September 12, 2017

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By Alameda County Environmental Health 4:53 pm, Oct 16, 2017

Ms. Karel Detterman
Alameda County Environmental Health
1131 Harbon Parkway, Suite 250
Alameda, California 94502

Subject: **Perjury Statement and Report Transmittal**
Zimmerman Property
3442 Adeline Street
Oakland, CA
AEI Project No. 281939
ACDEH Fuel Leak Case No. RO0002936

Dear Ms. Detterman:

I declare under penalty of perjury that the information and/or recommendations contained in the attached *Report on Data Gap Investigation, Updated Conceptual Site Model, and Closure Evaluation* dated September 12, 2017 for the above-referenced site are true and correct to the best of my knowledge.

If you have questions or need additional information, please contact me at (925) 457 - 5607 or Mr. Jonathan Sanders at AEI Consultants at (925) 250 - 6009

Sincerely,

Bill Mouat

Representative of the Steffi R. Zimmerman Trust

AEI Consultants
Environmental & Engineering Services

September 12, 2017

Report on Data Gap Investigation, Updated Conceptual Site Model, and Closure Evaluation

Property Identification:
Zimmerman Property
3442 Adeline Street
Oakland, CA

AEI Project No. 281939
ACEH Site: RO0002936

Prepared for:
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Environmental & Engineering Due Diligence

Site Investigation & Remediation

Energy Performance & Benchmarking

Industrial Hygiene

Construction

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Signatures

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Project Engineer

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AEI Consultants

1. INTRODUCTION

On behalf of the Steffi Zimmerman Trust (the Trust), AEI Consultants (AEI) has prepared this *Report on Data Gap Investigation, Updated Conceptual Site Model, and Closure Evaluation* for the property located at 3442 Adeline Street in the City of Oakland, Alameda County, California ("the Site"). The purposes of this report are to:

1) Document the implementation of the work plan presented in the *Updated Site Conceptual Model and Soil and Soil Vapor Investigation Report* dated November 15, 2016 ("the Work Plan") which was approved with technical comment by the Alameda County Department of Environmental Health (ACDEH) in their directive letter dated May 12, 2017;
2) Update the Site Conceptual Model with the newly collected data; and
3) Provide recommendations for achieving regulatory case closure for the Site under the requirements of the California State Water Resources Control Board (WRCB) Low-Threat Underground Storage Tank Case Closure Policy (LTCP).

2. SITE SETTING

2.1. Site Location and Description

The Site is an approximately one-acre parcel located on the southwest corner of 35th Street and Chestnut Street in an urban mixed commercial/industrial and residential area of the city of Oakland in California. The Site is fully developed with two conjoined warehouse buildings and attached canopy. Ground cover at the site consists of concrete paving throughout with no asphalt and no landscaped areas. Within the interior of easternmost warehouse building, the concrete paving is overlain by artificial turf or heavy rubber mats. The Site is fully enclosed by exterior walls to on-site improvements where present and a perimeter fence where no buildings are present. Access to the site is through a gate along Adeline street or through four roll-up doors along chestnut street. The general location of the Site is depicted in Figure 1 while the layout of the Site is depicted on Figure 2.

2.2. Summary of Previous Environmental Work

On February 22, 2000, Clearwater Group (Clearwater) reportedly removed a 3,750-gallon steel single-wall underground storage tank (UST) from a location immediately adjacent to the eastern property boundary. Sidewall soil samples (NW and SE) and a grab groundwater sample (Pit Water) were collected from the tank excavation for chemical analysis. Each of the two sidewall soil samples and the one groundwater sample yielded elevated concentrations of petroleum hydrocarbons suggesting a release of petroleum hydrocarbons had occurred from the former UST.

Subsurface investigations to characterize the lateral and vertical extent of petroleum hydrocarbons released from the former UST commenced in 2006. The investigation activities have included:

- Between 2006 and 2009, a total of 43 soil borings were advanced by Clearwater and AEI for the collection of soil and grab groundwater samples from both on-site and off-site

locations. Analytical soil and groundwater data from these investigations are summarized in Table 1 and Table 2 respectively.

- In April 2009, seven groundwater monitoring wells (MW-1 through MW-7) were installed. Each well was installed with a screened interval from 7 to 17 feet bgs. Periodic groundwater monitoring of the groundwater in each of the monitoring wells has been performed since their installation. Monitoring well construction details are summarized in Table 3. Summaries of groundwater elevation data and gradient trends are provided in Table 4 and Table 5 respectively. Analytical data collected during historic groundwater monitoring events is summarized in Table 6
- In October 2016, permanent soil vapor probes VB-6 through VB-16 were installed and soil boring 32 was advanced. A total of 9 soil vapor and 24 soil samples were collected as part of this investigation, the results of which are reported in the *Updated Site Conceptual Model and Soil and Soil Vapor Investigation Report* dated November 15, 2016 and are summarized in Table 6. The findings of this investigation identified several data gaps and that benzene was present above the soil gas criteria as defined by the California Environmental Protection Agency's (Cal EPA) Low Threat Underground Storage Tank Case Closure Policy dated August 17, 2012 (LTCP). Data gaps related to soil vapor delineation, temporal soil vapor analytical data, and bounding groundwater analytical data.

Remedial activities at the Site have consisted of the following:

- In March and April of 2009 AEI conducted an interim remedial excavation. This excavation is described in detail in the *Interim Corrective Action Report* dated August 31, 2009 and is described briefly below:
    - The excavation was performed on-site and immediately down-gradient of the former UST location and inside one of the on-site warehouse buildings.
    - Approximately 1,100 tons of petroleum impacted soil was removed from a roughly 35 feet wide, 75 feet long, and 12 feet deep area.
    - The lateral extents of the excavation were determined by screening soils with a photoionization detector (PID) until measurements were below 100 parts per million by volume (ppmv).
    - The vertical extent of the excavation was terminated within a yellowish brown clay.
    - Confirmation soil samples were collected from ten locations (SW1 through SW10) along the excavation sidewalls at depths of between 5.5 and 8 feet bgs and 11.5 and 12 feet bgs and from four locations (B-1 through B-4) along the base of the excavation
    - Dewatering during excavation generated approximately 5,000 gallons of water which was discharged under permit to the sanitary sewer.
    - Five dewatering wells (BF-1 through BF-5) and three horizontal soil vapor extraction wells (SVE-1 through SVE-3) were installed during excavation and subsequent backfilling operations. The SVE wells were installed at a depth of seven-feet bgs along the north (SVE-1), east (SVE-2), and south (SVE-3) sides of the excavation.

- In May 2009, one sparge well (IW-1) was installed within the former UST location for potential remedial activities. No further remedial activities involving this well have been conducted.
- Following evaluation of soil vapor concentrations in the horizontal vapor extraction wells, SVE-1 through SVE-3 and BF-4 were filled in place with neat cement grout on January 19, 2010 as documented in the *Work Plan for Remedial Investigation and Feasibility Study* dated April 30, 2010.

3. DATA GAP INVESTIGATION

AEI performed the data gap investigation in general accordance with the scope of work outlined in the DEH-approved Work Plan and the technical comments provided in the approval letter dated May 12, 2017. The purpose of the data gap investigation was to close the following data gaps:

- Collect additional soil vapor samples from the recently installed soil vapor probes at the Site to understand potential temporal variations in residual petroleum hydrocarbon concentrations in soil vapor.
- Install additional soil vapor probes to further define the lateral extent of the benzene and TPH-g soil vapor plumes to the west and north at the Site.
- The extents of the benzene and TPH-g groundwater plumes are bound by grab groundwater samples from 2007 and 2008 and from samples from groundwater monitoring events. Additional grab groundwater samples were requested by the ACDEH to confirm the petroleum hydrocarbon concentrations observed in the historical groundwater samples collected in 2007 and 2008 and that the extents of the benzene and TPH-g plumes in groundwater remain defined.

3.1. Health and Safety

The site-specific health and safety plan was updated, reviewed by onsite personnel, and kept onsite for the duration of the fieldwork.

3.2. Permitting and Utility Clearance

Soil boring permits W2017-0494 and W2017-0495 were obtained from the Alameda County Public Works Agency (ACPWA) for the advancement of soil borings and the installation of permanent soil vapor probes respectively. VB-04 and VB-05 were installed within the public right of way under encroachment permit X1700673 with the City of Oakland.

Prior to conducting subsurface field work, the public underground utility locating service 811 North was notified to identify public utilities in the work area. AEI contracted 1st Call Utility Locating Services of Richmond California to provide private utility locating services on June 13, 2017 to identify underground utilities entering the Site and to clear an approximate 10-square foot area around each boring location (VB-4, VB-5, and VB-17 through VB-22). Copies of the permits are included in Appendix A.

3.3. Drilling and Soil Sample Collection

AEI contracted Environmental Control Associates, Inc. (ECA) of Aptos, California to advance twinned soil borings at each location on June 13, 2017, using track mounted direct push drill rigs. At each location one shallow soil boring was advanced to a total depth of 5.5 feet below ground surface for the installation of a permanent soil vapor probe. At each location except VB-22, a twinned boring was advanced until groundwater was encountered (between 10 and 21 feet below ground surface) for the collection of grab groundwater samples. Each boring was advanced to depth using four-foot long rods and a four-foot long, 2.25-inch outer diameter core barrel with an acetate sample liner. After each interval, the core was retrieved, core barrel disassembled, and the sample liner was removed and transferred to the onsite AEI field geologist. A minimum of one soil sample was collected per core barrel based on observed soil conditions or lithological changes. Soil samples were collected by cutting an approximate six-inch section of acetate tube, sealing the tube with Teflon™ tape and plastic endcaps. Sample containers were sealed, labeled with a unique identifier, and placed in an ice-chilled cooler after sample collection.

Soil cores collected from each soil boring were described using the Unified Soil Classification System. Although soil analysis was not included in the scope of work proposed by the *Work Plan* or in the technical comments provided in the *Directive*, soil samples were collected from the sample liner by cutting a roughly six-inch segment from the acetate liner and sealing both ends with Teflon tape and plastic end caps. A photo ionization detector (PID) calibrated with a two-point calibration using a 100 ppm isobutylene standard and ambient air was used to screen soil samples in the field. PID readings for each sample are included on the soil boring logs presented in Appendix B.

Upon advancement of the seven deeper soil borings at VB-4, VB-5, and VB-17 through VB-21 to groundwater, grab groundwater samples were collected by first installing virgin $^{3}/_{4}$-inch polyvinyl chloride (PVC) casing and well screen to prevent hole collapse and facilitate in sample collection. Following installation of the PVC casing, groundwater was purged using a peristaltic pump until visibly clear or until no observable decrease in turbidity over a 5-minute period (typically at least half a gallon). After purging was completed, grab groundwater samples were collected using a peristaltic pump by transferring groundwater from the temporary casing to the appropriate sample containers which contained required preservatives. Sample containers were filled and sealed with no headspace and immediately placed in an insulated cooler with water-ice. During purging and sampling, the depth to groundwater was monitored using a water level meter and purge and sample rates were adjusted to minimize drawdown of the water table.

Upon completion of grab groundwater sample collection, the temporary well casing and screen were retrieved and disposed of and the soil boring was backfilled with neat cerement grout. Soil borings were finished at the surface to match the surrounding ground cover. Following the completion of each boring, down-hole equipment was decontaminated using a triple rinse system with a non-phosphate based detergent and drinking water quality water.

3.4. Soil Vapor Probe Installation

Upon completion, the eight shallow soil borings at VB-4, VB-5, and VB-17 through VB-22 were converted into permanent soil vapor probes. Each vapor probe was constructed in general accordance with the *Active Soil Gas Investigations Advisory* dated July 2015 (the *Advisory*) by the California Environmental Protection Agency (Cal-EPA) Department of Toxic Substance Control

(DTSC), et la. The construction of the soil vapor probes is depicted in Appendix C and is described briefly below:

- Vapor probes consisted of a $1^{7}/_{8}$-inch long high density polyethylene implant with a 40 to 60-micron pore size connected to $^{1}/_{4}$-inch nominal outer Teflon™ tubing terminating into a stainless-steel ball valve. These probes were installed in each boring with the polyethylene probe tip roughly centered at 5-feet below ground surface.
- From 5.5 to 4.5 -feet below ground surface, a sand pack consisting of #3 Monterey sand was emplaced in the annular space.
- From 4.5 to 3.5 -feet below ground surface, a transition seal consisting of one foot of dry granular bentonite was emplaced in the annular space.
- From 3.5-feet below ground surface to 8 inches below ground surface, an annular seal of neat cement grout was emplaced in the annular space.
- From 8-inches below ground surface to grade, the vapor probe was completed with neat cement grout and a 4-inch diameter traffic rated well box.

3.5. Soil Vapor Sample Collection

After allowing the newly installed vapor probes to equilibrate for a minimum of 48 hours after installation, soil vapor samples collection was attempted from the existing and newly installed soil vapor probes on June 15, 2017. Soil vapor sampling was conducted in general accordance with the guidelines outlined in the *Advisory* and with the methods proposed in the *Work Plan* and technical comment provided in the *Directive*. Soil vapor samples were collected from VB-4 through VB-22 separately into sorbent tubes and one-liter evacuated canisters:

- Evacuated canister samples were collected through a laboratory-supplied regulator set at 200 milliliters per minute into one-liter evacuated canisters. Each canister was individually checked, tested and certified by the laboratory for air tightness and proper vacuum prior to shipping. Prior to sampling, a minimum of three probe volumes were purged from each vapor probe. Sampling manifolds included dual vacuum gauges to monitor down-hole vacuum and sample container vacuum. The initial and final sample container vacuum for each sample was recorded and samples were completed with a slight vacuum remaining to ensure sample integrity during transport.
- Sorbent tube samples were collected by installing the tube in-line with the vapor probe and inducing a vacuum. Sorbent tube samples were collected by extracting pulling a total of 60 milliliters of soil vapor at a rate of approximately 200 millimeters per minute through the sorption media using a syringe equipped with a three-way valve to allow for venting. Flow rate was regulated using a critical orifice.

For quality assurance and quality control (QA/QC) purposes, soil vapor sample equipment was tested for leaks by conducting a vacuum tightness shut-in test prior to sampling and by conducting a leak check test during purging and sampling. The leak check test was conducted by encapsulating the surface completion of the vapor probe and the vapor sampling assembly within a shroud. An atmosphere of at least 15% helium was then induced and maintained within the shroud throughout the duration of the sampling.

3.6. Deviations and Exclusions

The following deviations and/or exclusions from the Work Plan were encountered during the implementation of the investigation.

1) **Exclusion**: Sampling of VB-6, VB-13, and VB-14 were attempted on June 15, 2017, however, down-hole vacuum pressure equilibrated during purging, resulting in no-flow/low-flow conditions. In accordance with the *Guidance*, the McAlary alternative sampling method was attempted, however, after several hours of recovery, downhole vacuum pressure was unable to equilibrate to ambient pressure resulting in insufficient sample volume for analysis. Sampling was re-attempted on June 19 and again on June 22, 2017, however, no-flow/low-flow conditions persisted. Therefore, soil vapor samples could not be collected from VB-6, VB-13, or VB-14 as part of this investigation. VB-13 and VB-14 were successfully sampled during the October 2016 vapor sampling event, however, this is the second consecutive sampling event in which VB-6 was unable to be sampled due to low flow conditions. AEI recommends that if VB-6 is unable to be sampled during the next vapor sampling event, a replacement soil vapor probe with a greater bore hole diameter be installed in the vicinity of VB-6 within the nearest high permeability zone encountered below five feet bgs.
2) **Exclusion**: Sampling of VB-3, VB-11, and VB-15 were attempted on June 15, 2017, however, groundwater was observed in the sample tubing. Sampling was re-attempted on June 19 and June 22, 2017, however, groundwater remained present in each of the afflicted soil vapor probes. Therefore, soil vapor samples could not be collected from VB-3, VB-11, and VB-15.
3) **Deviation**: VB-4 was resampled on June 22, 2017 and 1,1-difluoroethane was used as a leak check compound instead of Helium.
4) **Deviation**: The 2017 second semester groundwater monitoring and sampling event was originally scheduled to be completed in July 2017. AEI conducted the routine groundwater monitoring and sampling event for the second semester of 2017 on June 13, 2017 during the collection of the grab groundwater samples to improve temporal data quality. For the purpose of the CSM, analytical results for the second semester of 2017 groundwater monitoring and sampling event are included in this report. Sampling methodologies and anomalies are reported under a separate cover.
5) **Deviation**: A non-aqueous phase liquid with lower density than water (LNAPL) was encountered upon groundwater contact in the deeper soil boring for VB-21. LNAPL was not observed as a free phase liquid in soil pore spaces during soil logging by the on-site field geologist. Groundwater in the boring was initially encountered between 14- and 17-feet below ground surface, but equilibrated to approximately 9.46-below ground surface. LNAPL was not anticipated to be encountered as part of this investigation and as such an oil/water interface probe was not available on-site during drilling activities. The thickness of the LNAPL was approximated to be less than one inch by the field staff. A sample of the LNAPL was not recovered for analysis.
6) **Deviation**: Although soil sampling was not included as part of the DEH-approved scope of work, based on the uncharacteristic observations of elevated PID readings in VB-21 (50.4 ppmv and 224.5 ppmv at depths of 10 and 13 feet below ground surface respectively) and the presence of a LNAPL in VB-21, AEI submitted soil samples collected from VB-21 at depths of 10 and 13 feet below ground surface for analysis. Because the presence of LNAPL and

elevated PID readings were uncharacteristic, AEI expanded the analytical suite to include the full US EPA Method 8260 volatile organic compounds list and total petroleum hydrocarbons as motor oil.

3.7. Laboratory Analyses

The following laboratory analysis were completed on soil samples analyzed as part of this investigation:

- TPH-g, diesel range and motor oil range total petroleum hydrocarbons (TPH-d and TPH-mo respectively) by US EPA Testing Method 8015M with silica gel cleanup.
- Volatile organic compounds (VOCs), including BTEX and MTBE by US EPA Testing Method 8260b.

The following laboratory analysis were completed on groundwater samples analyzed as part of this investigation:

- TPH-g, diesel range and motor oil range total petroleum hydrocarbons (TPH-d and TPH-mo respectively) by US EPA Testing Method 8015M with no silica gel cleanup.
- BTEX and fuel oxygenates, including MTBE by US EPA Testing Method 8260b.
- Naphthalene by US EPA Testing Method 8270 with selective ion monitoring (SIM).

The following laboratory analysis were completed on soil vapor samples analyzed as part of this investigation:

- TPH-g, benzene, toluene, ethylbenzene, and xylenes (BTEX), and MTBE using US EPA Testing Method TO-15
- Metabolic gases (oxygen, carbon dioxide, and methane) and leak check compound helium using ASTM D1946.
- Naphthalene using US EPA Testing Method TO-17.

Soil samples, groundwater samples, and sorbent tubes were labeled and placed into an ice-chilled cooler immediately following sampling. Evacuated canister soil vapor samples were transferred under appropriate chain-of-custody documentation to ESC Lab Sciences of Mt. Juliet, Tennessee. Sorbent tube soil vapor samples were transferred under chain-of-custody documentation to Eurofins Air Toxics of Folsom, California. Soil and groundwater samples were transferred under appropriate chain-of-custody documentation to McCampbell Analytical, Inc. of Pittsburg, California.

A summary of all analytes which were present above their respective laboratory reporting limits in samples analyzed as part of this investigation is provided in Table 7. Copies of laboratory analytical reports and chain of custody documentation are provided in Appendix D

3.8. Investigation Derived Wastes

Investigation derived waste is currently containerized on-site in a 55-gallon drum pending profiling and disposal. At the request of the ACDEH, AEI has included the waste disposal manifest from the November 2016 data gap investigation in Appendix E.

4. RESULTS

This section presents the results of the investigation performed. To provide context to the data as it relates to eventual closure for the Site, laboratory analytical results were compared to the criteria provided in the California State Water Resources Control Board's *Low-threat Underground Storage Tank Case Closure Policy* (LTCP). Where applicable laboratory analytical results were also compared to the San Francisco Bay Regional Water Quality Control Board's (RWQCB's) *Environmental Screening Levels, Revision 3* dated February 2016 (ESLs) and the US EPA Regional Screening Levels (RSLs). Because the Site is currently zoned for residential use, a residential use scenario was assumed when selecting comparison values.

4.1. Geology and Hydrogeology

Consistent with previous investigations, shallow soils encountered throughout the Site consist of native and non-native fill materials predominantly of fine grained soil (high and low plasticity clays). A generally narrow and discontinuous band of gravely clay or gravely silt with between 30 and 40% course grained soils (sands and gravels) was observed throughout the Site at depths ranging from 2.5 to 8.5 feet bgs. Underlying this band is 2 to 10 feet of high plasticity clay. Figure 3 presents a lithologic cross-section for the shallow soils encountered beneath the Site.

Groundwater was encountered in each of the boring locations at depths ranging from 10 feet below ground surface to 21 feet below ground surface. Due to the discontinuous nature of the fill materials at the Site, groundwater at the Site varied from confined to unconfined depending on the location. The groundwater potentiometric surface from the June groundwater sampling event is depicted in Figure 4 and hydrographs depicting changes in groundwater elevation in each well are provided in Appendix F. Soil boring logs from the investigation are provided in Appendix B.

4.2. Soil Sample Analytical Results

Table 7 presents a summary of compounds detected in soil samples collected. Table 1 presents a summary of current and historical soil sample results for select compounds. Figure 5 presents the recent and historic soil sample results for TPHg and benzene. Copies of the laboratory analytical reports are included in Appendix E.

A total of 2 soil samples were analyzed as part of this investigation from VB-21 from depths of 10 and 13 feet below ground surface. Results of the soil laboratory analytical are summarized below:

- TPH-g and TPH-d were identified in the soil sample collected from 10 feet below ground surface at concentrations of 140 and 6.6 miligrams of analyte per kilogram of sample (mg/kg) respectively. The LTCP does not have established TPH-g and TPH-d criteria except within the bio-attenuation zone and when unweathered NAPL is present, neither of which are applicable in this instance. The cumulative TPH-g/TPH-d LTCP criteria within the bio-attenuation zone or when unweathered NAPL is present is <100 mg/kg of cumulative TPH-g and TPH-d.
- TPH-g and TPH-d were identified in the soil sample collected from the 13 feet below ground surface at concentrations of 23 and 1.1 mg/kg.

- No BTEX or fuel oxygenates were reported as present above the laboratory reporting limit in either of the soil samples analyzed as part of this investigation.
- Naphthalene was present at a 0.31 mg/kg in the sample collected from 10 feet below ground surface which is below the LTCP screening level of 9.7 mg/kg.
- Various propyl benzenes were present in both soil samples at concentrations below their respective applicable RSLs under a residential use scenario. LTCP and ESLs were not established for the propyl benzene compounds identified.

The location of VB-21 located approximately 18 feet northwest of SB-6 and 27 feet east of SB-28. Soil samples from SB-6 from depths of 7.5 and 11.5 feet below ground surface in 2007 and from SB-28 from a depth of 8 feet below ground surface in 2008 did not contain TPH-g or TPH-d above the laboratory reporting limit of 1.0 mg/kg. The soil sample collected from SB-28 from a depth of 12 feet below ground surface in 2008 contained TPH-g and TPH-d at concentrations of 19 mg/kg and 1.6 mg/kg respectively.

4.3. Groundwater Sample Analytical Results

Table 7 presents a summary of compounds detected in groundwater samples collected. Table 2 presents a summary of grab groundwater sample results for select compounds. Table 5 presents a summary of low-flow groundwater sample analytical results. Figure 6 and Figure 7 present the groundwater isoconcentration contours for benzene and TPH-g. Copies of the laboratory analytical reports are included in Appendix E.

A total of seven grab groundwater samples were collected as part of this investigation. Results of the grab groundwater samples can be summarized as follows:

- TPH-g and TPH-d were identified in each of the grab groundwater samples collected. TPH-g and TPH-d do not have established groundwater LTCP criteria.
    - Excepting VB-21, grab ground water samples collected as part of this investigation ranged from 160 µg/L to 9,500 µg/L of TPH-g and 65 µg/L to 4,400 µg/L of TPH-d.
    - The grab groundwater sample collected from VB-21 contained TPH-g at a concentration of 29,000 µg/L and TPH-d at a concentration of 24,000 µg/L. Relative to other groundwater samples collected in the vicinity of VB-21, the order of magnitude of TPH-g and TPH-d detections corroborates with the presence of LNAPL.
- Benzene was present above the laboratory reporting limit in each of the samples collected, except for VB-18, with a maximum reported concentration of 600 µg/L in VB-21. The applicable groundwater LTCP criteria for benzene is 1,000 µg/L.
- MTBE and other fuel oxygenates were not reported as present above their respective laboratory reporting limits in grab groundwater samples collected as part of this investigation. The applicable groundwater LTCP criteria for MTBE is 1,000 µg/L. Other fuel oxygenates do not have established groundwater LTCP criteria.
- Toluene, ethylbenzene, and xylenes were reported as present in grab groundwater samples collected as part of the data gap investigation at maximum concentrations of 5.6 µg/L, 150 µg/L, and 25 µg/L respectively. Groundwater LTCP criteria for these constituents are not established.

As mentioned in Section 3.7, the routine groundwater monitoring for the second semester of 2017 was conducted concurrently with these activities and is reported under a separate cover. For convenience, these data are summarized below:

- TPH-g and benzene were not present above the laboratory reporting limit in samples collected during the routine semi-annual groundwater monitoring event for the second semester of 2017 except in MW-3 (11,000 µg/L and 2,300 µg/L respectively), MW-6 (330 µg/L and 1.4 µg/L), and MW-7 (10,000 µg/L and 1,900 µg/L respectively).

4.4. Soil Vapor Sample Analytical Results

Table 7 presents a summary of the compounds detected in soil vapor samples collected as part of this investigation. Table 6 presents a summary of current and historical soil vapor sample results for select compounds and metabolic gases. Figure 8, Figure 9, and Figure 10 present isoconcentration contours for benzene, TPH-g, and oxygen in soil vapor samples collected and analyzed as part of this investigation respectively. Laboratory analytical reports are included in Appendix E. The results can be summarized as follows:

- Oxygen was present above the 4% level necessary for an aerobic bioattenuation zone under the LTCP in each of the vapor samples collected as part of this investigation except for in the vapor samples collected from VB-9 (3.81%) and VB-12 (2.85%).
- Methane was not present above the laboratory reporting limit of 0.40% in soil vapor collected as part of this investigation except in VB-4 which was 2.37% methane. No LTCP, ESL, or RSL levels are established for methane.
- Naphthalene was not reported above the laboratory reporting limit of 83 µg/m^3 in samples collected as part of this investigation. The applicable LTCP soil gas criteria for naphthalene is <93 µg/m^3 where no bioattenuation zone is present and <93,000 µg/m^3 where a bioattenuation zone is present.
    - Naphthalene was detected as present, but below the laboratory reporting limit of 83 µg/m^3 in soil vapor samples collected from VB-04, VB-05, VB-9, VB-14, VB-16, VB-19, and VB-21 with a maximum estimated concentration of 22 µg/m^3 in VB-10.
- Benzene was reported as present above the laboratory reporting limit in 10 of the 13 the soil vapor samples analyzed by US EPA Method TO-15.
    - Detections of benzene were below the LTCP soil gas criteria where a bioattenuation zone is present (<85,000 µg/m^3) and the LTCP soil gas criteria where no bioatenuation zone is present (<85 µg/m^3) in each of the vapor samples analyzed except for the vapor sample collected from VB-12 which had a reported concentration of 1,280 µg/m^3.
    - Benzene was not reported as present above the respective laboratory reporting limits the sample collected from VB-9 however, the laboratory reporting limit exceeds the applicable soil gas LTCP criteria where no bioattenuation zone is present of 85 µg/m^3.
- TPH-g was present above the laboratory reporting limit in each of the 10 soil vapor samples collected as part of this investigation. Most samples exhibited TPH-g concentrations in the range of thousands to tens of thousands of µg/m^3. Three samples, VB-4 (17,700,000), VB-9

(7,910,000 µg/m^3), and VB-12 (1,740,000 µg/m^3) yielded concentrations of TPH-g outside this range. TPH-g does not have an established soil gas LTCP criteria.

- Ethylbenzene was reported as present in nine soil vapor samples at a maximum concentration of 385 µg/m^3 in VB-9. The soil gas LTCP criteria for ethylbenzene is <1,100 where no bioattenuation zone is present.
- Toluene and xylenes were reported as present in several soil vapor samples at maximum concentrations of 847 µg/m^3 in VB-9 and 1,288 µg/m^3 in VB-12. Toluene and xylenes do not have soil gas LTCP criteria
- MTBE was not reported as present in any samples except for in VB-15 which had a reported MTBE concentration of 95.1 µg/m^3.
- No soil vapor samples failed the helium leak check test ($\geq$5.0 % leak)

5. UPDATED CONCEPTUAL SITE MODEL

The most recent conceptual site model (CSM) was provided in the *Updated Site Conceptual model and Soil and Soil Vapor Investigation Report* dated November 15, 2016. AEI has incorporated the following changes in the CSM using the data collected during this investigation, including:

- Based on the soil, soil vapor, and groundwater analytical results from VB-21 and the presence of LNAPL in VB-21, AEI has revised Section 5.2.1 and 5.2.2 to state that additional investigation is necessary to determine if contamination observed in VB-21 is from an on-site or off-site source.
- At the request of the DEH in their May 12, 2017 letter, AEI has revised the list of Chemicals of potential concern in section 5.2.3 to include TPH-d.
- AEI has revised Section 5.4 to include a discussion of LNAPL identified in soil boring VB-21.

5.1. Site Geology and Hydrogeology

The Site lies on the distal end of the Temescal Creek Alluvial Fan at an elevation of approximately 45 feet above North American Vertical Datum 1988 (NAVD88). The Temescal Alluvial Fan is a low relief broad alluvial fan sloping westerly and southwesterly from the mouth of the Temescal Creek. The Holocene age alluvial fan deposits are mapped as Quaternary Holocene alluvial fan deposits (Qhaf) (Helley 1997). The sediments are described as typically, brown to tan gravelly sand or sandy gravel, which generally grades upward into sandy or silty clay.

Figure 3 presents a lithologic cross-section. Sediments encountered at the Site in the upper four to five feet underlying the Site consist of black silty clay – clayey silt containing variable amounts of scattered gravel. These sediments are considered to be bay margin sediments.

The shallow fine grained surface layer is underlain by alluvial deposits of intercalated, lenticular bodies of silt, clay, sand, and gravel. The sediments are typically highly variable mixtures of the four primary soil types. Permeability (transmissivity) of the coarse-grained sediments is typically low due to the presence of interstitial clay; however, scattered clean sands and gravels are present with good permeability. These individual permeable channel deposits appear to act as preferential channels for groundwater flow across the Site and are the likely cause of the slightly sinuous, asymmetric appearance of the hydrocarbon plume in the soil and groundwater.

Groundwater elevation generally has fluctuated between 22.3 and 25.1 feet NAVD88 (approximately 6.2 to 9.0 feet bgs) with a historical maximum groundwater elevation of 27.1 feet above NAVD88 and a minimum of 17.5 feet above NAVD88. The groundwater potentiometric surface, as calculated using the posted groundwater elevation data from the routine semi-annual groundwater event for the second semester of 2017 is portrayed in Figure 4. Groundwater elevation measurements collected during historic groundwater monitoring events are presented in Table 3 while the general groundwater gradient and direction of flow are summarized in Table 4. Hyrdographs depicting depth to groundwater, screened interval, and the concentration of TPH-g and Benzene are included in Appendix F.

5.2. Primary Source Identification and Chemicals of Potential Concern

5.2.1. Potential On-Site Sources

Previous environmental investigations have identified a single walled, steel 3,750-gallon underground storage tank (UST) located under the sidewalk at the south east corner of the property. This UST was removed in February 2000 and was used to store fuel hydrocarbons. Investigations performed to-date have shown that this UST is the primary source of petroleum hydrocarbons which have been identified in soil, soil vapor, and groundwater at the Site. The presence of elevated concentrations of benzene in soil and groundwater samples collected suggest that the UST likely stored gasoline.

Additional investigation is necessary to determine if the LNAPL and the observed TPH-g, TPH-d, and benzene concentrations in soil, soil vapor, and groundwater in samples collected from VB-21 are from an on-site or off-site source

5.2.2. Potential Off-site Sources

AEI has identified two potential off-site sources of contamination at the Site:

- A closed release case associated with the California Hotel is located adjacent and to the east of the Site at 3501 San Pablo Avenue. There is limited information provided on the GeoTracker database beyond noted soil contamination of waste oil, motor, hydraulic, and lubricating oils and that a remedial excavation was performed. No groundwater data is available for this facility. Regulatory case closure was granted on October 28, 1998.
- An adjacent site, the Former City of Paris Cleaners (3516 Adeline Street), located northwest of the Site. A release from USTs of Stoddard Solvent, a dry cleaning solvent used during operation of the dry cleaning facility until the 1960s when the facility was closed. In 1990, one 750-gallon and two 1,000-gallon underground tanks used to store Stoddard Solvent were removed from the site. In 1991, an additional 250-gallon UST was removed. The site was granted regulatory case closure on March 3, 2017.

Additional investigation is needed to determine if the presence of LNAPL and the observed TPH-g, TPH-d, and benzene concentrations in soil, soil vapor, and groundwater in samples collected from VB-21 are from an on-site or off-site source.

5.2.3. Chemicals of Concern

Based on the nature of the identified sources, contamination at the Site is assumed to be caused by fuel hydrocarbons released from the on-site UST. As such, the following COCs have been identified based on the requirements and supporting technical justification documents of the LTCP and the request of the ACDEH:

- Combined TPH-g and TPH-d
- Benzene
- Ethylbenzene
- Naphthalene
- Methyl tert-butyl ether (MTBE)

The following chemicals of potential concern (COPCs) have historically been identified or sampled for at the request of the ACDEH, however, based on the requirements of the LTCP are not considered to be drivers of risk related to the protection of human health and environmental receptors:

- Long chain aliphatic hydrocarbons (C22-C32 or C32-C40)
- Toluene
- Xylenes
- Additional Fuel Oxygenates
- Semi-volatile organic compounds (SVOCs)

5.3. Receptors and Exposure Pathways

Potential receptors and exposure pathways for COCs at the Site are summarized in Figure 11. Justification for each exposure pathway is presented in the sections below. Although the Site is currently developed as a commercial/light industrial space, residential land use in the future both on-site and in the vicinity of the Site are likely and anticipated. Furthermore, according the property manager, the Site is and has been zoned for residential use. As such, residents, commercial workers, and subsurface utility workers are all considered as potential receptors.

5.3.1. Preferential Pathways

A utility survey to identify potential preferential pathways and sensitive receptors has been performed for the Site. AEI requested utility maps from Pacific Gas and Electric (PG&E) and East Bay Municipal District (EBMUD). AEI performed a geophysical survey to confirm the accuracy of these maps. The survey included ground penetrating radar (GPR), passive and active electromagnetic detectors. The geophysical survey identified a sanitary sewer, gas main, water lines and lateral lines along Adeline Street. A sanitary sewer, two gas lines, two water lines and lateral lines were located along Chestnut Street.

Based on the results of the utility survey and the underlying geology, the following preferential pathways have been identified:

- A utility trench along Chestnut Street may have acted as a preferential pathway for lateral migration of contaminants. The locations of identified utility conduits are shown on Figure 2.
- As described in Section 4.1, scattered clean sands and gravels are present throughout the subsurface which may act as preferential channels for groundwater and soil vapor flow across the Site.

5.3.2. Local Public Water System and Well Search

The Site is located within the service area of the East Bay Municipal District (EBMUD). The EBMUD provides potable water to the Site and surrounding residential and commercial properties.

To confirm that no drinking water wells were installed on or near the Site, AEI obtained the Well Drillers reports from the California Department of Water resources (DWR) for all wells within 1,000 feet of the subject site. Additionally, as requested in the ACEH's April 22, 2106 directive letter, this well survey was amended by reviewing Alameda County Public Works Agency (ACPWA) for all wells within 1,500 feet of the subject site. The DWR and ACPWA results of the well survey demonstrate that no wells are threatened by the petroleum hydrocarbon plume. The locations of these wells are shown on Figure 12.

Based on the results of the well search and the location of the Site within the EBMUD, groundwater is not considered to be used for irrigation or drinking purposes.

5.3.3. Soil

Ground cover at the Site consists of paving throughout with no landscaped or exposed areas. As such, ingestion, inhalation, and dermal contact are considered incomplete pathways for both on-site workers and residents. Subsurface utility workers who may cut through the existing concrete may still be exposed to on-site soils. As such, these exposure pathways are considered complete for subsurface utility workers.

5.3.4. Groundwater

As discussed in Section 4.3.2, groundwater at or near the Site is not in use as a source of drinking or irrigation water. As such, the dermal contact, inhalation, and ingestion exposure pathways for residents and on-site workers are considered incomplete. Due to the shallow depth to groundwater, these exposure pathways are still considered complete for subsurface utility workers.

5.3.5. Surface Water

According the National Fish and Wildlife Service's Wetland Mapper, the nearest surface water body is an estuarian wetland located approximately 0.8 miles west by northwest of the Site. Storm water runoff from the Site discharges to the municipal storm water system through curbside conveyances. No on-site French drains or other sub-surface storm water conveyances were identified at the Site. As such, storm water runoff does not come in to contact with potentially contaminated media and is therefore not considered as a complete transport pathway.

5.3.6. Air

Soil vapor analytical suggests that the volatilization of COCs from soil and groundwater to soil vapor is a complete transport mechanism. Intrusion of impacted soil vapor to the indoor air of both on-site and off-site improvements are considered a complete exposure pathway for both residents and on-site workers. Additionally, subsurface utility workers may be exposed to soil vapors contaminated by COCs.

5.4. Nature and Extent of Petroleum Hydrocarbon Impacts

5.4.1. Free Phase Hydrocarbons

Non aqueous phase liquid with a lower density than water (LNAPL) has not been directly observed in soils or groundwater samples except in a grab groundwater sample collected from VB-21 which was advanced during the data gap investigation. The nature and extent of the LNAPL in the vicinity of VB-21 is currently unknown and represents a data gap.

5.4.2. Soil

Table 1 presents a summary of the historic soil sample analytical results for the Site for select petroleum hydrocarbons. Current COC concentrations in soil are shown on Figure 7. Petroleum hydrocarbons in the unsaturated zone are present near the former UST location, but in general COCs are only present at residual levels in shallow soils (<5 feet bgs).

Analytical data from deeper soils, particularly within the smear zone (6 to 9 feet bgs) suggest that migration of petroleum hydrocarbons towards the west and south within the smear zone has occurred. The over-excavation at the time of the UST removal and interim remedial excavation performed removed much of the on-site shallow soils that could have potentially acted as secondary sources. Sidewall samples indicated that the extents of the excavation were reasonably sufficient. Soil samples collected at depths of less than 7.5 feet have not yielded significant concentrations of COCs. At depths below 7.5 feet bgs and above 9 feet bgs elevated concentrations of COCs are present at the location of the former UST and the along the south end of the interim remedial excavation.

At depths below 9 feet bgs, saturated soil samples analyzed yielded COCs near the former UST excavation and along the south and east sides of the source removal excavation. The impacted soil in this interval appears to be related to COC-impacted groundwater migrating in the more-permeable layers at the Site.

Soil samples collected from VB-21 at depths of 10 and 13 feet below ground surface indicated that this soil sample may be located within another source area, however, the nature and extents of the soil impacts in the vicinity of VB-21 are unknown.

5.4.3. Groundwater

Table 2 and Table 5 present a summary of COC concentrations in grab groundwater and monitoring well samples collected respectively. Figure 6 and Figure 7 present the current extent of benzene and TPH-g respectively in groundwater at the Site.

Generally, contaminant mass, specifically TPH-g, benzene, and ethylbenzene, have been historically present in each of the on-site monitoring wells. The benzene and TPH-g plumes have

historically extended from southeastern portion of the site to the western portion of the Site following historical groundwater gradient. TPH-g and benzene plumes have attenuated to below or near their respective detection limits each of the monitoring wells except MW-3 and MW-7 which continue to exhibit elevated levels of TPH-g and benzene. Fluctuations in the concentration of TPH-g and benzene in MW-3 and MW-7 are discussed in further detail below. MTBE has been present above the laboratory reporting limit in only one sample at a concentration of 31 µg/L which was collected from MW-7 in January of 2016. The natural processes including biological degradation, dispersion, and dilution have significantly reduced COC concentrations and their extent in groundwater beneath the Site and the benzene and TPH-g are stable and/or decreasing in size and concentration.

Grab groundwater samples collected during the data gap investigation have further refined and reinforced the extents of the groundwater benzene and TPH-g plumes that exceed water quality objectives and the criteria listed in the LTCP which have historically been centered around MW-7 and MW-3. Excluding the northeastern corner of the Site in the vicinity of VB-21, the existing groundwater data set is sufficient to define the extents of the benzene and TPH-g groundwater plumes that exceed water quality objectives. Grab groundwater samples collected from VB-21 are anomalous relative to the existing CSM and are potentially indicative of another source area.

MW-03, which is located immediately west of the remedial excavation area, exhibited an increase in both TPH-g (16,000 µg/L from 4,900 µg/L) and benzene (5,000 µg/L from 890 µg/L) during the groundwater monitoring event conducted in July 2016 when compared to the next most recent groundwater sample from this monitoring well which was collected in December 2009. Both TPH-g and benzene were at or near their historical high concentrations of 17,000 µg/L and 3,800 µg/L respectively. Groundwater during the July 2016 monitoring event was approximately 1.4 feet below the minimum groundwater elevation observed during previous groundwater monitoring events and this increase in the presence of TPH-g and benzene may have been the result of the mobilization of previously submerged pockets of separate phase hydrocarbons. Since groundwater levels have recovered from drought, the increase in TPH-g and benzene has persisted.

MW-07, which is located immediately to the east of the historic UST, has overall exhibited a trend of decreasing TPH-g and benzene concentrations, however the groundwater analytical from the most recent groundwater monitoring event (July 2016) exhibited a significant rebound in hydrocarbon concentrations, including TPH-g (6,700 µg/L), benzene (1,400 µg/L), and ethylbenzene (36 µg/L). As with MW-03, groundwater elevations in MW-7 have increased since falling to their historic low of 23.68 feet NAVD88 in July 2016.

Figure 8 presents isoconcentration contours for both benzene and TPH-g. In accordance with the LTCP, the Tier I environmental screening level (ESL) from the California Regional Water Quality Control Board, San Francisco Bay Region ("the Regional Water Board") were selected as the water quality objectives that define the extents of the benzene and TPH-g groundwater plumes. Figure 8 incorporates grab groundwater analytical data from 2007 and 2008 to present the extent of benzene and TPH-g in groundwater.

The observed fluctuations in TPH-g and benzene detected in groundwater samples collected from MW-03 and MW-07 are likely caused by interaction between residual separate phase petroleum hydrocarbons within the smear zone.

5.4.4. Soil Vapor

Table 6 presents the soil vapor analytical data available for the Site and Figure 9 presents a depiction of the soil vapor plumes for TPH-g and Benzene.

TPH-g and BTEX were reported as present above the laboratory reporting limit in each of vapor samples collected from the temporary soil vapor probes installed in October 2007 (VB-1 through VB-3) and in each of the soil vapor samples collected from the permanent soil vapor probes installed in October 2016 (VB-6 through VB-16) and June 2017 (VB-4, VB-5, and VB-17 through VB-22) except for soil vapor samples collected from VB-9 in October 2016 and June 2017 and soil vapor samples collected from VB-4 and VB-10 in June 2017.

The benzene in soil vapor plume based on the June 2017 soil vapor sampling event with extents defined by the residential vapor intrusion human health risk level ESL (48 µg/m^3) is depicted in Figure 8. The TPH-g soil vapor plume based on the June 2017 soil vapor sampling event with extents defined by the residential vapor intrusion human health risk level ESL (300,000 µg/m^3) is depicted on Figure 9.

In general, the extents of both the benzene and TPH-g vapor plumes have fluctuated drastically between the October 2016 and June 2017 soil vapor sampling events. The extents of the TPH-g and benzene soil vapor plumes from the June 2017 soil vapor sampling event are well defined except to the south where vapor samples were unable to be collected due to low-flow conditions or groundwater within existing soil vapor probes. And in the northeastern corner of the Site in the vicinity of VB-21. In general, both benzene and TPH-g soil vapor concentrations appear to be centered around VB-12 and VB-9 and appear to coincide with areas anaerobic conditions (>4% O_2) depicted on Figure 10 and the groundwater benzene and TPH-g plumes which are depicted on Figure 6 and Figure 7 respectively.

Based on the available soil and groundwater data, soil vapor contamination is likely primarily from volatilization from groundwater and from the potential presence of residual separate phase COCs within the smear zone. Figure 10 and Figure 11 provide an overlay of the soil vapor and groundwater plumes for TPH-g and benzene respectively.

5.5. Natural Attenuation

Throughout the course of the environmental investigations conducted at the Site (2009 to present), contaminant mass in groundwater monitoring wells and adjacent soil samples have been reduced significantly. Metabolic gases (oxygen and carbon dioxide) analytical data collected during this investigation and dissolved oxygen measurements taken during groundwater monitoring events indicate that hydrocarbon metabolizing microbial communities are likely present in soil and groundwater at the Site. Soil vapor concentrations of COCs and respirable gases generally meet the criteria from the LTCP for the presence of a bioattenuation zone within the top five feet of soil, however, oxygen infiltration to the center of the on-site warehouse building is inadequate to maintain a uniform bioattenuation zone throughout. In general, oxygen content decreases as the distance from soils which can undergo oxygen exchange with the atmosphere increases.

Based on the available soil vapor and groundwater oxygen data and COC analytical data, microbial degradation of COCs in soil vapor and groundwater are most likely predominantly aerobic and oxygen limited.

5.6. Data Gaps

The investigation performed provided additional information for the identified data gaps in the Work Plan including shallow soil and soil vapor data. However, the following data gaps remain open:

- **Temporal soil vapor data** – The current CSM is based on soil vapor data collected predominantly from two sampling events, which have indicated that petroleum hydrocarbons in soil vapor vary significantly. Additional sampling events should be conducted to confirm that the available soil vapor data is representative and that diurnal or seasonal variations in soil vapor do not significantly alter the extents of the COC soil vapor plumes.
- **VB-21 Source investigation –** TPH-g and benzene were identified in soil, groundwater, and soil vapor samples collected from VB-21 in excess of applicable LTCP criteria and applicable screening levels and above levels anticipated base on the existing CSM. Additionally, LNAPL was observed in VB-21. Based on these data, VB-21 may be located within a new source area. The lack of sufficient groundwater, soil vapor, or soil data in the vicinity of VB-21 to identify the source of contamination observer in samples collected from VB-21 represents a data gap.

6. EVALUATION OF THE LOW THREAT CLOSURE POLICY CRITERIA

This section presents AEI's evaluation of the Site under the LTCP criteria to identify what further actions may be necessary.

The California State Water Resources Control Board's LTCP was developed as an evaluation method to close low-threat petroleum release cases. Therefore, AEI has developed the following evaluation of whether this Site meets the criteria of the LTCP. The LTCP presents general criteria and media specific criteria that must be met for the Site to be considered low-threat and acceptable for closure. A matrix presenting the LTCP criteria, site-specific comments, and identified data gaps are presented in Table 8.

Based on the LTCP evaluation, the Site does not currently satisfy the requirements for regulatory case closure under the LTCP.

6.1. General Closure Criteria

The general closure criteria under the LTCP are summarized below with AEI's comments on each criteria as it relates to the Site. Based on AEI's review of the general closure criteria, the Site does not meet criteria f).

☒ **a) The unauthorized release is located within the service area of a public water system:** The Site is located within the EBMUD as described in the CSM. There are no on-site groundwater wells used for drinking and/or irrigation.

☒ **b) The unauthorized release consists only of petroleum:** The identified release is consistent as being from the former UST that was removed in February of 2000. No

non-petroleum related compounds have been detected in samples collected from the Site.

☒ **c) The unauthorized ("primary") release from the UST system has been stopped:** The former UST was removed from the Site in February of 2000.

☒ **d) Free product has been removed to the maximum extent practicable:** A limited amount of free product may be present at the Site as it was observed in VB-21 during the June 2017 investigation and, variations in the concentration of TPH-g and benzene within the identified source areas are indicative that residual separate phase petroleum hydrocarbons may be present in a limited area of the Site within the smear zone. However, AEI does not propose additional removal activities at this time.

☒ **e) A CSM that assesses the nature, extent, and mobility of the release has been developed**: Section 4 above presents the CSM for the Site.

☐ **f) Secondary source has been removed to the extent practicable:** Although interim remedial actions have been completed at the Site, limited residual separate phase petroleum hydrocarbons may present at the Site and dissolved benzene concentrations in groundwater remain elevated. Additional remedial actions such as enhanced biodegradation, and/or soil vapor extraction should be evaluated to determine if they are appropriate and practical to address the residual petroleum hydrocarbons that remain above LTCP closure criteria.

☒ **g) Soil or groundwater has been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15:** As presented above, MTBE has not been reported in any of the soil, groundwater, or soil vapor samples except for minor detections of 31 µg/L MTBE in a groundwater sample for MW-7 in January of 2016 and 95.1 µg/m^3 in a soil vapor sample from VB-15 in October 2016

☒ **h) Nuisance as defined by Water Code section 13050 does not exist at the Site:** The residual petroleum hydrocarbons present at the Site do not currently represent a nuisance as defined.

6.2. Media Specific Criteria

The LTCP includes media specific criteria, including groundwater, vapor intrusion to indoor air, and direct contact and outdoor air exposure. Each of these are presented below.

6.2.1. Groundwater

The LTCP outlines five classes of sites that would allow for closure of the Site under the LTCP. Based upon our evaluation of the five classes, this Site fits most closely within Class 3. The Class 3 criteria are summarized below along with AEI's analysis of the Site as it relates to each criteria:

☒ **a) The contaminant plume that exceeds water quality objectives is less than 250 feet in length:** Based on the available historical groundwater grab samples and monitoring well samples, the likely extents of the benzene and TPH-g groundwater plumes can be estimated and are depicted in Figure 8. However, as discussed in the

CSM, due to data gaps, the existing analytical data set is inadequate to reliably calculate the benzene and TPH-g plume lengths.

☒ **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:** As presented above, limited area of free product may be present on-site. However, no further removal of free product is warranted at this time.

☒ **c) The plume has been stable or decreasing for a minimum of five years**: Groundwater monitoring of the on-site groundwater monitoring well network has been conducted on at least a semi-annual basis since the first semester of 2009. As depicted on the hydrographs in Appendix F, dissolved benzene concentrations in groundwater have exhibited a stable or decreasing trend over their respective monitoring periods, which extend beyond the last five years. As presented in Section 5.4.3, the groundwater benzene and TPH-g plumes are adequately defined and bound except in the vicinity of VB-21.

☒ **d) The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary:** As discussed in Section 4.3.2 and 4.3.5, no water supply wells or surface water bodies have been identified within 1,000 feet of the Site.

☒ **e) The property owner is willing to accept a land use restriction if the regulatory agency requires a land use restriction as a condition of closure –** The property owner is willing to work with the ACDEH to accept land use restrictions as necessary to support to redevelopment of the Site for the current zoned use of residential.

6.2.2. Petroleum Vapor Intrusion to Indoor Air

The LTCP presents four potential exposure scenarios for the evaluation of a Site for closure under the LTCP. The exposure scenarios are based upon the presence of a sufficient bioattenuation zone that includes a separation of the building from free product in soil and/or on groundwater, and dissolved benzene in groundwater. In lieu of using the exposure scenarios, soil vapor samples were directly collected. The detected petroleum hydrocarbon concentrations in soil vapor were compared to ESLs and the LTCP vapor intrusion criteria from Scenario 4. Based on these criteria, soil vapor samples from VB-12 and VB-21 exceed the requirements of the LTCP. Based on these results, remediation or the institution of engineered controls as a part of land use restriction would be necessary to meet the requirements of the LTCP.

6.2.3. Direct Contact and Outdoor Air Exposure

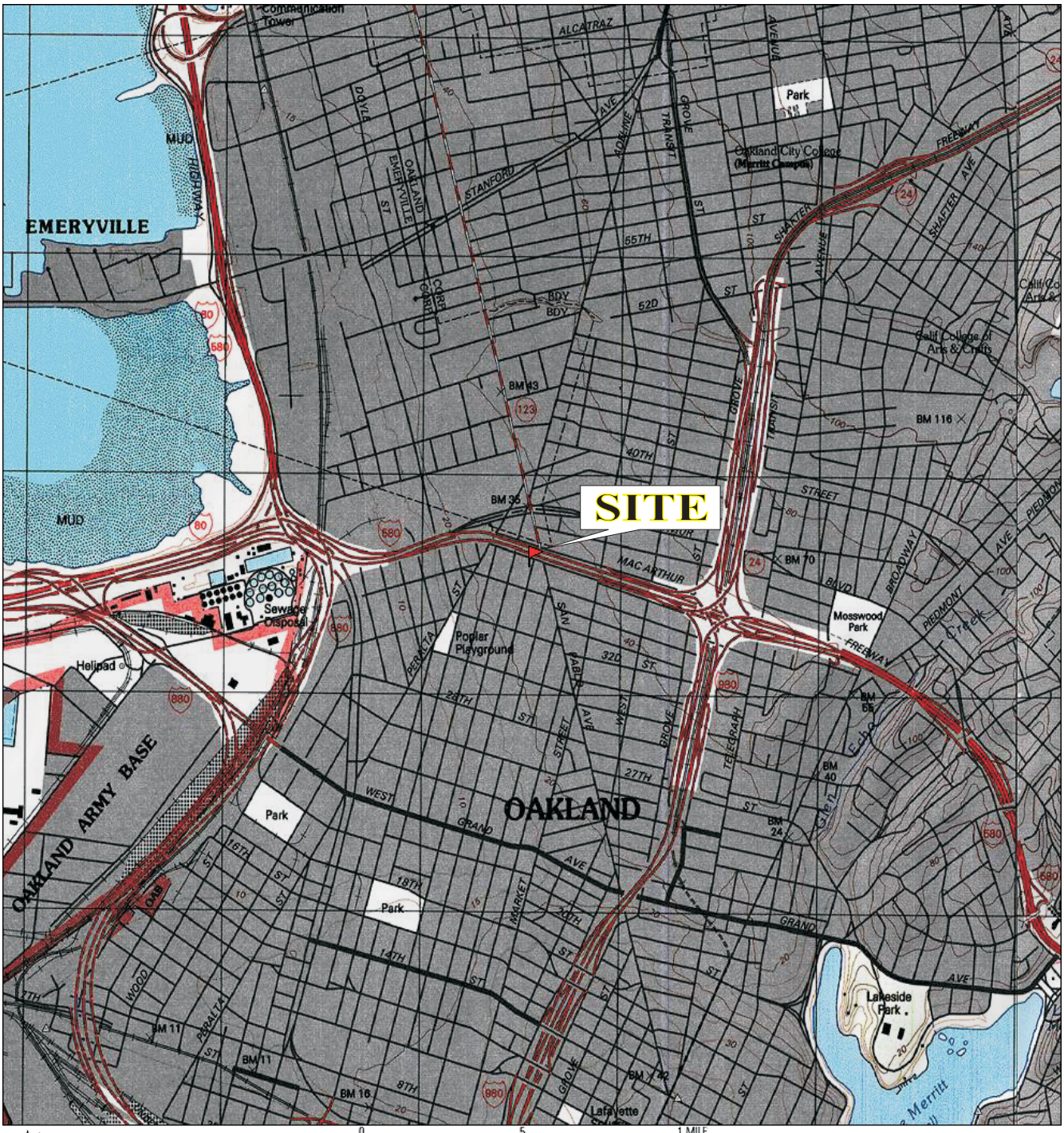
To evaluate the direct contact and outdoor air exposure routes, AEI compared the concentrations of petroleum hydrocarbon in soil to the commercial screening levels presented in Table 1 of the LTCP. None of the current concentrations of petroleum hydrocarbons were found to exceed the LTCP cleanup level.

