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Environmental Health



December 9, 2008

VIA ALAMEDA COUNTY FTP SITE

Mr. Paresh Khatri
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Groundwater Monitoring Report - Third Quarter 2008**
Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California
ACEH Case No. 304

Dear Mr. Khatri:

On behalf of Mr. Hooshang Hadjian, Pangea Environmental Services, Inc. has prepared this *Groundwater Monitoring Report – Third Quarter 2008*. The report describes groundwater monitoring, sampling, and other site activities.

To help control project cost per Cleanup Fund request on October 23, 2008, Pangea proposes to reduce the groundwater monitoring frequency on several site wells. Pangea's proposed groundwater monitoring program includes quarterly monitoring of six (6) key groundwater monitoring wells, and annual monitoring (first quarter of each year) of all sixteen (16) site wells located in shallow and intermediate-depth groundwater. Sampling of deep groundwater monitoring wells was discontinued with ACEH approval. The proposed monitoring reductions are shown in Appendix A.

If you have any questions or comments, please call me at (510) 435-8664.

Sincerely,
Pangea Environmental Services, Inc.

A handwritten signature in blue ink, appearing to read "Bob Clark-Riddell".

Bob Clark-Riddell, P.E.
Principal Engineer

Attachment: *Groundwater Monitoring Report – Third Quarter 2008*

cc: Mr. Hooshang Hadjian, 2108 San Ramon Valley Blvd, San Ramon, CA 94583
Mr. Jim Lange, 6500 Dublin Blvd., Suite 202, Dublin, CA 94568
SWRCB Geotracker (electronic copy)

PANGEA Environmental Services, Inc.



GROUNDWATER MONITORING REPORT – THIRD QUARTER 2008

**Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California**

December 9, 2008

Prepared for:

Mr. Hooshang Hadjian
2108 San Ramon Valley Blvd
San Ramon, CA 94583


Prepared by:

Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, California 94612

Written by:


Morgan Gillies
Project Manager




Bob Clark-Riddell, P.E.
Principal Engineer

PANGEA Environmental Services, Inc.

INTRODUCTION

On behalf of Mr. Hooshang Hadjian, Pangea Environmental Services, Inc. (Pangea) conducted groundwater monitoring and sampling activities during this quarter at the subject site (Figure 1). The purpose of the monitoring and sampling is to evaluate groundwater flow direction and dissolved contaminant concentrations, and to inspect site wells for separate-phase hydrocarbons (SPH). Current groundwater analytical results and elevation data are shown on Figure 2. Current and historical data are summarized on Table 1.

SITE BACKGROUND

The Dublin Auto Wash retail gasoline station is located at the southwest corner of Dublin Boulevard and Village Parkway in Dublin, California (Figure 1). Currently, there are three 10,000-gallon underground storage tanks (USTs) and a carwash at the site. Land use immediately surrounding the station is commercial.

From approximately 1988 to 1997, Chevron Products Company performed assessment and remediation of the site. A soil vapor extraction (SVE) system was operated at the site from December 1992 through June 1995. Mr. Hadjian is the responsible party for an unauthorized release from a leaking stainless steel flex-hose near the northernmost dispenser island in February 1997. Subsequently, a new product delivery system was installed and about 31 cubic yards of contaminated soil was removed from the release area. Gettler-Ryan, Inc. monitored the eight existing groundwater wells at the site until 2003, when SOMA Environmental Engineering, Inc., took over groundwater monitoring and conducted further characterization of the site using electrical conductivity logging to identify potential water-bearing zones. In November 2004, Pangea commenced coordination of groundwater monitoring and corrective action for the site. To delineate the contamination detected during SOMA's investigation, Pangea installed additional monitoring wells with shorter screen lengths in identified water-bearing zones in 2006. Pangea also drilled three soil borings (SB-1, SB-1A and SB-2) to help evaluate subsurface conditions downgradient of the 1997 release and north of the site, and the potential for contamination migration along the 18-inch sanitary sewer line in Dublin Boulevard.

The site subsurface consists primarily of clay, sandy clay, and clayey sand. The shallower soil (<34 ft bgs) is predominantly clay and sandy clay with thin lenses of clayey sand, while the deeper soil (>34 ft bgs) contains clayey sand units of apparently higher permeability than shallower materials. In March, April and May, 2006, Pangea installed fourteen monitoring wells to help define the vertical and lateral extent of groundwater contamination in the identified water-bearing zones. Wells with shorter screen lengths than existing wells were installed in the upper shallow (AA) zone from approximately 9 to 14 ft bgs (MW-7AA), the shallow (A) zone from approximately 15 to 20 ft bgs (MW-3A, MW-6A, MW-7A, MW-8A, MW-9A and MW-10A), the middle (B) zone from approximately 25 to 30 ft bgs (MW-6B and MW-7B), and the deep (C) zone from approximately 34 to 45 ft bgs (MW-6C, MW-7C, MW-9C, MW-10C and MW-11C). The well screen in MW-3A was installed at a shallower depth than the other A-zone wells to intercept the SPH previously observed in abandoned well MW-3.

The shallower (AA, A and B) water-bearing zones primarily consist of thin lenses of clayey sand within sandy clay, while higher permeability silty sand and clayey sand are the predominant soil types constituting the deeper (C) water-bearing zone. Vapor wells VW-1 through VW-3 are screened from approximately 3 to 9 ft bgs above the upper shallow seasonal water-bearing zone, which appears to be a perched zone. In late March and early April 2006, wells EA-1, EA-2, EA-3 and MW-3 were abandoned to reduce the risk of vertical contaminant migration and improve the quality of contaminant concentration and groundwater elevation data. To compare the elevation of surface water in the flood control channel with site groundwater, point C-1 was surveyed on the roadway overpass above the channel. Well construction details are presented in Table 2.

An interim remedial action was conducted by Pangea in July 2006 by extracting approximately 40 gallons of impacted liquid from wells MW-3A and MW-7AA with a vacuum truck. In November 2007, Pangea conducted a five-day dual-phase extraction (DPE) test (and interim remediation event) to evaluate the effectiveness of DPE as remedial technique and to provide additional source removal. As requested by ACEH, Pangea is preparing an *Interim Remediation Report and Corrective Action Plan*.

GROUNDWATER MONITORING AND SAMPLING

On August 13, 2008, groundwater monitoring and sampling was conducted at the site. All well caps were removed the day before monitoring to allow water levels to stabilize. Groundwater samples were obtained from groundwater monitoring wells MW-1, MW-2, MW-3A, MW-6A, MW-6B, MW-7AA, MW-7A, MW-7B, MW-8A, MW-9A and MW-10A, and vapor well VW-3. Vapor wells VW-1 and VW-2 contained insufficient water for sampling this quarter. Sampling of the vapor wells was initially requested in a February 9, 2006 letter from Alameda County Environmental Health (ACEH). The depth to water at survey point C-1 above the flood control channel was also measured. Monitoring and sampling of deep monitoring wells MW-6C, MW-7C, MW-9C, MW-10C and MW-11C was discontinued starting the second quarter 2007, as approved by Barney Chan of ACEH in a May 14, 2007 telephone conversation, because no significant contamination had been detected in these deeper site wells during four consecutive quarters.

Before well purging, the dissolved oxygen (DO) concentration was measured in each well. DO was measured by lowering a downwell sensor to the approximate middle of the water column, and allowing the reading to stabilize during gentle height adjustment. Prior to sample collection, approximately three casing volumes of water were purged using disposable bailers, an electric submersible pump, positive air displacement pump, or a peristaltic pump. During well purging, field technicians measured the pH, temperature and conductivity. Groundwater samples were collected from each well with a disposable bailer, and decanted into the appropriate containers supplied by the analytical laboratory. Groundwater samples were labeled, placed in protective plastic bags, and stored on crushed ice at or below 4° C. All samples were transported under chain-of-custody to a State-certified analytical laboratory. Purge water was temporarily stored onsite in DOT-approved 55-gallon drums. Groundwater monitoring field data sheets are presented in Appendix B.

MONITORING RESULTS

Current and historical groundwater elevation data and analytical results are described below and summarized on Table 1. Groundwater samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) by modified EPA Method 8015C; and benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. Samples were analyzed by McCampbell Analytical, Inc. of Pittsburg, California, a State-certified laboratory. The laboratory analytical report is included in Appendix B. DO concentrations ranged from 0.42 mg/L (well MW-6A) to 0.99 mg/L (well MW-5).

Groundwater Flow Direction

Based on depth-to-water data collected August 13, 2008, groundwater elevations in shallow and intermediate zones are shown on Figure 2 and discussed below. Groundwater flow at the site is complex due to the combined effects of a generally upward gradient, the nearby creek/flood control channel, seasonal fluctuations in flow direction, and possible influences of the city sewer line located beneath Dublin Boulevard.

Vertical Gradient Evaluation: A comparison of clustered well pairs screened at different depths indicates that a consistent upward gradient component of approximately 0.12 ft/ft is present between the shallow and intermediate water-bearing zones at the portion of the site north of the dispenser islands (MW-6A and 6B), and a significantly smaller upward gradient is present southwest of the dispenser islands (MW-7A and MW-7B), as shown below on Table A. A downward gradient appears to be present between the upper shallow, AA-zone vapor wells (VW-1, VW-2 and VW-3) and the shallow A-zone monitoring wells, although this apparent gradient may be due to perched groundwater.

Table A – Vertical Gradient Evaluation using Paired Monitoring Wells

Monitoring Well Pair	Groundwater Elevation	Mean Screen Depth	Calculated Vertical Gradient
MW-6A	319.90	17.5	
MW-6B	321.20	28	
<i>Difference</i>	<i>1.30</i>	<i>10.5</i>	<i>0.12 (upwards)</i>
MW-7A	320.44	18	
MW-7B	320.52	28	
<i>Difference</i>	<i>0.08</i>	<i>10</i>	<i>0.008 (upwards)</i>

Horizontal Gradient Evaluation: Depth-to-water measurements collected during prior monitoring events indicate that the horizontal component of the groundwater flow direction to the north of the site has been consistently southward to southeastward for the *shallow* wells, but gradient directions in the southern portion of the site have fluctuated significantly, possibly due to the influence of the nearby flood control channel. As shown on Figure 2, the horizontal component of the groundwater flow direction in the *shallow* wells at the site for the current monitoring event appears to converge to the northeast along Dublin Boulevard and is possibly influenced by permeable backfill around the sanitary sewer line beneath Dublin Boulevard. The groundwater flow direction for the shallow water-bearing zone may also be affected by surface water infiltration from the onsite car wash. The horizontal component of groundwater flow in the *intermediate depth* wells could not be determined since only two wells are screened at that depth.

