

<b>Type of Services</b>	<b>Draft Preliminary Environmental Assessment Report</b>
<b>Location</b>	<b>Menlo Park Small High School Project 150 Jefferson Drive Menlo Park, California (SITE CODE 204273)</b>
<b>Client</b>	<b>Sequoia Union High School District</b>
<b>Client Address</b>	<b>480 James Avenue Redwood City, CA 94062</b>
<b>Project Number</b>	<b>166-14-8</b>
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## **SECTION 1.0: INTRODUCTION**

This Preliminary Environmental Assessment (PEA) report was prepared at the request of the Department of Toxic Substances Control (DTSC) to evaluate current Site conditions at the planned Menlo Park Small High School Project located at 150 Jefferson Drive in Menlo Park, California (Site, Figures 1 and 2). This PEA report was prepared in accordance with the Revised PEA Work Plan dated November 13, 2015 prepared by Cornerstone Earth Group (Cornerstone). A copy of DTSC's PEA Work Plan approval letter dated November 30, 2015 is included in Appendix A.

This work was performed for the Sequoia Union High School District (District) in accordance with our agreement with the District dated December 1, 2015.

### **1.1 SITE DESCRIPTION**

The approximately 2.17-acre property is located at 150 Jefferson Drive in Menlo Park and is currently occupied with an asphalt pavement parking lot and warehouse building. The Site is located in a commercial area and is bound to the north by Jefferson Drive. A 43,986 square-foot structure exists on the Site and is currently occupied by Bay Associates Wire Technologies. The majority of the building is used for manufacturing of custom cable and wire products with the northern portion utilized for administrative office space. The majority of the building work floor is raised approximately 4 feet above the parking lot grade to accommodate the truck-loading bays along the eastern portion of the building.

### **1.2 PLANNED DEVELOPMENT**

The District is planning to redevelop the Site with the new Menlo Park Small High School Project. To prepare the school for the 2018-19 school year, the District will demolish the existing warehouse building and construct approximately 40,000 square feet of new high school structures and associated exterior play field and parking areas. The school will have capacity for 400 students and 35 faculty and staff. Potable water will be supplied by the local water service provider. The planned development is shown on Figure 3.

### **1.3 PEA OBJECTIVES**

As defined by DTSC, Preliminary Endangerment Assessment (PEA) means an activity which is performed to determine whether current or past hazardous material management practices or waste management practices have resulted in the release or threatened release of hazardous materials, or whether naturally occurring hazardous materials are present, which pose a threat to public health or the environment. The PEA is also applicable to releases of hazardous materials.

Specific objectives of the PEA include:

- Determining if a release of hazardous wastes/substances/materials has occurred at a site and delineating the general extent of the contamination.
- Evaluate available information for indications of naturally-occurring hazardous materials at the site.
- Estimating the potential threat to public health and/or the environment posed by the site and providing an indicator of the relative risk.
- Determining if an interim action is required to reduce an existing or potential threat to public health or the environment.
- Completing preliminary project scoping activities to determine data gaps and identify possible remedial action strategies to form the basis for development of a site strategy.
- Providing the data and information to the DTSC.
- Assessing and providing for the informational needs of the community.

## **SECTION 2.0: PRIOR ENVIRONMENTAL STUDIES**

In 2014, Cornerstone performed Phase I and II Environmental Site Assessment (ESA) studies at the Site as part of the District's acquisition of the property (Cornerstone, 2014a, 2014b). A geotechnical investigation was also performed (Cornerstone, 2014c). Selected information from these reports is presented below. Data summary tables for the December 2014 Phase II investigation are included in Appendix B. Please refer directly to these documents for a more complete overview of the Site.

### **2.1 SITE HISTORY**

Based on the information obtained during the Phase I ESA, the Site appears to have been undeveloped land until construction of the existing building in approximately 1962. Building plans from 1962 indicate that the building was constructed for Bucal, Inc., however, it is not known if Bucal, Inc. ever occupied the building. Scientific Products, a division of American Hospital Supply Corporation, is listed in city directories as an occupant of the building between at least 1963 and 1975. Jonker Business Machines (along with Scientific Products) also was identified as an occupant in a 1970 city directory. Bay Associates Wire Technologies, the current occupant, appears to have occupied the building since the late 1970s or early 1980s.

### **2.2 PHASE I ESA – NOVEMBER 2014**

Provided below is a summary of potential environmental concerns identified in Cornerstone's November 5, 2014 Phase I ESA prepared for the Site.

- At the time of our study, hazardous materials used at the Site by Bay Associates consisted mainly of methyl ethyl ketone (MEK), tetrahydrofuran (THF), isopropyl alcohol (IPA) and solvent based marking inks. These materials are stored within metal flammable materials storage cabinets. Hydraulic fluid, EDM dielectric oil, EnSolv (n-propyl bromide) and cutting fluids (way oil) also were observed at the Site. Hazardous wastes are stored within a canopy-covered and fenced enclosure located along the southern exterior side of the building.

Details regarding hazardous materials use by occupants prior to Bay Associates were not identified within the data sources researched during the Phase I ESA. However, building plans from 1962 show a chemical storage room with explosion proof fixtures within the southeast corner

of the building. This chemical storage room and associated fixtures were relocated to the southwest corner of the building in 1970. The presence of the former chemical storage rooms suggests that activities by prior occupants involved the use of hazardous materials.

- Based on the data reviewed, the Site appears to be located within an area where volatile organic compounds (VOCs) from an unidentified source are present in ground water. Perchloroethene (PCE) and trichloroethene (TCE) concentrations have been reported in ground water at adjacent properties at concentrations that exceeded its drinking water Maximum Contaminant Level (MCL) of 5 micrograms per liter (5 µg/L). Additional information pertaining to the regional solvent plume is presented in Section 3.3 of this PEA Report.

The United States Environmental Protection Agency (EPA) recommends further evaluation of potential vapor intrusion concerns for buildings overlying PCE/TCE impacted ground water that exceed 5 µg/L. Vapor intrusion generally occurs when there is a migration of volatile chemicals from contaminated ground water or soil into an overlying building. Volatile chemicals such as PCE and TCE can emit vapors that may migrate as vapors through subsurface soils and into indoor air spaces of overlying buildings.

- A railroad track spur historically extended onto the southern portion of the Site. The former railroad tracks and wooden ties appear to have been removed. Assorted chemicals historically were commonly used for dust suppression and weed control along rail lines.
- Based on our review of geologic maps, the Site is located approximately 4½ miles from the nearest ultramafic rock outcrop that may contain naturally occurring asbestos (NOA).

### 2.3 GENERAL SOIL QUALITY

During Cornerstone's December 2014 Phase II investigation, fill and native soil samples were collected from 18 exploratory borings and were analyzed for various organic and inorganic compounds including petroleum hydrocarbons, VOCs, polyaromatic hydrocarbons (PAHs), semi-VOCs (SVOCs), polychlorinated biphenols (PCBs), organochlorine pesticides (OCPs), metals, and/or asbestos. With exception to concentrations of oil-range total petroleum hydrocarbons (TPH-oil) detected in 2 of 12 soil samples at 77 milligrams per kilogram (mg/kg) and 130 mg/kg (ESL<sup>1</sup> is 100 mg/kg for odor/nuisance concerns) and low concentrations (i.e., less than environmental screening criteria) of diesel-range total petroleum hydrocarbons (TPH-diesel) (detected in 6 of 12 soil samples) and anthracene (detected in 1 of 3 soil samples), no analytes were detected above their respective laboratory reporting limit. The detected metal concentrations appear typical of natural background and/or less than their respective residential screening criteria.

Based on the analytical data, soil quality at the locations sampled near the former rail spur line and fill soil placed at the Site does not appear significantly impacted. Additionally, NOA does not appear to be a significant concern at the Site.

As noted, one soil sample collected from the boring advanced near the exterior hazardous waste storage area (SB-1) detected TPH-oil at 130 mg/kg. Note that its residential ESL for direct exposure human health concerns is 11,000 mg/kg.

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<sup>1</sup> Detected soil contaminants were compared to DTSC-recommended residential Screening Levels (DTSC-SLs) presented in the DTSC Office of Human and Ecological Risk (HERO) guidance document *Human Health Risk Assessment (HHRA) Note 3* updated January 2016 (HERO, 2016). If a DTSC-SL is not established, the soil results were compared to residential Regional Screening Levels (RSLs) established by USEPA Region 9 (USEPA, 2015). For detected chemicals for which RSLs have not been established, Environmental Screening Levels (ESLs) established by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2016) were used for comparison. Metal concentrations were also compared to regional published background concentrations (Scott, 1991; Bradford, 1996; LBNL, 2009; and Duverge, 2011).

## 2.4 GENERAL GROUND WATER QUALITY

Laboratory analyses of the grab ground water samples collected from the exploratory borings during Cornerstone's December 2014 investigation did not detect SVOCs, BTEX compounds (benzene, toluene, ethylbenzene, and xylenes), gasoline-range total petroleum hydrocarbons (TPH-gasoline), fuel oxygenates and/or other VOCs above their respective laboratory reporting limits except for 1,1-dichloroethene (1,1-DCE) and TPH-diesel/oil. 1,1-DCE was detected in 4 of 8 grab ground water samples at concentrations ranging from 1.2 micrograms per liter ( $\mu\text{g/L}$ ) to 2.1  $\mu\text{g/L}$ ; its drinking water MCL<sup>2</sup> is 6  $\mu\text{g/L}$ . The 1,1-DCE detections were found in the grab ground water samples collected from the borings advanced along a hypothetical line extending from the approximate northwest corner to southeast corner of the property (SB-5, SB-4, SB-3, and SB-8). The source of 1,1-DCE detected in the grab ground water samples is not known but is likely associated with the ground water solvent plume reported in the regional area. 1,1-DCE is a breakdown product of PCE, TCE and cis-1,2-dichloroethene (cis-1,2-DCE). As discussed in Section 3.3 of this PEA Report, these compounds have been detected on properties north and south of the Site. Regulatory agencies have not identified a responsible party for the solvent release(s).

TPH-oil was detected in 3 of 8 grab ground water samples at concentrations of 350  $\mu\text{g/L}$ , 800  $\mu\text{g/L}$ , and 1,000  $\mu\text{g/L}$ , respectively. The greatest concentrations were detected from the two borings advanced near the southeast corner of the Site (SB-3 and SB-8); TPH-diesel also exceeded its ESL of 100  $\mu\text{g/L}$  in these two samples. Note that only low to non-detectable concentrations of TPH-diesel/oil were reported in the three soil samples collected from the upper approximate 10 feet from borings SB-3 and SB-8. This data indicates a significant soil source likely does not exist at these locations.

The source of the TPH-affected ground water is not known but may be associated with possible localized minor spills/releases and/or associated with an off-Site release. Moderate and heavy-range petroleum hydrocarbons are relatively immobile in the environment and typically are limited in extent. The TPH-impacted ground water would be expected to degrade over time due to natural attenuation processes. These impacts do not appear to pose a significant risk to human health in a school setting.

## 2.5 GENERAL SOIL VAPOR QUALITY

To assist in evaluating potential vapor intrusion concerns, during Cornerstone's December 2014 investigation co-located sub-slab and subsurface soil vapor samples were collected at eight locations inside the on-Site building. The sub-slab samples were collected in the aggregate material immediately below the concrete floor slab. The subsurface samples were collected from approximate depths of 5 or 10 feet. An outdoor ambient air sample was also collected to assist in evaluating outdoor air quality.

Laboratory analyses of the eight sub-slab and eight subsurface soil vapor samples detected several VOCs; however, no chlorinated VOCs associated with the regional solvent plume (i.e., PCE/TCE and their breakdown products) were detected above their respective laboratory reporting limits.

Following CalEPA and DTSC guidance, the detected VOCs were compared to calculated sub-slab and subsurface screening criterion that are 20 times (attenuation factor = 0.05) and 1,000 times (attenuation factor = 0.001) the indoor air RSL, respectively. For example, the residential (unrestricted use) indoor air DTSC-SL for benzene is 0.097 micrograms per cubic meter ( $\mu\text{g/m}^3$ ). The calculated sub-slab and subsurface screening levels for benzene are 1.94  $\mu\text{g/m}^3$  and 97 $\mu\text{g/m}^3$ , respectively. None of the detected VOCs exceeded their respective calculated environmental screening criteria with exception of benzene and chloroform.

Benzene concentrations in the eight subsurface soil vapor samples ranged from 5 to 220  $\mu\text{g/m}^3$  with two samples exceeding its calculated screening level of 97  $\mu\text{g/m}^3$ . Both of the elevated benzene

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<sup>2</sup> Detected contaminants in ground water were compared to Maximum Contaminant Levels (MCLs) established by State Water Resources Control Board (September 2015). For detected chemicals for which MCLs have not been established, ESLs established by the San Francisco Bay Regional Water Quality Control Board (Water Board, 2016) were used for comparison.



concentrations were reported in the soil vapor samples collected within the building from an approximate depth of 10 feet below the elevated concrete floor slab. Benzene was not detected above its laboratory reporting limit in the eight sub-slab soil vapor samples. As noted above, benzene also was not detected in the eight grab ground water samples and selected soil samples collected at the Site.

The source of benzene detected in the subsurface soil vapor samples is not known; however, based on the available data and comparison to the selected screening criteria used by DTSC, the elevated benzene concentrations in soil vapor do not appear to be a Site-wide concern. Additionally, oxygen concentrations in the sub-slab vapor samples ranged from 16 to 20 percent and may explain why benzene was not detected above its laboratory reporting limit in the sub-slab samples. Petroleum hydrocarbon vapors will naturally degrade in an aerobic environment thus reducing the potential for petroleum hydrocarbon vapor intrusion concerns.

Chloroform was detected in 2 of 8 sub-slab soil vapor samples at concentrations of 5.5  $\mu\text{g}/\text{m}^3$  (SV-1) and 18  $\mu\text{g}/\text{m}^3$  (SV-5); its calculated screening level is 2.4  $\mu\text{g}/\text{m}^3$ . Chloroform was not detected above its laboratory reporting limit in the eight subsurface soil vapor samples. Similar to benzene, chloroform also was not detected in the eight grab ground water samples and selected soil samples collected at the Site, including the soil samples collected from the SV-1 and SV-5 borings. The source of the chloroform detected in the subsurface vapor samples is not known but may be associated with indoor air contamination inside the building associated with the existing tenant operations. Ambient barometric pressure forces can transfer indoor air across the floor slab via cracks and/or penetrations and into underlying soil. This natural process may also explain the occurrence of other VOCs detected at low concentrations in the soil vapor samples.

### **SECTION 3.0: AREAS OF CONCERN REQUIRING FURTHER EVALUATION**

This section presents the areas of potential concern requiring further evaluation that were identified during the District's scoping meeting with DTSC on June 16, 2015. A sampling and analyses plan to evaluate these areas of concern was presented in Cornerstone's Revised PEA Work Plan that was approved by DTSC in their letter dated November 30, 2015.

#### **3.1 PEST CONTROL AND LEAD-BASED PAINT RESIDUE**

Due to the age of the existing building, there is a potential that termiticides may have been sprayed near building foundations. Organochlorine pesticides were commonly used as insecticides for termite control around structures (DTSC, 2006). Since termiticides typically were applied adjacent to building foundations, the pesticide concentrations generally are highest closest to the exterior wall and decrease laterally away from the structures. Additionally, based on the age of the existing building, possible past lead-based paint (LBP) residue may have impacted shallow soil quality. Weathering, scraping, chipping, and abrasion could cause lead to be released to and accumulate in soil near the structure.

#### **3.2 POLYCHLORINATED BIPHENYLS (PCB) TRANSFORMER**

A PG&E transformer is located near the northeast corner of the Site. There is a potential that PCBs may have been historically used within the transformer. PCBs are man-made chemicals commonly used in the past as coolants and lubricants. PCBs are found as a clear to yellow, heavy oily liquid or waxy solid. PCBs were frequently used as insulation in electrical equipment because of their stability, low water solubility, high boiling point, low flammability, and low electrical conductivity. Prior to 1978, PCBs were often used in the manufacture of transformers and capacitors, and leaks or releases from transformers producing contaminated areas have been documented. The age of the transformer does not necessarily indicate the presence or absence of impacts to soil from PCBs, as releases of PCBs from a previous transformer may have occurred before its replacement. Once released to the environment, PCBs bind to soil particles and are very persistent.



Additionally, potential sources of PCBs in buildings constructed or renovated between approximately 1950 and 1979 include caulking used around windows, door frames, building joints, masonry columns and other masonry building materials. Based on the information obtained during the Phase I ESA, the Site appears to have been developed with the existing building in approximately 1962. PCB-containing caulk may be present on the exterior of the building as well as in surrounding surfaces.

### 3.3 REGIONAL VOC GROUND WATER PLUME

Based on the information sources reviewed during Cornerstone's Phase I ESA, the Site appears located in an area where chlorinated VOCs from an unidentified source are present in ground water. A responsible party has not yet been identified by the regulatory agencies. Provided below is a summary of prior environmental studies performed on nearby properties where chlorinated VOCs in ground water have been reported.

A former warehouse building on the 149 Commonwealth Drive property reportedly was used exclusively for liquor storage and office space. In 1987, two ground water monitoring wells (MW-1 and MW-2) were installed on the 149 Commonwealth Drive property. VOCs, predominantly TCE at 630 µg/L, were detected in ground water from well MW-2 located on the northeast portion of the property. Beta Associates (1987) subsequently installed four additional ground water monitoring wells (MW-3 to MW-6). TCE was reported at up to 925 µg/L, predominantly in MW-2 and MW-6; well MW-6 was located on the adjacent property east of MW-2. Beta Associates concluded that, based on the data and knowledge of the property history, the VOC contamination appears to originate from an off-property source.

During the late 1980s and early 1990s, TCE was detected at up to 2,300 µg/L (in MW-6) during subsequent sampling of ground water from the wells. During these sampling events, a southeasterly ground water flow direction was reported. However, as discussed in Section 4.2 of this PEA report, general regional ground water flow towards the north to northeast is anticipated.

In October 1998, the Water Board issued a no further action letter for the 149 Commonwealth Drive property that stated the following: *Groundwater monitoring data over the past seven years has indicated the presence of low levels of VOCs in shallow groundwater. Board staff agree that these chemicals most likely originate from an up gradient and off-site source. Concentrations of these compounds have decreased significantly within this period of time and currently only TCE is detectable in one well, MW-2, at a concentration of 5.3 µg/L. Additionally, the concentration of pollutants currently detected in groundwater beneath the property, whether they be from on- or off-site, do not represent a significant threat to water quality. Based on the information presented to the Board, and with the provision that the information provided to this agency was accurate and representative of site conditions, no further actions are required on the subject property.*

The San Mateo County Department of Environmental Health (DEH) files also contained a proposal prepared by EMCON in 1990 for the installation of ground water monitoring wells at 155 Jefferson Drive (located across Jefferson Drive to the northeast of the Site). EMCON noted that four soil borings were previously drilled along the perimeter of the 155 Jefferson Drive property and soil and ground water were sampled. The samples reportedly were analyzed for chlorinated VOCs and aromatic VOCs. Chlorinated VOCs reportedly were detected in the ground water from three of the four borings; the laboratory results were not described. EMCON stated that the property is in an area of Menlo Park that has ground water contamination known to exceed California drinking water MCLs for VOCs and that the source of ground water contamination is unknown.

The DEH files also contained a Water Board no further action letter for 141 Jefferson Drive, located across Jefferson Drive from the Site. The letter states that low levels of VOCs were detected in ground water at 141 Jefferson Drive, including PCE at 11 µg/L, cis-1,2-DCE at 33 µg/L and Freon 113 at 8 µg/L.

### 3.4 RADON

Elevated levels of radon in indoor air are a result of radon moving into buildings from the soil, either by diffusion or flow due to air pressure differences. The ultimate source of radon is the uranium that is naturally present in rock, soil, and water. Some types of rocks are known to have uranium concentrations greater than others and, consequently, there is an increased chance of elevated radon concentrations in soils and weathered bedrock where they are located. Areas down-slope which received sediments and/or surface and ground water from rock units with above average uranium content also have an increased likelihood of elevated radon concentrations in soil gas. In California, bedrock that can contain above average uranium concentrations includes the Monterey formation, asphaltic rocks, marine phosphatic rocks, granitic rocks, felsic volcanic rocks, and certain metamorphic rocks.

The federal EPA has established an action level of 4 pCi/L, above which the EPA recommends taking action to reduce radon levels in structures. To help local, state, and federal agencies prioritize resources and implement radon-control building codes, the EPA published maps of radon hazards for each county in California ([www.epa.gov/radon/zonemap/california.htm](http://www.epa.gov/radon/zonemap/california.htm)).

Radon potential maps are provided in the 2014 California Geological Survey (CGS) Special Report 226, titled *Radon Potential in San Mateo County, CA (CGS 2014)*. These maps were prepared based upon 1) indoor-radon data; 2) National Uranium Resource Evaluation (NURE) airborne equivalent uranium (eU) data; and 3) Natural Resources Conservation Service (NRCS) soil data for permeability and shrink-swell character. As shown on the map provided in Appendix D, the Site is not located in a “High” or “Moderate” zone having potential for indoor radon levels to exceed the federal EPA action level. The Site is located in the “Unknown” radon zone. Geologic units with insufficient data from within San Mateo County and from previous studies were assigned “unknown” radon potential.

## SECTION 4.0: ENVIRONMENTAL SETTING

### 4.1 PHYSICAL SETTING

A 1997 USGS 7.5 minute topographic map was reviewed to evaluate the physical setting of the Site. The Site's elevation is approximately 10 feet above mean sea level; topography in the vicinity of the Site slopes downward gently to the northeast towards the San Francisco Bay.

### 4.2 GEOLOGY AND HYDROGEOLOGY

The Site is located within the Santa Clara Valley, which is a broad alluvial plane between the Santa Cruz Mountains to the southwest and west, and the Diablo Range to the northeast. The San Andreas Fault system, including the Monte Vista-Shannon Fault, exists within the Santa Cruz Mountains and the Hayward and Calaveras Fault systems exist within the Diablo Range.

Based on Cornerstone's subsurface investigation, the concrete slab section for the existing raised building consisted of approximately 5 to 11 inches of concrete over approximately 4 feet of fill. The fill consists of varying amount of clay, sand, and gravel. The northern at-grade administrative office space consisted of approximately 6 inches of concrete over 3 inches of sand and 3 inches of coarse gravel fill followed by approximately 1½ feet of fill consisting of sandy clay with gravel. Exterior surface pavements generally consisted of 3 to 4 inches of asphalt concrete over approximately 3 inches of aggregate base.

Native subsurface materials observed below fill and aggregate base consisted of several feet of very stiff to hard fat clay underlain by medium stiff to hard lean clay with varying amounts of sand. Increased sand and gravel content were observed at approximately 14 feet below the asphalt pavement grade at several boring locations; free ground water was observed in this layer.

Ground water was observed at depths ranging from approximately 11 to 16 feet below the asphalt pavement surface. All measurements were taken at the time of drilling and may not represent the

stabilized levels that can differ from the initial levels encountered. Regional ground water flow is assumed to be in the north-northeast direction toward the San Francisco Bay; however, variable flow directions have been reported.

#### **4.3 EXPOSURE PATHWAYS**

Exposure pathways are the mechanisms by which a receptor (e.g. construction worker or future site user) may contact contaminants of concern at the Site. Exposure pathways consist of three parts: (1) a source of contaminants, (2) an exposure point where the receptor may come into contact with contaminants (e.g. contaminated soil, drinking water, and/or indoor air), and (3) an exposure route (e.g. dermal, ingestion, and/or inhalation).

As discussed in Section 3, contaminants of potential concern (COPC) in shallow soil consist of organochlorine pesticides, lead, and PCBs. The physical characteristics of the COPC in soil at the Site make them relatively persistent and immobile. These COPC typically do not readily dissolve in water and migrate to ground water, as they readily adsorb to soil particles. The COPC will not readily volatilize or migrate as vapors. The COPC are expected to persist in surface soil with the highest concentrations located near the surface. These chemicals may migrate if adsorbed to soil particles that become entrained into ambient air as a result of wind erosion of surface soil.

As is typical to most regional VOC ground water contamination plumes, volatilization of contaminants located in the subsurface soils and ground water and the subsequent mass transport of these vapors into indoor spaces constitute a potential inhalation exposure pathway.

Since Site ground water is not currently used for drinking water purposes, and the VOC-impacted ground water beneath the Site is associated with off-Site sources, the ground water exposure pathway is not complete and does not need to be further evaluated.

#### **4.4 CONCEPTUAL SITE MODEL**

A conceptual site model (CSM) was developed to assist in understanding Site conditions and potential pathways by which humans may be exposed to contaminants of concern at the Site. The CSM is based on the known Site history and results of the data collected at the Site to date. An exposure pathway is considered complete if it presents a means of exposure to a receptor. A complete exposure pathway includes all of the following: a source of contamination, release mechanism, transport mechanism, exposure point, and a receptor. Figure 4 presents the CSM for the Site.

### **SECTION 5.0: IMPLEMENTATION OF PEA WORK PLAN**

#### **5.1 PRE-FIELD ACTIVITIES**

Approximately 7 days before starting field work, the District issued a DTSC-approved Field Work Notice to neighboring businesses within line of sight of the school property. A copy of the notice is included in Appendix A.

#### **5.2 SOIL SAMPLING**

On December 9, 2015, Cornerstone's field engineer implemented the soil sampling and analyses plan presented in the DTSC-approved Revised PEA Work Plan. Table 1 presented below summarizes the soil sample handling and testing requirements; Table 2 presents the implemented sampling and analysis activities. Approximate sampling locations are shown on Figure 2.

**Table 1. Soil Sample Handling and Testing Requirements**

Chemical(s)	Test Method	Minimum Reporting Limits*	Preservative	Hold Times
OCPs	8081A	2 µg/kg 40 µg/kg for Chlordane	4° C	14 Days
PCBs	8082A	50 µg/kg	4° C	14 Days
Lead	6010B	0.5 mg/kg	4° C	180 Days

\* For samples with no dilution. Reporting limits may be higher for samples that require dilution due to elevated COC.

**Table 2. Soil Sampling and Analysis Activities**

Boring ID	Sample Location	Sample Depth (feet)	Sample Analysis			Area of Concern (AOC)
			Lead	OCPs	PCBs	
SB-11	West of Existing Building	0-0.5	X	X		LBP Residue, Pest Control
	West of Existing Building	2-2.5		X		Pest Control
SB-12	North of Existing Building	0-0.5	X	X	X	LBP Residue, Pest Control, PCBs
	North of Existing Building	2-2.5		X	X	Pest Control, PCBs
SB-13	East of Existing Building	0-0.5	X	X		LBP Residue, Pest Control
	East of Existing Building	2-2.5		X		Pest Control
SB-14	Near PG&E Transformer	0-0.5			X	PCBs
	Near PG&E Transformer	2-2.5			X	PCBs
SB-15	Near PG&E Transformer	0-0.5			X	PCBs
	Near PG&E Transformer	2-2.5			X	PCBs
<b>ANALYSES TOTALS</b>			<b>3</b>	<b>6</b>	<b>6</b>	

### 5.2.1 Soil Sampling Methods

The subsurface exploration program was performed using Direct Push technology equipped with the Dual Wall Sampling System. The Dual Wall Sampling System helps prevent cross contamination between sampling intervals. The Dual Wall Sampler is comprised of two main components: an exterior steel casing and an inner sample barrel. The outer casing has a 2-inch outer diameter (OD) and a 1.5-inch inner diameter (ID). The sample barrel is 5 feet in length with a 1.375-inch outside diameter (OD) and a 1-inch inner diameter (ID). The Dual Wall sample barrel was loaded with a 5-foot acetate liner and installed inside the outer casing. The outer drive casing and inner sample barrel were then hydraulically pushed to a depth of approximately 5 feet. As these tools were advanced, the inner sampling barrel collected the soil core sample. This sampler was then retrieved while the outer casing remained in place, protecting the integrity of the hole. Where borings extended below 5 feet, a new sampler was lowered into place and advanced another 5 feet to collect the next soil sample. This process continued until the desired depth was reached. Our field engineer continuously logged the borings in general accordance with the Unified Soil Classification System (ASTM D-2487). All borings were sealed to the surface with cement grout upon completion of sampling activities.

The ends of the liners were covered in Teflon film, fitted with plastic end caps, and labeled with a unique identification number. The samples were then placed in an ice-chilled cooler and transported to a state-certified analytical laboratory with chain of custody documentation.

All sampling equipment was cleaned using distilled water and a Liquinox solution prior to use at each sample point. Additionally, separate exterior steel casing and inner sample barrel were used at each boring location.

### 5.3 SOIL VAPOR SAMPLING

Between December 9, 2015 and December 21, 2015 Cornerstone’s field engineer and geologist implemented the soil vapor sampling and analyses plan presented in the DTSC-approved Revised PEA Work Plan. Subsurface soil vapor samples were collected at two exterior locations (SV-9 and SV-10) and three building interior locations (SV-2, SV-3, and SV-7). The two exterior soil vapor probes were installed south and north of the existing building, respectively. The three interior soil vapor probes (SV-2A, SV-3A, and SV-7A) were installed near previous subsurface vapor probes (SV-2, SV-3, and SV-7) that were installed and sampled during Cornerstone’s December 2014 investigation.

Table 3 presented below summarizes the soil vapor sample handling and testing requirements. Approximate sampling locations are shown on Figure 2.

**Table 3. Soil Vapor Sample Handling and Testing Requirements**

Chemical(s)	Test Method	Minimum Reporting Limits*	Hold Times
VOCs	TO-15	See Appendix E	30 Days
Fixed Gases (carbon dioxide, methane, and oxygen)	D-1946	0.023% for carbon dioxide 0.0003% for methane 0.23% for oxygen	30 Days

#### 5.3.1 Temporary Subsurface Soil Vapor Probe Installation

Following completion of concrete coring activities, on December 9, 2015 our C-57 licensed drilling contractor used limited access drilling equipment to advance the soil vapor probes to varying depths below the asphalt pavement surface. To help limit potential soil consolidation caused by Direct Push drilling activities, hand auger equipment was used to extend the bottom section of each boring to its desired depth. Boring and well construction details are included in Appendix C.

The subsurface probes consisted of a stainless steel expendable vapor tip and screen installed at an approximate depth of 5 feet below the asphalt pavement surface; the vapor tip was affixed to stainless steel tubing. The vapor probes were constructed by first placing approximately 2 inches of coarse aquarium sand into the bottom of the borehole using a tremie pipe. The stainless steel tip and tubing was then lowered into the borehole via a tremie pipe. Additional sand was then placed in the borehole via tremie to create an approximately 1 foot sand pack interval around the vapor tip. Approximately 1 foot of granular bentonite (Benseal™) was placed on top of the sand pack via the tremie pipe. Bentonite “gel” was placed via tremie pipe on top of the dry granular bentonite to the surface. The stainless steel tubing was labeled with depth of placement and capped utilizing a vapor tight Swagelok valve set in the “off” position. A construction cone was placed over the probe until purging and sampling was performed.

#### 5.3.2 Soil Vapor Purging and Sampling Methods

Due to low permeability clays beneath the Site, purging was performed in two steps. Approximately six days after probe installation, on December 15, 2015 the downhole shut off valve was opened and one purge volume of vapor was removed using a 1-liter summa canister. The volume of vapor removed was verified by the calculated pressure drop in the summa canister. The purge volume was calculated based on the length and inner diameter of the sampling probe, the connected sampling tubing and equipment, dry bentonite seal, and the borehole sand pack. At least three days after the initial purging, we returned to the Site for additional purging followed by sampling. Except at location SV-10, the purge volume during the second event was calculated similar to the first event. Due to observed back pressure at location SV-10, the purging volume was calculated based on the connected sampling tubing and equipment; the sand pack was excluded.

During the second round of purging then sampling, a 167 milliliters-per-minute flow regulator inclusive of particulate filter was fitted to the shut off valve and the other end to a “T” fitting. One end of the “T” was connected to the sampling summa canister. The other end of the “T” was affixed to a digital vacuum gauge and a 1-liter summa canister utilized for purging. Prior to purging, a minimum 10-minute vacuum tightness test was performed on the manifold and connections by opening and closing the 1-liter purge canister valve and applying and monitoring a vacuum on the vacuum gauge. The sample shut-off valve on the downhole side of the sampling manifold remained in the “off” position. Purging began when gauge vacuum was maintained for at least 10 minutes without any noticeable decrease (less than approximately 0.1 inches of mercury (Hg) for properly connected fittings).

Pentane was used as the leak detection compound during sampling by applying the pentane gas into the shroud atmosphere. Sampling began by opening the summa canister valve. Immediately upon opening the sampling valve, a shroud was placed over and enclosed the atmosphere of the borehole and entire sampling train including all connections.

Soil vapor sampling continued until limited vapor flow was observed and/or until the vacuum gauge indicated approximately 5 inches of Hg remaining. A data logging photoionization detector (PID) was utilized during sampling to monitor the atmosphere inside the shroud through a bulk head fitting. The logged data (at minimum thirty [30] second intervals) was corrected to parts per million by volume pentane concentrations and utilized to evaluate the integrity of the sampling train.

To confirm the pentane atmosphere, one confirmation sample was collected from the shroud atmosphere through the sampling port of the PID. The confirmation sample was collected using a summa connected to a flow controller within the shroud during sample collection. All field data, including equilibrium time, purge volume calculations and leak check measurements were recorded.

### **5.3.3 Temporary Probe Destruction Methods**

Upon completion of soil vapor sampling activities and receipt of the analytical results, the soil vapor probes were removed and the boreholes were sealed to the surface with cement grout.

## **5.4 DISCUSSION OF RESULTS**

### **5.4.1 Environmental Screening Levels**

The soil and soil vapor sampling results collected during this PEA investigation were compared to residential DTSC-SLs. If a DTSC-SL has not been established, the soil results were compared to RSLs.

HERO HHRA Note 3 does not include environmental screening levels for comparison to subsurface soil vapor data. To evaluate potential vapor intrusion concerns, HERO recommends using the DTSC guidance document Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air dated October 2011 (DTSC, 2011). The indoor air residential DTSC-SLs were adjusted using the attenuation factors provided in the DTSC guidance. For this study, the future residential building type attenuation factor of 0.001 was used to calculate subsurface screening criterion.

### **5.4.2 Summary of Soil Analytical Data**

The soil analytical results of the PEA investigation are presented in Table 4 in the Tables Section of this report. Analytical data sheets and chain of custody documentation are included in Appendix D. A brief discussion of the soil results is provided below.

- Lead was detected in 3 of 3 soil samples at concentrations up to 9.9 mg/kg, below its residential screening criteria of 80 mg/kg. The detected concentrations also appear within range of typical natural background.



- OCPs and PCBs were not detected above their respective laboratory reporting limits in the selected soil samples.

### 5.4.3 Summary of Soil Vapor Analytical Data

The analytical results of the soil vapor samples are summarized below and in Table 5 in the Tables section of this report. Chain of custody documentation and laboratory analytical datasheets are presented in Appendix D.

- Benzene was detected in 4 of 5 soil vapor samples at concentrations ranging from 4.2  $\mu\text{g}/\text{m}^3$  (SV-9) to 23  $\mu\text{g}/\text{m}^3$  (SV-7A). The detected concentrations are below the subsurface screening criterion for benzene of 97  $\mu\text{g}/\text{m}^3$ .
- Toluene was detected in 5 of 5 soil vapor samples at concentrations ranging from 7.3  $\mu\text{g}/\text{m}^3$  (SV-2A) to 33  $\mu\text{g}/\text{m}^3$  (SV-9). The detected concentrations are below the subsurface screening criterion for toluene of 310,000  $\mu\text{g}/\text{m}^3$ .
- Ethylbenzene was detected in 5 of 5 soil vapor samples at concentrations ranging from 12  $\mu\text{g}/\text{m}^3$  (SV-3A) to 130  $\mu\text{g}/\text{m}^3$  (SV-9). The detected concentrations are below the subsurface screening criterion for ethylbenzene of 1,100  $\mu\text{g}/\text{m}^3$ .
- 1,1,1-TCA was detected in 2 of 5 soil vapor samples at concentrations of 6.3  $\mu\text{g}/\text{m}^3$  (SV-3A) and 45  $\mu\text{g}/\text{m}^3$  (SV-7A). The detected concentrations are below the subsurface screening criterion for 1,1,1-TCA of 1,000,000  $\mu\text{g}/\text{m}^3$ .
- PCE was detected in 3 of 5 soil vapor samples at concentrations ranging from 9.3  $\mu\text{g}/\text{m}^3$  (SV-9) to 29  $\mu\text{g}/\text{m}^3$  (SV-3A). The detected concentrations are below the subsurface screening criterion for PCE of 480  $\mu\text{g}/\text{m}^3$ .
- Other VOCs were less frequently detected in the vapor samples including 1,1-DCE, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 2,2,4-trimethylpentane, 2-butanone (MEK), 4-ethyl toluene, acetone, carbon disulfide, cyclohexane, freon 113, heptane, hexane, isopropanol, isopropylbenzene, n-propylbenzene, o-xylene, and ethanol. These detected compounds did not exceed their respective calculated screening criterion.
- Leak detection compound pentane was detected in 3 of 5 soil vapor samples with concentrations ranging from 15  $\mu\text{g}/\text{m}^3$  to 180  $\mu\text{g}/\text{m}^3$ .
- Oxygen concentrations in the five soil vapor samples ranged from 6.8 percent to 16 percent with the lowest concentrations detected in the sample collected from the subsurface probe installed at location SV-3A. Carbon dioxide levels ranged from 3.4 percent to 15 percent with the greatest concentrations detected in the SV-3A subsurface sample probe.

