



December 03, 2019

Tasman Geosciences

Bob Cornez

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - Nelson 4-35

Project Number - 2141706

Attached are your analytical results for KMG - Nelson 4-35 received by Origins Laboratory, Inc. November 21, 2019. This project is associated with Origins project number Y911382-01.

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

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@4'	Y911382-01	Soil	November 21, 2019 15:50	11/21/2019 17:36
N01@3'	Y911382-02	Soil	November 21, 2019 15:52	11/21/2019 17:36
S01@3'	Y911382-03	Soil	November 21, 2019 15:54	11/21/2019 17:36
E01@3'	Y911382-04	Soil	November 21, 2019 15:56	11/21/2019 17:36
W01@3'	Y911382-05	Soil	November 21, 2019 15:58	11/21/2019 17:36
GW01	Y911382-07	Water	November 21, 2019 16:02	11/21/2019 17:36

Origins Laboratory, Inc.



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Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

ORIGINS

LABORATORY, INC

www.originslaboratory.com

Y911382

page 1 of 1

Fax: 303.265.9645

Client:

Oxy

Address:

Project Manager:

Kelbert Sarmet

Project Name:

Nelson 4-35

Project Number:

AFF # 214706

Telephone Number:

Samples Collected By:

BL, DS



Email Address:

cora@originslab.com

Phone: 303.433.1322

Denver, CO 80211

225 Elk Place

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative				Matrix			Analysis					Sample Instructions	
				Unpreserved	HCl	HNO ₃	Other	Groundwater	Soil	Air/Surface	Other	GC/MS-N	GC/MS-O	EC	PH		SMP
1901014'	11/21/19	1550	2	X						X			X	X	X		1
N0103'		1552	1										X	X			2
S0103'		1554	1										X	X			3
E0103'		1556	1										X	X			4
W0103'		1558	1										X	X			5
B0103"	✓	1600	1	✓						✓			X	X			6
G0103"	✓	1602	3	X					X						X		7
																	8
																	9
																	10
Relinquished By: 	Date: 11/21/19	Time: 16:30															
Relinquished By: 	Date: 11/21/19	Time: 17:30															
													Date: 11/21/19	Time: 17:30	Turnaround Time: Same Day <input checked="" type="checkbox"/> 24 Hr <input type="checkbox"/>		
													Date: 11/21/19	Time: 17:30	48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/>		
													Standard <input checked="" type="checkbox"/>				

Origins Laboratory, Inc.

Jeff Pellgrini

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y911382

Client: Tasman

Client Project ID: Nelson 4-35

Checklist Completed by: JG

Shipped Via: HD

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

Date/time completed: 11/21/2019

Airbill #: N/A

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

(Describe)

Cooler Number/Temperature: 1 / 4.6 °C 1 / _____ °C 1 / _____ °C 1 / _____ °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 ⁽¹⁾ ?	<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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<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 ⁽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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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: (Signature) (Project Manager)

Date/Time Reviewed: 11/21/19

Origins Laboratory, Inc.

Jefe Pellegrini

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

B01@4'

11/21/2019 3:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y911382-01 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9K2111	TEM	11/21/2019	11/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	TEM	"	"	U

Surrogate: o-Terphenyl 89.2 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9K2108	KDK	11/21/2019	11/21/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 92.0 % 70-130 " " "
Surrogate: Toluene-d8 98.6 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 96.0 % 70-130 " " "

Metals (Saturated Paste Prep)

Calcium	3.36	me/L	1	[none]	11/25/2019	12/02/2019
Magnesium	1.47	"	"	"	"	"
Sodium	2.49	"	"	"	"	"

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Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

B01@4'

11/21/2019 3:50:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y911382-01 (Soil)

pH in Soil by EPA 9045D

pH	8.81		pH Units	1	B9K2114	OLAB	11/21/2019	11/21/2019	
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SAR by 20B Saturated Paste

SAR	1.60			1	[none]		11/25/2019	12/02/2019	
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Specific Conductance by Modified 9050A

Specific Conductance (EC)	0.0606	0.00500	mmhos/cm	1	B9K2115	KDK	11/21/2019	11/21/2019	
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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

N01@3'

11/21/2019 3:52:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y911382-02 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9K2111	TEM	11/21/2019	11/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	TEM	"	"	U

Surrogate: o-Terphenyl 84.9 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9K2108	KDK	11/21/2019	11/21/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 92.5 % 70-130 " " "
Surrogate: Toluene-d8 98.9 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 95.4 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

S01@3'

11/21/2019 3:54:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y911382-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9K2111	TEM	11/21/2019	11/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	TEM	"	"	U

Surrogate: o-Terphenyl 90.7 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9K2108	KDK	11/21/2019	11/21/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 91.7 % 70-130 " " "
Surrogate: Toluene-d8 97.5 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 95.8 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

E01@3'

11/21/2019 3:56:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y911382-04 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9K2111	TEM	11/21/2019	11/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	TEM	"	"	U

Surrogate: o-Terphenyl 86.2 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9K2108	KDK	11/21/2019	11/21/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 92.2 % 70-130 " " "
Surrogate: Toluene-d8 98.0 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 97.3 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

W01@3'

11/21/2019 3:58:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y911382-05 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B9K2111	TEM	11/21/2019	11/21/2019	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	TEM	"	"	U

Surrogate: o-Terphenyl 94.4 % 50-150 " " "

GBTEX + Naphthalene by EPA 8260D

Gasoline Range Hydrocarbons	ND	5.00	mg/kg	25	B9K2108	KDK	11/21/2019	11/21/2019	U
Benzene	ND	0.050	"	"	"	KDK	"	"	U
Toluene	ND	0.050	"	"	"	KDK	"	"	U
Ethylbenzene	ND	0.050	"	"	"	KDK	"	"	U
Xylenes, total	ND	0.050	"	"	"	KDK	"	"	U
Naphthalene	ND	0.200	"	"	"	KDK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 94.1 % 70-130 " " "
Surrogate: Toluene-d8 97.7 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 97.3 % 70-130 " " "

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

GW01

11/21/2019 4:02:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Origins Laboratory, Inc. Y911382-07 (Water)

BTEX by EPA 8260D

Benzene	ND	4.00	ug/L	4	B9K2101	ZZZ	11/21/2019	11/21/2019	U
Toluene	ND	4.00	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	4.00	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	4.00	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	95.4 %	70-130	"	"	"
Surrogate: Toluene-d8	102 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	97.4 %	70-130	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

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 B9K2101 - EPA 5030B (Water)

Blank (B9K2101-BLK1)

Prepared: 11/21/2019 Analyzed: 11/21/2019

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	59		"	62.5	95.1	70-130				
Surrogate: Toluene-d8	64		"	62.5	102	70-130				
Surrogate: 4-Bromofluorobenzene	65		"	62.5	104	70-130				

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6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

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 B9K2101 - EPA 5030B (Water)

LCS (B9K2101-BS1)

Prepared: 11/21/2019 Analyzed: 11/21/2019

Benzene	44.4	1.00	ug/L	50.0		88.8	70-130			
Toluene	41.9	1.00	"	50.0		83.8	70-130			
Ethylbenzene	45.5	1.00	"	50.0		90.9	70-130			
m,p-Xylene	90.1	2.00	"	100		90.1	70-130			
o-Xylene	43.4	1.00	"	50.0		86.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.2	70-130			
Surrogate: Toluene-d8	58		"	62.5		93.2	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		103	70-130			

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Project Number: 2141706
Project: KMG - Nelson 4-35

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 B9K2101 - EPA 5030B (Water)

Matrix Spike (B9K2101-MS1)		Source: Y911343-06			Prepared: 11/21/2019 Analyzed: 11/21/2019					
Benzene	202	1.00	ug/L	50.0	99.1	206	70-130			QM-07
Toluene	63.1	1.00	"	50.0	ND	126	70-130			
Ethylbenzene	64.8	1.00	"	50.0	0.100	129	70-130			
m,p-Xylene	130	2.00	"	100	0.290	129	70-130			
o-Xylene	67.7	1.00	"	50.0	0.100	135	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	66		"	62.5		105	70-130			
Surrogate: Toluene-d8	63		"	62.5		101	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.2	70-130			

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Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

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 B9K2101 - EPA 5030B (Water)

Matrix Spike Dup (B9K2101-MSD1)		Source: Y911343-06			Prepared: 11/21/2019 Analyzed: 11/21/2019					
Benzene	109	1.00	ug/L	50.0	99.1	20.3	70-130	59.7	20	QM-07, QR-03
Toluene	40.9	1.00	"	50.0	ND	81.7	70-130	42.7	20	QR-03
Ethylbenzene	41.3	1.00	"	50.0	0.100	82.4	70-130	44.3	20	QR-03
m,p-Xylene	81.7	2.00	"	100	0.290	81.4	70-130	45.3	20	QR-03
o-Xylene	42.9	1.00	"	50.0	0.100	85.6	70-130	44.9	20	QR-03
Surrogate: 1,2-Dichloroethane-d4	62		"	62.5		99.8	70-130			
Surrogate: Toluene-d8	64		"	62.5		102	70-130			
Surrogate: 4-Bromofluorobenzene	62		"	62.5		99.7	70-130			

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6855 West 119th Avenue
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Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

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
Batch B9K2108 - EPA 5030 (soil)										
Blank (B9K2108-BLK1)					Prepared: 11/21/2019 Analyzed: 11/21/2019					
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	0.12		"	0.125		94.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.7	70-130			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Bob Cornez
Project Number: 2141706
Project: KMG - Nelson 4-35

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
Batch B9K2108 - EPA 5030 (soil)										
LCS (B9K2108-BS1)					Prepared: 11/21/2019 Analyzed: 11/21/2019					
Benzene	0.093	0.002	mg/kg	0.100		92.6	70-130			
Toluene	0.091	0.002	"	0.100		91.3	70-130			
Ethylbenzene	0.089	0.002	"	0.100		88.5	70-130			
m,p-Xylene	0.179	0.004	"	0.200		89.3	70-130			
o-Xylene	0.089	0.002	"	0.100		88.9	70-130			
Naphthalene	0.091	0.008	"	0.100		90.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		95.6	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.7	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 B9K2108 - EPA 5030 (soil)

Matrix Spike (B9K2108-MS1)		Source: Y911371-10			Prepared: 11/21/2019 Analyzed: 11/21/2019					
Benzene	0.096	0.002	mg/kg	0.100	ND	96.1	70-130			
Toluene	0.093	0.002	"	0.100	ND	93.2	70-130			
Ethylbenzene	0.096	0.002	"	0.100	ND	96.3	70-130			
m,p-Xylene	0.191	0.004	"	0.200	ND	95.3	70-130			
o-Xylene	0.094	0.002	"	0.100	ND	93.5	70-130			
Naphthalene	0.091	0.008	"	0.100	ND	91.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		88.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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 B9K2108 - EPA 5030 (soil)

Matrix Spike Dup (B9K2108-MSD1)		Source: Y911371-10			Prepared: 11/21/2019 Analyzed: 11/21/2019					
Benzene	0.088	0.002	mg/kg	0.100	ND	88.5	70-130	8.24	20	
Toluene	0.086	0.002	"	0.100	ND	85.8	70-130	8.18	20	
Ethylbenzene	0.087	0.002	"	0.100	ND	86.6	70-130	10.5	20	
m,p-Xylene	0.172	0.004	"	0.200	ND	85.9	70-130	10.4	20	
o-Xylene	0.087	0.002	"	0.100	ND	86.8	70-130	7.46	20	
Naphthalene	0.091	0.008	"	0.100	ND	90.7	70-130	0.594	20	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		86.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.0	70-130			

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Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B9K2111 - EPA 3580										
Blank (B9K2111-BLK1)					Prepared: 11/21/2019 Analyzed: 11/21/2019					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	20		"	25.0		81.1	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
Batch B9K2111 - EPA 3580										
LCS (B9K2111-BS1)					Prepared: 11/21/2019 Analyzed: 11/21/2019					
Diesel (C10-C28)	971	50.0	mg/kg	1000		97.1	70-130			
Residual Range Organics (C28-C40)	942	200	"	1000		94.2	70-130			
Surrogate: o-Terphenyl	46		"	50.0		92.6	50-150			

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Project: KMG - Nelson 4-35

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 B9K2111 - EPA 3580

Matrix Spike (B9K2111-MS1)		Source: Y911371-10			Prepared: 11/21/2019 Analyzed: 11/21/2019					
Diesel (C10-C28)	900	50.0	mg/kg	1000	ND	90.0	70-130			
Residual Range Organics (C28-C40)	880	200	"	1000	ND	88.0	70-130			
Surrogate: o-Terphenyl	39		"	50.0		78.3	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 B9K2111 - EPA 3580

Matrix Spike Dup (B9K2111-MSD1)		Source: Y911371-10			Prepared: 11/21/2019 Analyzed: 11/21/2019					
Diesel (C10-C28)	1140	50.0	mg/kg	1000	ND	114	70-130	23.6	35	
Residual Range Organics (C28-C40)	1100	200	"	1000	ND	110	70-130	21.9	35	
Surrogate: o-Terphenyl	53		"	50.0		106	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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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 B9K2114 - NO PREP

Duplicate (B9K2114-DUP1)		Source: Y911380-01			Prepared: 11/21/2019 Analyzed: 11/21/2019					
pH	8.10		pH Units		8.22			1.47	25	

Batch B9K2115 - NO PREP

Blank (B9K2115-BLK1)		Prepared: 11/21/2019 Analyzed: 11/21/2019								
Specific Conductance (EC)	0.00260	0.00500	mmhos/cm							
Duplicate (B9K2115-DUP1)		Source: Y911380-01			Prepared: 11/21/2019 Analyzed: 11/21/2019					
Specific Conductance (EC)	0.102	0.00502	mmhos/cm		0.106			3.85	25	

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Project: KMG - Nelson 4-35

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.

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