7. CONCLUSIONS AND RECOMMENDATIONS

Based on the updated CSM and the findings of the investigation performed, AEI has concluded that the Site does not meet the requirements for regulatory case closure under the LTCP at this time. AEI recommends the following actions be taken to continue to move the Site towards closure under the LTCP:

- **Conduct investigation in the vicinity of VB-21 –** The data gap investigation identified LNAPL and elevated levels of benzene and TPH-g in soil, groundwater, and soil vapor in samples collected from VB-21. These data, in conjunction with soil vapor data collected from VB-10, VB-7, and VB-20, groundwater data collected from VB-20, and soil data collected from SB-28, SB-6, and SB-16 are indicative that a previously unknown source may be impacting subsurface conditions in the vicinity of VB-21. AEI recommends that additional investigation be conducted in the vicinity of VB-21 to identify the source of LNAPL and petroleum hydrocarbon contamination in the northeastern portion of the Site.
- **Conduct Additional Soil Vapor Sampling and Installation of replacement vapor probe in vicinity of VB-6 as appropriate:** Because of the temporal variability in soil vapor analytical data, AEI recommends that additional round(s) of soil vapor analytical data be collected from the permanent soil vapor monitoring network until the benzene soil vapor plume can be shown to be stable. AEI also recommends that if no-flow conditions are encountered in VB-6 during the next vapor sampling event that a replacement soil vapor probe be installed. In order to improve performance of this vapor monitoring point, AEI recommends increasing the bore hole diameter and placing the probe tip within a higher permeability zone.
- **Installation of an additional groundwater monitoring well in the vicinity of VB-19:** Grab groundwater samples collected as part of the data gap investigation were sufficient to close data gaps in the bounds of the TPH-g and benzene groundwater plumes to the west and south of the Site, however, benzene was detected in VB-19 at a concentration of 83 µg/L and in VB-20 at a concentration of 5.7 µg/L, both of which are below the LTCP closure criteria, but above the groundwater quality objective of 1.0 µg/L. In order to satisfy the groundwater LTCP criteria of groundwater plume stability and dellineation, AEI recommends that an additional monitoring well be installed in the vicinity of VB-19 to allow inclusion of this data point in routine groundwater monitoring events.
- **Prepare a Response Action Plan** - COCs in groundwater and soil vapor do not currently meet the LTCP criteria for regulatory closure. AEI recommends that a response action plan be developed to address these limited areas where elevated concentrations of benzene persist.

FIGURES



AEI CONSULTANTS 2500 Camino Diablo, Suite 200, Walnut Creek, CA 94597	
Site Location Map	
3442 Adeline Street Oakland, CA 94608	**FIGURE 1** Job No: 281939

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N

A

ADELINE STREET

Gas line estimated
2-4 ft bgs

Btm SS
8.0 ft bgs

Wtr line 6 ft bgs

DRIVE

MW-6 SB-31 GATE

SB-30

VB-15

VB-17

RESIDENCE (NO BASEMENT)

CANOPY

SB-24

SB-26

VB-14 MW-5

VB-18

SB-23

VB-16

SHED

SB-25

VB-19

SB-22

MW-4

SB-29

SB-21

VB-13

SB-27

VB-11 MW-2

VB-12 SB-13

SB-28

VB-20

SB-14

SB-12

VB-8 SB-3

VB-9 SB-20 MW-3

VB-10

SB-28

VB-22

SB-2 VB-2 SW1 SW4 SW6 SW7 SB-15

VB-6 SB-5 BF-3 BF-5 SW10

BF-2 SB-11 B3 VB-7 VB-21

SB-1 MW-1 B1 B2 SB-4

VB-1 BF-1 SW2 SW9

SB-32 SW3 SW5 SW8 SB-6

S3 IW-1

SB-8

S4 S2 S1 SB-10

SIDEWALK AREA

VB-4 SB-7 VB-5 VB-3 MW-7

SB-19 SB-16

Wtr line 7 ft bgs

SB-9

10"Sanitary Sewer

CHESTNUT STREET

6" Gas Line

Btm SS
8.0 ft bgs

SB-18 SB-17

Wtr line estimated
2.5 ft bgs

A'

VACANT LOT

RESIDENCE (3425 CHESTNUT ST)

RESIDENCE (3431 CHESTNUT ST)

35TH STREET

LEGEND

0 30 60 APPROXIMATE SCALE IN FEET or MILES

- SB-1 AEI Soil Boring
- S-1 Clear Water Soil Sample
- SW1 Base Soil Sample
- B-1 Sidewall Soil Sample
- VB-1 Temporary Soil Vapor Probe
- VB-4 Permanent Soil Vapor Probe
- BF-1 Backfill Well Casings
- MW-1 Monitoring Well Casings
- IW-1 Injection Well
- Abandon AEI Soil Boring
- Abandon Base Soil Sample
- Site Boundary
- DW Domestic Water
- SS Sanitary Sewer
- NG Natural Gas
- A — A' Cross Section
- Interim Source Removal Excavation (2009)

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

SITE PLAN

3442 ADELINE STREET
OAKLAND, CA 94608

FIGURE 2
Project No. 281939

A

A'

MW-6 SB-24 MW-5 SB-21 SB-12 SB-5 BF-1 IW-1 MW-7 SB-17

Gas Mains | Sanitary Sewer | Water Mains

Gas & Water Mains

Gas Mains | Sanitary Sewer | Water Mains

Vertical Scale in Feet: 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24

16" Gas line dead | 6" Gas line | water line

Asphalt

Fill

Clayey Silt, black, 5 % fine gravel, slightly plastic, slightly moist

Gravelly Sand - Sandy Gravel, yellowish red, clayey, firm very slightly moist FILL 22

TPH-g 63 (1/12/16)

High Groundwater level in well.

Low Groundwater level in wells.

Silty Clay, black, reddish brown, moderately loose

Silty Gravel, very dark gray - dark greenish gray, loose

<1.0

Clay, olive gray, silty, 5% gravel slightly plastic, becoming increasingly sandy silty downward

Siltlt Clay, light yellowish brown - grayish green mottling moist

Clayey Silt, - Clayey Sand olive gray, v fine gr, 5-10% gravel moderately firm, moist

23

15

Gravelly Sand - Sandy Gravel, olive gray, clayey, coarse sand - medium garvel, wet

Clayey Silt, light yellowish brown, grayish green mottling moist

41

TPH-g 11,000

270

Clayey Gravelly Sand, brown - yellowish brown, coarse grained , wet

1.8

Clayey Gravelly Sand, brown - yellowish brown, coarse grained , wet

Sand, brown - yellowish brown, med. grained moderately firm, wet

Gravelly Clay, dark reddish brown, very moist

<1.0

Silty Clay, greenish black, 10% fine gravel, soft, moist moderate plasticity

Silty Clay, strong brown, hard, dry

TPH-g 110 (1/12/16)

Silty Clay, dark greenish gray, firm, moist

Silty Gravel, grn gry- dark greenish gray, mod. loose, wet

Silty Clay, dark grn. gray, stiff, moist

Silty Gravel, grn gry- dark greenish gray, mod. loose, wet

61

Clayey, dark greenish gray- grn gray - olive yellow - lite yellowish brn, mod. soft, moist

Clay, strong brown, gravelly, firm, moist

18

Clayey Sand, strong brown - yellowish brown, gravelly, mod soft, moist

Gravelly Sand, strong brown - yellowish brown, fine - coarse grain, moderastely firm, wet

Sandy Gravel, strong brown, clayey, firm, wet

Fill

Silty Clay, black, fine gravel, stiff, dry

Silty Clay, black, 5% fine gravel, stiff

Gravelly Silty Clay, dark gray, 10 % fine gravel, stiff

Silty Clay, greenish gray, 10 % fine gravel, moderate plasticity

25

Very Gravelly Clay, multicolored - green, blue, orange, brown, soft

<1.0

Silty Clay, light yellowish brown - greenish gray mottled, moderately plasticity, moist

26

Clay, light yellowish brown, 10% fine gravel moist

Clay, light yellowish brown with orange streaks high plasticity, moist

TPH-g 8,100

20

TPH-g 35,000

Silty Clay, black, 5% fine gravel, stiff, dry

Silty Clay, light grayish green, w/s orange mottling

Gravelly Silty Sand dark greenish gray, clayey, soft

Gravelly Silty Clay yellowish brown, orange mottling, gravel increasing downward, moist

82

Gravelly Sand, light yellowish brown, wet

Silty Clay, light yellowish brown, orange mottling gravelly, moist

SiltyClay, olive gray, orangge streaks, moderate plasticity, moist

<1.0

Silty Clay, black, 5% fine gravel, stiff, dry

FILL

490

TPH-g 1,200

13

Silty Clay, lt. olive brown - yellowish brown, dk bluish gray - red mottling moderately plastic, moist

<1.0

Asphalt

Silty Clay, greenish black, 10% fine gravel, soft, moist moderate plasticity

Water line

Gravelly Silt, dark greenish gray, 25% gravel, very stiff, hard, dry

Gravelly Silty Sand, darkl brown, silty gray, grayish green mottling, gravelly, firm, moist

Silty Gravel, greenish gray, fine gravel, loose

Silty Sandy Clay, dark brownish gray mottled grayish green, fine gravel, moderately soft, very slightly moist

Clay, dark greenish gray - greenish gray, gravelly, very hard, dry

<1.0

TPH-g 1,800 (1/12/16)

Silty Clay, dark grayish green, stiff, slightly moist

Very Clayey Sand - Sandy Clay, locally Clayey Sandy Gravel olive - olive yellow - brownish yellow, firm, very moist

Gravelly Silty Clay - Clayey Gravel light olive brown, fine - medium gravel, moderately stiff, wet

<1.0

TPH-g 1,000

Clayey Gravel, dark greenish gray, hard, wet

Silty Clay, olive yellow, w/s brownish yellow, moderately plastic, moist

<1.0

Sandy Gravel, strong brown - light olive, hard, wet

Gravelly Sand, strong brown - light olive, coarse grained, moderately soft, wet

Gravelly Silty Clay, strong brown - light olive brown, moderatly plastic, wet

High Groundwater level in wells.

Low Groundwater level in wells.

TPH-g 11,000 Grab Water Sample - ug/L

TPH-g 14,000 Monitoring Well Sample - ug/L (date)

41 TPH-g Soil Analysis - mg/kg

0 25 50 75 100

SCALE IN FEET

Clay

Silt

Gravel

Sand

Clayey Sediments

Permeable Intervals

Fill Material

AEI CONSULTANTS

2500 CAMINO DIABLO, WALNUT CREEK

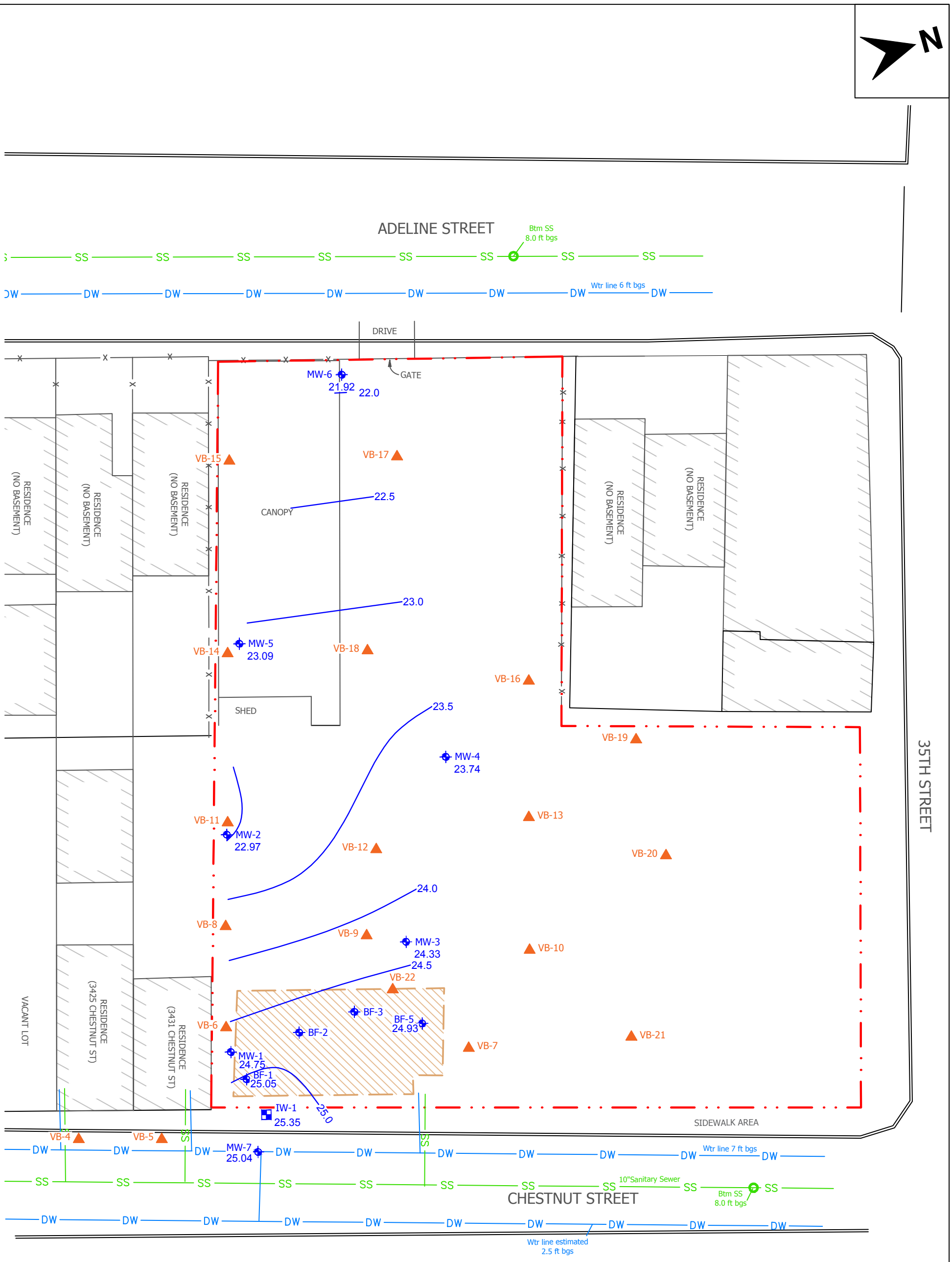
Soil Cross Section A-A'

3442 Adeline Street
Oakland, California

Figure 3

PROJECT NO. 281939

P:\Companywide Projects\280000 Series\281939 Oakland, CA\SM\281939 Zimmerman PM\Deliverables\2017 08 18 - 2017 S1 And S2 GW Monitoring Report\01_Figures\Working Files\2017S2 GWM Report_V01_JES - 09/12/2017



LEGEND

0 30 60 APPROXIMATE SCALE IN FEET or MILES

- VB-4 Permanent Soil Vapor Probe
- BF-1 Backfill Well Casings
- MW-1 Monitoring Well Casings
- IW-1 Injection Well
- 27.5 Groundwater Potentiometric Surface (feet NAVD88)
- Site Boundary
- DW Domestic Water
- SS Sanitary Sewer
- Interim Source Removal Excavation (2009)

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

GROUNDWATER POTENTIOMETRIC SURFACE JUNE 2017

3442 ADELINE STREET
OAKLAND, CA 94608

FIGURE 4
Project No. 281939

N

ADELINE STREET

DRIVE

MW-6 SB-31 GATE SB-30

VB-15 VB-17

VB-15		
DEPTH	TPH-g	BENZENE
4	<0.114	<0.00114
6	7.88	0.00113

RESIDENCE (NO BASEMENT)

CANOPY SB-24

SB-26

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

VB-16		
DEPTH	TPH-g	BENZENE
4	0.150 **B**	<0.00117
8	0.0745 **B, J**	<0.00108

VB-14		
DEPTH	TPH-g	BENZENE
2	<0.119	<0.00119
6	<0.114	<0.00114

VB-14 MW-5 VB-18

SB-23

VB-16

VB-13		
DEPTH	TPH-g	BENZENE
4	<0.121	<0.00121
8	<0.116	<0.00116

SHED

SB-25

VB-19

SB-22 MW-4 SB-29

SB-21 SB-27

VB-11		
DEPTH	TPH-g	BENZENE
2	<0.113	<0.00113
6	<0.114	<0.00114

VB-11 MW-2

VB-13

VB-12		
DEPTH	TPH-g	BENZENE
2	0.475	0.000908 **J**
8	214	0.187

VB-12 SB-13 SB-28 VB-20

SB-14

VB-8		
DEPTH	TPH-g	BENZENE
2	<0.116 **J3**	<0.00116
8	<0.125	<0.00125

SB-12

VB-8 SB-3

VB-9 SB-20 MW-3

VB-9		
DEPTH	TPH-g	BENZENE
2	0.0884 **B, J**	0.00219
8	4.88	0.0797

VB-10 SB-28

VB-10		
DEPTH	TPH-g	BENZENE
2	0.0941 **B, J**	<0.00121
6	<0.116	<0.00116

VB-22

VB-6		
DEPTH	TPH-g	BENZENE
4	<0.120	<0.00120
6	<0.122	<0.00122

SB-2 VB-2 VB-6 BF-3 BF-5 SB-15

BF-2

VB-7 VB-21

VB-7		
DEPTH	TPH-g	BENZENE
4	<0.115	<0.00115
6	0.0623 **B, J**	0.00272

SB-32		
DEPTH	TPH-g	BENZENE
2	0.385	0.000546 J
10	26.4	0.00214

SB-1 MW-1 VB-1 BF-1

SB-32

SB-6

SB-8 S3 IW-1 S4 S2

SIDEWALK AREA

VB-4 SB-7 VB-5 VB-3 S1 SB-10

SB-19

MW-7

TANK EXCAVATION

SB-16

SB-9

CHESTNUT STREET

SB-18 SB-17

35TH STREET

LEGEND

- SB-1 AEI Soil Boring
- S-1 Clear Water Soil Sample
- VB-1 Temporary Soil Vapor Probe
- VB-4 Permanent Soil Vapor Probe
- BF-1 Backfill Well Casings
- MW-1 Monitoring Well Casings
- Site Boundary
- Interim Source Removal Excavation
- Former Gasoline UST

0 30 60 APPROXIMATE SCALE IN FEET or MILES

Note:
All concentrations are reported in units of miligrams of analyte per kilogram of soil.

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

TPH-g AND BENZENE IN SOIL

3442 ADELINE STREET
OAKLAND, CA 94608

FIGURE 5
Project No. 281939

P:\Companywide Projects\280000 Series\281939 Oakland, CA\SM\281939 Zimmerman PM\Deliverables\2017 08 18 - 2017 S1 And S2 GW Monitoring Report\01_Figures\Working Files\2017S2 GWM Report_V01_JES - 09/06/2017

ADELINE STREET

Btm SS 8.0 ft bgs

Wtr line 6 ft bgs

DRIVE

GATE

CANOPY

SHED

SIDEWALK AREA

35TH STREET

CHESTNUT STREET

10"Sanitary Sewer

Btm SS 8.0 ft bgs

Wtr line 7 ft bgs

Wtr line estimated

RESIDENCE (NO BASEMENT)

ESIDENCE

MW-6 SB-31 270 (2008)

SB-30 <0.5 (2008)

VB-15

VB-17 6.0 (2017)

SB-24 80 (2008)

SB-26 22 (2008)

MW-6		
DATE	TPH-g	BENZENE
01/12/2016	63	1.8
07/21/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	330	1.4

MW-4		
DATE	TPH-g	BENZENE
01/13/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

MW-3		
DATE	TPH-g	BENZENE
07/22/2016	16,000	4,800/5,100
01/25/2017	7,300	1,900/1,500
06/13/2017	11,000	2,300

MW-5		
DATE	TPH-g	BENZENE
01/12/2016	110	2.7
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

VB-14 MW-5 SB-23 9,000 (2008)

VB-18 <0.50 (2017)

VB-16 42 (2008)

SB-25 42 (2008)

MW-2		
DATE	TPH-g	BENZENE
01/13/2016	330	97
07/22/2016	<50	1.9/2.0
01/25/2017	<50	1.4/1.1

SB-22 MW-4

1,600 (2007) SB-21

VB-11 MW-2

5,300 (2007) VB-12 SB-13

VB-19 83 (2017)

7.4 (2008)

SB-29 <0.5 (2008)

SB-27 VB-13

1.3 (2008) SB-28 VB-20

5.7 (2017)

SB-14 2,600 (2007)

3,400 (2007) SB-20 MW-3

VB-8 2.4 (2007) SB-3

SB-12 5,200 (2007)

VB-9

VB-10

SB-28 1.3 (2008)

MW-1		
DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

1.8 (2007) SB-2

VB-22

SB-15 7,700 (2008)

2,000 (2007)

BF-3 BF-5

BF-2

VB-7

VB-21 600 (2017)

BF-1		
DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

SB-1 MW-1 BF-1 110 (2007)

SB-32

SB-6 17 (2007)

SB-8 IW-1

VB-4 SB-7 VB-5

SB-10 3,800 (2007)

SB-19 <0.50 (2007)

91 (2017)

MW-7 1000 440 (2007) SB-9

SB-16 0.60 (2007)

17 (2017)

<0.50 (2007)

30 (2007) SB-18

SB-17

MW-7		
DATE	TPH-g	BENZENE
01/12/2016	1,800	400
07/21/2016	6,700	1,400/1,400
06/13/2017	10,000	1,900

IW-1		
DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/21/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

BF-5		
DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

LEGEND

0 30 60 APPROXIMATE SCALE IN FEET or MILES

- SB-1 AEI Soil Boring
- VB-4 Permanent Soil Vapor Probe
- BF-1 Backfill Well Casings
- MW-1 Monitoring Well Casings
- IW-1 Injection Well
- Site Boundary
- DW Domestic Water
- SS Sanitary Sewer
- Interim Source Removal Excavation (2009)
- 10 Benzene in Groundwater Isoconcentration Contour (µg/L)
- <0.50 (2017) Grab Groundwater Benzene Analytical Result (ug/L) / Grab Groundwater Sample Collection Year

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

BENZENE IN GROUNDWATER JUNE 2017

3442 ADELINE STREET
OAKLAND, CA 94608

FIGURE 6
Project No. 281939

P:\Companywide Projects\280000 Series\281939 Oakland, CA\SM\281939 Zimmerman PM\Deliverables\2017 06 - Data Gap Investigation\01_Figures\Zimmerman_V02_JES - 09/06/2017

N

ADELINE STREET

Btm SS 8.0 ft bgs

Wtr line 6 ft bgs

DRIVE

MW-6 SB-31 5,100 (2008) GATE

SB-30 <50 (2008)

VB-15

VB-17 4,100 (2017)

CANOPY

SB-24 11,000 (2008)

1000

100

SB-26 2,300 (2008)

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

VB-14 MW-5

SB-23 46,000 (2008)

SHED

VB-18 160 (2017)

VB-16

SB-25 3,600 (2008)

VB-19 9,500 (2017)

SB-22 2,600 (2007)

MW-4

SB-29 <50 (2008)

100

SB-21 1,200 (2007)

VB-11 MW-2

VB-13

SB-27 740 (2008)

1,000

VB-12 SB-13 29,000 (2007)

10,000

SB-28 VB-20 200 (2017)

SB-14 23,000 (2007)

28,000 (2007)

SB-12 35,000 (2007)

VB-8 84 (2007) SB-3

VB-9 SB-20 MW-3

VB-10

SB-28 290 (2008)

1,000

640 (2007)

VB-22

36,000 (2007)

SB-15

SB-2 VB-2 VB-6

28,000 (2007)

BF-3

BF-5

BF-2

VB-7

10,000

VB-21 24,000 (2017)

SB-1 MW-1 VB-1 BF-1

6,700 (2007)

2,200 (2017)

SB-32

SB-6 440 (2007)

SB-8 IW-1

100

SIDEWALK AREA

VACANT LOT

RESIDENCE (3425 CHESTNUT ST)

RESIDENCE (CHESTNUT ST)

35TH STREET

VB-4 SB-7 VB-5 VB-3

SB-19 <50 (2007)

1,100 (2007)

5,000 (2017)

MW-7

11,000 (2007)

SB-9

SB-10 17,000 (2007)

SB-16 88 (2007)

Wtr line 7 ft bgs

10"Sanitary Sewer

Btm SS 8.0 ft bgs

CHESTNUT STREET

1,100 (2007)

SB-18 <50

SB-17

1,000

Wtr line estimated

MW-5

DATE	TPH-g	BENZENE
01/12/2016	110	2.7
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

MW-6

DATE	TPH-g	BENZENE
01/12/2016	63	1.8
07/21/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	330	1.4

MW-4

DATE	TPH-g	BENZENE
01/13/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

MW-3

DATE	TPH-g	BENZENE
07/22/2016	16,000	4,800/5,100
01/25/2017	7,300	1,900/1,500
06/13/2017	11,000	2,300

MW-2

DATE	TPH-g	BENZENE
01/13/2016	330	97
07/22/2016	<50	1.9/2.0
01/25/2017	<50	1.4/1.1

BF-1

DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

MW-1

DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

MW-7

DATE	TPH-g	BENZENE
01/12/2016	1,800	400
07/21/2016	6,700	1,400/1,400
06/13/2017	10,000	1,900

IW-1

DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/21/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

BF-5

DATE	TPH-g	BENZENE
01/12/2016	<50	<0.5
07/22/2016	<50	<0.5/0.5
01/25/2017	<50	<0.5/<0.5
06/13/2017	<50	<0.5

LEGEND

0 30 60 APPROXIMATE SCALE IN FEET or MILES

- SB-1 AEI Soil Boring
- VB-1 Temporary Soil Vapor Probe
- VB-4 Permanent Soil Vapor Probe
- BF-1 Backfill Well Casings
- MW-1 Monitoring Well Casings
- IW-1 Injection Well
- Site Boundary
- DW Domestic Water
- SS Sanitary Sewer
- Interim Source Removal Excavation (2009)
- 10 TPH-g Isoconcentration Contour (ug/L)
- <0.50 (2017) Grab Groundwater TPH-G Analytical Result (ug/L) / Grab Groundwater Sample Collection Year

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

THP-g IN GROUNDWATER
June 2017

3442 ADELINE STREET
OAKLAND, CA 94608

FIGURE 7
Project No. 281939

N

Gas line estimated 2-4 ft bgs

ADELINE STREET

Btm SS 8.0 ft bgs

Wtr line 6 ft bgs

DRIVE

MW-6

GATE

VB-15		
DATE	TPH-g	BENZENE
10/14/2016	406,000	<51.1

VB-15 NS-GW

VB-18		
DATE	TPH-g	BENZENE
06/15/2017	1,510	1.94

VB-12		
DATE	TPH-g	BENZENE
10/14/2016	1,490,000	15,400
06/15/2017	1,740,000	1,280

VB-14		
DATE	TPH-g	BENZENE
10/14/2016	10,300	157

VB-14 NS-LF

MW-5

VB-18

VB-9		
DATE	TPH-g	BENZENE
10/14/2016	4,690,000	<294*
06/15/2017	7,910,000	<118

SHED

VB-11		
DATE	TPH-g	BENZENE
10/14/2016	3,420	44.4

VB-11

MW-2

VB-22		
DATE	TPH-g	BENZENE
06/15/2017	6,580	26.7

VB-8		
DATE	TPH-g	BENZENE
10/14/2016	1,770	48

VB-8 NS-GW

VB-2		
DATE	TPH-g	BENZENE
10/01/2007	3,100	32

VB-6		
DATE	TPH-g	BENZENE
-	-	-
-	-	-

VB-2

VB-6 NS-LF

MW-1

VB-1

BF-1

VB-1		
DATE	TPH-g	BENZENE
10/01/2007	1,900	130

IW-1

VB-4

VB-5

VB-3

MW-7

VB-4		
DATE	TPH-g	BENZENE
06/22/2017	17,000,000	<51.1

VB-5		
DATE	TPH-g	BENZENE
06/19/2017	16,300	9.61

VB-3		
DATE	TPH-g	BENZENE
10/01/2007	2,500	40

MW-4

48

VB-12 1240

1000

420

VB-9

MW-3

VB-22

BF-3

BF-5

BF-2

VB-7

48

VB-21

VB-17

VB-17		
DATE	TPH-g	BENZENE
06/15/2017	22,700	27.2

VB-16		
DATE	TPH-g	BENZENE
10/14/2016	30,000	106
06/19/2017	2,330	1.64

VB-16

VB-19		
DATE	TPH-g	BENZENE
06/19/2017	2,424	2.49

VB-13		
DATE	TPH-g	BENZENE
10/14/2016	15,900	197

VB-19

VB-13 NS-LF

VB-20

VB-20		
DATE	TPH-g	BENZENE
06/15/2017	3,380	7.86

VB-10		
DATE	TPH-g	BENZENE
10/14/2016	34,500	573
06/15/2017	4,920	<1.28

VB-10

VB-21		
DATE	TPH-g	BENZENE
06/15/2017	9,590	81.7

VB-7		
DATE	TPH-g	BENZENE
10/14/2016	17,900	206
06/15/2017	2,060	3.47

35TH STREET

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

CANOPY

RESIDENCE

RESIDENCE

SIDEWALK AREA

Wtr line 7 ft bgs

10"Sanitary Sewer

Btm SS 8.0 ft bgs

6" Gas Line

CHESTNUT STREET

Wtr line estimated 2.5 ft bgs

LEGEND

0 30 60 APPROXIMATE SCALE IN FEET or MILES

- VB-1 Temporary Soil Vapor Probe
- VB-4 Permanent Soil Vapor Probe
- BF-1 Backfill Well Casings
- MW-1 Monitoring Well Casings
- IW-1 Injection Well
- Site Boundary
- DW Domestic Water
- SS Sanitary Sewer
- NG Natural Gas
- Interim Source Removal Excavation (2009)
- 48 Benzene in Soil Vapor Isoconcentration Contour (µg/L)

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

BENZENE IN SOIL VAPOR JUNE 2017

3442 ADELINE STREET
OAKLAND, CA 94608

FIGURE 8
Project No. 281939

P:\Companywide Projects\280000 Series\281939 Zimmerman PM\Deliverables\2017 06 - Data Gap Investigation\01_Figures\Zimmerman_V02_JES - 09/06/2017

N

Gas line estimated 2-4 ft bgs

ADELINE STREET

Btm SS 8.0 ft bgs

Wtr line 6 ft bgs

DRIVE

MW-6

GATE

VB-15		
DATE	TPH-g	BENZENE
10/14/2016	406,000	<51.1

VB-18		
DATE	TPH-g	BENZENE
06/15/2017	1,510	1.94

VB-12		
DATE	TPH-g	BENZENE
10/14/2016	1,490,000	15,400
06/15/2017	1,740,000	1,280

VB-14		
DATE	TPH-g	BENZENE
10/14/2016	10,300	157

VB-9		
DATE	TPH-g	BENZENE
10/14/2016	4,690,000	<294*
06/15/2017	7,910,000	<118

VB-11		
DATE	TPH-g	BENZENE
10/14/2016		44.4

VB-8		
DATE	TPH-g	BENZENE
10/14/2016	1,770	

VB-2		
DATE	TPH-g	BENZENE
10/01/2007	3,100	32

VB-6		
DATE	TPH-g	BENZENE
-	-	-
-	-	-

VB-1		
DATE	TPH-g	BENZENE
10/01/2007	1,900	130

VB-4		
DATE	TPH-g	BENZENE
06/22/2017	17,000,000	<51.1

VB-5		
DATE	TPH-g	BENZENE
06/19/2017	16,300	9.61

VB-3		
DATE	TPH-g	BENZENE
	2,500	40

VB-22		
DATE	TPH-g	BENZENE
06/15/2017	6,580	26.7

VB-17		
DATE	TPH-g	BENZENE
06/15/2017	22,700	27.2

VB-16		
DATE	TPH-g	BENZENE
10/14/2016	30,000	106
	2,330	1.64

VB-19		
DATE	TPH-g	BENZENE
	2,424	2.49

VB-13		
DATE	TPH-g	BENZENE
10/14/2016	15,900	197

VB-20		
DATE	TPH-g	
	3,380	7.86

VB-10		
DATE	TPH-g	BENZENE
10/14/2016	34,500	573
06/15/2017	4,920	<1.28

VB-21		
DATE	TPH-g	BENZENE
06/15/2017	9,590	81.7

VB-7		
DATE	TPH-g	BENZENE
	17,900	206
06/15/2017	2,060	3.47

RESIDENCE

CANOPY

SHED

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

35TH STREET

SIDEWALK AREA

CHESTNUT STREET

10"Sanitary Sewer

6" Gas Line

Btm SS 8.0 ft bgs

Wtr line 7 ft bgs

300,000

1,000,000

10,000,000

VB-1 VB-2 VB-3 VB-4 VB-5 VB-6 VB-7 VB-8 VB-9 VB-10 VB-11 VB-12 VB-13 VB-14 VB-15 VB-16 VB-17 VB-18 VB-19 VB-20 VB-21 VB-22

NS-GW NS-LF

MW-1 MW-2 MW-3 MW-4 MW-5 MW-7

BF-1 BF-2 BF-3 BF-5

IW-1

LEGEND

0 30 60 APPROXIMATE SCALE IN FEET or MILES

- VB-1 Temporary Soil Vapor Probe
- VB-4 Permanent Soil Vapor Probe
- BF-1 Backfill Well Casings
- MW-1 Monitoring Well Casings
- IW-1 Injection Well
- Site Boundary
- DW Domestic Water
- SS Sanitary Sewer
- NG Natural Gas
- Interim Source Removal Excavation (2009)
- 10 TPH-g Isoconcentration Contour (ug/m3)

AEI Consultants

2500 Camino Diablo
Walnut Creek, California

THP-g IN SOIL VAPOR
June 2017

3442 ADELINE STREET
OAKLAND, CA 94608

FIGURE 9
Project No. 281939

N

ADELINE STREET

Gas line estimated
2-4 ft bgs

Btm SS
8.0 ft bgs

Wtr line 6 ft bgs

DRIVE

GATE

MW-6

VB-15

VB-17

CANOPY

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

RESIDENCE (NO BASEMENT)

MW-5

VB-14

VB-18

VB-16

SHED

VB-19

MW-4

4%

VB-11

MW-2

VB-12

VB-13

VB-20

VB-8

VB-9

MW-3

VB-10

VB-22

BF-3

BF-5

VB-6

BF-2

VB-7

VB-21

MW-1

BF-1

IW-1

VACANT LOT

RESIDENCE (3425 CHESTNUT ST)

RESIDENCE (3431 CHESTNUT ST)

SIDEWALK AREA

VB-4

VB-5

MW-7

Wtr line 7 ft bgs

10"Sanitary Sewer

Btm SS
8.0 ft bgs

6" Gas Line

CHESTNUT STREET

Wtr line estimated
2.5 ft bgs

35TH STREET

LEGEND

0 30 60 APPROXIMATE SCALE IN FEET or MILES

VB-4 Permanent Soil Vapor Probe
BF-1 Backfill Well Casings
MW-1 Monitoring Well Casings
IW-1 Injection Well

Site Boundary
DW Domestic Water
SS Sanitary Sewer
NG Natural Gas

Interim Source Removal Excavation (2009)

4% Oxygen Soil Vapor Isoconcentraion

AEI Consultants

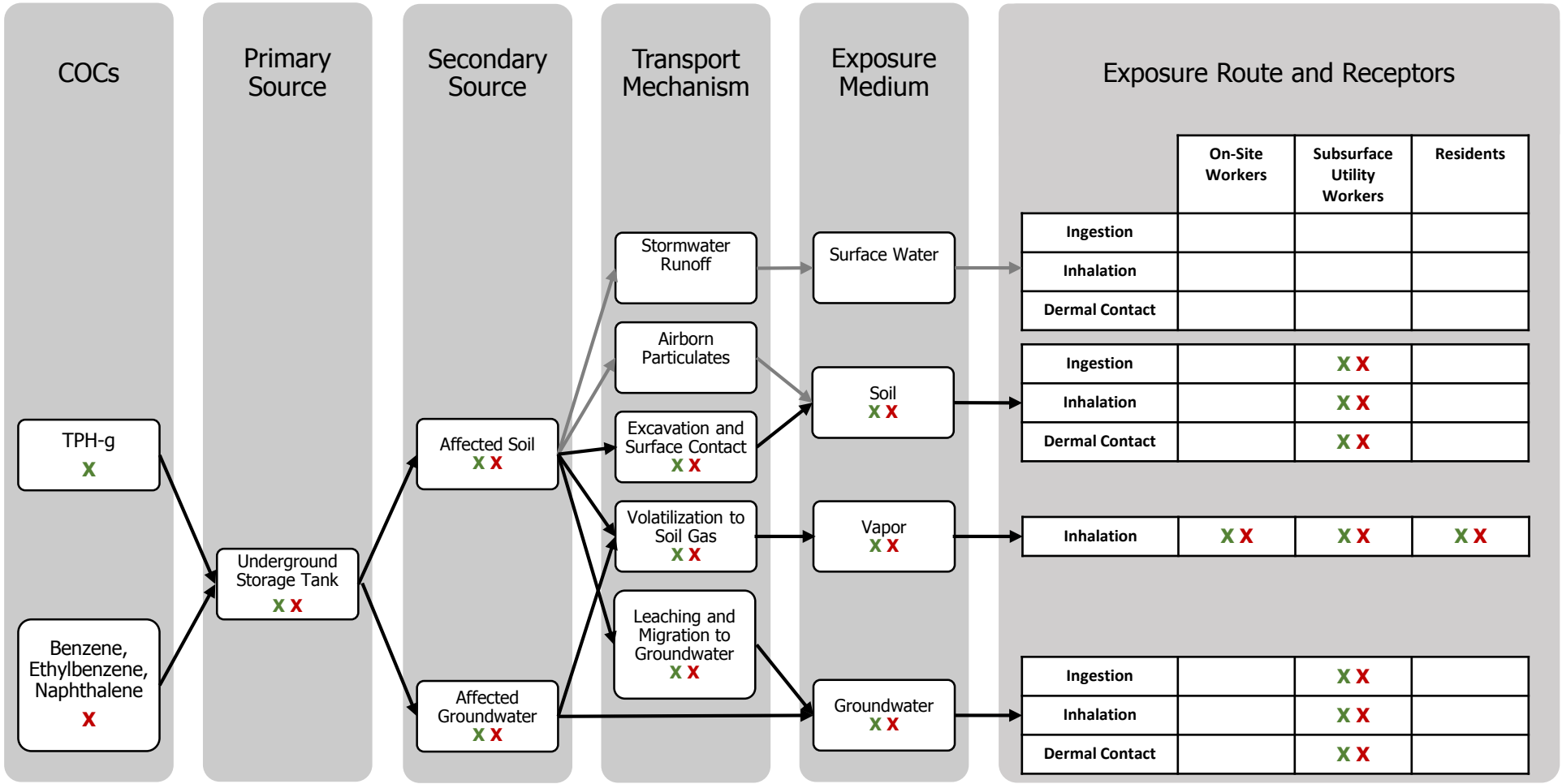
2500 Camino Diablo
Walnut Creek, California

OXYGEN IN SOIL VAPOR

3442 ADELINE STREET
OAKLAND, CA 94608

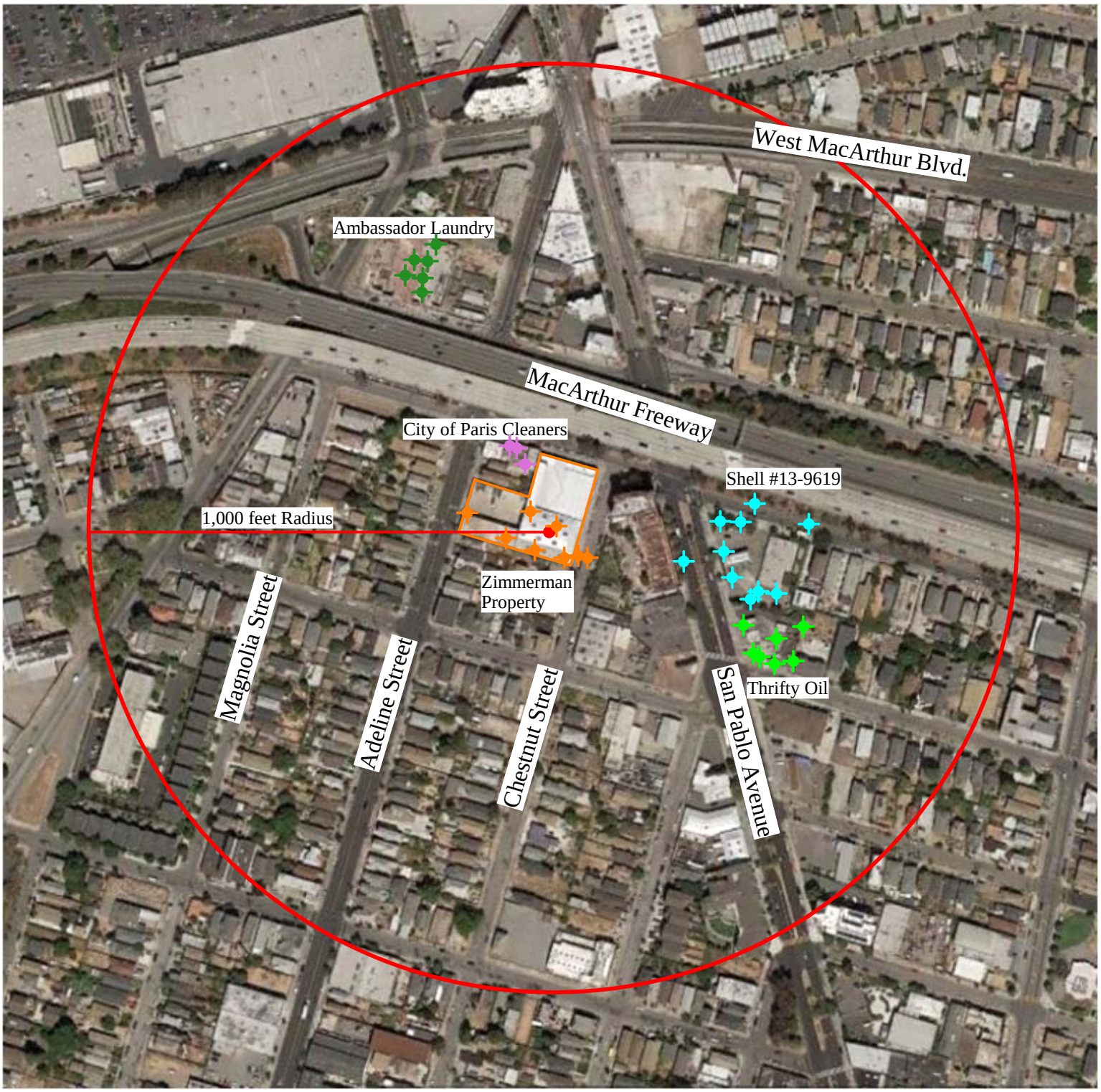
FIGURE 10
Project No. 281939

FIGURE 11
CONCEPTUAL SITE MODEL EXPOSURE PATHWAYS
Zimmerman Properties
3442 Adeline Street
Oakland, CA



Notes:
COCs Constituents of Concern
TPH-g Gasoline range petroleum hydrocarbons
Pathway considered complete for one or more constituent of concern
Pathway incomplete for all constituents of concern

AEI Consultants
AEI Proj. No. 281939



- Zimmerman Property
- Ambassador Laundry
- City of Paris Cleaners
- Shell #13-9619
- Thrifty Oil

Subject Property

AEI CONSULTANTS

2500 CAMINO DIABLO, WALNUT CREEK

ACPWA and DWP Well Survey Results

3442 Adeline Street
Oakland, California

Figure 12

PROJECT NO. 281939

TABLES

TABLE 1
Summary of Soil Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample ID	Depth (ft)	Date	TPH-g (C5-C12) (mg/kg)	TPH-d (C12-C22) (mg/kg)	TPH-mo (C22-C32) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Napthalene (mg/kg)	MTBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)
UST Removal Samples															
NW	6.5	2/22/00	130	130	---	0.16	0.26	0.73	6.3	---	---	---	---	---	---
SE	6.5	2/22/00	920	850	---	0.3	0.37	5.3	22	---	---	---	---	---	---
2006-2008 Soil Borings															
S-1	5	6/23/06	<1.0	5.6	---	0.011	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---
	8		100	26	---	1.3	0.22	2.0	7.2	---	---	---	---	---	---
	12		67	45	---	0.098	<0.025	0.73	0.39	---	---	---	---	---	---
	14.5		<1.0	1.2	---	<0.0050	<0.0050	<0.0050	0.01	---	---	---	---	---	---
S-2	4	6/23/06	<1.0	4.7	---	0.016	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---
	7.5		460	84	---	1.2	0.36	9.4	24	---	---	---	---	---	---
	12		61	49	---	0.33	0.055	0.84	2.4	---	---	---	---	---	---
	14		<1.0	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---
S-3	3.5	6/23/06	<1.0	3.1	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---
	7.5		1,200	250	---	0.47	0.52	18	100	---	---	---	---	---	---
	10		220	76	---	0.26	<0.040	6.2	7.2	---	---	---	---	---	---
	14.5		<1.0	1.3	---	<0.0050	<0.0050	0.0056	0.016	---	---	---	---	---	---
S-4	3.5	6/23/06	<1.0	3.5	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---
	7.5		820	240	---	<0.20	<0.20	6.7	4.4	---	---	---	---	---	---
	11.5		500	120	---	0.079	<0.040	3.5	4.8	---	---	---	---	---	---
	14.5		<1.0	1.3	---	<0.0050	<0.0050	<0.0050	<0.0050	---	---	---	---	---	---
SB-1	4	10/1/07	2.9	---	---	0.016	0.0079	<0.005	0.0094	---	<0.05	---	---	---	---
	7.5		1,200	450	---	3.1	2.5	24	110	---	<5.0	---	---	---	---
	11.5		640	90	---	0.40	1.5	9.3	23	---	<2.5	<0.33	<3.3	<0.33	<0.33
	15.5		<1.0	---	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-2	7.5	10/1/07	<1.0	<1.0		<0.005	<0.005	<0.005	<0.005		<0.05	---	---	---	---
	11		53	6.1	---	<0.005	0.24	0.0084	0.19	---	<0.05	<0.005	<0.05	<0.005	<0.005
SB-3	7.5	10/1/07	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	11.5		<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	<0.005	<0.05	<0.005	<0.005
SB-4	3.5	10/1/07	~~1.2~~	~~---~~	---	~~<0.005~~	~~<0.005~~	~~<0.005~~	~~<0.005~~	---	~~<0.05~~	~~---~~	~~---~~	~~---~~	~~---~~
	7.5		~~430~~	~~170~~	---	~~1.2~~	~~0.99~~	~~3.6~~	~~1.2~~	---	~~<1.0~~	~~---~~	~~---~~	~~---~~	~~---~~
	11.5		~~340~~	~~25~~	---	~~2.4~~	~~0.92~~	~~7.1~~	~~9.7~~	---	~~<1.0~~	~~<0.005~~	~~<0.05~~	~~<0.005~~	~~<0.005~~
	15.5		<1.0	---	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-5	~~3.5~~	10/1/07	~~<1.0~~	~~---~~	---	~~<0.005~~	~~<0.005~~	~~<0.005~~	~~<0.005~~	---	~~<0.05~~	~~---~~	~~---~~	~~---~~	~~---~~
	~~7.5~~		~~420~~	~~54~~	---	~~4.0~~	~~1.1~~	~~9.5~~	~~18~~	---	~~<1.5~~	~~---~~	~~---~~	~~---~~	~~---~~
	~~11.5~~		~~130~~	~~22~~	---	~~0.43~~	~~0.10~~	~~1.2~~	~~0.77~~	---	~~<1.0~~	~~<0.005~~	~~<0.05~~	~~<0.005~~	~~<0.005~~
	15.5		<1.0	---	---	0.017	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-6	7.5	10/1/07	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---

TABLE 1
Summary of Soil Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample ID	Depth (ft)	Date	TPH-g (C5-C12) (mg/kg)	TPH-d (C12-C22) (mg/kg)	TPH-mo (C22-C32) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Napthalene (mg/kg)	MTBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)
	11.5		<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	<0.005	<0.05	<0.005	<0.005
SB-7	7.5	10/3/07	310	90		<0.10	0.48	0.28	0.38		<1.0	---	---	---	---
	11.5		120	37	---	0.21	0.069	0.39	0.22	---	<0.50	<0.020	<0.20	<0.020	<0.020
SB-8	7.5	10/3/07	53	23	---	<0.010	0.030	0.034	0.13	---	<0.10	---	---	---	---
	11.5		99	13	---	0.24	0.070	0.66	0.46	---	<0.17	<0.010	<0.10	<0.010	<0.010
SB-9	4	10/3/07	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	11.5		<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	<0.005	<0.05	<0.005	<0.005
SB-10	7.5	10/3/07	35	5.1		0.72	0.024	0.47	0.079		<0.10	---	---	---	---
	11.5		750	74	---	6.9	1.6	13	33	---	<10	<0.10	<1.0	<0.10	<0.10
	15.5		<1.0	---	---	0.012	<0.005	<0.005	0.0052	---	<0.05	---	---	---	---
SB-11	~~11.5~~	10/3/07	~~39~~	~~13~~	---	~~0.68~~	~~0.086~~	~~0.76~~	~~2.3~~	---	~~<0.3~~	~~---~~	~~---~~	~~---~~	~~---~~
	15.5		41	10	---	1.1	0.071	0.55	1.5	---	0.14	---	---	---	---
SB-12	8	12/20/07	25	1.8	---	0.097	0.024	0.81	1.3	---	<0.10	---	---	---	---
	12		82	23	---	0.74	0.14	1.5	2.9	---	<0.50	---	---	---	---
	16		20	---	---	0.51	0.083	0.48	1.8	---	<0.25	---	---	---	---
SB-13	8	12/20/07	180	66	---	0.46	0.10	2.5	2.7	---	<0.50	---	---	---	---
	12		170	74	---	1.1	0.21	2.4	6.7	---	<0.50	---	---	---	---
	16		5.7	<50	---	0.87	0.017	0.12	0.10	---	<0.05	---	---	---	---
SB-14	8	12/20/07	<1.0	<1.0	---	0.0092	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		910	83	---	3.3	0.43	10	16	---	<2.5	---	---	---	---
	16		<1.0	---	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-15	8	12/20/07	<1.0	<1.0		<0.005	<0.005	<0.005	<0.005		<0.05	---	---	---	---
	12		390	61	---	2.7	0.47	6.7	13	---	<2.5	---	---	---	---
	16		40	---	---	0.26	0.047	0.37	1.3	---	<0.1	---	---	---	---
SB-16	8	12/20/07	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-17	8	12/20/07	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-18	8	12/20/07	<1.0	18		<0.005	<0.005	<0.005	<0.005		<0.05	---	---	---	---
SB-19	8	12/20/07	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		6.7	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-20	8	12/20/07	89	9.7	---	0.070	0.14	0.050	0.14	---	<0.25	---	---	---	---
	12		99	32	---	0.61	0.061	1.6	1.4	---	<0.17	---	---	---	---
	16		<1.0	---	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---

TABLE 1
Summary of Soil Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample ID	Depth (ft)	Date	TPH-g (C5-C12) (mg/kg)	TPH-d (C12-C22) (mg/kg)	TPH-mo (C22-C32) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Napthalene (mg/kg)	MTBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)
SB-21	8	12/21/07	<1.0	<1.0		<0.005	<0.005	<0.005	<0.005		<0.05	---	---	---	---
	12		26	5.8	---	0.28	0.048	0.31	0.30	---	<0.05	---	---	---	---
SB-22	8	12/21/07	24	<1.0	---	<0.005	0.070	0.016	0.059	---	<0.05	---	---	---	---
	12		310	150	---	0.17	<0.17	4.1	3.2	---	<1.7	---	---	---	---
	16		9.2	---	---	0.021	0.032	0.0052	0.0083	---	<0.05	---	---	---	---
SB-23	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		310	73	---	1.3	0.31	4.3	0.11	---	<3.0	---	---	---	---
SB-24	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		15	3.4	---	0.011	0.023	0.020	0.044	---	<0.15	---	---	---	---
	16		41	<1.0	---	<0.050	<0.050	0.11	0.11	---	<0.50	---	---	---	---
SB-25	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		48	12	---	0.027	0.079	0.029	0.11	---	<0.50	---	---	---	---
SB-26	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		<1.0	<1.0		<0.005	<0.005	<0.005	<0.005		<0.05	---	---	---	---
SB-27	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		27	4.2	---	<0.005	0.10	<0.005	0.061	---	<0.05	---	---	---	---
	16		4.8	1.5	---	0.0053	0.020	<0.005	0.0074	---	<0.05	---	---	---	---
SB-28	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		19	1.6	---	0.24	0.034	0.031	0.036	---	<0.05	---	---	---	---
SB-29	8	5/7/08	<1.0	<1.0		<0.005	<0.005	<0.005	<0.005		<0.05	---	---	---	---
	12		<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-30	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SB-31	8	5/7/08	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12		1.9	<1.0	---	<0.005	0.016	<0.005	<0.005	---	<0.05	---	---	---	---
SB-32	2	10/6/16	0.385	2.25 **J**	---	0.000546 **J**	<0.006	<0.001	<0.00351	<0.00620	<0.00117	<0.00117	<0.00585	<0.00117	<0.00117
	10	10/6/16	26.4	14.7	---	0.00214	0.00130 **J**	0.00162	0.00555	0.0921	<0.00117	<0.00117	<0.00585	<0.00117	<0.00117
Excavation Samples															
Sidewall Samples															
SW1	7.0	3/4/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	11.5	3/4/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SW2	8.0	3/4/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	11.5	3/4/09	24	5.8	---	0.17	<0.005	0.26	0.19	---	<0.05	---	---	---	---

