

December 31, 1997

12/31/97

**QUARTERLY GROUNDWATER
MONITORING REPORT**

Third Quarter, 1997

625 Hegenberger Road
Oakland, California

#568

Project No. 2169

Prepared For

Diversified Investment and Management Corp.
400 Oyster Point Blvd., Suite 415
South San Francisco, CA 94080

Prepared By

All Environmental, Inc.
3364 Mt. Diablo Boulevard
Lafayette, CA 94549
(800) 801-3224

AEI



ALL ENVIRONMENTAL, INC.

Environmental Engineering & Construction

December 31, 1997

Mr. Barney Chan, Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Rm 250
Alameda, CA 94502

RE: Quarterly Groundwater Monitoring Report
Third Quarter of 1997
625 Hegenberger Road
Oakland, California
Project No. 2169

Dear Mr. Chan:

This Quarterly Groundwater Monitoring Report is submitted by All Environmental, Inc. (AEI) on the behalf of Diversified Investment and Management Corp. for the former fuel service station location at 625 Hegenberger Road, Oakland, California. AEI measured the depth to groundwater and collected water samples from five groundwater monitoring wells on October 2, 1997. This groundwater monitoring episode is being conducted to monitor groundwater contamination caused by the release of hydrocarbon fuels at the site and to measure various chemical parameters to judge the suitability of the site for groundwater bioremediation.

Background

In October 1993, three underground storage tanks and related structures were removed from the site under the observation of Levine Fricke. Approximately 300 cubic yards (cy) of soil was excavated during the tank removal. Levine Fricke and Subsurface Consultants performed several shallow soil borings and installed six groundwater monitoring wells at the site. Results of the comprehensive soil investigation indicated that hydrocarbon contamination was present in elevated levels at the site.

The quarterly monitoring of the six monitoring wells was performed by Levine Fricke through January 1995. AEI began monitoring the wells in October 1995. In March 1996, AEI destroyed one of the wells (designated MW-24) in anticipation of excavation activities.

AEI excavated and aerated 1,600 cubic yards of contaminated soil in the spring and summer of 1996 as detailed in AEI's report, "Phase II Environmental Site Assessment" dated March 3, 1997. The excavation extended to the vadose zone, approximately 5 to 7 feet below ground surface (bgs). Figure 1 shows the areas excavated. AEI believes that all significant sources of groundwater contamination have been abated and that only minor

Corporate Headquarters:

3364 Mt. Diablo Blvd.
Lafayette, CA 94549
Phone : (510) 283-6000
Fax: (510) 283-6121

(800) 801-3224
www.all-environmental.com

Los Angeles Office:

2200 Pacific Coast Hwy., Suite 217
Hermosa Beach, CA 90254
Phone: (310) 798-4255
Fax: (310) 798-2841

all significant sources of groundwater contamination have been abated and that only minor contaminant concentrations remain within the soil at the site. The groundwater contamination should eventually attenuate to low levels. The site is currently being evaluated as a candidate for groundwater bioremediation to expedite the reduction of contamination.

Summary of Activities

Well locations are also shown in Figure 1. The sampling procedure for each monitoring well involved measuring water levels, purging the wells, and collecting a water sample. The depth from the top of the well casing and the total well depth were measured prior to sampling with an electric water level indicator. The wells were purged and a groundwater sample was collected from each well using a battery powered submersible pump. Temperature, pH, conductivity, and turbidity were measured during the purging of the wells. AEI removed approximately 4.5 to 6.0 well volumes per well and, provided that the water quality parameters stabilized, a water sample was collected.

Water samples were poured slowly into laboratory-provided glass sampling containers, capped, and shipped on ice under proper chain of custody to McCampbell Analytical Inc. The samples were analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline by EPA Method 5030/8015, benzene, toluene, ethylbenzene, and total xylenes (BTEX) by EPA Method 602, methyl tertiary butyl ether (MTBE), and TPH as diesel. AEI discontinued the analysis of samples for Total Petroleum Hydrocarbons as oil (TPHo) by EPA Methods 3510/8015 following the recommendations of the quarterly monitoring report dated March 20, 1996.

Field Results

No free product was encountered during monitoring activities. Groundwater levels for October 2, 1997 ranged from 1.50 to 1.82 feet below mean sea level (msl). These groundwater elevations were similar to the July 1997 levels. Groundwater flow direction appears to be to the west. The groundwater gradient was calculated to be 0.003 ft/ft. Groundwater elevation data are summarized in Table 1 and shown in Figure 1. The groundwater elevation contours and the groundwater flow directions are shown in Figure 1. A summary of field parameters measured during sampling is presented in Table 2.

Groundwater Quality

In general, analysis of samples retrieved from wells MW-8 through MW-16 did not show a substantial increase or decrease in contamination levels. Contaminant concentrations

Mr. Barney Chan, Hazardous Materials Specialist
Alameda County Health Care Services Agency
December 31, 1997
Page 3

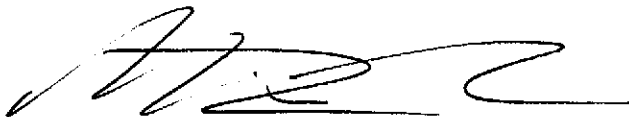
did not change by a significant amount in relation to previous monitoring episodes. A summary of groundwater quality data, including available historic data, is presented in Table 3. Laboratory analysis data are presented in Appendix A.

