

State of Colorado
Oil and Gas Conservation Commission



1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303)894-2100 Fax:(303)894-2109

FOR OGCC USE ONLY	
OGCC Employee: _____	
Spill Inspection	Complaint NOAV
Tracking No: _____	

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): _____

OGCC Operator Number: _____	Contact Name and Telephone: _____
Name of Operator: _____	_____
Address: _____	No: _____
City: _____ State: _____ Zip: _____	Fax: _____

API Number: _____	County: _____
Facility Name: _____	Facility Number: _____
Well Name: _____	Well Number: _____
Location: (QtrQtr, Sec, Twp, Rng, Meridian): _____	Latitude: _____ Longitude: _____

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): _____

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): _____

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: _____

Potential receptors (water wells within 1/4 mi, surface waters, etc.): _____

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):	Extent of Impact:	How Determined:
Soils	_____	_____
Vegetation	_____	_____
Groundwater	_____	_____
Surface Water	_____	_____

REMEDIALTION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Describe how source is to be removed:

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:



Tracking Number: _____
Name of Operator: _____
OGCC Operator No: _____
Received Date: _____
Well Name & No: _____
Facility Name & No: _____

REMEDIATION WORKPLAN (Cont.)

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.):

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.

Is further site investigation required? Y N If yes, describe:

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

IMPLEMENTATION SCHEDULE

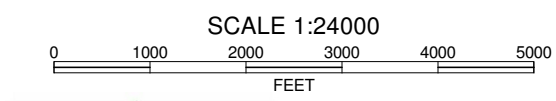
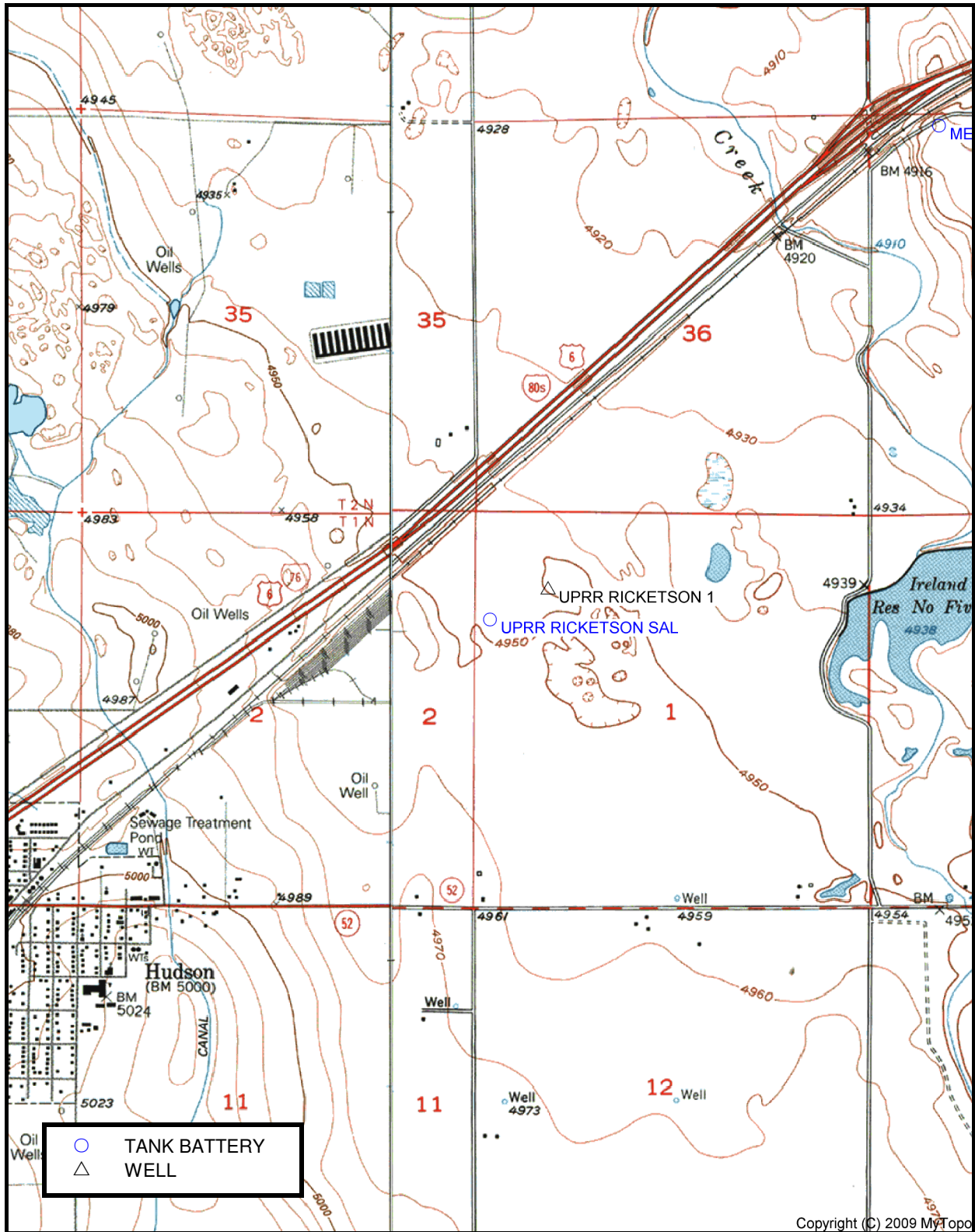
Date Site Investigation Began: _____ Date Site Investigation Completed: _____ Date Remediation Plan Submitted: _____
Remediation Start Date: 06/05/14 Anticipated Completion Date: _____ Actual Completion Date: _____