## 5.5 QUALITY ASSURANCE & QUALITY CONTROL

### 5.5.1 Field Duplicates

The field QA/QC procedures consisted of field duplicate collection and analysis. Field duplicate samples are two co-located samples of the same matrix, collected in the same approximate location and time, and similar overall homogeneity. Analysis of field duplicates provides a quantitative measure of the variability of the overall sampling and laboratory analysis process due to sample heterogeneity, sampling techniques, and/or analytical methods. The soil field duplicates were assigned a different sample ID but were packaged and transported in the same manner as the primary samples.



For this investigation, one field duplicate soil and soil vapor sample were collected from selected sampling locations. The soil field duplicate sample FD-1 was collected from sampling location SB-12 from approximately 2 to 2½ feet. The soil vapor field duplicate sample SV-3A (DUP) was collected from sampling location SV-3A.

As shown in Table 4, OCPs and PCBs were not detected in the soil sample field duplicate pair. The calculated average relative percent difference (RPD) of the two soil vapor samples was 24 percent. The RPD for the soil vapor field duplicate pair is within range of the EPA TO-15 method criteria for laboratory standard analysis.

### **5.5.2 Equipment Blank**

Equipment blank samples are collected prior to sampling activities by pouring analyte free water (deionized water) over or through decontaminated field sampling equipment. Analysis of equipment blanks evaluate the adequacy of the decontamination process and assess contamination from the total sampling, sample preparation process, when decontaminated sampling equipment is used to collect samples. For this investigation, one equipment blank (EB-1) was collected from the hand sampling equipment used for soil sampling. The equipment blank was collected from sampling equipment following soil sampling activities at SB-12. Analytical results of the equipment blank did not detect OCPs and PCBs above their respective laboratory reporting limits.

### **5.5.3 Integrity of Soil Vapor Data**

To help confirm the sampling trains were sufficiently tight and the soil vapor data is representative of subsurface conditions, one confirmation sample of the shroud atmosphere was collected by utilizing a 250 mL summa and micro flow controller connected to a bulkhead fitting through the shroud during sampling at soil vapor location SV-3A. Laboratory analyses of the shroud atmosphere sample detected pentane at 580,000 µg/m<sup>3</sup>. During the same sampling time period (approximately 2.5 minutes), the shroud atmosphere was measured by the PID to range from approximately 300,000 µg/m<sup>3</sup> to 600,000 µg/m<sup>3</sup> with an average concentration of 461,747 µg/m<sup>3</sup> (approximately 23 percent relative percent difference [RPD] below the laboratory reported value). The PID appeared to slightly underestimate the shroud atmosphere.

Pentane was detected in 3 of 5 soil vapor samples above laboratory reporting limits; reporting limits ranged from 12 µg/m<sup>3</sup> to 14 µg/m<sup>3</sup>. The maximum pentane detection in the soil vapor samples (180 µg/m<sup>3</sup> at SV-10) was used to estimate the maximum leakage rate, if any. The average shroud concentration of pentane measured with the PID during sampling at SV-10 was approximately 176,000 µg/m<sup>3</sup>. The calculated maximum approximate leakage rate based on the detected concentration of 180 µg/m<sup>3</sup> pentane was 0.1%. This data indicates that the sample trains appeared sufficiently tight for soil vapor sample collection and no significant leakage occurred.

### **5.5.4 Sample Receipt and Handling**

Sample handling and documentation was reviewed during the data quality assessment and included evaluating chain-of-custody documentation, technical sample integrity, preservation, and technical holding times. Samples were delivered to the analytical laboratory with proper chain-of-custody documentation. Sample cooler temperatures for samples submitted to Test America were recorded at the time of sample receipt. After transfer of sample custody to the laboratories, the samples were placed in storage refrigerators, maintaining a temperature of 6° Celsius or below. The analytical testing was performed within the technical holding times for sample preparation and analyses.

### **5.5.5 Laboratory Quality Control**

Upon completion of field work, samples were delivered with proper chain-of-custody documentation to Test America Inc. and Eurofins AirToxics, a state-certified analytical laboratory. The analytical laboratory

QA/QC program included sample receipt verification, sample hold times, and the preparation and analysis of laboratory QC samples. Test America Inc. and Eurofins AirToxics laboratory QC samples included method blanks, laboratory control samples, matrix spike and matrix spike duplicates, and surrogate recoveries.

### 5.5.6 Data Validation

To help confirm the validity of the analytical data, Level II data validation was performed for the analytical data received from Test America Inc. and Eurofins AirToxics. Data validation is a sample-specific process implemented to determine the quality of a given data set beyond the method specification, determines any causes for non-conformance to the standard method, and verifies that the reported results are within acceptable ranges. The data evaluation was performed by third-party consultant Laboratory Data Consultants, Inc. (LDC) in Carlsbad, California. The data validation process did not reject the analytical results. The Level II Data Validation package is included in Appendix E.

## SECTION 6.0: HUMAN HEALTH RISK SCREENING EVALUATION

Cornerstone retained Mr. Greg Brorby with ToxStrategies, Inc., a Diplomate of the American Board of Toxicology (DABT) to perform a human health screening level evaluation in general accordance with the methods outlined in DTSC's PEA Guidance Manual (DTSC, 2015). Except for the sub-slab soil vapor data and soil data representative of the fill beneath the raised warehouse, analytical results from Cornerstone's December 2014 Phase II investigation were included in the evaluation. Because of the planned demolition of the existing building and construction of a new at-grade school building, the December 2014 sub-slab vapor data and fill data were excluded.

The screening human health risk evaluation outlined in the PEA Guidance Manual is intended to be a health-conservative evaluation of potential risks posed by chemicals at a site. For example, this evaluation assumes a site will be used for residential purposes regardless of actual or intended land use. Non-cancer hazard quotients (HQs) and incremental lifetime cancer risks (ILCRs) are estimated using an established human health risk-based residential screening concentration and the maximum detected concentration for each chemical as follows:

$$\text{HQ} = \text{Maximum concentration} / \text{Screening concentration}$$

$$\text{ILCR} = (\text{Maximum concentration} / \text{Screening concentration}) \times 10^{-6}$$

Where:

The screening concentrations are based on a target HQ of one and a target ILCR of one-in-a-million ( $1 \times 10^{-6}$ ).

The chemical-specific HQs and ILCRs are each summed, regardless of the location of the maximum detected concentrations, to estimate the total non-cancer hazard index (HI) and total ILCR, respectively. If the total HI exceeds a value of one, then HIs are re-calculated by summing HQs for chemicals affecting the same target organ (e.g., respiratory effects).

The screening concentrations used in this evaluation are RSLs for residential land use (Hazard Quotient [HQ] = 1), modified as necessary based on HERO HHRA Note 3. The soil screening levels assume exposure via incidental soil ingestion, dermal contact with soil, and inhalation of vapors or resuspended particulates in ambient air. The soil vapor screening concentrations are based on DTSC-SLs for ambient air multiplied by a soil vapor to indoor air attenuation factor (AF) of 0.001 as recommended by DTSC for new buildings. RSLs were used in the event a DTSC-SL was not established for a specific analyte. DTSC-SLs and/or RSLs are available for the majority of compounds detected in soil and soil vapor samples at the Site. When necessary, surrogate compounds were identified based on similarity in chemical structure or physical characteristics. The RSL for trivalent chromium, rather than hexavalent

chromium, was used to evaluate total chromium detected in soil because, as noted above, total chromium concentrations are consistent with regional background.

As discussed in Section 2.3, TPH-diesel and TPH-oil were detected in several soil samples during Cornerstone's 2014 investigation. EPA has not developed RSLs for these petroleum hydrocarbon mixtures; therefore, in accordance with the PEA Guidance Manual, ESLs developed by the Water Board were used.

Additionally, lead typically is evaluated separately using the LeadSpread model; however, because the maximum detected concentration is less than the DTSC screening level of 80 mg/kg (which is based on LeadSpread), no further assessment of lead was performed.

The estimated noncancer HQs and ILCRs for the individual chemicals detected in soil are shown in the risk table included in Appendix F. To provide context for this evaluation, risk estimates were calculated for two cases: 1) all analytes detected above their respective method detection limit; and 2) all analytes detected but excluding metals because the reported metal concentrations appear consistent with regional natural background.

The majority of the non-cancer HQs and ILCRs for detections in soil are equal or less than the target HQ and ILCR of one and  $1 \times 10^{-6}$ , respectively; however, the HQ for two metals (arsenic and thallium) and the ILCR for arsenic, is above their respective target. As noted above, the detected metal concentrations appear consistent with regional background. When the HQs and ILCRs for metals are excluded, the HI is 0.2, and the ILCR is  $8 \times 10^{-7}$ .

The individual non-cancer HQs for chemicals detected in soil vapor are less than one, and the total HI is 0.3. The individual ILCRs for chemicals detected in soil vapor are less than  $1 \times 10^{-6}$ , except for benzene ( $2 \times 10^{-6}$ ). Note that the benzene concentration driving this risk calculation is from a soil vapor sample collected in November 2014 ( $220 \mu\text{g}/\text{m}^3$ ). The soil vapor collected at the same general location and depth in December 2015 detected benzene at  $13 \mu\text{g}/\text{m}^3$ . The total ILCR is  $5 \times 10^{-6}$ .

The cumulative non-cancer HI assuming exposure to chemicals in soil (excluding the naturally-occurring metals) and soil vapor is 0.5. The cumulative ILCR is  $5 \times 10^{-6}$ .

Based on the risk calculations, and considering the conservative nature of this screening level evaluation, ToxStrategies, Inc. concluded that potential exposure to future Site occupants via incidental soil ingestion, dermal contact with soil, inhalation of particulates or vapors in ambient air, and inhalation of vapors in indoor air as a result of vapor intrusion will not result in a public health risk under the conditions evaluated.

## **SECTION 7.0: CONCLUSIONS AND RECOMMENDATIONS**

During this PEA investigation, soil and soil vapor sampling was performed to address the areas requiring further evaluation identified in the DTSC-approved PEA Work Plan. Soil samples were collected near the existing building to evaluate potential impacts from possible pest control spraying near the building perimeter, and potential impacts from building materials such as lead-based paint and/or PCB caulking compounds. Additionally, soil samples were collected near the existing PG&E transformer since there is a potential that PCBs may have been historically used within the transformer. Soil vapor sampling was performed to evaluate potential vapor intrusion concerns associated with the VOCs reported in ground water beneath the regional area from unidentified off-Site sources. As shown in Tables 4 and 5, laboratory analyses of the soil and soil vapor samples collected during this investigation did not detect COPC above residential (unrestricted use) environmental screening criteria.

As part of this study, a human health screening level evaluation was performed in general accordance with the methods outlined in DTSC's PEA Guidance Manual. This evaluation considered analytical results obtained during this PEA investigation and Cornerstone's 2014 study. Excluding the naturally-

occurring metals, the cumulative non-cancer HI was estimated at 0.5, below the target HQ of one specified in the PEA Guidance Manual. The ILCR was estimated at five-in-a-million ( $5 \times 10^{-6}$ ) and slightly exceeds the target ILCR of one-in-a-million ( $1 \times 10^{-6}$ ). It should be noted, however, that this risk calculation is driven by the benzene concentration detected in a soil vapor sample collected in November 2014 ( $220 \mu\text{g}/\text{m}^3$ ). Laboratory analyses of the soil vapor collected at the same general location and depth during this PEA investigation detected benzene at  $13 \mu\text{g}/\text{m}^3$ . Similar low concentrations were detected in the other soil vapor samples (up to  $23 \mu\text{g}/\text{m}^3$ ). Additionally, oxygen concentrations in the soil vapor samples collected in November 2014 and December 2015 ranged from 6.8 to 20 percent, indicating aerobic conditions. Petroleum hydrocarbon vapors, like benzene, will naturally degrade in an aerobic environment thus reducing the potential for petroleum hydrocarbon vapor intrusion concerns. Furthermore, to provide a higher level of protection to future occupants against potential vapor intrusion, the District is planning to voluntarily install an impermeable vapor barrier and ventilation system beneath the planned classroom building.

Based on the results of this PEA, the Site does not pose a significant risk to human health and the environment and appears suitable to accommodate the District's school redevelopment plans. We recommend DTSC consider a "No Further Action" determination for the Site.

## **SECTION 8.0: LIMITATIONS**

This report, an instrument of professional service, was prepared for the sole use of Sequoia Union High School District and the Department of Toxic Substances Control may not be reproduced or distributed without written authorization from Cornerstone. The chemical data presented in this report may change over time and are only valid for this time and location. Cornerstone makes no warranty, expressed or implied, except that our services have been performed in accordance with the environmental principles generally accepted at this time and location.

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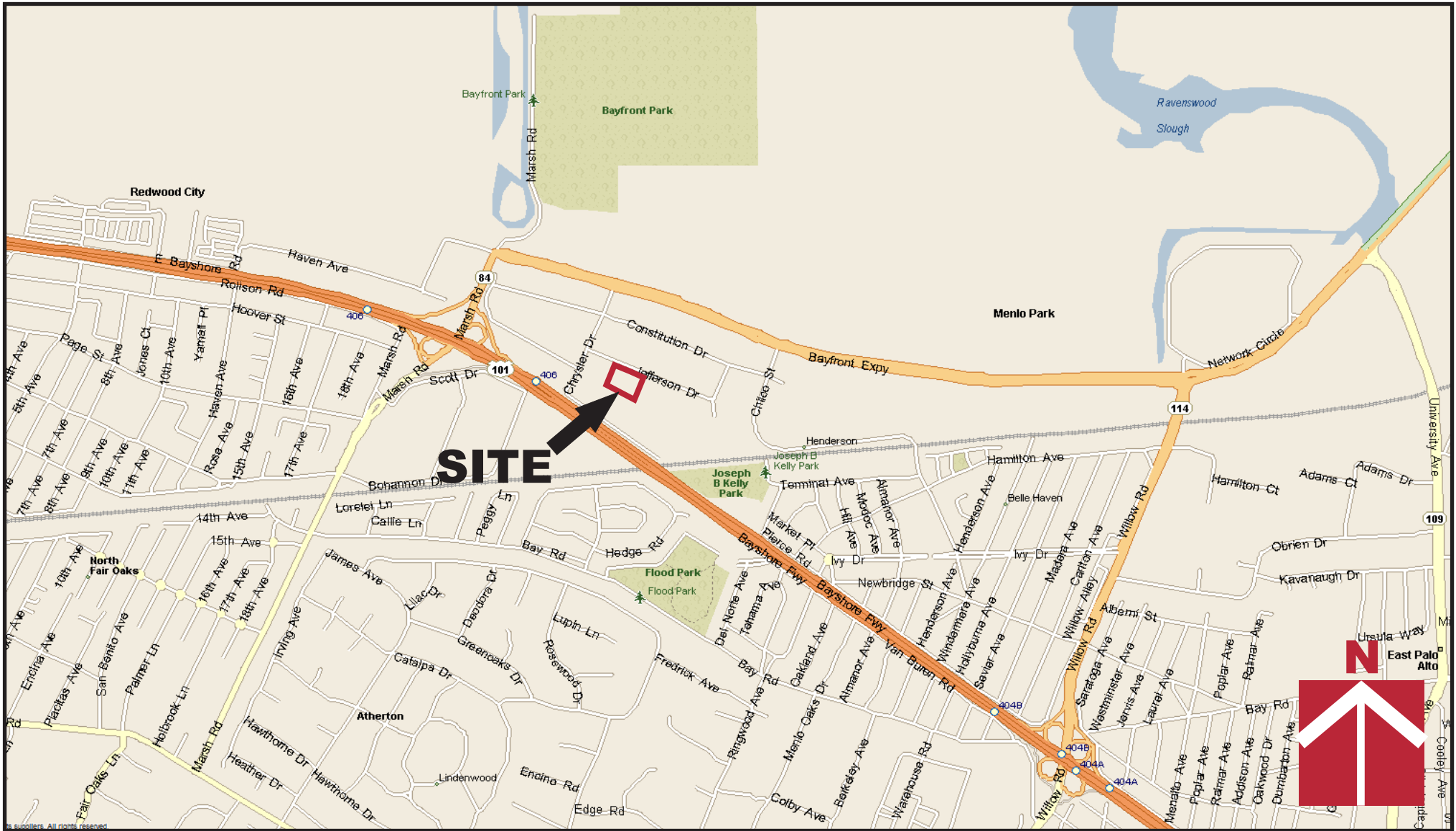
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Vicinity Map

150 Jefferson Drive  
Menlo Park, CA

Project Number

166-14-8

Figure Number

Figure 1

Date

March 2016

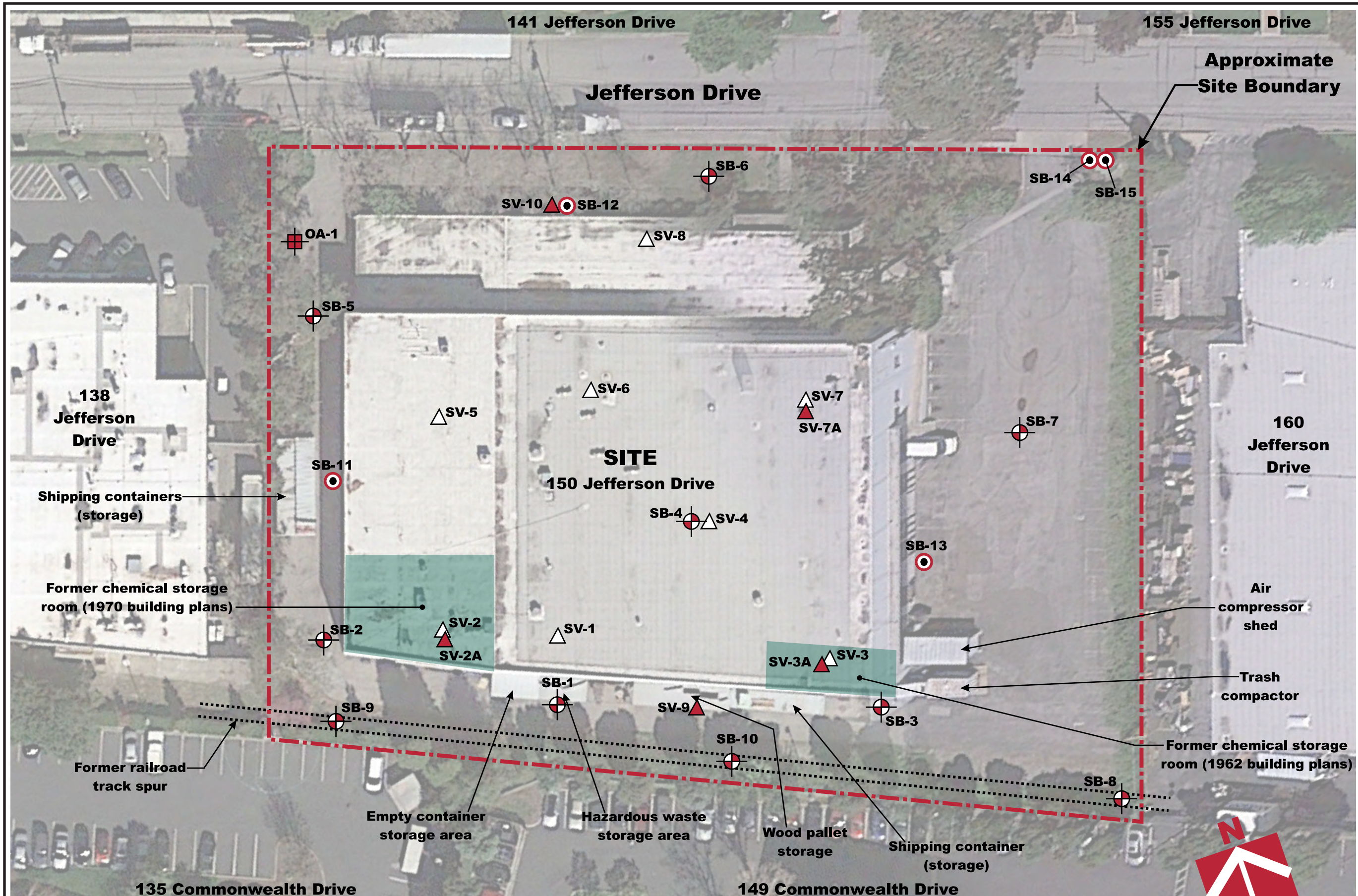
Drawn By

RRN



**CORNERSTONE**  
**EARTH GROUP**





Project Number  
166-14-8

Figure Number  
Figure 2

Date  
March 2016

Drawn By  
RRN

Site Plan with PEA Sampling Locations

150 Jefferson Drive  
Menlo Park, CA

**CORNERSTONE**  
**EARTH GROUP**

**Legend**

- Approximate location of soil and/or ground water boring (SB) (December, 2014)
- Approximate location of outdoor air sample (OA) (December, 2014)
- Approximate location of subsurface vapor probe (SV)
- Approximate location of soil boring (SB)
- Approximate location of subsurface and sub-slab vapor probe (SV) (December, 2014)

0 40 80  
APPROXIMATE SCALE (FEET)

Base by Google Earth, dated 2/23/2014





**Approximate Site Boundary**

Jefferson Drive

Shuttle/Bus Pull-Out

Vehicular Entry

Outdoor Learning /Amphitheater

3-STORY BUILDING (40,000 SF)

Drop-off

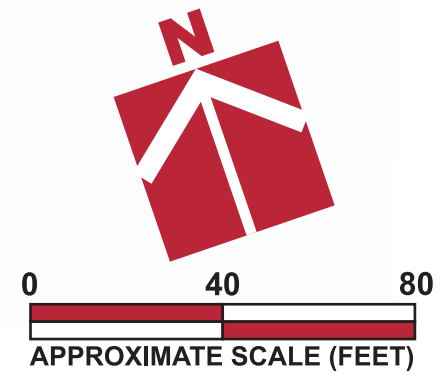
Entry Plaza

Bicycle Racks

Visitor / Staff Parking

Visitor / Staff Parking

Trash Enclosure



Proposed Development

150 Jefferson Drive  
Menlo Park, CA

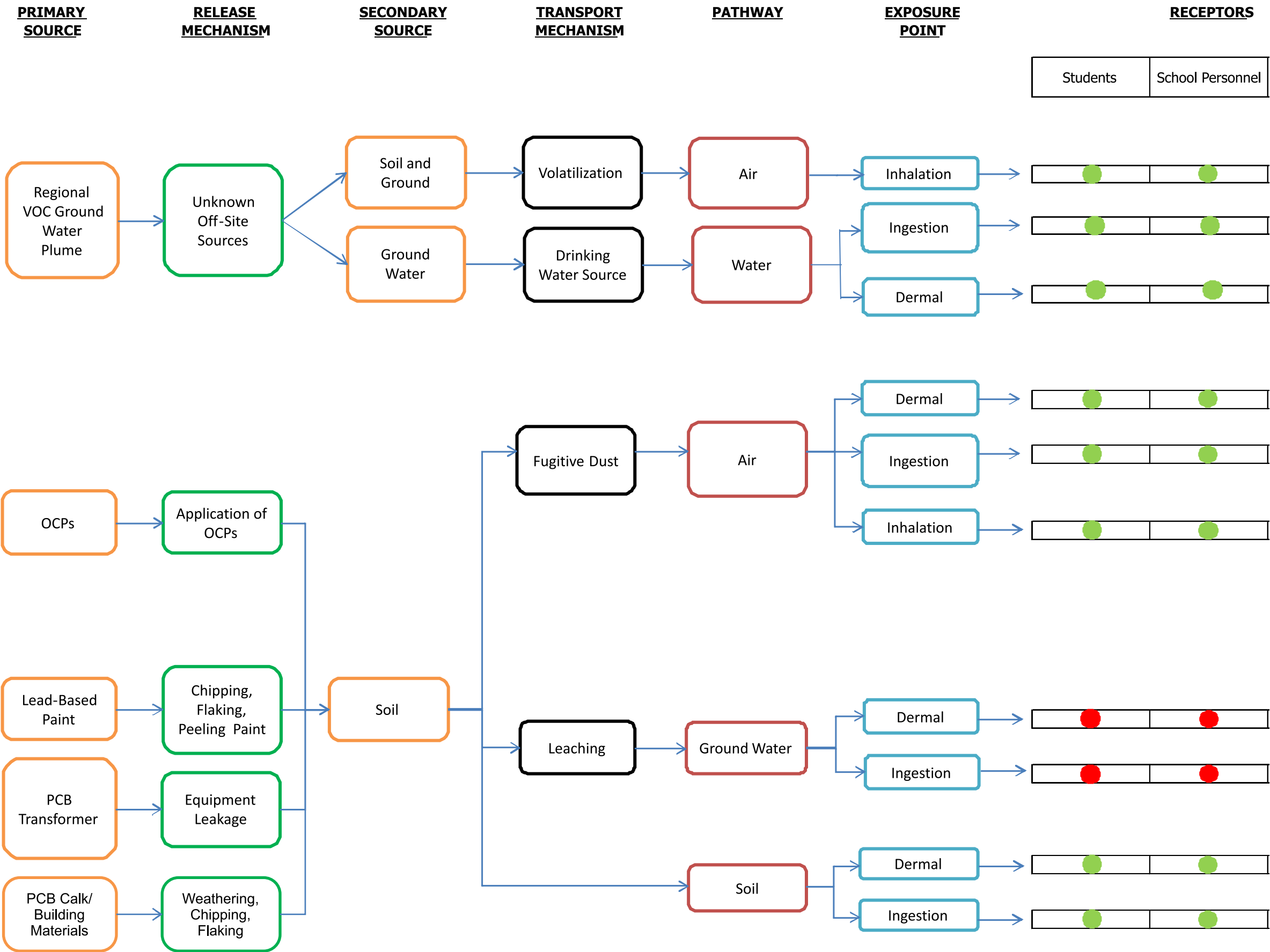
Project Number  
166-14-8

Figure Number  
Figure 3

Date  
March 2016

Drawn By  
RRN





● Complete Pathway  
● Incomplete Pathway

Project Number: 166-14-8  
 Figure Number: Figure 4  
 Date: March 2016  
 Drawn By: RRN

Conceptual Site Model

150 Jefferson Drive  
 Menlo Park, CA

**CORNERSTONE**  
**EARTH GROUP**

**Table 4. Analytical Results of Soil Samples - Lead / OCPs / PCBs**  
(Concentrations in mg/kg)

Sample Location	Boring ID	Sample ID	Date	Depth (feet)	Lead	4,4'-DDD	4,4'-DDE	4,4'-DDT	PCBs
West of Existing Building	SB-11	SB-11 (0-0.5)	12/9/2015	0-½	7.4	<0.002	<0.002	<0.002	---
		SB-11 (2-2.5)	12/9/2015	2-2½	---	<0.0019	<0.0019	<0.0019	---
North of Existing Building	SB-12	SB-12 (0-0.5)	12/9/2015	0-½	9.9	<0.002	<0.002	<0.002	ND
		SB-12 (2-2.5)	12/9/2015	2-2½	---	<0.0019	<0.0019	<0.0019	ND
	SB-12 Field Dup.	FD-1 (2-2.5)	12/9/2015	2-2½	---	<0.002	<0.002	<0.002	ND
East of Existing Building	SB-13	SB-13 (0-0.5)	12/9/2015	0-½	8.8	<0.0019	<0.0019	<0.0019	---
		SB-13 (2-2.5)	12/9/2015	2-2½	---	<0.002	<0.002	<0.002	---
Near PG&E Transformer	SB-14	SB-14 (0-0.5)	12/9/2015	0-½	---	---	---	---	ND
		SB-14 (2-2.5)	12/9/2015	2-2½	---	---	---	---	ND
Near PG&E Transformer	SB-15	SB-15 (0-0.5)	12/9/2015	0-½	---	---	---	---	ND
		SB-15 (2-2.5)	12/9/2015	2-2½	---	---	---	---	ND
Residential RSL <sup>1</sup> (HQ=1)		Carcinogenic Target Risk			400	2.3	2	1.9	VARIABLES
		Non-Cancer Child Hazard			NE	NE	NE	37	VARIABLES
Residential DTSC- SL <sup>2</sup>		Cancer Endpoint			NE	NE	NE	NE	NE
		Noncancer Endpoint			80	NE	NE	NE	NE

- 1 Regional Screening Level (RSL), USEPA Region 9 - November 2015.
- 2 DTSC - Recommended Screening Level (SL), HERO Note 3 - January 2016
- < Not detected (ND) at or above laboratory reporting limit (RL)
- NE Not Established
- Not Analyzed

**Table 5. Analytical Results of Soil Vapor Samples - VOCs**  
(Concentrations in µg/m<sup>3</sup>)

Sample Location	Boring ID	Sample ID	Date	Approximate Probe Depth (feet below existing street grade)	Benzene	Toluene	Ethylbenzene	1,1 - DCE	1,1,1-TCA	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2,2,4-Trimethylpentane	2-Butanone (MEK)	4-Ethyl Toluene	Acetone	Carbon Disulfide
Inside West Former Chemical Storage Area	SV-2A	SV-2A	12/21/2015	5	9.9	7.3	25	<4.6	<6.3	18	7.6	<5.4	<14	20	<28	<14
Inside East Former Chemical Storage Area	SV-3A	SV-3A	12/21/2015	5	13	7.8	12	<4.5	6.3	14	<5.6	<5.3	<14	13	<27	<14
	SV-3A Field Dup.	SV-3A(DUP)	12/21/2015	5	14	6.9	8.7	<4.5	<6.2	11	<5.6	<5.3	<13	10	<27	<14
Inside Northeast Manufacturing Area	SV-7A	SV-7A	12/21/2015	5	23	24	52	4.8	45	22	11	<5.3	14	33	54	<14
South of Existing Building	SV-9	SV-9	12/18/2015	5	4.2	33	130	<4.4	<6.0	69	25	21	<13	80	<26	<14
North of Existing Building	SV-10	SV-10	12/18/2015	5	<3.4	32	110	<4.2	<5.7	110	36	12	<12	120	26	21
Residential RSL <sup>1</sup> (HQ=1)	Indoor Air Carcinogenic Target Risk				0.36	NE	1.1	NE	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				3.6E+02	NE	1.1E+03	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Indoor Air Non-Cancer Hazard				31	5200	1000	210	5200	7.3	NE	NE	5200	NE	3,200	730
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				3.1E+04	5.2E+06	1.0E+06	2.1E+05	5.2E+06	7.3E+03	NE	NE	5.2E+06	NE	3.2E+06	7.3E+05
Residential DTSC-SL <sup>2</sup>	Ambient Air Cancer Endpoint				0.097	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				97	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Ambient Air Non-Cancer Endpoint				3.1	310	NE	73	1,000	NE	42	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				3.1E+03	3.1E+05	NE	7.3E+04	1.0E+06	NE	4.2E+04	NE	NE	NE	NE	NE

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - January 2016  
2 Regional Screening Level (RSL) HQ=1, USEPA Region 9 - November 2015.  
3 Calculated "contaminant source" screening level using an Attenuation Factor (AF) = 0.001 for future residential building type (DTSC, 2011)  
< Not detected (ND) at or above laboratory reporting limit (RL)  
NE Not Established

**Table 5. Analytical Results of Soil Vapor Samples - VOCs**  
(Concentrations in µg/m<sup>3</sup>)

Sample Location	Boring ID	Sample ID	Date	Approximate Probe Depth (feet below existing street grade)	Cyclohexane	Freon 113	Heptane	Hexane	Isopropanol	Isopropylbenzene	n-Propylbenzene	o-xylene	PCE	Ethanol	Pentane	Carbon Dioxide (%)	Methane (%)	Oxygen (%)
Inside West Former Chemical Storage Area	SV-2A	SV-2A	12/21/2015	5	<4.0	<8.9	<4.8	<4.1	18	<5.7	6	40	<7.9	<8.7	<14	6.4	<0.00023	14
Inside East Former Chemical Storage Area	SV-3A	SV-3A	12/21/2015	5	<3.9	<8.8	<4.7	<4.0	12	<5.6	<5.6	18	29	<8.6	18	15	<0.00023	6.8
	SV-3A Field Dup.	SV-3A(DUP)	12/21/2015	5	<3.9	<8.7	<4.6	<4.0	<11	<5.6	<5.6	15	27	<8.5	58	15	<0.00023	6.9
Inside Northeast Manufacturing Area	SV-7A	SV-7A	12/21/2015	5	<3.9	50	5.8	<4.0	31	9.9	10	71	9.8	17	15	6.2	<0.00023	13
South of Existing Building	SV-9	SV-9	12/18/2015	5	7	<8.5	33	7.4	<11	21	25	150	9.3	<8.4	<13	3.4	<0.00022	16
North of Existing Building	SV-10	SV-10	12/18/2015	5	5.2	<8.0	18	4	130	26	36	160	<7.1	29	180	5.6	<0.00021	16
Residential RSL <sup>1</sup> (HQ=1)	Indoor Air Carcinogenic Target Risk				NE	NE	NE	NE	NE	NE	NE	NE	11	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				NE	NE	NE	NE	NE	NE	NE	NE	1.1E+04	NE	NE	NE	NE	NE
	Indoor Air Non-Cancer Hazard				6300	31,000	NE	730	210	420	1000	100	42	NE	1000	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				6.3E+06	3.1E+07	NE	7.3E+05	2.1E+05	4.2E+05	1.0E+06	1.0E+05	4.2E+04	NE	1.0E+06	NE	NE	NE
Residential DTSC-SL <sup>2</sup>	Ambient Air Cancer Endpoint				NE	NE	NE	NE	NE	NE	NE	NE	0.48	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				NE	NE	NE	NE	NE	NE	NE	NE	4.8E+02	NE	NE	NE	NE	NE
	Ambient Air Non-Cancer Endpoint				NE	NE	NE	NE	NE	NE	NE	NE	37	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				NE	NE	NE	NE	NE	NE	NE	NE	3.7E+04	NE	NE	NE	NE	NE

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - January 2016  
2 Regional Screening Level (RSL) HQ=1, USEPA Region 9 - November 2015.  
3 Calculated "contaminant source" screening level using an Attenuation Factor (AF) = 0.001 for future residential building type (DTSC, 2011)  
< Not detected (ND) at or above laboratory reporting limit (RL)  
NE Not Established

**APPENDIX A: COPIES OF DTSC CORRESPONDENCE**



## Department of Toxic Substances Control



*Matthew Rodriguez*  
Secretary for  
Environmental Protection

Barbara A. Lee, Director  
8800 Cal Center Drive  
Sacramento, California 95826-3200

*Edmund G. Brown Jr.*  
Governor

November 30, 2015

Ms. Louise Pacheco  
Assistant Project Manager  
Construction  
Sequoia Union High School District  
480 James Avenue  
Redwood City, California 94062

**APPROVAL OF REVISED PRELIMINARY ENVIRONMENTAL ASSESSMENT  
WORKPLAN, SEQUOIA UNION HIGH SCHOOL DISTRICT, MENLO PARK  
PROPOSED SCHOOL SITE (A.K.A. NEW EAST MENLO PARK MAGNET HIGH  
SCHOOL), 150 JEFFERSON DRIVE, MENLO PARK, SAN MATEO COUNTY  
(PROJECT CODE 204273)**

Dear Ms. Pacheco:

The Department of Toxic Substances Control (DTSC) reviewed the Revised Preliminary Environmental Assessment Workplan (PEA Workplan – Cornerstone Earth Group, November 13, 2015) received on November 18, 2015. The PEA Workplan was revised in response to DTSC comments on the draft version forwarded in a letter dated September 10, 2015, and follow-up correspondence. The PEA Workplan includes project background information as well as proposed investigation activities.

According to the PEA Workplan, the approximately 2.17-acre project is located at 150 Jefferson Drive in Menlo Park, San Mateo County, California (Site). The Sequoia Union High School District (District) plans to redevelop the Site with the new East Menlo Park Magnet High School for the 2018–19 school year. The existing on-site building was constructed circa 1962 and is currently occupied by Bay Associates Wire Technologies for manufacturing of custom cable and wire products. The PEA Workplan includes activities to investigate lead and organochlorine pesticides in soils around the on-site building from lead-based paint and termiticide use, polychlorinated biphenyls in soils around the electrical transformer and the on-site building from the window caulking or glazing, and volatile organic compounds and fixed gases in soil-gas from the Site's current use and from the regional solvent plume that may pose a threat to human health and the environment.

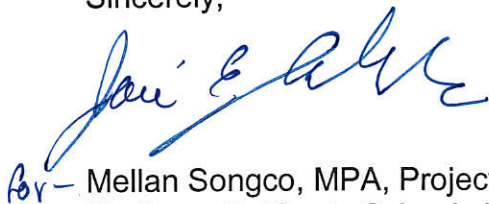


DTSC comments have been addressed and the revised PEA Workplan is hereby approved. If site conditions differ from those presented in the approved PEA Workplan, additional work may be necessary. In accordance with Education Code section 17210.1(b), the District must provide written notice to residents and businesses in the immediate area, approved in form by DTSC, at least five days in advance of field investigation activities. The intent of this requirement is to provide advance notice of fieldwork such as drilling, sampling, and other environmental data collection activities to anyone who lives or works in the line of sight of the Site. Please notify DTSC a minimum of 48 hours in advance of field work or schedule changes.

Pursuant to Education Code section 17213.1, subdivision (a)(6), at the same time the Draft PEA Report is submitted to DTSC, the District shall publish a notice that it has been submitted to DTSC in a local newspaper of general circulation and post the notice in a prominent manner at the Site. The notice should state the District's intent for making the PEA Report available for public review by either Option A (Education Code section 17213.1, subdivision (a)(6)(A)) or Option B (Education Code section 17213.1, subdivision (a)(6)(B)). A copy of the notice should be submitted to DTSC with the Draft PEA Report.

If you have any questions regarding the project, please contact me at (916) 255-6527 or via e-mail at [Mellan.Songco@dtsc.ca.gov](mailto:Mellan.Songco@dtsc.ca.gov).

