



Quandary Consultants

October 14, 2024

Mike Dinkel

2252 Emerson St.

Denver

CO

80205

**Project Name - KMG - Goodin 15N 15N 16N
16N-B6HZ**

Project Number - [none]

Attached are your analytical results for KMG - Goodin 15N 15N 16N 16N-B6HZ received by Origins Laboratory September 23, 2024. This project is associated with Origins project number E409682-01.

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
303.433.1322
projectmanager@originslab.com



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

Quandary Consultants
 2252 Emerson St.
 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01B@4'	E409682-01	Soil	September 23, 2024 12:46	09/23/2024 17:29
SS01N@3'	E409682-02	Soil	September 23, 2024 12:47	09/23/2024 17:29
SS01S@3'	E409682-03	Soil	September 23, 2024 12:48	09/23/2024 17:29
SS01E@3'	E409682-04	Soil	September 23, 2024 12:49	09/23/2024 17:29
SS01W@3'	E409682-05	Soil	September 23, 2024 12:50	09/23/2024 17:29
BG01@3"	E409682-06	Soil	September 23, 2024 12:51	09/23/2024 17:29
BG02@3"	E409682-07	Soil	September 23, 2024 12:52	09/23/2024 17:29
BG03@3"	E409682-08	Soil	September 23, 2024 12:53	09/23/2024 17:29
BG04@3"	E409682-09	Soil	September 23, 2024 12:54	09/23/2024 17:29

Origins Laboratory



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ORIGINS LABORATORY

Quandary Consultants
 2252 Emerson St.
 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Page 1 of 1

ORIGINS LABORATORY INC
 Client: Lead: MCGEE OIL & GAS OUSTHOPE, LP
 Address: 501 N. DIVISION ST. RAITTENVILLE, CO, 80651

Project Manager: Mike Dinkel
 Project Name: Goodin 15N 15N 16N B6HZ
 Project Number: [blank]

Key: W= Water CW= Groundwater SW= Surface Water WW= Waste Water L= Liquid

Collected By: JH
 Invoice Billing Info: EAT WILKINSON

Telephone Number: 785.681.7388 SAMPLES@QUANDARYCONSULTANTS.COM
 Email Address: MCDINKEL@QUANDARYCONSULTANTS.COM

S=Soil | SC=Solid | O=Oil | A=Air | G=Gas | UWP=Umpres | MCL= Hydrochloric | HNO3=Nitric | H2SO4=Sulfuric | NaOH=Sodium Hydroxide

#	Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix	Preservatives	Analysis										Comments			
							Nitrite	TPH	1-methyl	2-methyl	benzene	toluene	styrene	phenol	arsenic	barium		915 Inorganics		
1	SSP1B04	9/25/24	1246	3	S	NA	X	X	X	X	X	X	X	X	X	X	X	X	X	add Nickel & lead to all
2	SSP1N03'		1247				X	X	X	X	X	X	X	X	X	X	X	X	X	Samples per client email
3	SSP1S03'		1241				X	X	X	X	X	X	X	X	X	X	X	X	X	10/14 AG
4	SSP1E03'		1249				X	X	X	X	X	X	X	X	X	X	X	X	X	
5	SSP1W03'		1250				X	X	X	X	X	X	X	X	X	X	X	X	X	
6	SSP103'		1251				X	X	X	X	X	X	X	X	X	X	X	X	X	
7	SSP203'		1252				X	X	X	X	X	X	X	X	X	X	X	X	X	
8	SSP303'		1253				X	X	X	X	X	X	X	X	X	X	X	X	X	
9	SSP403'		1254				X	X	X	X	X	X	X	X	X	X	X	X	X	
10																				

Relinquished By: [Signature] Date: 9/25/24 Time: 1729
 Relinquished By: TPB Date: 9/23/24 Time: 1719

Temp Received: 17°C Received On Ice? Yes No

Origins Laboratory

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Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: E409682 Client: Quandary
 Client Project ID: Goodin
 Checklist Completed by: WS / WS Shipped Via: _____
 Date/time completed: 9/23/24 (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, 11.7 °C / _____ °C / _____ °C (Describe)
 Thermometer ID: T005

