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Alameda County Environmental Health

Ms. Barbara Jakub Hazardous Materials Specialist Alameda County Health Care Services Agency Department of Environmental Health, Local Oversight Program 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502

Subject: Work Plan for Additional Interim Corrective Actions 2836 Union Street, Oakland, California Alameda County Environmental Health UST Case No. RO0002901

Dear Ms. Jakub:

INTRODUCTION

On behalf of the property owner (Estate of Larry M. Wadler), Stellar Environmental Solutions, Inc. (Stellar Environmental) is providing Alameda County Health Care Services Agency, Department of Environmental Health (ACEH) this work plan for interim corrective action to accelerate moving the above referenced site, UST Case Number RO0002901, towards regulatory closure.

The Responsible Party (RP) proposes to implement interim corrective actions to treat the remaining contaminant mass; reducing the downgradient area of the plume that has concentrations in excess of 4,000 micrograms per liter (μ g/L) gasoline-range hydrocarbons in an effort to deduce the overall long-term impact to groundwater. The proposed corrective action will consist of an injection of Advanced ORCTM to treat dissolved petroleum-hydrocarbon contamination in groundwater. This method has already been used in the source area of the plume and has been successful in significantly reducing the hydrocarbon concentrations in groundwater. The historical analytical results of quarterly and semi-annual groundwater monitoring events, since the initial 2006 excavation and 2007 ORCTM injection, have shown a significant reduction in the source area contaminant concentrations in the downgradient portion of the plume (represented by wells MW-3B and MW-4B) have shown stable to increasing concentrations above levels of regulatory concern.

Attachment A contains Figures 1, 2, and 3; a site location map, site plan, and the extent of groundwater contaminant plume and the proposed injection points, respectively. A tabular summary of the historical analytical results is also included in Attachment A.

PROJECT BACKGROUND

Corrective actions were conducted between September and December 2006 and included the installation of ten monitoring wells, the advancement of one soil boring, the removal of 398 tons of petroleum hydrocarbon-contaminated soil, and the pumping of 5,100 gallons of contaminated groundwater from the backfilled excavation. An additional corrective action was conducted in November 2007 which included the removal of 212 tons of contaminated soil, purging contaminated groundwater, and applying Advanced Oxygen Reducing Compound (ORCTM) product into the open excavation. The site wells have been monitored quarterly since October 2006. At the request of ACEH, a "Preferential Pathway Utility and Well Survey" was conducted during the fourth quarter of 2008, the results of which are discussed in another technical report submitted to ACEH in 2008. The frequency of groundwater monitoring was reduced in 2009 from a quarterly to semiannual basis as per the ACEH directive letter dated July 24, 2009.

ACEH is the lead regulatory agency for the case, acting as a Local Oversight Program (LOP) for the Regional Water Quality Control Board (Water Board). There are no ACEH or Water Board cleanup orders for the site; however, all site work has been conducted under the oversight of ACEH. ACEH has assigned the site to its fuel leak case system (RO #2901), and a case officer has been assigned. The case has also been assigned Global Identification number T0600105641 in the State Water Resources Control Board's GeoTracker system. Electronic uploads of required data/reports are submitted to both agencies.

The site has been granted a Letter of Commitment and has been receiving financial reimbursement from the California Underground Storage Tank Cleanup Fund.

RATIONALE AND PROPOSED SCOPE OF CORRECTIVE ACTION WORK

Corrective Action Rationale

Quarterly and subsequent semi-annual monitoring events, conducted since October 2006, have shown a relatively flat groundwater gradient on the site which averages approximately 0.005 feet/foot. As stated previously, concentrations in the downgradient portion of the plume have shown an increasing trend in comparison to the source area where a significant reduction in contaminant concentrations has been achieved. This difference in concentrations is attributed to

the flat groundwater gradient which has created a hydrologic condition not conducive to moving the November 2007 ORCTM injected mass to the distal areas of the groundwater contaminant plume. This proposed corrective action is designed to target gasoline hydrocarbon-impacted groundwater in the downgradient zone, represented by wells MW-3B and MW-4B, which have not seen the affect of the November 2007 corrective action excavation and ORCTM inoculation. The last year of monitoring in these downgradient wells has shown concentrations which remain steadily elevated or have increased, with maximum gasoline concentrations exceeding 4,000 µg/L.

