



**Phase II Environmental Site  
Assessment**

**225 North Las Posas Road  
San Marcos, California 92069**

March 23, 2021

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## PHASE II ENVIRONMENTAL SITE ASSESSMENT

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## Executive Summary

This report documents the methodology and results of a Phase II Environmental Site Assessment (ESA) completed by Stantec Consulting Services Inc. (Stantec) for 2.5 Acres of Vacant Land addressed as 225 North Las Posas Road, San Marcos, California (the "Property"). This scope of work was completed in accordance with the Master Services Agreement with the client (the "MSA"), based on the scope of work set forth in the *Proposal to Conduct Phase II Environmental Site Investigation* dated February 11, 2021. All work shall be completed in accordance with the limitations stated in the Consultant Agreement between City Ventures and Stantec.

Stantec completed a Phase I ESA for the Property in March 2021. That report identified the following recognized environmental conditions (RECs) in connection with the Property:

- **Underground Storage Tank (USTs).** A 550-gallon diesel UST was reportedly installed at the Property in the northwestern corner of the Property in 1972. No leaks or spills have been reported for the Property; however, the presence of UST onsite constitutes a REC for the Property. Stantec recommended performing a ground penetrating radar (GPR) survey to verify if the UST remains on the Property. In addition, Stantec recommended that a soil and soil vapor assessment be completed at the UST location to evaluate the subsurface conditions beneath the Property.
- **Railroad Spurs.** Railroad spurs are located adjacent to the north of the Property. Herbicides are commonly applied to railroad alignments, and heavy metals associated with herbicidal application are commonly found in these areas. Due to the presence of the spur, Stantec recommended performing a Phase II subsurface investigation to sample and analyze shallow soil samples along this Property boundary nearest the rail line for the presence of heavy-metals. The need for sampling for these compounds given the intended use is for protection of construction workers during development of the paths when exposed to dust. The second issue is the potential for off-Site removal of soil, which will require profiling by chemical analysis to determine the proper location for disposal.

Based on the results of the Phase I ESA report, Stantec created a scope of work which would address the identified RECs.

Stantec provided the services of a field geologist to supervise and direct all on-site activities. Soil sampling and installation of soil vapor probes was performed between February 22 and March 4, 2021. All field work was performed under the supervision of a State of California registered professional geologist, and included the following activities:

- On February 22, 2021, Stantec oversaw a ground penetrating radar (GPR) survey performed by GPRS, a utility subcontractor, to locate any suspected UST or UST-related piping or other anomalies remaining on the Property. The scope of work consisted of scanning a 15' x 30' area of the northwestern portion of the Property. An anomaly which may be a potential UST was



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detected in the northwest portion of the Property at approximately 2 to 4-feet in depth. The location is shown on Figure 2 and the geophysical survey results attached in Appendix A.

- On March 1, 2021, Stantec advanced four soil borings; however, two locations in the western perimeter hit refusal at approximately 2-feet below ground surface (bgs) and were abandoned. Soil samples were collected from two locations (S-1 and S-2) along the northern perimeter at 1, 2, and 3-feet bgs to evaluate the adjacent railroad tracks and submitted for analysis of organochlorine pesticides, lead, and arsenic. The deeper soil samples (2 and 3-feet bgs) were placed on hold pending analysis of the shallow soil samples.

Two soil borings (SV-1 and SV-2) were advanced in the vicinity of the anomaly (i.e. potential UST) on the northwestern corner of the Property. Due to difficult drilling conditions (i.e. cobbles), the soil vapor probe for SV-1 was set at 3.5-feet bgs and the soil vapor probe SV-2 was set at 4-feet bgs.

The results of soil samples collected along the northern Property line near the rail line were "non-detect" for arsenic and organochlorine pesticides (OCPs) with the exception of a minor detection of Heptachlor at 0.0014 mg/kg, well below its screening levels for residential uses. Lead was detected at 4.8 and 7.2 milligrams per kilogram (mg/kg) in S-1 and S-2, respectively. Because all detected metals concentrations are within typical California naturally-occurring background concentration ranges, and do not exceed DTSC HERO Note 3 or EPA RSLs for residential use, the adjacent railroad tracks do not represent a REC to the Property and no further assessment appears warranted.

Total Petroleum Hydrocarbons as vapor (TPHv) and various VOCs were detected at low concentrations. These concentrations were all below the most conservative screening level between the USEPA Region 9 RSL and DTSC HERO Note 3 with an attenuation factor of 0.03, with the exception of benzene. Benzene was detected at 5.7 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in SV-2 which is above the regulatory screening level with an attenuation factor of 0.03 ( $3.2 \mu\text{g}/\text{m}^3$ ), but below the regulatory screening level with an attenuation factor of 0.001 ( $97 \mu\text{g}/\text{m}^3$ ). Given the concentration was only slightly above the regulatory screening level with an attenuation factor of 0.03 (which is not the official screening level and which has not been adopted by any state agency), and well below the risk-based screening level of  $97 \mu\text{g}/\text{m}^3$ , this single detection is considered a *de minimis* condition and no further assessment appears warranted for soil vapor.

The GPR Survey identified an anomaly which may be the 550-gallon UST in the northwest portion of the Property at approximately 2 to 4-feet in depth. Stantec recommends removing and disposing of the UST in accordance with all applicable laws.

The preceding summary is intended for informational purposes only and reading the full body of this report is recommended.



## PHASE II ENVIRONMENTAL SITE ASSESSMENT

### Introduction

## 1.0 INTRODUCTION

This report documents the methodology and results of a Phase II Environmental Site Assessment (ESA) completed by Stantec Consulting Services Inc. (Stantec) for the property located at 225 North Las Posas Road, City of San Marcos, County of San Diego, California (the "Property"). This scope of work was completed in accordance with the *Proposal to Conduct Phase II Environmental Site Investigation*, dated and approved by the Client on February 11, 2021.

### 1.1 SITE DESCRIPTION AND OPERATIONS

The Property consists of approximately 2.5 acres of vacant land located at 225 North Las Posas Road in the city of San Marcos, California. Surrounding properties are a mix of residential, commercial/industrial, and vacant properties. A Property location map is illustrated on Figure 1. A Property map illustrating the main features of the Property is provided as Figure 2. Photographs taken during the site reconnaissance visit are provided in Appendix A.

The Assessor Parcel Number (APN) associated with the Property is 19-162-57-00.

### 1.2 SITE GEOLOGY AND HYDROGEOLOGY

The Property is located within the San Marcos Valley Groundwater Basin. This groundwater basin underlies the San Marcos Valley in northwestern San Diego County. The basin is bound by semi-permeable marine and non-marine deposits and impermeable metamorphic and granitic rock. San Marcos Creek drains to the southwest towards Lake San Marcos. An average annual rainfall is between 11 and 15 inches. Water bearing materials include residuum, which consists of weathered bedrock, and Quaternary alluvium, which consists of sand, clay, gravel, and silt that has a maximum thickness of 175 feet. Wells located within the basin can produce up to 60 gallons of water per minute from the alluvium (DWR, 2003).

Water recharge within the basin mainly occurs through rainfall on the valley floor and ephemeral stream flow. Groundwater typically flows to the southwest and follows San Marcos Creek. Water levels have been measured within 10 feet of the ground surface (DWR, 2003).

According to information obtained from the State Water Resources Control Board (SWRCB) online database (Geotracker) for a site located approximately 1,485 feet to the southeast, groundwater was encountered between approximately 3.21 and 12.48 feet bgs with a groundwater flow direction most frequently to the south southwest (Hargis & Associates, Inc., 2013).



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### Background Information

## 2.0 BACKGROUND INFORMATION

Stantec completed a Phase I ESA for the Property in March 2021. That report identified the following recognized environmental conditions (RECs) in connection with the Property:

- **Underground Storage Tank (USTs).** A 550-gallon diesel UST was reportedly installed at the Property in the northwestern corner of the Property in 1972. No leaks or spills have been reported for the Property; however, the presence of UST onsite constitutes a REC for the Property. Stantec recommended performing a ground penetrating radar (GPR) survey to verify if the UST remains on the Property. In addition, Stantec recommended that a soil and soil vapor assessment be completed at the UST location to evaluate the subsurface conditions beneath the Property.
- **Railroad Spurs.** Railroad spurs are located adjacent to the north of the Property. Herbicides are commonly applied to railroad alignments, and heavy metals associated with herbicidal application are commonly found in these areas. Due to the presence of the spur, Stantec recommended performing a Phase II subsurface investigation to sample and analyze shallow soil samples along this Property boundary nearest the rail line for the presence of heavy-metals. The need for sampling for these compounds given the intended use is for protection of construction workers during development of the paths when exposed to dust. The second issue is the potential for off-Site removal of soil, which will require profiling by chemical analysis to determine the proper location for disposal.

Based on the results of the Phase I ESA report, Stantec created a scope of work which would address the identified RECs. The scope of work is discussed in Section 3.2.



## PHASE II ENVIRONMENTAL SITE ASSESSMENT

### Field Investigation Program

## 3.0 FIELD INVESTIGATION PROGRAM

### 3.1 PRE-ASSESSMENT ACTIVITIES

The scope of work consisted of the following general elements:

Prior to the commencement of fieldwork activities, Stantec made the following preparations:

- As required by law, Stantec visited the Site to mark the proposed boring locations and acquire a current Underground Service Alert (USA) ticket number prior to commencement of Property drilling activities.
- In accordance with federal OSHA regulations (29 CFR, Section 1910.120), Stantec developed a site-specific Health and Safety Plan (HASP) for the subject property. All Stantec personnel and subcontractors associated with the project were required to be familiar with, and comply with, all provisions of the HASP.

### 3.2 FIELD INVESTIGATION

Stantec provided the services of a field geologist to supervise and direct all on-site activities. Soil sampling and installation of soil vapor probes was performed between February 22 and March 4, 2021. All field work was performed under the supervision of a State of California registered professional geologist, and included the following activities:

#### **Ground Penetrating Radar Survey**

On February 22, 2021, Stantec oversaw a ground penetrating radar (GPR) survey performed by GPRS, a utility subcontractor, to locate any suspected UST or UST-related piping or other anomalies remaining on the Property. The scope of work consisted of scanning a 15'x30' area of the northwestern portion of the Property. An anomaly which maybe a potential UST was detected in the north-west portion of the Property at approximately 2 to 4-feet in depth. A copy of the GPR report is provided in Appendix A.

#### **Railroad Spurs**

On March 1, 2021, Stantec advanced four soil borings; however, two locations in the western perimeter hit refusal at approximately 2-feet below ground surface (bgs) and were abandoned. Soil samples were collected from two locations (S-1 and S-2) along the northern perimeter at 1, 2, and 3-feet bgs to evaluate the adjacent railroad tracks and submitted for analysis of organochlorine pesticides, lead, and arsenic. The deeper soil samples (2 and 3-feet bgs) were place on hold pending analysis of the shallow soil samples.





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### Field Investigation Program

#### **Former 550-Gallon UST**

On March 1, 2021, two soil borings (SV-1 and SV-2) were advanced in the vicinity of the anomaly (i.e. potential UST) on the northwestern corner of the Property. Due to difficult drilling conditions (i.e. cobbles), the soil vapor probe for SV-1 was set at 3.5-feet bgs and the soil vapor probe SV-2 was set at 4-feet bgs.

