## **RECEIVED**

8:48 am, Aug 27, 2012

Alameda County Environmental Health

THIRD QUARTER 2012
GROUNDWATER MONITORING REPORT
JORDAN RANCH – PARCEL H
DUBLIN, CALIFORNIA



Submitted to:
Dilan Roe
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

Prepared by: ENGEO Incorporated

Project No. 7828.000.001

August 22, 2012

Copyright © 2012 By ENGEO Incorporated. This Document May Not Be Reproduced In Whole Or In Part By Any Means Whatsoever, Nor May It Be Quoted Or Excerpted Without The Express Written Consent Of ENGEO Incorporated



Project No. **7828.000.001** 

August 22, 2012

Dilan Roe Alameda County Environmental Health 1131 Harbor Bay Parkway Alameda, CA 94502-6577

Subject: Jordan Ranch Parcel H – Former Leaking Underground Storage Tank

Dublin, California

ACEH Case No. R00002918

### THIRD QUARTER 2012 GROUNDWATER MONITORING REPORT

Dear Ms. Roe:

This letter summarizes the results of the July 2012 groundwater monitoring event completed for the Jordan Ranch – Parcel H (Site) located in Dublin, California. This is the third monitoring event following completion of the soil and groundwater remediation activities performed in fall 2011. The Site is located at the east side of the intersection of Central Parkway and Fallon Road. A Vicinity Map is attached as Figure 1.

#### **GROUNDWATER MONITORING**

#### **Groundwater Elevations**

ENGEO measured and recorded groundwater depths from the top of well casings (TOC) for wells MW-1, MW-2, MW-4, and MW-5 on April 30, 2012. The monitoring well locations are shown on Figure 2.

The depths to groundwater at the Site ranged from 10.58 feet below the TOC in MW-1 to 12.60 feet below the TOC in MW-2. During this sampling event, the direction of groundwater flow appeared to be towards the south at a gradient of approximately 0.028 feet per foot (ft/ft). Groundwater elevation contours for this event are depicted on Figure 2. The cumulative groundwater elevation data from this event is summarized in Table 1 (attached).

### **Well Sampling**

After recording groundwater depth measurements, we collected groundwater samples from wells MW-1, MW-2, MW-4, and MW-5. Well sampling logs are attached.

ENGEO conducted the following activities during sampling:

- Recorded in-situ dissolved oxygen (DO) and oxidation reduction potential (ORP) prior to purging.
- Purged three well casing volumes from wells MW-1, MW-2, MW-4, and MW-5 using a submersible pump.
- Monitored and recorded pH, temperature, and conductivity measurements during purging.
- Contained the purge water in labeled 55-gallon drum.
- Obtained groundwater samples using new disposable bailers.
- Transferred the groundwater to laboratory provided pre-preserved sample containers, which
  were labeled to include sample identification, date, and time of collection and requested
  analyses.
- Stored the groundwater samples on ice during transportation to a State certified laboratory using a chain-of custody record.
- Submitted the samples for the analysis of total petroleum hydrocarbon as gasoline (TPHg), BTEX, and MTBE by EPA Test Method 8260B, and diesel (TPHd) by EPA Test Method 8015B.

#### **Groundwater Analytical Results**

Concentrations of petroleum hydrocarbons detected during the Third Quarter 2012 monitoring event are tabulated below:

Well Location	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- Benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
MW-1	< 50	< 50	< 0.5	< 0.5	< 0.5	<1	< 0.5
MW-2	1,200	15,000	73	71	980	1,900	260
MW-4	<50	<50	< 0.5	< 0.5	< 0.5	<1	14
MW-5	2,200	45,000	940	2,300	3,300	14,000	290

In-situ DO measurements for MW-2, MW-3, and MW-5 ranged from 0.28 to 0.44 mg/l; and ORP readings ranged from -107.1 to 25 mV; which are indicative of anaerobic conditions. MW-1 exhibited an in-situ DO reading of 3.2 mg/l and an ORP reading of 29.2 mV, which is indicative of a more aerobic condition. Additional DO and ORP monitoring should be conducted to determine whether the groundwater beneath the site is primarily aerobic or anaerobic.

Cumulative groundwater monitoring well data is summarized in Table 2, attached. A copy of the groundwater laboratory report and chain-of-custody record are attached.

#### **FINDINGS**

A comparison of pre- and post-remediation groundwater data is provided in the table below. The data depicts notable decreases in benzene concentrations in MW-2 and MW-5, a notable decrease in the TPHg concentration in MW-5, and a notable decrease in the MTBE concentration in MW-4. Significant increases in MTBE concentrations were observed in MW-2 and MW-5. The post-remediation concentration of TPHg in MW-2 remains unchanged from the pre-remediation concentration.

Well	Aug	gust 2010 (I	Pre)	Ju	ly 2012 (Po	ost)	Percent Increase/Decrease			
Location	TPHg	Benzene	MTBE	TPHg Benzene MTBE			TPHg	Benzene	MTBE	
MW-1	< 50	< 0.5	< 0.5	< 50	< 0.5	< 0.5	0%	0%	0%	
MW-2	15,000	780	170	15,000	73	260	0%	-91%	+35%	
MW-4	< 50	< 0.5	80	< 50	< 0.5	14	0%	0%	-83%	
MW-5	74,000	7,500	100	45,000	940	290	-39%	-87%	+190%	

As of July 2012, the detected concentrations in MW-2 and MW-5 have increased from the previous sampling event conducted in April 2012. Based on the groundwater analytical data, it appears that additional remediation will be necessary to achieve the water quality objectives.

#### **FUTURE WORK**

We submitted a workplan for additional soil assessment to ACEH on August 7, 2012. The purpose of the workplan is to evaluate remaining impacts in the saturated zone, adjacent to the sidewalls of the previous remedial excavation. Removal of the remaining soil impacts will likely be necessary in order to achieve the water quality objectives.

#### **LIMITATIONS**

At the time we performed our professional services, they were consistent with those generally accepted environmental engineering principles and practices currently employed in Northern California. ENGEO does not express or imply any other warranty. Findings in this report are valid as of the day of monitoring. However, changes in groundwater conditions can occur with the passage of time, whether due to natural processes or human activity on the Site or on surrounding properties. ENGEO prepared this report for the exclusive use of our client. This report is applicable only for the subject property. We are not responsible for others' interpretations of this report's data. This report does not represent a legal opinion.

7828.000.001 August 22, 2012 Page 4

If you have any questions or comments regarding this report, please call and we will be glad to discuss them with you.

