



Kerr-McGee Oil & Gas Onshore LP  
1099 18<sup>th</sup> Street, Suite 1800  
Denver, Colorado 80202  
720-929-6000 Fax 720-929-7000

September 8, 2016

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

**Re: Sump Closure Summary Report  
UPRR 42 Pan Am AF-62N67W/35SWNE  
API: 05-123-08704 and -20045  
Facility ID: 332876  
NWNE Sec 35-T2N-R67W  
COGCC Remediation #8961**

Dear Mr. Mickelson:

Apex Companies, LLC (Apex) is providing Kerr-McGee Oil & Gas Onshore LP (Kerr-McGee) with this Sump Closure Summary 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 of Produced Water Vessels, which has been assigned Remediation #8961 by the COGCC. Apex provided the environmental services at the site that included collection of confirmation samples from the excavation and documentation of field activities, as described below.

### **Site Assessment Activities**

The field activities described herein were performed on July 8, 2016, with the purpose of assessing potential hydrocarbon impacts at the site related to the closure of a produced water sump. Soil sampling activities, laboratory analytical results, and conclusions are presented below. The general site layout and sample locations are provided on Figure 1.

The final extent of the excavation measured approximately 12 feet by 12 feet with an approximate depth of 5 feet below ground surface (bgs). No impacted soils were encountered in the excavation during closure activities. A liner was not present below the tanks, and groundwater was encountered in the excavation.

Confirmation soil samples were collected from the sidewalls of the excavation area at approximately 4 feet bgs. A groundwater sample was collected from the excavation at approximately 5 bgs. 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 (East 01 @ 4') 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 8260, and TPH – diesel range and residual range organics (DRO and RRO) by USEPA Method 8015, electrical conductivity (EC), and pH. The groundwater sample (Groundwater 01 @ 5') collected from the excavation was submitted to Origins Laboratory for analysis of BTEX by USEPA Method 8260. Soil and groundwater analytical data is summarized in Tables 1 and 2, and the laboratory analytical report is provided in Attachment A.

## Results

Analytical results from soil sample East 01 @ 4' indicated that BTEX and TPH concentrations were below the applicable COGCC Table 910-1 standards. Groundwater analytical results from groundwater sample Groundwater 01 @ 5' indicated that BTEX concentrations were below the applicable COGCC Table 910-1 standards. The remaining three soil samples collected from the 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 necessary. Following site assessment activities, the produced water sump was removed, and the facility was decommissioned.

Please contact me at (303)242-8671 if you have any questions regarding this report or require additional information.

Sincerely,

Apex Companies, LLC

A handwritten signature in blue ink that reads "Jacob H. Hildebrand".

Jacob Hildebrand, PMP

Project Manager

## Attachments:

- Figure 1 – Site Map
- Table 1 – Soil Sample Results Summary Table
- Table 2 – Groundwater Sample Analytical Results
- Attachment A – Laboratory Analytical Reports



**Figure 1**  
**UPRR 42 Pan Am AF-**  
**62N67W/35SWNE**  
**Site Layout**

**Legend**

- Soil Sample
- Groundwater Sample
- Former Equipment
- Secondary Containment
- Excavation Extent

**Sample Location**

B: benzene  
T: toluene  
E: ethylbenzene  
X: xylenes  
TPH: total petroleum hydrocarbons

Bold values exceed COGCC Table  
910-1 allowable concentrations

**Site Characteristics**

**Legal Location:** NWNE, Sec 35, T2N R67W  
**County:** Weld  
**Land Use:** Cropland  
**Topography:** 3-5%  
**Run-Off Risk:** Low  
**Soil Type:** Olney fine sandy loam

REVISED	BY	COMMENT
9/6/2016	BJB	Figure 1

**APEX**

Apex Companies, LLC  
beau.bergstrom@apexcos.com  
M:\Projects\Anadarko\DJ\_Basin\Remediation\UPRR\_42\_Pan\_Am\_AF\Projects  
UPRR\_42\_PanAm\_AF\_Fig1.dwg 20160906.mxd

# Table 1 - Soil Sample Analytical Results



Kerr-McGee Oil & Gas Onshore LP

Location Name: UPRR 42 Pan Am AF-62N67W/35SWNE

Location ID: 332876

County: Weld

			Organics in Soil						Inorganics in Soil	
COGCC Allowable Concentration →			500			0.17	85	100	(<4 or 2x background)	(6-9)
Sample ID	Sample Date	Depth (feet bgs)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-RRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Electrical Conductivity (mmhos/cm)	pH
East 01 @ 4'	7/8/2016	4'	<0.200	<25.0	<100	<0.002	<0.002	<0.002	0.147	7.36

**Notes:**

TPH Total petroleum hydrocarbons  
 GRO Gasoline range hydrocarbons (C6 - C10)  
 DRO Diesel range organics (C10 - C28)  
 RRO Residual range organics (C28 - C36)

**Bold** cell indicates result exceeded COGCC Table 910-1 allowable concentration for the contaminant / inorganic of concern

bgs below ground surface  
 mg/kg milligrams per kilogram  
 mmhos/cm millimhos per centimeter  
 NA Not analyzed / not available  
 COGCC Colorado Oil and Gas Conservation Commission

## Table 2 - Groundwater Sample Analytical Results



Kerr-McGee Oil & Gas Onshore LP

Location Name: UPRR 42 Pan Am AF-62N67W/35SWNE

Location ID: 332876

County: Weld

			Organics in Groundwater			
COGCC Allowable Concentration →			5	560	700	10,000
Sample ID	Sample Date	Depth (feet bgs)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes - total (µg/L)
Groundwater 01 @ 5'	7/8/2016	5'	<4.00	<4.00	<4.00	<4.00

Notes:

bgs below ground surface

µg/L micrograms per liter

NA Not analyzed / not available

COGCC Colorado Oil and Gas Conservation Commission

**Bold** cell indicates result exceeded COGCC Table 910-1 allowable concentration for the contaminant of concern

**Attachment A**

**Laboratory Analytical Report**



July 11, 2016

Apex Companies, LLC

Jake Hildebrand

4150 Darley Avenue, Suite 1

Boulder

CO 80305

**Project Name - KMG - Sanchez 7-35**

**Project Number - 89082240**

Attached are your analytical results for KMG - Sanchez 7-35 received by Origins Laboratory, Inc. July 08, 2016. This project is associated with Origins project number X607108-02.

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

Apex Companies, LLC

4150 Darley Avenue, Suite 1

Boulder CO 80305

Jake Hildebrand

Project Number: 89082240

Project: KMG - Sanchez 7-35

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
East 01@ 4'	X607108-02	Soil	July 8, 2016 12:52	07/08/2016 14:27
Groundwater 01@5'	X607108-06	Water	July 8, 2016 13:10	07/08/2016 14:27

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.*



Page 3 of 17

Apex Companies, LLC  
4150 Darley Avenue, Suite 1  
Boulder CO 80305

Jake Hildebrand  
Project Number: 89082240  
Project: KMG - Sanchez 7-35

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: XL07108

Client: Apex Companies

Client Project ID: Sanchez 7-35

Checklist Completed by: J. Pellegrini

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

Date/time completed: 7/8/16 1430

Airbill #: 207

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

Cooler Number/Temperature: 1 120.0 °C 1 °C 1 °C (Describe) °C

Thermometer ID: 1005

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 Saturday
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"/>			pH
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 (Project Manager)

7/8/16  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Apex Companies, LLC  
4150 Darley Avenue, Suite 1  
Boulder CO 80305

Jake Hildebrand  
Project Number: 89082240  
Project: KMG - Sanchez 7-35

East 01@ 4'  
7/8/2016 12:52:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**X607108-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B6G0804	07/08/2016	07/08/2016	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 84.1 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B6G0805	07/08/2016	07/08/2016	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 103 % 70-130 " " "  
Surrogate: Toluene-d8 97.8 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

**pH in Soil by EPA 9045D**

pH	7.36	pH Units	1	B6G0806	07/08/2016	07/08/2016
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.147	mmhos/cm	"	B6G0807	"	07/08/2016
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Apex Companies, LLC  
4150 Darley Avenue, Suite 1  
Boulder CO 80305

Jake Hildebrand  
Project Number: 89082240  
Project: KMG - Sanchez 7-35

Groundwater 01@5'  
7/8/2016 1:10:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.  
X607108-06 (Water)

BTEX by EPA 8260C

Benzene	ND	4.00	ug/L	4	B6G0808	07/08/2016	07/08/2016	U
Toluene	ND	4.00	"	"	"	"	"	U
Ethylbenzene	ND	4.00	"	"	"	"	"	U
Xylenes, total	ND	4.00	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	84-121	"	"	"
Surrogate: Toluene-d8	98.8 %	85-115	"	"	"
Surrogate: 4-Bromofluorobenzene	96.7 %	84-114	"	"	"

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Jake Hildebrand  
Project Number: 89082240  
Project: KMG - Sanchez 7-35

**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 B6G0805 - EPA 5030 (soil)</b>										
<b>Blank (B6G0805-BLK1)</b>					Prepared: 07/08/2016 Analyzed: 07/08/2016					
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	57		ug/kg	62.5		91.2	70-130			
Surrogate: Toluene-d8	60		"	62.5		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Project Number: 89082240  
Project: KMG - Sanchez 7-35

**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 B6G0805 - EPA 5030 (soil)										
LCS (B6G0805-BS1)					Prepared: 07/08/2016 Analyzed: 07/08/2016					
Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.096	0.002	"	0.100		96.4	74.5-128			
Ethylbenzene	0.102	0.002	"	0.100		102	66.4-127			
m,p-Xylene	0.206	0.004	"	0.200		103	76.6-124			
o-Xylene	0.102	0.002	"	0.100		102	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	57		ug/kg	62.5		91.0	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	70-130			

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**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B6G0805 - EPA 5030 (soil)**

Matrix Spike (B6G0805-MS1)		Source: X607099-01			Prepared: 07/08/2016 Analyzed: 07/08/2016					
Benzene	0.110	0.002	mg/kg	0.100	ND	110	71.8-126			
Toluene	0.104	0.002	"	0.100	ND	104	65.1-130			
Ethylbenzene	0.103	0.002	"	0.100	ND	103	62.2-130			
m,p-Xylene	0.211	0.004	"	0.200	ND	105	46.5-137			
o-Xylene	0.106	0.002	"	0.100	ND	106	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		96.9	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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Jake Hildebrand  
Project Number: 89082240  
Project: KMG - Sanchez 7-35

**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 B6G0805 - EPA 5030 (soil)**

Matrix Spike Dup (B6G0805-MSD1)		Source: X607099-01			Prepared: 07/08/2016 Analyzed: 07/08/2016					
Benzene	0.104	0.002	mg/kg	0.100	ND	104	71.8-126	5.57	11.3	
Toluene	0.098	0.002	"	0.100	ND	97.8	65.1-130	5.95	15.4	
Ethylbenzene	0.098	0.002	"	0.100	ND	98.4	62.2-130	4.76	19.6	
m,p-Xylene	0.200	0.004	"	0.200	ND	100	46.5-137	5.23	19.2	
o-Xylene	0.099	0.002	"	0.100	ND	99.3	54.2-134	6.11	17.9	
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		98.3	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.4	70-130			

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Jake Hildebrand  
Project Number: 89082240  
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**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 B6G0808 - EPA 5030B (Water)										
Blank (B6G0808-BLK1)					Prepared: 07/08/2016 Analyzed: 07/08/2016					
Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5	109		84-121			
Surrogate: Toluene-d8	64		"	62.5	103		85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5	98.1		84-114			

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**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 B6G0808 - EPA 5030B (Water)										
LCS (B6G0808-BS1)					Prepared: 07/08/2016 Analyzed: 07/08/2016					
Benzene	55.0	1.00	ug/L	50.0		110	73.3-129			
Toluene	56.9	1.00	"	50.0		114	76.2-123			
Ethylbenzene	58.4	1.00	"	50.0		117	73.6-130			
m,p-Xylene	117	2.00	"	100		117	76.1-126			
o-Xylene	55.5	1.00	"	50.0		111	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	84-121			
Surrogate: Toluene-d8	63		"	62.5		101	85-115			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	84-114			

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Jake Hildebrand  
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Project: KMG - Sanchez 7-35

**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 B6G0808 - EPA 5030B (Water)**

Matrix Spike (B6G0808-MS1)		Source: X607105-01			Prepared: 07/08/2016 Analyzed: 07/08/2016					
Benzene	53.4	1.00	ug/L	50.0	ND	107	74-130			
Toluene	55.3	1.00	"	50.0	ND	111	73-131			
Ethylbenzene	57.2	1.00	"	50.0	ND	114	76-132			
m,p-Xylene	116	2.00	"	100	ND	116	69-139			
o-Xylene	56.1	1.00	"	50.0	ND	112	74-131			
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5		108	84-121			
Surrogate: Toluene-d8	64		"	62.5		102	85-115			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		94.4	84-114			

Origins Laboratory, Inc.



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Jake Hildebrand  
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**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 B6G0808 - EPA 5030B (Water)**

Matrix Spike Dup (B6G0808-MSD1)		Source: X607105-01			Prepared: 07/08/2016 Analyzed: 07/08/2016					
Benzene	53.8	1.00	ug/L	50.0	ND	108	74-130	0.821	20	
Toluene	55.3	1.00	"	50.0	ND	111	73-131	0.0362	20	
Ethylbenzene	59.5	1.00	"	50.0	ND	119	76-132	4.03	20	
m,p-Xylene	121	2.00	"	100	ND	121	69-139	3.81	20	
o-Xylene	58.0	1.00	"	50.0	ND	116	74-131	3.35	20	
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	84-121			
Surrogate: Toluene-d8	62		"	62.5		98.8	85-115			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.3	84-114			

Origins Laboratory, Inc.



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Apex Companies, LLC  
4150 Darley Avenue, Suite 1  
Boulder CO 80305

Jake Hildebrand  
Project Number: 89082240  
Project: KMG - Sanchez 7-35

## 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 B6G0804 - EPA 3580

#### Blank (B6G0804-BLK1)

Prepared: 07/08/2016 Analyzed: 07/08/2016

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	41		"	50.0		82.6	59-131			

#### LCS (B6G0804-BS1)

Prepared: 07/08/2016 Analyzed: 07/08/2016

Diesel (C10-C28)	1010	50.0	mg/kg	1000		101	64-121			
Residual Range Organics (C28-C40)	1040	200	"	1000		104	58-124			
Surrogate: o-Terphenyl	45		"	50.0		89.9	59-131			

#### Matrix Spike (B6G0804-MS1)

Source: X607060-01

Prepared: 07/08/2016 Analyzed: 07/08/2016

Diesel (C10-C28)	999	50.0	mg/kg	1000	ND	99.9	53-125			
Residual Range Organics (C28-C40)	1020	200	"	1000	44.7	97.1	47-133			
Surrogate: o-Terphenyl	47		"	50.0		94.2	59-131			

#### Matrix Spike Dup (B6G0804-MSD1)

Source: X607060-01

Prepared: 07/08/2016 Analyzed: 07/08/2016

Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	53-125	2.24	20	
Residual Range Organics (C28-C40)	1030	200	"	1000	44.7	98.2	47-133	1.18	20	
Surrogate: o-Terphenyl	46		"	50.0		91.4	59-131			

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## 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 B6G0806 - NO PREP</b>										
<b>Duplicate (B6G0806-DUP1)</b>		<b>Source: X607108-02</b>			Prepared: 07/08/2016 Analyzed: 07/08/2016					
pH	7.37		pH Units		7.36			0.136	25	
<b>Batch B6G0807 - NO PREP</b>										
<b>Blank (B6G0807-BLK1)</b>		Prepared: 07/08/2016 Analyzed: 07/08/2016								
Specific Conductance (EC)	0.00280		mmhos/cm							
<b>Duplicate (B6G0807-DUP1)</b>		<b>Source: X607108-02</b>			Prepared: 07/08/2016 Analyzed: 07/08/2016					
Specific Conductance (EC)	0.150		mmhos/cm		0.147			1.88	25	

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Project Number: 89082240  
Project: KMG - Sanchez 7-35

### Notes and Definitions

U Sample is Non-Detect.

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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