



Ensolum

January 16, 2025

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Project Name - KMG - Sarchet 41-23 & 42-23 Facility

Project Number - 09A1417891

Attached are your analytical results for KMG - Sarchet 41-23 & 42-23 Facility received by Origins Laboratory December 06, 2024. This project is associated with Origins project number E4L0260-01.

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

Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1417891

Project: KMG - Sarchet 41-23 & 42-23 Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW-PWV-B01@5'	E4L0260-01	Water	December 6, 2024 14:45	12/06/2024 17:54
PWV-B01@5'	E4L0260-02	Soil	December 6, 2024 14:30	12/06/2024 17:54
PWV-W01@2'	E4L0260-03	Soil	December 6, 2024 15:00	12/06/2024 17:54
AST01@0.5'	E4L0260-04	Soil	December 6, 2024 15:30	12/06/2024 17:54
SEP-INLET@3'	E4L0260-05	Soil	December 6, 2024 13:30	12/06/2024 17:54
SEP-OUTLET@3'	E4L0260-06	Soil	December 6, 2024 13:40	12/06/2024 17:54
TB-BG01@0.5'	E4L0260-07	Soil	December 6, 2024 15:40	12/06/2024 17:54
PWV-B01@5'-V	E4L0260-08	Soil	December 6, 2024 14:31	12/06/2024 17:54
PWV-W01@2'-V	E4L0260-09	Soil	December 6, 2024 15:01	12/06/2024 17:54
AST01@0.5'-V	E4L0260-10	Soil	December 6, 2024 15:31	12/06/2024 17:54
SEP-INLET@3'-V	E4L0260-11	Soil	December 6, 2024 13:31	12/06/2024 17:54
SEP-OUTLET@3'-V	E4L0260-12	Soil	December 6, 2024 13:41	12/06/2024 17:54

Origins Laboratory



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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1417891

Project: KMG - Sarchet 41-23 & 42-23 Facility

Page 1 of 2

ORIGINS WORK ORDER #

6410260

ORIGINS
LABORATORY

Client: Ensolum

Address:

Project Manager: J. Espinoza

Key: W= Water

Project Name: Sarchet 41-23 & 42-23 Facility

GW=Groundwater

Project Number: 09A1417891

SW=Surface Water

Collected By: JH

WW=Waste Water

Invoice/Billing Info: Oxy/Initial

L=Liquid

Telephone Number:

Email Address: KMG Team

S=Soil | SC=Solid | O=Oil | A=Air | G=Gas | UNP=Uppres | HCL= Hydrochloric | HNO3=Nitric | H2SO4=Sulfuric | NaOH=Sodium Hydroxide

#	Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix	Preservative	Analysis	Comments
1	GWPNW-B0105'	12-6	1445	4	GW	UNP	X	As added to PWNW-B0102-V per the email from Jeremy on 12/11/24
2	PWNW-B0105'	1	1430	3	S			
3	PWNW-W0102'		1500	1				
4	AST0105'		1530					
5	SEP-INLET03'		1330					
6	SEP-OUTLET03'		1340					
7	TB-BG0100.5'		1540	2			X X X X X	
8	PWNW-B0105'-V		1431	3				
9	PWNW-B0102'-V		1501	1				
10	AST0100.5'-V		1531					

Relinquished By: <i>Jeremy Espinoza</i>	Date: 12-6-2024	Time: 1754	Received By: <i>JH</i>	Date: 12/6/24	Time: 1754
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

Turnaround Time

☒ SAME DAY

☐ 24 Hr

☐ 48 Hr

☐ 72

☐ Standard

Received On Ice? ☐ Yes ☐ No

For Lab Sample Receiving Only

Temp Received: 6

Received On Ice? ☐ Yes ☐ No

1992 Elk Grove, Denver, CO 80211 | 303.433.1322 | originslab.com

Origins Laboratory

Byron

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Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1417891

