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Alameda County Environmental Health

## Estate of Michael Dolan Ms. Noreen Fitzpatrick, Trustee 3215 Deer Park Dr. Walnut Creek, CA 94598

5/24 . 2007

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

Re: Perjury Statement

Dolan Property, 6393 Scarlett Court, Dublin, California; RO-210

Dear Mr Chan.

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

Noreen Fitzpatrick, Trustee

Peter MacDonald, Esquire
 Wanden Treanor, Esquire

## First Quarter 2007 Groundwater Monitoring Event

Dolan Trust Property
6393 Scarlett Court
Dublin, California
ACEH Fuel Leak Case No. RO0000210

April 23, 2007 BEI Job No. 202016

Prepared for:

Estate of Michael Dolan Ms. Noreen Fitzpatrick, Trustee 3215 Deer Park Dr. Walnut Creek, CA 94598

Prepared by:

Blymyer Engineers, Inc. 1829 Clement Avenue Alameda, CA 94501-1395 (510) 521-3773

#### Limitations

Services performed by Blymyer Engineers, Inc. have been provided in accordance with generally accepted professional practices for the nature and conditions of similar work completed in the same or similar localities, at the time the work was performed. The scope of work for the project was conducted within the limitations prescribed by the client. This report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made. This report was prepared for the sole use of the client, The Estate of Michael Dolan.

Blymyer Engineers, Inc.

Mark E. Detterman, CEG

Senior Geologist

Michael S. Lewis, REA

And:

Vice President, Technical Services

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Blymyer Engineers, Inc.
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#### 1.0 Introduction

This report documents the First Quarter 2007 groundwater monitoring event at the subject site (Figure 1). This is the eleventh groundwater monitoring event conducted by Blymyer Engineers, Inc. at the former Dolan Trust Property in Dublin, California.

#### 1.1 Background

A 600-gallon underground storage tank (UST) was removed in February 1990 from the subject site (Figure 2). Although the UST had reportedly stored diesel more recently, soil and groundwater samples collected for laboratory analysis indicated that the contaminant of concern at the site was gasoline. Files maintained by the Alameda County Department of Environmental (ACDEH) do not contain waste manifests for the disposal of soil, although a *Uniform Hazardous Waste Manifest* is present documenting the disposal of a 600-gallon UST. This suggests that contaminated soil may not have been removed from the site. In October 1990, five soil bores were installed at the site, and soil and grab groundwater samples were collected. Additional delineation work was conducted in November 1991, when groundwater monitoring wells MW-1 through MW-4 were installed to a depth of 20 feet below grade surface (bgs). Soil and groundwater samples were collected. In November 1992, 14 additional soil bores were installed, and soil and grab groundwater samples were collected from selected bore locations. Although there were several data gaps in the perimeter zone of soil and groundwater delineation, the soil and groundwater plumes were largely defined as a result of this investigation. The groundwater plume did not appear to extend offsite; however, a thin free-phase layer was present immediately adjacent to the former UST basin, and at a location approximately 40 feet to the east. Additional wells were proposed to fill the existing data gaps and to monitor the lateral extent of impacted groundwater and free-phase. As a consequence, in March 1995, wells MW-5 and MW-6 were installed to a depth of 10 feet bgs. Intermittent groundwater sample collection or groundwater monitoring has occurred at the facility since 1991. In an August 1998 letter, the ACDEH suggested that a health risk analysis or the installation of an oxygen releasing compound (ORC) might be appropriate for the site. Also in the August 1998 letter, the ACDEH stated that groundwater

sampling of wells MW-1, MW-3, MW-5, and MW-6 could be discontinued, stated that the sampling

interval could be decreased to a semiannual basis, and requested resumption of groundwater monitoring.

In May 2002, Blymyer Engineers was retained by Mr. Michael Fitzpatrick, on behalf of Mr. Michael Dolan,

to conduct semiannual groundwater sampling of wells MW-2 and MW-4, and to conduct a file review to

help determine the next appropriate step at the site.

In May 2002, Blymyer Engineers located and rehabilitated the wells at the site. Well MW-5 required the

most extensive rehabilitation work, and required resurveying due to a change in well casing elevation. In

June 2002, wells MW-2 and MW-4 were sampled, while depth to groundwater was measured all of the

wells. Except for a slight increase in benzene in groundwater from well MW-4, the concentration of all

analytes in the two wells decreased from the August 1997 sampling event. Based upon a review of the

results, the ACDEH recommended that well MW-5 be incorporated into the sampling program and that

quarterly groundwater monitoring resume in order that contaminant concentrations and contaminant trends

could be quickly generated for the recommended health risk assessment.

Two additional quarters were completed prior to the death of Mr. Dolan. Groundwater monitoring was on

hold after January 2003 due to the Estate becoming established. During the groundwater monitoring event

in December 2002, analysis for the fuel oxygenates was conducted by EPA Method 8260B. All fuel

oxygenates were found to be non-detectable at good limits of detection. Consequently, all sporadic

occurrences of methyl tert-butyl ether (MTBE) previously detected at the site have been attributed to

3-methyl-pentane, another gasoline related compound. This suggests that the release predates the use of

MTBE and other fuel oxygenates as gasoline additives. All previously available data from the site has been

tabulated on Tables I trough V.

On June 13, 2003, a workplan was submitted to the ACDEH in order to allow further subsurface

delineation of impacted soil at the site. In a telephone conversation on June 16, 2003, Mr. Scott Seery

mentioned that it was unlikely that he would be able to respond in a timely manner due to the work load at

the ACDEH, and noted that if a response was not issued 60 days after receipt, regulations stated that the

workplan should be considered approved. Consequently, field work commenced on September 13, 2003.

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Nine Geoprobe<sup>7</sup> soil bores were installed at the site to augment existing soil data. The data indicated that the lateral and vertical extent of impacted soil at the site had been adequately delineated to relatively low concentrations, and the limits further refined for the purposes of determining appropriate remedial actions (*Geoprobe*<sup>7</sup> *Subsurface Investigation*, dated October 10, 2003).

Based on these data and a lack of further comments by the ACDEH, a *Remedial Action Plan* (RAP), dated April 6, 2004, was issued. The plan detailed overexcavation and construction dewatering, as the principal method of remedial action. Introduction of ORC into the resulting excavation as an additional measure of insurance, should residual contamination be intentionally or unintentionally left in place, was also proposed. Use of ORC was proposed based on general knowledge that biodegradation of petroleum hydrocarbons is generally an oxygen limited process. A Request for Proposal (RFP) was generated in early May 2004 for contractor bidding purposes; however, it was not released due to a change in the timeline for sale closure. On September 2, 2004, Blymyer Engineers contacted Mr. Seery in order to determine the status of the RAP review. At that time, Mr. Seery notified Blymyer Engineers that Mr. Robert Schultz was the new case manager for the site. Mr. Schultz required time to review and become familiar with the file. On November 15, 2004, the ACDEH issued a 5-page response letter (*Fuel Leak Case No. RO0000210*) requesting extensive further work and containing several deadlines. A December 31, 2004 deadline was established for a workplan for additional site characterization. The *Workplan for Additional Investigation and Letter Report*, dated December 23, 2004, was submitted to the ACDEH on January 3, 2005.

In a letter dated January 24, 2005, the ACDEH approved the workplan provided four conditions were met:

- A pilot hole was to be used to identify lithology prior to collection of a groundwater sample from a deeper water-bearing zone,
- Should additional groundwater wells be required, the ACDEH would be consulted regarding well construction details,
- Should additional soil or groundwater samples be required, the ACDEH would be kept informed of planned changes and consistent dynamic investigation procedures, and

• A 72-hour written advanced warning would be provided.

On February 18, 2005, Blymyer Engineers mobilized to the site to install two to three dual-tube direct-push soil bores in an attempt to collect the approved soil and groundwater samples. As a precursor to the mobilization, a conduit survey was conducted. However, due to poor soil recovery an additional mobilization to the site was required. After notifying, and obtaining approval from, the ACDEH 72 hours in advance, a Cone Penetrometer Test (CPT) direct-push rig was mobilized to the site on March 28, 2005. Prior to the March 28, 2005 mobilization, the ACDEH approved a reduction in the quarterly analytical program, based on historical analytical trends. Specifically, hydrocarbon analysis of groundwater samples from wells MW-1, MW-3, and MW-6 was eliminated.

On April 13, 2005, CCS Environmental resurveyed all wells at the site. As of April 30, 2005, all tenant operations at the site ceased. This included the batch plant used by Dublin Concrete.

On May 10, 2005, Blymyer Engineers submitted the *Additional Site Investigation Data Transmittal* to the ACDEH providing a brief summary of the results of the CPT bore installations. Based on the detection of hydrocarbon compounds in groundwater between 30 and 40 feet bgs, the letter proposed the installation of groundwater well MW-7 across a deeper water-bearing zone in a downgradient position. Shortly thereafter, the ACDEH reported that Mr. Schultz had left the employ of the agency and that the case had not been assigned to a new case worker yet. The ACDEH was apprised that due to the sale of the parcel, work would proceed, pending agency review.

As a part of another related project, Blymyer Engineers oversaw the permitted destruction of two old water production wells between May 16 and May 24, 2005. According to Zone 7, both wells appear to have dated from the 1940s or 1950s. Well "3S/1E 6F 1", located on the subject parcel was constructed of 8-inch-diameter steel casing and was 95 feet in total depth. Well "3S/1E 6F 2" was located on the adjacent parcel, also owned by Dolan Properties, and was constructed of 13-inch-diameter riveted steel casing and was 38 feet in total depth. All Zone 7 permit conditions were observed; however, the upper 6 to 7.5 feet of each well casing was removed by excavation seven days after it had been filled to the surface with cement grout. An approximately 6- to 12-inch-thick concrete mushroom cap was placed over and around the

remaining casing at depths of 6 and 7.5 feet bgs, respectively (where the casing broke during removal). The excavation was backfilled with native soil, and track rolled.

On July 5 and July 8, 2005, Blymyer Engineers oversaw the installation of downgradient groundwater monitoring well MW-7 (Figure 2). The well was installed into the second water-bearing zone beneath the site due to the detection of hydrocarbon contamination in groundwater in both CPT bores at depths of approximately 30 to 40 feet bgs. A conductor casing was installed to a depth of 30 feet in order to exclude upper water-bearing zones, and to prevent cross-contamination of deeper water-bearing zones. A 2-inch-diameter PVC casing was installed through the conductor casing and the well was screened between 30 and 40 feet bgs.

On October 7, 2005, Blymyer Engineers issued the Remedial Investigation / Feasibility Study report documenting all field work conducted since January 2005, and the results of a feasibility study. The report evaluated three remedial alternatives, including monitored natural attenuation, dual-phase extraction, and source soil excavation and dewatering. It was found that, under monitored natural attenuation, benzene would require approximately 33 years to reach the Maximum Contaminant Level (MCL) and that the remedial cost was the highest of the three options. Remedial costs were the second highest under the dualphase extraction scenario, and would be more intrusive with respect to the future owner's land use. Remedial costs were lowest, and the site presence was least intrusive in the longer term under the remedial overexcavation and dewatering scenario. This scenario additionally proposed to introduce oxygen releasing compound (ORC) into the remedial excavation to stimulate biodegradation of the residual hydrocarbon contamination by indigenous microbes; previously shown to be oxygen-limited at the site. This scenario additionally proposed to treat soil and groundwater outside the plume core with ORC injected through Geoprobe bores on an approximately 10-foot spacing interval. Principally because remedial costs were lowest, remedial excavation was selected as the most appropriate remedial technology for the site. On October 26, 2005, Blymyer Engineers issued the Corrective Action Plan For Source Soil Excavation and Dewatering. On November 2, 2005, the ACDEH issued the letter Fuel Leak Case No. RO0000210, which concurred with the recommended remedial plan, but contained six technical comments for clarification. On November 9, 2005, Blymyer Engineers issued the Response to November 2, 2005

Letter, that addressed the technical comments contained in the ACDEH letter. The letter indicated that soil reuse was not planned due to high perched groundwater as shallow as 3 feet bgs, provided documentation (Figure 2 of that letter) of the approximate planned bottom sample soil collection locations based on the isoconcentration figures, stated that ORC would be applied throughout the excavation as requested, attached NPK bio-nutrient calculations for the site, stated that a second excavation backfill well would be installed as requested, and stated that a post-remediation quarterly groundwater sampling program was planned for a minimum period of one year.

Remedial excavation began on November 29, 2005, with the initial installation of a slide-rail shoring system in the area for excavation. Between December 1, and December 8, 2005, Marcor Remediation, Inc. (Marcor) excavated and stockpiled 2,370 cubic yards (3,054.65 tons) of impacted soil from an area approximately 50 by 50 feet, by 20 to 21 feet in depth. Concurrent excavation dewatering was attempted, but due to the load of suspended fine particles, could not keep up with groundwater infiltration. Extracted groundwater was plumbed through a bag filter to remove the sediment load, and then through two 2,000pound granular activated carbon (GAC) vessels into a 20,000-gallon temporary aboveground storage tank. Prior to discharge to the sanitary sewer a groundwater sample was collected under observation of the Dublin-San Ramon Services District personnel. Four authoritative excavation bottom soil samples were collected from locations in close proximity to previously documented worst-case soil concentrations and each returned non-detectable concentrations for all analytes. The excavation was backfilled with imported crushed rock and locally derived recycled asphaltic baserock. ORC was applied in slurry form to the crushed rock as it was placed into the excavation. On December 21 and 22, 2005, twenty-six ORC injection bores were pushed to approximately 21 feet bgs, and an ORC slurry was injected into the bores in areas surrounding the backfilled excavation in order to address residual contamination outside the area of excavation. The soil stockpiles were sampled concurrently with remedial excavation, and the soil was loaded, transported, and disposed at Keller Canyon Landfill in Pittsburg, California, between December 29, 2005, and January 4, 2006. On January 11, 2006, the property was sold by the Dolan Trust to Ken Harvey Honda, and site redevelopment planning was initiated for a car dealership.

On February 27, 2006, Blaine Tech Services, Inc. (Blaine) mobilized to the site to develop the two new wells (MW-8 and MW-9) located within the remedial excavation. Development details have been reported under separate cover in the report entitled *Report on Source Soil Excavation and Dewatering*, dated April 20, 2006. The first post-remediation groundwater monitoring event occurred on March 2, 2006, and was reported in the report entitled *First Quarter 2006 Groundwater Monitoring Event*, dated April 4, 2006. The *Second Quarter 2006 Groundwater Monitoring Event* dated June 22, 2006, was issued on June 28, 2006, while the *Third Quarter 2006 Groundwater Monitoring Event* dated December 1, 2006, was issued on December 4, 2006.

On January 2, 2007, the ACHCSA issued a letter commenting on the *Third Quarter 2006 Groundwater Monitoring Event* report. The letter contained four technical comments that received a response in a February 16, 2007 letter from Blymyer Engineers, on behalf of the Dolan Estate. The comments and responses included:

- ACHCSA concurrence with the recommendation for temporary cessation of natural attenuation parameters.
- The ACHCSA recommended that microbial assays be conducted in order to determine if an appropriate microbial population is present in subsurface groundwater to allow the natural degradation of petroleum hydrocarbons in the subsurface in the presence of increased oxygen. Blymyer Engineers noted that microbial assays would help determine if augmentation of the current microbial population might allow faster degradation. Blymyer Engineers proposed to collect groundwater at three wells (upgradient, excavation, and downgradient) to determine trends across the site as recommended by the analytical laboratory, CytoCulture Environmental Biotechnology (CytoCulture) in Point Richmond, CA. Collection of the samples was proposed to be coordinated with a groundwater monitoring event, and the results would be reported within a quarterly groundwater monitoring report. The samples were to be analyzed for total microbial population, and the hydrocarbon-degrading population within the total population at the three wells, as also recommended by CytoCulture.

- The ACHCSA recommended the installation of ORC socks in well MW-4 in lieu of additional subsurface Geoprobe exploration proposed by Blymyer Engineers in the *Third Quarter 2006 Groundwater Monitoring Event* report. The Geoprobe bores were intended to determine the location of the presumed near-surface source of hydrocarbons of apparently recent origin (see referenced report) that is apparently impacting groundwater in the vicinity of well MW-4. Blymyer Engineers noted general agreement with the recommendation; however, additionally consulted Regenesis, Inc. (Regenesis), provider of ORC products. Regenesis additionally recommended the addition of RegenOx to well MW-4 prior to the installation of the ORC socks in the well as an appropriate method to provide a more rapid decrease in fuel hydrocarbon concentrations, and to extend the life of the ORC socks. Regenesis noted that because RegenOx is essentially a liquid, it will be removed and distributed by natural process in the vicinity of the well, will not solidify in the well, and will not make the well unavailable for future monitoring and sampling. Conversely, because it will not be injected into the subsurface soils and will be distributed by natural groundwater movements, the radius of influence will be more localized, which is presumed beneficial if the source is localized to well MW-4, as suspected.
- The ACHCSA also requested continued analysis of groundwater from well MW-5 for fuel oxygenates based on previous groundwater analytical results. Blymyer Engineers noted that sampling of well MW-4 for fuel oxygenates was appropriate in support of determining the source of the hydrocarbons impacting groundwater in the vicinity of well MW-4, and recommended that a minimum of one groundwater sampling event at well MW-4 be conducted.

Since the Third Quarter 2007 groundwater monitoring event, site redevelopment activities including paving and infrastructure installation for the car dealership have precluded access to the groundwater monitoring wells. Additional groundwater monitoring has been pending access to, and reconstruction of, the groundwater monitoring wells, temporarily paved over during site redevelopment. The wells required raising and lowering of well casings and well boxes to the new grade, as well as re-surveying to GeoTracker standards. Between February 20 and March 9, 2007, remaining wells at the site were raised or lowered,

and new well boxes were installed, to conform to the new surface grade at the site. On March 19, 2007, the wells were resurveyed by CSS Environmental to GeoTracker standards.

### 2.0 Groundwater Sample Collection and Analytical Methods

Groundwater samples were collected from all remaining monitoring wells on March 20, 2007. The groundwater samples were collected by Blaine in accordance with Blaine *Standard Operating Procedures* for groundwater gauging, purging, and sampling. A copy is included as Appendix A. In accordance with the recommendation contained in the previous quarterly report, laboratory Remediation by Natural Attenuation (RNA) parameters were not collected this quarter; however, DO, ORP, and ferrous iron field measurements were collected as proxies for the RNA laboratory parameters. These RNA field parameters were collected using a peristaltic pump with tubing placed within the screened interval of the well in order to obtain more representative samples of groundwater upon infiltration into the well. Depth to groundwater was measured in all wells remaining at the site. Temperature, pH, conductivity, and turbidity were measured initially, and then after removal of each purge volume. Groundwater depth measurements and details of the monitoring well purging and sampling are presented on the *Well Gauging Data* sheet and *Well Monitoring Data Sheets* generated by Blaine and included as Appendix B. Additional field forms included in Appendix B include the *Purge Drum Inventory Log*, and the *Wellhead Inspection Checklist*. Depth-togroundwater measurements are presented in Table I. All purge and decontamination water was temporarily stored in Department of Transportation-approved 55-gallon drums for future disposal by the owner.

The groundwater samples for fuel hydrocarbons were analyzed by McCampbell Analytical, Inc., a California-certified laboratory, on a 5-day turnaround time. Groundwater samples from all wells were initially analyzed for Total Petroleum Hydrocarbons (TPH) as gasoline by Modified EPA Method 8015C; benzene, toluene, ethylbenzene, and total xylenes (BTEX) and MTBE by EPA Method 8021B, and TPH as diesel with silica gel cleanup by Modified EPA Method 8015C. Silica gel cleanup was requested for all samples in error by Blaine Tech, as the technique was intended to be selectively applied for diesel-range hydrocarbons in wells MW-4, MW-8, and MW-9 as a test. Regardless, the two samples that yielded detectable concentrations with silica gel cleanup were re-analyzed for TPH as diesel without silica gel cleanup in order to determine the effect the cleanup might have on the results. The sample from well MW-4, and the sample with the highest detected concentration of MTBE by EPA Method 8021B, well MW-5, were selected for reanalysis by EPA Method 8260B for five fuel oxygenates. This included *tert*-Butyl

Alcohol [TBA], Di-isopropyl Ether [DIPE], Ethyl *tert*-Butyl Ether [ETBE], and Methyl *tert*-Amyl Ether [TAME]. Tables II to V summarize current and previous analytical results for groundwater samples. The laboratory analytical report for the current sampling event is included as Appendix C.

The groundwater samples from wells MW-1, MW-4, and MW-5 were also initially submitted to CytoCulture Environmental Biotechnology of Point Richmond, California for Total Heterotrophic Bacteria and Hydrocarbon-Degrading Bacteria enumeration. CytoCulture recommends a minimum of three samples be collected to evaluate these populations at a site, from upgradient, plume core, and downgradient wells. Blaine Tech inadvertently sampled well MW-5 instead of well MW-3, the downgradient well; however, the results are enlightening. As a consequence, Blaine Tech remobilized to the site on April 9, 2007, to sample well MW-3.

