

Project No.
7828.000.001

August 18, 2014

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

RECEIVED

By Alameda County Environmental Health at 10:22 am, Sep 03, 2014

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

SOIL GAS SAMPLING REPORT – FIFTH ROUND

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

Dear Mr. Wickham:

ENGEO conducted the fifth 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).

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 $\mu\text{g}/\text{m}^3$. 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) in accordance with DTSC guidance (2012) and the County approved workplan dated January 15, 2014. During the February 2014 sampling event, all six wells were sampled with a helium shroud. For the February 2014 event, TPHg was detected at concentrations ranging from 900 to 34,000 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Benzene was detected only in well SG-6 at a concentration of 50 $\mu\text{g}/\text{m}^3$.

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 SAMPLING

We collected soil gas samples from the six soil gas monitoring wells on June 26, 2014. 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 not detected above the laboratory reporting limit of 720 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Benzene was not detected above the laboratory report limit of $1.6 \mu\text{g}/\text{m}^3$. Table 1 (attached) provides a cumulative summary of soil gas analytical data for the six monitoring wells. Applicable soil gas screening levels published by SWRCB and DTSC are provided.

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 0.32%. This is 0.016% 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.

CONCLUSION

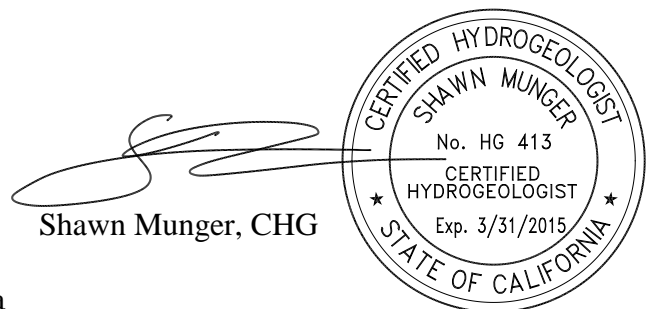
Based on the soil gas data collected from the five quarterly monitoring events, there does not appear to be a vapor intrusion risk at the site, considering a residential land use scenario. No further soil gas monitoring is recommended.

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

Sincerely,

ENGEO Incorporated


Morgan Johnson



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
Perjury Statement

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

TABLE 1

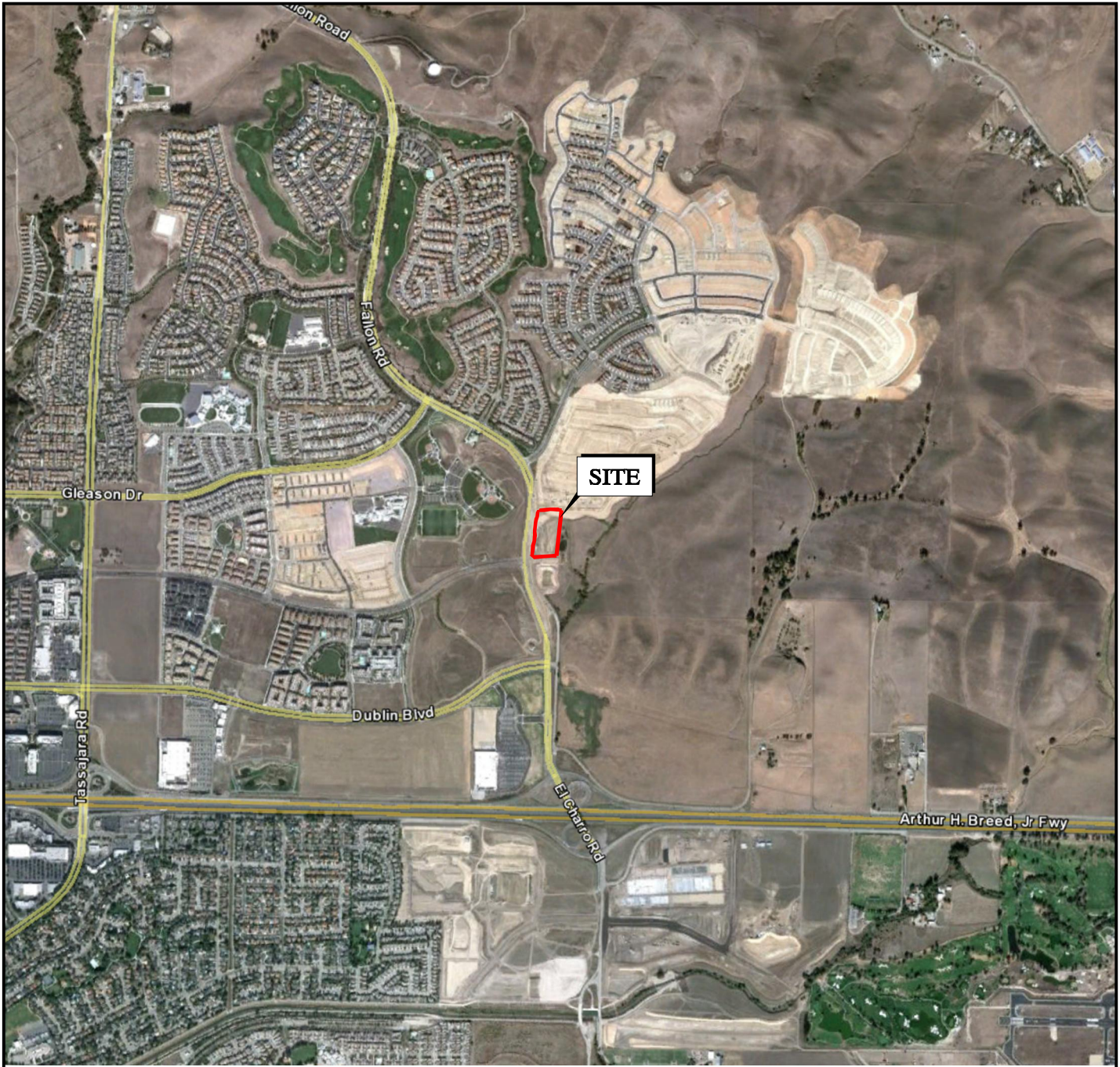
Soil Gas Analytical Data

FIGURES

Figure 1 – Site Vicinity Map

Figure 2 – Concentrations of VOCs in Soil Gas

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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

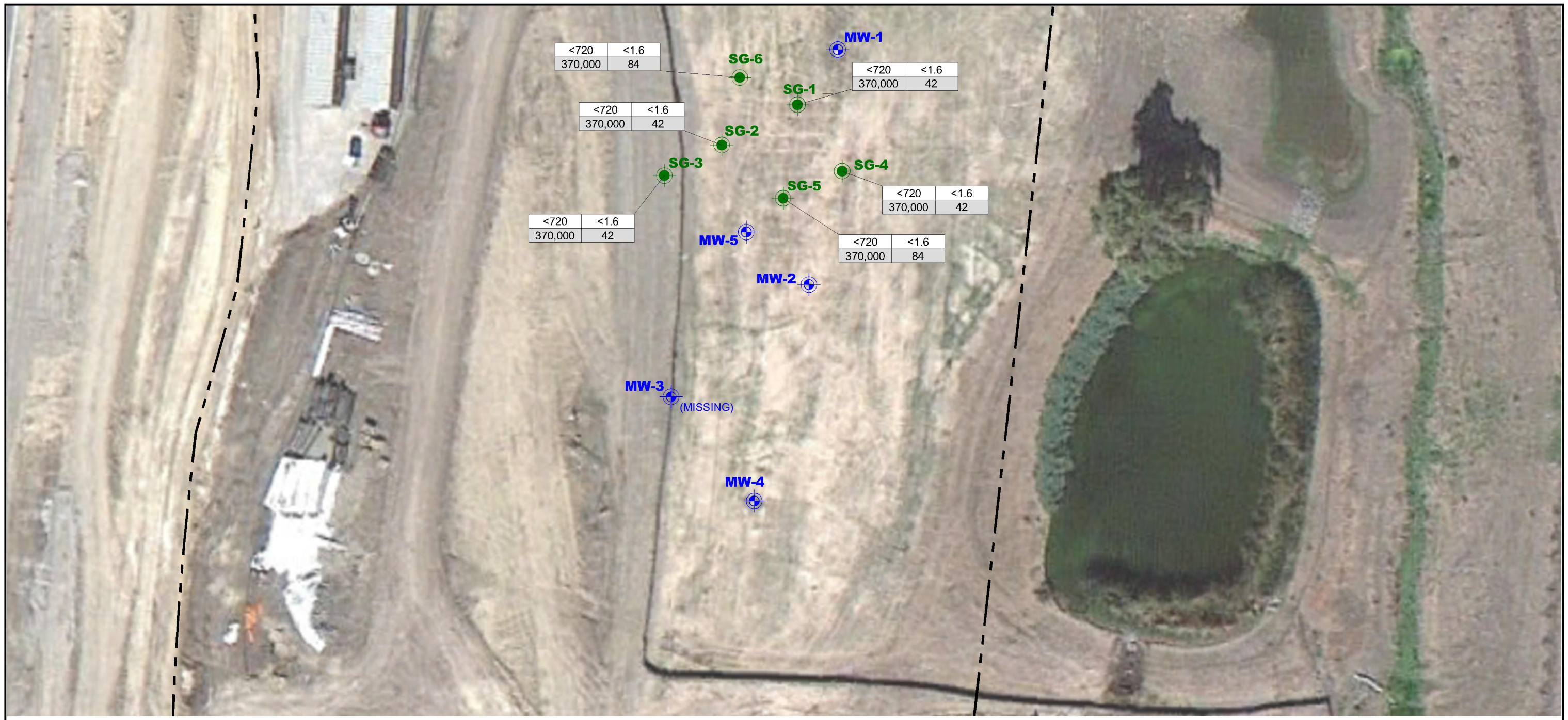
DRAWN BY: LL

CHECKED BY: SM



FIGURE NO.

