

May 30, 2014

RECEIVED

By Alameda County Environmental Health at 3:23 pm, Jun 06, 2014

Subject: Jordan Ranch Property – Former Leaking Underground Storage Tank
Dublin, California

PERJURY STATEMENT

“I declare, that to the best of my knowledge at the present time, the information and/or recommendations contained in the attached document are true and correct.”

Submitted by Responsible Party:



ROBERT RADANOVICH
BJP-ROF Jordan Ranch, LLC
5000 Hopyard Road, #170
Pleasanton, CA 94588

Project No.
7828.000.001

May 30, 2014

Mr. Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Subject: Jordan Ranch Parcel H (Case #R00002918)
Dublin, California

SOIL GAS SAMPLING REPORT – FOURTH ROUND

Reference: Department of Toxic Substance Control (DTSC); Final Advisory Active Soil Gas Investigations; April 2012.

Dear Mr. Wickham:

ENGEO conducted the fourth round of soil gas sampling at the Jordan Ranch Parcel H (Site), located in Dublin, California (Figure 1). The soil gas sampling was performed to evaluate potential vapor intrusion concerns within the former underground storage tank (UST) area (Figure 2). Two new soil gas wells (SG-5 and SG-6) were included in the fourth sampling event and all six wells were sampled with a helium shroud.

BACKGROUND

There are currently no structures within the former UST area. Construction of high-density residential units within the Site may be planned for sometime in the future. As part of the proposed future development, up to 5 vertical feet of engineered fill will be placed on top of the existing grade for drainage purposes.

Four permanent soil gas wells were installed in the former UST area in June 2012. The soil gas wells were sampled in June 2012, October 2012, and February 2013. During all three sampling events, constituents were not detected above the residential environmental screening levels (ESLs) listed in Table E-2 published by the Regional Water Quality Control Board, San Francisco Region (SFRWQCB) and the residential California Human Health Screening Levels (CHHSLs) published by Department of Toxic Substances Control (DTSC); with the exception of one detection of benzene at 94 ug/m³.

Elevated concentrations of total petroleum hydrocarbons as gasoline (TPHg) and benzene have been detected in shallow groundwater (within 20 feet of the ground surface); however, these groundwater zones are present in perched, thin, discontinuous lenses separated by large intervals of dry soil. As a result, the total contaminant mass present in these groundwater zones is

relatively minor. The relatively limited detections in soil gas are attributed to the lack of significant quantities of contaminant mass within these groundwater zones. Furthermore, the remedial excavation of the former UST basin in 2011 removed the majority of the petroleum-impacted soil.

SOIL GAS WELL INSTALLATION

In February 2014, two new soil gas wells (SG-5 and SG-6) were installed to the north and south of the UST basin backfill (Figure 2). Consistent with the previously installed wells, the two new wells were installed to a depth of 7 feet in accordance with DTSC guidance (2012) and the County approved workplan dated January 15, 2014. The well construction diagram is attached. Two soil samples were collected from each boring between 0 and 5 feet bgs. The soil samples were analyzed for volatile organic compounds (VOCs) by EPA Test Method 8260B and polyaromatic hydrocarbons (PAHs) by EPA Test Method 8310. The soil samples exhibited no detections above laboratory reporting limits.

SOIL GAS SAMPLING

We collected soil gas samples from the six soil gas monitoring wells on March 13 and April 22, 2014, providing a minimum of five days of dry weather after the last recorded rainfall. Soil gas well SG-6 was sampled on April 22 because the well had to be re-installed after we discovered there was inadequate flow on March 13. A helium shroud provided by McCampbell Analytical Laboratory was used for leak detection. We performed the sample collection in accordance with the 2012 Department of Toxic Substances Control (DTSC) guidance as follows:

- Prior to the connection of the sampling apparatus (“sample train”) to the well casing and system, we performed a “shut-in” test to assess potential leaks in the system. The test involved capping the end of the manifold, then applying a vacuum with the vacuum pump, closing the purge valve, and observing the vacuum gauge for two minutes to determine if there was a drop in vacuum. We observed no significant decreases in vacuum during the shut-in tests performed for this sampling event.
- We then connected the sample train to the well casing 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 built in flow controller set to 100-200 ml/min, which was encompassed in a helium shroud provided by McCampbell Analytical. The sample train is shown here: <http://www.youtube.com/watch?v=pXsOquN8Rw8#t=91>. A purge vacuum pump was attached to the manifold and one well volume of soil gas was purged from each well. Purge specifications are provided in Table A below.

TABLE A
Summary of Purging Process

Casing Length (feet)	Casing Volume Per Foot (ml)	Total Casing Volume (ml)	Sand Pack Pore Volume (ml) (50% Porosity)	Total Well Volume (ml)	Minutes (1x)
9.5	5	47.5	1,390	1437.5	9.6

Notes: Purge minutes are based on a flowrate of 150 ml/min
Sandpack is 3" diameter by 2 feet in length

- After purging was completed, a 20% helium content was established in the shroud and confirmed with a field meter prior to sampling. Once the 20% helium content was established, 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. Soil gas well field sampling logs are attached.
- We labeled each sample canister with a unique identification number, sampling time, pre- and post-sample vacuum readings; and the six soil gas samples were submitted to a State certified laboratory for analysis of TPHg and volatile organic compounds (VOCs) by EPA Test Method TO-15; and methane, carbon dioxide, oxygen, and helium by EPA Test Method D1946.

LABORATORY ANALYTICAL RESULTS

TPHg was detected at concentrations ranging from 900 to 34,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). The maximum detected concentration of TPHg is less than the residential ESL of 370,000 $\mu\text{g}/\text{m}^3$ listed in Table E-2 of the SWRCB ESLs. Benzene was detected only in well SG-6 at a concentration of 50 $\mu\text{g}/\text{m}^3$. Table 1 (attached) provides a cumulative summary of all soil gas detections for the six monitoring wells and the applicable soil gas screening levels published by SWRCB and DTSC.

According to DTSC (2012), if the concentration of helium in the sample canister is less than 5% of the helium concentration in the shroud, then the sample results are considered valid. The highest helium concentration detected in the samples was 0.05%. This is 0.0025% of the 20% helium concentration that was maintained in the shroud. Based on this, we conclude that an adjustment factor is not required for the detected compounds.

We plan to perform the next soil gas sampling event in June 2014.

If you have any questions regarding this report, please do not hesitate to contact us.

Sincerely,

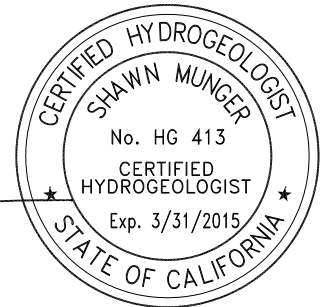
ENGEO Incorporated



Morgan Johnson
mj/sm/jf



Shawn Munger, CHG



Attachments: Table 1 – Soil Gas Analytical Data
Figures
Soil Gas Well Field Sampling Logs
Eurofins Air Toxics, Inc., Certified Laboratory Report and Chain of Custody

cc: Mr. Ravi Nandwana, BJP-ROF Jordan Ranch, LLC
Mr. Kevin Fryer, BJP-ROF Jordan Ranch, LLC

TABLE 1

Soil Gas Analytical Data

Table 1
Soil Gas Analytical Data
Jordan Ranch Parcel H

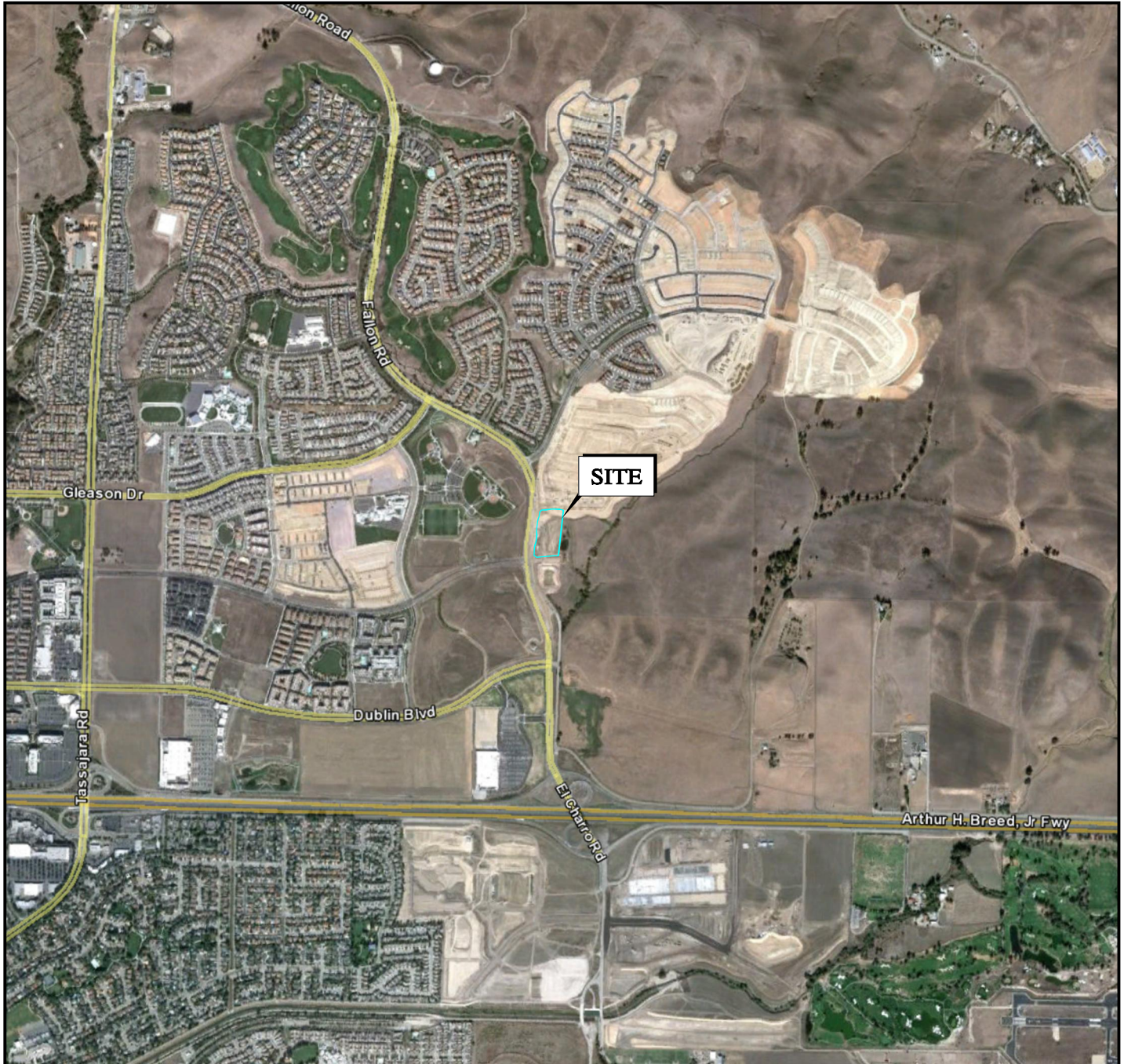
Sample ID	Date	TPHg	Benzene	Toulene	EB	m,p-Xyl	o-Xyl	1,2,4-TMB	1,3,5-TMB	4-ET	Freon 11	Ethanol	Acetone	2-Prop	2,2,4-TMP	1,3-BTD	CDS	Hexane	2-BTN	CLF	CHX	HPT	NPTH	4-MP	1,1-DFA	Helium	Methane	Carbon Dioxide	Oxygen
		µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	µg/m ³	%	uL/L	uL/L	uL/L
SG-1	6/29/2012	3,900	14	9.7	<3.6	7.1	<3.6	6.2	<4.1	<4.1	13	<6.3	64	22	28	4.2	12	10	<9.9	<4.1	7.9	5.6	<18	<3.4	<9.1	NR	NR	NR	NR
SG-1	10/4/2012	650	<4	<4.7	<5.5	<5.5	<5.5	<6.2	<6.2	<6.2	18	<9.5	<30	<12	<5.9	<2.8	<16	<4.4	<15	<6.2	<4.3	<5.2	<26	<5.2	<14	NR	NR	NR	NR
SG-1	2/21/2013	<250	<3.9	<4.6	<5.4	<5.4	<5.4	<6.1	<6.1	<6.1	<6.9	<9.3	<29	<12	<5.8	<2.7	<15	<4.4	<14	<6	<4.2	<5.1	<26	<5	<13	NR	NR	NR	NR
SG-1	3/13/2014	900	<1.6	<1.9	<2.2	<6.6	<6.6	<2.5	<2.5	<2.5	3.1	<96	<60	NR	NR	<1.1	<1.6	26	<75	<2.4	<18	<21	<5.3	<2.1	NR	0.035	<1	27,000	66,000
SG-2-1X	6/29/2012	3,000	11	12	6	18	13	9.7	7.4	12 K	13	12	<26	79	5.5	<2.4	<13	<3.8	<13	<5.2	<3.7	<4.4	<22	<4.4	<12	NR	NR	NR	NR
SG-2-3X	6/29/2012	1,900	6.6	11	<3.5	13	8	7.7	5.3	4	14	7.7	20	<7.9	<3.8	<1.8	<10	<2.8	<9.5	<3.9	<2.8	<3.3	<17	<3.3	<8.7	NR	NR	NR	NR
SG-2-10X	6/29/2012	1,100	5.2	9.9	<3.4	6.4	3.9	4	<3.8	<3.8	16	12	32	<7.6	<3.6	<1.7	<9.6	<2.7	<9.1	<3.8	<2.7	<3.2	<16	<3.2	<8.4	NR	NR	NR	NR
SG-2	10/4/2012	450	<4	<4.7	<5.5	<5.5	<5.5	<6.2	<6.2	<6.2	14	<9.5	<30	<12	<5.9	<2.8	<16	<4.4	<15	<6.2	<4.3	<5.2	<26	<5.2	98	NR	NR	NR	NR
SG-2	2/21/2013	<250	<3.9	5.8	<5.2	<5.2	<5.2	<5.9	<5.9	<5.9	<6.8	23	<29	<12	<5.6	<2.7	<15	<4.3	<14	<5.9	<4.2	<5	<25	<5	40	NR	NR	NR	NR
SG-2	3/13/2014	2,000	<1.6	<1.9	<2.2	<6.6	<6.6	<2.5	<2.5	<2.5	3.1	<96	<60	NR	NR	<1.1	<1.6	40	<75	<2.4	<18	<21	<5.3	5.0	NR	0.013	23	15,000	110,000
SG-3	6/29/2012	30,000	94	220	41	140	41	22	<16	16 J	<19	100	2100	<33	<16	110	160	210	57	20	18	120	<70	<14	<36	NR	NR	NR	NR
SG-3	10/4/2012	1,500	<4.6	<5.4	<6.3	<6.3	<6.3	<7.1	<7.1	<7.1	8.5	<11	<34	<14	<6.8	<3.2	37	<5.1	<17	<7	<5	<5.9	<30	<5.9	<16	NR	NR	NR	NR
SG-3	2/21/2013	<470	<7.4	<8.7	<10	<10	<10	<11	<11	<11	<13	<17	<55	<23	<11	<5.1	<29	<8.2	<27	<11	<8	<9.5	<49	<9.5	<25	NR	NR	NR	NR
SG-3	3/13/2014	1,500	<1.6	<1.9	<2.2	<6.6	<6.6	<2.5	<2.5	<2.5	<2.8	<96	<60	NR	NR	<1.1	<1.6	1,100	<75	<2.4	<18	<21	<5.3	<2.1	NR	0.023	<1	9,500	150,000
SG-4	6/29/2012	820	5.2	26	5.1	18	5.5	7.8	<4.2	<4.2	<4.8	<6.4	540	<8.4	<4	<1.9	<11	<3	<10	<4.2	<2.9	<3.5	<18	3.7	<9.2	NR	NR	NR	NR
SG-4	10/4/2012	<270	<4.2	<5	<5.7	<5.7	<5.7	<6.5	<6.5	<6.5	<7.4	<9.9	<31	<13	<6.2	<2.9	<16	<4.6	<16	<6.4	<4.5	<5.4	<28	<5.4	<14	NR	NR	NR	NR
SG-4	2/21/2013	<240	<3.8	<5.2	<4.5	<5.2	<5.2	<5.8	<5.8	<5.8	<6.7	<9	100	<12	<5.6	<2.6	<15	<4.2	<14	<5.8	<4.1	<4.9	<25	<4.9	<13	NR	NR	NR	NR
SG-4	3/13/2014	34,000	<1.6	<1.9	<2.2	<6.6	<6.6	<2.5	<2.5	<2.5	<2.8	<96	<60	NR	NR	<1.1	<1.6	96,000	<75	<2.4	<18	<21	<5.3	<2.1	NR	0.0068	8.4	750	180,000
SG-5	3/13/2014	25,000	<1.6	<1.9	<2.2	<6.6	<6.6	<2.5	<2.5	<2.5	<2.8	<96	<60	NR	NR	<1.1	<1.6	110,000	<75	<2.4	21	<21	<5.3	<2.1	NR	0.050	8.4	1,700	170,000
SG-6	4/22/2014	2,200	50	32	3.5	<6.6	<6.6	<2.5	<2.5	<2.5	<2.85	<96	<60	NR	NR	<1.1	29	58	<75	<2.4	<18	<21	<5.3	<2.1	NR	0.035	11	5,100	210,000
CHHSL (Residential - Soil Gas)		NR	36.2	135,000	NR	315,000	315,000	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	0.072	NR	NR	NR	NR	NR	NR
ESL (Table E-2 Residential -Soil Gas)		370,000	42	160,000	490	52,000	52,000	NR	NR	NR	NR	NR	16,000,000	NR	NR	NR	NR	NR	NR	NR	230	NR	NR	36	NR	NR	NR	NR	NR
DTSC 2003 Advisory 1,1-DFA		NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	10,000	NR	NR	NR	NR

