

State of Colorado  
Oil and Gas Conservation Commission

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



FOR OGCC USE ONLY

Received 5/28/2015  
Document 2143456  
REM 9106

**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 Employee:

☒ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No: ~~439681~~ 400722328

**GENERAL INFORMATION**

OGCC Operator Number: 47120		Contact Name and Telephone	
Name of Operator: Kerr-McGee Oil and Gas Onshore, LP		Name: Phillip Hamlin	
Address: 1099 18th Street, Suite 1800		No: 970-336-3500	
City: Denver State: CO Zip: 80202		Fax: 970-336-3656	
API/Facility No: 05-123-07902		County: Weld	
Facility Name: Albert Sack Unit 1		Facility Number: 317879	
Well Name: Albert Sack		Well Number: Unit 1	
Location (Qtr, Sec, Twp, Rng, Meridian): SWNE S22 T1N, R67W		Latitude: 40.040113 Longitude: -104.872339	

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.):		Condensate and Produced Water	
Site Conditions: Is location within a sensitive area (according to Rule 901e)?		<input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, attach evaluation.	
Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.):		Agriculture	
Soil type, if not previously identified on Form 2A or Federal Surface Use Plan:		Silty sand and silty clay	
Potential receptors (water wells within 1/4 mi, surface waters, etc.):		Surface water is located approximately 930' feet southeast of the site;	
the nearest water well is located approximately 1,105' east of the release area.			
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	40' N-S x 55' E-W x 10' bgs	Excavation, soil sampling, and laboratory analysis	
<input type="checkbox"/> Vegetation			
<input checked="" type="checkbox"/> Groundwater	See attached data	Groundwater sampling and laboratory analysis	
<input type="checkbox"/> Surface water			

**REMEDIATION WORKPLAN**

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

On October 30, 2014, historical hydrocarbon impacts were encountered beneath a partially buried produced water vessel during tank battery reconstruction activities. The volume of the release is unknown. The well was shut in and locked out, and petroleum hydrocarbon impacted soil was excavated and transported off-site for disposal. Groundwater was encountered in the excavation at approximately 10 feet below ground surface (bgs). Impacted groundwater was removed by a vacuum truck and taken to a licensed injection facility for disposal. An Initial Form 19 was submitted on November 3, 2014, and a Supplemental Form 19 was submitted on November 10, 2015. The COGCC has issued Spill Tracking number 439681 for this release.

Describe how source is to be removed:

Excavation activities commenced on October 30, 2014, and approximately 500 cubic yards (cy) of impacted soil were removed and transported to the Front Range Landfill in Erie, Colorado. Excavation activities were guided in the field using a photoionization detector (PID) to measure volatile organic compound (VOC) concentrations in soil. Soil samples were collected from the final extent of the excavation and submitted to Origins Laboratory in Denver, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) by USEPA Method 8260B, TPH - diesel range organics and oil range organics (DRO and ORO) by USEPA Method 8015. Laboratory results for the confirmation soil samples indicated that BTEX and TPH concentrations were below applicable COGCC standards at the final extent of the excavation. Groundwater was encountered in the excavation at approximately 10 feet bgs and a sample (GW01) was collected for laboratory analysis of BTEX. Sample GW01 exhibited concentrations of benzene (3,140 ug/L), toluene (1,400 ug/L), and total xylenes (8,040 ug/L) exceeding the applicable COGCC groundwater standards. A vacuum truck was used to remove approximately 80 barrels of impacted groundwater from the excavation, which were transported to a licensed injection facility for disposal. A subsequent groundwater sample (GW02) was collected and submitted for analysis of BTEX. Sample GW02 exhibited concentrations of benzene (2,250 ug/L), toluene (564 ug/L), and total xylenes (4,420 ug/L) exceeding the applicable COGCC standards. Soil analytical results are summarized in Table 1 and groundwater analytical results are summarized in Table 2. Soil and excavation groundwater sample locations are illustrated on Figure 1, and laboratory analytical reports are included as attachments.

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.:

The impacted soil was excavated and transported to the Front Range Landfill in Erie, Colorado. The impacted groundwater was removed by a vacuum truck and transported to a licensed injection facility for disposal. 264 pounds of activated carbon were added to the groundwater in the excavation prior to backfilling. Additional proposed groundwater remediation measures are described on the following page.

State of Colorado  
Oil and Gas Conservation Commission1120 Lincoln Street, Suite 801, Denver, Colorado  
(303) 894-2100 Fax 894-2109

## REMEDIATION WORKPLAN (CONT.)

OGCC Employee:

R&gt; Allison

Tracking Number: ~~439681~~ 400722328

Name of Operator: Kerr-McGee Oil and Gas Onshore, LP

OGCC Operator No: 47120

Received Date: 5/28/2015

Well Name &amp; No: Albert Sack Unit 1

Facility Name &amp; No.: Albert Sack Unit 1 / 317879

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

On April 2, 2015, five temporary groundwater monitoring wells (BH01 - BH05) were installed surrounding the area of the release to assess groundwater impacts subsequent to the completion of excavation, groundwater removal, and activated carbon treatment activities. Groundwater samples were collected from the wells on April 14, 2015, and analyzed for BTEX. Temporary monitoring well locations and groundwater analytical results are illustrated on Figure 2, and a groundwater elevation map is presented on Figure 3. Groundwater analytical results are summarized in Table 2, and the analytical laboratory reports and temporary groundwater well completion logs are included as attachments. Additional temporary monitoring wells will be installed to establish point of compliance and further remedial actions will be assessed at that time. Groundwater monitoring will continue on a quarterly basis until BTEX concentrations remain below COGCC groundwater standards for four consecutive quarters.

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.

Following assessment and source removal activities, the site was restored to its pre-release grade. Kerr-McGee's tank battery has been re-built and remains at the site.

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:

BTEX and TPH concentrations were below the applicable Table 910-1 standards for soil samples collected from the final extent of the excavation. Quarterly groundwater monitoring for BTEX will continue at the five temporary well locations until BTEX concentrations remain below COGCC groundwater standards for four consecutive quarters.

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

Impacted soil was transported to the Front Range Landfill in Erie, Colorado for disposal. Impacted groundwater was transported to a licensed injection facility for disposal.

## IMPLEMENTATION SCHEDULE

Date Site Investigation Began: 10/30/2014

Date Site Investigation Completed: 4/2/2015

Remediation Plan Submitted:

Remediation Start Date: 10/30/2014

Anticipated Completion Date: 10/14/2016

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: Phillip Hamlin

Signed:

Title: Senior HSE Representative

Date: 5/28/15

OGCC Approved:

Title: Northeast EPS

Date: 6/2/2015

Condition of Approval: Additional investigation is required. Conduct additional assessment work to define the extent of impact to ground water. Submit an additional assessment report within 90 days (by 8/31/2015) with the results of the additional assessment.

## TABLES



TABLE 1  
ALBERT SACK UNIT 1  
SOIL SAMPLE RESULTS SUMMARY TABLE  
KERR-McGEE OIL AND GAS ONSHORE LP

Sample ID	Date Sampled	Depth (feet bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH - GRO (mg/kg)	TEPH - DRO + ORO (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>			0.17	85	100	175	500	
NW01 @ 8'	10/30/2014	8	0.35	<0.10	3.07	10.0	1,300	608
NE01 @ 8'	10/30/2014	8	<0.10	<0.10	<0.10	<0.10	<50	63.0
SW01 @ 8'	10/30/2014	8	1.01	<0.10	2.09	14.3	339	175
SE01 @ 8'	10/30/2014	8	1.90	<0.10	5.42	6.09	235	203
E01 @ 8'	10/30/2014	8	0.05	<0.05	0.05	<0.05	<50	<200
W02 @ 8'	11/4/2014	8	<0.100	<0.100	0.390	2.07	398	100
SW02 @ 8'	11/4/2014	8	0.245	<0.100	0.214	0.283	124	<200
SE02 @ 8'	11/4/2014	8	0.0029	<0.0020	<0.0020	<0.0020	0.414	<200
SW03 @ 8'	11/4/2014	8	0.0200	<0.0020	<0.0020	0.0050	8.08	<200
NW02 @ 8'	11/5/2014	8	<0.0500	<0.0500	<0.0500	<0.0500	11.0	<200
E02 @ 8'	11/10/2014	8	0.759	<0.050	0.106	<0.050	275	290
E03 @ 8'	11/11/2014	8	0.091	<0.002	0.004	<0.002	4.48	<200
E04 @ 8'	11/14/2014	8	<0.050	<0.050	<0.050	<0.050	38.8	<200
W03 @ 8'	11/14/2014	8	<0.100	<0.100	<0.100	<0.100	316	130

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective February 1, 2014.

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH - DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH - ORO = Total extractable petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram.

bgs = Below ground surface.

**BOLD** = Analytical result is in exceedance of COGCC Table 910-1 soil standards.



**TABLE 2**  
**ALBERT SACK UNIT 1**  
**GROUNDWATER SAMPLE RESULTS SUMMARY TABLE**  
**KERR-McGEE OIL AND GAS ONSHORE LP**

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
COGCC Table 910-1 Groundwater Standard (µg/L) <sup>(1)</sup>		5	560	700	1,400
GW01	10/30/2014	3,140	1,400	618	8,040
GW02	11/5/2014	2,250	564	354	4,420
BH01	4/14/2015	226	<1.0	350	3,830
BH02	4/14/2015	393	<1.0	79.5	377
BH03	4/14/2015	328	<1.0	135	57.4
BH04	4/14/2015	<4.0	<4.0	279	1,110
BH05	4/14/2015	7.2	<1.0	26.2	208

**Notes:**

1. Groundwater standards referenced from 2 CCR 404-1, Table 910-1, effective February 1, 2014.

COGCC = Colorado Oil and Gas Conservation Commission

µg/L = Micrograms per liter

(<) = Analytical result is less than the indicated laboratory reporting limit.

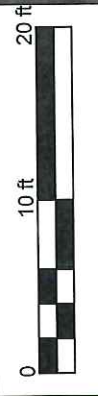
**BOLD** = Analytical result is in exceedance of COGCC groundwater standards.