### **3.2.1 Soil Boring and Sampling Procedures**

#### **Hand Auger Borings/Sampling**

All four (4) borings were advanced using a 4" hand auger to the respective desired depths. Samples S-1 and S-2 shallow soil samples were collected at 0.5- and 3-feet bgs. Upon extraction of the auger bucket at the prescribed sampling depths, the soils contained therein were packed into laboratory-provided clean 8-ounce glass jars and labeled with the appropriate identification information (boring number, sample depth, sample collection date, and sample collection time). The samples were logged on a chain-of-custody form and placed in an ice-filled cooler for transport to the laboratory.

No soil samples were retrieved from the SV-1 and SV-2 boring locations. Stantec attempted two locations in the western perimeter of the Property; however, due to difficult drilling conditions (i.e. cobbles) the borings were abandoned at 2 feet bgs. SV-1 was advanced to approximately 3.5-feet below ground surface and boring SV-2 was advanced to approximately 4-feet below ground surface. Both borings hit refusal at their before reaching a desired depth of 5-ft bgs and a soil vapor sampling point was installed at their maximum depths.

#### **Field Equipment Cleaning Procedures**

To maintain quality control during drilling operations, all hand auger buckets and reusable soil sampling equipment was decontaminated using a triple bucket rinse. Prior to drilling at a given location or sampling interval, all equipment coming in direct contact with soil samples was scrubbed with an Alconox scrub solution followed by a clean tap water rinse and then a final distilled water rinse. The disposable acetate soil sample liners were used for one sampling interval and then discarded.

#### **Investigation-Derived Waste**

All soil cuttings generated during the Phase II ESA investigation were placed in single California Department of Transportation-approved 55-gallon steel drum, which are located on the Property. Disposal of the drum is pending.

### **3.2.2 Soil Vapor Probe Installation and Sampling Procedures**

#### **Soil Vapor Probe Installation**

As indicated in Section 3.2.1, the soil vapor sample borings were advanced using a 4" hand auger bucket. Following soil sampling, SV-1 and SV-2 were completed with soil vapor sampling points at the prescribed depth intervals. Each sample probe was constructed with an airstone sampling prob set at the 3.5- or 4-foot bgs sampling interval. Each of the sampling screens were connected to the ground surface via



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### Field Investigation Program

dedicated ¼-inch outer diameter Nylaflow® nylon tubing. The annulus around the exposed probe tip was backfilled with washed #3 silica sand filter pack, totaling approximately 6 inches in height. Above the filter pack, a 3-inch transition zone was constructed using dry bentonite granules. From that point to ground surface, hydrated bentonite granules were utilized to seal the annular space. At the surface, the exposed nylon tubing was capped with tight fitting plastic end-caps and labeled to indicate sampling depth. After placement of the soil vapor sample probes on March 1, 2021 subsurface conditions were allowed to equilibrate for a period of at least 48-hours prior to leak testing and sample collection on March 4, 2021.

### **Soil Vapor Probe Sampling**

Subsurface soil vapor sampling was performed in accordance with the July 2015 Department of Toxic Substances Control (DTSC) "Advisory - Active Soil Gas Investigations" (DTSC Advisory).

Prior to sample collection, a shut-in test was performed on the above-ground sampling train. The sample tubing was evacuated of air to a measured vacuum of approximately 100 inches of water column and the vacuum was sealed in with closed valves on opposite ends of the sampling train. A vacuum gauge connected to the line was observed for at least one minute for any signs of a loss in vacuum. If vacuum loss was identified during the shut-in test, the sampling technician inspected and adjusted the sampling train fittings until the shut-in test showed no vacuum loss.

As specified in the DTSC Advisory, a default purge of 3 volumes of the sampling system was performed prior to sample collection. This process included purging the sampling system (tubing, sample screen, and void space of sand pack and dry bentonite) using a flow rate of 200 milliliters per minute (ml/min) or less while maintaining a low vacuum of 100 inches of water or less. This purging was performed using a SKC sample pump calibrated to 200 ml/min.

Once purging activities were completed, the fitting were adjusted to connect the sampling tubing to the sample collection container. During soil vapor sampling, a leak check was performed using 1,1-difluoroethane (DFA) as a tracer compound. The tracer compound was applied to a clean rag and situated around the monitoring point to evaluate seal integrity. Seal integrity was confirmed by the absence of the tracer compound in the collected samples. All soil vapor samples were collected into 400ml Summa® canisters fitted with 200 ml/min flow controllers. The samples were logged onto a chain-of-custody form with all sample details including collection date and time. All sampling equipment and the chain-of-custody form were shipped to a fixed laboratory for analyses.



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### Laboratory Testing Program

## 4.0 LABORATORY TESTING PROGRAM

A total of six (6) soil samples were collected during this investigation and delivered under chain-of-custody to Advanced Technology Laboratories (ATL) based in Signal Hill, California for possible chemical analyses. A total of two (2) soil vapor samples and one replicate were collected during this investigation and delivered under chain-of-custody to H&P Mobile Geochemistry (based out of Carlsbad, California) for Total Petroleum Hydrocarbons as Vapor (TPHv) and VOCs by EPA Method TO-15. ATL and H&P are certified to perform hazardous waste testing by the State of California Department of Health Services, Environmental Laboratory Accreditation Program.

Of the 6 soil samples collected, two (2) soil samples were analyzed for organochlorine pesticides (OCPs) by EPA Method 8081A and arsenic/lead by EPA Method 6010B. All soil samples collected during this investigation were kept on-ice during transit to the laboratory.



## PHASE II ENVIRONMENTAL SITE ASSESSMENT

### Investigation Results

## 5.0 INVESTIGATION RESULTS

### 5.1 FIELD OBSERVATIONS

On March 1, 2021, Stantec personnel oversaw the advancement of six (6) soil borings, and the installation of two (2) soil vapor borings within two of these borings at the Property. Soils encountered during this investigation consisted primarily of poorly graded sand and silty sand with large cobbles to a maximum explored depth of four feet bgs. No staining or odorous soils were observed in any borings during this investigation. PID measurements were recorded at 0.0 parts per million by volume (ppmV) within all soils collected. No groundwater was not encountered during this investigation.

### 5.2 ANALYTICAL RESULTS

Laboratory analytical test results from this assessment are summarized in the attached Table 1 and Table 2, and presented on the laboratory data sheets attached as Appendix B. The laboratory test results from this investigation are discussed below. Soil analytical results were compared to the more conservative value between the DTSC Human and Ecological Risk Office (HERO) Note 3 screening level for residential use (DTSC, 2020) and the EPA Regional Screening Levels (RSL), Region 9 for residential sites (EPA, 2020). Soil vapor analytical results were compared to the more conservative value between the DTSC HERO Note 3 screening levels using an attenuation factor of 0.001 and using an attenuation factor of 0.03 (the latter of which is unpublished and unofficial).

#### 5.2.1 Soil Analytical Results

Arsenic was not detected above the laboratory reporting limits (i.e. non-detect). Lead was detected at 4.8 and 7.2 milligrams per kilogram (mg/kg) in S-1 and S-2, respectively. All detected metals concentrations are within typical California background concentration ranges, and do not exceed DTSC HERO Note 3 or EPA RSLs for residential use. There were no detections of organochlorine pesticides (OCPs) above the laboratory reporting limits (i.e. non-detect) with the exception of a minor detection of Heptachlor at 0.0014 mg/kg, which does not represent an environmental concern.

#### 5.2.2 Soil Vapor Analytical Results

A total of two (2) soil vapor samples and one replicate sample were collected and analyzed during this investigation to characterize possible vapor impacts at the Property.

Total Petroleum Hydrocarbons as vapor (TPHv) and various VOCs were detected at low concentrations including benzene, toluene, p/m-xylenes, trichloroethene (TCE), 1,2,4-Trimethylbenzene, methylene chloride, and carbon disulfide. These concentrations were all below the applicable screening level and below the most conservative screening level between the USEPA Region 9 RSL and DTSC HERO Note 3 with an attenuation factor of 0.03, with the exception of benzene. Benzene was detected at 5.7 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in SV-2 which is above the regulatory screening level with an attenuation factor of



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### Investigation Results

0.03 (3.2  $\mu\text{g}/\text{m}^3$ ), which is not official, but below the published and applicable regulatory screening level that utilizes an attenuation factor of 0.001 (97  $\mu\text{g}/\text{m}^3$ ).



## PHASE II ENVIRONMENTAL SITE ASSESSMENT

### Conclusions and Recommendations

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

The results of soil samples collected along the northern Property line near the rail line were "non-detect" for arsenic and organochlorine pesticides (OCPs) with the exception of a minor detection of Heptachlor at 0.0014 mg/kg, well below its screening levels for residential uses. Lead was detected at 4.8 and 7.2 milligrams per kilogram (mg/kg) in S-1 and S-2, respectively. Because all detected metals concentrations are within typical California naturally-occurring background concentration ranges, and do not exceed DTSC HERO Note 3 or EPA RSLs for residential use, the adjacent railroad tracks do not represent a REC to the Property and no further assessment appears warranted.

Total Petroleum Hydrocarbons as vapor (TPHv) and various VOCs were detected at low concentrations. These concentrations were all below the most conservative screening level between the USEPA Region 9 RSL and DTSC HERO Note 3 with an attenuation factor of 0.03, with the exception of benzene. Benzene was detected at 5.7 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in SV-2 which is above the regulatory screening level with an attenuation factor of 0.03 ( $3.2 \mu\text{g}/\text{m}^3$ ), but below the regulatory screening level with an attenuation factor of 0.001 ( $97 \mu\text{g}/\text{m}^3$ ). Given the concentration was only slightly above the regulatory screening level with an attenuation factor of 0.03 (which is not the official screening level and which has not been adopted by any state agency), and well below the risk-based screening level of  $97 \mu\text{g}/\text{m}^3$ , this single detection is considered a *de minimis* condition and no further assessment appears warranted for soil vapor.

The GPR Survey identified an anomaly which may be the 550-gallon UST in the northwest portion of the Property at approximately 2 to 4-feet in depth. Stantec recommends removing and disposing of the UST in accordance with all applicable laws.



## PHASE II ENVIRONMENTAL SITE ASSESSMENT

### Limitations

## 7.0 LIMITATIONS

The conclusions presented in this report are professional opinions based on data described in this report. The opinions of this report have been arrived at in accordance with currently accepted hydrogeologic and engineering standards and practices applicable to this location and are subject to the following inherent limitations. Stantec makes no other warranty, either expressed or implied, concerning the conclusions and professional advice that is contained within the body of this report.

Inherent in most projects performed in a heterogeneous subsurface environment, continuing excavation and assessments may reveal findings that are different than those presented herein. This facet of the environmental profession should be considered when formulating professional opinions on the limited data collected on these projects.

This report has been issued with the clear understanding that it is the responsibility of the owner, or their representative, to make appropriate notifications to regulatory agencies. It is specifically not the responsibility of Stantec to conduct appropriate notifications as specified by current County and State regulations.

The information presented in this report is valid as of the date our exploration was performed. Site conditions may degrade with time; consequently, the findings presented herein are subject to change. In the event of any conflict between the terms and conditions of this report and the terms and conditions of the Consultant Agreement between Stantec and City Ventures (the "MSA"), the MSA shall control.



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### References

## 8.0 REFERENCES

California Water Resources Control Board, 2019, San Francisco Bay Regional Water Quality Control Board, Environmental Screening Levels, date January 24.

