



August 5, 2016

Mr. Erik Mickelson  
Senior HSE Representative  
Kerr-McGee Oil & Gas Onshore LP  
1099 18<sup>th</sup> Street, Suite 1800  
Denver, Colorado 80202

**Re: Sump Replacement Summary Letter Report  
Thomsen 1C-31HZ (Thomsen 34C-18HZ)  
API: 05-123-36866  
Facility ID: 431921  
Legal: SWNW Sec 7-T2N-R65W  
Remediation Project #8961**

Dear Mr. Mickelson:

On behalf of Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee), Tasman Geosciences, Inc. (Tasman) has prepared this Sump Replacement Summary Letter Report (Report) to document sampling activities and the results of environmental testing at the above-referenced site. This Report is being submitted under the Form 27 Management Plan for Closure/Replacement of Produced Water Vessels, which has been assigned Remediation #8961 by the COGCC. Tasman provided environmental services at the site that included collection of confirmation soil samples from the excavation and documentation of field activities, as described below.

### **Site Assessment Activities**

The field activities described herein were performed with the purpose of assessing potential hydrocarbon impacts at the site related to the replacement of the produced water sump on June 24, 2016. Soil sampling activities, laboratory analytical results, and conclusions are presented below. The general site layout and sample locations are provided in the attached site map (Attachment A)

The final extent of the excavation measured approximately 18 feet by 18 feet with an approximate depth of 4 feet below ground surface (bgs). No impacted material was removed during the replacement of the produced water sump at this location. A liner was present at the location and groundwater was not encountered in the excavation.

Confirmation soil samples were collected from the sidewalls of the excavation area at approximately 4 feet bgs. A soil sample was not collected from the base of the excavation area due to the presence of a liner. Soil samples were field screened for volatile organic compound (VOC) concentrations using a photoionization detector (PID). The confirmation soil sample collected from the east sidewall of the excavation area was 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 United States

Environmental Protection Agency (USEPA) Method 8260C, TPH – diesel range and oil range organics (DRO and ORO) by USEPA Method 8015, electrical conductivity (EC), and pH. Soil analytical data is summarized in Table 1 and the laboratory analytical report is provided in Attachment B.

## **Results**

Soil analytical results from the sample collected from the east sidewall of the final extent of the excavation area indicated that BTEX and TPH concentrations were below the applicable COGCC Table 910-1 standards. The remaining soil samples collected from the remaining sidewalls of the excavation area were not submitted for laboratory analysis as analytical data confirmed the absence of petroleum hydrocarbon impacts above regulatory standards.

## **Conclusions**

Analytical results described herein confirm BTEX and TPH impacts are not present at concentrations above applicable regulatory standards in the former sump location. Consequently, no further site assessment or remedial activity is recommended at this time. Following site assessment activities, the produced water sump was replaced and the excavation area was backfilled and contoured to match pre-existing site conditions. The production facility remains operational.

Please contact me at (303) 487-1228 if you have any questions regarding this report or require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Brock Nelson', written in a cursive style.

Brock Nelson  
Project Geologist

## **Attachments:**

Table 1 – Soil Sample Results Summary Table  
Attachment A – Site Map  
Attachment B – Laboratory Analytical Report

## **Table**

**TABLE 1**  
**THOMSEN 1C-31HZ (THOMSEN 34C-18HZ)**  
**SOIL SAMPLE RESULTS SUMMARY TABLE**  
**KERR-McGEE OIL AND GAS ONSHORE LP**

Sample Location	Date	Depth (ft. bgs)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)	TEPH-ORO (mg/kg)	EC (mmhos/cm)	pH (units)
<b>COGCC standards for soil (mg/kg) <sup>(1)</sup></b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>500</b>			<b>4 mmhos/cm or 2x BG</b>	<b>6-9</b>
E01@4'	06/24/16	4	<0.050	<0.050	<0.050	<0.050	<5.00	<25.0	100	0.0461	8.88

**Notes:**

1. Standards for soil are taken from 2 CCR 404-1, Table 910-1, effective March 16, 2016.

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

EC = Electrical conductivity

BG = Background

mmhos/cm = Millimhos per centimeter

mg/kg = Milligrams per kilogram.

ft. bgs = Feet below ground surface.

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

**Attachment A**



DATE: July 25, 2016

DESIGNED BY: B. Nelson

DRAWN BY: M. Petersen



**Kerr-McGee Oil and Gas Onshore, LP**  
**Thomsen 1C-31HZ (Thomsen 34C-18HZ)**  
 SWNW, Section 7, Township 2 North, Range 65 West  
 Weld County, Colorado

Sample Location  
 Map

FIGURE  
 1

**Attachment B**

June 27, 2016

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Thomsen 34C-18Hz

Project Number - [none]

Attached are your analytical results for KMG - Thomsen 34C-18Hz received by Origins Laboratory, Inc. June 24, 2016. This project is associated with Origins project number X606300-03.

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

Bob Cornez  
Project Number: [none]  
Project: KMG - Thomsen 34C-18Hz

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E01 @ 4'	X606300-03	Soil	June 24, 2016 14:06	06/24/2016 15:57

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

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: X606300

Client: Tasman

Client Project ID: Thomsen 34C-18Hz

Checklist Completed by: Jeff Smith

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

Date/time completed: 6/24/16

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 1-3 °C 1 °C 1 °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 <sup>(1)</sup> ?	X			
Is there ice present (document if blue ice is used)	X			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		X		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		X		
Were all samples received intact <sup>(1)</sup> ?	X			
Was adequate sample volume provided <sup>(1)</sup> ?	X			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	X			PH
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	X			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	X			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	X			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	X			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>			X	
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)			X	
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.

Jeff Smith  
 Reviewed by (Project Manager)

6/24/16  
 Date/Time Reviewed

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**E01 @ 4'**  
**6/24/2016 2:06:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X606300-03 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6F2404	06/24/2016	06/24/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

*Surrogate: o-Terphenyl* 65.5 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B6F2403	06/24/2016	06/24/2016	U
Benzene	ND	0.050	"	"	"	"	"	U
Toluene	ND	0.050	"	"	"	"	"	U
Ethylbenzene	ND	0.050	"	"	"	"	"	U
Xylenes, total	ND	0.050	"	"	"	"	"	U

*Surrogate: 1,2-Dichloroethane-d4* 94.6 % 70-130 " " "  
*Surrogate: Toluene-d8* 100 % 70-130 " " "  
*Surrogate: 4-Bromofluorobenzene* 109 % 70-130 " " "

**pH in Soil by EPA 9045D**

pH 8.88 pH Units 1 B6F2401 06/24/2016 06/24/2016

**Specific Conductance by Modified 9050A**

Specific Conductance (EC) 0.0461 mmhos/cm " B6F2407 06/24/2016 "

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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
<b>Batch B6F2403 - EPA 5030 (soil)</b>										
<b>Blank (B6F2403-BLK1)</b>										
					Prepared: 06/24/2016 Analyzed: 06/24/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		110	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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
<b>Batch B6F2403 - EPA 5030 (soil)</b>										
<b>Blank (B6F2403-BLK2)</b>										
					Prepared: 06/24/2016 Analyzed: 06/24/2016					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Surrogate: 1,2-Dichloroethane-d4	65		ug/kg	62.5		103	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		111	70-130			

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 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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 B6F2403 - EPA 5030 (soil)**

**LCS (B6F2403-BS1)**

Prepared: 06/24/2016 Analyzed: 06/24/2016

Benzene	0.102	0.002	mg/kg	0.100		102	77.1-124			
Toluene	0.101	0.002	"	0.100		101	74.5-128			
Ethylbenzene	0.100	0.002	"	0.100		100	66.4-127			
m,p-Xylene	0.206	0.004	"	0.200		103	76.6-124			
o-Xylene	0.100	0.002	"	0.100		99.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.4	70-130			
Surrogate: Toluene-d8	62		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		109	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

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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 B6F2403 - EPA 5030 (soil)**

**LCS (B6F2403-BS2)**

Prepared: 06/24/2016 Analyzed: 06/24/2016

Benzene	0.097	0.002	mg/kg	0.100		96.8	77.1-124			
Toluene	0.093	0.002	"	0.100		93.0	74.5-128			
Ethylbenzene	0.090	0.002	"	0.100		89.6	66.4-127			
m,p-Xylene	0.183	0.004	"	0.200		91.7	76.6-124			
o-Xylene	0.092	0.002	"	0.100		91.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		98.9	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		107	70-130			

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 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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 B6F2403 - EPA 5030 (soil)

Matrix Spike (B6F2403-MS1)	Source: X606280-01			Prepared: 06/24/2016 Analyzed: 06/24/2016						
Benzene	0.103	0.002	mg/kg	0.100	ND	103	71.8-126			
Toluene	0.098	0.002	"	0.100	ND	98.5	65.1-130			
Ethylbenzene	0.094	0.002	"	0.100	ND	94.0	62.2-130			
m,p-Xylene	0.193	0.004	"	0.200	ND	96.7	46.5-137			
o-Xylene	0.096	0.002	"	0.100	ND	95.8	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	72		ug/kg	62.5		114	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	68		"	62.5		109	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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 B6F2403 - EPA 5030 (soil)

Matrix Spike (B6F2403-MS2)	Source: X606301-01			Prepared: 06/24/2016 Analyzed: 06/25/2016						
Benzene	0.088	0.002	mg/kg	0.100	ND	87.7	71.8-126			
Toluene	0.079	0.002	"	0.100	ND	79.1	65.1-130			
Ethylbenzene	0.069	0.002	"	0.100	ND	68.6	62.2-130			
m,p-Xylene	0.136	0.004	"	0.200	ND	67.8	46.5-137			
o-Xylene	0.068	0.002	"	0.100	ND	67.9	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.1	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	69		"	62.5		110	70-130			

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 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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 B6F2403 - EPA 5030 (soil)

Matrix Spike Dup (B6F2403-MSD1)	Source: X606280-01			Prepared: 06/24/2016 Analyzed: 06/24/2016						
Benzene	0.099	0.002	mg/kg	0.100	ND	99.2	71.8-126	3.76	11.3	
Toluene	0.095	0.002	"	0.100	ND	94.8	65.1-130	3.75	15.4	
Ethylbenzene	0.092	0.002	"	0.100	ND	91.8	62.2-130	2.35	19.6	
m,p-Xylene	0.189	0.004	"	0.200	ND	94.3	46.5-137	2.47	19.2	
o-Xylene	0.093	0.002	"	0.100	ND	93.1	54.2-134	2.84	17.9	
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.0	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	67		"	62.5		107	70-130			

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 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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 B6F2403 - EPA 5030 (soil)**

<b>Matrix Spike Dup (B6F2403-MSD2)</b>	<b>Source: X606301-01</b>			<b>Prepared: 06/24/2016 Analyzed: 06/25/2016</b>						
Benzene	0.103	0.002	mg/kg	0.100	ND	103	71.8-126	16.1	11.3	QR-03
Toluene	0.099	0.002	"	0.100	ND	98.9	65.1-130	22.3	15.4	QR-03
Ethylbenzene	0.096	0.002	"	0.100	ND	96.3	62.2-130	33.5	19.6	QR-03
m,p-Xylene	0.196	0.004	"	0.200	ND	98.1	46.5-137	36.5	19.2	QR-03
o-Xylene	0.097	0.002	"	0.100	ND	96.8	54.2-134	35.1	17.9	QR-03
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		97.1	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	70		"	62.5		112	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6899 Pecos Street, Unit C  
 Denver CO 80211

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**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 8015C - 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 B6F2404 - EPA 3580**

**Blank (B6F2404-BLK1)**

Prepared: 06/24/2016 Analyzed: 06/24/2016

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	68		"	50.0		137	59-131			

**LCS (B6F2404-BS1)**

Prepared: 06/24/2016 Analyzed: 06/24/2016

Diesel (C10-C28)	876	50.0	mg/kg	1000		87.6	64-121			
Residual Range Organics (C28-C40)	881	200	"	1000		88.1	58-124			
Surrogate: o-Terphenyl	40		"	50.0		79.9	59-131			

**Matrix Spike (B6F2404-MS1)**

Source: X606280-02

Prepared: 06/24/2016 Analyzed: 06/24/2016

Diesel (C10-C28)	829	50.0	mg/kg	1000	ND	82.9	53-125			
Residual Range Organics (C28-C40)	832	200	"	1000	38.6	79.3	47-133			
Surrogate: o-Terphenyl	34		"	50.0		67.8	59-131			

**Matrix Spike Dup (B6F2404-MSD1)**

Source: X606280-02

Prepared: 06/24/2016 Analyzed: 06/24/2016

Diesel (C10-C28)	822	50.0	mg/kg	1000	ND	82.2	53-125	0.873	20	
Residual Range Organics (C28-C40)	806	200	"	1000	38.6	76.7	47-133	3.31	20	
Surrogate: o-Terphenyl	37		"	50.0		74.3	59-131			

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

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Thomsen 34C-18Hz

**Classical Chemistry Parameters - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B6F2401 - NO PREP</b>										
<b>Duplicate (B6F2401-DUP1)</b>		<b>Source: X606281-23</b>			Prepared: 06/24/2016 Analyzed: 06/24/2016					
pH	7.83		pH Units		7.93			1.27	25	
<b>Batch B6F2407 - NO PREP</b>										
<b>Blank (B6F2407-BLK1)</b>		Prepared: 06/24/2016 Analyzed: 06/24/2016								
Specific Conductance (EC)	0.00310		mmhos/cm							
<b>Duplicate (B6F2407-DUP1)</b>		<b>Source: X606297-01</b>			Prepared: 06/24/2016 Analyzed: 06/24/2016					
Specific Conductance (EC)	0.271		mmhos/cm		0.300			10.2	25	

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Project: KMG - Thomsen 34C-18Hz

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**Notes and Definitions**

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

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