Conclusion: The primary observation regarding the piezometric surface is that a moderately well-defined upward gradient is present in wells north of the dispenser islands. Future monitoring and analysis will help define the consistency and magnitude of this upward gradient. Historical depth-to-water and groundwater elevation data for the site are presented in Table 1.

Hydrocarbon Distribution in Groundwater

No separate-phase hydrocarbons (SPH) were detected in site wells this quarter. SPH was previously detected in MW-3 and replacement well MW-3A, but has not been detected in MW-3A since May 2006, shortly after well installation. A brief interim remedial action conducted on July 7, 2006, and consisting of removal of approximately 40 gallons of impacted liquid from well MW-3A using a vacuum truck, may have improved site conditions near well MW-3A. Site conditions were also likely improved by the five-day DPE test/removal event conducting in November 2007 on source area wells MW-3A, MW-6A, MW-7A and MW-7AA. Hydrocarbon concentrations generally show stable to decreasing trends in all site wells, although concentrations remain elevated in select source area wells.

Hydrocarbon contamination is concentrated in the upper shallow (AA) and shallow (A) water-bearing zones in the vicinity of the fuel dispensers, as shown in Table 1 and on Figure 2. Vapor well VW-3, located north of the dispenser islands, had the highest TPHg (9,300 µg/L) concentration. Monitoring well MW-7AA had the highest benzene concentration at 510 µg/L, which was also a historic low for this well. No petroleum hydrocarbons were detected above reporting limits in either of the two sampled intermediate-depth B-zone wells.

Fuel Oxygenate Distribution in Groundwater

MTBE was detected above reporting limits in several wells, as shown in Table 1 and on Figure 2. The highest MTBE concentration was in source area well MW-7AA (15,000 µg/L). A historic high MTBE concentration was detected in well VW-3 (100 µg/L). MTBE concentrations in other sampled wells were within historic limits or trends.

MTBE concentrations in well MW-1 had been steadily increasing over a three-year period before reaching a historic high of 8,400 µg/L during the fourth quarter 2006 monitoring event, but have decreased substantially since then (<5.0 µg/L this quarter). The concentration reductions in well MW-1 may be due to interim remediation, MTBE migration from the area, or natural attenuation.

OTHER SITE ACTIVITIES

Proposed Groundwater Monitoring Program Reductions

To help control project cost per Cleanup Fund request on October 23, 2008, Pangea proposes to reduce the groundwater monitoring frequency on several site wells. These recommendations are based on our review of many years of monitoring data, which indicates that contaminant concentrations appear to be stable to decreasing in most groundwater wells despite the elevated concentrations in select wells.

Pangea's proposed groundwater monitoring program is presented in Appendix A and includes the following:

- Quarterly monitoring of six (6) key groundwater monitoring wells (MW-1, MW-2, MW-3A, MW-6A, MW-7AA, and MW-8A). These are source area and select cross/downgradient wells or wells located adjacent the sanitary sewer that could be acting as a conduit for contaminant migration. Each quarter Pangea will gauge depth to water in all upper shallow, shallow and intermeditation-depth groundwater wells to evaluate the complex groundwater flow conditions.
- Annual monitoring (first quarter of each year) of all sixteen (16) site wells located in the upper, shallow (AA-zone), shallow (A-zone), and/or intermediate-depth (B-zone) groundwater zones. Pangea has discontinued sampling of all deep groundwater monitoring wells (MW-6C, MW-7C, MW-9C, MW-10C and MW-11C) with ACEH approval.
- Groundwater samples will be analyzed for TPHg/BTEX/MTBE by EPA Method 8015Cm/8021B.
- To compare surface water and groundwater elevation and help evaluate the potential for groundwater to impact the flood control channel, Pangea will continue to measure the depth to water at survey point C-1 at the overpass of the flood control channel.
- To address apparently non-representative prior water level measurements for some site wells due to slow recovery, Pangea will continue to open well caps the day prior to monitoring for future monitoring events. (Note that well caps will not be opened in advance of sampling if significant water is present in a given well vault or if precipitation is forecast).

Pangea will summarize groundwater monitoring activities and results in a groundwater monitoring report.

Additional Site Remediation

In November 2007, Pangea performed a five-day DPE pilot test with ACEH approval to evaluate whether DPE could effectively remove residual hydrocarbons and MTBE from beneath the site. The DPE test also provided additional source removal/interim remediation. As requested by ACEH, Pangea prepared an *Interim Remediation Report and Corrective Action Plan* dated December 9, 2008 that describes short-term remediation activities and results, and proposes remedial action for the site.

Electronic Reporting

The report, laboratory data, and other applicable information will be uploaded to the State Water Resource Control Board's Geotracker database.

ATTACHMENTS

Figure 1 – Site Location Map

Figure 2 – Groundwater Elevation Contour and Hydrocarbon Concentration Map – Shallow

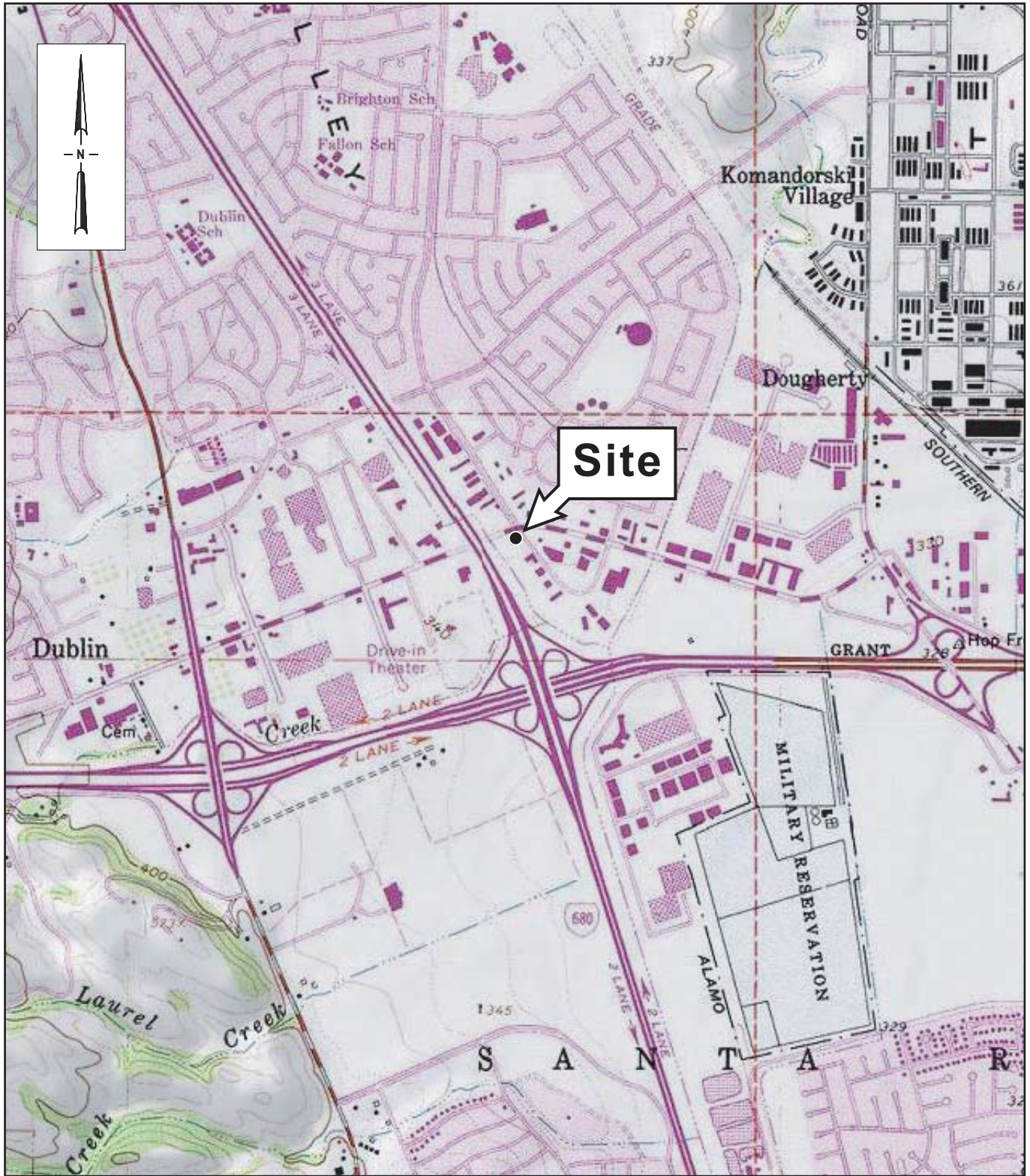
Table 1 – Groundwater Elevation and Analytical Data

