



January 16, 2024

Tasman Geosciences

Andy Sagen

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - VOGL 5-8A

Project Number - [none]

Attached are your analytical results for KMG - VOGL 5-8A received by Origins Laboratory, Inc. December 12, 2023. This project is associated with Origins project number Y312332-01.

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

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B02@8'	Y312332-01	Soil	December 12, 2023 14:00	12/12/2023 15:55
WH-N02@6'	Y312332-02	Soil	December 12, 2023 14:02	12/12/2023 15:55
WH-S02@6'	Y312332-03	Soil	December 12, 2023 14:04	12/12/2023 15:55
WH-E02@6'	Y312332-04	Soil	December 12, 2023 14:06	12/12/2023 15:55
WH-W02@6'	Y312332-05	Soil	December 12, 2023 14:08	12/12/2023 15:55

Origins Laboratory, Inc.



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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

[illegible]

Origins Laboratory, Inc.

Byron

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4312332 Client: Tasman
Client Project ID: VOGL 5-8A

Checklist Completed by: JBH/ELH Shipped Via: HP
Date/time completed: 12/12/23 (UPS, FedEx, Hand Delivered, Pick-up, etc.)
Airbill #: N/A

Matrix(s) Received: (Check all that apply): ☒ Soil/Solid ☐ Water ☐ Other: _____
Cooler Number/Temperature: 145 °C / _____ °C / _____ °C (Describe)
Thermometer ID: 7004

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 type="checkbox"/>	<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 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 (Project Manager) JSI Date/Time Reviewed 12/12/23

Origins Laboratory, Inc.

J. Bynon

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-B02@8'

12/12/2023 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-01 (Soil)
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3L1220	ZZZ	12/12/2023	12/13/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl 109 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3L1224	HK	12/12/2023	12/13/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 90.5 % 70-130 " " "
Surrogate: Toluene-d8 94.4 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.8 % 70-130 " " "

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B3L1229	/Windows	12/12/2023	12/13/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	/Windows	"	"	U
Acenaphthene	ND	0.020	"	"	"	/Windows	"	"	U

Origins Laboratory, Inc.

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Tasman Geosciences
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Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-B02@8'

12/12/2023 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-01 (Soil)
Origins Laboratory, Inc.

PAH by EPA 8270E

Anthracene	ND	0.020	mg/kg	1	B3L1229	Nindows	12/12/2023	12/13/2023	U
Benzo (a) anthracene	ND	0.005	"	"	"	Nindows	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Chrysene	ND	0.020	"	"	"	Nindows	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Nindows	"	"	U
Fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Fluorene	ND	0.020	"	"	"	Nindows	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Naphthalene	ND	0.002	"	"	"	Nindows	"	"	U
Pyrene	ND	0.020	"	"	"	Nindows	"	"	U

Surrogate: Fluorene-d10	106 %	60-130			"	"	"
Surrogate: Anthracene-d10	96.5 %	60-130			"	"	"
Surrogate: Pyrene-d10	98.1 %	60-130			"	"	"
Surrogate: Benzo (a) pyrene-d12	101 %	60-130			"	"	"

pH in Soil by 9045D

pH	8.46	pH Units	1	B3L1417	EAL	12/14/2023	12/15/2023
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Project Number: [none]
Project: KMG - VOGL 5-8A

WH-B02@8'

12/12/2023 2:00:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-01 (Soil)

Waypoint Analytical, LLC.

Total Metals by 6020B

Arsenic	2.21	0.25	mg/Kg	5	L724146	12/21/2023	01/15/2024
Barium	58	0.25	"	"	"	"	"
Cadmium	ND	0.25	"	"	"	"	"
Copper	6.31	0.25	"	"	"	"	"
Lead	6.07	0.25	"	"	"	"	"
Selenium	0.383	0.25	"	"	"	"	"

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Project Number: [none]
Project: KMG - VOGL 5-8A

WH-N02@6'

12/12/2023 2:02:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-02 (Soil)
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3L1220	ZZZ	12/12/2023	12/13/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl 99.9 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3L1224	HK	12/12/2023	12/13/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 92.3 % 70-130 " " "
Surrogate: Toluene-d8 95.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.6 % 70-130 " " "

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B3L1229	/Windows	12/12/2023	12/13/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	/Windows	"	"	U
Acenaphthene	ND	0.020	"	"	"	/Windows	"	"	U

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Project Number: [none]
Project: KMG - VOGL 5-8A

WH-N02@6'

12/12/2023 2:02:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-02 (Soil)

Origins Laboratory, Inc.

PAH by EPA 8270E

Anthracene	ND	0.020	mg/kg	1	B3L1229	Nindows	12/12/2023	12/13/2023	U
Benzo (a) anthracene	ND	0.005	"	"	"	Nindows	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Chrysene	ND	0.020	"	"	"	Nindows	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Nindows	"	"	U
Fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Fluorene	ND	0.020	"	"	"	Nindows	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Naphthalene	ND	0.002	"	"	"	Nindows	"	"	U
Pyrene	ND	0.020	"	"	"	Nindows	"	"	U

Surrogate: Fluorene-d10	106 %	60-130	"	"	"
Surrogate: Anthracene-d10	97.2 %	60-130	"	"	"
Surrogate: Pyrene-d10	98.0 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	100 %	60-130	"	"	"

pH in Soil by 9045D

pH	8.34	pH Units	1	B3L1417	EAL	12/14/2023	12/15/2023
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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-N02@6'

12/12/2023 2:02:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-02 (Soil)

Waypoint Analytical, LLC.

Total Metals by 6020B

Arsenic	1.37	0.25	mg/Kg	5	L724146	12/21/2023	01/15/2024
Barium	104	0.25	"	"	"	"	"
Cadmium	ND	0.25	"	"	"	"	"
Copper	11.8	0.25	"	"	"	"	"
Lead	8.9	0.25	"	"	"	"	"
Selenium	0.412	0.25	"	"	"	"	"

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Broomfield CO 80020

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Project Number: [none]
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WH-S02@6'

12/12/2023 2:04:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-03 (Soil)
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3L1220	ZZZ	12/12/2023	12/13/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl 110 % 50-150 " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3L1224	HK	12/12/2023	12/13/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 93.2 % 70-130 " "
Surrogate: Toluene-d8 94.1 % 70-130 " "
Surrogate: 4-Bromofluorobenzene 99.5 % 70-130 " "

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B3L1229	/Windows	12/12/2023	12/13/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	/Windows	"	"	U
Acenaphthene	ND	0.020	"	"	"	/Windows	"	"	U

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-S02@6'

12/12/2023 2:04:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-03 (Soil)

Origins Laboratory, Inc.

PAH by EPA 8270E

Anthracene	ND	0.020	mg/kg	1	B3L1229	Nindows	12/12/2023	12/13/2023	U
Benzo (a) anthracene	ND	0.005	"	"	"	Nindows	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Chrysene	ND	0.020	"	"	"	Nindows	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Nindows	"	"	U
Fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Fluorene	ND	0.020	"	"	"	Nindows	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Naphthalene	ND	0.002	"	"	"	Nindows	"	"	U
Pyrene	ND	0.020	"	"	"	Nindows	"	"	U

Surrogate: Fluorene-d10	106 %	60-130	"	"	"
Surrogate: Anthracene-d10	95.4 %	60-130	"	"	"
Surrogate: Pyrene-d10	99.1 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	100 %	60-130	"	"	"

pH in Soil by 9045D

pH	8.41	pH Units	1	B3L1417	EAL	12/14/2023	12/15/2023
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Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-S02@6'

12/12/2023 2:04:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-03 (Soil)

Waypoint Analytical, LLC.

Total Metals by 6020B

Arsenic	1.65	0.25	mg/Kg	5	L724146	12/21/2023	01/15/2024
Barium	123	0.25	"	"	"	"	"
Cadmium	ND	0.25	"	"	"	"	"
Copper	14.3	0.25	"	"	"	"	"
Lead	9.37	0.25	"	"	"	"	"
Selenium	0.375	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-E02@6'

12/12/2023 2:06:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-04 (Soil)
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3L1220	ZZZ	12/12/2023	12/13/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl 101 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3L1224	HK	12/12/2023	12/13/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 93.9 % 70-130 " " "
Surrogate: Toluene-d8 95.8 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 99.1 % 70-130 " " "

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B3L1229	/Windows	12/12/2023	12/13/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	/Windows	"	"	U
Acenaphthene	ND	0.020	"	"	"	/Windows	"	"	U

Origins Laboratory, Inc.

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-E02@6'

12/12/2023 2:06:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-04 (Soil)

Origins Laboratory, Inc.

