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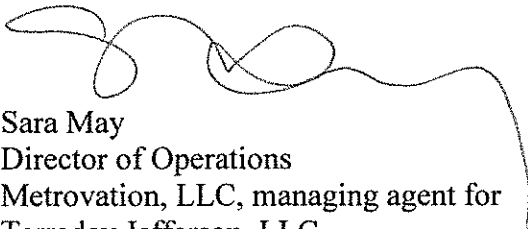
Ms. Anne Jurek
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
Environmental Health Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: Terradev Jefferson LLC Property
645 Fourth Street, Oakland, CA 94607
Fuel Leak Case No. RO0003001
Blue Rock Project No. ASE-1

Dear Ms. Jurek,

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

Sincerely,



Sara May
Director of Operations
Metrovation, LLC, managing agent for
Terradev Jefferson, LLC

Attachment:

*Blue Rock Environmental, Inc.'s Site Assessment Complete Report & Case Closure Request
(May 20, 2016).*



Ms. Anne Jurek
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
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1131 Harbor Bay Parkway, Suite 250
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**Re: Site Assessment Complete Report &
Case Closure Request**

Terradev Jefferson LLC Property
645 4th Street, Oakland, CA 94607
Fuel Leak Case No. RO0003001
Blue Rock Project No. ASE-1

Dear Ms. Jurek,

This report, prepared by Blue Rock Environmental, Inc. (Blue Rock) on behalf of Terradev Jefferson, LLC, presents the results of additional soil and groundwater sampling activities to define the extent of the remaining gasoline plume associated with the subject site (Figure 1). These activities were previously approved by the Alameda County Environmental Health Services (ACEHS). The report concludes with a summary of site history, a comparison of site conditions to Low Threat Underground Storage Tank Case Closure Policy (LTCP) criteria, and a recommendation for regulatory case closure.

Additional Soil and Groundwater Plume Delineation

Blue Rock performed additional upgradient and downgradient soil and groundwater investigation activities to define the extent of the gasoline impact remaining in the subsurface.

Field and Laboratory Activities

On April 20, 2016, Blue Rock supervised Gregg Drilling and Testing, Inc., a C-57 licensed contractor, in the drilling and sampling of three soil borings along the northeast side of 3rd Street to define the downgradient plume extent (SB-9, SB-10, and SB-11) and two borings on the Bay Area Rapid Transit (BART) property to define the upgradient plume extent (SB-12 and SB-13) (Figure 2).

Prior to fieldwork, Blue Rock obtained a right-of-entry agreement from BART and an excavation and street obstruction permit from the City of Oakland. Soil boring permits were obtained from the Alameda County Public Works Agency. The drilling locations were marked in white paint and Underground Service Alert was notified to identify utilities proximal to the proposed drilling locations. Blue Rock also prepared a site specific Health and Safety Plan.

Drilling and sampling was completed using direct-push drilling methods. At each drilling location, drill-rod, approximately 2.5-inches in diameter, was used to advance each boring several feet into the water table (i.e. approximately 13 to 15 feet below ground surface [ft bgs]). Soil types were logged in accordance with the Unified Soil Classification System. No obvious signs of petroleum impact (i.e. visual staining or odors) were observed in any of the borings. Two soil samples were collected from each boring at the approximate depth of the capillary fringe and water table, which ranged from 9 to 14 ft bgs, based on observations at each drilling location. The sample tubes were covered with Teflon lined plastic end caps, labeled, documented on a chain-of-custody form, and placed on ice in an insulated cooler for transport to the laboratory.

Following advancement of borings SB-9, SB-10, and SB-11 to the desired depth, a new SCH40 PVC well screen was placed in each boring to help facilitate collection of a water sample. At the location of borings SB-12 and SB-13, a hydro-punch type tool was driven several feet into the water table to facilitate collection of a water sample. A new disposable polyethylene bailer was used to collect a groundwater samples from each boring. The hydro-punch tool driven in SB-13 never accumulated water, therefore, no sample was collected from that location. Water samples were transferred to laboratory supplied containers, labeled, documented on a chain-of-custody form, and placed on ice in an insulated cooler for transport to the project laboratory.

Pace Analytical, California DHS-certified laboratory, analyzed the soil and groundwater samples for concentrations of:

- TPHd by EPA Method 8015M with silica-gel clean-up
- TPHg by EPA Method 8260B
- BTEX by EPA Method 8260B
- MTBE and TBA by EPA Method 8260B
- 1,2-DCA and EDB by EPA Method 8260B
- Naphthalene by EPA Method 8260B

Upon completion of sampling, all boreholes were backfilled to the surface with cement and finished at the surface to match existing conditions. Drill-rod and sampling devices were decontaminated in an Alconox® wash followed by double rinse in clean tap water to prevent cross-contamination. Investigation derived waste was stored in labeled 55-gallon drums on-site pending removal and disposal.

Hydrogeologic Conditions Observed

The soil types logged in borings SB-8 through SB-13 were similar to those observed in previous borings associated with the site. A light-brown silty sand was observed in all borings to the total depth explored, which ranged from 13 to 15 ft bgs. The depth to first encountered groundwater in the borings ranged from approximately 11.5 to 14 ft bgs. Groundwater flow in the area of the site, as previously measured at the nearby Allen Property, is southerly, towards the Oakland Inner Harbor.

Soil Sample Analytical Results

The following section summarizes soil analytical results for this event from SB-9 through SB-13:

- TPHd concentration 9.5[^] mg/kg (SB-9-13) to 20.0[^] mg/kg (SB-10-13)
- TPHg concentration <0.982 mg/kg (SB-10-13) to <0.998 mg/kg (several samples)
- Benzene concentration: <0.0049 (SB-12-12) to <0.0050 mg/kg (all other samples)
- MTBE concentration: <0.0049 (SB-12-12) to <0.0050 mg/kg (all other samples)
- 1,2-DCA concentration: <0.0049 (SB-12-12) to <0.0050 mg/kg (all other samples)

Note: ^ indicates that laboratory notes that hydrocarbons are higher-boiling than typical Diesel fuel.

Soil sample laboratory data are summarized in Table 2, and the laboratory report and chain-of-custody form are attached.

Groundwater Sample Analytical Results

The following section summarizes groundwater analytical results for SB-9 through SB-12:

- TPHd concentration: <48 µg/L (SB-9) to <50 µg/L (SB-12)
- TPHg concentration: <50 µg/L (SB-9 & 10) to 182 µg/L (SB-11)
- Benzene concentration: <0.50 µg/L (SB-9, 10, 11) to 0.58 µg/L (SB-12)
- MTBE concentration: <0.50 µg/L (SB-9 & 10) to 81.5 µg/L (SB-11)
- 1,2-DCA concentration: <0.50 µg/L (all samples)

Groundwater sample laboratory data are summarized in Table 3, and the laboratory report and chain-of-custody form are attached.

Summary of Site History and Conditions

Site Description and UST Discovery / Decommissioning

The site is located southeast of the intersection of 4th Street and MLK Jr. Way in Oakland, California (Figures 1 and 2). The site consists of a single story commercial building, bounded closely on the sides and back by other commercial buildings. One single-walled steel underground storage tank (UST) was discovered beneath the sidewalk immediately adjacent to the front of the building during renovation in 2006 (Figure 2).

Phase I Environmental Site Assessments completed in support of the purchase (1999) and for refinancing (2006) indicated that no sign of a UST was observed during associated site inspections. The Phase I author also interviewed persons knowledgeable with the property from the 1950s until the time of the Phase I, and the interviewees could recollect no UST being used during the period of their familiarity.

A review of Sanborn Fire Insurance Maps revealed no evidence of subject site use that would potentially require a UST, and as such it is difficult to discern precisely when the tank was installed or operated. Based on the Phase I interviews, it is assumed the tank was installed and last used prior to the 1950s. State and local regulations require the proper abandonment of tanks that are no longer used to store or dispense fuels, thus the tank abandonment work was performed after its discovery in 2006.

According to Golden Gate Tank Removal, Inc. (Golden Gate), after consultation with the City of Oakland, it was determined that building structural considerations prohibited physical tank removal and that in-place abandonment was the appropriate means to close the subject UST. Therefore, Golden Gate abandoned the UST in-place by triple washing followed by filling it to capacity with concrete slurry on September 5, 2006. Abandonment was performed with the permission and under the oversight of the City of Oakland Fire Prevention Bureau. Details of this event are presented in Golden Gate's *Tank Closure Report* dated September 21, 2006.

Golden Gate reported that the UST contained gasoline with an approximate holding capacity of 1,000-gallons, measuring approximately 10 feet in length and 4 feet in diameter. The bottom of the UST was estimated to be located 7.5 to 8 ft bgs. The fill port was reported to be located at the west end of the tank.

At the direction of the Oakland Fire Department, two holes were cored in the bottom of the cleaned tank prior to its abandonment to enable the collection of samples of underlying material. Golden Gate reported that the soil beneath the tank was wet, but that groundwater was not encountered. Soil samples were collected at a depth of 9 ft bgs. The samples were analyzed for concentrations of total petroleum hydrocarbons as diesel (TPHd), gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (BTEX), and the five fuel oxygenates (MTBE, TBA, ETBE, DIPE, and TAME). Results of analysis indicated the presence of residual fuel hydrocarbons in both samples, with concentrations higher in the sample collected from the western end of the tank. This sample contained TPHg at 10,000 mg/kg and benzene at 130 mg/kg.

Geophysical Survey for Other Potential Tanks

In August 2014, Blue Rock supervised Norcal Geophysical Consultants, Inc. (Norcal) in performance of the geophysical survey of the sidewalk area around the subject UST to evaluate the presence of other potential UST(s). The area investigated was approximately 90 feet long by 17 feet wide encompassing the location of the subject UST. Techniques employed consisted of electromagnetic survey and ground penetrating radar. No anomalous survey results suggestive of additional USTs were found in the search area. The results of that work were presented in Blue Rock's *Report for Geophysical Survey and Additional Site Characterization Workplan* dated September 18, 2014.

Summary of Investigation Activities

Subsurface investigation began in 2009. A total of 15 soil borings have been drilled (B-1 through B-6, CB-1, CB-2, SB-7 through SB-13) and nine passive sample modules deployed (S-1 through S-9). Additionally, three extraction wells (DPE-1 through DPE-3) and five sub-slab soil vapor points (VP-1 through VP-5) have been installed at the site (Figure 2). Indoor air samples have been collected twice from the interior spaces associated with 645 4th Street, 380 MLK Jr way, and 638 3rd Street, along with ambient outdoor air samples. A summary of well construction details is included in Table 1, and summaries of soil, groundwater, passive sample module analytical data, sub-slab soil vapor, and indoor/outdoor air samples are included in Tables 2, 3, 4, 5, and 6, respectively.

Physiography and Hydrogeology

The subject site is located in a commercial/industrial neighborhood along the San Francisco Bay-Margin. The site is set at an elevation of approximately 16 feet above mean sea level (ft msl) and local topography dips gently in a southerly direction toward the Oakland Inner Harbor, which is located approximately 1,250 feet from the subject UST (Figure 1).

The site is underlain predominantly by varying gradations of sand. The upper six feet generally consists of a brown sand (SP-SM), which has been interpreted as fill material. Native soil underlying the fill consists of a gray and yellow-brown sandy clay (CL) unit from approximately 6 – 7 ft bgs and a mottled red-brown and gray clayey sand (SC) from approximately 7 – 14 ft bgs, a brown sand (SP) from approximately 14 – 16 ft bgs, and gray clayey sand (SC) from approximately 16 – 20 ft bgs, the maximum depth explored.

Groundwater is present in unconfined conditions at a depth of approximately 9 ft bgs. Based on data from the nearby Allen Property, groundwater flows in a southerly direction towards the Oakland Inner Harbor, with calculated flow direction from individual monitoring events ranging from south-southwesterly, southerly, to south-southeasterly.

Groundwater beneath this area of Oakland is not presently used for beneficial purposes (consumption or irrigation). Additionally, it is reasonable to assume that the shallowest water-bearing zone in the vicinity of the subject site will plausibly not be used for beneficial consumption for the indeterminate future, if ever (in terms of City habitation). The residual hydrocarbons in groundwater do not, therefore, pose a threat to human health via consumption. Drinking water is supplied to the site vicinity by East Bay Municipal Utility District (EBMUD).

Constituents of Potential Concern

Gasoline range hydrocarbons are present in soil and groundwater proximal to the abandoned UST. Specific compounds, and constituents of potential concern (COPCs), that have been detected in soil or groundwater at the source area include: TPHd, TPHg, BTEX, MTBE, TBA, 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), and naphthalene.

The addition of MTBE to gasoline began as early as 1979, and its use became ubiquitous in California by March 1996 to meet Clean Air Act standards at that time. However, its use in California was banned as of January 1, 2004. Although it is uncertain when the subject UST was removed from service, it is not expected to have been in service during MTBE's lifespan as a gasoline additive in California.

Nearby Leaking UST Sites and Other Potential Petroleum Sources

The "Grove Auto Repair" (Global ID T06000101350) case is located upgradient of the subject site at the southeast corner of 5th Street and MLK Jr. Way (Figure 2). Sanborn maps indicate that property was used as a gasoline station from at least the early 1950s. ACEHS file documents indicate that five USTs (two 4,000-gallon, two 6,000-gallon, and one 550-gallon capacities) were removed in 1983. In 1988, approximately 1,000 cubic yards of soil were excavated from the former UST area and disposed off-site. The Grove Auto Repair case received regulatory closure in 1993. It is notable the area of the former southern dispenser island does not appear to have been investigated, nor was the southerly extent of dissolved-phase fuel hydrocarbons detected in former well MW-3 ever delineated in the direction of the subject site. Recently acquired data from borings SB-12 and SB-13 define the separation of remaining petroleum impacts from Grove Auto Repair and the subject site.

The "Allen Property" case (Global ID T0600108713) is located at the southwest corner of 4th Street and MLK Jr. Way. The Allen Property UST (10,000-gallon capacity) was abandoned in-place in 1993 (Figure 2). The site received regulatory case closure in 2014. The lateral extent of the Allen Property dissolved-phase fuel plume was delineated in the direction of the subject site by Allen well MW-2.

A database records search map also shows an "Oil/Gas" pipeline running down the west side of MLK Jr. Way; however, the specific product conveyed in the pipeline is unknown.

Secondary Source Removal

Amicus Environmental evaluated investigative and remedial options available at the site in their September 13, 2009 correspondence. It was noted that corrective actions would be necessarily constrained by the location of the abandoned UST relative to existing development - i.e. conventional soil and groundwater assessment proximally downgradient is prohibited, inadequate space to build a traditional fixed in-situ remediation system, and remedial excavation would undermine the existing building. Yet the persistence of elevated concentrations of gasoline range hydrocarbons in the subsurface merited remedial action. As a result, the use of mobile high-vacuum extraction (HVDPE) equipment was recommended as an aggressive approach to reduce the remaining gasoline mass in the vicinity of the UST for which details were proposed in the *Removal Action Workplan* dated February 3, 2010, which was conditionally approved by the ACEHS in a letter dated February 19, 2010.

First High-Vacuum Dual-Phase Extraction Event (September-October 2010)

An initial mobile HVDPE remedial event was performed at the site from September 28 to October 3, 2010 (5 days). The event was completed using a truck-mounted unit consisting of a 25-horsepower oil sealed liquid-ring pump capable of producing 29 "Hg vacuum, and a thermal oxidizer capable of treating an air flow of approximately 450 ACFM. Wells DPE-1, DPE-2, and DPE-3 were used as extraction wells. A stinger hose was lowered into each well through a vacuum tight cap and placed approximately one foot off the bottom of each well. Depth to water at the beginning of the event was approximately 9.5 ft bgs in all three wells. At the beginning of the event, influent TPHg levels at individual wells ranged from 1,700 ppmv to 3,530 ppmv; however, they dropped to less 1,000 ppmv by the end of the event. The total average hydrocarbon mass recovered was **174 lbs** (based on 122 lbs calculated from field PID data and 225 lbs calculated from lab data), which equates to an average removal rate of nearly 35 lbs/day.

Second High-Vacuum Dual-Phase Extraction Event (July 2012)

A second mobile HVDPE remedial event was performed at the site from July 9 to 24, 2012 (15 days). The event was completed using a truck-mounted unit consisting of a 25-horsepower oil sealed liquid-ring pump capable of producing 29 "Hg vacuum, and a thermal oxidizer capable of treating an air flow of approximately 450 ACFM. Wells DPE-1 and DPE-2 were used as primary extraction wells, as they proved to be the most productive. A stinger hose was lowered into each well through a vacuum tight cap and placed approximately one foot off the bottom of each well. Depth to water at the beginning of the event was approximately 9 ft bgs, and the no free-product was observed in any of the wells. At the start of event, the total influent TPHg level was 1,200 ppmv and declined to 430 ppmv by the end. The ending mass removal rate was estimated to be approximately 11 lbs/day. Blue Rock estimated the total average hydrocarbon mass recovered was approximately **249 lbs** (based on 199 lbs calculated from field PID data and 298 lbs calculated from lab data). The HVDPE unit provider (CalClean) estimated the total average hydrocarbon mass recovered was approximately **166 lbs** (based on 130 lbs calculated from field PID data and 191 lbs calculated from lab data). The difference between the mass removal estimates appears to be due to the fact that Blue Rock used flowrates from the manufacturer's blower curve based on the measured vacuum and Calclean used flowrates measured in the field with an inline flowmeter.

Cumulative Secondary Source Removal Efforts

A total hydrocarbon mass of approximately **340 to 423 lbs** has been removed by both the 2010 and 2012 events. At the beginning of the 2010 event, total inlet concentrations were 1,660 ppmv resulting in an extraction rate of approximately 90 lbs/day. By the end of the 2012 event, total inlet concentrations had declined to 430 ppmv and the extraction was approximately 10 lbs/day. Based on these data, it appears the use mobile HVDPE has reached its effective limit and the mass appears to have been removed to the extent practicable. Additional use of mobile HVDPE may not be cost effective.

Free-Product Occurrence and Removal

Free-product was measured once in DPE-3 at a thickness of 0.13-feet in January 2011. However, following the second HVDPE event, no measurable thicknesses of free product have been observed in any of the wells.

Evaluation of Secondary Source Removal / Reduction

As presented in Blue Rock's March 11, 2013 report, a comparison of pre- and post-remedial soil quality proximal to the abandoned UST was intended to serve as a proxy for removal / reduction of the secondary source mass. The results of confirmation soil sampling are shown below.

