



June 19, 2020

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

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

Project Number - 90200403

Attached are your analytical results for KMG - HSR - Van Schaack 4-33 received by Origins Laboratory, Inc. June 12, 2020. This project is associated with Origins project number Y006238-01.

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: 90200403
Project: KMG - HSR - Van Schaack 4-33

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@11.5'	Y006238-01	Soil	June 12, 2020 13:45	06/12/2020 15:15
N01@8.5'	Y006238-02	Soil	June 12, 2020 13:47	06/12/2020 15:15
S01@8.5'	Y006238-03	Soil	June 12, 2020 13:49	06/12/2020 15:15
E01@8.5'	Y006238-04	Soil	June 12, 2020 13:51	06/12/2020 15:15
W01@8.5'	Y006238-05	Soil	June 12, 2020 13:53	06/12/2020 15:15
GW01	Y006238-06	Water	June 12, 2020 13:30	06/12/2020 15:15

The project name was updated from "KMG-HSR-Van Shaack 4-33" to "KMG-HSR-Van Schaack 4-33" per the email request from Mike Jahn on 06/15/2020. JAM

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Tasman Geosciences

6855 West 119th Avenue

Broomfield CO 80020

Mike Jahn

Project Number: 90200403

Project: KMG - HSR - Van Schaack 4-33

www.originslaboratory.com

40062238

ORIGINS
LABORATORY, INC

Client: GSH / Tasman
Address: _____
Telephone Number: _____
Email Address: mjahn@tasman-geo.com

Project Manager: Mike Jahn
Project Name: HSR - Van Schaack 4-33
Project Number: 90200403
Samples Collected By: BL

project name updated per Mike's email request on 6/15/20

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis					Sample Instructions
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air Summa #	Other	GT-2000	Drop RO	SPR	BTEX	
B01 @ 11.5'	6/12/20	1345	2	X				X				X	X	X		1
N01 @ 11.5'		1347	1						X			X	X	X		2
S01 @ 8.5'		1349	1									X	X	X		3
E01 @ 8.5'		1351	1									X	X	X		4
W01 @ 8.5'		1353	1									X	X	X		5
GWA1		1320	1					X						X		6
																7
																8
																9
																10

Relinquished By: BL Date: 6/12/20 Time: 1515
Relinquished By: _____ Date: _____ Time: _____

Received By: BL Date: 6/12/20 Time: 1515
Received By: _____ Date: _____ Time: _____

Turnaround Time: Same Day ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐

15,8 Date Results Needed

Origins Laboratory, Inc.

Jordan A. Merrill

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 7006239

Client: Tasman

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

Checklist Completed by: Dan Lee

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

Date/time completed: 6-12-20

Airbill #: NA

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

Cooler Number/Temperature: 1 15.2 °C 1 °C 1 °C (Describe) °C

Thermometer ID: 603

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		<input checked="" type="checkbox"/>		<u>Sample 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input checked="" type="checkbox"/>			<u>3H</u>
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager) [Signature]

6-12-20
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

B01@11.5'
6/12/2020 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006238-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B0F1209	KDK	06/12/2020	06/12/2020	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 56.6 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B0F1208	ZZZ	06/12/2020	06/12/2020	U
Benzene	ND	0.050	"	"	"	ZZZ	"	"	U
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.050	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.050	"	"	"	ZZZ	"	"	U
Naphthalene	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
Surrogate: Toluene-d8 115 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 109 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	1.99	me/L	1	[none]	06/16/2020	06/19/2020
Magnesium	2.76	"	"	"	"	"
Sodium	4.50	"	"	"	"	"

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Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

B01@11.5'

6/12/2020 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006238-01 (Soil)

pH in Soil by EPA 9045D

pH	8.15	pH Units	1	B0F1213	KDK	06/12/2020	06/12/2020
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SAR by 20B Saturated Paste

SAR	2.92		1	[none]		06/16/2020	06/19/2020
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.142	0.00500	mmhos/cm	1	B0F1214	KDK	06/12/2020	06/12/2020
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Project Number: 90200403
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N01@8.5'
6/12/2020 1:47:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006238-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	115	25.0	mg/kg	1	B0F1209	KDK	06/12/2020	06/12/2020	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 67.6 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	46.3	5.00	mg/kg	25	B0F1208	ZZZ	06/12/2020	06/13/2020	
Benzene	ND	0.050	"	"	"	ZZZ	"	"	U
Toluene	0.128	0.050	"	"	"	ZZZ	"	"	
Ethylbenzene	0.204	0.050	"	"	"	ZZZ	"	"	
Xylenes, total	1.64	0.050	"	"	"	ZZZ	"	"	
Naphthalene	0.270	0.200	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4 99.4 % 70-130 " " "
Surrogate: Toluene-d8 111 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 111 % 70-130 " " "

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6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

S01@8.5'
6/12/2020 1:49:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006238-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	61.9	25.0	mg/kg	1	B0F1209	KDK	06/12/2020	06/12/2020	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 67.0 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	10.2	5.00	mg/kg	25	B0F1208	ZZZ	06/12/2020	06/13/2020	
Benzene	0.053	0.050	"	"	"	ZZZ	"	"	
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	0.823	0.050	"	"	"	ZZZ	"	"	
Xylenes, total	9.08	0.050	"	"	"	ZZZ	"	"	
Naphthalene	0.400	0.200	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4 103 % 70-130 " " "
Surrogate: Toluene-d8 110 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 117 % 70-130 " " "

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Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

E01@8.5'
6/12/2020 1:51:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006238-04 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	124	25.0	mg/kg	1	B0F1209	KDK	06/12/2020	06/12/2020	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 69.6 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	63.2	50.0	mg/kg	250	B0F1208	ZZZ	06/12/2020	06/12/2020	
Benzene	0.096	0.050	"	25	"	ZZZ	"	06/13/2020	
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	0.592	0.050	"	"	"	ZZZ	"	"	
Xylenes, total	5.94	0.050	"	"	"	ZZZ	"	"	
Naphthalene	0.338	0.200	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4 98.4 % 70-130 " " "
Surrogate: Toluene-d8 115 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 113 % 70-130 " " "

Origins Laboratory, Inc.



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6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

W01@8.5'

6/12/2020 1:53:00PM

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006238-05 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	31.9	25.0	mg/kg	1	B0F1209	KDK	06/12/2020	06/12/2020	
Residual Range Organics (C28-C40)	ND	100	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl 63.8 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	144	5.00	mg/kg	25	B0F1208	ZZZ	06/12/2020	06/12/2020	
Benzene	0.246	0.050	"	"	"	ZZZ	"	"	
Toluene	ND	0.050	"	"	"	ZZZ	"	"	U
Ethylbenzene	0.661	0.050	"	"	"	ZZZ	"	"	
Xylenes, total	6.50	0.050	"	"	"	ZZZ	"	"	
Naphthalene	0.362	0.200	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4 98.2 % 70-130 " " "
Surrogate: Toluene-d8 120 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 114 % 70-130 " " "

Origins Laboratory, Inc.



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Broomfield CO 80020

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Project Number: 90200403
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GW01

6/12/2020 1:30:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y006238-06 (Water)

BTEX by EPA 8260D

Benzene	296	100	ug/L	100	B0F1201	KDK	06/12/2020	06/12/2020
Toluene	381	100	"	"	"	KDK	"	"
Ethylbenzene	762	100	"	"	"	KDK	"	"
Xylenes, total	5780	100	"	"	"	KDK	"	"

Surrogate: 1,2-Dichloroethane-d4	86.4 %	70-130			"	"	"
Surrogate: Toluene-d8	100 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	105 %	70-130			"	"	"

Origins Laboratory, Inc.



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6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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 B0F1201 - EPA 5030B (Water)

Blank (B0F1201-BLK1)

Prepared: 06/12/2020 Analyzed: 06/12/2020

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		98.8	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.3	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

Origins Laboratory, Inc.



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Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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 B0F1201 - EPA 5030B (Water)

LCS (B0F1201-BS1)

Prepared: 06/12/2020 Analyzed: 06/12/2020

Benzene	24.4	1.00	ug/L	25.0		97.4	70-130			
Toluene	24.5	1.00	"	25.0		98.0	70-130			
Ethylbenzene	26.6	1.00	"	25.0		106	70-130			
m,p-Xylene	54.0	2.00	"	50.0		108	70-130			
o-Xylene	26.5	1.00	"	25.0		106	70-130			
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.4	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.3	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 B0F1201 - EPA 5030B (Water)

Matrix Spike (B0F1201-MS1)		Source: Y006192-01			Prepared: 06/12/2020 Analyzed: 06/12/2020					
Benzene	20.3	1.00	ug/L	25.0	ND	81.2	70-130			
Toluene	21.2	1.00	"	25.0	0.120	84.3	70-130			
Ethylbenzene	23.0	1.00	"	25.0	ND	91.8	70-130			
m,p-Xylene	47.1	2.00	"	50.0	ND	94.1	70-130			
o-Xylene	23.4	1.00	"	25.0	ND	93.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	60		"	62.5		96.5	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	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 B0F1201 - EPA 5030B (Water)

Matrix Spike Dup (B0F1201-MSD1)		Source: Y006192-01			Prepared: 06/12/2020 Analyzed: 06/12/2020					
Benzene	24.8	1.00	ug/L	25.0	ND	99.2	70-130	20.0	20	
Toluene	25.8	1.00	"	25.0	0.120	103	70-130	19.6	20	
Ethylbenzene	27.9	1.00	"	25.0	ND	112	70-130	19.4	20	
m,p-Xylene	56.9	2.00	"	50.0	ND	114	70-130	18.9	20	
o-Xylene	28.2	1.00	"	25.0	ND	113	70-130	18.8	20	
Surrogate: 1,2-Dichloroethane-d4	61		"	62.5		97.8	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	65		"	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
Batch B0F1208 - EPA 5030 (soil)										
Blank (B0F1208-BLK1)					Prepared: 06/12/2020 Analyzed: 06/12/2020					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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
Batch B0F1208 - EPA 5030 (soil)										
LCS (B0F1208-BS1)					Prepared: 06/12/2020 Analyzed: 06/12/2020					
Benzene	0.050	0.002	mg/kg	0.0500		101	70-130			
Toluene	0.050	0.002	"	0.0500		100	70-130			
Ethylbenzene	0.054	0.002	"	0.0500		107	70-130			
m,p-Xylene	0.110	0.004	"	0.100		110	70-130			
o-Xylene	0.054	0.002	"	0.0500		107	70-130			
Naphthalene	0.048	0.008	"	0.0500		96.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

Origins Laboratory, Inc.



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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
Batch B0F1208 - EPA 5030 (soil)										
Matrix Spike (B0F1208-MS1)		Source: Y006204-01			Prepared: 06/12/2020 Analyzed: 06/12/2020					
Benzene	0.049	0.002	mg/kg	0.0500	ND	98.4	70-130			
Toluene	0.049	0.002	"	0.0500	ND	97.3	70-130			
Ethylbenzene	0.051	0.002	"	0.0500	ND	103	70-130			
m,p-Xylene	0.105	0.004	"	0.100	ND	105	70-130			
o-Xylene	0.051	0.002	"	0.0500	ND	102	70-130			
Naphthalene	0.048	0.008	"	0.0500	0.002	91.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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
Batch B0F1208 - EPA 5030 (soil)										
Matrix Spike Dup (B0F1208-MSD1)					Source: Y006204-01					Prepared: 06/12/2020 Analyzed: 06/12/2020
Benzene	0.050	0.002	mg/kg	0.0500	ND	100	70-130	2.01	20	
Toluene	0.050	0.002	"	0.0500	ND	100	70-130	2.76	20	
Ethylbenzene	0.053	0.002	"	0.0500	ND	106	70-130	2.96	20	
m,p-Xylene	0.108	0.004	"	0.100	ND	108	70-130	2.94	20	
o-Xylene	0.053	0.002	"	0.0500	ND	106	70-130	3.12	20	
Naphthalene	0.049	0.008	"	0.0500	0.002	93.7	70-130	2.44	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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
Batch B0F1209 - EPA 3550B										
Blank (B0F1209-BLK1)					Prepared: 06/12/2020 Analyzed: 06/12/2020					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	16		"	25.0		63.6	50-150			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1209 - EPA 3550B

LCS (B0F1209-BS1)

Prepared: 06/12/2020 Analyzed: 06/12/2020

Diesel (C10-C28)	841	50.0	mg/kg	1000		84.1	70-130			
Residual Range Organics (C28-C40)	803	200	"	1000		80.3	70-130			
Surrogate: o-Terphenyl	36		"	50.0		71.9	50-150			

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Tasman Geosciences

6855 West 119th Avenue

Broomfield CO 80020

Mike Jahn

Project Number: 90200403

Project: KMG - HSR - Van Schaack 4-33

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1209 - EPA 3550B

Matrix Spike (B0F1209-MS1)		Source: Y006204-01			Prepared: 06/12/2020 Analyzed: 06/12/2020					
Diesel (C10-C28)	775	50.0	mg/kg	1000	ND	77.5	70-130			
Residual Range Organics (C28-C40)	732	200	"	1000	ND	73.2	70-130			
Surrogate: o-Terphenyl	33		"	50.0		65.7	50-150			

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Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1209 - EPA 3550B

Matrix Spike Dup (B0F1209-MSD1)		Source: Y006204-01			Prepared: 06/12/2020 Analyzed: 06/12/2020					
Diesel (C10-C28)	863	50.0	mg/kg	1000	ND	86.3	70-130	10.9	35	
Residual Range Organics (C28-C40)	847	200	"	1000	ND	84.7	70-130	14.6	35	
Surrogate: o-Terphenyl	38		"	50.0		76.3	50-150			

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Broomfield CO 80020

Mike Jahn
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Project: KMG - HSR - Van Schaack 4-33

Extractable Petroleum Hydrocarbons by 8015D - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Classical Chemistry Parameters - Quality Control

Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1213 - NO PREP

Duplicate (B0F1213-DUP1)		Source: Y006238-01		Prepared: 06/12/2020 Analyzed: 06/12/2020						
pH	8.10		pH Units		8.15			0.615	25	

Batch B0F1214 - NO PREP

Blank (B0F1214-BLK1)		Prepared: 06/12/2020 Analyzed: 06/12/2020								
Specific Conductance (EC)	0.00240	0.00500	mmhos/cm							
Duplicate (B0F1214-DUP1)		Source: Y006238-01		Prepared: 06/12/2020 Analyzed: 06/12/2020						
Specific Conductance (EC)	0.140	0.00500	mmhos/cm		0.142			1.14	25	

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Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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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June 16, 2020

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

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

Project Number - 90200403

Attached are your analytical results for KMG - HSR - Van Schaack 4-33 received by Origins Laboratory, Inc. June 15, 2020. This project is associated with Origins project number Y006257-01.

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: 90200403

Project: KMG - HSR - Van Schaack 4-33

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
W02@8.5'	Y006257-01	Soil	June 15, 2020 13:35	06/15/2020 15:50

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.

Page 3 of 14

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1000257

Client: Tasman

Client Project ID: HSR Van Schaack 4-33

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 6/15/2020

Airbill #: N/A

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

☐ Water

☐ Other:

Cooler Number/Temperature: 1 10.2 °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⁾ ?		<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analyses or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

Reviewed by (Project Manager)

Date/Time Reviewed 6/15/20

Origins Laboratory, Inc.

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Tasman Geosciences
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Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

W02@8.5'

6/15/2020 1:35:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y006257-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	123	50.0	mg/kg	1	B0F1508	KDK	06/15/2020	06/15/2020	
Residual Range Organics (C28-C40)	ND	200	"	"	"	KDK	"	"	U

Surrogate: o-Terphenyl	58.2 %	50-150	"	"	"	"	"	"	
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GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	172	5.00	mg/kg	25	B0F1218	KDK	06/15/2020	06/15/2020	
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	0.631	0.050	"	"	"	KDK	"	"	
Xylenes, total	5.75	0.050	"	"	"	KDK	"	"	
Naphthalene	0.324	0.200	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130	"	"	"	"	"	"	
Surrogate: Toluene-d8	94.2 %	70-130	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130	"	"	"	"	"	"	

Origins Laboratory, Inc.



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Broomfield CO 80020

Mike Jahn
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Project: KMG - HSR - Van Schaack 4-33

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
Batch B0F1218 - EPA 5030 (soil)										
Blank (B0F1218-BLK1)					Prepared: 06/12/2020 Analyzed: 06/15/2020					
Gasoline Range Hydrocarbons	ND	0.200	mg/kg							U
Benzene	ND	0.002	"							U
Toluene	ND	0.002	"							U
Ethylbenzene	ND	0.002	"							U
Xylenes, total	ND	0.002	"							U
Naphthalene	ND	0.008	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		101	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
Batch B0F1218 - EPA 5030 (soil)										
LCS (B0F1218-BS1)					Prepared: 06/12/2020 Analyzed: 06/15/2020					
Benzene	0.046	0.002	mg/kg	0.0500		91.5	70-130			
Toluene	0.044	0.002	"	0.0500		87.5	70-130			
Ethylbenzene	0.047	0.002	"	0.0500		93.2	70-130			
m,p-Xylene	0.096	0.004	"	0.100		95.6	70-130			
o-Xylene	0.046	0.002	"	0.0500		92.8	70-130			
Naphthalene	0.042	0.008	"	0.0500		84.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	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 B0F1218 - EPA 5030 (soil)

Matrix Spike (B0F1218-MS1)		Source: Y006234-01			Prepared: 06/12/2020 Analyzed: 06/15/2020					
Benzene	0.047	0.002	mg/kg	0.0500	ND	94.3	70-130			
Toluene	0.045	0.002	"	0.0500	ND	90.7	70-130			
Ethylbenzene	0.048	0.002	"	0.0500	ND	97.0	70-130			
m,p-Xylene	0.099	0.004	"	0.100	ND	99.3	70-130			
o-Xylene	0.048	0.002	"	0.0500	ND	96.5	70-130			
Naphthalene	0.039	0.008	"	0.0500	0.002	75.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		104	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0F1218 - EPA 5030 (soil)										
Matrix Spike Dup (B0F1218-MSD1)					Source: Y006234-01					Prepared: 06/12/2020 Analyzed: 06/15/2020
Benzene	0.050	0.002	mg/kg	0.0500	ND	100	70-130	6.01	20	
Toluene	0.048	0.002	"	0.0500	ND	95.2	70-130	4.78	20	
Ethylbenzene	0.050	0.002	"	0.0500	ND	99.8	70-130	2.81	20	
m,p-Xylene	0.101	0.004	"	0.100	ND	101	70-130	1.60	20	
o-Xylene	0.050	0.002	"	0.0500	ND	99.5	70-130	3.06	20	
Naphthalene	0.039	0.008	"	0.0500	0.002	75.4	70-130	0.459	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B0F1508 - EPA 3580										
Blank (B0F1508-BLK1)					Prepared: 06/15/2020 Analyzed: 06/15/2020					
Diesel (C10-C28)	ND	50.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	200	"							U
Surrogate: o-Terphenyl	34		"	50.0		68.3	50-150			

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Mike Jahn
Project Number: 90200403
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Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1508 - EPA 3580

LCS (B0F1508-BS1)

Prepared: 06/15/2020 Analyzed: 06/15/2020

Diesel (C10-C28)	873	50.0	mg/kg	1000		87.3	70-130			
Residual Range Organics (C28-C40)	851	200	"	1000		85.1	70-130			
Surrogate: o-Terphenyl	39		"	50.0		78.1	50-150			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1508 - EPA 3580

Matrix Spike (B0F1508-MS1)		Source: Y006254-01			Prepared: 06/15/2020 Analyzed: 06/15/2020					
Diesel (C10-C28)	824	50.0	mg/kg	1000	ND	82.4	70-130			
Residual Range Organics (C28-C40)	780	200	"	1000	ND	78.0	70-130			
Surrogate: o-Terphenyl	34		"	50.0		67.1	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B0F1508 - EPA 3580

Matrix Spike Dup (B0F1508-MSD1)		Source: Y006254-01			Prepared: 06/15/2020 Analyzed: 06/15/2020					
Diesel (C10-C28)	878	50.0	mg/kg	1000	ND	87.8	70-130	6.40	35	
Residual Range Organics (C28-C40)	862	200	"	1000	ND	86.2	70-130	10.0	35	
Surrogate: o-Terphenyl	37		"	50.0		73.1	50-150			

Origins Laboratory, Inc.



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Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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.



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June 19, 2020

Tasman Geosciences

Mike Jahn

6855 West 119th Avenue

Broomfield CO 80020

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

Project Number - 90200403

Attached are your analytical results for KMG - HSR - Van Schaack 4-33 received by Origins Laboratory, Inc. June 16, 2020. This project is associated with Origins project number Y006285-01.

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: 90200403

Project: KMG - HSR - Van Schaack 4-33

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW02	Y006285-01	Water	June 15, 2020 13:45	06/16/2020 16:40

Origins Laboratory, Inc.



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Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

[illegible]

Origins Laboratory, Inc.

Intent

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

Origins Laboratory

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

Origins Work Order: Y006285 Sample Receipt Checklist

Client: Tasman
Client Project ID: HSR Van Schaack

Checklist Completed by: JG
Date/time completed: 6/17/2020

Shipped Via: HD
(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 15.5 °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⁾ ?		<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity) (pH < 2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH > 10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)		<input checked="" type="checkbox"/>		
Additional Comments (if any):				

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

Reviewed by (Project Manager) JM

10-18-20
Date/Time Reviewed

Origins Laboratory, Inc.

Jordan A. Merrill

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

GW02

6/15/2020 1:45:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y006285-01 (Water)

BTEX by EPA 8260D

Benzene	ND	1.00	ug/L	1	B0F1701	KDK	06/17/2020	06/18/2020	U
Toluene	ND	1.00	"	"	"	KDK	"	"	U
Ethylbenzene	ND	1.00	"	"	"	KDK	"	"	U
Xylenes, total	64.8	1.00	"	"	"	KDK	"	"	

Surrogate: 1,2-Dichloroethane-d4	85.3 %	70-130			"	"	"
Surrogate: Toluene-d8	102 %	70-130			"	"	"
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"

Origins Laboratory, Inc.



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Broomfield CO 80020

Mike Jahn
Project Number: 90200403
Project: KMG - HSR - Van Schaack 4-33

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 B0F1701 - EPA 5030B (Water)

Blank (B0F1701-BLK1)

Prepared: 06/17/2020 Analyzed: 06/17/2020

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	51		"	62.5	81.9		70-130			
Surrogate: Toluene-d8	61		"	62.5	98.0		70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5	106		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 B0F1701 - EPA 5030B (Water)

LCS (B0F1701-BS1)

Prepared: 06/17/2020 Analyzed: 06/17/2020

Benzene	59.7	1.00	ug/L	50.0		119	70-130			
Toluene	62.4	1.00	"	50.0		125	70-130			
Ethylbenzene	62.5	1.00	"	50.0		125	70-130			
m,p-Xylene	118	2.00	"	100		118	70-130			
o-Xylene	57.9	1.00	"	50.0		116	70-130			
Surrogate: 1,2-Dichloroethane-d4	51		"	62.5		81.0	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.3	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	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 B0F1701 - EPA 5030B (Water)

Matrix Spike (B0F1701-MS1)		Source: Y006282-22			Prepared: 06/17/2020 Analyzed: 06/17/2020					
Benzene	54.8	1.00	ug/L	50.0	0.670	108	70-130			
Toluene	55.9	1.00	"	50.0	ND	112	70-130			
Ethylbenzene	57.5	1.00	"	50.0	ND	115	70-130			
m,p-Xylene	108	2.00	"	100	ND	108	70-130			
o-Xylene	53.3	1.00	"	50.0	ND	107	70-130			
Surrogate: 1,2-Dichloroethane-d4	51		"	62.5		81.8	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		106	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 B0F1701 - EPA 5030B (Water)

Matrix Spike Dup (B0F1701-MSD1)		Source: Y006282-22			Prepared: 06/17/2020 Analyzed: 06/17/2020					
Benzene	53.6	1.00	ug/L	50.0	0.670	106	70-130	2.18	20	
Toluene	55.1	1.00	"	50.0	ND	110	70-130	1.53	20	
Ethylbenzene	55.3	1.00	"	50.0	ND	111	70-130	3.92	20	
m,p-Xylene	105	2.00	"	100	ND	105	70-130	3.38	20	
o-Xylene	51.6	1.00	"	50.0	ND	103	70-130	3.24	20	
Surrogate: 1,2-Dichloroethane-d4	51		"	62.5		81.5	70-130			
Surrogate: Toluene-d8	61		"	62.5		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	66		"	62.5		105	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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