

October 29, 2019

Tasman Geosciences

Bob Cornez

6855 Wet 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Brown 32-35**

**Project Number - [none]**

Attached are your analytical results for KMG - Brown 32-35 received by Origins Laboratory, Inc. October 25, 2019. This project is associated with Origins project number Y910403-01.

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 Wet 119th Avenue  
Broomfield CO 80020

Bob Cornez  
Project Number: [none]  
Project: KMG - Brown 32-35

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 102519	Y910403-01	Water	October 25, 2019 16:15	10/25/2019 18:00
BH02 - 102519	Y910403-02	Water	October 25, 2019 16:36	10/25/2019 18:00
BH03 - 102519	Y910403-03	Water	October 25, 2019 16:18	10/25/2019 18:00
BH04 - 102519	Y910403-04	Water	October 25, 2019 15:38	10/25/2019 18:00
BH05 - 102519	Y910403-05	Water	October 25, 2019 15:38	10/25/2019 18:00
BH06 - 102519	Y910403-06	Water	October 25, 2019 15:55	10/25/2019 18:00
BH07 - 102519	Y910403-07	Water	October 25, 2019 15:56	10/25/2019 18:00
BH08 - 102519	Y910403-08	Water	October 25, 2019 15:20	10/25/2019 18:00
BH09 - 102519	Y910403-09	Water	October 25, 2019 15:21	10/25/2019 18:00
BH10 - 102519	Y910403-10	Water	October 25, 2019 15:37	10/25/2019 18:00

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Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

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**ORIGINS**  
LABORATORY, INC

Client: APC/OXY/TASMAN  
 Address: 6855 W 119th Ave  
 Telephone Number: 970-927-0393  
 Email Address: rcornez@tasman-geo.com

Project Manager: Robert Cornez  
 Project Name: BROWN 32-35  
 Project Number: 89805834  
 Samples Collected By: MR/RA

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Other			Other
BH01 - 102519	10/25/19	16:15	3					X					
BH02 - 102519		16:36											
BH03 - 102519		16:16											
BH04 - 102519		16:38											
BH05 - 102519		15:38											
BH06 - 102519		15:55											
BH07 - 102519		15:56											
BH08 - 102519		15:20											
BH09 - 102519		15:21											
BH10 - 102519		15:37											
Relinquished By: <i>[Signature]</i>	Date: 10/25/19	Time: 1800	Time: 1800	Received By: <i>[Signature]</i>	Date: 10/25/19	Time: 1800	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>						
Relinquished By:	Date:	Time:	Time:	Received By:	Date:	Time:							

Date Results Needed: 2.5

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y910403

Client: Tasman

Client Project ID: Brown 32-35

Checklist Completed by: JG KDK

Shipped Via: HD

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

Date/time completed: 10 / 28 / 2019

Airbill #: N/A

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

(Describe)

Cooler Number/Temperature: 1 / 2.5 °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 <sup>(1)</sup> ?	<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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / ( pH >10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) CYP

Date/Time Reviewed 10/29/19

Origins Laboratory, Inc.



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 6855 Wet 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH01 - 102519**  
**10/25/2019 4:15:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	87.1 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	94.1 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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**BH02 - 102519**  
**10/25/2019 4:36:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	88.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	"	

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**BH03 - 102519**

**10/25/2019 4:18:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-03 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	91.7 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	105 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.3 %	70-130			"	"	"	"	

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**BH04 - 102519**  
**10/25/2019 3:38:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	92.9 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.4 %	70-130			"	"	"	"	

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**BH05 - 102519**  
**10/25/2019 3:38:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	90.7 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	105 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	70-130			"	"	"	"	

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**BH06 - 102519**

**10/25/2019 3:55:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-06 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	94.8 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.1 %	70-130			"	"	"	"	

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 Broomfield CO 80020

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 Project: KMG - Brown 32-35

**BH07 - 102519**  
**10/25/2019 3:56:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	97.5 %	70-130				"	"	"	
Surrogate: Toluene-d8	91.9 %	70-130				"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130				"	"	"	