Conclusions / Recommendations

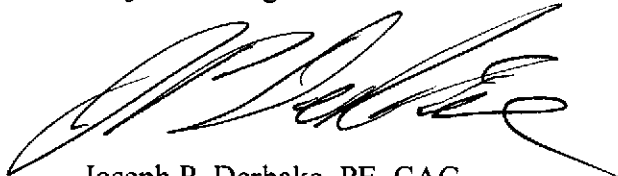
Contaminant concentrations are similar in relation to the July monitoring episode. AEI recommends continuing quarterly monitoring for TPH as gasoline, TPH as diesel, MTBE, and BTEX.

Please do not hesitate to call either of the undersigned, if you have any questions.

Sincerely,
All Environmental, Inc.



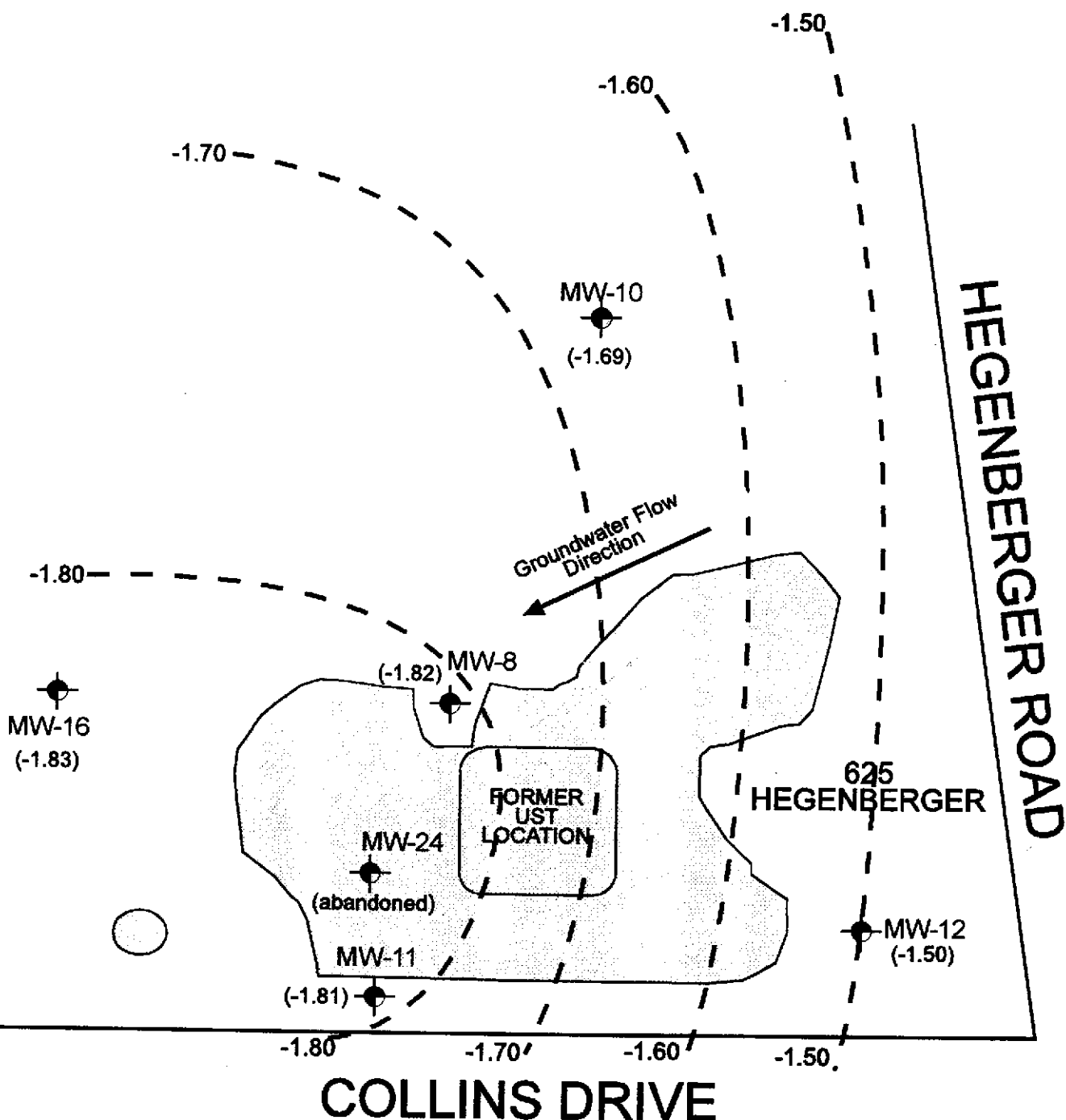
Mauricio Escobar
Project Geologist



Joseph P. Derhake, PE, CAC
Senior Author

Attachments

cc: Dinesh Manner, Diversified Investment and Management Corp.
400 Oyster Point Boulevard, Suite 400, South San Francisco, CA 94080



LEGEND	
	Groundwater elevation (feet).
	Line of equal groundwater elevation.
	Excavated area.



