

June 12, 2024

Tasman Geosciences

Andy Sagen

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - Open 10-25

Project Number - [none]

Attached are your analytical results for KMG - Open 10-25 received by Origins Laboratory, Inc. May 23, 2024. This project is associated with Origins project number Y405719-01.

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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@6'	Y405719-01	Soil	May 23, 2024 8:30	05/23/2024 17:45
FL-B01@4'	Y405719-02	Soil	May 23, 2024 9:00	05/23/2024 17:45
BG-01@3'	Y405719-03	Soil	May 23, 2024 8:48	05/23/2024 17:45
BG-01@6'	Y405719-04	Soil	May 23, 2024 8:50	05/23/2024 17:45
BG-02@3'	Y405719-05	Soil	May 23, 2024 8:52	05/23/2024 17:45
BG-02@6'	Y405719-06	Soil	May 23, 2024 8:54	05/23/2024 17:45
BG-03@3'	Y405719-07	Soil	May 23, 2024 8:56	05/23/2024 17:45
BG-03@6'	Y405719-08	Soil	May 23, 2024 8:58	05/23/2024 17:45

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Jen Pellegrini, Project Manager

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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4405719

Client: Tasman

Client Project ID: Open 10-25

Checklist Completed by: EHJ

Shipped Via: HD

Date/time completed: 5/23/24

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

Airbill #: N/A

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

Cooler Number/Temperature: 115 °C 1 °C 1 °C (Describe) \_\_\_\_\_ °C

Thermometer ID: 7005

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

EHJ  
 Reviewed by (Project Manager)

5/23/24  
 Date/Time Reviewed

Origins Laboratory, Inc.

*Jen Pellegrini*

Jen Pellegrini, Project Manager

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**WH-B01@6'**  
**5/23/2024 8:30:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.240		0.0994	mg/L	1	B4E2408	05/24/2024	05/28/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4E2307	05/23/2024	05/23/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	91.2 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4E2338	05/23/2024	05/24/2024	Ua
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Benzene	ND		0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Toluene	ND		0.00200	"	"	"	"	"	Ua
Xylenes, total	ND		0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	0.468		0.200	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %		70-130			"	"	"	
Surrogate: Toluene-d8	106 %		70-130			"	"	"	

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**WH-B01@6'**  
**5/23/2024 8:30:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: 4-Bromofluorobenzene	96.5 %		70-130			B4E23 38	05/23/2024	05/24/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.62		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	4.30		0.435	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4E2329	05/23/2024	05/24/2024	Ua
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	Ua
Acenaphthene	ND		0.020	"	"	"	"	"	Ua
Anthracene	ND		0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Chrysene	ND		0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	Ua
Fluoranthene	ND		0.020	"	"	"	"	"	Ua
Fluorene	ND		0.020	"	"	"	"	"	Ua

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**WH-B01@6'**  
**5/23/2024 8:30:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-01 (Soil)**

**PAH by EPA 8270E**

Indeno (1,2,3-cd) pyrene	ND		0.020	mg/kg	1	B4E2329	05/23/2024	05/24/2024	Ua
Naphthalene	ND		0.002	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	110 %		60-130			"	"	"	
Surrogate: Anthracene-d10	104 %		60-130			"	"	"	
Surrogate: Pyrene-d10	107 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	95.8 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.12			pH Units	1	B4E2412	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	4.05		0.0100	SAR	1	B4E2402	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.765		0.00500	mmhos/cm	1	B4E2412	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.44		0.277	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
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**WH-B01@6'**  
**5/23/2024 8:30:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-01 (Soil)**

**Table 915 metals by EPA 6020B**

Barium	45.9		9.54	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Cadmium	ND		0.0954	"	"	"	"	"	Ua
Copper	ND		9.54	"	"	"	"	"	Ua
Lead	32.8		0.954	"	"	"	"	"	
Nickel	3.09		0.954	"	"	"	"	"	
Selenium	ND		0.248	"	"	"	"	"	Ua
Silver	ND		0.0954	"	"	"	"	"	Ua
Zinc	ND		35.3	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.114	0.286	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**FL-B01@4'**

**5/23/2024 9:00:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND		0.0994	mg/L	1	B4E2408	05/24/2024	05/28/2024	Ua
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4E2307	05/23/2024	05/24/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: *o*-Terphenyl 89.6 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4E2338	05/23/2024	05/24/2024	Ua
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Benzene	ND		0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Toluene	ND		0.00200	"	"	"	"	"	Ua
Xylenes, total	ND		0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

FL-B01@4'  
 5/23/2024 9:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y405719-02 (Soil)

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	105 %		70-130			B4E23 38	05/23/2024	05/24/2024	
Surrogate: 4-Bromofluorobenzene	96.3 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	0.676		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	2.03		0.435	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4E2329	05/23/2024	05/24/2024	Ua
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	Ua
Acenaphthene	ND		0.020	"	"	"	"	"	Ua
Anthracene	ND		0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Chrysene	ND		0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	Ua
Fluoranthene	ND		0.020	"	"	"	"	"	Ua

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**FL-B01@4'**

**5/23/2024 9:00:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-02 (Soil)**

**PAH by EPA 8270E**

Fluorene	ND		0.020	mg/kg	1	B4E2329	05/23/2024	05/24/2024	Ua
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	Ua
Naphthalene	ND		0.002	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	103 %		60-130			"	"	"	
Surrogate: Anthracene-d10	101 %		60-130			"	"	"	
Surrogate: Pyrene-d10	103 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	100 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.18			pH Units	1	B4E2412	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	2.94		0.0100	SAR	1	B4E2402	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.356		0.00500	mmhos/cm	1	B4E2412	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Origins Laboratory, Inc.



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FL-B01@4'

5/23/2024 9:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y405719-02 (Soil)

**Table 915 metals by EPA 6020B**

Arsenic	1.22	0.269	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Barium	31.9	9.28	"	"	"	"	"	
Cadmium	ND	0.0928	"	"	"	"	"	Ua
Copper	ND	9.28	"	"	"	"	"	Ua
Lead	3.05	0.928	"	"	"	"	"	
Nickel	2.03	0.928	"	"	"	"	"	
Selenium	ND	0.241	"	"	"	"	"	Ua
Silver	ND	0.0928	"	"	"	"	"	Ua
Zinc	ND	34.3	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.108	0.270	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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 6855 West 119th Avenue  
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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**BG-01@3'**

**5/23/2024 8:48:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.503		0.101	mg/L	1	B4E2408	05/24/2024	05/28/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	25.5		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	15.9		0.823	"	"	"	"	"	
Sodium	49.0		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.03			pH Units	1	B4E2413	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	10.8		0.0100	SAR	1	B4E2403	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	7.04		0.00500	mmhos/cm	1	B4E2413	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.65		0.261	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Barium	110		8.98	"	"	"	"	"	
Cadmium	ND		0.0898	"	"	"	"	"	Ua
Copper	ND		8.98	"	"	"	"	"	Ua

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Andy Sagen  
 Project Number: [none]  
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**BG-01@3'**

**5/23/2024 8:48:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-03 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	8.17		0.898	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Nickel	7.73		0.898	"	"	"	"	"	
Selenium	ND		0.234	"	"	"	"	"	Ua
Silver	ND		0.0898	"	"	"	"	"	Ua
Zinc	ND		33.2	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.145	0.362	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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**BG-01@6'**

