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Compliance & Closure, Inc.

October 31, 2017

**RECEIVED**
By Alameda County Environmental Health 9:27 am, Nov 03, 2017

Alameda County Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Attention: Mr. Mark Detterman

RE: Soil Vapor Sampling & Off-Site Soil & Groundwater Investigation Report
Delong Oil, Inc.
1716 Webster Street, Alameda, California 94501
Fuel Leak Case No. RO0003140; (Global ID No. T10000005974)
(CCI Project No. 12214-3)

Dear Mr. Detterman:

Compliance & Closure, Inc. (CCI) is pleased to present this Soil Vapor Sampling & Off-Site Soil & Groundwater Investigation Report for the Delong Oil site located at 1716 Webster Street, Alameda, California. CCI appreciates your comments and if you have any questions, please contact our office at 925-648-2008 or e-mail gary@cci-envr.com.

Sincerely,
Compliance & Closure, Inc.

Professional Geologist
Gary R. Mulkey
NO. 5842
State of California

Gary R. Mulkey, P.G. 5842

"I have read and acknowledged the content, recommendations and/or conclusions in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's Geotracker Website."

Submitted by;

Delong Liu
President

# Soil Vapor Sampling &
# Off-Site Soil & Groundwater Investigation Report

# For

# Delong Oil, Inc.
# 1716 Webster Street, Alameda County, California

**Introduction**

Compliance & Closure, Inc. (CCI) has prepared this Soil Vapor Sampling & Off-Site Soil & Groundwater Investigation Report on behalf of Delong Oil, Inc., owner of the property located at 1716 Webster, Alameda, California (Figure 1). The investigation was requested by the Alameda County Environmental Health (ACEH) in its letter dated March 17, 2017.

In its March 17, 2017 letter, the ACEH stated that the sites diesel underground storage tank (UST) release on the northwest side of the site and the waste oil UST release on the southeast side of the site be investigated as separate environmental cases. The Waste Oil UST investigation will continue to be conducted as Fuel Leak Case No. RO0003140, (Global ID # T10000005974). ACEH requested a work plan be prepared by May 19, 2017 to investigate the extent of soil and groundwater contamination emanating from the former waste oil tank. As a part of the investigation, CCI also investigated the construction of the residential home to determine if the house had a basement structure or sump where soil gas could collect. CCI summited to the County a Revised Off-Site Soil & Groundwater Investigation Work Plan, dated May 11, 2017. The work plan was conditionally approved by the County on July 5, 2017.

**Site Setting**

The site is currently an operating 76 gas station with a Circle K convenience store located on the southeast corner of Webster Street and Buena Vista Avenue in the City and County of Alameda, California. Adjacent to the property on the east side are residences, across Buena Vista Avenue to the north is an operating Chevron gas station and commercial properties are located south and west of the site.

**Background Information**

In 1983, three single-walled, fiberglass gasoline fuel tanks (12,000-gallon, 10,000-gallon and 6,000-gallon) and one waste oil tank were installed underground (USTs) at the site. In 1987

Mobil Oil Corporation replaced the waste oil tank with a 1,000-gallon tank. The site was later sold to British Petroleum, which operated the site until 1994. In 1994, the site was sold to ConocoPhillips, which operated the site until 2009. Between 1990 and 2009, several environmental site investigations and monitoring activates were conducted by several environmental consulting firms including Kaprealian Engineering, Inc., Hydro-Environmental Technologies, Inc., Fugro West and TRC Alton Geoscience.

In 2009, ConocoPhillips sold the site to United Brothers Enterprises, Inc., also doing business as Delong Oil, Inc., the current owner of the property. In early November 2009, Delong Oil converted the 6,000-gallon gasoline tank to a diesel tank. In July 2011, free-phase product was discovered in well RW-1, located adjacent to the converted diesel tank. Fingerprint analysis later identified the liquid as diesel fuel. Since Delong Oil was the only operator to sell diesel fuel at the site, the ACHE named it as a responsible party for the unauthorized release of the fuel. On September 6, 2013, the 1,000-gallon waste oil tank was removed from the site. Two soil samples and one grab water sample were collected from the excavation. The laboratory reported the soil samples contained detectable total petroleum hydrocarbons as diesel (TPHd) at 30.9 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as motor oil (TPHmo) at 231 mg/kg. The groundwater sample was also reported to contain detectable TPHd at 18,200 micrograms per liter (ug/L) and TPHmo at 46,200 ug/L. Based on these results, Delong Oil was again named a responsible party for an unauthorized release of product in the vicinity of the former waste oil tank.

On June 10, 2014, ACEH issued a letter directing Delong Oil to prepare a scope of work to characterize the downgradient and lateral extent of the free-phase product and groundwater contamination associated with the waste oil tank. ACEH also directed Delong Oil to evaluate potential impacts from the waste oil tank release to adjacent down-gradient residential buildings.

On January 25, 2016, CCI conducted a soil and groundwater investigation in the vicinity of the former was oil and hydraulic lift area of the former gas station building. CCI was following the scope of work in the approved work plan from June 2014.

Results from the investigation showed that the soil and groundwater samples collected from the area just north and west of the former waste oil tank and the area of the former hydraulic lifts were reported by the laboratory to contain detectable concentrations of TPHd. Soil sample SB-6-5, collected from a depth of 5 feet was reported by the laboratory to contain the highest TPHd concentration, at 32.1 mg/kg. This soil sample was also reported to contain TPHmo at 178 mg/kg and total petroleum hydrocarbons as hydraulic oil (THPho) at 34.7 mg/kg. The concentration of TPHd in the other 11 soil samples were much lower. No other compounds were detected in the soil samples.

Six groundwater samples collected from the borings were reported to contain relatively low concentrations of TPHd. All the TPHd samples were below the ESLs for groundwater where groundwater is a current or potential drinking water source. Four of the water samples, however, were reported to contain TPHmo ranging from 0.221 mg/L at SB-5-W to 0.493 mg/L at SB-6-W. All four of these water samples (SB-1-W, SB-2-W, SB-5-W and SB-6-W) exceeded the 100 ug/L ESLs for TPHmo where groundwater is a current or potential drinking water resource. The extent of the TPHmo in the groundwater to the east was not defined. The current and past groundwater gradient at the site indicates the groundwater flow direction is generally toward the north. PID readings recorded during the investigation generally ranged from 15 to 1440 ppm in several of the soil borings. These PID readings did not correlate with results from the laboratory analysis.

On October 19, 2016, The ACEH requested a new work plan that addressed the residential foundations of the homes to the east of the site, on site soil vapor sampling and further delineation of the groundwater diesel plume to the northwest of the site. CCI submitted the work plan to ACEH on December 5, 2016. However, in its March 17, 2017, the ACEH issued a letter indicated that the sites diesel underground storage tank (UST) release and the waste oil UST release would be investigated as separate environmental cases. ACEH requested a work plan be prepared for Fuel Leak Case No. RO0003140 to investigate the extent of off-site soil and groundwater contamination emanating from the former waste oil tank to the east and northeast of the former waste oil tank location. CCI summited to the County a Revised Off-Site Soil & Groundwater Investigation Work Plan, dated May 11, 2017. The work plan was conditionally approved by the County on July 5, 2017.

**Scope of Work**

In response to the ACEH directive, CCI proposes to do the following;

1) Send a letter to the property owner of the adjacent residence immediately east of the gas station site to request access to the property to investigate the building foundation and obtain permission to collect soil and water samples from the site;

2) Obtained boring permits from Alameda County Public Works Agency;

3) Use a hand auger to collect soil samples and a grab water sample from the back yard of the residence at 706 Buena Vista Avenue and collected subsurface soil vapors samples along the east side of the gas station site to determine any impact to the residential home east of the former waste oil tank location;

4) Presented the results of the investigation in a report.

**Residential Foundation Investigation**

On September 6, 2013, the 1,000-gallon waste oil tank was removed from the southwest side of the site. Two soil samples and one grab water sample were collected from the excavation. The laboratory reported the soil samples contained detectable total petroleum hydrocarbons as diesel (TPHd) at 30.9 milligrams per kilogram (mg/kg) and total petroleum hydrocarbons as motor oil (TPHmo) at 231 mg/kg. The groundwater sample was also reported to contain detectable TPHd at 18,200 micrograms per liter (ug/L) and TPHmo at 46,200 ug/L. Due to the soil and groundwater contamination detected from the waste oil tank removal, the ACEH has requested that the residential home to the east of the Delong Oil site have its foundation investigated for the presence of any petroleum vapors and collect soil and groundwater samples from boring in the backyard. On July 20, 2017, CCI send a letter to the property owner located at 706 Buena Vista Avenue to request access to the property to investigate building foundation for any sign of petroleum vapors and collect soil and groundwater samples (Figure 2). The property owner granted CCI access. A meeting with the property owner was held on October 4, 2017 to determine if the residential structure has a basement or uses a sump pump to remove water from underneath the home. The owner of the property told CCI that foundation was constructed as a slab on grade. A garage is located on the bottom floor slab. The residential rooms are located on the second floor. CCI use a PID meter to determine if any measurable vapors were present in the garage. The PID meter did not register any elevated reading while in the garage. PID reading ranged from 0.0 to 0.1 ppm.

**Soil and Groundwater Sampling**

Due to limited site access to the backyard of the adjacent residence, CCI used a 3-inch diameter hand auger to bore down 10 feet and collect two soil and one grab water sample under Alameda County Public Works Agency (County) Permit No. W2017-0686 (Appendix A). The soil encountered in the boring consisted of a brown silty sand to fine sand, which was found to be moist and loose (Appendix B). While hand augering the boring, CCI collected one sample at a depth of 3 feet and the second soil sample at 7 feet using a using a slide hammer and sampling tube fitted with a 2 x 6-inch brass liner. Upon retrieval, the brass liner was sealed with Teflon® sheets and plastic caps, labeled, logged onto a chain of custody form and placed into an ice chest for transport to the laboratory.

Groundwater was encounter at depth of 8 feet below the ground surface. No petroleum odors were noted in the boring. CCI installed ten feet of ¾-inch diameter PVC tubing with 5 feet of 0.020-inch machine slots into the borehole. A groundwater sample was collected from the boring by inserting 3/8-inch diameter Teflon tubing into the temporary well and using a peristaltic pump to collect the water samples. The groundwater was pumped into laboratory supplied sample containers, labeled, logged onto a chain of custody form and placed into an ice chest for transport to the laboratory. Upon completion of the sampling, the boring was grouted with Portland cement

in the presence of a County representative. CCI use a tremie pipe installed to the bottom of the boring and poured grout down the pipe into the boring until grout reaches the surface (See Figures 6, 6A & 7).

**Laboratory Analysis for Soil and Groundwater Samples**

A total of two soil samples (SB-7-3 & SB-7-7) and one water sample (SB-7-W) were collected during the investigation. The samples were submitted to SGS Accutest Laboratories (Accutest), a state-certified laboratory located in San Jose, California, for chemical analysis. Accutest employed methods approved by the California Regional Water Quality Control Board (CRWQCB) and the EPA. The samples were analyzed for the presence of total petroleum hydrocarbons as gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene and halogenated volatile organic compounds using EPA Test Method 8260B. The samples were also analyzed for total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as motor oil (TPHmo) using EPA Test Method 8015B and polyaromatic hydrocarbons using EPA Test Method 8270D. All the water samples analyzed for TPHd and will be analyzed with silica gel cleanup.

**Soil Vapor Sampling**

CCI collected soil gas samples from three sample locations (SV-1, SV-2 & SV-3) along the east side of the gas station site, Figure 2. Prior to sampling, groundwater was measured in well MW-3A at 7 feet, which is below the 5-foot soil vapor probe depth. The subsurface vapor sampling was conducted using a Direct-Push Technology (DPT) system provided by Gregg Drilling and Testing of Martinez, California under the supervision of a California Professional Geologist. Soil gas. CCI retained Pangea Environmental Services, Inc. of Oakland, California to collect the three soil vapor samples. The soil gas samples were analyzed by McCampbell Analytical, Inc. of Pittsburg, California. The soil gas samples collected during the investigation were analyzed for volatile organic compounds (VOCs) using ASTM D-1946 and TO-15 analysis, oxygen, carbon dioxide and methane using test method ASTM D-1946-90. In addition, the samples were analyzed for Naphthalene using ASTM F-1946 and TO-17 analysis. The sample results were evaluated using screening levels developed by the Department of Toxic Substance Control (DTSC) Human and Ecological Risk Office (HERO). In addition, CCI compared the results to the San Francisco Bay, Regional Water Quality Control Boards, Environmental Screening Levels (ESLs) for soil vapor gas to determine if any VOC soil gas will be an issue at the subject site.

**Temporary Soil Gas Sampling Probe Installation**

Prior to commencing field work, CCI notified Underground Service Alert (USA) and a private line location firm to clear the proposed boring locations of any underground utilities. CCI installed the three temporary sampling points by “direct-pushing” small diameter rods into the subsurface with a Geoprobe® System under Alameda County Public Works Agency (County) Permit No. W2017-0685 (Appendix A). The rods were pushed to a depth of approximately 5

feet. Once the probe reached the designated sampling depth, ¼-inch outside diameter (O.D.) Teflon tubing with a vapor implant was inserted through the direct push probe, (Figure 3). The vapor implant was placed at the vertical midpoint of the sand pack having a thickness of 6-inches to 1 foot. One foot of dry granular bentonite was placed above the sand pack. Hydrated granular bentonite with then be placed on top of the 1 foot of the dry granular bentonite and brought to the surface. After construction of each temporary soil gas probe, samples were not collected for at least 2 hours to allow subsurface conditions to equilibrate.

**Shut-in Test**

The shut-in test was used to determine whether there are any leaks in the sample train between the SUMMA® canister and the vapor tight valve atop the sample probe. This test was performed prior to connecting the sample train to the ¼-inch Teflon tubing on the vapor sample probe. The sample train consists of a SUMMA® canister, a flow regulator (150-millilters/minute), vacuum gauges, purge port, sample port and micro-filter (Figure 4). The SUMMA® canister was attached to the sample manifold; the sample port valve was then closed. A vacuum pump was then attached to the purge port and a vacuum of at least 20 inches of mercury (hg) was applied. Once the vacuum was applied, the purge port valve was closed. The vacuum in the manifold was monitored for at least 5 minutes using an attached vacuum gauge. The vacuum readings remained constant at all 3-sample location. No leaks were noted.

**Leak Test**

A leak test was performed to determine whether ambient air is leaking into the soil gas sample during collection of the sample. The test was conducted at every soil gas probe sample location. Isopropyl Alcohol (IPA) was used as a liquid tracer compound to evaluate sample integrity. A leak test shroud was used and placed over the sample train at the surface to create background atmosphere with the tracer gas. The shroud is designed to contain the entire sampling train and the soil gas well annulus (Figure 5). The seal integrity of the sample train and soil sampling probe was confirmed by analyzing the soil gas sample for the tracer compound Isopropyl Alcohol (IPA).

**Vapor Probe Purge Volume**

To ensure stagnant or ambient air was removed from the sampling point and to assure samples collected are representative of subsurface conditions, the air in the sample probe was purged. CCI will use a default of three (3) purge volumes at each sample location and will calculate the purge volume based on purge volume tables (Appendix C). Three sampling tube volumes were purged using a vacuum pump.

**Subsurface Vapor Sampling**

Once the Shut in Test, Leak Test and Vapor Probe Purge were completed soil vapor samples were then collected in a 1-liter SUMMA® equipped with a pressure gauge. For each sample canister, initial and final pressure readings and sampling times were recorded. Following soil vapor sample collection, the SUMMA® canister valve was closed, labeled, recorded on a chain of custody form and placed into a cooler for transport to the laboratory. A copy of Pangea's field logs are attached in Appendix B. The probe boreholes were then backfilled with Portland cement in the presence of a County representative.

**Laboratory Results**

As previously stated, the soil and groundwater samples were analyzed by SGS Accutest Laboratory. Accutest reported one of the two soil samples (SB-7-3) to have minor concentrations of petroleum hydrocarbons. Soil sample SB-7-3 was reported to have detectable total petroleum hydrocarbons as motor oil (TPHmo-C28-C40) at 2.70 milligrams per kilogram (mg/kg). This concentration is an estimated value below the laboratory reporting limit. This soil sample was also reported to contain 21.8 micrograms per kilogram (ug/kg) fluoranthene and 20.6 ug/kg of pyrene. No other petroleum hydrocarbon compounds were detected in either soil sample. The laboratory reported grab water sample SB-7-W to have detectable total petroleum hydrocarbons as diesel (TPHd – C10-C28) at a concentration of 0.0458 micrograms per liter (ug/L). This concentration is also an estimated value below the laboratory reporting limit. No other petroleum compounds were detected. The soil and groundwater laboratory results are summarized in Table 1 and Table 1A. A copy of the laboratory report is attached in Appendix D. The laboratory also reported detectable concentrations of acetone and methylene chloride in both soil samples and the one water sample. All three samples were shipped by Accutest in a bulk container to their Florida laboratory for analysis. The methylene chloride is a suspected laboratory contaminant. The source of the acetone is unknown.

A total of four soil vapor samples and one shroud sample were submitted to McCampbell Analytical, Inc., (McCampbell) located in Pittsburg, California for laboratory analysis. The laboratory reported detectable concentrations of tetrachloroethene (PCE), toluene, ethylbenzene and total xylenes. None of these detected compounds exceeded toxicity factors for DTSC HERO screening levels, the State of California CHHSLs soil gas screening levels for a residential scenario and the San Francisco Bay soil gas ESLs for residences.

PCE was detected at concentrations that ranged between 6.4 ug/$m^3$ at SV-3 to 24 ug/$m^3$at SV-2. Toluene was detected at concentration ranging from 6 ug/$m^3$ t0 8.6 ug/$m^3$. Total xylenes were detected at concentrations ranging from 22 ug/$m^3$to 28 ug/$m^3$ and ethylbenzene was detected at concentrations ranging from 2.9 ug/$m^3$ to 4 ug/$m^3$. The vapor samples were also analyzed for the

percent of oxygen, carbon dioxide and methane. The concentrations of these three gases appear to be normal and the amount of methane detected (0.00021 to 0.00023 percent) suggests no biodegradation is occurring at the site. The soil vapor sample results are summarized in Table 2. A copy of the laboratory report is attached in Appendix D.

The isopropyl alcohol concentration in the shroud sample was measured at 170,000 ug/$m^3$. Sample SV-1 was reported by the laboratory to contain the tracer compound isopropyl alcohol at 130 ug/$m^3$. This is the only sample reported to contain detectable Isopropyl Alcohol. Vapor sample SV-1 is still an acceptable sample with a tracer gas concentration (0.076 percent), which is well below the allowable limit specified in the DTSC HERO soil vapor regulation, which states *"an ambient air leak up to 5 percent is acceptable if quantitative tracer testing is performed by shrouding."*

**Conclusion**

The data gathered from this Vapor Sampling & Off-Site Soil & Groundwater Investigation revealed the following:

1. The adjacent residence at 706 Buena Vista Avenue was constructed with a slab on grade foundation. PID readings in the garage did not register any elevated readings of volatile compounds while in the garage. PID reading ranged from 0.0 to 0.1 ppm;

2. The two soil samples and one water sample collected from boring SB-7 in the backyard of the residence were reported by the laboratory to have minor concentrations of TPHd & TPHmo. These detected petroleum compounds were estimated concentration below the laboratory reporting limit. Soil sample SB-7-3 was reported to contain minor concentrations of fluoranthene and pyrene. These compounds were also estimated concentration below the laboratory reporting limits;

3. The four soil vapor samples collected along the eastern side of the gas station site were reported to have detectable concentrations of tetrachloroethene (PCE), toluene, ethylbenzene and total xylenes. None of these detected compounds exceeded toxicity factors for DTSC HERO screening levels, the State of California CHHSLs soil gas screening levels for a residential scenario or the San Francisco Bay soil gas ESLs for residence;

4. The vapor samples were also analyzed for the percent of oxygen, carbon dioxide and methane. The concentrations of these three gases appear to be normal and the amount of methane detected (0.00021 to 0.00023 percent) suggests no biodegradation is occurring at the site.

Based on the data collected during this investigation, only minor soil, soil vapor and groundwater contamination was detected near the adjacent residence and along the east side of the gas station

site. It appears the contamination detected during the waist oil tank removal was localized and has had minimal impacted on the property at 706 Buena Vista Avenue. It is CCI's opinion that no further investigation of the residence is warranted and that the waist oil tank investigation should be reviewed for case closure.

**Limitations**

The discussion presented in this report is based on the following:

1. The observations of the field personnel;

2. The results of the laboratory analyses performed by a state-certified laboratory;

3. Our understanding of the regulations of the State of California and Alameda County.

It is possible that variations in the soil or groundwater conditions could exist beyond the points explored in this investigation. Also, changes in groundwater conditions could occur at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors. The services performed by CCI have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the Alameda area. No other warranty, express or implied, is made. Please note that contamination of soil and groundwater must be reported to the appropriate agencies in a timely manner.

CCI includes in this report chemical analytical data from a state-certified laboratory. CCI has been informed that the analyses are performed according to procedures suggested by the U.S. EPA and State of California. CCI is not responsible for laboratory errors in procedure or result reporting.

**Delong Petroleum**
**CCI Project No. 12214-2** **10/31/2017**

**TABLE 1**
**Summary of Soil Sample Analysis**
**Delong Petroleum- 1716 Webster Street, Alameda, CA**

| Sample Number | Date Sampled | TPHg (mg/kg) | TPHd[2] (mg/kg) (C10-C28) | Benzene (ug/kg) | Toulene (ug/kg) | Ethyl Benzene (ug/kg) | Total Xylenes (ug/kg) | MTBE (ug/kg) | Napthalene (ug/kg) | Fluoranthene[3] (ug/kg) | TPHm (mg/kg) (C28-C40) | Pyrene[3] (ug/kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB-7-3[4] | 10/9/2017 | <5.4 | <5.0 | <5.8 | <5.8 | <5.8 | <17 | <5.8 | <5.8 | 21.8[1] | 2.70[1] | 20.6[1] |
| SB-7-7[4] | 10/9/2017 | <5.8 | <5.0 | <4.7 | <4.7 | <4.7 | <14 | <4.7 | <4.7 | <160 | <5.0 | <160 |

**TABLE 1A**
**Summary of Groundwater Sample Analysis**
**Delong Petroleum- 1716 Webster Street, Alameda, CA**

| Sample Number | Date Sampled | TPHg (ug/L) | TPHd[2] (mg/L) (C10-C28) | Benzene (ug/L) | Toulene (ug/L) | Ethyl Benzene (ug/L) | Total Xylenes (ug/L) | MTBE (ug/L) | Napthalene (ug/L) | Fluoranthene[3] (ug/L) | TPHm (mg/L) (C28-C40) | Pyrene[3] (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SB-7-W[4] | 10/9/2017 | <100 | 0.0458[1] | <1 | <1 | <1 | <3 | <1 | <5 | <4.9 | <49 | <4.9 |

Red indicates detected compound

Foot Notes:

| | |
|---|---|
| mg/kg | Milligrams per kilogram |
| ug/kg | micrograms per kilogram |
| ug/L | Micrograms per liter |
| mg/L | Milligrams per Liter |
| ND | Not detected |
| NA | Not Analyzed |
| 1 | Indicates an estimated value below the laboratory reporting limit |
| 2 | Samples were run with silica gel cleanup |
| 3 | No other compounda detected in the 8270D analysis of any of the samples |
| 4 | Acetone and Methylene Chloride were detected in samples. Methylene Chloride maybe a suspected laboratory contaminant. See laboratory report for concentrations |

**Delong Petroleum**
**CCI Project No. 12214-2**

**9/21/2017**

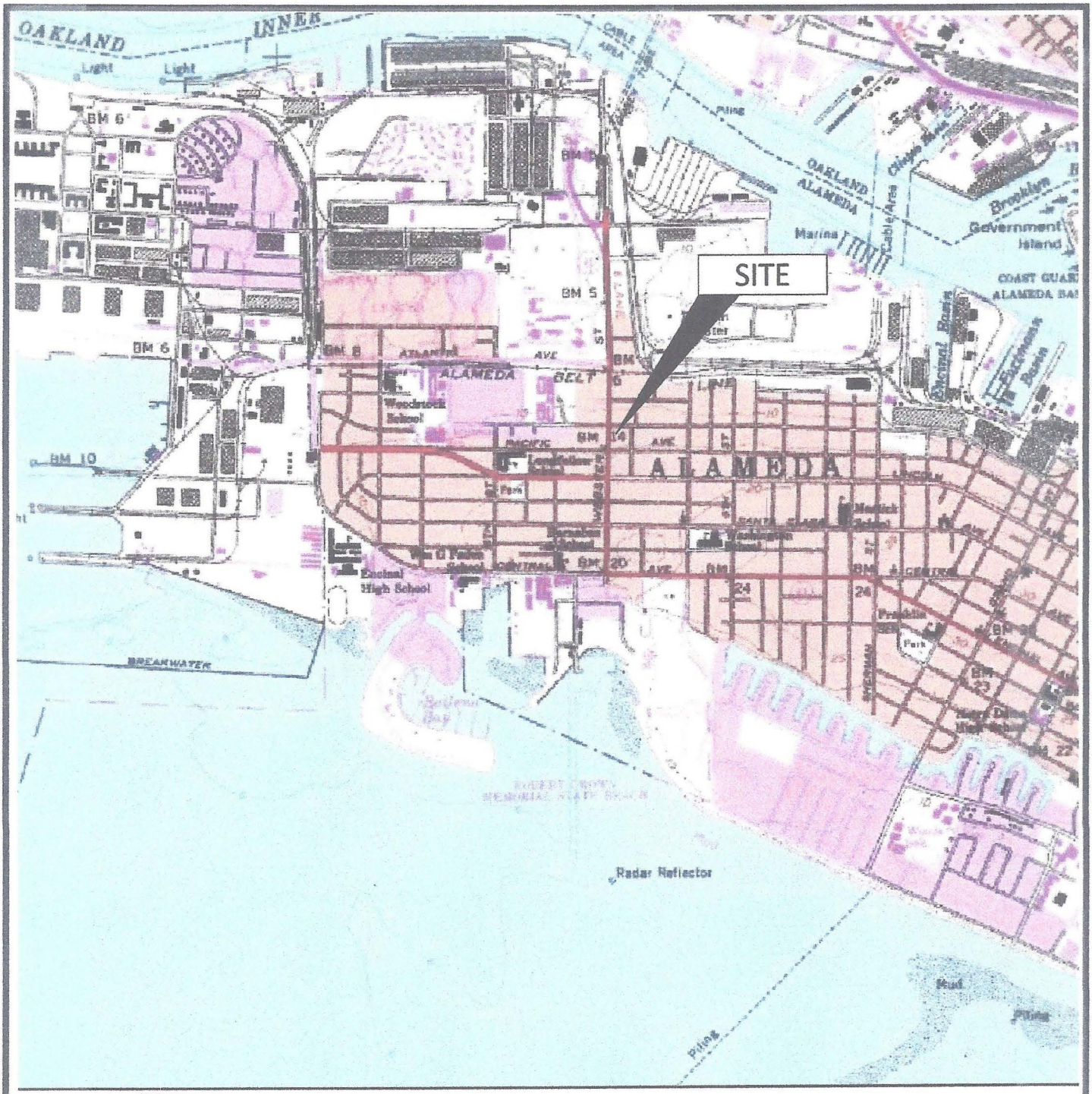
**TABLE 2**
**Summary of Groundwater Sample Analysis**
**Delong Petroleum- 1716 Webster Street, Alameda, CA**

| Sample Number | Date Sampled | TPHg (ug/L) (C6-C10) | TPHd[3] (mg/L) (C10-C28) | Benzene (ug/L) | Toulene (ug/L) | Ethyl Benzene (ug/L) | Total Xylenes (ug/L) | MTBE (ug/L) | Napthalene (ug/L) | TPHmo[3] (mg/L) (C28-C40) | Acetone (ug/L) | Tetrachloroethylene (ug/L) | Trichloroethlene[4] (ug/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **MW-1** | **2/25/2016** | **351** | **1.03** | **49.5** | **2.6** | **48.5** | **62.5** | **51.3[2]** | **56.1** | **0.513[3]** | N/A | N/A | N/A |
| | **6/6/2016** | **1700** | **1.1** | **3.3[1]** | <10 | **69.1** | **348** | <10 | **48.7[1]** | **0.184** | **45.6[1]** | <10 | <10 |
| | **11/28/2016** | **742** | **0.586** | **18.6** | **0.72[1]** | **9.0** | **6.9** | **10.8** | **69.2** | **0.105** | <25 | <1 | <1 |
| | **3/10/2017** | **432** | **0.736** | **6.0** | **0.60[1]** | **22.5** | **17.8** | **3.5** | **20.7** | **0.131** | <25 | <1 | <1 |
| | **8/31/2017** | **1250** | **0.704** | **2.7** | **0.93[1]** | **0.86[1]** | **288** | **2.8** | **138** | **0.217** | <25 | <1 | <1 |
| **MW-2A** | **2/25/2016** | <50 | **0.0410[1]** | <1 | <1 | <1 | <2 | <1 | <5 | <0.19[3] | N/A | N/A | N/A |
| | **6/6/2016** | <50 | <0.099 | <1 | <1 | <1 | <2 | <1 | <5 | <0.099 | <20 | **0.67[1]** | **0.21[1]** |
| | **11/28/2016** | <100 | <0.048 | <1 | <1 | <1 | <3 | <1 | <5 | **0.0413[1]** | <25 | **0.46[1]** | <1 |
| | **3/10/2017** | <100 | **0.0407[1]** | <1 | <1 | <1 | <3 | <1 | <5 | **0.0502** | <25 | **0.37[1]** | <1 |
| | **8/31/2017** | <100 | **0.0221[1]** | <1 | <1 | <1 | <3 | <1 | <5 | **0.0343[1]** | <25 | **0.61[1]** | <1 |
| **MW-3A** | **2/25/2016** | <50 | **0.0354[1]** | <1 | <1 | <1 | <2 | <1 | <5 | <0.19[3] | N/A | N/A | N/A |
| | **6/6/2016** | <50 | **0.0601[1]** | <1 | <1 | <1 | <2 | <1 | <5 | <0.096 | <20 | <1 | <1 |
| | **11/28/2016** | <100 | **0.0533** | <1 | <1 | <1 | <3 | <1 | <5 | **0.0798** | <25 | <1 | <1 |
| | **3/10/2017** | <100 | **0.205** | <1 | <1 | <1 | <3 | <1 | <5 | **0.144** | <25 | <1 | <1 |
| | **8/31/2017** | <100 | **0.232** | <1 | <1 | <1 | <3 | <1 | <5 | **0.125** | <25 | <1 | <1 |
| **RW-1** | **2/25/2016** | <50 | **1.06** | **0.27[1]** | <1 | <1 | <2 | **0.61[1]** | <5 | **0.232[3]** | N/A | N/A | N/A |
| | **6/6/2016** | **47.5[1]** | **2.14** | <1 | <1 | <1 | <2 | **1.8[1]** | **0.53[1]** | **0.200** | **7.1[1]** | <1 | <1 |
| | **11/28/2016** | <100 | **0.111** | <1 | <1 | <1 | <2 | **0.38[1]** | <5 | **0.0854** | <25 | <1 | <1 |
| | **3/10/2017** | <100 | **0.0897** | <1 | <1 | <1 | <2 | **1.1** | <5 | **0.0831** | <25 | <1 | <1 |
| | **8/31/2017** | <100 | **1.32** | <1 | <1 | <1 | **1.4[1]** | **1.1** | **1.5[1]** | **0.4360** | **14.3[1]** | <1 | <1 |