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?		/		
Is there ice present (document if blue ice is used)	/			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		/		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		/		
Were all samples received intact ⁽¹⁾ ?	/			
Was adequate sample volume provided ⁽¹⁾ ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		/		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	/			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	/			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	/			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	/			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analysis in order to insure sample integrity)/(pH <2 for samples preserved with HNO ₃ , HCl, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			/	
Additional Comments (if any):				

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

Reviewed by (Project Manager) WS Date/Time Reviewed 9/23/24

Origins Laboratory



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Quandary Consultants
2252 Emerson St.
Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01B@4'

9/23/2024 12:46:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-01 (Soil)**

DRO/ORO by EPA 8015D

Diesel (C10-C28)	74.9	25.0	mg/kg	1	B412348	09/23/2024	09/23/2024	
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	72.6 %	50-150			"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B412349	09/23/2024	09/23/2024	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	1.54	0.200	"	"	"	"	"	

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

PAH by EPA 8270E extracted via 3580A

Origins Laboratory



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SS01B@4'

9/23/2024 12:46:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-01 (Soil)**

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	0.049		0.002	mg/kg	1	B412347	09/23/2024	09/23/2024	
2-Methylnaphthalene	0.034		0.002	"	"	"	"	"	
Acenaphthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Fluorene	0.024		0.020	"	"	"	"	"	
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	113 %		60-130			"	"	"	
Surrogate: Anthracene-d10	117 %		60-130			"	"	"	
Surrogate: Pyrene-d10	90.2 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	95.5 %		60-130			"	"	"	

Table 915 metals by EPA 6020B

Arsenic	2.58		0.270	mg/kg	10	B412350	09/23/2024	09/24/2024	
Barium	93.8		9.30	"	"	"	"	"	
Lead	6.05		0.930	"	"	"	"	"	
Nickel	6.62		0.930	"	"	"	"	"	

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 Project Number: [none]
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SS01N@3'

9/23/2024 12:47:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
 E409682-02 (Soil)**

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B412348	09/23/2024	09/23/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

<i>Surrogate: o-Terphenyl</i>	73.5 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B412349	09/23/2024	09/23/2024	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

<i>Surrogate: 1,2-Dichloroethane-d4</i>	101 %		70-130			"	"	"	
<i>Surrogate: Toluene-d8</i>	98.7 %		70-130			"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>	103 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

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Mike Dinkel
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 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01N@3'

9/23/2024 12:47:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-02 (Soil)

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B412347	09/23/2024	09/23/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Fluorene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	109 %		60-130			"	"	"	
Surrogate: Anthracene-d10	101 %		60-130			"	"	"	
Surrogate: Pyrene-d10	93.6 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	104 %		60-130			"	"	"	

Table 915 metals by EPA 6020B

Arsenic	4.18		0.262	mg/kg	10	B412350	09/23/2024	09/24/2024	
Barium	127		9.04	"	"	"	"	"	
Lead	8.48		0.904	"	"	"	"	"	
Nickel	9.97		0.904	"	"	"	"	"	

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Quandary Consultants
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 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01S@3'

9/23/2024 12:48:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-03 (Soil)

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B412348	09/23/2024	09/23/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	70.3 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B412349	09/23/2024	09/23/2024	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	99.2 %		70-130			"	"	"	
Surrogate: Toluene-d8	96.6 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	104 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

Origins Laboratory



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 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01S@3'

9/23/2024 12:48:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-03 (Soil)

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B412347	09/23/2024	09/23/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Fluorene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	109 %		60-130			"	"	"	
Surrogate: Anthracene-d10	109 %		60-130			"	"	"	
Surrogate: Pyrene-d10	91.5 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	104 %		60-130			"	"	"	

Table 915 metals by EPA 6020B

Arsenic	2.27		0.282	mg/kg	10	B412350	09/23/2024	09/24/2024	
Barium	82.3		9.74	"	"	"	"	"	
Lead	6.04		0.974	"	"	"	"	"	
Nickel	7.34		0.974	"	"	"	"	"	

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Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01E@3'

9/23/2024 12:49:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-04 (Soil)**

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B412348	09/23/2024	09/23/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	70.2 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B412349	09/23/2024	09/23/2024	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	99.1 %		70-130			"	"	"	
Surrogate: Toluene-d8	99.1 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