Sincerely,

**ENGEO** Incorporated

Morgan Johnson

**Environmental Scientist** 

Shawn Munger, CHG

Principal

Attachments: Figure 1 – Vicinity Map

Figure 2 – Groundwater Elevation Contour Map - July 2012

Figure 3 – Concentrations of Petroleum Hydrocarbons in Groundwater - July 2012

Table 1 – Groundwater Elevations

Table 2 – Groundwater Analytical Data

Monitoring Well Sampling Logs

Groundwater Laboratory Analytical Report and Chain-of-Custody Record

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



### **FIGURES**

Figure 1 – Vicinity Map

Figure 2 – Groundwater Elevation Contour Map

Figure 3 – Concentrations of Petroleum Hydrocarbons in Groundwater







BASE MAP SOURCE: GOOGLE EARTH



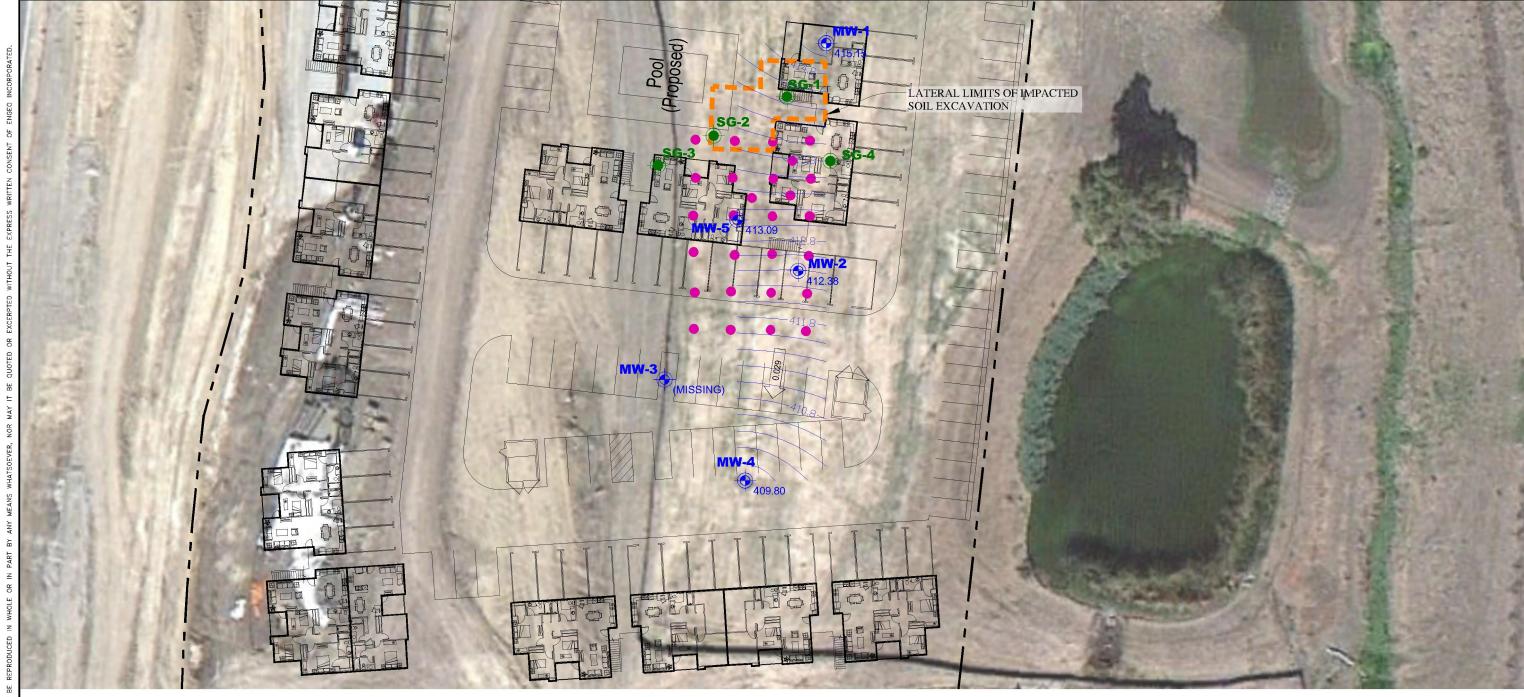
COPYRIGHT

VICINITY MAP JORDAN RANCH - PARCEL H DUBLIN, CALIFORNIA

DATE: AS SHOWN DRAWN BY: SRP CHECKED BY: SM

PROJECT NO.: 7828.000.001

FIGURE NO



## **EXPLANATION**



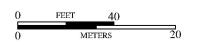
APPROXIMATE LOCATION OF MONITORING WELIL

APPROXIMATE LOCATION OF SOIL GAS WELL

APPROXIMATE LOCATION OF PREVIOUS INJECTION POINT

0.029 GROUNDWATER FLOW DIRECTION





BASE MAP SOURCE: GOOGLE EARTH, ST. ANTON



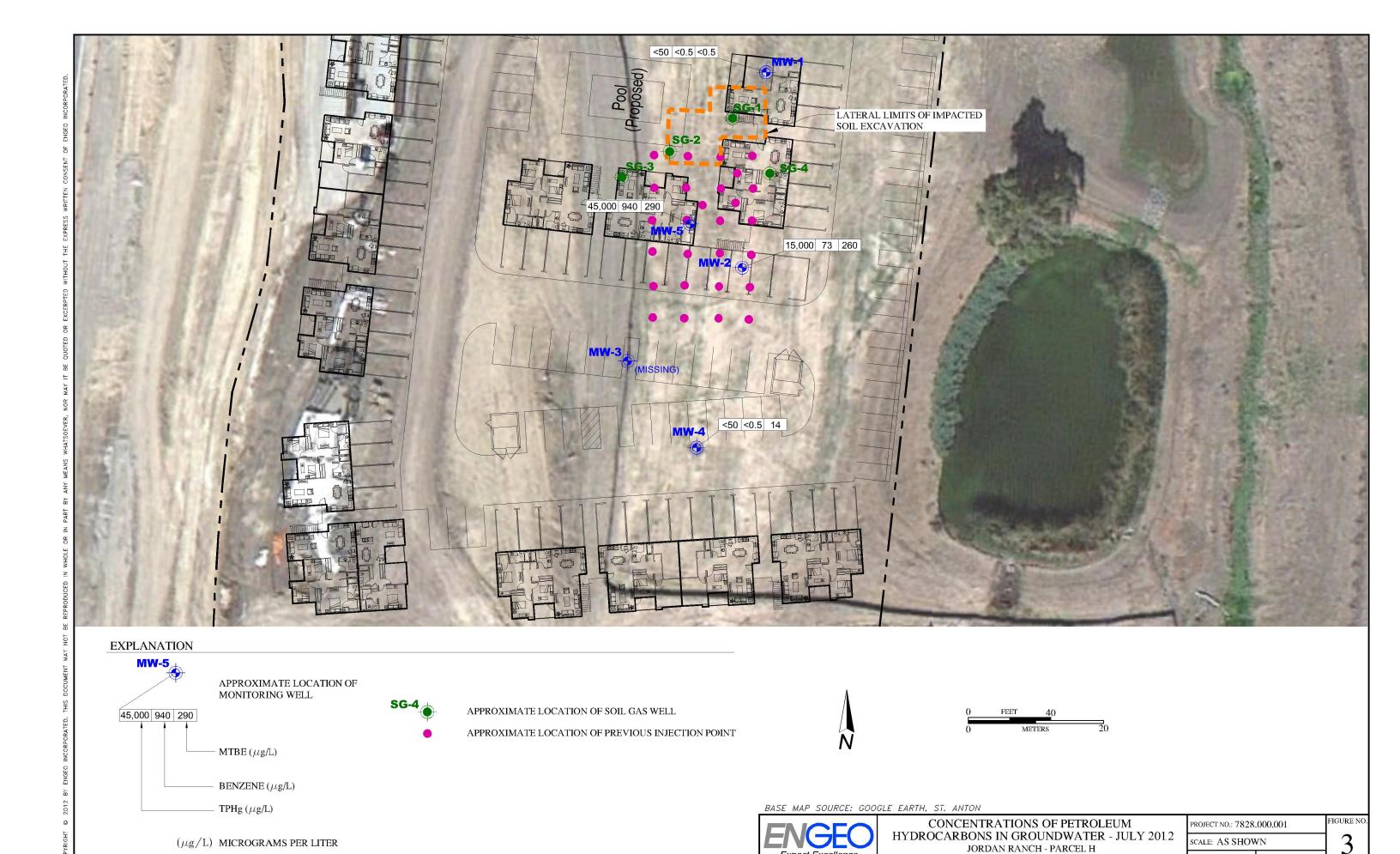
GROUNDWATER ELEVATION COUNTOUR MAP - JULY 2012 PROJECT NO.: 7828.000.001 JORDAN RANCH - PARCEL H DUBLIN, CALIFORNIA

SCALE: AS SHOWN

DRAWN BY: DLB CHECKED BY: SM

 $\hbox{G:\proofting\prooftin$ 

FIGURE NO



 $\hbox{G:\proofting\prooftin$ 

RIGINAL FIGURE PRINTED IN COLOR

DRAWN BY: DLB CHECKED BY: SM

DUBLIN, CALIFORNIA



## **TABLES**

Table 1 – Groundwater Elevations Table 2 – Groundwater Analytical Data

## Table 1 Groundwater Elevations Jordan Ranch Dublin, California

		Depth to	Top of Casing	Groundwater
Well Number	Date	Groundwater (1) (feet bgs)	Elevation (2) (feet)	Elevation (feet msl)
	12/6/2005	17.08	425.73	408.65
	7/26/2006	13.92	425.73	411.81
	4/10/2008	11.64	425.73	414.09
MW-1	8/24/2010	11.75	425.73	413.98
	1/10/2012	10.52	425.73	415.21
	4/30/2012	10.40	425.73	415.33
	7/26/2012	10.58	425.73	415.15
	12/6/2005	18.01	424.98	406.97
	7/26/2006	15.44	424.98	409.54
	4/10/2008	14.02	424.98	410.96
MW-2	8/24/2010	14.17	424.98	410.81
	1/10/2012	12.83	424.98	412.15
	4/30/2012	12.20	424.98	412.78
	7/26/2012	12.60	424.98	412.38
	12/6/2005	17.35	421.47	404.12
	7/26/2006	14.20	421.47	407.27
MW-3	4/10/2008	12.31	421.47	409.16
	8/24/2010	12.29	421.47	409.18
	1/10/2012	Inadverta	ntly Covered by Grading	Operations
	12/6/2005	18.58	421.60	403.02
	7/26/2006	15.75	421.60	405.85
	4/10/2008	13.89	421.60	407.71
MW-4	8/24/2010	13.88	421.60	407.72
	1/10/2012		Obstruction in Casing	•
	4/30/2012	11.52	421.60	410.08
	7/26/2012	11.80	421.60	409.80
	12/6/2005	16.40	424.04	407.64
	7/26/2006	13.89	424.04	410.15
	4/10/2008	12.24	424.04	411.80
MW-5	8/24/2010	12.20	424.04	411.84
	1/10/2012	11.11	424.04	412.93
	4/30/2012	10.50	424.04	413.54
	7/26/2012	10.85	424.04	413.19

## NOTES:

bgs = Below ground surface msl = Mean sea level



<sup>(1)</sup> Depth to groundwater measured from top of well casing.

<sup>(2)</sup> Well casing elevations surveyed by Quite River Services, Inc. January 16, 2007.