PAH by EPA 8270E

Anthracene	ND	0.020	mg/kg	1	B3L1229	Nindows	12/12/2023	12/13/2023	U
Benzo (a) anthracene	ND	0.005	"	"	"	Nindows	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Chrysene	ND	0.020	"	"	"	Nindows	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Nindows	"	"	U
Fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Fluorene	ND	0.020	"	"	"	Nindows	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Naphthalene	ND	0.002	"	"	"	Nindows	"	"	U
Pyrene	ND	0.020	"	"	"	Nindows	"	"	U

Surrogate: Fluorene-d10	105 %	60-130			"	"	"
Surrogate: Anthracene-d10	96.6 %	60-130			"	"	"
Surrogate: Pyrene-d10	98.5 %	60-130			"	"	"
Surrogate: Benzo (a) pyrene-d12	101 %	60-130			"	"	"

pH in Soil by 9045D

pH	8.39	pH Units	1	B3L1417	EAL	12/14/2023	12/15/2023
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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-E02@6'

12/12/2023 2:06:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-04 (Soil)

Waypoint Analytical, LLC.

Total Metals by 6020B

Arsenic	1.08	0.25	mg/Kg	5	L724146	12/21/2023	01/15/2024
Barium	114	0.25	"	"	"	"	"
Cadmium	ND	0.25	"	"	"	"	"
Copper	12	0.25	"	"	"	"	"
Lead	9.56	0.25	"	"	"	"	"
Selenium	0.382	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-W02@6'

12/12/2023 2:08:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-05 (Soil)
Origins Laboratory, Inc.

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B3L1220	ZZZ	12/12/2023	12/13/2023	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl 102 % 50-150 " " "

GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B3L1224	HK	12/12/2023	12/13/2023	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HK	"	"	U

Surrogate: 1,2-Dichloroethane-d4 97.4 % 70-130 " " "
Surrogate: Toluene-d8 93.3 % 70-130 " " "
Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B3L1229	/Windows	12/12/2023	12/13/2023	U
2-Methylnaphthalene	ND	0.002	"	"	"	/Windows	"	"	U
Acenaphthene	ND	0.020	"	"	"	/Windows	"	"	U

Origins Laboratory, Inc.

J. Bynon

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-W02@6'

12/12/2023 2:08:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-05 (Soil)

Origins Laboratory, Inc.

PAH by EPA 8270E

Anthracene	ND	0.020	mg/kg	1	B3L1229	Nindows	12/12/2023	12/13/2023	U
Benzo (a) anthracene	ND	0.005	"	"	"	Nindows	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Chrysene	ND	0.020	"	"	"	Nindows	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Nindows	"	"	U
Fluoranthene	ND	0.020	"	"	"	Nindows	"	"	U
Fluorene	ND	0.020	"	"	"	Nindows	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Nindows	"	"	U
Naphthalene	ND	0.002	"	"	"	Nindows	"	"	U
Pyrene	ND	0.020	"	"	"	Nindows	"	"	U

Surrogate: Fluorene-d10	105 %	60-130	"	"	"
Surrogate: Anthracene-d10	97.2 %	60-130	"	"	"
Surrogate: Pyrene-d10	98.8 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	98.0 %	60-130	"	"	"

pH in Soil by 9045D

pH	8.31	pH Units	1	B3L1417	EAL	12/14/2023	12/15/2023
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Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

WH-W02@6'

12/12/2023 2:08:00PM

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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Y312332-05 (Soil)

Waypoint Analytical, LLC.

Total Metals by 6020B

Arsenic	1.26	0.25	mg/Kg	5	L724146	12/21/2023	01/15/2024
Barium	108	0.25	"	"	"	"	"
Cadmium	ND	0.25	"	"	"	"	"
Copper	10.4	0.25	"	"	"	"	"
Lead	7.89	0.25	"	"	"	"	"
Selenium	0.306	0.25	"	"	"	"	"

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1220 - EPA 3550B										
Blank (B3L1220-BLK1)					Prepared: 12/12/2023 Analyzed: 12/12/2023					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	30		"	24.9		119	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1220 - EPA 3550B										
LCS (B3L1220-BS1)					Prepared: 12/12/2023 Analyzed: 12/12/2023					
Diesel (C10-C28)	927	50.0	mg/kg	1000		92.7	70-130			
Residual Range Organics (C28-C40)	960	200	"	1000		96.0	70-130			
Surrogate: o-Terphenyl	54		"	49.8		109	50-150			

Origins Laboratory, Inc.



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6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1220 - EPA 3550B

Matrix Spike (B3L1220-MS1)		Source: Y312322-01			Prepared: 12/12/2023 Analyzed: 12/12/2023					
Diesel (C10-C28)	1080	50.0	mg/kg	1000	ND	108	70-130			
Residual Range Organics (C28-C40)	1120	200	"	1000	ND	112	70-130			
Surrogate: o-Terphenyl	57		"	49.8		115	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1220 - EPA 3550B										
Matrix Spike Dup (B3L1220-MSD1)		Source: Y312322-01			Prepared: 12/12/2023 Analyzed: 12/12/2023					
Diesel (C10-C28)	936	50.0	mg/kg	1000	ND	93.6	70-130	14.0	35	
Residual Range Organics (C28-C40)	975	200	"	1000	ND	97.5	70-130	13.7	35	
Surrogate: o-Terphenyl	50		"	49.8		101	50-150			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1224 - EPA 5030 (soil)										
Blank (B3L1224-BLK1)					Prepared: 12/12/2023 Analyzed: 12/12/2023					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1224 - EPA 5030 (soil)										
LCS (B3L1224-BS1)					Prepared: 12/12/2023 Analyzed: 12/12/2023					
1,2,4-Trimethylbenzene	0.101	0.00200	mg/kg	0.100		101	70-130			
1,3,5-Trimethylbenzene	0.100	0.00200	"	0.100		100	70-130			
Benzene	0.101	0.00200	"	0.100		101	70-130			
Ethylbenzene	0.108	0.00200	"	0.100		108	70-130			
Naphthalene	0.102	0.00380	"	0.100		102	70-130			
Toluene	0.0977	0.00200	"	0.100		97.7	70-130			
o-Xylene	0.100	0.00200	"	0.100		100	70-130			
m,p-Xylene	0.201	0.00400	"	0.200		100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1224 - EPA 5030 (soil)										
Matrix Spike (B3L1224-MS1)		Source: Y312322-01			Prepared: 12/12/2023 Analyzed: 12/12/2023					
1,2,4-Trimethylbenzene	0.0953	0.00200	mg/kg	0.100	ND	95.3	70-130			
1,3,5-Trimethylbenzene	0.0942	0.00200	"	0.100	ND	94.2	70-130			
Benzene	0.102	0.00200	"	0.100	ND	102	70-130			
Ethylbenzene	0.0994	0.00200	"	0.100	ND	99.4	70-130			
Naphthalene	0.123	0.00380	"	0.100	0.00324	120	70-130			
Toluene	0.0947	0.00200	"	0.100	ND	94.7	70-130			
o-Xylene	0.0953	0.00200	"	0.100	0.00170	93.6	70-130			
m,p-Xylene	0.184	0.00400	"	0.200	ND	92.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		94.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		111	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B3L1224 - EPA 5030 (soil)										
Matrix Spike Dup (B3L1224-MSD1)		Source: Y312322-01			Prepared: 12/12/2023 Analyzed: 12/12/2023					
1,2,4-Trimethylbenzene	0.0858	0.00200	mg/kg	0.100	ND	85.8	70-130	10.5	20	
1,3,5-Trimethylbenzene	0.0841	0.00200	"	0.100	ND	84.1	70-130	11.4	20	
Benzene	0.0904	0.00200	"	0.100	ND	90.4	70-130	12.0	20	
Ethylbenzene	0.0883	0.00200	"	0.100	ND	88.3	70-130	11.9	20	
Naphthalene	0.110	0.00380	"	0.100	0.00324	106	70-130	11.3	20	
Toluene	0.0833	0.00200	"	0.100	ND	83.3	70-130	12.7	20	
o-Xylene	0.0851	0.00200	"	0.100	0.00170	83.4	70-130	11.2	20	
m,p-Xylene	0.166	0.00400	"	0.200	ND	83.1	70-130	10.2	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		107	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		113	70-130			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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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EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B3L1229 - EPA 3580

Blank (B3L1229-BLK1)

Prepared: 12/12/2023 Analyzed: 12/13/2023

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	210		ug/kg	200		106	60-130			
Surrogate: Anthracene-d10	190		"	200		97.5	60-130			
Surrogate: Pyrene-d10	190		"	200		96.8	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		98.2	60-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B3L1229 - EPA 3580

LCS (B3L1229-BS1)

