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September 27, 2016

Mr. Mark Detterman  
Alameda County Health Care Services  
Local Oversight Program  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Subject: Data Gap Investigation to Evaluate Potential Indoor Air Vapor Intrusion by Soil-Gas related to a Former Residential Underground Heating Oil Tank located at 811 Paramount Road, Oakland, CA. (Alameda County Fuel Leak Case No. RO0003143 and CA GeoTracker Global ID T10000006106)

Dear Mr. Detterman:

### **INTRODUCTION AND SCOPE OF WORK**

Stellar Environmental Solutions, Inc. (Stellar Environmental), on behalf of the property owners, presents Alameda County Health Care Services (ACHCS) with the findings of the recent additional sampling investigation activities to further evaluate the potential impacts of vapor intrusion related to a former 350-gallon residential underground heating fuel storage tank (UST) that was removed on December 16, 2013.

This report documents the implementation of the recommendations for additional site investigation that were included in the Stellar Environmental Data Gap Site Investigation Report, dated May 17, 2016 with the incorporation of modifications by ACHCS in its review and approval letter, dated July 12, 2016. This report also presents the results of the current soil-gas and indoor air sampling conducted from August 25 to 26, 2016, to further investigate potential vapor intrusion of hydrocarbon contaminants into the residential building indoor air and to evaluate the all the site data against the regulatory site closure criteria.

Attached Figure 1 shows the site location and Figure 2 is a site plan showing the locations of current and historical sampling of the former UST. Figures are included in Appendix A

## **SUBJECT PROPERTY DESCRIPTION**

The subject property is located at 811 Paramount Road in Trestle Glen, a historical residential district in Oakland, California. The area has historically been a residential area since the turn of the 20<sup>th</sup> century. The property is situated on a ridgeline in the Oakland hills with an average elevation of approximately 210 feet above mean sea level (amsl) and a generally westward and southward topographic slope. Rainwater drains away from the residential front yard area of the former UST site to the street curb gutter where it is channeled into the storm drain system on Paramount Road.

### **Local Hydrogeology**

The site is underlain by Late Pleistocene alluvium that generally consist of weakly consolidated slightly weathered poorly sorted irregularly interbedded clay, silt, sand, and gravel. Local heterogeneities in shallow lithology and groundwater levels are typical of the alluvial deposits in this area. Shallow site lithology was determined in this current March 2016 and the previous June 2015 investigations by the visual method of the Unified Soils Classification System (USCS) based on continuous core soil samples. The predominant soil types encountered consisted of clay from the ground surface to between 6 and 8 feet below ground surface (bgs). Silt predominated from approximately 6 feet bgs to 29 feet bgs with the exception of a predominance of clay to 20 feet bgs in bore SB1. Gravelly and sandy to silty clay were observed from approximately 24 to 30 feet bgs in bores SB2 and SB3. Clay was encountered at approximately 29 - 31 feet bgs in bores SB1 and SB2 and observed to persist to the maximum depth advanced of 36 feet bgs in bore SB2. Groundwater was not encountered during the June 2015 or this current investigation.

### **Surface Water Bodies**

The nearest surface water bodies are Sausal Creek located approximately 5,000 feet east of the site; Central Reservoir located 5,000 southeast and Lake Merritt Lake located about 5,000 feet west of the site. These water bodies ultimately drain to San Francisco Bay, located approximately 3.75 miles to the west of the site.

## **HISTORICAL ENVIRONMENTAL BACKGROUND AND DISCUSSION**

### **December 2013: Former UST Removal and Verification Soil Sampling**

The former UST was discovered during property renovations in 2013 at which time the subject property owners contracted Golden Gate Tank Removal, Inc. (GGT) to remove the UST. The underground storage tank (UST) removal report, dated January 14, 2014 that was prepared by

GGT documents the December 2013 removal of one 350-gallon heating oil UST and 32.75 tons of associated fuel impacted soil from the subject site. The UST was found to be in poor condition with at least one visible hole. Soil discoloration and hydrocarbon odors were noted to be associated with overburden soil and soil underlying the UST.

The initial UST soil samples were collected at a depth of 7 feet on both the east end and west end beneath the UST after its removal on December 16, 2013. The analytical at 7 feet bgs on the east end (sample E7) was reported at 9,290 milligrams per kilogram (mg/kg) Total Petroleum Hydrocarbons in the carbon C10-C28 range, which includes the upper C8-C10 range of gasoline (TPHg), the full (C10-C23) range of diesel (TPHd) and into the motor oil (C18-C35) range (TPHmo). The 9,290 mg/kg detection exceeds the applicable Environmental Screening Limits (ESLs) for TPHg, TPHd and TPHmo, which are 100 mg/kg, 230 mg/kg and 5,100 mg/kg, respectively (GGT, 2013). Also reported in sample E7 was 1.1 mg/kg ethylbenzene, 1.37 mg/kg total xylenes and 47.3 mg/kg naphthalene, with naphthalene above the ESL. Benzene and toluene were below the laboratory detection limit. The west end sample (sample W7) concentrations at 7 feet bgs were detected at 1,390 mg/kg in the C10-C28 range. The benzene, toluene, ethylbenzene and xylenes (BTEX) concentrations were near to below Laboratory Reporting Limits (RLs) of 79 µg/kg or less, and naphthalene concentration was 7.72 mg/kg, above its ESL.

Over-excavation to 12 feet bgs was subsequently performed on December 24, 2013. East end sample (sample E12) concentrations decreased two to three orders of magnitude to 28.0 mg/kg of TPH C10-C28, while BTEX and naphthalene concentrations were near to below RLs. The west end sample (sample E12) concentrations increased with depth to 3,960 mg/kg TPHd, and naphthalene concentrations increased to 25.2 mg/kg, in excess of their respective ESLs; BTEX concentrations were near to below RLs. MTBE was not analyzed in any of the samples.

### **June 2015: Residual Soil-Gas and Indoor Air Investigation**

ACHCS in its letter dated December 15, 2014, requested additional investigation of the residual soil contamination indicated by detections of TPHd and naphthalene above applicable ESLs that were reported in the UST removal report (GGT 2013). Stellar Environmental was retained by the property owners to prepare an investigation Workplan which was approved with the incorporation of modifications by ACHCS in its review and approval letter, dated March 30, 2015. The Workplan was implemented by Stellar Environmental in June 2015 and showed no detectable TPHd, TPHmo or fuel related volatile organic compounds (VOCs) in site soils, indicating the potential residual soil contamination is neither laterally or vertically extensive.

Groundwater was not encountered in any of the 3 bores that were advanced during the investigation, with the deepest bore extending to 36 feet bgs. The absence of residual soil

contamination and relatively deep first groundwater occurrence indicates no threat to groundwater by potential contaminants of concern (COCs).

Soil-gas collected from soil-gas well SG5.5 feet bgs showed 880,000  $\mu\text{g}/\text{m}^3$  TPHg, which is in excess of the Water Board residential ESL of 300,000  $\mu\text{g}/\text{m}^3$  for potential risk of vapor intrusion into the adjacent residential building. Thus vapor intrusion risk is the focus of this current investigation. The detection of residual TPHg in soil-gas is anomalous for a residential heating oil UST, as gasoline grade hydrocarbons were not used in heating oil. However, the TPHg appeared to rapidly attenuate with depth as there were no detections of any COCs at 13 feet bgs immediately below the target contaminant depth where elevated TPHd and naphthalene in soil were reported in the UST removal report (GGT 2013). One additional finding in the June 2015 investigation documented 3.0 to 3.4 % oxygen in shallow soil adjacent to the residential building.

The June 2015 investigation sampling detected no residual soil contamination, showed no threat to groundwater and only limited residual soil-gas detection of 880,000  $\mu\text{g}/\text{m}^3$  total petroleum hydrocarbons as gasoline in excess of the regulatory threshold criteria of 300,000  $\mu\text{g}/\text{m}^3$ . Thus, the only apparent potential exposure risk was soil vapor intrusion into the residential building.

### **September 2015: Residual Soil-Gas and Indoor Air Investigation**

The analytical results from the June 2015 investigation qualified the site for closure under the strict criteria of the Water Board Low Threat Closure Policy (LTCP), however due to the exceedance of TPHg over the Water Board ESL, ACHCS requested in its letter dated August 19, 2015, re-sampling of soil-gas, an evaluation of the building crawl space and additional sampling of potential toxic vapor intrusion into the site residence be conducted in the event that the soil-gas sampling results exceeded the applicable ESLs. A Workplan, dated September 9, 2015 was prepared by Stellar Environmental and approved with modifications by ACHCS in its letter dated September 10, 2015.

The soil-gas well SG5.5 was resampled on September 23, 2015 as prescribed in the Workplan. The analytical results showed 240,000  $\mu\text{g}/\text{m}^3$  TPHd, 2,000,000  $\mu\text{g}/\text{m}^3$  TPHg and 600  $\mu\text{g}/\text{m}^3$  benzene, all in excess of their applicable residential ESLs of 68,000  $\mu\text{g}/\text{m}^3$ , 300,000  $\mu\text{g}/\text{m}^3$ , and 48  $\mu\text{g}/\text{m}^3$ , respectively. The analyte TCA was incorrectly reported by the laboratory to be detected in that sampling event. The TCA was later confirmed as not detected and the amended analytical laboratory report was included in the March 2016 report. The analytical results of the September 23, 2015 soil-gas sampling were subsequently shared with the ACHCS regulator and, as prescribed in the Workplan, sampling of the indoor air was completed. Benzene was the only site contaminant of concern that was detected in the indoor air, in the basement, at 0.20  $\mu\text{g}/\text{m}^3$ ,

which is above its applicable ESL of  $0.084 \mu\text{g}/\text{m}^3$ . However as the  $0.20 \mu\text{g}/\text{m}^3$  benzene concentration was less than the  $1.0 \mu\text{g}/\text{m}^3$  detected in the ambient outdoor air, this finding suggests the benzene in the residential indoor air could be attributed to outdoor ambient sources. The compounds, TPHg and TPHd, that were detected above their ESLs in the soil-gas, were not detected in the indoor-air survey.

### **March 2016: Residual Soil, Soil-Gas and Indoor Air Investigation**

The March 2016 investigation work was advanced to address ACHCS's concern that the two previous samplings of soil-gas well SG5.5 showed an increasing concentration trend in TPH-gasoline and benzene. ACHCS also requested additional soil bore sampling to investigate TPHd, TPHg, benzene and TCA that could possibly be related to the discolored green soil noted on the June 2015 investigation borings logs (SB2 and SG5.5) between 3.5 and 6 feet bgs; re-evaluation of oxygen that was previously measured below the LTCP bioattenuation zone criteria of 4%; and a second indoor air survey.

Following receipt of the March 2016 results, the laboratory determined that TCA had previously been reported in error and retracted the September 2015 detection. The erroneously reported TCA was determined to be an unidentified compound by the laboratory. Tetrachloroethene (PCE) and methylene chloride (MC) were detected in soil-gas well SG5.5 above their ESLs in the March 2016, and also confirmed by the laboratory to not have been detected in September 2015. However, considering that the lab retracted their September 2015 finding of TCA and neither MC nor PCE were previously detected in any of the previous samples or other media prior to this event, these detections are considered likely false positives or likely laboratory contaminants related to the batch-certified clean Summa™ canisters. In addition, the property history does not indicate any other reasonable chemical source for the chlorinated VOC compound detections in the soil gas. The household chemical inventory conducted on March 31, 2016 revealed no chemical products other than commercially available products in their original packaging, with no signs of spillage. In addition, the owners, who have lived in the house since 1987 and who were also acquainted with the previous owner, were interviewed and have no knowledge of any site activities that used chemicals other than those used in routine household and garden maintenance that could be attributed to the detection of solvents such as PCE or methylene chloride (MC).

The March 2016 indoor air from the central basement room (sample IA2) showed TPH-gasoline, naphthalene and 1,4-dichlorobenzene above their ESLs. Benzene and carbon tetrachloride were also above their ESLs, but these can be discounted along with most of the naphthalene when compared to the outdoor air. The naphthalene concentration in outdoor air exceeded the indoor

air in the Oct 2015 event but was equal to the crawl space air and less than the basement room air in the April 2016 event. Oxygen was measured during the March 2016 event at 1.2 % in soil-gas well SG5.5. This showed a lowering concentration trend compared to the last measurement in June 2015 that showed 3.0 % in soil-gas well SG5.5.

### **August 2016: Current Soil-Gas and Indoor Air Investigation**

This report presents the findings of this current investigation conducted to evaluate soil-gas and potential vapor intrusion of contaminants into the residential air space related to the former UST and closes the data gap impediments to achieving regulatory site closure. Indoor-air was collected from 2 locations within the residence, one in the basement and one in the main ground floor living space upstairs. In addition one crawl space sample was collected in addition to an ambient outdoor-air sample. Soil-gas was collected from well SG5.5 using an individually-certified clean Summa™ canister and a different analytical laboratory to evaluate the previous potentially false positive reported detections of TCA, PCE and MC possibly related to laboratory contaminants or batch-certified Summa™ canisters.

Analytical results of current and historical investigations are presented in the attached table summaries.

## **REGULATORY CONSIDERATIONS**

The Water Board has established ESLs for evaluating the likelihood of environmental impact. ESLs are conservative screening-level criteria for soil and groundwater, designed to be generally protective of both drinking water resources and aquatic environments; they incorporate both environmental and human health risk considerations. ESLs are not cleanup criteria (i.e., health-based numerical values or disposal-based values). Rather, they are used as a preliminary guide in determining whether additional remediation and/or investigation may be warranted.

Different ESLs are published for commercial/industrial vs. residential land use, for sites where groundwater is a potential drinking water resource vs. is not a likely drinking water resource, and for the type of receiving water body. In our professional opinion, the appropriate ESL criteria for the subject site are *residential land use* and *groundwater is a potential drinking water resource*; based on the following:

- Residential land use as zoned by the City of Oakland.
- Groundwater is a potential a drinking water resource based on the location of the site being within the Department of Water Resources (DWR) designated East Bay Plain

Groundwater Sub-Basin (DWR 2003) and the designation of this area of Oakland as “Zone A – Significant Drinking Water Resource (Water Board, 1999).

- The receiving body for groundwater discharge is an estuary (San Francisco Bay).

As stated above, ESLs are used as a preliminary guide in determining whether additional investigation, remediation or other action is warranted. Exceeding ESLs may warrant additional actions, such as monitoring plume stability to demonstrate no risk to sensitive receptors in the case of sites where drinking water is not threatened.

### **Regulatory Status**

There was previously no known documentation of the Underground Storage Tank (UST) removal(s) or other information in the regulatory Water Board GeoTracker system. ACHCS is the oversight agency for the UST site cleanups in Oakland and the site was assigned a GeoTracker Global ID No. T10000006106 and ACHCS Fuel Leak Case No. RO0003143.

This report has been prepared to address ACHCS correspondence and to evaluate the site for regulatory closure under the State Water Resources Control Board Low-Threat Underground Storage Tank Policy (LTCP) Title 23, 2923 (OAL File No. 2012-0618-02 S), adopted on May 1, 2012 and effective as of August 17, 2012 (Water Board 2012).

### **LABORATORY ANALYTICAL METHODS**

The required U. S. Environmental Protection Agency (EPA) analytical methods from Test Methods for Evaluating Solid Waste, Physical Chemical Methods, SW-846 (EPA, 1986) that were used to analyze the samples collected during this project include:

Soil-Gas and Indoor Air Samples were analyzed using the following methods:

- TPHg and VOCs: full list including; naphthalene, BTEX and MTBE - by EPA Method TO-15/Gas Range Organics (GRO).
- TPHd and naphthalene - by EPA Method TO17 (soil-gas and 2 indoor air samples)
- Oxygen and methane - by ASTM 1946-90 (soil-gas only)
- Helium, the leak check compound by ASTM 1946-90 (soil-gas only)

Laboratory-certified clean sampling equipment including summa™ canisters, manifolds equipped with a filter, pressure gauge and the appropriate flow controller were used. The indoor air and soil-gas samples for TO15/GRO analysis were completed by Eurofins Air Toxics (Folsom, CA). Soil-gas for TO15/GRO analysis was collected in an individually certified clean

1-liter Summa™ canister. Indoor and outdoor ambient air samples for TO15/GRO analysis were collected in 6-liter Summa™ canisters. The TO17 analysis was conducted by McCampbell Analytical (Pittsburg, CA), the only laboratory that had the available sampling apparatus for the TO17 collection. The sorbent tubes used to collect the soil-gas and indoor-air samples for TO17 analysis of TPHd and naphthalene were held wrapped in laboratory-grade aluminum and maintained on ice in a cooler for courier transport to McCampbell Analytical. Both laboratories are California and National Environmental Laboratory Accreditation Program-ELAP-certified. Samples collected in Summa™ canisters were maintained at ambient temperature and out of direct sunlight. All sampling equipment used was certified clean by the laboratory prior to use. All samples were transported by courier under chain of custody to the analytical laboratory. The analyses were performed at a standard turnaround.

### **FIELDWORK IMPLEMENTATION**

Field activities discussed under this heading were conducted on August 25 and 26, 2016 and included collecting samples of soil-gas and indoor-air.

The analytical laboratory results are summarized in the tables included in Attachment B. A photo-documentation of the field activities is included in Attachment C. The certified laboratory analytical reports and chain-of-custody records are presented in Attachment D.

### **SOIL-GAS SAMPLING AND METHODOLOGY AND RESULTS**

The soil-gas wells were located and designed to evaluate potential for soil-gas intrusion into the residential site building. The two soil-gas wells were constructed during the June 2015 Stellar Environmental investigation in a cluster array approximately 2 feet apart with the subsurface diffuser implants installed at 5.5 and 13 feet bgs and labeled SG5.5 and SG13, respectively. A stainless-steel mesh air diffuser was set in the 3-inch diameter bore at the target depth, at the midpoint of a 1-foot sand pack and connected to the surface with Teflon® tubing (0.177-inch inside diameter) and terminated after the surface with about 2 feet of excess tubing and an inert plastic stopcock valve. Granular bentonite was emplaced over the sand pack and brought to the surface with hydrated bentonite to seal the diffuser and sand pack. The soil-gas well construction details are included on the geologic logs contained in the June 2015 Stellar Environmental Investigation report, dated July 20, 2015.

Department of Toxic Substance Control (DTSC, April 2012) guidelines were followed during set-up and sampling of site soil-gas well SG5.5. As specified in the DTSC guidelines, soil-gas sampling was not conducted during or within five days of a significant rain event (1/2-inch or



greater). No significant rain event was noted to occur in Oakland, California from August 19 to 25, 2015 (NOAA, 2016).

Pre-Soil-Gas Sampling: A shut-in test was conducted on the sampling train to check for leaks in the above-ground fittings at each sampling point. The shut-in test was conducted by assembling the above-ground apparatus of the tubing and sample port valve and evacuating the sampling train using a dedicated purge Summa™ canister. A shut-in test was conducted using an in-line vacuum gauge and evacuating the sampling train to a measured vacuum of about 100 inches of water, then shutting the vacuum in with a closed valve. The vacuum gauge was observed for about one minute and all above ground connections were considered “air-tight” if the pressure on the gauge did not noticeably dissipate.

The purge volume was calculated for a 1 foot of sand pack with 30% porosity (3-inch bore diameter) plus the length of the ¼-inch tubing (0.177-inch inner diameter). Thus, one purge volume for the 5.5 foot deep implant with 7 feet of tubing equals 451 milliliters (mls). Three purge volumes were extracted prior to collecting the soil-gas sample by default as per DTSC guidance.

A Helium Shroud apparatus was used, per ACHCS request, to test for ambient air leaks around the sampling train, and at the soil-gas tubing interface with the ground surface. The helium shroud apparatus was set over the well head and laboratory grade helium was flooded into the shroud initially to a concentration of approximately 35% helium. A concentration of 27 – 30% was maintained in the shroud throughout the sampling procedure and verified every few minutes using a helium meter supplied by the laboratory. The helium shroud apparatus used during this sampling event was rented from McCampbell Analytical laboratory.

A leak test was conducted to evaluate whether adequate seals were established in the sampling train at the connection with the well head and at interface the ground surface. A leak test was conducted at the well before purging and sampling to ensure that the sample was not being diluted by ambient air as evidenced by measuring that no helium was detected. The leak check was conducted by pulling 3 tubing volumes (102 mls for well SG5.5) through the implant tubing at the well head which is sufficient as per DTSC, to check if helium in the shroud is pulled down the bore between the bore and tubing interface which would indicate an ambient leak. The leak checks detected no helium indicating no leakage between the soil-gas tubing interfaces with the ground surface during sample collection.