Project work elements proposed in this workplan include: 1) Pre-Field Work Planning and Preparation; 2) ORC[™] Injection; 3) Post-Injection Monitoring and Laboratory Analyses; and 4) Technical Report Preparation.

Task 1 – Pre-Field Work Planning and Permits

This task includes the cost to conduct all the pre-field work planning and permitting elements for the proposed borehole program which includes:

- Obtaining work plan concurrence from ACEH, or proceed with the proposed investigation if ACEH does not respond within the 60-day LOP review period stipulated by California Code of Regulations, Title 23, Division 3, Chapter 16, Underground Tank Regulations;
- Notifying neighboring residents of proposed work and obtaining permission to drill on their property;
- Obtaining a drilling permit from the Alameda County Public Works Agency for the injection boreholes;
- Completing a site Health and Safety Plan to reflect the boring and Advanced ORC^{TM} injection tasks;
- Completing a site visit to mark drilling locations and notify Underground Service Alert for utility location;
- Procuring the necessary drilling contractor by obtain multiple bids; and
- Purchasing Advanced ORC^{TM} from the distributor for delivery to the site.

Task 2 – Advanced ORC^{TM} Injection Plan

Advanced ORC^{TM} was selected to treat the groundwater contaminant plume. This remedy will create highly oxygenated treatment zones at critical locations transverse to the plume, focusing on depth and loading based on lithology and suspected hydrocarbon contaminant mass in groundwater. Regenesis, the Advanced ORC^{TM} compound manufacturer, estimates that the radius of the product injection will be approximately 7.5 feet outside of each injection point. However, the Stellar Environmental design adopts a more conservative radius of effective injection, assuming sufficient overlap so that the Advanced ORC^{TM} is assured to reach the target zone. Stellar Environmental will place the injection points on 10 foot centers, allowing for a more conservative 5 feet of outbound penetration to occur, while still providing effective coverage. The Advanced ORC^{TM} is a longer lasting and more powerful oxygen delivery compound than the original ORC^{TM} compound.

The injection system equipment will consist of:

- Direct-push Geoprobe[®] rig;
- Drive rods (typically 1¹/₂-inch outside diameter) and injection tooling with fluid deliver sub-assembly;
- Recirculating mixing tank with an in-line pump rated for 5 gallons per minute at 200 pounds per square inch (psi) for sandy formations, and 800 psi for silt and clay formations (Geoprobe® DP-800, Rupe Models 9-1500 and 9-1600, Wilden, etc.);
- Injection hosing and a pressure relief valve with a bypass;
- Granular bentonite and quick-set grout concrete for closing and sealing injection holes; and
- Portable electric supply and water to be supplied by the drilling contractor.

A total of 15 borehole injections are proposed to deliver the Advanced ORC^{TM} product to treat and/or intercept all of the known petroleum hydrocarbon contamination throughout the plume.

The injection specifications for the treatment are as follows:

- A total of 15 injection points will be drilled using direct-push technology to inject between 20 -26 feet below ground surface (bgs) into the various points in the treatment zone;
- The treatment zone will transverse across the long dimension of the plume and cover a total area of approximately 2,400 square feet;

- Delivery point spacing will be approximately 10 feet.
- The saturated thickness of the treatment zone will be 6 feet.
- The oxidant loading will be approximately 9 pounds per foot, which is based on treating a conservative average of 4,250 µg/L total volatile hydrocarbons as gasoline (TVHg) as detected in the latest groundwater monitoring event (first 2010 semiannual groundwater monitoring event).
- A total of approximately 900 pounds of ORC[™] mixed with water to achieve a 20% solid slurry will be delivered to the subsurface (9 pounds of ORC[™] mixed with 2 gallons of water will be injected per bore-foot) (approximately 36 buckets of ORC[™] at 25 lbs per bucket is 900 lbs).
- The ideal schedule for injection would be before the start of the rainy season, and prior to the second semi-annual sampling event in September, to allow for the optimum transport of the oxygenating compound.

Figure 3 presents the proposed Advanced ORC^{TM} injection treatment points and projected aerial zones of distribution that would be covered by the treatment.

The Advanced ORC^{TM} injections should be effective in reducing the toxicity of the plume by accelerating the biodegradation significantly within the first approximately 6 to12 months. The volume of dissolved hydrocarbons within the generalized area will likely be reduced within the first 12 months by 50 percent or more—according both to the manufacturer's data and what has been observed at the site within the former source area. This approach assures continued long-term treatment of remaining contaminants through low-cost bioremediation after the chemical oxidation treatment is complete.

