

**RECEIVED**

By Alameda County Environmental Health 3:18 pm, Jan 25, 2017

January 20, 2016

Subject: Baker Road Redevelopment  
20785 and 20957 Baker Road (Case #RO0003234)  
Castro Valley, California

**ACKNOWLEDGEMENT STATEMENT**

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the State Water Resources Control Board's GeoTracker website.



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Todd Deutscher  
Catalyst Development Partners

Project No.  
**13255.000.000**

August 31, 2016

Mr. Todd Deutscher  
Catalyst Development Partners  
18 Crow Canyon Court, Suite 190  
San Ramon, CA 94583

Subject: 20957 Baker Road  
Castro Valley, California

## **PHASE II ENVIRONMENTAL SITE ASSESSMENT**

Reference: ENGEO, Phase I Environmental Site Assessment, 20957 Baker Road, Castro Valley, California, Project Number 13255.000.000, August 23, 2016 (DRAFT).

Dear Mr. Deutscher:

We are pleased to submit the findings from our phase II environmental site assessment conducted at the subject property (Property) in Castro Valley, California (Property). The purpose of the phase II assessment was to evaluate potential environmental concerns identified in the Phase I ESA conducted for the Property (Reference), associated with the past uses on the Property.

## **BACKGROUND**

### **Site Description**

The Property is located southwest of Baker Road, northeast of Rutledge Road, and southeast of Castro Valley Boulevard in Castro Valley, California (Figure 1). The Property, measuring approximately 0.56 acres in area, is identified with Assessor's Parcel Number (APN) 84A-16-6-4.

The Property, 20957 Baker Road, features one remnant building foundation slab, and a majority of the parcel is dirt- or asphalt-covered with overgrown vegetation.

Multi-family housing is present in the vicinity to the north and south of the Property. An automotive shop is present to the west, and multi-family housing occupies the properties to the east of Baker Road.

### **Previous Studies**

AEI, Additional Information Report, 20957 Baker Road, Castro Valley, California, November 15, 2008.

AEI prepared an Additional Information Report for the Property in November 2008. The document provided an overview of past investigations and reporting for the Property. The

following is a summary of information presented in that report as well as supplemental information provided in a Case Closure Letter from Alameda County Department of Environmental Health (ACDEH) dated September 8, 2009.

In April 2004, two 1,000-gallon USTs were removed from the Property. The tanks, which had been unused for over 15 years were reported to contain a small amount of fuel and sludge, but the tanks were reported to be intact with no obvious leaks. Two soil samples were collected from underneath each UST and analyzed for total petroleum hydrocarbons as gasoline (TPH-g), BTEX, MTBE, methyl tertiary butyl ether (MTBE), total petroleum hydrocarbons as diesel (TPH-d), and total lead. Hydrocarbons were reported in all the soil samples analyzed. TPH-g was reported at concentrations ranging from 160 milligrams per kilogram (mg/kg) to 1,400 mg/kg. TPH-d was reported at concentrations ranging from 1,400 mg/kg to 10,000 mg/kg. Lower concentrations of xylene(s) and lead were also detected.

A preliminary site investigation was performed in May 2005. Eight soil borings were advanced to depths ranging from 14 to 18 feet below ground surface. No detectable concentrations of TPH-g, TPH-d, TPH-mo, MTBE or BTEX, were reported in any of the soil samples. TPH-g was reported in a groundwater sample at concentration of 7,300 micrograms per liter ( $\mu\text{g/L}$ ). No TPH-g was reported in groundwater samples from any other borings. A maximum TPH-d groundwater concentration was reported at 23,000  $\mu\text{g/L}$ . Free product was observed both in the field and in this groundwater sample. TPH-d was detected in other samples to a maximum concentration of 670  $\mu\text{g/L}$ . TPH-motor oil (mo) was reported at concentrations ranging from 300  $\mu\text{g/L}$  to 1,400  $\mu\text{g/L}$ . No MTBE was reported in the groundwater samples.

In October 2007, five groundwater monitoring wells were installed, one on each side of the former UST location, one through the center of the tank backfill, and two downgradient of the former UST location. Low-level hydrocarbons were detected in samples collected in a boring near the former tank location. Depth to water at the time the wells were developed ranged from approximately 11 to 14 ½ feet below the ground surface. Groundwater samples from the October 2007 groundwater monitoring event did not identify TPH-g, BTEX or MTBE were present at or above standard reporting limits in any of the groundwater samples. TPH-d was detected in one sample but not during three subsequent events.

Following the four quarters of groundwater monitoring AEI opined that the data for the Property met the established Regional Water Quality Control Board (RWQCB) standard for closure. Following a protracted comment and rebuttal period between AEI and ACDEH where the lack of soil gas sampling was cited as an impediment for closure when considering proposed residential site use, ACDEH did provide case closure in a letter dated September 9, 2009. In the case closure letter, ACDEH did note the absence of soil gas testing but given the elapsed time since the release (prior to 1989); the potential for vapor intrusion appeared to be low. ACDEH did note in the document that the closure was based on the reported release did not appear to present a risk to human health based on the site use and conditions at the time of the closure.

ENGEO, Phase I Environmental Site Assessment, 20957 Baker Road, Castro Valley, California, Project Number 13255.000.000, August 23, 2016 (DRAFT).

ENGEO conducted a concurrent phase I environmental site assessment for the Property in August 2016. The Property was reportedly used a corporation yard/storage area for heavy equipment. Prior to development in the 1950s, the Property appeared to be under cultivation for row crops.

Based on the findings of the ENGEO phase I assessment and previous assessments of the Property, the following potential environmental concerns were identified for the Property:

- Although the former leaking USTs at the Property were removed and a case closure was subsequently granted, information in the former case file indicated that potential risks via vapor intrusion may not have been adequately assessed during past characterization activities.
- Historical records for the Property indicated the Property was under agricultural cultivation in the past. Recalcitrant agricultural chemicals could be present in near-surface soils.

A phase II environmental assessment was recommended for the Property to (1) evaluate potential vapor intrusion impacts in the vicinity of the former USTs and (2) evaluate potential impacts to near surface soil due to the past agricultural activity.

## **SITE CHARACTERIZATION**

Field sampling activities were performed on August 19, 2016, which included soil and soil gas sampling.

Prior to drilling, an ENGEO representative contacted the USA North Service Alert to be notified of the location of underground utilities at the site. In addition, ENGEO retained a private utility locator to mark the boring locations. A C-57 licensed drilling contractor was retained to advance soil and soil gas borings (Figure 2). A boring permit was obtained from the Alameda County Public Works Agency (ACPWA). Details pertaining to each of these tasks are presented below.

### **Task 1 – Soil Sampling**

Soil samples were collected from a total of two locations across the Property. The soil borings were advanced to a total depth of 2 feet below ground surface using a Geoprobe® direct-push rig. Continuous soil cores were retrieved from each boring. Soil samples were collected at approximate depths of 3 to 9 inches and 12 to 18 inches below the ground surface from each of the borings.

The sample sleeves were sealed using Teflon® sheets secured by tight-fitting plastic end caps. Upon collection of samples, a sample label was placed on the sample including a unique sample number, sample location, time/date collected, lab analysis and the sampler's identification. The soil samples were placed in an ice-cooled chest and submitted under documented chain-of-custody to Torrent Laboratory, Inc., a State-certified laboratory based in Milpitas, California. Soil samples from each boring were analyzed for the following:

- Organochlorine pesticides (EPA Method 8081)
- Lead and arsenic (EPA Method 6010)

The deeper samples from each location were held by the laboratory pending the results of the shallower samples. The borings were filled with grout upon completion of sampling.

## **Task 2 - Soil Gas Assessment**

In order to evaluate potential vapor intrusion concerns, a soil gas assessment was conducted at the Property. Three temporary soil gas monitoring wells (SG-1 through SG-3) were installed at the Property using a Geoprobe® rig. The soil gas well locations are presented on Figure 2.

The installation and sampling of the soil gas monitoring wells were performed in accordance with the Department of Toxic Substances Control (DTSC) Final Advisory Active Soil Gas Investigations (July 2015). The soil gas monitoring well casings were constructed with ¼-inch-diameter Teflon tubing equipped with a filter at the base of the tubing. The well installation was performed with a direct-push probe rig, which advanced an approximately 2-inch-diameter boring to a depth of 6 feet below the ground surface. The bottom of the well casing was equipped with a filter situated at a depth of 5 feet below the ground surface, centered in the middle of a 2-foot-layer of No. 3 sand. The 2-foot-long sand pack was designed to provide adequate flow within potentially low permeability lithology at the Property. Six inches of dry bentonite was installed on top of the sand, and the remaining annular space was filled with hydrated bentonite grout to the surface.

Following installation of the annular seal, the well casings were equipped with a permanent Swagelok® ferrule and nut. A threaded plug was then screwed into the nut and the mandatory 2-hour equilibration time began. The sample train was connected to the well tubing by threading the permanent Swagelok® fitting on the well casing onto the manifold. The sample train consisted of a stainless steel twin summa manifold with a built-in flow controller set to 100 to 200 milliliters per minute (ml/min). A purge canister was attached to the manifold connection closest to the well casing and the sample canister was connected to the manifold fitting furthest away from the well casing. Prior to connecting the sample train to the well casing, a shut-in test was performed to assess for potential leaks. The shut-in test consisted of capping the end of the manifold, then applying a vacuum with the canister, closing the purge valve, and observing the vacuum gauge for 2 minutes to check for a drop in the vacuum. Once the sample train was connected to the well casing, all of the valves were closed, allowing a mandatory 2-hour equilibration time to commence. After the 2-hour equilibration time elapsed, three well volumes were purged from the wells. After purging was completed, the purge valve on the manifold was closed, and the vacuum pump was removed and connected to another well. Samples were collected by opening the sample canister valve and allowing the sample canister to extract soil gas until the vacuum in the sample canister reached approximately 5 inches of mercury. The leak detection compound 1,1-difluoroethane (1,1 DFA) was applied by wrapping a doused rag around the manifold fittings during sample collection.

Each sample canister was labeled with a unique identification number, sampling time and pre- and post-sample vacuum readings. Three soil gas samples were collected submitted to Torrent Laboratory Inc. under documented chain-of-custody for analysis of TPH-g and VOCs by EPA Test Method TO-15.

## **ANALYTICAL RESULTS**

### **Soil Sampling**

None of the soil samples exhibited detectable concentrations of organochlorine pesticides. All collected soil samples exhibited detectable lead concentrations; the detected concentrations for S-1 and S-4 were 7.41 and 33.2 milligrams per kilogram (mg/kg), respectively. These concentrations are below the respective screening level assuming a residential land use scenario<sup>1</sup>.

Detected arsenic concentrations in the collected soil samples for S-1 and S-4 were 13.7 and 26.5 mg/kg, respectively. This is in excess of the respective arsenic screening level assuming a residential land use scenario and is in excess of expected background concentrations observed in the San Francisco Bay Area.

Table A provides a summary of the laboratory analyses for the soil samples. The laboratory results are presented in their entirety in Appendix A.