Prepared: 12/12/2023 Analyzed: 12/13/2023

1-Methylnaphthalene	0.207	0.002	mg/kg	0.200		103	70-130
2-Methylnaphthalene	0.210	0.002	"	0.200		105	70-130
Acenaphthene	0.198	0.020	"	0.200		98.9	70-130
Anthracene	0.210	0.020	"	0.200		105	70-130
Benzo (a) anthracene	0.200	0.005	"	0.200		100	70-130
Benzo (a) pyrene	0.202	0.020	"	0.200		101	70-130
Benzo (b) fluoranthene	0.187	0.020	"	0.200		93.3	70-130
Benzo (g,h,i) perylene	0.207	0.020	"	0.200		104	70-130
Benzo (k) fluoranthene	0.176	0.020	"	0.200		87.9	70-130
Chrysene	0.187	0.020	"	0.200		93.4	70-130
Dibenz (a,h) anthracene	0.194	0.020	"	0.200		96.8	70-130
Fluoranthene	0.199	0.020	"	0.200		99.7	70-130
Fluorene	0.208	0.020	"	0.200		104	70-130
Indeno (1,2,3-cd) pyrene	0.216	0.020	"	0.200		108	70-130
Naphthalene	0.202	0.002	"	0.200		101	70-130
Phenanthrene	0.191	0.020	"	0.200		95.4	70-130
Pyrene	0.189	0.020	"	0.200		94.7	70-130

Surrogate: Fluorene-d10	210		ug/kg	200		105	60-130
Surrogate: Anthracene-d10	190		"	200		97.4	60-130
Surrogate: Pyrene-d10	190		"	200		96.2	60-130
Surrogate: Benzo (a) pyrene-d12	200		"	200		98.9	60-130

Matrix Spike (B3L1229-MS1)

Source: Y312332-01

Prepared: 12/12/2023 Analyzed: 12/13/2023

1-Methylnaphthalene	0.219	0.002	mg/kg	0.200	ND	109	70-130
2-Methylnaphthalene	0.213	0.002	"	0.200	ND	107	70-130
Acenaphthene	0.211	0.020	"	0.200	ND	105	70-130
Anthracene	0.220	0.020	"	0.200	ND	110	70-130

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B3L1229 - EPA 3580

Matrix Spike (B3L1229-MS1)		Source: Y312332-01			Prepared: 12/12/2023 Analyzed: 12/13/2023					
Benzo (a) anthracene	0.211	0.005	mg/kg	0.200	ND	105	70-130			
Benzo (a) pyrene	0.212	0.020	"	0.200	ND	106	70-130			
Benzo (b) fluoranthene	0.200	0.020	"	0.200	ND	100	70-130			
Benzo (g,h,i) perylene	0.214	0.020	"	0.200	ND	107	70-130			
Benzo (k) fluoranthene	0.173	0.020	"	0.200	ND	86.5	70-130			
Chrysene	0.204	0.020	"	0.200	ND	102	70-130			
Dibenz (a,h) anthracene	0.200	0.020	"	0.200	ND	100	70-130			
Fluoranthene	0.211	0.020	"	0.200	ND	106	70-130			
Fluorene	0.226	0.020	"	0.200	ND	113	70-130			
Indeno (1,2,3-cd) pyrene	0.239	0.020	"	0.200	ND	119	70-130			
Naphthalene	0.211	0.002	"	0.200	ND	105	70-130			
Phenanthrene	0.199	0.020	"	0.200	ND	99.6	70-130			
Pyrene	0.199	0.020	"	0.200	ND	99.5	70-130			
Surrogate: Fluorene-d10	210		ug/kg	200		107	60-130			
Surrogate: Anthracene-d10	190		"	200		95.7	60-130			
Surrogate: Pyrene-d10	190		"	200		95.6	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

Matrix Spike Dup (B3L1229-MSD1)		Source: Y312332-01			Prepared: 12/12/2023 Analyzed: 12/13/2023					
1-Methylnaphthalene	0.215	0.002	mg/kg	0.200	ND	108	70-130	1.56	20	
2-Methylnaphthalene	0.213	0.002	"	0.200	ND	106	70-130	0.361	20	
Acenaphthene	0.207	0.020	"	0.200	ND	104	70-130	1.53	20	
Anthracene	0.218	0.020	"	0.200	ND	109	70-130	1.05	20	
Benzo (a) anthracene	0.207	0.005	"	0.200	ND	104	70-130	1.58	20	
Benzo (a) pyrene	0.209	0.020	"	0.200	ND	105	70-130	1.33	20	
Benzo (b) fluoranthene	0.195	0.020	"	0.200	ND	97.5	70-130	2.54	20	
Benzo (g,h,i) perylene	0.218	0.020	"	0.200	ND	109	70-130	2.16	20	

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B3L1229 - EPA 3580

Matrix Spike Dup (B3L1229-MSD1)		Source: Y312332-01			Prepared: 12/12/2023 Analyzed: 12/13/2023					
Benzo (k) fluoranthene	0.173	0.020	mg/kg	0.200	ND	86.5	70-130	0.00613	20	
Chrysene	0.194	0.020	"	0.200	ND	96.8	70-130	5.30	20	
Dibenz (a,h) anthracene	0.202	0.020	"	0.200	ND	101	70-130	0.866	20	
Fluoranthene	0.220	0.020	"	0.200	ND	110	70-130	4.07	20	
Fluorene	0.220	0.020	"	0.200	ND	110	70-130	2.72	20	
Indeno (1,2,3-cd) pyrene	0.232	0.020	"	0.200	ND	116	70-130	2.92	20	
Naphthalene	0.208	0.002	"	0.200	ND	104	70-130	1.20	20	
Phenanthrene	0.205	0.020	"	0.200	ND	102	70-130	2.65	20	
Pyrene	0.196	0.020	"	0.200	ND	97.9	70-130	1.66	20	
Surrogate: Fluorene-d10	210		ug/kg	200		107	60-130			
Surrogate: Anthracene-d10	200		"	200		100	60-130			
Surrogate: Pyrene-d10	190		"	200		95.6	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.9	60-130			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Saturated Paste - 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 B3L1417 - Saturated Paste pH/EC

Duplicate (B3L1417-DUP1)		Source: Y312319-01			Prepared: 12/14/2023 Analyzed: 12/15/2023					
pH	8.12		pH Units		8.02			1.24	25	

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Total Metals by 6020B - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L724146 - 3050B										
LCS (LCS-L724146)					Prepared: 12/21/2023 Analyzed: 01/15/2024					
Lead	2.47	0.25	mg/Kg	2.5		99	80-120			
Arsenic	2.46	0.25	"	2.5		98	80-120			
Barium	5.19	0.25	"	5		104	80-120			
Copper	2.44	0.25	"	2.5		98	80-120			
Selenium	4.99	0.25	"	5		100	80-120			
Cadmium	0.497	0.25	"	0.5		99	80-120			
LRB (LRB-L724146)					Prepared: 12/21/2023 Analyzed: 01/15/2024					
Copper	ND	0.25	mg/Kg				-			
Lead	ND	0.25	"				-			
Cadmium	ND	0.25	"				-			
Barium	ND	0.25	"				-			
Arsenic	ND	0.25	"				-			
Selenium	ND	0.25	"				-			
MSD (V 91398-MSD-L724146)					Source: 91398		Prepared: 12/21/2023 Analyzed: 01/15/2024			
Cadmium	0.456	0.25	mg/Kg dry	0.466	<0.0260	98	75-125	3.6	80	
Selenium	1.49	0.25	"	4.66	0.71	17	75-125	30.1	80	*
Copper	44.3	0.25	"	2.33	50	0	75-125	13.8	80	I*
Barium	174	0.25	"	4.66	148	557	75-125	14.1	80	I*
Arsenic	0.506	0.25	"	2.33	0.091	18	75-125	17.1	80	*
Lead	8.5	0.25	"	2.33	7.81	30	75-125	4	80	I*
MS (V 91398-MS-L724146)					Source: 91398		Prepared: 12/21/2023 Analyzed: 01/15/2024			
Lead	8.85	0.25	mg/Kg dry	2.43	7.81	43	75-125			I*
Copper	50.9	0.25	"	2.43	50	37	75-125			I*
Cadmium	0.473	0.25	"	0.485	<0.0260	97	75-125			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Total Metals by 6020B - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch L724146 - 3050B

MS (V 91398-MS-L724146)

Source: 91398

Prepared: 12/21/2023 Analyzed: 01/15/2024

Barium	151	0.25	mg/Kg dry	4.85	148	62	75-125			I*
Arsenic	0.601	0.25	"	2.43	0.091	21	75-125			*
Selenium	2.02	0.25	"	4.85	0.71	27	75-125			*

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Notes and Definitions

U Sample is Non-Detect.

I* [Undefined]

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported at a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

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.



April 08, 2024

Tasman Geosciences

Andy Sagen

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - VOGL 5-8A

Project Number - [none]

Attached are your analytical results for KMG - VOGL 5-8A received by Origins Laboratory, Inc. March 07, 2024. This project is associated with Origins project number Y403205-01.

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

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL-B03@4'	Y403205-01	Soil	March 7, 2024 15:08	03/07/2024 16:25
FL-B16@4'	Y403205-02	Soil	March 7, 2024 15:26	03/07/2024 16:25

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4403205

Client: Tasman

Client Project ID: VOGL 5-8A

Checklist Completed by: JTB/LSA

Shipped Via: FW

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

Date/time completed: 3/7/12

Airbill #: N/A

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

Cooler Number/Temperature: 1, 4 °C 1 °C 1 °C (Describe) _____ °C

Thermometer ID: 7004

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 type="checkbox"/>	<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 type="checkbox"/>	<input type="checkbox"/>	<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): LSA

3/7/12
Date/Time Reviewed

Origins Laboratory, Inc.