Table 2 – Well Construction Details

Appendix A – Groundwater Monitoring Program

Appendix B – Groundwater Monitoring Field Data Sheets

Appendix C – Laboratory Analytical Results



SOURCE: TOPOI MAPS



SCALE : 1" = 1/4 MILE

Figure 1

Dublin Auto Wash
 7240 Dublin Boulevard
 Dublin, California



Site Location Map

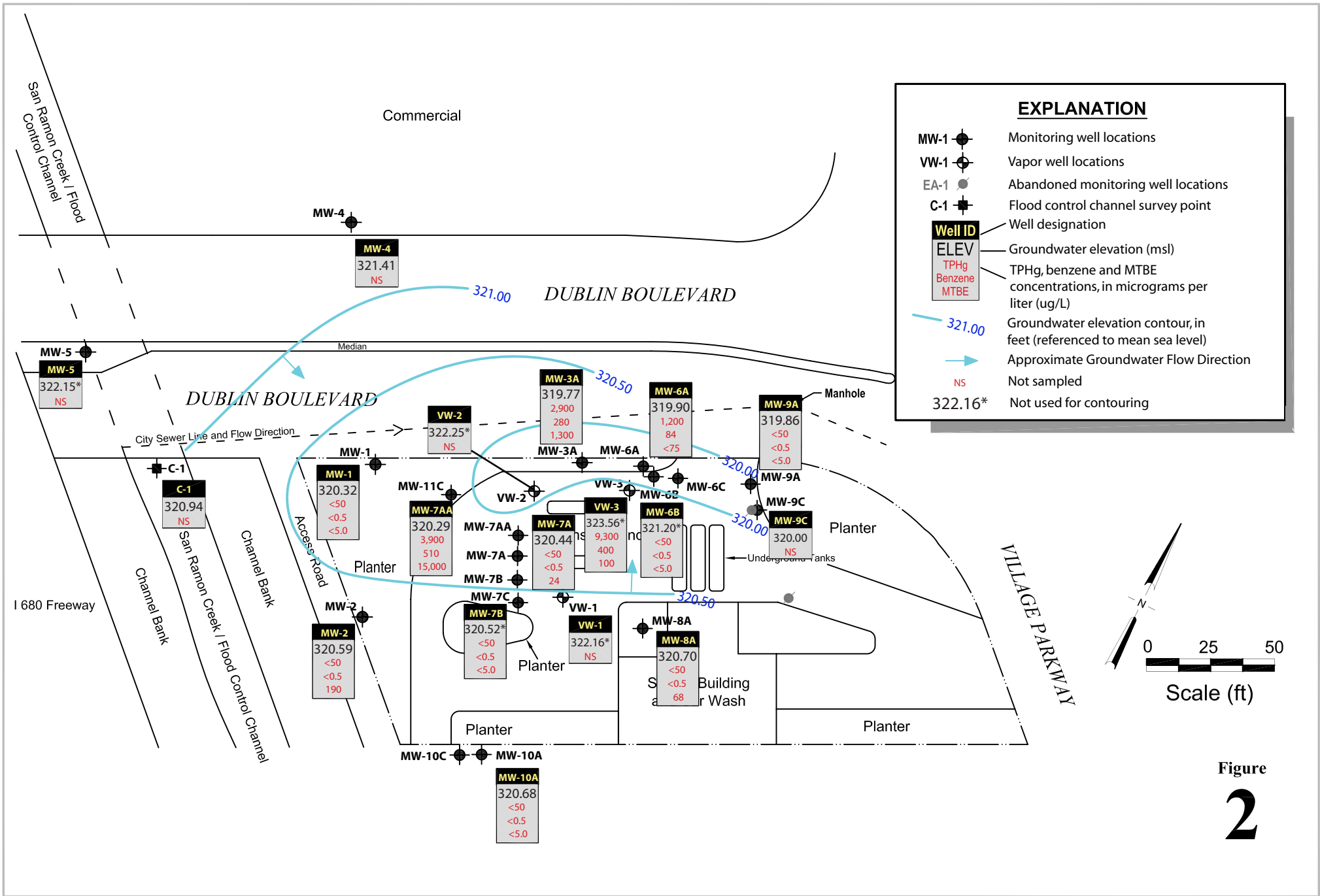


Figure
2

Pangea

Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID <i>TOC Elev (ft)</i>	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	TPHg ←	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE →	Dissolved Oxygen mg/L	Notes	
MW-4 332.63	03/01/96	9.9	322.74	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	04/02/96	9.77	322.87	--	--	--	--	--	--			
	06/27/96	10	322.64	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	09/12/96	11.67	320.96	<50	<0.5	<0.5	<0.5	<0.5	3.5			
	03/31/97	10.59	322.04	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	12/23/98	10.37	322.26	<50	<0.5	<0.5	<0.5	<1.5	<2.5			
	03/25/99	9.91	322.72	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	02/03/00	10.32	322.31	<50	<0.5	<0.5	<0.5	<0.5	<2.5/<2.0 (3)			
	01/23/01	10.54	322.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0			
	05/01/01	10.32	322.31				SAMPLED ANNUALLY					
	08/28/01	10.57	322.06				SAMPLED ANNUALLY					
	11/27/01	10.29	322.34				SAMPLED ANNUALLY					
	02/28/02	10.3	322.33	<50	<0.5	<0.5	<0.5	<1.5	<2.5			
	05/22/02	10.12	322.51				SAMPLED ANNUALLY					
	08/20/02	10.43	322.2				SAMPLED ANNUALLY					
	11/11/02	9.89	322.74				SAMPLED ANNUALLY					
	05/08/03	9.79	322.84	<50	<0.5	<0.5	<0.5	<0.5	<2			
	12/15/04	10.56	322.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0			
	02/21/05	9.50	323.13	<50	<0.5	<0.5	<0.5	<0.5	<5.0 (<0.5)	1.60		
	05/17/05	10.20	322.43				SAMPLED ANNUALLY			1.29		
	08/17/05	10.50	322.13				SAMPLED ANNUALLY			1.10		
	11/27/05	11.07	321.56				SAMPLED ANNUALLY			1.01		
	02/21/06	10.53	322.10	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.14/0.90		
	332.64	05/29/06	10.33	322.31				SAMPLED ANNUALLY				
		07/07/06	10.52	322.12	--	--	--	--	--	--		
		08/17/06	10.45	322.19	--	--	--	--	--	--		
		11/24/06	10.95	321.69	--	--	--	--	--	--		0.22
		02/21/07	10.71	321.93	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.40	
		05/15/07	11.24	321.40	--	--	--	--	--	--		
		08/28/07	11.42	321.22	--	--	--	--	--	--		0.52
		12/21/07	11.26	321.38	--	--	--	--	--	--		0.81
02/26/08		10.12	322.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.06		
05/21/08		11.30	321.34	--	--	--	--	--	--	0.98		
08/13/08		11.23	321.41	--	--	--	--	--	--	0.71		
MW-5 333.47		03/01/96	10.62	322.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
	04/02/96	10.14	323.06	--	--	--	--	--	--			
	06/27/96	10.22	322.98	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	09/12/96	10.85	322.19	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	03/31/97	10.44	322.6	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	12/23/98	10.21	322.83	<50	<0.5	<0.5	<0.5	<1.5	<2.5			
	03/25/99	9.92	323.12	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
	02/03/00	9.63	323.41	<50	<0.5	<0.5	<0.5	<0.5	<2.5/<2.03			
	01/23/01	10.35	322.69	<50	<0.5	<0.5	<0.5	<0.5	<5.0			
	05/01/01	10.34	322.7				SAMPLED ANNUALLY					
	08/28/01	10.44	322.6				SAMPLED ANNUALLY					
	11/27/01	10.17	322.87				SAMPLED ANNUALLY					
	02/28/02	10.2	322.84	<50	<0.5	<0.5	<0.5	<1.5	<2.5			
	05/22/02	10.38	322.66				SAMPLED ANNUALLY					
	08/20/02	10.36	322.68				SAMPLED ANNUALLY					
	11/11/02	10.03	323.01				SAMPLED ANNUALLY					
	05/08/03	9.56	323.48	<50	<0.5	<0.5	<0.5	<0.5	3.4/<0.5			
	12/15/04	10.08	322.96	<50	<0.5	<0.5	<0.5	<0.5	<5.0			
	02/21/05	9.90	323.14	<50	<0.5	<0.5	<0.5	<0.5	<5.0 (0.54)	1.62		
	05/17/05	10.33	322.71				SAMPLED ANNUALLY			1.47		
	08/17/05	10.40	322.64				SAMPLED ANNUALLY			1.18		
	333.13	11/27/05	10.43	322.61				SAMPLED ANNUALLY			1.19	
		02/21/06	10.32	322.81	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.48/0.76	
		05/29/06	10.41	322.72				SAMPLED ANNUALLY				
		07/07/06	10.46	322.67	--	--	--	--	--	--		
		08/17/06	10.49	324.19	--	--	--	--	--	--		
		11/24/06	10.92	322.21	--	--	--	--	--	--		0.27
		02/21/07	10.90	322.23	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.73	
		05/15/07	10.97	322.16	--	--	--	--	--	--		
		08/28/07	11.07	322.06	--	--	--	--	--	--		0.55
		12/21/07	10.80	322.33	--	--	--	--	--	--		0.97
02/26/08		10.38	322.75	<50	<0.5	<0.5	<0.5	<0.5	<5.0	1.01		
05/21/08		10.97	322.16	--	--	--	--	--	--	0.95		
08/13/08	10.98	322.15	--	--	--	--	--	--	0.99			
MW-6A 331.81	06/01/06	10.38	321.43	620	20	<2.5	<2.5	43	5,700 (5,300)	0.73	TAME, TBA, DIPE, ETBE=ND	
	07/07/06	10.15	321.66	--	--	--	--	--	--	--		
	08/17/06	9.69	322.12	860	55	3.1	31	41	5,300(6,200)	0.49		
	11/24/06	11.10	320.71	330	14	<2.5	11	3.4	5,500	0.37		
	02/21/07	10.72	321.09	360	13	1.8	16	34	4,400	0.50		
	05/15/07	11.69	320.12	<500	40	5.3	11	16	7,300	0.52		
	08/28/07	11.98	319.83	<250	<2.5	<2.5	<2.5	<2.5	7,300	0.39		
	12/21/07	11.31	320.50	4,400	200	45	50	550	3,500	0.45		
	02/26/08	10.15	321.66	6,800	740	130	290	600	330	0.61		
	05/21/08	11.60	320.21	1,900	150	8.1	44	100	88	0.63		
	08/13/08	11.91	319.90	1,200	84	3.7	36	18	<75	0.42		