Sincerely,



For - Mellan Songco, MPA, Project Manager  
Northern California Schools Unit  
Brownfields and Environmental Restoration Program

cc: (via e-mail)

Mr. Thomas Booze, PhD  
Staff Toxicologist  
DTSC Human and Ecological Risk Office  
[Thomas.Booze@dtsc.ca.gov](mailto:Thomas.Booze@dtsc.ca.gov)

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Mr. Kurt Soenen, PE  
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# SEQUOIA UNION HIGH SCHOOL DISTRICT

480 JAMES AVENUE, REDWOOD CITY, CALIFORNIA 94062-1098

*CONSTRUCTION DEPARTMENT*  
TEL. (650) 369-1411 x22356  
FAX (650) 306-1791

BOARD OF TRUSTEES  
CARRIE DU BOIS  
LAURA MARTINEZ  
ALAN SARVER  
CHRIS THOMSEN  
ALLEN WEINER

JAMES LIANIDES  
SUPERINTENDENT

ENRIQUE NAVAS  
ASSISTANT SUPERINTENDENT

MATTHEW ZITO  
CHIEF FACILITIES OFFICER

**Date:** December 1, 2015  
**TO:** Neighbors in Proximity to 150 Jefferson Drive, Menlo Park, California 94025  
**REGARDING:** Environmental Investigation at Future East Menlo Park Magnet High School

We would like to provide you with advance notice of an environmental investigation which will be conducted at the future East Menlo Park Magnet High School Site located at 150 Jefferson Drive in Menlo Park, California. The investigation will be performed by a licensed contractor under the oversight of the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). The investigation will consist of the sampling of soils and soil vapors on this property for any hazardous materials. Although an assessment will be conducted, this does not mean hazardous substances are located on this property. Recently enacted state laws now require that the Site undergo a complete environmental review, and if necessary, a cleanup to protect students, faculty and staff who will occupy the school.

Field work is scheduled to begin on December 9, 2015 and may continue intermittently through December 2015. All field work will be conducted during normal business hours. It is not expected that any street closures will be necessary during the investigation.

The District will submit the results of this Preliminary Environmental Assessment (PEA) as a draft to DTSC for review and approval of a final draft. The PEA will include an assessment of whether hazardous materials are present and, if so, whether the materials are present in concentrations that would require some type of cleanup before using the property. The District will hold a 30-day public review and comment period on the draft PEA. Additionally, the District will hold a public hearing to discuss the investigation results and receive comments from the public. All comments received in this process shall be forwarded to DTSC for consideration. The draft PEA will be made available for review at two District repositories. Notice of the start of the 30-day review period, date of public hearing, and location of repositories will be published in a local paper of general circulation. When the public participation process is complete, DTSC will issue a final determination with regard to the PEA.

If you have any questions concerning the upcoming environmental investigation or other activities at the future East Menlo Park Magnet High School Site, please contact our Chief Facilities Officer Matthew Zito (from Sequoia Union High School District) at 650-369-1411 or via email at [mzito@seq.org](mailto:mzito@seq.org).

Thank you for your patience, understanding and support of our school district as we work towards opening a new school site.

Matthew Zito

**APPENDIX B: DATA SUMMARY TABLES – CORNERSTONE 2014**

**Table 1. Analytical Results of Soil Samples - Metals**  
(Concentrations in mg/kg)

Sample Location	Boring ID	Soil Type	Sample ID	Date	Depth (feet)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Vanadium	Zinc	
Outside Near Hazardous Materials Storage Area	SB-1	Native	SB-1 (1-1.5)	11/21/2014	1-1½	2	<3.4	97	<0.34	<0.43	110	21	56	<1.7	0.085	<1.7	64	100	53	
Outside Near Former Chemical Storage Area - West	SB-2	Native	SB-2 (0.5-1)	11/21/2014	½-1	<1.9	<3.8	380	<0.38	0.53	33	8	25	3.9	0.044	<1.9	34	49	48	
Outside Near Former Chemical Storage Area - East	SB-3	Native	SB-3 (0.5-1)	11/21/2014	½-1	<1.5	3.7	210	0.5	<0.38	34	9.1	23	6.1	0.047	<1.5	37	32	48	
Inside Near Center of Manufacturing Area	SB-4	Fill	SB-4 (1-1.5)	11/20/2014	1-1½	<1.4	7.6	310	0.28	<0.34	28	16	44	11	0.11	<1.4	35	38	69	
Outside Southeast Corner of Site	SB-8	Native	SB-8 (0.5-1)	11/21/2014	½-1	<1.8	5.7	210	<0.35	<0.44	39	13	22	10	0.022	6.7	41	40	50	
Outside Near Former Rail Spur Alignment - Southwest	SB-9	Native	SB-9 (0.5-1)	11/21/2014	½-1	<1.6	5.5	220	0.72	3.6	49	11	30	12	0.044	<1.6	45	48	62	
Outside Near Former Rail Spur Alignment - South	SB-10	Native	SB-10 (0.5-1)	11/21/2014	½-1	<1.8	5.5	200	0.84	<0.44	49	11	28	6.3	0.028	<1.8	46	44	63	
Inside North Office Space Area	SV-8	Fill	SV-8 (1-1.5)	11/20/2014	1-1½	<1.7	4.4	95	<0.34	<0.43	29	9.1	21	6.6	0.093	<1.7	30	38	43	
Residential DTSC-SL <sup>1</sup>	Cancer Endpoint					NE	0.067 (11 <sup>1</sup> )	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Non-Cancer Endpoint					NE	0.25	NE	15	5.2	36000	NE	NE	80 <sup>3</sup>	0.89	NE	490	NE	NE	NE
Residential RSL (HQ=1) <sup>2</sup>	Carcinogenic Target Risk					NE	0.68	NE	1600	2100	NE	420	NE	NE	NE	NE	15000	NE	NE	NE
	Non-Cancer Child Hazard					31	35	15000	160	71	120000	23	3100	400	11	390	1500	390	390	390
Scott, 1991 <sup>4</sup>	Background Range					---	0.2 to 5.5	---	0.3 to 1.4	0.05 to 1.7	30.5 to 72	---	23.8 to 47.5	6.8 to 16.1	0.05 to 0.90	---	46.4 to 101	39 to 288	47.7 to 82.8	
	Maximum Background Detection					22	20	---	3.2	14	170	---	67	54	1.3	---	145	---	120	
Bradford, 1996 <sup>5</sup>	Background Range					0.15 to 1.95	0.6 to 11	133 to 1,400	0.25 to 2.7	0.05 to 1.7	23 to 1,579	2.7 to 46.9	9.1 to 96.4	12.4 to 97.1	0.05 to 0.90	0.1 to 9.6	9 to 509	39 to 288	88 to 236	
	Upper Quartile					0.73	4.7	625	1.53	0.44	115	18.3	36.6	26.7	0.34	1.4	56	134	170	
LBNL, 2009 <sup>6</sup>	99 <sup>th</sup> Percentile					<6	28	410	1	5.6	120	25	63	43	0.42	4.8	272	90	140	
	95% Upper Tolerance Limit (UTL)					5.5	19.1	323.6	1	2.7	99.6	22.2	69.4	16.1	0.4	7.4	119.8	74.3	106.1	
Duverge, 2011 <sup>7</sup>	Mean					---	4.6	---	---	---	---	---	---	---	---	---	---	---	---	
	99 <sup>th</sup> Percentile					---	11	---	---	---	---	---	---	---	---	---	---	---	---	
TTLC <sup>8</sup>						500	500	10000	75	100	2500	8000	2500	1000	20	3500	2000	2400	5000	
STLC <sup>9</sup> (mg/L)						15	5	100	0.75	1	5	80	25	5	0.2	350	20	24	250	

- 1 DTSC - Recommended Screening Level (SL). HERO Note 3 - October 2015
  - 2 Regional Screening Level (RSL) HQ=1, USEPA Region 9 - November 2015
  - 3 California Human Health Screening Level (CHHSL), CalEPA - September 2010.
  - 4 Scott, Christina. December 1991. Background Metal Concentrations in Soils in Northern Santa Clara County.
  - 5 Bradford, et. al. March 1996. Background Concentrations of Trace and Major Elements in California Soils.
  - 6 LBNL, 2009. Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory.
  - 7 Duverge, 2011. Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region.
  - 8 Total Threshold Limit Concentration - California Code of Regulations, Title 22, Chapter 11, Article 3.
  - 9 Soluble Threshold Limit Concentration - California Code of Regulations, Title 22, Chapter 11, Article 3.
- < Not detected at or above laboratory reporting limit  
 NE Not Established  
 --- Not Analyzed

**Table 2. Analytical Results of Soil Samples - TPH / VOCs / PAHs / SVOCs**  
(Concentrations in mg/kg)

Sample Location	Boring ID	Soil Type	Sample ID	Date	Depth (feet)	TPHd	TPHo	TPHg	BTEX	Fuel Oxygenates	Acetone	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1 - DCE	1,1-DCA	Other VOCs	Anthracene	Other PAHs (EPA 8270C SIM)	SVOCs (EPA 8270)	
Outside Near Hazardous Materials Storage Area	SB-1	Native	SB-1 (1-1.5)	11/21/2014	1-1½	39	130	<0.26	ND	ND	<0.052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	ND	<0.067	---	ND	
		Native	SB-1 (9.5-10)	11/21/2014	9½-10	<0.99	<49	<0.2	ND	ND	<0.041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	ND	---	---	---
Outside Near Former Chemical Storage Area - West	SB-2	Native	SB-2 (0.5-1)	11/21/2014	½-1	24	77	<0.31	ND	ND	<0.061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	<0.0061	ND	<0.066	---	ND	
		Native	SB-2 (9.5-10)	11/21/2014	9½-10	<0.98	<49	<0.21	ND	ND	<0.043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	<0.0043	ND	---	---	---
Outside Near Former Chemical Storage Area - East	SB-3	Native	SB-3 (0.5-1)	11/21/2014	½-1	7.7	<50	<0.26	ND	ND	<0.052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	<0.0052	ND	<0.067	---	ND	
		Native	SB-3 (9.5-10)	11/21/2014	9½-10	<1	<50	<0.22	ND	ND	<0.044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	<0.0044	ND	---	---	---
Inside Near Center of Manufacturing Area	SB-4	Fill	SB-4 (1-1.5)	11/20/2014	1-1½	1.3	<50	<0.21	ND	ND	<0.042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	ND	<0.067	---	ND	
		Native	SB-4 (5-5.5)	11/20/2014	5-5½	<1.0	<50	<0.2	ND	ND	<0.039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	ND	---	---	---
Outside Southeast Corner of Site	SB-8	Native	SB-8 (0.5-1)	11/21/2014	½-1	1.3	<50	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.0049	ND	---
Outside Near Former Rail Spur Alignment - Southwest	SB-9	Native	SB-9 (0.5-1)	11/21/2014	½-1	1.2	<49	---	---	---	---	---	---	---	---	---	---	---	---	---	0.005	ND	---
Outside Near Former Rail Spur Alignment - South	SB-10	Native	SB-10 (0.5-1)	11/21/2014	½-1	<0.99	<49	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.0049	ND	---
Inside South Manufacturing Area	SV-1	Fill/Native Contact	SV-1 (4-4.5)	11/20/2014	4-4½	---	---	---	---	---	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	<0.0042	ND	---	---	---	---
Near Former Chemical Storage Area - West	SV-2	Fill	SV-2 (0.5-1)	11/20/2014	½-1	---	---	---	---	---	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	ND	---	---	---	---
Near Former Chemical Storage Area - East	SV-3	Fill	SV-3 (1-1.5)	11/20/2014	1-1½	---	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---	---	---	---
		Fill/Native Contact	SV-3 (4-4.5)	11/20/2014	4-4½	---	---	---	---	---	---	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	ND	---	---	---
Inside Northwest Manufacturing Area	SV-5	Fill/Native Contact	SV-5 (4-4.5)	11/20/2014	4-4½	---	---	---	---	---	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	ND	---	---	---	---
Inside North Manufacturing Area	SV-6	Fill	SV-6 (0.5-1)	11/20/2014	½-1	---	---	---	---	---	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	ND	---	---	---	---
Inside Northeast Manufacturing Area	SV-7	Fill/Native Contact	SV-7 (5-5.5)	11/20/2014	5-5½	---	---	---	---	---	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	<0.0039	ND	---	---	---	---
Inside North Office Space Area	SV-8	Fill	SV-8 (1-1.5)	11/20/2014	1-1½	<1	<50	<0.25	ND	ND	<0.049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	ND	<0.066	---	ND	---
Residential DTSC-SL <sup>1</sup>	Cancer Endpoint					100 <sup>2</sup>	100 <sup>2</sup>	100 <sup>2</sup>	VARIABLES	VARIABLES	NE	NE	NE	NE	NE	0.0088	NE	NE	VARIABLES	NE	VARIABLES	VARIABLES	
	Non-Cancer Endpoint					NE	NE	NE	VARIABLES	VARIABLES	NE	NE	NE	19	130	NE	NE	1600	VARIABLES	NE	VARIABLES	VARIABLES	
Residential RSL (HQ=1) <sup>3</sup>	Carcinogenic Target Risk					NE	NE	NE	VARIABLES	VARIABLES	NE	24	0.94	NE	NE	0.059	NE	3.6	VARIABLES	NE	VARIABLES	VARIABLES	
	Non-Cancer Child Hazard					NE	NE	NE	VARIABLES	VARIABLES	61000	81	4.1	160	1600	70	230	16000	VARIABLES	18000	VARIABLES	VARIABLES	

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - October 2015  
2 Environmental Screening Level (ESL), RWOCB, San Francisco Bay Region - December 2013  
3 Regional Screening Level (RSL) with Hazard Quotient (HQ) = 1.0, USEPA Region 9 - November 2014  
< Not detected at or above laboratory reporting limit  
NE Not Established  
ND Not Detected  
--- Not Analyzed

**Table 3. Analytical Results of Soil Samples - PCBs / OCPs**  
(Concentrations in mg/kg)

Sample Location	Boring ID	Soil Type	Sample ID	Date	Depth (feet)	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	OCPs (EPA 8082)
Outside Near Hazardous Materials Storage Area	SB-1	Native	SB-1 (1-1.5)	11/21/2014	1-1½	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	ND
Outside Near Former Chemical Storage Area - West	SB-2	Native	SB-2 (0.5-1)	11/21/2014	½-1	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	ND
Outside Near Former Chemical Storage Area - East	SB-3	Native	SB-3 (0.5-1)	11/21/2014	½-1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND
Inside Near Center of Manufacturing Area	SB-4	Fill	SB-4 (1-1.5)	11/20/2014	1-1½	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	ND
Outside Southeast Corner of Site	SB-8	Native	SB-8 (0.5-1)	11/21/2014	½-1	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	ND
Outside Near Former Rail Spur Alignment - Southwest	SB-9	Native	SB-9 (0.5-1)	11/21/2014	½-1	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	<0.049	ND
Outside Near Former Rail Spur Alignment - South	SB-10	Native	SB-10 (0.5-1)	11/21/2014	½-1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	ND
Inside North Office Space Area	SV-8	Fill	SV-8 (1-1.5)	11/20/2014	1-1½	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	<0.048	ND
Residential RSL <sup>1</sup> (HO=1.0)						4.1	0.17	0.17	0.23	0.23	0.24	0.24	VARIABLES

- 1 Regional Screening Level (RSL) with Hazard Quotient (HQ) = 1.0, USEPA Region 9 – November 2014  
 < Not detected at or above laboratory reporting limit  
 NE Not Established  
 ND Not Detected

**Table 4. Analytical Results of Soil Samples - Asbestos**  
 (Concentrations in total weight % asbestos)

Sample Location	Boring ID	Soil Type	Sample ID	Date	Depth (feet)	Total Asbestos <sup>1</sup>
Near Former Chemical Storage Area - West	SV-2	Fill	SV-2 (2.5-3.5)	11/20/2014	2½-3½	<0.0001
Inside Near Center of Manufacturing Area	SB-4	Fill	SB-4 (2-2.5)	11/20/2014	2-2½	<0.0001
		Native	SB-4 (4-5)	11/20/2014	4-5	<0.0001
Inside Northeast Manufacturing Area	SB-7	Native	SB-7 (6-7)	11/21/2014	6-7	<0.0001
Inside North Office Space Area	SV-8	Fill	SV-8 (1-1.5)	11/21/2014	1-1½	<0.0001

- 1 EPA Test Method For the Determination of Asbestos in Bulk Building Materials - TEM method (EPA 600/R-93/116) with CARB 435 prep method
- < Not detected at or above laboratory reporting limit



**Table 5. Analytical Results of Ground Water Samples - TPH / VOCs / SVOCs**  
(Concentrations in µg/L)

Sample Location	Sample ID	Date	TPHd	TPHo	TPHg	BTEX	Fuel Oxygenates	PCE	TCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl Chloride	1,1 - DCE	1,1-DCA	Other VOCs	SVOCs
Outside Near Hazardous Materials Storage Area	SB-1	11/21/2014	<52	<100	<50	ND	ND	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	ND
Outside Near Former Chemical Storage Area - West	SB-2	11/21/2014	<54	<110	<50	ND	ND	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	ND
Outside Near Former Chemical Storage Area - East	SB-3	11/21/2014	<b>230</b>	<b>800</b>	<50	ND	ND	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	ND	ND
Inside Near Center of Manufacturing Area	SB-4	11/20/2014	<55	<110	<50	ND	ND	<0.50	<0.50	<0.50	<0.50	<0.50	2.1	<0.50	ND	ND
Outside Northwest	SB-5	11/21/2014	100	<b>350</b>	<50	ND	ND	<0.5	<0.5	<0.5	<0.5	<0.5	1.7	<0.5	ND	ND
Outside North Landscaping	SB-6	11/20/2014	<63	<130	<50	ND	ND	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	ND	ND
Outside East Parking Lot	SB-7	11/21/2014	<54	<110	<50	ND	ND	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	ND	ND
Outside Southeast Corner of Site	SB-8	11/21/2014	<b>230</b>	<b>1,000</b>	<50	ND	ND	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	ND	ND
Drinking Water MCL <sup>1</sup>			100 <sup>2</sup>	100 <sup>2</sup>	100 <sup>2</sup>	VAR	VAR	5	5	6	10	0.5	6	5	VAR	VAR

- 1 Maximum Contaminant Level (MCL), California Department of Public Health – July 2014  
2 MCL not established; value is Environmental Screening Level (ESL) (San Francisco RWQCB, December 2013. Table F-1a)  
< Not detected at or above laboratory reporting limit  
NE Not Established  
ND Not Detected  
VAR Various  
**BOLD** Concentration exceeds Drinking Water MCL

**Table 6. Analytical Results of Soil Vapor / Outdoor Air Samples**  
(Concentrations in µg/m<sup>3</sup>)

Sample Location	Sample ID	Depth (feet from existing grade)	Sample Type	Date	Benzene	Toluene	Ethylbenzene	1,2,4-Trimethylbenzene	1,3-Dichlorobenzene	2-Butanone (MEK)	4-Ethyl Toluene	4-Methyl-2-Pentanone (MIBK)	Acetone	Carbon Disulfide	Chloroform	Cyclohexane	Freon 113	Heptane	
Inside South Manufacturing Area	SV-1SS	below slab	Sub-Slab	11/24/2014	<3.6	<4.2	<4.9	<5.6	<6.8	<13	<5.6	<4.6	<27	<14	<b>5.5</b>	<3.9	<8.7	<4.6	
Near Former Chemical Storage Area - West	SV-2SS	below slab		11/25/2014	<3.6	<4.2	<4.9	<5.5	<6.7	<13	<5.5	<4.6	28	<14	<5.5	<3.8	<8.6	<4.6	
Near Former Chemical Storage Area - East	SV-3SS	below slab		11/24/2014	<3.7	8.1	<5.0	<5.7	8.4	140	<5.7	6.2	470	36	<5.7	<4.0	<8.9	<4.8	
Inside Near Center of Manufacturing Area	SV-4SS	below slab		11/24/2014	<3.6	<4.3	<4.9	<5.6	<6.8	<13	<5.6	<4.6	<27	<14	<5.5	<3.9	<8.7	<4.6	
Inside Northwest Manufacturing Area	SV-5SS	below slab		11/25/2014	<3.6	<4.2	<4.9	<5.6	<6.8	<13	<5.6	<4.6	31	18	<b>18</b>	<3.9	<8.7	<4.6	
Inside North Manufacturing Area	SV-6SS	below slab		11/24/2014	<3.7	<4.3	<5.0	<5.6	<6.9	<14	<5.6	<4.7	<27	<14	<5.6	<4.0	11	<4.7	
Inside Northeast Manufacturing Area	SV-7SS	below slab		11/25/2014	<3.7	<4.3	<5.0	<5.6	<6.9	73	<5.6	5.8	30	<14	<5.6	<4.0	9.6	<4.7	
Inside North Office Space Area	SV-8SS	below slab		11/25/2014	<3.7	<4.4	<5.0	<5.7	<7.0	<14	<5.7	<4.8	<28	<14	<5.7	<4.0	<8.9	<4.8	
Outside Northwest Corner of Site	OA-1	---	Outdoor Air	11/25/2014	<b>0.47</b>	1.2	0.21	<0.91	<1.1	2.8	<0.91	<0.76	7.9	<2.9	<0.9	<0.64	<1.4	<0.76	
Inside South Manufacturing Area	SV-1D5	5	Soil Vapor	11/24/2014	5	<4.4	<5.0	<5.7	<7.0	<14	<5.7	<4.8	53	<14	<5.7	4.4	<8.9	<4.8	
Near Former Chemical Storage Area - West	SV-2D10	10		11/25/2014	78	130	38	35	<30	<59	35	<20	<120	350	<24	2,500	<38	25	
Near Former Chemical Storage Area - East	SV-3D10	10		11/24/2014	<b>220</b>	210	59	75	<76	<150	77	<52	<300	710	<62	3,500	<96	<52	
Inside Near Center of Manufacturing Area	SV-4D5	5		11/24/2014	10	15	6.4	12	<6.9	<14	12	<4.7	52	26	<5.6	42	<8.8	<4.7	
Inside Northwest Manufacturing Area	SV-5D5	5		11/25/2014	5.6	12	8.7	16	<6.8	15	15	<4.6	54	19	<5.5	33	<8.7	<4.6	
Inside North Manufacturing Area	SV-6D5	5		11/24/2014	12	17	9	18	<6.9	45	18	<4.7	120	58	<5.6	14	37	<4.7	
Inside Northeast Manufacturing Area	SV-7D10	10		11/25/2014	<b>160</b>	38	<29	<33	<40	<80	<33	<28	<160	340	<33	27	<52	<28	
Inside North Office Space Area	SV-8D5	5		11/25/2014	80	31	<25	<28	<34	<67	<28	<23	<140	230	<28	20	<44	<23	
Residential DTSC-SL <sup>1</sup>	Ambient Air Cancer Endpoint				0.097	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				1.94	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>4</sup> (Indoor Air / Subsurface Soil Gas)				97	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Ambient Air Non-Cancer Endpoint				3.1	310	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				62	6200	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>4</sup> (Indoor Air / Subsurface Soil Gas)				3100	310000	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Residential RSL <sup>2</sup>	Indoor Air Carcinogenic Target Risk				0.36	NE	1.1	NE	NE	NE	NE	NE	NE	NE	0.12	NE	NE	NE	
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				7.2	NE	22	NE	NE	NE	NE	NE	NE	NE	2.4	NE	NE	NE	
	AF=0.001 <sup>4</sup> (Indoor Air / Subsurface Soil Gas)				360	NE	1100	NE	NE	NE	NE	NE	NE	NE	120	NE	NE	NE	
	Indoor Air Non-Cancer Hazard				31	5200	1000	7.3	NE	5200	NE	3100	3,200	730	100	6300	31000	NE	
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				620	104000	20000	146	NE	104000	NE	62000	64000	14600	2000	126000	620000	NE	
	AF=0.001 <sup>4</sup> (Indoor Air / Subsurface Soil Gas)				31000	5200000	1000000	7300	NE	5200000	NE	3100000	3200000	730000	100000	6300000	31000000	NE	

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - October 2015  
2 Regional Screening Level (RSL), USEPA Region 9 - May 2014  
3 Calculated sub-slab screening level using an Attenuation Factor (AF) = 0.05 for existing buildings (DTSC, 2011)  
4 Calculated "contaminant source" screening level using an Attenuation Factor (AF) = 0.001 for future buildings (DTSC, 2011)  
< Not detected at or above laboratory reporting limit  
--- Not Applicable  
NE Not Established  
BOLD Sub-slab concentrations exceeds calculated residential RSL using an AF = 0.05  
Outdoor air concentrations exceeds residential indoor air RSL  
Soil vapor concentrations exceeds calculated residential RSL using an AF = 0.001

**Table 6. Analytical Results of Soil Vapor / Outdoor Air Samples - continued**  
(Concentrations in µg/m<sup>3</sup>)

Sample Location	Sample ID	Depth (feet from existing grade)	Sample Type	Date	Hexane	Isopropanol	m,p-Xylene	o-xylene	Tetrahydrofuran	Trichlorofluoromethane	MTBE	1,1,1-TCA	Ethanol	Carbon Dioxide	Oxygen
Inside South Manufacturing Area	SV-1SS	below slab	Sub-Slab	11/24/2014	<4.0	12	<4.9	<4.9	<3.3	<6.3	<4.1	<6.2	<8.5	4.1	16
Near Former Chemical Storage Area - West	SV-2SS	below slab		11/25/2014	<3.9	18	<4.9	<4.9	3.4	<6.3	<4.0	<6.1	8.6	3.2	16
Near Former Chemical Storage Area - East	SV-3SS	below slab		11/24/2014	<4.1	240	6.8	<5.0	130	<6.5	5.7	<6.3	38	0.35	20
Inside Near Center of Manufacturing Area	SV-4SS	below slab		11/24/2014	<4.0	17	<4.9	<4.9	<3.3	<6.4	<4.1	<6.2	74	3.1	17
Inside Northwest Manufacturing Area	SV-5SS	below slab		11/25/2014	<4.0	36	<4.0	<4.9	<3.3	<6.3	<4.1	<6.2	<8.5	7	13
Inside North Manufacturing Area	SV-6SS	below slab		11/24/2014	<4.0	18	<4.9	<5.0	<3.4	<6.5	<4.1	12	<8.7	2.7	18
Inside Northeast Manufacturing Area	SV-7SS	below slab		11/25/2014	<4.0	82	<5.0	<5.0	17	<6.5	<4.1	31	590	2.4	18
Inside North Office Space Area	SV-8SS	below slab		11/25/2014	<4.1	45	<5.0	<5.0	<3.4	<6.5	<4.2	<6.3	48	0.77	20
Outside Northwest Corner of Site	OA-1	---	Outdoor Air	11/25/2014	<0.65	4.1	0.65	0.26	<2.7	1.6	<0.67	<0.2	7.1	---	---
Inside South Manufacturing Area	SV-1D5	5	Soil Vapor	11/24/2014	<4.1	<11	8.4	<5.0	26	<6.5	<4.2	<6.3	13	12	8.1
Near Former Chemical Storage Area - West	SV-2D10	10		11/25/2014	28	54	170	47	29	<28	<18	<27	200	0.29	17
Near Former Chemical Storage Area - East	SV-3D10	10		11/24/2014	<44	130	260	77	88	<71	<45	<69	<95	3.8	12
Inside Near Center of Manufacturing Area	SV-4D5	5		11/24/2014	<4.0	<11	30	9.9	39	<6.5	<4.1	16	<8.7	12	4.2
Inside Northwest Manufacturing Area	SV-5D5	5		11/25/2014	<4.0	<11	37	11	43	<6.4	<4.1	<6.2	<8.6	8.6	12
Inside North Manufacturing Area	SV-6D5	5		11/24/2014	<4.1	<11	41	14	74	<6.5	<4.2	46	<8.7	9.2	9
Inside Northeast Manufacturing Area	SV-7D10	10		11/25/2014	31	<66	<29	<29	51	<38	<24	<37	<51	0.68	16
Inside North Office Space Area	SV-8D5	5		11/25/2014	<20	<56	<25	<25	35	<32	<20	<31	<43	0.97	16
Residential DTSC-SL <sup>1</sup>	Ambient Air Cancer Endpoint				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Ambient Air Non-Cancer Endpoint				NE	NE	NE	NE	NE	NE	NE	1,000	NE	NE	NE
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				NE	NE	NE	NE	NE	NE	NE	20000	NE	NE	NE
Residential RSL <sup>2</sup>	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				NE	NE	NE	NE	NE	NE	NE	1000000	NE	NE	NE
	Indoor Air Carcinogenic Target Risk				NE	NE	NE	NE	NE	NE	11	NE	NE	NE	NE
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				NE	NE	NE	NE	NE	NE	220	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				NE	NE	NE	NE	NE	NE	11000	NE	NE	NE	NE
	Indoor Air Non-Cancer Hazard				730	210	100	100	2100	NE	3100	5200	NE	NE	NE
	AF=0.05 <sup>3</sup> (Indoor Air / Subslab)				14600	4200	2000	2000	42000	NE	62000	104000	NE	NE	NE
AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)				730000	210000	100000	100000	2100000	NE	3100000	5200000	NE	NE	NE	

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - October 2015  
2 Regional Screening Level (RSL), USEPA Region 9 - May 2014  
3 Calculated sub-slab screening level using an Attenuation Factor (AF) = 0.05 for existing buildings (DTSC, 2011)  
4 Calculated "contaminant source" screening level using an Attenuation Factor (AF) = 0.001 for future buildings (DTSC, 2011)  
< Not detected at or above laboratory reporting limit  
--- Not Applicable  
NE Not Established

**APPENDIX C: BORING LOGS**

PROJECT NAME 150 Jefferson Drive

 PROJECT NUMBER 166-14-8

 PROJECT LOCATION Menlo Park, CA

 DATE STARTED 12/9/15 DATE COMPLETED 12/9/15

 GROUND ELEVATION \_\_\_\_\_ BORING DEPTH 9.5 ft.

DRILLING CONTRACTOR \_\_\_\_\_

 BORING DIAMETER ft

 DRILLING METHOD Direct Push

GROUND WATER LEVELS:





 LOGGED BY SDK

 ▽ AT TIME OF DRILLING Not Encountered

PERMIT NUMBER \_\_\_\_\_ INSPECTOR \_\_\_\_\_

 ▼ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
0.0	0.0		6 inches Portland cement concrete				
	0.0		<b>Sandy Lean Clay with Gravel (CL) [Fill]</b> stiff, moist, reddish brown with light brown mottles, subangular gravel		0.1		1/4" dia. High Purity Stainless Steel Tubing with Swagelok Cap above ground
	2.5			75	0.2		
	2.5				0.3	none	2.25" diameter borehole to 5.25'
	5.0		<b>Fat Clay (CH)</b> very stiff, moist, dark brown, moderate to high plasticity		0.3		Hydrated Bentonite Seal Slurry 0-7.8'
	5.0		Hand augered from 5.0 to 9.5'		0.1		1.75" diameter borehole from 5.0' to 9.5'
	7.5		<b>Sandy Lean Clay (CL)</b> stiff, moist, light brown with reddish brown mottles, fine to medium sand				Hydrated Granular Bentonite 7.8-8.25'
	7.5						Dry Bentonite Seal 8.25-8.7'
	7.5						Filter Sand 8.7-9.5' with Stainless Steel Dedicated Vapor Tip @ 9.0'
	10.0		Bottom of Boring at 9.5 feet.				

PROJECT NAME 150 Jefferson Drive

PROJECT NUMBER 166-14-8

PROJECT LOCATION Menlo Park, CA

DATE STARTED 12/9/15 DATE COMPLETED 12/9/15

GROUND ELEVATION \_\_\_\_\_ BORING DEPTH 9.5 ft.

DRILLING CONTRACTOR \_\_\_\_\_

BORING DIAMETER ft

DRILLING METHOD Direct Push

GROUND WATER LEVELS:





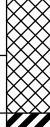

LOGGED BY SDK

▽ AT TIME OF DRILLING Not Encountered

PERMIT NUMBER \_\_\_\_\_ INSPECTOR \_\_\_\_\_

▼ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
0.0	0.0		12 inches Portland cement concrete over 2 inches sand			0.1		 <ul style="list-style-type: none"> <li>1/4" dia. High Purity Stainless Steel Tubing with Swagelok Cap above ground</li> <li>2.25" diameter borehole to 8.5'</li> <li>Hydrated Bentonite Seal Slurry 0-7.6'</li> <li>Hydrated Granular Bentonite 7.6-8.2'</li> <li>Dry Bentonite Seal 8.2-8.6'</li> <li>Filter Sand 8.6-9.5' with Stainless Steel Dedicated Vapor Tip @ 9.0'</li> <li>1.75" diameter borehole from 8.5' to 9.5'</li> </ul>
			<b>Sandy Lean Clay with Gravel (CL) [Fill]</b> stiff, moist, reddish brown with light brown mottles, subangular gravel			0.1		
2.5			<b>Fat Clay (CH)</b> very stiff, moist, dark brown, trace fine sand, moderate to high plasticity		60	0.1	none	
5.0			<b>Sandy Lean Clay (CL)</b> stiff, moist, light brown with light reddish brown mottles, fine to medium sand			0.5		
7.5			Hand augered from 8.5 to 9.5'		100	0.1	none	
			Bottom of Boring at 9.5 feet.					

PROJECT NAME 150 Jefferson Drive

PROJECT NUMBER 166-14-8

PROJECT LOCATION Menlo Park, CA

DATE STARTED 12/9/15 DATE COMPLETED 12/9/15

GROUND ELEVATION \_\_\_\_\_ BORING DEPTH 9.5 ft.

DRILLING CONTRACTOR \_\_\_\_\_

BORING DIAMETER ft

DRILLING METHOD Direct Push

GROUND WATER LEVELS:

LOGGED BY SDK

▽ AT TIME OF DRILLING Not Encountered

PERMIT NUMBER \_\_\_\_\_ INSPECTOR \_\_\_\_\_

▼ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
0.0	0.0	[Symbol]	7 inches Portland cement concrete over 2 inches sand			0.1		<ul style="list-style-type: none"> <li>1/4" dia. High Purity Stainless Steel Tubing with Swagelok Cap above ground</li> <li>2.25" diameter borehole to 8.5'</li> <li>Hydrated Bentonite Seal Slurry 0-7.6'</li> </ul>
		[Symbol]	Sandy Lean Clay with Gravel (CL) [Fill] stiff, moist, reddish brown with light brown mottles, subangular gravel		95	0.2	none	
2.5		[Symbol]				0.2		
		[Symbol]	Fat Clay (CH) very stiff, moist, dark brown, trace fine sand, moderate to high plasticity		100	0.6	none	
5.0		[Symbol]				0		
7.5		[Symbol]	Sandy Lean Clay (CL) stiff, moist, light brown with light reddish brown mottles, fine to medium sand					<ul style="list-style-type: none"> <li>Hydrated Granular Bentonite 7.6-8.2'</li> <li>Dry Bentonite Seal 8.2-8.6'</li> <li>Filter Sand 8.6-9.5' with Stainless Steel Dedicated Vapor Tip @ 9.0'</li> <li>1.75" diameter borehole from 8.5' to 9.5'</li> </ul>
		[Symbol]	Hand augered from 8.5 to 9.5'					
			Bottom of Boring at 9.5 feet.					
10.0								

CORNERSTONE GE WELL LOG - CORNERSTONE 0812.GDT - 3/10/16 08:03 - P:\DRAFTING\GINT FILES\166-14-8 150 JEFFERSON GE SV.GPJ



PROJECT NAME 150 Jefferson Drive

PROJECT NUMBER 166-14-8

PROJECT LOCATION Menlo Park, CA

DATE STARTED 12/9/15 DATE COMPLETED 12/9/15

GROUND ELEVATION \_\_\_\_\_ BORING DEPTH 5.5 ft.

DRILLING CONTRACTOR \_\_\_\_\_

BORING DIAMETER ft

DRILLING METHOD Direct Push

GROUND WATER LEVELS:

LOGGED BY SDK

▽ AT TIME OF DRILLING Not Encountered

PERMIT NUMBER \_\_\_\_\_ INSPECTOR \_\_\_\_\_

▼ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
0.0	0.0	[Hatched]	2 inches asphalt concrete					
		[Cross-hatched]	Well graded Sand with Gravel (SW) [Fill] loose, moist, brown, fine to coarse angular gravel			5.6		<ul style="list-style-type: none"> <li>1/4" dia. High Purity Stainless Steel Tubing with Swagelok Cap above ground</li> <li>Hydrated Bentonite Seal Slurry 0-3.8'</li> <li>2.25" diameter borehole to 4'</li> </ul>
		[Diagonal lines]	Sandy Lean Clay (CL) stiff, moist, dark brown with yellow and reddish brown mottles, trace fine to coarse gravel		50	6	none	
2.5						5.8		
						5.4		
	4.0		Hand augered from 4.0 to 5.5'					<ul style="list-style-type: none"> <li>Hydrated Granular Bentonite 3.8-4.2'</li> <li>Dry Bentonite Seal 4.2-4.6'</li> <li>Filter Sand 4.6-5.5' with Stainless Steel Dedicated Vapor Tip @ 5.0'</li> <li>1.75" diameter borehole from 4.0' to 5.5'</li> </ul>
	5.5		Bottom of Boring at 5.5 feet.					
7.5								
10.0								

PROJECT NAME 150 Jefferson Drive

PROJECT NUMBER 166-14-8

PROJECT LOCATION Menlo Park, CA

DATE STARTED 12/9/15 DATE COMPLETED 12/9/15

GROUND ELEVATION \_\_\_\_\_ BORING DEPTH 5.5 ft.