### **Soil Gas Sampling**

Each of the soil gas samples exhibited detectable target analyte concentrations; the detected analytes are typically associated with gasoline and/or other refined petroleum hydrocarbon product. The soil gas results were compared to the RWQCB soil gas screening levels. Elevated concentrations of gasoline were detected in all three samples, ranging from 15,300 to 245,000 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ). Although these concentrations are below the screening level for indicating a human health risk, two of the three detected concentrations did exceed the screening level assuming an odor nuisance<sup>2</sup>. Two of the three samples exhibited ethylbenzene concentrations (3,500 and 3,700  $\mu\text{g}/\text{m}^3$ , respectively) in excess of the human risk screening level. One sample also exhibited a naphthalene concentration (130  $\mu\text{g}/\text{m}^3$ , respectively) in excess of the respective human risk screening level. Low concentrations of several other VOCs were detected in the soil gas samples collected from the Property, below their corresponding screening levels. The leak check compound 1,1-DFA was not detected in any of the samples.

Table B provides a summary of the laboratory analyses for the soil gas samples. The laboratory results are presented in their entirety in Appendix A.

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<sup>1</sup> Regional Water Quality Control Board, Soil Human Health Risk Screening Levels Residential Land Use, Shallow Soil, Table S-1, February 2016 (Revision 3).

<sup>2</sup> Regional Water Quality Control Board, Subslab/Soil Gas Vapor Intrusion Human Health Risk Screening Levels and Odor Nuisance Levels, Residential Land Use, Tables SG-1 and SG-2, February 2016 (Revision 3).

## DISCUSSION & CONCLUSION

Review of the laboratory test results found detectable concentrations of lead and arsenic in surface soils. Given the reported arsenic concentrations, it appears the surface soil at the Property has been impacted by past agricultural activities. The presence of the arsenic-impacted soil will likely necessitate mitigation to allow for residential re-development of the Property. Additional sampling should be considered to better define the lateral extent and depth of the soil impact at the Property, and an excavation and off-site disposal program should be considered. The impacted soils likely would be classified for disposal at a Class II landfill disposal facility.

VOCs were detected in soil gas samples collected from the Property. As discussed, TPH-gasoline, ethylbenzene, and naphthalene were detected in soil gas concentrations in excess of odor nuisance and/or human risk levels. Given the presence of these elevated concentrations, a mitigation program, either in the form of environmental remediation (e.g., impacted soil removal, soil vapor extraction), or the use of a vapor intrusion mitigation system (VIMS), will likely be necessary to facilitate residential development at the Property.


Soil gas samples were collected in the immediate vicinity of the former UST location. To determine the extent of soil gas impact at the Property, additional soil gas sampling should be considered.

Given the presence of soil gas and soil impact at the Property, consideration should be given to reviewing and selecting the remediation/mitigation program alternatives under the oversight of a regulatory agency. The specific framework and timing of the remedial approaches should also be discussed with an oversight agency as appropriate.


If you have any questions regarding this report, please contact us.

Sincerely,

ENGEO Incorporated

  
Jeffrey A. Adams, PhD, PE



  
Shawn Munger, CHG

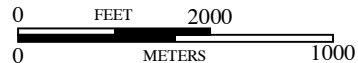
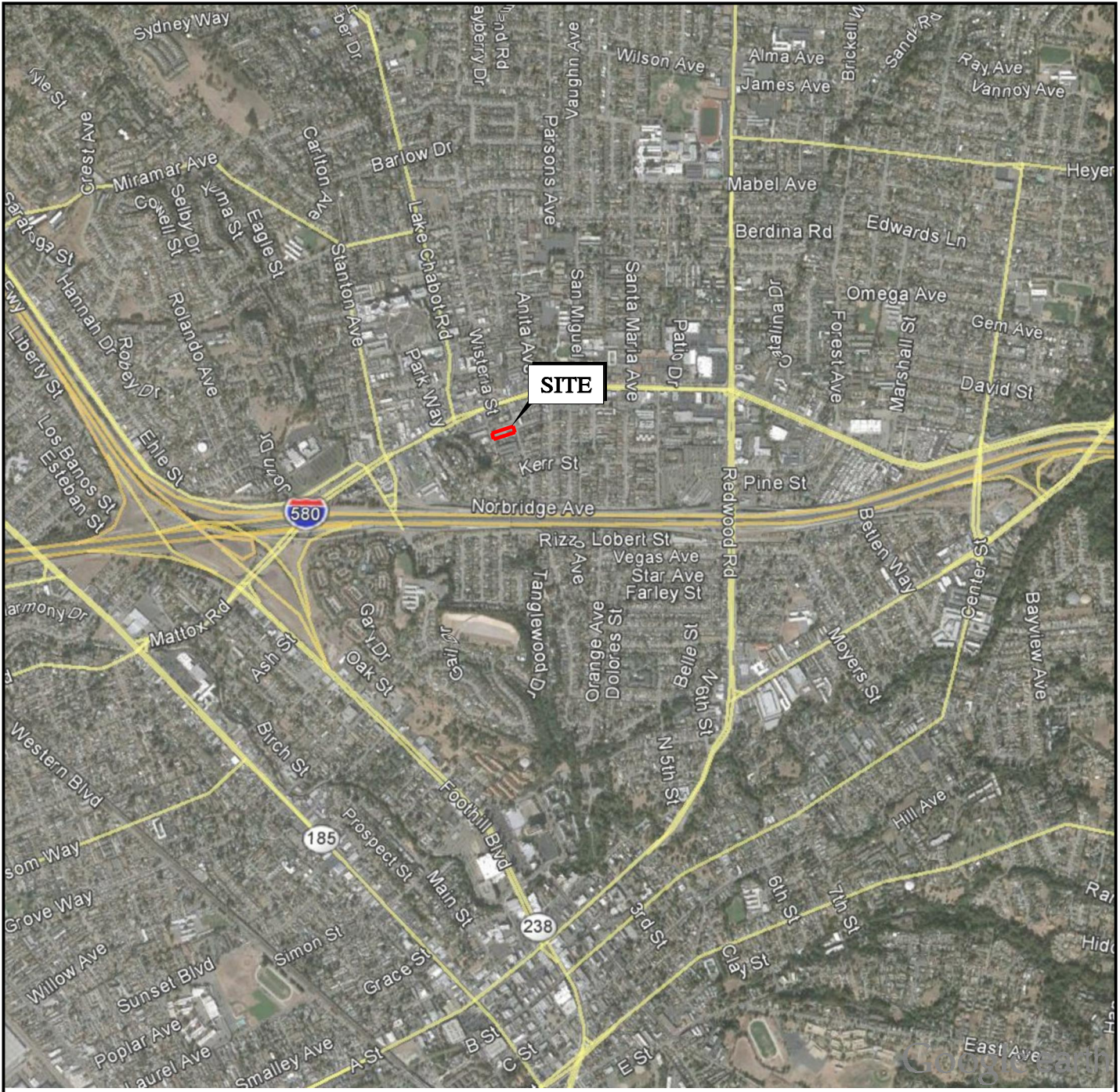
Attachments: Figures 1 and 2  
Tables A and B  
Appendix A – Laboratory Analysis Report

**FIGURES**

**Figure 1 – Vicinity Map**  
**Figure 2 – Site Plan**



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BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE



VICINITY MAP  
20957 BAKER ROAD  
CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000		FIGURE NO. <b>1</b>
SCALE: AS SHOWN		
DRAWN BY: LL	CHECKED BY: JA	



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RUTLEDGE ROAD

BAKER ROAD

SITE



**EXPLANATION**

ALL LOCATIONS ARE APPROXIMATE

- S-4** SOIL SAMPLE (ENGEO, 2016)
- SG-3** SOIL GAS SAMPLE (ENGEO, 2016)

BASE MAP SOURCE: GOOGLE EARTH MAPPING SERVICE



SITE PLAN  
 20957 BAKER ROAD  
 CASTRO VALLEY, CALIFORNIA

PROJECT NO.: 13255.000.000		<b>2</b>
SCALE: AS SHOWN		
DRAWN BY: LL	CHECKED BY: JA	

**TABLES**

**Table A – Summary of Soil Analytical Results**

**Table B – Summary of Soil Gas Analytical Results**

**TABLE A - SUMMARY OF SOIL LABORATORY ANALYSIS**

Soil Sample	Date Collected	Arsenic	Lead
		mg/kg	mg/kg
RWQCB Environmental Screening Levels <sup>1</sup>		0.067	80
S-1@3-9"	8/19/2016	<b>13.7</b>	7.41
S-4@3-9"	8/19/2016	<b>26.5</b>	33.2

<sup>1</sup> Regional Water Quality Control Board, Soil Human Health Risk Screening Levels (Residential Land Use), Table S-1, February 2016 (Revision 3)

**TABLE B - SUMMARY OF SOIL GAS LABORATORY ANALYSIS**

Soil Gas Sample	Date Collected	Volatile Organic Compounds/Total Petroleum Hydrocarbons as Gasoline									
		Acetone µg/m <sup>3</sup>	2-Hexanone µg/m <sup>3</sup>	Ethylbenzene µg/m <sup>3</sup>	m,p - Xylene µg/m <sup>3</sup>	o- Xylene µg/m <sup>3</sup>	1,2,4- Trimethylbenzene µg/m <sup>3</sup>	Naphthalene µg/m <sup>3</sup>	1,2,4- Trichlorobenzene µg/m <sup>3</sup>	1,3,5- Trimethylbenzene µg/m <sup>3</sup>	TPH-Gasoline µg/m <sup>3</sup>
RWQCB Environmental Screening Levels <sup>1</sup>		15,000,000	N/A	560	52,000	52,000	N/A	41	1,000		300,000 <sup>1</sup> 50,000 <sup>2</sup>
SG-1	8/19/2016	8,500	95	3,500	17,000	5,200	88	ND	ND	ND	88,100
SG-2	8/19/2016	4,900	ND	210	1,100	370	ND	ND	160	ND	15,300
SG-3	8/19/2016	2,500	170	3,700	20,000	7,800	5,700	130	ND	2,300	245,000

<sup>1</sup> Regional Water Quality Control Board, Subslab/Soil Gas Vapor Intrusion Human Risk Levels, Residential Land Use, Table SG-1, February 2016 (Revision 3).

<sup>2</sup> Regional Water Quality Control Board, Subslab/Soil Gas Vapor Intrusion Odor Nuisance Levels, Residential Land Use, Table SG-2, February 2016 (Revision 3).

**APPENDIX A**

**Laboratory Analysis Report**



Engeo (San Ramon)  
2010 Crow Canyon Place, #250  
San Ramon, California 94583  
Tel: (925) 866-9000  
Fax: (925) 866-0199  
RE: 20957 Baker Rd

Work Order No.: 1608183

Dear Divya Bhargava:

Torrent Laboratory, Inc. received 8 sample(s) on August 19, 2016 for the analyses presented in the following Report.

As requested on the Chain of Custody, four samples were placed on hold.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

A handwritten signature in blue ink, appearing to read "Patti L Sandrock", is written over a light blue horizontal line.

Patti L Sandrock  
QA Officer

August 22, 2016

Date



**Date:** 8/22/2016

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**Client:** Engeo (San Ramon)

**Project:** 20957 Baker Rd

**Work Order:** 1608183

### **CASE NARRATIVE**

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No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Analytical, Inc.





