10	28.79	0.00	3,600	27	<5.0	120	34	<5.0
	5/29/02	43.89	15.63	28.26	0.00	2,000	18	<5.0	53	13	<5.0
	8/14/02	43.89	16.63	27.26	0.00	2,400	19	< 0.5	50	6.5	<0.5
MW-4	2/5/92	42.76	21.31	21.45	0.00	16,000	2,700	410	<1	3,400	
	9/11/92	42.76	20.62	22.14	0.00	43,000	7,600	1,600	1,400	4,100	
	12/22/92	42.76	20.37	22.39	0.00	29,000	8,800	1,200	1,500	3,700	
	3/3/93	42.76	16.78	25.98	0.00	17,000	5,000	1,500	680	1,700	
	6/23/93	42.76	17.45	25.31	0.00	5,700	3,000	120	560	790	
	9/30/93	42.76	18.64	24.12	0.00	21,000	7,000	2,100	970	2,600	-
	2/6/94	42.76	18.59	24.17	0.00	24,000	7,200	1,600	990	3,200	
	5/2/94	42.76	17.81	24.95	0.00	10,000	2,200	440	470	1,200	
	7/1/94	42.76	18.13	24.63	0.00	8,200	2,000	370	350	930	
	9/20/94	42.76	21.13	21.63	0.00	7,200	2,000	360	380	1,000	
	12/6/94	42.76	18.36	24.40	0.00	9,000	2,300	400	440	1,100	
	3/10/95	42.76	15.25	27.51	0.00						
	3/15/95	42.76	14.89	27.87	0.00	15,000	4,400	600	770	2,660	
	9/23/96	42.76	15.56	27.20	0.00	32,000	7,400	540	1,500	2,800	2,100
	12/4/96	42.76	16.11	26.65	0.00	23,000	7,800	140	1,200	1,200	1,900
	4/8/97 <sup>NP</sup>	42.76	13.73	29.03	0.00	16,000	3,900	680	850	2,300	980

Table 1
Groundwater Elevations and Sample Analytical Results
Former E-Z Serve Location No. 100877

525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	GWE <sup>1</sup>	PSH	TPHg	В	T	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
MW-4	6/30/97	42.76	15.19	27.57	0.00	63,000	7,000	430	1,400	4,400	1,700
(Cont.)	11/25/97	42.76	16.49	26.27	0.00	30,000	4,300	61	810	1,500	880
	6/1/98	42.76	10.42	32.34	0.00	33,000	5,700	710	1,700	2,900	720
	6/14/01	42.76	15.55	27.21	0.00	9,500	690	45	560	600	<50
	11/7/01 <sup>2</sup>	42.76	16.81	25.95	0.00	6,000	710	20	630	190	27
	1/30/02	42.76	14.60	28.16	0.00	4,800	830	16	600	61	42
	5/29/02	42.76	15.14	27.62	0.00	5,300	720	57	600	200	35
	8/14/02	42.76	16.07	26.69	0.00	5,000	(640	15	550	35	28
			•••	01.15	0.00	70,000	7,000	5.000	2.000	1 000	
MW-5	2/5/92	42.10	20.93	21.17	0.00	78,000	7,900	5,000	2,900	1,800	
	9/11/92	42.10	20.27	21.83	0.00	49,000	4,700	400	1,400	4,100	
	12/22/92	42.10	19.99	22.11	0.00	34,000	8,600	340	2,200	4,800	
	3/3/93	42.10	16.49	25.61	0.00	22,000	7,500	640	1,300	3,400	
	6/23/93	42.10	17.02	25.08	0.00	15,000	5,800	120	1,100	2,100	
	9/30/93	42.10	18.25	23.85	0.00	25,000	7,600	410	1,000	4,400	
	2/6/94	42.10	18.26	23.84	0.00	23,000	6,000	180	2,000	5,900	
	5/2/94	42.10	17.50	24.60	0.00	8,000	1,300	29	440	770	
	7/1/94	42.10	17.79	24.31	0.00	10,000	1,700	97	600	1,400	
	9/20/94	42.10	20.77	21.33	0.00	8,400	1,600	54	650	1,400	
	12/5/94	42.10	18.02	24.08	0.00	10,000	1,800	<50	620	1,400	
	3/10/95	42.10	14.93	27.17	0.00						
	3/15/95	42.10	14.70	27.40	0.00	5,300	1,100	11	180	320	
	9/23/96	42.10	15.19	26.91	0.00	9,800	1,800	11	470	510	100
	12/4/96	42.10	15.78	26.32	0.00	10,000	2,200	9	550	430	70
	4/8/97 <sup>NP</sup>	42.10	13.39	28.71	0.00	11,000	1,300	15	450	720	180
	6/30/97	42.10	14.83	27.27	0.00	3,800	500	<	75	84	<
	11/25/97	42.10	16.14	25.96	0.00	8,200	1,300	14	310	220	<
	6/1/98	42.10	10.10	32.00	0.00	3,600	290	12	52	52	81
	6/14/01	42.10	15.19	26.91	0.00	5,100	44	0.71	110	23	<5.0
	11/7/01 <sup>2</sup>	42.10	16.47	25.63	0.00	7,600	220	<5.0	550	30	<5.0
	1/30/02	42.10	14.27	27.83	0.00	6,200	180	<20	310	130	<20
	5/29/02	42.10	14.73	27.37	0.00	3,900	66	0.8	110	7.4	0.9
	8/14/02	42.10	15.73	26.37	0.00	4,300	80	0.9	150	12	1.1
1.001.6	O (E IOO	40.00	21.20	21.04	0.00	£1 000	5.400	2 500	3 600	10,000	
MW-6	2/5/92	42.33	21.29	21.04	0.00	51,000	5,400	3,500	3,600	•	
	9/11/92	42.33	20.56	21.77	0.00	24,000	2,500	830	1,400	2,300	
	12/22/92	42.33	20.31	22.02	0.00	23,000	5,100	630	2,000	3,100	
	3/3/93	42.33	16.83	25.50	0.00	18,000	4,400	820	1,400	2,400	
	6/23/93	42.33	17.30	25.03	0.00	18,000	4,600	850	2,700	3,400	
	9/30/93	42.33	19.05	23.28	0.00						
	2/6/94	42.33	18.55	23.78	0.00	20,000	4,600	690	2,100	2,500	
	5/2/94	42.33	17.74	24.59	0.00	5,300	930	54	610	240	
	7/1/94	42.33	18.09	24.24	0.00	10,000	1,500	160	850	690	
	9/20/94	42.33	21.05	21.28	0.00	11,000	2,000	140	1,200	760	
	12/6/94	42,33	18.33	24.00	0.00	8,600	1,300	87	980	610	
	3/10/95	42.33	15.35	26.98	0.00	<b></b>					
	3/15/95	42.33	14.91	27.42	0.00	9,800	1,600	110	1,000	1,000	
	9/23/96	42.33	15.50	26.83	0.00	12,000	520	55	930	350	51
	12/4/96	42.33	16.06	26.27	0.00	11,000	390	25	680	170	130
	4/8/97 <sup>NP</sup>	42.33	13.64	28.69	0.00	17,000	700	92	1,400	900	2,700
	6/30/97	42.33	15.08	27.25	0.00	11,000	270	37	590	450	<
	11/25/97	42.33	16.40	25.93	0.00	9,100	130	26	500	150	310
	6/1/98	42.33	10.31	32.02	0.00	14,000	190	50	680	400	160
	6/14/01	42.33	15.46	26.87	0.00	6,400	29	6.3	200	55	<20
	11/7/01 <sup>2</sup>	42.33	16.71	25.62	0.00	7,200	34	8.7	180	31	<5.0
		42.33	14.60	27.73	0.00	6,600	32	7.2	130	28	<5.0