Soil or groundwater waste is usually not generated during the injection process. All other investigation derived waste will be disposed contained and disposed of off-site under chain of custody documentation to the appropriate landfill.

Task 3 – Post injection Monitoring and Laboratory Analyses

Post-injection monitoring will be conducted during the regular semi-annual sampling event to monitor the remedy. Dissolved oxygen will continue to be measured in the field during semi-annual sampling events to monitor the effect of the Advanced ORC^{TM} application. Groundwater samples will be analyzed in accordance with ACEH's current site groundwater monitoring requirements for the following:

- TVHg by EPA Method 8015M; and
- Aromatic hydrocarbons including benzene, toluene, ethlybenzene, and total xylenes (BTEX) and MTBE by EPA Method 8260.

Task 4 – Technical Reporting

Stellar Environmental will complete a report on the ORCTM injection and post-injection monitoring which will be integrated into the Second Semi-annual Groundwater Monitoring Event Report, completed in September.

The report will include:

- Summary of ORC^{TM} rationale and efficacy,
- Detailed description of the injection and associated field data,
- Maps showing key site features and injection areas,
- Key indicators to monitor effectiveness, and
- Technical appendices.

As required, site data will be electronically uploaded to both the State of California GeoTracker system and ACEH's "ftp" system.

ESTIMATED SCHEDULE

The property owner will proceed with the work following receipt of ACEH's concurrence with this work plan, and permission from the site neighbor to drill on their property. The results will be included in the September 2010 Semi-annual monitoring report, which is generally submitted the beginning of October to ACEH.

TEAM QUALIFICATIONS

Stellar Environmental has completed dozens of similar projects, including numerous projects under the oversight of ACEH. Our team will consist of:

Stellar Environmental (owner's consultant responsible for overall project coordination, geologic evaluation, sampling, data evaluation, and report certification by a California Registered Geologist); and

■ A driller with a current C-57 license to implement injection of the Advanced ORCTM.

We trust that this submittal meets your agency's needs. We will contact you in the near future to confirm your receipt of this Corrective Action Work Plan. In the interim, please contact the undersigned directly if you have any questions.

We declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of our knowledge.

Sincerely,

Henry Rehysch

Henry Pietropaoli, R.G., R.E.A. Senior Geologist/Project Manager

Churdes Mar

Richard S. Makdisi, R.G, R.E.A. President



cc: Estate of Larry M. Wadler (Property Owner and Responsible Party)

Attachment: Figures showing the site location, site plan, and the extent of groundwater contaminant plume and the proposed injection points; and table of historical analytical results

ATTACHMENT A

Figures and Tables

Figures

Site Location Map

Site Plan Map Site Plan Showing Proposed Injection Points







Table

Historical Analytical Results

TABLE A Historical Groundwater Monitoring Well Data 2836 Union Street, Oakland, California

	MW-IA											
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE		
1	Oct-06	dry	dry	NA	NS	NS	NS	NS	NS	NS		
2	Jan-07	9.80	2.45	NA	790	94	< 0.5	8.6	< 0.5	100		
3	Apr-07	7.49	4.76	NA	760	63	<0.5	1.9	<0.5	150		
4	Jul-07	7.16	5.09	NA	NS	NS	NS	NS	NS	NS		
5	Oct-07	7.29	4.96	NA	830	28	< 0.7	13	<0.7	110		
6	Jan-08	6.82	5.70	NA	720	8.1	< 0.5	< 0.5	< 0.5	130		
7	Apr-08	6.32	5.70	NA	NS	NS	NS	NS	NS	NS		
8	Jul-08	8.25	4.00	NA	120	1.0	<0.5	<0.5	<0.5	86		
9	Oct-08	9.04	3.21	NS	NS	NS	NS	NS	NS	NS		
10	Jan-09	7.00	5.25	NA	63	1.2	<0.5	<0.5	<0.5	77		
11	Apr-09	5.62	6.63	7,100	89	8.7	<0.5	0.75	<0.5	150		
12	Oct-09	7.62	4.63	1,700	72	1.5	<0.5	<0.5	<0.5	110		
13	Apr-10	5.74	6.51	3,400	<50	<0.5	<0.5	<0.5	<0.5	28		

