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Alameda County  
Environmental Health

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

7/27, 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  
Noreen Fitzpatrick, Trustee

c. Peter MacDonald, Esquire  
Wanden Treanor, Esquire

**Second Quarter 2007  
Groundwater Monitoring Event**

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

July 11, 2007  
BEI Job No. 202016

Prepared for:

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

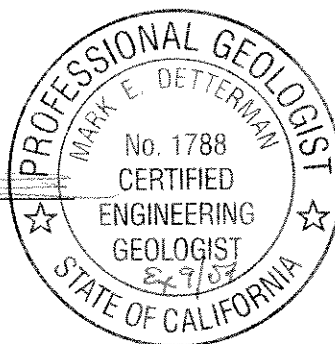
Prepared by:

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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.

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## 1.0 Introduction

This report documents the Second Quarter 2007 groundwater monitoring event at the former Dolan Trust Property in Dublin, California (Figure 1).

### 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 through 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. 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 dual-phase 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 iso-concentration 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 2,000-pound 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 Regenesys, Inc. (Regenesys), provider of ORC products. Regenesys 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. Regenesys 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 2006 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. Since the March 2007 groundwater monitoring event (First Quarter 2007), the site has continued to undergo redevelopment with a planned opening date of late June or early July 2007, for the Ken Harvey Honda facility.

## 2.0 Groundwater Sample Collection and Analytical Methods

Groundwater samples were collected from all remaining monitoring wells on June 15, 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 at the bottom of 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-to-groundwater 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.

During the sampling event well MW-1 was not located due to construction debris and trench spoils in the vicinity of the well. It was subsequently relocated after the sampling event, but was not sampled due to an extended history of predominately nondetectable results. Wells MW-6 and MW-9 were again paved over immediately after the sampling event in order to raise a portion of the paving to match surrounding pavements. These wells will require exhumation before they can be resampled in the future.

The groundwater samples 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 due to the encouraging results obtained during the previous quarterly event. This is the second quarterly event to request the silica gel cleanup technique. 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.

### **3.0 Groundwater Sample Analytical Results**

#### **3.1 Current Analytical Results**

Hydrocarbon analysis of groundwater samples from all remaining wells, except well MW-1, 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. Two trends in hydrocarbon concentrations were present at the site this quarter. All concentrations of hydrocarbons continued to decrease in downgradient well MW-4, while hydrocarbon concentrations appeared to stabilize, or modestly increase, in wells MW-8 and MW-9, constructed in the former tank basin. TPH as diesel in well MW-4 was nondetectable this quarter, while TPH as diesel in wells MW-8 and MW-9 remained below the RWQCB ESL of 100 Fg/L. The concentration of TPH as gasoline, which is not affected by silica gel cleanup technique, continued a downward trend in well MW-4 similar to the downward trend in fuel-related volatile aromatic compounds (BTEX) in the well. Only TPH as gasoline and benzene remain over the RWQCB ESL. The concentration of TPH as gasoline in wells MW-8 and MW-9 stabilized at 140 and 120 Fg/L, respectively, slightly over the RWQCB ESL of 100 Fg/L. The concentration of BTEX rose slightly in these wells. Of these compounds, only benzene was over the RWQCB ESL in the two wells. Except for the detection of MTBE in well MW-5, wells MW-3, MW-5, MW-6, and deep well MW-7 yielded non-detectable analyte concentrations. During the current quarterly event well MW-5 contained 38 Fg/L MTBE (by EPA 8021B). This is the first marked reduction in the concentration of MTBE in 9 quarterly groundwater events (since December 2004). 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.

#### **3.2 Previous Analytical Results and Insights**

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. Because the site was located in such a pre-development environment, it was judged appropriate to investigate use analytical technique at the site. During the



previous quarter, total non-silica gel cleanup TPH concentrations in wells MW-8 and MW-9 were roughly similar to the previous several quarters; however, the silica gel cleanup of the TPH as diesel analysis clearly suggested that the majority of the diesel-range hydrocarbons are vegetation derived. This also likely accounts for the majority of the footnotes previously provided by the laboratory for non-silica gel cleanup analysis (see footnotes f and j in wells MW-4, MW-8, and MW-9).

During the first quarterly groundwater monitoring event of 2005 well MW-2 yielded a detectable concentration of 1, 2-DCA (5.4 F g/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 (previously 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, when groundwater has been analyzed by EPA Method 8260B. 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 likely explains these notes. Previously, reviews of the chromatograms from these wells during the September 2002 and the September 2006 quarterly events 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 also 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 for the first time last quarter, and are again absent this quarter. This appears to be related to removal of non-fuel related oil-ranged compounds with the silica gel cleanup. Copies of the chromatograms reviewed during previous events were 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 last several events, hydrocarbon concentrations in well MW-4 have 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 September 2006 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.

### 3.3 Previous 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 was initially conducted during the previous 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. 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 ( $Mn^{4+}$ ) to soluble manganese ( $Mn^{2+}$ ), insoluble ferric iron ( $Fe^{3+}$ ) to soluble ferrous iron ( $Fe^{2+}$ ), 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. During the current sampling event, the concentration of DO in most wells was essentially unchanged in comparison to the previous sampling event, although most wells yielded slightly higher concentrations of DO this quarter. Wells MW-5 and MW-6 again are the exceptions and have again yielded higher concentrations of DO in comparison to the other wells at the site. It has been surmised that this may be the result of the screen interval in these two wells being shallower (3 to 10 feet bgs vs. 5 to 20 feet bgs), which might result in the sample tubing not being sufficiently below the oxygenated sampling zone (i.e. 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 excavation has been fully utilized. This is not unexpected as ORC is noted to generate oxygen between 6 and 12 months. This is again additionally supported by the appearance of ferrous iron in well MW-4. This is the only well that continues to yield a detectable concentration of ferrous iron (see below). Prior to remediation, the lack of DO appeared to be one of the RNA-limiting factors in the remedial area. During the September 2006 monitoring and sampling event, it appeared to be returning as a limiting factor, and during the previous and current sampling events 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 in all wells continue to decrease, and in the case of

wells MW-4 and MW-6 have returned to negative values, seen both before and after remedial actions. 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 again 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.

In summary, this is the second 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 September 2006 groundwater sampling event, the data suggested that the plume beneath the site was becoming oxygen and nitrate limited. During the March 2007 event, microbial degradation of the groundwater hydrocarbon plume beneath the site appeared to have become once again oxygen, and presumably, nitrate limited. This appears to be continuing during the current quarter.



## 5.0 Groundwater Flow Data

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.