ALL ENVIRONMENTAL, INC.	
3364 MT. DIABLO BOULEVARD, LAFAYETTE, CA	
DRAWN BY: M. ESCOBAR	ALL DISTANCES APPROXIMATE
PAGE 1 OF 1	APPROXIMATE SCALE: 1"=40'
POTENTIOMETRIC MAP	
625 Hegenberger Road, Oakland, California	JN 2359 December 31, 1997

Table 1
Groundwater Elevations
625 Hegenberger Road, Oakland, California

Well ID	Date	Well Elevation (ft msl)	Depth to Water (ft)	Groundwater Elevation (ft msl)
MW-8	12/22/93	4.88	6.72	-1.84
MW-10	12/22/93	4.21	6.00	-1.79
MW-11	12/22/93	5.04	6.84	-1.80
MW-12	12/22/93	4.58	6.07	-1.49
MW-16	12/22/93	5.53	7.48	-1.95
MW-8	6/30/94	4.88	6.55	-1.67
MW-10	6/30/94	4.21	5.79	-1.58
MW-11	6/30/94	5.04	6.73	-1.69
MW-12	6/30/94	4.58	6.06	-1.48
MW-16	6/30/94	5.53	7.28	-1.75
MW-8	9/27/94	4.88	7.20	-2.32
MW-10	9/27/94	4.21	6.39	-2.18
MW-11	9/27/94	5.04	7.41	-2.37
MW-12	9/27/94	4.58	6.57	-1.99
MW-16	9/27/94	5.53	7.93	-2.40
MW-8	1/4/95	4.88	6.21	-1.67
MW-10	1/4/95	4.21	5.42	-1.58
MW-11	1/4/95	5.04	6.45	-1.69
MW-12	1/4/95	4.58	5.50	-1.48
MW-16	1/4/95	5.53	7.03	-1.50
MW-8	1/10/95	4.88	5.09	-2.32
MW-10	1/10/95	4.21	4.67	-2.18
MW-11	1/10/95	5.04	5.72	-2.37
MW-12	1/10/95	4.58	4.46	-1.99
MW-16	1/10/95	5.53	6.21	-2.40
MW-24	1/10/95	5.49	5.97	-0.48
MW-8	10/2/95	4.88	7.66	-2.78
MW-10	10/2/95	4.21	6.87	-2.66
MW-11	10/2/95	5.04	7.85	-2.81
MW-12	10/2/95	4.58	6.99	-2.41
MW-16	10/2/95	5.53	8.40	-2.87
MW-24	10/2/95	5.49	8.31	-2.82
MW-8	1/8/96	4.88	7.45	-2.57
MW-10	1/8/96	4.21	6.82	-2.61
MW-11	1/8/96	5.04	7.91	-2.87
MW-12	1/8/96	4.58	6.65	-2.07
MW-16	1/8/96	5.53	8.23	-2.70
MW-24	1/8/96	5.49	8.08	-2.59
MW-8	4/25/96	4.88	7.32	-2.44
MW-10	4/25/96	4.21	7.48	-3.27
MW-11	4/25/96	5.04	7.51	-2.47
MW-12	4/25/96	4.58	6.56	-1.98
MW-16	4/25/96	5.53	8.06	-2.53
MW-8	3/25/97	4.88	6.75	-1.87
MW-10	3/25/97	4.21	5.83	-1.62
MW-11	3/25/97	5.04	6.83	-1.79
MW-12	3/25/97	4.58	6.03	-1.45
MW-16	3/25/97	5.53	7.35	-1.82
MW-8	7/3/97	4.88	8.70	-3.82
MW-10	7/3/97	4.21	5.87	-1.66
MW-11	7/3/97	5.04	6.83	-1.79
MW-12	7/3/97	4.58	6.03	-1.45
MW-16	7/3/97	5.53	7.35	-1.82
MW-8	10/2/97	4.88	6.70	-1.82
MW-10	10/2/97	4.21	5.90	-1.69
MW-11	10/2/97	5.04	6.85	-1.81
MW-12	10/2/97	4.58	6.08	-1.50
MW-16	10/2/97	5.53	7.36	-1.83

Notes: All elevations are measured from the top of casing.
ft msl = feet above mean sea level
NA = Not Available
All well elevation data was extracted from past Levine-Fricke reports.