Department of Toxic Substances Control, 2020, Human and Ecologic Risk Office Note 3, dated June.

Stantec Consulting Services Inc, 2021, Phase I Environmental Site Assessment, dated March

State Water Resource Control Board's Geotracker, 2021, website <https://geotracker.waterboards.ca.gov/>

United States Environmental Protection Agency, 2020, Regional Screening Levels, Region 9, dated May.





# TABLES

**TABLE 1**  
**Summary of Soil Analytical Results**  
**225 Las Posas Avenue, San Marcos California**  
**185805035**

Boring Location	Sample ID	Sample Depth (feet)	Sample Date	Arsenic and Lead by 6010B		OCPs by 8081A					
				Arsenic	Lead	4,4'-DDD	4,4'-DDE	4,4'-DDT	gamma-Chlordane	Toxaphene	Others
USEPA RSLs (Residential)				0.68	400	1.9	2.0	1.9	NE	0.49	Varies
DTSC HERO Note 3 (Residential)				0.41	80	1.9	23	37	NE	0.45	Varies
California Background Levels <sup>(2)</sup>				0.6 - 11.0	12.4 - 97.1	NE	NE	NE	NE	NE	Varies
Site Wide	S-1-1	1.0	3/4/21	<1.0	4.8	<0.002	<0.002	<0.002	<0.001	<0.050	<varies
	S-2-1	1.0	3/4/21	<1.0	7.2	<0.002	<0.002	<0.002	<0.001	<0.050	Heptachlor: 0.0014

Notes:

All concentrations reported in milligrams per kilogram (mg/kg).

More conservative screening level between USEPA Region 9

(1) - RSL (May, 2020) and DTSC HERO Note 3 (June, 2020)

DTSC - Department of Toxic Substance Control

HERO HHRA - Human and Ecological Risk Office Human Health Risk Assessment

NA - Not Analyzed

NE - Not Established


RSL - Regional Screening Level

USEPA - United States Environmental Protection Agency

OCPs - Organochlorine Pesticides

**BOLD** Denotes analyte was detected above the laboratory reporting limit

< - Denotes analyte was not detected above the laboratory reporting limit

 Yellow shading indicates value above the residential screening level.

**TABLE 2**  
**Summary of Soil Vapor Analytical Results**  
**225 Las Posas Avenue, San Marcos California**  
**185805035**

Sample ID	Sample Depth (feet)	Sampling Date	TPHv (C5- C12)	VOC by 8260B					
				Benzene	Toluene	p/m- Xylenes	TCE	1,2,4- Trimethylbenzene	Various
Residential Screening Level (0.03 AF) <sup>1</sup>			3,300	3.2	10,333	560	16	2,100	Various
Residential Screening Levels (0.001 AF) <sup>1</sup>			--	97	310,00	560	480	63,000	Various
SV-1	3.5	3/4/21	150	2.9	8.4	3.8	<2.2	<2.0	<various
SV-1 (REP)	3.5	3/4/21	120	2.4	8.8	3.8	<2.2	<2.0	<various
SV-2	4.0	3/4/21	360	5.7	11	4.0	2.2	2.3	Methylene Chloride: 1.6 Carbon Disulfide: 1.4

Notes:

All concentrations reported in micrograms per cubic meter (µg/m3)

More conservative screening level between USEPA Region 9 RSL (May, 2020) and DTSC HERO Note 3 (June, 2020); San Francisco Bay Regional Water Quality Control Board ESLs (January (1) - 2019) used for TPH screening.

DTSC - Department of Toxic Substance Control

ESL - Environmental Screening Level

HERO HHRA - Human and Ecological Risk Office Human Health Risk Assessment

NE - Not Established

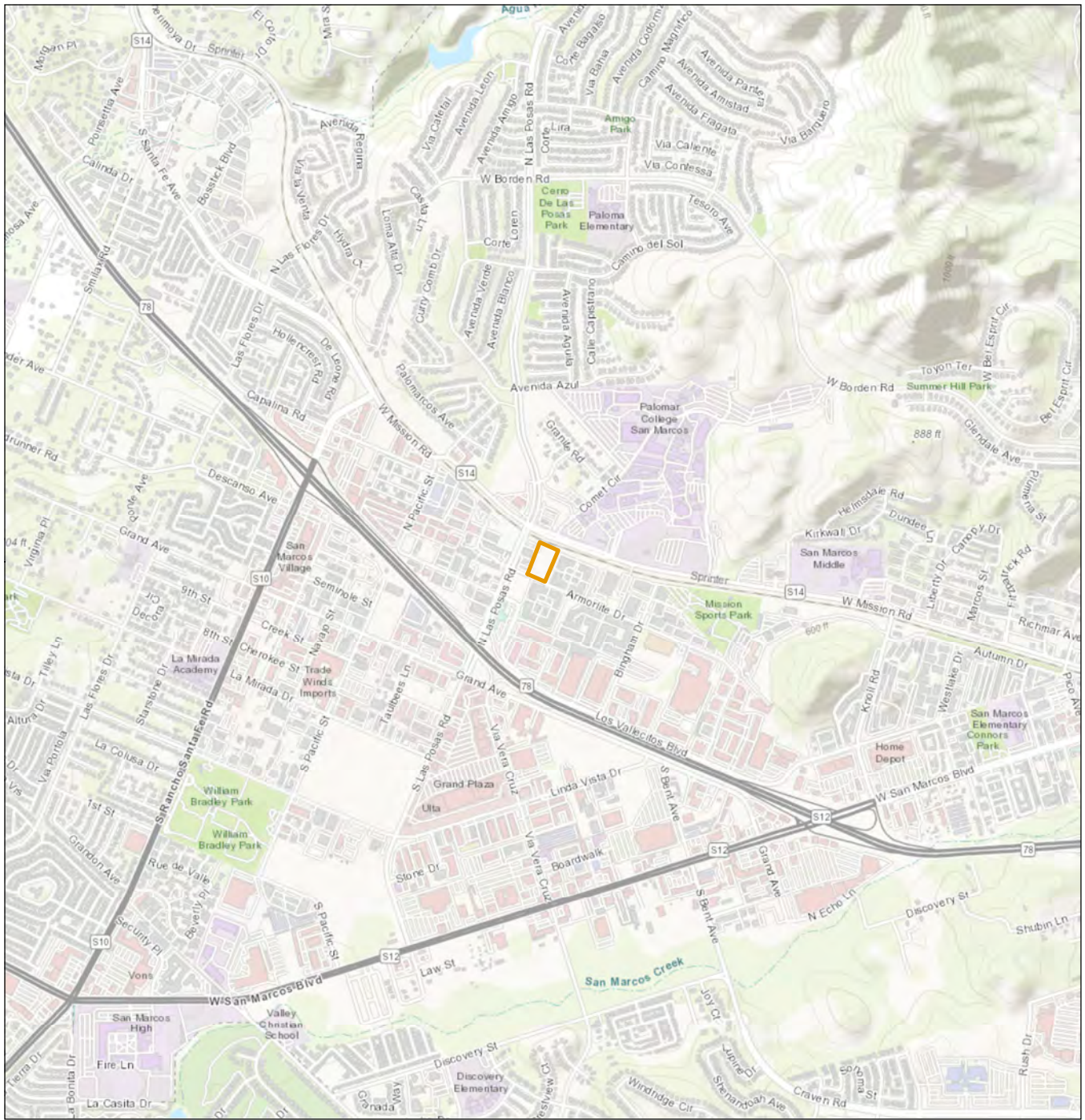
VOC - Volatile Organic Compounds

TCE - Trichloroethane

**BOLD** Denotes analyte was detected above the laboratory reporting limit

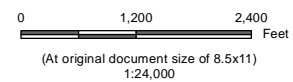
< - Denotes analyte was not detected above the laboratory reporting limit

## FIGURES



**Project Location**

 **Property Boundary**



**Project Location**  
225 North Las Posas  
San Marcos, California

Prepared by DH on 2021-02-22  
TR by SET on 2021-02-22  
IR by AJ on 2021-02-22

**Client/Project**  
City Ventures  
185805035  
Phase I Environmental Site Assessment

**Figure No.**  
1

**Title**  
**Property Location Map**

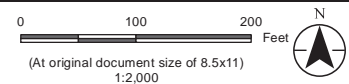
**Notes**

1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: Stantec, 2021
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community





- Property Boundary
- Soil Sample Location
- Soil Vapor Location



**Project Location**  
225 North Las Posas  
San Marcos, California

Prepared by DH on 2021-02-22  
TR by SET on 2021-02-22  
IR by AJon 2021-02-22

**Client/Project**  
City Ventures  
185805035  
Phase I Environmental Site Assessment

**Figure No.**  
2

**Title**  
PROPERTY DETAILS

**Notes**

1. Coordinate System: NAD 1983 UTM Zone 11N
2. Data Sources: Stantec, 2021
3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

# **APPENDIX A**

## **SUMMARY OF GPR FINDINGS REPORT**



# Summary of Scanning for Underground Storage Tanks (UST's)

---

Prepared For: Stantec

Prepared By:

Ivan Martinez

[Ivan.Martinez@GPRSINC.com](mailto:Ivan.Martinez@GPRSINC.com)

Project Manger-West Coast Region | LA/OC

213.215.7183

February 22, 2021



February 22, 2021

Stantec

**Attn:** Alicia Jansen

**Site:** 225 Las Posas Road, San Marcos, CA

We appreciate the opportunity to provide this report for our work completed on February 19, 2021.

## **PURPOSE**

The purpose of this project was to search for any suspected underground storage tanks (USTs) or suspected UST-related piping or other anomalies remaining on the property. The scope of work consisted of one location measuring approximately 15'x30'. The interiors of buildings were excluded from the scope of this project. The client marked the desired locations prior to our scanning and our markings were then placed onto the surface using spray paint.

## **EQUIPMENT**

- **Underground Scanning GPR Antenna.** The antenna with frequencies ranging from 250 MHz-450 MHz is mounted in a stroller frame which rolls over the surface. The surface needs to be reasonably smooth and unobstructed in order to obtain readable scans. Obstructions such as curbs, landscaping, and vegetation will limit the feasibility of GPR. The data is displayed on a screen and marked in the field in real time. The total depth achieved can be as much as 8' or more with this antenna but can vary widely depending on the types of materials being scanned through. Some soil types such as clay may limit maximum depths to 3' or less. As depth increases, targets must be larger in order to be detected and non-metallic targets can be especially difficult to locate. Depths provided should always be treated as estimates as their accuracy can be affected by multiple factors. For more information, please visit: [Link](#)

## **PROCESS**

Initial GPR scans were collected in order to evaluate the data and calibrate the equipment. Based on these findings, a scanning strategy is formed, consisting of scanning the entire area in a grid with 16" scan spacing in order to locate any potential UST's that may remain at the site. The GPR data is viewed in real time and anomalies in the data were located and marked on the surface along with their depths using spray paint. Relevant scan examples were saved and will be provided in this report.

## **LIMITATIONS**

Please keep in mind that there are limitations to any subsurface investigation. The equipment may not achieve maximum effectiveness due to soil conditions, above ground obstructions, reinforced concrete, and a variety of other factors. No subsurface investigation or equipment can provide a complete image of what lies below. Our results should always be used in conjunction with as many methods as possible including consulting existing plans and drawings, exploratory excavation or potholing, visual inspection of above-ground features, and utilization of services such as One Call/811. Depths are dependent on many factors so depth accuracy can vary throughout a site and should be treated as estimates only. Relevant scan examples were saved and will be provided in this report. Thick vegetation limited GPR scan length, see pictures below.

