FILE

August 11, 2006

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

Re: **Site Investigation Report**
Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California
ACHCSA Case No. 304

Dear Mr. Chan:

On behalf of Mr. Hooshang Hadjian, Pangea Environmental Services, Inc. has prepared this *Site Investigation Report* for the subject site. This report describes a soil boring adjacent a utility identified as a possible preferential pathway for contaminant migration, a soil boring downgradient of the source, the abandonment of four monitoring wells, and the installation of fourteen monitoring wells.

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: *Site Investigation Report*

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

SITE INVESTIGATION REPORT

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

August 11, 2006

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
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PROFESSIONAL GEOLOGIST
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Written by:

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Principal Engineer

August 11, 2006

SITE INVESTIGATION REPORT
Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

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1.0 INTRODUCTION

On behalf of Mr. Hooshang Hadjian, Pangea Environmental Services, Inc. (Pangea) prepared this *Site Investigation Report* (report) for the subject site. The approved scope of work was outlined in Pangea's *Soil and Water Investigation Work Plan* (Work Plan) dated February 20, 2005, and Work Plan *Addendum* dated January 20, 2006. This work was directed and approved by Alameda County Environmental Health (ACEH) in a letter dated February 9, 2006 and in email/phone correspondence on March 29, 2006 (Appendix A). In addition, some modifications to this scope were made based on field observations, and were approved by ACEH in telephone conversations during the fieldwork. The final approved scope consisted of the following:

- Installation of soil borings SB-1 and SB-1A to evaluate whether a sanitary sewer line adjacent to the site had served as a preferential pathway for contaminant migration,
- Installation of soil boring SB-2 to evaluate contaminant migration downgradient (southwest) of the source.
- Destruction of monitoring wells MW-3, EA-1, EA-2 and EA-3 to eliminate potential dilution of groundwater samples and vertical contaminant migration due to the wells being screened across multiple water-bearing zones.
- Installation of fourteen monitoring wells (MW-3A, MW-6A, MW-6B, MW-6C, MW7AA, MW-7A, MW-7B, MW-7C, MW-8A, MW-9A, MW-9C, MW-10A, MW-10C and MW-11C) to better evaluate the distribution and extent of contamination in the identified water-bearing zones.

2.0 SITE BACKGROUND

2.1 Site Description

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 331 feet above mean sea level (msl). The surface slopes gently to the south towards a roughly 10 foot deep southward-flowing flood control channel in the central and western portions of the site, and slopes gently to the southeast in 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 residential land use further from the site. The southwest boundary of the site is formed by the access road along the flood control channel. Bordering the channel to the southwest is the Interstate 680 freeway.

2.2 Summary of Previous Environmental Work

The first environmental investigation at the site began in early 1988 when Chevron Product Company (Chevron) 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.

In October 1988, HEW Drilling Company installed three groundwater monitoring wells, EA-1 through EA-3. During the installation of the groundwater monitoring wells, groundwater was encountered at depths ranging between 15 to 23 feet below ground surface (bgs). The depths of the groundwater monitoring wells were 35 to 40 feet bgs. Following the installation of the groundwater monitoring wells, 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. During this activity, soil and groundwater samples were collected and analyzed for petroleum hydrocarbons. Following the USTs' removal and upgrade, a total of 180 cubic yards of soil was removed from the site and sent to Class I and Class II landfill facilities. During the UST replacement project three horizontal 'wells' consisting of slotted PVC piping were installed between 3 to 4 feet bgs in piping trenches and around the USTs. Well #1 was installed at the northwest end of the pump islands, well #2 along the east side of the pump islands, and well #3 on the north, east and south perimeter of the UST field.

In March 1989, Western Geologic Resources, Inc. (WGR), drilled and sampled five soil boreholes in the area of the former pump island. In addition, nine soil samples were collected from the vicinity of the former product-line trenches at depths ranging from 2.5 feet to 10.5 feet bgs. Laboratory analyses results indicated total petroleum hydrocarbon (TPH) concentrations from non-detectable to 750 milligram per kilograms (mg/kg). In May 1990, three vapor extraction wells were apparently installed to monitor radius of influence during extraction from the horizontal wells. Soil vapor samples contained a maximum of 29,000 parts per million (ppm) benzene at the beginning of the test and 5,300 parts per billion (ppb) after 2,049 minutes into the test. A soil vapor extraction (SVE) system was operated between March 1992 and April 1996 by Geraghty & Miller. Reportedly, during this period a total of over 15,000 pounds of hydrocarbons were removed from the subsurface (although the removal calculations were based on the oxidizer's chart recorder paper rather than measured vapor concentrations and extraction flow rates).

In September 1994, Groundwater Technology, Inc. (GTI), installed three groundwater monitoring wells, MW-1 through MW-3. The total depths of these wells ranged between 21.5 to 26.5 feet bgs. In March 1995, elevated levels (up to 64,000 microgram per liter (ug/L)) of MTBE were reported for the first time in MW-3.

In February 1996, Bay Area Exploration Services, Inc., installed two groundwater monitoring wells (MW-4 and MW-5) each with a depth of 21.5 feet bgs. During the well installation, soil and groundwater samples were collected and analyzed for petroleum hydrocarbons. No petroleum hydrocarbons were detected in the soil or groundwater samples collected from these wells. Apparently, these wells are upgradient wells and have not been impacted by the petroleum hydrocarbons. In December 1996, Weiss Associates conducted a Risk Based Corrective Action (RBCA) and concluded that the site is a "Low Risk" soil and groundwater petroleum release site and recommended the SVE system be shut down. Based on Weiss Associates' recommendation, the SVE system was shut down, although the ACEH required quarterly groundwater monitoring and free product removal reports.

In February 1997, a leak in a stainless steel flex hose was discovered and reported to the ACEH. The leak location was immediately south of the northwesternmost 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, Parker Environmental Services collected soil samples via hand augering at locations B-1 through B-4. About 31 cubic yards of soil was 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 showed free product 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, when the depth to groundwater in well MW-3 was 12.92 feet in December 1998. Due to the occurrence of a new release at the site, the Chevron Product Company believed that they should no longer be the responsible party for further site characterization, removal and monitoring of contaminants at the site. Later on, Chevron negotiated with Mr. Hooshang Hadjian, and he subsequently assumed the responsibility for the new release at the site.

Gettler-Ryan, Inc. (GRI) monitored the eight existing groundwater monitoring wells at the site until the first quarter of 2003. In 2003, SOMA performed groundwater monitoring at the site. SOMA reported that groundwater in the vicinity of offsite wells MW-4 and MW-5 apparently flowed southeastwards toward the site, while groundwater in the eastern portion of the site groundwater apparently flowed northeastwards. sitesiteThe groundwater flow direction may be affected by the 18” diameter vitrified clay pipe (VCP) sewer line running beneath the southern portion of Dublin Boulevard immediately north of the site. In a letter dated October 30, 1995 to the County, GRI stated 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 feet bgs. The contaminant plume appeared to be concentrated in the vicinity of well MW-3.

In 2003, SOMA 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 north-central portion of the site, and concluded that the sitefill material around the sewer line immediately north of the site could be acting as a preferential pathway for contaminant migration to the east in the direction of sewer flow. SOMA also found contamination in deeper groundwater and 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 insufficient water was present in the potential water-bearing zones so no groundwater samples were obtained by SOMA at these locations. Since wells EA-1, EA-2, EA-3, and MW-1 are screened across the multiple water-bearing zones, 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.

Pangea has performed quarterly groundwater monitoring and sampling at the site since the first quarter of 2005. Pangea found that the inferred groundwater flow direction and dissolved contaminant concentrations were generally consistent with historical trends. During first, second and fourth quarter 2005 and first quarter 2006 groundwater monitoring, free product was again observed in well MW-3.

In February 2005, Pangea prepared a *Soil and Water Investigation Workplan*. The workplan 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 identified water supply well was 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 the installation of 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 an interim remedial action using vacuum extraction to remove groundwater and free product from selected site wells. During subsequent correspondence the ACEH requested a soil boring (SB-2) downgradient of the 1997 release. The current report discusses the findings of the characterization and remedial activities presented in the workplan.

3.0 SITE INVESTIGATION ACTIVITIES

Pangea's site investigation activities are described below.

3.1 Pre-Drilling Activities

A comprehensive site Safety Plan was prepared to protect site workers and the plan was kept onsite during all field activities. Boring and well installation permits were obtained from the Alameda County Flood Control and Water Conservation District Zone 7 Water Agency (Zone 7). An encroachment permit was obtained from the City of Dublin. Copies of the permits are presented in Appendix B. The proposed drilling locations were marked and Underground Service Alert was notified at least 72 hours before the proposed field activities. Pangea cleared the boring locations using a private line locator. Prior to drilling, concrete coring was performed for soil boring SB-2, for installation of monitoring wells MW-6B, MW-6C, MW-7AA, MW-7A, MW-7B, MW-7C, MW-8A and MW-9A, and for abandonment of wells EA-1 and EA-3.

3.2 Drilling Procedures

All soil borings and monitoring wells were installed in accordance with the procedures described in Pangea's *Soil and Water Investigation Workplan*, dated February 20, 2005. All boring and well locations were hand-augered to 5 ft bgs to help avoid subsurface utilities. Pangea retained Gregg Drilling & Testing, Inc. (Gregg) of Martinez, California, to drill the borings and install the monitoring wells. The drilling was observed in the field by Pangea scientist Morgan Gillies and supervised by Bob Clark-Riddell, a California Registered Civil Professional Engineer (P.E.). Soil characteristics such as color, texture, and relative water contents were noted in the field using the USCS classification system and entered onto a field boring log. Field screening of soil samples for potential hydrocarbons and volatile organic compounds included visual and olfactory observations and photo-ionization detector (PID) readings. Undisturbed soil samples were collected for laboratory analysis in acetate or brass liners, and capped with Teflon tape and plastic end caps. All samples were shipped under chain of custody to McCampbell Analytical, Inc., a California-certified laboratory.

3.3 Soil Boring Installation

Drilling Activities

On May 18, 2006, Pangea drilled two soil borings (SB-1 and SB-1A) to help evaluate subsurface conditions north of the site and the potential for contaminant migration along the 18-inch sanitary sewer line in Dublin Boulevard. Soil boring SB-1 was advanced directly over the sanitary sewer line where shown on Figure 2. Soil boring 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.

Boring SB-1 was hand augered to 5 ft bgs to ensure that no unmarked utilities would be damaged during drilling activities. After hand augering, Gregg drilled the boring using direct-push drilling methods to collect continuously cored soil samples. Soil and water samples were collected from each boring in accordance with Pangea's Standard Operating Procedures for Soil Borings (Appendix C). Due to the presence of a sewerline, the boring was advanced to approximately 3 feet above the estimated top of the sewer. Since hand-augering was not feasible, the boring tubes were advanced slowly without use of the hammer to ensure that the sewerline would not be damaged, until resistance was felt. After reaching 14 ft bgs in boring SB-1, the driller noted increased resistance (interpreted to be the sewerline) and stopped. Due to the boring sidewalls collapsing inward Pangea was unable to collect a water sample at this location. Pangea decided to advance a step out boring (SB-1A) approximately three feet south of boring SB-1. Boring SB-1A was advanced to approximately 16 ft bgs and temporary casing was installed and left in the open borehole. Approximately 1 hour after drilling, groundwater was measured at 11.2 ft bgs in boring SB-1A and a groundwater sample was collected using a disposable bailer.

Boring SB-2 was drilled to an approximate total depth of 16 ft bgs, but no water was observed in the temporary casing after 4.5 hours. The boring was advanced another 4 ft to 20 ft bgs and temporary casing was installed in the borehole, no water was observed after 1.5 hours.

During drilling of borings SB-1, SB-1A and SB-2, soil samples were collected continuously to the total depth of 14, 16 and 20 ft bgs, respectively. Soil from boring SB-1 consisted primarily of well graded sandy gravel to the total depth of approximately 14 ft bgs, suggesting that the boring was advanced into the sanitary sewer trench backfill. Soil from boring SB-1A consisted of well-graded sandy gravel (presumably trench fill) above 6 ft bgs, underlain by clay and minor clayey sand (apparently native soil) similar to soils logged in most site monitoring wells. A hydrocarbon odor was observed in soil sampled at 14 ft bgs (adjacent to the sanitary sewer line) in boring SB-1. Boring logs for SB-1, SB-1A and SB-2 are included in Appendix D.

An optional downgradient step-out boring (SB-3) was indicated in the workplan, but was not installed due to traffic control issues.

Soil Boring Sampling and Analysis

Soil samples were collected at depths of 7, 11 and 14 ft bgs from boring SB-1, depths of 5 and 15 ft bgs from boring SB-1A, and depths of 5, 10, 15 and 20 ft bgs from boring SB-2. Select soil samples were analyzed for TPHg by modified EPA Method 8015C, and benzene, toluene, ethylbenzene, and toluene (BTEX) and methyl tert-butyl ether (MTBE) by EPA method 8021B. If detected, MTBE results were confirmed, and four (4) oxygenates, tert-amyl methyl ether (TAME), t-butyl alcohol (TBA), diisopropyl ether (DIPE), ethyl tert-butyl ether (ETBE) were analyzed using EPA Method 8260B. No contaminants were detected in any of the sampled soil from borings SB-1 and SB-1A, although a PID reading of 274 ppm and a hydrocarbon odor were

observed in soil from 14 ft bgs in boring SB-1. Pangea believes that the soil type (primarily gravel and coarse sand) at this location resulted in the laboratory reporting non-detect levels of contaminants. TPHg was detected in samples from boring SB-2 at 790

mg/kg and 310 mg/kg in soil from 10 ft and 15 ft bgs, respectively, while benzene was detected at a concentration of 2.5 mg/kg in soil from 15 ft bgs. MTBE was not detected in soil samples from boring SB-2, but the detection limits were elevated, as a result of sample dilution, to 10 mg/kg and 5 mg/kg for soil from 10 and 15 ft bgs, respectively.

A grab groundwater sample was collected from boring SB-1A and submitted for laboratory analysis. TPHg, benzene and MTBE were detected in the sample at concentrations of 170 µg/L, 1.5 µg/L and 570 µg/L, respectively. Pangea did not advance the optional soil boring SB-3 presented in the Work Plan due to traffic control considerations and the proximity to boring SB-1 (the proposed location of SB-3 was only approximately 40 ft away). Soil and groundwater analytical results are summarized on Table 1 and Table 2. The laboratory analytical report is included in Appendix E.

3.4 Monitoring Well Abandonment and Installation

On March 27 through March 31, April 3, and May 17, 2006, Pangea installed fourteen monitoring wells (MW-3A, MW-6A, MW-6B, MW-6C, 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. On March 29 and 31, April 4 and May 18, 2006, 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.

Well Drilling Activities

Monitoring wells MW-3, EA-2 and EA-3 were abandoned by overdrilling with 10-inch hollow-stem augers and were then tremmie-grouted to the surface. Pangea had planned on using the drilled out EA-1 borehole to install new well MW-7C, but after removing the well box, a subsurface utility conduit was identified adjacent to EA-1. After consulting Wyman Hong of Zone 7, well EA-1 was pressure grouted and a nearby location was concrete cored for well MW-7C. Monitoring well MW-9C was installed in the borehole for well EA-3 after the casing was removed and all well construction materials had been drilled out. Monitoring wells MW-3A, MW-6C and MW-8A were continuously cored using direct push drilling methods. After reaching the total depth, each boring was reamed using the appropriate sized hollow-stem auger to facilitate the installation of the well. Monitoring wells MW-6A, MW-6B, MW-7AA, MW-7A, MW-7B, MW-7C, MW-9A, MW-10A, MW-10C and MW-11C were drilled using the appropriately sized hollow-stem auger, and soil was sampled using a California-modified split spoon sampler.

Soil Sampling During Well Installation

During drilling, soil samples were collected continuously for select wells to the total depth of the boring. Soil consisted primarily of black, brown and grey clay to approximately 12 to 17 ft bgs, underlain by clay with sand, sandy clay and clayey sand in thin layers and stringers. The depth and extent of clayey sand stringers amongst the fine-grained soils varied at each location, but were generally more prevalent between 25 and 30 ft bgs and again between 33 and 45 ft bgs. The observed soil type was similar to prior soil logging at the site. Boring logs and well construction diagrams for monitoring wells are included in Appendix D.

Select soil samples were analyzed for TPHg by modified EPA Method 8015C, and benzene, toluene, ethylbenzene, and toluene (BTEX) and methyl tert-butyl ether (MTBE) by EPA method 8021B. If detected, MTBE results were confirmed, and four (4) oxygenates, tert-amyl methyl ether (TAME), t-butyl alcohol (TBA), diisopropyl ether (DIPE), ethyl tert-butyl ether (ETBE) were analyzed using EPA Method 8260B. Soil samples collected approximately every five (5) feet from the vadose zone were submitted for analysis

Soil analytical results are summarized on Table 1. The laboratory analytical report is included in Appendix E. The highest concentrations of TPHg (1,800 mg/kg), benzene (7.8 mg/kg) and MTBE (13 mg/kg) in soil were detected in the boring for well MW-7B at a depth of 11 ft bgs. In general, the highest detected concentration of petroleum hydrocarbons in soil was at 10 to 11 ft bgs, except well MW-6C where the detected concentrations at 15 ft bgs were slightly higher than the 10 ft bgs soil sample. The laboratory noted that the petroleum hydrocarbons at 10 feet bgs in MW-6C were unmodified or weakly modified, whereas those sampled at 15 feet bgs in the same boring appeared to be aged.

Well Construction

The borings were converted to monitoring wells, which were constructed of either 2- or 4-inch diameter, 0.020-inch slotted and blank PVC casing. To assess contamination in the shallow clay near the source zone and at the piezometric surface, monitoring well MW-7AA was screened from approximately 9 to 14 ft bgs, above the previously identified shallow water-bearing zone. Monitoring wells MW-3A, MW-6A, MW-7A, MW-8A, MW-9A and MW-10A were screened in the shallow water-bearing zone composed of clayey sand/sandy clay to provide better assessment of contamination in this zone. Monitoring wells MW-6A, MW-7A, MW-8A, MW-9A and MW-10A were screened from approximately 15 to 20 ft bgs, while MW-3A was screened from approximately 10 to 17 ft bgs; well MW-3A was screened shallower than other A zone wells to ensure that the SPH recently observed in abandoned well MW-3 from 10.8 to 12.3 ft bgs was intercepted by replacement well MW-3A. Monitoring wells MW-6B and MW-7B were screened from approximately 26 to 30 ft bgs in the intermediate water-bearing zone composed of clay, sandy clay and clayey sand to help evaluate contamination in this zone. Monitoring wells MW-6C, MW-7C, MW-9C, MW-10C were screened from approximately 35 to 45 ft bgs in the deep water-bearing zone composed of sandy clay, clayey sand, sand

with silt and sand with clay to provide better assessment of contamination in this zone. The wells were protected by traffic-rated vaults and locking well caps. The soil characteristics and hydrogeology are detailed in the boring logs (Appendix D). Additional soil logging and sampling procedures are presented in Pangea's Standard Operating Procedures for soil borings in Appendix C.

Well Development & Sampling

Pangea retained Blaine Tech Services, Inc. (Blaine) of San Jose, California to develop the wells by surge block agitation and evacuation on May 22 to 25, 2006. Groundwater evacuation continued until turbidity was reduced to below 100 Nephelometric Turbidity Units (NTU), the well dewatered, or 25 case volumes had been removed. Monitoring wells MW-3A, MW-6A, MW-7AA, MW-7A, MW-8A, MW-9A, MW-9C, MW-10A and MW-10C dewatered during development, while wells MW-6B, MW-6C, MW-7C and MW-11C were purged until 25 case volumes of groundwater had been removed. Development was stopped for monitoring well MW-7B when the turbidity was reduced to 26 NTU after sixteen (16) case volumes of groundwater had been removed. The investigation-derived waste generated during drilling and development was temporarily stored onsite in a roll-off soil bin and a 2,400-gallon water tank pending analysis. Additional well installation and development procedures are presented in Pangea's Standard Operating Procedures for monitoring wells in Appendix G. The well development field data sheets are presented in Appendix H. Groundwater samples were collected for analysis during regular quarterly site monitoring on May 29 to June 1, 2006.

3.5 Flood Control Channel Assessment

To assess whether a connection existed between the flood control channel and site groundwater, the workplan indicated that a tile probe would be used to assess whether the channel was lined with concrete. However, upon detailed examination of the channel, it was determined that the channel is unlined except for areas adjacent to bridges crossing the channel, so use of a tile probe was determined to be unnecessary. Since the channel is approximately 10 feet deep (similar to the depth to groundwater) and generally contains flowing water, it is likely that the water in the channel interacts with groundwater.

4.0 SITE INVESTIGATION RESULTS

The following discussion of site geology, hydrogeology and sampling results is based on both prior investigations and data collected during the site assessment activities described below. The findings of the investigations are presented on shallow groundwater elevation maps showing MTBE and benzene concentration contours (Figures 3 and 4, respectively), a deep groundwater elevation map showing hydrocarbon concentration data (Figure 5), and on cross sections A-A' (Figures 6 and 7) and B-B' (Figures 8 and 9). Soil and groundwater analytical data are summarized on Table 2. The laboratory analytical reports for

samples collected during the investigation described above are included in Appendix E. The laboratory analytical reports for groundwater samples collected during routine quarterly monitoring are included in Pangea's *Groundwater Monitoring Report – Second Quarter 2006* for the site.

4.1 Geology and Hydrogeology

Subsurface soil encountered during drilling consisted primarily of clay, silty clay and clayey sand. Groundwater was encountered at a depth of approximately 12 to 19 feet below grade surface (bgs) during the well installation and soil boring activities, and subsequently rose to 8.8 to 12.9 ft bgs. During drilling of boring SB-2 (adjacent monitoring well EA-1) no groundwater was encountered to a depth of 20 ft. 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, as shown on the cross sections (Figures 6 through 9). However, it should be noted that vapor monitoring well VW-3 was open and exposed to infiltration of irrigation water at the time of measurement, so the perched groundwater shown for that well in Figures 6 and 7 are likely to be anomalously high. The shallowest 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 reaching 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).

4.2 Groundwater Flow Direction and Gradient

Depth-to-water measurements collected during monitoring events indicate that the groundwater flow direction has been fairly consistent. Groundwater in the shallow monitoring wells 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 3 and Figure 4). 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 for wells screened in the deeper water-bearing units appears to be northwestward (Figure 5). In addition, comparison of groundwater elevations measured in wells screened in upper and lower water-bearing units indicates the presence of a slight upwards gradient.

4.3 Hydrocarbon Distribution in Groundwater

As illustrated on Figure 3, the highest concentrations of TPHg and benzene are found in upper shallow 'AA' wells MW-3A and MW-7AA in the vicinity of the northernmost dispenser island immediately south of Dublin Boulevard. These wells contain several thousand µg/L TPHg and up to 1,000 µg/L benzene. Well MW-3A contained SPH in May, and the well that it replaced (MW-3) has contained SPH during quarterly monitoring events continuously from May 2003 until August 2005. Both of these wells are screened at very shallow depth across the piezometric surface. In addition, nearby vapor monitoring wells VW-2 and VW-3, which are screened from across the upper shallow 'AA' zone from approximately 3 to 9 feet bgs and contain perched groundwater, also contain elevated concentrations of TPHg and benzene. 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 SPH-bearing highly impacted clays is not significant. Notably, no petroleum hydrocarbons were detected in the deep 'C' zone wells (MW-6C, MW-7C, MW-9C, MW-10C and MW-11C) or the middle 'B' zone wells (MW-6B and MW-7B) except for low concentrations of benzene (0.79 µg/L) and xylenes (0.75 µg/L) in well MW-7B (Figures 7 and 9). No petroleum hydrocarbons were detected in shallow 'A' zone monitoring wells MW-8A and MW-9A, while low levels were detected in MW-7A (1.3 µg/L benzene, 0.79 µg/L ethylbenzene and 0.82 µg/L xylenes) and MW-10A (0.67 µg/L xylenes). These data

indicate that the lateral extent of petroleum-hydrocarbon-impacted groundwater is also limited in deeper groundwater.

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.

4.4 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 in MW-1, also located close to the sewer line (Figure 4). Both of these occurrences suggest that contaminated groundwater has migrated both westward and eastward through the backfill for the sanitary sewer line. The vertical extent of MTBE is also similar to the extent of benzene contamination (Figures 6 and 8), and has been delineated by the newly installed deep monitoring wells, with the exception of a relatively low concentration (11 µg/L) found in MW-11C. The lateral extent of upper shallow 'AA' and 'A' zone MTBE contamination is well defined, except to the west in the vicinity of MW-1 and in the area between the MW-7 group and MW-1 and MW-2. It is possible that the 1997 release near the dispensers migrated west toward MW-1.

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.

5.0 INTERIM REMEDIAL ACTION

Pangea conducted vacuum extraction from well MW-3A and MW-7AA using a vacuum truck on July 7, 2006. The purpose of the vacuum extraction was to provide cost-effective removal of source area material and provide additional information about subsurface conditions. The vacuum extraction targeted the apparent limited extent of contaminants and the presence of free product likely trapped within the upper shallow 'AA' water-bearing zone. Although SPH had previously been detected in well MW-3A, it was not present immediately prior to conducting vacuum extraction. The groundwater recharge rates for the wells were not sufficient to allow extraction of a large quantity of impacted groundwater. A total of approximately 50 gallons of groundwater (40 gallons from MW-3A and 10 gallons from MW-7AA) were extracted and transported

offsite by a licensed disposal contractor. The non-hazardous waste manifest for the extracted groundwater is included in Appendix I. Groundwater elevations were monitored in wells MW-6A, VW-2, MW-7A and MW-7AA during the vacuum truck extraction from well MW-3A. Maximum drawdowns were 0.26 ft in MW-6A, 0.15 ft in MW-7A, and 0.10 ft in MW-7AA, observed approximately 3 hours after extraction commenced. No drawdown was observed in VW-2. MW-7AA had substantially lower recovery rates than MW-3A, so extraction was curtailed after 25 minutes. Due to the low recovery rates, additional vacuum extraction events were not performed.

The effectiveness of vacuum extraction with a vacuum truck could potentially be enhanced by sealing the extraction well and performing dual-phase extraction. The well sealing would allow the application of a greater vacuum on the subsurface and would extract vapor-phase contaminants. This approach would require the use of vapor treatment (e.g., carbon canisters) and could be evaluated with other interim measures.

A groundwater sample was collected from MW-3A immediately following completion of vacuum extraction. The results are presented on Table 2 and indicate that contaminant concentrations were substantially lower than those detected in nearby wells (e.g. MW-3 and MW-6) during prior monitoring events. In addition, SPH that had been detected in MW-3A during the preceding quarterly monitoring event was no longer present.

6.0 CONCLUSIONS & RECOMMENDATIONS

Based on the above information, Pangea offers the following conclusions and recommendations:

- The vertical extent of hydrocarbon and fuel oxygenate contamination has been well defined by the newly installed site monitoring wells. The hydrocarbon and oxygenate contamination, including SPH, is primarily located in the shallower site subsurface described as the upper shallow 'AA' zone (wells VW-1 through VW-3, MW-7AA and MW3A), and to a lesser extent in the shallow 'A' zone (A zone). Little to no contamination was detected in the deeper B zone and C zone wells.

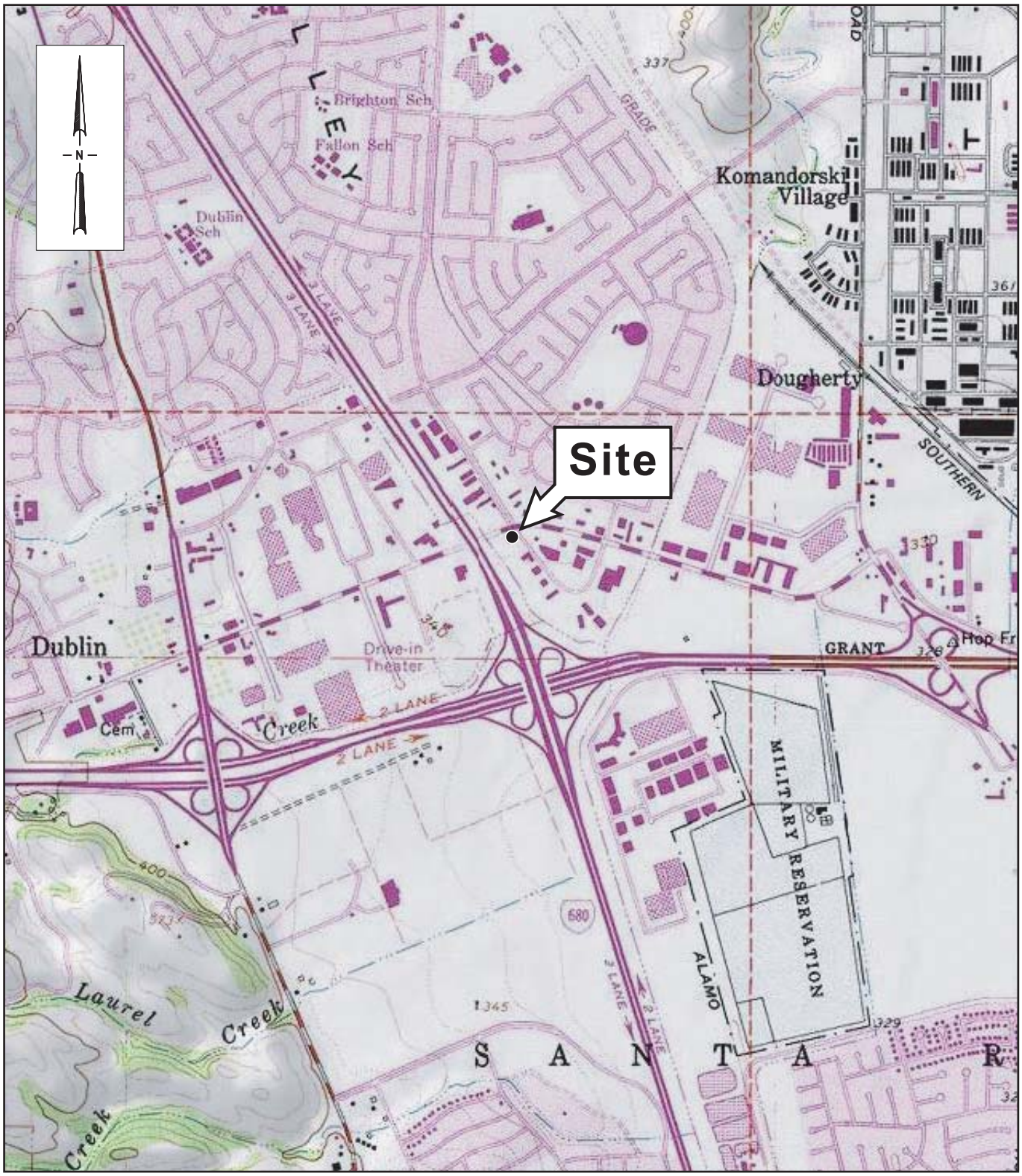
- The recent boring and well installation provided significant additional delineation of the lateral extent of contamination. The hydrocarbon and oxygenate contamination is primarily located in the vicinity of the northern dispenser island and immediately adjacent to the submerged sanitary sewer line. The lateral extent of contaminants appears sufficiently delineated in the deeper subsurface, but not in to the west of the dispenser islands in the upper shallow water-bearing zones where elevated contaminant concentrations have been detected. Pangea also recommends additional groundwater monitoring of wells VW-1, VW-2 and VW-3 to further evaluate very shallow subsurface conditions.

