



March 30, 2018

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Held 12-14 I8

Project Number - [none]

Attached are your analytical results for KMG - Held 12-14 I8 received by Origins Laboratory, Inc. March 23, 2018. This project is associated with Origins project number Y803412-01.

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 - Held 12-14 I8

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@7'	Y803412-01	Soil	March 23, 2018 0:00	03/23/2018 15:40
N01@5'	Y803412-02	Soil	March 23, 2018 0:00	03/23/2018 15:40
S01@5'	Y803412-03	Soil	March 23, 2018 0:00	03/23/2018 15:40
E01@5'	Y803412-04	Soil	March 23, 2018 0:00	03/23/2018 15:40
W01@5'	Y803412-05	Soil	March 23, 2018 0:00	03/23/2018 15:40

Per the email from Mike on 3/29/18, samples N01@5', S01@5', E01@5', and W01@4' were taken off hold for same day analysis.

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

www.originslaboratory.com

Y403412

page 1 of 1

ORIGINS

LABORATORY, INC

Client: APC
Address: 6899 Pecos St, Unit C
Telephone Number: 970-927-0393
Email Address: Rcornez@tasman-geo.com

Project Manager: Bob Cornez
Project Name: Held 12-14 I8
Project Number:
Samples Collected By: Zander Hamilton

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa Canister #	Other	GC/MS		PH
B01@7'	3-23-18		2	X				X				X X X	PH 7.0 to 8.0	1 SATURDAY!
N01@5'			1											2 H↑
S01@5'			1											3 H↑
E01@5'			1											4 H↑
W01@5'			1											5 H↑
B601@6"			1											6 H↑
														7
														8
														9
														10

Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Turnaround Time:
Alexander Hamilton	3-23-18	15:40				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"/>

Date Results Needed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I 8

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y803412 Client: Tasman
Client Project ID: KMG - Held 12-14 I 8
Checklist Completed by: JG Shipped Via: Pick up
(UPS, FedEx, Hand Delivered, Pick-up, etc.)
Date/time completed: 3/23/12 Airbill #: D/T
Matrix(s) Received: (Check all that apply) ☒ Soil/Solid ☐ Water ☐ Other: _____ (Describe)
Cooler Number/Temperature: 1 / 2.1 °C 1 °C 1 °C 1 °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? if yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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)

31
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

B01@7'

3/23/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803412-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	372	25.0	mg/kg	1	B8C2305	03/23/2018	03/23/2018	
Residual Range Organics (C28-C40)	375	100	"	"	"	"	"	

Surrogate: o-Terphenyl	106 %	59-131			"	"	"	
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GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	0.567	0.200	mg/kg	1	B8C2304	"	03/23/2018	
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	124 %	70-130			"	"	"	
Surrogate: Toluene-d8	96.9 %	70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	116 %	70-130			"	"	"	

pH in Soil by EPA 9045D

pH	8.24		pH Units	1	B8C2306	03/23/2018	03/23/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.647		mmhos/cm	"	B8C2307	"	03/23/2018	
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 l8

N01@5'

3/23/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803412-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2902	03/29/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 87.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2906	03/29/2018	03/29/2018	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 96.6 % 70-130 " " "
Surrogate: Toluene-d8 94.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.6 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.79	pH Units	1	B8C2908	03/29/2018	03/30/2018
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.119	mmhos/cm	"	B8C2909	03/29/2018	03/30/2018
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 l8

S01@5'

3/23/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803412-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2902	03/29/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 88.4 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2906	03/29/2018	03/29/2018	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 90.7 % 70-130 " " "
Surrogate: Toluene-d8 102 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.4 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.38		pH Units	1	B8C2908	03/29/2018	03/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0543		mmhos/cm	"	B8C2909	03/29/2018	03/30/2018	
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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 l8

E01@5'

3/23/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803412-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2902	03/29/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 86.2 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2906	03/29/2018	03/29/2018	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 93.3 % 70-130 " " "
Surrogate: Toluene-d8 106 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 106 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.29		pH Units	1	B8C2908	03/29/2018	03/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0681		mmhos/cm	"	B8C2909	03/29/2018	03/30/2018	
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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 l8