<sup>\*</sup> Depth to water measurement collected by ENGEO

# TABLE 2 Cumulative Monitoring Well Analytical Data Jordan Ranch Monitoring Wells

Well ID	Date	TPHd (ug/L)	TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl- Benzene (ug/L)	Total Xylenes (ug/L)	MTBE (ug/L)
	12/6/2005	NA	64	2	< 0.5	< 0.5	< 0.5	< 0.5
	7/26/2006	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
	4/10/2008	NA	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 50
MW-1	8/24/2010	<50	<50	< 0.5	< 0.5	< 0.5	<1.0	< 0.5
	1/10/2012	<50	<50	<1	1.1	1.1	2.4	<4
	4/30/2012	<50	<50	< 0.5	< 0.5	< 0.5	<1	< 0.5
	7/26/2012	<50	<50	< 0.5	< 0.5	< 0.5	<1	< 0.5
	12/6/2005	NA	3,400	470	<25	55	120	800
	7/26/2006	150	650	130	< 0.5	< 0.5	< 0.5	510
	4/10/2008	NA	8,700	1,600	350	370	790	810
MW-2	8/24/2010	<50	15,000	780	93	1,200	2,600	170
	1/10/2012	1,100	4,200	32	10	210	337	<4
	4/30/2012	620	4,100	14	10	340	660	21
	7/26/2012	1,200	15,000	73	71	980	1,900	260
	12/6/2005	NA	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	7/26/2006	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
MW-3	4/10/2008	NA	430	45	34	22	90	< 0.5
	8/24/2010	<50	<50	< 0.5	< 0.5	< 0.5	<1.0	< 0.5
	1/10/2012			Well inadvertar	ntly covered by gr	rading operation	ıs	
	12/6/2005	NA	70	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
	7/26/2006	<50	<50	< 0.5	< 0.5	< 0.5	< 0.5	<5
	4/10/2008	NA	830	29	19	16	54	1,200
MW-4	8/24/2010	<50	<50	< 0.5	< 0.5	< 0.5	<1.0	80
	1/10/2012			Obs	truction in well c	asing		
	4/30/2012	<50	<50	< 0.5	< 0.5	< 0.5	<1.0	14
	7/26/2012	<50	<50	< 0.5	< 0.5	< 0.5	<1.0	14
	12/6/2005	NA	53,000	13,000	1,300	930	4,400	7,000
	7/26/2006	560	15,000	4,100	580	200	870	2,200
	4/10/2008	NA	66,000	24,000	7,600	2,200	9,200	<130
MW-5	8/24/2010	<50	74,000	7,500	11,000	2,700	13,000	100
	1/10/2012	2,100	60,000	1,600	3,700	1,800	5,400	<4
	4/30/2012	2,600	37,000	880	2,500	3,200	15,000	140
	7/26/2012	2,200	45,000	940	2,300	3,300	14,000	290
Clear	nup Goal	$210^{1}$	$100^{2}$	$1^2$	150 <sup>2</sup>	$300^{2}$	1,750 <sup>2</sup>	13 <sup>3</sup>

#### NOTES:

TPHg = Total petroleum hydrocarbons as gasoline

TPHd = Total petroleum hydrocarbons as diesel

MTBE = Methyl tert-butyl ether

(ug/L) = micrograms per liter or parts per billion

<sup>1</sup>Regional Water Quality Control Board R2 Environmental Screening Level for Drinking Water Table F-3

<sup>2</sup>Cleanup goal approved in Corrective Action Plan

<sup>3</sup>California Department of Public Health Maximum Contaminant Level





**Monitoring Well Sampling Logs** 



							TNCORF	ORATED
Project:	Jordan Ranc					_		
Project No.	7828.000.00	1				W	ll ID	N/XX/ 1
Location:	Dublin, CA	6 G A 11				_ we	עווו	MW-1
Technician:	MJ.	RP, AU						
Activity:		Quarterly San	npling		llw-w	Develop/Sam	ple	
WELL SE	CURITY						Date	7/26/12
Well Box Set	t in Concrete?			Yes			Comment	ts
		Bolts and Gask		Yes				
		n Well Seal and		THE WAR	No	No lock		
WELL CO	DNSTRUCT	TION AND	WATER ]	LEVEL DE	ETAILS		Date	7/26/12
Well Type		Monitoring		Extraction \	Well with P	ump	Other	
Well Diamete	er (in)	2		Free	Product M	leasurement		
BOC (fbtoc)		29.4 🔾	(Ente	r measuremen	ts for wells	with free produ	ct history)	1
DTW = Dept	h to Water	10.58	_	"0.0" if no me		7		WCV Factors
WC (f)		18.80		DTFP (fbtoo	c)			2" = 0.17
WCV (gal)		3.2	1	DTW (fbtoo		_		4" = 0.66
3 X WCV (P	urge Vol)	9.6		FPT (f	1	_		6" = 1.50
<b>PURGING</b>	, SAMPLII	NG AND DE	CON EQ	UIPMENT			Date	7/26/12
Purging:		Disposable		12-V		Subm.	Comments	10012
		Bailer		Pump		Pump		
Sampling:	.5	Disposable		12-V		Subm.		Other
	<u>IX</u>	Bailer		Pump		Pump	$\Box$	
Decon:	Was purge pu	ımp decontamir	nated before	The second secon	use?	Yes	No	
	Decon Produ	et:	TSP/Alcon	ox	Decon Ri		110	
PURGE W	ATER STO	PRAGE/DIS	POSAL (	For Last W	ell Samp	oled Only)	Date	
Drums Onsite		2	Drums All	100	Yes		The state of the s	
Drums Used T	his Event	< 1/2	Drums Leal	king?	No			Gallons
Total Drums C	Onsite Now	3		r Processed T		VTS?		No
PHYSICAL	L PARAMI	ETERS					Date	1/26/15
Time	Volume	Temp	pН	EC	DO	Salinity (%)	Turbidity	Other
	Purged (gal)	(C degrees)		(mS/cm)	mall	(,0)	(NTU)	ORP
8:50	0	17.67	7.17	969	3,2		(1.10)	29.5
	5	17,94	7,30	1131				1
	Ö	17.91	7,92	1047				1
	9	17.70	7,00	949				
Sample	collected thro	ugh groundwate	er treatment	system using a	ctive extra	ction pump; no p	ourging require	ed.
LABORATOI	RY ANALYS	IS						
Number/Type (	Containers		3	VOA's	2	1-liter Ambers	0	500ml Plastic
reservative:			HC1					1 1115110
analysis:		3	TPH-g; VO	Cs, TPH-d, w	silica gel c	elean up		e ' ge
aboratory/TA	T:		Test Americ			F		- 1
TW = Depth to W	Vater			fbtoc = feet below	w top of casin	g		
OC = Bottom of	Well Casing		The same	WC = Water Col		e N		
TFP = Depth to F	Free Product					ne (gallons) = WC X	WCV Factor	

FPT = Free Product Thickness



Project:	Jordan Ranch	ı						1				
Project No.	7828.000.00	1				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	I ID	MANY 2				
Location:	Dublin, CA		0350-			] we	l ID	MW-2				
Technician:	MOIRF	AU										
Activity:		Quarterly Sam	pling			Develop/Samp	ole					
WELL SE	CURITY						Date	7/26/17				
Well Box Set	in Concrete?			(Yes)	X´		Comments					
Box Cover Ed	quipped With I	Bolts and Gaske	et?	Yes	/							
Well Casing I	Equipped With	Well Seal and	Lock?	Tes	) No	No lock						
WELL CO	<b>NSTRUCT</b>	TION AND V	WATER L	EVEL DE	ΓAILS		Date	7/26/12				
Well Type	X	Monitoring		Extraction W	ell with P	ımp [	Other	,				
Well Diamete	er (in)	2		Free P	roduct M	easurement						
BOC (fbtoc)		29.6 0	(Enter	measurements	for wells	with free produc	et history)					
DTW = Deptl	n to Water	12.60	Enter '	"0.0" if no mea	asurable fr	ee product 🔸		WCV Factors				
WC (f)		17,00		DTFP (fbtoc)		_		2" = 0.17				
WCV (gal)		2.89		DTW (fbtoc)		_		4" = 0.66				
3 X WCV (P	urge Vol)	8.67		FPT (ft)				6" = 1.50				
<b>PURGING</b>	, SAMPLII	NG AND DE	CON EQ	UIPMENT			Date	7/26/12				
Purging:		Disposable	Į.	12-V		Subm.	Comments					
		Bailer	بل	Pump		Pump						
Sampling:	V	Disposable	Г	12-V		Subm.		Other				
	<u>/_</u>	Bailer	0.	Pump		Pump						
Decon:	Was purge pu	ımp decontamin	ated before	and after this u	se?	Yes	☐ No					
	Decon Produ		TSP/Alcono		Decon Ri							
<b>PURGE W</b>	ATER STO	DRAGE/DIS	POSAL (1	For Last W	ell Samp	oled Only)	Date					
Drums Onsite	Arrival	2	Drums All I	Labeled?	Yes							
Drums Used T	This Event	< 1/2	Drums Leak	xing?	No			Gallons				
Total Drums (	Onsite Now	3	Purge Water	r Processed Th	rough GV	TS?		No				
PHYSICA:	L PARAMI	ETERS					Date	7/26/12				
Time	Volume	Temp	pН	EC	DO	Salinity (%)	Turbidity					
	Purged (gal)	(C degrees)		(mS/cm)			(NTU)	ORP				
9213	<b>O</b>	13,23	7,12	1199	0:41			TO7.1				
11:07	3	18.87	7,40	1178								
	5	1936	7.37	1047								
11:14	8	16,15	7.43	1154								
				,								
	L											
No. of Concession, Name of Street, or other Designation, Name of Street, or other Designation, Name of Street,	The second secon		er treatment	system using a	ctive extra	ction pump; no	purging require	ed.				
LABORATO	AND DESCRIPTION OF THE PERSON	SIS										
Number/Type	Containers		3	VOA's	2	1-liter Ambers	0	500ml Plastic				
Preservative:			HC1									
Analysis:			•	g; VOCs, TPH-d, w/silica gel clean up								
Laboratory/TA			Test Americ	COLUMN WESTERN WITH								
DTW = Depth to				fbtoc = feet below		ng						
BOC = Bottom of	Well Casing			WC = Water Col	umn Height							

DTFP = Depth to Free Product FPT = Free Product Thickness WCV = Water Column Volume (gallons) = WC X WCV Factor