Pangea

Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	TPHg ←	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE	Dissolved	Notes		
										Oxygen mg/L			
MW-7A 330.71	05/31/06	9.19	321.52	<50	1.3	<0.5	0.79	0.82	760 (770)	0.40	TAME, TBA, DIPE, ETBE=ND		
	07/07/06	9.17	321.54	--	--	--	--	--	--	--			
	08/17/06	8.68	322.03	60	1.1	<0.5	<0.5	1.1	930(1,400)	0.29			
	11/24/06	9.88	320.83	<50	<0.5	<0.5	<0.5	<0.5	260	0.20			
	02/21/07	9.59	321.12	<50	4.6	<0.5	0.62	2.2	270	0.35			
	05/15/07	10.15	320.56	<50	<0.5	<0.5	<0.5	<0.5	45	0.40			
	08/28/07	10.09	320.62	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.42			
	12/21/07	10.00	320.71	3,200	180	38	100	410	890	0.68			
	02/26/08	8.78	321.93	1,300	150	1.8	59	99	410	0.90			
	05/21/08	10.16	320.55	200	18	<0.5	3.3	<0.5	30	0.75			
	08/13/08	10.27	320.44	<50	<0.5	<0.5	<0.5	<0.5	24	0.81			
	MW-8A 331.19	05/29/06	9.55	321.64	<50	<0.5	<0.5	<0.5	<0.5	20 (18)		0.39	TAME, TBA, DIPE, ETBE=ND
		07/07/06	9.20	321.99	--	--	--	--	--	--		--	
		08/17/06	8.73	322.46	<50	<0.5	<0.5	<0.5	<0.5	19 (26)		0.26	
11/24/06		9.80	321.39	<50	<0.5	<0.5	<0.5	<0.5	34	0.21			
02/21/07		9.81	321.38	<50	<0.5	<0.5	<0.5	<0.5	16	0.29			
05/15/07		10.05	321.14	<50	<0.5	<0.5	<0.5	<0.5	13	0.33			
08/28/07		9.83	321.36	<50	<0.5	<0.5	<0.5	<0.5	19	0.35			
12/21/07		10.36	320.83	<50	<0.5	<0.5	<0.5	<0.5	16	0.61			
02/26/08		8.33	322.86	<50	<0.5	<0.5	<0.5	<0.5	38	0.77			
05/21/08		9.99	321.20	<50	<0.5	<0.5	<0.5	<0.5	13	0.81			
08/13/08		10.49	320.70	<50	<0.5	<0.5	<0.5	<0.5	68	0.65			
MW-9A 331.17		05/29/06	10.13	321.04	<50	<0.5	<0.5	<0.5	<0.5	210 (210)	0.46	TAME, TBA, DIPE, ETBE=ND	
		07/07/06	9.96	321.21	--	--	--	--	--	--	--		
		08/17/06	9.40	321.77	150	<0.5	1.3	<0.5	<0.5	79(100)	0.53		
	11/24/06	11.02	320.15	200	<0.5	2.4	<0.5	<0.5	31	0.38			
	02/21/07	10.53	320.64	<50	<0.5	<0.5	<0.5	<0.5	21	0.33			
	05/15/07	10.81	320.36	86	<0.5	<0.5	<0.5	<0.5	31	0.45			
	08/28/07	11.11	320.06	95	<0.5	1.4	<0.5	<0.5	10	0.38			
	12/21/07	10.76	320.41	120	<0.5	2.9	<0.5	0.51	9.5	0.50			
	02/26/08	9.71	321.46	120	<0.5	1.2	<0.5	<0.5	9.5	0.86			
	05/21/08	10.75	320.42	86	<0.5	<0.5	<0.5	<0.5	6.3	0.84			
	08/13/08	11.31	319.86	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.76			
	MW-10A 329.93	05/29/06	11.60	318.33	<50	<0.5	<0.5	<0.5	0.67	5.3 (4.7)	0.68		TAME, TBA, DIPE, ETBE=ND
		07/07/06	9.78	320.15	--	--	--	--	--	--	--		
		08/17/06	8.80	321.13	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.47		
11/24/06		12.61	317.32	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.26			
02/21/07		8.96	320.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.25			
05/15/07		9.22	320.71	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.30			
08/28/07		8.44	321.49	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.35			
12/21/07		8.81	321.12	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.47			
02/26/08		7.34	322.59	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.70			
05/21/08		9.22	320.71	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.64			
08/13/08		9.25	320.68	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.61			
Intermediate-Depth (B-zone) Wells													
MW-6B 330.9		06/01/06	8.41	322.49	<50	<0.5	<0.5	<0.5	<0.5	18 (16)	0.34	TAME, TBA, DIPE, ETBE=ND	
		07/07/06	8.55	322.35	--	--	--	--	--	--	--		
	08/17/06	8.66	322.24	<50	<0.5	<0.5	<0.5	<0.5	8.5(9.6)	0.40			
	11/24/06	9.25	321.65	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.31			
	02/21/07	8.80	322.10	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.37			
	05/15/07	9.21	321.69	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.31			
	08/28/07	9.60	321.30	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.51			
	12/21/07	9.42	321.48	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.82			
	02/26/08	7.87	323.03	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.80			
	05/21/08	9.37	321.53	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.87			
	08/13/08	9.70	321.20	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.81			
	MW-7B 330.69	05/31/06	9.05	321.64	<50	0.79	<0.5	<0.5	0.75	6.4 (6.6)	0.17		TAME, TBA, DIPE, ETBE=ND
		07/07/06	9.03	321.66	--	--	--	--	--	--	--		
		08/17/06	8.62	322.07	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.22		
11/24/06		9.75	320.94	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.27			
02/21/07		9.44	321.25	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.29			
05/15/07		9.97	320.72	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.33			
08/28/07		9.96	320.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.51			
12/21/07		9.87	320.82	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.53			
02/26/08		8.64	322.05	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.59			
05/21/08		10.05	320.64	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.56			
08/13/08		10.17	320.52	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.51			

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Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	TPHg ←	Benzene	Toluene	Ethylbenzene μg/L	Xylenes	MTBE →	Dissolved Oxygen mg/L	Notes	
EA-1 (cont'd)	09/16/93	10.66	322.75	3.9	410	830	220	890	--			
	12/20/93	10.6	322.81	27	1,200	2,600	1,100	4,200	--			
	03/29/94	10.41	323	6.3	250	700	200	830	--			
	06/22/94	10.4	323.01	4.1	71	240	110	460	<30			
	09/20/94	10.37	323.04	8,500	1,200	1,300	370	1,400	--			
	10/04/94	10.34	323.07	7,600	97	360	150	620	--			
	11/30/94	9.46	323.95	8,800	180	490	240	900	--			
	03/02/95	9.96	321.07	6.9	82	570	210	970	--			
	06/15/95	9.8	321.23	4.8	44	210	160	620	<25			
	09/26/95	10.48	320.55	13,000	150	620	370	1,400	<125			
	12/28/95	10.14	320.89	11,000	74	250	200	750	79			
	02/29/96	8.74	322.29	17,000	59	480	350	1,600	<125			
	06/27/96	10.21	320.82	3,600	22	130	130	49	46			
	09/12/96	10.49	320.72	2,000	20	<10	18	44	<50			
	03/31/97	10.19	321.02	17,000	87	230	330	1,200	310			
	12/23/98	9.83	321.38	290	20	0.88	1.1	16	<2.5			
	03/25/99	9.13	322.08	500	21	<0.5	21	<0.5	18			
	02/03/00	9.05	322.16	2,310	35.7	90	21.8	147	1,280 (365)			
	01/23/01	--	--	--	--	--	--	--	--		Inaccessible	
	05/01/01	9.82	321.39	7,710	19.9	12.6	22.3	64	31.8			
	08/28/01	10.04	321.17	4,800	69	<25	50	140	160			
	11/27/01	10.05	321.16	5,300	25	<5.0	30	120	<20			
	02/28/02	--	--	--	--	--	--	--	--		Inaccessible	
	05/22/02	9.05	322.16	110	<1.0	<0.50	1	<1.5	<2.5			
	08/20/02	9.21	322	410	2.6	<0.50	8.5	29	<5.0			
	11/11/02	9.01	322.2	3,800	<0.50	1.3	17	47	<5.0			
	05/08/03	8.23	322.98	1,700	11	0.97	63	161	<2.0			
	12/15/04	--	--	--	--	--	--	--	--		Inaccessible	
	02/21/05	--	--	--	--	--	--	--	--		Inaccessible	
	05/17/05	--	--	--	--	--	--	--	--		Inaccessible	
	08/17/05	--	--	--	--	--	--	--	--		Inaccessible	
	11/27/05	--	--	--	--	--	--	--	--		Inaccessible	
	02/21/06	--	--	--	--	--	--	--	--		Inaccessible	
	03/31/06	--	--	--	--	Well Abandoned		--	--	--	--	Well Abandoned
	EA-2 330.41	10/17/88	--	--	<50	<0.5	<0.5	<0.5	1.2	--		
		10/24/88	9.7	322.89	--	--	--	--	--	--		
		11/02/88	10.03	322.56	--	--	--	--	--	--		
		12/20/88	9.98	322.61	<50	<0.5	<0.5	<0.5	<0.5	--		
		03/28/89	8.8	323.79	<250	<2	<0.5	<0.5	<0.5	--		
		08/02/89	9.44	323.15	<50	<0.1	<0.1	<0.1	<0.1	--		
		11/06/89	9.53	323.06	<500	<3.0	<5.0	<5.0	<5.0	--		
		01/25/90	9.27	323.32	<50	<0.5	<0.5	<0.5	<0.5	--		
		04/23/90	9.35	323.24	<50	0.6	0.8	<0.5	2	--		
		08/01/90	9.71	322.88	<50	<0.5	<0.5	<0.5	<0.5	--		
		10/24/90	10.08	322.51	<50	<0.5	<0.5	<0.5	<0.5	--		
		01/31/91	10.21	322.38	<50	<0.5	<0.5	<0.5	<0.5	--		
01/31/91		10.21	322.38	<50	<0.5	<0.5	<0.5	<0.5	--		Duplicate	
08/21/91		9.8	322.79	<50	<0.5	<0.5	<0.5	<0.5	--			
10/07/91		9.98	322.61	--	--	--	--	--	--			
01/28/92		9.81	322.78	<50	0.8	<0.5	<0.5	<0.5	--			
06/05/92		9.86	322.73	<50	<0.5	<0.5	<0.5	<0.5	--			
09/30/92		10.6	321.99	66	1	3.2	1.3	7.4	--			
12/30/92		9.11	323.48	<50	<0.5	<0.5	<0.5	<0.5	--			
03/29/93		7.73	324.86	<50	<0.5	<0.5	<0.5	<1.5	--			
06/25/93		9.22	323.37	<50	<0.5	<0.5	<0.5	<1.5	--			
09/16/93		10	322.59	<50	<0.5	<0.5	<0.5	<1.5	--			
12/20/93		9.38	323.21	<50	<0.5	<0.5	<0.5	<0.5	--			
03/29/94		9.3	323.29	<50	<0.5	0.6	<0.5	<0.5	--			
06/22/94		9.49	323.1	<50	<0.5	<0.5	<0.5	<0.5	--			
09/26/94		9.72	322.87	<50	<0.5	<0.5	<0.5	<0.5	--			
10/04/94		9.58	323.01	<50	<0.5	<0.5	<0.5	<0.5	--			
11/30/94		8.7	323.89	<50	<0.5	<0.5	<0.5	<0.5	--			
03/02/95		8.54	321.67	<50	<0.5	<0.5	<0.5	<0.5	--			
06/07/95		8.42	321.79	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
09/26/95		9.34	320.87	540	6.8	<0.5	47	29	13			
12/28/95		8.84	321.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
02/29/96		7.44	322.77	<50	<0.5	<0.5	<0.5	1.5	<2.5			
06/27/96		8.83	321.38	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
09/12/96		9.4	321.01	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
03/31/97		9.11	321.3	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
12/23/98		8.91	321.5	<50	<0.5	<0.5	<0.5	<0.5	<2.5			
03/25/99		8.1	322.31	<50	<0.5	<0.5	<0.5	<0.5	2.7			
02/03/00		8.36	322.05	<50	<0.5	<0.5	<0.5	<0.5	<2.5 (<2.0)			
01/23/01		9.08	321.33	441 (1)	1.27	0.542	40.3	31	72.9			
05/01/01		8.87	321.54			SAMPLED ANNUALLY						
08/28/01		9.45	320.96			SAMPLED ANNUALLY						
11/27/01		9.5	320.91			SAMPLED ANNUALLY						
02/28/02		9.05	321.36	<50	<0.50	<0.50	<0.5	<1.5	74			
05/22/02		9.04	321.37			SAMPLED ANNUALLY						
08/20/02		9	321.41			SAMPLED ANNUALLY						