Table 2
Water Quality Parameters
625 Hegenberger Road, Oakland, California

Well ID	Date	Well Volume (gallons)	Volume Withdrawn (gallons)	Well Volumes Withdrawn	Stabilized Temperature (deg. C)	Qualitative Turbidity	Stabilized pH	Stabilized Dissolved Oxygen (mg/L)	Stabilized Redox Potential (mV)
MW-8	12/22/93	1.5	4.50	3.00	19.40	turbid*			
MW-10	12/22/93	1.6	7.00	4.38	20.80	moderately turbid			
MW-11	12/22/93	1.5	4.50	3.00	20.20	turbid			
MW-12	12/22/93	1.6	5.30	3.31	20.30	moderately turbid			
MW-16	12/22/93	1.1	4.50	4.09	20.50	turbid			
MW-8	6/30/94	1.5	8.00	5.33	21.00	turbid*			
MW-10	6/30/94	1.6	6.00	3.75	21.00	turbid			
MW-11	6/30/94	1.4	6.00	4.29	20.20	turbid			
MW-12	6/30/94	1.6	6.00	3.75	20.60	moderately turbid			
MW-16	6/30/94	1.1	4.50	4.09	21.80	turbid			
MW-8	9/27/94	1.4	4.50	3.21	21.60	turbid*			
MW-10	9/27/94	1.5	6.00	4.00	22.60	turbid			
MW-11	9/27/94	1.3	3.00	2.31	21.00	turbid			
MW-12	9/27/94	1.5	6.00	4.00	22.50	turbid			
MW-16	9/27/94	1.0	3.00	3.00	22.60	turbid			
MW-8	1/10/95	1.7	5.30	3.12	17.20	turbid*			
MW-10	1/10/95	1.8	6.00	3.33	19.50	turbid			
MW-11	1/10/95	1.6	5.30	3.31	18.60	turbid			
MW-12	1/10/95	1.8	6.00	3.33	19.30	turbid			
MW-16	1/10/95	1.2	6.00	5.00	19.30	turbid			
MW-24	1/10/95	4.9	41.00	8.37	18.90	turbid			
MW-8	10/2/95	1.1	11.00	10.00	22.80	moderately turbid	6.49		
MW-10	10/2/95	1.5	11.00	7.33	22.60	turbid	7.20		
MW-11	10/2/95	1.0	12.00	12.00	22.00	moderately turbid	6.85		
MW-12	10/2/95	1.3	11.00	8.46	22.90	turbid	7.20		
MW-16	10/2/95	1.1	11.00	10.00	22.60	turbid	7.20		
MW-24	10/2/95	3.4	20.00	5.88	22.80	turbid	7.10		
MW-8	1/8/96	1.1	12.00	10.91	17.30**	slightly turbid	6.74**		
MW-10	1/8/96	1.5	10.00	6.67	17.90**	slightly turbid	6.62**		
MW-11	1/8/96	1.0	5.50	5.50	17.60**	slightly turbid	6.65**		
MW-12	1/8/96	1.2	10.00	8.33	18.00**	slightly turbid	6.49**		
MW-16	1/8/96	0.9	5.00	5.56	19.00**	slightly turbid	7.50**		
MW-24	1/8/96	3.4	35.00	10.29	17.60**	slightly turbid	6.67**		
MW-8	4/25/96	1.1	5.00	4.55	21.11	clear	6.53		
MW-10	4/25/96	1.4	5.00	3.57	22.83	slightly turbid	6.70		
MW-11	4/25/96	1.1	5.50	5.00	21.39	clear	6.58		
MW-12	4/25/96	1.2	5.00	4.17	22.39	clear	6.50		
MW-16	4/25/96	1.2	5.00	4.17	25.33	slightly turbid	7.12		
MW-8	3/25/97	2.2	10.00	4.55	18.17	clear	6.67	0.23	-140.00
MW-10	3/25/97	3.4	12.00	3.57	19.72	slightly turbid	6.79	0.35	-131.00
MW-11	3/25/97	2.0	10.00	5.00	18.56	clear	6.64	0.19	-120.00
MW-12	3/25/97	2.4	10.00	4.17	18.44	clear	6.67	0.19	-79.00
MW-16	3/25/97	2.4	10.00	4.17	17.94	slightly turbid	7.02	0.10	-135.00
MW-8	7/3/97	1.1	12.00	10.91	19.58	clear	6.43	0.04	-99.00
MW-10	7/3/97	1.5	12.00	8.00	21.51	slightly turbid	6.67	0.17	-104.00
MW-11	7/3/97	1.4	12.00	8.57	19.38	clear	6.36	0.05	-84.00
MW-12	7/3/97	1.5	12.00	8.00	20.62	clear	6.50	0.10	-76.00
MW-16	7/3/97	1.0	12.00	12.00	19.66	clear	6.76	0.06	-103.00
MW-8	10/2/97	1.1	4.50	4.09	21.23	clear	6.93	NA	NA
MW-10	10/2/97	1.4	5.00	3.57	23.04	slightly turbid	7.26	NA	NA
MW-11	10/2/97	1.1	7.00	6.36	22.94	clear	6.73	NA	NA
MW-12	10/2/97	1.2	4.50	3.75	20.94	clear	7.15	NA	NA
MW-16	10/2/97	1.2	7.00	5.83	19.11	slightly turbid	7.22	NA	NA

Notes: * A slight hydrocarbon sheen was reported.
 ** Only one measurement collected.

*indicates
 redox in
 low O2
 condition*

Table 3
Historic Groundwater Monitoring Data
625 Hegenberger Road, Oakland, California
(concentrations in mg/L)