# Table 1 Groundwater Elevations and Sample Analytical Results Former E-Z Serve Location No. 100877

Former E-Z Serve Location No. 1008//
525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	GWE <sup>1</sup>	PSH	TPHg	В	T (******)	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
MW-6	5/29/02	42.33	14.99	27.34	0.00	5,200	26	7.0	150	27	<5.0
(Cont.)	8/14/02	42.33	16.03	26.30	0.00	5,300	24	6.6	120	22	<2.0
MW-7	6/23/93	42.70	17.87	24.83	0.00	29,000	4,200	71	4,400	5,600	
	9/30/93	42.70	18.94	23.76	0.00	30,000	3,200	71	2,800	3,400	
	2/6/94	42.70	19.11	23.64	0.06						
	5/2/94	42.70	18.11	24.59	0.00	5,700	630	13	660	400	
	7/1/94	42.70	18.72	23.98	0.00	3,100	180	99	160	520	
	9/20/94	42.70	21.41	21.29	0.00	6,100	540	6	750	730	
	12/5/94	42.70	18.66	24.04	0.00	3,700	280	<10	430	350	
	3/10/95	42.70	15.72	26.98	0.00	3,900	310	<10	540	540	
	3/14/95	42.70	15.23	27.47	0.00	1,900	290	4	26	296	
	9/23/96	42.70	15.94	26.76	0.00	6,300	76	<	420	270	15
	12/4/96	42.70	16.43	26:27	0.00	7,800	67	<	600	350	22
	4/8/97 <sup>NP</sup>	42.70	14.10	28.60	0.00	5,600	42	<	240	96	<
	6/30/97	42.70	15.51	27.19	0.00	5,500	<	79	<	44	280
	11/25/97	42.70	16.80	25.90	0.00	2,400	23	5.4	<	54	120
	6/1/98	42.70	10.31	32.39	0.00	14,000	190	50	680	400	160
	6/14/01	42.70	15.46	27.24	0.00	6,400	29	6	200	55	<20
	11/7/01 <sup>2</sup>	42.70	13.40	Z).ZT							
		42.70 42.70	14,97	27.73	0.00	6,200	1.5	<0.5	96	4.6	<0.5
	1/30/02	42.70 42.70	15.49	27.73	0.00	1,600	1.0	<0.5	3.4	1.9	<0.5
	5/29/02	42.70 42.70	16.44	26.26	0.00	4,100	1.3	<0.5	74 ·	1.3	<0.5
	8/14/02	42.70	10.44	20.20	0.00	4,100	1.5	<b>~0.3</b>	/4	1)	<b>~0.</b> 5
MW-8*	6/23/93	97.61	17.64	79.97	0.00	350	43	9	35	67	
	9/30/93	97.61	18.85	`78.76	0.00	2,700	190	340	170	720	
	2/6/94	97.61	18.91	78.70	0.00	<100	<1	1	1	2	
	5/2/94	97.61	18.11	79.50	0.00	<100	<1	3	<1	7	
	7/1/94	97.61	18.43	79.18	0.00	300	18	48	19	37	
	9/20/94	97.61	21.43	76.18	0.00	<100	<1	<1	<1	<1	
	12/5/94	97.61	18.72	78.89	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	
	3/10/95	97.61	18.69	78.92	0.00						
	3/14/95	97.61	14.83	82.78	0.00	<50	< 0.5	< 0.5	< 0.5	1	
	9/23/96	97.61	15.83	81.78	0.00	<	<	<	<	<	<
				No	t Sampled, w	ell inaccessib	le since 4th Q	uarter, 1996.			
MW-9*	6/23/93	95.41	. 15.94	79.47	0.00	45,000	14,000	1,200	2,800	12,000	
11211	9/30/93	95.41	17.05	78.36	0.00	86,000	22,000	1,100	3,300	15,000	
	2/6/94	95.41	17.07	78.34	0.00	43,000	10,000	460	2,100	7,500	
	5/2/94	95.41	16.24	79.17	0.00	17,000	5,400	270	1,300	4,700	
	7/1/94	95.41	16.59	78.82	0.00	10,000	2,100	120	450	1,300	
	9/20/94	95.41	19.61	75.80	0.00	7,500	2,200	97	400	1,200	
	12/5/94	95.41	16.85	78.56	0.00	10,000	2,700	130	530	1,600	
	3/10/95	95.41									
	3/14/95	95.41	14.18	81.23	0.00	18,000	5,900	270	1,200	3,680	
	5/1/1/5	75.11	110			accessible sind			-,	-,	
	4100100	27.11	17.00	50 5 <b>0</b>	0.00	25.000	000	C40	2.500	12.000	
MW-10*	6/23/93	97.11	17.39	79.72	0.00	35,000	980	640	3,500	12,000	
	9/30/93	97.11	18.58	78.53	0.00	4,000	230	12	100	680	
	2/6/94	97.11	18.61	78.50	0.00	2,000	69	12	220	120	
	5/2/94	97.11	17.83	79.28	0.00	710	16	6	85	62	
	7/1/94	97.11	18.17	78.94	0.00	2,000	52	43	120	210	
	9/20/94	97.11	21.15	75.96	0.00	2,800	34	16	270	560	
	12/5/94	97.11	18.43	78.68	0.00	2,700	30	13	260	430	
	3/10/95	97.11	15.37	81.74	0.00	1 400					
	3/14/95	97.11	15.93	81.18	0.00	1,400	18	6	200	239	

Table 1
Groundwater Elevations and Sample Analytical Results

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	тос	DTW	$\mathbf{GWE}^1$	PSH	ТРНg	В	T	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
MW-10*	9/23/96	97.11	15.59	81.52	0.00	3,800	4	2.9	220	170	397
(Cont.)	12/4/96	97.11	16.15	80.96	0.00	4,600	1.6	7.7	260	150	20
				Not San	npled, well in	accessible sind	ce 4th Quarter	, 1996.			
MW-11*	2/10/95	92.68	11.80	80.88	0.00	7,000	140	22	600	1,000	
	3/10/95	92.68	11.58	81.10	0.00						
	3/14/95	92.68	13.96	78.72	0.00	6,000	200	17	750	1,276	
	9/23/96	92.68	12.29	80.39	0.00	27,000	55	81	300	3,500	40
	12/4/96	92.68									
	4/8/97	92.68	10.51	82.17	0.00	24,000	280	130	3,000	3,700	<
				Not Sam	pled, well in	accessible sinc	e 2nd Quarte	r, 1997.			
MW-12	2/10/95	43.25	16.30	26.95	0.00	<50	<0.5	<0.5	<0.5	<0.5	
141 44 - 12	3/10/95	43.25	16.37	26.88	0.00						
	3/14/95	43.25	15.69	27.56	0.00	<50	<0.5	<0.5	< 0.5	0.9	
	9/23/96	43.25	16.67	26.58	0.00	<	<	1.6	<	<	<
	12/4/96	43.25	17.16	26.09	0.00	<	3.2	<	1.9	3.4	<
	4/8/97 <sup>NP</sup>	43.25	14.88	28.37	0.00	<	<	<	<	<	<
	6/30/97	43.25	16.33	26.92	0.00						
	11/25/97	43.25	17.61	25.64	0.00						
		43.25	11.58	31.67	0.00						
	6/1/98 6/14/01	43.25	16.62	26.63	0.00	<50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0
	11/7/01 <sup>2</sup>	43.25	17.91	25.34	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
			15.60	27.65	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	1/30/02	43.25	16.24	27.03	0.00	<50	<0.5	<0.5	<0.5	<0.5	<0.5
	5/29/02	43.25			0.00			<0.5	<0.5	<0.5	<0.5
	8/14/02	43.25	17.20	26.05	0.00	<50	<0.5	<0.3	<0.5	<0.5	<0.5
MW-13	2/10/95	40.97	14.45	26.52	0.00	<50	<0.5	<0.5	< 0.5	< 0.5	
	3/10/95	40.97	14.30	26.67	0.00					••	
	3/14/95	40.97	15.81	25.16	0.00	<50	<0.5	<0.5	< 0.5	1	
	9/23/96	40.97	14.60	26.37	0.00	<	<	0.80	1	<	<
	12/4/96	40.97									
	4/8/97 <sup>NP</sup>	40.97	12.75	28.22	0.00	<	<	<	<	<	<
	6/30/97	40.97	14.13	26.84	0.00						
	11/25/97	40.97	15.48	25.49	0.00						
	6/1/98	40.97	9.58	31.39	0.00						
	6/14/01	40.97	14.51	26.46	0.00	<50	< 0.50	< 0.50	< 0.50	< 0.50	< 5.0
	11/7/01 <sup>2</sup>	40.97	15.85	25.12	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	1/30/02	40.97	13.65	27.32	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	5/29/02	40.97	14.10	26.87	0.00	<50	< 0.5	<0.5	< 0.5	< 0.5	< 0.5
	8/14/02	40.97	15.13	25.84	0.00	<50	< 0.5	< 0.5	<0.5	<0.5	<0.5
MW-14	2/10/95	43.19	16.28	26.91	0.00	12,000	42	8	740	2,100	
	3/10/95	43.19	16.33	26.86	0.00						
	3/14/95	43.19	14.87	28.32	0.00	1,400	6	2	36	298	
	9/23/96	43.19	16.67	26.52	0.00	6,400	2.8	<	690	96	9.6
	12/4/96	43.19	17.06	26.13	0.00	9,500	6.3	<	1,100	400	30
	4/8/97 <sup>NP</sup>	43.19	14.77	28.42	0.00	2,900	<	2.7	220	21	<
	6/30/97	43.19	16.22	26.97	0.00	74	1.3	<	0.51	0.68	<
	11/25/97	43.19	17.52	25.67	0.00	<	<	<	<	<	<
	6/1/98	43.19	11.46	31.73	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	<5
	6/14/01	43.19	16.53	26.66	0.00	470	< 0.5	< 0.5	2.8	1	<5
	11/7/01 <sup>2</sup>	43.19	17.84	25.35	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	1/30/02	43.19	15.55	27.64	0.00	<50	<0.5	<0.5	<0.5	< 0.5	<0.5
	5/29/02	43.19	16.14	27.05	0.00	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

#### Table 1

#### Groundwater Elevations and Sample Analytical Results

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	TOC	DTW	GWE <sup>1</sup>	PSH	TPHg	В	T	E	X	MTBE
No.	Date	(feet)	(feet)	(feet)	(feet)	(μg/L)	(µg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
EX-1	8/14/02		16.58		0.00	250	31	< 0.5	< 0.5	4.2	1.4

Notes: Latest analytical results above their respective Practical Quantitation Limits are in boldface font.

No known groundwater monitoring or sampling was conducted between June 1, 1998 and June 14, 2001 and June 14, 2001 and November 7, 2001. Wellhead elevations resurveyed on January 30, 2002.

TOC = Top of casing referenced to USGS benchmark [elevation = 48.50 feet above mean sea level].

DTW = Depth to water measured from top of casing.

GWE = Groundwater elevation as referenced to benchmark in feet above mean sea level.

TPHg = Total Petroleum Hydrocarbons as gasoline (EPA Method 8015).

B = Benzene (EPA Method 602 or 8020/1).

T = Toluene (EPA Method 602 or 8020/1).

E = Ethylbenzene (EPA Method 602 or 8020/1).

X = Total Xylenes (EPA Method 602 or 8020/1).

MTBE = Methyl t-Butyl Ether (EPA Method 8020 or 8021).

SHEEN = Discontinuous, non-measurable thickness of PSH.

PSH = Phase Separate Hydrocarbon thickness in feet.

μg/L = Micrograms per liter (~parts per billion).

< = Sample reported as "not detected," in previous tables, reporting limit not known.

NP = No-purge sample collection method implemented and continued, beginning April 8, 1997..

<sup>1</sup> = If PSH present, corrected GWE = TOC - Measured DTW + Corrected PSH Thickness (PSH Thickness x gas density [0.75 g/cc]).

<sup>2</sup> = All analysis performed by EPA Method 8260 beginning on November 7, 2001.

\* = Wellhead elevation not re-surveyed on January 30, 2002. Previous arbitrary benchmark used as elevation refrence.

-- = Not measured, surveyed, sampled, or analyzed.