<i>West Side of UST</i>			
Sample ID	Pre-remedial TPHg (mg/kg)	Post-Remedial TPHg (mg/kg)	CB-1 Sample ID
DPE-1-7.5'	6,500	<1.0	CB-1-7.5'
EX-W-9'	10,000	1,200	CB-1-9'
DPE-1-12'	2,300	14,000	CB-1-12'
DPE-1-15'	770	1,000	CB-1-15'

<i>East Side of UST</i>			
Sample ID	Pre-remedial TPHg (mg/kg)	Post-Remedial TPHg (mg/kg)	CB-2 Sample ID
DPE-2-6'	1.2	No sample	
EX-E-9'	920	840	CB-2-9'
DPE-2-11'	160,000	2,700	CB-2-11'
DPE-2-15'	430	380	CB-2-15'

TPHg concentrations in the upper 11 feet of soil were lower compared to pre-remedial levels, while concentrations at a depth of 12 feet and below were similar to, or higher, than pre-remedial levels. The reduction in concentrations in the upper 11 feet is expected based on historical depth to water and temporary local dewatering during the HVDPE events. Static depth to water is approximately 9 ft bgs and the intake hoses were placed at a depth of approximately 14 ft bgs in DPE-3 and 14 ft bgs in DPE-1 / DPE-2 during HVDPE extraction (i.e. one foot off the bottom of the well casing). The combined effect of the naturally occurring vadose zone and depressed water levels in each extraction well likely facilitated better vapor flow, and therefore mass removal, in the upper 11 feet of the soil column relative to soil deeper in the saturated zone. These results are indicative of secondary source reduction primarily in the upper 11 feet of the soil column.

Evaluation of Preferential Pathways for Plume Migration

As requested in the ACEHS letter of April 22, 2015, Blue Rock researched the locations and depths of subsurface utilities in the area of closed UST and 4th Street that may serve as preferential pathways of plume migration.

The locations of utilities proximal to the closed UST were previously identified by subsurface investigation work and survey for potential nearby USTs (discussed above). The utilities mapped below the sidewalk adjacent to 645 4th Street are all located within the upper 5 feet based on the limitations of the geophysical survey equipment used. Utility burial depth within the upper 5 feet is typical for lateral or service utility lines below sidewalks. The depth to groundwater is approximately 9 ft bgs and the shallowest significant soil impact in the area of the closed tank is deeper than 5 ft bgs, therefore the utility conduits below the sidewalk do not appear to serve as preferential pathways for plume migration.

Several utility lines run below 4th Street and its northern sidewalk, which include water, electrical, high pressure natural gas, communication, and sanitary sewer lines. Due to the fact that the petroleum affected soil and groundwater interval in the area of SB-7 and SB-8 is greater than 5 ft bgs and that depth to groundwater is approximately 9 ft bgs, shallow-buried utilities, which typically consist of electrical, communication, natural gas, and water lines, were presumed to be located above the interval of impact. A sanitary sewer main line runs below the center of 4th Street, with flow direction indicated as west-northwesterly to toward MLK Jr. Way. At each manhole, an apparent invert elevation is provided in nomenclature an example of which is “FL. 5.85”, where FL appears to mean “flow line” or “flow level” followed by an elevation in feet. The approximate surface elevation of the 4th Street is 16 ft msl and the apparent flow line elevations of the sanitary pipe are 5.85 feet, between MLK Jr. Way and Jefferson Street, falling west-northwesterly to -0.48 feet, at the intersection of MLK Jr. Way and 4th Street. These invert elevations suggest that the sewer main depth along 4th Street may range from approximately 10 to 15 ft bgs. Brief internet research suggests that a depth of 10 ft bgs is common for sanitary sewer main lines. Although the sanitary sewer line in 4th Street may intersect the depth interval the petroleum affected soil and groundwater encountered in the area of SB-7 and SB-8 appears to attenuate in the direction of the sewer, which is located upgradient of the source area, and, therefore, is not considered to be significantly threatened by residual petroleum impact.

Extent of Remaining Gasoline Impact to Subsurface

Gasoline range hydrocarbons remain in soil and groundwater in the area, and downgradient, of the subject UST. The maximum gasoline concentrations in soil and groundwater have been documented immediately below the closed UST. For example, the maximum remaining TPHg concentration in soil following HVDPE was 14,000 mg/kg in CB-1 at a depth of 12 ft bgs. Similarly, the maximum remaining gasoline concentrations in groundwater following HVDPE have been observed in well DPE-2, where TPHg and benzene were most recently detected at concentrations of 100,000 µg/L and 17,000 µg/L, respectively. The remaining dissolved-phase plume of COPCs is approximately 270 feet in length trending south-southwesterly toward the Oakland Inner Harbor, which is located approximately 1,000 feet from the plume exceeding WQOs. The lateral extent of groundwater impact has been defined to the southeast of the subject UST by grab groundwater samples from borings B-3, B-4, and B-5, to the south and southwest by borings SB-9, SB-10, and SB-11, to the northwest by Allen Property well MW-2, and to the north by boring SB-12 (Figure 3).

Evaluation of Petroleum Vapor Intrusion to Indoor Air

Indoor air samples have been collected twice (December 2015 and March 2016) from the interior spaces associated with 645 4th Street, 380 MLK Jr Way, and 635 3rd Street due to earlier detections of CPOCs in sub-slab vapor samples from VP-4 and VP-5 in concentrations that indicated a potential for intrusion of petroleum vapors into indoor air above applicable screening levels (Figure 3).

The December 2015 indoor air samples from 645 4th Street, 380 MLK Jr Way contained trace concentrations of TPHg and BTEX, and the indoor air sample from 638 3rd Street contained a trace concentration of benzene. Low levels of benzene were also detected in the coeval outdoor air samples (Table 6). Due to the similarity between the analytical results, the concentrations of CPOCs detected in indoor air during that event can be attributed to subterranean contamination or “fresh” air introduced by the HVAC system, or a combination of both.

The March 2016 indoor air samples from 645 4th Street, 380 MLK Jr Way, and 638 3rd only contained trace concentrations of benzene, as did the coeval outdoor air samples (Table 6). Due to the fact that the indoor and outdoor air samples contained only benzene at similar concentrations, the benzene detected in indoor air during that event appears to be primarily attributable to “fresh” air introduced by the HVAC system.

The outdoor air quality (i.e. benzene) by itself exceeds, or nearly exceeds, the indoor air screening levels, and the cumulative risk and hazard indices for outdoor air quality are similar to those for indoor air quality. These measurements are not considered unusual in an urban setting proximal to a busy Interstate highway.

The DTSC Guidance Document indicates at least two sampling events should be performed before a risk determination is made. Two indoor air sampling events have now been completed. The results for indoor and outdoor air are similar, and the resulting risk and hazard indices are nearly the same. The presence of benzene, the primary constituent presenting risk, in outdoor air will likely continue to be exhibited in indoor air at similar concentrations until ambient air quality improves for the area of site. Based on these data and observations, additional monitoring of indoor air does not appear to be warranted as part of the vapor intrusion evaluation because the indoor air inhalation exposure risk associated with subterranean contamination appears to be relatively minimal compared to the risk posed by ambient air quality in this area of Oakland.

Comparison of Site Conditions to Low Threat UST Case Closure Criteria

The State Water Resources Control Board adopted the *Low-Threat Underground Storage Tank Case Closure Policy* on May 1, 2012, which became effective August 17, 2012. The intent of this policy is to increase UST clean-up process efficiency. A benefit of improved efficiency is the preservation of limited resources for mitigation of releases posing a greater threat to human and environmental health. Sites that meet general and media-specific criteria described in the policy do not pose a threat to human health, safety, or the environment and are appropriate for UST case closure pursuant to Health and Safety Code section 25296.10. The draft policy further states that sites that do not meet the stated criteria should be issued a closure letter if the site has been determined to be low-threat based on site-specific analysis. The General Criteria and Media-Specific Criteria are further examined in the following sections. Please note that italicized text are criteria list in the policy and normal text are discussion of site conditions.

General Criteria

- a. *The unauthorized release is located within the service area of a public water system.* **Satisfied:** The site is located within the EBMUD service area.
- b. *The unauthorized release consists only of petroleum.* **Satisfied:** The unauthorized release and constituents detected in the source area consist of gasoline compounds.
- c. *The unauthorized (“primary”) release from the UST system has been stopped.* **Satisfied:** The subject UST system was decommissioned in-place in September 2006.
- d. *Free product has been removed to the maximum extent practicable.* **Satisfied:** Free-product was measured once in DPE-3 at a thickness of 0.13-feet in January 2011. However, following the second HVDPE event, no measurable thicknesses of free product have been observed in any of the wells.
- e. *A conceptual site model that assesses the nature, extent, and mobility of the release has been developed.* **Satisfied:** Understanding of the conceptual site model (CSM) has necessarily evolved through the course of investigation and key elements that adequately describe the CSM are provided in the Site Summary section above.
- f. *Secondary source has been removed to the extent practicable.* **Satisfied:** The secondary source was removed to the extent practicable by the use of mobile HVDPE technology in two events in 2010 and 2012. A total hydrocarbon mass of approximately **340 to 423 lbs** has been removed by both the 2010 and 2012 events. By the end of the 2012 event, total inlet concentrations had declined to 430 ppmv and the extraction was approximately 10 lbs/day. Based on these data, it appears the use mobile HVDPE has reached its effective limit and the mass appears to have been removed to the extent practicable.
- g. *Soil or groundwater has been tested for methyl tert-butyl ether (MTBE) and results reported in accordance with Health and Safety Code section 25296.15.* **Satisfied:** Soil and groundwater samples collected since the beginning of the project have been tested for MTBE, and the results of testing have been made available and reported to the regulatory agencies, as per California Health and Safety Code 25296.15.
- h. *Nuisance as defined by Water Code section 13050 does not exist at the site.* **Satisfied:** "Nuisance" means anything which meets all of the following requirements: (1)Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2)Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3)Occurs during, or as a result of, the treatment or disposal of wastes. The site does not appear pose a nuisance as described above.

Media-Specific Criteria

Releases from USTs can impact human health and the environment through contact with any or all of the following contaminated media: groundwater, surface water, soil, and soil vapor. Although this contact can occur through ingestion, dermal contact, or inhalation of the various media, the most common drivers of health risk are ingestion of groundwater from drinking water wells, inhalation of vapors accumulated in buildings, contact with near surface contaminated soil, and inhalation of vapors in the outdoor environment. To simplify implementation, these media and pathways have been evaluated and the most common exposure scenarios have been combined into three media-specific criteria:

1. Groundwater

This policy describes criteria on which to base a determination that threats to existing and anticipated beneficial uses of groundwater have been mitigated or are de minimis, including cases that have not affected groundwater.

State Water Board Resolution 92-49, Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304 is a state policy for water quality control and applies to petroleum UST cases. Resolution 92-49 directs that water affected by an unauthorized release attain either background water quality or the best water quality that is reasonable if background water quality cannot be restored. Any alternative level of water quality less stringent than background must be consistent with the maximum benefit to the people of the state, not unreasonably affect current and anticipated beneficial use of affected water, and not result in water quality less than that prescribed in the water quality control plan for the basin within which the site is located. Resolution No. 92-49 does not require that the requisite level of water quality be met at the time of case closure; it specifies compliance with cleanup goals and objectives within a reasonable time frame.

Water quality control plans (Basin Plans) generally establish “background” water quality as a restorative endpoint. This policy recognizes the regulatory authority of the Basin Plans but underscores the flexibility contained in Resolution 92-49.

It is a fundamental tenet of this low-threat closure policy that if the closure criteria described in this policy are satisfied at a petroleum unauthorized release site, attaining background water quality is not feasible, establishing an alternate level of water quality not to exceed that prescribed in the applicable Basin Plan is appropriate, and that water quality objectives will be attained through natural attenuation within a reasonable time, prior to the expected need for use of any affected groundwater.

If groundwater with a designated beneficial use is affected by an unauthorized release, to satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional

characteristics of one of the five classes of sites listed below. A plume that is “stable or decreasing” is a contaminant mass that has expanded to its maximum extent: the distance from the release where attenuation exceeds migration.

Groundwater-Specific Criteria

- (1) a. The contaminant plume that exceeds water quality objectives is less than 100 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 250 feet from the defined plume boundary.*
- (2) a. The contaminant plume that exceeds water quality objectives is less than 250 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
d. The dissolved concentration of benzene is less than 3,000 micrograms per liter ($\mu\text{g/l}$), and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/l}$.*
- (3) a. The contaminant plume that exceeds water quality objectives is less than 250 feet in length.
b. Free product has been removed to the maximum extent practicable, may still be present below the site where the release originated, but does not extend off-site.
c. The plume has been stable or decreasing for a minimum of five years.
d. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
e. The property owner is willing to accept a land use restriction if the regulatory agency require a land use restriction as a condition of closure.*
- (4) a. The contaminant plume that exceeds water quality objectives is less than 1,000 feet in length.
b. There is no free product.
c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.
d. The dissolved concentration of benzene is less than 1,000 $\mu\text{g/l}$, and the dissolved concentration of MTBE is less than 1,000 $\mu\text{g/l}$.*
- (5) a. The regulatory agency determines, based on an analysis of site specific conditions, that under current and reasonably anticipated near-term future scenarios, the contaminant plume poses a low threat to human health and safety and to the environment and water quality objectives will be achieved within a reasonable time frame.*

The remaining plume appears to be stable and/or decreasing in-place. The plume exceeding WQOs is estimated to be approximately 275 feet long (Figure 3). The maximum remaining concentrations of benzene and MTBE are 17,000 $\mu\text{g/L}$ and 5,100 $\mu\text{g/L}$, respectively. There is no remaining free-product. The nearest surface water body, the Oakland Inner Harbor, is located approximately 1,000 from the plume boundary. Blue Rock believes that site conditions match Option 5 above, and respectfully requests the ACEHS to make such a determination.

2. Petroleum Vapor Intrusion to Indoor Air

Exposure to petroleum vapors migrating from soil or groundwater to indoor air may pose unacceptable human health risks. This policy describes conditions, including bioattenuation zones, which if met will assure that exposure to petroleum vapors in indoor air will not pose unacceptable health risks. In many petroleum release cases, potential human exposures to vapors are mitigated by bioattenuation processes as vapors migrate toward the ground surface. For the purposes of this section, the term “bioattenuation zone” means an area of soil with conditions that support biodegradation of petroleum hydrocarbon vapors.

The low-threat vapor-intrusion criteria described below apply to sites where the release originated and impacted or potentially impacted adjacent parcels when: (1) existing buildings are occupied or may be reasonably expected to be occupied in the future, or (2) buildings for human occupancy are reasonably expected to be constructed in the future. Appendices 1 through 4 (attached) illustrate four potential exposure scenarios and describe characteristics and criteria associated with each scenario. Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air and be considered low-threat for the vapor-intrusion-to-indoor-air pathway if:

- a. Site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, or all of the characteristics and criteria of scenario 4 as applicable; or*
- b. A site-specific risk assessment for the vapor intrusion pathway is conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency; or*
- c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health.*

Exception: Exposures to petroleum vapors associated with historical fuel system releases are comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. Therefore, satisfaction of the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.

In December 2015 and March 2016 indoor air samples were collected from the interior spaces associated with 645 4th Street, 380 MLK Jr Way, and 635 3rd Street, and ambient outdoor air samples were collected simultaneously. Trace concentrations of select gasoline constituents were detected in samples collected from 645 4th Street and 380 MLK Jr Way during the December 2015 event, and benzene was detected in all indoor and outdoor air samples collected during both the December 2015 and March 2016 events. The presence of benzene in outdoor air is not unexpected given the proximity of the busy vehicular thoroughfare of Interstate 880 within a block of the site. The results for indoor and outdoor air are similar, and the resulting risk and hazard indices are nearly the same. The presence of benzene, the primary constituent presenting risk, in outdoor air will likely continue to be exhibited in indoor air at similar concentrations until ambient air quality improves for the area of site. Based on these data and observations, additional monitoring of indoor air does not appear to be warranted as part of the vapor intrusion evaluation because the indoor air inhalation exposure risk associated with subterranean contamination appears to be relatively minimal compared to the risk posed by ambient air quality in this area of Oakland. The indoor air study data appear to satisfy the LTCP Petroleum Vapor Intrusion to Indoor Air criterion Option B, where “a site-specific risk assessment for the vapor intrusion pathway is conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency”, and Blue Rock respectfully requests the ACEHS to make such a determination.

3. Direct Contact and Outdoor Air Exposure

This policy describes conditions where direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air poses a low threat to human health. Release sites where human exposure may occur satisfy the media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if they meet any of the following:

a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs). The concentration limits for 0 to 5 feet bgs protect from ingestion of soil, dermal contact with soil, and inhalation of volatile soil emissions and inhalation of particulate emissions. The 5 to 10 feet bgs concentration limits protect from inhalation of volatile soil emissions. Both the 0 to 5 feet bgs concentration limits and the 5 to 10 feet bgs concentration limits for the appropriate site classification (Residential or Commercial/Industrial) shall be satisfied. In addition, if exposure to construction workers or utility trench workers are reasonably anticipated, the concentration limits for Utility Worker shall also be satisfied; or

b. Maximum concentrations of petroleum constituents in soil are less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health; or

c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.

Table 1
Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health

Chemical	Residential		Commercial / Industrial		Utility Worker
	0 to 5 ft bgs mg/kg	Volatilization to outdoor air (5 to 10 ft bgs) mg/kg	0 to 5 ft bgs mg/kg	Volatilization to outdoor air (5 to 10 ft bgs) mg/kg	0 to 10 ft bgs mg/kg
Benzene	1.9	2.8	8.2	12	14
Ethylbenzene	21	32	89	134	314
Naphthalene	9.7	9.7	45	45	219
PAH ¹	0.63	NA	0.68	NA	4.5

Notes:

1. Based on the seven carcinogenic poly-aromatic hydrocarbons (PAHs) as benzo(a)pyrene toxicity equivalent [BaPe]. Sampling and analysis for PAH is only necessary where soil is affected by either waste oil or Bunker C fuel.
2. The area of impacted soil where a particular exposure occurs is 25 by 25 meters (approximately 82 by 82 feet) or less.
3. NA = not applicable
4. mg/kg = milligrams per kilogram

The site is set in an area of commercial use, therefore, the Commercial / Industrial screening values were used. For soil samples collected outside of the building footprint, the maximum remaining ethylbenzene and naphthalene concentrations were below the applicable screening limits in SB-7 and SB-8. Benzene was present at a concentration of 30 mg/kg in boring SB-8-8.5-9 ft bgs, which slightly exceeds the screening level of 12 mg/kg. There is no data for the upper five feet in drilling locations outside of the building footprint; however, the depth of impact in these locations appears to have spread laterally along the capillary fringe and water table (i.e. approximately 9 ft bgs). Therefore, the paucity of data in the upper five feet is not considered a significant impediment in order to achieve this criterion. PAHs are not applicable because neither waste oil nor Bunker C fuel were chemicals of concern at the site. Site conditions appear to generally meet the LTCP Table 1 for Commercial/Industrial use and Utility Worker.