Well ID	Date	Consultant/ Lab		TPHg	MTBE	Benzene	Toluene	Ethyl- Benzene	Xylenes	TPHo	TPHd	Total Lead	
MW-8	(1)	SUB	(2)	NA	NA	3.7	BDL	0.29	0.69	NA	NA	BDL	
	5/28/93	HC/SUP		19	NA	6.4	0.028	0.16	0.036	NA	1	(3)	
	12/22/93	LF/AEN	(4)	56	NA	16	5.9993	(5)	0.65	2.7	<0.2	0.3	<0.04
	6/30/94	LF/AEN	(4)	41	NA	11	4.8	2.2	8.2	0.5	<0.5	<0.04	
	9/27/94	LF/AEN		28	NA	8.5	0.26	1.6	5.3	<0.2	0.62	<0.04	
	1/10/95	LF/AEN		58	NA	10	11	2.4	12	<0.2	0.07	NA	
	10/2/95	AEI/PEL		28	NA	0.051	0.016	0.054	0.08	<0.5	<0.05	NA	
	1/8/96	AEI/MAI		72	NA	8.6	13	2.2	12	<0.25	3.7	NA	
	duplicate	1/8/96	AEI/MAI		62	NA	7.2	9.5	1.6	8	NA	NA	NA
	4/25/96	AEI/MAI		33	NA	7.6	2.3	1.5	4.8	NA	3.1	NA	
	3/25/97	AEI/MAI		23	1.5	8.3	0.08	0.35	0.38	NA	1.9	NA	
	7/3/97	AEI/MAI		14	1.3	6.6	0.032	0.19	0.1	NA	1.4	NA	
	duplicate	7/3/97	AEI/MAI		15	1.7	7.3	0.034	0.16	0.11	NA	1.4	NA
	10/2/97	AEI/MAI		7.6	0.89	3.5	0.014	0.037	0.021	NA	0.81	NA	
MW-10	(1)	SUB		NA	NA	0.0017	BDL	BDL	BDL	NA	NA	BDL	
	5/28/93	HC/SUP		<0.05	NA	<0.0003	<0.0003	<0.0003	<0.0009	NA	0.054	(3)	
	12/22/93	LF/AEN		<0.05	NA	<0.0005	<0.0007	(5)	<0.0005	<0.0002	<0.2	0.58	<0.04
	6/30/94	LF/AEN		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0002	0.6	<0.05	<0.04	
	9/27/94	LF/AEN		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	0.61	<0.04	
	1/10/95	LF/AEN		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	0.6	NA	
	10/2/95	AEI/PEL		0.35	NA	0.0044	0.0026	0.0023	0.0064	<0.5	<0.05	NA	
	1/8/96	AEI/MAI		0.05	NA	0.0058	0.0071	0.0012	0.0064	<0.25	<0.05	NA	
	4/25/96	AEI/MAI		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.05	NA	
	3/25/97	AEI/MAI		<0.05	<0.005	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.05	NA	
	7/3/97	AEI/MAI		<0.05	<0.005	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.05	NA	
	10/2/97	AEI/MAI		<0.05	<0.005	<0.0005	<0.0005	<0.0005	<0.0005	NA	0.11	NA	
	MW-11	(1)	SUB	(6)	NA	NA	0.053	BDL	BDL	BDL	NA	NA	0.21
		5/28/93	HC/SUP		1.2	NA	0.45	0.017	0.0015	0.0021	NA	<0.05	(3)
12/22/93		LF/AEN		9.2	NA	4.5	0.0383	(5)	0.012	0.043	<0.2	0.53	<0.04
6/30/94		LF/AEN		8.8	NA	1.5	0.013	0.69	1.2	1.1	<0.05	<0.04	
duplicate		6/30/94	LF/AEN		9.7	NA	1.7	0.014	0.73	1.3	NA	NA	NA
9/27/94		LF/AEN		15	NA	6.5	0.026	0.87	0.59	<0.2	0.91	<0.04	
1/10/95		LF/AEN		14	NA	0.89	0.22	0.84	2.4	0.2	1.1	NA	
10/2/95		AEI/PEL		7.1	NA	0.047	0.0057	0.011	0.036	<0.5	<0.05	NA	
1/8/96		AEI/MAI		12	NA	1.2	0.099	0.79	1.4	<0.25	2	NA	
4/25/96		AEI/MAI		5.8	NA	0.23	0.059	0.2	0.77	NA	1.4	NA	
3/25/97		AEI/MAI		0.76	0.13	0.13	0.049	0.0029	0.001	NA	0.49	NA	
7/3/97		AEI/MAI		0.29	0.38	<0.0005	<0.0005	0.6	<0.0005	NA	<0.05	NA	
10/2/97		AEI/MAI		0.22	0.72	0.0088	0.00073	<0.0005	0.00067	NA	0.22	NA	
MW-12		(1)	SUB		NA	NA	0.0017	BDL	BDL	BDL	NA	NA	BDL
	5/28/93	HC/SUP		<0.05	NA	<0.0003	<0.0003	<0.0003	<0.0009	NA	<0.05	(3)	
	12/22/93	LF/AEN		0.05	NA	<0.0005	<0.0007	(5)	<0.0005	<0.0002	<0.2	0.3	<0.04
	6/30/94	LF/AEN		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0002	0.4	<0.05	<0.04	
	9/27/94	LF/AEN		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	0.4	<0.04	
	duplicate	9/27/94	LF/AEN		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0002	NA	NA	NA
	1/10/95	LF/AEN		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0002	<0.2	0.3	NA	
	10/2/95	AEI/PEL		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0005	<0.5	<0.05	NA	
	1/8/96	AEI/MAI		<0.05	NA	0.0024	0.0027	0.00054	0.0028	<0.25	<0.05	NA	
	4/25/96	AEI/MAI		<0.05	NA	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.05	NA	
	3/25/97	AEI/MAI		<0.05	0.016	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.05	NA	
	7/3/97	AEI/MAI		<0.05	0.016	<0.0005	<0.0005	<0.0005	<0.0005	NA	<0.05	NA	
	10/2/97	AEI/MAI		<0.05	0.017	<0.0005	<0.0005	<0.0005	<0.0005	NA	0.12	NA	
	MW-16	(1)	SUB	(7)	NA	NA	BDL	BDL	BDL	BDL	NA	NA	BDL
5/28/93		HC/SUP		<0.05	NA	0.0028	<0.0003	<0.0007	<0.0009	NA	<0.05	(3)	
12/22/93		LF/AEN		2.2	NA	<0.0005	<0.0007	(5)	<0.0005	<0.0002	<0.2	0.52	<0.04
6/30/94		LF/AEN		<0.05	NA	0.008	<0.0005	<0.0005	<0.0002	0.9	<0.05	<0.04	
9/27/94		LF/AEN		0.07	NA	0.017	<0.0005	<0.0005	<0.0002	<0.2	0.59	<0.04	
1/10/95		LF/AEN		0.3	NA	0.19	<0.0005	<0.0005	<0.0002	<0.2	0.7	NA	
10/2/95		AEI/PEL		0.55	NA	0.0077	0.0007	0.0035	0.013	<0.5	<0.05	NA	
1/8/96		AEI/MAI		0.36	NA	<0.0005	<0.0005	0.004	0.0097	<0.25	0.14	NA	
4/25/96		AEI/MAI		1.1	NA	0.39	0.0037	0.0032	0.014	NA	0.33	NA	
3/25/97		AEI/MAI		0.31	2.1	<0.0005	<0.0005	<0.0005	0.0014	NA	0.12	NA	