## **FINDINGS**

The subsurface conditions at the time of the scanning allowed for maximum GPR depth penetration of 4' in most areas. The equipment and methods used did detect reactions from potential UST's. Possible UST detected north-west of property lot at approximate 2'-4' in depth. The following pages will provide further explanation of the findings.




Prepared for: Stantec  
 Prepared By: Ivan Martinez  
 Date of Scanning: 2/19/21

**Terms and Conditions**

GPRS does not provide land survey or civil engineering data collection or documentation. This is provided as a reference map of the field markings and is not survey-grade.

**LEGEND**

	Potential UST		

225 Las Posas Road, San Marcos, CA

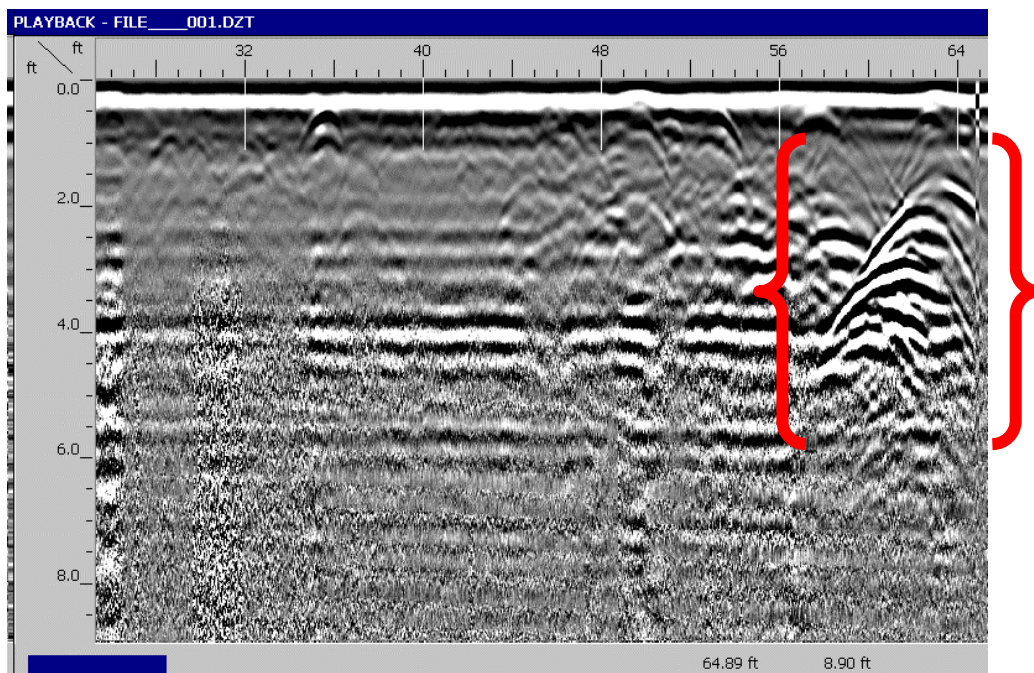
Prepared by:







Pink outline shows location of possible UST. Thick vegetation prevented GPR from scanning additional area.



Red brackets highlight anomaly detected in the field, potential UST.

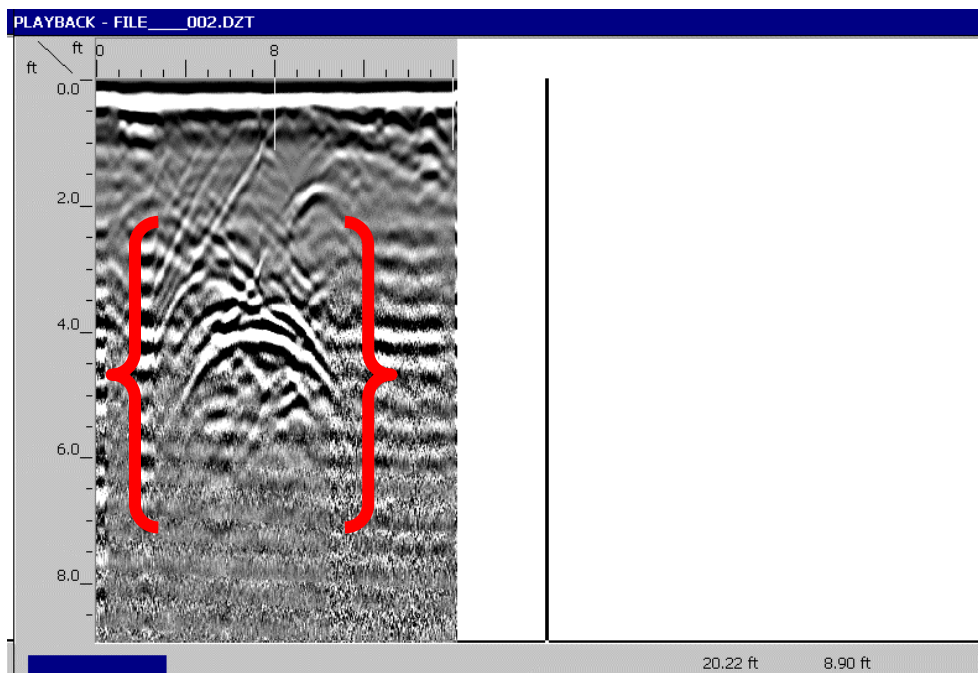
GPR Data Screenshot and Photo

225 Las Posas Road, San Marcos, CA





Possible location of UST marked in pink. Fence and vegetation limited GPR scan length.



Red brackets highlight anomaly detected in the field, potential UST.

GPR Data Screenshot and Photo

225 Las Posas Road, San Marcos, CA



## **CLOSING**

GPRS, Inc. has been in business since 2001, specializing in underground storage tank location, concrete scanning, utility locating, and shallow void detection for projects throughout the United States. I encourage you to visit our website ([www.gprsinc.com](http://www.gprsinc.com)) and contact any of the numerous references listed.

Possible UST detected north-west of property lot at approximate 2'-4' in depth. Thick vegetation limited GPR scan length in the west-east direction.

The GPRS appreciates the opportunity to offer our services, and we look forward to continuing to work with you on future projects. Please feel free to contact us for additional information or with any questions you may have regarding this report.

Signed,



Ivan Martinez

Project Manger—West Coast Region | LA/OC



Direct: 213.215.7183

Ivan.Martinez@GPRSINC.com

[www.gprsinc.com](http://www.gprsinc.com)

# **APPENDIX B**

## **Laboratory Data Sheets**



March 09, 2021

Alicia Jansen  
Stantec  
735 E. Carnegie Drive, Suite 280  
San Bernardino, CA 92408  
Tel: (909) 335-6116  
Fax: (909) 335-6120

ELAP No.: 1838  
CSDLAC No.: 10196  
ORELAP No.: CA300003

Re: ATL Work Order Number : 2100475  
Client Reference : 185805035, Olson - San Marcos

Enclosed are the results for sample(s) received on March 02, 2021 by Advanced Technology Laboratories. The sample(s) are tested for the parameters as indicated on the enclosed chain of custody in accordance with applicable laboratory certifications. The laboratory results contained in this report specifically pertains to the sample(s) submitted.

Thank you for the opportunity to serve the needs of your company. If you have any questions, please feel free to contact me or your Project Manager.

Sincerely,

A handwritten signature in black ink, appearing to read 'for Edgar P. Caballero', with a stylized flourish at the end.

Edgar P. Caballero  
Laboratory Director

The cover letter and the case narrative are an integral part of this analytical report and its absence renders the report invalid. Test results contained within this data package meet the requirements of applicable state-specific certification programs. The report cannot be reproduced without written permission from the client and Advanced Technology Laboratories.





## Certificate of Analysis

Stantec

735 E. Carnegie Drive, Suite 280

San Bernardino, CA 92408

Project Number : 185805035, Olson - San Marcos

Report To : Alicia Jansen

Reported : 03/09/2021

### SUMMARY OF SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1-1	2100475-01	Soil	3/01/21 10:05	3/02/21 11:05
S-2-1	2100475-04	Soil	3/01/21 10:40	3/02/21 11:05



## Certificate of Analysis

Stantec  
735 E. Carnegie Drive, Suite 280  
San Bernardino , CA 92408

Project Number : 185805035, Olson - San Marcos  
Report To : Alicia Jansen  
Reported : 03/09/2021

**Client Sample ID: S-1-1**

**Lab ID: 2100475-01**

### Total Metals by ICP-AES EPA 6010B

**Analyst: AMP**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	1.0	1	B1C0052	03/04/2021	03/04/21 12:52	
<b>Lead</b>	<b>4.8</b>	1.0	1	B1C0052	03/04/2021	03/04/21 12:52	

### Organochlorine Pesticides by EPA 8081A

**Analyst: AC**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
4,4'-DDE	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
4,4'-DDT	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Aldrin	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
alpha-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
alpha-Chlordane	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
beta-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Chlordane	ND	8.5	1	B1C0056	03/04/2021	03/05/21 10:52	
delta-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Dieldrin	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Endosulfan I	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Endosulfan II	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Endosulfan sulfate	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Endrin	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Endrin aldehyde	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Endrin ketone	ND	2.0	1	B1C0056	03/04/2021	03/05/21 10:52	
gamma-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
gamma-Chlordane	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Heptachlor	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Heptachlor epoxide	ND	1.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Methoxychlor	ND	5.0	1	B1C0056	03/04/2021	03/05/21 10:52	
Toxaphene	ND	50	1	B1C0056	03/04/2021	03/05/21 10:52	
Surrogate: Decachlorobiphenyl	79.9 %	9 - 80		B1C0056	03/04/2021	03/05/21 10:52	
Surrogate: Tetrachloro-m-xylene	70.2 %	13 - 77		B1C0056	03/04/2021	03/05/21 10:52	



## Certificate of Analysis

Stantec  
735 E. Carnegie Drive, Suite 280  
San Bernardino, CA 92408

Project Number : 185805035, Olson - San Marcos  
Report To : Alicia Jansen  
Reported : 03/09/2021

**Client Sample ID: S-2-1**

**Lab ID: 2100475-04**

### Total Metals by ICP-AES EPA 6010B

**Analyst: AMP**

Analyte	Result (mg/kg)	PQL (mg/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
Arsenic	ND	1.0	1	B1C0052	03/04/2021	03/04/21 12:57	
Lead	7.2	1.0	1	B1C0052	03/04/2021	03/04/21 12:57	

### Organochlorine Pesticides by EPA 8081A

**Analyst: AC**

Analyte	Result (ug/kg)	PQL (ug/kg)	Dilution	Batch	Prepared	Date/Time Analyzed	Notes
4,4'-DDD	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
4,4'-DDE	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
4,4'-DDT	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Aldrin	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
alpha-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
alpha-Chlordane	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
beta-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Chlordane	ND	8.5	1	B1C0056	03/04/2021	03/05/21 11:03	
delta-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Dieldrin	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Endosulfan I	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Endosulfan II	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Endosulfan sulfate	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Endrin	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Endrin aldehyde	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Endrin ketone	ND	2.0	1	B1C0056	03/04/2021	03/05/21 11:03	
gamma-BHC	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
gamma-Chlordane	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Heptachlor	1.4	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Heptachlor epoxide	ND	1.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Methoxychlor	ND	5.0	1	B1C0056	03/04/2021	03/05/21 11:03	
Toxaphene	ND	50	1	B1C0056	03/04/2021	03/05/21 11:03	
Surrogate: Decachlorobiphenyl	76.5 %	9 - 80		B1C0056	03/04/2021	03/05/21 11:03	
Surrogate: Tetrachloro-m-xylene	68.4 %	13 - 77		B1C0056	03/04/2021	03/05/21 11:03	