### 3.0 Groundwater Sample Analytical Results

### 3.1 Petroleum Hydrocarbon Groundwater Sample Analytical Results

Hydrocarbon analysis of groundwater samples from all remaining wells was conducted during the current sampling event. Well MW-2 was destroyed during the remedial excavation in November 2005, but was essentially replaced by excavation wells MW-8 and MW-9. The predominant trend in hydrocarbon concentrations at the site was a continued downward trend in all wells. Except for the detection of MTBE in well MW-5, wells MW-1, MW-3, MW-5, MW-6, and deep well MW-7 yielded non-detectable analyte concentrations. During the previous event, perimeter wells MW-1 and MW-6 yielded petroleum hydrocarbons below the RWQCB ESL goals (78 Fg/L TPH as gasoline and 61 Fg/L TPH as diesel, respectively). During the current quarterly event well MW-5 contained between 54 and 57 Fg/L MTBE (by EPA 8021B and EPA 8260B, respectively). MTBE in this well continues to trend slightly higher with each quarterly sampling event. No other fuel oxygenates were detected via analysis by EPA Method 8260B this quarter. Except for toluene, well MW-4 contained lower analyte concentrations than the previous quarter. TPH concentrations in well MW-4 underwent a notable reduction with and without use of the silica gel cleanup technique. With silica gel cleanup on the TPH as diesel analysis, all analyte concentrations in excavation wells MW-8 and MW-9 were detected at lower concentrations. Only TPH as gasoline was over the RWOCB ESLs in these wells, while benzene was marginally over the ESL in well MW-8 only. A copy of the groundwater petroleum hydrocarbon analytical results can be found in Appendix C, and the results are summarized in Table II and Table III.

The use of silica gel cleanup has provided some insight into the nature of hydrocarbons at the site. Silica gel cleanup is an additional analytical technique that removes polar hydrocarbons that are produced by the decomposition of vegetable matter native to a site (i.e. former grasslands or marshlands), as opposed to non-polar hydrocarbons that are found in fuel hydrocarbons. Because the site was located in such a predevelopment environment, it was judged appropriate to investigate use analytical technique at the site. While total non-silica gel cleanup TPH concentrations in wells MW-8 and MW-9 are roughly similar to the previous several quarters, the silica gel cleanup of the TPH as diesel analysis clearly indicates that the

majority of the diesel-range hydrocarbons are vegetation derived. This also likely accounts for the majority of the footnotes provided by the laboratory for non-silica gel cleanup analysis (footnotes f and j) in wells MW-4, MW-8, and MW-9. It can also be noted that the concentration of TPH as gasoline, which is not affected by silica gel cleanup technique (a difference in the analytical method prevents use of silica gel cleanup), continues a downward trend similar to the downward trend in fuel-related volatile aromatic compounds (BTEX).

The downward trend that is notable in TPH as gasoline concentrations in well MW-8 and MW-9 is also very prominent in downgradient well MW-4 this quarter. Figure 3 documents the dramatic decrease in concentrations in well MW-4 (TPH as diesel without the silica gel cleanup), and also documents the preremedial excavation correlation between rising groundwater elevations and increasing contaminant concentrations. This has previously been documented in combined well MW-2/MW-9 (Figure 4). This cycle appears to have been broken after the remedial actions and continues this quarter.

During the first quarterly groundwater monitoring event of 2005 well MW-2 yielded a detectable concentration of 1, 2-DCA (5.4 Fg/L). All other oxygenates and lead scavengers were not detected, sometimes at elevated limits of detection due to the dilutions required because of the elevated hydrocarbon compound concentrations in the sample. However, the lack of MTBE in groundwater collected from well MW-2 at that time, at good limits of detection, is consistent with previous analysis for fuel oxygenates conducted in December 2002. These results suggest that there may have been potentially two separate releases at the site, a non-MTBE-bearing release (from prior to use of MTBE as a fuel additive) as detected in well MW-2 (screened between 5 and 20 feet bgs) and an MTBE-bearing release detected in well MW-5 (screened between 3 and 10 feet bgs). Consistent with this interpretation is the lack of EDB, 1, 2-DCA, ethanol, and methanol in well MW-5, at good limits of detection. This suggests that portions of the release predate the use of fuel oxygenates as gasoline fuel additives.

The laboratory has previously included a note that the hydrocarbon quantified as TPH as diesel in wells MW-2 and MW-5 was present in the requested quantitation range (diesel), but that it did not resemble the fuel pattern requested. Inclusion of silica gel cleanup technique in the analytical process for TPH as diesel

analysis may now explain these notes. Previously reviews of the chromatograms from wells during the September 2002 quarterly event and the previous event have indicated that the hydrocarbon detected in the diesel range in groundwater from well MW-2 was associated with the heavy end of gasoline (carbon range C4 to C12) which overlaps into the typical carbon range occupied by diesel (carbon range C10 to C22). During several previous quarters, the laboratory included a note that oil range hydrocarbons were detected in the groundwater samples obtained from wells MW-8 and MW-9. McCampbell Analytical has previously stated (personal communication, October 20, 2006) that the chromatograms indicate that these could be either oil or asphalt related compounds. Those notes were not present this quarter, and this may be related to removal of non-fuel related oil-ranged compounds with the silica gel cleanup. Copies of the chromatograms reviewed during previous events have been attached at the end of Appendix C in the associated quarterly reports.

Prior to the remedial excavation, only wells MW-2 and MW-4 consistently yielded concentrations of petroleum hydrocarbons. Groundwater from well MW-2 consistently contained the highest concentrations at the site, followed by well MW-4. Well MW-2 was destroyed under permit during the remedial excavation. During the current monitoring event the predominant location of contaminants was in the vicinity of wells MW-4, MW-8, and MW-9; the latter two are tank basin wells. The concentrations of each analyte at these wells was significantly less than previously detected in destroyed well MW-2; however, they have previously remained elevated in well MW-4. During the current event, hydrocarbon concentrations in well MW-4 decreased significantly. During previous quarterly events in 2006 hydrocarbon concentrations in groundwater in well MW-4 had been assumed to be a by-product of remedial excavation, wherein contaminants formerly sequestered in soil were mixed and released into groundwater in a one-time process. A close review of the analytical data from groundwater collected in well MW-4 during the previous quarterly event suggested that this assumption might be incorrect in part. Multiple lines of evidence suggested that a different source of gasoline hydrocarbons could be reflected in the groundwater collected from well MW-4, or that a fresh spill of gasoline may have occurred near well MW-4. These lines of evidence can be summarized as follows:

• There was a large increase in gasoline and volatile (BTEX) hydrocarbon concentrations in groundwater collected from well MW-4 between September 2005 and March 2006. The relative stability of those concentrations over three quarters had suggested a remaining source as opposed to a transient spike in contaminant concentrations to be expected from a one-time event.

• The analytical laboratory began to flag the gasoline hydrocarbon in groundwater collected from well MW-4 as "unmodified or weakly modified gasoline" (i.e. fresh) in the March 2006 groundwater monitoring event.

• There appears to be no MTBE associated with this hydrocarbon, as would be anticipated with recent release of gasoline due to the required removal of this chemical from reformulated gasoline by December 31, 2003. This was confirmed during the current quarterly event.

• The apparent rapid decrease in the concentration of benzene in comparison to toluene and ethylbenzene would be typical of the chemical behavior (solubility) of these volatile compounds in groundwater. This trend continues during the current quarter.

• The concentration of TPH as diesel in wells MW-4, MW-8, and MW-9 has been very similar, while the concentration of TPH as gasoline in well MW-4 is significantly higher than in the other two wells. This has suggested the source of the TPH as diesel is the same (now more likely understood as a non-fuel related hydrocarbon related to vegetation), but that the source of TPH as gasoline is different between the wells.

• The ratio of TPH as gasoline to TPH as diesel in groundwater collected from well MW-4 has not matched the ratio seen previously in well MW-2, or currently in wells MW-8 or MW-9. Additionally the ratios of the various volatile organic compounds (BTEX) to TPH as gasoline or to TPH as diesel do not match between wells MW-4 and MW-8 or MW-9. Finally the ratios between the various volatile organic compounds, within a well, are generally not the same (see for example the ratio of total xylenes to benzene in each of the wells). These observations remain valid during the current quarterly event.

Each of these lines of evidence is suggestive of a separate source for the hydrocarbons in groundwater samples collected from well MW-4. This evidence appears to indicate an undiscovered residual pocket of

contamination outside the area of excavation, or more likely, the introduction of fresh gasoline hydrocarbons in the vicinity of the well. One potential source may be surface spillage from vehicles parked in the vicinity of well MW-4 waiting for repair at the auto shop across Scarlett Court from the site. During site visits leading up to the remedial excavation, between 6 to 10 cars were parked adjacent to the fence in the vicinity of well MW-4 on a daily basis. As Figure 3 documents, despite a rise in the groundwater elevation, these concentrations now appear to be declining.

#### 3.2 Bacteria Enumeration Groundwater Sample Analytical Results

Total heterotrophic and hydrocarbon-degrading aerobic bacteria enumeration analysis of groundwater samples from wells MW-1, MW-4, and MW-5 were initially conducted during the current sampling event (Table VI). Groundwater samples for aerobic bacteria enumeration were submitted to CytoCulture in Point Richmond, California. As recommended by CytoCulture, groundwater from upgradient, excavation area, and downgradient wells (MW-1, MW-4, and MW-3, respectively) was intended to be sampled; however, Blaine Tech inadvertently sampled well MW-5 in place of MW-3. As a consequence, Blaine Tech returned to the site and well MW-3 was sampled on April 9, 2007.

Bacteria populations for both hydrocarbon degrading and total heterotrophic bacteria ranged from the lower end in upgradient well MW-1 and downgradient well MW-3, to a high concentration in plume core well MW-4. Groundwater from well MW-5 contained intermediate bacterial populations. Groundwater from upgradient well MW-1 contained a low of 80 colony forming units per milliliter (cfu/ml) hydrocarbon degraders, and 400 cfu/ml total heterotrophic bacteria, while well MW-4 contained a high of 5,000 cfu/ml hydrocarbon degraders and 10,000 cfu/ml total heterotrophic bacteria. According to CytoCulture (personal communication, April 2007), bacteria populations in well MW-1 and MW-3 are generally considered low, while populations in MW-4 are on the high side of average and bacterial populations in well MW-5 (400 and 1,000 cfu/ml, respectively) are considered low-average. CytoCulture also reports that, because the enumeration results are separate plate counts, hydrocarbon degraders can be present at a higher population than total heterotrophs, at low population levels.

Based on these data, a hydrocarbon-degrading bacterial population has grown and is present in groundwater beneath the site. In particular, the relative percentages of hydrocarbon-degrading to total heterotrophic bacteria at each well are revealing. The percentages indicate that hydrocarbon degraders have preferentially grown to approximately 50% of the total bacterial population in well plume core well MW-4, to 40% in plume lateral well MW-5, and approximately 20% in upgradient well MW-1. While at low population levels in downgradient well MW-3, hydrocarbon degrading bacterial populations are present at a higher percentage (233%) than total heterotrophs, which may suggest that the hydrocarbon degrading population has been preferentially influenced by upgradient events. In total, these results suggest that the introduction of oxygen into the local vicinity has been, or can be, beneficial. Copies of the laboratory report can be found in Appendix D, and the results are tabulated in Table VI.

### 4.0 Intrinsic Bioremediation Groundwater Sample Field Results

Intrinsic bioremediation or RNA laboratory analytical parameters were not collected during the current quarter; however, field RNA parameters were collected. Analytical results for previous groundwater monitoring events are presented on Tables IV and V. Microbial use of petroleum hydrocarbons as a food source is affected by the concentration of a number of chemical compounds dissolved in groundwater at a site. RNA monitoring parameters were established by research conducted by the Air Force Center for Environmental Excellence. The research results were used to develop a technical protocol for documenting RNA in groundwater at petroleum hydrocarbon release sites (Wiedemeier, Wilson, Kampbell, Miller and Hansen, 1995, *Technical Protocol for Implementing the Intrinsic Remediation with Long Term Monitoring for Natural Attenuation of Fuel Contamination Dissolved in Groundwater, Volumes I and II*, U.S. Air Force Center for Environmental Excellence, Brooks Air Force Base, Texas). The protocol focuses on documenting both aerobic and anaerobic degradation processes whereby indigenous subsurface bacteria use various dissolved electron acceptors to degrade dissolved petroleum hydrocarbons.

In the order of preference, the following electron acceptors and metabolic by-products are used and generated, respectively, by the subsurface microbes (aerobes, Mn – Fe reducers, and methanogens) to degrade petroleum hydrocarbons: oxygen to carbon dioxide, nitrate to nitrogen, insoluble manganese (Mn<sup>4+</sup>) to soluble manganese (Mn<sup>2+</sup>), insoluble ferric iron (Fe<sup>3+</sup>) to soluble ferrous iron (Fe<sup>2+</sup>), sulfate to hydrogen sulfide, and carbon dioxide to methane. With the exception of oxygen, the use of all other electron acceptor pathways by microbes indicates increasingly anaerobic degradation. Aerobic degradation takes place first, and oxygen inhibits anaerobic degradation. As oxygen is consumed and an anoxic zone develops, the Mn – Fe reducers and methanogens begin to grow and release dissolved Mn, dissolved Fe, and methane (Commission on Geosciences, Environment and Resources, *Natural Attenuation for Groundwater Remediation*, 2000). Investigation of each of these electron acceptor pathways was conducted in all wells at the site as part of the evaluation of RNA chemical parameters. Analytical results collected prior to remedial excavation generally documented oxygen and nutrient (nitrate) limited RNA at the site.

Microbial use of petroleum hydrocarbons as a food source is principally affected by the concentration of dissolved oxygen (DO) in the groundwater present at a site; it is the preferred electron acceptor for the biodegradation of hydrocarbons. Post-purge DO was present in groundwater in concentrations ranging from 0.1 mg/L to 1.5 mg/L. Post-purge DO is generally accepted to document the concentration of DO in the area surrounding each well and is generally considered more representative of a water-bearing zone. Post-purge DO samples were collected with a peristaltic pump using tubing lowered to the lower portion of the screened interval of each well in an attempt to minimize the effect of standard purging and sampling techniques. The concentration of post-purge DO in most wells shows a decreasing trend over the first three post-remediation monitoring events. However, during the current event the concentration of DO in wells MW-5 and MW-6 are an exception and it is surmised that this is because the screen interval in these two wells is shallower (3 to 10 feet bgs vs. 5 to 20 feet bgs) and the tubing could not be lowered sufficiently, thus the concentration of DO has likely been influenced by purging and sampling techniques at these two wells.

In comparison to the period prior to remediation, the concentrations of post-purge DO appear to have returned to concentrations observed in March 2005, prior to remedial excavation. Thus it is generally assumed that the ORC injected and placed in the exaction has been fully utilized. This is not unexpected as ORC is noted to generate oxygen between 6 and 12 months. This is additionally supported by the appearance of ferrous iron in well MW-4. This is the only well that yielded a detectable concentration of ferrous iron during this event (see below). Prior to remediation, the lack of DO appeared to be one of the RNA-limiting factors in the remedial area. During the previous monitoring and sampling event, it appeared to be in transitioning back to a limiting factor, and during the current event it appears that it again is a limiting factor.

ORP is another measure of the supply and use of oxygen at a site. The higher the reading in millivolts (mV), the more oxygenated the subsurface environment is, and the lower the readings, the more anaerobic or reducing the subsurface environment is. ORP values ranged from 6.2 mV (MW-4) to 136 mV (MW-9). In general, ORP indicates a more oxidative subsurface environment beneath the site, except at well MW-4,

where DO is present at low concentrations. This implies that the addition of additional oxygen would be rapidly beneficial.

Ferrous iron was also investigated during the current sampling event. During this monitoring event, only well MW-4 contained detectable ferrous iron. Ferrous iron has consistently been present in well MW-4 at higher concentrations throughout the post-remedial period. This has suggested that microbial activity near this well is continuing to utilize iron to degrade contaminants in this area of the site. The lack of ferrous iron in all other wells, as well as the continued non-detectable concentration of ferrous iron in wells MW-8 and MW-9, suggest that Mn – Fe degrading microbial colonies remain in the vicinity of well MW-4. The slight increase in ferrous iron during the current quarter may also imply decreasing concentrations of DO in the vicinity of well MW-4.

In summary, this is the first event that suggests that the supply of DO in groundwater at the site and particularly in the plume core has decreased sufficiently to suggest the increasing growth of Mn-Fe degrading microbial colonies in the vicinity of well MW-4. Within the RNA process, aerobic microbial degradation provides the quickest method to degrade hydrocarbons at a site. During the previous groundwater sampling event, the data suggested that the plume beneath the site was becoming oxygen and nitrate limited. During the current event, microbial degradation of the groundwater hydrocarbon plume beneath the site appears to have become once again oxygen, and presumably, nitrate limited. During the previous event, indigenous aerobic microbes did not appear to have reestablished at significant densities, and oxygen appeared to be in sufficient concentrations to limit reestablishment of Mn-Fe reducing microbes. This appears to have changed. While the reduction of DO was expected, the re-establishment of the aerobic microbes in the plume core was anticipated to be quicker, and was expected to assist in achieving the remedial goal. During the previous event, most indicators suggested that the microbial process had or was temporarily reaching an end point at the site, that the remaining ORC had limited capacity to continue to provide DO to aerobic microbes beneath the site, and that additional efforts may be required. The indicators appear to have proceeded further along that trend line since that time.

#### 5.0 Groundwater Flow Data

Since the previous quarterly groundwater monitoring event, site redevelopment activities including paving and infrastructure installation for the car dealership have precluded access to the groundwater monitoring wells. Additional groundwater monitoring has been pending access to, and reconstruction of, the groundwater monitoring wells, temporarily paved over during site redevelopment. The wells required raising and lowering of well casings and well boxes to the new grade, as well as re-surveying to GeoTracker standards. Between February 20 and March 9, 2007, remaining wells at the site were raised or lowered, and new well boxes were installed, to conform to the new surface grade at the site. On March 19, 2007, the wells were resurveyed by CSS Environmental to GeoTracker standards. A copy of the survey is included as Appendix E.

Resurveyed top-of-casing (TOC) elevations were used to construct a groundwater gradient map (Figure 2). Well MW-7 was not used to construct the gradient map as it is set in a deeper water-bearing zone. While well MW-7 has been previously utilized to construct a groundwater gradient and flow direction map, the data was slightly more anomalous this quarter, and this may at least temporarily, reflect the different construction of the well. It has been previously suggested that the similarity of the groundwater elevation in well MW-7 with other wells may indicate that the well might be set in a deeper portion of the same water-bearing zone at the site. Additionally, while wells MW-5 and MW-6 are screened at shallower levels than wells MW-1, MW-3, and MW-4, the groundwater levels have periodically not been significantly different from other wells. Based on a review of the case file at the ACHCSA, groundwater elevations in wells MW-5 and MW-6 historically appear to have been consistently somewhat different than wells MW-1 through MW-4 at the site. During the current quarter, only well MW-5 appears to yield a groundwater elevation consistent with wells MW-1 through MW-4, while the groundwater elevation in well MW-6 is much more anomalous. The groundwater elevation obtained from well MW-6 was also excluded during construction of the groundwater gradient and flow direction as depicted in Figure 2.

Groundwater depths on March 20, 2007, ranged between 3.91 to 4.80 feet below the top of the casings. On average, the groundwater elevation rose by approximately 0.64 feet across the site since the September

2006 monitoring and sampling event. Based on these data, the direction of groundwater flow appears to be generally towards the south to south-southwest. Historically, groundwater has generally flowed to the south to southwest at the site (see for example the Rose Diagram of historic groundwater flow directions included in the *Additional Site Investigation Data Transmittal*); however, in June 2005 and November 1993, groundwater was documented to have flowed to the east. The average groundwater gradient was calculated to be at approximately 0.007 feet/foot for this monitoring event.

#### **6.0** Conclusions and Recommendations

The following summary and conclusions were generated from the available data discussed above:

- Groundwater was collected from all remaining wells during the current monitoring event for laboratory hydrocarbon analysis, only RNA field parameters were collected, and bacterial enumeration studies were conducted for the first time at the site.
- The predominant trend in hydrocarbon concentrations at the site was a continued downward trend in all wells. Except for the detection of MTBE in well MW-5, wells MW-1, MW-3, MW-5, MW-6, and deep well MW-7 yielded non-detectable analyte concentrations.
- All TPH as diesel analysis was initially conducted with a silica gel cleanup. Wells with detected TPH as diesel concentrations were reanalyzed without the silica gel cleanup. Total non-silica gel cleanup TPH concentrations in wells MW-8 and MW-9 were similar to recent quarters; however, with silica gel cleanup it was determined that the majority of the diesel-ranged hydrocarbons are clearly vegetation derived (in particular in wells MW-8 and MW-9). This also likely accounts for the majority of the footnotes provided by the laboratory for non-silica gel cleanup analysis in wells MW-4, MW-8, and MW-9. It can also be noted that the concentration of TPH as gasoline, which is not affected by silica gel cleanup technique, continues a downward trend similar to the downward trend in fuel-related volatile aromatic compounds (BTEX).
- Downward trends are notable in TPH as gasoline concentrations in wells MW-8, MW-9, and MW-4. The pre-remedial excavation correlation between rising groundwater elevations and increasing contaminant concentrations was broken with the remedial actions, and continues unabated during the current quarterly event.
- With silica gel cleanup on the TPH as diesel analysis, all analyte concentrations in excavation wells MW-8 and MW-9 were detected at lower concentrations. Only TPH as gasoline was over the RWQCB ESLs in these wells, while benzene was marginally over the ESL in well MW-8 only.

