

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

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OGCC Employee:

Spill       Complaint  
 Inspection       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: <u>10110</u>	Contact Name and Telephone: <u>Scot Donato</u>
Name of Operator: <u>Great Western Operating Company, LLC</u>	No: <u>303-398-0537</u>
Address: <u>1801 Broadway, Suite 500</u>	Fax: <u>866-742-1784</u>
City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u>	

API Number: <u>05-123-10374 &amp; 05-123-23335</u>	County: <u>Weld</u>
Facility Name: <u>Stanley Olson-62N68W14SWNE</u>	Facility Number: <u>336384</u>
Well Name: <u>Stanley Olson</u>	Well Number: <u>1 &amp; 2</u>
Location: (QtrQtr, Sec, Twp, Rng, Meridian): <u>SWNE 14 T2N 68W</u>	Latitude: <u>41.141381</u> Longitude: <u>-104.96606</u>

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Unknown, historical impact

**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.): Cultivated

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Vona sandy loam, 1 to 3 percent slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Unnamed drainage 1,000 feet west.

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

Impacted Media (check):	Extent of Impact:	How Determined:
<input checked="" type="checkbox"/> Soils	<u>Approximately 130' x 125' x 13' deep</u>	<u>Soil samples during initial subsurface investigation</u>
<input type="checkbox"/> Vegetation	_____	_____
<input checked="" type="checkbox"/> Groundwater	<u>Unknown</u>	<u>GW samples during initial subsurface investigation</u>
<input type="checkbox"/> Surface Water	_____	_____

**REMEDATION WORKPLAN**

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

Soil impacts were discovered during initial subsurface investigation activities at the tank battery between the two condensate tank berms. Analytical sample results from two source area boreholes indicated that soils exceed Table 910-1 concentration levels for TPH. Analytical results for TPH from the remaining boreholes were either below Table 910-1 concentration levels or were not detected. Refer to attached figure and laboratory report for borehole/sample locations and laboratory analytical results.

**Describe how source is to be removed:**

Operator will either dig and haul or treat any soils onsite that exceed Table 910-1 concentration levels.

**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.:**

In order to develop a detailed remediation plan, a more comprehensive subsurface investigation will be conducted at the site.



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

Page 2  
**REMEDIATION WORKPLAN (Cont.)**

OGCC Employee: \_\_\_\_\_

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

Groundwater was encountered at 7-15 ft. bgs. during the initial subsurface investigation. Refer to attached figure and laboratory report for borehole/sample locations and laboratory analytical results. Analytical sample results indicated that groundwater exceeded Table 910-1 concentration levels for benzene and ethylbenzene in the source area. BTEX was not detected above Table 910-1 concentration levels outside the source area. Following remediation activities, operator proposes to install up to 4 groundwater monitoring wells to monitor until 4 consecutive quarters of analytical results below Table 910-1 concentration levels for BTEX are obtained. Monitoring wells will remain in place until project closure.

**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.

If necessary, the site will be reclaimed in accordance with the COGCC 1000 series rules.

**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:

Further definition of site impact will be completed during the subsurface investigation which will begin within 90 days of the approval of this form by COGCC.

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

If necessary, impacted soils will be disposed of at a licensed disposal facility that has yet to be determined.

**IMPLEMENTATION SCHEDULE**

Date Site Investigation Began: \_\_\_\_\_ Date Site Investigation Completed: \_\_\_\_\_ Date Remediation Plan Submitted: \_\_\_\_\_  
Remediation Start Date: \_\_\_\_\_ 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.