Origins Laboratory



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 2252 Emerson St.
 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01E@3'

9/23/2024 12:49:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-04 (Soil)

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B412347	09/23/2024	09/23/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Fluorene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	101 %		60-130			"	"	"	
Surrogate: Anthracene-d10	99.1 %		60-130			"	"	"	
Surrogate: Pyrene-d10	96.6 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	97.0 %		60-130			"	"	"	

Table 915 metals by EPA 6020B

Arsenic	2.05		0.271	mg/kg	10	B412350	09/23/2024	09/24/2024	
Barium	71.8		9.35	"	"	"	"	"	
Lead	5.64		0.935	"	"	"	"	"	
Nickel	6.01		0.935	"	"	"	"	"	

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Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01W@3'

9/23/2024 12:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-05 (Soil)**

DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B412348	09/23/2024	09/23/2024	U
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	U

Surrogate: <i>o</i> -Terphenyl	72.7 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B412349	09/23/2024	09/23/2024	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	100 %		70-130			"	"	"	
Surrogate: Toluene-d8	97.4 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	103 %		70-130			"	"	"	

PAH by EPA 8270E extracted via 3580A

Origins Laboratory



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 2252 Emerson St.
 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

SS01W@3'

9/23/2024 12:50:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-05 (Soil)

PAH by EPA 8270E extracted via 3580A

1-Methylnaphthalene	ND		0.002	mg/kg	1	B412347	09/23/2024	09/23/2024	U
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	U
Acenaphthene	ND		0.020	"	"	"	"	"	U
Chrysene	ND		0.020	"	"	"	"	"	U
Fluorene	ND		0.020	"	"	"	"	"	U
Naphthalene	ND		0.002	"	"	"	"	"	U
Pyrene	ND		0.020	"	"	"	"	"	U

Surrogate: Fluorene-d10	104 %		60-130			"	"	"	
Surrogate: Anthracene-d10	103 %		60-130			"	"	"	
Surrogate: Pyrene-d10	90.0 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	93.8 %		60-130			"	"	"	

Table 915 metals by EPA 6020B

Arsenic	2.99		0.270	mg/kg	10	B412350	09/23/2024	09/24/2024	
Barium	101		9.32	"	"	"	"	"	
Lead	7.17		0.932	"	"	"	"	"	
Nickel	8.37		0.932	"	"	"	"	"	

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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG01@3"

9/23/2024 12:51:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-06 (Soil)

Boron (DTPA Sorbitol)

Boron	0.339	0.101	mg/L	1	B412407	09/24/2024	09/25/2024
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Metals by Saturated Paste by EPA 6010

Calcium	3.90	0.499	meq/L	10	[CALC]	09/24/2024	09/25/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	7.84		pH Units	1	B412411	09/24/2024	09/25/2024
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SAR by 20B Saturated Paste

SAR	0.0551	0.0100	SAR	1	B412409	09/24/2024	09/25/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.493	0.00500	mmhos/cm	1	B412411	09/24/2024	09/25/2024
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Table 915 metals by EPA 6020B

Arsenic	3.78	0.279	mg/kg	10	B412350	09/23/2024	09/24/2024
Barium	10300	9.62	"	"	"	"	"
Cadmium	0.769	0.0962	"	"	"	"	"
Copper	11.5	9.62	"	"	"	"	"

Origins Laboratory



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Mike Dinkel
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Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG01@3"

9/23/2024 12:51:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-06 (Soil)**

Table 915 metals by EPA 6020B

Lead	7.35		0.962	mg/kg	10	B412350	09/23/2024	09/24/2024	
Nickel	11.4		0.962	"	"	"	"	"	
Selenium	1.15		0.250	"	"	"	"	"	
Silver	ND		0.0962	"	"	"	"	"	
Zinc	56.3		35.6	"	"	"	"	"	

Total Metals 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L775080	09/23/2024	09/27/2024	
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Mike Dinkel
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 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG02@3"

9/23/2024 12:52:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-07 (Soil)

Boron (DTPA Sorbitol)

Boron	0.436		0.101	mg/L	1	B412407	09/24/2024	09/25/2024	
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Metals by Saturated Paste by EPA 6010