Groundwater depths on June 15, 2007, ranged between 4.16 to 5.31 feet below the top of the casings. On average, the groundwater elevation decreased by approximately 0.34 feet across the site since the March 2007 monitoring and sampling event. Based on these data, the direction of groundwater flow appears to be generally towards the west to 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 range between approximately 0.017 and 0.003 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 except well MW-1, which temporarily could not be located, for laboratory hydrocarbon analysis and RNA field parameters.
- Two trends were present at the site: continued decreases of all hydrocarbons in downgradient well MW-4, and stabilization or slight increase in wells MW-8 and MW-9, in the former tank basin. Except for the detection of MTBE in well MW-5, wells MW-3, MW-5, MW-6, and deep well MW-7 yielded non-detectable analyte concentrations.
- All TPH as diesel analysis was conducted for the second time using a silica gel cleanup. Previous analysis using silica gel cleanup determined that the majority of the diesel-ranged hydrocarbons are vegetation derived. 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.
- The concentration of TPH as diesel in wells MW-8 and MW-9 rose slightly, but remained below the RWQCB ESL of 100 Fg/L. The concentration of TPH as diesel in well MW-4 continued decreasing and was nondetectable in the well this quarter.
- The concentration of TPH as gasoline, which is not affected by silica gel cleanup technique, continues a downward trend in well MW-4 similar to the downward trend in fuel-related volatile aromatic compounds (BTEX) in the well. Only TPH as gasoline and benzene remains over the RWQCB ESL in this well.
- The concentration of TPH as gasoline in wells MW-8 and MW-9 stabilized at 140 and 120 Fg/L, respectively, slightly over the RWQCB ESL of 100 Fg/L. The concentrations of BTEX rose slightly in these wells. Of these compounds, only benzene was over the RWQCB ESL in the two wells.
- The concentration of MTBE in well MW-5 dropped markedly to 38 Fg/L, the first time it has decreased in nine sampling events.

- This is the second consecutive 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 previous 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.
- 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 September 2006 sampling event it appeared to be in transitioning back to a limiting factor, and during the previous and current events it appears that it again is a limiting factor.
- 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 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.
- During the current quarter, groundwater flow appears to be towards the west to southwest. The average groundwater gradient ranged between 0.017 and 0.003 feet/foot.

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

- Future analysis for TPH as diesel should employ the use of the silica gel cleanup technique.
- \$ The next quarterly groundwater sampling event is scheduled to occur in September 2007.
- \$ A copy of this 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

## *Tables*

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

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-1	11/27/1991	326.61	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	329.41	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 <sup>1</sup>	326.07	
	3/20/2007	331.23 <sup>3</sup>	4.60	326.63
6/15/2007	NS		NS	

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

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-2	11/27/1991	326.67	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	329.46	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
	6/15/2007		Destroyed	Destroyed

**Table I, Summary of Groundwater Elevation Measurements  
BEI Job No. 202016, Dolan Rentals  
6393 Scarlett Court, Dublin, 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	
6/15/2007		4.88	325.81	



**Table I, Summary of Groundwater Elevation Measurements  
BEI Job No. 202016, Dolan Rentals  
6393 Scarlett Court, Dublin, 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
	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
6/15/2007	4.35		325.75	

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

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
	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
	6/15/2007		5.31	325.95

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

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
	6/15/2007		4.16	325.39

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

Well ID	Date	TOC Elevation (feet)	Depth to Water (feet)	Water Surface Elevation (feet)
MW-7	7/18/2005	**	6.38	---
	9/6/2005		6.78	---
	3/2/2006	330.25	3.33	326.92
	6/12/2006		4.18	326.07
	9/28/2006		4.52	325.73
	3/20/2007	330.17 <sup>3</sup>	3.74	326.43
	6/15/2007		4.24	325.93
MW-8	3/2/2006	328.93	1.54	327.39
	6/12/2006		3.69	325.24
	9/28/2006		3.10	325.83
	3/20/2007	330.51 <sup>3</sup>	4.16	326.35
	6/15/2007		4.62	325.89
MW-9	3/2/2006	328.67	1.54	327.13
	6/12/2006		3.68	324.99
	9/28/2006		3.08	325.59
	3/20/2007	330.74 <sup>3</sup>	4.37	326.37
	6/15/2007		4.83	325.91

Notes:

TOC = Top of Casing

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

\*\* = Surveyed elevation not available

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

NM = Not measured

NS = Not sampled

<sup>1</sup> = Resurveyed on April 13, 2005 by CSS Environmental Services, Inc.

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

<sup>3</sup> = Surveyed on March 19, 2007 by CSS Environmental Services, Inc.

