



March 04, 2021

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - HSR - Van Schaack 4-33

Project Number - GS-15687

Attached are your analytical results for KMG - HSR - Van Schaack 4-33 received by Origins Laboratory, Inc. February 19, 2021. This project is associated with Origins project number Y102362-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Tasman Geosciences  
6855 West 119th Avenue  
Broomfield CO 80020

Mike Jahn  
Project Number: GS-15687  
Project: KMG - HSR - Van Schaack 4-33

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01 - 021921	Y102362-01	Water	February 19, 2021 12:26	02/19/2021 14:00
BH02 - 021921	Y102362-02	Water	February 19, 2021 12:56	02/19/2021 14:00
BH03 - 021921	Y102362-03	Water	February 19, 2021 12:40	02/19/2021 14:00
BH04 - 021921	Y102362-04	Water	February 19, 2021 12:50	02/19/2021 14:00
BH05 - 021921	Y102362-05	Water	February 19, 2021 12:30	02/19/2021 14:00

Per the email from Eric on 03/03/21, the results for TDS, Chloride, Sulfate, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, and Naphthalene were removed from the revised report. JEP

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Jen Pellegrini, Project Manager



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Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4102302

Client: Tasman  
 Client Project ID: KMG-HSR-Van Schaack 4-33

Checklist Completed by: Jm

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

Date/time completed: 2-14-12

Airbill #: N/A

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

Cooler Number/Temperature: 1 10.0 °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 ≤ 8°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? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analytes 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"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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: Jm (Project Manager)

Date/Time Reviewed: 2-22-12

Origins Laboratory, Inc.



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 Project: KMG - HSR - Van Schaack 4-33

**BH01 - 021921**  
**2/19/2021 12:26:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y102362-01 (Water)**

**BTEX+N+TMBs by 8260D**

Benzene	ND	1.00	ug/L	1	B1B2201	TEM	02/22/2021	02/22/2021	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	ND	1.00	"	"	"	TEM	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	105 %	70-130			"	"		"	
<i>Surrogate: Toluene-d8</i>	92.8 %	70-130			"	"		"	
<i>Surrogate: 4-Bromofluorobenzene</i>	101 %	70-130			"	"		"	

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**BH02 - 021921**  
**2/19/2021 12:56:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y102362-02 (Water)**

**BTEX+N+TMBs by 8260D**

Benzene	ND	1.00	ug/L	1	B1B2201	TEM	02/22/2021	02/22/2021	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	ND	1.00	"	"	"	TEM	"	"	U
Surrogate: 1,2-Dichloroethane-d4	107 %	70-130				"	"	"	
Surrogate: Toluene-d8	93.1 %	70-130				"	"	"	
Surrogate: 4-Bromofluorobenzene	101 %	70-130				"	"	"	

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**BH03 - 021921**  
**2/19/2021 12:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y102362-03 (Water)**

**BTEX+N+TMBs by 8260D**

Benzene	ND	1.00	ug/L	1	B1B2201	TEM	02/22/2021	02/22/2021	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	ND	1.00	"	"	"	TEM	"	"	U
Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	96.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

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**BH04 - 021921**  
**2/19/2021 12:50:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y102362-04 (Water)**

**BTEX+N+TMBs by 8260D**

Benzene	ND	1.00	ug/L	1	B1B2201	TEM	02/22/2021	02/22/2021	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	ND	1.00	"	"	"	TEM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %	70-130			"	"	"	"	

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**BH05 - 021921**  
**2/19/2021 12:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y102362-05 (Water)**

**BTEX+N+TMBs by 8260D**

Benzene	ND	1.00	ug/L	1	B1B2201	TEM	02/22/2021	02/22/2021	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	ND	1.00	"	"	"	TEM	"	"	U
<i>Surrogate: 1,2-Dichloroethane-d4</i>	104 %	70-130			"	"	"	"	
<i>Surrogate: Toluene-d8</i>	96.5 %	70-130			"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.4 %	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 B1B2201 - EPA 5030B (Water)**

**Blank (B1B2201-BLK1)**

Prepared: 02/22/2021 Analyzed: 02/22/2021

1,2,4-Trimethylbenzene	ND	1.00	ug/L							U
1,3,5-Trimethylbenzene	ND	1.00	"							U
Benzene	ND	1.00	"							U
Ethylbenzene	ND	1.00	"							U
Naphthalene	ND	4.00	"							U
Toluene	ND	1.00	"							U
Xylenes, total	ND	1.00	"							U
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5	103		70-130			
Surrogate: Toluene-d8	58		"	62.5	93.2		70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5	100		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 B1B2201 - EPA 5030B (Water)**

**LCS (B1B2201-BS1)**

Prepared: 02/22/2021 Analyzed: 02/22/2021

1,2,4-Trimethylbenzene	44.9	1.00	ug/L	50.0		89.8	70-130			
1,3,5-Trimethylbenzene	44.4	1.00	"	50.0		88.8	70-130			
Benzene	47.1	1.00	"	50.0		94.1	70-130			
Ethylbenzene	43.8	1.00	"	50.0		87.7	70-130			
m,p-Xylene	88.3	2.00	"	100		88.3	70-130			
Naphthalene	53.0	4.00	"	50.0		106	70-130			
o-Xylene	45.2	1.00	"	50.0		90.4	70-130			
Toluene	43.5	1.00	"	50.0		87.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	68		"	62.5		109	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		100	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 B1B2201 - EPA 5030B (Water)**

Matrix Spike (B1B2201-MS1)	Source: Y102357-01			Prepared: 02/22/2021 Analyzed: 02/22/2021						
1,2,4-Trimethylbenzene	60.7	1.00	ug/L	50.0	0.690	120	70-130			
1,3,5-Trimethylbenzene	63.5	1.00	"	50.0	ND	127	70-130			
Benzene	66.6	1.00	"	50.0	ND	133	70-130			QM-07
Ethylbenzene	64.2	1.00	"	50.0	ND	128	70-130			
m,p-Xylene	128	2.00	"	100	ND	128	70-130			
Naphthalene	62.8	4.00	"	50.0	ND	126	70-130			
o-Xylene	61.6	1.00	"	50.0	ND	123	70-130			
Toluene	60.1	1.00	"	50.0	ND	120	70-130			
Surrogate: 1,2-Dichloroethane-d4	72		"	62.5		116	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	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 B1B2201 - EPA 5030B (Water)**

Matrix Spike Dup (B1B2201-MSD1)	Source: Y102357-01			Prepared: 02/22/2021 Analyzed: 02/22/2021						
1,2,4-Trimethylbenzene	55.3	1.00	ug/L	50.0	0.690	109	70-130	9.19	20	
1,3,5-Trimethylbenzene	57.2	1.00	"	50.0	ND	114	70-130	10.4	20	
Benzene	57.6	1.00	"	50.0	ND	115	70-130	14.4	20	
Ethylbenzene	57.7	1.00	"	50.0	ND	115	70-130	10.7	20	
m,p-Xylene	115	2.00	"	100	ND	115	70-130	10.5	20	
Naphthalene	60.4	4.00	"	50.0	ND	121	70-130	3.89	20	
o-Xylene	56.3	1.00	"	50.0	ND	113	70-130	9.11	20	
Toluene	55.0	1.00	"	50.0	ND	110	70-130	8.77	20	
Surrogate: 1,2-Dichloroethane-d4	69		"	62.5		111	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.8	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	70-130			

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### Notes and Definitions

U Sample is Non-Detect.

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

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Jen Pellegrini, Project Manager