Project: KMG - Sarchet 41-23 & 42-23 Facility

Page 2 of 2

ORIGINS WORK ORDER #

ORIGINS
LABORATORY

6410260

Client: Ensolum
Address:
Telephone Number:
Email Address: JPellegrini@ensolum.com

Project Manager: J. Espinoza
Key: W=Water
GW=Groundwater
SW=Surface Water
WW=Waste Water
L=Liquid

Project Name: Sarchet 41-23 & 42-23 Facility
Project Number: 09A1417891
Collected By: JH
Invoice/Billing Info: Initial 10/14

S=Soil | SO=Solid | O=Oil | A=Air | G=Gas | UNP=Unpres | HCl=Hydrochloric | HNO3=Nitric | H2SO4=Sulfuric | NaOH=Sodium Hydroxide

#	Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix	Preservative	Analysis										Comments
							1	2	3	4	5	6	7	8	9	10	
1	SEP0110260-V	12-6-13	1331	3	5	WOP	X										Hold Additional Volume
2	SEP0110260-V	↓	1341	↓	↓	↓	↓										
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished By: <u>Jeremy Espinoza</u>	Date: <u>12-6-2014</u>	Time: <u>1334</u>	Received By: <u>JP</u>	Date: <u>12-6-24</u>	Time: <u>1754</u>
Relinquished By:	Date:	Time:	Received By:	Date:	Time:

For Lab Sample Return Only
Temp Received: 6 Received On Ice? ☒ Yes ☐ No
1725 Elk Place Denver, Co. 80211 | # 303.433.1322 | originslab.com

Origins Laboratory

JBynon

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ORIGINS LABORATORY

Ensolum

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Jeremy Espinoza

Project Number: 09A1417891

Project: KMG - Sarchet 41-23 & 42-23 Facility

Origins Laboratory

Sample Receipt Checklist

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

Origins Work Order: E410260

Client: Ensolum

Client Project ID: Sarchet 41-23 & 42-23 Fac

Checklist Completed by: JN / RK

Shipped Via: HD

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

Date/time completed: 12/6/24

Airbill #: N/A

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

Water

Other:

Cooler Number/Temperature: 1/6 °C / °C / °C / °C (Describe)

Thermometer ID: T007

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 analyses in order to insure sample integrity)(pH <2 for samples preserved with HNO ₃ , HCL, H ₂ SO ₄) / (pH >10 for samples preserved with NaAsO ₂ +NaOH, ZnAc+NaOH)			/	
Additional Comments (if any):				

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

Reviewed by (Project Manager) JN

12/6/24
Date/Time Reviewed

Origins Laboratory

J. Bynon

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Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

GW-PWV-B01@5'

12/6/2024 2:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-01 (Water)

Anions by IC 300.0

Chloride	ND	31.2	mg/L	125	B4L0924	12/09/2024	12/09/2024	
Sulfate	75.4	31.2	"	"	"	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	2.00	ug/L	1	B4L0539	12/06/2024	12/06/2024	Ua
1,3,5-Trimethylbenzene	ND	2.00	"	"	"	"	"	Ua
Benzene	ND	1.00	"	"	"	"	"	Ua
Ethylbenzene	ND	1.00	"	"	"	"	"	Ua
Naphthalene	ND	2.00	"	"	"	"	"	Ua
Toluene	ND	1.00	"	"	"	"	"	Ua
Xylenes, total	ND	1.00	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	92.7 %	70-130	"	"	"
Surrogate: Toluene-d8	102 %	70-130	"	"	"
Surrogate: 4-Bromofluorobenzene	81.7 %	70-130	"	"	"

Total Dissolved Solids by 2540C

Total Dissolved Solids	534	5.00	mg/L	1	B4L1324	12/16/2024	12/30/2024	O-04
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Origins Laboratory

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11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PWV-B01@5'

12/6/2024 2:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-02 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.0990	mg/L	1	B4L0907	12/09/2024	12/11/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4L0648	12/06/2024	12/07/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	76.4 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4L0646	12/06/2024	12/06/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	
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PWV-B01@5'