Soil-Gas Sampling for analysis by Method TO15/GRO for analysis of full list VOCs and TVHg was accomplished using an individually certified clean 1-liter Summa™ canister equipped with a filter and 150 milliliters per minute (ml/min) flow controller.

The Method TO17 analysis sample was collected using laboratory supplied sorbent tubes packed with Tenax™ absorbent and by drawing approximately 1 liter of soil-gas through the sorbent tube at approximately 50 ml/min using an in-line flow controller and a Summa™ canister attached at the end of the sampling train behind each sorbent tube. The manifold was set up to collect duplicate sorbent tube soil-gas samples in a successive arrangement.

### **Soil-Gas Well SG5.5 Analytical Results**

The analytical results of current and historical soil-gas sampling of well SG5.5 are included on Figure 3 in Attachment A and summarized in Tables 1 and 2 in Attachment B.

#### TPH Diesel and Naphthalene (Method TO17 Analysis)

TPHd was detected 410,000  $\mu\text{g}/\text{m}^3$  and at 580,000  $\mu\text{g}/\text{m}^3$  in the duplicate, both samples in excess of the residential ESL of 68,000  $\mu\text{g}/\text{m}^3$ . This shows a decreasing concentration trend since the October 2015 sampling event.

Naphthalene was not detected above the laboratory reporting limit of 5.0  $\mu\text{g}/\text{m}^3$  in either the primary or duplicate sample.

#### TVH Gasoline and Volatile Organic Compounds (Method TO15 Analysis)

TVHg was detected at 1,200,000  $\mu\text{g}/\text{m}^3$  in excess of the Water Board residential ESL of 300,000  $\mu\text{g}/\text{m}^3$ . This is above the previous March 31, 2016 detection of 690,000  $\mu\text{g}/\text{m}^3$  but represents a seasonal lowering from the October 2015 sampling event which showed 2,000,000  $\mu\text{g}/\text{m}^3$ .

Of the volatile fuel components; benzene, toluene, xylenes (MTBE) were detected; only benzene, detected at 470  $\mu\text{g}/\text{m}^3$ , was above its residential ESL of 48  $\mu\text{g}/\text{m}^3$ . This is an increase from 140  $\mu\text{g}/\text{m}^3$  measured in the previous March 2016 event but represents a seasonal lowering concentration trend compared to 600  $\mu\text{g}/\text{m}^3$  in the September 2015 sampling event.

#### Oxygen and Methane

Oxygen content in soil-gas well SG5.5 was analyzed to evaluate the LTCP “bioattenuation zone” and bioremediation potential of the site. This August 2016 soil-gas sampling showed 4.0% oxygen, an increasing concentration trend compared to the last measurement of 1.2 % in March 2016 and in June 2015, which showed 3.0 - 3.4 % in soil-gas collected from soil-gas wells SG5.5 and SG13, respectively. This is the first event in which oxygen was measured at the LTCP criteria concentration of 4% that supports active biodegradation.

Methane was detected in soil gas sample SG5.5 at a concentration of 0.28%. This is above the 0.19 % in June 2015 but well below the lower explosive limit of 5%. The methane may possibly be indicative of anaerobic decomposition of organic material, including residual fuel product.

### Quality Control Samples

*Field QC samples:* One duplicate field QC soil-gas sample was collected for TPHd and analyzed by Method TO17. The manifold provided by the laboratory was set up to collect the duplicate in succession order. The primary sample contained 410,000  $\mu\text{g}/\text{m}^3$  and the duplicate showed 580,000  $\mu\text{g}/\text{m}^3$  which shows a fair agreement (being less than 100%) with a relative percent difference of 34.3%.

A helium shroud leak detection apparatus was used during the soil-gas collections. Helium was not detected during either the TO-15 or TO-17 sample collection indicating no leakage in the sampling train. The samples showed 0.13% helium in both the primary and duplicate sample analytical results. This small detection indicates a leak in the above ground manifold since the field leak check prior to sampling detected no helium.

*Laboratory QC samples (e.g., method blanks, matrix spikes, surrogate spikes, etc.)* were analyzed by the laboratory in accordance with the requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the methods (Attachment D).

## **INDOOR AIR SURVEY METHODOLOGY AND RESULTS**

Because previous and historical events have showed indoor air and soil-gas analytical results contaminants exceeding the applicable ESL criteria, additional sampling for indoor-air was conducted. Indoor-air was collected in accordance with the DTSC/Cal EPA Vapor Intrusion Guidance (October 2011) procedures and methodology.

The residential indoor air evaluation entailed a 24-hour air sampling test per procedures and protocols of the DTSC guidance. Stellar Environmental personnel set up the 24-hour sampling apparatus in four (4) locations: 1) within the residential building subfloor crawl space (location IA1); 2) inside the basement activity room (location IA2); 3) inside the ground floor of the residence above the basement (location IA3); and 4) an ambient “control” sample (location OA1) placed outside the residence, on the back porch, and not below the drip line of any site landscape trees.

The 24-hour test apparatus was set up at approximately 8:30 AM on Thursday August 25<sup>th</sup> and removed 24 hours later at approximately the same time the next day, August 26, 2016. The TO17 sample was collected using sorbent tubes attached to the intake of the flow regulator manifold. All of the samples were analyzed by TO15, however only the basement room and the outdoor air samples were analyzed for TPHd and naphthalene by Method TO17. The air flow regulators on the sampling apparatus control the air inflow rate were calibrated by the laboratory for the specific method analyses to be 4 ml/minute for the TO15 sample and 3.5 ml/minute for the TO17 samples.

The Summa™ sample canisters were identified and labeled when placed in their respective sampling locations at the beginning of the test and the date and time were recorded on the label the next day at the end of the test, thus the potential to confuse the sample locations is minimized.

The sampling locations for the indoor and outdoor air samples are shown on Figures 2 through 5, with the analytical data shown on Figure 5 and summarized on Table 3.

### **Indoor Air Analytical Results and Discussion**

The analytical results of the August 25-26, 2016 indoor air survey indicated the residential indoor air contained more contaminants than the ambient outdoor air, similar to what was measured in March 2016, but the opposite of what was observed in the October 2015 survey.

The August 2016 indoor-air basement room sample (sample IA2) showed TPHd at 180  $\mu\text{g}/\text{m}^3$ , above its ESL of 140  $\mu\text{g}/\text{m}^3$  and naphthalene was detected above its ESL of 0.083  $\mu\text{g}/\text{m}^3$  by Method TO17 at 0.60  $\mu\text{g}/\text{m}^3$  and by Method TO15 at 0.72  $\mu\text{g}/\text{m}^3$ . TPHd was detected in the outdoor ambient air sample (sample OA1) at 75  $\mu\text{g}/\text{m}^3$ , below the indoor air detection suggesting there exists some degradation of the basement room air quality created by the former UST. TPHg was not detected in the indoor or outdoor-air during this event.

Benzene was the only volatile compound that was detected in all three indoor air samples, ranging from 0.17j – 0.21j  $\mu\text{g}/\text{m}^3$ , and in the outdoor air sample (0.18j  $\mu\text{g}/\text{m}^3$ ) above its ESL of 0.097  $\mu\text{g}/\text{m}^3$ . However, all of the detections were j-flagged by the laboratory. Detections between the reporting limit (RL) and the method detection limit (MDL) are j-flagged since they are estimated concentrations below the level of the laboratory instrument calibration curve that is the lowest concentration represented by the method reporting limit.

Indoor-Air; Crawl-Space (sample IA-1): The method TO15 analysis showed 22 compound detections of which 13 were j-flagged and only benzene was detected at a j-flagged concentration

of 0.17j  $\mu\text{g}/\text{m}^3$ , above its ESL of 0.097  $\mu\text{g}/\text{m}^3$ . As noted above, the simultaneous outdoor air sample benzene concentration was 0.18j  $\mu\text{g}/\text{m}^3$ .

Indoor-Air; Basement Room (sample IA-2): The method TO15 analysis showed 27 compound detections of which 9 were j-flagged detections with benzene detected at a j-flagged concentration of 0.21j  $\mu\text{g}/\text{m}^3$ , above its ESL (but again essentially equivalent to the outdoor concentration) and naphthalene at 0.72  $\mu\text{g}/\text{m}^3$  above its ESL of 0.083  $\mu\text{g}/\text{m}^3$ .

The method TO17 analysis detected both TPH-diesel at 180  $\mu\text{g}/\text{m}^3$  and naphthalene at 0.60  $\mu\text{g}/\text{m}^3$ , both above their ESLs of 180  $\mu\text{g}/\text{m}^3$  and 0.083  $\mu\text{g}/\text{m}^3$ , respectively.

The naphthalene detection of 0.72  $\mu\text{g}/\text{m}^3$  reported by method TO15 analysis was in fair agreement with the method TO17 detection of 0.60  $\mu\text{g}/\text{m}^3$ , showing a relative percent difference of 31% between the methods.

Indoor-Air; Ground Floor Living Room (sample IA-3): The method TO15 analysis showed 27 compound detections of which 13 were j-flagged and only benzene was detected at a j-flagged concentration of 0.20j  $\mu\text{g}/\text{m}^3$ , above its ESL but essentially equivalent to the outdoor concentration.

Outdoor-Air (sample OA-1): The method TO15 analysis showed 20 compound detections, of which 12 were j-flagged. Benzene, as noted above, was detected at a j-flagged concentration of 0.21j  $\mu\text{g}/\text{m}^3$ , above its ESL.

The method TO17 analysis detected 75  $\mu\text{g}/\text{m}^3$  TPH-diesel, below its ESL of 180  $\mu\text{g}/\text{m}^3$ .

Laboratory QC samples (e.g., method blanks, matrix spikes, surrogate spikes, etc.) were analyzed by the laboratory in accordance with the requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the methods (Attachment D).

The analytical results of the indoor-air and outdoor air samples for those compounds detected in excess of the indoor air ESLs are included on Figure 5 in Attachment A. The analytical results of all detected compounds in the indoor-air and outdoor air samples are summarized in Table 3 included in Attachment B. The certified laboratory results are contained in Attachment D.

## **SUMMARY, CONCLUSIONS AND RECOMENDATIONS**

Stellar Environmental previously prepared a site conceptual model and evaluated the site conditions against the Low Threat Closure Policy (LTCP) criteria (Stellar Environmental 2015b). Previous investigations indicate that residual contamination related to the former UST does not pose a threat to groundwater. The only remaining potential exposure risk is via soil vapor intrusion into the residential building which will continue to attenuate in time since the UST source has been removed.

The work documented in this study was conducted in general accordance with standard EPA, Water Board and DTSC methods and protocols established for investigations of this type. This work was advanced in consultation with the ACHCS regulator to evaluate potential exposure risk of soil vapor intrusion into the residential building; that being the remaining impediment to full regulatory site closure.

### **SUMMARY AND CONCLUSIONS**

- A 350-gallon UST was removed in December 2013 along with 32.75 tons of associated fuel impacted soil that was disposed to a permitted non-hazardous landfill facility (GGT 2013). The service piping from the UST into the building likely was routed along the eastern side of the building (it being the most direct route) and entered the basement to connect to pre-natural gas heater. None of that is evident now because the basement has been redone.
- The initial Stellar Environmental June 2015b investigation was advanced to investigate residual contamination detections of TPHd and naphthalene above applicable ESLs in the UST excavation confirmation soil sample collected from 12 feet bgs that was reported in the UST removal report (GGT 2013).

No TPHd, TPHmo or fuel related VOCs were detected in site soil from any of the three investigation borings during the June 2015 investigation, indicating site residual soil contamination is not extensive. Additional boring SB4 was advanced in March 2016, one foot east of SG5.5, along the approximate edge of the former UST excavation for the collection of soil samples to investigate the source of contaminants detected in soil-gas well SG5.5. The 3-foot deep soil sample detected trace (17 mg/kg) TPHd and the 5-foot deep sample showed TPHmo/ho at 81 mg/kg and 360 mg/kgTPHd in excess of its residential ESL of 230 mg/kg. TVHg was below laboratory detection in the 3 foot sample but was detected at 36 mg/kg TVHg in the 5 foot sample, but below the residential ESL of 100 mg/kg. No VOCs including the fuel components; naphthalene, MTBE, BTEX were detected in the 3 foot soil sample; however the 5 foot sample showed trace

detections of the following compounds; sec-butyl benzene, 4-isopropyl toluene, 1,1,2,2-tetrachloroethane, 1,2,3-trichlorobenzene, however all below applicable ESLs.

- The March 2016 soil boring SB4 sampling results showed some residual TPH-diesel in the 5 foot soil sample, above its the applicable ESL. No VOCs other than trace TPH-gasoline were detected and it is considered technically impractical to try to remove (excavate) little stringers of contaminated soil (that has contamination >ESL) that were left in the periphery of the tank excavation that we believe are the main source of the soil-gas detections.
- The residual TPHg in soil-gas appears to attenuate with depth as there were no detections of COCs in soil gas collected from 13 feet bgs immediately below the target contaminant depth where elevated TPHd and naphthalene in soil were reported in the UST removal report (GGT 2013).
- Soil-gas collected during the June 2015 investigation from 6 feet bgs (SG5.5) showed 880,000  $\mu\text{g}/\text{m}^3$  TPHg in excess of the Water Board residential ESL of 300,000  $\mu\text{g}/\text{m}^3$  for potential risk of vapor intrusion into the nearby building. Soil-gas well SG5.5 was sampled on September 23, 2015 and showed 240,000  $\mu\text{g}/\text{m}^3$  TPHd; 2,000,000  $\mu\text{g}/\text{m}^3$  TPHg and benzene at 600  $\mu\text{g}/\text{m}^3$ ; all in excess of their residential ESLs of 68,000; 300,000  $\mu\text{g}/\text{m}^3$  and 48  $\mu\text{g}/\text{m}^3$ , respectively. Soil-gas well SG5.5 sampled again on March 31, 2016 showed 680,000  $\mu\text{g}/\text{m}^3$  TPHd; 690,000  $\mu\text{g}/\text{m}^3$  TPHg; and 140  $\mu\text{g}/\text{m}^3$  benzene; all in excess of their residential ESLs.
- Soil-gas sampling of well SG5.5 during this August 2016 event showed a decrease in TPH-diesel from the previous event and a seasonal decrease in both TPH-gas and benzene compared to the September 2015 event, though all detections are still above the applicable ESLs.
- The soil-gas sampling during the March 2016 event reported the chlorinated compounds methylene chloride (MC) at 650  $\mu\text{g}/\text{m}^3$ ; and tetrachloroethene (PCE) at 7,500  $\mu\text{g}/\text{m}^3$ , both above their ESLs, however this current August 2016 event detected none of these chlorinated compounds in either the soil-gas or indoor air, suggesting that these compound detections were laboratory contaminants and false positive reports.
- Analysis of basement room indoor air (sample IA2) during this August 2016 event detected TPH-diesel at 180  $\mu\text{g}/\text{m}^3$  and naphthalene at 0.60  $\mu\text{g}/\text{m}^3$ , both above their ESLs of 140  $\mu\text{g}/\text{m}^3$  and 0.083  $\mu\text{g}/\text{m}^3$ , respectively, suggesting some degradation of the basement room air quality that likely resulted from the former UST. This is also supported when compared to the outdoor ambient air (sample OA1) that showed less (75  $\mu\text{g}/\text{m}^3$ ) TPH-diesel in this August 2016 event.

- Benzene was the only volatile compound detected in all three indoor air samples, ranging from 0.17j – 0.21j  $\mu\text{g}/\text{m}^3$ , but was also present in the outdoor air sample at 0.18j  $\mu\text{g}/\text{m}^3$ , all above the benzene ESL of 0.097  $\mu\text{g}/\text{m}^3$ , however all of these detections were j-flagged by the laboratory and considered estimates.
- Oxygen was measured during this August 2016 event at 4 % in soil-gas well SG5.5. and is the first event in which oxygen was measured at the LTCP criteria concentration of 4% that is supportive of active biodegradation of site contaminants. This shows an increasing concentration trend compared to the previous measurement of 1.2 % in March 2016 and in June 2015 that showed 3.0 and 3.4 % in soil-gas collected from soil-gas wells SG5.5 and SG13, respectively.
- Groundwater was not encountered in any of the 3 bores advanced in June 2015, with the deepest bore extending to 36 feet bgs. The absence of residual soil contamination indicates no threat to groundwater by potential COCs and deep groundwater is unlikely to be impacted and thus no volatilization risk from underlying groundwater exists.
- The sensitive receptor and well survey completed during the June 2015 study did not indicate the presence of a downgradient sensitive receptor that would be threatened by the residual soil-gas.
- The residential sub-floor crawl space was inspected in October 2015, observed to be adequately vented and contained no potential contaminant source items with the exception of the natural gas piping to the central heating unit observed in the crawl space and no unusual, natural gas or petroleum odors were noticed during the October 2015 inspection.
- The risk of vapor intrusion into the site residence by UST source contaminants will continue to attenuate in time since the UST and associated fuel impacted soil source were removed in December 2013.

## RECOMMENDATIONS

Stellar Environmental has discussed the results of this August 2016 investigation with the property owners and recommends regulatory case closure based on the following:

- The March 2016 and August 2016 indoor air survey indicate some degradation of the basement room air quality due to vapor intrusion of TPH-diesel and naphthalene. The August 2016 data shows the air quality in the main ground floor living space is not significantly affected, showing only benzene at a concentration of 0.20j  $\mu\text{g}/\text{m}^3$  compared to 0.18j  $\mu\text{g}/\text{m}^3$  in the outdoor ambient air. Though both values are above the ESL of



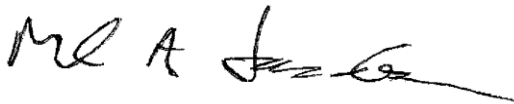
0.097  $\mu\text{g}/\text{m}^3$  for benzene, the ground floor room indoor air is close enough to ambient outdoor air that we recommend the site be closed.

- The soil-gas in the former UST source area shows a general decreasing contaminant concentration trend and the current oxygen concentration of 4% meets the LTCP criteria supportive of active biodegradation of site contaminants, which supports site closure.
- We recommend the property owners consider installing an interior air ventilation/filter system in the basement room and/or periodically test the basement room indoor air to verify a decreasing contaminant concentration trend.
- Stellar Environmental has uploaded this report and associated data to both ACHCS's fileserver and the Water Board's GeoTracker database and recommends following up with ACHCS following its receipt of this report, to discuss regulatory closure.

This report has been prepared for the exclusive use by the Property Owners (responsible party), the regulatory agencies, and their authorized assigns and/or representatives. No reliance on this report shall be made by anyone other than those for whom it was prepared. Costs incurred for this investigation are eligible for reimbursement from the State of California Tank Cleanup Fund until regulatory site closure is achieved.

We declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of our knowledge. If you have any questions regarding this report, please contact us at (510) 644-3123.