Table 3
Historic Groundwater Monitoring Data
625 Hegenberger Road, Oakland, California
(concentrations in mg/L)

Well ID	Date	Consultant/ Lab	TPHg	MTBE	Benzene	Toluene	Ethyl- Benzene	Xylenes	TPHo	TPHd	Total Lead
MW-10	7/3/97	AEI/MAI	0.25	1.9	<0.0005	<0.0005	<0.0005	<0.0005	NA	0.13	NA
	10/2/97	AEI/MAI	0.29	2	<0.0005	<0.0005	<0.0005	<0.0005	NA	0.18	NA
MW-24 duplicate	1/10/95	LF/AEN	31	NA	12	1.9	1.1	1.3	0.2	0.9	NA
	1/10/95	LF/AEN	31	NA	12	2	1.1	1.3	0.2	0.8	NA
	10/2/95	AEI/PEL	8.6	NA	0.044	0.011	0.012	0.04	<0.5	<0.05	NA
	1/8/96	AEI/MAI (8)	22	NA	8.8	0.14	0.5	0.28	<0.25	1.5	NA
Blanks											
Trip Blank	5/28/93	HC/SUP	<0.05		<0.0003	<0.0003	<0.0003	<0.0009	NA	NA	BDL
MW-12-BB	12/22/93	LF/AEN	<0.05		<0.0005	0.0007	<0.0005	<0.0002	NA	NA	(3)
MW-16-BB	12/22/93	LF/AEN	NA		NA	NA	NA	NA	NA	NA	<0.04
MW-12-BB	6/30/94	LF/AEN	<0.05		<0.0005	<0.0005	<0.0005	<0.0002	NA	NA	<0.04
MW-12-BB	9/27/94	LF/AEN	<0.05		<0.0005	<0.0005	<0.0005	<0.0002	NA	NA	NA
Trip Blank	9/27/94	LF/AEN	<0.05		<0.0005	<0.0005	<0.0005	<0.0002	NA	NA	NA
MW-11-BB	1/10/95	LF/AEN	<0.05		<0.0005	<0.0005	<0.0005	<0.0002	NA	NA	NA

Notes

- BDL below detection limit
- NA not analyzed
- NS not sampled
- TPHd total petroleum hydrocarbons as diesel
- TPHg total petroleum hydrocarbons as gasoline
- TPHo total petroleum hydrocarbons as oil
- MTBE methyl tertiary butyl ether
- AEN American Environmental Networks, Pleasant Hill, California
- HC HartCrowser, San Francisco, California
- LF Levine Fricke, Emeryville, California
- SUB Subsurface Consultants, Oakland, California
- SUP Superior Analytical Laboratories, Martinez, California
- AEI All Environmental, Inc., Lafayette, California
- PEL Priority Analytical Laboratories, Milpitas, California
- MAI McCampbell Analytical Inc., Pacheco, California

- (1) Date of groundwater sampling unavailable.
- (2) 18 mg/ total volatile hydrocarbons also detected
- (3) All May 1993 samples also analyzed for total organic lead (DHS Method). The compound was not detected above the detection limit of 4 mg/l
- (4) A slight hydrocarbon sheen was observed on the surface of the well water.
- (5) Toluene detection for 22-Dec-93 were qualified using 0.0007 mg/l as a baseline. The bailer blank (MW-12-BB) contained toluene at 0.0007 mg/l.
- (6) 0.24 mg/l total volatile hydrocarbons also detected
- (7) 0.38 mg/l total volatile hydrocarbons also detected
- (8) Well Mw-8 was abandoned on April 5, 1996.

APPENDIX A
LABORATORY DATA

 McCAMPBELL ANALYTICAL INC.	110 Second Avenue South, #D7, Pacheco, CA 94553 Telephone: 510-798-1620 Fax: 510-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com
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All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #2169; Hegenberger	Date Sampled: 10/02/97
		Date Received: 10/02/97
	Client Contact: Bryan Campbell	Date Extracted: 10/03-10/07/97
	Client P.O.:	Date Analyzed: 10/03-10/07/97


Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*
 EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)*	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	% Recovery Surrogate
81496	MW-8	W	7600,c,a	890	3500	14	37	21	105
81497	MW-10	W	ND	ND	ND	ND	ND	ND	96
81498	MW-11	W	220,e	720	8.8	0.73	ND	0.67	104
81499	MW-12	W	ND	17	ND	ND	ND	ND	105
81500	MW-16	W	290,c	2000	ND	ND	ND	ND	104
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W		50 ug/L	5.0	0.5	0.5	0.5	0.5	
	S		1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

* cluttered chromatogram: sample peak coelutes with surrogate peak

The following descriptions of the TPH chromatogram are custody in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.