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**BH08 - 102519**

**10/25/2019 3:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	90.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	112 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	94.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH09 - 102519**  
**10/25/2019 3:21:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	93.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	91.1 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Project: KMG - Brown 32-35

**BH10 - 102519**  
**10/25/2019 3:37:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y910403-10 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B9J2805	KDK	10/28/2019	10/28/2019	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	93.0 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.0 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Project Number: [none]  
 Project: KMG - Brown 32-35

**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 B9J2805 - EPA 5030B (Water)**

**Blank (B9J2805-BLK1)**

Prepared: 10/28/2019 Analyzed: 10/28/2019

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	51		"	62.5		81.3	70-130			
Surrogate: Toluene-d8	66		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	59		"	62.5		95.1	70-130			

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 Project Number: [none]  
 Project: KMG - Brown 32-35

**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 B9J2805 - EPA 5030B (Water)**

**LCS (B9J2805-BS1)**

Prepared: 10/28/2019 Analyzed: 10/28/2019

Benzene	46.6	1.00	ug/L	50.0		93.3	70-130			
Toluene	56.9	1.00	"	50.0		114	70-130			
Ethylbenzene	49.8	1.00	"	50.0		99.6	70-130			
m,p-Xylene	101	2.00	"	100		101	70-130			
o-Xylene	49.3	1.00	"	50.0		98.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	47		"	62.5		75.2	70-130			
Surrogate: Toluene-d8	73		"	62.5		116	70-130			
Surrogate: 4-Bromofluorobenzene	58		"	62.5		92.3	70-130			

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**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 B9J2805 - EPA 5030B (Water)**

<b>Matrix Spike (B9J2805-MS1)</b>	<b>Source: Y910400-09</b>			<b>Prepared: 10/28/2019 Analyzed: 10/28/2019</b>						
Benzene	44.7	1.00	ug/L	50.0	ND	89.5	70-130			
Toluene	48.0	1.00	"	50.0	ND	96.1	70-130			
Ethylbenzene	42.4	1.00	"	50.0	ND	84.7	70-130			
m,p-Xylene	85.1	2.00	"	100	ND	85.1	70-130			
o-Xylene	42.3	1.00	"	50.0	ND	84.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	49		"	62.5		79.1	70-130			
Surrogate: Toluene-d8	65		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	55		"	62.5		87.3	70-130			

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Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**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 B9J2805 - EPA 5030B (Water)**

Matrix Spike Dup (B9J2805-MSD1)	Source: Y910400-09			Prepared: 10/28/2019 Analyzed: 10/28/2019						
Benzene	46.4	1.00	ug/L	50.0	ND	92.7	70-130	3.58	20	
Toluene	57.4	1.00	"	50.0	ND	115	70-130	17.8	20	
Ethylbenzene	45.2	1.00	"	50.0	ND	90.4	70-130	6.51	20	
m,p-Xylene	91.1	2.00	"	100	ND	91.1	70-130	6.80	20	
o-Xylene	44.5	1.00	"	50.0	ND	89.1	70-130	5.11	20	
Surrogate: 1,2-Dichloroethane-d4	48		"	62.5		76.2	70-130			
Surrogate: Toluene-d8	77		"	62.5		122	70-130			
Surrogate: 4-Bromofluorobenzene	55		"	62.5		88.6	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
6855 Wet 119th Avenue  
Broomfield CO 80020

Bob Cornez  
Project Number: [none]  
Project: KMG - Brown 32-35

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**Notes and Definitions**

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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.*

January 07, 2020

Tasman Geosciences

Bob Cornez

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Brown 32-35**

**Project Number - [none]**

Attached are your analytical results for KMG - Brown 32-35 received by Origins Laboratory, Inc. January 02, 2020. This project is associated with Origins project number Y001016-01.