**5/23/2024 8:50:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.259		0.101	mg/L	1	B4E2408	05/24/2024	05/28/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.00		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	0.958		0.823	"	"	"	"	"	
Sodium	11.7		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.21			pH Units	1	B4E2413	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	9.64		0.0100	SAR	1	B4E2403	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.44		0.00500	mmhos/cm	1	B4E2413	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.32		0.286	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Barium	30.5		9.85	"	"	"	"	"	
Cadmium	ND		0.0985	"	"	"	"	"	Ua
Copper	ND		9.85	"	"	"	"	"	Ua

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Tasman Geosciences  
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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**BG-01@6'**

**5/23/2024 8:50:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-04 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	3.12		0.985	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Nickel	2.26		0.985	"	"	"	"	"	
Selenium	ND		0.256	"	"	"	"	"	Ua
Silver	ND		0.0985	"	"	"	"	"	Ua
Zinc	ND		36.5	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.0961	0.240	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**BG-02@3'**

**5/23/2024 8:52:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.175		0.100	mg/L	1	B4E2408	05/24/2024	05/28/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	3.22		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	1.24		0.823	"	"	"	"	"	
Sodium	11.4		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.12			pH Units	1	B4E2413	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	7.64		0.0100	SAR	1	B4E2403	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.61		0.00500	mmhos/cm	1	B4E2413	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.25		0.253	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Barium	31.1		8.71	"	"	"	"	"	
Cadmium	ND		0.0871	"	"	"	"	"	Ua
Copper	ND		8.71	"	"	"	"	"	Ua

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**BG-02@3'**

**5/23/2024 8:52:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-05 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	2.91		0.871	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Nickel	2.22		0.871	"	"	"	"	"	
Selenium	ND		0.227	"	"	"	"	"	Ua
Silver	ND		0.0871	"	"	"	"	"	Ua
Zinc	ND		32.2	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.137	0.342	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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Andy Sagen  
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**BG-02@6'**

**5/23/2024 8:54:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.440		0.0998	mg/L	1	B4E2408	05/24/2024	05/28/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	12.9		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	4.86		0.823	"	"	"	"	"	
Sodium	24.3		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.17			pH Units	1	B4E2413	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	8.14		0.0100	SAR	1	B4E2403	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	3.57		0.00500	mmhos/cm	1	B4E2413	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.92		0.261	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Barium	49.3		9.00	"	"	"	"	"	
Cadmium	ND		0.0900	"	"	"	"	"	Ua
Copper	ND		9.00	"	"	"	"	"	Ua

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**BG-02@6'**

**5/23/2024 8:54:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-06 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	4.50		0.900	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Nickel	5.12		0.900	"	"	"	"	"	
Selenium	ND		0.234	"	"	"	"	"	Ua
Silver	ND		0.0900	"	"	"	"	"	Ua
Zinc	ND		33.3	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.132	0.329	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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**BG-03@3'**

**5/23/2024 8:56:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.848		0.101	mg/L	1	B4E2408	05/24/2024	05/28/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	16.8		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	7.23		0.823	"	"	"	"	"	
Sodium	34.5		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.22			pH Units	1	B4E2413	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	9.94		0.0100	SAR	1	B4E2403	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	4.65		0.00500	mmhos/cm	1	B4E2413	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.19		0.268	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Barium	77.5		9.25	"	"	"	"	"	
Cadmium	ND		0.0925	"	"	"	"	"	Ua
Copper	ND		9.25	"	"	"	"	"	Ua

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 Project: KMG - Open 10-25

**BG-03@3'**

**5/23/2024 8:56:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-07 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	5.73		0.925	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Nickel	5.55		0.925	"	"	"	"	"	
Selenium	ND		0.240	"	"	"	"	"	Ua
Silver	ND		0.0925	"	"	"	"	"	Ua
Zinc	ND		34.2	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.130	0.325	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**BG-03@6'**

**5/23/2024 8:58:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.616		0.100	mg/L	1	B4E2408	05/24/2024	05/28/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	22.8		0.499	meq/L	10	[CALC]	05/24/2024	05/29/2024	
Magnesium	11.8		0.823	"	"	"	"	"	
Sodium	36.6		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.06			pH Units	1	B4E2413	05/24/2024	05/29/2024	
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**SAR by 20B Saturated Paste**

SAR	8.81		0.0100	SAR	1	B4E2403	05/24/2024	05/29/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	5.06		0.00500	mmhos/cm	1	B4E2413	05/24/2024	05/29/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.31		0.268	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Barium	68.6		9.23	"	"	"	"	"	
Cadmium	ND		0.0923	"	"	"	"	"	Ua
Copper	ND		9.23	"	"	"	"	"	Ua

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**BG-03@6'**

**5/23/2024 8:58:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405719-08 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	6.02		0.923	mg/kg	10	B4E2333	05/23/2024	05/24/2024	
Nickel	5.52		0.923	"	"	"	"	"	
Selenium	ND		0.240	"	"	"	"	"	Ua
Silver	ND		0.0923	"	"	"	"	"	Ua
Zinc	ND		34.1	"	"	"	"	"	Ua

**Total Metals 7196A**

Hexavalent Chromium	ND	0.110	0.276	mg/kg dry	1	2619648	06/03/2024	06/04/2024	U
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Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4E2307 - EPA 3550B</b>										
<b>Blank (B4E2307-BLK1)</b>										
					Prepared: 05/23/2024 Analyzed: 05/23/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	21		"	24.9		85.3	50-150			

Origins Laboratory, Inc.



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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Extractable Petroleum Hydrocarbons by 8015D - 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 B4E2307 - EPA 3550B**

**LCS (B4E2307-BS1)**

Prepared: 05/23/2024 Analyzed: 05/23/2024

Diesel (C10-C28)	868	50.0	mg/kg	1000		86.8	70-130			
Residual Range Organics (C28-C40)	958	200	"	1000		95.8	70-130			
Surrogate: o-Terphenyl	52		"	49.8		105	50-150			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Extractable Petroleum Hydrocarbons by 8015D - 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 B4E2307 - EPA 3550B**

<b>Matrix Spike (B4E2307-MS1)</b>	<b>Source: Y405695-02</b>			Prepared: 05/23/2024 Analyzed: 05/23/2024						
Diesel (C10-C28)	941	50.0	mg/kg	1000	ND	94.1	70-130			
Residual Range Organics (C28-C40)	1030	200	"	1000	ND	103	70-130			
Surrogate: o-Terphenyl	56		"	49.8		112	50-150			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Extractable Petroleum Hydrocarbons by 8015D - 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 B4E2307 - EPA 3550B

Matrix Spike Dup (B4E2307-MSD1)	Source: Y405695-02			Prepared: 05/23/2024 Analyzed: 05/23/2024						
Diesel (C10-C28)	880	50.0	mg/kg	1000	ND	88.0	70-130	6.73	35	
Residual Range Organics (C28-C40)	974	200	"	1000	ND	97.4	70-130	5.66	35	
Surrogate: o-Terphenyl	51		"	49.8		103	50-150			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Extractable Petroleum Hydrocarbons by 8015D - 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 B4E2338 - EPA 5030 (soil)**