12/6/2024 2:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-02 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	101 %		70-130			B4L06 46	12/06/2024	12/06/2024	
Surrogate: 4-Bromofluorobenzene	102 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	1.28		0.499	meq/L	10	[CALC]	12/10/2024	12/12/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

PAH by 8270E SIM

1-Methylnaphthalene	ND	0.00132	0.00400	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
2-Methylnaphthalene	ND	0.00132	0.00400	"	"	"	"	"	U
Acenaphthene	ND	0.00132	0.00400	"	"	"	"	"	U
Anthracene	ND	0.00132	0.00400	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00132	0.00400	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00132	0.00400	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00132	0.00400	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00132	0.00400	"	"	"	"	"	U
Chrysene	ND	0.00132	0.00400	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00132	0.00400	"	"	"	"	"	U
Fluoranthene	ND	0.00132	0.00400	"	"	"	"	"	U

Origins Laboratory



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Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PWV-B01@5'

12/6/2024 2:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
E4L0260-02 (Soil)

PAH by 8270E SIM

Fluorene	ND	0.00132	0.00400	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00132	0.00400	"	"	"	"	"	U
Naphthalene	ND	0.00132	0.00400	"	"	"	"	"	U
Pyrene	ND	0.00132	0.00400	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 28 % 22-135 " " "

pH in Soil by 9045D

pH	8.23			pH Units	1	B4L1023	12/10/2024	12/11/2024	
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SAR by 20B Saturated Paste

SAR	0.414		0.0100	SAR	1	B4L1014	12/10/2024	12/12/2024	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.256		0.00500	mmhos/cm	1	B4L1023	12/10/2024	12/11/2024	
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Table 915 metals by EPA 6020B

Arsenic	2.46		0.270	mg/kg	10	B4L0651	12/06/2024	12/07/2024	
Barium	10.8		9.31	"	"	"	"	"	

Origins Laboratory



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Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PWV-B01@5'

12/6/2024 2:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-02 (Soil)

Table 915 metals by EPA 6020B

Cadmium	ND	0.0931	mg/kg	10	B4L0651	12/06/2024	12/07/2024
Copper	ND	9.31	"	"	"	"	"
Lead	3.21	0.931	"	"	"	"	"
Nickel	4.07	0.931	"	"	"	"	"
Selenium	ND	0.242	"	"	"	"	"
Silver	ND	0.0931	"	"	"	"	"
Zinc	ND	34.5	"	"	"	"	"

Total Metals by 7196A

Hexavalent Chromium	ND	0.135	0.339	mg/kg dry	1	2726781	01/03/2025	01/10/2025	U
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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PWV-W01@2'

12/6/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E4L0260-03 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.101	mg/L	1	B4L0907	12/09/2024	12/11/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4L0648	12/06/2024	12/07/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	73.0 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4L0646	12/06/2024	12/06/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130	"	"	"
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Origins Laboratory



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11049 W 44th Avenue, Suite 103
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Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PWV-W01@2'

12/6/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-03 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	99.5 %		70-130			B4L06 46	12/06/2024	12/06/2024	
Surrogate: 4-Bromofluorobenzene	101 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	1.07		0.499	meq/L	10	[CALC]	12/10/2024	12/12/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

PAH by 8270E SIM

1-Methylnaphthalene	ND	0.00114	0.00345	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
2-Methylnaphthalene	ND	0.00114	0.00345	"	"	"	"	"	U
Acenaphthene	ND	0.00114	0.00345	"	"	"	"	"	U
Anthracene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00114	0.00345	"	"	"	"	"	U
Chrysene	ND	0.00114	0.00345	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00114	0.00345	"	"	"	"	"	U
Fluoranthene	ND	0.00114	0.00345	"	"	"	"	"	U

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Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PWV-W01@2'

12/6/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
E4L0260-03 (Soil)