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

Bob Cornez  
Project Number: [none]  
Project: KMG - Brown 32-35

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 010220	Y001016-01	Water	January 2, 2020 10:53	01/02/2020 15:06
BH02 - 010220	Y001016-02	Water	January 2, 2020 10:41	01/02/2020 15:06
BH03 - 010220	Y001016-03	Water	January 2, 2020 10:17	01/02/2020 15:06
BH04 - 010220	Y001016-04	Water	January 2, 2020 10:29	01/02/2020 15:06
BH05 - 010220	Y001016-05	Water	January 2, 2020 11:12	01/02/2020 15:06
BH06 - 010220	Y001016-06	Water	January 2, 2020 11:24	01/02/2020 15:06
BH07 - 010220	Y001016-07	Water	January 2, 2020 11:10	01/02/2020 15:06
BH08 - 010220	Y001016-08	Water	January 2, 2020 11:00	01/02/2020 15:06
BH09 - 010220	Y001016-09	Water	January 2, 2020 10:38	01/02/2020 15:06
BH10 - 010220	Y001016-10	Water	January 2, 2020 10:24	01/02/2020 15:06

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Jen Pellegrini For Noelle Doyle Mathis, President



Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y001016

Client: Tasman  
 Client Project ID: Brown 32-35

Checklist Completed by: JG

Shipped Via: HD  
(UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

Date/time completed: 1/2/2020

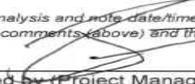
Matrix(s) Received: (Check all that apply): Soil/Solid  Water  Other:

Cooler Number/Temperature: 1/5.4 °C / °C / °C / °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)?</sup>	<input checked="" type="checkbox"/>	<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 <sup>(1)?</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)?</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)?</sup>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely <sup>(1)?</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)?</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)?</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded <sup>(1)?</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)?</sup> (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

  
 Reviewed by (Project Manager)

1/3/20  
 Date/Time Reviewed

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH01 - 010220**  
**1/2/2020 10:53:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.1 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH02 - 010220**  
**1/2/2020 10:41:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	94.3 %	70-130			"	"	"	"	

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 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH03 - 010220**  
**1/2/2020 10:17:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-03 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	104 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.1 %	70-130			"	"	"	"	

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 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH04 - 010220**  
**1/2/2020 10:29:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.1 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH05 - 010220**  
**1/2/2020 11:12:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.1 %	70-130			"	"	"	"	

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Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH06 - 010220**  
**1/2/2020 11:24:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-06 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH07 - 010220**  
**1/2/2020 11:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.9 %	70-130			"	"	"	"	

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 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH08 - 010220**  
**1/2/2020 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.7 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH09 - 010220**  
**1/2/2020 10:38:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**BH10 - 010220**  
**1/2/2020 10:24:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y001016-10 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0A0211	ZZZ	01/02/2020	01/03/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.2 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**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 B0A0211 - EPA 5030B (Water)**

**Blank (B0A0211-BLK1)**

Prepared: 01/02/2020 Analyzed: 01/03/2020

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.2	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		96.0	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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**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 B0A0211 - EPA 5030B (Water)**

**LCS (B0A0211-BS1)**

Prepared: 01/02/2020 Analyzed: 01/03/2020

Benzene	46.2	1.00	ug/L	50.0		92.3	70-130			
Toluene	45.9	1.00	"	50.0		91.8	70-130			
Ethylbenzene	44.0	1.00	"	50.0		88.1	70-130			
m,p-Xylene	98.6	2.00	"	100		98.6	70-130			
o-Xylene	45.9	1.00	"	50.0		91.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.5	70-130			
Surrogate: Toluene-d8	66		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.7	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**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 B0A0211 - EPA 5030B (Water)