- Pangea recommends installing additional monitoring well locations west of the dispenser islands (Figure 10). Two wells would be installed, screened from approximately 7 to 14 ft bgs, and from 15 to 20 ft bgs to evaluate contamination in the upper shallow 'AA' zone and the shallow 'A' water-bearing zone.

- Given the fairly limited extent of the most elevated constituent concentrations, Pangea recommends conducting *short-term feasibility testing/source removal* on key site wells (MW-3A, MW-7AA, MW-7A, MW-6A). Testing/source removal would also be recommended for the proposed new site wells, if elevated concentrations are detected in those wells. Source removal and/or site remediation would improve site conditions and reduce the potential for subsurface contaminants to use the sanitary sewer line backfill as a preferential pathway. If concentrations were observed to decrease in wells nearby the sewer line, no further characterization efforts along the sewer would be recommended. The testing/removal would be conducted using a portable dual phase extraction (DPE) system. DPE is a common and cost-effective technique for remediating sites impacted with elevated concentrations of petroleum hydrocarbons and MTBE, especially for targeting upper shallow 'AA' zone and shallow 'A' zone saturated soil. DPE involves the simultaneous extraction of soil vapor and liquid (groundwater/free product mixture) from site wells using a large above-ground extraction blower. For the short-term testing/source removal, a portable generator and temporary water storage tanks would be used. The testing/source removal would be conducted for up to five days. Pangea would prepare a report presenting test/removal procedures, results, conclusions and recommendations. The report would comment on the benefit of additional short-term source removal (via DPE or vacuum truck extraction events) or additional groundwater monitoring before evaluating the need for additional source removal. If deemed appropriate after the testing/removal, Pangea would recommend preparation of a Corrective Action Plan (CAP), which would compare active remedial alternatives to monitored natural attenuation (MNA). Data from the feasibility test would assist with evaluation of potential remedial alternatives.

- The ultimate goal of any source removal/remediation is to reduce the subsurface impact to the point where residual concentration can naturally attenuate to water quality objective levels within a reasonable timeframe and regulatory case closure can be granted.

5/1/2005



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

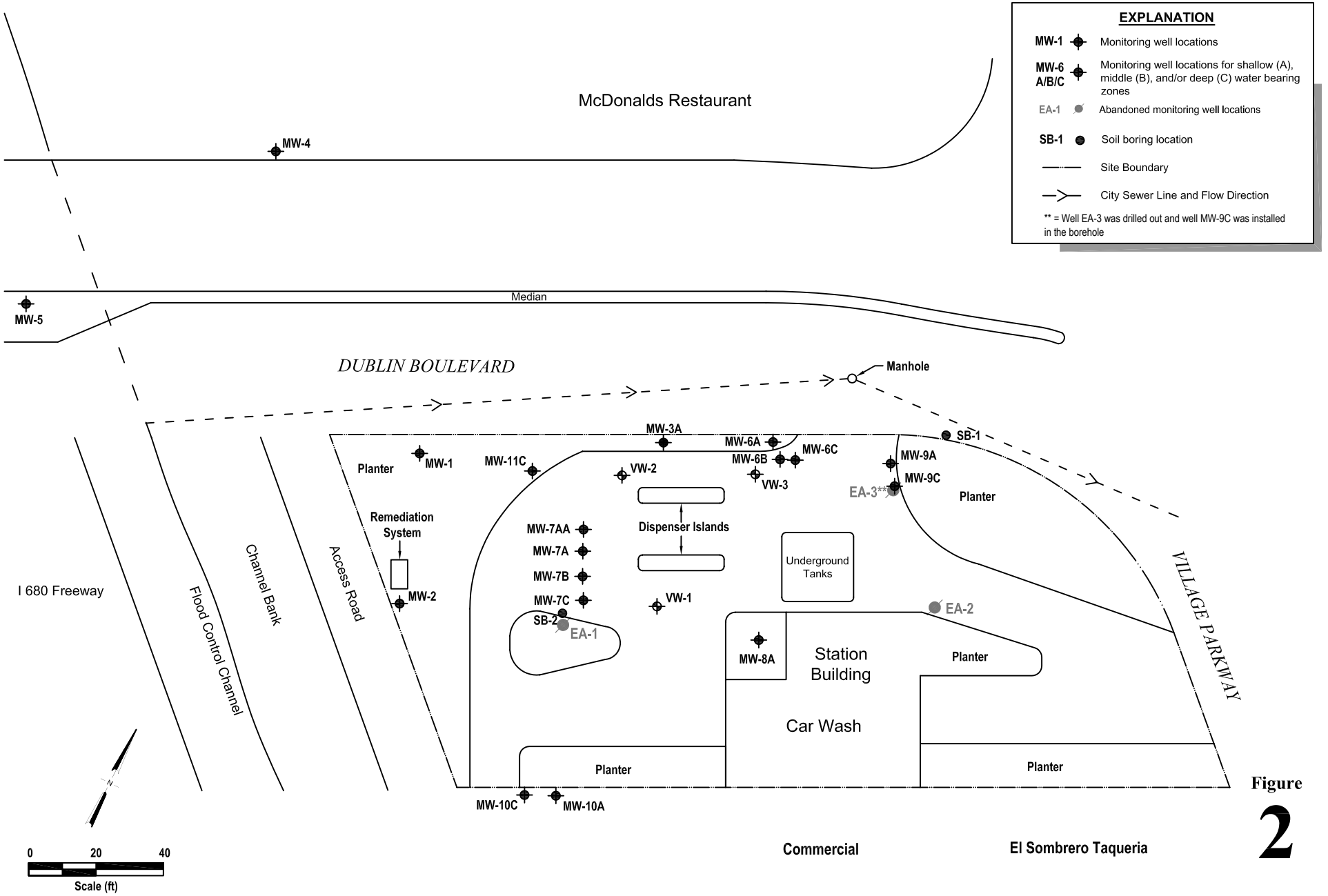


Figure 2

7/31/2006

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

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Monitoring Well and Soil Boring Locations

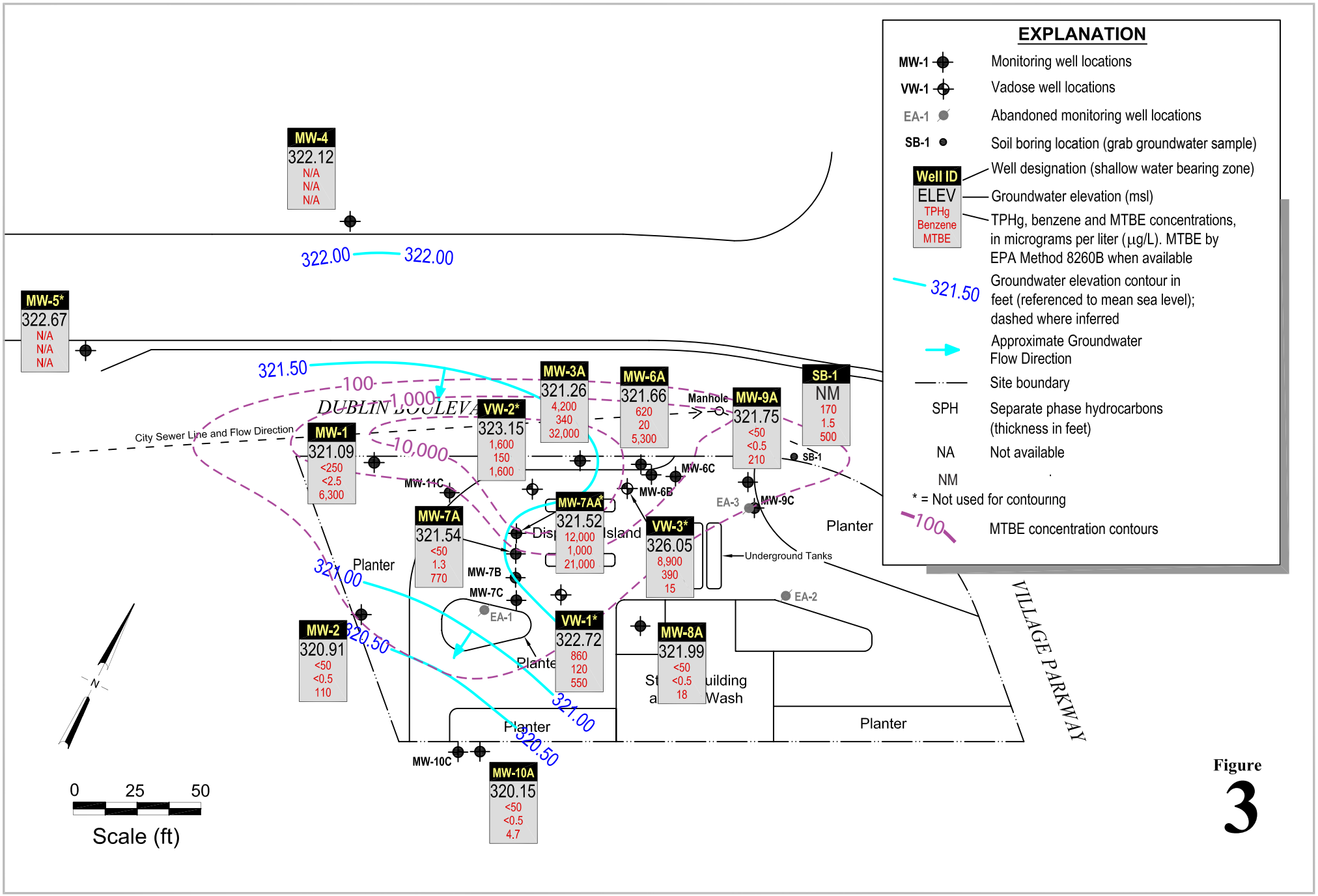

Figure 3

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7240 Dublin Boulevard
Dublin, California

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Groundwater Elevation and MTBE Concentration Map (Shallow)

July 7, 2006

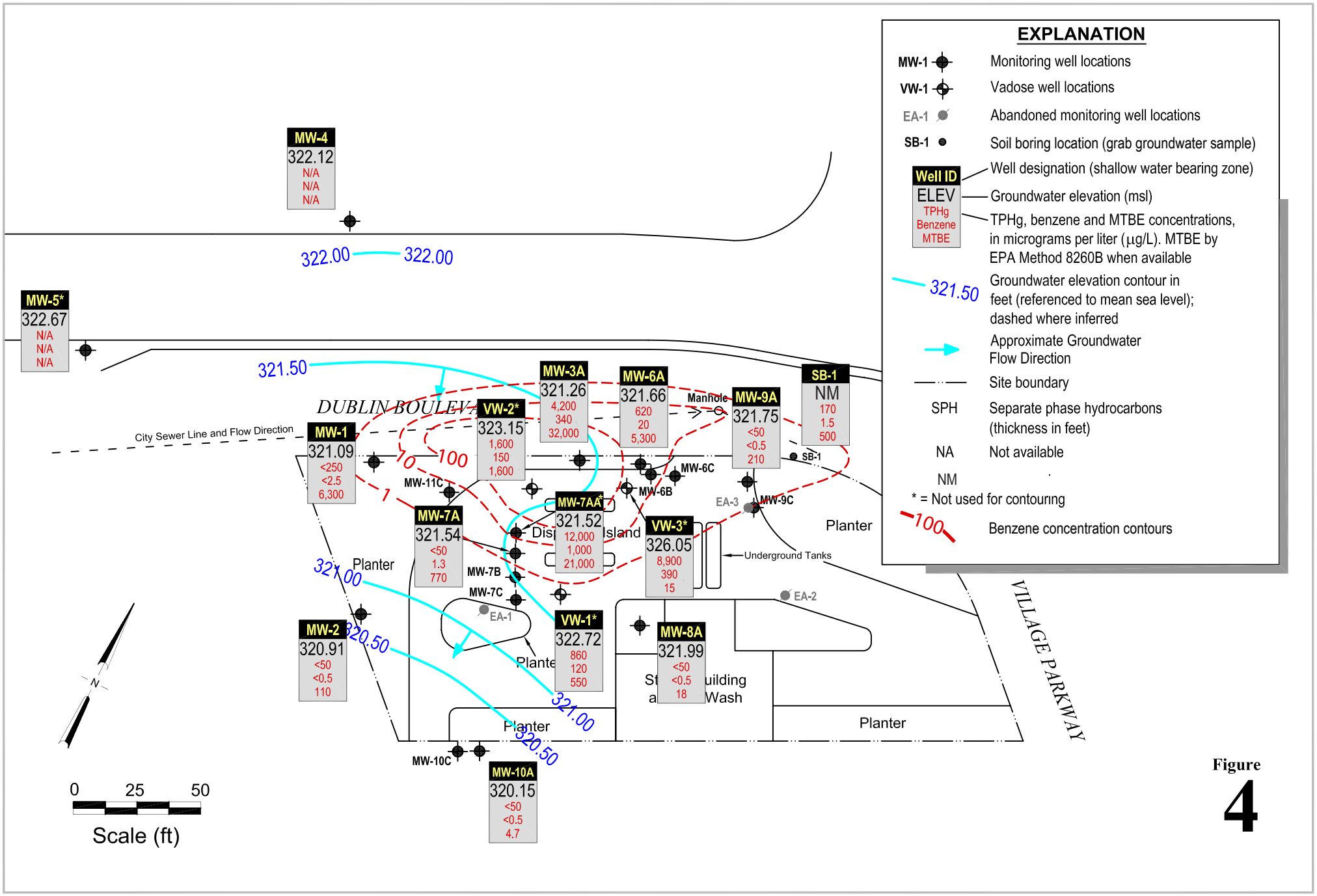


Figure 4

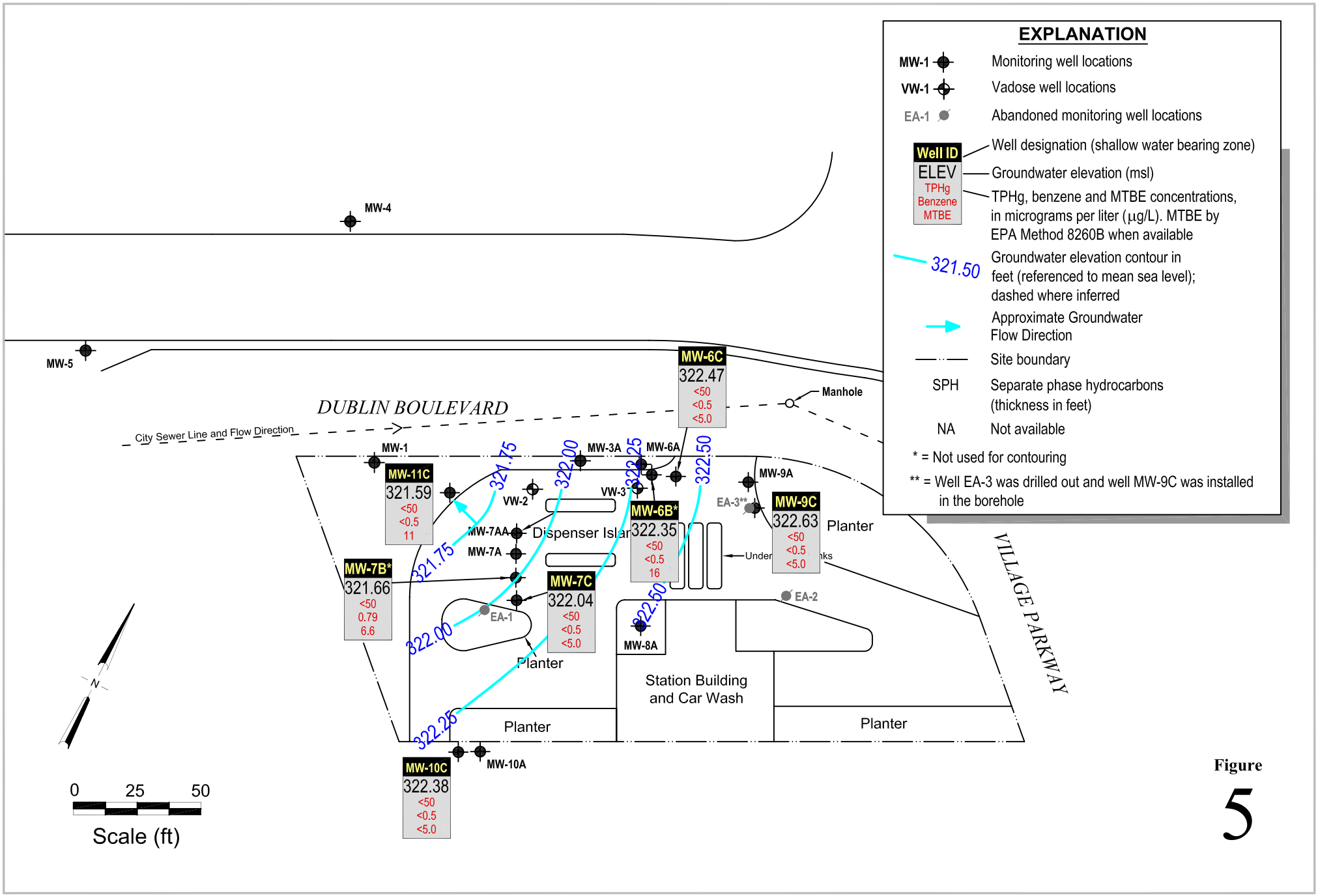
7/31/2006

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

PANGEA

Groundwater Elevation and Benzene Concentration Map (Shallow)

July 7, 2006



Figure

5

7/31/2006

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Dublin, California

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Groundwater Elevation and Hydrocarbon Concentration Map (Deep)
July 7, 2006

7/17/2006

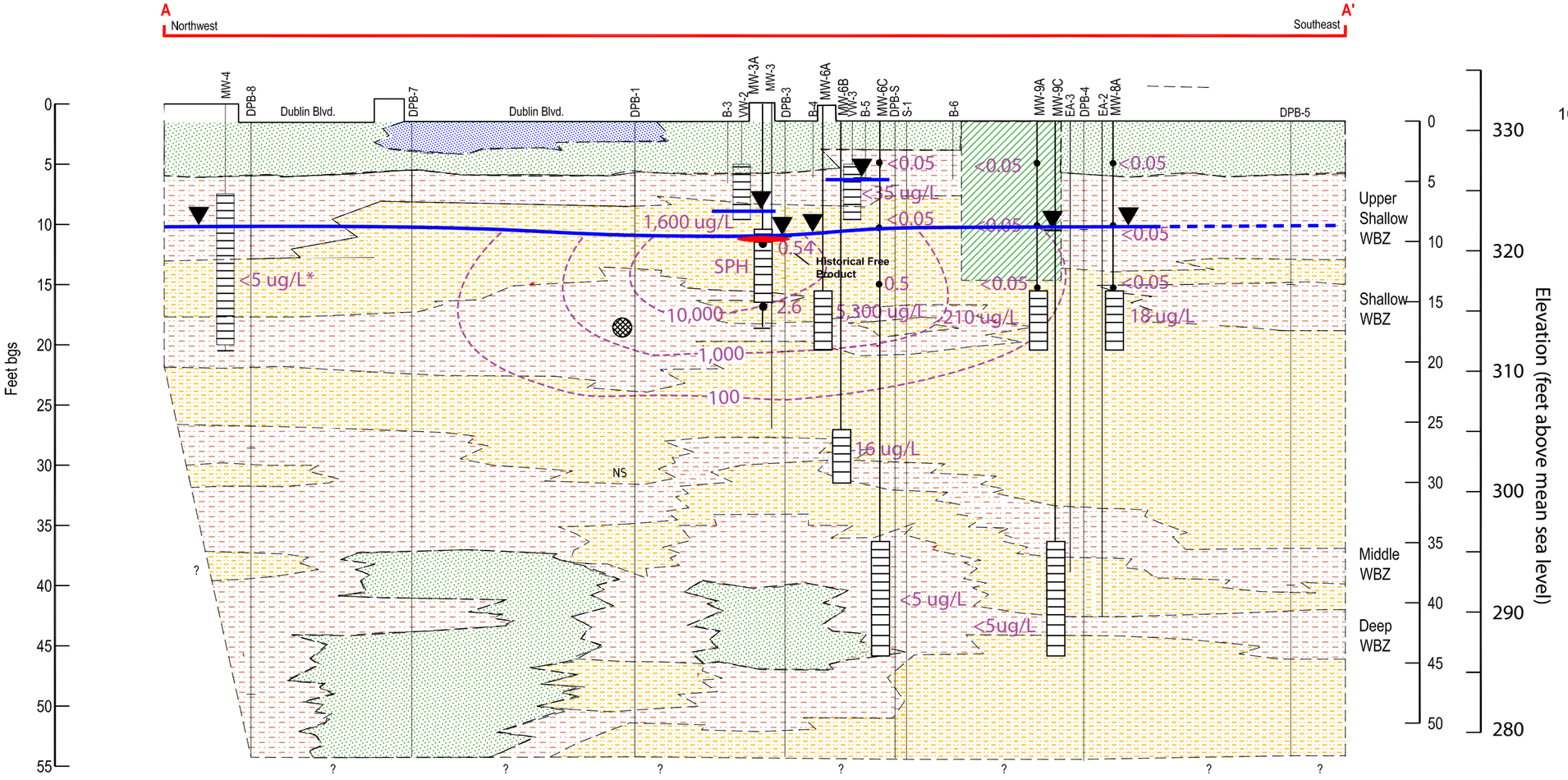
Figure 6

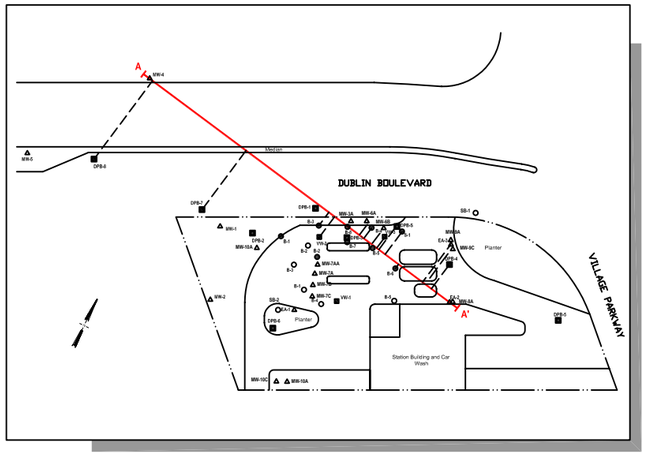
Cross Section A-A' Showing MTBE Concentrations

June 2006

A — Northwest

A' — Southeast





EXPLANATION

- UST Area
- Moderate to High Permeability [SANDS (SW, SP), GRAVELS (GW, GP)]
- Low to Moderate Permeability [Clayey to Silty SANDS (SC, SM), Clayey to Silty Gravels (GC, GM)]
- Low Permeability [Sandy SILTS (ML, MH), Sandy CLAYS (CL, CH)]
- Very Low Permeability [SILTS (ML, MH), CLAYS (CL, CH), Silty CLAY / Clayey SILT (ML, CL)]
- Dublin Sanitary Sewer (18" Diameter)
- Well Casing
- Screened Interval
- Soil Boring Trace
- Sample Point
- <0.05 — MTBE Concentration (mg/kg) in Soil (3-5/06)
- 20 ug/L — MTBE Concentration (µg/L) Groundwater (5/31/06)
- SPH — Separate-Phase Hydrocarbons
- MTBE Isoconcentration Contour
- Water Table (7/7/06)
- Static Water Depth (7/7/06)
- * Denotes well sampled annually - Concentration data from 2/21/06

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Dublin, California

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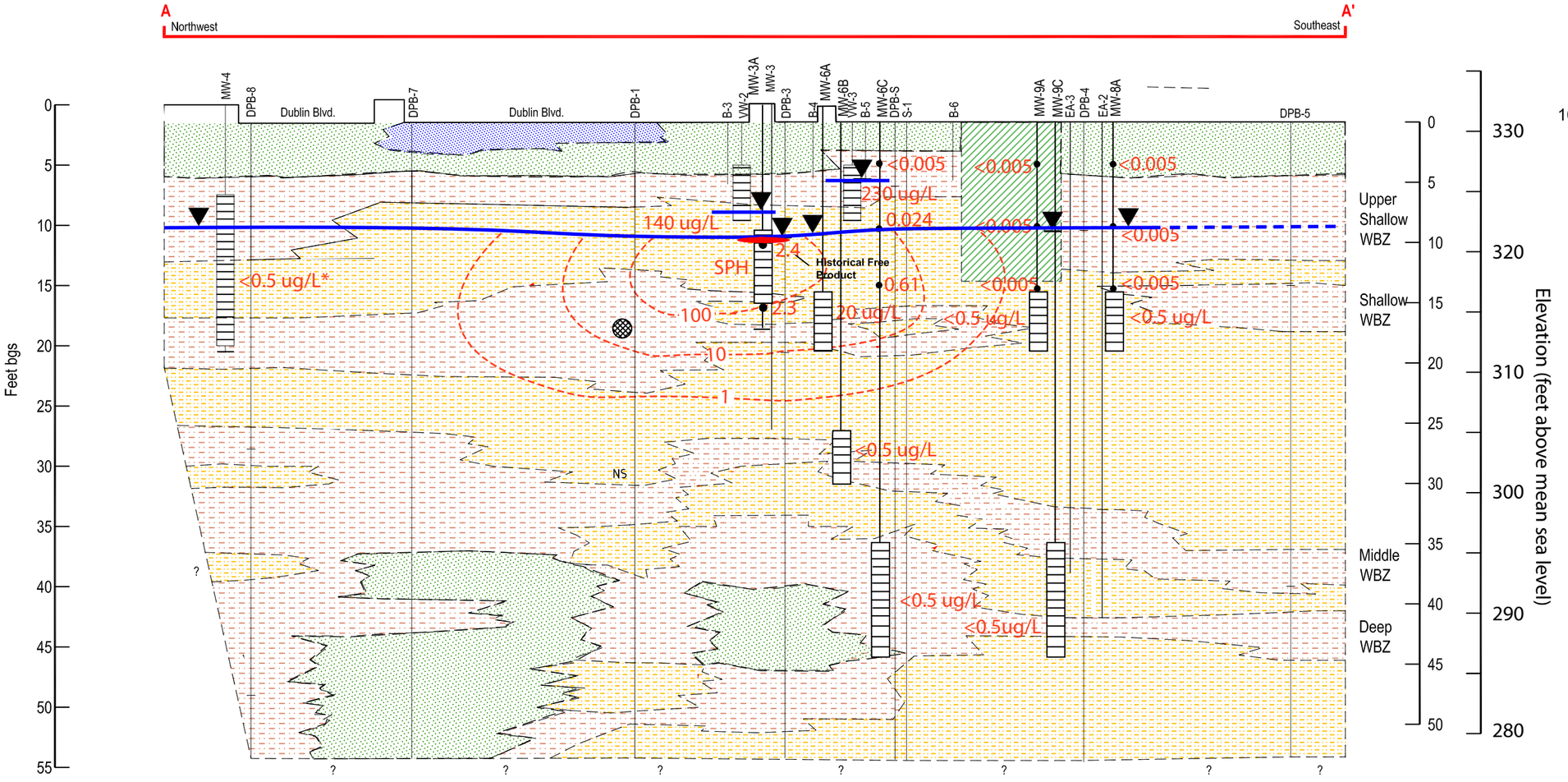
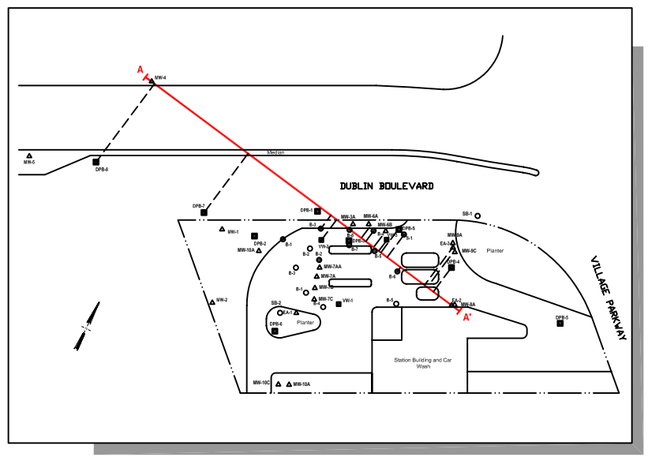
Figure 7

Cross Section A-A'
Showing Benzene Concentrations
June 2006





EXPLANATION

- UST Area
- Moderate to High Permeability [SANDS (SW, SP), GRAVELS (GW, GP)]
- Low to Moderate Permeability [Clayey to Silty SANDS (SC, SM), Clayey to Silty Gravels (GC, GM)]
- Low Permeability [Sandy SILTS (ML, MH), Sandy CLAYS (CL, CH)]
- Very Low Permeability [SILTS (ML, MH), CLAYS (CL, CH), Silty CLAY / Clayey SILT (ML, CL)]
- Dublin Sanitary Sewer (18" Diameter)
- Well Casing
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- Soil Boring Trace
- Sample Point
- <0.05 — Benzene Concentration (mg/kg) in Soil (3-5/06)
- 20 ug/L — Benzene Concentration (µg/L) in Groundwater (5/31/06)
- SPH — Separate-Phase Hydrocarbons
- Benzene Isoconcentration Contour
- Water Table (7/7/06)
- Static Water Depth (7/7/06)