Notes:
ET-Ethyltoluene
TMB-Trimethylbenzene
Prop-Propanol
TMP-Trimethylpentane
PCE-Tetrachloroethylene
EB-Ethylbenzene
BTD-Butadiene
CDS-Carbon Disulfide
BTN-Butanone
CLF-Chloroform
CHX-Cyclohexane
HPT-Heptane
4-MP-4-Methyl-2-pentanone
NPTH-NRphthalene
ND-Not detected above laboratory reporting limits
NR-Not reported
J-Estimated Value
K-Potential Interference

FIGURES

- Figure 1 – Site Vicinity Map
- Figure 2 – Concentrations of VOCs in Soil Gas
- Figure 3 – Soil Gas Well Construction Diagram

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BASE MAP SOURCE: GOOGLE EARTH



VICINITY MAP
JORDAN RANCH - PARCEL H
DUBLIN, CALIFORNIA

PROJECT NO.: 7828.000.001

DATE: AS SHOWN

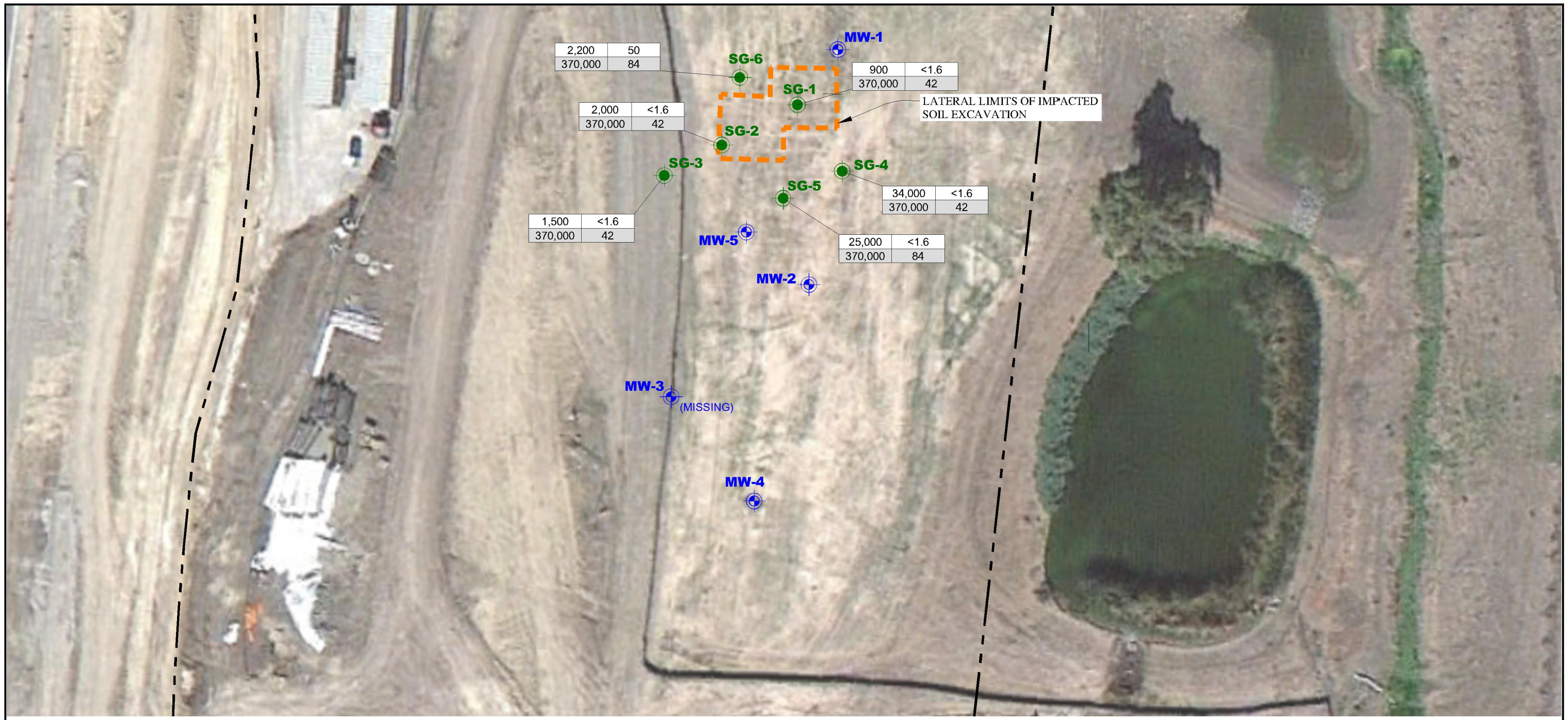
DRAWN BY: SRP

CHECKED BY: SM

FIGURE NO.

1

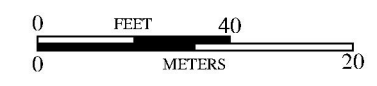
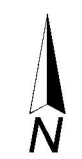
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EXPLANATION

- MW-5 APPROXIMATE LOCATION OF MONITORING WELL
- SG-6 APPROXIMATE LOCATION OF SOIL GAS WELL

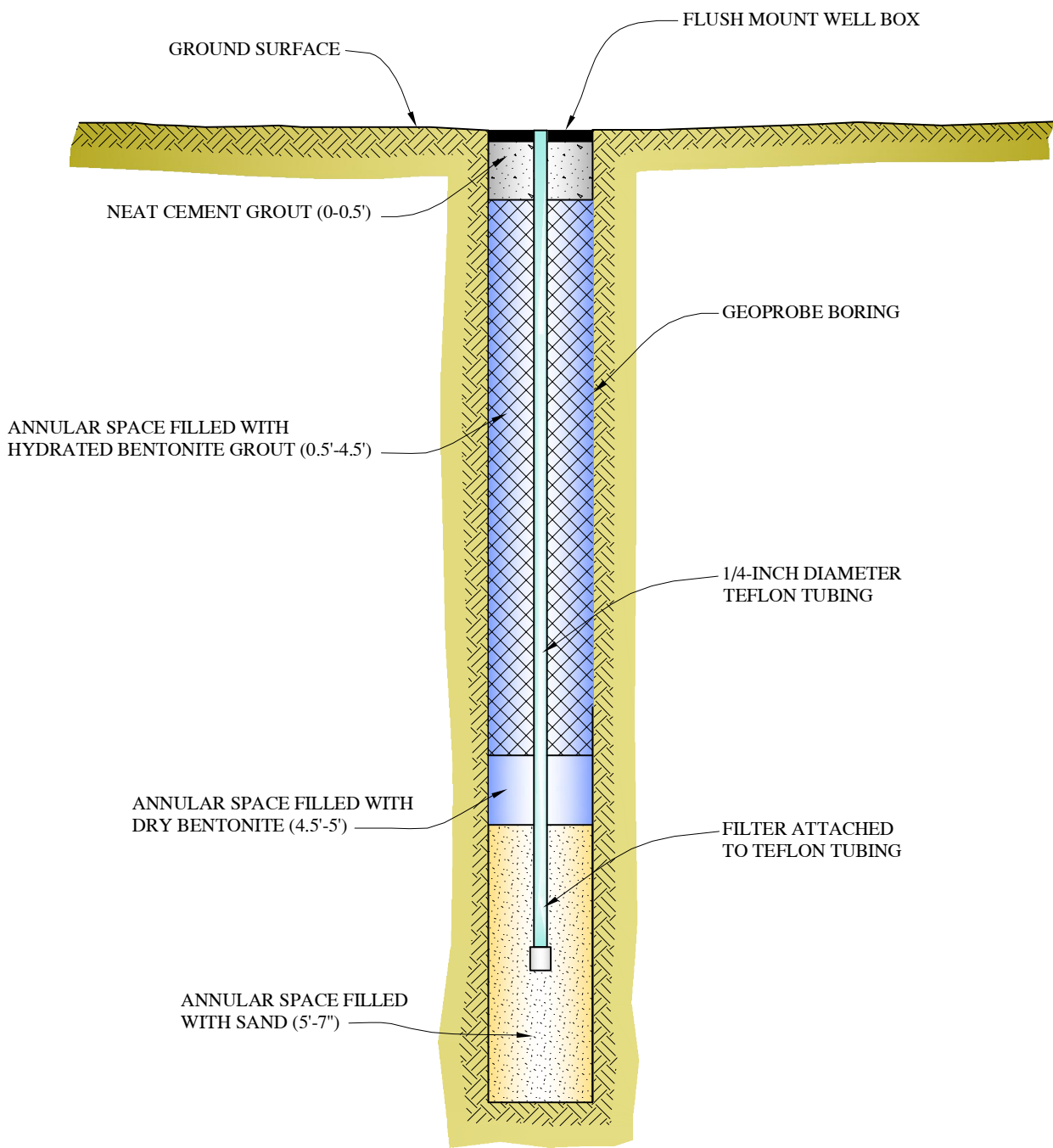
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE (TPHg) CONCENTRATION ($\mu\text{g}/\text{m}^3$)	
<270	<4.2
BENZENE CONCENTRATION ($\mu\text{g}/\text{m}^3$)	
10,000	84
RESIDENTIAL ENVIRONMENTAL SCREENING LEVELS (ESL.s)	



BASE MAP SOURCE: GOOGLE EARTH, ST. ANTON

<p>Expect Excellence</p>	<p>CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN SOIL GAS - MARCH-APRIL 2014</p> <p>JORDAN RANCH - PARCEL H DUBLIN, CALIFORNIA</p>	<p>PROJECT NO.: 7828.000.001</p> <p>SCALE: AS SHOWN</p> <p>DRAWN BY: SRP CHECKED BY: SM</p>	<p>2</p>
	<p>FIGURE NO.</p>		
	<p>ORIGINAL FIGURE PRINTED IN COLOR</p>		

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SOIL GAS WELL CONSTRUCTION DIAGRAM
JORDAN RANCH - PARCEL H
DUBLIN, CALIFORNIA

PROJECT NO.: 7828.000.001
SCALE: NO SCALE
DRAWN BY: SRP
CHECKED BY: SM

FIGURE NO.
3

EUROFINS AIR TOXICS, INC.

Certified Laboratory Report and Chain of Custody



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1403561

Report Created for: ENGEO Incorporated
2010 Crow Canyon Place, Ste 250
San Ramon, CA 94583-4634

Project Contact: Morgan Johnson
Project P.O.:
Project Name: #7828000.001; Jordan Ranch

Project Received: 03/18/2014

Analytical Report reviewed & approved for release on 03/26/2014 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
WorkOrder: 1403561

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
I	For PCB congeners 107, 108, 109, 199, 200, 201. There are conflicting naming conventions. MAI used the names cited in EPA Method 1668C (Table 2)
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Quality Control Qualifiers

F1	MS/MSD recovery was out of acceptance criteria; LCS validated the prep batch.
F2	LCS recovery for this compound is outside of acceptance limits.



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/18/14

WorkOrder: 1403561
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %

Helium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1	1403561-001A	Soil Gas	03/13/2014 14:36	GC26	88339

Initial Pressure (psia) **Final Pressure (psia)**

13.45	26.81
-------	-------

Analytes	Result	RL	DF	Date Analyzed
Helium	0.035	0.0050	1	03/18/2014 14:25

SG-2	1403561-002A	Soil Gas	03/13/2014 13:53	GC26	88339
------	--------------	----------	------------------	------	-------

Initial Pressure (psia) **Final Pressure (psia)**

12.00	23.90
-------	-------

Analytes	Result	RL	DF	Date Analyzed
Helium	0.013	0.0050	1	03/18/2014 14:38

SG-3	1403561-003A	Soil Gas	03/13/2014 12:48	GC26	88339
------	--------------	----------	------------------	------	-------

Initial Pressure (psia) **Final Pressure (psia)**

12.78	25.46
-------	-------

Analytes	Result	RL	DF	Date Analyzed
Helium	0.023	0.0050	1	03/18/2014 14:51

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/18/14

WorkOrder: 1403561
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %

Helium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1403561-004A	Soil Gas	03/13/2014 15:31	GC26	88339

Initial Pressure (psia) **Final Pressure (psia)**

12.28	24.46
-------	-------

Analytes	Result	RL	DF	Date Analyzed
Helium	0.0068	0.0050	1	03/18/2014 15:04

SG-5	1403561-005A	Soil Gas	03/13/2014 16:15	GC26	88339
------	--------------	----------	------------------	------	-------

Initial Pressure (psia) **Final Pressure (psia)**

11.18	22.28
-------	-------

Analytes	Result	RL	DF	Date Analyzed
Helium	0.050	0.0050	1	03/18/2014 15:17

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/19/14-3/20/14

WorkOrder: 1403561
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: uL/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1	1403561-001A	Soil Gas	03/13/2014 14:36	GC26	88355

Initial Pressure (psia)	Final Pressure (psia)
13.45	26.81

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	27,000	1000	20	03/20/2014 15:03
Methane	ND	1.0	1	03/19/2014 17:21
Oxygen	66,000	4000	1	03/20/2014 08:34

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1403561-002A	Soil Gas	03/13/2014 13:53	GC26	88355

Initial Pressure (psia)	Final Pressure (psia)
12.00	23.90

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	15,000	1000	20	03/20/2014 15:22
Methane	23	1.0	1	03/19/2014 17:55
Oxygen	110,000	4000	1	03/20/2014 08:55

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1403561-003A	Soil Gas	03/13/2014 12:48	GC26	88355

Initial Pressure (psia)	Final Pressure (psia)
12.78	25.46

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	9500	500	10	03/20/2014 15:37
Methane	ND	1.0	1	03/19/2014 18:29
Oxygen	150,000	4000	1	03/20/2014 09:16

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/19/14-3/20/14

WorkOrder: 1403561
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: uL/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1403561-004A	Soil Gas	03/13/2014 15:31	GC26	88355

Initial Pressure (psia)	Final Pressure (psia)
12.28	24.46

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	750	50	1	03/20/2014 09:37
Methane	8.4	1.0	1	03/19/2014 19:04
Oxygen	180,000	4000	1	03/20/2014 09:37

SG-5	1403561-005A	Soil Gas	03/13/2014 16:15	GC26	88355
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Initial Pressure (psia)	Final Pressure (psia)
11.18	22.28

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	1700	50	1	03/20/2014 09:58
Methane	8.4	1.0	1	03/19/2014 19:38
Oxygen	170,000	4000	1	03/20/2014 09:58



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1	1403561-001A	Soil Gas	03/13/2014 14:36	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
13.45	26.81