## Sample Result Summary

Report prepared for: Divya Bhargava  
 Engeo (San Ramon)

Date Received: 08/19/16

Date Reported: 08/22/16

S-1 @ 3-9" 1608183-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	13.7	mg/Kg
Lead	SW6010B	1	0.12	3.0	7.41	mg/Kg

S-2 @ 3-9" 1608183-003

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	27.3	mg/Kg
Lead	SW6010B	1	0.12	3.0	6.49	mg/Kg

S-3 @ 3-9" 1608183-005

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	17.9	mg/Kg
Lead	SW6010B	1	0.12	3.0	14.1	mg/Kg

S-4 @ 3-9" 1608183-007

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
Arsenic	SW6010B	1	0.15	1.3	26.5	mg/Kg
Lead	SW6010B	1	0.12	3.0	33.2	mg/Kg



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-1 @ 3-9"	<b>Lab Sample ID:</b>	1608183-001A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:10		
<b>SDG:</b>			

<b>Prep Method:</b> 3050B	<b>Prep Batch Date/Time:</b> 8/19/16 6:45:00PM
<b>Prep Batch ID:</b> 1820	<b>Prep Analyst:</b> PPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	<b>13.7</b>		mg/Kg	08/20/16	12:18	ERR	419401
Lead	SW6010B	1	0.12	3.0	<b>7.41</b>		mg/Kg	08/20/16	12:18	ERR	419401

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16 5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b> SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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**The results shown below are reported using their MDL.**

alpha-BHC	SW8081A	10	1.3	20	ND		ug/Kg	08/20/16	3:42	LA	419404
gamma-BHC (Lindane)	SW8081A	10	1.6	20	ND		ug/Kg	08/20/16	3:42	LA	419404
beta-BHC	SW8081A	10	3.2	20	ND		ug/Kg	08/20/16	3:42	LA	419404
delta-BHC	SW8081A	10	1.6	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Heptachlor	SW8081A	10	1.1	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Aldrin	SW8081A	10	2.0	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Heptachlor Epoxide	SW8081A	10	0.78	20	ND		ug/Kg	08/20/16	3:42	LA	419404
gamma-Chlordane	SW8081A	10	1.6	20	ND		ug/Kg	08/20/16	3:42	LA	419404
alpha-Chlordane	SW8081A	10	1.7	20	ND		ug/Kg	08/20/16	3:42	LA	419404
4,4-DDE	SW8081A	10	1.9	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Endosulfan I	SW8081A	10	1.8	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Dieldrin	SW8081A	10	1.5	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Endrin	SW8081A	10	1.9	20	ND		ug/Kg	08/20/16	3:42	LA	419404
4,4-DDD	SW8081A	10	5.7	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Endosulfan II	SW8081A	10	5.8	20	ND		ug/Kg	08/20/16	3:42	LA	419404
4,4-DDT	SW8081A	10	1.3	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Endrin Aldehyde	SW8081A	10	1.5	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Methoxychlor	SW8081A	10	2.0	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Endosulfan Sulfate	SW8081A	10	1.2	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Endrin Ketone	SW8081A	10	0.94	20	ND		ug/Kg	08/20/16	3:42	LA	419404
Chlordane	SW8081A	10	21	200	ND		ug/Kg	08/20/16	3:42	LA	419404
Toxaphene	SW8081A	10	85	500	ND		ug/Kg	08/20/16	3:42	LA	419404

Acceptance Limits



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-1 @ 3-9"	<b>Lab Sample ID:</b>	1608183-001A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:10		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16 5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b> SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
-------------	-----------------	----	-----	-----	---------	---	-------	----------	------	----	------------------

**The results shown below are reported using their MDL.**

TCMX (S)	SW8081A	70 - 125	<b>89.0</b>	ug/Kg	08/20/16	3:42	LA	419404
DCBP (S)	SW8081A	30 - 135	<b>115</b>	ug/Kg	08/20/16	3:42	LA	419404

**NOTE:** Sample diluted due to nature of the matrix (dark, viscous extract)



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-2 @ 3-9"	<b>Lab Sample ID:</b>	1608183-003A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:20		
<b>SDG:</b>			

<b>Prep Method:</b> 3050B	<b>Prep Batch Date/Time:</b> 8/19/16	6:45:00PM
<b>Prep Batch ID:</b> 1820	<b>Prep Analyst:</b>	PPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	<b>27.3</b>		mg/Kg	08/20/16	12:21	ERR	419401
Lead	SW6010B	1	0.12	3.0	<b>6.49</b>		mg/Kg	08/20/16	12:21	ERR	419401

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16	5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b>	SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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**The results shown below are reported using their MDL.**

alpha-BHC	SW8081A	4	0.51	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
gamma-BHC (Lindane)	SW8081A	4	0.64	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
beta-BHC	SW8081A	4	1.3	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
delta-BHC	SW8081A	4	0.62	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Heptachlor	SW8081A	4	0.42	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Aldrin	SW8081A	4	0.78	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Heptachlor Epoxide	SW8081A	4	0.31	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
gamma-Chlordane	SW8081A	4	0.65	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
alpha-Chlordane	SW8081A	4	0.69	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
4,4-DDE	SW8081A	4	0.78	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Endosulfan I	SW8081A	4	0.73	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Dieldrin	SW8081A	4	0.59	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Endrin	SW8081A	4	0.75	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
4,4-DDD	SW8081A	4	2.3	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Endosulfan II	SW8081A	4	2.3	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
4,4-DDT	SW8081A	4	0.52	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Endrin Aldehyde	SW8081A	4	0.60	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Methoxychlor	SW8081A	4	0.80	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Endosulfan Sulfate	SW8081A	4	0.47	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Endrin Ketone	SW8081A	4	0.38	8.0	ND		ug/Kg	08/20/16	3:55	LA	419404
Chlordane	SW8081A	4	8.4	80	ND		ug/Kg	08/20/16	3:55	LA	419404
Toxaphene	SW8081A	4	34	200	ND		ug/Kg	08/20/16	3:55	LA	419404

Acceptance Limits



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-2 @ 3-9"	<b>Lab Sample ID:</b>	1608183-003A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:20		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16 5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b> SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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**The results shown below are reported using their MDL.**

TCMX (S)	SW8081A	70 - 125	<b>85.8</b>	ug/Kg	08/20/16	3:55	LA	419404
DCBP (S)	SW8081A	30 - 135	<b>104</b>	ug/Kg	08/20/16	3:55	LA	419404

**NOTE:** Sample diluted due to nature of the matrix (dark, viscous extract)



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-3 @ 3-9"	<b>Lab Sample ID:</b>	1608183-005A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:30		
<b>SDG:</b>			

<b>Prep Method:</b> 3050B	<b>Prep Batch Date/Time:</b> 8/19/16 6:45:00PM
<b>Prep Batch ID:</b> 1820	<b>Prep Analyst:</b> PPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	<b>17.9</b>		mg/Kg	08/20/16	12:23	ERR	419401
Lead	SW6010B	1	0.12	3.0	<b>14.1</b>		mg/Kg	08/20/16	12:23	ERR	419401

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16 5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b> SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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**The results shown below are reported using their MDL.**

alpha-BHC	SW8081A	4	0.51	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
gamma-BHC (Lindane)	SW8081A	4	0.64	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
beta-BHC	SW8081A	4	1.3	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
delta-BHC	SW8081A	4	0.62	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Heptachlor	SW8081A	4	0.42	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Aldrin	SW8081A	4	0.78	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Heptachlor Epoxide	SW8081A	4	0.31	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
gamma-Chlordane	SW8081A	4	0.65	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
alpha-Chlordane	SW8081A	4	0.69	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
4,4-DDE	SW8081A	4	0.78	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Endosulfan I	SW8081A	4	0.73	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Dieldrin	SW8081A	4	0.59	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Endrin	SW8081A	4	0.75	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
4,4-DDD	SW8081A	4	2.3	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Endosulfan II	SW8081A	4	2.3	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
4,4-DDT	SW8081A	4	0.52	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Endrin Aldehyde	SW8081A	4	0.60	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Methoxychlor	SW8081A	4	0.80	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Endosulfan Sulfate	SW8081A	4	0.47	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Endrin Ketone	SW8081A	4	0.38	8.0	ND		ug/Kg	08/20/16	4:09	LA	419404
Chlordane	SW8081A	4	8.4	80	ND		ug/Kg	08/20/16	4:09	LA	419404
Toxaphene	SW8081A	4	34	200	ND		ug/Kg	08/20/16	4:09	LA	419404

Acceptance Limits



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-3 @ 3-9"	<b>Lab Sample ID:</b>	1608183-005A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:30		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16 5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b> SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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*The results shown below are reported using their MDL.*

TCMX (S)	SW8081A	70 - 125	<b>87.6</b>	ug/Kg	08/20/16	4:09	LA	419404
DCBP (S)	SW8081A	30 - 135	<b>105</b>	ug/Kg	08/20/16	4:09	LA	419404

**NOTE:** Sample diluted due to nature of the matrix (dark, viscous extract)



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-4 @ 3-9"	<b>Lab Sample ID:</b>	1608183-007A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:40		
<b>SDG:</b>			

<b>Prep Method:</b> 3050B	<b>Prep Batch Date/Time:</b> 8/19/16	6:45:00PM
<b>Prep Batch ID:</b> 1820	<b>Prep Analyst:</b>	PPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Arsenic	SW6010B	1	0.15	1.3	<b>26.5</b>		mg/Kg	08/20/16	12:26	ERR	419401
Lead	SW6010B	1	0.12	3.0	<b>33.2</b>		mg/Kg	08/20/16	12:26	ERR	419401

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16	5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b>	SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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**The results shown below are reported using their MDL.**

alpha-BHC	SW8081A	4	0.51	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
gamma-BHC (Lindane)	SW8081A	4	0.64	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
beta-BHC	SW8081A	4	1.3	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
delta-BHC	SW8081A	4	0.62	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Heptachlor	SW8081A	4	0.42	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Aldrin	SW8081A	4	0.78	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Heptachlor Epoxide	SW8081A	4	0.31	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
gamma-Chlordane	SW8081A	4	0.65	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
alpha-Chlordane	SW8081A	4	0.69	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
4,4-DDE	SW8081A	4	0.78	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Endosulfan I	SW8081A	4	0.73	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Dieldrin	SW8081A	4	0.59	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Endrin	SW8081A	4	0.75	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
4,4-DDD	SW8081A	4	2.3	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Endosulfan II	SW8081A	4	2.3	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
4,4-DDT	SW8081A	4	0.52	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Endrin Aldehyde	SW8081A	4	0.60	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Methoxychlor	SW8081A	4	0.80	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Endosulfan Sulfate	SW8081A	4	0.47	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Endrin Ketone	SW8081A	4	0.38	8.0	ND		ug/Kg	08/20/16	4:23	LA	419404
Chlordane	SW8081A	4	8.4	80	ND		ug/Kg	08/20/16	4:23	LA	419404
Toxaphene	SW8081A	4	34	200	ND		ug/Kg	08/20/16	4:23	LA	419404

Acceptance Limits





## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	S-4 @ 3-9"	<b>Lab Sample ID:</b>	1608183-007A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Soil
<b>Project Number:</b>	13255.000.000		
<b>Date/Time Sampled:</b>	08/19/16 / 9:40		
<b>SDG:</b>			

<b>Prep Method:</b> 3546_OCP	<b>Prep Batch Date/Time:</b> 8/19/16 5:28:00PM
<b>Prep Batch ID:</b> 1816	<b>Prep Analyst:</b> SNARASIMHAN

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
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**The results shown below are reported using their MDL.**

TCMX (S)	SW8081A	70 - 125	<b>81.8</b>	ug/Kg	08/20/16	4:23	LA	419404
DCBP (S)	SW8081A	30 - 135	<b>95.1</b>	ug/Kg	08/20/16	4:23	LA	419404