# Table 2 Groundwater Sample Analytical Results for Fuel Oxygenates

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	DIPE	ЕТВЕ	MTBE	TAME	TBA
No.	Date	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
MW-1	11/7/01	<5.0	<5.0	11	<5.0	<50
	1/30/02	<5.0	<5.0	14	<5.0	<50
	5/29/02	2.5	<2.0	12	<2.0	<20
	8/14/02	<10	<10	10	<10	<100
MW-1A	11/7/01	<5.0	<5.0	<5.0	<5.0	<50
	1/30/02	<5.0	<5.0	<5.0	<5.0	<50
	5/29/02	< 5.0	<5.0	< 5.0	<5.0	<50
	8/14/02	<2.0	<2.0	<2.0	<2.0	<20
MW-2	11/7/01	<5.0	<5.0	21	<5.0	<50
	1/30/02	<5.0	<5.0	56	<5.0	<50
	5/29/02	<5.0	<5.0	32	<5.0	<50
	8/14/02	<20	<20	29	<20	<200
MW-3	11/7/01	<5.0	<5.0	<5.0	<5.0	<50
111110	1/30/02	<5.0	<5.0	<5.0	<5.0	<50
	5/29/02	<5.0	<5.0	<5.0	<5.0	<50
	8/14/02	<0.5	<0.5	<0.5	<0.5	<5.0
MW-4	11/7/01	<5.0	<5.0	27	<5.0	<50
21211	1/30/02	<5.0	<5.0	42	<5.0	<50
	5/29/02	<20	<20	35	<20	<200
	8/14/02	<2.0	<2.0	28	<2.0	<20
MW C	11/7/01	<5.0	<5.0	<5.0	<5.0	<50
MW-5						
	1/30/02	<20	<20	<20	<20	<200
	5/29/02	2.0	<0.5	0.9	<0.5	<5.0
	8/14/02	<0.5	<0.5	1.1	<0.5	<5.0
MW-6	11/7/01	<5.0	<5.0	< 5.0	<5.0	<50
	1/30/02	< 5.0	< 5.0	<5.0	<5.0	<50
	5/29/02	< 5.0	<5.0	<5.0	<5.0	<50
	8/14/02	<2.0	<2.0	<2.0	<2.0	<20
MW-7	11/7/01			<b></b> -		<b></b>
2.2	1/30/02	<5.0	<5.0	<5.0	<5.0	<50
	5/29/02	<0.5	<0.5	<0.5	<0.5	<5.0
	8/14/02	<0.5	<0.5	<0.5	<0.5	<5.0
MW-12	11/7/01	<0.5	<0.5	<0.5	<0.5	<5.0
11111 12	1/30/02	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/02	<0.5	<0.5	<0.5	<0.5	<5.0
	8/14/02	<0.5	<0.5	<0.5	<0.5	<5.0
NASS7 12	11/7/01	<0.5	<0.5	<0.5	<0.5	<5.0
MW-13	11/7/01					
	1/30/02	<0.5	<0.5	<0.5	<0.5	<5.0
	5/29/02	<0.5	<0.5	<0.5	<0.5	<5.0
	8/14/02	<0.5	<0.5	<0.5	<0.5	<5.0
MW-14	11/7/01	<0.5	<0.5	<0.5	<0.5	<5.0
	1/30/02	< 0.5	<0.5	<0.5	<0.5	<5.0
	5/29/02	<0.5	<0.5	<0.5	< 0.5	<5.0
	8/14/02	<0.5	< 0.5	<0.5	<0.5	<5.0

# Table 2 Groundwater Sample Analytical Results for Fuel Oxygenates

Former E-Z Serve Location No. 100877 525 West 'A' Street, Hayward, California

Well	Sampling	DIPE	ETBE	MTBE	TAME	TBA
No.	Date	(μg/L)	(μg/L)	(μg/L)	(μg/L)	(μg/L)
EX-1	8/14/02	<0.5	<0.5	1.4	< 0.5	<5.0

Notes: Latest analytical results above the laboratory Practical Quantitation Limits (PQL) are in boldface font.

Analytical results performed by utilizing EPA Method 8260.

DIPE = Di-isopropyl Ether

ETBE = Ethyl tert-Butyl Ether

MTBE = Methyl-tert-Butyl Ether (See Table 1 for historic results)

TAME = tert-Amyl Methyl Ether

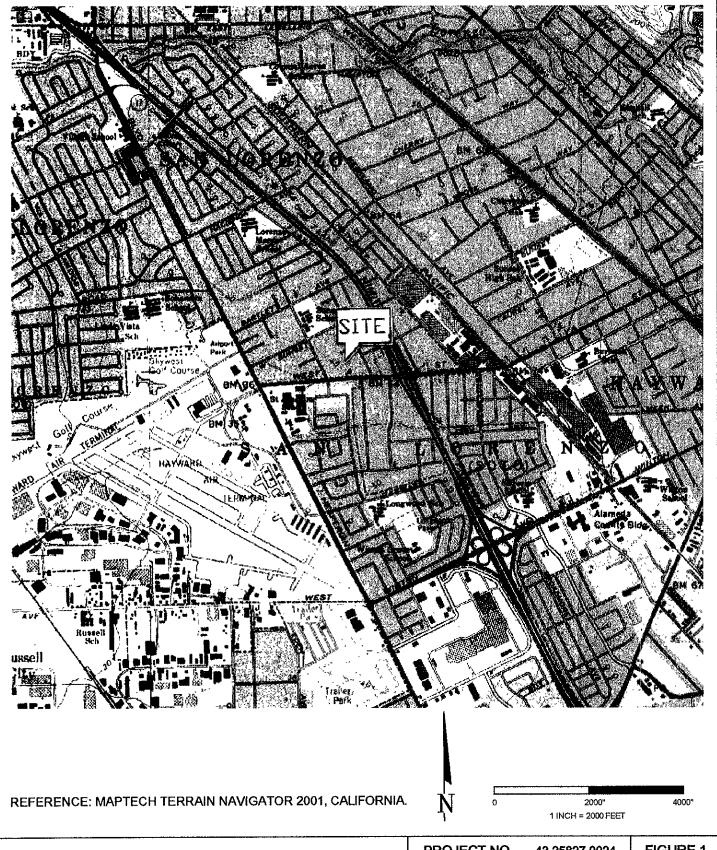
TBA = tert-Butanol

 $\mu$ g/L = micrograms per liter (~parts per billion)

< = Analytical results below the given PQL.

-- = Not sampled or analyzed.

**FIGURES** 

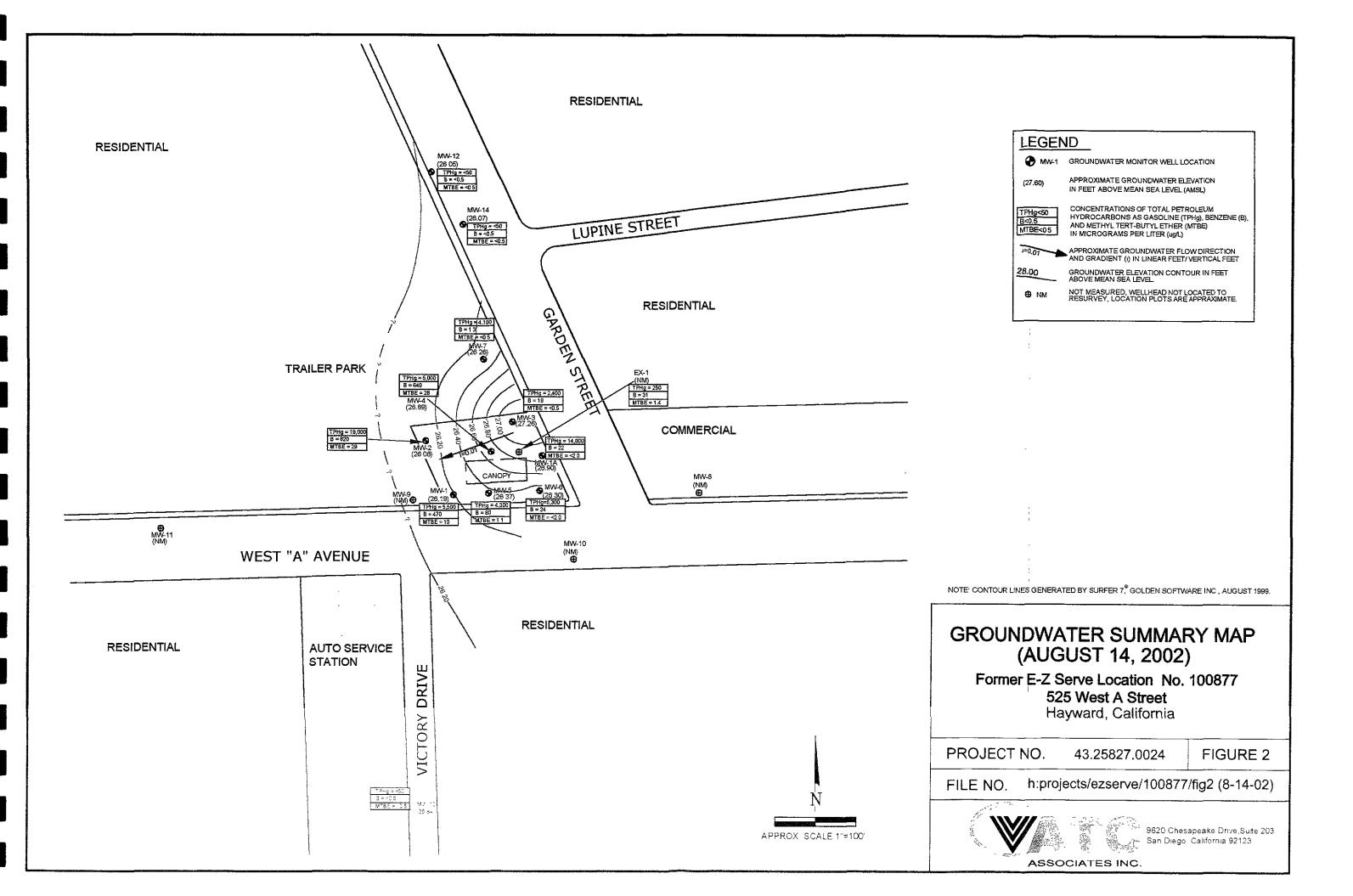


### **VICINITY MAP**

Former E-Z Serve Location No. 100877 525 West A Street Hayward, California PROJECT NO. 43.25827.0024 FIGURE 1

FILE NO. h:projects/ezserve/100877/fig1





### **APPENDICES**

# APPENDIX A GROUNDWATER MONITORING AND SAMPLING PROCEDURES, AND FIELD LOGS



#### GROUNDWATER MONITORING AND SAMPLING PROCEDURES

(Includes No-Purge Sampling)

#### Groundwater Monitoring and Decontamination Method

Prior to beginning, a decontamination area is established. Decontamination procedures consist of scrubbing down-well equipment in a Liquidnox<sup>®</sup> solution wash (or equivalent degreasing compound), and rinsing in potable water and a final rinse of de-ionized (or distilled) water before and after each well. Any non-dedicated down-well equipment is decontaminated prior to use on site.