Recommendations

Blue Rock recommends regulatory case closure.

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- AEI Consultant, 2013, *Site Status Update and Case Closure Request*, Allen Property, 325 Martin Luther King Jr. Way, Oakland, November 5
- Amicus Strategic Environmental Consulting, 2009, letter regarding Terradev Jefferson, LLC Property, 645 Fourth Street, Oakland, March 4.
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- Blue Rock, 2010, *Removal Action Workplan*, 645 Fourth Street, Oakland, California, February 3.
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- Blue Rock, 2012, *Sub-Slab Soil Vapor Sampling Workplan and Project Schedule*, 645 Fourth Street, Oakland, California, April 23.
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- Blue Rock, 2013, *Confirmation Soil and Groundwater Sampling Report & Low Threat UST Case Closure Policy Evaluation*, 645 Fourth Street, Oakland, California, March 11.
- Blue Rock, 2014, *Additional Site Characterization Report*, 645 Fourth Street, Oakland, California, May 29.
- Blue Rock, 2014, *Report for Geophysical Survey and Additional Site Characterization Workplan*, 645 Fourth Street, Oakland, California, September 18.
- Blue Rock, 2015, *Additional Site Characterization Report*, 645 4th Street, Oakland, California, March 27.
- Blue Rock, 2015, *Workplan for Additional Site Characterization, Sub-Slab Vapor Sampling, and Indoor Air Sampling*, 645 4th Street, Oakland, California, June 15.
- Blue Rock, 2015, *Sub-Slab Vapor Point Installation and Sampling Report*, 645 4th Street, Oakland, California, November 6.
- Blue Rock, 2016, *Indoor Air Study – Initial Report of Finding*, 645 4th Street, Oakland, California, January 4.
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- Clayton Environmental Consultants, 1993, *UST Closure Report*, 424 Martin Luther King Jr. Way, Oakland, California, April 30.
- Golden Gate Tank Removal, Inc. 2006, *Tank Closure Report*, 645 Fourth Street, Oakland, California, September 21.
- Ninyo & Moore, 2009, *Limited Phase II Environmental Site Assessment*, 645 Fourth Street, Oakland, California, July 24.
- San Francisco Bay RWQCB. 2016. *Users Guide: Derivation and Application of Environmental Screening Level (ESLs)*.

Certification

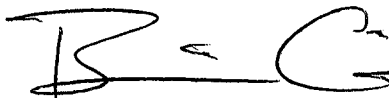
This report was prepared under the supervision of a California Professional Geologist at Blue Rock. All statements, conclusions, and recommendations are based upon published results from past consultants, field observations by Blue Rock, and analyses performed by a state-certified laboratory as they relate to the time, location, and depth of points sampled by Blue Rock. Interpretation of data, including spatial distribution and temporal trends, are based on commonly used geologic and scientific principles. It is possible that interpretations, conclusions, and recommendations presented in this report may change, as additional data become available and/or regulations change.

Information and interpretation presented herein are for the sole use of the client and regulating agency. The information and interpretation contained in this document should not be relied upon by a third party.

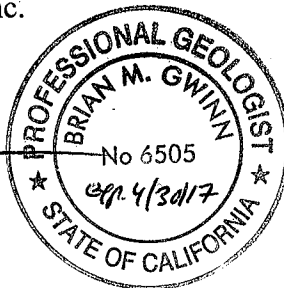
The service performed by Blue Rock has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

If you have any questions regarding this project, please contact us at (650) 522-9292.

Sincerely,
Blue Rock Environmental, Inc.



Brian Gwinn, PG
Principal Geologist



Attachments:

Figure 1: Site Location Map

Figure 2: Site Plan

Figure 3: Benzene in Groundwater

Figure 4: Air Sample Map

Table 1: Well Construction Data

Table 2: Soil Sample Analytical Data

Table 3: Groundwater Analytical Data

Table 4: Sub-Slab Vapor Sample Analytical Data

Table 5: Passive Soil Gas Sample Analytical Data

Table 6: Air Sample Analytical Data

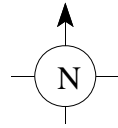
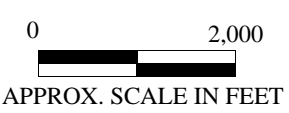
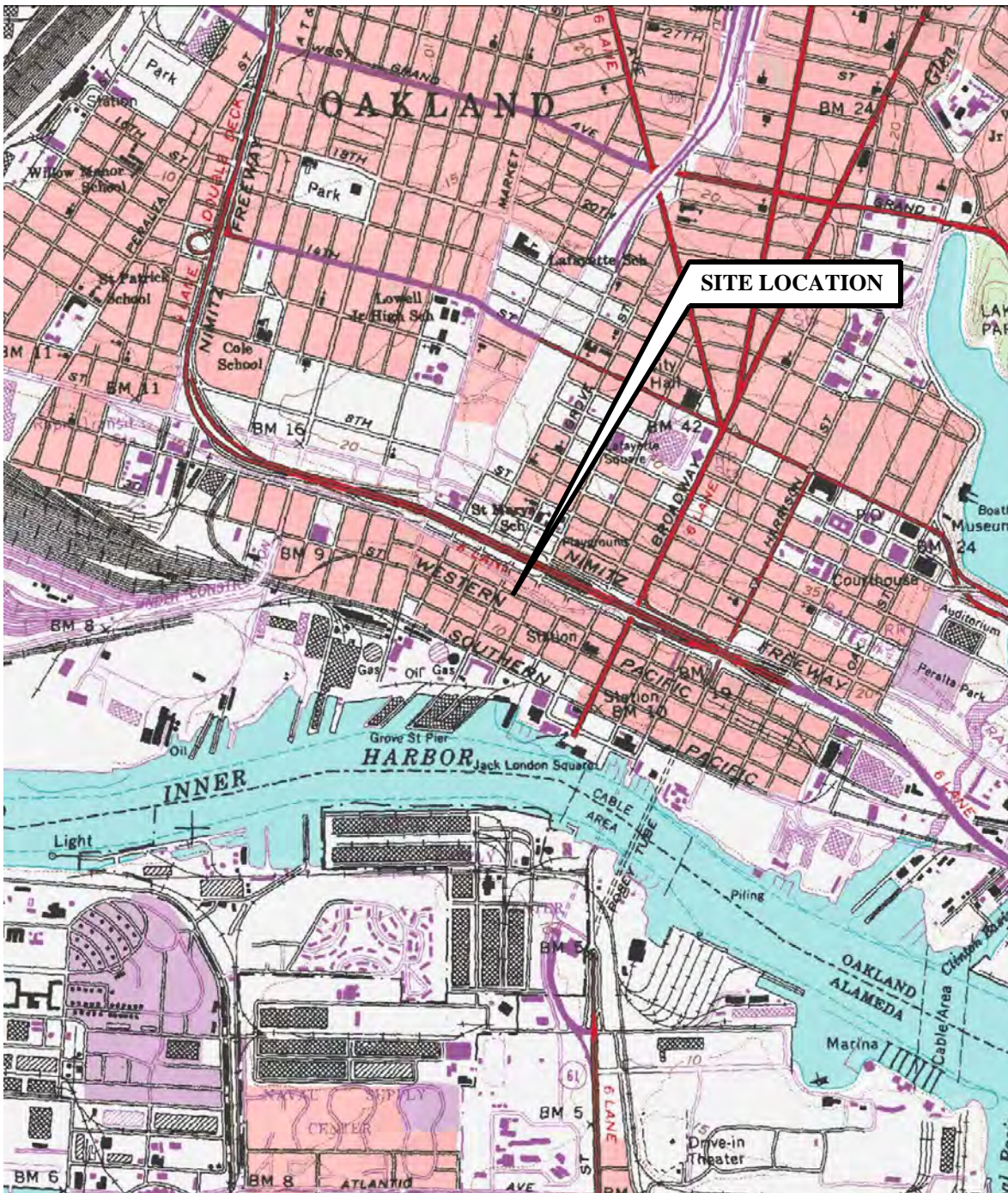
Boring Logs: Borings SB-9, SB-10, SB-11, SB-12, and SB-13

Laboratory Report and Chain-of-Custody Form (Soil Samples)

Laboratory Report and Chain-of-Custody Form (Groundwater Samples)

Distribution:

Ms. Sara May, Metrovation, 580 Second St. Suite 260, Oakland, CA 94607

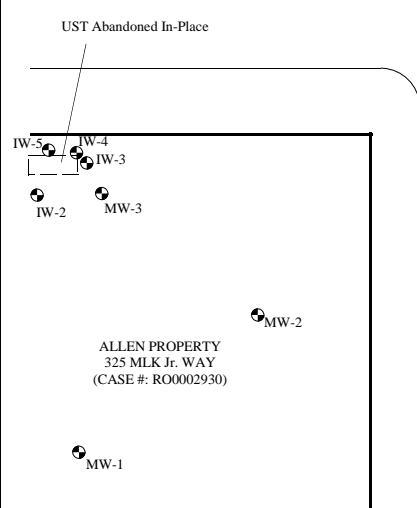
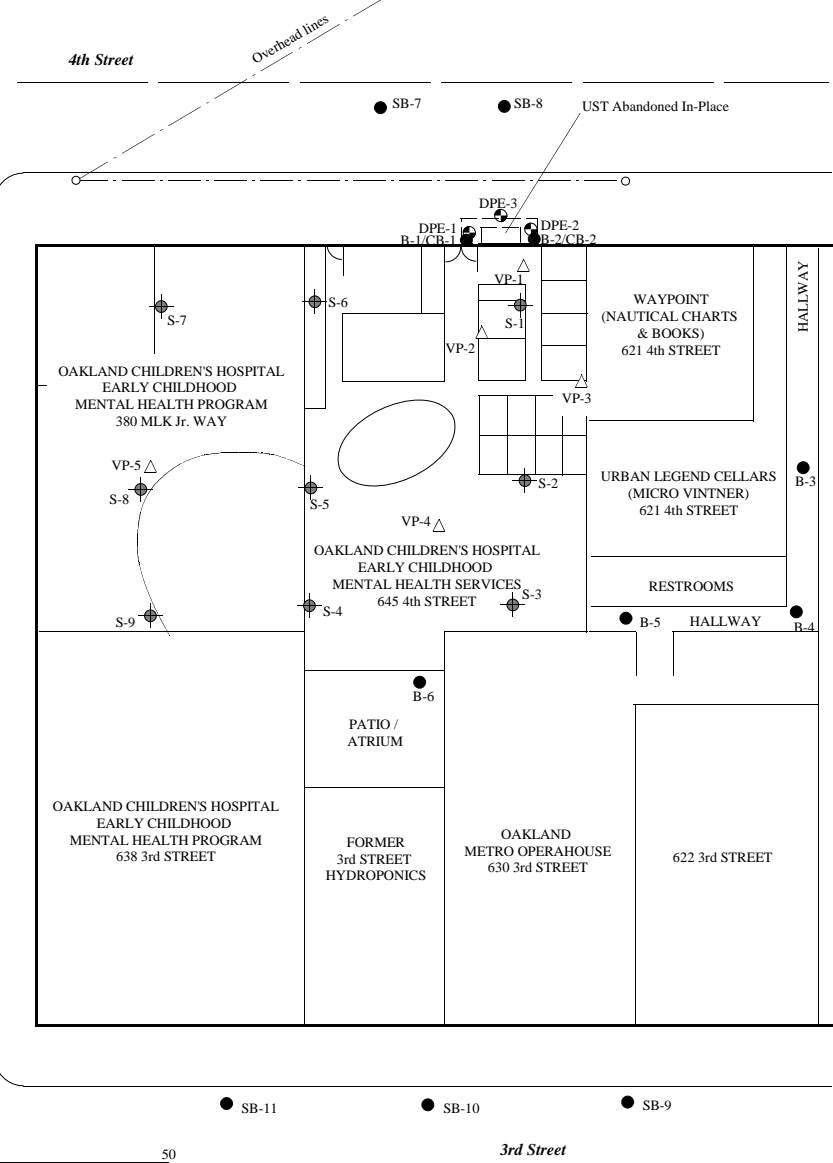
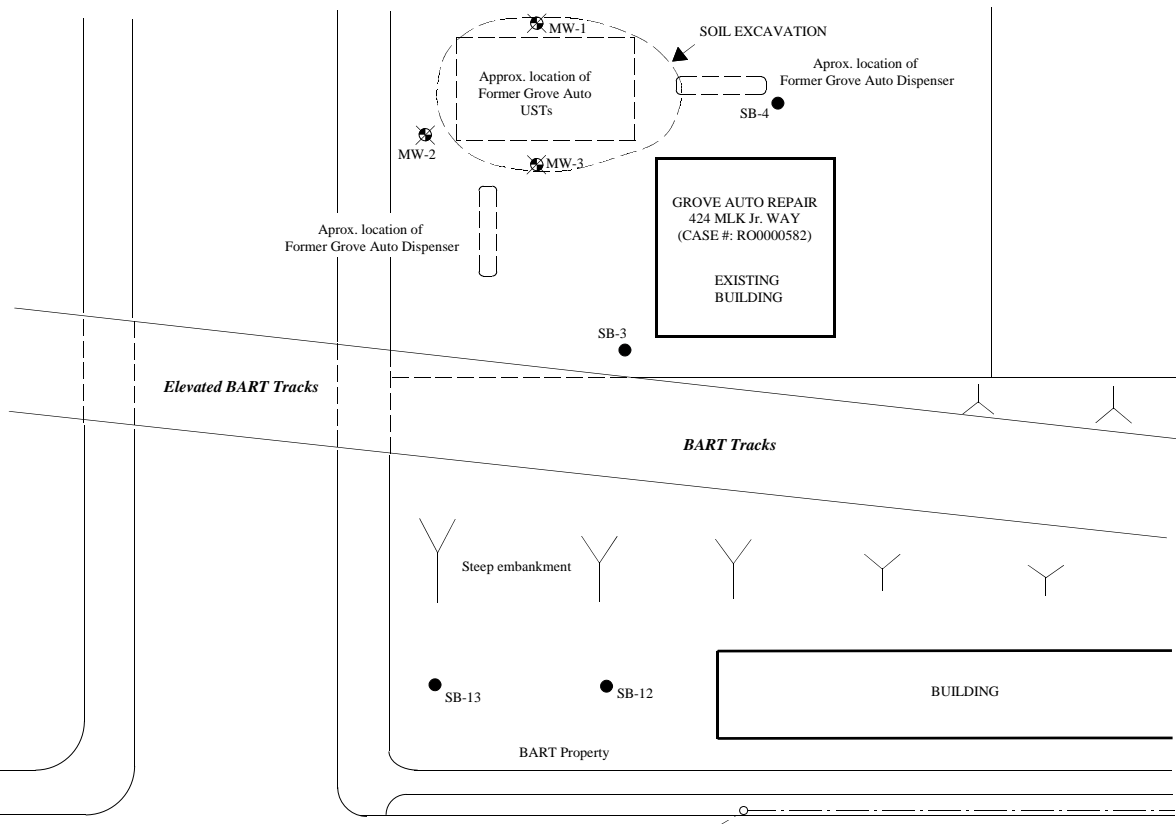


SOURCE: MyTopo.com

SITE LOCATION MAP
 Terradev Jefferson LLC Property
 645 Fourth St.
 Oakland, CA

 **BLUE ROCK**
 ENVIRONMENTAL, INC.

Project No. ASE-1	Figure Date 10/10	Figure 1
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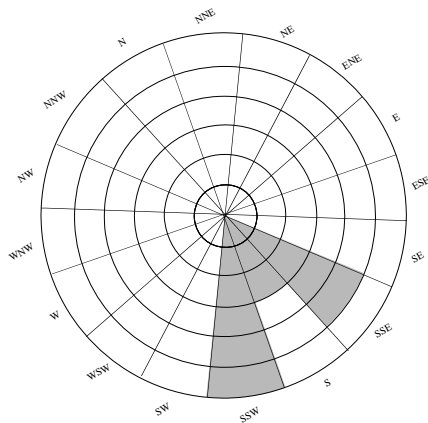
EXPLANATION	
B-6 ●	SOIL BORING
DPE-3 ⊕	PROJECT WELL
VP-2 △	SUB-SLAB SOIL VAPOR POINT
S-7 ⊕	PASSIVE SAMPLER