Elevations in feet above mean sea level

**Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results**  
**BEI Job No. 202016, Dolan Rentals**  
**6393 Scarlett Court, Dublin, California**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5
MW-1	11/27/1991	<50	NA	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/30/1992	<50	NA	NA	<0.3	<0.3	<0.3	<0.3	NA
	4/7/1994	<50	NA	NA	<0.5	<0.5	<0.5	<0.5	NA
	8/12/1994	<50	NA	NA	<b>1</b>	<b>1</b>	<0.3	<2	NA
	11/29/1994	<50	NA	NA	<0.5	<0.5	<0.5	<2	NA
	3/21/1995	<50	NA	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	2/12/1996	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	6/6/02*	NA	NA	NA	NA	NA	NA	NA	NA
	9/23/2002	NA	NA	NA	NA	NA	NA	NA	NA
	12/13/2002	NA	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	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
	3/2/2006	<b>62<sup>k</sup></b>	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/1/2006	NA	NA	NA	NA	NA	NA	NA	NA
	9/28/2006	<b>78<sup>k</sup></b>	<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	
6/15/2007	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**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5
MW-2	11/27/1991	NA	170,000	NA	24,000	13,000	3,500	16,000	NA
	9/30/1992	NA	120,000	NA	24,000	15,000	3,800	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
	3/21/1995	NA	83,000	NA	17,000	8,000	3,800	17,000	NA
	5/22/1995	NA	82,000	NA	14,000	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	8,100	4,200	18,000	NA
	2/5/1997	NA	58,000	NA	11,000	6,900	3,500	15,000	480
	8/6/1997	NA	66,000	NA	7,000	9,200	3,500	16,000	<500
	6/6/02*	NA	25,000 <sup>a</sup>	NA	2,900	50	2,700	2,200	<250
	9/23/2002	4,300 <sup>c</sup>	14,000 <sup>b</sup>	NA	2,700	81	2,100	1,800	<250
	12/13/2002	4,000 <sup>c</sup>	26,900	NA	1,120	91	1,480	2,370	197 <sup>d</sup>
	12/14/2004	7,600 <sup>f, g</sup>	21,000 <sup>e</sup>	NA	1,700	120	1,600	2,400	<60
	3/23/2005	15,000 <sup>f, g, i</sup>	27,000 <sup>ei</sup>	NA	1,400	170	1,700	2,500	<170
	6/22/2005	1,200 <sup>g</sup>	5,800 <sup>e</sup>	NA	53	46	570	58	<50
	9/6/2005	4,900 <sup>f, g, j</sup>	14,000 <sup>e</sup>	NA	1,000	40	1,500	680	<100
	3/2/2006	NS	NS	NS	NS	NS	NS	NS	NS
	6/1/2006	NS	NS	NS	NS	NS	NS	NS	NS
9/28/2006	NS	NS	NS	NS	NS	NS	NS	NS	
3/20/2007	NS	NS	NS	NS	NS	NS	NS	NS	
6/15/2007	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**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5
MW-3	11/27/1991	NA	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	9/30/1992	NA	<50	NA	<0.3	<0.3	<0.3	<0.3	NA
	4/7/1994	NA	<50	NA	<b>2.5</b>	<b>5.5</b>	<b>0.9</b>	<b>5.1</b>	NA
	8/12/1994	NA	<50	NA	<0.5	<0.5	<0.3	<2	NA
	11/29/1994	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	3/21/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	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
	6/6/02*	NA	NA	NA	NA	NA	NA	NA	NA
	9/23/2002	NA	NA	NA	NA	NA	NA	NA	NA
	12/13/2002	NA	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	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
	3/2/2006	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
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	
6/15/2007	<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**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5
MW-4	11/27/1991	NA	<b>11,000</b>	NA	<b>100</b>	<b>0.7</b>	<b>250</b>	<b>330</b>	NA
	9/30/1992	NA	<b>380</b>	NA	<b>3.5</b>	<b>2.4</b>	<b>8.9</b>	<b>3.4</b>	NA
	4/7/1994	NA	<b>1,100</b>	NA	<b>61</b>	<b>5.5</b>	<b>17</b>	<b>12</b>	NA
	8/12/1994	NA	<b>1,000</b>	NA	<b>3</b>	<b>1</b>	<b>8</b>	<b>4</b>	NA
	11/29/1994	NA	<b>1,100</b>	NA	<b>2</b>	<0.5	<b>10</b>	<b>6</b>	NA
	3/21/1995	NA	<b>1,400</b>	NA	<b>200</b>	<b>5</b>	<b>66</b>	<b>18</b>	NA
	5/22/1995	NA	<b>1,200</b>	NA	<b>60</b>	<b>1</b>	<b>12</b>	<b>8</b>	NA
	8/24/1995	NA	<b>400</b>	NA	<b>1</b>	<0.5	<b>1</b>	<2	NA
	2/12/1996	NA	<b>1,500</b>	NA	<b>130</b>	<0.5	<b>120</b>	<b>51</b>	NA
	2/5/1997	NA	<b>1,200</b>	NA	<b>250</b>	<b>4.9</b>	<b>94</b>	<b>12</b>	<b>16</b>
	8/6/1997	NA	<b>330</b>	NA	<b>1.5</b>	<0.5	<0.5	<0.5	<5
	6/6/02*	NA	<50	NA	<b>1.7</b>	<0.5	<0.5	<0.5	<2.5
	9/23/2002	<48	<50	NA	<0.5	<b>1.3</b>	<0.5	<0.5	<2.5
	12/13/2002	<b>86<sup>c</sup></b>	<50	NA	<0.5	<0.5	<0.5	<1.5	<0.5
	12/14/2004	<50	<b>95<sup>h</sup></b>	NA	<b>2.6</b>	<0.5	<0.5	<0.5	<5.0
	3/23/2005	<50	<b>120<sup>h</sup></b>	NA	<0.5	<b>5</b>	<0.5	<0.5	<5.0
	6/22/2005	<50	<b>180<sup>e</sup></b>	NA	<b>1.7</b>	<b>7.5</b>	<0.5	<0.5	<5.0
	9/6/2005	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	3/2/2006	<b>1,600<sup>e</sup></b>	<b>220<sup>g</sup></b>	NA	<b>47</b>	<b>4.1</b>	<b>1.6</b>	<b>19</b>	<20
	6/1/2006	<b>1,000<sup>e</sup></b>	<b>250<sup>f,g</sup></b>	NA	<b>22</b>	<b>2.8</b>	<b>3.9</b>	<b>0.59</b>	<5.0
9/27/2006	<b>1,400<sup>e</sup></b>	<b>220<sup>f,g</sup></b>	NA	<b>8.5</b>	<b>7.3</b>	<b>2.4</b>	<0.5	<15	
3/20/2007	<b>630<sup>e,1</sup></b>	<b>130<sup>f,g</sup></b>	<b>77<sup>g</sup></b>	<b>4.8</b>	<b>12</b>	<0.5	<0.5	<5.0	
6/15/2007	<b>440<sup>e,1</sup></b>	NA	<50	<b>2.1</b>	<b>7.8</b>	<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**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5
MW-5	3/21/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	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
	6/6/02*	NA	NA	NA	NA	NA	NA	NA	NA
	9/23/2002	<b>310<sup>c</sup></b>	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.5
	12/13/2002	<b>97<sup>c</sup></b>	<50	NA	<0.5	<0.5	<0.5	<1.5	<b>0.720<sup>d</sup></b>
	12/14/2004	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<b>12</b>
	3/23/2005	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<b>23</b>
	6/22/2005	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<b>31</b>
	9/6/2005	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<b>32</b>
	3/2/2006	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<b>30</b>
	6/1/2006	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<b>44</b>
	9/28/2006	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<b>48</b>
3/20/2007	<50	NA	<50	<0.5	<0.5	<0.5	<0.5	<b>54</b>	
6/15/2007	<50	NA	<50	<0.5	<0.5	<0.5	<0.5	<b>38</b>	

**Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results**  
**BEI Job No. 202016, Dolan Rentals**  
**6393 Scarlett Court, Dublin, California**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5
MW-6	3/21/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	5/22/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	NA
	8/24/1995	NA	<50	NA	<0.5	<0.5	<0.5	<2	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
	6/6/02*	NA	NA	NA	NA	NA	NA	NA	NA
	9/23/2002	NA	NA	NA	NA	NA	NA	NA	NA
	12/13/2002	NA	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	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
	3/2/2006	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/1/2006	<b>50<sup>e</sup></b>	<50	NA	<b>0.84</b>	<0.5	<0.5	<0.5	<5.0
	9/27/2006	<50	<b>61<sup>f</sup></b>	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	
6/15/2007	<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**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5
MW-7	7/18/2005	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	9/6/2005	<50	<50	NA	<b>0.7</b>	<0.5	<b>1.2</b>	<0.5	<5.0
	3/2/2006	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	6/1/2006	<50	<50	NA	<0.5	<0.5	<0.5	<0.5	<5.0
	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
	6/15/2007	<50	NA	<50	<0.5	<0.5	<0.5	<0.5	<5.0
MW-8	3/2/2006	<b>590<sup>e</sup></b>	<b>550<sup>f,g</sup></b>	NA	<b>6.2</b>	<b>2.7</b>	<b>0.67</b>	<b>21</b>	<5.0
	6/1/2006	<b>97<sup>k</sup></b>	<b>250<sup>f,j</sup></b>	NA	<0.5	<0.5	<0.5	<b>1.1</b>	<5.0
	9/28/2006	<b>150<sup>e</sup></b>	<b>300<sup>f,g,j</sup></b>	NA	<b>3</b>	<b>1.2</b>	<b>1.1</b>	<b>7.2</b>	<5.0
	3/20/2007	<b>140<sup>e</sup></b>	<b>440<sup>f,g</sup></b>	<b>61<sup>g</sup></b>	<b>1.2</b>	<b>0.68</b>	<b>0.55</b>	<b>2.5</b>	<5.0
	6/15/2007	<b>140<sup>e</sup></b>	NA	<b>98<sup>g</sup></b>	<b>1.6</b>	<b>0.81</b>	<b>0.76</b>	<b>2.8</b>	<5.0
MW-9	3/2/2006	<b>280<sup>e</sup></b>	<b>430<sup>f,g</sup></b>	NA	<b>2.6</b>	<b>0.96</b>	<b>1</b>	<b>10</b>	<5.0
	6/1/2006	<b>680<sup>k</sup></b>	<b>180<sup>f,j</sup></b>	NA	<b>0.85</b>	<0.5	<b>1.9</b>	<b>3.9</b>	<5.0
	9/28/2006	<b>150<sup>e</sup></b>	<b>530<sup>f,g,j</sup></b>	NA	<b>0.95</b>	<b>0.69</b>	<b>0.87</b>	<b>6.7</b>	<5.0
	3/20/2007	<b>120<sup>e</sup></b>	NA	<50	<b>0.88</b>	<b>0.70</b>	<0.5	<b>1.8</b>	<5.0
	6/15/2007	<b>120<sup>e</sup></b>	NA	<b>62<sup>g</sup></b>	<b>1.3</b>	<b>0.84</b>	<b>1.1</b>	<b>3</b>	<5.0

**Table II, Summary of Groundwater Sample Hydrocarbon Analytical Results**  
**BEI Job No. 202016, Dolan Rentals**  
**6393 Scarlett Court, Dublin, California**

Well ID	Sample Date	Modified EPA Method 8015 (µg/L)			EPA Method 8020 or 8021B (µg/L)				
		TPH as Gasoline	TPH as Diesel	TPH as Diesel with Silica Gel Cleanup	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
RWQCB ESLs; Table F-1a: Groundwater Screening Levels (groundwater IS a current or potential drinking water resource)		100	100	100	1	40	30	20	5

- 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  
 <x = 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.  
 l = 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**

Well ID	Sample Date	EPA Method 8260B (ug/L)								
		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)		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
	3/23/2005	<5.0	<50	<5.0	<b>5.4</b>	<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
MW-5	12/14/2004	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<0.5	<500	<b>12</b>
	3/2/2006	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<0.5	<500	<b>28*</b>
	6/1/2006	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<0.5	<500	<b>40*</b>
	9/28/2006	<0.5	<5.0	<0.5	<0.5	<0.5	<50	<0.5	<500	<b>48</b>
	3/20/2007	<1.0	<10	NA	NA	<1.0	NA	<1.0	NA	<b>57*</b>

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-butyl ether  
(µg/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

**Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results  
BEI Job No. 202016, Dolan Rentals  
6393 Scarlett Court, Dublin, California**

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissoved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (°C or °F)	Field pH 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
	6/15/2007	NS	NS	NS	NS	NS
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
	6/15/2007	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
	6/15/2007	0.22	82	0	20.0	7.3

**Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results  
BEI Job No. 202016, Dolan Rentals  
6393 Scarlett Court, Dublin, California**

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissoved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (°C or °F)	Field pH 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
	6/15/2007	0.18	-30	1.0	20.3	7.4
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
	6/15/2007	2.21	5.5	0	18.3	7.75
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
	6/15/2007	1.30	-51	0	20.5	7.7

**Table IV, Summary of Groundwater Intrinsic Bioremediation Field Results  
BEI Job No. 202016, Dolan Rentals  
6393 Scarlett Court, Dublin, California**

Well ID	Sample Date	Field Meter	Field Meter	Field Test Kit	Field Meter	Field Meter
		Dissoved Oxygen (mg/L)	Oxidation Reduction Potential (mV)	Ferrous Iron (Fe 2+)	Field Temperature (°C or °F)	Field pH 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
	6/15/2007	0.25	56	0	20.1	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
	6/15/2007	0.3	4	0	19.0	9.1
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
	6/15/2007	0.21	46	0	19.0	6.9

Notes: mV = Millivolts  
mg/L = Milligrams per liter  
oC = Degrees Centigrade  
2.6 / 2.2 = Initial reading (pre-purge) / Final reading (post-purge)  
NS = Not sampled  
\* = Post purge value



**Table V, Summary of Groundwater Intrinsic Bioremediation Analytical Results**  
**BEI Job No. 202016, Dolan Rentals**  
**6393 Scarlett Court, Dublin, California**

Well ID	Sample Date	Method SM 5310B	Method E300.1		Method RSK 174	Method E200.7		Method E365.1	Method SM 5210B	Method SM 5220D
		CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
		mg/L			µg/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 <sup>1</sup>	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
	6/15/2007	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
	6/15/2007	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**

Well ID	Sample Date	Method SM 5310B	Method E300.1		Method RSK 174	Method E200.7		Method E365.1	Method SM 5210B	Method SM 5220D
		CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
		mg/L			µg/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 <sup>1</sup>	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
	6/15/2007	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 <sup>1</sup>	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
	6/15/2007	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**

Well ID	Sample Date	Method SM 5310B	Method E300.1		Method RSK 174	Method E200.7		Method E365.1	Method SM 5210B	Method SM 5220D
		CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
		mg/L			µg/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 <sup>1</sup>	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
	6/15/2007	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 <sup>1</sup>	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
	6/15/2007	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**

Well ID	Sample Date	Method SM 5310B	Method E300.1		Method RSK 174	Method E200.7		Method E365.1	Method SM 5210B	Method SM 5220D
		CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
		mg/L			µg/L			mg/L		
MW-7	7/18/2005	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/2/2006	450	<0.7 <sup>1</sup>	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
	6/15/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS
MW-8	3/2/2006	9	13 <sup>1</sup>	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
	6/15/2007	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**

Well ID	Sample Date	Method SM 5310B	Method E300.1		Method RSK 174	Method E200.7		Method E365.1	Method SM 5210B	Method SM 5220D
		CO2	Nitrate (as N)	Sulfate	Methane	Manganese	Potassium	Total Phosphorous (as P)	BOD	COD
		mg/L			µg/L			mg/L		
MW-9	3/2/2006	8	11 <sup>1</sup>	890	19	<20	20,000	<0.04	<3.0	61
	6/1/2006	NS	NS	NS	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
	6/15/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS

Notes:

- SM = Standard Method
- mg/L = Milligrams per liter
- µg/L = Micrograms per liter
- CO<sub>2</sub> = Carbon Dioxide
- NS = Not sampled
- BOD = Biological Oxygen Demand
- COS = Chemical Oxygen Demand
- <sup>1</sup> = Total Nitrogen (Nitrate, Nitrite, & Ammonia)

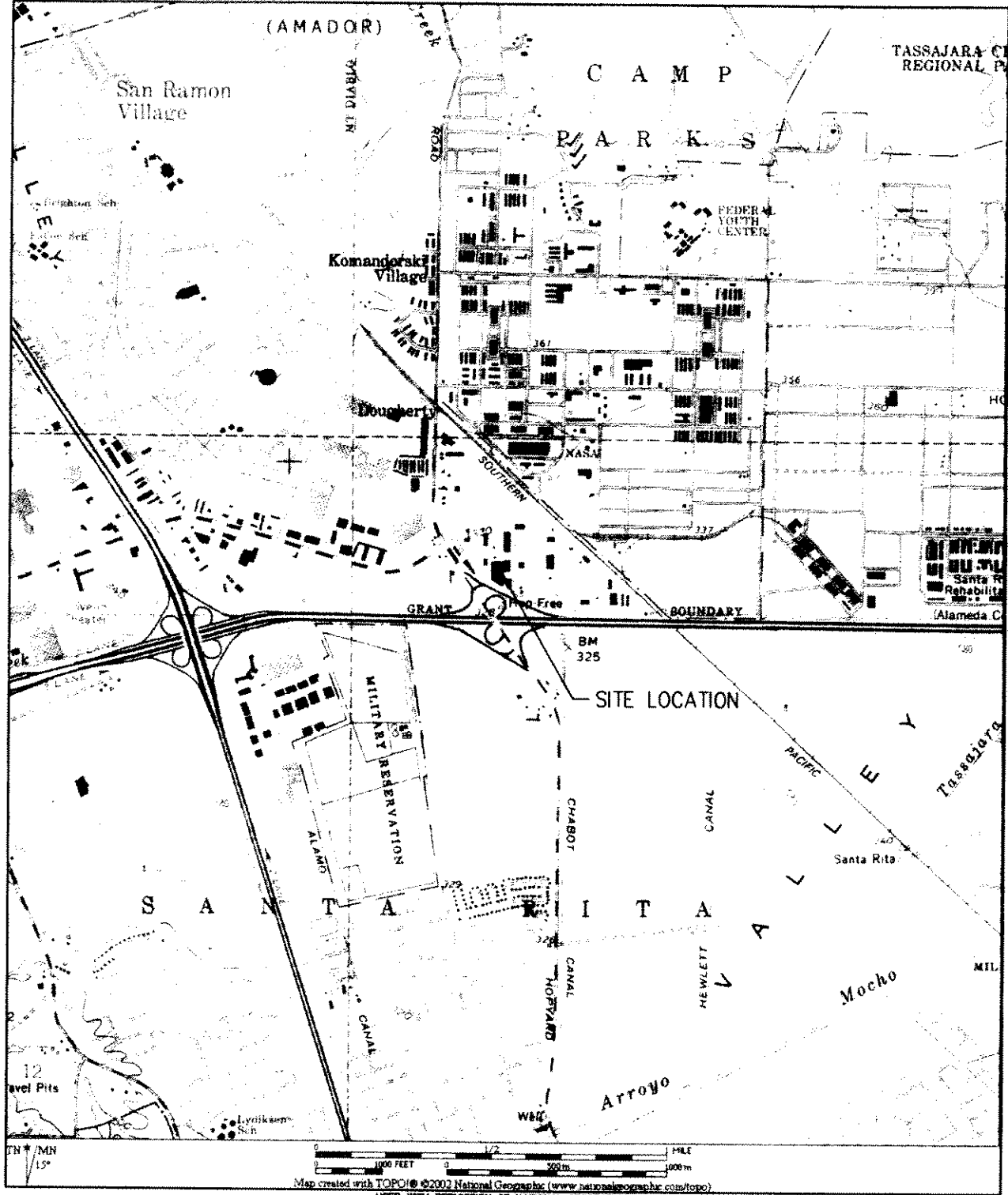
<b>Table VI, Summary of Groundwater Bacteria Enumeration Analytical Results BEI Job No. 202016, Dolan Rentals 6393 Scarlett Court, Dublin, California</b>				
Well ID	Sample Date	Aerobic Bacteria		
		Method 9215A (HPC) / SM 9215 B Modified		
		Hydrocarbon Degraders	Total Heterotrophs	Target Hydrocarbons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

## *Figures*

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BEI JOB NO. 202016	DATE 6-27-02