* Denotes well sampled annually - Concentration data from 2/21/06

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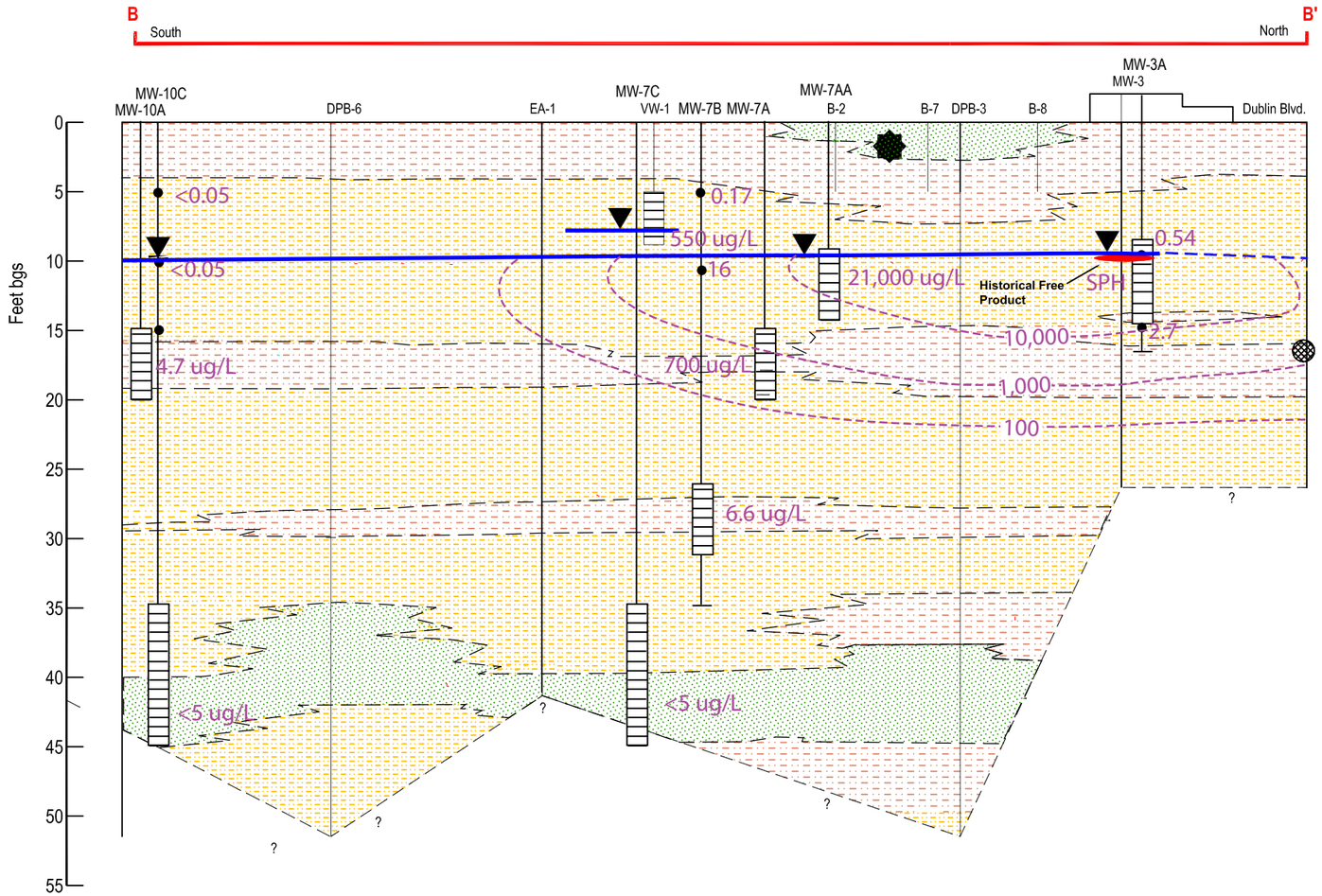
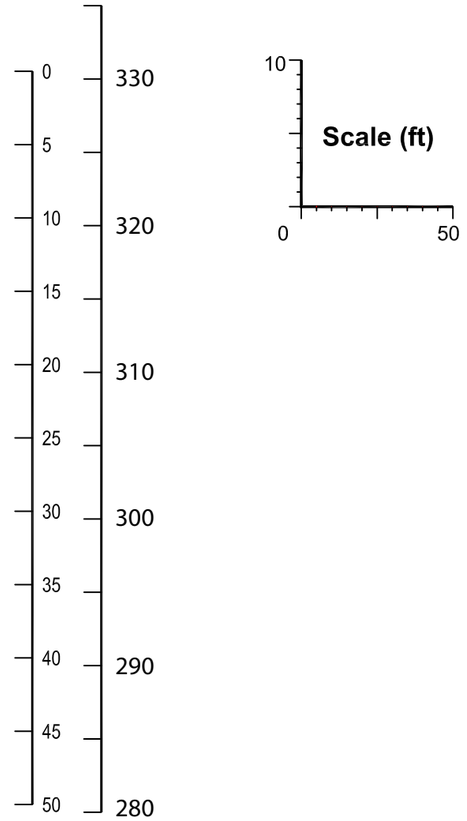
Figure 8

Geologic Cross Section B'B', Showing MTBE Concentrations June 1, 2006





EXPLANATION

- Low to Moderate Permeability [Clayey to Silty SANDS (SC, SM), Clayey to Silty Gravels (GC, GM)]
- Lower Permeability [Sandy SILTS (ML, MH), Sandy CLAYS (CL, CH)]
- Very Low Permeability [SILTS (ML, MH), CLAYS (CL, CH), Silty CLAY / Clayey SILT (ML, CL)]
- Dublin Sanitary Sewer (18" Diameter)
- Well Casing
- Screened Interval
- Soil Boring Trace
- Sample Point
- Flex Hose Leak Location (February 1997)
- <0.05 — MTBE Concentration (mg/kg) in Soil (3-5/06)
- 20 ug/L — MTBE Concentration (µg/L) in Groundwater (5/31/06)
- SPH — Separate-Phase Hydrocarbons
- MTBE Isoconcentration Contour (µg/L)
- Water Table (7/7/06)
- Static Water Depth (7/7/06)

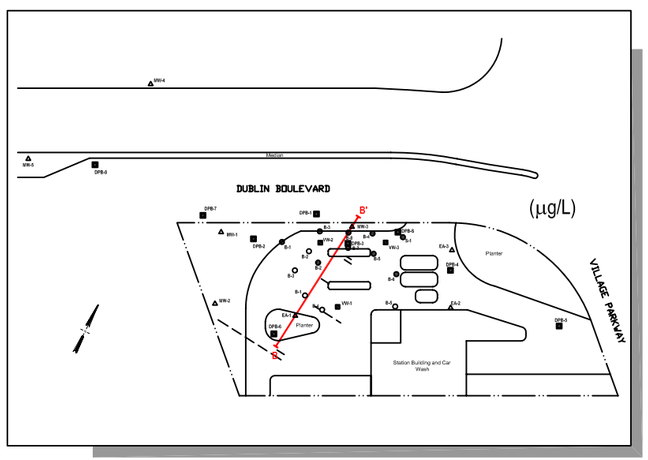


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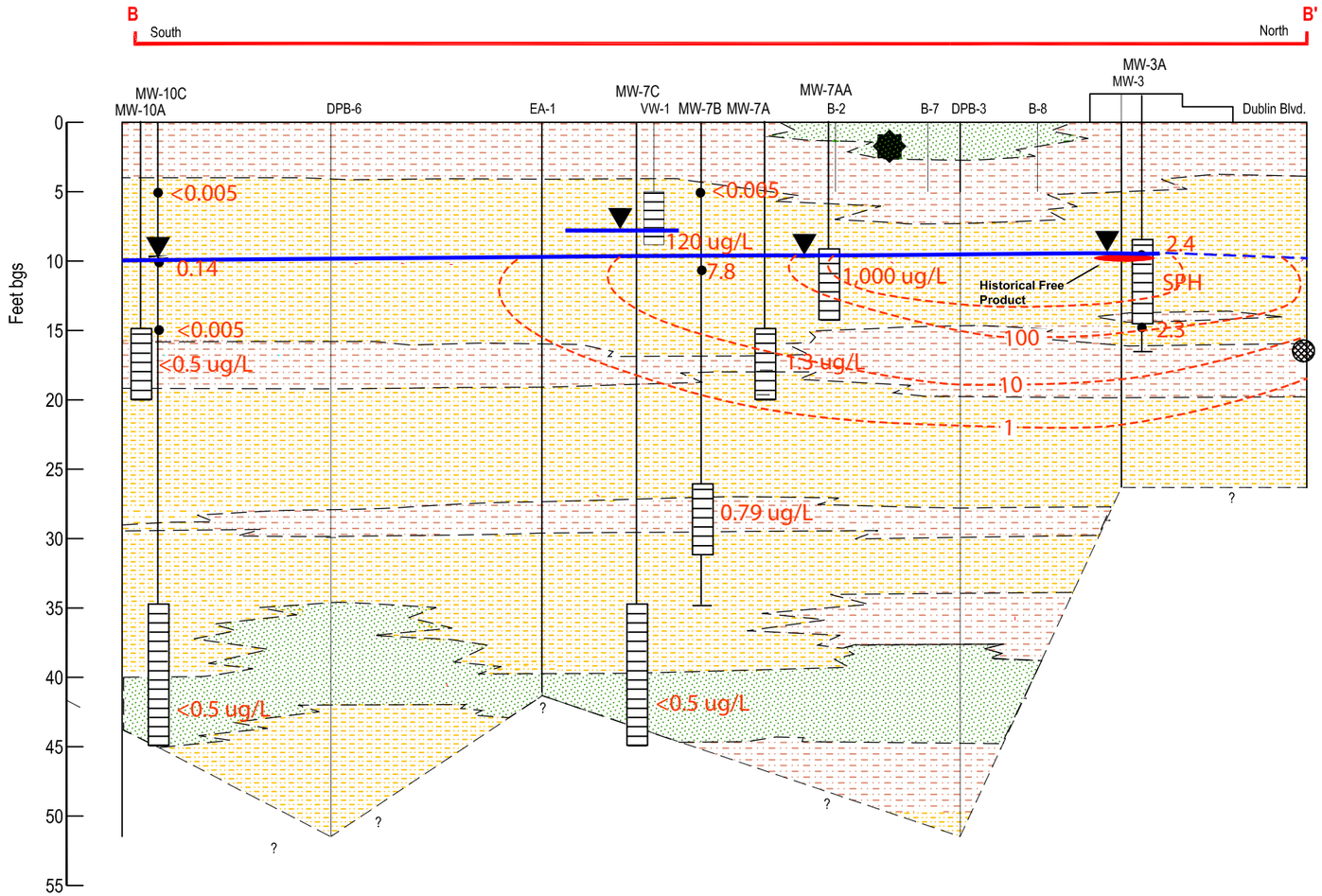
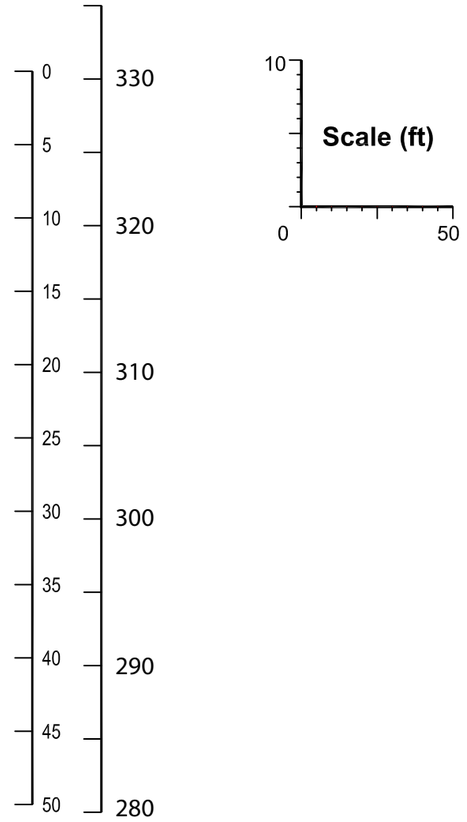
Figure 9

Geologic Cross Section B'B', Showing Benzene Concentrations June 1, 2006





EXPLANATION

- Low to Moderate Permeability [Clayey to Silty SANDS (SC, SM), Clayey to Silty Gravels (GC, GM)]
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- Very Low Permeability [SILTS (ML, MH), CLAYS (CL, CH), Silty CLAY / Clayey SILT (ML, CL)]
- Dublin Sanitary Sewer (18" Diameter)
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- Flex Hose Leak Location (February 1997)
- <0.05 — Benzene Concentration (mg/kg) in Soil (3-5/06)
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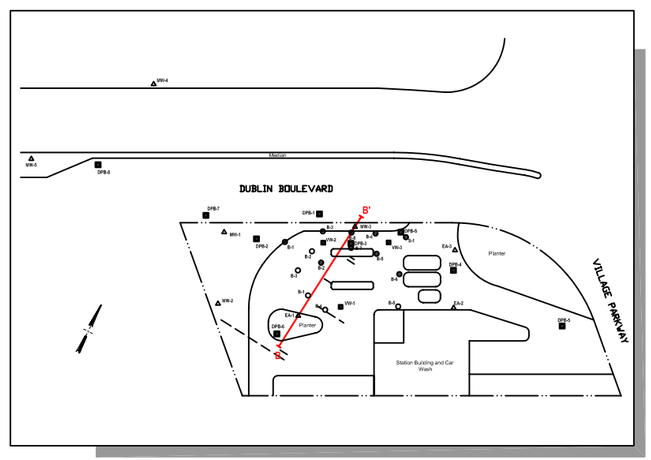
- Benzene Isoconcentration Contour
- Water Table (7/7/06)
- Static Water Depth (7/7/06)



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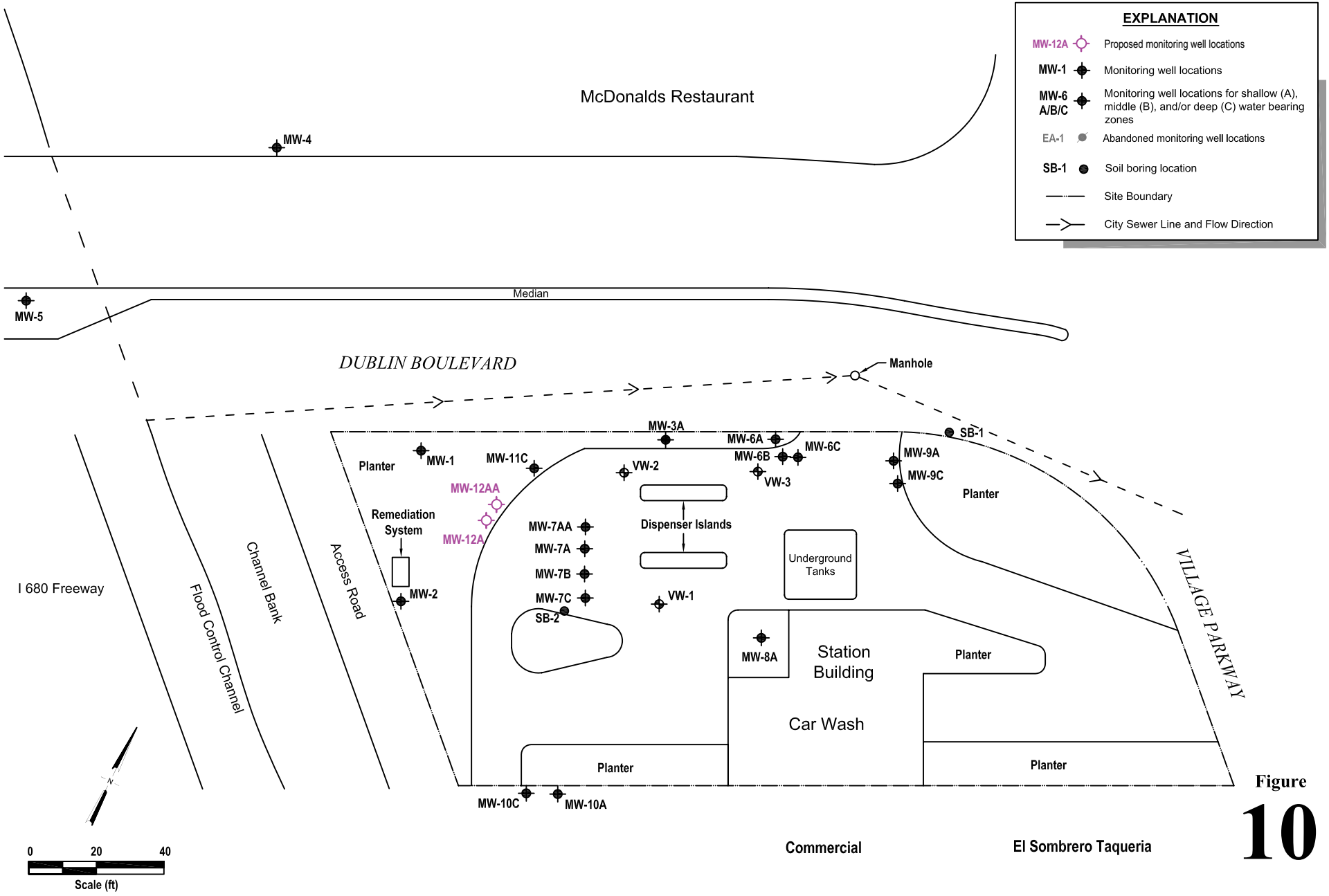

Figure 10

7/31/2006

Dublin Auto Wash
7240 Dublin Boulevard
Dublin, California

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Proposed Well Location Map

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	0.5	420	13	100	5.6	NE	Use soil gas	NE	
Comm. ESL - Urban Ecotoxicity				--	25	--	--	--	--	NE	--	NE	
Comm. ESL - Ceiling Value				1,000	1,000	520	230	210	500	NE	500	NE	
Comm. ESL - Direct Exposure				5,800	0.38	440	19	180	70	NE	950	NE	
Comm. ESL - GW Protection (Leaching)				100	0.044	2.9	3.3	1.5	0.023	NE	0.073	NE	
Final ESL - Commercial, Drinking Water Resource				**100**	**0.044**	**2.9**	**3.3**	**1.5**	**0.023**	NE	**0.073**	NE	
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 - Ceiling Value				1,000	1,000	520	230	210	500	NE	500	NE	
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Final ESL - Commercial, Drinking Water Resource				**100**	**0.044**	**2.9**	**3.3**	**1.5**	**0.023**	NE	**0.073**	NE	
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	0.5	420	13	100	5.6	NE	Use soil gas	NE	
Comm. ESL - Urban Ecotoxicity				--	25	--	--	--	--	NE	--	NE	
Comm. ESL - Ceiling Value				1,000	1,000	520	230	210	500	NE	500	NE	
Comm. ESL - Direct Exposure				5,800	0.38	440	19	180	70	NE	950	NE	
Comm. ESL - GW Protection (Leaching)				100	0.044	2.9	3.3	1.5	0.023	NE	0.073	NE	
Final ESL - Commercial, Drinking Water Resource				**100**	**0.044**	**2.9**	**3.3**	**1.5**	**0.023**	NE	**0.073**	NE	
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	0.5	420	13	100	5.6	NE	Use soil gas	NE	
Comm. ESL - Urban Ecotoxicity				--	25	--	--	--	--	NE	--	NE	
Comm. ESL - Ceiling Value				1,000	1,000	520	230	210	500	NE	500	NE	
Comm. ESL - Direct Exposure				5,800	0.38	440	19	180	70	NE	950	NE	
Comm. ESL - GW Protection (Leaching)				100	0.044	2.9	3.3	1.5	0.023	NE	0.073	NE	
Final ESL - Commercial, Drinking Water Resource				**100**	**0.044**	**2.9**	**3.3**	**1.5**	**0.023**	NE	**0.073**	NE	

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 from Table A-2, established by the SFBRWQCB, Interim Final -July 2003 and amended February 2004.
-- = Not analyzed
< = 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		→		
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	--	
		ESLs (final screening level)		100	1	40	30	13	5		
Groundwater Monitoring Well Analytical Data											
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	--		

Table 2. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID	Date	Depth	Groundwater						Dissolved	
TOC Elev	Sampled	to Water	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Oxygen	Notes
(ft)		(ft)	(ft, msl)	µg/L						mg/L	
EA-1 (Cont'd)	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
	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**
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	--		

Table 2. Groundwater Elevation and Analytical Data - Dublin Auto Wash, 7240 Dublin Boulevard, Dublin, CA

Well ID	Date	Depth	Groundwater						Dissolved	
TOC Elev	Sampled	to Water	Elevation	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Oxygen	Notes
(ft)		(ft)	(ft, msl)	µg/L						mg/L	
EA-2 (Cont'd)	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	--		Duplicate
	01/31/91	10.21	322.38	<50	<0.5	<0.5	<0.5	<0.5	--		
	08/21/91	9.8	322.79	<50	<0.5	<0.5	<0.5	<0.5	--		
	10/07/91	9.98	322.61	--	--	--	--	--	--		
	01/28/92	9.81	322.78	<50	0.8	<0.5	<0.5	<0.5	--		
	06/05/92	9.86	322.73	<50	<0.5	<0.5	<0.5	<0.5	--		
	09/30/92	10.6	321.99	66	1	3.2	1.3	7.4	--		
	12/30/92	9.11	323.48	<50	<0.5	<0.5	<0.5	<0.5	--		
	03/29/93	7.73	324.86	<50	<0.5	<0.5	<0.5	<1.5	--		
	06/25/93	9.22	323.37	<50	<0.5	<0.5	<0.5	<1.5	--		
	09/16/93	10	322.59	<50	<0.5	<0.5	<0.5	<1.5	--		
	12/20/93	9.38	323.21	<50	<0.5	<0.5	<0.5	<0.5	--		
	03/29/94	9.3	323.29	<50	<0.5	0.6	<0.5	<0.5	--		
	06/22/94	9.49	323.1	<50	<0.5	<0.5	<0.5	<0.5	--		
	09/26/94	9.72	322.87	<50	<0.5	<0.5	<0.5	<0.5	--		
	10/04/94	9.58	323.01	<50	<0.5	<0.5	<0.5	<0.5	--		
	11/30/94	8.7	323.89	<50	<0.5	<0.5	<0.5	<0.5	--		
	03/02/95	8.54	321.67	<50	<0.5	<0.5	<0.5	<0.5	--		
	06/07/95	8.42	321.79	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
	09/26/95	9.34	320.87	540	6.8	<0.5	47	29	13		
	12/28/95	8.84	321.37	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
	02/29/96	7.44	322.77	<50	<0.5	<0.5	<0.5	1.5	<2.5		
	06/27/96	8.83	321.38	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
	09/12/96	9.4	321.01	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
	03/31/97	9.11	321.3	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
	12/23/98	8.91	321.5	<50	<0.5	<0.5	<0.5	<0.5	<2.5		
	03/25/99	8.1	322.31	<50	<0.5	<0.5	<0.5	<0.5	2.7		
	02/03/00	8.36	322.05	<50	<0.5	<0.5	<0.5	<0.5	<2.5 (<2.0)		
	01/23/01	9.08	321.33	441 (1)	1.27	0.542	40.3	31	72.9		
	05/01/01	8.87	321.54			SAMPLED ANNUALLY					
	08/28/01	9.45	320.96			SAMPLED ANNUALLY					
	11/27/01	9.5	320.91			SAMPLED ANNUALLY					
	02/28/02	9.05	321.36	<50	<0.50	<0.50	<0.5	<1.5	74		
	05/22/02	9.04	321.37			SAMPLED ANNUALLY					
	08/20/02	9	321.41			SAMPLED ANNUALLY					
	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**

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	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	--	--	--	--	--	--	--	--		Duplicate
	10/07/91	11.15	322.49	180	40	20	4.7	8.4	--		
	10/7/1991	--	--	200	43	17	4.1	6.7	--		
	01/28/92	11.08	322.56	640	69	85	13	46	--		
	06/05/92	10.98	322.66	250	63	8.3	3	9.5	--		
	09/30/92	11.38	322.26	330	120	33	6.3	22	--		
	12/30/92	10.48	323.16	58	7.6	1.3	2.5	5.4	--		
	03/29/93	9.3	324.34	120	11	4.5	6.2	13	--		
	06/25/93	10.46	323.18	<50	<0.5	<0.5	<0.5	<1.5	--		
	09/16/93	10.9	322.74	85	3.9	8.8	4.5	22	--		
	12/20/93	10.66	322.98	190	12	12	13	50	--		
	03/29/94	10.5	323.14	<50	<0.5	1.2	<0.5	0.9	--		
	06/22/94	10.64	323	<50	<0.5	<0.5	<0.5	<0.5	<3.0		
	09/26/94	10.72	322.92	<50	<0.5	<0.5	<0.5	<0.5	--		
	10/04/94	10.68	322.96	<50	<0.5	<0.5	<0.5	0.7	--		
	11/30/94	9.66	323.98	170	6.1	3	6.5	28	--		
	03/02/95	9.92	321.38	<50	<0.5	<0.5	<0.5	<0.5	--		
	06/07/95	9.72	321.58	<50	<0.5	<0.5	<0.5	<0.5	3.2		
	09/26/95	10.6	320.7	2,000	140	<5.0	<5.0	190	280		
	12/28/95	9.82	321.48	<50	<0.5	<0.5	<0.5	<0.5	26		
	02/29/96	8.28	323.02	<50	2.1	<0.5	2.5	6	31		
	06/27/96	9.91	321.39	<50	<0.5	<0.5	<0.5	<0.5	<2.5		Inaccessible
	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		Inaccessible
	12/23/98	--	--	--	--	--	--	--	--		Inaccessible
	03/25/99	--	--	--	--	--	--	--	--		
	02/03/00	--	--	--	--	--	--	--	--		
	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		

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)	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**
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				
	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**	
	07/07/06	**12.60**	**321.09**	--	--	--	--	--	--	--	
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		

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)	02/29/96	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)		
	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**	
	07/07/06	**8.57**	**320.91**	--	--	--	--	--	--	--	
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		0.1' SPH; 0.079 gal SPH removed
	03/31/97	12.04	320.82	<25,000	1,200	370	<250	380	130,000		0.05' SPH; 0.05 gal SPH removed
	12/23/98	12.92	319.94	--	--	--	--	--	--		
	03/25/99	12.56	320.3	--	--	--	--	--	--		Absorbent sock in well
	02/03/00	11.12	321.74	92,100	4,780	11,400	2,270	15,800	137,000 (162,000)		Absorbent sock in well
	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 removed
	8/28/2001	11.79	321.07	32,000	3,800	2,600	1,200	7,500	160,000		
	11/27/2001	11.98	320.88	110,000	1,300	2,400	1,500	9,400	90,000		
	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)		0.01 SPH
	12/15/04	11.97	320.89	33,000	1,700	430	1,300	7,000	70,000 (89,000)		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)	02/21/05	10.81	322.06	--	--	--	--	--	--	1.29	
	05/17/05	11.63	321.29	--	--	--	--	--	--	1.06	0.19 SPH
	08/17/05	10.83	322.03	39,000	1,500	260	780	2,700	42,000 (47,000)	0.93	0.19 SPH
	11/27/05	12.29	320.72	--	--	--	--	--	--	--	
	02/21/06	11.73	321.28	--	--	--	--	--	--	--	
	03/30/06	--	--	--	--	--	--	--	--	--	**Well Abandoned**
MW-3A	**05/29/06**	**10.13**	**321.28**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**0.03 SPH**
331.39	**07/07/06**	**10.15**	**321.26**	**4,200**	**340**	**27**	**75**	**79**	**32,000**	--	
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				
	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**	--	--	--	--	--	--	--	
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				

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)	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	
	11/27/05	10.43	322.61			SAMPLED ANNUALLY				1.19	
	02/21/06	10.32	322.72	<50	<0.5	<0.5	<0.5	<0.5	<5.0	0.48/0.76	
333.13	**05/29/06**	**10.41**	**322.72**			**SAMPLED ANNUALLY**				--	
	07/07/06	**10.46**	**322.67**	--	--	--	--	--	--	--	
MW-6A	**06/01/06**	**10.38**	**321.43**	**620**	**20**	**<2.5**	**<2.5**	**43**	**5,700 (5,300)**	**0.73**	
331.81	**07/07/06**	**10.15**	**321.66**	--	--	--	--	--	--	--	
MW-6B	**06/01/06**	**8.41**	**322.49**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**18 (16)**	**0.34**	
330.90	**07/07/06**	**8.55**	**322.35**	--	--	--	--	--	--	--	
MW-6C	**06/01/06**	**8.21**	**322.67**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**0.29**	
330.88	**07/07/06**	**8.41**	**322.47**	--	--	--	--	--	--	--	
MW-7AA	**05/31/06**	**9.18**	**321.49**	**12,000**	**1,000**	**410**	**180**	**1,600**	**23,000 (21,000)**	**0.44**	
330.67	**07/07/06**	**9.15**	**321.52**	--	--	--	--	--	--	--	
MW-7A	**05/31/06**	**9.19**	**321.52**	**<50**	**1.3**	**<0.5**	**0.79**	**0.82**	**760 (770)**	**0.40**	
330.71	**07/07/06**	**9.17**	**321.54**	--	--	--	--	--	--	--	
MW-7B	**05/31/06**	**9.05**	**321.64**	**<50**	**0.79**	**<0.5**	**<0.5**	**0.75**	**6.4 (6.6)**	**0.17**	
330.69	**07/07/06**	**9.03**	**321.66**	--	--	--	--	--	--	--	
MW-7C	**05/31/06**	**8.65**	**322.09**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**0.12**	
330.74	**07/07/06**	**8.70**	**322.04**	--	--	--	--	--	--	--	
MW-8A	**05/29/06**	**9.55**	**321.64**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**20 (18)**	**0.39**	
331.19	**07/07/06**	**9.20**	**321.99**	--	--	--	--	--	--	--	
MW-9A	**05/29/06**	**10.13**	**321.58**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**210 (210)**	**0.46**	
331.71	**07/07/06**	**9.96**	**321.75**	--	--	--	--	--	--	--	
MW-9C	**05/29/06**	**16.59**	**314.89**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**0.28**	
331.48	**07/07/06**	**8.85**	**322.63**	--	--	--	--	--	--	--	
MW-10A	**05/29/06**	**11.60**	**318.33**	**<50**	**<0.5**	**<0.5**	**<0.5**	**0.67**	**5.3 (4.7)**	**0.68**	
329.93	**07/07/06**	**9.78**	**320.15**	--	--	--	--	--	--	--	

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-10C	**05/29/06**	**7.28**	**322.38**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<5.0**	**0.16**	
329.66	**07/07/06**	**7.28**	**322.38**	--	--	--	--	--	--	--	
MW-11C	**05/31/06**	**9.90**	**321.71**	**<50**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**11 (11)**	**0.29**	
331.61	**07/07/06**	**10.02**	**321.59**	--	--	--	--	--	--	--	
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**	
	07/07/06	**7.71**	**322.72**	--	--	--	--	--	--	--	
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**	
	07/07/06	**7.02**	**323.15**	--	--	--	--	--	--	--	
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**	**0.21**	
	07/07/06	**4.44**	**326.05**	--	--	--	--	--	--	--	

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 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 = tert-Amyl methyl ether
TBA = tert-Butyl alcohol
DIPE = Diisopropyl ether
ETBE = Ethyl tert-butyl ether
ND = Not detected by laboratory above reporting limits.
-- = Not Measured/Not Analyzed
1 Laboratory report indicates weathered gasoline C6-C12.
Dissolved oxygen concentrations measured downhole pre-purge or pre-purge/post-purge.