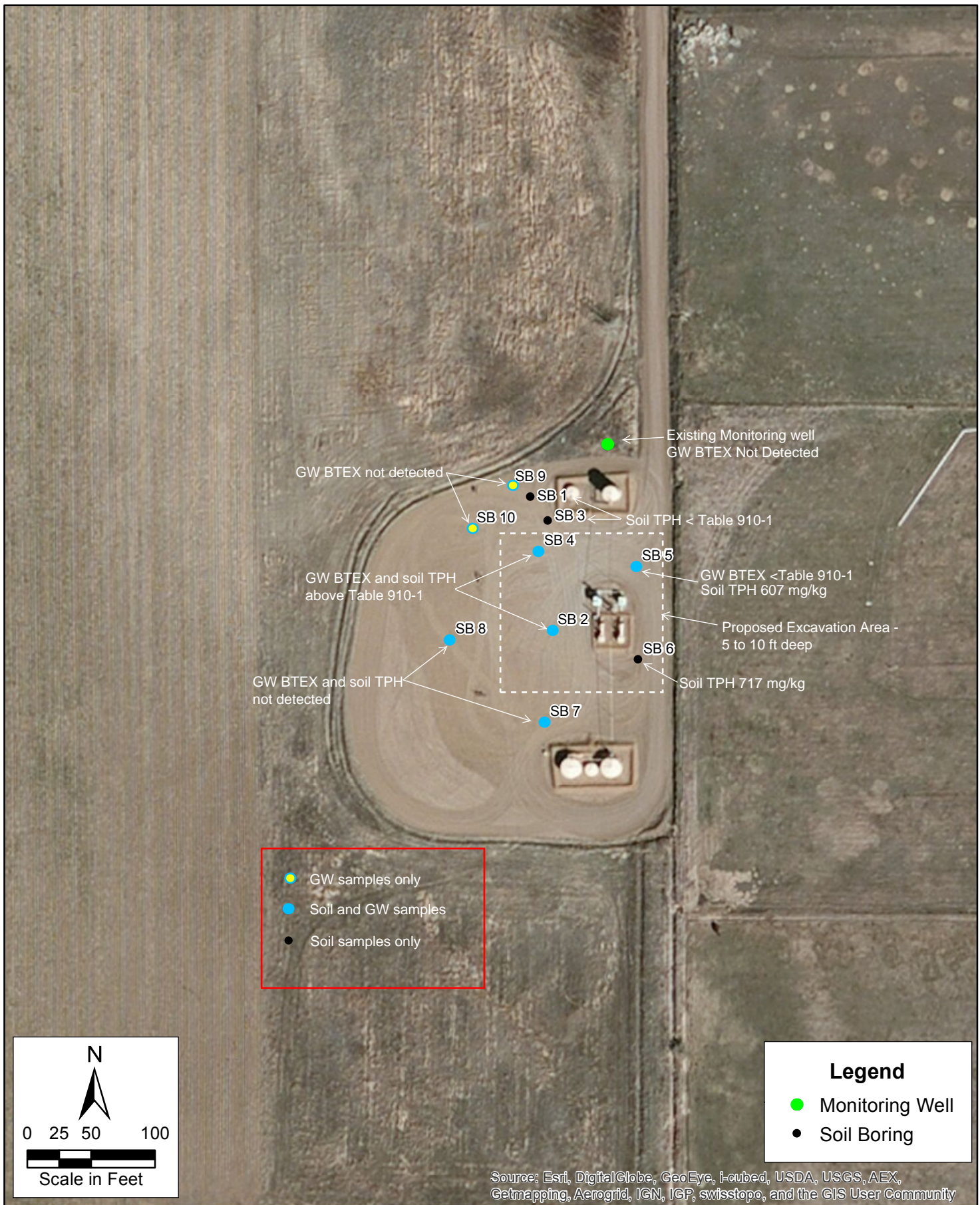
Print Name: Scot Donato

Signed: *Scot Donato*

Title: EH&S/Regulatory Manager

Date: 07/19/96

OGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_



- GW samples only
- Soil and GW samples
- Soil samples only

PROJECT: 014-0905

DRAWN BY: JM

DATE: May 20, 2014

Stanley Olson #1 and #2  
Great Western Oil & Gas  
Company  
Weld County, Colorado



FIGURE

2

April 29, 2014

Olsson Associates

Kevin Taylor

4690 Table Mountain Drive

Golden CO 80403

Project Name - Whitewing

Project Number - 014-0905

Attached are your analytical results for Whitewing received by Origins Laboratory, Inc. April 25, 2014. This project is associated with Origins project number X404259-01.

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



Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Per-SB1-18	X404259-01	Soil	April 24, 2014 10:04	04/25/2014 16:45
Per-SB3-10	X404259-02	Soil	April 24, 2014 11:04	04/25/2014 16:45
Ott-SB1-20	X404259-03	Soil	April 24, 2014 12:29	04/25/2014 16:45
Ott-SB3-5	X404259-04	Soil	April 24, 2014 14:23	04/25/2014 16:45
Bei-SB1-23	X404259-05	Soil	April 24, 2014 16:16	04/25/2014 16:45
Per-SB1-GW	X404259-06	Water	April 24, 2014 11:20	04/25/2014 16:45
Bei-SB3-23	X404259-07	Soil	April 25, 2014 8:44	04/25/2014 16:45
Edi-SB1-25	X404259-08	Soil	April 25, 2014 11:36	04/25/2014 16:45
Edi-SB3-20	X404259-09	Soil	April 25, 2014 11:42	04/25/2014 16:45
Edi-SB1-GW	X404259-10	Water	April 25, 2014 12:06	04/25/2014 16:45
Stan-SB1-10	X404259-11	Soil	April 25, 2014 14:03	04/25/2014 16:45
Stan-SB2-13	X404259-12	Soil	April 25, 2014 14:27	04/25/2014 16:45
Stan-SB2-GW	X404259-13	Water	April 25, 2014 14:20	04/25/2014 16:45
STAN-MW-GW	X404259-14	Water	April 25, 2014 14:44	04/25/2014 16:45

Origins Laboratory, Inc.



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Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

www.originslaboratory.com

X140259

**ORIGINS**  
 LABORATORY, INC

page 1 of 2

Client: Olsson Associates Project Manager/Send Report to: Kevin Taylor  
 Address: 4690 Table Mountain Dr Email Address: ktaylor@olssonassociates.com  
Suite 200 Golden 80403 Project Name/Number: Whitewing 014-0905  
 Telephone Number: 303 737 2072 Samples Collected By: Bob Nelson

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summ'd		
Per-SB1-18	4/24/14	1004	1					X			GC/D DRO 8015	
Per-SB3-10		1104	1					X			GC/D DRO 8015	
OH-SB1-20		1224	1					X			GC/D DRO 8015	
OH-SB3-5		1423	1					X			GC/D DRO 8015	
Bei-SB1-23		1614	1					X			BTEX (8200)	
Per-SB1-6W		1120	3		X						GC/D DRO 8015	
Bei-SB3-23	4/25/14	844	1					X			GC/D DRO 8015	
Eti-SB1-25		1136	1					X			GC/D DRO 8015	
Eti-SB3-20		1142	1					X			BTEX (8200)	
Eti-SB1-6W		1206	3		X				X		BTEX (8200)	
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:						
	9/25/14	645		4/25/14	1645	Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/>						
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/>						
				4/25/14	1645	Standard <input type="checkbox"/>						

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

Origins Laboratory, Inc.