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Table 1. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID TOC Elev (ft)	Date Sampled	Depth to Water (ft)	Groundwater Elevation (ft, msl)	TPHg						MTBE	Dissolved Oxygen mg/L	Notes			
				←	Benzene	Toluene	Ethylbenzene	Xylenes	→						
EA-2 (cont'd)	11/11/02	9.03	321.38												
	05/08/03	7.26	323.15	<50	<0.5	<0.5	<0.5	<0.5	<0.5	2.2/0.9					
	12/15/04	8.96	321.45	<50	<0.5	<0.5	<0.5	<0.5	<0.5						
	02/21/05	7.20	323.21	<50	<0.5	<0.5	<0.5	<0.5	<0.5	13 (11)	0.64				
	05/17/05	8.21	322.20								0.77				
	08/17/05	7.97	322.44								0.85				
	11/27/05	9.83	320.58								0.84				
	02/21/06	8.78	321.63	<50	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	0.51/0.68				
	03/28/06	--	--	--											Well Abandoned
EA-3	10/17/88	--	--	<50	1.8	<0.5	<0.5	3							
331.5	10/24/88	11.03	322.61	--	--	--	--	--	--	--					
	11/02/88	11.03	322.61	--	--	--	--	--	--	--					
	12/20/88	10.96	322.68	240	90	1.2	13	3.3							
	03/28/89	9.77	323.87	2,300	380	130	240	910							
	08/02/89	10.65	322.99	<50	<0.1	<0.1	<0.1	<0.1							
	11/06/89	10.78	322.86	<500	<3.0	<5.0	<5.0	<5.0							
	01/25/90	10.66	322.98	<50	<0.5	<0.5	<0.5	<0.5							
	04/23/90	10.68	322.96	<50	0.8	<0.5	0.9	<0.5							
	08/01/90	11.03	322.61	<50	<0.5	<0.5	<0.5	<0.5							
	10/24/90	11.35	322.29	<50	<0.5	<0.5	<0.5	<0.5							
	01/31/91	11.52	322.12	<50	<0.5	<0.5	<0.5	<0.5							
	08/21/91	--	--	--	--	--	--	--							
	10/07/91	11.15	322.49	180	40	20	4.7	8.4							
	10/7/1991	--	--	200	43	17	4.1	6.7							Duplicate
	01/28/92	11.08	322.56	640	69	85	13	46							
	06/05/92	10.98	322.66	250	63	8.3	3	9.5							
	09/30/92	11.38	322.26	330	120	33	6.3	22							
	12/30/92	10.48	323.16	58	7.6	1.3	2.5	5.4							
	03/29/93	9.3	324.34	120	11	4.5	6.2	13							
	06/25/93	10.46	323.18	<50	<0.5	<0.5	<0.5	<1.5							
	09/16/93	10.9	322.74	85	3.9	8.8	4.5	22							
	12/20/93	10.66	322.98	190	12	12	13	50							
	03/29/94	10.5	323.14	<50	<0.5	1.2	<0.5	0.9							
	06/22/94	10.64	323	<50	<0.5	<0.5	<0.5	<0.5	<3.0						
	09/26/94	10.72	322.92	<50	<0.5	<0.5	<0.5	<0.5							
	10/04/94	10.68	322.96	<50	<0.5	<0.5	<0.5	0.7							
	11/30/94	9.66	323.98	170	6.1	3	6.5	28							
	03/02/95	9.92	321.38	<50	<0.5	<0.5	<0.5	<0.5							
	06/07/95	9.72	321.58	<50	<0.5	<0.5	<0.5	<0.5		3.2					
	09/26/95	10.6	320.7	2,000	140	<5.0	<5.0	190		280					
	12/28/95	9.82	321.48	<50	<0.5	<0.5	<0.5	<0.5		26					
	02/29/96	8.28	323.02	<50	2.1	<0.5	2.5	6		31					
	06/27/96	9.91	321.39	<50	<0.5	<0.5	<0.5	<0.5	<2.5						
	09/12/96	10.59	320.91	13,000	<20	<20	<20	<20	48						
	03/31/97	--	--	--	--	--	--	--							Inaccessible
	04/15/97	10.25	321.25	<125	2	<1.2	<1.2	<1.2	680						
	12/23/98	--	--	--	--	--	--	--							Inaccessible
	03/25/99	--	--	--	--	--	--	--							Inaccessible
	02/03/00	--	--	--	--	--	--	--							Inaccessible
	01/23/01	10.31	321.19	862 (1)	3.97	1.15	18.9	48.6	289						
	05/01/01	10.15	321.35												
	08/28/01	10.56	320.94	<50	<0.5	<0.5	<0.5	<0.5	37						
	11/27/01	10.65	320.85												
	02/28/02	10.37	321.13	<50	1.3	<0.50	2	1.8	90						
	05/22/02	10.27	321.23												
	08/20/02	10.3	321.2	<50	<0.50	<0.50	<0.50	<1.5	40						
	11/11/02	9.05	322.45												
	05/08/03	8.83	322.67	<50	<0.5	<0.5	<0.5	<0.5	39/37						
	12/15/04	10.39	321.11	<50	<0.5	<0.5	<0.5	<0.5	18 (17)						
	02/21/05	8.80	322.70	<50	<0.5	<0.5	2.3	1.4	180 (290)	0.69					
	05/17/05	9.57	321.93	140	0.68	<0.5	6.6	0.94	250 (340)	0.86					
	08/17/05	9.23	322.27	3,800	11	3.7	110	24	200 (200)	0.99					
	11/27/05	11.05	320.45	150	<0.5	1.8	2.4	0.56	88 (85)	0.81					
	02/21/06	10.10	321.40	83	<0.5	0.72	1.7	<0.5	40 (49)	0.38/0.65					
	04/03/06	--	--	--											Well Abandoned

ABBREVIATIONS AND NOTES:

SPH = Separate-phase hydrocarbons; calculated groundwater elevation corrected for SPH by the relation: Groundwater Elevation = Well Elevation - Depth to Water + (0.8xSPH Thickness)

Groundwater monitoring data and laboratory analytical results prior to December 14, 2004, were scanned from a report by SOMA.

(ft) = Feet

(msl) = Mean sea level

TOC Elev. (ft) = Top of casing elevation

µg/L = Micrograms per liter - approximately equal to parts per billion = ppb

mg/L = Milligrams per liter - approximately equal to parts per million = ppm

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015C

BTEX = Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020/8021.

MTBE = Methyl tertiary butyl ether by EPA Method 8020/8021. (Concentrations in parentheses are by EPA Method 8260B).

1,2-DCA = 1,2-Dichloroethane

TAME = Tertiary amyl methyl ether by EPA Method 8260B

TBA = Tertiary butyl alcohol by EPA Method 8260B

DIPE = Diisopropyl ether by EPA Method 8260B

ETBE = Ethyl tertiary butyl ether by EPA Method 8260B

-- = Not Measured/Not Analyzed

1 Laboratory report indicates weathered gasoline C6-C12

Dissolved oxygen concentrations measured downhole pre-purge or pre-purge/post-purge

* = Cap loose, sprinkler runoff entering well

Table 2 –Well Construction Details –7240 Dublin Blvd., Dublin, CA

Well ID (TOC Elev)	Total Depth of Well (feet bgs)	Screened Interval (ft bgs)	Drill Hole Diameter (inches)	Casing Diameter (inches)	Surface Seal Depth (ft bgs)
MW-1	25	5-25	8	2	0-4
MW-2	20	5-20	8	2	0-4
MW-3A	17	10-17	10	4	0-9
MW-4	20	8.5-20	8	2	0-8
MW-5	21	8.5-21	8	2	0-8
MW-6A	20	15-20	10	4	0-14
MW-6B	30	26-30	8	2	0-25
MW-6C	44	34-44	8	2	0-33
MW-7AA	14	9-14	10	4	0-8
MW-7A	20	16-20	10	4	0-15
MW-7B	30	26-30	8	2	0-25
MW-7C	45	35-45	12	2	0-34
MW-8A	20	15-20	8	2	0-4
MW-9A	20	15-20	8	2	0-14
MW-9C	45	35-45	12	2	0-34
MW-10A	20	15-20	8	2	0-14
MW-10C	45	35-45	8	2	0-34
MW-11C	43.5	33.5-43.5	8	2	0-32
VW-1	9	3-9	8	2	0-2.5
VW-2	9	3-9	8	2	0-2.5
VW-3	9	3-9	8	2	0-2.5

APPENDIX A

Groundwater Monitoring Program

Table A. Groundwater Monitoring Program - 7240 Dublin Boulevard, Dublin, CA

Well ID	Well Type	Screened Interval (ft bgs)	Well Location for Monitoring	Casing Diam. (in)	Gauge Frequency	Sample Frequency ^{1,2}
Surface Water						
C-1*	Gauging Point	--	W, Flood Control Channel	--	All	---
Upper Shallow AA-Zone Wells						
MW-7AA	Mon (Proposed DPE)	9-14	Source	4	All	All
VW-1	Mon+SVE (Proposed DPE)	3-9	Source	2	All	1st
VW-2	Mon+SVE (Proposed DPE)	3-9	Source	2	All	1st
VW-3	Mon+SVE (Proposed DPE)	3-9	Source	2	All	1st
Shallow A-Zone Wells						
MW-1	Mon	5-25	W, Adjacent SS	2	All	All
MW-2	Mon	5-20	W, Adjacent Flood Channel	2	All	All
MW-3A	Mon (Proposed DPE)	10-17	N Source, Adjacent SS	4	All	All
MW-4	Mon	8.5-20	NW Upgradient, Offsite	2	All	1st
MW-5	Mon	8.5-21	W Upgradient, Offsite	2	All	1st
MW-6A	Mon (Proposed DPE)	15-20	N Source, Adjacent SS	4	All	All
MW-7A	Mon (Proposed DPE)	16-20	Source	4	All	1st
MW-8A	Mon	15-20	S, Adjacent Building	2	All	All
MW-9A	Mon	15-20	NE Perimeter	2	All	1st
MW-10A	Mon	15-20	S Perimeter	2	All	1st
Intermediate Depth B-Zone Wells						
MW-6B	Mon	26-30	N Source, Adjacent SS	2	All	1st
DW-7B	Mon	26-30	Source	2	All	1st
Deep C-Zone Wells						
MW-6C	Mon	34-44	N Source, Adjacent SS	2	---	---
MW-7C	Mon	35-45	Source	2	---	---
MW-9C	Mon	35-45	NE Perimeter	2	---	---
MW-10C	Mon	35-45	S Perimeter	2	---	---
MW-11C	Mon	33.5-43.5	W Intermediate	2	---	---

Notes and Abbreviations:

1 = Summary: 6 wells sampled each quarter, 16 wells sampled 1st quarter. 5 C-zone wells not sampled.