 McCAMPBELL ANALYTICAL INC.	110 Second Avenue South, #D7, Pacheco, CA 94553 Telephone: 510-798-1620 Fax: 510-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com
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All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #2169; Hegenberger	Date Sampled: 10/02/97
		Date Received: 10/02/97
	Client Contact: Bryan Campbell	Date Extracted: 10/02/97
	Client P.O:	Date Analyzed: 10/02-10/06/97

Diesel Range (C18-C23) Extractable Hydrocarbons as Diesel *
 EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d)*	% Recovery Surrogate
81496	MW-8	W	810,d,b	108
81497	MW-10	W	110,b,g	105
81498	MW-11	W	220,b,g	107
81499	MW-12	W	120,b,g	96
81500	MW-16	W	180,b,g	108
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		S	1.0 mg/kg	

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L.

* clustered chromatogram resulting in coeluted surrogate and sample peaks, or, surrogate peak is on elevated baseline, or, surrogate has been diminished by dilution of original extract.

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol % sediment.

DHS Certification No. 1644

 Edward Hamilton, Lab Director

45 TO XAIR 107.00C

McGAMBRELL ANALYTICAL
 115 2ND AVENUE # D7
 SACRAMENTO, CA 95833 FAX (916) 706-1622
 (916) 706-1620

CHAIN OF CUSTODY RECORD
 TURN AROUND TIME: RUSH 24 HOUR 48 HOUR 5 DAY


REPORT TO: *South County* BILL TO:
 COMPANY: *All Environmental Services*
 ANALYST: *SSLY MC DONALD*
 TEL: *510-231-0552* FAX: *510-223-6121*
 PROJECT NUMBER: *2169* PROJECT NAME: *HELENDALLO*
 PROJECT LOCATION: *Oakland* SAMPLER SIGNATURE: *[Signature]*

SAMPLE ID	LOCATION	SAMPLING		# CONTAINERS	TYPE CONTAINERS	MATRIX					METHOD RECEIVED			ANALYSIS REQUEST	OTHER	COMMENTS
		DATE	TIME			WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HEP	OTHER			
(2) MW-8		10/2/97		3		X										
(2) MW-10		"		3		X										
✓ MW-11		"		3		X										
+ MW-12		"		3		X										
+ MW-16		"		3		X										

(2)
(2)
✓
+
+

RECEIVED BY: *[Signature]* DATE: *10/2/97* TIME: *11:55A* RECEIVED BY: *Lisa Vongkay MAI*
 RECEIVED BY: _____ DATE: _____ TIME: _____ RECEIVED BY: _____
 RECEIVED BY: _____ DATE: _____ TIME: _____ RECEIVED BY: LABORATORY: _____

REMARKS:
 ICE/GOOD CONDITION ✓
 HEAD SPACE ABSENT ✓
 PRESERVATION APPROPRIATE ✓
 CONTAINERS ✓
 VOAS/C&B/METALS/OTHER

 McCAMPBELL ANALYTICAL INC.	110 Second Avenue South, #D7, Pacheco, CA 94553 Telephone: 510-798-1620 Fax: 510-798-1622 http://www.mccampbell.com E-mail: main@mccampbell.com	

INVOICE FOR ANALYTICAL SERVICES

Attention: Accounts Payable

All Environmental, Inc. 3364 Mt. Diablo Blvd. Lafayette, CA 94549	Client Project ID: #2169; Hegenberger	Date Sampled: 10/02/97
	Client Contact: Bryan Campbell	Date Received: 10/02/97
	Client P.O:	Date Extracted: 10/02/97
		Date Analyzed: 10/02/97

Billing Date: 10/09/97

Invoice # 9570

Number of Samples	Analysis	TAT	Unit Price	Sub-Total
5	TPH(g)-BTEX MTBE	5d	\$50	\$250
5	TPH (d/k/mo)	5d	\$50	\$250
0	Oil & Grease (418.1 or 5520)	5d	\$45	\$0
0	EPA 601 / 8010 / EDB	5d	\$70	\$0
0	EPA 624 / 8240 / 8260	5d	\$130	\$0
0	EPA 625 / 8270	subbed, 5d	\$240	\$0
0	PCB / Chlorinated Pesticides, EPA 608 / 8080	5d	\$50 / \$90	\$0
0	RCI	5d	\$70	\$0
0	CAM 17 Metals	5d	\$150	\$0
0	13 Priority Pollutant Metals	5d	\$125	\$0
0	RCRA 8 Metals	5d	\$90	\$0
0	5 LUFT Metals	5d	\$60	\$0
0	Individual Metal (AA Flame, Furnace, ICP)	5d	\$25	\$0
0	Organic Lead	5d	\$60	\$0
0	STLC Extraction	5d	\$50	\$0
0	ZHE TCLP Extraction	5d	\$100	\$0
0	Semi-Volatile TCLP Extraction	5d	\$50	\$0
0		Subbed	\$0	\$0
INVOICE TOTAL : \$500				
If paid by 11/09/97 Prompt Pay Invoice Total = \$450				

Please include the invoice number(s) with your check and remit to:

McC Campbell Analytical Inc.
 110 2nd Avenue South, #D7
 Pacheco, CA 94553

Terms are net 30 days from the billing date. After this period 1.5% interest per month will be charged. Overdue accounts are responsible for all legal and collection fees. If you have any questions about billing please contact Accounts Receivable at McC Campbell Analytical.