Prior to purging and sampling a well, the static water level is measured to the nearest 0.01 feet with an electronic interface probe and/or water level meter. Depth to bottom is typically measured every quarterly event. The water level meter and tape will be decontaminated between each well. If floating phase-separated hydrocarbons (PSH) are suspected or previously confirmed, an electronic interface probe is used to measure the well fluids to the nearest 0.01 feet. PSH may alternatively be measured using a clear, open-ended product bailer, and the thickness is measured to the nearest 0.01 feet in the bailer. Any monitoring well containing a measurable thickness of PSH before or during purging is not additionally purged and no sample is collected from that well. Wells containing hydrocarbon sheen are sampled unless otherwise specified by the project manager. Field observations such as well integrity as well as water level measurements and PSH thickness are recorded in the field.

#### Well Purging

When well purging is required, each monitoring well to be sampled is purged using, a truck-mounted vacuum pump, a polyvinyl chloride (PVC) bailer or a submersible pump. Physical parameters (pH, temperature, and conductivity) of the purge groundwater are monitored during purging activities to assess if the water sample collected is representative of the aquifer. If required, parameters such as dissolved oxygen, turbidity, salinity etc. are also measured. Samples are considered representative if parameter stability is achieved. Stability is defined as a change of less than 0.25 pH units, less than 10% change in conductivity in micro mhos, and less than 1.0 degree centigrade (1.8 degrees Fahrenheit) change in temperature. Parameters are measured in a discreet sample decanted from the bailer separately from the rest of the purge groundwater. Parameters are measured during purging; initially, and at volume intervals of one well or borehole volume (dependent on local regulations). Purging continues until the required well or borehole volumes have been removed, until the well completely dewaters, or until measured parameters stabilize as indicated above. When wells dewater or demonstrate a slow recharge, wells may be sampled although fewer than required volumes have been removed. Well purging information is recorded on the Purge Data sheet. All meters used to measure parameters are calibrated daily. Purge water is sealed, labeled, and stored on site in D.O.T.-approved 55-gallon drums. After being chemically profiled, the water is transported to an appropriate disposal facility by a licensed waste hauler.

#### Groundwater Sample Collection

After purging, groundwater samples are collected after at least 80% of its static water level is recovered in the well. If recharge is extremely slow, the well is allowed to recharge until sufficient volume has accumulated for sample collection. No-purge groundwater samples are collected when prior approval by the lead regulatory agency has been permitted. When no-purge samples are collected the same procedures are followed excluding well purging. All groundwater samples are collected using polyethylene disposable bailers attached with new, clean string or rope. Groundwater samples being analyzed for compounds most sensitive to volatilization are collected first. Groundwater samples are placed in appropriate laboratory-supplied containers, labeled, documented on a chain of custody form and preserved on ice in a cooler for transport to a state-certified analytical laboratory. After collection, all samples are stored in a chilled cooler and refrigerated to approximately four (4) degrees Celsius while a laboratory representative transports the samples to their facility. Analytical detection limits match or surpass standards required by relevant local or regional guidelines.



#### QUALITY ASSURANCE / QUALITY CONTROL (QA/QC) PROCEDURES

#### **Field Procedures**

To prevent contamination of the samples and/or cross-contamination of monitoring wells ATC personnel adhere to the following procedures in the field:

- New, clean pair of appropriate disposable gloves is dawned prior to sampling each well.
- Wells are gauged and purged in the expected order of increasing degree of contamination based on historical analytical results.
- All purging equipment will be thoroughly decontaminated between each well using the procedures previously described at the beginning of this section.
- During sample collection for volatile organic analysis, the amount of air passing through the sample is minimized. This helps prevent the air from stripping the volatiles from the groundwater. Sample bottles are filled by slowly running the sample down the side of the bottle until there is a convex meniscus over the mouth of the bottle. The lid is carefully screwed onto the bottle such that no air bubbles are present within the bottle. If a bubble is present, the cap is removed and additional water is added to the sample container. After resealing the sample container, if bubbles still are present inside, the sample container is discarded and the procedure is repeated with a new container.

#### Sample Control

Laboratory and field handling procedures may be monitored, if required by the client or local regulatory agency, by including quality control (QC) samples for analysis with the groundwater samples. Examples of different types of QC samples are as follows:

- Trip blanks are prepared at the analytical laboratory, by laboratory personnel to check handling procedures while in the field, as required by site conditions and local regulations. Trip blanks are transported to the project site in the same manner as the laboratory-supplied sample containers to be filled. They are not opened, and are returned to the laboratory with the samples collected. Trip blanks are analyzed for purgable organic compounds.
- Equipment blanks are prepared in the field to determine if decontamination of field sampling equipment has been effective, as required by site conditions and local regulations. The sampling equipment used to collect the groundwater samples is rinsed with distilled water that is then decanted into laboratory-supplied containers. The equipment blanks are transported to the laboratory, and are analyzed for the same chemical constituents as the samples collected at the site.
- Duplicates (split samples) are collected at the same time that the standard groundwater samples are being collected and are analyzed for the same compounds in order to check the reproducibility of laboratory data. They are typically only collected from one well per sampling event, as required by site conditions and local regulations. The duplicate is assigned an identification number that will not associate it with the source well.

Generally, trip blanks and field blanks check field handling and transportation procedures. Duplicates check laboratory procedures. The configuration of QC samples is determined by ATC depending on site conditions and regulatory requirements.

,	(IVIII			Field Report
			Date 8.14.00	2.
	O1 ***	DCIATES INC.	Job No. 43,25	827.0024
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				IAVD, CA
To:	SAN Dia	90 , ATC	Weather	Temperature
•		<u> </u>	Client	1. Omporature
Attn:			Contractor	
	•		ATC Representative	POA
Page	of			
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0640	, began	opening was	ca covers.	
0710	began			1
(see		sampling to	g) Closed ve	SAMPling
0850	in parge	- Jamplina (0	a) Closed we	66 Covers.V
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W-12,	14 Miss	sing bolts.		
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oment Used	: Water leve	el Meter. Staff Hours:	12 Disposable bai	1215.
HW-12,	: Water leve	el Meter	12 Disposable bai	1245.

0

Page:

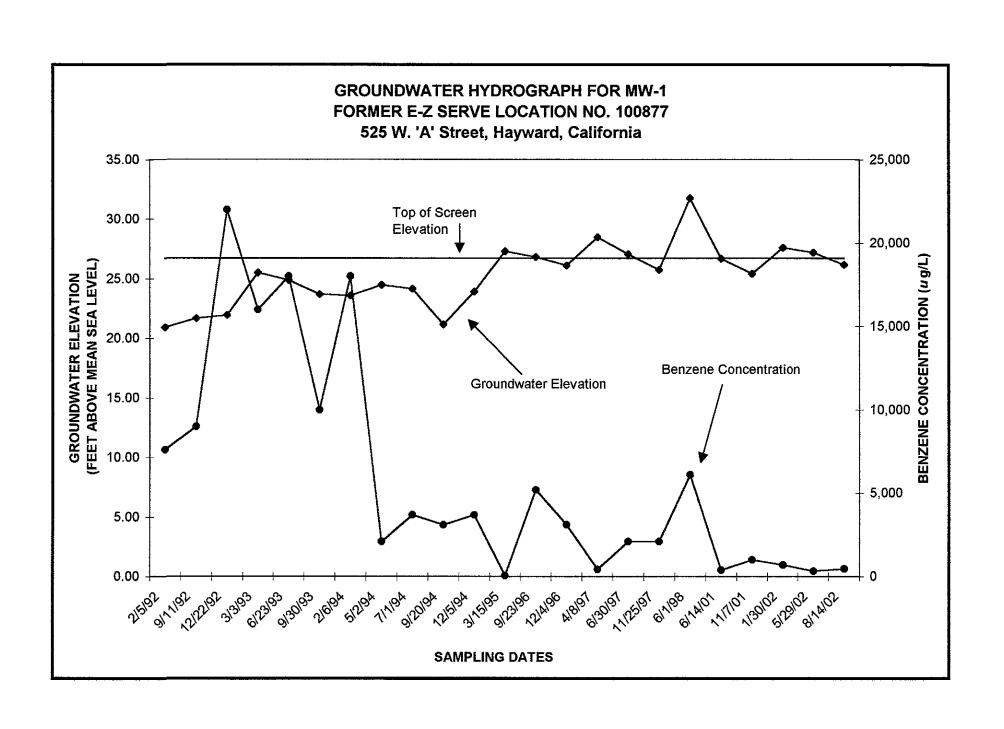
of

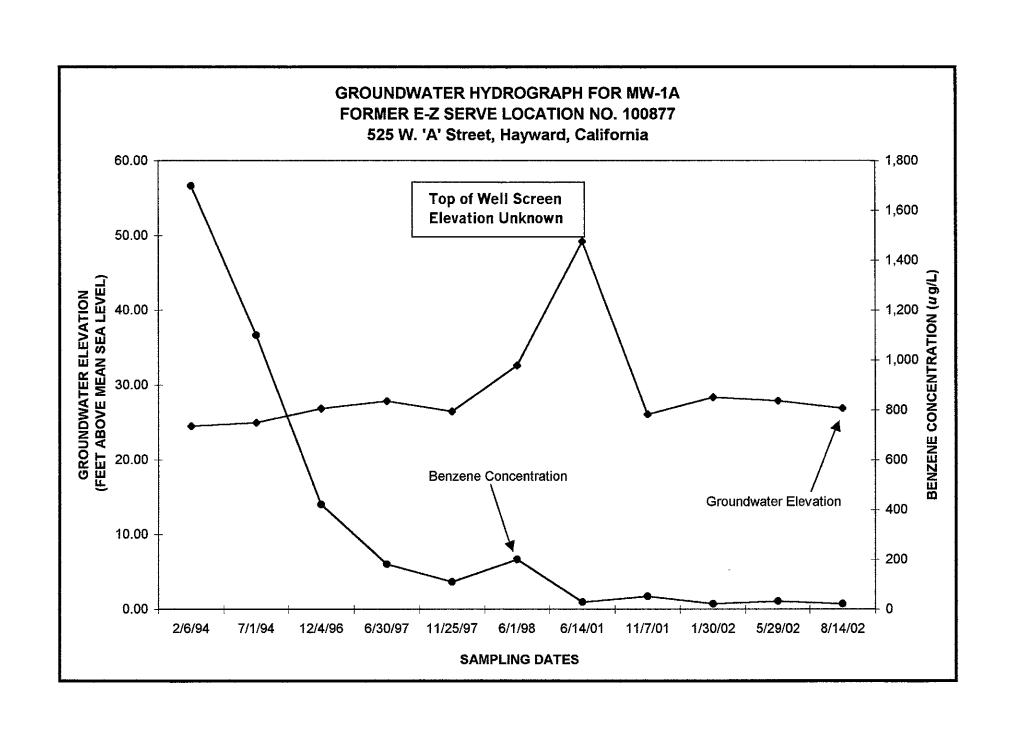


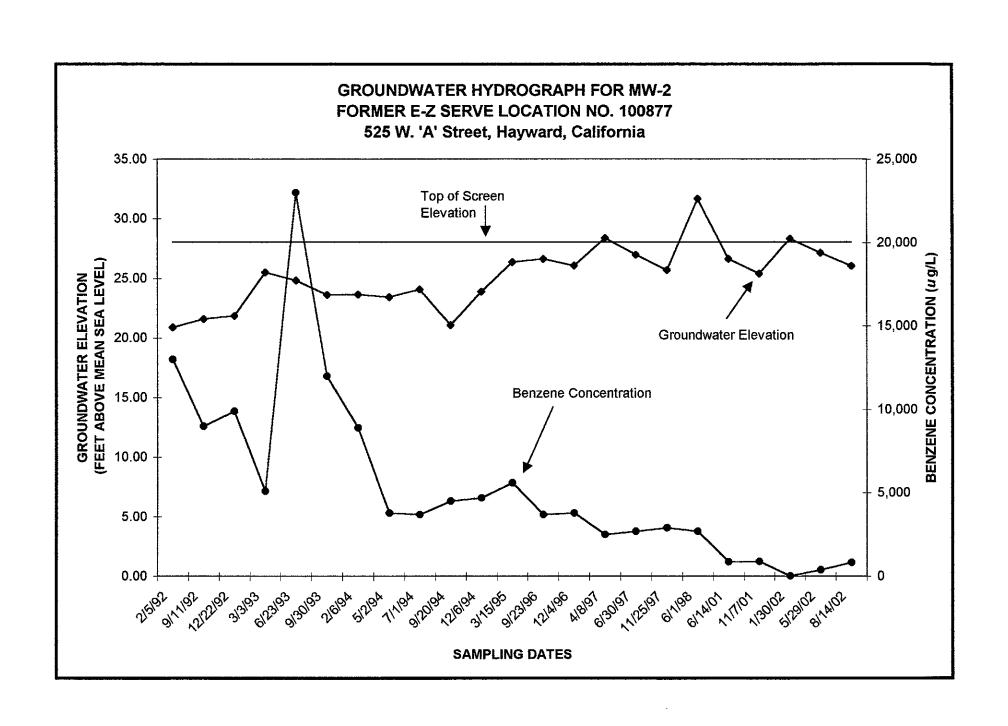
# **NO-PURGE SAMPLING LOG**

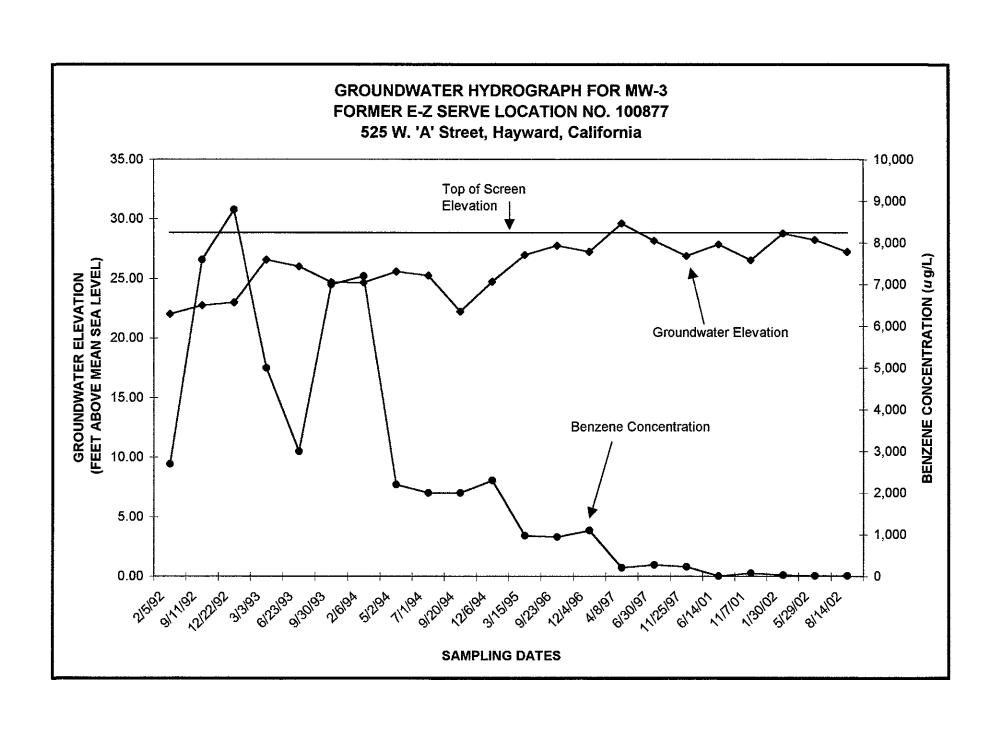
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Project Name:	Former	E. 2	SERVE	100	D877		Project No. 43,25827,0024
Project Addres	ss/City/County:		HAYWARD				
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	Meter Type/ID:	· · · · · ·			Interface Probe	Type/ID:	
ATC	. <del>-</del>	· · · ·	- 11 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		ing a second of	oli nye kalin ina a samah	
			Collection Data	:			
	Depth To Water	ſ	Container Type &	& I	Filtered	Sample	
Well No.	(feet)	Time	Volume	~	(yes/no)	Preservative	Requested Laboratory Analysis
MW-12	17.20	0715	VOA X 3			HCL	
MW-14	17.12	0723					
MW-13		0740					
MW-7	16.44	0730					
MW-3	16.63	0748					
MW-5	15.73	0752					
MW-6	16.03	0800					
MW.4	16.07	0805					
MW-1	15.56	0810					
MW-1A	16.50	0816					
MW-2	17.20	0820					
EX-1	16.58	0825					
·							
		·					
-1							
•							
- mo n				ide o			
	1 On-Site: POA						
Subcontractor	On Site:	1 .					
Signature:	Pet /	Jugar J				Date:	8.14.02