Foot Note:

| | |
|---|---|
| 1 | Indicates an estimated value below the laboratory reporting limit |
| 2 | Tert-Amyl Methyl Ether and Tert-Butyl Alcohol were also detected. See laboratory report. |
| 3 | Samples were run with silica gel cleanup |
| 4 | Other compounds were detected in the 8260B analysis, see laboratory report |

| | |
|---|---|
| TPHg | Total petroleum hydrocarbons as gasoline |
| TPHd | Total petroleum hydrocarbons as diesel |
| TPHmo | Total petroleum hydrocarbons as motor oil |
| TPHho | Total petroleum hydrocarbons as hydraulic oil |
| mg/L | Milligrams per Liter |
| ug/L | Micrograms per Liter |
| MTBE | Methyl-tert-butyl ether |
| < | Less than laboratory reporting limit |
| ND | Not Detected |
| NA | Not analyzed |
| ESLs | State of California Environmental Screening Levels for diesel and motor oil in groundwater , where groundwater is a current or potential drinking water resource = 100 ug/L. |




Base Map USGS

| | | |
|---|---|---|
| Reviewed By: GM | **Vicinity Map** | **Compliance & Closure, Inc.** |
| Approved By: GM | **Delong Petroleum**<br>**1716 Webster Street**<br>**Alameda, California** | Job No.: 12214-1 / Drawn By: GM<br>Date: 2/3/2016 / Fig. No.: 1 |

N

Legend

MW-1 Monitoring Well

RW-1 Recovery Well

Soil Vapor Sample

Soil Boring

Webster Street

Chevron

USTs

Apartment Building

Liquor Store

Buena Vista Avenue

MW-4
Well appears to have been destroyed

MW-5
Well appears to have been destroyed

Restuarant

Webster Street

Property Line

Bus Shelter

Landscaping

RW-1

MW-1

USTs

SV-3

Dispensers

Canopy

SV-2

MW-3

SV-1

MW-2

Sidewalk

Circle K Market

Trash Enclosure

706 Buena Vista
Residence

B-7

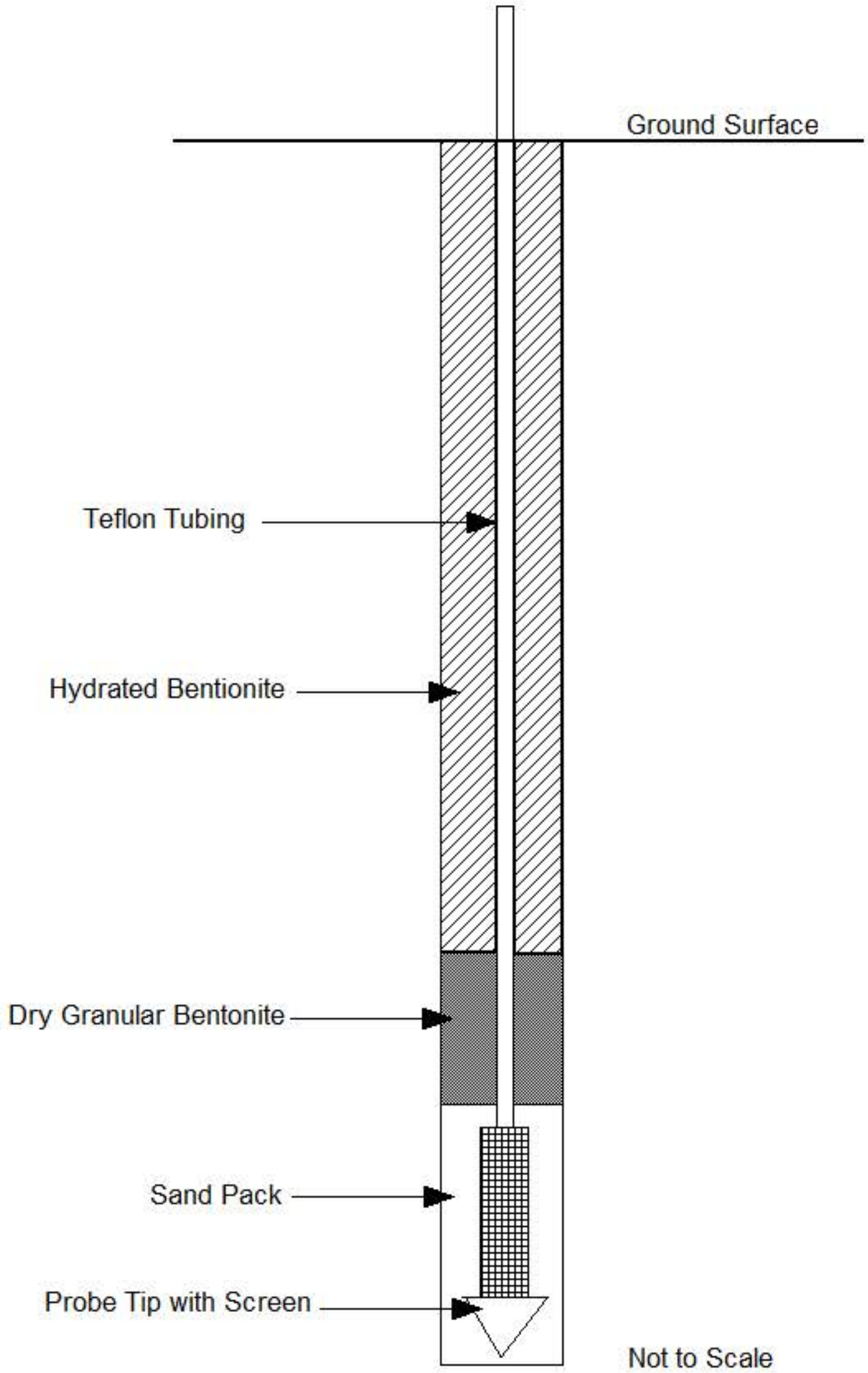
Lawn Area

Residence

0 20 40 80
Approximate Scale
1"=40'

| | | |
|---|---|---|
| Job No.: 12214-3 | Site Plan<br>Delong Oil<br>1716 Webster Street<br>Alameda, California | **Compliance & Closure, Inc.** |
| Date: 11/26/2016 | | Drawn by: NLN / Figure No.: 2 |

Base: Cambria Environmental, 2002




Not to Scale

| | | |
|---|---|---|
| Reviewed By: GM | **SCHEMATIC DIAGRAM OF SAMPLING PROBE** | **Compliance & Closure, Inc.** |
| Approved By: GM | **Delong Oil, Inc.**<br>**1716 Webster Street**<br>**Alameda, California** | Job No.: 12214-3 / Drawn By: GM<br>Date: 11/17/2016 / Fig. No.: 3 |

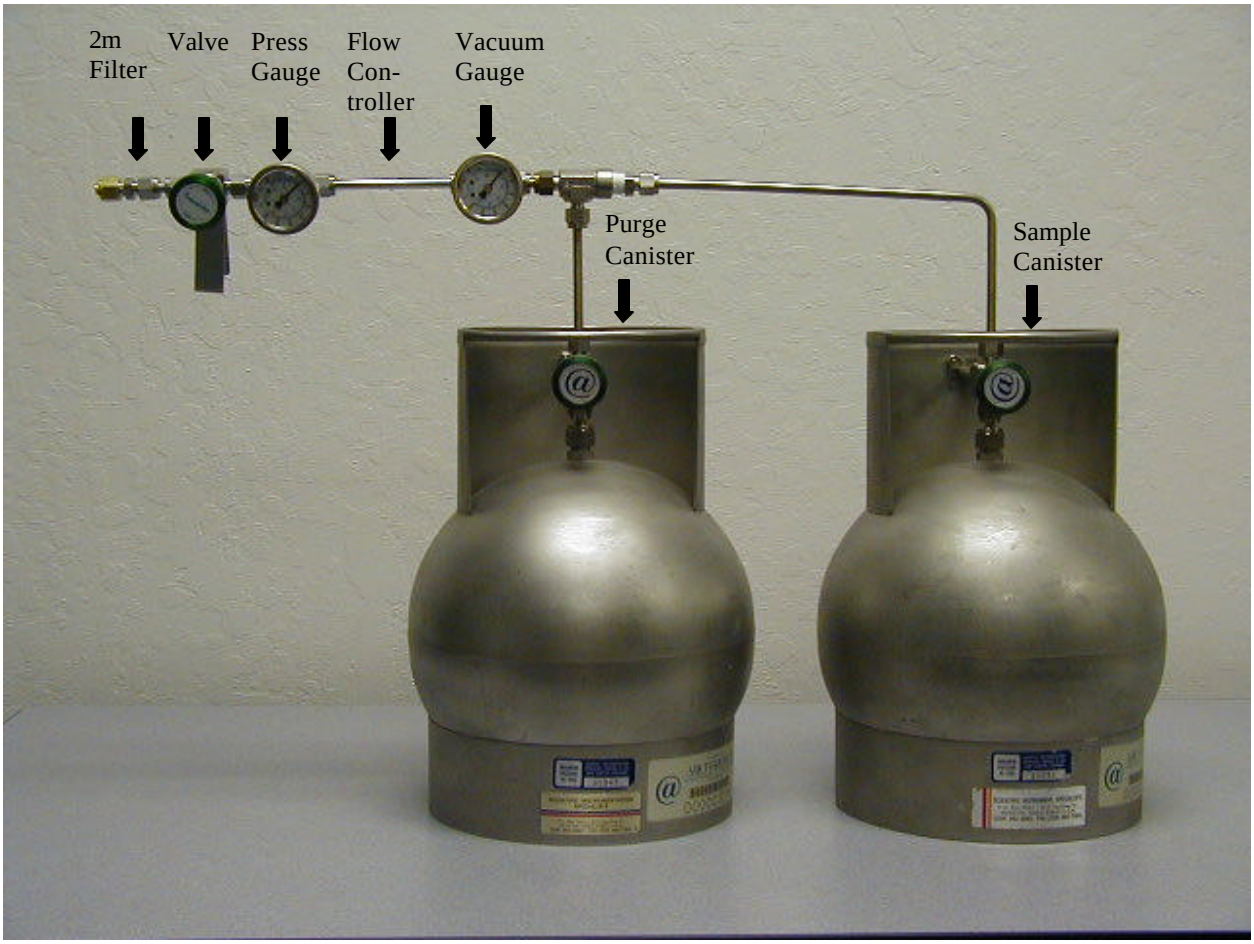



Figure 4, Sampling Manifold Set-up.

**Figure 5 - Sampling Shroud with 1-Liter SUMMA® Canister/Manifold and PID Meter to Monitor Tracer Gas Concentration**

**Delong Oil**
**CCI Project No. 12214-2**

**Drilling SB-7 with Hand Auger**
**Figure 6**

**Delong Oil**
**CCI Project No. 12214-2**


**Collecting Water Samples from Boring SB-7**
**Figure 6A**

**Delong Oil**
**CCI Project No. 12214-2**

**Grouting Soil Boring SB-7**
**Figure 7**

# APPENDIX A

**Alameda County Public Works Agency Boring Permits**

# 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: 09/01/2017 By jamesy**

**Permit Numbers: W2017-0685**
**Permits Valid from 09/08/2017 to 09/08/2017**

| | | |
|---|---|---|
| **Application Id:** | 1502927659696 | **City of Project Site:**Alameda |
| **Site Location:** | 1716 Webster St, Alameda, CA | |
| **Project Start Date:** | 09/08/2017 | **Completion Date:**09/08/2017 |
| **Assigned Inspector:** | Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org | |
| **Applicant:** | Compliance & Closure - Gary Mulkey<br>4115 Blackhawk Pl Cir #100, Danville, CA 94506 | **Phone:** 925-648-2008 |
| **Property Owner:** | United Bros. Enterprises Inc<br>2501 No. Main St, Walnut Creek, CA 94597 | **Phone:** 510-759-2384 |
| **Client:** | ** same as Property Owner ** | |

| | | |
|---|---|---|
| | **Total Due:** | $265.00 |
| **Receipt Number: WR2017-0413** | **Total Amount Paid:** | $265.00 |
| **Payer Name : Compliance & Closure** | Paid By: CHECK | **PAID IN FULL** |

**Works Requesting Permits:**

Borehole(s) for Investigation-Vapor Sampling 24 to 48 hours only - 3 Boreholes
Driller: Gregg - Lic #: 485165 - Method: DP

**Work Total: $265.00**

**Specifications**

| Permit Number | Issued Dt | Expire Dt | # Boreholes | Hole Diam | Max Depth |
|---|---|---|---|---|---|
| W2017-0685 | 09/01/2017 | 12/07/2017 | 3 | 3.00 in. | 5.00 ft |

**Specific Work Permit Conditions**

1. 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.

2. 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.

3. 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.

4. 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 and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.

# 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: 09/01/2017 By jamesy**

**Permit Numbers: W2017-0686**
**Permits Valid from 10/09/2017 to 10/09/2017**

| | | |
|---|---|---|
| **Application Id:** | 1502926473417 | **City of Project Site:** Alameda |
| **Site Location:** | 706 Buena Vista Ave, Alameda | |
| **Project Start Date:** | 10/09/2017 | **Completion Date:** 10/09/2017 |
| **Assigned Inspector:** | Contact Marcelino Vialpando at (510) 670-5760 or Marcelino@acpwa.org | |
| **Applicant:** | Compliance & Closure - Gary Mulkey<br>4155 Blackhawk Pl Cir #100, Danville, CA 94506 | **Phone:** 925-648-2008 |
| **Property Owner:** | Mr & Mrs Franklin<br>38632 Fuller Rd, Palm Desert, CA 92260 | **Phone:** 510-541-4878 |
| **Client:** | United Bros Enterprises Inc<br>2501 No. Main St, Walnut Creek, CA 94597 | **Phone:** 510-759-2384 |

| | | |
|---|---|---|
| | **Total Due:** | $265.00 |
| **Receipt Number: WR2017-0414** | **Total Amount Paid:** | $265.00 |
| **Payer Name : Compliance & Closure** | Paid By: CHECK | **PAID IN FULL** |

**Works Requesting Permits:**

Borehole(s) for Investigation-Environmental/Monitorinig Study - 1 Boreholes
Driller: Gregg - Lic #: 885165 - Method: Hand **Work Total: $265.00**

**Specifications**

| Permit Number | Issued Dt | Expire Dt | # Boreholes | Hole Diam | Max Depth |
|---|---|---|---|---|---|
| W2017-0686 | 09/01/2017 | 01/07/2018 | 1 | 3.00 in. | 10.00 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

# APPENDIX B

**Boring Log & Soil Vapor Field Logs**

**Compliance & Closure, Inc.**

## STANDARD SYMBOLS

Legend

- Soil Sample Location
- Soil Sample Collected for Laboratory Analysis
- No Soil Recovery
- Disturbed or Bag Soil Sample
- First Encountered Water Level
- Piezometric Ground Water Level

Unified Soil Classification System

| Major Divisions | | | Group Symbols | Typical Names |
|---|---|---|---|---|
| Coarse-Grained Soils More than half of material is larger than no. 200 sleve size | Gravels more than half of coarse fraction is smaller than no. 4 sleve size | Clean Gravels | GW | Well-graded gravels, gravel-sand mixtures, little of no fines |
| | | | GP | Poorly graded gravels, gravel sand mixtures, little or no fines |
| | | Gravels with fines | GM | Silty gravels, garvel-sand-silt mixtures |
| | | | GC | Claryey gravels, gravel-sand-clay mixtures |
| | Sands more than half of coarse fraction is smaller than no. 4 sleve size | Clean Sands | SW | Well-graded sands, gravelly sands, little or no fines |
| | | | SP | Poorly graded sand, gravelly sands; little or no fines |
| | | Sands with fines | SM | Silty sands, sandy silt mixtures |
| | | | SC | Clayey snads, sand-clay mixtures |
| Fine-Grained Soils more than half of material is smaller thaqn no. 200 sleve size | Silts and Clays | Low Liquid Limit | ML | Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, or clayey sitls with slight plasticity |
| | | | CL | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, sitly clays, lean clays |
| | | | CL | Organic silts and organic silty clays of low plasticity |
| | | High Liquid Limit | MH | Inorganic silts, micaceous or diatomeaceous fine sandy or sitly soils. elastic sitls |
| | | | CH | Inorganic clays of high plasticity, fat clays |
| | | | CH | Organic clays of medium to high plasticity, organic silts |
| High Organic Soils | | | Pt | Peat and other highly organic soils |

NOTES:

1. Boundary Classification: Soil possessing characteristics of two groups are designated by combinations of group symbols. For example, GW-GC, well-graded gravel-sand mixture with clay binder
2. All sieve sizes on this chart are U.S. Standard
3. The terms "silt" and "clay" ard used respectively to distinguish materials exhibiting lower plasticity from those with higher plasticity.
4. For a complete description of the Unified Soil Classification System, see Technical Memorandum No. 3-357, prepared for Office Chief Engineers, by Waterways Equipment Station, Vicksburg Mississippi, March 1953. (See also Data Sheet 17.)

**Compliance & Closure, Inc.** **Exploratory Boring Log**

Project No. 12214-2 BORING NO. B-7
Logged by: GM Date: 10/9/2017
Client: Delong Petroleum
Location: 706 Buena Vista Avenue, Alameda, CA

Permit: W2017-0686
Water Levels: 1st Enc: 8 feet Static: N/A

**Drilling Method:** Hand Auger **Page 1 of 1**
Boring Diameter: 3.5 " dia.

Total Depth: 10' Casing Depth: N/A'
Screen Length: N/A' Slot Size: N/A
Blank Length: N/A' Sand Pack: N/A
Top Sand Pack: N/A Top Bentonite: N/A
Grout Seal: 10 ' Vault Box N/A MSL N/A

| Sample No. | PID (PPM) | Blow Count | Sample | Depth | Lithology Log | Well Detail/ Backfill |
|---|---|---|---|---|---|---|
| | | | | Fill | Grass | |
| B-7-3 | 0.0 | Hand Auger | | | SM - Dark brown SILTY SAND, very moist, loose, very fine to medium grain, subrounded, poorly sorted, no vissible contamination. | |
| | | | | 5 | | |
| B-7-7 | 0.1 | | | | SM - Yellow brown SILTY SAND, moist, medium dense , very fine to medium grain, subrounded, poorly sorted, no vissible contamination. | |
| | | | | | ▽ Groundwater at 8 feet | |
| | | | | 10 | Bottom of Boring = 10 feet | |
| | | | | 15 | | |
| | | | | 20 | | |
| | | | | 25 | | |
| | | | | 30 | | |
| | | | | 35 | | |
| | | | | 40 | | |

Reviewed by PG

# DAILY LOG

| | |
|---|---|
| Date: 10.09.17 | Site Address: 1716 Webster St, Alameda |
| Task/Purpose: Soil Gas Sampling | Project Name: CCI |
| Log Notes By: E. Lervaag | Project Number: 2195.001.300 |

## NOTES

1015 Arrive on-site begin set up for soil gas sampling of 3 direct push temporary soil gas wells. SV-1, SV-2, SV-3
-include 1 duplicate and 1 shroud sample

* using ~~TO-15~~ 1L summa set up from McCampbell for TO-15 sampling and,
cartridges from McCampbell for TO-17 sampling

-set up shut-in testing

1100 start sampling SV-3. Total purge time 11:10, collected 1L summa, forgot TO-17 cartridge ~~Sample~~. No sampling issues.

- moved to SV-2 similar purge no sample collection issues.

- moved to SV-1. similar purge time. collected duplicate sample and shroud sample at this location. NO sampling issues.

1400 off-site to Lab (McCampbell) samples on normal Turnaround per Gary.

# SOIL GAS PURGING / SAMPLING LOG

Project Name: 1716 Webster St, Alameda
Project/Task Number: 2195.001.300
Date: 10.09.17
Sampler(s): E. Lervaag
Sample ID / Time: SV-1 / 1312

Probe / Well ID: SV-1
Canister Serial #: I1922-1905
Flow Controller #: man 316-1318
Initial Vacuum: 28.5
Final Vacuum: 5

**SPECIFICATIONS**

| | | |
|---|---|---|
| Tubing Length: | 120 | inches |
| Tubing Diameter (ID): | 0.170 | inches |
| Boring Diameter: | 2.25 | inches |
| Dry Bentonite Height: | 6 | inches |
| Sandpack height: | 12 | inches |
| Probe Length: | 1 | inches |
| Probe Diameter: | 0.5 | inches |
| Summa Flow Rate: | 150 | mL/min |
| Purge Flow Rate: | 150 | mL/min |

**PURGE VOLUME CALCULATION**

Purge Volume = tubing + sandpack+bentonite
Tubing = $\pi$ x (tubing diameter/2)$^2$ x length

| | | |
|---|---|---|
| Tubing = | 50 | mL |

Bentonite = $\pi$ x (boring diameter/2)$^2$ bentonite height x .5[porosity] x 16.4
Sandpack = $\pi$ x (boring diameter/2)$^2$ sandpack height x .4[porosity] x 16.4

| | | |
|---|---|---|
| bentonite= | 195 | mL |
| Sandpack = | 313 | mL |
| Single Purge Volume = | 558 | mL |
| Three Total Purge Volumes = | 1674 | mL |
| Total Purge Time = | 11:10 | seconds |

$\pi$ = 3.1416 | 1 inch$^3$ = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

**SHUT-IN TEST** start time/pressure ("$H_2O$): 1243 / 99.0" end time/pressure ("$H_2O$): 1248 / 99.0"

| TIME | PURGE TIME (min./sec.) | He / IPA IN SHROUD (% / PPM) | CANISTER PRESSURE ("Hg) | Probe-side Vacuum ("H20 / "Hg) | COMMENTS |
|---|---|---|---|---|---|
| 1253 | 0 | 2.1 | — | <2 | start purge |
| 1256 | 3 | 7.0 | — | <2 | |
| 1259 | 6 | 10.0 | — | <2 | |
| 1303 | 9 | 10.8 | — | <2 | |
| 1305 | 11:10 | | — | <2 | stop purge |
| | | | | | |
| 1312 | — | 6.3 | 28.5 | <2 | Start Sample |
| 1315 | — | 13.7 | 25 | <2 | |
| 1321 | — | 10.5 | 20 | <2 | |
| 1327 | — | 8.6 | 15 | <2 | add IPA |
| 1334 | — | 14.7 | 10 | <2 | |
| 1340 | — | 13.4 | 5 | <2 | Stop Sample |
| | — | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | Post-sampling PID screening (ppm): |
| | | | | | 0.3 |

**NOTES:** SV-1 Dup Can # 1930-1913 initial vacuum 28.5
Flow cont # 316-1318 Final vacuum 5

# SOIL GAS PURGING / SAMPLING LOG

Project Name: 1716 Webster St, Alameda
Project/Task Number: 2195.001.300
Date: 10.09.17
Sampler(s): E. Lervaag
Sample ID / Time: SV-2

Probe / Well ID: SV-2
Canister Serial #: CAN 6436-855
Flow Controller #: MFC 316-1366
Initial Vacuum: 29
Final Vacuum: 5

**SPECIFICATIONS**

| | | |
|---|---|---|
| Tubing Length: | 120 | inches |
| Tubing Diameter (ID): | 0.170 | inches |
| Boring Diameter: | 2.25 | inches |
| Dry Bentonite Height: | 6 | inches |
| Sandpack height: | 12 | inches |
| Probe Length: | 1 | inches |
| Probe Diameter: | 0.5 | inches |
| Summa Flow Rate: | 150 | mL/min |
| Purge Flow Rate: | 150 | mL/min |

**PURGE VOLUME CALCULATION**

Purge Volume = tubing + sandpack+bentonite
Tubing = $\pi$ x (tubing diameter/2)$^2$ x length

| | | |
|---|---|---|
| Tubing = | 50 | mL |

Bentonite = $\pi$ x (boring diameter/2)$^2$ bentonite height x .5[porosity] x 16.4
Sandpack = $\pi$ x (boring diameter/2)$^2$ sandpack height x .4[porosity] x 16.4

| | | |
|---|---|---|
| bentonite= | 195 | mL |
| Sandpack = | 313 | mL |
| Single Purge Volume = | 558 | mL |
| Three Total Purge Volumes = | 1674 | mL |
| Total Purge Time = | 11:10 | seconds |

$\pi$ = 3.1416 | 1 inch$^3$ = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