DRILLING CONTRACTOR \_\_\_\_\_

BORING DIAMETER ft

DRILLING METHOD Direct Push

GROUND WATER LEVELS:


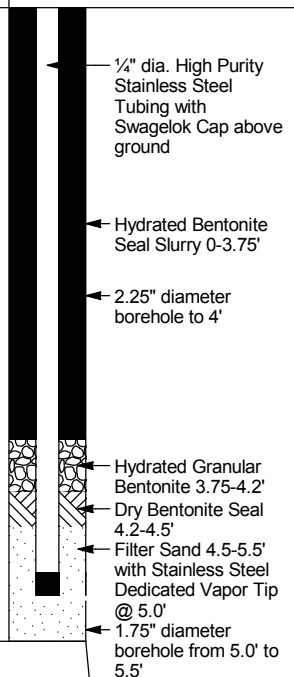



LOGGED BY SDK

▽ AT TIME OF DRILLING Not Encountered

PERMIT NUMBER \_\_\_\_\_ INSPECTOR \_\_\_\_\_

▼ AT END OF DRILLING Not Encountered

This log is a part of a report by Cornerstone Earth Group, and should not be used as a stand-alone document. This description applies only to the location of the exploration at the time of drilling. Subsurface conditions may differ at other locations and may change at this location with time. The description presented is a simplification of actual conditions encountered. Transitions between soil types may be gradual.

ELEVATION (ft)	DEPTH (ft)	SYMBOL	DESCRIPTION	Sample Type	Percent Recovery (%)	OVM Reading (ppm)	Odors or Discoloration	Well Details
0.0			<b>Sandy Lean Clay (CL) [Fill]</b> medium stiff, moist, light brown, some roots					 <ul style="list-style-type: none"> <li>1/4" dia. High Purity Stainless Steel Tubing with Swagelok Cap above ground</li> <li>Hydrated Bentonite Seal Slurry 0-3.75'</li> <li>2.25" diameter borehole to 4'</li> <li>Hydrated Granular Bentonite 3.75-4.2'</li> <li>Dry Bentonite Seal 4.2-4.5'</li> <li>Filter Sand 4.5-5.5' with Stainless Steel Dedicated Vapor Tip @ 5.0'</li> <li>1.75" diameter borehole from 5.0' to 5.5'</li> </ul>
			<b>Fat Clay (CH)</b> stiff, moist, dark brown, moderate to high plasticity			10.8		
						7.5		
2.5			<b>Sandy Lean Clay (CL)</b> stiff, moist, light brown with yellow and reddish brown mottles, fine sand		90	7.5	none	
						3.8		
5.0			Hand augered from 5.0 to 5.5'			0.8		
			Bottom of Boring at 5.5 feet.					
7.5								
10.0								

**APPENDIX D: ANALYTICAL DATA SHEETS AND CHAIN OF CUSTODY DOCUMENTATION**

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
TestAmerica Pleasanton  
1220 Quarry Lane  
Pleasanton, CA 94566  
Tel: (925)484-1919

TestAmerica Job ID: 720-69116-1  
Client Project/Site: 150 Jefferson Drive

For:  
Cornerstone Earth Group  
1259 Oakmead Parkway  
Sunnyvale, California 94085

Attn: Kurt Soenen



Authorized for release by:  
12/16/2015 5:04:28 PM

Afsaneh Salimpour, Senior Project Manager  
(925)484-1919  
[afsaneh.salimpour@testamericainc.com](mailto:afsaneh.salimpour@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Qualifiers

### GC Semi VOA

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
*	LCS or LCSD is outside acceptance limits.

### Metals

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Case Narrative

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Job ID: 720-69116-1**

**Laboratory: TestAmerica Pleasanton**

## Narrative

### Job Narrative 720-69116-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 12/9/2015 5:05 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.6° C.

#### Receipt Exceptions

Sample ID EB-1 was received with 1L amber unpreserved half full.

#### GC Semi VOA

Method(s) 8082: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: (LCS 720-194272/2-A) and (LCSD 720-194272/3-A).

Method(s) 8082: The following samples required a tetrabutylammonium sulfite (TBA) clean-up to reduce matrix interferences caused by sulfur: EB-1 (720-69116-11) and (MB 720-194272/1-A).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### Organic Prep

Method(s) 3510C: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: EPA 8081A: The sample is less than 800 mL.

Method(s) 3510C: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: EPA 8082: The sample is less than 800 mL.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.



# Detection Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-15 (0-0.5')**

**Lab Sample ID: 720-69116-1**

No Detections.

**Client Sample ID: SB-15 (2-2.5')**

**Lab Sample ID: 720-69116-2**

No Detections.

**Client Sample ID: SB-14 (0-0.5')**

**Lab Sample ID: 720-69116-4**

No Detections.

**Client Sample ID: SB-14 (2-2.5')**

**Lab Sample ID: 720-69116-5**

No Detections.

**Client Sample ID: SB-12 (0-0.5')**

**Lab Sample ID: 720-69116-7**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	9.9		1.8		mg/Kg	4		6010B	Total/NA

**Client Sample ID: SB-12 (2-2.5')**

**Lab Sample ID: 720-69116-8**

No Detections.

**Client Sample ID: FD-1 (2-2.5')**

**Lab Sample ID: 720-69116-9**

No Detections.

**Client Sample ID: EB-1**

**Lab Sample ID: 720-69116-11**

No Detections.

**Client Sample ID: SB-11 (0-0.5')**

**Lab Sample ID: 720-69116-12**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	7.4		1.3		mg/Kg	4		6010B	Total/NA

**Client Sample ID: SB-11 (2-2.5')**

**Lab Sample ID: 720-69116-13**

No Detections.

**Client Sample ID: SB-13 (0-0.5')**

**Lab Sample ID: 720-69116-15**

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Lead	8.8		1.5		mg/Kg	4		6010B	Total/NA

**Client Sample ID: SB-13 (2-2.5')**

**Lab Sample ID: 720-69116-16**

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

# Client Sample Results

Client: Cornerstone Earth Group  
 Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-15 (0-0.5')**

**Lab Sample ID: 720-69116-1**

**Date Collected: 12/09/15 08:22**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

**Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		49		ug/Kg		12/11/15 10:16	12/12/15 16:47	1
PCB-1221	ND		49		ug/Kg		12/11/15 10:16	12/12/15 16:47	1
PCB-1232	ND		49		ug/Kg		12/11/15 10:16	12/12/15 16:47	1
PCB-1242	ND		49		ug/Kg		12/11/15 10:16	12/12/15 16:47	1
PCB-1248	ND		49		ug/Kg		12/11/15 10:16	12/12/15 16:47	1
PCB-1254	ND		49		ug/Kg		12/11/15 10:16	12/12/15 16:47	1
PCB-1260	ND		49		ug/Kg		12/11/15 10:16	12/12/15 16:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	82		45 - 132	12/11/15 10:16	12/12/15 16:47	1
DCB Decachlorobiphenyl	68		42 - 146	12/11/15 10:16	12/12/15 16:47	1



# Client Sample Results

Client: Cornerstone Earth Group  
 Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-15 (2-2.5')**

**Lab Sample ID: 720-69116-2**

**Date Collected: 12/09/15 08:24**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		48		ug/Kg		12/11/15 10:16	12/12/15 17:03	1
PCB-1221	ND		48		ug/Kg		12/11/15 10:16	12/12/15 17:03	1
PCB-1232	ND		48		ug/Kg		12/11/15 10:16	12/12/15 17:03	1
PCB-1242	ND		48		ug/Kg		12/11/15 10:16	12/12/15 17:03	1
PCB-1248	ND		48		ug/Kg		12/11/15 10:16	12/12/15 17:03	1
PCB-1254	ND		48		ug/Kg		12/11/15 10:16	12/12/15 17:03	1
PCB-1260	ND		48		ug/Kg		12/11/15 10:16	12/12/15 17:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	82		45 - 132	12/11/15 10:16	12/12/15 17:03	1
DCB Decachlorobiphenyl	74		42 - 146	12/11/15 10:16	12/12/15 17:03	1

# Client Sample Results

Client: Cornerstone Earth Group  
 Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-14 (0-0.5')**

**Lab Sample ID: 720-69116-4**

**Date Collected: 12/09/15 08:42**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

**Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:20	1
PCB-1221	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:20	1
PCB-1232	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:20	1
PCB-1242	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:20	1
PCB-1248	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:20	1
PCB-1254	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:20	1
PCB-1260	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:20	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	82		45 - 132	12/11/15 10:16	12/12/15 17:20	1
DCB Decachlorobiphenyl	76		42 - 146	12/11/15 10:16	12/12/15 17:20	1

# Client Sample Results

Client: Cornerstone Earth Group  
 Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-14 (2-2.5')**

**Lab Sample ID: 720-69116-5**

**Date Collected: 12/09/15 08:45**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

**Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:36	1
PCB-1221	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:36	1
PCB-1232	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:36	1
PCB-1242	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:36	1
PCB-1248	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:36	1
PCB-1254	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:36	1
PCB-1260	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	83		45 - 132	12/11/15 10:16	12/12/15 17:36	1
DCB Decachlorobiphenyl	78		42 - 146	12/11/15 10:16	12/12/15 17:36	1

# Client Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-12 (0-0.5')**

**Lab Sample ID: 720-69116-7**

**Date Collected: 12/09/15 08:58**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

## Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Dieldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Endrin aldehyde	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Endrin	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Endrin ketone	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Heptachlor	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Heptachlor epoxide	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
4,4'-DDT	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
4,4'-DDE	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
4,4'-DDD	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Endosulfan I	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Endosulfan II	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
alpha-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
beta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
delta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Endosulfan sulfate	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Methoxychlor	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Toxaphene	ND		39		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
Chlordane (technical)	ND		39		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
alpha-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
gamma-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 18:01	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	95		57 - 122				12/11/15 10:40	12/14/15 18:01	1
<i>DCB Decachlorobiphenyl</i>	102		21 - 136				12/11/15 10:40	12/14/15 18:01	1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:53	1
PCB-1221	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:53	1
PCB-1232	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:53	1
PCB-1242	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:53	1
PCB-1248	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:53	1
PCB-1254	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:53	1
PCB-1260	ND		49		ug/Kg		12/11/15 10:16	12/12/15 17:53	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	85		45 - 132				12/11/15 10:16	12/12/15 17:53	1
<i>DCB Decachlorobiphenyl</i>	83		42 - 146				12/11/15 10:16	12/12/15 17:53	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Lead</b>	<b>9.9</b>		1.8		mg/Kg		12/11/15 16:48	12/14/15 21:44	4

TestAmerica Pleasanton

# Client Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-12 (2-2.5')**

**Lab Sample ID: 720-69116-8**

**Date Collected: 12/09/15 08:59**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

## Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Dieldrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Endrin aldehyde	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Endrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Endrin ketone	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Heptachlor	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Heptachlor epoxide	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
4,4'-DDT	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
4,4'-DDE	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
4,4'-DDD	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Endosulfan I	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Endosulfan II	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
alpha-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
beta-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
gamma-BHC (Lindane)	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
delta-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Endosulfan sulfate	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Methoxychlor	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Toxaphene	ND		39		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
Chlordane (technical)	ND		39		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
alpha-Chlordane	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
gamma-Chlordane	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:00	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	100		57 - 122				12/11/15 10:40	12/15/15 08:00	1
<i>DCB Decachlorobiphenyl</i>	129		21 - 136				12/11/15 10:40	12/15/15 08:00	1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		48		ug/Kg		12/11/15 10:16	12/12/15 18:10	1
PCB-1221	ND		48		ug/Kg		12/11/15 10:16	12/12/15 18:10	1
PCB-1232	ND		48		ug/Kg		12/11/15 10:16	12/12/15 18:10	1
PCB-1242	ND		48		ug/Kg		12/11/15 10:16	12/12/15 18:10	1
PCB-1248	ND		48		ug/Kg		12/11/15 10:16	12/12/15 18:10	1
PCB-1254	ND		48		ug/Kg		12/11/15 10:16	12/12/15 18:10	1
PCB-1260	ND		48		ug/Kg		12/11/15 10:16	12/12/15 18:10	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	81		45 - 132				12/11/15 10:16	12/12/15 18:10	1
<i>DCB Decachlorobiphenyl</i>	86		42 - 146				12/11/15 10:16	12/12/15 18:10	1

TestAmerica Pleasanton



# Client Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: FD-1 (2-2.5')**

**Lab Sample ID: 720-69116-9**

**Date Collected: 12/09/15 08:59**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

## Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Dieldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Endrin aldehyde	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Endrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Endrin ketone	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Heptachlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Heptachlor epoxide	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
4,4'-DDT	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
4,4'-DDE	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
4,4'-DDD	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Endosulfan I	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Endosulfan II	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
alpha-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
beta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
delta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Endosulfan sulfate	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Methoxychlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Toxaphene	ND		39		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
Chlordane (technical)	ND		39		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
alpha-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
gamma-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:17	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	95		57 - 122				12/11/15 10:40	12/15/15 08:17	1
<i>DCB Decachlorobiphenyl</i>	134		21 - 136				12/11/15 10:40	12/15/15 08:17	1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		49		ug/Kg		12/11/15 10:16	12/12/15 18:26	1
PCB-1221	ND		49		ug/Kg		12/11/15 10:16	12/12/15 18:26	1
PCB-1232	ND		49		ug/Kg		12/11/15 10:16	12/12/15 18:26	1
PCB-1242	ND		49		ug/Kg		12/11/15 10:16	12/12/15 18:26	1
PCB-1248	ND		49		ug/Kg		12/11/15 10:16	12/12/15 18:26	1
PCB-1254	ND		49		ug/Kg		12/11/15 10:16	12/12/15 18:26	1
PCB-1260	ND		49		ug/Kg		12/11/15 10:16	12/12/15 18:26	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	77		45 - 132				12/11/15 10:16	12/12/15 18:26	1
<i>DCB Decachlorobiphenyl</i>	81		42 - 146				12/11/15 10:16	12/12/15 18:26	1

TestAmerica Pleasanton

# Client Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: EB-1**  
**Date Collected: 12/09/15 09:10**  
**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-11**  
**Matrix: Water**

## Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Dieldrin	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Endrin aldehyde	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Endrin	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Endrin ketone	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Heptachlor	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Heptachlor epoxide	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
4,4'-DDT	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
4,4'-DDE	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
4,4'-DDD	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Endosulfan I	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Endosulfan II	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
alpha-BHC	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
beta-BHC	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
gamma-BHC (Lindane)	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
delta-BHC	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Endosulfan sulfate	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Methoxychlor	ND	*	0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
Toxaphene	ND		1.9		ug/L		12/16/15 09:44	12/16/15 15:14	1
Chlordane (technical)	ND		1.9		ug/L		12/16/15 09:44	12/16/15 15:14	1
alpha-Chlordane	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
gamma-Chlordane	ND		0.11		ug/L		12/16/15 09:44	12/16/15 15:14	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	77		36 - 112				12/16/15 09:44	12/16/15 15:14	1
<i>DCB Decachlorobiphenyl</i>	97		14 - 126				12/16/15 09:44	12/16/15 15:14	1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.94		ug/L		12/16/15 09:41	12/16/15 14:05	1
PCB-1221	ND		0.94		ug/L		12/16/15 09:41	12/16/15 14:05	1
PCB-1232	ND		0.94		ug/L		12/16/15 09:41	12/16/15 14:05	1
PCB-1242	ND		0.94		ug/L		12/16/15 09:41	12/16/15 14:05	1
PCB-1248	ND		0.94		ug/L		12/16/15 09:41	12/16/15 14:05	1
PCB-1254	ND		0.94		ug/L		12/16/15 09:41	12/16/15 14:05	1
PCB-1260	ND		0.94		ug/L		12/16/15 09:41	12/16/15 14:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	70		19 - 98				12/16/15 09:41	12/16/15 14:05	1
<i>DCB Decachlorobiphenyl</i>	88		10 - 122				12/16/15 09:41	12/16/15 14:05	1

TestAmerica Pleasanton

# Client Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-11 (0-0.5')**

**Lab Sample ID: 720-69116-12**

**Date Collected: 12/09/15 09:23**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

## Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Dieldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Endrin aldehyde	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Endrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Endrin ketone	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Heptachlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Heptachlor epoxide	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
4,4'-DDT	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
4,4'-DDE	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
4,4'-DDD	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Endosulfan I	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Endosulfan II	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
alpha-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
beta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
delta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Endosulfan sulfate	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Methoxychlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Toxaphene	ND		40		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Chlordane (technical)	ND		40		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
alpha-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
gamma-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 08:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>Tetrachloro-m-xylene</i>	105		57 - 122				12/11/15 10:40	12/15/15 08:34	1
<i>DCB Decachlorobiphenyl</i>	106		21 - 136				12/11/15 10:40	12/15/15 08:34	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	7.4		1.3		mg/Kg		12/11/15 16:48	12/14/15 21:49	4

# Client Sample Results

Client: Cornerstone Earth Group  
 Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-11 (2-2.5')**

**Lab Sample ID: 720-69116-13**

**Date Collected: 12/09/15 09:25**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

**Method: 8081A - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Dieldrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Endrin aldehyde	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Endrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Endrin ketone	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Heptachlor	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Heptachlor epoxide	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
4,4'-DDT	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
4,4'-DDE	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
4,4'-DDD	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Endosulfan I	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Endosulfan II	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
alpha-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
beta-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
gamma-BHC (Lindane)	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
delta-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Endosulfan sulfate	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Methoxychlor	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Toxaphene	ND		39		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
Chlordane (technical)	ND		39		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
alpha-Chlordane	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
gamma-Chlordane	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 08:51	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	103		57 - 122				12/11/15 10:40	12/15/15 08:51	1
<i>DCB Decachlorobiphenyl</i>	119		21 - 136				12/11/15 10:40	12/15/15 08:51	1

# Client Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-13 (0-0.5')**

**Lab Sample ID: 720-69116-15**

**Date Collected: 12/09/15 10:00**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

## Method: 8081A - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Dieldrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Endrin aldehyde	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Endrin	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Endrin ketone	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Heptachlor	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Heptachlor epoxide	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
4,4'-DDT	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
4,4'-DDE	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
4,4'-DDD	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Endosulfan I	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Endosulfan II	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
alpha-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
beta-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
gamma-BHC (Lindane)	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
delta-BHC	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Endosulfan sulfate	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Methoxychlor	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Toxaphene	ND		39		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
Chlordane (technical)	ND		39		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
alpha-Chlordane	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1
gamma-Chlordane	ND		1.9		ug/Kg		12/11/15 10:40	12/15/15 09:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	73		57 - 122	12/11/15 10:40	12/15/15 09:08	1
DCB Decachlorobiphenyl	98		21 - 136	12/11/15 10:40	12/15/15 09:08	1

## Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	8.8		1.5		mg/Kg		12/11/15 16:48	12/14/15 21:54	4

# Client Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-13 (2-2.5')**

**Lab Sample ID: 720-69116-16**

**Date Collected: 12/09/15 10:02**

**Matrix: Solid**

**Date Received: 12/09/15 17:05**

**Method: 8081A - Organochlorine Pesticides (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Dieldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Endrin aldehyde	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Endrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Endrin ketone	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Heptachlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Heptachlor epoxide	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
4,4'-DDT	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
4,4'-DDE	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
4,4'-DDD	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Endosulfan I	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Endosulfan II	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
alpha-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
beta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
delta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Endosulfan sulfate	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Methoxychlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Toxaphene	ND		39		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
Chlordane (technical)	ND		39		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
alpha-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1
gamma-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 09:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	84	p	57 - 122	12/11/15 10:40	12/15/15 09:24	1
DCB Decachlorobiphenyl	114		21 - 136	12/11/15 10:40	12/15/15 09:24	1



# Surrogate Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (57-122)	DCB1 (21-136)
720-69089-A-5-E MS	Matrix Spike	110	135
720-69089-A-5-F MSD	Matrix Spike Duplicate	98	130
720-69116-7	SB-12 (0-0.5')	95	102
720-69116-9	FD-1 (2-2.5')	95	134
720-69116-13	SB-11 (2-2.5')	103	119
720-69116-15	SB-13 (0-0.5')	73	98
720-69116-16	SB-13 (2-2.5')	84 p	114
LCS 720-194011/2-A	Lab Control Sample	115	104
LCS 720-194011/2-A	Lab Control Sample	110	121
MB 720-194011/1-A	Method Blank	105	104

#### Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (57-122)	DCB1 (21-136)
720-69116-12	SB-11 (0-0.5')	105	106

#### Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (57-122)	DCB2 (21-136)
720-69116-8	SB-12 (2-2.5')	100	129

#### Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (57-122)	DCB2 (21-136)
MB 720-194011/1-A	Method Blank	106	121

#### Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

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# Surrogate Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX2 (36-112)	DCB2 (14-126)
720-69116-11	EB-1	77	97
MB 720-194275/1-A	Method Blank	87	82

#### Surrogate Legend

TCX = Tetrachloro-m-xylene  
DCB = DCB Decachlorobiphenyl

## Method: 8081A - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (36-112)	DCB2 (14-126)
LCS 720-194275/2-A	Lab Control Sample	99	89
LCS 720-194275/3-A	Lab Control Sample Dup	93	101

#### Surrogate Legend

TCX = Tetrachloro-m-xylene  
DCB = DCB Decachlorobiphenyl

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Solid

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (45-132)	DCB1 (42-146)
720-69061-A-1-F MS	Matrix Spike	88	90
720-69061-A-1-G MSD	Matrix Spike Duplicate	78	82
720-69116-1	SB-15 (0-0.5')	82	68
720-69116-2	SB-15 (2-2.5')	82	74
720-69116-4	SB-14 (0-0.5')	82	76
720-69116-5	SB-14 (2-2.5')	83	78
720-69116-7	SB-12 (0-0.5')	85	83
720-69116-8	SB-12 (2-2.5')	81	86
720-69116-9	FD-1 (2-2.5')	77	81
LCS 720-194010/2-A	Lab Control Sample	96	96
MB 720-194010/1-A	Method Blank	98	98

#### Surrogate Legend

TCX = Tetrachloro-m-xylene  
DCB = DCB Decachlorobiphenyl

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (19-98)	DCB1 (10-122)
720-69116-11	EB-1	70	88
LCS 720-194272/2-A	Lab Control Sample	82	85

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# Surrogate Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	TCX1 (19-98)	DCB1 (10-122)
LCSD 720-194272/3-A	Lab Control Sample Dup	82	85
MB 720-194272/1-A	Method Blank	86	80

#### Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8081A - Organochlorine Pesticides (GC)

**Lab Sample ID: MB 720-194011/1-A**  
**Matrix: Solid**  
**Analysis Batch: 194086**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Dieldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Endrin aldehyde	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Endrin	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Endrin ketone	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Heptachlor	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Heptachlor epoxide	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
4,4'-DDT	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
4,4'-DDE	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
4,4'-DDD	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Endosulfan I	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Endosulfan II	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
alpha-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
beta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
delta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Endosulfan sulfate	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Methoxychlor	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Toxaphene	ND		40		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
Chlordane (technical)	ND		40		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
alpha-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
gamma-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/14/15 12:42	1
	<b>MB</b>	<b>MB</b>							
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
<i>Tetrachloro-m-xylene</i>	105		57 - 122				12/11/15 10:40	12/14/15 12:42	1
<i>DCB Decachlorobiphenyl</i>	104		21 - 136				12/11/15 10:40	12/14/15 12:42	1

**Lab Sample ID: MB 720-194011/1-A**  
**Matrix: Solid**  
**Analysis Batch: 194148**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Dieldrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Endrin aldehyde	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Endrin	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Endrin ketone	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Heptachlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Heptachlor epoxide	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
4,4'-DDT	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
4,4'-DDE	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
4,4'-DDD	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Endosulfan I	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Endosulfan II	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
alpha-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
beta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
gamma-BHC (Lindane)	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
delta-BHC	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1

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# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: MB 720-194011/1-A**  
**Matrix: Solid**  
**Analysis Batch: 194148**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan sulfate	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Methoxychlor	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Toxaphene	ND		40		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Chlordane (technical)	ND		40		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
alpha-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
gamma-Chlordane	ND		2.0		ug/Kg		12/11/15 10:40	12/15/15 07:27	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	106		57 - 122				12/11/15 10:40	12/15/15 07:27	1
DCB Decachlorobiphenyl	121		21 - 136				12/11/15 10:40	12/15/15 07:27	1

**Lab Sample ID: LCS 720-194011/2-A**  
**Matrix: Solid**  
**Analysis Batch: 194086**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	16.7	17.3		ug/Kg		104	65 - 120
Dieldrin	16.7	17.1		ug/Kg		103	72 - 120
Endrin aldehyde	16.7	19.1		ug/Kg		115	68 - 120
Endrin	16.7	17.7		ug/Kg		106	68 - 120
Endrin ketone	16.7	20.0		ug/Kg		120	84 - 133
Heptachlor	16.7	17.4		ug/Kg		105	69 - 120
Heptachlor epoxide	16.7	21.4	*	ug/Kg		128	68 - 120
4,4'-DDT	16.7	17.7		ug/Kg		106	63 - 127
4,4'-DDE	16.7	18.0		ug/Kg		108	84 - 126
4,4'-DDD	16.7	17.4		ug/Kg		104	85 - 128
Endosulfan I	16.7	17.0		ug/Kg		102	62 - 120
Endosulfan II	16.7	17.0		ug/Kg		102	65 - 120
alpha-BHC	16.7	15.9		ug/Kg		95	62 - 120
beta-BHC	16.7	19.4		ug/Kg		117	74 - 124
gamma-BHC (Lindane)	16.7	17.7		ug/Kg		106	72 - 120
delta-BHC	16.7	14.2		ug/Kg		85	43 - 125
Endosulfan sulfate	16.7	15.4		ug/Kg		92	84 - 126
Methoxychlor	16.7	17.8		ug/Kg		107	71 - 132
alpha-Chlordane	16.7	16.4		ug/Kg		98	70 - 120
gamma-Chlordane	16.7	16.9		ug/Kg		101	68 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
Tetrachloro-m-xylene	115		57 - 122				
DCB Decachlorobiphenyl	104		21 - 136				

**Lab Sample ID: LCS 720-194011/2-A**  
**Matrix: Solid**  
**Analysis Batch: 194148**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	16.7	16.7		ug/Kg		100	65 - 120
Dieldrin	16.7	16.9		ug/Kg		102	72 - 120

TestAmerica Pleasanton

# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: LCS 720-194011/2-A**  
**Matrix: Solid**  
**Analysis Batch: 194148**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Endrin aldehyde	16.7	19.3		ug/Kg		116	68 - 120
Endrin	16.7	18.5		ug/Kg		111	68 - 120
Endrin ketone	16.7	18.8		ug/Kg		113	84 - 133
Heptachlor	16.7	16.1		ug/Kg		97	69 - 120
Heptachlor epoxide	16.7	17.9		ug/Kg		107	68 - 120
4,4'-DDT	16.7	19.1		ug/Kg		115	63 - 127
4,4'-DDE	16.7	17.4		ug/Kg		105	84 - 126
4,4'-DDD	16.7	18.8		ug/Kg		113	85 - 128
Endosulfan I	16.7	17.9		ug/Kg		107	62 - 120
Endosulfan II	16.7	18.0		ug/Kg		108	65 - 120
alpha-BHC	16.7	15.9		ug/Kg		95	62 - 120
beta-BHC	16.7	19.8		ug/Kg		119	74 - 124
gamma-BHC (Lindane)	16.7	16.9		ug/Kg		101	72 - 120
delta-BHC	16.7	12.5		ug/Kg		75	43 - 125
Endosulfan sulfate	16.7	17.5		ug/Kg		105	84 - 126
Methoxychlor	16.7	18.4		ug/Kg		111	71 - 132
alpha-Chlordane	16.7	17.1		ug/Kg		102	70 - 120
gamma-Chlordane	16.7	17.4		ug/Kg		104	68 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	110		57 - 122
DCB Decachlorobiphenyl	121		21 - 136

**Lab Sample ID: 720-69089-A-5-E MS**  
**Matrix: Solid**  
**Analysis Batch: 194086**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Aldrin	ND		16.5	16.7		ug/Kg		101	53 - 120
Dieldrin	ND		16.5	23.4	F1	ug/Kg		142	46 - 130
Endrin aldehyde	ND		16.5	21.7	F1	ug/Kg		132	40 - 120
Endrin	ND		16.5	17.6	p	ug/Kg		107	32 - 143
Endrin ketone	ND		16.5	20.3	F1	ug/Kg		123	40 - 120
Heptachlor	ND		16.5	17.2		ug/Kg		104	52 - 120
Heptachlor epoxide	ND		16.5	18.5		ug/Kg		112	40 - 120
4,4'-DDT	150		16.5	162	4	ug/Kg		72	17 - 144
4,4'-DDE	560		16.5	553	4	ug/Kg		-46	40 - 120
4,4'-DDD	ND		16.5	22.0	F1	ug/Kg		133	40 - 120
Endosulfan I	ND		16.5	18.6		ug/Kg		112	40 - 120
Endosulfan II	ND		16.5	18.7		ug/Kg		113	40 - 120
alpha-BHC	ND		16.5	16.1		ug/Kg		98	40 - 120
beta-BHC	ND		16.5	20.1	F1	ug/Kg		122	40 - 120
gamma-BHC (Lindane)	ND		16.5	16.9		ug/Kg		102	58 - 120
delta-BHC	ND		16.5	14.6		ug/Kg		88	40 - 120
Endosulfan sulfate	ND	F1	16.5	21.7	F1	ug/Kg		131	40 - 120
Methoxychlor	ND		16.5	21.8	F1	ug/Kg		132	40 - 120
alpha-Chlordane	ND	F1	16.5	20.2	F1	ug/Kg		123	40 - 120
gamma-Chlordane	ND		16.5	19.4		ug/Kg		118	40 - 120

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# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	110		57 - 122
DCB Decachlorobiphenyl	135		21 - 136

**Lab Sample ID: 720-69089-A-5-F MSD**  
**Matrix: Solid**  
**Analysis Batch: 194086**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 194011**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	ND		16.6	15.4		ug/Kg		93	53 - 120	8	20
Dieldrin	ND		16.6	21.6		ug/Kg		130	46 - 130	8	20
Endrin aldehyde	ND		16.6	21.3	F1	ug/Kg		129	40 - 120	2	20
Endrin	ND		16.6	16.2	p	ug/Kg		98	32 - 143	8	20
Endrin ketone	ND		16.6	18.1		ug/Kg		109	40 - 120	12	20
Heptachlor	ND		16.6	15.0		ug/Kg		90	52 - 120	14	20
Heptachlor epoxide	ND		16.6	17.2		ug/Kg		104	40 - 120	7	20
4,4'-DDT	150		16.6	149	4	ug/Kg		-4	17 - 144	8	20
4,4'-DDE	560		16.6	512	4	ug/Kg		-291	40 - 120	8	20
4,4'-DDD	ND		16.6	20.3	F1	ug/Kg		123	40 - 120	8	20
Endosulfan I	ND		16.6	17.0		ug/Kg		103	40 - 120	9	20
Endosulfan II	ND		16.6	17.2		ug/Kg		104	40 - 120	8	30
alpha-BHC	ND		16.6	14.3		ug/Kg		86	40 - 120	12	20
beta-BHC	ND		16.6	18.0		ug/Kg		108	40 - 120	11	20
gamma-BHC (Lindane)	ND		16.6	14.7		ug/Kg		89	58 - 120	14	20
delta-BHC	ND		16.6	13.1		ug/Kg		79	40 - 120	11	20
Endosulfan sulfate	ND	F1	16.6	19.4		ug/Kg		117	40 - 120	11	20
Methoxychlor	ND		16.6	19.4		ug/Kg		117	40 - 120	12	20
alpha-Chlordane	ND	F1	16.6	18.8		ug/Kg		114	40 - 120	7	20
gamma-Chlordane	ND		16.6	17.3		ug/Kg		104	40 - 120	12	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene	98		57 - 122
DCB Decachlorobiphenyl	130		21 - 136

**Lab Sample ID: MB 720-194275/1-A**  
**Matrix: Water**  
**Analysis Batch: 194267**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 194275**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Dieldrin	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Endrin aldehyde	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Endrin	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Endrin ketone	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Heptachlor	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Heptachlor epoxide	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
4,4'-DDT	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
4,4'-DDE	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
4,4'-DDD	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Endosulfan I	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Endosulfan II	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
alpha-BHC	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
beta-BHC	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
gamma-BHC (Lindane)	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1

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# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

**Lab Sample ID: MB 720-194275/1-A**  
**Matrix: Water**  
**Analysis Batch: 194267**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 194275**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Endosulfan sulfate	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Methoxychlor	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Toxaphene	ND		1.0		ug/L		12/16/15 09:44	12/16/15 14:21	1
Chlordane (technical)	ND		1.0		ug/L		12/16/15 09:44	12/16/15 14:21	1
alpha-Chlordane	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
gamma-Chlordane	ND		0.060		ug/L		12/16/15 09:44	12/16/15 14:21	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	87		36 - 112				12/16/15 09:44	12/16/15 14:21	1
DCB Decachlorobiphenyl	82		14 - 126				12/16/15 09:44	12/16/15 14:21	1

**Lab Sample ID: LCS 720-194275/2-A**  
**Matrix: Water**  
**Analysis Batch: 194267**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194275**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.500	0.493		ug/L		99	44 - 120
Dieldrin	0.500	0.518		ug/L		104	43 - 120
Endrin aldehyde	0.500	0.538		ug/L		108	40 - 120
Endrin	0.500	0.531		ug/L		106	15 - 138
Endrin ketone	0.500	0.536		ug/L		107	40 - 120
Heptachlor	0.500	0.504		ug/L		101	17 - 128
Heptachlor epoxide	0.500	0.524		ug/L		105	40 - 120
4,4'-DDT	0.500	0.517		ug/L		103	46 - 120
4,4'-DDE	0.500	0.515		ug/L		103	40 - 120
4,4'-DDD	0.500	0.522		ug/L		104	40 - 120
Endosulfan I	0.500	0.520		ug/L		104	40 - 120
Endosulfan II	0.500	0.533		ug/L		107	40 - 120
alpha-BHC	0.500	0.512		ug/L		102	40 - 120
beta-BHC	0.500	0.545		ug/L		109	40 - 120
gamma-BHC (Lindane)	0.500	0.514		ug/L		103	46 - 121
delta-BHC	0.500	0.385		ug/L		77	40 - 120
Endosulfan sulfate	0.500	0.501		ug/L		100	40 - 120
Methoxychlor	0.500	0.551		ug/L		110	40 - 120
alpha-Chlordane	0.500	0.517		ug/L		103	40 - 120
gamma-Chlordane	0.500	0.519		ug/L		104	40 - 120
Surrogate	%Recovery	LCS Qualifier	Limits				
Tetrachloro-m-xylene	99		36 - 112				
DCB Decachlorobiphenyl	89		14 - 126				

**Lab Sample ID: LCSD 720-194275/3-A**  
**Matrix: Water**  
**Analysis Batch: 194267**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 194275**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.500	0.496		ug/L		99	44 - 120	1	20

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# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8081A - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCSD 720-194275/3-A

Matrix: Water

Analysis Batch: 194267

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 194275

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dieldrin	0.500	0.552		ug/L		110	43 - 120	6	20
Endrin aldehyde	0.500	0.571		ug/L		114	40 - 120	6	20
Endrin	0.500	0.567		ug/L		113	15 - 138	7	20
Endrin ketone	0.500	0.578		ug/L		116	40 - 120	7	20
Heptachlor	0.500	0.501		ug/L		100	17 - 128	1	20
Heptachlor epoxide	0.500	0.547		ug/L		109	40 - 120	4	20
4,4'-DDT	0.500	0.566		ug/L		113	46 - 120	9	20
4,4'-DDE	0.500	0.554		ug/L		111	40 - 120	7	20
4,4'-DDD	0.500	0.567		ug/L		113	40 - 120	8	20
Endosulfan I	0.500	0.548		ug/L		110	40 - 120	5	30
Endosulfan II	0.500	0.569		ug/L		114	40 - 120	7	20
alpha-BHC	0.500	0.494		ug/L		99	40 - 120	4	20
beta-BHC	0.500	0.555		ug/L		111	40 - 120	2	20
gamma-BHC (Lindane)	0.500	0.507		ug/L		101	46 - 121	1	20
delta-BHC	0.500	0.395		ug/L		79	40 - 120	3	20
Endosulfan sulfate	0.500	0.541		ug/L		108	40 - 120	8	20
Methoxychlor	0.500	0.597		ug/L		119	40 - 120	8	20
alpha-Chlordane	0.500	0.547		ug/L		109	40 - 120	6	20
gamma-Chlordane	0.500	0.547		ug/L		109	40 - 120	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	93		36 - 112
DCB Decachlorobiphenyl	101		14 - 126

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 720-194010/1-A

Matrix: Solid

Analysis Batch: 194070

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 194010

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		50		ug/Kg		12/11/15 10:16	12/12/15 15:40	1
PCB-1221	ND		50		ug/Kg		12/11/15 10:16	12/12/15 15:40	1
PCB-1232	ND		50		ug/Kg		12/11/15 10:16	12/12/15 15:40	1
PCB-1242	ND		50		ug/Kg		12/11/15 10:16	12/12/15 15:40	1
PCB-1248	ND		50		ug/Kg		12/11/15 10:16	12/12/15 15:40	1
PCB-1254	ND		50		ug/Kg		12/11/15 10:16	12/12/15 15:40	1
PCB-1260	ND		50		ug/Kg		12/11/15 10:16	12/12/15 15:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	98		45 - 132	12/11/15 10:16	12/12/15 15:40	1
DCB Decachlorobiphenyl	98		42 - 146	12/11/15 10:16	12/12/15 15:40	1

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# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 8082 - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

**Lab Sample ID: LCS 720-194010/2-A**

**Matrix: Solid**  
**Analysis Batch: 194070**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194010**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
PCB-1016	133	124		ug/Kg		93	65 - 121
PCB-1260	133	122		ug/Kg		91	68 - 127