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: _____ Signed: [Signature]
Title: _____ Date: _____

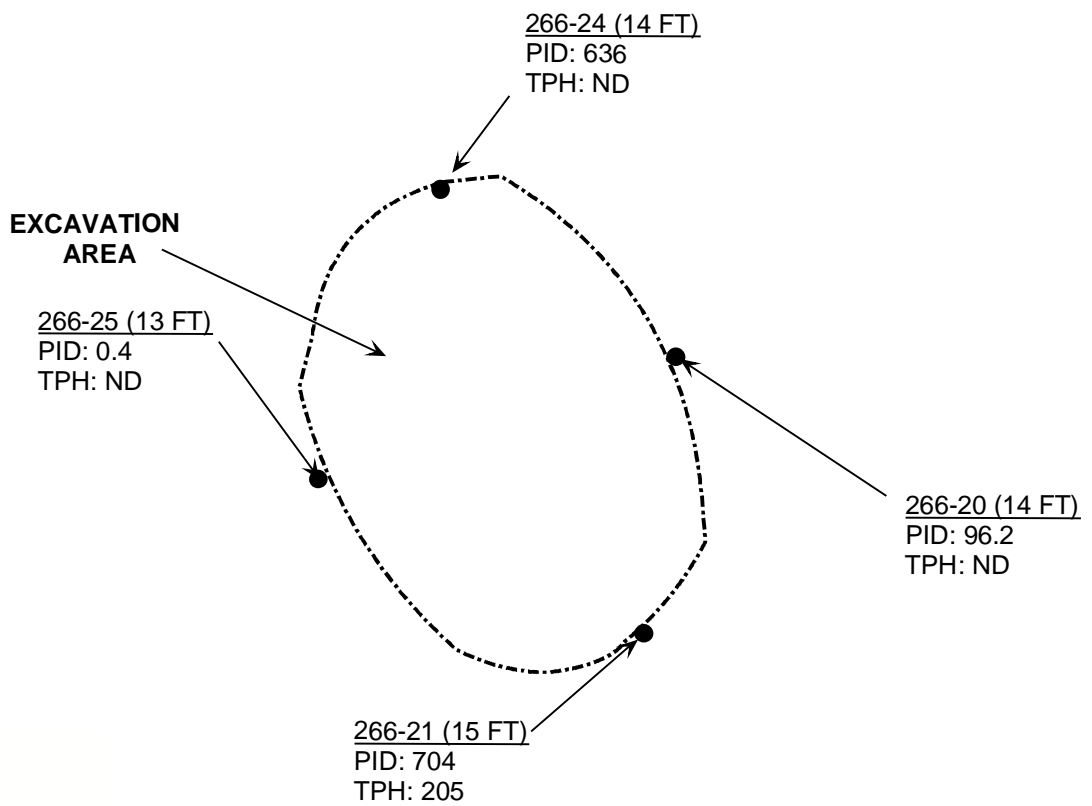
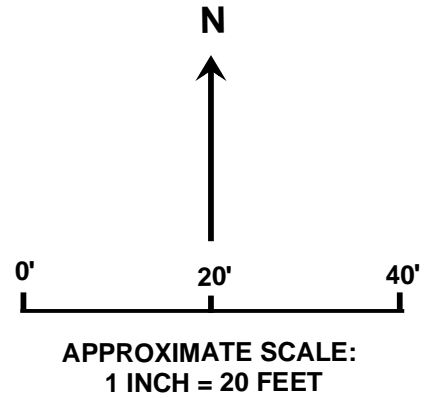
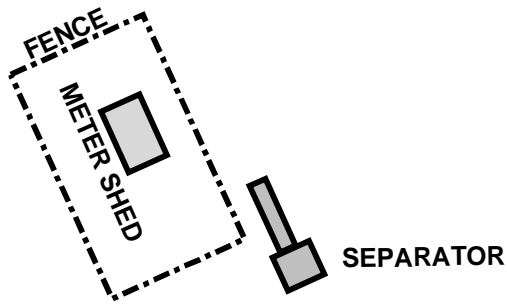
OGCC Approved: _____ Title: _____ Date: _____