SITE PLAN
Terredeve Jefferson LLC Property
645 4th St.
Oakland, CA

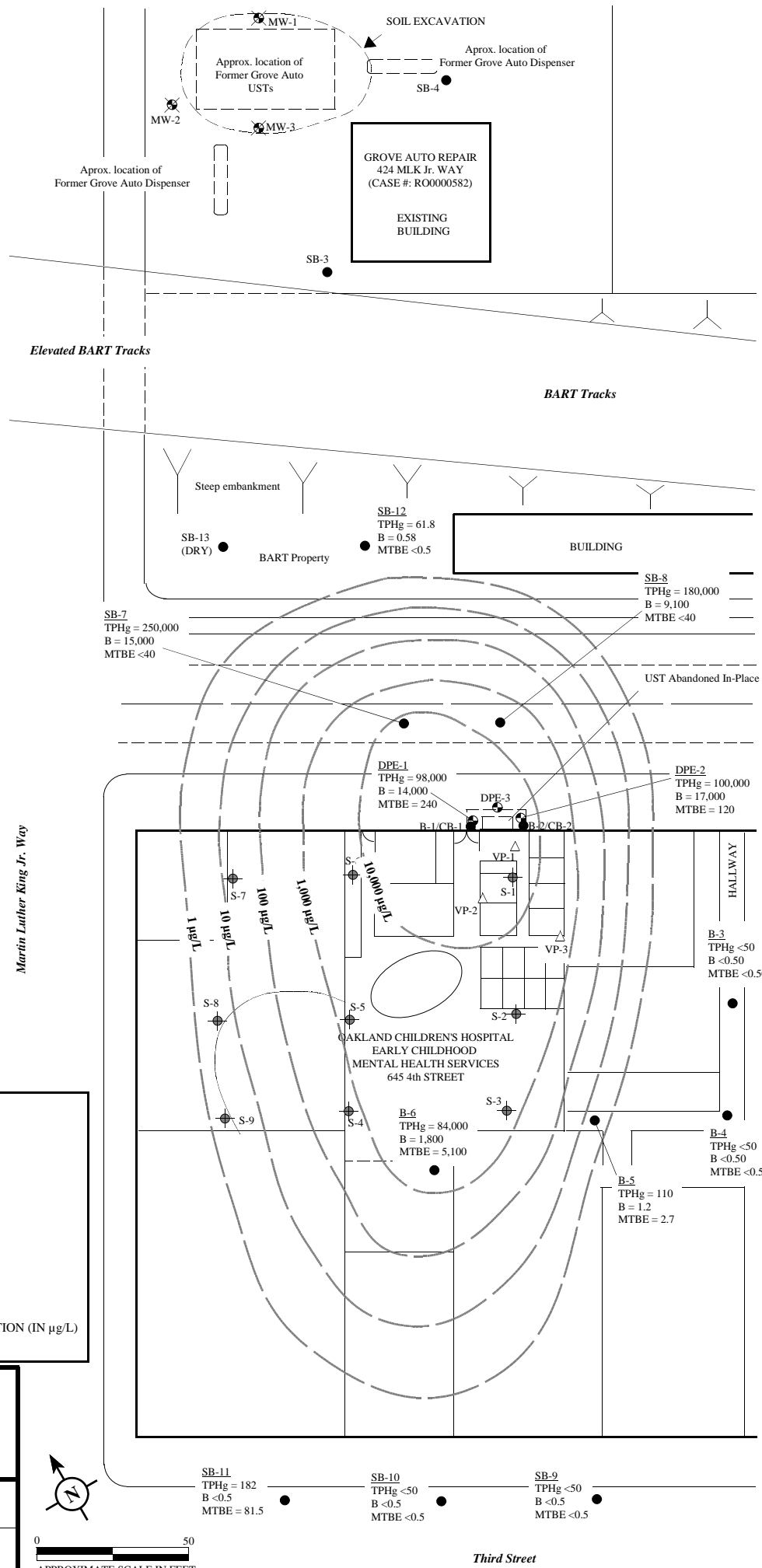


Project No. ASE-1	Figure Date 5/16	Figure 2
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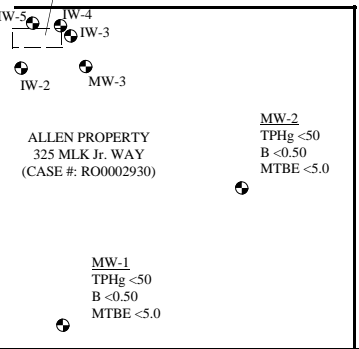
ROSE DIAGRAM OF GROUNDWATER FLOW DIRECTION AT ALLEN PROPERTY FROM 8/07 TO 7/13 (FROM GW MON REPORT FIGS)



Fourth Street

Martin Luther King Jr. Way

Third Street



ALLEN PROPERTY
325 MLK Jr. WAY
(CASE #: R00002930)

MW-2
TPHg <50
B <0.50
MTBE <5.0

MW-1
TPHg <50
B <0.50
MTBE <5.0

EXPLANATION	
B-6 ●	SOIL BORING
DPE-3 ⊕	PROJECT WELL
VP-2 △	SUB-SLAB SOIL VAPOR POINT
S-7 ⊕	PASSIVE SAMPLER
B-6 ^Δ	TPHg, BENZENE, MTBE (µg/L) MOST RECENT AVAILABLE DATA FROM ALL SAMPLING POINTS
10 µg/L	ESTIMATED BENZENE ISO-CONCENTRATION (IN µg/L)

BENZENE IN GROUNDWATER MAP
Terredev Jefferson LLC Property
645 Fourth St.
Oakland, CA



Project No. ASE-1	Figure Date 5/16	Figure 3
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SB-11
TPHg = 182
B <0.5
MTBE = 81.5

SB-10
TPHg <50
B <0.5
MTBE <0.5

SB-9
TPHg <50
B <0.5
MTBE <0.5

B-3
TPHg <50
B <0.50
MTBE <0.50

B-4
TPHg <50
B <0.50
MTBE <0.50

B-5
TPHg = 110
B = 1.2
MTBE = 2.7

B-6^Δ
TPHg = 84,000
B = 1,800
MTBE = 5,100

DPE-2
TPHg = 100,000
B = 17,000
MTBE = 120

DPE-1
TPHg = 98,000
B = 14,000
MTBE = 240

SB-7
TPHg = 250,000
B = 15,000
MTBE <40

SB-8
TPHg = 180,000
B = 9,100
MTBE <40

SB-12
TPHg = 61.8
B = 0.58
MTBE <0.5

SB-13
(DRY)

Approx. location of Former Grove Auto USTs

SOIL EXCAVATION
Approx. location of Former Grove Auto Dispenser

GROVE AUTO REPAIR
424 MLK Jr. WAY
(CASE #: R00000582)
EXISTING BUILDING

Elevated BART Tracks

BART Tracks

Steep embankment

BART Property

BUILDING

UST Abandoned In-Place


OAKLAND CHILDREN'S HOSPITAL
EARLY CHILDHOOD
MENTAL HEALTH SERVICES
645 4th STREET

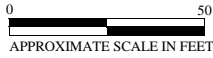
HALLWAY



EXPLANATION	
■ 645 4th	INDOOR AIR SAMPLE (12/5/15, 3/12/16)
⊠ R-1	OUTDOOR AIR SAMPLE (12/5/15, 3/12/16)

AIR SAMPLE MAP
 Terredev Jefferson LLC Property
 645 4th St.
 Oakland, CA

 BLUE ROCK ENVIRONMENTAL, INC.		
Project No. ASE-1	Figure Date 5/16	Figure 4



SOURCE: GOOGLE EARTH

TABLE 1
Well Construction Data
 Terradev Jefferson, LLC Property
 645 4th Street
 Oakland, CA

Extraction Wells

Well ID	Date Installed	Total Boring Depth (ft bgs)	Casing Diameter (inches)	Screen Depth (ft bgs)	Sandpack Depth (ft bgs)	Bentonite Depth (ft bgs)	Cement Grout Depth (ft bgs)
DPE-1	9/20/10	15	2	8 - 15	7 - 15	5 - 7	0 - 5
DPE-2	9/20/10	15	2	8 - 15	7 - 15	5 - 7	0 - 5
DPE-3	9/20/10	10	2	6 - 10	5 - 10	3 - 5	0 - 3

Vapor Probes

Well ID	Date Installed	Total Probe Depth (in bgs)	Tubing Diameter (inches)	Slab Thickness (in bgs)	Screen Depth (in bgs)	Rubber Plug / Bentonite (in bgs)	Cement Depth (in bgs)
VP-1	6/16/12	9	0.25	6.0	6 - 9	5.0 - 6.0	0 - 5
VP-2	6/16/12	9	0.25	4.5	6 - 9	3.5 - 4.5	0 - 3.5
VP-3	6/16/12	9	0.25	4.0	6 - 9	3.0 - 4.0	0 - 3
VP-4	8/29/15	9	0.25	5.5	6 - 9	3.0 - 6.0	0 - 3
VP-5	8/29/15	9	0.25	5.5	6 - 9	3.0 - 6.0	0 - 3

Notes:

ft bgs Feet below ground surface.
 in bgs Inches below ground surface.

TABLE 2
Soil Sample Analytical Data
Terradev Jefferson, LLC Property
645 4th Street
Oakland, CA

Sample ID	Depth (ft bgs)	Sample Date	TPHd							DIPE, TAME					1,2-DCA (mg/kg)	EDB (mg/kg)	Napht. (mg/kg)
			TPHd (mg/kg)	w/SCGCU (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	ETBE, TAME (mg/kg)					
<i>UST Removal Samples</i>																	
8795-EX-W-9'	9	8/23/06	<120	---	10,000	130	1,000	230	1,200	<12	<100	all<12	---	---	---		
8795-EX-E-9'	9	8/23/06	<25	---	920	6.8	55	18	110	<1.2	<10	all<1.2	---	---	---		
<i>Investigation Samples</i>																	
DPE-1-7.5	7.5	9/20/10	810^	---	6,500	14	320	180	980	<0.50	<2.5	---	<0.50	0.50	---		
DPE-1-12	12	9/20/10	260^	---	2,300	26	160	45	240	0.71	<1.5	---	<0.30	<0.30	---		
DPE-1-15	15	9/20/10	92^	---	770	10	53	15	80	0.39	<0.50	---	0.11	<0.090	---		
DPE-2-6	6	9/20/10	15	---	1.2	<0.0050	0.0054	<0.0050	0.021	<0.0050	<0.0050	---	<0.0050	<0.0050	---		
DPE-2-11	11	9/20/10	1,200^	---	160,000	1,400	10,000	3,300	19,000	<0.25	<1.5	---	<0.25	1.8	---		
DPE-2-15	15	9/20/10	66^	---	430	3.8	25	8.3	47	<0.50	<2.5	---	<0.050	<0.50	---		
DPE-3-7	7	9/20/10	260^	---	860	2.1	37	19	100	<0.10	<0.50	---	<0.10	<0.10	---		
DPE-3-10	10	9/20/10	800^	---	8,900	78	580	180	980	<0.25	<1.5	---	<0.25	0.82	---		
CB-1-7.5	7.5	2/18/13	1.2*	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---		
CB-1-9	9	2/18/13	110^	---	1,200	2.8	55	27	150	<0.25	---	---	<0.25	<0.25	---		
CB-1-12	12	2/18/13	880^	---	14,000	100	850	180	1,400	0.53	---	---	<0.25	0.86	---		
CB-1-15	15	2/18/13	89^	---	1,000	8.4	62	15	100	<0.050	---	---	<0.050	<0.050	---		
CB-2-9	9	2/18/13	120^	---	840	0.44	17	20	110	<0.15	---	---	<0.15	<0.15	---		
CB-2-11	11	2/18/13	110^	---	2,700	23	160	48	260	<0.40	---	---	<0.40	<0.40	---		
CB-2-15	15	2/18/13	45^	---	380	3.9	18	6.6	34	<0.050	---	---	<0.050	<0.050	---		
B-6-6'	6.5	1/11/14	340^	350^	1,700	0.13	8.0	12	91	<0.050	<0.25	---	<0.050	<0.050	---		
B-6-10.5'	10.5	1/11/14	280^	280^	1,500	4.1	48	26	130	<0.25	<1.5	---	<0.25	<0.25	---		
SB7-8.5/9	8.5-9	12/29/14	1.2^	---	4.0	0.16	0.50	0.081	0.50	<0.0050	<0.0050	---	<0.0050	0.0070	0.043		
SB7-10.5/11	10.5-11	12/29/14	1,400^	---	19,000	150	1,100	330	1,800	<0.25	<1.5	---	<0.25	2.5	99		
SB7-12.5/13	12.5-13	12/29/14	310^	---	3,600	29	200	59	330	<0.090	<1.5	---	<0.090	0.46	23		
SB-8-8.5/9	8.5-9	12/29/14	750^	---	6,600	30	290	120	580	<0.25	<1.5	---	<0.25	0.38	38		
SB-8 11.5/12	11.5-12	12/29/14	170^	---	1,400	6.4	54	22	130	<0.25	<1.5	---	<0.25	<0.25	10		
SB-8 14.5	14.5	12/29/14	<1.0	---	<1.0	0.026	0.060	0.011	0.065	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-9-13	13	4/20/16	---	9.5*	<0.994	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-9-14	14	4/20/16	---	16.3*	<0.994	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-10-13	13	4/20/16	---	20.0*	<0.982	<0.0050	<0.0050	<0.0050	<0.0098	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-10-14	14	4/20/16	---	12.8*	<0.984	<0.0050	<0.0050	<0.0050	<0.0098	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-11-13	13	4/20/16	---	13.8*	<0.992	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-11-14	14	4/20/16	---	12.8*	<0.998	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-12-9	9	4/20/16	---	5.5*	<0.998	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-12-12	12	4/20/16	---	14.9*	<0.982	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	---	<0.0049	<0.0049	<0.0049		
SB-13-10.5	10.5	4/20/16	---	11.6*	<0.992	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		
SB-13-13	13	4/20/16	---	14.6*	<0.998	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050		

Notes:

ft bgs feet below ground surface
mg/kg milligrams per kilogram
TPHd total petroleum hydrocarbons as diesel by EPA Method 8015M or 8015B, w/SCGCU = analysis performed after silica-gel clean-up.
TPHg total petroleum hydrocarbons as gasoline by EPA Method 8260B
BTEX benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B
MTBE, TBA, ETBE, methyl tert-butyl ether, tert-butanol, ethyl tert-butyl ether, di-isopropyl ether, tert-amyl methyl ether by EPA Method 8260B,
DIPE, TAME
1,2-DCA, EDB 1,2-dichloroethane, 1,2-dibromoethane by EPA Method 8260B.
µg/L Micrograms per liter.
<### Not detected at or above the indicated reporting limit.
^ Laboratory Flag: Hydrocarbons are lower-boiling than typical Diesel Fuel
* Laboratory Flag: Hydrocarbons are higher-boiling than typical Diesel Fuel
--- Data not available, not monitored, or not sampled

TABLE 3
Groundwater Analytical Data
Terradev Jefferson, LLC Property
645 4th Street
Oakland, CA

Sample ID	Sample Date	TOC (ft MSL)	DTW (ft)	LNAPL (ft)	GWE (ft MSL)	TPHd (µg/L)	TPHd w/SGCU (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Napht. (µg/L)
Grab Groundwater Samples																	
B-1-GW*	7/10/09	--	~9.5	--	--	5,300	--	78,000	15,000	13,000	1,700	10,500	570	--	--	--	--
B-2-GW*	7/10/09	--	~9.5	--	--	2,300	--	60,000	13,000	13,000	890	4,800	120	--	--	--	--
B-3	1/10/14	--	~12	--	--	58#	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--
B-4	1/10/14	--	~12	--	--	67#	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--
B-5	1/10/14	--	~12	--	--	110#	<50	110	1.2	1.4	0.65	4.5	2.7	200	43	<0.50	--
B-6 (2)	1/11/14	--	~11	--	--	5,200^	360^	84,000	1,800	7,600	2,400	12,000	5,100	180J	110	<20	--
SB-7	12/29/14	--	~9	--	--	60,000^	--	250,000	15,000	34,000	4,000	20,000	<40	<200	130	240	1,000
SB-8	12/29/14	--	~9	--	--	16,000^	--	180,000	9,100	22,000	3,000	16,000	<40	<200	130	140	1,200
SB-9	4/20/16	--	~12.5	--	--	--	<48	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<5.0	<0.50	<0.50	<0.50
SB-10	4/20/16	--	~12.5	--	--	--	<49	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<5.0	<0.50	<0.50	<0.50
SB-11	4/20/16	--	~12	--	--	--	<49	182	<0.50	<0.50	<0.50	<1.5	81.5	<5.0	<0.50	332	<0.50
SB-12	4/20/16	--	~11.2	--	--	--	<50	61.8	0.58	4.0	1.3	7.5	<0.50	<5.0	<0.50	<0.50	0.86
Monitoring Well Data																	
DPE-1	9/22/10	15.81	9.21	0.00	6.60	<4,000 (1)	--	120,000	25,000	18,000	3,300	17,000	320	320	620	<40	--
Screen	9/28-10/3/10	15.81	--	--	--	5-day HVDPE Remedial Event											
~8' - 15'	10/18/10	15.81	9.26	sheen	6.55	<4,000 (1)	--	97,000	15,000	20,000	1,600	11,000	490	270	390	<40	--
	1/20/11	15.81	8.56	sheen	7.25	<3,000 (1)	--	83,000	12,000	16,000	2,000	11,000	270	<200	220	<40	--
	7/6/12	15.81	8.85	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/9-7/24/12	15.81	--	--	--	15-day HVDPE Remedial Event											
	8/12/12	15.81	9.03	0.00	6.78	<2,000 (1)	--	71,000	7,500	9,800	1,000	6,500	280	89	190	<15	--
	2/11/13	15.81	8.74	0.00	7.07	<3,000 (1)	--	81,000	9,400	14,000	1,800	10,000	240	110	210	<15	--
	1/10/14	15.81	9.84	0.00	5.97	1,600^	56^	98,000	14,000	13,000	2,100	12,000	270	200	270	<25	--
DPE-2	9/22/10	16.01	9.44	0.00	6.57	<4,000 (1)	--	110,000	21,000	18,000	3,100	14,000	200	260	540	110	--
Screen	9/28-10/3/10	16.01	--	--	--	5-day HVDPE Remedial Event											
~8' - 15'	10/18/10	16.01	9.48	sheen	6.53	<5,000 (1)	--	84,000	11,000	16,000	1,600	9,200	77	<200	220	77	--
	1/20/11	16.01	8.77	sheen	7.24	<5,000 (1)	--	94,000	12,000	19,000	2,500	13,000	64	<200	220	88	--
	7/6/12	16.01	9.06	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/9-7/24/12	16.01	--	--	--	15-day HVDPE Remedial Event											
	8/12/12	16.01	9.27	0.00	6.74	<2,000 (1)	--	70,000	9,900	16,000	1,700	9,600	54	<200	160	56	--
	2/11/13	16.01	8.95	0.00	7.06	<4,000 (1)	--	60,000	7,300	9,500	1,400	7,000	34	<90	120	<20	--
	1/10/14	16.01	10.08	0.00	5.93	2,800^	<50	100,000	17,000	15,000	2,400	11,000	120	100	220	27	--
DPE-3	9/22/10	15.87	9.43	0.00	6.44	insufficient water column for sampling (i.e. <0.5-ft)											
Screen	9/28-10/3/10	15.87	--	--	--	5-day HVDPE Remedial Event											
~6' - 10'	10/18/10	15.87	9.35	0.00	6.52	insufficient water column for sampling (i.e. <0.5-ft)											
	1/20/11	15.87	8.51	0.13	7.36	no groundwater sample collected, LNAPL present.											
	7/6/12	15.87	8.65	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/9-7/24/12	15.87	--	--	--	15-day HVDPE Remedial Event											
	8/12/12	15.87	9.02	sheen	6.85	<200,000 (1)	--	190,000	1,400	7,800	3,700	29,000	27	120	40	130	--
	2/11/13	15.87	8.34	sheen	7.53	<40,000 (1)	--	130,000	4,700	9,000	1,900	25,000	<40	<200	54	80	--
	1/10/14	15.87	Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

- Screen: Well screen depth interval.
- TOC: Top of casing relative to feet above mean sea level (ft MSL) (ref NAVD88).
- DTW: Depth to water (for borings DTW shows "depth to water" and "depth to bottom of boring")
- LNAPL: Light non-aqueous phase liquid petroleum, "sheen" is an immeasurable thickness (i.e. <0.01-ft)
- GWE: Groundwater Elevation (TOC-DTW) in ft MSL. (This does not account for LNAPL thickness, if present).
- TPHd: Total petroleum hydrocarbons as diesel by EPA Method 8015M, *8015B. SGCU = Silica-gel cleanup prior to analysis.
- TPHg: Total petroleum hydrocarbons as gasoline by EPA Method 8260B, *8015B.
- BTEX: Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B, *8021B.
- Note: total xylenes equal the sum of separate isomers reported for the 7/09 samples.
- MTBE: Methyl tert-butyl ether by EPA Method 8260B, * 8021B.
- TBA: Tert-butanol by EPA Method 8260B.
- 1,2-DCA, EDB: 1,2-dichloroethane, 1,2-dibromoethane by EPA Method 8260B.
- µg/L: Micrograms per liter.
- <###: Not detected at or above the indicated reporting limit.
- : Data not available, not monitored, or not sampled
- ^: Laboratory Flag: Hydrocarbons are lower-boiling than typical Diesel Fuel
- #: Laboratory Flag: Discrete peaks in Diesel range, atypical for Diesel Fuel
- J: Laboratory Flag: TBA concentration may be biased slightly high due to conversion of a small fraction of MTBE to TBA during water sample analysis.
- (1): Method detection limit increased due to interference from gasoline range hydrocarbons
- (2): Repeat analysis by Method 8260B yielded inconsistent results. The concentrations appear to vary between bottles. The highest valid result is reported.