**Blank (B4E2338-BLK1)**

Prepared: 05/23/2024 Analyzed: 05/23/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							Ua
1,3,5-Trimethylbenzene	ND	0.00200	"							Ua
Benzene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
Naphthalene	ND	0.00380	"							Ua
Toluene	ND	0.00200	"							Ua
Xylenes, total	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	100		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	105		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	97.5		70-130			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B4E2338 - EPA 5030 (soil)

**LCS (B4E2338-BS1)**

Prepared: 05/23/2024 Analyzed: 05/23/2024

1,2,4-Trimethylbenzene	0.114	0.00200	mg/kg	0.100		114	70-130			
1,3,5-Trimethylbenzene	0.117	0.00200	"	0.100		117	70-130			
Benzene	0.109	0.00200	"	0.100		109	70-130			
Ethylbenzene	0.115	0.00200	"	0.100		115	70-130			
Naphthalene	0.115	0.00380	"	0.100		115	70-130			
Toluene	0.114	0.00200	"	0.100		114	70-130			
o-Xylene	0.113	0.00200	"	0.100		113	70-130			
m,p-Xylene	0.231	0.00400	"	0.200		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B4E2338 - EPA 5030 (soil)

Matrix Spike (B4E2338-MS1)	Source: Y405703-01			Prepared: 05/23/2024 Analyzed: 05/23/2024						
1,2,4-Trimethylbenzene	0.0770	0.00200	mg/kg	0.100	ND	77.0	70-130			
1,3,5-Trimethylbenzene	0.0792	0.00200	"	0.100	ND	79.2	70-130			
Benzene	0.0742	0.00200	"	0.100	ND	74.2	70-130			
Ethylbenzene	0.0790	0.00200	"	0.100	ND	79.0	70-130			
Naphthalene	0.0868	0.00380	"	0.100	ND	86.8	70-130			
Toluene	0.0786	0.00200	"	0.100	ND	78.6	70-130			
o-Xylene	0.0779	0.00200	"	0.100	ND	77.9	70-130			
m,p-Xylene	0.159	0.00400	"	0.200	ND	79.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		105	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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 Project Number: [none]  
 Project: KMG - Open 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B4E2338 - EPA 5030 (soil)

Matrix Spike Dup (B4E2338-MSD1)	Source: Y405703-01			Prepared: 05/23/2024 Analyzed: 05/23/2024						
1,2,4-Trimethylbenzene	0.0745	0.00200	mg/kg	0.100	ND	74.5	70-130	3.30	20	
1,3,5-Trimethylbenzene	0.0766	0.00200	"	0.100	ND	76.6	70-130	3.39	20	
Benzene	0.0744	0.00200	"	0.100	ND	74.4	70-130	0.242	20	
Ethylbenzene	0.0761	0.00200	"	0.100	ND	76.1	70-130	3.74	20	
Naphthalene	0.0846	0.00380	"	0.100	ND	84.6	70-130	2.59	20	
Toluene	0.0773	0.00200	"	0.100	ND	77.3	70-130	1.67	20	
o-Xylene	0.0751	0.00200	"	0.100	ND	75.1	70-130	3.69	20	
m,p-Xylene	0.152	0.00400	"	0.200	ND	76.0	70-130	4.24	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		105	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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 Project Number: [none]  
 Project: KMG - Open 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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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**Metals by EPA 6000/7000 Series Methods - 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 B4E2333 - EPA 3050B**

**Blank (B4E2333-BLK1)**

Prepared: 05/23/2024 Analyzed: 05/24/2024

Arsenic	ND	0.290	mg/kg							Ua
Barium	ND	10.0	"							Ua
Cadmium	ND	0.100	"							Ua
Copper	ND	10.0	"							Ua
Lead	ND	1.00	"							Ua
Nickel	ND	1.00	"							Ua
Selenium	ND	0.260	"							Ua
Silver	ND	0.100	"							Ua
Zinc	ND	37.0	"							Ua

**LCS (B4E2333-BS1)**

Prepared: 05/23/2024 Analyzed: 05/24/2024

Arsenic	5.33	0.290	mg/kg	5.00		107	80-120			
Barium	508	10.0	"	500		102	80-120			
Cadmium	4.94	0.100	"	5.00		98.8	80-120			
Copper	53.5	10.0	"	50.0		107	80-120			
Lead	5.13	1.00	"	5.00		103	80-120			
Nickel	5.24	1.00	"	5.00		105	80-120			
Selenium	9.23	0.260	"	9.50		97.2	80-120			
Silver	4.94	0.100	"	5.00		98.9	80-120			
Zinc	54.4	37.0	"	50.0		109	80-120			

**Matrix Spike (B4E2333-MS1)**

Source: Y405700-01

Prepared: 05/23/2024 Analyzed: 05/24/2024

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 Project Number: [none]  
 Project: KMG - Open 10-25

**Metals by EPA 6000/7000 Series Methods - 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 B4E2333 - EPA 3050B**

<b>Matrix Spike (B4E2333-MS1)</b>		<b>Source: Y405700-01</b>			Prepared: 05/23/2024 Analyzed: 05/24/2024					
Arsenic	6.85	0.277	mg/kg	4.78	1.92	103	75-125			
Barium	504	9.56	"	478	28.6	99.5	75-125			
Cadmium	5.07	0.0956	"	4.78	ND	106	75-125			
Copper	55.0	9.56	"	47.8	4.85	105	75-125			
Lead	11.5	0.956	"	4.78	6.59	103	75-125			
Nickel	11.5	0.956	"	4.78	6.31	109	75-125			
Selenium	9.32	0.249	"	9.09	ND	103	75-125			
Silver	5.04	0.0956	"	4.78	ND	106	75-125			
Zinc	79.4	35.4	"	47.8	33.9	95.2	75-125			

<b>Matrix Spike Dup (B4E2333-MSD1)</b>		<b>Source: Y405700-01</b>			Prepared: 05/23/2024 Analyzed: 05/24/2024					
Arsenic	7.53	0.287	mg/kg	4.95	1.92	113	75-125	9.38	20	
Barium	565	9.90	"	495	28.6	108	75-125	11.4	20	
Cadmium	5.45	0.0990	"	4.95	ND	110	75-125	7.22	20	
Copper	61.1	9.90	"	49.5	4.85	114	75-125	10.6	20	
Lead	11.9	0.990	"	4.95	6.59	108	75-125	3.63	20	
Nickel	12.0	0.990	"	4.95	6.31	114	75-125	3.99	20	
Selenium	10.0	0.257	"	9.41	ND	107	75-125	7.31	20	
Silver	5.37	0.0990	"	4.95	ND	109	75-125	6.30	20	
Zinc	89.9	36.6	"	49.5	33.9	113	75-125	12.4	20	