							THOOKI	OK	AILU		
Project:	Jordan Ranc	h						T			
Project No.	7828.000.00	1				] w	11 115	n	ATXX7 4		
Location:	Dublin, CA					7 we	ll ID	I.	MW-4		
Technician:						1		l l			
Activity:		Quarterly Sam	pling			Develop/Sam	ple				
WELL SE	CURITY						Date	7/	26/12		
Well Box Set	in Concrete?			Yes		T	Comments				
Box Cover E	quipped With	Bolts and Gaske	et?	Yes							
		Well Seal and		· Ve	No	No lock					
WELL CO	NSTRUCT	TION AND	WATER I	EVÉL DE	ΓAILS		Date	71	26/12		
Well Type	X	Monitoring		Extraction W	ell with Pu	ımp [	Other	1			
Well Diamete	er (in)	2		Free P	roduct Me	easurement					
BOC (fbtoc)		28.1 💍	(Enter	measurements	s for wells	with free produ	ct history)	1			
DTW = Deptl	n to Water	11.80	Enter	"0.0" if no mea	asurable fro	ee product 🔸		W	CV Factors		
WC (f)		1630	1	DTFP (fbtoc)	1			2" =	0.17		
WCV (gal)		2.7	1	DTW (fbtoc)		<b>-</b> .:		4" =	0.66		
3 X WCV (P	urge Vol)	8.3	1	FPT (ft)		-		6" =	1.50		
<b>PURGING</b>	, SAMPLII	NG AND DE	CON EQ	UIPMENT			Date	7	26/12		
Purging:		Disposable	F	12-V		Subm.	Comments				
	_	Bailer	ļ	Pump		Pump					
Sampling:		Disposable	Г	7 12-V		Subm.	•	Othe	er		
		Bailer	L	Pump		$\square_{\text{Pump}}$					
Decon:	Was purge pu	ımp decontamir	ated before	and after this u	ise?	Yes	☐ No				
	Decon Produc	MINISTER OF THE PERSON NAMED IN COLUMN 1	TSP/Alcono		Decon Ri						
PURGE W	ATER STO	DRAGE/DIS	POSAL (	For Last W	ell Samp	led Only)	Date				
Drums Onsite	Arrival		Drums All I	Labeled?	Yes						
Drums Used T	This Event		Drums Leak	ting?	No				Gallons		
Total Drums (	Onsite Now		Purge Wate	r Processed Th	rough GW	TS?		No			
PHYSICAL	L PARAMI	ETERS					Date	7/	26/12		
Time	Volume	Temp	pН	EC	DO	Salinity (%)	Turbidity		Other		
	Purged (gal)	(C degrees)		(mS/cm)		/	(NTU)		ORP		
9:07AM	٥	17.57	6.98	1190	0.44				25.0		
	3	18.80	7.60	1409							
	5	18.51	7.50	1210							
	8	18.20	7.44	1175							
Sample	collected thro	ugh groundwate	er treatment s	system using a	ctive extra	ction pump; no	purging require	d.			
LABORATO	RY ANALYS	IS		76 - 213 mag							
Number/Type	Containers		3	VOA's	2	1-liter Ambers	0	500n	nl Plastic		
Preservative:			HCl								
Analysis:			TPH-g; VOCs, TPH-d, w/silica gel clean up								
Laboratory/TA			Test Americ	a/ 5-day							
OTW = Depth to V	Water		1905	fbtoc = feet below	v top of casin	g					
ROC = Rottom of	Well Casing			WC - Water Col	ımn Uaiakt						

BOC = Bottom of Well Casing

WC = Water Column Height

DTFP = Depth to Free Product

WCV = Water Column Volume (gallons) = WC X WCV Factor

FPT = Free Product Thickness



Desirate	Indan Danal					1		T			
Project:	Jordan Ranch					-		1			
Project No.	7828.000.00	I				We	ll ID	N	<b>1W-5</b>		
Location:	Dublin, CA					4 '' "		^'	111		
Technician:		10 10	1.			12 1 /6	1				
Activity:		Quarterly Sam	pling			Develop/Samp	The second second	_	, ,		
WELL SE							Date	7	126/12		
Well Box Set	in Concrete?			Yes			Comments				
		Bolts and Gaske		Yes							
	The second second	Well Seal and	The second secon	(Yes)	No	No lock	<u> </u>				
	NSTRUCT	TION AND V	WATER L	EVEL DE	<b>TAILS</b>		Date	71	26/1		
Well Type		Monitoring		Extraction W	ell with Pu	ımp [	Other		ρ .ος		
Well Diamete	r (in)	2		Free P	roduct M	easurement	"				
BOC (fbtoc)		29,45	(Enter	measurements	s for wells	with free produ	ct history)				
DTW = Deptl	to Water	10.85	Enter	"0.0" if no mea	asurable fr	ee product 🔸		WC	CV Factors		
WC (f)		18.60		DTFP (fbtoc)				2" =	0.17		
WCV (gal)		3.2	1	DTW (fbtoc)		_		4" =	0.66		
3 X WCV (Pt	ırge Vol)	9,6		FPT (ft)				6" =	1.50		
<b>PURGING</b>	, SAMPLII	NG AND DE	CON EQ	UIPMENT	25.77		Date	71	26/12		
Purging:		Disposable	ŕ	12-V		Subm.	Comments				
	L	Bailer	ل	Pump		Pump					
Sampling:	7	Disposable		12-V		Subm.		Othe	r		
330 4501		Bailer	L	Pump		$\square_{\text{Pump}}$					
Decon:	Was purge pu	mp decontamin	ated before a	and after this u	ise?	Yes	☐ No				
	Decon Produc	The second secon	TSP/Alcono	THE RESIDENCE OF THE PARTY OF T	Decon Ri	200					
PURGE W	ATER STO	PRAGE/DIS	POSAL (1	For Last W	ell Samp	oled Only)	Date				
Drums Onsite	Arrival		Drums All I	Labeled?	Yes			10.5			
Drums Used T	his Event		Drums Leak	ring?	No			Gallons			
Total Drums (	Onsite Now		Purge Water	r Processed Th	rough GW	TS?		No			
PHYSICAL	L PARAMI	ETERS					Date	71	26/12		
Time	Volume	Temp	pН	EC	DO	Salinity (%)	Turbidity	-	Other		
	Purged (gal)	(C degrees)	1505	(mS/cm)			(NTU)		ORP		
9:25 am	0	1855	6.95	1074	.28				-47.7		
11:30	'5	19.78	7,78	1220							
	5	19.45	7.43	1106							
	9	19.17	7.15	1091							
The state of the s		THE STATE OF THE S	er treatment s	system using a	ctive extra	ction pump; no	purging require	d.			
LABORATO	RY ANALYS	IS									
Number/Type	Containers		3	VOA's	2	1-liter Ambers	0	500m	l Plastic		
Preservative:			HCl								
Analysis:			TPH-g; VO	Cs, TPH-d, w/	silica gel c	lean up					
Laboratory/TA			Test Americ	a/ 5-day							
OTW = Depth to V	Vater			fbtoc = feet below	v top of casin	g		Seed on the			

DTW = Depth to Water fbtoc = feet below top of casing

BOC = Bottom of Well Casing WC = Water Column Height

DTFP = Depth to Free Product WCV = Water Column Volume (gallons) = WC X WCV Factor

FPT = Free Product Thickness



Groundwater Laboratory Analytical Report and Chain-of-Custody Record



THE LEADER IN ENVIRONMENTAL TESTING

## **ANALYTICAL REPORT**

TestAmerica Laboratories, Inc.

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

TestAmerica Job ID: 720-43550-1 Client Project/Site: Jordan Ranch

#### For:

Engeo, Inc. 2213 Plaza Drive Rocklin, California 95765

Attn: Ms. Morgan Johnson



Authorized for release by: 7/31/2012 4:11:52 PM

Afsaneh Salimpour Project Manager I

afsaneh.salimpour@testamericainc.com

·····LINKS ······

Review your project results through

Total Access

**Have a Question?** 



Visit us at: www.testamericainc.com

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

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

Client: Engeo, Inc. Project/Site: Jordan Ranch TestAmerica Job ID: 720-43550-1

## **Table of Contents**

Cover Page	1
Table of Contents	2
Definitions/Glossary	3
Case Narrative	4
Detection Summary	5
Client Sample Results	6
QC Sample Results	9
QC Association Summary	16
Lab Chronicle	18
Certification Summary	19
Method Summary	20
Sample Summary	21
Chain of Custody	22
Receipt Chacklists	23

3

4

Q

9

11

12

## **Definitions/Glossary**

Client: Engeo, Inc.

Project/Site: Jordan Ranch

TestAmerica Job ID: 720-43550-1

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
<b>*</b>	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica Pleasanton 7/31/2012

#### **Case Narrative**

Client: Engeo, Inc.

Project/Site: Jordan Ranch

TestAmerica Job ID: 720-43550-1

Job ID: 720-43550-1

**Laboratory: TestAmerica Pleasanton** 

Narrative

Job Narrative 720-43550-1

#### Comments

No additional comments.

#### Receipt

The samples were received on 7/26/2012 12:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 6.6° C.

#### GC/MS VOA

Method(s) 8260B: The following sample 43550-2 submitted for volatiles analysis was received with insufficient preservation (pH >2).

No other analytical or quality issues were noted.

#### GC Semi VOA

No analytical or quality issues were noted.

#### **Organic Prep**

No analytical or quality issues were noted.

2

4

5

6

ŏ

4 4

12

13

Client: Engeo, Inc.