TABLE 4
Passive Soil Gas Sample Analytical Data
 Terradev Jefferson, LLC Property
 645 Fourth Street
 Oakland, CA

Sample ID	Sample Depth (ft bgs)	Install Date	Retrieval Date	TPH (µg)	DRPH (µg)	GRPH (µg)	B (µg)	T (µg)	E (µg)	X (µg)	MTBE (µg)	1,2-DCA (µg)	Napht. (µg)
S-1	~2 - 3	2/7/15	2/14/15	13.33	2.90	10.86	0.04	0.03	0.02	0.17	0.25	0.13	0.20
S-2	~2 - 3	2/7/15	2/14/15	273.77	59.21	223.55	48.01	209.52	123.77	505.33	<0.02	3.97	35.44
S-3	~2 - 3	2/7/15	2/14/15	183.36	72.98	115.01	33.38	127.13	113.16	367.48	<0.02	2.35	37.35
S-4	~2 - 3	2/7/15	2/14/15	1.00	<0.50	0.66	0.02	0.02	<0.02	0.18	<0.02	2.35	<0.50
S-5	~2 - 3	2/7/15	2/14/15	220.53	107.91	117.33	20.23	90.58	24.79	369.71	<0.02	2.01	30.63
S-6	~2 - 3	2/7/15	2/14/15	169.75	54.69	119.88	15.94	29.38	31.45	337.65	<0.02	0.90	2.45
S-7	~2 - 3	2/7/15	2/14/15	1.03	0.74	<0.50	0.07	0.15	0.06	0.59	<0.02	<0.02	<0.50
S-8	~2 - 3	2/7/15	2/14/15	245.41	106.20	145.04	32.86	103.45	76.32	421.35	<0.02	2.53	36.09
S-9	~2 - 3	2/7/15	2/14/15	<0.50	<0.50	<0.50	0.36	0.36	0.03	0.16	<0.02	0.02	<0.50

Notes:

ft bgs feet below ground surface
 µg micrograms
 TPH Total petroleum hydrocarbons by SPG-WI-0292
 DRPH Diesel range petroleum hydrocarbons by SPG-WI-0292
 GRPH Gasoline range petroleum hydrocarbons by SPG-WI-0292
 BTEX benzene, toluene, ethylbenzene, and xylenes by SPG-WI-0292
 MTBE methyl tert-butyl ether by SPG-WI-0292
 1,2-DCA 1,2-dichloroethane by SPG-WI-0292
 Naphthalene Naphthalene by SPG-WI-0292
 <### Not detected at or above the indicated reporting limit.

Table 5
SUB-SLAB VAPOR SAMPLE ANALYTICAL DATA

Terradev Jefferson LLC Property
645 4th St.
Oakland, CA

Sample I.D.	Sample Date	sample container	Constituent Concentrations									Soil Gas Concentrations			Tracer Gas			Sample Can Vacuum	
			TPHg (ug/m ³)	B (ug/m ³)	T (ug/m ³)	E (ug/m ³)	X (ug/m ³)	MTBE (ug/m ³)	Naphthalene (ug/m ³)	1,2-DCA (ug/m ³)	EDB (ug/m ³)	O ₂ (%)	CO ₂ (%)	CH ₄ (%)	He - Avg (%)	He (%)	Leak Percent [^] (%)	End of Sampling ("Hg)	Arrival at Lab ("Hg)
VP-1	6/16/12	1-L	1,300	38	120	21	138	7.3	<0.09	<0.14	<0.050	15	0.096	<0.008	22.2	2.4	10.8%	~8	~6
	9/22/12	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	19	0.78	<0.008	20.0	0.19	1.0%	~5	~6
	1/25/14	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	14	4.7	<0.008	5.7	0.023	0.40%	~5	~5
	12/5/15	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	11	2.6	<0.008	8.0	<0.003	<0.04%	~5	~1
	3/12/16	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	13	2.4	<0.009	10.0	0.009	0.09%	~5	~4
VP-2	6/16/12	1-L	1,200	66	25	2.6	8.2	<6.3	<0.090	<0.14	<0.050	11	1.3	<0.009	13.8	<0.003	<0.02%	~8	~7
	9/22/12	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	14	4.0	<0.008	19.0	<0.003	<0.02%	~7	~6
	1/25/14	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	12	7.4	<0.008	6.6	<0.003	<0.05%	~5	~5
	12/5/15	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	5.2	4.2	<0.010	8.3	<0.003	<0.04%	~5	~2
	3/12/16	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	9.3	6.8	<0.010	9.6	0.009	0.09%	~5	~4
VP-3	6/16/12	1-L	960	16	19	2.9	20	<5.8	<0.08	<0.13	<0.050	16	0.029	<0.008	23.6	2.6	11%	~5	~5
	9/22/12	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	20	0.46	<0.008	15.7	0.036	0.23%	~5	~6
	1/25/14	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	19	1.5	<0.008	6.6	0.012	0.18%	~5	~1
VP-4	9/6/15	1-L	5,600,000	<58,000	<69,000	<79,000	600,000	<66,000	<95,000	<74,000	<140,000	7.5	0.37	<0.009	6.5	0.004	0.06%	~5	~2
	12/5/15	1-L	2,000,000	<1,100	<1,300	<1,500	55,000	<1,200	<1,800	<1,400	<530	17	2.9	<0.007	8.2	<0.003	<0.04%	~5	~3
	3/12/16	1-L	10,000,000	4,100	6,500	<1,700	22,400	<1,400	<2,000	<1,600	<590	0.82	13	0.055	8.7	0.28	3.2%	~5	~4
VP-5	9/6/15	1-L	5,000,000	180,000	140,000	110,000	1,390,000	<54,000	<78,000	<60,000	<110,000	2.7	3.3	<0.007	7.0	<0.003	<0.04%	~5	~3
	12/5/15	1-L	8,200,000	170,000	180,000	150,000	1,310,000	<12,000	<18,000	<14,000	<5,300	1.9	13	0.008	8.2	<0.003	<0.04%	~5	~1
	3/12/16	1-L	780,000	9,100	6,500	3,700	208,000	<1,300	<1,900	<1,400	<550	15	1.6	<0.007	8.9	0.13	1.5%	~5	~2

Subslab Soil Gas Seening Levels Calculated as: Screening level (subslab soil gas) = Screening level (indoor air) / 0.05

ESLs Residential Indoor Air divided by 0.05	2,000	1.9	6,200	22	2,000	220	1.7	2.2	0.094
ESLs Comm/Indus Indoor Air divided by 0.05	2,000	8.4	26,000	98	8,800	940	7.2	9.4	0.40

Indoor Air Screening Levels

ESLs Residential Indoor Air	100	0.097	310	1.1	100	11	0.083	0.11	0.0047
ESLs Comm/Indus Indoor Air	100	0.42	1,300	4.9	440	47	0.36	0.47	0.020

- Notes:
- TPHg Total Petroleum Hydrocarbons as gasoline by EPA Method TO-15
 - BTEX, MTBE Benzene, Toluene, Ethylbenzene, and Total Xylenes, Methyl tert-Butyl Ether by EPA Method TO-15(M) GC/MS (note: Xylene number shown in table is the sum of xylene isomers reported by lab)
 - Naphthalene Naphthalene by EPA Method TO-15
 - 1,2-DCA, EDB 1,2-dichloroethane, 1,2-dibromoethane by EPA Method TO-15
 - O₂, CO₂, CH₄, He Oxygen, Carbon Dioxide, Methane, and Helium by modified ASTM D-1946
 - ug/m³ Micrograms per cubic meter
 - <#.## Compound not detected at or above the reported laboratory detection limit
 - ESLs Environmental Screening Levels for Indoor Air in Commercial/Industrial or Residential setting (SFBRWQCB 2016)
 - Tracer Gas in Shroud Concentration range of tracer gas in shroud recorded during sample collection. Average = (Max + Min) / 2
 - Tracer Gas in Sample Concentration of tracer gas in sample as detected by lab analysis.
 - Tracer Gas Leak into Sample If helium was detected in the sample, the concentration measured in the sample was divided by the average concentration in the shroud (and multiplied by 100 to convert to percent).
 - [^] a leak of less than 5% is considered acceptable for data evaluation.
 - Shaded samples indicate a tracer gas leak of more than 5%.

Table 6
AIR SAMPLE ANALYTICAL DATA
 Terradev Jefferson LLC Property
 645 4th St.
 Oakland, CA

Sample I.D.	Sample Date	Sample Duration	sample container	Constituent Concentrations									Sample Can Vacuum	
				TPHg (µg/m ³)	B (µg/m ³)	T (µg/m ³)	E (µg/m ³)	X (µg/m ³)	MTBE (µg/m ³)	Naphthalene (µg/m ³)	1,2-DCA (µg/m ³)	EDB (µg/m ³)	End of Sampling ("Hg)	Arrival at Lab ("Hg)
<i>Indoor Air Samples</i>														
645 4th	12/5/15	8 hrs	6-L	36	1.8	5.4	1.2	5.4	<3.6	<0.05	<0.08	<0.03	~2.5	~1
	3/12/16	8 hrs	6-L	<9.8	0.74	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~0	~0
380 MLK	12/5/15	8 hrs	6-L	17	2.0	5.4	1.2	4.9	<3.6	<0.05	<0.08	<0.03	~0	~0
	3/12/16	8 hrs	6-L	<9.8	0.42	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~4	~2
638 3rd	12/5/15	8 hrs	6-L	<9.8	1.2	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~5	~3
	3/12/16	8 hrs	6-L	<9.8	0.36	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~5	~2
<i>Outdoor Air Samples</i>														
R-1	12/5/15	8 hrs	6-L	<9.8	0.78	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~5	~2
	3/12/16	8 hrs	6-L	<9.8	0.31	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~1	~0
R-2	12/5/15	8 hrs	6-L	<9.8	1.2	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~4.5	~1
	3/12/16	8 hrs	6-L	<9.8	0.32	<3.8	<0.87	<8.6	<3.6	<0.05	<0.08	<0.03	~3.25	~0

Indoor Air Screening Levels

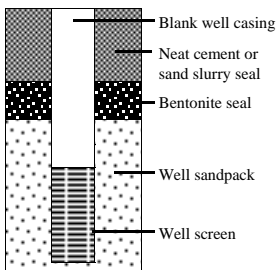
<i>ESLs Residential Indoor Air</i>	100	0.097	310	1.1	100	11	0.083	0.11	0.0047
<i>ESLs Comm/Indus Indoor Air</i>	100	0.42	1,300	4.9	440	47	0.36	0.47	0.020

- Notes:
- TPHg Total Petroleum Hydrocarbons as gasoline by EPA Method TO-15
 - BTEX, MTBE Benzene, Toluene, Ethylbenzene, and Total Xylenes, Methyl tert-Butyl Ether by EPA Method TO-15(M) GC/MS (note: Xylene number shown in table is the sum of xylene isomers reported by lab)
 - Naphthalene Naphthalene by EPA Method TO-15
 - 1,2-DCA, EDB 1,2-dichloroethane, 1,2-dibromoethane by EPA Method TO-15
 - µg/m³ Micrograms per cubic meter
 - <#.## Compound not detected at or above the reported laboratory detection limit
 - ESLs Environmental Screening Levels for Indoor Air in Commercial/Industrial or Residential setting (SFBRWQCB 2016)

UNIFIED SOIL CLASSIFICATION SYSTEM - VISUAL CLASSIFICATION OF SOILS (ASTM D-2488)

MAJOR DIVISIONS	GROUP SYMBOL	GROUP NAME	DESCRIPTION	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravel Well-graded gravel with sand	Well-graded gravels or gravel-sand mixtures, little or no fines.
		GP	Poorly-graded gravel Poorly-graded gravel with sand	Poorly-graded gravels or gravel sand mixture, little or no fines.
		GM	Silty gravel Silty gravel with sand	Silty gravels, gravel-sand-silt mixtures.
		GC	Clayey gravel Clayey gravel with sand	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	SW	Well-graded sand Well-graded sand with gravel	Well-graded sands or gravelly sands, little or no fines.
		SP	Poorly-graded sand Poorly-graded sand with gravel	Poorly-graded sands or gravelly sands, little or no fines.
		SM	Silty sand Silty sand with gravel	Silty sands, sand-silt mixtures.
		SC	Clayey sand Clayey sand with gravel	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS	ML	Silt; Silt with sand; Silt with gravel Sandy silt; Sandy silt with gravel Gravelly silt; Gravelly silt with sand	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL	Lean clay; Lean clay with sand; Lean clay with gravel Sandy lean clay; Sandy lean clay with gravel Gravelly lean clay; Gravelly lean clay with sand	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
	ELASTIC SILTS AND CLAYS	MH	Elastic silt; Elastic silt with sand; Elastic silt with gravel Sandy elastic silt; Sandy elastic silt with gravel Gravelly elastic silt; Gravelly elastic silt with sand	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH	Fat clay; Fat clay with sand; Fat clay with gravel Sandy fat clay; Sandy fat clay with gravel Gravelly fat clay; Gravelly fat clay with sand	Inorganic clays of high plasticity, fat clays.
HIGHLY ORGANIC SOILS	OL/OH	Organic soil; Organic soil with sand; Organic soil with gravel Sandy organic soil; Sandy organic soil with gravel Gravelly organic soil; Gravelly organic soil with sand	Organic silts and organic silt-clays of low plasticity. Organic clays of medium to high plasticity.	
	Pt	Peat	Peat and other highly organic soils.	

WELL CONSTRUCTION EXPLANATION



SOIL BORING NOTES:

Blow count represents the number of blows of a 140-lb hammer falling 30 inches per blow required to drive a sampler through the last 12 inches of an 18-inch penetration.

No warranty is provided as to the continuity of soil strata between borings. Logs represent the soil section observed at the boring location on the date of drilling only.

S = Sampler sank into medium under the weight of the hammer (no blow count)

P = Sampler was pushed into medium by drilling rig (no blow count)

NR = No Recovery

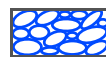
SANDS & GRAVELS	BLOWS/FT	SILTS & CLAYS	BLOWS/FT
VERY LOOSE	0 - 5	SOFT	0 - 5
LOOSE	5 - 12	FIRM	5 - 10
MED. DENSE	12 - 37	STIFF	10 - 20
DENSE	37 - 62	VERY STIFF	20 - 40
VERY DENSE	OVER 62	HARD	OVER 40

Approximate stabilized water level

Approximate first encountered water level

NOTE: all percentages of lithological composition presented on the soil boring logs are approximate. They represent the best estimates of the field scientist based on visual inspection in the field.

SOIL BORING LOG AND WELL CONSTRUCTION DIAGRAM LEGEND



BLUE ROCK
ENVIRONMENTAL, INC.

SOIL BORING AND WELL CONSTRUCTION LOG: SB-9

BLUE ROCK ENVIRONMENTAL, INC.

FIELD LOCATION OF BORING:							DRILLING CONTRACTOR:	BORING DIAMETER:	CLIENT/LOCATION:					
<p>NOT TO SCALE</p>							Gregg Drilling &	2.5 inches	Terradev Jefferson, 645 4th St., Oakland					
							DRILL RIG OPERATOR:	NA	BORING DEPTH:	15 feet	SCREEN SLOT SIZE:	NA	DRILLING DATE:	4/20/16
							DRILL RIG TYPE:	Direct-Push	WELL DEPTH:	NA	WELL MATERIAL:	NA	FILTER PACK:	NA
							WELL SEAL:	Neat cement		PLANNED USE:	Sampling	LOGGED BY:	Loren Taylor	
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD:		MONITORING INST:	APPROVED BY:				
			INTERVAL	RECOVERY			Continuous		NA	Brian Gwinn, PG				
							FIRST ENCOUNTERED WATER DEPTH:	STATIC WATER DEPTH - DATE:						
							Approx. 12.5 feet	~10.5 feet - 4/20/16						
		1					Asphalt & Baserock.							
		2					Hand cleared to ~4-5 feet.							
		3					Silty SAND (SM); light brown; moderately graded; fine sand; trace gravel; dry.							
		4												
		5												
		6												
		7												
		8	▼	▼			Silty SAND (SM); light brown to orange brown; moderately graded; fine sand; trace gravel; moist.							
		9												
	▼	10												
	▼	11												
		12	▼	▼			Silty SAND (SM); light brown to orange brown; moderately graded; fine sand; wet.							
		13												
		14												
		15	▼	▼										
		16					A temporary well screen consisting of new SCH40 PVC was placed in the boring to facilitate collection of a grab groundwater sample. Following sample collection, the casing was removed and the boring was backfilled with cement.							
		17												
		18												
		19												
		20												
		21												
		22												
		23												
		24												
		25												
		26												
		27												
		28												
		29												
		30												

SOIL BORING AND WELL CONSTRUCTION LOG: SB-10

BLUE ROCK ENVIRONMENTAL, INC.