Sincerely,



Mr. Mark A. Jacobson  
Property Owner-Responsible Party



Ms. Ilona Frieden  
Property Owner-Responsible Party



Mr. Henry Pietropaoli, P.G.  
Principal Geologist and Project Manager



Mr. Richard S. Makdisi, P.G.  
Principal Geochemist and President

cc: Mr. Amitai Schwartz, Esq.—counsel to RPs.  
Alameda County Health Care and California GeoTracker fileservers



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# **ATTACHMENT A**

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## **Figures**



**SITE LOCATION MAP**

**811 Paramount Avenue  
Oakland, CA**

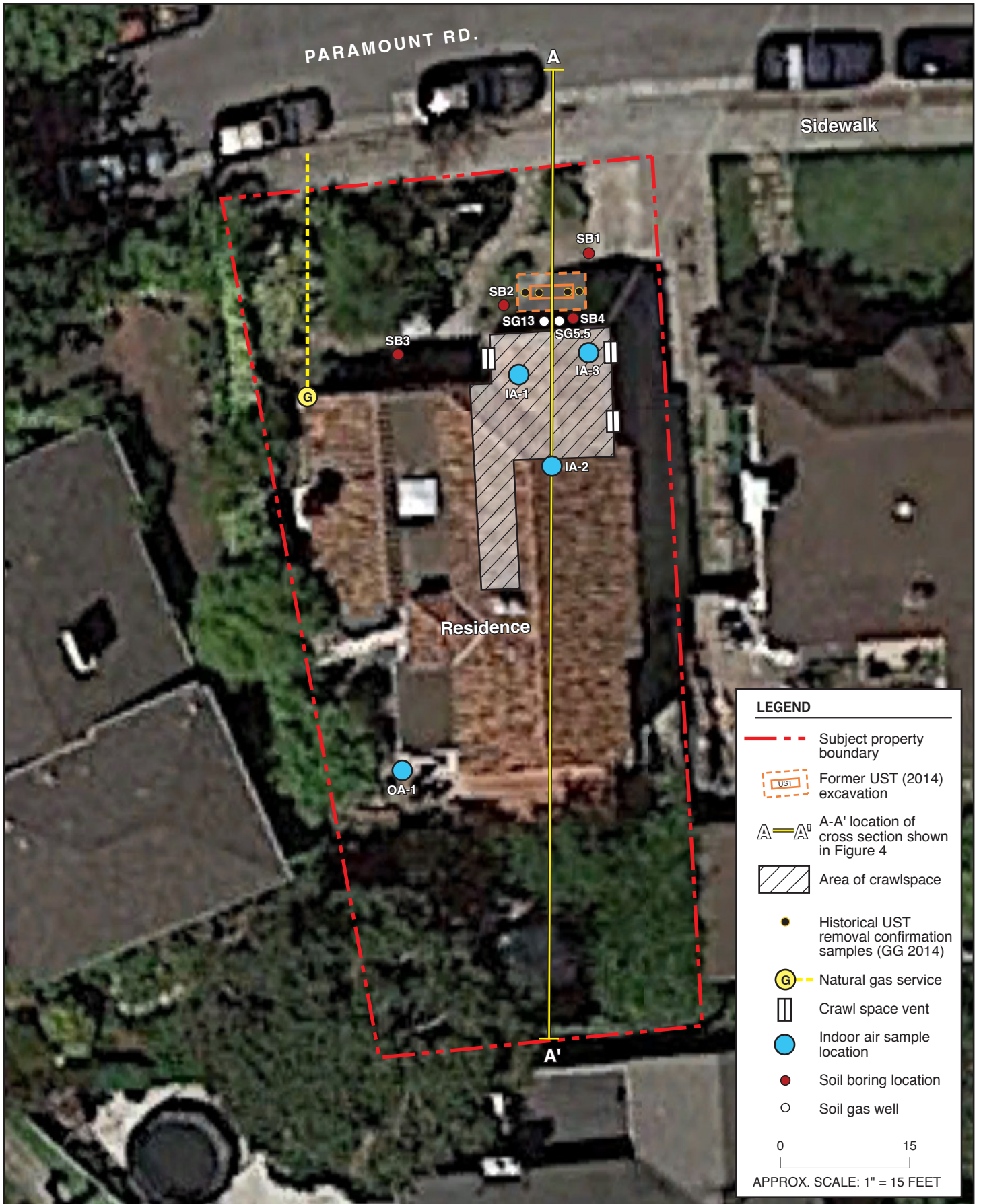
By: MJC

FEBRUARY 2015

**Figure 1**



2015-16-01



**LEGEND**

- - - Subject property boundary
- UST Former UST (2014) excavation
- A—A' A-A' location of cross section shown in Figure 4
- / / / / Area of crawlspace
- Historical UST removal confirmation samples (GG 2014)
- G Natural gas service
- | | Crawl space vent
- Indoor air sample location
- Soil boring location
- Soil gas well

0 15

APPROX. SCALE: 1" = 15 FEET



**SITE PLAN SHOWING LOCATIONS OF FORMER UST, HISTORICAL AND CURRENT INVESTIGATION SAMPLING**

**811 Paramount Road  
Oakland, CA**

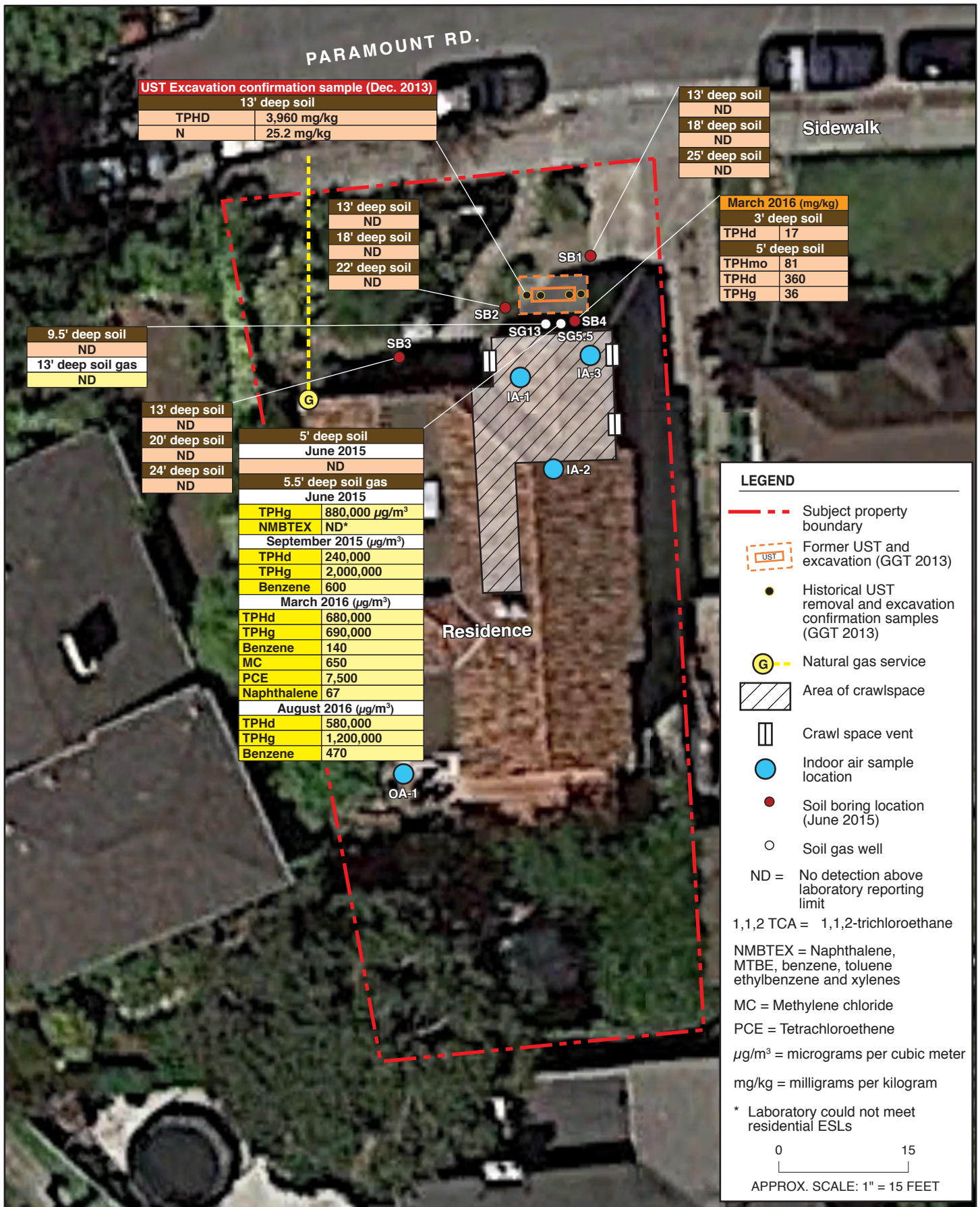
By: MJC

SEPTEMBER 2016

**Figure 2**



2015-16-14



2015-16-17



**DISTRIBUTION OF ANALYTICAL RESULTS OF SOIL AND SOIL GAS**

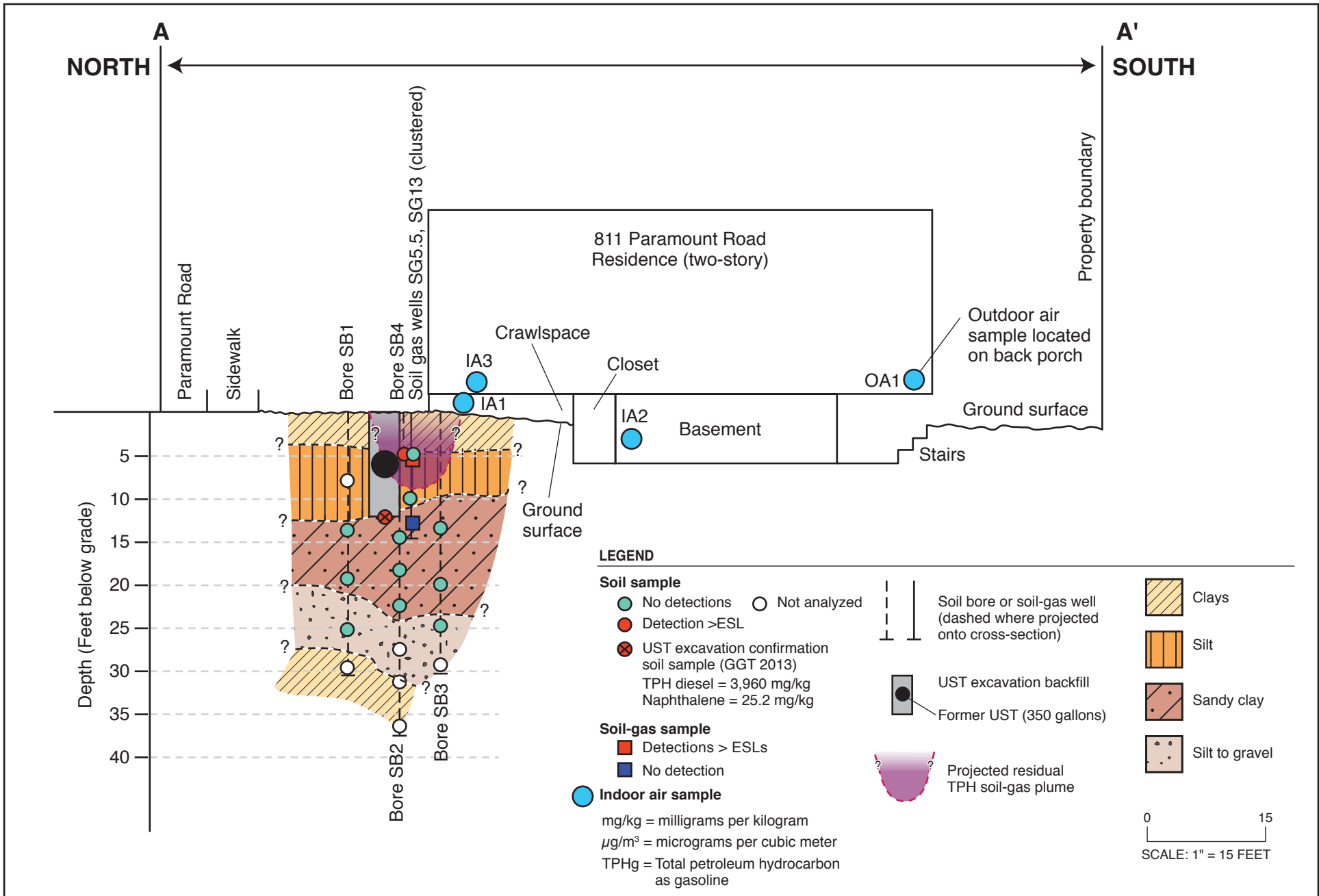
811 Paramount Road  
Oakland, CA

By: MJC

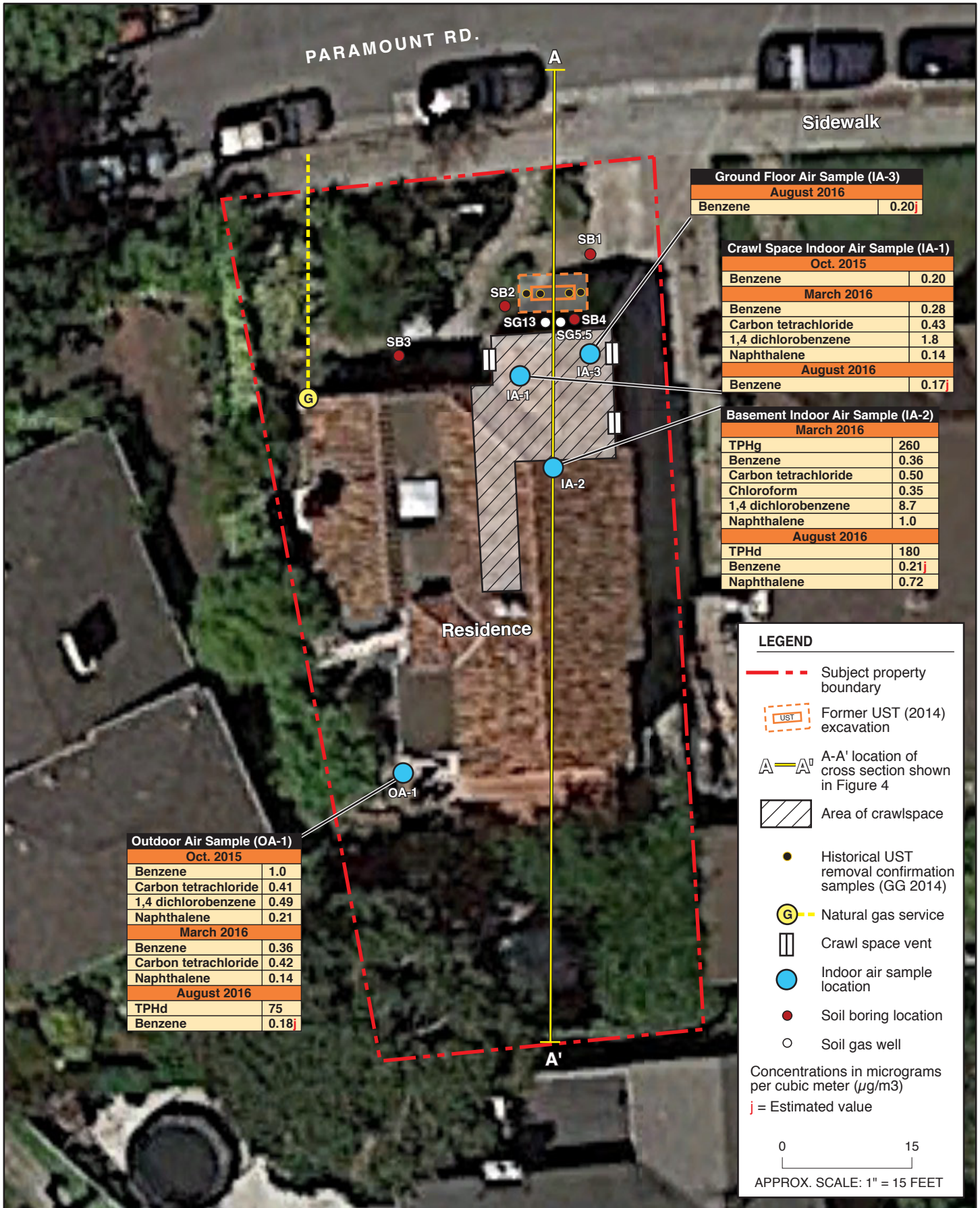
SEPTEMBER 2016

**Figure 3**









2015-16-18



**ANALYTICAL RESULT OF CONTAMINANT >ESLs IN INDOOR AND OUTDOOR AIR**

811 Paramount Road  
Oakland, CA

By: MJC

SEPTEMBER 2016

**Figure 5**



## **ATTACHMENT B**

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### **Analytical Summary Tables**

**Table 1**  
**Current and Historical Analytical Results of Detected Compounds in Soil-Gas Well SG-5.5**  
**811 Paramount Road, Oakland, California**

Sample I.D.	Contaminants (µg/m <sup>3</sup> )								Gases (%)		Leak Check (%)
	TPHd	TVHg	Benzene	Ethyl-benzene	Toluene	Xylenes	MTBE	Naphthalene	O <sub>2</sub>	Methane	Helium
<i>June 4, 2015</i>											
SG6	NA	<b>880,000</b>	<250	<250	<250	<250	<250	<250	3.0	0.21	<0.050
SG6s	NA	NA	NA	NA	NA	NA	NA	<2.7	NA	NA	<0.068*
<i>September 23, 2015</i>											
SG6SA	NA	<b>2,000,000</b>	<b>600</b>	340	94	410 j	<33	<43	NA	NA	NA
SG6s	<b>240,000</b>	NA	NA	NA	NA	NA	NA	<3.0	NA	NA	<0.050*
SG6Sd	<b>230,000</b>	NA	NA	NA	NA	NA	NA	<3.0	NA	NA	<0.050*
<i>March 31, 2016</i>											
SG5.5	NA	<b>690,000</b>	<b>140</b>	<110	7,500	390	<92	<b>67</b>	1.2	0.19	<0.050
SG5.5s	<b>460,000</b>	NA	NA	NA	NA	NA	NA	<17.0	NA	NA	0.13*
SG5.5sd	<b>680,000</b>	NA	NA	NA	NA	NA	NA	<17.0	NA	NA	0.13*
<i>August 25, 2016</i>											
SG5.5	NA	<b>1,200,000</b>	<b>470</b>	<110	<82	140	<78	<190	4.0	0.28	<0.11
SG5.5s	<b>410,000</b>	NA	NA	NA	NA	NA	NA	<5.0	NA	NA	<0.050*
SG5.5sd	<b>580,000</b>	NA	NA	NA	NA	NA	NA	<5.0	NA	NA	<0.050*
<b>ESL</b>	68,000	300,000	48	560	160,000	52,000	5,400	41	NR	NR	NR

Notes: 's' indicates sorbent tube TO17 analysis; d = indicates duplicate sample; \* = helium leak check during TO17 sorbent tube collection analyzed from in-line Summa  
ESL = Environmental Screening Level applicable to both shallow (<3 meters) and deep (>3 meters) soil-gas in residential areas where groundwater is considered a potential drinking water resource, above which additional investigation is recommended (Water Board 2016); Analytical results in **bold-face** type equal or exceed the applicable ESL;  
Analytical results shown as < and italicized indicate a non-detection or less than the laboratory detection limit; µg/m<sup>3</sup> = micrograms per cubic meter  
TVHg = total petroleum hydrocarbons as gasoline; TPHd = total petroleum hydrocarbons as diesel; NA = not analyzed or not applicable; NR = not relevant

**Table 2**  
**Current and Historical Analytical TO15 Results of Detected Compounds in Soil-Gas Well SG5.5**  
**811 Paramount Road, Oakland, California**

Analyte	Sample Collection Date			ESL
	September 23, 2015	March 31, 2016	August 25, 2016	
Acetone	<1,300	4,300	<210	15,000,000
Benzene	<b>600</b>	<b>140</b>	<b>470</b>	48
2-butanone (MEK)	1,800 j	<3,800	<260	2,600,000
t-butyl alcohol	<1,700	2,700	<260	NLP
Cumene (isopropylbenzene)	ND	ND	280	NLP
Cyclohexane	24,000	5,400	8,500	NLP
Dichlorodifluoromethane	<44	1,100	<110	NLP
trans-1,3-dichloropropene	<1.4	180	<98	NLP
Ethanol	<580	13,000	<160	NLP
Ethyl acetate	<29	96	ND	NLP
Ethylbenzene	340	<110	250	560
4-Ethyltoluene	130 j	<120	140	NLP
Heptane	11,000	2,100	7,600	NLP
Hexane	4,600	1,200	2,200	NLP
4-methyl-2-pentanone	170 j	<100	<89	NLP
Methylene chloride	110	<b>650</b>	<300	510
Naphthalene *	<43	<b>67</b>	<b>&lt;190</b>	41
Propylbenzene	ND	ND	310	NLP
Styrene	<25	150	<92	470,000
Tetrachloroethene	<55	<b>7,500</b>	<150	240
Toluene	94	7,500	<82	160,000
1,1,2-Trichloroethane	<12	<0.70	<31	88
1,2,4-Trimethylbenzene	130	130	130	NLP
1,3,5-Trimethylbenzene	150 j	<120	120	NLP
Xylenes	410 j	390	94	52,000
Helium (leak check)**	<0.050	<0.050	<0.11	NR

*Notes:*

*ESL= Environmental Screening Level for shallow soil-gas at residential sites (Water Board 2016).*

*NLP= no level published; Results in **bold-face** type exceed regulatory ESLs.*

*Analytical results shown as "<" and italicized indicate a non-detection (ND) or less than the laboratory detection limit.*

*All results are reported in micrograms per cubic meter (µg/m<sup>3</sup>)*

*j = indicates compound was detected below quantification limit and is a statistical estimated value.*

*\* = Refer to Table 1 for naphthalene analysis results by by method TO17*

*\*\* Helium tracer analyzed by Method ASTM194*

**Table 3**  
**Current and Historical Analytical Results of Detected Compounds in Indoor and Outdoor Air**  
**811 Paramount Road, Oakland, California**