APPENDIX A

Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

February 9, 2006

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

Mr. Mark Inglis
Chevron
6001 Bollinger Canyon Rd., K2256
P.O. Box 6012
San Ramon, CA 94583

Dear Messrs. Hadjian and Inglis:

Subject: Fuel Leak Case RO0000304, Dublin Auto Wash, 7240 Dublin Blvd., Dublin, CA 94568

Alameda County Environmental Health (ACEH) staff has reviewed the file for the subject site including the February 20, 2005 Soil and Water Investigation Work Plan and the January 20, 2006 Soil and Water Investigation Work Plan-Addendum prepared by Pangea Environmental Services, Inc. These work plans respond to the County's November 2, 2004 technical letter and follow a January 6, 2006 meeting with Pangea consultant, Bob Clark-Riddell and our office. The work plan includes a wide scope of work and is approved with the following technical comments and requests.

TECHNICAL COMMENTS

1. Well Decommission Proposal- As indicated in the prior Secor technical report, groundwater bearing zones appear to exist in three zones, labeled shallow, middle and deep. Although it is uncertain how contiguous these zones may be, wells screened across all three zones compromise analytical results and may allow for vertical contaminant migration. Therefore, we concur with the proposal to decommission wells MW-3, EA-1, EA-2 and EA-3.

2. Conduit/Preferential Pathway Study- The sewer running along the northern boundary of the property was identified as a potential preferential pathway for groundwater migration. This could pose a risk due to the presence of elevated MTBE in this area. Therefore, the proposal to advance at least one boring along the sewer line and collect soil and a groundwater sample is approved. Further investigation of nearby wells and surface water bodies may be put on hold until the completion of this investigation and actual threat evaluated.

3. Additional Soil Characterization Down-gradient of Dispenser- To address this earlier request, soil boring SB-2 and MW-10 are proposed to investigate both soil and groundwater delineation in the presumed down-gradient direction. In addition, we concur that the results from sampling of SB-2 shall be used to determine the need for the replacement of well EA-1.

4. Replacement of Wells- Additional wells with appropriately screened intervals in the shallow, middle and deep water bearing zones are proposed to better characterize and monitor the contaminant plume. Since the middle water bearing zone does not appear in all locations, some of the wells propose only a shallow and deep replacement well cluster. In other wells where contamination has not been identified in any of the three zones, there appears no need to replace these wells. The wells proposed wells; MW3A, MW6A/B/C, MW-7A/B/C, MW-8A, MW-9A/C, MW10A/C and MW11C are approved. We recommend that the location of MW-9A/C be moved to the location of well EA-3 given the lack of contamination historically found in EA-2 and the recent detection of significant TPHg and MTBE in EA-3.

5. Interim Remediation- Vacuum extraction from well MW-3A and (MW-6A and MW-7A) based upon groundwater concentrations is proposed. Vacuum extraction should be considered from those wells exhibiting elevated petroleum contaminant levels including the vapor wells. Therefore, vapor wells that contain groundwater should be sampled to see if they are in source areas that would be affected by vacuum extraction. We concur that additional remediation testing ie aquifer testing should be deferred until the completion of the proposed investigation and interim remediation.

6. Chemical Analysis- Pangea proposes to analyze the soil and groundwater samples for TPHg, BTEX and MTBE using EPA Method 8021. If MTBE is detected both its presence and that of the other oxygenates will be confirmed using EPA Method 8260. This is acceptable, however, plume characterization will require the complete analysis of the oxygenates and lead scavengers prior to site closure consideration.

TECHNICAL REPORT REQUEST

Please submit the following technical reports to our office according to the following schedule:

- April 11, 2006- Soil and Groundwater Investigation Report

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

Effective **January 31, 2006**, the Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program ftp site are provided on the attached "Electronic Report Upload (ftp) Instructions." Please do not submit reports as attachments to electronic mail.

Submission of reports to the Alameda County ftp site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. Submission of reports to the Geotracker website does not fulfill the requirement to submit documents to the Alameda County ftp site. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitor wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, electronic submittal of a complete copy of all necessary reports was required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting).

In order to facilitate electronic correspondence, we request that you provide up to date electronic mail addresses for all responsible and interested parties. Please provide current electronic mail addresses and notify us of future changes to electronic mail addresses by sending an electronic mail message to me at barney.chan@acgov.org.

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6765.

Sincerely,

Barney M Chan

Barney M. Chan
Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: files, D. Drogos
Bob Clark-Riddell, Pangea, 1710 Franklin St., Suite 200, Oakland, CA 94612
Matt Katen, Zone 7 Water District, QIC 80201

2_9_06 7240 Dublin Blvd

You forwarded this message on 3/29/2006 11:47 AM.
This message was sent with high importance.
Attachments can contain viruses that may harm your computer. Attachments may not display correctly.

Bob Clark-Riddell

From: Bob Clark-Riddell **Sent:** Wed 3/29/2006 11:33 AM
To: barney.chan@acgov.org
Cc:
Subject: 7240 Dublin Blvd
Attachments: figure 7-soil x sectionB.pdf(498KB) figure 9-gw x sectionB.pdf(552KB)

Barney,

Here are two cross-sectional figures from our approved workplan that are relevant to our discussion on well construction. Data on Figure 7 suggests that soil contamination is highest between 10-14 ft depth (excluding the shallower hits under the former leaking pipe). Figure 7 also shows free product at approximately 12 ft depth in well MW-3. Figure 9 shows an apparently confined water-bearing unit (zone A) from approximately 16 - 20. During drilling this week we found clayey soil with sandy stringers from approximately 5 to 15 ft bgs with significant odor from 10 to 13 ft and little to no odor at 15 ft, and found the water-bearing unit where anticipated (16-20 ft depth). The depth to water in nearby well monitoring well MW-3 has been approximately 11 to 12 feet. The vapor wells are screened much shallower, at approximately 3 to 9 ft bgs.

Based on this information, we plan to screen our A zone wells only in the water-bearing unit (approximately 16-20 ft bgs). We do not wish to screen the well shallower into the more contaminated soil to avoid creating a potential conduit for downward vertical migration of contaminants.

We also recommend installing a separate and shallower well (MW-7AA) from approximately 9 to 14 ft bgs, into the primary soil impact area near MW-7 (about 5-10 ft from the former release area). This well will facilitate evaluation of site conditions in source area material, which is comprised of clayey soil with thin sand stringers. With this proposed well, there would be wells targeting different depths (zones) beneath the site, providing much more thorough assessment information. This proposed well could be used for monitoring, feasibility testing (vapor or dual-phase extraction testing), and/or site remediation in source area material.

Depending on the results on additional drilling (especially boring SB-2 approximately 20 feet downgradient), we may recommend installing one or more other shallow wells from approximately 9-14 ft bgs. We did observe similar conditions further downgradient (about 55 ft downgradient of the source area) during installation of well MW-10A. We screened well MW-10A from 15 to 20 ft bgs, but did not install a well into the clayey soil (with stringers) with heavy odor from 10 to 13 ft bgs.

We would like your input soon since we are constructing some wells today. I will call you to discuss.

Bob Clark-Riddell, P.E.
Principal Engineer
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA 94612
510.836.3701 direct
510.435.8664 mobile
510.836.3709 fascimile
briddell@pangeaenv.com
www.pangeaenv.com

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Bob Clark-Riddell

From: Chan, Barney, Env. Health [barney.chan@acgov.org] **Sent:** Wed 4/26/2006 1:36 PM
To: Bob Clark-Riddell
Cc:
Subject: RE: 7240 Dublin Blvd, Dublin
Attachments:

The extension is approved.
Barney

From: Bob Clark-Riddell [mailto:BRiddell@pangeaenv.com]
Sent: Tuesday, April 18, 2006 11:24 AM
To: Chan, Barney, Env. Health
Cc: Morgan Gillies
Subject: 7240 Dublin Blvd, Dublin

Barney,

Pangea prepared this email to update you on the well installation/abandonment schedule for the subject site. Pangea coordinated the installation of most new wells during the end of March 2006. However, the City of Dublin requires a special insurance endorsement for the encroachment permit to drill in Dublin Blvd, and the endorsement takes one month to obtain from our insurance carrier. We tried to shorten this time and modify the City's requirement, but the City and our insurance broker could not reach an agreement. With the encroachment permit we can drill in Dublin Blvd and have access to install the wells adjacent to Dublin Blvd.

Pangea plans to resume sampling and well installation on May 17 and 18. After well installation Pangea will coordinate well development and sampling, will await laboratory analytical results, and will prepare a well installation report.

Based on the above information, Pangea respectfully requests a 90-day extention from April 11 to July 11, 2006 to complete the well installation work and reporting. Please call me if you have any questions. Thank you.

Bob Clark-Riddell, P.E.
Principal Engineer
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA 94612
510.836.3701 direct
510.435.8664 mobile
510.836.3709 fascimile
briddell@pangeaenv.com
www.pangeaenv.com

APPENDIX B

Permits

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

100 NORTH CANYONS PARKWAY, LIVERMORE, CA 94551 PHONE (925) 454-5000

March 21, 2006

Mr. Morgan Gillies
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA 94612

Dear Mr. Gillies:

Enclosed are drilling permits 26048 and 26049 for the destruction of monitoring wells 3S/1W-1F1 (EA-1), 3S/1W-1F2 (EA-2), 3S/1W-1F3 (EA-3) and 3S/1W-1F15 (MW-3) and for the construction of 13 monitoring wells at 7240 Dublin Boulevard in Dublin for Dublin Auto Wash. Drilling permit applications can be downloaded from our web site (www.zone7water.com) for future projects.

Please note that permit condition A-2 requires that a well destruction and construction report be submitted after completion of the work. The report should include a description of methods and materials used to destroy the wells, location sketch, date of destruction, and permit number. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact me at extension 5056 or Matt Katen at extension 5071.

Sincerely,

Wyman Hong

Wyman Hong
Water Resources Specialist

Enc.

P:\WRE\GPOs\GPO1\GPO1.DESTRUCTION.wpd

ZONE 7 WATER AGENCY

100 NORTH CANYONS PARKWAY, LIVERMORE, CALIFORNIA 94551 VOICE (925) 454-5000 FAX (925) 454-5728

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT Dublin Auto Wash
7241 Dublin Blvd.
Dublin, CA

California Coordinates Source _____ ft. Accuracy _____ ft.
CCN _____ ft. CCE _____ ft.
APN _____

CLIENT
Name Hooshang Hadjian
Address 2163 San Ramon Valley Blvd Phone (925) 323-5411
City San Ramon Zip 94583

APPLICANT
Name Pangea Environmental Services, Inc.
Morgan Gillies Fax 510-834-3709
Address 1710 Franklin St, Ste 200 Phone 510-834-3702
City Oakland Zip 94612

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	••	General	••
Water Supply	••	Contamination	••
Monitoring	••	(Well Destruction)	4 wells

PROPOSED WELL USE

New Domestic	••	Irrigation	••
Municipal	••	Remediation	••
Industrial	••	Groundwater Monitoring	••
Dewatering	••	Other _____	••

DRILLING METHOD:

Mud Rotary	••	Air Rotary	••	(Hollow Stem Auger)	••
Cable Tool	••	Direct Push	••	Other _____	••

DRILLING COMPANY Gregg Drilling
DRILLER'S LICENSE NO. 455165

WELL PROJECTS

Drill Hole Diameter	in.	Maximum Depth	ft.
Casing Diameter	in.	Number	
Surface Seal Depth	ft.		

SOIL BORINGS

Number of Borings		Maximum Depth	ft.
Hole Diameter	in.		

ESTIMATED STARTING DATE 3/27/06
ESTIMATED COMPLETION DATE 3/31/06

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE _____ Date 3/9/06
Morgan Gillies

ATTACH SITE PLAN OR SKETCH

PERMIT NUMBER 26048
WELL NUMBER 3S/1W-1F1, 1F2, 1F3 & 1F15
APN 941-1401-019-00

PERMIT CONDITIONS

(Circled Permit Requirements Apply)

(A.) GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.

B. WATER SUPPLY WELLS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved.
3. An access port at least 0.5 inches in diameter is required on the wellhead for water level measurements.
4. A sample port is required on the discharge pipe near the wellhead.

C. GROUNDWATER MONITORING WELLS INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.

D. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.

E. CATHODIC. Fill hole above anode zone with concrete placed by tremie.

(F.) WELL DESTRUCTION. See attached.

G. SPECIAL CONDITIONS. Submit to Zone 7 within 60 days after the completion of permitted work the well installation report including all soil and water laboratory analysis results.

Approved Wyman Hong Date 3/17/06
Wyman Hong

Revised: April 27, 2005

March 21, 2006

Zone 7
Water Resources Engineering
Groundwater Protection Ordinance

Dublin Auto Wash
7240 Dublin Boulevard
Dublin
Wells 3S/1W-1F1 (EA-1), 3S/1W-1F2 (EA-2), 3S/1W-1F3 (EA-3) and 3S/1W-1F15 (MW-3)
Permit 26048

Destruction Requirements:

1. Sound the well as deeply as practicable and record for your report.

2. Drill out the well so that the casing, seal, and gravel pack are removed to the bottom of the well.

3. Fill the remaining hole to grade or original ground, whichever is the lower elevation, with neat cement sealing material, using a tremie pipe.

P:\WRE\GPOs\Destruct Specs\Drillout.wpd

CITY OF DUBLIN
PUBLIC WORKS DEPARTMENT
100 Civic Plaza
Dublin, California 94568
(925) 833-6630

PERMIT NO. 06-28

ENCROACHMENT PERMIT

PERMIT TO DO WORK IN ACCORDANCE WITH CITY OF DUBLIN MUNICIPAL CODE CHAPTER 7.04 AND ANY SPECIAL REQUIREMENTS SHOWN OR LISTED HEREIN.

Applicant/Permittee:		
Name: Pangea Environmental Services	Permit Fee:	$ 10.00
Address: 1710 Franklin St., Ste. 200	Plancheck Fee:	$
Oakland, CA 94612	Resurfacing Surcharge:	$ 130.00
Telephone (510)836-3702	Inspection Fees:	$
		$
		$
	Total Fees:	$ 140.00
	Bond: Surety: $ Cash:	$ 500.00
	Total Paid:	$ 640.00
	Receipt No.	

PLEASE READ THIS PERMIT CAREFULLY. KEEP IT AT THE WORK SITE. TO ARRANGE FOR INSPECTION, PHONE 833-6630 AT LEAST 48 HOURS *BEFORE YOU START WORK.*

JOB LOCATION: 7240 Dublin Blvd

DESCRIPTION OF WORK: (Attach 2 copies of plans. Attach additional pages if needed.)

Drill 1 or 2 (2nd boring optional, based on results of 1st boring) soil borings along southern edge of Dublin Blvd. at Village Plaza. Abandon one well (MW-3) in the planter along the sidewalk along the southern edge of Dublin Blvd.

Length of Excavation _____ l.f. **Width** _____ l.f. **Depth** 20 ft.

***U. S. A.* IDENTIFICATION NUMBER** (if applicable) 088901

ATTENTION IS DIRECTED TO THE GENERAL PROVISIONS PRINTED ON THE REVERSE SIDE OF THIS PERMIT AND TO THE FOLLOWING SPECIAL REQUIREMENTS:

1. Permittee shall provide and keep current a certificate of Public Liability and Workers Compensation Insurance which names the City of Dublin and its employees and agents as additional insureds.
2. Worksites left in an unsafe condition will be secured by the City Maintenance Department and the cost charged to the permittee.

INSPECTION REQUIRED FOR TRAFFIC CONTROL AND FINAL.

Prosecution of Work: All work authorized by the permit shall be performed in a workmanlike, diligent, and expeditious manner, and must be complete to the satisfaction of the City Engineer.

Liability and Damages: The permittee shall be responsible for all liability imposed by law for personal injury or property damage which may arise out of the work permitted and done by permittee under this permit, or which may arise out of failure on the part of the permittee to perform his obligations under said permit in respect to maintenance and encroachment. The permittee shall protect and indemnify the City of Dublin, its officers and employees, and save them harmless in every way from all action by law for damage or injury to persons or property that may arise out of or be occasioned in any way because of his operations as provided in this permit.

Signature of Permittee:

By: _____

Date: 3/24/06

City Engineer

By: _____

Date of Issue: 5-15-06

action by law for damage or injury to persons or property that may arise out of or be occasioned in any way because of his operations as provided in this permit.

Signature of Permittee:

By: _____

Date: 3/24/06

City Engineer

By: _____

Date of Issue: 5-15-06

Inspection Record (Note date, type of inspection, and comments.)

Completion Date: _____ Inspector: _____

APPENDIX C

Pangea's Standard Operating Procedures for Soil Borings

STANDARD FIELD PROCEDURES FOR SOIL BORINGS

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

Objectives

Soil samples are collected to characterize subsurface lithology, assess whether the soils exhibit obvious hydrocarbon or other compound vapor odor or staining, estimate ground water depth and quality, and to submit samples for chemical analysis.

Soil Classification/Logging

All soil samples are classified according to the Unified Soil Classification System by a trained geologist, scientist or engineer working under the supervision of a California Registered Engineer, California Registered Geologist (RG) or a Certified Engineering Geologist (CEG). The following soil properties are noted for each soil sample:

- Principal and secondary grain size category (i.e. sand, silt, clay or gravel)
- Approximate percentage of each grain size category,
- Color,
- Approximate water or product saturation percentage,
- Observed odor and/or discoloration,
- Other significant observations (i.e. cementation, presence of marker horizons, mineralogy), and
- Estimated permeability.

Soil Boring and Sampling

Soil borings are typically drilled using hollow-stem augers or hydraulic-push technologies. At least one and one half ft of the soil column is collected for every five ft of drilled depth. Additional soil samples are collected near the water table and at lithologic changes. With hollow-stem drilling, samples are collected using lined split-barrel or equivalent samplers driven into undisturbed sediments beyond the bottom of the borehole. With hydraulic-push drilling, samples are typically collected using acetate liners. The vertical location of each soil sample is determined by measuring the distance from the middle of the soil sample tube to the end of the drive rod used to advance the split barrel sampler. All sample depths use the ground surface immediately adjacent to the boring as a datum. The horizontal location of each boring is measured in the field from an onsite permanent reference using a measuring wheel or tape measure.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Storage, Handling and Transport

Sampling tubes or cut acetate liners chosen for analysis are trimmed of excess soil and capped with Teflon tape and plastic end caps. Soil samples are labeled and stored at or below 4°C on either crushed or dry ice, depending upon local regulations. Samples are transported under chain-of-custody to a State-certified analytic laboratory.

Field Screening

Soil samples collected during drilling will be analyzed in the field for ionizable organic compounds using a photo-ionization detector (PID) with a 10.2 eV lamp. The screening procedure will involve placing an undisturbed soil sample in a sealed container (either a zip-lock bag, glass jar, or a capped soil tube). The container will be set aside, preferably in the sun or warm location. After approximately fifteen minutes, the head space within the container will be tested for total organic vapor, measured in parts per million on a volume to volume basis (ppmv) by the PID. The PID instrument will be calibrated prior to boring using hexane or isobutylene. PID measurements are used along with the field observations, odors, stratigraphy and ground water depth to select soil samples for analysis.

Water Sampling

Water samples collected from borings are either collected from the open borehole, from within screened PVC inserted into the borehole, or from a driven Hydropunch-type sampler. Groundwater is typically extracted using a bailer, check valve and/or a peristaltic pump. The ground water samples 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.

Pangea often performs electrical conductivity (EC) logging and/or continuous coring to identify potential water-bearing zones. Hydropunch-type sampling is then performed to provide discrete-depth grab groundwater sampling within potential water-bearing zones for vertical contaminant delineation. Hydropunch-type sampling typically involves driving a cylindrical sheath of hardened steel with an expendable drive point to the desired depth within undisturbed soil. The sheath is retracted to expose a stainless steel or PVC screen that is sealed inside the sheath with Neoprene O-rings to prevent infiltration of formation fluids until the desired depth is attained. The groundwater is extracted using tubing inserted down the center of the rods into the screened sampler.

Duplicates and Blanks

Blind duplicate water samples are collected usually collected only for monitoring well sampling programs, at a rate of one blind sample for every 10 wells sampled. Laboratory-supplied trip blanks accompany samples collected for all sampling programs to check for cross-contamination caused by sample handling and transport. These trip blanks are analyzed if the internal laboratory QA/QC blanks contain the suspected field contaminants. An equipment blank may also be analyzed if non-dedicated sampling equipment is used.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe.

Waste Handling and Disposal

Soil cuttings from drilling activities are usually stockpiled onsite on top of and covered by plastic sheeting. At least four individual soil samples are collected from the stockpiles for later compositing at the analytic laboratory. The composite sample is analyzed for the same constituents analyzed in the borehole samples. Soil cuttings are transported by licensed waste haulers and disposed in secure, licensed facilities based on the composite analytic results.

Ground water removed during sampling and/or rinsate generated during decontamination procedures are stored onsite in sealed 55 gallon drums. Each drum is labeled with the drum number, date of generation, suspected contents, generator identification and consultant contact. Disposal of the water is based on the analytic results for the well samples. The water is either pumped out using a vacuum truck for transport to a licensed waste treatment/disposal facility or the individual drums are picked up and transported to the waste facility where the drum contents are removed and appropriately disposed.

APPENDIX D

Boring Logs & Well Construction Diagrams

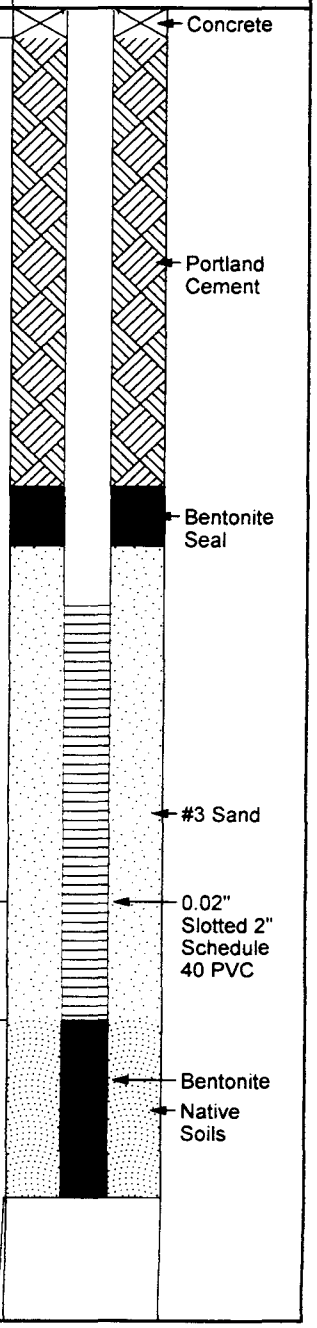
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

WELL NUMBER MW-3A

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Ave
DATE STARTED 3/30/06 **COMPLETED** 3/30/06
GROUND ELEVATION ___ **HOLE SIZE** 10"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push - Single Wall
AT TIME OF DRILLING 15.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Hand Auger to 5', Pilot boring continously cored to 20' bgs.
4hrs AFTER DRILLING 10.2 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						0.5 Grass; topsoil; organics; roots.
				CL		**Silty Clay (CL)**; grey and black; 90-95% low to medium plasticity fines; 5-10% fine-grained sand; trace roots; slightly moist.
5						
10	MW-3A-10		213			@10' Hydrocarbon Odor @10.5' 3" lens with 10-20% fine-grained sand; no odor. @11' Moist; stiff; strong hydrocarbon odor. @12-13' 10-20% fine-grained sand; no odor. @13' hydrocarbon odor.
15	MW-3A-15		2	CL		15.0 **Sandy Clay (CL)**; brown and black; 50-60% medium plasticity fines; 40-50% fine- to coarse-grain sand; trace fine-gravel; moist; hydrocarbon odor.
				CL		17.0 **Clay (CL)**; grey and black; 90-95% medium plasticity fines; 5-10% fine- to coarse-grain sand stringers; moist; no odor. @19.5' 10-20% fine- to coarse-grain sand stringers.
20			0			20.0 *(Pilot boring was advanced to 20' using direct push drilling method. Boring was reamed with a 10" hollow stem auger to facilitate the installation of the well.)* Bottom of hole at 20.0 feet.

WELL DIAGRAM



TOTAL WELL LOG DUBLIN - MW3A.GPJ GINT.US.GDT 8/8/06

PANGEA
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

WELL NUMBER MW-6A

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 5/17/06 **COMPLETED** 5/17/06
GROUND ELEVATION ___ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
▽ **AT TIME OF DRILLING** 15.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Hand Auger to 5'
▼ **2hrs AFTER DRILLING** 9.3 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						See MW-6C boring log for lithology.	Concrete
5							Portland Cement
10						▼	
15						▽	Bentonite Seal #3 Sand
20						20.0	0.02" Slotted 2" Schedule 40 PVC

Bottom of hole at 20.0 feet.

TOTAL WELL LOG DUBLIN MW-6A.GPJ GINT US.GDT 8/8/06

PANGEA
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

WELL NUMBER MW-6B

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 5/17/06 **COMPLETED** 5/17/06
GROUND ELEVATION _____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
▽ **AT TIME OF DRILLING** 15.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored, hand auger to 5'
▼ **3hrs AFTER DRILLING** 8.9 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0							Concrete
						See MW-6C boring log for lithology.	
5							
						▼	
10							Portland Cement
						▽	
15							
20							
25							Bentonite Seal #3 Sand
							0.02" Slotted 2" Schedule 40 PVC
30						30.0	

Bottom of hole at 30.0 feet.

TOTAL WELL LOG DUBLIN MW-6B.GPJ GINT US.GDT 8/8/06

PANGEA
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

WELL NUMBER MW-6C

CLIENT Hadjian **PROJECT NAME** Hadjian - Dublin

PROJECT NUMBER 1001.001 **PROJECT LOCATION** 7240 Dublin Blvd

DATE STARTED 3/30/06 **COMPLETED** 3/30/06 **GROUND ELEVATION** _____ **HOLE SIZE** 8"

DRILLING CONTRACTOR Gregg Drilling **GROUND WATER LEVELS:**

DRILLING METHOD Hollow Stem Auger - 8" ▽ **AT TIME OF DRILLING** 15.0 ft

LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell **AT END OF DRILLING** ---

NOTES Concrete cored, hand auger to 5'. ▼ **AFTER DRILLING** 9.0 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						Concrete; baserock.	Concrete
1.0						**Silty Clay (CL)**; grey and black; 90-95% low to medium plasticity fines; 5-10% fine-grain sand; slightly moist.	
5	MW-6C-5		0				
10	MW-6C-10		87	CL		▼ @10' Hydrocarbon Odor **Sandy Clay (CL)**; brown; 60-70% medium plasticity fines; 30-40% fine- to coarse-grain sand; trace roots; no odor. **Clay (CL)**; grey and black; 70-80% medium to high plasticity fines; 20-30% fine- to coarse-grain sand stringers; strong hydrocarbon odor.	
15	MW-6C-15		5			▼ **Sandy Clay**; brown; 60-70% meidum plasticity fines; 30-40% fine- to coarse-grained sand; moist, decreased odor. **Clay (CL)**; grey and black; 90-95% medium to high plasticity fines; 5-10% fine- to coarse-grain sand stringers; faint hydrocarbon odor.	Portland Cement
18.0							
				SC		18.5 **Clayey Sand (SC)**; brown; 60-70% fine- to medium-grain sand; 30-40% medium plasticity fines; moist; no odor.	
20			14			**Clay (CL)**; grey and black; 90-95% medium to high plasticity fines; 5-10% fine- to coarse-grain sand stringers; no odor. **Clay (CL)**; grey and black; 70-80% medium to high plasticity fines; 20-30% fine- to coarse-grain sand stringers; no odor. **Clay (CL)**; grey and black; 90-95% medium to high plasticity fines; 5-10% fine- to coarse-grain sand stringers; no odor.	
				CL		**Sandy Clay (CL)**; brown; 60-70% medium plasticity fines; 30-40% fine- to coarse-grain sand; no odor. **Clay (CL)**; grey and black; 90-95% medium to high plasticity fines; 5-10% fine- to coarse-grain sand stringers; no odor	
25							

TOTAL WELL LOG DUBLIN MW-6C GPJ GINT US GDT 8/8/06

(Continued Next Page)

PANGEA
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

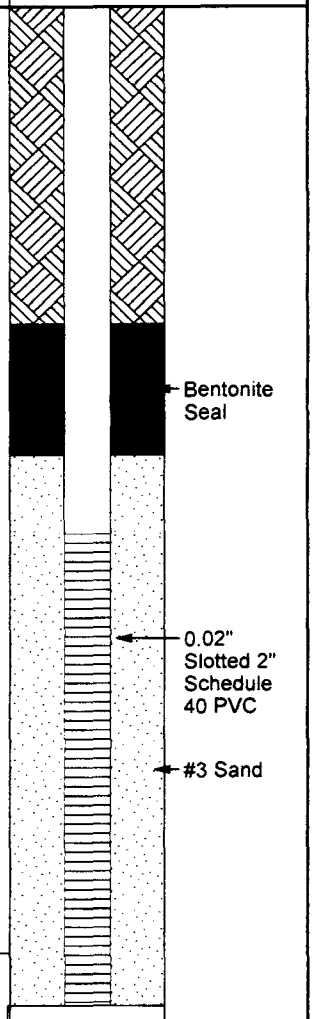
WELL NUMBER MW-6C

CLIENT Hadjian **PROJECT NAME** Hadjian - Dublin

PROJECT NUMBER 1001.001 **PROJECT LOCATION** 7240 Dublin Blvd

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
25			21	CL		**Sandy Clay (CL)**; brown; 60-70% medium plasticity fines; 30-40% fine- to coarse-grain sand; no odor.
						Clay (CL); brown and grey; 80-90% medium to high plasticity fines; 10-20% fine- to coarse-grain sand; trace fine gravel to 1/2"; stiff.
						Sandy Clay (CL); grey and black; 70-80% low to medium plasticity fines; 20-30% fine- to coarse-grain sand; trace gravel to 1/2"; soft; moist.
30			33			**Clay (CL)**; brown and grey; 80-90% medium to high plasticity fines; 10-20% fine- to coarse-grain sand; stiff.
						Sandy Clay (CL); grey and black; 70-80% low to medium plasticity fines; 20-30% fine- to coarse-grain sand; soft; wet.
35			29			**Clay (CL)**; brown and grey; 80-90% medium to high plasticity fines; 10-20% fine- to coarse-grain sand; trace fine gravel to 1/2"; stiff.
						Sandy Clay (CL); grey and black; 70-80% low to medium plasticity fines; 20-30% fine- to coarse-grain sand; soft; moist.
40			0			@40' Wet
						Clay (CL); brown and grey; 80-90% medium to high plasticity fines; 10-20% fine- to coarse-grain sand; stiff.
			0	SC	43.0 / 44.0	**Clayey Sand (SC)**; brown; 60-70% fine- to medium-grain sand; 30-40% medium plasticity fines; trace fine gravel; moist; no odor.
						(Pilot boring was advanced to 44' bgs using direct push drilling method. Boring was reamed with a 8" hollow stem auger to facilitate the installation of the well.)
						Bottom of hole at 44.0 feet.