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

www.originslaboratory.com

X40259

page 2 of 2

**ORIGINS**  
 LABORATORY, INC

Client: Olsson Associates Project Manager/Send Report To: Kevin Taylor  
 Address: 4690 Table Mountain Email Address: ktaylor@olssonassociates.com  
Dr. Julie Zuo Golden 80403 Project Name/Number: Whitewing 014-0905  
 Telephone Number: 303 237 2072 Samples Collected By: Brett Nelson

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

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Groundwater	Soil	Air Summ #		
STAN-SB1-10	4/25/14	1403	1				X			Geo/Dico (8015)	1
STAN-SB2-13	↓	1427	1				X			Geo/Dico (8015)	2
STAN-SB2-6W		1420	3		X			X		BTEX (8260)	3
STAN-MIN-6W		1444	3		X		X			BTEX (8260)	4
											5
											6
											7
											8
											9
											10
Relinquished By:	Date: 4/25/14	Time: 1645	Received By:	Date: 4/25/14	Time: 1645	Turnaround Time:					
Relinquished By:	Date:	Time:	Received By:	Date: 4/25/14	Time: 1645	Some Day	48 Hr	72 Hr			

Prints Required: Needed:

Origins Laboratory, Inc.

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

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

**Sample Receipt Checklist**

Origins Work Order: 14-0259 Client: Olsson Assoc.  
 Client Project ID: Whitewing

Checklist Completed by: JR Shipped Via: H/D  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Date/time completed: 04/25/14 1707 Airbill #: \_\_\_\_\_

Matrix(s) Received: (Check all that apply):  Soil/Solid  Water \_\_\_\_\_ Other: \_\_\_\_\_ (Describe)

Cooler Number/Temperature: \_\_\_\_\_ / 14.3°c / \_\_\_\_\_ °c / \_\_\_\_\_ °c / \_\_\_\_\_ °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 <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			<u>SVL yeddy</u>
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>			
Additional Comments (if any): <u>SAMPLES 8/9 LIDS DO NOT MATCH LABELS</u> <u>EXTRA AQ VOA NOT ON COC PER REQUEST BROCK DESSON STAN-MW: GW</u> <u>WAS ADDED TO COC AND LABELS FOR 8/9 WERE SWAPPED</u> <u>Photo</u> <u>4/29/14</u>				

<sup>(1)</sup> 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 04-29-14 1537

Origins Laboratory, Inc.

[Signature]

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Per-SB1-18

4/24/2014 10:04:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-01 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	93.6	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	88.6 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Per-SB3-10

4/24/2014 11:04:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-02 (Soil)

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

Gasoline (C6-C10)	3440	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	765	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>88.2 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

Ott-SB1-20

4/24/2014 12:29:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X404259-03 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>89.2 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Ott-SB3-5  
 4/24/2014 2:23:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-04 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>87.6 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

Bei-SB1-23

4/24/2014 4:16:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X404259-05 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	239	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	87.7 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Per-SB1-GW  
 4/24/2014 11:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-06 (Water)

**BTEX by EPA 8260C**

Benzene	5390	50.0	ug/L	50	4D28007	04/28/2014	04/29/2014	
Toluene	ND	20.0	"	20	"	"	04/28/2014	
Ethylbenzene	1780	20.0	"	"	"	"	"	
Xylenes, total	12100	50.0	"	50	"	"	04/29/2014	

<i>Surrogate: 1,2-Dichloroethane-d4</i>	110 %	87.3-113			"	"	04/28/2014	
<i>Surrogate: Toluene-d8</i>	103 %	90.9-108			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	96.5 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

Bei-SB3-23

4/25/2014 8:44:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X404259-07 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>87.3 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

Edi-SB1-25

4/25/2014 11:36:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X404259-08 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>88.5 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

Edi-SB3-20

4/25/2014 11:42:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X404259-09 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	<i>89.3 %</i>	<i>59-131</i>			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Edi-SB1-GW  
 4/25/2014 12:06:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-10 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4D28007	04/28/2014	04/28/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	87.3-113			"	"	"	
<i>Surrogate: Toluene-d8</i>	102 %	90.9-108			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	94.4 %	88.6-111			"	"	"	

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 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Stan-SB1-10  
 4/25/2014 2:03:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-11 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	74.0	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	96.7 %	59-131			"	"	"	

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Stan-SB2-13  
 4/25/2014 2:27:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-12 (Soil)

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

Gasoline (C6-C10)	908	50.0	mg/kg	1	4D28009	04/28/2014	04/28/2014	
Diesel (C10-C28)	442	50.0	"	"	"	"	"	
<i>Surrogate: o-Terphenyl</i>	91.6 %	59-131			"	"	"	

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 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Stan-SB2-GW  
 4/25/2014 2:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-13 (Water)

**BTEX by EPA 8260C**

Benzene	26.5	10.0	ug/L	10	4D28007	04/28/2014	04/29/2014	
Toluene	ND	10.0	"	"	"	"	"	
Ethylbenzene	287	50.0	"	50	"	"	04/28/2014	
Xylenes, total	7830	50.0	"	"	"	"	04/29/2014	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>103 %</i>	<i>87.3-113</i>			<i>"</i>	<i>"</i>	<i>04/28/2014</i>	
<i>Surrogate: Toluene-d8</i>	<i>102 %</i>	<i>90.9-108</i>			<i>"</i>	<i>"</i>	<i>"</i>	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>95.1 %</i>	<i>88.6-111</i>			<i>"</i>	<i>"</i>	<i>"</i>	

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Olsson Associates  
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 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

STAN-MW-GW  
 4/25/2014 2:44:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X404259-14 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4D28008	04/28/2014	04/29/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	87.3-113			"	"	04/29/2014	
<i>Surrogate: Toluene-d8</i>	98.6 %	90.9-108			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %	88.6-111			"	"	"	

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28007 - EPA 5030B (Water)

Blank (4D28007-BLK1)