Analyte	Indoor Air (Crawl Space) (IA-1)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Indoor Air (Living Room) (IA-3)	Outdoor Air (OA-1)	ESL
	October 30, 2015		April 1, 2016			August 26, 2016				
<i>Method TO17 Analysis *</i>										
TPH-diesel	<31	NA	NA	NA	NA	NA	180	NA	75	140
Naphthalene **	0.51 j	NA	NA	NA	NA	NA	0.60	NA	<0.085	0.083
<i>Method TO15 Analysis</i>										
TPH-gasoline	<36	<36	<36	260	<36	<71	<65	<54	<57	100
Acetone	<6.0	6.2	<6.0	62	<6.0	14	48	25	6.8	31,000
Acrolein	ND	ND	<0.58	5.3	<0.58	NA	NA	NA	NA	NLP
2-propanol	ND	ND	ND	ND	ND	2.3	7.7	1.6	<2.0	NLP
Acrylonitrile	<0.22	0.36	<0.22	<0.22	<0.22	NA	NA	NA	NA	NLP
Benzene	0.20	1.0	0.28	0.36	0.36	0.17j	0.21j	0.20j	0.18j	0.097
Bromodichloromethane	ND	ND	0.0074	0.022	<0.0070	<0.14	<0.16	<0.14	<0.17	0.076
2-Butanone (MEK)	ND	ND	<7.5	7.5	<7.5	2.4j	4.7	2.0	0.65j	5,200
Carbon Tetrachloride	0.062	0.41	0.43	0.50	0.42	0.49	0.62	0.53	0.48	0.067
Chloroform	0.034	0.17	0.18	0.35	0.11	0.22	0.22	0.54	0.096j	0.12
Chloromethane	<0.21	0.52	0.49	1.1	0.79	1.1	0.85	1.0	1.0	19
Cyclohexane	ND	ND	<1.8	2.8	<1.8	0.12j	2.1	0.22j	<0.57	NLP
1,3-Dichlorobenzene	ND	ND	1.8	8.7	0.063	<0.14	<0.14	<0.042	<0.13	NLP
1,4-Dichlorobenzene	<0.030	0.49	1.8	8.7	<0.030	0.048j	0.21	0.34	<0.20	0.26
Dichlorodifluoromethane	<0.50	2.4	2.2	2.2	2.2	2.6	2.4	2.7	2.6	NLP
Methylene chloride	ND	ND	ND	ND	ND	0.55j	0.49j	0.52j	0.52j	1.0
1,2-Dichloroethane	<0.0041	0.037	0.048	0.067	0.050	0.0141j	0.044j	0.047j	0.047j	0.11

Analyte	Indoor Air (Crawl Space) (IA-1)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Outdoor Air (OA-1)	Indoor Air (Crawl Space) (IA-1)	Indoor Air (Basement Room) (IA-2)	Indoor Air (Living Room) (IA-3)	Outdoor Air (OA-1)	ESL
	October 30, 2015		April 1, 2016			August 26, 2016				
<i>Method TO15 Analysis - continued</i>										
1,2-Dichloropropane	<0.0047	0.017	0.022	0.039	0.024	<0.18	<0.16	<0.13	<0.17	0.28
1,4-Dioxane	0.021	<0.018	0.041	<0.018	<0.018	<0.19	<0.17	<0.14	<0.18	0.36
Ethanol	ND	ND	ND	ND	ND	1.8	19	320	2.6	NLP
Ethylbenzene	<0.44	0.82	<0.44	<0.44	<0.44	0.079j	0.23	0.15	0.066 j	1.1
4-Ethyltoluene	ND	ND	ND	ND	ND	<0.17	<0.17	0.34j	<0.17	NLP
Heptane	ND	ND	ND	ND	ND	<0.16	1.2	0.20j	0.57j	NLP
Hexane	ND	ND	ND	ND	ND	0.14j	1.0	0.13j	<0.58	NLP
2-Hexanone	ND	ND	<0.42	0.67	<0.42	<0.18	<0.34	<0.28	<0.61	NLP
4-Methyl-2-Pentanone	ND	ND	<0.42	0.70	<0.42	<0.13	0.48j	0.018j	<0.68	NLP
Naphthalene	<0.050	<b>0.21</b>	<b>0.14</b>	<b>1.0</b>	<b>0.14</b>	0.074j	<b>0.72</b>	0.33j	0.093j	0.083
Styrene	ND	ND	<0.43	1.9	<0.43	<0.075	0.88	0.26j	<0.70	940
1,1,1,2-Tetrachlorethane	ND	ND	<0.0070	0.0091	0.0077	<0.0078	<0.0071	<0.0059	<0.0073	0.048
Tetrachloroethene	ND	ND	0.075	0.074	<0.069	0.061j	0.054j	0.037j	0.049j	0.48
Tetrahydrofuran	ND	ND	<0.60	12	<0.60	<0.44	0.49j	<0.33	<2.4	NLP
Toluene	0.56	3.9	0.92	3.0	0.65	0.44	2.8	13	0.58	310
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	0.016j	0.014j	0.026j	0.016j	1,000
Trichloroethene	ND	ND	ND	ND	ND	0.028j	0.066j	0.028j	0.021j	0.48
Trichloroflouromethane	<0.57	1.3	1.1	1.2	1.2	1.4	9.0	2.1	1.5	NLP
1,2,4-Trimethylbenzene	<0.50	1.0	<0.50	<0.50	<0.50	<0.17	0.44j	<0.20	<0.81	2.1
Xylenes	<1.3	3.6	<1.3	1.5	<1.3	0.3j	0.88	0.57	0.262j	100

Notes:

ESL= Environmental Screening Level for residential Indoor-Air (Water Board 2016, Tier 1). Results in **bold** type exceed regulatory ESLs;

NLP= no level published ; NA = not analyzed

\* = TO17 analysis reported to method dection limit, however method could not meet ESL for naphthalene; \*\* = refer to TO15 results for method TO17naphthalene analysis (Table 1).

j = indicates compound was detected below quantification limit and is a statistical estimated value; All results are reported in micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ )

**Table 4**  
**Historical Soil Sample Analytical Results**  
**811 Paramount Road, Oakland, California**

Sample ID	Depth (feet bgs)	TPHmo/ho	TPHd	TPHg	benzene	toluene	ethylbenzene	xylenes	MTBE	Naphthalene
<b>June 2, 2015 Soil Samples (mg/kg)</b>										
SG5.5-5	5	<1.2	<6.0	NA	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SG13-9.5	9.5	<1.2	<5.8	NA	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058
SB1-13	13	<1.2	<6.0	NA	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB1-18	18	<1.2	<6.0	NA	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB1-25	25	<1.2	<6.0	NA	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB2-13	13	<1.2	<5.7	NA	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057	<0.0057
SB2-18	18	<1.2	<5.8	NA	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058
SB2-22	22	<1.2	<5.6	NA	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056	<0.0056
SB3-13	13	<1.2	<6.0	NA	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060	<0.0060
SB3-20	20	<1.2	<5.8	NA	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058	<0.0058
SB3-24	24	<1.2	<5.9	NA	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059	<0.0059
<b>March 31, 2016 Soil Samples (mg/kg)</b>										
SB4-3.5	3	<5.9	17	<1.2	<0.0019	<0.0026	<0.0024	<0.0029	<0.0015	<0.00071
SB4-5.5	5	81	<b>360</b>	36	<0.0020	<0.0027	<0.0024	<0.0031	<0.0016	<0.00073
ESL	--	5,100	230	100	0.044	2.9	1.4	2.3	0.023	0.023

*Notes:*

*TPHmo* = total petroleum hydrocarbons as motor oil/hydraulic oil

*TPHd* = total petroleum hydrocarbons as diesel

*TPHg* = total petroleum hydrocarbons as gasoline

*MTBE* = methyl tertiary-butyl ether

*ESL* = Environmental Screening Levels for residential sites where groundwater is considered a potential drinking water resource (Water Board, 2016).

Analytical results shown as < italicized indicate a non-detection or less than the laboratory reporting limit.

All concentrations are expressed in milligrams per kilogram (mg/kg). Analytical results in bold type exceed the ESLs.

Sample concentrations reported on a dry weight basis. Moisture content in the soils ranged from 10.5 to 18.1 %. Moisture analyses included in Appendix D

bgs = below ground surface

**Table 5**  
**Historical Analytical Results of Detected VOCs in Soil Bore SB4 – March 31, 2016**  
**811 Paramount Road, Oakland, California**

Analyte	Sample ID		ESL
	SB4-3.5	SB4-5.5	
sec-butyl benzene	<0.0040	0.012	NLP
4-Isopropyl toluene	<0.0037	0.014	NLP
1,1,2,2-Tetrachloroethane	<0.0015	0.0017 j	0.018
1,2,3-Trichlorobenzene	<0.00083	0.0017 jb	1.5*

*Notes:*

*ESL= Environmental Screening Level for shallow soil at residential sites (Water Board 2016).*

*\* = ESL for 1,2,4-Trichlorobenzene shown*

*NLP= no level published; Results in **bold-face** type exceed regulatory ESLs.*

*Analytical results shown as < and italicized indicate a non-detection (ND) or less than the laboratory detection limit. All results are reported in milligram per kilogram (mg/kg) on a dry wt basis, moisture ranged from 10.5 to 18.1 %.*

*Moisture analyses included in Appendix D*

*j = indicates compound was detected below quantification limit and is a statistical estimated value.*

*b = analyte detected in the associated method blank and in the sample*



# **ATTACHMENT C**

---

## **Photo-documentation**



Subject : Helium gas meter reading during soil-gas sampling at SG5.5

Site: 811 Paramount Road, Oakland, California

Date Taken: August 24, 2016

Project No.: SES 2015-16

Photographer: H. Pietropaoli

Photo No.: 01



Subject: Ambient outdoor sampling for both method TO15 and TO17 analyses

Site: 811 Paramount Road, Oakland, California

Date Taken: August 24, 2016

Project No.: SES 2015-16

Photographer: H. Pietropaoli

Photo No.: 02

## **ATTACHMENT D**

---

### **Certified Laboratory Analytical Results and Chain-of-Custody Record**

9/13/2016

Mr. Henry Pietropaoli  
Stellar Environmental Solutions, Inc.  
2198 6th Street  
Suite 201  
Berkeley CA 94710

Project Name: Paramount  
Project #: 2015-16  
Workorder #: 1608456C

Dear Mr. Henry Pietropaoli

The following report includes the data for the above referenced project for sample(s) received on 8/30/2016 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner  
Project Manager

**WORK ORDER #: 1608456C**

Work Order Summary

<b>CLIENT:</b>	Mr. Henry Pietropaoli Stellar Environmental Solutions, Inc. 2198 6th Street Suite 201 Berkeley, CA 94710	<b>BILL TO:</b>	Mr. Henry Pietropaoli Stellar Environmental Solutions, Inc. 2198 6th Street Suite 201 Berkeley, CA 94710
<b>PHONE:</b>	510-644-3123	<b>P.O. #</b>	
<b>FAX:</b>		<b>PROJECT #</b>	2015-16 Paramount
<b>DATE RECEIVED:</b>	08/30/2016	<b>CONTACT:</b>	Kelly Buettner
<b>DATE COMPLETED:</b>	09/13/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
05A	SG5.5	Modified ASTM D-1946	2 "Hg	15 psi
06A	Lab Blank	Modified ASTM D-1946	NA	NA
06B	Lab Blank	Modified ASTM D-1946	NA	NA
07A	LCS	Modified ASTM D-1946	NA	NA
07AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 09/13/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified ASTM D-1946**  
**Stellar Environmental Solutions, Inc.**  
**Workorder# 1608456C**

One 1 Liter Summa Canister (100% Certified) sample was received on August 30, 2016. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections $> 5 X$ 's the RL.

**Receiving Notes**

There were no receiving discrepancies.

---

### **Analytical Notes**

There were no analytical discrepancies.

### **Definition of Data Qualifying Flags**

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds**  
**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

**Client Sample ID: SG5.5**

**Lab ID#: 1608456C-05A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.22	4.0
Methane	0.00022	0.28





Air Toxics

Client Sample ID: SG5.5

Lab ID#: 1608456C-05A

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

File Name:	10090813	Date of Collection:	8/25/16 10:15:00 AM
Dil. Factor:	2.17	Date of Analysis:	9/8/16 03:04 PM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.22	4.0
Methane	0.00022	0.28
Helium	0.11	Not Detected

**Container Type: 1 Liter Summa Canister (100% Certified)**



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1608456C-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10090804	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/8/16 10:03 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1608456C-06B

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

File Name:	10090803c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	9/8/16 09:18 AM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Helium	0.050	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 1608456C-07A

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

File Name:	10090802	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/8/16 08:41 AM

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Oxygen	98	85-115
Methane	103	85-115
Helium	102	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1608456C-07AA

**NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

File Name:	10090815	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 9/8/16 04:04 PM

Compound	%Recovery	Method Limits
Oxygen	98	85-115
Methane	100	85-115
Helium	102	85-115

Container Type: NA - Not Applicable

**eurofins** Air Toxics

2 boxes

Fedex Tracking # 8076 0434 4201  
8076 0434 4223

**Sample Transportation Notice**

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, state, federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4927

180 BLUE RAVINE ROAD, SUITE B  
FOLSOM, CA 95630-4719  
(916) 986-1000 FAX (916) 986-1020

Page 1 of 1

Project Manager H. Pietropoli  
 Collected by: (Print and Sign) H. Pietropoli  
 Company Stellar Environmental Email hpietropoli@stellar-environmental.com  
 Address 2198 6th City Berkeley State CA Zip \_\_\_\_\_  
 Phone 510 644 3123 Fax 510 644 3859

Project Info:	Turn Around Time:	Lab Use Only
P.O. # <u>environmental.com</u>	<input checked="" type="checkbox"/> Normal	Pressurized by _____
Project # <u>2015-16</u>	<input type="checkbox"/> Rush	Date _____
Project Name <u>PARAMOUNT</u>	spec/	Pressurization Gas: _____
		N He

Lab ID	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Recent	Final (2016)
024	OA1	25304	8/26/16	0831	TOLX + Naph, TPHg	-30	-0.5		
024	IA1	34440		0838		-30	0		
034	IA2	32107		0835		-30	0.5		
040	IA3	12666		0836		-30	-1		
052	SG5.5	1L1791	8/25/16	1015	Vt, He, O2, CH4	-30	-5		
	Purge Can - 6L	4242	10/16						

V.V.  
8/11/16

Quote # Q160724601R1 8/8/16  
 \* RL/MOL must meet \* residential ESK \*

Relinquished by: (signature) <u>Hary Pietropoli</u> Date/Time <u>10/26/16/1040</u>	Received by: (signature) <u>1 - King</u> Date/Time <u>8/30/16</u>	Notes: <input checked="" type="checkbox"/> He maintained @ 27-30% in shroud Email results to: <u>hpietropoli@stellar-environmental.com</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name <u>Fedex</u>	Air Bill # _____	Temp (°C) <u>10/16</u>	Condition <u>Good</u>	Custody seals intact? Yes No <u>None</u>	Work Order # <u>16084506</u>
--------------	---------------------------	------------------	------------------------	-----------------------	--	------------------------------

\* please email results

9/22/2016

Mr. Henry Pietropaoli  
Stellar Environmental Solutions, Inc.  
2198 6th Street  
Suite 201  
Berkeley CA 94710

Project Name: Paramount  
Project #: 2015-16  
Workorder #: 1608456BR1

Dear Mr. Henry Pietropaoli

The following report includes the data for the above referenced project for sample(s) received on 8/30/2016 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner  
Project Manager

**WORK ORDER #: 1608456BR1**

Work Order Summary

<b>CLIENT:</b>	Mr. Henry Pietropaoli Stellar Environmental Solutions, Inc. 2198 6th Street Suite 201 Berkeley, CA 94710	<b>BILL TO:</b>	Mr. Henry Pietropaoli Stellar Environmental Solutions, Inc. 2198 6th Street Suite 201 Berkeley, CA 94710
<b>PHONE:</b>	510-644-3123	<b>P.O. #</b>	
<b>FAX:</b>		<b>PROJECT #</b>	2015-16 Paramount
<b>DATE RECEIVED:</b>	08/30/2016	<b>CONTACT:</b>	Kelly Buettner
<b>DATE COMPLETED:</b>	09/13/2016		
<b>DATE REISSUED:</b>	09/22/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
05A	SG5.5	TO-15	2 "Hg	15 psi
06A	Lab Blank	TO-15	NA	NA
07A	CCV	TO-15	NA	NA
08A	LCS	TO-15	NA	NA
08AA	LCSD	TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 09/22/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020



**LABORATORY NARRATIVE**  
**EPA Method TO-15**  
**Stellar Environmental Solutions, Inc.**  
**Workorder# 1608456BR1**

One 1 Liter Summa Canister (100% Certified) sample was received on August 30, 2016. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Due to the linear calibration range of the instrument, the reporting limit for Chloroethane was raised from 20ppbv to 50ppbv.

Due to the linear calibration range of the instrument, the reporting limit for Heptane was raised from 5.0ppbv to 20ppbv.

Dilution was performed on sample SG5.5 due to matrix interference.

The workorder was reissued on 09/22/16 as follows:

1. To report estimated values for target compound hits that are below the reporting limit but greater than the method detection limit. All the canisters used for this project have been certified to the reporting limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.
2. To report the data using a different format.

**Definition of Data Qualifying Flags**

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV  
N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	SG5.5	<b>Date/Time Analyzed:</b>	9/12/16 08:30 PM
<b>Lab ID:</b>	1608456BR1-05A	<b>Dilution Factor:</b>	4.34
<b>Date/Time Collecte</b>	8/25/16 10:15 AM	<b>Instrument/Filename:</b>	msd14.i / 14091221r1
<b>Media:</b>	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	28	71	120	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	19	89	150	Not Detected
1,1,2-Trichloroethane	79-00-5	31	71	120	Not Detected
1,1-Dichloroethane	75-34-3	15	53	88	Not Detected
1,1-Dichloroethene	75-35-4	15	52	86	Not Detected
1,2,4-Trichlorobenzene	120-82-1	260	260	640	Not Detected
1,2,4-Trimethylbenzene	95-63-6	17	64	110	130
1,2-Dibromoethane (EDB)	106-93-4	34	100	170	Not Detected
1,2-Dichlorobenzene	95-50-1	33	78	130	Not Detected
1,2-Dichloroethane	107-06-2	26	53	88	Not Detected
1,2-Dichloropropane	78-87-5	32	60	100	Not Detected
1,3,5-Trimethylbenzene	108-67-8	13	64	110	120
1,3-Butadiene	106-99-0	20	29	48	Not Detected
1,3-Dichlorobenzene	541-73-1	16	78	130	Not Detected
1,4-Dichlorobenzene	106-46-7	17	78	130	Not Detected
1,4-Dioxane	123-91-1	53	78	310	Not Detected
2,2,4-Trimethylpentane	540-84-1	14	61	100	Not Detected
2-Butanone (Methyl Ethyl Ketone)	78-93-3	59	64	260	Not Detected
2-Hexanone	591-78-6	40	89	360	Not Detected
2-Propanol	67-63-0	27	53	210	Not Detected
3-Chloropropene	107-05-1	79	79	270	Not Detected
4-Ethyltoluene	622-96-8	10	64	110	140
4-Methyl-2-pentanone	108-10-1	69	69	89	Not Detected
Acetone	67-64-1	28	52	210	Not Detected

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	SG5.5	<b>Date/Time Analyzed:</b>	9/12/16 08:30 PM
<b>Lab ID:</b>	1608456BR1-05A	<b>Dilution Factor:</b>	4.34
<b>Date/Time Collecte</b>	8/25/16 10:15 AM	<b>Instrument/Filename:</b>	msd14.i / 14091221r1
<b>Media:</b>	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
alpha-Chlorotoluene	100-44-7	21	67	110	Not Detected
Benzene	71-43-2	12	42	69	470
Bromodichloromethane	75-27-4	24	87	140	Not Detected
Bromoform	75-25-2	39	130	220	Not Detected
Bromomethane	74-83-9	27	50	340	Not Detected
Carbon Disulfide	75-15-0	13	40	270	Not Detected
Carbon Tetrachloride	56-23-5	33	82	140	Not Detected
Chlorobenzene	108-90-7	20	60	100	Not Detected
Chloroethane	75-00-3	94	94	570	Not Detected
Chloroform	67-66-3	33	64	100	Not Detected
Chloromethane	74-87-3	44	45	180	Not Detected
cis-1,2-Dichloroethene	156-59-2	20	52	86	Not Detected
cis-1,3-Dichloropropene	10061-01-5	28	59	98	Not Detected
Cumene	98-82-8	12	64	110	280
Cyclohexane	110-82-7	29	45	75	8500
Dibromochloromethane	124-48-1	25	110	180	Not Detected
Ethanol	64-17-5	31	41	160	Not Detected
Ethyl Benzene	100-41-4	17	56	94	250
Freon 11	75-69-4	20	73	120	Not Detected
Freon 113	76-13-1	23	100	170	Not Detected
Freon 114	76-14-2	37	91	150	Not Detected
Freon 12	75-71-8	35	64	110	Not Detected
Heptane	142-82-5	14	53	360	7600
Hexachlorobutadiene	87-68-3	500	500	920	Not Detected