PAH by 8270E SIM

Fluorene	ND	0.00114	0.00345	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00114	0.00345	"	"	"	"	"	U
Naphthalene	ND	0.00114	0.00345	"	"	"	"	"	U
Pyrene	ND	0.00114	0.00345	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 75 % 22-135 " " "

pH in Soil by 9045D

pH	8.34			pH Units	1	B4L1023	12/10/2024	12/11/2024	
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SAR by 20B Saturated Paste

SAR	0.0350		0.0100	SAR	1	B4L1014	12/10/2024	12/12/2024	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.166		0.00500	mmhos/cm	1	B4L1023	12/10/2024	12/11/2024	
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Table 915 metals by EPA 6020B

Arsenic	3.50		0.279	mg/kg	10	B4L0651	12/06/2024	12/07/2024	
Barium	59.7		9.60	"	"	"	"	"	
Cadmium	0.130		0.0960	"	"	"	"	"	

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PWV-W01@2'

12/6/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-03 (Soil)

Table 915 metals by EPA 6020B

Copper	ND	9.60	mg/kg	10	B4L0651	12/06/2024	12/07/2024
Lead	5.45	0.960	"	"	"	"	"
Nickel	6.82	0.960	"	"	"	"	"
Selenium	ND	0.250	"	"	"	"	"
Silver	ND	0.0960	"	"	"	"	"
Zinc	ND	35.5	"	"	"	"	"

Total Metals by 7196A

Hexavalent Chromium	ND	0.121	0.302	mg/kg dry	1	2726781	01/03/2025	01/10/2025	U
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Origins Laboratory

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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

AST01@0.5'

12/6/2024 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-04 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.0987	mg/L	1	B4L0907	12/09/2024	12/11/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4L0648	12/06/2024	12/07/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	69.2 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4L0646	12/06/2024	12/06/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"	
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Origins Laboratory

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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

AST01@0.5'

12/6/2024 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E4L0260-04 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	98.8 %		70-130			B4L06 46	12/06/2024	12/06/2024	
Surrogate: 4-Bromofluorobenzene	104 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	0.650		0.499	meq/L	10	[CALC]	12/10/2024	12/12/2024	
Magnesium	0.891		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

PAH by 8270E SIM

1-Methylnaphthalene	ND	0.00114	0.00345	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
2-Methylnaphthalene	ND	0.00114	0.00345	"	"	"	"	"	U
Acenaphthene	ND	0.00114	0.00345	"	"	"	"	"	U
Anthracene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00114	0.00345	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00114	0.00345	"	"	"	"	"	U
Chrysene	ND	0.00114	0.00345	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00114	0.00345	"	"	"	"	"	U
Fluoranthene	ND	0.00114	0.00345	"	"	"	"	"	U

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

AST01@0.5'

12/6/2024 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC
E4L0260-04 (Soil)

PAH by 8270E SIM

Fluorene	ND	0.00114	0.00345	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00114	0.00345	"	"	"	"	"	U
Naphthalene	ND	0.00114	0.00345	"	"	"	"	"	U
Pyrene	ND	0.00114	0.00345	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 72 % 22-135 " " "

pH in Soil by 9045D

pH	8.65			pH Units	1	B4L1023	12/10/2024	12/11/2024	
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SAR by 20B Saturated Paste

SAR	0.343		0.0100	SAR	1	B4L1014	12/10/2024	12/12/2024	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.191		0.00500	mmhos/cm	1	B4L1023	12/10/2024	12/11/2024	
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Table 915 metals by EPA 6020B

Arsenic	2.21		0.276	mg/kg	10	B4L0651	12/06/2024	12/07/2024	
Barium	44.2		9.52	"	"	"	"	"	

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

AST01@0.5'

12/6/2024 3:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-04 (Soil)