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Reported : 03/09/2021

### QUALITY CONTROL SECTION

#### Total Metals by ICP-AES EPA 6010B - Quality Control

Analyte	Result (mg/kg)	PQL (mg/kg)	MDL (mg/kg)	Spike Level	Source Result	% Rec	% Rec Limits	RPD	RPD Limit	Notes
<b>Batch B1C0052 - EPA 3050B_S</b>										
<b>Blank (B1C0052-BLK1)</b>					Prepared: 3/4/2021 Analyzed: 3/4/2021					
Arsenic	ND	1.0	0.12							
Lead	ND	1.0	0.18							
<b>LCS (B1C0052-BS1)</b>					Prepared: 3/4/2021 Analyzed: 3/4/2021					
Arsenic	23.6226	1.0	0.12	25.0000		94.5	80 - 120			
Lead	26.3536	1.0	0.18	25.0000		105	80 - 120			
<b>Duplicate (B1C0052-DUP1)</b>					<b>Source: 2100459-01</b>		Prepared: 3/4/2021 Analyzed: 3/4/2021			
Arsenic	5.28544	1.0	0.12		5.09308			3.71	20	
Lead	5.54896	1.0	0.18		5.64196			1.66	20	
<b>Duplicate (B1C0052-DUP2)</b>					<b>Source: 2100459-16</b>		Prepared: 3/4/2021 Analyzed: 3/4/2021			
Arsenic	3.00048	1.0	0.12		3.01202			0.384	20	
Lead	8.28652	1.0	0.18		8.33858			0.626	20	
<b>Matrix Spike (B1C0052-MS1)</b>					<b>Source: 2100459-01</b>		Prepared: 3/4/2021 Analyzed: 3/4/2021			
Arsenic	27.1461	1.0	0.12	25.0000	5.09308	88.2	55 - 117			
Lead	28.6712	1.0	0.18	25.0000	5.64196	92.1	26 - 161			
<b>Matrix Spike (B1C0052-MS2)</b>					<b>Source: 2100459-16</b>		Prepared: 3/4/2021 Analyzed: 3/4/2021			
Arsenic	20.6058	1.0	0.12	25.0000	3.01202	70.4	55 - 117			
Lead	25.0837	1.0	0.18	25.0000	8.33858	67.0	26 - 161			
<b>Matrix Spike Dup (B1C0052-MSD1)</b>					<b>Source: 2100459-01</b>		Prepared: 3/4/2021 Analyzed: 3/4/2021			
Arsenic	27.0570	1.0	0.12	25.0000	5.09308	87.9	55 - 117	0.329	20	
Lead	28.4768	1.0	0.18	25.0000	5.64196	91.3	26 - 161	0.680	20	



## Certificate of Analysis

Stantec  
735 E. Carnegie Drive, Suite 280  
San Bernardino, CA 92408

Project Number : 185805035, Olson - San Marcos  
Report To : Alicia Jansen  
Reported : 03/09/2021

### Organochlorine Pesticides by EPA 8081A - Quality Control

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec % Rec	% Rec Limits	RPD RPD	RPD Limit	Notes
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#### Batch B1C0056 - GCSEMI\_PCB/PEST\_S

##### Blank (B1C0056-BLK1)

Prepared: 3/4/2021 Analyzed: 3/5/2021

4,4'-DDD	ND	2.0	0.08
4,4'-DDD [2C]	ND	2.0	0.08
4,4'-DDE	ND	2.0	0.09
4,4'-DDE [2C]	ND	2.0	0.09
4,4'-DDT	ND	2.0	0.10
4,4'-DDT [2C]	ND	2.0	0.10
Aldrin	ND	1.0	0.09
Aldrin [2C]	ND	1.0	0.09
alpha-BHC	ND	1.0	0.11
alpha-BHC [2C]	ND	1.0	0.11
alpha-Chlordane	ND	1.0	0.10
alpha-Chlordane [2C]	ND	1.0	0.10
beta-BHC	ND	1.0	0.15
beta-BHC [2C]	ND	1.0	0.15
Chlordane	ND	8.5	1.1
Chlordane [2C]	ND	8.5	1.1
delta-BHC	ND	1.0	0.11
delta-BHC [2C]	ND	1.0	0.11
Dieldrin	ND	2.0	0.09
Dieldrin [2C]	ND	2.0	0.09
Endosulfan I	ND	1.0	0.09
Endosulfan I [2C]	ND	1.0	0.09
Endosulfan II	ND	2.0	0.09
Endosulfan II [2C]	ND	2.0	0.09
Endosulfan sulfate	ND	2.0	0.11
Endosulfan Sulfate [2C]	ND	2.0	0.11
Endrin	ND	2.0	0.07
Endrin [2C]	ND	2.0	0.07
Endrin aldehyde	ND	2.0	0.18
Endrin aldehyde [2C]	ND	2.0	0.18
Endrin ketone	ND	2.0	0.06
Endrin ketone [2C]	ND	2.0	0.06
gamma-BHC	ND	1.0	0.12
gamma-BHC [2C]	ND	1.0	0.12
gamma-Chlordane	ND	1.0	0.11
gamma-Chlordane [2C]	ND	1.0	0.11
Heptachlor	ND	1.0	0.10
Heptachlor [2C]	ND	1.0	0.10
Heptachlor epoxide	ND	1.0	0.09
Heptachlor epoxide [2C]	ND	1.0	0.09
Methoxychlor	ND	5.0	0.14



## Certificate of Analysis

Stantec  
735 E. Carnegie Drive, Suite 280  
San Bernardino, CA 92408

Project Number : 185805035, Olson - San Marcos  
Report To : Alicia Jansen  
Reported : 03/09/2021

### Organochlorine Pesticides by EPA 8081A - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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#### Batch B1C0056 - GCSEMI\_PCB/PEST\_S (continued)

##### Blank (B1C0056-BLK1) - Continued

Prepared: 3/4/2021 Analyzed: 3/5/2021

Methoxychlor [2C]	ND	5.0	0.14						
Toxaphene	ND	50	3.6						
Toxaphene [2C]	ND	50	3.6						
Surrogate: Decachlorobiphenyl	17.33			16.6667		104	9 - 80		S12
Surrogate: Decachlorobiphenyl [	14.09			16.6667		84.6	5 - 74		S12
Surrogate: Tetrachloro-m-xylene	14.00			16.6667		84.0	13 - 77		S12
Surrogate: Tetrachloro-m-xylene	12.24			16.6667		73.5	14 - 79		

##### LCS (B1C0056-BS1)

Prepared: 3/4/2021 Analyzed: 3/5/2021

4,4'-DDD	13.2785	2.0	0.08	16.6667		79.7	33 - 88		
4,4'-DDD [2C]	12.0927	2.0	0.08	16.6667		72.6	29 - 100		
4,4'-DDE	14.1093	2.0	0.09	16.6667		84.7	35 - 87		
4,4'-DDE [2C]	11.8755	2.0	0.09	16.6667		71.3	38 - 91		
4,4'-DDT	14.7395	2.0	0.10	16.6667		88.4	41 - 94		
4,4'-DDT [2C]	13.2905	2.0	0.10	16.6667		79.7	31 - 110		
Aldrin	14.2087	1.0	0.09	16.6667		85.3	35 - 85		L3
Aldrin [2C]	12.4015	1.0	0.09	16.6667		74.4	38 - 92		
alpha-BHC	14.2117	1.0	0.11	16.6667		85.3	37 - 86		
alpha-BHC [2C]	12.6410	1.0	0.11	16.6667		75.8	39 - 92		
alpha-Chlordane	16.6013	1.0	0.10	16.6667		99.6	36 - 97		L3
alpha-Chlordane [2C]	14.2848	1.0	0.10	16.6667		85.7	44 - 102		
beta-BHC	13.4835	1.0	0.15	16.6667		80.9	38 - 75		L3
beta-BHC [2C]	12.0630	1.0	0.15	16.6667		72.4	39 - 85		
delta-BHC	14.8322	1.0	0.11	16.6667		89.0	35 - 90		
delta-BHC [2C]	13.4507	1.0	0.11	16.6667		80.7	37 - 98		
Dieldrin	14.8340	2.0	0.09	16.6667		89.0	37 - 87		L3
Dieldrin [2C]	13.0352	2.0	0.09	16.6667		78.2	40 - 91		
Endosulfan I	14.5038	1.0	0.09	16.6667		87.0	32 - 84		L3
Endosulfan I [2C]	12.8375	1.0	0.09	16.6667		77.0	33 - 94		
Endosulfan II	15.9968	2.0	0.09	16.6667		96.0	40 - 90		L3
Endosulfan II [2C]	13.4575	2.0	0.09	16.6667		80.7	33 - 109		
Endosulfan sulfate	14.5735	2.0	0.11	16.6667		87.4	37 - 82		L3
Endosulfan Sulfate [2C]	12.2703	2.0	0.11	16.6667		73.6	29 - 95		
Endrin	17.9922	2.0	0.07	16.6667		108	38 - 95		L3
Endrin [2C]	13.7862	2.0	0.07	16.6667		82.7	36 - 106		
Endrin aldehyde	15.6703	2.0	0.18	16.6667		94.0	44 - 88		L3
Endrin aldehyde [2C]	13.7237	2.0	0.18	16.6667		82.3	33 - 107		
Endrin ketone	14.1745	2.0	0.06	16.6667		85.0	43 - 84		L3
Endrin ketone [2C]	12.4187	2.0	0.06	16.6667		74.5	30 - 97		
gamma-BHC	14.6870	1.0	0.12	16.6667		88.1	40 - 88		L3
gamma-BHC [2C]	13.5772	1.0	0.12	16.6667		81.5	41 - 95		



## Certificate of Analysis

Stantec  
735 E. Carnegie Drive, Suite 280  
San Bernardino, CA 92408

Project Number : 185805035, Olson - San Marcos  
Report To : Alicia Jansen  
Reported : 03/09/2021

### Organochlorine Pesticides by EPA 8081A - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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#### Batch B1C0056 - GCSEMI\_PCB/PEST\_S (continued)

##### LCS (B1C0056-BS1) - Continued

Prepared: 3/4/2021 Analyzed: 3/5/2021

gamma-Chlordane	16.6208	1.0	0.11	16.6667		99.7	40 - 86		L3
gamma-Chlordane [2C]	13.4162	1.0	0.11	16.6667		80.5	41 - 96		
Heptachlor	13.5527	1.0	0.10	16.6667		81.3	37 - 93		
Heptachlor [2C]	13.6170	1.0	0.10	16.6667		81.7	36 - 99		
Heptachlor epoxide	14.2343	1.0	0.09	16.6667		85.4	40 - 82		L3
Heptachlor epoxide [2C]	12.7558	1.0	0.09	16.6667		76.5	42 - 88		
Methoxychlor	15.1247	5.0	0.14	16.6667		90.7	43 - 96		
Methoxychlor [2C]	13.4747	5.0	0.14	16.6667		80.8	32 - 108		
Surrogate: Decachlorobiphenyl	14.38			16.6667		86.3	9 - 80		S12
Surrogate: Decachlorobiphenyl [	11.88			16.6667		71.3	5 - 74		
Surrogate: Tetrachloro-m-xylene	11.50			16.6667		69.0	13 - 77		
Surrogate: Tetrachloro-m-xylene	10.23			16.6667		61.4	14 - 79		