## FIGURES



Benzene Concentrations Listed Above Sample ID.  
TPH Concentrations Listed Below Sample ID.  
Soil concentrations in mg/kg  
Groundwater concentrations in ug/L

Image Source:  
Google Earth 2014



- LEGEND
- Approximate Excavation Extent
  - Approximate Release Location
  - Approximate Soil Sample Location
  - Approximate Groundwater Sample Location

FIGURE 1  
SITE MAP AND SAMPLE  
LOCATIONS

**Facility Diagram**  
Kerr-McGee Oil and Gas Onshore, LP  
Albert Sack Unit 1  
SWNE S22 T1N R67W  
Weld County, CO



6899 Pecos St., Unit C  
Denver, CO 80221

DRAWN BY: ESS  
DATE: 4/21/2015





BH05	
Compound (ug/L)	4/14/2015
Benzene	7.2
Toluene	<1.0
Ethylbenzene	26.2
Total Xylenes	208

BH05

BH04

BH04	
Compound (ug/L)	4/14/2015
Benzene	<4.0
Toluene	<4.0
Ethylbenzene	279
Total Xylenes	1,110

GW01

GW02

BH02

BH01

BH01	
Compound (ug/L)	4/14/2015
Benzene	226
Toluene	<1.0
Ethylbenzene	350
Total Xylenes	3,830

BH03	
Compound (ug/L)	4/14/2015
Benzene	328
Toluene	<1.0
Ethylbenzene	135
Total Xylenes	57.4

BH03

BH02	
Compound (ug/L)	4/14/2015
Benzene	393
Toluene	<1.0
Ethylbenzene	79.5
Total Xylenes	377

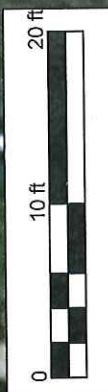


Image Source:  
Google Earth 2014

#### LEGEND

- Approximate Excavation Extent
- Approximate Release Location
- Approximate Monitoring Well Location
- Approximate Groundwater Sample Location

**Facility Diagram**  
Kerr-McGee Oil and Gas Onshore, LP  
Albert Sack Unit 1  
SWNE S22 T1N R67W  
Weld County, CO



**TASMAN**  
GEOSCIENCES  
6899 Pecos St., Unit C  
Denver, CO 80221

FIGURE 2

TEMPORARY WELL  
LOCATIONS AND  
GROUNDWATER  
ANALYTICAL RESULTS

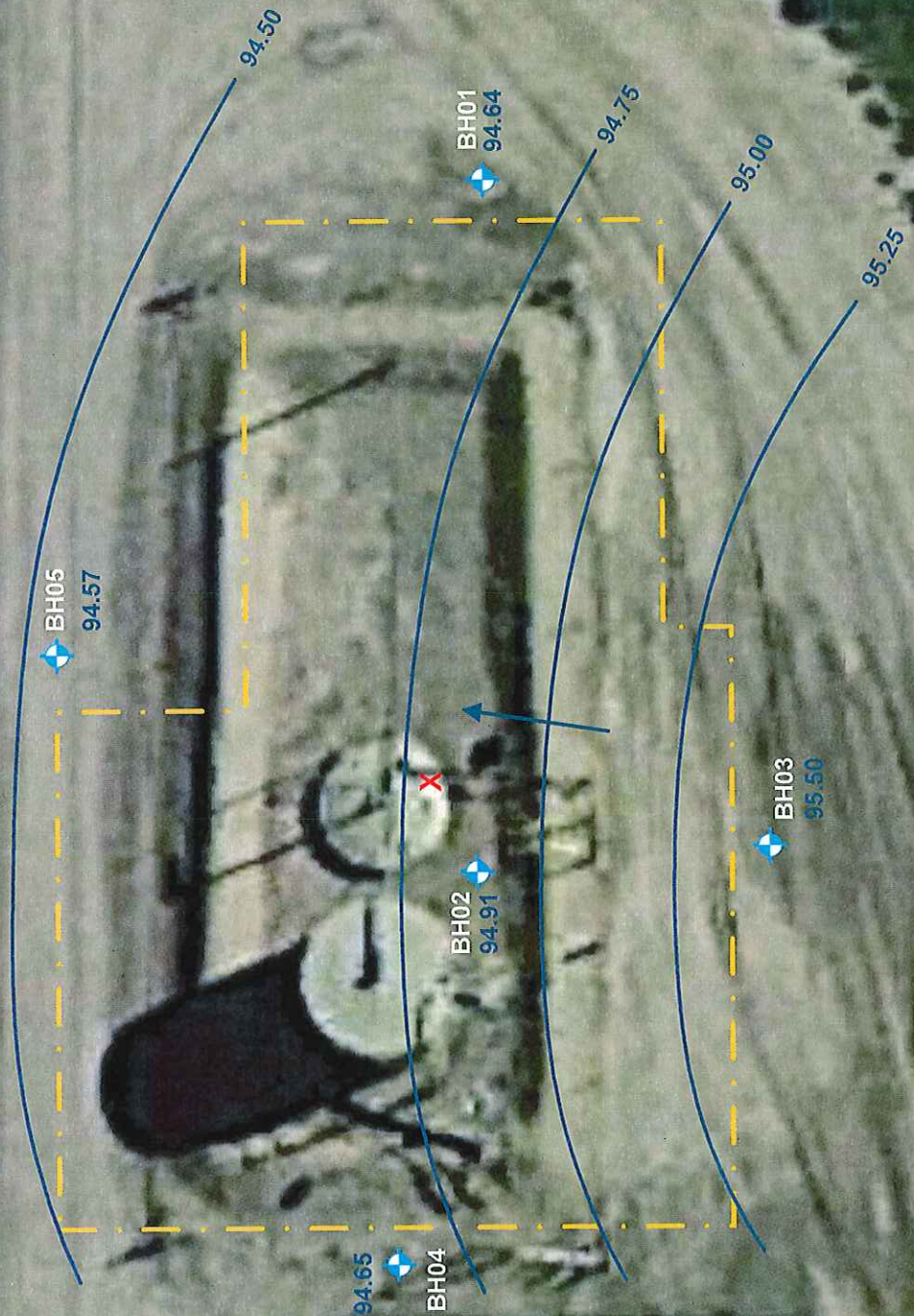
DRAWN BY: ESS

DATE: 4/21/2015





Image Source:  
Google Earth 2014



DRAWN BY: ESS		Facility Diagram Kerr-McGee Oil and Gas Onshore, LP Albert Sack Unit 1 SWNE S22 T1N R67W Weld County, CO	 <b>TASMAN</b> GEOSCIENCES 6899 Pecos St., Unit C Denver, CO 80221	<b>FIGURE 3</b> GROUNDWATER ELEVATION CONTOUR MAP (APRIL 14, 2015)
DATE: 4/21/2015				
<b>LEGEND</b> <div> Groundwater Elevation Contour</div> <div> Approximate Excavation Extent</div> <div> Approximate Release Location</div> <div> Approximate Monitoring Well Location</div> <div> 94.64</div> <div> Approximate Groundwater Flow Direction</div>				

# **ATTACHMENT A**

## **LABORATORY ANALYTICAL REPORTS**





October 31, 2014

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - Albert Sack Unit 1

Project Number - [none]

Attached are your analytical results for Albert Sack Unit 1 received by Origins Laboratory, Inc. October 30, 2014. This project is associated with Origins project number X410357-01.

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



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**CROSS REFERENCE REPORT**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NW01 @ 8	X410357-01	Soil	October 30, 2014 15:10	10/30/2014 16:11
NE01 @ 8	X410357-02	Soil	October 30, 2014 15:13	10/30/2014 16:11
SW01 @ 8	X410357-03	Soil	October 30, 2014 15:15	10/30/2014 16:11
SE01 @ 8	X410357-04	Soil	October 30, 2014 15:17	10/30/2014 16:11
E01 @ 8	X410357-05	Soil	October 30, 2014 15:20	10/30/2014 16:11
GW01	X410357-06	Water	October 30, 2014 15:30	10/30/2014 16:11

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.*

Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: Albert Sack Unit 1

www.originslaboratory.com

X10357

**ORIGINS**  
LABORATORY, INC

page 1 of 1

Client: Tasman Geo Project Manager/Send Report To: Christine Wasko  
Address: \_\_\_\_\_ Email Address: Wasko@TasmanGeo.com  
Telephone Number: 912 232 2807 Project Name/Number: Albert Sack Unit 1  
Samples Collected By: Brak Nelson

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		
NW108	10/17/14	1516	1	X							1
NW108		1513	1	X							2
SW108		1515	1	X							3
SE108		1517	1	X							4
EW108		1520	1	X							5
GW1		1530	2	X						BTEX (300)	6
											7
											8
											9
											10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<i>[Signature]</i>	10/31/14	1611	<i>[Signature]</i>	10/31/14	1611	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/> 55

Date Results Needed:

Comments:

Origins Laboratory, Inc.

*[Signature]*

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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X440357

Client: Tasman

Client Project ID: Albert Sack Unit 1

Checklist Completed by: Jeff Smith

Shipped Via: Pick Up  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 10/30/14

Airbill #: N/A

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

Cooler Number/Temperature: 15.5 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

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"/>	<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"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<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)

Date/Time Reviewed

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.

Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

NW01 @ 8

10/30/2014 3:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X410357-01 (Soil)**

**BTEX by EPA 8260C**

Benzene	0.35	0.10	mg/kg	50	4J30004	10/30/2014	10/30/2014	
Toluene	ND	0.10	"	"	"	"	"	
Ethylbenzene	3.07	0.10	"	"	"	"	"	
Xylenes, total	10.0	0.10	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	86.9 %	70-130			"	"	"	
Surrogate: Toluene-d8	171 %	70-130			"	"	"	S-GC
Surrogate: 4-Bromofluorobenzene	114 %	70-130			"	"	"	

**TPH-Carbon Chain by EPA Method 8015C**

Gasoline (C6-C10)	1300	50.0	mg/kg	1	4J30001	10/30/2014	10/30/2014	
Diesel (C10-C28)	608	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	98.7 %	65-146			"	"	"	
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Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

NE01 @ 8

10/30/2014 3:13:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X410357-02 (Soil)

## BTEX by EPA 8260C

Benzene	ND	0.10	mg/kg	50	4J30004	10/30/2014	10/30/2014	
Toluene	ND	0.10	"	"	"	"	"	
Ethylbenzene	ND	0.10	"	"	"	"	"	
Xylenes, total	ND	0.10	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	85.1 %	70-130			"	"	"	
Surrogate: Toluene-d8	110 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	

## TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4J30001	10/30/2014	10/30/2014	
Diesel (C10-C28)	63.0	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	84.9 %	65-146			"	"	"	
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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.

Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

SW01 @ 8

10/30/2014 3:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X410357-03 (Soil)**

**BTEX by EPA 8260C**

Benzene	1.01	0.10	mg/kg	50	4J30004	10/30/2014	10/30/2014	
Toluene	ND	0.10	"	"	"	"	"	
Ethylbenzene	2.09	0.10	"	"	"	"	"	
Xylenes, total	14.3	0.10	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	87.5 %	70-130			"	"	"	
Surrogate: Toluene-d8	130 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	

**TPH-Carbon Chain by EPA Method 8015C**

Gasoline (C6-C10)	339	50.0	mg/kg	1	4J30001	10/30/2014	10/30/2014	
Diesel (C10-C28)	175	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	71.7 %	65-146			"	"	"	
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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

SE01 @ 8

10/30/2014 3:17:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X410357-04 (Soil)

## BTEX by EPA 8260C

Benzene	1.90	0.10	mg/kg	50	4J30004	10/30/2014	10/30/2014	
Toluene	ND	0.10	"	"	"	"	"	
Ethylbenzene	5.42	0.10	"	"	"	"	"	
Xylenes, total	6.09	0.10	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	88.3 %	70-130			"	"	"	
Surrogate: Toluene-d8	173 %	70-130			"	"	"	S-GC
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	

## TPH-Carbon Chain by EPA Method 8015C

Gasoline (C6-C10)	235	50.0	mg/kg	1	4J30001	10/30/2014	10/30/2014	
Diesel (C10-C28)	203	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	
Surrogate: o-Terphenyl	99.5 %	65-146			"	"	"	

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

E01 @ 8

10/30/2014 3:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X410357-05 (Soil)**

**BTEX by EPA 8260C**

Benzene	0.05	0.05	mg/kg	25	4J30004	10/30/2014	10/30/2014	
Toluene	ND	0.05	"	"	"	"	"	
Ethylbenzene	0.05	0.05	"	"	"	"	"	
Xylenes, total	ND	0.05	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	84.4 %	70-130			"	"	"	
Surrogate: Toluene-d8	106 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	

**TPH-Carbon Chain by EPA Method 8015C**

Gasoline (C6-C10)	ND	50.0	mg/kg	1	4J30001	10/30/2014	10/30/2014	
Diesel (C10-C28)	ND	50.0	"	"	"	"	"	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	86.2 %	65-146			"	"	"	
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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## GW01

10/30/2014 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory, Inc. X410357-06 (Water)

### BTEX by EPA 8260C

Benzene	3140	100	ug/L	100	4J29014	10/30/2014	10/30/2014
Toluene	1400	100	"	"	"	"	"
Ethylbenzene	618	100	"	"	"	"	"
Xylenes, total	8040	100	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	102 %	87.3-113			"	"	"
Surrogate: Toluene-d8	101 %	90.9-108			"	"	"
Surrogate: 4-Bromofluorobenzene	99.0 %	88.6-111			"	"	"

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J29014 - EPA 5030B (Water)

Blank (4J29014-BLK1)

Prepared: 10/29/2014 Analyzed: 10/30/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		102	87.3-113			
Surrogate: Toluene-d8	63		"	62.5		101	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.4	88.6-111			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J29014 - EPA 5030B (Water)

LCS (4J29014-BS1)

Prepared: 10/29/2014 Analyzed: 10/30/2014

Benzene	47.2	1.0	ug/L	50.0		94.4	75-126			
Toluene	46.9	1.0	"	50.0		93.8	78.7-126			
Ethylbenzene	47.2	1.0	"	50.0		94.4	81-130			
m,p-Xylene	93.4	2.0	"	100		93.4	77.2-133			
o-Xylene	46.8	1.0	"	50.0		93.5	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.1	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.2	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.7	88.6-111			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J29014 - EPA 5030B (Water)

Matrix Spike (4J29014-MS1)		Source: X410322-01			Prepared: 10/29/2014 Analyzed: 10/30/2014					
Benzene	49.7	1.0	ug/L	50.0	6.3	86.8	74-130			
Toluene	41.8	1.0	"	50.0	ND	83.5	73-131			
Ethylbenzene	42.0	1.0	"	50.0	0.2	83.7	76-132			
m,p-Xylene	84.2	2.0	"	100	ND	84.2	69-139			
o-Xylene	43.9	1.0	"	50.0	ND	87.7	74-131			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		95.6	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.2	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.8	88.6-111			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J29014 - EPA 5030B (Water)**

Matrix Spike Dup (4J29014-MSD1)		Source: X410322-01			Prepared: 10/29/2014 Analyzed: 10/30/2014					
Benzene	52.4	1.0	ug/L	50.0	6.3	92.2	74-130	5.29	20	
Toluene	44.6	1.0	"	50.0	ND	89.3	73-131	6.71	20	
Ethylbenzene	44.5	1.0	"	50.0	0.2	88.6	76-132	5.67	20	
m,p-Xylene	88.4	2.0	"	100	ND	88.4	69-139	4.87	20	
o-Xylene	46.6	1.0	"	50.0	ND	93.1	74-131	5.93	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.5	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		98.9	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.9	88.6-111			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J30004 - EPA 5030 (soil)

Blank (4J30004-BLK1)

Prepared: 10/30/2014 Analyzed: 10/30/2014

Benzene	ND	0.002	mg/kg							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	56		ug/kg	62.5		90.1	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J30004 - EPA 5030 (soil)

**LCS (4J30004-BS1)**

Prepared: 10/30/2014 Analyzed: 10/30/2014

Benzene	0.09	0.002	mg/kg	0.100		92.3	77.1-124			
Toluene	0.09	0.002	"	0.100		92.6	74.5-128			
Ethylbenzene	0.09	0.002	"	0.100		88.0	66.4-127			
m,p-Xylene	0.17	0.004	"	0.200		85.2	76.6-124			
o-Xylene	0.08	0.002	"	0.100		80.6	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.6	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J30004 - EPA 5030 (soil)

Matrix Spike (4J30004-MS1)		Source: X410282-01			Prepared: 10/30/2014 Analyzed: 10/30/2014					
Benzene	0.09	0.002	mg/kg	0.100	ND	89.4	71.8-126			
Toluene	0.10	0.002	"	0.100	ND	95.1	65.1-130			
Ethylbenzene	0.09	0.002	"	0.100	ND	87.7	62.2-130			
m,p-Xylene	0.18	0.004	"	0.200	ND	89.0	46.5-137			
o-Xylene	0.08	0.002	"	0.100	ND	83.4	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.6	70-130			
Surrogate: Toluene-d8	64		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	70-130			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J30004 - EPA 5030 (soil)

Matrix Spike Dup (4J30004-MSD1)		Source: X410282-01			Prepared: 10/30/2014 Analyzed: 10/30/2014					
Benzene	0.09	0.002	mg/kg	0.100	ND	90.2	71.8-126	0.935	11.3	
Toluene	0.09	0.002	"	0.100	ND	94.3	65.1-130	0.908	15.4	
Ethylbenzene	0.09	0.002	"	0.100	ND	88.4	62.2-130	0.818	19.6	
m,p-Xylene	0.17	0.004	"	0.200	ND	84.9	46.5-137	4.73	19.2	
o-Xylene	0.08	0.002	"	0.100	ND	78.3	54.2-134	6.33	17.9	
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.9	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		107	70-130			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## 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 4J30001 - EPA 3580

### Blank (4J30001-BLK1)

Prepared: 10/29/2014 Analyzed: 10/30/2014

Gasoline (C6-C10)	ND	50.0	mg/kg							
Diesel (C10-C28)	ND	50.0	"							
Residual Range Organics (C28-C36)	ND	200	"							
TPH - Carbon Chain Total	ND	50.0	"							
Surrogate: o-Terphenyl	54		g	50.0		109	65-146			

### LCS (4J30001-BS1)

Prepared: 10/29/2014 Analyzed: 10/30/2014

Gasoline (C6-C10)	917	50.0	mg/kg	1000		91.7	66.7-119			
Diesel (C10-C28)	1100	50.0	"	1000		110	70.1-127			
Residual Range Organics (C28-C36)	580	200	"	1000		58.0	54.5-139			
Surrogate: o-Terphenyl	48		g	50.0		96.3	65-146			

### Matrix Spike (4J30001-MS1)

Source: X410298-01

Prepared: 10/29/2014 Analyzed: 10/30/2014

Gasoline (C6-C10)	913	50.0	mg/kg	1000	ND	91.3	56.4-132			
Diesel (C10-C28)	1080	50.0	"	1000	15.2	107	57.4-138			
Residual Range Organics (C28-C36)	578	200	"	1000	23.2	55.5	47.7-129			
Surrogate: o-Terphenyl	45		g	50.0		89.9	65-146			

### Matrix Spike Dup (4J30001-MSD1)

Source: X410298-01

Prepared: 10/29/2014 Analyzed: 10/30/2014

Gasoline (C6-C10)	971	50.0	mg/kg	1000	ND	97.1	56.4-132	6.13	22	
Diesel (C10-C28)	1130	50.0	"	1000	15.2	112	57.4-138	4.27	18.3	
Residual Range Organics (C28-C36)	595	200	"	1000	23.2	57.2	47.7-129	2.87	30.1	

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6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4J30001 - EPA 3580

Matrix Spike Dup (4J30001-MSD1)

Source: X410298-01

Prepared: 10/29/2014 Analyzed: 10/30/2014

Surrogate: o-Terphenyl	47		g	50.0		93.5	65-146			
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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: Albert Sack Unit 1

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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.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference

Origins Laboratory, Inc.