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	SG5.5	<b>Date/Time Analyzed:</b>	9/12/16 08:30 PM
<b>Lab ID:</b>	1608456BR1-05A	<b>Dilution Factor:</b>	4.34
<b>Date/Time Collecte</b>	8/25/16 10:15 AM	<b>Instrument/Filename:</b>	msd14.i / 14091221r1
<b>Media:</b>	1 Liter Summa Canister (100% Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	110-54-3	20	46	76	2200
m,p-Xylene	108-38-3	15	56	94	140
Methyl tert-butyl ether	1634-04-4	20	47	78	Not Detected
Methylene Chloride	75-09-2	28	45	300	Not Detected
Naphthalene	91-20-3	190	190	450	Not Detected
o-Xylene	95-47-6	25	56	94	63 J
Propylbenzene	103-65-1	11	64	110	310
Styrene	100-42-5	16	55	92	Not Detected
Tetrachloroethene	127-18-4	48	88	150	Not Detected
Tetrahydrofuran	109-99-9	22	38	64	Not Detected
Toluene	108-88-3	9.6	49	82	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	3600	1200000
trans-1,2-Dichloroethene	156-60-5	31	52	86	Not Detected
trans-1,3-Dichloropropene	10061-02-6	18	59	98	Not Detected
Trichloroethene	79-01-6	24	70	120	Not Detected
Vinyl Chloride	75-01-4	14	33	55	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	129
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	105

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	Lab Blank	<b>Date/Time Analyzed:</b>	9/12/16 11:50 AM
<b>Lab ID:</b>	1608456BR1-06A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091206c
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	6.5	16	27	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	4.3	20	34	Not Detected
1,1,2-Trichloroethane	79-00-5	7.2	16	27	Not Detected
1,1-Dichloroethane	75-34-3	3.5	12	20	Not Detected
1,1-Dichloroethene	75-35-4	3.5	12	20	Not Detected
1,2,4-Trichlorobenzene	120-82-1	61	61	150	Not Detected
1,2,4-Trimethylbenzene	95-63-6	4.0	15	24	Not Detected
1,2-Dibromoethane (EDB)	106-93-4	7.8	23	38	Not Detected
1,2-Dichlorobenzene	95-50-1	7.6	18	30	Not Detected
1,2-Dichloroethane	107-06-2	6.0	12	20	Not Detected
1,2-Dichloropropane	78-87-5	7.5	14	23	Not Detected
1,3,5-Trimethylbenzene	108-67-8	3.1	15	24	Not Detected
1,3-Butadiene	106-99-0	4.6	6.6	11	Not Detected
1,3-Dichlorobenzene	541-73-1	3.7	18	30	Not Detected
1,4-Dichlorobenzene	106-46-7	4.0	18	30	Not Detected
1,4-Dioxane	123-91-1	12	18	72	Not Detected
2,2,4-Trimethylpentane	540-84-1	3.3	14	23	Not Detected
2-Butanone (Methyl Ethyl Ketone)	78-93-3	14	15	59	Not Detected
2-Hexanone	591-78-6	9.3	20	82	Not Detected
2-Propanol	67-63-0	6.3	12	49	Not Detected
3-Chloropropene	107-05-1	18	18	63	Not Detected
4-Ethyltoluene	622-96-8	2.3	15	24	Not Detected
4-Methyl-2-pentanone	108-10-1	16	16	20	Not Detected
Acetone	67-64-1	6.5	12	48	Not Detected

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	Lab Blank	<b>Date/Time Analyzed:</b>	9/12/16 11:50 AM
<b>Lab ID:</b>	1608456BR1-06A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091206c
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
alpha-Chlorotoluene	100-44-7	4.8	16	26	Not Detected
Benzene	71-43-2	2.9	9.6	16	Not Detected
Bromodichloromethane	75-27-4	5.4	20	34	Not Detected
Bromoform	75-25-2	8.9	31	52	Not Detected
Bromomethane	74-83-9	6.3	12	78	Not Detected
Carbon Disulfide	75-15-0	3.0	9.3	62	Not Detected
Carbon Tetrachloride	56-23-5	7.6	19	31	Not Detected
Chlorobenzene	108-90-7	4.6	14	23	Not Detected
Chloroethane	75-00-3	22	22	130	Not Detected
Chloroform	67-66-3	7.7	15	24	Not Detected
Chloromethane	74-87-3	10	10	41	Not Detected
cis-1,2-Dichloroethene	156-59-2	4.7	12	20	Not Detected
cis-1,3-Dichloropropene	10061-01-5	6.6	14	23	Not Detected
Cumene	98-82-8	2.7	15	24	Not Detected
Cyclohexane	110-82-7	6.7	10	17	Not Detected
Dibromochloromethane	124-48-1	5.8	26	42	Not Detected
Ethanol	64-17-5	7.2	9.4	38	Not Detected
Ethyl Benzene	100-41-4	3.9	13	22	Not Detected
Freon 11	75-69-4	4.7	17	28	Not Detected
Freon 113	76-13-1	5.3	23	38	Not Detected
Freon 114	76-14-2	8.4	21	35	Not Detected
Freon 12	75-71-8	8.0	15	25	Not Detected
Heptane	142-82-5	3.3	12	82	Not Detected
Hexachlorobutadiene	87-68-3	120	120	210	Not Detected

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	Lab Blank	<b>Date/Time Analyzed:</b>	9/12/16 11:50 AM
<b>Lab ID:</b>	1608456BR1-06A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091206c
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	110-54-3	4.7	10	18	Not Detected
m,p-Xylene	108-38-3	3.4	13	22	Not Detected
Methyl tert-butyl ether	1634-04-4	4.6	11	18	Not Detected
Methylene Chloride	75-09-2	6.6	10	69	Not Detected
Naphthalene	91-20-3	44	44	100	Not Detected
o-Xylene	95-47-6	5.7	13	22	Not Detected
Propylbenzene	103-65-1	2.5	15	24	Not Detected
Styrene	100-42-5	3.7	13	21	Not Detected
Tetrachloroethene	127-18-4	11	20	34	Not Detected
Tetrahydrofuran	109-99-9	5.2	8.8	15	Not Detected
Toluene	108-88-3	2.2	11	19	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	820	Not Detected
trans-1,2-Dichloroethene	156-60-5	7.0	12	20	Not Detected
trans-1,3-Dichloropropene	10061-02-6	4.1	14	23	Not Detected
Trichloroethene	79-01-6	5.7	16	27	Not Detected
Vinyl Chloride	75-01-4	3.1	7.7	13	Not Detected

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	101



EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	CCV	<b>Date/Time Analyzed:</b>	9/12/16 09:17 AM
<b>Lab ID:</b>	1608456BR1-07A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091202
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	111
1,1,2,2-Tetrachloroethane	79-34-5	98
1,1,2-Trichloroethane	79-00-5	106
1,1-Dichloroethane	75-34-3	115
1,1-Dichloroethene	75-35-4	115
1,2,4-Trichlorobenzene	120-82-1	108
1,2,4-Trimethylbenzene	95-63-6	102
1,2-Dibromoethane (EDB)	106-93-4	106
1,2-Dichlorobenzene	95-50-1	103
1,2-Dichloroethane	107-06-2	99
1,2-Dichloropropane	78-87-5	98
1,3,5-Trimethylbenzene	108-67-8	115
1,3-Butadiene	106-99-0	97
1,3-Dichlorobenzene	541-73-1	101
1,4-Dichlorobenzene	106-46-7	106
1,4-Dioxane	123-91-1	104
2,2,4-Trimethylpentane	540-84-1	115
2-Butanone (Methyl Ethyl Ketone)	78-93-3	109
2-Hexanone	591-78-6	113
2-Propanol	67-63-0	115
3-Chloropropene	107-05-1	118
4-Ethyltoluene	622-96-8	112
4-Methyl-2-pentanone	108-10-1	106
Acetone	67-64-1	122

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	CCV	<b>Date/Time Analyzed:</b>	9/12/16 09:17 AM
<b>Lab ID:</b>	1608456BR1-07A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091202
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
alpha-Chlorotoluene	100-44-7	110
Benzene	71-43-2	107
Bromodichloromethane	75-27-4	100
Bromoform	75-25-2	103
Bromomethane	74-83-9	122
Carbon Disulfide	75-15-0	103
Carbon Tetrachloride	56-23-5	119
Chlorobenzene	108-90-7	99
Chloroethane	75-00-3	94
Chloroform	67-66-3	111
Chloromethane	74-87-3	102
cis-1,2-Dichloroethene	156-59-2	110
cis-1,3-Dichloropropene	10061-01-5	98
Cumene	98-82-8	110
Cyclohexane	110-82-7	120
Dibromochloromethane	124-48-1	102
Ethanol	64-17-5	108
Ethyl Benzene	100-41-4	106
Freon 11	75-69-4	118
Freon 113	76-13-1	108
Freon 114	76-14-2	98
Freon 12	75-71-8	98
Heptane	142-82-5	102
Hexachlorobutadiene	87-68-3	105

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	CCV	<b>Date/Time Analyzed:</b>	9/12/16 09:17 AM
<b>Lab ID:</b>	1608456BR1-07A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091202
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Hexane	110-54-3	119
m,p-Xylene	108-38-3	109
Methyl tert-butyl ether	1634-04-4	116
Methylene Chloride	75-09-2	118
Naphthalene	91-20-3	104
o-Xylene	95-47-6	108
Propylbenzene	103-65-1	104
Styrene	100-42-5	110
Tetrachloroethene	127-18-4	105
Tetrahydrofuran	109-99-9	110
Toluene	108-88-3	104
TPH ref. to Gasoline (MW=100)	9999-9999-038	100
trans-1,2-Dichloroethene	156-60-5	96
trans-1,3-Dichloropropene	10061-02-6	107
Trichloroethene	79-01-6	106
Vinyl Chloride	75-01-4	94

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	100
4-Bromofluorobenzene	460-00-4	70-130	102
Toluene-d8	2037-26-5	70-130	99

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	LCS	<b>Date/Time Analyzed:</b>	9/12/16 09:58 AM
<b>Lab ID:</b>	1608456BR1-08A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091203
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	117
1,1,2,2-Tetrachloroethane	79-34-5	104
1,1,2-Trichloroethane	79-00-5	103
1,1-Dichloroethane	75-34-3	112
1,1-Dichloroethene	75-35-4	117
1,2,4-Trichlorobenzene	120-82-1	88
1,2,4-Trimethylbenzene	95-63-6	102
1,2-Dibromoethane (EDB)	106-93-4	106
1,2-Dichlorobenzene	95-50-1	102
1,2-Dichloroethane	107-06-2	97
1,2-Dichloropropane	78-87-5	98
1,3,5-Trimethylbenzene	108-67-8	118
1,3-Butadiene	106-99-0	93
1,3-Dichlorobenzene	541-73-1	104
1,4-Dichlorobenzene	106-46-7	103
1,4-Dioxane	123-91-1	101
2,2,4-Trimethylpentane	540-84-1	114
2-Butanone (Methyl Ethyl Ketone)	78-93-3	103
2-Hexanone	591-78-6	115
2-Propanol	67-63-0	117
3-Chloropropene	107-05-1	114
4-Ethyltoluene	622-96-8	114
4-Methyl-2-pentanone	108-10-1	110
Acetone	67-64-1	117

\* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	LCS	<b>Date/Time Analyzed:</b>	9/12/16 09:58 AM
<b>Lab ID:</b>	1608456BR1-08A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091203
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
alpha-Chlorotoluene	100-44-7	114
Benzene	71-43-2	109
Bromodichloromethane	75-27-4	102
Bromoform	75-25-2	109
Bromomethane	74-83-9	116
Carbon Disulfide	75-15-0	89
Carbon Tetrachloride	56-23-5	118
Chlorobenzene	108-90-7	96
Chloroethane	75-00-3	96
Chloroform	67-66-3	111
Chloromethane	74-87-3	106
cis-1,2-Dichloroethene	156-59-2	111
cis-1,3-Dichloropropene	10061-01-5	96
Cumene	98-82-8	113
Cyclohexane	110-82-7	120
Dibromochloromethane	124-48-1	106
Ethanol	64-17-5	120
Ethyl Benzene	100-41-4	104
Freon 11	75-69-4	121
Freon 113	76-13-1	110
Freon 114	76-14-2	103
Freon 12	75-71-8	102
Heptane	142-82-5	112
Hexachlorobutadiene	87-68-3	86

\* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	LCS	<b>Date/Time Analyzed:</b>	9/12/16 09:58 AM
<b>Lab ID:</b>	1608456BR1-08A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091203
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Hexane	110-54-3	120
m,p-Xylene	108-38-3	114
Methyl tert-butyl ether	1634-04-4	110
Methylene Chloride	75-09-2	114
Naphthalene	91-20-3	89
o-Xylene	95-47-6	114
Propylbenzene	103-65-1	109
Styrene	100-42-5	114
Tetrachloroethene	127-18-4	108
Tetrahydrofuran	109-99-9	100
Toluene	108-88-3	104
TPH ref. to Gasoline (MW=100)	9999-9999-038	Not Spiked
trans-1,2-Dichloroethene	156-60-5	106
trans-1,3-Dichloropropene	10061-02-6	112
Trichloroethene	79-01-6	105
Vinyl Chloride	75-01-4	97

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	97
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	102

\* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	LCSD	<b>Date/Time Analyzed:</b>	9/12/16 10:43 AM
<b>Lab ID:</b>	1608456BR1-08AA	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091204
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	114
1,1,2,2-Tetrachloroethane	79-34-5	99
1,1,2-Trichloroethane	79-00-5	105
1,1-Dichloroethane	75-34-3	118
1,1-Dichloroethene	75-35-4	120
1,2,4-Trichlorobenzene	120-82-1	83
1,2,4-Trimethylbenzene	95-63-6	98
1,2-Dibromoethane (EDB)	106-93-4	104
1,2-Dichlorobenzene	95-50-1	98
1,2-Dichloroethane	107-06-2	100
1,2-Dichloropropane	78-87-5	100
1,3,5-Trimethylbenzene	108-67-8	111
1,3-Butadiene	106-99-0	94
1,3-Dichlorobenzene	541-73-1	99
1,4-Dichlorobenzene	106-46-7	100
1,4-Dioxane	123-91-1	105
2,2,4-Trimethylpentane	540-84-1	116
2-Butanone (Methyl Ethyl Ketone)	78-93-3	109
2-Hexanone	591-78-6	110
2-Propanol	67-63-0	122
3-Chloropropene	107-05-1	116
4-Ethyltoluene	622-96-8	110
4-Methyl-2-pentanone	108-10-1	108
Acetone	67-64-1	121

\* % Recovery is calculated using unrounded analytical results.

EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	LCSD	<b>Date/Time Analyzed:</b>	9/12/16 10:43 AM
<b>Lab ID:</b>	1608456BR1-08AA	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091204
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
alpha-Chlorotoluene	100-44-7	111
Benzene	71-43-2	110
Bromodichloromethane	75-27-4	104
Bromoform	75-25-2	105
Bromomethane	74-83-9	122
Carbon Disulfide	75-15-0	92
Carbon Tetrachloride	56-23-5	116
Chlorobenzene	108-90-7	95
Chloroethane	75-00-3	95
Chloroform	67-66-3	113
Chloromethane	74-87-3	108
cis-1,2-Dichloroethene	156-59-2	112
cis-1,3-Dichloropropene	10061-01-5	97
Cumene	98-82-8	110
Cyclohexane	110-82-7	119
Dibromochloromethane	124-48-1	101
Ethanol	64-17-5	123
Ethyl Benzene	100-41-4	107
Freon 11	75-69-4	124
Freon 113	76-13-1	110
Freon 114	76-14-2	99
Freon 12	75-71-8	104
Heptane	142-82-5	113
Hexachlorobutadiene	87-68-3	86

\* % Recovery is calculated using unrounded analytical results.



EPA METHOD TO-15 GC/MS  
Paramount

<b>Client ID:</b>	LCSD	<b>Date/Time Analyzed:</b>	9/12/16 10:43 AM
<b>Lab ID:</b>	1608456BR1-08AA	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd14.i / 14091204
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Hexane	110-54-3	118
m,p-Xylene	108-38-3	111
Methyl tert-butyl ether	1634-04-4	114
Methylene Chloride	75-09-2	118
Naphthalene	91-20-3	86
o-Xylene	95-47-6	105
Propylbenzene	103-65-1	104
Styrene	100-42-5	112
Tetrachloroethene	127-18-4	102
Tetrahydrofuran	109-99-9	102
Toluene	108-88-3	106
TPH ref. to Gasoline (MW=100)	9999-9999-038	Not Spiked
trans-1,2-Dichloroethene	156-60-5	104
trans-1,3-Dichloropropene	10061-02-6	108
Trichloroethene	79-01-6	107
Vinyl Chloride	75-01-4	98

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	99
4-Bromofluorobenzene	460-00-4	70-130	101
Toluene-d8	2037-26-5	70-130	101

\* % Recovery is calculated using unrounded analytical results.

9/15/2016

Mr. Henry Pietropaoli  
Stellar Environmental Solutions, Inc.  
2198 6th Street  
Suite 201  
Berkeley CA 94710

Project Name: Paramount  
Project #: 2015-16  
Workorder #: 1608456AR1

Dear Mr. Henry Pietropaoli

The following report includes the data for the above referenced project for sample(s) received on 8/30/2016 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kelly Buettner  
Project Manager

**WORK ORDER #: 1608456AR1**

Work Order Summary

<b>CLIENT:</b>	Mr. Henry Pietropaoli Stellar Environmental Solutions, Inc. 2198 6th Street Suite 201 Berkeley, CA 94710	<b>BILL TO:</b>	Mr. Henry Pietropaoli Stellar Environmental Solutions, Inc. 2198 6th Street Suite 201 Berkeley, CA 94710
<b>PHONE:</b>	510-644-3123	<b>P.O. #</b>	
<b>FAX:</b>		<b>PROJECT #</b>	2015-16 Paramount
<b>DATE RECEIVED:</b>	08/30/2016	<b>CONTACT:</b>	Kelly Buettner
<b>DATE COMPLETED:</b>	09/13/2016		
<b>DATE REISSUED:</b>	09/15/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	OA1	Modified TO-15	5.5 "Hg	5.1 psi
01B	OA1	Modified TO-15	5.5 "Hg	5.1 psi
02A	IA1	Modified TO-15	6.9 "Hg	5 psi
02B	IA1	Modified TO-15	6.9 "Hg	5 psi
03A	IA2	Modified TO-15	4.9 "Hg	5 psi
03B	IA2	Modified TO-15	4.9 "Hg	5 psi
04A	IA3	Modified TO-15	0.2 psi	4.9 psi
04B	IA3	Modified TO-15	0.2 psi	4.9 psi
05A	Lab Blank	Modified TO-15	NA	NA
05B	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
06B	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA
07AA	LCSD	Modified TO-15	NA	NA
07B	LCS	Modified TO-15	NA	NA
07BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY:   
 \_\_\_\_\_  
 Technical Director

DATE: 09/15/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704434-15-9, UT NELAP CA0093332015-6, VA NELAP - 8113, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2015, Expiration date: 10/17/2016.

Eurofins Air Toxics Inc. certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, Inc.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE  
Modified TO-15 Full Scan/SIM  
Stellar Environmental Solutions, Inc.  
Workorder# 1608456AR1**

Four 6 Liter Summa Canister (SIM Certified) and one 1 Liter Summa Canister (100% Certified) samples were received on August 30, 2016. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	<math>\leq 30\%</math> RSD with 2 compounds allowed out to <math>< 40\%</math> RSD	For Full Scan: 30% RSD with 4 compounds allowed out to <math>< 40\%</math> RSD  For SIM: Project specific; default criteria is <math>\leq 30\%</math> RSD with 10% of compounds allowed out to <math>< 40\%</math> RSD
Daily Calibration	+/- 30% Difference	For Full Scan: <math>\leq 30\%</math> Difference with four allowed out up to <math>\leq 40\%</math>; flag and narrate outliers  For SIM: Project specific; default criteria is <math>\leq 30\%</math> Difference with 10% of compounds allowed out up to <math>\leq 40\%</math>; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

**Receiving Notes**

Despite the use of flow controllers for sample collection, the final canister vacuums for sample IA3 was measured at ambient pressure. These ambient pressure readings were confirmed by the laboratory upon sample receipt.

**Analytical Notes**

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

The workorder was reissued on 09/15/2016 as follows:

1. To report estimated values for target compound hits that are below the reporting limit but greater than the method detection limit. All the canisters used for this project have been certified to the reporting limit for the target analytes included in this workorder. Concentrations that are below the level at which the canister was certified may be false positives.