- MTBE continues to trend slightly higher in well MW-5 with each quarterly sampling event. During the current event, the well contained between 54 and 57 Fg/L MTBE (by EPA 8021B and EPA 8260B, respectively).
- Except for toluene, downgradient well MW-4 contained lower analyte concentrations than the previous quarter. TPH as gasoline and diesel concentrations in well MW-4 underwent a notable reduction.
- This is the first event to document significant reductions of fuel hydrocarbons in well MW-4. This may indicate that the source is limited. Groundwater obtained from well MW-4 continues to contain the highest concentrations of hydrocarbon compounds of wells at the site. This has previously been assumed to have been as a result of the remedial excavation process; however, a close inspection of the specific analytes has suggested an undetected residual source outside the area of excavation, or more likely, a fresh release of gasoline hydrocarbons. There are multiple lines of evidence to support these observations, and include the size of the increase; laboratory notes of fresh unweathered hydrocarbons; the lack of MTBE; the rapid decrease of benzene; similar concentrations of TPH as diesel but not of TPH as gasoline between wells MW-4, MW-8, and MW-9; multiple contaminant ratios; and observations of parked cars awaiting repair at the auto shop formerly located across the street.
- Microbial use of petroleum hydrocarbons as a food source has historically been principally limited by the concentration of DO in the groundwater; it is the preferred electron acceptor for the biodegradation of hydrocarbons. Nitrate concentrations in groundwater have also historically been a limiting factor at the site.
- In comparison to the period prior to remediation, the concentrations of post-purge DO appear to have returned to concentrations observed in March 2005, prior to remedial excavation. Thus it is generally assumed that the ORC injected and placed in the exaction has been fully utilized. This is not unexpected as ORC is noted to generate oxygen for between 6 and 12 months. This is additionally supported by the appearance of ferrous iron in well MW-4. This is the only well that yielded a detectable concentration of ferrous iron during this event. Prior to remediation, the lack of DO appeared to be one of the RNA-limiting

factors in the remedial area. During the previous monitoring and sampling event it appeared to be in transitioning back to a limiting factor, and during the current event it appears that it again is a limiting factor.

- During this monitoring event only well MW-4 contained detectable ferrous iron. Ferrous iron has consistently been present in well MW-4 at higher concentrations through out the post-remedial period. This has suggested that microbial activity near this well is continuing to utilize iron to degrade contaminants in the vicinity of this well location. The lack of ferrous iron in all other wells, as well as the continued non-detectable concentration of ferrous iron in wells MW-8 and MW-9, suggest that Mn Fe degrading microbial colonies remain in the vicinity of well MW-4. The slight increase in ferrous iron during the current quarter may also imply decreasing concentrations of DO in the vicinity of well MW-4.
- Total heterotrophic and hydrocarbon-degrading aerobic bacteria enumeration analysis of groundwater samples from wells MW-1, MW-3, MW-4, and MW-5 were conducted during the current sampling event. Bacteria populations for both hydrocarbon degrading and total heterotrophic bacteria ranged from a low in upgradient well MW-1 and downgradient well MW-3 to a high concentration in plume core well MW-4. Groundwater from well MW-5 contained intermediate bacterial populations.
- Based on these data, a hydrocarbon-degrading bacterial population has grown and is present in groundwater beneath the site. In particular the ratio of hydrocarbon-degrading to total heterotrophic bacteria at each well is revealing. The percentages indicate that hydrocarbon degraders have preferentially grown to approximately 50% of the total bacterial population in well MW-4, to 40% in well MW-5, and approximately 20% in well MW-1. While at low population levels in downgradient well MW-3, hydrocarbon-degrading bacterial populations exceed the total heterotrophic population (233%), and this may suggest that the hydrocarbon degrading population has been preferentially influenced by upgradient events. In total, these results suggest that the introduction of oxygen into the local vicinity has been, or can be, beneficial.
- During the current quarter, groundwater flow appears to be towards the south to southwest. The average groundwater gradient was calculated at 0.007 feet/foot.

•

The following recommendations were generated from the available data discussed above:

• As a cost savings measure, analysis for RNA parameters (carbon dioxide, nitrate, sulfate, methane,

manganese, potassium, total phosphorous, BOD, and COD) can again be temporarily stopped. Field

measurements including DO, ORP, and ferrous iron can be used as proxies for the extent of biological or

chemical degradation in groundwater beneath the subject site. Analytical testing for RNA parameters can

be resumed in the future as it is warranted.

• Future analysis for TPH as diesel should employ the use of the silica gel cleanup technique.

Elimination of the use of RegenOx as proposed in the Workplan for Additional Remediation

Efforts should be considered. Documentation of a preferentially grown hydrocarbon-degrading microbial

population in the vicinity of well MW-4 indicates that a preferred microbial population is present and use of

RegenOx could destroy or otherwise hinder their continued growth and use of the fuel hydrocarbons in

groundwater beneath the site.

\$ The next quarterly groundwater sampling event is scheduled to occur in June 2007.

\$ A copy of this letter report should be forwarded to:

Mr. Barney Chan

Alameda County Health Care Services Agency

Environmental Protection Division

1131 Harbor Bay Parkway, Suite 250

Alameda, CA 94502-6577

First Quarter 2007 Groundwater Monitoring Event April 23, 2007

6393 Scarlett Court, Dublin, California				
Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-1	11/27/1991	329.41	4.82	321.79
	9/30/1992		5.34	321.27
	4/7/1994		3.38	323.23
	8/12/1994		4.23	322.38
	11/29/1994		3.44	323.17
	3/21/1995		1.00	325.61
	5/22/1995		2.20	324.41
	8/24/1995		3.45	323.16
	2/12/1996		1.95	324.66
	2/5/1997		Data	Missing
	8/6/1997		3.60	323.01
	6/6/02*		2.89	323.72
	9/23/2002		3.48	323.13
	12/13/2002		3.18	323.43
	12/14/2004		2.76	323.85
	3/23/2005		1.14	325.47
	6/22/2005		2.58	326.83
	7/18/2005		2.21	327.20
	9/6/2005		3.30	326.11
	3/2/2006		2.32	327.09
	6/12/2006		3.61	325.80
	9/28/2006		3.34 1	326.07
	3/20/2007	331.23 <sup>3</sup>	4.60	326.63

6393 Scarlett Court, Dublin, California				
Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-2	11/27/1991	329.46	4.92	321.75
	9/30/1992		5.42	321.25
	4/7/1994		3.48	323.19
	8/12/1994		4.18	322.49
	11/29/1994		3.76	322.91
	3/21/1995		1.25	325.42
	5/22/1995		2.20	324.47
	8/24/1995		3.57	323.10
	2/12/1996		2.60	324.07
	2/5/1997		1.72	324.95
	8/6/1997		3.72	322.95
	6/6/02*		3.46	323.21
	9/23/2002		4.14	322.53
	12/13/2002		3.45	323.22
	12/14/2004		2.96	323.71
	3/23/2005		1.83	324.84
	6/22/2005		3.82	325.64
	7/18/2005		3.55	325.91
	9/6/2005		3.70	325.76
	3/2/2006		Destroyed	Destroyed
	6/12/2006		Destroyed	Destroyed
	9/28/2006		Destroyed	Destroyed
	3/20/2007		Destroyed	Destroyed

	6393 S	carlett Court, Dub	lin, California	
Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-3	11/27/1991	326.58	4.96	321.62
	9/30/1992		5.46	321.12
	4/7/1994		3.66	322.92
	8/12/1994		4.37	322.21
	11/29/1994		3.60	322.98
	3/21/1995		1.62	324.96
	5/22/1995		2.73	323.85
	8/24/1995		3.76	322.82
	2/12/1996		2.45	324.13
	2/5/1997		1.99	324.59
	8/6/1997		3.83	322.75
	6/6/02*		3.66	322.92
	9/23/2002		4.66	321.92
	12/13/2002		3.66	322.92
	12/14/2004		3.52	323.06
	3/23/2005		1.83	324.75
	6/22/2005	329.37	3.99	325.38
	7/18/2005		3.60	322.98
	9/6/2005		4.42	324.95
	3/2/2006		2.50	326.87
	6/12/2006		3.52	325.85
	9/28/2006		3.88	325.49
	3/20/2007	330.69 <sup>3</sup>	4.40	326.29

	6393 S	carlett Court, Dub	lin, California	
Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-4	11/27/1991	326.92	5.26	321.66
	9/30/1992		5.78	321.14
	4/7/1994		4.02	322.90
	8/12/1994		4.81	322.11
	11/29/1994		4.39	322.53
	3/21/1995		1.80	325.12
	5/22/1995		3.07	323.85
	8/24/1995		4.09	322.83
	2/12/1996		2.80	324.12
	2/5/1997		2.32	324.60
	8/6/1997		4.14	322.78
	6/6/02*		3.76	323.16
	9/23/2002		4.14	322.78
	12/13/2002		3.90	323.02
	12/14/2004		3.68	323.24
	3/23/2005		1.93	324.99
	6/22/2005	329.70	3.65	326.05
	7/18/2005		3.69	323.23
	9/6/2005		3.97	325.73
	3/2/2006		2.90	326.80
	6/12/2006		3.88	325.82
	9/28/2006		4.23	325.47
	3/20/2007	330.10 <sup>3</sup>	3.91	326.19

# Table I, Summary of Groundwater Elevation Measurements BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California

	0393 8	carlett Court, Dubl	ın, Camornia	
Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-5	3/21/1995	326.50	2.10	324.40
	5/22/1995		2.93	323.57
	8/24/1995		1.57	324.93
	2/12/1996		2.78	323.72
	2/5/1997		2.24	324.26
	8/6/1997		3.02	323.48
	6/6/02*	**	2.79	NM
	9/23/2002		3.07	NM
	12/13/2002		3.14	NM
	12/14/2004		2.92	NM
	3/23/2005		2.39	NM
	6/22/2005	329.16	2.99	326.17
	7/18/2005		3.39	325.77
	9/6/2005		3.07	326.09
	3/2/2006		2.74	326.42
	6/12/2006		3.36	325.80
	9/28/2006		3.33	325.83
	3/20/2007	331.26 <sup>3</sup>	4.80	326.46

# Table I, Summary of Groundwater Elevation Measurements BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California

	0393 8	carien Court, Dubi	iii, Camoi ma	
Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-6	3/21/1995	327.23	3.24	323.99
	5/22/1995		4.70	322.53
	8/24/1995		4.95	322.28
	2/12/1996		4.50	322.73
	2/5/1997		3.68	323.55
	8/6/1997		4.79	322.44
	6/6/02*		4.81	322.42
	9/23/2002	327.23	5.10	322.13
	12/13/2002		4.88	322.35
	12/14/2004		4.61	322.62
	3/23/2005		3.40	323.83
	6/22/2005	330.02	4.72	325.30
	7/18/2005		2.65	327.37
	9/6/2005		4.98	325.04
	3/2/2006		3.89	326.13
	6/12/2006		4.73	325.29
	9/28/2006		4.85	325.17
	3/20/2007	329.55 <sup>3</sup>	3.94	325.61

#### **Table I, Summary of Groundwater Elevation Measurements** BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Water Surface Elevation TOC Elevation Depth to Water Well ID Date (feet) (feet) (feet) \*\* MW-7 7/18/2005 6.38 9/6/2005 6.78 330.25 3/2/2006 3.33 326.92 6/12/2006 4.18 326.07 9/28/2006 4.52 325.73 330.17 <sup>3</sup> 3/20/2007 3.74 326.43 MW-8 328.93 3/2/2006 1.54 327.39 3.69 6/12/2006 325.24 9/28/2006 3.10 325.83 330.51 <sup>3</sup> 3/20/2007 4.16 326.35 MW-9 328.67 1.54 327.13 3/2/2006 6/12/2006 3.68 324.99 9/28/2006 3.08 325.59

Notes: TOC = Top of Casing

\* = Initial data set collected under direction of Blymyer Engineers, Inc.

4.37

326.37

330.74 <sup>3</sup>

\*\* = Surveyed elevation not available

NM = Not measured

3/20/2007

= Resurveyed on April 13, 2005 by CSS Environmental Services, Inc.

<sup>2</sup> = Surveyed on February 7, 2006 by CSS Environmental Services, Inc.

Surveyed on March 19, 2007 by CSS Environmental Services, Inc.

Elevations in feet above mean sea level

<sup>&</sup>lt;sup>1</sup> = Sampling form indicates casing is bent.

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel TPH **TPH** with Total Benzene Toluene Ethylbenzene **MTBE** as Gasoline as Diesel Silica **Xylenes** Gel Cleanup RWQCB ESLs; Table F-1a: **Groundwater Screening** Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource) MW-1 11/27/1991 < 50 NA NA < 0.3 < 0.3 NA < 0.3< 0.39/30/1992 < 50 NA NA < 0.3 < 0.3 < 0.3 < 0.3 NA 4/7/1994 < 0.5 < 50 NA NA < 0.5 < 0.5 < 0.5 NA < 50 NA < 0.3 <2 NA 8/12/1994 NA 1 1 11/29/1994 < 50 NA NA < 0.5 < 0.5 < 0.5 <2 NA < 50 NA < 0.5 < 0.5 < 0.5 3/21/1995 NA <2 NA NA < 50 < 0.5 <2 NA 5/22/1995 NA < 0.5 < 0.5 < 0.5 <2 8/24/1995 NA < 50 NA < 0.5 < 0.5 NA 2/12/1996 NA < 50 NA < 0.5 < 0.5 < 0.5 <2 NA 6/6/02\* NA 9/23/2002 NA NA NA NA NA NA 12/13/2002 NA NA NA NA NA NA NA 12/14/2004 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 < 50 3/23/2005 NA NA NA NA NA NA NA NA 6/22/2005 NA NA NA NA NA NA NA NA 9/6/2005 NA NA NA NA NA NA NA NA $62^{\frac{1}{k}}$ 3/2/2006 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 NA NA NA NA NA 6/1/2006 NA NA NA $78^{\,k}$ < 0.5 < 0.5 < 0.5 < 5.0 9/28/2006 < 50 NA < 0.5 3/20/2007 < 50 NA < 50 < 0.5 < 0.5 < 0.5 < 0.5 < 5.0

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel **TPH** with TPH Total Benzene Toluene Ethylbenzene **MTBE** as Gasoline as Diesel Silica **Xylenes** Gel Cleanup RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource) MW-2 11/27/1991 170,000 16,000 NA NA 24,000 13,000 3,500 NA 120,000 15,000 3,800 9/30/1992 NA NA 24,000 17,000 NA 4/7/1994 NA 120,000 NA 21,000 14,000 4,300 21,000 NA 8/12/1994 NA 140,000 NA 17,000 10,000 4,300 18,000 NA 11/29/1994 NA 90,000 NA 17,000 7,500 3,400 15,000 NA NA 3/21/1995 83,000 NA 17,000 8,000 3,800 17,000 NA NA 82,000 14,000 5/22/1995 NA 6,000 4,000 16,000 NA 8/24/1995 NA 86,000 NA 13,000 8,100 3,700 16,000 NA 2/12/1996 NA 78,000 NA 15,000 18,000 NA 8,100 4,200 2/5/1997 NA 58,000 NA 3,500 480 11,000 6,900 15,000 8/6/1997 NA 66,000 NA 7,000 3,500 < 500 9,200 16,000 NA **50** 6/6/02\* 25,000 a NA 2,900 2,700 2,200 < 250 4,300° 14.000<sup>b</sup> 9/23/2002 NA 2,700 81 2,100 1,800 < 250 4,000 ° 26,900 12/13/2002 NA 1,120 91 1,480 2,370 197 d 7,600 f, g 12/14/2004 21,000 e NA 1,700 120 1,600 2,400 < 60 15,000 f, g, i 3/23/2005 27,000 e i NA 1,400 170 1,700 2,500 <170 6/22/2005 NA 53 46 570 58 < 50 1,200<sup>g</sup> 5,800 e 4,900 f, g, j 14,000 e 9/6/2005 NA 1,000 40 1,500 680 <100 NS NS NS NS NS 3/2/2006 NS NS NS 6/1/2006 NS 9/28/2006 3/20/2007 NS NS NS NS NS NS NS NS

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel TPH **TPH** with Total Benzene Toluene Ethylbenzene **MTBE** as Gasoline as Diesel Silica **Xylenes** Gel Cleanup RWQCB ESLs; Table F-1a: **Groundwater Screening** Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource) MW-3 11/27/1991 NA < 0.3 < 0.3 NA NA < 50 < 0.3< 0.3NA < 0.3 9/30/1992 < 50 NA < 0.3 < 0.3 < 0.3 NA 5.5 4/7/1994 NA < 50 NA 2.5 0.9 NA 5.1 < 0.5 < 0.3 <2 8/12/1994 NA < 50 NA < 0.5 NA 11/29/1994 NA < 50 NA < 0.5 < 0.5 < 0.5 <2 NA NA < 50 < 0.5 < 0.5 < 0.5 3/21/1995 NA <2 NA NA < 0.5 <2 NA 5/22/1995 < 50 NA < 0.5 < 0.5< 0.5 <2 8/24/1995 NA < 50 NA < 0.5 < 0.5 NA 2/12/1996 NA < 50 NA < 0.5 < 0.5 < 0.5 <2 NA 2/5/1997 NA < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 <5 NA NA NA 6/6/02\* NA NA NA NA NA NA NA 9/23/2002 NA 12/13/2002 NA NA NA NA 12/14/2004 < 0.5 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 5.0 3/23/2005 NA NA NA NA NA NA NA NA 6/22/2005 NA 9/6/2005 < 50 < 50 < 0.5 < 5.0 3/2/2006 NA < 0.5 < 0.5 < 0.5 6/1/2006 NA NA NA NA NA NA NA NA 9/27/2006 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 3/20/2007 < 50 NA < 50 < 0.5 < 0.5 < 0.5 < 0.5 < 5.0

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel TPH **TPH** with Total Benzene Toluene Ethylbenzene **MTBE** as Gasoline as Diesel Silica **Xylenes** Gel Cleanup RWQCB ESLs; Table F-1a: **Groundwater Screening** Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource) MW-4 11/27/1991 NA NA 11,000 NA 100 0.7 250 330 380 3.5 2.4 8.9 9/30/1992 NA NA 3.4 NA 5.5 4/7/1994 NA NA 17 12 NA 1,100 61 8 8/12/1994 NA 1,000 NA 3 1 4 NA 11/29/1994 NA 1,100 NA 2 < 0.5 10 6 NA NA 5 3/21/1995 1,400 NA 200 **66** 18 NA NA 1 12 8 5/22/1995 1,200 NA 60 NA 400 < 0.5 1 <2 8/24/1995 NA NA 1 NA 2/12/1996 NA 1,500 NA < 0.5 120 NA 130 51 2/5/1997 NA 1,200 NA 250 4.9 94 **12** 16 <5 8/6/1997 NA 330 NA 1.5 < 0.5 < 0.5< 0.5 1.7 6/6/02\* NA < 50 NA < 0.5 < 0.5 < 0.5 < 2.5<48 < 0.5 9/23/2002 < 50 NA < 0.5 1.3 < 0.5 < 2.5 86° < 0.5 12/13/2002 < 50 NA < 0.5 < 0.5 <1.5 < 0.5 95<sup>h</sup> 12/14/2004 < 50 NA 2.6 < 0.5 < 0.5 < 0.5 < 5.0 3/23/2005 < 50 120<sup>h</sup> NA < 0.5 5 < 0.5 < 0.5 < 5.0 180 e 1.7 7.5 < 50 NA < 0.5 < 0.5 < 5.0 6/22/2005 < 50 < 50 < 5.0 9/6/2005 NA < 0.5 < 0.5 < 0.5 < 0.5 3/2/2006 1,600 e 220<sup>g</sup> NA 47 4.1 1.6 19 < 20 1,000 e 6/1/2006 250 f, g NA 22 2.8 3.9 0.59 < 5.0 1,400 e 220 f, g 9/27/2006 NA 7.3 2.4 < 0.5 <15 8.5 630 e,1 130 f, g 3/20/2007 77<sup>g</sup> 4.8 12 < 0.5 < 0.5 < 5.0

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel Total TPH **TPH** with Benzene Toluene Ethylbenzene **MTBE** as Gasoline as Diesel Silica **Xylenes** Gel Cleanup RWQCB ESLs; Table F-1a: **Groundwater Screening** Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource) MW-5 3/21/1995 < 50 NA < 0.5 < 0.5 NA NA < 0.5 <2 NA NA < 0.5 NA 5/22/1995 < 50 < 0.5 < 0.5 <2 8/24/1995 < 0.5 < 0.5 NA < 50 NA < 0.5 <2 NA 2/12/1996 < 50 NA < 0.5 < 0.5 <2 NA NA < 0.5 2/5/1997 NA < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5 6/6/02\* NA NA NA NA NA NA NA NA 310<sup>c</sup> < 50 NA < 0.5 < 2.5 9/23/2002 < 0.5 < 0.5 < 0.5 97 <sup>c</sup> $\boldsymbol{0.720}^{\text{ d}}$ < 50 < 0.5 < 0.5 12/13/2002 NA < 0.5 < 1.5 12/14/2004 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 12 3/23/2005 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 23 < 50 < 50 < 0.5 < 0.5 < 0.5 6/22/2005 NA < 0.5 31 < 50 < 0.5 32 9/6/2005 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 3/2/2006 < 50 NA < 0.5 < 0.5 < 50 < 0.5 **30** < 50 < 0.5 < 0.5 < 0.5 6/1/2006 < 50 NA < 0.5 44 9/28/2006 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 48 3/20/2007 < 50 NA < 50 < 0.5 < 0.5 < 0.5 < 0.5 54

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel Total TPH **TPH** with Benzene Toluene Ethylbenzene **MTBE** as Gasoline as Diesel Silica **Xylenes** Gel Cleanup RWQCB ESLs; Table F-1a: **Groundwater Screening** Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource) MW-6 3/21/1995 < 50 NA < 0.5 < 0.5 NA NA < 0.5 <2 NA NA NA 5/22/1995 < 50 < 0.5 < 0.5 < 0.5 <2 < 0.5 < 0.5 8/24/1995 NA < 50 NA < 0.5 <2 NA 2/12/1996 <50 NA < 0.5 < 0.5 < 0.5 <2 NA NA 2/5/1997 NA < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5 NA NA NA NA NA NA 6/6/02\* NA NA NA NA NA NA NA NA 9/23/2002 NA NA NA 12/13/2002 NA NA NA NA NA NA NA 12/14/2004 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 3/23/2005 NA 6/22/2005 NA NA NA NA NA NA NA NA 9/6/2005 NA NA NA NA 3/2/2006 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 50 e < 0.5 < 0.5 < 5.0 6/1/2006 < 50 NA 0.84 < 0.5 $61^{\,f}$ 9/27/2006 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 3/20/2007 < 50 NA < 50 < 0.5 < 0.5 < 0.5 < 0.5 < 5.0