**SHUT-IN TEST** start time/pressure ("$H_2O$): 1151 / 100.0" end time/pressure ("$H_2O$): 1155 / 100.0"

| TIME | PURGE TIME (min./sec.) | He / IPA IN SHROUD (% / PPM) | CANISTER PRESSURE ("Hg) | Probe-side Vacuum ("H20 / "Hg) | COMMENTS |
|---|---|---|---|---|---|
| 1202 | 0 | 3.6 | — | < 2 | Start Purge |
| 1205 | 3 | 16.1 | — | < 2 | |
| 1208 | 6 | 15.8 | — | < 2 | |
| 1211 | 9 | 14.8 | — | < 2 | |
| 1213 | 11.10 | 10.7 | — | < 2 | Stop Purge |
| | | | | | |
| 1214 | — | 6.7 | 29 | < 2 | Start Sample |
| 1215 | — | 9.4 | 25 | < 2 | |
| 1216 | — | 10.7 | 20 | < 2 | |
| 1217 | — | 9.4 | 15 | < 2 | |
| 1218 | — | 9.3 | 10 | < 2 | |
| 1220 | — | 8.8 | 5 | < 2 | stop sample |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | Post-sampling PID screening (ppm): |
| | | | | | 0.2 |
| | | | | | |

**NOTES:**

# SOIL GAS PURGING / SAMPLING LOG

Project Name: 1716 Webster St, Alameda
Project/Task Number: 2195.001.300
Date: 10.09.17
Sampler(s): E. Lervaag
Sample ID / Time: SV-3 / 1130

Probe / Well ID: SV-3
Canister Serial #: CAN 881-1929
Flow Controller #: MAN 316-678
Initial Vacuum: 25.5
Final Vacuum: 5"

**SPECIFICATIONS**

| | | |
|---|---|---|
| Tubing Length: | 120 | inches |
| Tubing Diameter (ID): | 0.170 | inches |
| Boring Diameter: | 2.25 | inches |
| Dry Bentonite Height: | 6 | inches |
| Sandpack height: | 12 | inches |
| Probe Length: | 1 | inches |
| Probe Diameter: | 0.5 | inches |
| Summa Flow Rate: | 150 | mL/min |
| Purge Flow Rate: | 150 | mL/min |

**PURGE VOLUME CALCULATION**

Purge Volume = tubing + sandpack+bentonite
Tubing = π x (tubing diameter/2)$^2$ x length
Tubing = 50 mL
Bentonite = π x (boring diameter/2)$^2$ bentonite height x .5[porosity] x 16.4
Sandpack = π x (boring diameter/2)$^2$ sandpack height x .4[porosity] x 16.4
bentonite= 195 mL
Sandpack = 313 mL
Single Purge Volume = 558 mL
Three Total Purge Volumes = 1679 mL
Total Purge Time = 11:10 seconds

π = 3.1416 | 1 inch$^3$ = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

**SHUT-IN TEST** start time/pressure ("$H_2O$): 1048 / 100.0" end time/pressure ("$H_2O$): 1057 / 100.0"

| TIME | PURGE TIME (min./sec.) | He / IPA IN SHROUD (% / PPM) | CANISTER PRESSURE ("Hg) | Probe-side Vacuum ("H20 / "Hg) | COMMENTS |
|---|---|---|---|---|---|
| | 0 | 2.7 | – | 2 | Start Purge |
| | 3 | 13.3 | – | 2 | |
| | 6 | 12.0 | – | 2 | |
| | 9 | | – | 2 | |
| | 11:10 | | – | 2 | Stop Purge |
| | | | | | |
| 1130 | – | 8.0 | 25.5 | 2 | Start Sample |
| 1131 | – | 9.2 | 20 | 2 | |
| 1132 | – | 12.5 | 15 | 2 | |
| 1133 | – | 16.2 | 10 | 2 | |
| 1134 | – | 15.5 | 5 | 2 | stop Sample |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | Post-sampling PID screening (ppm): |
| | | | | | 0.1 |

**NOTES:**

# SOIL GAS PURGING / SAMPLING LOG

Project Name: 1716 Webster St, Alameda
Project/Task Number: 2195.001.300
Date: 10.09.17
Sampler(s): E. Lervaag
Sample ID / Time: Shroud / 1315

Probe / Well ID: Shroud
Canister Serial #: CANA7524-872
Flow Controller #: MAN316-1220
Initial Vacuum: 29
Final Vacuum: 5

**SPECIFICATIONS**

Tubing Length: ____ inches
Tubing Diameter (ID): ____ inches
Boring Diameter: ____ inches
Dry Bentonite Height: ____ inches
Sandpack height: ____ inches
Probe Length: ____ inches
Probe Diameter: ____ inches
Summa Flow Rate: ____ mL/min
Purge Flow Rate: ____ mL/min

Shroud sample no purge

**PURGE VOLUME CALCULATION**

Purge Volume = tubing + sandpack+bentonite
Tubing = $\pi$ x (tubing diameter/2)$^2$ x length
Tubing = ____ mL
Bentonite = $\pi$ x (boring diameter/2)$^2$ bentonite height x .5[porosity] x 16.4
Sandpack = $\pi$ x (boring diameter/2)$^2$ sandpack height x .4[porosity] x 16.4
bentonite= ____ mL
Sandpack = ____ mL
Single Purge Volume = ____ mL
Three Total Purge Volumes = ____ mL
Total Purge Time = ____ seconds

$\pi$ = 3.1416 | 1 inch$^3$ = 16.4 mL | 5 mL purge / 1 ft tubing | Estimated Porosity, Sandpack = 0.4; bentonite = 0.5

**SHUT-IN TEST** start time/pressure ("$H_2O$): 1152 / 98.5" end time/pressure ("$H_2O$): 1157 / 98.5"

| TIME | PURGE TIME (min./sec.) | He / IPA IN SHROUD (% / PPM) | CANISTER PRESSURE ("Hg) | Probe-side Vacuum ("H20 / "Hg) | COMMENTS |
|---|---|---|---|---|---|
| 1315 | — | 12.9 | 29 | — | Start Sample |
| 1316 | — | 21.3 | 25 | — | |
| 1317 | — | 20.0 | 20 | — | |
| 1318 | — | 12.8 | 15 | — | |
| 1319 | — | 11.6 | 10 | — | |
| 1320 | — | 10.8 | 5 | — | Stop Sample |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | Post-sampling PID screening (ppm): ____ |
| | | | | | |
| | | | | | |

**NOTES:** ____

# APPENDIX C

**Purge Volume Tables**

Delong Oil
CCI No. 12214-2

# Soil Vapor Sample Purge Volume Table

Purge Volumes for Temporaty Sampling Points (PRT System)

| | 5 feet Sample Depth | 10 feet Sample Depth | 15 feet Sample Depth | 20 feet Sample Depth | 25 feet Sample Depth | 30 feet Sample Depth | 35 feet Sample Depth | 40 feet Sample Depth | 45 feet Sample Depth | 50 feet Sample Depth |
|---|---|---|---|---|---|---|---|---|---|---|
| One Purge Volume | 28.3 ml 0 min 8.4 sec | 50.6 ml 0 min 15.1 sec | 72.9 ml 0 min 21.8 sec | 95.2 ml 0 min 28.5 sec | 117.5 ml 0 min 35.2 sec | 139.8 ml 0 min 41.94 sec | 162.1 ml 0 min 48.6 sec | 184.4 ml 0 min 55.3 sec | 206.7 ml 1 min 2.0 sec | 229.0 ml 1 min 8.7 sec |
| Three Purge Volume | 84.9 ml 0 min 25.2 sec | 151.8 ml 0 min 45.3 sec | 218.7 ml 1 min 5.4 sec | 285.6 ml 1 min 25.5 sec | 352. ml 1 min 45.6 sec | 419.4 ml 2 min 5.82 sec | 486.3 ml 2 min 25.8 sec | 553.2 ml 2 min 45.9 sec | 620.1 ml 3 min 6.0 sec | 687.0 ml 3 min 26.1 sec |
| Seven Purge Volume | 198.1 ml 0 min 58.8 sec | 354.2 ml 1 min 45.7 sec | 510.3 ml 2 min 32.6 sec | 666.4 ml 3 min 19.5 sec | 822.5 ml 4 min 6.4 sec | 978.6 ml 4 min 53.8 sec | 1,134.4 ml 5 min 40.2 sec | 1,290.8 ml 6 min 27.1 sec | 1,446.9 ml 7 min 14.0 sec | 1,603.0 ml 8 min 0.9 sec |

**Purge calculation Factors**

1. Tubing (0.25 in OD, 0.17 in ID)
    a. Volume = 4.46 ml per foot internal volume
2. Vapor Point Holder and Post Run Tubing Adapter
    a. Volume = 6 ml internal volume
3. Calculations assume a 4-foot section of tubing is being used to extend from the boring surface to the pump

**volume Formula** A ((B x C) + D) = E

A = Number of purge volumes
B = 1 foot of tubing, 4.46 ml
C = Depth
D = Point Holder Volume, 6 ml
E = Volume to be purged

**Time Formula** (F + E) x G = H

E = Volume to be purged
P = Purge Rate, 200 ml (cc) per min
G = 60 Seconds
H = Purg Time in seconds at 200 ml (cc) per min

Data Table Provided by Cascade Drilling/Vironex 2013

# APPENDIX D

**Laboratory Reports**

**McCampbell Analytical, Inc. - # 1710363**

**SGS Accutest – FA48304**

McCampbell Analytical, Inc.

*"When Quality Counts"*

# Analytical Report

**WorkOrder:** 1710363

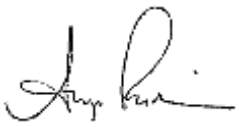
**Report Created for:** Pangea Environmental Svcs., Inc.

1710 Franklin Street, Ste. 200
Oakland, CA 94612

**Project Contact:** Ron Scheele
**Project P.O.:**
**Project Name:** 1716 Webster- CCI

**Project Received:** 10/09/2017

Analytical Report reviewed & approved for release on 10/16/2017 by:



Angela Rydelius,
Laboratory Manager

***The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.***

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# Glossary of Terms & Qualifier Definitions

**Client:** Pangea Environmental Svcs., Inc.
**Project:** 1716 Webster- CCI
**WorkOrder:** 1710363

## 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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# Case Narrative

**Client:** Pangea Environmental Svcs., Inc.
**Project:** 1716 Webster- CCI

**Work Order:** 1710363
October 16, 2017

TO-15 ANALYSIS

All summa canisters are EVACUATED 5 days after the reporting of the results. Please call or email if a longer retention time is required.

In an effort to attain the lowest reporting limits possible for the majority of the TO-15 target list, high level compounds may be analyzed using EPA Method 8260B.

Polymer (Tedlar) bags are not recommended for TO15 samples. The disadvantages are listed in Appendix B of the DTSC Active Soil Gas Advisory of July 2015.

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | SW5030B |
| **Date Prepared:** | 10/16/17 | **Analytical Method:** | SW8260B |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Methanol and/or Isopropyl Alcohol (2-Propanol)

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **Shroud** | **1710363-005A** | **SoilGas** | **10/09/2017 13:20** | **GC16 10161707.D** | **147126** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.08** | **24.10** | **AK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| 2-Propanol | **170,000** | 50,000 | 2 | 10/16/2017 11:53 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| Dibromofluoromethane | 121 | 70-130 | 10/16/2017 11:53 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method** | ASTM D 1946-90 |
| **Date Prepared:** | 10/10/17 | **Analytical Method:** | ASTM D 1946-90 |
| **Project:** | 1716 Webster- CCI | **Unit:** | % |

## Atmospheric Gases

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1** | **1710363-001A** | **SoilGas** | **10/09/2017 13:40** | **GC26 1010170906.D** | **146830** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.13** | **24.21** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Oxygen | **11** | 0.40 | 1 | 10/10/2017 13:33 |

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-2** | **1710363-002A** | **SoilGas** | **10/09/2017 12:20** | **GC26 1010170908.D** | **146830** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.60** | **23.13** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Oxygen | **8.8** | 0.40 | 1 | 10/10/2017 13:54 |

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-3** | **1710363-003A** | **SoilGas** | **10/09/2017 11:34** | **GC26 1010170910.D** | **146830** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.92** | **23.79** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Oxygen | **12** | 0.40 | 1 | 10/10/2017 14:15 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | ASTM D 1946-90 |
| **Date Prepared:** | 10/10/17-10/11/17 | **Analytical Method:** | ASTM D 1946-90 |
| **Project:** | 1716 Webster- CCI | **Unit:** | % |

## Light Gases

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1** | **1710363-001A** | **SoilGas** | **10/09/2017 13:40** | **GC26 1010170318.D** | **147119** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.13** | **24.21** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Carbon Dioxide | **2.3** | 0.080 | 20 | 10/11/2017 08:27 |
| Methane | ND | 0.00020 | 1 | 10/10/2017 16:47 |

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-2** | **1710363-002A** | **SoilGas** | **10/09/2017 12:20** | **GC26 1010170320.D** | **147119** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.60** | **23.13** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Carbon Dioxide | **8.8** | 0.080 | 20 | 10/11/2017 08:48 |
| Methane | **0.00021** | 0.00020 | 1 | 10/10/2017 17:08 |

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-3** | **1710363-003A** | **SoilGas** | **10/09/2017 11:34** | **GC26 1010170322.D** | **147119** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.92** | **23.79** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Carbon Dioxide | **2.9** | 0.080 | 20 | 10/11/2017 09:09 |
| Methane | **0.00023** | 0.00020 | 1 | 10/10/2017 17:29 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Leak Check Compound

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1** | **1710363-001A** | **SoilGas** | **10/09/2017 13:40** | **GC24 10101722A.** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.13** | **24.21** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Isopropyl Alcohol | **130** | 50 | 1 | 10/11/2017 19:41 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 1,2-DCA-d4 | 100 | 70-130 | 10/11/2017 19:41 |

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-2** | **1710363-002A** | **SoilGas** | **10/09/2017 12:20** | **GC24 10101723A.** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.60** | **23.13** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Isopropyl Alcohol | ND | 50 | 1 | 10/11/2017 20:21 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 1,2-DCA-d4 | 100 | 70-130 | 10/11/2017 20:21 |

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-3** | **1710363-003A** | **SoilGas** | **10/09/2017 11:34** | **GC24 10121711A.** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.92** | **23.79** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Isopropyl Alcohol | ND | 50 | 1 | 10/12/2017 20:34 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 1,2-DCA-d4 | 94 | 70-130 | 10/12/2017 20:34 |

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Leak Check Compound

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1 Dup** | **1710363-004A** | **SoilGas** | **10/09/2017 13:40** | **GC24 10101721A.** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.04** | **24.07** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Isopropyl Alcohol | ND | 50 | 1 | 10/11/2017 19:00 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 1,2-DCA-d4 | 98 | 70-130 | 10/11/2017 19:00 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| SV-1 | 1710363-001A | SoilGas | 10/09/2017 13:40 | GC24 10101722.D | 146978 |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| 12.13 | 24.21 | HK |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acetone | ND | 60 | 1 | 10/11/2017 19:41 |
| Acrolein | ND | 5.8 | 1 | 10/11/2017 19:41 |
| Acrylonitrile | ND | 1.1 | 1 | 10/11/2017 19:41 |
| tert-Amyl methyl ether (TAME) | ND | 2.1 | 1 | 10/11/2017 19:41 |
| Benzene | ND | 1.6 | 1 | 10/11/2017 19:41 |
| Benzyl chloride | ND | 2.6 | 1 | 10/11/2017 19:41 |
| Bromodichloromethane | ND | 3.5 | 1 | 10/11/2017 19:41 |
| Bromoform | ND | 5.2 | 1 | 10/11/2017 19:41 |
| Bromomethane | ND | 2.0 | 1 | 10/11/2017 19:41 |
| 1,3-Butadiene | ND | 1.1 | 1 | 10/11/2017 19:41 |
| 2-Butanone (MEK) | ND | 75 | 1 | 10/11/2017 19:41 |
| t-Butyl alcohol (TBA) | ND | 31 | 1 | 10/11/2017 19:41 |
| Carbon Disulfide | **3.2** | 1.6 | 1 | 10/11/2017 19:41 |
| Carbon Tetrachloride | ND | 3.2 | 1 | 10/11/2017 19:41 |
| Chlorobenzene | ND | 2.4 | 1 | 10/11/2017 19:41 |
| Chloroethane | ND | 1.3 | 1 | 10/11/2017 19:41 |
| Chloroform | **2.8** | 2.4 | 1 | 10/11/2017 19:41 |
| Chloromethane | ND | 1.0 | 1 | 10/11/2017 19:41 |
| Cyclohexane | ND | 18 | 1 | 10/11/2017 19:41 |
| Dibromochloromethane | ND | 4.4 | 1 | 10/11/2017 19:41 |
| 1,2-Dibromo-3-chloropropane | ND | 0.70 | 1 | 10/11/2017 19:41 |
| 1,2-Dibromoethane (EDB) | ND | 3.9 | 1 | 10/11/2017 19:41 |
| 1,2-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 19:41 |
| 1,3-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 19:41 |
| 1,4-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 19:41 |
| Dichlorodifluoromethane | **3.4** | 2.5 | 1 | 10/11/2017 19:41 |
| 1,1-Dichloroethane | ND | 2.0 | 1 | 10/11/2017 19:41 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 2.0 | 1 | 10/11/2017 19:41 |
| 1,1-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 19:41 |
| cis-1,2-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 19:41 |
| trans-1,2-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 19:41 |
| 1,2-Dichloropropane | ND | 2.4 | 1 | 10/11/2017 19:41 |
| cis-1,3-Dichloropropene | ND | 2.3 | 1 | 10/11/2017 19:41 |

*(Cont.)*

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http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| SV-1 | 1710363-001A | SoilGas | 10/09/2017 13:40 | GC24 10101722.D | 146978 |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| 12.13 | 24.21 | HK |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | 2.3 | 1 | 10/11/2017 19:41 |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | ND | 3.6 | 1 | 10/11/2017 19:41 |
| Diisopropyl ether (DIPE) | ND | 2.1 | 1 | 10/11/2017 19:41 |
| 1,4-Dioxane | ND | 1.8 | 1 | 10/11/2017 19:41 |
| Ethanol | ND | 96 | 1 | 10/11/2017 19:41 |
| Ethyl acetate | ND | 1.8 | 1 | 10/11/2017 19:41 |
| Ethyl tert-butyl ether (ETBE) | ND | 2.1 | 1 | 10/11/2017 19:41 |
| Ethylbenzene | **3.1** | 2.2 | 1 | 10/11/2017 19:41 |
| 4-Ethyltoluene | **6.0** | 2.5 | 1 | 10/11/2017 19:41 |
| Freon 113 | ND | 3.9 | 1 | 10/11/2017 19:41 |
| Heptane | ND | 21 | 1 | 10/11/2017 19:41 |
| Hexachlorobutadiene | ND | 5.4 | 1 | 10/11/2017 19:41 |
| Hexane | ND | 18 | 1 | 10/11/2017 19:41 |
| 2-Hexanone | **4.4** | 2.1 | 1 | 10/11/2017 19:41 |
| 4-Methyl-2-pentanone (MIBK) | **8.4** | 2.1 | 1 | 10/11/2017 19:41 |
| Methyl-t-butyl ether (MTBE) | ND | 1.8 | 1 | 10/11/2017 19:41 |
| Methylene chloride | ND | 8.8 | 1 | 10/11/2017 19:41 |
| Methyl methacrylate | ND | 2.1 | 1 | 10/11/2017 19:41 |
| Naphthalene | ND | 5.3 | 1 | 10/11/2017 19:41 |
| Propene | ND | 88 | 1 | 10/11/2017 19:41 |
| Styrene | ND | 2.2 | 1 | 10/11/2017 19:41 |
| 1,1,1,2-Tetrachloroethane | ND | 3.5 | 1 | 10/11/2017 19:41 |
| 1,1,2,2-Tetrachloroethane | ND | 3.5 | 1 | 10/11/2017 19:41 |
| Tetrachloroethene | **19** | 3.4 | 1 | 10/11/2017 19:41 |
| Tetrahydrofuran | ND | 3.0 | 1 | 10/11/2017 19:41 |
| Toluene | **6.0** | 1.9 | 1 | 10/11/2017 19:41 |
| 1,2,4-Trichlorobenzene | ND | 3.8 | 1 | 10/11/2017 19:41 |
| 1,1,1-Trichloroethane | ND | 2.8 | 1 | 10/11/2017 19:41 |
| 1,1,2-Trichloroethane | ND | 2.8 | 1 | 10/11/2017 19:41 |
| Trichloroethene | ND | 2.8 | 1 | 10/11/2017 19:41 |
| Trichlorofluoromethane | **10** | 2.8 | 1 | 10/11/2017 19:41 |
| 1,2,4-Trimethylbenzene | **12** | 2.5 | 1 | 10/11/2017 19:41 |
| 1,3,5-Trimethylbenzene | **4.0** | 2.5 | 1 | 10/11/2017 19:41 |

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Angela Rydelius, Lab Manager

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http://www.mccampbell.com / E-mail: main@mccampbell.com

# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1** | **1710363-001A** | **SoilGas** | **10/09/2017 13:40** | **GC24 10101722.D** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.13** | **24.21** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Vinyl Acetate | ND | 18 | 1 | 10/11/2017 19:41 |
| Vinyl Chloride | ND | 1.3 | 1 | 10/11/2017 19:41 |
| Xylenes, Total | **23** | 6.6 | 1 | 10/11/2017 19:41 |
| **Surrogates** | **REC (%)** | **Limits** | | |
| 1,2-DCA-d4 | 100 | 70-130 | | 10/11/2017 19:41 |
| Toluene-d8 | 101 | 70-130 | | 10/11/2017 19:41 |
| 4-BFB | 92 | 70-130 | | 10/11/2017 19:41 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-2** | **1710363-002A** | **SoilGas** | **10/09/2017 12:20** | **GC24 10101723.D** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.60** | **23.13** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acetone | ND | 60 | 1 | 10/11/2017 20:21 |
| Acrolein | ND | 5.8 | 1 | 10/11/2017 20:21 |
| Acrylonitrile | ND | 1.1 | 1 | 10/11/2017 20:21 |
| tert-Amyl methyl ether (TAME) | ND | 2.1 | 1 | 10/11/2017 20:21 |
| Benzene | ND | 1.6 | 1 | 10/11/2017 20:21 |
| Benzyl chloride | ND | 2.6 | 1 | 10/11/2017 20:21 |
| Bromodichloromethane | ND | 3.5 | 1 | 10/11/2017 20:21 |
| Bromoform | ND | 5.2 | 1 | 10/11/2017 20:21 |
| Bromomethane | ND | 2.0 | 1 | 10/11/2017 20:21 |
| 1,3-Butadiene | ND | 1.1 | 1 | 10/11/2017 20:21 |
| 2-Butanone (MEK) | ND | 75 | 1 | 10/11/2017 20:21 |
| t-Butyl alcohol (TBA) | ND | 31 | 1 | 10/11/2017 20:21 |
| Carbon Disulfide | ND | 1.6 | 1 | 10/11/2017 20:21 |
| Carbon Tetrachloride | ND | 3.2 | 1 | 10/11/2017 20:21 |
| Chlorobenzene | ND | 2.4 | 1 | 10/11/2017 20:21 |
| Chloroethane | ND | 1.3 | 1 | 10/11/2017 20:21 |
| Chloroform | ND | 2.4 | 1 | 10/11/2017 20:21 |
| Chloromethane | ND | 1.0 | 1 | 10/11/2017 20:21 |
| Cyclohexane | ND | 18 | 1 | 10/11/2017 20:21 |
| Dibromochloromethane | ND | 4.4 | 1 | 10/11/2017 20:21 |
| 1,2-Dibromo-3-chloropropane | ND | 0.12 | 1 | 10/11/2017 20:21 |
| 1,2-Dibromoethane (EDB) | ND | 3.9 | 1 | 10/11/2017 20:21 |
| 1,2-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 20:21 |
| 1,3-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 20:21 |
| 1,4-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 20:21 |
| Dichlorodifluoromethane | **3.0** | 2.5 | 1 | 10/11/2017 20:21 |
| 1,1-Dichloroethane | ND | 2.0 | 1 | 10/11/2017 20:21 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 2.0 | 1 | 10/11/2017 20:21 |
| 1,1-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 20:21 |
| cis-1,2-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 20:21 |
| trans-1,2-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 20:21 |
| 1,2-Dichloropropane | ND | 2.4 | 1 | 10/11/2017 20:21 |
| cis-1,3-Dichloropropene | ND | 2.3 | 1 | 10/11/2017 20:21 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| SV-2 | 1710363-002A | SoilGas | 10/09/2017 12:20 | GC24 10101723.D | 146978 |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| 11.60 | 23.13 | HK |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | 2.3 | 1 | 10/11/2017 20:21 |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | ND | 3.6 | 1 | 10/11/2017 20:21 |
| Diisopropyl ether (DIPE) | ND | 2.1 | 1 | 10/11/2017 20:21 |
| 1,4-Dioxane | ND | 1.8 | 1 | 10/11/2017 20:21 |
| Ethanol | ND | 96 | 1 | 10/11/2017 20:21 |
| Ethyl acetate | ND | 1.8 | 1 | 10/11/2017 20:21 |
| Ethyl tert-butyl ether (ETBE) | ND | 2.1 | 1 | 10/11/2017 20:21 |
| Ethylbenzene | **2.9** | 2.2 | 1 | 10/11/2017 20:21 |
| 4-Ethyltoluene | **4.6** | 2.5 | 1 | 10/11/2017 20:21 |
| Freon 113 | ND | 3.9 | 1 | 10/11/2017 20:21 |
| Heptane | ND | 21 | 1 | 10/11/2017 20:21 |
| Hexachlorobutadiene | ND | 5.4 | 1 | 10/11/2017 20:21 |
| Hexane | ND | 18 | 1 | 10/11/2017 20:21 |
| 2-Hexanone | ND | 2.1 | 1 | 10/11/2017 20:21 |
| 4-Methyl-2-pentanone (MIBK) | **16** | 2.1 | 1 | 10/11/2017 20:21 |
| Methyl-t-butyl ether (MTBE) | ND | 1.8 | 1 | 10/11/2017 20:21 |
| Methylene chloride | ND | 8.8 | 1 | 10/11/2017 20:21 |
| Methyl methacrylate | ND | 2.1 | 1 | 10/11/2017 20:21 |
| Naphthalene | ND | 5.3 | 1 | 10/11/2017 20:21 |
| Propene | ND | 88 | 1 | 10/11/2017 20:21 |
| Styrene | ND | 2.2 | 1 | 10/11/2017 20:21 |
| 1,1,1,2-Tetrachloroethane | ND | 3.5 | 1 | 10/11/2017 20:21 |
| 1,1,2,2-Tetrachloroethane | ND | 3.5 | 1 | 10/11/2017 20:21 |
| Tetrachloroethene | **24** | 3.4 | 1 | 10/11/2017 20:21 |
| Tetrahydrofuran | ND | 3.0 | 1 | 10/11/2017 20:21 |
| Toluene | **7.9** | 1.9 | 1 | 10/11/2017 20:21 |
| 1,2,4-Trichlorobenzene | ND | 3.8 | 1 | 10/11/2017 20:21 |
| 1,1,1-Trichloroethane | ND | 2.8 | 1 | 10/11/2017 20:21 |
| 1,1,2-Trichloroethane | ND | 2.8 | 1 | 10/11/2017 20:21 |
| Trichloroethene | ND | 2.8 | 1 | 10/11/2017 20:21 |
| Trichlorofluoromethane | **5.0** | 2.8 | 1 | 10/11/2017 20:21 |
| 1,2,4-Trimethylbenzene | **10** | 2.5 | 1 | 10/11/2017 20:21 |
| 1,3,5-Trimethylbenzene | **3.4** | 2.5 | 1 | 10/11/2017 20:21 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-2** | **1710363-002A** | **SoilGas** | **10/09/2017 12:20** | **GC24 10101723.D** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.60** | **23.13** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Vinyl Acetate | ND | 18 | 1 | 10/11/2017 20:21 |
| Vinyl Chloride | ND | 1.3 | 1 | 10/11/2017 20:21 |
| Xylenes, Total | **22** | 6.6 | 1 | 10/11/2017 20:21 |
| **Surrogates** | **REC (%)** | **Limits** | | |
| 1,2-DCA-d4 | 100 | 70-130 | | 10/11/2017 20:21 |
| Toluene-d8 | 101 | 70-130 | | 10/11/2017 20:21 |
| 4-BFB | 93 | 70-130 | | 10/11/2017 20:21 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| SV-3 | 1710363-003A | SoilGas | 10/09/2017 11:34 | GC24 10121711.D | 146978 |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| 11.92 | 23.79 | HK |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acetone | ND | 60 | 1 | 10/12/2017 20:34 |
| Acrolein | ND | 5.8 | 1 | 10/12/2017 20:34 |
| Acrylonitrile | ND | 1.1 | 1 | 10/12/2017 20:34 |
| tert-Amyl methyl ether (TAME) | ND | 2.1 | 1 | 10/12/2017 20:34 |
| Benzene | ND | 1.6 | 1 | 10/12/2017 20:34 |
| Benzyl chloride | ND | 2.6 | 1 | 10/12/2017 20:34 |
| Bromodichloromethane | ND | 3.5 | 1 | 10/12/2017 20:34 |
| Bromoform | ND | 5.2 | 1 | 10/12/2017 20:34 |
| Bromomethane | ND | 2.0 | 1 | 10/12/2017 20:34 |
| 1,3-Butadiene | ND | 1.1 | 1 | 10/12/2017 20:34 |
| 2-Butanone (MEK) | ND | 75 | 1 | 10/12/2017 20:34 |
| t-Butyl alcohol (TBA) | ND | 31 | 1 | 10/12/2017 20:34 |
| Carbon Disulfide | ND | 1.6 | 1 | 10/12/2017 20:34 |
| Carbon Tetrachloride | ND | 3.2 | 1 | 10/12/2017 20:34 |
| Chlorobenzene | ND | 2.4 | 1 | 10/12/2017 20:34 |
| Chloroethane | ND | 1.3 | 1 | 10/12/2017 20:34 |
| Chloroform | ND | 2.4 | 1 | 10/12/2017 20:34 |
| Chloromethane | ND | 1.0 | 1 | 10/12/2017 20:34 |
| Cyclohexane | ND | 18 | 1 | 10/12/2017 20:34 |
| Dibromochloromethane | ND | 4.4 | 1 | 10/12/2017 20:34 |
| 1,2-Dibromo-3-chloropropane | ND | 0.12 | 1 | 10/12/2017 20:34 |
| 1,2-Dibromoethane (EDB) | ND | 3.9 | 1 | 10/12/2017 20:34 |
| 1,2-Dichlorobenzene | ND | 3.0 | 1 | 10/12/2017 20:34 |
| 1,3-Dichlorobenzene | ND | 3.0 | 1 | 10/12/2017 20:34 |
| 1,4-Dichlorobenzene | ND | 3.0 | 1 | 10/12/2017 20:34 |
| Dichlorodifluoromethane | **2.6** | 2.5 | 1 | 10/12/2017 20:34 |
| 1,1-Dichloroethane | ND | 2.0 | 1 | 10/12/2017 20:34 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 2.0 | 1 | 10/12/2017 20:34 |
| 1,1-Dichloroethene | ND | 2.0 | 1 | 10/12/2017 20:34 |
| cis-1,2-Dichloroethene | ND | 2.0 | 1 | 10/12/2017 20:34 |
| trans-1,2-Dichloroethene | ND | 2.0 | 1 | 10/12/2017 20:34 |
| 1,2-Dichloropropane | ND | 2.4 | 1 | 10/12/2017 20:34 |
| cis-1,3-Dichloropropene | ND | 2.3 | 1 | 10/12/2017 20:34 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| SV-3 | 1710363-003A | SoilGas | 10/09/2017 11:34 | GC24 10121711.D | 146978 |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| 11.92 | 23.79 | HK |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | 2.3 | 1 | 10/12/2017 20:34 |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | ND | 3.6 | 1 | 10/12/2017 20:34 |
| Diisopropyl ether (DIPE) | ND | 2.1 | 1 | 10/12/2017 20:34 |
| 1,4-Dioxane | ND | 1.8 | 1 | 10/12/2017 20:34 |
| Ethanol | ND | 96 | 1 | 10/12/2017 20:34 |
| Ethyl acetate | ND | 1.8 | 1 | 10/12/2017 20:34 |
| Ethyl tert-butyl ether (ETBE) | ND | 2.1 | 1 | 10/12/2017 20:34 |
| Ethylbenzene | **4.0** | 2.2 | 1 | 10/12/2017 20:34 |
| 4-Ethyltoluene | **4.2** | 2.5 | 1 | 10/12/2017 20:34 |
| Freon 113 | ND | 3.9 | 1 | 10/12/2017 20:34 |
| Heptane | ND | 21 | 1 | 10/12/2017 20:34 |
| Hexachlorobutadiene | ND | 5.4 | 1 | 10/12/2017 20:34 |
| Hexane | ND | 18 | 1 | 10/12/2017 20:34 |
| 2-Hexanone | ND | 2.1 | 1 | 10/12/2017 20:34 |
| 4-Methyl-2-pentanone (MIBK) | **13** | 2.1 | 1 | 10/12/2017 20:34 |
| Methyl-t-butyl ether (MTBE) | ND | 1.8 | 1 | 10/12/2017 20:34 |
| Methylene chloride | ND | 8.8 | 1 | 10/12/2017 20:34 |
| Methyl methacrylate | ND | 2.1 | 1 | 10/12/2017 20:34 |
| Naphthalene | ND | 5.3 | 1 | 10/12/2017 20:34 |
| Propene | ND | 88 | 1 | 10/12/2017 20:34 |
| Styrene | ND | 2.2 | 1 | 10/12/2017 20:34 |
| 1,1,1,2-Tetrachloroethane | ND | 3.5 | 1 | 10/12/2017 20:34 |
| 1,1,2,2-Tetrachloroethane | ND | 3.5 | 1 | 10/12/2017 20:34 |
| Tetrachloroethene | **6.4** | 3.4 | 1 | 10/12/2017 20:34 |
| Tetrahydrofuran | ND | 3.0 | 1 | 10/12/2017 20:34 |
| Toluene | **8.6** | 1.9 | 1 | 10/12/2017 20:34 |
| 1,2,4-Trichlorobenzene | ND | 3.8 | 1 | 10/12/2017 20:34 |
| 1,1,1-Trichloroethane | ND | 2.8 | 1 | 10/12/2017 20:34 |
| 1,1,2-Trichloroethane | ND | 2.8 | 1 | 10/12/2017 20:34 |
| Trichloroethene | ND | 2.8 | 1 | 10/12/2017 20:34 |
| Trichlorofluoromethane | ND | 2.8 | 1 | 10/12/2017 20:34 |
| 1,2,4-Trimethylbenzene | **12** | 2.5 | 1 | 10/12/2017 20:34 |
| 1,3,5-Trimethylbenzene | **3.9** | 2.5 | 1 | 10/12/2017 20:34 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-3** | **1710363-003A** | **SoilGas** | **10/09/2017 11:34** | **GC24 10121711.D** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **11.92** | **23.79** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Vinyl Acetate | ND | 18 | 1 | 10/12/2017 20:34 |
| Vinyl Chloride | ND | 1.3 | 1 | 10/12/2017 20:34 |
| Xylenes, Total | **28** | 6.6 | 1 | 10/12/2017 20:34 |
| **Surrogates** | **REC (%)** | **Limits** | | |
| 1,2-DCA-d4 | 94 | 70-130 | | 10/12/2017 20:34 |
| Toluene-d8 | 101 | 70-130 | | 10/12/2017 20:34 |
| 4-BFB | 100 | 70-130 | | 10/12/2017 20:34 |