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	96		45 - 132
DCB Decachlorobiphenyl	96		42 - 146

**Lab Sample ID: 720-69061-A-1-F MS**

**Matrix: Solid**  
**Analysis Batch: 194070**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 194010**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
PCB-1016	ND		132	117		ug/Kg		88	69 - 120
PCB-1260	ND	F1	132	123		ug/Kg		77	73 - 114

Surrogate	MS %Recovery	MS Qualifier	Limits
Tetrachloro-m-xylene	88		45 - 132
DCB Decachlorobiphenyl	90		42 - 146

**Lab Sample ID: 720-69061-A-1-G MSD**

**Matrix: Solid**  
**Analysis Batch: 194070**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 194010**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
PCB-1016	ND		131	104		ug/Kg		79	69 - 120	12	20
PCB-1260	ND	F1	131	112	F1	ug/Kg		69	73 - 114	9	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Tetrachloro-m-xylene	78		45 - 132
DCB Decachlorobiphenyl	82		42 - 146

**Lab Sample ID: MB 720-194272/1-A**

**Matrix: Water**  
**Analysis Batch: 194252**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 194272**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	ND		0.50		ug/L		12/16/15 09:41	12/16/15 13:49	1
PCB-1221	ND		0.50		ug/L		12/16/15 09:41	12/16/15 13:49	1
PCB-1232	ND		0.50		ug/L		12/16/15 09:41	12/16/15 13:49	1
PCB-1242	ND		0.50		ug/L		12/16/15 09:41	12/16/15 13:49	1
PCB-1248	ND		0.50		ug/L		12/16/15 09:41	12/16/15 13:49	1
PCB-1254	ND		0.50		ug/L		12/16/15 09:41	12/16/15 13:49	1
PCB-1260	ND		0.50		ug/L		12/16/15 09:41	12/16/15 13:49	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	86		19 - 98	12/16/15 09:41	12/16/15 13:49	1
DCB Decachlorobiphenyl	80		10 - 122	12/16/15 09:41	12/16/15 13:49	1

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# QC Sample Results

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Lab Sample ID: LCS 720-194272/2-A**  
**Matrix: Water**  
**Analysis Batch: 194253**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194272**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.92		ug/L		98	40 - 115
PCB-1260	4.00	3.99		ug/L		100	48 - 115
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Tetrachloro-m-xylene	82		19 - 98				
DCB Decachlorobiphenyl	85		10 - 122				

**Lab Sample ID: LCSD 720-194272/3-A**  
**Matrix: Water**  
**Analysis Batch: 194253**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 194272**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
PCB-1016	4.00	3.82		ug/L		96	40 - 115	3	20
PCB-1260	4.00	3.87		ug/L		97	48 - 115	3	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Tetrachloro-m-xylene	82		19 - 98						
DCB Decachlorobiphenyl	85		10 - 122						

## Method: 6010B - Metals (ICP)

**Lab Sample ID: MB 720-194051/1-A**  
**Matrix: Solid**  
**Analysis Batch: 194172**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 194051**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.50		mg/Kg		12/11/15 16:48	12/14/15 20:38	1

**Lab Sample ID: LCS 720-194051/2-A**  
**Matrix: Solid**  
**Analysis Batch: 194172**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194051**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	50.0	45.3		mg/Kg		91	80 - 120

**Lab Sample ID: LCSD 720-194051/3-A**  
**Matrix: Solid**  
**Analysis Batch: 194172**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 194051**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Lead	50.0	45.5		mg/Kg		91	80 - 120	1	20

**Lab Sample ID: LCSSRM 720-194051/4-A**  
**Matrix: Solid**  
**Analysis Batch: 194172**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 194051**

Analyte	Spike Added	LCSSRM Result	LCSSRM Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	302	261		mg/Kg		86	62 - 113

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# QC Sample Results

Client: Cornerstone Earth Group  
 Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Method: 6010B - Metals (ICP) (Continued)

**Lab Sample ID: 720-69155-A-1-A MS**  
**Matrix: Solid**  
**Analysis Batch: 194172**

**Client Sample ID: Matrix Spike**  
**Prep Type: Total/NA**  
**Prep Batch: 194051**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Lead	2.2	F1	39.1	29.8	F1	mg/Kg		71	75 - 125

**Lab Sample ID: 720-69155-A-1-B MSD**  
**Matrix: Solid**  
**Analysis Batch: 194172**

**Client Sample ID: Matrix Spike Duplicate**  
**Prep Type: Total/NA**  
**Prep Batch: 194051**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Lead	2.2	F1	38.8	29.2	F1	mg/Kg		70	75 - 125	2	20





# QC Association Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## GC Semi VOA

### Prep Batch: 194010

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69061-A-1-F MS	Matrix Spike	Total/NA	Solid	3546	
720-69061-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	
720-69116-1	SB-15 (0-0.5')	Total/NA	Solid	3546	
720-69116-2	SB-15 (2-2.5')	Total/NA	Solid	3546	
720-69116-4	SB-14 (0-0.5')	Total/NA	Solid	3546	
720-69116-5	SB-14 (2-2.5')	Total/NA	Solid	3546	
720-69116-7	SB-12 (0-0.5')	Total/NA	Solid	3546	
720-69116-8	SB-12 (2-2.5')	Total/NA	Solid	3546	
720-69116-9	FD-1 (2-2.5')	Total/NA	Solid	3546	
LCS 720-194010/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-194010/1-A	Method Blank	Total/NA	Solid	3546	

### Prep Batch: 194011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69089-A-5-E MS	Matrix Spike	Total/NA	Solid	3546	
720-69089-A-5-F MSD	Matrix Spike Duplicate	Total/NA	Solid	3546	
720-69116-7	SB-12 (0-0.5')	Total/NA	Solid	3546	
720-69116-8	SB-12 (2-2.5')	Total/NA	Solid	3546	
720-69116-9	FD-1 (2-2.5')	Total/NA	Solid	3546	
720-69116-12	SB-11 (0-0.5')	Total/NA	Solid	3546	
720-69116-13	SB-11 (2-2.5')	Total/NA	Solid	3546	
720-69116-15	SB-13 (0-0.5')	Total/NA	Solid	3546	
720-69116-16	SB-13 (2-2.5')	Total/NA	Solid	3546	
LCS 720-194011/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-194011/1-A	Method Blank	Total/NA	Solid	3546	

### Analysis Batch: 194070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69061-A-1-F MS	Matrix Spike	Total/NA	Solid	8082	194010
720-69061-A-1-G MSD	Matrix Spike Duplicate	Total/NA	Solid	8082	194010
LCS 720-194010/2-A	Lab Control Sample	Total/NA	Solid	8082	194010
MB 720-194010/1-A	Method Blank	Total/NA	Solid	8082	194010

### Analysis Batch: 194071

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-1	SB-15 (0-0.5')	Total/NA	Solid	8082	194010
720-69116-2	SB-15 (2-2.5')	Total/NA	Solid	8082	194010
720-69116-4	SB-14 (0-0.5')	Total/NA	Solid	8082	194010
720-69116-5	SB-14 (2-2.5')	Total/NA	Solid	8082	194010
720-69116-7	SB-12 (0-0.5')	Total/NA	Solid	8082	194010
720-69116-8	SB-12 (2-2.5')	Total/NA	Solid	8082	194010
720-69116-9	FD-1 (2-2.5')	Total/NA	Solid	8082	194010

### Analysis Batch: 194086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69089-A-5-E MS	Matrix Spike	Total/NA	Solid	8081A	194011
720-69089-A-5-F MSD	Matrix Spike Duplicate	Total/NA	Solid	8081A	194011
720-69116-7	SB-12 (0-0.5')	Total/NA	Solid	8081A	194011
LCS 720-194011/2-A	Lab Control Sample	Total/NA	Solid	8081A	194011
MB 720-194011/1-A	Method Blank	Total/NA	Solid	8081A	194011

TestAmerica Pleasanton

# QC Association Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## GC Semi VOA (Continued)

### Analysis Batch: 194148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-8	SB-12 (2-2.5')	Total/NA	Solid	8081A	194011
720-69116-9	FD-1 (2-2.5')	Total/NA	Solid	8081A	194011
720-69116-12	SB-11 (0-0.5')	Total/NA	Solid	8081A	194011
720-69116-13	SB-11 (2-2.5')	Total/NA	Solid	8081A	194011
720-69116-15	SB-13 (0-0.5')	Total/NA	Solid	8081A	194011
720-69116-16	SB-13 (2-2.5')	Total/NA	Solid	8081A	194011
LCS 720-194011/2-A	Lab Control Sample	Total/NA	Solid	8081A	194011
MB 720-194011/1-A	Method Blank	Total/NA	Solid	8081A	194011

### Analysis Batch: 194252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-11	EB-1	Total/NA	Water	8082	194272
MB 720-194272/1-A	Method Blank	Total/NA	Water	8082	194272

### Analysis Batch: 194253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-194272/2-A	Lab Control Sample	Total/NA	Water	8082	194272
LCSD 720-194272/3-A	Lab Control Sample Dup	Total/NA	Water	8082	194272

### Analysis Batch: 194267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-11	EB-1	Total/NA	Water	8081A	194275
LCS 720-194275/2-A	Lab Control Sample	Total/NA	Water	8081A	194275
LCSD 720-194275/3-A	Lab Control Sample Dup	Total/NA	Water	8081A	194275
MB 720-194275/1-A	Method Blank	Total/NA	Water	8081A	194275

### Prep Batch: 194272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-11	EB-1	Total/NA	Water	3510C	
LCS 720-194272/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 720-194272/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 720-194272/1-A	Method Blank	Total/NA	Water	3510C	

### Prep Batch: 194275

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-11	EB-1	Total/NA	Water	3510C	
LCS 720-194275/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 720-194275/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 720-194275/1-A	Method Blank	Total/NA	Water	3510C	

## Metals

### Prep Batch: 194051

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-7	SB-12 (0-0.5')	Total/NA	Solid	3050B	
720-69116-12	SB-11 (0-0.5')	Total/NA	Solid	3050B	
720-69116-15	SB-13 (0-0.5')	Total/NA	Solid	3050B	
720-69155-A-1-A MS	Matrix Spike	Total/NA	Solid	3050B	
720-69155-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	
LCS 720-194051/2-A	Lab Control Sample	Total/NA	Solid	3050B	

TestAmerica Pleasanton

# QC Association Summary

Client: Cornerstone Earth Group  
 Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Metals (Continued)

### Prep Batch: 194051 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 720-194051/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
LCSSRM 720-194051/4-A	Lab Control Sample	Total/NA	Solid	3050B	
MB 720-194051/1-A	Method Blank	Total/NA	Solid	3050B	

### Analysis Batch: 194172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-69116-7	SB-12 (0-0.5')	Total/NA	Solid	6010B	194051
720-69116-12	SB-11 (0-0.5')	Total/NA	Solid	6010B	194051
720-69116-15	SB-13 (0-0.5')	Total/NA	Solid	6010B	194051
720-69155-A-1-A MS	Matrix Spike	Total/NA	Solid	6010B	194051
720-69155-A-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	194051
LCS 720-194051/2-A	Lab Control Sample	Total/NA	Solid	6010B	194051
LCSD 720-194051/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	194051
LCSSRM 720-194051/4-A	Lab Control Sample	Total/NA	Solid	6010B	194051
MB 720-194051/1-A	Method Blank	Total/NA	Solid	6010B	194051



# Lab Chronicle

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-15 (0-0.5')**

**Date Collected: 12/09/15 08:22**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-1**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194010	12/11/15 10:16	JEP	TAL PLS
Total/NA	Analysis	8082		1	194071	12/12/15 16:47	DCH	TAL PLS

**Client Sample ID: SB-15 (2-2.5')**

**Date Collected: 12/09/15 08:24**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-2**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194010	12/11/15 10:16	JEP	TAL PLS
Total/NA	Analysis	8082		1	194071	12/12/15 17:03	DCH	TAL PLS

**Client Sample ID: SB-14 (0-0.5')**

**Date Collected: 12/09/15 08:42**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-4**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194010	12/11/15 10:16	JEP	TAL PLS
Total/NA	Analysis	8082		1	194071	12/12/15 17:20	DCH	TAL PLS

**Client Sample ID: SB-14 (2-2.5')**

**Date Collected: 12/09/15 08:45**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-5**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194010	12/11/15 10:16	JEP	TAL PLS
Total/NA	Analysis	8082		1	194071	12/12/15 17:36	DCH	TAL PLS

**Client Sample ID: SB-12 (0-0.5')**

**Date Collected: 12/09/15 08:58**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-7**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194011	12/11/15 10:40	JEP	TAL PLS
Total/NA	Analysis	8081A		1	194086	12/14/15 18:01	JZT	TAL PLS
Total/NA	Prep	3546			194010	12/11/15 10:16	JEP	TAL PLS
Total/NA	Analysis	8082		1	194071	12/12/15 17:53	DCH	TAL PLS
Total/NA	Prep	3050B			194051	12/11/15 16:48	ASB	TAL PLS
Total/NA	Analysis	6010B		4	194172	12/14/15 21:44	CAM	TAL PLS

TestAmerica Pleasanton

# Lab Chronicle

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-12 (2-2.5')**

**Date Collected: 12/09/15 08:59**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-8**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194011	12/11/15 10:40	JEP	TAL PLS
Total/NA	Analysis	8081A		1	194148	12/15/15 08:00	JZT	TAL PLS
Total/NA	Prep	3546			194010	12/11/15 10:16	JEP	TAL PLS
Total/NA	Analysis	8082		1	194071	12/12/15 18:10	DCH	TAL PLS

**Client Sample ID: FD-1 (2-2.5')**

**Date Collected: 12/09/15 08:59**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-9**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194011	12/11/15 10:40	JEP	TAL PLS
Total/NA	Analysis	8081A		1	194148	12/15/15 08:17	JZT	TAL PLS
Total/NA	Prep	3546			194010	12/11/15 10:16	JEP	TAL PLS
Total/NA	Analysis	8082		1	194071	12/12/15 18:26	DCH	TAL PLS

**Client Sample ID: EB-1**

**Date Collected: 12/09/15 09:10**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-11**

**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			194275	12/16/15 09:44	NDU	TAL PLS
Total/NA	Analysis	8081A		1	194267	12/16/15 15:14	MQL	TAL PLS
Total/NA	Prep	3510C			194272	12/16/15 09:41	NDU	TAL PLS
Total/NA	Analysis	8082		1	194252	12/16/15 14:05	DCH	TAL PLS

**Client Sample ID: SB-11 (0-0.5')**

**Date Collected: 12/09/15 09:23**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-12**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194011	12/11/15 10:40	JEP	TAL PLS
Total/NA	Analysis	8081A		1	194148	12/15/15 08:34	JZT	TAL PLS
Total/NA	Prep	3050B			194051	12/11/15 16:48	ASB	TAL PLS
Total/NA	Analysis	6010B		4	194172	12/14/15 21:49	CAM	TAL PLS

**Client Sample ID: SB-11 (2-2.5')**

**Date Collected: 12/09/15 09:25**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-13**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194011	12/11/15 10:40	JEP	TAL PLS
Total/NA	Analysis	8081A		1	194148	12/15/15 08:51	JZT	TAL PLS

TestAmerica Pleasanton

# Lab Chronicle

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

**Client Sample ID: SB-13 (0-0.5')**

**Date Collected: 12/09/15 10:00**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-15**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194011	12/11/15 10:40	JEP	TAL PLS
Total/NA	Analysis	8081A		1	194148	12/15/15 09:08	JZT	TAL PLS
Total/NA	Prep	3050B			194051	12/11/15 16:48	ASB	TAL PLS
Total/NA	Analysis	6010B		4	194172	12/14/15 21:54	CAM	TAL PLS

**Client Sample ID: SB-13 (2-2.5')**

**Date Collected: 12/09/15 10:02**

**Date Received: 12/09/15 17:05**

**Lab Sample ID: 720-69116-16**

**Matrix: Solid**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3546			194011	12/11/15 10:40	JEP	TAL PLS
Total/NA	Analysis	8081A		1	194148	12/15/15 09:24	JZT	TAL PLS

#### Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

# Certification Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

## Laboratory: TestAmerica Pleasanton

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16 *

Analysis Method	Prep Method	Matrix	Analyte
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\* Certification renewal pending - certification considered valid.





# Method Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

Method	Method Description	Protocol	Laboratory
8081A	Organochlorine Pesticides (GC)	SW846	TAL PLS
8082	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL PLS
6010B	Metals (ICP)	SW846	TAL PLS

**Protocol References:**

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

**Laboratory References:**

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919



# Sample Summary

Client: Cornerstone Earth Group  
Project/Site: 150 Jefferson Drive

TestAmerica Job ID: 720-69116-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-69116-1	SB-15 (0-0.5')	Solid	12/09/15 08:22	12/09/15 17:05
720-69116-2	SB-15 (2-2.5')	Solid	12/09/15 08:24	12/09/15 17:05
720-69116-4	SB-14 (0-0.5')	Solid	12/09/15 08:42	12/09/15 17:05
720-69116-5	SB-14 (2-2.5')	Solid	12/09/15 08:45	12/09/15 17:05
720-69116-7	SB-12 (0-0.5')	Solid	12/09/15 08:58	12/09/15 17:05
720-69116-8	SB-12 (2-2.5')	Solid	12/09/15 08:59	12/09/15 17:05
720-69116-9	FD-1 (2-2.5')	Solid	12/09/15 08:59	12/09/15 17:05
720-69116-11	EB-1	Water	12/09/15 09:10	12/09/15 17:05
720-69116-12	SB-11 (0-0.5')	Solid	12/09/15 09:23	12/09/15 17:05
720-69116-13	SB-11 (2-2.5')	Solid	12/09/15 09:25	12/09/15 17:05
720-69116-15	SB-13 (0-0.5')	Solid	12/09/15 10:00	12/09/15 17:05
720-69116-16	SB-13 (2-2.5')	Solid	12/09/15 10:02	12/09/15 17:05



Chain of Custody Record

720-69116

WLF# 165505

Project Manager: Kurt Soenen  
 Cornerstone Earth Group, Inc.  
 1259 Oakmead Pkwy  
 Sunnyvale, California 94085  
 (408) 245-4600 Phone  
 (408) 245-4620 FAX  
 Project Name: 150 Jefferson Drive  
 Site: Menlo Park, CA  
 Project Number: 166-14-7

TAT F default from Below  
 1 week  
 3 days  
 2 days  
 1 day

Site Sampler: Sarah Kuehn  
 Lab Contract: Afsaneh Salimpour  
 Date: 12/9/15  
 Lab: Test America

COC No: 1 of 2 COCs  
 Laboratory's Job No.

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	Lead 6010B	OCPs 8081A	PCBs 8082A	Hold	Laboratory's Sample Specific Notes:
SB-15 (10-0.5')	12/9/15	8:22	liner soil	soil	1						
SB-15 (2-2.5')		8:24					X				
SB-15 (4.5-5')		8:26					X				
SB-14 (10-0.5')		8:42					X				
SB-14 (2-2.5')		8:45					X				
SB-14 (4.5-5')		8:46					X				
SB-12 (10-0.5')		8:58					X				
SB-12 (2-2.5')		8:59					X				
FD-1 (2-2.5')		8:59					X				
SB-12 (4.5-5')		9:05					X				
EB-1		9:10	amber	HD			X				



Preservation Used: 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other

Possible Hazard Identification  
 Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Special Instructions/OC Requirements & Comments:

email results to: skenney@cornerstoneearth.com + ksochen@cornerstoneearth.com

Relinquished by: [Signature]  
 Company: Cornerstone Earth Group  
 Date/Time: 12/9/15 2:00pm

Received by: [Signature]  
 Company: [Signature]  
 Date/Time: 12-9-15 705

Relinquished by: [Signature]  
 Company: [Signature]  
 Date/Time: 12-9-15 705

3.6%

165505

<b>Cornerstone Earth Group, Inc.</b> 1259 Oakmead Pkwy Sunnyvale, California 94085 (408) 245-4600 (408) 245-4620 Project Name: 150 Jefferson Drive Site: Menlo Park, CA Project Number: 166-14-7		Project Manager: Kurt Soenen Tel/Fax: 408-245-4600 ext. 101 Analysis Turnaround Time TAT if different from Below <input type="checkbox"/> 1 week <input type="checkbox"/> 3 days <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Site Sampler: Sarah Krehr Lab Contact: Afraah Salimpour Date: 12/9/15 Lab: Test America		COC No: 2 of 2 COCs Laboratory's Job No.									
Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Sample Disposal <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		email results to: skennery@cornerstoneearth.com + ksoenen@cornerstoneearth.com											
Relinquished by: <i>[Signature]</i> Relinquished by: <i>[Signature]</i> Relinquished by:	Company: Cornerstone Earth Group Company: <i>TA</i> Company:	Date/Time: 12/9/15 2:00 PM Date/Time: 12-9-15 Date/Time: 12-9-15 7:05	Received by: <i>[Signature]</i> Received by: <i>[Signature]</i> Received by:	Company: <i>TA</i> Company: <i>Test America</i> Company:	Date/Time: 12-9-15 1520 Date/Time: 12-9-15 1705 Date/Time:	Laboratory's Sample Specific Notes:									
<del>           Sample Identification            SB-11 (0-0.5')            SB-11 (2-2.5')            SB-11 (4.5-5')            SB-13 (0-0.5')            SB-13 (2-2.5')            SB-13 (4.5-5')         </del>		<del>           Sample Date            12/9/15            12/9/15            12/9/15            12/9/15            12/9/15         </del>		<del>           Sample Time            9:23            9:25            9:26            10:00            10:02            10:04         </del>		<del>           Sample Type            liner            liner            liner            liner            liner            liner         </del>		<del>           Matrix            soil            soil            soil            soil            soil            soil         </del>		<del>           # of Cont.            1            1            1            1            1            1         </del>		<del>           Filtered Sample            Lead 6010B            OCPs 8081A            PCBs 8082A         </del>		<del>           Hold         </del>	

# Login Sample Receipt Checklist

Client: Cornerstone Earth Group

Job Number: 720-69116-1

**Login Number: 69116**  
**List Number: 1**  
**Creator: Arauz, Dennis**

**List Source: TestAmerica Pleasanton**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



1/7/2016

Mr. Kurt Soenen  
Cornerstone Earth Group  
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: 150 Jefferson

Project #:

Workorder #: 1512443A

Dear Mr. Kurt Soenen

The following report includes the data for the above referenced project for sample(s) received on 12/22/2015 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1512443A**

Work Order Summary

<b>CLIENT:</b>	Mr. Kurt Soenen Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	<b>BILL TO:</b>	Mr. Kurt Soenen Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
<b>PHONE:</b>	408-245-4600 x110	<b>P.O. #</b>	
<b>FAX:</b>	408-245-4620	<b>PROJECT #</b>	150 Jefferson
<b>DATE RECEIVED:</b>	12/22/2015	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	01/07/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-9	TO-15	2.6 "Hg	15.1 psi
02A	SV-10	TO-15	1.2 "Hg	14.9 psi
03A	SV-7A	TO-15	3.9 "Hg	14.5 psi
04A	SV-2A	TO-15	3.9 "Hg	15 psi
05A	SV-3A	TO-15	3.5 "Hg	15 psi
06A	SV-3A(DUP)	TO-15	3.5 "Hg	14.7 psi
07A	Lab Blank	TO-15	NA	NA
07B	Lab Blank	TO-15	NA	NA
08A	CCV	TO-15	NA	NA
08B	CCV	TO-15	NA	NA
09A	LCS	TO-15	NA	NA
09AA	LCSD	TO-15	NA	NA
09B	LCS	TO-15	NA	NA
09BB	LCSD	TO-15	NA	NA

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

DATE: 01/07/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

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

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 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020



**LABORATORY NARRATIVE**  
**EPA Method TO-15**  
**Cornerstone Earth Group**  
**Workorder# 1512443A**

Six 1 Liter Summa Canister samples were received on December 22, 2015. 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**

The reported CCV for each daily batch may be derived from more than one analytical file due to the client's request for non-standard compounds. Non-standard compounds may have different acceptance criteria than the standard TO-14A/TO-15 compound list as per contract or verbal agreement.

**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

## Summary of Detected Compounds

### EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: SV-9**

**Lab ID#: 1512443A-01A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Hexane	1.1	2.1	3.9	7.4
Cyclohexane	1.1	2.0	3.8	7.0
2,2,4-Trimethylpentane	1.1	4.5	5.2	21
Benzene	1.1	1.3	3.5	4.2
Heptane	1.1	8.1	4.5	33
Toluene	1.1	8.7	4.2	33
Tetrachloroethene	1.1	1.4	7.5	9.3
Ethyl Benzene	1.1	31	4.8	130
m,p-Xylene	1.1	150	4.8	650
o-Xylene	1.1	35	4.8	150
Cumene	1.1	4.3	5.4	21
Propylbenzene	1.1	5.1	5.4	25
4-Ethyltoluene	1.1	16	5.4	80
1,3,5-Trimethylbenzene	1.1	5.0	5.4	25
1,2,4-Trimethylbenzene	1.1	14	5.4	69

**Client Sample ID: SV-10**

**Lab ID#: 1512443A-02A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.2	16	7.9	29
Acetone	10	11	25	26
2-Propanol	4.2	52	10	130
Carbon Disulfide	4.2	6.7	13	21
Hexane	1.0	1.1	3.7	4.0
Cyclohexane	1.0	1.5	3.6	5.2
2,2,4-Trimethylpentane	1.0	2.6	4.9	12
Heptane	1.0	4.4	4.3	18
Toluene	1.0	8.5	4.0	32
Ethyl Benzene	1.0	26	4.6	110
m,p-Xylene	1.0	140	4.6	590
o-Xylene	1.0	36	4.6	160
Cumene	1.0	5.3	5.2	26

## Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: SV-10**

**Lab ID#: 1512443A-02A**

Propylbenzene	1.0	7.4	5.2	36
4-Ethyltoluene	1.0	24	5.2	120
1,3,5-Trimethylbenzene	1.0	7.4	5.2	36
1,2,4-Trimethylbenzene	1.0	22	5.2	110
Pentane	4.2	60	12	180

**Client Sample ID: SV-7A**

**Lab ID#: 1512443A-03A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethanol	4.6	9.0	8.6	17
Freon 113	1.1	6.5	8.7	50
1,1-Dichloroethene	1.1	1.2	4.5	4.8
Acetone	11	23	27	54
2-Propanol	4.6	13	11	31
2-Butanone (Methyl Ethyl Ketone)	4.6	4.7	13	14
1,1,1-Trichloroethane	1.1	8.3	6.2	45
Benzene	1.1	7.3	3.6	23
Heptane	1.1	1.4	4.7	5.8
Toluene	1.1	6.3	4.3	24
Tetrachloroethene	1.1	1.4	7.7	9.8
Ethyl Benzene	1.1	12	4.9	52
m,p-Xylene	1.1	61	5.0	260
o-Xylene	1.1	16	5.0	71
Cumene	1.1	2.0	5.6	9.9
Propylbenzene	1.1	2.2	5.6	10
4-Ethyltoluene	1.1	6.8	5.6	33
1,3,5-Trimethylbenzene	1.1	2.2	5.6	11
1,2,4-Trimethylbenzene	1.1	4.6	5.6	22
Pentane	4.6	5.0	13	15

**Client Sample ID: SV-2A**

**Lab ID#: 1512443A-04A**

## Summary of Detected Compounds EPA METHOD TO-15 GC/MS FULL SCAN

**Client Sample ID: SV-2A**

**Lab ID#: 1512443A-04A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	4.6	7.2	11	18
Benzene	1.2	3.1	3.7	9.9
Toluene	1.2	1.9	4.4	7.3
Ethyl Benzene	1.2	5.8	5.0	25
m,p-Xylene	1.2	31	5.0	140
o-Xylene	1.2	9.2	5.0	40
Propylbenzene	1.2	1.2	5.7	6.0
4-Ethyltoluene	1.2	4.2	5.7	20
1,3,5-Trimethylbenzene	1.2	1.5	5.7	7.6
1,2,4-Trimethylbenzene	1.2	3.7	5.7	18

**Client Sample ID: SV-3A**

**Lab ID#: 1512443A-05A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
2-Propanol	4.6	4.8	11	12
1,1,1-Trichloroethane	1.1	1.2	6.2	6.3
Benzene	1.1	4.1	3.6	13
Toluene	1.1	2.1	4.3	7.8
Tetrachloroethene	1.1	4.2	7.8	29
Ethyl Benzene	1.1	2.6	5.0	12
m,p-Xylene	1.1	13	5.0	55
o-Xylene	1.1	4.2	5.0	18
4-Ethyltoluene	1.1	2.6	5.6	13
1,2,4-Trimethylbenzene	1.1	2.9	5.6	14
Pentane	4.6	6.1	14	18

**Client Sample ID: SV-3A(DUP)**

**Lab ID#: 1512443A-06A**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.1	4.2	3.6	14
Toluene	1.1	1.8	4.2	6.9

**Summary of Detected Compounds**  
**EPA METHOD TO-15 GC/MS FULL SCAN**

**Client Sample ID: SV-3A(DUP)**

**Lab ID#: 1512443A-06A**

Tetrachloroethene	1.1	4.0	7.7	27
Ethyl Benzene	1.1	2.0	4.9	8.7
m,p-Xylene	1.1	9.3	4.9	40
o-Xylene	1.1	3.4	4.9	15
4-Ethyltoluene	1.1	2.0	5.6	10
1,2,4-Trimethylbenzene	1.1	2.3	5.6	11
Pentane	4.5	20	13	58



Air Toxics

Client Sample ID: SV-9

Lab ID#: 1512443A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122920	Date of Collection:	12/18/15 7:08:00 AM
Dil. Factor:	2.22	Date of Analysis:	12/29/15 11:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.5	Not Detected
Freon 114	1.1	Not Detected	7.8	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.8	Not Detected
1,3-Butadiene	1.1	Not Detected	2.4	Not Detected
Bromomethane	11	Not Detected	43	Not Detected
Chloroethane	4.4	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.2	Not Detected
Ethanol	4.4	Not Detected	8.4	Not Detected
Freon 113	1.1	Not Detected	8.5	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Acetone	11	Not Detected	26	Not Detected
2-Propanol	4.4	Not Detected	11	Not Detected
Carbon Disulfide	4.4	Not Detected	14	Not Detected
3-Chloropropene	4.4	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	38	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.0	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Hexane	1.1	2.1	3.9	7.4
1,1-Dichloroethane	1.1	Not Detected	4.5	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.4	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.4	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	Not Detected	5.4	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Cyclohexane	1.1	2.0	3.8	7.0
Carbon Tetrachloride	1.1	Not Detected	7.0	Not Detected
2,2,4-Trimethylpentane	1.1	4.5	5.2	21
Benzene	1.1	1.3	3.5	4.2
1,2-Dichloroethane	1.1	Not Detected	4.5	Not Detected
Heptane	1.1	8.1	4.5	33
Trichloroethene	1.1	Not Detected	6.0	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.1	Not Detected
1,4-Dioxane	4.4	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.4	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.5	Not Detected
Toluene	1.1	8.7	4.2	33
trans-1,3-Dichloropropene	1.1	Not Detected	5.0	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.0	Not Detected
Tetrachloroethene	1.1	1.4	7.5	9.3
2-Hexanone	4.4	Not Detected	18	Not Detected



Client Sample ID: SV-9

Lab ID#: 1512443A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122920	Date of Collection:	12/18/15 7:08:00 AM
Dil. Factor:	2.22	Date of Analysis:	12/29/15 11:41 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.4	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.5	Not Detected
Chlorobenzene	1.1	Not Detected	5.1	Not Detected
Ethyl Benzene	1.1	31	4.8	130
m,p-Xylene	1.1	150	4.8	650
o-Xylene	1.1	35	4.8	150
Styrene	1.1	Not Detected	4.7	Not Detected
Bromoform	1.1	Not Detected	11	Not Detected
Cumene	1.1	4.3	5.4	21
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.6	Not Detected
Propylbenzene	1.1	5.1	5.4	25
4-Ethyltoluene	1.1	16	5.4	80
1,3,5-Trimethylbenzene	1.1	5.0	5.4	25
1,2,4-Trimethylbenzene	1.1	14	5.4	69
1,3-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.7	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.7	Not Detected
1,2,4-Trichlorobenzene	4.4	Not Detected	33	Not Detected
Hexachlorobutadiene	4.4	Not Detected	47	Not Detected
Pentane	4.4	Not Detected	13	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	101	70-130





Air Toxics

Client Sample ID: SV-10

Lab ID#: 1512443A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122921	Date of Collection:	12/18/15 7:53:00 AM
Dil. Factor:	2.10	Date of Analysis:	12/30/15 12:20 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.0	Not Detected	5.2	Not Detected
Freon 114	1.0	Not Detected	7.3	Not Detected
Chloromethane	10	Not Detected	22	Not Detected
Vinyl Chloride	1.0	Not Detected	2.7	Not Detected
1,3-Butadiene	1.0	Not Detected	2.3	Not Detected
Bromomethane	10	Not Detected	41	Not Detected
Chloroethane	4.2	Not Detected	11	Not Detected
Freon 11	1.0	Not Detected	5.9	Not Detected
Ethanol	4.2	16	7.9	29
Freon 113	1.0	Not Detected	8.0	Not Detected
1,1-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Acetone	10	11	25	26
2-Propanol	4.2	52	10	130
Carbon Disulfide	4.2	6.7	13	21
3-Chloropropene	4.2	Not Detected	13	Not Detected
Methylene Chloride	10	Not Detected	36	Not Detected
Methyl tert-butyl ether	1.0	Not Detected	3.8	Not Detected
trans-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Hexane	1.0	1.1	3.7	4.0
1,1-Dichloroethane	1.0	Not Detected	4.2	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.2	Not Detected	12	Not Detected
cis-1,2-Dichloroethene	1.0	Not Detected	4.2	Not Detected
Tetrahydrofuran	1.0	Not Detected	3.1	Not Detected
Chloroform	1.0	Not Detected	5.1	Not Detected
1,1,1-Trichloroethane	1.0	Not Detected	5.7	Not Detected
Cyclohexane	1.0	1.5	3.6	5.2
Carbon Tetrachloride	1.0	Not Detected	6.6	Not Detected
2,2,4-Trimethylpentane	1.0	2.6	4.9	12
Benzene	1.0	Not Detected	3.4	Not Detected
1,2-Dichloroethane	1.0	Not Detected	4.2	Not Detected
Heptane	1.0	4.4	4.3	18
Trichloroethene	1.0	Not Detected	5.6	Not Detected
1,2-Dichloropropane	1.0	Not Detected	4.8	Not Detected
1,4-Dioxane	4.2	Not Detected	15	Not Detected
Bromodichloromethane	1.0	Not Detected	7.0	Not Detected
cis-1,3-Dichloropropene	1.0	Not Detected	4.8	Not Detected
4-Methyl-2-pentanone	1.0	Not Detected	4.3	Not Detected
Toluene	1.0	8.5	4.0	32
trans-1,3-Dichloropropene	1.0	Not Detected	4.8	Not Detected
1,1,2-Trichloroethane	1.0	Not Detected	5.7	Not Detected
Tetrachloroethene	1.0	Not Detected	7.1	Not Detected
2-Hexanone	4.2	Not Detected	17	Not Detected



Air Toxics

Client Sample ID: SV-10

Lab ID#: 1512443A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122921	Date of Collection:	12/18/15 7:53:00 AM
Dil. Factor:	2.10	Date of Analysis:	12/30/15 12:20 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.0	Not Detected	8.9	Not Detected
1,2-Dibromoethane (EDB)	1.0	Not Detected	8.1	Not Detected
Chlorobenzene	1.0	Not Detected	4.8	Not Detected
Ethyl Benzene	1.0	26	4.6	110
m,p-Xylene	1.0	140	4.6	590
o-Xylene	1.0	36	4.6	160
Styrene	1.0	Not Detected	4.5	Not Detected
Bromoform	1.0	Not Detected	11	Not Detected
Cumene	1.0	5.3	5.2	26
1,1,2,2-Tetrachloroethane	1.0	Not Detected	7.2	Not Detected
Propylbenzene	1.0	7.4	5.2	36
4-Ethyltoluene	1.0	24	5.2	120
1,3,5-Trimethylbenzene	1.0	7.4	5.2	36
1,2,4-Trimethylbenzene	1.0	22	5.2	110
1,3-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,4-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
alpha-Chlorotoluene	1.0	Not Detected	5.4	Not Detected
1,2-Dichlorobenzene	1.0	Not Detected	6.3	Not Detected
1,2,4-Trichlorobenzene	4.2	Not Detected	31	Not Detected
Hexachlorobutadiene	4.2	Not Detected	45	Not Detected
Pentane	4.2	60	12	180

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: SV-7A

Lab ID#: 1512443A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122922	Date of Collection:	12/21/15 9:45:00 AM
Dil. Factor:	2.28	Date of Analysis:	12/30/15 12:46 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.6	Not Detected
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	4.6	9.0	8.6	17
Freon 113	1.1	6.5	8.7	50
1,1-Dichloroethene	1.1	1.2	4.5	4.8
Acetone	11	23	27	54
2-Propanol	4.6	13	11	31
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	4.7	13	14
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.4	Not Detected
Chloroform	1.1	Not Detected	5.6	Not Detected
1,1,1-Trichloroethane	1.1	8.3	6.2	45
Cyclohexane	1.1	Not Detected	3.9	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.3	Not Detected
Benzene	1.1	7.3	3.6	23
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	1.4	4.7	5.8
Trichloroethene	1.1	Not Detected	6.1	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.6	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	6.3	4.3	24
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	1.4	7.7	9.8
2-Hexanone	4.6	Not Detected	19	Not Detected