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel Total TPH TPH with Benzene Toluene Ethylbenzene **MTBE Xylenes** as Gasoline as Diesel Silica Gel Cleanup RWQCB ESLs; Table F-1a: **Groundwater Screening** Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource) MW-7 7/18/2005 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 NA 0.7 1.2 9/6/2005 < 50 < 50 < 0.5 < 0.5 < 5.0 < 50 < 50 < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 3/2/2006 NA < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 5.0 6/1/2006 < 0.5 9/27/2006 < 50 < 50 NA < 0.5 < 0.5 < 0.5 < 0.5 < 5.0 < 50 NA < 50 < 0.5 < 0.5 < 0.5 < 5.0 3/20/2007 < 0.5 MW-8 550 f g 590 e **6.2** 2.7 21 < 5.0 3/2/2006 NA 0.67 97 <sup>k</sup> 250 f, j 6/1/2006 NA < 0.5 < 0.5 < 0.5 < 5.0 1.1 $300^{\,f,\,g,\,j}$ 150 e 9/28/2006 NA 3 1.2 7.2 < 5.0 1.1 440 f, g 140 e 61 <sup>g</sup> 3/20/2007 1.2 0.68 0.55 2.5 < 5.0 MW-9 430 f g < 5.0 3/2/2006 280 e NA 2.6 0.96 1 **10** $680^{k}$ 180 f, j NA 0.85 < 0.5 1.9 3.9 < 5.0 6/1/2006 530 f, g, j 9/28/2006 150 e NA 0.95 **6.7** < 5.0 0.69 0.87

< 50

0.88

0.70

NA

< 0.5

< 5.0

1.8

120 e

3/20/2007

#### Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Modified EPA Method 8015 EPA Method 8020 or 8021B $(\mu g/L)$ $(\mu g/L)$ TPH as Well ID Sample Date Diesel TPH TPH with Total Benzene Toluene Ethylbenzene **MTBE** as Gasoline as Diesel Silica **Xylenes** Gel Cleanup RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a 100 100 100 1 40 30 20 5 current or potential drinking water resource)

Notes: ug/L = micrograms per liter

TPH = Total Petroleum Hydrocarbons

MTBE = Methyl *tert* -Butyl Ether

RWQCB = California Regional Water Quality Control Board, San Francisco Bay Region

ESL = Environmental Screening Level

ND = Not Detected (method reporting limit not known)

NA = Not Analyzed

NS = Not Sampled

- $\langle x \rangle$  = Analyte not detected at reporting limit x
- \* = Initial data set collected under direction of Blymyer Engineers, Inc.
- a = Laboratory note indicates the result is an unidentified hydrocarbon within the C6 to C10 range.
- b = Laboratory note indicates the result is gasoline within the C6 to C10 range.
- c = Laboratory note indicates the result is a hydrocarbon within the diesel range but that it does not represent the pattern of the requested fuel.
- d = MTBE analysis by EPA Method 8260B yielded a non-detectable concentration at a detection
- e = Laboratory note indicates that unmodified or weakly modified gasoline is significant.
- f = Laboratory note indicates that diesel range compounds are significant, with no recognizable pattern.
- g = Laboratory note indicates that gasoline range compounds are significant.
- h = Laboratory note indicates that no recognizable pattern is present.
- i = Laboratory note indicates that a lighter than water immiscible sheen / product is present.
- j = Laboratory note indicates that oil range compounds are significant.
- k = Laboratory note indicates one to a few isolated non-target peaks are present.
- 1 = Laboratory note indicates that there is no recognizable pattern.

Bold results indicate detectable analyte concentrations.

Note: Shaded cell indicates that detected concentration exceeds ESL

# Table III, Summary of Groundwater Sample Fuel Additive Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California

W-11 ID	Camarla Data				EPA Met	hod 8260B	(ug/L)			
Well ID	Sample Date	TAME	TBA	EDB	1,2-DCA	DIPE	Ethanol	ETBE	Methanol	MTBE
RWQCB Groundwater ESLs Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water source)  12/13/2002		NV	12	0.05	0.5	NV	50,000	NV	NV	5.0
MW-2	12/13/2002	< 0.50	<2,000	NA	NA	< 0.50	NA	< 0.50	NA	< 0.50
IVI VV -2	3/23/2005	< 5.0	<50	< 5.0	5.4	< 5.0	< 500	< 5.0	<5,000	< 5.0
MW-4	3/20/2007	< 0.5	< 5.0	NA	NA	< 0.5	NA	< 0.5	NA	< 0.5
	12/14/2004	< 0.5	< 5.0	< 0.5	< 0.5	< 0.5	<50	< 0.5	<500	12
	3/2/2006	< 0.5	< 5.0	< 0.5	< 0.5	< 0.5	< 50	< 0.5	< 500	28*
MW-5	MW-5 6/1/2006		< 5.0	< 0.5	< 0.5	< 0.5	< 50	< 0.5	< 500	40*
	9/28/2006		< 5.0	< 0.5	< 0.5	< 0.5	< 50	< 0.5	<500	48
	3/20/2007	<1.0	<10	NA	NA	<1.0	NA	<1.0	NA	57*

Notes: TAME = Methyl tert-Amyl Ether

TBA = tert-Butyl Alcohol

EDB = 1,2-Dibromoethane

1,2-DCA = 1,2-Dichloroethane

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

 $MTBE \ = \ Methly \ tert\text{-butyl} \ ether$ 

 $(\mu g/L) = Micrograms per liter$ 

NA = Not analyzed

NV = No value

\* = Differs from result yielded by EPA 8021B

Bold results indicate detectable analyte concentrations.

Note: Shaded cell indicates that detected concentration exceeds ESL

	T		, ,	<u> </u>	-	
		Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
Well ID	Sample Date	Dissoved Oxygen	Oxidation Reduction	Ferrous Iron	Field Temperature	Field pH
		Oxygen	Potential		Temperature	
		(mg/L)	(mV)	(Fe 2+)	(°C or °F)	pH units
MW-1	12/14/2004	0.2 / 2.0	224 / 160	0.1	18.8	6.9
	3/23/2005	5.1 / 0.2	105 / 102	0.0	17.3	6.9
	6/22/2005	0.51 / 0.28	-208.2 / -137.4	0.3	19.6	6.7
	3/2/2006	0.53 / 0.38	441.3 / 448.7	0.0	17.4	6.8
	6/1/2006	NS	NS	NS	NS	NS
	9/28/2006	0.74 / 0.45	-11.9 / -129.5	< 0.2	22.6	6.8
	3/20/2007	0.2	88	0	65.9	7.0
MW-2	12/14/2004	0.3 / 2.0	-160 / -148	1.4	18.4	6.9
	3/23/2005	0.1 / 0.1	-133 / -145	2.0	16.6	7.0
	6/22/2005	0.55 / 0.11	-208.5 / -229.6	1.0	22.6	7.0
	3/2/2006	NS	NS	NS	NS	NS
	6/1/2006	NS	NS	NS	NS	NS
	9/28/2006	NS	NS	NS	NS	NS
	3/20/2007	NS	NS	NS	NS	NS
MW-3	12/14/2004	0.3 / 0.6	171 / 165	0.1	19.4	7.2
	3/23/2005	0.1 / 0.1	81 / 79	0.0	17.7	7.2
	6/22/2005	1.49/1.39	100.7 / 30.3	0.1	20.8	7.1
	3/2/2006	0.49 / 0.17	414.9 / 419.7	0.0	18.7	6.1
	6/1/2006	NS	NS	NS	NS	NS
	9/27/2006	0.64 / 0.39	-49.0 / -103.2	< 0.2	22.1	7.0
	3/20/2007	0.1	92	0	64.3	7.2

			<u> </u>	-		
		Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
Well ID	Sample Date	Dissoved Oxygen	Oxidation Reduction Potential	Ferrous Iron	Field Temperature	Field pH
		(mg/L)	(mV)	(Fe 2+)	(°C or °F)	pH units
MW-4	12/14/2004	0.7 / 0.1	-7 / -41	0.8	18.0	6.8
	3/23/2005	0.1 / 0.4	-17 / -19	1.2	15.9	6.9
	6/22/2005	0.23 / 0.12	-28.6 / -30.9	1.2	20.1	6.7
	3/2/2006	0.58 / 0.56	-169.5 / -205.6	1.2	16.2	7.5
	6/1/2006*	0.31	-78	1.0	18.5	7.0
	9/27/2006	1.88 / 0.51	109 / -1.9	< 0.2	19.4	6.7
	3/20/2007	0.1	6.2	1.5	36.4	7.1
MW-5	12/14/2004	0.5 / 2.0	5 / 532	0.1	17.9	7.1
	3/23/2005	0.1 / 0.9	-17 / 0	0.0	15.1	7.2
	6/22/2005	0.52 / 0.27	14.4 / -35.3	0.1	23.8	7.0
	3/2/2006	0.84 / 0.59	436.8 / 449.2	0.0	14.6	6.2
	6/1/2006*	0.49	-34	0.0	19.4	7.16
	9/28/2006	0.75 / 0.78	153.1 / 94.1	< 0.2	20.5	6.70
	3/20/2007	1.4	108	0	61.6	7.30
MW-6	12/14/2004	0.3 / 1.2	125 / -25	0.0	15.5	7.2
	3/23/2005	0.1 / 0.8	52 / -4	0.0	13.9	7.2
	6/22/2005	0.53 / 0.49	-22.3 / -18	0.1	22.7	7.0
	3/2/2006	1.53 / 0.51	-116.5 / -189.9	0.2	13.5	8.2
	6/1/2006*	0.50	16	0.0	20.1	8.0
	9/27/2006	0.69 / 0.35	-50.2 / -72.9	< 0.2	22.9	7.5
	3/20/2007	1.5	74	0	60.2	7.5

		Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
Well ID	Sample Date	Dissoved Oxygen	Oxidation Reduction Potential	Ferrous Iron	Field Temperature	Field pH
		(mg/L)	(mV)	(Fe 2+)	(°C or °F)	pH units
MW-7	7/18/2005	NS	NS	NS	68.7 / 69.4	7.0 / 7.0
	3/2/2006	2.71 / 1.08	214.3 / -176.9	0.4	14.0	8.0
	6/1/2006*	0.45	62	0.4	20.2	7.15
	9/27/2006	0.67 / 0.26	70.0 / 62.0	< 0.2	19.8	7.0
	3/20/2007	0.1	92	0	63.9	7.4
MW-8	3/2/2006	1.20 / 0.85	423.8 / 456.9	0.0	14.1	8.4
	6/1/2006*	0.60	-50	0.0	19.9	10.3
	9/28/2006	0.97 / 0.40	51.9 / 63.9	< 0.2	20.2	10.3
	3/20/2007	0.1	101	0	62.3	9.9
MW-9	3/2/2006	0.52 / 0.20	118.0 / 112.6	0.0	15.2	9.4
	6/1/2006*	0.42	-30	0.0	20.5	10.45
	9/28/2006	1.15 / 0.23	78.5 / -6.1	<0.2	21.1	10.80
	3/20/2007	0.2	136	0	62.8	8.90

Notes: mV = Millivolts

mg/L = Milligrams per literoC = Degrees Centigrade

2.6 / 2.2 = Initial reading (pre-purge) / Final reading (post-purge)

NS = Not sampled \* = Post purge value

	6393 Scariett Court, Dubin, Camornia											
		Method SM 5310B	Method F	E300.1	Method RSK 174	Method	E200.7	Method E365.1	Method SM 5210B	Method SM 5220D		
Well ID	Sample Date	CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD		
			mg/L			$\mu g/L$			mg/L			
MW-1	12/14/2004	580	<20	1,100	2.2	NA	NS	NS	NS	NS		
	3/23/2005	660	0.41	620	< 0.5	NS	NS	NS	NS	NS		
	6/22/2005	660	< 0.1	580	0.91	NS	NS	NS	NS	NS		
	3/2/2006	850	<0.7 1	610	0.65	1,700	5,100	0.19	<3.0	43		
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	9/28/2006	660	< 0.1	980	0.86	1,900	1,200	0.18	<4.0	15		
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-2	12/14/2004	940	<5.0	220	4,700	NS	NS	NS	NS	NS		
	3/23/2005	1,100	0.34	180	3,700	NS	NS	NS	NS	NS		
	6/22/2005	990	< 0.1	290	1,800	NS	NS	NS	NS	NS		
	3/2/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	9/28/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS		

	6393 Scariett Court, Dubin, Camornia											
		Method SM 5310B	Method I	E300.1	Method RSK 174	Method	E200.7	Method E365.1	Method SM 5210B	Method SM 5220D		
Well ID	Sample Date	CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD		
			mg/L			$\mu g/L$			mg/L			
MW-3	12/14/2004	610	<20	780	< 0.5	NS	NS	NS	NS	NS		
	3/23/2005	590	0.2	560	< 0.5	NS	NS	NS	NS	NS		
	6/22/2005	320	1.3	540	< 0.5	NS	NS	NS	NS	NS		
	3/2/2006	730	2.0 1	630	< 0.5	1,800	4,400	0.18	<3.0	<10		
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	9/27/2006	650	1.5	580	< 0.5	1,500	900	0.16	<4.0	<10		
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-4	12/14/2004	680	<10	760	170	NS	NS	NS	NS	NS		
	3/23/2005	700	0.3	430	24	NS	NS	NS	NS	NS		
	6/22/2005	700	<0.1	480	71	NS	NS	NS	NS	NS		
	3/2/2006	370	0.88 1	490	90	5,300	3,900	0.17	<3.0	33		
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	9/27/2006	290	<0.1	480	51	4,100	670	0.13	<4.0	22		
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS		

	6393 Scariett Court, Dublin, California											
		Method SM 5310B	Method F	E300.1	Method RSK 174	Method	E200.7	Method E365.1	Method SM 5210B	Method SM 5220D		
Well ID	Sample Date	CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD		
			mg/L			$\mu g/L$			mg/L			
MW-5	12/14/2004	1,400	<20	1,200	120	NS	NS	NS	NS	NS		
	3/23/2005	1,400	1	640	57	NS	NS	NS	NS	NS		
	6/22/2005	1,500	< 0.1	590	1.5	NS	NS	NS	NS	NS		
	3/2/2006	1,600	<0.7 1	450	490	960	4,000	0.14	<3.0	31		
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	9/28/2006	1,400	< 0.1	410	24	630	920	0.13	<4.0	15		
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS		
MW-6	12/14/2004	790	<10	460	180	NS	NS	NS	NS	NS		
	3/23/2005	770	0.12	380	60	NS	NS	NS	NS	NS		
	6/22/2005	770	< 0.1	400	36	NS	NS	NS	NS	NS		
	3/2/2006	470	5.2 1	540	12	480	1,600	0.099	<3.0	21		
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS		
	9/27/2006	400	<0.1	530	55	410	320	0.079	<4.0	25		
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS		

			0393 8	scariett Co	urt, Dublin	, California				
		Method SM 5310B	Method I	E300.1	Method RSK 174	Method	E200.7	Method E365.1	Method SM 5210B	Method SM 5220D
Well ID	Sample Date	CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
			mg/L			$\mu g/L$			mg/L	
MW-7	7/18/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/2/2006	450	<0.7 1	260	1.7	5,500	7,300	0.16	<3.0	26
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/27/2006	350	< 0.1	270	1.1	4,600	1,700	0.13	<4.0	<10
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	3/2/2006	9	13 1	570	17	<20	19,000	0.21	<3.0	71
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS	NS
	9/28/2006	5	0.29	290	18	<20	6,000	< 0.04	<4.0	34
	3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS

#### Table V, Summary of Groundwater Intrinsic Bioremediation Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California Method SM Method Method Method Method Method E300.1 Method E200.7 5310B **RSK 174** E365.1 SM 5210B SM 5220D Total Nitrate Well ID Sample Date Manganese Potassium Sulfate CO<sub>2</sub> Methane Phosphorous BOD COD (as N) (as P) mg/L μg/L mg/L MW-9 $11^{1}$ 3/2/2006 8 890 19 < 20 20,000 < 0.04 < 3.0 61 NS NS NS 6/1/2006 NS NS NS NS NS NS 9/28/2006 6.3 < 0.1 120 28 < 20 5,300 < 0.04 < 4.0 42 3/20/2007 NS NS NS NS NS NS NS NS NS

Notes: SM = Standard Method

mg/L = Milligrams per liter $\mu g/L = Micrograms per liter$ 

 $CO_2$  = Carbon Dioxide

NS = Not sampled

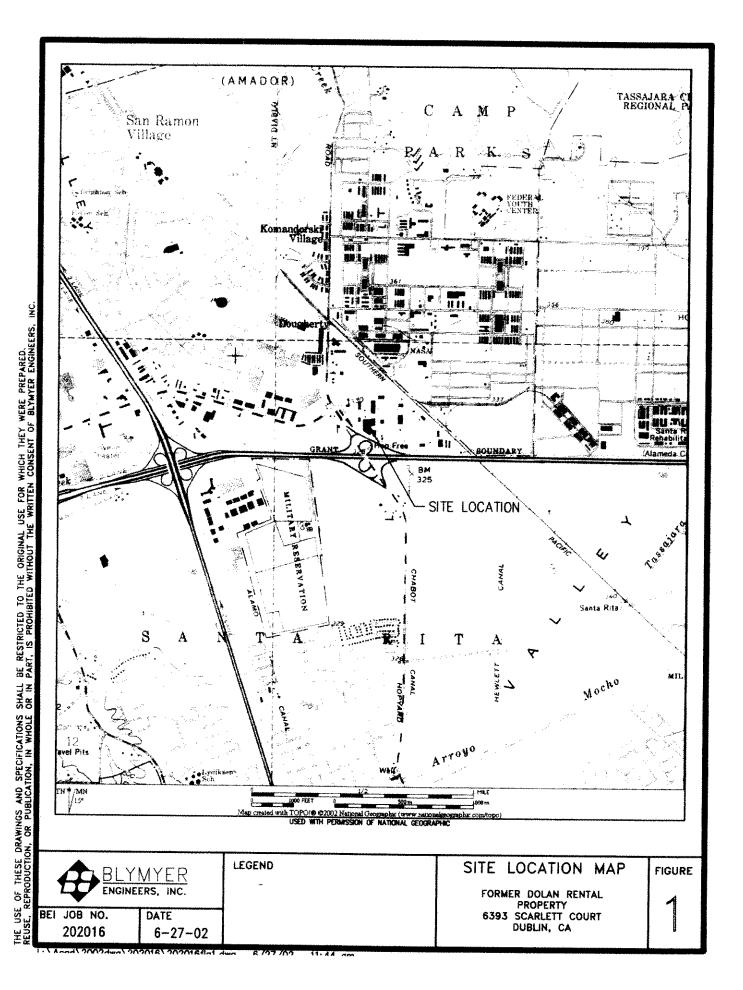
BOD = Biological Oxygen Demand COS = Chemical Oxygen Demand

<sup>&</sup>lt;sup>1</sup> = Total Nitrogen (Nitrate, Nitrite, & Ammonia)

Table V	Table VI, Summary of Groundwater Bacteria Enumeration Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California											
	Aerobic Bacteria											
	Method 9215A (HPC) / SM 9215 B Modified											
Well ID	Well ID Sample Date Hydrocarbon Degraders Total Heterotrophs Hydrocarbons Tested											
			cfu/ml									
MW-1	3/20/2007	80	400	Gasoline/Diesel								
MW-3	4/9/2007	700	300	Gasoline/Diesel								
MW-4	MW-4 3/20/2007 5,000 10,000 Gasoline/Diesel											
MW-5	3/20/2007	400	1,000	Gasoline/Diesel								