WELL DIAGRAM

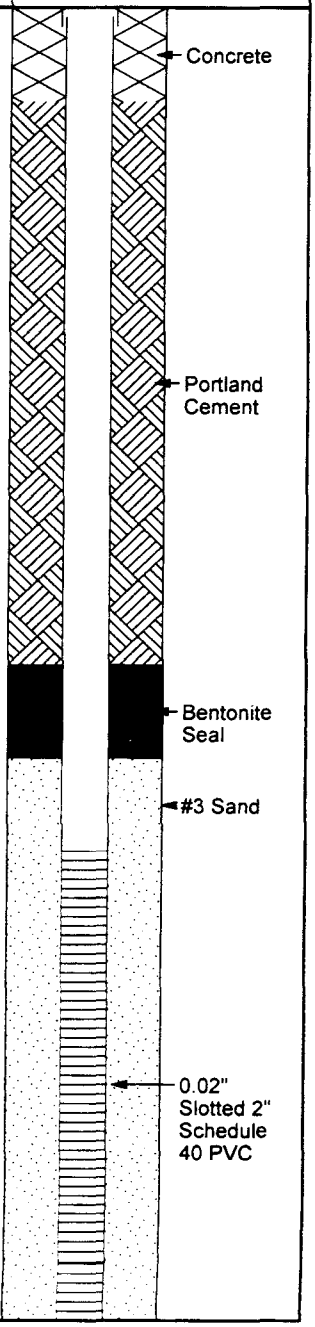


Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

WELL NUMBER MW-7AA

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 3/31/06 **COMPLETED** 3/31/06
GROUND ELEVATION _____ **HOLE SIZE** 10"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 10"
AT TIME OF DRILLING 14.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored, hand auger to 5'
72hrs AFTER DRILLING 8.8 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0.0						**See MW-7B boring log for lithology.**
2.5						
5.0						
7.5						
10.0						
12.5						
14.0						



Bottom of hole at 14.0 feet.

TOTAL WELL LOG DUBLIN MW-7AA.GPJ GINT US.GDT 8/8/06

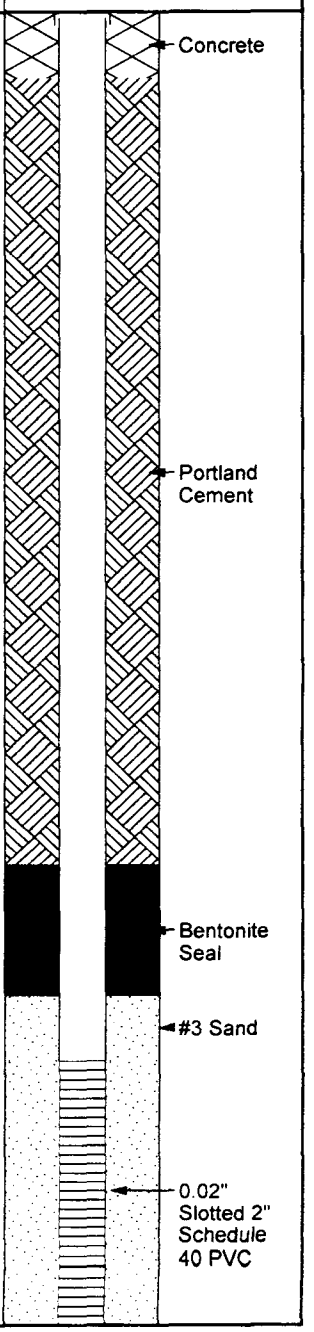
PANGEA
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

WELL NUMBER MW-7A

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 3/29/06 **COMPLETED** 3/29/06
GROUND ELEVATION _____ **HOLE SIZE** 10"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 10"
▽ **AT TIME OF DRILLING** 14.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored, hand auger to 5'
▼ **8hrs AFTER DRILLING** 8.7 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						See MW-7B boring log for lithology.
5						
						▼
10						
						▽
15						
20						20.0

WELL DIAGRAM



Bottom of hole at 20.0 feet.

TOTAL WELL LOG DUBLIN MW-7A.GPJ GINT US.GDT 8/8/06

PANGEA
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

WELL NUMBER MW-7B

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 3/29/06 **COMPLETED** 3/29/06
GROUND ELEVATION _____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
▽ **AT TIME OF DRILLING** 14.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored; Hand Auger to 5'.
▽ **29hrs AFTER DRILLING** 8.8 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						0.5 Concrete	Concrete
						1.0 Sand	
						Silty Clay (CL); grey and black; 90-95% low to medium plasticity fines; 5-10% fine-grain sand; trace roots; slightly moist.	
5	MW-7B-5		0			@8' Slight hydrocarbon odor.	
						▽	
10		2					
	MW-7B-11	3	231			**Clay (CL)**; grey and black; 80-90% medium plasticity fines; 10-20% medium- to coarse-grain sand stringers; trace fine gravel; stiff; moist; strong hydrocarbon odor.	Portland Cement
		2					
		3					
		3					
		2					
		3		CL		▽	
		4					
15		3				@15' No hydrocarbon odor.	
		5	2				
		6					
		3					
		4				17.0	
		6				**Clayey Sand (SC)**; grey; 50-60% fine- to coarse-grain sand; 30-40% medium plasticity fines; 5-10% fine gravel; wet.	
		2		SC			
		4				18.5	
		4				**Clay (CL)**; grey and black; 80-90% medium plasticity fines; 10-20% medium- to coarse-grain sand stringers; trace fine gravel; stiff; moist.	
		2					
20		4					
		5	0				
		3					
		5					
		7		CL			
		3					
		6					
		6					
		2					
		2					
25		3					Bentonite Seal

TOTAL WELL LOG DUBLIN MW-7B GPJ GINT US GDT 8/8/06

(Continued Next Page)

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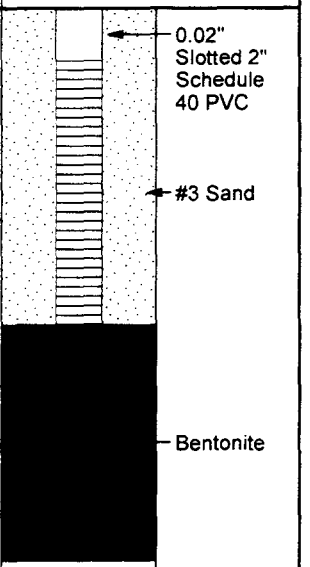
WELL NUMBER MW-7B

CLIENT Hadjian **PROJECT NAME** Hadjian - Dublin

PROJECT NUMBER 1001.001 **PROJECT LOCATION** 7240 Dublin Blvd

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
25		3	0	CL		**Clay (CL)**; grey and black; 80-90% medium plasticity fines; 10-20% medium- to coarse-grain sand stringers; trace fine gravel; stiff; moist. *(continued)*
		5				
		6				
		2				27.0
		2		SC		**Clayey Sand (SC)**; grey; 70-80% fine- to medium-grain sand; 20-30% medium plasticity fines; wet.
		3				
		3				
		5				29.0
		6				**Clay (CL)**; brown and grey; 80-90% medium plasticity fines; 10-20% fine- to coarse-grain sand stringers; stiff to medium stiff.
30		4				
		6	0			
		8				
		5				
		9		CL		
		9				
		5				
		6				
		7				
		4				
35		6				
		6	0			Bottom of hole at 35.5 feet.

WELL DIAGRAM



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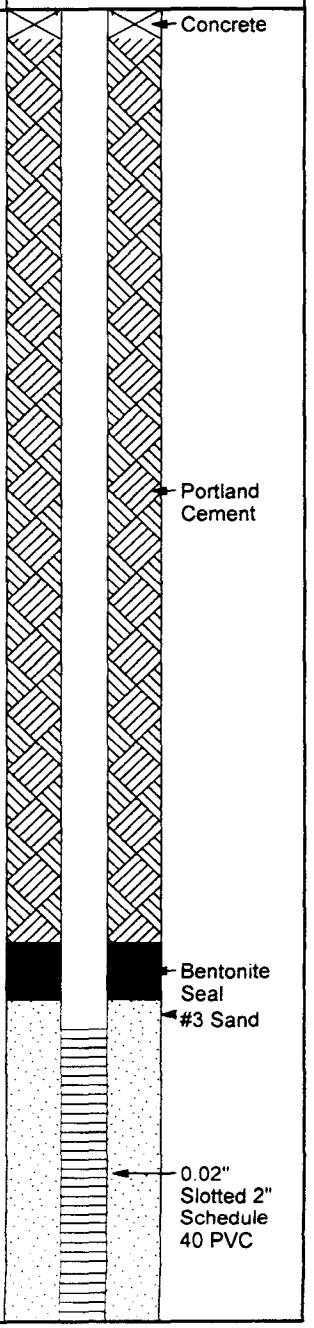
WELL NUMBER MW-7C

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 3/31/06 **COMPLETED** 3/31/06
GROUND ELEVATION _____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
▽ **AT TIME OF DRILLING** 14.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored, hand auger to 5'
▼ **72hrs AFTER DRILLING** 6.6 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						See MW-7B, EA-1 boring log for lithology.
5						
						▼
10						
						▽
15						
20						
25						
30						
35						
40						
45						45.0

WELL DIAGRAM



Bottom of hole at 45.0 feet.

TOTAL WELL LOG DUBLIN MW-7C.GPJ GINT US.GDT 8/8/06

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WELL NUMBER MW-8A

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 5/17/06 **COMPLETED** 5/17/06
GROUND ELEVATION _____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push - Single Wall
▽ **AT TIME OF DRILLING** 14.5 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored; hand Auger to 5'
▼ **5.5hrs AFTER DRILLING** 12.9 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						**Clay (CL)**; black; 90-95% medium plasticity fines; 5-10% fine- to coarse-grain sand stringers; moist.
5	MW-8A-5		4	CL		
10	MW-8A-10		2			*(@11' Driller noted 'soft' drilling)*
						▼
14.5						▽
15	MW-8A-15		5	SC		**Clayey sand (SC)**; brown; 70-80% fine-grain sand; 20-30% medium plasticity fines; increased moisture.
15.5						**Clay (CL)**; black, 70-80% medium plasticity fines; 10-20% fine- to coarse-grain sand; trace to 10% fine gravel.
				CL		
20			0			**Clay (CL)**; black; 90-95% medium plasticity fines; 5-10% fine- to coarse-grain sand.
20.0						*(Pilot boring was advanced to 20' using direct push drilling method. Boring was reamed with a 8" hollow stem auger to facilitate the installation of the well.)*

WELL DIAGRAM: Concrete; Portland Cement Type II; Bentonite; #3 Sand; 0.02" Slotted 2" Schedule 40 PVC; Slough

Bottom of hole at 20.0 feet.

TOTAL WELL LOG DUBLIN MW8A.GPJ GINT US.GDT 8/8/06

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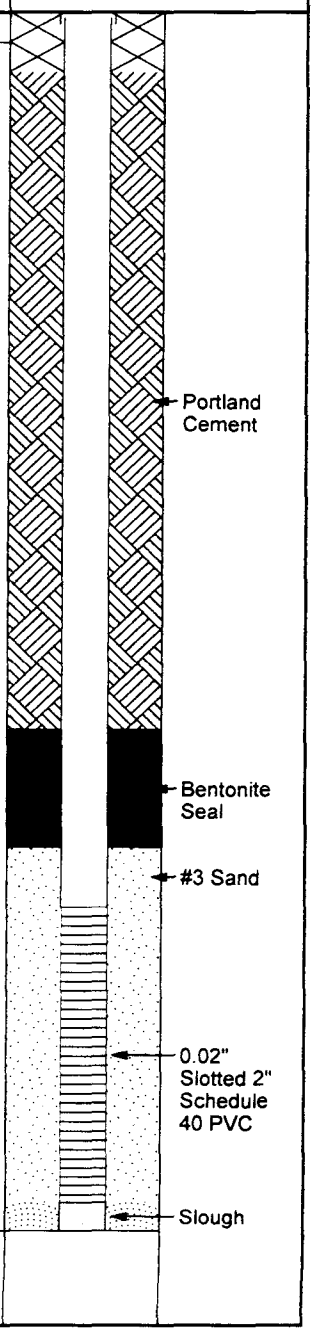
WELL NUMBER MW-9A

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 4/3/06 **COMPLETED** 4/3/06
GROUND ELEVATION _____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
▽ **AT TIME OF DRILLING** 11.5 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored; hand auger to 5'.
▽ **10hrs AFTER DRILLING** 9.8 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0					0.5	Concrete, baserock.
						Silty Clay (CL); grey and black; 80-90% low to medium plasticity fines; 10-20% fine- to medium-grain sand; moist.
5	MW-9A-5		0	CL		
		2				
		3				
10		3				@9.5' 1" lens of brown clayey sand; 70-80% fine- to medium-grain sand; 20-30% medium plasticity fines; slight hydrocarbon odor.
	MW-9A-10	3	0			
		6				@11' No odor.
		9				▽
		3				**Sandy Clay (CL)**; grey and brown; 60-70% medium plasticity fines; 30-40% fine- to coarse-grain sand stringers; moist to wet.
		6				**Clay (CL)**; grey and black; 80-90% medium plasticity fines; 10-20% fine- to coarse-grain sand stringers; trace fine gravel to 1/2"; moist.
		5				
		3				
		3				
		5				
15		4		CL		
	MW-9A-15	5	0			
		5				
		3				
		5				
		5				**Clay (CL)**; grey and black; 70-80% medium plasticity fines; 20-30% fine- to medium-grain sand; trace fine gravel; moist.
		3				
		3				
		4				**Clay (CL)**; grey and black; 90-95% medium plasticity fines; 5-10% fine- to medium-grain sand; trace fine gravel; moist.
		3				
20		5				
		7	0		20.5	
						Bottom of hole at 20.5 feet.

WELL DIAGRAM



TOTAL WELL LOG DUBLIN MW9A.GPJ GINT US.GDT 8/8/06

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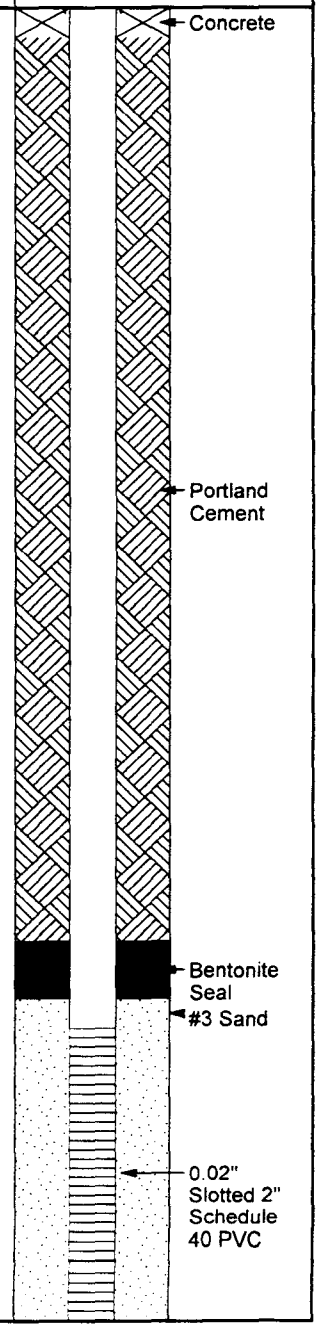
WELL NUMBER MW-9C

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 4/3/06 **COMPLETED** 4/3/06
GROUND ELEVATION _____ **HOLE SIZE** 10"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 10"
▽ **AT TIME OF DRILLING** 11.5 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored, hand auger to 5'
▼ **9hrs AFTER DRILLING** 10.7 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
0						
						See MW-9A, EA-3 boring log for lithology.
5						
10						▼ ▽
15						
20						
25						
30						
35						
40						
45						45.0

WELL DIAGRAM



Bottom of hole at 45.0 feet.

TOTAL WELL LOG DUBLIN MW-9C.GPJ GINT US GDT 8/8/06

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WELL NUMBER MW-10A

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 3/27/06 **COMPLETED** 3/27/06
GROUND ELEVATION _____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
AT TIME OF DRILLING 17.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored, hand auger to 5'
24hrs AFTER DRILLING 6.1 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						See MW-10C boring log for lithology.	Concrete
5							Portland Cement
10							Bentonite Seal
15							#3 Sand
20						20.0	0.02" Slotted 2" Schedule 40 PVC

Bottom of hole at 20.0 feet.

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WELL NUMBER MW-10C

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 3/27/06 **COMPLETED** 3/27/06
GROUND ELEVATION ____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
▽ **AT TIME OF DRILLING** 17.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Hand Auger to 5'.
▼ **20hrs AFTER DRILLING** 11.2 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						0.5 Asphalt	
						Clay (CL); black and brown; 90-95% medium plasticity fines; 5-10% fine- to coarse-grain sand stringers.	
5	MW-10C-5					@5' No odor.	
				CL			
10						@10' Gray and black; trace roots; moist; hydrocarbon odor.	
	MW-10C-10	2	1129				
		5				▼	
		5					
		3					
		5					
		5					
		3					
		4				@14.5' No odor.	
		6					
15		4					
	MW-10C-15	6	101				
		6					Portland Cement
		3				▽	
		3				**Clay with sand (CL)**; grey and black; 75-85% medium plasticity fines; 10-20% fine- to coarse-grain sand stringers; trace to 5% fine gravel; stiff; increased moisture.	
		5					
		4					
		7					
		11					
		3					
20		6					
		4	3				
		3					
		7		CL			
		8					
		4				@24' Increased sand; 20-30% fine- to coarse-grain sand stringers; no gravel.	
		7					
		8					
		4					
		6					
25		9					

TOTAL WELL LOG DUBLIN MW10C.GPJ GINT US GDT 8/8/06

(Continued Next Page)

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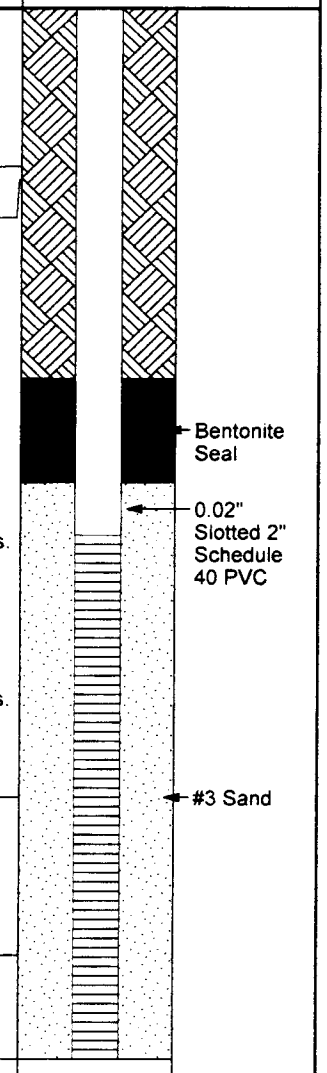
WELL NUMBER MW-10C

CLIENT Hadjian **PROJECT NAME** Hadjian - Dublin

PROJECT NUMBER 1001.001 **PROJECT LOCATION** 7240 Dublin Blvd

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
25		4	0	CL		
		7				
		7				
		4				
		6				
		7				28.0
		3		SC		28.3 **Clayey Sand (SC)**; grey; 75-85% fine- to medium-grain sand; 15-25% medium plasticity fines; moist.
		5				**Clay with sand (CL)**; grey and black; 75-85% medium plasticity fines; 10-20% fine- to coarse-grain sand stringers; trace to 5% fine gravel; stiff.
		6				
30		4				
		9	22			**Clay (CL)**; grey; 90-95% medium plasticity fines; trace to 5% medium- to coarse-grain sand; trace to 5% fine gravel.
		10				
		4				
		6				
		7				@33' increased sand; 20-30% fine- to coarse-grain sand; no gravel.
		4				
		6				
		7				
		4				
35		5				
		6	0	CL		@35' decreased sand; 5-10% medium- to coarse-grain sand stringers.
		4				
		5				@36' increased sand; 20-30% fine- to coarse-grain sand stringers.
		9				
		5				
		6				
		7				@38' decreased sand; 5-10% medium- to coarse-grain sand stringers.
		5				
		8				
40		9				40.0
		4	2	SM		**Silty sand (SM)**; grey; 60-70% fine- to medium-grain sand; 30-40% low plasticity fines; moist.
		12				
		14				
		5				
		6				
		7				43.0
		6		SW		**Well graded sand (SW)**; grey; 95-100% fine- to coarse-grain sand; trace to 5% non-plastic fines.
		9				
		11				
45		7	2			45.0
						Bottom of hole at 45.0 feet.

WELL DIAGRAM



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WELL NUMBER MW-11C

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 3/28/06 **COMPLETED** 3/28/06
GROUND ELEVATION _____ **HOLE SIZE** 8"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Hollow Stem Auger - 8"
▽ **AT TIME OF DRILLING** 19.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES
▼ **7hrs AFTER DRILLING** 9.0 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0						0.5 Grass topsoil; black; organics; roots.	Concrete
						Clay with sand (CL); grey; 70-80% medium plasticity fines; 20-30% fine- to coarse-grain sand.	
5	MW-11C-5						
						▼	
10		3				**Clay (CL)**; grey and brown; 80-90% medium plasticity fines; 10-20% medium- to coarse-grain sand stringers; moist; strong hydrocarbon odor.	
		4					
	MW-11C-11	10	69				
		3					
		4					
		6				@13' Increased sand stringers (30-40%)	
		3					
		6					
15		11					
		3				@15' Decreased sand stringers (10-20%)	
	MW-11C-15	5	5				Portland Cement
		10					
		3					
		4					
		5		CL			
		4					
		5					
		5				▽	
		2				@19' Increased moisture	
20		2					
		4	0				
		3					
		4				@21' Decreased sand stringers (trace - 5%); black; stiff.	
		4					
		5					
		6				@23' Brown	
		7					
		5					
		7				**Sandy Clay with gravel (CL)**; grey; 40-50% medium to high plasticity fines; 20-30% medium- to coarse-grain sand; 20-30% fine gravel;	
25		8					

(Continued Next Page)

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WELL NUMBER MW-11C

CLIENT Hadjian **PROJECT NAME** Hadjian - Dublin

PROJECT NUMBER 1001.001 **PROJECT LOCATION** 7240 Dublin Blvd

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION
25		5	0			moist.
		7				**Clay (CL)**; grey and brown; 80-90% medium plasticity fines; 10-20% medium- to coarse-grain sand stringers; moist. *(continued)*
		8				**Sandy Clay with gravel (CL)**; grey; 40-50% medium to high plasticity fines; 20-30% medium- to coarse-grain sand; 20-30% fine gravel; moist.
		3				**Clay (CL)**; grey and brown; 80-90% medium plasticity fines; 10-20% medium- to coarse-grain sand stringers; moist.
		4				@29' Less stiff.
		4				
		3				
		6				
		6				
		3				
30		5	0	CL		@30' More stiff as before; increased sand; 20-30% medium- to coarse-grain sand stringers.
		5				
		2				
		3				
		6				
		4				
		5				
		6			34.0	
		4				**Clayey Sand (SC)**; grey; 50-60% fine- to coarse-grain sands; 40-50% medium plasticity fines; moist.
		4				
35		5	0	SC		
		3				
		5				
		6			37.0	
		3				**Poorly graded sand with clay (SP-SC)**; grey; 85-95% fine- to medium-grain sand; 5-15% non plastic fines; wet.
		4				
		8		SP-SC		
		3				
		4				
40		6			40.0	
		3	0	CL	40.5	**Clay (CL)**; 80-90% medium plasticity fines; 10-20% fine- to medium-grain sand.
		5		SP-SC	40.8	
		7			41.5	**Poorly graded sand with clay (SP-SC)**; grey; 85-95% fine- to medium-grain sand; 5-15% non plastic fines; wet.
		3		CL	41.8	**Clay (CL)**; 80-90% medium plasticity fines; 10-20% fine- to medium-grain sand.
		4		SP-SC		**Poorly graded sand with clay (SP-SC)**; grey; 85-95% fine- to medium-grain sand; 5-15% non plastic fines; wet.
		7			43.0	**Clay (CL)**; 80-90% medium plasticity fines; 10-20% fine- to medium-grain sand.
		3		CL		**Poorly graded sand with clay (SP-SC)**; grey; 85-95% fine- to medium-grain sand; 5-15% non plastic fines; wet.
		4		SP-SC		
		7				
45		3	0		45.0	

(Note: When abandoning well, pressure grout due to conduits adjacent well. Irrigation line approximately 1' bgs north of well and electrical line approximately 1' bgs south of well.)

Bottom of hole at 45.0 feet.

WELL DIAGRAM

- Bentonite Seal
- #3 Sand
- 0.02" Slotted 2" Schedule 40 PVC
- Slough

TOTAL WELL LOG DUBLIN MW11C GPJ GINT US GDT 8/8/06

PANGEA
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BORING NUMBER SB-1

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 5/18/06 **COMPLETED** 5/18/06
GROUND ELEVATION _____ **HOLE SIZE** 2"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push - Single Wall
AT TIME OF DRILLING ---
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Hand Auger to 5'
AFTER DRILLING ---

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0.0					0.3 Asphalt	Concrete
			GW		**Well graded sandy gravel(GW)**; grey; baserock; 75-85% fine gravel to 1/2"; 15-25% fine- to coarse-grain sand; moist.	
2.5					3.0	
			CL		**Clay (CL)**; black, 90-95% medium plasticity fines; 5-10% fine- to coarse-grain sand stringers; moist.	
					4.0	
			GW		**Well graded sandy gravel(GW)**; grey; baserock; 75-85% fine gravel to 1/2"; 15-25% fine- to coarse-grain sand; moist.	
5.0					5.0	
					No Recovery	
					7.0	
7.5	SB-1-7	5			**Well graded sandy gravel(GW)**; grey; baserock; 75-85% fine gravel to 1/2"; 15-25% fine- to coarse-grain sand; moist.	Portland Cement
			GW			
10.0						
	SB-1-11					
12.5					@13' Strong hydrocarbon odor.	
	SB-1-14	274			14.0	
					(@14' hit something solid (top of sewer line) and stop. Moved 2' south and start new hole (SB-1A).)	
					Bottom of hole at 14.0 feet.	

BH COPY DUBLIN SB-1.GPJ GINT US.GDT 7/14/06

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BORING NUMBER SB-1A

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dublin Blvd
DATE STARTED 5/18/06 **COMPLETED** 5/18/06
GROUND ELEVATION _____ **HOLE SIZE** 2"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push - Single Wall
▽ **AT TIME OF DRILLING** 14.0 ft
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES
▼ **1hrs AFTER DRILLING** 11.2 ft

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					0.1 Asphalt	Concrete
			GW		**Well graded sandy gravel (GW)**; grey; baserock; 75-85% fine gravel to 1/2"; 15-25% fine- to coarse-grain sand; moist.	
					4.0	
			CL		4.5 **Clay (CL)**; black, 90-95% medium plasticity fines; 5-10% fine- to coarse-grain sand stringers; moist.	
5			GW		**Well graded sandy gravel(GW)**; grey; baserock; 75-85% fine gravel to 1/2"; 15-25% fine- to coarse-grain sand; moist.	
	SB-1A-5				6.0	
			CL		**Clay (CL)**; black and grey; 80-90% medium plasticity fines; 10-20% fine- to coarse-grain sand; trace gravel.	
					8.0	
					No Recovery	Portland Cement
10					11.0	
					▼ **Clay (CL)**; black and grey; 80-90% medium plasticity fines; 10-20% fine- to coarse-grain sand; trace gravel.	
		4	CL			
		7			14.0 ▽	
			SC		14.5 **Clayey Sand (SC)**; black; 80-90% fine-grain sand; 10-20% medium plasticity fines; wet.	
15			CL		**Clay (CL)**; black and grey; 80-90% medium plasticity fines; 10-20% fine- to coarse-grain sand; trace gravel.	
	SB-1A-15	3			16.0 *(@16' Set temporary casing and left in open borehole for 1 hour. Water sample SB-1A-W.)*	
					Bottom of hole at 16.0 feet.	

PANGEA
Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200
Oakland, CA, 94612
Telephone: 510-836-3700
Fax: 510-836-3709

BORING NUMBER SB-2

CLIENT Hadjian
PROJECT NAME Hadjian - Dublin
PROJECT NUMBER 1001.001
PROJECT LOCATION 7240 Dulbin Blvd
DATE STARTED 5/18/06 **COMPLETED** 5/18/06
GROUND ELEVATION _____ **HOLE SIZE** 2"
DRILLING CONTRACTOR Gregg Drilling
GROUND WATER LEVELS:
DRILLING METHOD Direct Push - Single Wall
AT TIME OF DRILLING ---
LOGGED BY Morgan Gillies **CHECKED BY** Bob Clark-Riddell
AT END OF DRILLING ---
NOTES Concrete cored - hand auger to 5'.
AFTER DRILLING ---

DEPTH (ft bgs)	SAMPLE TYPE NUMBER	PID (ppm)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	BORING DIAGRAM
0					Concrete	Concrete
					1.0	
					Clay (CL); black; 90-95% medium plasticity fines; 5-10% fine- to coarse-grain sand stringers; moist.	
5	SB-2-5	3				
10	SB-2-10	81	CL		**Clay with sand (CL)**; black and grey; 70-80% medium plasticity fines; 20-30% fine- to coarse-grain sand stringers; trace fine gravel; moist; no odor. @9.5' strong hydrocarbon odor. @12' no odor	Portland Cement
15	SB-2-15	62			**Clay (CL)**; black and grey; 85-95% medium plasticity fines; 5-15% fine- to coarse-grain sand stringers; trace (less than 5%) fine gravel. **Clay with sand (CL)**; brown and grey; 60-70% medium plasticity fines; 20-30% fine- to coarse-grain sand; 10% fine gravel; moist.	
20	SB-2-20	2			@19.5' A 1" lense of Clayey Gravel with sand; 50-60% fine gravel; 20-30% coarse grain sand; 20-30% medium plasticity fines. *(@16' Set temporary casing and left in open borehole for 4.5 hours. No water. @20' Set temporary casing and left open for 1.5 hours. No Water.)* Bottom of hole at 20.0 feet.	