Project/Site: Jordan Ranch

**Client Sample ID: MW-1** Lab Sample ID: 720-43550-1

No Detections

Client Sample ID: MW-2 Lab Sample ID: 720-43550-2

Analyte	Result	Qualifier RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	260	5.0		ug/L		_	8260B/CA_LUFT	Total/NA
							MS	
Benzene	73	5.0		ug/L	10		8260B/CA_LUFT	Total/NA
							MS	
Ethylbenzene	980	25		ug/L	50		8260B/CA_LUFT	Total/NA
							MS	
Toluene	71	5.0		ug/L	10		8260B/CA_LUFT	Total/NA
							MS	
Xylenes, Total	1900	50		ug/L	50		8260B/CA_LUFT	Total/NA
							MS	
Gasoline Range Organics (GRO)	15000	2500		ug/L	50		8260B/CA_LUFT	Total/NA
-C5-C12							MS	
Diesel Range Organics [C10-C28]	1200	63		ug/L	1		8015B	Silica Gel
								Cleanup

Client Sample ID: MW-4 Lab Sample ID: 720-43550-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	14		0.50		ug/L	1		8260B/CA_LUFT	Total/NA
								MS	

Client Sample ID: MW-5 Lab Sample ID: 720-43550-4

Analyte	Result (	Qualifier RL	MDL Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	290	100	ug/L	200	_	8260B/CA_LUFT	Total/NA
Benzene	940	100	//	. 200		MS	Total/NA
benzene	940	100	ug/L	. 200		8260B/CA_LUFT MS	TOtal/INA
Ethylbenzene	3300	100	ug/L	. 200		8260B/CA_LUFT	Total/NA
Toluene	2300	100	ug/L	. 200		MS 8260B/CA LUFT	Total/NA
Toluene	2300	100	ug/L	. 200		MS	TOTALITYA
Xylenes, Total	14000	200	ug/L	200		8260B/CA_LUFT	Total/NA
						MS	
Gasoline Range Organics (GRO)	45000	10000	ug/L	. 200		8260B/CA_LUFT	Total/NA
-C5-C12						MS	
Diesel Range Organics [C10-C28]	2200	63	ug/L	. 1		8015B	Silica Gel
							Cleanup

Client: Engeo, Inc. Project/Site: Jordan Ranch

Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS

Client Sample ID: MW-1	Lab Sample ID: 720-43550-1
Date Collected: 07/26/12 09:00	Matrix: Water

Date Received: 07/26/12 12:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			07/27/12 17:49	1
Benzene	ND		0.50		ug/L			07/27/12 17:49	1
Ethylbenzene	ND		0.50		ug/L			07/27/12 17:49	1
Toluene	ND		0.50		ug/L			07/27/12 17:49	1
Xylenes, Total	ND		1.0		ug/L			07/27/12 17:49	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			07/27/12 17:49	1

%Recovery Qualifier Surrogate Limits Prepared Analyzed Dil Fac 4-Bromofluorobenzene 85 67 - 130 07/27/12 17:49 1,2-Dichloroethane-d4 (Surr) 91 75 - 138 07/27/12 17:49

95 07/27/12 17:49 Toluene-d8 (Surr) 70 - 130 Client Sample ID: MW-2 Lab Sample ID: 720-43550-2

Date Collected: 07/26/12 11:15

Date Received: 07/26/12 12:35									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	260		5.0		ug/L			07/28/12 16:54	10
Benzene	73		5.0		ug/L			07/28/12 16:54	10
Ethylbenzene	980		25		ug/L			07/31/12 00:54	50
Toluene	71		5.0		ug/L			07/28/12 16:54	10
Xylenes, Total	1900		50		ug/L			07/31/12 00:54	50
Gasoline Range Organics (GRO)	15000		2500		ug/L			07/31/12 00:54	50

-C5-C12

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	107		67 - 130		07/28/12 16:54	10
4-Bromofluorobenzene	88		67 - 130		07/31/12 00:54	50
1,2-Dichloroethane-d4 (Surr)	101		75 - 138		07/28/12 16:54	10
1,2-Dichloroethane-d4 (Surr)	87		75 - 138		07/31/12 00:54	50
Toluene-d8 (Surr)	103		70 - 130		07/28/12 16:54	10
Toluene-d8 (Surr)	98		70 - 130		07/31/12 00:54	50

Client Sample ID: MW-4 Lab Sample ID: 720-43550-3 Date Collected: 07/26/12 09:30 **Matrix: Water** 

Date Received: 07/26/12 12:35

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	14		0.50		ug/L			07/28/12 16:23	1
Benzene	ND		0.50		ug/L			07/28/12 16:23	1
Ethylbenzene	ND		0.50		ug/L			07/28/12 16:23	1
Toluene	ND		0.50		ug/L			07/28/12 16:23	1
Xylenes, Total	ND		1.0		ug/L			07/28/12 16:23	1
Gasoline Range Organics (GRO)	ND		50		ug/L			07/28/12 16:23	1

-C5-C12

١	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	4-Bromofluorobenzene	98		67 - 130	 	07/28/12 16:23	1
١	1,2-Dichloroethane-d4 (Surr)	101		75 - 138		07/28/12 16:23	1
١	Toluene-d8 (Surr)	100		70 - 130		07/28/12 16:23	1

TestAmerica Pleasanton 7/31/2012

Page 6 of 23

1

**Matrix: Water** 

## **Client Sample Results**

Client: Engeo, Inc. TestAmerica Job ID: 720-43550-1

Project/Site: Jordan Ranch

Client Sample ID: MW-5

Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS

Lab	Sample	ID:	720	-4355	U-4

Date Collected: 07/26/12 11:45	Matrix: Water
Date Received: 07/26/12 12:35	

Date Received: 07/26/12 12:35									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	290		100		ug/L			07/28/12 17:24	200
Benzene	940		100		ug/L			07/28/12 17:24	200
Ethylbenzene	3300		100		ug/L			07/31/12 01:24	200
Toluene	2300		100		ug/L			07/28/12 17:24	200
Xylenes, Total	14000		200		ug/L			07/31/12 01:24	200
Gasoline Range Organics (GRO)	45000		10000		ug/L			07/31/12 01:24	200

-C5-C12						
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	101	· -	67 - 130		07/28/12 17:24	200
4-Bromofluorobenzene	88		67 - 130		07/31/12 01:24	200
1,2-Dichloroethane-d4 (Surr)	101		75 - 138		07/28/12 17:24	200
1,2-Dichloroethane-d4 (Surr)	87		75 - 138		07/31/12 01:24	200
Toluene-d8 (Surr)	102		70 - 130		07/28/12 17:24	200
Toluene-d8 (Surr)	97		70 - 130		07/31/12 01:24	200

Client: Engeo, Inc. Project/Site: Jordan Ranch

Surrogate

p-Terphenyl

Capric Acid (Surr)

Method: 8015B - Diesel Range Organics (DRO) (GC) - Silica Gel Cleanup

%Recovery Qualifier

0.3

65

		• , ,	•		-				
Client Sample ID: MW-1							Lab S	Sample ID: 720-	43550-1
Date Collected: 07/26/12 09:00									c: Wate
Date Received: 07/26/12 12:35									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		53		ug/L		07/26/12 15:43	07/28/12 00:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr)	0.01		0 - 5				07/26/12 15:43	07/28/12 00:52	
p-Terphenyl	71		31 - 150				07/26/12 15:43	07/28/12 00:52	1
Client Sample ID: MW-2							Lab S	Sample ID: 720-	43550-2
Date Collected: 07/26/12 11:15								Matrix	c: Water
Date Received: 07/26/12 12:35									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1200		63		ug/L		07/26/12 15:43	07/28/12 01:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr)	0.2		0 - 5				07/26/12 15:43	07/28/12 01:16	1
p-Terphenyl	65		31 - 150				07/26/12 15:43	07/28/12 01:16	1
Client Sample ID: MW-4							Lab S	Sample ID: 720-	43550-3
Date Collected: 07/26/12 09:30								Matrix	c: Water
Date Received: 07/26/12 12:35									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		62		ug/L		07/26/12 15:43	07/28/12 01:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr)	0.006		0 - 5				07/26/12 15:43	07/28/12 01:40	1
p-Terphenyl	67		31 - 150				07/26/12 15:43	07/28/12 01:40	1
Client Sample ID: MW-5							Lab S	Sample ID: 720-	43550-4
Date Collected: 07/26/12 11:45								Matrix	c: Water
Date Received: 07/26/12 12:35									
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	2200		63		ug/L		07/26/12 15:43	07/28/12 02:05	

Limits

0 - 5

31 - 150

Prepared

Analyzed

Dil Fac

Client: Engeo, Inc.