DIAGRAMS



<h1>A.G. Wassenaar</h1> <h2>Inc.</h2>	
<p>UPRR RICKETSON SAL & WELL LOCATION NWNW S1-T1N-R65W</p>	<p>PROJECT NO. E12118.EC TOPOGRAPHIC MAP FIGURE 1</p>





Great Western
OIL & GAS COMPANY

LEGEND

- - SOIL SAMPLE LOCATION
- PID - PHOTOIONIZATION READING IN PARTS PER MILLION
- TPH - TOTAL PETROLEUM HYDROCARBONS
- ND - NOT DETECTED

NOTE: CONCENTRATIONS ARE IN MILLIGRAMS PER KILOGRAM (mg/kg)

NOTE: ALL LOCATIONS ARE APPROXIMATE.

A.G. Wassenaar
Geotechnical and Environmental Consultants | **Inc.**

UPRR RICKETSON SAL SITE
NWNW SEC 1-T1N-R65W
API05-123-13749

PROJECT NO. E14266.E2
SITE DIAGRAM
& CONFIRMATION SOIL
ANALYTICAL RESULTS

**CONFIRMATION SOIL SAMPLE
ANALYTICAL RESULTS**

June 06, 2014

A.G. Wassenaar

Joe Pieterick

2180 South Ivanhoe Street - Suite 5

Denver CO 80222

Project Name - E14266.E2

Project Number - E14266.E2

Attached are your analytical results for E14266.E2 received by Origins Laboratory, Inc. June 05, 2014. This project is associated with Origins project number X406056-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



A.G. Wassenaar
2180 South Ivanhoe Street - Suite 5
Denver CO 80222

Joe Pieterick
Project Number: E14266.E2
Project: E14266.E2

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
266-18	X406056-01	Soil	June 5, 2014 8:30	06/05/2014 11:59
266-20	X406056-02	Soil	June 5, 2014 8:55	06/05/2014 11:59
266-21	X406056-03	Soil	June 5, 2014 9:22	06/05/2014 11:59
266-23	X406056-04	Soil	June 5, 2014 9:39	06/05/2014 11:59
266-24	X406056-05	Soil	June 5, 2014 10:08	06/05/2014 11:59

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

ORIGINS
 LABORATORY, INC

X406056

www.originslaboratory.com

page 1 of 1

Client: A.G. WASSenaar, INC/Project Manager/Send Report To: JOE PIETERICK/ANNE PETERSEN
 Address: 2180 S. IVANHOE ST. #5
DENVER, CO 80222
 Telephone Number: 303.981-2107
 Email Address: pieterick@agwassenaar.com
pietersen@agwassenaar.com
 Project Name/Number: E14266.E2
 Samples Collected By: JOE PIETERICK