TOTAL P. 04

TOTAL P. 10

APPENDIX B

WELL SAMPLING SHEETS

ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL FIELD SAMPLING FORM						
Monitoring Well Number: MW-8						
Project Name: Hegenberger			Date of Sampling: 10/2/97			
Job Number: 2169			Name of Sampler: Dusty Roy			
Project Address: 625 Hegenberger Road			Oakland, CA			
MONITORING WELL DATA						
Well Casing Diameter (2"/4"/6")			2"			
Seal at Grade -- Type and Condition						
Well Cap & Lock -- OK/Replace						
Elevation of Top of Casing			4.88			
Depth of Well						
Depth to Water			6.70			
Water Elevation			-1.82			
Three Well Volumes (gallons)*						
2" casing: (TD - DTW)(0.16)(3)						
4" casing: (TD - DTW)(0.65)(3)						
6" casing: (TD - DTW)(1.44)(3)						
Actual Volume Purged (gallons)			12			
Appearance of Purge Water			Clear			
GROUNDWATER SAMPLES						
Number of Samples/Container Size			2 X 40 ml VOAs; 2 X 1 liter			
Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	2.0	21.06	6.80	6870		
	2.5	21.06	6.92	7670		
	3.0	21.17	6.95	7030		
	3.5	21.23	6.91	8050		
	4.5	21.23	6.93	7820		
COMMENTS (i.e., sample odor, well recharge time & percent, etc.)						

TD - Total Depth of Well

DTW - Depth To Water

**ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

Monitoring Well Number: MW-10

Project Name: Hegenberger	Date of Sampling: 10/2/97
Job Number: 2169	Name of Sampler: Dusty Roy
Project Address: 625 Hegenberger Road	Oakland, CA

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	
Well Cap & Lock -- OK/Replace	
Elevation of Top of Casing	4.21
Depth of Well	
Depth to Water	5.90
Water Elevation	-1.69

15
- 15.9
9.1 (1.6 X 3)

Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.7
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	12
Appearance of Purge Water	Greenish

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 X 40 ml VOAs; 2 X 1 liter
----------------------------------	-----------------------------

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	2.0	22.89	7.42	5690		
	2.5	22.94	7.33	5530		
	3.5	22.94	7.31	5530		
	4.0	23.04	7.30	5520		
	5.0	23.04	7.26	5540		

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD - Total Depth of Well
DTW - Depth To Water

**ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

Monitoring Well Number: MW-11

Project Name: Hegenberger	Date of Sampling: 10/2/97
Job Number: 2169	Name of Sampler: Dusty Roy
Project Address: 625 Hegenberger Road	Oakland, CA

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	
Well Cap & Lock - OK/Replace	
Elevation of Top of Casing	5.04
Depth of Well	
Depth to Water	6.85
Water Elevation	-1.81

Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.1
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	12
Appearance of Purge Water	

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 X 40 ml VOAs; 2 X 1 liter
----------------------------------	-----------------------------

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Dissolved Oxygen (mg/L)	Redox Potential (Mv)
	1.0	22.89	6.91	2780		
	3.0	22.89	6.82	2850		
	5.0	22.89	6.74	2870		
	6.0	22.94	6.74	2860		
	7.0	22.94	6.73	2850		

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)


TD - Total Depth of Well
DTW - Depth To Water

**ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

Monitoring Well Number: MW-12

Project Name: Hegenberger	Date of Sampling: 10/2/97
Job Number: 2169	Name of Sampler: Dusty Roy
Project Address: 625 Hegenberger Road	Oakland, CA

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade - Type and Condition	
Well Cap & Lock - OK/Replace	
Elevation of Top of Casing	4.58
Depth of Well	
Depth to Water	6.08
Water Elevation	-1.50
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	4.6
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	
Appearance of Purge Water	

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 X 40 ml VOAs; 2 X 1 liter
----------------------------------	-----------------------------

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	1.0	20.83	7.25	3210		
	2.0	20.94	7.13	1990		
	2.5	20.94	7.13	3480		
	3.0	20.94	7.09	2230		
	4.5	20.94	7.15	2570		

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD - Total Depth of Well
DTW - Depth To Water

**ALL ENVIRONMENTAL INC. - GROUNDWATER MONITORING WELL
FIELD SAMPLING FORM**

Monitoring Well Number: MW-16

Project Name: Hegenberger	Date of Sampling: 10/2/97
Job Number: 2169	Name of Sampler: Dusty Roy
Project Address: 625 Hegenberger Road	Oakland, CA

MONITORING WELL DATA

Well Casing Diameter (2"/4"/6")	2"
Seal at Grade -- Type and Condition	
Well Cap & Lock - OK/Replace	
Elevation of Top of Casing	5.53
Depth of Well	
Depth to Water	7.36
Water Elevation	-1.83
Three Well Volumes (gallons)*	
2" casing: (TD - DTW)(0.16)(3)	3.0
4" casing: (TD - DTW)(0.65)(3)	
6" casing: (TD - DTW)(1.44)(3)	
Actual Volume Purged (gallons)	12
Appearance of Purge Water	

GROUNDWATER SAMPLES

Number of Samples/Container Size	2 X 40 ml VOAs; 2 X 1 liter
----------------------------------	-----------------------------

Time	Vol Remvd (gal)	Temp C	pH	Cond (mS)	Dissolved Oxygen (mg/L)	Redox Potential (mV)
	1.0	18.83	7.35	3580		
	3.0	19.72	7.27	3760		
	4.0	19.11	7.28	3810		
	6.0	19.11	7.30	3800		
	7.0	19.11	7.22	3830		

COMMENTS (i.e., sample odor, well recharge time & percent, etc.)

TD - Total Depth of Well
DTW - Depth To Water