	MW-1B											
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE		
1	Oct-06	7.44	4.56	NA	350	<1.3	<1.3	<1.3	<1.3	2.7		
2	Jan-07	6.40	5.65	NA	350	<1.3	<1.3	<1.3	<1.3	3.6		
3	Apr-07	6.42	5.63	NA	320	<0.5	<0.5	<0.5	<0.5	4.2		
4	Jul-07	7.19	4.86	NA	200	<1.3	<1.3	<1.3	<1.3	3.2		
5	Oct-07	7.10	4.95	NA	230	<0.7	<0.7	<0.7	<0.7	6.0		
6	Jan-08	5.81	6.67	NA	400	< 0.5	< 0.5	< 0.5	< 0.5	6.2		
7	Apr-08	6.82	5.23	NA	350	<0.5	<0.5	<0.5	<0.5	7.8		
8	Jul-08	7.62	4.43	NA	300	<0.5	<0.5	<0.5	<0.5	8.4		
9	Oct-08	8.21	3.84	3,600	520	<0.5	<0.5	<0.5	<0.5	5.9		
10	Jan-09	6.89	5.16	6,160	300	<0.5	<0.5	<0.5	<0.5	7.5		
11	Apr-09	6.27	5.78	6,000	1,400	<1.0	<1.0	<1.0	<1.0	7.7		
12	Oct-09	7.32	4.73	700	150	<0.5	<0.5	<0.5	<0.5	8.5		
12	Apr-10	4.92	7.13	600	760	<0.5	<0.5	<0.5	< 0.5	5.8		

				Ν	AW-2A					
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Oct-06	7.93	4.87	NA	80	<0.5	<0.5	<0.5	<0.5	<0.5
2	Jan-07	6.58	6.24	NA	490	<0.5	<0.5	<0.5	<0.5	< 0.5
3	Apr-07	6.52	6.30	NA	83	<0.5	<0.5	<0.5	<0.5	< 0.5
4	Jul-07	7.37	5.45	NA	<50	<0.5	<0.5	<0.5	<0.5	< 0.5
5	Oct-07	7.33	5.49	NA	<50	<0.5	<0.5	<0.5	<0.5	< 0.5
6	Jan-08	5.50	7.56	NA	<50	<0.5	<0.5	<0.5	<0.5	<2.0
7	Apr-08	6.86	5.96	NA	160	<0.5	<0.5	<0.5	<0.5	3.0
8	Jul-08	7.70	5.12	NA	97	<0.5	<0.5	<0.5	<0.5	5.5
9	Oct-08	8.44	4.38	3,280	71	<0.5	<0.5	<0.5	<0.5	<2.0
10	Jan-09	6.99	5.83	2,120	<50	<0.5	<0.5	<0.5	<0.5	<2.0
11	Apr-09	6.47	6.35	5,800	110	<0.5	<0.5	<0.5	<0.5	1.9
12	Oct-09	6.93	5.89	700	75	<0.5	<0.5	<0.5	<0.5	<2.0
13	Apr-10	4.82	8.00	500	210	< 0.5	< 0.5	< 0.5	<0.5	3.1

Table A continued

	MW-2B												
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE			
1	Oct-06	7.90	5.06	NA	NS	NS	NS	NS	NS	NS			
2	Jan-07	6.59	6.37	NA	2,000	<0.5	1.1	6.7	0.8	19			
3	Apr-07	6.20	6.76	NA	84	<0.5	<0.5	<0.5	<0.5	18			
4	Jul-07	7.33	5.63	NA	580	<0.5	<0.5	<0.5	<0.5	6.0			
5	Oct-07	7.12	5.84	NA	1,700	<0.5	<0.5	<0.5	<0.5	83			
6	Jan-08	5.51	7.65	NA	780	< 0.5	< 0.5	< 0.5	< 0.5	32			
7	Apr-08	6.56	6.40	NA	92	<0.5	<0.5	<0.5	<0.5	2.4			
8	Jul-08	7.78	5.18	NA	570	<0.5	<0.5	<0.5	0.72	17			
9	Oct-08	8.62	4.34	NS	NS	NS	NS	NS	NS	NS			
10	Jan-09	7.03	5.93	2,160	110	<0.5	<0.5	<0.5	<0.5	27			
11	Apr-09	6.21	6.75	5,800	250	<0.5	<0.5	<0.5	<0.5	30			
12	Oct-09	8.03	4.93	1,400	65	<0.5	<0.5	<0.5	<0.5	22			
13	Apr-10	5.73	7.23	1,100	<50	3.2	<0.5	0.68	<0.5	86			