**NOTE:** Sample diluted due to nature of the matrix (dark, viscous extract)



### MB Summary Report

<b>Work Order:</b>	1608183	<b>Prep Method:</b>	3546_OCP	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1816
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8081A	<b>Analyzed Date:</b>	8/20/2016	<b>Analytical Batch:</b>	419404
<b>Units:</b>	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.13	2.0	ND	
gamma-BHC (Lindane)	0.16	2.0	ND	
beta-BHC	0.32	2.0	ND	
delta-BHC	0.16	2.0	ND	
Heptachlor	0.11	2.0	ND	
Aldrin	0.20	2.0	ND	
Heptachlor Epoxide	0.078	2.0	ND	
gamma-Chlordane	0.16	2.0	ND	
alpha-Chlordane	0.17	2.0	ND	
4,4-DDE	0.19	2.0	ND	
Endosulfan I	0.18	2.0	ND	
Dieldrin	0.15	2.0	ND	
Endrin	0.19	2.0	ND	
4,4-DDD	0.57	2.0	ND	
Endosulfan II	0.58	2.0	ND	
4,4-DDT	0.13	2.0	ND	
Endrin Aldehyde	0.15	2.0	ND	
Methoxychlor	0.20	2.0	ND	
Endosulfan Sulfate	0.12	2.0	ND	
Endrin Ketone	0.094	2.0	ND	
Chlordane	2.1	20	ND	
Toxaphene	8.5	50	ND	
TCMX (S)			88.1	
DCBP (S)			98.5	

<b>Work Order:</b>	1608183	<b>Prep Method:</b>	3050B	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1820
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010B	<b>Analyzed Date:</b>	8/20/2016	<b>Analytical Batch:</b>	419401
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Arsenic	0.15	5.00	0.98	
Lead	0.10	5.00	ND	



## LCS/LCSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	1608183	<b>Prep Method:</b>	3546_OCP	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1816
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8081A	<b>Analyzed Date:</b>	8/20/2016	<b>Analytical Batch:</b>	419404
<b>Units:</b>	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	86.6	89.9	3.97	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	84.9	87.8	3.18	40 - 130	30	
Aldrin	0.20	2.0	ND	40	85.5	86.0	0.583	25 - 140	30	
Dieldrin	0.15	2.0	ND	40	87.0	88.7	1.99	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	83.8	87.2	4.09	55 - 135	30	
4,4-DDT	0.13	2.0	ND	40	101	104	1.95	45 - 140	30	
TCMX (S)				100	81.5	85.0		70 - 125		
DCBP (S)				100	97.8	100		30 - 135		

<b>Work Order:</b>	1608183	<b>Prep Method:</b>	3050B	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1820
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW6010B	<b>Analyzed Date:</b>	8/20/2016	<b>Analytical Batch:</b>	419401
<b>Units:</b>	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Arsenic	0.15	5.00	0.98	50	110	117	6.15	80 - 120	30	
Lead	0.10	5.00	ND	50	98.2	101	2.81	80 - 120	30	



## MS/MSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	1608183	<b>Prep Method:</b>	3546_OCP	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1816
<b>Matrix:</b>	Soil	<b>Analytical Method:</b>	SW8081A	<b>Analyzed Date:</b>		<b>Analytical Batch:</b>	419404
<b>Spiked Sample:</b>	1608183-007A						
<b>Units:</b>	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.636	8.00	ND	40	89.4	90.3	1.00	25 - 135	30	
Heptachlor	0.420	8.00	ND	40	85.7	85.2	0.585	40 - 130	30	
Aldrin	0.780	8.00	ND	40	89.4	91.2	1.99	25 - 140	30	
Dieldrin	0.592	8.00	ND	40	89.7	90.2	0.550	60 - 130	30	
Endrin	0.752	8.00	ND	40	74.5	74.4	0.134	55 - 135	30	
4,4-DDT	0.516	8.00	ND	40	121	123	1.64	45 - 140	30	
TCMX (S)				100	84.0	85.2		70 - 125		
DCBP (S)				100	104	107		30 - 135		



## Laboratory Qualifiers and Definitions

### DEFINITIONS:

<b>Accuracy/Bias (% Recovery)</b> - The closeness of agreement between an observed value and an accepted reference value.
<b>Blank (Method/Preparation Blank)</b> -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
<b>Duplicate</b> - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
<b>Laboratory Control Sample (LCS ad LCSD)</b> - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
<b>Matrix</b> - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
<b>Matrix Spike (MS/MSD)</b> - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
<b>Method Detection Limit (MDL)</b> - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
<b>Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ)</b> - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
<b>Precision (%RPD)</b> - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
<b>Surrogate (S) or (Surr)</b> - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
<b>Tentatively Identified Compound (TIC)</b> - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
<b>Units:</b> the unit of measure used to express the reported result - <b>mg/L</b> and <b>mg/Kg</b> (equivalent to PPM - parts per million in <b>liquid</b> and <b>solid</b> ), <b>ug/L</b> and <b>ug/Kg</b> (equivalent to PPB - parts per billion in <b>liquid</b> and <b>solid</b> ), <b>ug/m3</b> , <b>mg/m3</b> , <b>ppbv</b> and <b>ppmv</b> (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), <b>ug/Wipe</b> (concentration found on the surface of a single Wipe usually taken over a 100cm <sup>2</sup> surface)

### LABORATORY QUALIFIERS:

<p><b>B</b> - Indicates when the analyte is found in the associated method or preparation blank</p> <p><b>D</b> - Surrogate is not recoverable due to the necessary dilution of the sample</p> <p><b>E</b> - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.</p> <p><b>H</b> - Indicates that the recommended holding time for the analyte or compound has been exceeded</p> <p><b>J</b> - Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative</p> <p><b>NA</b> - Not Analyzed</p> <p><b>N/A</b> - Not Applicable</p> <p><b>ND</b> - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.</p> <p><b>NR</b> - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added</p> <p><b>R</b> - The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts</p> <p><b>S</b> - Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative</p> <p><b>X</b> -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.</p>
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## Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Date and Time Received: 8/19/2016 3:20:00PM

Project Name: 20957 Baker Rd

Received By: ke

Work Order No.: 1608183

Physically Logged By: Lorna Imbat

Checklist Completed By:

Carrier Name: Client Drop Off

### Chain of Custody (COC) Information

Chain of custody present? Yes  
Chain of custody signed when relinquished and received? Yes  
Chain of custody agrees with sample labels? Yes  
Custody seals intact on sample bottles? Not Present

### Sample Receipt Information

Custody seals intact on shipping container/cooler? Not Present  
Shipping Container/Cooler In Good Condition? Yes  
Samples in proper container/bottle? Yes  
Samples containers intact? Yes  
Sufficient sample volume for indicated test? Yes

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

All samples received within holding time? Yes  
Container/Temp Blank temperature in compliance? Temperature: °C  
Water-VOA vials have zero headspace?  
Water-pH acceptable upon receipt? N/A  
pH Checked by: n/a pH Adjusted by: n/a

### Comments:



## Login Summary Report

**Client ID:** TL5123      Engeo (San Ramon)  
**Project Name:** 20957 Baker Rd  
**Project # :** 13255.000.000  
**Report Due Date:** 8/22/2016

**QC Level:** II  
**TAT Requested:** Next Day  
**Date Received:** 8/19/2016  
**Time Received:** 3:20 pm

**Comments:**

**Work Order # :** 1608183

<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
1608183-001A	S-1 @ 3-9"	08/19/16 9:10	Soil	02/15/17			Pest_S_8081OCP Met_S_AsPb	
1608183-002A	S-1 @ 12-18"	08/19/16 9:15	Soil	02/15/17	On-Hold		Hold Samples	
1608183-003A	S-2 @ 3-9"	08/19/16 9:20	Soil	02/15/17			Met_S_AsPb Pest_S_8081OCP	
1608183-004A	S-2 @ 12-18"	08/19/16 9:25	Soil	02/15/17	On-Hold		Hold Samples	
1608183-005A	S-3 @ 3-9"	08/19/16 9:30	Soil	02/15/17			Pest_S_8081OCP Met_S_AsPb	
1608183-006A	S-3 @ 12-18"	08/19/16 9:35	Soil	02/15/17	On-Hold		Hold Samples	
1608183-007A	S-4 @ 3-9"	08/19/16 9:40	Soil	02/15/17			Pest_S_8081OCP Met_S_AsPb	
1608183-008A	S-4 @ 12-18"	08/19/16 9:45	Soil	02/15/17	On-Hold		Hold Samples	





Milpitas, CA 95035  
 Phone: 408.263.5258  
 FAX: 408.263.8293  
 www.torrentlab.com

### CHAIN OF CUSTODY

\* NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY \*

LAB WORK ORDER NO
1608183

Company Name: ENGEO, INC	<input checked="" type="checkbox"/> Env. <input type="checkbox"/> DOD <input type="checkbox"/> Food <input type="checkbox"/> Special	Project Name: 20957 Baker Rd
Address: 2010 Crow Canyon Place, Suite 200	Project # 13255.000.000	
City: San Ramon State: CA Zip Code: 94583	Comments: Please hold 12-18" interval samples pending other results	
Telephone: Cell:	Email: dbhongava@engeo.com	
REPORT TO: Divya Bhargava SAMPLER: Lauren Gordon	P.O. #	QUOTE #

TURNAROUND TIME:	SAMPLE TYPE:	REPORT FORMAT:	<b>ANALYSIS REQUESTED</b>
<input type="checkbox"/> 10 Work Days <input type="checkbox"/> 4 Work Days <input checked="" type="checkbox"/> 1 Work Day <input type="checkbox"/> 7 Work Days <input type="checkbox"/> 3 Work Days <input type="checkbox"/> Noon - Nxt Day <input type="checkbox"/> 5 Work Days <input type="checkbox"/> 2 Work Days <input type="checkbox"/> 2-8 Hours	<input type="checkbox"/> Storm Water <input type="checkbox"/> Air <input type="checkbox"/> Waste Water <input type="checkbox"/> Wipe <input type="checkbox"/> Ground Water <input type="checkbox"/> Other <input checked="" type="checkbox"/> Soil	<input type="checkbox"/> Excell EDD <input type="checkbox"/> EDF <input type="checkbox"/> QC Level III <input type="checkbox"/> QC Level IV	
VOCs + TPH (10-15) PESTICIDES (8081) LEAD + ARSENIC (6010)			

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	PRES.	VOCs + TPH (10-15)	PESTICIDES (8081)	LEAD + ARSENIC (6010)	REMARKS
-001A		S-1 @ 3-9"	08/19/16 0910	Soil	1	6" sleeve	ICE		X	X	
-002A		S-1 @ 12-18"	0915						X	X	Please hold pending shallow results
-003A		S-2 @ 3-9"	0920						X	X	
-004A		S-2 @ 12-18"	0925						X	X	Please hold pending shallow results
-005A		S-3 @ 3-9"	0930						X	X	
-006A		S-3 @ 12-18"	0935						X	X	please hold pending shallow results
-007A		S-4 @ 3-9"	0940						X	X	
-008A		S-4 @ 12-18"	0945						X	X	Please hold pending shallow results
		SG-1	1300	Soil GAS	1	1L Canister	NA	X			<b>RUSH 1 DAY</b>
		SG-2	1130					X			
		SG-3	1220					X			

1 Relinquished By: <u>Lauren Gordon</u> Print: <u>Lauren Gordon</u> Date: <u>08/19/16</u> Time: <u>1520</u>	Received By: <u>Kathie Evans</u> Print: <u>Kathie Evans</u> Date: <u>8-19-16</u> Time: <u>15:20</u>
2 Relinquished By: _____ Print: _____ Date: _____ Time: _____	Received By: _____ Print: _____ Date: _____ Time: _____

Were Samples Received in Good Condition?  Yes  NO Samples on Ice?  Yes  NO Method of Shipment Dloff Sample seals intact?  Yes  NO  N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made. Temp. Gun # #1 Temp 7 °C Page 1 of 1

Log In By: \_\_\_\_\_ Date: \_\_\_\_\_ Labeled By: \_\_\_\_\_ Date: \_\_\_\_\_ Log In Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_





Engeo (San Ramon)  
2010 Crow Canyon Place, #250  
San Ramon, California 94583  
Tel: (925) 866-9000  
Fax: (925) 866-0199  
RE: 20957 Baker Rd

Work Order No.: 1608182

Dear Divya Bhargava:

Torrent Laboratory, Inc. received 3 sample(s) on August 19, 2016 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.