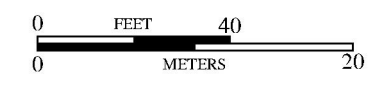
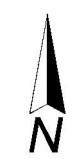
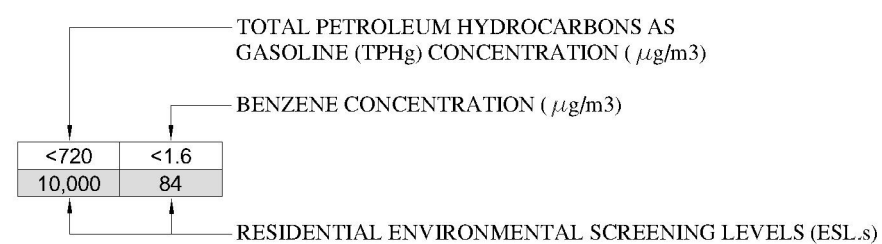
1

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EXPLANATION

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



BASE MAP SOURCE: GOOGLE EARTH, ST. ANTON

	CONCENTRATIONS OF VOLATILE ORGANIC COMPOUNDS IN SOIL GAS - JUNE 2014 JORDAN RANCH - PARCEL H DUBLIN, CALIFORNIA		PROJECT NO.: 7828.000.001	FIGURE NO.
			SCALE: AS SHOWN	2
			DRAWN BY: LL	

Soil Gas Well Field Sampling Logs

7828.000.001
August 18, 2014

SOIL GAS WELL FIELD SAMPLING LOG



Project:	Jordan Ranch	Well ID	SG-1
Date:	6/26/2014		
Project No.:	7828.000.001		
Location:	NE Fallon Road and Central Pwky, Dublin, CA.		
Sampler:	Matt M.		
Activity:	<input checked="" type="checkbox"/> Quarterly Sampling <input type="checkbox"/> One Time Event		

WELL CONSTRUCTION

Post run tubing DPT <input type="checkbox"/>	Notes:
Well constructed with cement/bentonite seal and sand pack <input checked="" type="checkbox"/>	

PURGING

<input type="checkbox"/> Summa Canister <input checked="" type="checkbox"/> Peristaltic Pump								
Casing Length (ft)	Casing Vol/Foot (ml)	Total Casing Volume (ml)	Sand Pack Pore Volume (ml) (50% Porosity)	Total Well Volume (ml)	Minutes (1 casing vol)	Minutes (3 casing vol)	Minutes (10 casing vol)	Notes:
9.5	5	47.5	1,390	1,437.50	9.6	28.7	95.8	

Notes: 1) purge minutes are based on a flowrate of 150 ml/min 2) sand pack pore volume = 3.14 x (boring radius²) x length of sand pack x 0.5

SAMPLING

1L Summa
 6L Summa
 Sorbent Tubing

Shut In Test: Shut-in test @ 8:38am , Purge @ 8:45am

1" or less drop in mmHg over 5 minute period:
 Yes
 No, tighten fittings and perform second shut in test

Sampling Start Time:	9:22am	Notes:
Start Vacuum:	-30	Notes:
End Time:	9:27am	Notes:
End Vacuum:	-6	Notes:
Start Vacuum:		Notes:

Leak Detection:
 1,1-DFA
 Helium

SOIL GAS WELL FIELD SAMPLING LOG



Project:	Jordan Ranch	Well ID	SG-2
Date:	6/26/2014		
Project No.:	7828.000.001		
Location:	NE Fallon Road and Central Pwky, Dublin, CA.		
Sampler:	Matt M.		
Activity:	<input checked="" type="checkbox"/> Quarterly Sampling <input type="checkbox"/> One Time Event		

WELL CONSTRUCTION

Post run tubing DPT <input type="checkbox"/>	Notes:
Well constructed with cement/bentonite seal and sand pack <input checked="" type="checkbox"/>	

PURGING

<input type="checkbox"/> Summa Canister <input checked="" type="checkbox"/> Peristaltic Pump								
Casing Length (ft)	Casing Vol/Foot (ml)	Total Casing Volume (ml)	Sand Pack Pore Volume (ml) (50% Porosity)	Total Well Volume (ml)	Minutes (1 casing vol)	Minutes (3 casing vol)	Minutes (10 casing vol)	Notes: 3 well casings purged.
9.5	5	47.5	1,390	1,437.50	9.6	28.7	95.8	

Notes: 1) purge minutes are based on a flowrate of 150 ml/min 2) sand pack pore volume = 3.14 x (boring radius²) x length of sand pack x 0.5

SAMPLING

<input checked="" type="checkbox"/> 1L Summa <input type="checkbox"/> 6L Summa <input type="checkbox"/> Sorbent Tubing
--

Shut In Test: Shut-in test @ 10:13am , Purge @ 10:19am

1" or less drop in mmHg over 5 minute period:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No, tighten fittings and perform second shut in test
---	---	---

Sampling Start Time:	10:49	Notes:
Start Vacuum:	-29	Notes:
End Time:	10:55am	Notes:
End Vacuum:	-5	Notes:
Start Vacuum:		Notes:
Leak Detection:	<input type="checkbox"/> 1,1-DFA <input checked="" type="checkbox"/> Helium	

SOIL GAS WELL FIELD SAMPLING LOG



Project:	Jordan Ranch	Well ID	SG-3
Date:	6/26/2014		
Project No.:	7828.000.001		
Location:	NE Fallon Road and Central Pwky, Dublin, CA.		
Sampler:	Matt M.		
Activity:	<input checked="" type="checkbox"/> Quarterly Sampling <input type="checkbox"/> One Time Event		

WELL CONSTRUCTION

Post run tubing DPT <input type="checkbox"/>	Notes:
Well constructed with cement/bentonite seal and sand pack <input checked="" type="checkbox"/>	

PURGING

<input type="checkbox"/> Summa Canister <input checked="" type="checkbox"/> Peristaltic Pump								
Casing Length (ft)	Casing Vol/Foot (ml)	Total Casing Volume (ml)	Sand Pack Pore Volume (ml) (50% Porosity)	Total Well Volume (ml)	Minutes (1 casing vol)	Minutes (3 casing vol)	Minutes (10 casing vol)	Notes: 3 well casings purged.
9.5	5	47.5	1,390	1,437.50	9.6	28.7	95.8	

Notes: 1) purge minutes are based on a flowrate of 150 ml/min 2) sand pack pore volume = 3.14 x (boring radius²) x length of sand pack x 0.5

SAMPLING

<input checked="" type="checkbox"/> 1L Summa <input type="checkbox"/> 6L Summa <input type="checkbox"/> Sorbent Tubing
--

Shut In Test: Shut-in test @ 11:14am , Purge @ 11:19am

1" or less drop in mmHg over 5 minute period:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No, tighten fittings and perform second shut in test
---	---	---

Sampling Start Time:	11:53am	Notes:
Start Vacuum:	-30	Notes:
End Time:	11:59am	Notes:
End Vacuum:	-6	Notes:
Start Vacuum:		Notes:
Leak Detection:	<input type="checkbox"/> 1,1-DFA <input checked="" type="checkbox"/> Helium	

SOIL GAS WELL FIELD SAMPLING LOG



Project:	Jordan Ranch	Well ID	SG-4
Date:	6/26/2014		
Project No.:	7828.000.001		
Location:	NE Fallon Road and Central Pwky, Dublin, CA.		
Sampler:	Matt M.		
Activity:	<input checked="" type="checkbox"/> Quarterly Sampling <input type="checkbox"/> One Time Event		

WELL CONSTRUCTION

Post run tubing DPT <input type="checkbox"/>	Notes:
Well constructed with cement/bentonite seal and sand pack <input checked="" type="checkbox"/>	

PURGING

<input type="checkbox"/> Summa Canister <input checked="" type="checkbox"/> Peristaltic Pump								
Casing Length (ft)	Casing Vol/Foot (ml)	Total Casing Volume (ml)	Sand Pack Pore Volume (ml) (50% Porosity)	Total Well Volume (ml)	Minutes (1 casing vol)	Minutes (3 casing vol)	Minutes (10 casing vol)	Notes: 3 well casings purged.
9.5	5	47.5	1,390	1,437.50	9.6	28.7	95.8	

Notes: 1) purge minutes are based on a flowrate of 150 ml/min 2) sand pack pore volume = 3.14 x (boring radius²) x length of sand pack x 0.5

SAMPLING

<input checked="" type="checkbox"/> 1L Summa <input type="checkbox"/> 6L Summa <input type="checkbox"/> Sorbent Tubing
--

Shut In Test: Shut-in test @ 12:23pm , Purge @ 12:28pm

1" or less drop in mmHg over 5 minute period:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No, tighten fittings and perform second shut in test
---	---	---

Sampling Start Time:	1:06pm	Notes:
Start Vacuum:	-30	Notes:
End Time:	1:12pm	Notes:
End Vacuum:	-5	Notes:
Start Vacuum:		Notes:

Leak Detection:	<input type="checkbox"/> 1,1-DFA	<input checked="" type="checkbox"/> Helium
-----------------	----------------------------------	--

SOIL GAS WELL FIELD SAMPLING LOG



Project:	Jordan Ranch	Well ID	SG-5
Date:	6/26/2014		
Project No.:	7828.000.001		
Location:	NE Fallon Road and Central Pwky, Dublin, CA.		
Sampler:	Matt M.		
Activity:	<input checked="" type="checkbox"/> Quarterly Sampling <input type="checkbox"/> One Time Event		

WELL CONSTRUCTION

Post run tubing DPT <input type="checkbox"/>	Notes:
Well constructed with cement/bentonite seal and sand pack <input checked="" type="checkbox"/>	

PURGING

<input type="checkbox"/> Summa Canister		<input checked="" type="checkbox"/> Peristaltic Pump						
Casing Length (ft)	Casing Vol/Foot (ml)	Total Casing Volume (ml)	Sand Pack Pore Volume (ml) (50% Porosity)	Total Well Volume (ml)	Minutes (1 casing vol)	Minutes (3 casing vol)	Minutes (10 casing vol)	Notes: 3 well casings purged.
9.5	5	47.5	1,390	1,437.50	9.6	28.7	95.8	