Page: 1 of 1
Project: ASE-1

FIELD LOCATION OF BORING:							DRILLING CONTRACTOR:	BORING DIAMETER:	CLIENT/LOCATION:					
<p>NOT TO SCALE</p>							Gregg Drilling &	2.5 inches	Terradev Jefferson, 645 4th St., Oakland					
							DRILL RIG OPERATOR:	NA	BORING DEPTH:	15 feet	SCREEN SLOT SIZE:	NA	DRILLING DATE:	4/20/16
							DRILL RIG TYPE:	Direct-Push	WELL DEPTH:	NA	WELL MATERIAL:	NA	FILTER PACK:	NA
							WELL SEAL:	Neat cement	PLANNED USE:	Sampling	LOGGED BY:	Loren Taylor		
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD:		MONITORING INST:	APPROVED BY:				
			INTERVAL	RECOVERY			Continuous	NA	NA	Brian Gwinn, PG				
							FIRST ENCOUNTERED WATER DEPTH:		STATIC WATER DEPTH - DATE:					
							Approx. 12.5 feet		NA					
		1					Asphalt & Baserock.							
		2					Hand cleared to ~4-5 feet.							
		3												
		4												
		5					Silty SAND (SM); light brown; moderately graded; fine sand; trace gravel; dry.							
		6												
		7												
		8	▼	▼			Silty SAND (SM); light brown to orange brown; moderately graded; fine sand; trace gravel; moist.							
		9												
		10												
		11												
		12	▼	▼			Silty SAND (SM); light brown to orange brown; moderately graded; fine sand; wet.							
		13												
		14												
		15	▼	▼										
		16					A temporary well screen consisting of new SCH40 PVC was placed in the boring to facilitate collection of a grab groundwater sample. Following sample collection, the casing was removed and the boring was backfilled with cement.							
		17												
		18												
		19												
		20												
		21												
		22												
		23												
		24												
		25												
		26												
		27												
		28												
		29												
		30												

SOIL BORING AND WELL CONSTRUCTION LOG: SB-11

BLUE ROCK ENVIRONMENTAL, INC.

Page: 1 of 1
Project: ASE-1

FIELD LOCATION OF BORING:							DRILLING CONTRACTOR:	BORING DIAMETER:	CLIENT/LOCATION:					
<p>NOT TO SCALE</p>							Gregg Drilling &	2.5 inches	Terradev Jefferson, 645 4th St., Oakland					
							DRILL RIG OPERATOR:	NA	BORING DEPTH:	15 feet	SCREEN SLOT SIZE:	NA	DRILLING DATE:	4/20/16
							DRILL RIG TYPE:	Direct-Push	WELL DEPTH:	NA	WELL MATERIAL:	NA	FILTER PACK:	NA
							WELL SEAL:	Neat cement		PLANNED USE:	Sampling	LOGGED BY:	Loren Taylor	
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD:		MONITORING INST:	APPROVED BY:				
			INTERVAL	RECOVERY			Continuous		NA	Brian Gwinn, PG				
							FIRST ENCOUNTERED WATER DEPTH:		STATIC WATER DEPTH - DATE:					
							Approx. 12 feet		NA					
		1					Asphalt & Baserock.							
		2					Hand cleared to ~4-5 feet.							
		3												
		4												
		5					Silty SAND (SM); light brown; moderately graded; fine sand; trace gravel; dry.							
		6												
		7												
		8	▼	▼			Silty SAND (SM); light brown to orange brown; some dark brown mottles; moderately graded; fine sand; trace gravel; moist.							
		9												
		10												
		11												
		12	▼	▼			Silty SAND (SM); light brown to orange brown; moderately graded; fine sand; wet.							
		13												
		14												
		15	▼	▼										
		16					A temporary well screen consisting of new SCH40 PVC was placed in the boring to facilitate collection of a grab groundwater sample. Following sample collection, the casing was removed and the boring was backfilled with cement.							
		17												
		18												
		19												
		20												
		21												
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		23												
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		28												
		29												
		30												

SOIL BORING AND WELL CONSTRUCTION LOG: SB-12

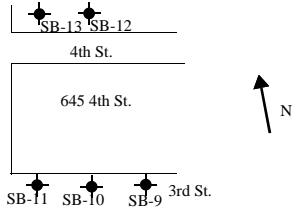
BLUE ROCK ENVIRONMENTAL, INC.

FIELD LOCATION OF BORING:						DRILLING CONTRACTOR:	BORING DIAMETER:	CLIENT/LOCATION:					
						Gregg Drilling &	2.5 inches	Terradev Jefferson, 645 4th St., Oakland					
						DRILL RIG OPERATOR:	NA	BORING DEPTH:	14.5 feet	SCREEN SLOT SIZE:	NA	DRILLING DATE:	4/20/16
						DRILL RIG TYPE:	Direct-Push	WELL DEPTH:	NA	WELL MATERIAL:	NA	FILTER PACK:	NA
						WELL SEAL:	Neat cement	PLANNED USE:	Sampling	LOGGED BY:	Loren Taylor		
WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD:		MONITORING INST:	APPROVED BY:			
			INTERVAL	RECOVERY			Continuous	NA	NA	Brian Gwinn, PG			
							FIRST ENCOUNTERED WATER DEPTH:		STATIC WATER DEPTH - DATE:				
							Approx. 14 feet		Approx. 11.2 feet - 4/20/16				
		1					Hand cleared to ~4-5 feet.						
		2					Silty SAND (SM); light brown; moderately graded; fine sand; trace gravel; dry.						
		3											
		4											
		5											
		6											
		7											
		8	▼	▼			Silty SAND (SM); light brown; moderately graded; fine sand; trace gravel; moist.						
		9											
		10											
		11											
		12	▼	▼			Silty SAND (SM); light brown to orange brown; moderately graded; fine sand; wet.						
		13											
		14	▼	▼									
		15				Sample groundwater with hydro-punch tool. Following sample collection, the tool was removed and the boring was backfilled with cement							
		16											
		17											
		18											
		19											
		20											
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		28											
		29											
		30											


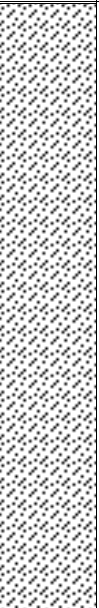
SOIL BORING AND WELL CONSTRUCTION LOG: SB-13


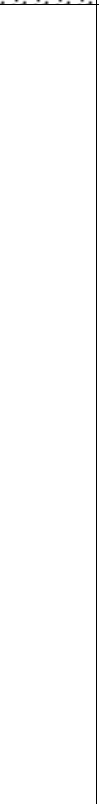
BLUE ROCK ENVIRONMENTAL, INC.

Page: 1 of 1
Project: ASE-1

FIELD LOCATION OF BORING:  NOT TO SCALE		DRILLING CONTRACTOR: Gregg Drilling &	BORING DIAMETER: 2.5 inches	CLIENT/LOCATION: Terradev Jefferson, 645 4th St., Oakland	
		DRILL RIG OPERATOR: NA	BORING DEPTH: 13 feet	SCREEN SLOT SIZE: NA	DRILLING DATE: 4/20/16
		DRILL RIG TYPE: Direct-Push	WELL DEPTH: NA	WELL MATERIAL: NA	FILTER PACK: NA
		WELL SEAL: Neat cement	PLANNED USE: Sampling	LOGGED BY: Loren Taylor	

WELL CONSTRUCTION DETAIL	WATER LEVEL	DEPTH (FEET)	SAMPLING		OVM READING (PPM)	GRAPHIC LOG OR USCS CODE	SAMPLING METHOD:		MONITORING INST:	APPROVED BY:
			INTERVAL	RECOVERY			Continuous	NA	NA	Brian Gwinn, PG
							FIRST ENCOUNTERED WATER DEPTH:		STATIC WATER DEPTH - DATE:	
							Approx. 11.5 feet		Dry	

WELL CONSTRUCTION DETAIL		1					Hand cleared to ~4-5 feet.
		2					
		3					
		4					
		5					
		6					
		7					
		8					
		9		▼	▼		
		10					
		11		▼	▼		
		12					
		13		▼	▼		

WELL CONSTRUCTION DETAIL		14					Attempt to sample groundwater with hydro-punch type tool was unsuccessful.
		15					
		16					
		17					
		18					
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		28					
		29					
		30					

May 02, 2016

Brian Gwinn
Blue Rock Environmental
1169 Chess Drive
Suite C
Foster City, CA 94404

RE: Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

Dear Brian Gwinn:

Enclosed are the analytical results for sample(s) received by the laboratory on April 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott M Forbes
scott.forbes@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

Davis Certification IDs

2795 Second Street Suite 300 Davis, CA 95618
North Dakota Certification #: R-214
Oregon Certification #: CA300002

Washington Certification #: C926-15a
California Certification #: 08263CA

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Terradev Jefferson, LLC

Pace Project No.: 1264692

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1264692001	SB-9-13	Solid	04/20/16 14:17	04/22/16 17:00
1264692002	SB-9-14	Solid	04/20/16 14:19	04/22/16 17:00
1264692003	SB-10-13	Solid	04/20/16 14:29	04/22/16 17:00
1264692004	SB-10-14	Solid	04/20/16 14:38	04/22/16 17:00
1264692005	SB-11-13	Solid	04/20/16 15:00	04/22/16 17:00
1264692006	SB-11-14	Solid	04/20/16 15:03	04/22/16 17:00
1264692007	SB-12-9	Solid	04/20/16 09:13	04/22/16 17:00
1264692008	SB-12-12	Solid	04/20/16 09:52	04/22/16 17:00
1264692009	SB-13-10.5	Solid	04/20/16 11:20	04/22/16 17:00
1264692010	SB-13-13	Solid	04/20/16 11:52	04/22/16 17:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Terradev Jefferson, LLC

Pace Project No.: 1264692

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1264692001	SB-9-13	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692002	SB-9-14	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692003	SB-10-13	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692004	SB-10-14	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692005	SB-11-13	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692006	SB-11-14	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692007	SB-12-9	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692008	SB-12-12	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692009	SB-13-10.5	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264692010	SB-13-13	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

Sample: SB-9-13 **Lab ID: 1264692001** Collected: 04/20/16 14:17 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	9.5	mg/kg	0.99	1	04/25/16 14:27	04/25/16 20:31		DO
Surrogates								
n-Octacosane (S)	112	%	47-150	1	04/25/16 14:27	04/25/16 20:31	630-02-4	
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	106-93-4	
1,2-Dichloroethane	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	107-06-2	
Ethylbenzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	91-20-3	
Toluene	ND	ug/kg	5.0	1	04/25/16 19:49	04/25/16 23:47	108-88-3	
TPH as Gas	ND	ug/kg	994	1	04/25/16 19:49	04/25/16 23:47		
Xylene (Total)	ND	ug/kg	9.9	1	04/25/16 19:49	04/25/16 23:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1	04/25/16 19:49	04/25/16 23:47	17060-07-0	
Toluene-d8 (S)	100	%	70-130	1	04/25/16 19:49	04/25/16 23:47	2037-26-5	
4-Bromofluorobenzene (S)	105	%	70-130	1	04/25/16 19:49	04/25/16 23:47	460-00-4	

Sample: SB-9-14 **Lab ID: 1264692002** Collected: 04/20/16 14:19 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	16.3	mg/kg	1.0	1	04/25/16 14:27	04/25/16 22:16		DO
Surrogates								
n-Octacosane (S)	118	%	47-150	1	04/25/16 14:27	04/25/16 22:16	630-02-4	
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	106-93-4	
1,2-Dichloroethane	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	107-06-2	
Ethylbenzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	91-20-3	
Toluene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 01:27	108-88-3	
TPH as Gas	ND	ug/kg	994	1	04/25/16 19:49	04/26/16 01:27		
Xylene (Total)	ND	ug/kg	9.9	1	04/25/16 19:49	04/26/16 01:27	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	101	%	70-130	1	04/25/16 19:49	04/26/16 01:27	17060-07-0	
Toluene-d8 (S)	101	%	70-130	1	04/25/16 19:49	04/26/16 01:27	2037-26-5	
4-Bromofluorobenzene (S)	102	%	70-130	1	04/25/16 19:49	04/26/16 01:27	460-00-4	

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ANALYTICAL RESULTS

Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

Sample: SB-10-13 **Lab ID: 1264692003** Collected: 04/20/16 14:29 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	20.0	mg/kg	0.99	1	04/25/16 14:27	04/26/16 09:03		DO
Surrogates								
n-Octacosane (S)	88	%.	47-150	1	04/25/16 14:27	04/26/16 09:03	630-02-4	
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	107-06-2	
Ethylbenzene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	1634-04-4	
Naphthalene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	91-20-3	
Toluene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 01:47	108-88-3	
TPH as Gas	ND	ug/kg	982	1	04/25/16 19:49	04/26/16 01:47		
Xylene (Total)	ND	ug/kg	9.8	1	04/25/16 19:49	04/26/16 01:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 01:47	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1	04/25/16 19:49	04/26/16 01:47	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	70-130	1	04/25/16 19:49	04/26/16 01:47	460-00-4	

Sample: SB-10-14 **Lab ID: 1264692004** Collected: 04/20/16 14:38 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	12.8	mg/kg	1.0	1	04/25/16 14:27	04/26/16 09:38		DO
Surrogates								
n-Octacosane (S)	89	%.	47-150	1	04/25/16 14:27	04/26/16 09:38	630-02-4	
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	107-06-2	
Ethylbenzene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	1634-04-4	
Naphthalene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	91-20-3	
Toluene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 02:07	108-88-3	
TPH as Gas	ND	ug/kg	984	1	04/25/16 19:49	04/26/16 02:07		
Xylene (Total)	ND	ug/kg	9.8	1	04/25/16 19:49	04/26/16 02:07	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 02:07	17060-07-0	
Toluene-d8 (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 02:07	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 02:07	460-00-4	

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ANALYTICAL RESULTS

Project: Terradev Jefferson, LLC

Pace Project No.: 1264692

Sample: SB-11-13 **Lab ID: 1264692005** Collected: 04/20/16 15:00 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	13.8	mg/kg	0.99	1	04/25/16 14:27	04/26/16 10:12		DO
Surrogates								
n-Octacosane (S)	117	%.	47-150	1	04/25/16 14:27	04/26/16 10:12	630-02-4	
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	106-93-4	
1,2-Dichloroethane	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	107-06-2	
Ethylbenzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	91-20-3	
Toluene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:27	108-88-3	
TPH as Gas	ND	ug/kg	992	1	04/25/16 19:49	04/26/16 02:27		
Xylene (Total)	ND	ug/kg	9.9	1	04/25/16 19:49	04/26/16 02:27	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1	04/25/16 19:49	04/26/16 02:27	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1	04/25/16 19:49	04/26/16 02:27	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	70-130	1	04/25/16 19:49	04/26/16 02:27	460-00-4	

Sample: SB-11-14 **Lab ID: 1264692006** Collected: 04/20/16 15:03 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	12.8	mg/kg	1.0	1	04/25/16 14:27	04/29/16 15:38		DO
Surrogates								
n-Octacosane (S)	105	%.	47-150	1	04/25/16 14:27	04/29/16 15:38	630-02-4	CH
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	106-93-4	
1,2-Dichloroethane	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	107-06-2	
Ethylbenzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	91-20-3	
Toluene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 02:47	108-88-3	
TPH as Gas	ND	ug/kg	998	1	04/25/16 19:49	04/26/16 02:47		
Xylene (Total)	ND	ug/kg	10	1	04/25/16 19:49	04/26/16 02:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 02:47	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1	04/25/16 19:49	04/26/16 02:47	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	70-130	1	04/25/16 19:49	04/26/16 02:47	460-00-4	

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ANALYTICAL RESULTS

Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

Sample: SB-12-9 **Lab ID: 1264692007** Collected: 04/20/16 09:13 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	5.5	mg/kg	0.99	1	04/25/16 14:27	04/29/16 16:09		DO
Surrogates								
n-Octacosane (S)	122	%.	47-150	1	04/25/16 14:27	04/29/16 16:09	630-02-4	CH
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	106-93-4	
1,2-Dichloroethane	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	107-06-2	
Ethylbenzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	91-20-3	
Toluene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:07	108-88-3	
TPH as Gas	ND	ug/kg	998	1	04/25/16 19:49	04/26/16 03:07		
Xylene (Total)	ND	ug/kg	10	1	04/25/16 19:49	04/26/16 03:07	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	104	%.	70-130	1	04/25/16 19:49	04/26/16 03:07	17060-07-0	
Toluene-d8 (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 03:07	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	70-130	1	04/25/16 19:49	04/26/16 03:07	460-00-4	

Sample: SB-12-12 **Lab ID: 1264692008** Collected: 04/20/16 09:52 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	14.9	mg/kg	0.99	1	04/25/16 14:27	04/29/16 16:50		DO
Surrogates								
n-Octacosane (S)	108	%.	47-150	1	04/25/16 14:27	04/29/16 16:50	630-02-4	CH
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	106-93-4	
1,2-Dichloroethane	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	107-06-2	
Ethylbenzene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	1634-04-4	
Naphthalene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	91-20-3	
Toluene	ND	ug/kg	4.9	1	04/25/16 19:49	04/26/16 03:27	108-88-3	
TPH as Gas	ND	ug/kg	982	1	04/25/16 19:49	04/26/16 03:27		
Xylene (Total)	ND	ug/kg	9.8	1	04/25/16 19:49	04/26/16 03:27	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 03:27	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1	04/25/16 19:49	04/26/16 03:27	2037-26-5	
4-Bromofluorobenzene (S)	100	%.	70-130	1	04/25/16 19:49	04/26/16 03:27	460-00-4	

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ANALYTICAL RESULTS

Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

Sample: SB-13-10.5 **Lab ID: 1264692009** Collected: 04/20/16 11:20 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	11.6	mg/kg	1.0	1	04/25/16 14:27	04/29/16 17:21		DO
Surrogates								
n-Octacosane (S)	125	%.	47-150	1	04/25/16 14:27	04/29/16 17:21	630-02-4	CH
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	106-93-4	
1,2-Dichloroethane	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	107-06-2	
Ethylbenzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	91-20-3	
Toluene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 03:47	108-88-3	
TPH as Gas	ND	ug/kg	992	1	04/25/16 19:49	04/26/16 03:47		
Xylene (Total)	ND	ug/kg	9.9	1	04/25/16 19:49	04/26/16 03:47	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	103	%.	70-130	1	04/25/16 19:49	04/26/16 03:47	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1	04/25/16 19:49	04/26/16 03:47	2037-26-5	
4-Bromofluorobenzene (S)	101	%.	70-130	1	04/25/16 19:49	04/26/16 03:47	460-00-4	

Sample: SB-13-13 **Lab ID: 1264692010** Collected: 04/20/16 11:52 Received: 04/22/16 17:00 Matrix: Solid