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November 05, 2014

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - Albert Sack Unit 1

Project Number - [none]

Attached are your analytical results for Albert Sack Unit 1 received by Origins Laboratory, Inc. November 04, 2014. This project is associated with Origins project number X411018-01.

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



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W02 @ 8	X411018-01	Soil	November 4, 2014 12:00	11/04/2014 16:40
SW02 @ 8	X411018-02	Soil	November 4, 2014 14:30	11/04/2014 16:40
SE02 @ 8	X411018-03	Soil	November 4, 2014 14:35	11/04/2014 16:40
SW03 @ 8	X411018-04	Soil	November 4, 2014 14:45	11/04/2014 16:40

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

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**X410 X411018**  
page ☐ of ☐

**ORIGINS**  
LABORATORY, INC

Client: Tasman Geo  
Address:   
Project Manager: Christine Wasko  
Project Name: Albert Sack Unit 1  
Project Number:   
Samples Collected By: Frank Nelson

Telephone Number: 970 236 2807  
Email Address: CWasko@Tasman-geo.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Sampling		
10208	11/14	1000	2	X								1
SW 0208	11/14	1430	2	X								2
560208		1435	2	X								3
SW 0308		1445									hold	4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
<u>[Signature]</u>	11/14/14	1640	<u>[Signature]</u>	11/04/14	1640	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>
<u>[Signature]</u>			<u>[Signature]</u>			2 & 4

Date Results Needed

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

Origins Laboratory, Inc.

[Signature]

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.

Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X411018

Client: Tasman

Client Project ID: ALBERT SACK

Checklist Completed by: Jeff Smith

Shipped Via: Pick Up  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 11/14/14

Airbill #: N/A

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

Cooler Number/Temperature: 14.1 °C 1 °C 1 °C 1 °C

Thermometer ID: T003

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?	<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"/>	
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 sub-contracted 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):				

<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)

11-03-14 1913  
Date/Time Reviewed

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

W02 @ 8

11/4/2014 12:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X411018-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	100	50	mg/kg	1	4K04013	11/04/2014	11/04/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	62.6 %	59-131			"	"	"	
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	398	10.0	mg/kg	50	4K04011	11/04/2014	11/04/2014	
Benzene	ND	0.100	"	"	"	"	"	
Toluene	ND	0.100	"	"	"	"	"	
Ethylbenzene	0.390	0.100	"	"	"	"	"	
Xylenes, total	2.07	0.100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	
Surrogate: Toluene-d8	109 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	97.4 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## SW02 @ 8

11/4/2014 2:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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### Origins Laboratory, Inc. X411018-02 (Soil)

#### DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	4K04013	11/04/2014	11/04/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	62.1 %	59-131			"	"	"	
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#### GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	124	10.0	mg/kg	50	4K04011	11/04/2014	11/04/2014	
Benzene	0.245	0.100	"	"	"	"	"	
Toluene	ND	0.100	"	"	"	"	"	
Ethylbenzene	0.214	0.100	"	"	"	"	"	
Xylenes, total	0.283	0.100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	98.2 %	70-130			"	"	"	
Surrogate: Toluene-d8	98.6 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	91.6 %	70-130			"	"	"	

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.

Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

SE02 @ 8

11/4/2014 2:35:00PM

Reporting

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X411018-03 (Soil)

## DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	4K04013	11/04/2014	11/04/2014
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"

Surrogate: o-Terphenyl	67.3 %	59-131			"	"	"
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## GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.414	0.200	mg/kg	1	4K04011	11/04/2014	11/04/2014
Benzene	0.0029	0.0020	"	"	"	"	"
Toluene	ND	0.0020	"	"	"	"	"
Ethylbenzene	ND	0.0020	"	"	"	"	"
Xylenes, total	ND	0.0020	"	"	"	"	"

Surrogate: 1,2-Dichloroethane-d4	88.8 %	70-130			"	"	"
Surrogate: Toluene-d8	98.6 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	92.1 %	70-130			"	"	"

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.

Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

SW03 @ 8  
11/4/2014 2:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X411018-04 (Soil)

## DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	50	mg/kg	1	4K04013	11/04/2014	11/04/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	68.3 %	59-131			"	"	"	
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## GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	8.08	0.200	mg/kg	1	4K04011	11/04/2014	11/04/2014	
Benzene	0.0200	0.0020	"	"	"	"	"	
Toluene	ND	0.0020	"	"	"	"	"	
Ethylbenzene	ND	0.0020	"	"	"	"	"	
Xylenes, total	0.0050	0.0020	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	
Surrogate: Toluene-d8	108 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.0 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K04011 - EPA 5030 (soil)

Blank (4K04011-BLK1)

Prepared: 11/04/2014 Analyzed: 11/04/2014

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0020	"							
Ethylbenzene	ND	0.0020	"							
Xylenes, total	ND	0.0020	"							
Surrogate: 1,2-Dichloroethane-d4	57.8		ug/kg	62.5		92.5	70-130			
Surrogate: Toluene-d8	49.4		"	62.5		79.1	70-130			
Surrogate: 4-Bromofluorobenzene	49.6		"	62.5		79.4	70-130			

Origins Laboratory, Inc.



Ross S Hutto For Noelle Doyle Mathis, President

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K04011 - EPA 5030 (soil)

LCS (4K04011-BS1)

Prepared: 11/04/2014 Analyzed: 11/04/2014

Benzene	0.104	0.0020	mg/kg	0.100		104	77.1-124			
Toluene	0.0888	0.0020	"	0.100		88.8	74.5-128			
Ethylbenzene	0.0932	0.0020	"	0.100		93.2	66.4-127			
m,p-Xylene	0.176	0.0040	"	0.200		88.0	76.6-124			
o-Xylene	0.0858	0.0020	"	0.100		85.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	59.8		ug/kg	62.5		95.7	70-130			
Surrogate: Toluene-d8	62.4		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	54.7		"	62.5		87.5	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K04011 - EPA 5030 (soil)

Matrix Spike (4K04011-MS1)		Source: X411015-01			Prepared: 11/04/2014 Analyzed: 11/04/2014					
Benzene	0.115	0.0020	mg/kg	0.100	ND	115	71.8-126			
Toluene	0.110	0.0020	"	0.100	ND	110	65.1-130			
Ethylbenzene	0.106	0.0020	"	0.100	ND	106	62.2-130			
m,p-Xylene	0.195	0.0040	"	0.200	ND	97.6	46.5-137			
o-Xylene	0.0968	0.0020	"	0.100	ND	96.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63.1		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	65.2		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	54.7		"	62.5		87.6	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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
Batch 4K04011 - EPA 5030 (soil)										
Matrix Spike Dup (4K04011-MSD1)			Source: X411015-01		Prepared: 11/04/2014 Analyzed: 11/04/2014					
Benzene	0.102	0.0020	mg/kg	0.100	ND	102	71.8-126	12.7	11.3	QM-07
Toluene	0.0954	0.0020	"	0.100	ND	95.4	65.1-130	14.0	15.4	
Ethylbenzene	0.0961	0.0020	"	0.100	ND	96.1	62.2-130	9.50	19.6	
m,p-Xylene	0.179	0.0040	"	0.200	ND	89.3	46.5-137	8.86	19.2	
o-Xylene	0.0870	0.0020	"	0.100	ND	87.0	54.2-134	10.7	17.9	
Surrogate: 1,2-Dichloroethane-d4	61.3		ug/kg	62.5		98.0	70-130			
Surrogate: Toluene-d8	63.7		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	56.4		"	62.5		90.3	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K04013 - EPA 3580**

**Blank (4K04013-BLK1)**

Prepared: 11/04/2014 Analyzed: 11/04/2014

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	38		g	50.0		75.7	59-131			

**LCS (4K04013-BS1)**

Prepared: 11/04/2014 Analyzed: 11/04/2014

Diesel (C10-C28)	1200	50	mg/kg	1000		115	64-121			
Residual Range Organics (C28-C36)	940	200	"	1000		94.0	58-124			
Surrogate: o-Terphenyl	47		g	50.0		94.2	59-131			

**Matrix Spike (4K04013-MS1)**

Source: X411021-01

Prepared: 11/04/2014 Analyzed: 11/04/2014

Diesel (C10-C28)	3200	50	mg/kg	1000	2100	116	53-125			
Residual Range Organics (C28-C36)	1200	200	"	1000	350	82.2	47-133			
Surrogate: o-Terphenyl	52		g	50.0		105	59-131			

**Matrix Spike Dup (4K04013-MSD1)**

Source: X411021-01

Prepared: 11/04/2014 Analyzed: 11/04/2014

Diesel (C10-C28)	3200	50	mg/kg	1000	2100	114	53-125	0.647	20	
Residual Range Organics (C28-C36)	1200	200	"	1000	350	81.5	47-133	0.590	20	
Surrogate: o-Terphenyl	51		g	50.0		102	59-131			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: Albert Sack Unit 1

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**Notes and Definitions**

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- 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

*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.*





November 06, 2014

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - Albert Sack Unit 1

Project Number - [none]

Attached are your analytical results for Albert Sack Unit 1 received by Origins Laboratory, Inc. November 05, 2014. This project is associated with Origins project number X411034-01.

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



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NW02 @ 8	X411034-01	Soil	November 5, 2014 12:15	11/05/2014 15:13
GW02	X411034-02	Water	November 5, 2014 11:30	11/05/2014 15:13

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.*

Jen Pellegrini For Noelle Doyle Mathis, President

# ORIGINS

LABORATORY, INC

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

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page 1 of 1

ORIGINS  
LABORATORY, INC

X11034

Project Manager: Christine Wasko  
Project Name: Albert Sack Unit 1  
Project Number:  
Samples Collected By: Brock Nelson

Client: Tasman-Geo  
Address:  
Telephone Number:  
Email Address: (Wasko@Tasman-Geo.com)

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	As Summed Concentrations		
NW0208	11/5/14	1215	1	X				X			BTEX (600) TPH Dec 1000 (815)	1
GW02		1130	3	X				X			BTEX (7260)	2
												3
												4
												5
												6
												7
												8
												9
												10
Relinquished By:	Date: 11/5/14	Time: 1513		Received By:				Received By:			Date: 11/5/14	Time: 1513
Relinquished By:	Date: 11/5/14	Time: 1513		Received By:				Received By:			Date: 11/5/14	Time: 1513

Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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.

Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XN11034

Client: Treman

Client Project ID: Albert Sack Unit 1

Checklist Completed by: Jeff Smith

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

Date/time completed: 11/5/14

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 10.2 °C \_\_\_\_\_ °C \_\_\_\_\_ °C \_\_\_\_\_ °C

Thermometer ID: T003

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"/>		Sampled Some Dry
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"/>		
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 Na <sub>2</sub> SO <sub>3</sub> +NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>			HCL
Additional Comments (if any):				

<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 [Signature] (Project Manager)

Date/Time Reviewed 11-5-14

Origins Laboratory, Inc.

Jeff Pellegrini

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.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

NW02 @ 8

11/5/2014 12:15:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X411034-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	4K05011	11/05/2014	11/05/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl 103 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	11.0	5.00	mg/kg	25	4K05005	11/05/2014	11/05/2014	
Benzene	ND	0.0500	"	"	"	"	"	
Toluene	ND	0.0500	"	"	"	"	"	
Ethylbenzene	ND	0.0500	"	"	"	"	"	
Xylenes, total	ND	0.0500	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 96.7 % 70-130 " " "

Surrogate: Toluene-d8 99.8 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 99.0 % 70-130 " " "

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## GW02

11/5/2014 11:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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### Origins Laboratory, Inc. X411034-02 (Water)

#### BTEX by EPA 8260C

Benzene	2250	200	ug/L	200	4K05009	11/05/2014	11/06/2014	
Toluene	564	200	"	"	"	"	"	
Ethylbenzene	354	200	"	"	"	"	"	
Xylenes, total	4420	200	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	102 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	99.5 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %	88.6-111			"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05005 - EPA 5030 (soil)

Blank (4K05005-BLK1)

Prepared: 11/05/2014 Analyzed: 11/05/2014

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0020	"							
Ethylbenzene	ND	0.0020	"							
m,p-Xylene	ND	0.0040	"							
o-Xylene	ND	0.0020	"							
Xylenes, total	ND	0.0020	"							
Surrogate: 1,2-Dichloroethane-d4	71.8		ug/kg	62.5		115	70-130			
Surrogate: Toluene-d8	64.3		"	62.5		103	70-130			
Surrogate: 4-Bromofluorobenzene	63.9		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05005 - EPA 5030 (soil)

**LCS (4K05005-BS1)**

Prepared: 11/05/2014 Analyzed: 11/05/2014

Benzene	0.101	0.0020	mg/kg	0.100		101	77.1-124			
Toluene	0.0985	0.0020	"	0.100		98.5	74.5-128			
Ethylbenzene	0.0940	0.0020	"	0.100		94.0	66.4-127			
m,p-Xylene	0.182	0.0040	"	0.200		91.2	76.6-124			
o-Xylene	0.0845	0.0020	"	0.100		84.5	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	75.9		ug/kg	62.5		121	70-130			
Surrogate: Toluene-d8	65.5		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	56.6		"	62.5		90.5	70-130			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05005 - EPA 5030 (soil)

Matrix Spike (4K05005-MS1)		Source: X411024-01			Prepared: 11/05/2014 Analyzed: 11/05/2014					
Benzene	0.118	0.0020	mg/kg	0.100	ND	118	71.8-126			
Toluene	0.113	0.0020	"	0.100	0.0010	112	65.1-130			
Ethylbenzene	0.112	0.0020	"	0.100	ND	112	62.2-130			
m,p-Xylene	0.217	0.0040	"	0.200	0.0014	108	46.5-137			
o-Xylene	0.104	0.0020	"	0.100	0.0005	104	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	74.7		ug/kg	62.5		120	70-130			
Surrogate: Toluene-d8	64.8		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	55.8		"	62.5		89.4	70-130			

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Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1


**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 4K05005 - EPA 5030 (soil)

Matrix Spike Dup (4K05005-MSD1)		Source: X411024-01			Prepared: 11/05/2014 Analyzed: 11/05/2014					
Benzene	0.112	0.0020	mg/kg	0.100	ND	112	71.8-126	5.05	11.3	
Toluene	0.114	0.0020	"	0.100	0.0010	113	65.1-130	0.813	15.4	
Ethylbenzene	0.112	0.0020	"	0.100	ND	112	62.2-130	0.589	19.6	
m,p-Xylene	0.219	0.0040	"	0.200	0.0014	109	46.5-137	0.541	19.2	
o-Xylene	0.103	0.0020	"	0.100	0.0005	103	54.2-134	0.751	17.9	
Surrogate: 1,2-Dichloroethane-d4	73.2		ug/kg	62.5		117	70-130			
Surrogate: Toluene-d8	66.4		"	62.5		106	70-130			
Surrogate: 4-Bromofluorobenzene	58.1		"	62.5		92.9	70-130			

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05009 - EPA 5030B (Water)

Blank (4K05009-BLK1)

Prepared: 11/05/2014 Analyzed: 11/05/2014

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		103	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.4	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.7	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05009 - EPA 5030B (Water)

**LCS (4K05009-BS1)**

Prepared: 11/05/2014 Analyzed: 11/05/2014

Benzene	44.4	1.0	ug/L	50.0		88.8	75-126			
Toluene	43.2	1.0	"	50.0		86.4	78.7-126			
Ethylbenzene	42.7	1.0	"	50.0		85.5	81-130			
m,p-Xylene	85.6	2.0	"	100		85.6	77.2-133			
o-Xylene	43.7	1.0	"	50.0		87.5	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		98.6	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		98.5	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.8	88.6-111			

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05009 - EPA 5030B (Water)

Matrix Spike (4K05009-MS1)		Source: X410353-08			Prepared: 11/05/2014 Analyzed: 11/06/2014					
Benzene	45.7	1.0	ug/L	50.0	ND	91.3	74-130			
Toluene	44.1	1.0	"	50.0	ND	88.1	73-131			
Ethylbenzene	42.5	1.0	"	50.0	ND	85.0	76-132			
m,p-Xylene	85.7	2.0	"	100	ND	85.7	69-139			
o-Xylene	46.2	1.0	"	50.0	ND	92.4	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.8	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.2	90.9-108			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	88.6-111			

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05009 - EPA 5030B (Water)

Matrix Spike Dup (4K05009-MSD1)		Source: X410353-08			Prepared: 11/05/2014 Analyzed: 11/06/2014					
Benzene	50.0	1.0	ug/L	50.0	ND	100	74-130	9.01	20	
Toluene	49.5	1.0	"	50.0	ND	99.0	73-131	11.6	20	
Ethylbenzene	49.9	1.0	"	50.0	ND	99.8	76-132	16.0	20	
m,p-Xylene	99.8	2.0	"	100	ND	99.8	69-139	15.1	20	
o-Xylene	50.1	1.0	"	50.0	ND	100	74-131	8.10	20	
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.7	87.3-113			
Surrogate: Toluene-d8	62		"	62.5		99.3	90.9-108			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	88.6-111			

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K05011 - EPA 3580**

**Blank (4K05011-BLK1)**

Prepared: 11/05/2014 Analyzed: 11/05/2014

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	46		g	250		18.4	59-131			

**LCS (4K05011-BS1)**

Prepared: 11/05/2014 Analyzed: 11/05/2014

Diesel (C10-C28)	950	50	mg/kg	1000		95.5	64-121			
Residual Range Organics (C28-C36)	810	200	"	1000		81.4	58-124			
Surrogate: o-Terphenyl	44		g	50.0		89.0	59-131			

**Matrix Spike (4K05011-MS1)**

Source: X411034-01

Prepared: 11/05/2014 Analyzed: 11/05/2014

Diesel (C10-C28)	960	50	mg/kg	1000	27	93.2	53-125			
Residual Range Organics (C28-C36)	770	200	"	1000	24	74.6	47-133			
Surrogate: o-Terphenyl	42		g	50.0		84.5	59-131			

**Matrix Spike Dup (4K05011-MSD1)**

Source: X411034-01

Prepared: 11/05/2014 Analyzed: 11/05/2014

Diesel (C10-C28)	960	50	mg/kg	1000	27	93.3	53-125	0.131	20	
Residual Range Organics (C28-C36)	770	200	"	1000	24	74.3	47-133	0.337	20	
Surrogate: o-Terphenyl	42		g	50.0		84.5	59-131			

Origins Laboratory, Inc.

*Jeje Pellegrini*

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Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: Albert Sack Unit 1

### 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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Jen Pellegrini For Noelle Doyle Mathis, President



November 11, 2014

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - Albert Sack Unit 1

Project Number - [none]

Attached are your analytical results for Albert Sack Unit 1 received by Origins Laboratory, Inc. November 10, 2014. This project is associated with Origins project number X411094-01.

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



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E02 @ 8	X411094-01	Soil	November 10, 2014 15:20	11/10/2014 17:04

Origins Laboratory, Inc.



Ross S Hutto For Noelle Doyle Mathis, President

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

www.originslaboratory.com

page 1 of 1

# ORIGINS

LABORATORY, INC

X11094

Client: Tasman Geo Project Manager/Send Report To: Christine Wasko  
Address: \_\_\_\_\_ Email Address: Christine@tasman-geo.com  
Telephone Number: 912 230 2607 Project Name/Number: Albert Sack Unit 1  
Samples Collected By: Barle 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/Sediment/Contaminant		
E0208	11/14/14	1536	1	X							ISTE/Geo (500) TPA-DR-1406 (215)	1
												2
												3
												4
												5
												6
												7
												8
												9
												10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
	11/14/14	1704		11/10/14	1704	Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input type="checkbox"/> 42

Daria Desautels-Manderson

Comments:

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

Origins Laboratory, Inc.

