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

Mr. Barney Chan
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California
ACHCSA Case No. 304

Dear Mr.Chan:

I, Mr. Hooshang Hadjian, have retained Pangea Environmental Services, Inc. (Pangea) as the environmental consultant for the project referenced above. Pangea is submitting the attached report on my behalf.

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

Sincerely,

Hooshang Hadjian

December 9, 2008

Mr. Paresh Khatri
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: **Interim Remediation Report and Corrective Action Plan**
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 *Interim Remediation Report and Corrective Action Plan* (CAP) for the subject site. The feasibility testing/interim remediation and corrective action plan were requested in a November 9, 2007 letter from Alameda County Environmental Health (ACEH).

If you have any questions or comments, please call me at (510) 435-8664 or email briddell@pangeaenv.com.

Sincerely,
Pangea Environmental Services, Inc.

Bob Clark-Riddell, P.E.
Principal Engineer

Attachment: *Interim Remediation Report and Corrective Action Plan*

cc: Mr. Hooshang Hadjian, 2108 San Ramon Valley Blvd, San Ramon, CA 94583
cc: Mr. Jim Lange, 6500 Dublin Blvd., Suite 202, Dublin, CA 94568

INTERIM REMEDIATION REPORT AND CORRECTIVE ACTION PLAN

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California
ACHCSA Case No. 304

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:

REGISTERED PROFESSIONAL ENGINEER
ROBERT G. CLARK-RIDDELL
No. C 049629
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CIVIL
STATE OF CALIFORNIA

Brian Busch
Senior Project Scientist

Bob Clark-Riddell, P.E.
Principal Engineer

INTRODUCTION

On behalf of Mr. Hooshang Hadjian, Pangea Environmental Services, Inc. has prepared this *Feasibility Test Report and Corrective Action Plan* (CAP) for the subject site. The feasibility testing described herein was proposed in Pangea's *Site Investigation Report,* dated August 11, 2006, and approved in a November 9, 2007 letter from Alameda County Environmental Health (ACEH). The ACEH letter also requested that a corrective action plan be prepared for the site. The purpose of the feasibility testing was to evaluate potentially applicable remedial alternatives for remediating residual site contaminants and to provide additional source removal at the site. The purpose of the CAP is to provide a method to remediate impacted soil and groundwater beneath the site to the point where residual hydrocarbons can attenuate naturally. Presented below are the site background, feasibility testing methods and results, evaluated remedial alternatives, and the proposed corrective action plan.

SITE BACKGROUND

The Dublin Auto Wash is located at the southwest corner of Dublin Boulevard and Village Parkway in Dublin, California (Figure 1). The site elevation is approximately 321 feet above mean sea level (msl), with the topography sloping gently to the south from the central and western portions of the site, toward a flood control channel (identified by SOMA as San Ramon Creek). The natural topography slopes gently to the southeast on the eastern portion of the site. Onsite facilities consist of two dispenser islands (four dispensers), three 10,000-gallon underground storage tanks (USTs), and a station building with a car wash (Figure 2). Land use immediately surrounding the site is commercial, with Interstate 680 located southwest of the site, across the flood control channel.

Previous Environmental Work

Chevron Release – 1988 to 1996

The first environmental investigation at the site was performed in early 1988 when Chevron Products Company (Chevron), the previous owner/operator, hired EA Engineering, Science, and Technology, Inc. (EA), to conduct a soil vapor investigation at the site. The results of the soil gas survey indicated elevated levels of hydrocarbons beneath the site, especially around the southern pump island. Subsequently, groundwater monitoring wells were installed and quarterly groundwater monitoring began. In February 1989, one 5,000-gallon and two 10,000-gallon underground storage tanks (USTs) were excavated and removed from the site and replaced with three new USTs. A soil vapor extraction (SVE) system was operated between March 1992 and April 1996, removing approximately 15,000 pounds of hydrocarbons. Between 1994 and 1996, additional groundwater monitoring wells were installed and added to the quarterly monitoring program. A December 1996 Risk Based Corrective Action (RBCA) report concluded that the site is a "Low Risk" soil and groundwater petroleum release site, and ACEH subsequently approved SVE system shutdown.

New Release – February 1997

In February 1997, a leak in a stainless steel product line flex hose was discovered and reported to ACEH. The leak location was immediately south of the north-westernmost dispenser (dispenser No. 2). During June 1997 testing, the secondary piping failed a pressure test. Subsequently, a new product delivery system was installed to replace the existing lines. During the system modifications in July 1997, Parker Environmental Services collected soil samples via hand auger at locations B-1 through B-4. About 31 cubic yards of soil were removed from the release area to a depth of 8 feet bgs. The results of subsequent groundwater monitoring events in December 1998 and March 1999 indicated free product was present in well MW-3. The detection of free product in MW-3 (up to 0.1 feet thick) corresponds to the historically lowest groundwater elevation observed during site monitoring activities, when the depth to groundwater in well MW-3 was 12.92 feet in December 1998.

On February 6, 2003, due to the new release, the Chevron Product Company signed a *Liability Management Transfer Agreement* with Mr. Hooshang Hadjian, the UST operator at the time. Mr. Hadjian assumed responsibility for the new release and ongoing corrective action at the site.

Gettler-Ryan, Inc. (GRI), a subcontractor of Chevron, monitored the eight existing groundwater monitoring wells at the site until the first quarter of 2003. In 2003, SOMA began performing groundwater monitoring at the site on behalf of Mr. Hadjian. SOMA noted groundwater apparently flowed from offsite wells MW-4 and MW-5 toward the site in the approximate southeast direction, while groundwater at the eastern portion of the site apparently flowed in the northeast direction. SOMA believed the groundwater flow direction may have been affected by the 18" diameter vitrified clay pipe (VCP) sewer line running beneath the southern portion of Dublin Boulevard immediately north of the site. Information provided by Gettler-Ryan indicated that the top of the sanitary sewer line was approximately 16 feet below grade surface (bgs), while the depth to water in nearby wells MW-1 and MW-3 has ranged from approximately 11 to 13 ft bgs.

In 2003, SOMA also conducted further characterization and remediation activities at the site. SOMA advanced seven shallow soil borings using hand augers (B-1 through B-8), nine soil borings using a Geoprobe™ direct push rig, and one soil boring using a drill rig equipped with hollow stem augers. Initially, the Geoprobe borings were intended to be used for cone penetrometer testing (CPT) to log the borings; however, due to subsurface conditions the borings were logged using electric conductivity sensors. The direct push borings included collection of discrete depth groundwater samples to assess the vertical extent of contamination.

SOMA's investigation confirmed that contaminant concentrations were highest near the northern central portion of the site, and concluded that the 18" diameter sewer line located immediately north of the site is intercepting groundwater contamination. Fill material around the sewer line could be acting as a preferential pathway for the contamination conveyance to the east and then southeast, the sewer flow direction. SOMA

also found contamination in deeper groundwater. SOMA concluded that there are three relatively higher permeability zones on the site acting as water bearing zones – Shallow (10 – 15 to 19 – 23 feet bgs), Middle (19 – 23 to 32 – 36 feet bgs), and Deep (32 – 36 to 43 – 47 feet bgs) – with an Upper Shallow zone (at approximately 2 to 6 feet bgs) noted in a few of the borings. In several locations, an insufficient amount of water was present in the potential water bearing zones, so no groundwater samples were obtained by SOMA. Since wells EA-1, EA-2, EA-3, and MW-1 are screened across the various water bearing zones at the site, SOMA recommended that these wells be destroyed to prevent them from acting as vertical conduits for the migration of the contaminants. SOMA also recommended that wells be installed in the Shallow, Middle, and Deep zones at the site to determine the groundwater flow directions in the various zones.

In November 2004, Pangea Environmental Services, Inc. (Pangea) of Oakland, California, assumed the lead role as consultant for Mr. Hadjian. During first, second and fourth quarters of 2005 and the first quarter 2006 groundwater monitoring events free product was again observed in well MW-3.

In February 2005, Pangea prepared a soil and groundwater investigation workplan, which included an evaluation of local and regional geology and hydrogeology, a review of soil and groundwater sampling data from the site (including detailed cross sections), a conduit study, and a sensitive receptor survey to assess potential impacts to wells and surface water bodies. The closest water supply well was identified approximately 1,900 feet southwest of the site, and was not considered to be potentially impacted by site contamination. The adjacent flood control channel is the only nearby surface water body that could potentially be impacted by site contamination. The workplan recommended installing borings along the sanitary sewer line in Dublin Boulevard and destruction of select wells screened across multiple water-bearing zones. The workplan also recommended installation of new monitoring wells within the multiple water-bearing zones and implementation of interim remediation using vacuum extraction to remove groundwater and free product from selected site wells. During subsequent correspondence, ACEH requested installation of a soil boring (SB-2) downgradient of the 1997 release.

During workplan implementation in March through May 2006, Pangea installed fourteen monitoring wells (MW-3A, MW-6A, MW-6B, MW-7AA, MW-7A, MW-7B, MW-7C, MW-8A, MW-9A, MW-9C, MW-10A, MW-10C and MW-11C) to help define the vertical and lateral extent of groundwater contamination. Pangea abandoned wells EA-1, EA-2, EA-3 and MW-3 to reduce the risk of vertical contaminant migration and improve the quality of monitoring data. Pangea 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. Soil borings SB-1 was located near the intersection of Dublin Boulevard and Village Parkway and boring SB-1A was located approximately 3 ft south of SB-1. Results are detailed in the August 11, 2006 *Site Investigation Report* prepared by Pangea.

In July 2006, Pangea conducted vacuum extraction from well MW-3A and MW-7AA using a vacuum truck. The vacuum extraction was conducted to provide cost-effective removal of source area material and additional information about subsurface conditions. The results of the vacuum extraction led Pangea to recommend conducting *short-term feasibility testing/source removal* on key site wells (MW-3A, MW-7AA, MW-7A, MW-6A) detailed in the August 11, 2006 *Site Investigation Report.* ACEH approved the proposed feasibility testing and requested a corrective action plan (CAP) in a letter dated November 9, 2007. The ACEH letter also approved discontinuance of groundwater monitoring of C-zone wells, because monitoring data suggested the C-zone was not impacted. Test results are described in this report.

Geology and Hydrogeology

Subsurface soil encountered at the site consists primarily of clay, silty clay and clayey sand. Groundwater has been encountered at depths of approximately 12 to 19 feet below grade surface (bgs) during well installation and soil boring activities, and subsequently rose to 8.8 to 12.9 ft bgs. These observations suggest that site groundwater is under confined to semi-confined conditions. Historically, the depth to groundwater in site monitoring wells has ranged from approximately 7.2 to 13.2 feet bgs.

Throughout much of the site, saturated-zone soil is primarily clay down to approximately 15 ft bgs, although sporadic thin seams of coarser material are also present. Generally, the piezometric surface for the deeper confined to semi-confined water-bearing units lies within this relatively low permeability unit, and the coarser materials within the unit often contain perched groundwater with piezometric surfaces that differ significantly from those of the deeper units. The shallowest groundwater monitoring wells and vapor monitoring wells (MW7AA, VW-1, VW-2 and VW-3) are screened within this unit, which is referred to herein as the upper shallow 'AA' zone. This nomenclature differs slight from prior reports by SOMA, which restricted their "upper shallow zone" to depths of 3 to 6 ft bgs. A water-bearing unit comprised of clayey sand and sandy clay is present at approximately 15 to 18 ft bgs and appears to be laterally persistent throughout most of the site. This is referred to in this report as the shallow 'A' zone. The shallow wells (MW-6A, MW-8A, MW-9A and MW-10A) were screened into this unit of higher permeability materials. The shallow source zone well MW-3A is screened across the 'A' zone but the screen was extended up above the 'A' zone piezometric surface to 9' bgs so as to intersect SPH that had been previously encountered in well MW-3 in the upper shallow 'AA' zone.

Beneath approximately 18 ft bgs, soil is primarily clay until a depth of approximately 26 ft bgs, where water-bearing units of sandy clay and clayey sand interbedded with layers of clay are present to a depth of approximately 30 ft bgs. The mid-level wells (MW-6B and MW-7B) were screened into this unit of higher permeability material ('B' zone). Beneath approximately 30 ft bgs soil is again primarily clay to approximately 34 ft bgs. At approximately 34 ft bgs clayey sand, sandy clay, and clay with sand is encountered interbedded with layers of clay to a total explored depth of approximately 45 ft bgs. The deep-

level wells (MW-6C, MW-7C, MW-9C, MW-10C and MW-11C) are screened in this zone ('C' zone). Soil contamination appears to be highest at depths between 10 and 15 ft bgs as shown on Table 1.

Groundwater Flow Direction and Gradient

Depth-to-water measurements collected during monitoring events indicate that the groundwater flow direction beneath the site has been fairly consistent. Groundwater in the shallow water-bearing units appears to flow generally southwards, although the gradient data suggests that westward to northwestward flow occurs in the vicinity of wells MW-3A and MW-6A (Figure 2). The groundwater flow direction in this area may be affected by the 18-inch diameter sanitary sewer line running beneath the south side of Dublin Boulevard and adjacent to these wells. Pangea measured the depth to the top of the sanitary sewer line to be approximately 14 ft bgs and the depth to water in boring SB-1A adjacent to this line was 11.2 feet. Although this boring was not surveyed relative to the other wells, this depth is apparently lower than water table elevations in the nearby monitoring wells, suggesting that the flow may be towards the sanitary sewer. Depth to water in wells MW-1, MW-3 and EA-3 near the sanitary sewer has historically ranged from approximately 9 to 13 ft bgs.

The groundwater gradient in the deeper water-bearing units appears to be northwestward. In addition, a comparison of groundwater elevations measured in wells screened in upper and lower water-bearing units indicate the presence of a slight upwards gradient.

Hydrocarbon Distribution in Groundwater

As shown on Figure 2, the highest concentrations of TPHg and benzene are generally found in upper shallow-zone wells (MW-7AA, MW-3A, MW-6A, VW-1 and VW-3) in the vicinity of the northernmost dispenser island, immediately south of Dublin Boulevard. These wells have contained several thousand µg/L TPHg and several hundred µg/L benzene. Well MW-3A contained SPH in May 2006, and the well that it replaced (MW-3) contained SPH during quarterly monitoring events continuously from May 2003 until August 2005 (Table 2). Both of these wells are screened at very shallow depths across the piezometric surface. These observations are consistent with the location of the 1997 release from the flex hose between the dispensers, and the approximate location of previously excavated source soil. The 'A' zone wells screened in the more permeable shallow "A" zone water-bearing unit encountered at approximately 15 to 18 feet bgs appear to have considerably lower TPHg and benzene concentrations than the nearby shallower wells, indicating that downward migration of contamination from the shallow highly impacted SPH-bearing clays is not significant.

Considering that the vapor wells are screened from approximately 3 to 9 ft bgs, analytical results suggest that the primary zones of hydrocarbon contamination are in the upper shallow 'AA' and shallow A' water-bearing zones. Broadly, the lateral extent of petroleum hydrocarbon contamination in the shallow 'A' zone appears to be defined by wells MW-10A to the south and MW-9A to the east, while wells MW-1 (screened from

approximately 5 to 25 ft bgs) and MW-2 (screened from approximately 5 to 20 ft bgs) define the extent of hydrocarbon contamination to the west. However, it is not know how far west towards MW-1 and MW-2 the highly impacted groundwater in the upper shallow 'AA' and 'A' zones extends from the MW-7 well group.

No contaminants have been detected in the B-zone or C-zone wells, except for low concentrations during the first one or two monitoring events following well installation in June 2006. The November 9, 2007 ACEH letter approved discontinuance of groundwater monitoring of C-zone wells.

Fuel Oxygenate Distribution in Groundwater

The lateral distribution of MTBE in groundwater is similar to that of benzene and TPHg, except that relatively high MTBE concentrations were found in boring SB-1A drilled next to the Dublin Boulevard sewer line and were historically found in well MW-1, also located close to the sewer line (Figure 2). This data suggests that contaminated groundwater has migrated both westward and eastward through the backfill of the sanitary sewer line. The vertical extent of MTBE is also similar to the extent of benzene contamination, and has been delineated by the newly installed deep monitoring wells. The lateral extent of upper shallow 'AA' and 'A' zone MTBE contamination is well defined, except to the west in the vicinity of wells MW-1, MW-2 and well MW-7AA. It is possible that the 1997 release near the dispensers migrated west toward MW-1.

During second quarter 2006 monitoring, all groundwater samples that contained detectable concentrations of MTBE by EPA Method 8021B were analyzed for 5 oxygenates (MTBE, TAME, TBA, DIPE and ETBE) by EPA Method 8260B. No oxygenates other than MTBE were detected above reporting limits, with the exception of 12 µg/L TAME in vapor well VW-1. Third quarter 2008 monitoring results indicate that MTBE concentrations have been stable and/or declining, with dramatic concentration reductions in select site wells.

FEASIBILITY TEST PROCEDURES

Feasibility Test Overview

Between November 27 and December 1, 2007, Pangea performed approximately 90 hours of DPE feasibility testing from selected site wells to evaluate whether DPE could effectively remove residual hydrocarbons from beneath the site and to provide additional source removal. DPE testing also evaluated soil vapor extraction and groundwater extraction techniques. DPE was evaluated as a possible remedial alternative because previous assessments demonstrated that petroleum hydrocarbons are present at depths below the water table, and soil vapor extraction without water table depression would not be sufficient to remove these hydrocarbons. In addition, brief vacuum extraction performed in July 2006 using a vacuum truck suggested extraction could be effective.

Specific goals of the DPE pilot test were to determine:

- Groundwater extraction rates under vacuum and the extraction rate necessary for dewatering hydrocarbon-impacted soils beneath the water table;
- Soil vapor extraction vacuum and flow rates;
- The estimated radius of influence for the applied vacuum;
- Vapor-phase hydrocarbon concentrations and trends in extracted vapor; and
- Contaminant mass removal rates.

Pilot Test Equipment

For DPE testing, a 25-horsepower, trailer-mounted 400 cubic foot per minute (cfm) liquid-ring vacuum pump routed to a thermal/catalytic oxidizer was used to extract soil vapor and groundwater and treat extracted soil vapor from selected site extraction wells. The 25 horsepower (hp) liquid-ring vacuum pump was capable of achieving up to 28.5 inches of mercury vacuum (“Hg). Selected site wells were chosen for extraction due to the presence of elevated aqueous-phase hydrocarbon concentrations. Soil vapor and groundwater were extracted from the wells by applying vacuum to the well casings through a 1.5-inch diameter hose (stinger) inserted through a rubber coupling installed on top of each well head. The stinger was slowly lowered into the water table to the target depth. After extraction from the well, the soil vapor/groundwater process stream was passed through a vapor/liquid separator, where groundwater was separated out and soil vapor was routed to a thermal oxidizer for abatement. The blower was powered by electricity obtained from an onsite power source. The oxidizer was fueled by propane stored in a 499-gallon propane tank. Extracted groundwater was pumped from the vapor/liquid separator to a 6,500-gallon water storage tank and stored onsite for eventual

disposal.