W01@5'

3/23/2018 12:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803412-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2902	03/29/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 80.9 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2906	03/29/2018	03/29/2018	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 98.5 % 70-130 " " "
Surrogate: Toluene-d8 94.4 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 109 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.46		pH Units	1	B8C2908	03/29/2018	03/30/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0745		mmhos/cm	"	B8C2909	03/29/2018	03/30/2018	
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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2304 - EPA 5030 (soil)										
Blank (B8C2304-BLK1)					Prepared: 03/23/2018 Analyzed: 03/23/2018					
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	76		ug/kg	62.5		122	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 - Held 12-14 I8

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 B8C2304 - EPA 5030 (soil)										
LCS (B8C2304-BS1)					Prepared: 03/23/2018 Analyzed: 03/23/2018					
Benzene	0.101	0.002	mg/kg	0.100		101	77.1-124			
Toluene	0.092	0.002	"	0.100		91.6	74.5-128			
Ethylbenzene	0.092	0.002	"	0.100		92.1	66.4-127			
m,p-Xylene	0.181	0.004	"	0.200		90.7	76.6-124			
o-Xylene	0.088	0.002	"	0.100		87.9	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	69		ug/kg	62.5		111	70-130			
Surrogate: Toluene-d8	59		"	62.5		95.2	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.8	70-130			

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2304 - EPA 5030 (soil)

Matrix Spike (B8C2304-MS1)		Source: Y803412-01			Prepared: 03/23/2018 Analyzed: 03/23/2018					
Benzene	0.117	0.002	mg/kg	0.100	ND	117	71.8-126			
Toluene	0.108	0.002	"	0.100	ND	108	65.1-130			
Ethylbenzene	0.128	0.002	"	0.100	0.0007	127	62.2-130			
m,p-Xylene	0.247	0.004	"	0.200	0.001	123	46.5-137			
o-Xylene	0.120	0.002	"	0.100	0.001	119	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	73		ug/kg	62.5		117	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	77		"	62.5		123	70-130			

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2304 - EPA 5030 (soil)

Matrix Spike Dup (B8C2304-MSD1)		Source: Y803412-01			Prepared: 03/23/2018 Analyzed: 03/23/2018					
Benzene	0.108	0.002	mg/kg	0.100	ND	108	71.8-126	8.35	11.3	
Toluene	0.095	0.002	"	0.100	ND	95.0	65.1-130	12.7	15.4	
Ethylbenzene	0.107	0.002	"	0.100	0.0007	106	62.2-130	17.9	19.6	
m,p-Xylene	0.204	0.004	"	0.200	0.001	101	46.5-137	19.3	19.2	QR-02
o-Xylene	0.098	0.002	"	0.100	0.001	97.0	54.2-134	20.1	17.9	QR-02
Surrogate: 1,2-Dichloroethane-d4	72		ug/kg	62.5		116	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.6	70-130			
Surrogate: 4-Bromofluorobenzene	73		"	62.5		116	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2906 - EPA 5030 (soil)										
Blank (B8C2906-BLK1)					Prepared: 03/29/2018 Analyzed: 03/29/2018					
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	52		ug/kg	62.5		83.5	70-130			
Surrogate: Toluene-d8	65		"	62.5		104	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.7	70-130			

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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2906 - EPA 5030 (soil)										
LCS (B8C2906-BS1)					Prepared: 03/29/2018 Analyzed: 03/29/2018					
Benzene	0.117	0.002	mg/kg	0.100		117	77.1-124			
Toluene	0.115	0.002	"	0.100		115	74.5-128			
Ethylbenzene	0.105	0.002	"	0.100		105	66.4-127			
m,p-Xylene	0.200	0.004	"	0.200		99.9	76.6-124			
o-Xylene	0.098	0.002	"	0.100		97.8	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	48		ug/kg	62.5		76.1	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.6	70-130			

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 - Held 12-14 I8

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 B8C2906 - EPA 5030 (soil)