Matrix Spike (B0A0211-MS1)	Source: Y001017-01			Prepared: 01/02/2020 Analyzed: 01/03/2020						
Benzene	61.8	1.00	ug/L	50.0	0.960	122	70-130			
Toluene	61.2	1.00	"	50.0	ND	122	70-130			
Ethylbenzene	60.0	1.00	"	50.0	ND	120	70-130			
m,p-Xylene	131	2.00	"	100	ND	131	70-130			QM-07
o-Xylene	60.0	1.00	"	50.0	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	56		"	62.5		89.6	70-130			
Surrogate: Toluene-d8	62		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: [none]  
 Project: KMG - Brown 32-35

**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 B0A0211 - EPA 5030B (Water)

Matrix Spike Dup (B0A0211-MSD1)	Source: Y001017-01			Prepared: 01/02/2020 Analyzed: 01/03/2020						
Benzene	43.1	1.00	ug/L	50.0	0.960	84.3	70-130	35.7	20	QR-03
Toluene	42.6	1.00	"	50.0	ND	85.2	70-130	35.8	20	QR-03
Ethylbenzene	41.5	1.00	"	50.0	ND	83.0	70-130	36.4	20	QR-03
m,p-Xylene	92.6	2.00	"	100	ND	92.6	70-130	34.5	20	QR-03
o-Xylene	42.6	1.00	"	50.0	ND	85.1	70-130	34.1	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.2	70-130			

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Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Bob Cornez  
Project Number: [none]  
Project: KMG - Brown 32-35

---

**Notes and Definitions**

U Sample is Non-Detect.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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April 14, 2020

Tasman Geosciences

Bob Cornez

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Brown 32-35**

**Project Number - 89805834**

Attached are your analytical results for KMG - Brown 32-35 received by Origins Laboratory, Inc. April 07, 2020. This project is associated with Origins project number Y004119-01.

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

Bob Cornez  
Project Number: 89805834  
Project: KMG - Brown 32-35

## CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 040720	Y004119-01	Water	April 7, 2020 11:25	04/07/2020 13:48
BH02 - 040720	Y004119-02	Water	April 7, 2020 10:19	04/07/2020 13:48
BH03 - 040720	Y004119-03	Water	April 7, 2020 11:53	04/07/2020 13:48
BH04 - 040720	Y004119-04	Water	April 7, 2020 11:45	04/07/2020 13:48
BH05 - 040720	Y004119-05	Water	April 7, 2020 12:06	04/07/2020 13:48
BH06 - 040720	Y004119-06	Water	April 7, 2020 11:11	04/07/2020 13:48
BH07 - 040720	Y004119-07	Water	April 7, 2020 10:31	04/07/2020 13:48
BH08 - 040720	Y004119-08	Water	April 7, 2020 12:21	04/07/2020 13:48
BH09 - 040720	Y004119-09	Water	April 7, 2020 10:59	04/07/2020 13:48
BH10 - 040720	Y004119-10	Water	April 7, 2020 10:45	04/07/2020 13:48

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

www.originslaboratory.com

Y004119

page 1 of 1

**ORIGINS**  
 LABORATORY, INC

Client: Oxy Tasman  
 Address: 6855 W 119th Ave  
Broomfield, CO 80020  
 Telephone Number: 303-987-1258  
 Email Address: l.cornez@tasman-geo.com

Project Manager: Bob Cornez  
 Project Name: Brown 32-35  
 Project Number: 89805834  
 Samples Collected By: Brandon V.

Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis		Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summ #	Other		
BH01-040720	4/7/20	1145	3	X				X					1
BH02-040720	4/7/20	1019	3	X				X					2
BH03-040720	4/7/20	1153	3	X				X					3
BH04-040720	4/7/20	1145	3	X				X					4
BH05-040720	4/7/20	1206	3	X				X					5
BH06-040720	4/7/20	1111	3	X				X					6
BH07-040720	4/7/20	1031	3	X				X					7
BH08-040720	4/7/20	1221	3	X				X					8
BH09-040720	4/7/20	1059	3	X				X					9
BH10-040720	4/7/20	1045	3	X				X					10
Relinquished By: <u>Brandon V.</u>	Date: 4/7/20	Time: 1348	Time: 1348	Received By: <u>[Signature]</u>	Date: 4/7/20	Time: 1348	Received By: <u>[Signature]</u>	Date: 4/7/20	Time: 1348	Turnaround Time: Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard <input checked="" type="checkbox"/>			