BH COPY DUBLIN SB-2.GPJ GINT US.GDT 7/14/06

01-410T
35/1W-1F1

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING: EA 1

Coordinates: 121 55' 20" West
37 41' 10" North
Elevation top of casing:333.41
Casing below surface:0.28 ft

CLIENT	STATION #	LOCATION
Chevron USA	SS 9-2582	7240 Dublin Blvd Dublin, California

DRILLING AND SAMPLING METHODS Rotary with 10 inch hollow stem auger and CA modified split tube sampler lined with 2 inch brass sleeves; HEW Drilling Co. C57:384167

				DRILLING START	DRILLING FINISH
WATER LEVEL	10.71	10.39			
TIME	1200	1205		TIME 0930	TIME 1230
DATE	10-20	10-21		DATE 10-17	DATE 10-17
REFERENCE	T of C	T of C			

SURFACE CONDITIONS Landscaped grass

DESCRIPTION by: T. R. Winsor

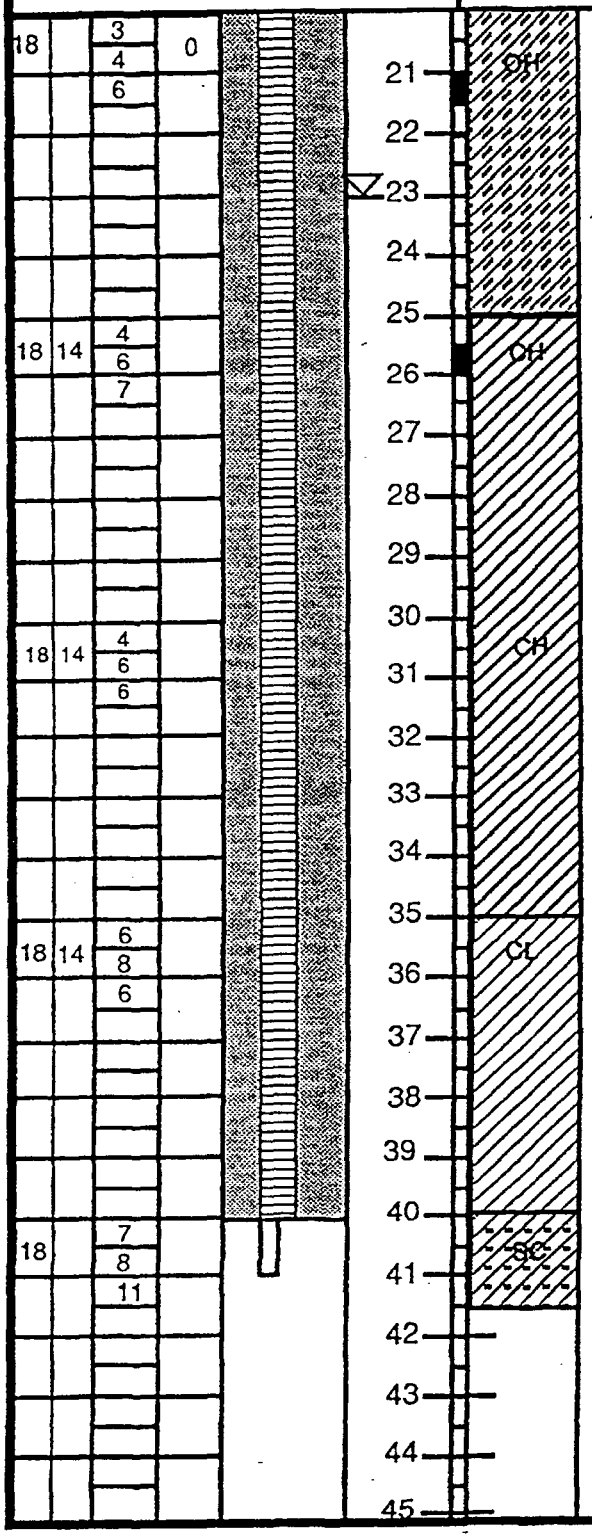
Inches Driven	Inches Recover	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG	
					0		Dark greenish-black silt and clay-rich soil, with rare coarse sand grains, abundant tree roots and organics.
18	12	3, 3, 4	0		5	CL	Dark greenish-black silty clay, angular silt sized fragments of quartz in plastic clay; locally goes to gray-green and has the appearance of a fill; aggregated chunks and pieces of clay-rich material; very plastic, damp, no odor.
18	14	3, 4, 6	0.6		10	CH	Dark olive-gray to greenish-gray clay; soft and lustrous, plastic and pliable, damp but no odor; rare sand/silt grains, still has the aggregated look of a fill.
18	16	3, 5, 6	0		15	CH	Olive-gray clay, loses the aggregated appearance of a fill, very rare silt grain, damp, no odor, plastic; a consistent clay
					20		

01-410T
3S/1W-1F1

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

CLIENT	STATION #	LOCATION
Chevron USA	SS 9-2582	7240 Dublin Blvd Dublin, California

LOG OF SOIL BORING **EA1**



Olive-gray clay, very plastic, damp with no odor, rare silt grains and abundant organics.

Gray-green clay, very tough plastic clay with local Fe oxides and organics, rare silt grains and angular lithics.

Tough, sticky pliable clay-dark, angular silt is visible in small %, not sufficient to give clay a gritty feel; still smooth, wet/moist but not yielding a lot of water

Gray-green silty clay to clayey silt/sand, much more silt than above but still very plastic and pliable, silt is evenly distributed rounded silt sized grains of quartz cemented by clay; wet ;silt to 80%, (3 brass tubes).

Very fine-grained sand or silt cemented with clay, sample is still coherent and pliable to a point; ultimately is rather friable; grains are rounded and very well sorted; no angular lithics or sand.

01-410V

3S/1W-1F3

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

LOG OF SOIL BORING: EA 3

Coordinates:121 55'20" West
37 41'10"North

Elevation top of casing:333.64

Casing below surface: 0.30 ft

CLIENT	STATION #	LOCATION
Chevron USA	SS 9-2582	7240 Dublin Blvd Dublin, California

DRILLING AND SAMPLING METHODS Rotary drill with 10 inch hollow stem auger with CA split spoon auger lined with 2 inch brass liners; HEW Drilling Co.C57: 384167

				DRILLING START	DRILLING FINISH
WATER LEVEL					
TIME				TIME 08:30	TIME 15:30
DATE				DATE 10-21-88	DATE 10-21-88
REFERENCE					

SURFACE CONDITIONS Concrete that slopes to the south

DESCRIPTION by: T. R. Winsor TRW

Inches Driven	Inches Recovered	Blows/6" Sampler	OVA Reading	WELL DETAIL	DEPTH (Feet)	GRAPHIC LOG
18	10		20		5	CL
					6	SC
					7	
					8	CL
					9	
18	10	2 4 7			10	
					11	
					12	
					13	
					14	
					15	
18	10	2 5 7			16	CH
					17	
					18	
					19	
					20	

Olive-gray clay, plastic, locally with high silt but generally high clay, odor.

Very fine grained sand, salt and pepper appears with quartz and dark lithics, clay approximately 10%, subangular quartz.

Olive-gray clay, silt evenly dispersed, less than 2% in otherwise homogeneous clay, some clay is lighter colored gray giving a variegated appearance, sample is moist with very weak odor, rare pebbles of siltstone

Olive-gray clay, less than 1% silt, rare pebbles or grains of siltstone, similar olive-gray/gray variegation to above, spotty Fe oxides, some organic debris; clay is almost elastic; clay is almost vitreous.

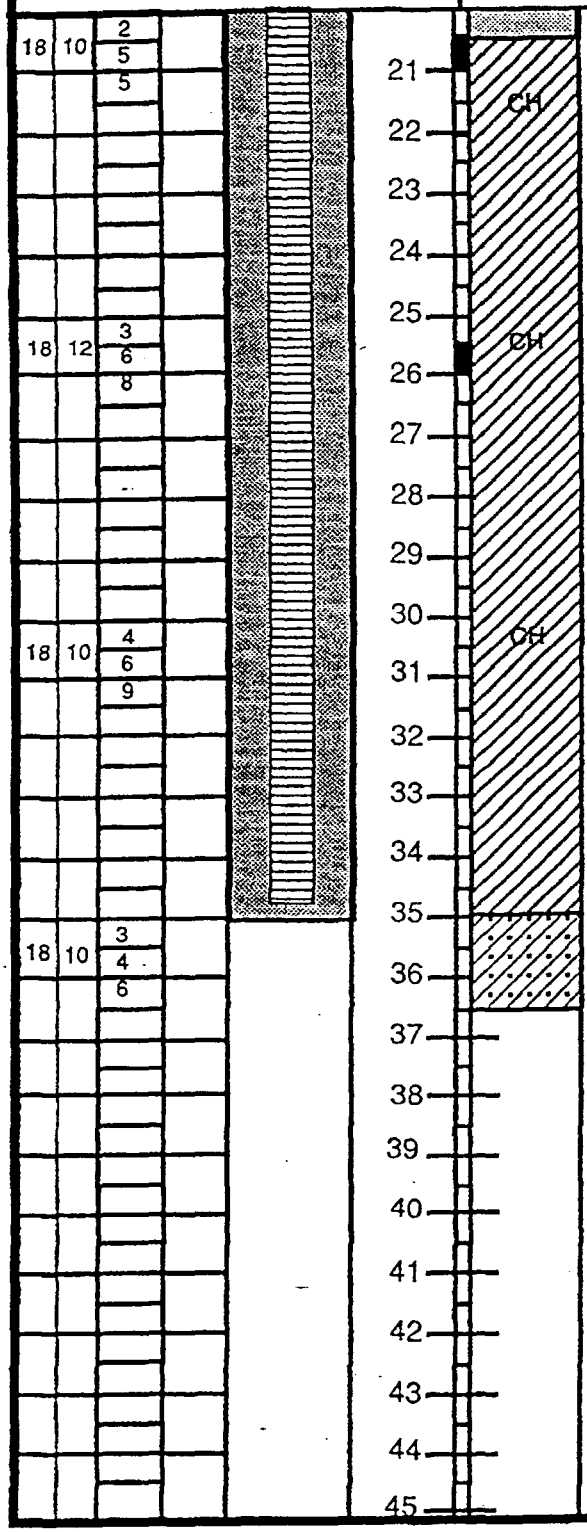
Fine-grained sand and clay is lithic-rich and subangular, still with significant clay content.

01-410V
3S/1W-1F3

EA ENGINEERING, SCIENCE, AND TECHNOLOGY, INC.

CLIENT	STATION #	LOCATION
Chevron USA	SS 9-2582	7240 Dublin Blvd Dublin, California

LOG OF SOIL BORING **EA 3**



Sand

Grayish-green clay, clay is very sticky, stiff and almost elastic, not as vitreous as above, does not contain the silt.

Gray-green clay, with local fe oxides, rare pebbles of gray siltstone, clay is very tough, almost elastic, wet.

Gray-green clay, with limited local Fe oxides, less than 2%, rare sand grains, clay is very stiff and tough.

Clayey sand to sandy clay, grades evenly from a sand composed of very fine grained (almost silt sized) grains of quartz and lithics cemented by gray-green clay to a clay with only 30-40% sand; the sand is almost friable, and clay is still very pliable, wet.

APPENDIX E

Laboratory Analytical Reports

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 03/27/06
		Date Received: 03/31/06
	Client Contact: Morgan Gillies	Date Reported: 04/06/06
	Client P.O.:	Date Completed: 04/06/06

WorkOrder: 0603702

April 06, 2006

Dear Morgan:

Enclosed are:

1). the results of **13** analyzed samples from your **#1001.001; 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 please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 03/27/06-03/30/06
1710 Franklin Street, Ste. 200		Date Received: 03/31/06
Oakland, CA 94612	Client Contact: Morgan Gillies	Date Extracted: 03/31/06
	Client P.O.:	Date Analyzed: 04/01/06-04/05/06

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0603702

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-10C-10	S	17,a	ND	0.14	0.063	0.46	1.3	1	93
002A	MW-10C-15	S	ND	ND	ND	ND	0.0065	0.023	1	96
003A	MW-10C-5	S	ND	ND	ND	ND	ND	ND	1	102
004A	MW-11C-5	S	ND	ND	ND	ND	ND	ND	1	99
005A	MW-11C-11	S	700,a	ND<10	1.4	12	14	65	200	107
006A	MW-11C-15	S	ND	1.0	ND	0.023	0.014	0.073	1	96
007A	MW-7B-5	S	ND	0.17	ND	ND	ND	ND	1	97
008A	MW-7B-11	S	1800,a	16	7.8	14	30	170	200	106
009A	MW-3A-10	S	1500,a	ND<10	2.4	5.2	19	83	200	109
010A	MW-3A-15	S	140,a	2.7	2.3	2.6	2.4	16	20	110
011A	MW-6C-5	S	ND	ND	ND	ND	ND	ND	1	102
012A	MW-6C-10	S	50,g,m	ND	0.024	0.072	0.13	1.5	1	99
013A	MW-6C-15	S	130,a	ND<0.50	0.61	0.29	1.4	9.3	10	90
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	NA	NA	NA	NA	NA	NA	1	ug/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts 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 MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request; o) results are reported on a dry weight basis.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 03/28/06-03/30/06
		Date Received: 03/31/06
	Client Contact: Morgan Gillies	Date Extracted: 04/05/06
	Client P.O.:	Date Analyzed: 04/05/06-04/06/06

Methyl tert-Butyl Ether*

Extraction method: SW5030B Analytical methods: SW8260B Work Order: 0603702

Lab ID	Client ID	Matrix	Methyl-t-butyl ether (MTBE)	DF	% SS
005A	MW-11C-11	S	3.1	67	97
006A	MW-11C-15	S	0.80	6.7	96
007A	MW-7B-5	S	0.11	1	96
008A	MW-7B-11	S	13	100	91
009A	MW-3A-10	S	0.54	67	97
010A	MW-3A-15	S	2.6	20	93
013A	MW-6C-15	S	0.050	4	91

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA
	S	0.005	mg/kg

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0603702

EPA Method: SW8021B/8015Cm **Extraction: SW5030B** **BatchID: 21076** **Spiked Sample ID: 0603700-008A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	0.60	96.6	98.8	2.31	99.1	110	10.3	70 - 130	70 - 130
MTBE	ND	0.10	99.8	106	5.99	110	107	2.95	70 - 130	70 - 130
Benzene	ND	0.10	96.6	103	6.15	104	99.6	3.87	70 - 130	70 - 130
Toluene	ND	0.10	96.5	103	6.11	106	100	5.44	70 - 130	70 - 130
Ethylbenzene	ND	0.10	96.3	101	4.63	101	101	0	70 - 130	70 - 130
Xylenes	ND	0.30	89	94.3	5.82	89	94.7	6.17	70 - 130	70 - 130
%SS:	91	0.10	108	97	10.7	102	106	3.85	70 - 130	70 - 130

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

NONE

BATCH 21076 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603702-001A	3/27/06 9:35 AM	3/31/06	4/01/06 10:47 AM	0603702-002A	3/28/06 9:55 AM	3/31/06	4/01/06 11:20 AM
0603702-003A	3/28/06 9:30 AM	3/31/06	4/01/06 11:53 AM	0603702-004A	3/28/06 10:05 AM	3/31/06	4/01/06 12:26 PM
0603702-005A	3/28/06 10:20 AM	3/31/06	4/01/06 1:00 PM	0603702-006A	3/28/06 10:40 AM	3/31/06	4/01/06 11:26 AM
0603702-007A	3/29/06 7:40 AM	3/31/06	4/05/06 12:23 AM	0603702-008A	3/29/06 8:00 AM	3/31/06	4/01/06 10:06 PM
0603702-009A	3/30/06 8:35 AM	3/31/06	4/01/06 10:36 PM	0603702-010A	3/30/06 8:40 AM	3/31/06	4/01/06 11:35 PM
0603702-011A	3/30/06 10:50 AM	3/31/06	4/04/06 6:48 AM	0603702-012A	3/30/06 11:00 AM	3/31/06	4/02/06 1:04 AM
0603702-013A	3/30/06 11:05 AM	3/31/06	4/03/06 10:21 PM				

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

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

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

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

cluttered chromatogram; sample peak coelutes with surrogate peak.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0603702

EPA Method: SW8260B	Extraction: SW5030B	BatchID: 21095	Spiked Sample ID: 0604020-011A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
Methyl-t-butyl ether (MTBE)	ND	0.050	86.6	95.3	9.54	86.1	89.2	3.58	70 - 130	70 - 130
%SS1:	103	0.050	103	100	2.70	103	102	1.06	70 - 130	70 - 130

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

NONE

BATCH 21095 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0603702-005A	3/28/06 10:20 AM	4/05/06	4/05/06 7:12 PM	0603702-006A	3/28/06 10:40 AM	4/05/06	4/05/06 7:55 PM
0603702-007A	3/29/06 7:40 AM	4/05/06	4/05/06 8:38 PM	0603702-008A	3/29/06 8:00 AM	4/05/06	4/06/06 1:55 AM
0603702-009A	3/30/06 8:35 AM	4/05/06	4/05/06 11:37 PM	0603702-010A	3/30/06 8:40 AM	4/05/06	4/06/06 12:20 AM
0603702-013A	3/30/06 11:05 AM	4/05/06	4/06/06 1:04 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.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0603702 **ClientID: PEO** **EDF: NO**

Report to:
Morgan Gillies
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612
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: **03/31/2006**
Date Printed: **04/05/2006**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
0603702-001	MW-10C-10	Soil	3/27/06 9:35:00 AM	☐	A											
0603702-002	MW-10C-15	Soil	3/28/06 9:55:00 AM	☐	A											
0603702-003	MW-10C-5	Soil	3/28/06 9:30:00 AM	☐	A											
0603702-004	MW-11C-5	Soil	3/28/06 10:05:00	☐	A											
0603702-005	MW-11C-11	Soil	3/28/06 10:20:00	☐	A	A										
0603702-006	MW-11C-15	Soil	3/28/06 10:40:00	☐	A	A										
0603702-007	MW-7B-5	Soil	3/29/06 7:40:00 AM	☐	A	A										
0603702-008	MW-7B-11	Soil	3/29/06 8:00:00 AM	☐	A	A										
0603702-009	MW-3A-10	Soil	3/30/06 8:35:00 AM	☐	A	A										
0603702-010	MW-3A-15	Soil	3/30/06 8:40:00 AM	☐	A	A										
0603702-011	MW-6C-5	Soil	3/30/06 10:50:00	☐	A											
0603702-012	MW-6C-10	Soil	3/30/06 11:00:00	☐	A											
0603702-013	MW-6C-15	Soil	3/30/06 11:05:00	☐	A	A										

Test Legend:

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

Prepared by: Kathleen Owen

Comments: MTBE conformation added per Bob on 4/5/06 on samples: 005-010, 013

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.

0603702

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: Morgan Gillies Bill To: Pangea

Company: Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: mgillies@pangeaenv.com

Tele: (510) 836-3702 Fax: (510) 836-3709

Project #: 1001.001 Project Name: Dublin Auto Wash

Project Location: 7240 Dublin Blvd., Dublin, CA

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	Comments
MW-1C-10		3/27	935	1	Brass sleeve		X				X				X													X			X	MTBE is detected by 8260 - Confirm by 8260 added 4/5/06
MW-1C-15		3/27	955	1	↓		X				X				X													X			X	
MW-1C-5		3/27	930	1			X				X				X													X			X	
MW-11C-5		3/28	1005	1			X				X				X													X			X	
MW-11C-11		3/28	1020	1			X				X				X													X			X	
MW-11C-15		3/28	1040	1			X				X				X													X			X	
MW-7B-5		3/29	740	1			X				X				X													X			X	
MW-7B-11		3/29	800	1			X				X				X													X			X	
MW-3A-10		3/30	835	1			X				X				X													X			X	
MW-3A-15		3/30	840	1			X				X				X													X			X	
MW-6C-5		3/30	1050	1			X				X				X													X				
MW-6C-10		3/30	1100	1			X				X				X													X				
MW-6C-15		3/30	1105	1	↓		X				X				X													X			X	

Relinquished By:	Date:	Time:	Received By:
	3/31/06	1240	
Relinquished By:	Date:	Time:	Received By:
	3/31/06	515	Kathleen Green
Relinquished By:	Date:	Time:	Received By:

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

COMMENTS:

VOAS O&G METALS OTHER
PRESERVATION pH<2

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 04/03/06
		Date Received: 04/04/06
	Client Contact: Morgan Gillies	Date Reported: 04/11/06
	Client P.O.:	Date Completed: 04/11/06

WorkOrder: 0604043

April 11, 2006

Dear Morgan:

Enclosed are:

1). the results of **3** analyzed samples from your **#1001.001; 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 please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 04/03/06
1710 Franklin Street, Ste. 200		Date Received: 04/04/06
Oakland, CA 94612	Client Contact: Morgan Gillies	Date Extracted: 04/04/06
	Client P.O.:	Date Analyzed: 04/05/06-04/11/06

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0604043

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-9A-5	S	ND	ND	ND	ND	ND	ND	1	95
002A	MW-9A-10	S	ND	ND	ND	ND	ND	ND	1	84
003A	MW-9A-15	S	ND	ND	ND	ND	ND	ND	1	102
Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	NA	NA	NA	NA	NA	NA	1	ug/L
	S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts 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 MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) range non-target isolated peaks subtracted out of the TPH(g) concentration at the client's request; o) results are reported on a dry weight basis.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil | QC Matrix: Soil | WorkOrder: 0604043

EPA Method: SW8021B/8015Cm | **Extraction: SW5030B** | **BatchID: 21109** | **Spiked Sample ID: 0604043-001A**

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	0.60	101	102	1.77	96.6	97.8	1.26	70 - 130	70 - 130
MTBE	ND	0.10	108	112	3.78	112	108	3.53	70 - 130	70 - 130
Benzene	ND	0.10	103	108	4.60	105	101	3.56	70 - 130	70 - 130
Toluene	ND	0.10	103	109	4.86	105	102	3.13	70 - 130	70 - 130
Ethylbenzene	ND	0.10	104	109	4.54	105	103	2.63	70 - 130	70 - 130
Xylenes	ND	0.30	95	99.3	4.46	95.3	94.3	1.05	70 - 130	70 - 130
%SS:	95	0.10	111	119	6.96	111	112	0.897	70 - 130	70 - 130

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

NONE

BATCH 21109 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0604043-001A	4/03/06 8:25 AM	4/04/06	4/05/06 3:22 AM	0604043-002A	4/03/06 11:10 AM	4/04/06	4/11/06 2:46 PM
0604043-003A	4/03/06 12:10 PM	4/04/06	4/05/06 5:01 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.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

McCampbell Analytical, Inc.
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0604043 **ClientID: PEO** **EDF: NO**

Report to:
Morgan Gillies
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612
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: 04/04/2006
Date Printed: 04/04/2006

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
0604043-001	MW-9A-5	Soil	04/03/2006	☐	A											
0604043-002	MW-9A-10	Soil	04/03/2006	☐	A											
0604043-003	MW-9A-15	Soil	04/03/2006	☐	A											

Test Legend:

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

Prepared by: Kathleen Owen

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.

0604043 PEO

McCAMPBELL ANALYTICAL, INC.

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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: Morgan Gillies	Bill To: Pangea
Company: Pangea Environmental Services, Inc.	
1710 Franklin Street, Suite 200, Oakland, CA 94612	
	E-Mail: mgillies@pangeaenv.com
Tele: (510) 836-3702	Fax: (510) 836-3709
Project #: 1001.001	Project Name: Dublin Auto Wash
Project Location: 7240 Dublin Blvd., Dublin, CA	
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: If MTBE is detected by 8020, confirm by 8260.				Comments
MW-9A-5		4/3	8:25	1	Selve		X				X				X																X				Filter Samples for Metals analysis: Yes / No
MW-9A-10		↓	1110	1	↓		X				X				X																X				
MW-9A-15		↓	1210	1	↓		X				X				X																X				

	Date:	Time:	
Relinquished By:	4/4	1315	Received By:
Relinquished By:	4/4	1350	Received By:
Relinquished By:	Date:	Time:	Received By:

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

COMMENTS:

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

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Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 03/28/06
		Date Received: 03/31/06
	Client Contact: Morgan Gillies	Date Reported: 04/06/06
	Client P.O.:	Date Completed: 05/01/06

WorkOrder: 0603702

May 01, 2006

Dear Morgan:

Enclosed are:

1). the results of 7 analyzed samples from your **#1001.001; 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 please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 03/28/06-03/30/06
		Date Received: 03/31/06
	Client Contact: Morgan Gillies	Date Extracted: 04/05/06
	Client P.O.:	Date Analyzed: 04/05/06-04/06/06

Oxygenated Volatile Organics by P&T & GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0603702

Lab ID	0603702-005A	0603702-006A	0603702-007A	0603702-008A	Reporting Limit for DF =1	
Client ID	MW-11C-11	MW-11C-15	MW-7B-5	MW-7B-11		
Matrix	S	S	S	S		
DF	67	6.7	1	100	S	W
Compound	**Concentration**				mg/kg	ug/L
tert-Amyl methyl ether (TAME)	ND<0.33	ND<0.033	ND	ND<0.50	0.005	NA
t-Butyl alcohol (TBA)	ND<3.3	0.41	ND	ND<5.0	0.05	NA
Diisopropyl ether (DIPE)	ND<0.33	ND<0.033	ND	ND<0.50	0.005	NA
Ethyl tert-butyl ether (ETBE)	ND<0.33	ND<0.033	ND	ND<0.50	0.005	NA
Methyl-t-butyl ether (MTBE)	3.1	0.80	0.11	13	0.005	NA
Surrogate Recoveries (%)						
%SS1:	97	96	96	91		
Comments						

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 03/28/06-03/30/06
		Date Received: 03/31/06
	Client Contact: Morgan Gillies	Date Extracted: 04/05/06
	Client P.O.:	Date Analyzed: 04/05/06-04/06/06

Oxygenated Volatile Organics by P&T & GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0603702

Lab ID	0603702-009A	0603702-010A	0603702-013A	Reporting Limit for DF =1	
Client ID	MW-3A-10	MW-3A-15	MW-6C-15		
Matrix	S	S	S		
DF	67	20	4	S	W
Compound	**Concentration**			mg/kg	ug/L
tert-Amyl methyl ether (TAME)	ND<0.33	ND<0.10	ND<0.020	0.005	NA
t-Butyl alcohol (TBA)	ND<3.3	ND<1.0	ND<0.20	0.05	NA
Diisopropyl ether (DIPE)	ND<0.33	ND<0.10	ND<0.020	0.005	NA
Ethyl tert-butyl ether (ETBE)	ND<0.33	ND<0.10	ND<0.020	0.005	NA
Methyl-t-butyl ether (MTBE)	0.54	2.6	0.050	0.005	NA
Surrogate Recoveries (%)					
%SS1:	97	93	91		
Comments					

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

0603702

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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: Morgan Gillies Bill To: Pangea

Company: Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: mgillies@pangeaenv.com

Tele: (510) 836-3702 Fax: (510) 836-3709

Project #: 1001.001 Project Name: Dublin Auto Wash

Project Location: 7240 Dublin Blvd., Dublin, CA

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: If MTBE is detected by 8020 Confirm by 8260.	Comments: Filter Samples for Metals analysis: Yes / No
MW-10C-10		3/27	935	1	Brass sleeves		X				X				X															X	X	
MW-10C-15		3/27	955	1			X				X				X															X		
MW-10C-5		3/27	930	1			X				X				X															X		
MW-11C-5		3/28	1005	1			X				X				X															X		
MW-11C-11		3/28	1020	1			X				X				X															X		
MW-11C-15		3/28	1040	1			X				X				X															X		
MW-7B-5		3/29	740	1			X				X				X															X		
MW-7B-11		3/29	800	1			X				X				X															X		
MW-3A-10		3/30	835	1			X				X				X															X		
MW-3A-15		3/30	840	1			X				X				X															X		
MW-6C-5		3/30	1050	1			X				X				X															X		
MW-6C-10		3/30	1100	1			X				X				X															X		
MW-6C-15		3/30	1105	1			X				X				X															X		

Relinquished By:	Date:	Time:	Received By:
	3/31	1240	
Relinquished By:	Date:	Time:	Received By:
	3/31/06	515	Kathleen Jensen
Relinquished By:	Date:	Time:	Received By:

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

COMMENTS:

VOAS O&G METALS OTHER
PRESERVATION pH<2

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc. 1710 Franklin Street, Ste. 200 Oakland, CA 94612	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 05/18/06
		Date Received: 05/19/06
	Client Contact: Morgan Gillies	Date Reported: 05/30/06
	Client P.O.:	Date Completed: 06/02/06

WorkOrder: 0605414

June 02, 2006

Dear Morgan:

Enclosed are:

1). the results of **12** analyzed samples from your **#1001.001; 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 please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Best regards,

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 05/17/06-05/18/06
1710 Franklin Street, Ste. 200		Date Received: 05/19/06
Oakland, CA 94612	Client Contact: Morgan Gillies	Date Extracted: 05/19/06-05/27/06
	Client P.O.:	Date Analyzed: 05/19/06-05/27/06

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0605414

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-8A-5	S	ND	ND	ND	ND	ND	ND	1	96
002A	MW-8A-10	S	ND	ND	ND	ND	ND	ND	1	93
003A	MW-8A-15	S	ND	ND	ND	ND	ND	ND	1	84
004A	SB-2-5	S	ND	ND	ND	ND	ND	ND	1	97
005A	SB-2-10	S	790,b,m	ND<10	ND<1.0	2.9	10	58	200	97
006A	SB-2-15	S	310,a	ND<5.0	2.5	2.4	6.4	27	100	113
007A	SB-2-20	S	ND	ND	ND	ND	ND	ND	1	93
008A	SB-1-7	S	ND	ND	ND	ND	ND	ND	1	99
009A	SB-1-11	S	ND	ND	ND	ND	ND	ND	1	95
010A	SB-1-14	S	ND	ND	ND	ND	ND	ND	1	86
011A	SB-1A-15	S	ND	ND	ND	ND	ND	ND	1	104
012A	SB-1A-W	W	170,a,f	570	1.5	1.5	1.2	5.9	1	111
Reporting Limit for DF =1; ND means not detected at or above the reporting limit		W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
		S	1.0	0.05	0.005	0.005	0.005	0.005	1	mg/Kg

* water and vapor samples and all TCLP & SPLP extracts 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 MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern; n) TPH(g) value derived using a client specified carbon range; o) results are reported on a dry weight basis.

DHS Certification No. 1644

Angela Rydelius, Lab Manager

McCampbell Analytical, Inc.