2. To report the data using a different format.

### **Definition of Data Qualifying Flags**

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative explanation

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	OA1	<b>Date/Time Analyzed:</b>	9/9/16 10:33 AM
<b>Lab ID:</b>	1608456AR1-01A	<b>Dilution Factor:</b>	1.65
<b>Date/Time Collecte</b>	8/26/16 08:31 AM	<b>Instrument/Filename:</b>	msd20.i / 20090910r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trichlorobenzene	120-82-1	0.25	1.2	6.1	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.16	0.32	0.81	Not Detected
1,2-Dichlorobenzene	95-50-1	0.31	0.40	0.99	Not Detected
1,2-Dichloropropane	78-87-5	0.17	0.30	0.76	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.14	0.32	0.81	Not Detected
1,3-Butadiene	106-99-0	0.053	0.15	0.36	Not Detected
1,3-Dichlorobenzene	541-73-1	0.13	0.40	0.99	Not Detected
1,4-Dioxane	123-91-1	0.18	0.24	0.59	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.49	0.77	3.8	Not Detected
2-Butanone (Methyl Ethyl Ketone)	78-93-3	0.17	0.49	2.4	0.65 J
2-Hexanone	591-78-6	0.36	0.68	3.4	Not Detected
2-Propanol	67-63-0	0.15	0.40	2.0	0.46 J
3-Chloropropene	107-05-1	0.18	0.52	2.6	Not Detected
4-Ethyltoluene	622-96-8	0.17	0.32	0.81	Not Detected
4-Methyl-2-pentanone	108-10-1	0.12	0.27	0.68	Not Detected
Acetone	67-64-1	0.27	0.39	2.0	6.8
alpha-Chlorotoluene	100-44-7	0.18	0.34	0.85	Not Detected
Bromodichloromethane	75-27-4	0.17	0.44	1.1	Not Detected
Bromoform	75-25-2	0.32	0.68	1.7	Not Detected
Bromomethane	74-83-9	0.99	0.99	3.2	Not Detected
Carbon Disulfide	75-15-0	0.21	0.51	2.6	Not Detected
Chlorobenzene	108-90-7	0.19	0.30	0.76	Not Detected
cis-1,3-Dichloropropene	10061-01-5	0.16	0.30	0.75	Not Detected
Cumene	98-82-8	0.13	0.32	0.81	Not Detected

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	OA1	<b>Date/Time Analyzed:</b>	9/9/16 10:33 AM
<b>Lab ID:</b>	1608456AR1-01A	<b>Dilution Factor:</b>	1.65
<b>Date/Time Collecte</b>	8/26/16 08:31 AM	<b>Instrument/Filename:</b>	msd20.i / 20090910r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cyclohexane	110-82-7	0.096	0.23	0.57	Not Detected
Dibromochloromethane	124-48-1	0.23	0.56	1.4	Not Detected
Ethanol	64-17-5	0.33	0.33	1.6	2.6
Freon 11	75-69-4	0.12	0.37	0.93	1.5
Freon 113	76-13-1	0.36	0.50	1.3	0.57 J
Heptane	142-82-5	0.15	0.27	0.68	Not Detected
Hexachlorobutadiene	87-68-3	0.44	1.8	8.8	Not Detected
Hexane	110-54-3	0.12	0.23	0.58	Not Detected
Methylene Chloride	75-09-2	0.086	0.23	1.1	0.54 J
Propylbenzene	103-65-1	0.15	0.32	0.81	Not Detected
Styrene	100-42-5	0.071	0.28	0.70	Not Detected
Tetrahydrofuran	109-99-9	0.42	0.49	2.4	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	67	Not Detected
trans-1,3-Dichloropropene	10061-02-6	0.16	0.30	0.75	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	92
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	OA1	<b>Date/Time Analyzed:</b>	9/9/16 10:33 AM
<b>Lab ID:</b>	1608456AR1-01B	<b>Dilution Factor:</b>	1.65
<b>Date/Time Collecte</b>	8/26/16 08:31 AM	<b>Instrument/Filename:</b>	msd20.i / 20090910simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.0076	0.045	0.18	0.016 J
1,1,2,2-Tetrachloroethane	79-34-5	0.0074	0.057	0.23	Not Detected
1,1,2-Trichloroethane	79-00-5	0.016	0.045	0.18	Not Detected
1,1-Dichloroethane	75-34-3	0.0048	0.033	0.13	Not Detected
1,1-Dichloroethene	75-35-4	0.0058	0.033	0.065	Not Detected
1,2-Dibromoethane (EDB)	106-93-4	0.0068	0.063	0.25	Not Detected
1,2-Dichloroethane	107-06-2	0.0073	0.033	0.13	0.047 J
1,4-Dichlorobenzene	106-46-7	0.011	0.050	0.20	0.030 J
Benzene	71-43-2	0.0038	0.026	0.26	0.18 J
Carbon Tetrachloride	56-23-5	0.013	0.052	0.21	0.48
Chloroethane	75-00-3	0.032	0.032	0.22	Not Detected
Chloroform	67-66-3	0.0052	0.040	0.16	0.096 J
Chloromethane	74-87-3	0.025	0.025	0.17	1.0
cis-1,2-Dichloroethene	156-59-2	0.0069	0.033	0.13	Not Detected
Ethyl Benzene	100-41-4	0.0065	0.036	0.14	0.066 J
Freon 114	76-14-2	0.016	0.058	0.23	0.13 J
Freon 12	75-71-8	0.012	0.041	0.16	2.6
m,p-Xylene	108-38-3	0.0094	0.036	0.29	0.19 J
Methyl tert-butyl ether	1634-04-4	0.0031	0.030	0.59	Not Detected
Naphthalene	91-20-3	0.012	0.035	0.43	0.093 J
o-Xylene	95-47-6	0.0090	0.036	0.14	0.072 J
Tetrachloroethene	127-18-4	0.011	0.056	0.22	0.049 J
Toluene	108-88-3	0.0055	0.031	0.12	0.58
trans-1,2-Dichloroethene	156-60-5	0.0072	0.033	0.65	Not Detected



MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	OA1	<b>Date/Time Analyzed:</b>	9/9/16 10:33 AM
<b>Lab ID:</b>	1608456AR1-01B	<b>Dilution Factor:</b>	1.65
<b>Date/Time Collecte</b>	8/26/16 08:31 AM	<b>Instrument/Filename:</b>	msd20.i / 20090910simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.0069	0.044	0.18	0.021 J
Vinyl Chloride	75-01-4	0.0062	0.021	0.042	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	98

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA1	<b>Date/Time Analyzed:</b>	9/9/16 11:34 AM
<b>Lab ID:</b>	1608456AR1-02A	<b>Dilution Factor:</b>	1.74
<b>Date/Time Collecte</b>	8/26/16 08:38 AM	<b>Instrument/Filename:</b>	msd20.i / 20090911r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trichlorobenzene	120-82-1	0.26	1.3	6.4	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.17	0.34	0.86	Not Detected
1,2-Dichlorobenzene	95-50-1	0.32	0.42	1.0	Not Detected
1,2-Dichloropropane	78-87-5	0.18	0.32	0.80	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.15	0.34	0.86	Not Detected
1,3-Butadiene	106-99-0	0.056	0.15	0.38	Not Detected
1,3-Dichlorobenzene	541-73-1	0.14	0.42	1.0	Not Detected
1,4-Dioxane	123-91-1	0.19	0.25	0.63	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.52	0.81	4.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	78-93-3	0.18	0.51	2.6	2.4 J
2-Hexanone	591-78-6	0.38	0.71	3.6	Not Detected
2-Propanol	67-63-0	0.16	0.43	2.1	2.3
3-Chloropropene	107-05-1	0.19	0.54	2.7	Not Detected
4-Ethyltoluene	622-96-8	0.18	0.34	0.86	Not Detected
4-Methyl-2-pentanone	108-10-1	0.13	0.28	0.71	Not Detected
Acetone	67-64-1	0.28	0.41	2.1	14
alpha-Chlorotoluene	100-44-7	0.19	0.36	0.90	Not Detected
Bromodichloromethane	75-27-4	0.18	0.47	1.2	Not Detected
Bromoform	75-25-2	0.33	0.72	1.8	Not Detected
Bromomethane	74-83-9	1.0	1.0	3.4	Not Detected
Carbon Disulfide	75-15-0	0.22	0.54	2.7	Not Detected
Chlorobenzene	108-90-7	0.20	0.32	0.80	Not Detected
cis-1,3-Dichloropropene	10061-01-5	0.17	0.32	0.79	Not Detected
Cumene	98-82-8	0.14	0.34	0.86	Not Detected

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA1	<b>Date/Time Analyzed:</b>	9/9/16 11:34 AM
<b>Lab ID:</b>	1608456AR1-02A	<b>Dilution Factor:</b>	1.74
<b>Date/Time Collecte</b>	8/26/16 08:38 AM	<b>Instrument/Filename:</b>	msd20.i / 20090911r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cyclohexane	110-82-7	0.10	0.24	0.60	0.12 J
Dibromochloromethane	124-48-1	0.24	0.59	1.5	Not Detected
Ethanol	64-17-5	0.35	0.35	1.6	1.8
Freon 11	75-69-4	0.12	0.39	0.98	1.4
Freon 113	76-13-1	0.37	0.53	1.3	0.54 J
Heptane	142-82-5	0.16	0.28	0.71	Not Detected
Hexachlorobutadiene	87-68-3	0.47	1.8	9.3	Not Detected
Hexane	110-54-3	0.12	0.24	0.61	0.14 J
Methylene Chloride	75-09-2	0.091	0.24	1.2	0.55 J
Propylbenzene	103-65-1	0.16	0.34	0.86	Not Detected
Styrene	100-42-5	0.075	0.30	0.74	Not Detected
Tetrahydrofuran	109-99-9	0.44	0.51	2.6	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	71	Not Detected
trans-1,3-Dichloropropene	10061-02-6	0.17	0.32	0.79	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	110
4-Bromofluorobenzene	460-00-4	70-130	96
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA1	<b>Date/Time Analyzed:</b>	9/9/16 11:34 AM
<b>Lab ID:</b>	1608456AR1-02B	<b>Dilution Factor:</b>	1.74
<b>Date/Time Collecte</b>	8/26/16 08:38 AM	<b>Instrument/Filename:</b>	msd20.i / 20090911simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.0080	0.047	0.19	0.016 J
1,1,2,2-Tetrachloroethane	79-34-5	0.0078	0.060	0.24	Not Detected
1,1,2-Trichloroethane	79-00-5	0.017	0.047	0.19	Not Detected
1,1-Dichloroethane	75-34-3	0.0051	0.035	0.14	Not Detected
1,1-Dichloroethene	75-35-4	0.0061	0.034	0.069	Not Detected
1,2-Dibromoethane (EDB)	106-93-4	0.0072	0.067	0.27	Not Detected
1,2-Dichloroethane	107-06-2	0.0077	0.035	0.14	0.041 J
1,4-Dichlorobenzene	106-46-7	0.012	0.052	0.21	0.048 J
Benzene	71-43-2	0.0040	0.028	0.28	0.17 J
Carbon Tetrachloride	56-23-5	0.014	0.055	0.22	0.49
Chloroethane	75-00-3	0.033	0.033	0.23	0.23
Chloroform	67-66-3	0.0054	0.042	0.17	0.22
Chloromethane	74-87-3	0.026	0.026	0.18	1.1
cis-1,2-Dichloroethene	156-59-2	0.0072	0.034	0.14	Not Detected
Ethyl Benzene	100-41-4	0.0069	0.038	0.15	0.079 J
Freon 114	76-14-2	0.016	0.061	0.24	0.13 J
Freon 12	75-71-8	0.013	0.043	0.17	2.6
m,p-Xylene	108-38-3	0.0099	0.038	0.30	0.18 J
Methyl tert-butyl ether	1634-04-4	0.0033	0.031	0.63	Not Detected
Naphthalene	91-20-3	0.012	0.036	0.46	0.074 J
o-Xylene	95-47-6	0.0094	0.038	0.15	0.12 J
Tetrachloroethene	127-18-4	0.011	0.059	0.24	0.061 J
Toluene	108-88-3	0.0058	0.033	0.13	0.44
trans-1,2-Dichloroethene	156-60-5	0.0076	0.034	0.69	Not Detected

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA1	<b>Date/Time Analyzed:</b>	9/9/16 11:34 AM
<b>Lab ID:</b>	1608456AR1-02B	<b>Dilution Factor:</b>	1.74
<b>Date/Time Collecte</b>	8/26/16 08:38 AM	<b>Instrument/Filename:</b>	msd20.i / 20090911simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.0073	0.047	0.19	0.028 J
Vinyl Chloride	75-01-4	0.0066	0.022	0.044	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	98
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA2	<b>Date/Time Analyzed:</b>	9/9/16 12:12 PM
<b>Lab ID:</b>	1608456AR1-03A	<b>Dilution Factor:</b>	1.60
<b>Date/Time Collecte</b>	8/26/16 08:35 AM	<b>Instrument/Filename:</b>	msd20.i / 20090912r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trichlorobenzene	120-82-1	0.24	1.2	5.9	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.15	0.31	0.79	0.44 J
1,2-Dichlorobenzene	95-50-1	0.30	0.38	0.96	Not Detected
1,2-Dichloropropane	78-87-5	0.16	0.30	0.74	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.14	0.31	0.79	Not Detected
1,3-Butadiene	106-99-0	0.052	0.14	0.35	Not Detected
1,3-Dichlorobenzene	541-73-1	0.12	0.38	0.96	Not Detected
1,4-Dioxane	123-91-1	0.17	0.23	0.58	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.48	0.75	3.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	78-93-3	0.17	0.47	2.4	4.7
2-Hexanone	591-78-6	0.34	0.66	3.3	Not Detected
2-Propanol	67-63-0	0.15	0.39	2.0	7.7
3-Chloropropene	107-05-1	0.18	0.50	2.5	Not Detected
4-Ethyltoluene	622-96-8	0.17	0.31	0.79	Not Detected
4-Methyl-2-pentanone	108-10-1	0.12	0.26	0.66	0.48 J
Acetone	67-64-1	0.26	0.38	1.9	48
alpha-Chlorotoluene	100-44-7	0.17	0.33	0.83	Not Detected
Bromodichloromethane	75-27-4	0.16	0.43	1.1	Not Detected
Bromoform	75-25-2	0.31	0.66	1.6	Not Detected
Bromomethane	74-83-9	0.96	0.96	3.1	Not Detected
Carbon Disulfide	75-15-0	0.20	0.50	2.5	Not Detected
Chlorobenzene	108-90-7	0.18	0.29	0.74	Not Detected
cis-1,3-Dichloropropene	10061-01-5	0.15	0.29	0.73	Not Detected
Cumene	98-82-8	0.12	0.31	0.79	Not Detected

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA2	<b>Date/Time Analyzed:</b>	9/9/16 12:12 PM
<b>Lab ID:</b>	1608456AR1-03A	<b>Dilution Factor:</b>	1.60
<b>Date/Time Collecte</b>	8/26/16 08:35 AM	<b>Instrument/Filename:</b>	msd20.i / 20090912r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cyclohexane	110-82-7	0.093	0.22	0.55	2.1
Dibromochloromethane	124-48-1	0.22	0.54	1.4	Not Detected
Ethanol	64-17-5	0.32	0.32	1.5	19
Freon 11	75-69-4	0.12	0.36	0.90	9.0
Freon 113	76-13-1	0.34	0.49	1.2	0.52 J
Heptane	142-82-5	0.15	0.26	0.66	1.2
Hexachlorobutadiene	87-68-3	0.43	1.7	8.5	Not Detected
Hexane	110-54-3	0.12	0.22	0.56	1.0
Methylene Chloride	75-09-2	0.084	0.22	1.1	0.49 J
Propylbenzene	103-65-1	0.14	0.31	0.79	Not Detected
Styrene	100-42-5	0.069	0.27	0.68	0.88
Tetrahydrofuran	109-99-9	0.40	0.47	2.4	0.49 J
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	65	Not Detected
trans-1,3-Dichloropropene	10061-02-6	0.16	0.29	0.73	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	109
4-Bromofluorobenzene	460-00-4	70-130	105
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA2	<b>Date/Time Analyzed:</b>	9/9/16 12:12 PM
<b>Lab ID:</b>	1608456AR1-03B	<b>Dilution Factor:</b>	1.60
<b>Date/Time Collecte</b>	8/26/16 08:35 AM	<b>Instrument/Filename:</b>	msd20.i / 20090912simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.0073	0.044	0.17	0.14 J
1,1,2,2-Tetrachloroethane	79-34-5	0.0071	0.055	0.22	Not Detected
1,1,2-Trichloroethane	79-00-5	0.016	0.044	0.17	Not Detected
1,1-Dichloroethane	75-34-3	0.0047	0.032	0.13	Not Detected
1,1-Dichloroethene	75-35-4	0.0056	0.032	0.063	Not Detected
1,2-Dibromoethane (EDB)	106-93-4	0.0066	0.061	0.24	Not Detected
1,2-Dichloroethane	107-06-2	0.0070	0.032	0.13	0.044 J
1,4-Dichlorobenzene	106-46-7	0.011	0.048	0.19	0.21
Benzene	71-43-2	0.0037	0.026	0.26	0.21 J
Carbon Tetrachloride	56-23-5	0.013	0.050	0.20	0.62
Chloroethane	75-00-3	0.031	0.031	0.21	Not Detected
Chloroform	67-66-3	0.0050	0.039	0.16	0.22
Chloromethane	74-87-3	0.024	0.024	0.16	0.85
cis-1,2-Dichloroethene	156-59-2	0.0067	0.032	0.13	Not Detected
Ethyl Benzene	100-41-4	0.0063	0.035	0.14	0.23
Freon 114	76-14-2	0.015	0.056	0.22	0.12 J
Freon 12	75-71-8	0.012	0.040	0.16	2.4
m,p-Xylene	108-38-3	0.0091	0.035	0.28	0.59
Methyl tert-butyl ether	1634-04-4	0.0030	0.029	0.58	Not Detected
Naphthalene	91-20-3	0.011	0.034	0.42	0.72
o-Xylene	95-47-6	0.0087	0.035	0.14	0.29
Tetrachloroethene	127-18-4	0.010	0.054	0.22	0.054 J
Toluene	108-88-3	0.0053	0.030	0.12	2.8
trans-1,2-Dichloroethene	156-60-5	0.0070	0.032	0.63	Not Detected



MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA2	<b>Date/Time Analyzed:</b>	9/9/16 12:12 PM
<b>Lab ID:</b>	1608456AR1-03B	<b>Dilution Factor:</b>	1.60
<b>Date/Time Collecte</b>	8/26/16 08:35 AM	<b>Instrument/Filename:</b>	msd20.i / 20090912simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.0067	0.043	0.17	0.066 J
Vinyl Chloride	75-01-4	0.0060	0.020	0.041	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	98

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA3	<b>Date/Time Analyzed:</b>	9/9/16 01:46 PM
<b>Lab ID:</b>	1608456AR1-04A	<b>Dilution Factor:</b>	1.32
<b>Date/Time Collecte</b>	8/26/16 08:36 AM	<b>Instrument/Filename:</b>	msd20.i / 20090913r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trichlorobenzene	120-82-1	0.20	0.98	4.9	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.13	0.26	0.65	0.49 J
1,2-Dichlorobenzene	95-50-1	0.24	0.32	0.79	Not Detected
1,2-Dichloropropane	78-87-5	0.13	0.24	0.61	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.11	0.26	0.65	0.18 J
1,3-Butadiene	106-99-0	0.042	0.12	0.29	Not Detected
1,3-Dichlorobenzene	541-73-1	0.10	0.32	0.79	Not Detected
1,4-Dioxane	123-91-1	0.14	0.19	0.48	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.39	0.62	3.1	Not Detected
2-Butanone (Methyl Ethyl Ketone)	78-93-3	0.14	0.39	1.9	2.0
2-Hexanone	591-78-6	0.28	0.54	2.7	Not Detected
2-Propanol	67-63-0	0.12	0.32	1.6	1.6
3-Chloropropene	107-05-1	0.14	0.41	2.1	Not Detected
4-Ethyltoluene	622-96-8	0.14	0.26	0.65	0.34 J
4-Methyl-2-pentanone	108-10-1	0.099	0.22	0.54	0.18 J
Acetone	67-64-1	0.21	0.31	1.6	25
alpha-Chlorotoluene	100-44-7	0.14	0.27	0.68	Not Detected
Bromodichloromethane	75-27-4	0.14	0.35	0.88	Not Detected
Bromoform	75-25-2	0.25	0.54	1.4	Not Detected
Bromomethane	74-83-9	0.79	0.79	2.6	Not Detected
Carbon Disulfide	75-15-0	0.16	0.41	2.0	Not Detected
Chlorobenzene	108-90-7	0.15	0.24	0.61	Not Detected
cis-1,3-Dichloropropene	10061-01-5	0.13	0.24	0.60	Not Detected
Cumene	98-82-8	0.10	0.26	0.65	Not Detected

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA3	<b>Date/Time Analyzed:</b>	9/9/16 01:46 PM
<b>Lab ID:</b>	1608456AR1-04A	<b>Dilution Factor:</b>	1.32
<b>Date/Time Collecte</b>	8/26/16 08:36 AM	<b>Instrument/Filename:</b>	msd20.i / 20090913r1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cyclohexane	110-82-7	0.077	0.18	0.45	0.22 J
Dibromochloromethane	124-48-1	0.18	0.45	1.1	Not Detected
Ethanol	64-17-5	0.27	0.27	1.2	320 E
Freon 11	75-69-4	0.095	0.30	0.74	2.1
Freon 113	76-13-1	0.28	0.40	1.0	0.53 J
Heptane	142-82-5	0.12	0.22	0.54	0.20 J
Hexachlorobutadiene	87-68-3	0.35	1.4	7.0	Not Detected
Hexane	110-54-3	0.095	0.19	0.46	0.13 J
Methylene Chloride	75-09-2	0.069	0.18	0.92	0.52 J
Propylbenzene	103-65-1	0.12	0.26	0.65	Not Detected
Styrene	100-42-5	0.057	0.22	0.56	0.26 J
Tetrahydrofuran	109-99-9	0.33	0.39	1.9	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	54	Not Detected
trans-1,3-Dichloropropene	10061-02-6	0.13	0.24	0.60	Not Detected

E = Exceeds instrument calibration range.