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1 Dup** | **1710363-004A** | **SoilGas** | **10/09/2017 13:40** | **GC24 10101721.D** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.04** | **24.07** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Acetone | ND | 60 | 1 | 10/11/2017 19:00 |
| Acrolein | ND | 5.8 | 1 | 10/11/2017 19:00 |
| Acrylonitrile | ND | 1.1 | 1 | 10/11/2017 19:00 |
| tert-Amyl methyl ether (TAME) | ND | 2.1 | 1 | 10/11/2017 19:00 |
| Benzene | ND | 1.6 | 1 | 10/11/2017 19:00 |
| Benzyl chloride | ND | 2.6 | 1 | 10/11/2017 19:00 |
| Bromodichloromethane | ND | 3.5 | 1 | 10/11/2017 19:00 |
| Bromoform | ND | 5.2 | 1 | 10/11/2017 19:00 |
| Bromomethane | ND | 2.0 | 1 | 10/11/2017 19:00 |
| 1,3-Butadiene | ND | 1.1 | 1 | 10/11/2017 19:00 |
| 2-Butanone (MEK) | ND | 75 | 1 | 10/11/2017 19:00 |
| t-Butyl alcohol (TBA) | ND | 31 | 1 | 10/11/2017 19:00 |
| Carbon Disulfide | ND | 1.6 | 1 | 10/11/2017 19:00 |
| Carbon Tetrachloride | ND | 3.2 | 1 | 10/11/2017 19:00 |
| Chlorobenzene | ND | 2.4 | 1 | 10/11/2017 19:00 |
| Chloroethane | ND | 1.3 | 1 | 10/11/2017 19:00 |
| Chloroform | **3.2** | 2.4 | 1 | 10/11/2017 19:00 |
| Chloromethane | ND | 1.0 | 1 | 10/11/2017 19:00 |
| Cyclohexane | ND | 18 | 1 | 10/11/2017 19:00 |
| Dibromochloromethane | ND | 4.4 | 1 | 10/11/2017 19:00 |
| 1,2-Dibromo-3-chloropropane | ND | 0.70 | 1 | 10/11/2017 19:00 |
| 1,2-Dibromoethane (EDB) | ND | 3.9 | 1 | 10/11/2017 19:00 |
| 1,2-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 19:00 |
| 1,3-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 19:00 |
| 1,4-Dichlorobenzene | ND | 3.0 | 1 | 10/11/2017 19:00 |
| Dichlorodifluoromethane | **3.3** | 2.5 | 1 | 10/11/2017 19:00 |
| 1,1-Dichloroethane | ND | 2.0 | 1 | 10/11/2017 19:00 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 2.0 | 1 | 10/11/2017 19:00 |
| 1,1-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 19:00 |
| cis-1,2-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 19:00 |
| trans-1,2-Dichloroethene | ND | 2.0 | 1 | 10/11/2017 19:00 |
| 1,2-Dichloropropane | ND | 2.4 | 1 | 10/11/2017 19:00 |
| cis-1,3-Dichloropropene | ND | 2.3 | 1 | 10/11/2017 19:00 |

*(Cont.)*

Angela Rydelius, Lab Manager

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| SV-1 Dup | 1710363-004A | SoilGas | 10/09/2017 13:40 | GC24 10101721.D | 146978 |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| 12.04 | 24.07 | HK |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| trans-1,3-Dichloropropene | ND | 2.3 | 1 | 10/11/2017 19:00 |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | ND | 3.6 | 1 | 10/11/2017 19:00 |
| Diisopropyl ether (DIPE) | ND | 2.1 | 1 | 10/11/2017 19:00 |
| 1,4-Dioxane | ND | 1.8 | 1 | 10/11/2017 19:00 |
| Ethanol | ND | 96 | 1 | 10/11/2017 19:00 |
| Ethyl acetate | ND | 1.8 | 1 | 10/11/2017 19:00 |
| Ethyl tert-butyl ether (ETBE) | ND | 2.1 | 1 | 10/11/2017 19:00 |
| Ethylbenzene | **3.2** | 2.2 | 1 | 10/11/2017 19:00 |
| 4-Ethyltoluene | **4.3** | 2.5 | 1 | 10/11/2017 19:00 |
| Freon 113 | ND | 3.9 | 1 | 10/11/2017 19:00 |
| Heptane | ND | 21 | 1 | 10/11/2017 19:00 |
| Hexachlorobutadiene | ND | 5.4 | 1 | 10/11/2017 19:00 |
| Hexane | ND | 18 | 1 | 10/11/2017 19:00 |
| 2-Hexanone | **2.9** | 2.1 | 1 | 10/11/2017 19:00 |
| 4-Methyl-2-pentanone (MIBK) | **8.1** | 2.1 | 1 | 10/11/2017 19:00 |
| Methyl-t-butyl ether (MTBE) | ND | 1.8 | 1 | 10/11/2017 19:00 |
| Methylene chloride | ND | 8.8 | 1 | 10/11/2017 19:00 |
| Methyl methacrylate | ND | 2.1 | 1 | 10/11/2017 19:00 |
| Naphthalene | ND | 5.3 | 1 | 10/11/2017 19:00 |
| Propene | ND | 88 | 1 | 10/11/2017 19:00 |
| Styrene | ND | 2.2 | 1 | 10/11/2017 19:00 |
| 1,1,1,2-Tetrachloroethane | ND | 3.5 | 1 | 10/11/2017 19:00 |
| 1,1,2,2-Tetrachloroethane | ND | 3.5 | 1 | 10/11/2017 19:00 |
| Tetrachloroethene | **19** | 3.4 | 1 | 10/11/2017 19:00 |
| Tetrahydrofuran | ND | 3.0 | 1 | 10/11/2017 19:00 |
| Toluene | **6.1** | 1.9 | 1 | 10/11/2017 19:00 |
| 1,2,4-Trichlorobenzene | ND | 3.8 | 1 | 10/11/2017 19:00 |
| 1,1,1-Trichloroethane | ND | 2.8 | 1 | 10/11/2017 19:00 |
| 1,1,2-Trichloroethane | ND | 2.8 | 1 | 10/11/2017 19:00 |
| Trichloroethene | ND | 2.8 | 1 | 10/11/2017 19:00 |
| Trichlorofluoromethane | **11** | 2.8 | 1 | 10/11/2017 19:00 |
| 1,2,4-Trimethylbenzene | **12** | 2.5 | 1 | 10/11/2017 19:00 |
| 1,3,5-Trimethylbenzene | **4.2** | 2.5 | 1 | 10/11/2017 19:00 |

*(Cont.)*

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method:** | TO15 |
| **Date Prepared:** | 10/11/17-10/12/17 | **Analytical Method:** | TO15 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1 Dup** | **1710363-004A** | **SoilGas** | **10/09/2017 13:40** | **GC24 10101721.D** | **146978** |

| Initial Pressure (psia) | Final Pressure (psia) | Analyst(s) |
|---|---|---|
| **12.04** | **24.07** | **HK** |

| Analytes | Result | RL | DF | Date Analyzed |
|---|---|---|---|---|
| Vinyl Acetate | ND | 18 | 1 | 10/11/2017 19:00 |
| Vinyl Chloride | ND | 1.3 | 1 | 10/11/2017 19:00 |
| Xylenes, Total | **24** | 6.6 | 1 | 10/11/2017 19:00 |
| **Surrogates** | **REC (%)** | **Limits** | | |
| 1,2-DCA-d4 | 98 | 70-130 | | 10/11/2017 19:00 |
| Toluene-d8 | 102 | 70-130 | | 10/11/2017 19:00 |
| 4-BFB | 100 | 70-130 | | 10/11/2017 19:00 |

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# Analytical Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Received:** | 10/9/17 18:30 | **Extraction Method** | TO17 |
| **Date Prepared:** | 10/10/17 | **Analytical Method:** | TO17 |
| **Project:** | 1716 Webster- CCI | **Unit:** | µg/m³ |

## Volatile Organic Compounds by TO17

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-1** | **1710363-001B** | **Air** | **10/09/2017 13:40** | **GC37 F1010171207.D** | **146884** |

| Analytes | Result | RL | DF | Sample Volume | Date Analyzed |
|---|---|---|---|---|---|
| Naphthalene | ND | 2.0 | 1 | 1 L | 10/10/2017 21:05 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 4-BFB | 100 | 70-130 | 10/10/2017 21:05 |

Analyst(s): KBO

| Client ID | Lab ID | Matrix | Date Collected | Instrument | Batch ID |
|---|---|---|---|---|---|
| **SV-2** | **1710363-002B** | **Air** | **10/09/2017 12:20** | **GC37 F1010171208.D** | **146884** |

| Analytes | Result | RL | DF | Sample Volume | Date Analyzed |
|---|---|---|---|---|---|
| Naphthalene | ND | 2.0 | 1 | 1 L | 10/10/2017 21:49 |

| Surrogates | REC (%) | Limits | |
|---|---|---|---|
| 4-BFB | 102 | 70-130 | 10/10/2017 21:49 |

Analyst(s): KBO

Angela Rydelius, Lab Manager

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Prepared:** | 10/10/17 | **BatchID:** | 146830 |
| **Date Analyzed:** | 10/10/17 | **Extraction Method** | ASTM D 1946-90 |
| **Instrument:** | GC26 | **Analytical Method:** | ASTM D 1946-90 |
| **Matrix:** | SoilGas | **Unit:** | % |
| **Project:** | 1716 Webster- CCI | **Sample ID:** | MB/LCS-146830 |

## QC Summary Report for ASTM D1946-90

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Oxygen | ND | 0.570 | 0.20 | 0.70 | - | 81 | 70-130 |

QA/QC Officer

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Prepared:** | 10/10/17 | **BatchID:** | 147119 |
| **Date Analyzed:** | 10/10/17 | **Extraction Method:** | ASTM D 1946-90 |
| **Instrument:** | GC26 | **Analytical Method:** | ASTM D 1946-90 |
| **Matrix:** | SoilGas | **Unit:** | % |
| **Project:** | 1716 Webster- CCI | **Sample ID:** | MB/LCS-147119 |

## QC Summary Report for ASTM D1946-90

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Carbon Dioxide | ND | 0.00921 | 0.0020 | 0.010 | - | 92 | 70-130 |
| Methane | ND | 0.00879 | 0.00010 | 0.010 | - | 88 | 70-130 |

QA/QC Officer

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Prepared:** | 10/10/17 - 10/11/17 | **BatchID:** | 146978 |
| **Date Analyzed:** | 10/10/17 - 10/11/17 | **Extraction Method:** | TO15 |
| **Instrument:** | GC24 | **Analytical Method:** | TO15 |
| **Matrix:** | SoilGas | **Unit:** | µg/m³ |
| **Project:** | 1716 Webster- CCI | **Sample ID:** | MB/LCS-146978 |

## QC Summary Report for TO15

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Acetone | ND | 61.4 | 30 | 60 | - | 102 | 60-140 |
| Acrolein | ND | 46.7 | 2.9 | 58.25 | - | 80 | 60-140 |
| Acrylonitrile | ND | 54.9 | 0.55 | 55 | - | 100 | 60-140 |
| tert-Amyl methyl ether (TAME) | ND | 110 | 1.0 | 105 | - | 105 | 60-140 |
| Benzene | ND | 78.8 | 0.80 | 80 | - | 98 | 60-140 |
| Benzyl chloride | ND | 86.9 | 1.3 | 132.5 | - | 66 | 60-140 |
| Bromodichloromethane | ND | 196 | 1.8 | 175 | - | 112 | 60-140 |
| Bromoform | ND | 276 | 2.6 | 262.5 | - | 105 | 60-140 |
| Bromomethane | ND | 101 | 1.0 | 97.5 | - | 103 | 60-140 |
| 1,3-Butadiene | ND | 56.2 | 0.55 | 55 | - | 102 | 60-140 |
| 2-Butanone (MEK) | ND | 74.4 | 38 | 75 | - | 99 | 60-140 |
| t-Butyl alcohol (TBA) | ND | 77.0 | 16 | 77.5 | - | 99 | 60-140 |
| Carbon Disulfide | ND | 79.2 | 0.80 | 80 | - | 99 | 60-140 |
| Carbon Tetrachloride | ND | 189 | 1.6 | 160 | - | 118 | 60-140 |
| Chlorobenzene | ND | 116 | 1.2 | 117.5 | - | 99 | 60-140 |
| Chloroethane | ND | 66.5 | 0.65 | 67.5 | - | 99 | 60-140 |
| Chloroform | ND | 108 | 1.2 | 122.5 | - | 88 | 60-140 |
| Chloromethane | ND | 48.2 | 0.50 | 52.5 | - | 92 | 60-140 |
| Cyclohexane | ND | 84.5 | 9.0 | 87.5 | - | 97 | 60-140 |
| Dibromochloromethane | ND | 239 | 2.2 | 217.5 | - | 110 | 60-140 |
| 1,2-Dibromo-3-chloropropane | ND | 299 | 0.060 | 245 | - | 122 | 60-140 |
| 1,2-Dibromoethane (EDB) | ND | 182 | 2.0 | 195 | - | 93 | 60-140 |
| 1,2-Dichlorobenzene | ND | 158 | 1.5 | 152.5 | - | 103 | 60-140 |
| 1,3-Dichlorobenzene | ND | 157 | 1.5 | 152.5 | - | 103 | 60-140 |
| 1,4-Dichlorobenzene | ND | 155 | 1.5 | 152.5 | - | 102 | 60-140 |
| Dichlorodifluoromethane | ND | 116 | 1.2 | 125 | - | 93 | 60-140 |
| 1,1-Dichloroethane | ND | 98.7 | 1.0 | 102.5 | - | 96 | 60-140 |
| 1,2-Dichloroethane (1,2-DCA) | ND | 86.7 | 1.0 | 102.5 | - | 85 | 60-140 |
| 1,1-Dichloroethene | ND | 89.7 | 1.0 | 100 | - | 90 | 60-140 |
| cis-1,2-Dichloroethene | ND | 96.8 | 1.0 | 100 | - | 97 | 60-140 |
| trans-1,2-Dichloroethene | ND | 96.8 | 1.0 | 100 | - | 97 | 60-140 |
| 1,2-Dichloropropane | ND | 120 | 1.2 | 117.5 | - | 103 | 60-140 |
| cis-1,3-Dichloropropene | ND | 124 | 1.2 | 115 | - | 107 | 60-140 |
| trans-1,3-Dichloropropene | ND | 122 | 1.2 | 115 | - | 106 | 60-140 |
| 1,2-Dichloro-1,1,2,2-tetrafluoroethane | ND | 168 | 1.8 | 177.5 | - | 95 | 60-140 |
| Diisopropyl ether (DIPE) | ND | 97.8 | 1.0 | 105 | - | 93 | 60-140 |
| 1,4-Dioxane | ND | 113 | 0.90 | 92.5 | - | 122 | 60-140 |

*(Cont.)*

QA/QC Officer

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Prepared:** | 10/10/17 - 10/11/17 | **BatchID:** | 146978 |
| **Date Analyzed:** | 10/10/17 - 10/11/17 | **Extraction Method:** | TO15 |
| **Instrument:** | GC24 | **Analytical Method:** | TO15 |
| **Matrix:** | SoilGas | **Unit:** | µg/m³ |
| **Project:** | 1716 Webster- CCI | **Sample ID:** | MB/LCS-146978 |

## QC Summary Report for TO15

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Ethanol | ND | ND | 48 | 47.5 | - | 95 | 60-140 |
| Ethyl acetate | ND | 92.7 | 0.90 | 92.5 | - | 100 | 60-140 |
| Ethyl tert-butyl ether (ETBE) | ND | 98.8 | 1.0 | 105 | - | 94 | 60-140 |
| Ethylbenzene | ND | 108 | 1.1 | 110 | - | 98 | 60-140 |
| 4-Ethyltoluene | ND | 127 | 1.2 | 125 | - | 102 | 60-140 |
| Freon 113 | ND | 183 | 2.0 | 195 | - | 94 | 60-140 |
| Heptane | ND | 110 | 10 | 105 | - | 104 | 60-140 |
| Hexachlorobutadiene | ND | 288 | 2.7 | 270 | - | 107 | 60-140 |
| Hexane | ND | 88.3 | 9.0 | 90 | - | 98 | 60-140 |
| 2-Hexanone | ND | 114 | 1.0 | 105 | - | 109 | 60-140 |
| Isopropyl Alcohol | ND | 64.0 | 25 | 62.5 | - | 102 | 60-140 |
| 4-Methyl-2-pentanone (MIBK) | ND | 111 | 1.0 | 105 | - | 106 | 60-140 |
| Methyl-t-butyl ether (MTBE) | ND | 88.2 | 0.90 | 92.5 | - | 95 | 60-140 |
| Methylene chloride | ND | 78.0 | 4.4 | 87.5 | - | 89 | 60-140 |
| Methyl methacrylate | ND | 111 | 1.0 | 104 | - | 107 | 60-140 |
| Naphthalene | ND | 295 | 2.6 | 265 | - | 111 | 60-140 |
| Propene | ND | ND | 44 | 42.5 | - | 93 | 60-140 |
| Styrene | ND | 103 | 1.1 | 107.5 | - | 96 | 60-140 |
| 1,1,1,2-Tetrachloroethane | ND | 172 | 1.8 | 175 | - | 98 | 60-140 |
| 1,1,2,2-Tetrachloroethane | ND | 179 | 1.8 | 175 | - | 102 | 60-140 |
| Tetrachloroethene | ND | 160 | 1.7 | 172 | - | 93 | 60-140 |
| Tetrahydrofuran | ND | 69.5 | 1.5 | 75 | - | 93 | 60-140 |
| Toluene | ND | 94.2 | 0.95 | 95 | - | 99 | 60-140 |
| 1,2,4-Trichlorobenzene | ND | 208 | 1.9 | 187.5 | - | 111 | 60-140 |
| 1,1,1-Trichloroethane | ND | 154 | 1.4 | 137.5 | - | 112 | 60-140 |
| 1,1,2-Trichloroethane | ND | 134 | 1.4 | 137.5 | - | 97 | 60-140 |
| Trichloroethene | ND | 140 | 1.4 | 137.5 | - | 102 | 60-140 |
| Trichlorofluoromethane | ND | 133 | 1.4 | 142.5 | - | 93 | 60-140 |
| 1,2,4-Trimethylbenzene | ND | 126 | 1.2 | 125 | - | 101 | 60-140 |
| 1,3,5-Trimethylbenzene | ND | 124 | 1.2 | 125 | - | 99 | 60-140 |
| Vinyl Acetate | ND | 82.4 | 9.0 | 90 | - | 92 | 60-140 |
| Vinyl Chloride | ND | 66.1 | 0.65 | 65 | - | 102 | 60-140 |
| Xylenes, Total | ND | 324 | 3.3 | 330 | - | 98 | 60-140 |

*(Cont.)*

QA/QC Officer

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Prepared:** | 10/10/17 - 10/11/17 | **BatchID:** | 146978 |
| **Date Analyzed:** | 10/10/17 - 10/11/17 | **Extraction Method:** | TO15 |
| **Instrument:** | GC24 | **Analytical Method:** | TO15 |
| **Matrix:** | SoilGas | **Unit:** | µg/m³ |
| **Project:** | 1716 Webster- CCI | **Sample ID:** | MB/LCS-146978 |

## QC Summary Report for TO15

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| **Surrogate Recovery** | | | | | | | |
| 1,2-DCA-d4 | 472.5 | 500 | | 500 | 94 | 100 | 70-130 |
| Toluene-d8 | 506.8 | 510 | | 500 | 101 | 102 | 70-130 |
| 4-BFB | 500.3 | 503 | | 500 | 100 | 101 | 70-130 |

QA/QC Officer

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# Quality Control Report

| | | | |
|---|---|---|---|
| **Client:** | Pangea Environmental Svcs., Inc. | **WorkOrder:** | 1710363 |
| **Date Prepared:** | 10/10/17 | **BatchID:** | 146884 |
| **Date Analyzed:** | 10/10/17 | **Extraction Method** | TO17 |
| **Instrument:** | GC37 | **Analytical Method:** | TO17 |
| **Matrix:** | Sorbent Tube | **Unit:** | µg/m³ |
| **Project:** | 1716 Webster- CCI | **Sample ID:** | MB/LCS-146884 |

## QC Summary Report for VOCs by TO17

| Analyte | MB Result | LCS Result | RL | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|---|---|---|---|---|---|---|---|
| Naphthalene | ND | 58.5 | 2.0 | 50 | - | 117 | 60-140 |
| Xylenes, Total | ND | 173 | 6.0 | 150 | - | 115 | 60-140 |
| **Surrogate Recovery** | | | | | | | |
| 4-BFB | 93.61 | 101 | | 100 | 94 | 101 | 70-130 |

QA/QC Officer

McCampbell Analytical, Inc.
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# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 1710363** **ClientCode: PEO**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

**Report to:**
Ron Scheele
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612
(510) 836-3700 FAX: (510) 836-3709

Email: Rscheele@pangeaenv.com
cc/3rd Party:
PO:
ProjectNo: 1716 Webster- CCI

**Bill to:**
Bob Clark-Riddell
Pangea Environmental Svcs., Inc.
1710 Franklin Street, Ste. 200
Oakland, CA 94612

**Requested TAT:** 5 days;

***Date Received:*** **10/09/2017**
***Date Logged:*** **10/10/2017**

| 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 |
| 1710363-001 | SV-1 | Air | 10/9/2017 13:40 | ☐ | | | | | | | | | | B | | |
| 1710363-001 | SV-1 | SoilGas | 10/9/2017 13:40 | ☐ | A | A | | | A | A | A | A | A | | | |
| 1710363-002 | SV-2 | Air | 10/9/2017 12:20 | ☐ | | | | | | | | | | B | | |
| 1710363-002 | SV-2 | SoilGas | 10/9/2017 12:20 | ☐ | A | A | | | A | A | A | A | A | | | |
| 1710363-003 | SV-3 | SoilGas | 10/9/2017 11:34 | ☐ | A | A | | | A | A | A | A | A | | | |
| 1710363-004 | SV-1 Dup | SoilGas | 10/9/2017 13:40 | ☐ | | | | | A | A | A | A | A | | | |
| 1710363-005 | Shroud | SoilGas | 10/9/2017 13:20 | ☐ | | | | | A | A | A | A | A | | | |
| 1710363-006 | Unused Summa 1 | SoilGas | <Not Provided> | ☐ | | | | A | | | | | | | A | |
| 1710363-007 | Unused Summa 2 | SoilGas | <Not Provided> | ☐ | | | | A | | | | | | | A | |
| 1710363-008 | Unused Sorbent Tube | Sorbent Tube | <Not Provided> | ☐ | | | A | | | | | | | | | |

**Test Legend:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | ATMOSPHERICGAS_SG(%) | 2 | LG_SUMMA_SOILGAS(%) | 3 | PRSUMACLEAN | 4 | PRUNUSEDSUMMA |
| 5 | TO15_HIGHLEVEL_SOIL(UG/M3) | 6 | TO15_HIGHLEVEL-LC_SOIL(UG/M3) | 7 | TO15_Scan-SIM_SOIL(UG/M3) [N] | 8 | TO15-8260_SOIL(UG/M3) [N] |
| 9 | TO15-LC_SOIL(UG/M3) [N] | 10 | TO17VOC_ST(UGM3) | 11 | UNUSED_SUMMA | 12 | |

**Prepared by: Jena Alfaro**

The following SampIDs: 001A, 002A, 003A, 004A, 005A contain testgroup TO15_SG(UG/M3).