Calcium	4.02		0.499	meq/L	10	[CALC]	09/24/2024	09/25/2024	
Magnesium	1.08		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

pH in Soil by 9045D

pH	7.90			pH Units	1	B412411	09/24/2024	09/25/2024	
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SAR by 20B Saturated Paste

SAR	0.0937		0.0100	SAR	1	B412409	09/24/2024	09/25/2024	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.745		0.00500	mmhos/cm	1	B412411	09/24/2024	09/25/2024	
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Table 915 metals by EPA 6020B

Arsenic	3.43		0.281	mg/kg	10	B412350	09/23/2024	09/24/2024	
Barium	10100		9.70	"	"	"	"	"	
Cadmium	0.671		0.0970	"	"	"	"	"	
Copper	11.2		9.70	"	"	"	"	"	

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Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG02@3"

9/23/2024 12:52:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-07 (Soil)**

Table 915 metals by EPA 6020B

Lead	7.01		0.970	mg/kg	10	B412350	09/23/2024	09/24/2024	
Nickel	9.56		0.970	"	"	"	"	"	
Selenium	1.15		0.252	"	"	"	"	"	
Silver	ND		0.0970	"	"	"	"	"	
Zinc	57.3		35.9	"	"	"	"	"	

Total Metals 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L775080	09/23/2024	09/27/2024	
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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG03@3"

9/23/2024 12:53:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-08 (Soil)

Boron (DTPA Sorbitol)

Boron	0.280	0.0990	mg/L	1	B4I2407	09/24/2024	09/25/2024
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Metals by Saturated Paste by EPA 6010

Calcium	8.76	0.499	meq/L	10	[CALC]	09/24/2024	09/25/2024
Magnesium	0.883	0.823	"	"	"	"	"
Sodium	0.621	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	7.77		pH Units	1	B4I2411	09/24/2024	09/25/2024
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SAR by 20B Saturated Paste

SAR	0.283	0.0100	SAR	1	B4I2409	09/24/2024	09/25/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	1.04	0.00500	mmhos/cm	1	B4I2411	09/24/2024	09/25/2024
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Table 915 metals by EPA 6020B

Arsenic	3.66	0.286	mg/kg	10	B4I2350	09/23/2024	09/24/2024
Barium	9220	9.87	"	"	"	"	"
Cadmium	0.883	0.0987	"	"	"	"	"
Copper	10.0	9.87	"	"	"	"	"

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Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG03@3"

9/23/2024 12:53:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-08 (Soil)**

Table 915 metals by EPA 6020B

Lead	7.08		0.987	mg/kg	10	B412350	09/23/2024	09/24/2024	
Nickel	10.5		0.987	"	"	"	"	"	
Selenium	1.29		0.257	"	"	"	"	"	
Silver	ND		0.0987	"	"	"	"	"	
Zinc	53.5		36.5	"	"	"	"	"	

Total Metals 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L775080	09/23/2024	09/27/2024	
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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG04@3"

9/23/2024 12:54:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E409682-09 (Soil)

Boron (DTPA Sorbitol)

Boron	0.285	0.100	mg/L	1	B412407	09/24/2024	09/25/2024
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Metals by Saturated Paste by EPA 6010

Calcium	6.44	0.499	meq/L	10	[CALC]	09/24/2024	09/25/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	7.93		pH Units	1	B412411	09/24/2024	09/25/2024
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SAR by 20B Saturated Paste

SAR	0.0752	0.0100	SAR	1	B412409	09/24/2024	09/25/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.727	0.00500	mmhos/cm	1	B412411	09/24/2024	09/25/2024
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Table 915 metals by EPA 6020B

Arsenic	4.31	0.274	mg/kg	10	B412350	09/23/2024	09/24/2024
Barium	11200	9.44	"	"	"	"	"
Cadmium	0.742	0.0944	"	"	"	"	"
Copper	12.4	9.44	"	"	"	"	"

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Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

BG04@3"

9/23/2024 12:54:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E409682-09 (Soil)**