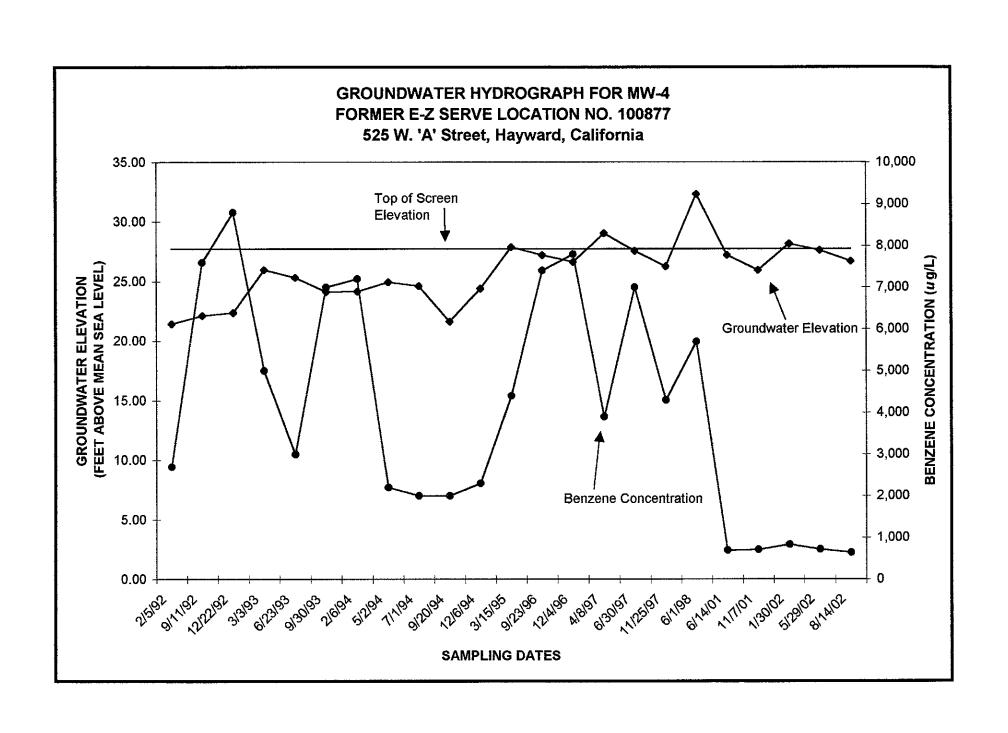
# APPENDIX B HYDROGRAPHS

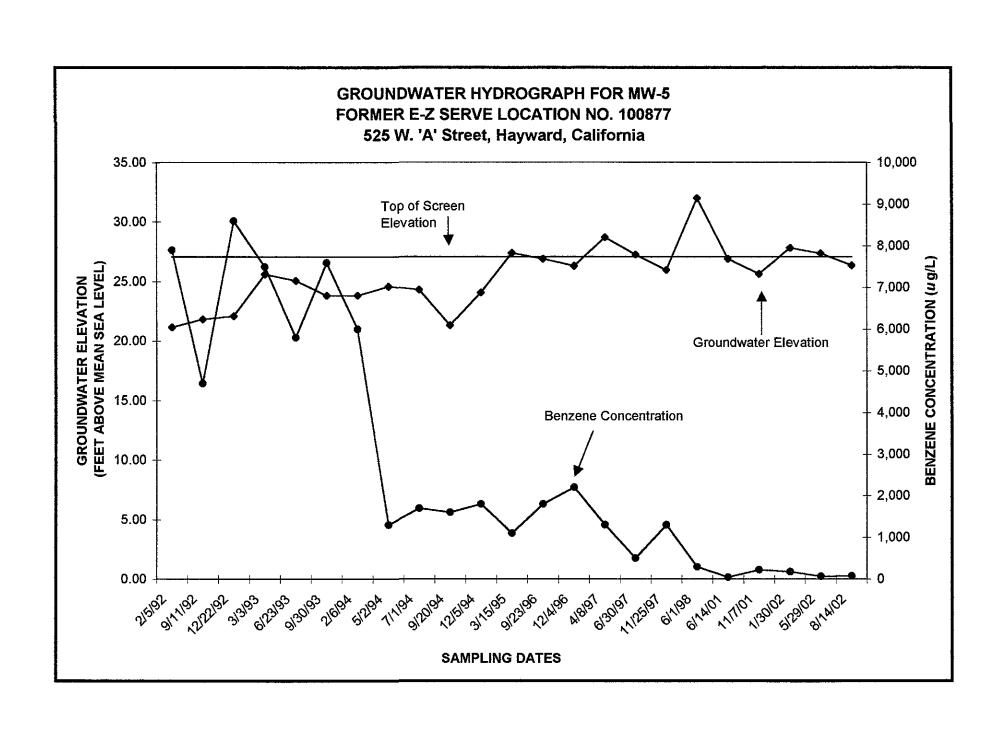


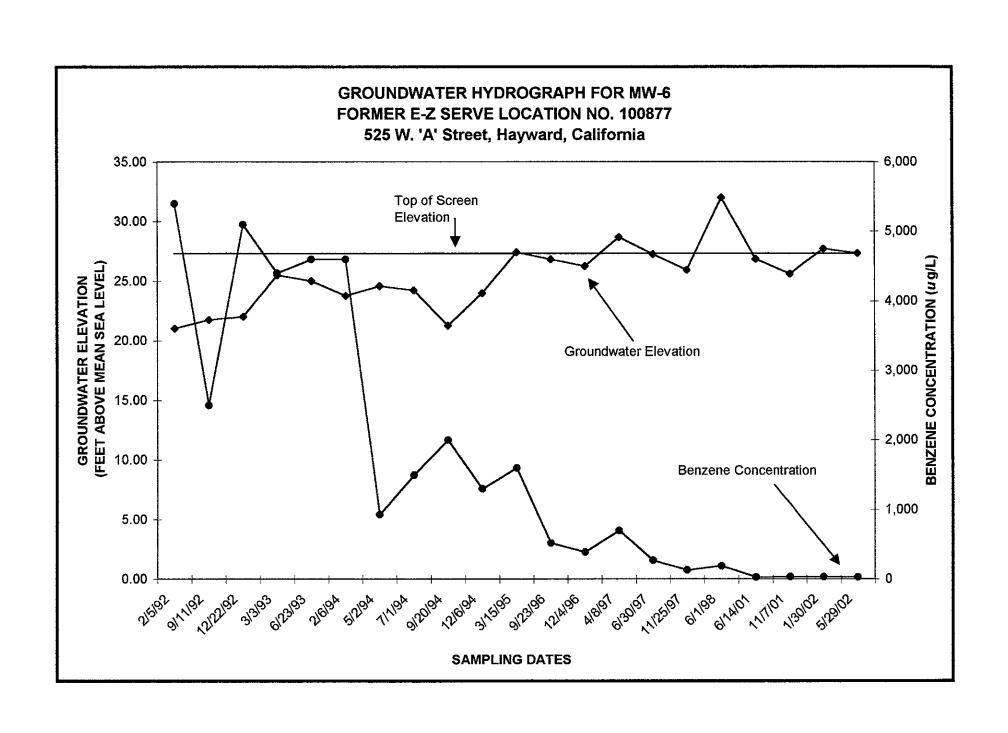


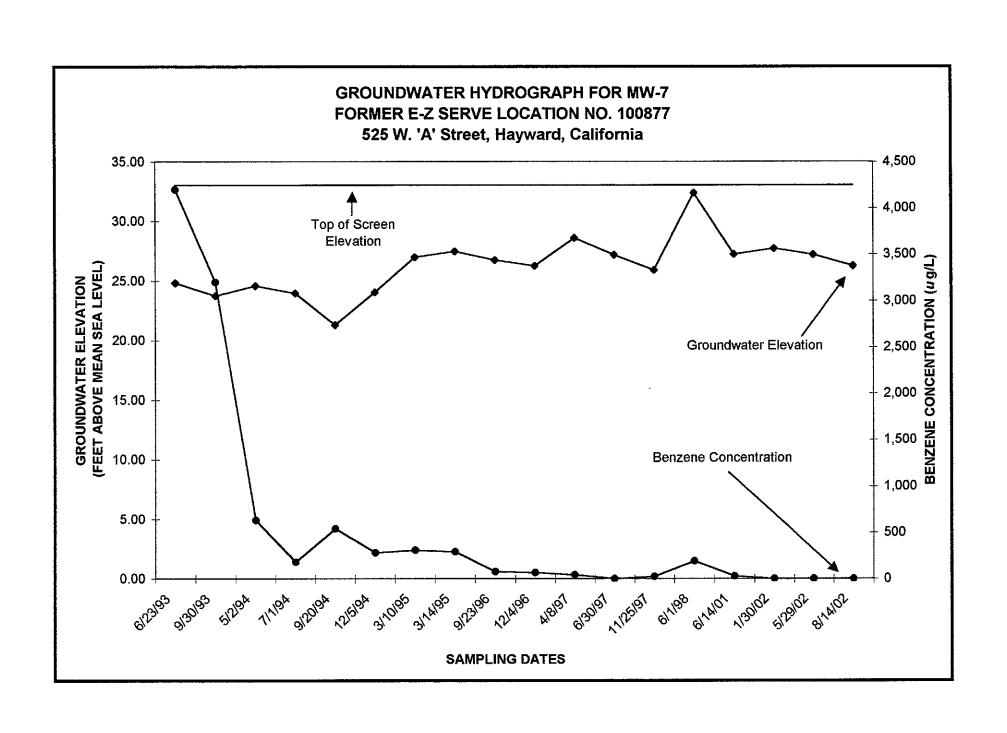


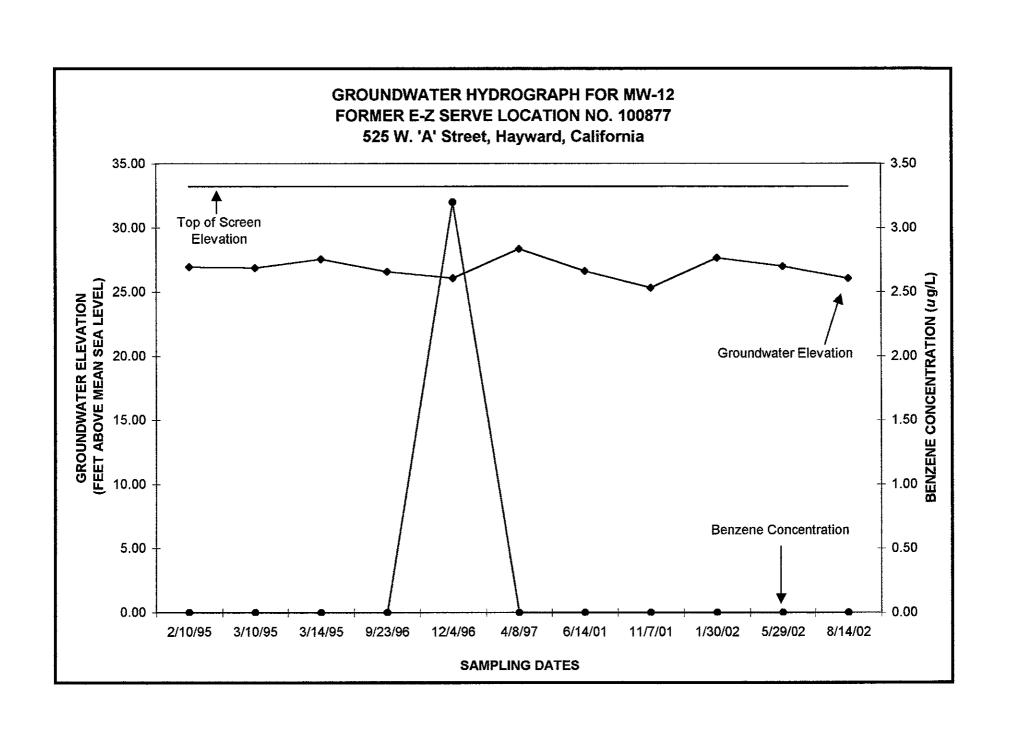


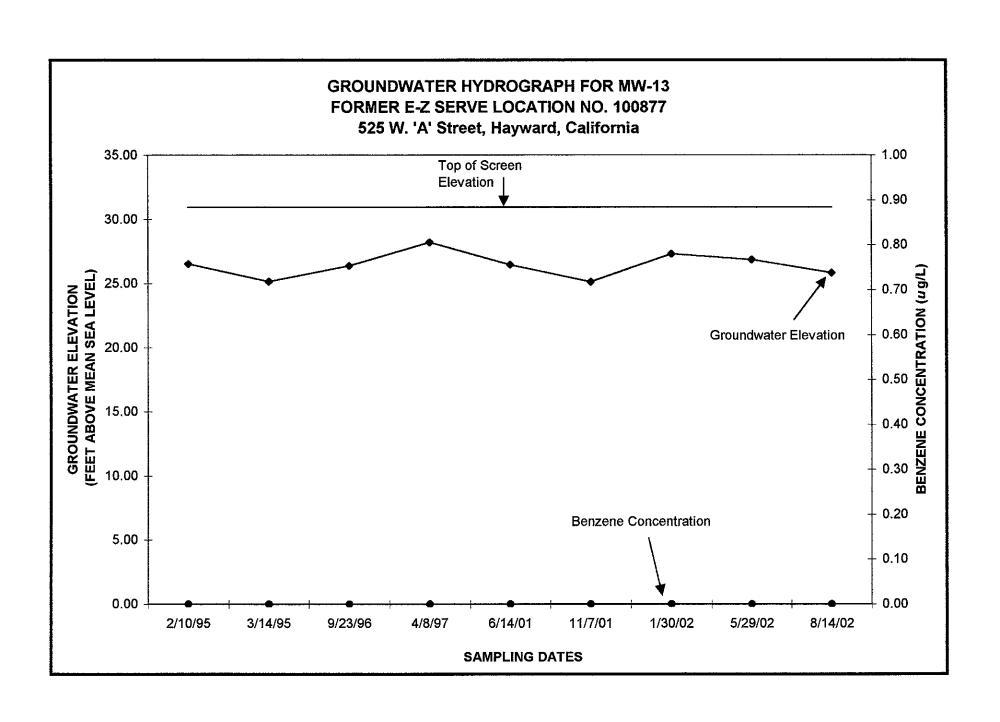


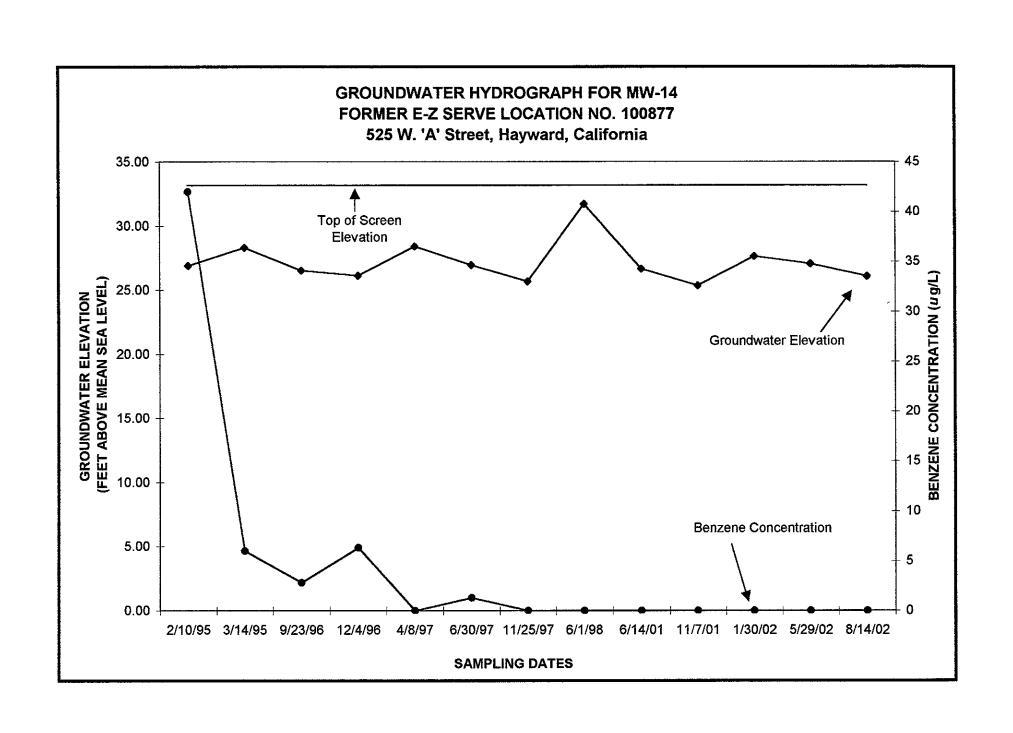












### APPENDIX C

# LABORATORY REPORT AND CHAIN-OF-CUSTODY RECORD



#### REPORT OF ANALYTICAL RESULTS

Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

EZ Serve #100877

Project Number:

Project:

EZS0024

Collected by: POA

 Lab Number:
 28609-2

 Collected:
 08/14/02

 Received:
 08/19/02

 Matrix:
 Aqueous

Sample Description:

MW-1

Analyzed:

08/23/02

Method:

See Below

CONSTITUENT	PQL* ug/L	RESULT** ug/L
Benzene	10.	470.
Toluene	10.	14.
Ethylbenzene	10.	360.
Xylenes	10.	160.
t-Amyl Methyl Ether (TAME)	10.	ND
t-Butyl Alcohol (TBA)	100.	ND
Diisopropyl Ether (DIPE)	10.	ND
Ethyl-t-Butyl Ether (ETBE)	10.	ND
Methyl-t-Butyl Ether (MTBE)	10.	10.
Percent Surrogate Recovery		102

#### TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

1000.

5500.

BTX as a Percent of Fuel

12

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

VA110822 MSD #11 28609-2.xls DZ/sks/pv/ses/jh

Durain Zooda

Dwain Zsadanyi Project Manager

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



#### REPORT OF ANALYTICAL RESULTS

Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

**Project Number:** 

EZS0024

Collected by:

POA

Lab Number: Collected: Received:

28609-3 08/14/02 08/19/02

08/19/02 Aqueous

Sample Description:

MW-1A

Analyzed:

08/23/02

Method:

Matrix:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	2.0	22.
Toluene	2.0	ND
Ethylbenzene	2.0	510.
Xylenes	2.0	240.
t-Amyl Methyl Ether (TAME)	2.0	ND
t-Butyl Alcohol (TBA)	20.	ND
Diisopropyl Ether (DIPE)	2.0	ND
Ethyl-t-Butyl Ether (ETBE)	2.0	ND
Methyl-t-Butyl Ether (MTBE)	2.0	ND
Percent Surrogate Recovery		103

TOTAL PETROLEUM HYDROCARBONS .

Total Petroleum Hydrocarbons

200.

14000.

BTX as a Percent of Fuel

2

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

en.

Dwain Zsadanyi Project Manager

VA110823 MSD #11 28609-3.xls DZ/sks/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

POA

Lab Number: Collected: Received:

28609-4 08/14/02 08/19/02

Aqueous

Sample Description:

MW-2

Analyzed:

08/23/02

Method:

Matrix:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	20.	820.
Toluene	20.	21.
Ethylbenzene	20.	1200.
Xylenes	20.	2600.
t-Amyl Methyl Ether (TAME)	20.	ND
t-Butyl Alcohol (TBA)	200.	ND
Diisopropyl Ether (DIPE)	20.	ND

Percent Surrogate Recovery

Methyl-t-Butyl Ether (MTBE)

Ethyl-t-Butyl Ether (ETBE)

101

ND

29.

TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

2000.

20.

20.

19000.

BTX as a Percent of Fuel

18

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

By.

Dwain Zsadanyi Project Manager