Matrix Spike (B8C2906-MS1)		Source: Y803507-01			Prepared: 03/29/2018 Analyzed: 03/29/2018					
Benzene	0.109	0.002	mg/kg	0.100	0.004	106	71.8-126			
Toluene	0.107	0.002	"	0.100	0.0009	106	65.1-130			
Ethylbenzene	0.094	0.002	"	0.100	0.002	91.7	62.2-130			
m,p-Xylene	0.187	0.004	"	0.200	0.004	91.3	46.5-137			
o-Xylene	0.099	0.002	"	0.100	0.006	92.9	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	49		ug/kg	62.5		78.3	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.2	70-130			

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 - Held 12-14 I8

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 B8C2906 - EPA 5030 (soil)

Matrix Spike Dup (B8C2906-MSD1)		Source: Y803507-01			Prepared: 03/29/2018 Analyzed: 03/29/2018					
Benzene	0.112	0.002	mg/kg	0.100	0.004	109	71.8-126	2.78	11.3	
Toluene	0.106	0.002	"	0.100	0.0009	105	65.1-130	1.33	15.4	
Ethylbenzene	0.097	0.002	"	0.100	0.002	94.4	62.2-130	2.86	19.6	
m,p-Xylene	0.185	0.004	"	0.200	0.004	90.5	46.5-137	0.828	19.2	
o-Xylene	0.094	0.002	"	0.100	0.006	87.9	54.2-134	5.21	17.9	
Surrogate: 1,2-Dichloroethane-d4	49		ug/kg	62.5		78.1	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.9	70-130			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		90.8	70-130			

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 - Held 12-14 I8

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 B8C2305 - EPA 3550B

Blank (B8C2305-BLK1)

Prepared: 03/23/2018 Analyzed: 03/23/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	43		"	50.0		86.1	59-131			

LCS (B8C2305-BS1)

Prepared: 03/23/2018 Analyzed: 03/23/2018

Diesel (C10-C28)	1020	50.0	mg/kg	1000		102	64-121			
Residual Range Organics (C28-C40)	951	200	"	1000		95.1	58-124			
Surrogate: o-Terphenyl	49		"	50.0		97.4	59-131			

Matrix Spike (B8C2305-MS1)

Source: Y803412-01

Prepared: 03/23/2018 Analyzed: 03/23/2018

Diesel (C10-C28)	1320	50.0	mg/kg	1000	372	94.8	53-125			
Residual Range Organics (C28-C40)	1240	200	"	1000	375	87.0	47-133			
Surrogate: o-Terphenyl	54		"	50.0		107	59-131			

Matrix Spike Dup (B8C2305-MSD1)

Source: Y803412-01

Prepared: 03/23/2018 Analyzed: 03/23/2018

Diesel (C10-C28)	1470	50.0	mg/kg	1000	372	110	53-125	14.7	20	
Residual Range Organics (C28-C40)	1320	200	"	1000	375	94.6	47-133	8.37	20	
Surrogate: o-Terphenyl	54		"	50.0		108	59-131			

Batch B8C2902 - EPA 3550B

Blank (B8C2902-BLK1)

Prepared: 03/29/2018 Analyzed: 03/29/2018

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 - Held 12-14 l8

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
Batch B8C2902 - EPA 3550B										
Blank (B8C2902-BLK1)					Prepared: 03/29/2018 Analyzed: 03/29/2018					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	47		"	50.0		93.4	59-131			
LCS (B8C2902-BS1)					Prepared: 03/29/2018 Analyzed: 03/29/2018					
Diesel (C10-C28)	822	50.0	mg/kg	1000		82.2	64-121			
Residual Range Organics (C28-C40)	788	200	"	1000		78.8	58-124			
Surrogate: o-Terphenyl	49		"	50.0		98.8	59-131			
Matrix Spike (B8C2902-MS1)					Source: Y803416-01		Prepared: 03/29/2018 Analyzed: 03/29/2018			
Diesel (C10-C28)	787	50.0	mg/kg	1000	ND	78.7	53-125			
Residual Range Organics (C28-C40)	755	200	"	1000	ND	75.5	47-133			
Surrogate: o-Terphenyl	47		"	50.0		94.6	59-131			
Matrix Spike Dup (B8C2902-MSD1)					Source: Y803416-01		Prepared: 03/29/2018 Analyzed: 03/29/2018			
Diesel (C10-C28)	813	50.0	mg/kg	1000	ND	81.3	53-125	3.24	20	
Residual Range Organics (C28-C40)	761	200	"	1000	ND	76.1	47-133	0.690	20	
Surrogate: o-Terphenyl	49		"	50.0		98.1	59-131			

Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2306 - NO PREP										
Duplicate (B8C2306-DUP1)		Source: Y803412-01			Prepared: 03/23/2018 Analyzed: 03/23/2018					
pH	8.03		pH Units		8.24			2.58	25	
Batch B8C2307 - NO PREP										
Blank (B8C2307-BLK1)		Prepared: 03/23/2018 Analyzed: 03/23/2018								
Specific Conductance (EC)	0.00250		mmhos/cm							
Duplicate (B8C2307-DUP1)		Source: Y803412-01			Prepared: 03/23/2018 Analyzed: 03/23/2018					
Specific Conductance (EC)	0.649		mmhos/cm		0.647			0.262	25	
Batch B8C2908 - NO PREP										
Duplicate (B8C2908-DUP1)		Source: Y803412-02			Prepared: 03/29/2018 Analyzed: 03/30/2018					
pH	7.60		pH Units		7.79			2.47	25	
Batch B8C2909 - NO PREP										
Blank (B8C2909-BLK1)		Prepared: 03/29/2018 Analyzed: 03/30/2018								
Specific Conductance (EC)	0.00350		mmhos/cm							
Duplicate (B8C2909-DUP1)		Source: Y803412-02			Prepared: 03/29/2018 Analyzed: 03/30/2018					
Specific Conductance (EC)	0.135		mmhos/cm		0.119			12.2	25	

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 - Held 12-14 I8

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.

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.



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.



March 29, 2018

Tasman Geosciences

Bob Cornez

6899 Pecos Street, Unit C

Denver

CO 80211

Project Name - KMG - Held 12-14 I8

Project Number - [none]

Attached are your analytical results for KMG - Held 12-14 I8 received by Origins Laboratory, Inc. March 28, 2018. This project is associated with Origins project number Y803498-01.

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 - Held 12-14 I8

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02@19'	Y803498-01	Soil	March 28, 2018 15:30	03/28/2018 18:00
N02@18'	Y803498-02	Soil	March 28, 2018 15:32	03/28/2018 18:00
E02@18'	Y803498-03	Soil	March 28, 2018 15:34	03/28/2018 18:00
S02@18'	Y803498-04	Soil	March 28, 2018 15:36	03/28/2018 18:00
W02@18'	Y803498-05	Soil	March 28, 2018 15:38	03/28/2018 18:00

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.

Jen Pellegrini For Noelle Doyle Mathis, President

Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

www.originslaboratory.com

page ____ of ____

1403498

ORIGINS LABORATORY, INC

Client: APC Project Manager/Send Report To: Robert Cornez
Address: _____ Email Address: rcornez@tasman-geo.com
Project Name/Number: Held 12-14 I8
Telephone Number: _____ Samples Collected By: BRL

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/Method		Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa	Other	
8626 19'	3-28-17	1530	2	X				X		X	GC/MS	1
8626 18'		1532								X	GC/MS	2
8626 18'		1534								X	GC/MS	3
8626 18'		1536								X	GC/MS	4
8626 18'		1538								X	GC/MS	5
												6
												7
												8
												9
												10

Relinquished By: <u>BRL</u>	Date: <u>3-28-18</u>	Time: <u>1600</u>	Received By: <u>[Signature]</u>	Date: <u>3/28/18</u>	Time: <u>1800</u>	Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr
Relinquished By:	Date:	Time:	Received By:	Date:	Time:	Standard

Dr. Bessie Nardari

Comments:

Origins Laboratory, Inc.