Notes: 1) purge minutes are based on a flowrate of 150 ml/min 2) sand pack pore volume = $3.14 \times (\text{boring radius}^2) \times \text{length of sand pack} \times 0.5$

SAMPLING

1L Summa 6L Summa Sorbent Tubing

Shut In Test: Shut-in test @ 12:56pm , Purge @ 1:02pm

1" or less drop in mmHg over 5 minute period: Yes No, tighten fittings and perform second shut in test

Sampling Start Time:	1:39pm	Notes:
Start Vacuum:	-29	Notes:
End Time:	1:44pm	Notes:
End Vacuum:	-5	Notes:
Start Vacuum:		Notes:
Leak Detection:	<input type="checkbox"/> 1,1-DFA <input checked="" type="checkbox"/> Helium	

SOIL GAS WELL FIELD SAMPLING LOG



Project:	Jordan Ranch	Well ID	SG-6
Date:	6/26/2014		
Project No.:	7828.000.001		
Location:	NE Fallon Road and Central Pwky, Dublin, CA.		
Sampler:	Matt M.		
Activity:	<input checked="" type="checkbox"/> Quarterly Sampling <input type="checkbox"/> One Time Event		

WELL CONSTRUCTION

Post run tubing DPT <input type="checkbox"/>	Notes:
Well constructed with cement/bentonite seal and sand pack <input checked="" type="checkbox"/>	

PURGING

<input type="checkbox"/> Summa Canister <input checked="" type="checkbox"/> Peristaltic Pump								
Casing Length (ft)	Casing Vol/Foot (ml)	Total Casing Volume (ml)	Sand Pack Pore Volume (ml) (50% Porosity)	Total Well Volume (ml)	Minutes (1 casing vol)	Minutes (3 casing vol)	Minutes (10 casing vol)	Notes: 3 well casings purged.
9.5	5	47.5	1,390	1,437.50	9.6	28.7	95.8	

Notes: 1) purge minutes are based on a flowrate of 150 ml/min 2) sand pack pore volume = 3.14 x (boring radius²) x length of sand pack x 0.5

SAMPLING

<input checked="" type="checkbox"/> 1L Summa <input type="checkbox"/> 6L Summa <input type="checkbox"/> Sorbent Tubing
Shut In Test: Shut-in test @ 2:03pm , Purge @ 2:08pm
1" or less drop in mmHg over 5 minute period: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No, tighten fittings and perform second shut in test

Sampling Start Time:	3:00pm	Notes:
Start Vacuum:	-30	Notes:
End Time:	3:05pm	Notes:
End Vacuum:	-5	Notes:
Start Vacuum:		Notes:
Leak Detection:	<input type="checkbox"/> 1,1-DFA <input checked="" type="checkbox"/> Helium	

EUROFINS AIR TOXICS, INC.

Certified Laboratory Report and Chain of Custody

7828.000.001
August 18, 2014



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1406A93 A

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; Jordan Ranch

Project Received: 06/30/2014

Analytical Report reviewed & approved for release on 07/15/2014 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; Jordan Ranch
WorkOrder: 1406A93

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
ML	Minimum Level of Quantitation
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; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/10/14

WorkOrder: 1406A93
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	1406A93-001A	Soil Gas	06/26/2014 09:27	GC26	92569

Initial Pressure (psia)	Final Pressure (psia)
13.03	26.07

Analytes	Result	RL	DF	Date Analyzed
Helium	0.063	0.0050	1	07/10/2014 08:05

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1406A93-002A	Soil Gas	06/26/2014 10:55	GC26	92569

Initial Pressure (psia)	Final Pressure (psia)
11.74	23.49

Analytes	Result	RL	DF	Date Analyzed
Helium	0.016	0.0050	1	07/10/2014 08:18

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1406A93-003A	Soil Gas	06/26/2014 11:59	GC26	92569

Initial Pressure (psia)	Final Pressure (psia)
12.64	25.27

Analytes	Result	RL	DF	Date Analyzed
Helium	0.0089	0.0050	1	07/10/2014 08:30

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/10/14

WorkOrder: 1406A93
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	1406A93-004A	Soil Gas	06/26/2014 13:17	GC26	92569

Initial Pressure (psia)	Final Pressure (psia)
12.49	24.97

Analytes	Result	RL	DF	Date Analyzed
Helium	0.013	0.0050	1	07/10/2014 08:43

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1406A93-005A	Soil Gas	06/26/2014 13:44	GC26	92569

Initial Pressure (psia)	Final Pressure (psia)
12.22	24.46

Analytes	Result	RL	DF	Date Analyzed
Helium	0.045	0.0050	1	07/10/2014 08:56

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1406A93-006A	Soil Gas	06/26/2014 15:05	GC26	92569

Initial Pressure (psia)	Final Pressure (psia)
12.88	25.73

Analytes	Result	RL	DF	Date Analyzed
Helium	0.32	0.0050	1	07/10/2014 09:09



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 7/10/14
Date Analyzed: 7/10/14
Instrument: GC26
Matrix: Soilgas
Project: #7828.000.001; Jordan Ranch

WorkOrder: 1406A93
BatchID: 92569
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: %
Sample ID: MB/LCS-92569

QC Summary Report for ASTM D1946-90

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Helium	ND	0.0121	0.0050	0.010	-	121	60-140



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1406A93 **A** ClientCode: ENGE

WaterTrax
 WriteOn
 EDF
 Excel
 Fax
 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; 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: 06/30/2014
Date Add-On: 07/09/2014
Date Printed: 07/09/2014

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	
1406A93-001	SG-1	Soil Gas	6/26/2014 9:27	<input type="checkbox"/>	A												
1406A93-002	SG-2	Soil Gas	6/26/2014 10:55	<input type="checkbox"/>	A												
1406A93-003	SG-3	Soil Gas	6/26/2014 11:59	<input type="checkbox"/>	A												
1406A93-004	SG-4	Soil Gas	6/26/2014 13:17	<input type="checkbox"/>	A												
1406A93-005	SG-5	Soil Gas	6/26/2014 13:44	<input type="checkbox"/>	A												
1406A93-006	SG-6	Soil Gas	6/26/2014 15:05	<input type="checkbox"/>	A												

Test Legend:

1	HELIUM_LC_SOILGAS(%)	2		3		4		5	
6		7		8		9		10	
11		12							

Prepared by: Jena Alfaro

Add-On Prepared By: Jena Alfaro

Comments: HE LC added 7/9/14

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.



WORK ORDER SUMMARY

Client Name: ENGEO INCORPORATED
Project: #7828.000.001; Jordan Ranch
Comments: HE LC added 7/9/14

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

Work Order: 1406A93
Date Received: 6/30/2014
Date Add-On: 7/9/2014

Lab ID	Client ID	Matrix	Test Name	Number of Containers	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1406A93-001A	SG-1	Soil Gas	ASTM D1946-90 (Helium)	1	1L Summa	6/26/2014 9:27	5 days		<input type="checkbox"/>	
1406A93-002A	SG-2	Soil Gas	ASTM D1946-90 (Helium)	1	1L Summa	6/26/2014 10:55	5 days		<input type="checkbox"/>	
1406A93-003A	SG-3	Soil Gas	ASTM D1946-90 (Helium)	1	1L Summa	6/26/2014 11:59	5 days		<input type="checkbox"/>	
1406A93-004A	SG-4	Soil Gas	ASTM D1946-90 (Helium)	1	1L Summa	6/26/2014 13:17	5 days		<input type="checkbox"/>	
1406A93-005A	SG-5	Soil Gas	ASTM D1946-90 (Helium)	1	1L Summa	6/26/2014 13:44	5 days		<input type="checkbox"/>	
1406A93-006A	SG-6	Soil Gas	ASTM D1946-90 (Helium)	1	1L Summa	6/26/2014 15:05	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.mcccampbell.com / main@mcccampbell.com
Telephone: (877) 252-9262 / Fax: (925) 252-9269

1406A93

CHAIN OF CUSTODY RECORD

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

Report To: Morgan Johnson Bill To:
Company: ENGEO
E-Mail: mjohnson@engeo.com
Tele: () Fax: ()
Project #: 7828.000.001 Project Name: Jordan Ranch
Project Location: Fallon Rd., Dublin, CA
Sampler Signature: [Signature]

Analysis Requested

Helium Shroud SN#

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: CO2, 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 (%) <u>7/9/14</u>	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-1	6/26	9:27am	7520-868		X	X		X	X	X	X	X						-30	-6
SG-2		10:55am	6201-742		X	X		X	X	X	X	X						-29	-5
SG-3		11:59am	7527-875		X	X		X	X	X	X	X						-30	-6
SG-4		1:17pm	5809-740		X	X		X	X	X	X	X						-30	-5
SG-5*		1:44pm	6420-851		X	X		X	X	X	X	X						-29	-5
SG-6		3:05pm	7530-878		X	X		X	X	X	X	X						-30	-5

Relinquished By: Matthew Miller Date: 6/26 Time: 4:41pm Received By: [Signature]
 Relinquished By: [Signature] Date: 6/27 Time: 3:50 Received By: [Signature]
 Relinquished By: [Signature] Date: 6/27 Time: 3:50 Received By: [Signature]

Temp (°C): _____ Work Order #: _____
Condition: _____
Custody Seals Intact?: Yes _____ No _____ None _____
Shipped Via: _____

Rec. @ MAT 200 6/27/14
170
710

He LC added 7/9/14



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1406A93

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; Jordan Ranch

Project Received: 06/30/2014

Analytical Report reviewed & approved for release on 07/09/2014 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; Jordan Ranch
WorkOrder: 1406A93

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
ML	Minimum Level of Quantitation
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; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/2/14-7/7/14