Data Collection

DPE system operational data was collected periodically during testing. Data collected included DPE system hour meter readings, DPE system vapor flow, applied vacuum rates and groundwater production rates. Select site wells were monitored for vacuum influence and groundwater table drawdown before and during DPE testing. The DPE system groundwater extraction rates were monitored by recording the water accumulation in the vapor/liquid separator sight tube, and by a flow totalizer on the water discharge line of the vapor/liquid separator. Organic vapor concentrations were measured using a Thermo TVA-1000 flame ionization detector (FID). Vapor samples were collected in 1-liter Tedlar bags for laboratory analysis. McCampbell Analytical, Inc., of Pittsburg, California, analyzed the samples for total petroleum hydrocarbons as gasoline (TPHg) using EPA Method 8015M and benzene, toluene, ethylbenzene, and xylenes (BTEX) and MTBE using EPA Method 8021B. Laboratory analytical reports are included in Appendix A.

FEASIBILITY TEST RESULTS

DPE testing was performed for a total of approximately 90 hours on site wells MW-7A, MW-3A, MW-6A and MW-7AA. The 'AA' well was constructed with a screened interval of 9 to 14 feet below grade surface (bgs) into the upper shallow water-bearing zone beneath the site. The 'A' wells were constructed with screened intervals from between 10 to 20 ft bgs into the shallow water-bearing zone. These test wells were selected due to elevated dissolved contaminant concentrations in groundwater. Testing was not performed in deeper wells due to little to low impact in deeper groundwater. DPE test data is summarized below in Table A and in attached Table 3. Soil vapor analytical data is presented in attached Table 4. Water level drawdown data is summarized on Table 5. To facilitate evaluation of test results, well construction details are included on Table 6, which also shows on the new proposed groundwater monitoring program.

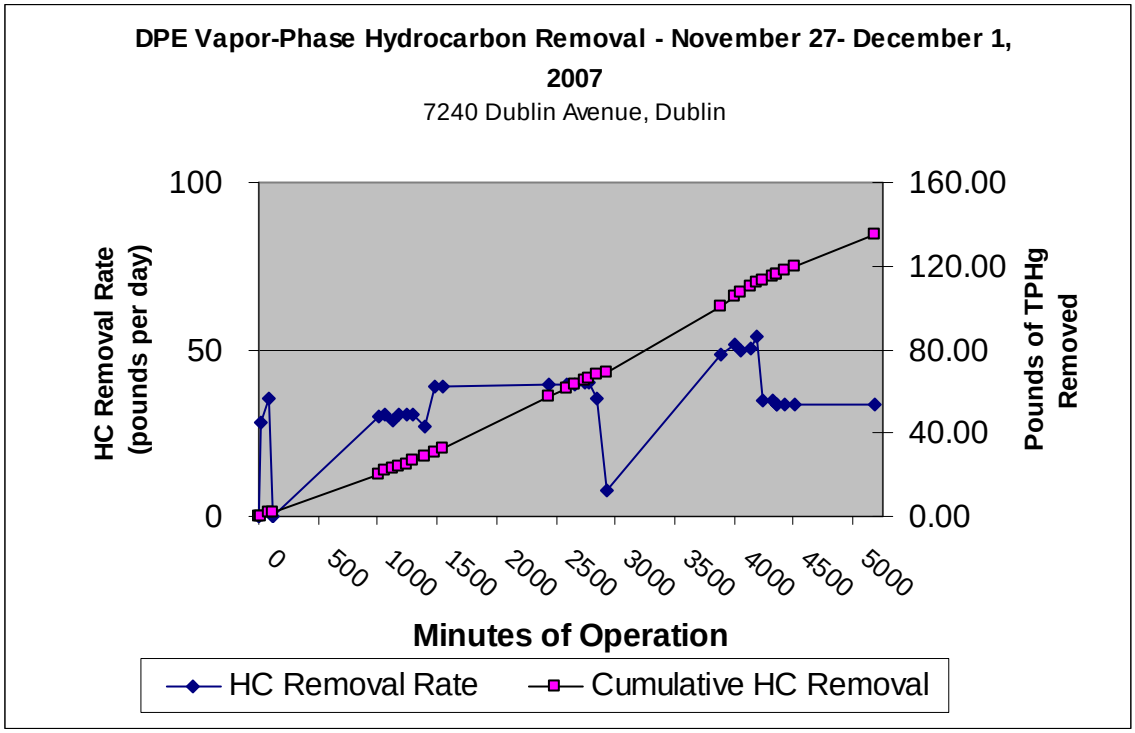
During testing, applied vacuum rates ranged from 16 to 23 "Hg. Soil vapor extraction flow rates ranged from 40 cubic feet per minute (cfm) to 80 cfm. Groundwater extraction rates observed during testing ranged from below 1 gallon per minute (gpm) during extraction from wells MW-3A, MW-6A and MW-7AA to about 1.5 gpm during extraction from well MW-7A. In all cases, the observed groundwater extraction rates were achieved with the DPE extraction hose inserted to the bottom of each well casing. Based on laboratory analytical data and extraction flow rates, vapor-phase hydrocarbon mass removal rates during testing ranged from approximately 8 pounds per day (ppd) to 53.9 ppd in tested wells. A total of approximately 135 lbs of vapor-phase hydrocarbons were removed from the subsurface during DPE testing.

Table A – DPE Test Data

Extraction Well	Test Duration (total hours)	Applied Vacuum Range ("Hg)	Vapor Flow Rate Range (cfm)	Avg. Water Flow Rate (gpm)	Maximum Vapor Conc. (ppmv TPHg)	Max. HC Vapor Removal Rate (lbs/day)
MW-7A	23.2	16-21	40-80	1.5	2,200	35.3
MW-3A	24.3	21-22	67-74	0.5	1,800	40.4
MW-6A	24.7	20-23	68-80	0.4	2,100	53.9
MW-7AA	14.3	19.5	70	0.2	1,500	33.7

Vapor-phase hydrocarbon removal rates and the cumulative vapor-phase hydrocarbon removal amounts are shown on the Figure A below.

Figure A – DPE Vapor-Phase Removal



Vacuum Radius of Influence Measurements

During DPE testing, Pangea collected vacuum radius of influence measurements from selected observation wells in the vicinity of the operating DPE wells. The effective radius of vacuum influence for DPE design purposes can be based on an observed vacuum of approximately 1% to 0.1% of the vacuum applied at the extraction well. Using 1% of the applied vacuum rate is a very conservative approach, especially for sites

with high applied vacuum using a liquid-ring vacuum pump. Our evaluation used 0.1% of the applied vacuum rate to define the extent at which DPE effectively captures soil vapor from the subsurface. An alternative approach to estimate effective vacuum influence relies on the measurement of *any* (e.g., >0.005 "H2O) vacuum in an observation well, since actual vacuum measurement indicates the subsurface location is under vacuum.

Select vacuum influence data is summarized below on Table B, which indicates that there is horizontal vacuum communication in the shallower units. Effective radius of influence rates based on 0.1% of the applied vacuum rate measured at the extraction well ranged from 8 feet to 50 feet during DPE testing. The radius of vacuum influence appears to be greatest (e.g., 50 ft) between A-zone wells MW-6A and MW-7A screened approximately 16 – 20 ft deep. Note that no vacuum influence was obtained between wells MW-3A and MW-6A by the end of the MW-3A test, and that influence observed in MW-3A during MW-6A testing could be residual vacuum. The estimated radius of influence was smaller (e.g., <20 ft) within the AA-zone wells (MW-7AA and VW wells) than in the A-zone wells. Extraction from the A-zone wells did influence the shallower AA-zone. We anticipate long-term DPE system operation will likely yield a larger radius of influence due to greater dewatering of the subsurface during long-term system operation.

Table B – DPE Test Vacuum Influence Data

Extraction Well(s)	Observation Well	Hours From Test Start	Distance to Observation Well (ft)	Applied Vacuum ("Hg)	Vacuum Influence ("H2O)	ROI based on 0.1% of Applied Vacuum (ft)	Estimated ROI based on Measurable Vacuum (ft)	Comments
MW-7A (16'-20')	MW-7AA (9'-14')	26	8	15.5	0.22	8	25	Shallower observation well
	MW-6A (16'-20')	26	57	15.5	0.10	48	50+	Influence at same depth as extraction
	MW-1 (5'-25')	21	65	14.5	0.02	49	50	Could be pre-test vacuum
	MW-2 (5'-20')	21	64	14.5	0.02	49	50	Could be pre-test vacuum
MW-3A (10'-17')	VW-2 (3'-9')	16	21	17	0.01	14	15	Could be pre-test vacuum
	VW-3 (3'-9')	21	20	18	0.01	13.5	15	Limited data
	MW-6A (16'-20')	16	39	17	0.03	29	20	No influence at test end
	MW-7B (26'-30')	21	52	18	0	unknown	unknown	0.09" pressure before test. Submerged screen
MW-6A (16'-20')	VW-3 (3'-9')	22	10	19	0.06	8	30	Shallower observation well
	VW-2 (3'-9')	22	42	19	0.03	32	40	Shallower observation well
	MW-3A (10'-17')	22	39	19	1.7	47	50+	Influence at same depth as

								extraction. Could be residual vac.

Water Table Drawdown

Prior to the start of DPE testing, Pangea measured water levels in site wells. Pre-test water level data was used to determine the extent of water table drawdown that could be achieved during DPE testing. The maximum drawdown observed in site wells during extraction from MW-7A was in wells MW-7B and MW-6C, located 5 and 68 ft away, respectively, where water levels decreased approximately 4.15 ft in MW-7B and 3.56 ft in MW-6C after about 22 hours of system operation. Approximately 1 hour after extracting from MW-7A, Pangea began performing DPE from well MW-3A. A water table drawdown ranging from 0.03 to 3.27 ft was observed in other site wells after 21 hours of extraction from MW-3A. After extracting from MW-3A, Pangea began extraction from MW-6A. After about 24 hours of extraction from MW-6A, water level drawdown in site observation wells ranged from 0.02 to 3.30 ft. After extracting from MW-6A, Pangea began extraction from MW-7AA. Pangea was unable to record drawdown measurements from MW-7AA due to system shut down after the fuel source had been depleted. As with vacuum radius of influence, we anticipate full-scale DPE system operation from several site wells simultaneously will yield greater water table drawdown, and will allow for more effective vapor-phase hydrocarbon removal. DPE test water level drawdown data is presented in Table 5.

Feasibility Test Conclusions

Based on the above feasibility test results, Pangea offers the following conclusions:

1. DPE is an appropriate remedial technology for this site, based on the high vapor-phase hydrocarbon removal rates (up to 53.9 lbs/day observed during testing from well MW-6A). Observed vapor-phase hydrocarbon removal rates indicate there is a significant hydrocarbon mass in the subsurface accessible for removal via DPE.

2. The observed vacuum influence appears to be greatest (e.g., 50 ft) during extraction from A-zone wells MW-6A and MW-7A screened approximately 16 – 20 ft deep. Extraction from the A-zone wells did influence the shallower AA-zone. The estimated radius of influence was smaller (e.g., <20 ft) within the AA-zone wells (MW-7AA and VW wells). Due to lack of consistent vacuum influence and potential preferential pathways, Pangea estimates that vacuum influence is not uniform within the site subsurface. Long-term DPE system operation should lower the water table elevation and reduce soil moisture content to enhance vapor-phase hydrocarbon removal; these actions tend to increase the effective radius of influence but can also decrease the effective radius if short-circuiting occurs through newly established flow pathways. Pangea recommends performing DPE from multiple AA-zone and A-zone locations to best ensure remedial effectiveness.

3. DPE is effective at dewatering subsurface soils as indicated by water drawdown measurements; observed groundwater extraction rates are low enough to perform successful site remediation via DPE without the need for supplemental groundwater extraction via submersible pumps.

4. DPE is an appropriate and effective remedial approach for this site. Pangea recommends consideration of DPE for site remediation.

REMEDIAL OBJECTIVES

This section presents proposed cleanup goals, cleanup levels, and remedial objectives. The cleanup *goal* is to reduce soil and groundwater contaminant concentrations to below applicable environmental screening levels (ESLs) established by the San Francisco Bay Region – Regional Water Quality Control Board within a reasonable timeframe. Since groundwater monitoring data indicates that contaminant concentrations are decreasing but remain elevated in select shallow wells, the remedial objective is to remove source area hydrocarbons with aggressive short-term remediation. Remediation can target the historical free product area near well MW-3/3A, and can reduce the potential for contaminant migration along the sanitary sewer line beneath Dublin Boulevard. The proposed cleanup *level* is to reduce dissolved contaminant concentrations to near or below ESLs for commercial site use where groundwater is considered a potential drinking water resource.

EVALUATION OF REMEDIAL ALTERNATIVES

The following subsections present an evaluation of the appropriateness and cost-effectiveness of several techniques for site remediation. This evaluation will facilitate the selection of the most cost-effective remedial technique, or a combination of techniques to appropriately address site-specific conditions. Pangea evaluates excavation, monitored natural attenuation, groundwater extraction, soil vapor extraction, dual phase extraction, air sparging, and ozone sparging.

Monitored Natural Attenuation

Monitored natural attenuation (MNA) is the stabilization and long-term shrinking of a contaminant plume by natural processes such as microbial degradation. This alternative is generally applicable only to dissolved groundwater plumes. In order to implement this alternative, the source of the contamination must first be removed, migration of the plume controlled, and the presence of natural degradation processes must be documented. Natural attenuation processes can be demonstrated through a variety of lines of evidence, including static or retreating chemical isoconcentration contours, changes in the ratios of parent to breakdown products, the presence of bacteria capable of degrading the COCs, and/or the presence of geochemical indicators of naturally occurring biodegradation.

MNA is retained as a remedial alternative where natural degradation can be currently documented. MNA is also retained as an option for future consideration at other locations after the source has been removed and monitoring data indicate that natural degradation is occurring. The major component of MNA as a remedial alternative would be a long-term monitoring program to provide continuing confirmation that the predicted biological activity occurs and remains effective. Risk and hazard management measures are in many cases required to protect human health and the environment during the short term until long-term effectiveness can be achieved.

Available characterization data indicate that contaminant concentrations are decreasing in select wells but remain elevated in select shallow AA-zone and A-zone wells. The historical (as recent as 2006) presence of free product in well MW-3/3A suggests that significant residual mass is present at the site. There is also a potential for contaminant migration along the sanitary sewer line beneath Dublin Boulevard. Monitored natural attenuation (MNA) is therefore eliminated from further consideration under current plume source area conditions. However, MNA may be a viable alternative once concentrations have been reduced to levels which are more conducive to natural attenuation processes.

Excavation

Excavation is a proven and effective technique for remediation of petroleum hydrocarbons. Excavation is most appropriate for shallow soil, and especially for low permeability soil where in-situ remedial techniques have very limited effectiveness. Excavation is also a cost-effective option for undeveloped sites, where the excavation area is accessible and not beneath site facilities. Excavation can remove unsaturated soil, capillary fringe soil, and saturated soil. Excavated soil is usually transported offsite for disposal, but soil can be treated and reused at the site in accordance with regulatory guidelines and approval. The contaminated material is primarily located beneath site paving and improvements. Therefore, excavation is not deemed appropriate or cost effective for this site for the following reasons: 1) excavation would severely disrupt the service station and car wash business, and 2) significant excavation of saturated-zone material would be required, involving expensive shoring and related costs for deeper excavation.

Groundwater Extraction

Groundwater extraction (GWE) is a common approach for remediating MTBE impacts to groundwater, especially where hydraulic control is required. GWE relies on submersible groundwater pumps to extract subsurface groundwater for aboveground, treatment and disposal, which can be costly. GWE was used extensively in the 1980's and early 1990's before being displaced by more cost-effective insitu treatment methods, such as soil vapor extraction (SVE), air sparging (AS), oxidation, and enhanced biodegradation. GWE regained popularity for remediation of MTBE, which is highly soluble in groundwater and is more

recalcitrant in the subsurface. MTBE generally does not remove or degrade as readily as BTEX and TPH compounds during SVE, AS or enhanced biodegradation.

GWE is also conducted in conjunction with SVE (sometimes called dual-phase extraction) to help dewater the hydrocarbon smear zone and expose hydrocarbons to vapor extraction. This approach requires a network of extraction and discharge piping and equipment to extract, treat and dispose of the extracted groundwater. Since vacuum truck extraction apparently reduced dissolved contaminant concentrations in 2006, GWE may be effective at the site. However, post-removal rebound of concentrations indicates that the long-term effectiveness of this method might not be viable, especially given the relatively high cost of a long-term GWE program. Since most groundwater monitoring wells recharge slowly or dewater during quarterly monitoring, GWE would likely have limited effectiveness. GWE would also not have a significant effect on the prevalent clayey soils impacted at the site. Therefore, Pangea does not recommend GWE for this site. GWE is always considered a contingency approach to provide hydraulic control, if necessary.

Soil Vapor Extraction

Soil vapor extraction is a common approach for remediating unsaturated soil. This approach uses an aboveground blower to extract vapor-phase hydrocarbons from the site subsurface. SVE also remediates hydrocarbons adsorbed to unsaturated soil that could pose a risk to groundwater quality. At sites with a fairly permeable capillary fringe and saturated zone, SVE can improve groundwater quality and can remove floating, separate-phase hydrocarbons. When saturated zone remediation is required, SVE is commonly combined with other technologies such as air sparging or groundwater extraction. Extracted vapors are typically treated aboveground with oxidizers or activated carbon.

Shallow site groundwater and the predominantly clayey vadose zone suggest that SVE alone would be ineffective due to anticipated water upwelling. Therefore, SVE is not considered a viable method for this site unless shallow soil can be effectively dewatered using other techniques.