J. Bynon

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B03@4'

3/7/2024 3:08:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.174	0.0990	mg/L	1	B4C0813	03/08/2024	03/12/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4C0740	03/07/2024	03/08/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	109 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4C0741	03/07/2024	03/08/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B03@4'

3/7/2024 3:08:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	100 %	70-130				B4C07 41	03/07/2024	03/08/2024	
Surrogate: 4-Bromofluorobenzene	94.1 %	70-130				"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	0.813	0.499	meq/L	10	[CALC]	03/09/2024	03/11/2024	
Magnesium	ND	0.823	"	"	"	"	"	
Sodium	3.17	0.435	"	"	"	"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4C0739	03/07/2024	03/07/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	U

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B03@4'

3/7/2024 3:08:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-01 (Soil)

PAH by EPA 8270E

Fluorene	ND	0.020	mg/kg	1	B4C0739	03/07/2024	03/07/2024	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	U
Naphthalene	ND	0.002	"	"	"	"	"	U
Pyrene	ND	0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	99.1 %	60-130	"	"	"
Surrogate: Anthracene-d10	92.3 %	60-130	"	"	"
Surrogate: Pyrene-d10	103 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	105 %	60-130	"	"	"

pH in Soil by 9045D

pH	8.08	pH Units	1	B4C0913	03/09/2024	03/10/2024
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SAR by 20B Saturated Paste

SAR	3.63	0.0100	SAR	1	B4C0903	03/09/2024	03/11/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.81	0.00500	mmhos/cm	1	B4C0913	03/09/2024	03/10/2024
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B03@4'

3/7/2024 3:08:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-01 (Soil)

Table 915 metals by EPA 6020B

Arsenic	3.07	0.280	mg/kg	10	B4C0745	03/07/2024	03/17/2024
Barium	68.8	9.66	"	"	"	"	"
Cadmium	0.117	0.0966	"	"	"	"	"
Copper	ND	9.66	"	"	"	"	"
Lead	7.00	0.966	"	"	"	"	"
Nickel	8.63	0.966	"	"	"	"	"
Selenium	ND	0.251	"	"	"	"	"
Silver	ND	0.0966	"	"	"	"	"
Zinc	ND	35.8	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.248	0.509	mg/Kg	1	L742378	03/07/2024	04/03/2024
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Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B16@4'

3/7/2024 3:26:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-02 (Soil)

Boron (DTPA Sorbitol)

Boron	0.122	0.0991	mg/L	1	B4C0813	03/08/2024	03/12/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4C0740	03/07/2024	03/08/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	103 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4C0741	03/07/2024	03/08/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B16@4'

3/7/2024 3:26:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-02 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	103 %	70-130				B4C07 41	03/07/2024	03/08/2024	
Surrogate: 4-Bromofluorobenzene	90.9 %	70-130				"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	1.06	0.499	meq/L	10	[CALC]		03/09/2024	03/11/2024	
Magnesium	ND	0.823	"	"	"		"	"	
Sodium	0.823	0.435	"	"	"		"	"	

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4C0739	03/07/2024	03/07/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	U

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B16@4'

3/7/2024 3:26:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-02 (Soil)

PAH by EPA 8270E

Fluorene	ND	0.020	mg/kg	1	B4C0739	03/07/2024	03/07/2024	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	U
Naphthalene	ND	0.002	"	"	"	"	"	U
Pyrene	ND	0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	95.4 %	60-130	"	"	"
Surrogate: Anthracene-d10	93.8 %	60-130	"	"	"
Surrogate: Pyrene-d10	104 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	111 %	60-130	"	"	"

pH in Soil by 9045D

pH	7.78	pH Units	1	B4C0913	03/09/2024	03/10/2024
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SAR by 20B Saturated Paste

SAR	0.914	0.0100	SAR	1	B4C0903	03/09/2024	03/11/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.318	0.00500	mmhos/cm	1	B4C0913	03/09/2024	03/10/2024
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Table 915 metals by EPA 6020B

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6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

FL-B16@4'

3/7/2024 3:26:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403205-02 (Soil)

Table 915 metals by EPA 6020B

Arsenic	2.00	0.244	mg/kg	10	B4C0745	03/07/2024	03/17/2024
Barium	52.6	8.42	"	"	"	"	"
Cadmium	0.127	0.0842	"	"	"	"	"
Copper	14.9	8.42	"	"	"	"	"
Lead	5.99	0.842	"	"	"	"	"
Nickel	7.28	0.842	"	"	"	"	"
Selenium	ND	0.219	"	"	"	"	"
Silver	ND	0.0842	"	"	"	"	"
Zinc	34.9	31.1	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L742378	03/07/2024	04/03/2024
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6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0740 - EPA 3550B										
Blank (B4C0740-BLK1)					Prepared: 03/07/2024 Analyzed: 03/07/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	32		"	24.9		127	50-150			

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Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0740 - EPA 3550B										
LCS (B4C0740-BS1)					Prepared: 03/07/2024 Analyzed: 03/07/2024					
Diesel (C10-C28)	1100	50.0	mg/kg	1000		110	70-130			
Residual Range Organics (C28-C40)	1220	200	"	1000		122	70-130			
Surrogate: o-Terphenyl	60		"	49.8		121	50-150			

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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0740 - EPA 3550B

Matrix Spike (B4C0740-MS1)		Source: Y403198-23			Prepared: 03/07/2024 Analyzed: 03/07/2024					
Diesel (C10-C28)	1080	50.0	mg/kg	1000	ND	108	70-130			
Residual Range Organics (C28-C40)	1230	200	"	1000	ND	123	70-130			
Surrogate: o-Terphenyl	55		"	49.8		110	50-150			

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Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0740 - EPA 3550B										
Matrix Spike Dup (B4C0740-MSD1)		Source: Y403198-23			Prepared: 03/07/2024 Analyzed: 03/07/2024					
Diesel (C10-C28)	923	50.0	mg/kg	1000	ND	92.3	70-130	15.7	35	
Residual Range Organics (C28-C40)	1060	200	"	1000	ND	106	70-130	15.0	35	
Surrogate: o-Terphenyl	47		"	49.8		94.9	50-150			

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Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0741 - EPA 5030 (soil)										
Blank (B4C0741-BLK1)					Prepared: 03/07/2024 Analyzed: 03/07/2024					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		95.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.1	70-130			

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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0741 - EPA 5030 (soil)										
LCS (B4C0741-BS1)					Prepared: 03/07/2024 Analyzed: 03/07/2024					
1,2,4-Trimethylbenzene	0.100	0.00200	mg/kg	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Benzene	0.107	0.00200	"	0.100		107	70-130			
Ethylbenzene	0.102	0.00200	"	0.100		102	70-130			
Naphthalene	0.118	0.00380	"	0.100		118	70-130			
Toluene	0.103	0.00200	"	0.100		103	70-130			
o-Xylene	0.0959	0.00200	"	0.100		95.9	70-130			
m,p-Xylene	0.204	0.00400	"	0.200		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		94.8	70-130			

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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0741 - EPA 5030 (soil)

Matrix Spike (B4C0741-MS1)		Source: Y403198-23			Prepared: 03/07/2024 Analyzed: 03/07/2024					
1,2,4-Trimethylbenzene	0.0952	0.00200	mg/kg	0.100	0.0423	52.9	70-130			QM-07
1,3,5-Trimethylbenzene	0.0880	0.00200	"	0.100	0.0122	75.8	70-130			
Benzene	0.0950	0.00200	"	0.100	ND	95.0	70-130			
Ethylbenzene	0.0894	0.00200	"	0.100	0.00458	84.8	70-130			
Naphthalene	0.110	0.00380	"	0.100	0.00492	105	70-130			
Toluene	0.0886	0.00200	"	0.100	ND	88.6	70-130			
o-Xylene	0.0763	0.00200	"	0.100	ND	76.3	70-130			
m,p-Xylene	0.169	0.00400	"	0.200	0.0176	75.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		109	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.7	70-130			

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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0741 - EPA 5030 (soil)										
Matrix Spike Dup (B4C0741-MSD1)		Source: Y403198-23			Prepared: 03/07/2024 Analyzed: 03/07/2024					
1,2,4-Trimethylbenzene	0.0920	0.00200	mg/kg	0.100	0.0423	49.7	70-130	3.44	20	QM-07
1,3,5-Trimethylbenzene	0.0899	0.00200	"	0.100	0.0122	77.7	70-130	2.16	20	
Benzene	0.0964	0.00200	"	0.100	ND	96.4	70-130	1.46	20	
Ethylbenzene	0.0898	0.00200	"	0.100	0.00458	85.2	70-130	0.491	20	
Naphthalene	0.110	0.00380	"	0.100	0.00492	105	70-130	0.454	20	
Toluene	0.0896	0.00200	"	0.100	ND	89.6	70-130	1.08	20	
o-Xylene	0.0779	0.00200	"	0.100	ND	77.9	70-130	2.15	20	
m,p-Xylene	0.173	0.00400	"	0.200	0.0176	77.9	70-130	2.32	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		93.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.2	70-130			