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis/Method	Sample Instructions			
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #			Other		
266-18	6-5-14	8:30	1	<input checked="" type="checkbox"/>						X			BTEX	1	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input checked="" type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/>
266-20		8:55	1	<input checked="" type="checkbox"/>						X			DR0 + G-R0	2	
266-21		9:22	1	<input checked="" type="checkbox"/>						X			DR0 + G-R0	3	
266-23		9:39	1	<input checked="" type="checkbox"/>						X			DR0 + G-R0	4	
266-24		10:08	1	<input checked="" type="checkbox"/>						X			DR0 + G-R0	5	
														6	
														7	
														8	
														9	
														10	
Relinquished By: <i>Joe Pieterick</i>	Date: 6-5-14	Time: 11:59	Received By: <i>[Signature]</i>	Date: 6/5/14	Time: 11:59	Relinquished By: <i>[Signature]</i>	Date: 6/5/14	Time: 11:59	Standard						

Comments:

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

Origins Laboratory F-012207-01-R1
Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: X406056 Client: A.G. Wassenaar
 Client Project ID: E14266.E2

Checklist Completed by: Jeff Smith Shipped Via: HTD
 Date/time completed: 6/5/14 1202 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: NA

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____

Cooler Number/Temperature: 117.9 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: T002

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ^{(1)?}		X		Sampled Same Day
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ^{(1)?}	X			
Was adequate sample volume provided ^{(1)?}	X			
Are short holding time analytes or samples with HTs due within 48 hours present ^{(1)?}		X		
Is a chain-of-custody (COC) present and filled out completely ^{(1)?}	X			
Does the COC agree with the number and type of sample bottles received ^{(1)?}	X			
Do the sample IDs on the bottle labels match the COC ^{(1)?}	X			
Is the COC properly relinquished by the client with date and time recorded ^{(1)?}	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	Soil
Are samples preserved that require preservation and was it checked ^{(1)?} (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO3, HCL, H2SO4) / (pH > 10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			X	Soil
Additional Comments (if any):				

⁽¹⁾If NO, then contact the client before proceeding with analysis and note date, time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) [Signature] Date/Time Reviewed 6/6/14 7:21

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

266-18

6/5/2014 8:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X406056-01 (Soil)

BTEX by EPA 8260C

Benzene	ND	0.1	mg/kg	50	4F05006	06/05/2014	06/05/2014	
Toluene	ND	0.1	"	"	"	"	"	
Ethylbenzene	21.3	1.0	"	500	"	"	06/06/2014	
Xylenes, total	336	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"	
Surrogate: Toluene-d8	113 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.5 %	70-130			"	"	"	

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

266-20

6/5/2014 8:55:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X406056-02 (Soil)

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4F05011	06/05/2014	06/05/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	103%	59-131			"	"	"	

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

266-21

6/5/2014 9:22:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X406056-03 (Soil)

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4F05011	06/05/2014	06/05/2014	
Diesel (C10-C28)	205	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	106 %	59-131			"	"	"	

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

266-23

6/5/2014 9:39:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X406056-04 (Soil)

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	60.3	50.0	mg/kg	1	4F05011	06/05/2014	06/05/2014	
Diesel (C10-C28)	532	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	95.9 %	59-131			"	"	"	

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

266-24

6/5/2014 10:08:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X406056-05 (Soil)

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4F05011	06/05/2014	06/05/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	99.8 %	59-131			"	"	"	

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F05006 - EPA 5030 (soil)

Blank (4F05006-BLK1)

Prepared: 06/05/2014 Analyzed: 06/05/2014

Benzene	ND	0.002	mg/kg							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		98.0	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F05006 - EPA 5030 (soil)

LCS (4F05006-BS1)

Prepared: 06/05/2014 Analyzed: 06/05/2014

Benzene	0.1	0.002	mg/kg	0.100		97.0	77.1-124			
Toluene	0.1	0.002	"	0.100		95.3	74.5-128			
Ethylbenzene	0.09	0.002	"	0.100		93.2	66.4-127			
m,p-Xylene	0.2	0.004	"	0.200		92.8	76.6-124			
o-Xylene	0.09	0.002	"	0.100		92.6	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		98.8	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.1	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F05006 - EPA 5030 (soil)

Matrix Spike (4F05006-MS1)	Source: X406044-01			Prepared: 06/05/2014 Analyzed: 06/05/2014						
Benzene	0.08	0.002	mg/kg	0.100	ND	78.4	71.8-126			
Toluene	0.07	0.002	"	0.100	ND	73.8	65.1-130			
Ethylbenzene	0.06	0.002	"	0.100	ND	64.0	62.2-130			
m,p-Xylene	0.1	0.004	"	0.200	ND	63.6	46.5-137			
o-Xylene	0.06	0.002	"	0.100	ND	64.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		98.6	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		107	70-130			