A handwritten signature in blue ink, appearing to read "Patti L. Sandroock", is written over a light blue horizontal line.

Patti L Sandroock  
QA Officer

August 22, 2016

Date



**Date:** 8/22/2016

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**Client:** Engeo (San Ramon)

**Project:** 20957 Baker Rd

**Work Order:** 1608182

### **CASE NARRATIVE**

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No issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Analytical, Inc.



## Sample Result Summary

Report prepared for: Divya Bhargava  
 Engeo (San Ramon)

Date Received: 08/19/16

Date Reported: 08/22/16

SG-1

1608182-001

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results ug/m3</u>
Acetone	ETO15	35	14	420	8500
2-Hexanone	ETO15	35	23	72	95
Ethyl Benzene	ETO15	35	22	76	3500
m,p-Xylene	ETO15	35	34	76	17000
o-Xylene	ETO15	35	11	76	5200
1,2,4-Trimethylbenzene	ETO15	35	21	86	88
TPH-Gasoline	TO-15	35	1400	6200	88100

SG-2

1608182-002

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results ug/m3</u>
Ethyl Benzene	ETO15	10	6.3	22	210
m,p-Xylene	ETO15	10	9.8	22	1100
o-Xylene	ETO15	10	3.0	22	370
1,2,4-Trichlorobenzene	ETO15	10	22	37	160
Acetone	ETO15	50	20	600	4900
TPH-Gasoline	TO-15	10	400	1800	15300

SG-3

1608182-003

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results ug/m3</u>
Acetone	ETO15	50	20	600	2500
2-Hexanone	ETO15	50	33	100	170
Ethyl Benzene	ETO15	50	31	110	3700
m,p-Xylene	ETO15	50	49	110	20000
o-Xylene	ETO15	50	15	110	7800
1,3,5-Trimethylbenzene	ETO15	50	15	120	2300
1,2,4-Trimethylbenzene	ETO15	50	30	120	5700
Naphthalene	ETO15	50	64	130	130
TPH-Gasoline	TO-15	50	2000	8800	245000



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b> SG-1	<b>Lab Sample ID:</b> 1608182-001A
<b>Project Name/Location:</b> 20957 Baker Rd	<b>Sample Matrix:</b> Air
<b>Project Number:</b> 13255.000.000	
<b>Date/Time Sampled:</b> 08/19/16 / 13:00	<b>Certified Clean WO # :</b>
<b>Canister/Tube ID:</b> A7464	<b>Received PSI :</b> 1.7
<b>Collection Volume (L):</b>	<b>Corrected PSI :</b> 12.2
<b>SDG:</b>	

<b>Prep Method:</b> TO15-P	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1833	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	ETO15	35.00	55	87	ND	ND		08/19/16	20:06	BA	419413
1,1-Difluoroethane	ETO15	35.00	12	470	ND	ND		08/19/16	20:06	BA	419413
1,2-Dichlorotetrafluoroethane	ETO15	35.00	990	2000	ND	ND		08/19/16	20:06	BA	419413
Chloromethane	ETO15	35.00	72	140	ND	ND		08/19/16	20:06	BA	419413
Vinyl Chloride	ETO15	35.00	7.9	45	ND	ND		08/19/16	20:06	BA	419413
1,3-Butadiene	ETO15	35.00	12	39	ND	ND		08/19/16	20:06	BA	419413
Bromomethane	ETO15	35.00	23	68	ND	ND		08/19/16	20:06	BA	419413
Chloroethane	ETO15	35.00	28	46	ND	ND		08/19/16	20:06	BA	419413
Trichlorofluoromethane	ETO15	35.00	19	98	ND	ND		08/19/16	20:06	BA	419413
1,1-Dichloroethene	ETO15	35.00	29	69	ND	ND		08/19/16	20:06	BA	419413
Freon 113	ETO15	35.00	36	130	ND	ND		08/19/16	20:06	BA	419413
Carbon Disulfide	ETO15	35.00	13	54	ND	ND		08/19/16	20:06	BA	419413
2-Propanol (Isopropyl Alcohol)	ETO15	35.00	45	430	ND	ND		08/19/16	20:06	BA	419413
Methylene Chloride	ETO15	35.00	25	61	ND	ND		08/19/16	20:06	BA	419413
Acetone	ETO15	35.00	14	420	8500	3,571.43	E	08/19/16	20:06	BA	419413
trans-1,2-Dichloroethene	ETO15	35.00	17	69	ND	ND		08/19/16	20:06	BA	419413
Hexane	ETO15	35.00	16	62	ND	ND		08/19/16	20:06	BA	419413
MTBE	ETO15	35.00	16	63	ND	ND		08/19/16	20:06	BA	419413
tert-Butanol	ETO15	35.00	22	53	ND	ND		08/19/16	20:06	BA	419413
Diisopropyl ether (DIPE)	ETO15	35.00	26	73	ND	ND		08/19/16	20:06	BA	419413
1,1-Dichloroethane	ETO15	35.00	19	71	ND	ND		08/19/16	20:06	BA	419413
ETBE	ETO15	35.00	11	73	ND	ND		08/19/16	20:06	BA	419413
cis-1,2-Dichloroethene	ETO15	35.00	29	69	ND	ND		08/19/16	20:06	BA	419413
Chloroform	ETO15	35.00	34	85	ND	ND		08/19/16	20:06	BA	419413
Vinyl Acetate	ETO15	35.00	26	62	ND	ND		08/19/16	20:06	BA	419413
Carbon Tetrachloride	ETO15	35.00	39	110	ND	ND		08/19/16	20:06	BA	419413
1,1,1-Trichloroethane	ETO15	35.00	28	96	ND	ND		08/19/16	20:06	BA	419413
2-Butanone (MEK)	ETO15	35.00	14	52	ND	ND		08/19/16	20:06	BA	419413
Ethyl Acetate	ETO15	35.00	17	63	ND	ND		08/19/16	20:06	BA	419413
Tetrahydrofuran	ETO15	35.00	16	52	ND	ND		08/19/16	20:06	BA	419413
Benzene	ETO15	35.00	15	56	ND	ND		08/19/16	20:06	BA	419413
TAME	ETO15	35.00	24	73	ND	ND		08/19/16	20:06	BA	419413



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b> SG-1	<b>Lab Sample ID:</b> 1608182-001A
<b>Project Name/Location:</b> 20957 Baker Rd	<b>Sample Matrix:</b> Air
<b>Project Number:</b> 13255.000.000	
<b>Date/Time Sampled:</b> 08/19/16 / 13:00	<b>Certified Clean WO # :</b>
<b>Canister/Tube ID:</b> A7464	<b>Received PSI :</b> 1.7
<b>Collection Volume (L):</b>	<b>Corrected PSI :</b> 12.2
<b>SDG:</b>	

<b>Prep Method:</b> TO15-P	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1833	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
1,2-Dichloroethane (EDC)	ETO15	35.00	15	71	ND	ND		08/19/16	20:06	BA	419413
Trichloroethylene	ETO15	35.00	28	94	ND	ND		08/19/16	20:06	BA	419413
1,2-Dichloropropane	ETO15	35.00	27	81	ND	ND		08/19/16	20:06	BA	419413
Bromodichloromethane	ETO15	35.00	26	120	ND	ND		08/19/16	20:06	BA	419413
1,4-Dioxane	ETO15	35.00	63	130	ND	ND		08/19/16	20:06	BA	419413
trans-1,3-Dichloropropene	ETO15	35.00	37	79	ND	ND		08/19/16	20:06	BA	419413
Toluene	ETO15	35.00	26	66	ND	ND		08/19/16	20:06	BA	419413
4-Methyl-2-Pentanone (MIBK)	ETO15	35.00	26	72	ND	ND		08/19/16	20:06	BA	419413
cis-1,3-Dichloropropene	ETO15	35.00	15	79	ND	ND		08/19/16	20:06	BA	419413
Tetrachloroethylene	ETO15	35.00	51	120	ND	ND		08/19/16	20:06	BA	419413
1,1,2-Trichloroethane	ETO15	35.00	20	96	ND	ND		08/19/16	20:06	BA	419413
Dibromochloromethane	ETO15	35.00	39	150	ND	ND		08/19/16	20:06	BA	419413
1,2-Dibromoethane (EDB)	ETO15	35.00	26	130	ND	ND		08/19/16	20:06	BA	419413
2-Hexanone	ETO15	35.00	23	72	95	23.17		08/19/16	20:06	BA	419413
Ethyl Benzene	ETO15	35.00	22	76	3500	806.45		08/19/16	20:06	BA	419413
Chlorobenzene	ETO15	35.00	21	81	ND	ND		08/19/16	20:06	BA	419413
1,1,1,2-Tetrachloroethane	ETO15	35.00	29	120	ND	ND		08/19/16	20:06	BA	419413
m,p-Xylene	ETO15	35.00	34	76	17000	3,917.05		08/19/16	20:06	BA	419413
o-Xylene	ETO15	35.00	11	76	5200	1,198.16		08/19/16	20:06	BA	419413
Styrene	ETO15	35.00	16	75	ND	ND		08/19/16	20:06	BA	419413
Bromoform	ETO15	35.00	46	180	ND	ND		08/19/16	20:06	BA	419413
1,1,2,2-Tetrachloroethane	ETO15	35.00	29	120	ND	ND		08/19/16	20:06	BA	419413
4-Ethyl Toluene	ETO15	35.00	19	86	ND	ND		08/19/16	20:06	BA	419413
1,3,5-Trimethylbenzene	ETO15	35.00	11	86	ND	ND		08/19/16	20:06	BA	419413
1,2,4-Trimethylbenzene	ETO15	35.00	21	86	88	17.89		08/19/16	20:06	BA	419413
1,4-Dichlorobenzene	ETO15	35.00	26	110	ND	ND		08/19/16	20:06	BA	419413
1,3-Dichlorobenzene	ETO15	35.00	47	110	ND	ND		08/19/16	20:06	BA	419413
1,2-Dichlorobenzene	ETO15	35.00	37	110	ND	ND		08/19/16	20:06	BA	419413
Hexachlorobutadiene	ETO15	35.00	65	190	ND	ND		08/19/16	20:06	BA	419413
1,2,4-Trichlorobenzene	ETO15	35.00	75	130	ND	ND		08/19/16	20:06	BA	419413
Naphthalene	ETO15	35.00	45	92	ND	ND		08/19/16	20:06	BA	419413
(S) 4-Bromofluorobenzene	ETO15	35.00	65	135	93 %			08/19/16	20:06	BA	419413