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	03/21/2014 06:06
Acrolein	2.7	1.2	1	03/21/2014 06:06
Acrylonitrile	ND	1.1	1	03/21/2014 06:06
tert-Amyl methyl ether (TAME)	ND	2.1	1	03/21/2014 06:06
Benzene	ND	1.6	1	03/21/2014 06:06
Benzyl chloride	ND	2.6	1	03/21/2014 06:06
Bromodichloromethane	ND	3.5	1	03/21/2014 06:06
Bromoform	ND	5.2	1	03/21/2014 06:06
Bromomethane	ND	2.0	1	03/21/2014 06:06
1,3-Butadiene	ND	1.1	1	03/21/2014 06:06
2-Butanone (MEK)	ND	75	1	03/21/2014 06:06
t-Butyl alcohol (TBA)	ND	31	1	03/21/2014 06:06
Carbon Disulfide	ND	1.6	1	03/21/2014 06:06
Carbon Tetrachloride	ND	3.2	1	03/21/2014 06:06
Chlorobenzene	ND	2.4	1	03/21/2014 06:06
Chloroethane	ND	1.3	1	03/21/2014 06:06
Chloroform	ND	2.4	1	03/21/2014 06:06
Chloromethane	ND	1.0	1	03/21/2014 06:06
Cyclohexane	ND	18	1	03/21/2014 06:06
Dibromochloromethane	ND	4.4	1	03/21/2014 06:06
1,2-Dibromo-3-chloropropane	ND	0.12	1	03/21/2014 06:06
1,2-Dibromoethane (EDB)	ND	3.9	1	03/21/2014 06:06
1,2-Dichlorobenzene	ND	3.0	1	03/21/2014 06:06
1,3-Dichlorobenzene	ND	3.0	1	03/21/2014 06:06
1,4-Dichlorobenzene	ND	3.0	1	03/21/2014 06:06
Dichlorodifluoromethane	ND	2.5	1	03/21/2014 06:06
1,1-Dichloroethane	ND	2.0	1	03/21/2014 06:06
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	03/21/2014 06:06
1,1-Dichloroethene	ND	2.0	1	03/21/2014 06:06
cis-1,2-Dichloroethene	ND	2.0	1	03/21/2014 06:06
trans-1,2-Dichloroethene	ND	2.0	1	03/21/2014 06:06
1,2-Dichloropropane	ND	2.4	1	03/21/2014 06:06
cis-1,3-Dichloropropene	ND	2.3	1	03/21/2014 06:06
trans-1,3-Dichloropropene	ND	2.3	1	03/21/2014 06:06

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Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1	1403561-001A	Soil Gas	03/13/2014 14:36	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
13.45	26.81

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	03/21/2014 06:06
Diisopropyl ether (DIPE)	ND	2.1	1	03/21/2014 06:06
1,4-Dioxane	ND	1.8	1	03/21/2014 06:06
Ethanol	ND	96	1	03/21/2014 06:06
Ethyl acetate	ND	1.8	1	03/21/2014 06:06
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	03/21/2014 06:06
Ethylbenzene	ND	2.2	1	03/21/2014 06:06
4-Ethyltoluene	ND	2.5	1	03/21/2014 06:06
Freon 113	ND	3.9	1	03/21/2014 06:06
Heptane	ND	21	1	03/21/2014 06:06
Hexachlorobutadiene	ND	5.4	1	03/21/2014 06:06
Hexane	26	18	1	03/21/2014 06:06
2-Hexanone	ND	2.1	1	03/21/2014 06:06
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	03/21/2014 06:06
Methyl-t-butyl ether (MTBE)	ND	1.8	1	03/21/2014 06:06
Methylene chloride	ND	1.8	1	03/21/2014 06:06
Methyl methacrylate	ND	2.1	1	03/21/2014 06:06
Naphthalene	ND	5.3	1	03/21/2014 06:06
Propene	ND	88	1	03/21/2014 06:06
Styrene	ND	2.2	1	03/21/2014 06:06
1,1,1,2-Tetrachloroethane	ND	3.5	1	03/21/2014 06:06
1,1,2,2-Tetrachloroethane	ND	3.5	1	03/21/2014 06:06
Tetrachloroethene	ND	3.4	1	03/21/2014 06:06
Tetrahydrofuran	ND	1.5	1	03/21/2014 06:06
Toluene	ND	1.9	1	03/21/2014 06:06
TPH(g)	900	720	1	03/25/2014 12:12
1,2,4-Trichlorobenzene	ND	3.8	1	03/21/2014 06:06
1,1,1-Trichloroethane	ND	2.8	1	03/21/2014 06:06
1,1,2-Trichloroethane	ND	2.8	1	03/21/2014 06:06
Trichloroethene	ND	2.8	1	03/21/2014 06:06
Trichlorofluoromethane	3.1	2.8	1	03/21/2014 06:06
1,2,4-Trimethylbenzene	ND	2.5	1	03/21/2014 06:06
1,3,5-Trimethylbenzene	ND	2.5	1	03/21/2014 06:06
Vinyl Acetate	ND	1.8	1	03/21/2014 06:06

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Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1	1403561-001A	Soil Gas	03/13/2014 14:36	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
13.45	26.81

Analytes	Result	RL	DF	Date Analyzed
Vinyl Chloride	ND	1.3	1	03/21/2014 06:06
Xylenes, Total	ND	6.6	1	03/21/2014 06:06

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	106	70-130	03/21/2014 06:06
Toluene-d8	94	70-130	03/21/2014 06:06
4-BFB	98	70-130	03/21/2014 06:06

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1403561-002A	Soil Gas	03/13/2014 13:53	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.00	23.90

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	03/21/2014 06:50
Acrolein	ND	1.2	1	03/21/2014 06:50
Acrylonitrile	ND	1.1	1	03/21/2014 06:50
tert-Amyl methyl ether (TAME)	ND	2.1	1	03/21/2014 06:50
Benzene	ND	1.6	1	03/21/2014 06:50
Benzyl chloride	ND	2.6	1	03/21/2014 06:50
Bromodichloromethane	ND	3.5	1	03/21/2014 06:50
Bromoform	ND	5.2	1	03/21/2014 06:50
Bromomethane	ND	2.0	1	03/21/2014 06:50
1,3-Butadiene	ND	1.1	1	03/21/2014 06:50
2-Butanone (MEK)	ND	75	1	03/21/2014 06:50
t-Butyl alcohol (TBA)	ND	31	1	03/21/2014 06:50
Carbon Disulfide	ND	1.6	1	03/21/2014 06:50
Carbon Tetrachloride	ND	3.2	1	03/21/2014 06:50
Chlorobenzene	ND	2.4	1	03/21/2014 06:50
Chloroethane	ND	1.3	1	03/21/2014 06:50
Chloroform	ND	2.4	1	03/21/2014 06:50
Chloromethane	ND	1.0	1	03/21/2014 06:50
Cyclohexane	ND	18	1	03/21/2014 06:50
Dibromochloromethane	ND	4.4	1	03/21/2014 06:50
1,2-Dibromo-3-chloropropane	ND	0.12	1	03/21/2014 06:50
1,2-Dibromoethane (EDB)	ND	3.9	1	03/21/2014 06:50
1,2-Dichlorobenzene	ND	3.0	1	03/21/2014 06:50
1,3-Dichlorobenzene	ND	3.0	1	03/21/2014 06:50
1,4-Dichlorobenzene	ND	3.0	1	03/21/2014 06:50
Dichlorodifluoromethane	ND	2.5	1	03/21/2014 06:50
1,1-Dichloroethane	ND	2.0	1	03/21/2014 06:50
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	03/21/2014 06:50
1,1-Dichloroethene	ND	2.0	1	03/21/2014 06:50
cis-1,2-Dichloroethene	ND	2.0	1	03/21/2014 06:50
trans-1,2-Dichloroethene	ND	2.0	1	03/21/2014 06:50
1,2-Dichloropropane	ND	2.4	1	03/21/2014 06:50
cis-1,3-Dichloropropene	ND	2.3	1	03/21/2014 06:50
trans-1,3-Dichloropropene	ND	2.3	1	03/21/2014 06:50

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Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1403561-002A	Soil Gas	03/13/2014 13:53	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.00	23.90

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	03/21/2014 06:50
Diisopropyl ether (DIPE)	ND	2.1	1	03/21/2014 06:50
1,4-Dioxane	ND	1.8	1	03/21/2014 06:50
Ethanol	ND	96	1	03/21/2014 06:50
Ethyl acetate	ND	1.8	1	03/21/2014 06:50
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	03/21/2014 06:50
Ethylbenzene	ND	2.2	1	03/21/2014 06:50
4-Ethyltoluene	ND	2.5	1	03/21/2014 06:50
Freon 113	ND	3.9	1	03/21/2014 06:50
Heptane	ND	21	1	03/21/2014 06:50
Hexachlorobutadiene	ND	5.4	1	03/21/2014 06:50
Hexane	40	18	1	03/21/2014 06:50
2-Hexanone	ND	2.1	1	03/21/2014 06:50
4-Methyl-2-pentanone (MIBK)	5.0	2.1	1	03/21/2014 06:50
Methyl-t-butyl ether (MTBE)	ND	1.8	1	03/21/2014 06:50
Methylene chloride	ND	1.8	1	03/21/2014 06:50
Methyl methacrylate	ND	2.1	1	03/21/2014 06:50
Naphthalene	ND	5.3	1	03/21/2014 06:50
Propene	ND	88	1	03/21/2014 06:50
Styrene	ND	2.2	1	03/21/2014 06:50
1,1,1,2-Tetrachloroethane	ND	3.5	1	03/21/2014 06:50
1,1,2,2-Tetrachloroethane	ND	3.5	1	03/21/2014 06:50
Tetrachloroethene	ND	3.4	1	03/21/2014 06:50
Tetrahydrofuran	ND	1.5	1	03/21/2014 06:50
Toluene	ND	1.9	1	03/21/2014 06:50
TPH(g)	2000	720	1	03/25/2014 12:56
1,2,4-Trichlorobenzene	ND	3.8	1	03/21/2014 06:50
1,1,1-Trichloroethane	ND	2.8	1	03/21/2014 06:50
1,1,2-Trichloroethane	ND	2.8	1	03/21/2014 06:50
Trichloroethene	ND	2.8	1	03/21/2014 06:50
Trichlorofluoromethane	3.1	2.8	1	03/21/2014 06:50
1,2,4-Trimethylbenzene	ND	2.5	1	03/21/2014 06:50
1,3,5-Trimethylbenzene	ND	2.5	1	03/21/2014 06:50
Vinyl Acetate	ND	1.8	1	03/21/2014 06:50

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1403561-002A	Soil Gas	03/13/2014 13:53	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.00	23.90

Analytes	Result	RL	DF	Date Analyzed
Vinyl Chloride	ND	1.3	1	03/21/2014 06:50
Xylenes, Total	ND	6.6	1	03/21/2014 06:50

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	108	70-130	03/21/2014 06:50
Toluene-d8	101	70-130	03/21/2014 06:50
4-BFB	97	70-130	03/21/2014 06:50

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1403561-003A	Soil Gas	03/13/2014 12:48	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.78	25.46

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	03/21/2014 07:34
Acrolein	ND	1.2	1	03/21/2014 07:34
Acrylonitrile	ND	1.1	1	03/21/2014 07:34
tert-Amyl methyl ether (TAME)	ND	2.1	1	03/21/2014 07:34
Benzene	ND	1.6	1	03/21/2014 07:34
Benzyl chloride	ND	2.6	1	03/21/2014 07:34
Bromodichloromethane	ND	3.5	1	03/21/2014 07:34
Bromoform	ND	5.2	1	03/21/2014 07:34
Bromomethane	ND	2.0	1	03/21/2014 07:34
1,3-Butadiene	ND	1.1	1	03/21/2014 07:34
2-Butanone (MEK)	ND	75	1	03/21/2014 07:34
t-Butyl alcohol (TBA)	ND	31	1	03/21/2014 07:34
Carbon Disulfide	ND	1.6	1	03/21/2014 07:34
Carbon Tetrachloride	ND	3.2	1	03/21/2014 07:34
Chlorobenzene	ND	2.4	1	03/21/2014 07:34
Chloroethane	ND	1.3	1	03/21/2014 07:34
Chloroform	ND	2.4	1	03/21/2014 07:34
Chloromethane	ND	1.0	1	03/21/2014 07:34
Cyclohexane	ND	18	1	03/21/2014 07:34
Dibromochloromethane	ND	4.4	1	03/21/2014 07:34
1,2-Dibromo-3-chloropropane	ND	0.12	1	03/21/2014 07:34
1,2-Dibromoethane (EDB)	ND	3.9	1	03/21/2014 07:34
1,2-Dichlorobenzene	ND	3.0	1	03/21/2014 07:34
1,3-Dichlorobenzene	ND	3.0	1	03/21/2014 07:34
1,4-Dichlorobenzene	ND	3.0	1	03/21/2014 07:34
Dichlorodifluoromethane	ND	2.5	1	03/21/2014 07:34
1,1-Dichloroethane	ND	2.0	1	03/21/2014 07:34
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	03/21/2014 07:34
1,1-Dichloroethene	ND	2.0	1	03/21/2014 07:34
cis-1,2-Dichloroethene	ND	2.0	1	03/21/2014 07:34
trans-1,2-Dichloroethene	ND	2.0	1	03/21/2014 07:34
1,2-Dichloropropane	ND	2.4	1	03/21/2014 07:34
cis-1,3-Dichloropropene	ND	2.3	1	03/21/2014 07:34
trans-1,3-Dichloropropene	ND	2.3	1	03/21/2014 07:34

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Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1403561-003A	Soil Gas	03/13/2014 12:48	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.78	25.46

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	03/21/2014 07:34
Diisopropyl ether (DIPE)	ND	2.1	1	03/21/2014 07:34
1,4-Dioxane	ND	1.8	1	03/21/2014 07:34
Ethanol	ND	96	1	03/21/2014 07:34
Ethyl acetate	ND	1.8	1	03/21/2014 07:34
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	03/21/2014 07:34
Ethylbenzene	ND	2.2	1	03/21/2014 07:34
4-Ethyltoluene	ND	2.5	1	03/21/2014 07:34
Freon 113	ND	3.9	1	03/21/2014 07:34
Heptane	ND	21	1	03/21/2014 07:34
Hexachlorobutadiene	ND	5.4	1	03/21/2014 07:34
Hexane	1100	72	4	03/21/2014 01:47
2-Hexanone	ND	2.1	1	03/21/2014 07:34
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	03/21/2014 07:34
Methyl-t-butyl ether (MTBE)	ND	1.8	1	03/21/2014 07:34
Methylene chloride	ND	1.8	1	03/21/2014 07:34
Methyl methacrylate	ND	2.1	1	03/21/2014 07:34
Naphthalene	ND	5.3	1	03/21/2014 07:34
Propene	ND	88	1	03/21/2014 07:34
Styrene	ND	2.2	1	03/21/2014 07:34
1,1,1,2-Tetrachloroethane	ND	3.5	1	03/21/2014 07:34
1,1,2,2-Tetrachloroethane	ND	3.5	1	03/21/2014 07:34
Tetrachloroethene	ND	3.4	1	03/21/2014 07:34
Tetrahydrofuran	ND	1.5	1	03/21/2014 07:34
Toluene	ND	1.9	1	03/21/2014 07:34
TPH(g)	1500	720	1	03/25/2014 14:10
1,2,4-Trichlorobenzene	ND	3.8	1	03/21/2014 07:34
1,1,1-Trichloroethane	ND	2.8	1	03/21/2014 07:34
1,1,2-Trichloroethane	ND	2.8	1	03/21/2014 07:34
Trichloroethene	ND	2.8	1	03/21/2014 07:34
Trichlorofluoromethane	ND	2.8	1	03/21/2014 07:34
1,2,4-Trimethylbenzene	ND	2.5	1	03/21/2014 07:34
1,3,5-Trimethylbenzene	ND	2.5	1	03/21/2014 07:34
Vinyl Acetate	ND	1.8	1	03/21/2014 07:34

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1403561-003A	Soil Gas	03/13/2014 12:48	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.78	25.46