WorkOrder: 1406A93
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	1406A93-001A	Soil Gas	06/26/2014 09:27	GC26	92348

Initial Pressure (psia)	Final Pressure (psia)
13.03	26.07

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	94,000	10,000	100	07/07/2014 16:31
Methane	2.0	2.0	1	07/03/2014 14:04
Oxygen	91,000	4000	1	07/02/2014 15:51

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1406A93-002A	Soil Gas	06/26/2014 10:55	GC26	92348

Initial Pressure (psia)	Final Pressure (psia)
11.74	23.49

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	19,000	10,000	100	07/07/2014 17:06
Methane	5.1	2.0	1	07/03/2014 14:38
Oxygen	81,000	4000	1	07/02/2014 16:12

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1406A93-003A	Soil Gas	06/26/2014 11:59	GC26	92348

Initial Pressure (psia)	Final Pressure (psia)
12.64	25.27

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	25,000	10,000	100	07/07/2014 17:40
Methane	ND	2.0	1	07/03/2014 15:13
Oxygen	180,000	4000	1	07/02/2014 16:34

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/2/14-7/7/14

WorkOrder: 1406A93
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	1406A93-004A	Soil Gas	06/26/2014 13:17	GC26	92348

Initial Pressure (psia)	Final Pressure (psia)
12.49	24.97

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	8500	1000	10	07/07/2014 14:27
Methane	ND	2.0	1	07/03/2014 15:47
Oxygen	200,000	4000	1	07/02/2014 16:55

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1406A93-005A	Soil Gas	06/26/2014 13:44	GC26	92348

Initial Pressure (psia)	Final Pressure (psia)
12.22	24.46

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	9700	1000	10	07/07/2014 15:01
Methane	ND	2.0	1	07/03/2014 16:22
Oxygen	170,000	4000	1	07/02/2014 17:16

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1406A93-006A	Soil Gas	06/26/2014 15:05	GC26	92348

Initial Pressure (psia)	Final Pressure (psia)
12.88	25.73

Analytes	Result	RL	DF	Date Analyzed
Carbon Dioxide	27,000	10,000	100	07/07/2014 18:15
Methane	ND	2.0	1	07/03/2014 16:56
Oxygen	170,000	4000	1	07/02/2014 17:37



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1	1406A93-001A	Soil Gas	06/26/2014 09:27	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
13.03	26.07

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	720	1	07/01/2014 05:39
Surrogates	REC (%)	Limits		
1,2-DCA-d4	94	70-130		07/01/2014 05:39

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1406A93-002A	Soil Gas	06/26/2014 10:55	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
11.74	23.49

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	720	1	07/01/2014 06:19
Surrogates	REC (%)	Limits		
1,2-DCA-d4	95	70-130		07/01/2014 06:19

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1406A93-003A	Soil Gas	06/26/2014 11:59	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.64	25.27

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	720	1	07/01/2014 07:00
Surrogates	REC (%)	Limits		
1,2-DCA-d4	95	70-130		07/01/2014 07:00

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

TPH gas in µg/m³

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1406A93-004A	Soil Gas	06/26/2014 13:17	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.49	24.97

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	720	1	07/01/2014 07:40
Surrogates	REC (%)	Limits		
1,2-DCA-d4	95	70-130		07/01/2014 07:40

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1406A93-005A	Soil Gas	06/26/2014 13:44	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.22	24.46

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	720	1	07/01/2014 08:20
Surrogates	REC (%)	Limits		
1,2-DCA-d4	95	70-130		07/01/2014 08:20

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1406A93-006A	Soil Gas	06/26/2014 15:05	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.88	25.73

Analytes	Result	RL	DF	Date Analyzed
TPH(g)	ND	720	1	07/01/2014 09:01
Surrogates	REC (%)	Limits		
1,2-DCA-d4	95	70-130		07/01/2014 09:01



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Leak Check Compound

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-1	1406A93-001A	Soil Gas	06/26/2014 09:27	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
13.03	26.07

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/01/2014 05:39

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-2	1406A93-002A	Soil Gas	06/26/2014 10:55	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
11.74	23.49

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/01/2014 06:19

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-3	1406A93-003A	Soil Gas	06/26/2014 11:59	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.64	25.27

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/01/2014 07:00

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
Extraction Method: TO15
Analytical Method: TO15
Unit: µg/m³

Leak Check Compound

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-4	1406A93-004A	Soil Gas	06/26/2014 13:17	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.49	24.97

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/01/2014 07:40

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-5	1406A93-005A	Soil Gas	06/26/2014 13:44	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.22	24.46

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/01/2014 08:20

Client ID	Lab ID	Matrix/ExtType	Date Collected	Instrument	Batch ID
SG-6	1406A93-006A	Soil Gas	06/26/2014 15:05	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.88	25.73

Analytes	Result	RL	DF	Date Analyzed
Isopropyl Alcohol	ND	50	1	07/01/2014 09:01



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-1	1406A93-001A	Soil Gas	06/26/2014 09:27	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
13.03	26.07

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	07/01/2014 05:39
Acrolein	ND	1.2	1	07/01/2014 05:39
Acrylonitrile	ND	1.1	1	07/01/2014 05:39
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/01/2014 05:39
Benzene	ND	1.6	1	07/01/2014 05:39
Benzyl chloride	ND	2.6	1	07/01/2014 05:39
Bromodichloromethane	ND	3.5	1	07/01/2014 05:39
Bromoform	ND	5.2	1	07/01/2014 05:39
Bromomethane	ND	2.0	1	07/01/2014 05:39
1,3-Butadiene	ND	1.1	1	07/01/2014 05:39
2-Butanone (MEK)	ND	75	1	07/01/2014 05:39
t-Butyl alcohol (TBA)	ND	31	1	07/01/2014 05:39
Carbon Disulfide	ND	1.6	1	07/01/2014 05:39
Carbon Tetrachloride	ND	3.2	1	07/01/2014 05:39
Chlorobenzene	ND	2.4	1	07/01/2014 05:39
Chloroethane	ND	1.3	1	07/01/2014 05:39
Chloroform	ND	2.4	1	07/01/2014 05:39
Chloromethane	ND	1.0	1	07/01/2014 05:39
Cyclohexane	ND	18	1	07/01/2014 05:39
Dibromochloromethane	ND	4.4	1	07/01/2014 05:39
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/01/2014 05:39
1,2-Dibromoethane (EDB)	ND	3.9	1	07/01/2014 05:39
1,2-Dichlorobenzene	ND	3.0	1	07/01/2014 05:39
1,3-Dichlorobenzene	ND	3.0	1	07/01/2014 05:39
1,4-Dichlorobenzene	ND	3.0	1	07/01/2014 05:39
Dichlorodifluoromethane	ND	2.5	1	07/01/2014 05:39
1,1-Dichloroethane	ND	2.0	1	07/01/2014 05:39
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/01/2014 05:39
1,1-Dichloroethene	ND	2.0	1	07/01/2014 05:39
cis-1,2-Dichloroethene	ND	2.0	1	07/01/2014 05:39
trans-1,2-Dichloroethene	ND	2.0	1	07/01/2014 05:39
1,2-Dichloropropane	ND	2.4	1	07/01/2014 05:39
cis-1,3-Dichloropropene	ND	2.3	1	07/01/2014 05:39
trans-1,3-Dichloropropene	ND	2.3	1	07/01/2014 05:39

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-1	1406A93-001A	Soil Gas	06/26/2014 09:27	GC24	92248

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

13.03	26.07
--------------	--------------

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/01/2014 05:39
Diisopropyl ether (DIPE)	ND	2.1	1	07/01/2014 05:39
1,4-Dioxane	ND	1.8	1	07/01/2014 05:39
Ethanol	ND	96	1	07/01/2014 05:39
Ethyl acetate	ND	1.8	1	07/01/2014 05:39
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/01/2014 05:39
Ethylbenzene	ND	2.2	1	07/01/2014 05:39
4-Ethyltoluene	ND	2.5	1	07/01/2014 05:39
Freon 113	ND	3.9	1	07/01/2014 05:39
Heptane	ND	21	1	07/01/2014 05:39
Hexachlorobutadiene	ND	5.4	1	07/01/2014 05:39
Hexane	ND	18	1	07/01/2014 05:39
2-Hexanone	ND	2.1	1	07/01/2014 05:39
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/01/2014 05:39
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/01/2014 05:39
Methylene chloride	ND	1.8	1	07/01/2014 05:39
Methyl methacrylate	ND	2.1	1	07/01/2014 05:39
Naphthalene	ND	5.3	1	07/01/2014 05:39
Propene	ND	88	1	07/01/2014 05:39
Styrene	ND	2.2	1	07/01/2014 05:39
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 05:39
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 05:39
Tetrachloroethene	ND	3.4	1	07/01/2014 05:39
Tetrahydrofuran	ND	1.5	1	07/01/2014 05:39
Toluene	ND	1.9	1	07/01/2014 05:39
1,2,4-Trichlorobenzene	ND	3.8	1	07/01/2014 05:39
1,1,1-Trichloroethane	ND	2.8	1	07/01/2014 05:39
1,1,2-Trichloroethane	ND	2.8	1	07/01/2014 05:39
Trichloroethene	ND	2.8	1	07/01/2014 05:39
Trichlorofluoromethane	ND	2.8	1	07/01/2014 05:39
1,2,4-Trimethylbenzene	ND	2.5	1	07/01/2014 05:39
1,3,5-Trimethylbenzene	ND	2.5	1	07/01/2014 05:39
Vinyl Acetate	ND	1.8	1	07/01/2014 05:39
Vinyl Chloride	ND	1.3	1	07/01/2014 05:39

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-1	1406A93-001A	Soil Gas	06/26/2014 09:27	GC24	92248

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

13.03	26.07
--------------	--------------

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	07/01/2014 05:39

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	90	70-130	07/01/2014 05:39
Toluene-d8	101	70-130	07/01/2014 05:39
4-BFB	101	70-130	07/01/2014 05:39