LEGEND

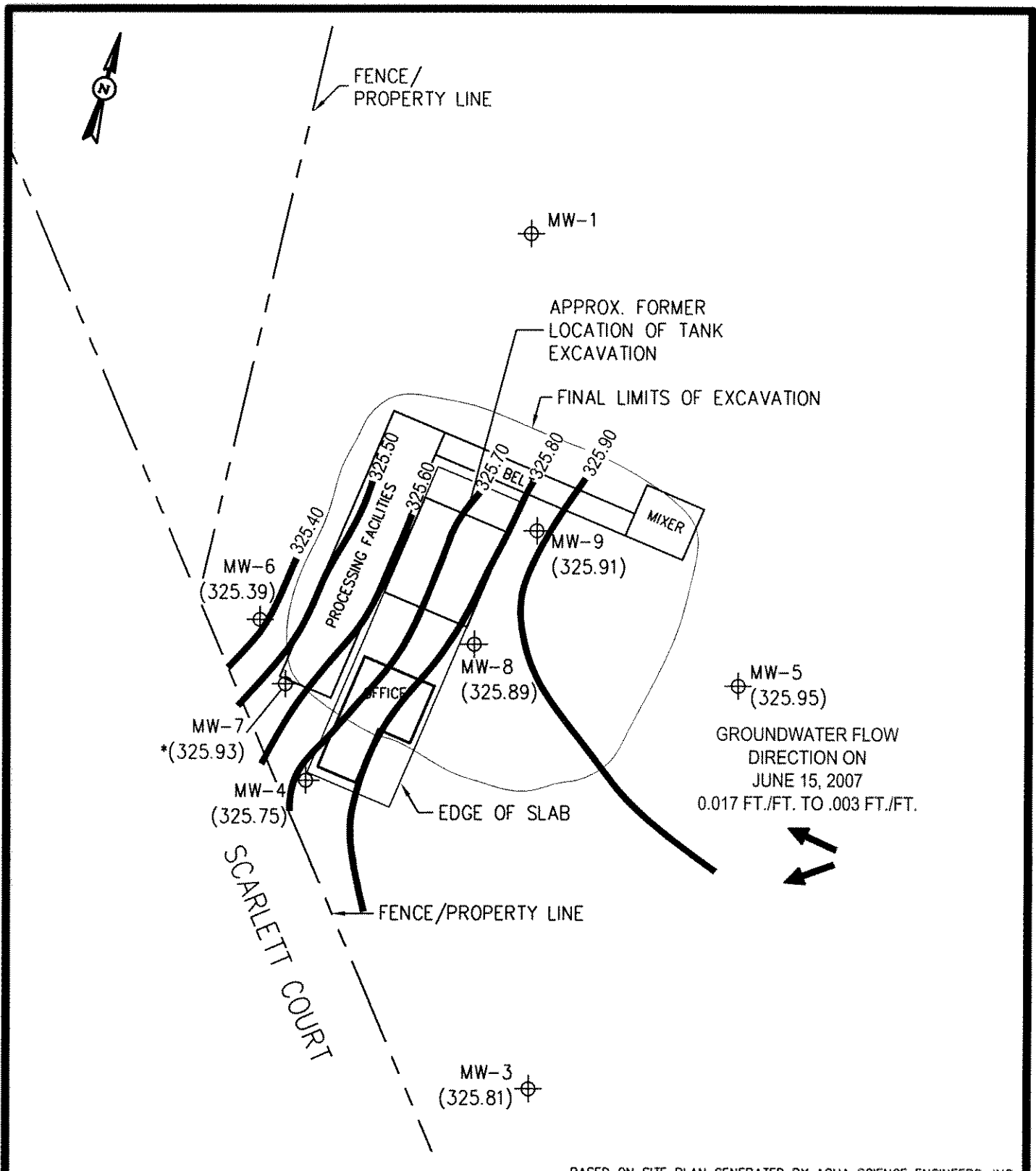
**SITE LOCATION MAP**

FORMER DOLAN RENTAL PROPERTY  
6393 SCARLETT COURT  
DUBLIN, CA

FIGURE  
1



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BASED ON SITE PLAN GENERATED BY AQUA SCIENCE ENGINEERS, INC.

0 20  
SCALE IN FEET

LEGEND	
	GROUNDWATER MONITORING WELL
(326.63)	GROUND WATER ELEVATION
(*)	WELL SET IN DEEPER WATER-BEARING ZONE, NOT USED IN GRADIENT CALCULATION
	GROUNDWATER ELEV. CONTOUR
	GROUNDWATER FLOW DIRECTION

SITE PLAN AND GROUNDWATER GRADIENT ON JUNE 15, 2007  
FORMER DOLAN RENTAL PROPERTY  
6393 SCARLETT COURT  
DUBLIN, CA

FIGURE  
**2**

BEI JOB NO. 202016	DATE 8-3-07
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*Appendix A*

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*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 HARMFUL 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.

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 HARMFUL 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.

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

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:

$$\text{Casing Volume} = (\text{TD} - \text{DTW}) \text{ VCF}$$

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.



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.
4. 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.
9. 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.
10. 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.

***Appendix B***

---

***Purge Drum Inventory Log, Wellhead Inspection Checklist, Well  
Gauging Data, and Repair Data Sheet***

**Blaine Tech Services, Inc.**

**Dated June 15, 2007**

## SPH or Purge Water Drum Log

Client: Bymyer @ Downs Rooms  
 Site Address: Dublin, CA

### STATUS OF DRUM(S) UPON ARRIVAL

	Date	4/9/07	6/15/07			
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:		8				
Total drum(s) on site:		9	0			
Are the drum(s) properly labeled?		Y				
Drum ID & Contents:		Purge water				
If any drum(s) are partially or totally filled, what is the first use date:		3/20/07				

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purge water or DI Water.

-If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.

-All BTS drums MUST be labeled appropriately.

### STATUS OF DRUM(S) UPON DEPARTURE

	Date	4/9/07	6/15/07			
Number of drums empty:						
Number of drum(s) 1/4 full:						
Number of drum(s) 1/2 full:		1	1			
Number of drum(s) 3/4 full:						
Number of drum(s) full:		8	1			
Total drum(s) on site:		9	2			
Are the drum(s) properly labeled?		Y	Y			
Drum ID & Contents:		Purge water	purge water			

### LOCATION OF DRUM(S)

Describe location of drum(s): East of MW-1 near trailer

### FINAL STATUS

Number of new drum(s) left on site this event		0	2			
Date of inspection:		4/9/07	6/15/07			
Drum(s) labelled properly:		Y	Y			
Logged by BTS Field Tech:		roy	xy			
Office reviewed by:		w	w			



# WELLHEAD INSPECTION CHECKLIST

Date 6/15/07 Client Blymyer  
 Site Address 8406393 Scarlett Ct  
 Job Number 070612-070615-S4 Technician SW

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	unable to locate							
MW-3	X							
MW-4	X							
MW-5	X							
MW-6	X							
MW-7	X							
MW-8	X							
MW-9	X							

NOTES: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## WELL GAUGING DATA

Project # 070615-54 Date 6/15/07 Client Blymyer

Site 6393 Scarlett Ct. Dublin

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes	
MW-1		Unable to locate									
MW-3	0706	2					4.88	17.85	↓		
MW-4	0806	2					4.35	18.25			
MW-5	0803	2					5.31	12.03			
MW-6	0755	2					4.16	8.93			
MW-7	0801	2					4.24	39.90			
MW-8	0759	4					4.62	21.02			
MW-9	0758	4					4.83	20.88			

## WELL MONITORING DATA SHEET

Project #: <b>070615-SL1</b>	Client: <b>Blaymyer</b>
Sampler: <b>SL</b>	Date: <b>6/15/07</b>
Well I.D.: <b>MW-1</b>	Well Diameter: 2 3 4 6 8 <u>    </u>
Total Well Depth (TD):	Depth to Water (DTW):
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Watterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other: _____
--	---	---

_____ (Gals.) X _____	= _____ Gals.	
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.77
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
						unable to locate well → spent 45 minutes looking, shoveling, conferring w/ foreman (Craig Schmitz) of construction company → unable to sample

Did well de-water? Yes No	Gallons actually evacuated: _____	
Sampling Date: _____	Sampling Time: _____	Depth to Water: _____
Sample I.D.: _____	Laboratory: Kiff CalScience Other _____	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____		
EB I.D. (if applicable): _____ @ _____ Time	Duplicate I.D. (if applicable): _____	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: _____		
D.O. (if req'd): Pre-purge: _____ mg/L	Post-purge: _____ mg/L	
O.R.P. (if req'd): Pre-purge: _____ mV	Post-purge: _____ mV	