Temp Received- 7.6 Date Results Needed

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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y004119

Client: Tasman  
 Client Project ID: Brown 32-35

Checklist Completed by: JG

Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

Date/time completed: 4/7/2020

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

Cooler Number/Temperature: 1 / 7.6 °C 1 / \_\_\_\_\_ °C 1 / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °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 <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		<u>Same Day</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaAsO2+NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

Jm  
 Reviewed by (Project Manager)

4-8-20  
 Date/Time Reviewed

Origins Laboratory, Inc.

*Jefe Pellegrini*

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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH01 - 040720**  
**4/7/2020 11:25:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.0 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH02 - 040720**  
**4/7/2020 10:19:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH03 - 040720**  
**4/7/2020 11:53:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-03 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	"	

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 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH04 - 040720**  
**4/7/2020 11:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH05 - 040720**  
**4/7/2020 12:06:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH06 - 040720**  
**4/7/2020 11:11:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-06 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U
Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"		"	
Surrogate: Toluene-d8	95.4 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"		"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH07 - 040720**  
**4/7/2020 10:31:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH08 - 040720**  
**4/7/2020 12:21:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH09 - 040720**  
**4/7/2020 10:59:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	95.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH10 - 040720**  
**4/7/2020 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y004119-10 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0D0802	ZZZ	04/08/2020	04/09/2020	U
Toluene	ND	1.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	1.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	1.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**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 B0D0802 - EPA 5030B (Water)**

**Blank (B0D0802-BLK1)**

Prepared: 04/08/2020 Analyzed: 04/09/2020

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	102		70-130			
Surrogate: Toluene-d8	60		"	62.5	96.3		70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	101		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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**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 B0D0802 - EPA 5030B (Water)**

**LCS (B0D0802-BS1)**

Prepared: 04/08/2020 Analyzed: 04/09/2020

Benzene	52.6	1.00	ug/L	50.0		105	70-130			
Toluene	49.9	1.00	"	50.0		99.8	70-130			
Ethylbenzene	52.6	1.00	"	50.0		105	70-130			
m,p-Xylene	102	2.00	"	100		102	70-130			
o-Xylene	50.4	1.00	"	50.0		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.7	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.1	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.9	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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**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 B0D0802 - EPA 5030B (Water)**

<b>Matrix Spike (B0D0802-MS1)</b>	<b>Source: Y004116-01</b>			<b>Prepared: 04/08/2020 Analyzed: 04/09/2020</b>						
Benzene	51.6	1.00	ug/L	50.0	ND	103	70-130			
Toluene	47.9	1.00	"	50.0	ND	95.8	70-130			
Ethylbenzene	51.8	1.00	"	50.0	0.170	103	70-130			
m,p-Xylene	101	2.00	"	100	0.500	101	70-130			
o-Xylene	49.2	1.00	"	50.0	ND	98.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.4	70-130			
Surrogate: Toluene-d8	60		"	62.5		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Bob Cornez  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**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 B0D0802 - EPA 5030B (Water)**

Matrix Spike Dup (B0D0802-MSD1)	Source: Y004116-01			Prepared: 04/08/2020 Analyzed: 04/09/2020						
Benzene	50.2	1.00	ug/L	50.0	ND	100	70-130	2.75	20	
Toluene	47.5	1.00	"	50.0	ND	95.0	70-130	0.880	20	
Ethylbenzene	50.5	1.00	"	50.0	0.170	101	70-130	2.56	20	
m,p-Xylene	99.0	2.00	"	100	0.500	98.5	70-130	2.24	20	
o-Xylene	48.7	1.00	"	50.0	ND	97.5	70-130	0.879	20	
Surrogate: 1,2-Dichloroethane-d4	67		"	62.5		108	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

Origins Laboratory, Inc.