Analytes	Result	RL	DF	Date Analyzed
Vinyl Chloride	ND	1.3	1	03/21/2014 07:34
Xylenes, Total	ND	6.6	1	03/21/2014 07:34

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	103	70-130	03/21/2014 07:34
Toluene-d8	100	70-130	03/21/2014 07:34
4-BFB	97	70-130	03/21/2014 07:34

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1403561-004A	Soil Gas	03/13/2014 15:31	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.28	24.46

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	03/21/2014 08:18
Acrolein	ND	1.2	1	03/21/2014 08:18
Acrylonitrile	ND	1.1	1	03/21/2014 08:18
tert-Amyl methyl ether (TAME)	ND	2.1	1	03/21/2014 08:18
Benzene	ND	1.6	1	03/21/2014 08:18
Benzyl chloride	ND	2.6	1	03/21/2014 08:18
Bromodichloromethane	ND	3.5	1	03/21/2014 08:18
Bromoform	ND	5.2	1	03/21/2014 08:18
Bromomethane	ND	2.0	1	03/21/2014 08:18
1,3-Butadiene	ND	1.1	1	03/21/2014 08:18
2-Butanone (MEK)	ND	75	1	03/21/2014 08:18
t-Butyl alcohol (TBA)	ND	31	1	03/21/2014 08:18
Carbon Disulfide	ND	1.6	1	03/21/2014 08:18
Carbon Tetrachloride	ND	3.2	1	03/21/2014 08:18
Chlorobenzene	ND	2.4	1	03/21/2014 08:18
Chloroethane	ND	1.3	1	03/21/2014 08:18
Chloroform	ND	2.4	1	03/21/2014 08:18
Chloromethane	ND	1.0	1	03/21/2014 08:18
Cyclohexane	ND	18	1	03/21/2014 08:18
Dibromochloromethane	ND	4.4	1	03/21/2014 08:18
1,2-Dibromo-3-chloropropane	ND	0.12	1	03/21/2014 08:18
1,2-Dibromoethane (EDB)	ND	3.9	1	03/21/2014 08:18
1,2-Dichlorobenzene	ND	3.0	1	03/21/2014 08:18
1,3-Dichlorobenzene	ND	3.0	1	03/21/2014 08:18
1,4-Dichlorobenzene	ND	3.0	1	03/21/2014 08:18
Dichlorodifluoromethane	ND	2.5	1	03/21/2014 08:18
1,1-Dichloroethane	ND	2.0	1	03/21/2014 08:18
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	03/21/2014 08:18
1,1-Dichloroethene	ND	2.0	1	03/21/2014 08:18
cis-1,2-Dichloroethene	ND	2.0	1	03/21/2014 08:18
trans-1,2-Dichloroethene	ND	2.0	1	03/21/2014 08:18
1,2-Dichloropropane	ND	2.4	1	03/21/2014 08:18
cis-1,3-Dichloropropene	ND	2.3	1	03/21/2014 08:18
trans-1,3-Dichloropropene	ND	2.3	1	03/21/2014 08:18

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1403561-004A	Soil Gas	03/13/2014 15:31	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.28	24.46

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	03/21/2014 08:18
Diisopropyl ether (DIPE)	ND	2.1	1	03/21/2014 08:18
1,4-Dioxane	ND	1.8	1	03/21/2014 08:18
Ethanol	ND	96	1	03/21/2014 08:18
Ethyl acetate	ND	1.8	1	03/21/2014 08:18
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	03/21/2014 08:18
Ethylbenzene	ND	2.2	1	03/21/2014 08:18
4-Ethyltoluene	ND	2.5	1	03/21/2014 08:18
Freon 113	ND	3.9	1	03/21/2014 08:18
Heptane	ND	21	1	03/21/2014 08:18
Hexachlorobutadiene	ND	5.4	1	03/21/2014 08:18
2-Hexanone	ND	2.1	1	03/21/2014 08:18
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	03/21/2014 08:18
Methyl-t-butyl ether (MTBE)	ND	1.8	1	03/21/2014 08:18
Methylene chloride	ND	1.8	1	03/21/2014 08:18
Methyl methacrylate	ND	2.1	1	03/21/2014 08:18
Naphthalene	ND	5.3	1	03/21/2014 08:18
Propene	ND	88	1	03/21/2014 08:18
Styrene	ND	2.2	1	03/21/2014 08:18
1,1,1,2-Tetrachloroethane	ND	3.5	1	03/21/2014 08:18
1,1,2,2-Tetrachloroethane	ND	3.5	1	03/21/2014 08:18
Tetrachloroethene	ND	3.4	1	03/21/2014 08:18
Tetrahydrofuran	ND	1.5	1	03/21/2014 08:18
Toluene	ND	1.9	1	03/21/2014 08:18
TPH(g)	34,000	1400	2	03/25/2014 14:54
1,2,4-Trichlorobenzene	ND	3.8	1	03/21/2014 08:18
1,1,1-Trichloroethane	ND	2.8	1	03/21/2014 08:18
1,1,2-Trichloroethane	ND	2.8	1	03/21/2014 08:18
Trichloroethene	ND	2.8	1	03/21/2014 08:18
Trichlorofluoromethane	ND	2.8	1	03/21/2014 08:18
1,2,4-Trimethylbenzene	ND	2.5	1	03/21/2014 08:18
1,3,5-Trimethylbenzene	ND	2.5	1	03/21/2014 08:18
Vinyl Acetate	ND	1.8	1	03/21/2014 08:18
Vinyl Chloride	ND	1.3	1	03/21/2014 08:18

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1403561-004A	Soil Gas	03/13/2014 15:31	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
12.28	24.46

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	03/21/2014 08:18

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	96	70-130	03/21/2014 08:18
Toluene-d8	92	70-130	03/21/2014 08:18
4-BFB	105	70-130	03/21/2014 08:18

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1403561-005A	Soil Gas	03/13/2014 16:15	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
11.18	22.28

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	03/21/2014 09:02
Acrolein	ND	1.2	1	03/21/2014 09:02
Acrylonitrile	ND	1.1	1	03/21/2014 09:02
tert-Amyl methyl ether (TAME)	ND	2.1	1	03/21/2014 09:02
Benzene	ND	1.6	1	03/21/2014 09:02
Benzyl chloride	ND	2.6	1	03/21/2014 09:02
Bromodichloromethane	ND	3.5	1	03/21/2014 09:02
Bromoform	ND	5.2	1	03/21/2014 09:02
Bromomethane	ND	2.0	1	03/21/2014 09:02
1,3-Butadiene	ND	1.1	1	03/21/2014 09:02
2-Butanone (MEK)	ND	75	1	03/21/2014 09:02
t-Butyl alcohol (TBA)	ND	31	1	03/21/2014 09:02
Carbon Disulfide	ND	1.6	1	03/21/2014 09:02
Carbon Tetrachloride	ND	3.2	1	03/21/2014 09:02
Chlorobenzene	ND	2.4	1	03/21/2014 09:02
Chloroethane	ND	1.3	1	03/21/2014 09:02
Chloroform	ND	2.4	1	03/21/2014 09:02
Chloromethane	ND	1.0	1	03/21/2014 09:02
Cyclohexane	21	18	1	03/21/2014 09:02
Dibromochloromethane	ND	4.4	1	03/21/2014 09:02
1,2-Dibromo-3-chloropropane	ND	0.12	1	03/21/2014 09:02
1,2-Dibromoethane (EDB)	ND	3.9	1	03/21/2014 09:02
1,2-Dichlorobenzene	ND	3.0	1	03/21/2014 09:02
1,3-Dichlorobenzene	ND	3.0	1	03/21/2014 09:02
1,4-Dichlorobenzene	ND	3.0	1	03/21/2014 09:02
Dichlorodifluoromethane	ND	2.5	1	03/21/2014 09:02
1,1-Dichloroethane	ND	2.0	1	03/21/2014 09:02
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	03/21/2014 09:02
1,1-Dichloroethene	ND	2.0	1	03/21/2014 09:02
cis-1,2-Dichloroethene	ND	2.0	1	03/21/2014 09:02
trans-1,2-Dichloroethene	ND	2.0	1	03/21/2014 09:02
1,2-Dichloropropane	ND	2.4	1	03/21/2014 09:02
cis-1,3-Dichloropropene	ND	2.3	1	03/21/2014 09:02
trans-1,3-Dichloropropene	ND	2.3	1	03/21/2014 09:02

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Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1403561-005A	Soil Gas	03/13/2014 16:15	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
11.18	22.28

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	03/21/2014 09:02
Diisopropyl ether (DIPE)	ND	2.1	1	03/21/2014 09:02
1,4-Dioxane	ND	1.8	1	03/21/2014 09:02
Ethanol	ND	96	1	03/21/2014 09:02
Ethyl acetate	ND	1.8	1	03/21/2014 09:02
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	03/21/2014 09:02
Ethylbenzene	ND	2.2	1	03/21/2014 09:02
4-Ethyltoluene	ND	2.5	1	03/21/2014 09:02
Freon 113	ND	3.9	1	03/21/2014 09:02
Heptane	ND	21	1	03/21/2014 09:02
Hexachlorobutadiene	ND	5.4	1	03/21/2014 09:02
2-Hexanone	ND	2.1	1	03/21/2014 09:02
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	03/21/2014 09:02
Methyl-t-butyl ether (MTBE)	ND	1.8	1	03/21/2014 09:02
Methylene chloride	ND	1.8	1	03/21/2014 09:02
Methyl methacrylate	ND	2.1	1	03/21/2014 09:02
Naphthalene	ND	5.3	1	03/21/2014 09:02
Propene	ND	88	1	03/21/2014 09:02
Styrene	ND	2.2	1	03/21/2014 09:02
1,1,1,2-Tetrachloroethane	ND	3.5	1	03/21/2014 09:02
1,1,2,2-Tetrachloroethane	ND	3.5	1	03/21/2014 09:02
Tetrachloroethene	6.6	3.4	1	03/21/2014 09:02
Tetrahydrofuran	ND	1.5	1	03/21/2014 09:02
Toluene	ND	1.9	1	03/21/2014 09:02
TPH(g)	25,000	1400	2	03/25/2014 15:38
1,2,4-Trichlorobenzene	ND	3.8	1	03/21/2014 09:02
1,1,1-Trichloroethane	ND	2.8	1	03/21/2014 09:02
1,1,2-Trichloroethane	ND	2.8	1	03/21/2014 09:02
Trichloroethene	ND	2.8	1	03/21/2014 09:02
Trichlorofluoromethane	ND	2.8	1	03/21/2014 09:02
1,2,4-Trimethylbenzene	ND	2.5	1	03/21/2014 09:02
1,3,5-Trimethylbenzene	ND	2.5	1	03/21/2014 09:02
Vinyl Acetate	ND	1.8	1	03/21/2014 09:02
Vinyl Chloride	ND	1.3	1	03/21/2014 09:02

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/21/14-3/25/14

WorkOrder: 1403561
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1403561-005A	Soil Gas	03/13/2014 16:15	GC29	88563

Initial Pressure (psia)	Final Pressure (psia)
11.18	22.28

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	03/21/2014 09:02
Surrogates	REC (%)	Limits		
1,2-DCA-d4	91	70-130		03/21/2014 09:02
Toluene-d8	93	70-130		03/21/2014 09:02
4-BFB	100	70-130		03/21/2014 09:02



Analytical Report

Client: ENGEO Incorporated
Project: #7828000.001; Jordan Ranch
Date Received: 3/18/14 10:52
Date Prepared: 3/24/14-3/25/14

WorkOrder: 1403561
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/m³

Volatile Organics by P&T and GC/MS in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1403561-004A	Soil Gas	03/13/2014 15:31	GC18	88541

Initial Pressure (psia)	Final Pressure (psia)
12.28	24.46

Analytes	Result	RL	DF	Date Analyzed
Hexane	96,000	500	1	03/24/2014 21:58

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	98	70-130	03/24/2014 21:58

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1403561-005A	Soil Gas	03/13/2014 16:15	GC18	88541

Initial Pressure (psia)	Final Pressure (psia)
11.18	22.28

Analytes	Result	RL	DF	Date Analyzed
Hexane	110,000	1000	2	03/25/2014 11:42

Surrogates	REC (%)	Limits	Date Analyzed
Dibromofluoromethane	95	70-130	03/25/2014 11:42



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 3/19/14
Date Analyzed: 3/18/14
Instrument: GC26
Matrix: Soilgas
Project: #7828000.001; Jordan Ranch

WorkOrder: 1403561
BatchID: 88339
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %
Sample ID: MB/LCS-88339

QC Summary Report for ASTM D1946-90

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Helium	ND	0.01196	0.0050	0.010	-	120	60-140



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 3/19/14
Date Analyzed: 3/19/14
Instrument: GC26
Matrix: SoilGas
Project: #7828000.001; Jordan Ranch

WorkOrder: 1403561
BatchID: 88355
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: uL/L
Sample ID: MB/LCS-88355

QC Summary Report for ASTM D1946-90

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Carbon Dioxide	ND	101.9	50	100	-	102	70-130
Methane	ND	119.4	1.0	100	-	119	70-130
Oxygen	ND	6696	4000	7000	-	95.7	70-130



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 3/25/14
Date Analyzed: 3/20/14
Instrument: GC29
Matrix: Soilgas
Project: #7828000.001; Jordan Ranch

WorkOrder: 1403561
BatchID: 88563
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-88563

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	25	-	-	-	-
Acrolein	ND	25.07	0.50	25	-	100	60-140
Acrylonitrile	ND	25.23	0.50	25	-	101	60-140
tert-Amyl methyl ether (TAME)	ND	26.79	0.50	25	-	107	60-140
Benzene	ND	23.13	0.50	25	-	92.5	60-140
Benzyl chloride	ND	28.16	0.50	25	-	113	60-140
Bromodichloromethane	ND	29.23	0.50	25	-	117	60-140
Bromoform	ND	36.93	0.50	25	-	148, F2	60-140
Bromomethane	ND	-	0.50	-	-	-	-
1,3-Butadiene	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	25	-	-	-	-
t-Butyl alcohol (TBA)	ND	26.61	10	25	-	106	60-140
Carbon Disulfide	ND	24.81	0.50	25	-	99.2	60-140
Carbon Tetrachloride	ND	25.94	0.50	25	-	104	60-140
Chlorobenzene	ND	26.53	0.50	25	-	106	60-140
Chloroethane	ND	24.45	0.50	25	-	97.8	60-140
Chloroform	ND	23.76	0.50	25	-	95	60-140
Chloromethane	ND	21.04	0.50	25	-	84.2	60-140
Cyclohexane	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	31.57	0.50	25	-	126	60-140
1,2-Dibromo-3-chloropropane	ND	35.64	0.012	25	-	143, F2	60-140
1,2-Dibromoethane (EDB)	ND	27.42	0.50	25	-	110	60-140
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	28.83	0.50	25	-	115	60-140
1,4-Dichlorobenzene	ND	27.65	0.50	25	-	111	60-140
Dichlorodifluoromethane	ND	22.72	0.50	25	-	90.9	60-140
1,1-Dichloroethane	ND	26.21	0.50	25	-	105	60-140
1,2-Dichloroethane (1,2-DCA)	ND	23.15	0.50	25	-	92.6	60-140
1,1-Dichloroethene	ND	-	0.50	-	-	-	-
cis-1,2-Dichloroethene	ND	25.51	0.50	25	-	102	60-140
trans-1,2-Dichloroethene	ND	25.71	0.50	25	-	103	60-140
1,2-Dichloropropane	ND	23.89	0.50	25	-	95.6	60-140
cis-1,3-Dichloropropene	ND	31.72	0.50	25	-	127	60-140
trans-1,3-Dichloropropene	ND	28.23	0.50	25	-	113	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	24.19	0.50	25	-	96.8	60-140
Diisopropyl ether (DIPE)	ND	24.62	0.50	25	-	98.5	60-140
1,4-Dioxane	ND	23.89	0.50	25	-	95.6	60-140
Ethanol	ND	-	50	-	-	-	-
Ethyl acetate	ND	26.29	0.50	25	-	105	60-140
Ethyl tert-butyl ether (ETBE)	ND	24.93	0.50	25	-	99.7	60-140

(Cont.)