## WELL MONITORING DATA SHEET

Project #: <u>070615-54</u>	Client: <u>Blaine Tech</u>
Sampler: <u>SL</u>	Date: <u>6/15/07</u>
Well I.D.: <u>MW-5</u>	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth (TD): <u>12.09</u>	Depth to Water (DTW): <u>5.31</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: <input checked="" type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Positive Air Displacement <input type="checkbox"/> Electric Submersible	Waterra <input type="checkbox"/> Peristaltic <input type="checkbox"/> Extraction Pump Other: _____	Sampling Method: <input checked="" type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port <input type="checkbox"/> Dedicated Tubing Other: _____
--	---	---

1.1 (Gals.) X <u>3</u> = <u>3.3</u> Gals. 1 Case Volume      Specified Volumes      Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F or °C)	pH	Cond (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0919	20.6	8.16	3434	71000	1.1	cloudy / Brown
0921	19.3	7.77	3601	71000	2.2	
0927	18.3	7.15	3565	71000	3.3	
post-purge parameters are @ 8' logs post-purge test → 700 mV						

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>3.3</u>
Sampling Date: <u>6/15/07</u> Sampling Time: <u>0927</u> Depth to Water: <u>7.40</u>	
Sample I.D.: <u>MW-5</u> Laboratory: Kiff CalScience Other: <u>McCampbell</u>	
Analyzed for: TPH-G <u>BTEX</u> <u>MTBE</u> <u>TPH-D</u> Oxygenates (5) Other:	
EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:	
D.O. (if req'd): Pre-purge: _____ mg/L Post-purge: <u>2.21</u> mg/L	
O.R.P. (if req'd): Pre-purge: _____ mV Post-purge: <u>55</u> mV	







## WELL MONITORING DATA SHEET

Project #: 070615-SL1	Client: <u>Ely Meyer</u>
Sampler: <u>SL</u>	Date: <u>6/15/07</u>
Well I.D.: <u>MW-9</u>	Well Diameter: 2 3 <u>(4)</u> 6 8 _____
Total Well Depth (TD): <u>20.88</u>	Depth to Water (DTW): <u>4.83</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>8.04</u>	

Purge Method: Bailer Disposable Bailer Positive Air Displacement -- Electric Submersible	Waterra Peristaltic Extraction Pump Other _____	Sampling Method: Bailer -- Disposable Bailer Extraction Port Dedicated Tubing Other: _____
---	--	--

$\underline{10.4} \text{ (Gals.)} \times \underline{3} = \underline{31.2} \text{ Gals.}$ I Case Volume                      Specified Volumes                      Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0829	20.4	6.66	3131	>1000	10.4	Grey
0831	19.3	6.61	2955	>1000	20.8	↓
0833	19.0	6.91	2927	896	31.2	
post-purge parameters taken @ 10' logs post-purge Fe <sup>2+</sup> → 0.0 mg/L						

Did well dewater? Yes  No  Gallons actually evacuated: 31.2

Sampling Date: 6/15/07 Sampling Time: 0840 Depth to Water: 5.03

Sample I.D.: MW-9 Laboratory: Kiff CalScience Other: McGinnell

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

EB I.D. (if applicable): @ \_\_\_\_\_ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	
			<u>0.21</u> mg/L
			<u>46</u> mV

*Appendix C*

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**Analytical Laboratory Report  
McC Campbell Analytical, Inc.  
Dated June 21, 2007**



**McC Campbell Analytical, Inc.**

"When Quality Counts"

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

Blymyer Engineers, Inc.  1829 Clement Avenue  Alameda, CA 94501-1395	Client Project ID: Dolan Rentals	Date Sampled: 06/15/07
		Date Received: 06/15/07
	Client Contact: Mark Detterman	Date Reported: 06/21/07
	Client P.O.:	Date Completed: 06/21/07

**WorkOrder: 0706435**

June 21, 2007

Dear Mark:

Enclosed are:

- 1). the results of **7** 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. McC Campbell 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



Beia 0706435

# BLAINE

TECH SERVICES, INC.

1680 ROGERS AVENUE  
 SAN JOSE, CALIFORNIA 95112-1105  
 FAX (408) 573-7771  
 PHONE (408) 573-0555

CONDUCT ANALYSIS TO DETECT

LAB McCCampbell DHS # \_\_\_\_\_  
 ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND  
 EPA  RWQCB REGION \_\_\_\_\_  
 LIA  
 OTHER

CHAIN OF CUSTODY  
 BTS # 070619-911  
 CLIENT Blymyer Engineers, Inc.  
 SITE Dolan Rentals  
6393 Scarlett Ct.  
Dublin, CA

C = COMPOSITE ALL CONTAINERS

TPH-G (8015M)	BTEX & MTBE (8021B)	TPH-D w/Silica gel clean up (8015M)									
---------------	---------------------	-------------------------------------	--	--	--	--	--	--	--	--	--

SPECIAL INSTRUCTIONS  
 Invoice and Report to : Blymyer Engineers, Inc.  
 Attn: Mark Detterman  
 EDF Format Required.  
 mdetterman@blymyer.com 510.521.3773 office

SAMPLE I.D.	DATE	TIME	MATRIX S=SOIL W=H <sub>2</sub> O	CONTAINERS TOTAL	TPH-G (8015M)	BTEX & MTBE (8021B)	TPH-D w/Silica gel clean up (8015M)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
<del>MW-1</del>	<del>6/15/07</del>		<del>W</del>	<del>4</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>ICE/° 5.8°</del>			
MW-3	6/15/07	1000	W	4	X	X	X				
MW-4	6/15/07	1145	W	4	X	X	X				
MW-5	6/15/07	0927	W	4	X	X	X				
MW-6	6/15/07	1035	W	4	X	X	X				
MW-7	6/15/07	1120	W	4	X	X	X				
MW-8	6/15/07	0905	W	4	X	X	X				
MW-9	6/15/07	0840	W	4	X	X	X				

GOOD CONDITION   
 HEAD SPACE ABSENT   
 DECHLORINATED IN LAB   
 PRESERVED IN LAB   
 PRESERVATION:  VOAS  O&G  METALS  OTHER

SAMPLING COMPLETED DATE 6/15/07 TIME 1230 SAMPLING PERFORMED BY S. Lane / T. Vega RESULTS NEEDED NO LATER THAN As contracted

RELEASED BY S. Lane DATE 6/15/07 TIME 1315 RECEIVED BY Franklyn (cost) DATE 6/15/07 TIME 1315

RELEASED BY [Signature] DATE 6/15/07 TIME 1545 RECEIVED BY Deak Carl DATE 6/15 TIME 15:45