	MW-3A											
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE		
1	Oct-06	dry	dry	NA	NS	NS	NS	NS	NS	NS		
2	Jan-07	6.32	5.27	NA	NS	NS	NS	NS	NS	NS		
3	Apr-07	5.75	5.84	NA	<50	<0.5	<0.5	<0.5	<0.5	75		
4	Jul-07	6.19	5.40	NA	NS	NS	NS	NS	NS	NS		
5	Oct-07	6.50	5.09	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5		
6	Jan-08	5.69	6.07	NA	<50	< 0.5	< 0.5	< 0.5	< 0.5	70		
7	Apr-08	6.56	6.40	NA	<50	<0.5	<0.5	<0.5	<0.5	77		
8	Jul-08	6.73	4.86	NA	<50	<0.5	<0.5	<0.5	<0.5	56		
9	Oct-08	8.68	2.91	NS	NS	NS	NS	NS	NS	NS		
10	Jan-09	6.28	5.31	NS	NS	NS	NS	NS	NS	NS		
11	Apr-09	5.58	6.01	8,100	<50	<0.5	<0.5	<0.5	<0.5	52		
12	Oct-09	6.89	4.70	7,100	NS	NS	NS	NS	NS	NS		
13	Apr-10	5.67	5.92	9,500	<50	<0.5	<0.5	<0.5	<0.5	25		

	MW-3B											
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE		
1	Oct-06	7.34	4.61	NA	1,900	<10	<10	<10	<10	<10		
2	Jan-07	6.41	5.54	NA	1,900	<8.3	<8.3	<8.3	<8.3	<8.3		
3	Apr-07	6.39	5.56	NA	1,900	<0.5	<0.5	<0.5	<0.5	<0.5		
4	Jul-07	7.15	4.80	NA	1,200	<2.0	<2.0	<2.0	<2.0	<2.0		
5	Oct-07	7.11	4.84	NA	2,100	<7.1	<7.1	<7.1	<7.1	<7.1		
6	Jan-08	5.60	6.50	NA	2,100	< 0.5	< 0.5	< 0.5	< 0.5	<2.0		
7	Apr-08	6.77	5.18	NA	1,800	<0.5	<0.5	<0.5	<0.5	<2.0		
8	Jul-08	7.50	4.45	NA	1,700	<0.5	<0.5	<0.5	<0.5	<2.0		
9	Oct-08	8.11	3.84	1,490	2,300	<0.5	<0.5	<0.5	<0.5	<2.0		
10	Jan-09	6.84	5.11	1,480	1,500	<0.5	<0.5	<0.5	<0.5	<2.0		
11	Apr-09	6.24	5.71	5,300	4,900	<0.5	<0.5	<0.5	<0.5	<2.0		
12	Oct-09	6.49	5.46	400	1,700	<0.5	<0.5	<0.5	<0.5	<2.0		
13	Apr-10	4.98	6.97	300	4,800	< 0.5	< 0.5	<0.5	<0.5	<5.0		

Table A continued

	MW-4A												
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE			
1	Oct-06	9.74	1.28	NA	NS	NS	NS	NS	NS	NS			
2	Jan-07	5.64	5.38	NA	<50	<0.5	<0.5	<0.5	<0.5	72			
3	Apr-07	5.34	5.68	NA	<50	<0.5	0.6	<0.5	0.6	77			
4	Jul-07	5.71	5.31	NA	<50	<0.5	<0.5	<0.5	<0.5	64			
5	Oct-07	6.09	4.93	NA	<50	<0.5	<0.5	<0.5	<0.5	73			
6	Jan-08	5.53	5.72	NA	NS	NS	NS	NS	NS	NS			
7	Apr-08	5.56	5.46	NA	<50	<0.5	<0.5	<0.5	<0.5	61			
8	Jul-08	6.30	4.34	NA	<50	<0.5	<0.5	<0.5	<0.5	46			
9	Oct-08	10.45	0.57	1,870	<50	<0.5	<0.5	<0.5	<0.5	66			
10	Jan-09	6.00	5.02	2,350	<50	<0.5	<0.5	<0.5	<0.5	6.7			
11	Apr-09	5.45	5.57	7,100	<50	<0.5	<0.5	<0.5	<0.5	11			
12	Oct-09	6.41	4.61	3,100	NS	NS	NS	NS	NS	NS			
13	Apr-10	4.15	6.87	6,900	<50	< 0.5	< 0.5	<0.5	<0.5	16			