2 = Sample Analytes: Total Petroleum Hydrocarbons as Gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX) and methyl tertiary butyl ether (MTBE) by EPA Method 8015Cm/8021B.

All = All four quarters. Typically B months (February, May, August, November)

Mon = Groundwater Monitoring Only

SVE = Soil Vapor Extraction

DPE = Dual Phase Extraction

N, S, W, E = Cardinal directions North, South, West, East and other directions (e.g., Northeast = NE)

SS = Sanitary Sewer beneath Dublin Blvd


* = Surface water level gauging point, not a well.

-- = Not gauged or sampled.

APPENDIX B


Groundwater Monitoring Field Data Sheets

Well Gauging Data Sheet

Project.Task #: 1001.001 216			Project Name: Dublin Car Wash				
Address: 7420 Dublin Boulevard, Dublin, CA						Date:8/13/08	
Name: Sanjiv Gill			Signature: 				
Well ID	Well Size (in.)	Time	Depth to Immiscible Liquid (ft)	Thickness of Immiscible Liquid (ft)	Depth to Water (ft)	Total Depth (ft)	Measuring Point
MW-1	2"	7:55			13.37	25.32	TOC
MW-2	2"	7:58			8.89	20.00	
MW-3A	4"	8:25			11.62	16.78	
MW-4	2"	7:35			11.23	19.78	
MW-5	2"	7:40			10.98	20.56	
MW-6A	2"	8:22			11.91	19.13	
MW-6B	2"	8:04			9.70	29.73	
MW-7AA	4"	8:19			10.38	13.84	
MW-7A	4"	8:16			10.27	19.53	
MW-7B	2"	8:01			10.17	28.42	
MW-8A	2"	7:52			10.49	19.01	X

Comments: DO = mg/L MW-4 = 0.71 MW-5 = 0.99

Well Gauging Data Sheet

Project.Task #: 1001.001 216				Project Name: Dublin Car Wash			
Address: 7420 Dublin Boulevard, Dublin, CA						Date:8/13/08	
Name: Sanjiv Gill				Signature: 			
Well ID	Well Size (in.)	Time	Depth to Immiscible Liquid (ft)	Thickness of Immiscible Liquid (ft)	Depth to Water (ft)	Total Depth (ft)	Measuring Point
MW-9A	2"	7:48			11.31	19.66	TOC
MW-10A	2"	7:44			9.25	19.51	
VW-1	2"	8:07			8.27	8.40	
VW-2	2"	8:10			7.92	8.30	
VW-3	2"	8:13			6.93	8.40	X
C-1	—	8:30			11.95	—	TOG


Comments:

MONITORING FIELD DATA SHEET

Well ID: MW-1

Project.Task #: 1001.001 216				Project Name: Dublin Car Wash				
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08				Weather: <u>Sunny</u>				
Well Diameter: <u>2"</u>				Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47	
					2" = 0.16	4" = 0.65	radius ² * 0.163	
Total Depth (TD): <u>25.32</u>				Depth to Product:				
Depth to Water (DTW): <u>13.37</u>				Product Thickness:				
Water Column Height: <u>11.95</u>				1 Casing Volume: <u>1.91</u> gallons				
Reference Point: TOC				<u>3</u> Casing Volumes: <u>5.73</u> gallons				
Purging Device: <u>Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump</u>								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>10:40</u>	<u>20.0</u>	<u>7.68</u>	<u>2309</u>				<u>2</u>	
<u>10:45</u>	<u>19.9</u>	<u>7.65</u>	<u>2285</u>				<u>4</u>	
<u>10:50</u>	<u>19.7</u>	<u>7.64</u>	<u>2232</u>				<u>6</u>	

Comments: YSI 550A DO meter pre purge DO = 0.91 mg/l
 post purge DO = mg/l
for bid

Sample ID: <u>MW-1</u>	Sample Time: <u>10:55</u>
Laboratory: McCampbell Analytical, INC.	Sample Date: <u>8/13/08</u>
Containers/Preservative: <u>Voa/HCl</u>	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature: 


MONITORING FIELD DATA SHEET

Well ID: MW-2

Project Task #: 1001.001 216		Project Name: Dublin Car Wash						
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08		Weather: Sunny						
Well Diameter: 2"	Volume/ft.		1" = 0.04					
			3" = 0.37					
		6" = 1.47						
		2" = 0.16						
		4" = 0.65						
		radius ² * 0.163						
Total Depth (TD): 20.00		Depth to Product:						
Depth to Water (DTW): 8.89		Product Thickness:						
Water Column Height: 11.11		1 Casing Volume: 1.77 gallons						
Reference Point: TOC		3 Casing Volumes: 5.31 gallons						
Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
11:15	19.5	7.65	1906				2	
11:20	20.5	7.61	1858				4	
11:25	20.1	7.69	1853				5.5	

Comments: YSI 550A DO meter pre purge DO = 0.77mg/l
 post purge DO = mg/l

turbid

Sample ID: MW-2	Sample Time: 11:30
Laboratory: McCampbell Analytical, INC.	Sample Date: 8/13/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature: 

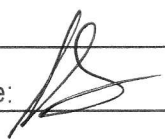
MONITORING FIELD DATA SHEET

Well ID: MW-3A

Project.Task #: 1001.001 216				Project Name: Dublin Car Wash				
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08				Weather: <u>Sunny</u>				
Well Diameter: <u>4"</u>				Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47	
					2" = 0.16	4" = 0.65	radius ² * 0.163	
Total Depth (TD): <u>16.78</u>				Depth to Product:				
Depth to Water (DTW): <u>11.62</u>				Product Thickness:				
Water Column Height: <u>5.16</u>				1 Casing Volume: <u>3.35</u>		gallons		
Reference Point: TOC				<u>3</u> Casing Volumes: <u>10.05</u>		gallons		
Purging Device: Disposable Bailer, <u>3" PVC Bailer</u> , 3" Disposable Bailer, What Pump								
Sampling Device: Disposable Bailer								
Time	Temp @	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>8:20</u>	<u>19.5</u>	<u>7.59</u>	<u>1834</u>				<u>3.5</u>	
<u>8:25</u>	<u>19.2</u>	<u>7.59</u>	<u>1826</u>				<u>7</u>	
<u>8:40</u>	<u>19.3</u>	<u>7.60</u>	<u>1839</u>				<u>10</u>	

Comments: YSI 550A DO meter pre purge DO = 0.52 mg/l
 post purge DO = mg/l

very turbid, silty

Sample ID: <u>MW-3A</u>		Sample Time: <u>9:00</u>	
Laboratory: McCampbell Analytical, INC.		Sample Date: <u>8/14/08</u>	
Containers/Preservative: <u>Voac/HCl</u>			
Analyzed for: <u>8015, 8021</u>			
Sampler Name: Sanjiv Gill		Signature: 	



MONITORING FIELD DATA SHEET

Well ID: **MW-6A**

Project Task #: 1001.001 216		Project Name: Dublin Car Wash						
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08		Weather: Sunny						
Well Diameter: 2''	Volume/ft.	1" = 0.04	3" = 0.37					
		2" = 0.16	4" = 0.65					
6" = 1.47		radius ² * 0.163						
Total Depth (TD): 19.13	Depth to Product:							
Depth to Water (DTW): 11.91	Product Thickness:							
Water Column Height: 7.22	1 Casing Volume: 1.15		gallons					
Reference Point: TOC	3 Casing Volumes: 3.45		gallons					
Purging Device: <u>Disposable Bailer</u> 3" PVC Bailer, 3" Disposable Bailer, What Pump								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
7:50	20.8	7.16	2033				1.5	
7:55	20.2	7.09	2030				2.5	
8:00	20.0	7.07	2064				3.5	

Comments: YSI 550A DO meter pre purge DO = **0.42** mg/l
 post purge DO = _____ mg/l
very turbid, silty

Sample ID: MW-6A	Sample Time: 8:05
Laboratory: McCampbell Analytical, INC.	Sample Date: 8/14/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:


MONITORING FIELD DATA SHEET

Well ID: MW-6B

Project.Task #: 1001.001 216		Project Name: Dublin Car Wash							
Address: 7420 Dublin Boulevard, Dublin, CA									
Date: 8/13/08		Weather: <u>Sunny</u>							
Well Diameter: <u>2'</u>		Volume/ft. <table border="1"> <tr> <td>1" = 0.04</td> <td>3" = 0.37</td> <td>6" = 1.47</td> </tr> <tr> <td>2" = 0.16</td> <td>4" = 0.65</td> <td>radius² * 0.163</td> </tr> </table>		1" = 0.04	3" = 0.37	6" = 1.47	2" = 0.16	4" = 0.65	radius ² * 0.163
1" = 0.04	3" = 0.37	6" = 1.47							
2" = 0.16	4" = 0.65	radius ² * 0.163							
Total Depth (TD): <u>29.73</u>		Depth to Product:							
Depth to Water (DTW): <u>9.70</u>		Product Thickness:							
Water Column Height: <u>20.03</u>		1 Casing Volume: <u>3.20</u> gallons							
Reference Point: TOC		<u>3</u> Casing Volumes: <u>9.60</u> gallons							
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, 3" Disposable Bailer, Whal Pump									
Sampling Device: Disposable Bailer									
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW	
7:20	18.5	7.56	<u>3314</u>				<u>3</u>		
7:25	18.1	7.62	<u>3318</u>				<u>6</u>		
7:30	18.5	7.52	<u>3296</u>				<u>9.5</u>		

Comments: YSI 550A DO meter pre purge DO = 0.81 mg/l
 post purge DO = mg/l

very turbid, silty

Sample ID: <u>MW-6B</u>	Sample Time: <u>7:35</u>
Laboratory: McCampbell Analytical, INC.	Sample Date: <u>8/14/08</u>
Containers/Preservative: <u>Voa/HCl</u>	
Analyzed for: <u>8015, 8021</u>	
Sampler Name: <u>Sanjiv Gill</u>	Signature: 