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2329 - EPA 3580**

**Blank (B4E2329-BLK1)**

Prepared: 05/23/2024 Analyzed: 05/24/2024

1-Methylnaphthalene	ND	0.002	mg/kg							Ua
2-Methylnaphthalene	ND	0.002	"							Ua
Acenaphthene	ND	0.020	"							Ua
Anthracene	ND	0.020	"							Ua
Benzo (a) anthracene	ND	0.005	"							Ua
Benzo (a) pyrene	ND	0.020	"							Ua
Benzo (b) fluoranthene	ND	0.020	"							Ua
Benzo (g,h,i) perylene	ND	0.020	"							Ua
Benzo (k) fluoranthene	ND	0.020	"							Ua
Chrysene	ND	0.020	"							Ua
Dibenz (a,h) anthracene	ND	0.020	"							Ua
Fluoranthene	ND	0.020	"							Ua
Fluorene	ND	0.020	"							Ua
Indeno (1,2,3-cd) pyrene	ND	0.020	"							Ua
Naphthalene	ND	0.002	"							Ua
Phenanthrene	ND	0.020	"							Ua
Pyrene	ND	0.020	"							Ua
Surrogate: Fluorene-d10	180		ug/kg	200		92.4	60-130			
Surrogate: Anthracene-d10	200		"	200		101	60-130			
Surrogate: Pyrene-d10	190		"	200		96.1	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		93.0	60-130			

**LCS (B4E2329-BS1)**

Prepared: 05/23/2024 Analyzed: 05/24/2024

1-Methylnaphthalene	0.179	0.002	mg/kg	0.200		89.4	70-130			
2-Methylnaphthalene	0.184	0.002	"	0.200		92.0	70-130			
Acenaphthene	0.187	0.020	"	0.200		93.4	70-130			
Anthracene	0.199	0.020	"	0.200		99.5	70-130			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2329 - EPA 3580**

**LCS (B4E2329-BS1)**

Prepared: 05/23/2024 Analyzed: 05/24/2024

Benzo (a) anthracene	0.196	0.005	mg/kg	0.200		98.2	70-130			
Benzo (a) pyrene	0.184	0.020	"	0.200		92.2	70-130			
Benzo (b) fluoranthene	0.188	0.020	"	0.200		94.2	70-130			
Benzo (g,h,i) perylene	0.183	0.020	"	0.200		91.4	70-130			
Benzo (k) fluoranthene	0.158	0.020	"	0.200		79.2	70-130			
Chrysene	0.189	0.020	"	0.200		94.5	70-130			
Dibenz (a,h) anthracene	0.185	0.020	"	0.200		92.5	70-130			
Fluoranthene	0.197	0.020	"	0.200		98.7	70-130			
Fluorene	0.199	0.020	"	0.200		99.5	70-130			
Indeno (1,2,3-cd) pyrene	0.176	0.020	"	0.200		88.0	70-130			
Naphthalene	0.190	0.002	"	0.200		94.8	70-130			
Phenanthrene	0.181	0.020	"	0.200		90.7	70-130			
Pyrene	0.184	0.020	"	0.200		92.1	70-130			
Surrogate: Fluorene-d10	210		ug/kg	200		107	60-130			
Surrogate: Anthracene-d10	200		"	200		97.9	60-130			
Surrogate: Pyrene-d10	210		"	200		103	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.6	60-130			

**Matrix Spike (B4E2329-MS1)**

**Source: Y405695-02**

Prepared: 05/23/2024 Analyzed: 05/24/2024

1-Methylnaphthalene	0.231	0.002	mg/kg	0.200	0.0009	115	70-130			
2-Methylnaphthalene	0.231	0.002	"	0.200	0.001	115	70-130			
Acenaphthene	0.218	0.020	"	0.200	0.0005	109	70-130			
Anthracene	0.221	0.020	"	0.200	0.003	109	70-130			
Benzo (a) anthracene	0.225	0.005	"	0.200	0.002	111	70-130			
Benzo (a) pyrene	0.216	0.020	"	0.200	0.001	108	70-130			
Benzo (b) fluoranthene	0.232	0.020	"	0.200	0.0007	116	70-130			
Benzo (g,h,i) perylene	0.206	0.020	"	0.200	0.0009	103	70-130			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2329 - EPA 3580**

<b>Matrix Spike (B4E2329-MS1)</b>		<b>Source: Y405695-02</b>			Prepared: 05/23/2024 Analyzed: 05/24/2024					
Benzo (k) fluoranthene	0.202	0.020	mg/kg	0.200	0.001	101	70-130			
Chrysene	0.227	0.020	"	0.200	0.001	113	70-130			
Dibenz (a,h) anthracene	0.229	0.020	"	0.200	ND	114	70-130			
Fluoranthene	0.252	0.020	"	0.200	0.0004	126	70-130			
Fluorene	0.217	0.020	"	0.200	0.0003	108	70-130			
Indeno (1,2,3-cd) pyrene	0.217	0.020	"	0.200	ND	108	70-130			
Naphthalene	0.227	0.002	"	0.200	ND	114	70-130			
Phenanthrene	0.224	0.020	"	0.200	0.001	111	70-130			
Pyrene	0.258	0.020	"	0.200	ND	129	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		102	60-130			
Surrogate: Pyrene-d10	230		"	200		114	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.2	60-130			

<b>Matrix Spike Dup (B4E2329-MSD1)</b>		<b>Source: Y405695-02</b>			Prepared: 05/23/2024 Analyzed: 05/24/2024					
1-Methylnaphthalene	0.215	0.002	mg/kg	0.200	0.0009	107	70-130	7.05	20	
2-Methylnaphthalene	0.212	0.002	"	0.200	0.001	105	70-130	8.88	20	
Acenaphthene	0.212	0.020	"	0.200	0.0005	106	70-130	2.92	20	
Anthracene	0.213	0.020	"	0.200	0.003	105	70-130	3.96	20	
Benzo (a) anthracene	0.221	0.005	"	0.200	0.002	109	70-130	1.96	20	
Benzo (a) pyrene	0.225	0.020	"	0.200	0.001	112	70-130	4.01	20	
Benzo (b) fluoranthene	0.219	0.020	"	0.200	0.0007	109	70-130	5.99	20	
Benzo (g,h,i) perylene	0.208	0.020	"	0.200	0.0009	103	70-130	0.567	20	
Benzo (k) fluoranthene	0.202	0.020	"	0.200	0.001	100	70-130	0.281	20	
Chrysene	0.210	0.020	"	0.200	0.001	104	70-130	7.70	20	
Dibenz (a,h) anthracene	0.219	0.020	"	0.200	ND	110	70-130	4.16	20	
Fluoranthene	0.231	0.020	"	0.200	0.0004	116	70-130	8.68	20	

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2329 - EPA 3580

Matrix Spike Dup (B4E2329-MSD1)	Source: Y405695-02			Prepared: 05/23/2024 Analyzed: 05/24/2024						
Fluorene	0.216	0.020	mg/kg	0.200	0.0003	108	70-130	0.209	20	
Indeno (1,2,3-cd) pyrene	0.213	0.020	"	0.200	ND	107	70-130	1.53	20	
Naphthalene	0.214	0.002	"	0.200	ND	107	70-130	6.07	20	
Phenanthrene	0.201	0.020	"	0.200	0.001	100	70-130	10.6	20	
Pyrene	0.239	0.020	"	0.200	ND	119	70-130	7.84	20	
Surrogate: Fluorene-d10	220		ug/kg	200		110	60-130			
Surrogate: Anthracene-d10	200		"	200		98.1	60-130			
Surrogate: Pyrene-d10	220		"	200		109	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

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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
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**Batch B4E2402 - Saturated Paste Metals**

**Blank (B4E2402-BLK1)**

Prepared: 05/24/2024 Analyzed: 05/29/2024

SAR	ND	0.0100	SAR							Ua
Calcium PPM	ND	10.0	mg/L							Ua
Magnesium PPM	ND	10.0	"							Ua
Sodium PPM	ND	10.0	"							Ua

