



August 15, 2018

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Bell 4-16A

Project Number - [none]

Attached are your analytical results for KMG - Bell 4-16A received by Origins Laboratory, Inc. August 14, 2018. This project is associated with Origins project number Y808187-01.

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

Bob Cornez

Project Number: [none]

Project: KMG - Bell 4-16A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@5'	Y808187-01	Soil	August 14, 2018 13:12	08/14/2018 16:47

Origins Laboratory, Inc.



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Bob Cornez
Project Number: [none]
Project: KMG - Bell 4-16A

ORIGINS

LABORATORY, INC.

Fax: 303.265.9645

www.originslaboratory.com

Client: APC/ TASMAN

Address: 6899 Pecos St, Denver, CO

Telephone Number:

Email Address: r.conne2@tasmn-gas.com

Project Manager: Robert Connez

Project Name: Cell 4-16A

Project Number: -

Samples Collected By: M Binda

page 1 of 1

[illegible]

Origins Laboratory, Inc.

Jeff Pellipini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Bell 4-16A

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 7808187

Client: Tasman

Client Project ID: KMG-Bell 4-16

Checklist Completed by: Don Lee

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

Date/time completed: 8-14-18

Airbill #: NA

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

Cooler Number/Temperature: 16.6 °C / _____ °C / _____ °C (Describe) _____ °C

Thermometer ID: 1003

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"/>		sampled 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 ⁽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"/>			not
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]

8-14-18
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Bell 4-16A

B01@5'

8/14/2018 1:12:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y808187-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8H1406	JTD	08/14/2018	08/14/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	JTD	"	"	U

Surrogate: o-Terphenyl 77.8 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8H1405	KDK	"	08/14/2018	U
Benzene	ND	0.002	"	"	"	KDK	"	"	U
Toluene	ND	0.002	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.002	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.002	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 108 % 70-130 " " "
Surrogate: Toluene-d8 98.6 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 103 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.95		pH Units	1	B8H1407	OLAB	08/14/2018	08/14/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.120	0.00502	mmhos/cm	"	B8H1408	OLAB	08/14/2018	"	
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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Bell 4-16A

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 B8H1405 - EPA 5030 (soil)										
Blank (B8H1405-BLK1)					Prepared: 08/14/2018 Analyzed: 08/14/2018					
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	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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
Batch B8H1405 - EPA 5030 (soil)										
LCS (B8H1405-BS1)					Prepared: 08/14/2018 Analyzed: 08/14/2018					
Benzene	0.106	0.002	mg/kg	0.100		106	77.1-124			
Toluene	0.107	0.002	"	0.100		107	74.5-128			
Ethylbenzene	0.112	0.002	"	0.100		112	66.4-127			
m,p-Xylene	0.222	0.004	"	0.200		111	76.6-124			
o-Xylene	0.110	0.002	"	0.100		110	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	60		ug/kg	62.5		95.8	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B8H1405 - EPA 5030 (soil)

Matrix Spike (B8H1405-MS1)		Source: Y808180-01			Prepared: 08/14/2018 Analyzed: 08/14/2018					
Benzene	0.089	0.002	mg/kg	0.100	ND	89.4	71.8-126			
Toluene	0.091	0.002	"	0.100	ND	90.7	65.1-130			
Ethylbenzene	0.091	0.002	"	0.100	0.0008	90.2	62.2-130			
m,p-Xylene	0.184	0.004	"	0.200	0.001	91.3	46.5-137			
o-Xylene	0.093	0.002	"	0.100	ND	93.2	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		101	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.5	70-130			

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Project: KMG - Bell 4-16A

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 B8H1405 - EPA 5030 (soil)

Matrix Spike Dup (B8H1405-MSD1)		Source: Y808180-01			Prepared: 08/14/2018 Analyzed: 08/14/2018					
Benzene	0.099	0.002	mg/kg	0.100	ND	98.9	71.8-126	10.1	11.3	
Toluene	0.102	0.002	"	0.100	ND	102	65.1-130	11.3	15.4	
Ethylbenzene	0.102	0.002	"	0.100	0.0008	102	62.2-130	11.8	19.6	
m,p-Xylene	0.205	0.004	"	0.200	0.001	102	46.5-137	11.1	19.2	
o-Xylene	0.101	0.002	"	0.100	ND	101	54.2-134	8.37	17.9	
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		99.5	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.0	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Project Number: [none]
Project: KMG - Bell 4-16A

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 B8H1406 - EPA 3580

Blank (B8H1406-BLK1)

Prepared: 08/14/2018 Analyzed: 08/14/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	51		"	50.0		103	59-131			

LCS (B8H1406-BS1)

Prepared: 08/14/2018 Analyzed: 08/14/2018

Diesel (C10-C28)	992	50.0	mg/kg	1000		99.2	64-121			
Residual Range Organics (C28-C40)	967	200	"	1000		96.7	58-124			
Surrogate: o-Terphenyl	52		"	50.0		105	59-131			

Matrix Spike (B8H1406-MS1)

Source: Y808180-01

Prepared: 08/14/2018 Analyzed: 08/14/2018

Diesel (C10-C28)	1120	50.0	mg/kg	1000	ND	112	53-125			
Residual Range Organics (C28-C40)	1110	200	"	1000	ND	111	47-133			
Surrogate: o-Terphenyl	58		"	50.0		116	59-131			

Matrix Spike Dup (B8H1406-MSD1)

Source: Y808180-01

Prepared: 08/14/2018 Analyzed: 08/14/2018

Diesel (C10-C28)	1080	50.0	mg/kg	1000	ND	108	53-125	3.73	20	
Residual Range Organics (C28-C40)	1040	200	"	1000	ND	104	47-133	6.99	20	
Surrogate: o-Terphenyl	57		"	50.0		113	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 B8H1407 - NO PREP										
Duplicate (B8H1407-DUP1)		Source: Y808180-01			Prepared: 08/14/2018 Analyzed: 08/14/2018					
pH	7.16		pH Units		7.34			2.48	25	
Batch B8H1408 - NO PREP										
Blank (B8H1408-BLK1)		Prepared: 08/14/2018 Analyzed: 08/14/2018								
Specific Conductance (EC)	0.00240	0.00500	mmhos/cm							
Duplicate (B8H1408-DUP1)		Source: Y808180-01			Prepared: 08/14/2018 Analyzed: 08/14/2018					
Specific Conductance (EC)	0.135	0.00500	mmhos/cm		0.143			5.75	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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