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 3/25/14
Date Analyzed: 3/20/14
Instrument: GC29
Matrix: Soilgas
Project: #7828000.001; Jordan Ranch

WorkOrder: 1403561
BatchID: 88563
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-88563

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethylbenzene	ND	27.08	0.50	25	-	108	60-140
4-Ethyltoluene	ND	-	0.50	-	-	-	-
Freon 113	ND	25.3	0.50	25	-	101	60-140
Heptane	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	31.63	0.50	25	-	127	60-140
Hexane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	26.1	0.50	25	-	104	60-140
Methyl-t-butyl ether (MTBE)	ND	24.86	0.50	25	-	99.4	60-140
Methylene chloride	ND	23.06	0.50	25	-	92.2	60-140
Methyl methacrylate	ND	28.51	0.50	25	-	114	60-140
Naphthalene	ND	43.07	1.0	50	-	86.1	60-140
Propene	ND	-	50	-	-	-	-
Styrene	ND	26.91	0.50	25	-	108	60-140
1,1,1,2-Tetrachloroethane	ND	31.81	0.50	25	-	127	60-140
1,1,2,2-Tetrachloroethane	ND	26.88	0.50	25	-	108	60-140
Tetrachloroethene	ND	24.78	0.50	25	-	99.1	60-140
Tetrahydrofuran	ND	24.67	0.50	25	-	98.7	60-140
Toluene	ND	26.14	0.50	25	-	105	60-140
1,2,4-Trichlorobenzene	ND	23.89	0.50	25	-	95.5	60-140
1,1,1-Trichloroethane	ND	28.17	0.50	25	-	113	60-140
1,1,2-Trichloroethane	ND	25.07	0.50	25	-	100	60-140
Trichloroethene	ND	21.64	0.50	25	-	86.6	60-140
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	27.37	0.50	25	-	109	60-140
1,3,5-Trimethylbenzene	ND	26.8	0.50	25	-	107	60-140
Vinyl Acetate	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	20.17	0.50	25	-	80.7	60-140
Xylenes, Total	ND	84.13	1.5	75	-	112	60-140

Surrogate Recovery

1,2-DCA-d4	474.6	441.6		500	95	88	60-140
Toluene-d8	499.6	505.2		500	100	101	60-140
4-BFB	478.7	494.2		500	96	99	60-140



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 3/24/14
Date Analyzed: 3/24/14
Instrument: GC18
Matrix: Water
Project: #7828000.001; Jordan Ranch

WorkOrder: 1403561
BatchID: 88541
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-88541
 1403695-001BMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	10	-	-	-	-
tert-Amyl methyl ether (TAME)	ND	17.52	0.50	20	-	87.6	70-130
Benzene	ND	17.78	0.50	20	-	88.9	70-130
Bromobenzene	ND	-	0.50	-	-	-	-
Bromochloromethane	ND	-	0.50	-	-	-	-
Bromodichloromethane	ND	-	0.50	-	-	-	-
Bromoform	ND	-	0.50	-	-	-	-
Bromomethane	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	2.0	-	-	-	-
t-Butyl alcohol (TBA)	ND	68.75	2.0	80	-	85.9	70-130
n-Butyl benzene	ND	-	0.50	-	-	-	-
sec-Butyl benzene	ND	-	0.50	-	-	-	-
tert-Butyl benzene	ND	-	0.50	-	-	-	-
Carbon Disulfide	ND	-	0.50	-	-	-	-
Carbon Tetrachloride	ND	-	0.50	-	-	-	-
Chlorobenzene	ND	19.19	0.50	20	-	95.9	70-130
Chloroethane	ND	-	0.50	-	-	-	-
Chloroform	ND	-	0.50	-	-	-	-
Chloromethane	ND	-	0.50	-	-	-	-
2-Chlorotoluene	ND	-	0.50	-	-	-	-
4-Chlorotoluene	ND	-	0.50	-	-	-	-
Dibromochloromethane	ND	-	0.50	-	-	-	-
1,2-Dibromo-3-chloropropane	ND	-	0.20	-	-	-	-
1,2-Dibromoethane (EDB)	ND	19.55	0.50	20	-	97.8	70-130
Dibromomethane	ND	-	0.50	-	-	-	-
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,4-Dichlorobenzene	ND	-	0.50	-	-	-	-
Dichlorodifluoromethane	ND	-	0.50	-	-	-	-
1,1-Dichloroethane	ND	-	0.50	-	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	18.33	0.50	20	-	91.7	70-130
1,1-Dichloroethene	ND	16.66	0.50	20	-	83.3	70-130
cis-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
trans-1,2-Dichloroethene	ND	-	0.50	-	-	-	-
1,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,3-Dichloropropane	ND	-	0.50	-	-	-	-
2,2-Dichloropropane	ND	-	0.50	-	-	-	-
1,1-Dichloropropene	ND	-	0.50	-	-	-	-
cis-1,3-Dichloropropene	ND	-	0.50	-	-	-	-
trans-1,3-Dichloropropene	ND	-	0.50	-	-	-	-

(Cont.)



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 3/24/14
Date Analyzed: 3/24/14
Instrument: GC18
Matrix: Water
Project: #7828000.001; Jordan Ranch

WorkOrder: 1403561
BatchID: 88541
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-88541
 1403695-001BMS/MSD

QC Summary Report for SW8260B

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Diisopropyl ether (DIPE)	ND	17.11	0.50	20	-	85.5	70-130
Ethylbenzene	ND	-	0.50	-	-	-	-
Ethyl tert-butyl ether (ETBE)	ND	17.76	0.50	20	-	88.8	70-130
Freon 113	ND	-	0.50	-	-	-	-
Hexachlorobutadiene	ND	-	0.50	-	-	-	-
Hexachloroethane	ND	-	0.50	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
Isopropylbenzene	ND	-	0.50	-	-	-	-
4-Isopropyl toluene	ND	-	0.50	-	-	-	-
Methyl-t-butyl ether (MTBE)	ND	17.9	0.50	20	-	89.5	70-130
Methylene chloride	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	-	0.50	-	-	-	-
Naphthalene	ND	-	0.50	-	-	-	-
n-Propyl benzene	ND	-	0.50	-	-	-	-
Styrene	ND	-	0.50	-	-	-	-
1,1,1,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
1,1,2,2-Tetrachloroethane	ND	-	0.50	-	-	-	-
Tetrachloroethene	ND	-	0.50	-	-	-	-
Toluene	ND	17.58	0.50	20	-	87.9	70-130
1,2,3-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,2,4-Trichlorobenzene	ND	-	0.50	-	-	-	-
1,1,1-Trichloroethane	ND	-	0.50	-	-	-	-
1,1,2-Trichloroethane	ND	-	0.50	-	-	-	-
Trichloroethene	ND	18.29	0.50	20	-	91.5	70-130
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,3-Trichloropropane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	-	0.50	-	-	-	-
1,3,5-Trimethylbenzene	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	-	0.50	-	-	-	-
Xylenes, Total	ND	-	0.50	-	-	-	-

Surrogate Recovery

Dibromofluoromethane	23.25	42.86		45	93	95	70-130
Toluene-d8	24.55	43.97		45	98	98	70-130
4-BFB	2.324	4.18		4.5	93	93	70-130

(Cont.)



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 3/24/14
Date Analyzed: 3/24/14
Instrument: GC18
Matrix: Water
Project: #7828000.001; Jordan Ranch

WorkOrder: 1403561
BatchID: 88541
Extraction Method: SW5030B
Analytical Method: SW8260B
Unit: µg/L
Sample ID: MB/LCS-88541
 1403695-001BMS/MSD

QC Summary Report for SW8260B

Analyte	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
tert-Amyl methyl ether (TAME)	17.01	17.37	20	ND	85.1	86.9	70-130	2.10	20
Benzene	17.62	17.64	20	ND	88.1	88.2	70-130	0.0785	20
t-Butyl alcohol (TBA)	48.46	36.98	80	ND	60.6,F1	46.2,F1	70-130	26.9,F1	20
Chlorobenzene	18.95	18.83	20	ND	94.8	94.1	70-130	0.674	20
1,2-Dibromoethane (EDB)	19.09	19.2	20	ND	95.5	96	70-130	0.561	20
1,2-Dichloroethane (1,2-DCA)	17.06	17.7	20	ND	85.3	88.5	70-130	3.72	20
1,1-Dichloroethene	17.92	18.69	20	ND	89.6	93.5	70-130	4.24	20
Diisopropyl ether (DIPE)	16.84	16.85	20	ND	84.2	84.2	70-130	0	20
Ethyl tert-butyl ether (ETBE)	17.09	17.24	20	ND	85.4	86.2	70-130	0.878	20
Methyl-t-butyl ether (MTBE)	16.85	17.4	20	ND	84.3	87	70-130	3.17	20
Toluene	16.95	17.01	20	ND	84.7	85.1	70-130	0.370	20
Trichloroethene	18.39	18.43	20	ND	91.9	92.2	70-130	0.266	20
Surrogate Recovery									
Dibromofluoromethane	42.59	43.5	45		95	97	70-130	2.11	20
Toluene-d8	43.89	43.99	45		98	98	70-130	0	20
4-BFB	3.985	4.026	4.5		89	89	70-130	0	20



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1403561

ClientCode: ENGE

WaterTrax
 WriteOn
 EDF
 Excel
 EQUIS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:

Morgan Johnson
ENGEO Incorporated
2010 Crow Canyon Place, Ste 250
San Ramon, CA 94583-4634
(916) 580-6518 FAX: (925) 866-0199

Email: mjohnson@engeo.com
cc/3rd Party:
PO:
ProjectNo: #7828000.001; Jordan Ranch

Bill to:

Chantelle
ENGEO Incorporated
2010 Crow Canyon Place, Ste 250
San Ramon, CA 94583-4634
AP@engeo.com

Requested TAT:

5 days

Date Received: 03/18/2014

Date Printed: 03/18/2014

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1403561-001	SG-1	Soil Gas	3/13/2014 14:36	<input type="checkbox"/>	A	A											
1403561-002	SG-2	Soil Gas	3/13/2014 13:53	<input type="checkbox"/>	A	A											
1403561-003	SG-3	Soil Gas	3/13/2014 12:48	<input type="checkbox"/>	A	A											
1403561-004	SG-4	Soil Gas	3/13/2014 15:31	<input type="checkbox"/>	A	A											
1403561-005	SG-5	Soil Gas	3/13/2014 16:15	<input type="checkbox"/>	A	A											

Test Legend:

1	LG_SUMMA_SOILGAS	2	5+GAS_Scan-SIM_SOIL(UG)	3		4		5	
6		7		8		9		10	
11		12							

The following SamplIDs: 001A, 002A, 003A, 004A, 005A contain testgroup.

Prepared by: Jena Alfaro

Comments: Samples taken off hold 3/18/14

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.



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

Work Order No.: 1403183

Dear Morgan Johnson:

Torrent Laboratory, Inc. received 2 sample(s) on March 25, 2014 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.

Patti Sandrock
QA Officer

April 01, 2014

Date



Date: 4/1/2014

Client: Engeo (San Ramon)

Project: Jordan Ranch

Work Order: 1403183

CASE NARRATIVE

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: Morgan Johnson
Engco (San Ramon)

Date Received: 03/25/14
Date Reported: 04/01/14
1403183-001

SV-N @ 2'

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
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All compounds were non-detectable for this sample.

SV-N @ 5' 1403183-002

<u>Parameters:</u>	<u>Analysis Method</u>	<u>DF</u>	<u>MDL</u>	<u>PQL</u>	<u>Results</u>	<u>Unit</u>
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All compounds were non-detectable for this sample.



SAMPLE RESULTS

Report prepared for: Morgan Johnson
Engeo (San Ramon)

Date Received: 03/25/14
Date Reported: 04/01/14

Client Sample ID:	SV-N @ 2'	Lab Sample ID:	1403183-001A
Project Name/Location:	Jordan Ranch	Sample Matrix:	Soil
Project Number:	7828.000.001		
Date/Time Sampled:	03/24/14 / 8:20		
Tag Number:	Jordan Ranch		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Dichlorodifluoromethane	SW8260B	NA	03/27/14	1	4.4	10	ND		ug/Kg	419885	NA
Chloromethane	SW8260B	NA	03/27/14	1	4.6	10	ND		ug/Kg	419885	NA
Vinyl Chloride	SW8260B	NA	03/27/14	1	2.6	10	ND		ug/Kg	419885	NA
Bromomethane	SW8260B	NA	03/27/14	1	4.7	10	ND		ug/Kg	419885	NA
Trichlorofluoromethane	SW8260B	NA	03/27/14	1	2.9	10	ND		ug/Kg	419885	NA
1,1-Dichloroethene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
Freon 113	SW8260B	NA	03/27/14	1	3.7	10	ND		ug/Kg	419885	NA
Methylene Chloride	SW8260B	NA	03/27/14	1	2.0	50	ND		ug/Kg	419885	NA
trans-1,2-Dichloroethene	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
MTBE	SW8260B	NA	03/27/14	1	2.6	10	ND		ug/Kg	419885	NA
tert-Butanol	SW8260B	NA	03/27/14	1	21	50	ND		ug/Kg	419885	NA
Diisopropyl ether (DIPE)	SW8260B	NA	03/27/14	1	2.2	10	ND		ug/Kg	419885	NA
1,1-Dichloroethane	SW8260B	NA	03/27/14	1	1.3	10	ND		ug/Kg	419885	NA
ETBE	SW8260B	NA	03/27/14	1	2.4	10	ND		ug/Kg	419885	NA
cis-1,2-Dichloroethene	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
2,2-Dichloropropane	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
Bromochloromethane	SW8260B	NA	03/27/14	1	2.3	10	ND		ug/Kg	419885	NA
Chloroform	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
Carbon Tetrachloride	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
1,1,1-Trichloroethane	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
1,1-Dichloropropene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
Benzene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
TAME	SW8260B	NA	03/27/14	1	2.1	10	ND		ug/Kg	419885	NA
1,2-Dichloroethane	SW8260B	NA	03/27/14	1	1.9	10	ND		ug/Kg	419885	NA
Trichloroethylene	SW8260B	NA	03/27/14	1	3.9	10	ND		ug/Kg	419885	NA
Dibromomethane	SW8260B	NA	03/27/14	1	2.2	10	ND		ug/Kg	419885	NA
1,2-Dichloropropane	SW8260B	NA	03/27/14	1	1.3	10	ND		ug/Kg	419885	NA
Bromodichloromethane	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
cis-1,3-Dichloropropene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
Toluene	SW8260B	NA	03/27/14	1	0.98	10	ND		ug/Kg	419885	NA
Tetrachloroethylene	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
trans-1,3-Dichloropropene	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
1,1,2-Trichloroethane	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
Dibromochloromethane	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
1,3-Dichloropropane	SW8260B	NA	03/27/14	1	2.1	10	ND		ug/Kg	419885	NA



SAMPLE RESULTS

Report prepared for: Morgan Johnson
Engeo (San Ramon)