**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.

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

# WORK ORDER SUMMARY

**Client Name:** PANGEA ENVIRONMENTAL SVCS., INC. **Project:** 1716 Webster- CCI **Work Order:** 1710363
**Client Contact:** Ron Scheele **QC Level:** LEVEL 2
**Contact's Email:** Rscheele@pangeaenv.com **Comments:** **Date Logged:** 10/10/2017

☐ 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1710363-001A | SV-1 | SoilGas | TO15 for Soil Vapor (Scan-SIM) | 1 | 1L Summa | ☐ | 10/9/2017 13:40 | 5 days | | ☐ | |
| | | | ASTM D1946-90 (CO, CO2, C1-C6) <Carbon Dioxide_2, Methane_4> | | | ☐ | | 5 days | | ☐ | |
| | | | ASTM D1946-90 (N2 O2) <Oxygen> | | | ☐ | | 5 days | | ☐ | |
| 1710363-001B | SV-1 | Air | TO17 (VOCs) (µg/m³) <Naphthalene> | 1 | Sorbent Tube | ☐ | 10/9/2017 13:40 | 5 days | | ☐ | |
| 1710363-002A | SV-2 | SoilGas | TO15 for Soil Vapor (Scan-SIM) | 1 | 1L Summa | ☐ | 10/9/2017 12:20 | 5 days | | ☐ | |
| | | | ASTM D1946-90 (CO, CO2, C1-C6) <Carbon Dioxide_2, Methane_4> | | | ☐ | | 5 days | | ☐ | |
| | | | ASTM D1946-90 (N2 O2) <Oxygen> | | | ☐ | | 5 days | | ☐ | |
| 1710363-002B | SV-2 | Air | TO17 (VOCs) (µg/m³) <Naphthalene> | 1 | Sorbent Tube | ☐ | 10/9/2017 12:20 | 5 days | | ☐ | |
| 1710363-003A | SV-3 | SoilGas | TO15 for Soil Vapor (Scan-SIM) | 1 | 1L Summa | ☐ | 10/9/2017 11:34 | 5 days | | ☐ | |
| | | | ASTM D1946-90 (CO, CO2, C1-C6) <Carbon Dioxide_2, Methane_4> | | | ☐ | | 5 days | | ☐ | |
| | | | ASTM D1946-90 (N2 O2) <Oxygen> | | | ☐ | | 5 days | | ☐ | |
| 1710363-004A | SV-1 Dup | SoilGas | TO15 for Soil Vapor (Scan-SIM) | 1 | 1L Summa | ☐ | 10/9/2017 13:40 | 5 days | | ☐ | |
| 1710363-005A | Shroud | SoilGas | TO15 for Soil Vapor (Scan-SIM) | 1 | 1L Summa | ☐ | 10/9/2017 13:20 | 5 days | | ☐ | |
| 1710363-006A | Unused Summa 1 | SoilGas | Unused Summa | 1 | 1L Summa | ☐ | <Not Provided> | 5 days | | ☐ | |
| 1710363-007A | Unused Summa 2 | SoilGas | Unused Summa | 1 | 1L Summa | ☐ | <Not Provided> | 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.**

Summa COC

MAI Work Order # 17103G3

6

# McCAMPBELL ANALYTICAL, INC.

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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 X | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: PDF | GeoTracker EDF X | EDD | Write On (DW) | EQuIS

Report To: Ron Scheele | Bill To: Pangea
Company: Pangea Env. Svs
Email: rscheele@pangeaenv.com
Alt Email: | Tele: 510-836-3700
Project Name: 1716 Webster - CC1 | Project#:
Project Location: | PO #
Sampler Signature:

**Analysis Requested**

Helium Shroud SN#

**Leak Check Default is IPA**

Notes: Please specify units if different than default: VOCs is reported in µg/m³, fixed is reported in %.

| SAMPLE ID Location / Field Point | Sampling Start Date | Sampling Start Time | End Time | Canister SN# | Sample Kit / Manifold # | VOCs TO-15 (µg/m³) - See Notes | 8010 by TO-15 (µg/m³) | TPH(g) (µg/m³) | LEED: (inc. 4PCH, Formaldehyde, CO, Total VOCs) | Fixed Gas ($CO_2$, Methane, Ethane, Ethylene, Acetylene, Propane, CO) % | Fixed Gas ($O_2$, $N_2$) % | APH: Aliphatic and/or Aromatic (circle one) µg/m³ | Helium Leak Check % | Leak Check (IPA, Norflurane, 1,1-difluoroethane) µg/m³ | Naphthalene by TO-17 | Matrix: Soilgas | Matrix: Indoor Air | Matrix: | Canister Pressure / Vacuum: Initial | Canister Pressure / Vacuum: Final |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SV-1 | 10/9/17 | 1312 | 1340 | J1922-1905 | 316-1318 | X | | | | X | X | | | X | X | | | | | |
| SV-2 | " | 1214 | 1220 | 6436-855 | 316-1366 | X | | | | X | X | | | X | X | | | | | |
| SV-3 | " | 1130 | 1134 | 1981-1929 | 316-678 | X | | | | X | X | | | X | | | | | | |
| SV-1 DUP | " | 1312 | 1340 | 1930-1913 | 316-1318 | X | | | | | | | | X | EC1 | | | | | |
| Shroud | 10/9/17 | 1315 | 1320 | A7524-872 | 316-1220 | | | | | | | | | X | | | | | | |

**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.

| Relinquished By / Company Name | Date | Time | Received By / Company Name | Date | Time | Comments / Instructions |
|---|---|---|---|---|---|---|
| | 10/9/17 | 1830 | | 10/9/17 | 1830 | |

Page 1 of 1

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# Sample Receipt Checklist

| | | | |
|---|---|---|---|
| Client Name: | **Pangea Environmental Svcs., Inc.** | Date and Time Received | **10/9/2017 18:30** |
| Project Name: | **1716 Webster- CCI** | Date Logged: | **10/10/2017** |
| | | Received by: | Kena Ponce |
| WorkOrder №: | **1710363** Matrix: Air/SoilGas/Sorbent Tube | Logged by: | Jena Alfaro |
| 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 | ☐ | |
| COC agrees with Quote? | Yes | ☐ | No | ☐ | NA ☑ |

## 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: 2.7°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 ) | | | | |

UCMR 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:

SGS ACCUTEST IS PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

*e-Hardcopy 2.0*
*Automated Report*

Technical Report for

Compliance & Closure, Inc.

T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

12214-2

SGS Accutest Job Number: FA48304

Sampling Date: 10/09/17

Report to:

Compliance & Closure, Inc
4115 BlackHawk Plaza Circle Suite 100
Danville, CA 94506
gary@cci-envr.com

ATTN: Gary Mulkey

Total number of pages in report: 70

NELAP ACCREDITED TNI LABORATORY

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Caitlin Brice, M.S.
General Manager

Client Service contact: Elvin Kumar 407-425-6700

Certifications: FL(E83510), LA(03051), KS(E-10327), IL(200063), NC(573), NJ(FL002), NY(12022), SC(96038001) DoD ELAP(L-A-B L2229), AZ(AZ0806), CA(2937), TX(T104704404), PA(68-03573), VA(460177), AK, AR, GA, IA, KY, MA, NV, OK, OR, UT, WA

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# Table of Contents

# Sample Summary

Compliance & Closure, Inc.

**Job No:** FA48304

T10000005974-Delong Oil; 1716 Webster St, Alameda, CA
Project No: 12214-2

| Sample Number | Collected Date | Time | By | Received | Matrix Code | Matrix Type | Client Sample ID |
|---|---|---|---|---|---|---|---|
| FA48304-1 | 10/09/17 | 09:30 | GM | 10/11/17 | SO | Soil | SB-7-3 |
| FA48304-2 | 10/09/17 | 10:00 | GM | 10/11/17 | SO | Soil | SB-7-7 |
| FA48304-3 | 10/09/17 | 10:30 | GM | 10/11/17 | AQ | Ground Water | SB-7-W |

Soil samples reported on a dry weight basis unless otherwise indicated on result page.

# Summary of Hits



**Job Number:** FA48304
**Account:** Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA
**Collected:** 10/09/17

| Lab Sample ID / Analyte | Client Sample ID | Result/ Qual | RL | MDL | Units | Method |
|---|---|---|---|---|---|---|
| **FA48304-1** | **SB-7-3** | | | | | |
| Acetone [a] | | 12.3 J | 58 | 12 | ug/kg | SW846 8260B |
| Methylene Chloride [b] | | 51.5 | 12 | 4.6 | ug/kg | SW846 8260B |
| Fluoranthene | | 21.8 J | 170 | 17 | ug/kg | SW846 8270D |
| Pyrene | | 20.6 J | 170 | 19 | ug/kg | SW846 8270D |
| TPH (> C28-C40) | | 2.70 J | 5.0 | 2.5 | mg/kg | SW846 8015C |
| **FA48304-2** | **SB-7-7** | | | | | |
| Acetone [a] | | 12.7 J | 47 | 9.3 | ug/kg | SW846 8260B |
| Methylene Chloride [b] | | 29.3 | 9.3 | 3.7 | ug/kg | SW846 8260B |
| **FA48304-3** | **SB-7-W** | | | | | |
| Acetone | | 16.0 J | 25 | 10 | ug/l | SW846 8260B |
| Methyl Chloride | | 1.6 J | 2.0 | 0.50 | ug/l | SW846 8260B |
| TPH (C10-C28) | | 0.0458 J | 0.049 | 0.020 | mg/l | SW846 8015C |

(a) Sample was received in a bulk container.
(b) Sample was received in a bulk container. Suspected laboratory contaminant.

## Sample Results

Report of Analysis

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-3 | | |
| **Lab Sample ID:** | FA48304-1 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [b] | C0123869.D | 1 | 10/11/17 15:34 | EP | n/a | n/a | VC4903 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 4.34 g | 5.0 ml |
| Run #2 | | |

**VOA 8260 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 12.3 | 58 | 12 | ug/kg | J |
| 71-43-2 | Benzene | ND | 5.8 | 1.4 | ug/kg | |
| 108-86-1 | Bromobenzene | ND | 5.8 | 1.2 | ug/kg | |
| 74-97-5 | Bromochloromethane | ND | 5.8 | 1.7 | ug/kg | |
| 75-27-4 | Bromodichloromethane | ND | 5.8 | 1.2 | ug/kg | |
| 75-25-2 | Bromoform | ND | 5.8 | 1.2 | ug/kg | |
| 78-93-3 | 2-Butanone (MEK) | ND | 29 | 8.4 | ug/kg | |
| 104-51-8 | n-Butylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 56-23-5 | Carbon Tetrachloride | ND | 5.8 | 1.2 | ug/kg | |
| 108-90-7 | Chlorobenzene | ND | 5.8 | 1.2 | ug/kg | |
| 75-00-3 | Chloroethane | ND | 5.8 | 2.3 | ug/kg | |
| 67-66-3 | Chloroform | ND | 5.8 | 1.5 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | ND | 5.8 | 1.2 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | ND | 5.8 | 1.2 | ug/kg | |
| 124-48-1 | Dibromochloromethane | ND | 5.8 | 1.2 | ug/kg | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 5.8 | 2.2 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | ND | 5.8 | 1.2 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | ND | 5.8 | 2.3 | ug/kg | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 5.8 | 1.2 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 5.8 | 1.2 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 5.8 | 1.3 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | ND | 5.8 | 2.0 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | ND | 5.8 | 1.2 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 5.8 | 1.2 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | 5.8 | 1.6 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | 5.8 | 1.2 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | ND | 5.8 | 1.2 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | ND | 5.8 | 1.2 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | ND | 5.8 | 1.2 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | ND | 5.8 | 1.2 | ug/kg | |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-3 | | |
| **Lab Sample ID:** | FA48304-1 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

**VOA 8260 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 5.8 | 1.2 | ug/kg | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 5.8 | 1.2 | ug/kg | |
| 108-20-3 | Di-Isopropyl Ether | ND | 5.8 | 2.7 | ug/kg | |
| 100-41-4 | Ethylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 637-92-3 | Ethyl Tert Butyl Ether | ND | 5.8 | 1.5 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | ND | 5.8 | 1.5 | ug/kg | |
| 591-78-6 | 2-Hexanone | ND | 29 | 8.6 | ug/kg | |
| 98-82-8 | Isopropylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | ND | 5.8 | 1.2 | ug/kg | |
| 74-83-9 | Methyl Bromide | ND | 5.8 | 2.3 | ug/kg | |
| 74-87-3 | Methyl Chloride | ND | 5.8 | 2.3 | ug/kg | |
| 74-95-3 | Methylene Bromide | ND | 5.8 | 1.2 | ug/kg | |
| 75-09-2 | Methylene Chloride [c] | 51.5 | 12 | 4.6 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | ND | 29 | 8.6 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 5.8 | 1.2 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 5.8 | 2.3 | ug/kg | |
| 103-65-1 | n-Propylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 100-42-5 | Styrene | ND | 5.8 | 1.2 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | 5.8 | 1.2 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | ND | 58 | 20 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 5.8 | 1.2 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 5.8 | 1.2 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | ND | 5.8 | 1.5 | ug/kg | |
| 108-88-3 | Toluene | ND | 5.8 | 1.2 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 5.8 | 1.6 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.8 | 1.2 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 5.8 | 1.2 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 5.8 | 1.2 | ug/kg | |
| 79-01-6 | Trichloroethylene | ND | 5.8 | 1.2 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | ND | 5.8 | 2.3 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 5.8 | 1.4 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 5.8 | 1.2 | ug/kg | |
| 75-01-4 | Vinyl Chloride | ND | 5.8 | 1.2 | ug/kg | |
| 1330-20-7 | Xylene (total) | ND | 17 | 2.4 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 111% | | 75-124% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 113% | | 72-135% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-3 | | |
| **Lab Sample ID:** | FA48304-1 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

**VOA 8260 List**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 101% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 96% | | 71-133% |

(a) All results reported on a wet weight basis.
(b) Sample was received in a bulk container.
(c) Suspected laboratory contaminant.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-3 | | |
| **Lab Sample ID:** | FA48304-1 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X056549.D | 1 | 10/20/17 16:15 | MV | 10/17/17 08:50 | OP67244 | SX2383 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.1 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 170 | 18 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 170 | 17 | ug/kg | |
| 120-12-7 | Anthracene | ND | 170 | 19 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 170 | 17 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 170 | 20 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 170 | 18 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 170 | 17 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 170 | 22 | ug/kg | |
| 218-01-9 | Chrysene | ND | 170 | 17 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 170 | 21 | ug/kg | |
| 206-44-0 | Fluoranthene | 21.8 | 170 | 17 | ug/kg | J |
| 86-73-7 | Fluorene | ND | 170 | 18 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 170 | 20 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 170 | 17 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 170 | 17 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 170 | 17 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 170 | 17 | ug/kg | |
| 129-00-0 | Pyrene | 20.6 | 170 | 19 | ug/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 82% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 87% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 93% | | 45-119% |

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-3 | | |
| **Lab Sample ID:** | FA48304-1 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8015C | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | CD146531.D | 1 | 10/13/17 19:17 | EG | n/a | n/a | GCD6112 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 4.66 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 5.4 | 2.7 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 90% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 75% | | 66-132% |

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-3 | | |
| **Lab Sample ID:** | FA48304-1 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8015C SW846 3546 | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | WW13066.D | 1 | 10/24/17 01:21 | SJL | 10/19/17 13:54 | OP67285 | GWW542 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 20.2 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | ND | 5.0 | 2.5 | mg/kg | |
| | TPH (> C28-C40) | 2.70 | 5.0 | 2.5 | mg/kg | J |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 70% | | 56-122% |

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-7 | | |
| **Lab Sample ID:** | FA48304-2 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [b] | C0123870.D | 1 | 10/11/17 15:58 | EP | n/a | n/a | VC4903 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 5.37 g | 5.0 ml |
| Run #2 | | |

**VOA 8260 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 12.7 | 47 | 9.3 | ug/kg | J |
| 71-43-2 | Benzene | ND | 4.7 | 1.1 | ug/kg | |
| 108-86-1 | Bromobenzene | ND | 4.7 | 0.93 | ug/kg | |
| 74-97-5 | Bromochloromethane | ND | 4.7 | 1.4 | ug/kg | |
| 75-27-4 | Bromodichloromethane | ND | 4.7 | 0.93 | ug/kg | |
| 75-25-2 | Bromoform | ND | 4.7 | 0.93 | ug/kg | |
| 78-93-3 | 2-Butanone (MEK) | ND | 23 | 6.8 | ug/kg | |
| 104-51-8 | n-Butylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 56-23-5 | Carbon Tetrachloride | ND | 4.7 | 0.95 | ug/kg | |
| 108-90-7 | Chlorobenzene | ND | 4.7 | 0.93 | ug/kg | |
| 75-00-3 | Chloroethane | ND | 4.7 | 1.9 | ug/kg | |
| 67-66-3 | Chloroform | ND | 4.7 | 1.2 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | ND | 4.7 | 0.93 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | ND | 4.7 | 0.93 | ug/kg | |
| 124-48-1 | Dibromochloromethane | ND | 4.7 | 0.93 | ug/kg | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 4.7 | 1.8 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | ND | 4.7 | 0.93 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | ND | 4.7 | 1.9 | ug/kg | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 4.7 | 0.93 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 4.7 | 0.93 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 4.7 | 1.1 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | ND | 4.7 | 1.6 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | ND | 4.7 | 0.93 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 4.7 | 0.93 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | 4.7 | 1.3 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | 4.7 | 0.93 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | ND | 4.7 | 0.93 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | ND | 4.7 | 0.93 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | ND | 4.7 | 0.93 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | ND | 4.7 | 0.95 | ug/kg | |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-7 | | |
| **Lab Sample ID:** | FA48304-2 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

**VOA 8260 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 4.7 | 0.93 | ug/kg | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 4.7 | 0.93 | ug/kg | |
| 108-20-3 | Di-Isopropyl Ether | ND | 4.7 | 2.2 | ug/kg | |
| 100-41-4 | Ethylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 637-92-3 | Ethyl Tert Butyl Ether | ND | 4.7 | 1.2 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | ND | 4.7 | 1.2 | ug/kg | |
| 591-78-6 | 2-Hexanone | ND | 23 | 7.0 | ug/kg | |
| 98-82-8 | Isopropylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | ND | 4.7 | 0.93 | ug/kg | |
| 74-83-9 | Methyl Bromide | ND | 4.7 | 1.9 | ug/kg | |
| 74-87-3 | Methyl Chloride | ND | 4.7 | 1.9 | ug/kg | |
| 74-95-3 | Methylene Bromide | ND | 4.7 | 0.93 | ug/kg | |
| 75-09-2 | Methylene Chloride [c] | 29.3 | 9.3 | 3.7 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | ND | 23 | 7.0 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 4.7 | 0.93 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 4.7 | 1.9 | ug/kg | |
| 103-65-1 | n-Propylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 100-42-5 | Styrene | ND | 4.7 | 0.93 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | 4.7 | 0.93 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | ND | 47 | 16 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 4.7 | 0.96 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 4.7 | 0.93 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | ND | 4.7 | 1.2 | ug/kg | |
| 108-88-3 | Toluene | ND | 4.7 | 0.93 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 4.7 | 1.3 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 4.7 | 0.93 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 4.7 | 0.93 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 4.7 | 0.93 | ug/kg | |
| 79-01-6 | Trichloroethylene | ND | 4.7 | 0.93 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | ND | 4.7 | 1.9 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 4.7 | 1.2 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 4.7 | 0.93 | ug/kg | |
| 75-01-4 | Vinyl Chloride | ND | 4.7 | 0.93 | ug/kg | |
| 1330-20-7 | Xylene (total) | ND | 14 | 2.0 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 109% | | 75-124% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 112% | | 72-135% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-7 | | |
| **Lab Sample ID:** | FA48304-2 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

**VOA 8260 List**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 98% | | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 92% | | 71-133% |

(a) All results reported on a wet weight basis.
(b) Sample was received in a bulk container.
(c) Suspected laboratory contaminant.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-7 | | |
| **Lab Sample ID:** | FA48304-2 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8270D SW846 3550C | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | X056550.D | 1 | 10/20/17 16:41 | MV | 10/17/17 08:50 | OP67244 | SX2383 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 30.4 g | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 160 | 17 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 160 | 16 | ug/kg | |
| 120-12-7 | Anthracene | ND | 160 | 18 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 160 | 16 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 160 | 19 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 160 | 18 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 160 | 17 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 160 | 22 | ug/kg | |
| 218-01-9 | Chrysene | ND | 160 | 17 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 160 | 21 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 160 | 16 | ug/kg | |
| 86-73-7 | Fluorene | ND | 160 | 18 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 160 | 20 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 160 | 16 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 160 | 16 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 160 | 16 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 160 | 16 | ug/kg | |
| 129-00-0 | Pyrene | ND | 160 | 19 | ug/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 80% | | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 86% | | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 93% | | 45-119% |

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-7 | | |
| **Lab Sample ID:** | FA48304-2 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8015C | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | CD146532.D | 1 | 10/13/17 19:44 | EG | n/a | n/a | GCD6112 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume | Methanol Aliquot |
|---|---|---|---|
| Run #1 | 4.29 g | 5.0 ml | 100 ul |
| Run #2 | | | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 5.8 | 2.9 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 86% | | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 74% | | 66-132% |

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-7 | | |
| **Lab Sample ID:** | FA48304-2 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | SO - Soil | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8015C SW846 3546 | **Percent Solids:** | n/a [a] |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | WW13077.D | 1 | 10/24/17 14:49 | SJL | 10/19/17 13:54 | OP67285 | GWW543 |
| Run #2 | | | | | | | |

| | Initial Weight | Final Volume |
|---|---|---|
| Run #1 | 20.1 g | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | ND | 5.0 | 2.5 | mg/kg | |
| | TPH (> C28-C40) | ND | 5.0 | 2.5 | mg/kg | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 67% | | 56-122% |

(a) All results reported on a wet weight basis.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-W | | |
| **Lab Sample ID:** | FA48304-3 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | N0106241.D | 1 | 10/17/17 14:41 | MM | n/a | n/a | VN4861 |
| Run #2 | 5E4117.D | 1 | 10/19/17 17:19 | MM | n/a | n/a | V5E172 |

| | Purge Volume |
|---|---|
| Run #1 | 5.0 ml |
| Run #2 | 5.0 ml |

**VOA 8260 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 16.0 [a] | 25 | 10 | ug/l | J |
| 71-43-2 | Benzene | ND | 1.0 | 0.31 | ug/l | |
| 108-86-1 | Bromobenzene | ND | 1.0 | 0.37 | ug/l | |
| 74-97-5 | Bromochloromethane | ND | 1.0 | 0.45 | ug/l | |
| 75-27-4 | Bromodichloromethane | ND | 1.0 | 0.24 | ug/l | |
| 75-25-2 | Bromoform | ND | 1.0 | 0.41 | ug/l | |
| 78-93-3 | 2-Butanone (MEK) [b] | ND | 5.0 | 2.0 | ug/l | |
| 104-51-8 | n-Butylbenzene | ND | 1.0 | 0.23 | ug/l | |
| 135-98-8 | sec-Butylbenzene | ND | 1.0 | 0.24 | ug/l | |
| 98-06-6 | tert-Butylbenzene | ND | 1.0 | 0.31 | ug/l | |
| 56-23-5 | Carbon Tetrachloride | ND | 1.0 | 0.36 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 1.0 | 0.20 | ug/l | |
| 75-00-3 | Chloroethane | ND | 2.0 | 0.67 | ug/l | |
| 67-66-3 | Chloroform | ND | 1.0 | 0.30 | ug/l | |
| 95-49-8 | o-Chlorotoluene | ND | 1.0 | 0.22 | ug/l | |
| 106-43-4 | p-Chlorotoluene | ND | 1.0 | 0.31 | ug/l | |
| 124-48-1 | Dibromochloromethane | ND | 1.0 | 0.28 | ug/l | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 5.0 | 1.0 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | ND | 2.0 | 0.28 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | ND | 2.0 | 0.50 | ug/l | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 1.0 | 0.32 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 1.0 | 0.22 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 1.0 | 0.26 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | ND | 1.0 | 0.34 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 1.0 | 0.31 | ug/l | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 1.0 | 0.32 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | 1.0 | 0.28 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | 1.0 | 0.22 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | ND | 1.0 | 0.43 | ug/l | |
| 142-28-9 | 1,3-Dichloropropane | ND | 1.0 | 0.31 | ug/l | |
| 594-20-7 | 2,2-Dichloropropane | ND | 1.0 | 0.24 | ug/l | |
| 563-58-6 | 1,1-Dichloropropene | ND | 1.0 | 0.34 | ug/l | |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-W | | |
| **Lab Sample ID:** | FA48304-3 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

**VOA 8260 List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 1.0 | 0.29 | ug/l | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 1.0 | 0.21 | ug/l | |
| 108-20-3 | Di-Isopropyl Ether | ND | 1.0 | 0.24 | ug/l | |
| 100-41-4 | Ethylbenzene | ND | 1.0 | 0.36 | ug/l | |
| 637-92-3 | Ethyl Tert Butyl Ether | ND | 2.0 | 0.24 | ug/l | |
| 87-68-3 | Hexachlorobutadiene | ND | 2.0 | 0.30 | ug/l | |
| 591-78-6 | 2-Hexanone [b] | ND | 10 | 2.0 | ug/l | |
| 98-82-8 | Isopropylbenzene | ND | 1.0 | 0.22 | ug/l | |
| 99-87-6 | p-Isopropyltoluene | ND | 1.0 | 0.21 | ug/l | |
| 74-83-9 | Methyl Bromide | ND | 2.0 | 0.59 | ug/l | |
| 74-87-3 | Methyl Chloride | 1.6 | 2.0 | 0.50 | ug/l | J |
| 74-95-3 | Methylene Bromide | ND | 2.0 | 0.37 | ug/l | |
| 75-09-2 | Methylene Chloride | ND | 5.0 | 2.0 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone (MIB [b] | ND | 5.0 | 1.0 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 1.0 | 0.23 | ug/l | |
| 91-20-3 | Naphthalene | ND | 5.0 | 1.0 | ug/l | |
| 103-65-1 | n-Propylbenzene | ND | 1.0 | 0.29 | ug/l | |
| 100-42-5 | Styrene | ND | 1.0 | 0.22 | ug/l | |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | 2.0 | 0.24 | ug/l | |
| 75-65-0 | Tert-Butyl Alcohol | ND [a] | 20 | 5.3 | ug/l | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 1.0 | 0.28 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.30 | ug/l | |
| 127-18-4 | Tetrachloroethylene | ND | 1.0 | 0.22 | ug/l | |
| 108-88-3 | Toluene | ND | 1.0 | 0.30 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 2.0 | 0.61 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 2.0 | 0.50 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 1.0 | 0.25 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 1.0 | 0.47 | ug/l | |
| 79-01-6 | Trichloroethylene | ND | 1.0 | 0.35 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | ND | 2.0 | 0.50 | ug/l | |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 2.0 | 0.63 | ug/l | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 1.0 | 0.32 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 1.0 | 0.27 | ug/l | |
| 75-01-4 | Vinyl Chloride | ND | 1.0 | 0.41 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 3.0 | 0.72 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 104% | 98% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 96% | 103% | 79-125% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-W | | |
| **Lab Sample ID:** | FA48304-3 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8260B | **Percent Solids:** | n/a |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

**VOA 8260 List**

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 2037-26-5 | Toluene-D8 | 98% | 101% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 100% | 102% | 83-118% |

(a) Result is from Run# 2
(b) Associated CCV outside of control limits high, sample was ND.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-W | | |
| **Lab Sample ID:** | FA48304-3 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8270D SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 [a] | 4D2843.D | 1 | 10/20/17 12:07 | MV | 10/19/17 12:10 | OP67203 | S4D107 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1020 ml | 1.0 ml |
| Run #2 | | |

**BN PAH List**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 4.9 | 0.61 | ug/l | |
| 208-96-8 | Acenaphthylene | ND | 4.9 | 0.63 | ug/l | |
| 120-12-7 | Anthracene | ND | 4.9 | 0.78 | ug/l | |
| 56-55-3 | Benzo(a)anthracene | ND | 4.9 | 0.75 | ug/l | |
| 50-32-8 | Benzo(a)pyrene | ND | 4.9 | 0.77 | ug/l | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 4.9 | 0.76 | ug/l | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 4.9 | 0.81 | ug/l | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 4.9 | 0.84 | ug/l | |
| 218-01-9 | Chrysene | ND | 4.9 | 0.83 | ug/l | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 4.9 | 0.79 | ug/l | |
| 206-44-0 | Fluoranthene | ND | 4.9 | 0.54 | ug/l | |
| 86-73-7 | Fluorene | ND | 4.9 | 0.69 | ug/l | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 4.9 | 0.70 | ug/l | |
| 90-12-0 | 1-Methylnaphthalene | ND | 4.9 | 0.51 | ug/l | |
| 91-57-6 | 2-Methylnaphthalene | ND | 4.9 | 0.59 | ug/l | |
| 91-20-3 | Naphthalene | ND | 4.9 | 0.49 | ug/l | |
| 85-01-8 | Phenanthrene | ND | 4.9 | 0.85 | ug/l | |
| 129-00-0 | Pyrene | ND | 4.9 | 0.67 | ug/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 4165-60-0 | Nitrobenzene-d5 | 55% | | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 58% | | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 59% | | 39-121% |

(a) Sample extracted beyond hold time; reported results are considered minimum values.