Ross S Hutto For Noelle Doyle Mathis, President

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X111094

Client: Tasman  
Client Project ID: Albert Sack Unit 1

Checklist Completed by: A. E. Smith

Shipped Via: Dick WD

Date/time completed: 11/10/14

(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
Airbill #: NA

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

Cooler Number/Temperature: 1 14.2 °C 1 °C 1 °C (Describe)

Thermometer ID: 1003

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 (> ½ inch bubble) present? If yes, contact client and note in narrative.			<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):				

<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)

11/10/14 18:22  
Date/Time Reviewed

Origins Laboratory, Inc.

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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

E02 @ 8

11/10/2014 3:20:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X411094-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	290	50	mg/kg	1	4K10005	11/10/2014	11/10/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	87.8 %	59-131			"	"	"	
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	275	5.00	mg/kg	25	4K10006	11/10/2014	11/10/2014	
Benzene	0.759	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	0.106	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.0 %	70-130			"	"	"	
Surrogate: Toluene-d8	127 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	112 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K10006 - EPA 5030 (soil)

Blank (4K10006-BLK1)

Prepared: 11/10/2014 Analyzed: 11/10/2014

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	63.0		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	63.8		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	62.5		"	62.5		100	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 4K10006 - EPA 5030 (soil)

LCS (4K10006-BS1)					Prepared: 11/10/2014 Analyzed: 11/10/2014					
Benzene	0.219	0.002	mg/kg	0.200	110	77.1-124				
Toluene	0.213	0.002	"	0.200	107	74.5-128				
Ethylbenzene	0.210	0.002	"	0.200	105	66.4-127				
m,p-Xylene	0.414	0.004	"	0.400	104	76.6-124				
o-Xylene	0.216	0.002	"	0.200	108	76.6-124				
Surrogate: 1,2-Dichloroethane-d4	59.3		ug/kg	62.5	94.9	70-130				
Surrogate: Toluene-d8	61.7		"	62.5	98.8	70-130				
Surrogate: 4-Bromofluorobenzene	65.4		"	62.5	105	70-130				

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K10006 - EPA 5030 (soil)

Matrix Spike (4K10006-MS1)		Source: X411073-03			Prepared: 11/10/2014 Analyzed: 11/10/2014			QM-07		
Benzene	0.203	0.002	mg/kg	0.200	ND	102	71.8-126			
Toluene	0.200	0.002	"	0.200	ND	100	65.1-130			
Ethylbenzene	0.191	0.002	"	0.200	ND	95.5	62.2-130			
m,p-Xylene	0.378	0.004	"	0.400	0.500	NR	46.5-137			
o-Xylene	0.192	0.002	"	0.200	0.200	NR	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	61.2		ug/kg	62.5		97.9	70-130			
Surrogate: Toluene-d8	62.2		"	62.5		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	63.8		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K10006 - EPA 5030 (soil)

Matrix Spike Dup (4K10006-MSD1)		Source: X411073-03			Prepared: 11/10/2014 Analyzed: 11/10/2014			QM-07		
Benzene	0.218	0.002	mg/kg	0.200	ND	109	71.8-126		11.3	
Toluene	0.208	0.002	"	0.200	ND	104	65.1-130		15.4	
Ethylbenzene	0.207	0.002	"	0.200	ND	103	62.2-130		19.6	
m,p-Xylene	0.397	0.004	"	0.400	0.500	NR	46.5-137		19.2	
o-Xylene	0.204	0.002	"	0.200	0.200	2.11	54.2-134	6.13	17.9	
Surrogate: 1,2-Dichloroethane-d4	61.2		ug/kg	62.5		98.0	70-130			
Surrogate: Toluene-d8	62.3		"	62.5		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	64.2		"	62.5		103	70-130			

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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K10005 - EPA 3580

**Blank (4K10005-BLK1)**

Prepared: 11/10/2014 Analyzed: 11/10/2014

Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	52		g	50.0		104	59-131			

**LCS (4K10005-BS1)**

Prepared: 11/10/2014 Analyzed: 11/10/2014

Diesel (C10-C28)	900	50	mg/kg	1000		90.2	64-121			
Residual Range Organics (C28-C36)	640	200	"	1000		64.0	58-124			
Surrogate: o-Terphenyl	41		g	50.0		81.2	59-131			

**Matrix Spike (4K10005-MS1)**

Source: X411073-03

Prepared: 11/10/2014 Analyzed: 11/10/2014

Diesel (C10-C28)	990	50	mg/kg	1000	63	92.8	53-125			
Residual Range Organics (C28-C36)	730	200	"	1000	41	68.5	47-133			
Surrogate: o-Terphenyl	43		g	50.0		86.9	59-131			

**Matrix Spike Dup (4K10005-MSD1)**

Source: X411073-03

Prepared: 11/10/2014 Analyzed: 11/10/2014

Diesel (C10-C28)	1100	50	mg/kg	1000	63	103	53-125	10.2	20	
Residual Range Organics (C28-C36)	820	200	"	1000	41	77.8	47-133	12.1	20	
Surrogate: o-Terphenyl	48		g	50.0		96.9	59-131			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: Albert Sack Unit 1

## Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- 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



November 12, 2014

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - Albert Sack Unit 1

Project Number - [none]

Attached are your analytical results for Albert Sack Unit 1 received by Origins Laboratory, Inc. November 11, 2014. This project is associated with Origins project number X411111-01.

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



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E03 @ 8	X411111-01	Soil	November 11, 2014 12:02	11/11/2014 16:45

Origins Laboratory, Inc.



Ross S Hutto For Noelle Doyle Mathis, President

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Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**ORIGINS**  
 LABORATORY, INC

Client: Tasman Leo

Address: \_\_\_\_\_

Telephone Number: 912 330 2487

Project Manager/Send Report To: Christine White

Email Address: tw@lewis-geo.com

Project Name/Number: ③ Kent & Lane Farm - Allentown, PA

Samples Collected By: Brak Nelson

www.originslaboratory.com

page 1 of 1

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analyst/Method	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Sampling #		
E0308	10/11/11	1200	1	X				X			BLEN (600, 5700) TPAH - DEQ (605)	
	</											

—

Comments:

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.*

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X411111

Client: Tasman

Client Project ID: 011111 Lead from Albert Sack Unit 1

Checklist Completed by: Jeff Smith

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

Date/time completed: 11/11/14

Airbill #: NA

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

Cooler Number/Temperature: 14.9 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C

Thermometer ID: T003

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"/>	
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 Na <sub>2</sub> CO <sub>3</sub> +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any): <u>Block D, instructed me by phone conversation to revise project name on COC to Albert Sack Unit 1</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) Jeff Smith

11/12/14 5:29  
Date/Time Reviewed

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.

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

E03 @ 8

11/11/2014 12:02:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X411111-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	4K11007	11/11/2014	11/11/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	74.0 %	59-131			"	"	"	
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	4.48	0.200	mg/kg	1	4K11008	11/11/2014	11/11/2014	
Benzene	0.091	0.002	"	"	"	"	"	
Toluene	ND	0.002	"	"	"	"	"	
Ethylbenzene	0.004	0.002	"	"	"	"	"	
Xylenes, total	ND	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	96.2 %	70-130			"	"	"	
Surrogate: Toluene-d8	114 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	113 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K11008 - EPA 5030 (soil)

Blank (4K11008-BLK1)

Prepared: 11/11/2014 Analyzed: 11/11/2014

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	59.0		ug/kg	62.5		94.4	70-130			
Surrogate: Toluene-d8	61.0		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	62.9		"	62.5		101	70-130			

Origins Laboratory, Inc.



Ross S Hutto For Noelle Doyle Mathis, President

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K11008 - EPA 5030 (soil)

**LCS (4K11008-BS1)**

Prepared: 11/11/2014 Analyzed: 11/11/2014

Benzene	0.113	0.002	mg/kg	0.100		113	77.1-124			
Toluene	0.110	0.002	"	0.100		110	74.5-128			
Ethylbenzene	0.100	0.002	"	0.100		99.6	66.4-127			
m,p-Xylene	0.224	0.004	"	0.200		112	76.6-124			
o-Xylene	0.105	0.002	"	0.100		105	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	58.7		ug/kg	62.5		93.9	70-130			
Surrogate: Toluene-d8	61.6		"	62.5		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	63.6		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K11008 - EPA 5030 (soil)

Matrix Spike (4K11008-MS1)		Source: X411069-01			Prepared: 11/11/2014 Analyzed: 11/11/2014					
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126			
Toluene	0.105	0.002	"	0.100	ND	105	65.1-130			
Ethylbenzene	0.094	0.002	"	0.100	0.002	92.0	62.2-130			
m,p-Xylene	0.207	0.004	"	0.200	ND	103	46.5-137			
o-Xylene	0.093	0.002	"	0.100	ND	93.0	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	58.5		ug/kg	62.5		93.6	70-130			
Surrogate: Toluene-d8	63.9		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	63.2		"	62.5		101	70-130			

Origins Laboratory, Inc.



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Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K11008 - EPA 5030 (soil)

Matrix Spike Dup (4K11008-MSD1)		Source: X411069-01			Prepared: 11/11/2014 Analyzed: 11/11/2014					
Benzene	0.108	0.002	mg/kg	0.100	ND	108	71.8-126	2.73	11.3	
Toluene	0.105	0.002	"	0.100	ND	105	65.1-130	0.115	15.4	
Ethylbenzene	0.093	0.002	"	0.100	0.002	91.3	62.2-130	0.706	19.6	
m,p-Xylene	0.205	0.004	"	0.200	ND	103	46.5-137	0.602	19.2	
o-Xylene	0.093	0.002	"	0.100	ND	93.1	54.2-134	0.0215	17.9	
Surrogate: 1,2-Dichloroethane-d4	58.7		ug/kg	62.5		93.9	70-130			
Surrogate: Toluene-d8	62.4		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	62.5		"	62.5		100	70-130			

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.

Ross S Hutto For Noelle Doyle Mathis, President

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: Albert Sack Unit 1

---

**Notes and Definitions**

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

Origins Laboratory, Inc.



---

Ross S Hutto For Noelle Doyle Mathis, President

*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.*





November 17, 2014

Tasman Geosciences

Christine Wasko

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - Albert Sack Unit 1

Project Number - [none]

Attached are your analytical results for Albert Sack Unit 1 received by Origins Laboratory, Inc. November 14, 2014. This project is associated with Origins project number X411138-01.

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



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E04@8	X411138-01	Soil	November 14, 2014 12:45	11/14/2014 18:20
W03@8	X411138-02	Soil	November 14, 2014 12:50	11/14/2014 18:20

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.*

Jen Pellegrini For Noelle Doyle Mathis, President

Page 3 of 12



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X411138

Client: Tasman Geo

Client Project ID: Albert Sack Unit 1

Checklist Completed by: SA

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

Date/time completed: 11/14/14 @ 1830

Airbill #: \_\_\_\_\_

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

Cooler Number/Temperature: 12-3 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C

Thermometer ID: Tφφ3

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"/>		RECEIVED ON ICE
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"/>	
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):				

<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: [Signature] (Project Manager)

11-17-14  
Date/Time Reviewed

Origins Laboratory, Inc.

Jen Pellegrini

Jen Pellegrini For Noelle Doyle Mathis, President

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.



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

E04@8

11/14/2014 12:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X411138-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	50	mg/kg	1	4K14015	11/14/2014	11/14/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	90.0 %	59-131			"	"	"	
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	38.8	5.00	mg/kg	25	4K14007	11/14/2014	11/15/2014	
Benzene	ND	0.050	"	"	"	"	"	
Toluene	ND	0.050	"	"	"	"	"	
Ethylbenzene	ND	0.050	"	"	"	"	"	
Xylenes, total	ND	0.050	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	90.8 %	70-130			"	"	11/14/2014	
Surrogate: Toluene-d8	99.1 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.8 %	70-130			"	"	"	

Origins Laboratory, Inc.

*Jefe Pellegrini*

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.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

W03@8

11/14/2014 12:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X411138-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	130	50	mg/kg	1	4K14015	11/14/2014	11/14/2014	
Residual Range Organics (C28-C36)	ND	200	"	"	"	"	"	

Surrogate: o-Terphenyl	117 %	59-131			"	"	"	
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**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	316	10.0	mg/kg	50	4K14007	11/14/2014	11/14/2014	
Benzene	ND	0.100	"	"	"	"	"	
Toluene	ND	0.100	"	"	"	"	"	
Ethylbenzene	ND	0.100	"	"	"	"	"	
Xylenes, total	ND	0.100	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	89.2 %	70-130			"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	

Origins Laboratory, Inc.



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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K14007 - EPA 5030 (soil)

Blank (4K14007-BLK1)

Prepared: 11/14/2014 Analyzed: 11/14/2014

Gasoline Range Hydrocarbons	ND	0.200	mg/kg							
Benzene	ND	0.002	"							
Toluene	ND	0.002	"							
Ethylbenzene	ND	0.002	"							
Xylenes, total	ND	0.002	"							
Surrogate: 1,2-Dichloroethane-d4	61.9		ug/kg	62.5		99.0	70-130			
Surrogate: Toluene-d8	61.2		"	62.5		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	60.6		"	62.5		96.9	70-130			

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K14007 - EPA 5030 (soil)

LCS (4K14007-BS1)

Prepared: 11/14/2014 Analyzed: 11/14/2014

Benzene	0.097	0.002	mg/kg	0.100		97.2	77.1-124			
Toluene	0.091	0.002	"	0.100		90.6	74.5-128			
Ethylbenzene	0.089	0.002	"	0.100		89.1	66.4-127			
m,p-Xylene	0.185	0.004	"	0.200		92.7	76.6-124			
o-Xylene	0.093	0.002	"	0.100		93.3	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	59.8		ug/kg	62.5		95.6	70-130			
Surrogate: Toluene-d8	61.9		"	62.5		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	61.5		"	62.5		98.4	70-130			

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K14007 - EPA 5030 (soil)

Matrix Spike (4K14007-MS1)		Source: X411118-01			Prepared: 11/14/2014 Analyzed: 11/14/2014					
Benzene	0.105	0.002	mg/kg	0.100	ND	105	71.8-126			
Toluene	0.096	0.002	"	0.100	ND	96.2	65.1-130			
Ethylbenzene	0.094	0.002	"	0.100	ND	93.5	62.2-130			
m,p-Xylene	0.195	0.004	"	0.200	ND	97.4	46.5-137			
o-Xylene	0.090	0.002	"	0.100	ND	90.1	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	64.6		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	59.7		"	62.5		95.5	70-130			
Surrogate: 4-Bromofluorobenzene	61.6		"	62.5		98.5	70-130			

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K14007 - EPA 5030 (soil)

Matrix Spike Dup (4K14007-MSD1)		Source: X411118-01			Prepared: 11/14/2014 Analyzed: 11/14/2014					
Benzene	0.101	0.002	mg/kg	0.100	ND	101	71.8-126	3.80	11.3	
Toluene	0.095	0.002	"	0.100	ND	95.1	65.1-130	1.17	15.4	
Ethylbenzene	0.093	0.002	"	0.100	ND	92.6	62.2-130	0.989	19.6	
m,p-Xylene	0.186	0.004	"	0.200	ND	93.1	46.5-137	4.49	19.2	
o-Xylene	0.081	0.002	"	0.100	ND	81.5	54.2-134	10.1	17.9	
Surrogate: 1,2-Dichloroethane-d4	64.5		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	59.7		"	62.5		95.5	70-130			
Surrogate: 4-Bromofluorobenzene	61.2		"	62.5		98.0	70-130			

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.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Christine Wasko  
Project Number: [none]  
Project: Albert Sack Unit 1

**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 4K14015 - EPA 3580**

<b>Blank (4K14015-BLK1)</b>					Prepared: 11/14/2014 Analyzed: 11/14/2014					
Diesel (C10-C28)	ND	50	mg/kg							
Residual Range Organics (C28-C36)	ND	200	"							
Surrogate: o-Terphenyl	57		g	50.0		115	59-131			
<b>LCS (4K14015-BS1)</b>					Prepared: 11/14/2014 Analyzed: 11/14/2014					
Diesel (C10-C28)	1100	50	mg/kg	1000		110	64-121			
Residual Range Organics (C28-C36)	810	200	"	1000		81.1	58-124			
Surrogate: o-Terphenyl	52		g	50.0		103	59-131			
<b>Matrix Spike (4K14015-MS1)</b>					Source: X411136-01		Prepared: 11/14/2014 Analyzed: 11/14/2014			
Diesel (C10-C28)	1100	50	mg/kg	1000	22	107	53-125			
Residual Range Organics (C28-C36)	810	200	"	1000	18	78.9	47-133			
Surrogate: o-Terphenyl	52		g	50.0		104	59-131			
<b>Matrix Spike Dup (4K14015-MSD1)</b>					Source: X411136-01		Prepared: 11/14/2014 Analyzed: 11/14/2014			
Diesel (C10-C28)	1100	50	mg/kg	1000	22	110	53-125	2.61	20	
Residual Range Organics (C28-C36)	850	200	"	1000	18	83.2	47-133	5.29	20	
Surrogate: o-Terphenyl	52		g	50.0		105	59-131			

Origins Laboratory, Inc.

*Jefe Pellegrini*

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.

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Christine Wasko

Project Number: [none]

Project: Albert Sack Unit 1

### 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.



*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.*

Jen Pellegrini For Noelle Doyle Mathis, President





April 16, 2015

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Albert Sack Unit #1

Project Number - [none]

Attached are your analytical results for KMG - Albert Sack Unit #1 received by Origins Laboratory, Inc. April 14, 2015. This project is associated with Origins project number X504185-01.

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



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

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01	X504185-01	Water	April 14, 2015 9:10	04/14/2015 17:00
BH02	X504185-02	Water	April 14, 2015 9:15	04/14/2015 17:00
BH03	X504185-03	Water	April 14, 2015 9:24	04/14/2015 17:00
BH04	X504185-04	Water	April 14, 2015 9:26	04/14/2015 17:00
BH05	X504185-05	Water	April 14, 2015 9:35	04/14/2015 17:00

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.*

Jen Pellegrini For Noelle Doyle Mathis, President




Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

# SHINGIRO

581h05x

Page 1 of 1

Client:	Truman Geo	Project Manager:	Bob Cornet
Address:	6874 Paris St New Vnt C	Project Name:	Albert Snith Unit #1
Telephone Number:	303 487 1229	Project Number:	
Email Address:	TCornet@Truman-Geo.COM	Samples Collected By:	M.H. Gibson

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative					Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Sampling Container #	Other		
B101	4/14/15	910	3	X	X			X				STEX 6260	1
B102		915											2
B103		924											3
B104		926											4
B105		935											5
													6
													7
													8
													9
													10
Admistered By: 	Date: 4/14/15	Time: 11:00		Received By: 	Date: 4.14.15	Time: 1700	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>	Standard <input checked="" type="checkbox"/>					
Refinanced By: 	Date:	Time:		Received By:	Date:	Time:							

Date Results Needed

Jose Pelloni



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: X504185

Client: Tugnan

Client Project ID: Albert Sack Unit #1

Checklist Completed by: Jen Pellegrini

Shipped Via: HTDge Pickup  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 4/15/15

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 4.2 °C 1 / 1 °C 1 / 1 °C 1 / 1 °C

Thermometer ID: 1003

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"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCL
Additional Comments (if any):				

<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) Jen Pellegrini

Date/Time Reviewed 4/15/15

Origins Laboratory, Inc.