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6855 West 119th Avenue
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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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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Metals by EPA 6000/7000 Series Methods - 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 B4C0745 - EPA 3050B

Blank (B4C0745-BLK1)

Prepared: 03/07/2024 Analyzed: 03/17/2024

Arsenic	ND	0.290	mg/kg
Barium	ND	10.0	"
Cadmium	ND	0.100	"
Copper	ND	10.0	"
Lead	ND	1.00	"
Nickel	ND	1.00	"
Selenium	ND	0.260	"
Silver	ND	0.100	"
Zinc	ND	37.0	"

LCS (B4C0745-BS1)

Prepared: 03/07/2024 Analyzed: 03/17/2024

Arsenic	5.06	0.290	mg/kg	5.00	101	80-120
Barium	518	10.0	"	500	104	80-120
Cadmium	5.42	0.100	"	5.00	108	80-120
Copper	51.8	10.0	"	50.0	104	80-120
Lead	4.90	1.00	"	5.00	98.1	80-120
Nickel	5.19	1.00	"	5.00	104	80-120
Selenium	10.1	0.260	"	9.50	107	80-120
Silver	5.37	0.100	"	5.00	107	80-120
Zinc	54.2	37.0	"	50.0	108	80-120

Matrix Spike (B4C0745-MS1)

Source: Y403183-02

Prepared: 03/07/2024 Analyzed: 03/17/2024

Origins Laboratory, Inc.



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Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Metals by EPA 6000/7000 Series Methods - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0745 - EPA 3050B										
Matrix Spike (B4C0745-MS1)			Source: Y403183-02		Prepared: 03/07/2024 Analyzed: 03/17/2024					
Arsenic	6.66	0.249	mg/kg	4.29	1.56	119	75-125			
Barium	602	8.58	"	429	107	115	75-125			
Cadmium	4.80	0.0858	"	4.29	0.0683	110	75-125			
Copper	50.6	8.58	"	42.9	4.50	108	75-125			
Lead	9.40	0.858	"	4.29	4.98	103	75-125			
Nickel	8.65	0.858	"	4.29	3.57	118	75-125			
Selenium	8.95	0.223	"	8.15	0.0804	109	75-125			
Silver	4.72	0.0858	"	4.29	0.0467	109	75-125			
Zinc	68.3	31.7	"	42.9	20.1	112	75-125			
Matrix Spike Dup (B4C0745-MSD1)			Source: Y403183-02		Prepared: 03/07/2024 Analyzed: 03/17/2024					
Arsenic	7.08	0.283	mg/kg	4.88	1.56	113	75-125	6.04	20	
Barium	612	9.76	"	488	107	103	75-125	1.55	20	
Cadmium	5.36	0.0976	"	4.88	0.0683	109	75-125	11.2	20	
Copper	55.8	9.76	"	48.8	4.50	105	75-125	9.78	20	
Lead	9.97	0.976	"	4.88	4.98	102	75-125	5.89	20	
Nickel	8.79	0.976	"	4.88	3.57	107	75-125	1.62	20	
Selenium	10.2	0.254	"	9.27	0.0804	109	75-125	13.1	20	
Silver	5.32	0.0976	"	4.88	0.0467	108	75-125	11.9	20	
Zinc	73.4	36.1	"	48.8	20.1	109	75-125	7.25	20	

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6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C0739 - EPA 3580

Blank (B4C0739-BLK1)

Prepared: 03/07/2024 Analyzed: 03/07/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	200		ug/kg	200		97.7	60-130			
Surrogate: Anthracene-d10	200		"	200		99.6	60-130			
Surrogate: Pyrene-d10	200		"	200		98.6	60-130			
Surrogate: Benzo (a) pyrene-d12	180		"	200		92.4	60-130			

LCS (B4C0739-BS1)

Prepared: 03/07/2024 Analyzed: 03/07/2024

1-Methylnaphthalene	0.167	0.002	mg/kg	0.200		83.5	70-130			
2-Methylnaphthalene	0.162	0.002	"	0.200		81.0	70-130			
Acenaphthene	0.183	0.020	"	0.200		91.7	70-130			
Anthracene	0.190	0.020	"	0.200		94.9	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C0739 - EPA 3580

LCS (B4C0739-BS1)

Prepared: 03/07/2024 Analyzed: 03/07/2024

Benzo (a) anthracene	0.171	0.005	mg/kg	0.200		85.6	70-130
Benzo (a) pyrene	0.189	0.020	"	0.200		94.6	70-130
Benzo (b) fluoranthene	0.158	0.020	"	0.200		78.9	70-130
Benzo (g,h,i) perylene	0.163	0.020	"	0.200		81.7	70-130
Benzo (k) fluoranthene	0.161	0.020	"	0.200		80.7	70-130
Chrysene	0.203	0.020	"	0.200		102	70-130
Dibenz (a,h) anthracene	0.189	0.020	"	0.200		94.5	70-130
Fluoranthene	0.196	0.020	"	0.200		97.9	70-130
Fluorene	0.166	0.020	"	0.200		83.1	70-130
Indeno (1,2,3-cd) pyrene	0.161	0.020	"	0.200		80.6	70-130
Naphthalene	0.173	0.002	"	0.200		86.6	70-130
Phenanthrene	0.173	0.020	"	0.200		86.4	70-130
Pyrene	0.193	0.020	"	0.200		96.3	70-130
Surrogate: Fluorene-d10	190		ug/kg	200		92.5	60-130
Surrogate: Anthracene-d10	190		"	200		96.8	60-130
Surrogate: Pyrene-d10	210		"	200		107	60-130
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130

Matrix Spike (B4C0739-MS1)

Source: Y403201-01

Prepared: 03/07/2024 Analyzed: 03/07/2024

1-Methylnaphthalene	0.167	0.002	mg/kg	0.200	ND	83.4	70-130
2-Methylnaphthalene	0.171	0.002	"	0.200	ND	85.5	70-130
Acenaphthene	0.179	0.020	"	0.200	0.0005	89.0	70-130
Anthracene	0.194	0.020	"	0.200	ND	97.0	70-130
Benzo (a) anthracene	0.163	0.005	"	0.200	0.004	79.6	70-130
Benzo (a) pyrene	0.199	0.020	"	0.200	0.006	96.6	70-130
Benzo (b) fluoranthene	0.187	0.020	"	0.200	0.002	92.4	70-130
Benzo (g,h,i) perylene	0.162	0.020	"	0.200	0.004	78.9	70-130

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C0739 - EPA 3580

Matrix Spike (B4C0739-MS1)		Source: Y403201-01			Prepared: 03/07/2024 Analyzed: 03/07/2024					
Benzo (k) fluoranthene	0.156	0.020	mg/kg	0.200	0.002	77.1	70-130			
Chrysene	0.182	0.020	"	0.200	0.004	89.1	70-130			
Dibenz (a,h) anthracene	0.192	0.020	"	0.200	ND	96.1	70-130			
Fluoranthene	0.171	0.020	"	0.200	0.003	84.0	70-130			
Fluorene	0.179	0.020	"	0.200	0.0005	89.4	70-130			
Indeno (1,2,3-cd) pyrene	0.188	0.020	"	0.200	0.002	93.0	70-130			
Naphthalene	0.181	0.002	"	0.200	ND	90.6	70-130			
Phenanthrene	0.187	0.020	"	0.200	0.0008	92.9	70-130			
Pyrene	0.195	0.020	"	0.200	0.005	95.1	70-130			
Surrogate: Fluorene-d10	190		ug/kg	200		95.0	60-130			
Surrogate: Anthracene-d10	200		"	200		98.5	60-130			
Surrogate: Pyrene-d10	170		"	200		85.4	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.8	60-130			

Matrix Spike Dup (B4C0739-MSD1)		Source: Y403201-01			Prepared: 03/07/2024 Analyzed: 03/07/2024					
1-Methylnaphthalene	0.170	0.002	mg/kg	0.200	ND	84.9	70-130	1.73	20	
2-Methylnaphthalene	0.167	0.002	"	0.200	ND	83.6	70-130	2.19	20	
Acenaphthene	0.179	0.020	"	0.200	0.0005	89.4	70-130	0.414	20	
Anthracene	0.176	0.020	"	0.200	ND	88.1	70-130	9.60	20	
Benzo (a) anthracene	0.179	0.005	"	0.200	0.004	87.5	70-130	9.25	20	
Benzo (a) pyrene	0.190	0.020	"	0.200	0.006	92.3	70-130	4.42	20	
Benzo (b) fluoranthene	0.176	0.020	"	0.200	0.002	86.9	70-130	6.11	20	
Benzo (g,h,i) perylene	0.170	0.020	"	0.200	0.004	82.9	70-130	4.79	20	
Benzo (k) fluoranthene	0.166	0.020	"	0.200	0.002	82.1	70-130	6.21	20	
Chrysene	0.174	0.020	"	0.200	0.004	84.9	70-130	4.65	20	
Dibenz (a,h) anthracene	0.217	0.020	"	0.200	ND	108	70-130	11.9	20	
Fluoranthene	0.167	0.020	"	0.200	0.003	81.9	70-130	2.47	20	