MONITORING FIELD DATA SHEET

Well ID: MW-7AA

Project Task #: 1001.001 216		Project Name: Dublin Car Wash						
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08		Weather: <u>Sunny</u>						
Well Diameter: <u>4"</u>	Volume/ft.	1" = 0.04	3" = 0.37					
		2" = 0.16	4" = 0.65					
6" = 1.47		radius ² * 0.163						
Total Depth (TD): <u>13.84</u>	Depth to Product:							
Depth to Water (DTW): <u>10.38</u>	Product Thickness:							
Water Column Height: <u>3.46</u>	1 Casing Volume: <u>2.24</u>		gallons					
Reference Point: TOC	<u>3</u> Casing Volumes: <u>6.72</u>		gallons					
Purging Device: Disposable Bailer, <u>3" PVC Bailer</u> , 3" Disposable Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>6:45</u>	<u>14.0</u>	<u>7.70</u>	<u>1884</u>				<u>2.5</u>	
<u>6:50</u>	<u>18.7</u>	<u>7.74</u>	<u>1827</u>				<u>5</u>	
<u>6:57</u>	<u>18.9</u>	<u>7.71</u>	<u>1835</u>				<u>7</u>	

Comments: YSI 550A DO meter pre purge DO = 0.77 mg/l
 post purge DO = mg/l

very turbid, silty

Sample ID: <u>MW-7AA</u>	Sample Time: <u>7:00</u>
Laboratory: McCampbell Analytical, INC.	Sample Date: <u>8/14/08</u>
Containers/Preservative: <u>Voa/HCl</u>	
Analyzed for: <u>8015, 8021</u>	
Sampler Name: Sanjiv Gill	Signature: 


MONITORING FIELD DATA SHEET

Well ID: MW-7A

Project.Task #: 1001.001 216				Project Name: Dublin Car Wash				
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08				Weather: Sunny				
Well Diameter: 4"				Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47	
					2" = 0.16	4" = 0.65	radius ² * 0.163	
Total Depth (TD): 19.53				Depth to Product:				
Depth to Water (DTW): 10.27				Product Thickness:				
Water Column Height: 9.26				1 Casing Volume: 6.01			gallons	
Reference Point: TOC				3 Casing Volumes: 18.03			gallons	
Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp @	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
6:15	18.7	7.42	1305				6	
6:20	19.0	7.36	1295				12	
6:25	18.9	7.36	1283				18	

Comments: YSI 550A DO meter pre purge DO = 0.81 mg/l
post purge DO = mg/l

very turbid, silty


Sample ID: MW-7A	Sample Time: 6:30
Laboratory: McCampbell Analytical, INC.	Sample Date: 8/14 /08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature: 

MONITORING FIELD DATA SHEET

Well ID: MN-7B

Project.Task #: 1001.001 216		Project Name: Dublin Car Wash	
Address: 7420 Dublin Boulevard, Dublin, CA			
Date: 8/13/08		Weather: <u>Sunny</u>	
Well Diameter: <u>2'</u>	Volume/ft.	1" = 0.04	3" = 0.37
		2" = 0.16	4" = 0.65
Total Depth (TD): <u>28.42</u>		Depth to Product:	
Depth to Water (DTW): <u>10.17</u>		Product Thickness:	
Water Column Height: <u>18.25</u>		1 Casing Volume: <u>2.92</u> gallons	
Reference Point: TOC		<u>3</u> Casing Volumes: <u>8.76</u> gallons	
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, 3" Disposable Bailer, What Pump			
Sampling Device: Disposable Bailer			
Time	Temp ©	pH	Cond (µs)
<u>5:35</u>	<u>19.3</u>	<u>7.51</u>	<u>1033</u>
<u>5:45</u>	<u>18.9</u>	<u>7.60</u>	<u>1034</u>
<u>5:55</u>	<u>18.9</u>	<u>7.61</u>	<u>1042</u>

Comments: YSI 550A DO meter pre purge DO = 0.51 mg/l
 post purge DO = mg/l
turbid


Sample ID: <u>MN-7B</u>	Sample Time: <u>6:00</u>
Laboratory: McCampbell Analytical, INC.	Sample Date: <u>8/14/08</u>
Containers/Preservative: <u>Voa/HCl</u>	
Analyzed for: <u>8015, 8021</u>	
Sampler Name: Sanjiv Gill	Signature: 

MONITORING FIELD DATA SHEET

Well ID: MW-8A

Project.Task #: 1001.001 216		Project Name: Dublin Car Wash						
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08		Weather: Sunny						
Well Diameter: 2"	Volume/ft.	1" = 0.04	3" = 0.37	6" = 1.47				
		2" = 0.16	4" = 0.65	radius ² * 0.163				
Total Depth (TD): 19.01		Depth to Product:						
Depth to Water (DTW): 10.49		Product Thickness:						
Water Column Height: 8.52		1 Casing Volume: 1.36		gallons				
Reference Point: TOC		3 Casing Volumes: 4.08		gallons				
Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, What Pump								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
9:30	20.0	7.52	1818				1.5	
9:35	19.8	7.54	1847				3	
9:40	19.4	7.51	1861				4	

Comments: YSI 550A DO meter pre purge DO = 0.65 mg/l
post purge DO = mg/l
Turbid


Sample ID: MW-8A	Sample Time: 9:45
Laboratory: McCampbell Analytical, INC.	Sample Date: 8/13/08
Containers/Preservative: Voal/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature: 

MONITORING FIELD DATA SHEET

Well ID: MW-9A

Project.Task #: 1001.001 216		Project Name: Dublin Car Wash							
Address: 7420 Dublin Boulevard, Dublin, CA									
Date: 8/13/08		Weather: <u>Sunny</u>							
Well Diameter: <u>2"</u>	Volume/ft. <table border="1" style="font-size: small;"> <tr> <td>1" = 0.04</td> <td>3" = 0.37</td> <td>6" = 1.47</td> </tr> <tr> <td>2" = 0.16</td> <td>4" = 0.65</td> <td>radius² * 0.163</td> </tr> </table>			1" = 0.04	3" = 0.37	6" = 1.47	2" = 0.16	4" = 0.65	radius ² * 0.163
1" = 0.04	3" = 0.37	6" = 1.47							
2" = 0.16	4" = 0.65	radius ² * 0.163							
Total Depth (TD): <u>19.66</u>	Depth to Product:								
Depth to Water (DTW): <u>11.31</u>	Product Thickness:								
Water Column Height: <u>8.35</u>	1 Casing Volume: <u>1.33</u>		gallons						
Reference Point: TOC	<u>3</u> Casing Volumes: <u>3.99</u>		gallons						
Purging Device: <u>Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump</u>									
Sampling Device: Disposable Bailer									
Time	Temp @	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW	
<u>8:55</u>	<u>21.2</u>	<u>7.10</u>	<u>788</u>				<u>1.5</u>		
<u>9:00</u>	<u>22.0</u>	<u>7.18</u>	<u>809</u>				<u>3</u>		
<u>9:05</u>	<u>21.8</u>	<u>7.14</u>	<u>812</u>				<u>4</u>		

Comments: YSI 550A DO meter pre purge DO = 0.76 mg/l
post purge DO = mg/l
turbid

Sample ID: <u>MW-9A</u>	Sample Time: <u>9:10</u>
Laboratory: McCampbell Analytical, INC.	Sample Date: <u>8/13/08</u>
Containers/Preservative: <u>Voac/HCl</u>	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature: 


MONITORING FIELD DATA SHEET

Well ID: MW-10A

Project.Task #: 1001.001 216		Project Name: Dublin Car Wash						
Address: 7420 Dublin Boulevard, Dublin, CA								
Date: 8/13/08		Weather: Sunny						
Well Diameter: 2"	Volume/ft.							
	1" = 0.04	3" = 0.37	6" = 1.47					
	2" = 0.16	4" = 0.65	radius ² * 0.163					
Total Depth (TD): 19.51	Depth to Product:							
Depth to Water (DTW): 9.25	Product Thickness: 2							
Water Column Height: 10.26	1 Casing Volume: 1.64		gallons					
Reference Point: TOC	3 Casing Volumes: 4.92		gallons					
Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, Whal Pump								
Sampling Device: Disposable Bailer								
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
10:05	21.0	7.28	2579				1.5	
10:10	20.7	7.19	2610				3	
10:15	20.9	7.19	2605				5	

Comments: YSI 550A DO meter pre purge DO = 0.61 mg/l
 post purge DO = mg/l

turbid

Sample ID: MW-10A	Sample Time: 10:20
Laboratory: McCampbell Analytical, INC.	Sample Date: 8/13/08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature: 

MONITORING FIELD DATA SHEET

Well ID: VH-1

Project Task #: 1001.001 216 Project Name: Dublin Car Wash

Address: 7420 Dublin Boulevard, Dublin, CA

Date: 8/13/08 Weather: Sunny

Well Diameter: 2'' Volume/ft.

1" = 0.04	3" = 0.37	6" = 1.47
2" = 0.16	4" = 0.65	radius ² * 0.163

Total Depth (TD): 8.40 Depth to Product:

Depth to Water (DTW): 8.27 Product Thickness:

Water Column Height: 0.13 1 Casing Volume: 0.02 gallons


Reference Point: TOC 3 Casing Volumes: 0.06 gallons

Purging Device: Disposable Bailer, 3" PVC Bailer, 3" Disposable Bailer, What Pump

Sampling Device: Disposable Bailer

Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW
<u>Insufficient Water</u>								

Comments: YSI 550A DO meter pre purge DO = mg/l
 post purge DO = mg/l

Sample ID:	Sample Time:
Laboratory: McCampbell Analytical, INC.	Sample Date: 8/ /08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature: 

MONITORING FIELD DATA SHEET

Well ID: VH-2

Project.Task #: 1001.001 216		Project Name: Dublin Car Wash							
Address: 7420 Dublin Boulevard, Dublin, CA									
Date: 8/13/08		Weather: <u>Sunny</u>							
Well Diameter: <u>2"</u>		Volume/ft. <table border="1" style="font-size: small; border-collapse: collapse;"> <tr> <td>1" = 0.04</td> <td>3" = 0.37</td> <td>6" = 1.47</td> </tr> <tr> <td>2" = 0.16</td> <td>4" = 0.65</td> <td>radius² * 0.163</td> </tr> </table>		1" = 0.04	3" = 0.37	6" = 1.47	2" = 0.16	4" = 0.65	radius ² * 0.163
1" = 0.04	3" = 0.37	6" = 1.47							
2" = 0.16	4" = 0.65	radius ² * 0.163							
Total Depth (TD): <u>8.30</u>		Depth to Product:							
Depth to Water (DTW): <u>7.92</u>		Product Thickness:							
Water Column Height: <u>0.38</u>		1 Casing Volume: <u>0.06</u> gallons							
Reference Point: TOC		<u>3</u> Casing Volumes: <u>0.18</u> gallons							
Purging Device: <u>Disposable Bailer</u> , 3" PVC Bailer, 3" Disposable Bailer, What Pump									
Sampling Device: Disposable Bailer									
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW	
			<u>Insufficient Water</u>						