Client Sample ID: SV-7A

Lab ID#: 1512443A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122922	Date of Collection:	12/21/15 9:45:00 AM
Dil. Factor:	2.28	Date of Analysis:	12/30/15 12:46 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.7	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	12	4.9	52
m,p-Xylene	1.1	61	5.0	260
o-Xylene	1.1	16	5.0	71
Styrene	1.1	Not Detected	4.8	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	2.0	5.6	9.9
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.8	Not Detected
Propylbenzene	1.1	2.2	5.6	10
4-Ethyltoluene	1.1	6.8	5.6	33
1,3,5-Trimethylbenzene	1.1	2.2	5.6	11
1,2,4-Trimethylbenzene	1.1	4.6	5.6	22
1,3-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected
Pentane	4.6	5.0	13	15

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: SV-2A

Lab ID#: 1512443A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122923	Date of Collection:	12/21/15 10:31:00 A
Dil. Factor:	2.32	Date of Analysis:	12/30/15 01:25 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.2	Not Detected	5.7	Not Detected
Freon 114	1.2	Not Detected	8.1	Not Detected
Chloromethane	12	Not Detected	24	Not Detected
Vinyl Chloride	1.2	Not Detected	3.0	Not Detected
1,3-Butadiene	1.2	Not Detected	2.6	Not Detected
Bromomethane	12	Not Detected	45	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.2	Not Detected	6.5	Not Detected
Ethanol	4.6	Not Detected	8.7	Not Detected
Freon 113	1.2	Not Detected	8.9	Not Detected
1,1-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Acetone	12	Not Detected	28	Not Detected
2-Propanol	4.6	7.2	11	18
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	12	Not Detected	40	Not Detected
Methyl tert-butyl ether	1.2	Not Detected	4.2	Not Detected
trans-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Hexane	1.2	Not Detected	4.1	Not Detected
1,1-Dichloroethane	1.2	Not Detected	4.7	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.2	Not Detected	4.6	Not Detected
Tetrahydrofuran	1.2	Not Detected	3.4	Not Detected
Chloroform	1.2	Not Detected	5.7	Not Detected
1,1,1-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Cyclohexane	1.2	Not Detected	4.0	Not Detected
Carbon Tetrachloride	1.2	Not Detected	7.3	Not Detected
2,2,4-Trimethylpentane	1.2	Not Detected	5.4	Not Detected
Benzene	1.2	3.1	3.7	9.9
1,2-Dichloroethane	1.2	Not Detected	4.7	Not Detected
Heptane	1.2	Not Detected	4.8	Not Detected
Trichloroethene	1.2	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.2	Not Detected	5.4	Not Detected
1,4-Dioxane	4.6	Not Detected	17	Not Detected
Bromodichloromethane	1.2	Not Detected	7.8	Not Detected
cis-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
4-Methyl-2-pentanone	1.2	Not Detected	4.8	Not Detected
Toluene	1.2	1.9	4.4	7.3
trans-1,3-Dichloropropene	1.2	Not Detected	5.3	Not Detected
1,1,2-Trichloroethane	1.2	Not Detected	6.3	Not Detected
Tetrachloroethene	1.2	Not Detected	7.9	Not Detected
2-Hexanone	4.6	Not Detected	19	Not Detected



Client Sample ID: SV-2A

Lab ID#: 1512443A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122923	Date of Collection:	12/21/15 10:31:00 A
Dil. Factor:	2.32	Date of Analysis:	12/30/15 01:25 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.2	Not Detected	9.9	Not Detected
1,2-Dibromoethane (EDB)	1.2	Not Detected	8.9	Not Detected
Chlorobenzene	1.2	Not Detected	5.3	Not Detected
Ethyl Benzene	1.2	5.8	5.0	25
m,p-Xylene	1.2	31	5.0	140
o-Xylene	1.2	9.2	5.0	40
Styrene	1.2	Not Detected	4.9	Not Detected
Bromoform	1.2	Not Detected	12	Not Detected
Cumene	1.2	Not Detected	5.7	Not Detected
1,1,2,2-Tetrachloroethane	1.2	Not Detected	8.0	Not Detected
Propylbenzene	1.2	1.2	5.7	6.0
4-Ethyltoluene	1.2	4.2	5.7	20
1,3,5-Trimethylbenzene	1.2	1.5	5.7	7.6
1,2,4-Trimethylbenzene	1.2	3.7	5.7	18
1,3-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,4-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
alpha-Chlorotoluene	1.2	Not Detected	6.0	Not Detected
1,2-Dichlorobenzene	1.2	Not Detected	7.0	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected
Pentane	4.6	Not Detected	14	Not Detected

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: SV-3A

Lab ID#: 1512443A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122924	Date of Collection:	12/21/15 11:44:00 A
Dil. Factor:	2.29	Date of Analysis:	12/30/15 01:52 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.7	Not Detected
Freon 114	1.1	Not Detected	8.0	Not Detected
Chloromethane	11	Not Detected	24	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.6	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.4	Not Detected
Ethanol	4.6	Not Detected	8.6	Not Detected
Freon 113	1.1	Not Detected	8.8	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	Not Detected	27	Not Detected
2-Propanol	4.6	4.8	11	12
Carbon Disulfide	4.6	Not Detected	14	Not Detected
3-Chloropropene	4.6	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	40	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.6	Not Detected	14	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.4	Not Detected
Chloroform	1.1	Not Detected	5.6	Not Detected
1,1,1-Trichloroethane	1.1	1.2	6.2	6.3
Cyclohexane	1.1	Not Detected	3.9	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.2	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.3	Not Detected
Benzene	1.1	4.1	3.6	13
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	Not Detected	4.7	Not Detected
Trichloroethene	1.1	Not Detected	6.2	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.3	Not Detected
1,4-Dioxane	4.6	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.7	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.7	Not Detected
Toluene	1.1	2.1	4.3	7.8
trans-1,3-Dichloropropene	1.1	Not Detected	5.2	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	4.2	7.8	29
2-Hexanone	4.6	Not Detected	19	Not Detected



Client Sample ID: SV-3A

Lab ID#: 1512443A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122924	Date of Collection:	12/21/15 11:44:00 A
Dil. Factor:	2.29	Date of Analysis:	12/30/15 01:52 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.8	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.8	Not Detected
Chlorobenzene	1.1	Not Detected	5.3	Not Detected
Ethyl Benzene	1.1	2.6	5.0	12
m,p-Xylene	1.1	13	5.0	55
o-Xylene	1.1	4.2	5.0	18
Styrene	1.1	Not Detected	4.9	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.9	Not Detected
Propylbenzene	1.1	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.1	2.6	5.6	13
1,3,5-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,2,4-Trimethylbenzene	1.1	2.9	5.6	14
1,3-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.9	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.9	Not Detected
1,2,4-Trichlorobenzene	4.6	Not Detected	34	Not Detected
Hexachlorobutadiene	4.6	Not Detected	49	Not Detected
Pentane	4.6	6.1	14	18

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: SV-3A(DUP)

Lab ID#: 1512443A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123012	Date of Collection:	12/21/15 11:44:00 A
Dil. Factor:	2.26	Date of Analysis:	12/30/15 06:15 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	1.1	Not Detected	5.6	Not Detected
Freon 114	1.1	Not Detected	7.9	Not Detected
Chloromethane	11	Not Detected	23	Not Detected
Vinyl Chloride	1.1	Not Detected	2.9	Not Detected
1,3-Butadiene	1.1	Not Detected	2.5	Not Detected
Bromomethane	11	Not Detected	44	Not Detected
Chloroethane	4.5	Not Detected	12	Not Detected
Freon 11	1.1	Not Detected	6.3	Not Detected
Ethanol	4.5	Not Detected	8.5	Not Detected
Freon 113	1.1	Not Detected	8.7	Not Detected
1,1-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Acetone	11	Not Detected	27	Not Detected
2-Propanol	4.5	Not Detected	11	Not Detected
Carbon Disulfide	4.5	Not Detected	14	Not Detected
3-Chloropropene	4.5	Not Detected	14	Not Detected
Methylene Chloride	11	Not Detected	39	Not Detected
Methyl tert-butyl ether	1.1	Not Detected	4.1	Not Detected
trans-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Hexane	1.1	Not Detected	4.0	Not Detected
1,1-Dichloroethane	1.1	Not Detected	4.6	Not Detected
2-Butanone (Methyl Ethyl Ketone)	4.5	Not Detected	13	Not Detected
cis-1,2-Dichloroethene	1.1	Not Detected	4.5	Not Detected
Tetrahydrofuran	1.1	Not Detected	3.3	Not Detected
Chloroform	1.1	Not Detected	5.5	Not Detected
1,1,1-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Cyclohexane	1.1	Not Detected	3.9	Not Detected
Carbon Tetrachloride	1.1	Not Detected	7.1	Not Detected
2,2,4-Trimethylpentane	1.1	Not Detected	5.3	Not Detected
Benzene	1.1	4.2	3.6	14
1,2-Dichloroethane	1.1	Not Detected	4.6	Not Detected
Heptane	1.1	Not Detected	4.6	Not Detected
Trichloroethene	1.1	Not Detected	6.1	Not Detected
1,2-Dichloropropane	1.1	Not Detected	5.2	Not Detected
1,4-Dioxane	4.5	Not Detected	16	Not Detected
Bromodichloromethane	1.1	Not Detected	7.6	Not Detected
cis-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
4-Methyl-2-pentanone	1.1	Not Detected	4.6	Not Detected
Toluene	1.1	1.8	4.2	6.9
trans-1,3-Dichloropropene	1.1	Not Detected	5.1	Not Detected
1,1,2-Trichloroethane	1.1	Not Detected	6.2	Not Detected
Tetrachloroethene	1.1	4.0	7.7	27
2-Hexanone	4.5	Not Detected	18	Not Detected



Client Sample ID: SV-3A(DUP)

Lab ID#: 1512443A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123012	Date of Collection:	12/21/15 11:44:00 A
Dil. Factor:	2.26	Date of Analysis:	12/30/15 06:15 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	1.1	Not Detected	9.6	Not Detected
1,2-Dibromoethane (EDB)	1.1	Not Detected	8.7	Not Detected
Chlorobenzene	1.1	Not Detected	5.2	Not Detected
Ethyl Benzene	1.1	2.0	4.9	8.7
m,p-Xylene	1.1	9.3	4.9	40
o-Xylene	1.1	3.4	4.9	15
Styrene	1.1	Not Detected	4.8	Not Detected
Bromoform	1.1	Not Detected	12	Not Detected
Cumene	1.1	Not Detected	5.6	Not Detected
1,1,2,2-Tetrachloroethane	1.1	Not Detected	7.8	Not Detected
Propylbenzene	1.1	Not Detected	5.6	Not Detected
4-Ethyltoluene	1.1	2.0	5.6	10
1,3,5-Trimethylbenzene	1.1	Not Detected	5.6	Not Detected
1,2,4-Trimethylbenzene	1.1	2.3	5.6	11
1,3-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,4-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
alpha-Chlorotoluene	1.1	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	1.1	Not Detected	6.8	Not Detected
1,2,4-Trichlorobenzene	4.5	Not Detected	34	Not Detected
Hexachlorobutadiene	4.5	Not Detected	48	Not Detected
Pentane	4.5	20	13	58

Container Type: 1 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	104	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1512443A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122909a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/29/15 03:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected



Client Sample ID: Lab Blank

Lab ID#: 1512443A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122909a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/29/15 03:00 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Pentane	2.0	Not Detected	5.9	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	102	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1512443A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123011a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/30/15 04:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 12	0.50	Not Detected	2.5	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
1,3-Butadiene	0.50	Not Detected	1.1	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Freon 11	0.50	Not Detected	2.8	Not Detected
Ethanol	2.0	Not Detected	3.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Acetone	5.0	Not Detected	12	Not Detected
2-Propanol	2.0	Not Detected	4.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
3-Chloropropene	2.0	Not Detected	6.3	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
Methyl tert-butyl ether	0.50	Not Detected	1.8	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Hexane	0.50	Not Detected	1.8	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
Tetrahydrofuran	0.50	Not Detected	1.5	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Cyclohexane	0.50	Not Detected	1.7	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
2,2,4-Trimethylpentane	0.50	Not Detected	2.3	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Heptane	0.50	Not Detected	2.0	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
1,4-Dioxane	2.0	Not Detected	7.2	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected



Client Sample ID: Lab Blank

Lab ID#: 1512443A-07B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123011a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/30/15 04:53 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Cumene	0.50	Not Detected	2.4	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Propylbenzene	0.50	Not Detected	2.4	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
Pentane	2.0	Not Detected	5.9	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	100	70-130





Air Toxics

Client Sample ID: CCV

Lab ID#: 1512443A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122905	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/29/15 11:28 AM

Compound	%Recovery
Freon 12	110
Freon 114	111
Chloromethane	109
Vinyl Chloride	110
1,3-Butadiene	113
Bromomethane	112
Chloroethane	111
Freon 11	111
Ethanol	111
Freon 113	111
1,1-Dichloroethene	115
Acetone	105
2-Propanol	114
Carbon Disulfide	111
3-Chloropropene	110
Methylene Chloride	113
Methyl tert-butyl ether	116
trans-1,2-Dichloroethene	111
Hexane	115
1,1-Dichloroethane	112
2-Butanone (Methyl Ethyl Ketone)	112
cis-1,2-Dichloroethene	112
Tetrahydrofuran	116
Chloroform	112
1,1,1-Trichloroethane	113
Cyclohexane	116
Carbon Tetrachloride	113
2,2,4-Trimethylpentane	119
Benzene	113
1,2-Dichloroethane	113
Heptane	115
Trichloroethene	110
1,2-Dichloropropane	109
1,4-Dioxane	109
Bromodichloromethane	112
cis-1,3-Dichloropropene	117
4-Methyl-2-pentanone	112
Toluene	111
trans-1,3-Dichloropropene	115
1,1,2-Trichloroethane	110
Tetrachloroethene	111
2-Hexanone	106

Client Sample ID: CCV

Lab ID#: 1512443A-08A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122905	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/29/15 11:28 AM

Compound	%Recovery
Dibromochloromethane	113
1,2-Dibromoethane (EDB)	112
Chlorobenzene	110
Ethyl Benzene	113
m,p-Xylene	115
o-Xylene	116
Styrene	115
Bromoform	112
Cumene	114
1,1,2,2-Tetrachloroethane	111
Propylbenzene	115
4-Ethyltoluene	115
1,3,5-Trimethylbenzene	116
1,2,4-Trimethylbenzene	118
1,3-Dichlorobenzene	112
1,4-Dichlorobenzene	112
alpha-Chlorotoluene	108
1,2-Dichlorobenzene	112
1,2,4-Trichlorobenzene	118
Hexachlorobutadiene	115
Pentane	76

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	100	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1512443A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 11:43 AM

Compound	%Recovery
Freon 12	114
Freon 114	113
Chloromethane	110
Vinyl Chloride	112
1,3-Butadiene	114
Bromomethane	114
Chloroethane	112
Freon 11	114
Ethanol	108
Freon 113	115
1,1-Dichloroethene	114
Acetone	105
2-Propanol	112
Carbon Disulfide	112
3-Chloropropene	107
Methylene Chloride	111
Methyl tert-butyl ether	114
trans-1,2-Dichloroethene	110
Hexane	114
1,1-Dichloroethane	113
2-Butanone (Methyl Ethyl Ketone)	108
cis-1,2-Dichloroethene	114
Tetrahydrofuran	113
Chloroform	112
1,1,1-Trichloroethane	112
Cyclohexane	115
Carbon Tetrachloride	113
2,2,4-Trimethylpentane	99
Benzene	110
1,2-Dichloroethane	111
Heptane	107
Trichloroethene	107
1,2-Dichloropropane	106
1,4-Dioxane	106
Bromodichloromethane	111
cis-1,3-Dichloropropene	115
4-Methyl-2-pentanone	109
Toluene	108
trans-1,3-Dichloropropene	112
1,1,2-Trichloroethane	107
Tetrachloroethene	109
2-Hexanone	105



Air Toxics

Client Sample ID: CCV

Lab ID#: 1512443A-08B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 11:43 AM

Compound	%Recovery
Dibromochloromethane	111
1,2-Dibromoethane (EDB)	110
Chlorobenzene	108
Ethyl Benzene	109
m,p-Xylene	111
o-Xylene	112
Styrene	112
Bromoform	109
Cumene	110
1,1,2,2-Tetrachloroethane	108
Propylbenzene	111
4-Ethyltoluene	114
1,3,5-Trimethylbenzene	112
1,2,4-Trimethylbenzene	114
1,3-Dichlorobenzene	110
1,4-Dichlorobenzene	112
alpha-Chlorotoluene	106
1,2-Dichlorobenzene	110
1,2,4-Trichlorobenzene	115
Hexachlorobutadiene	112
Pentane	74

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	103	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 1512443A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/29/15 10:20 AM

Compound	%Recovery	Method Limits
Freon 12	113	70-130
Freon 114	115	70-130
Chloromethane	110	70-130
Vinyl Chloride	111	70-130
1,3-Butadiene	109	70-130
Bromomethane	110	70-130
Chloroethane	114	70-130
Freon 11	113	70-130
Ethanol	110	70-130
Freon 113	110	70-130
1,1-Dichloroethene	113	70-130
Acetone	100	70-130
2-Propanol	114	70-130
Carbon Disulfide	96	70-130
3-Chloropropene	104	70-130
Methylene Chloride	108	70-130
Methyl tert-butyl ether	111	70-130
trans-1,2-Dichloroethene	113	70-130
Hexane	113	70-130
1,1-Dichloroethane	110	70-130
2-Butanone (Methyl Ethyl Ketone)	111	70-130
cis-1,2-Dichloroethene	108	70-130
Tetrahydrofuran	110	70-130
Chloroform	109	70-130
1,1,1-Trichloroethane	109	70-130
Cyclohexane	114	70-130
Carbon Tetrachloride	111	70-130
2,2,4-Trimethylpentane	114	70-130
Benzene	109	70-130
1,2-Dichloroethane	109	70-130
Heptane	110	70-130
Trichloroethene	105	70-130
1,2-Dichloropropane	105	70-130
1,4-Dioxane	106	70-130
Bromodichloromethane	111	70-130
cis-1,3-Dichloropropene	106	70-130
4-Methyl-2-pentanone	108	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	112	70-130
1,1,2-Trichloroethane	106	70-130
Tetrachloroethene	109	70-130
2-Hexanone	113	70-130

Client Sample ID: LCS

Lab ID#: 1512443A-09A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122903	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/29/15 10:20 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	111	70-130
1,2-Dibromoethane (EDB)	110	70-130
Chlorobenzene	106	70-130
Ethyl Benzene	109	70-130
m,p-Xylene	109	70-130
o-Xylene	114	70-130
Styrene	118	70-130
Bromoform	112	70-130
Cumene	110	70-130
1,1,2,2-Tetrachloroethane	109	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	113	70-130
1,3,5-Trimethylbenzene	113	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	109	70-130
1,4-Dichlorobenzene	107	70-130
alpha-Chlorotoluene	118	70-130
1,2-Dichlorobenzene	109	70-130
1,2,4-Trichlorobenzene	114	70-130
Hexachlorobutadiene	112	70-130
Pentane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1512443A-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122904	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/29/15 10:44 AM

Compound	%Recovery	Method Limits
Freon 12	108	70-130
Freon 114	110	70-130
Chloromethane	104	70-130
Vinyl Chloride	104	70-130
1,3-Butadiene	104	70-130
Bromomethane	104	70-130
Chloroethane	108	70-130
Freon 11	107	70-130
Ethanol	105	70-130
Freon 113	105	70-130
1,1-Dichloroethene	106	70-130
Acetone	97	70-130
2-Propanol	110	70-130
Carbon Disulfide	90	70-130
3-Chloropropene	99	70-130
Methylene Chloride	105	70-130
Methyl tert-butyl ether	106	70-130
trans-1,2-Dichloroethene	105	70-130
Hexane	109	70-130
1,1-Dichloroethane	105	70-130
2-Butanone (Methyl Ethyl Ketone)	103	70-130
cis-1,2-Dichloroethene	105	70-130
Tetrahydrofuran	106	70-130
Chloroform	105	70-130
1,1,1-Trichloroethane	105	70-130
Cyclohexane	109	70-130
Carbon Tetrachloride	105	70-130
2,2,4-Trimethylpentane	114	70-130
Benzene	107	70-130
1,2-Dichloroethane	106	70-130
Heptane	109	70-130
Trichloroethene	104	70-130
1,2-Dichloropropane	104	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	109	70-130
cis-1,3-Dichloropropene	104	70-130
4-Methyl-2-pentanone	108	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	110	70-130
1,1,2-Trichloroethane	105	70-130
Tetrachloroethene	106	70-130
2-Hexanone	112	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1512443A-09AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j122904	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/29/15 10:44 AM

Compound	%Recovery	Method Limits
Dibromochloromethane	110	70-130
1,2-Dibromoethane (EDB)	108	70-130
Chlorobenzene	105	70-130
Ethyl Benzene	108	70-130
m,p-Xylene	109	70-130
o-Xylene	113	70-130
Styrene	116	70-130
Bromoform	111	70-130
Cumene	111	70-130
1,1,2,2-Tetrachloroethane	108	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	112	70-130
1,3,5-Trimethylbenzene	112	70-130
1,2,4-Trimethylbenzene	112	70-130
1,3-Dichlorobenzene	108	70-130
1,4-Dichlorobenzene	110	70-130
alpha-Chlorotoluene	117	70-130
1,2-Dichlorobenzene	109	70-130
1,2,4-Trichlorobenzene	112	70-130
Hexachlorobutadiene	111	70-130
Pentane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	97	70-130
4-Bromofluorobenzene	101	70-130





Air Toxics

Client Sample ID: LCS

Lab ID#: 1512443A-09B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 12:15 PM

Compound	%Recovery	Method Limits
Freon 12	112	70-130
Freon 114	113	70-130
Chloromethane	108	70-130
Vinyl Chloride	110	70-130
1,3-Butadiene	108	70-130
Bromomethane	109	70-130
Chloroethane	110	70-130
Freon 11	112	70-130
Ethanol	105	70-130
Freon 113	108	70-130
1,1-Dichloroethene	111	70-130
Acetone	98	70-130
2-Propanol	112	70-130
Carbon Disulfide	93	70-130
3-Chloropropene	101	70-130
Methylene Chloride	106	70-130
Methyl tert-butyl ether	109	70-130
trans-1,2-Dichloroethene	112	70-130
Hexane	110	70-130
1,1-Dichloroethane	109	70-130
2-Butanone (Methyl Ethyl Ketone)	105	70-130
cis-1,2-Dichloroethene	107	70-130
Tetrahydrofuran	108	70-130
Chloroform	108	70-130
1,1,1-Trichloroethane	109	70-130
Cyclohexane	113	70-130
Carbon Tetrachloride	108	70-130
2,2,4-Trimethylpentane	113	70-130
Benzene	107	70-130
1,2-Dichloroethane	108	70-130
Heptane	109	70-130
Trichloroethene	105	70-130
1,2-Dichloropropane	105	70-130
1,4-Dioxane	104	70-130
Bromodichloromethane	109	70-130
cis-1,3-Dichloropropene	105	70-130
4-Methyl-2-pentanone	108	70-130
Toluene	106	70-130
trans-1,3-Dichloropropene	112	70-130
1,1,2-Trichloroethane	105	70-130
Tetrachloroethene	107	70-130
2-Hexanone	112	70-130

Client Sample ID: LCS

Lab ID#: 1512443A-09B

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123003	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 12:15 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	110	70-130
1,2-Dibromoethane (EDB)	109	70-130
Chlorobenzene	106	70-130
Ethyl Benzene	108	70-130
m,p-Xylene	108	70-130
o-Xylene	113	70-130
Styrene	116	70-130
Bromoform	112	70-130
Cumene	110	70-130
1,1,2,2-Tetrachloroethane	107	70-130
Propylbenzene	112	70-130
4-Ethyltoluene	112	70-130
1,3,5-Trimethylbenzene	113	70-130
1,2,4-Trimethylbenzene	113	70-130
1,3-Dichlorobenzene	110	70-130
1,4-Dichlorobenzene	108	70-130
alpha-Chlorotoluene	119	70-130
1,2-Dichlorobenzene	109	70-130
1,2,4-Trichlorobenzene	113	70-130
Hexachlorobutadiene	111	70-130
Pentane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: LCS D

Lab ID#: 1512443A-09BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123004	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/30/15 12:41 PM

Compound	%Recovery	Method Limits
Freon 12	106	70-130
Freon 114	107	70-130
Chloromethane	102	70-130
Vinyl Chloride	103	70-130
1,3-Butadiene	103	70-130
Bromomethane	103	70-130
Chloroethane	106	70-130
Freon 11	105	70-130
Ethanol	101	70-130
Freon 113	103	70-130
1,1-Dichloroethene	104	70-130
Acetone	91	70-130
2-Propanol	106	70-130
Carbon Disulfide	88	70-130
3-Chloropropene	95	70-130
Methylene Chloride	102	70-130
Methyl tert-butyl ether	103	70-130
trans-1,2-Dichloroethene	103	70-130
Hexane	105	70-130
1,1-Dichloroethane	104	70-130
2-Butanone (Methyl Ethyl Ketone)	103	70-130
cis-1,2-Dichloroethene	102	70-130
Tetrahydrofuran	103	70-130
Chloroform	104	70-130
1,1,1-Trichloroethane	103	70-130
Cyclohexane	106	70-130
Carbon Tetrachloride	103	70-130
2,2,4-Trimethylpentane	116	70-130
Benzene	103	70-130
1,2-Dichloroethane	102	70-130
Heptane	106	70-130
Trichloroethene	101	70-130
1,2-Dichloropropane	100	70-130
1,4-Dioxane	100	70-130
Bromodichloromethane	105	70-130
cis-1,3-Dichloropropene	100	70-130
4-Methyl-2-pentanone	103	70-130
Toluene	102	70-130
trans-1,3-Dichloropropene	108	70-130
1,1,2-Trichloroethane	103	70-130
Tetrachloroethene	105	70-130
2-Hexanone	108	70-130



Client Sample ID: LCSD

Lab ID#: 1512443A-09BB

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	j123004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 12:41 PM

Compound	%Recovery	Method Limits
Dibromochloromethane	108	70-130
1,2-Dibromoethane (EDB)	105	70-130
Chlorobenzene	102	70-130
Ethyl Benzene	105	70-130
m,p-Xylene	106	70-130
o-Xylene	112	70-130
Styrene	114	70-130
Bromoform	109	70-130
Cumene	107	70-130
1,1,2,2-Tetrachloroethane	105	70-130
Propylbenzene	110	70-130
4-Ethyltoluene	108	70-130
1,3,5-Trimethylbenzene	110	70-130
1,2,4-Trimethylbenzene	110	70-130
1,3-Dichlorobenzene	106	70-130
1,4-Dichlorobenzene	105	70-130
alpha-Chlorotoluene	114	70-130
1,2-Dichlorobenzene	106	70-130
1,2,4-Trichlorobenzene	111	70-130
Hexachlorobutadiene	109	70-130
Pentane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	101	70-130

1/7/2016

Mr. Kurt Soenen  
Cornerstone Earth Group  
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: 150 Jefferson

Project #:

Workorder #: 1512443B

Dear Mr. Kurt Soenen

The following report includes the data for the above referenced project for sample(s) received on 12/22/2015 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 (5&20 ppbv) 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1512443B**

Work Order Summary

<b>CLIENT:</b>	Mr. Kurt Soenen Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	<b>BILL TO:</b>	Mr. Kurt Soenen Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
<b>PHONE:</b>	408-245-4600 x110	<b>P.O. #</b>	
<b>FAX:</b>	408-245-4620	<b>PROJECT #</b>	150 Jefferson
<b>DATE RECEIVED:</b>	12/22/2015	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	01/07/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
07A	SV-3A(Pentane)	Modified TO-15 (5&20 ppbv	3.5 "Hg	15 psi
08A	Lab Blank	Modified TO-15 (5&20 ppbv	NA	NA
09A	CCV	Modified TO-15 (5&20 ppbv	NA	NA

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

DATE: 01/07/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

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

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180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**EPA Method TO-15 Soil Gas**  
**Cornerstone Earth Group**  
**Workorder# 1512443B**

One PAC250 Canister sample was received on December 22, 2015. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode. The method involves concentrating up to 50 mLs 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.

**Receiving Notes**

There were no receiving discrepancies.

**Analytical Notes**

Dilution was performed on sample SV-3A(Pentane) due to the presence of high level target species.

**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

**Summary of Detected Compounds  
EPA METHOD TO-15 GC/MS**

**Client Sample ID: SV-3A(Pentane)**

**Lab ID#: 1512443B-07A**

<b>Compound</b>	<b>Rpt. Limit (ppbv)</b>	<b>Amount (ppbv)</b>	<b>Rpt. Limit (ug/m3)</b>	<b>Amount (ug/m3)</b>
Pentane	23000	200000	67000	580000



Client Sample ID: SV-3A(Pentane)

Lab ID#: 1512443B-07A

EPA METHOD TO-15 GC/MS

File Name:	14010616	Date of Collection:	12/21/15 11:38:00 A
Dil. Factor:	1140	Date of Analysis:	1/6/16 03:16 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Pentane	23000	200000	67000	580000

Container Type: PAC250 Canister

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	104	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1512443B-08A

EPA METHOD TO-15 GC/MS

File Name:	14010610a	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	1/6/16 12:03 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Pentane	20	Not Detected	59	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	94	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 1512443B-09A

EPA METHOD TO-15 GC/MS

File Name:	14010606a	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 1/6/16 10:18 AM

Compound	%Recovery
----------	-----------

Pentane	111
---------	-----

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
------------	-----------	---------------

1,2-Dichloroethane-d4	107	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	95	70-130

1/7/2016

Mr. Kurt Soenen  
Cornerstone Earth Group  
1259 Oakmead Parkway

Sunnyvale CA 94085

Project Name: 150 Jefferson

Project #:

Workorder #: 1512443C

Dear Mr. Kurt Soenen

The following report includes the data for the above referenced project for sample(s) received on 12/22/2015 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: Kyle Vagadori at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Kyle Vagadori  
Project Manager

**WORK ORDER #: 1512443C**

Work Order Summary

<b>CLIENT:</b>	Mr. Kurt Soenen Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085	<b>BILL TO:</b>	Mr. Kurt Soenen Cornerstone Earth Group 1259 Oakmead Parkway Sunnyvale, CA 94085
<b>PHONE:</b>	408-245-4600 x110	<b>P.O. #</b>	
<b>FAX:</b>	408-245-4620	<b>PROJECT #</b>	150 Jefferson
<b>DATE RECEIVED:</b>	12/22/2015	<b>CONTACT:</b>	Kyle Vagadori
<b>DATE COMPLETED:</b>	01/07/2016		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SV-9	Modified ASTM D-1946	2.6 "Hg	15.1 psi
02A	SV-10	Modified ASTM D-1946	1.2 "Hg	14.9 psi
03A	SV-7A	Modified ASTM D-1946	3.9 "Hg	14.5 psi
04A	SV-2A	Modified ASTM D-1946	3.9 "Hg	15 psi
05A	SV-3A	Modified ASTM D-1946	3.5 "Hg	15 psi
06A	SV-3A(DUP)	Modified ASTM D-1946	3.5 "Hg	14.7 psi
07A	Lab Blank	Modified ASTM D-1946	NA	NA
08A	LCS	Modified ASTM D-1946	NA	NA
08AA	LCSD	Modified ASTM D-1946	NA	NA

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

DATE: 01/07/16

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,  
 TX NELAP - T104704343-14-7, UT NELAP CA009332014-5, VA NELAP - 460197, WA NELAP - C935  
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)  
 Accreditation number: CA300005, Effective date: 10/18/2014, Expiration date: 10/17/2015.

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 - 9563  
 (916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

**LABORATORY NARRATIVE**  
**Modified ASTM D-1946**  
**Cornerstone Earth Group**  
**Workorder# 1512443C**

Six 1 Liter Summa Canister samples were received on December 22, 2015. 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 ATL 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  
MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946**

**Client Sample ID: SV-9**

**Lab ID#: 1512443C-01A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.22	16
Carbon Dioxide	0.022	3.4

**Client Sample ID: SV-10**

**Lab ID#: 1512443C-02A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.21	16
Carbon Dioxide	0.021	5.6

**Client Sample ID: SV-7A**

**Lab ID#: 1512443C-03A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	13
Carbon Dioxide	0.023	6.2

**Client Sample ID: SV-2A**

**Lab ID#: 1512443C-04A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	14
Carbon Dioxide	0.023	6.4

**Client Sample ID: SV-3A**

**Lab ID#: 1512443C-05A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	6.8
Carbon Dioxide	0.023	15



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

**Client Sample ID: SV-3A(DUP)**

**Lab ID#: 1512443C-06A**

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	6.9
Carbon Dioxide	0.023	15



Air Toxics

Client Sample ID: SV-9

Lab ID#: 1512443C-01A

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

File Name:	10123010	Date of Collection:	12/18/15 7:08:00 AM
Dil. Factor:	2.22	Date of Analysis:	12/30/15 12:03 PM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.22	16
Methane	0.00022	Not Detected
Carbon Dioxide	0.022	3.4

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: SV-10

Lab ID#: 1512443C-02A

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

File Name:	10123011	Date of Collection:	12/18/15 7:53:00 AM
Dil. Factor:	2.10	Date of Analysis:	12/30/15 12:47 PM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.21	16
Methane	0.00021	Not Detected
Carbon Dioxide	0.021	5.6

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: SV-7A

Lab ID#: 1512443C-03A

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

File Name:	10123012	Date of Collection:	12/21/15 9:45:00 AM
Dil. Factor:	2.28	Date of Analysis:	12/30/15 01:15 PM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	13
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	6.2

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: SV-2A

Lab ID#: 1512443C-04A

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

File Name:	10123013	Date of Collection:	12/21/15 10:31:00 A
Dil. Factor:	2.32	Date of Analysis:	12/30/15 03:26 PM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	14
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	6.4

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: SV-3A

Lab ID#: 1512443C-05A

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

File Name:	10123014	Date of Collection: 12/21/15 11:44:00 A
Dil. Factor:	2.28	Date of Analysis: 12/30/15 03:48 PM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	6.8
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	15

**Container Type: 1 Liter Summa Canister**



Air Toxics

Client Sample ID: SV-3A(DUP)

Lab ID#: 1512443C-06A

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

File Name:	10123015	Date of Collection:	12/21/15 11:44:00 A
Dil. Factor:	2.26	Date of Analysis:	12/30/15 04:12 PM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.23	6.9
Methane	0.00023	Not Detected
Carbon Dioxide	0.023	15

Container Type: 1 Liter Summa Canister



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1512443C-07A

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

File Name:	10123004	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 09:00 AM

<b>Compound</b>	<b>Rpt. Limit (%)</b>	<b>Amount (%)</b>
Oxygen	0.10	Not Detected
Methane	0.00010	Not Detected
Carbon Dioxide	0.010	Not Detected

Container Type: NA - Not Applicable





Air Toxics

Client Sample ID: LCS

Lab ID#: 1512443C-08A

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

File Name:	10123002	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 08:04 AM

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Oxygen	100	85-115
Methane	106	85-115
Carbon Dioxide	98	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 1512443C-08AA

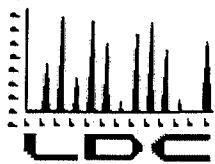
**MODIFIED NATURAL GAS ANALYSIS BY ASTM D-1946**

File Name:	10123025	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/30/15 09:20 PM

<b>Compound</b>	<b>%Recovery</b>	<b>Method Limits</b>
Oxygen	100	85-115
Methane	107	85-115
Carbon Dioxide	99	85-115

Container Type: NA - Not Applicable

**APPENDIX E: LEVEL II DATA VALIDATION PACKAGE AND SOIL VAPOR REPORTING LIMITS**



# LABORATORY DATA CONSULTANTS, INC.

2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Cornerstone Earth  
1259 Oakmead Parkway  
Sunnyvale, CA 94085  
ATTN: Mr. Sean M. Kenney

January 19, 2016

SUBJECT: 150 Jefferson Drive, Menlo Park, Data Validation

Dear Mr. Kenney,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on January 8, 2016. Attachment 1 is a summary of the samples that were reviewed for each analysis.

## **LDC Project #35700:**

### **SDG #**

### **Fraction**

720-69116-1, 1512443A  
1512443B

Volatiles, Chlorinated Pesticides, Polychlorinated  
Biphenyls, Lead

The data validation was performed under Level II guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA National Functional Guidelines for Superfund Organic Methods Data Review , August 2014
- USEPA National Functional Guidelines for Inorganic Superfund Data Review , January 2014
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; Update IV, February 2007

Please feel free to contact us if you have any questions.

Sincerely,

Shauna McKellar  
Project Manager/Chemist

Level II LDC #35700 (Cornerstone Earth - Sunnyvale, CA / 150 Jefferson Drive, Menlo Park)

LDC	SDG#	DATE REC'D	(3) DATE DUE	VOA (TO-15)		Pest. (8081B)		PCBs (8082)		Pb (6010B)																											
				A	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	720-69116-1	01/08/16	01/22/16	-	-	1	7	1	7	0	3																										
B	1512443A	01/08/16	01/22/16	6	0	-	-	-	-	-	-																										
C	1512443B	01/08/16	01/22/16	1	0	-	-	-	-	-	-																										
Matrix: Air/Water/Soil																																					
Total	A/SM			7	0	1	7	1	7	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** 150 Jefferson Drive

**LDC Report Date:** January 15, 2016

**Parameters:** Chlorinated Pesticides

**Validation Level:** Level II

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 720-69116-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
SB-12 (0-0.5')	720-69116-7	Soil	12/09/15
SB-12 (2-2.5')	720-69116-8	Soil	12/09/15
FD-1 (2-2.5')	720-69116-9	Soil	12/09/15
EB-1	720-69116-11	Water	12/09/15
SB-11 (0-0.5')	720-69116-12	Soil	12/09/15
SB-11 (2-2.5')	720-69116-13	Soil	12/09/15
SB-13 (0-0.5')	720-69116-15	Soil	12/09/15
SB-13 (2-2.5')	720-69116-16	Soil	12/09/15

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Chlorinated Pesticides by Environmental Protection Agency (EPA) SW 846 Method 8081A

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria

All technical holding time requirements were met.