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F05006 - EPA 5030 (soil)

Matrix Spike Dup (4F05006-MSD1)	Source: X406044-01			Prepared: 06/05/2014 Analyzed: 06/05/2014						
Benzene	0.07	0.002	mg/kg	0.100	ND	74.0	71.8-126	5.77	11.3	
Toluene	0.07	0.002	"	0.100	ND	66.9	65.1-130	9.84	15.4	
Ethylbenzene	0.06	0.002	"	0.100	ND	55.5	62.2-130	14.2	19.6	J-02
m,p-Xylene	0.1	0.004	"	0.200	ND	54.8	46.5-137	14.8	19.2	
o-Xylene	0.06	0.002	"	0.100	ND	56.1	54.2-134	14.4	17.9	
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.1	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	70-130			

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: E14266.E2

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Extractable Petroleum Hydrocarbons by 8015M - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F05011 - EPA 3580

Blank (4F05011-BLK1)

Prepared: 06/05/2014 Analyzed: 06/05/2014

Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Surrogate: o-Terphenyl	43		g	50.0		85.7	59-131			

LCS (4F05011-BS1)

Prepared: 06/05/2014 Analyzed: 06/05/2014

Gasoline (C6-C10)	1040	50.0	mg/kg	1000		104	59-133			
Diesel (C10-C28)	1120	50.0	"	1000		112	64-121			
Surrogate: o-Terphenyl	55		g	50.0		109	59-131			

LCS Dup (4F05011-BSD1)

Prepared: 06/05/2014 Analyzed: 06/05/2014

Gasoline (C6-C10)	1070	50.0	mg/kg	1000		107	59-133	2.67	20	
Diesel (C10-C28)	1090	50.0	"	1000		109	64-121	2.65	20	
Surrogate: o-Terphenyl	54		g	50.0		107	59-131			

Origins Laboratory, Inc.



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A.G. Wassenaar

2180 South Ivanhoe Street - Suite 5

Denver CO 80222

Joe Pieterick

Project Number: E14266.E2

Project: E14266.E2

Notes and Definitions

J-02 Reported value failed to meet established quality control criteria for the precision accuracy.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

July 08, 2014

A.G. Wassenaar

Rachel Peterson

2180 South Ivanhoe Street - Suite 5

Denver CO 80222

Project Name - Ricketson

Project Number - E14266.E2

Attached are your analytical results for Ricketson received by Origins Laboratory, Inc. July 08, 2014. This project is associated with Origins project number X407046-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
o-squad@oelabinc.com



A.G. Wassenaar
2180 South Ivanhoe Street - Suite 5
Denver CO 80222

Rachel Peterson
Project Number: E14266.E2
Project: Ricketson

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
266-25	X407046-01	Soil	July 8, 2014 10:30	07/08/2014 12:30

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Noelle Doyle Mathis, President

A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Rachel Peterson
 Project Number: E14266.E2
 Project: Ricketson

Origins Laboratory

F-012207-01-R1
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: XA07046
 Checklist Completed by: [Signature]
 Date/Time completed: 7/8/14 12:35
 Matrix(s) Received: (Check all that apply) Soil/Solid Water Other _____ (Describe)
 Cooler Number/Temperature: 1 / 12.6 °C / _____ °C / _____ °C / _____ °C
 Thermometer ID: 702

Client: AG
 Client Project ID: RICKETSON
 Shipped Via: H/D
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾² ?		X		
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾² ?	X			
Was adequate sample volume provided ⁽¹⁾² ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾² ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾² ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾² ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾² ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾² ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			X	
Are samples preserved that require preservation and was it checked ⁽¹⁾² ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO3, HCl, H2SO4 / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)			X	
Additional Comments (if any):				

⁽¹⁾²If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action in the additional comments (above) and the case narrative.

Reviewed by (Project Manager): [Signature]
 Date/Time Reviewed: 7/8/14 1430

Origins Laboratory, Inc.