Project/Site: Jordan Ranch

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-117944/4

**Matrix: Water** 

Analysis Batch: 117944

Client Sample ID: Method Blank

Prep Type: Total/NA

MR MR						
Result Qualifier	RL	MDL Unit	D	Prepared	Analyzed	Dil Fac
ND	0.50	ug/L			07/27/12 09:17	1
ND	0.50	ug/L			07/27/12 09:17	1
ND	0.50	ug/L			07/27/12 09:17	1
ND	0.50	ug/L			07/27/12 09:17	1
ND	1.0	ug/L			07/27/12 09:17	1
ND	50	ug/L			07/27/12 09:17	1
	ND ND ND ND	Result         Qualifier         RL           ND         0.50           ND         0.50           ND         0.50           ND         0.50           ND         1.00	Result         Qualifier         RL         MDL         Unit           ND         0.50         ug/L           ND         0.50         ug/L           ND         0.50         ug/L           ND         0.50         ug/L           ND         1.0         ug/L	Result         Qualifier         RL         MDL         Unit         D           ND         0.50         ug/L           ND         0.50         ug/L           ND         0.50         ug/L           ND         1.0         ug/L	Result         Qualifier         RL         MDL         Unit         D         Prepared           ND         0.50         ug/L         Ug/L <td< td=""><td>Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed           ND         0.50         ug/L         07/27/12 09:17           ND         1.0         ug/L         07/27/12 09:17</td></td<>	Result         Qualifier         RL         MDL         Unit         D         Prepared         Analyzed           ND         0.50         ug/L         07/27/12 09:17           ND         1.0         ug/L         07/27/12 09:17

MB MB

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	86		67 - 130	<del>-</del>		07/27/12 09:17	1
1,2-Dichloroethane-d4 (Surr)	84		75 - 138			07/27/12 09:17	1
Toluene-d8 (Surr)	94		70 - 130			07/27/12 09:17	1

Lab Sample ID: LCS 720-117944/5

**Matrix: Water** 

Analysis Batch: 117944

**Client Sample ID: Lab Control Sample** 

Prep Type: Total/NA

-	Spike	LCS	LCS		%Rec.	
Analyte	Added	Result	Qualifier Unit	D %Rec	Limits	
Methyl tert-butyl ether	25.0	25.0	ug/L	100	62 - 130	
Benzene	25.0	24.6	ug/L	98	79 - 130	
Ethylbenzene	25.0	22.8	ug/L	91	80 - 120	
Toluene	25.0	24.0	ug/L	96	78 - 120	
m-Xylene & p-Xylene	50.0	43.4	ug/L	87	70 - 142	
o-Xylene	25.0	23.6	ug/L	94	70 - 130	

LCS LCS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	89		67 - 130
1,2-Dichloroethane-d4 (Surr)	85		75 - 138
Toluene-d8 (Surr)	95		70 - 130

Lab Sample ID: LCS 720-117944/7

**Matrix: Water** 

Analyte

-C5-C12

Analysis Batch: 117944

Gasoline Range Organics (GRO)

Client Sample ID:	Lab Control Sample
	Prep Type: Total/NA

**Client Sample ID: Lab Control Sample Dup** 

LCS LCS Spike %Rec. Added Result Qualifier Unit %Rec Limits 500 513 ug/L 103 62 - 120

100 100

	LUS	LUS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	94		67 - 130
1,2-Dichloroethane-d4 (Surr)	85		75 - 138
Toluene-d8 (Surr)	102		70 - 130

Lab Sample ID: LCSD 720-117944/6

**Matrix: Water** 

Analysis Batch: 117944

Allalysis Datcii. 117344									
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Methyl tert-butyl ether	25.0	26.4		ug/L	 	106	62 - 130	5	20

Prep Type: Total/NA

Client: Engeo, Inc. Project/Site: Jordan Ranch

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-117944/6

**Matrix: Water** 

Analysis Batch: 117944

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Spike	LCSD	LCSD				%Rec.		RPD
Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
25.0	25.9		ug/L		104	79 - 130	5	20
25.0	23.7		ug/L		95	80 - 120	4	20
25.0	25.2		ug/L		101	78 - 120	5	20
50.0	45.2		ug/L		90	70 - 142	4	20
25.0	24.8		ug/L		99	70 - 130	5	20
	25.0 25.0 25.0 50.0	Added         Result           25.0         25.9           25.0         23.7           25.0         25.2           50.0         45.2	Added         Result         Qualifier           25.0         25.9           25.0         23.7           25.0         25.2           50.0         45.2	Added         Result         Qualifier         Unit           25.0         25.9         ug/L           25.0         23.7         ug/L           25.0         25.2         ug/L           50.0         45.2         ug/L	Added         Result         Qualifier         Unit         D           25.0         25.9         ug/L           25.0         23.7         ug/L           25.0         25.2         ug/L           50.0         45.2         ug/L	Added         Result         Qualifier         Unit         D         %Rec           25.0         25.9         ug/L         104           25.0         23.7         ug/L         95           25.0         25.2         ug/L         101           50.0         45.2         ug/L         90	25.0     25.9     ug/L     104     79 - 130       25.0     23.7     ug/L     95     80 - 120       25.0     25.2     ug/L     101     78 - 120       50.0     45.2     ug/L     90     70 - 142	Added         Result         Qualifier         Unit         D         %Rec         Limits         RPD           25.0         25.9         ug/L         104         79 - 130         5           25.0         23.7         ug/L         95         80 - 120         4           25.0         25.2         ug/L         101         78 - 120         5           50.0         45.2         ug/L         90         70 - 142         4

LCSD LCSD

мв мв

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	88		67 - 130
1,2-Dichloroethane-d4 (Surr)	84		75 - 138
Toluene-d8 (Surr)	96		70 - 130

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

**Matrix: Water** 

Analysis Batch: 117944

Lab Sample ID: LCSD 720-117944/8

	Spike	LCSD	LCSD				%Rec.		RPD	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit	
Gasoline Range Organics (GRO)	500	513		ug/L		103	62 - 120	0	20	

-C5-C12

LCSD LCSD %Recovery Qualifier Surrogate Limits 4-Bromofluorobenzene 93 67 - 130 1,2-Dichloroethane-d4 (Surr) 75 - 138 86 Toluene-d8 (Surr) 102 70 - 130

Lab Sample ID: MB 720-118038/4 Client Sample ID: Method Blank Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 118038** 

Analyte Result Qualifier RL MDL Unit D Prepared Analyzed Dil Fac Methyl tert-butyl ether ND 0.50 07/28/12 12:32 ug/L Benzene ND 0.50 07/28/12 12:32 ug/L Ethylbenzene ND 0.50 ug/L 07/28/12 12:32 Toluene ND 0.50 ug/L 07/28/12 12:32 Xylenes, Total ND 1.0 ug/L 07/28/12 12:32 ND 07/28/12 12:32 Gasoline Range Organics (GRO) 50 ug/L

MR MR

Surrogate	%Recovery	Qualifier	Limits		Prepared	Analyzed	Dil Fac	
4-Bromofluorobenzene	91		67 - 130	_		07/28/12 12:32	1	
1,2-Dichloroethane-d4 (Surr)	95		75 - 138			07/28/12 12:32	1	
Toluene-d8 (Surr)	99		70 - 130			07/28/12 12:32	1	

Lab Sample ID: LCS 720-118038/5

**Matrix: Water** 

-C5-C12

Analysis Batch: 118038

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methyl tert-butyl ether	25.0	23.2		ug/L		93	62 - 130	
Benzene	25.0	24.6		ug/L		98	79 - 130	

TestAmerica Pleasanton 7/31/2012

Prep Type: Total/NA

Client Sample ID: Lab Control Sample

Client: Engeo, Inc. Project/Site: Jordan Ranch

Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-118038/5

**Matrix: Water** 

**Analysis Batch: 118038** 

Client Sample ID: Lab Control Sample Prep Type: Total/NA

LCS LCS Spike %Rec. Analyte Added Result Qualifier %Rec Limits Unit 25.0 25.0 80 - 120 Ethylbenzene 100 ug/L Toluene 25.0 24.7 ug/L 99 78 - 120 50.0 49 4 99 70 - 142 m-Xylene & p-Xylene ug/L o-Xylene 25.0 25.0 ug/L 100 70 - 130

LCS LCS %Recovery Qualifier Limits Surrogate 4-Bromofluorobenzene 98 67 - 130 1,2-Dichloroethane-d4 (Surr) 93 75 - 138 Toluene-d8 (Surr) 102 70 - 130

Lab Sample ID: LCS 720-118038/7 Client Sample ID: Lab Control Sample

**Matrix: Water** 

Analysis Batch: 118038

Spike LCS LCS %Rec. Added Result Qualifier Analyte Unit Limits D %Rec 500 478 62 - 120 Gasoline Range Organics (GRO) ug/L -C5-C12

LCS LCS Surrogate %Recovery Qualifier Limits 67 - 130 4-Bromofluorobenzene 100 1,2-Dichloroethane-d4 (Surr) 97 75 - 138 101 70 - 130 Toluene-d8 (Surr)

Lab Sample ID: LCSD 720-118038/6

**Matrix: Water** 

Analysis Batch: 118038

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

	Spike	LCSD L	_CSD			%Rec.		RPD
Analyte	Added	Result C	Qualifier Unit	D	%Rec	Limits	RPD	Limit
Methyl tert-butyl ether	25.0	24.2	ug/L		97	62 - 130	4	20
Benzene	25.0	24.7	ug/L		99	79 - 130	0	20
Ethylbenzene	25.0	24.7	ug/L		99	80 - 120	1	20
Toluene	25.0	24.4	ug/L		98	78 - 120	1	20
m-Xylene & p-Xylene	50.0	48.7	ug/L		97	70 - 142	1	20
o-Xylene	25.0	25.0	ug/L		100	70 - 130	0	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	97		67 - 130
1,2-Dichloroethane-d4 (Surr)	95		75 - 138
Toluene-d8 (Surr)	104		70 - 130

Lab Sample ID: LCSD 720-118038/8

**Matrix: Water** 

Analysis Batch: 118038

Spike LCSD LCSD %Rec. RPD Result Qualifier babbA Limits RPD Limit Analyte Unit D %Rec 500 92 62 - 120 20 Gasoline Range Organics (GRO) 458 ug/L -C5-C12