Table 915 metals by EPA 6020B

Cadmium	ND	0.0952	mg/kg	10	B4L0651	12/06/2024	12/07/2024
Copper	ND	9.52	"	"	"	"	"
Lead	5.07	0.952	"	"	"	"	"
Nickel	6.62	0.952	"	"	"	"	"
Selenium	ND	0.248	"	"	"	"	"
Silver	ND	0.0952	"	"	"	"	"
Zinc	ND	35.2	"	"	"	"	"

Total Metals by 7196A

Hexavalent Chromium	ND	0.142	0.356	mg/kg dry	1	2726781	01/03/2025	01/10/2025	U
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Origins Laboratory

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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-INLET@3'

12/6/2024 1:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-05 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.101	mg/L	1	B4L0907	12/09/2024	12/11/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4L0648	12/06/2024	12/07/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	73.9 %	50-150	"	"	"
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4L0646	12/06/2024	12/06/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

Surrogate: 1,2-Dichloroethane-d4	110 %	70-130	"	"	"
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Origins Laboratory

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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-INLET@3'

12/6/2024 1:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory E4L0260-05 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	95.8 %		70-130			B4L06 46	12/06/2024	12/06/2024	
Surrogate: 4-Bromofluorobenzene	101 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	ND		0.499	meq/L	10	[CALC]	12/10/2024	12/12/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

PAH by 8270E SIM

1-Methylnaphthalene	ND	0.00121	0.00366	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
2-Methylnaphthalene	ND	0.00121	0.00366	"	"	"	"	"	U
Acenaphthene	ND	0.00121	0.00366	"	"	"	"	"	U
Anthracene	ND	0.00121	0.00366	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00121	0.00366	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00121	0.00366	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00121	0.00366	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00121	0.00366	"	"	"	"	"	U
Chrysene	ND	0.00121	0.00366	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00121	0.00366	"	"	"	"	"	U
Fluoranthene	ND	0.00121	0.00366	"	"	"	"	"	U

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-INLET@3'

12/6/2024 1:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

E4L0260-05 (Soil)

PAH by 8270E SIM

Fluorene	ND	0.00121	0.00366	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00121	0.00366	"	"	"	"	"	U
Naphthalene	ND	0.00121	0.00366	"	"	"	"	"	U
Pyrene	ND	0.00121	0.00366	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 30 % 22-135 " " "

pH in Soil by 9045D

pH	7.28			pH Units	1	B4L1023	12/10/2024	12/11/2024	
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SAR by 20B Saturated Paste

SAR	0.336		0.0100	SAR	1	B4L1014	12/10/2024	12/12/2024	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.0518		0.00500	mmhos/cm	1	B4L1023	12/10/2024	12/11/2024	
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Table 915 metals by EPA 6020B

Arsenic	1.99		0.246	mg/kg	10	B4L0651	12/06/2024	12/07/2024	
Barium	45.7		8.48	"	"	"	"	"	
Cadmium	0.126		0.0848	"	"	"	"	"	

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-INLET@3'

12/6/2024 1:30:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E4L0260-05 (Soil)

Table 915 metals by EPA 6020B

Copper	ND	8.48	mg/kg	10	B4L0651	12/06/2024	12/07/2024
Lead	5.05	0.848	"	"	"	"	"
Nickel	3.94	0.848	"	"	"	"	"
Selenium	ND	0.220	"	"	"	"	"
Silver	ND	0.0848	"	"	"	"	"
Zinc	ND	31.4	"	"	"	"	"

Total Metals by 7196A

Hexavalent Chromium	ND	0.0988	0.247	mg/kg dry	1	2726781	01/03/2025	01/10/2025	U
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Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-OUTLET@3'

12/6/2024 1:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory E4L0260-06 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.0994	mg/L	1	B4L0907	12/09/2024	12/11/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4L0648	12/06/2024	12/07/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	70.7 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4L0646	12/06/2024	12/07/2024	Ua
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Benzene	ND	0.00200	"	"	"	"	"	Ua
Ethylbenzene	ND	0.00200	"	"	"	"	"	Ua
Toluene	ND	0.00200	"	"	"	"	"	Ua
Xylenes, total	ND	0.00200	"	"	"	"	"	Ua
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	"	"	Ua

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



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-OUTLET@3'

12/6/2024 1:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory E4L0260-06 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	105 %		70-130			B4L06 46	12/06/2024	12/07/2024	
Surrogate: 4-Bromofluorobenzene	109 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	0.679		0.499	meq/L	10	[CALC]	12/10/2024	12/12/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	ND		0.435	"	"	"	"	"	

PAH by 8270E SIM

1-Methylnaphthalene	ND	0.00122	0.00371	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
2-Methylnaphthalene	ND	0.00122	0.00371	"	"	"	"	"	U
Acenaphthene	ND	0.00122	0.00371	"	"	"	"	"	U
Anthracene	ND	0.00122	0.00371	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00122	0.00371	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00122	0.00371	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00122	0.00371	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00122	0.00371	"	"	"	"	"	U
Chrysene	ND	0.00122	0.00371	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00122	0.00371	"	"	"	"	"	U
Fluoranthene	ND	0.00122	0.00371	"	"	"	"	"	U

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-OUTLET@3'

12/6/2024 1:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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GEL Laboratories, LLC

E4L0260-06 (Soil)

PAH by 8270E SIM

Fluorene	ND	0.00122	0.00371	mg/kg dry	1	2721434	12/16/2024	12/16/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00122	0.00371	"	"	"	"	"	U
Naphthalene	ND	0.00122	0.00371	"	"	"	"	"	U
Pyrene	ND	0.00122	0.00371	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 46 % 22-135 " " "

pH in Soil by 9045D

pH	7.11			pH Units	1	B4L1023	12/10/2024	12/11/2024	
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SAR by 20B Saturated Paste

SAR	0.552		0.0100	SAR	1	B4L1014	12/10/2024	12/12/2024	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.222		0.00500	mmhos/cm	1	B4L1023	12/10/2024	12/11/2024	
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Table 915 metals by EPA 6020B

Arsenic	1.68		0.256	mg/kg	10	B4L0651	12/06/2024	12/07/2024	
Barium	54.5		8.82	"	"	"	"	"	

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

SEP-OUTLET@3'

12/6/2024 1:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-06 (Soil)

Table 915 metals by EPA 6020B

Cadmium	ND	0.0882	mg/kg	10	B4L0651	12/06/2024	12/07/2024
Copper	ND	8.82	"	"	"	"	"
Lead	4.51	0.882	"	"	"	"	"
Nickel	4.38	0.882	"	"	"	"	"
Selenium	ND	0.229	"	"	"	"	"
Silver	ND	0.0882	"	"	"	"	"
Zinc	ND	32.6	"	"	"	"	"

Total Metals by 7196A

Hexavalent Chromium	ND	0.117	0.292	mg/kg dry	1	2726781	01/03/2025	01/10/2025	U
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11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

TB-BG01@0.5'

12/6/2024 3:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E4L0260-07 (Soil)

Boron (DTPA Sorbitol)

Boron	ND	0.100	mg/L	1	B4L0907	12/09/2024	12/11/2024
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Metals by Saturated Paste by EPA 6010

Calcium	0.869	0.499	meq/L	10	[CALC]	12/10/2024	12/12/2024
Magnesium	ND	0.823	"	"	"	"	"
Sodium	ND	0.435	"	"	"	"	"

pH in Soil by 9045D

pH	8.39		pH Units	1	B4L1023	12/10/2024	12/11/2024
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SAR by 20B Saturated Paste

SAR	0.0169	0.0100	SAR	1	B4L1014	12/10/2024	12/12/2024
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	0.137	0.00500	mmhos/cm	1	B4L1023	12/10/2024	12/11/2024
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Table 915 metals by EPA 6020B

Arsenic	1.98	0.256	mg/kg	10	B4L0651	12/06/2024	12/07/2024
Barium	39.2	8.81	"	"	"	"	"
Cadmium	ND	0.0881	"	"	"	"	"