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-2	1406A93-002A	Soil Gas	06/26/2014 10:55	GC24	92248

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

11.74	23.49
-------	-------

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	07/01/2014 06:19
Acrolein	ND	1.2	1	07/01/2014 06:19
Acrylonitrile	ND	1.1	1	07/01/2014 06:19
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/01/2014 06:19
Benzene	ND	1.6	1	07/01/2014 06:19
Benzyl chloride	ND	2.6	1	07/01/2014 06:19
Bromodichloromethane	ND	3.5	1	07/01/2014 06:19
Bromoform	ND	5.2	1	07/01/2014 06:19
Bromomethane	ND	2.0	1	07/01/2014 06:19
1,3-Butadiene	ND	1.1	1	07/01/2014 06:19
2-Butanone (MEK)	ND	75	1	07/01/2014 06:19
t-Butyl alcohol (TBA)	ND	31	1	07/01/2014 06:19
Carbon Disulfide	ND	1.6	1	07/01/2014 06:19
Carbon Tetrachloride	ND	3.2	1	07/01/2014 06:19
Chlorobenzene	ND	2.4	1	07/01/2014 06:19
Chloroethane	ND	1.3	1	07/01/2014 06:19
Chloroform	ND	2.4	1	07/01/2014 06:19
Chloromethane	ND	1.0	1	07/01/2014 06:19
Cyclohexane	ND	18	1	07/01/2014 06:19
Dibromochloromethane	ND	4.4	1	07/01/2014 06:19
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/01/2014 06:19
1,2-Dibromoethane (EDB)	ND	3.9	1	07/01/2014 06:19
1,2-Dichlorobenzene	ND	3.0	1	07/01/2014 06:19
1,3-Dichlorobenzene	ND	3.0	1	07/01/2014 06:19
1,4-Dichlorobenzene	ND	3.0	1	07/01/2014 06:19
Dichlorodifluoromethane	ND	2.5	1	07/01/2014 06:19
1,1-Dichloroethane	ND	2.0	1	07/01/2014 06:19
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/01/2014 06:19
1,1-Dichloroethene	ND	2.0	1	07/01/2014 06:19
cis-1,2-Dichloroethene	ND	2.0	1	07/01/2014 06:19
trans-1,2-Dichloroethene	ND	2.0	1	07/01/2014 06:19
1,2-Dichloropropane	ND	2.4	1	07/01/2014 06:19
cis-1,3-Dichloropropene	ND	2.3	1	07/01/2014 06:19
trans-1,3-Dichloropropene	ND	2.3	1	07/01/2014 06:19

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-2	1406A93-002A	Soil Gas	06/26/2014 10:55	GC24	92248

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

11.74	23.49
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Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/01/2014 06:19
Diisopropyl ether (DIPE)	ND	2.1	1	07/01/2014 06:19
1,4-Dioxane	ND	1.8	1	07/01/2014 06:19
Ethanol	ND	96	1	07/01/2014 06:19
Ethyl acetate	1.9	1.8	1	07/01/2014 06:19
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/01/2014 06:19
Ethylbenzene	ND	2.2	1	07/01/2014 06:19
4-Ethyltoluene	ND	2.5	1	07/01/2014 06:19
Freon 113	ND	3.9	1	07/01/2014 06:19
Heptane	ND	21	1	07/01/2014 06:19
Hexachlorobutadiene	ND	5.4	1	07/01/2014 06:19
Hexane	ND	18	1	07/01/2014 06:19
2-Hexanone	ND	2.1	1	07/01/2014 06:19
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/01/2014 06:19
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/01/2014 06:19
Methylene chloride	ND	1.8	1	07/01/2014 06:19
Methyl methacrylate	ND	2.1	1	07/01/2014 06:19
Naphthalene	ND	5.3	1	07/01/2014 06:19
Propene	ND	88	1	07/01/2014 06:19
Styrene	ND	2.2	1	07/01/2014 06:19
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 06:19
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 06:19
Tetrachloroethene	ND	3.4	1	07/01/2014 06:19
Tetrahydrofuran	ND	1.5	1	07/01/2014 06:19
Toluene	ND	1.9	1	07/01/2014 06:19
1,2,4-Trichlorobenzene	ND	3.8	1	07/01/2014 06:19
1,1,1-Trichloroethane	ND	2.8	1	07/01/2014 06:19
1,1,2-Trichloroethane	ND	2.8	1	07/01/2014 06:19
Trichloroethene	ND	2.8	1	07/01/2014 06:19
Trichlorofluoromethane	ND	2.8	1	07/01/2014 06:19
1,2,4-Trimethylbenzene	ND	2.5	1	07/01/2014 06:19
1,3,5-Trimethylbenzene	ND	2.5	1	07/01/2014 06:19
Vinyl Acetate	ND	1.8	1	07/01/2014 06:19
Vinyl Chloride	ND	1.3	1	07/01/2014 06:19

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-2	1406A93-002A	Soil Gas	06/26/2014 10:55	GC24	92248

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

11.74	23.49
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Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	07/01/2014 06:19

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	91	70-130	07/01/2014 06:19
Toluene-d8	101	70-130	07/01/2014 06:19
4-BFB	100	70-130	07/01/2014 06:19

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-3	1406A93-003A	Soil Gas	06/26/2014 11:59	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.64	25.27

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	07/01/2014 07:00
Acrolein	ND	1.2	1	07/01/2014 07:00
Acrylonitrile	ND	1.1	1	07/01/2014 07:00
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/01/2014 07:00
Benzene	ND	1.6	1	07/01/2014 07:00
Benzyl chloride	ND	2.6	1	07/01/2014 07:00
Bromodichloromethane	ND	3.5	1	07/01/2014 07:00
Bromoform	ND	5.2	1	07/01/2014 07:00
Bromomethane	ND	2.0	1	07/01/2014 07:00
1,3-Butadiene	ND	1.1	1	07/01/2014 07:00
2-Butanone (MEK)	ND	75	1	07/01/2014 07:00
t-Butyl alcohol (TBA)	ND	31	1	07/01/2014 07:00
Carbon Disulfide	ND	1.6	1	07/01/2014 07:00
Carbon Tetrachloride	ND	3.2	1	07/01/2014 07:00
Chlorobenzene	ND	2.4	1	07/01/2014 07:00
Chloroethane	ND	1.3	1	07/01/2014 07:00
Chloroform	ND	2.4	1	07/01/2014 07:00
Chloromethane	ND	1.0	1	07/01/2014 07:00
Cyclohexane	ND	18	1	07/01/2014 07:00
Dibromochloromethane	ND	4.4	1	07/01/2014 07:00
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/01/2014 07:00
1,2-Dibromoethane (EDB)	ND	3.9	1	07/01/2014 07:00
1,2-Dichlorobenzene	ND	3.0	1	07/01/2014 07:00
1,3-Dichlorobenzene	ND	3.0	1	07/01/2014 07:00
1,4-Dichlorobenzene	ND	3.0	1	07/01/2014 07:00
Dichlorodifluoromethane	ND	2.5	1	07/01/2014 07:00
1,1-Dichloroethane	ND	2.0	1	07/01/2014 07:00
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/01/2014 07:00
1,1-Dichloroethene	ND	2.0	1	07/01/2014 07:00
cis-1,2-Dichloroethene	ND	2.0	1	07/01/2014 07:00
trans-1,2-Dichloroethene	ND	2.0	1	07/01/2014 07:00
1,2-Dichloropropane	ND	2.4	1	07/01/2014 07:00
cis-1,3-Dichloropropene	ND	2.3	1	07/01/2014 07:00
trans-1,3-Dichloropropene	ND	2.3	1	07/01/2014 07:00

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-3	1406A93-003A	Soil Gas	06/26/2014 11:59	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.64	25.27

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/01/2014 07:00
Diisopropyl ether (DIPE)	ND	2.1	1	07/01/2014 07:00
1,4-Dioxane	ND	1.8	1	07/01/2014 07:00
Ethanol	ND	96	1	07/01/2014 07:00
Ethyl acetate	ND	1.8	1	07/01/2014 07:00
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/01/2014 07:00
Ethylbenzene	ND	2.2	1	07/01/2014 07:00
4-Ethyltoluene	ND	2.5	1	07/01/2014 07:00
Freon 113	ND	3.9	1	07/01/2014 07:00
Heptane	ND	21	1	07/01/2014 07:00
Hexachlorobutadiene	ND	5.4	1	07/01/2014 07:00
Hexane	ND	18	1	07/01/2014 07:00
2-Hexanone	ND	2.1	1	07/01/2014 07:00
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/01/2014 07:00
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/01/2014 07:00
Methylene chloride	ND	1.8	1	07/01/2014 07:00
Methyl methacrylate	ND	2.1	1	07/01/2014 07:00
Naphthalene	ND	5.3	1	07/01/2014 07:00
Propene	ND	88	1	07/01/2014 07:00
Styrene	ND	2.2	1	07/01/2014 07:00
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 07:00
1,1,2,2-Tetrachloroethane	ND	3.5	1	07/01/2014 07:00
Tetrachloroethene	ND	3.4	1	07/01/2014 07:00
Tetrahydrofuran	ND	1.5	1	07/01/2014 07:00
Toluene	ND	1.9	1	07/01/2014 07:00
1,2,4-Trichlorobenzene	ND	3.8	1	07/01/2014 07:00
1,1,1-Trichloroethane	ND	2.8	1	07/01/2014 07:00
1,1,2-Trichloroethane	ND	2.8	1	07/01/2014 07:00
Trichloroethene	ND	2.8	1	07/01/2014 07:00
Trichlorofluoromethane	ND	2.8	1	07/01/2014 07:00
1,2,4-Trimethylbenzene	ND	2.5	1	07/01/2014 07:00
1,3,5-Trimethylbenzene	ND	2.5	1	07/01/2014 07:00
Vinyl Acetate	ND	1.8	1	07/01/2014 07:00
Vinyl Chloride	ND	1.3	1	07/01/2014 07:00