Results reported on a "wet-weight" basis

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Soil, Silica Gel Analytical Method: EPA 8015B Preparation Method: 89 CA LUFT								
TPH-DRO (C10-C28)	14.6	mg/kg	0.99	1	04/25/16 14:27	04/29/16 17:52		DO
Surrogates								
n-Octacosane (S)	102	%.	47-150	1	04/25/16 14:27	04/29/16 17:52	630-02-4	CH
8260 MSV Low Soil Analytical Method: EPA 8260B Preparation Method: EPA 5030 Low								
Benzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	71-43-2	
tert-Butyl Alcohol	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	106-93-4	
1,2-Dichloroethane	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	107-06-2	
Ethylbenzene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	100-41-4	
Methyl-tert-butyl ether	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	1634-04-4	
Naphthalene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	91-20-3	
Toluene	ND	ug/kg	5.0	1	04/25/16 19:49	04/26/16 04:07	108-88-3	
TPH as Gas	ND	ug/kg	998	1	04/25/16 19:49	04/26/16 04:07		
Xylene (Total)	ND	ug/kg	10	1	04/25/16 19:49	04/26/16 04:07	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	107	%.	70-130	1	04/25/16 19:49	04/26/16 04:07	17060-07-0	
Toluene-d8 (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 04:07	2037-26-5	
4-Bromofluorobenzene (S)	102	%.	70-130	1	04/25/16 19:49	04/26/16 04:07	460-00-4	

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QUALITY CONTROL DATA

Project: Terradev Jefferson, LLC

Pace Project No.: 1264692

QC Batch: DAOP/1683 Analysis Method: EPA 8015B
 QC Batch Method: 89 CA LUFT Analysis Description: 8015 GCS Soil, SI Gel
 Associated Lab Samples: 1264692001, 1264692002, 1264692003, 1264692004, 1264692005, 1264692006, 1264692007, 1264692008, 1264692009, 1264692010

METHOD BLANK: 309573 Matrix: Solid
 Associated Lab Samples: 1264692001, 1264692002, 1264692003, 1264692004, 1264692005, 1264692006, 1264692007, 1264692008, 1264692009, 1264692010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/kg	ND	1.0	04/25/16 23:25	
n-Octacosane (S)	%	87	47-150	04/25/16 23:25	

LABORATORY CONTROL SAMPLE: 309574

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/kg	20.1	17.7	88	75-125	
n-Octacosane (S)	%			88	47-150	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 309575 309576

Parameter	Units	1264692001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
TPH-DRO (C10-C28)	mg/kg	9.5	20	20	22.9	23.8	67	72	30-150	4	25	
n-Octacosane (S)	%						95	92	47-150			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Terradev Jefferson, LLC

Pace Project No.: 1264692

QC Batch: DAVM/3603 Analysis Method: EPA 8260B
 QC Batch Method: EPA 5030 Low Analysis Description: 8260 MSV Low Soil
 Associated Lab Samples: 1264692001, 1264692002, 1264692003, 1264692004, 1264692005, 1264692006, 1264692007, 1264692008, 1264692009, 1264692010

METHOD BLANK: 309916 Matrix: Solid
 Associated Lab Samples: 1264692001, 1264692002, 1264692003, 1264692004, 1264692005, 1264692006, 1264692007, 1264692008, 1264692009, 1264692010

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	ND	4.9	04/25/16 23:27	
1,2-Dichloroethane	ug/kg	ND	4.9	04/25/16 23:27	
Benzene	ug/kg	ND	4.9	04/25/16 23:27	
Ethylbenzene	ug/kg	ND	4.9	04/25/16 23:27	
Methyl-tert-butyl ether	ug/kg	ND	4.9	04/25/16 23:27	
Naphthalene	ug/kg	ND	4.9	04/25/16 23:27	
tert-Butyl Alcohol	ug/kg	ND	4.9	04/25/16 23:27	
Toluene	ug/kg	ND	4.9	04/25/16 23:27	
TPH as Gas	ug/kg	ND	982	04/25/16 23:27	
Xylene (Total)	ug/kg	ND	9.8	04/25/16 23:27	
1,2-Dichloroethane-d4 (S)	%	101	70-130	04/25/16 23:27	
4-Bromofluorobenzene (S)	%	101	70-130	04/25/16 23:27	
Toluene-d8 (S)	%	100	70-130	04/25/16 23:27	

LABORATORY CONTROL SAMPLE: 309917

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/kg	39.3	35.7	91	73-125	
1,2-Dichloroethane	ug/kg	39.3	34.8	89	67-125	
Benzene	ug/kg	39.3	34.9	89	69-125	
Ethylbenzene	ug/kg	39.3	35.6	91	72-125	
Methyl-tert-butyl ether	ug/kg	39.3	33.6	86	71-125	
Naphthalene	ug/kg	39.3	32.2	82	64-125	
tert-Butyl Alcohol	ug/kg	39.3	309	79	69-125	
Toluene	ug/kg	39.3	34.8	89	70-125	
Xylene (Total)	ug/kg	118	108	92	72-125	
1,2-Dichloroethane-d4 (S)	%			100	70-130	
4-Bromofluorobenzene (S)	%			105	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 309918 309919

Parameter	Units	309918		309919		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		MS Result	MSD Spike Conc.	MS Result	MSD Spike Conc.							
1,2-Dibromoethane (EDB)	ug/kg	ND	39.7	40	32.7	32.7	82	82	46-125	0	25	
1,2-Dichloroethane	ug/kg	ND	39.7	40	31.9	31.9	80	80	46-125	0	25	
Benzene	ug/kg	ND	39.7	40	32.9	34.0	83	85	56-125	3	25	

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QUALITY CONTROL DATA

Project: Terradev Jefferson, LLC

Pace Project No.: 1264692

Parameter	Units	309918		309919		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		1264692001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result								
Ethylbenzene	ug/kg	ND	39.7	40	32.7	34.4	82	86	45-125	5	25		
Methyl-tert-butyl ether	ug/kg	ND	39.7	40	31.2	31.1	79	78	42-125	0	25		
Naphthalene	ug/kg	ND	39.7	40	26.5	27.4	67	68	30-127	3	25		
tert-Butyl Alcohol	ug/kg	ND	397	400	280	277	71	69	30-125	1	25		
Toluene	ug/kg	ND	39.7	40	32.7	34.4	82	86	50-125	5	25		
Xylene (Total)	ug/kg	ND	119	120	97.8	104	82	86	44-125	6	25		
1,2-Dichloroethane-d4 (S)	%.						99	99	70-130				
4-Bromofluorobenzene (S)	%.						106	107	70-130				
Toluene-d8 (S)	%.						100	101	70-130				

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-DAV Pace Analytical Services - Davis

ANALYTE QUALIFIERS

CH The continuing calibration for this compound is outside of Pace Analytical acceptance limits. The results may be biased high.

DO Higher boiling hydrocarbons, discrete peaks present, atypical for Diesel Fuel.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Terradev Jefferson, LLC
Pace Project No.: 1264692

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1264692001	SB-9-13	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692002	SB-9-14	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692003	SB-10-13	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692004	SB-10-14	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692005	SB-11-13	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692006	SB-11-14	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692007	SB-12-9	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692008	SB-12-12	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692009	SB-13-10.5	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692010	SB-13-13	89 CA LUFT	DAOP/1683	EPA 8015B	DASG/1654
1264692001	SB-9-13	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692002	SB-9-14	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692003	SB-10-13	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692004	SB-10-14	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692005	SB-11-13	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692006	SB-11-14	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692007	SB-12-9	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692008	SB-12-12	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692009	SB-13-10.5	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604
1264692010	SB-13-13	EPA 5030 Low	DAVM/3603	EPA 8260B	DAVM/3604

REPORT OF LABORATORY ANALYSIS

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2795 2nd Street, Suite 300
 Davis, CA 95618
 Lab: 530.297.4800
 Fax: 530.297.4802

SRG # / Lab No.

1264692

Page 1 of 1

Send Report To: Brian Gwin
 brian@bluerockenv.com
 Email Address:

Electronic Data Deliverable (EDD):
 CA EDF CA WriteOn WA EIM

Chain-of-Custody Record and Analysis Request

Company: BlueRock Environmental, Inc.

Excel EQUiS Other
 (format)

TPH	8260B	524	Metals	SPECIAL	Other
<input checked="" type="checkbox"/> Gas (8260) <input type="checkbox"/> Gas (8015) <input type="checkbox"/> Diesel <input type="checkbox"/> Motor Oil	BTX: Benzene Toluene Ethylbenzene Total Xylenes	MTBE	Oxygenates: MTBE DIPE ETBE TAME TBA	7 Oxygenates (5 Oxygenates plus): Ethanol Methanol	Lead Scavengers: 1,2 DCA 1,2 EDB
<input type="checkbox"/> Other (specify):	Halogenated Volatile Organic Compounds (former 8010 list)				
	Volatile Organic Compounds Full List				
	Volatile Organics by EPA Method 524.2				
	Metals Group (Method:): <input type="checkbox"/> CAM 17 <input type="checkbox"/> LUFT 5				
	Individual Metals (list and enter method):				
	<input type="checkbox"/> Nitrate as N <input type="checkbox"/> Nitrite as N <input type="checkbox"/> Ferrous Iron				
	<input type="checkbox"/> Nitrate as NO ₃ <input type="checkbox"/> Nitrite as NO ₂				
	Chromium VI by EPA 7199				
	TBA (BACO)				
	Naphthalene (BACO)				
					For Lab Use Only

Address: 1157 Class Dr, #107, Foster City, CA

Global ID (for CA EDF use): T10000001072

Phone Number: 650-522-9222 Fax Number:

EDD Deliverable To (Email Address): brian@bluerockenv.com

Project #: ASE-1 P.O. #:

Sampling Company: BlueRock Sampler Signature:

Project Name: Terraden Jefferson, LLC

Invoice To: BlueRock

Project Address: 645 4th St Oakland, CA

Sampling	# of Containers	# Preserved	Matrix
	40 ml VOA		
	Sleeve		
	Poly		
	Glass		
	Tedlar		
	HCl		
	HNO ₃		
	None		
	Water		
	Soil		
	Air		
	Other (specify)		

Sample Identification	Date	Time	40 ml VOA	Sleeve	Poly	Glass	Tedlar	HCl	HNO ₃	None	Water	Soil	Air	Other (specify)
SB-9-13	9/20/16	1417	1							X		X		
SB-9-14		1419												
SB-10-13		1429												
SB-10-14		1438												
SB-11-13		1500												
SB-11-14		1503												
SB-12-9		0913												
SB-12-12		0952												
SB-13-10.5		1120												
SB-13-13		1152												

Relinquished by (signature/affiliation): [Signature] Date & Time: 9/20/16 1400

Received by (signature/affiliation): [Signature] Date & Time: 1400

Remarks and Special Instructions (composite, filter, MS/MSD, return samples, Silica Gel, etc.): Silica Gel Clean up prior to TPH Analysis

Relinquished by (signature/affiliation): [Signature] Date & Time: 0922 1700

Received by (signature/affiliation): [Signature] Date & Time: 0422 16 1700

Relinquished by (signature/affiliation): Date & Time:

Received by Kiff Analytical (signature): Date & Time:

Turnaround Time (TAT - Circle One): Standard 4-Day 3-Day 2-Day 1-Day Other: TAT in business days. Surcharge may apply. TAT for subcontracted work may vary.

Sample Condition Upon Receipt

Client Name: Blue Rock Environmental Project #: _____

WO# : 1264692



1264692

Courier: Fed Ex UPS USPS Client
 Commercial Pace OnTrac Other: _____
 Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No Optional: Proj. Due Date: _____ Proj. Name: _____

Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No

Thermom. Used: DA1434 DA2285 Type of Ice: Wet Blue Dry Ice None Samples on ice, cooling process has begun

Cooler Temp Read(°C): 0.2 Cooler Temp Corrected(°C): 0.6 Biological Tissue Frozen? Yes No N/A
 Temp should be above freezing to 6°C Correction Factor: +0.4 Date and Initials of Person Examining Contents: 042216 TJB

Chain of Custody Present?	Yes	No	N/A	1.
Chain of Custody Filled Out?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. <u>Sample Dates and analysis</u>
Chain of Custody Relinquished?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. <u>request not indicated for</u>
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. <u>samples -002 through -010.</u>
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. <u>All containers have 4/20/16</u>
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	6. <u>as the date. Per SMF of</u>
Rush Turn Around Time Requested?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. <u>Pace, all samples will be</u>
Sufficient Volume?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. <u>logged in with the</u>
Correct Containers Used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. <u>analyses requested for -01.</u>
-Pace Containers Used?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Containers Intact?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10.
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. Note if sediment is visible in the dissolved container.
Sample Labels Match COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12.
-Includes Date/Time/ID/Analysis Matrix: <u>SL</u>				
All containers needing acid/base preservation have been checked?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. <input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH>9 Sulfide, NaOH>12 Cyanide)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sample #
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Initial when completed: _____ Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	14.
Trip Blank Present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	15.
Trip Blank Custody Seals Present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Pace Trip Blank Lot # (if purchased):				

CLIENT NOTIFICATION/RESOLUTION


Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review: Scott Jones Date: 4/25/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)

	Document Name: Soil Checklist	Document Revised: 13Jan2016 Page 1 of 1
	Document No.: F-DAV-C-028-Rev.00	Issuing Authority: Pace Davis Quality Office

SOIL CHECKLIST

To Be Completed by SR Staff:

Client: Blue Rock Env. Date: 042216 Initials: TJB

Are any samples from a depth of ≤ 6 ft?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not indicated (If No, proceed with receipt, samples are not regulated.)	
Sample Origin (circle one):	FOREIGN	DOMESTIC
<i>(Note: soil samples from Hawaii and Puerto Rico are considered to be of a Foreign Source)</i>		
If Foreign, list County of Origin:		
If Domestic, circle State of Origin:	AL AR AZ CA FL GA ID LA MS NC NM NY OK OR SC TN TX WA <input type="checkbox"/> NONE OF THE ABOVE (If None of the Above, proceed with receipt, samples are not regulated.)	
If from a circled state above, County of Origin	<i>If unknown, contact PM. Project cannot be received until this is determined.</i>	
Is County of Origin in a Regulated or Quarantined Zone?	<input type="checkbox"/> Yes <input type="checkbox"/> No (If No, proceed with receipt, samples are not regulated.)	

REQUIREMENT	ACTION	COMPLETED
Samples from a depth of > 6 feet are not regulated under APHIS / USDA guidelines	Were samples segregated by depth ≤ or > 6 feet? (If samples from > 6 feet were in direct contact with soil from ≤ 6 ft, all soils must be treated as regulated.)	YES NO N/A
Yellow stickers are to be placed on all regulated samples.	Did yellow stickers get placed on all sample containers?	YES NO
Samples must be segregated and stored in designated bins, shelves and coolers.	Were samples placed in a designated cooler, containers and shelves?	YES NO
Samples must be double contained to prevent accidental release.	Were there any signs of breakage or leakage (check for broken glass and/or loose soil in the cooler)?	YES NO
	<i>If NO, ice and melt water can be disposed of by normal process (down the drain).</i>	
	If YES, were ice and melt water separated from the cooler and disposed of properly?	YES NO N/A
Equipment and supplies that have come into contact samples must be decontaminated.	<i>Any broken glass and/or loose soil are to be bagged and placed in a USDA Regulated satellite container or active drum (see Waste Coordinator). Ice and melt water must be containerized and sterilized by adding enough bleach to achieve a 10% concentration and allowed to sit for ≥ 30 minutes before disposing.</i>	
	Was the cooler(s) and/or countertop(s) decontaminated using a fresh 10% bleach solution? (<i>Gloves and other lab supplies will be bagged and placed in the SR USDA Regulated satellite container.</i>)	YES NO

To Be Completed by PM/PC for Regulated Soils:

Sample Analysis to be conducted at (circle all that apply): Davis Subcontract Lab
 Name of Subcontract Lab(s): _____

REQUIREMENT	ACTION	COMPLETED
USDA / APHIS rep must be informed by email prior to shipping untreated soil to any subcontract lab, including IR Pace Labs.	Anthony Jackson, USDA APHIS PPQ Tel.: (916) 930-5536 Email: Anthony.S.Jackson@aphis.usda.gov	YES NO N/A
Shipment must include a valid copy of the receiving lab's permit along with all required forms.	Is a copy of all needed paperwork included with the COC? Do NOT ship samples until all necessary paperwork is compiled.	YES NO N/A

Comments: Per MAS of Pace, the client indicated verbally that the suffix of each sample ID is the depth in feet.