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C0739 - EPA 3580

Matrix Spike Dup (B4C0739-MSD1)		Source: Y403201-01			Prepared: 03/07/2024 Analyzed: 03/07/2024					
Fluorene	0.174	0.020	mg/kg	0.200	0.0005	86.8	70-130	2.96	20	
Indeno (1,2,3-cd) pyrene	0.173	0.020	"	0.200	0.002	85.2	70-130	8.62	20	
Naphthalene	0.179	0.002	"	0.200	ND	89.6	70-130	1.13	20	
Phenanthrene	0.184	0.020	"	0.200	0.0008	91.7	70-130	1.28	20	
Pyrene	0.168	0.020	"	0.200	0.005	81.4	70-130	15.1	20	
Surrogate: Fluorene-d10	190		ug/kg	200		95.6	60-130			
Surrogate: Anthracene-d10	190		"	200		96.5	60-130			
Surrogate: Pyrene-d10	170		"	200		83.1	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		100	60-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 B4C0813 - DTPA Sorbitol Preparation

Blank (B4C0813-BLK1)

Prepared: 03/08/2024 Analyzed: 03/12/2024

Boron ND 0.100 mg/L

Duplicate (B4C0813-DUP1)

Source: Y403198-12

Prepared: 03/08/2024 Analyzed: 03/12/2024

Boron 0.0599 0.102 mg/L 0.0592 1.19 50

Batch B4C0903 - Saturated Paste Metals

Blank (B4C0903-BLK1)

Prepared: 03/09/2024 Analyzed: 03/11/2024

SAR ND 0.0100 SAR
Calcium PPM ND 10.0 mg/L
Magnesium PPM ND 10.0 "
Sodium PPM ND 10.0 "

Duplicate (B4C0903-DUP1)

Source: Y403194-01

Prepared: 03/09/2024 Analyzed: 03/11/2024

Calcium PPM 24.3 10.0 mg/L 22.1 9.43 50
SAR ND 0.0100 SAR 1.44 200
Magnesium PPM 6.22 10.0 mg/L 6.03 3.10 50
Sodium PPM 31.7 10.0 " 29.7 6.74 50

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C0913 - Saturated Paste pH/EC										
Blank (B4C0913-BLK1)					Prepared: 03/09/2024 Analyzed: 03/10/2024					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B4C0913-DUP1)					Source: Y403194-01 Prepared: 03/09/2024 Analyzed: 03/10/2024					
Specific Conductance (EC)	0.456	0.00500	mmhos/cm		0.393			14.9	25	
pH	8.27		pH Units		8.31			0.483	25	

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

Total Metals by 7196A - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L742378 -										
DUP (L 91044-DUP)	Source: 91044				Prepared: Analyzed: 04/03/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500	-		0	20	
MS (L 91044-MS)	Source: 91044				Prepared: Analyzed: 04/03/2024					
Chromium, Hexavalent	36.2	2.5	mg/Kg	38.9	< 0.244	93	75-125			
LCS (LCS)					Prepared: Analyzed: 04/03/2024					
Chromium, Hexavalent	6.41	0.5	mg/Kg	8		80	75-125			
LRB (LRB)					Prepared: Analyzed: 04/03/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - VOGL 5-8A

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 on a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

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.



April 16, 2024

Tasman Geosciences

Andy Sagen

6855 West 119th Avenue

Broomfield CO 80020

Project Name - KMG - Vogl 5-8A FL

Project Number - [none]

Attached are your analytical results for KMG - Vogl 5-8A FL received by Origins Laboratory, Inc. March 12, 2024. This project is associated with Origins project number Y403325-01.

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

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL-B26@4'	Y403325-01	Soil	March 12, 2024 11:00	03/12/2024 13:10
FL-B30@4'	Y403325-02	Soil	March 12, 2024 11:10	03/12/2024 13:10

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: Y403325

Client: Tasman

Client Project ID: Vogl 5-8A FL

Checklist Completed by: EHS

Shipped Via: HO

Date/time completed: 3/12/24

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

Airbill #: N/A

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

Cooler Number/Temperature: 1,4 °C 1 °C 1 °C (Describe) 1 °C

Thermometer ID: T004

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"/>			
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.

[Signature]
Reviewed by (Project Manager)

3/12/24
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B26@4'

3/12/2024 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-01 (Soil)

Boron (DTPA Sorbitol)

Boron	0.189	0.0995	mg/L	1	B4C1315	03/13/2024	03/19/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4C1228	03/12/2024	03/12/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	99.9 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4C1234	03/12/2024	03/13/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130	"	"	"
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Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B26@4'

3/12/2024 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-01 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	99.8 %	70-130	B4C12 34	03/12/2024	03/13/2024
Surrogate: 4-Bromofluorobenzene	97.8 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	0.725	0.499	meq/L	10	[CALC]	03/13/2024	03/14/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	2.45	0.435	"	"	"	"	"

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4C1233	03/12/2024	03/12/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	U

Origins Laboratory, Inc.



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B26@4'

3/12/2024 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-01 (Soil)

PAH by EPA 8270E

Fluorene	ND	0.020	mg/kg	1	B4C1233	03/12/2024	03/12/2024	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	U
Naphthalene	ND	0.002	"	"	"	"	"	U
Pyrene	ND	0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	95.2 %	60-130	"	"	"
Surrogate: Anthracene-d10	98.6 %	60-130	"	"	"
Surrogate: Pyrene-d10	101 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	97.6 %	60-130	"	"	"

pH in Soil by 9045D

pH	8.16	pH Units	1	B4C1322	03/13/2024	03/14/2024
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SAR by 20B Saturated Paste

SAR	3.26	0.0100	SAR	1	B4C1308	03/13/2024	03/14/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.378	0.00500	mmhos/cm	1	B4C1322	03/13/2024	03/14/2024
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Table 915 metals by EPA 6020B

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B26@4'

3/12/2024 11:00:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-01 (Soil)

Table 915 metals by EPA 6020B

Arsenic	2.18	0.261	mg/kg	10	B4C1239	03/12/2024	03/23/2024
Barium	45.8	9.00	"	"	"	"	"
Cadmium	ND	0.0900	"	"	"	"	"
Copper	ND	9.00	"	"	"	"	"
Lead	4.96	0.900	"	"	"	"	"
Nickel	7.78	0.900	"	"	"	"	"
Selenium	ND	0.234	"	"	"	"	"
Silver	ND	0.0900	"	"	"	"	"
Zinc	ND	33.3	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L743340	03/12/2024	04/10/2024
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Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B30@4'

3/12/2024 11:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-02 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.0994	mg/L	1	B4C1315	03/13/2024	03/19/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4C1228	03/12/2024	03/12/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: o-Terphenyl	109 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4C1234	03/12/2024	03/13/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	U
Benzene	ND	0.00200	"	"	"	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	"	"	U
Toluene	ND	0.00200	"	"	"	"	"	U
Xylenes, total	ND	0.00200	"	"	"	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	
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Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B30@4'

3/12/2024 11:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-02 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	99.4 %	70-130	B4C12 34	03/12/2024	03/13/2024
Surrogate: 4-Bromofluorobenzene	99.2 %	70-130	"	"	"

Metals by Saturated Paste by EPA 6010

Calcium	0.589	0.499	meq/L	10	[CALC]	03/13/2024	03/14/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	0.877	0.435	"	"	"	"	"

PAH by EPA 8270E

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4C1233	03/12/2024	03/12/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	U
Acenaphthene	ND	0.020	"	"	"	"	"	U
Anthracene	ND	0.020	"	"	"	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	U
Chrysene	ND	0.020	"	"	"	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	U
Fluoranthene	ND	0.020	"	"	"	"	"	U

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B30@4'

3/12/2024 11:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-02 (Soil)

PAH by EPA 8270E

Fluorene	ND	0.020	mg/kg	1	B4C1233	03/12/2024	03/12/2024	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	"	"	U
Naphthalene	ND	0.002	"	"	"	"	"	U
Pyrene	ND	0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	106 %	60-130	"	"	"
Surrogate: Anthracene-d10	100 %	60-130	"	"	"
Surrogate: Pyrene-d10	96.9 %	60-130	"	"	"
Surrogate: Benzo (a) pyrene-d12	99.3 %	60-130	"	"	"

pH in Soil by 9045D

pH	7.57	pH Units	1	B4C1322	03/13/2024	03/14/2024
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SAR by 20B Saturated Paste

SAR	1.31	0.0100	SAR	1	B4C1308	03/13/2024	03/14/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.204	0.00500	mmhos/cm	1	B4C1322	03/13/2024	03/14/2024
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Table 915 metals by EPA 6020B

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

FL-B30@4'

3/12/2024 11:10:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory, Inc.
Y403325-02 (Soil)

Table 915 metals by EPA 6020B

Arsenic	1.66	0.268	mg/kg	10	B4C1239	03/12/2024	03/23/2024
Barium	51.1	9.24	"	"	"	"	"
Cadmium	ND	0.0924	"	"	"	"	"
Copper	ND	9.24	"	"	"	"	"
Lead	5.35	0.924	"	"	"	"	"
Nickel	7.58	0.924	"	"	"	"	"
Selenium	ND	0.240	"	"	"	"	"
Silver	ND	0.0924	"	"	"	"	"
Zinc	ND	34.2	"	"	"	"	"

Total Metals by 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L743342	03/12/2024	04/10/2024
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Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1228 - EPA 3550B										
Blank (B4C1228-BLK1)					Prepared: 03/12/2024 Analyzed: 03/12/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	32		"	24.9		129	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1228 - EPA 3550B										
LCS (B4C1228-BS1)					Prepared: 03/12/2024 Analyzed: 03/13/2024					
Diesel (C10-C28)	999	50.0	mg/kg	1000		99.9	70-130			
Residual Range Organics (C28-C40)	1150	200	"	1000		115	70-130			
Surrogate: o-Terphenyl	51		"	49.8		102	50-150			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1228 - EPA 3550B										
Matrix Spike (B4C1228-MS1)		Source: Y403320-01			Prepared: 03/12/2024 Analyzed: 03/12/2024					
Diesel (C10-C28)	1290	50.0	mg/kg	1000	373	91.3	70-130			
Residual Range Organics (C28-C40)	1240	200	"	1000	ND	124	70-130			
Surrogate: o-Terphenyl	57		"	49.8		115	50-150			

Origins Laboratory, Inc.



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6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1228 - EPA 3550B										
Matrix Spike Dup (B4C1228-MSD1)			Source: Y403320-01			Prepared: 03/12/2024 Analyzed: 03/12/2024				
Diesel (C10-C28)	1250	50.0	mg/kg	1000	373	87.7	70-130	2.84	35	
Residual Range Organics (C28-C40)	1170	200	"	1000	ND	117	70-130	6.21	35	
Surrogate: o-Terphenyl	61		"	49.8		122	50-150			

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6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1234 - EPA 5030 (soil)										
Blank (B4C1234-BLK1)					Prepared: 03/12/2024 Analyzed: 03/12/2024					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		89.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1234 - EPA 5030 (soil)										
LCS (B4C1234-BS1)					Prepared: 03/12/2024 Analyzed: 03/12/2024					
1,2,4-Trimethylbenzene	0.107	0.00200	mg/kg	0.100		107	70-130			
1,3,5-Trimethylbenzene	0.109	0.00200	"	0.100		109	70-130			
Benzene	0.101	0.00200	"	0.100		101	70-130			
Ethylbenzene	0.110	0.00200	"	0.100		110	70-130			
Naphthalene	0.115	0.00380	"	0.100		115	70-130			
Toluene	0.109	0.00200	"	0.100		109	70-130			
o-Xylene	0.101	0.00200	"	0.100		101	70-130			
m,p-Xylene	0.218	0.00400	"	0.200		109	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.2	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.5	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1234 - EPA 5030 (soil)										
Matrix Spike (B4C1234-MS1)		Source: Y403321-01			Prepared: 03/12/2024 Analyzed: 03/12/2024					
1,2,4-Trimethylbenzene	0.108	0.00200	mg/kg	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.110	0.00200	"	0.100	ND	110	70-130			
Benzene	0.100	0.00200	"	0.100	ND	100	70-130			
Ethylbenzene	0.112	0.00200	"	0.100	ND	112	70-130			
Naphthalene	0.0995	0.00380	"	0.100	ND	99.5	70-130			
Toluene	0.106	0.00200	"	0.100	ND	106	70-130			
o-Xylene	0.104	0.00200	"	0.100	ND	104	70-130			
m,p-Xylene	0.222	0.00400	"	0.200	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.2	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1234 - EPA 5030 (soil)										
Matrix Spike Dup (B4C1234-MSD1)		Source: Y403321-01			Prepared: 03/12/2024 Analyzed: 03/12/2024					
1,2,4-Trimethylbenzene	0.102	0.00200	mg/kg	0.100	ND	102	70-130	5.41	20	
1,3,5-Trimethylbenzene	0.105	0.00200	"	0.100	ND	105	70-130	5.02	20	
Benzene	0.0978	0.00200	"	0.100	ND	97.8	70-130	2.34	20	
Ethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130	4.94	20	
Naphthalene	0.100	0.00380	"	0.100	ND	100	70-130	0.681	20	
Toluene	0.102	0.00200	"	0.100	ND	102	70-130	4.47	20	
o-Xylene	0.0992	0.00200	"	0.100	ND	99.2	70-130	4.44	20	
m,p-Xylene	0.212	0.00400	"	0.200	ND	106	70-130	4.95	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		92.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.2	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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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Metals by EPA 6000/7000 Series Methods - 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 B4C1239 - EPA 3050B

Blank (B4C1239-BLK1)

Prepared: 03/12/2024 Analyzed: 03/23/2024

Arsenic	ND	0.290	mg/kg
Barium	ND	10.0	"
Cadmium	ND	0.100	"
Copper	ND	10.0	"
Lead	ND	1.00	"
Nickel	ND	1.00	"
Selenium	ND	0.260	"
Silver	ND	0.100	"
Zinc	ND	37.0	"

LCS (B4C1239-BS1)

Prepared: 03/12/2024 Analyzed: 03/23/2024

Arsenic	5.56	0.290	mg/kg	5.00	111	80-120
Barium	517	10.0	"	500	103	80-120
Cadmium	5.34	0.100	"	5.00	107	80-120
Copper	58.3	10.0	"	50.0	117	80-120
Lead	5.15	1.00	"	5.00	103	80-120
Nickel	5.43	1.00	"	5.00	109	80-120
Selenium	9.92	0.260	"	9.50	104	80-120
Silver	5.73	0.100	"	5.00	115	80-120
Zinc	52.3	37.0	"	50.0	105	80-120

Matrix Spike (B4C1239-MS1)

Source: Y403323-01

Prepared: 03/12/2024 Analyzed: 03/23/2024

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

Metals by EPA 6000/7000 Series Methods - Quality Control
Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C1239 - EPA 3050B										
Matrix Spike (B4C1239-MS1)		Source: Y403323-01			Prepared: 03/12/2024 Analyzed: 03/23/2024					
Arsenic	6.49	0.254	mg/kg	4.39	1.84	106	75-125			
Barium	495	8.77	"	439	50.7	101	75-125			
Cadmium	4.60	0.0877	"	4.39	0.0939	103	75-125			
Copper	57.4	8.77	"	43.9	7.93	113	75-125			
Lead	10.2	0.877	"	4.39	5.75	101	75-125			
Nickel	12.4	0.877	"	4.39	7.52	111	75-125			
Selenium	8.12	0.228	"	8.33	0.136	95.8	75-125			
Silver	4.81	0.0877	"	4.39	0.0275	109	75-125			
Zinc	68.7	32.5	"	43.9	24.9	99.9	75-125			
Matrix Spike Dup (B4C1239-MSD1)		Source: Y403323-01			Prepared: 03/12/2024 Analyzed: 03/23/2024					
Arsenic	6.38	0.251	mg/kg	4.33	1.84	105	75-125	1.71	20	
Barium	477	8.66	"	433	50.7	98.5	75-125	3.57	20	
Cadmium	4.59	0.0866	"	4.33	0.0939	104	75-125	0.170	20	
Copper	57.9	8.66	"	43.3	7.93	115	75-125	0.822	20	
Lead	10.2	0.866	"	4.33	5.75	103	75-125	0.539	20	
Nickel	12.3	0.866	"	4.33	7.52	110	75-125	0.654	20	
Selenium	8.20	0.225	"	8.23	0.136	98.0	75-125	0.921	20	
Silver	4.85	0.0866	"	4.33	0.0275	111	75-125	0.768	20	
Zinc	68.1	32.0	"	43.3	24.9	99.8	75-125	0.934	20	

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C1233 - EPA 3580

Blank (B4C1233-BLK1)

Prepared: 03/12/2024 Analyzed: 03/12/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	200		ug/kg	200		99.7	60-130			
Surrogate: Anthracene-d10	200		"	200		99.9	60-130			
Surrogate: Pyrene-d10	210		"	200		104	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130			

LCS (B4C1233-BS1)

Prepared: 03/12/2024 Analyzed: 03/12/2024

1-Methylnaphthalene	0.172	0.002	mg/kg	0.200		86.2	70-130			
2-Methylnaphthalene	0.171	0.002	"	0.200		85.4	70-130			
Acenaphthene	0.176	0.020	"	0.200		88.1	70-130			
Anthracene	0.181	0.020	"	0.200		90.4	70-130			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C1233 - EPA 3580