Dual Phase Extraction

Dual-phase extraction (DPE) consists of the simultaneous extraction of groundwater and soil vapor, generally from the same wells. DPE can be implemented generally by one of three methods: 1) using submersible pumps to draw down the water table within the wells while using a vacuum pump system to extract soil vapor; 2) using a powerful vacuum pump system to extract both groundwater and vapor from the wellhead (generally used only on small diameter wells); 3) using a powerful vacuum pump and "stinger" (vacuum tube inserted below the water table) to both depress the water table and extract soil vapor from the vadose zone. Method 1 is generally used in relatively permeable environments, where groundwater extraction using pumps is feasible. However, shallow site soils are relatively impermeable, so methods 2 and 3 are more likely to be effective. A benefit of using either method 2 or 3 at sites where groundwater is confined or semi-confined is

that the pressure-drop produced in the well casing can often enhance the rate of extraction of groundwater from the water-bearing zone in comparison to use of submersible pumps, In addition, these methods can often recover SPH from site soils that are not recoverable by bailing and pumping.

DPE is a common technique for remediating sites impacted with elevated concentrations of petroleum hydrocarbons and MTBE and/or impacted with separate-phase hydrocarbons (free product). DPE feasibility test results confirm that DPE is effective at this site. The existing equipment compound and subsurface piping from prior remediation will help reduce DPE costs. Pangea recommends further consideration of DPE using a large aboveground vacuum pump for cost effective remediation of site soil and shallow groundwater.

Air Sparging

Air sparging (AS) is common technique for cost-effectively remediating petroleum hydrocarbons from saturated soil and groundwater. AS involves the injection of compressed air into the saturated zone to 'strip' hydrocarbons from saturated soil and groundwater for capture by SVE. AS also oxygenates groundwater and thereby stimulates hydrocarbon degradation. AS is routinely more cost effective than groundwater extraction because no large extraction and treatment equipment is required with AS, and operation and maintenance costs are low. AS wells are typically constructed with well screen starting approximately 10 feet or more below the water table, and well screen intervals are carefully selected to allow capture of hydrocarbon vapors created by sparging if low permeability units are present. For sites with deeper water-bearing units overlain by clayey soil, AS can be performed at low flow rates to allow groundwater oxygenation without causing lateral migration of hydrocarbons. Low flow AS is also a cost effective technique to stimulate hydrocarbon degradation of residual contamination that slowly diffuses out of the fine grained materials at a given site.

AS is not considered to be a preferred remedial method for this site. Given the very thin, clayey vadose zone, it would be unlikely that SVE could be employed to effectively capture vapors created due to AS. AS could cause lateral migration of contaminants within the thin water-bearing lenses at the site. AS could be performed in conjunction with DPE, but due to possible limited vapor capture by DPE, this method could also potentially result in increases to indoor air inhalation hazards at buildings on and adjacent to the site. Finally, the additional cost for AS does not appear to be merited since DPE can target the contaminant extent area effectively without AS.

Ozone Sparging

Ozone sparging is is similar to air sparging but includes the addition of ozone to air injected into the subsurface. Ozone sparging is used especially for remediation of petroleum hydrocarbon releases with methyl tertiary butyl ether (MTBE). Similar to air sparging, ozone sparging is often used in conjunction with SVE or dual phase extraction (DPE) to capture hydrocarbon vapors created by sparging (although ozone's oxidation

of volatile compounds makes vapor capture less important than with traditional air sparging). The ozone, however, acts as a biocide near the injection location and temporarily stops microbial degradation of hydrocarbons. Upon completion of ozone injection the microbial populations likely return rapidly in the presence of the elevated dissolved oxygen. Because ozone is a strong oxidizer, ozone injection within any areas impacted by free product should be carefully controlled and monitored. When a significant mass of petroleum hydrocarbons is present, ozone sparging takes considerably longer or requires much larger and more costly ozone generation equipment. Ozone can also pose a hazard at sites with operating subsurface fueling facilities, and can degrade subsurface facilities if conducted for more than a brief period. Given the significant hydrocarbon mass at this site, the potential to impact indoor air quality in nearby buildings, and the presence of subsurface fueling facilities at the site, ozone sparging is not considered appropriate for this site.

PROPOSED CORRECTIVE ACTION PLAN = SHORT-TERM DPE

Based on site feasibility testing and the evaluation of remedial alternatives presented above, Pangea proposes short-term dual phase extraction (DPE) as the most appropriate and cost-effective technique for site remediation. DPE is a common technique for remediating sites impacted with elevated concentrations of petroleum hydrocarbons and MTBE and/or impacted with separate-phase hydrocarbons (free product). Described below are the proposed DPE system design and the corrective action plan (CAP) implementation plan.

DPE Overview and System Design

To help provide cost-effective site remediation, Pangea proposes to perform DPE as follows:

- Short-term DPE lasting approximately 3 to 6 months.
- Using the existing underground and aboveground piping, equipment compound, and electrical service to extent practical. Temporary aboveground piping with traffic ramps will be used to the extent practical.
- Renting trailer-mounted equipment with an existing permit from the BAAQMD, if available. The equipment will include a 20 hp or larger liquid-ring vacuum pump and catalytic oxidizer.
- DPE from six (6) upper shallow AA-zone wells, including four (4) existing wells (MW-7AA, VW-1, VW-2 and VW-3) and two (2) new DPE wells (to be screened approximately 9 to 14 ft bgs). The new DPE wells will be installed in the planter to minimize business disruption and well head/piping cost.

- DPE from three (3) existing shallow A-zone wells, including wells MW-3A, MW-6A and MW-7A. Wells MW-3A is screened from 10 to 17 ft bgs, while wells MW-6A and MW-7A are screened from 16 to 20 ft bgs.

Figure 3 presents the proposed DPE well locations and estimated DPE influence area. The estimated DPE influence area shows a conservative DPE radius of influence of approximately 20 feet for AA-zone wells and 30 ft for A-zone wells. Figure 3 illustrates that the planned DPE will target the primary and secondary contaminant impact area.

If cost-effective, Pangea will conduct brief (e.g., 1 to 2 days) testing on vapor wells VW-1, VW-2 and VW-3 utilizing temporary extraction piping to determine if removal rates are high enough to merit permanent connection to the procured DPE system.

DPE will induce vapor and water flow primarily from the more permeable soil units, encouraging contaminant volatilization and diffusion from the surrounding fine-grained materials as the subsurface is dewatered. Based on the amount of water produced during feasibility testing, Pangea anticipates that a discharge permit will need to be obtained from the Dublin San Ramon Services District. DPE operation will be conducted on the shallowest wells first and then on the deeper wells once removal rates approach asymptotic levels in the shallower zones. Implementing DPE in this manner will help reduce the likelihood of shallow contamination being pulled into the deeper A-zone water-bearing zone. The two new DPE wells (DPE-1 and DPE-2) will be 4" diameter Schedule 40 PVC, and will be screened from approximately 9 to 14 ft bgs into the AA-zone where vacuum influence is more limited than in the A-zone. A schematic diagram of the DPE well design is shown in Figure 4. The screen intervals may be adjusted based on field conditions. Pangea's standard procedures for well installation are included in Appendix B.

To help control costs, Pangea proposes using moderately-sized DPE remediation equipment. The equipment will provide significant removal capacity and avoid the costly energy requirements associated with larger DPE equipment. Pangea anticipates using a thermal/catalytic oxidizer and extraction blower capable of achieving a minimum flow rate of 300 cubic feet per (cfm) minute and an applied vacuum up to 28.5 inches of mercury.

The remediation equipment compound will be located near well MW-2. Electrical services and a remediation compound are available at this location from the former SVE system (operated by Chevron for the prior release at the site). Extracted groundwater will be treated and discharged into sanitary sewer connection according to permit requirements.

PROPOSED SCOPE OF WORK FOR SHORT-TERM DPE

The scope of work to implement the proposed corrective action plan is described below.

Task 1 - Pre-Field Activities

Prior to initiating field activities, Pangea will conduct the following tasks:

- Obtain well installation permits from Alameda County Flood Control and Water Conservation District Zone 7 Water Agency (Zone 7);

- Pre-mark the well boring locations with white paint, notify Underground Service Alert (USA) of the drilling and sampling activities at least 72 hours before work begins, and conduct private line locating as merited;

- Prepare a site-specific health and safety plan to educate personnel and minimize their exposure to potential hazards related to site activities;

- Coordinate with installation contractor, equipment vendors, drilling subcontractor, laboratory subcontractor and involved parties. The installation contractor will contact the City of San Ramon Building Department regarding permitting requirements. Pangea will help procure AS and SVE equipment, and will obtain an air discharge permit from the Bay Area Air Quality District (BAAQMD) for the operation of the DPE system, if equipment with an existing BAAQMD is not readily available.

Task 2 - Remediation Well Installation

Pangea will coordinate installation of two DPE wells. Four existing monitoring wells and potentially three vapor wells will be converted for DPE by connecting to the top of the well casing above the bentonite seal (the precise method will be determined in the field).

The two new DPE wells will be constructed using 4-inch diameter, 0.010-inch slotted, polyvinyl chloride (PVC) casing screened from approximately 9-14 ft bgs. Pangea plans to install the well using a hollow-stem auger drill rig.

The new wells will be developed to remove silt and improve remediation effectiveness. To help establish pre-remediation conditions, the new wells will be sampled after well development. To control costs the wells will be sampled immediately following well development to avoid additional mobilization and purging cost.

Task 3 – Design and Permitting

Pangea will design the system and prepare construction drawings to obtain system installation bids from qualified contractors. The drawings will include system layout, trenching, piping, wellhead, equipment compound, and equipment anchoring details. Electrical single line and process and instrumentation diagrams will also be included. The treatment equipment will be located inside the existing equipment compound, if the equipment will fit inside the enclosure. The DPE remediation piping to each well will be manifolded near the treatment equipment, and will include valves, meters, gauges and/or sampling ports to facilitate flow control flow and parameter measurement for individual wells.

Pangea will conduct discharge permitting for the final remedial design. A groundwater discharge permit will be obtained from the Dublin/San Ramon Services District (DSRSD), the local sanitary sewer agency. Pangea will conduct air discharge permitting with the Bay Area Air Quality Management District (BAAQMD) as necessary. Limited permitting with BAAQMD will be required if we rent a blower/oxidizer system with a BAAQMD various location permit. Pangea anticipates that the remediation installation contractor will obtain permits from the City of Dublin Building Department as required.

Task 4 - Equipment Procurement

Pangea will coordinate or conduct procurement of remediation equipment for the remedial plans. Pangea currently plans to rent a thermal/catalytic oxidizer and extraction blower unit, although a used unit may be purchased if deemed cost effective. The equipment will include a 20-hp or larger liquid ring blower capable of providing 28.5 inches of mercury vacuum and 300 cfm air flow. The remediation piping to each well will be manifolded in the equipment enclosure, and will include valves, meters, gauges and/or sampling ports to facilitate flow and parameter measurement for individual wells.

Task 5 - Remediation System Installation

Upon completion of remediation well installation, Pangea will observe installation of the remediation system by a licensed contractor. The installation contractor will be retained to install the system in accordance with local building and use permit conditions. Electrical service will be provided to the equipment either from the existing electrical service at the site, or via a temporary service panel. A dedicated electrical grounding rod will be provided for the remediation equipment.

Pangea will use existing underground and aboveground piping from the former SVE system to the extent practical. The new remediation piping will be installed underground and/or aboveground as necessary to minimize cost and disruption to the site businesses. All aboveground piping will be painted to protect the piping from sunlight. Remediation plumbing will be plumbed from each well to a piping manifold in the equipment closure. Long-radius elbow piping will be used at 45- and 90-degree bends to reduce line loss in DPE piping. The piping will be tested prior to completion of installation activities. All conveyance piping will be tested at 10 psi for one hour, or in accordance with additional specifications or manufacturer requirements. The piping manifold will include valves, gauges and sampling ports to control and measure flow within each well. A telephone autodialer may be installed to alert Pangea technicians in the event of a shutdown.

Upon completion of system installation, Pangea will commence equipment testing and start up. The remediation system will be started and operated in accordance with BAAQMD air permit requirements and manufacturer recommendations. Pangea will monitor the applied vacuum, vapor extraction flow rates, hydrocarbon concentrations in extracted vapor for individual wells and system influent. Vapor samples will be periodically collected from each vapor extraction well and analyzed using a PID or organic vapor analyzer. Vapor samples will also be periodically collected for laboratory analysis to aid in calculating hydrocarbon mass removal rates and to comply with BAAQMD permit conditions.

Pangea plans to conduct operation and maintenance at least weekly during the first two months of operation. We will perform routine system maintenance, record system parameters and collect vapor samples to comply with permit conditions and evaluate system performance.

Task 6 – Reporting and System Evaluation

Pangea will prepare a remediation well installation report. Upon completion of start up, Pangea will incorporate system start up and operation information within quarterly reports. In each quarterly report, Pangea will evaluate DPE effect on dissolved contaminant concentrations. The reporting will describe the remedial activities, present tabulated data, and offer conclusions and recommendations for future site remediation. Pangea may recommend rebound testing of DPE to evaluate the effectiveness of the remedial efforts.

Task 7 - Geotracker Information and Surveying

Upon completion of wellhead modification, Pangea will retain a licensed surveyor to survey the modified elevations of site wells also used for groundwater monitoring to facilitate uploading to the state Geotracker database.

REFERENCES

California Regional Water Quality Control Board – San Francisco Bay Region (CRWQCB-SF), 2005, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, February.

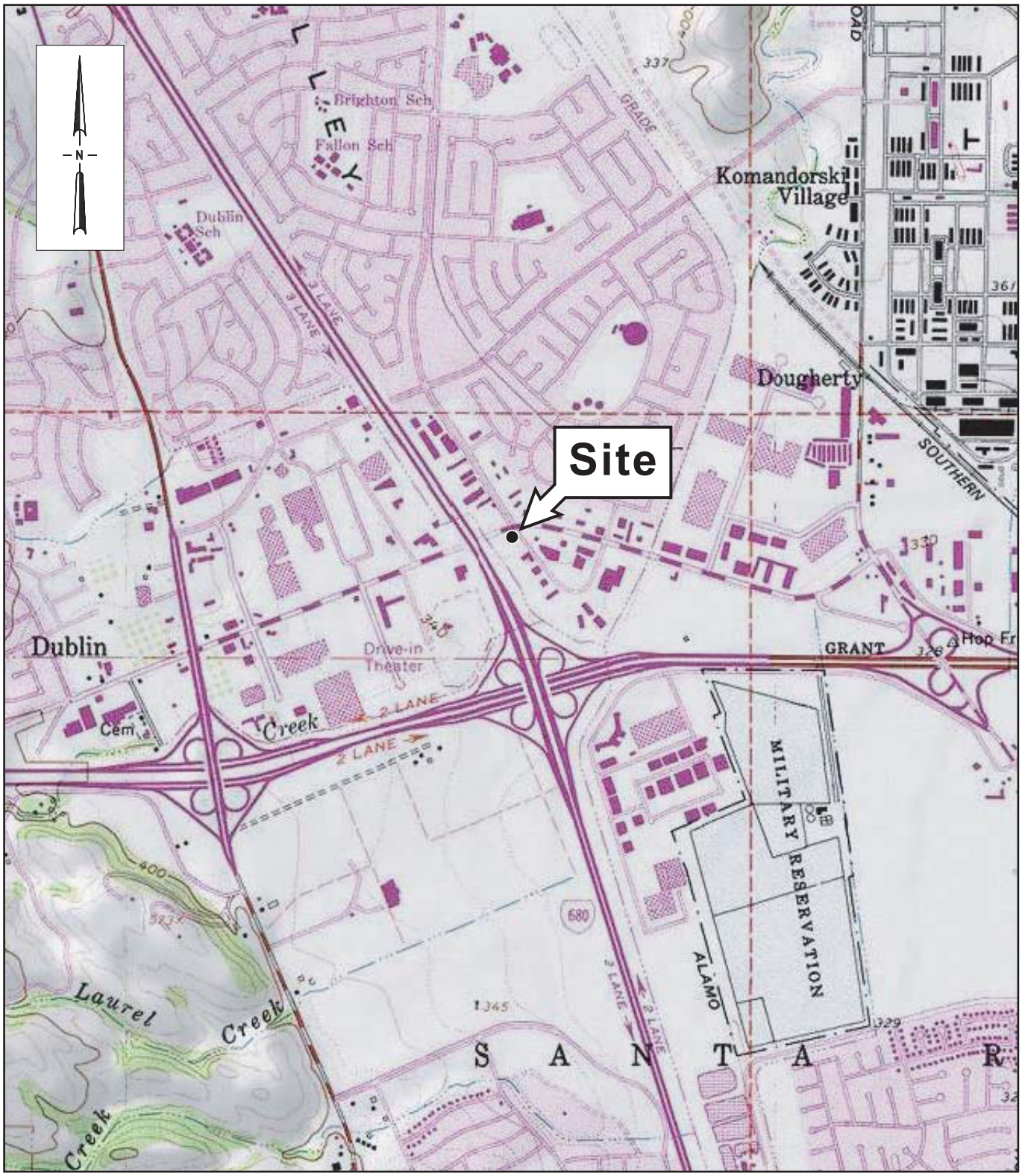
Pangea, 2006, *Site Investigation Report*, Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, California, August 11.