[Signature]

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A.G. Wassenaar
2180 South Ivanhoe Street - Suite 5
Denver CO 80222

Rachel Peterson
Project Number: E14266.E2
Project: Ricketson

266-25
7/8/2014 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
X407046-01 (Soil)

GRO (TVPH)/DRO (TEPH)by EPA 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4G08009	07/08/2014	07/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>98.1 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Rachel Peterson
 Project Number: E14266.E2
 Project: Ricketson

Extractable Petroleum Hydrocarbons by 8015M - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4G08009 - EPA 3580										
Blank (4G08009-BLK1)					Prepared: 07/08/2014 Analyzed: 07/08/2014					
Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
<i>Surrogate: o-Terphenyl</i>	47		<i>g</i>	50.0		93.2	59-131			
LCS (4G08009-BS1)					Prepared: 07/08/2014 Analyzed: 07/08/2014					
Gasoline (C6-C10)	951	50.0	mg/kg	1000		95.1	59-133			
Diesel (C10-C28)	1030	50.0	"	1000		103	64-121			
<i>Surrogate: o-Terphenyl</i>	46		<i>g</i>	50.0		92.6	59-131			
Matrix Spike (4G08009-MS1)					Source: X407042-01		Prepared: 07/08/2014 Analyzed: 07/08/2014			
Gasoline (C6-C10)	940	50.0	mg/kg	1000	ND	94.0	57-139			
Diesel (C10-C28)	965	50.0	"	1000	18.7	94.6	53-125			
<i>Surrogate: o-Terphenyl</i>	44		<i>g</i>	50.0		87.9	59-131			
Matrix Spike Dup (4G08009-MSD1)					Source: X407042-01		Prepared: 07/08/2014 Analyzed: 07/08/2014			
Gasoline (C6-C10)	1000	50.0	mg/kg	1000	ND	100	57-139	6.62	20	
Diesel (C10-C28)	962	50.0	"	1000	18.7	94.3	53-125	0.366	20	
<i>Surrogate: o-Terphenyl</i>	46		<i>g</i>	50.0		91.7	59-131			

Origins Laboratory, Inc.



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A.G. Wassenaar

2180 South Ivanhoe Street - Suite 5

Denver CO 80222

Rachel Peterson

Project Number: E14266.E2

Project: Ricketson

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

**GRAB GROUND WATER SAMPLE
ANALYTICAL RESULTS**

June 18, 2014

A.G. Wassenaar

Joe Pieterick

2180 South Ivanhoe Street - Suite 5

Denver CO 80222

Project Name - Ricketson

Project Number - E14266.E2

Attached are your analytical results for Ricketson received by Origins Laboratory, Inc. June 13, 2014. This project is associated with Origins project number X406166-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.
303.433.1322
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A.G. Wassenaar
2180 South Ivanhoe Street - Suite 5
Denver CO 80222

Joe Pieterick
Project Number: E14266.E2
Project: Ricketson

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
266-W-1	X406166-01	Water	June 13, 2014 8:08	06/13/2014 11:00

Client cancelled the analysis of GRO/DRO. ndm

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Noelle Doyle Mathis, President

A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: Ricketson

Origins Laboratory

F-012207-01-R1
 Effective Date: 01/09/12

Sample Receipt Checklist

Origins Work Order: X406166

Client: A.G. Wassenaar

Client Project ID: Ricketson

Checklist Completed by: Jeff Smith

Shipped Via: H/D
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 6/13/14 12:18

Airbill #: NA

Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____

Cooler Number/Temperature: 16.7 °C / 1 °C / 1 °C (Describe) _____ °C

Thermometer ID: T002

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		X		Sampled Same Day
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
Are short holding time analytes or samples with HT's due within 48 hours present ⁽¹⁾ ?		X		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	X			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	X			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	X			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	X			
For volatiles in water - is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		X		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH < 2 for samples preserved with HNO3, HCL, H2CO4) / (pH > 10 for samples preserved with NaAsO2+As2O4, ZnAc+ZnOH)	X			HCL
Additional Comments (if any): <u>Per Joe P.'s request we are only running the water sample. Cancelling GRO/DRO for Soil Sample - pbl 06-17-14</u>				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note date, time and person contacted as well as the corrective actions in the additional comments (above) and the case narrative.