**Duplicate (B4E2402-DUP1)**

Source: Y405703-12

Prepared: 05/24/2024 Analyzed: 05/29/2024

Calcium PPM	13.8	10.0	mg/L		13.5			2.05	50	
SAR	ND	0.0100	SAR		3.90				200	Ua
Magnesium PPM	9.22	10.0	mg/L		9.02			2.19	50	Ua
Sodium PPM	76.3	10.0	"		75.4			1.19	50	

**Batch B4E2403 - Saturated Paste Metals**

**Blank (B4E2403-BLK1)**

Prepared: 05/24/2024 Analyzed: 05/29/2024

Calcium PPM	ND	10.0	mg/L							Ua
SAR	ND	0.0100	SAR							Ua
Magnesium PPM	ND	10.0	mg/L							Ua
Sodium PPM	ND	10.0	"							Ua

**Duplicate (B4E2403-DUP1)**

Source: Y405663-01

Prepared: 05/24/2024 Analyzed: 05/29/2024

Calcium PPM	25.1	10.0	mg/L		26.9			7.01	50	
SAR	ND	0.0100	SAR		2.01				200	Ua
Magnesium PPM	4.79	10.0	mg/L		5.26			9.35	50	Ua
Sodium PPM	40.4	10.0	"		43.6			7.57	50	

**Batch B4E2408 - DTPA Sorbitol Preparation**

**Blank (B4E2408-BLK1)**

Prepared: 05/24/2024 Analyzed: 05/28/2024

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 Project Number: [none]  
 Project: KMG - Open 10-25

**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 B4E2408 - DTPA Sorbitol Preparation</b>										
<b>Blank (B4E2408-BLK1)</b>					Prepared: 05/24/2024 Analyzed: 05/28/2024					
Boron	ND	0.100	mg/L							Ua
<b>Duplicate (B4E2408-DUP1)</b>					<b>Source: Y405691-01</b> Prepared: 05/24/2024 Analyzed: 05/28/2024					
Boron	0.736	0.0993	mg/L		0.739			0.430	50	

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Saturated Paste - 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 B4E2412 - Saturated Paste pH/EC**

**Blank (B4E2412-BLK1)**

Prepared: 05/24/2024 Analyzed: 05/29/2024

Specific Conductance (EC)	ND	0.00500	mmhos/cm							Ua
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**Duplicate (B4E2412-DUP1)**

**Source: Y405703-12**

Prepared: 05/24/2024 Analyzed: 05/29/2024

Specific Conductance (EC)	0.502	0.00500	mmhos/cm		0.483			3.82	25	
pH	8.42		pH Units		8.45			0.356	25	

**Batch B4E2413 - Saturated Paste pH/EC**

**Blank (B4E2413-BLK1)**

Prepared: 05/24/2024 Analyzed: 05/29/2024

Specific Conductance (EC)	ND	0.00500	mmhos/cm							Ua
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**Duplicate (B4E2413-DUP1)**

**Source: Y405663-01**

Prepared: 05/24/2024 Analyzed: 05/29/2024

Specific Conductance (EC)	0.425	0.00500	mmhos/cm		0.444			4.46	25	
pH	8.18		pH Units		8.20			0.244	25	

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Jen Pellegrini, Project Manager

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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Open 10-25

**Total Metals 7196A - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2619648 - SW846 3060A</b>										
<b>BLANK (1205748943-BLK)</b>					Prepared: 06/03/2024 Analyzed: 06/04/2024					
Hexavalent Chromium	ND	0.318	mg/kg				-			U
<b>LCS (1205748944-BKS)</b>					Prepared: 06/03/2024 Analyzed: 06/04/2024					
Hexavalent Chromium	2.94	0.293	mg/kg	2.93		100	80-120			
<b>DUP (1205748945 D)</b>					Source: 669320001 Prepared: 06/03/2024 Analyzed: 06/04/2024					
Hexavalent Chromium	ND	0.356	mg/kg dry		<0.143		0-50	N/A	50	U
<b>MS (1205748946 S)</b>					Source: 669320001 Prepared: 06/03/2024 Analyzed: 06/04/2024					
Hexavalent Chromium	2.56	0.356	mg/kg dry	3.56	<0.143	70.5	75-125			
<b>DUP (1205748947 D)</b>					Source: Y405719-05 Prepared: 06/03/2024 Analyzed: 06/04/2024					
Hexavalent Chromium	ND	0.342	mg/kg dry		<0.137		0-50	N/A	50	U
<b>MS (1205748948 S)</b>					Source: Y405719-05 Prepared: 06/03/2024 Analyzed: 06/04/2024					
Hexavalent Chromium	2.91	0.342	mg/kg dry	3.42	<0.137	83.7	75-125			
<b>ILCS (1205748949-ILCS)</b>					Prepared: 06/03/2024 Analyzed: 06/04/2024					
Hexavalent Chromium	7.41	0.348	mg/kg	7.09		105	80-120			

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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Broomfield CO 80020

Andy Sagen  
Project Number: [none]  
Project: KMG - Open 10-25

---

**Notes and Definitions**

Ua Sample is Non-Detect.

U Result not detected above the detection limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Origins Laboratory, Inc.



Jen Pellegrini, Project Manager

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June 27, 2024

Tasman Geosciences

Andy Sagen

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - Oben 10-25

Project Number - [none]

Attached are your analytical results for KMG - Oben 10-25 received by Origins Laboratory, Inc. May 28, 2024. This project is associated with Origins project number Y405766-01.

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  
6855 West 119th Avenue  
Broomfield CO 80020

Andy Sagen  
Project Number: [none]  
Project: KMG - Oben 10-25

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL-B03@4'	Y405766-01	Soil	May 28, 2024 13:00	05/28/2024 14:05

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4405706 Client: Tasman  
 Client Project ID: Oben 10-25  
 Checklist Completed by: JSTV Shipped Via: HD  
 Date/time completed: 5/28/24 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 / 5 °c \_\_\_\_\_ / \_\_\_\_\_ °c \_\_\_\_\_ / \_\_\_\_\_ °c (Describe)  
 Thermometer ID: 7005

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> ?	/			
Is there ice present (document if blue ice is used)	/			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)			/	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)			/	
Were all samples received intact <sup>(1)</sup> ?	/			
Was adequate sample volume provided <sup>(1)</sup> ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		/		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	/			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	/			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	/			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>			/	
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)		/		
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) Josh Date/Time Reviewed 5/28/24

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**FL-B03@4'**

**5/28/2024 1:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405766-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.159		0.0999	mg/L	1	B4E2906	05/29/2024	05/30/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4E2804	05/28/2024	05/28/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	89.3 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4E2830	05/28/2024	05/28/2024	Ua
1,3,5-Trimethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Benzene	ND		0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND		0.00200	"	"	"	"	"	Ua
Toluene	ND		0.00200	"	"	"	"	"	Ua
Xylenes, total	ND		0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND		0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	119 %		70-130			"	"	"	
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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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**FL-B03@4'**

**5/28/2024 1:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405766-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	103 %		70-130			B4E28 30	05/28/2024	05/28/2024	
Surrogate: 4-Bromofluorobenzene	104 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.31		0.499	meq/L	10	[CALC]	05/29/2024	05/30/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4E2825	05/28/2024	05/28/2024	Ua
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	Ua
Acenaphthene	ND		0.020	"	"	"	"	"	Ua
Anthracene	ND		0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Chrysene	ND		0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	Ua
Fluoranthene	ND		0.020	"	"	"	"	"	Ua

Origins Laboratory, Inc.