FIGURES

TABLES

APPENDICES

2/17/2005



SOURCE: TOPO! MAPS

0 1/8 1/4 1/2 1

SCALE : 1" = 1/4 MILE

Figure
1

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

PANGEA

Site Location Map

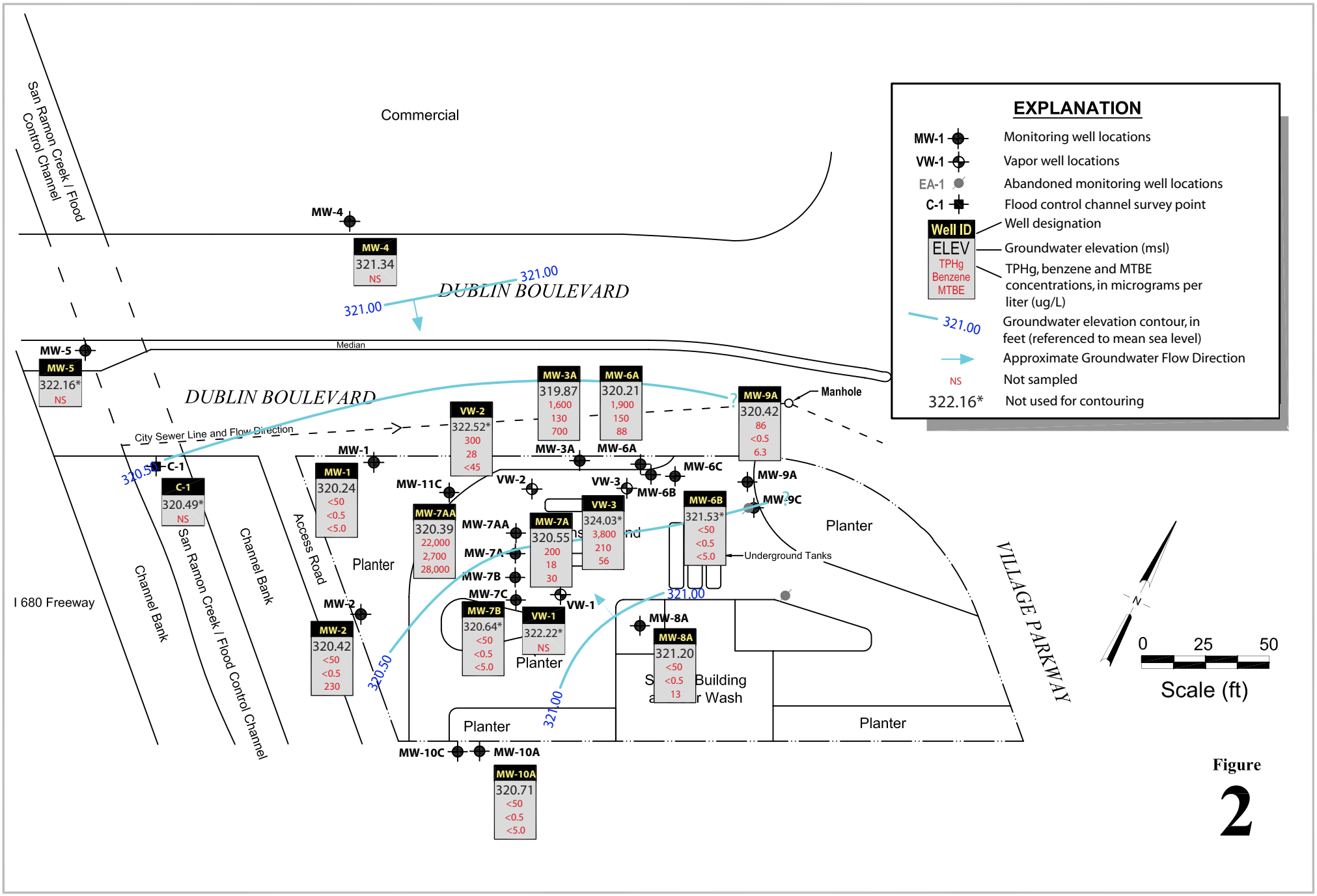


Figure 2

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

PANGEA

Groundwater Elevation Contour and Hydrocarbon Concentration Map
May 21, 2008

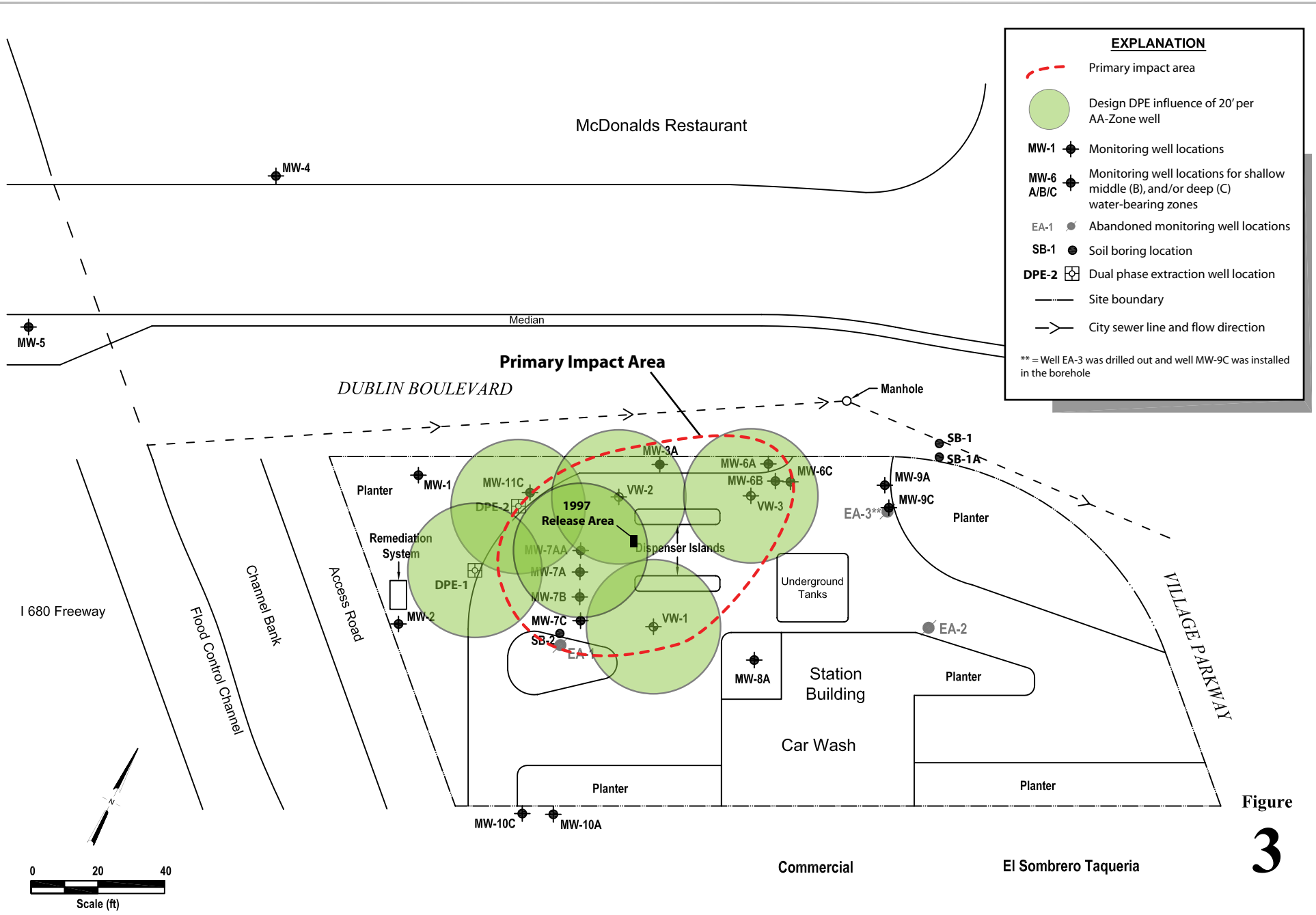


Figure 3

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

PANGEA

Estimated DPE Influence in Upper Shallow AA-Zone

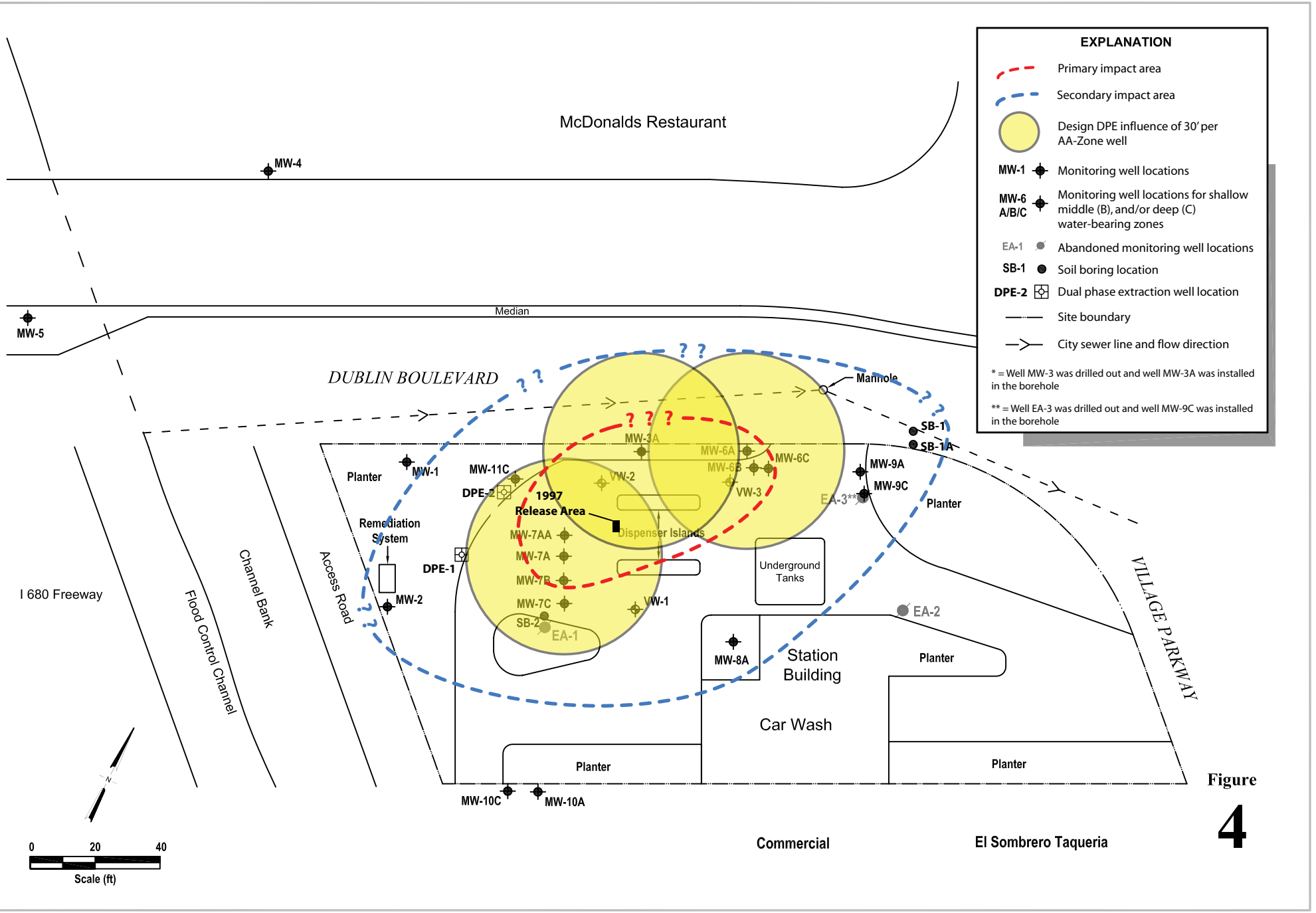


Figure 4

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

PANGEA

Estimated DPE Influence in Shallow A-Zone

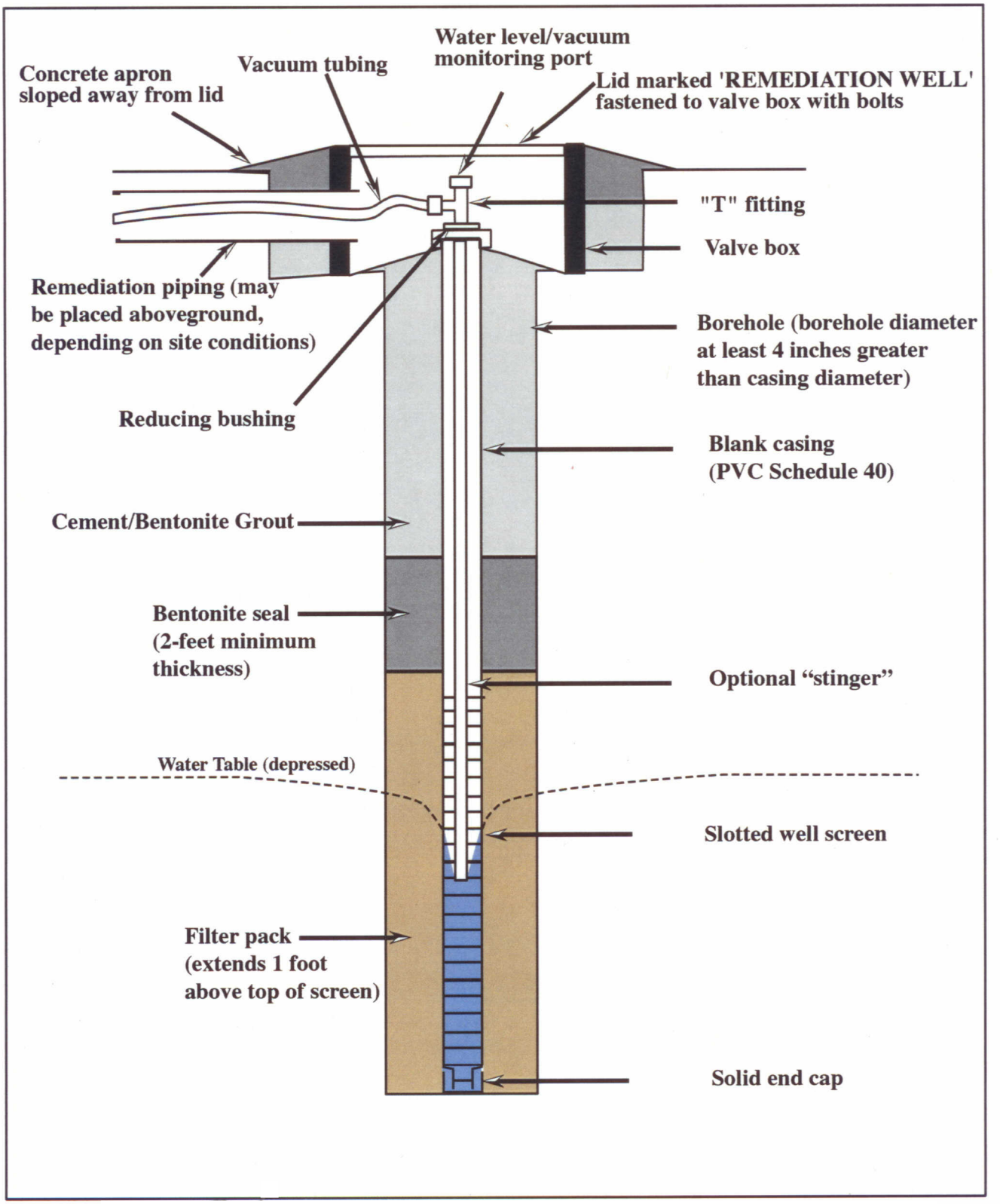


Figure 5. Typical Dual Phase Extraction Well Construction Details

Table 1. Soil Analytical Results - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Boring/Well ID	Consultant	Date Sampled	Sample Depth (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TAME	TBA	Ethanol	Notes
				← mg/kg →									
Comm. ESL - Indoor Air Impacts				Use soil gas	Use soil gas	Use soil gas	Use soil gas	Use soil gas	Use soil gas	--	Use soil gas	--	
Comm. ESL - Urban Ecotoxicity				--	25	--	--	--	--	--	--	--	
Comm. ESL - Ceiling Value				500	870	650	400	420	500	--	500	--	
Comm. ESL - Direct Exposure				450	0.27	210	5.0	100	65	--	320,000	--	
Comm. ESL - GW Protection (Leaching)				83	0.044	2.9	3.3	2.3	0.023	--	0.075	--	
Final ESL - Commercial, Drinking Water Resource				**83**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	--	**0.075**	--	
WELL INSTALLATION & SOIL BORINGS - 2006													
MW-3A-10	PANGEA	3/30/2006	10	**1,500**	**2.4**	**5.2**	**19**	**83**	<10 **(0.54)**	<0.33	<3.3	--	
MW-3A-15	PANGEA	3/30/2006	15	**140**	**2.3**	2.6	2.4	**16**	**2.7 (2.6)**	<0.10	<1.0	--	
MW-6C-5	PANGEA	3/30/2006	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-6C-10	PANGEA	3/30/2006	10	50	0.024	0.072	0.13	**1.5**	<0.05	--	--	--	
MW-6C-15	PANGEA	3/30/2006	15	**130**	**0.61**	0.29	1.4	**9.3**	<0.50 **(0.050)**	<0.020	<0.20	--	
MW-7B-5	PANGEA	3/29/2006	5	<1.0	<0.005	<0.005	<0.005	<0.005	**0.17 (0.11)**	<0.005	<0.05	--	
MW-7B-11	PANGEA	3/29/2006	11	**1,800**	**7.8**	**14**	**30**	**170**	**16 (13)**	<0.50	<5.0	--	
MW-8A-5	PANGEA	5/17/2006	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-8A-10	PANGEA	5/17/2006	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-8A-15	PANGEA	5/17/2006	15	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-9A-5	PANGEA	4/3/2006	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-9A-10	PANGEA	4/3/2006	10	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-9A-15	PANGEA	4/3/2006	15	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-10C-5	PANGEA	3/27/2006	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-10C-10	PANGEA	3/27/2006	10	17	**0.14**	0.063	0.46	1.3	<0.05	--	--	--	
MW-10C-15	PANGEA	3/27/2006	15	<1.0	<0.005	<0.005	0.0065	0.023	<0.05	--	--	--	
MW-11C-5	PANGEA	3/28/2006	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
MW-11C-11	PANGEA	3/28/2006	11	**700**	**1.4**	**12**	**14**	**65**	<10 **(3.1)**	<0.33	<3.3	--	
MW-11C-15	PANGEA	3/28/2006	15	<1.0	<0.005	0.023	0.014	0.073	**1.0 (0.80)**	<0.033	**0.41**	--	
SB-1-7	PANGEA	5/18/2006	7	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
SB-1-11	PANGEA	5/18/2006	11	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
SB-1-14	PANGEA	5/18/2006	14	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
SB-1A-15	PANGEA	5/18/2006	15	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	