TABLE 1
Summary of Soil Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample ID	Depth (ft)	Date	TPH-g (C5-C12) (mg/kg)	TPH-d (C12-C22) (mg/kg)	TPH-mo (C22-C32) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Napthalene (mg/kg)	MTBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)
SW3	7.5	3/4/09	180	65	---	0.88	0.28	2.9	4.2	---	<1.0	---	---	---	---
	11.5	3/4/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
SW4	6.0	3/5/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	11.5	3/5/09	100	21	---	0.49	0.10	1.5	4.2	---	<1.0	---	---	---	---
SW5	6.5	3/5/09	87	16	---	0.23	0.11	0.62	0.49	---	<0.50	---	---	---	---
SW6	6.5	3/5/09	17	<1.0	---	0.02	<0.010	<0.010	0.032	---	<0.10	---	---	---	---
	12	3/11/09	4.9	<1.0	---	0.54	<0.005	0.15	0.16	---	<0.05	---	---	---	---
SW7	6.5	3/5/09	200	210	---	0.2	<0.10	0.49	0.71	---	<1.0	---	---	---	---
	11.5	3/9/09	1,200	310	---	2.3	1.4	18	41	---	<2.5	---	---	---	---
SW8	6.5	3/11/09	12	5.2	---	0.085	0.0084	0.027	0.07	---	<0.05	---	---	---	---
	11.5	3/11/09	12	1.1	---	0.0091	0.0091	0.15	0.19	---	<0.05	---	---	---	---
SW9	6.5	3/11/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
	12	3/11/09	5.0	<1.0	---	0.82	<0.005	0.2	0.2	---	<0.05	---	---	---	---
SW10	6.5	3/11/09	5.6	<1.0	---	0.045	0.0062	0.0089	0.012	---	<0.05	---	---	---	---
Bottom Samples															
B-1	13	3/4/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
B-2	13	3/4/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
B-3	11	3/9/09	38	3.6	---	2.6	<0.050	0.49	0.58	---	<0.50	---	---	---	---
B-4 *	11	3/11/09	130	13	---	0.81	0.12	1.5	2.5	---	<0.50	---	---	---	---
Well Installation Samples															
MW-1	12	4/1/09	30	1.5	---	0.034	0.26	0.042	0.11	---	<0.05	---	---	---	---
	15	4/1/09	<1.0	<1.0	---	<0.05	<0.05	<0.05	<0.05	---	<1.0	---	---	---	---
MW-2	12	4/1/09	140	21	---	0.81	<0.10	1.9	2.6	---	<1.0	---	---	---	---
	16	4/1/09	2.3	<1.0	---	0.62	<0.005	0.016	0.0091	---	<1.0	---	---	---	---
	19	4/1/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<1.0	---	---	---	---
MW-3	12	4/1/09	27	4.3	---	0.57	0.049	0.69	0.62	---	<1.0	---	---	---	---
	16	4/1/09	<1.0	<1.0	---	0.018	0.0059	0.0061	0.023	---	<0.05	---	---	---	---
MW-4	12	4/1/09	1100	99	---	<1.0	2.9	1.1	1.3	---	<10	---	---	---	---
	16	4/1/09	<1.0	<1.0	---	0.018	0.0059	1.0061	0.023	---	<0.05	---	---	---	---
MW-5	12	5/12/09	61	31	---	0.27	0.12	0.66	0.92	---	<1.0	---	---	---	---

TABLE 1
Summary of Soil Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample ID	Depth (ft)	Date	TPH-g (C5-C12) (mg/kg)	TPH-d (C12-C22) (mg/kg)	TPH-mo (C22-C32) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Napthalene (mg/kg)	MTBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)
	16	5/12/09	18	1.9	---	0.15	0.0055	0.23	0.33	---	<0.05	---	---	---	---
MW-6	12	4/2/09	23	2.3	---	0.12	0.018	0.15	0.34	---	<0.05	---	---	---	---
	16	4/2/09	270	29	---	<0.25	0.67	0.43	0.81	---	<2.5	---	---	---	---
	19	4/2/09	1.8	5	---	<0.005	<0.005	<0.005	<0.005	---	0.12	---	---	---	---
	25	4/2/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	0.029	---	---	---	---
MW-7	12	5/13/09	13	<1.0	---	0.067	0.03	0.042	0.02	---	<0.05	---	---	---	---
	16		<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
IW-1	10.5	5/12/09	490	86	---	0.19	0.69	6.7	3.5	---	<1.0	---	---	---	---
	15	5/12/09	<1.0	<1.0	---	<0.005	<0.005	<0.005	<0.005	---	<0.05	---	---	---	---
Vapor Well Installation Samples															
VB-6	4	10/12/16	<0.120	1.00 **J**	2.25 **J**	<0.0012	<0.00601	<0.0012	<0.00361	<0.00601	<0.0012	<0.0012	<0.00601	<0.0012	<0.0012
	8	10/12/16	<0.122	6.52	2.48 **J**	<0.00122	<0.0061	<0.00122	<0.00366	<0.00601	<0.00122	<0.00122	<0.0061	<0.00122	<0.00122
VB-7	4	10/12/16	<0.115	<4.6	<4.60	<0.00115	<0.00575	<0.00115	<0.00345	<0.00575	<0.00115	<0.00115	<0.00575	<0.00115	<0.00115
	6	10/12/16	0.0623 **B, J**	1.68 **J**	1.79 **J**	0.00272	<0.0058	<0.00116	<0.00348	<0.00580	<0.00116	<0.00116	<0.0058	<0.00116	<0.00116
VB-8	2	10/12/16	<0.116 **J3**	3.49 **J**	<4.62	<0.00116	<0.00578	<0.00116	<0.00347	<0.00578	<0.00116	<0.00116	<0.00578	<0.00116	<0.00116
	8	10/12/16	<0.125	7.16	1.77 **J**	<0.00125	<0.00625	<0.00125	<0.00375	<0.00625	<0.00125	<0.00125	<0.00625	<0.00125	<0.00125
VB-9	2	10/12/16	0.0884 **B, J**	1.15 **J**	<4.65	0.00219	<0.00581	<0.00116	<0.00348	<0.00581	<0.00116	<0.00116	0.0433	<0.00116	<0.00116
	8	10/12/16	4.88	19.8 **J**	60.6	0.0797	0.0235 **J**	0.0359	0.0516 **J**	<0.154	<0.0309	<0.0309	<0.154	<0.0309	<0.0309
VB-10	2	10/12/16	0.0941 **B, J**	3.35 **J**	<4.84	<0.00121	<0.00605	<0.00121	<0.00363	<0.00605	<0.00121	<0.00121	<0.00605	<0.00121	<0.00121
	6	10/12/16	<0.116	4.82	<4.66	<0.00116	<0.00582	<0.00116	<0.00349	<0.00582	<0.00116	<0.00116	<0.00582	<0.00116	<0.00116
VB-11	2	10/12/16	<0.113	1.99 **J**	<4.53	<0.00113	<0.00566	<0.00113	<0.0034	<0.00566	<0.00113	<0.00113	<0.00566	<0.00113	<0.00113
	6	10/12/16	<0.114	1.94 **J**	<4.56	<0.00114	0.00225 **J**	0.000647	0.00309 **J**	<0.00571	<0.00114	<0.00114	<0.00571	<0.00114	<0.00114
VB-12	2	10/6/16	0.475	3.19 **J**	2.79 **J**	0.000908 **J**	<0.00588	<0.00118	<0.00353	<0.00588	<0.00118	<0.00118	0.0536 **J**	<0.00118	<0.00118
	8	10/6/16	214	4.12 **J**	2.37 **J**	0.187	0.00322 **J**	0.496	0.821	0.102	<0.00116	<0.00116	0.0586 **J**	<0.00116	<0.00116
VB-13	4	10/12/16	<0.121	<4.86	<4.86	<0.00121	<0.00607	<0.00121	<0.00364	<0.00607	<0.00121	<0.00121	<0.00607	<0.00121	<0.00121
	8	10/12/16	<0.116	2.02 **J**	4.64	<0.00116	<0.00579	<0.00116	<0.00348	<0.00579	<0.00116	<0.00116	<0.00579	<0.00116	<0.00116
VB-14	2	10/12/16	<0.119	5.28	<4.77	<0.00119	<0.00596	<0.00119	<0.00358	<0.00596	<0.00119	<0.00119	<0.00596	<0.00119	<0.00119
	6	10/12/16	<0.114	4.7	<4.54	<0.00114	<0.00568	<0.00114	<0.00341	<0.00568	<0.00114	<0.00114	<0.00568	<0.00114	<0.00114
VB-15	4	10/12/16	<0.114	3.94 **J**	<4.54	<0.00114	<0.00568	<0.00114	<0.00341	<0.00568	<0.00114	<0.00114	<0.00568	<0.00114	<0.00114
	6	10/12/16	7.88	4.06 **J**	<4.50	<0.00113	<0.00563	<0.00113	<0.00338	<0.00563	<0.00113	<0.00113	0.00497	<0.00113	<0.00113
VB-16	4	10/12/16	0.150 **B**	2.15 **J**	<4.67	<0.00117	<0.00584	<0.00117	<0.0035	<0.00584	<0.00117	<0.00117	<0.00584	<0.00117	<0.00117
	8	10/12/16	0.0745 **B, J**	8.31	1.76 **J**	<0.00108	<0.00542	<0.00108	<0.00325	<0.00542	<0.00108	<0.00108	<0.00542	<0.00108	<0.00108

TABLE 1
Summary of Soil Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample ID	Depth (ft)	Date	TPH-g (C5-C12) (mg/kg)	TPH-d (C12-C22) (mg/kg)	TPH-mo (C22-C32) (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Xylenes (mg/kg)	Napthalene (mg/kg)	MTBE (mg/kg)	TAME (mg/kg)	TBA (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)
VB-21	10	6/13/17	140 **S**	6.6	<5.0	<0.050 H	<0.050 H	<0.050 H	<0.050 H	<0.050 H	<0.050 H	<0.050 H	<0.50 H	<0.050 H	<0.050 H
	13	6/13/17	23	1.1	<5.0	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.020 H	<0.20 H	<0.020 H	<0.020 H

Notes:

---	No Data	TAME	tert-amyl methyl ether
DIPE	Di-isopropyl Ether	TBA	tertiary butyl alcohol
ETBE	ethyl tert-butyl ether	TPH-d	total petroleum hydrocarbons as diesel (C12-C-22)
mg/kg	milligrams per kilogram	TPH-g	total petroleum hydrocarbons as gasoline (C5-C12)
MTBE	methyl tert-butyl ether	B-4 *	Sample mislabeled in field and identified in report as "B-3(B-4-11)"
~~Strikethrough~~	Removed during 2009 Excavation	J	The identification of the analyte is acceptable; the reported value is an estimate
B	The analyte was present in the method blank	H	Samples were analyzed out of holding time
S	Surrogate recovery outside of accepted recovery limits		Analytical data from the current reporting period

TABLE 2
Summary of Grab Groundwater Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA

Sample ID	Date	TPH-g µg/L	TPH-d µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L	MTBE µg/L	TAME µg/L	ETBE µg/L	TBA µg/L	DIPE µg/L
Pit Water	02/22/00	7,400	34,000	3,300	930	400	6,200	---	---	---	---	---
S-1	6/23/06	20,000	<10,000	980	70	1,500	1,100	---	---	---	---	---
S-2	6/23/06	31,000	<4,000	7,000	260	920	2,800	---	---	---	---	---
S-3	6/23/06	23,000	<1,500	490	67	1,200	3,300	---	---	---	---	---
S-4	6/23/06	120,000	<40,000	200	<15	3,500	2,900	---	---	---	---	---
SB-1	10/1/2007	28,000	6,100	2,000	77	1,600	4,100	<25	<25	<25	<250	<25
SB-2	10/1/2007	640	300	1.8	2.2	1.1	4.9	<0.5	<0.5	<0.5	<5.0	<0.5
SB-3	10/1/2007	84	<50	2.4	<0.5	4.2	11	<0.5	<0.5	<0.5	<5.0	<0.5
SB-4	10/1/2007	20,000	2,200	6,600	110	390	430	<17	<17	<17	430	<17
SB-5	10/1/2007	22,000	7,400	1,900	86	1,200	2,100	<5.0	<5.0	<5.0	120	<5.0
SB-6	10/1/2007	440	---	17	<0.5	0.99	2.2	2.0	<0.5	<0.5	18	<0.5
SB-7	10/3/2007	2,000	1,000	30	5.1	56	82	6.1	<0.5	<0.5.	<5.0	<0.5
SB-8	10/3/2007	6,700	1,600	110	6.3	160	140	<0.5	<0.5	<0.5	12	<0.5
SB-9	10/3/2007	11,000	5,700	440	14	720	1,000	<1.7	<1.7	<1.7	37	<1.7
SB-10	10/3/2007	17,000	1,700	3,800	55	420	830	<10	<10	<10	510	11

TABLE 2
Summary of Grab Groundwater Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA

Sample ID	Date	TPH-g	TPH-d	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE	TAME	ETBE	TBA	DIPE
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
SB-11	10/3/2007	83,000	4,300	10,000	640	2,700	7,900	<25	<25	<25	840	<25
SB-12	12/20/2007	35,000	4,900	5,200	110	1,000	1,800	<450	---	---	---	---
SB-13	12/20/2007	29,000	5,100	5,300	80	1,400	3,900	<250	---	---	---	---
SB-14	12/20/2007	23,000	12,000	2,600	15	1,500	1,800	<240	---	---	---	---
SB-15	12/20/2007	36,000	3,000	7,700	190	1,600	4,700	<350	---	---	---	---
SB-16	12/20/2007	88	480	0.60	<0.5	<0.5	0.83	<5.0	---	---	---	---
SB-17	12/20/2007	1,100	320	<0.5	6.2	<0.5	4.2	<5.0	---	---	---	---
SB-18	12/20/2007	<50	1,800	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---	---
SB-19	12/20/2007	<50	280	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---	---
SB-20	12/20/2007	28,000	3,900	3,400	22	1,200	930	<160	---	---	---	---
SB-21	12/21/2007	8,100	1,200	1,600	<5.0	160	84	<50	---	---	---	---
SB-22	12/21/2007	2,600	620	110	0.90	150	55	<10	---	---	---	---
SB-23	5/14/2008	46,000	4,800	9,000	40	2,300	5,200	<450	---	---	---	---
SB-24	5/14/2008	11,000	2,900	80	<5.0	440	290	<50	---	---	---	---
SB-25	5/9/2008	3,600	1,300	42	1.90	65	36	<5.0	---	---	---	---
SB-26	5/14/2008	2,300	770	22	2.1	<1.0	2.4	<10	---	---	---	---

TABLE 2
Summary of Grab Groundwater Analytical Data

Zimmerman Property
3442 Adeline Street
Oakland, CA

Sample ID	Date	TPH-g µg/L	TPH-d µg/L	Benzene µg/L	Toluene µg/L	Ethyl-Benzene µg/L	Xylenes µg/L	MTBE µg/L	TAME µg/L	ETBE µg/L	TBA µg/L	DIPE µg/L
SB-27	5/14/2008	740	180	7.4	3.70	<0.5	1.0	<5.0	---	---	---	---
SB-28	5/16/2008	290	72	1.3	0.93	2.7	4.0	<5.0	---	---	---	---
SB-29	5/16/2008	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---	---
SB-30	5/14/2008	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0	---	---	---	---
SB-31	5/14/2008	5,100	770	270	6.3	79	7.2	<110	---	---	---	---
VB-4	6/13/2017	2,200	710	17	1.1	4.0	1.7	<5.0	<5.0	<5.0	11	<5.0
VB-5	6/13/2017	5,000	4,400	91	<5.0	93	25	<5.0	<5.0	<5.0	<20	<5.0
VB-17	6/13/2017	4,100	1,400	6.0	<0.50	18	1.4	<0.50	<0.50	<0.50	<2.0	<0.50
VB-18	6/13/2017	160	260	<0.50	<0.50	3.0	0.9	<0.50	<0.50	<0.50	<2.0	<0.50
VB-19	6/13/2017	9,500	2,200	83	<5.0	40	<5.0	<5.0	<5.0	<5.0	<20	<5.0
VB-20	6/13/2017	200	65	5.7	5.6	0.72	1.1	<0.50	<0.50	<0.50	13	<0.50
VB-21	6/13/2017	29,000	24,000	600	<25	150	<25	<25	<25	<25	<100	<25

Notes:

µg/L	micrograms of analyte per liter of sample	TAME	tert-amyl methyl ether	MTBE	methyl tert-butyl ether
DIPE	Di-isopropyl Ether	TBA	tertiary butyl alcohol	---	No Data
ETBE	ethyl tert-butyl ether	TPH-d	total petroleum hydrocarbons as diesel		
	Analytical data from the current reporting period	TPH-g	total petroleum hydrocarbons as gasoline		

TABLE 3
Well Construction Details
Zimmerman Property
3442 Adeline Street
Oakland, CA

Well ID	Date Installed	Top of Casing Elevation (ft)	Well Box Rim Elevation (ft)	Well Depth (ft bgs)	Casing Material	Casing Diameter (in)	Sceened Interval (ft bgs)	Slot Size (in)	Sand Interval (ft bgs)	Sand Size
BF-1	03/09/09	31.87	32.14	13	PVC	4	9-13	0.020	8-13	# 2/12
BF-2	03/09/09	NA	NA	13	PVC	4	9-13	0.020	8-13	# 2/12
BF-3	03/09/09	NA	NA	13	PVC	4	8-13	0.020	7-13	# 2/12
BF-5	03/09/09	32.28	32.59	13	PVC	4	8-13	0.020	7-13	# 2/12
MW-1	04/01/09	31.12	32.13	17	PVC	4	7-17	0.020	6-17	# 2/12
MW-2	04/01/09	31.19	31.43	17	PVC	4	7-17	0.020	6-17	# 2/12
MW-3	04/01/09	32.07	32.39	17	PVC	4	7-17	0.020	6-17	# 2/12
MW-4	04/02/09	31.68	31.98	17	PVC	2	7-17	0.020	6-17	# 2/12
MW-5	05/12/09	30.39	30.82	17	PVC	2	7-17	0.020	6-17	# 2/12
MW-6	04/02/09	29.34	29.96	17	PVC	2	7-17	0.020	6-17	# 2/12
MW-7	05/13/09	31.04	31.45	17	PVC	2	7-17	0.020	6-17	# 2/12
IW-1	05/12/09	31.66	31.90	15	SS	2	13-15	40 mesh	12-15	# 2/12

Notes:

Elevations provided in reference to North American Vertical Datum 1988

bgs	below ground surface
ft	feet
in	inches
PVC	polyvinylchloride
SS	stainless steel
NA	no available information

TABLE 4
Groundwater Elevation Data
Zimmerman Property
3442 Adeline Street
Oakland, CA

Well ID (Screen Interval)	Date Collected	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
MW-1 (7-17)	6/10/09	31.12	7.01	24.11
	8/27/09	31.12	6.96	24.16
	12/15/09	31.12	5.96	25.16
	3/12/10	31.12	5.06	26.06
	10/21/10	31.12	7.00	24.12
	5/5/11	31.12	5.88	25.24
	4/25/12	31.12	5.33	25.79
	12/12/12	31.12	5.35	25.77
	4/4/13	31.12	6.63	24.49
	4/30/14	31.12	5.42	25.70
	1/12/16	31.12	6.07	25.05
	7/22/16	31.12	8.85	22.27
	1/25/17	31.12	4.16	26.96
	6/13/2017	31.12	6.37	24.75
MW-2 (7-17)	6/10/09	31.19	9.50	21.69
	8/27/09	31.19	10.50	20.69
	12/15/09	31.19	8.68	22.51
	3/12/10	31.19	5.09	26.10
	10/21/10	31.19	7.51	23.68
	5/5/11	31.19	6.68	24.51
	4/25/12	31.19	5.58	25.61
	12/12/12	31.19	6.47	24.72
	4/4/13	31.19	7.56	23.63
	4/30/14	31.19	6.62	24.57
	1/13/16	31.19	7.06	24.13
	7/22/16	31.19	9.94	21.25
	1/25/17	31.19	4.27	26.92
	6/13/2017	31.19	8.22	22.97
MW-3 (7-17)	6/10/09	32.07	8.44	23.63
	8/27/09	32.07	8.59	23.48
	12/15/09	32.07	7.66	24.41
	3/12/10	Well inaccessible	----	----
	10/21/10	Well inaccessible	----	----
	7/22/16	32.07	9.98	22.09
	1/25/17	32.07	4.79	27.28
	6/13/2017	32.07	7.74	24.33
MW-4 (7-17)	6/10/09	31.68	9.45	22.23
	8/27/09	31.68	10.29	21.39
	12/15/09	31.68	8.19	23.49
	3/12/10	31.68	5.45	26.23
	10/21/10	31.68	9.93	21.75
	5/5/11	31.68	6.60	25.08
	4/25/12	31.68	5.73	25.95
	12/12/12	31.68	6.21	25.47

TABLE 4
Groundwater Elevation Data
Zimmerman Property
3442 Adeline Street
Oakland, CA

Well ID (Screen Interval)	Date Collected	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
	4/4/13	31.68	7.88	23.80
	4/30/14	31.68	6.92	24.76
	1/13/16	31.68	6.34	25.34
	7/22/16	31.68	10.50	21.18
	1/25/17	31.68	4.01	27.67
	6/13/2017	31.68	7.94	23.74
MW-5 (7-17)	6/10/09	30.39	9.13	21.26
	8/27/09	30.39	9.54	20.85
	12/15/09	30.39	8.33	22.06
	3/12/10	Well inaccessible	----	----
	10/21/10	30.39	6.85	23.54
	5/5/11	30.39	3.25	27.14
	4/25/12	30.39	4.50	25.89
	12/12/12	30.39	5.43	24.96
	4/4/13	30.39	7.25	23.14
	4/30/14	Well inaccessible	----	----
	1/12/16	30.39	5.65	24.74
	7/21/16	30.39	9.75	20.64
	1/25/17	30.39	3.08	27.31
	6/13/2017	30.39	7.30	23.09
MW-6 (7-17)	6/10/09	29.34	9.98	19.36
	8/27/09	29.34	11.84	17.50
	12/15/09	29.34	8.33	21.01
	3/12/10	29.34	4.66	24.68
	10/21/10	29.34	10.00	19.34
	5/5/11	29.34	5.59	23.75
	4/25/12	29.34	4.82	24.52
	12/20/12	29.34	5.23	24.11
	4/4/13	29.34	7.37	21.97
	4/30/14	29.34	5.89	23.45
	1/12/16	29.34	5.67	23.67
	7/21/16	29.34	10.40	18.94
	1/25/17	29.34	3.59	25.75
	6/13/2017	29.34	7.42	21.92
MW-7 (7-17)	6/10/09	31.04	6.53	24.51
	8/27/09	31.04	6.19	24.85
	12/15/09	31.04	5.71	25.33
	3/12/10	31.04	5.34	25.70
	10/21/10	31.04	6.59	24.45
	5/5/11	31.04	5.98	25.06
	4/25/12	31.04	5.71	25.33
	12/20/12	Well inaccessible	----	----
	4/4/13	31.04	6.18	24.86
	4/30/14	31.04	6.29	24.75

TABLE 4
Groundwater Elevation Data
Zimmerman Property
3442 Adeline Street
Oakland, CA

Well ID (Screen Interval)	Date Collected	Top of Casing Elevation (ft)	Depth to Water (ft)	Groundwater Elevation (ft)
	1/12/16	31.04	5.61	25.43
	7/21/16	31.04	7.36	23.68
	7/21/16	31.04	7.36	23.68
	6/13/2017	31.04	6.00	25.04
IW-1 (13-15)	6/10/09	31.66	7.65	24.01
	8/27/09	31.66	7.70	23.96
	12/15/09	31.66	10.99	20.67
	3/12/10	31.66	6.00	25.66
	10/21/10	31.66	9.35	22.31
	5/5/11	31.66	6.73	24.93
	4/25/12	31.66	8.05	23.61
	12/20/12	31.66	12.88	18.78
	4/4/13	31.66	12.81	18.85
	4/30/14	31.66	6.01	25.65
	1/12/16	31.66	6.33	25.33
	7/21/16	31.66	8.31	23.35
	1/25/17	31.66	5.48	26.18
	6/13/2017	31.66	6.31	25.35
BF-1	7/21/16	31.87	8.40	23.47
	1/25/17	31.87	4.56	27.31
	6/13/2017	31.87	6.82	25.05
BF-5	7/21/16	32.28	8.95	23.33
	1/25/17	32.28	5.12	27.16
	6/13/2017	32.28	7.35	24.93

Notes:

Data from current reporting period

Elevations provided in feet above North American Vertical Datum 1988

TABLE 5
Summary of Groundwater Elevation and Flow

Zimmerman Property
3442 Adeline Street
Oakland, CA

Date	Average Water Table Elevation (ft)	Change from Previous Episode (ft)	Flow Direction (gradient) (ft/ft)
6/10/2009	22.40	----	West (0.0186)
8/27/2009	21.85	-0.55	West (0.0186)
12/15/2009	23.42	1.58	West (0.0181)
3/12/2010	25.75	2.33	West (0.004)
10/21/2010	22.81	-2.94	North Northwest (0.041)
5/5/2011	25.13	2.32	West (0.01)
4/25/2012	25.52	0.38	West (0.01)
12/20/2012	25.01	-0.51	West (0.01)
4/4/2013	23.41	-1.60	West (0.01)
4/30/2014	24.62	1.21	West (0.01)
1/12-13/2016	24.55	-0.07	West (0.01)
7/21-22/2016	20.91	-3.64	West (0.01)

Notes:
Elevations provided in reference to North American Vertical Datum 1988

TABLE 6
Summary of Groundwater Monitoring Well Analytical Data

Zimmerman Property
3442 Adeline Street
Oakland, CA

Sample ID	Date	Depth to Water (ft)	TPH-g (µg/L)	TPH-d (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW-1	04/17/09	7.01	220	97	10	<0.5	3.0	5.4	<5.0
	08/27/09	6.96	7,000	----	610	10	320	220	<180
	09/17/09	----	92	----	0.91	0.70	<0.5	<0.5	<15
	12/15/09	5.96	2500	----	170	6.4	66	120	<50
	03/12/10	5.06	500	----	4.0	1.1	0.6	0.7	<5.0
	10/21/10	7.00	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	05/05/11	5.88	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/25/12	5.33	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	12/20/12	5.35	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/04/13	6.63	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/30/14	5.42	83	----	<0.5	0.53	<0.5	<0.5	<5.0
	01/12/16	6.07	<50	----	<0.5	<0.5	<0.5	<1.5	<5.0
	07/22/16	8.85	<50	----	<0.5/0.5	<0.5	<0.5	<1.5	<5.0
	01/25/17	4.16	<50	----	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<1.5/<0.5	<5.0/<0.5
	06/13/17	6.37	<50	----	<0.50	<0.50	<0.50	<1.5	<5.0
MW-2	04/17/09	9.50	7,000	2,200	850	19	93	470	<100
	08/27/09	10.50	26,000	----	3,600	<25	1,200	3,000	<1,200
	12/15/09	8.68	25,000	----	2,900	70	1,500	2,400	<250
	03/12/10	5.69	7,300	----	590	7.0	6.4	680	<350
	10/21/10	7.51	1,900	----	140	1.4	28	140	<15
	05/05/11	6.68	27,000	----	2,300	13	1,700	2,600	<180
	04/25/12	5.58	9,600	----	440	8.8	260	920	<120
	12/20/12	6.47	2,900	----	63	2.6	21	85	<35
	04/04/13	7.56	7,900	----	960	10	380	690	<150
	04/30/14	6.62	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	01/13/16	7.06	330	----	97	<0.5	2.5	14	<5.0
	07/22/16	9.94	<50	----	1.9/2.0	<0.5	<0.5	<1.5	<5.0
	01/25/17	4.27	<50	----	1.4/1.1	<0.5/<0.5	0.56/<0.5	1.6/1.1	<5.0/<0.5
	06/13/17	8.22	<50	----	<0.50	<0.50	<0.50	<1.5	<5.0
MW-3	04/17/09	8.44	10,000	2,200	930	5.6	270	920	<110
	08/27/09	8.59	17,000	----	3,800	38	730	710	<250
	09/17/09	----	260	----	1.8	1.0	<0.5	2.1	<15
	10/14/09	----	1,800	----	220	13	37	130	<30
	12/15/09	7.66	4,900	----	890	13	160	130	<50
	03/12/10	Well inaccessible							
	10/21/10	Well inaccessible							
	07/22/16	9.98	16,000	----	4,800/5,100	28	52	42	<150
	01/25/17	4.79	7,300	----	1,900/1,500	17/<25	99/80	59/37	<200/<25
	06/13/17	7.74	11,000	----	2,300	<25	110	<75	<250

TABLE 6
Summary of Groundwater Monitoring Well Analytical Data

Zimmerman Property
3442 Adeline Street
Oakland, CA

Sample ID	Date	Depth to Water (ft)	TPH-g (µg/L)	TPH-d (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW-4	04/17/09	9.45	4,700	1,200	140	2.0	28	18	<30
	08/27/09	10.29	4,300	----	75	11	8.6	3.4	<25
	12/15/09	8.19	3,000	----	64	11	5.6	3.3	<15
	03/12/10	5.45	6,100	----	1,200	14	170	6.2	<35
	10/21/10	9.93	1,900	----	120	4.7	5.7	1.8	<15
	05/05/11	6.60	4,900	----	560	2.6	41	17	<25
	04/25/12	5.73	330	----	23	1.4	2.0	4.2	<5.0
	12/20/12	6.21	150	----	5.8	<0.5	<0.5	<0.5	<5.0
	04/04/13	7.88	1,000	----	30	4.6	0.61	0.65	<5.0
	04/30/14	6.92	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	01/13/16	6.34	<50	----	<0.5	<0.5	<0.5	<1.5	<5.0
	07/22/16	10.50	<50	----	<0.5/0.5	<0.5	<0.5	<1.5	<5.0
	01/25/17	4.01	<50	----	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<1.5/<0.5	<5.0/<0.5
	06/13/17	7.94	<50	----	<0.50	<0.50	<0.50	<1.5	<5.0
MW-5	05/22/09	9.13	14,000	2,800	3,000	12	340	420	<100
	08/27/09	9.54	25,000	----	3,300	36	110	160	<400
	12/15/09	8.33	8,200	----	1,200	6.9	300	610	<250
	03/12/10	Well inaccessible							
	10/21/10	6.85	<50	----	1.3	<0.5	<0.5	<0.5	<5.0
	05/05/11	3.25	790	----	140	1.0	29	30	<20
	04/25/12	4.51	67	----	3.4	<0.5	1.4	0.83	<5.0
	12/20/12	5.43	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/04/13	7.25	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/30/14	Well inaccessible			----	----	----	----	----
	01/12/16	5.65	110	----	2.7	<0.5	<0.5	<1.5	<5.0
	07/21/16	9.75	<50	----	<0.5/0.5	<0.5	<0.5	<1.5	<5.0
	01/25/17	3.08	<50	----	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<1.5/<0.5	<5.0/<0.5
	06/13/17	7.36	<50	----	<0.50	<0.50	<0.50	<1.5	<5.0
MW-6	04/17/09	9.98	5,600	1,000	210	3.0	180	160	<300
	08/27/09	11.84	2,200	----	98	7.9	20	1.1	<120
	12/15/09	8.59	4,700	----	370	6.9	260	300	<250
	03/12/10	4.66	9,300	----	210	12	250	110	<90
	10/21/10	10.00	380	----	35	1.2	4.6	3.8	<5.0
	05/05/11	5.59	7,000	----	80	2.9	120	28	<75
	04/25/12	4.82	7,400	----	99	11.0	100	27	<150
	12/20/12	5.23	5,500	----	81	3.1	78	16	<50
	04/04/13	7.37	5,300	----	76	5.7	50	12	<70
	04/30/14	5.89	670	----	12	2.4	2.3	0.77	<5.0
	01/12/16	5.67	63	----	1.8	<0.5	<0.5	<1.5	<5.0
	07/21/16	10.40	<50	----	<0.5/0.5	<0.5	<0.5	<1.5	<5.0
	01/25/17	3.59	<50	----	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<1.5/<0.5	<5.0/<0.5
	06/13/17	7.42	330	----	1.4	<0.50	2.3	<1.5	<5.0

TABLE 6
Summary of Groundwater Monitoring Well Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA

Sample ID	Date	Depth to Water (ft)	TPH-g (µg/L)	TPH-d (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW-7	04/17/09	6.53	12,000	3,700	1,000	37	100	36	<120
	08/27/09	6.19	12,000	----	550	30	130	33	<100
	12/15/09	5.71	9,600	----	620	26	140	20	<100
	03/12/10	5.34	10,000	----	850	33	87	28	<25
	10/21/10	6.59	7,900	----	1,100	22	44	21	<180
	05/05/11	5.98	9,300	----	690	23	42	21	<200
	04/25/12	5.71	8,600	----	1,000	31	10	20	<75
	12/20/12	Well inaccessible							
	04/04/13	6.18	12,000	----	2,800	51	96	37	<210
	04/30/14	6.29	220	----	39	0.75	0.53	<0.5	<5.0
	01/12/16	5.61	1,800	----	400	6.8	9.7	7.6	31
	07/21/16	7.36	6,700	----	1,400/1,400	29	36	28	<400
	01/25/207	4.61	3,200	----	190/140	8.0/5.1	7.2/7.0	11/6.7	<150/<5.0
	06/13/17	6.00	10,000	----	1,900	46	180	85	<250
IW-1	05/22/09	7.65	1,200	680	58	2.7	2.3	18	<15
	08/27/09	7.70	160	----	4.1	0.5	0.8	1.6	<5.0
	09/17/09	----	300	----	8.0	1.5	1.4	0.85	<5.0
	12/15/09	10.99	220	----	5.4	1.4	0.65	0.7	<5.0
	03/12/10	6.00	<50	----	1.9	<0.5	<0.5	<0.5	<5.0
	10/21/10	9.35	<50	**----**	<0.5	<0.5	<0.5	<0.5	<5.0
	05/05/11	6.73	<50	**----**	<0.5	<0.5	<0.5	<0.5	<5.0
	04/25/12	8.05	<50	**----**	0.91	<0.5	<0.5	0.57	<5.0
	12/20/12	12.88	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/04/13	12.81	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/30/14	6.01	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	01/12/16	6.33	<50	----	<0.5	<0.5	<0.5	<1.5	<5.0
	07/21/16	6.33	<50	----	<0.5/0.5	<0.5	<0.5	<1.5	<5.0
	01/25/17	5.48	<50	----	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<1.5/<0.5	<5.0/<0.5
	06/13/17	6.31	<50	----	<0.50	<0.50	<0.50	<1.5	<5.0
BF-1	03/27/09	----	19,000	----	890	27	460	1,200	<250
	06/17/09	----	6,700	----	840	19	170	150	<150
	08/10/09	----	11,000	----	710	14	440	290	<120
	08/27/09	----	9,600	----	590	14	350	220	<90
	09/13/09	----	<50	----	1.2	<0.5	<0.5	<0.5	<5.0
	10/14/09	----	2,400	----	83	1.9	5.0	120	<10
	12/11/09	6.70	200	----	12	<0.5	2.2	9.6	<5.0
	03/12/10	5.61	<50	----	2.9	<0.5	<0.5	<0.5	<0.5
	10/21/10	7.95	560	----	68	1.5	6.7	25	<5.0
	05/05/11	6.25	<50	----	0.65	<0.5	<0.5	<0.5	<5.0
	04/25/12	5.85	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	12/20/12	5.82	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0

TABLE 6
Summary of Groundwater Monitoring Well Analytical Data

Zimmerman Property
3442 Adeline Street
Oakland, CA

Sample ID	Date	Depth to Water (ft)	TPH-g (µg/L)	TPH-d (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
	04/04/13	6.78	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/30/14	5.36	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	01/12/16	6.58	<50	----	<0.5	<0.5	<0.5	<1.5	<5.0
	07/22/16	8.40	<50	----	<0.5/0.5	<0.5	<0.5	<1.5	<5.0
	01/25/17	4.56	<50	----	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<1.5/<0.5	<5.0/<0.5
	06/13/17	6.82	<50	----	<0.50	<0.50	<0.50	<1.5	<5.0
BF-5	08/27/09	----	170	----	32	0.55	4.2	220	<25
	10/14/09	----	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	12/11/09	7.25	130	**----**	40	<0.5	0.91	<0.5	<5.0
	03/12/10	6.09	<50	**----**	4.3	<0.5	0.91	<0.5	<5.0
	10/21/10	8.62	80	**----**	8.8	<0.5	1.4	4.5	<5.0
	05/05/11	6.75	<50	**----**	<0.5	<0.5	<0.5	<0.5	<5.0
	04/25/12	6.37	<50	**----**	<0.5	<0.5	<0.5	<0.5	<5.0
	12/20/12	6.33	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/04/13	7.25	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	04/30/14	5.83	<50	----	<0.5	<0.5	<0.5	<0.5	<5.0
	01/12/16	7.09	<50	----	<0.5	<0.5	<0.5	<1.5	<5.0
	07/22/16	8.95	<50	----	<0.5/0.5	<0.5	<0.5	<1.5	<5.0
	01/25/17	5.12	<50	----	<0.5/<0.5	<0.5/<0.5	<0.5/<0.5	<1.5/<0.5	<5.0/<0.5
	06/13/17	7.35	<50	----	<0.50	<0.50	<0.50	<1.5	<5.0

Notes:

µg/L	micrograms of analyte per liter of sample
	Analytical data from the current reporting period
MTBE	methyl tert-butyl ether
TPH-d	total petroleum hydrocarbons as diesel
TPH-g	total petroleum hydrocarbons as gasoline
---	No Data

TABLE 7
Summary of Soil Vapor Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Boring	Date	TPH-g µg/m³	Benzene µg/m³	Toluene µg/m³	Ethyl-benzene µg/m³	Xylenes µg/m³	MTBE µg/m³	Naphthalene µg/m³	Oxygen %	Carbon Monoxide %	Carbon Dioxide %	Methane %	Helium* ppbv	Leak Check Result
VB-1	10/1/2007	1,900	130	35	<8.8	<27	<48	---	---	---	---	---	---	NL
VB-2	10/1/2007	3,100	32	42	11	50	<48	---	---	---	---	---	---	NL
VB-3	10/1/2007	2,500	40	42	16	49	<48	---	---	---	---	---	---	NL
VB-4	6/22/2017	17,700,000	<51.1 *	---	---	---	---	<83	5.24	---	4.22	2.37	---	NL
VB-5	6/19/2017	16,300	9.61	25.8	23.6	124.4	<1.44	<83	10.7	---	2.87	<0.400	<100,000	<0.04%
VB-7	10/14/2016	17,900	206	1,090	148	636	<18	<25	12.8	<2.00	0.65	<0.400	9,280,000	4.0%
	6/15/2017	2,060	3.47	<1.51	<1.73	<5.20	<1.44	<83	10.9	---	2.39	<0.400	3,050,000	1.0%
VB-8	10/14/2016	1,770	48.0	287	25.3	119.4	<1.44	<6.60	13.6	<2.00	1.55	<0.400	1,150,000	0.6%
VB-9	10/14/2016	4,690,000	<294 *	<1,510	<347	<1,041	<288	<25 **Q**	<2.00	<2.00	10.9	0.806	<100,000	<0.04%
	6/15/2017	7,910,000	<118 *	847	385	1,038	169	<83	3.81	---	4.76	<0.400	<100,000	<0.04%
VB-10	10/14/2016	34,500	573	827	77.3	87.7	<18	<25	3.40	<2.00	3.93	<0.400	11,200,000	4.8%
	6/15/2017	4,920	<1.28	12.3	3.35	14.69	<1.44	<83	13.5	---	2.37	<0.400	1,860,000	0.6%
VB-11	10/14/2016	3,420	44.4	343	62.3	272.5	<1.44	<6.6	7.81	<2.00	1.83	<0.400	2,460,000	1.5%
VB-12	10/14/2016	1,490,000	15,400	<603	<694	<2,084	<577	<25 **Q**	<2.00	<2.00	13.6	0.416	<100,000	<0.05%
	6/15/2017	1,740,000	1,280	231	311	1,288	<21.1	<83	2.85	---	9.72	<0.400	<100,000	<0.03%
VB-13	10/14/2016	15,900	197	855	73.6	322.7	<1.44	<6.6	13.6	<2.00	<0.500	<0.400	10,600,000	6.0%
VB-14	10/14/2016	10,300	157	605	63.1	270.2	<1.44	<6.6	10.9	<2.00	2.35	<0.400	11,200,000	4.7%
VB-15	10/14/2016	406,000	<51.1	<60.3	<69.4	<208	95.1	<25 **Q**	2.09	<2.00	10.4	<0.400	2,450,000	1.2%
VB-16	10/14/2016	30,000	106	1,010	116	538	<18	<6.6	11.1	<2.00	2.97	<0.400	8,540,000	4.5%
	6/19/2017	2,330	1.64	4.91	<1.73	7.79	<0.400	<83	14.1	---	<0.500	<0.400	<100,000	<0.04%
VB-17	6/15/2017	22,700	27.2	55.3	13.6	52.7	<1.44	<83	8.82	---	3.14	<0.400	2,090,000	0.6%
VB-18	6/15/2017	1,510	1.94	8.60	<1.73	6.63	<1.44	<83	4.71	---	4.36	<0.400	2,430,000	0.8%
VB-19	6/19/2017	2,424	2.49	29.4	5.82	48.6	<1.44	<83	13.6	---	1.04	<0.400	<100,000	<0.04%

TABLE 7
Summary of Soil Vapor Analytical Data
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Boring	Date	TPH-g µg/m^3	Benzene µg/m^3	Toluene µg/m^3	Ethyl-benzene µg/m^3	Xylenes µg/m^3	MTBE µg/m^3	Naphthalene µg/m^3	Oxygen %	Carbon Monoxide %	Carbon Dioxide %	Methane %	Helium* ppbv	Leak Check Result
VB-20	6/15/2017	3,380	7.86	50.8	6.23	38.28	<0.400	<83	11.7	---	3.58	<0.400	1,510,000	0.5%
VB-21	6/15/2017	9,590	81.7	644	56.7	272.6	<1.44	<83	14.7	---	<0.500	<0.400	683,000	0.2%
VB-22	6/15/2017	6,580	26.7	7.43	1.93	<5.20	<1.44	<83	7.13	---	1.76	<0.400	1,500,000	0.6%

Notes:

---	No Data
% Leak	Ratio of the concentration of the leak check compound in the shroud to the concentraiton of the leak check compound in the sample
(a)	Results determined using a field Helium meter
(b)	isopropyl alcohol used as a leack check compound
(c)	1,1-difluoroethane used as a leack check compound
*	Analyte reported at the method detection limit
µg/m^3	micrograms of analyte per cubic meter of sample under standard conditions
MTBE	methyl tert-butyl ether
NL	Non-helium leak check compounds were not reported as present
Q	The internal standard associated with the analyte exceeded acceptable limits
TPH-g	total petroleum hydrocarbons as gasoline
	Analytical data from the current reporting period
	Soil vapor samples collected from probes at an approximate depth of 5 feet below ground surface

TABLE 8
Summary of Compounds Detected

Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample Location	Sample Date	Sample Depth (feet bgs)	Analyte	Result (varies)	Qualifier
Soil				**Result (mg/kg)**	
VB-21	6/13/2017	10	N-BUTYL BENZENE	0.31	H
			SEC-BUTYL BENZENE	0.082	H
			ISPROPYLBENZENE	0.12	
			NAPHTHALENE	0.31	
			N-PROPYLBENZENE	0.5	
			TPH-G	140	S
			TPH-D	6.6	
		13	N-BUTYL BENZENE	0.086	H
			SEC-BUTYL BENZENE	0.027	H
			N-PROPYLBENZENE	0.12	H
			TPH-G	23	
			TPH-D	1.1	
Groundwater				**Result (µg/L)**	
VB-4	6/13/2017	5	BENZENE	17	
			T-BUTYL ALCOHOL (TBA)	11	
			ETHYLBENZENE	4	
			TOLUENE	1.1	
			XYLENES, TOTAL	1.7	
			NAPHTHALENE	8.4	
			TPH-G	2,200	S
			TPH-D	710	
VB-5	6/13/2017	5	BENZENE	91	
			ETHYLBENZENE	93	
			XYLENES, TOTAL	25	
			NAPHTHALENE	130	
			TPH-G	5,000	S
			TPH-D	4,400	
			TPH-MO	420	
VB-17	6/13/2017	5	BENZENE	6.0	
			ETHYLBENZENE	18	
			XYLENES, TOTAL	1.4	
			NAPHTHALENE	2.6	
			TPH-G	4100	S
			TPH-D	1,400	
VB-18	6/13/2017	5	ETHYLBENZENE	3	
			XYLENES, TOTAL	0.92	
			NAPHTHALENE	1.6	
			TPH-G	160	
			TPH-D	260	

TABLE 8
Summary of Compounds Detected
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample Location	Sample Date	Sample Depth (feet bgs)	Analyte	Result (varies)	Qualifier
VB-19	6/13/2017	5	BENZENE	83.0	
			ETHYLBENZENE	40	
			NAPHTHALENE	54	
			TPH-G	9,500	S
			TPH-D	2,200	
VB-20	6/13/2017	5	BENZENE	5.7	
			TERT-BUTYL ALCOHOL (TBA)	13	
			ETHYLBENZENE	0.72	
			TOLUENE	5.6	
			XYLENES, TOTAL	1.1	
			TPH-G	200	S
			TPH-D	65	
VB-21	6/13/2017	5	BENZENE	600.0	
			ETHYLBENZENE	150	
			NAPHTHALENE	620	
			TPH-G	29,000	S
			TPH-D	240,000	
Soil Vapor				**Result (µg/m3)**	
VB-4	6/13/2017	5	BENZENE	17	
			T-BUTYL ALCOHOL (TBA)	11	
			ETHYLBENZENE	4	
			TOLUENE	1.1	
			XYLENES, TOTAL	1.7	
VB-5	6/19/2017	5	TPH-G	16,300	
			BENZENE	9.61	
			ETHYLBENZENE	23.6	
			TOLUENE	25.8	
			M&P-XYLENE	83.2	
			O-XYLENE	41.2	
VB-7	6/15/2017	5	TPH-G	2,060	
			BENZENE	3.47	
VB-9	6/15/2017		TPH-G	7,910,000	
			ETHYLBENZENE	385	
			MTBE	169	
			TOLUENE	847	
			M&P-XYLENE	741	
			O-XYLENE	297	
VB-10	6/15/2017	5	TPH-G	4,920	
			ETHYLBENZENE	3.35	
			TOLUENE	12.3	
			M&P-XYLENE	9.73	
			O-XYLENE	4.96	

TABLE 8
Summary of Compounds Detected
Zimmerman Property
3442 Adeline Street
Oakland, CA 94608

Sample Location	Sample Date	Sample Depth (feet bgs)	Analyte	Result (varies)	Qualifier
VB-12	6/15/2017	5	TPH-G	1,740,000	
			BENZENE	1,280	
			ETHYLBENZENE	311	
			TOLUENE	231	
			M&P-XYLENE	974	
			O-XYLENE	314	
VB-16	6/19/2017	5	TPH-G	2,330	
			BENZENE	1.64	
			TOLUENE	4.91	
			M&P-XYLENE	4.98	
			O-XYLENE	2.81	
VB-17	6/15/2017	5	TPH-G	22,700	
			BENZENE	27.2	
			ETHYLBENZENE	13.6	
			TOLUENE	55.3	
			M&P-XYLENE	38.8	
			O-XYLENE	13.9	
VB-18	6/15/2017	5	TPH-G	1510	
			BENZENE	1.94	
			TOLUENE	8.60	
			M&P-XYLENE	4.58	
			O-XYLENE	2.05	
VB-19	6/19/2017	5	TPH-G	2,420	
			BENZENE	2.49	
			ETHYLBENZENE	5.82	
			TOLUENE	29.4	
			M&P-XYLENE	36.9	
			O-XYLENE	11.7	
VB-20	6/15/2017	5	TPH-G	3,380	
			BENZENE	7.86	
			ETHYLBENZENE	6.23	
			TOLUENE	50.8	
			M&P-XYLENE	30.1	
			O-XYLENE	8.18	
VB-21	6/15/2017	5	TPH-G	9,590	
			BENZENE	81.7	
			ETHYLBENZENE	56.7	
			TOLUENE	644	
			M&P-XYLENE	215	
			O-XYLENE	57.6	
VB-22	6/15/2017	5	TPH-G	6,580	
			BENZENE	26.7	
			ETHYLBENZENE	1.93	
			TOLUENE	7.43	

Notes:
mg/kg miligrams of analyte per kilogram of sample
bgs below ground surface
BOLD analyte present above the applicable comparizon value
-- not established
* use combined C22-C32 and C32-C40 values against the comparison value

Qualifiers:
B: The same analyte is found in the associated blank
J: The identification of the analyte is acceptable; the reported value is an estimate due to being lower than the Reported Detection Limit

APPENDIX A

PERMITS

JOB SITE

Permits for which no major inspection [redacted] final.

- SL and X permits valid 90 days
- CGS permit valid 30 days

CHECK REVERSE →

CITY OF OAKLAND

CITY OF OAKLAND

DEPT OF PUBLIC WORKS 4th FLOOR

250 FRANK H. OGAWA PLAZA ▪ [redacted] ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

To schedule inspection
Email: pwa_inspections@oaklandnet.com or call 510-238-3651

[redacted]

Permit No: X1700673 OPW - Excavation **Filed Date:** 6/13/2017

Job Site: 3433 CHESTNUT ST [redacted]

Parcel No: 005 047800501

For SL; X; and CGS permits see **SPECIAL NOTE** below

District:

Project Description: Soil sampling along Chestnut Street. No impact on traffic lane or sidewalk allowed. Please see Map.
Ensure that environmental controls are in place to prevent dust/debris/waste water from contaminating environment. Additional permits/fees may be required including permits from outside agencies/utility companies. If working within 25' feet of a monument you must comply with State Law 8771, contact the Inspector prior to starting excavation: minimum $5,800.00 fine for non-compliance. Comply with all terms of City of Oakland Public Works Standards, Street Excavation Rules, Revised March 2015 and City Council Ordinance No. 13300 C.M.S. Five day prior notice required for work lasting five days or less in business/commercial districts; 72 hour notice in residential districts. Ten day prior notice required for work lasting six days or more in all districts.
Call PWA INSPECTION prior to start: 510-238-3651. email PWA_inspections@oaklandnet.com.
Contact: 281-250-5856

Related Permits:

ADDRESS

	Name	Applicant	Address	Phone	License #
Owner:	ZIMMERMAN STEFFI R TR		3289 LOMAS VERDES PL LAFAYETTE, CA		
Contractor:	ALL ENVIRONMENTAL INC		2500 CAMINO DIABLO STE 100 WALNUT CREEK, CA	(925) 761-6071	654919
Contractor-Employee:	JOHNATHAN E. SANDERS	X	2500 CAMINO DIABLO STE 100 WALNUT CREEK, CA	281-250-5856	

APPLICATION

PERMIT DETAILS: Building/Public Infrastructure/Excavation/NA

General Information

Excavation Type: Private Party
Date Street Last Resurfaced:
Worker's Compensation Company Name:
Worker's Compensation Policy #:

Special Paving Detail Required:

Tree Removal Involved:
Holiday Restriction (Nov 1 - Jan 1):
Limited Operation Area (7AM-9AM) And (4PM-6PM):

Key Dates

Approximate Start Date:
Approximate End Date:

YL 6/13

TOTAL FEES TO BE PAID AT FILING: $449.09

Application Fee	$70.00	Excavation - Private Party Type	$321.36	Records Management Fee	$37.18
Technology Enhancement Fee	$20.55				

SPECIAL NOTE

- SL, X, and CGS permits: prior to start, email pwa_inspections@oaklandnet.com or call 510-238-3651
- SL and X permits valid 90 days
- CGS permit valid 30 days

#755520-17-06/13/17-Check 449.09

Alameda County Public Works Agency - Water Resources Well Permit

Public Works Agency
Alameda County

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 06/13/2017 By jamesy

Permit Numbers: W2017-0494 to W2017-0495
Permits Valid from 06/13/2017 to 06/14/2017

Application Id: 1496846541077
City of Project Site: Oakland
Site Location: 3442 Adeline Street
Project Start Date: 06/13/2017
Completion Date: 06/14/2017
Assigned Inspector: Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org

Applicant:	AEI Consultants - William Banker-Hix 2500 Camino Diablo, Walnut Creek, CA 94595	**Phone:** 925-746-6050
Property Owner:	Family Trust Zimmerman 3289 Lomas Verdes Place, Lafayette, CA 94549	**Phone:** 925-891-4428
Client:	Steffi Zimmerman 3289 Lomas Verdes Place, Lafayette, CA 94549	**Phone:** 925-891-4428
Contact:	William Banker-Hix	**Phone:** 805-674-7835 **Cell:** 925-746-6050

Total Due: $530.00
Receipt Number: WR2017-0272 **Total Amount Paid:** $530.00
Payer Name : 4266841483915144 Paid By: VISA **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 8 Boreholes
Driller: Environmental Control Associates - Lic #: 695970 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2017-0494	06/13/2017	09/11/2017	8	2.25 in.	15.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

5. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

6. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

7. NOTE:
Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

8. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

9. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

Well Construction-Vapor monitoring well-Vapor monitoring well - 8 Wells
Driller: ECA - Lic #: 695970 - Method: DP **Work Total: $265.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2017-0495	06/13/2017	09/11/2017	VB-05	1.50 in.	1.00 in.	0.50 ft	5.50 ft
W2017-0495	06/13/2017	09/11/2017	VB-17	1.50 in.	1.00 in.	0.50 ft	5.50 ft
W2017-0495	06/13/2017	09/11/2017	VB-18	1.50 in.	1.00 in.	0.50 ft	5.50 ft
W2017-0495	06/13/2017	09/11/2017	VB-19	1.50 in.	1.00 in.	0.50 ft	5.50 ft
W2017-0495	06/13/2017	09/11/2017	VB-20	1.50 in.	1.00 in.	0.50 ft	5.50 ft
W2017-0495	06/13/2017	09/11/2017	VB-21	1.50 in.	1.00 in.	0.50 ft	5.50 ft
W2017-0495	06/13/2017	09/11/2017	VB-22	1.50 in.	1.00 in.	0.50 ft	5.50 ft
W2017-0495	06/13/2017	09/11/2017	VB-47	1.50 in.	1.00 in.	0.50 ft	5.50 ft

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Compliance with the above well-sealing specifications shall not exempt the well-sealing contractor from complying with

appropriate state reporting-requirements related to well destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 30 days, including permit number and site map.

3. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.

4. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

5. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

6. Applicant shall submit the copies of the approved encroachment permit to this office within 10 days.

7. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

8. Wells shall have a Christy box or similar structure with a locking cap or cover. Well(s) shall be kept locked at all times. Well(s) that become damaged by traffic or construction shall be repaired in a timely manner or destroyed immediately (through permit process). No well(s) shall be left in a manner to act as a conduit at any time.

9. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of $500.00.

10. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

11. Vapor monitoring wells above water level constructed with tubing maybe be backfilled with pancake-batter consistency bentonite. Minimum surface seal thickness is two inches of cement grout around well box.

Vapor monitoring wells above water level constructed with pvc pipe shall have a minimum seal depth (Neat Cement Seal) of 2 feet below ground surface (BGS). Minimum surface seal thickness is two inches of cement grout around well box. All other conditions for monitoring well construction shall apply.

Your ticket number is X715601056-00X. and will be active untill 07/03/2017 11:59 PM. If your work is going to continue past that date, contact USA North 811 to extend your ticket. If at any time you need your dig site remarked, it is your responsibility to contact USA North 811 and request your site to be remarked.

After our members have responded to your request, it is your responsibility to notify USA North if you need the members to re-mark their facilties.

If you excavate and damage facilities prior to our Member' response to mark their facilities, you may be liable for those damages.

You can also get a copy of your ticket by going to: www.usanorth811.org and selecting Ticket Copy

Contact Information

Service Area	Day Phone	Emergenc Phone
AT&T TRANSMISSION CAL	800-241-3624	800-241-3624
COMCAST-OAKLAND	510-887-1300	888-824-8399
CITY EMERYVILLE ENGR	510-596-4330	510-508-9895
CITY OAKLAND CONST DEPT		510-772-8134
EAST BAY WATER		510-287-0600
EAST BAY WATER		

EAST BAY WATER OAKLAND 2		
EAST BAY WATER RICHMOND		
ICG ACCESS SVCS 2		
I C G ACCESS SVCS,INC		510-772-8488
MCI WORLDCOM	919-414-2782	800-624-9675
MPOWER COMMUNICATIONS	916-431-0225	510-772-8488
PACIFIC BELL		510-645-2929
PGE DISTR OAKLAND	510-437-2153	800-743-5000
SPRINT	913-794-5141	800-521-0579
TREASURE ISL UTIL OPS	415-274-0333	415-550-4956
XO COMM SVCS DBA XO COMM		323-376-3326
XO COMM SVCS DBA XO COMM	801-364-1063	408-980-0201

Enter another locate

Exit to USAN811 website

APPENDIX B

BORING LOGS

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-4

CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING 10.00 ft
LOGGED BY Nathan Bricker **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING 7.50 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					0.8 ASPHALT	5" O.D. TRAFFIC RATED WELL BOX CONCRETE
					CLAY (CH), black (2/1 10YR), stiff, moist, high plasticity	NEAT CEMENT GROUT
	VB-4-4					DRY BENTONITE
5					5.5 CLAY (CH), olive (4/4 10Y), medium stiff, moist, high plasticity	#3 MONTEREY SAND
	VB-4-7				6.5 GRAVEL (GP) with clay, olive (4/4 10Y), loose, moist. about 85% poorly sorted gravel	1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
					7.5 CLAY (CH), pale brown (6/3 10YR), stiff, moist, high plasticity	
10	VB-4-10		200.4		10.0 GRAVELLY CLAY (CL), olive (4/4 10Y), medium stiff, wet, low plasticity, about 30% gravel	
					12.0 CLAY (CH), olive (4/4 10Y), medium stiff, wet, low plasticity	
					13.0	

Bottom of borehole at 13.0 feet.

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-5

CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Nathan Bricker **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING 10.30 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					0.8 ASPHALT	5" O.D. TRAFFIC RATED WELL BOX CONCRETE
					CLAY (CH), black (2/1 10YR), stiff, moist, high plasticity	NEAT CEMENT GROUT
	VB-5-4					DRY BENTONITE
5						#3 MONTEREY SAND
	VB-5-7		16.6		6.5 GRAVELLY CLAY (CL), yellowish brown (5/6 10YR), medium stiff, moist, low plasticity, about 15% gravel, wet after 7 feet	1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
					7.5 CLAY (CH), olive (4/4 10Y), stiff, wet, high plasticity	
10	VB-5-10					
					13.0	

Bottom of borehole at 13.0 feet.

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-17

CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 15.50 ft
LOGGED BY Nathan Bricker **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					CONCRETE 0.8	5" O.D. TRAFFIC RATED WELL BOX CONCRETE; NEAT CEMENT GROUT; DRY BENTONITE; #3 MONTEREY SAND; 1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
					CLAY (CH), black (2/1 10YR), stiff, moist, high plasticity 4.0	
5	VB-17-5		0.8		GRAVELLY CLAY (CL), brown (4/4 10YR), stiff, moist, around 30% gravel, low plasticity 6.5	
	VB-17-8		2.0		CLAY (CH) , olive (4/4 10Y), stiff, moist, high plasticity	
10	VB-17-11		3.1			
	VB-17-14		2.9		14.5	
15					▽ GRAVELLY CLAY (CL) , olive (4/4 10Y), stiff, moist, about 30% gravel, medium plasticity, wet after 15 feet 19.0	

Bottom of borehole at 19.0 feet.

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-18

CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 16.00 ft
LOGGED BY Nathan Bricker **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					0.8 CONCRETE	5" O.D. TRAFFIC RATED WELL BOX CONCRETE
					CLAY (CH), black (2/1 10YR), medium stiff, moist, high plasticity	
					2.5 SAND (SP) with clay, brown (4/3 10YR), moist, stiff, about 55% poorly graded sand, low plasticity	NEAT CEMENT GROUT
5	VB-18-5		3.3			DRY BENTONITE
						#3 MONTEREY SAND
						1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
					8.5	
	VB-18-9		4.1		CLAY (CH), olive (4/4 10Y), moist, stiff, high plasticity	
10						
	VB-18-12.5		100.5			
15	VB-18-15		26.2			
					16.0 ▽	
					SANDY CLAY (CL), olive (4/4 10Y), moist, stiff, about 30% coarse grained sand, high plasticity	
20					21.0	

Bottom of borehole at 21.0 feet.

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-19

CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION ___ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 16.00 ft
LOGGED BY Nathan Bricker **CHECKED BY** ___
AT END OF DRILLING ---
NOTES ___
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					0.8 CONCRETE	5" O.D. TRAFFIC RATED WELL BOX CONCRETE
					CLAY (CH), black (2/1 10YR), medium stiff, moist, high plasticity	NEAT CEMENT GROUT
	VB-19-4		1.6		3.0 CLAY (CH), brown (4/3 10YR), medium stiff, moist, high plasticity	DRY BENTONITE
5					4.5 SANDY CLAY (CL) interbedded sand and clay, dark yellowish brown (3/4 10YR), firm or stiff depending on matrix, moist, low plasticity, coarse sand	#3 MONTEREY SAND
	VB-19-7		1.0			1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
					7.5 SANDY CLAY (CL), olive (4/4 10Y), moist, stiff, medium plasticity, about 10% sand	
10	VB-19-1		9.5			
	VB-19-13		63.6		14.0 SANDY CLAY (CL), brown (4/3 10YR), moist, stiff, medium plasticity, about 10% sand, wet after 6 feet	
15					▽	
	VB-19-16		5.6		19.0	

Bottom of borehole at 19.0 feet.

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-20

CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 15.60 ft
LOGGED BY Nathan Bricker **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					CONCRETE 0.8	5" O.D. TRAFFIC RATED WELL BOX CONCRETE
					CLAY (CH) with trace gravel, black (2/1 10YR), moist, medium stiff, high plasticity 4.0	NEAT CEMENT GROUT
	VB-20-4		1.1			DRY BENTONITE
5					GRAVELLY SILT (ML), light gray (7/1 10YR), stiff, dry, no plasticity, about 30% gravel 6.5	#3 MONTEREY SAND
	VB-20-8		0.7		SILTY SAND (SP), dark yellowish brown (4/6 10YR), moist, firm, about 70% coarse sand, non-plastic 8.5	1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
10					CLAY (CH), grayish green (5/2 5GY), moist, high plasticity, firm 13.0	
	VB-20-12		13.4			
15	VB-20-15				CLAY (CH), yellowish brown (5/6 10YR), moist, high plasticity, firm, wet after 15 feet ▽ 18.0	

Bottom of borehole at 18.0 feet.

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2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-21

CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING ---
LOGGED BY Nathan Bricker **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING 9.46 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					0.8 CONCRETE	5" O.D. TRAFFIC RATED WELL BOX CONCRETE
					CLAY (CH), black (2/1 10YR), moist, stiff, high plasticity	NEAT CEMENT GROUT
	VB-21-4		1.9		4.5	DRY BENTONITE
5					CLAY (CH), brown (4/4 10YR), moist, stiff, high plasticity	#3 MONTEREY SAND
					6.0	1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
	VB-21-7		0.5		SANDY CLAY (CL) with gravel, brown (4/4 10YR), soft, moist, about 30% sand, about 30% gravel, low plasticity	
					8.0	
					CLAY (CH), olive (4/4 10Y), stiff, moist, high plasticity	
10	VB-21-10		50.4			
	VB-21-13		224.5		14.0	
					CLAY (CH), grayish green (5/4 5GY), stiff, moist, high plasticity	
15						
	VB-21-16		12.0		17.0	

Bottom of borehole at 17.0 feet.

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK CA 94597-3998
Telephone: 925-746-6000
Fax: 925-746-6099

BORING NUMBER VB-22

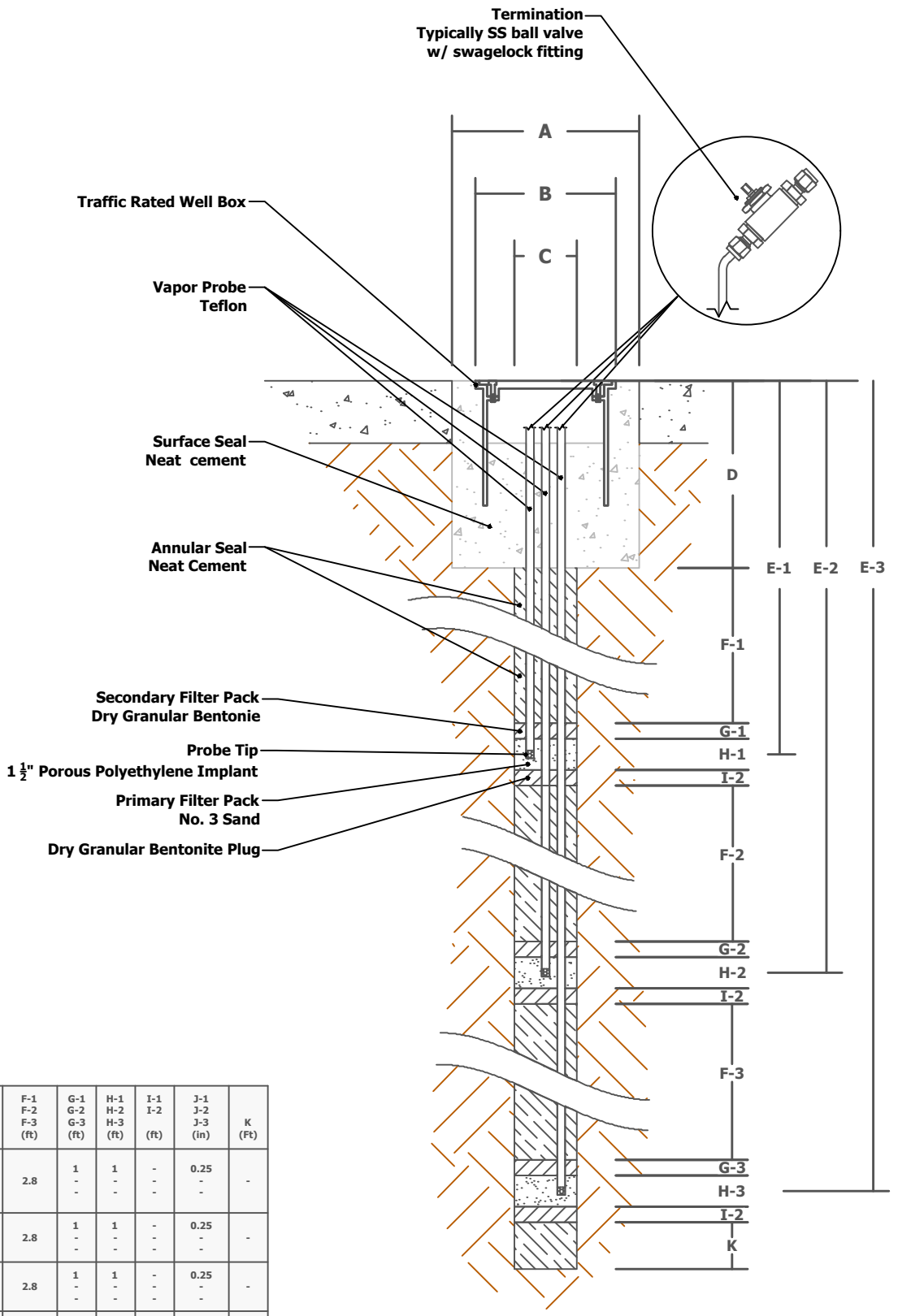
CLIENT Steffi Zimmerman Trust
PROJECT NAME Zimmerman
PROJECT NUMBER 281939
PROJECT LOCATION 3442 Adeline Street, Oakland, California
DATE STARTED 6/12/17 **COMPLETED** 6/12/17
GROUND ELEVATION _____ **HOLE SIZE** 2.25 inches
DRILLING CONTRACTOR Environmental Control Associates, Inc.
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▽ **AT TIME OF DRILLING** 9.25 ft
LOGGED BY Nathan Bricker **CHECKED BY** _____
AT END OF DRILLING ---
NOTES _____
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	BLOW COUNTS	PID DATA (ppm)	GRAPHIC LOG	MATERIAL DESCRIPTION	COMPLETION
0					0.8 CONCRETE	5" O.D. TRAFFIC RATED WELL BOX CONCRETE
	VB-22-2		0.2		2.0 GRAVELLY SILT (ML), fill material, brown (4/3 10 YR), loose or very soft where appropriate, dry, about 30% poorly graded gravel, non-plastic	NEAT CEMENT GROUT
					2.3 GRAVEL (GP), fill material, ligh gray (7/1 10YR), dry loose, poorly graded, angular	
5					CLAY (CL), black (2/1 10YR), moist, stiff, medium plasticity	DRY BENTONITE
	VB-22-6		0.3			#3 MONTEREY SAND
						1 1/2" POROUS POLYETHYLENE VAPOR IMPLANT
	VB-22-9		1.0		▽	
10					10.0	

Bottom of borehole at 10.0 feet.

APPENDIX C

SOIL VAPOR PROBE CONSTRUCTION



A: Core Diameter
B: Well Box Diameter
C: Borehole Diameter
D: Suface Completion
E: Total Probe Depth
F: Annular Seal
G: Secondary Filter Pack
H: Primary Filter Pack
I: Bentonite Plug
J: Probe Diameter
K: Overbore Seal

Vapor Probe ID	A (in)	B (in)	C (in)	D (ft)	E-1 E-2 E-3 (ft)	F-1 F-2 F-3 (ft)	G-1 G-2 G-3 (ft)	H-1 H-2 H-3 (ft)	I-1 I-2 (ft)	J-1 J-2 J-3 (in)	K (Ft)
VP-4	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-
VP-5	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-
VP-17	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-
VP-18	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-
VP-19	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-
VP-20	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-
VP-21	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-
VP-22	6	5	2	0.7	5 - -	2.8	1 - -	1 - -	- - -	0.25 - -	-

Not for Construction: Diagram not to scale

AEI Consultants

2500 Camino Diablo, Walnut Creek, California

Conceptual Vapor Probe Installation

Former Dynasty Cleaners
293-295 MacArthur Blvd
San Leandro, California

FIGURE A
Project No. 281939

APPENDIX D

LABORATORY ANALYTICAL AND CHAIN OF CUSTODY DOCUMENTATION

McCampbell Analytical, Inc.
"When Quality Counts"

Analytical Report

WorkOrder: 1706675

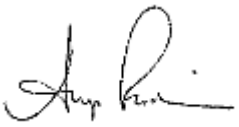
Report Created for: AEI Consultants

2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597

Project Contact: Jonathan Sanders
Project P.O.: 134736
Project Name: 281939; Zimmerman, 3442 Adeline St. Oakland, CA

Project Received: 06/14/2017

Analytical Report reviewed & approved for release on 06/21/2017 by:



Angela Rydelius,
Laboratory Manager

1534 Willow Pass Rd. Pittsburg, CA 94565 ♦ TEL: (877) 252-9262 ♦ FAX: (925) 252-9269 ♦ www.mccampbell.com
CA ELAP 1644 ♦ NELAP 4033ORELAP

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 281939; Zimmerman, 3442 Adeline St. Oakland, CA
WorkOrder: 1706675

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 281939; Zimmerman, 3442 Adeline St. Oakland, CA
WorkOrder: 1706675

Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
c4	Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	Weakly modified or unmodified gasoline is significant

Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.

McCampbell Analytical, Inc.
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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	**1706675-001B**	**Water**	**06/13/2017 13:57**	**GC18**	**140572**

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/15/2017 14:39
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/15/2017 14:39
Benzene	ND	0.50	1	06/15/2017 14:39
Bromobenzene	ND	0.50	1	06/15/2017 14:39
Bromochloromethane	ND	0.50	1	06/15/2017 14:39
Bromodichloromethane	ND	0.50	1	06/15/2017 14:39
Bromoform	ND	0.50	1	06/15/2017 14:39
Bromomethane	ND	0.50	1	06/15/2017 14:39
2-Butanone (MEK)	ND	2.0	1	06/15/2017 14:39
t-Butyl alcohol (TBA)	ND	2.0	1	06/15/2017 14:39
n-Butyl benzene	ND	0.50	1	06/15/2017 14:39
sec-Butyl benzene	ND	0.50	1	06/15/2017 14:39
tert-Butyl benzene	ND	0.50	1	06/15/2017 14:39
Carbon Disulfide	ND	0.50	1	06/15/2017 14:39
Carbon Tetrachloride	ND	0.50	1	06/15/2017 14:39
Chlorobenzene	ND	0.50	1	06/15/2017 14:39
Chloroethane	ND	0.50	1	06/15/2017 14:39
Chloroform	**0.98**	0.50	1	06/15/2017 14:39
Chloromethane	ND	0.50	1	06/15/2017 14:39
2-Chlorotoluene	ND	0.50	1	06/15/2017 14:39
4-Chlorotoluene	ND	0.50	1	06/15/2017 14:39
Dibromochloromethane	ND	0.50	1	06/15/2017 14:39
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/15/2017 14:39
1,2-Dibromoethane (EDB)	ND	0.50	1	06/15/2017 14:39
Dibromomethane	ND	0.50	1	06/15/2017 14:39
1,2-Dichlorobenzene	ND	0.50	1	06/15/2017 14:39
1,3-Dichlorobenzene	ND	0.50	1	06/15/2017 14:39
1,4-Dichlorobenzene	ND	0.50	1	06/15/2017 14:39
Dichlorodifluoromethane	ND	0.50	1	06/15/2017 14:39
1,1-Dichloroethane	ND	0.50	1	06/15/2017 14:39
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/15/2017 14:39
1,1-Dichloroethene	ND	0.50	1	06/15/2017 14:39
cis-1,2-Dichloroethene	ND	0.50	1	06/15/2017 14:39
trans-1,2-Dichloroethene	ND	0.50	1	06/15/2017 14:39
1,2-Dichloropropane	ND	0.50	1	06/15/2017 14:39
1,3-Dichloropropane	ND	0.50	1	06/15/2017 14:39
2,2-Dichloropropane	ND	0.50	1	06/15/2017 14:39

(Cont.)

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1706675-001B	Water	06/13/2017 13:57	GC18	140572

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/15/2017 14:39
cis-1,3-Dichloropropene	ND	0.50	1	06/15/2017 14:39
trans-1,3-Dichloropropene	ND	0.50	1	06/15/2017 14:39
Diisopropyl ether (DIPE)	ND	0.50	1	06/15/2017 14:39
Ethylbenzene	ND	0.50	1	06/15/2017 14:39
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/15/2017 14:39
Freon 113	ND	0.50	1	06/15/2017 14:39
Hexachlorobutadiene	ND	0.50	1	06/15/2017 14:39
Hexachloroethane	ND	0.50	1	06/15/2017 14:39
2-Hexanone	ND	0.50	1	06/15/2017 14:39
Isopropylbenzene	ND	0.50	1	06/15/2017 14:39
4-Isopropyl toluene	ND	0.50	1	06/15/2017 14:39
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/15/2017 14:39
Methylene chloride	ND	0.50	1	06/15/2017 14:39
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/15/2017 14:39
Naphthalene	ND	0.50	1	06/15/2017 14:39
n-Propyl benzene	ND	0.50	1	06/15/2017 14:39
Styrene	ND	0.50	1	06/15/2017 14:39
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/15/2017 14:39
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/15/2017 14:39
Tetrachloroethene	ND	0.50	1	06/15/2017 14:39
Toluene	ND	0.50	1	06/15/2017 14:39
1,2,3-Trichlorobenzene	ND	0.50	1	06/15/2017 14:39
1,2,4-Trichlorobenzene	ND	0.50	1	06/15/2017 14:39
1,1,1-Trichloroethane	ND	0.50	1	06/15/2017 14:39
1,1,2-Trichloroethane	ND	0.50	1	06/15/2017 14:39
Trichloroethene	ND	0.50	1	06/15/2017 14:39
Trichlorofluoromethane	ND	0.50	1	06/15/2017 14:39
1,2,3-Trichloropropane	ND	0.50	1	06/15/2017 14:39
1,2,4-Trimethylbenzene	ND	0.50	1	06/15/2017 14:39
1,3,5-Trimethylbenzene	ND	0.50	1	06/15/2017 14:39
Vinyl Chloride	ND	0.50	1	06/15/2017 14:39
Xylenes, Total	ND	0.50	1	06/15/2017 14:39

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	**1706675-001B**	**Water**	**06/13/2017 13:57**	**GC18**	**140572**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	117	70-130		06/15/2017 14:39
Toluene-d8	99	70-130		06/15/2017 14:39
4-BFB	105	70-130		06/15/2017 14:39

Analyst(s): KF

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Angela Rydelius, Lab Manager

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	**1706675-002B**	**Water**	**06/13/2017 12:37**	**GC18**	**140572**

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/15/2017 15:19
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/15/2017 15:19
Benzene	ND	0.50	1	06/15/2017 15:19
Bromobenzene	ND	0.50	1	06/15/2017 15:19
Bromochloromethane	ND	0.50	1	06/15/2017 15:19
Bromodichloromethane	ND	0.50	1	06/15/2017 15:19
Bromoform	ND	0.50	1	06/15/2017 15:19
Bromomethane	ND	0.50	1	06/15/2017 15:19
2-Butanone (MEK)	ND	2.0	1	06/15/2017 15:19
t-Butyl alcohol (TBA)	**6.6**	2.0	1	06/15/2017 15:19
n-Butyl benzene	ND	0.50	1	06/15/2017 15:19
sec-Butyl benzene	ND	0.50	1	06/15/2017 15:19
tert-Butyl benzene	ND	0.50	1	06/15/2017 15:19
Carbon Disulfide	ND	0.50	1	06/15/2017 15:19
Carbon Tetrachloride	ND	0.50	1	06/15/2017 15:19
Chlorobenzene	ND	0.50	1	06/15/2017 15:19
Chloroethane	ND	0.50	1	06/15/2017 15:19
Chloroform	**0.56**	0.50	1	06/15/2017 15:19
Chloromethane	ND	0.50	1	06/15/2017 15:19
2-Chlorotoluene	ND	0.50	1	06/15/2017 15:19
4-Chlorotoluene	ND	0.50	1	06/15/2017 15:19
Dibromochloromethane	ND	0.50	1	06/15/2017 15:19
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/15/2017 15:19
1,2-Dibromoethane (EDB)	ND	0.50	1	06/15/2017 15:19
Dibromomethane	ND	0.50	1	06/15/2017 15:19
1,2-Dichlorobenzene	ND	0.50	1	06/15/2017 15:19
1,3-Dichlorobenzene	ND	0.50	1	06/15/2017 15:19
1,4-Dichlorobenzene	ND	0.50	1	06/15/2017 15:19
Dichlorodifluoromethane	ND	0.50	1	06/15/2017 15:19
1,1-Dichloroethane	ND	0.50	1	06/15/2017 15:19
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/15/2017 15:19
1,1-Dichloroethene	ND	0.50	1	06/15/2017 15:19
cis-1,2-Dichloroethene	ND	0.50	1	06/15/2017 15:19
trans-1,2-Dichloroethene	ND	0.50	1	06/15/2017 15:19
1,2-Dichloropropane	ND	0.50	1	06/15/2017 15:19
1,3-Dichloropropane	ND	0.50	1	06/15/2017 15:19
2,2-Dichloropropane	ND	0.50	1	06/15/2017 15:19

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1706675-002B	Water	06/13/2017 12:37	GC18	140572

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/15/2017 15:19
cis-1,3-Dichloropropene	ND	0.50	1	06/15/2017 15:19
trans-1,3-Dichloropropene	ND	0.50	1	06/15/2017 15:19
Diisopropyl ether (DIPE)	ND	0.50	1	06/15/2017 15:19
Ethylbenzene	ND	0.50	1	06/15/2017 15:19
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/15/2017 15:19
Freon 113	ND	0.50	1	06/15/2017 15:19
Hexachlorobutadiene	ND	0.50	1	06/15/2017 15:19
Hexachloroethane	ND	0.50	1	06/15/2017 15:19
2-Hexanone	ND	0.50	1	06/15/2017 15:19
Isopropylbenzene	ND	0.50	1	06/15/2017 15:19
4-Isopropyl toluene	ND	0.50	1	06/15/2017 15:19
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/15/2017 15:19
Methylene chloride	ND	0.50	1	06/15/2017 15:19
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/15/2017 15:19
Naphthalene	ND	0.50	1	06/15/2017 15:19
n-Propyl benzene	ND	0.50	1	06/15/2017 15:19
Styrene	ND	0.50	1	06/15/2017 15:19
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/15/2017 15:19
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/15/2017 15:19
Tetrachloroethene	ND	0.50	1	06/15/2017 15:19
Toluene	ND	0.50	1	06/15/2017 15:19
1,2,3-Trichlorobenzene	ND	0.50	1	06/15/2017 15:19
1,2,4-Trichlorobenzene	ND	0.50	1	06/15/2017 15:19
1,1,1-Trichloroethane	ND	0.50	1	06/15/2017 15:19
1,1,2-Trichloroethane	ND	0.50	1	06/15/2017 15:19
Trichloroethene	ND	0.50	1	06/15/2017 15:19
Trichlorofluoromethane	ND	0.50	1	06/15/2017 15:19
1,2,3-Trichloropropane	ND	0.50	1	06/15/2017 15:19
1,2,4-Trimethylbenzene	ND	0.50	1	06/15/2017 15:19
1,3,5-Trimethylbenzene	ND	0.50	1	06/15/2017 15:19
Vinyl Chloride	ND	0.50	1	06/15/2017 15:19
Xylenes, Total	ND	0.50	1	06/15/2017 15:19

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	**1706675-002B**	**Water**	**06/13/2017 12:37**	**GC18**	**140572**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	117	70-130		06/15/2017 15:19
Toluene-d8	100	70-130		06/15/2017 15:19
4-BFB	105	70-130		06/15/2017 15:19

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	**1706675-003B**	**Water**	**06/13/2017 12:01**	**GC18**	**140572**

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	1000	100	06/17/2017 02:15
tert-Amyl methyl ether (TAME)	ND	50	100	06/17/2017 02:15
Benzene	**2200**	50	100	06/17/2017 02:15
Bromobenzene	ND	50	100	06/17/2017 02:15
Bromochloromethane	ND	50	100	06/17/2017 02:15
Bromodichloromethane	ND	50	100	06/17/2017 02:15
Bromoform	ND	50	100	06/17/2017 02:15
Bromomethane	ND	50	100	06/17/2017 02:15
2-Butanone (MEK)	ND	200	100	06/17/2017 02:15
t-Butyl alcohol (TBA)	ND	200	100	06/17/2017 02:15
n-Butyl benzene	ND	50	100	06/17/2017 02:15
sec-Butyl benzene	ND	50	100	06/17/2017 02:15
tert-Butyl benzene	ND	50	100	06/17/2017 02:15
Carbon Disulfide	ND	50	100	06/17/2017 02:15
Carbon Tetrachloride	ND	50	100	06/17/2017 02:15
Chlorobenzene	ND	50	100	06/17/2017 02:15
Chloroethane	ND	50	100	06/17/2017 02:15
Chloroform	ND	50	100	06/17/2017 02:15
Chloromethane	ND	50	100	06/17/2017 02:15
2-Chlorotoluene	ND	50	100	06/17/2017 02:15
4-Chlorotoluene	ND	50	100	06/17/2017 02:15
Dibromochloromethane	ND	50	100	06/17/2017 02:15
1,2-Dibromo-3-chloropropane	ND	20	100	06/17/2017 02:15
1,2-Dibromoethane (EDB)	ND	50	100	06/17/2017 02:15
Dibromomethane	ND	50	100	06/17/2017 02:15
1,2-Dichlorobenzene	ND	50	100	06/17/2017 02:15
1,3-Dichlorobenzene	ND	50	100	06/17/2017 02:15
1,4-Dichlorobenzene	ND	50	100	06/17/2017 02:15
Dichlorodifluoromethane	ND	50	100	06/17/2017 02:15
1,1-Dichloroethane	ND	50	100	06/17/2017 02:15
1,2-Dichloroethane (1,2-DCA)	ND	50	100	06/17/2017 02:15
1,1-Dichloroethene	ND	50	100	06/17/2017 02:15
cis-1,2-Dichloroethene	ND	50	100	06/17/2017 02:15
trans-1,2-Dichloroethene	ND	50	100	06/17/2017 02:15
1,2-Dichloropropane	ND	50	100	06/17/2017 02:15
1,3-Dichloropropane	ND	50	100	06/17/2017 02:15
2,2-Dichloropropane	ND	50	100	06/17/2017 02:15

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	1706675-003B	Water	06/13/2017 12:01	GC18	140572

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	50	100	06/17/2017 02:15
cis-1,3-Dichloropropene	ND	50	100	06/17/2017 02:15
trans-1,3-Dichloropropene	ND	50	100	06/17/2017 02:15
Diisopropyl ether (DIPE)	ND	50	100	06/17/2017 02:15
Ethylbenzene	**96**	50	100	06/17/2017 02:15
Ethyl tert-butyl ether (ETBE)	ND	50	100	06/17/2017 02:15
Freon 113	ND	50	100	06/17/2017 02:15
Hexachlorobutadiene	ND	50	100	06/17/2017 02:15
Hexachloroethane	ND	50	100	06/17/2017 02:15
2-Hexanone	ND	50	100	06/17/2017 02:15
Isopropylbenzene	ND	50	100	06/17/2017 02:15
4-Isopropyl toluene	ND	50	100	06/17/2017 02:15
Methyl-t-butyl ether (MTBE)	ND	50	100	06/17/2017 02:15
Methylene chloride	ND	50	100	06/17/2017 02:15
4-Methyl-2-pentanone (MIBK)	ND	50	100	06/17/2017 02:15
Naphthalene	**56**	50	100	06/17/2017 02:15
n-Propyl benzene	ND	50	100	06/17/2017 02:15
Styrene	ND	50	100	06/17/2017 02:15
1,1,1,2-Tetrachloroethane	ND	50	100	06/17/2017 02:15
1,1,2,2-Tetrachloroethane	ND	50	100	06/17/2017 02:15
Tetrachloroethene	ND	50	100	06/17/2017 02:15
Toluene	ND	50	100	06/17/2017 02:15
1,2,3-Trichlorobenzene	ND	50	100	06/17/2017 02:15
1,2,4-Trichlorobenzene	ND	50	100	06/17/2017 02:15
1,1,1-Trichloroethane	ND	50	100	06/17/2017 02:15
1,1,2-Trichloroethane	ND	50	100	06/17/2017 02:15
Trichloroethene	ND	50	100	06/17/2017 02:15
Trichlorofluoromethane	ND	50	100	06/17/2017 02:15
1,2,3-Trichloropropane	ND	50	100	06/17/2017 02:15
1,2,4-Trimethylbenzene	ND	50	100	06/17/2017 02:15
1,3,5-Trimethylbenzene	ND	50	100	06/17/2017 02:15
Vinyl Chloride	ND	50	100	06/17/2017 02:15
Xylenes, Total	ND	50	100	06/17/2017 02:15

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	**1706675-003B**	**Water**	**06/13/2017 12:01**	**GC18**	**140572**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	117	70-130		06/17/2017 02:15
Toluene-d8	102	70-130		06/17/2017 02:15
4-BFB	107	70-130		06/17/2017 02:15

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	**1706675-004B**	**Water**	**06/13/2017 10:51**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/16/2017 14:43
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/16/2017 14:43
Benzene	ND	0.50	1	06/16/2017 14:43
Bromobenzene	ND	0.50	1	06/16/2017 14:43
Bromochloromethane	ND	0.50	1	06/16/2017 14:43
Bromodichloromethane	ND	0.50	1	06/16/2017 14:43
Bromoform	ND	0.50	1	06/16/2017 14:43
Bromomethane	ND	0.50	1	06/16/2017 14:43
2-Butanone (MEK)	ND	2.0	1	06/16/2017 14:43
t-Butyl alcohol (TBA)	ND	2.0	1	06/16/2017 14:43
n-Butyl benzene	ND	0.50	1	06/16/2017 14:43
sec-Butyl benzene	ND	0.50	1	06/16/2017 14:43
tert-Butyl benzene	ND	0.50	1	06/16/2017 14:43
Carbon Disulfide	ND	0.50	1	06/16/2017 14:43
Carbon Tetrachloride	ND	0.50	1	06/16/2017 14:43
Chlorobenzene	ND	0.50	1	06/16/2017 14:43
Chloroethane	ND	0.50	1	06/16/2017 14:43
Chloroform	**1.3**	0.50	1	06/16/2017 14:43
Chloromethane	ND	0.50	1	06/16/2017 14:43
2-Chlorotoluene	ND	0.50	1	06/16/2017 14:43
4-Chlorotoluene	ND	0.50	1	06/16/2017 14:43
Dibromochloromethane	ND	0.50	1	06/16/2017 14:43
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/16/2017 14:43
1,2-Dibromoethane (EDB)	ND	0.50	1	06/16/2017 14:43
Dibromomethane	ND	0.50	1	06/16/2017 14:43
1,2-Dichlorobenzene	ND	0.50	1	06/16/2017 14:43
1,3-Dichlorobenzene	ND	0.50	1	06/16/2017 14:43
1,4-Dichlorobenzene	ND	0.50	1	06/16/2017 14:43
Dichlorodifluoromethane	ND	0.50	1	06/16/2017 14:43
1,1-Dichloroethane	ND	0.50	1	06/16/2017 14:43
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/16/2017 14:43
1,1-Dichloroethene	ND	0.50	1	06/16/2017 14:43
cis-1,2-Dichloroethene	ND	0.50	1	06/16/2017 14:43
trans-1,2-Dichloroethene	ND	0.50	1	06/16/2017 14:43
1,2-Dichloropropane	ND	0.50	1	06/16/2017 14:43
1,3-Dichloropropane	ND	0.50	1	06/16/2017 14:43
2,2-Dichloropropane	ND	0.50	1	06/16/2017 14:43

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	1706675-004B	Water	06/13/2017 10:51	GC18	140633

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/16/2017 14:43
cis-1,3-Dichloropropene	ND	0.50	1	06/16/2017 14:43
trans-1,3-Dichloropropene	ND	0.50	1	06/16/2017 14:43
Diisopropyl ether (DIPE)	ND	0.50	1	06/16/2017 14:43
Ethylbenzene	ND	0.50	1	06/16/2017 14:43
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/16/2017 14:43
Freon 113	ND	0.50	1	06/16/2017 14:43
Hexachlorobutadiene	ND	0.50	1	06/16/2017 14:43
Hexachloroethane	ND	0.50	1	06/16/2017 14:43
2-Hexanone	ND	0.50	1	06/16/2017 14:43
Isopropylbenzene	ND	0.50	1	06/16/2017 14:43
4-Isopropyl toluene	ND	0.50	1	06/16/2017 14:43
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/16/2017 14:43
Methylene chloride	ND	0.50	1	06/16/2017 14:43
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/16/2017 14:43
Naphthalene	ND	0.50	1	06/16/2017 14:43
n-Propyl benzene	ND	0.50	1	06/16/2017 14:43
Styrene	ND	0.50	1	06/16/2017 14:43
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/16/2017 14:43
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/16/2017 14:43
Tetrachloroethene	ND	0.50	1	06/16/2017 14:43
Toluene	ND	0.50	1	06/16/2017 14:43
1,2,3-Trichlorobenzene	ND	0.50	1	06/16/2017 14:43
1,2,4-Trichlorobenzene	ND	0.50	1	06/16/2017 14:43
1,1,1-Trichloroethane	ND	0.50	1	06/16/2017 14:43
1,1,2-Trichloroethane	ND	0.50	1	06/16/2017 14:43
Trichloroethene	ND	0.50	1	06/16/2017 14:43
Trichlorofluoromethane	ND	0.50	1	06/16/2017 14:43
1,2,3-Trichloropropane	ND	0.50	1	06/16/2017 14:43
1,2,4-Trimethylbenzene	ND	0.50	1	06/16/2017 14:43
1,3,5-Trimethylbenzene	ND	0.50	1	06/16/2017 14:43
Vinyl Chloride	ND	0.50	1	06/16/2017 14:43
Xylenes, Total	ND	0.50	1	06/16/2017 14:43

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	**1706675-004B**	**Water**	**06/13/2017 10:51**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	124	70-130		06/16/2017 14:43
Toluene-d8	100	70-130		06/16/2017 14:43
4-BFB	116	70-130		06/16/2017 14:43

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1706675-005B	Water	06/13/2017 14:40	GC28	140575

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/21/2017 12:51
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/21/2017 12:51
Benzene	ND	0.50	1	06/21/2017 12:51
Bromobenzene	ND	0.50	1	06/21/2017 12:51
Bromochloromethane	ND	0.50	1	06/21/2017 12:51
Bromodichloromethane	ND	0.50	1	06/21/2017 12:51
Bromoform	ND	0.50	1	06/21/2017 12:51
Bromomethane	ND	0.50	1	06/21/2017 12:51
2-Butanone (MEK)	ND	2.0	1	06/21/2017 12:51
t-Butyl alcohol (TBA)	ND	2.0	1	06/21/2017 12:51
n-Butyl benzene	ND	0.50	1	06/21/2017 12:51
sec-Butyl benzene	ND	0.50	1	06/21/2017 12:51
tert-Butyl benzene	ND	0.50	1	06/21/2017 12:51
Carbon Disulfide	ND	0.50	1	06/21/2017 12:51
Carbon Tetrachloride	ND	0.50	1	06/21/2017 12:51
Chlorobenzene	ND	0.50	1	06/21/2017 12:51
Chloroethane	ND	0.50	1	06/21/2017 12:51
Chloroform	ND	0.50	1	06/21/2017 12:51
Chloromethane	ND	0.50	1	06/21/2017 12:51
2-Chlorotoluene	ND	0.50	1	06/21/2017 12:51
4-Chlorotoluene	ND	0.50	1	06/21/2017 12:51
Dibromochloromethane	ND	0.50	1	06/21/2017 12:51
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/21/2017 12:51
1,2-Dibromoethane (EDB)	ND	0.50	1	06/21/2017 12:51
Dibromomethane	ND	0.50	1	06/21/2017 12:51
1,2-Dichlorobenzene	ND	0.50	1	06/21/2017 12:51
1,3-Dichlorobenzene	ND	0.50	1	06/21/2017 12:51
1,4-Dichlorobenzene	ND	0.50	1	06/21/2017 12:51
Dichlorodifluoromethane	ND	0.50	1	06/21/2017 12:51
1,1-Dichloroethane	ND	0.50	1	06/21/2017 12:51
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/21/2017 12:51
1,1-Dichloroethene	ND	0.50	1	06/21/2017 12:51
cis-1,2-Dichloroethene	ND	0.50	1	06/21/2017 12:51
trans-1,2-Dichloroethene	ND	0.50	1	06/21/2017 12:51
1,2-Dichloropropane	ND	0.50	1	06/21/2017 12:51
1,3-Dichloropropane	ND	0.50	1	06/21/2017 12:51
2,2-Dichloropropane	ND	0.50	1	06/21/2017 12:51

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Analytical Report

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Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	1706675-005B	Water	06/13/2017 14:40	GC28	140575

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/21/2017 12:51
cis-1,3-Dichloropropene	ND	0.50	1	06/21/2017 12:51
trans-1,3-Dichloropropene	ND	0.50	1	06/21/2017 12:51
Diisopropyl ether (DIPE)	ND	0.50	1	06/21/2017 12:51
Ethylbenzene	ND	0.50	1	06/21/2017 12:51
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/21/2017 12:51
Freon 113	ND	0.50	1	06/21/2017 12:51
Hexachlorobutadiene	ND	0.50	1	06/21/2017 12:51
Hexachloroethane	ND	0.50	1	06/21/2017 12:51
2-Hexanone	ND	0.50	1	06/21/2017 12:51
Isopropylbenzene	ND	0.50	1	06/21/2017 12:51
4-Isopropyl toluene	ND	0.50	1	06/21/2017 12:51
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/21/2017 12:51
Methylene chloride	ND	0.50	1	06/21/2017 12:51
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/21/2017 12:51
Naphthalene	ND	0.50	1	06/21/2017 12:51
n-Propyl benzene	ND	0.50	1	06/21/2017 12:51
Styrene	ND	0.50	1	06/21/2017 12:51
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/21/2017 12:51
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/21/2017 12:51
Tetrachloroethene	ND	0.50	1	06/21/2017 12:51
Toluene	ND	0.50	1	06/21/2017 12:51
1,2,3-Trichlorobenzene	ND	0.50	1	06/21/2017 12:51
1,2,4-Trichlorobenzene	ND	0.50	1	06/21/2017 12:51
1,1,1-Trichloroethane	ND	0.50	1	06/21/2017 12:51
1,1,2-Trichloroethane	ND	0.50	1	06/21/2017 12:51
Trichloroethene	ND	0.50	1	06/21/2017 12:51
Trichlorofluoromethane	ND	0.50	1	06/21/2017 12:51
1,2,3-Trichloropropane	ND	0.50	1	06/21/2017 12:51
1,2,4-Trimethylbenzene	ND	0.50	1	06/21/2017 12:51
1,3,5-Trimethylbenzene	ND	0.50	1	06/21/2017 12:51
Vinyl Chloride	ND	0.50	1	06/21/2017 12:51
Xylenes, Total	ND	0.50	1	06/21/2017 12:51

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Analytical Report

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Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	**1706675-005B**	**Water**	**06/13/2017 14:40**	**GC28**	**140575**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	106	70-130		06/21/2017 12:51
Toluene-d8	104	70-130		06/21/2017 12:51
4-BFB	84	70-130		06/21/2017 12:51

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	1706675-006B	Water	06/13/2017 10:05	GC28	140575

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/21/2017 13:28
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/21/2017 13:28
Benzene	**0.87**	0.50	1	06/21/2017 13:28
Bromobenzene	ND	0.50	1	06/21/2017 13:28
Bromochloromethane	ND	0.50	1	06/21/2017 13:28
Bromodichloromethane	ND	0.50	1	06/21/2017 13:28
Bromoform	ND	0.50	1	06/21/2017 13:28
Bromomethane	ND	0.50	1	06/21/2017 13:28
2-Butanone (MEK)	ND	2.0	1	06/21/2017 13:28
t-Butyl alcohol (TBA)	ND	2.0	1	06/21/2017 13:28
n-Butyl benzene	**0.70**	0.50	1	06/21/2017 13:28
sec-Butyl benzene	ND	0.50	1	06/21/2017 13:28
tert-Butyl benzene	ND	0.50	1	06/21/2017 13:28
Carbon Disulfide	ND	0.50	1	06/21/2017 13:28
Carbon Tetrachloride	ND	0.50	1	06/21/2017 13:28
Chlorobenzene	ND	0.50	1	06/21/2017 13:28
Chloroethane	ND	0.50	1	06/21/2017 13:28
Chloroform	ND	0.50	1	06/21/2017 13:28
Chloromethane	ND	0.50	1	06/21/2017 13:28
2-Chlorotoluene	ND	0.50	1	06/21/2017 13:28
4-Chlorotoluene	ND	0.50	1	06/21/2017 13:28
Dibromochloromethane	ND	0.50	1	06/21/2017 13:28
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/21/2017 13:28
1,2-Dibromoethane (EDB)	ND	0.50	1	06/21/2017 13:28
Dibromomethane	ND	0.50	1	06/21/2017 13:28
1,2-Dichlorobenzene	ND	0.50	1	06/21/2017 13:28
1,3-Dichlorobenzene	ND	0.50	1	06/21/2017 13:28
1,4-Dichlorobenzene	ND	0.50	1	06/21/2017 13:28
Dichlorodifluoromethane	ND	0.50	1	06/21/2017 13:28
1,1-Dichloroethane	ND	0.50	1	06/21/2017 13:28
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/21/2017 13:28
1,1-Dichloroethene	ND	0.50	1	06/21/2017 13:28
cis-1,2-Dichloroethene	ND	0.50	1	06/21/2017 13:28
trans-1,2-Dichloroethene	ND	0.50	1	06/21/2017 13:28
1,2-Dichloropropane	ND	0.50	1	06/21/2017 13:28
1,3-Dichloropropane	ND	0.50	1	06/21/2017 13:28
2,2-Dichloropropane	ND	0.50	1	06/21/2017 13:28

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	**1706675-006B**	**Water**	**06/13/2017 10:05**	**GC28**	**140575**

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/21/2017 13:28
cis-1,3-Dichloropropene	ND	0.50	1	06/21/2017 13:28
trans-1,3-Dichloropropene	ND	0.50	1	06/21/2017 13:28
Diisopropyl ether (DIPE)	ND	0.50	1	06/21/2017 13:28
Ethylbenzene	**2.2**	0.50	1	06/21/2017 13:28
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/21/2017 13:28
Freon 113	ND	0.50	1	06/21/2017 13:28
Hexachlorobutadiene	ND	0.50	1	06/21/2017 13:28
Hexachloroethane	ND	0.50	1	06/21/2017 13:28
2-Hexanone	ND	0.50	1	06/21/2017 13:28
Isopropylbenzene	**3.4**	0.50	1	06/21/2017 13:28
4-Isopropyl toluene	ND	0.50	1	06/21/2017 13:28
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/21/2017 13:28
Methylene chloride	ND	0.50	1	06/21/2017 13:28
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/21/2017 13:28
Naphthalene	**0.86**	0.50	1	06/21/2017 13:28
n-Propyl benzene	**7.6**	0.50	1	06/21/2017 13:28
Styrene	ND	0.50	1	06/21/2017 13:28
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/21/2017 13:28
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/21/2017 13:28
Tetrachloroethene	ND	0.50	1	06/21/2017 13:28
Toluene	ND	0.50	1	06/21/2017 13:28
1,2,3-Trichlorobenzene	ND	0.50	1	06/21/2017 13:28
1,2,4-Trichlorobenzene	ND	0.50	1	06/21/2017 13:28
1,1,1-Trichloroethane	ND	0.50	1	06/21/2017 13:28
1,1,2-Trichloroethane	ND	0.50	1	06/21/2017 13:28
Trichloroethene	ND	0.50	1	06/21/2017 13:28
Trichlorofluoromethane	ND	0.50	1	06/21/2017 13:28
1,2,3-Trichloropropane	ND	0.50	1	06/21/2017 13:28
1,2,4-Trimethylbenzene	ND	0.50	1	06/21/2017 13:28
1,3,5-Trimethylbenzene	ND	0.50	1	06/21/2017 13:28
Vinyl Chloride	ND	0.50	1	06/21/2017 13:28
Xylenes, Total	ND	0.50	1	06/21/2017 13:28

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	**1706675-006B**	**Water**	**06/13/2017 10:05**	**GC28**	**140575**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	107	70-130		06/21/2017 13:28
Toluene-d8	103	70-130		06/21/2017 13:28
4-BFB	87	70-130		06/21/2017 13:28

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1706675-007B	Water	06/13/2017 16:21	GC16	140575

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	500	50	06/16/2017 00:23
tert-Amyl methyl ether (TAME)	ND	25	50	06/16/2017 00:23
Benzene	**1800**	25	50	06/16/2017 00:23
Bromobenzene	ND	25	50	06/16/2017 00:23
Bromochloromethane	ND	25	50	06/16/2017 00:23
Bromodichloromethane	ND	25	50	06/16/2017 00:23
Bromoform	ND	25	50	06/16/2017 00:23
Bromomethane	ND	25	50	06/16/2017 00:23
2-Butanone (MEK)	ND	100	50	06/16/2017 00:23
t-Butyl alcohol (TBA)	ND	100	50	06/16/2017 00:23
n-Butyl benzene	ND	25	50	06/16/2017 00:23
sec-Butyl benzene	ND	25	50	06/16/2017 00:23
tert-Butyl benzene	ND	25	50	06/16/2017 00:23
Carbon Disulfide	ND	25	50	06/16/2017 00:23
Carbon Tetrachloride	ND	25	50	06/16/2017 00:23
Chlorobenzene	ND	25	50	06/16/2017 00:23
Chloroethane	ND	25	50	06/16/2017 00:23
Chloroform	ND	25	50	06/16/2017 00:23
Chloromethane	ND	25	50	06/16/2017 00:23
2-Chlorotoluene	ND	25	50	06/16/2017 00:23
4-Chlorotoluene	ND	25	50	06/16/2017 00:23
Dibromochloromethane	ND	25	50	06/16/2017 00:23
1,2-Dibromo-3-chloropropane	ND	10	50	06/16/2017 00:23
1,2-Dibromoethane (EDB)	ND	25	50	06/16/2017 00:23
Dibromomethane	ND	25	50	06/16/2017 00:23
1,2-Dichlorobenzene	ND	25	50	06/16/2017 00:23
1,3-Dichlorobenzene	ND	25	50	06/16/2017 00:23
1,4-Dichlorobenzene	ND	25	50	06/16/2017 00:23
Dichlorodifluoromethane	ND	25	50	06/16/2017 00:23
1,1-Dichloroethane	ND	25	50	06/16/2017 00:23
1,2-Dichloroethane (1,2-DCA)	ND	25	50	06/16/2017 00:23
1,1-Dichloroethene	ND	25	50	06/16/2017 00:23
cis-1,2-Dichloroethene	ND	25	50	06/16/2017 00:23
trans-1,2-Dichloroethene	ND	25	50	06/16/2017 00:23
1,2-Dichloropropane	ND	25	50	06/16/2017 00:23
1,3-Dichloropropane	ND	25	50	06/16/2017 00:23
2,2-Dichloropropane	ND	25	50	06/16/2017 00:23

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	1706675-007B	Water	06/13/2017 16:21	GC16	140575

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	25	50	06/16/2017 00:23
cis-1,3-Dichloropropene	ND	25	50	06/16/2017 00:23
trans-1,3-Dichloropropene	ND	25	50	06/16/2017 00:23
Diisopropyl ether (DIPE)	ND	25	50	06/16/2017 00:23
Ethylbenzene	**120**	25	50	06/16/2017 00:23
Ethyl tert-butyl ether (ETBE)	ND	25	50	06/16/2017 00:23
Freon 113	ND	25	50	06/16/2017 00:23
Hexachlorobutadiene	ND	25	50	06/16/2017 00:23
Hexachloroethane	ND	25	50	06/16/2017 00:23
2-Hexanone	ND	25	50	06/16/2017 00:23
Isopropylbenzene	**56**	25	50	06/16/2017 00:23
4-Isopropyl toluene	ND	25	50	06/16/2017 00:23
Methyl-t-butyl ether (MTBE)	ND	25	50	06/16/2017 00:23
Methylene chloride	ND	25	50	06/16/2017 00:23
4-Methyl-2-pentanone (MIBK)	ND	25	50	06/16/2017 00:23
Naphthalene	**34**	25	50	06/16/2017 00:23
n-Propyl benzene	**100**	25	50	06/16/2017 00:23
Styrene	ND	25	50	06/16/2017 00:23
1,1,1,2-Tetrachloroethane	ND	25	50	06/16/2017 00:23
1,1,2,2-Tetrachloroethane	ND	25	50	06/16/2017 00:23
Tetrachloroethene	ND	25	50	06/16/2017 00:23
Toluene	ND	25	50	06/16/2017 00:23
1,2,3-Trichlorobenzene	ND	25	50	06/16/2017 00:23
1,2,4-Trichlorobenzene	ND	25	50	06/16/2017 00:23
1,1,1-Trichloroethane	ND	25	50	06/16/2017 00:23
1,1,2-Trichloroethane	ND	25	50	06/16/2017 00:23
Trichloroethene	ND	25	50	06/16/2017 00:23
Trichlorofluoromethane	ND	25	50	06/16/2017 00:23
1,2,3-Trichloropropane	ND	25	50	06/16/2017 00:23
1,2,4-Trimethylbenzene	ND	25	50	06/16/2017 00:23
1,3,5-Trimethylbenzene	ND	25	50	06/16/2017 00:23
Vinyl Chloride	ND	25	50	06/16/2017 00:23
Xylenes, Total	**52**	25	50	06/16/2017 00:23

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	**1706675-007B**	**Water**	**06/13/2017 16:21**	**GC16**	**140575**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	122	70-130		06/16/2017 00:23
Toluene-d8	113	70-130		06/16/2017 00:23
4-BFB	96	70-130		06/16/2017 00:23