##### LCS Dup (B1C0056-BS1)

Prepared: 3/4/2021 Analyzed: 3/5/2021

4,4'-DDD	13.9275	2.0	0.08	16.6667		83.6	33 - 88	4.77	20	
4,4'-DDD [2C]	13.9353	2.0	0.08	16.6667		83.6	29 - 100	14.2	20	
4,4'-DDE	14.8860	2.0	0.09	16.6667		89.3	35 - 87	5.36	20	L3
4,4'-DDE [2C]	13.6267	2.0	0.09	16.6667		81.8	38 - 91	13.7	20	
4,4'-DDT	15.3805	2.0	0.10	16.6667		92.3	41 - 94	4.26	20	
4,4'-DDT [2C]	15.3082	2.0	0.10	16.6667		91.8	31 - 110	14.1	20	
Aldrin	14.5072	1.0	0.09	16.6667		87.0	35 - 85	2.08	20	L3
Aldrin [2C]	14.2853	1.0	0.09	16.6667		85.7	38 - 92	14.1	20	
alpha-BHC	15.1353	1.0	0.11	16.6667		90.8	37 - 86	6.29	20	L3
alpha-BHC [2C]	14.6060	1.0	0.11	16.6667		87.6	39 - 92	14.4	20	
alpha-Chlordane	17.1085	1.0	0.10	16.6667		103	36 - 97	3.01	20	L3
alpha-Chlordane [2C]	16.3540	1.0	0.10	16.6667		98.1	44 - 102	13.5	20	
beta-BHC	14.0968	1.0	0.15	16.6667		84.6	38 - 75	4.45	20	L3
beta-BHC [2C]	13.8093	1.0	0.15	16.6667		82.9	39 - 85	13.5	20	
delta-BHC	15.4902	1.0	0.11	16.6667		92.9	35 - 90	4.34	20	L3
delta-BHC [2C]	15.4548	1.0	0.11	16.6667		92.7	37 - 98	13.9	20	
Dieldrin	15.4780	2.0	0.09	16.6667		92.9	37 - 87	4.25	20	L3
Dieldrin [2C]	14.9978	2.0	0.09	16.6667		90.0	40 - 91	14.0	20	
Endosulfan I	15.0365	1.0	0.09	16.6667		90.2	32 - 84	3.61	20	L3
Endosulfan I [2C]	14.8067	1.0	0.09	16.6667		88.8	33 - 94	14.2	20	
Endosulfan II	16.3857	2.0	0.09	16.6667		98.3	40 - 90	2.40	20	L3
Endosulfan II [2C]	15.4722	2.0	0.09	16.6667		92.8	33 - 109	13.9	20	
Endosulfan sulfate	14.9108	2.0	0.11	16.6667		89.5	37 - 82	2.29	20	L3
Endosulfan Sulfate [2C]	14.1350	2.0	0.11	16.6667		84.8	29 - 95	14.1	20	
Endrin	18.3477	2.0	0.07	16.6667		110	38 - 95	1.96	20	L3
Endrin [2C]	15.5763	2.0	0.07	16.6667		93.5	36 - 106	12.2	20	
Endrin aldehyde	16.4180	2.0	0.18	16.6667		98.5	44 - 88	4.66	20	L3



## Certificate of Analysis

Stantec  
735 E. Carnegie Drive, Suite 280  
San Bernardino , CA 92408

Project Number : 185805035, Olson - San Marcos  
Report To : Alicia Jansen  
Reported : 03/09/2021

### Organochlorine Pesticides by EPA 8081A - Quality Control (cont'd)

Analyte	Result (ug/kg)	PQL (ug/kg)	MDL (ug/kg)	Spike Level	Source Result	% Rec Limits	RPD	RPD Limit	Notes
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#### Batch B1C0056 - GCSEMI\_PCB/PEST\_S (continued)

##### LCS Dup (B1C0056-BSD1) - Continued

Prepared: 3/4/2021 Analyzed: 3/5/2021

Endrin aldehyde [2C]	15.9552	2.0	0.18	16.6667		95.7	33 - 107	15.0	20	
Endrin ketone	14.7405	2.0	0.06	16.6667		88.4	43 - 84	3.91	20	L3
Endrin ketone [2C]	14.4113	2.0	0.06	16.6667		86.5	30 - 97	14.9	20	
gamma-BHC	15.5443	1.0	0.12	16.6667		93.3	40 - 88	5.67	20	L3
gamma-BHC [2C]	15.7455	1.0	0.12	16.6667		94.5	41 - 95	14.8	20	
gamma-Chlordane	16.6672	1.0	0.11	16.6667		100	40 - 86	0.278	20	L3
gamma-Chlordane [2C]	15.4060	1.0	0.11	16.6667		92.4	41 - 96	13.8	20	
Heptachlor	14.3153	1.0	0.10	16.6667		85.9	37 - 93	5.47	20	
Heptachlor [2C]	15.7093	1.0	0.10	16.6667		94.3	36 - 99	14.3	20	
Heptachlor epoxide	14.9187	1.0	0.09	16.6667		89.5	40 - 82	4.69	20	L3
Heptachlor epoxide [2C]	14.7078	1.0	0.09	16.6667		88.2	42 - 88	14.2	20	L3
Methoxychlor	15.8030	5.0	0.14	16.6667		94.8	43 - 96	4.39	20	
Methoxychlor [2C]	15.4433	5.0	0.14	16.6667		92.7	32 - 108	13.6	20	
Surrogate: Decachlorobiphenyl	15.01			16.6667		90.1	9 - 80			S12
Surrogate: Decachlorobiphenyl [	13.41			16.6667		80.5	5 - 74			S12
Surrogate: Tetrachloro-m-xylene	12.02			16.6667		72.1	13 - 77			
Surrogate: Tetrachloro-m-xylene	11.73			16.6667		70.4	14 - 79			





## Certificate of Analysis

Stantec

735 E. Carnegie Drive, Suite 280

San Bernardino, CA 92408

Project Number : 185805035, Olson - San Marcos

Report To : Alicia Jansen

Reported : 03/09/2021

### Notes and Definitions

S12	Surrogate recovery outside in-house established limit but within method default criteria.
L3	Laboratory control sample outside in-house established limits but within method criteria.
ND	Analyte is not detected at or above the Practical Quantitation Limit (PQL). When client requests quantitation against MDL, analyte is not detected at or above the Method Detection Limit (MDL)
PQL	Practical Quantitation Limit
MDL	Method Detection Limit
NR	Not Reported
RPD	Relative Percent Difference
CA2	CA-ELAP (CDPH)
OR1	OR-NELAP (OSPHL)

#### Notes:

- (1) The reported MDL and PQL are based on prep ratio variation and analytical dilution.
- (2) The suffix [2C] of specific analytes signifies that the reported result is taken from the instrument's second column.
- (3) Results are wet unless otherwise specified.



Stantec

CHAIN OF CUSTODY

Laboratory Project Number: 2100475

Page 1 of 1

Client Name/Address:		Project Manager:		Analysis Required		Turn Around Time:	
Stantec Consulting Services Inc. 735 E. Carnegie Drive, Suite 280 San Bernardino, CA 92408 909-335-6116		Cecilia Jansen E-Mail: debbie.hernandez@stantec.com Cecilia.jansen@stantec.com		Arctic/Lead/COB Organic/Lead/COB HCL		Normal TAT: 72 Hour: 48 Hour: 24 Hour: Same Day: Other:	
Laboratory (circle): Cal Science - 714-895-5494 ATL - 800-499-4388 TAL - 949-261-1022		D. Hernandez Stantec Project Number: 185805035				Sample Temp °C: 5.1 SCPT/1	
Jones Environmental - 714-449-9937		Project: OISUM-SAN MARCOS				Special Instructions	
Sample Description/Identification	Sample Matrix	Preservative (see below)	# of Cont.	Sample Date	Sample Time		
S-1-1	S011	1	1	3/1/21	1005		
S-1-2					1015		
S-1-3					1035		
S-2-1					1040		
S-2-2					1045		
S-2-3					1050		
SV-COMP					1130		
Sample Preservative: 1=ICE - 2=HCL - 3=H <sub>2</sub> SO <sub>4</sub> - 4=HNO <sub>3</sub> - 5=NaOH - 6=Other:							
Special Instructions:							
Relinquished By: [Signature]		Date: 3/1/21	Time: 1105	Received By + Company Name: Max Rothman		Date: 3/2/21	Time: 1105
Relinquished By + Company Name: Max Rothman		Date: 3/2/21	Time: 1246	Received By + Company Name: [Signature]		Date: 3/2/21	Time: 1246
Relinquished By + Company Name:		Date:	Time:	Received By + Company Name:		Date:	Time:

15 March 2021

Alicia Jansen  
Stantec - San Bernardino  
735 E Carnegie Dr., Ste 280  
San Bernardino, CA 92408

H&P Project: ST030421-11  
Client Project: 18585035 / San Marcos

Dear Alicia Jansen:



Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 04-Mar-21 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,



Lisa Eminhizer  
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC) for the fields of proficiency and analytes listed on those certificates. H&P is approved as an Environmental Testing Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs for the fields of proficiency and analytes included in the certification process and to the extent offered by the accreditation agency. Unless otherwise noted, accreditation certificate numbers, expiration of certificates, and scope of accreditation can be found at: [www.handpmg.com/about/certifications](http://www.handpmg.com/about/certifications). Fields of services and analytes contained in this report that are not listed on the certificates should be considered uncertified or unavailable for certification.