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
 Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	SG-1	<b>Lab Sample ID:</b>	1608182-001A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Air
<b>Project Number:</b>	13255.000.000	<b>Certified Clean WO # :</b>	
<b>Date/Time Sampled:</b>	08/19/16 / 13:00	<b>Received PSI :</b>	1.7
<b>Canister/Tube ID:</b>	A7464	<b>Corrected PSI :</b>	12.2
<b>Collection Volume (L):</b>			
<b>SDG:</b>			

<b>Prep Method:</b> TO15-GRO	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1841	<b>Prep Analyst:</b>	BALI

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
TPH-Gasoline	TO-15	35.00	1400	6200	88100	25,028.41	x	08/19/16	18:37	BA	419423

**NOTE:** x-not a match to Gas reference std but within C5-C12 quantitation range (possibly aged gasoline)



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b> SG-2	<b>Lab Sample ID:</b> 1608182-002A
<b>Project Name/Location:</b> 20957 Baker Rd	<b>Sample Matrix:</b> Air
<b>Project Number:</b> 13255.000.000	
<b>Date/Time Sampled:</b> 08/19/16 / 11:30	<b>Certified Clean WO # :</b>
<b>Canister/Tube ID:</b> 6116	<b>Received PSI :</b> 13.4
<b>Collection Volume (L):</b>	<b>Corrected PSI :</b>
<b>SDG:</b>	

<b>Prep Method:</b> TO15-P	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1833	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	ETO15	10.00	16	25	ND	ND		08/19/16	18:18	BA	419413
1,1-Difluoroethane	ETO15	10.00	3.5	140	ND	ND		08/19/16	18:18	BA	419413
1,2-Dichlorotetrafluoroethane	ETO15	10.00	280	560	ND	ND		08/19/16	18:18	BA	419413
Chloromethane	ETO15	10.00	20	41	ND	ND		08/19/16	18:18	BA	419413
Vinyl Chloride	ETO15	10.00	2.3	13	ND	ND		08/19/16	18:18	BA	419413
1,3-Butadiene	ETO15	10.00	3.4	11	ND	ND		08/19/16	18:18	BA	419413
Bromomethane	ETO15	10.00	6.6	19	ND	ND		08/19/16	18:18	BA	419413
Chloroethane	ETO15	10.00	8.1	13	ND	ND		08/19/16	18:18	BA	419413
Trichlorofluoromethane	ETO15	10.00	5.6	28	ND	ND		08/19/16	18:18	BA	419413
1,1-Dichloroethene	ETO15	10.00	8.3	20	ND	ND		08/19/16	18:18	BA	419413
Freon 113	ETO15	10.00	10	38	ND	ND		08/19/16	18:18	BA	419413
Carbon Disulfide	ETO15	10.00	3.7	16	ND	ND		08/19/16	18:18	BA	419413
2-Propanol (Isopropyl Alcohol)	ETO15	10.00	13	120	ND	ND		08/19/16	18:18	BA	419413
Methylene Chloride	ETO15	10.00	7.0	17	ND	ND		08/19/16	18:18	BA	419413
trans-1,2-Dichloroethene	ETO15	10.00	4.8	20	ND	ND		08/19/16	18:18	BA	419413
Hexane	ETO15	10.00	4.6	18	ND	ND		08/19/16	18:18	BA	419413
MTBE	ETO15	10.00	4.4	18	ND	ND		08/19/16	18:18	BA	419413
tert-Butanol	ETO15	10.00	6.2	15	ND	ND		08/19/16	18:18	BA	419413
Diisopropyl ether (DIPE)	ETO15	10.00	7.4	21	ND	ND		08/19/16	18:18	BA	419413
1,1-Dichloroethane	ETO15	10.00	5.4	20	ND	ND		08/19/16	18:18	BA	419413
ETBE	ETO15	10.00	3.3	21	ND	ND		08/19/16	18:18	BA	419413
cis-1,2-Dichloroethene	ETO15	10.00	8.3	20	ND	ND		08/19/16	18:18	BA	419413
Chloroform	ETO15	10.00	9.7	24	ND	ND		08/19/16	18:18	BA	419413
Vinyl Acetate	ETO15	10.00	7.6	18	ND	ND		08/19/16	18:18	BA	419413
Carbon Tetrachloride	ETO15	10.00	11	31	ND	ND		08/19/16	18:18	BA	419413
1,1,1-Trichloroethane	ETO15	10.00	7.9	27	ND	ND		08/19/16	18:18	BA	419413
2-Butanone (MEK)	ETO15	10.00	3.9	15	ND	ND		08/19/16	18:18	BA	419413
Ethyl Acetate	ETO15	10.00	4.8	18	ND	ND		08/19/16	18:18	BA	419413
Tetrahydrofuran	ETO15	10.00	4.5	15	ND	ND		08/19/16	18:18	BA	419413
Benzene	ETO15	10.00	4.4	16	ND	ND		08/19/16	18:18	BA	419413
TAME	ETO15	10.00	6.7	21	ND	ND		08/19/16	18:18	BA	419413
1,2-Dichloroethane (EDC)	ETO15	10.00	4.2	20	ND	ND		08/19/16	18:18	BA	419413



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b> SG-2	<b>Lab Sample ID:</b> 1608182-002A
<b>Project Name/Location:</b> 20957 Baker Rd	<b>Sample Matrix:</b> Air
<b>Project Number:</b> 13255.000.000	
<b>Date/Time Sampled:</b> 08/19/16 / 11:30	<b>Certified Clean WO # :</b>
<b>Canister/Tube ID:</b> 6116	<b>Received PSI :</b> 13.4
<b>Collection Volume (L):</b>	<b>Corrected PSI :</b>
<b>SDG:</b>	

<b>Prep Method:</b> TO15-P	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1833	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
Trichloroethylene	ETO15	10.00	8.1	27	ND	ND		08/19/16	18:18	BA	419413
1,2-Dichloropropane	ETO15	10.00	7.6	23	ND	ND		08/19/16	18:18	BA	419413
Bromodichloromethane	ETO15	10.00	7.4	34	ND	ND		08/19/16	18:18	BA	419413
1,4-Dioxane	ETO15	10.00	18	36	ND	ND		08/19/16	18:18	BA	419413
trans-1,3-Dichloropropene	ETO15	10.00	11	23	ND	ND		08/19/16	18:18	BA	419413
Toluene	ETO15	10.00	7.5	19	ND	ND		08/19/16	18:18	BA	419413
4-Methyl-2-Pentanone (MIBK)	ETO15	10.00	7.5	21	ND	ND		08/19/16	18:18	BA	419413
cis-1,3-Dichloropropene	ETO15	10.00	4.2	23	ND	ND		08/19/16	18:18	BA	419413
Tetrachloroethylene	ETO15	10.00	15	34	ND	ND		08/19/16	18:18	BA	419413
1,1,2-Trichloroethane	ETO15	10.00	5.8	27	ND	ND		08/19/16	18:18	BA	419413
Dibromochloromethane	ETO15	10.00	11	43	ND	ND		08/19/16	18:18	BA	419413
1,2-Dibromoethane (EDB)	ETO15	10.00	7.4	38	ND	ND		08/19/16	18:18	BA	419413
2-Hexanone	ETO15	10.00	6.5	21	ND	ND		08/19/16	18:18	BA	419413
Ethyl Benzene	ETO15	10.00	6.3	22	210	48.39		08/19/16	18:18	BA	419413
Chlorobenzene	ETO15	10.00	6.0	23	ND	ND		08/19/16	18:18	BA	419413
1,1,1,2-Tetrachloroethane	ETO15	10.00	8.4	34	ND	ND		08/19/16	18:18	BA	419413
m,p-Xylene	ETO15	10.00	9.8	22	1100	253.46		08/19/16	18:18	BA	419413
o-Xylene	ETO15	10.00	3.0	22	370	85.25		08/19/16	18:18	BA	419413
Styrene	ETO15	10.00	4.6	21	ND	ND		08/19/16	18:18	BA	419413
Bromoform	ETO15	10.00	13	52	ND	ND		08/19/16	18:18	BA	419413
1,1,2,2-Tetrachloroethane	ETO15	10.00	8.2	34	ND	ND		08/19/16	18:18	BA	419413
4-Ethyl Toluene	ETO15	10.00	5.5	25	ND	ND		08/19/16	18:18	BA	419413
1,3,5-Trimethylbenzene	ETO15	10.00	3.0	25	ND	ND		08/19/16	18:18	BA	419413
1,2,4-Trimethylbenzene	ETO15	10.00	6.0	25	ND	ND		08/19/16	18:18	BA	419413
1,4-Dichlorobenzene	ETO15	10.00	7.5	30	ND	ND		08/19/16	18:18	BA	419413
1,3-Dichlorobenzene	ETO15	10.00	13	30	ND	ND		08/19/16	18:18	BA	419413
1,2-Dichlorobenzene	ETO15	10.00	11	30	ND	ND		08/19/16	18:18	BA	419413
Hexachlorobutadiene	ETO15	10.00	19	53	ND	ND		08/19/16	18:18	BA	419413
1,2,4-Trichlorobenzene	ETO15	10.00	22	37	160	21.56		08/19/16	18:18	BA	419413
Naphthalene	ETO15	10.00	13	26	ND	ND		08/19/16	18:18	BA	419413
(S) 4-Bromofluorobenzene	ETO15	10.00	65	135	99 %			08/19/16	18:18	BA	419413





## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
 Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b> SG-2	<b>Lab Sample ID:</b> 1608182-002A
<b>Project Name/Location:</b> 20957 Baker Rd	<b>Sample Matrix:</b> Air
<b>Project Number:</b> 13255.000.000	
<b>Date/Time Sampled:</b> 08/19/16 / 11:30	<b>Certified Clean WO # :</b>
<b>Canister/Tube ID:</b> 6116	<b>Received PSI :</b> 13.4
<b>Collection Volume (L):</b>	<b>Corrected PSI :</b>
<b>SDG:</b>	

<b>Prep Method:</b> TO15-P	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1833	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
Acetone	ETO15	50.00	20	600	4900	2,058.82		08/19/16	20:31	BA	419413
(S) 4-Bromofluorobenzene	ETO15	50.00	65	135	97 %			08/19/16	20:31	BA	419413

<b>Prep Method:</b> TO15-GRO	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1841	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
TPH-Gasoline	TO-15	10.00	400	1800	15300	4,346.59	x	08/19/16	18:18	BA	419423

**NOTE:** x-not a match to Gas reference std but within C5-C12 quantitation range (possibly aged gasoline)



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b> SG-3	<b>Lab Sample ID:</b> 1608182-003A
<b>Project Name/Location:</b> 20957 Baker Rd	<b>Sample Matrix:</b> Air
<b>Project Number:</b> 13255.000.000	
<b>Date/Time Sampled:</b> 08/19/16 / 12:20	<b>Certified Clean WO # :</b>
<b>Canister/Tube ID:</b> 6321	<b>Received PSI :</b> 13.2
<b>Collection Volume (L):</b>	<b>Corrected PSI :</b>
<b>SDG:</b>	