*Jen Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

BH01

4/14/2015 9:10:00AM

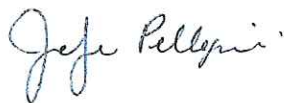
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X504185-01 (Water)

## BTEX by EPA 8260C

Benzene	226	10.0	ug/L	10	5D16007	04/16/2015	04/16/2015	
Toluene	ND	1.0	"	1	"	"	04/16/2015	
Ethylbenzene	350	10.0	"	10	"	"	04/16/2015	
Xylenes, total	3830	10.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	104 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	103 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	90.7 %	88.6-111			"	"	"	

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

BH02

4/14/2015 9:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X504185-02 (Water)

## BTEX by EPA 8260C

Benzene	393	10.0	ug/L	10	5D16007	04/16/2015	04/16/2015	
Toluene	ND	1.0	"	1	"	"	04/16/2015	
Ethylbenzene	79.5	1.0	"	"	"	"	"	
Xylenes, total	377	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	100 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	107 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	91.4 %	88.6-111			"	"	"	

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

BH03

4/14/2015 9:24:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X504185-03 (Water)

## BTEX by EPA 8260C

Benzene	328	10.0	ug/L	10	5D16007	04/16/2015	04/16/2015	
Toluene	ND	1.0	"	1	"	"	04/16/2015	
Ethylbenzene	135	1.0	"	"	"	"	"	
Xylenes, total	57.4	1.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	104 %	87.3-113			"	"	04/16/2015	
Surrogate: Toluene-d8	104 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	90.6 %	88.6-111			"	"	"	

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*Jefe Pellegrini*

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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

BH04

4/14/2015 9:26:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X504185-04 (Water)

## BTEX by EPA 8260C

Benzene	ND	4.0	ug/L	4	5D16007	04/16/2015	04/16/2015	
Toluene	ND	4.0	"	"	"	"	"	
Ethylbenzene	279	4.0	"	"	"	"	"	
Xylenes, total	1110	4.0	"	"	"	"	"	
Surrogate: 1,2-Dichloroethane-d4	103 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	107 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	91.9 %	88.6-111			"	"	"	

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Jen Pellegrini For Noelle Doyle Mathis, President



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6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

BH05

4/14/2015 9:35:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X504185-05 (Water)

## BTEX by EPA 8260C

Benzene	7.2	1.0	ug/L	1	5D16007	04/16/2015	04/16/2015	
Toluene	ND	1.0	"	"	"	"	"	
Ethylbenzene	26.2	1.0	"	"	"	"	"	
Xylenes, total	208	1.0	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	87.3-113			"	"	"	
Surrogate: Toluene-d8	108 %	90.9-108			"	"	"	
Surrogate: 4-Bromofluorobenzene	90.7 %	88.6-111			"	"	"	

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

**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 5D16007 - EPA 5030B (Water)

Blank (5D16007-BLK1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Benzene	ND	1.0	ug/L							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5	104		87.3-113			
Surrogate: Toluene-d8	63		"	62.5	102		90.9-108			
Surrogate: 4-Bromofluorobenzene	57		"	62.5	90.8		88.6-111			

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

**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 5D16007 - EPA 5030B (Water)

LCS (5D16007-BS1)

Prepared: 04/16/2015 Analyzed: 04/16/2015

Benzene	44.4	1.0	ug/L	50.0		88.7	75-126			
Toluene	46.1	1.0	"	50.0		92.1	78.7-126			
Ethylbenzene	47.3	1.0	"	50.0		94.5	80-130			
m,p-Xylene	94.3	2.0	"	100		94.3	77.2-133			
o-Xylene	46.4	1.0	"	50.0		92.8	77.9-126			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		96.8	87.3-113			
Surrogate: Toluene-d8	64		"	62.5		102	90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		92.8	88.6-111			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

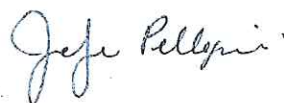
**Volatile Organic Compounds by GC/MS SW846 8260C - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 5D16007 - EPA 5030B (Water)

Matrix Spike (5D16007-MS1)		Source: X504183-01			Prepared: 04/16/2015 Analyzed: 04/16/2015					
Benzene	50.2	1.0	ug/L	50.0	ND	100	74-130			
Toluene	52.8	1.0	"	50.0	ND	106	73-131			
Ethylbenzene	55.2	1.0	"	50.0	ND	110	76-132			
m,p-Xylene	108	2.0	"	100	ND	108	69-139			
o-Xylene	51.5	1.0	"	50.0	ND	103	74-131			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.9	87.3-113			
Surrogate: Toluene-d8	64		"	62.5		102	90.9-108			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		91.6	88.6-111			

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Tasman Geosciences  
6899 Pecos Street, Unit C  
Denver CO 80211

Bob Cornez  
Project Number: [none]  
Project: KMG - Albert Sack Unit #1

**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 5D16007 - EPA 5030B (Water)

Matrix Spike Dup (5D16007-MSD1)		Source: X504183-01			Prepared: 04/16/2015 Analyzed: 04/16/2015					
Benzene	52.2	1.0	ug/L	50.0	ND	104	74-130	3.79	20	
Toluene	55.3	1.0	"	50.0	ND	111	73-131	4.59	20	
Ethylbenzene	57.6	1.0	"	50.0	ND	115	76-132	4.31	20	
m,p-Xylene	112	2.0	"	100	ND	112	69-139	3.84	20	
o-Xylene	54.1	1.0	"	50.0	ND	108	74-131	4.87	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.1	87.3-113			
Surrogate: Toluene-d8	64		"	62.5		102	90.9-108			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.6	88.6-111			

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Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences

6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Albert Sack Unit #1

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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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Jen Pellegrini For Noelle Doyle Mathis, President

# **ATTACHMENT B**

## **WELL COMPLETION DIAGRAMS**

WELL ID: BH01 SITE: Albert Sack Unit 1  
DATE: 4/2/2015 Driller: Brandon LeVasseur  
DRILLING METHOD: AMS Powerprobe 9300-SK  
SAMPLING EQUIPMENT: macro-core liners

Depth (ft bgs)	Lithology					Well Completion Detail	
	From	To	Material Description <sup>1</sup>	Lab Samples	PID (ppm)	Well Completion Material	
0							
1							
2							
3			Hydro-excavation - no recovery			Hydrated Bentonite Chips	
4							
5							
6			Borehole geology not logged			Hydrated Granular Bentonite Seal	
7							
8							
9							
10							
11			Groundwater interface approximately 11 ft bgs				
12							
13						10-20 Silica Sand	
14							
15							
16							
17							
18							
19			Borehole TD= 19' ft bgs				Threaded PVC End Cap
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							

Notes:  
1. Material Description to include: Soil type, color; grain size; texture; moisture content; odor

NOTES:

Temporary monitoring well was flush mounted.



WELL ID: BH02 SITE: Albert Sack Unit 1  
DATE: 4/2/2015 Driller: Brandon LeVasseur  
DRILLING METHOD: AMS Powerprobe 9300-SK  
SAMPLING EQUIPMENT: macro-core liners

Depth (ft bgs)	Lithology					Well Completion Detail
	From	To	Material Description <sup>1</sup>	Lab Samples	PID (ppm)	Well Completion Material
0						
1						
2						
3			Hydro-excavation - no recovery			Hydrated Bentonite Chips
4						
5						
6						
7			Borehole geology not logged			Hydrated Granular Bentonite Seal
8						
9						
10						
11			Groundwater interface approximately 11 ft bgs			
12						
13						
14						10-20 Silica Sand
15						
16						
17						
18						
19			Borehole TD= 19' ft bgs			Threaded PVC End Cap
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

Notes:  
1. Material Description to include: Soil type, color; grain size; texture; moisture content; odor

NOTES:  
Temporary monitoring well was flush mounted.

**WELL ID:** BH03      **SITE:** Albert Sack Unit 1  
**DATE:** 4/2/2015      **Driller:** Brandon LeVasseur  
**DRILLING METHOD:** AMS Powerprobe 9300-SK  
**SAMPLING EQUIPMENT:** macro-core liners

Depth (ft bgs)	Lithology					Well Completion Detail
	From	To	Material Description <sup>1</sup>	Lab Samples	PID (ppm)	Well Completion Material
0						
1						
2						
3			Hydro-excavation - no recovery			Hydrated Bentonite Chips
4						
5						
6			Borehole geology not logged			Hydrated Granular Bentonite Seal
7						
8						
9						
10						
11			Groundwater interface approximately 11 ft bgs			
12						
13						
14						10-20 Silica Sand
15						
16						
17						
18						
19			Borehole TD= 19' ft bgs			Threaded PVC End Cap
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

**Notes:**

1. Material Description to include: Soil type, color; grain size; texture; moisture content; odor

**NOTES:**

Temporary monitoring well was flush mounted.

WELL ID: BH04 SITE: Albert Sack Unit 1  
DATE: 4/2/2015 Driller: Brandon LeVasseur  
DRILLING METHOD: AMS Powerprobe 9300-SK  
SAMPLING EQUIPMENT: macro-core liners

Depth (ft bgs)	Lithology					Well Completion Detail
	From	To	Material Description <sup>1</sup>	Lab Samples	PID (ppm)	Well Completion Material
0						
1						
2						
3			Hydro-excavation - no recovery			Hydrated Bentonite Chips
4						
5						
6			Borehole geology not logged			Hydrated Granular Bentonite Seal
7						
8						
9						
10						
11			Groundwater interface approximately 11 ft bgs			
12						
13						
14						10-20 Silica Sand
15						
16						
17						
18						
19			Borehole TD= 19' ft bgs			Threaded PVC End Cap
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

Notes:

1. Material Description to include: Soil type, color; grain size; texture; moisture content; odor

NOTES:

Temporary monitoring well was flush mounted.

WELL ID: BH05 SITE: Albert Sack Unit 1  
DATE: 4/2/2015 Driller: Brandon LeVasseur  
DRILLING METHOD: AMS Powerprobe 9300-SK  
SAMPLING EQUIPMENT: macro-core liners

Depth (ft bgs)	Lithology					Well Completion Detail
	From	To	Material Description <sup>1</sup>	Lab Samples	PID (ppm)	Well Completion Material
0						
1						
2						
3			Hydro-excavation - no recovery			Hydrated Bentonite Chips
4						
5						
6			Borehole geology not logged			Hydrated Granular Bentonite Seal
7						
8						
9						
10						
11			Groundwater interface approximately 11 ft bgs			
12						
13						
14						10-20 Silica Sand
15						
16						
17						
18						
19			Borehole TD= 19' ft bgs			Threaded PVC End Cap
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
32						

Notes:

1. Material Description to include: Soil type, color; grain size; texture; moisture content; odor

NOTES:

Temporary monitoring well was flush mounted.