Stantec - San Bernardino  
735 E Carnegie Dr., Ste 280  
San Bernardino, CA 92408

Project: ST030421-11  
Project Number: 18585035 / San Marcos  
Project Manager: Alicia Jansen

Reported:  
15-Mar-21 14:17

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SV-1	E103017-01	Vapor	04-Mar-21	04-Mar-21
SV-1 Rep	E103017-02	Vapor	04-Mar-21	04-Mar-21
SV-2	E103017-03	Vapor	04-Mar-21	04-Mar-21

Stantec - San Bernardino  
735 E Carnegie Dr., Ste 280  
San Bernardino, CA 92408

Project: ST030421-11  
Project Number: 18585035 / San Marcos  
Project Manager: Alicia Jansen

Reported:  
15-Mar-21 14:17

### DETECTIONS SUMMARY

Sample ID: **SV-1**

Laboratory ID: **E103017-01**

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
<b>Benzene</b>	<b>2.9</b>	0.6	ug/m3	EPA TO-15	
<b>Toluene</b>	<b>8.4</b>	3.1	ug/m3	EPA TO-15	
<b>m,p-Xylene</b>	<b>3.8</b>	1.8	ug/m3	EPA TO-15	
<b>TPHv (C5 - C12)</b>	<b>150</b>	100	ug/m3	EPA TO-15	

Sample ID: **SV-1 Rep**

Laboratory ID: **E103017-02**

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
<b>Benzene</b>	<b>2.4</b>	0.6	ug/m3	EPA TO-15	
<b>Toluene</b>	<b>8.8</b>	3.1	ug/m3	EPA TO-15	
<b>m,p-Xylene</b>	<b>3.8</b>	1.8	ug/m3	EPA TO-15	
<b>TPHv (C5 - C12)</b>	<b>120</b>	100	ug/m3	EPA TO-15	

Sample ID: **SV-2**

Laboratory ID: **E103017-03**

Analyte	Result	Reporting	Units	Method	Notes
		Limit			
<b>Methylene chloride (Dichloromethane)</b>	<b>1.6</b>	1.4	ug/m3	EPA TO-15	
<b>Carbon disulfide</b>	<b>1.4</b>	1.3	ug/m3	EPA TO-15	
<b>Benzene</b>	<b>5.7</b>	0.6	ug/m3	EPA TO-15	
<b>Trichloroethene</b>	<b>2.2</b>	2.2	ug/m3	EPA TO-15	
<b>Toluene</b>	<b>11</b>	3.1	ug/m3	EPA TO-15	
<b>m,p-Xylene</b>	<b>4.0</b>	1.8	ug/m3	EPA TO-15	
<b>1,2,4-Trimethylbenzene</b>	<b>2.3</b>	2.0	ug/m3	EPA TO-15	
<b>TPHv (C5 - C12)</b>	<b>360</b>	100	ug/m3	EPA TO-15	

Stantec - San Bernardino  
735 E Carnegie Dr., Ste 280  
San Bernardino, CA 92408

Project: ST030421-11  
Project Number: 18585035 / San Marcos  
Project Manager: Alicia Jansen

Reported:  
15-Mar-21 14:17

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-1 (E103017-01) Vapor Sampled: 04-Mar-21 Received: 04-Mar-21</b>									
1,1-Difluoroethane (LCC)	ND	2.2	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
Dichlorodifluoromethane (F12)	ND	4.0	"	"	"	"	"	"	
Chloromethane	ND	0.8	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	2.8	"	"	"	"	"	"	
Vinyl chloride	ND	0.5	"	"	"	"	"	"	
Bromomethane	ND	1.6	"	"	"	"	"	"	
Chloroethane	ND	1.1	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	2.3	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1.4	"	"	"	"	"	"	
Carbon disulfide	ND	1.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.6	"	"	"	"	"	"	
2-Butanone (MEK)	ND	2.4	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.2	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	1.6	"	"	"	"	"	"	
<b>Benzene</b>	<b>2.9</b>	0.6	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.3	"	"	"	"	"	"	
Trichloroethene	ND	2.2	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.9	"	"	"	"	"	"	
Bromodichloromethane	ND	2.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	3.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
<b>Toluene</b>	<b>8.4</b>	3.1	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.2	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	3.3	"	"	"	"	"	"	
Dibromochloromethane	ND	3.5	"	"	"	"	"	"	
Tetrachloroethene	ND	2.8	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.1	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
Chlorobenzene	ND	1.9	"	"	"	"	"	"	
Ethylbenzene	ND	1.8	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>3.8</b>	1.8	"	"	"	"	"	"	
Styrene	ND	1.7	"	"	"	"	"	"	

Stantec - San Bernardino  
735 E Carnegie Dr., Ste 280  
San Bernardino, CA 92408

Project: ST030421-11  
Project Number: 18585035 / San Marcos  
Project Manager: Alicia Jansen

Reported:  
15-Mar-21 14:17

### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-1 (E103017-01) Vapor    Sampled: 04-Mar-21    Received: 04-Mar-21</b>									
o-Xylene	ND	1.8	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
Bromoform	ND	4.2	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
4-Ethyltoluene	ND	2.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	2.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.0 %	76-134		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.6 %	78-125		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		84.8 %	77-127		"	"	"	"	

#### SV-1 Rep (E103017-02) Vapor    Sampled: 04-Mar-21    Received: 04-Mar-21

1,1-Difluoroethane (LCC)	ND	2.2	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
Dichlorodifluoromethane (F12)	ND	4.0	"	"	"	"	"	"	
Chloromethane	ND	0.8	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	2.8	"	"	"	"	"	"	
Vinyl chloride	ND	0.5	"	"	"	"	"	"	
Bromomethane	ND	1.6	"	"	"	"	"	"	
Chloroethane	ND	1.1	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	2.3	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
Methylene chloride (Dichloromethane)	ND	1.4	"	"	"	"	"	"	
Carbon disulfide	ND	1.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.6	"	"	"	"	"	"	
2-Butanone (MEK)	ND	2.4	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.2	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	1.6	"	"	"	"	"	"	
<b>Benzene</b>	<b>2.4</b>	0.6	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.3	"	"	"	"	"	"	

Stantec - San Bernardino  
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Project: ST030421-11  
Project Number: 18585035 / San Marcos  
Project Manager: Alicia Jansen

Reported:  
15-Mar-21 14:17

### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-1 Rep (E103017-02) Vapor    Sampled: 04-Mar-21    Received: 04-Mar-21</b>									
Trichloroethene	ND	2.2	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
1,2-Dichloropropane	ND	1.9	"	"	"	"	"	"	
Bromodichloromethane	ND	2.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	3.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
<b>Toluene</b>	<b>8.8</b>	<b>3.1</b>	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.2	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	3.3	"	"	"	"	"	"	
Dibromochloromethane	ND	3.5	"	"	"	"	"	"	
Tetrachloroethene	ND	2.8	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.1	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
Chlorobenzene	ND	1.9	"	"	"	"	"	"	
Ethylbenzene	ND	1.8	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>3.8</b>	<b>1.8</b>	"	"	"	"	"	"	
Styrene	ND	1.7	"	"	"	"	"	"	
o-Xylene	ND	1.8	"	"	"	"	"	"	
Bromoform	ND	4.2	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
4-Ethyltoluene	ND	2.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	2.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
<hr/>									
Surrogate: 1,2-Dichloroethane-d4		96.0 %	76-134		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	78-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.0 %	77-127		"	"	"	"	



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15-Mar-21 14:17

## Volatile Organic Compounds by EPA TO-15

### H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-2 (E103017-03) Vapor Sampled: 04-Mar-21 Received: 04-Mar-21</b>									
1,1-Difluoroethane (LCC)	ND	2.2	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
Dichlorodifluoromethane (F12)	ND	4.0	"	"	"	"	"	"	
Chloromethane	ND	0.8	"	"	"	"	"	"	
Dichlorotetrafluoroethane (F114)	ND	2.8	"	"	"	"	"	"	
Vinyl chloride	ND	0.5	"	"	"	"	"	"	
Bromomethane	ND	1.6	"	"	"	"	"	"	
Chloroethane	ND	1.1	"	"	"	"	"	"	
Trichlorofluoromethane (F11)	ND	2.3	"	"	"	"	"	"	
1,1-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"	"	"	"	"	"	
<b>Methylene chloride (Dichloromethane)</b>	<b>1.6</b>	1.4	"	"	"	"	"	"	
<b>Carbon disulfide</b>	<b>1.4</b>	1.3	"	"	"	"	"	"	
trans-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
1,1-Dichloroethane	ND	1.6	"	"	"	"	"	"	
2-Butanone (MEK)	ND	2.4	"	"	"	"	"	"	
cis-1,2-Dichloroethene	ND	1.6	"	"	"	"	"	"	
Chloroform	ND	1.0	"	"	"	"	"	"	
1,1,1-Trichloroethane	ND	2.2	"	"	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	1.6	"	"	"	"	"	"	
<b>Benzene</b>	<b>5.7</b>	0.6	"	"	"	"	"	"	
Carbon tetrachloride	ND	1.3	"	"	"	"	"	"	
<b>Trichloroethene</b>	<b>2.2</b>	2.2	"	"	"	"	"	"	
1,2-Dichloropropane	ND	1.9	"	"	"	"	"	"	
Bromodichloromethane	ND	2.7	"	"	"	"	"	"	
cis-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
4-Methyl-2-pentanone (MIBK)	ND	3.3	"	"	"	"	"	"	
trans-1,3-Dichloropropene	ND	1.8	"	"	"	"	"	"	
<b>Toluene</b>	<b>11</b>	3.1	"	"	"	"	"	"	
1,1,2-Trichloroethane	ND	2.2	"	"	"	"	"	"	
2-Hexanone (MBK)	ND	3.3	"	"	"	"	"	"	
Dibromochloromethane	ND	3.5	"	"	"	"	"	"	
Tetrachloroethene	ND	2.8	"	"	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	3.1	"	"	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
Chlorobenzene	ND	1.9	"	"	"	"	"	"	
Ethylbenzene	ND	1.8	"	"	"	"	"	"	
<b>m,p-Xylene</b>	<b>4.0</b>	1.8	"	"	"	"	"	"	
Styrene	ND	1.7	"	"	"	"	"	"	

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Project Manager: Alicia Jansen

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15-Mar-21 14:17

### Volatile Organic Compounds by EPA TO-15

#### H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-2 (E103017-03) Vapor    Sampled: 04-Mar-21    Received: 04-Mar-21</b>									
o-Xylene	ND	1.8	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
Bromoform	ND	4.2	"	"	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	2.8	"	"	"	"	"	"	
4-Ethyltoluene	ND	2.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	2.0	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>2.3</b>	2.0	"	"	"	"	"	"	
1,3-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,4-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2-Dichlorobenzene	ND	2.4	"	"	"	"	"	"	
1,2,4-Trichlorobenzene	ND	7.5	"	"	"	"	"	"	
Hexachlorobutadiene	ND	11	"	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4		95.9 %	76-134		"	"	"	"	
Surrogate: Toluene-d8		99.0 %	78-125		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		83.4 %	77-127		"	"	"	"	

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Reported:  
15-Mar-21 14:17

**Petroleum Hydrocarbon Analysis by EPA TO-15**

**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
<b>SV-1 (E103017-01) Vapor    Sampled: 04-Mar-21    Received: 04-Mar-21</b>									
<b>TPHv (C5 - C12)</b>	<b>150</b>	<b>100</b>	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
<b>SV-1 Rep (E103017-02) Vapor    Sampled: 04-Mar-21    Received: 04-Mar-21</b>									
<b>TPHv (C5 - C12)</b>	<b>120</b>	<b>100</b>	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	
<b>SV-2 (E103017-03) Vapor    Sampled: 04-Mar-21    Received: 04-Mar-21</b>									
<b>TPHv (C5 - C12)</b>	<b>360</b>	<b>100</b>	ug/m3	1	EC11204	12-Mar-21	12-Mar-21	EPA TO-15	