<b>Prep Method:</b> TO15-P	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1833	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	ETO15	50.00	78	120	ND	ND		08/19/16	20:55	BA	419413
1,1-Difluoroethane	ETO15	50.00	17	680	ND	ND		08/19/16	20:55	BA	419413
1,2-Dichlorotetrafluoroethane	ETO15	50.00	1400	2800	ND	ND		08/19/16	20:55	BA	419413
Chloromethane	ETO15	50.00	100	210	ND	ND		08/19/16	20:55	BA	419413
Vinyl Chloride	ETO15	50.00	11	64	ND	ND		08/19/16	20:55	BA	419413
1,3-Butadiene	ETO15	50.00	17	55	ND	ND		08/19/16	20:55	BA	419413
Bromomethane	ETO15	50.00	33	97	ND	ND		08/19/16	20:55	BA	419413
Chloroethane	ETO15	50.00	41	66	ND	ND		08/19/16	20:55	BA	419413
Trichlorofluoromethane	ETO15	50.00	28	140	ND	ND		08/19/16	20:55	BA	419413
1,1-Dichloroethene	ETO15	50.00	41	99	ND	ND		08/19/16	20:55	BA	419413
Freon 113	ETO15	50.00	51	190	ND	ND		08/19/16	20:55	BA	419413
Carbon Disulfide	ETO15	50.00	19	78	ND	ND		08/19/16	20:55	BA	419413
2-Propanol (Isopropyl Alcohol)	ETO15	50.00	64	620	ND	ND		08/19/16	20:55	BA	419413
Methylene Chloride	ETO15	50.00	35	87	ND	ND		08/19/16	20:55	BA	419413
Acetone	ETO15	50.00	20	600	2500	1,050.42		08/19/16	20:55	BA	419413
trans-1,2-Dichloroethene	ETO15	50.00	24	99	ND	ND		08/19/16	20:55	BA	419413
Hexane	ETO15	50.00	23	88	ND	ND		08/19/16	20:55	BA	419413
MTBE	ETO15	50.00	22	90	ND	ND		08/19/16	20:55	BA	419413
tert-Butanol	ETO15	50.00	31	76	ND	ND		08/19/16	20:55	BA	419413
Diisopropyl ether (DIPE)	ETO15	50.00	37	100	ND	ND		08/19/16	20:55	BA	419413
1,1-Dichloroethane	ETO15	50.00	27	100	ND	ND		08/19/16	20:55	BA	419413
ETBE	ETO15	50.00	16	100	ND	ND		08/19/16	20:55	BA	419413
cis-1,2-Dichloroethene	ETO15	50.00	42	99	ND	ND		08/19/16	20:55	BA	419413
Chloroform	ETO15	50.00	48	120	ND	ND		08/19/16	20:55	BA	419413
Vinyl Acetate	ETO15	50.00	38	88	ND	ND		08/19/16	20:55	BA	419413
Carbon Tetrachloride	ETO15	50.00	55	160	ND	ND		08/19/16	20:55	BA	419413
1,1,1-Trichloroethane	ETO15	50.00	40	140	ND	ND		08/19/16	20:55	BA	419413
2-Butanone (MEK)	ETO15	50.00	19	74	ND	ND		08/19/16	20:55	BA	419413
Ethyl Acetate	ETO15	50.00	24	90	ND	ND		08/19/16	20:55	BA	419413
Tetrahydrofuran	ETO15	50.00	22	74	ND	ND		08/19/16	20:55	BA	419413
Benzene	ETO15	50.00	22	80	ND	ND		08/19/16	20:55	BA	419413
TAME	ETO15	50.00	34	100	ND	ND		08/19/16	20:55	BA	419413



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b> SG-3	<b>Lab Sample ID:</b> 1608182-003A
<b>Project Name/Location:</b> 20957 Baker Rd	<b>Sample Matrix:</b> Air
<b>Project Number:</b> 13255.000.000	
<b>Date/Time Sampled:</b> 08/19/16 / 12:20	<b>Certified Clean WO # :</b>
<b>Canister/Tube ID:</b> 6321	<b>Received PSI :</b> 13.2
<b>Collection Volume (L):</b>	<b>Corrected PSI :</b>
<b>SDG:</b>	

<b>Prep Method:</b> TO15-P	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1833	<b>Prep Analyst:</b> BALI	

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
1,2-Dichloroethane (EDC)	ETO15	50.00	21	100	ND	ND		08/19/16	20:55	BA	419413
Trichloroethylene	ETO15	50.00	40	130	ND	ND		08/19/16	20:55	BA	419413
1,2-Dichloropropane	ETO15	50.00	38	120	ND	ND		08/19/16	20:55	BA	419413
Bromodichloromethane	ETO15	50.00	37	170	ND	ND		08/19/16	20:55	BA	419413
1,4-Dioxane	ETO15	50.00	90	180	ND	ND		08/19/16	20:55	BA	419413
trans-1,3-Dichloropropene	ETO15	50.00	53	110	ND	ND		08/19/16	20:55	BA	419413
Toluene	ETO15	50.00	38	94	ND	ND		08/19/16	20:55	BA	419413
4-Methyl-2-Pentanone (MIBK)	ETO15	50.00	37	100	ND	ND		08/19/16	20:55	BA	419413
cis-1,3-Dichloropropene	ETO15	50.00	21	110	ND	ND		08/19/16	20:55	BA	419413
Tetrachloroethylene	ETO15	50.00	73	170	ND	ND		08/19/16	20:55	BA	419413
1,1,2-Trichloroethane	ETO15	50.00	29	140	ND	ND		08/19/16	20:55	BA	419413
Dibromochloromethane	ETO15	50.00	56	210	ND	ND		08/19/16	20:55	BA	419413
1,2-Dibromoethane (EDB)	ETO15	50.00	37	190	ND	ND		08/19/16	20:55	BA	419413
2-Hexanone	ETO15	50.00	33	100	170	41.46		08/19/16	20:55	BA	419413
Ethyl Benzene	ETO15	50.00	31	110	3700	852.53		08/19/16	20:55	BA	419413
Chlorobenzene	ETO15	50.00	30	120	ND	ND		08/19/16	20:55	BA	419413
1,1,1,2-Tetrachloroethane	ETO15	50.00	42	170	ND	ND		08/19/16	20:55	BA	419413
m,p-Xylene	ETO15	50.00	49	110	20000	4,608.29		08/19/16	20:55	BA	419413
o-Xylene	ETO15	50.00	15	110	7800	1,797.24		08/19/16	20:55	BA	419413
Styrene	ETO15	50.00	23	110	ND	ND		08/19/16	20:55	BA	419413
Bromoform	ETO15	50.00	65	260	ND	ND		08/19/16	20:55	BA	419413
1,1,2,2-Tetrachloroethane	ETO15	50.00	41	170	ND	ND		08/19/16	20:55	BA	419413
4-Ethyl Toluene	ETO15	50.00	27	120	ND	ND		08/19/16	20:55	BA	419413
1,3,5-Trimethylbenzene	ETO15	50.00	15	120	2300	467.48		08/19/16	20:55	BA	419413
1,2,4-Trimethylbenzene	ETO15	50.00	30	120	5700	1,158.54		08/19/16	20:55	BA	419413
1,4-Dichlorobenzene	ETO15	50.00	37	150	ND	ND		08/19/16	20:55	BA	419413
1,3-Dichlorobenzene	ETO15	50.00	67	150	ND	ND		08/19/16	20:55	BA	419413
1,2-Dichlorobenzene	ETO15	50.00	53	150	ND	ND		08/19/16	20:55	BA	419413
Hexachlorobutadiene	ETO15	50.00	93	270	ND	ND		08/19/16	20:55	BA	419413
1,2,4-Trichlorobenzene	ETO15	50.00	110	190	ND	ND		08/19/16	20:55	BA	419413
Naphthalene	ETO15	50.00	64	130	130	24.81		08/19/16	20:55	BA	419413
(S) 4-Bromofluorobenzene	ETO15	50.00	65	135	110 %			08/19/16	20:55	BA	419413



## SAMPLE RESULTS

**Report prepared for:** Divya Bhargava  
Engeo (San Ramon)

**Date/Time Received:** 08/19/16, 3:20 pm  
**Date Reported:** 08/22/16

<b>Client Sample ID:</b>	SG-3	<b>Lab Sample ID:</b>	1608182-003A
<b>Project Name/Location:</b>	20957 Baker Rd	<b>Sample Matrix:</b>	Air
<b>Project Number:</b>	13255.000.000	<b>Certified Clean WO # :</b>	
<b>Date/Time Sampled:</b>	08/19/16 / 12:20	<b>Received PSI :</b>	13.2
<b>Canister/Tube ID:</b>	6321	<b>Corrected PSI :</b>	
<b>Collection Volume (L):</b>			
<b>SDG:</b>			

<b>Prep Method:</b> TO15-GRO	<b>Prep Batch Date/Time:</b> 8/19/16	12:01:00AM
<b>Prep Batch ID:</b> 1841	<b>Prep Analyst:</b>	BALI

Parameters:	Analysis Method	DF	MDL ug/m3	PQL ug/m3	Results ug/m3	Results ppbv	Q	Analyzed	Time	By	Analytical Batch
TPH-Gasoline	TO-15	50.00	2000	8800	245000	69,602.27	x	08/19/16	20:55	BA	419423

**NOTE:** x-not a match to Gas reference std but within C5-C12 quantitation range (possibly aged gasoline)



## MB Summary Report

<b>Work Order:</b>	1608182	<b>Prep Method:</b>	TO15-P	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1833
<b>Matrix:</b>	Air	<b>Analytical Method:</b>	ETO15	<b>Analyzed Date:</b>	8/19/2016	<b>Analytical Batch:</b>	419413
<b>Units:</b>	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	0.32	0.50	ND		
1,1-Difluoroethane	0.13	5.0	ND		
1,2-Dichlorotetrafluoroethane	4.0	8.0	ND		
Chloromethane	0.99	2.0	ND		
Vinyl Chloride	0.088	0.50	ND		
1,3-Butadiene	0.15	0.50	ND		
Bromomethane	0.17	0.50	ND		
Chloroethane	0.31	0.50	ND		
Trichlorofluoromethane	0.099	0.50	ND		
1,1-Dichloroethene	0.21	0.50	ND		
Freon 113	0.13	0.50	ND		
Carbon Disulfide	0.12	0.50	ND		
2-Propanol (Isopropyl Alcohol)	0.52	5.0	ND		
Methylene Chloride	0.20	0.50	ND		
Acetone	0.17	5.0	0.64	J	
trans-1,2-Dichloroethene	0.12	0.50	ND		
Hexane	0.13	0.50	ND		
MTBE	0.12	0.50	ND		
tert-Butanol	0.20	0.50	ND		
Diisopropyl ether (DIPE)	0.18	0.50	ND		
1,1-Dichloroethane	0.13	0.50	ND		
ETBE	0.078	0.50	ND		
cis-1,2-Dichloroethene	0.21	0.50	ND		
Chloroform	0.20	0.50	ND		
Vinyl Acetate	0.22	0.50	ND		
Carbon Tetrachloride	0.18	0.50	ND		
1,1,1-Trichloroethane	0.15	0.50	ND		
2-Butanone (MEK)	0.13	0.50	ND		
Ethyl Acetate	0.13	0.50	ND		
Tetrahydrofuran	0.15	0.50	ND		
Benzene	0.14	0.50	ND		
TAME	0.16	0.50	ND		
1,2-Dichloroethane (EDC)	0.10	0.50	ND		
Trichloroethylene	0.15	0.50	ND		
1,2-Dichloropropane	0.17	0.50	ND		
Bromodichloromethane	0.11	0.50	ND		
1,4-Dioxane	0.50	1.0	ND		
trans-1,3-Dichloropropene	0.23	0.50	ND		
Toluene	0.20	0.50	ND		
4-Methyl-2-Pentanone (MIBK)	0.18	0.50	ND		
cis-1,3-Dichloropropene	0.093	0.50	ND		