Analyst(s): KF

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	**1706675-008B**	**Water**	**06/13/2017 15:37**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/16/2017 16:50
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/16/2017 16:50
Benzene	ND	0.50	1	06/16/2017 16:50
Bromobenzene	ND	0.50	1	06/16/2017 16:50
Bromochloromethane	ND	0.50	1	06/16/2017 16:50
Bromodichloromethane	ND	0.50	1	06/16/2017 16:50
Bromoform	ND	0.50	1	06/16/2017 16:50
Bromomethane	ND	0.50	1	06/16/2017 16:50
2-Butanone (MEK)	ND	2.0	1	06/16/2017 16:50
t-Butyl alcohol (TBA)	**3.7**	2.0	1	06/16/2017 16:50
n-Butyl benzene	ND	0.50	1	06/16/2017 16:50
sec-Butyl benzene	ND	0.50	1	06/16/2017 16:50
tert-Butyl benzene	ND	0.50	1	06/16/2017 16:50
Carbon Disulfide	ND	0.50	1	06/16/2017 16:50
Carbon Tetrachloride	ND	0.50	1	06/16/2017 16:50
Chlorobenzene	ND	0.50	1	06/16/2017 16:50
Chloroethane	ND	0.50	1	06/16/2017 16:50
Chloroform	ND	0.50	1	06/16/2017 16:50
Chloromethane	ND	0.50	1	06/16/2017 16:50
2-Chlorotoluene	ND	0.50	1	06/16/2017 16:50
4-Chlorotoluene	ND	0.50	1	06/16/2017 16:50
Dibromochloromethane	ND	0.50	1	06/16/2017 16:50
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/16/2017 16:50
1,2-Dibromoethane (EDB)	ND	0.50	1	06/16/2017 16:50
Dibromomethane	ND	0.50	1	06/16/2017 16:50
1,2-Dichlorobenzene	ND	0.50	1	06/16/2017 16:50
1,3-Dichlorobenzene	ND	0.50	1	06/16/2017 16:50
1,4-Dichlorobenzene	ND	0.50	1	06/16/2017 16:50
Dichlorodifluoromethane	ND	0.50	1	06/16/2017 16:50
1,1-Dichloroethane	ND	0.50	1	06/16/2017 16:50
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/16/2017 16:50
1,1-Dichloroethene	ND	0.50	1	06/16/2017 16:50
cis-1,2-Dichloroethene	ND	0.50	1	06/16/2017 16:50
trans-1,2-Dichloroethene	ND	0.50	1	06/16/2017 16:50
1,2-Dichloropropane	ND	0.50	1	06/16/2017 16:50
1,3-Dichloropropane	ND	0.50	1	06/16/2017 16:50
2,2-Dichloropropane	ND	0.50	1	06/16/2017 16:50

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	**1706675-008B**	**Water**	**06/13/2017 15:37**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/16/2017 16:50
cis-1,3-Dichloropropene	ND	0.50	1	06/16/2017 16:50
trans-1,3-Dichloropropene	ND	0.50	1	06/16/2017 16:50
Diisopropyl ether (DIPE)	ND	0.50	1	06/16/2017 16:50
Ethylbenzene	ND	0.50	1	06/16/2017 16:50
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/16/2017 16:50
Freon 113	ND	0.50	1	06/16/2017 16:50
Hexachlorobutadiene	ND	0.50	1	06/16/2017 16:50
Hexachloroethane	ND	0.50	1	06/16/2017 16:50
2-Hexanone	ND	0.50	1	06/16/2017 16:50
Isopropylbenzene	ND	0.50	1	06/16/2017 16:50
4-Isopropyl toluene	ND	0.50	1	06/16/2017 16:50
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/16/2017 16:50
Methylene chloride	ND	0.50	1	06/16/2017 16:50
4-Methyl-2-pentanone (MIBK)	**0.63**	0.50	1	06/16/2017 16:50
Naphthalene	ND	0.50	1	06/16/2017 16:50
n-Propyl benzene	ND	0.50	1	06/16/2017 16:50
Styrene	ND	0.50	1	06/16/2017 16:50
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/16/2017 16:50
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/16/2017 16:50
Tetrachloroethene	ND	0.50	1	06/16/2017 16:50
Toluene	ND	0.50	1	06/16/2017 16:50
1,2,3-Trichlorobenzene	ND	0.50	1	06/16/2017 16:50
1,2,4-Trichlorobenzene	ND	0.50	1	06/16/2017 16:50
1,1,1-Trichloroethane	ND	0.50	1	06/16/2017 16:50
1,1,2-Trichloroethane	ND	0.50	1	06/16/2017 16:50
Trichloroethene	ND	0.50	1	06/16/2017 16:50
Trichlorofluoromethane	ND	0.50	1	06/16/2017 16:50
1,2,3-Trichloropropane	ND	0.50	1	06/16/2017 16:50
1,2,4-Trimethylbenzene	ND	0.50	1	06/16/2017 16:50
1,3,5-Trimethylbenzene	ND	0.50	1	06/16/2017 16:50
Vinyl Chloride	ND	0.50	1	06/16/2017 16:50
Xylenes, Total	ND	0.50	1	06/16/2017 16:50

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	**1706675-008B**	**Water**	**06/13/2017 15:37**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	119	70-130		06/16/2017 16:50
Toluene-d8	101	70-130		06/16/2017 16:50
4-BFB	110	70-130		06/16/2017 16:50

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	**1706675-009B**	**Water**	**06/13/2017 13:29**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/16/2017 17:31
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/16/2017 17:31
Benzene	ND	0.50	1	06/16/2017 17:31
Bromobenzene	ND	0.50	1	06/16/2017 17:31
Bromochloromethane	ND	0.50	1	06/16/2017 17:31
Bromodichloromethane	ND	0.50	1	06/16/2017 17:31
Bromoform	ND	0.50	1	06/16/2017 17:31
Bromomethane	ND	0.50	1	06/16/2017 17:31
2-Butanone (MEK)	ND	2.0	1	06/16/2017 17:31
t-Butyl alcohol (TBA)	ND	2.0	1	06/16/2017 17:31
n-Butyl benzene	ND	0.50	1	06/16/2017 17:31
sec-Butyl benzene	ND	0.50	1	06/16/2017 17:31
tert-Butyl benzene	ND	0.50	1	06/16/2017 17:31
Carbon Disulfide	ND	0.50	1	06/16/2017 17:31
Carbon Tetrachloride	ND	0.50	1	06/16/2017 17:31
Chlorobenzene	ND	0.50	1	06/16/2017 17:31
Chloroethane	ND	0.50	1	06/16/2017 17:31
Chloroform	ND	0.50	1	06/16/2017 17:31
Chloromethane	ND	0.50	1	06/16/2017 17:31
2-Chlorotoluene	ND	0.50	1	06/16/2017 17:31
4-Chlorotoluene	ND	0.50	1	06/16/2017 17:31
Dibromochloromethane	ND	0.50	1	06/16/2017 17:31
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/16/2017 17:31
1,2-Dibromoethane (EDB)	ND	0.50	1	06/16/2017 17:31
Dibromomethane	ND	0.50	1	06/16/2017 17:31
1,2-Dichlorobenzene	ND	0.50	1	06/16/2017 17:31
1,3-Dichlorobenzene	ND	0.50	1	06/16/2017 17:31
1,4-Dichlorobenzene	ND	0.50	1	06/16/2017 17:31
Dichlorodifluoromethane	ND	0.50	1	06/16/2017 17:31
1,1-Dichloroethane	ND	0.50	1	06/16/2017 17:31
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/16/2017 17:31
1,1-Dichloroethene	ND	0.50	1	06/16/2017 17:31
cis-1,2-Dichloroethene	ND	0.50	1	06/16/2017 17:31
trans-1,2-Dichloroethene	ND	0.50	1	06/16/2017 17:31
1,2-Dichloropropane	ND	0.50	1	06/16/2017 17:31
1,3-Dichloropropane	ND	0.50	1	06/16/2017 17:31
2,2-Dichloropropane	ND	0.50	1	06/16/2017 17:31

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	**1706675-009B**	**Water**	**06/13/2017 13:29**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/16/2017 17:31
cis-1,3-Dichloropropene	ND	0.50	1	06/16/2017 17:31
trans-1,3-Dichloropropene	ND	0.50	1	06/16/2017 17:31
Diisopropyl ether (DIPE)	ND	0.50	1	06/16/2017 17:31
Ethylbenzene	ND	0.50	1	06/16/2017 17:31
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/16/2017 17:31
Freon 113	ND	0.50	1	06/16/2017 17:31
Hexachlorobutadiene	ND	0.50	1	06/16/2017 17:31
Hexachloroethane	ND	0.50	1	06/16/2017 17:31
2-Hexanone	ND	0.50	1	06/16/2017 17:31
Isopropylbenzene	ND	0.50	1	06/16/2017 17:31
4-Isopropyl toluene	ND	0.50	1	06/16/2017 17:31
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/16/2017 17:31
Methylene chloride	ND	0.50	1	06/16/2017 17:31
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/16/2017 17:31
Naphthalene	ND	0.50	1	06/16/2017 17:31
n-Propyl benzene	ND	0.50	1	06/16/2017 17:31
Styrene	ND	0.50	1	06/16/2017 17:31
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/16/2017 17:31
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/16/2017 17:31
Tetrachloroethene	ND	0.50	1	06/16/2017 17:31
Toluene	ND	0.50	1	06/16/2017 17:31
1,2,3-Trichlorobenzene	ND	0.50	1	06/16/2017 17:31
1,2,4-Trichlorobenzene	ND	0.50	1	06/16/2017 17:31
1,1,1-Trichloroethane	ND	0.50	1	06/16/2017 17:31
1,1,2-Trichloroethane	ND	0.50	1	06/16/2017 17:31
Trichloroethene	ND	0.50	1	06/16/2017 17:31
Trichlorofluoromethane	ND	0.50	1	06/16/2017 17:31
1,2,3-Trichloropropane	ND	0.50	1	06/16/2017 17:31
1,2,4-Trimethylbenzene	ND	0.50	1	06/16/2017 17:31
1,3,5-Trimethylbenzene	ND	0.50	1	06/16/2017 17:31
Vinyl Chloride	ND	0.50	1	06/16/2017 17:31
Xylenes, Total	ND	0.50	1	06/16/2017 17:31

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	**1706675-009B**	**Water**	**06/13/2017 13:29**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	119	70-130		06/16/2017 17:31
Toluene-d8	101	70-130		06/16/2017 17:31
4-BFB	104	70-130		06/16/2017 17:31

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	**1706675-010B**	**Water**	**06/13/2017 11:28**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	10	1	06/16/2017 18:12
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/16/2017 18:12
Benzene	ND	0.50	1	06/16/2017 18:12
Bromobenzene	ND	0.50	1	06/16/2017 18:12
Bromochloromethane	ND	0.50	1	06/16/2017 18:12
Bromodichloromethane	ND	0.50	1	06/16/2017 18:12
Bromoform	ND	0.50	1	06/16/2017 18:12
Bromomethane	ND	0.50	1	06/16/2017 18:12
2-Butanone (MEK)	ND	2.0	1	06/16/2017 18:12
t-Butyl alcohol (TBA)	ND	2.0	1	06/16/2017 18:12
n-Butyl benzene	ND	0.50	1	06/16/2017 18:12
sec-Butyl benzene	ND	0.50	1	06/16/2017 18:12
tert-Butyl benzene	ND	0.50	1	06/16/2017 18:12
Carbon Disulfide	ND	0.50	1	06/16/2017 18:12
Carbon Tetrachloride	ND	0.50	1	06/16/2017 18:12
Chlorobenzene	ND	0.50	1	06/16/2017 18:12
Chloroethane	ND	0.50	1	06/16/2017 18:12
Chloroform	ND	0.50	1	06/16/2017 18:12
Chloromethane	ND	0.50	1	06/16/2017 18:12
2-Chlorotoluene	ND	0.50	1	06/16/2017 18:12
4-Chlorotoluene	ND	0.50	1	06/16/2017 18:12
Dibromochloromethane	ND	0.50	1	06/16/2017 18:12
1,2-Dibromo-3-chloropropane	ND	0.20	1	06/16/2017 18:12
1,2-Dibromoethane (EDB)	ND	0.50	1	06/16/2017 18:12
Dibromomethane	ND	0.50	1	06/16/2017 18:12
1,2-Dichlorobenzene	ND	0.50	1	06/16/2017 18:12
1,3-Dichlorobenzene	ND	0.50	1	06/16/2017 18:12
1,4-Dichlorobenzene	ND	0.50	1	06/16/2017 18:12
Dichlorodifluoromethane	ND	0.50	1	06/16/2017 18:12
1,1-Dichloroethane	ND	0.50	1	06/16/2017 18:12
1,2-Dichloroethane (1,2-DCA)	ND	0.50	1	06/16/2017 18:12
1,1-Dichloroethene	ND	0.50	1	06/16/2017 18:12
cis-1,2-Dichloroethene	ND	0.50	1	06/16/2017 18:12
trans-1,2-Dichloroethene	ND	0.50	1	06/16/2017 18:12
1,2-Dichloropropane	ND	0.50	1	06/16/2017 18:12
1,3-Dichloropropane	ND	0.50	1	06/16/2017 18:12
2,2-Dichloropropane	ND	0.50	1	06/16/2017 18:12

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	1706675-010B	Water	06/13/2017 11:28	GC18	140633

Analytes	Result	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	0.50	1	06/16/2017 18:12
cis-1,3-Dichloropropene	ND	0.50	1	06/16/2017 18:12
trans-1,3-Dichloropropene	ND	0.50	1	06/16/2017 18:12
Diisopropyl ether (DIPE)	ND	0.50	1	06/16/2017 18:12
Ethylbenzene	ND	0.50	1	06/16/2017 18:12
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/16/2017 18:12
Freon 113	ND	0.50	1	06/16/2017 18:12
Hexachlorobutadiene	ND	0.50	1	06/16/2017 18:12
Hexachloroethane	ND	0.50	1	06/16/2017 18:12
2-Hexanone	ND	0.50	1	06/16/2017 18:12
Isopropylbenzene	ND	0.50	1	06/16/2017 18:12
4-Isopropyl toluene	ND	0.50	1	06/16/2017 18:12
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/16/2017 18:12
Methylene chloride	ND	0.50	1	06/16/2017 18:12
4-Methyl-2-pentanone (MIBK)	ND	0.50	1	06/16/2017 18:12
Naphthalene	ND	0.50	1	06/16/2017 18:12
n-Propyl benzene	ND	0.50	1	06/16/2017 18:12
Styrene	ND	0.50	1	06/16/2017 18:12
1,1,1,2-Tetrachloroethane	ND	0.50	1	06/16/2017 18:12
1,1,2,2-Tetrachloroethane	ND	0.50	1	06/16/2017 18:12
Tetrachloroethene	ND	0.50	1	06/16/2017 18:12
Toluene	ND	0.50	1	06/16/2017 18:12
1,2,3-Trichlorobenzene	ND	0.50	1	06/16/2017 18:12
1,2,4-Trichlorobenzene	ND	0.50	1	06/16/2017 18:12
1,1,1-Trichloroethane	ND	0.50	1	06/16/2017 18:12
1,1,2-Trichloroethane	ND	0.50	1	06/16/2017 18:12
Trichloroethene	ND	0.50	1	06/16/2017 18:12
Trichlorofluoromethane	ND	0.50	1	06/16/2017 18:12
1,2,3-Trichloropropane	ND	0.50	1	06/16/2017 18:12
1,2,4-Trimethylbenzene	ND	0.50	1	06/16/2017 18:12
1,3,5-Trimethylbenzene	ND	0.50	1	06/16/2017 18:12
Vinyl Chloride	ND	0.50	1	06/16/2017 18:12
Xylenes, Total	ND	0.50	1	06/16/2017 18:12

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	**1706675-010B**	**Water**	**06/13/2017 11:28**	**GC18**	**140633**

Analytes	Result	RL	DF	Date Analyzed
Surrogates	REC (%)	Limits		
Dibromofluoromethane	119	70-130		06/16/2017 18:12
Toluene-d8	100	70-130		06/16/2017 18:12
4-BFB	111	70-130		06/16/2017 18:12

Analyst(s): AK

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/19/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-1	1706675-001A	Water	06/13/2017 13:57	GC3	140583

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/15/2017 23:28
MTBE	ND	5.0	1	06/15/2017 23:28
Benzene	ND	0.50	1	06/15/2017 23:28
Toluene	ND	0.50	1	06/15/2017 23:28
Ethylbenzene	ND	0.50	1	06/15/2017 23:28
Xylenes	ND	1.5	1	06/15/2017 23:28

Surrogates	REC (%)	Limits	
aaa-TFT	102	89-115	06/15/2017 23:28

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-2	1706675-002A	Water	06/13/2017 12:37	GC3	140583

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/16/2017 00:00
MTBE	ND	5.0	1	06/16/2017 00:00
Benzene	ND	0.50	1	06/16/2017 00:00
Toluene	ND	0.50	1	06/16/2017 00:00
Ethylbenzene	ND	0.50	1	06/16/2017 00:00
Xylenes	ND	1.5	1	06/16/2017 00:00

Surrogates	REC (%)	Limits	
aaa-TFT	103	89-115	06/16/2017 00:00

Analyst(s): HD

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/19/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-3	**1706675-003A**	**Water**	**06/13/2017 12:01**	**GC3**	**140583**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**11,000**	2500	50	06/16/2017 16:12
MTBE	ND	250	50	06/16/2017 16:12
Benzene	**2300**	25	50	06/16/2017 16:12
Toluene	ND	25	50	06/16/2017 16:12
Ethylbenzene	**110**	25	50	06/16/2017 16:12
Xylenes	ND	75	50	06/16/2017 16:12

Surrogates	REC (%)	Limits	
aaa-TFT	95	89-115	06/16/2017 16:12

Analyst(s): HD Analytical Comments: d1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-4	**1706675-004A**	**Water**	**06/13/2017 10:51**	**GC3**	**140583**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/16/2017 01:33
MTBE	ND	5.0	1	06/16/2017 01:33
Benzene	ND	0.50	1	06/16/2017 01:33
Toluene	ND	0.50	1	06/16/2017 01:33
Ethylbenzene	ND	0.50	1	06/16/2017 01:33
Xylenes	ND	1.5	1	06/16/2017 01:33

Surrogates	REC (%)	Limits	
aaa-TFT	103	89-115	06/16/2017 01:33

Analyst(s): HD

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/19/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-5	**1706675-005A**	**Water**	**06/13/2017 14:40**	**GC3**	**140583**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/19/2017 22:54
MTBE	ND	5.0	1	06/19/2017 22:54
Benzene	ND	0.50	1	06/19/2017 22:54
Toluene	ND	0.50	1	06/19/2017 22:54
Ethylbenzene	ND	0.50	1	06/19/2017 22:54
Xylenes	ND	1.5	1	06/19/2017 22:54

Surrogates	REC (%)	Limits	
aaa-TFT	96	89-115	06/19/2017 22:54

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-6	**1706675-006A**	**Water**	**06/13/2017 10:05**	**GC3**	**140583**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**330**	50	1	06/19/2017 23:27
MTBE	ND	5.0	1	06/19/2017 23:27
Benzene	**1.4**	0.50	1	06/19/2017 23:27
Toluene	ND	0.50	1	06/19/2017 23:27
Ethylbenzene	**2.3**	0.50	1	06/19/2017 23:27
Xylenes	ND	1.5	1	06/19/2017 23:27

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	117	S	89-115	06/19/2017 23:27

Analyst(s): HD Analytical Comments: d1,c4

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/19/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MW-7	**1706675-007A**	**Water**	**06/13/2017 16:21**	**GC3**	**140583**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**10,000**	2500	50	06/16/2017 17:55
MTBE	ND	250	50	06/16/2017 17:55
Benzene	**1900**	25	50	06/16/2017 17:55
Toluene	**46**	25	50	06/16/2017 17:55
Ethylbenzene	**180**	25	50	06/16/2017 17:55
Xylenes	**85**	75	50	06/16/2017 17:55

Surrogates	REC (%)	Limits	
aaa-TFT	105	89-115	06/16/2017 17:55

Analyst(s): HD Analytical Comments: d1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IW-1	**1706675-008A**	**Water**	**06/13/2017 15:37**	**GC3**	**140583**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/19/2017 19:12
MTBE	ND	5.0	1	06/19/2017 19:12
Benzene	ND	0.50	1	06/19/2017 19:12
Toluene	ND	0.50	1	06/19/2017 19:12
Ethylbenzene	ND	0.50	1	06/19/2017 19:12
Xylenes	ND	1.5	1	06/19/2017 19:12

Surrogates	REC (%)	Limits	
aaa-TFT	101	89-115	06/19/2017 19:12

Analyst(s): HD

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/15/17-6/19/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-1	**1706675-009A**	**Water**	**06/13/2017 13:29**	**GC7**	**140725**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/19/2017 21:10
MTBE	ND	5.0	1	06/19/2017 21:10
Benzene	ND	0.50	1	06/19/2017 21:10
Toluene	ND	0.50	1	06/19/2017 21:10
Ethylbenzene	ND	0.50	1	06/19/2017 21:10
Xylenes	ND	1.5	1	06/19/2017 21:10

Surrogates	REC (%)	Limits	
aaa-TFT	95	89-115	06/19/2017 21:10

Analyst(s): HD

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
BF-5	**1706675-010A**	**Water**	**06/13/2017 11:28**	**GC3**	**140583**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	ND	50	1	06/19/2017 23:59
MTBE	ND	5.0	1	06/19/2017 23:59
Benzene	ND	0.50	1	06/19/2017 23:59
Toluene	ND	0.50	1	06/19/2017 23:59
Ethylbenzene	ND	0.50	1	06/19/2017 23:59
Xylenes	ND	1.5	1	06/19/2017 23:59

Surrogates	REC (%)	Limits	
aaa-TFT	97	89-115	06/19/2017 23:59

Analyst(s): HD

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140572
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140572 1706674-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	168	10	200	-	84	46-155
tert-Amyl methyl ether (TAME)	ND	8.61	0.50	10	-	86	54-140
Benzene	ND	9.91	0.50	10	-	99	47-158
Bromobenzene	ND	9.11	0.50	10	-	91	50-155
Bromochloromethane	ND	9.97	0.50	10	-	100	48-160
Bromodichloromethane	ND	9.17	0.50	10	-	92	60-156
Bromoform	ND	7.87	0.50	10	-	79	43-149
Bromomethane	ND	8.72	0.50	10	-	87	61-159
2-Butanone (MEK)	ND	33.8	2.0	40	-	85	61-124
t-Butyl alcohol (TBA)	ND	29.1	2.0	40	-	73	42-140
n-Butyl benzene	ND	9.46	0.50	10	-	95	74-138
sec-Butyl benzene	ND	9.57	0.50	10	-	96	72-142
tert-Butyl benzene	ND	9.06	0.50	10	-	91	74-140
Carbon Disulfide	ND	9.58	0.50	10	-	96	64-127
Carbon Tetrachloride	ND	10.1	0.50	10	-	101	61-158
Chlorobenzene	ND	9.52	0.50	10	-	95	43-157
Chloroethane	ND	9.16	0.50	10	-	92	50-127
Chloroform	ND	9.94	0.50	10	-	99	56-154
Chloromethane	ND	8.33	0.50	10	-	83	41-132
2-Chlorotoluene	ND	9.16	0.50	10	-	92	50-155
4-Chlorotoluene	ND	9.15	0.50	10	-	92	53-153
Dibromochloromethane	ND	8.57	0.50	10	-	86	49-156
1,2-Dibromo-3-chloropropane	ND	3.01	0.20	4	-	75	46-149
1,2-Dibromoethane (EDB)	ND	9.00	0.50	10	-	90	44-155
Dibromomethane	ND	9.39	0.50	10	-	94	50-157
1,2-Dichlorobenzene	ND	9.45	0.50	10	-	94	48-156
1,3-Dichlorobenzene	ND	9.56	0.50	10	-	96	49-159
1,4-Dichlorobenzene	ND	9.44	0.50	10	-	94	51-151
Dichlorodifluoromethane	ND	8.57	0.50	10	-	86	61-117
1,1-Dichloroethane	ND	9.91	0.50	10	-	99	53-153
1,2-Dichloroethane (1,2-DCA)	ND	9.65	0.50	10	-	97	66-125
1,1-Dichloroethene	ND	9.74	0.50	10	-	97	47-149
cis-1,2-Dichloroethene	ND	10.2	0.50	10	-	102	54-155
trans-1,2-Dichloroethene	ND	10.0	0.50	10	-	100	46-151
1,2-Dichloropropane	ND	9.65	0.50	10	-	97	54-153
1,3-Dichloropropane	ND	8.95	0.50	10	-	89	49-150
2,2-Dichloropropane	ND	9.77	0.50	10	-	98	74-147

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140572
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140572 1706674-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	10.0	0.50	10	-	100	54-150
cis-1,3-Dichloropropene	ND	8.90	0.50	10	-	89	55-159
trans-1,3-Dichloropropene	ND	8.69	0.50	10	-	87	74-131
Diisopropyl ether (DIPE)	ND	9.42	0.50	10	-	94	57-136
Ethylbenzene	ND	9.56	0.50	10	-	96	60-152
Ethyl tert-butyl ether (ETBE)	ND	9.14	0.50	10	-	91	55-137
Freon 113	ND	10.4	0.50	10	-	104	47-138
Hexachlorobutadiene	ND	9.84	0.50	10	-	98	66-160
Hexachloroethane	ND	8.30	0.50	10	-	83	75-130
2-Hexanone	ND	7.67	0.50	10	-	77	70-115
Isopropylbenzene	ND	9.33	0.50	10	-	93	59-156
4-Isopropyl toluene	ND	9.31	0.50	10	-	93	75-138
Methyl-t-butyl ether (MTBE)	ND	8.96	0.50	10	-	90	53-139
Methylene chloride	ND	10.0	0.50	10	-	100	66-127
4-Methyl-2-pentanone (MIBK)	ND	7.90	0.50	10	-	79	42-153
Naphthalene	ND	7.82	0.50	10	-	78	66-127
n-Propyl benzene	ND	9.51	0.50	10	-	95	54-155
Styrene	ND	8.87	0.50	10	-	89	51-152
1,1,1,2-Tetrachloroethane	ND	9.27	0.50	10	-	93	58-159
1,1,2,2-Tetrachloroethane	ND	7.93	0.50	10	-	79	51-150
Tetrachloroethene	ND	9.97	0.50	10	-	100	55-145
Toluene	ND	9.14	0.50	10	-	91	52-137
1,2,3-Trichlorobenzene	ND	9.40	0.50	10	-	94	70-136
1,2,4-Trichlorobenzene	ND	9.17	0.50	10	-	92	74-137
1,1,1-Trichloroethane	ND	10.1	0.50	10	-	101	57-156
1,1,2-Trichloroethane	ND	8.80	0.50	10	-	88	51-150
Trichloroethene	ND	10.2	0.50	10	-	102	43-157
Trichlorofluoromethane	ND	10.4	0.50	10	-	104	50-147
1,2,3-Trichloropropane	ND	8.54	0.50	10	-	85	41-152
1,2,4-Trimethylbenzene	ND	9.09	0.50	10	-	91	57-157
1,3,5-Trimethylbenzene	ND	9.12	0.50	10	-	91	56-159
Vinyl Chloride	ND	9.13	0.50	10	-	91	42-137
Xylenes, Total	ND	27.4	0.50	30	-	91	70-130

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140572
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140572 1706674-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Surrogate Recovery							
Dibromofluoromethane	28.15	28.2		25	113	113	70-130
Toluene-d8	25.65	25.7		25	103	103	70-130
4-BFB	2.455	2.67		2.5	98	107	70-130

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140572
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140572 1706674-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acetone	218	215	200	ND	109	107	66-158	1.69	20
tert-Amyl methyl ether (TAME)	10.6	10.9	10	ND	106	109	69-139	3.31	20
Benzene	10.4	10.4	10	ND	105	104	69-141	0.712	20
Bromobenzene	9.90	9.92	10	ND	99	99	70-127	0	20
Bromochloromethane	11.1	11.0	10	ND	111	110	72-142	0.896	20
Bromodichloromethane	10.4	10.4	10	ND	103	104	75-141	0.181	20
Bromoform	9.58	9.72	10	ND	96	97	72-126	1.44	20
Bromomethane	6.96	7.64	10	ND	70	76	50-160	9.31	20
2-Butanone (MEK)	45.4	44.7	40	ND	113	112	69-154	1.44	20
t-Butyl alcohol (TBA)	42.2	42.3	40	ND	105	106	41-152	0.405	20
n-Butyl benzene	9.51	9.35	10	ND	95	94	70-134	1.65	20
sec-Butyl benzene	9.49	9.61	10	ND	95	96	73-131	1.30	20
tert-Butyl benzene	9.14	9.29	10	ND	91	93	71-125	1.54	20
Carbon Disulfide	9.71	9.60	10	ND	97	96	63-158	1.12	20
Carbon Tetrachloride	10.4	10.3	10	ND	104	103	72-143	0.387	20
Chlorobenzene	10.0	9.89	10	ND	100	99	77-120	1.22	20
Chloroethane	8.49	8.39	10	ND	85	84	54-131	1.13	20
Chloroform	10.8	10.8	10	ND	106	106	75-139	0	20
Chloromethane	6.42	6.44	10	ND	64	64	40-130	0	20
2-Chlorotoluene	9.37	9.58	10	ND	94	96	70-122	2.22	20
4-Chlorotoluene	9.35	9.58	10	ND	93	96	71-123	2.45	20
Dibromochloromethane	9.86	9.91	10	ND	99	99	78-132	0	20
1,2-Dibromo-3-chloropropane	3.59	3.55	4	ND	90	89	59-143	0.951	20
1,2-Dibromoethane (EDB)	10.4	10.4	10	ND	104	104	76-135	0	20
Dibromomethane	11.0	10.9	10	ND	110	109	78-135	0.574	20
1,2-Dichlorobenzene	10.3	10.1	10	ND	103	101	68-133	2.23	20
1,3-Dichlorobenzene	9.94	9.88	10	ND	99	99	78-122	0	20
1,4-Dichlorobenzene	10.0	9.89	10	ND	100	99	80-117	1.53	20
Dichlorodifluoromethane	7.56	7.44	10	ND	76	74	38-125	1.66	20
1,1-Dichloroethane	10.4	10.3	10	ND	104	103	65-152	0.766	20
1,2-Dichloroethane (1,2-DCA)	11.1	11.1	10	ND	111	111	73-139	0	20
1,1-Dichloroethene	9.81	9.69	10	ND	98	97	59-140	1.28	20
cis-1,2-Dichloroethene	10.8	10.6	10	ND	107	106	50-154	1.34	20
trans-1,2-Dichloroethene	10.4	10.3	10	ND	104	103	69-136	0.491	20
1,2-Dichloropropane	10.7	10.6	10	ND	107	106	78-132	0.332	20
1,3-Dichloropropane	10.2	10.0	10	ND	102	100	77-131	1.76	20
2,2-Dichloropropane	10.1	9.91	10	ND	101	99	61-160	2.14	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140572
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140572 1706674-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,1-Dichloropropene	10.3	10.2	10	ND	103	102	70-137	1.23	20
cis-1,3-Dichloropropene	9.64	9.58	10	ND	96	96	78-135	0	20
trans-1,3-Dichloropropene	9.72	9.67	10	ND	97	97	78-131	0	20
Diisopropyl ether (DIPE)	10.9	10.9	10	ND	109	109	72-140	0	20
Ethylbenzene	9.77	9.66	10	ND	98	97	73-128	1.10	20
Ethyl tert-butyl ether (ETBE)	10.9	10.9	10	ND	109	109	71-140	0	20
Freon 113	10.6	10.6	10	ND	106	106	60-136	0	20
Hexachlorobutadiene	9.84	9.49	10	ND	98	95	56-132	3.54	20
Hexachloroethane	8.64	8.64	10	ND	86	86	61-129	0	20
2-Hexanone	10.1	10.0	10	ND	101	100	57-149	1.02	20
Isopropylbenzene	9.30	9.22	10	ND	93	92	69-130	0.786	20
4-Isopropyl toluene	9.34	9.33	10	ND	93	93	75-124	0	20
Methyl-t-butyl ether (MTBE)	11.0	11.1	10	ND	110	111	73-139	0.667	20
Methylene chloride	10.9	10.8	10	ND	109	108	74-128	0.556	20
4-Methyl-2-pentanone (MIBK)	10.2	10.0	10	ND	102	100	61-145	1.60	20
Naphthalene	10.8	10.6	10	ND	108	106	54-148	1.24	20
n-Propyl benzene	9.41	9.64	10	ND	94	96	71-121	2.42	20
Styrene	9.57	9.68	10	ND	96	97	56-140	1.04	20
1,1,1,2-Tetrachloroethane	10.1	10.1	10	ND	101	101	74-127	0	20
1,1,2,2-Tetrachloroethane	9.52	9.34	10	ND	95	93	63-142	1.90	20
Tetrachloroethene	9.89	9.80	10	ND	99	98	71-125	0.886	20
Toluene	9.31	9.16	10	ND	93	92	71-128	1.61	20
1,2,3-Trichlorobenzene	13.0	12.8	10	ND	130	128	59-135	2.01	20
1,2,4-Trichlorobenzene	10.8	10.7	10	ND	108	107	60-132	1.44	20
1,1,1-Trichloroethane	10.4	10.4	10	ND	104	103	75-138	1.00	20
1,1,2-Trichloroethane	10.1	10.1	10	ND	101	101	78-129	0	20
Trichloroethene	10.6	10.6	10	ND	106	105	64-132	0.641	20
Trichlorofluoromethane	10.3	10.2	10	ND	103	102	53-159	1.32	20
1,2,3-Trichloropropane	10.2	10.2	10	ND	102	102	68-130	0	20
1,2,4-Trimethylbenzene	9.39	9.35	10	ND	94	94	76-124	0	20
1,3,5-Trimethylbenzene	9.22	9.28	10	ND	92	93	77-124	0.636	20
Vinyl Chloride	7.96	7.85	10	ND	80	79	43-142	1.41	20
Xylenes, Total	28.7	28.9	30	ND	96	96	70-130	0	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140572
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140572 1706674-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Surrogate Recovery									
Dibromofluoromethane	29.5	29.7	25		118	119	73-131	0.767	20
Toluene-d8	25.0	24.7	25		100	99	72-117	1.05	20
4-BFB	2.78	2.83	2.5		111	113	74-116	1.75	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140575
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140575

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	202	10	200	-	101	46-155
tert-Amyl methyl ether (TAME)	ND	10.5	0.50	10	-	105	54-140
Benzene	ND	10.6	0.50	10	-	106	47-158
Bromobenzene	ND	7.08	0.50	10	-	71	50-155
Bromochloromethane	ND	10.4	0.50	10	-	104	48-160
Bromodichloromethane	ND	10.2	0.50	10	-	102	60-156
Bromoform	ND	9.25	0.50	10	-	93	43-149
Bromomethane	ND	11.2	0.50	10	-	112	61-159
2-Butanone (MEK)	ND	42.0	2.0	40	-	105	61-124
t-Butyl alcohol (TBA)	ND	36.1	2.0	40	-	90	42-140
n-Butyl benzene	ND	9.54	0.50	10	-	95	74-138
sec-Butyl benzene	ND	8.95	0.50	10	-	90	72-142
tert-Butyl benzene	ND	7.69	0.50	10	-	77	74-140
Carbon Disulfide	ND	9.54	0.50	10	-	95	64-127
Carbon Tetrachloride	ND	10.5	0.50	10	-	105	61-158
Chlorobenzene	ND	9.02	0.50	10	-	90	43-157
Chloroethane	ND	11.5	0.50	10	-	115	50-127
Chloroform	ND	11.2	0.50	10	-	112	56-154
Chloromethane	ND	11.0	0.50	10	-	111	41-132
2-Chlorotoluene	ND	8.20	0.50	10	-	82	50-155
4-Chlorotoluene	ND	7.77	0.50	10	-	78	53-153
Dibromochloromethane	ND	9.44	0.50	10	-	94	49-156
1,2-Dibromo-3-chloropropane	ND	2.82	0.20	4	-	70	46-149
1,2-Dibromoethane (EDB)	ND	9.61	0.50	10	-	96	44-155
Dibromomethane	ND	10.3	0.50	10	-	103	50-157
1,2-Dichlorobenzene	ND	8.71	0.50	10	-	87	48-156
1,3-Dichlorobenzene	ND	9.28	0.50	10	-	93	49-159
1,4-Dichlorobenzene	ND	8.56	0.50	10	-	86	51-151
Dichlorodifluoromethane	ND	7.65	0.50	10	-	77	61-117
1,1-Dichloroethane	ND	10.6	0.50	10	-	106	53-153
1,2-Dichloroethane (1,2-DCA)	ND	11.1	0.50	10	-	111	66-125
1,1-Dichloroethene	ND	9.92	0.50	10	-	99	47-149
cis-1,2-Dichloroethene	ND	10.4	0.50	10	-	104	54-155
trans-1,2-Dichloroethene	ND	10.4	0.50	10	-	104	46-151
1,2-Dichloropropane	ND	10.4	0.50	10	-	104	54-153
1,3-Dichloropropane	ND	10.0	0.50	10	-	100	49-150
2,2-Dichloropropane	ND	10.7	0.50	10	-	107	74-147

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140575
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140575

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	10.7	0.50	10	-	107	54-150
cis-1,3-Dichloropropene	ND	9.91	0.50	10	-	99	55-159
trans-1,3-Dichloropropene	ND	10.6	0.50	10	-	106	74-131
Diisopropyl ether (DIPE)	ND	11.0	0.50	10	-	110	57-136
Ethylbenzene	ND	10.6	0.50	10	-	106	60-152
Ethyl tert-butyl ether (ETBE)	ND	11.3	0.50	10	-	113	55-137
Freon 113	ND	10.2	0.50	10	-	102	47-138
Hexachlorobutadiene	ND	8.06	0.50	10	-	81	66-160
Hexachloroethane	ND	8.28	0.50	10	-	83	75-130
2-Hexanone	ND	9.25	0.50	10	-	93	70-115
Isopropylbenzene	ND	9.32	0.50	10	-	93	59-156
4-Isopropyl toluene	ND	8.82	0.50	10	-	88	75-138
Methyl-t-butyl ether (MTBE)	ND	11.0	0.50	10	-	110	53-139
Methylene chloride	ND	9.34	0.50	10	-	93	66-127
4-Methyl-2-pentanone (MIBK)	ND	9.25	0.50	10	-	93	42-153
Naphthalene	ND	7.36	0.50	10	-	74	66-127
n-Propyl benzene	ND	8.33	0.50	10	-	83	54-155
Styrene	ND	9.02	0.50	10	-	90	51-152
1,1,1,2-Tetrachloroethane	ND	9.37	0.50	10	-	94	58-159
1,1,2,2-Tetrachloroethane	ND	8.15	0.50	10	-	82	51-150
Tetrachloroethene	ND	9.06	0.50	10	-	91	55-145
Toluene	ND	9.76	0.50	10	-	98	52-137
1,2,3-Trichlorobenzene	ND	7.98	0.50	10	-	80	70-136
1,2,4-Trichlorobenzene	ND	8.15	0.50	10	-	82	74-137
1,1,1-Trichloroethane	ND	10.5	0.50	10	-	105	57-156
1,1,2-Trichloroethane	ND	9.60	0.50	10	-	96	51-150
Trichloroethene	ND	9.63	0.50	10	-	96	43-157
Trichlorofluoromethane	ND	10.3	0.50	10	-	103	50-147
1,2,3-Trichloropropane	ND	8.43	0.50	10	-	84	41-152
1,2,4-Trimethylbenzene	ND	8.91	0.50	10	-	89	57-157
1,3,5-Trimethylbenzene	ND	8.69	0.50	10	-	87	56-159
Vinyl Chloride	ND	10.9	0.50	10	-	109	42-137
Xylenes, Total	ND	27.4	0.50	30	-	91	70-130

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140575
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC16	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140575

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Surrogate Recovery							
Dibromofluoromethane	29.33	30.7		25	117	123	70-130
Toluene-d8	28.77	28.6		25	115	114	70-130
4-BFB	2.185	2.19		2.5	87	88	70-130

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/16/17	**BatchID:**	140633
Date Analyzed:	6/16/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140633 1706675-010BMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	159	10	200	-	80	46-155
tert-Amyl methyl ether (TAME)	ND	9.23	0.50	10	-	92	54-140
Benzene	ND	10.2	0.50	10	-	102	47-158
Bromobenzene	ND	9.75	0.50	10	-	98	50-155
Bromochloromethane	ND	10.5	0.50	10	-	105	48-160
Bromodichloromethane	ND	10.0	0.50	10	-	100	60-156
Bromoform	ND	8.84	0.50	10	-	88	43-149
Bromomethane	ND	9.12	0.50	10	-	91	61-159
2-Butanone (MEK)	ND	33.0	2.0	40	-	83	61-124
t-Butyl alcohol (TBA)	ND	31.0	2.0	40	-	77	42-140
n-Butyl benzene	ND	9.49	0.50	10	-	95	74-138
sec-Butyl benzene	ND	9.84	0.50	10	-	98	72-142
tert-Butyl benzene	ND	9.87	0.50	10	-	99	74-140
Carbon Disulfide	ND	9.80	0.50	10	-	98	64-127
Carbon Tetrachloride	ND	10.9	0.50	10	-	109	61-158
Chlorobenzene	ND	10.2	0.50	10	-	102	43-157
Chloroethane	ND	9.89	0.50	10	-	99	50-127
Chloroform	ND	10.3	0.50	10	-	103	56-154
Chloromethane	ND	8.76	0.50	10	-	88	41-132
2-Chlorotoluene	ND	9.92	0.50	10	-	99	50-155
4-Chlorotoluene	ND	9.72	0.50	10	-	97	53-153
Dibromochloromethane	ND	9.56	0.50	10	-	96	49-156
1,2-Dibromo-3-chloropropane	ND	3.03	0.20	4	-	76	46-149
1,2-Dibromoethane (EDB)	ND	9.16	0.50	10	-	92	44-155
Dibromomethane	ND	9.75	0.50	10	-	97	50-157
1,2-Dichlorobenzene	ND	9.66	0.50	10	-	97	48-156
1,3-Dichlorobenzene	ND	9.87	0.50	10	-	99	49-159
1,4-Dichlorobenzene	ND	9.71	0.50	10	-	97	51-151
Dichlorodifluoromethane	ND	8.44	0.50	10	-	84	61-117
1,1-Dichloroethane	ND	10.5	0.50	10	-	105	53-153
1,2-Dichloroethane (1,2-DCA)	ND	10.2	0.50	10	-	102	66-125
1,1-Dichloroethene	ND	9.97	0.50	10	-	100	47-149
cis-1,2-Dichloroethene	ND	10.3	0.50	10	-	103	54-155
trans-1,2-Dichloroethene	ND	10.3	0.50	10	-	103	46-151
1,2-Dichloropropane	ND	10.4	0.50	10	-	104	54-153
1,3-Dichloropropane	ND	9.35	0.50	10	-	94	49-150
2,2-Dichloropropane	ND	10.6	0.50	10	-	107	74-147

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/16/17	**BatchID:**	140633
Date Analyzed:	6/16/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140633 1706675-010BMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	10.6	0.50	10	-	106	54-150
cis-1,3-Dichloropropene	ND	9.81	0.50	10	-	98	55-159
trans-1,3-Dichloropropene	ND	9.48	0.50	10	-	95	74-131
Diisopropyl ether (DIPE)	ND	9.95	0.50	10	-	99	57-136
Ethylbenzene	ND	9.81	0.50	10	-	98	60-152
Ethyl tert-butyl ether (ETBE)	ND	9.68	0.50	10	-	97	55-137
Freon 113	ND	10.6	0.50	10	-	106	47-138
Hexachlorobutadiene	ND	10.2	0.50	10	-	102	66-160
Hexachloroethane	ND	9.39	0.50	10	-	94	75-130
2-Hexanone	ND	7.65	0.50	10	-	77	70-115
Isopropylbenzene	ND	9.72	0.50	10	-	97	59-156
4-Isopropyl toluene	ND	9.61	0.50	10	-	96	75-138
Methyl-t-butyl ether (MTBE)	ND	9.16	0.50	10	-	92	53-139
Methylene chloride	ND	10.3	0.50	10	-	103	66-127
4-Methyl-2-pentanone (MIBK)	ND	7.94	0.50	10	-	79	42-153
Naphthalene	ND	7.89	0.50	10	-	79	66-127
n-Propyl benzene	ND	10.4	0.50	10	-	104	54-155
Styrene	ND	9.56	0.50	10	-	96	51-152
1,1,1,2-Tetrachloroethane	ND	10.3	0.50	10	-	103	58-159
1,1,2,2-Tetrachloroethane	ND	7.70	0.50	10	-	77	51-150
Tetrachloroethene	ND	10.3	0.50	10	-	103	55-145
Toluene	ND	9.54	0.50	10	-	95	52-137
1,2,3-Trichlorobenzene	ND	10.0	0.50	10	-	100	70-136
1,2,4-Trichlorobenzene	ND	9.70	0.50	10	-	97	74-137
1,1,1-Trichloroethane	ND	10.4	0.50	10	-	104	57-156
1,1,2-Trichloroethane	ND	8.98	0.50	10	-	90	51-150
Trichloroethene	ND	10.8	0.50	10	-	109	43-157
Trichlorofluoromethane	ND	10.6	0.50	10	-	106	50-147
1,2,3-Trichloropropane	ND	8.21	0.50	10	-	82	41-152
1,2,4-Trimethylbenzene	ND	9.52	0.50	10	-	95	57-157
1,3,5-Trimethylbenzene	ND	9.53	0.50	10	-	95	56-159
Vinyl Chloride	ND	10.0	0.50	10	-	101	42-137
Xylenes, Total	ND	29.6	0.50	30	-	99	70-130

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/16/17	**BatchID:**	140633
Date Analyzed:	6/16/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140633 1706675-010BMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Surrogate Recovery							
Dibromofluoromethane	29.15	28.8		25	117	115	70-130
Toluene-d8	25.53	25.8		25	102	103	70-130
4-BFB	2.738	2.89		2.5	110	116	70-130

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/16/17	**BatchID:**	140633
Date Analyzed:	6/16/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140633 1706675-010BMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acetone	201	209	200	ND	99	102	66-158	3.70	20
tert-Amyl methyl ether (TAME)	9.46	10.9	10	ND	95	109	69-139	14.5	20
Benzene	8.80	10.3	10	ND	88	103	69-141	15.7	20
Bromobenzene	8.76	9.97	10	ND	88	100	70-127	13.0	20
Bromochloromethane	9.78	11.0	10	ND	98	110	72-142	11.9	20
Bromodichloromethane	9.04	10.4	10	ND	90	104	75-141	13.6	20
Bromoform	9.49	10.3	10	ND	95	103	72-126	8.28	20
Bromomethane	6.82	8.40	10	ND	68	84	50-160	20.8,F1	20
2-Butanone (MEK)	42.3	44.7	40	ND	106	112	69-154	5.57	20
t-Butyl alcohol (TBA)	38.5	42.4	40	ND	96	106	41-152	9.84	20
n-Butyl benzene	8.07	9.43	10	ND	81	94	70-134	15.6	20
sec-Butyl benzene	8.12	9.54	10	ND	81	95	73-131	16.2	20
tert-Butyl benzene	8.10	9.53	10	ND	81	95	71-125	16.2	20
Carbon Disulfide	8.13	9.65	10	ND	81	96	63-158	17.1	20
Carbon Tetrachloride	8.73	10.5	10	ND	87	105	72-143	18.4	20
Chlorobenzene	9.10	10.4	10	ND	91	104	77-120	13.5	20
Chloroethane	7.61	9.04	10	ND	76	90	54-131	17.2	20
Chloroform	9.09	10.5	10	ND	89	103	75-139	14.3	20
Chloromethane	6.08	7.32	10	ND	61	73	40-130	18.6	20
2-Chlorotoluene	8.48	9.74	10	ND	85	97	70-122	13.8	20
4-Chlorotoluene	8.48	9.76	10	ND	85	98	71-123	14.1	20
Dibromochloromethane	9.41	10.5	10	ND	94	105	78-132	11.1	20
1,2-Dibromo-3-chloropropane	3.62	3.92	4	ND	90	98	59-143	8.01	20
1,2-Dibromoethane (EDB)	9.89	10.8	10	ND	99	108	76-135	8.70	20
Dibromomethane	9.77	10.9	10	ND	98	109	78-135	11.2	20
1,2-Dichlorobenzene	9.00	10.3	10	ND	90	103	68-133	13.5	20
1,3-Dichlorobenzene	8.82	10.1	10	ND	88	101	78-122	13.5	20
1,4-Dichlorobenzene	8.83	10.1	10	ND	88	101	80-117	13.4	20
Dichlorodifluoromethane	6.22	7.35	10	ND	62	73	38-125	16.7	20
1,1-Dichloroethane	9.08	10.6	10	ND	91	106	65-152	15.4	20
1,2-Dichloroethane (1,2-DCA)	10.1	11.3	10	ND	101	113	73-139	11.1	20
1,1-Dichloroethene	8.18	9.78	10	ND	82	98	59-140	17.8	20
cis-1,2-Dichloroethene	9.13	10.6	10	ND	91	106	50-154	14.8	20
trans-1,2-Dichloroethene	8.64	10.2	10	ND	86	102	69-136	16.8	20
1,2-Dichloropropane	9.41	10.8	10	ND	94	108	78-132	14.1	20
1,3-Dichloropropane	9.74	10.8	10	ND	97	108	77-131	10.5	20
2,2-Dichloropropane	8.84	10.3	10	ND	88	103	61-160	15.4	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/16/17	**BatchID:**	140633
Date Analyzed:	6/16/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140633 1706675-010BMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,1-Dichloropropene	8.74	10.4	10	ND	87	104	70-137	17.7	20
cis-1,3-Dichloropropene	9.20	10.4	10	ND	92	104	78-135	12.4	20
trans-1,3-Dichloropropene	9.44	10.5	10	ND	94	105	78-131	10.3	20
Diisopropyl ether (DIPE)	9.56	10.8	10	ND	96	108	72-140	12.4	20
Ethylbenzene	8.49	9.83	10	ND	85	98	73-128	14.6	20
Ethyl tert-butyl ether (ETBE)	9.66	10.8	10	ND	97	108	71-140	11.1	20
Freon 113	8.83	10.6	10	ND	88	106	60-136	17.8	20
Hexachlorobutadiene	8.41	10.2	10	ND	84	102	56-132	19.2	20
Hexachloroethane	7.51	9.06	10	ND	75	91	61-129	18.7	20
2-Hexanone	10.2	10.8	10	ND	102	108	57-149	5.62	20
Isopropylbenzene	7.93	9.22	10	ND	79	92	69-130	15.1	20
4-Isopropyl toluene	8.12	9.50	10	ND	81	95	75-124	15.7	20
Methyl-t-butyl ether (MTBE)	9.84	10.8	10	ND	98	109	73-139	9.76	20
Methylene chloride	9.29	10.7	10	ND	93	107	74-128	14.1	20
4-Methyl-2-pentanone (MIBK)	10.2	10.8	10	ND	102	108	61-145	6.14	20
Naphthalene	9.63	10.5	10	ND	96	105	54-148	8.49	20
n-Propyl benzene	8.34	9.85	10	ND	83	99	71-121	16.6	20
Styrene	8.62	9.80	10	ND	86	98	56-140	12.8	20
1,1,1,2-Tetrachloroethane	9.31	10.6	10	ND	93	106	74-127	13.0	20
1,1,2,2-Tetrachloroethane	8.86	9.70	10	ND	89	97	63-142	9.04	20
Tetrachloroethene	8.72	10.4	10	ND	87	104	71-125	17.8	20
Toluene	8.24	9.64	10	ND	82	96	71-128	15.6	20
1,2,3-Trichlorobenzene	11.1	12.5	10	ND	111	125	59-135	11.3	20
1,2,4-Trichlorobenzene	9.50	11.0	10	ND	95	110	60-132	14.4	20
1,1,1-Trichloroethane	8.64	10.4	10	ND	86	103	75-138	18.0	20
1,1,2-Trichloroethane	9.41	10.4	10	ND	94	104	78-129	10.0	20
Trichloroethene	9.00	10.7	10	ND	90	107	64-132	17.4	20
Trichlorofluoromethane	8.67	10.4	10	ND	87	104	53-159	17.8	20
1,2,3-Trichloropropane	9.66	10.2	10	ND	97	102	68-130	5.70	20
1,2,4-Trimethylbenzene	8.12	9.45	10	ND	81	95	76-124	15.1	20
1,3,5-Trimethylbenzene	8.07	9.32	10	ND	81	93	77-124	14.4	20
Vinyl Chloride	7.28	8.77	10	ND	73	88	43-142	18.6	20
Xylenes, Total	25.6	29.3	30	ND	85	98	70-130	13.8	20

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/16/17	**BatchID:**	140633
Date Analyzed:	6/16/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140633 1706675-010BMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Surrogate Recovery									
Dibromofluoromethane	28.7	28.8	25		115	115	73-131	0	20
Toluene-d8	25.5	25.5	25		102	102	72-117	0	20
4-BFB	2.82	2.78	2.5		113	111	74-116	1.52	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/15/17	**BatchID:**	140583
Date Analyzed:	6/15/17	**Extraction Method:**	SW5030B
Instrument:	GC3	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140583 1706663-010AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	46.8	40	60	-	78	78-116
MTBE	ND	10.7	5.0	10	-	107	72-122
Benzene	ND	9.16	0.50	10	-	92	81-123
Toluene	ND	9.75	0.50	10	-	97	83-129
Ethylbenzene	ND	10.2	0.50	10	-	102	88-126
Xylenes	ND	32.2	1.5	30	-	107	87-131
Surrogate Recovery							
aaa-TFT	9.968	9.79		10	100	98	89-116

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	48.9	49.8	60	ND	81	83	63-133	1.96	20
MTBE	11.3	10.7	10	ND	113	107	69-122	5.90	20
Benzene	9.64	9.14	10	ND	95	90	84-125	5.36	20
Toluene	9.96	9.39	10	ND	100	94	87-131	5.82	20
Ethylbenzene	10.6	10.1	10	ND	106	101	92-126	4.72	20
Xylenes	33.4	31.7	30	ND	111	106	88-132	5.22	20
Surrogate Recovery									
aaa-TFT	9.72	9.49	10		97	95	90-117	2.39	20

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NELAP 4033ORELAP

QA/QC Officer

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706675
Date Prepared:	6/19/17	**BatchID:**	140725
Date Analyzed:	6/19/17	**Extraction Method:**	SW5030B
Instrument:	GC7	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland, CA	**Sample ID:**	MB/LCS-140725 1706640-026AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	50.3	40	60	-	84	78-116
MTBE	ND	11.1	5.0	10	-	111	72-122
Benzene	ND	9.67	0.50	10	-	97	81-123
Toluene	ND	11.2	0.50	10	-	112	83-129
Ethylbenzene	ND	10.8	0.50	10	-	108	88-126
Xylenes	ND	33.3	1.5	30	-	111	87-131
Surrogate Recovery							
aaa-TFT	9.442	9.98		10	94	100	89-116

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	53.2	52.7	60	ND	89	88	63-133	1.03	20
MTBE	12.2	11.5	10	ND	122	115	69-122	5.76	20
Benzene	10.7	10.2	10	ND	106	101	84-125	4.96	20
Toluene	12.4	11.8	10	ND	124	118	87-131	5.70	20
Ethylbenzene	11.4	10.8	10	ND	113	108	92-126	5.03	20
Xylenes	31.7	30.4	30	ND	106	101	88-132	4.01	20
Surrogate Recovery									
aaa-TFT	10.8	10.6	10		108	106	90-117	2.68	20

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706675 **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Jonathan Sanders
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 283-6000 FAX: (925) 944-2895

Email: jsanders@aeiconsultants.com
cc/3rd Party:
PO: 134736
ProjectNo: 281939; Zimmerman; 3442 Adeline St. Oakland, CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 5 days;

Date Received: **06/14/2017**
Date Logged: **06/14/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1706675-001	MW-1	Water	6/13/2017 13:57	☐	B	A	A									
1706675-002	MW-2	Water	6/13/2017 12:37	☐	B	A										
1706675-003	MW-3	Water	6/13/2017 12:01	☐	B	A										
1706675-004	MW-4	Water	6/13/2017 10:51	☐	B	A										
1706675-005	MW-5	Water	6/13/2017 14:40	☐	B	A										
1706675-006	MW-6	Water	6/13/2017 10:05	☐	B	A										
1706675-007	MW-7	Water	6/13/2017 16:21	☐	B	A										
1706675-008	IW-1	Water	6/13/2017 15:37	☐	B	A										
1706675-009	BF-1	Water	6/13/2017 13:29	☐	B	A										
1706675-010	BF-5	Water	6/13/2017 11:28	☐	B	A										

Test Legend:

1	8260B_W	2	G-MBTEX_W	3	PREDF REPORT	4	
5		6		7		8	
9		10		11		12	

Prepared by: Kena Ponce

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: Jonathan Sanders
Contact's Email: jsanders@aeiconsultants.com

Project: 281939; Zimmerman; 3442 Adeline St. Oakland, CA
Comments:

Work Order: 1706675
QC Level: LEVEL 2
Date Logged: 6/14/2017

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706675-001A	MW-1	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 13:57	5 days	Trace	☐	
1706675-001B	MW-1	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 13:57	5 days	Trace	☐	
1706675-002A	MW-2	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 12:37	5 days	Trace	☐	
1706675-002B	MW-2	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 12:37	5 days	Trace	☐	
1706675-003A	MW-3	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 12:01	5 days	Trace	☐	
1706675-003B	MW-3	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 12:01	5 days	Trace	☐	
1706675-004A	MW-4	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 10:51	5 days	Trace	☐	
1706675-004B	MW-4	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 10:51	5 days	Trace	☐	
1706675-005A	MW-5	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 14:40	5 days	Trace	☐	
1706675-005B	MW-5	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 14:40	5 days	Trace	☐	
1706675-006A	MW-6	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 10:05	5 days	Trace	☐	
1706675-006B	MW-6	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 10:05	5 days	Trace	☐	
1706675-007A	MW-7	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 16:21	5 days	Trace	☐	
1706675-007B	MW-7	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 16:21	5 days	Trace	☐	
1706675-008A	IW-1	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 15:37	5 days	Trace	☐	
1706675-008B	IW-1	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 15:37	5 days	Trace	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: Jonathan Sanders
Contact's Email: jsanders@aeiconsultants.com

Project: 281939; Zimmerman; 3442 Adeline St. Oakland, CA
Comments:

Work Order: 1706675
QC Level: LEVEL 2
Date Logged: 6/14/2017

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706675-009A	BF-1	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 13:29	5 days	Trace	☐	
1706675-009B	BF-1	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 13:29	5 days	Trace	☐	
1706675-010A	BF-5	Water	SW8021B/8015Bm (G/MBTEX)	2	VOA w/ HCl	☐	6/13/2017 11:28	5 days	Trace	☐	
1706675-010B	BF-5	Water	SW8260B (VOCs)	2	VOA w/ HCl	☐	6/13/2017 11:28	5 days	Trace	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

MAI Work Order # 1706675

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ● | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: PDF | GeoTracker EDF ● | EDD | Write On (DW) | EQuIS

Report To: Jonathan Sanders Bill To: AEI
Company: AEI
Email: jsanders@aeiconsultants.com
Alt Email: nbricker@aeiconsultants.com Tele: 707-484-6223
Project Name: Zimmerman Project #281939
Project Location: 3442 Adeline Street, Oakland, California PO # 134736
Sampler Signature:

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis
MW-1	6/13/17	1357	4	GW	HCl	●								●						
MW-2	6/13/17	1237	4	GW	HCl	●								●						
MW-3	6/13/17	1201	4	GW	HCl	●								●						
MW-4	6/13/17	1051	4	GW	HCl	●								●						
MW-5	6/13/17	1237 (1440)	4	GW	HCl	●								●						
MW-6 *	6/13/17	1005	4	GW	HCl	●								●						
MW-7	6/13/17	1621	4	GW	HCl	●								●						
IW-1	6/13/17	1537	4	GW	HCl	●								●						
BF-1	6/13/17	1324	4	GW	HCl	●								●						
BF-5	6/13/17	1128		GW		●								●						

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	6/13/17	1848		6/13	1848
	6/14	1520		6/14/17	1520

Comments / Instructions
* Sample was labled Mw6-GW But Time/location/date MATCH

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 5.4 °C Initials TP

Page 1 of 1

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Sample Receipt Checklist

Client Name:	**AEI Consultants**	Date and Time Received	**6/14/2017 15:20**
Project Name:	**281939; Zimmerman; 3442 Adeline St. Oakland, CA**	Date Logged:	**6/14/2017**
		Received by:	Maria Venegas
WorkOrder №:	**1706675** Matrix: Water	Logged by:	Kena Ponce
Carrier:	Client Drop-In		

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA ☐
Sample/Temp Blank temperature	Temp: 5.4°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☑	No	☐	NA ☐
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
Samples Received on Ice?	Yes	☑	No	☐	
	(Ice Type: WET ICE)				

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes	☐	No	☐	NA ☑

Comments:

McCampbell Analytical, Inc.
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Analytical Report

WorkOrder: 1706676

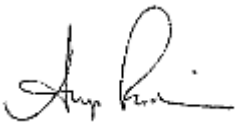
Report Created for: AEI Consultants

2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597

Project Contact: Jonathan Sanders
Project P.O.: 134930
Project Name: 281939; Zimmerman, 3442 Adeline St. Oakland,CA

Project Received: 06/14/2017

Analytical Report reviewed & approved for release on 06/22/2017 by:



Angela Rydelius,
Laboratory Manager

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 281939; Zimmerman, 3442 Adeline St. Oakland,CA
WorkOrder: 1706676

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 281939; Zimmerman, 3442 Adeline St. Oakland,CA
WorkOrder: 1706676

Analytical Qualifiers

S	Surrogate spike recovery outside accepted recovery limits
b1	Aqueous sample that contains greater than ~1 vol. % sediment
c4	Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d1	Weakly modified or unmodified gasoline is significant
e2	Diesel range compounds are significant; no recognizable pattern
e4/e11	Gasoline range compounds are significant.; and/or Pattern resembles stoddard solvent/mineral spirit
e4	Gasoline range compounds are significant.
e7	Oil range compounds are significant
e11	Pattern resembles stoddard solvent/mineral spirit

Quality Control Qualifiers

F2	LCS/LCSD recovery and/or RPD is out of acceptance criteria.