## **II. GC Instrument Performance Check**

Instrument performance check were not reviewed for level II validation.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration data were not reviewed for Level II validation.

## **IV. Continuing Calibration**

Continuing calibration data were not reviewed for Level II validation.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **VI. Field Blanks**

Sample EB-1 was identified as an equipment blank. No contaminants were found.

## **VII. Surrogates**

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VIII. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **IX. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits with the following exceptions:



LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	Flag	A or P
LCS-720-194011 (All soil samples in SDG 720-69116-1)	Heptachlor epoxide	128 (68-120)	-	NA	-

Relative percent differences (RPD) were within QC limits.

#### **X. Field Duplicates**

Samples SB-12 (2-2.5') and FD-1 (2-2.5') were identified as field duplicates. No results were detected in any of the samples.

#### **XI. Compound Quantitation**

Raw data were not reviewed for Level II validation.

#### **XII. Target Compound Identification**

Raw data were not reviewed for Level II validation.

#### **XIII. System Performance**

Raw data were not reviewed for Level II validation.

#### **XIII. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**150 Jefferson Drive  
Chlorinated Pesticides - Data Qualification Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Chlorinated Pesticides - Field Blank Data Qualification Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG

LDC #: 35700A3a  
 SDG #: 720-69116-1  
 Laboratory: Test America Inc.

**VALIDATION COMPLETENESS WORKSHEET**  
 Level II

Date: 1/11/16  
 Page: 1 of 1  
 Reviewer: [Signature]  
 2nd Reviewer: [Signature]

**METHOD:** GC Chlorinated Pesticides (EPA SW846 Method 8081A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	GC Instrument Performance Check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB = 4
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	SW	see 10
X.	Field duplicates	ND	D = 2, 3
XI.	Compound quantitation/RL/LOQ/LODs	N	
XII.	Target compound identification	N	
XIII.	System Performance	N	
XIV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	SB-12 (0-0.5')	720-69116-7	Soil	12/09/15
2	SB-12 (2-2.5') D	720-69116-8	Soil	12/09/15
3	FD-1 (2-2.5') D	720-69116-9	Soil	12/09/15
4	EB-1	720-69116-11	Water	12/09/15
5	SB-11 (0-0.5')	720-69116-12	Soil	12/09/15
6	SB-11 (2-2.5')	720-69116-13	Soil	12/09/15
7	SB-13 (0-0.5')	720-69116-15	Soil	12/09/15
8	SB-13 (2-2.5')	720-69116-16	Soil	12/09/15
9				
10				
11				
12				

Notes:

-	MB 720-194011				
-	MB 720-194275				

## VALIDATION FINDINGS WORKSHEET

**METHOD:** Pesticide/PCBs (EPA SW 846 Method 8081/8082)

A. alpha-BHC	I. Dieldrin	Q. Endrin ketone	Y. Aroclor-1242	GG. Chlordane
B. beta-BHC	J. 4,4'-DDE	R. Endrin aldehyde	Z. Aroclor-1248	HH. Chlordane (Technical)
C. delta-BHC	K. Endrin	S. alpha-Chlordane	AA. Aroclor-1254	II. Arochlor 1262
D. gamma-BHC	L. Endosulfan II	T. gamma-Chlordane	BB. Aroclor-1260	JJ. Aroclor 1268
E. Heptachlor	M. 4,4'-DDD	U. Toxaphene	CC. 2,4'-DDD	KK. Oxychlordane
F. Aldrin	N. Endosulfan sulfate	V. Aroclor-1016	DD. 2,4'-DDE	LL. trans-Nonachlor
G. Heptachlor epoxide	O. 4,4'-DDT	W. Aroclor-1221	EE. 2,4'-DDT	MM. cis-Nonachlor
H. Endosulfan I	P. Methoxychlor	X. Aroclor-1232	FF. Hexachlorobenzene	NN.

Notes: \_\_\_\_\_

LDC #: 35700A 3a

**VALIDATION FINDINGS WORKSHEET**  
**Laboratory Control Samples (LCS)**

Page: 1 of 1  
Reviewer: FT  
2nd Reviewer: [Signature]

METHOD:  GC  HPLC

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".  
Y N N/A Were a laboratory control samples (LCS) and laboratory control sample duplicate (LCSD) analyzed for each matrix in this SDG?  
Y N N/A Were the LCS percent recoveries (%R) and relative percent differences (RPD) within the QC limits?

**Level IV/D Only**  
Y N N/A Was an LCS analyzed every 20 samples for each matrix or whenever a sample extraction was performed?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	<u>LCS-720-</u> <u>194011</u>	<u>G</u>	<u>128</u> (68-120)	( )	( )	<u>all 80115</u>	<u>Jdt / P (ND)</u>
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
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			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** 150 Jefferson Drive  
**LDC Report Date:** January 15, 2016  
**Parameters:** Polychlorinated Biphenyls as Congeners  
**Validation Level:** Level II  
**Laboratory:** TestAmerica, Inc.  
**Sample Delivery Group (SDG):** 720-69116-1

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
SB-15 (0-0.5')	720-69116-1	Soil	12/09/15
SB-15 (2-2.5')	720-69116-2	Soil	12/09/15
SB-14 (0-0.5')	720-69116-4	Soil	12/09/15
SB-14 (2-2.5')	720-69116-5	Soil	12/09/15
SB-12 (0-0.5')	720-69116-7	Soil	12/09/15
SB-12 (2-2.5')	720-69116-8	Soil	12/09/15
FD-1 (2-2.5')	720-69116-9	Soil	12/09/15
EB-1	720-69116-11	Water	12/09/15

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Polychlorinated Biphenyls (PCBs) as Congeners by Environmental Protection Agency (EPA) SW 846 Method 8082

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

## **II. Initial Calibration and Initial Calibration Verification**

Initial calibration data were not reviewed for Level II validation.

## **III. Continuing Calibration**

Continuing calibration data were not reviewed for Level II validation.

## **IV. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **V. Field Blanks**

Sample EB-1 was identified as an equipment blank. No contaminants were found.

## **VI. Surrogates**

Surrogates were added to all samples as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **VIII. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## **IX. Field Duplicates**

Samples SB-12 (2-2.5') and FD-1 (2-2.5') were identified as field duplicates. No results were detected in any of the samples.



## **X. Compound Quantitation**

Raw data were not reviewed for Level II validation.

## **XI. Target Compound Identification**

Raw data were not reviewed for Level II validation.

## **XII. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**150 Jefferson Drive  
Polychlorinated Biphenyls as Congeners - Data Qualification Summary - SDG  
720-69116-1**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Polychlorinated Biphenyls as Congeners - Laboratory Blank Data Qualification  
Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Polychlorinated Biphenyls as Congeners - Field Blank Data Qualification  
Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG

LDC #: 35700A3b

**VALIDATION COMPLETENESS WORKSHEET**

Date: 1/11/16

SDG #: 720-69116-1

Level II

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: SM

2nd Reviewer: SM

**METHOD:** GC Polychlorinated Biphenyls (EPA SW846 Method 8082)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / Δ	
II.	Initial calibration/ICV	N/N	
III.	Continuing calibration	N	
IV.	Laboratory Blanks	Δ	
V.	Field blanks	ND	FB = 8
VI.	Surrogate spikes	Δ	
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	Δ	les IP
IX.	Field duplicates	ND	D = 6, 7
X.	Compound quantitation/RL/LOQ/LODs	N	
XI.	Target compound identification	N	
XII.	Overall assessment of data	A	

Note: A = Acceptable  
N = Not provided/applicable  
SW = See worksheet

ND = No compounds detected  
R = Rinsate  
FB = Field blank

D = Duplicate  
TB = Trip blank  
EB = Equipment blank

SB=Source blank  
OTHER:

	Client ID	Lab ID	Matrix	Date
1	SB-15 (0-0.5')	720-69116-1	Soil	12/09/15
2	SB-15 (2-2.5')	720-69116-2	Soil	12/09/15
3	SB-14 (0-0.5')	720-69116-4	Soil	12/09/15
4	SB-14 (2-2.5')	720-69116-5	Soil	12/09/15
5	SB-12 (0-0.5')	720-69116-7	Soil	12/09/15
6	SB-12 (2-2.5') D	720-69116-8	Soil	12/09/15
7	FD-1 (2-2.5') D	720-69116-9	Soil	12/09/15
8	EB-1	720-69116-11	Water	12/09/15
9				
10				
11				
12				

Notes:

1	MB 720-194010				
2	MB 720-194277				

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** 150 Jefferson Drive

**LDC Report Date:** January 15, 2016

**Parameters:** Lead

**Validation Level:** Level II

**Laboratory:** TestAmerica, Inc.

**Sample Delivery Group (SDG):** 720-69116-1

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
SB-12 (0-0.5')	720-69116-7	Soil	12/09/15
SB-11 (0-0.5')	720-69116-12	Soil	12/09/15
SB-13 (0-0.5')	720-69116-15	Soil	12/09/15

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Data Review (January 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Lead by Environmental Protection Agency (EPA) SW 846 Method 6010B

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

All samples were received in good condition.

All technical holding time requirements were met.

## **II. Instrument Calibration**

Calibration data were not reviewed for Level II validation.

## **III. ICP Interference Check Sample Analysis**

ICP Interference check sample analysis data were not reviewed for Level II validation.

## **IV. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

## **V. Field Blanks**

No field blanks were identified in this SDG.

## **VI. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **VII. Duplicate Sample Analysis**

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## **VIII. Serial Dilution**

Serial dilution was not performed for this SDG.

## **IX. Laboratory Control Samples/Standard Reference Material**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

Standard reference materials (SRM) were analyzed as required by the method. The results were within QC limits.

## **X. Field Duplicates**

No field duplicates were identified in this SDG.

## **XI. Sample Result Verification**

Raw data were not reviewed for Level II validation.

## **XII. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**150 Jefferson Drive**  
**Lead - Data Qualification Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG

**150 Jefferson Drive**  
**Lead - Laboratory Blank Data Qualification Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG

**150 Jefferson Drive**  
**Lead - Field Blank Data Qualification Summary - SDG 720-69116-1**

No Sample Data Qualified in this SDG



LDC #: 35700A4b

# VALIDATION COMPLETENESS WORKSHEET

Date: 1/8/16

SDG #: 720-69116-1

Level II

Page: 1 of 1

Laboratory: Test America Inc.

Reviewer: *ca*

*mg Lead*

2nd Reviewer: *sm*

METHOD: ~~Metals~~ (EPA SW 846 Method 6010B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, A	
II.	Instrument Calibration	N	
III.	ICP Interference Check Sample (ICS) Analysis	N	
IV.	Laboratory Blanks	A	
V.	Field Blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	CS
VII.	Duplicate sample analysis	N	
VIII.	Serial Dilution	N	
IX.	Laboratory control samples <i>1SRM</i>	A	LCS/D, SRM
X.	Field Duplicates	N	
XI.	Sample Result Verification	N	
XII.	Overall Assessment of Data	A	

Note: A = Acceptable  
N = Not provided/applicable  
SW = See worksheet

ND = No compounds detected  
R = Rinsate  
FB = Field blank

D = Duplicate  
TB = Trip blank  
EB = Equipment blank

SB=Source blank  
OTHER:

	Client ID	Lab ID	Matrix	Date
1	SB-12 (0-0.5')	720-69116-7	Soil	12/09/15
2	SB-11 (0-0.5')	720-69116-12	Soil	12/09/15
3	SB-13 (0-0.5')	720-69116-15	Soil	12/09/15
4				
5				
6				
7				
8				
9				
10				

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** 150 Jefferson Drive

**LDC Report Date:** January 15, 2016

**Parameters:** Volatiles

**Validation Level:** Level II

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** 1512443A

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
SV-9	1512443-01	Air	12/18/15
SV-10	1512443-02	Air	12/18/15
SV-7A	1512443-03	Air	12/21/15
SV-2A	1512443-04	Air	12/21/15
SV-3A	1512443-05	Air	12/21/15
SV-3A(DUP)	1512443-06	Air	12/21/15

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Method TO-15

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

The canisters were properly pressurized and handled.

All technical holding time requirements were met.

## **II. GC/MS Instrument Performance Check**

Instrument performance check data were not reviewed for Level II validation.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration data were not reviewed for Level II validation.

## **IV. Continuing Calibration**

Continuing calibration data were not reviewed for Level II validation.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

All canisters were cleaned as required by the method. The laboratory indicated that canister certification was performed by batch. No contaminants were found in the representative canister blank.

## **VI. Field Blanks**

No field blanks were identified in this SDG.

## **VII. Surrogates**

Although surrogates were not required by the method, surrogate analysis was performed by the laboratory. Surrogate recoveries (%R) were within QC limits.

## **VIII. Duplicates**

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## **IX. Laboratory Control Samples**

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

## X. Field Duplicates

Samples SV-3A and SV-3A(DUP) were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/m <sup>3</sup> )		RPD
	SV-3A	SV-3A(DUP)	
2-Propanol	12	11U	200
1,1,1-Trichloroethane	6.3	6.2U	200
Benzene	13	14	7
Toluene	7.8	6.9	12
Tetrachloroethene	29	27	7
Ethylbenzene	12	8.7	32
m,p-Xylenes	55	40	32
o-Xylene	18	15	18
4-Ethyltoluene	13	10	26
1,2,4-Trimethylbenzene	14	11	24
Pentane	18	58	105

## XI. Internal Standards

Internal standards data were not reviewed for Level II validation.

## XII. Compound Quantitation

Raw data were not reviewed for Level II validation.

## XIII. Target Compound Identifications

Raw data were not reviewed for Level II validation.

## XIV. System Performance

Raw data were not reviewed for Level II validation.

## XV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The leak check compound, pentane, was not detected in any of the client samples with the following exceptions:

Sample	Compound	Leak Check Compound Pentane concentration
SV-10	All TCL compounds	180 ug/m <sup>3</sup>
SV-7A	All TCL compounds	15 ug/m <sup>3</sup>
SV-3A	All TCL compounds	18 ug/m <sup>3</sup>
SV-3A(DUP)	All TCL compounds	58 ug/m <sup>3</sup>

Since the above sample detections for leak check compound pentane are less than 5% of the pentane concentration 580,000 ug/m<sup>3</sup> detected in shroud sample SV-3A(Pentane) (from SDG 1512443B), no data were qualified.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**150 Jefferson Drive  
Volatiles - Data Qualification Summary - SDG 1512443A**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Volatiles - Laboratory Blank Data Qualification Summary - SDG 1512443A**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Volatiles - Field Blank Data Qualification Summary - SDG 1512443A**

No Sample Data Qualified in this SDG

LDC #: 35700B48  
 SDG #: 1512443A  
 Laboratory: eurofins

**VALIDATION COMPLETENESS WORKSHEET**

Level II

Date: 1/11/16  
 Page: 1 of 1  
 Reviewer: F7  
 2nd Reviewer: SN

**METHOD:** GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, Δ	
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks / canister check per batch	A	
VI.	Field blanks	N	
VII.	Surrogate spikes	A	
VIII.	Matrix spike/Matrix spike duplicates	N	
IX.	Laboratory control samples	A	W2 ID
X.	Field duplicates	SW	D = 5, 6
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	

Note: A = Acceptable      ND = No compounds detected      D = Duplicate      SB=Source blank  
 N = Not provided/applicable      R = Rinsate      TB = Trip blank      OTHER:  
 SW = See worksheet      FB = Field blank      EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	SV-9	1512443-01	Air	12/18/15
2	SV-10	1512443-02	Air	12/18/15
3	SV-7A	1512443-03	Air	12/21/15
4	SV-2A	1512443-04	Air	12/21/15
5	SV-3A D	1512443-05	Air	12/21/15
6	SV-3A(DUP) D	1512443-06	Air	12/21/15
7				
8				
9				
10				

Notes:

-	1512443A-07A				
-	1512443A-07B				



## TARGET COMPOUND WORKSHEET

### METHOD: VOA

A. Chloromethane	AA. Tetrachloroethene	AAA. 1,3,5-Trimethylbenzene	AAAA. Ethyl tert-butyl ether	A1. 1,3-Butadiene
B. Bromomethane	BB. 1,1,2,2-Tetrachloroethane	BBB. 4-Chlorotoluene	BBBB. tert-Amyl methyl ether	B1. Hexane
C. Vinyl chloride	CC. Toluene	CCC. tert-Butylbenzene	CCCC. 1-Chlorohexane	C1. Heptane
D. Chloroethane	DD. Chlorobenzene	DDD. 1,2,4-Trimethylbenzene	DDDD. Isopropyl alcohol	D1. Propylene
E. Methylene chloride	EE. Ethylbenzene	EEE. sec-Butylbenzene	EEEE. Acetonitrile	E1. Freon 11
F. Acetone	FF. Styrene	FFF. 1,3-Dichlorobenzene	FFFF. Acrolein	F1. Freon 12
G. Carbon disulfide	GG. Xylenes, total	GGG. p-Isopropyltoluene	GGGG. Acrylonitrile	G1. Freon 113
H. 1,1-Dichloroethene	HH. Vinyl acetate	HHH. 1,4-Dichlorobenzene	HHHH. 1,4-Dioxane	H1. Freon 114
I. 1,1-Dichloroethane	II. 2-Chloroethylvinyl ether	III. n-Butylbenzene	IIII. Isobutyl alcohol	I1. 2-Nitropropane
J. 1,2-Dichloroethene, total	JJ. Dichlorodifluoromethane	JJJ. 1,2-Dichlorobenzene	JJJJ. Methacrylonitrile	J1. Dimethyl disulfide
K. Chloroform	KK. Trichlorofluoromethane	KKK. 1,2,4-Trichlorobenzene	KKKK. Propionitrile	K1. 2,3-Dimethyl pentane
L. 1,2-Dichloroethane	LL. Methyl-tert-butyl ether	LLL. Hexachlorobutadiene	LLLL. Ethyl ether	L1. 2,4-Dimethyl pentane
M. 2-Butanone	MM. 1,2-Dibromo-3-chloropropane	MMM. Naphthalene	MMMM. Benzyl chloride	M1. 3,3-Dimethyl pentane
N. 1,1,1-Trichloroethane	NN. Methyl ethyl ketone	NNN. 1,2,3-Trichlorobenzene	NNNN. Iodomethane	N1. 2-Methylpentane
O. Carbon tetrachloride	OO. 2,2-Dichloropropane	OOO. 1,3,5-Trichlorobenzene	OOOO. 1,1-Difluoroethane	O1. 3-Methylpentane
P. Bromodichloromethane	PP. Bromochloromethane	PPP. trans-1,2-Dichloroethene	PPPP. Tetrahydrofuran	P1. 3-Ethylpentane
Q. 1,2-Dichloropropane	QQ. 1,1-Dichloropropene	QQQ. cis-1,2-Dichloroethene	QQQQ. Methyl acetate	Q1. 2,2-Dimethylpentane
R. cis-1,3-Dichloropropene	RR. Dibromomethane	RRR. m,p-Xylenes	RRRR. Ethyl acetate	R1. 2,2,3-Trimethylbutane
S. Trichloroethene	SS. 1,3-Dichloropropane	SSS. o-Xylene	SSSS. Cyclohexane	S1. 2,2,4-Trimethylpentane
T. Dibromochloromethane	TT. 1,2-Dibromoethane	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	TTTT. Methyl cyclohexane	T1. 2-Methylhexane
U. 1,1,2-Trichloroethane	UU. 1,1,1,2-Tetrachloroethane	UUU. 1,2-Dichlorotetrafluoroethane	UUUU. Allyl chloride	U1. Nonanal
V. Benzene	VV. Isopropylbenzene	VVV. 4-Ethyltoluene	VVVV. Methyl methacrylate	V1. 2-Methylnaphthalene
W. trans-1,3-Dichloropropene	WW. Bromobenzene	WWW. Ethanol	WWWW. Ethyl methacrylate	W1. Methanol
X. Bromoform	XX. 1,2,3-Trichloropropane	XXX. Di-isopropyl ether	XXXX. cis-1,4-Dichloro-2-butene	X1. 1,2,3-Trimethylbenzene
Y. 4-Methyl-2-pentanone	YY. n-Propylbenzene	YYY. tert-Butanol	YYYY. trans-1,4-Dichloro-2-butene	Y1. 2-Propanol
Z. 2-Hexanone	ZZ. 2-Chlorotoluene	ZZZ. tert-Butyl alcohol	ZZZZ. Pentachloroethane	Z1. 4-Ethyltoluene

AA1. Pentane

LDC#: 35700B48

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

Page: 1 of 1  
Reviewer: F7  
2nd Reviewer: SMA

**METHOD:** GCMS VOA (EPA Method TO-15)

Compound	Concentration (ug/m3)		RPD
	5	6	
Y1	12	11U	200
N	6.3	6.2U	200
V	13	14	7
CC	7.8	6.9	12
AA	29	27	7
EE	12	8.7	32
RRR	55	40	32
SSS	18	15	18
Z1	13	10	26
DDD	14	11	24
AA1	18	58	105

LDC #: 35700B48

**VALIDATION FINDINGS WORKSHEET**  
**Overall Assessment of Data**

Page: 1 of 1  
Reviewer: FT  
2nd Reviewer: Sh

**METHOD:** GC/MS VOA (EPA Method TO-15)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

All available information pertaining to the data were reviewed using professional judgement to compliment the determination of the overall quality of the data.

Y N N/A Was the overall quality and usability of the data acceptable?

#	Date	Shroud sample ID	Shroud sample result (Pentane)	Associated Samples and results	Qualifications
		SV-3A (Pentane)	580,000 ug/m <sup>3</sup>	1 → 6	Since the leak check compound (pentane) in the sample is less than 5% of the concentration in the shroud sample, the associated samples were not qualified.
		from SDG 1512443		1 + 4 = ND	
				2 = 180 ug/m <sup>3</sup>	
				3 = 15 ug/m <sup>3</sup>	
				5 = 18 ug/m <sup>3</sup>	
				6 = 18 ug/m <sup>3</sup> ↓ 58	

Comments: \_\_\_\_\_

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** 150 Jefferson Drive

**LDC Report Date:** January 15, 2016

**Parameters:** Volatiles

**Validation Level:** Level II

**Laboratory:** Eurofins

**Sample Delivery Group (SDG):** 1512443B

<b>Sample Identification</b>	<b>Laboratory Sample Identification</b>	<b>Matrix</b>	<b>Collection Date</b>
SV-3A(Pentane)	1512443-07	Air	12/21/15

## Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with a modified outline of the USEPA National Functional Guidelines (NFG) for Superfund Organic Methods Data Review (August 2014). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Volatile Organic Compounds (VOCs) by Environmental Protection Agency (EPA) Method TO-15

All sample results were subjected to Level II data validation, which comprises an evaluation of quality control (QC) summary results.

The following are definitions of the data qualifiers utilized during data validation:

- J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.
- U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).
- UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.
- R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.
- NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

## **I. Sample Receipt and Technical Holding Times**

The canisters were properly pressurized and handled.

All technical holding time requirements were met.

## **II. GC/MS Instrument Performance Check**

Instrument performance check data were not reviewed for Level II validation.

## **III. Initial Calibration and Initial Calibration Verification**

Initial calibration data were not reviewed for Level II validation.

## **IV. Continuing Calibration**

Continuing calibration data were not reviewed for Level II validation.

## **V. Laboratory Blanks**

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks.

All canisters were cleaned as required by the method. The laboratory indicated that canister certification was performed by batch. No contaminants were found in the representative canister blank.

## **VI. Field Blanks**

No field blanks were identified in this SDG.

## **VII. Surrogates**

Surrogates were not required by the method.

## **VIII. Duplicates**

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## **IX. Laboratory Control Samples**

Laboratory control samples (LCS) were not required by the method.

## **X. Field Duplicates**

No field duplicates were identified in this SDG.

## **XI. Internal Standards**

Internal standards data were not reviewed for Level II validation.

## **XII. Compound Quantitation**

Raw data were not reviewed for Level II validation.

## **XIII. Target Compound Identifications**

Raw data were not reviewed for Level II validation.

## **XIV. System Performance**

Raw data were not reviewed for Level II validation.

## **XV. Overall Assessment of Data**

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable. Based upon the data validation all results are considered valid and usable for all purposes.

**150 Jefferson Drive  
Volatiles - Data Qualification Summary - SDG 1512443B**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Volatiles - Laboratory Blank Data Qualification Summary - SDG 1512443B**

No Sample Data Qualified in this SDG

**150 Jefferson Drive  
Volatiles - Field Blank Data Qualification Summary - SDG 1512443B**

No Sample Data Qualified in this SDG



LDC #: 35700C48

# VALIDATION COMPLETENESS WORKSHEET

Date: 1/11/16

SDG #: 1512443B

Level II

Page: 1 of 1

Laboratory: eurofins

Reviewer: *EF*

2nd Reviewer: *SH*

**METHOD:** GC/MS Volatiles (EPA Method TO-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A, Δ	
II.	GC/MS Instrument performance check	N	
III.	Initial calibration/ICV	N/N	
IV.	Continuing calibration	N	
V.	Laboratory Blanks	A	canister cert by batch
VI.	Field blanks	N	
VII.	Surrogate spikes	N	
VIII.	Matrix spike/Matrix spike duplicates	N	not required
IX.	Laboratory control samples	A N	not required
X.	Field duplicates	N	
XI.	Internal standards	N	
XII.	Compound quantitation RL/LOQ/LODs	N	
XIII.	Target compound identification	N	
XIV.	System performance	N	
XV.	Overall assessment of data	Δ	

Note: A = Acceptable  
 N = Not provided/applicable  
 SW = See worksheet

ND = No compounds detected  
 R = Rinsate  
 FB = Field blank

D = Duplicate  
 TB = Trip blank  
 EB = Equipment blank

SB=Source blank  
 OTHER:

	Client ID	Lab ID	Matrix	Date
1	SV-3A(Pentane)	1512443-07	Air	12/21/15
2				
3				
4				
5				
6				
7				
8				

Notes:

1512443B-08A				

**TO-15 Reporting Limit Calculator**

Compound	TO-15			Estimated Sample RL µg/m3
	CAS#	Base Reporting Limit		
		ppbv	µg/m3	
Freon 12	75-71-8	0.50	2.5	6.6
Freon 114	76-14-2	0.50	3.5	9.2
Chloromethane	74-87-3	5.0	10	26.4
Vinyl Chloride	75-01-4	0.50	1.3	3.4
1,3-Butadiene	106-99-0	0.50	1.1	2.9
Bromomethane	74-83-9	5.0	19	50.2
Chloroethane	75-00-3	2.0	5.3	14.0
Freon 11	75-69-4	0.50	2.8	7.4
Ethanol	64-17-5	2.0	3.8	10.0
Freon 113	76-13-1	0.50	3.8	10.0
1,1-Dichloroethene	75-35-4	0.50	2.0	5.3
Acetone	67-64-1	5.0	12	31.7
2-Propanol	67-63-0	2.0	4.9	12.9
Carbon Disulfide	75-15-0	2.0	6.2	16.4
3-Chloropropene	107-05-1	2.0	6.3	16.6
Methylene Chloride	75-09-2	5.0	17	44.9
Methyl tert-butyl ether	1634-04-4	0.50	1.8	4.8
trans-1,2-Dichloroethene	156-60-5	0.50	2.0	5.3
Hexane	110-54-3	0.50	1.8	4.8
1,1-Dichloroethane	75-34-3	0.50	2.0	5.3
2-Butanone (Methyl Ethyl Ketone)	78-93-3	2.0	5.9	15.6
cis-1,2-Dichloroethene	156-59-2	0.50	2.0	5.3
Tetrahydrofuran	109-99-9	0.50	1.5	4.0
Chloroform	67-66-3	0.50	2.4	6.3
1,1,1-Trichloroethane	71-55-6	0.50	2.7	7.1
Cyclohexane	110-82-7	0.50	1.7	4.5
Carbon Tetrachloride	56-23-5	0.50	3.1	8.2
2,2,4-Trimethylpentane	540-84-1	0.50	2.3	6.1
Benzene	71-43-2	0.50	1.6	4.2
1,2-Dichloroethane	107-06-2	0.50	2.0	5.3
Heptane	142-82-5	0.50	2.0	5.3
Trichloroethene	79-01-6	0.50	2.7	7.1
1,2-Dichloropropane	78-87-5	0.50	2.3	6.1
1,4-Dioxane	123-91-1	2.0	7.2	19.0
Bromodichloromethane	75-27-4	0.50	3.4	9.0
cis-1,3-Dichloropropene	10061-01-5	0.50	2.3	6.1
4-Methyl-2-pentanone	108-10-1	0.50	2.0	5.3
Toluene	108-88-3	0.50	1.9	5.0
trans-1,3-Dichloropropene	10061-02-6	0.50	2.3	6.1
1,1,2-Trichloroethane	79-00-5	0.50	2.7	7.1
Tetrachloroethene	127-18-4	0.50	3.4	9.0
2-Hexanone	591-78-6	2.0	8.2	21.6
Dibromochloromethane	124-48-1	0.50	4.2	11.1
1,2-Dibromoethane (EDB)	106-93-4	0.50	3.8	10.0
Chlorobenzene	108-90-7	0.50	2.3	6.1
Ethyl Benzene	100-41-4	0.50	2.2	5.8
m,p-Xylene	108-38-3	0.50	2.2	5.8
o-Xylene	95-47-6	0.50	2.2	5.8
Styrene	100-42-5	0.50	2.1	5.5
Bromoform	75-25-2	0.50	5.2	13.7
Cumene	98-82-8	0.50	2.4	6.3
1,1,2,2-Tetrachloroethane	79-34-5	0.50	3.4	9.0
Propylbenzene	103-65-1	0.50	2.4	6.3
4-Ethyltoluene	622-96-8	0.50	2.4	6.3
1,3,5-Trimethylbenzene	108-67-8	0.50	2.4	6.3
1,2,4-Trimethylbenzene	95-63-6	0.50	2.4	6.3
1,3-Dichlorobenzene	541-73-1	0.50	3.0	7.9
1,4-Dichlorobenzene	106-46-7	0.50	3.0	7.9
alpha-Chlorotoluene	100-44-7	0.50	2.6	6.9
1,2-Dichlorobenzene	95-50-1	0.50	3.0	7.9
1,2,4-Trichlorobenzene	120-82-1	2.0	15	39.6
Hexachlorobutadiene	87-68-3	2.0	21	55.4
<i>Naphthalene (by request)</i>	91-20-3	1.0	5.2	13.8
<i>TPH- Gasoline (by request)</i>	NA	50	204	538.6

Assume post-sample can vacuum of 7.0 in Hg and no analytical dilution. (Typical post-sample vacuum for TWA sample ranges from 4 in Hg to 10 in Hg.)

Select  
 Can Size (L):  ▼ 2.64

**APPENDIX F: HUMAN HEALTH RISK SCREENING EVALUATION CALCULATIONS**

March 11, 2016

Mr. Kurt Soenen  
Principal Engineer  
Cornerstone Earth Group  
1259 Oakmead Parkway  
Sunnyvale, CA 94085

**SUBJECT: Human Health Screening Risk Evaluation  
150 Jefferson Drive  
Menlo Park, California**

Dear Mr. Soenen:

The purpose of this letter report is to present the results of a Human Health Screening Risk Evaluation of soil and soil vapor sampling data collected in November 2014 and December 2015 at the above-referenced site. These samples were collected in support of future construction East Menlo Park Magnet High School. This evaluation was conducted in general accordance with the methods outlined in the Department of Toxic Substances Control (DTSC) Preliminary Endangerment Assessment (PEA) Guidance Manual (DTSC, 2015).<sup>1</sup> As discussed below, based on this evaluation, potential exposure to future site occupants via incidental soil ingestion, dermal contact with soil, and inhalation of vapor or particulates in outdoor air and inhalation of vapors in indoor air would not result in a public health risk under the conditions evaluated. As such, no further action should be required for future construction at the property.

## **Background**

The approximately 2.17-acre project Site is located at 150 Jefferson Drive, California. The site is comprised of an asphalt parking lot and a warehouse building. The warehouse is currently occupied by Bay Associates Wire Technology, which uses the majority of the building for manufacturing of custom cable and wire products; the northern portion is used as office space. The manufacturing portion of the building is currently raised approximately 4 feet above grade to accommodate truck-loading bays along the eastern portion of the building. As part of site redevelopment, the building will be removed and the raised area will be removed and the site returned to the surrounding street grade.

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<sup>1</sup> Department of Toxic Substances Control (DTSC). 2015. Preliminary Endangerment Guidance Manual (A guidance manual for evaluating hazardous substance release sites). October.

To support the proposed construction, Cornerstone Earth Group (Cornerstone) collected soil samples from a total of 13 locations (SB-1 through SB-4; SB-8 through SB-15; SV-8) (Cornerstone, 2015).<sup>2</sup> Soil borings extended to approximate depths ranging from 1.5 to 10.0 feet below existing grade. One or two discrete soil samples were collected from each boring at depths ranging from 0 to 0.5 feet to 9.5 to 10 feet below grade, for a total of 21 samples. Importantly, one of these samples, SB-4 at 1.0-1.5 feet below grade, was collected from the fill material underlying the raised portion of the warehouse, which will be removed as part of site redevelopment. Therefore, the data from this sample will not be included in this evaluation.

Cornerstone also collected soil vapor samples from 10 locations (SV-1 through SV-10). In November 2014, two soil vapor samples were collected from each of SV-1 through SV-8: one sample was collected immediately below the slab (subslab samples) and the other was collected at a depth of 5 to 10 feet below current grade. In 2015, single soil vapor samples were collected from new locations SV-9 and SV10 at a depth of approximately 5 feet below grade, and well as from three prior locations (SV-2, SV-3, and SV-9) at a depth of approximately 9 feet below grade. Seven of the eight subslab samples were collected within the fill material that will be removed as part of site redevelopment; therefore, these data will not be included in this evaluation. The eighth subslab sample was collected beneath a portion of the building that is currently at street grade. However, because the surface soil will be disturbed as part of site redevelopment, the data from this location is not likely representative of future site conditions and thus also not included.

Soil samples were analyzed for one or more of the following chemical suites: volatile organic compounds (VOCs) and total petroleum hydrocarbons in the gasoline range (TPHg) by EPA Test Method 8260B, TPH in the diesel and oil range (TPHd/o) by EPA Test Method 8015B with a silica gel cleanup, California Assessment Manual (CAM 17) metals by EPA Test Method 6010B/7471A, polyaromatic hydrocarbons (PAHs) by EPA Test Method 8270 or 8270SIM, organochlorine pesticides (OCPs) by EPA Test Method 8081A, and polychlorinated biphenyls (PCBs) by EPA Test Method 8082A. Soil vapor samples were analyzed for VOCs via EPA Test Method TO-15 and fixed gases (carbon dioxide, methane, and oxygen) by ASTM D-1946.

Tabular summaries of the analytical results for compounds detected in soil or soil vapor samples included in this evaluation are provided in Attachment A. Except as noted, the values represent detected concentrations above the laboratory reporting limit (RL) or less than values (<) equal to the RL. In some cases, the maximum detected concentration is below the RL in another sample and that RL is greater than the screening level (discussed further in the next section). In these cases, the RL was replaced by the method detection limit (MDL) or the detected concentration below the RL (J-flagged value). As shown in Attachment A, low concentrations of several PAHs and another semivolatile chemical, bis(2-ethylhexyl)phthalate, were detected in one or more of the discrete soil samples. Except for anthracene detected in one soil sample, the reported concentrations are J-flagged values. TPHd and/or TPHo, but not TPHg, were also detected at low

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<sup>2</sup> Cornerstone Earth Group (Cornerstone). 2015. Revised PEA Work Plan, 150 Jefferson Drive, Menlo Park, California (Site Code 204273), dated November 13, 2015

concentrations in the some of samples analyzed. Aroclor 1260, a mixture of PCBs, was detected (J-flagged value) in a single soil sample at a low concentration. Similarly, low concentrations of two VOCs, acetone and xylenes, were detected in one sample (J-flagged values). Finally, several CAM metals also were detected in soil samples; metals occur naturally in soil and the detected concentrations appear consistent with regional background concentrations for these chemicals (see Attachment A). Several VOCs were detected in one or more of the soil vapor samples. Gasoline-related compounds benzene, toluene, ethylbenzene, and xylenes (BTEX), were detected in all the samples included in this evaluation, with the other VOCs detected much less frequently.

### Screening Human Health Risk Evaluation

The screening human health risk evaluation outlined in the PEA Guidance Manual is intended to be a health-conservative evaluation of potential risks posed by chemicals at a site. For example, this evaluation assumes a site will be used for residential purposes regardless of actual or intended land use. Non-cancer hazard quotients (HQs) and incremental lifetime cancer risks (ILCRs) are estimated using an established human health risk-based residential screening concentration and the maximum detected concentration for each chemical as follows:

$$\text{HQ} = \text{Maximum concentration} / \text{Screening concentration}$$

$$\text{ILCR} = (\text{Maximum concentration} / \text{Screening concentration}) \times 10^{-6}$$

Where:

The screening concentrations are based on a target HQ of one and a target ILCR of one-in-a-million ( $1 \times 10^{-6}$ ).