Prepared: 04/28/2014 Analyzed: 04/28/2014

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>65</i>		<i>"</i>	<i>62.5</i>	<i>104</i>		<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>64</i>		<i>"</i>	<i>62.5</i>	<i>102</i>		<i>90.9-108</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>58</i>		<i>"</i>	<i>62.5</i>	<i>93.2</i>		<i>88.6-111</i>			

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 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28007 - EPA 5030B (Water)

LCS (4D28007-BS1)

Prepared: 04/28/2014 Analyzed: 04/28/2014

Benzene	58.5	1.0	ug/L	50.0	117	75-126				
Toluene	56.3	1.0	"	50.0	113	78.7-126				
Ethylbenzene	54.0	1.0	"	50.0	108	81-130				
m,p-Xylene	109	2.0	"	100	109	77.2-133				
o-Xylene	51.4	1.0	"	50.0	103	77.9-126				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>61</i>		<i>"</i>	<i>62.5</i>	<i>97.6</i>	<i>87.3-113</i>				
<i>Surrogate: Toluene-d8</i>	<i>63</i>		<i>"</i>	<i>62.5</i>	<i>101</i>	<i>90.9-108</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>58</i>		<i>"</i>	<i>62.5</i>	<i>93.0</i>	<i>88.6-111</i>				

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 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28007 - EPA 5030B (Water)

Matrix Spike (4D28007-MS1)	Source: X404256-01			Prepared: 04/28/2014 Analyzed: 04/28/2014						
Benzene	60.1	1.0	ug/L	50.0	ND	120	74-130			
Toluene	60.0	1.0	"	50.0	ND	120	73-131			
Ethylbenzene	58.1	1.0	"	50.0	ND	116	76-132			
m,p-Xylene	111	2.0	"	100	0.4	111	69-139			
o-Xylene	53.3	1.0	"	50.0	ND	107	74-131			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>59</i>		<i>"</i>	<i>62.5</i>		<i>94.6</i>	<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>64</i>		<i>"</i>	<i>62.5</i>		<i>102</i>	<i>90.9-108</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>59</i>		<i>"</i>	<i>62.5</i>		<i>93.8</i>	<i>88.6-111</i>			

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 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

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 4D28007 - EPA 5030B (Water)

Matrix Spike Dup (4D28007-MSD1)	Source: X404256-01			Prepared: 04/28/2014 Analyzed: 04/28/2014						
Benzene	48.0	1.0	ug/L	50.0	ND	96.0	74-130	22.4	20	QR-02
Toluene	45.4	1.0	"	50.0	ND	90.9	73-131	27.6	20	QR-02
Ethylbenzene	41.3	1.0	"	50.0	ND	82.7	76-132	33.7	20	QR-02
m,p-Xylene	79.2	2.0	"	100	0.4	78.9	69-139	33.7	20	QR-02
o-Xylene	40.9	1.0	"	50.0	ND	81.9	74-131	26.2	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		95.1	87.3-113			
Surrogate: Toluene-d8	64		"	62.5		103	90.9-108			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.3	88.6-111			

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 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28008 - EPA 5030B (Water)

Blank (4D28008-BLK1)

Prepared: 04/28/2014 Analyzed: 04/29/2014

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>64</i>		<i>"</i>	<i>62.5</i>	<i>103</i>		<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>63</i>		<i>"</i>	<i>62.5</i>	<i>100</i>		<i>90.9-108</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>62</i>		<i>"</i>	<i>62.5</i>	<i>99.9</i>		<i>88.6-111</i>			

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Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28008 - EPA 5030B (Water)

LCS (4D28008-BS1)

Prepared: 04/28/2014 Analyzed: 04/29/2014

Benzene	50.8	1.0	ug/L	50.0		102	75-126			
Toluene	47.6	1.0	"	50.0		95.2	78.7-126			
Ethylbenzene	46.0	1.0	"	50.0		92.1	81-130			
m,p-Xylene	95.9	2.0	"	100		95.9	77.2-133			
o-Xylene	48.3	1.0	"	50.0		96.5	77.9-126			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>62</i>		<i>"</i>	<i>62.5</i>		<i>99.7</i>	<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>62</i>		<i>"</i>	<i>62.5</i>		<i>99.2</i>	<i>90.9-108</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>62</i>		<i>"</i>	<i>62.5</i>		<i>100</i>	<i>88.6-111</i>			

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Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28008 - EPA 5030B (Water)

Matrix Spike (4D28008-MS1)	Source: X404263-03			Prepared: 04/28/2014 Analyzed: 04/29/2014						
Benzene	56.5	1.0	ug/L	50.0	ND	113	74-130			
Toluene	53.8	1.0	"	50.0	ND	108	73-131			
Ethylbenzene	53.1	1.0	"	50.0	ND	106	76-132			
m,p-Xylene	108	2.0	"	100	ND	108	69-139			
o-Xylene	53.9	1.0	"	50.0	ND	108	74-131			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>62</i>		<i>"</i>	<i>62.5</i>		<i>98.9</i>	<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>63</i>		<i>"</i>	<i>62.5</i>		<i>100</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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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28008 - EPA 5030B (Water)

Matrix Spike Dup (4D28008-MSD1)	Source: X404263-03			Prepared: 04/28/2014 Analyzed: 04/29/2014						
Benzene	55.0	1.0	ug/L	50.0	ND	110	74-130	2.62	20	
Toluene	51.8	1.0	"	50.0	ND	104	73-131	3.69	20	
Ethylbenzene	50.4	1.0	"	50.0	ND	101	76-132	5.29	20	
m,p-Xylene	104	2.0	"	100	ND	104	69-139	4.16	20	
o-Xylene	52.2	1.0	"	50.0	ND	104	74-131	3.17	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>62</i>		<i>"</i>	<i>62.5</i>		<i>98.9</i>	<i>87.3-113</i>			
<i>Surrogate: Toluene-d8</i>	<i>63</i>		<i>"</i>	<i>62.5</i>		<i>100</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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 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4D28009 - EPA 3580**