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-W | | |
| **Lab Sample ID:** | FA48304-3 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8015C | **Percent Solids:** | n/a |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | CD146653.D | 1 | 10/19/17 22:00 | EG | n/a | n/a | GCD6118 |
| Run #2 | | | | | | | |

| | Purge Volume |
|---|---|
| Run #1 | 5.0 ml |
| Run #2 | |

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 0.10 | 0.050 | mg/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 92% | | 70-131% |
| 98-08-8 | aaa-Trifluorotoluene | 81% | | 69-143% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

# Report of Analysis





| | | | |
|---|---|---|---|
| **Client Sample ID:** | SB-7-W | | |
| **Lab Sample ID:** | FA48304-3 | **Date Sampled:** | 10/09/17 |
| **Matrix:** | AQ - Ground Water | **Date Received:** | 10/11/17 |
| **Method:** | SW846 8015C SW846 3510C | **Percent Solids:** | n/a |
| **Project:** | T10000005974-Delong Oil; 1716 Webster St, Alameda, CA | | |

| | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| Run #1 | WW12894.D | 1 | 10/18/17 03:16 | SJL | 10/16/17 09:00 | OP67222 | GWW539 |
| Run #2 | | | | | | | |

| | Initial Volume | Final Volume |
|---|---|---|
| Run #1 | 1020 ml | 1.0 ml |
| Run #2 | | |

**TPH Extractable w/ Silica Gel Cleanup**

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 0.0458 | 0.049 | 0.020 | mg/l | J |
| | TPH (> C28-C40) | ND | 0.049 | 0.020 | mg/l | |

| CAS No. | Surrogate Recoveries | Run# 1 | Run# 2 | Limits |
|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 73% | | 50-131% |

ND = Not detected MDL = Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

## Misc. Forms

# Custody Documents and Other Forms

Includes the following where applicable:

- Certification Exceptions
- Chain of Custody

# Parameter Certification Exceptions



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA



The following parameters included in this report are exceptions to NELAC certification.
The certification status of each is indicated below.

| Parameter | CAS# | Method | Mat | Certification Status |
|---|---|---|---|---|
| Di-Isopropyl Ether | 108-20-3 | **SW846 8260B** | AQ | Certified by SOP MS005 |

SGS CADS830 ACCUTEST

# CHAIN OF CUSTODY

2105 Lundy Ave, San Jose, CA 95131
(408) 588-0200 FAX: (408) 588-0201

FA48304

FED-EX Tracking # | Bottle Order Control #
SGS Accutest Quote # | SGS Accutest NC Job #: C

**Client / Reporting Information**

Company Name: Compliance & closure, Inc.
Address: 4115 Blackhawk Plaza Circle Ste. 100
City: Danville State: CA Zip: 94506
Project Contact: Gary Mulkey
Phone #: 925-580-2258
Samplers's Name: Gary Mulkey

**Project Information**

Project Name: Delong 0.L
Street: 1716 webster street
City: Alameda State: CA
Project #: 12214-2
EMAIL: gary@cci-envr.com
Client Purchase Order #: 12214

**Requested Analysis**

| SGS Accutest Sample ID | Sample ID / Field Point / Point of Collection | Collection Date | Time | Sampled by | Matrix | # of bottles | Preserved: HCl | NaOH | HNO3 | H2SO4 | NONE | NaHSO4 | MEOH | ENCORE | TPHg - 8015 | 8260 - FULL SCAN BTEX + OXygenates | TPH d - Silica Gel cleanup | TPHmo - Silica Gel cleanup | Naphthalene |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | SB-7-3 | 10/9/17 | 9:50 | GM | SO | 1 | | | | | X | | | | X | X | X | X | X |
| 2 | SB-7-7 | 10/9/17 | 10:00 | GM | SO | 1 | | | | | X | | | | X | X | X | X | X |
| 3 | SB-7-W | 10/9/17 | 10:10 | GM | GW | 8 | X | | | | X | | | | X | X | X | X | X |

**Matrix Codes**

WW- Wastewater
GW- Ground Water
SW- Surface Water
SO- Soil
OI-Oil
WP-Wipe
LIQ - Non-aqueous Liquid
AIR
DW- Drinking Water (Perchlorate Only)

LAB USE ONLY

**Turnaround Time ( Business days)**

Approved By:/ Date:

- [X] 10 Day
- [ ] 5 Day
- [ ] 3 Day
- [ ] 2 Day
- [ ] 1 Day
- [ ] Same Day

Emergency T/A data available VIA Lablink

**Data Deliverable Information**

- [ ] Commercial "A" - Results only
- [ ] Commercial "B" - Results with QC summaries
- [ ] Commercial "B+" - Results, QC, and chromatograms
- [ ] FULT1 - Level 4 data package
- [ ] EDF for Geotracker [ ] EDD Format
- Provide EDF Global ID
- Provide EDF Logcode:

**Comments / Remarks**

Prepare EDF - Global ID. # T10000005974

**Sample Custody must be documented below each time samples change possession, including courier delivery.**

| | Relinquished by Sampler: | Date Time: | Received By: | Relinquished By: | Date Time: | Received By: |
|---|---|---|---|---|---|---|
| 1 | Gary R. Mulkey | 10/10/17 0800 | Lee Bains | | | |
| 2 | | | | | 10/10/17 1500 | FEDEX |
| 3 | Fed Ex | | 915 10/11/17 | | | |
| 4 | | | | | | |
| 5 | | | | Custody Seal # | | |

Appropriate Bottle / Pres. Y / N | Headspace Y / N | On Ice Y / N | Cooler Temp. 2.2 °C
Labels match Coc? Y / N | Separate Receiving Check List used: Y / N

# SGS Accutest Sample Receipt Summary

**Job Number:** FA48304 **Client:** COMPLIANCE & CLOSURE, INC **Project:** DELONG OIL

**Date / Time Received:** 10/11/2017 9:15:00 AM **Delivery Method:** FED EX **Airbill #'s:** 7704 6576 3214

**Therm ID:** IR 1; **Therm CF:** -0.2; **# of Coolers:** 1

**Cooler Temps (Raw Measured) °C:** Cooler 1: (2.4);

**Cooler Temps (Corrected) °C:** Cooler 1: (2.2);

| Cooler Information | Y | or | N |
|---|---|---|---|
| 1. Custody Seals Present | ☑ | | ☐ |
| 2. Custody Seals Intact | ☑ | | ☐ |
| 3. Temp criteria achieved | ☑ | | ☐ |
| 4. Cooler temp verification | IR Gun | | |
| 5. Cooler media | Ice (Bag) | | |

| Trip Blank Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Trip Blank present / cooler | ☐ | | ☑ | ☐ |
| 2. Trip Blank listed on COC | ☐ | | ☑ | ☐ |

| | W | or | S | N/A |
|---|---|---|---|---|
| 3. Type Of TB Received | ☐ | | ☐ | ☑ |

| Sample Information | Y | or | N | N/A |
|---|---|---|---|---|
| 1. Sample labels present on bottles | ☑ | | ☐ | |
| 2. Samples preserved properly | ☑ | | ☐ | |
| 3. Sufficient volume/containers recvd for analysis: | ☑ | | ☐ | |
| 4. Condition of sample | Intact | | | |
| 5. Sample recvd within HT | ☑ | | ☐ | |
| 6. Dates/Times/IDs on COC match Sample Label | ☑ | | ☐ | |
| 7. VOCs have headspace | ☐ | | ☑ | ☐ |
| 8. Bottles received for unspecified tests | ☐ | | ☑ | |
| 9. Compositing instructions clear | ☐ | | ☐ | ☑ |
| 10. Voa Soil Kits/Jars received past 48hrs? | ☐ | | ☐ | ☑ |
| 11. % Solids Jar received? | ☐ | | ☐ | ☑ |
| 12. Residual Chlorine Present? | ☐ | | ☐ | ☑ |

**Misc. Information**

Number of Encores: 25-Gram _____ 5-Gram _____ Number of 5035 Field Kits: _____ Number of Lab Filtered Metals: _____

Test Strip Lot #s: pH 0-3 230315 pH 10-12 219813A Other: (Specify) _____ _____

Residual Chlorine Test Strip Lot #: _____

Comments

SM001
Rev. Date 05/24/17

Technician: SHAYLAP Date: 10/11/2017 9:15:00 A Reviewer: JC Date: 10/11/2017

**FA48304: Chain of Custody**
**Page 2 of 3**

## Job Change Order: FA48304

| | | | |
|---|---|---|---|
| **Requested Date:** | 10/12/2017 | **Received Date:** | 10/11/2017 |
| **Account Name:** | Compliance & Closure, Inc. | **Due Date:** | 10/25/2017 |
| **Project Description:** | T10000005974-Delong Oil; 1716 Webster St, Alame | **Deliverable:** | COMMB |
| **CSR:** | elvink | **TAT (Days):** | 10 |

==========

**Sample #:** FA48304-1 **Change:** Added B8270PAH per Client

**Dept:**

**TAT:** 10

SB-7-3

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**Sample #:** FA48304-2 **Change:** Added B8270PAH per Client

**Dept:**

**TAT:** 10

SB-7-7

==========

==========

**Sample #:** FA48304-3 **Change:** Added B8270PAH per Client

**Dept:**

**TAT:** 10

SB-7-W

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**FA48304: Chain of Custody**

**Page 3 of 3**

**Above Changes Per:** Gary Mulkey **Date/Time:** 10/12/2017 12:54:31 PM

To Client: This Change Order is confirmation of the revisions, previously discussed with the SGS Accutest Client Service Representative.

Page 1 of 1

5

## MS Volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VC4903-MB | C0123862.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 50 | 10 | ug/kg | |
| 71-43-2 | Benzene | ND | 5.0 | 1.2 | ug/kg | |
| 108-86-1 | Bromobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 74-97-5 | Bromochloromethane | ND | 5.0 | 1.5 | ug/kg | |
| 75-27-4 | Bromodichloromethane | ND | 5.0 | 1.0 | ug/kg | |
| 75-25-2 | Bromoform | ND | 5.0 | 1.0 | ug/kg | |
| 78-93-3 | 2-Butanone (MEK) | ND | 25 | 7.3 | ug/kg | |
| 104-51-8 | n-Butylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 135-98-8 | sec-Butylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 98-06-6 | tert-Butylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 56-23-5 | Carbon Tetrachloride | ND | 5.0 | 1.0 | ug/kg | |
| 108-90-7 | Chlorobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 75-00-3 | Chloroethane | ND | 5.0 | 2.0 | ug/kg | |
| 67-66-3 | Chloroform | ND | 5.0 | 1.3 | ug/kg | |
| 95-49-8 | o-Chlorotoluene | ND | 5.0 | 1.0 | ug/kg | |
| 106-43-4 | p-Chlorotoluene | ND | 5.0 | 1.0 | ug/kg | |
| 124-48-1 | Dibromochloromethane | ND | 5.0 | 1.0 | ug/kg | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 5.0 | 1.9 | ug/kg | |
| 106-93-4 | 1,2-Dibromoethane | ND | 5.0 | 1.0 | ug/kg | |
| 75-71-8 | Dichlorodifluoromethane | ND | 5.0 | 2.0 | ug/kg | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 5.0 | 1.2 | ug/kg | |
| 75-34-3 | 1,1-Dichloroethane | ND | 5.0 | 1.8 | ug/kg | |
| 107-06-2 | 1,2-Dichloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 5.0 | 1.0 | ug/kg | |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | 5.0 | 1.4 | ug/kg | |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | 5.0 | 1.0 | ug/kg | |
| 78-87-5 | 1,2-Dichloropropane | ND | 5.0 | 1.0 | ug/kg | |
| 142-28-9 | 1,3-Dichloropropane | ND | 5.0 | 1.0 | ug/kg | |
| 594-20-7 | 2,2-Dichloropropane | ND | 5.0 | 1.0 | ug/kg | |
| 563-58-6 | 1,1-Dichloropropene | ND | 5.0 | 1.0 | ug/kg | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 5.0 | 1.0 | ug/kg | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 5.0 | 1.0 | ug/kg | |
| 108-20-3 | Di-Isopropyl Ether | ND | 5.0 | 2.3 | ug/kg | |
| 100-41-4 | Ethylbenzene | ND | 5.0 | 1.0 | ug/kg | |

# Method Blank Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VC4903-MB | C0123862.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 637-92-3 | Ethyl Tert Butyl Ether | ND | 5.0 | 1.3 | ug/kg | |
| 87-68-3 | Hexachlorobutadiene | ND | 5.0 | 1.3 | ug/kg | |
| 591-78-6 | 2-Hexanone | ND | 25 | 7.5 | ug/kg | |
| 98-82-8 | Isopropylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 99-87-6 | p-Isopropyltoluene | ND | 5.0 | 1.0 | ug/kg | |
| 74-83-9 | Methyl Bromide | ND | 5.0 | 2.0 | ug/kg | |
| 74-87-3 | Methyl Chloride | ND | 5.0 | 2.0 | ug/kg | |
| 74-95-3 | Methylene Bromide | ND | 5.0 | 1.0 | ug/kg | |
| 75-09-2 | Methylene Chloride | ND | 10 | 4.0 | ug/kg | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | ND | 25 | 7.5 | ug/kg | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 5.0 | 1.0 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 5.0 | 2.0 | ug/kg | |
| 103-65-1 | n-Propylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 100-42-5 | Styrene | ND | 5.0 | 1.0 | ug/kg | |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | 5.0 | 1.0 | ug/kg | |
| 75-65-0 | Tert-Butyl Alcohol | ND | 50 | 18 | ug/kg | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 127-18-4 | Tetrachloroethylene | ND | 5.0 | 1.3 | ug/kg | |
| 108-88-3 | Toluene | ND | 5.0 | 1.0 | ug/kg | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 5.0 | 1.4 | ug/kg | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 5.0 | 1.0 | ug/kg | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 5.0 | 1.0 | ug/kg | |
| 79-01-6 | Trichloroethylene | ND | 5.0 | 1.0 | ug/kg | |
| 75-69-4 | Trichlorofluoromethane | ND | 5.0 | 2.0 | ug/kg | |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 5.0 | 1.3 | ug/kg | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 5.0 | 1.0 | ug/kg | |
| 75-01-4 | Vinyl Chloride | ND | 5.0 | 1.0 | ug/kg | |
| 1330-20-7 | Xylene (total) | ND | 15 | 2.1 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 97% | 75-124% |

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VC4903-MB | C0123862.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 17060-07-0 | 1,2-Dichloroethane-D4 | 101% | 72-135% |
| 2037-26-5 | Toluene-D8 | 102% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 97% | 71-133% |

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VN4861-MB | N0106240.D | 1 | 10/17/17 | MM | n/a | n/a | VN4861 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | ND | 1.0 | 0.31 | ug/l | |
| 108-86-1 | Bromobenzene | ND | 1.0 | 0.37 | ug/l | |
| 74-97-5 | Bromochloromethane | ND | 1.0 | 0.45 | ug/l | |
| 75-27-4 | Bromodichloromethane | ND | 1.0 | 0.24 | ug/l | |
| 75-25-2 | Bromoform | ND | 1.0 | 0.41 | ug/l | |
| 78-93-3 | 2-Butanone (MEK) | ND | 5.0 | 2.0 | ug/l | |
| 104-51-8 | n-Butylbenzene | ND | 1.0 | 0.23 | ug/l | |
| 135-98-8 | sec-Butylbenzene | ND | 1.0 | 0.24 | ug/l | |
| 98-06-6 | tert-Butylbenzene | ND | 1.0 | 0.31 | ug/l | |
| 56-23-5 | Carbon Tetrachloride | ND | 1.0 | 0.36 | ug/l | |
| 108-90-7 | Chlorobenzene | ND | 1.0 | 0.20 | ug/l | |
| 75-00-3 | Chloroethane | ND | 2.0 | 0.67 | ug/l | |
| 67-66-3 | Chloroform | ND | 1.0 | 0.30 | ug/l | |
| 95-49-8 | o-Chlorotoluene | ND | 1.0 | 0.22 | ug/l | |
| 106-43-4 | p-Chlorotoluene | ND | 1.0 | 0.31 | ug/l | |
| 124-48-1 | Dibromochloromethane | ND | 1.0 | 0.28 | ug/l | |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | 5.0 | 1.0 | ug/l | |
| 106-93-4 | 1,2-Dibromoethane | ND | 2.0 | 0.28 | ug/l | |
| 75-71-8 | Dichlorodifluoromethane | ND | 2.0 | 0.50 | ug/l | |
| 95-50-1 | 1,2-Dichlorobenzene | ND | 1.0 | 0.32 | ug/l | |
| 541-73-1 | 1,3-Dichlorobenzene | ND | 1.0 | 0.22 | ug/l | |
| 106-46-7 | 1,4-Dichlorobenzene | ND | 1.0 | 0.26 | ug/l | |
| 75-34-3 | 1,1-Dichloroethane | ND | 1.0 | 0.34 | ug/l | |
| 107-06-2 | 1,2-Dichloroethane | ND | 1.0 | 0.31 | ug/l | |
| 75-35-4 | 1,1-Dichloroethylene | ND | 1.0 | 0.32 | ug/l | |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | 1.0 | 0.28 | ug/l | |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | 1.0 | 0.22 | ug/l | |
| 78-87-5 | 1,2-Dichloropropane | ND | 1.0 | 0.43 | ug/l | |
| 142-28-9 | 1,3-Dichloropropane | ND | 1.0 | 0.31 | ug/l | |
| 594-20-7 | 2,2-Dichloropropane | ND | 1.0 | 0.24 | ug/l | |
| 563-58-6 | 1,1-Dichloropropene | ND | 1.0 | 0.34 | ug/l | |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | 1.0 | 0.29 | ug/l | |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | 1.0 | 0.21 | ug/l | |
| 108-20-3 | Di-Isopropyl Ether | ND | 1.0 | 0.24 | ug/l | |
| 100-41-4 | Ethylbenzene | ND | 1.0 | 0.36 | ug/l | |
| 637-92-3 | Ethyl Tert Butyl Ether | ND | 2.0 | 0.24 | ug/l | |

# Method Blank Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VN4861-MB | N0106240.D | 1 | 10/17/17 | MM | n/a | n/a | VN4861 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 87-68-3 | Hexachlorobutadiene | 0.38 | 2.0 | 0.30 | ug/l | J |
| 591-78-6 | 2-Hexanone | ND | 10 | 2.0 | ug/l | |
| 98-82-8 | Isopropylbenzene | ND | 1.0 | 0.22 | ug/l | |
| 99-87-6 | p-Isopropyltoluene | ND | 1.0 | 0.21 | ug/l | |
| 74-83-9 | Methyl Bromide | ND | 2.0 | 0.59 | ug/l | |
| 74-87-3 | Methyl Chloride | ND | 2.0 | 0.50 | ug/l | |
| 74-95-3 | Methylene Bromide | ND | 2.0 | 0.37 | ug/l | |
| 75-09-2 | Methylene Chloride | ND | 5.0 | 2.0 | ug/l | |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | ND | 5.0 | 1.0 | ug/l | |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | 1.0 | 0.23 | ug/l | |
| 91-20-3 | Naphthalene | ND | 5.0 | 1.0 | ug/l | |
| 103-65-1 | n-Propylbenzene | ND | 1.0 | 0.29 | ug/l | |
| 100-42-5 | Styrene | ND | 1.0 | 0.22 | ug/l | |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | 2.0 | 0.24 | ug/l | |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | 1.0 | 0.28 | ug/l | |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | 1.0 | 0.30 | ug/l | |
| 127-18-4 | Tetrachloroethylene | ND | 1.0 | 0.22 | ug/l | |
| 108-88-3 | Toluene | ND | 1.0 | 0.30 | ug/l | |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | 2.0 | 0.61 | ug/l | |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | 2.0 | 0.50 | ug/l | |
| 71-55-6 | 1,1,1-Trichloroethane | ND | 1.0 | 0.25 | ug/l | |
| 79-00-5 | 1,1,2-Trichloroethane | ND | 1.0 | 0.47 | ug/l | |
| 79-01-6 | Trichloroethylene | ND | 1.0 | 0.35 | ug/l | |
| 75-69-4 | Trichlorofluoromethane | ND | 2.0 | 0.50 | ug/l | |
| 96-18-4 | 1,2,3-Trichloropropane | ND | 2.0 | 0.63 | ug/l | |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | 1.0 | 0.32 | ug/l | |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | 1.0 | 0.27 | ug/l | |
| 75-01-4 | Vinyl Chloride | ND | 1.0 | 0.41 | ug/l | |
| 1330-20-7 | Xylene (total) | ND | 3.0 | 0.72 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 102% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 98% | 79-125% |
| 2037-26-5 | Toluene-D8 | 99% | 85-112% |

# Method Blank Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VN4861-MB | N0106240.D | 1 | 10/17/17 | MM | n/a | n/a | VN4861 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 101% | 83-118% |

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| V5E172-MB | 5E4101.D | 1 | 10/19/17 | MM | n/a | n/a | V5E172 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | 25 | 10 | ug/l | |
| 75-65-0 | Tert-Butyl Alcohol | ND | 20 | 5.3 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 98% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 101% | 79-125% |
| 2037-26-5 | Toluene-D8 | 102% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 103% | 83-118% |

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VC4903-BS | C0123861.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 67-64-1 | Acetone | 250 | 255 | 102 | 61-152 |
| 71-43-2 | Benzene | 50 | 57.7 | 115 | 76-126 |
| 108-86-1 | Bromobenzene | 50 | 56.1 | 112 | 76-122 |
| 74-97-5 | Bromochloromethane | 50 | 48.5 | 97 | 77-120 |
| 75-27-4 | Bromodichloromethane | 50 | 51.4 | 103 | 74-130 |
| 75-25-2 | Bromoform | 50 | 52.0 | 104 | 76-127 |
| 78-93-3 | 2-Butanone (MEK) | 250 | 269 | 108 | 75-137 |
| 104-51-8 | n-Butylbenzene | 50 | 57.2 | 114 | 71-128 |
| 135-98-8 | sec-Butylbenzene | 50 | 58.9 | 118 | 79-135 |
| 98-06-6 | tert-Butylbenzene | 50 | 62.4 | 125 | 77-133 |
| 56-23-5 | Carbon Tetrachloride | 50 | 51.5 | 103 | 78-133 |
| 108-90-7 | Chlorobenzene | 50 | 52.7 | 105 | 81-129 |
| 75-00-3 | Chloroethane | 50 | 62.5 | 125 | 68-133 |
| 67-66-3 | Chloroform | 50 | 51.3 | 103 | 72-123 |
| 95-49-8 | o-Chlorotoluene | 50 | 57.7 | 115 | 77-129 |
| 106-43-4 | p-Chlorotoluene | 50 | 52.8 | 106 | 80-134 |
| 124-48-1 | Dibromochloromethane | 50 | 53.9 | 108 | 76-127 |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 50 | 55.7 | 111 | 70-137 |
| 106-93-4 | 1,2-Dibromoethane | 50 | 51.6 | 103 | 77-126 |
| 75-71-8 | Dichlorodifluoromethane | 50 | 52.6 | 105 | 68-168 |
| 95-50-1 | 1,2-Dichlorobenzene | 50 | 53.9 | 108 | 80-129 |
| 541-73-1 | 1,3-Dichlorobenzene | 50 | 51.8 | 104 | 81-129 |
| 106-46-7 | 1,4-Dichlorobenzene | 50 | 49.3 | 99 | 76-130 |
| 75-34-3 | 1,1-Dichloroethane | 50 | 54.2 | 108 | 73-125 |
| 107-06-2 | 1,2-Dichloroethane | 50 | 50.9 | 102 | 74-128 |
| 75-35-4 | 1,1-Dichloroethylene | 50 | 49.2 | 98 | 81-136 |
| 156-59-2 | cis-1,2-Dichloroethylene | 50 | 53.2 | 106 | 74-126 |
| 156-60-5 | trans-1,2-Dichloroethylene | 50 | 54.1 | 108 | 70-127 |
| 78-87-5 | 1,2-Dichloropropane | 50 | 52.2 | 104 | 74-125 |
| 142-28-9 | 1,3-Dichloropropane | 50 | 49.9 | 100 | 76-122 |
| 594-20-7 | 2,2-Dichloropropane | 50 | 53.4 | 107 | 77-133 |
| 563-58-6 | 1,1-Dichloropropene | 50 | 52.4 | 105 | 75-130 |
| 10061-01-5 | cis-1,3-Dichloropropene | 50 | 50.3 | 101 | 80-123 |
| 10061-02-6 | trans-1,3-Dichloropropene | 50 | 55.7 | 111 | 75-131 |
| 108-20-3 | Di-Isopropyl Ether | 50 | 51.5 | 103 | 75-122 |
| 100-41-4 | Ethylbenzene | 50 | 58.4 | 117 | 77-123 |

* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VC4903-BS | C0123861.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 637-92-3 | Ethyl Tert Butyl Ether | 50 | 50.7 | 101 | 75-117 |
| 87-68-3 | Hexachlorobutadiene | 50 | 54.4 | 109 | 74-136 |
| 591-78-6 | 2-Hexanone | 250 | 276 | 110 | 72-133 |
| 98-82-8 | Isopropylbenzene | 50 | 59.3 | 119 | 80-136 |
| 99-87-6 | p-Isopropyltoluene | 50 | 63.4 | 127 | 77-131 |
| 74-83-9 | Methyl Bromide | 50 | 52.6 | 105 | 65-139 |
| 74-87-3 | Methyl Chloride | 50 | 53.1 | 106 | 71-144 |
| 74-95-3 | Methylene Bromide | 50 | 49.6 | 99 | 74-124 |
| 75-09-2 | Methylene Chloride | 50 | 45.1 | 90 | 74-137 |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | 250 | 297 | 119 | 76-132 |
| 1634-04-4 | Methyl Tert Butyl Ether | 50 | 50.7 | 101 | 77-120 |
| 91-20-3 | Naphthalene | 50 | 63.3 | 127 | 79-129 |
| 103-65-1 | n-Propylbenzene | 50 | 57.5 | 115 | 80-135 |
| 100-42-5 | Styrene | 50 | 58.1 | 116 | 78-125 |
| 994-05-8 | Tert-Amyl Methyl Ether | 50 | 50.7 | 101 | 69-130 |
| 75-65-0 | Tert-Butyl Alcohol | 500 | 486 | 97 | 58-136 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 50 | 59.6 | 119 | 78-126 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 50 | 55.3 | 111 | 71-126 |
| 127-18-4 | Tetrachloroethylene | 50 | 55.1 | 110 | 79-130 |
| 108-88-3 | Toluene | 50 | 60.6 | 121 | 76-124 |
| 87-61-6 | 1,2,3-Trichlorobenzene | 50 | 55.4 | 111 | 77-128 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 50 | 57.0 | 114 | 78-130 |
| 71-55-6 | 1,1,1-Trichloroethane | 50 | 49.1 | 98 | 70-129 |
| 79-00-5 | 1,1,2-Trichloroethane | 50 | 54.0 | 108 | 74-124 |
| 79-01-6 | Trichloroethylene | 50 | 52.2 | 104 | 75-128 |
| 75-69-4 | Trichlorofluoromethane | 50 | 54.4 | 109 | 73-145 |
| 96-18-4 | 1,2,3-Trichloropropane | 50 | 54.6 | 109 | 74-127 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 50 | 61.2 | 122 | 74-123 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 50 | 61.0 | 122 | 73-122 |
| 75-01-4 | Vinyl Chloride | 50 | 53.1 | 106 | 76-141 |
| 1330-20-7 | Xylene (total) | 150 | 174 | 116 | 80-129 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 96% | 75-124% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VC4903-BS | C0123861.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 17060-07-0 | 1,2-Dichloroethane-D4 | 93% | 72-135% |
| 2037-26-5 | Toluene-D8 | 106% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 100% | 71-133% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VN4861-BS | N0106239.D | 1 | 10/17/17 | MM | n/a | n/a | VN4861 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 71-43-2 | Benzene | 25 | 26.0 | 104 | 81-122 |
| 108-86-1 | Bromobenzene | 25 | 26.1 | 104 | 80-121 |
| 74-97-5 | Bromochloromethane | 25 | 25.9 | 104 | 76-123 |
| 75-27-4 | Bromodichloromethane | 25 | 27.6 | 110 | 79-123 |
| 75-25-2 | Bromoform | 25 | 23.6 | 94 | 66-123 |
| 78-93-3 | 2-Butanone (MEK) | 125 | 139 | 111 | 56-143 |
| 104-51-8 | n-Butylbenzene | 25 | 28.8 | 115 | 79-126 |
| 135-98-8 | sec-Butylbenzene | 25 | 28.8 | 115 | 83-133 |
| 98-06-6 | tert-Butylbenzene | 25 | 27.0 | 108 | 80-133 |
| 56-23-5 | Carbon Tetrachloride | 25 | 27.7 | 111 | 76-136 |
| 108-90-7 | Chlorobenzene | 25 | 26.1 | 104 | 82-124 |
| 75-00-3 | Chloroethane | 25 | 28.9 | 116 | 62-144 |
| 67-66-3 | Chloroform | 25 | 26.3 | 105 | 80-124 |
| 95-49-8 | o-Chlorotoluene | 25 | 27.2 | 109 | 81-127 |
| 106-43-4 | p-Chlorotoluene | 25 | 27.2 | 109 | 83-130 |
| 124-48-1 | Dibromochloromethane | 25 | 27.4 | 110 | 78-122 |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 25 | 25.8 | 103 | 64-123 |
| 106-93-4 | 1,2-Dibromoethane | 25 | 25.8 | 103 | 75-120 |
| 75-71-8 | Dichlorodifluoromethane | 25 | 19.1 | 76 | 42-167 |
| 95-50-1 | 1,2-Dichlorobenzene | 25 | 25.7 | 103 | 82-124 |
| 541-73-1 | 1,3-Dichlorobenzene | 25 | 26.9 | 108 | 84-125 |
| 106-46-7 | 1,4-Dichlorobenzene | 25 | 25.9 | 104 | 78-120 |
| 75-34-3 | 1,1-Dichloroethane | 25 | 28.9 | 116 | 81-122 |
| 107-06-2 | 1,2-Dichloroethane | 25 | 25.9 | 104 | 75-125 |
| 75-35-4 | 1,1-Dichloroethylene | 25 | 28.9 | 116 | 78-137 |
| 156-59-2 | cis-1,2-Dichloroethylene | 25 | 27.9 | 112 | 78-120 |
| 156-60-5 | trans-1,2-Dichloroethylene | 25 | 28.8 | 115 | 76-127 |
| 78-87-5 | 1,2-Dichloropropane | 25 | 25.5 | 102 | 76-124 |
| 142-28-9 | 1,3-Dichloropropane | 25 | 24.3 | 97 | 80-118 |
| 594-20-7 | 2,2-Dichloropropane | 25 | 29.1 | 116 | 74-139 |
| 563-58-6 | 1,1-Dichloropropene | 25 | 26.5 | 106 | 79-131 |
| 10061-01-5 | cis-1,3-Dichloropropene | 25 | 25.1 | 100 | 75-118 |
| 10061-02-6 | trans-1,3-Dichloropropene | 25 | 25.4 | 102 | 80-120 |
| 108-20-3 | Di-Isopropyl Ether | 25 | 25.8 | 103 | 68-123 |
| 100-41-4 | Ethylbenzene | 25 | 27.0 | 108 | 81-121 |
| 637-92-3 | Ethyl Tert Butyl Ether | 25 | 25.3 | 101 | 71-120 |

* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VN4861-BS | N0106239.D | 1 | 10/17/17 | MM | n/a | n/a | VN4861 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 87-68-3 | Hexachlorobutadiene | 25 | 27.6 | 110 | 75-142 |
| 591-78-6 | 2-Hexanone | 125 | 129 | 103 | 61-129 |
| 98-82-8 | Isopropylbenzene | 25 | 28.7 | 115 | 83-132 |
| 99-87-6 | p-Isopropyltoluene | 25 | 29.1 | 116 | 79-130 |
| 74-83-9 | Methyl Bromide | 25 | 26.0 | 104 | 59-143 |
| 74-87-3 | Methyl Chloride | 25 | 23.0 | 92 | 50-159 |
| 74-95-3 | Methylene Bromide | 25 | 25.6 | 102 | 78-119 |
| 75-09-2 | Methylene Chloride | 25 | 24.8 | 99 | 69-135 |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | 125 | 136 | 109 | 66-122 |
| 1634-04-4 | Methyl Tert Butyl Ether | 25 | 25.0 | 100 | 72-117 |
| 91-20-3 | Naphthalene | 25 | 26.6 | 106 | 63-132 |
| 103-65-1 | n-Propylbenzene | 25 | 27.8 | 111 | 82-133 |
| 100-42-5 | Styrene | 25 | 27.3 | 109 | 78-119 |
| 994-05-8 | Tert-Amyl Methyl Ether | 25 | 25.3 | 101 | 73-122 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 25 | 28.1 | 112 | 77-122 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 25 | 26.8 | 107 | 72-120 |
| 127-18-4 | Tetrachloroethylene | 25 | 27.6 | 110 | 76-135 |
| 108-88-3 | Toluene | 25 | 26.2 | 105 | 80-120 |
| 87-61-6 | 1,2,3-Trichlorobenzene | 25 | 26.5 | 106 | 68-131 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 25 | 27.5 | 110 | 73-129 |
| 71-55-6 | 1,1,1-Trichloroethane | 25 | 26.2 | 105 | 75-130 |
| 79-00-5 | 1,1,2-Trichloroethane | 25 | 25.5 | 102 | 76-119 |
| 79-01-6 | Trichloroethylene | 25 | 25.7 | 103 | 81-126 |
| 75-69-4 | Trichlorofluoromethane | 25 | 29.5 | 118 | 71-156 |
| 96-18-4 | 1,2,3-Trichloropropane | 25 | 26.1 | 104 | 77-120 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 25 | 27.1 | 108 | 79-120 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 25 | 28.3 | 113 | 79-120 |
| 75-01-4 | Vinyl Chloride | 25 | 23.7 | 95 | 69-159 |
| 1330-20-7 | Xylene (total) | 75 | 81.9 | 109 | 80-126 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 102% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 100% | 79-125% |
| 2037-26-5 | Toluene-D8 | 99% | 85-112% |

* = Outside of Control Limits.

# Blank Spike Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| VN4861-BS | N0106239.D | 1 | 10/17/17 | MM | n/a | n/a | VN4861 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 100% | 83-118% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| V5E172-BS | 5E4100.D | 1 | 10/19/17 | MM | n/a | n/a | V5E172 |



**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 67-64-1 | Acetone | 125 | 122 | 98 | 50-147 |
| 75-65-0 | Tert-Butyl Alcohol | 250 | 241 | 96 | 63-129 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 100% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 101% | 79-125% |
| 2037-26-5 | Toluene-D8 | 100% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 102% | 83-118% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48304-2MS | C0123871.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |
| FA48304-2MSD | C0123872.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |
| FA48304-2 [a] | C0123870.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Compound | FA48304-2 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | 12.7 | J | 293 | 315 | 103 | 292 | 270 | 88 | 15 | 61-152/27 |
| 71-43-2 | Benzene | ND | | 58.5 | 52.7 | 90 | 58.4 | 51.7 | 89 | 2 | 76-126/26 |
| 108-86-1 | Bromobenzene | ND | | 58.5 | 55.5 | 95 | 58.4 | 52.4 | 90 | 6 | 76-122/32 |
| 74-97-5 | Bromochloromethane | ND | | 58.5 | 53.5 | 91 | 58.4 | 52.9 | 91 | 1 | 77-120/24 |
| 75-27-4 | Bromodichloromethane | ND | | 58.5 | 55.9 | 95 | 58.4 | 53.9 | 92 | 4 | 74-130/25 |
| 75-25-2 | Bromoform | ND | | 58.5 | 58.0 | 99 | 58.4 | 54.6 | 93 | 6 | 76-127/26 |
| 78-93-3 | 2-Butanone (MEK) | ND | | 293 | 317 | 108 | 292 | 276 | 95 | 14 | 75-137/25 |
| 104-51-8 | n-Butylbenzene | ND | | 58.5 | 53.7 | 92 | 58.4 | 54.5 | 93 | 1 | 71-128/35 |
| 135-98-8 | sec-Butylbenzene | ND | | 58.5 | 50.3 | 86 | 58.4 | 50.0 | 86 | 1 | 79-135/34 |
| 98-06-6 | tert-Butylbenzene | ND | | 58.5 | 54.3 | 93 | 58.4 | 53.2 | 91 | 2 | 77-133/34 |
| 56-23-5 | Carbon Tetrachloride | ND | | 58.5 | 46.1 | 79 | 58.4 | 47.8 | 82 | 4 | 78-133/29 |
| 108-90-7 | Chlorobenzene | ND | | 58.5 | 53.6 | 92 | 58.4 | 51.4 | 88 | 4 | 81-129/29 |
| 75-00-3 | Chloroethane | ND | | 58.5 | 46.2 | 79 | 58.4 | 52.4 | 90 | 13 | 68-133/29 |
| 67-66-3 | Chloroform | ND | | 58.5 | 51.3 | 88 | 58.4 | 51.1 | 87 | 0 | 72-123/26 |
| 95-49-8 | o-Chlorotoluene | ND | | 58.5 | 53.1 | 91 | 58.4 | 52.8 | 90 | 1 | 77-129/33 |
| 106-43-4 | p-Chlorotoluene | ND | | 58.5 | 53.8 | 92 | 58.4 | 51.8 | 89 | 4 | 80-134/33 |
| 124-48-1 | Dibromochloromethane | ND | | 58.5 | 59.4 | 101 | 58.4 | 56.0 | 96 | 6 | 76-127/27 |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | ND | | 58.5 | 61.8 | 106 | 58.4 | 57.0 | 98 | 8 | 70-137/29 |
| 106-93-4 | 1,2-Dibromoethane | ND | | 58.5 | 60.6 | 104 | 58.4 | 55.1 | 94 | 10 | 77-126/26 |
| 75-71-8 | Dichlorodifluoromethane | ND | | 58.5 | 42.5 | 73 | 58.4 | 44.0 | 75 | 3 | 68-168/29 |
| 95-50-1 | 1,2-Dichlorobenzene | ND | | 58.5 | 54.6 | 93 | 58.4 | 54.1 | 93 | 1 | 80-129/32 |
| 541-73-1 | 1,3-Dichlorobenzene | ND | | 58.5 | 54.2 | 93 | 58.4 | 53.5 | 92 | 1 | 81-129/33 |
| 106-46-7 | 1,4-Dichlorobenzene | ND | | 58.5 | 54.4 | 93 | 58.4 | 54.0 | 92 | 1 | 76-130/32 |
| 75-34-3 | 1,1-Dichloroethane | ND | | 58.5 | 50.2 | 86 | 58.4 | 50.6 | 87 | 1 | 73-125/27 |
| 107-06-2 | 1,2-Dichloroethane | ND | | 58.5 | 57.8 | 99 | 58.4 | 55.3 | 95 | 4 | 74-128/23 |
| 75-35-4 | 1,1-Dichloroethylene | ND | | 58.5 | 45.4 | 78* | 58.4 | 46.9 | 80* | 3 | 81-136/28 |
| 156-59-2 | cis-1,2-Dichloroethylene | ND | | 58.5 | 50.3 | 86 | 58.4 | 50.5 | 86 | 0 | 74-126/26 |
| 156-60-5 | trans-1,2-Dichloroethylene | ND | | 58.5 | 48.9 | 84 | 58.4 | 47.2 | 81 | 4 | 70-127/27 |
| 78-87-5 | 1,2-Dichloropropane | ND | | 58.5 | 53.0 | 91 | 58.4 | 52.1 | 89 | 2 | 74-125/25 |
| 142-28-9 | 1,3-Dichloropropane | ND | | 58.5 | 59.0 | 101 | 58.4 | 53.5 | 92 | 10 | 76-122/26 |
| 594-20-7 | 2,2-Dichloropropane | ND | | 58.5 | 43.3 | 74* | 58.4 | 45.4 | 78 | 5 | 77-133/28 |
| 563-58-6 | 1,1-Dichloropropene | ND | | 58.5 | 48.5 | 83 | 58.4 | 48.0 | 82 | 1 | 75-130/28 |
| 10061-01-5 | cis-1,3-Dichloropropene | ND | | 58.5 | 58.0 | 99 | 58.4 | 52.6 | 90 | 10 | 80-123/26 |
| 10061-02-6 | trans-1,3-Dichloropropene | ND | | 58.5 | 62.1 | 106 | 58.4 | 54.5 | 93 | 13 | 75-131/28 |
| 108-20-3 | Di-Isopropyl Ether | ND | | 58.5 | 53.3 | 91 | 58.4 | 54.5 | 93 | 2 | 75-122/25 |
| 100-41-4 | Ethylbenzene | ND | | 58.5 | 52.6 | 90 | 58.4 | 52.3 | 90 | 1 | 77-123/31 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48304-2MS | C0123871.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |
| FA48304-2MSD | C0123872.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |
| FA48304-2 [a] | C0123870.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Compound | FA48304-2 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 637-92-3 | Ethyl Tert Butyl Ether | ND | | 58.5 | 54.5 | 93 | 58.4 | 54.8 | 94 | 1 | 75-117/24 |
| 87-68-3 | Hexachlorobutadiene | ND | | 58.5 | 44.5 | 76 | 58.4 | 46.5 | 80 | 4 | 74-136/38 |
| 591-78-6 | 2-Hexanone | ND | | 293 | 309 | 106 | 292 | 274 | 94 | 12 | 72-133/26 |
| 98-82-8 | Isopropylbenzene | ND | | 58.5 | 52.5 | 90 | 58.4 | 54.0 | 92 | 3 | 80-136/32 |
| 99-87-6 | p-Isopropyltoluene | ND | | 58.5 | 55.9 | 95 | 58.4 | 55.2 | 95 | 1 | 77-131/34 |
| 74-83-9 | Methyl Bromide | ND | | 58.5 | 45.3 | 77 | 58.4 | 48.4 | 83 | 7 | 65-139/31 |
| 74-87-3 | Methyl Chloride | ND | | 58.5 | 44.6 | 76 | 58.4 | 45.3 | 78 | 2 | 71-144/27 |
| 74-95-3 | Methylene Bromide | ND | | 58.5 | 58.2 | 99 | 58.4 | 54.7 | 94 | 6 | 74-124/24 |
| 75-09-2 | Methylene Chloride | 29.3 | | 58.5 | 67.1 | 65* | 58.4 | 68.7 | 67* | 2 | 74-137/28 |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | ND | | 293 | 324 | 111 | 292 | 303 | 104 | 7 | 76-132/26 |
| 1634-04-4 | Methyl Tert Butyl Ether | ND | | 58.5 | 56.8 | 97 | 58.4 | 55.9 | 96 | 2 | 77-120/24 |
| 91-20-3 | Naphthalene | ND | | 58.5 | 56.3 | 96 | 58.4 | 56.2 | 96 | 0 | 79-129/33 |
| 103-65-1 | n-Propylbenzene | ND | | 58.5 | 52.4 | 89 | 58.4 | 51.2 | 88 | 2 | 80-135/33 |
| 100-42-5 | Styrene | ND | | 58.5 | 55.7 | 95 | 58.4 | 55.2 | 95 | 1 | 78-125/30 |
| 994-05-8 | Tert-Amyl Methyl Ether | ND | | 58.5 | 55.8 | 95 | 58.4 | 56.1 | 96 | 1 | 69-130/23 |
| 75-65-0 | Tert-Butyl Alcohol | ND | | 585 | 722 | 123 | 584 | 617 | 106 | 16 | 74-126/32 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | ND | | 58.5 | 56.2 | 96 | 58.4 | 56.2 | 96 | 0 | 78-126/27 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | ND | | 58.5 | 58.4 | 100 | 58.4 | 54.6 | 93 | 7 | 71-126/30 |
| 127-18-4 | Tetrachloroethylene | ND | | 58.5 | 51.0 | 87 | 58.4 | 50.4 | 86 | 1 | 79-130/31 |
| 108-88-3 | Toluene | ND | | 58.5 | 54.7 | 93 | 58.4 | 53.4 | 91 | 2 | 76-124/30 |
| 87-61-6 | 1,2,3-Trichlorobenzene | ND | | 58.5 | 50.9 | 87 | 58.4 | 51.7 | 89 | 2 | 77-128/35 |
| 120-82-1 | 1,2,4-Trichlorobenzene | ND | | 58.5 | 54.9 | 94 | 58.4 | 55.8 | 96 | 2 | 78-130/34 |
| 71-55-6 | 1,1,1-Trichloroethane | ND | | 58.5 | 46.5 | 79 | 58.4 | 47.0 | 80 | 1 | 70-129/27 |
| 79-00-5 | 1,1,2-Trichloroethane | ND | | 58.5 | 59.4 | 101 | 58.4 | 55.8 | 96 | 6 | 74-124/28 |
| 79-01-6 | Trichloroethylene | ND | | 58.5 | 51.4 | 88 | 58.4 | 49.5 | 85 | 4 | 75-128/27 |
| 75-69-4 | Trichlorofluoromethane | ND | | 58.5 | 44.7 | 76 | 58.4 | 47.5 | 81 | 6 | 73-145/31 |
| 96-18-4 | 1,2,3-Trichloropropane | ND | | 58.5 | 59.3 | 101 | 58.4 | 54.7 | 94 | 8 | 74-127/27 |
| 95-63-6 | 1,2,4-Trimethylbenzene | ND | | 58.5 | 54.6 | 93 | 58.4 | 54.2 | 93 | 1 | 74-123/34 |
| 108-67-8 | 1,3,5-Trimethylbenzene | ND | | 58.5 | 52.5 | 90 | 58.4 | 52.6 | 90 | 0 | 73-122/33 |
| 75-01-4 | Vinyl Chloride | ND | | 58.5 | 45.0 | 77 | 58.4 | 47.8 | 82 | 6 | 76-141/27 |
| 1330-20-7 | Xylene (total) | ND | | 176 | 161 | 92 | 175 | 161 | 92 | 0 | 80-129/30 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48304-2 | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 99% | 100% | 109% | 75-124% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48304-2MS | C0123871.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |
| FA48304-2MSD | C0123872.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |
| FA48304-2 [a] | C0123870.D | 1 | 10/11/17 | EP | n/a | n/a | VC4903 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-1, FA48304-2

| CAS No. | Surrogate Recoveries | MS | MSD | FA48304-2 | Limits |
|---|---|---|---|---|---|
| 17060-07-0 | 1,2-Dichloroethane-D4 | 101% | 100% | 112% | 72-135% |
| 2037-26-5 | Toluene-D8 | 99% | 101% | 98% | 75-126% |
| 460-00-4 | 4-Bromofluorobenzene | 98% | 96% | 92% | 71-133% |

(a) Sample was received in a bulk container.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48346-15MS | N0106259.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |
| FA48346-15MSD | N0106260.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |
| FA48346-15 | N0106249.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | FA48346-15 ug/l | Q | Spike ug/l | MS ug/l | MS % | Spike ug/l | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 71-43-2 | Benzene | 20 U | | 500 | 536 | 107 | 500 | 540 | 108 | 1 | 81-122/14 |
| 108-86-1 | Bromobenzene | 20 U | | 500 | 518 | 104 | 500 | 507 | 101 | 2 | 80-121/14 |
| 74-97-5 | Bromochloromethane | 20 U | | 500 | 496 | 99 | 500 | 499 | 100 | 1 | 76-123/14 |
| 75-27-4 | Bromodichloromethane | 20 U | | 500 | 561 | 112 | 500 | 570 | 114 | 2 | 79-123/19 |
| 75-25-2 | Bromoform | 20 U | | 500 | 434 | 87 | 500 | 464 | 93 | 7 | 66-123/21 |
| 78-93-3 | 2-Butanone (MEK) | 100 U | | 2500 | 3060 | 122 | 2500 | 2850 | 114 | 7 | 56-143/18 |
| 104-51-8 | n-Butylbenzene | 20 U | | 500 | 557 | 111 | 500 | 547 | 109 | 2 | 79-126/16 |
| 135-98-8 | sec-Butylbenzene | 20 U | | 500 | 579 | 116 | 500 | 559 | 112 | 4 | 83-133/16 |
| 98-06-6 | tert-Butylbenzene | 20 U | | 500 | 551 | 110 | 500 | 533 | 107 | 3 | 80-133/16 |
| 56-23-5 | Carbon Tetrachloride | 20 U | | 500 | 570 | 114 | 500 | 574 | 115 | 1 | 76-136/23 |
| 108-90-7 | Chlorobenzene | 20 U | | 500 | 521 | 104 | 500 | 529 | 106 | 2 | 82-124/14 |
| 75-00-3 | Chloroethane | 40 U | | 500 | 630 | 126 | 500 | 676 | 135 | 7 | 62-144/20 |
| 67-66-3 | Chloroform | 20 U | | 500 | 550 | 110 | 500 | 546 | 109 | 1 | 80-124/15 |
| 95-49-8 | o-Chlorotoluene | 20 U | | 500 | 560 | 112 | 500 | 543 | 109 | 3 | 81-127/15 |
| 106-43-4 | p-Chlorotoluene | 20 U | | 500 | 554 | 111 | 500 | 547 | 109 | 1 | 83-130/15 |
| 124-48-1 | Dibromochloromethane | 20 U | | 500 | 538 | 108 | 500 | 554 | 111 | 3 | 78-122/19 |
| 96-12-8 | 1,2-Dibromo-3-chloropropane | 100 U | | 500 | 530 | 106 | 500 | 509 | 102 | 4 | 64-123/18 |
| 106-93-4 | 1,2-Dibromoethane | 40 U | | 500 | 523 | 105 | 500 | 521 | 104 | 0 | 75-120/13 |
| 75-71-8 | Dichlorodifluoromethane | 40 U | | 500 | 373 | 75 | 500 | 391 | 78 | 5 | 42-167/19 |
| 95-50-1 | 1,2-Dichlorobenzene | 20 U | | 500 | 514 | 103 | 500 | 505 | 101 | 2 | 82-124/14 |
| 541-73-1 | 1,3-Dichlorobenzene | 20 U | | 500 | 538 | 108 | 500 | 531 | 106 | 1 | 84-125/14 |
| 106-46-7 | 1,4-Dichlorobenzene | 20 U | | 500 | 515 | 103 | 500 | 511 | 102 | 1 | 78-120/15 |
| 75-34-3 | 1,1-Dichloroethane | 20 U | | 500 | 582 | 116 | 500 | 579 | 116 | 1 | 81-122/15 |
| 107-06-2 | 1,2-Dichloroethane | 20 U | | 500 | 556 | 111 | 500 | 555 | 111 | 0 | 75-125/14 |
| 75-35-4 | 1,1-Dichloroethylene | 20 U | | 500 | 590 | 118 | 500 | 588 | 118 | 0 | 78-137/18 |
| 156-59-2 | cis-1,2-Dichloroethylene | 1130 | | 500 | 1660 | 106 | 500 | 1650 | 104 | 1 | 78-120/15 |
| 156-60-5 | trans-1,2-Dichloroethylene | 19.1 | I | 500 | 604 | 117 | 500 | 603 | 117 | 0 | 76-127/17 |
| 78-87-5 | 1,2-Dichloropropane | 20 U | | 500 | 529 | 106 | 500 | 511 | 102 | 3 | 76-124/14 |
| 142-28-9 | 1,3-Dichloropropane | 20 U | | 500 | 500 | 100 | 500 | 517 | 103 | 3 | 80-118/13 |
| 594-20-7 | 2,2-Dichloropropane | 20 U | | 500 | 474 | 95 | 500 | 470 | 94 | 1 | 74-139/17 |
| 563-58-6 | 1,1-Dichloropropene | 20 U | | 500 | 538 | 108 | 500 | 542 | 108 | 1 | 79-131/16 |
| 10061-01-5 | cis-1,3-Dichloropropene | 20 U | | 500 | 464 | 93 | 500 | 470 | 94 | 1 | 75-118/23 |
| 10061-02-6 | trans-1,3-Dichloropropene | 20 U | | 500 | 485 | 97 | 500 | 493 | 99 | 2 | 80-120/22 |
| 108-20-3 | Di-Isopropyl Ether | 20 U | | 500 | 527 | 105 | 500 | 529 | 106 | 0 | 68-123/16 |
| 100-41-4 | Ethylbenzene | 20 U | | 500 | 557 | 111 | 500 | 557 | 111 | 0 | 81-121/14 |
| 637-92-3 | Ethyl Tert Butyl Ether | 40 U | | 500 | 506 | 101 | 500 | 503 | 101 | 1 | 71-120/14 |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48346-15MS | N0106259.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |
| FA48346-15MSD | N0106260.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |
| FA48346-15 | N0106249.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | FA48346-15 ug/l | Q | Spike ug/l | MS ug/l | MS % | Spike ug/l | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 87-68-3 | Hexachlorobutadiene | 40 U | | 500 | 536 | 107 | 500 | 521 | 104 | 3 | 75-142/19 |
| 591-78-6 | 2-Hexanone | 200 U | | 2500 | 2660 | 106 | 2500 | 2700 | 108 | 1 | 61-129/18 |
| 98-82-8 | Isopropylbenzene | 20 U | | 500 | 576 | 115 | 500 | 586 | 117 | 2 | 83-132/15 |
| 99-87-6 | p-Isopropyltoluene | 20 U | | 500 | 576 | 115 | 500 | 557 | 111 | 3 | 79-130/16 |
| 74-83-9 | Methyl Bromide | 40 U | | 500 | 552 | 110 | 500 | 558 | 112 | 1 | 59-143/19 |
| 74-87-3 | Methyl Chloride | 40 U | | 500 | 460 | 92 | 500 | 462 | 92 | 0 | 50-159/19 |
| 74-95-3 | Methylene Bromide | 40 U | | 500 | 526 | 105 | 500 | 527 | 105 | 0 | 78-119/14 |
| 75-09-2 | Methylene Chloride | 100 U | | 500 | 517 | 103 | 500 | 508 | 102 | 2 | 69-135/16 |
| 108-10-1 | 4-Methyl-2-pentanone (MIBK) | 100 U | | 2500 | 2790 | 112 | 2500 | 2830 | 113 | 1 | 66-122/16 |
| 1634-04-4 | Methyl Tert Butyl Ether | 20 U | | 500 | 495 | 99 | 500 | 500 | 100 | 1 | 72-117/14 |
| 91-20-3 | Naphthalene | 100 U | | 500 | 510 | 102 | 500 | 499 | 100 | 2 | 63-132/25 |
| 103-65-1 | n-Propylbenzene | 20 U | | 500 | 564 | 113 | 500 | 547 | 109 | 3 | 82-133/15 |
| 100-42-5 | Styrene | 20 U | | 500 | 542 | 108 | 500 | 547 | 109 | 1 | 78-119/23 |
| 994-05-8 | Tert-Amyl Methyl Ether | 40 U | | 500 | 491 | 98 | 500 | 493 | 99 | 0 | 73-122/13 |
| 630-20-6 | 1,1,1,2-Tetrachloroethane | 20 U | | 500 | 557 | 111 | 500 | 553 | 111 | 1 | 77-122/19 |
| 79-34-5 | 1,1,2,2-Tetrachloroethane | 20 U | | 500 | 535 | 107 | 500 | 527 | 105 | 2 | 72-120/14 |
| 127-18-4 | Tetrachloroethylene | 20 U | | 500 | 524 | 105 | 500 | 538 | 108 | 3 | 76-135/16 |
| 108-88-3 | Toluene | 20 U | | 500 | 523 | 105 | 500 | 539 | 108 | 3 | 80-120/14 |
| 87-61-6 | 1,2,3-Trichlorobenzene | 40 U | | 500 | 503 | 101 | 500 | 498 | 100 | 1 | 68-131/25 |
| 120-82-1 | 1,2,4-Trichlorobenzene | 40 U | | 500 | 525 | 105 | 500 | 510 | 102 | 3 | 73-129/20 |
| 71-55-6 | 1,1,1-Trichloroethane | 20 U | | 500 | 550 | 110 | 500 | 549 | 110 | 0 | 75-130/16 |
| 79-00-5 | 1,1,2-Trichloroethane | 20 U | | 500 | 521 | 104 | 500 | 532 | 106 | 2 | 76-119/14 |
| 79-01-6 | Trichloroethylene | 20 U | | 500 | 530 | 106 | 500 | 529 | 106 | 0 | 81-126/15 |
| 75-69-4 | Trichlorofluoromethane | 40 U | | 500 | 639 | 128 | 500 | 640 | 128 | 0 | 71-156/21 |
| 96-18-4 | 1,2,3-Trichloropropane | 40 U | | 500 | 533 | 107 | 500 | 501 | 100 | 6 | 77-120/16 |
| 95-63-6 | 1,2,4-Trimethylbenzene | 20 U | | 500 | 541 | 108 | 500 | 535 | 107 | 1 | 79-120/18 |
| 108-67-8 | 1,3,5-Trimethylbenzene | 20 U | | 500 | 565 | 113 | 500 | 546 | 109 | 3 | 79-120/19 |
| 75-01-4 | Vinyl Chloride | 78.3 | | 500 | 543 | 93 | 500 | 554 | 95 | 2 | 69-159/18 |
| 1330-20-7 | Xylene (total) | 60 U | | 1500 | 1690 | 113 | 1500 | 1700 | 113 | 1 | 80-126/15 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48346-15 | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 104% | 103% | 102% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 106% | 104% | 100% | 79-125% |
| 2037-26-5 | Toluene-D8 | 98% | 101% | 97% | 85-112% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary

**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48346-15MS | N0106259.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |
| FA48346-15MSD | N0106260.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |
| FA48346-15 | N0106249.D | 20 | 10/17/17 | MM | n/a | n/a | VN4861 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Surrogate Recoveries | MS | MSD | FA48346-15 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 97% | 96% | 100% | 83-118% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48291-2MS | 5E4118.D | 5 | 10/19/17 | MM | n/a | n/a | V5E172 |
| FA48291-2MSD | 5E4121.D | 5 | 10/19/17 | MM | n/a | n/a | V5E172 |
| FA48291-2 | 5E4120.D | 5 | 10/19/17 | MM | n/a | n/a | V5E172 |

**The QC reported here applies to the following samples:** **Method:** SW846 8260B

FA48304-3

| CAS No. | Compound | FA48291-2 ug/l | Q | Spike ug/l | MS ug/l | MS % | Spike ug/l | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 67-64-1 | Acetone | ND | | 625 | 649 | 104 | 625 | 598 | 96 | 8 | 50-147/21 |
| 75-65-0 | Tert-Butyl Alcohol | ND | | 1250 | 1210 | 97 | 1250 | 1270 | 102 | 5 | 63-129/27 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48291-2 | Limits |
|---|---|---|---|---|---|
| 1868-53-7 | Dibromofluoromethane | 99% | 97% | 96% | 83-118% |
| 17060-07-0 | 1,2-Dichloroethane-D4 | 104% | 100% | 101% | 79-125% |
| 2037-26-5 | Toluene-D8 | 99% | 100% | 101% | 85-112% |
| 460-00-4 | 4-Bromofluorobenzene | 101% | 103% | 103% | 83-118% |

* = Outside of Control Limits.

## MS Semi-volatiles

6

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67203-MB | 4D2754.D | 1 | 10/18/17 | MV | 10/13/17 | OP67203 | S4D105 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA48304-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 5.0 | 0.63 | ug/l | |
| 208-96-8 | Acenaphthylene | ND | 5.0 | 0.64 | ug/l | |
| 120-12-7 | Anthracene | ND | 5.0 | 0.80 | ug/l | |
| 56-55-3 | Benzo(a)anthracene | ND | 5.0 | 0.76 | ug/l | |
| 50-32-8 | Benzo(a)pyrene | ND | 5.0 | 0.78 | ug/l | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 5.0 | 0.78 | ug/l | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 5.0 | 0.82 | ug/l | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 5.0 | 0.86 | ug/l | |
| 218-01-9 | Chrysene | ND | 5.0 | 0.85 | ug/l | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 5.0 | 0.80 | ug/l | |
| 206-44-0 | Fluoranthene | ND | 5.0 | 0.55 | ug/l | |
| 86-73-7 | Fluorene | ND | 5.0 | 0.70 | ug/l | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 5.0 | 0.71 | ug/l | |
| 90-12-0 | 1-Methylnaphthalene | ND | 5.0 | 0.53 | ug/l | |
| 91-57-6 | 2-Methylnaphthalene | ND | 5.0 | 0.60 | ug/l | |
| 91-20-3 | Naphthalene | ND | 5.0 | 0.50 | ug/l | |
| 85-01-8 | Phenanthrene | ND | 5.0 | 0.86 | ug/l | |
| 129-00-0 | Pyrene | ND | 5.0 | 0.68 | ug/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 22% | 14-67% |
| 4165-62-2 | Phenol-d5 | 14% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 81% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 74% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 77% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 60% | 39-121% |

| CAS No. | Tentatively Identified Compounds | R.T. | Est. Conc. | Units | Q |
|---|---|---|---|---|---|
| | Total TIC, Semi-Volatile [a] | | 0 | ug/l | |

(a) No TICs detected.

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67244-MB | X056487.D | 1 | 10/19/17 | MV | 10/17/17 | OP67244 | SX2382 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA48304-1, FA48304-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | 170 | 18 | ug/kg | |
| 208-96-8 | Acenaphthylene | ND | 170 | 17 | ug/kg | |
| 120-12-7 | Anthracene | ND | 170 | 19 | ug/kg | |
| 56-55-3 | Benzo(a)anthracene | ND | 170 | 17 | ug/kg | |
| 50-32-8 | Benzo(a)pyrene | ND | 170 | 20 | ug/kg | |
| 205-99-2 | Benzo(b)fluoranthene | ND | 170 | 18 | ug/kg | |
| 191-24-2 | Benzo(g,h,i)perylene | ND | 170 | 17 | ug/kg | |
| 207-08-9 | Benzo(k)fluoranthene | ND | 170 | 22 | ug/kg | |
| 218-01-9 | Chrysene | ND | 170 | 17 | ug/kg | |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | 170 | 21 | ug/kg | |
| 206-44-0 | Fluoranthene | ND | 170 | 17 | ug/kg | |
| 86-73-7 | Fluorene | ND | 170 | 18 | ug/kg | |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | 170 | 20 | ug/kg | |
| 90-12-0 | 1-Methylnaphthalene | ND | 170 | 17 | ug/kg | |
| 91-57-6 | 2-Methylnaphthalene | ND | 170 | 17 | ug/kg | |
| 91-20-3 | Naphthalene | ND | 170 | 17 | ug/kg | |
| 85-01-8 | Phenanthrene | ND | 170 | 17 | ug/kg | |
| 129-00-0 | Pyrene | ND | 170 | 19 | ug/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 79% | 40-102% |
| 4165-62-2 | Phenol-d5 | 80% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 84% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 73% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 82% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 90% | 45-119% |

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67203-BS | 4D2753.D | 1 | 10/18/17 | MV | 10/13/17 | OP67203 | S4D105 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA48304-3

| CAS No. | Compound | Spike ug/l | BSP ug/l | BSP % | Limits |
|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 50 | 40.3 | 81 | 61-107 |
| 208-96-8 | Acenaphthylene | 50 | 42.8 | 86 | 60-104 |
| 120-12-7 | Anthracene | 50 | 41.5 | 83 | 65-108 |
| 56-55-3 | Benzo(a)anthracene | 50 | 43.0 | 86 | 66-111 |
| 50-32-8 | Benzo(a)pyrene | 50 | 43.0 | 86 | 62-107 |
| 205-99-2 | Benzo(b)fluoranthene | 50 | 44.4 | 89 | 65-114 |
| 191-24-2 | Benzo(g,h,i)perylene | 50 | 42.2 | 84 | 66-116 |
| 207-08-9 | Benzo(k)fluoranthene | 50 | 43.7 | 87 | 65-114 |
| 218-01-9 | Chrysene | 50 | 43.8 | 88 | 66-111 |
| 53-70-3 | Dibenzo(a,h)anthracene | 50 | 44.2 | 88 | 66-119 |
| 206-44-0 | Fluoranthene | 50 | 43.0 | 86 | 63-106 |
| 86-73-7 | Fluorene | 50 | 41.9 | 84 | 62-108 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 50 | 43.6 | 87 | 64-119 |
| 90-12-0 | 1-Methylnaphthalene | 50 | 39.6 | 79 | 53-102 |
| 91-57-6 | 2-Methylnaphthalene | 50 | 39.5 | 79 | 51-102 |
| 91-20-3 | Naphthalene | 50 | 38.6 | 77 | 47-100 |
| 85-01-8 | Phenanthrene | 50 | 41.8 | 84 | 66-110 |
| 129-00-0 | Pyrene | 50 | 44.7 | 89 | 64-113 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 21% | 14-67% |
| 4165-62-2 | Phenol-d5 | 12% | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 83% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 81% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 79% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 47% | 39-121% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67244-BS | X056486.D | 1 | 10/19/17 | MV | 10/17/17 | OP67244 | SX2382 |



**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA48304-1, FA48304-2

| CAS No. | Compound | Spike ug/kg | BSP ug/kg | BSP % | Limits |
|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | 1670 | 1470 | 88 | 56-109 |
| 208-96-8 | Acenaphthylene | 1670 | 1520 | 91 | 56-106 |
| 120-12-7 | Anthracene | 1670 | 1410 | 85 | 61-110 |
| 56-55-3 | Benzo(a)anthracene | 1670 | 1470 | 88 | 66-111 |
| 50-32-8 | Benzo(a)pyrene | 1670 | 1470 | 88 | 59-104 |
| 205-99-2 | Benzo(b)fluoranthene | 1670 | 1540 | 92 | 67-113 |
| 191-24-2 | Benzo(g,h,i)perylene | 1670 | 1640 | 98 | 67-113 |
| 207-08-9 | Benzo(k)fluoranthene | 1670 | 1560 | 94 | 67-114 |
| 218-01-9 | Chrysene | 1670 | 1480 | 89 | 65-112 |
| 53-70-3 | Dibenzo(a,h)anthracene | 1670 | 1690 | 101 | 68-115 |
| 206-44-0 | Fluoranthene | 1670 | 1480 | 89 | 60-108 |
| 86-73-7 | Fluorene | 1670 | 1500 | 90 | 58-109 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | 1670 | 1680 | 101 | 66-116 |
| 90-12-0 | 1-Methylnaphthalene | 1670 | 1380 | 83 | 49-106 |
| 91-57-6 | 2-Methylnaphthalene | 1670 | 1320 | 79 | 47-106 |
| 91-20-3 | Naphthalene | 1670 | 1350 | 81 | 44-104 |
| 85-01-8 | Phenanthrene | 1670 | 1470 | 88 | 63-111 |
| 129-00-0 | Pyrene | 1670 | 1480 | 89 | 65-115 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 78% | 40-102% |
| 4165-62-2 | Phenol-d5 | 74% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 94% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 77% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 86% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 91% | 45-119% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67203-MS | 4D2756.D | 1 | 10/18/17 | MV | 10/13/17 | OP67203 | S4D105 |
| OP67203-MSD | 4D2757.D | 1 | 10/18/17 | MV | 10/13/17 | OP67203 | S4D105 |
| FA48285-1 | 4D2755.D | 1 | 10/18/17 | MV | 10/13/17 | OP67203 | S4D105 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA48304-3

| CAS No. | Compound | FA48285-1 ug/l | Q | Spike ug/l | MS ug/l | MS % | Spike ug/l | MSD ug/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | | 98 | 82.7 | 84 | 98 | 78.4 | 80 | 5 | 61-107/22 |
| 208-96-8 | Acenaphthylene | ND | | 98 | 87.2 | 89 | 98 | 83.9 | 86 | 4 | 60-104/22 |
| 120-12-7 | Anthracene | ND | | 98 | 82.6 | 84 | 98 | 80.7 | 82 | 2 | 65-108/20 |
| 56-55-3 | Benzo(a)anthracene | ND | | 98 | 77.7 | 79 | 98 | 74.9 | 76 | 4 | 66-111/22 |
| 50-32-8 | Benzo(a)pyrene | ND | | 98 | 86.9 | 89 | 98 | 90.8 | 93 | 4 | 62-107/23 |
| 205-99-2 | Benzo(b)fluoranthene | ND | | 98 | 88.8 | 91 | 98 | 94.1 | 96 | 6 | 65-114/23 |
| 191-24-2 | Benzo(g,h,i)perylene | ND | | 98 | 91.6 | 93 | 98 | 89.8 | 92 | 2 | 66-116/23 |
| 207-08-9 | Benzo(k)fluoranthene | ND | | 98 | 88.9 | 91 | 98 | 90.3 | 92 | 2 | 65-114/24 |
| 218-01-9 | Chrysene | ND | | 98 | 77.8 | 79 | 98 | 74.3 | 76 | 5 | 66-111/22 |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | | 98 | 87.6 | 89 | 98 | 90.2 | 92 | 3 | 66-119/24 |
| 206-44-0 | Fluoranthene | ND | | 98 | 80.0 | 82 | 98 | 76.9 | 78 | 4 | 63-106/21 |
| 86-73-7 | Fluorene | ND | | 98 | 83.9 | 86 | 98 | 81.5 | 83 | 3 | 62-108/20 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | | 98 | 96.4 | 98 | 98 | 97.1 | 99 | 1 | 64-119/24 |
| 90-12-0 | 1-Methylnaphthalene | ND | | 98 | 78.4 | 80 | 98 | 73.2 | 75 | 7 | 53-102/27 |
| 91-57-6 | 2-Methylnaphthalene | ND | | 98 | 76.6 | 78 | 98 | 73.0 | 74 | 5 | 51-102/26 |
| 91-20-3 | Naphthalene | ND | | 98 | 75.7 | 77 | 98 | 70.8 | 72 | 7 | 47-100/29 |
| 85-01-8 | Phenanthrene | ND | | 98 | 83.6 | 85 | 98 | 80.6 | 82 | 4 | 66-110/21 |
| 129-00-0 | Pyrene | ND | | 98 | 79.2 | 81 | 98 | 77.6 | 79 | 2 | 64-113/23 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48285-1 | Limits |
|---|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 36% | 33% | 14% | 14-67% |
| 4165-62-2 | Phenol-d5 | 23% | 22% | 8%* [a] | 10-50% |
| 118-79-6 | 2,4,6-Tribromophenol | 84% | 78% | 68% | 33-118% |
| 4165-60-0 | Nitrobenzene-d5 | 79% | 73% | 64% | 42-108% |
| 321-60-8 | 2-Fluorobiphenyl | 80% | 75% | 67% | 40-106% |
| 1718-51-0 | Terphenyl-d14 | 49% | 47% | 51% | 39-121% |

(a) Outside control limits. Insufficient sample for re-extraction.

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67244-MS | X056509.D | 1 | 10/19/17 | MV | 10/17/17 | OP67244 | SX2382 |
| OP67244-MSD | X056510.D | 1 | 10/19/17 | MV | 10/17/17 | OP67244 | SX2382 |
| FA48393-7 | X056508.D | 1 | 10/19/17 | MV | 10/17/17 | OP67244 | SX2382 |

**The QC reported here applies to the following samples:** **Method:** SW846 8270D

FA48304-1, FA48304-2

| CAS No. | Compound | FA48393-7 ug/kg | Q | Spike ug/kg | MS ug/kg | MS % | Spike ug/kg | MSD ug/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 83-32-9 | Acenaphthene | ND | | 1910 | 1630 | 85 | 1920 | 1810 | 94 | 10 | 56-109/23 |
| 208-96-8 | Acenaphthylene | ND | | 1910 | 1720 | 90 | 1920 | 1900 | 99 | 10 | 56-106/23 |
| 120-12-7 | Anthracene | ND | | 1910 | 1550 | 81 | 1920 | 1690 | 88 | 9 | 61-110/21 |
| 56-55-3 | Benzo(a)anthracene | ND | | 1910 | 1620 | 85 | 1920 | 1840 | 96 | 13 | 66-111/23 |
| 50-32-8 | Benzo(a)pyrene | ND | | 1910 | 1630 | 85 | 1920 | 1840 | 96 | 12 | 59-104/23 |
| 205-99-2 | Benzo(b)fluoranthene | ND | | 1910 | 1750 | 92 | 1920 | 1940 | 101 | 10 | 67-113/24 |
| 191-24-2 | Benzo(g,h,i)perylene | ND | | 1910 | 1800 | 94 | 1920 | 2090 | 109 | 15 | 67-113/21 |
| 207-08-9 | Benzo(k)fluoranthene | ND | | 1910 | 1710 | 90 | 1920 | 1900 | 99 | 11 | 67-114/22 |
| 218-01-9 | Chrysene | ND | | 1910 | 1630 | 85 | 1920 | 1840 | 96 | 12 | 65-112/25 |
| 53-70-3 | Dibenzo(a,h)anthracene | ND | | 1910 | 1830 | 96 | 1920 | 2250 | 117* | 21 | 68-115/23 |
| 206-44-0 | Fluoranthene | ND | | 1910 | 1580 | 83 | 1920 | 1820 | 95 | 14 | 60-108/25 |
| 86-73-7 | Fluorene | ND | | 1910 | 1660 | 87 | 1920 | 2030 | 106 | 20 | 58-109/21 |
| 193-39-5 | Indeno(1,2,3-cd)pyrene | ND | | 1910 | 1830 | 96 | 1920 | 2150 | 112 | 16 | 66-116/22 |
| 90-12-0 | 1-Methylnaphthalene | ND | | 1910 | 1550 | 81 | 1920 | 1730 | 90 | 11 | 49-106/26 |
| 91-57-6 | 2-Methylnaphthalene | ND | | 1910 | 1460 | 76 | 1920 | 1620 | 85 | 10 | 47-106/27 |
| 91-20-3 | Naphthalene | ND | | 1910 | 1550 | 81 | 1920 | 1740 | 91 | 12 | 44-104/27 |
| 85-01-8 | Phenanthrene | ND | | 1910 | 1620 | 85 | 1920 | 1830 | 95 | 12 | 63-111/22 |
| 129-00-0 | Pyrene | ND | | 1910 | 1710 | 90 | 1920 | 1930 | 101 | 12 | 65-115/25 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48393-7 | Limits |
|---|---|---|---|---|---|
| 367-12-4 | 2-Fluorophenol | 74% | 91% | 77% | 40-102% |
| 4165-62-2 | Phenol-d5 | 70% | 84% | 74% | 41-100% |
| 118-79-6 | 2,4,6-Tribromophenol | 90% | 104% | 91% | 42-108% |
| 4165-60-0 | Nitrobenzene-d5 | 75% | 85% | 80% | 40-105% |
| 321-60-8 | 2-Fluorobiphenyl | 85% | 94% | 89% | 43-107% |
| 1718-51-0 | Terphenyl-d14 | 91% | 106% | 98% | 45-119% |

* = Outside of Control Limits.

## GC Volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GCD6112-MB | CD146520.D | 1 | 10/13/17 | EG | n/a | n/a | GCD6112 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-1, FA48304-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 5.0 | 2.5 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 88% | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 75% | 66-132% |

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GCD6118-MB | CD146635.D | 1 | 10/19/17 | EG | n/a | n/a | GCD6118 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | ND | 0.10 | 0.050 | mg/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 88% | 70-131% |
| 98-08-8 | aaa-Trifluorotoluene | 79% | 69-143% |

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GCD6112-BS | CD146519.D | 1 | 10/13/17 | EG | n/a | n/a | GCD6112 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-1, FA48304-2

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 20 | 21.1 | 106 | 74-128 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 95% | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 94% | 66-132% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| GCD6118-BS | CD146634.D | 1 | 10/19/17 | EG | n/a | n/a | GCD6118 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-3

| CAS No. | Compound | Spike mg/l | BSP mg/l | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 0.4 | 0.416 | 104 | 75-138 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 95% | 70-131% |
| 98-08-8 | aaa-Trifluorotoluene | 94% | 69-143% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48179-1MS | CD146527.D | 1 | 10/13/17 | EG | n/a | n/a | GCD6112 |
| FA48179-1MSD | CD146528.D | 1 | 10/13/17 | EG | n/a | n/a | GCD6112 |
| FA48179-1 | CD146521.D | 1 | 10/13/17 | EG | n/a | n/a | GCD6112 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-1, FA48304-2

| CAS No. | Compound | FA48179-1 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | Spike mg/kg | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 4.6 | U | 18.4 | 19.4 | 105 | 18.4 | 20.1 | 109 | 4 | 74-128/17 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48179-1 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 92% | 95% | 88% | 56-149% |
| 98-08-8 | aaa-Trifluorotoluene | 91% | 92% | 77% | 66-132% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| FA48289-3MS | CD146642.D | 10 | 10/19/17 | EG | n/a | n/a | GCD6118 |
| FA48289-3MSD | CD146643.D | 10 | 10/19/17 | EG | n/a | n/a | GCD6118 |
| FA48289-3 | CD146636.D | 10 | 10/19/17 | EG | n/a | n/a | GCD6118 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-3

| CAS No. | Compound | FA48289-3 mg/l | Q | Spike mg/l | MS mg/l | MS % | Spike mg/l | MSD mg/l | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TPH-GRO (C6-C10) | 4.03 | | 4 | 8.01 | 100 | 4 | 8.07 | 101 | 1 | 75-138/13 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48289-3 | Limits |
|---|---|---|---|---|---|
| 460-00-4 | 4-Bromofluorobenzene | 101% | 99% | 96% | 70-131% |
| 98-08-8 | aaa-Trifluorotoluene | 97% | 104% | 89% | 69-143% |

* = Outside of Control Limits.

## GC/LC Semi-volatiles

### QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67222-MB | WW12891.D | 1 | 10/18/17 | SJL | 10/16/17 | OP67222 | GWW539 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-3

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | ND | 0.050 | 0.020 | mg/l | |
| | TPH (> C28-C40) | ND | 0.050 | 0.020 | mg/l | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 71% | 50-131% |

# Method Blank Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67285-MB | WW13064.D | 1 | 10/24/17 | SJL | 10/19/17 | OP67285 | GWW542 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-1, FA48304-2

| CAS No. | Compound | Result | RL | MDL | Units | Q |
|---|---|---|---|---|---|---|
| | TPH (C10-C28) | ND | 5.0 | 2.5 | mg/kg | |
| | TPH (> C28-C40) | ND | 5.0 | 2.5 | mg/kg | |

| CAS No. | Surrogate Recoveries | | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 74% | 56-122% |

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67222-BS | WW12925.D | 1 | 10/18/17 | SJL | 10/16/17 | OP67222 | GWW539 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-3

| CAS No. | Compound | Spike mg/l | BSP mg/l | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH (C10-C28) | 1 | 1.25 | 125 | 60-128 |
| | TPH (> C28-C40) | 1 | 0.805 | 81 | 51-138 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 75% | 50-131% |

* = Outside of Control Limits.

# Blank Spike Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67285-BS | WW13063.D | 1 | 10/23/17 | SJL | 10/19/17 | OP67285 | GWW542 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-1, FA48304-2

| CAS No. | Compound | Spike mg/kg | BSP mg/kg | BSP % | Limits |
|---|---|---|---|---|---|
| | TPH (C10-C28) | 50 | 57.7 | 115 | 62-116 |
| | TPH (> C28-C40) | 50 | 37.0 | 74 | 47-138 |

| CAS No. | Surrogate Recoveries | BSP | Limits |
|---|---|---|---|
| 84-15-1 | o-Terphenyl | 73% | 56-122% |

* = Outside of Control Limits.

# Matrix Spike/Matrix Spike Duplicate Summary



**Job Number:** FA48304
**Account:** CCCAD Compliance & Closure, Inc.
**Project:** T10000005974-Delong Oil; 1716 Webster St, Alameda, CA

| Sample | File ID | DF | Analyzed | By | Prep Date | Prep Batch | Analytical Batch |
|---|---|---|---|---|---|---|---|
| OP67285-MS | WW13069.D | 4 | 10/24/17 | SJL | 10/19/17 | OP67285 | GWW542 |
| OP67285-MSD | WW13070.D | 4 | 10/24/17 | SJL | 10/19/17 | OP67285 | GWW542 |
| FA48501-1 | WW13068.D | 4 | 10/24/17 | SJL | 10/19/17 | OP67285 | GWW542 |

**The QC reported here applies to the following samples:** **Method:** SW846 8015C

FA48304-1, FA48304-2

| CAS No. | Compound | FA48501-1 mg/kg | Q | Spike mg/kg | MS mg/kg | MS % | Spike mg/kg | MSD mg/kg | MSD % | RPD | Limits Rec/RPD |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | TPH (C10-C28) | 50.6 | | 48.8 | 134 | 171* | 48.8 | 152 | 208* | 13 | 62-116/35 |
| | TPH (> C28-C40) | 156 | | 48.8 | 223 | 137 | 48.8 | 263 | 219* [a] | 16 | 47-138/29 |

| CAS No. | Surrogate Recoveries | MS | MSD | FA48501-1 | Limits |
|---|---|---|---|---|---|
| 84-15-1 | o-Terphenyl | 82% | 80% | 70% | 56-122% |

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.