Notes: SM = Standard Method

cfu/ml = Colony forming units per milliliter



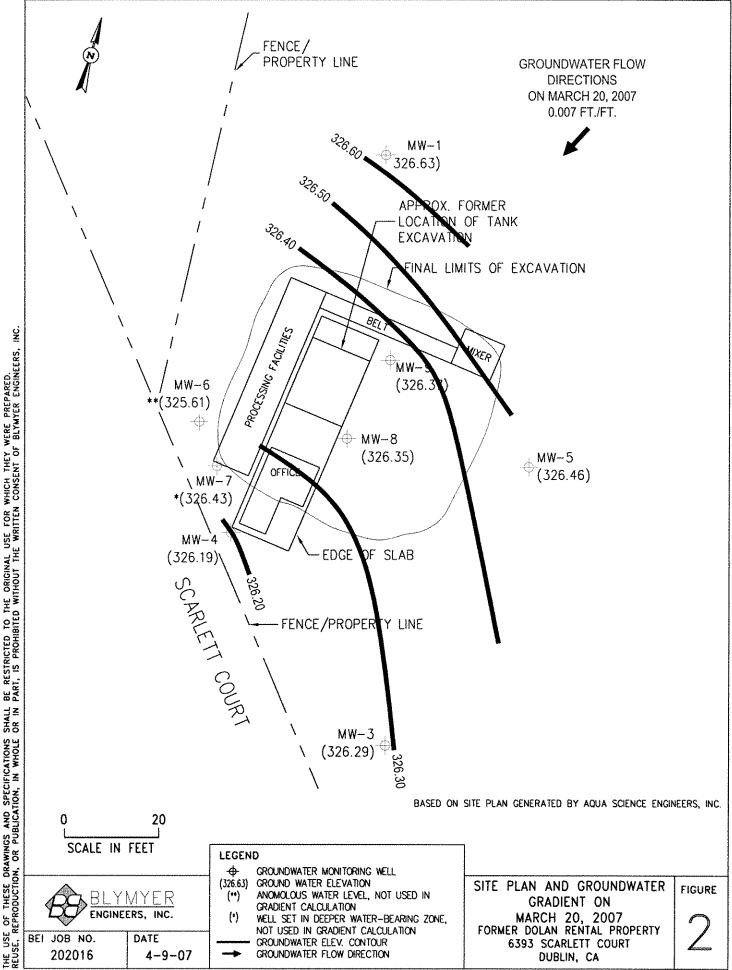


Figure 3: TPH Concentration and Groundwater Elevation vs. Time in Well MW-4

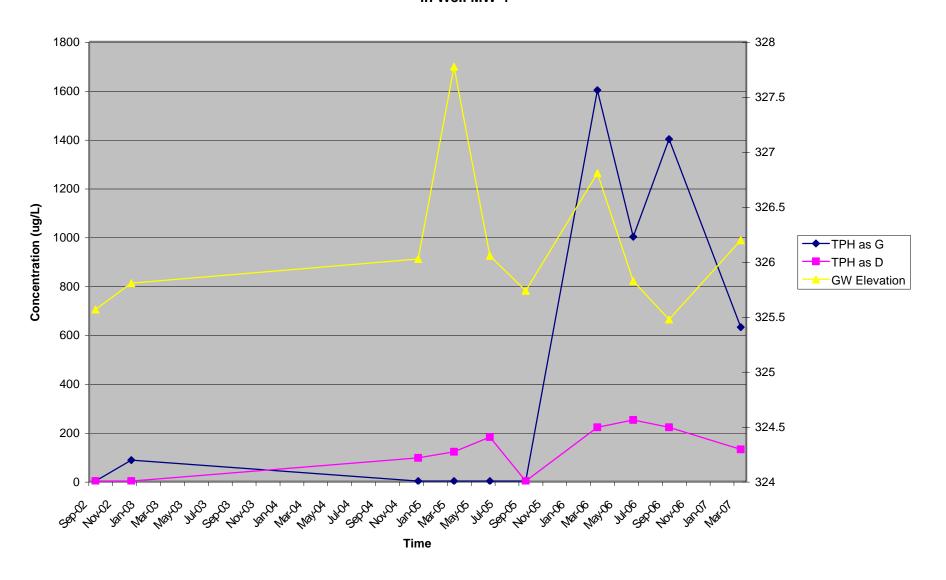
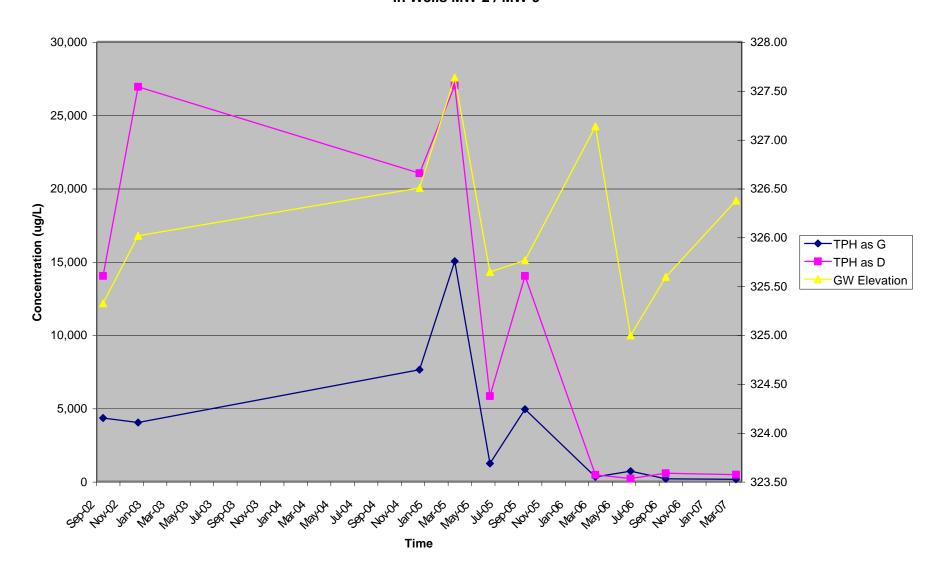


Figure 4: TPH Concentration and Groundwater Elevation vs. Time in Wells MW-2 / MW-9



# Appendix A

Standard Operating Procedures
Blaine Tech Services, Inc.

# Blaine Tech Services, Inc. Standard Operating Procedure

# WATER LEVEL, SEPARATE PHASE LEVEL AND TOTAL WELL DEPTH MEASUREMENTS (GAUGING)

### **Routine Water Level Measurements**

- 1. Establish that water or debris will not enter the well box upon removal of the cover.
- 2. Remove the cover using the appropriate tools.
- 3. Inspect the wellhead (see Wellhead Inspections).
- 4. Establish that water or debris will not enter the well upon removal of the well cap.
- 5. Unlock and remove the well cap lock (if applicable). If lock is not functional cut it off.
- 6. Loosen and remove the well cap. CAUTION: DO NOT PLACE YOUR FACE OR HEAD DIRECTLY OVER WELLHEAD WHEN REMOVING THE WELL CAP. WELL CAP MAY BE UNDER PRESSURE AND/OR MAY RELEASE ACCUMULATED AND POTENTIALLY HARMFULL VAPORS.
- 7. Verify and identify survey point as written on S.O.W.
  - TOC: If survey point is listed as Top of Casing (TOC), look for the exact survey point in the form of a notch or mark on the top of the casing. If no mark is present, use the north side of the casing as the measuring point.
  - TOB: If survey point is listed as Top of Box (TOB), the measuring point will be established manually. Place the inverted wellbox lid halfway across the wellbox opening and directly over the casing. The lower edge of the inverted cover directly over the casing will be the measuring point.
- 8. Put new Latex or Nitrile gloves on your hands.
- 9. Slowly lower the Water Level Meter probe into the well until it signals contact with water with a tone and/or flashing a light.
- 10. Gently raise the probe tip slightly above the water and hold it there. Wait momentarily to see if the meter emits a tone, signaling rising water in the casing. Gently lower the probe tip slightly below the water. Wait momentarily to see if the meter stops emitting a tone, signaling dropping water in the casing. Continue process until water level stabilizes indicating that the well has equilibrated.
- 11. While holding the probe at first contact with water and the tape against the measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Depth to Water column.
- 12. Recover probe, replace and tighten well cap, replace lock (if applicable), replace well box cover and tighten hardware (if applicable)

# Water Level and Separate Phase Thickness Measurements in Wells Suspected of Containing Separate Phase

- 1. Establish that water or debris will not enter the well box upon removal of the cover.
- 2. Remove the cover using the appropriate tools.
- 3. Inspect the wellhead (see Wellhead Inspections).
- 4. Establish that water or debris will not enter the well upon removal of the well cap.

GAUGING SOP Page 2 of 3

5. Unlock and remove the well cap lock (if applicable). If lock is not functional cut it off.

- 6. Loosen and remove the well cap. CAUTION: DO NOT PLACE YOUR FACE OR HEAD DIRECTLY OVER WELLHEAD WHEN REMOVING THE WELL CAP. WELL CAP MAY BE UNDER PRESSURE AND/OR MAY RELEASE ACCUMULATED AND POTENTIALLY HARMFULL VAPORS.
- 7. Verify and identify survey point as written on S.O.W.
  - TOC: If survey point is listed as Top of Casing (TOC), look for the exact survey point in the form of a notch or mark on the top of the casing. If no mark is present, use the north side of the casing as the measuring point.
  - TOB: If survey point is listed as Top of Box (TOB), the measuring point will be established manually. Place the inverted well box lid halfway across the well box opening and directly over the casing. The lower edge of the inverted cover directly over the casing will be the measuring point.
- 8. Put new Nitrile gloves on your hands.
- 9. Slowly lower the tip of the Interface Probe into the well until it emits either a solid or broken tone.

BROKEN TONE: Separate phase layer is not present. Go to Step 8 of Routine Water Level Measurements shown above to complete gauging process using the Interface probe as you would a Water Level Meter.

SOLID TONE: Separate phase layer is present. Go to the next step.

- 10. Gently raise the probe tip slightly above the separate phase layer and hold it there. Wait momentarily to see if the meter emits a tone, signaling rising water in the casing. Gently lower the probe tip slightly below the separate phase layer. Wait momentarily to see if the meter stops emitting a tone, signaling dropping water in the casing. Continue process until water level stabilizes indicating that the well has equilibrated.
- 11. While holding the probe at first contact with the separate phase layer and the tape against the measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Depth to Product column.
- 12. Gently lower the probe tip until it emits a broken tone signifying contact with water. While holding the probe at first contact with water and the tape against the measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Depth to Water column.
- 13. Recover probe, replace and tighten well cap, replace lock (if applicable), replace well box cover and tighten hardware (if applicable).

### **Routine Total Well Depth Measurements**

- 1. Lower the Water Level Meter probe into the well until it lightens in your hands, indicating that the probe is resting at the bottom of well.
- 2. Gently raise the tape until the weight of the probe increases, indicating that the probe has lifted off the well bottom.
- 3. While holding the probe at first contact with the well bottom and the tape against the well measuring point, note depth. Repeat twice to verify accuracy. Write down measurement on Well Gauging Sheet under Total Well Depth column.

GAUGING SOP Page 3 of 3

4. Recover probe, replace and tighten well cap, replace lock (if applicable), replace well box cover and tighten hardware (if applicable).

PURGING SOP Page 1 of 3

# Blaine Tech Services, Inc. Standard Operating Procedure

## **WELL WATER EVACUATION (PURGING)**

### **Purpose**

Evacuation of a predetermined minimum volume of water from a well (purging) while simultaneously measuring water quality parameters is typically required prior to sampling. Purging a minimum volume guarantees that actual formation water is drawn into the well. Measuring water quality parameters either verifies that the water is stable and suitable for sampling or shows that the water remains unstable, indicating the need for continued purging. Both the minimum volume and the stable parameter qualifications need to be met prior to sampling. This assures that the subsequent sample will be representative of the formation water surrounding the well screen and not of the water standing in the well.

### **Defining Casing Volumes**

The predetermined minimum quantity of water to be purged is based on the wells' casing volume. A casing volume is the volume of water presently standing within the casing of the well. This is calculated as follows:

Casing Volume = (TD - DTW) VCF

- 1. Subtract the wells' depth to water (DTW) measurement from its total depth (TD) measurement. This is the height of the water column in feet.
- 2. Determine the well casings' volume conversion factor (VCF). The VCF is based on the diameter of the well casing and represents the volume, in gallons, that is contained in one (1) foot of a particular diameter of well casing. The common VCF's are listed on our Well Purge Data Sheets.
- 3. Multiply the VCF by the calculated height of the water column. This is the casing volume, the amount of water in gallons standing in the well.

### Remove Three to Five Casing Volumes

Prior to sampling, an attempt will be made to purge all wells of a minimum of three casing volumes and a maximum of five casing volumes except where regulations mandate the minimum removal of four casing volumes.

### Choose the Appropriate Evacuation Device Based on Efficiency

In the absence of instructions on the SOW to the contrary, selection of evacuation device will be based on efficiency.

### Measure Water Quality Parameters at Each Casing Volume

At a minimum, water quality measurements include pH, temperature and electrical conductivity (EC). Measurements are made and recorded at least once every casing volume. They are considered stable when all parameters are within 10% of their previous measurement.

Note: The following instructions assume that well has already been properly located, accessed, inspected and gauged.

## Prior to Purging a Well

- 1. Confirm that the well is to be purged and sampled per the SOW.
- 2. Confirm that the well is suitable based on the conditions set by the client relative to separate phase.
- 3. Calculate the wells' casing volume.
- 4. Put new Latex or Nitrile gloves on your hands.

## Purging With a Bailer (Stainless Steel, Teflon or Disposable)

- 1. Attach bailer cord or string to bailer. Leave other end attached to spool.
- 2. Gently lower empty bailer into well until well bottom is reached.
- 3. Cut cord from spool. Tie end of cord to hand.
- 4. Gently raise full bailer out of well and clear of well head. Do not let the bailer or cord touch the ground.
- 5. Pour contents into graduated 5-gallon bucket or other graduated receptacle.
- 6. Repeat purging process.
- 7. Upon removal of first casing volume, fill clean parameter cup with purgewater, empty the remainder of the purgewater into the bucket, lower the bailer back into the well and secure the cord on the Sampling Vehicle.
- 8. Use the water in the cup to collect and record parameter measurements.
- 9. Continue purging until second casing volume is removed.
- 10. Collect parameter measurements.
- 11. Continue purging until third casing volume is removed.
- 12. Collect parameter measurements. If parameters are stable, stop purging. If parameters remain unstable, continue purging until stabilization occurs or the fifth casing volume is removed.

## **Purging With a Pneumatic Pump**

- 1. Position Pneumatic pump hose reel over the top of the well.
- 2. Gently unreel and lower the pump into the well. Do not contact the well bottom.
- 3. Secure the hose reel.
- 4. Begin purging into graduated 5-gallon bucket or other graduated receptacle.
- 5. Adjust water recharge duration and air pulse duration for maximum efficiency.
- 6. Upon removal of first casing volume, fill clean parameter cup with water.
- 7. Use the water in the cup to collect and record parameter measurements.
- 8. Continue purging until second casing volume is removed.

- 9. Collect parameter measurements.
- 10. Continue purging until third casing volume is removed.
- 11. Collect parameter measurements. If parameters are stable, stop purging. If parameters remain unstable, continue purging until stabilization occurs or the fifth casing volume is removed.
- 12. Upon completion of purging, gently recover the pump and secure the reel.

## Purging With a Fixed Speed Electric Submersible Pump

- 1. Position Electric Submersible hose reel over the top of the well.
- 2. Gently unreel and lower the pump to the well bottom.
- 3. Raise the pump 5 feet off the bottom.
- 4. Secure the hose reel.
- 5. Begin purging.
- 6. Verify pump rate with flow meter or graduated 5-gallon bucket
- 7. Upon removal of first casing volume, fill clean parameter cup with water.
- 8. Use the water in the cup to collect and record parameter measurements.
- 9. Continue purging until second casing volume is removed.
- 10. Collect parameter measurements.
- 11. Continue purging until third casing volume is removed.
- 12. Collect parameter measurements. If parameters are stable, stop purging. If parameters remain unstable, continue purging until stabilization occurs or the fifth casing volume is removed.
- 13. Upon completion of purging, gently recover the pump and secure the reel.

Sampling SOP

# Blaine Tech Services, Inc. Standard Operating Procedure

# SAMPLE COLLECTION FROM GROUNDWATER WELLS USING BAILERS

## Sampling with a Bailer (Stainless Steel, Teflon or Disposable)

- 1. Put new Latex or Nitrile gloves on your hands.
- 2. Determine required bottle set.
- 3. Fill out sample labels completely and attach to bottles.
- Arrange bottles in filling order and loosen caps (see Determine Collection Order below).
- 5. Attach bailer cord or string to bailer. Leave other end attached to spool.
- 6. Gently lower empty bailer into well until water is reached.
- 7. As bailer fills, cut cord from spool and tie end of cord to hand.
- 8. Gently raise full bailer out of well and clear of well head. Do not let the bailer or cord touch the ground. If a set of parameter measurements is required, go to step 9. If no additional measurements are required, go to step 11.
- Fill a clean parameter cup, empty the remainder contained in the bailer into the sink, lower the bailer back into the well and secure the cord on the Sampling Vehicle. Use the water in the cup to collect and record parameter measurements.
- Fill bailer again and carefully remove it from the well.
- 11. Slowly fill and cap sample bottles. Fill and cap volatile compounds first, then semi-volatile, then inorganic. Return to the well as needed for additional sample material.

Fill 40-milliliter vials for volatile compounds as follows: Slowly pour water down the inside on the vial. Carefully pour the last drops creating a convex or positive meniscus on the surface. Gently screw the cap on eliminating any air space in the vial. Turn the vial over, tap several times and check for trapped bubbles. If bubbles are present, repeat process.

Fill 1 liter amber bottles for semi-volatile compounds as follows: Slowly pour water into the bottle. Leave approximately 1 inch of headspace in the bottle. Cap bottle.

Field filtering of inorganic samples using a stainless steel bailer is performed as follows: Attach filter connector to top of full stainless steel bailer. Attach 0.45 micron filter to connector. Flip bailer over and let water gravity feed through the filter and into the sample bottle. If high turbidity level of water clogs filter, repeat process with new filter until bottle is filled. Leave headspace in the bottle. Cap bottle.

Field filtering of inorganic samples using a disposable bailer is performed as follows: Attach 0.45 micron filter to connector plug. Attach connector plug to bottom of full disposable bailer. Water will gravity feed through the filter and into the sample bottle. If high turbidity level of water clogs filter, repeat process with new filter until bottle is filled. Leave headspace in the bottle. Cap bottle.

- 12. Bag samples and place in ice chest.
- 13. Note sample collection details on well data sheet and Chain of Custody.

BLAINE TECH SERVICES, INC

Page 1 of 1

# Appendix B

Purge Drum Inventory Log, Wellhead Inspection Checklist, Well Gauging Data, and Repair Data Sheet Blaine Tech Services, Inc. Dated March 20, 2007, and April 9, 2007

# WELLHEAD INSPECTION CHECKLIST

Page \_\_\_\_ ot \_\_\_\_

Date 3-2	0-0	<b>)</b>	Client	Blyn	nyen				
Date 3-2 Site Address	634	i3 Scar	Lett	ct	Dub.	んっ			
Job Number					Tec	chnician	BPn	'ny	
Well ID		Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-1		X			,				
MW-3		×							
MW-Y		7							
MW-5		7							
M2-6		4							
MWT				·	4.1	<u></u>	X		
mh-8		<b>×</b>							
mw-9		X				<u> </u>			
,									
							<u></u>		
,									
NOTES:	All	wells wer	e previo	usly Ma	rked a	t North	side	TOC	
			<del></del>			<del></del>			• • • • • • • • • • • • • • • • • • • •
				<del> </del>			··· •···		
					<del> </del>		<u> </u>	<u></u>	
			<del></del>		<del></del>	<del></del>			
							·	<del></del>	

## WELL GAUGING DATA

Project #070320-B/1 Date 3-20-07 Client Blymyer

Site 6343 Scalett Ct Dublin

			Well Size	Sheen /	Depth to	Thickness of Immiscible	Immiscibles	Depth to water	Depth to well	Survey Point: TOB or	
	Well ID	Time	(in.)	Odor	Liquid (ft.)			(ft.)	bottom (ft.)	100	Notes
	MW-1	832	2					4.60	21.16	7	
	MW-3	836	2	<u></u>				4.40	וטעה		
	mw-4	837	2					3.91	18.46		
	MW-5	835	2					4,80	12.11		
	MW-6	839	2					3,94	\$8.95		
	MWJ	828	l					3 <b>.9</b> 4	78.95 18.95 gr		
	mw-8	833	4			,,,,,,		4.16	20.61		
	mw-9	830	7	2				4.37	21.62	4	
			:								
									,	-	
				•							·
					·	·					
Ì					,						
	-										
	···········				1						

# W LL MONITORING DATA SHE. 1

Project #:	07032	2-301		Client: Blym	yer .						
Sampler: 1	3 from			Date: 3-20-							
Well I.D.:				Well Diameter	:: <b>②</b> 3 4	6 8					
Total Well	Depth (TD	):21.16	•	Depth to Wate	r (DTW): 4,60	•					
Depth to Fr	ee Product	:		Thickness of F	ree Product (feet)	:					
Referenced	to:	100	Grade	D.O. Meter (if req'd): (S) HACH							
DTW with	80% Recha	arge [(H	leight of Wate	r Column x 0.20	) + DTW]:7,91						
Purge Method:	Bailer  Disposable B  Positive Air I  Electric Subm	affer /	nt Ext <b>r</b> a	Waterra Peristaltic action Pump  Win  Well Diame	Sampling Method: Other:	Bailer  Disposable Bailer  Extraction Port  Dedicated Tubing					
l Case Volume	Gals.) XSpeci	3 fied Volum	= 7.9  Calculated \	Gals.   1" 3"	0.04 4" 0.16 6" 0.37 Other	0.65 1.47 radius <sup>2</sup> * 0.163					
Time	Temp	pH	Cond. (mS or 🔊	Turbidity (NTUs)	Gals. Removed	Observations					
1072	65.3	7-1	3989	21000	3.0						
1035	65-8	7.0	4032	>1000	5-5						
1038	65-9	7-0	4046	71000	8-0						
						Fe <sup>21</sup> 9					
Did well de	ewater?	Yes	NO	Gallons actual	lly evacuated: 🗞	0					
Sampling I	Date: 3-20	7-07.	Sampling Tir	ne: 1045	Depth to Water:	5.61					
Sample I.D	: MW-1		-	Laboratory:	Kiff CalScience	Other					
Analyzed f	or: TPH-G	BTEX	МТВЕ ТРН-D	Oxygenates (5)	Other:						
EB I.D. (if	applicable	):	@ Time	Duplicate I.D	. (if applicable):						

Oxygenates (5)

mV

Other:

Post-purge:

Post-purge:

0.2

88

mV

Analyzed for:

D.O. (if req'd):

O.R.P. (if req'd):

TPH-G

BTEX

Pre-purge:

Pre-purge:

 $\mathbf{MTBE}$ 

TPH-D

## W \_L MONITORING DATA SHE. \_

Project #:	070370	- Q A)		Client:	Rlu						
Sampler:		13/1		Date:	В lym - 3-20-	•					
Well I.D.:		<del>_</del> _		<del></del> -			4	6 8			
Total Well		): <b>!</b> つ.つ	7	1		(DTW):					
			. <u></u>	Thickness of Free Product (feet):							
Depth to Fr Referenced		PVO	Grade	D.O. Meter (if req'd): ASD HACH							
			eight of Water								
Purge Method:	Bailer Disposable Ba Positive Air D Electric Subm	ailer /		Waterra Peristaltic tion Pump	Vcll Diamete	Sampling M		Bailer Disposable Bai Extraction Pol Dedicated Tubi	1		
2.1 (I Case Volume	Gals.) X Speci	3 fied Volum	$\frac{1}{1} = \frac{6.4}{\text{Calculated Vol}}$	_ Gals.	1" 2" 3"	0.04	6" Other	1.47 cadius <sup>2</sup> * 0.163			
Time	Temp	pН	Cond. (mS or ඁ	Turb (NT	-	Gals. Rer	noved	Observation	is		
914	62.4	7.3	3263	7100	00	2.5					
917	63.3	7.3	3225	2100	))	4.5			<del></del> .		
919	64.3	7.2	3238	>100	<i>0</i> 0	6.5			ν.		
								Fe <sup>21</sup> = Ø			
Did well de	 ewater?	Yes	MD	Gallons	actual	ly evacua	ted:	5.5			
	Date: 3-20		Sampling Tim	ie: 100	<u>ل</u>	Depth to	Water	. 4,46			
Sample I.D				Labora			IScience		- <u>-</u>		
Analyzed f		BTEX	MTBE TPH-D	Oxygena	ites (5)	Other:	<u> </u>				
	applicable	<del></del>	@ Time		<u> ii</u>	(if applic	able):				
Analyzed f			MTBE TPH-D	Oxygena		Other:					
D.O. (if red		re-purge:	<del></del>	mg/L		Post-purge:		0-1	mg		
O D D (if		be burea		mV		Post-purge:		<i>a</i> 3	m'		

## W \_L MONITORING DATA SHE. \_

Project#:	070320-	BPT		Client: Blym			
Sampler:	B front			Date: 3-20	70 )		
Well I.D.:				Well Diamete	er: <b>2</b> 3 4 .	6 8	
Total Well	Depth (TD)	): 18.4	6	Depth to Wat	er (DTW): 3, 9,	<u> </u>	
Depth to Fr	ee Product			Thickness of	Free Product (fee	t):	
Referenced	to:	PXS	Grade	D.O. Meter (i		TSD HACH	
DTW with	80% Recha	arge [(He	eight of Water	Column x 0.2	0) + DTW]: <b>6-</b>	82	
Purge Method:	Bailer Disposable Ba Positive Air E Electric Subm	Displacemer			Sampling Method: Other:	Bailer Disposable Bailer Extraction Port Dedicated Tubing	
2.3	(Gals.) X Speci	fied Volum	$= \frac{7 - 0}{\text{Calculated Vo}}$	Gals. Gume Well Diam	Multiplier   Well E	0.65 1.47 radius <sup>2</sup> * 0.163	
Time	Temp	pН	Cond. (mS or 🖾	Turbidity (NTUs)	Gals. Removed	Observations	
1019	60.8	7.3	2986	71000	2.5		
1022	61.6	21	3081	7/000	510		
1025	62.4	21	3120	3/200	7.0		
						Fe <sup>2†</sup> =1.5	
Did well d	ewater?	Yes .	<b>(</b>	Gallons actu	ally evacuated:	٥.٥	
Sampling	Date: 3-W	7-07	Sampling Tim	ne: 1100	Depth to Wate	er: 3.47	
Sample I.I	D.: MW-9	1		Laboratory:	Kiff CalScienc	e Other	
Analyzed	for: трн-G	BTEX	мтве трн-D	Oxygenates (5	) Other:		
EB I.D. (it	f applicable	):	@ Time	Duplicate I.I	D. (if applicable):	and the second s	
Analyzed	for: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5	) Other:		
D.O. (if re	eq'd): F	re-purge:		mg/L	Post-purge:	0.1 mg	
O.R.P. (if	reg'd): F	re-purge:		mV Post-purge: 62			

# W \_L MONITORING DATA SHE. .

Project#: 🕻	10320-	(3(2)		Client: Blymyer								
Sampler:	B Prond			Date: 3-20-0	<u>ه ۲</u>							
				Well Diameter:	3 4	6 8						
		): [2-[	(	Depth to Water	(DTW): 4, 80	<u>ر</u>						
Depth to Fre	e Product:		-	Thickness of F	ree Product (feet)	):						
		(C)	Grade									
DTW with 8	30% Recha	ırge [(H	eight of Water	Column x 0.20)	) + DTW]: 6.2	6						
Sampler: B Prowd  Well I.D.: Mw-5  Well Diameter: ② 3 4 6 8  Total Well Depth (TD): 12-11  Depth to Free Product:  Thickness of Free Product (feet):												
	1		(mS or (S)	(NTUs)		Observations						
1006	61.1	1,4		· · · · · · · · · · · · · · · · · · ·								
1008	61.4	7.3		21000								
(310	61.6	7.3	3809	2000	8.3							
Did well de	ewater?	Yes	Ko	Gallons actual	lly evacuated:							
	<del></del>	0-67		ne: 1110	Depth to Water	6.00						
				Laboratory:	Kiff CalScience	Other						
Analyzed f	or: TPH-G	BTEX	мтве трн-D	Oxygenates (5)	Other:							
EB I.D. (if	applicable	e):		Duplicate I.D	. (if applicable):							
Analyzed f	or: TPH-G	BTEX	MTBE TPH-D		Other:							
D.O. (if red	q'd): F	re-purge		mg/L	1.4 mg/							
O.R.P. (if r	ea'd): F	re-purge		mV	Post-purge:	108 mV						

# W \_L MONITORING DATA SHE. \_

Project #:	020320-	BPI		Client: Blym,	<u> </u>	
Sampler:	B Prond	1		Client: Blymy.  Date: 3-20-	ره-	
Well I.D.:	MW-6			Well Diameter:	2 3 4	6 8
Total Well	Depth (TD)	: 8.9	5	Depth to Water	(DTW): 3.90	1
Depth to Fr				Thickness of Fr	ee Product (feet)	):
Referenced		(V)	Grade	D.O. Meter (if t	req'd):	S HACH
DTW with	80% Recha	rge [(He	eight of Water	Column x 0.20)	+ DTW]: 4.9	4
Purge Method:	Bailer Disposable Ba Positive Air D Electric Subm	iler / isplacemer	nt Extrac Other	Waterra Peristaltic ction Pump	Sampling Method:  Other:  Multiplier Well Dia  0.04 4"	0.65
Case Volume	Gals.) X	5 fied Volum	$= \frac{2 \cdot 4}{\text{Calculated Vol}}$	Gals. 2" olume 3"	0.16 6" 0.37 Other	1.47 radius <sup>2</sup> * 0.163
Time	Temp (For °C)	pН	Cond. (mS or 🎒)	Turbidity (NTUs)	Gals. Removed	Observations
902	60.3	7.2	3517	473	2.0	
903	60.4	7.4	35 il	648	2.5	
905	60.2	75	35110	580	4.)	
						Fe= Ø
Did well d	lewater?	Yes	<b>(1)</b>	Gallons actual	ly evacuated: 2	25
Sampling	Date: 3-20	-07	Sampling Tin	ne: 1055	Depth to Water	r: 4.22
Sample I.I				Laboratory:	Kiff CalScience	Other
Analyzed		BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
EB I.D. (i	f applicable	e):	@ Time	Duplicate I.D.	(if applicable):	
Analyzed	for: TPH-C	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
D.O. (if re	eq'd): I	Pre-purge		mg/L	Post-purge:	1.5 mg
O.R.P. (if	reg'd):	re-purge	:	mV	Post-purge:	74 m

# W \_L MONITORING DATA SHE. .

Project #: <i>O</i>	70720-8	PI		Client: Blym		
Sampler: 6				Date: 3-20	٦	
Well I.D.:		,		Well Diameter:	2 3 4	6 8
Total Well [		39.9	·	Depth to Water	(DTW): 3.74	
Depth to Fre				Thickness of F	ree Product (feet)	):
Referenced		<b>EVD</b>	Grade	D.O. Meter (if	req'd):	SI) HACH
DTW with 8	80% Recha	rge [(He	eight of Water	Column x 0.20)	) + DTW]: 10.9	8
Purge Method:	Bailer Disposable Ba Positive Air D Electric Subm	iler isplacemer	-	Waterra Peristaltic tion Pump	Sampling Method: Other:	Bailer Disposable Bailer Extraction Port Dedicated Tubing
S & (1 Case Volume	Gals.) X Speci	3 fied Volum	es Calculated Vo	Gals.	0.16 6" 0.37 Other	1.47 radius <sup>2</sup> * 0.163
Time	Temp (F)r °C)	pН	Cond. (mS or ᡌ	Turbidity (NTUs)	Gals. Removed	Observations
971	63.3	7.5	3401	53	6.0	
938	63.2	7.3	3426	47	165.0	
945	63.9	7.4	3433	58	17.5	^
						•
				-		Fe21 = 0
Did well de	ewater?	Yes	No	Gallons actua	lly evacuated:	1).5
Sampling l	Date: 3.10	1-07	Sampling Tin	ne: 950	Depth to Wate	r: <b>3, 8 8</b>
Sample I.I.				Laboratory:	Kiff CalScience	Other
Analyzed	for: трн-с	втех	мтве трн-D	Oxygenates (5)	Other:	
EB I.D. (if	f applicable	e):	@ Time	Duplicate I.D	. (if applicable):	
Analyzed			МТВЕ ТРН-О	Oxygenates (5)	Other:	mu .
D.O. (if re	eq'd):	Pre-purge		mg/L	Post-purge:	O.I mg/
O.R.P. (if	req'd):	Pre-purge	:	mV	Post-purge:	92 m\

# W \_L MONITORING DATA SHE. .

D.O. (If req d): Pre-purge:		Client: Blymyr								
		<u></u>		Date: 3-20	0-07					
Sampler: 8 Provided  Well Daire: 3-20-07  Well LD:: Mw-8  Well Dameter: 2 3 6 6 8  Total Well Depth (TD): 20.61  Depth to Water (DTW): 4.66  Depth to Free Product:  Referenced to:  Grade  D.O. Meter (if req'd):  Daire: 3-20-07  Water (if req'd):  Daire: 3-20-07  Sampling Method:  Perstatitic Extraction Pump Other:  Disposable Bailer Perstatitic Extraction Pump Other:  Disposable Bailer Perstatitic Extraction Pump Other:  Other:  Disposable Bailer Perstatitic Extraction Pump Other:  Disposable Bailer Disposable Bailer Disposable Bailer Disposable Bailer Perstatitic Extraction Pump Other:  Ot		Well Diameter: 2 3 (4) 6 8								
		: 20.6	l	Depth to Wa	ter (DTW): 4,16					
				Thickness of	Free Product (fee	t):				
Date: 3-20-07  Well LD:: Aw 8  Well Depth (TD): 20.61  Depth to Free Product:  Referenced to:  Grade  Do. Meter (if req'd):  Disposable Bailer Pesitive Air Displacement Electric Submersible  Time  Time  Time  Temp  Temp  Time  Temp  Temp  Time  Temp  T		D.O. Motor (Ir requ).								
Sampler: 8 from Mell LD.: hw 8  Well Dameter: 2 3 6 6 8  Total Well Depth (TD): 20.61  Depth to Water (DTW): 4.16  Depth to Free Product: Thickness of Free Product (feet):  Referenced to: Grade D.O. Meter (if req'd): GS ILACH  DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: Y  Purge Method: Bailer Positive Air Displacement Electric Submersible  Disposable Bailer Positive Air Displacement Extraction Purup Other  Other  Depth to Water (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter Mater Referenced D.O. Meter State of Color (if req'd): GS ILACH  Depth to Water (if req'd): GS ILACH  Water Referenced to: Grade D.O. Meter Mater Referenced D.O. Meter State D.O. Meter										
	Bailer Disposable Ba Positive Air D	iler isplacemen	t Extrac Other	Waterra Peristaltic tion Pump  Well Dia	Sampling Method:  Other:  meter Multiplier Well II  0.04 4"	Bailer Disposable Bailer Extraction Port Dedicated Tubing  Diameter Multiplier 0.65				
<del>\</del>		ied Volume		Gals.	0	· ·				
Time	· ·	pН		1	Gals. Removed	Observations				
1123	62.5	9.6	2521	71000	11,0	<u> </u>				
1125	62.4	9.8	2552	26000	22.0					
1128	623	9.9	2562	71000	32.5					
						Fe=0				
Did well de	ewater?	Yes	MS	Gallons actu	ually evacuated:	325				
Sampling I	Date: 3-20	-07	Sampling Tim	ne: 1130	Depth to Water	er: 4,16				
				Laboratory:	Kiff CalScience	e Other				
Analyzed f	or: TPH-G	BTEX	МТВЕ ТРН-D	Oxygenates (	5) Other:					
EB I.D. (if	applicable	):		Duplicate I	.D. (if applicable)					
			МТВЕ ТРН-D		5) Other:	Hethod: Bailer Disposable Bailer Extraction Port Dedicated Tubing  Other:  Well Diameter Multiplier 4" 0.65 6" 1.47 Other radius² * 0.163  moved Observations  ted; 32.5  Water: 4,16  alscience Other				
D.O. (if red	q'd): F	re-purge:		mg/L	Post-purge:	Ø. 1				
O.R.P. (if	req'd): F	re-purge:		mV	101 m					

## W \_L MONITORING DATA SHE. \_

					· · · · · · · · · · · · · · · · · · ·	
Project #: 6	10320-1	301		Client: Bly	nye	
Sampler:	B Prom/			Date: 3-20		
Well I.D.:	mw-q			Well Diameter	: 2 3 <b>4</b> )	6 8
Total Well l	Depth (TD)	): 21-6	,2	Depth to Wate	er (DTW): <b>4,3</b>	7
Depth to Fr	ee Product			Thickness of F	Free Product (fee	t):
Referenced	to:	RØ9	Grade	D.O. Meter (if	req'd):	YS HACH
DTW with	80% Recha	arge [(H	eight of Water	Column x 0.20	<u>)) + DTW]: 7.                                   </u>	٠ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ ـ
Purge Method:	Bailer Disposable Ba Positive Air D Electric Subm	ailer Displacemer	nt Extrac	Waterra Peristaltic tion Pump	Sampling Method: Other:	Bailer Disposable Bailer Extraction Port Dedicated Tubing
Case Volume	Gals.) XSpeci	3 fied Volum	$= \frac{33.6}{\text{Calculated Vo}}$		ter Multiplier Well D 0.04 4" 0.16 6" 0.37 Other	
Time	Temp (°F)or °C)	pН	Cond. (mS or (1S)	Turbidity (NTUs)	Gals. Removed	Observations
1139	62-5	9.0	2534	13	11.5	
1141	62.7	8.9	2564	11	23.0	
1143	62-8	8.9	25 83	10	340	
						Fe <sup>W</sup> = 18
Did well de	ewater?	Yes	No	Gallons actua	lly evacuated:	34.0
Sampling I	Date: 3-W	100	Sampling Tim	ie: 1145	Depth to Wate	er: 4.37
Sample I.D	1: Mw-9			Laboratory:	Kiff CalScience	e Other
Analyzed f	or: TPH-G	BTEX	MTBE TPH-D	Oxygenates (5)	Other:	
EB I.D. (if	applicable	):	@ Time	Duplicate I.D	. (if applicable):	
Analyzed f	or: TPH-G	BTEX	МТВЕ ТРН-D	Oxygenates (5)	Other:	
D.O. (if red	n'd): P	re-purge:		$^{ m mg}/_{ m L}$	Post-purge:	0.2 mg/

mV

Post-purge:

O.R.P. (if req'd):

Pre-purge:

136

'nV

# **TEST EQUIPMENT CALIBRATION LOG**

PROJECT NAM	1E Blymye			PROJECT NUMBER 670320-8/1							
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS				
Ultanetu	612495	3/20107	4.0,7.0,10.0 3900ms	3900m.	'les-	62-0	R				
Turbidinah	& HOLONGTY	7/20/07	20 20 (00	20, 20, 100	y es	6-	B				
431 55DA	0 541042	1700 3/20107	1006	1002	Yes	_	R				
4/1 558	0 6F1362	(200 3/2010)	244 ORP	244-0	yes	15.6	BS				
				<u> </u>							

# CytoCulture Environmental Biotechnology 249 Tewksbury Avenue Point Richmond, CA 94801-3829

Volum Estat	_	CHAIN OF CU	JSTODY	FORM		•							
Project Name: Dublin Concre	Project N	10. 202016 P	Purchase	Order / LO	G IN #:								
Client Organization: Blymye	r Enginees	P	Project M	lanager:	Son	me							
Address to Send Results: 1829	Clement the	1) mr wing	U#	9450									
Client Fax for Sending Data: (5,0	) 865-2544	C	Client Co	ontact / Proj	ect Man	ager: A	1ak	)eti	tern	nin			
Client Tel for Follow-up: (510)	747-3068	C	Client Sa	mpler / Rec	corder: $oldsymbol{arepsilon}$	R	mil	LB	173	)			
Sample ID Sampling Matrix	Bacterial Plate Enumeration	\$		rial MPN Enum	erations	Nutrier	t / Chemi	æl Ass	ays	<del></del>		_	<del></del>
Date Time Soil Water	Aerobic Hydrocarbon Total Degraders Heterotrophs	Anaerobic Hydrocarbon Total Degraders Heterotrop	Anaer Nitrate phs Reduc		Suffate Reducers	pH mV	DO NH	PO4	NO3	504	Sulfide	Fe(U)	Fedil

Sample ID	Samp	ing	Matrix		Bacterial Plat	Enumeration	\$		Bacterial 1	MPN Enum	erations	Nu	trien	/Ch	emica	Assa	YS				
	Date	Time	Soil	1	Aerobic Hydrocarbon Degraders		Anaerobic Hydrocarbon Degraders	Total Heterotrophs	1	Iron	Suffate Reducers	ρΗ	mV	DO	NH3	PQ4	NO3	SO4	Sulfide	Fe(U)	Fe(III)
mw-/	3-20	1005		×	У	×	59														
mw-4		1100		×	X	X	务														
MW.5	1	1110	1	1	X	×	134														
	T																				

Chain of Custody Record	Signature of this form constitutes	a firm Purchase Order for services.	Payment DUE on Reporting Date.
Relinquished by:	Date/Hr:	Received by:	Date/Hr:
Received for CytoCulture Lab	Date/Hr:	CytoCulture Tel: 510-233-0102	Please fax Chain of Custody form
		Lab Services Fax: 510-233-3777	to CytoCulture prior to delivery.

BLAINE 1680 ROGERS AVENUE SAN JOSE, CALIFORNIA 95112 FAX (408) 573-777	E [		CONDUC	TANAL	YSIS TO DET	ECT	LAB Mc Campbell		DHS #
FAX (408) 573-777  FAX (408) 573-777  PHONE (408) 573-055	1		, ,				ALL ANALYSES MUST MEET SPECIF SET BY CALIFORNIA DHS AND	ICATIONS AND	DETECTION LIMITS
TECH SERVICES INC. PHONE (408) 573-055.	_	.	12 - VA (50.5				<b>□</b> EPA	RWOCE	REGION
CHAIN OF CUSTODY			clear (s	(0978)			LIA		
070720-861	- SH	~~	_	3			OTHER		
CLIENT Blymye	- NE	8015~1	3.				SPECIAL INSTRUCTIONS		
SITE Dolan Rentals	CONTAINERS	8	4.150	\ <del>\</del>					
6393 SCarlett Ct	\ \ \	)	3	0x258445					
Dublin CA	= COMPOSITE	હ	0	> ×					
MATRIXI CONTAINERS	MPC	TPH-	7						
SAMPLEID DAKe Time SE TOTAL HEL	C = CC	2	2	1,2			ADD'L INFORMATION STATUS	CONDITION	LAB SAMPLE #
DAME 1 1 1 1		X	X						
		V	X						
mv-3 1000 14 1	$\dashv$	17	7	T <sub>X</sub>					
		X	<del> </del>	<del>-                                     </del>	<del>                                     </del>				
M2-5 1110 7		X	X	<u>                                     </u>				1	
MW-6 1055 4		X	X	$\bot$	1			+	
mw-7 950 4		X	X						<u> </u>
mw-8 1130 4		X	X			-			
mr-9 1145 2 4 2		1							
		<u> </u>							
	- }								
SAMPLING DATE TIME SAMPLING PERFORMED BY B	$\overline{\ell}$	0 W	)			<u> </u>	RESULTS NEEDED NO LATER THAN		- Inve
7 0 11 1	DATE 3-ZU		TIME	+ 8	RECEIV	BY BY		3/20/07	TIME .
RELEASED BY	DATE	0 /	TIME	10	RECEIV			DATE	TIME
	DATE		TIME		RECEIV	ED BY		DATE	TIME
	DATE S	ENT	TIME	SENT	COOLER	#		<del></del>	
SHIPPED VIA	- *								



# **PURGE DRUM INVENTORY LOG**

CLIENT	Blymmer		
	<del></del>	Scarlettety Deblin	

STATUS OF DRUM(S)							
UPON ARRIVAL							
Number of drum(s) empty:		1	0		0		
Number of drum(s) 1/4 full:		2	0		0		
Number of drum(s) 1/2 full:		2	Ø		Ð		4
Number of drum(s) 3/4 full:	l	1	0	l	ì		
Number of drum(s) full:	14	18	0	3	3	6	6
Total drum(s) on site:	15	24	0	4	4	6	7
STATUS OF DRUM(S)							
AT DEPARTURE							
Number of drum(s) empty:		1	Ø			0	
Number of drum(s) 1/4 full:		2	0				1
Number of drum(s) 1/2 full:		1	Ø				
Number of drum(s) 3/4 full:		1	. 1		1		
Number of drum(s) full:	15	19	3	4	<u>5</u> _	6	.8
Total drum(s) on site:	15	24	4	4	6	7	9
LOCATION OF DRUM(S)							
Is/Are drum(s) at wellhead(s)?	45	464		405	4	X	4
Describe location if drum(s) is/are	News	to U	w-7 \$ 1	W.2-		, )	
located elsewhere:	NEXT	N MW	-7 ax	moz.	Ct. SIO	<b>(</b>	·
		* `	. •				
Label drum(s) properly:	Yes	425	115	445	4	$\sim$	У
FINAL STATUS				17			
Number of new BTS drum(s) left on	72	s.e	4	1	Z	1	7
site this event:	10	<b>7</b>		4			
Date of inspection:	7/18/01	1	02/27/06	3.2.06	olilop	9/20/00	3-20-27
Logged by BTS Field Technician:	m	5r	72	DW	PAY	we	<u>የ</u> አዖ
Office Review by:			1/28	3/3	W	12/	

# WELLHEAD INSPECTION CHECKLIST

Date 4/9/	67 6393 Sc	Client	Blymy	er				
Site Address	6393 Sc	arlett	ct.	Duble.	<u></u>			
	070409-M				hnician	Mile.	W	
Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed IFrom Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-3	X						Bolowy	Deldwy
	<i>"</i>							
			,					
				· <del></del>				
<del></del>								
				<del></del>				
						-		
				<del></del>	·			
			<u> </u>	· · · · · · · · · · · · · · · · · · ·		<u> </u>		
NOTES:		•	· · · · · · · · · · · · · · · · · · ·				·	
······································		<del></del>	<del> </del>	<del></del>	<del></del>			
				<del></del>				
						·		

## **WELL GAUGING DATA**

Project # <u>070</u>	404-MN1	_ Date _	4/9/07	Client	Blymere	
Site <u>6793</u>	Sca-lett	cl.	Deblin.			