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-3	1406A93-003A	Soil Gas	06/26/2014 11:59	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.64	25.27

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	07/01/2014 07:00

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	98	70-130	07/01/2014 07:00
Toluene-d8	101	70-130	07/01/2014 07:00
4-BFB	100	70-130	07/01/2014 07:00

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-4	1406A93-004A	Soil Gas	06/26/2014 13:17	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.49	24.97

Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	07/01/2014 07:40
Acrolein	ND	1.2	1	07/01/2014 07:40
Acrylonitrile	ND	1.1	1	07/01/2014 07:40
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/01/2014 07:40
Benzene	ND	1.6	1	07/01/2014 07:40
Benzyl chloride	ND	2.6	1	07/01/2014 07:40
Bromodichloromethane	ND	3.5	1	07/01/2014 07:40
Bromoform	ND	5.2	1	07/01/2014 07:40
Bromomethane	ND	2.0	1	07/01/2014 07:40
1,3-Butadiene	ND	1.1	1	07/01/2014 07:40
2-Butanone (MEK)	ND	75	1	07/01/2014 07:40
t-Butyl alcohol (TBA)	ND	31	1	07/01/2014 07:40
Carbon Disulfide	ND	1.6	1	07/01/2014 07:40
Carbon Tetrachloride	ND	3.2	1	07/01/2014 07:40
Chlorobenzene	ND	2.4	1	07/01/2014 07:40
Chloroethane	ND	1.3	1	07/01/2014 07:40
Chloroform	ND	2.4	1	07/01/2014 07:40
Chloromethane	ND	1.0	1	07/01/2014 07:40
Cyclohexane	ND	18	1	07/01/2014 07:40
Dibromochloromethane	ND	4.4	1	07/01/2014 07:40
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/01/2014 07:40
1,2-Dibromoethane (EDB)	ND	3.9	1	07/01/2014 07:40
1,2-Dichlorobenzene	ND	3.0	1	07/01/2014 07:40
1,3-Dichlorobenzene	ND	3.0	1	07/01/2014 07:40
1,4-Dichlorobenzene	ND	3.0	1	07/01/2014 07:40
Dichlorodifluoromethane	ND	2.5	1	07/01/2014 07:40
1,1-Dichloroethane	ND	2.0	1	07/01/2014 07:40
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/01/2014 07:40
1,1-Dichloroethene	ND	2.0	1	07/01/2014 07:40
cis-1,2-Dichloroethene	ND	2.0	1	07/01/2014 07:40
trans-1,2-Dichloroethene	ND	2.0	1	07/01/2014 07:40
1,2-Dichloropropane	ND	2.4	1	07/01/2014 07:40
cis-1,3-Dichloropropene	ND	2.3	1	07/01/2014 07:40
trans-1,3-Dichloropropene	ND	2.3	1	07/01/2014 07:40

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-4	1406A93-004A	Soil Gas	06/26/2014 13:17	GC24	92248

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

12.49	24.97
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Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/01/2014 07:40
Diisopropyl ether (DIPE)	ND	2.1	1	07/01/2014 07:40
1,4-Dioxane	ND	1.8	1	07/01/2014 07:40
Ethanol	ND	96	1	07/01/2014 07:40
Ethyl acetate	ND	1.8	1	07/01/2014 07:40
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/01/2014 07:40
Ethylbenzene	ND	2.2	1	07/01/2014 07:40
4-Ethyltoluene	ND	2.5	1	07/01/2014 07:40
Freon 113	ND	3.9	1	07/01/2014 07:40
Heptane	ND	21	1	07/01/2014 07:40
Hexachlorobutadiene	ND	5.4	1	07/01/2014 07:40
Hexane	ND	18	1	07/01/2014 07:40
2-Hexanone	ND	2.1	1	07/01/2014 07:40
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/01/2014 07:40
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/01/2014 07:40
Methylene chloride	2.2	1.8	1	07/01/2014 07:40
Methyl methacrylate	ND	2.1	1	07/01/2014 07:40
Naphthalene	ND	5.3	1	07/01/2014 07:40
Propene	ND	88	1	07/01/2014 07:40
Styrene	ND	2.2	1	07/01/2014 07:40
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 07:40
1,1,2,2-Tetrachloroethane	ND	3.5	1	07/01/2014 07:40
Tetrachloroethene	ND	3.4	1	07/01/2014 07:40
Tetrahydrofuran	ND	1.5	1	07/01/2014 07:40
Toluene	ND	1.9	1	07/01/2014 07:40
1,2,4-Trichlorobenzene	ND	3.8	1	07/01/2014 07:40
1,1,1-Trichloroethane	ND	2.8	1	07/01/2014 07:40
1,1,2-Trichloroethane	ND	2.8	1	07/01/2014 07:40
Trichloroethene	ND	2.8	1	07/01/2014 07:40
Trichlorofluoromethane	ND	2.8	1	07/01/2014 07:40
1,2,4-Trimethylbenzene	ND	2.5	1	07/01/2014 07:40
1,3,5-Trimethylbenzene	ND	2.5	1	07/01/2014 07:40
Vinyl Acetate	ND	1.8	1	07/01/2014 07:40
Vinyl Chloride	ND	1.3	1	07/01/2014 07:40

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-4	1406A93-004A	Soil Gas	06/26/2014 13:17	GC24	92248

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

12.49	24.97
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Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	07/01/2014 07:40

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	91	70-130	07/01/2014 07:40
Toluene-d8	101	70-130	07/01/2014 07:40
4-BFB	100	70-130	07/01/2014 07:40

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-5	1406A93-005A	Soil Gas	06/26/2014 13:44	GC24	92248

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

12.22	24.46
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Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	07/01/2014 08:20
Acrolein	ND	1.2	1	07/01/2014 08:20
Acrylonitrile	ND	1.1	1	07/01/2014 08:20
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/01/2014 08:20
Benzene	ND	1.6	1	07/01/2014 08:20
Benzyl chloride	ND	2.6	1	07/01/2014 08:20
Bromodichloromethane	ND	3.5	1	07/01/2014 08:20
Bromoform	ND	5.2	1	07/01/2014 08:20
Bromomethane	ND	2.0	1	07/01/2014 08:20
1,3-Butadiene	ND	1.1	1	07/01/2014 08:20
2-Butanone (MEK)	ND	75	1	07/01/2014 08:20
t-Butyl alcohol (TBA)	ND	31	1	07/01/2014 08:20
Carbon Disulfide	ND	1.6	1	07/01/2014 08:20
Carbon Tetrachloride	ND	3.2	1	07/01/2014 08:20
Chlorobenzene	ND	2.4	1	07/01/2014 08:20
Chloroethane	ND	1.3	1	07/01/2014 08:20
Chloroform	ND	2.4	1	07/01/2014 08:20
Chloromethane	ND	1.0	1	07/01/2014 08:20
Cyclohexane	ND	18	1	07/01/2014 08:20
Dibromochloromethane	ND	4.4	1	07/01/2014 08:20
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/01/2014 08:20
1,2-Dibromoethane (EDB)	ND	3.9	1	07/01/2014 08:20
1,2-Dichlorobenzene	ND	3.0	1	07/01/2014 08:20
1,3-Dichlorobenzene	ND	3.0	1	07/01/2014 08:20
1,4-Dichlorobenzene	ND	3.0	1	07/01/2014 08:20
Dichlorodifluoromethane	ND	2.5	1	07/01/2014 08:20
1,1-Dichloroethane	ND	2.0	1	07/01/2014 08:20
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/01/2014 08:20
1,1-Dichloroethene	ND	2.0	1	07/01/2014 08:20
cis-1,2-Dichloroethene	ND	2.0	1	07/01/2014 08:20
trans-1,2-Dichloroethene	ND	2.0	1	07/01/2014 08:20
1,2-Dichloropropane	ND	2.4	1	07/01/2014 08:20
cis-1,3-Dichloropropene	ND	2.3	1	07/01/2014 08:20
trans-1,3-Dichloropropene	ND	2.3	1	07/01/2014 08:20

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-5	1406A93-005A	Soil Gas	06/26/2014 13:44	GC24	92248

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

12.22	24.46
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Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/01/2014 08:20
Diisopropyl ether (DIPE)	ND	2.1	1	07/01/2014 08:20
1,4-Dioxane	ND	1.8	1	07/01/2014 08:20
Ethanol	ND	96	1	07/01/2014 08:20
Ethyl acetate	ND	1.8	1	07/01/2014 08:20
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/01/2014 08:20
Ethylbenzene	ND	2.2	1	07/01/2014 08:20
4-Ethyltoluene	ND	2.5	1	07/01/2014 08:20
Freon 113	ND	3.9	1	07/01/2014 08:20
Heptane	ND	21	1	07/01/2014 08:20
Hexachlorobutadiene	ND	5.4	1	07/01/2014 08:20
Hexane	ND	18	1	07/01/2014 08:20
2-Hexanone	ND	2.1	1	07/01/2014 08:20
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/01/2014 08:20
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/01/2014 08:20
Methylene chloride	ND	1.8	1	07/01/2014 08:20
Methyl methacrylate	ND	2.1	1	07/01/2014 08:20
Naphthalene	ND	5.3	1	07/01/2014 08:20
Propene	ND	88	1	07/01/2014 08:20
Styrene	ND	2.2	1	07/01/2014 08:20
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 08:20
1,1,2,2-Tetrachloroethane	ND	3.5	1	07/01/2014 08:20
Tetrachloroethene	3.8	3.4	1	07/01/2014 08:20
Tetrahydrofuran	ND	1.5	1	07/01/2014 08:20
Toluene	ND	1.9	1	07/01/2014 08:20
1,2,4-Trichlorobenzene	ND	3.8	1	07/01/2014 08:20
1,1,1-Trichloroethane	ND	2.8	1	07/01/2014 08:20
1,1,2-Trichloroethane	ND	2.8	1	07/01/2014 08:20
Trichloroethene	ND	2.8	1	07/01/2014 08:20
Trichlorofluoromethane	ND	2.8	1	07/01/2014 08:20
1,2,4-Trimethylbenzene	ND	2.5	1	07/01/2014 08:20
1,3,5-Trimethylbenzene	ND	2.5	1	07/01/2014 08:20
Vinyl Acetate	ND	1.8	1	07/01/2014 08:20
Vinyl Chloride	ND	1.3	1	07/01/2014 08:20