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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**FL-B03@4'**

**5/28/2024 1:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405766-01 (Soil)**

**PAH by EPA 8270E**

Fluorene	ND		0.020	mg/kg	1	B4E2825	05/28/2024	05/28/2024	Ua
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	Ua
Naphthalene	ND		0.002	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	99.8 %		60-130			"	"	"	
Surrogate: Anthracene-d10	98.8 %		60-130			"	"	"	
Surrogate: Pyrene-d10	97.8 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	98.8 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.33			pH Units	1	B4E2909	05/29/2024	05/30/2024	
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**SAR by 20B Saturated Paste**

SAR	0.186		0.0100	SAR	1	B4E2903	05/29/2024	05/30/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.205		0.00500	mmhos/cm	1	B4E2909	05/29/2024	05/30/2024	
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**Table 915 metals by EPA 6020B**

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

FL-B03@4'

5/28/2024 1:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
 Y405766-01 (Soil)

**Table 915 metals by EPA 6020B**

Arsenic	2.33		0.256	mg/kg	10	B4E2828	05/28/2024	05/29/2024	
Barium	93.9		8.83	"	"	"	"	"	
Cadmium	0.147		0.0883	"	"	"	"	"	
Copper	9.05		8.83	"	"	"	"	"	
Lead	7.91		0.883	"	"	"	"	"	
Nickel	7.93		0.883	"	"	"	"	"	
Selenium	ND		0.230	"	"	"	"	"	
Silver	ND		0.0883	"	"	"	"	"	
Zinc	37.9		32.7	"	"	"	"	"	

**Total Metals 7196A**

Hexavalent Chromium	0.165	0.145	0.362	mg/kg dry	1	2632194	06/26/2024	06/27/2024	J
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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4E2804 - EPA 3550B</b>										
<b>Blank (B4E2804-BLK1)</b>										
					Prepared: 05/28/2024 Analyzed: 05/28/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	23		"	24.9		94.0	50-150			

Origins Laboratory, Inc.



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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Extractable Petroleum Hydrocarbons by 8015D - 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 B4E2804 - EPA 3550B**

**LCS (B4E2804-BS1)**

Prepared: 05/28/2024 Analyzed: 05/28/2024

Diesel (C10-C28)	931	50.0	mg/kg	1000		93.1	70-130			
Residual Range Organics (C28-C40)	1040	200	"	1000		104	70-130			
Surrogate: o-Terphenyl	50		"	49.8		101	50-150			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Extractable Petroleum Hydrocarbons by 8015D - 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 B4E2804 - EPA 3550B**

<b>Matrix Spike (B4E2804-MS1)</b>	<b>Source: Y405765-01</b>			Prepared: 05/28/2024 Analyzed: 05/28/2024						
Diesel (C10-C28)	874	50.0	mg/kg	1000	ND	87.4	70-130			
Residual Range Organics (C28-C40)	1010	200	"	1000	ND	101	70-130			
Surrogate: o-Terphenyl	46		"	49.8		93.2	50-150			

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4E2804 - EPA 3550B</b>										
<b>Matrix Spike Dup (B4E2804-MSD1)</b>		<b>Source: Y405765-01</b>			Prepared: 05/28/2024 Analyzed: 05/28/2024					
Diesel (C10-C28)	859	50.0	mg/kg	1000	ND	85.9	70-130	1.71	35	
Residual Range Organics (C28-C40)	986	200	"	1000	ND	98.6	70-130	1.97	35	
Surrogate: o-Terphenyl	45		"	49.8		90.3	50-150			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Extractable Petroleum Hydrocarbons by 8015D - 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 B4E2830 - EPA 5030 (soil)**

**Blank (B4E2830-BLK1)**

Prepared: 05/28/2024 Analyzed: 05/28/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							Ua
1,3,5-Trimethylbenzene	ND	0.00200	"							Ua
Benzene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
Naphthalene	ND	0.00380	"							Ua
Toluene	ND	0.00200	"							Ua
Xylenes, total	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	103		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	104		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	105		70-130			

Origins Laboratory, Inc.



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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B4E2830 - EPA 5030 (soil)

**LCS (B4E2830-BS1)**

Prepared: 05/28/2024 Analyzed: 05/28/2024

1,2,4-Trimethylbenzene	0.110	0.00200	mg/kg	0.100		110	70-130			
1,3,5-Trimethylbenzene	0.115	0.00200	"	0.100		115	70-130			
Benzene	0.105	0.00200	"	0.100		105	70-130			
Ethylbenzene	0.114	0.00200	"	0.100		114	70-130			
Naphthalene	0.116	0.00380	"	0.100		116	70-130			
Toluene	0.109	0.00200	"	0.100		109	70-130			
o-Xylene	0.110	0.00200	"	0.100		110	70-130			
m,p-Xylene	0.225	0.00400	"	0.200		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125	99.4		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	105		70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125	108		70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B4E2830 - EPA 5030 (soil)

Matrix Spike (B4E2830-MS1)	Source: Y405765-01			Prepared: 05/28/2024 Analyzed: 05/28/2024						
1,2,4-Trimethylbenzene	0.106	0.00200	mg/kg	0.100	ND	106	70-130			
1,3,5-Trimethylbenzene	0.111	0.00200	"	0.100	ND	111	70-130			
Benzene	0.101	0.00200	"	0.100	ND	101	70-130			
Ethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130			
Naphthalene	0.126	0.00380	"	0.100	ND	126	70-130			
Toluene	0.103	0.00200	"	0.100	ND	103	70-130			
o-Xylene	0.104	0.00200	"	0.100	ND	104	70-130			
m,p-Xylene	0.213	0.00400	"	0.200	ND	106	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		106	70-130			

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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 B4E2830 - EPA 5030 (soil)**

<b>Matrix Spike Dup (B4E2830-MSD1)</b>	<b>Source: Y405765-01</b>			<b>Prepared: 05/28/2024 Analyzed: 05/28/2024</b>						
1,2,4-Trimethylbenzene	0.106	0.00200	mg/kg	0.100	ND	106	70-130	0.246	20	
1,3,5-Trimethylbenzene	0.109	0.00200	"	0.100	ND	109	70-130	1.51	20	
Benzene	0.101	0.00200	"	0.100	ND	101	70-130	0.397	20	
Ethylbenzene	0.106	0.00200	"	0.100	ND	106	70-130	0.526	20	
Naphthalene	0.120	0.00380	"	0.100	ND	120	70-130	4.34	20	
Toluene	0.104	0.00200	"	0.100	ND	104	70-130	0.213	20	
o-Xylene	0.103	0.00200	"	0.100	ND	103	70-130	0.560	20	
m,p-Xylene	0.212	0.00400	"	0.200	ND	106	70-130	0.386	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		107	70-130			

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 Broomfield CO 80020

Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Volatile Organic Compounds by GC/MS SW846 8260D - 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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**Metals by EPA 6000/7000 Series Methods - 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 B4E2828 - EPA 3050B**

