

**Attachment A**

**Laboratory Analytical Report**



March 20, 2019

Apex Companies, LLC

Maggie Graham

4150 Darley Avenue, Suite 1

Boulder

CO 80305

**Project Name - KMG - Daniels V 11-15**

**Project Number - 450468**

Attached are your analytical results for KMG - Daniels V 11-15 received by Origins Laboratory, Inc. March 19, 2019. This project is associated with Origins project number Y903236-01.

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

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

Maggie Graham  
Project Number: 450468  
Project: KMG - Daniels V 11-15

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@11'	Y903236-01	Soil	March 19, 2019 14:13	03/19/2019 15:45
E01@11'	Y903236-02	Soil	March 19, 2019 14:17	03/19/2019 15:45

Origins Laboratory, Inc.



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Project Number: 450468  
Project: KMG - Daniels V 11-15

# ORIGINS

LABORATORY, INC

www.originslaboratory.com

Y903236

page 1 of 1

Client: Apex Companies  
Address: 1746 Cole Blvd, Lakewood, CO 80401  
Telephone Number: 720-501-5065  
Email Address: Maggie.Graham@apexcos.com

Project Manager: Maggie Graham  
Project Name: Denver U 11-15  
Project Number: WO# 450468 Greg Hamilton  
Samples Collected By: Andrew Bowyer  
Bill to Anadarko

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				Sample Instructions		
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Continer #	Other	DBTEX	DRO/RRO	EC, pH		HOLD SAR	
N01P11	3/19/19	1413	1						X	1							1
E01P11	3/19/19	1417	1							1							2
																	3
																	4
																	5
																	6
																	7
																	8
																	9
																	10
Relinquished By: <i>[Signature]</i>	Date: 3/19/19	Time: 1545															Turnaround Time: 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"/>
Relinquished By:	Date:	Time:															

Auto Results Needed ☐ Max Day 7am

Origins Laboratory, Inc.

Jeff Pellipini

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Maggie Graham  
Project Number: 450468  
Project: KMG - Daniels V 11-15

Origins Laboratory

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

## Sample Receipt Checklist

Origins Work Order: Y903236

Client: Apex

Client Project ID: KMG - Daniels V 11-15

Checklist Completed by: JG

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

Date/time completed: 3/19/2019

Airbill #: N/A

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

Cooler Number/Temperature: 1 / 13.1 °C \_\_\_\_\_ / \_\_\_\_\_ °C \_\_\_\_\_ / \_\_\_\_\_ °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 <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		Same Day
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):				

<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 be taken in the additional comments (above) and the case narrative.

Reviewed by (Project Manager)

3/19/19  
Date/Time Reviewed

Origins Laboratory, Inc.

*Jefe Pellegrini*

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

Maggie Graham  
Project Number: 450468  
Project: KMG - Daniels V 11-15

N01@11'

3/19/2019 2:13:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903236-01 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	1200	25.0	mg/kg	1	B9C1905	JTD	03/19/2019	03/19/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 83.2 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	1720	50.0	mg/kg	250	B9C1904	JTD	03/19/2019	03/19/2019	
Benzene	ND	0.050	"	25	"	JTD	"	03/19/2019	U
Toluene	ND	0.050	"	"	"	JTD	"	"	U
Ethylbenzene	3.54	0.050	"	"	"	JTD	"	"	
Xylenes, total	22.7	0.498	"	250	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 109 % 70-130 " " 03/19/2019  
Surrogate: Toluene-d8 93.7 % 70-130 " " "  
Surrogate: 4-Bromofluorobenzene 121 % 70-130 " " "

**pH in Soil by EPA 9045D**

pH	7.54		pH Units	1	B9C1906	OLAB	03/19/2019	03/19/2019	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.0772	0.00500	mmhos/cm	"	B9C1907	OLAB	03/19/2019	"	
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Maggie Graham  
Project Number: 450468  
Project: KMG - Daniels V 11-15

E01@11'

3/19/2019 2:17:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y903236-02 (Soil)**

**DRO/RRO by EPA8015C**

Diesel (C10-C28)	1180	25.0	mg/kg	1	B9C1905	JTD	03/19/2019	03/19/2019	
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 97.4 % 59-131 " " "

**GBTEX by EPA 8260C**

Gasoline Range Hydrocarbons	1840	50.0	mg/kg	250	B9C1904	JTD	03/19/2019	03/19/2019	
Benzene	3.88	0.498	"	"	"	JTD	"	"	
Toluene	0.535	0.498	"	"	"	JTD	"	"	
Ethylbenzene	10.0	0.498	"	"	"	JTD	"	"	
Xylenes, total	116	0.498	"	"	"	JTD	"	"	

Surrogate: 1,2-Dichloroethane-d4 109 % 70-130 " " "

Surrogate: Toluene-d8 93.0 % 70-130 " " "

Surrogate: 4-Bromofluorobenzene 95.1 % 70-130 " " "

**pH in Soil by EPA 9045D**

pH	8.29		pH Units	1	B9C1906	OLAB	03/19/2019	03/19/2019	
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**Specific Conductance by Modified 9050A**

Specific Conductance (EC)	0.155	0.00500	mmhos/cm	"	B9C1907	OLAB	03/19/2019	"	
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Project: KMG - Daniels V 11-15

**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 B9C1904 - EPA 5030 (soil)</b>										
<b>Blank (B9C1904-BLK1)</b>					Prepared: 03/19/2019 Analyzed: 03/19/2019					
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	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.8	70-130			

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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
<b>Batch B9C1904 - EPA 5030 (soil)</b>										
<b>LCS (B9C1904-BS1)</b>					Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.105	0.002	mg/kg	0.100		105	77.1-124			
Toluene	0.100	0.002	"	0.100		100	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.199	0.004	"	0.200		99.5	76.6-124			
o-Xylene	0.100	0.002	"	0.100		99.7	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.0	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 B9C1904 - EPA 5030 (soil)**

Matrix Spike (B9C1904-MS1)		Source: Y903226-01			Prepared: 03/19/2019 Analyzed: 03/19/2019					
Benzene	0.109	0.002	mg/kg	0.100	ND	109	71.8-126			
Toluene	0.104	0.002	"	0.100	ND	104	65.1-130			
Ethylbenzene	0.107	0.002	"	0.100	ND	107	62.2-130			
m,p-Xylene	0.210	0.004	"	0.200	0.0009	104	46.5-137			
o-Xylene	0.105	0.002	"	0.100	0.0004	104	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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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
<b>Batch B9C1904 - EPA 5030 (soil)</b>										
<b>Matrix Spike Dup (B9C1904-MSD1)</b>										
					<b>Source: Y903226-01</b>					
					Prepared: 03/19/2019		Analyzed: 03/19/2019			
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126	2.69	11.3	
Toluene	0.099	0.002	"	0.100	ND	99.4	65.1-130	4.52	15.4	
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130	6.10	19.6	
m,p-Xylene	0.196	0.004	"	0.200	0.0009	97.8	46.5-137	6.51	19.2	
o-Xylene	0.099	0.002	"	0.100	0.0004	98.4	54.2-134	5.60	17.9	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	70-130			

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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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**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 B9C1905 - EPA 3580**

**Blank (B9C1905-BLK1)**

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	58		"	50.0		115	59-131			

**LCS (B9C1905-BS1)**

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	865	50.0	mg/kg	1000		86.5	64-121			
Residual Range Organics (C28-C40)	834	200	"	1000		83.4	58-124			
Surrogate: o-Terphenyl	42		"	50.0		84.8	59-131			

**Matrix Spike (B9C1905-MS1)**

**Source: Y903226-01**

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	914	50.0	mg/kg	1000	ND	91.4	53-125			
Residual Range Organics (C28-C40)	885	200	"	1000	7.30	87.8	47-133			
Surrogate: o-Terphenyl	48		"	50.0		95.9	59-131			

**Matrix Spike Dup (B9C1905-MSD1)**

**Source: Y903226-01**

Prepared: 03/19/2019 Analyzed: 03/19/2019

Diesel (C10-C28)	925	50.0	mg/kg	1000	ND	92.5	53-125	1.30	20	
Residual Range Organics (C28-C40)	881	200	"	1000	7.30	87.3	47-133	0.490	20	
Surrogate: o-Terphenyl	45		"	50.0		89.8	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 B9C1906 - NO PREP</b>										
<b>Duplicate (B9C1906-DUP1)</b>		<b>Source: Y903236-01</b>			Prepared: 03/19/2019 Analyzed: 03/19/2019					
pH	7.36		pH Units		7.54			2.42	25	
<b>Batch B9C1907 - NO PREP</b>										
<b>Blank (B9C1907-BLK1)</b>		Prepared: 03/19/2019 Analyzed: 03/19/2019								
Specific Conductance (EC)	0.00230	0.00500	mmhos/cm							
<b>Duplicate (B9C1907-DUP1)</b>		<b>Source: Y903236-01</b>			Prepared: 03/19/2019 Analyzed: 03/19/2019					
Specific Conductance (EC)	0.0750	0.00506	mmhos/cm		0.0772			2.89	25	

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### 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.

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Jen Pellegrini For Noelle Doyle Mathis, President