Date Received: 03/25/14
Date Reported: 04/01/14

Client Sample ID:	SV-N @ 2'	Lab Sample ID:	1403183-001A
Project Name/Location:	Jordan Ranch	Sample Matrix:	Soil
Project Number:	7828.000.001		
Date/Time Sampled:	03/24/14 / 8:20		
Tag Number:	Jordan Ranch		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
1,2-Dibromoethane	SW8260B	NA	03/27/14	1	1.7	10	ND		ug/Kg	419885	NA
Ethyl Benzene	SW8260B	NA	03/27/14	1	0.86	10	ND		ug/Kg	419885	NA
Chlorobenzene	SW8260B	NA	03/27/14	1	4.2	10	ND		ug/Kg	419885	NA
1,1,1,2-Tetrachloroethane	SW8260B	NA	03/27/14	1	0.86	10	ND		ug/Kg	419885	NA
m,p-Xylene	SW8260B	NA	03/27/14	1	1.9	10	ND		ug/Kg	419885	NA
o-Xylene	SW8260B	NA	03/27/14	1	0.66	5.0	ND		ug/Kg	419885	NA
Styrene	SW8260B	NA	03/27/14	1	0.77	10	ND		ug/Kg	419885	NA
Bromoform	SW8260B	NA	03/27/14	1	1.9	10	ND		ug/Kg	419885	NA
Isopropyl Benzene	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
n-Propylbenzene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
Bromobenzene	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
1,1,2,2-Tetrachloroethane	SW8260B	NA	03/27/14	1	3.0	10	ND		ug/Kg	419885	NA
1,3,5-Trimethylbenzene	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
1,2,3-Trichloropropane	SW8260B	NA	03/27/14	1	3.3	10	ND		ug/Kg	419885	NA
4-Chlorotoluene	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
2-Chlorotoluene	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
tert-Butylbenzene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
1,2,4-Trimethylbenzene	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
sec-Butyl Benzene	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
p-Isopropyltoluene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
1,3-Dichlorobenzene	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
1,4-Dichlorobenzene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
n-Butylbenzene	SW8260B	NA	03/27/14	1	2.2	10	ND		ug/Kg	419885	NA
1,2-Dichlorobenzene	SW8260B	NA	03/27/14	1	1.3	10	ND		ug/Kg	419885	NA
1,2-Dibromo-3-Chloropropane	SW8260B	NA	03/27/14	1	4.2	10	ND		ug/Kg	419885	NA
Hexachlorobutadiene	SW8260B	NA	03/27/14	1	2.6	10	ND		ug/Kg	419885	NA
1,2,4-Trichlorobenzene	SW8260B	NA	03/27/14	1	2.1	10	ND		ug/Kg	419885	NA
Naphthalene	SW8260B	NA	03/27/14	1	2.8	10	ND		ug/Kg	419885	NA
1,2,3-Trichlorobenzene	SW8260B	NA	03/27/14	1	2.9	10	ND		ug/Kg	419885	NA
(S) Dibromofluoromethane	SW8260B	NA	03/27/14	1	59.8	148	128		%	419885	NA
(S) Toluene-d8	SW8260B	NA	03/27/14	1	55.2	133	124		%	419885	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	03/27/14	1	55.8	141	116		%	419885	NA



SAMPLE RESULTS

Report prepared for: Morgan Johnson
Engeo (San Ramon)

Date Received: 03/25/14
Date Reported: 04/01/14

Client Sample ID:	SV-N @ 2'	Lab Sample ID:	1403183-001A
Project Name/Location:	Jordan Ranch	Sample Matrix:	Soil
Project Number:	7828.000.001		
Date/Time Sampled:	03/24/14 / 8:20		
Tag Number:	Jordan Ranch		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Naphthalene	8270CSIM	3/26/14	03/26/14	1	0.01220	0.0495	ND		mg/Kg	419862	11147
2-Methylnaphthalene	8270CSIM	3/26/14	03/26/14	1	0.007690	0.0495	ND		mg/Kg	419862	11147
1-Methylnaphthalene	8270CSIM	3/26/14	03/26/14	1	0.007540	0.0495	ND		mg/Kg	419862	11147
Acenaphthylene	8270CSIM	3/26/14	03/26/14	1	0.008270	0.0495	ND		mg/Kg	419862	11147
Acenaphthene	8270CSIM	3/26/14	03/26/14	1	0.008440	0.0495	ND		mg/Kg	419862	11147
Fluorene	8270CSIM	3/26/14	03/26/14	1	0.009600	0.0495	ND		mg/Kg	419862	11147
Phenanthrene	8270CSIM	3/26/14	03/26/14	1	0.009710	0.0495	ND		mg/Kg	419862	11147
Anthracene	8270CSIM	3/26/14	03/26/14	1	0.009680	0.0495	ND		mg/Kg	419862	11147
Fluoranthene	8270CSIM	3/26/14	03/26/14	1	0.009670	0.0495	ND		mg/Kg	419862	11147
Pyrene	8270CSIM	3/26/14	03/26/14	1	0.01240	0.0495	ND		mg/Kg	419862	11147
Benz[a]anthracene	8270CSIM	3/26/14	03/26/14	1	0.007210	0.0495	ND		mg/Kg	419862	11147
Chrysene	8270CSIM	3/26/14	03/26/14	1	0.006550	0.0995	ND		mg/Kg	419862	11147
Benzo[b]fluoranthene	8270CSIM	3/26/14	03/26/14	1	0.004830	0.0495	ND		mg/Kg	419862	11147
Benzo[k]fluoranthene	8270CSIM	3/26/14	03/26/14	1	0.007840	0.0495	ND		mg/Kg	419862	11147
Benzo[a]pyrene	8270CSIM	3/26/14	03/26/14	1	0.007320	0.0495	ND		mg/Kg	419862	11147
Indeno[1,2,3-cd]pyrene	8270CSIM	3/26/14	03/26/14	1	0.01080	0.0495	ND		mg/Kg	419862	11147
Dibenz[a,h]anthracene	8270CSIM	3/26/14	03/26/14	1	0.01040	0.0495	ND		mg/Kg	419862	11147
Benzo[g,h,i]perylene	8270CSIM	3/26/14	03/26/14	1	0.01120	0.0495	ND		mg/Kg	419862	11147
2-Fluorobiphenyl (S)	8270CSIM	3/26/14	03/26/14	1	60	120	88.9		%	419862	11147
p-Terphenyl-d14 (S)	8270CSIM	3/26/14	03/26/14	1	24.3	129	84.5		%	419862	11147



SAMPLE RESULTS

Report prepared for: Morgan Johnson
Engeo (San Ramon)

Date Received: 03/25/14
Date Reported: 04/01/14

Client Sample ID:	SV-N @ 5'	Lab Sample ID:	1403183-002A
Project Name/Location:	Jordan Ranch	Sample Matrix:	Soil
Project Number:	7828.000.001		
Date/Time Sampled:	03/24/14 / 8:20		
Tag Number:	Jordan Ranch		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Dichlorodifluoromethane	SW8260B	NA	03/27/14	1	4.4	10	ND		ug/Kg	419885	NA
Chloromethane	SW8260B	NA	03/27/14	1	4.6	10	ND		ug/Kg	419885	NA
Vinyl Chloride	SW8260B	NA	03/27/14	1	2.6	10	ND		ug/Kg	419885	NA
Bromomethane	SW8260B	NA	03/27/14	1	4.7	10	ND		ug/Kg	419885	NA
Trichlorofluoromethane	SW8260B	NA	03/27/14	1	2.9	10	ND		ug/Kg	419885	NA
1,1-Dichloroethene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
Freon 113	SW8260B	NA	03/27/14	1	3.7	10	ND		ug/Kg	419885	NA
Methylene Chloride	SW8260B	NA	03/27/14	1	2.0	50	ND		ug/Kg	419885	NA
trans-1,2-Dichloroethene	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
MTBE	SW8260B	NA	03/27/14	1	2.6	10	ND		ug/Kg	419885	NA
tert-Butanol	SW8260B	NA	03/27/14	1	21	50	ND		ug/Kg	419885	NA
Diisopropyl ether (DIPE)	SW8260B	NA	03/27/14	1	2.2	10	ND		ug/Kg	419885	NA
1,1-Dichloroethane	SW8260B	NA	03/27/14	1	1.3	10	ND		ug/Kg	419885	NA
ETBE	SW8260B	NA	03/27/14	1	2.4	10	ND		ug/Kg	419885	NA
cis-1,2-Dichloroethene	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
2,2-Dichloropropane	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
Bromochloromethane	SW8260B	NA	03/27/14	1	2.3	10	ND		ug/Kg	419885	NA
Chloroform	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
Carbon Tetrachloride	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
1,1,1-Trichloroethane	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
1,1-Dichloropropene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
Benzene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
TAME	SW8260B	NA	03/27/14	1	2.1	10	ND		ug/Kg	419885	NA
1,2-Dichloroethane	SW8260B	NA	03/27/14	1	1.9	10	ND		ug/Kg	419885	NA
Trichloroethylene	SW8260B	NA	03/27/14	1	3.9	10	ND		ug/Kg	419885	NA
Dibromomethane	SW8260B	NA	03/27/14	1	2.2	10	ND		ug/Kg	419885	NA
1,2-Dichloropropane	SW8260B	NA	03/27/14	1	1.3	10	ND		ug/Kg	419885	NA
Bromodichloromethane	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
cis-1,3-Dichloropropene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
Toluene	SW8260B	NA	03/27/14	1	0.98	10	ND		ug/Kg	419885	NA
Tetrachloroethylene	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
trans-1,3-Dichloropropene	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
1,1,2-Trichloroethane	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
Dibromochloromethane	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
1,3-Dichloropropane	SW8260B	NA	03/27/14	1	2.1	10	ND		ug/Kg	419885	NA



SAMPLE RESULTS

Report prepared for: Morgan Johnson
Engeo (San Ramon)

Date Received: 03/25/14
Date Reported: 04/01/14

Client Sample ID:	SV-N @ 5'	Lab Sample ID:	1403183-002A
Project Name/Location:	Jordan Ranch	Sample Matrix:	Soil
Project Number:	7828.000.001		
Date/Time Sampled:	03/24/14 / 8:20		
Tag Number:	Jordan Ranch		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
1,2-Dibromoethane	SW8260B	NA	03/27/14	1	1.7	10	ND		ug/Kg	419885	NA
Ethyl Benzene	SW8260B	NA	03/27/14	1	0.86	10	ND		ug/Kg	419885	NA
Chlorobenzene	SW8260B	NA	03/27/14	1	4.2	10	ND		ug/Kg	419885	NA
1,1,1,2-Tetrachloroethane	SW8260B	NA	03/27/14	1	0.86	10	ND		ug/Kg	419885	NA
m,p-Xylene	SW8260B	NA	03/27/14	1	1.9	10	ND		ug/Kg	419885	NA
o-Xylene	SW8260B	NA	03/27/14	1	0.66	5.0	ND		ug/Kg	419885	NA
Styrene	SW8260B	NA	03/27/14	1	0.77	10	ND		ug/Kg	419885	NA
Bromoform	SW8260B	NA	03/27/14	1	1.9	10	ND		ug/Kg	419885	NA
Isopropyl Benzene	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
n-Propylbenzene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
Bromobenzene	SW8260B	NA	03/27/14	1	1.2	10	ND		ug/Kg	419885	NA
1,1,2,2-Tetrachloroethane	SW8260B	NA	03/27/14	1	3.0	10	ND		ug/Kg	419885	NA
1,3,5-Trimethylbenzene	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
1,2,3-Trichloropropane	SW8260B	NA	03/27/14	1	3.3	10	ND		ug/Kg	419885	NA
4-Chlorotoluene	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
2-Chlorotoluene	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
tert-Butylbenzene	SW8260B	NA	03/27/14	1	1.4	10	ND		ug/Kg	419885	NA
1,2,4-Trimethylbenzene	SW8260B	NA	03/27/14	1	1.1	10	ND		ug/Kg	419885	NA
sec-Butyl Benzene	SW8260B	NA	03/27/14	1	1.6	10	ND		ug/Kg	419885	NA
p-Isopropyltoluene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
1,3-Dichlorobenzene	SW8260B	NA	03/27/14	1	1.8	10	ND		ug/Kg	419885	NA
1,4-Dichlorobenzene	SW8260B	NA	03/27/14	1	1.5	10	ND		ug/Kg	419885	NA
n-Butylbenzene	SW8260B	NA	03/27/14	1	2.2	10	ND		ug/Kg	419885	NA
1,2-Dichlorobenzene	SW8260B	NA	03/27/14	1	1.3	10	ND		ug/Kg	419885	NA
1,2-Dibromo-3-Chloropropane	SW8260B	NA	03/27/14	1	4.2	10	ND		ug/Kg	419885	NA
Hexachlorobutadiene	SW8260B	NA	03/27/14	1	2.6	10	ND		ug/Kg	419885	NA
1,2,4-Trichlorobenzene	SW8260B	NA	03/27/14	1	2.1	10	ND		ug/Kg	419885	NA
Naphthalene	SW8260B	NA	03/27/14	1	2.8	10	ND		ug/Kg	419885	NA
1,2,3-Trichlorobenzene	SW8260B	NA	03/27/14	1	2.9	10	ND		ug/Kg	419885	NA
(S) Dibromofluoromethane	SW8260B	NA	03/27/14	1	59.8	148	126		%	419885	NA
(S) Toluene-d8	SW8260B	NA	03/27/14	1	55.2	133	121		%	419885	NA
(S) 4-Bromofluorobenzene	SW8260B	NA	03/27/14	1	55.8	141	116		%	419885	NA



SAMPLE RESULTS

Report prepared for: Morgan Johnson
Engeo (San Ramon)

Date Received: 03/25/14
Date Reported: 04/01/14

Client Sample ID:	SV-N @ 5'	Lab Sample ID:	1403183-002A
Project Name/Location:	Jordan Ranch	Sample Matrix:	Soil
Project Number:	7828.000.001		
Date/Time Sampled:	03/24/14 / 8:20		
Tag Number:	Jordan Ranch		

Parameters:	Analysis Method	Prep Date	Date Analyzed	DF	MDL	PQL	Results	Lab Qualifier	Unit	Analytical Batch	Prep Batch
Naphthalene	8270CSIM	3/26/14	03/26/14	1	0.01220	0.0495	ND		mg/Kg	419862	11147
2-Methylnaphthalene	8270CSIM	3/26/14	03/26/14	1	0.007690	0.0495	ND		mg/Kg	419862	11147
1-Methylnaphthalene	8270CSIM	3/26/14	03/26/14	1	0.007540	0.0495	ND		mg/Kg	419862	11147
Acenaphthylene	8270CSIM	3/26/14	03/26/14	1	0.008270	0.0495	ND		mg/Kg	419862	11147
Acenaphthene	8270CSIM	3/26/14	03/26/14	1	0.008440	0.0495	ND		mg/Kg	419862	11147
Fluorene	8270CSIM	3/26/14	03/26/14	1	0.009600	0.0495	ND		mg/Kg	419862	11147
Phenanthrene	8270CSIM	3/26/14	03/26/14	1	0.009710	0.0495	ND		mg/Kg	419862	11147
Anthracene	8270CSIM	3/26/14	03/26/14	1	0.009680	0.0495	ND		mg/Kg	419862	11147
Fluoranthene	8270CSIM	3/26/14	03/26/14	1	0.009670	0.0495	ND		mg/Kg	419862	11147
Pyrene	8270CSIM	3/26/14	03/26/14	1	0.01240	0.0495	ND		mg/Kg	419862	11147
Benz[a]anthracene	8270CSIM	3/26/14	03/26/14	1	0.007210	0.0495	ND		mg/Kg	419862	11147
Chrysene	8270CSIM	3/26/14	03/26/14	1	0.006550	0.0995	ND		mg/Kg	419862	11147
Benzo[b]fluoranthene	8270CSIM	3/26/14	03/26/14	1	0.004830	0.0495	ND		mg/Kg	419862	11147
Benzo[k]fluoranthene	8270CSIM	3/26/14	03/26/14	1	0.007840	0.0495	ND		mg/Kg	419862	11147
Benzo[a]pyrene	8270CSIM	3/26/14	03/26/14	1	0.007320	0.0495	ND		mg/Kg	419862	11147
Indeno[1,2,3-cd]pyrene	8270CSIM	3/26/14	03/26/14	1	0.01080	0.0495	ND		mg/Kg	419862	11147
Dibenz[a,h]anthracene	8270CSIM	3/26/14	03/26/14	1	0.01040	0.0495	ND		mg/Kg	419862	11147
Benzo[g,h,i]perylene	8270CSIM	3/26/14	03/26/14	1	0.01120	0.0495	ND		mg/Kg	419862	11147
2-Fluorobiphenyl (S)	8270CSIM	3/26/14	03/26/14	1	60	120	79.9		%	419862	11147
p-Terphenyl-d14 (S)	8270CSIM	3/26/14	03/26/14	1	24.3	129	74.1		%	419862	11147