Jefe Pellegrini

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 - Held 12-14 18

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y803498

Client: Tasman

Client Project ID: KMG - Held 12-14 18

Checklist Completed by: SG

Shipped Via: HD

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

Date/time completed: 3/28/18

Airbill #: N/A

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

(Describe)

Cooler Number/Temperature: 1 / 5.6 °C / °C / °C / °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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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.

[Signature]
Reviewed by (Project Manager)

3/28/18
Date/Time Reviewed

Origins Laboratory, Inc.

Jefe Pellegrini

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 - Held 12-14 I8

B02@19'
3/28/2018 3:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803498-01 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2805	03/28/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 82.1 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2804	"	03/28/2018	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 96.1 % 70-130 " " "
Surrogate: Toluene-d8 99.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	7.61		pH Units	1	B8C2808	03/28/2018	03/29/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	1.18		mmhos/cm	"	B8C2809	"	03/29/2018	
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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 - Held 12-14 I8

N02@18'
3/28/2018 3:32:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803498-02 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2805	03/28/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 83.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2804	"	03/28/2018	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 97.0 % 70-130 " " "
Surrogate: Toluene-d8 97.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 100 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.50		pH Units	1	B8C2808	03/28/2018	03/29/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.203		mmhos/cm	"	B8C2809	"	03/29/2018	
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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 - Held 12-14 I8

E02@18'
3/28/2018 3:34:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803498-03 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2805	03/28/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 89.3 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2804	"	03/28/2018	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 100 % 70-130 " " "
Surrogate: Toluene-d8 99.2 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.3 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.33		pH Units	1	B8C2808	03/28/2018	03/29/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.110		mmhos/cm	"	B8C2809	"	03/29/2018	
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Origins Laboratory, Inc.



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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

S02@18'
3/28/2018 3:36:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803498-04 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2805	03/28/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 86.5 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2804	"	03/28/2018	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 102 % 70-130 " " "
Surrogate: Toluene-d8 103 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.09		pH Units	1	B8C2808	03/28/2018	03/29/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.142		mmhos/cm	"	B8C2809	"	03/29/2018	
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Tasman Geosciences
6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

W02@18'
3/28/2018 3:38:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y803498-05 (Soil)

DRO/RRO by EPA8015C

Diesel (C10-C28)	ND	25.0	mg/kg	1	B8C2805	03/28/2018	03/29/2018	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl 83.7 % 59-131 " " "

GBTEX by EPA 8260C

Gasoline Range Hydrocarbons	ND	0.200	mg/kg	1	B8C2804	"	03/28/2018	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 98.6 % 70-130 " " "
Surrogate: Toluene-d8 100 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 98.6 % 70-130 " " "

pH in Soil by EPA 9045D

pH	8.17		pH Units	1	B8C2808	03/28/2018	03/29/2018	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.220		mmhos/cm	"	B8C2809	"	03/29/2018	
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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2804 - EPA 5030 (soil)										
Blank (B8C2804-BLK1)					Prepared: 03/28/2018 Analyzed: 03/28/2018					
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	57		ug/kg	62.5		91.4	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.2	70-130			

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6899 Pecos Street, Unit C
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Bob Cornez
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Project: KMG - Held 12-14 I8

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 B8C2804 - EPA 5030 (soil)										
Blank (B8C2804-BLK2)					Prepared: 03/28/2018 Analyzed: 03/28/2018					
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	58		ug/kg	62.5		92.3	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.8	70-130			

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Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2804 - EPA 5030 (soil)										
LCS (B8C2804-BS1)					Prepared: 03/28/2018 Analyzed: 03/28/2018					
Benzene	0.107	0.002	mg/kg	0.100		107	77.1-124			
Toluene	0.102	0.002	"	0.100		102	74.5-128			
Ethylbenzene	0.095	0.002	"	0.100		94.7	66.4-127			
m,p-Xylene	0.180	0.004	"	0.200		90.1	76.6-124			
o-Xylene	0.087	0.002	"	0.100		87.2	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	53		ug/kg	62.5		85.2	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		93.0	70-130			

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Project: KMG - Held 12-14 I8