Project Manager Signature: Scott Jenkins Date: 4/25/16

April 29, 2016

Brian Gwinn
Blue Rock Environmental
1169 Chess Drive
Suite C
Foster City, CA 94404

RE: Project: Terradev Jefferson, LLC
Pace Project No.: 1264691

Dear Brian Gwinn:

Enclosed are the analytical results for sample(s) received by the laboratory on April 22, 2016. The results relate only to the samples included in this report. Results reported herein conform to the most current TNI standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott M Forbes
scott.forbes@pacelabs.com
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

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CERTIFICATIONS

Project: Terradev Jefferson, LLC
Pace Project No.: 1264691

Davis Certification IDs

2795 Second Street Suite 300 Davis, CA 95618
North Dakota Certification #: R-214
Oregon Certification #: CA300002

Washington Certification #: C926-15a
California Certification #: 08263CA

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: Terradev Jefferson, LLC

Pace Project No.: 1264691

Lab ID	Sample ID	Matrix	Date Collected	Date Received
1264691001	SB-9	Water	04/20/16 14:50	04/22/16 17:00
1264691002	SB-10	Water	04/20/16 15:42	04/22/16 17:00
1264691003	SB-11	Water	04/20/16 15:20	04/22/16 17:00
1264691004	SB-12	Water	04/20/16 12:03	04/22/16 17:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: Terradev Jefferson, LLC

Pace Project No.: 1264691

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
1264691001	SB-9	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264691002	SB-10	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV
1264691003	SB-11	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP, JMB	13	PASI-DAV
1264691004	SB-12	EPA 8015B	DRM	2	PASI-DAV
		EPA 8260B	JCP	13	PASI-DAV

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Terradev Jefferson, LLC

Pace Project No.: 1264691

Sample: SB-9		Lab ID: 1264691001	Collected: 04/20/16 14:50	Received: 04/22/16 17:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water, Silica Gel		Analytical Method: EPA 8015B Preparation Method: EPA 3511						
TPH-DRO (C10-C28)	ND	mg/L	0.048	1	04/25/16 10:06	04/26/16 22:56		
Surrogates								
n-Octacosane (S)	99	%.	75-139	1	04/25/16 10:06	04/26/16 22:56	630-02-4	
8260 MSV Med Water		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	0.50	1		04/25/16 19:46	71-43-2	
tert-Butyl Alcohol	ND	ug/L	5.0	1		04/25/16 19:46	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1		04/25/16 19:46	106-93-4	
1,2-Dichloroethane	ND	ug/L	0.50	1		04/25/16 19:46	107-06-2	
Ethylbenzene	ND	ug/L	0.50	1		04/25/16 19:46	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		04/25/16 19:46		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		04/25/16 19:46	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		04/25/16 19:46	91-20-3	
Toluene	ND	ug/L	0.50	1		04/25/16 19:46	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		04/25/16 19:46	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	98	%.	70-130	1		04/25/16 19:46	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		04/25/16 19:46	2037-26-5	
4-Bromofluorobenzene (S)	104	%.	70-130	1		04/25/16 19:46	460-00-4	

Sample: SB-10		Lab ID: 1264691002	Collected: 04/20/16 15:42	Received: 04/22/16 17:00	Matrix: Water			
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water, Silica Gel		Analytical Method: EPA 8015B Preparation Method: EPA 3511						
TPH-DRO (C10-C28)	ND	mg/L	0.049	1	04/25/16 10:06	04/26/16 23:31		
Surrogates								
n-Octacosane (S)	92	%.	75-139	1	04/25/16 10:06	04/26/16 23:31	630-02-4	
8260 MSV Med Water		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	0.50	1		04/25/16 21:46	71-43-2	
tert-Butyl Alcohol	ND	ug/L	5.0	1		04/25/16 21:46	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1		04/25/16 21:46	106-93-4	
1,2-Dichloroethane	ND	ug/L	0.50	1		04/25/16 21:46	107-06-2	
Ethylbenzene	ND	ug/L	0.50	1		04/25/16 21:46	100-41-4	
Gasoline Range Organics	ND	ug/L	50.0	1		04/25/16 21:46		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		04/25/16 21:46	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		04/25/16 21:46	91-20-3	
Toluene	ND	ug/L	0.50	1		04/25/16 21:46	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		04/25/16 21:46	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%.	70-130	1		04/25/16 21:46	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		04/25/16 21:46	2037-26-5	
4-Bromofluorobenzene (S)	103	%.	70-130	1		04/25/16 21:46	460-00-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: Terradev Jefferson, LLC

Pace Project No.: 1264691

Sample: SB-11		Lab ID: 1264691003		Collected: 04/20/16 15:20	Received: 04/22/16 17:00	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water, Silica Gel		Analytical Method: EPA 8015B Preparation Method: EPA 3511						
TPH-DRO (C10-C28)	ND	mg/L	0.049	1	04/25/16 10:06	04/27/16 00:06		
Surrogates								
n-Octacosane (S)	95	%.	75-139	1	04/25/16 10:06	04/27/16 00:06	630-02-4	
8260 MSV Med Water		Analytical Method: EPA 8260B						
Benzene	ND	ug/L	0.50	1		04/25/16 22:06	71-43-2	
tert-Butyl Alcohol	ND	ug/L	5.0	1		04/25/16 22:06	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1		04/25/16 22:06	106-93-4	
1,2-Dichloroethane	332	ug/L	1.7	3.33		04/28/16 22:32	107-06-2	
Ethylbenzene	ND	ug/L	0.50	1		04/25/16 22:06	100-41-4	
Gasoline Range Organics	182	ug/L	50.0	1		04/25/16 22:06		
Methyl-tert-butyl ether	81.5	ug/L	0.50	1		04/25/16 22:06	1634-04-4	
Naphthalene	ND	ug/L	0.50	1		04/25/16 22:06	91-20-3	
Toluene	ND	ug/L	0.50	1		04/25/16 22:06	108-88-3	
Xylene (Total)	ND	ug/L	1.5	1		04/25/16 22:06	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	95	%.	70-130	1		04/25/16 22:06	17060-07-0	
Toluene-d8 (S)	101	%.	70-130	1		04/25/16 22:06	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	70-130	1		04/25/16 22:06	460-00-4	

Sample: SB-12		Lab ID: 1264691004		Collected: 04/20/16 12:03	Received: 04/22/16 17:00	Matrix: Water		
Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
8015 GCS Water, Silica Gel		Analytical Method: EPA 8015B Preparation Method: EPA 3511						
TPH-DRO (C10-C28)	ND	mg/L	0.050	1	04/25/16 10:06	04/27/16 00:40		
Surrogates								
n-Octacosane (S)	94	%.	75-139	1	04/25/16 10:06	04/27/16 00:40	630-02-4	
8260 MSV Med Water		Analytical Method: EPA 8260B						
Benzene	0.58	ug/L	0.50	1		04/25/16 22:26	71-43-2	
tert-Butyl Alcohol	ND	ug/L	5.0	1		04/25/16 22:26	75-65-0	
1,2-Dibromoethane (EDB)	ND	ug/L	0.50	1		04/25/16 22:26	106-93-4	
1,2-Dichloroethane	ND	ug/L	0.50	1		04/25/16 22:26	107-06-2	
Ethylbenzene	1.3	ug/L	0.50	1		04/25/16 22:26	100-41-4	
Gasoline Range Organics	61.8	ug/L	50.0	1		04/25/16 22:26		
Methyl-tert-butyl ether	ND	ug/L	0.50	1		04/25/16 22:26	1634-04-4	
Naphthalene	0.86	ug/L	0.50	1		04/25/16 22:26	91-20-3	
Toluene	4.0	ug/L	0.50	1		04/25/16 22:26	108-88-3	
Xylene (Total)	7.5	ug/L	1.5	1		04/25/16 22:26	1330-20-7	
Surrogates								
1,2-Dichloroethane-d4 (S)	97	%.	70-130	1		04/25/16 22:26	17060-07-0	
Toluene-d8 (S)	100	%.	70-130	1		04/25/16 22:26	2037-26-5	
4-Bromofluorobenzene (S)	105	%.	70-130	1		04/25/16 22:26	460-00-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Terradev Jefferson, LLC
Pace Project No.: 1264691

QC Batch: DAOP/1684 Analysis Method: EPA 8015B
QC Batch Method: EPA 3511 Analysis Description: 8015 GCS Water, SI Gel
Associated Lab Samples: 1264691001, 1264691002, 1264691003, 1264691004

METHOD BLANK: 309581 Matrix: Water
Associated Lab Samples: 1264691001, 1264691002, 1264691003, 1264691004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
TPH-DRO (C10-C28)	mg/L	ND	0.050	04/26/16 08:28	
n-Octacosane (S)	%.	90	75-139	04/26/16 08:28	

LABORATORY CONTROL SAMPLE: 309582

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
TPH-DRO (C10-C28)	mg/L	1	0.84	83	59-125	
n-Octacosane (S)	%.			101	75-139	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 309617 309618

Parameter	Units	1264673001		309618		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
		Result	MS Spike Conc.	MSD Spike Conc.	MS Result						
TPH-DRO (C10-C28)	mg/L	ND	1	.98	0.80	79	83	57-125	3	25	
n-Octacosane (S)	%.					94	95	75-139			

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: Terradev Jefferson, LLC
Pace Project No.: 1264691

QC Batch: DAVM/3601 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Med Water
Associated Lab Samples: 1264691001, 1264691002, 1264691003, 1264691004

METHOD BLANK: 309896 Matrix: Water
Associated Lab Samples: 1264691001, 1264691002, 1264691003, 1264691004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	ND	0.50	04/25/16 19:26	
1,2-Dichloroethane	ug/L	ND	0.50	04/25/16 19:26	
Benzene	ug/L	ND	0.50	04/25/16 19:26	
Ethylbenzene	ug/L	ND	0.50	04/25/16 19:26	
Gasoline Range Organics	ug/L	ND	50.0	04/25/16 19:26	
Methyl-tert-butyl ether	ug/L	ND	0.50	04/25/16 19:26	
Naphthalene	ug/L	ND	0.50	04/25/16 19:26	
tert-Butyl Alcohol	ug/L	ND	5.0	04/25/16 19:26	
Toluene	ug/L	ND	0.50	04/25/16 19:26	
Xylene (Total)	ug/L	ND	1.5	04/25/16 19:26	
1,2-Dichloroethane-d4 (S)	%	92	70-130	04/25/16 19:26	
4-Bromofluorobenzene (S)	%	103	70-130	04/25/16 19:26	
Toluene-d8 (S)	%	100	70-130	04/25/16 19:26	

LABORATORY CONTROL SAMPLE: 309897

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dibromoethane (EDB)	ug/L	40	40.0	100	74-128	
1,2-Dichloroethane	ug/L	40	37.4	93	64-141	
Benzene	ug/L	40	39.0	98	75-125	
Ethylbenzene	ug/L	40	39.7	99	75-125	
Methyl-tert-butyl ether	ug/L	40	38.6	97	73-125	
Naphthalene	ug/L	40	36.2	91	69-128	
tert-Butyl Alcohol	ug/L	400	376	94	75-125	
Toluene	ug/L	40	38.8	97	75-125	
Xylene (Total)	ug/L	120	121	101	75-125	
1,2-Dichloroethane-d4 (S)	%			97	70-130	
4-Bromofluorobenzene (S)	%			106	70-130	
Toluene-d8 (S)	%			101	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 309898 309899

Parameter	Units	MS		MSD		MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual	
		1264691001 Result	Spike Conc.	Spike Conc.	MS Result							MSD Result
1,2-Dibromoethane (EDB)	ug/L	ND	40	40	41.0	39.4	103	99	75-126	4	30	
1,2-Dichloroethane	ug/L	ND	40	40	40.0	37.0	100	92	75-137	8	30	
Benzene	ug/L	ND	40	40	40.2	38.5	101	96	75-125	4	30	
Ethylbenzene	ug/L	ND	40	40	40.5	40.3	101	101	74-125	0	30	

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QUALITY CONTROL DATA

Project: Terradev Jefferson, LLC

Pace Project No.: 1264691

Parameter	Units	309898		309899		MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual
		1264691001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result							
Methyl-tert-butyl ether	ug/L	ND	40	40	40.0	38.5	100	96	73-129	4	30	
Naphthalene	ug/L	ND	40	40	37.6	36.4	94	91	60-133	3	30	
tert-Butyl Alcohol	ug/L	ND	400	400	411	403	103	101	65-128	2	30	
Toluene	ug/L	ND	40	40	39.8	38.8	100	97	75-125	2	30	
Xylene (Total)	ug/L	ND	120	120	122	123	102	102	61-129	0	30	
1,2-Dichloroethane-d4 (S)	%.							97	70-130			
4-Bromofluorobenzene (S)	%.							105	70-130			
Toluene-d8 (S)	%.							101	70-130			

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QUALITY CONTROL DATA

Project: Terradev Jefferson, LLC
Pace Project No.: 1264691

QC Batch: DAVM/3627 Analysis Method: EPA 8260B
QC Batch Method: EPA 8260B Analysis Description: 8260 MSV Med Water
Associated Lab Samples: 1264691003

METHOD BLANK: 311386 Matrix: Water
Associated Lab Samples: 1264691003

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,2-Dichloroethane	ug/L	ND	0.50	04/28/16 18:53	
1,2-Dichloroethane-d4 (S)	%.	103	70-130	04/28/16 18:53	
4-Bromofluorobenzene (S)	%.	98	70-130	04/28/16 18:53	
Toluene-d8 (S)	%.	100	70-130	04/28/16 18:53	

LABORATORY CONTROL SAMPLE: 311387

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,2-Dichloroethane	ug/L	40	37.6	94	64-141	
1,2-Dichloroethane-d4 (S)	%.			102	70-130	
4-Bromofluorobenzene (S)	%.			98	70-130	
Toluene-d8 (S)	%.			100	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 311429 311430

Parameter	Units	1264940001		311430		MS % Rec	MSD % Rec	% Rec Limits	Max RPD	Qual	
		MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result						
1,2-Dichloroethane	ug/L	ND	40	40	38.2	38.8	95	97	75-137	2	30
1,2-Dichloroethane-d4 (S)	%.						100	103	70-130		
4-Bromofluorobenzene (S)	%.						100	102	70-130		
Toluene-d8 (S)	%.						98	95	70-130		

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REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: Terradev Jefferson, LLC

Pace Project No.: 1264691

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-DAV Pace Analytical Services - Davis

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: Terradev Jefferson, LLC

Pace Project No.: 1264691

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
1264691001	SB-9	EPA 3511	DAOP/1684	EPA 8015B	DASG/1653
1264691002	SB-10	EPA 3511	DAOP/1684	EPA 8015B	DASG/1653
1264691003	SB-11	EPA 3511	DAOP/1684	EPA 8015B	DASG/1653
1264691004	SB-12	EPA 3511	DAOP/1684	EPA 8015B	DASG/1653
1264691001	SB-9	EPA 8260B	DAVM/3601		
1264691002	SB-10	EPA 8260B	DAVM/3601		
1264691003	SB-11	EPA 8260B	DAVM/3601		
1264691003	SB-11	EPA 8260B	DAVM/3627		
1264691004	SB-12	EPA 8260B	DAVM/3601		

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2795 2nd Street, Suite 300
 Davis, CA 95618
 Lab: 530.297.4800
 Fax: 530.297.4802

SRG # / Lab No.

TJB 042216
~~1264690~~ 1264691

Page 1 of 1

Send Report To: *Brian Gewinn*
 Email Address: *brian@bluerockenv.com*
 Company: *Blue Rock Environmental*
 Address: *157 Chess Dr #107 Foster City*
 Phone Number: *650-522-9272* Fax Number:
 Project #: *ASE-1* P.O. #:

Electronic Data Deliverable (EDD):
 CA EDF CA WriteOn WA EIM
 Excel EQUIS Other _____
 (format)
 Global ID (for CA EDF use):
TI 0000001072
 EDD Deliverable To (Email Address):
 Sampling Company: *BlueRock* Sampler Signature: *[Signature]*

Project Name: *Terraden Jefferson, LLC*
 Project Address: *645 4th St Oakland, CA*

Invoice To: *BlueRock*

Sample Identification	Sampling		# of Containers				# Preserved			Matrix				
	Date	Time	40 ml VOA	Sleeve	Poly	Glass	Tedlar	HCl	HNO ₃	None	Water	Soil	Air	Other (specify)
SB-9	4/20/16	1450	6					X			X			
SB-10	↓	1542	6					X			X			
SB-11	↓	1520	6					X			X			
SB-12	↓	1203	6					X			X			

Chain-of-Custody Record and Analysis Request															
TPH	8260B				524	Metals	SPECIAL	Other							
<input checked="" type="checkbox"/> Gas (8260) <input type="checkbox"/> Gas (8015) <input type="checkbox"/> Diesel <input type="checkbox"/> Motor Oil	<input type="checkbox"/> Other (specify):														
BTEX: Benzene Toluene Ethylbenzene Total Xylenes															
MTBE															
5 Oxygenates: MTBE DIPE ETBE TAME TBA															
7 Oxygenates (5 Oxygenates plus): Ethanol Methanol															
Lead Scavengers: 1,2 DCA 1,2 EDB															
Halogenated Volatile Organic Compounds (former 8010 list)															
Volatile Organic Compounds Full List															
Volatile Organics by EPA Method 524.2															
Metals Group (Method: _____): <input type="checkbox"/> CAM 17 <input type="checkbox"/> LUFT 5															
Individual Metals (list and enter method):															
<input type="checkbox"/> Nitrate as N <input type="checkbox"/> Nitrite as N <input type="checkbox"/> Ferrous Iron															
<input type="checkbox"/> Nitrate as NO ₃ <input type="checkbox"/> Nitrite as NO ₂															
Chromium VI by EPA 7199															
	TBA (8260)				Naphthalene (8260)										

Relinquished by (signature/affiliation): <i>[Signature]</i>	Date & Time: <i>4/22/16 1400</i>	Received by (signature/affiliation): <i>[Signature]</i>	Date & Time: <i>1900 042216</i>
Relinquished by (signature/affiliation): <i>[Signature]</i>	Date & Time: <i>1900 042216</i>	Received by (signature/affiliation): <i>[Signature]</i>	Date & Time: <i>042216 1700</i>
Relinquished by (signature/affiliation):	Date & Time:	Received by Kiff Analytical (signature):	Date & Time:

Remarks and Special Instructions (composite, filter, MS/MSD, return samples, Silica Gel, etc.):
Silica Gel cleanup prior to analysis

Turnaround Time (TAT - Circle One):
 Standard 4-Day 3-Day 2-Day 1-Day Other: _____
 TAT in business days. Surcharge may apply. TAT for subcontracted work may vary.

Sample Condition Upon Receipt

Client Name: Blue Rock Environmental Project #: _____

WO#: 1264691



1264691

Courier: Fed Ex UPS USPS Client
 Commercial Pace OnTrac Other: _____
 Tracking Number: _____

Custody Seal on Cooler/Box Present? Yes No Seals Intact? Yes No
 Packing Material: Bubble Wrap Bubble Bags None Other: _____ Temp Blank? Yes No
 Thermom. Used: DA1434 DA2285 Type of Ice: Wet Blue Dry Ice None Samples on ice, cooling process has begun
 Cooler Temp Read(°C): 38 Cooler Temp Corrected(°C): 4.2 Biological Tissue Frozen? Yes No N/A
 Temp should be above freezing to 6°C Correction Factor: 10.4 Date and Initials of Person Examining Contents: 042216 TJB

			Comments:
Chain of Custody Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	1.	<u>KIFF COC used. Samples</u>
Chain of Custody Filled Out?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	2.	<u>were relinquished to PACE</u>
Chain of Custody Relinquished?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	3.	
Sampler Name and/or Signature on COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	4.	
Samples Arrived within Hold Time?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	5.	
Short Hold Time Analysis (<72 hr)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	6.	
Rush Turn Around Time Requested?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	7.	
Sufficient Volume?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	8.	
Correct Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	9.	
-Pace Containers Used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A		
Containers Intact?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	10.	
Filtered Volume Received for Dissolved Tests?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	11.	Note if sediment is visible in the dissolved container.
Sample Labels Match COC?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	12.	
-Includes Date/Time/ID/Analysis Matrix: <u>WT</u>			
All containers needing acid/base preservation have been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	13.	<input type="checkbox"/> HNO ₃ <input type="checkbox"/> H ₂ SO ₄ <input type="checkbox"/> NaOH <input type="checkbox"/> HCl
All containers needing preservation are found to be in compliance with EPA recommendation? (HNO ₃ , H ₂ SO ₄ , HCl<2; NaOH >9 Sulfide, NaOH >12 Cyanide)	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	Sample #	
Exceptions: VOA, Coliform, TOC, Oil and Grease, DRO/8015 (water) DOC	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Initial when completed: _____	Lot # of added preservative: _____
Headspace in VOA Vials (>6mm)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	14.	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A	15.	
Trip Blank Custody Seals Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
Pace Trip Blank Lot # (if purchased):			

CLIENT NOTIFICATION/RESOLUTION

Field Data Required? Yes No

Person Contacted: _____ Date/Time: _____

Comments/Resolution: _____

Project Manager Review:

Scott Ren

Date: 4/25/16

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)