-	<del></del>	Τ	<u> </u>	T	T	m · ·	1	<del>,</del>			
-		· ···	XX 7 _ 11				-Volume-of-			Survey	
1			Well	~	Depth to	of	Immiscibles	ł		Point:	
	***	<u> </u>	Size	Sheen /	Immiscible	Immiscible	Removed	Depth to water	Depth to well	TOB or	ı
	Well ID	Time	(in.)	Odor	Liquid (ft.)	Liquid (ft.)	(ml)	(ft.)	bottom (ft.)	TOB or	Notes
		وسدور د									
	MW-3	1456	2					4.65	17.83		
								1105	11.00		
١											
	<del></del> -	ļ	ļ								
			Ì								
									,		
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## **TEST EQUIPMENT CALIBRATION LOG**

PROJECT NAM	ME Doblin Con	ienete		PROJECT NUI	MBER 070409-	-MNI	
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
Myron L Ultrameter	6207577	4/2/07/1438	pH 4.0 7.0 10.0	7-22 4.4 7 7.22 10.01	7-0 4.4 7.6 10,0	22.8°C	W
ů	U	1445	Card. 3900 u/s	3931	3900	21.0°C	W
Hach 2100p	103	11 1449	600 NTU	604	У		W
		-					
-							

Project #:	070409	- MNI		Client:	Blymy	per O	Dola	и		
Sampler: P	like N.			Date: 4						
Well I.D.:	MW-3			Well Dia	ımeter	: D 3	4	6 8		
Total Well	Depth (TI	)): 1 <b>7</b> .	83	Depth to	Water	r (DTW):	4,0	65		
Depth to Fr	ee Produc	t:	NA	Thickness of Free Product (feet): NA						
Referenced	to:	PVC	Grade	D.O. Meter (if req'd): YSI HACH						
DTW with	80% Rech	arge [(F	Height of Water	Column	x 0.20)	) + DTW	]:	7.29		
_	Bailer ∠Disposable B Positive Air I Electric Subn	Displaceme	0.4	Waterra Peristaltic ction Pump	Peristaltic Disposable Extraction					
				We	ell Diamete I"	Multiplier 0.04	Well I	Diameter Multiplier 0.65		
2 · i ((		3	$=\frac{6.3}{\text{Colordot IV}}$	Gals.	2" 3"	0.16 0.37	6" Other	1.47 radius <sup>2</sup> * 0.163		
I Case volume	Эресі	ified Volun	nes Calculated Vo	olume						
Time	Temp	pН	Cond. (mS or \(\mu S\)	Turbid (NTU		Gals. Rei	noved	Observations		
1517	18.7	7.4	3267	> 1000		2.1		Brown / cloudy		
15 19	16.2	7.4	3314	> 1000		4.2		DAN = 6.22 s.c.		
1521	16.2	7.4	3307	> 1000	)	6.3	)	DTW = 6.22		
<u></u>	 									
Did well dev	water?	Yes (	No)	Gallons a	ectuall	y evacuat	ted:	6.3		
Sampling D	ate: 4/9/0	7	Sampling Time	e: 1525	,	Depth to	Wate	r: 6.22		
Sample I.D.	: MW-3			Laborato	ry:	Kiff Cal	Science	Other CytoCulture		
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenate	s (5)	Other: 5	EE C	Coc		
EB I.D. (if a	ipplicable)	I: NA	@ Time	Duplicate	e I.D. (	if applica	able):	NA		
Analyzed fo	or: TPH-G	BTEX	MTBE TPH-D	Oxygenate	s (5)	Other:	NA	-		
D.O. (if req'	d): Pr	e-purge:		mg/L	- Po	ost-purge:		mg/L		
O.R.P. (if re	q'd): Pr	e-purge:		mV	Po	ost-purge:		mV		

# CytoCulture Environmental Biotechnology 249 Tewksbury Avenue Point Richmond, CA 94801-3829

CHAIN C	IF CTICTOR	V KARM

Project N	Project Name:  Dolan Reutals  Otorganization: Blymper Ensineers  Address to Send Results:  1829 Clement Alameda, CA 97								Purchase Order / LOG IN #:													
Client Or	ganizat	ion:	lya	·jei	e Engi	neers			Project Manager: Mark Determan													
Address t	o Send 29	Resul Clem	ts: <i>Len</i> 7	Ι,	Alamed	la , Co	4.9	450	1							···					<u></u>	
Client Fax for Sending Data:  (570) 865-2594  Client Contact / Project Manager:  Mark Defferinge						9				<b></b>												
Client Te	for Fo	110w-1 7 <i>4</i>	ゆ: フー	30	68				Clie	ent Samp <i>Mulu</i>	oler/Re	carder: <i>linsten</i>	ta								<u>.</u>	
Sample (D Sampling Matrix Sectorial Plate Engrerations Agrobic Appendix							-	Bacterial i		perations	Nu	Irient	/ Ch	emical	Acre	Y-6						
	Date	Time	Soff	Water	Myskocarbon Degradera	Yotal Heterotrophs	Pšydrocarbon Degradera	Total Hoterox	aphe		iren Redecers	Sulfate Reducers	рĦ	mē'	BO	AHI3	PO4	NQ3	504	Sulfida	Fe(U)	Fe(IR)
NW-3	4/9/07	1525		K	×	X							<u>                                     </u>									
-	_			!					<del></del> -			<del>                                     </del>	-									
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Chain of	Custo	dv Re	fres		Signatur	e of this for	m constitute	es	a fir	m Purch	se Orde	er for servi	ces.	·	Payr	neni	DUE	on l	Repo	ning l	Date.	
Resinquished by: Date/Hr: 4/9/07 1658						<del> </del>	eived by						e/Hr:		<del></del>		<del></del>					
	Received for CytoCulture Lab Date/Hr:					CytoCulture Tel: 510-233-0102 Please fax Chain of Custody for Lab Services Fax: 510-233-3777 to CytoCulture prior to delivery																

SPH or Purge Water Drum Log

Client: Bennye	- @ DOLAN	Roms	1	
Site Address: Que C	- @ Doiss			
STATUS OF DRUM(S) UPON	ARRIVAL			
Date	4/9/07			
Number of drum(s) empty:				
Number of drum(s) 1/4 full:	1			
Number of drum(s) 1/2 full:				
Number of drum(s) 3/4 full:				
Number of drum(s) full:	€			
Total drum(s) on site:	9			
Are the drum(s) properly labeled?	y			
Drum ID & Contents:	Puzzentera			
If any drum(s) are partially or totally filled, what is the first use date:	Rizewsterk 3/20/07			
- If you add any SPH to an empty or partiall -If drum contains SPH, the drum MUST be s -All BTS drums MUST be labeled appropria	steel AND labeled wit tely.			
STATUS OF DRUM(S) UPON	the state of the s			
Date	4/9/07			
Number of drums empty:				
Number of drum(s) 1/4 full:				
Number of drum(s) 1/2 full:				
Number of drum(s) 3/4 full:				
Number of drum(s) full:	8			
Total drum(s) on site:	7			
Are the drum(s) properly labeled?	Y			
Drum ID & Contents:	Przemater			
LOCATION OF DRUM(S)				
Describe location of drum(s):				
HINAL STATUS				
Number of new drum(s) left on site this event	0			
Date of inspection:	4/1/07			
Drum(s) labelled properly:	1			Annual Annual Control of the Control
Logged by BTS Field Tech:	nov			
Office reviewed by:	W			

# Appendix C

Analytical Laboratory Report McCampbell Analytical, Inc. Dated March 27, 2007, and April 4, 2007

Blymyer Engineers, Inc.	Client Project ID: Dolan Rentals	Date Sampled: 03/20/07
1829 Clement Avenue		Date Received: 03/20/07
Alameda, CA 94501-1395	Client Contact: Mark Detterman	Date Reported: 03/27/07
7 Halloud, C/1 7 (501 1575	Client P.O.:	Date Completed: 03/27/07

WorkOrder: 0703472

March 27, 2007

Dear Mark:

Enclosed are:

- 1). the results of 8 analyzed samples from your **Dolan Rentals 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

0703472 LAB Mc Campbell 1680 ROGERS AVENUE BLAINE SAN JOSE, CALIFORNIA 57112 CONDUCT ANALYSIS TO DETECT DHS # FAX (408) 573-7771 ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS TECH SERVICES INC. PHONE (408) 573-0555 80.5 SET BY CALIFORNIA DHS AND clean-up MEPA RWQCB REGION \_\_\_\_\_ CHAIN OF CUSTODY 2560 LIA 070720-801 OTHER CONTAINERS Blymye CLIENT 2 SPECIAL INSTRUCTIONS SITE Oxysertits C = COMPOSITE ALL Dublin 0 CONTAINERS MATRIX MA 2 E Date Time LAB SAMPLE # CONDITION ADD'L INFORMATION STATUS TOTAL SAMPLE LD 3-20 1045 MW-1 MW-3 1000 MW-4 1100 X 1110 MZ-5 1055 4 MW-b 950 mw-7 1130 U MW-8 1145 mw-g RESULTS NEEDED TIME SAMPLING Promo SAMPLING DATE NO LATER THAN PERFORMED BY COMPLETED RECEIVED BY DATE TIME DATE TIME RELEASED BY 1448 3-20-07 1448 DATE TIME DATE TIME RECEIVED BY RELEASED BY TIME DATE RECEIVED BY RELEASED BY DATE TIME COOLER# DATE SENT TIME SENT SHIPPED VIA

## McCampbell Analytical, Inc.

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

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 0703472 ClientID: BEIA

(925) 252-920	62						-01441	. 0.00		`	J11011011						
				☐ EDF			-ax		<b>✓</b> Emai	I	□Н	lardCopy	[	Third	Party		
Report to:  Mark Detterman Blymyer Engineer 1829 Clement Av		TEL: (	MDetterman ( 510) 521-37 Dolan Rental		865-2	59	Bly	myer E	Payabl Enginee ment Av	rs, Inc.					d TAT:		days 2007
Alameda, CA 94		PO:								501-139	95		Dat	te Prin	nted:	03/21/	2007
									Req	uested	Tests (	See leg	end be	elow)			
Sample ID	ClientSampID		Matrix	<b>Collection Date</b>	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0703472-001	MW-1		Water	03/20/07 10:45:00			Α								T		
0703472-002	MW-3		Water	03/20/07 10:00:00			Α										
0703472-003	MW-4		Water	03/20/07 11:00:00		В	Α										
0703472-004	MW-5		Water	03/20/07 11:10:00		В	Α										
0703472-005	MW-6		Water	03/20/07 10:55:00			Α										
0703472-006	MW-7		Water	03/20/07 9:50:00			Α										
0703472-007	MW-8		Water	03/20/07 11:30:00			Α										
0703472-008	MW-9		Water	03/20/07 11:45:00	İΠ		Α										
Test Legend:	V 2	G-MBTE)	( W	3				ΓΖ	4				Г	5			
		G-MIDTE/	\_W														
6	7			8				٤	9				<u>[1</u>	10			
The following SampIDs	.: 0703472-001A, 070347	2-002A, 0703 <sup>2</sup>	172-003A, 070	)3472-004A, 070347	2-005/	۹, 0703	472-006	A, 0703	472-007	<b>′</b> A,			Prepa	red by:	: Rosa	Venega	s
0703472-008A contain																	

#### **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.

Blymyer Engineers, Inc.		Client Pro	oject ID: Dolan F	Rentals	Date Sampled:	03/20/07					
1829 Clement Avenue					Date Received:	03/20/07					
Alameda, CA 94501-1395	Ī	Client Co	ontact: Mark Det	terman	Date Extracted:	: 03/26/07					
7 Hallicott, C11 74501 1575		Client P.0	O.:		Date Analyzed	03/26/07					
	Oxygenated Volatile Organics by P&T and GC/MS*										
Extraction Method: SW5030B		Anal	ytical Method: SW8260	0B		Work Order:	0703472				
Lab ID	070347	72-003B	0703472-004B								
Client ID	M	W-4	MW-5			Reporting DF					
Matrix	1	W	W			]					
DF		1	2			S	W				
Compound			Conce	ug/kg	μg/L						
tert-Amyl methyl ether (TAME)	N	ND	ND<1.0			NA	0.5				
t-Butyl alcohol (TBA)	N	ND	ND<10			NA	5.0				
Diisopropyl ether (DIPE)	N	ND	ND<1.0			NA	0.5				
Ethyl tert-butyl ether (ETBE)	N	ND	ND<1.0			NA	0.5				
Methyl-t-butyl ether (MTBE)	N	ND	57			NA	0.5				
		Surre	ogate Recoveries	; (%)							
%SS1:	1	106	103								
Comments											

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.



<sup>\*</sup> 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.

Blymyer Engineers, Inc.	Client Project ID: Dolan Rentals	Date Sampled: 03/20/07
1829 Clement Avenue		Date Received: 03/20/07
Alameda, CA 94501-1395	Client Contact: Mark Detterman	Date Extracted: 03/23/07-03/24/07
114111944, 6117 1801 1876	Client P.O.:	Date Analyzed: 03/23/07-03/24/07

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

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0703472 Lab ID Client ID TPH(g) MTBE Toluene Ethylbenzene Xylenes DF Matrix Benzene % SS MW-1 W ND 001A ND ND ND ND ND 1 86 002A MW-3 W ND ND ND ND ND ND 1 93 003A MW-4 W 630.a.m ND 4.8 12 ND ND 1 87 004A MW-5 W ND ND ND ND 98 54 ND W 005A MW-6 ND ND ND ND ND ND 114 W ND 98 006A MW-7 ND ND ND ND ND 007A MW-8 W 140.a 101 ND 1.2 0.68 0.55 2.5 008A MW-9 W 120,a ND 0.88 0.70 ND 1.8 117 Reporting Limit for DF = 1; W 50 5.0 0.5 0.5 0.5 0.5 μg/L ND means not detected at or

NA

S

NA

NA

NA



NA

mg/Kg

NA

above the reporting limit

<sup>\*</sup> water and vapor samples and all TCLP & SPLP extracts are reported in ug/L, soil/sludge/solid samples in mg/kg, wipe samples in  $\mu$ g/wipe, product/oil/non-aqueous liquid samples in mg/L.

<sup>#</sup> cluttered chromatogram; sample peak coelutes with surrogate peak.

<sup>+</sup>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; p) see attached narrative.

Blymyer Engineers, Inc.	Client Project ID: Dolan Rentals	Date Sampled: 03/20/07
1829 Clement Avenue		Date Received: 03/20/07
Alameda, CA 94501-1395	Client Contact: Mark Detterman	Date Extracted: 03/21/07
124	Client P.O.:	Date Analyzed 03/22/07-03/25/07

#### Diesel Range (C10-C23) Extractable Hydrocarbons with Silica Gel Clean-Up\*

Extraction method SW35	10C/3630C	Analytical me	ethods SW8015C	Work Order: 07	03472
Lab ID	Client ID	Matrix	TPH(d)	DF	% SS
0703472-001A	MW-1	W	ND	1	101
0703472-002A	MW-3	W	ND	1	102
0703472-003A	MW-4	w	77,d	1	100
0703472-004A	MW-5	W	ND	1	102
0703472-005A	MW-6	W	ND	1	100
0703472-006A	MW-7	W	ND	1	101
0703472-007A	MW-8	W	61,d	1	101
0703472-008A	MW-9	W	ND	1	101

Reporting Limit for DF =1;	W	50	μg/L
ND means not detected at or	S	NA	NA

<sup>\*</sup> water samples are reported in µg/L, wipe samples in µg/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / STLC / SPLP / TCLP extracts are reported in µg/L.

<sup>#</sup> cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract/matrix interference.

<sup>+</sup>The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

## QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0703472

EPA Method SW8260B	Extra	ction SW	5030B		BatchID: 26941 Sp				piked Sample ID: 0703456-014B				
Analyte	Sample Spiked MS			MSD	SD MS-MSD LCS LCSE		LCSD	LCS-LCSD	Acceptance Criteria (%)				
7 mary to	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
tert-Amyl methyl ether (TAME)	ND	10	112	111	0.741	98.7	101	2.73	70 - 130	30	70 - 130	30	
t-Butyl alcohol (TBA)	ND	50	110	99.9	9.24	87.6	90.8	3.62	70 - 130	30	70 - 130	30	
Diisopropyl ether (DIPE)	ND	10	129	129	0	124	129	3.79	70 - 130	30	70 - 130	30	
Ethyl tert-butyl ether (ETBE)	ND	10	127	128	1.23	114	119	3.81	70 - 130	30	70 - 130	30	
Methyl-t-butyl ether (MTBE)	ND	10	124	124	0	112	117	4.84	70 - 130	30	70 - 130	30	
%SS1:	105	10	101	106	5.39	101	104	2.83	70 - 130	30	70 - 130	30	

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

#### BATCH 26941 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703472-003B	03/20/07 11:00 AM	03/26/07	03/26/07 1:28 PM	0703472-004B	03/20/07 11:10 AM	03/26/07	03/26/07 11:21 PM

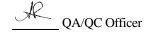
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% 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.

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.



## QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0703472

EPA Method SW8015Cm	Extraction SW5030B BatchID: 26881 Spiked Sample ID: 0703421-001A										1 <b>A</b>		
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	Acceptance Criteria (%)			
rilaryto	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
TPH(btex <sup>£</sup>	ND	60	92.4	89	3.79	95.2	92.8	2.47	70 - 130	30	70 - 130	30	
MTBE	ND	10	85.4	79.8	6.73	85.2	84	1.39	70 - 130	30	70 - 130	30	
Benzene	ND	10	95.5	90.1	5.88	91.6	94.5	3.07	70 - 130	30	70 - 130	30	
Toluene	ND	10	96.6	90.5	6.48	92.2	95.4	3.43	70 - 130	30	70 - 130	30	
Ethylbenzene	ND	10	101	94.6	7.02	96.9	100	3.26	70 - 130	30	70 - 130	30	
Xylenes	ND	30	113	107	6.06	110	113	2.99	70 - 130	30	70 - 130	30	
%SS:	93	10	94	91	3.49	90	94	4.28	70 - 130	30	70 - 130	30	

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

NONE

#### BATCH 26881 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703472-001A	03/20/07 10:45 AM	03/24/07	03/24/07 10:31 AM	0703472-002A	03/20/07 10:00 AM	03/24/07	03/24/07 11:04 AM
0703472-003A	03/20/07 11:00 AM	03/23/07	03/23/07 9:12 AM				

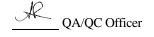
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% 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.



## QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0703472

EPA Method SW8015Cm	Extraction SW5030B BatchID: 26942 Spiked Sample ID: 0703472-006A											6A	
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acce	Acceptance Criteria (%)			
ruidiyto	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
TPH(btex <sup>£</sup>	ND	60	93	93	0	86.4	92.3	6.60	70 - 130	30	70 - 130	30	
MTBE	ND	10	103	99	3.89	114	117	2.45	70 - 130	30	70 - 130	30	
Benzene	ND	10	102	102	0	100	103	2.53	70 - 130	30	70 - 130	30	
Toluene	ND	10	104	107	2.55	92.1	94.3	2.38	70 - 130	30	70 - 130	30	
Ethylbenzene	ND	10	99.2	97	2.30	82.4	102	21.0	70 - 130	30	70 - 130	30	
Xylenes	ND	30	90.7	87.3	3.75	96.7	96.7	0	70 - 130	30	70 - 130	30	
%SS:	98	10	110	110	0	89	99	10.6	70 - 130	30	70 - 130	30	

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

NONE

#### BATCH 26942 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703472-004A	03/20/07 11:10 AM	03/23/07	03/23/07 10:22 PM	0703472-005A	03/20/07 10:55 AM	03/23/07	03/23/07 9:42 AM
0703472-006A	03/20/07 9:50 AM	03/23/07	03/23/07 5:27 AM	0703472-007A	03/20/07 11:30 AM	03/23/07	03/23/07 10:56 PM
0703472-008A	03/20/07 11:45 AM	03/23/07	03/23/07 11:29 PM				

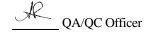
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% 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.