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 B8C2804 - EPA 5030 (soil)										
LCS (B8C2804-BS2)					Prepared: 03/28/2018 Analyzed: 03/28/2018					
Benzene	0.116	0.002	mg/kg	0.100		116	77.1-124			
Toluene	0.112	0.002	"	0.100		112	74.5-128			
Ethylbenzene	0.102	0.002	"	0.100		102	66.4-127			
m,p-Xylene	0.204	0.004	"	0.200		102	76.6-124			
o-Xylene	0.095	0.002	"	0.100		95.4	76.6-124			
Surrogate: 1,2-Dichloroethane-d4	52		ug/kg	62.5		82.7	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.3	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 B8C2804 - EPA 5030 (soil)

Matrix Spike (B8C2804-MS1)		Source: Y803478-01			Prepared: 03/28/2018 Analyzed: 03/28/2018					
Benzene	0.102	0.002	mg/kg	0.100	ND	102	71.8-126			
Toluene	0.089	0.002	"	0.100	0.0007	88.8	65.1-130			
Ethylbenzene	0.094	0.002	"	0.100	0.002	92.7	62.2-130			
m,p-Xylene	0.181	0.004	"	0.200	0.007	86.7	46.5-137			
o-Xylene	0.099	0.002	"	0.100	0.009	90.7	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	63		ug/kg	62.5		100	70-130			
Surrogate: Toluene-d8	57		"	62.5		91.5	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

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Project Number: [none]
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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 B8C2804 - EPA 5030 (soil)

Matrix Spike (B8C2804-MS2)		Source: Y803383-01			Prepared: 03/28/2018 Analyzed: 03/28/2018					
Benzene	0.114	0.002	mg/kg	0.100	ND	114	71.8-126			
Toluene	0.113	0.002	"	0.100	ND	113	65.1-130			
Ethylbenzene	0.097	0.002	"	0.100	ND	96.5	62.2-130			
m,p-Xylene	0.190	0.004	"	0.200	ND	95.2	46.5-137			
o-Xylene	0.095	0.002	"	0.100	ND	95.1	54.2-134			
Surrogate: 1,2-Dichloroethane-d4	52		ug/kg	62.5		83.1	70-130			
Surrogate: Toluene-d8	68		"	62.5		108	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2804 - EPA 5030 (soil)										
Matrix Spike Dup (B8C2804-MSD1)										
					Source: Y803478-01					
										Prepared: 03/28/2018 Analyzed: 03/28/2018
Benzene	0.103	0.002	mg/kg	0.100	ND	103	71.8-126	0.254	11.3	
Toluene	0.092	0.002	"	0.100	0.0007	92.4	65.1-130	4.00	15.4	
Ethylbenzene	0.090	0.002	"	0.100	0.002	87.9	62.2-130	5.22	19.6	
m,p-Xylene	0.172	0.004	"	0.200	0.007	82.2	46.5-137	5.16	19.2	
o-Xylene	0.089	0.002	"	0.100	0.009	80.3	54.2-134	11.0	17.9	
Surrogate: 1,2-Dichloroethane-d4	62		ug/kg	62.5		98.6	70-130			
Surrogate: Toluene-d8	59		"	62.5		94.1	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.0	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
Batch B8C2804 - EPA 5030 (soil)										
Matrix Spike Dup (B8C2804-MSD2)					Source: Y803383-01					Prepared: 03/28/2018 Analyzed: 03/28/2018
Benzene	0.118	0.002	mg/kg	0.100	ND	118	71.8-126	3.85	11.3	
Toluene	0.116	0.002	"	0.100	ND	116	65.1-130	2.55	15.4	
Ethylbenzene	0.101	0.002	"	0.100	ND	101	62.2-130	4.87	19.6	
m,p-Xylene	0.190	0.004	"	0.200	ND	95.2	46.5-137	0.0315	19.2	
o-Xylene	0.095	0.002	"	0.100	ND	95.1	54.2-134	0.00	17.9	
Surrogate: 1,2-Dichloroethane-d4	48		ug/kg	62.5		77.0	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	57		"	62.5		90.9	70-130			

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6899 Pecos Street, Unit C
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Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 18