The chemical-specific HQs and ILCRs are each summed, regardless of the location of the maximum detected concentrations, to estimate the total non-cancer hazard index (HI) and total ILCR, respectively.<sup>3</sup> If the total HI exceeds a value of one, then HIs are recalculated by summing HQs for chemicals affecting the same target organ (e.g., respiratory effects).

The screening concentrations used in this evaluation are U.S. EPA Regional Screening Levels (RSLs) for residential land use,<sup>4</sup> modified as necessary based on DTSC Human Health Risk Assessment (HHRA) Note 3.<sup>5</sup> The soil screening levels assume exposure via incidental soil ingestion, dermal contact with soil, and inhalation of vapors or resuspended particulates in ambient air. The soil vapor screening concentrations are based on RSLs for ambient air multiplied by a soil vapor to indoor air attenuation factor

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<sup>3</sup> Lead is traditionally evaluated separately using the LeadSpread model; however, because the maximum detected concentration is less than the DTSC screening level of 80 mg/kg (which is based on LeadSpread), no further assessment is needed.

<sup>4</sup> U.S. Environmental Protection Agency (EPA). 2015. Regional Screening Level Summary Table (TR-1E-06, HQ=1). June.

<sup>5</sup> Department of Toxic Substances Control (DTSC). 2015. Human Health Risk Assessment (HHRA) Note 3, DTSC-modified Screening Levels (DTSC-SLs). October.

(AF) of 0.001 as recommended by DTSC for new buildings.<sup>6</sup> EPA RSLs are available for the majority of compounds detected in soil samples at the Site. When necessary, surrogate compounds were identified based on similarity in chemical structure or physical characteristics. The RSL for trivalent chromium, rather than hexavalent chromium, was used to evaluate total chromium detected in soil because, as noted above, total chromium concentrations are consistent with regional background. Finally, TPHd and TPHo were detected in several soil samples. EPA has not developed RSLs for these petroleum hydrocarbon mixtures; therefore, in accordance with the PEA Guidance Manual, Environmental Screening Levels (ESLs) developed by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), were used.<sup>7</sup>

### *Soil*

The estimated non-cancer HQs and ILCRs for the individual chemicals detected in soil are shown in Table 1. These HQs and ILCRs include the contribution of what is believed to be background levels of metals, which are typically excluded if site-specific background data are available. In this case, regional data for background metals concentrations in soil are used to provide context for the evaluation, but were not used to eliminate background metals from the analysis prior to the risk calculations.

The majority of the non-cancer HQs are less than the target HQ of one; however, the HQ for two metals, arsenic and thallium, is above one. The total HI for all detected chemicals, including metals, is 30, which is well above the target HI of one. However, as noted above, the concentrations of all of the detected metals appear consistent with regional background. Excluding arsenic, the HI decreases to 4. When the HQs for all of the metals are excluded, the HI is 0.2, which is below the target HI.

Similarly, the estimated ILCRs for individual analytes are equal to or below the target ILCR of  $1 \times 10^{-6}$  except for arsenic. The total ILCR including arsenic is  $9 \times 10^{-5}$ . Excluding arsenic, the total ILCR is  $9 \times 10^{-7}$ , and excluding all metals, the total ILCR is  $8 \times 10^{-7}$ , both of which are below the target ILCR.

### *Soil Vapor*

The estimated non-cancer HQs and ILCRs for the individual chemicals detected in soil vapor are shown in Table 2. The individual non-cancer HQs are all less than the target HQ of one, and the total HI is 0.3, which is also below the target HI of one. The individual ILCRs are less than the target ILCR of  $1 \times 10^{-6}$ , except for benzene, which has an ILCR of  $2 \times 10^{-6}$ . Note that the maximum benzene concentration is from a soil vapor sample collected in November 2014 ( $220 \mu\text{g}/\text{m}^3$ ). The benzene concentration in a soil vapor collected at the same general location and depth in December 2015 was  $13 \mu\text{g}/\text{m}^3$ . The other primary contributors included carbon tetrachloride, hexachlorobutadiene, and methylene chloride; however, the concentrations used in the risk calculations for these analytes were either the maximum RL or MDL, which is greater than the maximum detected value. The total ILCR is  $5 \times 10^{-6}$ .

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<sup>6</sup> Department of Toxic Substances Control (DTSC). 2011. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance). October.

<sup>7</sup> Regional Water Quality Control Board, San Francisco Bay Region (RWQCB). 2013. Environmental Screening Levels (ESLs). December.

*Total Risk Estimates*

The total non-cancer HI assuming exposure to chemicals in both soil (except naturally occurring metals) and soil vapor is 0.5, which is still below the target HI. The corresponding total ILCR, excluding all metals, is  $5 \times 10^{-6}$ .

**Conclusions**

This letter report presents the results of a human health screening risk evaluation conducted in general accordance with the DTSC PEA Guidance Manual. Non-cancer HQs and ILCRs were estimated based on maximum detected concentrations in soil or soil vapor and residential screening concentrations assuming exposure via incidental soil ingestion, dermal contact with soil, inhalation of resuspended particulates or vapors in ambient air, and inhalation of vapors in indoor air as a result of vapor intrusion. With the exception of naturally-occurring metals, which were detected at concentrations consistent with regional background levels, the total non-cancer HI is below and the total ILCR is slightly above generally accepted levels under the conditions evaluated. Given the conservative nature of this assessment, no further action should be required for future development of the property.

Please feel free to contact me at (510) 455-4769 (office), (707) 319-1741 (cell), or e-mail me at [gbrorby@toxstrategies.com](mailto:gbrorby@toxstrategies.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory P. Brorby". The signature is fluid and cursive, with a large initial "G" and "B".

Gregory P. Brorby, DABT  
Senior Managing Scientist

Attachment



# Tables

**Table 1. Estimated Noncancer Hazard Indexes and Excess Lifetime Cancer Risks Associated with Chemicals in Soil for a Residential Scenario - 150 Jefferson Drive, Menlo Park, CA**

Chemical	Maximum Soil Concentration		Non-Cancer Residential Screening Level		Source/Basis	Noncancer Hazard Index	Cancer Residential Screening Level		Excess Cancer Risk
	(mg/kg)		(mg/kg)				(mg/kg)	Source/Basis	
Acenaphthylene	0.067	(1)	3600		EPA RSL for acenaphthalene	1.9E-05	NA	NA	NA
Acetone	0.061	(1)	61000		EPA RSL	1.0E-06	NA	NA	NA
Antimony	2		31		EPA RSL	6.5E-02	NA	NA	NA
Anthracene	0.067	(1)	18000		EPA RSL	3.7E-06	NA	NA	NA
Aroclor 1260	0.05	(1)	NA		NA	NA	0.24	EPA RSL	2.1E-07
Arsenic	5.7		0.25		HERO Note 3	2.3E+01	0.067	HERO Note 3	8.5E-05
Barium	380		15000		EPA RSL	2.5E-02	NA	NA	NA
Benzo(a)anthracene	0.018	(2)	NA		NA	NA	0.16	EPA RSL	1.1E-07
Benzo(a)pyrene	0.0066	(2)	NA		NA	NA	0.016	EPA RSL	4.1E-07
Benzo(b)fluoranthene	0.0095	(2)	NA		NA	NA	0.16	EPA RSL	5.9E-08
Benzo(g,h,i)perylene	0.067	(1)	1800		EPA RSL for pyrene	3.7E-05	NA	NA	NA
Benzo(k)fluoranthene	0.014	(2)	NA		NA	NA	1.6	EPA RSL	8.8E-09
Beryllium	0.84		15		HERO Note 3	5.6E-02	1600	EPA RSL	5.3E-10
Bis(2-ethylhexyl)phthalate	0.043	J	1300		EPA RSL	3.3E-05	39	EPA RSL	1.1E-09
Cadmium	3.6		5.2		HERO Note 3	6.9E-01	2100	EPA RSL	1.7E-09
Chromium	110	(3)	36000		HERO Note 3 for chromium (III)	3.1E-03	NA	NA	NA
Cobalt	21		23		EPA RSL	9.1E-01	420	EPA RSL	5.0E-08
Copper	56		3100		EPA RSL	1.8E-02	NA	NA	NA
Chrysene	0.033	(2)	NA		NA	NA	16	EPA RSL	2.1E-09
Fluoranthene	0.067	(1)	2400		EPA RSL	2.8E-05	NA	NA	NA
Lead	12	(4)	80		HERO Note 3	NA	NA	NA	NA
Mercury	0.093		11		EPA RSL for elemental mercury	8.5E-03	NA	NA	NA
Molybdenum	6.7		390		EPA RSL	1.7E-02	NA	NA	NA
Naphthalene	0.067	(1)	130		EPA RSL	5.2E-04	3.8	EPA RSL	1.8E-08
Nickel	64		490		HERO Note 3 for nickel soluble salts	1.3E-01	15000	EPA RSL	4.3E-09
Phenanthrene	0.067	(1)	1800		EPA RSL for pyrene	3.7E-05	NA	NA	NA
Pyrene	0.067	(1)	1800		EPA RSL	3.7E-05	NA	NA	NA
Silver	0.95	(1)	390		EPA RSL	2.4E-03	NA	NA	NA
Thallium	1.4	J	0.78		EPA RSL for thallium soluble salts	1.8E+00	NA	NA	NA
TPHd	39		240		RWQCB ESL	1.6E-01	NA	NA	NA
TPHo	130		11000		RWQCB ESL	1.2E-02	NA	NA	NA
Vanadium	100		390		EPA RSL	2.6E-01	NA	NA	NA
Xylenes	0.012	(1)	580		EPA RSL	2.1E-05	NA	NA	NA
Zinc	63		23000		EPA RSL	2.7E-03	NA	NA	NA
<b>Total</b>						<b>3E+01</b>	<b>Total</b>		<b>9E-05</b>
<b>Total without arsenic</b>						<b>4E+00</b>	<b>Total without arsenic</b>		<b>9E-07</b>
<b>Total without all metals</b>						<b>2E-01</b>	<b>Total without all metals except</b>		<b>8E-07</b>

Notes:

EPA RSL - U.S. EPA Regional Screening Levels (November 2015)

HERO Note 3 - DTSC Human and Ecological Risk Office Human Health Risk Assessment Note 3 (October 2015)

J - J-flagged value (detected below the reporting limit)

NA - Not applicable

RWQCB ESL - Regional Water Quality Control Board, San Francisco Bay Region, Environmental Screening Level (February 2016)

Concentrations within regional background

(1) Maximum RL, which is greater than the maximum detected value.

(2) Maximum MDL, which is greater than the maximum detected value.

(3) Total chromium; presumed to be trivalent chromium [chromium (III)] based on measured concentrations within regional background

(4) Lead is traditionally evaluated separately using the LeadSpread model; however, because the maximum detected concentration is less than the DTSC screening level of 80 mg/kg (which is based on LeadSpread), no further assessment is needed.

Table 2. Estimated Noncancer Hazard Indexes and Excess Lifetime Cancer Risks Associated with Chemicals in Soil Vapor for a Residential Scenario - 150 Jefferson Drive, Menlo Park, CA

Chemical	Maximum Soil Vapor Concentration		Non-Cancer Residential Screening Level <sup>a</sup>	Source/Basis	Noncancer Hazard Index	Cancer Residential Screening Level <sup>a</sup>	Source/Basis	Excess Cancer Risk
	(µg/m <sup>3</sup> )		(µg/m <sup>3</sup> )			(µg/m <sup>3</sup> )		
Acetone	120		32000000	EPA RSL	3.8E-06	NA	NA	NA
Benzene	220		3100	HERO Note 3	7.1E-02	97	HERO Note 3	2.3E-06
Bromomethane	490	(1)	5200	EPA RSL	9.4E-02	NA	NA	NA
2-Butanone (MEK)	150	(1)	5200000	EPA RSL	2.9E-05	NA	NA	NA
Carbon disulfide	710		730000	EPA RSL	9.7E-04	NA	NA	NA
Carbon tetrachloride	42	(1)	42000	HERO Note 3	1.0E-03	67	HERO Note 3	6.3E-07
Chloroform	33	(1)	100000	EPA RSL	3.3E-04	120	NA	2.8E-07
Chloromethane	260	(1)	94000	EPA RSL	2.8E-03	NA	NA	NA
Cyclohexane	3500		6300000	EPA RSL	5.6E-04	NA	NA	NA
1,3-Dichlorobenzene	34	(1)	830000	EPA RSL for 1,4-dichlorobenzene	4.1E-05	260	EPA RSL for 1,4-dichlorobenzene	1.3E-07
1,1-Dichloroethene	50	(1)	73000	HERO Note 3	6.8E-04	NA	NA	NA
Dichlorodifluoromethane	62	(1)	100000	EPA RSL	6.2E-04	NA	NA	NA
Ethanol	200		21000000	EPA RSL for methanol	9.5E-06	NA	NA	NA
Ethylbenzene	130		1000000	EPA RSL	1.3E-04	1100	EPA RSL	1.2E-07
4-Ethyl toluene	120		100000	EPA RSL for xylene	1.2E-03	NA	NA	NA
Heptane	33		730000	EPA RSL for hexane	4.5E-05	NA	NA	NA
Hexachlorobutadiene	57	(2)	4200	HERO Note 3	1.4E-02	130	EPA RSL	4.4E-07
Hexane	34	J	730000	EPA RSL	4.7E-05	NA	NA	NA
2-Hexanone	210	(1)	31000	EPA RSL	6.8E-03	NA	NA	NA
Isopropanol	130		210000	EPA RSL	6.2E-04	NA	NA	NA
Isopropylbenzene (cumene)	33	(1)	420000	EPA RSL	7.9E-05	NA	NA	NA
Methyl t-butyl ether (MTBE)	45	(1)	3100000	EPA RSL	1.5E-05	11000	EPA RSL	4.1E-09
4-Methyl-2-pentanone (MIBK)	28	(1)	3100000	EPA RSL	9.0E-06	NA	NA	NA
Methylene chloride	440	(1)	420000	HERO Note 3	1.0E-03	1000	HERO Note 3	4.4E-07
Pentane	180		1000000	EPA RSL	1.8E-04	NA	NA	NA
n-Propylbenzene	36		1000000	EPA RSL	3.6E-05	NA	NA	NA
Tetrachloroethene (PCE)	85	(1)	37000	HERO Note 3	2.3E-03	480	HERO Note 3	1.8E-07
Tetrahydrofuran	88		2100000	EPA RSL	4.2E-05	NA	NA	NA
Toluene	210		310000	HERO Note 3	6.8E-04	NA	NA	NA
1,2,4-Trichlorobenzene	170	(1)	2100	EPA RSL	8.1E-02	NA	NA	NA
1,1,1-Trichloroethane	69	(1)	1000000	HERO Note 3	6.9E-05	NA	NA	NA
Trichloroethene	68	(1)	2100	EPA RSL	3.2E-02	480	EPA RSL	1.4E-07
Trichlorofluoroethane	71	(1)	31000000	EPA RSL for 1,1,2-trichloro-1,2,2-trifluoroethane (Freon 113)	2.3E-06	NA	NA	NA
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	96	(1)	31000000	EPA RSL	3.1E-06	NA	NA	NA
1,2,4-Trimethylbenzene	110		7300	EPA RSL	1.5E-02	NA	NA	NA
1,3,5-Trimethylbenzene	36		42000	HERO Note 3	8.6E-04	NA	NA	NA
2,2,4-Trimethylpentane	27	(1)	730000	EPA RSL for hexane	3.7E-05	NA	NA	NA
o-Xylene	160		100000	EPA RSL	1.6E-03	NA	NA	NA
				<b>Total</b>	<b>3E-01</b>		<b>Total</b>	<b>5E-06</b>

Notes:

<sup>a</sup> Soil vapor screening level based on ambient air screening level divided by an attenuation factor of 0.001 for future residential buildings (DTSC, 2011)

EPA RSL - U.S. EPA Regional Screening Levels (November 2015)

HERO Note 3 - DTSC Human and Ecological Risk Office Human Health Risk Assessment Note 3 (October 2015)

J - J-flagged value (detected below the reporting limit)

NA - Not applicable

(1) Maximum RL, which is greater than the maximum detected value.

(2) Maximum MDL, which is greater than the maximum detected value.

**Attachment A**

**Summary Tables of Soil  
and Soil Vapor Analytical  
Results from Cornerstone  
Earth Group (2015)**

**Table F.1 - Analytical Results of Soil Samples**  
(Concentrations in mg/kg)

Boring ID	Sample ID	Date	Depth (feet)	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Silver	Thallium	Vanadium	Zinc	
SB-1	SB-1 (1-1.5)	11/21/2014	1-1½	2	<b>2.4</b>	97	<0.34	<b>0.29</b>	110	21	56	<b>0.82</b>	0.085	<1.7	64	<b>0.26</b>	<b>1.4</b>	100	53	
SB-1	SB-1 (9.5-10)	11/21/2014	9½-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-2	SB-2 (0.5-1)	11/21/2014	½-1	<1.9	<b>3.3</b>	380	<b>0.13</b>	0.53	33	8	25	3.9	0.044	<b>0.75</b>	34	<0.95	<0.55 <sup>4</sup>	49	48	
SB-2	SB-2 (9.5-10)	11/21/2014	9½-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-3	SB-3 (0.5-1)	11/21/2014	½-1	<1.5	3.7	210	0.5	<b>0.35</b>	34	9.1	23	6.1	0.047	<b>0.83</b>	37	<0.76	<0.44 <sup>4</sup>	32	48	
SB-3	SB-3 (9.5-10)	11/21/2014	9½-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-4	SB-4 (5-5.5)	11/20/2014	5-5½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-8	SB-8 (0.5-1)	11/21/2014	½-1	<b>0.42</b>	5.7	210	0.32	<b>0.35</b>	39	13	22	10	0.022	6.7	41	<0.88	<0.51 <sup>4</sup>	40	50	
SB-9	SB-9 (0.5-1)	11/21/2014	½-1	<b>0.59</b>	5.5	220	0.72	3.6	49	11	30	12	0.044	<b>1.1</b>	45	<b>0.16</b>	<0.46 <sup>4</sup>	48	62	
SB-10	SB-10 (0.5-1)	11/21/2014	½-1	<b>0.49</b>	5.5	200	0.84	<b>0.27</b>	49	11	28	6.3	0.028	<b>0.56</b>	46	<0.88	<0.51 <sup>4</sup>	44	63	
SB-11	SB-11 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	7.4	---	---	---	---	---	---	---	
SB-12	SB-12 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	9.9	---	---	---	---	---	---	---	
SB-12	SB-12 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-12 Field Dup.	FD-1 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-13	SB-13 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	8.8	---	---	---	---	---	---	---	
SB-14	SB-14 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-14	SB-14 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-15	SB-15 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB-15	SB-15 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SV-8	SV-8 (1-1.5)	11/20/2014	1-1½	<b>0.56</b>	4.4	95	<b>0.2</b>	<b>0.13</b>	29	9.1	21	6.6	0.093	<1.7	30	<0.85	<0.50 <sup>4</sup>	38	43	
Residential DTSC-SL <sup>1</sup>				Cancer Endpoint	NE	0.067 (11 <sup>9</sup> )	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	
				Non-Cancer Endpoint	NE	0.25	NE	15	5.2	36000	NE	NE	80 <sup>3</sup>	0.89	NE	490	NE	NE	NE	NE
Residential RSL <sup>2</sup>				Carcinogenic Target Risk	NE	0.68	NE	1600	2100	NE	420	NE	NE	NE	15000	NE	NE	NE	NE	
				Non-Cancer Child Hazard	31	35	15000	160	71	120000	23	3100	400	11	390	1500	390	0.78	390	2300
Scott, 1991 <sup>6</sup>				Background Range	---	0.2 to 5.5	---	0.3 to 1.4	0.05 to 1.7	30.5 to 72	---	23.8 to 47.5	6.8 to 16.1	0.05 to 0.90	---	46.4 to 101	---	---	39 to 288	47.7 to 82.8
				Maximum Background Detection	22	20	---	3.2	14	170	---	67	54	1.3	---	145	4.8	3.8	---	120
Bradford, 1996 <sup>7</sup>				Background Range	0.15 to 1.95	0.6 to 11	33 to 1,400	0.25 to 2.7	0.05 to 1.7	23 to 1,579	2.7 to 46.9	9.1 to 96.4	12.4 to 97.1	0.05 to 0.90	0.1 to 9.6	9 to 509	0.1 to 8.3	42 to 0.984	39 to 288	88 to 236
				Upper Quartile	0.73	4.7	625	1.53	0.44	115	18.3	36.6	26.7	0.34	1.4	56	0.53	1.1	134	170
LBNL, 2009 <sup>8</sup>				99 <sup>th</sup> Percentile	<6	28	410	1	5.6	120	25	63	43	0.42	4.8	272	2.9	10	90	140
				95% Upper Tolerance Limit (UTL)	5.5	19.1	323.6	1	2.7	99.6	22.2	69.4	16.1	0.4	7.4	119.8	1.8	7.6	74.3	106.1
Duverge, 2011 <sup>9</sup>				Mean	---	4.6	---	---	---	---	---	---	---	---	---	---	---	---	---	
				99 <sup>th</sup> Percentile	---	11	---	---	---	---	---	---	---	---	---	---	---	---	---	---

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - October 2015  
2 Regional Screening Level (RSL) HQ=1, USEPA Region 9 - November 2015  
3 California Human Health Screening Level (CHHSL), CalEPA - September 2010.  
4 Method Detection Limit (MDL) value  
5 Environmental Screening Level (ESL), RWQCB, San Francisco Bay Region - December 2013  
6 Scott, Christina. December 1991. Background Metal Concentrations in Soils in Northern Santa Clara County.  
7 Bradford, et. al. March 1996. Background Concentrations of Trace and Major Elements in California Soils.  
8 LBNL, 2009. Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory.  
9 Duverge, 2011. Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region.  
< Not detected at or above laboratory reporting limit or MDL  
NE Not Established  
--- Not Analyzed  
**BOLD** Concentration exceeds selected environmental screening criteria  
Note: Highlighted concentration denotes estimated value that is greater than the method detection limit but less than the laboratory reporting limit.

**Table F.1 - Analytical Results of Soil Samples**  
(Concentrations in mg/kg)

Boring ID	Sample ID	Date	Depth (feet)	Xylenes	Acetone	TPHD	TPHO	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(g,h,i)perylene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[k]fluoranthene	Chrysene	Fluoranthene	Naphthalene	Phenanthrene	Pyrene	Bis(2-ethylhexyl)phthalate	Aroclor 1260
SB-1	SB-1 (1-1.5)	11/21/2014	1-1½	0.0039	<0.052	39	130	<0.067	<0.067	<0.018 <sup>4</sup>	<0.067	<0.0066	<0.0095	<0.0041	<0.033 <sup>4</sup>	<0.067	<0.067	<0.067	<0.067	0.043	<0.049
SB-1	SB-1 (9.5-10)	11/21/2014	9½-10	<0.0082	<0.041	0.77	<49	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB-2	SB-2 (0.5-1)	11/21/2014	½-1	<0.012	<0.061	24	77	<0.066	<0.066	<0.018 <sup>4</sup>	<0.066	<0.0066	<0.0094	<0.014 <sup>4</sup>	<0.033 <sup>4</sup>	<0.066	<0.066	<0.066	<0.066	0.039	<0.049
SB-2	SB-2 (9.5-10)	11/21/2014	9½-10	<0.0085	<0.043	<0.98	<49	---	---	---	---	---	---	---	---	---	<0.0085	---	---	---	---
SB-3	SB-3 (0.5-1)	11/21/2014	½-1	<0.01	0.026	7.7	27	<0.067	<0.067	<0.018 <sup>4</sup>	<0.067	<0.0066	<0.0095	<0.014 <sup>4</sup>	<0.033 <sup>4</sup>	<0.067	<0.067	<0.067	<0.067	0.022	<0.05
SB-3	SB-3 (9.5-10)	11/21/2014	9½-10	<0.0088	<0.044	<1.0	<50	---	---	---	---	---	---	---	---	---	<0.0088	---	---	---	---
SB-4	SB-4 (5-5.5)	11/20/2014	5-5½	<0.0079	<0.039	0.96	<50	---	---	---	---	---	---	---	---	---	<0.0079	---	---	---	---
SB-8	SB-8 (0.5-1)	11/21/2014	½-1	---	---	1.3	<50	<0.0049	<0.0049	<0.0049	<0.0049	0.0014	0.0027	<0.0010	0.0015	0.0029	<0.0049	0.0018	0.0026	---	<0.049
SB-9	SB-9 (0.5-1)	11/21/2014	½-1	---	---	1.2	<49	0.002	0.005	0.0019	0.0022	0.0018	0.0035	0.0011	0.0019	0.0034	0.003	0.0023	0.0035	---	<0.049
SB-10	SB-10 (0.5-1)	11/21/2014	½-1	---	---	<0.99	<49	<0.0049	<0.0049	<0.0049	<0.0049	<0.0049	<0.0011	<0.0010	<0.0007	0.001	<0.0049	<0.0049	0.0009	---	<0.05
SB-11	SB-11 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB-12	SB-12 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.049
SB-12	SB-12 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.048
SB-12 Field Dup.	FD-1 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.049
SB-13	SB-13 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB-14	SB-14 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0061
SB-14	SB-14 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.049
SB-15	SB-15 (0-0.5')	12/9/2015	0-½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.049
SB-15	SB-15 (2-2.5')	12/9/2015	2-2½	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	<0.048
SV-8	SV-8 (1-1.5)	11/20/2014	1-1½	<0.0098	<0.049	<1.0	<50	<0.066	<0.066	<0.018 <sup>4</sup>	<0.066	<0.0066	<0.0094	<0.014 <sup>4</sup>	<0.033 <sup>4</sup>	<0.066	<0.066	<0.066	<0.066	<0.33	<0.048
Residential DTSC-SL <sup>1</sup>	Cancer Endpoint	NE	NE	100 <sup>5</sup>	100 <sup>5</sup>	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
	Non-Cancer Endpoint	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Residential RSL <sup>2</sup>	Carcinogenic Target Risk	NE	NE	NE	NE	NE	NE	0.16	NE	0.016	0.16	1.6	16	NE	3.8	NE	NE	39	0.24		
	Non-Cancer Child Hazard	580	6100	NE	NE	NE	18000	NE	NE	NE	NE	NE	NE	NE	2400	130	NE	1800	1300	NE	

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - October 2015  
2 Regional Screening Level (RSL) HQ=1, USEPA Region 9 - November 2015  
3 California Human Health Screening Level (CHHSL), CalEPA - September 2010.  
4 Method Detection Limit (MDL) value  
< Not detected at or above laboratory reporting limit or MDL  
NE Not Established  
--- Not Analyzed  
**BOLD** Concentration exceeds selected environmental screening criteria  
Note: Highlighted concentration denotes estimated value that is greater than the method detection limit but less than the laboratory reporting limit.

**Table F.2 - Analytical Results of Soil Vapor Samples**  
(Concentrations in µg/m<sup>3</sup>)

Sample ID	Date	Notes	Sample Location	Benzene	Toluene	Ethylbenzene	MTBE	1,1 - DCE	1,1,1-TCA	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	2,2,4-Trimethylpentane	2-Butanone (MEK)	2-Hexanone	4-Ethyl Toluene	4-Methyl-2-Pentanone (MIBK)	Acetone	Bromomethane	Carbon Disulfide	Carbon Tetrachloride	Chloroform	
SV-1D5	11/24/2014	- 1 from street grade	SV-1D5	5	3.3	1.8	<4.2	<4.6	<6.3	<34	3.6	1.1	<7.0	<5.4	12	<19	3.8	1	53	<45	11	<7.3	<5.7	
SV-2A	12/21/2015	- 5 from street grade	SV-2A	9.9	7.3	25	<4.2	<4.6	<6.3	<34	18	7.6	<7.0	1.9	2.8	<19	20	<4.8	13	4.1	3	<7.3	<5.7	
SV-2D10	11/25/2014	- 6 from street grade	SV-2D10	78	130	38	<18	<20	<27	<150	35	11	3.8	9.1	<59	<82	35	<20	50	<190	350	<31	8.2	
SV-3A	12/21/2015	- 5 from street grade	SV-3A	13	7.8	12	<4.1	<4.5	6.3	<34	14	4.5	<6.9	0.91	<14	<19	13	<4.7	7.1	5.1	3.2	<7.2	<5.6	
SV-3A(DUP)	12/21/2015	SV-3A Field Duplicate Sample	SV-3A(DUP)	14	6.9	8.7	<4.1	<4.5	5.6	<34	11	3.4	<6.8	<5.3	2.6	<18	10	<4.6	11	3.7	3.1	<7.1	<5.5	
SV-3D10	11/24/2014	- 6 from street grade	SV-3D10	<b>220</b>	210	59	<45	<50	<69	21	75	22	12	13	<150	<210	77	13	79	<490	710	<18 <sup>4</sup>	32	
SV-4D5	11/24/2014	- 1 from street grade	SV-4D5	10	15	6.4	<4.1	1.7	16	<34	12	4.4	1.1	<5.4	12	<19	12	2.4	52	<45	26	<7.2	<5.6	
SV-5D5	11/25/2014	- 1 from street grade	SV-5D5	5.6	12	8.7	<4.1	<4.5	2.4	8.1	16	4.4	1.4	<5.3	15	<18	15	2.9	54	<44	19	<7.1	3.9	
SV-6D5	11/24/2014	- 1 from street grade	SV-6D5	12	17	9	<b>0.87</b>	<4.6	46	<34	18	5.6	1.5	<5.4	45	3.2	18	4.2	120	<45	58	<7.3	<5.6	
SV-7A	12/21/2015	- 5 from street grade	SV-7A	23	24	52	<4.1	4.8	45	<34	22	11	<6.8	3.8	14	<19	33	<4.7	54	4.2	3.4	<7.2	<5.6	
SV-7D10	11/25/2014	- 6 from street grade	SV-7D10	<b>160</b>	38	6.7	<24	<b>11</b>	<b>18</b>	<b>34</b>	<b>5.5</b>	<33	<b>7.4</b>	<b>7</b>	<80	<110	<33	<28	<b>36</b>	<260	340	<42	<33	
SV-8D5	11/25/2014	- 1 from street grade	SV-8D5	80	31	5.8	<20	<23	<31	<170	<28	<28	<34	<27	<67	<93	<28	<23	<b>36</b>	<220	230	<36	<28	
SV-9	12/18/2015	- 5 from street grade	SV-9	4.2	33	130	<4.0	<4.4	<6.0	<33	69	25	<6.7	21	3.8	<18	80	<4.5	15	5.5	3.9	<7.0	<5.4	
SV-10	12/18/2015	- 5 from street grade	SV-10	<b>1</b>	32	110	<3.8	<4.2	<5.7	<31	110	36	<6.3	12	<b>6</b>	<17	120	<4.3	26	<b>3.8</b>	21	<6.6	<b>2.2</b>	
Residential DTSC-SL <sup>1</sup>	Ambient Air Cancer Endpoint			0.097	NE	NE	NE	NE	NE	0.39	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.067	NE	
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			97	NE	NE	NE	NE	NE	390	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	67	NE
	Ambient Air Non-Cancer Endpoint			3.1	310	NE	NE	73	1,000	NE	NE	42	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	42	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			3100	310000	NE	NE	73000	1000000	NE	NE	42000	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	42000	NE
Residential RSL <sup>2</sup>	Indoor Air Carcinogenic Target Risk			0.36	NE	1.1	11	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	0.47	0.12	
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			360	NE	1100	11000	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	470	120
	Indoor Air Non-Cancer Hazard			31	5200	1000	3100	210	5200	2.1	7.3	NE	NE	NE	5200	31	NE	3100	3,200	5.2	730	100	100	
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			31000	520000	100000	310000	210000	520000	2100	7300	NE	NE	NE	520000	31000	NE	310000	320000	5200	730000	100000	100000	

1 DTSC - Recommended Screening Level (SL), HERO Note 3 - October 2015  
2 Regional Screening Level (RSL) HQ=1, USEPA Region 9 - November 2015.  
3 Calculated "contaminant source" screening level using an Attenuation Factor (AF) = 0.001 for future residential building type (DTSC, 2011)  
4 Method Detection Limit (MDL) value  
< Not detected at or above laboratory reporting limit  
NE Not Established  
--- Not Analyzed  
**BOLD** Concentration exceeds selected environmental screening criteria  
Note: Highlighted concentration denotes estimated value that is greater than the method detection limit but less than the laboratory reporting limit.

**Table F.2 - Analytical Results of Soil Vapor Samples**  
(Concentrations in µg/m³)

Sample ID	Date	Notes	Sample Location	Chloromethane	Cyclohexane	Dichlorodifluoromethane	Freon 113	Heptane	Hexachlorobutadiene	Hexane	Isopropanol	Isopropylbenzene	Methylene Chloride	n-Propylbenzene	o-xylene	PCE	TCE	Tetrahydrofuran	Trichlorofluoromethane	Ethanol	Pentane	Carbon Dioxide (%)	Oxygen (%)	
SV-1D5	11/24/2014	- 1 from street grade	SV-1D5	<24	4.4	2.7	<8.9	<4.8	<49	<4.1	3.8	<5.7	<40	0.7	2.9	<7.9	0.53	26	1.5	13	---	12	8.1	
SV-2A	12/21/2015	- 5 from street grade	SV-2A	<24	<4.0	2.5	<8.9	2.9	<49	<4.1	18	5.2	6.1	6	40	4.2	<6.2	<3.4	2.3	5.4	<14	6.4	14	
SV-2D10	11/25/2014	- 6 from street grade	SV-2D10	<100	2,500	<25	<38	25	<23 <sup>4</sup>	28	54	<24	<170	7.1	47	<34	1.8	29	<28	200	---	0.29	17	
SV-3A	12/21/2015	- 5 from street grade	SV-3A	<24	<3.9	2.4	<8.8	<4.7	<49	<4.0	12	2.5	2.3	3.6	18	29	<6.2	<3.4	1.3	<8.6	18	15	6.8	
SV-3A(DUP)	12/21/2015	SV-3A Field Duplicate Sample	SV-3A(DUP)	<23	<3.9	2.6	<8.7	<4.6	<48	<4.0	7.2	2.4	3	2.9	15	27	<6.1	<3.3	1.3	4.8	58	15	6.9	
SV-3D10	11/24/2014	- 6 from street grade	SV-3D10	<260	3,500	<62	<96	25	<57 <sup>4</sup>	34	130	6.4	<440	16	77	<85	<68	88	<71	<95	---	3.8	12	
SV-4D5	11/24/2014	- 1 from street grade	SV-4D5	<24	42	1.4	8.2	<4.7	<49	<4.0	5.5	0.66	<40	2.3	9.9	<7.8	0.51	39	1.8	3.9	---	12	4.2	
SV-5D5	11/25/2014	- 1 from street grade	SV-5D5	<23	33	2	<8.7	<4.6	6.6	<4.0	3.1	0.52	<39	2.7	11	<7.7	<6.1	43	1.5	5.9	---	8.6	12	
SV-6D5	11/24/2014	- 1 from street grade	SV-6D5	<24	14	2.3	37	<4.7	<49	<4.1	8.3	0.82	<40	3.1	14	<7.8	<6.2	74	4.3	6.5	---	9.2	9	
SV-7A	12/21/2015	- 5 from street grade	SV-7A	7.2	2.3	2.4	50	5.8	<49	<4.0	31	9.9	<40	10	71	9.8	5.5	<3.4	4	17	15	6.2	13	
SV-7D10	11/25/2014	- 6 from street grade	SV-7D10	<140	27	<33	<52	16	54	31	50	<33	<230	<33	7.4	<46	<36	51	<38	<51	---	0.68	16	
SV-8D5	11/25/2014	- 1 from street grade	SV-8D5	<120	20	<28	<44	<23	<26 <sup>4</sup>	18	47	<28	<200	<28	3.3	<39	<31	35	<32	32	---	0.97	16	
SV-9	12/18/2015	- 5 from street grade	SV-9	<23	7	2.7	<8.5	33	<47	7.4	4.1	21	<38	25	150	9.3	<6.0	1.2	1.2	5.3	<13	3.4	16	
SV-10	12/18/2015	- 5 from street grade	SV-10	<22	5.2	5	<8.0	18	<45	4	130	26	2.5	36	160	5.1	<5.6	1.6	2.1	29	180	5.6	16	
Residential DTSC-SL <sup>1</sup>	Ambient Air Cancer Endpoint			NE	NE	NE	NE	NE	NE	NE	NE	NE	1	NE	NE	0.48	NE	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			NE	NE	NE	NE	NE	NE	NE	NE	NE	1000	NE	NE	480	NE	NE	NE	NE	NE	NE	NE	NE
	Ambient Air Non-Cancer Endpoint			NE	NE	NE	NE	NE	4.2	NE	NE	NE	NE	420	NE	NE	37	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			NE	NE	NE	NE	NE	4200	NE	NE	NE	420000	NE	NE	37000	NE	NE	NE	NE	NE	NE	NE	NE
Residential RSL <sup>2</sup>	Indoor Air Carcinogenic Target Risk			NE	NE	NE	NE	NE	0.13	NE	NE	NE	100	NE	NE	11	0.48	NE	NE	NE	NE	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			NE	NE	NE	NE	NE	130	NE	NE	NE	100000	NE	NE	11000	480	NE	NE	NE	NE	NE	NE	NE
	Indoor Air Non-Cancer Hazard			94	6300	100	31000	NE	NE	730	210	420	630	1000	100	42	2.1	2100	NE	NE	1000	NE	NE	NE
	AF=0.001 <sup>3</sup> (Indoor Air / Subsurface Soil Gas)			94000	6300000	100000	3.1E+07	NE	NE	730000	210000	420000	630000	1000000	100000	42000	2100	2100000	NE	NE	1000000	NE	NE	NE

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4 Method Detection Limit (MDL) value  
< Not detected at or above laboratory reporting limit  
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**BOLD** Concentration exceeds selected environmental screening criteria  
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