Table 915 metals by EPA 6020B

Lead	7.69		0.944	mg/kg	10	B412350	09/23/2024	09/24/2024	
Nickel	12.9		0.944	"	"	"	"	"	
Selenium	1.31		0.246	"	"	"	"	"	
Silver	ND		0.0944	"	"	"	"	"	
Zinc	66.5		34.9	"	"	"	"	"	

Total Metals 7196A

Chromium, Hexavalent	ND	0.244	0.5	mg/Kg	1	L775080	09/23/2024	09/27/2024	
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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B412348 - EPA 3550B										
Blank (B412348-BLK1)										
					Prepared: 09/23/2024 Analyzed: 09/23/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	21		"	24.9		82.5	50-150			

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 Jordan A. Bynon, Project Manager



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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B412348 - EPA 3550B

LCS (B412348-BS1)

Prepared: 09/23/2024 Analyzed: 09/23/2024

Diesel (C10-C28)	849	50.0	mg/kg	1000		84.9	70-130			
Residual Range Organics (C28-C40)	916	200	"	1000		91.6	70-130			
Surrogate: o-Terphenyl	46		"	49.8		93.0	50-150			

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Jordan A. Bynon, Project Manager



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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2348 - EPA 3550B

Matrix Spike (B4I2348-MS1)	Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/23/2024						
Diesel (C10-C28)	947	50.0	mg/kg	1000	ND	94.7	70-130			
Residual Range Organics (C28-C40)	1040	200	"	1000	ND	104	70-130			
Surrogate: o-Terphenyl	46		"	49.8		92.6	50-150			

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 Jordan A. Bynon, Project Manager



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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2348 - EPA 3550B

Matrix Spike Dup (B4I2348-MSD1)	Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/23/2024						
Diesel (C10-C28)	800	50.0	mg/kg	1000	ND	80.0	70-130	16.8	35	
Residual Range Organics (C28-C40)	871	200	"	1000	ND	87.1	70-130	17.6	35	
<i>Surrogate: o-Terphenyl</i>	39		"	49.8		77.4	50-150			

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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Extractable Petroleum Hydrocarbons by 8015D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B412349 - EPA 5030 (soil)										
Blank (B412349-BLK1)										
					Prepared: 09/23/2024 Analyzed: 09/23/2024					
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	0.14		"	0.125	109		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	99.5		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	105		70-130			

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Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B412349 - EPA 5030 (soil)

LCS (B412349-BS1)

Prepared: 09/23/2024 Analyzed: 09/23/2024

1,2,4-Trimethylbenzene	0.107	0.00200	mg/kg	0.100		107	70-130			
1,3,5-Trimethylbenzene	0.108	0.00200	"	0.100		108	70-130			
Benzene	0.115	0.00200	"	0.100		115	70-130			
Ethylbenzene	0.109	0.00200	"	0.100		109	70-130			
Naphthalene	0.0957	0.00380	"	0.100		95.7	70-130			
Toluene	0.111	0.00200	"	0.100		111	70-130			
o-Xylene	0.111	0.00200	"	0.100		111	70-130			
m,p-Xylene	0.224	0.00400	"	0.200		112	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.9	70-130			

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Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2349 - EPA 5030 (soil)

Matrix Spike (B4I2349-MS1)	Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/23/2024						
1,2,4-Trimethylbenzene	0.105	0.00200	mg/kg	0.100	ND	105	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100	ND	107	70-130			
Benzene	0.115	0.00200	"	0.100	ND	115	70-130			
Ethylbenzene	0.108	0.00200	"	0.100	ND	108	70-130			
Naphthalene	0.103	0.00380	"	0.100	ND	103	70-130			
Toluene	0.109	0.00200	"	0.100	ND	109	70-130			
o-Xylene	0.109	0.00200	"	0.100	ND	109	70-130			
m,p-Xylene	0.210	0.00400	"	0.200	ND	105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		108	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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2252 Emerson St.
Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B412349 - EPA 5030 (soil)