MB Summary Report

Work Order:	1403183	Prep Method:	3546_PAHSIM	Prep Date:	03/26/14	Prep Batch:	11147
Matrix:	Soil	Analytical Method:	SW8270C	Analyzed Date:	03/26/14	Analytical Batch:	419862
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Naphthalene	0.01220	0.0495	ND	
2-Methylnaphthalene	0.007690	0.0495	ND	
1-Methylnaphthalene	0.007540	0.0495	ND	
Acenaphthylene	0.008270	0.0495	ND	
Acenaphthene	0.008440	0.0495	ND	
Fluorene	0.009600	0.0495	ND	
Phenanthrene	0.009710	0.0495	ND	
Anthracene	0.009680	0.0495	ND	
Fluoranthene	0.009670	0.0495	ND	
Pyrene	0.01240	0.0495	ND	
Benz[a]anthracene	0.007210	0.0495	ND	
Chrysene	0.006550	0.0995	ND	
Benzo[b]fluoranthene	0.004830	0.0495	ND	
Benzo[k]fluoranthene	0.007840	0.0495	ND	
Benzo[a]pyrene	0.007320	0.0495	ND	
Indeno[1,2,3-cd]pyrene	0.01080	0.0495	ND	
Dibenz[a,h]anthracene	0.01040	0.0495	ND	
Benzo[g,h,i]perylene	0.01120	0.0495	ND	
2-Fluorobiphenyl (S)			74.3	
p-Terphenyl-d14 (S)			72.7	

Work Order:	1403183	Prep Method:	5035	Prep Date:	03/27/14	Prep Batch:	11167
Matrix:	Soil	Analytical Method:	8260TPH	Analyzed Date:	03/27/14	Analytical Batch:	419885
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
TPH(Gasoline)	30	100	41	
(S) 4-Bromofluorobenzene			104	



MB Summary Report

Work Order:	1403183	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Soil	Analytical Method:	SW8260B	Analyzed Date:	03/27/14	Analytical Batch:	419885
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	4.4	10	ND	
Chloromethane	4.6	10	ND	
Vinyl Chloride	2.6	10	ND	
Bromomethane	4.7	10	ND	
Trichlorofluoromethane	2.9	10	ND	
1,1-Dichloroethene	1.5	10	ND	
Freon 113	3.7	10	ND	
Methylene Chloride	2.0	50	ND	
trans-1,2-Dichloroethene	1.1	10	ND	
MTBE	2.6	10	ND	
tert-Butanol	21	50	ND	
Diisopropyl ether (DIPE)	2.2	10	ND	
1,1-Dichloroethane	1.3	10	ND	
ETBE	2.4	10	ND	
cis-1,2-Dichloroethene	1.8	10	ND	
2,2-Dichloropropane	1.2	10	ND	
Bromochloromethane	2.3	10	ND	
Chloroform	1.2	10	ND	
Carbon Tetrachloride	1.6	10	ND	
1,1,1-Trichloroethane	1.2	10	ND	
1,1-Dichloropropene	1.4	10	ND	
Benzene	1.5	10	ND	
TAME	2.1	10	ND	
1,2-Dichloroethane	1.9	10	ND	
Trichloroethylene	3.9	10	ND	
Dibromomethane	2.2	10	ND	
1,2-Dichloropropane	1.3	10	ND	
Bromodichloromethane	1.1	10	ND	
cis-1,3-Dichloropropene	1.4	10	ND	
Toluene	0.98	10	ND	
Tetrachloroethylene	1.8	10	ND	
trans-1,3-Dichloropropene	1.2	10	ND	
1,1,2-Trichloroethane	1.8	10	ND	
Dibromochloromethane	1.1	10	ND	
1,3-Dichloropropane	2.1	10	ND	
1,2-Dibromoethane	1.7	10	ND	
Ethyl Benzene	0.86	10	ND	
Chlorobenzene	4.2	10	ND	
1,1,1,2-Tetrachloroethane	0.86	10	ND	
m,p-Xylene	1.9	10	ND	
o-Xylene	0.66	5.0	ND	



MB Summary Report

Work Order:	1403183	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Soil	Analytical Method:	SW8260B	Analyzed Date:	03/27/14	Analytical Batch:	419885
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Styrene	0.77	10	0.79		
Bromoform	1.9	10	ND		
Isopropyl Benzene	1.2	10	ND		
n-Propylbenzene	1.4	10	ND		
Bromobenzene	1.2	10	ND		
1,1,2,2-Tetrachloroethane	3.0	10	ND		
1,3,5-Trimethylbenzene	1.1	10	ND		
1,2,3-Trichloropropane	3.3	10	ND		
4-Chlorotoluene	1.6	10	ND		
2-Chlorotoluene	1.6	10	ND		
tert-Butylbenzene	1.4	10	ND		
1,2,4-Trimethylbenzene	1.1	10	ND		
sec-Butyl Benzene	1.6	10	ND		
p-Isopropyltoluene	1.5	10	ND		
1,3-Dichlorobenzene	1.8	10	ND		
1,4-Dichlorobenzene	1.5	10	ND		
n-Butylbenzene	2.2	10	ND		
1,2-Dichlorobenzene	1.3	10	ND		
1,2-Dibromo-3-Chloropropane	4.2	10	ND		
Hexachlorobutadiene	2.6	10	ND		
1,2,4-Trichlorobenzene	2.1	10	ND		
Naphthalene	2.8	10	ND		
1,2,3-Trichlorobenzene	2.9	10	ND		
(S) Dibromofluoromethane			119		
(S) Toluene-d8			118		
(S) 4-Bromofluorobenzene			105		



LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1403183	Prep Method:	3546_PAHSIM	Prep Date:	03/26/14	Prep Batch:	11147
Matrix:	Soil	Analytical Method:	SW8270C	Analyzed Date:	03/26/14	Analytical Batch:	419862
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Acenaphthene	0.008440	0.0495	ND	0.2500	98.4	97.9	0.485	11.9 - 106	30	
Pyrene	0.01240	0.0495	ND	0.2500	107	103	3.77	16.9 - 136	30	
2-Fluorobiphenyl (S)			ND	7	73.3	70.9		60 - 120		
p-Terphenyl-d14 (S)			ND	6	89.0	85.7		24.3 - 129		

Work Order:	1403183	Prep Method:	5035	Prep Date:	03/27/14	Prep Batch:	11167
Matrix:	Soil	Analytical Method:	8260TPH	Analyzed Date:	03/27/14	Analytical Batch:	419885
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
TPH(Gasoline)	30	100	41	1000	95.1	93.8	1.34	64.0 - 133.2	30	
(S) 4-Bromofluorobenzene			104	50	105	95.4		43.9 - 127		

Work Order:	1403183	Prep Method:	NA	Prep Date:	NA	Prep Batch:	NA
Matrix:	Soil	Analytical Method:	SW8260B	Analyzed Date:	03/27/14	Analytical Batch:	419885
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	1.5	10	ND	50	99.7	97.5	2.08	53.7 - 139	30	
Benzene	1.5	10	ND	50	117	114	2.04	66.5 - 135	30	
Trichloroethylene	3.9	10	ND	50	111	108	2.52	57.5 - 150	30	
Toluene	0.98	10	ND	50	113	108	4.16	56.8 - 134	30	
Chlorobenzene	4.2	10	ND	50	101	98.1	3.30	57.4 - 134	30	
(S) Dibromofluoromethane			ND	50	116	118		59.8 - 148		
(S) Toluene-d8			ND	50	120	120		55.2 - 133		
(S) 4-Bromofluorobenzene			ND	50	103	105		55.8 - 141		



MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	1403183	Prep Method:	3546_PAHSIM	Prep Date:	03/26/14	Prep Batch:	11147
Matrix:	Soil	Analytical Method:	SW8270C	Analyzed Date:	03/26/14	Analytical Batch:	419862
Spiked Sample:	1403183-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Acenaphthene	0.008440	0.0495	0	0.2500	95.0	85.6	10.5	11.9 - 106	30	
Pyrene	0.01240	0.0495	0.002	0.2500	56.7	51.0	10.6	16.9 - 136	30	
2-Fluorobiphenyl (S)				6.9	92.0	81.8		60 - 120		
p-Terphenyl-d14 (S)				6.3	88.9	79.6		24.3 - 129		



Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -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.
Duplicate - 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)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - 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.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit (PQL) - 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 reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - 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
Tentatively Identified Compound (TIC) - 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.
Units: the unit of measure used to express the reported result - mg/L and mg/Kg (equivalent to PPM - parts per million in liquid and solid), ug/L and ug/Kg (equivalent to PPB - parts per billion in liquid and solid), ug/m3 , mg.m3 , ppbv and ppmv (all units of measure for reporting concentrations in air), % (equivalent to 10000 ppm or 1,000,000 ppb), ug/Wipe (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

<p>B - Indicates when the analyte is found in the associated method or preparation blank</p> <p>D - Surrogate is not recoverable due to the necessary dilution of the sample</p> <p>E - 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>H- Indicates that the recommended holding time for the analyte or compound has been exceeded</p> <p>J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative</p> <p>NA - Not Analyzed</p> <p>N/A - Not Applicable</p> <p>NR - 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>R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts</p> <p>S- 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>X -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>



Sample Receipt Checklist

Client Name: Engeo (San Ramon)

Date and Time Received: 3/25/2014 12:10

Project Name: Jordan Ranch

Received By: rp

Work Order No.: 1403183

Physically Logged By: rp

Checklist Completed By: rp

Carrier Name: FedEx

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? Yes Temperature: 4 °C
Water-VOA vials have zero headspace? No VOA vials submitted
Water-pH acceptable upon receipt? N/A
pH Checked by: na pH Adjusted by: na



Login Summary Report

Client ID:	TL5123	Engeo (San Ramon)	QC Level:
Project Name:	Jordan Ranch		TAT Requested: 3 day:25
Project # :	7828.000.001		Date Received: 3/25/2014
Report Due Date:	4/1/2014		Time Received: 12:10
Comments:	CoC requests PAH by 8310. Torrent currently offers on PAHSIM by 8270C for low level PAH analysis. Client informed by email.		
Work Order # :	1403183		

<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>
1403183-001A	SV-N @ 2'	03/24/14 8:20	Soil	09/21/14			S_8260Full S_8270PAHSIM	
Sample Note: 3 day STD TAT. Test for 8260, PAH 8310								
1403183-002A	SV-N @ 5'	03/24/14 8:20	Soil	09/21/14			S_8260Full S_8270PAHSIM	
Sample Note: Test for 8260, PAH 8310								



1403183

CHAIN OF CUSTODY RECORD

PROJECT NUMBER: 7828.000.001		PROJECT NAME: Jordan Ranch						VOC (8260)	PAH (8310)											REMARKS REQUIRED DETECTION LIMITS				
SAMPLED BY: (SIGNATURE/PRINT) Richard Gandolfo (rgandolfo@engeo.com)																								
PROJECT MANAGER: Morgan Johnson (mjohnson@engeo.com)																								
ROUTING: E-MAIL rgandolfo@engeo.com		Hard Copy No																						
SAMPLE NUMBER	DATE	TIME	MATRIX	NUMBER OF CONTAINERS	CONTAINER SIZE	PRESERVATIVE																		
SV WIN02	03/24/14	8:20 AM	S	1	poly sleeve	ice	X	X																
SV WIN05	03/24/14	8:20 AM	S	1	poly sleeve	ice	X	X																
																						Temp 4°C		
RELINQUISHED BY: (SIGNATURE) <i>[Signature]</i>		DATE/TIME 3-25-14 10:45		RECEIVED BY: (SIGNATURE) <i>[Signature]</i>		RELINQUISHED BY: (SIGNATURE) <i>[Signature]</i>		DATE/TIME 3/25/14		RECEIVED BY: (SIGNATURE) <i>[Signature]</i>														
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)		RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED BY: (SIGNATURE)														
RELINQUISHED BY: (SIGNATURE)		DATE/TIME		RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE/TIME		5-Day TAT																
ENGEO INCORPORATED				2010 CROW CANYON PL (STE 250) SAN RAMON, CALIFORNIA 94583 (925) 837-2973 FAX (888) 279-2698 WWW.ENGEO.COM								DISTRIBUTION: ORIGINAL ACCOMPANIES SHIPMENT; COPY TO PROJECT FIELD FILES												

REC RP LI PP LBL PP LIR FedEx



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1404889

Report Created for: ENGEO Incorporated
2010 Crow Canyon Place, Ste 250
San Ramon, CA 94583-4634

Project Contact: Morgan Johnson
Project P.O.:
Project Name: #7828.000.001; Phase 5 Task 1

Project Received: 04/22/2014

Analytical Report reviewed & approved for release on 04/29/2014 by:

Question about
your data?

[Click here to email
McC Campbell](#)

Angela Rydelius,
Laboratory Manager

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





Glossary of Terms & Qualifier Definitions

Client: ENGEO Incorporated
Project: #7828.000.001; Phase 5 Task 1
WorkOrder: 1404889

Glossary Abbreviation

95% Interval	95% Confident Interval
DF	Dilution Factor
DUP	Duplicate
EDL	Estimated Detection Limit
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
ND	Not detected at or above the indicated MDL or RL
NR	Matrix interferences, or analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix; or sample diluted due to high matrix or analyte content.
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
TEQ	Toxicity Equivalence

Quality Control Qualifiers

F2 LCS recovery for this compound is outside of acceptance limits.



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Phase 5 Task 1
Date Received: 4/22/14 19:38
Date Prepared: 4/24/14

WorkOrder: 1404889
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %

Helium

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1404889-001A	Soil Gas	04/22/2014 12:15	GC26	89697

Initial Pressure (psia)	Final Pressure (psia)
12.95	25.81

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Helium	0.035	0.0050	1	04/24/2014 08:09



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Phase 5 Task 1
Date Received: 4/22/14 19:38
Date Prepared: 4/29/14

WorkOrder: 1404889
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: uL/L

Light Gases

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1404889-001A	Soil Gas	04/22/2014 12:15	GC26	89849

Initial Pressure (psia)	Final Pressure (psia)
12.95	25.81

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	5100	1200	24	04/29/2014 10:03
Methane	11	2.4	1.2	04/29/2014 12:24
Oxygen	210,000	4800	1.2	04/29/2014 10:03



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Phase 5 Task 1
Date Received: 4/22/14 19:38
Date Prepared: 4/29/14

WorkOrder: 1404889
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas + Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1404889-001A	Soil Gas	04/22/2014 12:15	GC24	89875

Initial Pressure (psia)	Final Pressure (psia)
12.95	25.81

<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
TPH(g)	2200	860	1.2	04/29/2014 15:41

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
1,2-DCA-d4	113	70-130	04/29/2014 15:41



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Phase 5 Task 1
Date Received: 4/22/14 19:38
Date Prepared: 4/25/14-4/26/14

WorkOrder: 1404889
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1404889-001A	Soil Gas	04/22/2014 12:15	GC29	89875

Initial Pressure (psia)	Final Pressure (psia)
12.95	25.81

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	04/26/2014 03:56
Acrolein	ND	1.2	1	04/26/2014 03:56
Acrylonitrile	ND	1.1	1	04/26/2014 03:56
tert-Amyl methyl ether (TAME)	ND	2.1	1	04/26/2014 03:56
Benzene	50	1.6	1	04/26/2014 03:56
Benzyl chloride	ND	2.6	1	04/26/2014 03:56
Bromodichloromethane	ND	3.5	1	04/26/2014 03:56
Bromoform	ND	5.2	1	04/26/2014 03:56
Bromomethane	ND	2.0	1	04/26/2014 03:56
1,3-Butadiene	ND	1.1	1	04/26/2014 03:56
2-Butanone (MEK)	ND	75	1	04/26/2014 03:56
t-Butyl alcohol (TBA)	ND	31	1	04/26/2014 03:56
Carbon Disulfide	29	1.6	1	04/26/2014 03:56
Carbon Tetrachloride	ND	3.2	1	04/26/2014 03:56
Chlorobenzene	ND	2.4	1	04/26/2014 03:56
Chloroethane	ND	1.3	1	04/26/2014 03:56
Chloroform	ND	2.4	1	04/26/2014 03:56
Chloromethane	ND	1.0	1	04/26/2014 03:56
Cyclohexane	ND	18	1	04/26/2014 03:56
Dibromochloromethane	ND	4.4	1	04/26/2014 03:56
1,2-Dibromo-3-chloropropane	ND	0.12	1	04/26/2014 03:56
1,2-Dibromoethane (EDB)	ND	3.9	1	04/26/2014 03:56
1,2-Dichlorobenzene	ND	3.0	1	04/26/2014 03:56
1,3-Dichlorobenzene	ND	3.0	1	04/26/2014 03:56
1,4-Dichlorobenzene	ND	3.0	1	04/26/2014 03:56
Dichlorodifluoromethane	ND	2.5	1	04/26/2014 03:56
1,1-Dichloroethane	ND	2.0	1	04/26/2014 03:56
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	04/26/2014 03:56
1,1-Dichloroethene	ND	2.0	1	04/26/2014 03:56
cis-1,2-Dichloroethene	ND	2.0	1	04/26/2014 03:56
trans-1,2-Dichloroethene	ND	2.0	1	04/26/2014 03:56
1,2-Dichloropropane	ND	2.4	1	04/26/2014 03:56
cis-1,3-Dichloropropene	ND	2.3	1	04/26/2014 03:56
trans-1,3-Dichloropropene	ND	2.3	1	04/26/2014 03:56