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

Prep Type: Total/NA

TestAmerica Pleasanton 7/31/2012

Client: Engeo, Inc. Project/Site: Jordan Ranch

Project/Site: Jordan Ranch

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-118038/8

**Matrix: Water** 

Analysis Batch: 118038

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

LCSD LCSD

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	99		67 - 130
1,2-Dichloroethane-d4 (Surr)	96		75 - 138
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: 720-43550-3 MS

**Matrix: Water** 

Analysis Batch: 118038

Client Sample ID: MW-4
Prep Type: Total/NA

Sample Sample Spike MS MS %Rec. Result Qualifier Analyte Added Result Qualifier %Rec Limits Unit D Methyl tert-butyl ether 14 25.0 45.8 ug/L 126 60 - 138 ND 25.0 27.0 Benzene ug/L 108 60 - 140 Ethylbenzene ND 25.0 26.5 ug/L 106 60 - 140 Toluene ND 25.0 26.3 ug/L 105 60 - 140 ND 50.0 m-Xylene & p-Xylene 54.6 ug/L 109 60 - 140 ND 25.0 28.3 60 - 140 o-Xylene ug/L 113

MS MS

Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	101		67 - 130
1,2-Dichloroethane-d4 (Surr)	101		75 - 138
Toluene-d8 (Surr)	101		70 - 130

Lab Sample ID: 720-43550-3 MSD

**Matrix: Water** 

**Analysis Batch: 118038** 

Client Sample ID: MW-4
Prep Type: Total/NA

	Sample	Sample	Spike	MSD	MSD				%Rec.		RPD
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Methyl tert-butyl ether	14		25.0	43.9		ug/L		119	60 - 138	4	20
Benzene	ND		25.0	26.8		ug/L		107	60 - 140	1	20
Ethylbenzene	ND		25.0	26.4		ug/L		106	60 - 140	1	20
Toluene	ND		25.0	26.1		ug/L		104	60 - 140	1	20
m-Xylene & p-Xylene	ND		50.0	52.2		ug/L		104	60 - 140	4	20
o-Xylene	ND		25.0	27.1		ug/L		109	60 - 140	4	20

 Surrogate
 %Recovery
 Qualifier
 Limits

 4-Bromofluorobenzene
 103
 67 - 130

 1,2-Dichloroethane-d4 (Surr)
 98
 75 - 138

 Toluene-d8 (Surr)
 103
 70 - 130

Lab Sample ID: MB 720-118108/5

**Matrix: Water** 

Analysis Batch: 118108

Client Sample ID: Method Blank

Prep Type: Total/NA

MB MB

D 14	A

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			07/30/12 18:21	1
Benzene	ND		0.50		ug/L			07/30/12 18:21	1
Ethylbenzene	ND		0.50		ug/L			07/30/12 18:21	1
Toluene	ND		0.50		ug/L			07/30/12 18:21	1
Xylenes, Total	ND		1.0		ug/L			07/30/12 18:21	1

А

6

8

4.6

4.0

13

Client: Engeo, Inc.

Project/Site: Jordan Ranch

## Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-118108/5

**Matrix: Water** 

Analysis Batch: 118108

Gasoline Range Organics (GRO)

Client Sample ID: Method Blank
Prep Type: Total/NA

MB MB MDL Unit Result Qualifier RL D Prepared Analyzed Dil Fac 07/30/12 18:21 ND 50 ug/L

-C5-C12

Analyte

MB MB

ı							
	Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
	4-Bromofluorobenzene	87		67 - 130		07/30/12 18:21	1
١	1,2-Dichloroethane-d4 (Surr)	83		75 - 138		07/30/12 18:21	1
١	Toluene-d8 (Surr)	95		70 - 130		07/30/12 18:21	1

Lab Sample ID: LCS 720-118108/6 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

**Matrix: Water** 

**Analysis Batch: 118108** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Methyl tert-butyl ether	25.0	24.2		ug/L		97	62 - 130	
Benzene	25.0	23.6		ug/L		94	79 - 130	
Ethylbenzene	25.0	21.6		ug/L		86	80 - 120	
Toluene	25.0	22.7		ug/L		91	78 - 120	
m-Xylene & p-Xylene	50.0	41.7		ug/L		83	70 - 142	
o-Xylene	25.0	22.8		ug/L		91	70 - 130	

LCS LCS

Surrogate	%Recovery Q	ualifier	Limits
4-Bromofluorobenzene	90		67 - 130
1,2-Dichloroethane-d4 (Surr)	82		75 <sub>-</sub> 138
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: LCS 720-118108/8 **Client Sample ID: Lab Control Sample** Prep Type: Total/NA

Matrix: Water

**Analysis Batch: 118108** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Gasoline Range Organics (GRO)	 500	443		ug/L		89	62 - 120	 

-C5-C12

	LUS LU	,3	
Surrogate	%Recovery Qu	ualifier	Limits
4-Bromofluorobenzene	89		67 - 130
1,2-Dichloroethane-d4 (Surr)	84		75 - 138
Toluene-d8 (Surr)	98		70 - 130

Lab Sample ID: LCSD 720-118108/7 Client Sample ID: Lab Control Sample Dup **Matrix: Water** Prep Type: Total/NA

**Analysis Batch: 118108** 

	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Methyl tert-butyl ether	25.0	23.7		ug/L	_	95	62 - 130	2	20
Benzene	25.0	23.7		ug/L		95	79 - 130	1	20
Ethylbenzene	25.0	21.8		ug/L		87	80 - 120	1	20
Toluene	25.0	23.0		ug/L		92	78 <sub>-</sub> 120	1	20
m-Xylene & p-Xylene	50.0	41.9		ug/L		84	70 - 142	1	20
o-Xylene	25.0	23.0		ug/L		92	70 - 130	1	20

7/31/2012

Client: Engeo, Inc. Project/Site: Jordan Ranch

Method: 8260B/CA\_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-118108/7

**Matrix: Water** 

Analysis Batch: 118108

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

LCSD LCSD Surrogate %Recovery Qualifier Limits 4-Bromofluorobenzene 88 67 - 130 1,2-Dichloroethane-d4 (Surr) 80 75 - 138 Toluene-d8 (Surr) 98 70 - 130

Lab Sample ID: LCSD 720-118108/9

**Matrix: Water** 

Analysis Batch: 118108

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

	Spike	LCSD	LCSD LCSD				%Rec.	Rec. R	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline Range Organics (GRO)	500	452		ug/L	<u> </u>	90	62 - 120	2	20

-C5-C12

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	90		67 - 130
1,2-Dichloroethane-d4 (Surr)	85		75 - 138
Toluene-d8 (Surr)	99		70 - 130

Method: 8015B - Diesel Range Organics (DRO) (GC)

MB MB

Lab Sample ID: MB 720-117917/1-A

**Matrix: Water** 

Analysis Batch: 117947

Client Sample ID: Method Blank Prep Type: Silica Gel Cleanup

**Prep Batch: 117917** 

Analyte	Result	Qualifier	KL	MDL	Unit	D	Prepared	Anaiyzed	DII Fac
Diesel Range Organics [C10-C28]	ND		50		ug/L		07/26/12 15:43	07/27/12 23:14	1
	МВ	МВ							
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Capric Acid (Surr)	0.01		0 - 5				07/26/12 15:43	07/27/12 23:14	1
p-Terphenyl	79		31 - 150				07/26/12 15:43	07/27/12 23:14	1

Lab Sample ID: LCS 720-117917/2-A

**Matrix: Water** 

Analysis Batch: 117947

**Client Sample ID: Lab Control Sample** Prep Type: Silica Gel Cleanup **Prep Batch: 117917** 

	Spike	LCS	LCS				%Rec.	
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	
Diesel Range Organics	 2500	1370		ug/L	_	55	32 _ 119	

[C10-C28]

	LUS	LUS	
Surrogate	%Recovery	Qualifier	Limits
p-Terphenyl	69		31 _ 150

100 100

Lab Sample ID: LCSD 720-117917/3-A

**Matrix: Water** 

Client Sample ID: Lab Control Sample Dup Prep Type: Silica Gel Cleanup 447917

Analysis Batch: 11/94/							Prep I	o Batch: 11/91/	
	Spike	LCSD	LCSD				%Rec.		RPD
Analyte	Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Diesel Range Organics	2500	1350		ug/L	_	54	32 _ 119	2	35

[C10-C28]

## **QC Sample Results**

Client: Engeo, Inc.
Project/Site: Jordan Ranch

TestAmerica Job ID: 720-43550-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Matrix: Water

Analysis Batch: 117947

Lab Sample ID: LCSD 720-117917/3-A

LCSD LCSD

Client Sample ID: Lab Control Sample Dup Prep Type: Silica Gel Cleanup Prep Batch: 117917

4

\_

7

0

10

12

13

Client: Engeo, Inc. Project/Site: Jordan Ranch

GC/MS VOA

Analysis Batch: 117944

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Pre	p Batch
720-43550-1	MW-1	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-117944/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-117944/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-117944/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-117944/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
MB 720-117944/4	Method Blank	Total/NA	Water	8260B/CA_LUFT	
				MS	

Analysis Batch: 118038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-43550-2	MW-2	Total/NA	Water	8260B/CA_LUFT	
				MS	
720-43550-3	MW-4	Total/NA	Water	8260B/CA_LUFT	
				MS	
720-43550-3 MS	MW-4	Total/NA	Water	8260B/CA_LUFT	
				MS	
720-43550-3 MSD	MW-4	Total/NA	Water	8260B/CA_LUFT	
				MS	
720-43550-4	MW-5	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-118038/5	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-118038/7	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-118038/6	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-118038/8	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
MB 720-118038/4	Method Blank	Total/NA	Water	8260B/CA_LUFT	

Analysis Batch: 118108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method Prep Bat	tch
720-43550-2	MW-2	Total/NA	Water	8260B/CA_LUFT	_
				MS	
720-43550-4	MW-5	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-118108/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCS 720-118108/8	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-118108/7	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
LCSD 720-118108/9	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT	
				MS	
MB 720-118108/5	Method Blank	Total/NA	Water	8260B/CA_LUFT	
				MS	

GC Semi VOA

**Prep Batch: 117917** 

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-43550-1	MW-1	Silica Gel Cleanup	Water	3510C SGC	

MS

## **QC Association Summary**

Client: Engeo, Inc.

TestAmerica Job ID: 720-43550-1 Project/Site: Jordan Ranch

## GC Semi VOA (Continued)

## Prep Batch: 117917 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-43550-2	MW-2	Silica Gel Cleanup	Water	3510C SGC	
720-43550-3	MW-4	Silica Gel Cleanup	Water	3510C SGC	
720-43550-4	MW-5	Silica Gel Cleanup	Water	3510C SGC	
LCS 720-117917/2-A	Lab Control Sample	Silica Gel Cleanup	Water	3510C SGC	
LCSD 720-117917/3-A	Lab Control Sample Dup	Silica Gel Cleanup	Water	3510C SGC	
MB 720-117917/1-A	Method Blank	Silica Gel Cleanup	Water	3510C SGC	

Analysis Batch: 117947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-43550-1	MW-1	Silica Gel Cleanup	Water	8015B	117917
720-43550-2	MW-2	Silica Gel Cleanup	Water	8015B	117917
720-43550-3	MW-4	Silica Gel Cleanup	Water	8015B	117917
720-43550-4	MW-5	Silica Gel Cleanup	Water	8015B	117917
LCS 720-117917/2-A	Lab Control Sample	Silica Gel Cleanup	Water	8015B	117917
LCSD 720-117917/3-A	Lab Control Sample Dup	Silica Gel Cleanup	Water	8015B	117917
MB 720-117917/1-A	Method Blank	Silica Gel Cleanup	Water	8015B	117917

Project/Site: Jordan Ranch

Client Sample ID: MW-1

Lab Sample ID: 720-43550-1 Date Collected: 07/26/12 09:00 Date Received: 07/26/12 12:35

Matrix: Water

Batch Dilution Prepared Batch Batch Method Factor or Analyzed **Prep Type** Type Run Number Analyst Lab Total/NA Analysis 8260B/CA LUFTMS 117944 07/27/12 17:49 AC TAL SF 3510C SGC 117917 07/26/12 15:43 Silica Gel Cleanup RU TAL SF Prep 117947 07/28/12 00:52 JΖ TAL SF Silica Gel Cleanup Analysis 8015B

Lab Sample ID: 720-43550-2 Client Sample ID: MW-2 Date Collected: 07/26/12 11:15

**Matrix: Water** 

Date Received: 07/26/12 12:35

Batch Batch Dilution Batch Prepared Prep Type Method Run Factor Number or Analyzed Analyst Lab Type Total/NA 8260B/CA\_LUFTMS 118038 07/28/12 16:54 TAL SF Analysis 10 AC 8260B/CA LUFTMS 07/31/12 00:54 Total/NA Analysis 50 118108 AC TAL SF Silica Gel Cleanup Prep 3510C SGC 117917 07/26/12 15:43 RU TAL SF Silica Gel Cleanup 8015B 117947 07/28/12 01:16 JΖ TAL SF Analysis 1

Client Sample ID: MW-4 Lab Sample ID: 720-43550-3

Date Collected: 07/26/12 09:30 Matrix: Water

Date Received: 07/26/12 12:35

	Batch	Batch		Dilution	Batch	Prepared		
Prep Type	Type	Method	Run	Factor	Number	or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS			118038	07/28/12 16:23	AC	TAL SF
Silica Gel Cleanup	Prep	3510C SGC			117917	07/26/12 15:43	RU	TAL SF
Silica Gel Cleanup	Analysis	8015B		1	117947	07/28/12 01:40	JZ	TAL SF

Client Sample ID: MW-5 Lab Sample ID: 720-43550-4

Date Collected: 07/26/12 11:45 Matrix: Water Date Received: 07/26/12 12:35

Batch Batch Dilution Batch Prepared Prep Type Type Method Run Factor Number or Analyzed Analyst Lab Total/NA 8260B/CA\_LUFTMS 07/28/12 17:24 TAL SF Analysis 200 118038 AC Total/NA Analysis 8260B/CA LUFTMS 200 118108 07/31/12 01:24 AC TAL SF Silica Gel Cleanup 3510C SGC 117917 07/26/12 15:43 RU TAL SF Prep TAL SF Silica Gel Cleanup Analysis 8015B 117947 07/28/12 02:05 JΖ 1

**Laboratory References:** 

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

## **Certification Summary**

Client: Engeo, Inc.

TestAmerica Job ID: 720-43550-1

Project/Site: Jordan Ranch

### **Laboratory: TestAmerica Pleasanton**

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	<b>Expiration Date</b>
California	State Program	9	2496	01-31-14

3

4

5

6

8

TU

12

13

## **Method Summary**

Client: Engeo, Inc.

Project/Site: Jordan Ranch

TestAmerica Job ID: 720-43550-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFTM	8260B / CA LUFT MS	SW846	TAL SF
S			
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL SF

#### **Protocol References:**

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

#### Laboratory References:

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

5

6

7

0

10

## **Sample Summary**

Client: Engeo, Inc.

Project/Site: Jordan Ranch

TestAmerica Job ID: 720-43550-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-43550-1	MW-1	Water	07/26/12 09:00	07/26/12 12:35
720-43550-2	MW-2	Water	07/26/12 11:15	07/26/12 12:35
720-43550-3	MW-4	Water	07/26/12 09:30	07/26/12 12:35
720-43550-4	MW-5	Water	07/26/12 11:45	07/26/12 12:35

2

4

6

9

10

13

<b>-</b> 2		0		ထ တ		12 6	4	-	7 2	7 /	) .	1	/2	<	5	7)	)					
					CHA	AIN OF	CU	JS.	TO	D	r 1 R	E	COF	RD						10	39760	
PROJECT NUM	BER 8000001	PROJECT NAI	me an R	lanch-	Parce	14																
SAMPLED BY:	BER  B 00000 ( SIGNATURE/PRIN  AGER: (SIGNATURE)	T)  Mo * REJPRINT),	-90n	Johnse				/	198		Y.			Liconomic		***************************************					REMARKS REQUIRED DETECTION LIMIT	s
	Morgan	John	<u>50n</u>		- 1		149	) }	, 'A	7	13											
ROUTING. E-W	All mich	nson@(	<u>20302</u>	NUMBER OF	CONTAINER	<u> </u>	5	75	7/	1/2	2											
SAMPLE NUMBER	DATE	i IME	MATRIX	CONTAINERS	SIZE	PRESERVATIVE		1	4	3					-					-		
MW-/	7/26/12	9:00	H20	5	VOA	HCL	<u>'</u> X	X	X	X	$ \mathcal{X} $				-							
MW-4		9:30			AMBO	4								-					į.			
MW-5		11:45		V		J	U	V	W	V	V											
			V	V	V					_					_				_			
								<u> </u>			-					-			-			
								<u> </u>			<u> </u>		-		-	-		-	_	-		
			-				-		<del> </del>		-				-							
							-	<b> </b>		<u> </u>						-		-		<del>                                     </del>		
							<u> </u>	<u> </u>	<u> </u>		<del> </del>			+	-							
							-		1		1				-	<del> </del>						
								<del>                                     </del>		<u> </u>	1											
							<del>                                     </del>		<u> </u>		<u> </u>											
																		-				
								_	<u> </u>			<u> </u>			_							
				1 201	E/TIME	RECEIVED BY: (SIG	NATURE	1	<u> </u>		RELI	NQUISH	ED BY: (S	IGNATUR	RE)			DATE/	TIME	RECE	EIVED BY: (SIGNATURE)	
RELINQUISHEL	BY: (SIGNATURE)	1 0	1 0	7/26	128354	1		,														***************************************
RELINQUISHED	BY: (SIGNATURE)	<u>/ ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( </u>	<u>~</u>		」 マン <u>ンド</u> E/TIME 	RECEIVED BY: (SIG	NATURE	E)	niii		RELII	VQUISH	ED BY: (S	IGNATUI	RE)			DATE	TIME	RECE	EIVED BY: (SIGNATURE)	
RELINQUISHE	BY: (SIGNATURE)			DAT	E/TIME	RECEIVED FOR LAN	BORATO	RY BY	(SIGN	ATURE)	1		17 12		marks 5	D		Tu	.rn	Ar	ound	
E	<b>V</b> GI	ΕΟ			ROCk (916) 78	2213 PLAZA (LIN, CALIFC 6-8883 FAX	)RNI/ (888)	4 95 ) 279													6,6° 24 MS	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
INC	ORPOR	ATED			' 1	www.enge	:O.C(	MC						DIS	STRIBUT	ION: OR	IGINAL A	CCOMF	PANIES S	HIPMENT	; COPY TO PROJECT FIELD FILES	I

#### **Login Sample Receipt Checklist**

Client: Engeo, Inc. Job Number: 720-43550-1

Login Number: 43550 List Source: TestAmerica Pleasanton

List Number: 1 Creator: Apostol, Anita

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

6

9

11

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 RADADOVICH

BJP-ROF Jordan Ranch, LLC 5000 Hopyard Road, #170

Pleasanton, CA 94588