	MW-4B											
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE		
1	Oct-06	6.63	4.41	NA	1,100	<2.5	<2.5	<2.5	<2.5	<2.5		
2	Jan-07	5.55	5.49	NA	1,300	<4.2	<4.2	<4.2	<4.2	<4.2		
3	Apr-07	5.45	5.59	NA	1,300	<0.5	<0.5	<0.5	<0.5	<0.5		
4	Jul-07	6.28	4.76	NA	1,000	<4.2	<4.2	<4.2	<4.2	<4.2		
5	Oct-07	6.13	4.91	NA	1,400	<4.2	<4.2	<4.2	<4.2	<4.2		
6	Jan-08	4.81	6.44	NA	1,500	<0.5	<0.5	<0.5	<0.5	<2.0		
7	Apr-08	5.90	5.14	NA	1,500	<0.5	<0.5	<0.5	<0.5	<2.0		
8	Jul-08	6.70	4.34	NA	1,200	<0.5	<0.5	<0.5	<0.5	<2.0		
9	Oct-08	7.24	3.80	1,960	1,600	<0.5	<0.5	<0.5	<0.5	<2.0		
10	Jan-09	6.00	5.04	1,620	980	<0.5	<0.5	<0.5	<0.5	<2.0		
11	Apr-09	5.35	5.69	5,200	3,700	<4.2	<4.2	<4.2	<4.2	<4.2		
12	Oct-09	5.61	5.43	500	1,100	<0.5	<0.5	<0.5	<0.5	<2.0		
13	Apr-10	4.01	7.03	500	3,700	<42	<42	<42	<42	<42		

Table A continued

	MW-5A											
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE		
1	Oct-06	9.60	2.82	NA	NS	NS	NS	NS	NS	NS		
2	Jan-07	6.72	6.10	NA	NS	NS	NS	NS	NS	NS		
3	Apr-07	5.74	6.68	NA	1,000	6.6	<0.5	29	7.6	79		
4	Jul-07	6.98	5.44	NA	NS	NS	NS	NS	NS	NS		
5	Oct-07	8.32	4.10	NA	820	6.6	<0.5	6.6	1.8	78		
Well Destoyed in November 2007												

	MW-5B											
Sampling Event No.	Date Sampled	Depth to Groundwater (a)	Groundwater Elevation (b)	Dissolved Oxygen	TVH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE		
1	Oct-06	9.07	3.31	NA	13,000	9.6	0.6	21	1.9	37		
2	Jan-07	6.45	5.93	NA	6,600	4.0	<0.5	10	1.0	22		
3	Apr-07	6.45	5.93	NA	3,300	0.7	<0.5	2.7	<0.5	<0.5		
4	Jul-07	7.15	5.23	NA	2,000	1.1	<0.5	2.2	<0.5	26		
5	Oct-07	7.28	5.10	NA	1,200	<0.5	<0.5	<0.5	<0.5	45		
6	Jan-08	4.94	7.63	NA	1,200	<0.5	<0.5	4.1	<0.5	69		
7	Apr-08	6.51	5.87	NA	240	<0.5	<0.5	<0.5	<0.5	65		
8	Jul-08	7.64	4.74	NA	310	<0.5	<0.5	<0.5	<0.5	68		
9	Oct-08	8.24	4.14	1,670	780	<0.5	<0.5	< 0.5	<0.5	84		
10	Jan-09	6.93	5.45	3,210	1,200	<0.5	<0.5	< 0.5	4.2	56		
11	Apr-09	5.82	6.56	5,900	220	<0.5	<0.5	<0.5	<0.5	73		
12	Oct-09	7.34	5.04	7,100	76	<0.5	<0.5	<0.5	<0.5	71		
13	Apr-10	4.71	7.67	7,900	90	<0.5	<0.5	<0.5	<0.5	4.9		

Notes:

All concentrations reported in micrograms per liter.

 $TVH\mbox{-}g = Total \ volatile \ hydrocarbons - gasoline \ range.$

NA = Not analyzed for this constituent. NS = Not sampled

(a) Feet below top of casing

(b) Relative to mean sea level