**Blank (4D28009-BLK1)**

Prepared: 04/28/2014 Analyzed: 04/28/2014

Gasoline (C6-C10) ND 50.0 mg/kg

Diesel (C10-C28) ND 50.0 "

*Surrogate: o-Terphenyl* 51 g 50.0 101 59-131

**LCS (4D28009-BS1)**

Prepared: 04/28/2014 Analyzed: 04/28/2014

Gasoline (C6-C10) 983 50.0 mg/kg 1000 98.3 59-133

Diesel (C10-C28) 866 50.0 " 1000 86.6 64-121

*Surrogate: o-Terphenyl* 42 g 50.0 83.0 59-131

**Matrix Spike (4D28009-MS1)**

Source: X404259-09

Prepared: 04/28/2014 Analyzed: 04/28/2014

Gasoline (C6-C10) 955 50.0 mg/kg 1000 ND 95.5 57-139

Diesel (C10-C28) 819 50.0 " 1000 31.0 78.8 53-125

*Surrogate: o-Terphenyl* 41 g 50.0 82.8 59-131

**Matrix Spike Dup (4D28009-MSD1)**

Source: X404259-09

Prepared: 04/28/2014 Analyzed: 04/28/2014

Gasoline (C6-C10) 1140 50.0 mg/kg 1000 ND 114 57-139 17.8 20

Diesel (C10-C28) 926 50.0 " 1000 31.0 89.5 53-125 12.3 20

*Surrogate: o-Terphenyl* 49 g 50.0 97.6 59-131

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Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

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### Notes and Definitions

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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

May 12, 2014

**Olsson Associates**

**Kevin Taylor**

**4690 Table Mountain Drive**

**Golden CO 80403**

**Project Name - Whitewing**

**Project Number - 014-0905**

Attached are your analytical results for Whitewing received by Origins Laboratory, Inc. May 07, 2014. This project is associated with Origins project number X405075-01.

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



Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Per-SB4-20	X405075-01	Soil	May 6, 2014 9:43	05/07/2014 13:35
Per-SB5-20	X405075-02	Soil	May 6, 2014 10:18	05/07/2014 13:35
Per-SB5-20GW	X405075-03	Water	May 6, 2014 10:39	05/07/2014 13:35
Per-SB6-14	X405075-04	Soil	May 6, 2014 11:29	05/07/2014 13:35
Per-SB6-22GW	X405075-05	Water	May 6, 2014 11:49	05/07/2014 13:35
Per-SB7-18	X405075-06	Soil	May 6, 2014 12:33	05/07/2014 13:35
Beie-SB4-30	X405075-07	Soil	May 6, 2014 15:52	05/07/2014 13:35
Sta-SB3-11	X405075-08	Soil	May 7, 2014 9:05	05/07/2014 13:35
Sta-SB4-8	X405075-09	Soil	May 7, 2014 9:42	05/07/2014 13:35
Sta-SB4-12GW	X405075-10	Water	May 7, 2014 9:54	05/07/2014 13:35
Sta-SB5-14	X405075-11	Soil	May 7, 2014 10:32	05/07/2014 13:35
Sta-SB5-16GW	X405075-12	Water	May 7, 2014 10:41	05/07/2014 13:35
Sta-SB6-12	X405075-13	Soil	May 7, 2014 10:13	05/07/2014 13:35
Sta-SB7-12	X405075-14	Soil	May 7, 2014 11:42	05/07/2014 13:35

Origins Laboratory, Inc.



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Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sta-SB7-12GW	X405075-15	Water	May 7, 2014 12:01	05/07/2014 13:35
Sta-SB8-12	X405075-16	Soil	May 7, 2014 12:16	05/07/2014 13:35
Sta-SB8-12GW	X405075-17	Water	May 7, 2014 12:21	05/07/2014 13:35

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing



www.originslaboratory.com

page 1 of 2

Client: Olsson Associates Project Manager/Send Report To: Kevin Taylor  
 Address: 4690 Table Mountain Dr #200 Email Address: ktaylor@olssonassociates.com  
Golden CO 80403 Project Name/Number: Whitewing beaproj 014-0905  
 Telephone Number: 303-237-2072 Samples Collected By: MKK's Giribaur

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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa #		
Per-584-20	5/6/14	0943	2 X					X			640/PRO 8015	1
Per-585-20	5/6/14	1018	2 X					X			640/PRO 8015	2
Per-585-26aw	5/6/14	1039	5 <del>1</del> X					X			BTEX 8260	3
Per-586-14	5/6/14	1129	2 X					X			640/PRO 8015	4
Per-586-226w	5/6/14	1149	5 <del>1</del> X					X			BTEX 8260	5
Per-587-18	5/6/14	1233	2 X					X			640/PRO 8015	6
Beie-584-30	5/6/14	1852	2 X					X			640/PRO 8015	7
SHA-583-11	5/7/14	0908	1 X					X			640/PRO 8015	8
SHA-584-8	5/7/14	0942	1 X					X			640/PRO 8015	9
SHA-584-126w	5/7/14	0954	5 X					X			BTEX 8260	10
Relinquished By: <u>kwj</u>	Date: <u>5/7/14</u>	Time: <u>1335</u>	Received By: <u>[Signature]</u>	Date: <u>5/7/14</u>	Time: <u>1335</u>	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input checked="" type="checkbox"/> Standard <input type="checkbox"/>						
Relinquished By: <u>[Signature]</u>	Date: <u>5/7/14</u>	Time: <u>1335</u>	Received By: <u>[Signature]</u>	Date: <u>5/7/14</u>	Time: <u>1335</u>							

Durba Basille Mandak

Comments:

Origins Laboratory, Inc.