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Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 05/18/06
1710 Franklin Street, Ste. 200		Date Received: 05/19/06
Oakland, CA 94612	Client Contact: Morgan Gillies	Date Extracted: 05/30/06
	Client P.O.:	Date Analyzed: 05/30/06

Methyl tert-Butyl Ether*

Extraction method: SW5030B Analytical methods: SW8260B Work Order: 0605414

Lab ID	Client ID	Matrix	Methyl-t-butyl ether (MTBE)	DF	% SS
012A	SB-1A-W	W	500	20	107

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	0.5	µg/L
	S	NA	NA

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS ELAP Certification N° 1644

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil | QC Matrix: Soil | WorkOrder: 0605414

EPA Method: SW8021B/8015Cm	Extraction: SW5030B	BatchID: 21767	Spiked Sample ID: 0605392-001a

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	0.60	102	101	1.15	102	98.7	3.79	70 - 130	70 - 130
MTBE	ND	0.10	105	109	4.09	104	104	0	70 - 130	70 - 130
Benzene	ND	0.10	96.4	101	5.10	97.3	95.6	1.84	70 - 130	70 - 130
Toluene	ND	0.10	95.4	100	4.61	96.8	95.3	1.58	70 - 130	70 - 130
Ethylbenzene	ND	0.10	96.2	99.4	3.24	97.6	96.1	1.55	70 - 130	70 - 130
Xylenes	ND	0.30	94	94.3	0.354	94.3	90	4.70	70 - 130	70 - 130
%SS:	92	0.10	102	106	3.33	103	102	1.11	70 - 130	70 - 130

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

NONE

BATCH 21767 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605414-001A	5/17/06 7:05 PM	5/19/06	5/20/06 1:21 AM	0605414-002A	5/17/06 7:15 AM	5/19/06	5/20/06 4:06 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.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Soil QC Matrix: Soil WorkOrder: 0605414

EPA Method: SW8021B/8015Cm	Extraction: SW5030B	BatchID: 21795	Spiked Sample ID: 0605414-011A

Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	mg/Kg	mg/Kg	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	LCS / LCSD
TPH(btex)£	ND	0.60	107	105	1.79	103	100	3.12	70 - 130	70 - 130
MTBE	ND	0.10	93.9	109	15.1	105	105	0	70 - 130	70 - 130
Benzene	ND	0.10	93.3	98.3	5.21	96.6	102	5.70	70 - 130	70 - 130
Toluene	ND	0.10	94.6	99.1	4.61	96.1	94.7	1.47	70 - 130	70 - 130
Ethylbenzene	ND	0.10	97.2	99.8	2.72	97.3	95.5	1.91	70 - 130	70 - 130
Xylenes	ND	0.30	94.7	94.7	0	94.3	90.3	4.33	70 - 130	70 - 130
%SS:	104	0.10	98	103	4.43	101	102	1.05	70 - 130	70 - 130

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

NONE

BATCH 21795 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605414-003A	5/17/06 7:25 AM	5/19/06	5/20/06 5:12 AM	0605414-004A	5/18/06 7:55 AM	5/19/06	5/20/06 5:45 AM
0605414-005A	5/18/06 8:00 AM	5/19/06	5/19/06 9:54 PM	0605414-006A	5/18/06 8:05 AM	5/19/06	5/20/06 8:20 PM
0605414-007A	5/18/06 12:40 PM	5/19/06	5/20/06 10:00 PM	0605414-008A	5/18/06 9:10 AM	5/19/06	5/20/06 11:07 PM
0605414-009A	5/18/06 9:15 AM	5/19/06	5/20/06 11:40 PM	0605414-010A	5/18/06 9:20 AM	5/19/06	5/27/06 12:56 AM
0605414-011A	5/18/06 9:55 AM	5/19/06	5/20/06 9:38 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.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0605414

EPA Method: SW8021B/8015Cm **Extraction: SW5030B** **BatchID: 21789** **Spiked Sample ID: 0605413-010A**

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	LCS / LCSD
TPH(btex)£	ND	60	104	112	8.01	114	116	1.00	70 - 130	70 - 130
MTBE	ND	10	105	112	6.79	104	105	0.764	70 - 130	70 - 130
Benzene	ND	10	102	111	8.26	111	109	1.67	70 - 130	70 - 130
Toluene	ND	10	95.9	104	7.85	102	100	1.11	70 - 130	70 - 130
Ethylbenzene	ND	10	99.8	109	8.51	107	106	1.03	70 - 130	70 - 130
Xylenes	ND	30	94.7	100	5.48	96.7	100	3.39	70 - 130	70 - 130
%SS:	105	10	103	105	2.07	102	100	2.28	70 - 130	70 - 130

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

NONE

BATCH 21789 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605414-012A	5/18/06 10:50 AM	5/20/06	5/20/06 8:00 AM	0605414-012A	5/18/06 10:50 AM	5/21/06	5/21/06 12:26 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.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

DHS Certification No. 1644

QA/QC Officer

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0605414

EPA Method: SW8260B	Extraction: SW5030B			BatchID: 21916				Spiked Sample ID: 0605584-005B		
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	LCS / LCSD
Methyl-t-butyl ether (MTBE)	ND	10	109	112	2.79	107	110	2.87	70 - 130	70 - 130
%SS1:	97	10	106	104	2.07	108	104	4.18	70 - 130	70 - 130

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

NONE

BATCH 21916 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605414-012A	5/18/06 10:50 AM	5/30/06	5/30/06 11:31 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.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS ELAP Certification No 1644

QA/QC Officer

McCampbell Analytical, Inc.
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Pacheco, CA 94553-5560
(925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0605414 **ClientID: PEO** **EDF: NO**

Report to:
Morgan Gillies
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612
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: **05/19/2006**
Date Printed: **05/30/2006**

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
0605414-001	MW-8A-5	Soil	5/17/06 7:05:00 PM	☐	A											
0605414-002	MW-8A-10	Soil	5/17/06 7:15:00 AM	☐	A											
0605414-003	MW-8A-15	Soil	5/17/06 7:25:00 AM	☐	A											
0605414-004	SB-2-5	Soil	5/18/06 7:55:00 AM	☐	A											
0605414-005	SB-2-10	Soil	5/18/06 8:00:00 AM	☐	A											
0605414-006	SB-2-15	Soil	5/18/06 8:05:00 AM	☐	A											
0605414-007	SB-2-20	Soil	5/18/06 12:40:00	☐	A											
0605414-008	SB-1-7	Soil	5/18/06 9:10:00 AM	☐	A											
0605414-009	SB-1-11	Soil	5/18/06 9:15:00 AM	☐	A											
0605414-010	SB-1-14	Soil	5/18/06 9:20:00 AM	☐	A											
0605414-011	SB-1A-15	Soil	5/18/06 9:55:00 AM	☐	A											
0605414-012	SB-1A-W	Water	5/18/06 10:50:00	☐		A	A									

Test Legend:

1	G-MBTEX_S	2	G-MBTEX_W	3	MTBE_W	4		5	
6		7		8		9		10	
11		12							

Prepared by: Rosa Venegas

Comments: 012 MTBE by 8260 5/30/06

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.

P00 0605414

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: Morgan Gillies Bill To: Pangea
Company: Pangea Environmental Services, Inc.
1710 Franklin Street, Suite 200, Oakland, CA 94612
E-Mail: mgillies@pangeaenv.com
Tele: (510) 836-3702 Fax: (510) 836-3709
Project #: 1001.001 Project Name: Dublin Auto Wash
Project Location: 7240 Dublin Blvd., Dublin, CA
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
MW-8A-5		5/17	705	1	tetra liner		X				X			
MW-8A-10			715	1			X				X			
MW-8A-15			725	1			X				X			
SB-2-5		5/18	755	1			X				X			
SB-2-10			800	1			X				X			
SB-2-15			805	1			X				X			
SB-2-20			1240	1			X				X			
SB-1-7			910	1			X				X			
SB-1-11			915	1			X				X			
SB-1-14			920	1			X				X			
SB-1A-15			955	1			X				X			
+30 SB-1A-W			1050	3	HCL VOAs	X					X	X		
SB-1A-5			950	1	tetra liner		X				X			

Analysis Request

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: I.D. MTBE detected by 8260 confirm by 8260.	Comments
X																X	Filter Samples for Metals analysis: Yes / No
X																X	
X																X	
X																X	
X																X	
X																X	
X																X	
X																X	
X																X	
X																X	
X																X	
X																X	set up 5/30/06 ON HOLD
X															X	X	

Relinquished By:	Date:	Time:	Received By:
	5/19	10:41	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

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

COMMENTS:

	VOAS	O&G	METALS	OTHER
PRESERVATION			pH<2	

McCampbell Analytical, Inc.

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Telephone : 925-798-1620 Fax : 925-798-1622
Website: www.mccampbell.com E-mail: main@mccampbell.com

Pangea Environmental Svcs., Inc.	Client Project ID: #1001.001; Dublin Auto Wash	Date Sampled: 05/18/06
1710 Franklin Street, Ste. 200		Date Received: 05/19/06
Oakland, CA 94612	Client Contact: Morgan Gillies	Date Extracted: 05/30/06
	Client P.O.:	Date Analyzed: 05/30/06

Oxygenated Volatile Organics by P&T and GC/MS*

Extraction Method: SW5030B | Analytical Method: SW8260B | Work Order: 0605414

		Reporting Limit for DF =1	
Lab ID	0605414-012A		
Client ID	SB-1A-W		
Matrix	W		
DF	20	S	W
Compound	**Concentration**	ug/kg	µg/L
tert-Amyl methyl ether (TAME)	90	NA	0.5
t-Butyl alcohol (TBA)	ND<100	NA	5.0
Diisopropyl ether (DIPE)	ND<10	NA	0.5
Ethyl tert-butyl ether (ETBE)	ND<10	NA	0.5
Methyl-t-butyl ether (MTBE)	500	NA	0.5
Surrogate Recoveries (%)			
%SS1:	107		
Comments			

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

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.

DHS ELAP Certification N° 1644

Angela Rydelius, Lab Manager

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QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0605414

EPA Method: SW8260B	Extraction: SW5030B	BatchID: 21916	Spiked Sample ID: 0605584-005B

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	LCS / LCSD
tert-Amyl methyl ether (TAME)	ND	10	98.7	103	4.22	98.1	99.4	1.33	70 - 130	70 - 130
t-Butyl alcohol (TBA)	ND	50	116	107	7.77	105	104	0.336	70 - 130	70 - 130
Diisopropyl ether (DIPE)	ND	10	115	118	2.30	118	119	0.827	70 - 130	70 - 130
Ethyl tert-butyl ether (ETBE)	ND	10	98.7	102	3.26	99.6	102	2.33	70 - 130	70 - 130
Methyl-t-butyl ether (MTBE)	ND	10	109	112	2.79	107	110	2.87	70 - 130	70 - 130
%SS1:	97	10	106	104	2.07	108	104	4.18	70 - 130	70 - 130

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

NONE

BATCH 21916 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0605414-012A	5/18/06 10:50 AM	5/30/06	5/30/06 11:31 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.

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

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and acetone may occasionally appear in the method blank at low levels.

DHS ELAP Certification N° 1644

QA/QC Officer

P00 0605414

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: Morgan Gillies Bill To: Pangea

Company: Pangea Environmental Services, Inc.

1710 Franklin Street, Suite 200, Oakland, CA 94612

E-Mail: mgillies@pangeaenv.com

Tele: (510) 836-3702 Fax: (510) 836-3709

Project #: 1001.001 Project Name: Dublin Auto Wash

Project Location: 7240 Dublin Blvd., Dublin, CA

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
MW-8A-5		5/17	705	1	Tedlar bag		X				X			
MW-8A-10			715	1			X				X			
MW-8A-15			725	1			X				X			
SB-2-5		5/18	755	1			X				X			
SB-2-10			800	1			X				X			
SB-2-15			806	1			X				X			
SB-2-20			1240	1			X				X			
SB-1-7			910	1			X				X			
SB-1-11			915	1			X				X			
SB-1-14			920	1			X				X			
SB-1A-15			955	1	↓		X				X			
+30 SB-1A-W			1050	3	HCL vials	X					X	X		
SB-1A-5			950	1	tedlar bag		X				X			

Analysis Request

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)
X															
X															
X															
X															
X															
X															
X															
X															
X															
X															
X															
X															
X															
X															

Other: LUFT 5 Metals (6010 / 6020) Lead (200.8 / 200.9 / 6010)

Comments: Filter Samples for Metals analysis: Yes / No

Set up 5/30/06 ON HOLD

Relinquished By:	Date:	Time:	Received By:
	5/19	10:41	
Relinquished By:	Date:	Time:	Received By:
Relinquished By:	Date:	Time:	Received By:

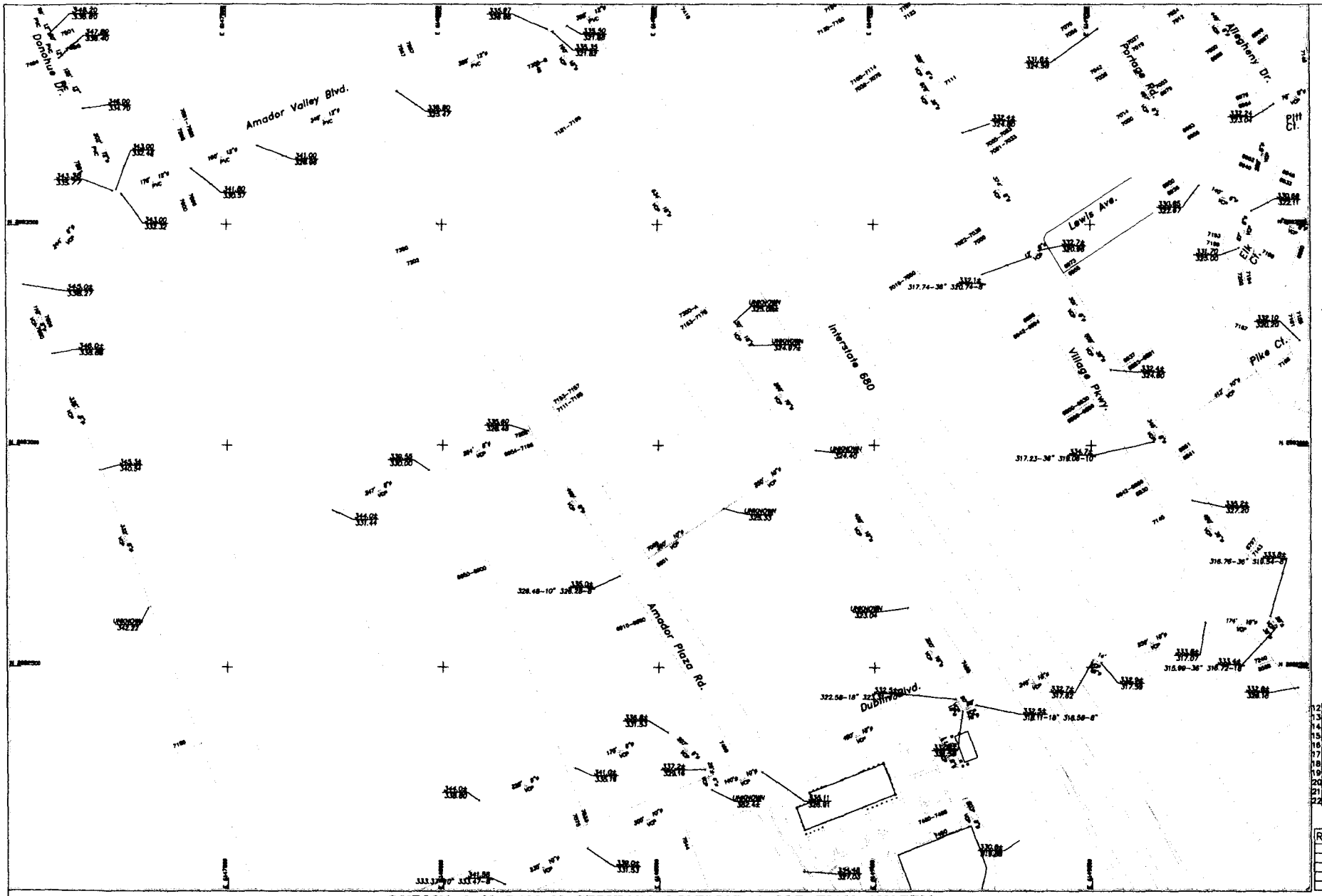
ICE/t° ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
DECHLORINATED IN LAB
APPROPRIATE CONTAINERS ✓
PRESERVED IN LAB

COMMENTS:

VOAS O&G METALS OTHER
PRESERVATION pH<2

APPENDIX F

Dublin San Ramon Services District Sanitary Sewer Maps



LEGEND

MANHOLE

SEWER MAIN

GRID NORTH

SCALE (Feet)

0 100 200

Map Scale: 1" = 200'

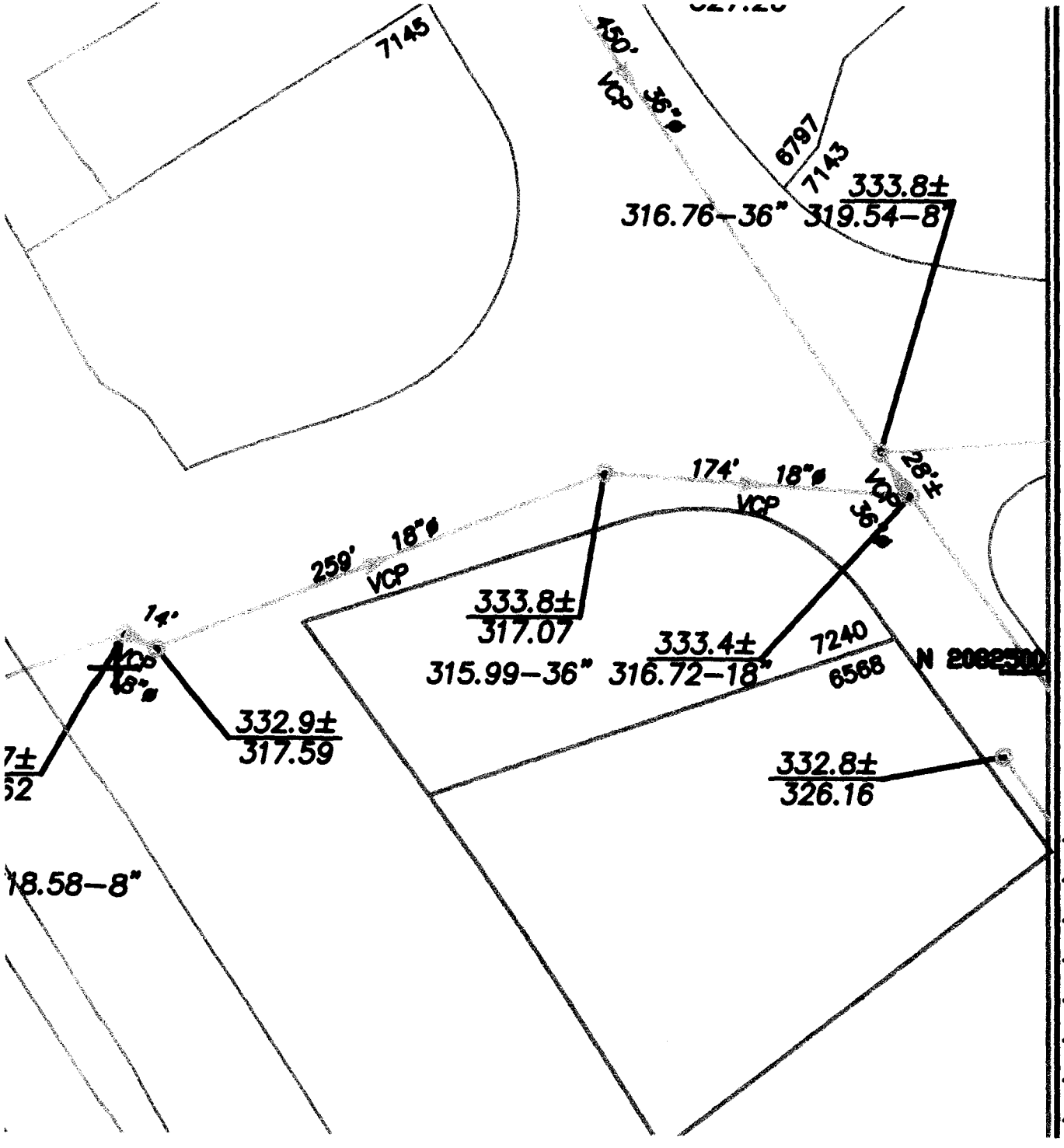
A B C D U20

SHEET:
U-20-B

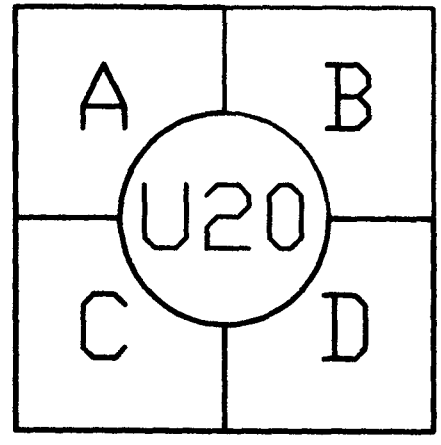
R S T U V W X Y
12 13 14 15 16 17 18 19 20 21 22

Rev.	Date	By
1	05-01-01	RP
2	01-22-02	RP
3	05-06-02	RP
4	09-26-02	RP
5	09-26-02	RP

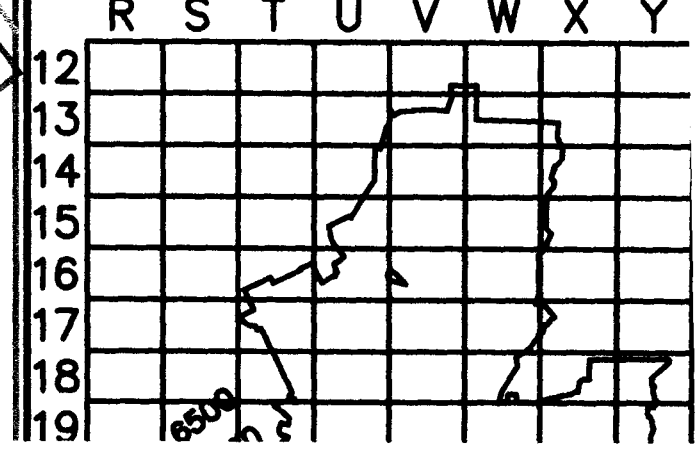
DUBLIN SAN RAMON SERVICES DISTRICT COLLECTION SYSTEM



Map Scale: 1" = 200'



SHEET: U-20-B



APPENDIX G

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. 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. This process usually occurs prior to installing the sanitary surface seal to ensure sand pack stabilization. If development occurs after surface seal installation, then development occurs 24 to 72 hours after seal installation to ensure that the Portland cement has set up correctly.

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.

APPENDIX H

Well Development Field Data Sheets

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME Tanger @ 7240 Dublin Blvd				PROJECT NUMBER 060522-WC-1			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
Myron L Ultrameter	617803	5/22/06 @0530	4.0, 7.0, 10.0 pH 3900 µS	4.13, 7.16, 9.98 pH 3973 µS	4.0, 7.0, 10.0 pH 3900 µS	65°F	WC
Hach 2100P Turbidimeter	04110000 37749	11	7.60, 470 NTU	7.61, 473 NTU	OK	65°F	WC
Myron L Ultrameter	617803	5/23/06 @0540	4.0, 7.0, 10.0 pH 3900 µS	3.98, 7.07, 9.97 pH 3911 µS	4.0, 7.0, 10.0 pH 3900 µS	63°F	WC
Myron L Ultrameter	617803	5/24/06 @0545	4.0, 7.0, 10.0 pH 3900 µS	3.96, 7.09, 10.04 pH 3926 µS	4.0, 7.0, 10.0 pH 3900 µS	66°F	WC
Myron L Ultrameter	617803	5/25/06 @0600	4.0, 7.0, 10.0 pH 3900 µS	4.03, 7.16, 10.11 pH 3907 µS	4.0, 7.0, 10.0 pH 3900 µS	61°F	WC

WELL GAUGING DATA

Project # 060522-WC1 Date 05/22/06 Client Langan

Site 7290 Dublin Blvd.

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Final TOB
MW-7C	2					7.02	42.95		44.45
MW-3A	4	no sph detected w/ interface probe slight sheen on probe				10.04	16.64		16.64
MW-6A	4					10.57	18.50		19.14
MW-6B	2					8.65	29.69		29.71
MW-6C	2					8.13	43.20		44.10
MW-7AA	4					8.82	13.86		13.80
MW-7A	4					~~9.13~~ 9.03	19.43		19.43
MW-7B	2					8.96	28.01		28.39
~~MW-5C~~	2								
MW-8A	2					9.47	18.96		18.96
MW-9A	2					9.85	19.60		19.62
MW-9C	2					10.05	36.73		44.13
MW-10A	2					6.77	19.45		19.47
MW-10C	2					6.94	39.58		44.53
MW-11C	2					9.73	36.70		42.95

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: Forge
Developer: WC / DM	Date Developed: 5/25/06
Well I.D. MW-3A	Well Diameter: (circle one) 2 3 (4) 6
Total Well Depth: Before 16.64 After 16.64	Depth to Water: Before 10.04 After
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for 10 min w/ 4" surge blck prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
$\{12 \times (d^2/4) \times \pi\} / 231$	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

4.3	X	25 max/ if recovery is doubled	107.5
1 Case Volume		Specified Volumes	= gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump _____
Other equipment used 4" surge blck

TIME	TEMP (F)	pH	Cond. (mS or (µS))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	
1323	66.3	6.8	1506	>1000	4.3	Hard bottom/Dark & silty —odor—	DTW= 12.22
1330	65.8	8.0	1520	577	8.6	Clearing/odor/little silt.	13.79
1340	66.1	7.6	1695	869	12.9	Lowered pump/recovered quickly odor/cloudy	14.56
⊗ Pump not pulling up enough H2O, mostly air bubbles/almost dewatered							
1340	well dewatered @ 13 gallons						
Recharge info:							
@ Time		DTW=					
1041 →		14.53		@ Time		DTW=	
1042 →		14.41		1046 →		14.05	
1043 →		14.33		1047 →		13.95	
1044 →		14.22					
1045 →		14.14					
Did Well Dewater? yes		If yes, note above.		Gallons Actually Evacuated:		26	

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-3A	PAGE 2 OF 2
Project #: 060522-WC-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
⊗1427	DTW =		11.67			
⊗ Surged	well	for	10	additional		min prior to purge
1448	65.7	7.5	1997	>1000	17.3	grey, some heavy silt/clearing
1456	66.4	7.7	1886	392	21.6	clearing, faint odor/light grey
1512	65.2	7.7	1904	51	25.9	clear, very faint odor
1512	well	dewatered	@	26	gallons,	end purge

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC1	Client: PANGEA
Developer: WC/DM	Date Developed: 5/24/06
Well I.D. MW-6A	Well Diameter: (circle one) (2) 3 4 6 ___
Total Well Depth: Before 19.50 After 19.14	Depth to Water: Before 10.57 After see next page
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for 10 min w/2 surge block prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

7.93

1.3	x	25 MAX/clears or if waters	32.5
1 Case Volume		Specified Volumes	= gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump
Other equipment used 2" inch surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1310	74.1	11.74	2534	>1000	1.3	HARD BOTTOM
1313	72.0	11.18	1854	>1000	2.6	DARK, LOTS OF SILT
1315	71.0	9.54	1600	>1000	3.9	turned down pump, very dark w/ heavy silt
1320	70.8	9.56	1600	>1000	5.2	very dark w/ silt
1323	70.8	9.97	1520	>1000	6.5	silt lighter grey
1326	70.5	8.54	2008	>1000	7.8	HEAVY SILT dark
1333	70.3	7.69	2251	555	9.1	clearing / slow upkeep
1337	70.6	7.36	2266	229	10.4	more clear less silt
1346	70.1	7.30	2247	262	11.7	little silt/clear
1346	70.4	7.75	2237	614	13.0	cloudy
1346	well dewatered @ 13 gallons					
(2)	see next page for recharge info					

DTW: 15.36
15.88 to pump top

Did Well Dewater? Yes If yes, note above. Gallons Actually Evacuated: 13

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-6A	PAGE 2 OF 2
Project #: 060522-JC-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
Well Recharge Info:						
@Time	DTW =					
1348		17.32				
:30		16.93				
1349		16.64				
:30		16.35				
1350		16.10				
:30		15.77				
1351		15.56				
:30		15.23				
1352		15.05				
:30		14.86				
1353		4.70				
:30		14.53				
1354		14.18				
:30		13.76				
1355		13.47				
		1315				

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: Pangea
Developer: WC/DM	Date Developed: 5/24/06
Well I.D. MW-6B	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 29.69 After 29.71	Depth to Water: Before 8.65 After
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for 10 min prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

3.4	X 25 max/clearing or dewater	85.0
1 Case Volume	Specified Volumes	= gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump _____

Other equipment used 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW:
1001	70.4	7.3	2443	>1000	3.4	hard bottom detected/dark grey thick silt	13.65
1005	70.2	7.4	2366	>1000	6.8	lighter/grey w/ heavy silt	15.42
1008	69.9	7.4	2335	>1000	10.2	GREY W SILT	16.60
1013	pH 7.34 7.3	7.3	2304	>1000	13.6	LIGHTER GREY W SILT	17.46
1017	69.7	7.3	2300	>1000	17.0	HARD BOTTOM @ GREY SILT	18.02
1020	70.2	7.3	2291	>1000	20.4	more silt & darker grey when surged w/ pump	18.39
1024	69.8	7.4	2268	>1000	23.8	GREY LIGHTER SILT	18.12
1027	70.6	7.3	2274	>1000	27.2	GREY W LIGHTER SILT	19.18
1031	69.7	7.3	2269	>1000	30.4	LIGHTER GREY SILT	19.7
1035	70.1	7.3	2264	>1000	33.8	GREY W/ silt	19.98
1039	70.1	7.3	2268	>1000	37.2	LIGHTER GREY W/ SILT	20.3
1042	70.0	7.3	2262	>1000	40.6	LIGHTER GREY W/ SILT	20.66
1046	70.0	7.3	2260	>1000	43.8	LIGHTER GREY W/ SILT	21.14

Did Well Dewater? NO	If yes, note above.	Gallons Actually Evacuated: 85

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-6B	PAGE 2 OF 2
Project #: 060522-cx-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	
1050	69.5	7.3	2257	>1000	47.2	LIGHTER GREY W SILT	21.11
1054	69.6	7.3	2253	71000	50.6	LIGHTER GREY W SILT	21.22
1058	69.5	7.3	2247	71000	54.0	Becomes darker when surged w/ pump	21.40
1101	69.8	7.3	2247	71000	57.4	LIGHTER GREY W/SILT	21.53
1106	70.1	7.3	2234	71000	60.8	LIGHTER GREY W/SILT	21.68
1110	69.9	7.3	2236	71000	64.2	GREY W SILT	21.86
1114	69.7	7.4	2239	71000	67.6	Becoming less dark when surged w/ pump	21.93
1118	69.5	7.3	2231	>1000	71.0	GREY W/SILT	22.25
1123	69.6	7.3	2228	71000	74.4	some heavy silt/mostly suspended in H2O	22.01
1127	70.1	7.3	2235	71000	77.8	grey, becomes darker when surged by pump / some silt	22.48
1132	70.4	7.3	2239	71000	81.2	grey / w/ silt	23.05
1136	69.8	7.4	2233	71000	85.0	" "	23.14
Recharge info:							
1139 →	18.05						
1140 →	17.48						
1141 →	16.78						
1142 →	16.61						
1143 →	16.48						