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Phase 5 Task 1
Date Received: 4/22/14 19:38
Date Prepared: 4/25/14-4/26/14

WorkOrder: 1404889
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1404889-001A	Soil Gas	04/22/2014 12:15	GC29	89875

Initial Pressure (psia)	Final Pressure (psia)
12.95	25.81

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	04/26/2014 03:56
Diisopropyl ether (DIPE)	ND	2.1	1	04/26/2014 03:56
1,4-Dioxane	ND	1.8	1	04/26/2014 03:56
Ethanol	ND	96	1	04/26/2014 03:56
Ethyl acetate	ND	1.8	1	04/26/2014 03:56
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	04/26/2014 03:56
Ethylbenzene	3.5	2.2	1	04/26/2014 03:56
4-Ethyltoluene	ND	2.5	1	04/26/2014 03:56
Freon 113	ND	3.9	1	04/26/2014 03:56
Heptane	ND	21	1	04/26/2014 03:56
Hexachlorobutadiene	ND	5.4	1	04/26/2014 03:56
Hexane	58	18	1	04/26/2014 03:56
2-Hexanone	ND	2.1	1	04/26/2014 03:56
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	04/26/2014 03:56
Methyl-t-butyl ether (MTBE)	ND	1.8	1	04/26/2014 03:56
Methylene chloride	ND	1.8	1	04/26/2014 03:56
Methyl methacrylate	ND	2.1	1	04/26/2014 03:56
Naphthalene	ND	5.3	1	04/26/2014 03:56
Propene	1200	350	4	04/25/2014 19:17
Styrene	ND	2.2	1	04/26/2014 03:56
1,1,1,2-Tetrachloroethane	ND	3.5	1	04/26/2014 03:56
1,1,2,2-Tetrachloroethane	ND	3.5	1	04/26/2014 03:56
Tetrachloroethene	9.8	3.4	1	04/26/2014 03:56
Tetrahydrofuran	ND	1.5	1	04/26/2014 03:56
Toluene	32	1.9	1	04/26/2014 03:56
1,2,4-Trichlorobenzene	ND	3.8	1	04/26/2014 03:56
1,1,1-Trichloroethane	ND	2.8	1	04/26/2014 03:56
1,1,2-Trichloroethane	ND	2.8	1	04/26/2014 03:56
Trichloroethene	6.9	2.8	1	04/26/2014 03:56
Trichlorofluoromethane	ND	2.8	1	04/26/2014 03:56
1,2,4-Trimethylbenzene	ND	2.5	1	04/26/2014 03:56
1,3,5-Trimethylbenzene	ND	2.5	1	04/26/2014 03:56
Vinyl Acetate	ND	1.8	1	04/26/2014 03:56
Vinyl Chloride	ND	1.3	1	04/26/2014 03:56

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Phase 5 Task 1
Date Received: 4/22/14 19:38
Date Prepared: 4/25/14-4/26/14

WorkOrder: 1404889
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Volatile Organic Compounds in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1404889-001A	Soil Gas	04/22/2014 12:15	GC29	89875

Initial Pressure (psia)	Final Pressure (psia)
12.95	25.81

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	04/26/2014 03:56
Surrogates	REC (%)	Limits		Date Analyzed
1,2-DCA-d4	92	70-130		04/26/2014 03:56
Toluene-d8	97	70-130		04/26/2014 03:56
4-BFB	96	70-130		04/26/2014 03:56



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 4/24/14
Date Analyzed: 4/24/14
Instrument: GC26
Matrix: Soilgas
Project: #7828.000.001; Phase 5 Task 1

WorkOrder: 1404889
BatchID: 89697
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %
Sample ID: MB/LCS-89697

QC Summary Report for ASTM D1946-90

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Helium	ND	0.0111	0.0050	0.010	-	111	60-140



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 4/29/14
Date Analyzed: 4/29/14
Instrument: GC26
Matrix: SoilGas
Project: #7828.000.001; Phase 5 Task 1

WorkOrder: 1404889
BatchID: 89849
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: uL/L
Sample ID: MB/LCS-89849

QC Summary Report for ASTM D1946-90

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Carbon Dioxide	ND	101	50	100	-	101	70-130
Methane	ND	113	2.0	100	-	113	70-130
Oxygen	ND	6900	4000	7000	-	98.6	70-130



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 4/29/14
Date Analyzed: 4/25/14 - 4/26/14
Instrument: GC29
Matrix: Soilgas
Project: #7828.000.001; Phase 5 Task 1

WorkOrder: 1404889
BatchID: 89875
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-89875

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Acetone	ND	-	25	-	-	-	-
Acrolein	ND	24.1	0.50	25	-	96.5	60-140
Acrylonitrile	ND	23.6	0.50	25	-	94.6	60-140
tert-Amyl methyl ether (TAME)	ND	25.8	0.50	25	-	103	60-140
Benzene	ND	21.7	0.50	25	-	86.8	60-140
Benzyl chloride	ND	30.7	0.50	25	-	123	60-140
Bromodichloromethane	ND	26.5	0.50	25	-	106	60-140
Bromoform	ND	39.0	0.50	25	-	156, F2	60-140
Bromomethane	ND	-	0.50	-	-	-	-
1,3-Butadiene	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	25	-	-	-	-
t-Butyl alcohol (TBA)	ND	25.6	10	25	-	103	60-140
Carbon Disulfide	ND	24.9	0.50	25	-	99.6	60-140
Carbon Tetrachloride	ND	24.7	0.50	25	-	98.7	60-140
Chlorobenzene	ND	27.0	0.50	25	-	108	60-140
Chloroethane	ND	25.6	0.50	25	-	103	60-140
Chloroform	ND	24.0	0.50	25	-	96	60-140
Chloromethane	ND	21.0	0.50	25	-	84	60-140
Cyclohexane	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	30.5	0.50	25	-	122	60-140
1,2-Dibromo-3-chloropropane	ND	36.1	0.012	25	-	144, F2	60-140
1,2-Dibromoethane (EDB)	ND	25.6	0.50	25	-	102	60-140
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	30.8	0.50	25	-	123	60-140
1,4-Dichlorobenzene	ND	28.8	0.50	25	-	115	60-140
Dichlorodifluoromethane	ND	27.3	0.50	25	-	109	60-140
1,1-Dichloroethane	ND	24.8	0.50	25	-	99.3	60-140
1,2-Dichloroethane (1,2-DCA)	ND	23.1	0.50	25	-	92.4	60-140
1,1-Dichloroethene	ND	-	0.50	-	-	-	-
cis-1,2-Dichloroethene	ND	27.2	0.50	25	-	109	60-140
trans-1,2-Dichloroethene	ND	27.4	0.50	25	-	110	60-140
1,2-Dichloropropane	ND	21.2	0.50	25	-	84.7	60-140
cis-1,3-Dichloropropene	ND	28.8	0.50	25	-	115	60-140
trans-1,3-Dichloropropene	ND	25.3	0.50	25	-	101	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	24.5	0.50	25	-	98.1	60-140
Diisopropyl ether (DIPE)	ND	23.3	0.50	25	-	93.1	60-140
1,4-Dioxane	ND	22.4	0.50	25	-	89.8	60-140
Ethanol	ND	-	50	-	-	-	-
Ethyl acetate	ND	24.0	0.50	25	-	96.1	60-140
Ethyl tert-butyl ether (ETBE)	ND	25.6	0.50	25	-	102	60-140

(Cont.)



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 4/29/14
Date Analyzed: 4/25/14 - 4/26/14
Instrument: GC29
Matrix: Soilgas
Project: #7828.000.001; Phase 5 Task 1

WorkOrder: 1404889
BatchID: 89875
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-89875

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethylbenzene	ND	26.6	0.50	25	-	106	60-140
4-Ethyltoluene	ND	-	0.50	-	-	-	-
Freon 113	ND	27.0	0.50	25	-	108	60-140
Heptane	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	36.0	0.50	25	-	144, F2	60-140
Hexane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	21.9	0.50	25	-	87.7	60-140
Methyl-t-butyl ether (MTBE)	ND	26.1	0.50	25	-	104	60-140
Methylene chloride	ND	24.1	0.50	25	-	96.3	60-140
Methyl methacrylate	ND	25.9	0.50	25	-	104	60-140
Naphthalene	ND	51.2	1.0	50	-	102	60-140
Propene	ND	-	50	-	-	-	-
Styrene	ND	27.4	0.50	25	-	110	60-140
1,1,1,2-Tetrachloroethane	ND	32.7	0.50	25	-	131	60-140
1,1,2,2-Tetrachloroethane	ND	25.4	0.50	25	-	102	60-140
Tetrachloroethene	ND	25.6	0.50	25	-	102	60-140
Tetrahydrofuran	ND	21.1	0.50	25	-	84.5	60-140
Toluene	ND	25.0	0.50	25	-	100	60-140
1,2,4-Trichlorobenzene	ND	30.2	0.50	25	-	121	60-140
1,1,1-Trichloroethane	ND	27.0	0.50	25	-	108	60-140
1,1,2-Trichloroethane	ND	23.5	0.50	25	-	93.9	60-140
Trichloroethene	ND	22.0	0.50	25	-	88	60-140
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	30.5	0.50	25	-	122	60-140
1,3,5-Trimethylbenzene	ND	28.8	0.50	25	-	115	60-140
Vinyl Acetate	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	19.2	0.50	25	-	76.8	60-140
Xylenes, Total	ND	85.3	1.5	75	-	114	60-140

Surrogate Recovery

1,2-DCA-d4	472	416		500	94	83	60-140
Toluene-d8	446	460		500	89	92	60-140
4-BFB	464	464		500	93	93	60-140

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1404889

ClientCode: ENGE

WaterTrax
 WriteOn
 EDF
 Excel
 EQulS
 Email
 HardCopy
 ThirdParty
 J-flag

Report to:
 Morgan Johnson
 ENGEO Incorporated
 2010 Crow Canyon Place, Ste 250
 San Ramon, CA 94583-4634
 (916) 580-6518 FAX: (925) 866-0199

Email: mjohnson@engeo.com
 cc/3rd Party:
 PO:
 ProjectNo: #7828.000.001; Phase 5 Task 1

Bill to:
 Chantelle
 ENGEO Incorporated
 2010 Crow Canyon Place, Ste 250
 San Ramon, CA 94583-4634
 AP@engeo.com

Requested TAT: 5 days

Date Received: 04/22/2014
Date Printed: 04/23/2014

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
1404889-001	SG-6	Soil Gas	4/22/2014 12:15	<input type="checkbox"/>	A	A	A	A									

Test Legend:

1	3_SUMMA_SOILGAS(UG/M)	2	PRHELIUM SHROUD	3	015_Scan-SIM_SOIL(UG/M)	4	5+GAS_Scan-SIM_SOIL(UG)	5	
6		7		8		9		10	
11		12							

The following SampID: 001A contains testgroup.

Prepared by: Jena Alfaro

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days). Hazardous samples will be returned to client or disposed of at client expense.



WORK ORDER SUMMARY

Client Name: ENGEO INCORPORATED
Project: #7828.000.001; Phase 5 Task 1
Comments:

QC Level: LEVEL 2
Client Contact: Morgan Johnson
Contact's Email: mjohnson@engeo.com

Work Order: 1404889
Date Received: 4/22/2014

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 Email
 HardCopy
 ThirdParty
 J-flag

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1404889-001A	SG-6	Soil Gas	TO15 + Gas w/ Helium	1	1L Summa	<input type="checkbox"/>	4/22/2014 12:15	5 days		<input type="checkbox"/>	
			ASTM D1946-90 (Light Gases) <Carbon Dioxide_2, Methane_4, Oxygen>			<input type="checkbox"/>		5 days		<input type="checkbox"/>	

*** NOTE: STLC and TCLP extractions require 48 hrs to complete; therefore, all TATs begin after the extraction is completed (i.e., 24hr TAT yields results in 72 hrs from sample submission).**

Bottle Legend:

1L Summa = 1L Summa Canister



McC Campbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701
www.mccampbell.com / main@mccampbell.com
Telephone: (877) 252-9262 / Fax: (925) 252-9269

1404889

CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH 1 Day 2 Day 3 Day 5 DAY
GeoTracker EDF PDF EDD EQuIS 10 DAY
UST Clean Up Fund Project Claim #

Report To: Morgan Johnson

Bill To:

Company: ENGEO

Analysis Requested

Helium Shroud SN#

E-Mail:

Tele: ()

Fax: ()

Project #: 7828.000.001 Phase 5 Task 1

Project Name: Jordan Ranch

Project Location: Environmental Services

Sampler Signature: [Signature]

Other:
Notes: Please Specify units if different than defaults VOCs is ug/m3 and fixed gas is uL/L. Leak check default is IPA.

Field Sample ID (Location)	Collection		Canister SN#	Sampler Kit SN#	VOCs by TO-15 (ug/m3)	8010 by TO-15 (ug/m3)	TPH(g) (ug/m3)	LEED (inc. 4PCH, Formaldehyde, CO, Total VOCs)	Fixed Gas: CO, Methane, Ethane, Ethylene, Acetylene, CO (please circle or indicate in notes) uL/L	Fixed Gas: O2, N2 (please circle) uL/L	Fixed Gas: Propane uL/L	Helium Leak Check (%)	Leak Check (IPA, Norflorane, 1,1-difluoroethane) ug/m3	APH: Aliphatic and/or Aromatic (please circle) ug/m3	Other:	Matrix		Cannister Pressure/ Vacuum	
	Date	Time														Soilgas	Indoor Air	Initial	Final
SG-b	4/22	12:15pm	5806-737		X		X		X	X		X				X		-30	-6

Relinquished By: [Signature] Date: 4/22 Time: 2:00pm Received By: [Signature]

Temp (°C): _____ Work Order #: _____

Relinquished By: _____ Date: _____ Time: _____ Received By: _____

Condition: _____ Custody Seals Intact?: Yes _____ No _____ None _____

Relinquished By: _____ Date: _____ Time: _____ Received By: _____

Shipped Via: _____

★ Added 4/23/14 to original.



Sample Receipt Checklist

Client Name: **ENGEO Incorporated** Date and Time Received: **4/22/2014 7:38:16 PM**
 Project Name: **#7828.000.001; Phase 5 Task 1** Login Reviewed by: **Jena Alfaro**
 WorkOrder N°: **1404889** Matrix: Soil Gas Carrier: Client Drop-In

Chain of Custody (COC) Information

Chain of custody present? Yes No
 Chain of custody signed when relinquished and received? Yes No
 Chain of custody agrees with sample labels? Yes No
 Sample IDs noted by Client on COC? Yes No
 Date and Time of collection noted by Client on COC? Yes No
 Sampler's name noted on COC? Yes No

Sample Receipt Information

Custody seals intact on shipping container/cooler? Yes No NA
 Shipping container/cooler in good condition? Yes No
 Samples in proper containers/bottles? Yes No
 Sample containers intact? Yes No
 Sufficient sample volume for indicated test? Yes No

Sample Preservation and Hold Time (HT) Information

All samples received within holding time? Yes No
 Container/Temp Blank temperature Cooler Temp: NA
 Water - VOA vials have zero headspace / no bubbles? Yes No NA
 Sample labels checked for correct preservation? Yes No
 Metal - pH acceptable upon receipt (pH<2)? Yes No NA
 Samples Received on Ice? Yes No

* NOTE: If the "No" box is checked, see comments below.

 Comments: