

November 19, 2020

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

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

Project Number - GS-9608

Attached are your analytical results for KMG - HSR - Van Schaack 4-33 received by Origins Laboratory, Inc. November 12, 2020. This project is associated with Origins project number Y011179-01.

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: GS-9608
Project: KMG - HSR - Van Schaack 4-33

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH01-11/12/20	Y011179-01	Water	November 12, 2020 10:00	11/12/2020 14:05
BH02-11/12/20	Y011179-02	Water	November 12, 2020 10:15	11/12/2020 14:05
BH03-11/12/20	Y011179-03	Water	November 12, 2020 10:20	11/12/2020 14:05
BH04-11/12/20	Y011179-04	Water	November 12, 2020 10:25	11/12/2020 14:05
BH05-11/12/20	Y011179-05	Water	November 12, 2020 10:30	11/12/2020 14:05

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Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y011179 Client: Tasman
 Client Project ID: HSR - Van Schaack
 Checklist Completed by: SGT KDK Shipped Via: HD
 Date/time completed: 11/12/20 (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, 13.8 °C 1 °C 1 °C 1 °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 ⁽¹⁾ ?		/		Same Day
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 ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/		TKDK	
Are short holding time analytes or samples with HTS due within 48 hours present ⁽¹⁾ ?			-	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		-		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)(pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			-	
Additional Comments (if any):				

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

Reviewed by (Project Manager) Jm Date/Time Reviewed 11-13-20

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BH01-11/12/20
11/12/2020 10:00:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y011179-01 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0K1210	TEM	11/12/2020	11/14/2020	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	ND	1.00	"	"	"	TEM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.6 %	70-130			"	"	"	"	

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BH02-11/12/20
11/12/2020 10:15:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y011179-02 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0K1210	TEM	11/12/2020	11/14/2020	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	ND	1.00	"	"	"	TEM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.6 %	70-130			"	"	"	"	

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BH03-11/12/20
11/12/2020 10:20:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y011179-03 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0K1210	TEM	11/12/2020	11/14/2020	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	8.03	1.00	"	"	"	TEM	"	"	

Surrogate: 1,2-Dichloroethane-d4	97.8 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.3 %	70-130			"	"	"	"	

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BH04-11/12/20
11/12/2020 10:25:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y011179-04 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0K1210	TEM	11/12/2020	11/14/2020	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	13.7	1.00	"	"	"	TEM	"	"	
Surrogate: 1,2-Dichloroethane-d4	102 %		70-130			"	"	"	
Surrogate: Toluene-d8	104 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %		70-130			"	"	"	

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BH05-11/12/20
11/12/2020 10:30:00AM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y011179-05 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0K1302	TEM	11/13/2020	11/17/2020	U
Toluene	ND	1.00	"	"	"	TEM	"	"	U
Ethylbenzene	ND	1.00	"	"	"	TEM	"	"	U
Xylenes, total	2.38	1.00	"	"	"	TEM	"	"	

Surrogate: 1,2-Dichloroethane-d4	97.3 %	70-130			"	"	"		
Surrogate: Toluene-d8	98.5 %	70-130			"	"	"		
Surrogate: 4-Bromofluorobenzene	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 B0K1210 - EPA 5030B (Water)

Blank (B0K1210-BLK1)

Prepared: 11/12/2020 Analyzed: 11/14/2020

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		100	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.7	70-130			
Surrogate: 4-Bromofluorobenzene	60		"	62.5		95.7	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 B0K1210 - EPA 5030B (Water)

LCS (B0K1210-BS1)

Prepared: 11/12/2020 Analyzed: 11/14/2020

Benzene	56.0	1.00	ug/L	50.0		112	70-130			
Toluene	57.0	1.00	"	50.0		114	70-130			
Ethylbenzene	57.3	1.00	"	50.0		115	70-130			
m,p-Xylene	117	2.00	"	100		117	70-130			
o-Xylene	59.4	1.00	"	50.0		119	70-130			
Surrogate: 1,2-Dichloroethane-d4	57		"	62.5		90.5	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.0	70-130			

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Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0K1210 - EPA 5030B (Water)

Matrix Spike (B0K1210-MS1)	Source: Y011174-01			Prepared: 11/12/2020 Analyzed: 11/14/2020						
Benzene	62.8	1.00	ug/L	50.0	ND	126	70-130			
Toluene	63.9	1.00	"	50.0	ND	128	70-130			
Ethylbenzene	63.1	1.00	"	50.0	ND	126	70-130			
m,p-Xylene	128	2.00	"	100	ND	128	70-130			
o-Xylene	63.3	1.00	"	50.0	ND	127	70-130			
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.3	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.1	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 B0K1210 - EPA 5030B (Water)

Matrix Spike Dup (B0K1210-MSD1)	Source: Y011174-01			Prepared: 11/12/2020 Analyzed: 11/14/2020						
Benzene	62.2	1.00	ug/L	50.0	ND	124	70-130	1.10	20	
Toluene	62.9	1.00	"	50.0	ND	126	70-130	1.62	20	
Ethylbenzene	61.7	1.00	"	50.0	ND	123	70-130	2.29	20	
m,p-Xylene	126	2.00	"	100	ND	126	70-130	1.54	20	
o-Xylene	62.1	1.00	"	50.0	ND	124	70-130	2.01	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		92.2	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		98.3	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 B0K1302 - EPA 5030B (Water)

Blank (B0K1302-BLK1)

Prepared: 11/13/2020 Analyzed: 11/17/2020

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	62		"	62.5	98.6		70-130			
Surrogate: Toluene-d8	62		"	62.5	98.5		70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5	103		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 B0K1302 - EPA 5030B (Water)

LCS (B0K1302-BS1)

Prepared: 11/13/2020 Analyzed: 11/17/2020

Benzene	49.3	1.00	ug/L	50.0		98.6	70-130			
Toluene	48.8	1.00	"	50.0		97.7	70-130			
Ethylbenzene	50.3	1.00	"	50.0		101	70-130			
m,p-Xylene	99.8	2.00	"	100		99.8	70-130			
o-Xylene	50.2	1.00	"	50.0		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		105	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	62.5		104	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 B0K1302 - EPA 5030B (Water)

Matrix Spike (B0K1302-MS1)	Source: Y011187-01			Prepared: 11/13/2020 Analyzed: 11/17/2020						
Benzene	47.0	1.00	ug/L	50.0	ND	94.0	70-130			
Toluene	46.8	1.00	"	50.0	ND	93.5	70-130			
Ethylbenzene	46.9	1.00	"	50.0	ND	93.9	70-130			
m,p-Xylene	94.6	2.00	"	100	ND	94.6	70-130			
o-Xylene	49.3	1.00	"	50.0	ND	98.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	65		"	62.5		104	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		102	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 B0K1302 - EPA 5030B (Water)

Matrix Spike Dup (B0K1302-MSD1)	Source: Y011187-01			Prepared: 11/13/2020 Analyzed: 11/17/2020						
Benzene	49.2	1.00	ug/L	50.0	ND	98.4	70-130	4.55	20	
Toluene	48.5	1.00	"	50.0	ND	96.9	70-130	3.57	20	
Ethylbenzene	49.2	1.00	"	50.0	ND	98.4	70-130	4.68	20	
m,p-Xylene	98.1	2.00	"	100	ND	98.1	70-130	3.67	20	
o-Xylene	51.7	1.00	"	50.0	ND	103	70-130	4.67	20	
Surrogate: 1,2-Dichloroethane-d4	64		"	62.5		103	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	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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