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/17/17-6/20/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-4	**1706676-032B**	**Water**	**06/13/2017 16:56**	**GC18**	**140646**

Analytes	Result	RL	DF	Date Analyzed
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/17/2017 22:08
Benzene	**17**	0.50	1	06/17/2017 22:08
t-Butyl alcohol (TBA)	**11**	2.0	1	06/17/2017 22:08
Diisopropyl ether (DIPE)	ND	0.50	1	06/17/2017 22:08
Ethylbenzene	**4.0**	0.50	1	06/17/2017 22:08
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/17/2017 22:08
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/17/2017 22:08
Toluene	**1.1**	0.50	1	06/17/2017 22:08
Xylenes, Total	**1.7**	0.50	1	06/17/2017 22:08

Surrogates	REC (%)	Limits	
Dibromofluoromethane	114	70-130	06/17/2017 22:08
Toluene-d8	103	70-130	06/17/2017 22:08

Analyst(s): HK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-5	**1706676-033B**	**Water**	**06/13/2017 16:11**	**GC18**	**140646**

Analytes	Result	RL	DF	Date Analyzed
tert-Amyl methyl ether (TAME)	ND	5.0	10	06/17/2017 22:48
Benzene	**91**	5.0	10	06/17/2017 22:48
t-Butyl alcohol (TBA)	ND	20	10	06/17/2017 22:48
Diisopropyl ether (DIPE)	ND	5.0	10	06/17/2017 22:48
Ethylbenzene	**93**	5.0	10	06/17/2017 22:48
Ethyl tert-butyl ether (ETBE)	ND	5.0	10	06/17/2017 22:48
Methyl-t-butyl ether (MTBE)	ND	5.0	10	06/17/2017 22:48
Toluene	ND	5.0	10	06/17/2017 22:48
Xylenes, Total	**25**	5.0	10	06/17/2017 22:48

Surrogates	REC (%)	Limits	
Dibromofluoromethane	117	70-130	06/17/2017 22:48
Toluene-d8	101	70-130	06/17/2017 22:48

Analyst(s): HK Analytical Comments: b1

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/17/17-6/20/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-17	**1706676-034B**	**Water**	**06/13/2017 13:31**	**GC18**	**140646**

Analytes	Result	RL	DF	Date Analyzed
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/17/2017 23:27
Benzene	**6.0**	0.50	1	06/17/2017 23:27
t-Butyl alcohol (TBA)	ND	2.0	1	06/17/2017 23:27
Diisopropyl ether (DIPE)	ND	0.50	1	06/17/2017 23:27
Ethylbenzene	**18**	0.50	1	06/17/2017 23:27
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/17/2017 23:27
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/17/2017 23:27
Toluene	ND	0.50	1	06/17/2017 23:27
Xylenes, Total	**1.4**	0.50	1	06/17/2017 23:27

Surrogates	REC (%)	Limits	
Dibromofluoromethane	91	70-130	06/17/2017 23:27
Toluene-d8	112	70-130	06/17/2017 23:27

Analyst(s): HK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-18	**1706676-035B**	**Water**	**06/13/2017 10:26**	**GC18**	**140646**

Analytes	Result	RL	DF	Date Analyzed
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/20/2017 02:56
Benzene	ND	0.50	1	06/20/2017 02:56
t-Butyl alcohol (TBA)	ND	2.0	1	06/20/2017 02:56
Diisopropyl ether (DIPE)	ND	0.50	1	06/20/2017 02:56
Ethylbenzene	**3.0**	0.50	1	06/20/2017 02:56
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/20/2017 02:56
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/20/2017 02:56
Toluene	ND	0.50	1	06/20/2017 02:56
Xylenes, Total	**0.92**	0.50	1	06/20/2017 02:56

Surrogates	REC (%)	Limits	
Dibromofluoromethane	115	70-130	06/20/2017 02:56
Toluene-d8	99	70-130	06/20/2017 02:56

Analyst(s): KF Analytical Comments: b1

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/17/17-6/20/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-19	**1706676-036B**	**Water**	**06/13/2017 10:59**	**GC18**	**140646**

Analytes	Result	RL	DF	Date Analyzed
tert-Amyl methyl ether (TAME)	ND	5.0	10	06/18/2017 00:46
Benzene	**83**	5.0	10	06/18/2017 00:46
t-Butyl alcohol (TBA)	ND	20	10	06/18/2017 00:46
Diisopropyl ether (DIPE)	ND	5.0	10	06/18/2017 00:46
Ethylbenzene	**40**	5.0	10	06/18/2017 00:46
Ethyl tert-butyl ether (ETBE)	ND	5.0	10	06/18/2017 00:46
Methyl-t-butyl ether (MTBE)	ND	5.0	10	06/18/2017 00:46
Toluene	ND	5.0	10	06/18/2017 00:46
Xylenes, Total	ND	5.0	10	06/18/2017 00:46

Surrogates	REC (%)	Limits	
Dibromofluoromethane	109	70-130	06/18/2017 00:46
Toluene-d8	102	70-130	06/18/2017 00:46

Analyst(s): HK Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-20	**1706676-037B**	**Water**	**06/13/2017 09:34**	**GC18**	**140718**

Analytes	Result	RL	DF	Date Analyzed
tert-Amyl methyl ether (TAME)	ND	0.50	1	06/19/2017 12:01
Benzene	**5.7**	0.50	1	06/19/2017 12:01
t-Butyl alcohol (TBA)	**13**	2.0	1	06/19/2017 12:01
Diisopropyl ether (DIPE)	ND	0.50	1	06/19/2017 12:01
Ethylbenzene	**0.72**	0.50	1	06/19/2017 12:01
Ethyl tert-butyl ether (ETBE)	ND	0.50	1	06/19/2017 12:01
Methyl-t-butyl ether (MTBE)	ND	0.50	1	06/19/2017 12:01
Toluene	**5.6**	0.50	1	06/19/2017 12:01
Xylenes, Total	**1.1**	0.50	1	06/19/2017 12:01

Surrogates	REC (%)	Limits	
Dibromofluoromethane	114	70-130	06/19/2017 12:01
Toluene-d8	101	70-130	06/19/2017 12:01

Analyst(s): KF Analytical Comments: b1

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/17/17-6/20/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21	**1706676-038B**	**Water**	**06/13/2017 13:23**	**GC18**	**140718**

Analytes	Result	RL	DF	Date Analyzed
tert-Amyl methyl ether (TAME)	ND	25	50	06/20/2017 02:16
Benzene	**600**	25	50	06/20/2017 02:16
t-Butyl alcohol (TBA)	ND	100	50	06/20/2017 02:16
Diisopropyl ether (DIPE)	ND	25	50	06/20/2017 02:16
Ethylbenzene	**150**	25	50	06/20/2017 02:16
Ethyl tert-butyl ether (ETBE)	ND	25	50	06/20/2017 02:16
Methyl-t-butyl ether (MTBE)	ND	25	50	06/20/2017 02:16
Toluene	ND	25	50	06/20/2017 02:16
Xylenes, Total	ND	25	50	06/20/2017 02:16

Surrogates	REC (%)	Limits	
Dibromofluoromethane	114	70-130	06/20/2017 02:16
Toluene-d8	99	70-130	06/20/2017 02:16

Analyst(s): KF Analytical Comments: b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW3510C
Date Prepared:	6/15/17	**Analytical Method:**	SW8270C-SIM
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-4	1706676-032C	Water	06/13/2017 16:56	GC35	140519

Analytes	Result	RL	DF	Date Analyzed
Naphthalene	**8.4**	0.50	1	06/20/2017 20:41

Surrogates	REC (%)	Limits	
1-Fluoronaphthalene	100	30-130	06/20/2017 20:41

Analyst(s): REB Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-5	1706676-033C	Water	06/13/2017 16:11	GC35	140519

Analytes	Result	RL	DF	Date Analyzed
Naphthalene	**130**	2.5	5	06/21/2017 17:39

Surrogates	REC (%)	Qualifiers	Limits	
1-Fluoronaphthalene	213	S	30-130	06/21/2017 17:39

Analyst(s): REB Analytical Comments: c4,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-17	1706676-034C	Water	06/13/2017 13:31	GC35	140519

Analytes	Result	RL	DF	Date Analyzed
Naphthalene	**2.6**	0.50	1	06/20/2017 21:32

Surrogates	REC (%)	Limits	
1-Fluoronaphthalene	100	30-130	06/20/2017 21:32

Analyst(s): REB Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-18	1706676-035C	Water	06/13/2017 10:26	GC35	140519

Analytes	Result	RL	DF	Date Analyzed
Naphthalene	**1.6**	0.50	1	06/20/2017 21:57

Surrogates	REC (%)	Limits	
1-Fluoronaphthalene	99	30-130	06/20/2017 21:57

Analyst(s): REB Analytical Comments: b1

(Cont.)

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW3510C
Date Prepared:	6/15/17	**Analytical Method:**	SW8270C-SIM
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Polynuclear Aromatic Hydrocarbons (PAHs / PNAs) using SIM Mode

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-19	**1706676-036C**	**Water**	**06/13/2017 10:59**	**GC35**	**140519**

Analytes	Result	RL	DF	Date Analyzed
Naphthalene	**54**	1.0	2	06/21/2017 18:05

Surrogates	REC (%)	Qualifiers	Limits	
1-Fluoronaphthalene	144	S	30-130	06/21/2017 18:05

Analyst(s): REB Analytical Comments: c4,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-20	**1706676-037C**	**Water**	**06/13/2017 09:34**	**GC35**	**140519**

Analytes	Result	RL	DF	Date Analyzed
Naphthalene	ND	0.50	1	06/20/2017 22:48

Surrogates	REC (%)	Limits	
1-Fluoronaphthalene	99	30-130	06/20/2017 22:48

Analyst(s): REB Analytical Comments: b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21	**1706676-038C**	**Water**	**06/13/2017 13:23**	**GC35**	**140519**

Analytes	Result	RL	DF	Date Analyzed
Naphthalene	**620**	25	50	06/21/2017 18:32

Surrogates	REC (%)	Qualifiers	Limits	
1-Fluoronaphthalene	596	S	30-130	06/21/2017 18:32

Analyst(s): REB Analytical Comments: c4,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/19/17-6/20/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-4	**1706676-032A**	**Water**	**06/13/2017 16:56**	**GC12**	**140769**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**2200**	50	1	06/19/2017 11:03
MTBE	---	5.0	1	06/19/2017 11:03
Benzene	---	0.50	1	06/19/2017 11:03
Toluene	---	0.50	1	06/19/2017 11:03
Ethylbenzene	---	0.50	1	06/19/2017 11:03
Xylenes	---	1.5	1	06/19/2017 11:03

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	266	S	89-115	06/19/2017 11:03

Analyst(s): LT Analytical Comments: d1,c4,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-5	**1706676-033A**	**Water**	**06/13/2017 16:11**	**GC12**	**140769**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**5000**	250	5	06/19/2017 12:40
MTBE	---	25	5	06/19/2017 12:40
Benzene	---	2.5	5	06/19/2017 12:40
Toluene	---	2.5	5	06/19/2017 12:40
Ethylbenzene	---	2.5	5	06/19/2017 12:40
Xylenes	---	7.5	5	06/19/2017 12:40

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	129	S	89-115	06/19/2017 12:40

Analyst(s): LT Analytical Comments: d1,c4,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/19/17-6/20/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-17	**1706676-034A**	**Water**	**06/13/2017 13:31**	**GC12**	**140769**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**4100**	500	10	06/20/2017 19:07
MTBE	**---**	50	10	06/20/2017 19:07
Benzene	**---**	5.0	10	06/20/2017 19:07
Toluene	**---**	5.0	10	06/20/2017 19:07
Ethylbenzene	**---**	5.0	10	06/20/2017 19:07
Xylenes	**---**	15	10	06/20/2017 19:07

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	131	S	89-115	06/20/2017 19:07

Analyst(s): HD Analytical Comments: d1,c4,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-18	**1706676-035A**	**Water**	**06/13/2017 10:26**	**GC12**	**140769**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**160**	50	1	06/20/2017 19:38
MTBE	**---**	5.0	1	06/20/2017 19:38
Benzene	**---**	0.50	1	06/20/2017 19:38
Toluene	**---**	0.50	1	06/20/2017 19:38
Ethylbenzene	**---**	0.50	1	06/20/2017 19:38
Xylenes	**---**	1.5	1	06/20/2017 19:38

Surrogates	REC (%)	Limits	
aaa-TFT	109	89-115	06/20/2017 19:38

Analyst(s): HD Analytical Comments: d1,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/19/17-6/20/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-19	**1706676-036A**	**Water**	**06/13/2017 10:59**	**GC12**	**140769**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**9500**	250	5	06/19/2017 14:19
MTBE	**---**	25	5	06/19/2017 14:19
Benzene	**---**	2.5	5	06/19/2017 14:19
Toluene	**---**	2.5	5	06/19/2017 14:19
Ethylbenzene	**---**	2.5	5	06/19/2017 14:19
Xylenes	**---**	7.5	5	06/19/2017 14:19

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	177	S	89-115	06/19/2017 14:19

Analyst(s): LT Analytical Comments: d1,c4,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-20	**1706676-037A**	**Water**	**06/13/2017 09:34**	**GC12**	**140769**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**200**	50	1	06/20/2017 20:08
MTBE	**---**	5.0	1	06/20/2017 20:08
Benzene	**---**	0.50	1	06/20/2017 20:08
Toluene	**---**	0.50	1	06/20/2017 20:08
Ethylbenzene	**---**	0.50	1	06/20/2017 20:08
Xylenes	**---**	1.5	1	06/20/2017 20:08

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	127	S	89-115	06/20/2017 20:08

Analyst(s): HD Analytical Comments: d1,c4,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/19/17-6/20/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21	**1706676-038A**	**Water**	**06/13/2017 13:23**	**GC12**	**140769**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**29,000**	500	10	06/19/2017 15:27
MTBE	**---**	50	10	06/19/2017 15:27
Benzene	**---**	5.0	10	06/19/2017 15:27
Toluene	**---**	5.0	10	06/19/2017 15:27
Ethylbenzene	**---**	5.0	10	06/19/2017 15:27
Xylenes	**---**	15	10	06/19/2017 15:27

Surrogates	REC (%)	Qualifiers	Limits	
aaa-TFT	215	S	89-115	06/19/2017 15:27

Analyst(s): LT Analytical Comments: d1,c4,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW3510C
Date Prepared:	6/14/17	**Analytical Method:**	SW8015B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-4	**1706676-032A**	**Water**	**06/13/2017 16:56**	**GC11B**	**140451**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**710**	50	1	06/16/2017 19:50
TPH-Motor Oil (C18-C36)	ND	250	1	06/16/2017 19:50

Surrogates	REC (%)	Limits	
C9	103	66-138	06/16/2017 19:50

Analyst(s): TK Analytical Comments: e4/e11,e2,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-5	**1706676-033A**	**Water**	**06/13/2017 16:11**	**GC11B**	**140451**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**4400**	50	1	06/17/2017 03:44
TPH-Motor Oil (C18-C36)	**420**	250	1	06/17/2017 03:44

Surrogates	REC (%)	Limits	
C9	105	66-138	06/17/2017 03:44

Analyst(s): TK Analytical Comments: e11,e7,e2,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-17	**1706676-034A**	**Water**	**06/13/2017 13:31**	**GC11B**	**140451**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**1400**	50	1	06/16/2017 21:11
TPH-Motor Oil (C18-C36)	ND	250	1	06/16/2017 21:11

Surrogates	REC (%)	Limits	
C9	119	66-138	06/16/2017 21:11

Analyst(s): TK Analytical Comments: e4,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW3510C
Date Prepared:	6/14/17	**Analytical Method:**	SW8015B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-18	1706676-035A	Water	06/13/2017 10:26	GC11B	140451

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**260**	50	1	06/16/2017 22:30
TPH-Motor Oil (C18-C36)	ND	250	1	06/16/2017 22:30

Surrogates	REC (%)	Limits	
C9	105	66-138	06/16/2017 22:30

Analyst(s): TK Analytical Comments: e4,e2,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-19	1706676-036A	Water	06/13/2017 10:59	GC11B	140451

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**2200**	50	1	06/16/2017 23:49
TPH-Motor Oil (C18-C36)	ND	250	1	06/16/2017 23:49

Surrogates	REC (%)	Limits	
C9	105	66-138	06/16/2017 23:49

Analyst(s): TK Analytical Comments: e11,b1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-20	1706676-037A	Water	06/13/2017 09:34	GC11B	140451

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**65**	50	1	06/17/2017 01:07
TPH-Motor Oil (C18-C36)	ND	250	1	06/17/2017 01:07

Surrogates	REC (%)	Limits	
C9	104	66-138	06/17/2017 01:07

Analyst(s): TK Analytical Comments: e4,b1

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW3510C
Date Prepared:	6/14/17	**Analytical Method:**	SW8015B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	µg/L

Total Extractable Petroleum Hydrocarbons w/out SG Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21	**1706676-038A**	**Water**	**06/13/2017 13:23**	**GC11B**	**140451**

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**24,000**	50	1	06/17/2017 02:26
TPH-Motor Oil (C18-C36)	ND	250	1	06/17/2017 02:26

Surrogates	REC (%)	Limits	
C26	94	59-139	06/17/2017 02:26

Analyst(s): TK Analytical Comments: e4,b1

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/17/17	**BatchID:**	140646
Date Analyzed:	6/17/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS/LCSD-140646

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
tert-Amyl methyl ether (TAME)	ND	0.50	-	-	-
Benzene	ND	0.50	-	-	-
t-Butyl alcohol (TBA)	ND	2.0	-	-	-
Diisopropyl ether (DIPE)	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
Xylenes, Total	ND	0.50	-	-	-
Surrogate Recovery					
Dibromofluoromethane	28.57		25	114	70-130
Toluene-d8	25.47		25	102	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	8.96	9.79	10	90	98	54-140	8.85	20
Benzene	9.29	9.47	10	93	95	47-158	1.98	20
t-Butyl alcohol (TBA)	33.9	35.2	40	85	88	42-140	3.80	20
Diisopropyl ether (DIPE)	9.62	9.87	10	96	99	57-136	2.65	20
Ethylbenzene	9.02	9.14	10	90	91	60-152	1.35	20
Ethyl tert-butyl ether (ETBE)	9.44	9.80	10	94	98	55-137	3.72	20
Methyl-t-butyl ether (MTBE)	9.25	9.71	10	92	97	53-139	4.94	20
Toluene	8.65	8.82	10	87	88	52-137	1.90	20
Surrogate Recovery								
Dibromofluoromethane	28.6	28.8	25	115	115	70-130	0	20
Toluene-d8	25.4	25.5	25	102	102	70-130	0	20

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QA/QC Officer

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/19/17	**BatchID:**	140718
Date Analyzed:	6/19/17	**Extraction Method:**	SW5030B
Instrument:	GC18	**Analytical Method:**	SW8260B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS/LCSD-140718

QC Summary Report for SW8260B

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
tert-Amyl methyl ether (TAME)	ND	0.50	-	-	-
Benzene	ND	0.50	-	-	-
t-Butyl alcohol (TBA)	ND	2.0	-	-	-
Diisopropyl ether (DIPE)	ND	0.50	-	-	-
Ethylbenzene	ND	0.50	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	0.50	-	-	-
Methyl-t-butyl ether (MTBE)	ND	0.50	-	-	-
Toluene	ND	0.50	-	-	-
Xylenes, Total	ND	0.50	-	-	-
Surrogate Recovery					
Dibromofluoromethane	28.16		25	113	70-130
Toluene-d8	25.55		25	102	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	10.5	10.9	10	105	109	54-140	4.02	20
Benzene	10.5	10.7	10	105	107	47-158	1.38	20
t-Butyl alcohol (TBA)	43.6	43.0	40	109	108	42-140	1.37	20
Diisopropyl ether (DIPE)	11.0	11.1	10	110	111	57-136	0.995	20
Ethylbenzene	9.54	9.83	10	95	98	60-152	2.98	20
Ethyl tert-butyl ether (ETBE)	10.9	10.9	10	109	109	55-137	0	20
Methyl-t-butyl ether (MTBE)	10.9	10.9	10	109	109	53-139	0	20
Toluene	9.39	9.65	10	94	97	52-137	2.74	20
Surrogate Recovery								
Dibromofluoromethane	29.2	29.2	25	117	117	70-130	0	20
Toluene-d8	24.8	24.9	25	99	100	70-130	0.691	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/15/17	**BatchID:**	140519
Date Analyzed:	6/20/17 - 6/21/17	**Extraction Method:**	SW3510C
Instrument:	GC35	**Analytical Method:**	SW8270C-SIM
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS/LCSD-140519

QC Summary Report for SW8270C

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
Acenaphthene	ND	0.50	-	-	-
Acenaphthylene	ND	0.50	-	-	-
Anthracene	ND	0.50	-	-	-
Benzo (a) anthracene	ND	0.50	-	-	-
Benzo (a) pyrene	ND	0.50	-	-	-
Benzo (b) fluoranthene	ND	0.50	-	-	-
Benzo (g,h,i) perylene	ND	0.50	-	-	-
Benzo (k) fluoranthene	ND	0.50	-	-	-
Chrysene	ND	0.50	-	-	-
Dibenzo (a,h) anthracene	ND	0.50	-	-	-
Fluoranthene	ND	0.50	-	-	-
Fluorene	ND	0.50	-	-	-
Indeno (1,2,3-cd) pyrene	ND	0.50	-	-	-
1-Methylnaphthalene	ND	0.50	-	-	-
2-Methylnaphthalene	ND	0.50	-	-	-
Naphthalene	ND	0.50	-	-	-
Phenanthrene	ND	0.50	-	-	-
Pyrene	ND	0.50	-	-	-
Surrogate Recovery					
1-Fluoronaphthalene	19.65		25	79	30-130
2-Fluorobiphenyl	20.08		25	80	30-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Benzo (a) pyrene	11.9	11.9	10	119	119	12-152	0	25
Chrysene	12.5	12.5	10	125, F2	125, F2	28-116	0	25
1-Methylnaphthalene	13.1	13.2	10	131, F2	132, F2	48-125	5.25	25
2-Methylnaphthalene	12.8	12.6	10	128, F2	125, F2	41-124	6.43	25
Phenanthrene	12.3	12.3	10	123	123	36-123	0	25
Pyrene	13.2	12.9	10	132, F2	129, F2	29-118	5.45	25
Surrogate Recovery								
1-Fluoronaphthalene	25.7	25.7	25	103	103	45-129	0	25
2-Fluorobiphenyl	26.1	25.3	25	104	101	47-125	2.45	25

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/19/17	**BatchID:**	140769
Date Analyzed:	6/19/17	**Extraction Method:**	SW5030B
Instrument:	GC12	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140769 1706676-033AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	58.2	40	60	-	97	78-116
MTBE	ND	10.8	5.0	10	-	108	72-122
Benzene	ND	10.4	0.50	10	-	103	81-123
Toluene	ND	10.2	0.50	10	-	102	83-129
Ethylbenzene	ND	9.59	0.50	10	-	96	88-126
Xylenes	ND	27.8	1.5	30	-	93	87-131
Surrogate Recovery							
aaa-TFT	10.62	10.7		10	106	107	89-116

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	NR	NR		950	NR	NR	-	NR	-
MTBE	NR	NR		ND<25	NR	NR	-	NR	-
Benzene	NR	NR		100	NR	NR	-	NR	-
Toluene	NR	NR		6.5	NR	NR	-	NR	-
Ethylbenzene	NR	NR		99	NR	NR	-	NR	-
Xylenes	NR	NR		25	NR	NR	-	NR	-
Surrogate Recovery									
aaa-TFT	NR	NR			NR	NR	-	NR	-

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/14/17	**BatchID:**	140451
Date Analyzed:	6/14/17	**Extraction Method:**	SW3510C
Instrument:	GC39A	**Analytical Method:**	SW8015B
Matrix:	Water	**Unit:**	µg/L
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS/LCSD-140451

QC Report for SW8015B w/out SG Clean-Up

Analyte	MB Result	RL	SPK Val	MB SS %REC	MB SS Limits
TPH-Diesel (C10-C23)	ND	50	-	-	-
TPH-Motor Oil (C18-C36)	ND	250	-	-	-
Surrogate Recovery					
C9	561.4		625	90	79-111

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	1170	1190	1000	117	119	88-134	1.94	30
Surrogate Recovery								
C9	557	560	625	89	90	79-111	0.521	30

NELAP 4033ORELAP

QA/QC Officer

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706676 **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Jonathan Sanders
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 321-3561 FAX: (925) 283-6121

Email: jsanders@aeiconsultants.com
cc/3rd Party: nbricker@aeiconsultants.com;
PO: 134930
ProjectNo: 281939; Zimmerman, 3442 Adeline St. Oakland,CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 5 days;

Date Received: **06/14/2017**
Date Logged: **06/14/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1706676-032	VB-4	Water	6/13/2017 16:56	☐	B	C	A	A	A							
1706676-033	VB-5	Water	6/13/2017 16:11	☐	B	C	A		A							
1706676-034	VB-17	Water	6/13/2017 13:31	☐	B	C	A		A							
1706676-035	VB-18	Water	6/13/2017 10:26	☐	B	C	A		A							
1706676-036	VB-19	Water	6/13/2017 10:59	☐	B	C	A		A							
1706676-037	VB-20	Water	6/13/2017 09:34	☐	B	C	A		A							
1706676-038	VB-21	Water	6/13/2017 13:23	☐	B	C	A		A							

Test Legend:

1	8260B_5OXYBTEX_W	2	8270_PNA_W	3	G-MBTEX_W	4	PREDF REPORT
5	TPH(DMO)_W	6		7		8	
9		10		11		12	

Prepared by: Kena Ponce

The following SampIDs: 032A, 033A, 034A, 035A, 036A, 037A, 038A contain testgroup Multi Range_W.

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: Jonathan Sanders
Contact's Email: jsanders@aeiconsultants.com

Project: 281939; Zimmerman; 3442Adeline St. Oakland,CA
Comments:

Work Order: 1706676
QC Level: LEVEL 2
Date Logged: 6/14/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-001A	VB-4-4	Soil		1	Acetate Liner	☐	6/13/2017 16:43			☑	
1706676-002A	VB-4-7	Soil		1	Acetate Liner	☐	6/13/2017 16:49			☑	
1706676-003A	VB-4-10	Soil		1	Acetate Liner	☐	6/13/2017 16:56			☑	
1706676-004A	VB-5-4	Soil		1	Acetate Liner	☐	6/13/2017 15:51			☑	
1706676-005A	VB-5-7	Soil		1	Acetate Liner	☐	6/13/2017 15:58			☑	
1706676-006A	VB-5-10	Soil		1	Acetate Liner	☐	6/13/2017 16:11			☑	
1706676-007A	VB-17-5	Soil		1	Acetate Liner	☐	6/13/2017 12:52			☑	
1706676-008A	VB-17-8	Soil		1	Acetate Liner	☐	6/13/2017 12:55			☑	
1706676-009A	VB-17-11	Soil		1	Acetate Liner	☐	6/13/2017 13:15			☑	
1706676-010A	VB-17-14	Soil		1	Acetate Liner	☐	6/13/2017 13:31			☑	
1706676-011A	VB-18-5	Soil		1	Acetate Liner	☐	6/13/2017 9:49			☑	
1706676-012A	VB-18-9	Soil		1	Acetate Liner	☐	6/13/2017 9:59			☑	
1706676-013A	VB-18-12.5	Soil		1	Acetate Liner	☐	6/13/2017 10:11			☑	
1706676-014A	VB-18-15	Soil		1	Acetate Liner	☐	6/13/2017 10:26			☑	
1706676-015A	VB-19-4	Soil		1	Acetate Liner	☐	6/13/2017 10:35			☑	
1706676-016A	VB-19-7	Soil		1	Acetate Liner	☐	6/13/2017 10:39			☑	

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: Jonathan Sanders
Contact's Email: jsanders@aeiconsultants.com

Project: 281939; Zimmerman; 3442Adeline St. Oakland,CA
Comments:

Work Order: 1706676
QC Level: LEVEL 2
Date Logged: 6/14/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-017A	VB-19-10	Soil		1	Acetate Liner	☐	6/13/2017 10:45			☑	
1706676-018A	VB-19-13	Soil		1	Acetate Liner	☐	6/13/2017 10:50			☑	
1706676-019A	VB-19-16	Soil		1	Acetate Liner	☐	6/13/2017 10:59			☑	
1706676-020A	VB-20-4	Soil		1	Acetate Liner	☐	6/13/2017 9:12			☑	
1706676-021A	VB-20-8	Soil		1	Acetate Liner	☐	6/13/2017 9:17			☑	
1706676-022A	VB-20-12	Soil		1	Acetate Liner	☐	6/13/2017 9:25			☑	
1706676-023A	VB-20-15	Soil		1	Acetate Liner	☐	6/13/2017 9:34			☑	
1706676-024A	VB-21-4	Soil		1	Acetate Liner	☐	6/13/2017 12:11			☑	
1706676-025A	VB-21-7	Soil		1	Acetate Liner	☐	6/13/2017 12:14			☑	
1706676-026A	VB-21-10	Soil		1	Acetate Liner	☐	6/13/2017 13:03			☑	
1706676-027A	VB-21-13	Soil		1	Acetate Liner	☐	6/13/2017 13:11			☑	
1706676-028A	VB-21-16	Soil		1	Acetate Liner	☐	6/13/2017 13:23			☑	
1706676-029A	VB-22-2	Soil		1	Acetate Liner	☐	6/13/2017 8:18			☑	
1706676-030A	VB-22-6	Soil		1	Acetate Liner	☐	6/13/2017 8:19			☑	
1706676-031A	VB-22-9	Soil		1	Acetate Liner	☐	6/13/2017 8:34			☑	
1706676-032A	VB-4	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 16:56	5 days	2%+	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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Client Contact: Jonathan Sanders
Contact's Email: jsanders@aeiconsultants.com

Project: 281939; Zimmerman; 3442Adeline St. Oakland,CA
Comments:

Work Order: 1706676
QC Level: LEVEL 2
Date Logged: 6/14/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-032B	VB-4	Water	SW8260B (5 OXYS & BTEX)	2	VOA w/ HCl	☐	6/13/2017 16:56	5 days	2%+	☐	
1706676-032C	VB-4	Water	SW8270C (PAHs/PNAs) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	1	1LA Narrow Mouth	☐	6/13/2017 16:56	5 days	2%+	☐	
1706676-033A	VB-5	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 16:11	5 days	5%+	☐	
1706676-033B	VB-5	Water	SW8260B (5 OXYS & BTEX)	2	VOA w/ HCl	☐	6/13/2017 16:11	5 days	5%+	☐	
1706676-033C	VB-5	Water	SW8270C (PAHs/PNAs) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	1	1LA Narrow Mouth	☐	6/13/2017 16:11	5 days	5%+	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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Work Order: 1706676
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☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-034A	VB-17	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 13:31	5 days	2%+	☐	
1706676-034B	VB-17	Water	SW8260B (5 OXYS & BTEX)	2	VOA w/ HCl	☐	6/13/2017 13:31	5 days	2%+	☐	
1706676-034C	VB-17	Water	SW8270C (PAHs/PNAs) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	1	1LA Narrow Mouth	☐	6/13/2017 13:31	5 days	2%+	☐	
1706676-035A	VB-18	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 10:26	5 days	1%+	☐	
1706676-035B	VB-18	Water	SW8260B (5 OXYS & BTEX)	2	VOA w/ HCl	☐	6/13/2017 10:26	5 days	1%+	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-035C	VB-18	Water	SW8270C (PAHs/PNAs) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	1	1LA Narrow Mouth	☐	6/13/2017 10:26	5 days	1%+	☐	
1706676-036A	VB-19	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 10:59	5 days	1%+	☐	
1706676-036B	VB-19	Water	SW8260B (5 OXYS & BTEX)	2	VOA w/ HCl	☐	6/13/2017 10:59	5 days	1%+	☐	
1706676-036C	VB-19	Water	SW8270C (PAHs/PNAs) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	1	1LA Narrow Mouth	☐	6/13/2017 10:59	5 days	1%+	☐	
1706676-037A	VB-20	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 9:34	5 days	1%+	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

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Comments:

Work Order: 1706676
QC Level: LEVEL 2
Date Logged: 6/14/2017

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-037B	VB-20	Water	SW8260B (5 OXYS & BTEX)	2	VOA w/ HCl	☐	6/13/2017 9:34	5 days	1%+	☐	
1706676-037C	VB-20	Water	SW8270C (PAHs/PNAs) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	1	1LA Narrow Mouth	☐	6/13/2017 9:34	5 days	1%+	☐	
1706676-038A	VB-21	Water	Multi-Range TPH(g,d,mo) by EPA 8015Bm	2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 13:23	5 days	1%+	☐	
1706676-038B	VB-21	Water	SW8260B (5 OXYS & BTEX)	2	VOA w/ HCl	☐	6/13/2017 13:23	5 days	1%+	☐	
1706676-038C	VB-21	Water	SW8270C (PAHs/PNAs) <1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene, Acenaphthylene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (g,h,i) perylene, Benzo (k) fluoranthene, Chrysene, Dibenzo (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Naphthalene, Phenanthrene, Pyrene>	1	1LA Narrow Mouth	☐	6/13/2017 13:23	5 days	1%+	☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: Jonathan Sanders
Contact's Email: jsanders@aeiconsultants.com

Project: 281939; Zimmerman; 3442Adeline St. Oakland,CA
Comments:

Work Order: 1706676
QC Level: LEVEL 2
Date Logged: 6/14/2017

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-039A	VB-22	Water		2	2 VOAs w/HCL + 2-aVOAs (multi-range)	☐	6/13/2017 8:34		1%+	☑	
1706676-039B	VB-22	Water		2	VOA w/ HCl	☐	6/13/2017 8:34		1%+	☑	
1706676-039C	VB-22	Water		1	1LA Narrow Mouth	☐	6/13/2017 8:34		1%+	☑	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

MAI Work Order # 1706676

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: PDF | GeoTracker EDF | EDD | Write On (DW) | EQuIS

Report To: Jonathan Sanders Bill To: AEI
Company: AEI
Email: jsanders@aeiconsultants.com
Alt Email: nbricker@aeiconsultants.com Tele: 707-484-6223
Project Name: Zimmerman Project #281939
Project Location: 3442 Adeline St, Oakland, CA PO #134930
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative
VB-4-4	6/13/17	1643	1	S	1
VB-4-7	"	1649	1	S	1
VB-4-10	"	1656	1	S	1
VB-5-4	"	1551	1	S	1
VB-5-7	"	1558	1	S	1
VB-5-10	"	1611	1	S	1
VB-17-5	"	1252	1	S	1
VB-17-8	"	1255	1	S	1
VB-17-11	"	1315	1	S	1
VB-17-14	"	1331	1	S	1

Analysis Requested

BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	HOLD
															●
															●
															●
															●
															●
															●
															●
															●
															●
															●

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	6/14	1520		6/14/17	1520

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 7.9 °C Initials

General COC

MAI Work Order # ____________________

6

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www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush		STD		Quote #	
J-Flag / MDL		ESL		Cleanup Approved				Bottle Order #	
Delivery Format:	PDF		GeoTracker EDF		EDD		Write On (DW)		EQuIS

Report To: SEE PAGE 1	Bill To: AEI
Company:	
Email:	
Alt Email:	Tele:
Project Name:	Project #281939
Project Location:	PO #134930
Sampler Signature:	

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	HOLD			
VB-18--5	6/13/17	0949	1	S	1																●			
VB-18-9	"	0959	1	S	1																●			
VB-18-12.5	"	1011	1	S	1																●			
VB-18-15	"	1026	1	S	1																●			
VB-19-4	"	1035	1	S	1																●			
VB-19-7	"	1039	1	S	1																●			
VB-19-10	"	1045	1	S	1																●			
VB-19-13	"	1050	1	S	1																●			
VB-19-16	"	1059	1	S	1																●			
VB-20-4	"	0912	1	S	1																●			

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Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	6/14	1520		6/14/17	1520

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp ______ °C Initials ______

Page 2 of 5

MAI Work Order # _____

6

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CHAIN OF CUSTODY RECORD

Turn Around Time:	1 Day Rush		2 Day Rush		3 Day Rush		STD		Quote #						
J-Flag / MDL		ESL		Cleanup Approved				Bottle Order #							
Delivery Format:	PDF		GeoTracker EDF		EDD		Write On (DW)		EQuIS						

Report To: SEE PAGE 1 Bill To: AEI

Company:

Email:

Alt Email: Tele:

Project Name: Project #281939

Project Location: PO # 134930

Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	HOLD			
VB-20-8	6/13/17	0917	1	S	1																●			
VB-20-12	"	0925	1	S	1																●			
VB-20-15	"	0934	1	S	1																●			
VB-21-4	"	1211	1	S	1																●			
VB-21-7	"	1214	1	S	1																●			
VB-21-10	"	1303	1	S	1																●			
VB-21-13	"	1311	1	S	1																●			
VB-21-16	"	1323	1	S	1																●			
VB-22-2	"	0818	1	S	1																●			
VB-22-6	"	0819	1	S	1																●			

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Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Comments / Instructions

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	6/14	1520		6/14/17	1520

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp _____ °C Initials _____

6

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CHAIN OF CUSTODY RECORD

Turn Around Time:	1 Day Rush		2 Day Rush		3 Day Rush		STD		Quote #	
J-Flag / MDL		ESL		Cleanup Approved					Bottle Order #	
Delivery Format:	PDF		GeoTracker EDF		EDD		Write On (DW)		EQuIS	

Report To: SEE PAGE 1 Bill To: AEI

Company:

Email:

Alt Email: Tele:

Project Name: Project #281939

Project Location: PO #134930

Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	HOLD			
VB-22-9	6-13-17	0834	1	S	1																●			

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	6/14	1520		6/14/17	1520

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Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp _____ °C Initials _____

MAI Work Order # _____

6

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CHAIN OF CUSTODY RECORD

Turn Around Time:	1 Day Rush		2 Day Rush		3 Day Rush		STD	●	Quote #						
J-Flag / MDL		ESL		Cleanup Approved					Bottle Order #						
Delivery Format:	PDF		GeoTracker EDF	●	EDD		Write On (DW)		EQuIS						

Report To: SEE PAGE 1 Bill To: AEI

Company:

Email:

Alt Email: Tele:

Project Name: Project #281939

Project Location: PO # 134930

Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	HOLD	TPH Multi-Range 8015M	BTEX and fuel oxygenates 8260B	Napthalene 8270 SIM
VB-4	6/13/17	1656	7	GW	1,2																	●	●	●
VB-5	"	1611	7	GW	"																	●	●	●
VB-17	"	1331	7	GW	"																	●	●	●
VB-18*	"	1026	7	GW	"																	●	●	●
VB-19	"	1059	7	GW	"																	●	●	●
VB-20	"	0934	7	GW	"																	●	●	●
VB-21	"	1323	7	GW	"																	●	●	●
VB-22	"	0834	7	GW	"																●			

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Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
	6/14	1520		6/14/17	1520

Comments / Instructions
*Not enough material to completely fill 1L bottle.

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp _____ °C Initials _____

Page 5 of 5

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Sample Receipt Checklist

Client Name:	**AEI Consultants**	Date and Time Received	**6/14/2017 15:20**
Project Name:	**281939; Zimmerman; 3442Adeline St. Oakland,CA**	Date Logged:	**6/14/2017**
		Received by:	Maria Venegas
WorkOrder №:	**1706676** Matrix: Soil/Water	Logged by:	Kena Ponce
Carrier:	Client Drop-In		

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA ☐
Sample/Temp Blank temperature	Temp: 7.9°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☑	No	☐	NA ☐
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
Samples Received on Ice?	Yes	☑	No	☐	
	(Ice Type: WET ICE)				

UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes	☐	No	☐	NA ☑

Comments:

McCampbell Analytical, Inc.
"When Quality Counts"

Analytical Report

WorkOrder: 1706676 A

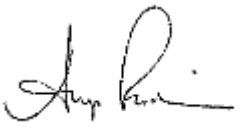
Report Created for: AEI Consultants

2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597

Project Contact: Jonathan Sanders
Project P.O.: 134930
Project Name: 281939; Zimmerman, 3442 Adeline St. Oakland,CA

Project Received: 06/14/2017

Analytical Report reviewed & approved for release on 06/28/2017 by:



Angela Rydelius,
Laboratory Manager

McCampbell Analytical, Inc.
"When Quality Counts"

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 281939; Zimmerman, 3442 Adeline St. Oakland,CA
WorkOrder: 1706676

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: AEI Consultants
Project: 281939; Zimmerman, 3442 Adeline St. Oakland,CA
WorkOrder: 1706676

Analytical Qualifiers

H	Samples were analyzed out of holding time
S	Surrogate spike recovery outside accepted recovery limits
c4	Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.
d7	Strongly aged gasoline or diesel range compounds are significant in the TPH(g) chromatogram
d9	No recognizable pattern
e4	Gasoline range compounds are significant.

Quality Control Qualifiers

F1	MS/MSD recovery and/or RPD is out of acceptance criteria; LCS validates the prep batch.
F2	LCS/LCSD recovery and/or RPD is out of acceptance criteria.