Comments: YSI 550A DO meter pre purge DO = 1.58 mg/l
post purge DO = mg/l

Sample ID:	Sample Time:
Laboratory: McCampbell Analytical, INC.	Sample Date: 8/ /08
Containers/Preservative: Voa/HCl	
Analyzed for: 8015, 8021	
Sampler Name: Sanjiv Gill	Signature:


MONITORING FIELD DATA SHEET

Well ID: VW-3

Project.Task #: 1001.001 216		Project Name: Dublin Car Wash							
Address: 7420 Dublin Boulevard, Dublin, CA									
Date: 8/13/08		Weather: <u>Sunny</u>							
Well Diameter: <u>VW-3</u>		Volume/ft. <table border="1" style="display: inline-table; border-collapse: collapse;"><tr><td>1" = 0.04</td><td>3" = 0.37</td><td>6" = 1.47</td></tr><tr><td>2" = 0.16</td><td>4" = 0.65</td><td>radius² * 0.163</td></tr></table>		1" = 0.04	3" = 0.37	6" = 1.47	2" = 0.16	4" = 0.65	radius ² * 0.163
1" = 0.04	3" = 0.37	6" = 1.47							
2" = 0.16	4" = 0.65	radius ² * 0.163							
Total Depth (TD): <u>8.40</u>		Depth to Product:							
Depth to Water (DTW): <u>6.93</u>		Product Thickness:							
Water Column Height: <u>1.47</u>		1 Casing Volume: <u>0.23</u> gallons							
Reference Point: TOC		<u>3</u> Casing Volumes: <u>0.69</u> gallons							
Purging Device: <u>Disposable Bailer</u> 3" PVC Bailer, 3" Disposable Bailer, What Pump									
Sampling Device: Disposable Bailer									
Time	Temp ©	pH	Cond (µs)	NTU	DO(mg/L)	ORP (mV)	Vol(gal)	DTW	
<u>11:55</u>		<u>DEwatered</u>					<u>.2</u>		

8/13/08

Comments: YSI 550A DO meter pre purge DO = 0.59 mg/l
 post purge DO = mg/l

Sample ID: <u>VW-3</u>	Sample Time: <u>9:10</u>
Laboratory: McCampbell Analytical, INC.	Sample Date: <u>8/14/08</u>
Containers/Preservative: <u>Voac/HCl</u>	
Analyzed for: <u>8015, 8021</u>	
Sampler Name: Sanjiv Gill	Signature: 

APPENDIX C

Laboratory Analytical Results



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Car Wash, 7420 Dublin Blvd	Date Sampled: 08/13/08-08/14/08
	Client Contact: Celia Costarella	Date Received: 08/14/08
	Client P.O.:	Date Reported: 08/22/08
		Date Completed: 08/20/08

WorkOrder: 0808405

August 22, 2008

Dear Celia:

Enclosed within are:

- 1) The results of the **12** analyzed samples from your project: **#1001.001; Dublin Car Wash, 7420**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McC Campbell Analytical, Inc.



McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Web: www.mcccampbell.com E-mail: main@mcccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Car Wash, 7420 Dublin Blvd	Date Sampled: 08/13/08-08/14/08
	Client Contact: Celia Costarella	Date Received: 08/14/08
	Client P.O.:	Date Extracted: 08/16/08-08/22/08
		Date Analyzed 08/16/08-08/22/08

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0808405

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-1	W	ND	ND	ND	ND	ND	ND	1	100
002A	MW-2	W	ND	190	ND	ND	ND	ND	1	101
003A	MW-3A	W	2900,d1	1300	280	3.4	52	56	1	117
004A	MW-6A	W	1200,d1	ND<75	84	3.7	36	18	2	97
005A	MW-6B	W	ND	ND	ND	ND	ND	ND	1	102
006A	MW-7AA	W	3900,d1	15,000	510	ND<5.0	150	42	10	106
007A	MW-7A	W	ND	24	ND	ND	ND	ND	1	97
008A	MW-7B	W	ND	ND	ND	ND	ND	ND	1	101
009A	MW-8A	W	ND	68	ND	ND	ND	ND	1	96
010A	MW-9A	W	ND	ND	ND	ND	ND	ND	1	98
011A	MW-10A	W	ND	ND	ND	ND	ND	ND	1	101
012A	VW-3	W	9300,d1	100	400	4.8	87	60	5	94

Reporting Limit for DF =1; ND means not detected at or	W	50	5.0	0.5	0.5	0.5	0.5	µg/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in µg/wipe, product/oil/non-aqueous liquid samples in mg/L.

cluttered chromatogram; sample peak coelutes with surrogate peak.

+The following descriptions of the TPH chromatogram are cursory in nature and McC Campbell Analytical is not responsible for their interpretation:

d1) weakly modified or unmodified gasoline is significant



QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

BatchID: 37620

WorkOrder 0808405

EPA Method SW8021B/8015Cm		Extraction SW5030B							Spiked Sample ID: 0808405-011			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex) ^f	ND	60	102	93.4	8.84	93.7	91.2	2.68	70 - 130	20	70 - 130	20
MTBE	ND	10	87.5	90.8	3.76	91.1	107	15.6	70 - 130	20	70 - 130	20
Benzene	ND	10	90.2	95.2	5.41	89.1	95.4	6.78	70 - 130	20	70 - 130	20
Toluene	ND	10	88.3	93	5.23	81	86.6	6.70	70 - 130	20	70 - 130	20
Ethylbenzene	ND	10	90.4	93.4	3.23	88.4	90.7	2.55	70 - 130	20	70 - 130	20
Xylenes	ND	30	84.1	87.3	3.80	87.5	88.9	1.60	70 - 130	20	70 - 130	20
%SS:	101	10	123	124	0.219	96	102	6.58	70 - 130	20	70 - 130	20

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
NONE

BATCH 37620 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0808405-001A	08/13/08 10:55 AM	08/16/08	08/16/08 10:17 AM	0808405-002A	08/13/08 11:30 AM	08/19/08	08/19/08 5:30 PM
0808405-003A	08/14/08 9:00 AM	08/19/08	08/19/08 8:05 AM	0808405-003A	08/14/08 9:00 AM	08/22/08	08/22/08 12:19 PM
0808405-004A	08/14/08 8:05 AM	08/18/08	08/18/08 7:28 PM	0808405-005A	08/14/08 7:35 AM	08/18/08	08/18/08 4:56 PM
0808405-006A	08/14/08 7:00 AM	08/16/08	08/16/08 8:46 AM	0808405-006A	08/14/08 7:00 AM	08/19/08	08/19/08
0808405-007A	08/14/08 6:30 AM	08/20/08	08/20/08 10:16 PM	0808405-008A	08/14/08 6:00 AM	08/18/08	08/18/08 7:14 PM
0808405-009A	08/13/08 9:45 AM	08/18/08	08/18/08 7:47 PM	0808405-010A	08/13/08 9:10 AM	08/20/08	08/20/08 10:49 PM
0808405-011A	08/13/08 10:20 AM	08/19/08	08/19/08 9:36 AM	0808405-012A	08/14/08 9:10 AM	08/18/08	08/18/08 9:59 PM

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 * (MS-Sample) / (Amount Spiked); RPD = 100 * (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

£ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = matrix interference and/or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content, or inconsistency in sample containers.



Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.** Date and Time Received: **08/14/08 11:55:24 AM**
 Project Name: **#1001.001; Dublin Car Wash, 7420 Dublin Blvd** Checklist completed and reviewed by: **Maria Venegas**
 WorkOrder N°: **0808405** Matrix Water Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present? Yes No
 Chain of custody signed when relinquished and received? Yes No
 Chain of custody agrees with sample labels? Yes No
 Sample IDs noted by Client on COC? Yes No
 Date and Time of collection noted by Client on COC? Yes No
 Sampler's name noted on COC? Yes No

Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes No NA
 Shipping container/cooler in good condition? Yes No
 Samples in proper containers/bottles? Yes No
 Sample containers intact? Yes No
 Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: 9.2°C NA
 Water - VOA vials have zero headspace / no bubbles? Yes No No VOA vials submitted
 Sample labels checked for correct preservation? Yes No
 TTLC Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 Samples Received on Ice? Yes No
 (Ice Type: WET ICE)

* NOTE: If the "No" box is checked, see comments below.

=====

Client contacted: Date contacted: Contacted by:

Comments:

McC Campbell Analytical, Inc.

1534 Willow Pass Rd
 Pittsburg, CA 94565-1701
 (925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0808405

ClientCode: PEO

WriteOn EDF Excel Fax Email HardCopy ThirdParty J-flag

Report to: Celia Costarella
 Pangea Environmental Svcs., Inc.
 1710 Franklin Street, Ste. 200
 Oakland, CA 94612
 (510) 836-3700 FAX (510) 836-3709

Email: ccostarella@pangeaenv.com
 cc:
 PO:
 ProjectNo: #1001.001; Dublin Car Wash, 7420
 Dublin Blvd

Bill to: Bob Clark-Riddell
 Pangea Environmental Svcs., Inc.
 1710 Franklin Street, Ste. 200
 Oakland, CA 94612

Requested TAT: **5 days**
 Date Received: **08/14/2008**
 Date Printed: **08/14/2008**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0808405-001	MW-1	Water	8/13/2008 10:55	<input type="checkbox"/>	A	A											
0808405-002	MW-2	Water	8/13/2008 11:30	<input type="checkbox"/>	A												
0808405-003	MW-3A	Water	8/14/2008 9:00	<input type="checkbox"/>	A												
0808405-004	MW-6A	Water	8/14/2008 8:05	<input type="checkbox"/>	A												
0808405-005	MW-6B	Water	8/14/2008 7:35	<input type="checkbox"/>	A												
0808405-006	MW-7AA	Water	8/14/2008 7:00	<input type="checkbox"/>	A												
0808405-007	MW-7A	Water	8/14/2008 6:30	<input type="checkbox"/>	A												
0808405-008	MW-7B	Water	8/14/2008 6:00	<input type="checkbox"/>	A												
0808405-009	MW-8A	Water	8/13/2008 9:45	<input type="checkbox"/>	A												
0808405-010	MW-9A	Water	8/13/2008 9:10	<input type="checkbox"/>	A												
0808405-011	MW-10A	Water	8/13/2008 10:20	<input type="checkbox"/>	A												
0808405-012	VW-3	Water	8/14/2008 9:10	<input type="checkbox"/>	A												

Test Legend:

1	G-MBTX W	2	PREF REPORT	3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Maria Venegas

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
 Hazardous samples will be returned to client or disposed of at client expense.