VA110822 MSD #11 28609-4.xls DZ/sks/pv/ses/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project: EZ Serve #100877

Project Number:

EZS0024

Collected by:

POA

Lab Number: Collected:

Received:

Matrix:

28609-5

08/14/02 08/19/02

Aqueous

Sample Description:

MW-3

Analyzed:

08/23/02

Method: See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/ <b>L</b>
Benzene	0.5	19.
Toluene	0.5	ND
Ethylbenzene	0.5	50.
Xylenes	0.5	6.5
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		102
TOTAL PETROLEUM HYDROCARBONS		Market Annual State Control of the C
Total Petroleum Hydrocarbons	50.	2400.

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

BTX as a Percent of Fuel

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

-

Dwain Zsadanyi Project Manager

VA110823 MSD #11 28609-5.xls DZ/sks/pv/jh 1

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project: EZ Serve #100877

Project Number: EZS0024
Collected by: POA

 Lab Number:
 28609-6

 Collected:
 08/14/02

 Received:
 08/19/02

 Matrix:
 Aqueous

Sample Description:

MW-4

Analyzed: Method: 08/23/02

|--|

CONSTITUENT	PQL*	RESULT**
•	ug/L	ug/L
Benzene	2.0	640.
Toluene	2.0	15.
Ethylbenzene	2.0	550.
Xylenes	2.0	35.
t-Amyl Methyl Ether (TAME)	2.0	ND
t-Butyl Alcohol (TBA)	20.	ND
Diisopropyl Ether (DIPE)	2.0	ND
Ethyl-t-Butyl Ether (ETBE)	2.0	ND
Methyl-t-Butyl Ether (MTBE)	2.0	28.
Percent Surrogate Recovery		102

#### TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

200.

5000.

BTX as a Percent of Fuel

1

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

· ·

Dwain Zsadanyi Project Manager

VA110823 MSD #11 28609-6.xls DZ/sks/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project: E

EZ Serve #100877

Project Number:

EZS0024

Collected by:

POA

Lab Number: Collected: 28609-7

Received:

08/14/02 08/19/02

Matrix:

Aqueous

Sample Description:

MW-5

Analyzed:

08/23/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
1.00	ug/L	ug/L
Benzene	0.5	80.
Toluene	0.5	0.9
Ethylbenzene	0.5	150.
Xylenes	0.5	12.
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	1.1
Percent Surrogate Recovery		102

TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

50.

4300.

BTX as a Percent of Fuel

2

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

Æ,

Dwain Zsadanyi Project Manager

VA110823 MSD #11 28609-7.xls DZ/sks/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

**Project Number:** 

EZS0024

Collected by:

POA

Lab Number: Collected: Received:

28609-8 08/14/02

08/19/02 Aqueous

Sample Description:

MW-6

Analyzed:

08/23/02

Method:

Matrix:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	2.0	24.
Toluene	2.0	6.6
Ethylbenzene	2.0	120.
Xylenes	2.0	22.
t-Amyl Methyl Ether (TAME)	2.0	ND
t-Butyl Alcohol (TBA)	20.	ND
Diisopropyl Ether (DIPE)	2.0	ND
Ethyl-t-Butyl Ether (ETBE)	2.0	ND
Methyl-t-Butyl Ether (MTBE)	2.0	ND
Percent Surrogate Recovery		102

## TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

200.