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-10	1706676-026A	Soil	06/13/2017 13:03	GC18	140735

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acetone	ND	H	1.0	10	06/28/2017 17:57
tert-Amyl methyl ether (TAME)	ND	H	0.050	10	06/28/2017 17:57
Benzene	ND	H	0.050	10	06/28/2017 17:57
Bromobenzene	ND	H	0.050	10	06/28/2017 17:57
Bromochloromethane	ND	H	0.050	10	06/28/2017 17:57
Bromodichloromethane	ND	H	0.050	10	06/28/2017 17:57
Bromoform	ND	H	0.050	10	06/28/2017 17:57
Bromomethane	ND	H	0.050	10	06/28/2017 17:57
2-Butanone (MEK)	ND	H	0.20	10	06/28/2017 17:57
t-Butyl alcohol (TBA)	ND	H	0.50	10	06/28/2017 17:57
n-Butyl benzene	**0.31**	H	0.050	10	06/28/2017 17:57
sec-Butyl benzene	**0.082**	H	0.050	10	06/28/2017 17:57
tert-Butyl benzene	ND	H	0.050	10	06/28/2017 17:57
Carbon Disulfide	ND	H	0.050	10	06/28/2017 17:57
Carbon Tetrachloride	ND	H	0.050	10	06/28/2017 17:57
Chlorobenzene	ND	H	0.050	10	06/28/2017 17:57
Chloroethane	ND	H	0.050	10	06/28/2017 17:57
Chloroform	ND	H	0.050	10	06/28/2017 17:57
Chloromethane	ND	H	0.050	10	06/28/2017 17:57
2-Chlorotoluene	ND	H	0.050	10	06/28/2017 17:57
4-Chlorotoluene	ND	H	0.050	10	06/28/2017 17:57
Dibromochloromethane	ND	H	0.050	10	06/28/2017 17:57
1,2-Dibromo-3-chloropropane	ND	H	0.040	10	06/28/2017 17:57
1,2-Dibromoethane (EDB)	ND	H	0.040	10	06/28/2017 17:57
Dibromomethane	ND	H	0.050	10	06/28/2017 17:57
1,2-Dichlorobenzene	ND	H	0.050	10	06/28/2017 17:57
1,3-Dichlorobenzene	ND	H	0.050	10	06/28/2017 17:57
1,4-Dichlorobenzene	ND	H	0.050	10	06/28/2017 17:57
Dichlorodifluoromethane	ND	H	0.050	10	06/28/2017 17:57
1,1-Dichloroethane	ND	H	0.050	10	06/28/2017 17:57
1,2-Dichloroethane (1,2-DCA)	ND	H	0.040	10	06/28/2017 17:57
1,1-Dichloroethene	ND	H	0.050	10	06/28/2017 17:57
cis-1,2-Dichloroethene	ND	H	0.050	10	06/28/2017 17:57
trans-1,2-Dichloroethene	ND	H	0.050	10	06/28/2017 17:57
1,2-Dichloropropane	ND	H	0.050	10	06/28/2017 17:57
1,3-Dichloropropane	ND	H	0.050	10	06/28/2017 17:57
2,2-Dichloropropane	ND	H	0.050	10	06/28/2017 17:57

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-10	1706676-026A	Soil	06/13/2017 13:03	GC18	140735

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	H	0.050	10	06/28/2017 17:57
cis-1,3-Dichloropropene	ND	H	0.050	10	06/28/2017 17:57
trans-1,3-Dichloropropene	ND	H	0.050	10	06/28/2017 17:57
Diisopropyl ether (DIPE)	ND	H	0.050	10	06/28/2017 17:57
Ethylbenzene	ND	H	0.050	10	06/28/2017 17:57
Ethyl tert-butyl ether (ETBE)	ND	H	0.050	10	06/28/2017 17:57
Freon 113	ND	H	0.050	10	06/28/2017 17:57
Hexachlorobutadiene	ND	H	0.050	10	06/28/2017 17:57
Hexachloroethane	ND	H	0.050	10	06/28/2017 17:57
2-Hexanone	ND	H	0.050	10	06/28/2017 17:57
Isopropylbenzene	**0.12**	H	0.050	10	06/28/2017 17:57
4-Isopropyl toluene	ND	H	0.050	10	06/28/2017 17:57
Methyl-t-butyl ether (MTBE)	ND	H	0.050	10	06/28/2017 17:57
Methylene chloride	ND	H	0.050	10	06/28/2017 17:57
4-Methyl-2-pentanone (MIBK)	ND	H	0.050	10	06/28/2017 17:57
Naphthalene	**0.31**	H	0.050	10	06/28/2017 17:57
n-Propyl benzene	**0.50**	H	0.050	10	06/28/2017 17:57
Styrene	ND	H	0.050	10	06/28/2017 17:57
1,1,1,2-Tetrachloroethane	ND	H	0.050	10	06/28/2017 17:57
1,1,2,2-Tetrachloroethane	ND	H	0.050	10	06/28/2017 17:57
Tetrachloroethene	ND	H	0.050	10	06/28/2017 17:57
Toluene	ND	H	0.050	10	06/28/2017 17:57
1,2,3-Trichlorobenzene	ND	H	0.050	10	06/28/2017 17:57
1,2,4-Trichlorobenzene	ND	H	0.050	10	06/28/2017 17:57
1,1,1-Trichloroethane	ND	H	0.050	10	06/28/2017 17:57
1,1,2-Trichloroethane	ND	H	0.050	10	06/28/2017 17:57
Trichloroethene	ND	H	0.050	10	06/28/2017 17:57
Trichlorofluoromethane	ND	H	0.050	10	06/28/2017 17:57
1,2,3-Trichloropropane	ND	H	0.050	10	06/28/2017 17:57
1,2,4-Trimethylbenzene	ND	H	0.050	10	06/28/2017 17:57
1,3,5-Trimethylbenzene	ND	H	0.050	10	06/28/2017 17:57
Vinyl Chloride	ND	H	0.050	10	06/28/2017 17:57
Xylenes, Total	ND	H	0.050	10	06/28/2017 17:57

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-10	**1706676-026A**	**Soil**	**06/13/2017 13:03**	**GC18**	**140735**

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Qualifiers**	**Limits**		
Dibromofluoromethane	114	H	70-130		06/28/2017 17:57
Toluene-d8	102	H	70-130		06/28/2017 17:57
4-BFB	113	H	70-130		06/28/2017 17:57
Benzene-d6	92	H	60-140		06/28/2017 17:57
Ethylbenzene-d10	87	H	60-140		06/28/2017 17:57
1,2-DCB-d4	93	H	60-140		06/28/2017 17:57

Analyst(s): JEM

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-13	1706676-027A	Soil	06/13/2017 13:11	GC10	140735

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Acetone	ND	H	0.40	4	06/28/2017 18:04
tert-Amyl methyl ether (TAME)	ND	H	0.020	4	06/28/2017 18:04
Benzene	ND	H	0.020	4	06/28/2017 18:04
Bromobenzene	ND	H	0.020	4	06/28/2017 18:04
Bromochloromethane	ND	H	0.020	4	06/28/2017 18:04
Bromodichloromethane	ND	H	0.020	4	06/28/2017 18:04
Bromoform	ND	H	0.020	4	06/28/2017 18:04
Bromomethane	ND	H	0.020	4	06/28/2017 18:04
2-Butanone (MEK)	ND	H	0.080	4	06/28/2017 18:04
t-Butyl alcohol (TBA)	ND	H	0.20	4	06/28/2017 18:04
n-Butyl benzene	**0.086**	H	0.020	4	06/28/2017 18:04
sec-Butyl benzene	**0.027**	H	0.020	4	06/28/2017 18:04
tert-Butyl benzene	ND	H	0.020	4	06/28/2017 18:04
Carbon Disulfide	ND	H	0.020	4	06/28/2017 18:04
Carbon Tetrachloride	ND	H	0.020	4	06/28/2017 18:04
Chlorobenzene	ND	H	0.020	4	06/28/2017 18:04
Chloroethane	ND	H	0.020	4	06/28/2017 18:04
Chloroform	ND	H	0.020	4	06/28/2017 18:04
Chloromethane	ND	H	0.020	4	06/28/2017 18:04
2-Chlorotoluene	ND	H	0.020	4	06/28/2017 18:04
4-Chlorotoluene	ND	H	0.020	4	06/28/2017 18:04
Dibromochloromethane	ND	H	0.020	4	06/28/2017 18:04
1,2-Dibromo-3-chloropropane	ND	H	0.016	4	06/28/2017 18:04
1,2-Dibromoethane (EDB)	ND	H	0.016	4	06/28/2017 18:04
Dibromomethane	ND	H	0.020	4	06/28/2017 18:04
1,2-Dichlorobenzene	ND	H	0.020	4	06/28/2017 18:04
1,3-Dichlorobenzene	ND	H	0.020	4	06/28/2017 18:04
1,4-Dichlorobenzene	ND	H	0.020	4	06/28/2017 18:04
Dichlorodifluoromethane	ND	H	0.020	4	06/28/2017 18:04
1,1-Dichloroethane	ND	H	0.020	4	06/28/2017 18:04
1,2-Dichloroethane (1,2-DCA)	ND	H	0.016	4	06/28/2017 18:04
1,1-Dichloroethene	ND	H	0.020	4	06/28/2017 18:04
cis-1,2-Dichloroethene	ND	H	0.020	4	06/28/2017 18:04
trans-1,2-Dichloroethene	ND	H	0.020	4	06/28/2017 18:04
1,2-Dichloropropane	ND	H	0.020	4	06/28/2017 18:04
1,3-Dichloropropane	ND	H	0.020	4	06/28/2017 18:04
2,2-Dichloropropane	ND	H	0.020	4	06/28/2017 18:04

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-13	1706676-027A	Soil	06/13/2017 13:11	GC10	140735

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
1,1-Dichloropropene	ND	H	0.020	4	06/28/2017 18:04
cis-1,3-Dichloropropene	ND	H	0.020	4	06/28/2017 18:04
trans-1,3-Dichloropropene	ND	H	0.020	4	06/28/2017 18:04
Diisopropyl ether (DIPE)	ND	H	0.020	4	06/28/2017 18:04
Ethylbenzene	ND	H	0.020	4	06/28/2017 18:04
Ethyl tert-butyl ether (ETBE)	ND	H	0.020	4	06/28/2017 18:04
Freon 113	ND	H	0.020	4	06/28/2017 18:04
Hexachlorobutadiene	ND	H	0.020	4	06/28/2017 18:04
Hexachloroethane	ND	H	0.020	4	06/28/2017 18:04
2-Hexanone	ND	H	0.020	4	06/28/2017 18:04
Isopropylbenzene	ND	H	0.020	4	06/28/2017 18:04
4-Isopropyl toluene	ND	H	0.020	4	06/28/2017 18:04
Methyl-t-butyl ether (MTBE)	ND	H	0.020	4	06/28/2017 18:04
Methylene chloride	ND	H	0.020	4	06/28/2017 18:04
4-Methyl-2-pentanone (MIBK)	ND	H	0.020	4	06/28/2017 18:04
Naphthalene	ND	H	0.020	4	06/28/2017 18:04
n-Propyl benzene	**0.12**	H	0.020	4	06/28/2017 18:04
Styrene	ND	H	0.020	4	06/28/2017 18:04
1,1,1,2-Tetrachloroethane	ND	H	0.020	4	06/28/2017 18:04
1,1,2,2-Tetrachloroethane	ND	H	0.020	4	06/28/2017 18:04
Tetrachloroethene	ND	H	0.020	4	06/28/2017 18:04
Toluene	ND	H	0.020	4	06/28/2017 18:04
1,2,3-Trichlorobenzene	ND	H	0.020	4	06/28/2017 18:04
1,2,4-Trichlorobenzene	ND	H	0.020	4	06/28/2017 18:04
1,1,1-Trichloroethane	ND	H	0.020	4	06/28/2017 18:04
1,1,2-Trichloroethane	ND	H	0.020	4	06/28/2017 18:04
Trichloroethene	ND	H	0.020	4	06/28/2017 18:04
Trichlorofluoromethane	ND	H	0.020	4	06/28/2017 18:04
1,2,3-Trichloropropane	ND	H	0.020	4	06/28/2017 18:04
1,2,4-Trimethylbenzene	ND	H	0.020	4	06/28/2017 18:04
1,3,5-Trimethylbenzene	ND	H	0.020	4	06/28/2017 18:04
Vinyl Chloride	ND	H	0.020	4	06/28/2017 18:04
Xylenes, Total	ND	H	0.020	4	06/28/2017 18:04

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/21/17	**Analytical Method:**	SW8260B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/kg

Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-13	1706676-027A	Soil	06/13/2017 13:11	GC10	140735

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Surrogates	**REC (%)**	**Qualifiers**	**Limits**		
Dibromofluoromethane	120	H	70-130		06/28/2017 18:04
Toluene-d8	121	H	70-130		06/28/2017 18:04
4-BFB	126	H	70-130		06/28/2017 18:04
Benzene-d6	89	H	60-140		06/28/2017 18:04
Ethylbenzene-d10	86	H	60-140		06/28/2017 18:04
1,2-DCB-d4	87	H	60-140		06/28/2017 18:04

Analyst(s): JEM

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW5030B
Date Prepared:	6/21/17	**Analytical Method:**	SW8021B/8015Bm
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/Kg

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

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-10	**1706676-026A**	**Soil**	**06/13/2017 13:03**	**GC19**	**140788**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**140**	10	10	06/24/2017 19:40
MTBE	**---**	0.50	10	06/24/2017 19:40
Benzene	**---**	0.050	10	06/24/2017 19:40
Toluene	**---**	0.050	10	06/24/2017 19:40
Ethylbenzene	**---**	0.050	10	06/24/2017 19:40
Xylenes	**---**	0.15	10	06/24/2017 19:40

Surrogates	REC (%)	Qualifiers	Limits	
2-Fluorotoluene	178	S	62-126	06/24/2017 19:40

Analyst(s): HD Analytical Comments: d7,d9,c4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-13	**1706676-027A**	**Soil**	**06/13/2017 13:11**	**GC19**	**140788**

Analytes	Result	RL	DF	Date Analyzed
TPH(g) (C6-C12)	**23**	1.0	1	06/24/2017 05:58
MTBE	**---**	0.050	1	06/24/2017 05:58
Benzene	**---**	0.0050	1	06/24/2017 05:58
Toluene	**---**	0.0050	1	06/24/2017 05:58
Ethylbenzene	**---**	0.0050	1	06/24/2017 05:58
Xylenes	**---**	0.015	1	06/24/2017 05:58

Surrogates	REC (%)	Limits	
2-Fluorotoluene	108	62-126	06/24/2017 05:58

Analyst(s): HD Analytical Comments: d7,d9

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Analytical Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Received:	6/14/17 15:20	**Extraction Method:**	SW3550B/3630C
Date Prepared:	6/21/17	**Analytical Method:**	SW8015B
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Unit:**	mg/Kg

Total Extractable Petroleum Hydrocarbons with Silica Gel Clean-Up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-10	1706676-026A	Soil	06/13/2017 13:03	GC6A	140804

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**6.6**	1.0	1	06/21/2017 20:49
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 20:49

Surrogates	REC (%)	Limits	
C9	87	78-109	06/21/2017 20:49

Analyst(s): TK Analytical Comments: e4

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
VB-21-13	1706676-027A	Soil	06/13/2017 13:11	GC6A	140804

Analytes	Result	RL	DF	Date Analyzed
TPH-Diesel (C10-C23)	**1.1**	1.0	1	06/21/2017 23:26
TPH-Motor Oil (C18-C36)	ND	5.0	1	06/21/2017 23:26

Surrogates	REC (%)	Limits	
C9	87	78-109	06/21/2017 23:26

Analyst(s): TK Analytical Comments: e4

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/20/17	**BatchID:**	140735
Date Analyzed:	6/20/17 - 6/21/17	**Extraction Method:**	SW5030B
Instrument:	GC10, GC18, GC28	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140735 1706977-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	0.936	0.10	1	-	94	72-156
tert-Amyl methyl ether (TAME)	ND	0.0368	0.0050	0.050	-	74	53-116
Benzene	ND	0.0429	0.0050	0.050	-	86	63-137
Bromobenzene	ND	0.0440	0.0050	0.050	-	88	68-126
Bromochloromethane	ND	0.0476	0.0050	0.050	-	95	72-126
Bromodichloromethane	ND	0.0386	0.0050	0.050	-	77	61-127
Bromoform	ND	0.0304	0.0050	0.050	-	61	49-100
Bromomethane	ND	0.0683	0.0050	0.050	-	137	40-161
2-Butanone (MEK)	ND	0.153	0.020	0.20	-	76	43-157
t-Butyl alcohol (TBA)	ND	0.150	0.050	0.20	-	75	41-135
n-Butyl benzene	ND	0.0660	0.0050	0.050	-	132	102-160
sec-Butyl benzene	ND	0.0663	0.0050	0.050	-	133	74-168
tert-Butyl benzene	ND	0.0560	0.0050	0.050	-	112	88-157
Carbon Disulfide	ND	0.0533	0.0050	0.050	-	107	42-151
Carbon Tetrachloride	ND	0.0487	0.0050	0.050	-	97	49-149
Chlorobenzene	ND	0.0432	0.0050	0.050	-	86	77-121
Chloroethane	ND	0.0482	0.0050	0.050	-	96	41-134
Chloroform	ND	0.0454	0.0050	0.050	-	91	69-133
Chloromethane	ND	0.0416	0.0050	0.050	-	83	31-119
2-Chlorotoluene	ND	0.0514	0.0050	0.050	-	103	79-139
4-Chlorotoluene	ND	0.0484	0.0050	0.050	-	97	77-138
Dibromochloromethane	ND	0.0355	0.0050	0.050	-	71	58-121
1,2-Dibromo-3-chloropropane	ND	0.0125	0.0040	0.020	-	63	39-115
1,2-Dibromoethane (EDB)	ND	0.0401	0.0040	0.050	-	80	67-119
Dibromomethane	ND	0.0404	0.0050	0.050	-	81	66-117
1,2-Dichlorobenzene	ND	0.0403	0.0050	0.050	-	81	59-109
1,3-Dichlorobenzene	ND	0.0452	0.0050	0.050	-	90	75-130
1,4-Dichlorobenzene	ND	0.0444	0.0050	0.050	-	89	71-122
Dichlorodifluoromethane	ND	0.0196	0.0050	0.050	-	39, F2	43-68
1,1-Dichloroethane	ND	0.0449	0.0050	0.050	-	90	62-139
1,2-Dichloroethane (1,2-DCA)	ND	0.0433	0.0040	0.050	-	87	58-135
1,1-Dichloroethene	ND	0.0479	0.0050	0.050	-	96	42-145
cis-1,2-Dichloroethene	ND	0.0439	0.0050	0.050	-	88	67-129
trans-1,2-Dichloroethene	ND	0.0443	0.0050	0.050	-	89	54-139
1,2-Dichloropropane	ND	0.0410	0.0050	0.050	-	82	68-125
1,3-Dichloropropane	ND	0.0391	0.0050	0.050	-	78	65-125
2,2-Dichloropropane	ND	0.0488	0.0050	0.050	-	98	45-151

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/20/17	**BatchID:**	140735
Date Analyzed:	6/20/17 - 6/21/17	**Extraction Method:**	SW5030B
Instrument:	GC10, GC18, GC28	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140735 1706977-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
1,1-Dichloropropene	ND	0.0449	0.0050	0.050	-	90	64-138
cis-1,3-Dichloropropene	ND	0.0386	0.0050	0.050	-	77	62-134
trans-1,3-Dichloropropene	ND	0.0369	0.0050	0.050	-	74	59-128
Diisopropyl ether (DIPE)	ND	0.0402	0.0050	0.050	-	80	52-129
Ethylbenzene	ND	0.0455	0.0050	0.050	-	91	74-142
Ethyl tert-butyl ether (ETBE)	ND	0.0401	0.0050	0.050	-	80	53-125
Freon 113	ND	0.0439	0.0050	0.050	-	88	51-126
Hexachlorobutadiene	ND	0.0591	0.0050	0.050	-	118	70-158
Hexachloroethane	ND	0.0446	0.0050	0.050	-	89	80-160
2-Hexanone	ND	0.0294	0.0050	0.050	-	59	41-116
Isopropylbenzene	ND	0.0571	0.0050	0.050	-	114	77-146
4-Isopropyl toluene	ND	0.0592	0.0050	0.050	-	118	96-159
Methyl-t-butyl ether (MTBE)	ND	0.0404	0.0050	0.050	-	81	58-122
Methylene chloride	ND	0.0465	0.0050	0.050	-	93	58-135
4-Methyl-2-pentanone (MIBK)	ND	0.0290	0.0050	0.050	-	58	40-112
Naphthalene	ND	0.0191	0.0050	0.050	-	38	23-73
n-Propyl benzene	ND	0.0571	0.0050	0.050	-	114	82-160
Styrene	ND	0.0429	0.0050	0.050	-	86	68-124
1,1,1,2-Tetrachloroethane	ND	0.0457	0.0050	0.050	-	91	70-128
1,1,2,2-Tetrachloroethane	ND	0.0341	0.0050	0.050	-	68	57-111
Tetrachloroethene	ND	0.0503	0.0050	0.050	-	101	73-145
Toluene	ND	0.0424	0.0050	0.050	-	85	76-130
1,2,3-Trichlorobenzene	ND	0.0270	0.0050	0.050	-	54	43-72
1,2,4-Trichlorobenzene	ND	0.0348	0.0050	0.050	-	70	47-95
1,1,1-Trichloroethane	ND	0.0486	0.0050	0.050	-	97	60-141
1,1,2-Trichloroethane	ND	0.0380	0.0050	0.050	-	76	62-118
Trichloroethene	ND	0.0462	0.0050	0.050	-	92	72-132
Trichlorofluoromethane	ND	0.0455	0.0050	0.050	-	91	43-135
1,2,3-Trichloropropane	ND	0.0392	0.0050	0.050	-	78	57-122
1,2,4-Trimethylbenzene	ND	0.0506	0.0050	0.050	-	101	81-152
1,3,5-Trimethylbenzene	ND	0.0537	0.0050	0.050	-	107	78-160
Vinyl Chloride	ND	0.0442	0.0050	0.050	-	88	42-131
Xylenes, Total	ND	0.134	0.0050	0.15	-	89	70-130

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/20/17	**BatchID:**	140735
Date Analyzed:	6/20/17 - 6/21/17	**Extraction Method:**	SW5030B
Instrument:	GC10, GC18, GC28	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140735 1706977-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Surrogate Recovery							
Dibromofluoromethane	0.1384	0.133		0.12	111	106	70-130
Toluene-d8	0.1405	0.144		0.12	112	115	70-130
4-BFB	0.0142	0.0117		0.012	114	93	70-130
Benzene-d6	0.08958	0.0875		0.10	90	88	60-140
Ethylbenzene-d10	0.1024	0.108		0.10	102	108	60-140
1,2-DCB-d4	0.07231	0.0826		0.10	72	83	60-140

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/20/17	**BatchID:**	140735
Date Analyzed:	6/20/17 - 6/21/17	**Extraction Method:**	SW5030B
Instrument:	GC10, GC18, GC28	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140735 1706977-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Acetone	1.01	0.966	1	ND	101	97	72-156	4.16	20
tert-Amyl methyl ether (TAME)	0.0388	0.0358	0.050	ND	78	72	53-116	7.90	20
Benzene	0.0445	0.0434	0.050	ND	85	83	63-137	2.30	20
Bromobenzene	0.0381	0.0359	0.050	ND	76	72	68-126	5.80	20
Bromochloromethane	0.0406	0.0385	0.050	ND	81	77	72-126	5.24	20
Bromodichloromethane	0.0397	0.0382	0.050	ND	79	76	61-127	3.94	20
Bromoform	0.0303	0.0282	0.050	ND	61	56	49-100	7.31	20
Bromomethane	0.0526	0.0477	0.050	ND	105	95	40-161	9.85	20
2-Butanone (MEK)	0.181	0.179	0.20	ND	85	84	43-157	0.948	20
t-Butyl alcohol (TBA)	0.151	0.151	0.20	ND	76	76	41-135	0	20
n-Butyl benzene	0.0646	0.0592	0.050	0.007021	115	104	102-160	8.72	20
sec-Butyl benzene	0.0586	0.0551	0.050	ND	117	110	74-168	6.09	20
tert-Butyl benzene	0.0558	0.0459	0.050	ND	103	83,F1	88-157	19.4	20
Carbon Disulfide	0.0409	0.0394	0.050	ND	82	79	42-151	3.68	20
Carbon Tetrachloride	0.0416	0.0399	0.050	ND	83	80	49-149	4.04	20
Chlorobenzene	0.0399	0.0386	0.050	ND	80	77	77-121	3.37	20
Chloroethane	0.0513	0.0475	0.050	ND	103	95	41-134	7.74	20
Chloroform	0.0446	0.0431	0.050	ND	85	82	69-133	3.38	20
Chloromethane	0.0504	0.0463	0.050	ND	101	93	31-119	8.44	20
2-Chlorotoluene	0.0456	0.0435	0.050	ND	91	87	79-139	4.56	20
4-Chlorotoluene	0.0417	0.0405	0.050	ND	83	81	77-138	3.00	20
Dibromochloromethane	0.0347	0.0329	0.050	ND	69	66	58-121	5.47	20
1,2-Dibromo-3-chloropropane	0.0126	0.0127	0.020	ND	44	44	39-115	0	20
1,2-Dibromoethane (EDB)	0.0383	0.0371	0.050	ND	77	74	67-119	3.01	20
Dibromomethane	0.0398	0.0387	0.050	ND	80	77	66-117	2.84	20
1,2-Dichlorobenzene	0.0354	0.0346	0.050	ND	71	69	59-109	2.15	20
1,3-Dichlorobenzene	0.0416	0.0403	0.050	ND	83	81	75-130	3.26	20
1,4-Dichlorobenzene	0.0399	0.0389	0.050	ND	80	78	71-122	2.62	20
Dichlorodifluoromethane	0.0204	0.0190	0.050	ND	41,F1	38,F1	43-68	7.48	20
1,1-Dichloroethane	0.0438	0.0424	0.050	ND	88	85	62-139	3.14	20
1,2-Dichloroethane (1,2-DCA)	0.0424	0.0414	0.050	ND	85	83	58-135	2.60	20
1,1-Dichloroethene	0.0394	0.0382	0.050	ND	79	76	42-145	3.14	20
cis-1,2-Dichloroethene	0.0414	0.0396	0.050	ND	83	79	67-129	4.46	20
trans-1,2-Dichloroethene	0.0416	0.0401	0.050	ND	83	80	54-139	3.53	20
1,2-Dichloropropane	0.0427	0.0416	0.050	ND	85	83	68-125	2.67	20
1,3-Dichloropropane	0.0405	0.0393	0.050	ND	81	79	65-125	3.06	20
2,2-Dichloropropane	0.0425	0.0409	0.050	ND	85	82	45-151	3.99	20

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/20/17	**BatchID:**	140735
Date Analyzed:	6/20/17 - 6/21/17	**Extraction Method:**	SW5030B
Instrument:	GC10, GC18, GC28	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140735 1706977-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
1,1-Dichloropropene	0.0430	0.0433	0.050	ND	86	87	64-138	0.575	20
cis-1,3-Dichloropropene	0.0411	0.0394	0.050	ND	82	79	62-134	4.20	20
trans-1,3-Dichloropropene	0.0432	0.0413	0.050	ND	86	83	59-128	4.37	20
Diisopropyl ether (DIPE)	0.0423	0.0409	0.050	ND	85	82	52-129	3.20	20
Ethylbenzene	0.0572	0.0582	0.050	0.01423	86	88	74-142	1.81	20
Ethyl tert-butyl ether (ETBE)	0.0410	0.0398	0.050	ND	82	80	53-125	2.84	20
Freon 113	0.0344	0.0326	0.050	ND	69	65	51-126	5.57	20
Hexachlorobutadiene	0.0469	0.0446	0.050	ND	94	89	70-158	5.14	20
Hexachloroethane	0.0545	0.0576	0.050	ND	100	107	80-160	5.59	20
2-Hexanone	0.0315	0.0310	0.050	ND	63	62	41-116	1.83	20
Isopropylbenzene	0.0473	0.0474	0.050	ND	95	95	77-146	0	20
4-Isopropyl toluene	0.0484	0.0456	0.050	ND	97	91,F1	96-159	5.96	20
Methyl-t-butyl ether (MTBE)	0.0400	0.0394	0.050	ND	80	79	58-122	1.53	20
Methylene chloride	0.0444	0.0427	0.050	ND	89	85	58-135	3.85	20
4-Methyl-2-pentanone (MIBK)	0.0453	0.0436	0.050	ND	91	87	40-112	3.89	20
Naphthalene	0.0264	0.0267	0.050	0.005125	42	43	23-73	1.11	20
n-Propyl benzene	0.0608	0.0580	0.050	0.008030	106	100	82-160	4.70	20
Styrene	0.0384	0.0385	0.050	ND	77	77	68-124	0	20
1,1,1,2-Tetrachloroethane	0.0392	0.0373	0.050	ND	78	75	70-128	5.00	20
1,1,2,2-Tetrachloroethane	0.0413	0.0381	0.050	ND	77	71	57-111	8.06	20
Tetrachloroethene	0.0411	0.0388	0.050	ND	82	78	73-145	5.63	20
Toluene	0.0488	0.0493	0.050	0.009502	79	80	76-130	0.944	20
1,2,3-Trichlorobenzene	0.0252	0.0249	0.050	ND	50	50	43-72	0	20
1,2,4-Trichlorobenzene	0.0302	0.0299	0.050	ND	60	60	47-95	0	20
1,1,1-Trichloroethane	0.0421	0.0406	0.050	ND	84	81	60-141	3.59	20
1,1,2-Trichloroethane	0.0394	0.0380	0.050	ND	79	76	62-118	3.67	20
Trichloroethene	0.0403	0.0384	0.050	ND	81	77	72-132	4.97	20
Trichlorofluoromethane	0.0370	0.0360	0.050	ND	74	72	43-135	2.63	20
1,2,3-Trichloropropane	0.0442	0.0410	0.050	ND	88	82	57-122	7.52	20
1,2,4-Trimethylbenzene	0.0859	0.0845	0.050	0.03740	97	94	81-152	1.69	20
1,3,5-Trimethylbenzene	0.0652	0.0615	0.050	0.01443	102	94	78-160	5.87	20
Vinyl Chloride	0.0520	0.0477	0.050	ND	104	95	42-131	8.73	20
Xylenes, Total	0.160	0.167	0.15	0.03902	81	85	70-130	4.15	20

(Cont.)

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/20/17	**BatchID:**	140735
Date Analyzed:	6/20/17 - 6/21/17	**Extraction Method:**	SW5030B
Instrument:	GC10, GC18, GC28	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140735 1706977-001AMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Surrogate Recovery									
Dibromofluoromethane	0.146	0.149	0.12		117	119	70-130	1.44	20
Toluene-d8	0.156	0.154	0.12		125	123	70-130	1.29	20
4-BFB	0.0138	0.0131	0.012		111	105	70-130	5.57	20
Benzene-d6	0.0896	0.0867	0.10		90	87	60-140	3.25	20
Ethylbenzene-d10	0.0990	0.0960	0.10		99	96	60-140	3.05	20
1,2-DCB-d4	0.0742	0.0722	0.10		74	72	60-140	2.67	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/20/17	**BatchID:**	140788
Date Analyzed:	6/22/17 - 6/24/17	**Extraction Method:**	SW5030B
Instrument:	GC19	**Analytical Method:**	SW8021B/8015Bm
Matrix:	Soil	**Unit:**	mg/Kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140788 1706979-001AMS/MSD

QC Summary Report for SW8021B/8015Bm

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH(btex)	ND	0.593	0.40	0.60	-	99	82-118
MTBE	ND	0.100	0.050	0.10	-	100	61-119
Benzene	ND	0.106	0.0050	0.10	-	106	77-128
Toluene	ND	0.109	0.0050	0.10	-	109	74-132
Ethylbenzene	ND	0.107	0.0050	0.10	-	107	84-127
Xylenes	ND	0.308	0.015	0.30	-	103	86-129
Surrogate Recovery							
2-Fluorotoluene	0.09308	0.0956		0.10	93	96	75-134

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH(btex)	0.455	0.404	0.60	ND	76	67	58-129	11.9	20
MTBE	0.0660	ND	0.10	ND	66	49	47-118	30.3,F1	20
Benzene	0.0722	0.0670	0.10	ND	72	67	55-129	7.42	20
Toluene	0.0852	0.0846	0.10	ND	84	83	56-130	0.725	20
Ethylbenzene	0.0887	0.0902	0.10	ND	89	90	63-129	1.73	20
Xylenes	0.263	0.262	0.30	ND	87	86	64-131	0.330	20
Surrogate Recovery									
2-Fluorotoluene	0.0776	0.0790	0.10		78	79	62-126	1.71	20

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Quality Control Report

Client:	AEI Consultants	**WorkOrder:**	1706676
Date Prepared:	6/21/17	**BatchID:**	140804
Date Analyzed:	6/21/17	**Extraction Method:**	SW3550B/3630C
Instrument:	GC6A	**Analytical Method:**	SW8015B
Matrix:	Soil	**Unit:**	mg/Kg
Project:	281939; Zimmerman, 3442 Adeline St. Oakland,CA	**Sample ID:**	MB/LCS-140804 1706676-026AMS/MSD

QC Report for SW8015B w/ Silica Gel Clean-Up

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	ND	42.9	1.0	40	-	107	79-133
TPH-Motor Oil (C18-C36)	ND	-	5.0	-	-	-	-
Surrogate Recovery							
C9	22.2	22.5		25	89	90	77-109

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
TPH-Diesel (C10-C23)	44.4	45.4	40	6.564	95	97	59-150	2.26	30
Surrogate Recovery									
C9	21.5	21.4	25		86	86	78-109	0	30

McCampbell Analytical, Inc.
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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1706676 A **ClientCode: AEL**

☐ WaterTrax ☐ WriteOn ☑ EDF ☐ Excel ☐ Fax ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Report to:
Jonathan Sanders
AEI Consultants
2500 Camino Diablo, Ste.#200
Walnut Creek, CA 94597
(925) 321-3561 FAX: (925) 283-6121

Email: jsanders@aeiconsultants.com
cc/3rd Party: nbricker@aeiconsultants.com;
PO: 134930
ProjectNo: 281939; Zimmerman, 3442 Adeline St. Oakland,CA

Bill to:
Accounts Payable
AEI Consultants
2500 Camino Diablo, Ste. #200
Walnut Creek, CA 94597
AccountsPayable@AEIConsultants.com

Requested TAT: 5 days;

Date Received: **06/14/2017**
Date Logged: **06/14/2017**
Date Add-On: **06/21/2017**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)											
					1	2	3	4	5	6	7	8	9	10	11	12
1706676-026	VB-21-10	Soil	6/13/2017 13:03	☐	A	A	A									
1706676-027	VB-21-13	Soil	6/13/2017 13:11	☐	A	A	A									

Test Legend:

1	8260B_S	2	G-MBTEX_S	3	TPH(DMO)WSG_S	4	
5		6		7		8	
9		10		11		12	

Prepared by: Kena Ponce

Add-On Prepared By: Jena Alfaro

Comments: 026 and 027 taken off hold for 8260, GDMO 6/21/17 STAT

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: AEI CONSULTANTS
Client Contact: Jonathan Sanders
Contact's Email jsanders@aeiconsultants.com

Project: 281939; Zimmerman, 3442 Adeline St. Oakland,CA
Comments: 026 and 027 taken off hold for 8260, GDMO 6/21/17 STAT

Work Order: 1706676
QC Level: LEVEL 2
Date Logged: 6/14/2017
Date Add-On: 6/21/2017

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1706676-026A	VB-21-10	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Acetate Liner	6/13/2017 13:03	5 days		☐	
			SW8260B (VOCs)				5 days		☐	
1706676-027A	VB-21-13	Soil	Multi-Range TPH(g,d,mo) w/ S.G. Clean-Up	1	Acetate Liner	6/13/2017 13:11	5 days		☐	
			SW8260B (VOCs)				5 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

MAI Work Order # ____________

McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701
Telephone: (877) 252-9262 / Fax: (925) 252-9269
www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time:1 Day Rush		2 Day Rush		3 Day Rush		STD		Quote #		
J-Flag / MDL		ESL		Cleanup Approved				Bottle Order #		
Delivery Format:	PDF		GeoTracker EDF		EDD		Write On (DW)		EQuIS	

Report To: SEE PAGE 1 Bill To: AEI

Company:

Email:

Alt Email: Tele:

Project Name: Project #281939

Project Location: PO #134930

Sampler Signature: [signature]

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel + GAS	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (Cl Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)	Baylands Requirements	Lab to filter sample for dissolved metals analysis	HOLD			
VB-20-8	6/13/17	0917	1	S	1																●			
VB-20-12	"	0925	1	S	1																●			
VB-20-15	"	0934	1	S	1																●			
VB-21-4	"	1211	1	S	1																●			
VB-21-7	"	1214	1	S	1																●			
VB-21-10	"	1303	1	S	1			X						X							●			
VB-21-13	"	1311	1	S	1			X						X							●			
VB-21-16	"	1323	1	S	1																●			
VB-22-2	"	0818	1	S	1																●			
VB-22-6	"	0819	1	S	1																●			

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[signature]	6/14	1520	[signature]	6/14/17	1520

Comments / Instructions

added 6/21/17 STAFF

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp ______ °C Initials ______

ANALYTICAL REPORT

June 23, 2017

AEI Consultants - CA

Sample Delivery Group:	L917000
Samples Received:	06/19/2017
Project Number:	281939
Description:	Zimmerman
Site:	3442 ADELINE STREET
Report To:	Jonathan Sanders 2500 Camino Diablo Walnut Creek, CA 94597

Entire Report Reviewed By: Brian Ford

Brian Ford
Technical Service Representative

VB-7 L917000-01 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 12:18
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	5	06/21/17 13:41	06/21/17 13:41	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG990972	2	06/20/17 18:19	06/20/17 18:19	MJ
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 09:50	06/20/17 09:50	AMC

VB-22 L917000-02 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 13:08
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	5	06/21/17 14:08	06/21/17 14:08	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG990972	2	06/20/17 19:02	06/20/17 19:02	MJ
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 10:03	06/20/17 10:03	AMC

VB-9 L917000-03 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 13:53
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	1	06/21/17 10:35	06/21/17 10:35	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG991407	800	06/21/17 22:03	06/21/17 22:03	DWR
Volatile Organic Compounds (MS) by Method TO-15	WG991947	4000	06/22/17 21:57	06/22/17 21:57	DWR
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 10:16	06/20/17 10:16	AMC

VB-21 L917000-04 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 15:08
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	1	06/21/17 10:48	06/21/17 10:48	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG990972	2	06/20/17 19:45	06/20/17 19:45	MJ
Volatile Organic Compounds (MS) by Method TO-15	WG991947	20	06/22/17 22:36	06/22/17 22:36	DWR
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 11:59	06/20/17 11:59	AMC

VB-10 L917000-05 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 15:53
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	1	06/21/17 11:20	06/21/17 11:20	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG990972	2	06/20/17 20:33	06/20/17 20:33	MJ
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 11:01	06/20/17 11:01	AMC

VB-20 L917000-06 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 16:25
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	1	06/21/17 12:14	06/21/17 12:14	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG990972	2	06/20/17 21:17	06/20/17 21:17	MJ
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 11:17	06/20/17 11:17	AMC

VB-12 L917000-07 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 13:57
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	1	06/21/17 12:29	06/21/17 12:29	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG991407	29.25	06/21/17 22:51	06/21/17 22:51	DWR
Volatile Organic Compounds (MS) by Method TO-15	WG991947	2340	06/22/17 23:15	06/22/17 23:15	DWR
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 11:32	06/20/17 11:32	AMC

VB-18 L917000-08 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 16:05
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	1	06/21/17 12:42	06/21/17 12:42	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG990972	2	06/20/17 22:02	06/20/17 22:02	MJ
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 11:45	06/20/17 11:45	AMC

VB-17 L917000-10 Air

Collected by: Nathan Bricker
Collected date/time: 06/15/17 15:27
Received date/time: 06/19/17 09:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991081	1	06/21/17 12:54	06/21/17 12:54	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG991407	2	06/21/17 23:41	06/21/17 23:41	DWR
Volatile Organic Compounds (MS) by Method TO-15	WG991947	16	06/22/17 23:54	06/22/17 23:54	DWR
Organic Compounds (GC) by Method D1946	WG990784	1	06/20/17 12:13	06/20/17 12:13	AMC

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Project Narrative

L917000-07 (VB-12) TO-15, Helium: Sample was accidentally exposed to ambient air in the lab. Results may be biased low due to loss of VOCs. Results may be biased high due to contamination. Oxygen, carbon dioxide, and methane results were unaffected.
L917000-09 (VB-14) cannot be analyzed due to insufficient sample volume.

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		500000	3050000		5	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	500	2060		2	WG990972
Benzene	71-43-2	78.10	0.400	1.28	1.09	3.47		2	WG990972
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG990972
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG990972
Toluene	108-88-3	92.10	0.400	1.51	ND	ND		2	WG990972
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG990972
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG990972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*103*				WG990972

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	10.9		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	2.39		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		500000	1500000		5	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	1590	6580		2	WG990972
Benzene	71-43-2	78.10	0.400	1.28	8.35	26.7		2	WG990972
Ethylbenzene	100-41-4	106	0.400	1.73	0.445	1.93		2	WG990972
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG990972
Toluene	108-88-3	92.10	0.400	1.51	1.97	7.43		2	WG990972
m&p-Xylene	1330-20-7	106	0.800	3.47	ND	ND		2	WG990972
o-Xylene	95-47-6	106	0.400	1.73	ND	ND		2	WG990972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*100*				WG990972

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	7.13		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	1.76		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	ND		1	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	200000	826000	1910000	7910000		4000	WG991947
Benzene	71-43-2	78.10	36.8	118	ND	ND		800	WG991407
Ethylbenzene	100-41-4	106	40.5	175	88.7	385	Z1	800	WG991407
MTBE	1634-04-4	88.10	40.4	146	47.0	169	Z1	800	WG991407
Toluene	108-88-3	92.10	39.9	150	225	847		800	WG991407
m&p-Xylene	1330-20-7	106	75.7	328	171	741	Z1	800	WG991407
o-Xylene	95-47-6	106	50.6	220	68.6	297	Z1	800	WG991407
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*107*				WG991407
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.9*				WG991947

Sample Narrative:

TO-15 L917000-03 WG991407: Non-target compounds too high to run at a lower dilution. Reporting to the MDL.

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	3.18		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	4.76		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	683000		1	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	2320	9590		2	WG990972
Benzene	71-43-2	78.10	0.400	1.28	25.6	81.7		2	WG990972
Ethylbenzene	100-41-4	106	0.400	1.73	13.1	56.7		2	WG990972
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG990972
Toluene	108-88-3	92.10	4.00	15.1	171	644		20	WG991947
m&p-Xylene	1330-20-7	106	0.800	3.47	49.5	215		2	WG990972
o-Xylene	95-47-6	106	0.400	1.73	13.3	57.6		2	WG990972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG991947
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*106*				WG990972

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	14.7		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	ND		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	1860000		1	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	1190	4920		2	WG990972
Benzene	71-43-2	78.10	0.400	1.28	ND	ND		2	WG990972
Ethylbenzene	100-41-4	106	0.400	1.73	0.774	3.35		2	WG990972
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG990972
Toluene	108-88-3	92.10	0.400	1.51	3.26	12.3		2	WG990972
m&p-Xylene	1330-20-7	106	0.800	3.47	2.24	9.73		2	WG990972
o-Xylene	95-47-6	106	0.400	1.73	1.15	4.96		2	WG990972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.3*				WG990972

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	13.5		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	2.37		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	1510000		1	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	819	3380		2	WG990972
Benzene	71-43-2	78.10	0.400	1.28	2.46	7.86		2	WG990972
Ethylbenzene	100-41-4	106	0.400	1.73	1.44	6.23		2	WG990972
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG990972
Toluene	108-88-3	92.10	0.400	1.51	13.5	50.8		2	WG990972
m&p-Xylene	1330-20-7	106	0.800	3.47	6.93	30.1		2	WG990972
o-Xylene	95-47-6	106	0.400	1.73	1.89	8.18		2	WG990972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.4*				WG990972

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	11.7		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	3.58		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	ND		1	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	117000	483000	421000	1740000		2340	WG991947
Benzene	71-43-2	78.10	5.85	18.7	401	1280		29.25	WG991407
Ethylbenzene	100-41-4	106	5.85	25.4	71.8	311		29.25	WG991407
MTBE	1634-04-4	88.10	5.85	21.1	ND	ND		29.25	WG991407
Toluene	108-88-3	92.10	5.85	22.0	61.3	231		29.25	WG991407
m&p-Xylene	1330-20-7	106	11.7	50.7	225	974		29.25	WG991407
o-Xylene	95-47-6	106	5.85	25.4	72.4	314		29.25	WG991407
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.8*				WG991947
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*127*				WG991407

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	2.85		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	9.72	E	1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Sample Narrative:

D1946 L917000-07 WG990784: No sample remains for further analysis.

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	2430000		1	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	367	1510		2	WG990972
Benzene	71-43-2	78.10	0.400	1.28	0.609	1.94		2	WG990972
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG990972
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG990972
Toluene	108-88-3	92.10	0.400	1.51	2.28	8.60		2	WG990972
m&p-Xylene	1330-20-7	106	0.800	3.47	1.06	4.58		2	WG990972
o-Xylene	95-47-6	106	0.400	1.73	0.472	2.05		2	WG990972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG990972

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	4.71		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	4.36		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	2090000		1	WG991081

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	800	3300	5490	22700		16	WG991947
Benzene	71-43-2	78.10	0.400	1.28	8.52	27.2		2	WG991407
Ethylbenzene	100-41-4	106	0.400	1.73	3.15	13.6		2	WG991407
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG991407
Toluene	108-88-3	92.10	0.400	1.51	14.7	55.3		2	WG991407
m&p-Xylene	1330-20-7	106	0.800	3.47	8.94	38.8		2	WG991407
o-Xylene	95-47-6	106	0.400	1.73	3.20	13.9		2	WG991407
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG991947
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*116*				WG991407

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	8.82		1	WG990784
Carbon Dioxide	124-38-9	44.01	0.500	3.14		1	WG990784
Methane	74-82-8	16	0.400	ND		1	WG990784

Method Blank (MB)

(MB) R3227496-3 06/21/17 08:53

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppb		ppb	ppb
Helium	U		30000	100000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3227496-1 06/21/17 08:02 • (LCSD) R3227496-2 06/21/17 08:20

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppb	ppb	ppb	%	%	%			%	%
Helium	500000	447000	479000	89.4	95.9	70.0-130			7.00	25

Method Blank (MB)

(MB) R3227072-3 06/20/17 10:27

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
MTBE	U		0.0505	0.200
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	*96.7*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3227072-1 06/20/17 08:58 • (LCSD) R3227072-2 06/20/17 09:41

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
MTBE	3.75	4.00	3.98	107	106	70.0-130			0.580	25
Benzene	3.75	4.11	4.09	110	109	70.0-130			0.390	25
Toluene	3.75	4.08	4.14	109	110	70.0-130			1.43	25
Ethylbenzene	3.75	4.19	4.13	112	110	70.0-130			1.43	25
m&p-Xylene	7.50	8.36	8.38	112	112	70.0-130			0.210	25
o-Xylene	3.75	4.13	4.11	110	110	70.0-130			0.590	25
TPH (GC/MS) Low Fraction	176	192	191	109	109	70.0-130			0.280	25
(S) 1,4-Bromofluorobenzene				*98.8*	*99.0*	*60.0-140*				

Method Blank (MB)

(MB) R3227491-2 06/21/17 10:50

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
MTBE	U		0.0505	0.200
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
(S) 1,4-Bromofluorobenzene	*91.4*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3227491-1 06/21/17 09:08 • (LCSD) R3227491-3 06/21/17 10:00

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
MTBE	3.75	4.21	4.33	112	115	70.0-130			2.81	25
Benzene	3.75	4.14	4.11	110	110	70.0-130			0.770	25
Toluene	3.75	4.03	3.97	108	106	70.0-130			1.62	25
Ethylbenzene	3.75	4.07	4.04	109	108	70.0-130			0.860	25
m&p-Xylene	7.50	7.86	7.79	105	104	70.0-130			0.940	25
o-Xylene	3.75	3.94	3.87	105	103	70.0-130			1.75	25
(S) 1,4-Bromofluorobenzene				*97.7*	*93.9*	*60.0-140*				

Method Blank (MB)

(MB) R3228144-3 06/22/17 12:05

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppbv		ppbv	ppbv
Toluene	U		0.0499	0.200
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	*95.9*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3228144-1 06/22/17 10:42 • (LCSD) R3228144-2 06/22/17 11:23

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppbv	ppbv	ppbv	%	%	%			%	%
Toluene	3.75	3.80	3.80	101	101	70.0-130			0.220	25
TPH (GC/MS) Low Fraction	176	179	182	102	103	70.0-130			1.40	25
(S) 1,4-Bromofluorobenzene				*98.4*	*101*	*60.0-140*				

Method Blank (MB)

(MB) R3227121-3 06/20/17 08:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	%		%	%
Oxygen	U		0.225	2.00
Carbon Dioxide	U		0.121	0.500
Methane	U		0.0584	0.400

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3227121-1 06/20/17 08:20 • (LCSD) R3227121-2 06/20/17 08:39

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	%	%	%	%	%	%			%	%
Oxygen	3.50	3.43	3.52	98.1	101	70.0-130			2.51	20
Carbon Dioxide	3.50	3.22	3.15	92.1	90.1	70.0-130			2.15	20
Methane	2.80	2.51	2.54	89.7	90.7	70.0-130			1.09	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
Z1	The identification of the analyte is acceptable; the reported value is an estimate.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660
Alaska	UST-080
Arizona	AZ0612
Arkansas	88-0469
California	01157CA
Colorado	TN00003
Conneticut	PH-0197
Florida	E87487
Georgia	NELAP
Georgia [1]	923
Idaho	TN00003
Illinois	200008
Indiana	C-TN-01
Iowa	364
Kansas	E-10277
Kentucky [1]	90010
Kentucky [2]	16
Louisiana	AI30792
Maine	TN0002
Maryland	324
Massachusetts	M-TN003
Michigan	9958
Minnesota	047-999-395
Mississippi	TN00003
Missouri	340
Montana	CERT0086
Nebraska	NE-OS-15-05
Nevada	TN-03-2002-34
New Hampshire	2975
New Jersey–NELAP	TN002
New Mexico	TN00003
New York	11742
North Carolina	Env375
North Carolina [1]	DW21704
North Carolina [2]	41
North Dakota	R-140
Ohio–VAP	CL0069
Oklahoma	9915
Oregon	TN200002
Pennsylvania	68-02979
Rhode Island	221
South Carolina	84004
South Dakota	n/a
Tennessee [1 4]	2006
Texas	T 104704245-07-TX
Texas [5]	LAB0152
Utah	6157585858
Vermont	VT2006
Virginia	109
Washington	C1915
West Virginia	233
Wisconsin	9980939910
Wyoming	A2LA

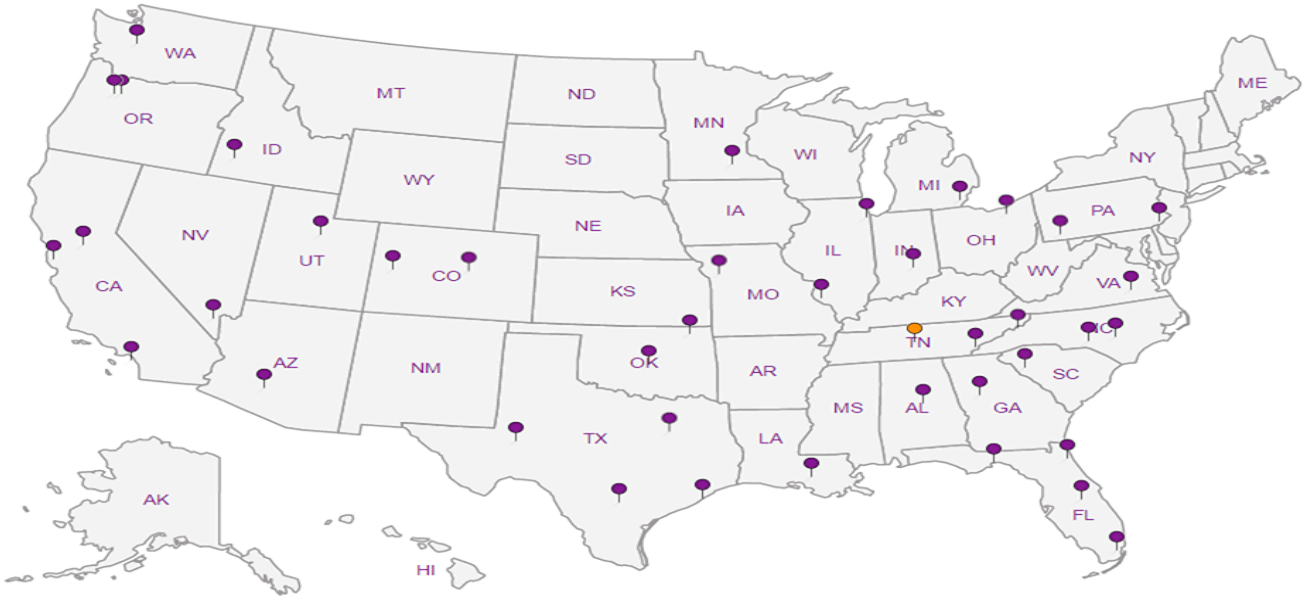
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01
A2LA – ISO 17025 [5]	1461.02
Canada	1461.01
EPA–Crypto	TN00003
AIHA-LAP,LLC	100789
DOD	1461.01
USDA	S-67674

[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

Our Locations

ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



AEI Consultants - CA

2500 Camino Diablo
Walnut Creek, CA 94597

Billing Information:
Accounts Payable- Jeremy Smith
2500 Camino Diablo
Walnut Creek, CA 94597

Pres Chk

Report to: Jonathan Sanders

Email To: jsanders@aeiconsultants.com; nbricker@aeiconsultants.com;

Project Description: Zimmerman

City/State Collected:

Phone: 925-746-6028
Fax:

Client Project # 281939

Lab Project # AEICONWCCA-281939

Collected by (print): Nathan Bricker

Site/Facility ID # 3442 ADELINE STREET

P.O. # 133225

Collected by (signature):

Immediately Packed on Ice N X Y

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed: Standard TAT

Quote #

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM,GRO Summa	Helium Summa	O2,CO2,CH4 Summa	Remarks	Sample # (lab only)
~~VB-6~~ VB-7	Grab	Air	5.0	6/15/17	1218	1	X	X	X		-01
~~VB-8~~ VB-22		Air			1308						02
~~VB-~~ VB-9		Air			1353						03
VB-21		Air			1508						04
VB-10		Air			1553						05
VB-20		Air			1625						06
VB-12		Air			1357						07
VB-18		Air			1605						08
VB-14		Air			1448						09
VB-17		Air			1527						10

Chain of Custody Page ___ of ___

ESC LAB SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 191700

M109

Acctnum: AEICONWCCA
Template: T124790
Prelogin: P606231
TSR: 110 - Brian Ford
PB:
Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: (16)1Liter summas, (16) cali manifolds, (16)3ft sections of tubing with fittings on one end, (16)3ft sections of tubing with fittings on both ends, (4)6Liter summas

pH ___ Temp ___
Flow ___ Other ___

Samples returned via: __ UPS __ FedEx __ Courier __ ___

Tracking # TRK# 7283 8328 0076-0102-0098 0087

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	6/16/17	1300	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: Amb °C Bottles Received: 10 summas

Date: 6-19-17 Time: 09:40

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

June 28, 2017

AEI Consultants - CA

Sample Delivery Group:	L917485
Samples Received:	06/21/2017
Project Number:	281939
Description:	Zimmerman
Site:	3442 ADELINE STREET
Report To:	Jonathan Sanders 2500 Camino Diablo Walnut Creek, CA 94597

Entire Report Reviewed By:

Jason Romer
Technical Service Representative

TABLE OF CONTENTS

VB-16 L917485-01 Air

Collected by: Nathan Bricker
Collected date/time: 06/19/17 11:52
Received date/time: 06/21/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991769	1	06/22/17 10:16	06/22/17 10:16	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG991950	2	06/23/17 01:18	06/23/17 01:18	DWR
Organic Compounds (GC) by Method D1946	WG992738	1	06/25/17 10:41	06/25/17 10:41	AMC

VB-19 L917485-02 Air

Collected by: Nathan Bricker
Collected date/time: 06/19/17 12:37
Received date/time: 06/21/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991769	1	06/22/17 10:34	06/22/17 10:34	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG991950	2	06/23/17 02:02	06/23/17 02:02	DWR
Organic Compounds (GC) by Method D1946	WG992738	1	06/25/17 10:55	06/25/17 10:55	AMC

VB-05 L917485-03 Air

Collected by: Nathan Bricker
Collected date/time: 06/19/17 13:36
Received date/time: 06/21/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC) by Method ASTM 1946	WG991769	1	06/22/17 10:47	06/22/17 10:47	AMC
Volatile Organic Compounds (MS) by Method TO-15	WG991950	2	06/23/17 02:47	06/23/17 02:47	DWR
Organic Compounds (GC) by Method D1946	WG992738	1	06/25/17 11:14	06/25/17 11:14	AMC

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Jason Romer
Technical Service Representative

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	ND		1	WG991769

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	564	2330		2	WG991950
Benzene	71-43-2	78.10	0.400	1.28	0.515	1.64		2	WG991950
Ethylbenzene	100-41-4	106	0.400	1.73	ND	ND		2	WG991950
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG991950
Toluene	108-88-3	92.10	0.400	1.51	1.30	4.91		2	WG991950
m&p-Xylene	1330-20-7	106	0.800	3.47	1.15	4.98		2	WG991950
o-Xylene	95-47-6	106	0.400	1.73	0.648	2.81		2	WG991950
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.1*				WG991950

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	14.1		1	WG992738
Carbon Dioxide	124-38-9	44.01	0.500	ND		1	WG992738
Methane	74-82-8	16	0.400	ND		1	WG992738

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	ND		1	WG991769

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	585	2420		2	WG991950
Benzene	71-43-2	78.10	0.400	1.28	0.778	2.49		2	WG991950
Ethylbenzene	100-41-4	106	0.400	1.73	1.34	5.82		2	WG991950
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG991950
Toluene	108-88-3	92.10	0.400	1.51	7.82	29.4		2	WG991950
m&p-Xylene	1330-20-7	106	0.800	3.47	8.51	36.9		2	WG991950
o-Xylene	95-47-6	106	0.400	1.73	2.69	11.7		2	WG991950
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*97.8*				WG991950

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	13.6		1	WG992738
Carbon Dioxide	124-38-9	44.01	0.500	1.04		1	WG992738
Methane	74-82-8	16	0.400	ND		1	WG992738

Volatile Organic Compounds (GC) by Method ASTM 1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			ppb	ppb			
Helium	7440-59-7		100000	ND		1	WG991769

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1	RDL2	Result	Result	Qualifier	Dilution	Batch
			ppbv	ug/m3	ppbv	ug/m3			
TPH (GC/MS) Low Fraction	8006-61-9	101	100	413	3950	16300		2	WG991950
Benzene	71-43-2	78.10	0.400	1.28	3.01	9.61		2	WG991950
Ethylbenzene	100-41-4	106	0.400	1.73	5.43	23.6		2	WG991950
MTBE	1634-04-4	88.10	0.400	1.44	ND	ND		2	WG991950
Toluene	108-88-3	92.10	0.400	1.51	6.85	25.8		2	WG991950
m&p-Xylene	1330-20-7	106	0.800	3.47	19.2	83.2		2	WG991950
o-Xylene	95-47-6	106	0.400	1.73	9.51	41.2		2	WG991950
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*106*				WG991950

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL	Result	Qualifier	Dilution	Batch
			%	%			
Oxygen	7782-44-7	32	2.00	10.7		1	WG992738
Carbon Dioxide	124-38-9	44.01	0.500	2.87		1	WG992738
Methane	74-82-8	16	0.400	ND		1	WG992738

Method Blank (MB)

(MB) R3227939-3 06/22/17 09:32

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ppb		ppb	ppb
Helium	U		30000	100000

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3227939-1 06/22/17 08:35 • (LCSD) R3227939-2 06/22/17 09:19

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	ppb	ppb	ppb	%	%	%			%	%
Helium	500000	508000	460000	102	92.0	70.0-130			9.92	25

Method Blank (MB)

(MB) R3228182-3 06/22/17 10:58

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
MTBE	U		0.0505	0.200
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	*96.8*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3228182-1 06/22/17 09:28 • (LCSD) R3228182-2 06/22/17 10:12

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
MTBE	3.75	4.07	4.21	109	112	70.0-130			3.37	25
Benzene	3.75	4.27	4.28	114	114	70.0-130			0.200	25
Toluene	3.75	4.25	4.34	113	116	70.0-130			2.27	25
Ethylbenzene	3.75	4.35	4.32	116	115	70.0-130			0.830	25
m&p-Xylene	7.50	8.82	8.67	118	116	70.0-130			1.71	25
o-Xylene	3.75	4.31	4.22	115	112	70.0-130			2.09	25
TPH (GC/MS) Low Fraction	176	204	202	116	115	70.0-130			0.710	25
(S) 1,4-Bromofluorobenzene				*101*	*97.8*	*60.0-140*				

Method Blank (MB)

(MB) R3228524-3 06/25/17 10:28

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Oxygen	U		0.225	2.00
Carbon Dioxide	U		0.121	0.500
Methane	U		0.0584	0.400

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3228524-1 06/25/17 09:24 • (LCSD) R3228524-2 06/25/17 09:59

Analyte	Spike Amount %	LCS Result %	LCSD Result %	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Oxygen	3.50	3.42	3.57	97.6	102	70.0-130			4.29	20
Carbon Dioxide	3.50	3.08	3.31	88.1	94.5	70.0-130			7.03	20
Methane	2.80	2.43	2.55	86.9	91.2	70.0-130			4.75	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description

The remainder of this page intentionally left blank, there are no qualifiers applied to this SDG.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**
***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

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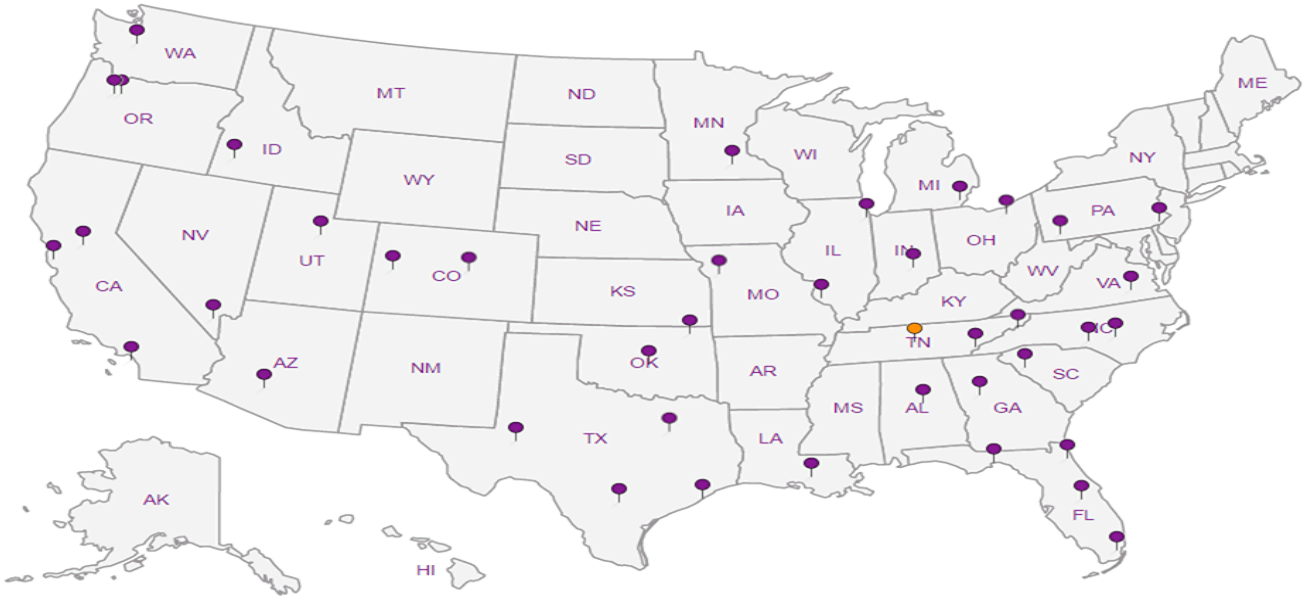

AEI Consultants - CA

2500 Camino Diablo
Walnut Creek, CA 94597

Billing Information:
Accounts Payable- Jeremy Smith
2500 Camino Diablo
Walnut Creek, CA 94597

Pres Chk

Report to: Jonathan Sanders

Email To: jsanders@aeiconsultants.com; nbricker@aeiconsultants.com;

Project Description: Zimmerman

City/State Collected: Oakland, CA

Phone: 925-746-6028
Fax:

Client Project # 281939

Lab Project # AEICONWCCA-281939

Collected by (print): Nathan Bricker

Site/Facility ID # 3442 ADELINE STREET

P.O. # 133225

Collected by (signature):

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed: Standard TAT

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	BTEXM,GRO Summa	Helium Summa	O2,CO2,CH4 Summa	Remarks	Sample # (lab only)
VB-16	Grab	Air	5.0	6/19/17	1152	1	X	X	X		01
VB-19	↓	Air	↓	↓	1237	↓	X	X	X		02
VB-05	↓	Air	↓	↓	1336	↓	X	X	X		03
		Air									
		Air									
		Air									

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 917485

Table M127

Acctnum: AEICONWCCA

Template: T124790

Prelogin: P606231

TSR: 110 - Brian Ford

PB:

Shipped Via:

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other_____

Remarks: (16)1Liter summas, (16) cali manifolds, (16)3ft sections of tubing with fittings on one end, (16)3ft sections of tubing with fittings on both ends, (4)6Liter summas

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier __ _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	6/19/17	1745	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: Amb °C Bottles Received: 3 samples 1 unused

If preservation required by Login: Date/Time

Date: 6/21/17 Time: 0845

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

July 03, 2017

AEI Consultants - CA

Sample Delivery Group:	L918483
Samples Received:	06/24/2017
Project Number:	281939
Description:	Zimmerman
Site:	3442 ADELINE STREET
Report To:	Jonathan Sanders 2500 Camino Diablo Walnut Creek, CA 94597

Entire Report Reviewed By: Brian Ford

Brian Ford
Technical Service Representative

TABLE OF CONTENTS

VB-4 L918483-01 Air

Collected by	Collected date/time	Received date/time
Nathan Bricker	06/22/17 14:33	06/24/17 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (MS) by Method TO-15	WG992927	80	06/26/17 14:28	06/26/17 14:28	GLN
Volatile Organic Compounds (MS) by Method TO-15	WG993324	2000	06/27/17 23:21	06/27/17 23:21	GLN
Organic Compounds (GC) by Method D1946	WG992738	1	06/25/17 11:29	06/25/17 11:29	AMC

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times. All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Brian Ford
Technical Service Representative

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Benzene	71-43-2	78.10	16.0	51.1	ND	ND		80	WG992927
Ethylbenzene	100-41-4	106	16.0	69.4	ND	ND		80	WG992927
Toluene	108-88-3	92.10	16.0	60.3	ND	ND		80	WG992927
m&p-Xylene	1330-20-7	106	32.0	139	ND	ND		80	WG992927
o-Xylene	95-47-6	106	16.0	69.4	ND	ND		80	WG992927
TPH (GC/MS) Low Fraction	8006-61-9	101	100000	413000	4300000	17700000		2000	WG993324
1,1-Difluoroethane	75-37-6	66.05	16.0	43.2	ND	ND		80	WG992927
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*93.8*				WG993324
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*100*				WG992927

Sample Narrative:

TO-15 L918483-01 WG992927: Cannot be evaluated at a lower dilution due to non-target matrix interference.