**Blank (B4E2828-BLK1)**

Prepared: 05/28/2024 Analyzed: 05/29/2024

Arsenic	ND	0.290	mg/kg							
Barium	ND	10.0	"							
Cadmium	ND	0.100	"							
Copper	ND	10.0	"							
Lead	ND	1.00	"							
Nickel	ND	1.00	"							
Selenium	ND	0.260	"							
Silver	ND	0.100	"							
Zinc	ND	37.0	"							

**LCS (B4E2828-BS1)**

Prepared: 05/28/2024 Analyzed: 05/29/2024

Arsenic	5.47	0.290	mg/kg	5.00		109	80-120			
Barium	582	10.0	"	500		116	80-120			
Cadmium	5.68	0.100	"	5.00		114	80-120			
Copper	55.3	10.0	"	50.0		111	80-120			
Lead	5.40	1.00	"	5.00		108	80-120			
Nickel	5.60	1.00	"	5.00		112	80-120			
Selenium	9.96	0.260	"	9.50		105	80-120			
Silver	5.56	0.100	"	5.00		111	80-120			
Zinc	55.5	37.0	"	50.0		111	80-120			

**Matrix Spike (B4E2828-MS1)**

Source: Y405765-05

Prepared: 05/28/2024 Analyzed: 05/29/2024

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 Project Number: [none]  
 Project: KMG - Oben 10-25

**Metals by EPA 6000/7000 Series Methods - 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 B4E2828 - EPA 3050B**

<b>Matrix Spike (B4E2828-MS1)</b>		<b>Source: Y405765-05</b>			Prepared: 05/28/2024 Analyzed: 05/29/2024					
Arsenic	7.63	0.280	mg/kg	4.82	2.33	110	75-125			
Barium	671	9.64	"	482	85.1	121	75-125			
Cadmium	5.58	0.0964	"	4.82	0.198	112	75-125			
Copper	62.5	9.64	"	48.2	9.94	109	75-125			
Lead	12.8	0.964	"	4.82	8.10	97.9	75-125			
Nickel	13.7	0.964	"	4.82	8.59	106	75-125			
Selenium	9.76	0.251	"	9.16	0.163	105	75-125			
Silver	5.36	0.0964	"	4.82	0.0293	111	75-125			
Zinc	86.6	35.7	"	48.2	34.8	108	75-125			

<b>Matrix Spike Dup (B4E2828-MSD1)</b>		<b>Source: Y405765-05</b>			Prepared: 05/28/2024 Analyzed: 05/29/2024					
Arsenic	7.31	0.284	mg/kg	4.89	2.33	102	75-125	4.25	20	
Barium	644	9.78	"	489	85.1	114	75-125	4.05	20	
Cadmium	5.60	0.0978	"	4.89	0.198	110	75-125	0.375	20	
Copper	62.2	9.78	"	48.9	9.94	107	75-125	0.373	20	
Lead	12.6	0.978	"	4.89	8.10	91.7	75-125	1.87	20	
Nickel	13.1	0.978	"	4.89	8.59	91.9	75-125	4.51	20	
Selenium	10.2	0.254	"	9.29	0.163	108	75-125	4.62	20	
Silver	5.33	0.0978	"	4.89	0.0293	108	75-125	0.472	20	
Zinc	84.8	36.2	"	48.9	34.8	102	75-125	2.05	20	

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2825 - EPA 3580**

**Blank (B4E2825-BLK1)**

Prepared: 05/28/2024 Analyzed: 05/28/2024

1-Methylnaphthalene	ND	0.002	mg/kg							Ua
2-Methylnaphthalene	ND	0.002	"							Ua
Acenaphthene	ND	0.020	"							Ua
Anthracene	ND	0.020	"							Ua
Benzo (a) anthracene	ND	0.005	"							Ua
Benzo (a) pyrene	ND	0.020	"							Ua
Benzo (b) fluoranthene	ND	0.020	"							Ua
Benzo (g,h,i) perylene	ND	0.020	"							Ua
Benzo (k) fluoranthene	ND	0.020	"							Ua
Chrysene	ND	0.020	"							Ua
Dibenz (a,h) anthracene	ND	0.020	"							Ua
Fluoranthene	ND	0.020	"							Ua
Fluorene	ND	0.020	"							Ua
Indeno (1,2,3-cd) pyrene	ND	0.020	"							Ua
Naphthalene	ND	0.002	"							Ua
Phenanthrene	ND	0.020	"							Ua
Pyrene	ND	0.020	"							Ua
Surrogate: Fluorene-d10	200		ug/kg	200		99.1	60-130			
Surrogate: Anthracene-d10	210		"	200		103	60-130			
Surrogate: Pyrene-d10	210		"	200		105	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.3	60-130			

**LCS (B4E2825-BS1)**

Prepared: 05/28/2024 Analyzed: 05/28/2024

1-Methylnaphthalene	0.221	0.002	mg/kg	0.200		110	70-130			
2-Methylnaphthalene	0.220	0.002	"	0.200		110	70-130			
Acenaphthene	0.225	0.020	"	0.200		112	70-130			
Anthracene	0.213	0.020	"	0.200		107	70-130			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2825 - EPA 3580**

**LCS (B4E2825-BS1)**

Prepared: 05/28/2024 Analyzed: 05/28/2024

Benzo (a) anthracene	0.232	0.005	mg/kg	0.200		116	70-130			
Benzo (a) pyrene	0.235	0.020	"	0.200		118	70-130			
Benzo (b) fluoranthene	0.235	0.020	"	0.200		117	70-130			
Benzo (g,h,i) perylene	0.221	0.020	"	0.200		111	70-130			
Benzo (k) fluoranthene	0.208	0.020	"	0.200		104	70-130			
Chrysene	0.220	0.020	"	0.200		110	70-130			
Dibenz (a,h) anthracene	0.226	0.020	"	0.200		113	70-130			
Fluoranthene	0.228	0.020	"	0.200		114	70-130			
Fluorene	0.202	0.020	"	0.200		101	70-130			
Indeno (1,2,3-cd) pyrene	0.226	0.020	"	0.200		113	70-130			
Naphthalene	0.238	0.002	"	0.200		119	70-130			
Phenanthrene	0.216	0.020	"	0.200		108	70-130			
Pyrene	0.234	0.020	"	0.200		117	70-130			
Surrogate: Fluorene-d10	190		ug/kg	200		96.2	60-130			
Surrogate: Anthracene-d10	200		"	200		98.0	60-130			
Surrogate: Pyrene-d10	210		"	200		104	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		97.7	60-130			

**Matrix Spike (B4E2825-MS1)**

Source: Y405765-01

Prepared: 05/28/2024 Analyzed: 05/28/2024

1-Methylnaphthalene	0.222	0.002	mg/kg	0.200	ND	111	70-130			
2-Methylnaphthalene	0.219	0.002	"	0.200	ND	110	70-130			
Acenaphthene	0.216	0.020	"	0.200	0.0002	108	70-130			
Anthracene	0.210	0.020	"	0.200	0.0007	105	70-130			
Benzo (a) anthracene	0.240	0.005	"	0.200	0.0007	120	70-130			
Benzo (a) pyrene	0.228	0.020	"	0.200	0.002	113	70-130			
Benzo (b) fluoranthene	0.227	0.020	"	0.200	0.0006	113	70-130			
Benzo (g,h,i) perylene	0.219	0.020	"	0.200	0.001	109	70-130			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2825 - EPA 3580**