5300.

BTX as a Percent of Fuel

< 1

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

A Service

Dwain Zsadanyi Project Manager

VA110823 MSD #11 28609-8.xls DZ/sks/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

POA

 Lab Number:
 28609-9

 Collected:
 08/14/02

 Received:
 08/19/02

 Matrix:
 Aqueous

Sample Description:

MW-7

Analyzed:

08/24/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	1.3
Toluene	0.5	ND
Ethylbenzene	0.5	74.
Xylenes	0.5	1.3
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		103

TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

50.

4100.

BTX as a Percent of Fuel

< 1

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

Sen,

Dwain Zsadanyi Project Manager

VA110823 MSD #11 28609-9.xls DZ/sks/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: **Scott Levin** 

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project: EZ Serve #100877

Project Number: EZS0024

Collected by: POA Lab Number: 28609-10 Collected: 08/14/02 Received: 08/19/02 Matrix: Aqueous

Sample Description:

**MW-12** 

Analyzed:

08/24/02

Method: See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		100
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

Dwain Zsadanyi **Project Manager** 

VA110823 MSD #11 28609-10.xls DZ/sks/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

POA

Lab Number:

28609-11

Collected:

08/14/02

Received:

08/19/02

Matrix:

Aqueous

Sample Description:

MW-13

Analyzed:

08/23/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		101
TOTAL PETROLEUM HYDROCARBONS		
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

1001

Dwain Zsadanyi Project Manager

VA110823 MSD #11 28609-11.xls DZ/sks/pv/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

**Project Number:** 

EZS0024

Collected by:

**POA** 

Lab Number: Collected:

28609-12

Received:

08/14/02 08/19/02

Matrix:

Aqueous

Sample Description:

MW-14

Analyzed:

08/23/02

N

/lethod:	See	Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	ND
Toluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	ND
t-Amyl Methyl Ether (TAME)	0.5	ND
t-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	ND
Percent Surrogate Recovery		101
TOTAL PETROLEUM HYDROCARBONS		* 1
Total Petroleum Hydrocarbons	50.	ND
BTX as a Percent of Fuel		N/A

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

AL .

Dwain Zsadanyi **Project Manager** 

VA110823 MSD #11 28609-12.xls DZ/sks/pv/jh/ses

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.



Client: Scott Levin

ATC Associates, Inc.

9620 Chesapeake Dr., Ste. 203

San Diego, CA 92123

Project:

EZ Serve #100877

Project Number:

EZS0024

Collected by:

POA

Lab Number:

28609-1

Collected:

08/14/02

Received:

08/19/02 Aqueous

Matrix:

Sample Description:

EX-1

Analyzed:

08/23/02

Method:

See Below

CONSTITUENT	PQL*	RESULT**
	ug/L	ug/L
Benzene	0.5	31.
Foluene	0.5	ND
Ethylbenzene	0.5	ND
Xylenes	0.5	4.2
-Amyl Methyl Ether (TAME)	0.5	ND
-Butyl Alcohol (TBA)	5.0	ND
Diisopropyl Ether (DIPE)	0.5	ND
Ethyl-t-Butyl Ether (ETBE)	0.5	ND
Methyl-t-Butyl Ether (MTBE)	0.5	1.4
Percent Surrogate Recovery		101

## TOTAL PETROLEUM HYDROCARBONS

Total Petroleum Hydrocarbons

50.

250.

BTX as a Percent of Fuel

14

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Note: Analytical range is C4-C12.

Note: TPH quantitated against gasoline.

Note: Oxygenates not included in TPH result.

Submitted by,

ZymaX envirotechnology, inc.

ben.

Dwain Zsadanyi **Project Manager** 

VA110822 MSD #11 28609-1.xls DZ/sks/pv/ses/jh

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.





ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Lab Number: BLK VA110823

Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

Instrument Blank

Analyzed:

08/23/02

Method: See Below

PQL*	RESIII T**		
	RESULT** ug/L		
ug/L			
0.5	ND		
5.0	ND		
0.5	ND		
0.5	ND		
0.5	ND		
	101		
50.	ND		
	N/A		
	0.5 0.5 0.5 0.5 0.5 5.0 0.5 0.5 0.5		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,

ZymaX envirotechnology, inc.

VA110823 MSD #11 A110823b.xls DZ/sks/pv/ses

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<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.





ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Lab Number: BLK VA110822
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

**Instrument Blank** 

Analyzed:

08/22/02

Method: See Below

CONSTITUENT	PQL*	RESULT**		
	ug/L	ug/L		
Benzene	0.5	ND		
Toluene	0.5	ND		
Ethylbenzene	0.5	ND		
Xylenes	0.5	ND		
t-Amyl Methyl Ether (TAME)	0.5	ND		
t-Butyl Alcohol (TBA)	5.0	ND		
Diisopropyl Ether (DIPE)	0.5	ND		
Ethyl-t-Butyl Ether (ETBE)	0.5	ND		
Methyl-t-Butyl Ether (MTBE)	0.5	ND		
Percent Surrogate Recovery		101		
TOTAL PETROLEUM HYDROCARBONS				
Gasoline	50.	ND		
BTX as a Percent of Fuel		N/A		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

Submitted by,

ZymaX envirotechnology, inc.

VA110108 MSD #11 A110822b.xls DZ/sks/pv/mh

Dwain Zsadanyi

Project Manager

<sup>\*</sup>PQL - Practical Quantitation Limit

<sup>\*\*</sup>Results listed as ND would have been reported if present at or above the listed PQL.





ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Lab Number: Collected:

**QS VA110823** 

Received: Matrix:

Aqueous

Project:

**Project Number:** Collected by:

Sample Description:

**Quality Assurance Spike** 

Analyzed:

08/23/02

See Below Method:

CONSTITUENT	Amount Spiked	Amount Recovered	Percent	
	ug/L	ug/L	Recovery	
Benzene	2.2	2.0	91	
Toluene	30.6	34.1	111	
Ethylbenzene	9.3	9.1	98	
Xylenes	50.0	50.9	102	
Methyl t-Butyl Ether (MTBE)	29.5	30.2	102	
Percent Surrogate Recovery			102	
TOTAL PETROLEUM HYDROCARBONS			•	
Gasoline	500.	539.	108	
BTX as a Percent of Fuel	17	16		

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

VA110823 MSD #11 A110823q.xls DZ/sks/pv/ses

Submitted by, ZymaX envirotechnology, inc.

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# QUALITY ASSURANCE REPORT SPIKE DUPLICATE RESULTS

Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Lab Number: QSD VA110823
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

Quality Assurance Spike Duplicate

Analyzed: Method: 08/23/02 See Below

CONSTITUENT	Amount Spiked	Amount Recovered	Percent	Relative Percent	
	ug/L	ug/L	Recovery	Difference*	
Benzene	2.2	2.1	95	5	
Toluene	30.6	35.8	117	5	
Ethylbenzene	9.3	9.6	103	5	
Xylenes	50.0	53.6	107	5	
Methyl t-Butyl Ether (MTBE)	29.5	31.7	107	5	
Percent Surrogate Recovery			102		
TOTAL PETROLEUM HYDROCARE	BONS				
Gasoline	500.	557.	111	3	
BTX as a Percent of Fuel	17	16			

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

\*Relative Percent Difference of the spike and spike duplicate

Note: Analyzed by EPA 8260 and GC/MS Combination.

VA110823 MSD #11 A110823q.xls DZ/sks/pv/ses Submitted by, ZymaX envirotechnology, inc.

- 100 B.





ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Lab Number: QS VA110822
Collected:
Received:
Matrix: Aqueous

Project:

Project Number: Collected by: Sample Description:

Quality Assurance Spike

Analyzed:

08/22/02

Method:

See Below

CONSTITUENT	Amount Spiked ug/L	Amount Recovered ug/L	Percent Recovery
Benzene	2.2	2.1	95
Toluene	30.6	34.8	114
Ethylbenzene	9.3	9.3	100
Xylenes	50.0	51.8	104
Methyl t-Butyl Ether (MTBE)	29.5	33.2	113
Percent Surrogate Recovery			102
TOTAL PETROLEUM HYDROCARBONS			
Gasoline	500.	459.	92
BTX as a Percent of Fuel	17	19	

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

VA110822 MSD #11 A110822q.xls DZ/sks/pv/mh Submitted by, ZymaX envirotechnology, inc.

-60



## **QUALITY ASSURANCE REPORT** SPIKE DUPLICATE RESULTS

Client:

ZymaX envirotechnology, inc. 71 Zaca Lane, Suite 110 San Luis Obispo, CA 93401

Lab Number: **QSD VA110822** Collected: Received: Matrix: Aqueous

Project:

Project Number: Collected by:

Sample Description:

**Quality Assurance Spike Duplicate** 

Analyzed:

08/22/02

See Below Method:

CONSTITUENT	Amount Spiked	Amount Recovered	Percent	Relative Percent	
	ug/L	ug/L	Recovery	Difference*	
Benzene	2.2	2.0	91	5	
Toluene	30.6	34.6	113	1	
Ethylbenzene	9.3	9.6	103	3	
Xylenes	50.0	52.9	106	· 2	
Methyl t-Butyl Ether (MTBE)	29.5	31.0	105	7	
Percent Surrogate Recovery			102		
TOTAL PETROLEUM HYDROCARBO	NS				
Gasoline	500.	480.	96	4	
BTX as a Percent of Fuel	17	19			

ZymaX envirotechnology, inc. is certified by CA Department of Health Services: Laboratory #1717

Note: Analyzed by EPA 8260 and GC/MS Combination.

VA110822 MSD #11 A110822q.xls DZ/sks/pv/mh

Submitted by, ZymaX envirotechnology, inc.

Dwain Zsadanyi

- Co.

<sup>\*</sup>Relative Percent Difference of the spike and spike duplicate

ZymaX

71 Zaca Lane tel 805.544.4696 San Luis Obispo CA 93401 fax 805.544.8226 10#43.25827.0003

**CHAIN of CUSTODY** 

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and water		(Ori	<del></del>			2/8				* -
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