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	113
4-Bromofluorobenzene	460-00-4	70-130	104
Toluene-d8	2037-26-5	70-130	97

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA3	<b>Date/Time Analyzed:</b>	9/9/16 01:46 PM
<b>Lab ID:</b>	1608456AR1-04B	<b>Dilution Factor:</b>	1.32
<b>Date/Time Collecte</b>	8/26/16 08:36 AM	<b>Instrument/Filename:</b>	msd20.i / 20090913simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.0060	0.036	0.14	0.026 J
1,1,2,2-Tetrachloroethane	79-34-5	0.0059	0.045	0.18	Not Detected
1,1,2-Trichloroethane	79-00-5	0.013	0.036	0.14	Not Detected
1,1-Dichloroethane	75-34-3	0.0038	0.027	0.11	Not Detected
1,1-Dichloroethene	75-35-4	0.0046	0.026	0.052	Not Detected
1,2-Dibromoethane (EDB)	106-93-4	0.0055	0.051	0.20	Not Detected
1,2-Dichloroethane	107-06-2	0.0058	0.027	0.11	0.047 J
1,4-Dichlorobenzene	106-46-7	0.0088	0.040	0.16	0.34
Benzene	71-43-2	0.0031	0.021	0.21	0.20 J
Carbon Tetrachloride	56-23-5	0.011	0.042	0.17	0.53
Chloroethane	75-00-3	0.025	0.025	0.17	Not Detected
Chloroform	67-66-3	0.0041	0.032	0.13	0.54
Chloromethane	74-87-3	0.020	0.020	0.14	1.0
cis-1,2-Dichloroethene	156-59-2	0.0055	0.026	0.10	Not Detected
Ethyl Benzene	100-41-4	0.0052	0.029	0.11	0.15
Freon 114	76-14-2	0.012	0.046	0.18	0.13 J
Freon 12	75-71-8	0.010	0.033	0.13	2.7
m,p-Xylene	108-38-3	0.0075	0.029	0.23	0.37
Methyl tert-butyl ether	1634-04-4	0.0025	0.024	0.48	Not Detected
Naphthalene	91-20-3	0.0095	0.028	0.34	0.33 J
o-Xylene	95-47-6	0.0072	0.029	0.11	0.20
Tetrachloroethene	127-18-4	0.0087	0.045	0.18	0.037 J
Toluene	108-88-3	0.0044	0.025	0.099	13
trans-1,2-Dichloroethene	156-60-5	0.0058	0.026	0.52	Not Detected

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	IA3	<b>Date/Time Analyzed:</b>	9/9/16 01:46 PM
<b>Lab ID:</b>	1608456AR1-04B	<b>Dilution Factor:</b>	1.32
<b>Date/Time Collecte</b>	8/26/16 08:36 AM	<b>Instrument/Filename:</b>	msd20.i / 20090913simr1
<b>Media:</b>	6 Liter Summa Canister (SIM Certified)		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.0055	0.035	0.14	0.028 J
Vinyl Chloride	75-01-4	0.0050	0.017	0.034	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	115
4-Bromofluorobenzene	460-00-4	70-130	106
Toluene-d8	2037-26-5	70-130	96

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	Lab Blank	<b>Date/Time Analyzed:</b>	9/9/16 07:55 AM
<b>Lab ID:</b>	1608456AR1-05A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090907r1
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trichlorobenzene	120-82-1	0.15	0.74	3.7	Not Detected
1,2,4-Trimethylbenzene	95-63-6	0.096	0.20	0.49	Not Detected
1,2-Dichlorobenzene	95-50-1	0.19	0.24	0.60	Not Detected
1,2-Dichloropropane	78-87-5	0.10	0.18	0.46	Not Detected
1,3,5-Trimethylbenzene	108-67-8	0.086	0.20	0.49	Not Detected
1,3-Butadiene	106-99-0	0.032	0.088	0.22	Not Detected
1,3-Dichlorobenzene	541-73-1	0.078	0.24	0.60	Not Detected
1,4-Dioxane	123-91-1	0.11	0.14	0.36	Not Detected
2,2,4-Trimethylpentane	540-84-1	0.30	0.47	2.3	Not Detected
2-Butanone (Methyl Ethyl Ketone)	78-93-3	0.10	0.29	1.5	Not Detected
2-Hexanone	591-78-6	0.22	0.41	2.0	Not Detected
2-Propanol	67-63-0	0.094	0.24	1.2	Not Detected
3-Chloropropene	107-05-1	0.11	0.31	1.6	Not Detected
4-Ethyltoluene	622-96-8	0.10	0.20	0.49	Not Detected
4-Methyl-2-pentanone	108-10-1	0.075	0.16	0.41	Not Detected
Acetone	67-64-1	0.16	0.24	1.2	Not Detected
alpha-Chlorotoluene	100-44-7	0.11	0.21	0.52	Not Detected
Bromodichloromethane	75-27-4	0.10	0.27	0.67	Not Detected
Bromoform	75-25-2	0.19	0.41	1.0	Not Detected
Bromomethane	74-83-9	0.60	0.60	1.9	Not Detected
Carbon Disulfide	75-15-0	0.12	0.31	1.6	Not Detected
Chlorobenzene	108-90-7	0.12	0.18	0.46	Not Detected
cis-1,3-Dichloropropene	10061-01-5	0.096	0.18	0.45	Not Detected
Cumene	98-82-8	0.078	0.20	0.49	Not Detected

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	Lab Blank	<b>Date/Time Analyzed:</b>	9/9/16 07:55 AM
<b>Lab ID:</b>	1608456AR1-05A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090907r1
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Cyclohexane	110-82-7	0.058	0.14	0.34	Not Detected
Dibromochloromethane	124-48-1	0.14	0.34	0.85	Not Detected
Ethanol	64-17-5	0.20	0.20	0.94	0.20 J
Freon 11	75-69-4	0.072	0.22	0.56	Not Detected
Freon 113	76-13-1	0.22	0.31	0.77	Not Detected
Heptane	142-82-5	0.093	0.16	0.41	Not Detected
Hexachlorobutadiene	87-68-3	0.27	1.1	5.3	Not Detected
Hexane	110-54-3	0.072	0.14	0.35	Not Detected
Methylene Chloride	75-09-2	0.052	0.14	0.69	0.11 J
Propylbenzene	103-65-1	0.089	0.20	0.49	Not Detected
Styrene	100-42-5	0.043	0.17	0.42	Not Detected
Tetrahydrofuran	109-99-9	0.25	0.29	1.5	Not Detected
TPH ref. to Gasoline (MW=100)	9999-9999-038	NA	D	41	Not Detected
trans-1,3-Dichloropropene	10061-02-6	0.097	0.18	0.45	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	108
4-Bromofluorobenzene	460-00-4	70-130	89
Toluene-d8	2037-26-5	70-130	99

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	Lab Blank	<b>Date/Time Analyzed:</b>	9/9/16 07:55 AM
<b>Lab ID:</b>	1608456AR1-05B	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090907simr1
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,1,1-Trichloroethane	71-55-6	0.0046	0.027	0.11	Not Detected
1,1,2,2-Tetrachloroethane	79-34-5	0.0045	0.034	0.14	0.023 J
1,1,2-Trichloroethane	79-00-5	0.010	0.027	0.11	Not Detected
1,1-Dichloroethane	75-34-3	0.0029	0.020	0.081	Not Detected
1,1-Dichloroethene	75-35-4	0.0035	0.020	0.040	Not Detected
1,2-Dibromoethane (EDB)	106-93-4	0.0041	0.038	0.15	0.017 J
1,2-Dichloroethane	107-06-2	0.0044	0.020	0.081	Not Detected
1,4-Dichlorobenzene	106-46-7	0.0067	0.030	0.12	0.020 J
Benzene	71-43-2	0.0023	0.016	0.16	0.010 J
Carbon Tetrachloride	56-23-5	0.0081	0.031	0.12	Not Detected
Chloroethane	75-00-3	0.019	0.019	0.13	Not Detected
Chloroform	67-66-3	0.0031	0.024	0.098	Not Detected
Chloromethane	74-87-3	0.015	0.015	0.10	Not Detected
cis-1,2-Dichloroethene	156-59-2	0.0042	0.020	0.079	Not Detected
Ethyl Benzene	100-41-4	0.0040	0.022	0.087	0.018 J
Freon 114	76-14-2	0.0095	0.035	0.14	0.012 J
Freon 12	75-71-8	0.0076	0.025	0.099	Not Detected
m,p-Xylene	108-38-3	0.0057	0.022	0.17	0.037 J
Methyl tert-butyl ether	1634-04-4	0.0019	0.018	0.36	Not Detected
Naphthalene	91-20-3	0.0072	0.021	0.26	0.016 J
o-Xylene	95-47-6	0.0054	0.022	0.087	0.040 J
Tetrachloroethene	127-18-4	0.0066	0.034	0.14	0.014 J
Toluene	108-88-3	0.0033	0.019	0.075	0.023 J
trans-1,2-Dichloroethene	156-60-5	0.0044	0.020	0.40	Not Detected



MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	Lab Blank	<b>Date/Time Analyzed:</b>	9/9/16 07:55 AM
<b>Lab ID:</b>	1608456AR1-05B	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090907simr1
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	MDL (ug/m3)	LOD (ug/m3)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Trichloroethene	79-01-6	0.0042	0.027	0.11	Not Detected
Vinyl Chloride	75-01-4	0.0038	0.013	0.026	Not Detected

J = Estimated value.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	112
4-Bromofluorobenzene	460-00-4	70-130	93
Toluene-d8	2037-26-5	70-130	98

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	CCV	<b>Date/Time Analyzed:</b>	9/8/16 11:21 PM
<b>Lab ID:</b>	1608456AR1-06A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090902
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,2,4-Trichlorobenzene	120-82-1	86
1,2,4-Trimethylbenzene	95-63-6	104
1,2-Dichlorobenzene	95-50-1	104
1,2-Dichloropropane	78-87-5	109
1,3,5-Trimethylbenzene	108-67-8	111
1,3-Butadiene	106-99-0	96
1,3-Dichlorobenzene	541-73-1	104
1,4-Dioxane	123-91-1	104
2,2,4-Trimethylpentane	540-84-1	102
2-Butanone (Methyl Ethyl Ketone)	78-93-3	97
2-Hexanone	591-78-6	109
2-Propanol	67-63-0	89
3-Chloropropene	107-05-1	98
4-Ethyltoluene	622-96-8	99
4-Methyl-2-pentanone	108-10-1	119
Acetone	67-64-1	93
alpha-Chlorotoluene	100-44-7	122
Bromodichloromethane	75-27-4	113
Bromoform	75-25-2	125
Bromomethane	74-83-9	119
Carbon Disulfide	75-15-0	102
Chlorobenzene	108-90-7	106
cis-1,3-Dichloropropene	10061-01-5	111
Cumene	98-82-8	116

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	CCV	<b>Date/Time Analyzed:</b>	9/8/16 11:21 PM
<b>Lab ID:</b>	1608456AR1-06A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090902
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Cyclohexane	110-82-7	96
Dibromochloromethane	124-48-1	120
Ethanol	64-17-5	92
Freon 11	75-69-4	98
Freon 113	76-13-1	93
Heptane	142-82-5	114
Hexachlorobutadiene	87-68-3	84
Hexane	110-54-3	96
Methylene Chloride	75-09-2	92
Propylbenzene	103-65-1	109
Styrene	100-42-5	118
Tetrahydrofuran	109-99-9	98
TPH ref. to Gasoline (MW=100)	9999-9999-038	100
trans-1,3-Dichloropropene	10061-02-6	111

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	105

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	CCV	<b>Date/Time Analyzed:</b>	9/8/16 11:21 PM
<b>Lab ID:</b>	1608456AR1-06B	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090902sim
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	102
1,1,2,2-Tetrachloroethane	79-34-5	115
1,1,2-Trichloroethane	79-00-5	106
1,1-Dichloroethane	75-34-3	98
1,1-Dichloroethene	75-35-4	87
1,2-Dibromoethane (EDB)	106-93-4	109
1,2-Dichloroethane	107-06-2	112
1,4-Dichlorobenzene	106-46-7	90
Benzene	71-43-2	92
Carbon Tetrachloride	56-23-5	123
Chloroethane	75-00-3	101
Chloroform	67-66-3	100
Chloromethane	74-87-3	90
cis-1,2-Dichloroethene	156-59-2	94
Ethyl Benzene	100-41-4	112
Freon 114	76-14-2	95
Freon 12	75-71-8	103
m,p-Xylene	108-38-3	111
Methyl tert-butyl ether	1634-04-4	94
Naphthalene	91-20-3	68
o-Xylene	95-47-6	111
Tetrachloroethene	127-18-4	97
Toluene	108-88-3	109
trans-1,2-Dichloroethene	156-60-5	94

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	CCV	<b>Date/Time Analyzed:</b>	9/8/16 11:21 PM
<b>Lab ID:</b>	1608456AR1-06B	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090902sim
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Trichloroethene	79-01-6	100
Vinyl Chloride	75-01-4	92

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	104
4-Bromofluorobenzene	460-00-4	70-130	109
Toluene-d8	2037-26-5	70-130	107

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCS	<b>Date/Time Analyzed:</b>	9/9/16 12:10 AM
<b>Lab ID:</b>	1608456AR1-07A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090903
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,2,4-Trichlorobenzene	120-82-1	85
1,2,4-Trimethylbenzene	95-63-6	98
1,2-Dichlorobenzene	95-50-1	100
1,2-Dichloropropane	78-87-5	107
1,3,5-Trimethylbenzene	108-67-8	107
1,3-Butadiene	106-99-0	100
1,3-Dichlorobenzene	541-73-1	99
1,4-Dioxane	123-91-1	99
2,2,4-Trimethylpentane	540-84-1	102
2-Butanone (Methyl Ethyl Ketone)	78-93-3	98
2-Hexanone	591-78-6	105
2-Propanol	67-63-0	97
3-Chloropropene	107-05-1	96
4-Ethyltoluene	622-96-8	96
4-Methyl-2-pentanone	108-10-1	117
Acetone	67-64-1	94
alpha-Chlorotoluene	100-44-7	127
Bromodichloromethane	75-27-4	116
Bromoform	75-25-2	128
Bromomethane	74-83-9	111
Carbon Disulfide	75-15-0	92
Chlorobenzene	108-90-7	102
cis-1,3-Dichloropropene	10061-01-5	101
Cumene	98-82-8	110

\* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCS	<b>Date/Time Analyzed:</b>	9/9/16 12:10 AM
<b>Lab ID:</b>	1608456AR1-07A	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090903
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Cyclohexane	110-82-7	98
Dibromochloromethane	124-48-1	120
Ethanol	64-17-5	101
Freon 11	75-69-4	103
Freon 113	76-13-1	94
Heptane	142-82-5	110
Hexachlorobutadiene	87-68-3	87
Hexane	110-54-3	97
Methylene Chloride	75-09-2	94
Propylbenzene	103-65-1	107
Styrene	100-42-5	114
Tetrahydrofuran	109-99-9	101
TPH ref. to Gasoline (MW=100)	9999-9999-038	Not Spiked
trans-1,3-Dichloropropene	10061-02-6	112

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	104
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	105

\* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCSD	<b>Date/Time Analyzed:</b>	9/9/16 04:40 AM
<b>Lab ID:</b>	1608456AR1-07AA	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090904
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,2,4-Trichlorobenzene	120-82-1	89
1,2,4-Trimethylbenzene	95-63-6	101
1,2-Dichlorobenzene	95-50-1	104
1,2-Dichloropropane	78-87-5	110
1,3,5-Trimethylbenzene	108-67-8	112
1,3-Butadiene	106-99-0	103
1,3-Dichlorobenzene	541-73-1	104
1,4-Dioxane	123-91-1	102
2,2,4-Trimethylpentane	540-84-1	106
2-Butanone (Methyl Ethyl Ketone)	78-93-3	103
2-Hexanone	591-78-6	114
2-Propanol	67-63-0	102
3-Chloropropene	107-05-1	102
4-Ethyltoluene	622-96-8	101
4-Methyl-2-pentanone	108-10-1	120
Acetone	67-64-1	98
alpha-Chlorotoluene	100-44-7	134 Q
Bromodichloromethane	75-27-4	121
Bromoform	75-25-2	134 Q
Bromomethane	74-83-9	116
Carbon Disulfide	75-15-0	94
Chlorobenzene	108-90-7	107
cis-1,3-Dichloropropene	10061-01-5	104
Cumene	98-82-8	118

\* % Recovery is calculated using unrounded analytical results.



MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCSD	<b>Date/Time Analyzed:</b>	9/9/16 04:40 AM
<b>Lab ID:</b>	1608456AR1-07AA	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090904
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Cyclohexane	110-82-7	102
Dibromochloromethane	124-48-1	126
Ethanol	64-17-5	103
Freon 11	75-69-4	107
Freon 113	76-13-1	98
Heptane	142-82-5	113
Hexachlorobutadiene	87-68-3	89
Hexane	110-54-3	100
Methylene Chloride	75-09-2	98
Propylbenzene	103-65-1	113
Styrene	100-42-5	120
Tetrahydrofuran	109-99-9	104
TPH ref. to Gasoline (MW=100)	9999-9999-038	Not Spiked
trans-1,3-Dichloropropene	10061-02-6	117

Q = Exceeds Quality Control limits.

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	107
Toluene-d8	2037-26-5	70-130	105

\* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCS	<b>Date/Time Analyzed:</b>	9/9/16 12:10 AM
<b>Lab ID:</b>	1608456AR1-07B	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090903sim
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	101
1,1,2,2-Tetrachloroethane	79-34-5	110
1,1,2-Trichloroethane	79-00-5	103
1,1-Dichloroethane	75-34-3	94
1,1-Dichloroethene	75-35-4	87
1,2-Dibromoethane (EDB)	106-93-4	108
1,2-Dichloroethane	107-06-2	107
1,4-Dichlorobenzene	106-46-7	85
Benzene	71-43-2	89
Carbon Tetrachloride	56-23-5	130
Chloroethane	75-00-3	104
Chloroform	67-66-3	98
Chloromethane	74-87-3	91
cis-1,2-Dichloroethene	156-59-2	90
Ethyl Benzene	100-41-4	108
Freon 114	76-14-2	101
Freon 12	75-71-8	105
m,p-Xylene	108-38-3	107
Methyl tert-butyl ether	1634-04-4	90
Naphthalene	91-20-3	69
o-Xylene	95-47-6	108
Tetrachloroethene	127-18-4	95
Toluene	108-88-3	105
trans-1,2-Dichloroethene	156-60-5	96

\* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCS	<b>Date/Time Analyzed:</b>	9/9/16 12:10 AM
<b>Lab ID:</b>	1608456AR1-07B	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090903sim
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Trichloroethene	79-01-6	97
Vinyl Chloride	75-01-4	97

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	103
4-Bromofluorobenzene	460-00-4	70-130	108
Toluene-d8	2037-26-5	70-130	107

\* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCSD	<b>Date/Time Analyzed:</b>	9/9/16 04:40 AM
<b>Lab ID:</b>	1608456AR1-07BB	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090904sim
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
1,1,1-Trichloroethane	71-55-6	103
1,1,2,2-Tetrachloroethane	79-34-5	114
1,1,2-Trichloroethane	79-00-5	108
1,1-Dichloroethane	75-34-3	98
1,1-Dichloroethene	75-35-4	91
1,2-Dibromoethane (EDB)	106-93-4	112
1,2-Dichloroethane	107-06-2	110
1,4-Dichlorobenzene	106-46-7	90
Benzene	71-43-2	91
Carbon Tetrachloride	56-23-5	136
Chloroethane	75-00-3	109
Chloroform	67-66-3	101
Chloromethane	74-87-3	94
cis-1,2-Dichloroethene	156-59-2	93
Ethyl Benzene	100-41-4	112
Freon 114	76-14-2	104
Freon 12	75-71-8	110
m,p-Xylene	108-38-3	113
Methyl tert-butyl ether	1634-04-4	93
Naphthalene	91-20-3	72
o-Xylene	95-47-6	113
Tetrachloroethene	127-18-4	99
Toluene	108-88-3	108
trans-1,2-Dichloroethene	156-60-5	98

\* % Recovery is calculated using unrounded analytical results.