Organic Compounds (GC) by Method D1946

Analyte	CAS #	Mol. Wt.	RDL %	Result %	Qualifier	Dilution	Batch
Oxygen	7782-44-7	32	2.00	5.24		1	WG992738
Carbon Dioxide	124-38-9	44.01	0.500	4.22		1	WG992738
Methane	74-82-8	16	0.400	2.37		1	WG992738

Method Blank (MB)

(MB) R3228935-3 06/26/17 10:45

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0460	0.200
Ethylbenzene	U		0.0506	0.200
Toluene	U		0.0499	0.200
m&p-Xylene	U		0.0946	0.400
o-Xylene	U		0.0633	0.200
1,1-Difluoroethane	U		0.0256	0.200
(S) 1,4-Bromofluorobenzene	*86.0*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3228935-1 06/26/17 09:07 • (LCSD) R3228935-2 06/26/17 09:55

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	3.75	3.95	4.01	105	107	70.0-130			1.74	25
Toluene	3.75	4.02	4.08	107	109	70.0-130			1.30	25
Ethylbenzene	3.75	3.97	4.00	106	107	70.0-130			0.710	25
m&p-Xylene	7.50	7.62	7.61	102	102	70.0-130			0.0600	25
o-Xylene	3.75	3.81	3.87	102	103	70.0-130			1.45	25
1,1-Difluoroethane	3.75	3.50	3.47	93.5	92.6	70.0-130			0.930	25
(S) 1,4-Bromofluorobenzene				*93.2*	*90.4*	*60.0-140*				

Method Blank (MB)

(MB) R3229348-3 06/27/17 09:50

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
TPH (GC/MS) Low Fraction	U		6.91	50.0
(S) 1,4-Bromofluorobenzene	*97.1*			*60.0-140*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3229348-1 06/27/17 10:32 • (LCSD) R3229348-2 06/27/17 11:14

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
TPH (GC/MS) Low Fraction	176	187	189	106	107	70.0-130			0.920	25
(S) 1,4-Bromofluorobenzene				*100*	*101*	*60.0-140*				

Method Blank (MB)

(MB) R3228524-3 06/25/17 10:28

Analyte	MB Result %	MB Qualifier	MB MDL %	MB RDL %
Oxygen	U		0.225	2.00
Carbon Dioxide	U		0.121	0.500
Methane	U		0.0584	0.400

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3228524-1 06/25/17 09:24 • (LCSD) R3228524-2 06/25/17 09:59

Analyte	Spike Amount %	LCS Result %	LCSD Result %	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Oxygen	3.50	3.42	3.57	97.6	102	70.0-130			4.29	20
Carbon Dioxide	3.50	3.08	3.31	88.1	94.5	70.0-130			7.03	20
Methane	2.80	2.43	2.55	86.9	91.2	70.0-130			4.75	20

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
U	Not detected at the Reporting Limit (or MDL where applicable).
RPD	Relative Percent Difference.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.

Qualifier	Description

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California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP,LLC	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1.] Drinking Water [2.] Underground Storage Tanks [3.] Aquatic Toxicity [4.] Chemical/Microbiological [5.] Mold [n/a] Accreditation not applicable

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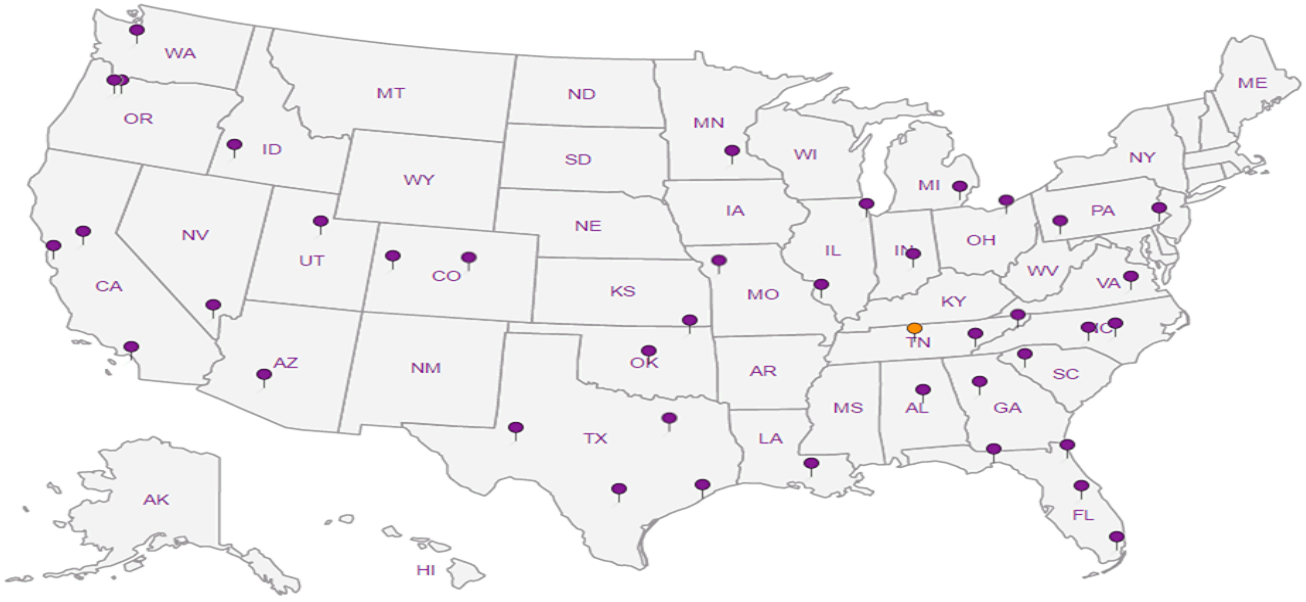


Company Name/Address:
AEI CONSULTANTS - CA
2500 CAMINO DIABLO
WALNUT CREEK, CA 94597

Billing Information:
ACCOUNTS PAYABLE - JEREMY SMITH
2500 CAMINO DIABLO
WALNUT CREEK, CA 94597

Report to: JONATHAN SANDERS

Email To: jsanders@aeiconsultants.com/nbricker@aeiconsult

Project Description: ZIMMERMAN

City/State Collected: OAKLAND, CA

Phone: 925-746-6028
Fax:

Client Project # 281939

Lab Project # AEICONWCCA-281939

Collected by (print): NATHAN BRICKER

Site/Facility ID # 3442 ADELINE STREET

P.O. # 133225

Collected by (signature):

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed: STANDARD TAT

Email? ___No ✓Yes
FAX? ___No ___Yes

Canister Pressure/Vacuum

Sample ID	Sample Description	Can #	Date	Time	Initial	Final	BTEX, GRO SUMMA	O2, CO2, CH4 SUMMA	1,1-DIFLUORETHANE LEAK CHECK		Rem./Contaminant	Sample # (lab only)
VB-4	SOIL VAPOR	5348	6/22/2017	1433	-30	-5	X	X	X			6

Analysis

Chain of Custody Page ___ of ___

ESC LABORATORY SCIENCES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# 918483
M162

Acctnum:
Template:
Prelogin:
TSR:
PB:
Shipped Via:

Remarks:

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Samples returned via: ☐ UPS ☒ FedEx ☐ Courier ☐ ____
	6/23/17	1700		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
				1
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 6-24-17 Time: 845

Condition: (lab use only)

COC Seal Intact: ___Y ___N ___NA

pH Checked: NCF:

ESC LAB SCIENCES
Cooler Receipt Form

Client:	AECOM	SDG#	91483
Cooler Received/Opened On:	6-24-17	Temperature:	Amb
Received By:	Nadia Yakob		
Signature:			

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?			
COC Signed / Accurate?			
Bottles arrive intact?			
Correct bottles used?			
Sufficient volume sent?			
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

APPENDIX E

WASTE DISPOSAL RECORDS

ADVANCED ENVIRONMENTAL SERVICES

CALIFORNIA ENVIRONMENTAL SERVICES

13645 Ben Dier Lane
Baker City, OR 97814

415.699.6207
Fax 541.523.1870

Log #: _____

NON-HAZARDOUS WASTE MANIFEST

GENERATOR

Generator Name: Zimmerman Family Trust

Location:

Address:

Address: 3442 Adeline Street
Oakland , CA

Phone #:

Phone No.:

Approval Number	55 Gallon Drum(s) Non-Hazardous	Net Weight (Tons)
PHLF14359	**2**	

Description of Material

Non-Regulated Petroleum
Contaminated Material
Non-DOT/RCRA Regulated

I hereby certify that the above named material does not contain free liquids as defined by 40 CFR Part 260.10 or any other applicable state law, is not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law, is not a DOT hazardous substance as defined by 49 CFR Part 172 or any applicable state law, has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulations.

Signature | Generator Authorized Agenr Name | Date

TRANSPORTER

Transporter Name: Jeff Rhodes

Driver Name: Jeff Rhodes

Address: 401 CHANNEL ST
BENICIA, CA

Vehicle License No./State:

Truck Number: 001

I hereby certify that the above named material was picked up at the generator site listed above and was delivered without incident to the destination listed below

Driver Signature | Print Driver Name: Jeff Rhodes | Date: NOV 17 2016

DESTINATION

Facility Name: Potrero Landfill

Phone: 707.429.9600

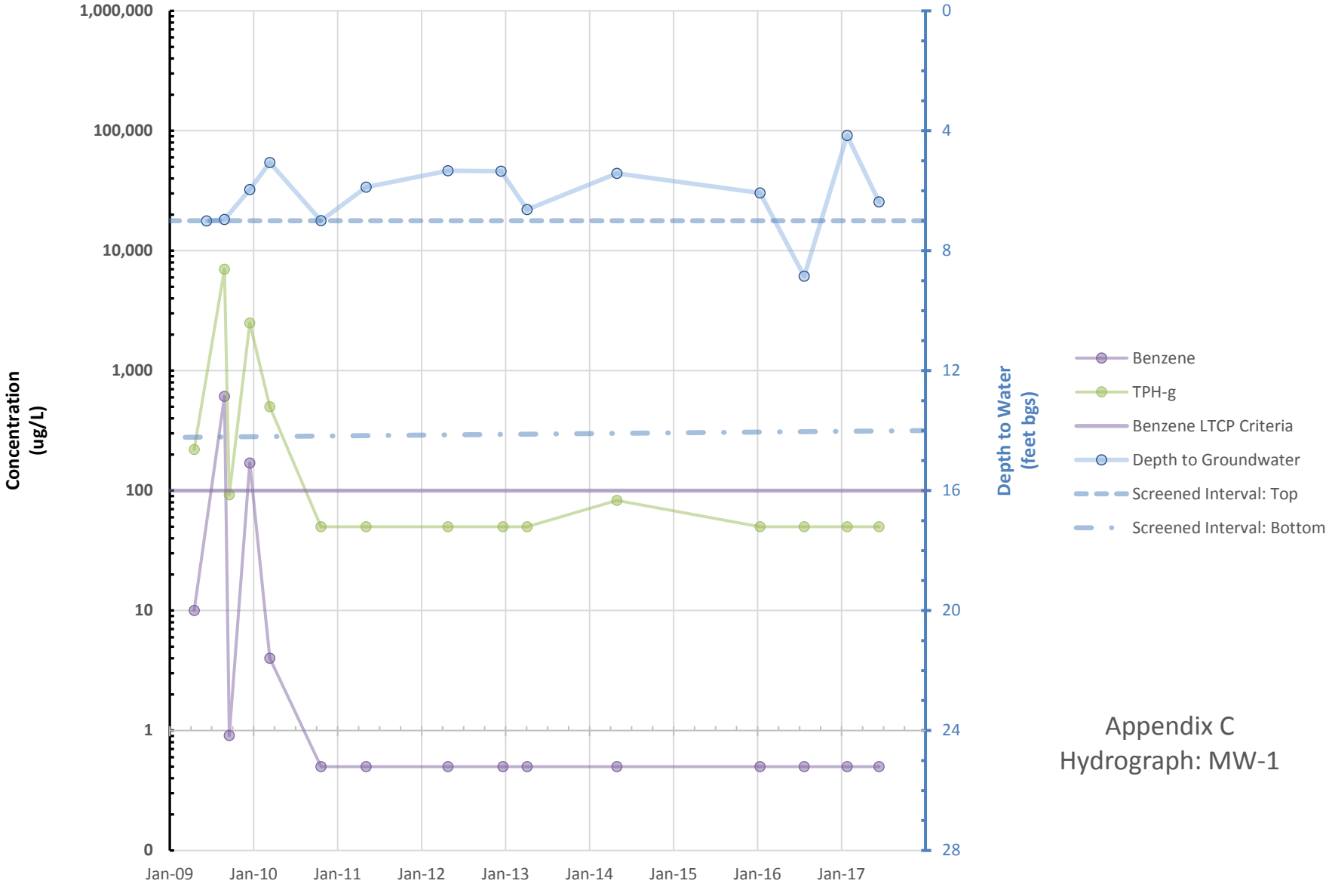
Address: 3675 Potrero Hills Lane, Suisun City, CA

I hereby certify that the above named material has been accepted and to the best of my knowledge the foregoing is true and accurate.

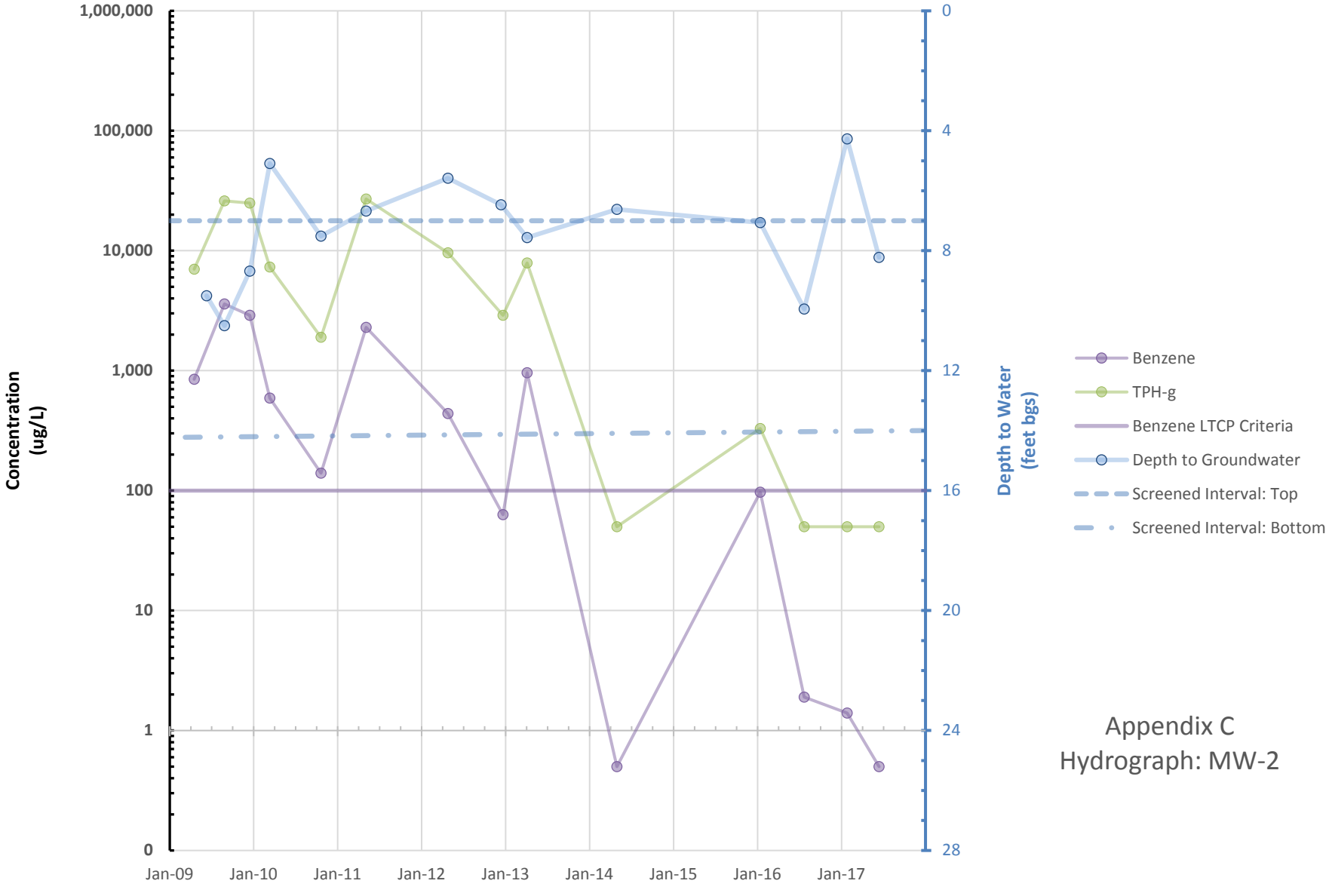
Signature | Authorized Agent Name | Receipt Date

APPENDIX F

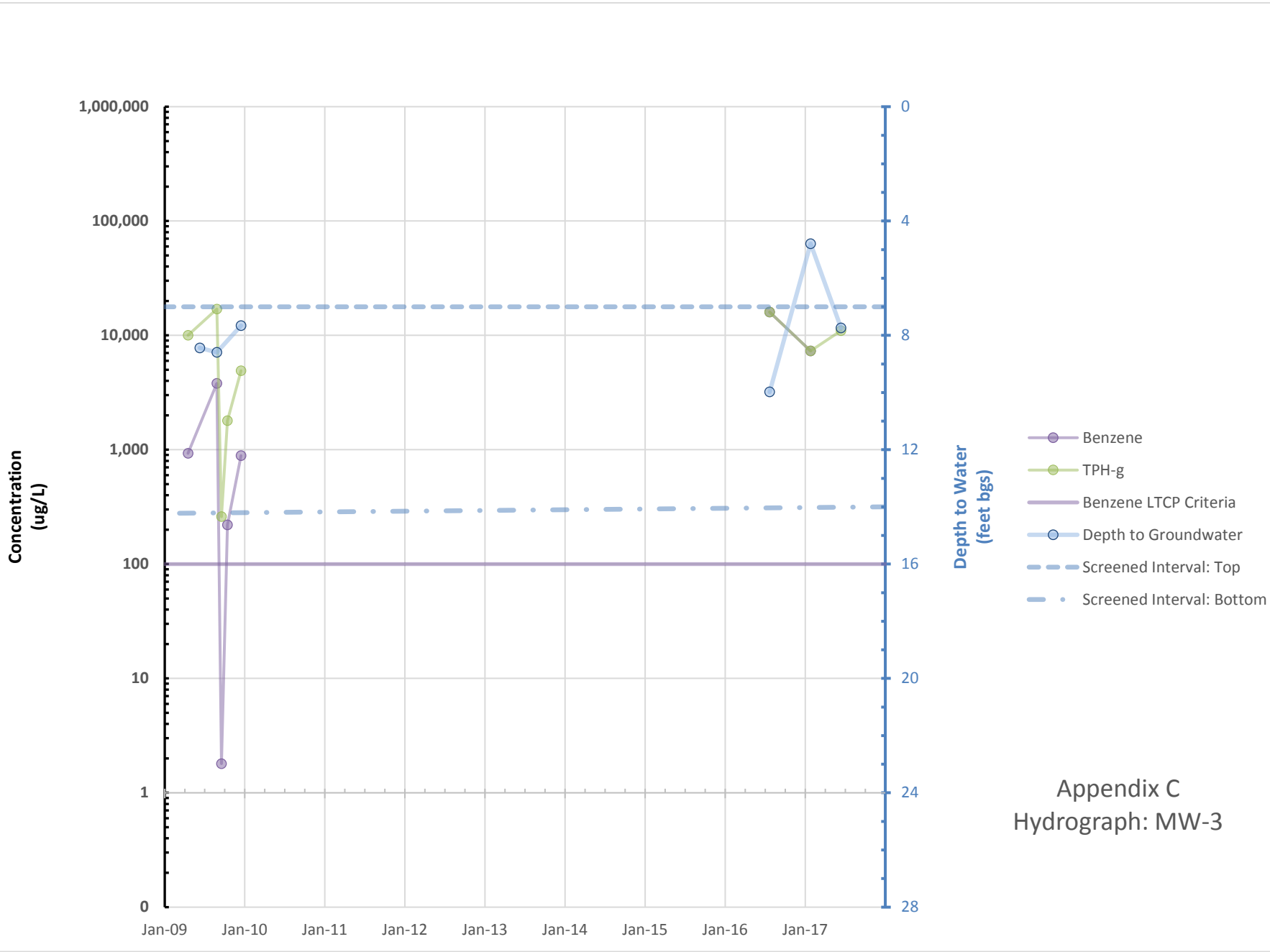
HYDROGRAPHS



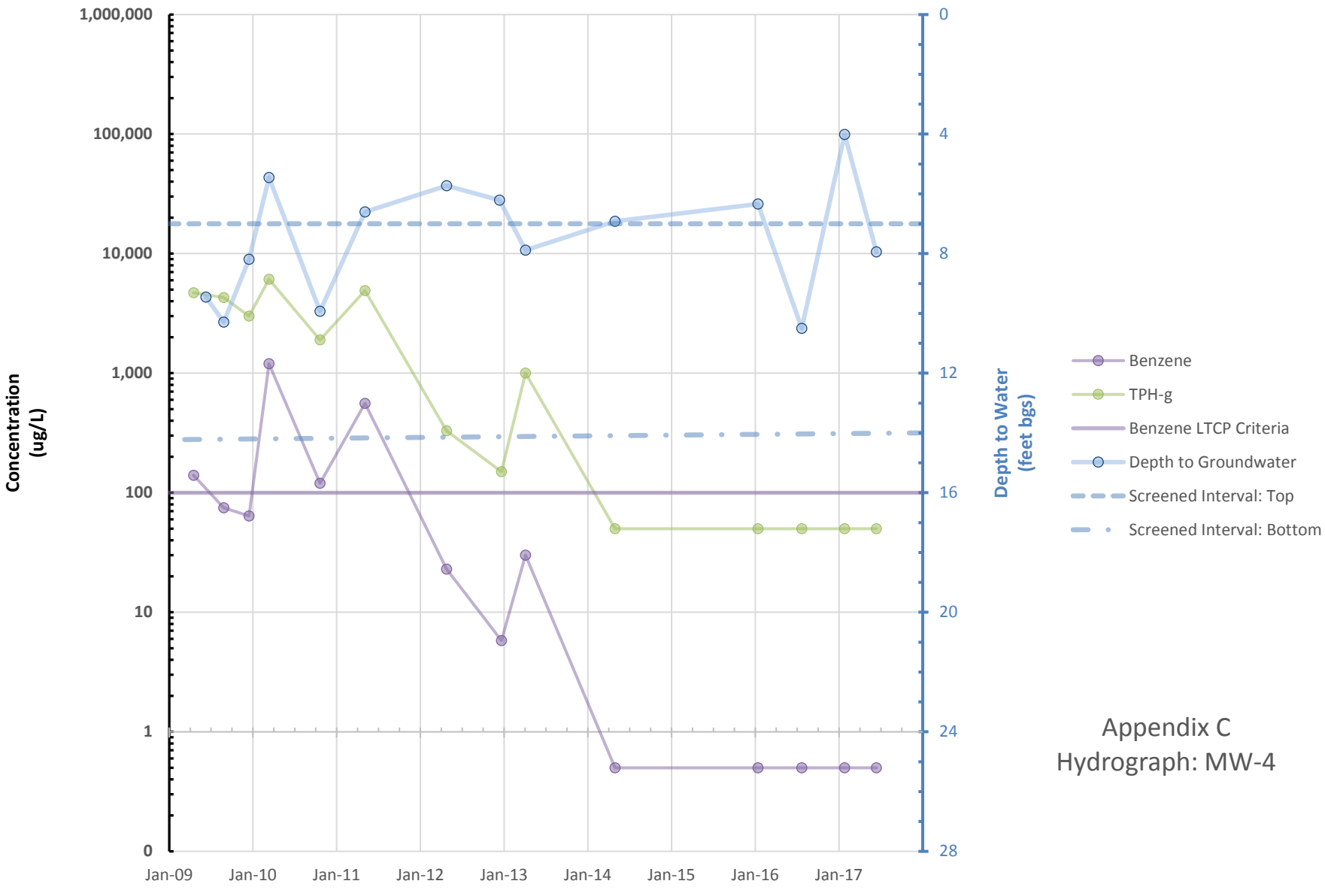
Appendix C
Hydrograph: MW-1



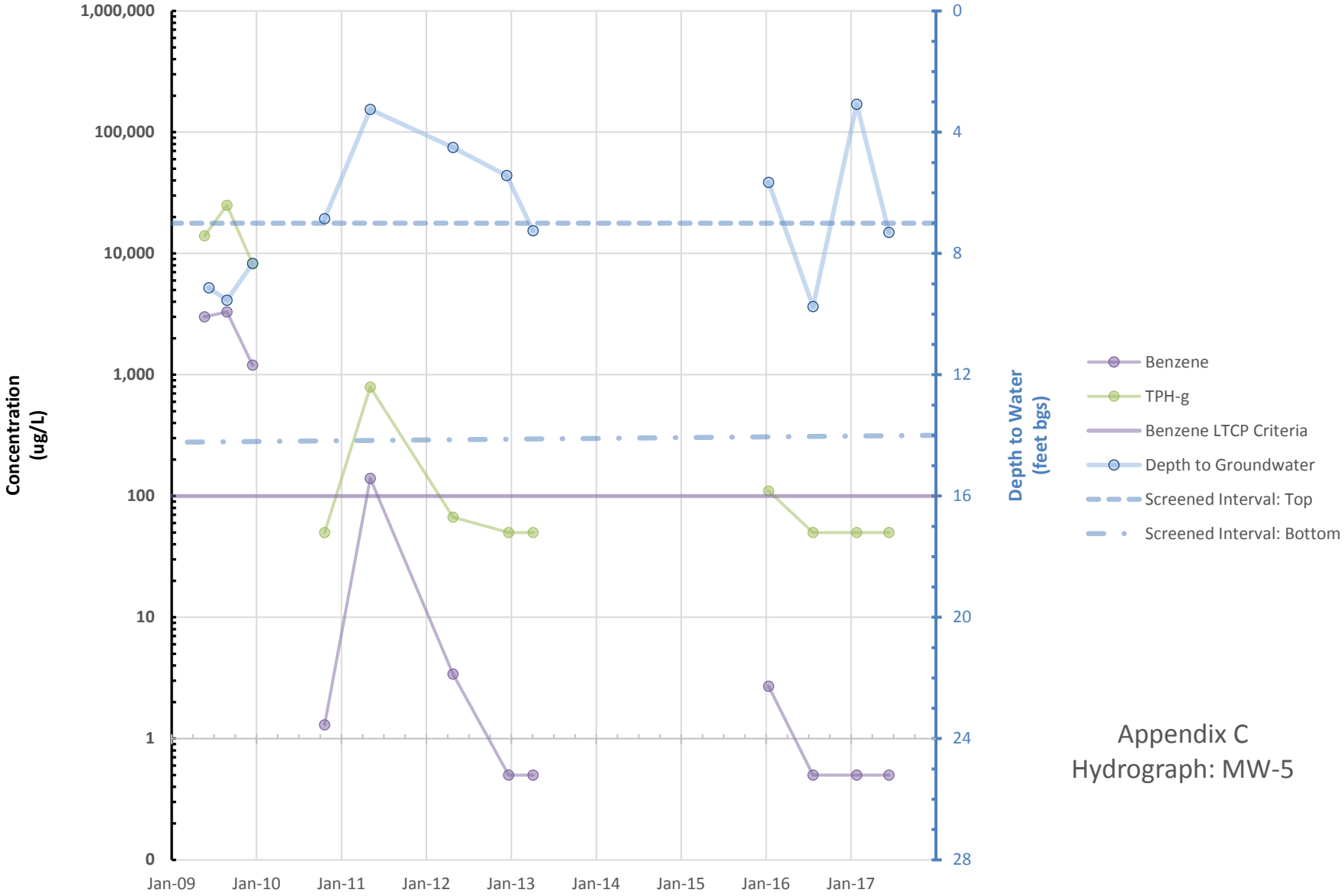
Appendix C
Hydrograph: MW-2



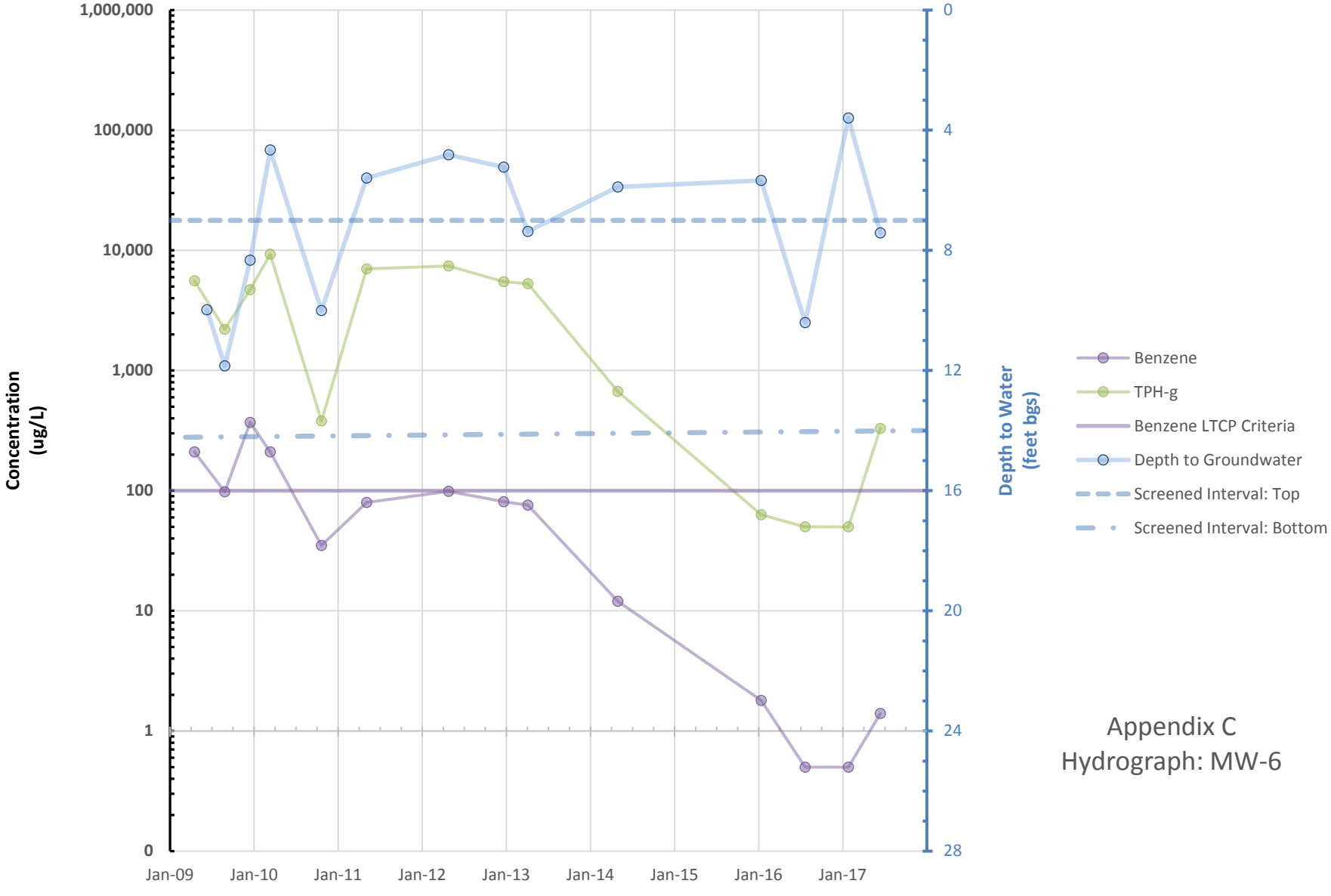
Appendix C
Hydrograph: MW-3



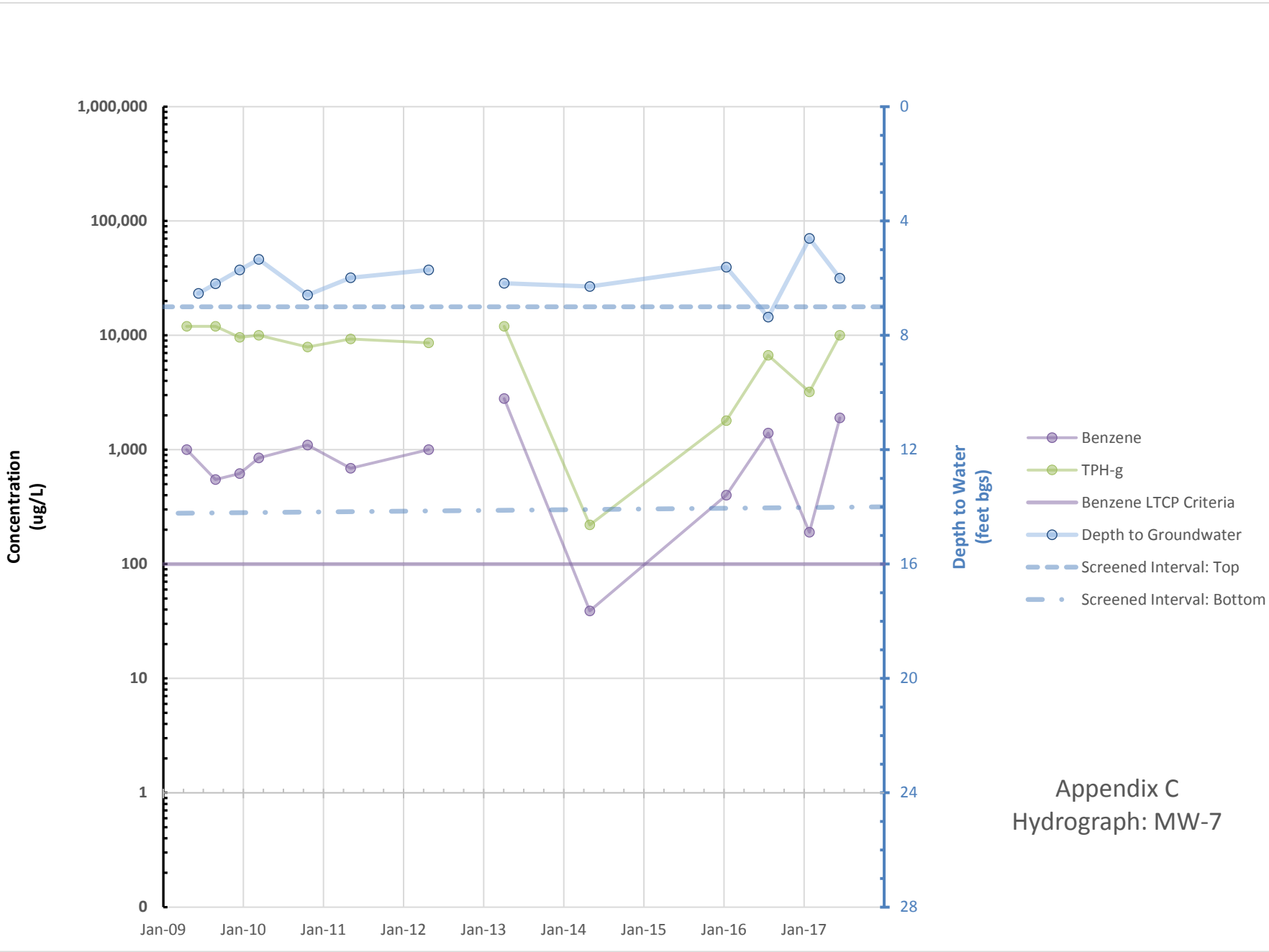
Appendix C
Hydrograph: MW-4



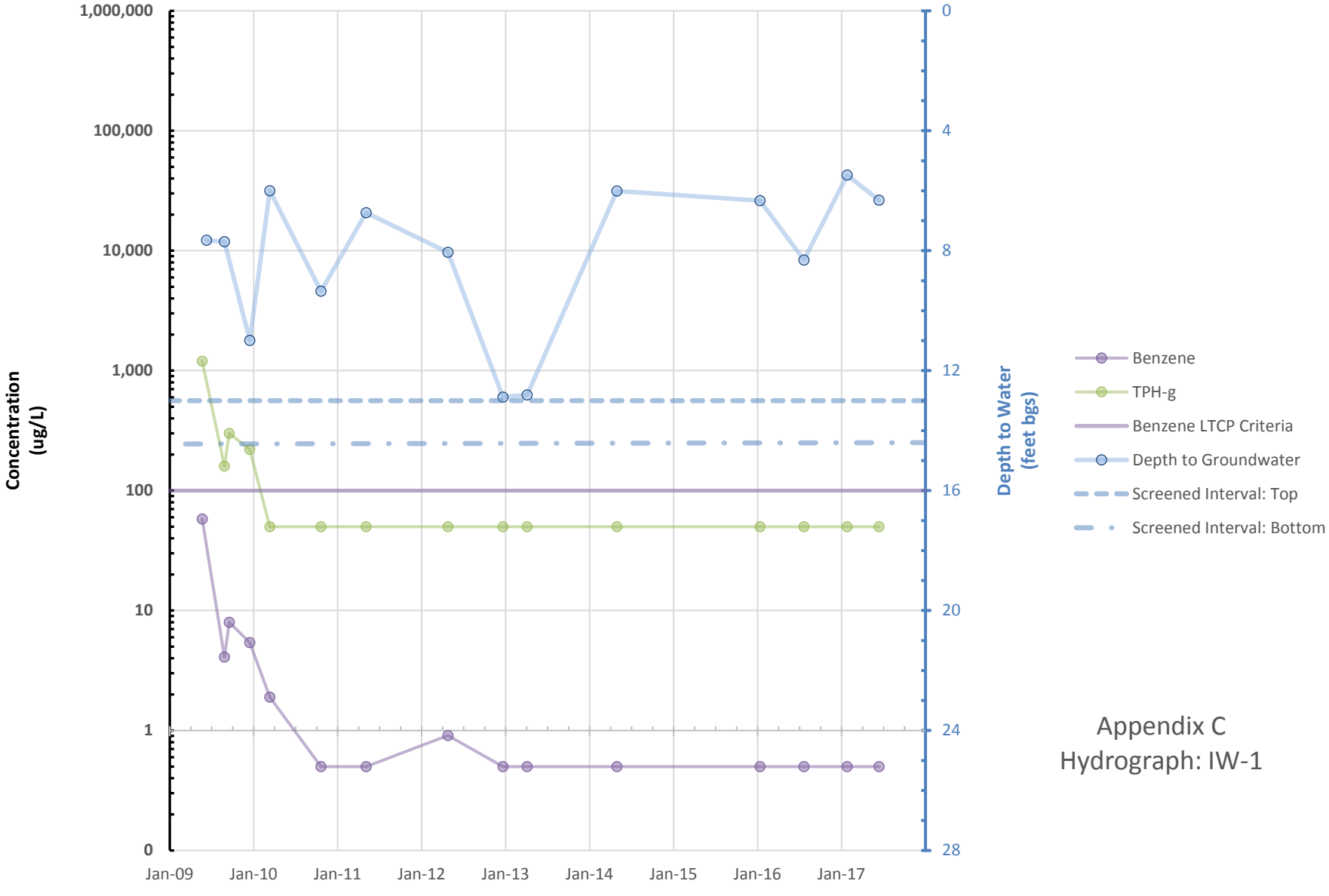
Appendix C
Hydrograph: MW-5



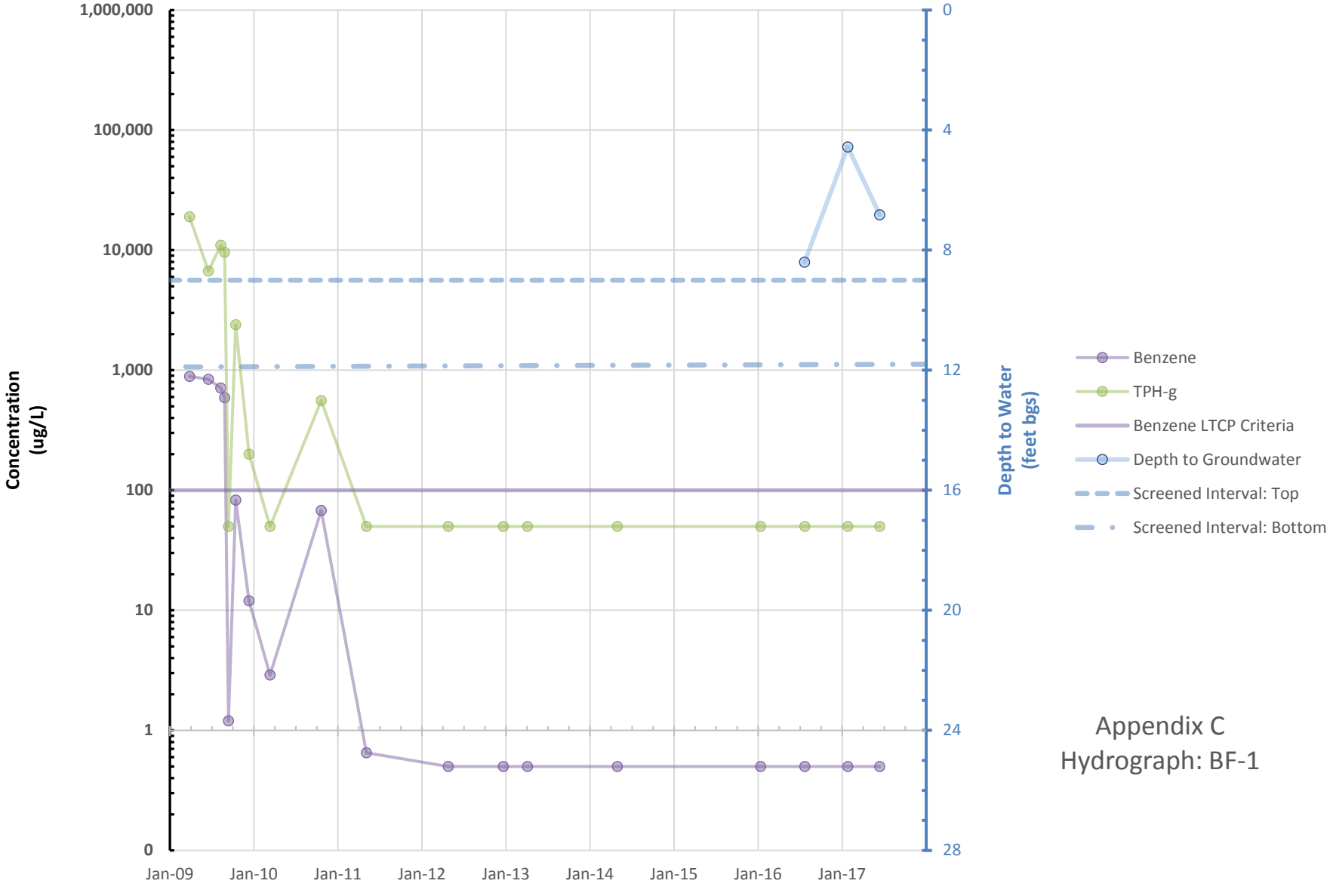
Appendix C
Hydrograph: MW-6



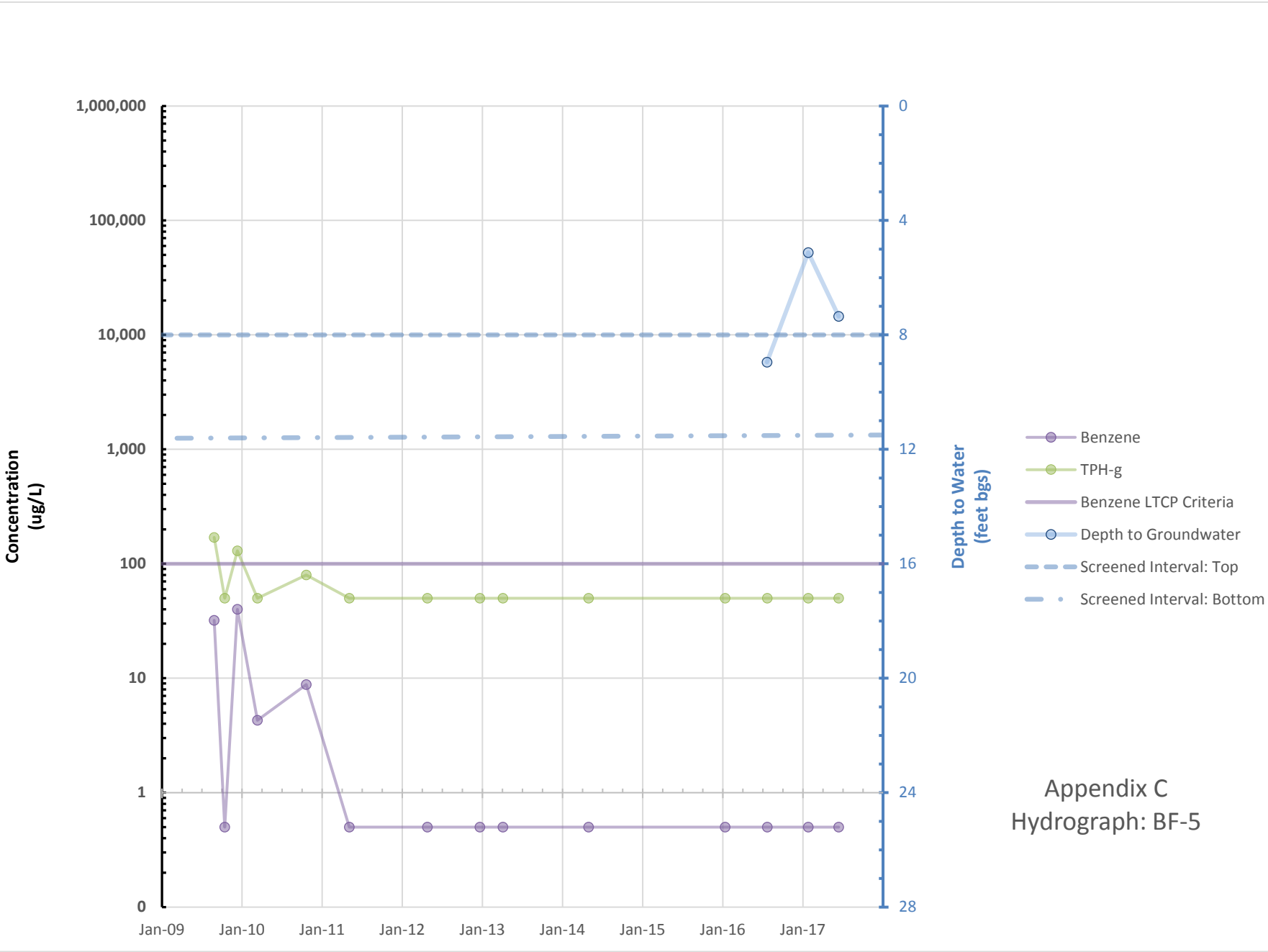
Appendix C
Hydrograph: MW-7



Appendix C
Hydrograph: IW-1



Appendix C
Hydrograph: BF-1



Appendix C
Hydrograph: BF-5