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15-Mar-21 14:17

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EC11204 - TO-15**

**Blank (EC11204-BLK1)**

Prepared & Analyzed: 12-Mar-21

1,1-Difluoroethane (LCC)	ND	2.2	ug/m3
Dichlorodifluoromethane (F12)	ND	4.0	"
Chloromethane	ND	0.8	"
Dichlorotetrafluoroethane (F114)	ND	2.8	"
Vinyl chloride	ND	0.5	"
Bromomethane	ND	1.6	"
Chloroethane	ND	1.1	"
Trichlorofluoromethane (F11)	ND	2.3	"
1,1-Dichloroethene	ND	1.6	"
1,1,2-Trichlorotrifluoroethane (F113)	ND	3.1	"
Methylene chloride (Dichloromethane)	ND	1.4	"
Carbon disulfide	ND	1.3	"
trans-1,2-Dichloroethene	ND	1.6	"
1,1-Dichloroethane	ND	1.6	"
2-Butanone (MEK)	ND	2.4	"
cis-1,2-Dichloroethene	ND	1.6	"
Chloroform	ND	1.0	"
1,1,1-Trichloroethane	ND	2.2	"
1,2-Dichloroethane (EDC)	ND	1.6	"
Benzene	ND	0.6	"
Carbon tetrachloride	ND	1.3	"
Trichloroethene	ND	2.2	"
1,2-Dichloropropane	ND	1.9	"
Bromodichloromethane	ND	2.7	"
cis-1,3-Dichloropropene	ND	1.8	"
4-Methyl-2-pentanone (MIBK)	ND	3.3	"
trans-1,3-Dichloropropene	ND	1.8	"
Toluene	ND	3.1	"
1,1,2-Trichloroethane	ND	2.2	"
2-Hexanone (MBK)	ND	3.3	"
Dibromochloromethane	ND	3.5	"
Tetrachloroethene	ND	2.8	"
1,2-Dibromoethane (EDB)	ND	3.1	"
1,1,1,2-Tetrachloroethane	ND	2.8	"

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**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EC11204 - TO-15**

**Blank (EC11204-BLK1)**

Prepared & Analyzed: 12-Mar-21

Chlorobenzene	ND	1.9	ug/m3
Ethylbenzene	ND	1.8	"
m,p-Xylene	ND	1.8	"
Styrene	ND	1.7	"
o-Xylene	ND	1.8	"
Bromoform	ND	4.2	"
1,1,2,2-Tetrachloroethane	ND	2.8	"
4-Ethyltoluene	ND	2.0	"
1,3,5-Trimethylbenzene	ND	2.0	"
1,2,4-Trimethylbenzene	ND	2.0	"
1,3-Dichlorobenzene	ND	2.4	"
1,4-Dichlorobenzene	ND	2.4	"
1,2-Dichlorobenzene	ND	2.4	"
1,2,4-Trichlorobenzene	ND	7.5	"
Hexachlorobutadiene	ND	11	"

<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>203</i>	<i>"</i>	<i>214</i>	<i>95.1</i>	<i>76-134</i>
<i>Surrogate: Toluene-d8</i>	<i>204</i>	<i>"</i>	<i>208</i>	<i>98.0</i>	<i>78-125</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>298</i>	<i>"</i>	<i>363</i>	<i>82.1</i>	<i>77-127</i>

**LCS (EC11204-BS1)**

Prepared & Analyzed: 12-Mar-21

Dichlorodifluoromethane (F12)	89	4.0	ug/m3	101	88.7	59-128
Vinyl chloride	46	0.5	"	52.0	88.9	64-127
Chloroethane	48	1.1	"	53.6	90.1	63-127
Trichlorofluoromethane (F11)	95	2.3	"	113	83.8	62-126
1,1-Dichloroethene	74	1.6	"	80.8	91.2	61-133
1,1,2-Trichlorotrifluoroethane (F113)	130	3.1	"	155	82.1	66-126
Methylene chloride (Dichloromethane)	55	1.4	"	70.8	77.1	62-115
trans-1,2-Dichloroethene	70	1.6	"	80.8	86.3	67-124
1,1-Dichloroethane	69	1.6	"	82.4	83.5	68-126
cis-1,2-Dichloroethene	72	1.6	"	80.0	89.6	70-121
Chloroform	85	1.0	"	99.2	85.8	68-123
1,1,1-Trichloroethane	100	2.2	"	111	89.9	68-125
1,2-Dichloroethane (EDC)	73	1.6	"	82.4	88.8	65-128

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15-Mar-21 14:17

**Volatile Organic Compounds by EPA TO-15 - Quality Control**  
**H&P Mobile Geochemistry, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EC11204 - TO-15**

**LCS (EC11204-BS1)**

Prepared & Analyzed: 12-Mar-21

Benzene	54	0.6	ug/m3	64.8		83.7	69-119			
Carbon tetrachloride	120	1.3	"	128		90.6	68-132			
Trichloroethene	100	2.2	"	110		94.2	71-123			
Toluene	72	3.1	"	76.8		94.2	66-119			
1,1,2-Trichloroethane	98	2.2	"	111		87.8	73-119			
Tetrachloroethene	170	2.8	"	138		121	66-124			
1,1,1,2-Tetrachloroethane	140	2.8	"	140		101	67-129			
Ethylbenzene	86	1.8	"	88.4		96.9	70-124			
m,p-Xylene	87	1.8	"	88.4		97.9	61-134			
o-Xylene	83	1.8	"	88.4		94.2	67-125			
1,1,2,2-Tetrachloroethane	110	2.8	"	140		79.3	65-127			

Surrogate: 1,2-Dichloroethane-d4	209		"	214		97.7	76-134			
Surrogate: Toluene-d8	199		"	208		95.6	78-125			
Surrogate: 4-Bromofluorobenzene	323		"	363		89.0	77-127			

Stantec - San Bernardino	Project: ST030421-11	
735 E Carnegie Dr., Ste 280	Project Number: 18585035 / San Marcos	Reported:
San Bernardino, CA 92408	Project Manager: Alicia Jansen	15-Mar-21 14:17

Petroleum Hydrocarbon Analysis by EPA TO-15 - Quality Control  
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch EC11204 - TO-15

Blank (EC11204-BLK1)	Prepared & Analyzed: 12-Mar-21									
TPHv (C5 - C12)	ND	100	ug/m3							

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San Bernardino, CA 92408

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Reported:  
15-Mar-21 14:17

### Notes and Definitions

LCC      Leak Check Compound  
ND      Analyte NOT DETECTED at or above the reporting limit  
MDL      Method Detection Limit  
%REC      Percent Recovery  
RPD      Relative Percent Difference

All soil results are reported in wet weight.

### Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743 & 2745.

H&P is approved by the State of Louisiana Department of Environmental Quality under the National Environmental Laboratory Accreditation Conference (NELAC) certification number 04138

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at [www.handpimg.com/about/certifications](http://www.handpimg.com/about/certifications).



Lab Client and Project Information			
Lab Client/Consultant: <u>Stantec</u>		Project Name / #: <u>1858 5035</u>	
Lab Client Project Manager: <u>Alicia Jansen</u>		Project Location: <u>225 N. Las Brisas, San Marcos</u>	
Lab Client Address: <u>735 E. Carnegie Dr. Suite 280</u>		Report E-Mail(s): <u>alicia.jansen@stantec.com</u>	
Lab Client City, State, Zip: <u>San Bernardino, CA 92408</u>			
Phone Number: <u>909-654-8342</u>			
Reporting Requirements		Turnaround Time	
<input checked="" type="checkbox"/> Standard Report <input type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____ <input type="checkbox"/> CA Geotracker Global ID: _____		<input checked="" type="checkbox"/> Standard (7 days for preliminary report, 10 days for final report) <input type="checkbox"/> Rush (specify): _____	
Sampler Information			
Sampler(s): <u>D. Balkenhol</u>			
Signature: <u>D. Balkenhol</u>			
Date: <u>3/4/21</u>			

Sample Receipt (Lab Use Only)	
Date Rec'd: <u>3/4/21</u>	Control #: <u>210149.03</u>
H&P Project # <u>ST030421-11</u>	
Lab Work Order # <u>E103017</u>	
Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Notes Below	
Receipt Gauge ID: <u>60206</u>	Temp: <u>RT</u>
Outside Lab:	
Receipt Notes/Tracking #:	
Lab PM Initials: <u>KB</u>	

**Additional Instructions to Laboratory:**

\* Preferred VOC units (please choose one):

☐ µg/L   ☒ µg/m<sup>3</sup>   ☐ ppbv   ☐ ppmv

1L RLS - KB/5

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List		VOCs Short List		Oxygenates	Naphthalene	TPHv as Gas		Aromatic/Aliphatic	Leak Check Compound	Methane by EPA 8015	Fixed Gases by ASTM D1945	Other	Remarks
								<input type="checkbox"/> 8260SV	<input checked="" type="checkbox"/> TO-15	<input type="checkbox"/> 8260SV	<input type="checkbox"/> TO-15			<input type="checkbox"/> 8260SV/m	<input checked="" type="checkbox"/> TO-15m						
SV-1		3/4/21	0950	SV	1L	381	-0.82	X						X		X					
SV-1 Rep		↓	0956	↓	↓	372	-1.13	X						X		X					
SV-2		↓	1013	↓	↓	199	-2.08	X						X		X					

Approved/Relinquished by: <u>[Signature]</u> Company: <u>Stantec</u> Date: <u>3/4/21</u> Time: <u>1016</u>	Received by: <u>[Signature]</u> Company: <u>H&amp;P</u> Date: <u>3/4/21</u> Time: <u>1016</u>
Approved/Relinquished by: _____ Company: _____ Date: _____ Time: _____	Received by: _____ Company: _____ Date: _____ Time: _____
Approved/Relinquished by: _____ Company: _____ Date: _____ Time: _____	Received by: _____ Company: _____ Date: _____ Time: _____

## Log Sheet: Soil Vapor Sampling with Summa

H&P Project #: ST030421-TECH  
Site Address: 225 Las Posas Rd., San Marcos  
Consultant: Stantec  
Consultant Rep(s): Alicia

Date: 3/4/21  
Page: 1 of 1  
H&P Rep(s): D. Balkenbush

Reviewed: EC  
Scanned: Thomas

**Equipment Info**  
Inline Gauge ID#: \_\_\_\_\_  
Pump ID#: 014

**Purge Volume Information**  
PV Amount: 3PV  
PV Includes: ☒ Tubing  
☒ Sand 40%  
☒ Dry Bent 50%

**Leak Check Compound** ☒ 1,1-DFA  
☐ 1,1,1,2-TFA  
☐ IPA  
☐ Other:  
*A cloth saturated with LCC is placed around tubing connections and probe seal. This is done for all samples unless otherwise noted.*

Sample and Summa Information							Probe Specs							Purge & Collection Information						
Point ID	Summa ID #	Sample Kit ID #	Start Time	Initial Vac (" Hg)	End / Sample Time	End Vac (" Hg)	Probe Depth (ft)	Tubing Length (ft)	Tubing OD (in.)	Sand Ht (in.)	Sand Dia (in.)	Dry Bent. Ht (in.)	Dry Bent. Dia (in.)	Shut In Test 60 sec (✓)	Leak Check (✓)	Purge Vol (mL)	Purge Flow Rate (mL/min)	Pump Time (min:sec)	Sample Flow Rate (mL/min)	Probe Vac <input type="checkbox"/> Hg <input checked="" type="checkbox"/> H <sub>2</sub> O
1 SV-1	381	271	0944	-28"	0950	0	3.5	7	1/8	6	1.5	3	1.5	✓	✓	359	200	1:48	<200	0
2 SV-1 Rep	372	271	0950	-28"	0956	0	3.5	7	1/8	6	1.5	3	1.5	✓	✓	1359	-	-	<200	0
3 SV-2	199	202	1006	-29"	1013	0	4	7	1/8	6	1.5	3	1.5	✓	✓	359	200	1:48	<200	0
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				

Site Notes such as weather, visitors, scope deviations, health & safety issues, etc. (When making sample specific notes, reference the line number above):