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN  
Paramount

<b>Client ID:</b>	LCSD	<b>Date/Time Analyzed:</b>	9/9/16 04:40 AM
<b>Lab ID:</b>	1608456AR1-07BB	<b>Dilution Factor:</b>	1.00
<b>Date/Time Collecte</b>	NA - Not Applicable	<b>Instrument/Filename:</b>	msd20.i / 20090904sim
<b>Media:</b>	NA - Not Applicable		

Compound	CAS#	%Recovery
Trichloroethene	79-01-6	100
Vinyl Chloride	75-01-4	100

D: Analyte not within the DoD scope of accreditation.

Surrogates	CAS#	Limits	%Recovery
1,2-Dichloroethane-d4	17060-07-0	70-130	102
4-Bromofluorobenzene	460-00-4	70-130	109
Toluene-d8	2037-26-5	70-130	106

\* % Recovery is calculated using unrounded analytical results.



Air Toxics

2 boxes

Fedex Tracking # 8076 0434 4201  
8076 0434 4223

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FOLSOM, CA 95630-4719  
(916) 985-1000 FAX (916) 985-1020

Page 1 of 1

Project Manager H. Pietropoli  
Collected by: (Print and Sign) H. Pietropoli  
Company Stellar Environmental Email hpietropoli@stellar-environmental.com  
Address 2198 6th City Berkeley State CA Zip \_\_\_\_\_  
Phone 510 644 3123 Fax 510 644 3859

Project Info: P.O. # _____ Project # <u>2015-16</u> Project Name <u>PARAMOUNT</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush specify _____	Lab Use Only Pressurized by: Date: Pressurization Gas: N <sub>2</sub> He
--	---	--

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum			
						Initial	Final	Receipt	Final (psi)
01A	OA1	25304	8/26/16	0831	TOLU + Naph, TPHg	-30	-0.5		
02A	IA1	34440		0838		-30	0		
03A	IA2	32107		0835		-30	-0.5		
04A	IA3	12666		0836		-30	-1		
05A	SG5-5	1L1791	8/25/16	1015	✓ +, He, O <sub>2</sub> , CH <sub>4</sub>	-30	-5		
	Purge Can - 6L	4242	10/11/16						

U.V. 9/11/16

Quote # Q160724601R1 8/8/16  
\* RL/MOL must meet \* residential ESLs \*

Relinquished by: (signature) <u>H. Pietropoli</u> Date/Time <u>10/24/16/1040</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10/24/16/1400</u>	Notes: * He maintained @ 27-30% in shroud email results to: hpietropoli@stellar-environmental.com
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name <u>Fedex</u>	Air Bill # _____	Temp (°C) <u>N/A</u>	Condition <u>Good</u>	Custody Seals Intact? Yes No <u>(None)</u>	Work Order # <u>16084506</u>
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\* please email results



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1608D73 **Amended:** 09/08/2016

**Report Created for:** Stellar Environmental Solutions

2198 Sixth St. #201  
Berkeley, CA 94710

**Project Contact:** Henry Pietropaoli  
**Project P.O.:**  
**Project Name:** 2015-16; Paramount

**Project Received:** 08/26/2016

Analytical Report reviewed & approved for release on 09/06/2016 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.*





## Glossary of Terms & Qualifier Definitions

**Client:** Stellar Environmental Solutions  
**Project:** 2015-16; Paramount  
**WorkOrder:** 1608D73

### 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
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)





## Glossary of Terms & Qualifier Definitions

**Client:** Stellar Environmental Solutions  
**Project:** 2015-16; Paramount  
**WorkOrder:** 1608D73

### Analytical Qualifiers

J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.  
S Surrogate spike recovery outside accepted recovery limits  
a10 reporting limit changed due to variable volume of air that pumped through each filter / sorbent tube.  
a28 reporting limit raised due to cluttered chromatogram  
c4 surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.  
e4 gasoline range compounds are significant.  
j1 see attached narrative



## Case Narrative

**Client:** Stellar Environmental Solutions  
**Project:** 2015-16; Paramount

**Work Order:** 1608D73  
September 06, 2016

9/2/16 Napthalene and TPH-Diesel Analysis by TO-17 analysis

Samples: SG5.5s and SG5.5sd (1608D73-001A and 1608D73-002A)

The soilgas samples were comprised of high levels of an early eluting TPH-Gasoline range pattern from C5- C15 branched and unbranched alkanes. The majority of the calculated C10-C23 TPH-Diesel concentration is derived from this TPH-gasoline pattern.

Due to the high levels of organics within the samples, the reporting limit for naphthalene must be raised. The internal standards under-recovered by a factor of ten when analyzed at a dilution factor of 1 when compared to the daily calibration check verification, suggesting co-elution and the cluttered chromatogram interfered with the identification of individual compounds, namely naphthalene.



## Analytical Report

**Client:** Stellar Environmental Solutions  
**Date Received:** 8/26/16 16:55  
**Date Prepared:** 8/29/16  
**Project:** 2015-16; Paramount

**WorkOrder:** 1608D73  
**Extraction Method:** ASTM D 1946-90  
**Analytical Method:** ASTM D 1946-90  
**Unit:** %

### Helium

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SG5.5s	1608D73-001A	SoilGas	08/25/2016 10:38	GC26	125909

Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
12.73	25.41	HK

Analytes	Result	MDL	RL	DF	Date Analyzed
Helium	ND	0.050	0.050	1	08/29/2016 15:03

SG5.5sd	1608D73-002A	SoilGas	08/25/2016 11:06	GC26	125909
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Initial Pressure (psia)	Final Pressure (psia)	Analyst(s)
13.36	26.65	HK

Analytes	Result	MDL	RL	DF	Date Analyzed
Helium	ND	0.050	0.050	1	08/29/2016 15:16

 Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Stellar Environmental Solutions  
**Date Received:** 8/26/16 16:55  
**Date Prepared:** 9/1/16-9/2/16  
**Project:** 2015-16; Paramount

**WorkOrder:** 1608D73  
**Extraction Method:** TO17  
**Analytical Method:** TO17  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
SG5.5s	1608D73-001A	SoilGas	08/25/2016 10:38	GC37	126085	
<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Sample Volume</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	410,000	14,000	110,000	100	0.95 L	09/02/2016 13:54
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>				
4-BFB	106	70-130				09/02/2016 13:54
<u>Analyst(s):</u> KBO	<u>Analytical Comments:</u> a10,e4,j1					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
SG5.5sd	1608D73-002A	SoilGas	08/25/2016 11:06	GC37	126085	
<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Sample Volume</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	580,000	14,000	110,000	100	0.95 L	09/02/2016 17:59
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>				
4-BFB	107	70-130				09/02/2016 17:59
<u>Analyst(s):</u> KBO	<u>Analytical Comments:</u> a10,e4,j1					

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID		
OA1	1608D73-003A	Indoor Air	08/26/2016 08:31	GC37	126085		
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Sample Volume</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	75	J	24	180	1	5.6 L	09/01/2016 19:07
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>					
4-BFB	94	70-130					09/01/2016 19:07
<u>Analyst(s):</u> KBO							

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
IA2	1608D73-004A	Indoor Air	08/26/2016 08:35	GC37	126085	
<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Sample Volume</u>	<u>Date Analyzed</u>
TPH-Diesel (C10-C23)	180	23	170	1	5.9 L	09/01/2016 19:51
<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>				
4-BFB	93	70-130				09/01/2016 19:51
<u>Analyst(s):</u> KBO						

Angela Rydelius, Lab Manager



## Analytical Report

**Client:** Stellar Environmental Solutions  
**Date Received:** 8/26/16 16:55  
**Date Prepared:** 9/1/16  
**Project:** 2015-16; Paramount

**WorkOrder:** 1608D73  
**Extraction Method:** TO17  
**Analytical Method:** TO17  
**Unit:** µg/m<sup>3</sup>

### Volatile Organic Compounds in µg/m<sup>3</sup>

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SG5.5s	1608D73-001A	SoilGas	08/25/2016 10:38	GC37	126085

Analytes	Result	MDL	RL	DF	Sample Volume	Date Analyzed
Naphthalene	ND	5.0	5.0	1	0.95 L	09/01/2016 20:38

Surrogates	REC (%)	Qualifiers	Limits
4-BFB	287	S	70-130

**Analyst(s):** KBO **Analytical Comments:** a10,c4,e4,a28,j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
SG5.5sd	1608D73-002A	SoilGas	08/25/2016 11:06	GC37	126085

Analytes	Result	MDL	RL	DF	Sample Volume	Date Analyzed
Naphthalene	ND	5.0	5.0	1	0.95 L	09/01/2016 23:35

Surrogates	REC (%)	Qualifiers	Limits
4-BFB	309	S	70-130

**Analyst(s):** KBO **Analytical Comments:** a10,c4,e4,a28,j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
OA1	1608D73-003A	Indoor Air	08/26/2016 08:31	GC37	126085

Analytes	Result	MDL	RL	DF	Sample Volume	Date Analyzed
Naphthalene	ND	0.085	0.36	1	5.6 L	09/01/2016 19:07

Surrogates	REC (%)	Limits
4-BFB	87	70-130

**Analyst(s):** KBO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
IA2	1608D73-004A	Indoor Air	08/26/2016 08:35	GC37	126085

Analytes	Result	MDL	RL	DF	Sample Volume	Date Analyzed
Naphthalene	0.60	0.081	0.34	1	5.9 L	09/01/2016 19:51

Surrogates	REC (%)	Limits
4-BFB	86	70-130

**Analyst(s):** KBO

 Angela Rydelius, Lab Manager



## Quality Control Report

**Client:** Stellar Environmental Solutions  
**Date Prepared:** 8/29/16  
**Date Analyzed:** 8/29/16  
**Instrument:** GC26  
**Matrix:** Soilgas  
**Project:** 2015-16; Paramount

**WorkOrder:** 1608D73  
**BatchID:** 125909  
**Extraction Method:** ASTM D 1946-90  
**Analytical Method:** ASTM D 1946-90  
**Unit:** %  
**Sample ID:** MB/LCS-125909

### QC Summary Report for ASTM D1946-90

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Helium	ND	0.0835	0.025	0.025	0.10	-	84	60-140

QA/QC Officer



## Quality Control Report

**Client:** Stellar Environmental Solutions  
**Date Prepared:** 9/1/16  
**Date Analyzed:** 9/1/16  
**Instrument:** GC37  
**Matrix:** Sorbent Tube  
**Project:** 2015-16; Paramount

**WorkOrder:** 1608D73  
**BatchID:** 126085  
**Extraction Method:** TO17  
**Analytical Method:** TO17  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-126085

### QC Summary Report for TO17

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
TPH-Diesel (C10-C23)	230,J	10,500	140	1000	10000	-	105	60-140
<b>Surrogate Recovery</b>								
4-BFB	94.4	91.6			100	94	92	60-140

QA/QC Officer



## Quality Control Report

**Client:** Stellar Environmental Solutions  
**Date Prepared:** 9/1/16  
**Date Analyzed:** 9/1/16  
**Instrument:** GC37  
**Matrix:** Sorbent Tube  
**Project:** 2015-16; Paramount

**WorkOrder:** 1608D73  
**BatchID:** 126085  
**Extraction Method:** TO17  
**Analytical Method:** TO17  
**Unit:** µg/m<sup>3</sup>  
**Sample ID:** MB/LCS-126085

### QC Summary Report for TO17

Analyte	MB Result	LCS Result	MDL	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Naphthalene	ND	64.3	0.48	2.0	50	-	129	60-140
<b>Surrogate Recovery</b>								
4-BFB	87.3	85.5			100	87	86	70-130

QA/QC Officer





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

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1608D73

ClientCode: SESB

WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQUIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag

**Report to:**  
 Henry Pietropaoli  
 Stellar Environmental Solutions  
 2198 Sixth St. #201  
 Berkeley, CA 94710  
 510-644-3123    FAX: 510-644-3859

Email: hpietropaoli@stellar-environmental.com; r  
 cc/3rd Party:  
 PO:  
 ProjectNo: 2015-16; Paramount

**Bill to:**  
 Accounts Payable  
 Stellar Enviornmental Solutions  
 2198 Sixth St. #201  
 Berkeley, CA 94710  
 lwheeler@stellar-environmental.com

**Requested TAT: 5 days;**  
  
**Date Received: 08/26/2016**  
**Date Logged: 08/26/2016**

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
1608D73-001	SG5.5s	SoilGas	8/25/2016 10:38	<input type="checkbox"/>	A	A		A	A							
1608D73-002	SG5.5sd	SoilGas	8/25/2016 11:06	<input type="checkbox"/>	A			A	A							
1608D73-003	OA1	Indoor Air	8/26/2016 8:31	<input type="checkbox"/>				A	A							
1608D73-004	IA2	Indoor Air	8/26/2016 8:35	<input type="checkbox"/>				A	A							
1608D73-005	Unused Summa	Indoor Air	<Not Provided>	<input type="checkbox"/>			A			A						

**Test Legend:**

1	HELIUM_LC_SOILGAS(%)	2	PRHELIUM SHROUD	3	PRUNUSEDSUMMA	4	TO17DIESEL_ST(UG/M3)
5	TO17VOC_ST(UGM3)	6	UNUSED_SUMMA	7		8	
9		10		11		12	

**Prepared by: Jena Alfaro**

The following SampIDs: 001A, 002A contain testgroup TO17+Helium\_SG(UG/M3).; The following SampIDs: 003A, 004A contain testgroup TO17VOC+DIESEL.

**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.



## WORK ORDER SUMMARY

**Client Name:** STELLAR ENVIRONMENTAL SOLUTIONS

**QC Level:** LEVEL 2

**Work Order:** 1608D73

**Project:** 2015-16; Paramount

**Client Contact:** Henry Pietropaoli

**Date Logged:** 8/26/2016


**Comments:**

**Contact's Email:** hpietropaoli@stellar-environmental.com;  
 rmakdisi@stellar-

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
1608D73-001A	SG5.5s	SoilGas	TO17 with Helium as a Leak Check	1	Sorbent Tube	<input type="checkbox"/>	8/25/2016 10:38	5 days		<input type="checkbox"/>	
1608D73-001B	SG5.5s	SoilGas		1	1L Summa	<input type="checkbox"/>	8/25/2016 10:38			<input type="checkbox"/>	
1608D73-002A	SG5.5sd	SoilGas	TO17 with Helium as a Leak Check	1	Sorbent Tube	<input type="checkbox"/>	8/25/2016 11:06	5 days		<input type="checkbox"/>	
1608D73-002B	SG5.5sd	SoilGas		1	1L Summa	<input type="checkbox"/>	8/25/2016 11:06			<input type="checkbox"/>	
1608D73-003A	OA1	Indoor Air	TO17VOC+DIESEL	1	Sorbent Tube	<input type="checkbox"/>	8/26/2016 8:31	5 days		<input type="checkbox"/>	
1608D73-003B	OA1	Indoor Air		1	6L Summa	<input type="checkbox"/>	8/26/2016 8:31			<input type="checkbox"/>	
1608D73-004A	IA2	Indoor Air	TO17VOC+DIESEL	1	Sorbent Tube	<input type="checkbox"/>	8/26/2016 8:35	5 days		<input type="checkbox"/>	
1608D73-004B	IA2	Indoor Air		1	6L Summa	<input type="checkbox"/>	8/26/2016 8:35			<input type="checkbox"/>	
1608D73-005A	Unused Summa	Indoor Air	Unused Summa	1	6L Summa	<input type="checkbox"/>	<Not Provided>	5 days		<input type="checkbox"/>	

**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.

 <b>McCAMPBELL ANALYTICAL, INC.</b> 1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701 Telephone: (877) 252-9262 / Fax: (925) 252-9269 <a href="http://www.mccampbell.com">www.mccampbell.com</a> <a href="mailto:main@mccampbell.com">main@mccampbell.com</a>						<b>CHAIN OF CUSTODY RECORD</b>																																			
						Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush		STD		Quote #																											
J-Flag / MDL			ESL			Cleanup Approved			Bottle Order #																																
Delivery Format: GeoTracker EDF				PDF		EDD		Write On (DW)		EQUIS																															
Report To: <u>H. Petropoulos</u> Bill To:						<b>Analysis Requested</b>						Helium Shroud SN#																													
Company: <u>Stellar Environmental Solutions</u>						Notes: Please specify units if different than default: VOCs is reported in $\mu\text{g}/\text{m}^3$ , fixed is reported in % <u>He Shroud maintained @ 27-30% He</u>						<del>Leak Check Default is IPA</del>																													
Email: <u>hpetropoulos@stellar-environmental.com</u>																																									
Email: _____      Telephone: <u>510 644 3123</u>																																									
Project Name/#: <u>2015-16</u>																																									
Project Location: <u>Paramount</u> PO #						TO17 TPH ofiesel naphthalene						Matrix																													
Sampler Signature: <u>Hans Petropoulos</u>												Canister Pressure / Vacuum																													
SAMPLE ID Location / Field Point		Sampling Start Date      Time		End Time		Canister SN# <u>or Sorbent</u>		Sample Kit / Manifold #		VOCs TO-15 ( $\mu\text{g}/\text{m}^3$ ) - See Notes		8010 by TO-15 ( $\mu\text{g}/\text{m}^3$ )		TPH (g) ( $\mu\text{g}/\text{m}^3$ )		LEED: (inc. 4PCH, Formaldehyde, CO, Total VOCs)		Fixed Gas (CO, Methane, Ethane, Ethylene, Acetylene, Propane, CO) %		Fixed Gas: (O <sub>2</sub> , N <sub>2</sub> ) %		APH: Aliphatic and/or Aromatic (circle one) $\mu\text{g}/\text{m}^3$		Helium Leak Check %		Leak Check (IPA, Norflorane, 1,1-difluoroethane) $\mu\text{g}/\text{m}^3$		Soilgas		Indoor Air		Initial		Final							
SG5.5s		8/25/16 1038		1100		G0149985		765																																	
SG5.5		↓		1100		2515		↓																																	
SG5.5sd		↓		1106		1125		G0150345		998																															
SG5.5		↓		1125		1923		↓																																	
		(RP)		8/26/16		TS		manifold		Summa																															
OAI		8/25/16		0845		0831		G0150106		8638 / 932																															
IA2		↓		0845		0835		G0147795		4736 / 933																															
6l-Purge can								934																																	

\*\*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
<u>Hans Petropoulos Stellar Environmental</u>		<u>8/26/16</u>	<u>1300</u>	<u>[Signature]</u>		<u>8/26/16</u>	<u>1300</u>	<u>RL/MDLs must meet Residential ESLs</u>
<u>[Signature]</u>		<u>8/26/16</u>	<u>1055</u>	<u>[Signature]</u>		<u>8/26/16</u>	<u>1105</u>	



### Sample Receipt Checklist

Client Name:	<b>Stellar Environmental Solutions</b>	Date and Time Received:	<b>8/26/2016 16:55</b>
Project Name:	<b>2015-16; Paramount</b>	Date Logged:	<b>8/26/2016</b>
WorkOrder №:	<b>1608D73</b>	Matrix:	<u>Indoor Air/SoilGas</u>
Carrier:	<u>David Shaver (MAI Courier)</u>	Received by:	Jena Alfaro
		Logged by:	Jena Alfaro

#### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Date and Time of collection noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>

#### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

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

All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample/Temp Blank temperature		Temp:	NA <input checked="" type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

#### UCMR3 Samples:

Total Chlorine tested and acceptable upon receipt for EPA 522?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

-----  
 Comments: