

January 25, 2018

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver CO 80211

Project Name - KMG - Clifford L3-3

Project Number - 2130768.PAB

Attached are your analytical results for KMG - Clifford L3-3 received by Origins Laboratory, Inc. January 24, 2018. This project is associated with Origins project number Y801335-01.

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

Bob Cornez
Project Number: 2130768.PAB
Project: KMG - Clifford L3-3

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@3"	Y801335-01	Soil	January 24, 2018 11:50	01/24/2018 16:45

Origins Laboratory, Inc.



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 Project: KMG - Clifford L3-3

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

Sample Receipt Checklist

Origins Work Order: YB01335 Client: Tasman
 Client Project ID: KMG - Clifford L3-3
 Checklist Completed by: Don Lee Shipped Via: Pick-up
 Date/time completed: 1-24-12 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
 Airbill #: NR
 Matrix(s) Received: (Check all that apply): Soil/Solid Water Other: _____
 Cooler Number/Temperature: 1 / 5.6 °C °C °C (Describe)
 Thermometer ID: 603

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"/>			pk
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) [Signature] Date/Time Reviewed 1-24-12

Origins Laboratory, Inc.

Jefe Pellegrini

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Bob Cornez
 Project Number: 2130768.PAB
 Project: KMG - Clifford L3-3

SS01@3"

1/24/2018 11:50:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
 Y801335-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	71.6	25.0	mg/kg	1	B8A2405	01/24/2018	01/25/2018	
Residual Range Organics (C28-C40)	109	100	"	"	"	"	"	

Surrogate: o-Terphenyl 67.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	3.40	0.200	mg/kg	1	B8A2404	01/24/2018	01/25/2018	
Benzene	0.048	0.002	"	"	"	"	"	
Toluene	0.182	0.002	"	"	"	"	"	
Ethylbenzene	0.036	0.002	"	"	"	"	"	
Xylenes, total	0.376	0.002	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 111 % 70-130 " " "
 Surrogate: Toluene-d8 94.1 % 70-130 " " "
 Surrogate: 4-Bromofluorobenzene 121 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.23		pH Units	1	B8A2406	01/24/2018	01/24/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.316		mmhos/cm	"	B8A2407	01/24/2018	"	
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Tasman Geosciences
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 Denver CO 80211

Bob Cornez
 Project Number: 2130768.PAB
 Project: KMG - Clifford L3-3

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 B8A2404 - EPA 5030 (soil)										
Blank (B8A2404-BLK1)										
					Prepared: 01/24/2018 Analyzed: 01/24/2018					
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	68		ug/kg	62.5		110	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B8A2404 - EPA 5030 (soil)

LCS (B8A2404-BS1)

Prepared: 01/24/2018 Analyzed: 01/24/2018

Benzene	0.108	0.002	mg/kg	0.100		108	77.1-124			
Toluene	0.101	0.002	"	0.100		101	74.5-128			
Ethylbenzene	0.101	0.002	"	0.100		101	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.105	0.002	"	0.100		105	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	61		ug/kg	62.5		98.4	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		98.8	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 B8A2404 - EPA 5030 (soil)

Matrix Spike (B8A2404-MS1)	Source: Y801319-01			Prepared: 01/24/2018 Analyzed: 01/24/2018						
Benzene	0.106	0.002	mg/kg	0.100	ND	106	71.8-126			
Toluene	0.113	0.002	"	0.100	ND	113	65.1-130			
Ethylbenzene	0.125	0.002	"	0.100	ND	125	62.2-130			
m,p-Xylene	0.266	0.004	"	0.200	ND	133	46.5-137			
o-Xylene	0.135	0.002	"	0.100	ND	135	54.2-134			QM-07
Surrogate: 1,2-Dichloroethane-d4	66		ug/kg	62.5		105	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	77		"	62.5		122	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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Batch B8A2404 - EPA 5030 (soil)

Matrix Spike Dup (B8A2404-MSD1)	Source: Y801319-01			Prepared: 01/24/2018 Analyzed: 01/24/2018						
Benzene	0.095	0.002	mg/kg	0.100	ND	94.5	71.8-126	11.4	11.3	QR-02
Toluene	0.100	0.002	"	0.100	ND	99.5	65.1-130	12.5	15.4	
Ethylbenzene	0.106	0.002	"	0.100	ND	106	62.2-130	16.0	19.6	
m,p-Xylene	0.235	0.004	"	0.200	ND	117	46.5-137	12.6	19.2	
o-Xylene	0.118	0.002	"	0.100	ND	118	54.2-134	13.8	17.9	
Surrogate: 1,2-Dichloroethane-d4	67		ug/kg	62.5		107	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	79		"	62.5		126	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 B8A2405 - EPA 3550B

Blank (B8A2405-BLK1)

Prepared: 01/24/2018 Analyzed: 01/24/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		89.3	59-131			

LCS (B8A2405-BS1)

Prepared: 01/24/2018 Analyzed: 01/24/2018

Diesel (C10-C28)	974	50.0	mg/kg	1000		97.4	64-121			
Residual Range Organics (C28-C40)	902	200	"	1000		90.2	58-124			
Surrogate: o-Terphenyl	48		"	50.0		96.4	59-131			

Matrix Spike (B8A2405-MS1)

Source: Y801319-01

Prepared: 01/24/2018 Analyzed: 01/24/2018

Diesel (C10-C28)	970	50.0	mg/kg	1000	ND	97.0	53-125			
Residual Range Organics (C28-C40)	924	200	"	1000	20.9	90.3	47-133			
Surrogate: o-Terphenyl	50		"	50.0		99.9	59-131			

Matrix Spike Dup (B8A2405-MSD1)

Source: Y801319-01

Prepared: 01/24/2018 Analyzed: 01/24/2018

Diesel (C10-C28)	943	50.0	mg/kg	1000	ND	94.3	53-125	2.79	20	
Residual Range Organics (C28-C40)	907	200	"	1000	20.9	88.7	47-133	1.90	20	
Surrogate: o-Terphenyl	48		"	50.0		96.2	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
Batch B8A2406 - NO PREP										
Duplicate (B8A2406-DUP1)		Source: Y801332-01			Prepared: 01/24/2018 Analyzed: 01/24/2018					
pH	8.45		pH Units		8.80			4.06	25	
Batch B8A2407 - NO PREP										
Blank (B8A2407-BLK1)		Prepared: 01/24/2018 Analyzed: 01/24/2018								
Specific Conductance (EC)	0.00210		mmhos/cm							
Duplicate (B8A2407-DUP1)		Source: Y801332-01			Prepared: 01/24/2018 Analyzed: 01/24/2018					
Specific Conductance (EC)	0.276		mmhos/cm		0.300			8.57	25	

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Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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

All soil results are reported at a wet weight basis.

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Jen Pellegrini For Noelle Doyle Mathis, President