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

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X405075

page 2 of 2

**ORIGINS**  
 LABORATORY, INC

Client: Olsson Project Manager/Send Report To: Kevin Taylor  
 Address: 4690 Table Mountain Dr #200 Email Address: Kevin@olssonassociates.com  
Golden CO 80403 Project Name/Number: Whitewing freeprobe 014-0905  
 Telephone Number: 303-237-2072 Samples Collected By: NA

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 <sub>3</sub>	Other	Groundwater	Soil	Air Summa #			Other
STA-885-14	5/7/14	1032	1	X				X				GAO/PAQ 885	1
STA-885-16GW	5/7/14	1041	5	X				X				BTEX 8260	2
STA-886-12	5/7/14	1113	1	X				X				GAO/PAQ 885	3
STA-887-12	5/7/14	1142	1	X				X				GAO/PAQ 885	4
STA-887-12GW	5/7/14	1201	5	X				X				BTEX 8260	5
STA-888-12	5/7/14	1216	1	X				X				GAO/PAQ 885	6
STA-888-12GW	5/7/14	1221	5	X				X				BTEX 8260	7
													8
													9
													10
Relinquished By: <u>red</u>	Date: <u>5/7/14</u>	Time: <u>1335</u>	Received By: <u>[Signature]</u>	Date: <u>5/7/14</u>	Time: <u>1339</u>	Turnaround Time: <input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input checked="" type="checkbox"/> 72 Hr <input type="checkbox"/> Standard							
Relinquished By:	Date:	Time:	Received By:	Date:	Time:								

Print: Results Manual

Comments:

Origins Laboratory, Inc.

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X40507S Client: Olsson  
 Client Project ID: Whitewing  
 Checklist Completed by: Jeff Smith Shipped Via: Pick Up  
 Date/time completed: 5/7/14 14:26 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: NA  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water Other: \_\_\_\_\_  
 Cooler Number/Temperature: \_\_\_\_\_ / 14.3 °C \_\_\_\_\_ / \_\_\_\_\_ °C \_\_\_\_\_ / \_\_\_\_\_ °C (Describe)  
 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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		COC = Sta-SB3-11 Sample Label = Sta-SB3-10
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input checked="" type="checkbox"/>			Per-SB5-2066 (E) Sta-SB4-1266 (B,C,D,E)
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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)	<input checked="" type="checkbox"/>			HCL
Additional Comments (if any):	<u>Not Recd Client via email, Proceed with analysis</u>			

<sup>(1)</sup>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.

[Signature]  
 Reviewed by (Project Manager)

5/12/14 9:21  
 Date/Time Reviewed

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Per-SB4-20**

**5/6/2014 9:43:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-01 (Soil)**

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	83.4 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Per-SB5-20**

**5/6/2014 10:18:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-02 (Soil)**

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	82.4 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Per-SB5-20GW**

**5/6/2014 10:39:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-03 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4E07014	05/07/2014	05/07/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	104 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	92.2 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.9 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Per-SB6-14**

**5/6/2014 11:29:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-04 (Soil)**

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	94.2 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Per-SB6-22GW**

**5/6/2014 11:49:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-05 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4E07014	05/07/2014	05/07/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	104 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	93.6 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.5 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Per-SB7-18

5/6/2014 12:33:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405075-06 (Soil)

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	82.0 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Beie-SB4-30**

**5/6/2014 3:52:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-07 (Soil)**

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	90.0 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB3-11**

**5/7/2014 9:05:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-08 (Soil)**

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	93.1 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB4-8**

**5/7/2014 9:42:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-09 (Soil)**

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

Gasoline (C6-C10)	4530	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	1200	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	80.4 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB4-12GW**

**5/7/2014 9:54:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-10 (Water)**

**BTEX by EPA 8260C**

Benzene	3970	20.0	ug/L	20	4E07014	05/07/2014	05/07/2014	
Toluene	ND	20.0	"	"	"	"	"	
Ethylbenzene	1700	20.0	"	"	"	"	"	
Xylenes, total	6390	20.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	99.7 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	95.2 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	94.7 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB5-14**

**5/7/2014 10:32:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-11 (Soil)**

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

Gasoline (C6-C10)	356	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	251	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	82.2 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB5-16GW**

**5/7/2014 10:41:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-12 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	4.0	ug/L	4	4E07014	05/07/2014	05/12/2014	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	<b>56.0</b>	4.0	"	"	"	"	"	
Xylenes, total	<b>726</b>	4.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	87.3-113			"	"	05/08/2014	
Surrogate: Toluene-d8	92.5 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	99.7 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB6-12**

**5/7/2014 10:13:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-13 (Soil)**

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

Gasoline (C6-C10)	449	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	268	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	84.1 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB7-12**

**5/7/2014 11:42:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-14 (Soil)**

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	87.0 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB7-12GW**

**5/7/2014 12:01:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-15 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4E07014	05/07/2014	05/08/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	<b>4.7</b>	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	103 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	91.9 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB8-12**

**5/7/2014 12:16:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-16 (Soil)**

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

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4E08008	05/08/2014	05/08/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Surrogate: o-Terphenyl	81.9 %	59-131			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**Sta-SB8-12GW**