## MB Summary Report

<b>Work Order:</b> 1608182	<b>Prep Method:</b> TO15-P	<b>Prep Date:</b> 08/19/16	<b>Prep Batch:</b> 1833
<b>Matrix:</b> Air	<b>Analytical Method:</b> ETO15	<b>Analyzed Date:</b> 8/19/2016	<b>Analytical Batch:</b> 419413
<b>Units:</b> ppbv			

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Tetrachloroethylene	0.22	0.50	ND	
1,1,2-Trichloroethane	0.11	0.50	ND	
Dibromochloromethane	0.13	0.50	ND	
1,2-Dibromoethane (EDB)	0.096	0.50	ND	
2-Hexanone	0.16	0.50	ND	
Ethyl Benzene	0.15	0.50	ND	
Chlorobenzene	0.13	0.50	ND	
1,1,1,2-Tetrachloroethane	0.12	0.50	ND	
m,p-Xylene	0.23	0.50	ND	
o-Xylene	0.070	0.50	ND	
Styrene	0.11	0.50	ND	
Bromoform	0.13	0.50	ND	
1,1,2,2-Tetrachloroethane	0.12	0.50	ND	
4-Ethyl Toluene	0.11	0.50	ND	
1,3,5-Trimethylbenzene	0.061	0.50	ND	
1,2,4-Trimethylbenzene	0.12	0.50	ND	
1,4-Dichlorobenzene	0.12	0.50	ND	
1,3-Dichlorobenzene	0.22	0.50	ND	
1,2-Dichlorobenzene	0.18	0.50	ND	
Hexachlorobutadiene	0.17	0.50	ND	
1,2,4-Trichlorobenzene	0.29	0.50	ND	
Naphthalene	0.24	0.50	ND	
(S) 4-Bromofluorobenzene			97	

<b>Work Order:</b> 1608182	<b>Prep Method:</b> TO15-GRO	<b>Prep Date:</b> 08/19/16	<b>Prep Batch:</b> 1841
<b>Matrix:</b> Air	<b>Analytical Method:</b> ETO15	<b>Analyzed Date:</b> 8/19/2016	<b>Analytical Batch:</b> 419423
<b>Units:</b> ppbv			

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH-Gasoline	11	50	ND	



## LCS/LCSD Summary Report

*Raw values are used in quality control assessment.*

<b>Work Order:</b>	1608182	<b>Prep Method:</b>	TO15-P	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1833
<b>Matrix:</b>	Air	<b>Analytical Method:</b>	ETO15	<b>Analyzed Date:</b>	8/19/2016	<b>Analytical Batch:</b>	419413
<b>Units:</b>	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	0.21	0.50	ND	8.00	101	103	1.84	65 - 135	30	
Benzene	0.14	0.50	ND	8.00	92.8	91.8	200	65 - 135	30	
Trichloroethylene	0.15	0.50	ND	8.00	93.3	95.0	200	65 - 135	30	
Toluene	0.20	0.50	ND	8.00	88.6	88.3	200	65 - 135	30	
Chlorobenzene	0.13	0.50	ND	8.00	87.4	88.4	200	65 - 135	30	
(S) 4-Bromofluorobenzene				20.0	98.9	97.8		65 - 135		

<b>Work Order:</b>	1608182	<b>Prep Method:</b>	TO15-GRO	<b>Prep Date:</b>	08/19/16	<b>Prep Batch:</b>	1841
<b>Matrix:</b>	Air	<b>Analytical Method:</b>	ETO15	<b>Analyzed Date:</b>	8/19/2016	<b>Analytical Batch:</b>	419423
<b>Units:</b>	ppbv						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH-Gasoline	11	50	ND	504	91.8	98.4	7.10	65 - 135	30	





## Laboratory Qualifiers and Definitions

### DEFINITIONS:

<b>Accuracy/Bias (% Recovery)</b> - The closeness of agreement between an observed value and an accepted reference value.
<b>Blank (Method/Preparation Blank)</b> -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
<b>Duplicate</b> - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
<b>Laboratory Control Sample (LCS ad LCSD)</b> - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
<b>Matrix</b> - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
<b>Matrix Spike (MS/MSD)</b> - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
<b>Method Detection Limit (MDL)</b> - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
<b>Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ)</b> - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
<b>Precision (%RPD)</b> - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
<b>Surrogate (S) or (Surr)</b> - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
<b>Tentatively Identified Compound (TIC)</b> - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
<b>Units:</b> the unit of measure used to express the reported result - <b>mg/L</b> and <b>mg/Kg</b> (equivalent to PPM - parts per million in <b>liquid</b> and <b>solid</b> ), <b>ug/L</b> and <b>ug/Kg</b> (equivalent to PPB - parts per billion in <b>liquid</b> and <b>solid</b> ), <b>ug/m3</b> , <b>mg/m3</b> , <b>ppbv</b> and <b>ppmv</b> (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), <b>ug/Wipe</b> (concentration found on the surface of a single Wipe usually taken over a 100cm <sup>2</sup> surface)

### LABORATORY QUALIFIERS:

<p><b>B</b> - Indicates when the analyte is found in the associated method or preparation blank</p> <p><b>D</b> - Surrogate is not recoverable due to the necessary dilution of the sample</p> <p><b>E</b> - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.</p> <p><b>H</b> - Indicates that the recommended holding time for the analyte or compound has been exceeded</p> <p><b>J</b> - Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative</p> <p><b>NA</b> - Not Analyzed</p> <p><b>N/A</b> - Not Applicable</p> <p><b>ND</b> - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.</p> <p><b>NR</b> - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added</p> <p><b>R</b> - The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts</p> <p><b>S</b> - Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative</p> <p><b>X</b> -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.</p>
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## Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Date and Time Received: 8/19/2016 3:20:00PM

Project Name: 20957 Baker Rd

Received By: Lorna Imbat

Work Order No.: 1608182

Physically Logged By: Lorna Imbat

Checklist Completed By:

Carrier Name: Client Drop Off

### Chain of Custody (COC) Information

Chain of custody present? Yes  
Chain of custody signed when relinquished and received? Yes  
Chain of custody agrees with sample labels? Yes  
Custody seals intact on sample bottles? Not Present

### Sample Receipt Information

Custody seals intact on shipping container/cooler? Not Present  
Shipping Container/Cooler In Good Condition? Yes  
Samples in proper container/bottle? Yes  
Samples containers intact? Yes  
Sufficient sample volume for indicated test? Yes

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

All samples received within holding time? Yes  
Container/Temp Blank temperature in compliance? Temperature: °C  
Water-VOA vials have zero headspace?  
Water-pH acceptable upon receipt? N/A  
pH Checked by: n/a pH Adjusted by: n/a

### Comments:



### Login Summary Report

**Client ID:** TL5123      Engeo (San Ramon)  
**Project Name:** 20957 Baker Rd  
**Project # :** 13255.000.000  
**Report Due Date:** 8/22/2016

**QC Level:** II  
**TAT Requested:** Next Day  
**Date Received:** 8/19/2016  
**Time Received:** 3:20 pm

**Comments:**

**Work Order # :** 1608182

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<u>WO Sample ID</u>	<u>Client Sample ID</u>	<u>Collection Date/Time</u>	<u>Matrix</u>	<u>Scheduled Disposal</u>	<u>Sample On Hold</u>	<u>Test On Hold</u>	<u>Requested Tests</u>	<u>Subbed</u>
1608182-001A	SG-1	08/19/16 13:00	Air				VOC_A_TO15GRO VOC_A_TO15	
1608182-002A	SG-2	08/19/16 11:30	Air				VOC_A_TO15GRO VOC_A_TO15	
1608182-003A	SG-3	08/19/16 12:20	Air				VOC_A_TO15GRO VOC_A_TO15	



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 Milpitas, CA 95035  
 Phone: 408.263.5258  
 FAX: 408.263.8293  
 www.torrentlab.com

# CHAIN OF CUSTODY

LAB WORK ORDER NO
1608182

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

Company Name: ENGeo, INC	<input checked="" type="checkbox"/> Env. <input type="checkbox"/> DOD <input type="checkbox"/> Food <input type="checkbox"/> Special	Project Name: 20957 Baker Rd
Address: 2010 Crow Canyon Place, Suite 250	Project # 13255.000.000	
City: San Ramon State: CA Zip Code: 94583	Comments: Please hold 12-18" interval samples pending other results	
Telephone: Cell:	Email: dbhargava@engco.com	
REPORT TO: Divya Bhargava	SAMPLER: Lauren Gordon	P.O. # QUOTE #

TURNAROUND TIME:

10 Work Days  4 Work Days  1 Work Day

7 Work Days  3 Work Days  Noon - Nxt Day

5 Work Days  2 Work Days  2-8 Hours

SAMPLE TYPE:

Storm Water  Air

Waste Water  Wipe

Ground Water  Other

Soil

REPORT FORMAT:

Excel/ EDD

EDF

QC Level III

QC Level IV

VOCs + TPAS (TO-15)

PESTICIDES (8081)

LEAD + ARSENIC (6010)

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	PRES.	VOCs + TPAS (TO-15)	PESTICIDES (8081)	LEAD + ARSENIC (6010)	REMARKS
		S-1 @ 3-9"	08/19/16 0910	Soil	1	6" Sleeve	10E		X	X	
		S-1 @ 12-18"	0915						X	X	Please hold pending shallow results
		S-2 @ 3-9"	0920						X	X	
		S-2 @ 12-18"	0925						X	X	Please hold pending shallow results
		S-3 @ 3-9"	0930						X	X	
		S-3 @ 12-18"	0935						X	X	please hold pending shallow results
		S-4 @ 3-9"	0940						X	X	
		S-4 @ 12-18"	0945						X	X	Please hold pending shallow results
001A	SG-1		1300	Soil (GPS)	1	1L Canister	NA	X			<b>RUSH 1 DAY</b> A 7464 6116 6321
002A	SG-2		1130					X			
003A	SG-3		1220					X			

1 Relinquished By: <u>Lauren Gordon</u> Print: <u>Lauren Gordon</u> Date: <u>08/19/16</u> Time: <u>1520</u>	Received By: <u>Kathie Evans</u> Print: <u>Kathie Evans</u> Date: <u>8-19-16</u> Time: <u>15:20</u>
2 Relinquished By: _____ Print: _____ Date: _____ Time: _____	Received By: _____ Print: _____ Date: _____ Time: _____

Were Samples Received in Good Condition?  Yes  NO Samples on Ice?  Yes  NO Method of Shipment D/Off Sample seals intact?  Yes  NO  N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made. Temp. Gun # #1 Temp 7 °C Page \_\_\_\_\_ of \_\_\_\_\_

Log In By: \_\_\_\_\_ Date: \_\_\_\_\_ Labeled By: \_\_\_\_\_ Date: \_\_\_\_\_ Log In Reviewed By: \_\_\_\_\_ Date: \_\_\_\_\_