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6855 West 119th Avenue  
Broomfield CO 80020

Bob Cornez  
Project Number: 89805834  
Project: KMG - Brown 32-35

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**Notes and Definitions**

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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

July 09, 2020

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

**Project Name - KMG - Brown 32-35**

**Project Number - 89805834**

Attached are your analytical results for KMG - Brown 32-35 received by Origins Laboratory, Inc. July 01, 2020. This project is associated with Origins project number Y007007-01.

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

Mike Jahn  
Project Number: 89805834  
Project: KMG - Brown 32-35

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 070120	Y007007-01	Water	July 1, 2020 11:00	07/01/2020 13:45
BH02 - 070120	Y007007-02	Water	July 1, 2020 12:14	07/01/2020 13:45
BH03 - 070120	Y007007-03	Water	July 1, 2020 10:32	07/01/2020 13:45
BH04 - 070120	Y007007-04	Water	July 1, 2020 10:43	07/01/2020 13:45
BH05 - 070120	Y007007-05	Water	July 1, 2020 10:20	07/01/2020 13:45
BH06 - 070120	Y007007-06	Water	July 1, 2020 11:12	07/01/2020 13:45
BH07 - 070120	Y007007-07	Water	July 1, 2020 12:04	07/01/2020 13:45
BH08 - 070120	Y007007-08	Water	July 1, 2020 10:08	07/01/2020 13:45
BH09 - 070120	Y007007-09	Water	July 1, 2020 11:40	07/01/2020 13:45
BH10 - 070120	Y007007-10	Water	July 1, 2020 11:53	07/01/2020 13:45

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

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

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100FOOT

page 7 of 7

**ORIGINS**  
 LABORATORY, INC

Client: SSH/TASMAN  
 Address: 6855 W 119th Ave  
Broomfield, CO 80020  
 Telephone Number: 303-487-1228  
 Email Address: mjahn@tasman-geo.com

Project Manager: Mike Jahn  
 Project Name: Brown 32-35  
 Project Number: 89805834  
 Samples Collected By: Brandon V.

1725 Elk Place | Denver, CO 80211 | Phone: 303.433.1322 | Fax: 303.265.9645

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis	Sample Instructions		
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa #			Other	
B3161 - 070120	7/1/20	1100	3	X				X						
B3162 - 070120	7/1/20	1214	3	X				X						
B3163 - 070120	7/1/20	1032	3	X				X						
B3164 - 070120	7/1/20	1043	3	X				X						
B3165 - 070120	7/1/20	1020	3	X				X						
B3166 - 070120	7/1/20	1112	3	X				X						
B3167 - 070120	7/1/20	1204	3	X				X						
B3168 - 070120	7/1/20	1008	3	X				X						
B3169 - 070120	7/1/20	1140	3	X				X						
B3170 - 070120	7/1/20	1153	3	X				X						
Relinquished By: <u>Brandon V.</u>	Date: <u>7/1/20</u>	Time: <u>1348</u>	Received By: <u>[Signature]</u>	Date: <u>7/1/20</u>	Time: <u>1345</u>	Turnaround Time: <input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hr <input type="checkbox"/> 48 Hr <input checked="" type="checkbox"/> Standard								

Date Results Needed

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Origins Laboratory, Inc.

*Jordan A. Merrill*

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

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4007007

Client: Tasman

Client Project ID: Brown 32-35

Checklist Completed by: JA

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

Date/time completed: 7/11/2020

Airbill #: \_\_\_\_\_

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

Cooler Number/Temperature: 1, 5.2 °C \_\_\_\_\_ °C \_\_\_\_\_ °C (Describe)

Thermometer ID: T003

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> / ( pH > 10 for samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

<sup>(1)</sup>If NO, then contact the client before proceeding with analysis and note date/time and person contacted as well as the corrective action to in the additional comments (above) and the case narrative.