**5/7/2014 12:21:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X405075-17 (Water)**

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4E07014	05/07/2014	05/08/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %	87.3-113			"	"	"	
<i>Surrogate: Toluene-d8</i>	90.5 %	90.9-108			"	"	"	S-GC
<i>Surrogate: 4-Bromofluorobenzene</i>	99.7 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4E07014 - EPA 5030B (Water)**

**Blank (4E07014-BLK1)**

Prepared: 05/07/2014 Analyzed: 05/07/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5	99.2		87.3-113			
Surrogate: Toluene-d8	59		"	62.5	95.0		90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5	98.4		88.6-111			

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Ross S Hutto For Noelle Doyle Mathis, President

Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4E07014 - EPA 5030B (Water)

**LCS (4E07014-BS1)**

Prepared: 05/07/2014 Analyzed: 05/07/2014

Benzene	48.4	1.0	ug/L	50.0		96.7	75-126			
Toluene	45.6	1.0	"	50.0		91.1	78.7-126			
Ethylbenzene	45.8	1.0	"	50.0		91.7	81-130			
m,p-Xylene	90.8	2.0	"	100		90.8	77.2-133			
o-Xylene	47.3	1.0	"	50.0		94.5	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.4	87.3-113			
Surrogate: Toluene-d8	60		"	62.5		95.4	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.1	88.6-111			

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 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4E07014 - EPA 5030B (Water)

Matrix Spike (4E07014-MS1)	Source: X405069-02			Prepared: 05/07/2014 Analyzed: 05/07/2014						
Benzene	47.3	1.0	ug/L	50.0	ND	94.6	74-130			
Toluene	45.6	1.0	"	50.0	ND	91.3	73-131			
Ethylbenzene	45.7	1.0	"	50.0	ND	91.4	76-132			
m,p-Xylene	92.4	2.0	"	100	0.2	92.2	69-139			
o-Xylene	46.8	1.0	"	50.0	0.1	93.4	74-131			
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		91.9	87.3-113			
Surrogate: Toluene-d8	61		"	62.5		97.3	90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.1	88.6-111			

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Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4E07014 - EPA 5030B (Water)

Matrix Spike Dup (4E07014-MSD1)	Source: X405069-02			Prepared: 05/07/2014 Analyzed: 05/07/2014						
Benzene	52.0	1.0	ug/L	50.0	ND	104	74-130	9.43	20	
Toluene	47.2	1.0	"	50.0	ND	94.4	73-131	3.34	20	
Ethylbenzene	47.2	1.0	"	50.0	ND	94.4	76-132	3.21	20	
m,p-Xylene	95.0	2.0	"	100	0.2	94.8	69-139	2.80	20	
o-Xylene	49.1	1.0	"	50.0	0.1	98.0	74-131	4.82	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.3	87.3-113			
Surrogate: Toluene-d8	59		"	62.5		94.5	90.9-108			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		96.8	88.6-111			

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 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4E08008 - EPA 3580**

**Blank (4E08008-BLK1)**

Prepared: 05/08/2014 Analyzed: 05/08/2014

Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Surrogate: o-Terphenyl	40		g	50.0		80.2	59-131			

**LCS (4E08008-BS1)**

Prepared: 05/08/2014 Analyzed: 05/08/2014

Gasoline (C6-C10)	904	50.0	mg/kg	1000		90.4	59-133			
Diesel (C10-C28)	831	50.0	"	1000		83.1	64-121			
Surrogate: o-Terphenyl	41		g	50.0		82.1	59-131			

**Matrix Spike (4E08008-MS1)**

**Source: X405075-01**

Prepared: 05/08/2014 Analyzed: 05/08/2014

Gasoline (C6-C10)	945	50.0	mg/kg	1000	ND	94.5	57-139			
Diesel (C10-C28)	860	50.0	"	1000	20.5	84.0	53-125			
Surrogate: o-Terphenyl	78		g	50.0		156	59-131			S-DUP

**Matrix Spike Dup (4E08008-MSD1)**

**Source: X405075-01**

Prepared: 05/08/2014 Analyzed: 05/08/2014

Gasoline (C6-C10)	1120	50.0	mg/kg	1000	ND	112	57-139	17.1	20	
Diesel (C10-C28)	951	50.0	"	1000	20.5	93.0	53-125	9.98	20	
Surrogate: o-Terphenyl	88		g	50.0		176	59-131			S-DUP

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Olsson Associates

4690 Table Mountain Drive

Golden CO 80403

Kevin Taylor

Project Number: 014-0905

Project: Whitewing

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**Notes and Definitions**

- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- S-DUP Duplicate analysis confirmed surrogate failure due to matrix effects.
- 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

May 21, 2014

Olsson Associates

Kevin Taylor

4690 Table Mountain Drive

Golden CO 80403

Project Name - Whitewing

Project Number - 014-0905

Attached are your analytical results for Whitewing received by Origins Laboratory, Inc. May 16, 2014. This project is associated with Origins project number X405176-01.

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



Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Sta-SB9-12GW	X405176-01	Water	May 16, 2014 9:25	05/16/2014 15:43
Sta-SB10-15GW	X405176-02	Water	May 16, 2014 10:11	05/16/2014 15:43
Per-SB8-20GW	X405176-03	Water	May 16, 2014 12:33	05/16/2014 15:43
Per-SB9-20GW	X405176-04	Water	May 16, 2014 13:59	05/16/2014 15:43

Origins Laboratory, Inc.