LCS (B4C1233-BS1)

Prepared: 03/12/2024 Analyzed: 03/12/2024

Benzo (a) anthracene	0.176	0.005	mg/kg	0.200		87.8	70-130
Benzo (a) pyrene	0.172	0.020	"	0.200		86.0	70-130
Benzo (b) fluoranthene	0.182	0.020	"	0.200		91.1	70-130
Benzo (g,h,i) perylene	0.171	0.020	"	0.200		85.3	70-130
Benzo (k) fluoranthene	0.167	0.020	"	0.200		83.5	70-130
Chrysene	0.174	0.020	"	0.200		87.0	70-130
Dibenz (a,h) anthracene	0.175	0.020	"	0.200		87.6	70-130
Fluoranthene	0.163	0.020	"	0.200		81.7	70-130
Fluorene	0.177	0.020	"	0.200		88.6	70-130
Indeno (1,2,3-cd) pyrene	0.179	0.020	"	0.200		89.5	70-130
Naphthalene	0.178	0.002	"	0.200		88.9	70-130
Phenanthrene	0.174	0.020	"	0.200		87.2	70-130
Pyrene	0.174	0.020	"	0.200		87.0	70-130
Surrogate: Fluorene-d10	200		ug/kg	200		98.5	60-130
Surrogate: Anthracene-d10	200		"	200		99.8	60-130
Surrogate: Pyrene-d10	200		"	200		99.3	60-130
Surrogate: Benzo (a) pyrene-d12	210		"	200		107	60-130

Matrix Spike (B4C1233-MS1)

Source: Y403323-01

Prepared: 03/12/2024 Analyzed: 03/12/2024

1-Methylnaphthalene	0.177	0.002	mg/kg	0.200	ND	88.3	70-130
2-Methylnaphthalene	0.173	0.002	"	0.200	ND	86.6	70-130
Acenaphthene	0.176	0.020	"	0.200	ND	88.0	70-130
Anthracene	0.167	0.020	"	0.200	0.0008	83.1	70-130
Benzo (a) anthracene	0.176	0.005	"	0.200	0.001	87.1	70-130
Benzo (a) pyrene	0.175	0.020	"	0.200	0.003	86.2	70-130
Benzo (b) fluoranthene	0.172	0.020	"	0.200	ND	85.9	70-130
Benzo (g,h,i) perylene	0.159	0.020	"	0.200	0.0004	79.4	70-130

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C1233 - EPA 3580

Matrix Spike (B4C1233-MS1)		Source: Y403323-01			Prepared: 03/12/2024 Analyzed: 03/12/2024					
Benzo (k) fluoranthene	0.158	0.020	mg/kg	0.200	0.001	78.6	70-130			
Chrysene	0.178	0.020	"	0.200	0.0003	88.7	70-130			
Dibenz (a,h) anthracene	0.181	0.020	"	0.200	ND	90.5	70-130			
Fluoranthene	0.187	0.020	"	0.200	ND	93.7	70-130			
Fluorene	0.179	0.020	"	0.200	0.0004	89.3	70-130			
Indeno (1,2,3-cd) pyrene	0.181	0.020	"	0.200	ND	90.5	70-130			
Naphthalene	0.179	0.002	"	0.200	ND	89.5	70-130			
Phenanthrene	0.176	0.020	"	0.200	ND	88.1	70-130			
Pyrene	0.195	0.020	"	0.200	ND	97.4	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	190		"	200		97.5	60-130			
Surrogate: Pyrene-d10	220		"	200		110	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		103	60-130			

Matrix Spike Dup (B4C1233-MSD1)		Source: Y403323-01			Prepared: 03/12/2024 Analyzed: 03/12/2024					
1-Methylnaphthalene	0.179	0.002	mg/kg	0.200	ND	89.6	70-130	1.37	20	
2-Methylnaphthalene	0.177	0.002	"	0.200	ND	88.5	70-130	2.17	20	
Acenaphthene	0.177	0.020	"	0.200	ND	88.3	70-130	0.361	20	
Anthracene	0.192	0.020	"	0.200	0.0008	95.8	70-130	14.1	20	
Benzo (a) anthracene	0.177	0.005	"	0.200	0.001	87.9	70-130	0.887	20	
Benzo (a) pyrene	0.172	0.020	"	0.200	0.003	84.7	70-130	1.64	20	
Benzo (b) fluoranthene	0.184	0.020	"	0.200	ND	92.2	70-130	7.09	20	
Benzo (g,h,i) perylene	0.176	0.020	"	0.200	0.0004	87.8	70-130	10.0	20	
Benzo (k) fluoranthene	0.188	0.020	"	0.200	0.001	93.6	70-130	17.4	20	
Chrysene	0.187	0.020	"	0.200	0.0003	93.3	70-130	5.05	20	
Dibenz (a,h) anthracene	0.196	0.020	"	0.200	ND	97.8	70-130	7.77	20	
Fluoranthene	0.178	0.020	"	0.200	ND	88.8	70-130	5.30	20	

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Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

EPA 8270E (SW846) - Semivolatile Organic Compounds - 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 B4C1233 - EPA 3580

Matrix Spike Dup (B4C1233-MSD1)		Source: Y403323-01			Prepared: 03/12/2024 Analyzed: 03/12/2024					
Fluorene	0.182	0.020	mg/kg	0.200	0.0004	90.9	70-130	1.70	20	
Indeno (1,2,3-cd) pyrene	0.187	0.020	"	0.200	ND	93.4	70-130	3.17	20	
Naphthalene	0.181	0.002	"	0.200	ND	90.7	70-130	1.29	20	
Phenanthrene	0.177	0.020	"	0.200	ND	88.7	70-130	0.741	20	
Pyrene	0.190	0.020	"	0.200	ND	95.0	70-130	2.48	20	
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	200		"	200		98.3	60-130			
Surrogate: Pyrene-d10	220		"	200		109	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130			

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Tasman Geosciences
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Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

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 B4C1308 - Saturated Paste Metals

Blank (B4C1308-BLK1)

Prepared: 03/13/2024 Analyzed: 03/14/2024

SAR	ND	0.0100	SAR
Calcium PPM	ND	10.0	mg/L
Magnesium PPM	ND	10.0	"
Sodium PPM	ND	10.0	"

Duplicate (B4C1308-DUP1)

Source: Y403323-01

Prepared: 03/13/2024 Analyzed: 03/14/2024

Calcium PPM	12.8	10.0	mg/L	13.3	4.45	50
SAR	ND	0.0100	SAR	0.323		200
Magnesium PPM	3.78	10.0	mg/L	4.09	7.88	50
Sodium PPM	5.12	10.0	"	5.26	2.70	50

Batch B4C1315 - DTPA Sorbitol Preparation

Blank (B4C1315-BLK1)

Prepared: 03/13/2024 Analyzed: 03/19/2024

Boron	ND	0.100	mg/L
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Duplicate (B4C1315-DUP1)

Source: Y403323-01

Prepared: 03/13/2024 Analyzed: 03/19/2024

Boron	0.190	0.0988	mg/L	0.140	30.2	50
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Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

Saturated Paste - Quality Control Origins Laboratory, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4C1322 - Saturated Paste pH/EC										
Blank (B4C1322-BLK1)					Prepared: 03/13/2024 Analyzed: 03/14/2024					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B4C1322-DUP1)					Source: Y403323-01 Prepared: 03/13/2024 Analyzed: 03/14/2024					
Specific Conductance (EC)	0.238	0.00500	mmhos/cm		0.238			0.0841	25	
pH	7.01		pH Units		7.12			1.56	25	

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

Total Metals by 7196A - Quality Control
Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L743342 -										
DUP (L 93023-DUP)	Source: 93023				Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
MS (L 93023-MS)	Source: 93023				Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	28	2.5	mg/Kg	38.6	< 0.244	73	75-125			*
LCS (LCS)					Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	6.76	0.5	mg/Kg	8		85	75-125			
LRB (LRB)					Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

Origins Laboratory, Inc.



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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

Total Metals by 7196A - Quality Control Waypoint Analytical, LLC.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L743340 -										
DUP (L 93009-DUP)	Source: 93009				Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500	-		0	20	
MS (L 93009-MS)	Source: 93009				Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	35.4	2.5	mg/Kg	39.4	< 0.244	90	75-125			
LCS (LCS)					Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	6.68	0.5	mg/Kg	8		84	75-125			
LRB (LRB)					Prepared: Analyzed: 04/10/2024					
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

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Tasman Geosciences
6855 West 119th Avenue
Broomfield CO 80020

Andy Sagen
Project Number: [none]
Project: KMG - Vogl 5-8A FL

Notes and Definitions

U Sample is Non-Detect.

* QC Failure

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

Calculated results may use J-flag data (instead of reported "ND") as part of calculation to provide a more accurate result.

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