JM  
 Reviewed by (Project Manager)

7-2-20  
 Date/Time Reviewed

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH01 - 070120**  
**7/1/2020 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-01 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.1 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH02 - 070120**  
**7/1/2020 12:14:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-02 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	96.2 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH03 - 070120**  
**7/1/2020 10:32:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-03 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.3 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH04 - 070120**  
**7/1/2020 10:43:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-04 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.4 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Project: KMG - Brown 32-35

**BH05 - 070120**  
**7/1/2020 10:20:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-05 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.8 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH06 - 070120**  
**7/1/2020 11:12:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-06 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70-130			"	"		"	
<i>Surrogate: Toluene-d8</i>	101 %	70-130			"	"		"	
<i>Surrogate: 4-Bromofluorobenzene</i>	100 %	70-130			"	"		"	

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 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH07 - 070120**  
**7/1/2020 12:04:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-07 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH08 - 070120**  
**7/1/2020 10:08:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-08 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.6 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH09 - 070120**  
**7/1/2020 11:40:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-09 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U
Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"		"	
Surrogate: Toluene-d8	101 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	101 %	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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**BH10 - 070120**  
**7/1/2020 11:53:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y007007-10 (Water)**

**BTEX by EPA 8260D**

Benzene	ND	1.00	ug/L	1	B0G0107	KDK	07/01/2020	07/02/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	ND	1.00	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	108 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.1 %	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  
 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**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 B0G0107 - EPA 5030B (Water)**

**Blank (B0G0107-BLK1)**

Prepared: 07/01/2020 Analyzed: 07/02/2020

Benzene	ND	1.00	ug/L							U
Toluene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	70-130			

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Tasman Geosciences  
 6855 West 119th Avenue  
 Broomfield CO 80020

Mike Jahn  
 Project Number: 89805834  
 Project: KMG - Brown 32-35

**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 B0G0107 - EPA 5030B (Water)

**LCS (B0G0107-BS1)**

Prepared: 07/01/2020 Analyzed: 07/02/2020

Benzene	47.3	1.00	ug/L	50.0		94.7	70-130			
Toluene	45.3	1.00	"	50.0		90.6	70-130			
Ethylbenzene	45.9	1.00	"	50.0		91.8	70-130			
m,p-Xylene	93.7	2.00	"	100		93.7	70-130			
o-Xylene	45.8	1.00	"	50.0		91.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.2	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B0G0107 - EPA 5030B (Water)**

<b>Matrix Spike (B0G0107-MS1)</b>	<b>Source: Y007007-01</b>			<b>Prepared: 07/01/2020 Analyzed: 07/02/2020</b>						
Benzene	41.2	1.00	ug/L	50.0	ND	82.5	70-130			
Toluene	41.4	1.00	"	50.0	ND	82.8	70-130			
Ethylbenzene	41.3	1.00	"	50.0	ND	82.6	70-130			
m,p-Xylene	82.7	2.00	"	100	ND	82.7	70-130			
o-Xylene	40.6	1.00	"	50.0	ND	81.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.5	70-130			
Surrogate: Toluene-d8	66		"	62.5		105	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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**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 B0G0107 - EPA 5030B (Water)**

Matrix Spike Dup (B0G0107-MSD1)	Source: Y007007-01			Prepared: 07/01/2020 Analyzed: 07/02/2020						
Benzene	46.4	1.00	ug/L	50.0	ND	92.9	70-130	11.9	20	
Toluene	46.4	1.00	"	50.0	ND	92.8	70-130	11.3	20	
Ethylbenzene	45.0	1.00	"	50.0	ND	90.0	70-130	8.58	20	
m,p-Xylene	90.4	2.00	"	100	ND	90.4	70-130	8.88	20	
o-Xylene	44.9	1.00	"	50.0	ND	89.8	70-130	9.98	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		98.1	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.0	70-130			

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**Notes and Definitions**

U Sample is Non-Detect.

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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