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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-5	1406A93-005A	Soil Gas	06/26/2014 13:44	GC24	92248

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

12.22	24.46
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<u>Analytes</u>	<u>Result</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Xylenes, Total	ND	6.6	1	07/01/2014 08:20

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>	<u>Date Analyzed</u>
1,2-DCA-d4	91	70-130	07/01/2014 08:20
Toluene-d8	101	70-130	07/01/2014 08:20
4-BFB	99	70-130	07/01/2014 08:20

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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	1406A93-006A	Soil Gas	06/26/2014 15:05	GC24	92248

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

12.88	25.73
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Analytes	Result	RL	DF	Date Analyzed
Acetone	ND	60	1	07/01/2014 09:01
Acrolein	ND	1.2	1	07/01/2014 09:01
Acrylonitrile	ND	1.1	1	07/01/2014 09:01
tert-Amyl methyl ether (TAME)	ND	2.1	1	07/01/2014 09:01
Benzene	ND	1.6	1	07/01/2014 09:01
Benzyl chloride	ND	2.6	1	07/01/2014 09:01
Bromodichloromethane	ND	3.5	1	07/01/2014 09:01
Bromoform	ND	5.2	1	07/01/2014 09:01
Bromomethane	ND	2.0	1	07/01/2014 09:01
1,3-Butadiene	ND	1.1	1	07/01/2014 09:01
2-Butanone (MEK)	ND	75	1	07/01/2014 09:01
t-Butyl alcohol (TBA)	ND	31	1	07/01/2014 09:01
Carbon Disulfide	5.9	1.6	1	07/01/2014 09:01
Carbon Tetrachloride	ND	3.2	1	07/01/2014 09:01
Chlorobenzene	ND	2.4	1	07/01/2014 09:01
Chloroethane	ND	1.3	1	07/01/2014 09:01
Chloroform	ND	2.4	1	07/01/2014 09:01
Chloromethane	ND	1.0	1	07/01/2014 09:01
Cyclohexane	ND	18	1	07/01/2014 09:01
Dibromochloromethane	ND	4.4	1	07/01/2014 09:01
1,2-Dibromo-3-chloropropane	ND	0.12	1	07/01/2014 09:01
1,2-Dibromoethane (EDB)	ND	3.9	1	07/01/2014 09:01
1,2-Dichlorobenzene	ND	3.0	1	07/01/2014 09:01
1,3-Dichlorobenzene	ND	3.0	1	07/01/2014 09:01
1,4-Dichlorobenzene	ND	3.0	1	07/01/2014 09:01
Dichlorodifluoromethane	ND	2.5	1	07/01/2014 09:01
1,1-Dichloroethane	ND	2.0	1	07/01/2014 09:01
1,2-Dichloroethane (1,2-DCA)	ND	2.0	1	07/01/2014 09:01
1,1-Dichloroethene	ND	2.0	1	07/01/2014 09:01
cis-1,2-Dichloroethene	ND	2.0	1	07/01/2014 09:01
trans-1,2-Dichloroethene	ND	2.0	1	07/01/2014 09:01
1,2-Dichloropropane	ND	2.4	1	07/01/2014 09:01
cis-1,3-Dichloropropene	ND	2.3	1	07/01/2014 09:01
trans-1,3-Dichloropropene	ND	2.3	1	07/01/2014 09:01

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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	1406A93-006A	Soil Gas	06/26/2014 15:05	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.88	25.73

Analytes	Result	RL	DF	Date Analyzed
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	3.6	1	07/01/2014 09:01
Diisopropyl ether (DIPE)	ND	2.1	1	07/01/2014 09:01
1,4-Dioxane	ND	1.8	1	07/01/2014 09:01
Ethanol	ND	96	1	07/01/2014 09:01
Ethyl acetate	ND	1.8	1	07/01/2014 09:01
Ethyl tert-butyl ether (ETBE)	ND	2.1	1	07/01/2014 09:01
Ethylbenzene	ND	2.2	1	07/01/2014 09:01
4-Ethyltoluene	ND	2.5	1	07/01/2014 09:01
Freon 113	ND	3.9	1	07/01/2014 09:01
Heptane	ND	21	1	07/01/2014 09:01
Hexachlorobutadiene	ND	5.4	1	07/01/2014 09:01
Hexane	ND	18	1	07/01/2014 09:01
2-Hexanone	ND	2.1	1	07/01/2014 09:01
4-Methyl-2-pentanone (MIBK)	ND	2.1	1	07/01/2014 09:01
Methyl-t-butyl ether (MTBE)	ND	1.8	1	07/01/2014 09:01
Methylene chloride	ND	1.8	1	07/01/2014 09:01
Methyl methacrylate	ND	2.1	1	07/01/2014 09:01
Naphthalene	ND	5.3	1	07/01/2014 09:01
Propene	ND	88	1	07/01/2014 09:01
Styrene	ND	2.2	1	07/01/2014 09:01
1,1,1,2-Tetrachloroethane	ND	3.5	1	07/01/2014 09:01
1,1,2,2-Tetrachloroethane	ND	3.5	1	07/01/2014 09:01
Tetrachloroethene	8.6	3.4	1	07/01/2014 09:01
Tetrahydrofuran	ND	1.5	1	07/01/2014 09:01
Toluene	ND	1.9	1	07/01/2014 09:01
1,2,4-Trichlorobenzene	ND	3.8	1	07/01/2014 09:01
1,1,1-Trichloroethane	ND	2.8	1	07/01/2014 09:01
1,1,2-Trichloroethane	ND	2.8	1	07/01/2014 09:01
Trichloroethene	ND	2.8	1	07/01/2014 09:01
Trichlorofluoromethane	ND	2.8	1	07/01/2014 09:01
1,2,4-Trimethylbenzene	ND	2.5	1	07/01/2014 09:01
1,3,5-Trimethylbenzene	ND	2.5	1	07/01/2014 09:01
Vinyl Acetate	ND	1.8	1	07/01/2014 09:01
Vinyl Chloride	ND	1.3	1	07/01/2014 09:01

(Cont.)



Analytical Report

Client: ENGEO Incorporated
Project: #7828.000.001; Jordan Ranch
Date Received: 6/30/14 10:57
Date Prepared: 7/1/14

WorkOrder: 1406A93
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	1406A93-006A	Soil Gas	06/26/2014 15:05	GC24	92248

Initial Pressure (psia)	Final Pressure (psia)
12.88	25.73

Analytes	Result	RL	DF	Date Analyzed
Xylenes, Total	ND	6.6	1	07/01/2014 09:01

Surrogates	REC (%)	Limits	Date Analyzed
1,2-DCA-d4	91	70-130	07/01/2014 09:01
Toluene-d8	101	70-130	07/01/2014 09:01
4-BFB	100	70-130	07/01/2014 09:01



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 7/3/14
Date Analyzed: 7/2/14 - 7/3/14
Instrument: GC26
Matrix: Soil Gas
Project: #7828.000.001; Jordan Ranch

WorkOrder: 1406A93
BatchID: 92348
Extraction Method: ASTM D 1946-90
Analytical Method: ASTM D 1946-90
Unit: uL/L
Sample ID: MB/LCS-92348

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	951	50	1000	-	95.1	70-130
Methane	ND	119	2.0	100	-	119	70-130
Oxygen	ND	6260	4000	7000	-	89.5	70-130



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 7/1/14
Date Analyzed: 6/30/14
Instrument: GC24
Matrix: Soilgas
Project: #7828.000.001; Jordan Ranch

WorkOrder: 1406A93
BatchID: 92248
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-92248

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	30.2	0.50	25	-	121	60-140
Acrylonitrile	ND	21.6	0.50	25	-	86.3	60-140
tert-Amyl methyl ether (TAME)	ND	23.8	0.50	25	-	95.2	60-140
Benzene	ND	20.0	0.50	25	-	79.9	60-140
Benzyl chloride	ND	26.8	0.50	25	-	107	60-140
Bromodichloromethane	ND	21.9	0.50	25	-	87.5	60-140
Bromoform	ND	36.1	0.50	25	-	144, F2	60-140
Bromomethane	ND	-	0.50	-	-	-	-
1,3-Butadiene	ND	-	0.50	-	-	-	-
2-Butanone (MEK)	ND	-	25	-	-	-	-
t-Butyl alcohol (TBA)	ND	18.7	10	25	-	74.9	60-140
Carbon Disulfide	ND	20.5	0.50	25	-	82	60-140
Carbon Tetrachloride	ND	22.1	0.50	25	-	88.6	60-140
Chlorobenzene	ND	20.3	0.50	25	-	81.3	60-140
Chloroethane	ND	20.1	0.50	25	-	80.3	60-140
Chloroform	ND	16.4	0.50	25	-	65.4	60-140
Chloromethane	ND	19.5	0.50	25	-	77.9	60-140
Cyclohexane	ND	-	5.0	-	-	-	-
Dibromochloromethane	ND	25.1	0.50	25	-	100	60-140
1,2-Dibromo-3-chloropropane	ND	31.9	0.012	25	-	128	60-140
1,2-Dibromoethane (EDB)	ND	19.9	0.50	25	-	79.6	60-140
1,2-Dichlorobenzene	ND	-	0.50	-	-	-	-
1,3-Dichlorobenzene	ND	20.6	0.50	25	-	82.4	60-140
1,4-Dichlorobenzene	ND	19.4	0.50	25	-	77.8	60-140
Dichlorodifluoromethane	ND	19.1	0.50	25	-	76.4	60-140
1,1-Dichloroethane	ND	20.6	0.50	25	-	82.5	60-140
1,2-Dichloroethane (1,2-DCA)	ND	19.1	0.50	25	-	76.5	60-140
1,1-Dichloroethene	ND	-	0.50	-	-	-	-
cis-1,2-Dichloroethene	ND	19.9	0.50	25	-	79.5	60-140
trans-1,2-Dichloroethene	ND	19.5	0.50	25	-	78	60-140
1,2-Dichloropropane	ND	21.4	0.50	25	-	85.4	60-140
cis-1,3-Dichloropropene	ND	23.0	0.50	25	-	91.9	60-140
trans-1,3-Dichloropropene	ND	22.2	0.50	25	-	88.6	60-140
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND	18.7	0.50	25	-	74.7	60-140
Diisopropyl ether (DIPE)	ND	19.9	0.50	25	-	79.4	60-140
1,4-Dioxane	ND	21.9	0.50	25	-	87.8	60-140
Ethanol	ND	-	50	-	-	-	-
Ethyl acetate	ND	20.2	0.50	25	-	80.7	60-140
Ethyl tert-butyl ether (ETBE)	ND	20.9	0.50	25	-	83.5	60-140

(Cont.)