Table 1. Soil Analytical Results - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Boring/Well ID	Consultant	Date Sampled	Sample Depth (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TAME	TBA	Ethanol	Notes
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Comm. ESL - Urban Ecotoxicity				--	25	--	--	--	--	--	--	--	
Comm. ESL - Ceiling Value				500	870	650	400	420	500	--	500	--	
Comm. ESL - Direct Exposure				450	0.27	210	5.0	100	65	--	320,000	--	
Comm. ESL - GW Protection (Leaching)				83	0.044	2.9	3.3	2.3	0.023	--	0.075	--	
Final ESL - Commercial, Drinking Water Resource				**83**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	--	**0.075**	--	
SB-2-5	PANGEA	5/18/2006	5	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
SB-2-10	PANGEA	5/18/2006	10	**790**	<1.0	**2.9**	**10**	**58**	<10	--	--	--	
SB-2-15	PANGEA	5/18/2006	15	**310**	**2.5**	2.4	**6.4**	**27**	<5.0	--	--	--	
SB-2-20	PANGEA	5/18/2006	20	<1.0	<0.005	<0.005	<0.005	<0.005	<0.05	--	--	--	
WELL INSTALLATION & SOIL BORINGS - HISTORICAL													
EA-1	EA	10/17/1988	6.5 & 11.5	<0.05	0.0019	0.0097	<0.0005	0.0018	--	--	--	--	
			16	<0.05	0.0007	0.0015	<0.0005	0.0008	--	--	--	--	
			21	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
EA-2	EA	10/20/1988	6	0.14	0.02	0.0013	0.0037	0.0018	--	--	--	--	
			11	0.11	0.0093	0.0034	0.0013	<0.0005	--	--	--	--	
			16	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
			21	0.14	0.02	0.0059	0.0045	0.0043	--	--	--	--	
EA-3	EA	10/21/1988	6	0.086	0.0054	0.0013	0.0049	0.0024	--	--	--	--	
			11	0.27	0.032	0.0043	0.0067	<0.0005	--	--	--	--	
			16	<0.05	0.0016	0.0037	<0.0005	<0.0005	--	--	--	--	
			21-36	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	--	--	--	--	
B-1	WGR	3/17/1989	3-4	<0.5	**0.24**	<0.5	<0.5	<0.5	--	--	--	--	
			4.5-5.5	<0.5	**0.43**	<0.5	<0.5	<0.5	--	--	--	--	
			6.5-7.5	<0.5	**0.13**	<0.5	<0.5	<0.5	--	--	--	--	
			9.5-10.5	<0.5	**0.09**	<0.5	<0.5	<0.5	--	--	--	--	
			14.5-15.5	1.8	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
B-2	WGR	3/17/1989	3.5-4.5	NA	NA	NA	NA	NA	--	--	--	--	
			5.5-6.5	<0.5	**0.06**	<0.5	<0.5	<0.5	--	--	--	--	
			9.5-10.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
			14.5-15.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
B-3	WGR	3/17/1989	5.5-6.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
		3/18/1989	9.5-10.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
B-4	WGR	3/18/1989	3-4	<0.5	**0.06**	<0.5	<0.5	<0.5	--	--	--	--	
			5.5-6.5	<0.5	**0.07**	<0.5	<0.5	<0.5	--	--	--	--	
			9.5-10.5	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
B-5	WGR	3/18/1989	3-4	<0.5	<0.5	<0.5	<0.5	<0.5	--	--	--	--	
			5.5-6.5	<0.5	**0.06**	0.2	<0.5	0.1	--	--	--	--	
			9.5-10.5	<0.5	**0.9**	0.4	0.08	0.09	--	--	--	--	

Table 1. Soil Analytical Results - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Boring/Well ID	Consultant	Date Sampled	Sample Depth (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TAME	TBA	Ethanol	Notes
				←				mg/kg				→	
Comm. ESL - Indoor Air Impacts				Use soil gas	Use soil gas	Use soil gas	Use soil gas	Use soil gas	Use soil gas	--	Use soil gas	--	
Comm. ESL - Urban Ecotoxicity				--	25	--	--	--	--	--	--	--	
Comm. ESL - Ceiling Value				500	870	650	400	420	500	--	500	--	
Comm. ESL - Direct Exposure				450	0.27	210	5.0	100	65	--	320,000	--	
Comm. ESL - GW Protection (Leaching)				83	0.044	2.9	3.3	2.3	0.023	--	0.075	--	
Final ESL - Commercial, Drinking Water Resource				**83**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	--	**0.075**	--	
MW-1	GTI	9/13/1994	10	ND	ND	0.0099	ND	ND	--	--	--	--	
			15	23	**0.14**	0.47	0.37	**1.5**	--	--	--	--	
MW-2	GTI	9/13/1994	10	**980**	**2.7**	**19**	**15**	**78**	--	--	--	--	
			15	ND	ND	ND	ND	ND	--	--	--	--	
MW-3	GTI	9/13/1994	10	**2,500**	**0.8**	**4.8**	**5.1**	**120**	--	--	--	--	
			15	37	**0.21**	0.48	0.32	**1.5**	--	--	--	--	
MW-4	GRI	2/22/1996	9.5	<1	<0.005	<0.005	<0.005	<0.005	<0.025	--	--	--	
MW-5	GRI	2/22/1996	9.5	<1	<0.005	<0.005	<0.005	<0.005	<0.025	--	--	--	
B-1	PES	7/14/1997	5	10	**0.41**	0.027	0.16	0.01	**6**	--	--	--	hand augered
			9	**1,400**	**13**	**45**	**26**	**130**	**4.5**	--	--	--	
B-2	PES	7/14/1997	5	1.8	0.006	0.007	0.013	0.033	**0.33**	--	--	--	hand augered
			10	**1,100**	**11**	**35**	**18**	**91**	**20**	--	--	--	
B-3	PES	7/15/1997	7	230	**2.4**	2	**3.8**	**19**	**6**	--	--	--	hand augered
			10	**1,000**	**9.8**	**32**	**17**	**84**	**10**	--	--	--	
B-4	PES	7/15/1997	7	33	**0.11**	0.034	0.39	0.87	**1.5**	--	--	--	hand augered
			10	**1,900**	**2.2**	**14**	**19**	**170**	<4.5	--	--	--	
B-1	SOMA	4/23/2003	3.5-4	<0.2	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0005	<0.1	<1	hand augered
B-2	SOMA	4/23/2003	3.5-4	**92,000**	**12**	**560**	**240**	**1,550**	**21**	20	<100	<1,000	hand augered
B-3	SOMA	4/23/2003	3.5-4	<0.19	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	**0.086**	0.86	hand augered
B-4	SOMA	4/23/2003	2.5-3	<0.17	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	**0.083**	0.83	hand augered
B-5	SOMA	4/23/2003	3.5-4	<0.19	<0.0047	<0.0047	<0.0047	0.0079	<0.0047	<0.0047	**0.094**	0.94	hand augered
B-6	SOMA	4/23/2003	2.5-3	<0.17	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	**0.086**	0.86	hand augered
B-7	SOMA	4/23/2003	3.5-4	**8,700**	**7.7**	**270**	**170**	**920**	**7.1**	<10	<140	<1,400	hand augered
B-8	SOMA	4/23/2003	4-5.75	9.9	0.0064	<0.0044	0.033	0.2	**0.047**	0.012	**0.088**	0.88	hand augered
DPB-3	SOMA	4/17/2003	14-15	**3,500**	**6.6**	**120**	**43**	**251**	**17**	--	--	--	
			18.5-19.5	<0.16	<0.0042	<0.0042	<0.0042	<0.0042	**1.4**	--	--	--	
DPB-4	SOMA	4/17/2003	9-10	0.2	<0.0039	<0.0039	<0.0039	<0.0039	**0.041**	--	--	--	
DPB-5	SOMA	4/17/2003	11-12	<0.17	<0.0041	<0.0041	<0.0041	<0.0041	**0.0045**	--	--	--	
DPB-6	SOMA	4/18/2003	18-18.75	<0.15	<0.004	<0.004	<0.004	<0.004	<0.004	--	--	--	
DPB-7	SOMA	4/18/2003	15.5-16.5	<0.2	<0.005	<0.005	<0.005	<0.005	<0.005	--	--	--	
DPB-S	SOMA	4/18/2003	15-16	1.2	<0.13	<0.13	<0.13	0.36	**3.5**	--	--	--	

Table 1. Soil Analytical Results - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Boring/Well ID	Consultant	Date Sampled	Sample Depth (feet)	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TAME	TBA	Ethanol	Notes
				← mg/kg →									
Comm. ESL - Indoor Air Impacts				Use soil gas	Use soil gas	Use soil gas	Use soil gas	Use soil gas	Use soil gas	--	Use soil gas	--	
Comm. ESL - Urban Ecotoxicity				--	25	--	--	--	--	--	--	--	
Comm. ESL - Ceiling Value				500	870	650	400	420	500	--	500	--	
Comm. ESL - Direct Exposure				450	0.27	210	5.0	100	65	--	320,000	--	
Comm. ESL - GW Protection (Leaching)				83	0.044	2.9	3.3	2.3	0.023	--	0.075	--	
Final ESL - Commercial, Drinking Water Resource				**83**	**0.044**	**2.9**	**3.3**	**2.3**	**0.023**	--	**0.075**	--	

ABBREVIATIONS AND NOTES:

TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015M.
MTBE = Methyl tert-butyl ether by EPA Method 8020/8021. (Concentrations in parentheses are by EPA Method 8260B)
TAME = Tert-amyl methyl ether by EPA Method 8020/8021. (Concentrations in parentheses are by EPA Method 8260B)
TBA = Tert-butyl alcohol by EPA Method 8020/8021. (Concentrations in parentheses are by EPA Method 8260B)
mg/kg = milligram per kilogram
EA = EA Engineering Science and Technology Inc.
WGR = Western Geologic Resources
GTI = Groundwater Technology
GRI = Gettler-Ryan Inc.
PES = Parker Environmental Services
SOMA = SOMA Environmental Engineering Inc.
ESL = Environmental Screening Levels for shallow soil with commercial/industrial land use where groundwater is a current or potential drinking water resource from Table A-2, established by the SFBRWQCB, Interim Final - November 2007 (Revised May 2008).
< = Not detected at or above indicated detection limit
Bold = Analytical results at or above the final ESL

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
Surface Water (Flood Control Channel)											
C-1	08/17/06	11.60	321.29	--	--	--	--	--	--	--	Gauge data - flood control channel
332.89	11/24/06	12.10	320.79	--	--	--	--	--	--	--	
	02/21/07	12.10	320.79	--	--	--	--	--	--	--	
	05/15/07	12.05	320.84	--	--	--	--	--	--	--	
	08/28/07	11.90	320.99	--	--	--	--	--	--	--	
	12/21/07	12.16	320.73	--	--	--	--	--	--	--	
	02/26/08	12.21	320.68	--	--	--	--	--	--	--	
	05/21/08	12.40	320.49	--	--	--	--	--	--	--	
	08/13/08	**11.95**	**320.94**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	
Upper Shallow (AA-Zone) Wells											
MW-7AA	05/31/06	9.18	321.49	12,000	1,000	410	180	1,600	23,000 (21,000)	0.44	TAME, TBA, DIPE, ETBE=ND
330.67	07/07/06	9.15	321.52	--	--	--	--	--	--	--	
	08/17/06	8.75	321.92	25,000	2,200	210	780	1,400	36,000(42,000)	0.24	
	11/24/06	9.84	320.83	27,000	3,400	1,100	1,300	3,400	37,000	0.33	
	02/21/07	9.60	321.07	18,000	2,400	670	200	2,800	41,000	0.58	
	05/15/07	10.20	320.47	11,000	1,500	200	520	1,100	47,000	0.49	
	08/28/07	10.20	320.47	4,500	720	13	73	100	18,000	0.33	
	12/21/07	10.09	320.58	3,700	550	32	74	330	12,000	0.58	
	02/26/08	8.96	321.71	5,400	970	7.2	320	100	15,000	0.74	
	05/21/08	10.28	320.39	22,000	2,700	19	940	440	28,000	0.71	
	08/13/08	**10.38**	**320.29**	**3,900**	**510**	**<5.0**	**150**	**42**	**15,000**	**0.77**	
VW-1	02/21/06	7.95	322.48	860	120	1.4	32	4.4	390 (440)	1.97	
330.43	06/01/06	7.89	322.54	1,100	92	2.2	11	1.4	600 (550)	0.11	TAME=12µg/L, TBA,DIPE,ETBE=ND
	07/07/06	7.71	322.72	--	--	--	--	--	--	--	
	08/17/06	7.65	322.78	--	--	--	--	--	--	0.07	
	11/24/06	7.75	322.68	Insufficient Water to Sample						0.48	
	02/21/07	7.81	322.62	620	52	4.3	<0.5	2.7	340	0.22	
	05/15/07	7.94	322.49	2,000	270	6.4	1.2	15	720	0.10	
	08/28/07	8.07	322.36	2,400	400	4.6	<0.5	23	610	0.27	
	12/21/07	8.20	322.23	Insufficient Water to Sample							
	02/26/08	8.20	322.23	Insufficient Water to Sample							
	05/21/08	8.21	322.22	Insufficient Water to Sample							
	08/13/08	**8.27**	**322.16**	**Insufficient Water to Sample**							

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				← µg/L →							
VW-2	02/21/06	6.01	324.16	1,600	150	2.7	55	20	1,700 (1,600)	1.97	
330.17	06/01/06	6.17	324.00	1,500	140	3.3	24	19	1,600 (1,600)	0.29	TAME, TBA, DIPE, ETBE=ND
	07/07/06	7.02	323.15	--	--	--	--	--	--	--	
	08/17/06	7.23	322.94	--	--	--	--	--	--	0.14	
	11/24/06	5.55	324.62	<50	5.7	<0.5	<0.5	<0.5	260	0.20	
	02/21/07	6.22	323.95	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.42	
	05/15/07	7.54	322.63	430	40	1.5	<0.5	1.0	470	0.28	
	08/28/07	7.82	322.35	1,200	170	5.0	<0.5	20	160	0.35	
	12/21/07	4.44	325.73	<50	<0.5	<0.5	<0.5	<0.5	100	0.70	
	02/26/08	4.56	325.61	<50	<0.5	<0.5	<0.5	<0.5	21	0.75	
	05/21/08	7.65	322.52	300	28	1.7	<0.5	0.97	<45	0.71	
	08/13/08	**7.92**	**322.25**	**Insufficient Water to Sample**						1.58	
VW-3	02/21/06	6.10	324.39	8,900	390	29	490	650	<50	2.28	
330.49	06/01/06	6.22	324.27	5,900	230	4.5	270	63	<35 (15)	0.21	TAME, TBA, DIPE, ETBE=ND
	07/07/06	4.44	326.05	--	--	--	--	--	--	--	
	08/17/06	4.4 *	326.09	4,200	120	1.7	39	30	<25	0.10	
	11/24/06	6.15	324.34	7,600	310	9.9	270	420	<50	0.21	
	02/21/07	6.87	323.62	8,800	260	5.1	130	160	<90	0.29	
	05/15/07	7.13	323.36	5,600	270	6.9	110	110	<90	0.36	
	08/28/07	7.41	323.08	10,000	320	5.9	150	140	84	0.39	
	12/21/07	6.28	324.21	3,900	140	1.9	54	29	<50	0.66	
	02/26/08	6.09	324.40	5,600	270	4.5	68	130	<90	0.69	
	05/21/08	6.46	324.03	3,800	210	3.0	32	47	56	0.77	
	08/13/08	**6.93**	**323.56**	**9,300**	**400**	**4.8**	**87**	**60**	**100**	**0.59**	
Shallow (A-Zone) Wells											
MW-1	10/04/94	12.8	320.76	2,100	150	170	61	320	--		
333.66	11/30/94	12.38	321.18	1,500	210	17	73	130	--		
	03/02/95	12.88	320.68	2,600	510	<10	160	<10	--		
	06/07/95	12.58	320.98	710	160	<2.0	45	<2.0	<10		
	09/26/95	13.15	320.41	1,100	140	1.4	92	1.8	<5.0		
	12/28/95	13.09	320.47	750	96	2.5	61	7.4	37		
	02/29/96	12.17	321.39	250	17	<0.5	18	0.81	9		
	06/27/96	12.95	320.61	710	72	<2.0	92	2.2	<10		
	09/12/96	13.11	320.55	300	53	<0.5	32	0.65	21		
	03/31/97	12.99	320.67	<200	4.1	<2.0	4.8	<2.0	640		
	12/23/98	13.87	319.79	<50	<50	<0.5	<0.5	<0.5	3200		
	03/25/99	12.01	321.65	<50	<0.5	<0.5	<0.5	<0.5	5,200 (5,200)		
	02/03/00	11.91	321.75	<500	<5.0	<5.0	<5.0	<5.0	3,180 (3,350)		
	01/23/01	12.57	321.09	<50.0	<0.5	<0.5	<0.5	<0.5	4,420		
	05/01/01	12.6	321.06	SAMPLED SEMI-ANNUALLY							
	08/28/01	12.74	320.92	<50	<0.5	<0.5	<0.5	<0.5	4,800		
	11/27/01	12.7	320.96	SAMPLED SEMI-ANNUALLY							

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
MW-1 (cont'd)	02/28/02	12.7	320.96	<50	<0.5	<0.5	<0.5	<1.5	1,400		
	05/22/02	12.38	321.28				SAMPLED SEMI-ANNUALLY				
	08/20/02	12.57	321.09	<50	<0.5	<0.5	<0.5	<1.5	1,400		
	11/11/02	11.31	322.35				SAMPLED SEMI-ANNUALLY				
	05/08/03	11.85	321.81	<50	<0.5	<0.5	<0.5	<0.5	1,300 (1,200)		
	12/15/04	12.80	320.86	<50	<0.5	<0.5	<0.5	<0.5	1,700 (1,900)		
	02/21/05	11.81	321.85	<100	<1.0	<1.0	<1.0	<1.0	3,000 (3,800)	0.82	
	05/17/05	12.51	321.15	<120	<1.2	<1.2	<1.2	<1.2	3,400 (4,400)	0.75	
	08/17/05	12.35	321.31	<170	<1.7	<1.7	<1.7	<1.7	4,500 (4,900)	0.77	
	11/27/05	13.18	320.48	<170	<1.7	<1.7	<1.7	<1.7	5,400 (4,400)	0.90	
	02/21/06	12.61	321.05	<170	<1.7	<1.7	<1.7	<1.7	5,000 (5,400)	0.29/0.71	
333.69	06/01/06	12.47	321.22	<250	<2.5	<2.5	<2.5	<2.5	6,400 (6,300)	0.46	TAME, TBA, DIPE, ETBE=ND
	07/07/06	12.60	321.09	--	--	--	--	--	--	--	
	08/17/06	11.93	321.76	<250	<2.5	<2.5	<2.5	<2.5	7,700 (9,100)	0.43	
	11/24/06	13.01	320.68	<250	<2.5	<2.5	<2.5	<2.5	8,400	0.29	
	02/21/07	12.91	320.78	<50	<0.5	<0.5	<0.5	<0.5	3,600	0.24	
	05/15/07	13.40	320.29	<50	<0.5	<0.5	<0.5	<0.5	2,500	0.29	
	08/28/07	13.40	320.29	<50	<0.5	<0.5	<0.5	<0.5	170	0.40	
	12/21/07	13.40	320.29	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.68	
	02/26/08	12.60	321.09	<50	<0.5	<0.5	<0.5	<0.5	7.0	0.86	
	05/21/08	13.45	320.24	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.94	
	08/13/08	**13.37**	**320.32**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**0.91**	
MW-2	10/04/94	8.56	320.62	2300	160	280	96	480	--		
329.29	11/30/94	8.33	320.85	1,600	170	16	110	120	--		
	03/02/95	8.35	320.83	1,200	220	5.6	140	36	--		
	06/07/95	8.62	320.56	160	25	<0.5	16	<0.5	240		
	09/26/95	8.71	320.47	150	15	<0.5	7.2	<0.5	120		
	12/28/95	8.78	320.4	400	34	1.3	26	5.1	170		
	02/29/96	7.82	321.36	120	29	<0.5	<0.5	<0.5	790		
	06/27/96	8.72	320.46	150	13	<0.5	7	<0,5	850		
	09/12/96	8.81	320.48	<1,000	18	<10	<10	<10	3,100		
	03/31/97	8.65	320.64	<500	<5.0	<5.0	<5.0	<5.0	1,400		
	12/23/98	8.32	320.97	<50	<0.5	<0.5	<0.5	<1.5	900		
	03/25/99	7.89	321.4	<50	2.6	<0.5	<0.5	<0.5	1,100 (670)		
	02/03/00	7.53	321.76	<125	<1.25	<1.25	<1.25	<1.25	1,020 (1,100)		
	01/23/01	8.18	321.11	<50.0	<0.5	<0.5	<0.5	<0.5	642		
	05/01/01	8.43	320.86	70.8	<0.5	<0.5	<0.5	<0.5	342		
	08/28/01	8.39	320.9	<50	<0.5	<0.5	<0.5	<0.5	530		
	11/27/01	8.46	320.83	210	<0.5	<0.5	<0.5	<1.5	260		
	02/28/02	8.48	320.81	<50	<0.5	<0.5	<0.5	<1.5	180		
	05/22/02	8.14	321.15	<50	<0.5	<0.5	<0.5	<1.5	180		
	08/20/02	8.24	321.05	<50	<0.5	<0.5	<0.5	<1.5	160		
	11/11/02	8.06	321.23	<50	<0.5	<0.5	<0.5	<1.5	130		
	05/08/03	7.86	321.43	<50	<0.5	<0.5	<0.5	<0.5	180 (160)		
	12/15/04	8.60	320.69	<50	<0.5	<0.5	<0.5	<0.5	1,400 (1,600)		

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
MW-2 (cont'd)	02/21/05	7.55	321.74	<50	<0.5	<0.5	<0.5	<0.5	800 (1,100)	1.35	
	05/17/05	8.52	320.77	<50	<0.5	<0.5	<0.5	<0.5	160 (210)	1.06	
	08/17/05	8.16	321.13	<50	<0.5	<0.5	<0.5	<0.5	190 (210)	0.90	
	11/27/05	9.00	320.29	<50	<0.5	<0.5	<0.5	<0.5	200 (210)	0.92	
	02/21/06	8.51	320.78	<50	<0.5	<0.5	<0.5	<0.5	240 (270)	0.33/0.46	
329.48	06/01/06	8.50	320.98	<50	<0.5	<0.5	<0.5	<0.5	120 (110)	0.38	TAME, TBA, DIPE, ETBE=ND
	07/07/06	8.57	320.91	--	--	--	--	--	--	--	
	08/17/06	8.21	321.27	<50	<0.5	<0.5	<0.5	<0.5	230(230)	0.30	
	11/24/06	8.87	320.61	<50	<0.5	<0.5	<0.5	<0.5	760	0.24	
	02/21/07	8.80	320.68	<50	<0.5	<0.5	<0.5	<0.5	1,100	0.21	
	05/15/07	8.94	320.54	<50	<0.5	<0.5	<0.5	<0.5	1,400	0.25	
	08/28/07	8.83	320.65	<50	<0.5	<0.5	<0.5	<0.5	1,800	0.33	
	12/21/07	8.93	320.55	<50	<0.5	<0.5	<0.5	<0.5	1,700	0.49	
	02/26/08	8.49	320.99	<50	<0.5	<0.5	<0.5	<0.5	590	0.51	
	05/21/08	9.06	320.42	<50	<0.5	<0.5	<0.5	<0.5	230	0.67	
	08/13/08	**8.89**	**320.59**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**190**	**0.77**	
MW-3A	05/29/06	10.13	321.28	--	--	--	--	--	--	--	0.03 SPH
331.39	07/07/06	10.15	321.24	4,200	340	27	75	79	32,000	--	
	08/17/06	9.56	321.83	6,200	410	68	100	650	28,000(34,000)	0.19	
	11/24/06	10.73	320.66	2,100	190	11	72	220	7,900	0.10	
	02/21/07	10.52	320.87	7,100	890	28	440	470	8,400	0.17	
	05/15/07	11.46	319.93	1,800	210	11	96	88	3,500	0.25	
	08/28/07	11.62	319.77	1,900	260	6.9	110	74	3,400	0.28	
	12/21/07	11.33	320.06	4,700	570	160	120	970	2,800	0.54	
	02/26/08	10.25	321.14	7,200	550	32	440	690	1,800	0.49	
	05/21/08	11.52	319.87	1,600	130	2.9	40	94	700	0.55	
	08/13/08	**11.62**	**319.77**	**2,900**	**280**	**3.4**	**52**	**56**	**1,300**	**0.52**	
MW-4	03/01/96	9.9	322.74	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
332.63	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				

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L			→	
MW-4 (cont'd)	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	03/01/96	10.62	322.58	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
333.47	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	--	--	--	--	--	--	--	

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
MW-5 (cont'd)	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	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
331.81	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**	
MW-7A	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
330.71	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**	

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
MW-8A	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
331.19	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	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
331.17	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	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
329.93	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**	

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
Intermediate-Depth (B-zone) Wells											
MW-6B	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
330.9	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	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
330.69	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	
	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**	
Deep (C-Zone) Wells											
MW-6C	06/01/06	8.21	322.67	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.29	TAME, TBA, DIPE, ETBE=ND
330.88	07/07/06	8.41	322.47	--	--	--	--	--	--	--	
	08/17/06	8.56	322.32	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.21	
	11/24/06	9.12	321.76	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.28	
	02/21/07	8.62	322.26	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.21	
MW-7C	05/31/06	8.65	322.09	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.12	TAME, TBA, DIPE, ETBE=ND
330.74	07/07/06	8.70	322.04	--	--	--	--	--	--	--	
	08/17/06	8.52	322.22	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.17	
	11/24/06	9.42	321.32	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.19	
	02/21/07	9.01	321.73	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.31	

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
MW-9C	05/29/06	16.59	314.89	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.28	TAME, TBA, DIPE, ETBE=ND
331.48	07/07/06	8.85	322.63	--	--	--	--	--	--	--	
	08/17/06	9.20	322.28	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.21	
	11/24/06	9.61	321.87	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.33	
	02/21/07	8.94	322.54	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.46	
MW-10C	05/29/06	7.28	322.38	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.16	TAME, TBA, DIPE, ETBE=ND
329.66	07/07/06	7.28	322.38	--	--	--	--	--	--	--	
	08/17/06	7.29	322.37	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.22	
	11/24/06	10.75	318.91	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.33	
	02/21/07	7.69	321.97	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.39	
MW-11C	05/31/06	9.90	321.71	<50	<0.5	<0.5	<0.5	<0.5	11 (11)	0.29	TAME, TBA, DIPE, ETBE=ND
331.61	07/07/06	10.02	321.59	--	--	--	--	--	--	--	
	08/17/06	9.60	322.01	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.22	
	11/24/06	10.60	321.01	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.28	
	02/21/07	10.30	321.31	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.43	
Abandoned Wells											
MW-3	10/04/94	12.06	320.67	6,300	610	750	68	670	--		
332.86	11/30/94	11.38	321.35	17	3,600	490	430	610	--		
	03/02/95	11.97	320.76	8,500	2,200	<50	240	<50	64,000		
	06/07/95	11.54	321.19	3,000	710	18	220	44	3,100		
	09/26/95	12.36	320.37	<10,000	230	<100	130	<100	64,000		
	12/28/95	12.07	320.66	<12,500	760	<125	<125	<125	100,000		
	02/29/96	11.01	321.72	1,600	380	<10	84	17	33,000		
	06/27/96	11.93	320.8	1,400	<2.5	4.3	130	4	96,000		
	09/12/96	12.26	320.6	<10,000	560	<l00	110	<100	100,000		
	03/31/97	12.04	320.82	<25,000	1,200	370	<250	380	130,000		
	12/23/98	12.92	319.94	--	--	--	--	--	--		0.1' SPH; 0.079 gal SPH removed
	03/25/99	12.56	320.3	--	--	--	--	--	--		0.05' SPH; 0.05 gal SPH removed
	02/03/00	11.12	321.74	92,100	4,780	11,400	2,270	15,800	137,000 (162,000)		
	1/23/2001	11.78	321.08	60,600	4,810	7,500	1,870	11,000	148,000		Absorbent sock in well
	5/1/2001	10.66	322.2	56,000	3,760	5,640	<2,500	8,740	136,000		Absorbent sock in well
	8/28/2001	11.79	321.07	32,000	3,800	2,600	1,200	7,500	160,000		Absorbent sock in well
	11/27/2001	11.98	320.88	110,000	1,300	2,400	1,500	9,400	90,000		Absorbent sock removed
	02/28/02	11.81	321.05	24,000	1,900	820	520	3,100	90,000		
	05/22/02	11.6	321.26	110,000	4,000	3,200	2,800	18,000	140,000		
	08/20/02	11.81	321.05	37,000	2,600	1,500	890	4,800	110,000		
	11/11/02	11.63	321.23	81,000	2,900	2,100	2,100	14,000	110,000		
	05/08/03	10.91	321.95	5,700	770	69	130	365	76,000 (70,000)		
	12/15/04	11.97	320.89	33,000	1,700	430	1,300	7,000	70,000 (89,000)		
	02/21/05	10.81	322.06	--	--	--	--	--	--	1.29	0.01 SPH
	05/17/05	11.63	321.29	--	--	--	--	--	--	1.06	0.08 SPH

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				← µg/L →							
MW-3 (cont'd)	08/17/05	10.83	322.03	39,000	1,500	260	780	2,700	42,000 (47,000)	0.93	
	11/27/05	12.29	320.72	--	--	--	--	--	--	--	0.19 SPH
	02/21/06	11.73	321.28	--	--	--	--	--	--	--	0.19 SPH
	03/30/06	--	--	--	**Well Abandoned**			--	--	--	Well Abandoned
EA-1	10/17/88	--	--	<50	<0.5	<0.5	<0.5	<0.5	--		
331.21	10/24/88	10.64	322.77	--	--	--	--	--	--		
	11/02/88	10.69	322.72	--	--	--	--	--	--		
	12/20/88	10.51	322.9	<50	<0.5	<0.5	<0.5	<0.5	--		
	03/28/89	9.87	323.54	<250	<0.5	<0.5	<0.5	<0.5	--		
	08/02/89	10.34	323.07	<50	<0.1	<0.1	<0.1	<0.1	--		
	11/06/89	10.65	322.76	<500	<3.0	<5.0	<5.0	<5.0	--		
	01/25/90	10.6	322.81	<50	<0.5	<0.5	<0.5	<0.5	--		
	04/23/90	10.58	322.83	71	2	5	3	8	--		
	08/01/90	10.88	322.53	300	86	21	10	33	--		
	10/24/91	11.12	322.29	280	69	13	11	16	--		
	01/31/91	11.16	322.25	460	160	11	17	17	--		
	08/21/91	10.8	322.61	2,400	400	220	44	120	--		
	08/21/91	10.8	322.61	2,300	390	210	42	120	--		Duplicate
	10/07/91	10.79	322.62	--	--	--	--	--	--		
	01/28/92	10.79	322.62	3,600	320	360	110	310	--		
	01/28/92	10.79	322.62	3,000	290	320	99	270	--		Duplicate
	06/05/92	10.84	322.57	1,700	290	89	61	130	--		
	09/30/92	11.06	322.35	2,100	160	260	80	350	--		
	12/30/92	10.15	323.26	3,200	240	180	110	310	--		
	03/29/93	9.42	323.99	23,000	700	3,000	610	3,000	--		
	06/25/93	10.42	322.99	2.7	130	590	130	590	--		
	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	<l25		
	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

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				← µg/L →							
EA-1 (cont'd)	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	10/17/88	--	--	<50	<0.5	<0.5	<0.5	1.2	--		
330.41	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		

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
EA-2 *(cont'd)*	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					
	11/11/02	9.03	321.38			SAMPLED ANNUALLY					
	05/08/03	7.26	323.15	<50	<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	<5.0		
	02/21/05	7.20	323.21	<50	<0.5	<0.5	<0.5	<0.5	13 (11)	0.64	
	05/17/05	8.21	322.20			SAMPLED ANNUALLY				0.77	
	08/17/05	7.97	322.44			SAMPLED ANNUALLY				0.85	
	11/27/05	9.83	320.58			SAMPLED ANNUALLY				0.84	
	02/21/06	8.78	321.63	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.51/0.68	
	03/28/06	--	--	--		**Well Abandoned**		--	--	--	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	--		

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
EA-3 *(cont'd)*	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				SAMPLED SEMI-ANNUALLY				
	08/28/01	10.56	320.94	<50	<0.5	<0.5	<0.5	<0.5	37		
	11/27/01	10.65	320.85				SAMPLED SEMI-ANNUALLY				
	02/28/02	10.37	321.13	<50	1.3	<0.50	2	1.8	90		
	05/22/02	10.27	321.23				SAMPLED SEMI-ANNUALLY				
	08/20/02	10.3	321.2	<50	<0.50	<0.50	<0.50	<1.5	40		
	11/11/02	9.05	322.45				SAMPLED SEMI-ANNUALLY				
	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**		--	--	--	Well Abandoned

Table 2. 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	Xylenes	MTBE	Dissolved Oxygen mg/L	Notes
				←			µg/L		→		
Grab Groundwater Analytical Data											
SB-1A-W	05/18/06	11.20	NA	170	1.5	1.5	1.2	5.9	570 (500)	--	TAME=90µg/L, TBA,DIPE,ETBE=ND
DPB-1	05/01/03	16-20	NA	12,000	25	440	440	2,180	8,100	--	
DPB-2	04/22/03	NA	NA	710	1.1	<1	18	74	540	--	
DPB-3	04/17/03	16-20	NA	48,000	400	5,800	1,500	9,500	8,900	--	
	04/17/03	27-31	NA	62,000	700	9,900	1,300	7,900	4,200	--	
	04/17/03	39-43	NA	27,000	210	3,200	640	4,100	7,700	--	
DPB-4	04/17/03	32-36	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
DPB-5	04/30/03	7-11	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
	04/17/03	11-15	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
	04/30/03	26-30	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
	04/17/03	36-40	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
DPB-6	04/18/03	15-19	NA	7,700	18	77	170	640	5.9	--	
	04/18/03	26-30	NA	4,700	21	76	160	650	6.2	--	
	04/18/03	35-39	NA	2,900	8.8	24	54	249	100	--	
DPB-7	04/18/03	15-19	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
	04/18/03	20-24	NA	7,000	42	640	190	990	300	--	
	04/18/03	35-39	NA	150	<0.5	1.8	0.8	5.7	<0.5	--	
DPB-8	05/01/03	NA	NA	<50	<0.5	<0.5	<0.5	<0.5	<0.5	--	
DPB-S	04/18/03	14-18	NA	20,000	<170	<170	380	6,600	53,000	--	
	04/18/03	26-30	NA	1,500	7.1	<3.1	7.4	170	760	--	
	04/18/03	35-39	NA	4,300	<63	<63	<63	910	42,000	--	

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 = Diispopropyl 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 3 - DPE Pilot Test Performance Data - 7240 Dublin Boulevard, Dublin, CA

Date	Well	Hour Meter Reading (hours)	Elapsed Time (minutes)	Interval Time (minutes)	Totalizer Reading (GW) (GPM)	Groundwater Flow Rate (GPM)	System Vapor Flow Rate (cfm)	Stinger Vacuum ("Hg)	Lab Sample ID	TPHg Lab Data (ppmv)	Benzene Lab Data (ppmv)	Influent FID Reading (ppm)	SVE TPHg Removal Rate (lbs/day)	SVE Benzene Removal Rate (lbs/day)	Cumulative SVE TPHg Removal (lbs)	Cumulative SVE Benzene Removal (lbs)
11/27/07	MW-7A	3.3	0	0	12,974	0.0	---	---	---	---	---	NM	0.0	0.00	0.0	0.00
11/27/07	MW-7A	3.6	18	18	12,974	0.0	40	17.5	MW-7A-1	2,200	31	3,500	28.2	0.36	0.4	0.00
11/27/07	MW-7A	4.6	78	60	13,039	1.1	50	16	---	2,200	31	3,050	35.3	0.45	1.8	0.02
11/27/07	MW-7A	5.2	114	36	13,039	0.0	---	---	---	2,200	31	NM	0.0	0.00	1.8	0.02
11/28/07	MW-7A	20	1002	888	14,500	1.6	78	20	MW-7A-2	1,200	15	3,400	30.0	0.34	20.3	0.23
11/28/07	MW-7A	21	1062	60	14,618	2.0	79	20	---	1,200	15	3,000	30.4	0.34	21.6	0.25
11/28/07	MW-7A	22	1122	60	14,618	0.0	75	21	---	1,200	15	3,866	28.9	0.33	22.8	0.26
11/28/07	MW-7A	23	1182	60	14,774	2.6	80	21	---	1,200	15	3,680	30.8	0.35	24.1	0.28
11/28/07	MW-7A	24	1242	60	14,774	0.0	80	21	---	1,200	15	3,670	30.8	0.35	25.4	0.29
11/28/07	MW-7A	25	1302	60	14,928	2.6	79	21	---	1,200	15	4,025	30.4	0.34	26.6	0.30
11/28/07	MW-7A	26.5	1392	90	15,081	1.7	77	20	MW-7A-3	1,100	14	2,900	**27.2**	**0.31**	28.3	0.32
11/28/07	MW-3A	28	1482	90	15,081	0.0	67	22	MW-3A-1	1,800	24	12,500	38.7	0.47	30.8	0.35
11/28/07	MW-3A	29	1542	60	15,081	0.0	67	22	---	1,800	24	19,500	38.7	0.47	32.4	0.37
11/29/07	MW-3A	44	2442	900	15,510	0.5	73	21	MW-3A-2	1,700	23	7,500	39.8	0.49	57.3	0.68
11/29/07	MW-3A	46.5	2592	150	15,666	1.0	73	21	---	1,700	23	7,400	39.8	0.49	61.4	0.73
11/29/07	MW-3A	47.5	2652	60	15,666	0.0	73	21	---	1,700	23	5,250	39.8	0.49	63.1	0.75
11/29/07	MW-3A	49	2742	90	15,666	0.0	74	21	---	1,700	23	7,690	40.4	0.50	65.6	0.78
11/29/07	MW-3A	49.5	2772	30	15,666	0.0	74	21	---	1,700	23	8,502	40.4	0.50	66.4	0.79
11/29/07	MW-3A	50.8	2850	78	15,834	2.2	73	21	MW-3A-3	1,500	24	6,702	**35.1**	**0.51**	68.3	0.82
11/29/07	MW-6A	52	2922	72	15,834	0.0	68	20	MW-6A-1	360	4.6	2,450	7.9	0.09	68.7	0.82
11/30/07	MW-6A	68	3882	960	16,421	0.6	72	22	MW-6A-2	2,100	17	8,350	48.5	0.36	101.1	1.06
11/30/07	MW-6A	70	4002	120	16,421	0.0	76	23	---	2,100	17	8,600	51.2	0.38	105.3	1.09
11/30/07	MW-6A	71	4062	60	16,576	2.6	74	22	---	2,100	17	9,700	49.9	0.37	107.4	1.11
11/30/07	MW-6A	72.2	4134	72	16,576	0.0	75	22	---	2,100	17	7,300	50.5	0.37	109.9	1.13
11/30/07	MW-6A	73	4182	48	16,576	0.0	80	22	---	2,100	17	4,500	53.9	0.40	111.7	1.14
11/30/07	MW-6A	74	4242	60	16,576	0.0	72	23	MW-6A-3	1,500	13	4,600	34.6	0.27	113.2	1.15
11/30/07	MW-6A	75.5	4332	90	16,576	0.0	72	23	---	1,500	13	NM	**34.6**	**0.27**	115.3	1.17
11/30/07	MW-7AA	75.8	4350	18	16,716	7.8	70	19.5	---	1,500	13	NM	33.7	0.26	115.8	1.17
11/30/07	MW-7AA	76	4362	12	16,716	0.0	70	19.5	---	1,500	13	8,500	33.7	0.26	116.0	1.17
11/30/07	MW-7AA	77	4422	60	NM	---	70	19.5	---	1,500	13	NM	33.7	0.26	117.4	1.18
11/30/07	MW-7AA	78.5	4512	90	NM	---	70	19.5	MW-7-AA	1,500	25	NM	33.7	0.51	119.6	1.22
12/01/07	MW-7AA	89.8	5190	678	16,904	0.3	70	19.5	---	1,500	25	NM	**33.7**	**0.51**	**135.4**	**1.46**

Notes:

NM = not measured
cfm = cubic feet per minute.
ppm = Parts per million
ppmv = parts per million by volume
lbs = Pounds
"Hg = Inches of mercury
DPE = Dual-phase extraction
FID = Flame Ionization Detector.
Hydrocarbon Removal/Emission Rate = Rate based on Bay Area Air Quality Management District's Manual of Procedures for Soil Vapor Extraction dated July 17, 1991.
Rate = lab concentration (ppmv) x system flowrate (scfm) x (1lb-mole/386 ft³) x molecular weight (86 lb/lb-mole for TPH-Gas hexane) x 1440 min/day x 1/1,000,000.

Table 4 - Soil Vapor Analytical Data - 7240 Dublin Boulevard, Dublin, CA

Extraction Well ID	Sample Date	TPHg	MTBE	Benzene	Toluene	Ethyl-benzene	Xylenes	Notes
		← ppmv →						
MW-7A	11/27/07	2,200	ND<150	31	9.9	2	6.5	
	11/28/07	1,200	ND<14	15	7	5.9	24	
	11/28/07	1,100	ND<18	14	7.8	8.8	36	
MW-3A	11/28/07	1,800	ND<240	24	8.3	2.8	11	
	11/29/07	1,700	ND<20	23	15	2.6	10	
	11/29/07	1,500	ND<20	24	21	4.5	18	
MW-6A	11/29/07	360	ND<35	4.6	3.4	1.1	4.6	
	11/30/07	2,100	ND<6.8	17	15	3.6	14	
	11/30/07	1,500	ND<14	13	11	3.8	15	
MW-7AA	11/30/07	1,500	67	25	29	18	72	

ABBREVIATIONS AND NOTES

< = Not detected at or above indicated detection limit
ppmv = parts per million by volume
TPHg = Total Petroleum Hydrocarbons as Gasoline by modified EPA Method 8015C
Benzene, Toluene, Ethylbenzene, and Xylenes by EPA Method 8021B
MTBE = Methyl tert-butyl ether by EPA Method 8021B

Table 5. DPE Pilot Test - Water Level Drawdown Data. 7240 Dublin Boulevard, Dublin, CA

Date	Hour Meter Reading	Total Elapsed Hours	Extraction Well ID	MW-6A DTW (feet)	MW-6A drawdown (feet)	MW-1 DTW (feet)	MW-1 drawdown (feet)	MW-2 DTW (feet)	MW-2 drawdown (feet)	MW-10C DTW (feet)	MW-10C drawdown (feet)	MW-10A DTW (feet)	MW-10A drawdown (feet)	MW-6C DTW (feet)	MW-6C drawdown (feet)
11/27/07 2:45 PM	3.3	0		12.01	**0.00**	13.63	**0.00**	9.08	**0.00**	8.35	**0.00**	11.81	**0.00**	6.61	**0.00**
11/28/07 8:00 AM	20.5	17.2	**MW-7A**	12.61	**0.60**	14.32	**0.69**	9.41	**0.33**	8.87	**0.52**	9.71	**-2.10**	10.20	**3.59**
11/28/07 1:30 PM	25.5	22.2	**MW-7A**	12.73	**0.72**	14.38	**0.75**	9.48	**0.40**	8.94	**0.59**	9.44	**-2.37**	10.17	**3.56**
Distance from Extraction Well MW-7A:				**57**		**62**		**72**		**69**		**69**		**68**	
11/28/07 3:00 PM	27.5	24.2	**MW-3A**	12.45	**0.44**	14.40	**0.77**	9.49	**0.41**	8.94	**0.59**	9.78	**-2.03**	10.25	**3.64**
11/29/07 8:05 AM	44.6	41.3	**MW-3A**	13.15	**1.14**	14.12	**0.49**	9.30	**0.22**	8.60	**0.25**	9.70	**-2.11**	9.87	**3.26**
11/29/07 1:10 PM	49.6	49.6	**MW-3A**	13.15	**1.14**	14.06	**0.43**	9.26	**0.18**	8.50	**0.15**	9.62	**-2.19**	9.88	**3.27**
Distance from Extraction Well MW-3A:				**27**		**69**		**107**		**109**		**109**		**38**	
11/29/07 3:10 PM	49.6	46.3	**MW-6A**	NM	NM	14.07	**0.44**	9.28	**0.20**	8.49	**0.14**	9.62	**-2.19**	9.87	**3.26**
11/30/07 10:45 AM	71.2	67.9	**MW-6A**	NM	NM	13.86	**0.23**	9.14	**0.06**	8.44	**0.09**	9.53	**-2.28**	9.90	**3.29**
12/1/07 1:30 PM	74.0	70.7	**MW-6A**	NM	NM	13.87	**0.24**	9.14	**0.06**	8.43	**0.08**	9.54	**-2.27**	9.91	**3.30**
Distance from Extraction Well MW-6A:				**0**		**86**		**134**		**125**		**125**		**9**	

Date	Hour Meter Reading	Total Elapsed Hours	Extraction Well ID	MW-11C DTW (feet)	MW-11C drawdown (feet)	MW-7AA DTW (feet)	MW-7AA drawdown (feet)	MW-7A DTW (feet)	MW-7A drawdown (feet)	MW-7B DTW (feet)	MW-7B drawdown (feet)	MW-7C DTW (feet)	MW-7C drawdown (feet)	MW-9A DTW (feet)	MW-9A drawdown (feet)
11/27/07 2:45 PM	3.3	0		11.15	**0.00**	10.49	**0.00**	10.49	**0.00**	10.27	**0.00**	9.71	**0.00**	10.96	**0.00**
11/28/07 8:00 AM	20.5	17.2	**MW-7A**	13.23	**2.08**	13.36	**2.87**	NM	NM	13.50	**3.23**	12.20	**2.49**	11.00	**0.04**
11/28/07 1:30 PM	25.5	22.2	**MW-7A**	13.27	**2.12**	13.38	**2.89**	NM	NM	14.42	**4.15**	12.30	**2.59**	11.01	**0.05**
Distance from Extraction Well MW-7A:						**6**				**5**		**13**		**98**	
11/28/07 3:00 PM	27.5	24.2	**MW-3A**	13.00	**1.85**	13.38	**2.89**	13.50	**3.01**	13.04	**2.77**	11.83	**2.12**	11.01	**0.05**
11/29/07 8:05 AM	44.6	41.3	**MW-3A**	11.86	**0.71**	12.00	**1.51**	11.31	**0.82**	11.11	**0.84**	10.46	**0.75**	11.05	**0.09**
11/29/07 1:10 PM	49.6	49.6	**MW-3A**	11.73	**0.58**	11.77	**1.28**	11.21	**0.72**	11.00	**0.73**	10.38	**0.67**	11.03	**0.07**
Distance from Extraction Well MW-3A:						**34**		**40**		**45**		**51**		**62**	
11/29/07 3:10 PM	49.6	46.3	**MW-6A**	11.73	**0.58**	11.72	**1.23**	11.15	**0.66**	10.96	**0.69**	10.34	**0.63**	11.04	**0.08**
11/30/07 10:45 AM	71.2	67.9	**MW-6A**	11.53	**0.38**	11.13	**0.64**	10.91	**0.42**	10.73	**0.46**	10.17	**0.46**	10.10	**-0.86**
12/1/07 1:30 PM	74.0	70.7	**MW-6A**	11.54	**0.39**	11.11	**0.62**	10.86	**0.37**	10.73	**0.46**	10.09	**0.38**	10.12	**-0.84**
Distance from Extraction Well MW-6A:						**55**		**57**		**60**		**65**		**36**	

Table 5. DPE Pilot Test - Water Level Drawdown Data. 7240 Dublin Boulevard, Dublin, CA

Date	Hour Meter Reading	Total Elapsed Hours	**Extraction Well ID**	VW-1 DTW (feet)	VW-1 drawdown (feet)	MW-8A DTW (feet)	MW-8A drawdown (feet)	VW-2 DTW (feet)	VW-2 drawdown (feet)	MW-3A DTW (feet)	MW-3A drawdown (feet)	MW-6B DTW (feet)	MW-6B drawdown (feet)	MW-9C DTW (feet)	MW-9C drawdown (feet)
11/27/07 2:45 PM	3.3	0		8.08	**0.00**	12.71	**0.00**	8.40	**0.00**	11.75	**0.00**	9.79	**0.00**	10.05	**0.00**
11/28/07 8:00 AM	20.5	17.2	**MW-7A**	8.10	**0.02**	10.01	**-2.70**	5.46	**-2.94**	12.85	**1.10**	10.45	**0.66**	10.20	**0.15**
11/28/07 1:30 PM	25.5	22.2	**MW-7A**	8.10	**0.02**	11.11	**-1.60**	5.48	**-2.92**	12.92	**1.17**	10.55	**0.76**	10.26	**0.21**
Distance from Extraction Well MW-7A:				**21**				**26**		**41**		**60**		**95**	
11/28/07 3:00 PM	27.5	24.2	**MW-3A**	8.10	**0.02**	11.11	**-1.60**	5.48	**-2.92**	NM	NM	10.52	**0.73**	10.23	**0.18**
11/29/07 8:05 AM	44.6	41.3	**MW-3A**	8.11	**0.03**	NM	NM	5.54	**-2.86**	NM	NM	10.09	**0.30**	10.15	**0.10**
11/29/07 1:10 PM	49.6	49.6	**MW-3A**	8.11	**0.03**	NM	NM	5.55	**-2.85**	NM	NM	10.08	**2.00**	10.15	**0.10**
Distance from Extraction Well MW-3A:				**52**				**17**				**35**		**65**	
11/29/07 3:10 PM	49.6	46.3	**MW-6A**	8.10	**0.02**	NM	NM	5.55	**-2.85**	14.25	**2.50**	10.09	**0.30**	10.15	**0.10**
11/30/07 10:45 AM	71.2	67.9	**MW-6A**	8.11	**0.03**	NM	NM	5.61	**-2.79**	12.76	**1.01**	10.19	**0.40**	10.10	**0.05**
12/1/07 1:30 PM	74.0	70.7	**MW-6A**	8.10	**0.02**	NM	NM	5.63	**-2.77**	12.84	**1.09**	10.19	**0.40**	10.19	**0.14**
Distance from Extraction Well MW-6A:				**60**				**42**		**27**		**9**		**39**	

Notes:
gpm = Gallons per minute
DTW = Depth to water

Table 6. 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 A

Laboratory Analytical Reports

McCampbell 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: Dublin Auto Wash	Date Sampled: 11/27/07-11/28/07
		Date Received: 11/28/07
	Client Contact: Greg Bentley	Date Reported: 11/30/07
	Client P.O.:	Date Completed: 12/03/07

WorkOrder: 0711675

December 03, 2007

Dear Greg:

Enclosed are:

1). the results of **4** analyzed samples from your **Dublin Auto Wash project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill 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

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius, Lab Manager

0711675

McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD
PITTSBURG, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Greg Bentley Bill To: Pangea
Company: Pangea Environmental Technology, Inc.
1710 Franklin Street, Suite 200, Oakland, CA 94612
E-Mail: gbentley@pangeaenv.com
Tele: (510) 409-8980 Fax: (510) 836-3709
Project #: Project Name: Dublin Auto Wash
Project Location: 7240
Sampler Signature:

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	Analysis Request: TPHg/BTEX/MTBE (8015/8020)	Other	Comments
MW-7A-1		11/27	1510	1	BAG			X						X	X		
MW-7A-2		11/28	730	↓	↓			↓						↓	↓		
MW-7A-3		11/28	1400	↓	↓			↓						↓	↓		
MW-3A-1		11/28	1530	X	↓			↓						↓	X		

Relinquished By:	Date:	Time:	Received By:
	11/28	1546	
Relinquished By:	Date:	Time:	Received By:
	11/28/07	1700	K. Burton
Relinquished By:	Date:	Time:	Received By:

ICE/t° N/A
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB

COMMENTS: Please report in ppmv.

PRESERVATION VOAS O&G METALS OTHER pH<2

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0711675 **ClientID: PEO**

☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty

Report to:
Greg Bentley
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612

Email: gbentley@pangeaenv.com
TEL: (510) 409-8980 FAX: (510) 836-3709
ProjectNo: Dublin Auto Wash
PO:

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

Requested TAT: 5 days

Date Received: **11/28/2007**
Date Printed: **11/28/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0711675-001	MW-7A-1	Air	11/27/2007	☐	A											
0711675-002	MW-7A-2	Air	11/28/2007	☐	A											
0711675-003	MW-7A-3	Air	11/28/2007	☐	A											
0711675-004	MW-3A-1	Air	11/28/2007	☐	A											

Test Legend:

1	G-MBTEX_AIR	2		3		4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A, 004A contain testgroup.

Prepared by: Kimberly Burks

Comments:

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

McCampbell 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

Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**

Date and Time Received: **11/28/2007 7:08:08 PM**

Project Name: **Dublin Auto Wash**

Checklist completed and reviewed by: Kimberly Burks

WorkOrder N°: **0711675** Matrix Air

Carrier: Derik Cartan (MAI Courier)

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:		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 ☑

Client contacted: Date contacted: Contacted by:

Comments:

McCampbell Analytical, Inc.
"When Quality Counts"

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Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc.	Client Project ID: Dublin Auto Wash	Date Sampled: 11/27/07-11/28/07
1710 Franklin Street, Ste. 200		Date Received: 11/28/07
Oakland, CA 94612	Client Contact: Greg Bentley	Date Extracted: 11/29/07
	Client P.O.:	Date Analyzed 11/29/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0711675

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-7A-1	A	7800,a	ND<500	99	38	8.8	29	20	90
002A	MW-7A-2	A	4300,a	ND<50	49	27	26	100	20	102
003A	MW-7A-3	A	4100,a	ND<65	46	30	39	160	2	89
004A	MW-3A-1	A	6400,a	ND<800	78	32	12	49	20	97

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples are reported in µg/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 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

McCampbell 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.	Client Project ID: Dublin Auto Wash	Date Sampled: 11/27/07
1710 Franklin Street, Ste. 200		Date Received: 11/28/07
Oakland, CA 94612	Client Contact: Greg Bentley	Date Extracted: 11/29/07
	Client P.O.:	Date Analyzed 11/29/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0711675

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-7A-1	A	2200,a	ND<150	31	9.9	2.0	6.5	20	90
002A	MW-7A-2	A	1200,a	ND<14	15	7.0	5.9	24	20	102
003A	MW-7A-3	A	1100,a	ND<18	14	7.8	8.8	36	2	89
004A	MW-3A-1	A	1800,a	ND<240	24	8.3	2.8	11	20	97

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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Web: www.mccampbell.com E-mail: main@mccampbell.com
Telephone: 877-252-9262 Fax: 925-252-9269

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air QC Matrix: Water WorkOrder: 0711675

EPA Method SW8021B/8015Cm	Extraction SW5030B	BatchID: 32145	Spiked Sample ID: 0711694-001A

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)£	ND	60	99.9	103	2.84	96	97	1.10	70 - 130	30	70 - 130	30
MTBE	ND	10	86.7	96.5	10.7	89	90.5	1.64	70 - 130	30	70 - 130	30
Benzene	ND	10	91.8	92.6	0.888	90.3	91.9	1.78	70 - 130	30	70 - 130	30
Toluene	ND	10	96.2	98.3	2.19	95	96.4	1.45	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	104	105	1.49	103	104	1.64	70 - 130	30	70 - 130	30
Xylenes	ND	30	117	117	0	117	117	0	70 - 130	30	70 - 130	30
%SS:	93	10	92	93	1.63	91	92	0.124	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 32145 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0711675-001A	11/27/07 3:10 PM	11/29/07	11/29/07 12:13 AM	0711675-002A	11/28/07 7:30 AM	11/29/07	11/29/07 1:12 AM
0711675-003A	11/28/07 2:00 PM	11/29/07	11/29/07 2:11 AM	0711675-004A	11/28/07 3:30 PM	11/29/07	11/29/07 2:41 AM

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.

DHS ELAP Certification N° 1644

QA/QC Officer

McCampbell 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: Dublin Auto Wash	Date Sampled: 11/29/07
		Date Received: 11/29/07
	Client Contact: Bob Clark-Riddell	Date Reported: 12/04/07
	Client P.O.:	Date Completed: 12/04/07

WorkOrder: 0711712

December 04, 2007

Dear Bob:

Enclosed are:

1). the results of **2** analyzed samples from your **Dublin Auto Wash project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill 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

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius, Lab Manager

0711712

McCAMPBELL ANALYTICAL, INC.

110 2nd AVENUE SOUTH, #D7
PACHECO, CA 94553-5560
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (925) 798-1620 Fax: (925) 798-1622

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To:	Bill To: Pangea Environmental
Company: Pangea Environmental Services, Inc.	
1710 Franklin Street, Suite 200	
Oakland, CA 94612	E-Mail: @pangeaenv.com
Tele:	Fax: (510) 836-3709
Project #:	Project Name: Dublin Auto Wash
Project Location: 7240 Dublin Blvd.	
Sampler Signature:	

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)	Lead (200.8 / 200.9 / 6010)	Other	Other	Other	Comments
MW-3A-2		11/29	730	1	BAG			X						X	X																			Filter Samples for Metals analysis: Yes / No
MW-3A-3		11/29	1415	1	BAG			X						X	X																			

Relinquished By:	Date:	Time:	Received By:
	11/29	1500	
Relinquished By:	Date:	Time:	Received By:
	11/29	1735	
Relinquished By:	Date:	Time:	Received By:

ICE/t° _____
GOOD CONDITION ✓
HEAD SPACE ABSENT _____
DECHLORINATED IN LAB _____
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB _____

COMMENTS: Please report in PPMV

PRESERVATION	VOAS	O&G	METALS pH<2	OTHER

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0711712 **ClientID: PEO**

☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty

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

Email: bcr@pangeaenv.com
TEL: (510) 836-3700 FAX: (510) 836-3709
ProjectNo: Dublin Auto Wash
PO:

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

Requested TAT: 5 days

Date Received: **11/29/2007**
Date Printed: **11/29/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0711712-001	MW-3A-2	Air	11/29/07 7:30:00	☐	A											
0711712-002	MW-3A-3	Air	11/29/07 2:15:00	☐	A											

Test Legend:

1	G-MBTEX_AIR	2		3		4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A contain testgroup.

Prepared by: Ana Venegas

Comments:

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

McCampbell Analytical, Inc.
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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

Sample Receipt Checklist

Client Name: **Pangea Environmental Svcs., Inc.**
Date and Time Received: **11/29/07 6:41:04 PM**

Project Name: **Dublin Auto Wash**
Checklist completed and reviewed by: Ana Venegas

WorkOrder N°: **0711712** Matrix Air
Carrier: Derik Cartan (MAI Courier)

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:		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 ☑

Client contacted: Date contacted: Contacted by:

Comments:

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Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc.	Client Project ID: Dublin Auto Wash	Date Sampled: 11/29/07
1710 Franklin Street, Ste. 200		Date Received: 11/29/07
Oakland, CA 94612	Client Contact: Bob Clark-Riddell	Date Extracted: 11/30/07
	Client P.O.:	Date Analyzed 11/30/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0711712

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-3A-2	A	6100,a	ND<60	75	57	12	43	6.7	97
002A	MW-3A-3	A	5300,a	ND<60	79	79	20	81	10	103
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples are reported in µg/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 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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Pangea Environmental Svcs., Inc.	Client Project ID: Dublin Auto Wash	Date Sampled: 11/29/07
1710 Franklin Street, Ste. 200		Date Received: 11/29/07
Oakland, CA 94612	Client Contact: Bob Clark-Riddell	Date Extracted: 11/30/07
	Client P.O.:	Date Analyzed 11/30/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0711712

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-3A-2	A	1700,a	ND<20	23	15	2.6	10	6.7	97
002A	MW-3A-3	A	1500,a	ND<20	24	21	4.5	18	10	103

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air QC Matrix: Water WorkOrder: 0711712

EPA Method SW8021B/8015Cm **Extraction SW5030B** **BatchID: 32139** **Spiked Sample ID: 0711673-001A**

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)£	ND	60	108	89.9	18.3	99	107	8.07	70 - 130	30	70 - 130	30
MTBE	ND	10	84.4	85.6	1.39	92.7	83.5	10.4	70 - 130	30	70 - 130	30
Benzene	ND	10	88.8	84.7	4.75	90.3	87.7	2.86	70 - 130	30	70 - 130	30
Toluene	ND	10	93.3	88.8	4.94	105	103	1.25	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	98.2	92.8	5.57	105	103	1.15	70 - 130	30	70 - 130	30
Xylenes	ND	30	91.7	87.3	4.84	113	113	0	70 - 130	30	70 - 130	30
%SS:	100	10	108	105	2.22	97	95	2.73	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 32139 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0711712-001A	11/29/07 7:30 AM	11/30/07	11/30/07 4:51 AM				

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.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air QC Matrix: Water WorkOrder: 0711712

EPA Method SW8021B/8015Cm	Extraction SW5030B	BatchID: 32145	Spiked Sample ID: 0711694-001A

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)£	ND	60	99.9	103	2.84	96	97	1.10	70 - 130	30	70 - 130	30
MTBE	ND	10	86.7	96.5	10.7	89	90.5	1.64	70 - 130	30	70 - 130	30
Benzene	ND	10	91.8	92.6	0.888	90.3	91.9	1.78	70 - 130	30	70 - 130	30
Toluene	ND	10	96.2	98.3	2.19	95	96.4	1.45	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	104	105	1.49	103	104	1.64	70 - 130	30	70 - 130	30
Xylenes	ND	30	117	117	0	117	117	0	70 - 130	30	70 - 130	30
%SS:	93	10	92	93	1.63	91	92	0.124	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 32145 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0711712-002A	11/29/07 2:15 PM	11/30/07	11/30/07 2:53 AM				

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.

DHS ELAP Certification N° 1644

QA/QC Officer

McCampbell Analytical, Inc.
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Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: Dublin	Date Sampled: 11/24/07-11/30/07
		Date Received: 11/30/07
	Client Contact: Brian Busch	Date Reported: 12/06/07
	Client P.O.:	Date Completed: 12/06/07

WorkOrder: 0711768

December 06, 2007

Dear Brian:

Enclosed are:

1). the results of **3** analyzed samples from your **Dublin project,**

2). a QC report for the above samples

3). a copy of the chain of custody, and

4). a bill 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

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius, Lab Manager

PEO 071768

McCAMPBELL ANALYTICAL, INC.

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CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

EDF Required? Coelt (Normal) No Write On (DW) No

Report To: Brian Busch	**Bill To:** Pangea Environmental
Company: Pangea Environmental Services, Inc.	
1710 Franklin Street, Suite 200	
Oakland, CA 94612	**E-Mail:** bbusch @pangeaenv.com
Tele: (510) 836-3700	**Fax:** (510) 836-3709
Project #:	**Project Name:** Dublin Auto Wash
Project Location: 7240 Dublin Rd, Dublin	
Sampler Signature:	

SAMPLE ID (Field Point Name)	LOCATION	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	Soil	Air	Sludge	Other	METHOD PRESERVED ICE	HCL	HNO_3	Other	BTEX & TPH as Gas (602/8020 + 8015)/MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 601 / 8010 / 8021	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8081	EPA 608 / 8082 PCB's ONLY	EPA 8140 / 8141	EPA 8150 / 8151	EPA 524.2 / 624 / 8260	EPA 525 / 625 / 8270	PAH's / PNA's by EPA 625 / 8270 / 8310	CAM-17 Metals (6010 / 6020)	LUFT 5 Metals (6010 / 6020)	Lead (200.8 / 200.9 / 6010)	Other			Comments
															Analysis Request																				
MW-6A-3	influent	11/30/07	1145	1	bag			X						X	X																			report
MW-6A-2	↓	11/30/07	0730	1	bag			X						X	X																			results in
MW-6A-1	↓	11/29/07	1530	1	bag			X						X	X																			ppmv

Relinquished By:	**Date:** 11/30/07	**Time:** 1710	**Received By:**	
Relinquished By:	**Date:** 11/30/07	**Time:** 1835	**Received By:**	
Relinquished By:	**Date:**	**Time:**	**Received By:**	

ICE/t° N/A
GOOD CONDITION
HEAD SPACE ABSENT
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS
PRESERVED IN LAB

PRESERVATION	VOAS	O&G	METALS pH<2	OTHER

COMMENTS:

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0711768 **ClientID: PEO**

☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty

Report to:
Brian Busch
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612

Email: bbusch@pangeaenv.com
TEL: (510) 836-3700 FAX: (510) 836-3709
ProjectNo: Dublin
PO:

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

Requested TAT: 5 days

Date Received: **11/30/2007**
Date Printed: **11/30/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0711768-001	MW-6A-3	Air	11/30/07 1:45:00	☐	A	A										
0711768-002	MW-6A-2	Air	11/30/07 7:30:00	☐	A											
0711768-003	MW-6A-1	Air	11/24/07 3:30:00	☐	A											

Test Legend:

1	G-MBTEX_AIR	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

The following SampIDs: 001A, 002A, 003A contain testgroup.

Prepared by: Nickole White

Comments:

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

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Pangea Environmental Svcs., Inc.	Client Project ID: Dublin	Date Sampled: 11/24/07-11/30/07
1710 Franklin Street, Ste. 200		Date Received: 11/30/07
Oakland, CA 94612	Client Contact: Brian Busch	Date Extracted: 11/30/07-12/01/07
	Client P.O.:	Date Analyzed 11/30/07-12/01/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0711768

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-6A-3	A	5300,a	ND<50	41	43	17	65	20	108
002A	MW-6A-2	A	7700,a	ND<25	55	57	16	59	10	92
003A	MW-6A-1	A	1300,a	ND<120	15	13	4.6	20	4	110

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples are reported in µg/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 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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Telephone: 877-252-9262 Fax: 925-252-9269

Pangea Environmental Svcs., Inc.	Client Project ID: Dublin	Date Sampled: 11/24/07
1710 Franklin Street, Ste. 200		Date Received: 11/30/07
Oakland, CA 94612	Client Contact: Brian Busch	Date Extracted: 11/30/07-12/01/07
	Client P.O.:	Date Analyzed 11/30/07-12/01/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0711768

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-6A-3	A	1500,a	ND<14	13	11	3.8	15	20	108
002A	MW-6A-2	A	2100,a	ND<6.8	17	15	3.6	14	10	92
003A	MW-6A-1	A	360,a	ND<35	4.6	3.4	1.1	4.6	4	110

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air QC Matrix: Water WorkOrder: 0711768

EPA Method SW8021B/8015Cm	Extraction SW5030B				BatchID: 32218			Spiked Sample ID: 0711765-001A			
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)£	ND	60	75.5	91.4	19.0	78.9	76.8	2.69	70 - 130	30	70 - 130	30
MTBE	ND	10	80.4	81.7	1.63	82	84.6	3.18	70 - 130	30	70 - 130	30
Benzene	ND	10	83.1	85.3	2.65	86	86.7	0.814	70 - 130	30	70 - 130	30
Toluene	ND	10	87	90.3	3.64	89.5	90.8	1.37	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	91	94.4	3.67	93.9	95.3	1.41	70 - 130	30	70 - 130	30
Xylenes	ND	30	85.3	86.3	1.17	86.7	87	0.384	70 - 130	30	70 - 130	30
%SS:	90	10	105	104	0.611	104	104	0	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 32218 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0711768-001A	11/30/07 1:45 AM	11/30/07	11/30/07 11:50 PM	0711768-002A	11/30/07 7:30 AM	12/01/07	12/01/07 12:21 AM
0711768-003A	11/24/07 3:30 PM	12/01/07	12/01/07 1:22 AM				

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.

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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 Auto Wash	Date Sampled: 11/30/07
		Date Received: 12/03/07
	Client Contact: Brian Busch	Date Reported: 12/10/07
	Client P.O.:	Date Completed: 12/10/07

WorkOrder: 0712016

December 10, 2007

Dear Brian:

Enclosed within are:

1) The results of the **1** analyzed sample from your project: **#1001.001; Dublin Auto Wash,**
2) A QC report for the above sample,
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

McCampbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius
Laboratory Manager
McCampbell Analytical, Inc.

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Road
Pittsburg, CA 94565-1701
Website: www.mccampbell.com Email: main@mccampbell.com
Telephone: (877) 252-9262 Fax: (925) 252-9269

PEO 07/2016

CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

GeoTracker EDF ☒ YES PDF ☐ Excel ☐ Write On (DW) ☐

☐ Check if sample is effluent and "J" flag is required

Report To: Brian Busch Bill To: Paysa Environtal

Company: Paysa Environtal

1710 Franklin St. Ste 200

Oak, CA 94612 E-Mail:

Tele: (510) 836-3700 Fax: (510) 836-3709

Project #: 1001.001 Project Name: Dublin Auto Wash

Project Location: Dublin, CA; 7240 Dublin Rd

Sampler Signature:

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING Date	SAMPLING Time	# Containers	Type Containers	MATRIX Water	MATRIX Soil	MATRIX Air	MATRIX Sludge	MATRIX Other	METHOD PRESERVED ICE	METHOD PRESERVED HCL	METHOD PRESERVED HNO_3	METHOD PRESERVED Other
7AA-1	Sys inlet	11/30/16	1800	1	Tedlar Bag			X						

Analysis Request

BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	TPH as Diesel (8015)	Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	Total Petroleum Hydrocarbons (418.1)	EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	MTBE / BTEX ONLY (EPA 602 / 8021)	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	EPA 507 / 8141 (NP Pesticides)	EPA 515 / 8151 (Acidic Cl Herbicides)	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	LUFT 5 Metals (200.7 / 200.8 / 6010 / 6020)	Lead (200.7 / 200.8 / 6010 / 6020)	Other	Other	Other	Other	Comments
X																				Filter Samples for Metals analysis: Yes / No

Relinquished By:	Date:	Time:	Received By:
	11/30	1730	
Relinquished By:	Date:	Time:	Received By:
	11/30	1730	
Relinquished By:	Date:	Time:	Received By:

ICE/t°_____
GOOD CONDITION_____
HEAD SPACE ABSENT_____
DECHLORINATED IN LAB_____
APPROPRIATE CONTAINERS_____
PRESERVED IN LAB_____

COMMENTS: tpg/btex/mtbe
(1) report results in ppmv

VOAS O&G METALS OTHER
PRESERVATION pH<2

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0712016 **ClientID: PEO**

☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty

Report to:
Brian Busch
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612

Email: bbusch@pangeaenv.com
TEL: (510) 836-3700 FAX: (510) 836-3709
ProjectNo: #1001.001; Dublin Auto Wash
PO:

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

Requested TAT: 5 days

Date Received: **12/03/2007**
Date Printed: **12/03/2007**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
0712016-001	7AA-1	Air	11/30/07	☐	A											

Test Legend:

1	G-MBTEX_AIR	2		3		4		5	
6		7		8		9		10	
11		12							

The following SampID: 001A contains testgroup.

Prepared by: Nickole White

Comments:

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

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Pangea Environmental Svcs., Inc.	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 11/30/07
1710 Franklin Street, Ste. 200		Date Received: 12/03/07
Oakland, CA 94612	Client Contact: Brian Busch	Date Extracted: 12/03/07
	Client P.O.:	Date Analyzed 12/03/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0712016

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	7AA-1	A	5400,a	240	82	110	79	320	10	115

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	25	2.5	0.25	0.25	0.25	0.25	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

* water and vapor samples are reported in µg/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 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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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 Auto Wash	Date Sampled: 11/30/07
		Date Received: 12/03/07
	Client Contact: Brian Busch	Date Extracted: 12/03/07
	Client P.O.:	Date Analyzed 12/03/07

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

Extraction method SW5030B Analytical methods SW8021B/8015Cm Work Order: 0712016

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	7AA-1	A	1500,a	67	25	29	18	72	10	115

ppm (mg/L) to ppmv (ul/L) conversion for TPH(g) assumes the molecular weight of gasoline to be equal to that of hexane.

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	A	7.0	0.68	0.077	0.065	0.057	0.057	1	uL/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 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 (stoddard solvent / mineral spirit?); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) reporting limit raised due to high organic / MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Air QC Matrix: Water WorkOrder 0712016

EPA Method SW8021B/8015Cm Extraction SW5030B BatchID: 32227 Spiked Sample ID: 0712008-001A

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)£	ND	60	80.6	77.5	3.97	85	78.4	8.06	70 - 130	30	70 - 130	30
MTBE	ND	10	79.4	83.5	5.06	86.2	74.2	15.0	70 - 130	30	70 - 130	30
Benzene	ND	10	84.1	88.5	5.10	86.3	85.7	0.743	70 - 130	30	70 - 130	30
Toluene	ND	10	89.1	95.5	6.92	92.4	93.1	0.756	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	93.5	101	7.67	97.9	95.1	2.92	70 - 130	30	70 - 130	30
Xylenes	ND	30	90.3	96	6.08	91.7	90	1.83	70 - 130	30	70 - 130	30
%SS:	115	10	101	103	1.59	101	108	6.64	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:

NONE

BATCH 32227 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0712016-001A	11/30/07	12/03/07	12/03/07 11:50 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.

APPENDIX B

Pangea's Standard Operating Procedures for Monitoring Wells

STANDARD FIELD PROCEDURES FOR MONITORING WELLS

This document describes Pangea Environmental Services' standard field methods for drilling, installing, developing and sampling groundwater monitoring wells. These procedures are designed to comply with Federal, State and local regulatory guidelines. Specific field procedures are summarized below.

Well Construction and Surveying

Groundwater monitoring wells are installed in soil borings to monitor groundwater quality and determine the groundwater elevation, flow direction and gradient. Well depths and screen lengths are based on groundwater depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 10 to 15 feet below and 5 feet above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three feet thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two feet thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of Portland type I, II cement.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security. The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

Well Development

Wells are generally developed using a combination of groundwater surging and extraction. Surging agitates the groundwater and dislodges fine sediments from the sand pack. Wells may be surged prior to installation of the well seal to ensure that there are no voids in the sand pack. Development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly. After about ten minutes of surging, groundwater is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of groundwater are extracted and the sediment volume in the groundwater is negligible.

All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Groundwater Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of groundwater are purged prior to sampling. Purging continues until groundwater pH, conductivity, and temperature have stabilized. Groundwater samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labeled, placed in protective foam sleeves, stored on crushed ice at or below 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.