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: PANGEA
Developer: WC / DM	Date Developed: 5/25/06
Well I.D. MW-6C	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 123.20 After 44.10	Depth to Water: Before 8.13 After see page 2
Reason not developed:	If Free Product, thickness:
Additional Notations: surged well w/ 2" surge block for 10 min prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
(12 x (d^2/4) x π) /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

35.01

1 Case Volume	X	Specified Volumes	=	gallons
5.6		25 MAX / clearing or dewatered		140.0

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump
Other equipment used 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW:
0930	69.2	7.3	2436	>1000	5.6	DARK GREY VERY SILTY	14.62
0938	63.2	7.4	2400	>1000	11.2	DISCHARGE BEGIN	16.00
0946	61.9	7.5	2393	>1000	16.8	lighter dark grey very silty	16.6
0955	63.2	7.5	2438	>1000	22.4	lighter heavy silt	17.51
1004	69.6	7.5	2433	>1000	28.0	grey / silty	18.80
1013	69.4	7.5	2395	>1000	33.6	becomes darker when surged w/ pump / dark & silty	19.60
1021	69.1	7.6	2383	>1000	39.2	lighter dark grey / silty, but less heavy	20.0
1028	69.1	7.5	2349	>1000	44.8	becomes slightly darker when surged w/ pump (silt-mostly coarse)	20.50
1036	68.9	7.5	2360	>1000	50.4	less silt lighter grey	20.67
1044	69.4	7.5	2310	>1000	56.0	little change when surged w/ pump / silty grey	21.79
1051	69.1	7.5	2376	>1000	61.6	grey / less silt	22.41
1059	68.8	7.5	2342	>1000	67.2	very little heavy silt mostly suspended in H_2O	25.13
1107	68.7	7.5	2356	959	72.8	Lighter grey less silt	23.1
Did Well Dewater? NO		If yes, note above.		Gallons Actually Evacuated:		140	

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-6C	PAGE 2 OF 2
Project #: 060522-WX-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW:
1115	69.0	7.4	2346	71000	78.4	light grey some silt	23.55
1123	69.9	7.4	2335	>1000	84	No visible change when surged by pump / Light grey w/ silt	23.70
1130	69.0	7.5	2304	>1000	89.6	grey w/ silt	24.15 pump set @
1138	69.0	7.5	2335	71000	95.2	grey silt w/ clay	25.65
1145	68.7	7.5	2319	>1000	100.8	small amounts of heavy silty almost all suspended in H2O	25.86
1151	68.7	7.4	2323	549	106.4	lighter grey some silt	25.92
1200	68.8	7.5	2321	180	112	more clear grey silt some surge	25.99
1208	69.0	7.4	2325	74	117.6	clearing w/ pump not surged	26.48
1214	68.7	7.6	2316	71000	123.2	when surged w/ pump is silty	26.95
1222	68.5	7.6	2318	71000	128.8	clearer w grey silt some	26.81
1230	68.7	7.5	2322	942	134.4	well clears if pump is not	
1237	69.6	7.4	2303	177	140.0	surged in well.	27.70
Hard purge @ 25 case volume max.							
Recharge info:							

@ Time		DTW=
1240.5	→	24.45
1241	→	22.70
1241.5	→	21.15
1242	→	20.05
1242.5	→	18.90

@ Time		DTW=
1243	→	16.08
1243.5	→	17.24
1244	→	16.55
1244.5	→	15.90
1245	→	15.37
1245.5	→	14.85

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: Pursea
Developer: WC / SM	Date Developed: 5/24/06
Well I.D. MW-7AA	Well Diameter: (circle one) ~~1~~ (2) 3 (4) 6
Total Well Depth: Before 13.80 After 13.80	Depth to Water: Before 8.82 After
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for 10 min w/ 4" surge block prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1 Case Volume	X	Specified Volumes	=	gallons
3.3	X	25 min/clearing or dewater	=	82.5

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump _____

Other equipment used 4" surge Block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS: hard Bottom	
0730	64.0	6.8	2604	>1000	3.3	color/light grey/some silt	DTW= 9.90
0735	64.1	7.3	2047	437	6.6	clearing/very little silt	11.20
0739	64.0	7.6	7424	276	9.9	clearing/very little silt	11.91
0747	well dewatered @ ~11 gallons						
*well Recharge info:							
@time		DTW=		@time		DTW=	
0748	→	12.60		0753		12.46	
0749	→	12.56		0754		12.44	
0750	→	12.50		0755		12.41	
0751	→	12.49		0755		12.38	
0752	→	12.48		0756		12.36	
→ Surged well again for 10 min							
@ 0920 → DTW= 11.31							
Did Well Dewater? yes	If yes, note above.			Gallons Actually Evacuated:		21	

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-7A/I	PAGE 2 OF 2
Project #: 060522-wc.1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0738	DTW = 8.11'			5	5/25/06	
					14.3	
0745	63.8	7.1	2228	68	~~13.3~~	clear (turned down pump, air bubble in line)
0751	63.7	7.2	2279	43	~~16.6~~ 17.6	clear
0758	62.3	7.9	2321	58	20.9	clear
0758	well	dewatered	@	~ 21	gallons	

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: Pinson
Developer: WC / DM	Date Developed: 5/24/06
Well I.D. MW-7A	Well Diameter: (circle one) 2 3 (4) 6
Total Well Depth: Before 19.43 After 19.43	Depth to Water: Before 9.12 After '
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for 10 minutes prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
$(12 \times (d^2/4) \times \pi) / 231$	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1 Case Volume		Specified Volumes		gallons
6.7	X	25 max/cleaning w Dewater	=	167.5

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☒ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump
Other equipment used 4" Surge Block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW=
0816	65.1	7.2	2431	>1000	6.7	Hard Bottom / Dark grey / silty	11.45'
0823	65.4	7.0	2414	>1000	13.4	Dark grey w/ heavy silt	11.80'
0830	65.6	7.1	2435	>1000	20.1	lighter dark grey w/ less silt	11.85'
0837	65.9	7.0	2423	812	26.8	clearing, grey less silt	12.13'
0844	65.5	6.9	2391	536	33.5	clearing / light grey / very little silt	12.08'
(1)	Switch check to 3" grundfos ES pump						
0849	66.1	6.8	2274	>1000	40.2	Dark brown/grey/silty	16.31'
0851	66.4	6.9	2339	>1000	46.9	" " " "	17.55
(2) 0851	well dewatered @ 47 gallons						
(3) 0853	DTW = 16.85 / @			0854	DTW =	14.48 / @ 0856	DTW = 12.
0855	66.6	6.9	2403	771	53.7	clearing / good recharge	16.82
0859	67.0	6.9	2418	875	60.4	well dewaters & recharges quickly (clears then dewaters)	
0854	well dewatered @ 60.4 gallons, good recharge						
Did Well Dewater? Yes (w/ ES pump)	If yes, note above.			Gallons Actually Evacuated:		95.0	

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-7A	PAGE 2 OF 2
Project #: 060522-WC-1	Client: Parsons

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0905	66.8	6.9	2404	317	67.1	clear-ish
0905	well	dewatered	@	67.1	gallons,	good recharge.
→ recharge 1' per ~35 seconds						
0909	66.7	6.9	2398	157	73.8	clear
0909	well	dewatered	@	71	gallons/	good recharge
0911	Recharged to 15'			—	—	—
0913	66.7	6.9	2375	294	80.7	
well	dewatered	→ let	recharge	to 15' &	resume purge	
0916	67.0	6.9	2404	96	87.3	clear
well dewatered → resume			purge	when	DTW = 15'	
0919	66.7	6.9	2435	75	95.0	clear
DONE purge @ clear water						

WELL DEVELOPMENT DATA SHEET

Project #: 060527-WC1	Client: Pangea
Developer: WC/SC	Date Developed: 05/23/06
Well I.D. MW-7B	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 28.01 After 28.39	Depth to Water: Before 8.96 After See Page 2
Reason not developed:	If Free Product, thickness:
Additional Notations: Well Surged for 10 min. w/ 2" surge block prior to purging.	

Volume Conversion Factor (VCF):	Well dia.		VCF
(12 x (d^2/4) x π) /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

3.1	x	25 volumes max. or clearing/turbidity	77.5
1 Case Volume		Specified Volumes	= gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump: _____
Other equipment used: 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW
0648	66.2	7.4	1975	>1000	3.1	grey color / heavy silt	17.00
0652	65.6	8.6	2119	>1000	6.2	" " / " "	17.70
0657	65.3	9.3	2016	>1000	9.3	Hard bottom felt w/ pump surged. grey color / heavy silt	18.00
0704	65.0	7.3	2358	>1000	12.4	check w/ pH w/ 7.0 stand. " " " " " "	17.80
0711	65.2	7.8	2411	>1000	15.5	dark grey / heavy silt.	17.65
0718	65.4	7.7	2438	>1000	18.6	" " / " " slightly lighter	18.50
0723	64.8	7.9	2481	>1000	21.7	Not getting cloudier when surged w/ pump. Getting somewhat lighter	19.00
0728	64.6	7.7	2496	745	24.8	grey color / less silt.	18.99
0735	65.2	7.5	2517	599	27.9	" " / " "	19.45
0743	64.5	7.6	2537	178	31.0	almost clear / less silt surged w/ pump head	
0750	65.1	7.5	2545	515	34.1	get cloudier / silt when surged w/ pump	
0757	65.3	7.5	2560	543	37.2	" " " " " "	18.91
0802	65.0	7.4	2577	312	40.3	light grey / slightly cloudy	

Did Well Dewater? N(Y)	If yes, note above.	Gallons Actually Evacuated:	50

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-7B	PAGE 2 OF 2
Project #: 060522-WC1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0808	65.5	7.4	2572	250	43.4	light grey/slight silt / 18.91
0813	65.2	7.4	2580	46	46.5	cleaning; very little silt
0819	65.5	7.4	2593	26	49.6	clear / 18.84
0820	end purge @			50 gallons /		remains clear when surged w/ pump.
Well Recharge info: (DTW taken every 30sec)						
@ Time		DTW=				
0821		19~~8~~.12				
		18.85				
0822		15.45				
		14.65				
0823		13.75				
		13.10				
0824		12.55				
		12.08				
0825		11.74				
		11.44				

WELL DEVELOPMENT DATA SHEET

Project #: 06C05 22-MW-1	Client: Parsons
Developer: WC / SC	Date Developed: 5/22/06
Well I.D. MW-7C	Well Diameter: (circle one) ② 3 4 6
Total Well Depth: Before 42.95 After 44.45	Depth to Water: Before 7.02 After See page 2
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for 10 min w/ 2" surge block	

Volume Conversion Factor (VCF):	Well dia.		VCF
$\{12 \times (d^2/4) \times \pi\} / 231$	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1 Case Volume		Specified Volumes		gallons
5.7	X	until clearing/drawdown (max 25)	=	142.5

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☑ Positive Air Displacement

Type of Installed Pump
Other equipment used 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or (µS))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0807	66.5	6.7	1793	>1000	5.7	Greyish w/ alot of silt.
0809	66.3	7.1	1682	>1000	11.4	27.82' DTW. Greyish w/ alot of silt.
0812	66.5	7.2	1741	>1000	17.1	DTW @ 27' Hard bottom.
0825	66.9	7.3	1761	>1000	22.8	lighter grey/fine silt
0831	67.0	7.3	1771	>1000	28.5	grey w/ silt
0837	66.9	7.3	1782	>1000	34.2	" " "
0845	66.7	7.3	1837	>1000	39.9	" " "
0853	66.2	7.3	1836	>1000	45.6	" " " (reposition hand truck)
0904	65.8	7.4	1754	>1000	51.3	" " "
0910	65.9	7.3	1838	>1000	57.0	" " "
0916	65.2	7.3	1850	>1000	62.7	Looks lighter grey/less sediment
0921	65.8	7.4	1854	>1000	68.4	" " " " "
0925	66.0	7.4	1837	>1000	74.1	Looks lighter colored w/ less sediment.
Did Well Dewater? NO		If yes, note above.		Gallons Actually Evacuated:		142.5

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-7C	PAGE 2 OF 2
Project #: 060523-NC1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
0933	65.5	7.3	1957	>1000	79.8	light gray/cloudy; med. sediment.
0939	65.9	7.3	1871	>1000	85.5	" " " " "
0943	66.3	7.3	1895	>1000	91.2	light gray; heavy silt,
0947	66.4	7.3	1883	>1000	96.9	" " " "
0954	66.1	7.3	1853	>1000	102.6	clearing; surged w/pump when becomes very silty.
1001	66.1	7.3	1882	>1000	108.3	" " " " "
1011	65.5	7.3	1893	>1000	117.0	well clearing, became very silty when surged w/pump
1018	66.1	7.3	1844	>1000	119.7	" " " " " "
1025	66.0	7.3	1719	>1000	125.4	" " " " " "
1031	66.0	7.3	1828	>1000	131.1	" " " " " "
1037	66.5	7.3	1894	>1000	136.8	" " " " " "
1044	66.1	7.3	1837	927	142.5	became silty when surged w/pump. Waited >1000 NTU again DTW=22.40
well	recharge	info:				
@Time	1045	DTW=	21.52			
	1046		19.69			
	1046		18.35			
	1047		16.94			
	1047		15.87			
	1048		15.15			
	1048		14.29			
	1049		13.76			
	1049		13.17			
	1050		12.80			
	1105		12.47			

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: Pangea
Developer: WC/DM	Date Developed: 5/25/04
Well I.D. MW-8A	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 18.96 After 18.96	Depth to Water: Before 9.47 After
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well w/ 2" surge block for 10 min prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
$(12 \times (d^2/4) \times \pi) / 231$	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1.5	X	25 max / clearing or dewatered	37.5
1 Case Volume		Specified Volumes	= gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump _____
Other equipment used 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW:
0832	61.8	7.6	3146	>1000	1.5	1-HAKD Bottom Detected	14.28
0836	62.4	7.3	3074	71000	3.0	lighter grey w/ silt (still dirty)	15.30 (pump)
0840	63.0	7.4	3056	>1000	4.5	dark grey w/ silt	
0840	Well dewatered @				4.5 gallons		
Well Recharge info:							
@ Time		DTW=		@ Time		DTW=	
0841.5	→	17.85		0844.5	→	17.56	
0842	→	17.77		0845	→	17.53	
0842.5	→	17.73		0845.5	→	17.49	
0843	→	17.68		0846	→	17.45	
0843.5	→	17.63		0846.5	→	17.42	
0844	→	17.60		0847	→	17.38	
Did Well Dewater? yes		If yes, note above.		Gallons Actually Evacuated:		9	

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-8A	PAGE 2 OF 2
Project #: 060522-WC-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1310	DTW = 9.95					
1355	DTW = 9.80					
→ Continue PURGE, after surging well for additional 10min.						
						DTW=
1412	66.5	7.4	2501	>1000	60	Brownish grey/silty but clearing 15.65
1415	66.0	7.4	2434	>1000	7.5	grey/ish brown/silty clearing less 15.78 no pvn
1420	66.5	7.9	2510	>1000	9.0	dark/silty
1420	well	dewatered	@	9	gallons	

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: Pangea
Developer: WC/SC	Date Developed: 5/23/06
Well I.D. MW-9A	Well Diameter: (circle one) 2 3 4 6
Total Well Depth: Before 19.60 After 19.62	Depth to Water: Before After 9.85
Reason not developed:	If Free Product, thickness:
Additional Notations: surged well w/ 2" surge block prior to purge for 10 min	

Volume Conversion Factor (VCF):	Well dia.		VCF
$(12 \times (d^2/4) \times \pi) / 231$	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1.6	X	25 (max) / cleaning / dewaterers	=	40.0
1 Case Volume		Specified Volumes		gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump _____

Other equipment used 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1224	71.5	7.1	5625	71000	1.6	DTW= 14.58' hard bottom, very dark, very silty
1227	70.1	7.1	5212	71000	3.2	DTW= 15.45' dark grey, very silty
1230	69.4	7.3	4710	71000	4.8	" " " "
1231	well dewatered @ 6 gallons					
Well	recharge	info:				
@ time		DTW=		@ time		DTW=
1231 →		16.71		1236 →		~~14.57~~ 15.08
1232 →		16.34		1237 →		14.78
1233 →		15.94		1238 →		14.57
1234 →		15.61		1239 →		13.88
1235 →		15.34		1240 →		15.25
				13.30 →		10.15
Did Well Dewater? yes		If yes, note above.		Gallons Actually Evacuated:		~~100~~ gallons 16 gal.

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-9A	PAGE 2 OF 2
Project #: 060522-wc-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW
1330	surged well for 10 min w/ 2" surge block						
→Continue Purge @ 1330							
1346	72.6	7.1	3447	>1000	7.6	Very dark w/ heavy silt	14.85'
1349	71.3	7.2	3322	>1000	9.2	" " " "	15.35'
1351	71.0	7.1	3260	>1000	10.8	very dark grey / heavy silt	13.49' (SC)
1352	well dewatered @ 11 gallons				@ 1356	DTW = 15.46	16.32' to pump top
					@ 1406	DTW = 10.90	
→Continue Purge @			~~14715~~	1428			
1430	70.4	7.7	2998	>1000	12.4	grey / w/ silt	14.67'
1433	70.1	7.5	2932	>1000	14.0	grey / w/ silt (slightly lighter)	15.75'
1436	70.6	7.3	2912	>1000	15.6	" " "	(16.22' to pump top)
1437	well dewatered @ 16 gallons						
1448	DTW = 14.79						

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC-1	Client: Cargill
Developer: WC	Date Developed: 5/23/06
Well I.D. MW-9C	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth:	Depth to Water:
Before 36.73 After 41.13	Before 10.05 After
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for 10 min w/ 2' surge block prior to purge	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1 Case Volume	X	Specified Volumes	=	gallons
4.3	X	25 max / clearing / dewater	=	107.5

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump
Other equipment used 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW
1120	68.3	7.4	6332	>1000	4.3	Hard bottom / Dark grey w/ heavy silt	32.32
1126	68.8	7.3	6916	>1000	8.6	Dark grey / heavy silt	37.32
1134	69.9	7.2	7421	>1000	12.9	" " / " "	38.42 to pump
1146	71.7	7.4	8462	>1000	17.2	" " / " " pumping	
1146	well dewatered @			17.2	gallons		
well recharge info:							
@ time		DTW =		@ time		DTW =	
1148	→	42.43'		1153	→	41.49	
1149	→	42.00'		1154	→	41.39	
1150	→	41.85'		1155	→	41.32	
1151	→	41.73'		1156	→	41.26	
1152	→	41.62		1157	→	41.14	

Did Well Dewater? Yes If yes, note above. Gallons Actually Evacuated: 30.1 gallons

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-9C	PAGE 2 OF 2
Project #: 060522-WC-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	
1330	→	DTW = 30.47		Surged well for 2		DTW	
	10 minutes	w/	2"	surge	block.		
1400 Begin Purge.							35.98'
1407	69.9	7.1	9587	>1000	21.5	dark grey / heavy silt.	
1413	69.7	7.2	9494	>1000	25.8	" " " "	38.56'
1421	70.4	7.4	9123	>1000	30.1	dark grey / heavy silt (thick)	
1421	well	dewatered	@	30.1	gallons		

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC1	Client: Pangea
Developer: WC/SC	Date Developed: 05/22/06
Well I.D. MW-10A	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 19.45 After 19.47	Depth to Water: Before 6.77 After
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well w/ 2" surge block for 10 minutes	

Volume Conversion Factor (VCF):	Well dia.		VCF
$\{12 \times (d^2/4) \times \pi\} / 231$	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

1 Case Volume		Specified Volumes		gallons
2.0	X	25 or until clears/dewaters	=	50

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump: _____
Other equipment used: 2" surge block

TIME	TEMP (F)	pH	Cond. (mS or (µS))	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW
1400	66.3	7.3	3163	>1000	2.0	Hard bottom detected; Grey color; heavy silt.	14.75
1404	66.9	7.6	2551	>1000	4.0	Grey color; very silty	16.05 (top of pump)
1407	66.8	7.7	3062	>1000	6.0	" " " "	
1418	68.7	7.9	3016	>1000	8.0	slightly lighter grey w/ silt.	
1418 well dewatered @ 8 gallons							
Recharge info:							
@ Time	DTW =			@ Time		DTW =	
1419 →	18.37			1424 →		17.65	
1420 →	18.22			1425 →		17.53	
1421 →	18.08			1426 →		17.43	
1422 →	17~~9.97~~			1427 →		17.30	
1423 →	17.90			1428 →		17.20	
Surged well for additional 5 min w/ 2" surge block							
Did Well Dewater? yes	If yes, note above.			Gallons Actually Evacuated:		12	

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-10A	PAGE 2 OF 2
Project #: 060522-WC-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1436		DTW = 16.73				continue purge.
1440	72.3	7.9	2895	71000	10.0	dark grey w/ heavy silt
1440	well	dewatered	@ ~	10 gallons		
5/23/06 → @		1015	DTW = 12.43			
surged well for		10 min	prior	to continue purge		
1031	66.5	7.5	2920	>1000	12 gal	grey & silty
1031	well	dewatered	@ total	12 gallons purged		

WELL DEVELOPMENT DATA SHEET

Project #: 060522-WC1	Client: Pangea
Developer: WC, SC	Date Developed: 05/23/06
Well I.D. MW-10C	Well Diameter: (circle one) (2) 3 4 6
Total Well Depth: Before 39.58 After 44.53	Depth to Water: Before 6.94 After
Reason not developed:	If Free Product, thickness:
Additional Notations: Surged well for ~10 min w/ 2" Surge block	

Volume Conversion Factor (VCF):	Well dia.		VCF
{12 x (d^2/4) x π} /231	2"	=	0.16
where	3"	=	0.37
12 = in / foot	4"	=	0.65
d = diameter (in.)	6"	=	1.47
π = 3.1416	10"	=	4.08
231 = in 3/gal	12"	=	6.87

5.2	x	25 vol. max or until clear/dewatered	130
1 Case Volume		Specified Volumes	= gallons

Purging Device:
- ☐ Bailer
- ☐ Suction Pump
- ☐ Electric Submersible
- ☒ Positive Air Displacement

Type of Installed Pump
Other equipment used 2" Surge block

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW:
0844	64.7	9.0	1760	>1000	5.2	Dark grey / very silty	28.56
0852	64.7	9.5	1437	>1000	10.4	Dark grey / very silty (turned down pump)	37.08
0902	65.1	8.6	1545	>1000	15.6	Dark grey / very silty	39.54
0912	65.1	8.0	1743	>1000	20.8	hard bottom detected	41.10'
0924	65.4	7.8	1738	>1000	26.0	Dark grey / silty	(41.40' @ top of pump)
0924	well dewatered @ 26 gallons						
*note: faint sheen present throughout above case volumes							
well recharge info:							
@Time	0926	DTW=	42.35	@Time	0931	DTW=	39.56
	0927		41.71		0932		39.06
	0928		41.15		0935		38.60
	0929		40.68		0936		38.11
	0930		40.08		0937		37.63

Did Well Dewater? Yes — If yes, note above. Gallons Actually Evacuated: 46.6 gallons

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-10C	PAGE 2 OF 2
Project #: 060522-WC-1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:	DTW=
0940	surged well w/ 2" surge block for 10 min & continue purge						
0955	66.2	8.0	1639	>1000	31.2	very faint sheen still present. Dark grey/very silty	37.74
1003	66.3	8.0	1700	>1000	36.4	no sheen w/ Dark grey & silty	40.81
1005	well dewatered @ 37 Gallons						
1043	66.3	7.7	1601	>1000	41.5	no sheen, lighter grey & silty	
1050	66.0	7.8	1745	>1000	46.6	darker grey/silty	
1050	well dewatered @ 46.6 gallons						

WELL DEVELOPMENT DATA SHEET

Well I.D. MW-11C	PAGE 2 OF 2
Project #: 060522-WC1	Client: Pangea

TIME	TEMP (F)	pH	Cond. (mS or µS)	TURBIDITY (NTUs)	VOLUME REMOVED:	NOTATIONS:
1230	66.5	7.4	1545	>1000	60.2	dark grey/very silty
1239	66.1	7.4	1526	>1000	64.5	" " " "
1246	66.7	7.4	1529	>1000	68.8	clear sup some/then very silty when surged w/ pump.
1251	66.1	7.4	1512	>1000	73.1	dark grey/very silty
1255	66.5	7.4	1528	>1000	77.4	grey/very silty
1259	66.5	7.3	1511	>1000	81.7	cleaning, but quickly becomes dark grey w/ heavy silt when pump is surged
1303	66.9	7.4	1526	>1000	86.0	" " " " "
1307	66.3	7.6	1498	>1000	90.3	dark grey/very silty
1311	66.1	7.4	1529	>1000	94.6	" " / " "
1315	65.7	7.4	1530	>1000	98.9	" " / " "
1319	65.9	7.4	1526	>1000	103.2	cleaning, but becomes dark silty when surged w/ pump
1323	66.0	7.4	1531	>1000	107.5	dark grey v. silt (w/ pump) DTW = 32.44

DTI

31.6

Well Recharge Info: (every 30 sec)

@time		DTW=				
1324		28.60				
:5		26.75				
1325		24.90				
:5		23.60				
1326		22.18				
:5		20.96				
1327		19.61				
:5		18.73				
1328		18.15				
:5		17.51				

APPENDIX I

Waste Manifest for Extracted Groundwater

CLEARWATER
ENVIRONMENTAL MANAGEMENT, INC.

WE ACCEPT VISA & MASTERCARD

REMIT TO:

P.O. Box 2407 UNION CITY, CA 94587-2407
(800) 499-3676 FAX (510) 476-1786
CAR 000 007 013

P.O. Box 349 SILVER SPRINGS, NV 89429-0349
(775) 577-9001 FAX (775) 577-9199
NVD 982 358 483 (800) 471-2105

Bill of Lading
Invoice # 144401
Date 7-7-06

BILLING INFORMATION

NAME: PANGEA ESI
ADDRESS: 1710 FRANKLIN ST #200
CITY: OAKLAND STATE: CA ZIP: 94612
PHONE NO.: (510) 836-3702

JOB SITE

NAME:
ADDRESS: 7240 DUBLIN BLVD
CITY: DUBLIN STATE: CA ZIP:
PHONE NO.: ( )

PO# CASH CHECK
CUSTOMER EPA ID #
PROFILE #
CUSTOMER ID #

PRODUCT PROPER SHIPPING DESCRIPTION	WASTE CODE	MANIFEST NUMBER	QUANTITY	UNITS	PRICE	AMOUNT
Used Oil, Non-RCRA Hazardous Waste, Liquid	221					
Used Automotive Antifreeze, Non-RCRA Hazardous Waste, Liquid	134					
Oily Water Non-RCRA Hazardous Waste, Liquid						
Non RCRA Hazardous Waste Solid Oil Contaminated Debris / Soil						
Waste Combustible Liquid nos 3 UN1993, PG III						
Non Hazardous Waste Liquid	X	NH2905	60	G		
Non Hazardous Waste Solid						
Transportation Charges	X		4			
Washout Charges						
Drained Used Oil Filters						
Empty Drums						
Additional Labor						
Pressure Washer						
Other:						

DISPOSAL/RECYCLING FACILITY: Collection Station | Industrial | Agriculture | Government | Marine

TOTAL

NET 10 DAYS

[X] Alviso Independent Oil
5002 Archer Street; Alviso, CA
CAL 000 161 743; 95002
(510) 476-1740

[ ] Clearwater Environmental Mgmt. Inc.
2430 Almond Dr.
Silver Springs, NV 89429
NVD 982 358 483
(775) 577-9001

[ ] D/K Environmental
3650 E. 26th Street; Vernon, CA
CAT 080 033 681; 90023
(323) 268-5056

[ ] Onyx Environmental Services
1125 Hensley Street; Richmond, CA
CAT 080 014 079; 94801
(510) 233-8001

[ ] Seaport Environmental
675 Seaport Blvd; Redwood City, CA
CAR 000 140 624; 94063
(650) 364-8154

[ ] Commercial Filter Recycling
33210 Western Ave; Union City, CA
(510) 487-9227; 94587

[ ] DeMenno Kerdoon
2000 N. Alameda Blvd; Compton, CA
CAT 080 013 352; 90222
(310) 537-7100

[ ] Evergreen Oil
6880 Smith Ave; Newark, CA
CAD 980 887 418; 94560
(510) 795-4400

[ ]

I hereby certify that all information submitted in this and all attached documents contain true and accurate descriptions of the waste. All relevant information regarding known or suspected hazards associated with the wastes has been disclosed. I certify that we have an established program to reduce the volume of waste to the degree to be economically practicable

DRIVER SIGNATURE

GENERATOR SIGNATURE

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.	2. Page 1 of 1	3. Document Number 2905

GENERATOR

4. Generator's Name and Mailing Address

[illegible]

Generator's Phone [illegible]

5. Transporter Company Name	6. US EPA ID Number	7. Transporter Phone
CLEARWATER ENVIRONMENTAL	CAR000007013	(510) 476-1740

8. Designated Facility Name and Site Address	9. US EPA ID Number	10. Facility's Phone
ALVISO INDEPENDENT OIL 5002 ARCHER STREET ALVISO, CA 95002	CAL000161743	(510) 476-1740

11. Waste Shipping Name and Description	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol
a. Non-Hazardous waste, liquid	001	TT	30	G
b.				

15. Special Handling Instructions and Additional Information

Wear PPE
Emergency Contact
(510) 476-1740
Attn: Kirk Hayward

Handling Codes for Wastes Listed Above	
11a.	11b.

16. **GENERATOR'S CERTIFICATION:** I certify the materials described above on this manifest are not subject to state or federal regulations for reporting proper disposal of Hazardous Waste.

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	7	7	00

TRANSPORTER

17. Transporter Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	7	7	00

FACILITY

18. Discrepancy Indication Space

19. Facility Owner or Operator: Certification of receipt of waste materials covered by this manifest except as noted in Item 18.

Printed/Typed Name	Signature	Month	Day	Year

WHITE – ORIGINAL (Return to Generator) YELLOW – TSDF (Retain Copy) PINK – TRANSPORTER COPY GOLDENROD – GENERATOR'S COPY