QC SUMMARY REPORT FOR SW8015C

# W.O. Sample Matrix: Water QC Matrix: Water WorkOrder 0703472

EPA Method SW8015C	Extra	ction SW	3510C/3	630C	Bat	chID: 26	919	Spiked Sample ID: N/A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acc	eptance	Criteria (%)		
, may to	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
TPH(d)	N/A	1000	N/A	N/A	N/A	98.3	100	1.87	N/A	N/A	70 - 130	30	
%SS:	N/A	2500	N/A	N/A	N/A	102	104	1.79	N/A	N/A	70 - 130	30	

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

#### BATCH 26919 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0703472-001A	03/20/07 10:45 AM	03/21/07	03/22/07 8:47 PM	0703472-002A	03/20/07 10:00 AM	03/21/07	03/22/07 7:39 PM
0703472-003A	03/20/07 11:00 AM	03/21/07	03/22/07 11:04 PM	0703472-004A	03/20/07 11:10 AM	03/21/07	03/22/07 9:55 PM
0703472-005A	03/20/07 10:55 AM	03/21/07	03/23/07 1:20 AM	0703472-006A	03/20/07 9:50 AM	03/21/07	03/23/07 12:12 AM
0703472-007A	03/20/07 11:30 AM	03/21/07	03/25/07 4:40 AM	0703472-008A	03/20/07 11:45 AM	03/21/07	03/23/07 2:29 AM

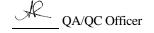
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = <math>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.



Blymyer Engineers, Inc.	Client Project ID: Dolan Rentals	Date Sampled: 03/20/07
1829 Clement Avenue		Date Received: 03/20/07
Alameda, CA 94501-1395	Client Contact: Mark Detterman	Date Reported: 04/04/07
7 Hallieda, C11 7 1501 1575	Client P.O.:	Date Completed: 04/04/07

WorkOrder: 0703472

April 04, 2007

Dear Mark:

Enclosed are:

- 1). the results of 2 analyzed samples from your **Dolan Rentals 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

			32				0	70	34	72	-					
BLAI	NE	16 SAN JOSE	, CALIFO	RS AVENUE RNIA 9511	2		CON	DUCT	ANAL	YSISTO	DETECT		LLAB Mc Camp	2011		DHS#
TECH SERV			FAX (4	08) 573-777 08) 573-055	1		5	(3)		3/20			ALL ANALYSES MUST SET BY CALIFORNIA	MEET SPECI	FICATIONS AND	
CHAIN OF CUSTODY	רס	v720-1	BPI		s		clear-up	8)	8560)	added			□ LIA □ OTHER		RWQC	CB REGION
CLIENT Blymy	iv				INER	2	2		3	del			SPECIAL INSTRUCTION	)NS		
SITE Dolan	SCarle		Ct		L CONTAINERS	(80	/ silica		4 ths	Vi Kron						
Dublin	CA				COMPOSITE ALL	3	Dw		0xysertites	o/m (						
	1	MATRIX HSO2H	CON	NTAINERS	COMP	TPH-	-Hc		Frel 0	h (d					a servi	
SAMPLE I.D.	ite Tim	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	TOTAL	HEL	O	-	J.		15	4	-		ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
	-20 1045	1	4		-	X	X		-	-			-		-	
mv-3	1000	++-	111		+	X	X		~	6		_			-	
MW-4	1100		7		+-	X	X		X	(8)	_		1			
M2-5	1110	- 11	7		-	X	X		X			_			1	
MW-6	105		14	_	+-	X	X	2	34.			<u> </u>				
mw-1	952	+	4		1	X	X				_		-			
mr-8	1130	- 1	4		-	X	X			$\otimes$						
mw-9 =	1145	1	4		+	1	X						70			
Test Legend:					-											
SAMPLING DAT	te ITIME	SAMP	LING DRMED E	BY B	R	m							RESULTS NEEDED NO LATER THAN			
RELEASED BY	- Cu			DA			TIME	48		RECE	WED BY	_			DATE /3/20/07	1448
RELEASED BY	piDa: 0703#			DAT	TE		TIME			RECE	IVED BY				DATE	TIME
RELEASED BY				DAT	ΓE		TIME			RECE	IVED BY				DATE	TIME
SHIPPED VIA				DAT	TE SEN	VT	TIME	SEN	T	COOLE	R#	-				
MOTE: S	Sampas	310)														

## McCampbell Analytical, Inc.



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

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

WorkOrder: 070347 A ClientID: BEIA

(925) 2	52-9262				•	VOLK	nuci.	070547			CHCHU	D. DE	u <b>1</b>				
				☐ EDF		□F	ax	5	✓ Email		□н	ardCopy		ThirdF	arty		
Report to: Mark Detter Blymyer Enç 1829 Cleme Alameda, C	gineers, Inc.	Email: TEL: ProjectNo PO:	MDetterman@ (510) 521-37 Dolan Rental	·	865-2	59	Bly 18:	counts /myer E 29 Cler ameda,	nginee	rs, Inc.	95		D D	ate Ad	ed TA ceive ld-On: inted:	03/20 03/29	<b>0/2007</b>
									Req	uested	Tests	(See leg	end be	elow)			
Sample ID	ClientSampI	)	Matrix	Collection Date	Hold	1	2	3	4	5	6	7	8	9	10	11	12
0703472-003	MW-4		Water	3/20/07 11:00:00		С	1	1									
0703472-003	MW-8		Water	3/20/07 11:30:00	井片	В											
Test Legend: 1 TPH 6	(D)_W 2 7			3 8				4						5 0			
11	12												Prepa	red by:	Rosa V	Venega	ıs

Comments: Tph diesel with no silica gel added 3/29/07 5 day

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.

	"When Quality Counts"		Telephone: 8	777-252-9262 Fax: 925-252-92	69	
Blymyer Engi	ineers, Inc.	Client Projec	t ID: Dolan Rentals	Date Sampled: 03/20	/07	
1829 Clement	t Avenue			Date Received: 03/20	/07	
Alameda, CA	94501-1395	Client Conta	ct: Mark Detterman	Date Extracted: 03/29/	07	
7 Harrieda, C7 1	71301 1373	Client P.O.:		Date Analyzed 03/30	/07	
	Diesel Rang	e (C10-C23)	Extractable Hydrocarbons as	Diesel*		
Extraction method	SW3510C	Ana	lytical methods SW8015C	Work Or	der: 070	)3472
Lab ID	Client ID	Matrix	TPH(d)		DF	% SS
0703472-003C	MW-4	W	130,d,b		1	113
0703472-007B	MW-8	W	440,b,d		1	109
					•	•

50

NA

W

S

μg/L

Reporting Limit for DF = 1;

ND means not detected at or

above the reporting limit

<sup>\*</sup> water samples are reported in  $\mu$ g/L, wipe samples in  $\mu$ g/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, and all DISTLC / SPLP / TCLP extracts are reported in  $\mu$ g/L.

<sup>#</sup> cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

<sup>+</sup>The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; k) kerosene/kerosene range/jet fuel range; l) bunker oil; m) fuel oil; n) stoddard solvent/mineral spirit.

## QC SUMMARY REPORT FOR SW8015C

W.O. Sample Matrix: Water QC Matrix: Water WorkOrder: 0703472

EPA Method SW8015C	Extrac	ction SW	3510C		Bat	tchID: 27	126	Spiked Sample ID: N/A					
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acc	eptance	Criteria (%)		
, may to	μg/L	μg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD	
TPH(d)	N/A	1000	N/A	N/A	N/A	114	112	2.58	N/A	N/A	70 - 130	30	
%SS:	N/A	2500	N/A	N/A	N/A	117	101	14.8	N/A	N/A	70 - 130	30	

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

#### BATCH 27126 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed		
0703472-003C	03/20/07 11:00 AM	03/29/07	03/30/07 8:51 AM	0703472-007B	03/20/07 11:30 AM	03/29/07	03/30/07 10:00 AM		

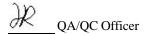
MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% 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.



# Appendix D

Laboratory Report CytoCulture Environmental Biotechnology, Inc. Dated March 27, 2007, and April 18, 2007



Pt. Richmond, CA 94801 USA



**Blymeyer Engineers** 

Address: 1829 Clement Ave.

Alameda, CA 94501

Tel: (510)-747-3068 Fax: (510) 865-2594

Project Manager: Mark Detterman

Reporting date: March 27, 2007 CytoCulture lab login: 07-34 Project Name: Dublin Concrete/

Dolan Estate

Project number: 202016

**Samples:** Three water samples packed on ice were received 3/20/2007. The samples were stored at 4°C and assayed on the same day. Please see the attached chain of custody form.

#### **AEROBIC**

# Hydrocarbon-Degrading and Total Heterotrophic Bacteria Enumeration Assays

**Analysis Request:** Enumeration of aerobic gasoline hydrocarbon-degrading bacteria and aerobic total heterotrophic bacteria by method 9215A (HPC)/ Standard Methods 9215B modified.

**Carbon Source for Hydrocarbon-Degrading Bacteria:** Pasteurized Chevron regular gasoline and diesel No. 2 were dissolved into agar plates as the sole carbon and energy source for the growth of aerobic hydrocarbon-degrading bacteria.

**Protocol for Hydrocarbon-Degrading Bacteria:** Sterile agar plates (100 x 15 mm) were prepared with minimal salts medium at pH 6.8 with agar and hydrocarbons, without any other carbon sources or nutrients added. Sets of triplicate plates were inoculated with 1.0 ml of each sample (log dilution10<sup>0</sup>) and log dilutions of each sample at 10<sup>-1</sup>, 10<sup>-2</sup>, and 10<sup>-3</sup>. Hydrocarbon plates were counted after 7 days incubation at 30°C. The plate count data is reported as colony forming units (cfu) per milliliter (ml). Each enumeration value represents a statistical average of the plate count data obtained from two of the four inoculating log dilutions assayed.

Carbon Source for Total Heterotrophic Bacteria: Growth medium was prepared with standard methods total plate count agar (Difco) containing a wide range of carbon sources derived from yeast extract, tryptone, pancreatic digest of casein and glucose.

**Protocol for Total Heterotrophic Bacteria:** Sterile agar plates (100 x 15 mm) were prepared with minimal salts and 2.35% heterotrophic plate count agar at pH 6.8 without any other carbon source or nutrients added. Sets of triplicate plates were inoculated with 1.0 ml of each sample

(log dilution 10<sup>0</sup>) and log dilutions of each sample at log dilutions 10<sup>-1</sup>, 10<sup>-2</sup>, and 10<sup>-3</sup>. The heterotrophic plates were counted after 7 days incubation at 30°C. The plate count data is reported as colony forming units (cfu) per milliliter (ml) of sample. Each enumeration value represents a statistical average of two of the four inoculating log dilutions assayed.

# AEROBIC Total Heterotrophic Bacteria and Hydrocarbon-Degrading Bacteria Enumeration Results

Client Sample Number	Sample Date	Hydrocarbon Degraders (cfu/ml)	Target Hydrocarbons Tested	Total Heterotrophs (cfu/ml)
MW-1	3/20/2007	8 x 10 <sup>1</sup>	Gasoline/Diesel	$4 \times 10^2$
MW-4	3/20/2007	5 x 10 <sup>3</sup>	Gasoline/Diesel	$1 \times 10^4$
MW-5	3/20/2007	$4 \times 10^2$	Gasoline/Diesel	$1 \times 10^3$
Sterile Water	3/20/2007	0	Gasoline/Diesel	0
Air Control	3/20/2007	0	Gasoline/Diesel	0
Positive Control	3/20/2007	5 x 10 <sup>9</sup>	Gasoline/Diesel	3 x 10 <sup>10</sup>

Reporting Limit for enumeration data is  $1.0 \times 10^{1}$  cfu/ml.

A hydrocarbon-degrading bacteria positive control sample was run concurrently with each set of samples using a mixed flask culture of bacteria enriched from contaminated UST sites in Northern California.

CytoCulture is available on a consulting basis to assist in the interpretation of these data and their application to field bioremediation protocols.

Stewart Lin

Laboratory Technician

Randall von Wedel, Ph.D. Principal Biochemist

# 07-34

# CytoCulture Environmental Biotechnology 249 Tewksbury Avenue Point Richmond, CA 94801-3829

Dolan Estate

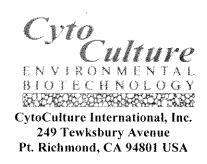
CHAIN OF CUSTODY FORM

Project Name: Dublin Concrete Project No. 202016	Purchase Order / LOG IN #:
Client Organization: Blymper Enginees	Project Manager:
Address to Send Results: 1829 Clement the Alameda	U 94501
Client Fax for Sending Data: (510) 865 - 2594	Client Contact / Project Manager: Mark Dettermin
Client Tel for Follow-up: (510) 747 - 3068	Client Sampler / Recorder: B Rowl (BTS)

1	Sample ID	Samplin	<u>a</u>	Matrix		Bacterial Plate	Enumeration	\$		Bacterial MPN Enumerations			Nu	rient	/ Ch	emica	ai Assays					
		7	•		l	Aerobic Hydrocarbon	•	t -	Totei	Anaerobio	Iron	Sulfate										
	1			Soil	Water	Degraders	Helerotrophs	Degraders	<u>Helerotrophs</u>	Reducers	Reducers	Reducers	PH_	W.Y.	<i>DO</i>	NH3	PO4	NOS	SO4	Sulfide	Fe(II)	Fe(IR)
l	MW1)	3.20	00		Х	У	X	***	ļ	-												
	mw-4		1100		Х	X	×	#														
	AWIS	سل	IIIO		٨	X	×	A														
	·														***************************************							

Chain of Custody Record	Signature of this form constitutes	a firm Purchase Order for services.	Payment DUE on Reporting Date.
Relinquished by:	Date/Hr:	Received by:	Date/Hr:
hlo	7-20-27 1530	Taxait Lin	3/20/07
Received for CytoCulture Lab	Date/Hr:		Please fax Chain of Custody form
		Lab Services Fax: 510-233-3777	to CytoCulture prior to delivery.





**Blymeyer Engineers** 

Address: 1829 Clement Ave.

Alameda, CA 94501

Tel: (510)-747-3068 Fax: (510) 865-2594

Project Manager: Mark Detterman

Reporting date: **April 18, 2007**CytoCulture lab login: **07-45**Project Name: **Dolan Rentals**Project number: **070409 MN** 

**Samples:** One water sample packed on ice was received 4/10/2007. The sample was stored at 4°C and assayed on the same day. Please see the attached chain of custody form.

## AEROBIC Hydrocarbon-Degrading and Total Heterotrophic Bacteria Enumeration Assays

**Analysis Request:** Enumeration of aerobic gasoline hydrocarbon-degrading bacteria and aerobic total heterotrophic bacteria by method 9215A (HPC)/ Standard Methods 9215B modified.

**Carbon Source for Hydrocarbon-Degrading Bacteria:** Pasteurized Chevron regular gasoline and diesel No. 2 were dissolved into agar plates as the sole carbon and energy source for the growth of aerobic hydrocarbon-degrading bacteria.

Protocol for Hydrocarbon-Degrading Bacteria: Sterile agar plates (100 x 15 mm) were prepared with minimal salts medium at pH 6.8 with agar and hydrocarbons, without any other carbon sources or nutrients added. Sets of triplicate plates were inoculated with 1.0 ml of each sample (log dilution10<sup>0</sup>) and log dilutions of each sample at 10<sup>-1</sup>, 10<sup>-2</sup>, and 10<sup>-3</sup>. Hydrocarbon plates were counted after 7 days incubation at 30°C. The plate count data is reported as colony forming units (cfu) per milliliter (ml). Each enumeration value represents a statistical average of the plate count data obtained from two of the four inoculating log dilutions assayed.

Carbon Source for Total Heterotrophic Bacteria: Growth medium was prepared with standard methods total plate count agar (Difco) containing a wide range of carbon sources derived from yeast extract, tryptone, pancreatic digest of casein and glucose.

**Protocol for Total Heterotrophic Bacteria:** Sterile agar plates (100 x 15 mm) were prepared with minimal salts and 2.35% heterotrophic plate count agar at pH 6.8 without any other carbon source or nutrients added. Sets of triplicate plates were inoculated with 1.0 ml of each sample (log dilution  $10^{-0}$ ) and log dilutions of each sample at log dilutions  $10^{-1}$ ,  $10^{-2}$ , and  $10^{-3}$ . The

heterotrophic plates were counted after 7 days incubation at 30°C. The plate count data is reported as colony forming units (cfu) per milliliter (ml) of sample. Each enumeration value represents a statistical average of two of the four inoculating log dilutions assayed.

# AEROBIC Total Heterotrophic Bacteria and Hydrocarbon-Degrading Bacteria Enumeration Results

Client Sample Number	Sample Date	Hydrocarbon Degraders (cfu/ml)	Target Hydrocarbons Tested	Total Heterotrophs (cfu/ml)			
MW-3	4/09/2007	$7 \times 10^2$	Gasoline/Diesel	$3 \times 10^2$			
Sterile Water	4/09/2007	0	Gasoline/Diesel	0			
Air Control	4/10/2007	0	Gasoline/Diesel	0			
Positive Control	4/10/2007	7 x 10 <sup>9</sup>	Gasoline/Diesel	$2\times10^{10}$			

Reporting Limit for enumeration data is  $1.0 \times 10^{1}$  cfu/ml.

A hydrocarbon-degrading bacteria positive control sample was run concurrently with each set of samples using a mixed flask culture of bacteria enriched from contaminated UST sites in Northern California.

CytoCulture is available on a consulting basis to assist in the interpretation of these data and their application to field bioremediation protocols.

Sharon Huang

Laboratory Technician

Randall von Wedel, Ph.D. Principal Biochemist

Kandash vantan

C:\CytoCulture2007\Cytolab\Lab reports\ Blymeyer Engineers\Water 07-45

BECEIVED)

07-45

BLYMYER ENGINEERS, INC.

# CytoCulture Environmental Biotechnology 249 Tewksbury Avenue Point Richmond, CA 94801-3829

	CHAIN OF COSTODI FORM
Project Name: Project Dolan Rentals 070409-11	4a) /
Client Organization: Blymper Ensineers	Project Manager: Mark Detterman
Address to Send Results:  1829 Clement Alameda C	
Client Fax for Sending Data: (570) 865 - 2594	Client Contact / Project Manager:  Mark Detterman
Client Tel for Follow-up: (578) 747 - 3068	Client Sampler / Recorder: Muhael Ninslesta

Sample ID	Seructir	М	Matrix		Bacterial Plate	Bacterial Plate Enginerations Bacterial MPN Enginerations					Nutrient / Chemical Assays										
	Sate				Aerobik: Hydrocerbon	Total .	Anaerobic Hydrocerban	Total Haterovaphs		ison	Sulfate Reducers	pH	mÿ	80	EHA)	P04	NO3	S04	Sville	Fe(II)	Fe(ill)
NW-3	4/9/07	1525	,	K	×	ス					·										
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Chain of Custody Record	Signature of this form constitutes	a firm Purchase Order for services.	Payment DUE on Reporting Date.				
Refuguished by:	Date/Hr:,	Received by:	Date/Hr:				
	4/9/07 1658		·				
Received for CytoCulture Lab	Date/Hr: ,	CytoCulture Tel: 510-233-0102	Please fax Chain of Custody form				
Front Nalan	4/10/07	Lab Services Fax: 510-233-3777	to CytoCulture prior to delivery.				

451

# Appendix E

Monitoring Well Survey Results CSS Environmental, Inc. Dated March 19, 2007



#### CSS ENVIRONMENTAL SERVICES, INC.

Managing Cost, Scope and Schedule 100 Galli Drive, Suite 1 Novato, CA 94949 Telephone: (415) 883-6203 Facsimile: (415) 883-6204

#### Monitoring Well Survey Results

Blymyer Engineers, Inc.: Former Dolan Lumber Site

Site Address: 6393 Scarlett Court

Dublin, CA 94568

Global ID: TO600101601

CSS Job: 6306

Units: Int. Feet

Coordinate System: North American Datumof 1983-CONUS (NAD83)

Height System: North American Vertical Datum of 1988-GEOID99 (NAVD88) Survey Dates: Heights-3/19/07, Locations-4/13/05 (MW-1 to MW-6), 2/7/06

(MW-7 to MW-9)

# Location Information (Heights modified prior to 3/19/07 during site redevelopment)

MW-1

Coordinates: 37.7042595° -121.9079665°

Orthometric Height: 331.23 ft

MW-2 (Destroyed and replaced by MW-9 prior to 2/7/06)

Coordinates: 37.7041266° -121.9079392°

MW-3

Coordinates: 37.7039230° -121.9078597°

Orthometric Height: 330.69 ft

MW-4

Coordinates: 37.7040215° -121.9080085°

Orthometric Height: 330.10 ft

MW-5

Coordinates: 37.7041056° -121.9078006°

Orthometric Height: 331.36 ft

MW-6

Coordinates: 37.7040729° -121.9080664°

Orthometric Height: 329.55 ft

MW-7

Coordinates: 37.7040577° -121.9080305°

Orthometric Height: 330.17 ft

MW-8

Coordinates: 37.7040944° -121.9079338°

Orthometric Height: 330.51 ft

MW-9

Coordinates: 37.7041537° -121.9079365°

Orthometric Height: 330.74 ft