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Noelle Doyle Mathis, President



Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

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


**Sample Receipt Checklist**

Origins Work Order: X405176 Client: Olsson  
 Client Project ID: Whitewing  
 Checklist Completed by: Jeff Smith Shipped Via: Pick up  
 Date/time completed: 5/19/14 9:23 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 14.1 °C  \_\_\_\_\_ °C  \_\_\_\_\_ °C (Describe)  
 Thermometer ID: 7000

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input checked="" type="checkbox"/>			See below Client has signed off headspace as noted on the COC, and via verbal conversation
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (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 HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>			HCL
Additional Comments (if any): updated COC that was received by email on 5/19/14 was not relinquished by client. I printed name/Date/Time of sampler who had relinquished Project to me on 5/16/14. Due to sediment 68-8/9 CAN ONLY BE RUN AT 5/17/14 4x Diluted. RLL 5/21/14				

<sup>(1)</sup>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 5.20.14 2145

Origins Laboratory, Inc.  


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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Sta-SB9-12GW  
 5/16/2014 9:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405176-01 (Water)

**BTEX by EPA 8260C**

Benzene	1.6	1.0	ug/L	1	4E19009	05/19/2014	05/20/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	ND	1.0	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	98.4 %	87.3-113			"	"	"	
<i>Surrogate: Toluene-d8</i>	104 %	90.9-108			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.0 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Sta-SB10-15GW  
 5/16/2014 10:11:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405176-02 (Water)

**BTEX by EPA 8260C**

Benzene	ND	1.0	ug/L	1	4E19009	05/19/2014	05/20/2014	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	
Xylenes, total	13.7	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.7 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	105 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.5 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Per-SB8-20GW  
 5/16/2014 12:33:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405176-03 (Water)

**BTEX by EPA 8260C**

Benzene	ND	4.0	ug/L	4	4E19009	05/19/2014	05/21/2014	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	ND	4.0	"	"	"	"	"	
Xylenes, total	ND	4.0	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	98.5 %	87.3-113			"	"	05/20/2014	
<i>Surrogate: Toluene-d8</i>	103 %	90.9-108			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.9 %	88.6-111			"	"	"	

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Olsson Associates  
 4690 Table Mountain Drive  
 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

Per-SB9-20GW  
 5/16/2014 1:59:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
 X405176-04 (Water)

**BTEX by EPA 8260C**

Benzene	ND	4.0	ug/L	4	4E19009	05/19/2014	05/21/2014	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	ND	4.0	"	"	"	"	"	
Xylenes, total	ND	4.0	"	"	"	"	"	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	98.5 %	87.3-113			"	"	05/20/2014	
<i>Surrogate: Toluene-d8</i>	105 %	90.9-108			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.8 %	88.6-111			"	"	"	

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 Project: Whitewing

**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 4E19009 - EPA 5030B (Water)

Blank (4E19009-BLK1)

Prepared: 05/19/2014 Analyzed: 05/20/2014

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>61</i>		<i>"</i>	<i>62.5</i>	<i>97.8</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>62</i>		<i>"</i>	<i>62.5</i>	<i>99.2</i>		<i>88.6-111</i>			

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 Project: Whitewing

**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 4E19009 - EPA 5030B (Water)

LCS (4E19009-BS1)

Prepared: 05/19/2014 Analyzed: 05/20/2014

Benzene	49.5	1.0	ug/L	50.0	99.0	75-126				
Toluene	53.5	1.0	"	50.0	107	78.7-126				
Ethylbenzene	52.9	1.0	"	50.0	106	81-130				
m,p-Xylene	105	2.0	"	100	105	77.2-133				
o-Xylene	51.3	1.0	"	50.0	103	77.9-126				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>54</i>		<i>"</i>	<i>62.5</i>	<i>86.9</i>	<i>87.3-113</i>				
<i>Surrogate: Toluene-d8</i>	<i>67</i>		<i>"</i>	<i>62.5</i>	<i>107</i>	<i>90.9-108</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>63</i>		<i>"</i>	<i>62.5</i>	<i>101</i>	<i>88.6-111</i>				

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 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4E19009 - EPA 5030B (Water)

Matrix Spike (4E19009-MS1)	Source: X405164-08			Prepared: 05/19/2014 Analyzed: 05/20/2014						
Benzene	48.9	1.0	ug/L	50.0	ND	97.9	74-130			
Toluene	51.0	1.0	"	50.0	ND	102	73-131			
Ethylbenzene	53.1	1.0	"	50.0	ND	106	76-132			
m,p-Xylene	105	2.0	"	100	ND	105	69-139			
o-Xylene	51.4	1.0	"	50.0	ND	103	74-131			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>58</i>		<i>"</i>	<i>62.5</i>		<i>92.2</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>61</i>		<i>"</i>	<i>62.5</i>		<i>98.2</i>	<i>88.6-111</i>			

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 Golden CO 80403

Kevin Taylor  
 Project Number: 014-0905  
 Project: Whitewing

**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 4E19009 - EPA 5030B (Water)

Matrix Spike Dup (4E19009-MSD1)	Source: X405164-08			Prepared: 05/19/2014 Analyzed: 05/20/2014						
Benzene	50.6	1.0	ug/L	50.0	ND	101	74-130	3.24	20	
Toluene	53.7	1.0	"	50.0	ND	107	73-131	5.16	20	
Ethylbenzene	55.1	1.0	"	50.0	ND	110	76-132	3.71	20	
m,p-Xylene	109	2.0	"	100	ND	109	69-139	3.52	20	
o-Xylene	53.1	1.0	"	50.0	ND	106	74-131	3.29	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>56</i>		<i>"</i>	<i>62.5</i>		<i>90.4</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>63</i>		<i>"</i>	<i>62.5</i>		<i>100</i>	<i>88.6-111</i>			

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*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.*

Olsson Associates  
4690 Table Mountain Drive  
Golden CO 80403

Kevin Taylor  
Project Number: 014-0905  
Project: Whitewing

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### 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.

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Noelle Doyle Mathis, President