<b>Matrix Spike (B4E2825-MS1)</b>		<b>Source: Y405765-01</b>			Prepared: 05/28/2024 Analyzed: 05/28/2024					
Benzo (k) fluoranthene	0.201	0.020	mg/kg	0.200	0.0005	100	70-130			
Chrysene	0.225	0.020	"	0.200	0.0009	112	70-130			
Dibenz (a,h) anthracene	0.222	0.020	"	0.200	0.001	111	70-130			
Fluoranthene	0.249	0.020	"	0.200	0.0003	125	70-130			
Fluorene	0.234	0.020	"	0.200	0.0006	117	70-130			
Indeno (1,2,3-cd) pyrene	0.220	0.020	"	0.200	ND	110	70-130			
Naphthalene	0.221	0.002	"	0.200	ND	111	70-130			
Phenanthrene	0.224	0.020	"	0.200	ND	112	70-130			
Pyrene	0.237	0.020	"	0.200	ND	119	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	200		"	200		100	60-130			
Surrogate: Pyrene-d10	210		"	200		105	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		97.1	60-130			

<b>Matrix Spike Dup (B4E2825-MSD1)</b>		<b>Source: Y405765-01</b>			Prepared: 05/28/2024 Analyzed: 05/28/2024					
1-Methylnaphthalene	0.215	0.002	mg/kg	0.200	ND	108	70-130	3.00	20	
2-Methylnaphthalene	0.212	0.002	"	0.200	ND	106	70-130	3.27	20	
Acenaphthene	0.207	0.020	"	0.200	0.0002	103	70-130	4.01	20	
Anthracene	0.206	0.020	"	0.200	0.0007	103	70-130	2.08	20	
Benzo (a) anthracene	0.229	0.005	"	0.200	0.0007	114	70-130	4.90	20	
Benzo (a) pyrene	0.234	0.020	"	0.200	0.002	116	70-130	2.79	20	
Benzo (b) fluoranthene	0.224	0.020	"	0.200	0.0006	112	70-130	1.16	20	
Benzo (g,h,i) perylene	0.217	0.020	"	0.200	0.001	108	70-130	0.762	20	
Benzo (k) fluoranthene	0.204	0.020	"	0.200	0.0005	102	70-130	1.81	20	
Chrysene	0.217	0.020	"	0.200	0.0009	108	70-130	3.43	20	
Dibenz (a,h) anthracene	0.220	0.020	"	0.200	0.001	110	70-130	0.899	20	
Fluoranthene	0.208	0.020	"	0.200	0.0003	104	70-130	18.0	20	

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 Project: KMG - Oben 10-25

**EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4E2825 - EPA 3580

Matrix Spike Dup (B4E2825-MSD1)	Source: Y405765-01			Prepared: 05/28/2024 Analyzed: 05/28/2024						
Fluorene	0.206	0.020	mg/kg	0.200	0.0006	103	70-130	12.7	20	
Indeno (1,2,3-cd) pyrene	0.226	0.020	"	0.200	ND	113	70-130	2.46	20	
Naphthalene	0.207	0.002	"	0.200	ND	103	70-130	6.80	20	
Phenanthrene	0.211	0.020	"	0.200	ND	106	70-130	5.85	20	
Pyrene	0.214	0.020	"	0.200	ND	107	70-130	10.4	20	
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		99.2	60-130			
Surrogate: Pyrene-d10	200		"	200		99.1	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		102	60-130			

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Classical Chemistry Parameters - 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 B4E2903 - Saturated Paste Metals**

**Blank (B4E2903-BLK1)**

Prepared: 05/29/2024 Analyzed: 05/30/2024

Calcium PPM	ND	10.0	mg/L							
SAR	ND	0.0100	SAR							
Magnesium PPM	ND	10.0	mg/L							
Sodium PPM	ND	10.0	"							

**Duplicate (B4E2903-DUP1)**

**Source: Y405765-01**

Prepared: 05/29/2024 Analyzed: 05/30/2024

Calcium PPM	14.6	10.0	mg/L		17.1			15.7	50	
SAR	ND	0.0100	SAR		ND				200	
Magnesium PPM	7.03	10.0	mg/L		9.92			34.1	50	
Sodium PPM	2.80	10.0	"		3.06			8.87	50	

**Batch B4E2906 - DTPA Sorbitol Preparation**

**Blank (B4E2906-BLK1)**

Prepared: 05/29/2024 Analyzed: 05/30/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4E2906-DUP1)**

**Source: Y405765-01**

Prepared: 05/29/2024 Analyzed: 05/30/2024

Boron	0.0481	0.102	mg/L		0.0447			7.34	50	
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 Project Number: [none]  
 Project: KMG - Oben 10-25

**Saturated Paste - 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 B4E2909 - Saturated Paste pH/EC**

**Blank (B4E2909-BLK1)**

Prepared: 05/29/2024 Analyzed: 05/30/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

**Duplicate (B4E2909-DUP1)**

**Source: Y405765-01**

Prepared: 05/29/2024 Analyzed: 05/30/2024

Specific Conductance (EC)	0.178	0.00500	mmhos/cm	0.204	13.6	25
pH	8.05		pH Units	8.38	4.02	25

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Andy Sagen  
 Project Number: [none]  
 Project: KMG - Oben 10-25

**Total Metals 7196A - Quality Control**  
**GEL Laboratories, LLC**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2632194 - SW846 3060A</b>										
<b>BLANK (1205772977-BLK)</b>					Prepared: 06/26/2024 Analyzed: 06/27/2024					
Hexavalent Chromium	ND	0.364	mg/kg				-			U
<b>LCS (1205772978-BKS)</b>					Prepared: 06/26/2024 Analyzed: 06/27/2024					
Hexavalent Chromium	3.74	0.383	mg/kg	3.83		97.7	80-120			
<b>DUP (1205772979 D)</b>					Source: 672015001 Prepared: 06/26/2024 Analyzed: 06/27/2024					
Hexavalent Chromium	0.183	0.401	mg/kg dry		<0.160		0-50	N/A	50	J
<b>MS (1205772980 S)</b>					Source: 672015001 Prepared: 06/26/2024 Analyzed: 06/27/2024					
Hexavalent Chromium	3.16	0.401	mg/kg dry	4.01	<0.161	75.4	75-125			
<b>DUP (1205772981 D)</b>					Source: 672036001 Prepared: 06/26/2024 Analyzed: 06/27/2024					
Hexavalent Chromium	0.177	0.312	mg/kg dry		0.211		0-50	17.7	50	J
<b>MS (1205772982 S)</b>					Source: 672036001 Prepared: 06/26/2024 Analyzed: 06/27/2024					
Hexavalent Chromium	2.67	0.312	mg/kg dry	3.12	0.211	78.7	75-125			
<b>ILCS (1205772983-ILCS)</b>					Prepared: 06/26/2024 Analyzed: 06/27/2024					
Hexavalent Chromium	8.00	0.371	mg/kg	7.53		106	80-120			

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Broomfield CO 80020

Andy Sagen  
Project Number: [none]  
Project: KMG - Oben 10-25

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**Notes and Definitions**

Ua Sample is Non-Detect.

U Result not detected above the detection limit

J Greater than the detection limit but less than the reporting limit

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

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