

ANALYTICAL 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) ⁽¹⁾			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

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 (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Total Xylenes (ug/L)
COGCC Table 910-1 Groundwater Standard (ug/L) ⁽¹⁾		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

Notes:

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

COGCC = Colorado Oil and Gas Conservation Commission

ug/L = Micrograms per liter

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

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

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



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

page 1 of 1

ORIGINS LABORATORY, INC

Client: Tasman Geo Project Manager/Send Report To: Christine Wasko

Address: _____ Email Address: twasko@tasman-geo.com

Telephone Number: 912 232 2807 Project Name/Number: Albert Sack Unit 1

Samples Collected By: Bryk Nelson

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis/Method	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa		
NW0108	10/20/14	1516	1	X				X			STEP (600, 8200) - PH - D2660 (6015)	1
NE0108		1513	1	X				Y				2
SW0108		1515	1	X				Y				3
SE0108		1517	1	X				Y				4
EO108		1520	1	X				Y				5
GW01		1530	2	X				X			STEP (8200)	6
												7
												8
												9
												10

Relinquished By: _____ Date: 10/30/14 Time: 1611

Relinquished By: _____ Date: 10/30/14 Time: 1611

Turnaround Time: Same Day ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Standard ☐ SS

Comments: _____

Date Results Needed: _____

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

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: 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: _____

Cooler Number/Temperature: 15.5 °C / _____ °C / _____ °C (Describe) _____ °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 ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

R. Smith
Reviewed by (Project Manager)

10/31/14 4:31
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

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.



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

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.



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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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Origins Laboratory, Inc.



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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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Origins Laboratory, Inc.



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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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Origins Laboratory, Inc.



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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			"	"	"

Origins Laboratory, Inc.



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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			

Origins Laboratory, Inc.



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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			

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 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			

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 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			

Origins Laboratory, Inc.



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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			

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

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			

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 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			

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

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			

Origins Laboratory, Inc.



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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

Origins Laboratory, Inc.

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Tasman Geosciences
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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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

- 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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Ross S Hutto For Noelle Doyle Mathis, President



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

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

ORIGINS
LABORATORY, INC

www.originslaboratory.com

X410 X411018 page ☐ of ☐

Client: Tasman Geo

Address: _____

Project Manager: Christine Wasko

Project Name: Albert Sack Unit 1

Project Number: _____

Samples Collected By: Buck Nelson

Telephone Number: 970 230 2807

Email Address: CWasko@Tasman-geo.com

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air / Surface		
W0208	11/14	1000	2	X								1
SW 0208	11/14	1430	2	X								2
SE0208		1435	2	X								3
SW0308		1445										4
												5
												6
												7
												8
												9
												10

Relinquished By: [Signature]

Date: 11/14/11

Time: 1640

Received By: [Signature]

Date: 11.04.14

Turnaround Time: ☒ Same Day ☐ 24 Hr ☐ 48 Hr ☐ 72 Hr

2-3-4

Date Results Needed:

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: 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 #: NA

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

Cooler Number/Temperature: 14.1 °C 1 °C 1 °C (Describe)

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 ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

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.



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

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.

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

Analyte	Result	Reporting 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.



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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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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.



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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)

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.



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

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			

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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 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			

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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 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

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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

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