Quality Control Report

Client: ENGEO Incorporated
Date Prepared: 7/1/14
Date Analyzed: 6/30/14
Instrument: GC24
Matrix: Soilgas
Project: #7828.000.001; Jordan Ranch

WorkOrder: 1406A93
BatchID: 92248
Extraction Method: TO15
Analytical Method: TO15
Unit: nL/L
Sample ID: MB/LCS-92248

QC Summary Report for TO15

Analyte	MB Result	LCS Result	RL	SPK Val	MB SS %REC	LCS %REC	LCS Limits
Ethylbenzene	ND	21.1	0.50	25	-	84.5	60-140
4-Ethyltoluene	ND	-	0.50	-	-	-	-
Freon 113	ND	18.1	0.50	25	-	72.2	60-140
Heptane	ND	-	5.0	-	-	-	-
Hexachlorobutadiene	ND	18.2	0.50	25	-	72.6	60-140
Hexane	ND	-	5.0	-	-	-	-
2-Hexanone	ND	-	0.50	-	-	-	-
4-Methyl-2-pentanone (MIBK)	ND	25.4	0.50	25	-	102	60-140
Methyl-t-butyl ether (MTBE)	ND	21.1	0.50	25	-	84.4	60-140
Methylene chloride	ND	17.4	0.50	25	-	69.6	60-140
Methyl methacrylate	ND	24.9	0.50	25	-	99.7	60-140
Naphthalene	ND	48.5	1.0	50	-	97.1	60-140
Propene	ND	-	50	-	-	-	-
Styrene	ND	23.4	0.50	25	-	93.7	60-140
1,1,1,2-Tetrachloroethane	ND	21.2	0.50	25	-	84.8	60-140
1,1,2,2-Tetrachloroethane	ND	19.2	0.50	25	-	76.7	60-140
Tetrachloroethene	ND	20.9	0.50	25	-	83.7	60-140
Tetrahydrofuran	ND	17.6	0.50	25	-	70.4	60-140
Toluene	ND	20.6	0.50	25	-	82.5	60-140
1,2,4-Trichlorobenzene	ND	21.5	0.50	25	-	86.1	60-140
1,1,1-Trichloroethane	ND	23.5	0.50	25	-	93.9	60-140
1,1,2-Trichloroethane	ND	17.5	0.50	25	-	70	60-140
Trichloroethene	ND	19.4	0.50	25	-	77.5	60-140
Trichlorofluoromethane	ND	-	0.50	-	-	-	-
1,2,4-Trimethylbenzene	ND	19.6	0.50	25	-	78.4	60-140
1,3,5-Trimethylbenzene	ND	19.0	0.50	25	-	75.8	60-140
Vinyl Acetate	ND	-	0.50	-	-	-	-
Vinyl Chloride	ND	20.2	0.50	25	-	80.7	60-140
Xylenes, Total	ND	59.3	1.5	75	-	79	60-140

Surrogate Recovery

1,2-DCA-d4	470	572		500	94	114	60-140
Toluene-d8	508	512		500	102	102	60-140
4-BFB	508	525		500	102	105	60-140

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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1406A93

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: #7828.000.001; 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: 06/30/2014

Date Printed: 06/30/2014

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	
1406A93-001	SG-1	Soil Gas	6/26/2014 9:27	<input type="checkbox"/>	A		A										
1406A93-002	SG-2	Soil Gas	6/26/2014 10:55	<input type="checkbox"/>	A		A										
1406A93-003	SG-3	Soil Gas	6/26/2014 11:59	<input type="checkbox"/>	A		A										
1406A93-004	SG-4	Soil Gas	6/26/2014 13:17	<input type="checkbox"/>	A		A										
1406A93-005	SG-5	Soil Gas	6/26/2014 13:44	<input type="checkbox"/>	A		A										
1406A93-006	SG-6	Soil Gas	6/26/2014 15:05	<input type="checkbox"/>	A		A										
1406A93-007	Unused Summa	Soil Gas	6/26/2014	<input type="checkbox"/>		A											

Test Legend:

1	LG_SUMMA_SOILGAS	2	PRUNUSEDSUMMA	3	O15_Scan-SIM_SOIL(UG/M)	4		5	
6		7		8		9		10	
11		12							

The following SamplIDs: 001A, 002A, 003A, 004A, 005A, 006A contain 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

QC Level: LEVEL 2

Work Order: 1406A93

Project: #7828.000.001; Jordan Ranch

Client Contact: Morgan Johnson

Date Received: 6/30/2014

Comments:

Contact's Email: mjohnson@engeo.com

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
1406A93-001A	SG-1	Soil Gas	VOCs and TPHgas by TO15 for Soil Vapor ASTM D1946-90 (Light Gases) <Carbon Dioxide_2, Methane_4, Oxygen>	1	1L Summa	<input type="checkbox"/>	6/26/2014 9:27	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1406A93-002A	SG-2	Soil Gas	VOCs and TPHgas by TO15 for Soil Vapor ASTM D1946-90 (Light Gases) <Carbon Dioxide_2, Methane_4, Oxygen>	1	1L Summa	<input type="checkbox"/>	6/26/2014 10:55	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1406A93-003A	SG-3	Soil Gas	VOCs and TPHgas by TO15 for Soil Vapor ASTM D1946-90 (Light Gases) <Carbon Dioxide_2, Methane_4, Oxygen>	1	1L Summa	<input type="checkbox"/>	6/26/2014 11:59	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1406A93-004A	SG-4	Soil Gas	VOCs and TPHgas by TO15 for Soil Vapor ASTM D1946-90 (Light Gases) <Carbon Dioxide_2, Methane_4, Oxygen>	1	1L Summa	<input type="checkbox"/>	6/26/2014 13:17	5 days		<input type="checkbox"/>	
						<input type="checkbox"/>		5 days		<input type="checkbox"/>	
1406A93-005A	SG-5	Soil Gas	VOCs and TPHgas by TO15 for Soil Vapor ASTM D1946-90 (Light Gases) <Carbon Dioxide_2, Methane_4, Oxygen>	1	1L Summa	<input type="checkbox"/>	6/26/2014 13:44	5 days		<input type="checkbox"/>	
						<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



WORK ORDER SUMMARY

Client Name: ENGEO INCORPORATED

QC Level: LEVEL 2

Work Order: 1406A93

Project: #7828.000.001; Jordan Ranch

Client Contact: Morgan Johnson

Date Received: 6/30/2014

Comments:

Contact's Email: mjohnson@engeo.com

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
1406A93-006A	SG-6	Soil Gas	VOCs and TPHgas by TO15 for Soil Vapor	1	1L Summa	<input type="checkbox"/>	6/26/2014 15:05	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.mcccampbell.com / main@mcccampbell.com
Telephone: (877) 252-9262 / Fax: (925) 252-9269

1406A93

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 # Standard

Report To: Morgan Johnson Bill To:
Company: ENGEO
E-Mail: mjohnson@engco.com
Tele: () Fax: ()
Project #: 7828.000.001 Project Name: Jordan Ranch
Project Location: Fallon Rd., Dublin, CA
Sampler Signature: [Signature]

Analysis Requested

Helium Shroud SN#

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#
	Date	Time		
SG-1	6/26	9:27am	7520-868	
SG-2		10:55am	6201-742	
SG-3		11:59am	7527-875	
SG-4		1:17pm	5809-740	
SG-5 ⁺		1:44pm	6420-851	
SG-6		3:05pm	7530-878	

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, Ncflorane, 1,1-difluoroethane) ug/m3	APH: Aliphatic and/or Aromatic (please circle) ug/m3	Other:
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Matrix		Cannister Pressure/ Vacuum	
Soilgas	Indoor Air	Initial	Final
		-30	-6
		-29	-5
		-30	-6
		-30	-5
		-29	-5
		-30	-5

Relinquished By: Matthew Miller Date: 6/26 Time: 4:41pm Received By: [Signature]
 Relinquished By: [Signature] Date: 6/27 Time: 3:50 Received By: [Signature]

Temp (°C): _____ Work Order #: _____
 Condition: _____
 Custody Seals Intact?: Yes _____ No _____ None _____
 Shipped Via: _____

Rec. @ MAT 200 6/27/14
170
710



Sample Receipt Checklist

Client Name: **ENGEO Incorporated** Date and Time Received: **6/30/2014 10:57:30 AM**
 Project Name: **#7828.000.001; Jordan Ranch** Login Reviewed by: **Jena Alfaro**
 WorkOrder No: **1406A93** Matrix: Soil Gas Carrier: Benjamin Yslas (MAI Courier)

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
 pH acceptable upon receipt (Metal: pH<2; 522: pH<4)? Yes No NA
 Samples Received on Ice? Yes No

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

 Comments:

Perjury Statement

7828.000.001
August 18, 2014

August 19, 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