[Signature]
 Reviewed by (Project Manager) 06-17-14 11:08
 Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: Ricketson

266-W-1

6/13/2014 8:08:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 X406166-01 (Water)

BTEX by EPA 8260C

Benzene	6.6	4.0	ug/L	4	4F13007	06/13/2014	06/16/2014	
Toluene	98.6	20.0	"	20	"	"	06/16/2014	
Ethylbenzene	94.0	20.0	"	"	"	"	"	
Xylenes, total	5200	20.0	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	98.8 %	87.3-113			"	"	"	
<i>Surrogate: Toluene-d8</i>	104 %	90.9-108			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.4 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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A.G. Wassenaar
 2180 South Ivanhoe Street - Suite 5
 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: Ricketson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F13007 - EPA 5030B (Water)

Blank (4F13007-BLK1)

Prepared: 06/13/2014 Analyzed: 06/16/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>62</i>		<i>"</i>	<i>62.5</i>	<i>98.7</i>		<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>65</i>		<i>"</i>	<i>62.5</i>	<i>104</i>		<i>90.9-108</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>64</i>		<i>"</i>	<i>62.5</i>	<i>102</i>		<i>88.6-111</i>			

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

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 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: Ricketson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F13007 - EPA 5030B (Water)

LCS (4F13007-BS1)

Prepared: 06/13/2014 Analyzed: 06/16/2014

Benzene	55.0	1.0	ug/L	50.0	110	75-126				
Toluene	57.2	1.0	"	50.0	114	78.7-126				
Ethylbenzene	59.2	1.0	"	50.0	118	81-130				
m,p-Xylene	117	2.0	"	100	117	77.2-133				
o-Xylene	56.5	1.0	"	50.0	113	77.9-126				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>57</i>		<i>"</i>	<i>62.5</i>	<i>91.6</i>	<i>87.3-113</i>				
<i>Surrogate: Toluene-d8</i>	<i>64</i>		<i>"</i>	<i>62.5</i>	<i>103</i>	<i>90.9-108</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>64</i>		<i>"</i>	<i>62.5</i>	<i>103</i>	<i>88.6-111</i>				

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 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: Ricketson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F13007 - EPA 5030B (Water)

Matrix Spike (4F13007-MS1)	Source: X406154-03			Prepared: 06/13/2014 Analyzed: 06/16/2014						
Benzene	53.1	1.0	ug/L	50.0	ND	106	74-130			
Toluene	55.4	1.0	"	50.0	ND	111	73-131			
Ethylbenzene	56.8	1.0	"	50.0	ND	114	76-132			
m,p-Xylene	112	2.0	"	100	ND	112	69-139			
o-Xylene	54.2	1.0	"	50.0	ND	108	74-131			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>57</i>		<i>"</i>	<i>62.5</i>		<i>91.3</i>	<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>64</i>		<i>"</i>	<i>62.5</i>		<i>103</i>	<i>90.9-108</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>64</i>		<i>"</i>	<i>62.5</i>		<i>102</i>	<i>88.6-111</i>			

Origins Laboratory, Inc.



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 Denver CO 80222

Joe Pieterick
 Project Number: E14266.E2
 Project: Ricketson

Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 4F13007 - EPA 5030B (Water)

Matrix Spike Dup (4F13007-MSD1)	Source: X406154-03			Prepared: 06/13/2014 Analyzed: 06/16/2014						
Benzene	53.2	1.0	ug/L	50.0	ND	106	74-130	0.320	20	
Toluene	56.2	1.0	"	50.0	ND	112	73-131	1.29	20	
Ethylbenzene	57.4	1.0	"	50.0	ND	115	76-132	1.14	20	
m,p-Xylene	115	2.0	"	100	ND	115	69-139	2.27	20	
o-Xylene	55.1	1.0	"	50.0	ND	110	74-131	1.81	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>56</i>		<i>"</i>	<i>62.5</i>		<i>90.2</i>	<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>64</i>		<i>"</i>	<i>62.5</i>		<i>103</i>	<i>90.9-108</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>64</i>		<i>"</i>	<i>62.5</i>		<i>102</i>	<i>88.6-111</i>			

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2180 South Ivanhoe Street - Suite 5
Denver CO 80222

Joe Pieterick
Project Number: E14266.E2
Project: Ricketson

Notes and Definitions

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President