Matrix Spike Dup (B412349-MSD1)	Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/23/2024						
1,2,4-Trimethylbenzene	0.104	0.00200	mg/kg	0.100	ND	104	70-130	0.766	20	
1,3,5-Trimethylbenzene	0.103	0.00200	"	0.100	ND	103	70-130	4.16	20	
Benzene	0.116	0.00200	"	0.100	ND	116	70-130	0.709	20	
Ethylbenzene	0.106	0.00200	"	0.100	ND	106	70-130	2.17	20	
Naphthalene	0.104	0.00380	"	0.100	ND	104	70-130	1.20	20	
Toluene	0.106	0.00200	"	0.100	ND	106	70-130	2.78	20	
o-Xylene	0.107	0.00200	"	0.100	ND	107	70-130	2.20	20	
m,p-Xylene	0.206	0.00400	"	0.200	ND	103	70-130	1.58	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		109	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Quandary Consultants
 2252 Emerson St.
 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control
Origins Laboratory

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2350 - EPA 3050B

Blank (B4I2350-BLK1)

Prepared: 09/23/2024 Analyzed: 09/24/2024

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 (B4I2350-BS1)

Prepared: 09/23/2024 Analyzed: 09/24/2024

Arsenic	5.39	0.290	mg/kg	5.00		108	80-120			
Barium	511	10.0	"	500		102	80-120			
Cadmium	5.49	0.100	"	5.00		110	80-120			
Copper	56.1	10.0	"	50.0		112	80-120			
Lead	5.34	1.00	"	5.00		107	80-120			
Nickel	5.47	1.00	"	5.00		109	80-120			
Selenium	5.55	0.260	"	5.00		111	80-120			
Silver	5.54	0.100	"	5.00		111	80-120			
Zinc	54.4	37.0	"	50.0		109	80-120			

Matrix Spike (B4I2350-MS1)

Source: E409680-01

Prepared: 09/23/2024 Analyzed: 09/24/2024

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Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2350 - EPA 3050B

Matrix Spike (B4I2350-MS1)		Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/24/2024					
Arsenic	7.15	0.262	mg/kg	4.52	2.50	103	75-125			
Barium	587	9.04	"	452	118	104	75-125			
Cadmium	5.08	0.0904	"	4.52	0.118	110	75-125			
Copper	56.1	9.04	"	45.2	6.40	110	75-125			
Lead	11.4	0.904	"	4.52	6.20	115	75-125			
Nickel	10.4	0.904	"	4.52	5.60	107	75-125			
Selenium	4.78	0.235	"	4.52	0.139	103	75-125			
Silver	5.06	0.0904	"	4.52	0.0345	111	75-125			
Zinc	116	33.4	"	45.2	31.4	187	75-125			QM-07

Matrix Spike Dup (B4I2350-MSD1)		Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/24/2024					
Arsenic	7.09	0.258	mg/kg	4.45	2.50	103	75-125	0.847	20	
Barium	558	8.90	"	445	118	98.7	75-125	5.14	20	
Cadmium	4.89	0.0890	"	4.45	0.118	107	75-125	3.79	20	
Copper	55.5	8.90	"	44.5	6.40	110	75-125	1.11	20	
Lead	10.8	0.890	"	4.45	6.20	103	75-125	5.43	20	
Nickel	10.2	0.890	"	4.45	5.60	104	75-125	1.75	20	
Selenium	4.55	0.231	"	4.45	0.139	99.2	75-125	4.85	20	
Silver	4.89	0.0890	"	4.45	0.0345	109	75-125	3.33	20	
Zinc	101	32.9	"	44.5	31.4	156	75-125	13.9	20	QM-07

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Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2347 - EPA 3580

Blank (B4I2347-BLK1)

Prepared: 09/23/2024 Analyzed: 09/23/2024

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	210		ug/kg	200	106	60-130
Surrogate: Anthracene-d10	210		"	200	107	60-130
Surrogate: Pyrene-d10	170		"	200	83.0	60-130
Surrogate: Benzo (a) pyrene-d12	210		"	200	107	60-130

LCS (B4I2347-BS1)

Prepared: 09/23/2024 Analyzed: 09/23/2024

1-Methylnaphthalene	0.165	0.002	mg/kg	0.200	82.3	70-130
2-Methylnaphthalene	0.173	0.002	"	0.200	86.7	70-130
Acenaphthene	0.183	0.020	"	0.200	91.7	70-130
Anthracene	0.179	0.020	"	0.200	89.7	70-130

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Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2347 - EPA 3580

LCS (B4I2347-BS1)

Prepared: 09/23/2024 Analyzed: 09/23/2024

Benzo (a) anthracene	0.168	0.005	mg/kg	0.200		83.9	70-130			
Benzo (a) pyrene	0.145	0.020	"	0.200		72.3	70-130			
Benzo (b) fluoranthene	0.197	0.020	"	0.200		98.3	70-130			
Benzo (g,h,i) perylene	0.160	0.020	"	0.200		79.9	70-130			
Benzo (k) fluoranthene	0.161	0.020	"	0.200		80.6	70-130			
Chrysene	0.188	0.020	"	0.200		94.2	70-130			
Dibenz (a,h) anthracene	0.207	0.020	"	0.200		103	70-130			
Fluoranthene	0.154	0.020	"	0.200		76.8	70-130			
Fluorene	0.195	0.020	"	0.200		97.4	70-130			
Indeno (1,2,3-cd) pyrene	0.164	0.020	"	0.200		81.8	70-130			
Naphthalene	0.188	0.002	"	0.200		94.1	70-130			
Phenanthrene	0.184	0.020	"	0.200		92.2	70-130			
Pyrene	0.165	0.020	"	0.200		82.4	70-130			
Surrogate: Fluorene-d10	220		ug/kg	200		111	60-130			
Surrogate: Anthracene-d10	210		"	200		107	60-130			
Surrogate: Pyrene-d10	210		"	200		104	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

Matrix Spike (B4I2347-MS1)

Source: E409680-01

Prepared: 09/23/2024 Analyzed: 09/23/2024

1-Methylnaphthalene	0.170	0.002	mg/kg	0.200	0.0008	84.4	70-130			
2-Methylnaphthalene	0.169	0.002	"	0.200	ND	84.3	70-130			
Acenaphthene	0.185	0.020	"	0.200	ND	92.6	70-130			
Anthracene	0.185	0.020	"	0.200	ND	92.5	70-130			
Benzo (a) anthracene	0.175	0.005	"	0.200	0.002	86.6	70-130			
Benzo (a) pyrene	0.149	0.020	"	0.200	0.004	72.6	70-130			
Benzo (b) fluoranthene	0.164	0.020	"	0.200	0.004	80.2	70-130			
Benzo (g,h,i) perylene	0.160	0.020	"	0.200	0.005	77.3	70-130			

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Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B412347 - EPA 3580

Matrix Spike (B412347-MS1)	Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/23/2024						
Benzo (k) fluoranthene	0.164	0.020	mg/kg	0.200	0.005	79.7	70-130			
Chrysene	0.173	0.020	"	0.200	0.002	85.6	70-130			
Dibenz (a,h) anthracene	0.233	0.020	"	0.200	0.006	113	70-130			
Fluoranthene	0.160	0.020	"	0.200	0.002	79.1	70-130			
Fluorene	0.193	0.020	"	0.200	ND	96.4	70-130			
Indeno (1,2,3-cd) pyrene	0.226	0.020	"	0.200	0.006	110	70-130			
Naphthalene	0.188	0.002	"	0.200	ND	94.0	70-130			
Phenanthrene	0.191	0.020	"	0.200	ND	95.6	70-130			
Pyrene	0.171	0.020	"	0.200	0.0009	85.1	70-130			
Surrogate: Fluorene-d10	220		ug/kg	200		109	60-130			
Surrogate: Anthracene-d10	210		"	200		103	60-130			
Surrogate: Pyrene-d10	190		"	200		93.8	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		98.0	60-130			

Matrix Spike Dup (B412347-MSD1)	Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/23/2024						
1-Methylnaphthalene	0.168	0.002	mg/kg	0.200	0.0008	83.4	70-130	1.25	20	
2-Methylnaphthalene	0.168	0.002	"	0.200	ND	84.2	70-130	0.0967	20	
Acenaphthene	0.188	0.020	"	0.200	ND	94.1	70-130	1.62	20	
Anthracene	0.167	0.020	"	0.200	ND	83.3	70-130	10.4	20	
Benzo (a) anthracene	0.174	0.005	"	0.200	0.002	86.0	70-130	0.640	20	
Benzo (a) pyrene	0.140	0.020	"	0.200	0.004	68.1	70-130	6.18	20	QM-07
Benzo (b) fluoranthene	0.186	0.020	"	0.200	0.004	91.0	70-130	12.4	20	
Benzo (g,h,i) perylene	0.163	0.020	"	0.200	0.005	78.6	70-130	1.70	20	
Benzo (k) fluoranthene	0.147	0.020	"	0.200	0.005	71.1	70-130	11.0	20	
Chrysene	0.170	0.020	"	0.200	0.002	83.8	70-130	2.10	20	
Dibenz (a,h) anthracene	0.234	0.020	"	0.200	0.006	114	70-130	0.433	20	
Fluoranthene	0.158	0.020	"	0.200	0.002	77.9	70-130	1.52	20	

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2252 Emerson St.
Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B412347 - EPA 3580

Matrix Spike Dup (B412347-MSD1)	Source: E409680-01			Prepared: 09/23/2024 Analyzed: 09/23/2024						
Fluorene	0.185	0.020	mg/kg	0.200	ND	92.7	70-130	3.91	20	
Indeno (1,2,3-cd) pyrene	0.191	0.020	"	0.200	0.006	92.5	70-130	17.1	20	
Naphthalene	0.187	0.002	"	0.200	ND	93.4	70-130	0.714	20	
Phenanthrene	0.180	0.020	"	0.200	ND	90.1	70-130	5.92	20	
Pyrene	0.164	0.020	"	0.200	0.0009	81.4	70-130	4.33	20	
Surrogate: Fluorene-d10	210		ug/kg	200		103	60-130			
Surrogate: Anthracene-d10	200		"	200		102	60-130			
Surrogate: Pyrene-d10	190		"	200		92.9	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

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 2252 Emerson St.
 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Classical Chemistry Parameters - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2407 - DTPA Sorbitol Preparation

Blank (B4I2407-BLK1) Prepared: 09/24/2024 Analyzed: 09/25/2024

Boron	ND	0.100	mg/L						
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Duplicate (B4I2407-DUP1) Prepared: 09/24/2024 Analyzed: 09/25/2024
Source: E409636-03

Boron	0.776	0.0984	mg/L		0.784			1.13	50
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Batch B4I2409 - Saturated Paste Metals

Blank (B4I2409-BLK1) Prepared: 09/24/2024 Analyzed: 09/25/2024

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

Duplicate (B4I2409-DUP1) Prepared: 09/24/2024 Analyzed: 09/25/2024
Source: E409676-03

SAR	ND	0.0100	SAR		0.511			200	
Calcium PPM	48.2	10.0	mg/L		48.4		0.455	50	
Magnesium PPM	6.16	10.0	"		6.17		0.162	50	
Sodium PPM	14.2	10.0	"		14.2		0.141	50	

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 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

Saturated Paste - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4I2411 - Saturated Paste pH/EC

Blank (B4I2411-BLK1)

Prepared: 09/24/2024 Analyzed: 09/25/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B4I2411-DUP1)

Source: E409676-03

Prepared: 09/24/2024 Analyzed: 09/25/2024

Specific Conductance (EC)	0.358	0.00500	mmhos/cm	0.373	4.10	25
pH	7.95		pH Units	8.00	0.627	25

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Jordan A. Bynon, Project Manager

Quandary Consultants
 2252 Emerson St.
 Denver CO 80205

Mike Dinkel
 Project Number: [none]
 Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch L775080 -										
DUP (L 97431-DUP)										
			Source: 97431			Prepared: Analyzed: 09/27/2024				
Chromium, Hexavalent	ND	0.5	mg/Kg		<0.500		-	0	20	
LCS (LCS)										
			Prepared: Analyzed: 09/27/2024							
Chromium, Hexavalent	6.88	0.5	mg/Kg	8		86	75-125			
LRB (LRB)										
			Prepared: Analyzed: 09/27/2024							
Chromium, Hexavalent	ND	0.5	mg/Kg				-			

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Quandary Consultants
2252 Emerson St.
Denver CO 80205

Mike Dinkel
Project Number: [none]
Project: KMG - Goodin 15N 15N 16N 16N-B6HZ

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.

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Jordan A. Bynon, Project Manager