RELEASED BY Deak Carl DATE 6/15 TIME 1805 RECEIVED BY Yue Vall DATE 6/15/07 TIME

SHIPPED VIA DATE SENT TIME SENT COOLER #

# McC Campbell Analytical, Inc.



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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 0706435

ClientID: BEIA

EDF     Excel     Fax     Email     HardCopy     ThirdParty

Report to:

Mark Detterman  
Blymyer Engineers, Inc.  
1829 Clement Avenue  
Alameda, CA 94501-1395

Email: MDetterman@blymyer.com  
TEL: (510) 521-377    FAX: (510) 865-259  
ProjectNo: Dolan Rentals  
PO:

Bill to:

Accounts Payable  
Blymyer Engineers, Inc.  
1829 Clement Avenue  
Alameda, CA 94501-1395

Requested TAT: 5 days

Date Received 06/15/2007

Date Printed: 06/18/2007

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0706435-001	MW-3	Water	6/15/07 10:00:00	<input type="checkbox"/>	A	A	B										
0706435-002	MW-4	Water	6/15/07 11:45:00	<input type="checkbox"/>	A		B										
0706435-003	MW-5	Water	6/15/07 9:27:00	<input type="checkbox"/>	A		B										
0706435-004	MW-6	Water	6/15/07 10:35:00	<input type="checkbox"/>	A		B										
0706435-005	MW-7	Water	6/15/07 11:20:00	<input type="checkbox"/>	A		B										
0706435-006	MW-8	Water	6/15/07 9:05:00	<input type="checkbox"/>	A		B										
0706435-007	MW-9	Water	6/15/07 8:40:00	<input type="checkbox"/>	A		B										

Test Legend:

1	G-MBTX_W	2	PREDF REPORT	3	TPH(DMO)WSG_W	4		5	
6		7		8		9		10	
11		12							

Prepared by: Melissa Valles

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.



**Sample Receipt Checklist**

Client Name: **Blymyer Engineers, Inc.**

Date and Time Received: **6/15/07 6:53:40 PM**

Project Name: **Dolan Rentals**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **0706435** Matrix Water

Carrier: Derik Cartan (MAI Courier)

**Chain of Custody (COC) Information**

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

**Sample Receipt Information**

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

**Sample Preservation and Hold Time (HT) Information**

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: 5.8°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA

-----

Client contacted:

Date contacted:

Contacted by:

Comments:



# McC Campbell Analytical, Inc.

"When Quality Counts"

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

Blymyer Engineers, Inc.  1829 Clement Avenue  Alameda, CA 94501-1395	Client Project ID: Dolan Rentals	Date Sampled: 06/15/07
		Date Received: 06/15/07
	Client Contact: Mark Detterman	Date Extracted: 06/18/07-06/20/07
	Client P.O.:	Date Analyzed 06/18/07-06/20/07

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

Extraction method SW5030B

Analytical methods SW8021B/8015Cm

Work Order: 0706435

Lab ID	Client ID	Matrix	TPH(g)	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	DF	% SS
001A	MW-3	W	ND	ND	ND	ND	ND	ND	1	99
002A	MW-4	W	440,a,m	ND	2.1	7.8	ND	ND	1	103
003A	MW-5	W	ND	38	ND	ND	ND	ND	1	102
004A	MW-6	W	ND	ND	ND	ND	ND	ND	1	115
005A	MW-7	W	ND	ND	ND	ND	ND	ND	1	95
006A	MW-8	W	140,a	ND	1.6	0.81	0.76	2.8	1	103
007A	MW-9	W	120,a	ND	1.3	0.84	1.1	3.0	1	104

Reporting Limit for DF =1; ND means not detected at or above the reporting limit	W	50	5.0	0.5	0.5	0.5	0.5	1	µg/L
	S	NA	NA	NA	NA	NA	NA	1	mg/Kg

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

# cluttered chromatogram; sample peak coelutes with surrogate peak.

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





### QC SUMMARY REPORT FOR SW8021B/8015Cm

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder 0706435

EPA Method SW8021B/8015Cm	Extraction SW5030B			BatchID: 28772					Spiked Sample ID: 0706435-005A			
	Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)		
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(btex)£	ND	60	96.1	98.2	2.16	128	100	24.1	70 - 130	30	70 - 130	30
MTBE	ND	10	109	111	1.96	108	96.3	11.4	70 - 130	30	70 - 130	30
Benzene	ND	10	92.2	91.2	1.17	104	97.6	6.00	70 - 130	30	70 - 130	30
Toluene	ND	10	86.5	86.2	0.349	92.9	90.5	2.56	70 - 130	30	70 - 130	30
Ethylbenzene	ND	10	94.7	96.3	1.68	117	99.5	16.0	70 - 130	30	70 - 130	30
Xylenes	ND	30	96.7	96.7	0	99.4	95.7	3.74	70 - 130	30	70 - 130	30
%SS:	95	10	96	94	2.45	109	102	6.64	70 - 130	30	70 - 130	30

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

#### BATCH 28772 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0706435-001A	06/15/07 10:00 AM	06/20/07	06/20/07 1:34 PM	0706435-002A	06/15/07 11:45 AM	06/18/07	06/18/07 10:14 PM
0706435-003A	06/15/07 9:27 AM	06/20/07	06/20/07 12:16 AM	0706435-004A	06/15/07 10:35 AM	06/20/07	06/20/07 1:15 AM
0706435-005A	06/15/07 11:20 AM	06/18/07	06/18/07 10:48 PM	0706435-006A	06/15/07 9:05 AM	06/18/07	06/18/07 11:21 PM
0706435-007A	06/15/07 8:40 AM	06/18/07	06/18/07 11:54 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: 0706435

EPA Method SW8015C		Extraction SW3510C/3630C				BatchID: 28765			Spiked Sample ID: N/A			
Analyte	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
TPH(d)	N/A	1000	N/A	N/A	N/A	118	109	8.45	N/A	N/A	70 - 130	30
%SS:	N/A	2500	N/A	N/A	N/A	79	84	6.17	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 28765 SUMMARY

Sample ID	Date Sampled	Date Extracted	Date Analyzed	Sample ID	Date Sampled	Date Extracted	Date Analyzed
0706435-001B	06/15/07 10:00 AM	06/15/07	06/17/07 8:44 AM	0706435-002B	06/15/07 11:45 AM	06/15/07	06/17/07 9:53 AM
0706435-003B	06/15/07 9:27 AM	06/15/07	06/17/07 11:01 AM	0706435-004B	06/15/07 10:35 AM	06/15/07	06/20/07 4:36 AM
0706435-005B	06/15/07 11:20 AM	06/15/07	06/17/07 9:53 AM	0706435-006B	06/15/07 9:05 AM	06/15/07	06/17/07 11:01 AM
0706435-007B	06/15/07 8:40 AM	06/15/07	06/20/07 5:42 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.