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 B8C2805 - EPA 3550B

Blank (B8C2805-BLK1)

Prepared: 03/28/2018 Analyzed: 03/28/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	45		"	50.0		90.8	59-131			

Blank (B8C2805-BLK2)

Prepared: 03/28/2018 Analyzed: 03/28/2018

Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	46		"	50.0		91.1	59-131			

LCS (B8C2805-BS1)

Prepared: 03/28/2018 Analyzed: 03/28/2018

Diesel (C10-C28)	802	50.0	mg/kg	1000		80.2	64-121			
Residual Range Organics (C28-C40)	750	200	"	1000		75.0	58-124			
Surrogate: o-Terphenyl	47		"	50.0		94.5	59-131			

LCS (B8C2805-BS2)

Prepared: 03/28/2018 Analyzed: 03/28/2018

Diesel (C10-C28)	808	50.0	mg/kg	1000		80.8	64-121			
Residual Range Organics (C28-C40)	749	200	"	1000		74.9	58-124			
Surrogate: o-Terphenyl	46		"	50.0		92.6	59-131			

Matrix Spike (B8C2805-MS1)

Source: Y803478-01

Prepared: 03/28/2018 Analyzed: 03/28/2018

Diesel (C10-C28)	734	50.0	mg/kg	1000	118	61.6	53-125			
Residual Range Organics (C28-C40)	658	200	"	1000	84.0	57.4	47-133			

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Project Number: [none]
Project: KMG - Held 12-14 18

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
Batch B8C2805 - EPA 3550B										
Matrix Spike (B8C2805-MS1)		Source: Y803478-01			Prepared: 03/28/2018 Analyzed: 03/28/2018					
Surrogate: o-Terphenyl	40		mg/kg	50.0		79.4	59-131			
Matrix Spike (B8C2805-MS2)		Source: Y803383-01			Prepared: 03/28/2018 Analyzed: 03/28/2018					
Diesel (C10-C28)	892	50.0	mg/kg	1000	ND	89.2	53-125			
Residual Range Organics (C28-C40)	850	200	"	1000	20.0	83.0	47-133			
Surrogate: o-Terphenyl	51		"	50.0		101	59-131			
Matrix Spike Dup (B8C2805-MSD1)		Source: Y803478-01			Prepared: 03/28/2018 Analyzed: 03/28/2018					
Diesel (C10-C28)	942	50.0	mg/kg	1000	118	82.4	53-125	28.9	20	QR-02
Residual Range Organics (C28-C40)	853	200	"	1000	84.0	76.9	47-133	29.0	20	QR-02
Surrogate: o-Terphenyl	49		"	50.0		98.8	59-131			
Matrix Spike Dup (B8C2805-MSD2)		Source: Y803383-01			Prepared: 03/28/2018 Analyzed: 03/28/2018					
Diesel (C10-C28)	853	50.0	mg/kg	1000	ND	85.3	53-125	4.49	20	
Residual Range Organics (C28-C40)	811	200	"	1000	20.0	79.1	47-133	4.83	20	
Surrogate: o-Terphenyl	47		"	50.0		94.9	59-131			

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6899 Pecos Street, Unit C
Denver CO 80211

Bob Cornez
Project Number: [none]
Project: KMG - Held 12-14 I8

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 B8C2808 - NO PREP										
Duplicate (B8C2808-DUP1)		Source: Y803374-01			Prepared: 03/28/2018 Analyzed: 03/29/2018					
pH	7.22		pH Units		7.81			7.85	25	
Batch B8C2809 - NO PREP										
Blank (B8C2809-BLK1)		Prepared: 03/28/2018 Analyzed: 03/29/2018								
Specific Conductance (EC)	0.00240		mmhos/cm							
Duplicate (B8C2809-DUP1)		Source: Y803374-01			Prepared: 03/28/2018 Analyzed: 03/29/2018					
Specific Conductance (EC)	0.0242		mmhos/cm		0.0260			7.17	25	

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6899 Pecos Street, Unit C

Denver CO 80211

Bob Cornez

Project Number: [none]

Project: KMG - Held 12-14 I8

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.

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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