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Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

TB-BG01@0.5'

12/6/2024 3:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory

E4L0260-07 (Soil)

Table 915 metals by EPA 6020B

Copper	ND	8.81	mg/kg	10	B4L0651	12/06/2024	12/07/2024
Lead	4.30	0.881	"	"	"	"	"
Nickel	5.60	0.881	"	"	"	"	"
Selenium	ND	0.229	"	"	"	"	"
Silver	ND	0.0881	"	"	"	"	"
Zinc	ND	32.6	"	"	"	"	"

Total Metals by 7196A

Hexavalent Chromium	ND	0.139	0.348	mg/kg dry	1	2726781	01/03/2025	01/10/2025	U
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PWV-B01@5'-V

12/6/2024 2:31:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-08 (Soil)

pH in Soil by 9045D

pH	8.33			pH Units	1	B4L1352	12/13/2024	12/16/2024	
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PWV-W01@2'-V

12/6/2024 3:01:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-09 (Soil)

pH in Soil by 9045D

pH	8.38			pH Units	1	B4L1352	12/13/2024	12/16/2024	
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Table 915 metals by EPA 6020B

Arsenic	2.25	0.258	mg/kg	10	B4L1151	12/11/2024	12/16/2024	
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AST01@0.5'-V

12/6/2024 3:31:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-10 (Soil)

pH in Soil by 9045D

pH	8.52			pH Units	1	B4L1352	12/13/2024	12/16/2024	
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SEP-INLET@3'-V

12/6/2024 1:31:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-11 (Soil)

pH in Soil by 9045D

pH	7.16			pH Units	1	B4L1352	12/13/2024	12/16/2024	
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SEP-OUTLET@3'-V

12/6/2024 1:41:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4L0260-12 (Soil)

pH in Soil by 9045D

pH	6.97			pH Units	1	B4L1352	12/13/2024	12/16/2024	
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Project: KMG - Sarchet 41-23 & 42-23 Facility

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
Batch B4L0539 - EPA 5030B (Water)										
Blank (B4L0539-BLK1)					Prepared: 12/05/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	ND	2.00	ug/L							Ua
1,3,5-Trimethylbenzene	ND	2.00	"							Ua
Benzene	ND	1.00	"							Ua
Ethylbenzene	ND	1.00	"							Ua
Naphthalene	ND	2.00	"							Ua
Toluene	ND	1.00	"							Ua
Xylenes, total	ND	1.00	"							Ua
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.8	70-130			
Surrogate: Toluene-d8	63		"	62.5		100	70-130			
Surrogate: 4-Bromofluorobenzene	51		"	62.5		81.9	70-130			

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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
Batch B4L0539 - EPA 5030B (Water)										
LCS (B4L0539-BS1)					Prepared: 12/05/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	44.6	2.00	ug/L	50.0		89.2	70-130			
1,3,5-Trimethylbenzene	44.7	2.00	"	50.0		89.4	70-130			
Benzene	41.5	1.00	"	50.0		83.0	70-130			
Ethylbenzene	42.8	1.00	"	50.0		85.6	70-130			
m,p-Xylene	88.5	2.00	"	100		88.5	70-130			
Naphthalene	43.9	2.00	"	50.0		87.8	70-130			
o-Xylene	44.3	1.00	"	50.0		88.5	70-130			
Toluene	40.4	1.00	"	50.0		80.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.6	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.2	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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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
Batch B4L0539 - EPA 5030B (Water)										
Matrix Spike (B4L0539-MS1)		Source: E4L0167-01			Prepared: 12/05/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	44.9	2.00	ug/L	50.0	ND	89.8	70-130			
1,3,5-Trimethylbenzene	46.0	2.00	"	50.0	ND	92.0	70-130			
Benzene	40.3	1.00	"	50.0	ND	80.6	70-130			
Ethylbenzene	42.4	1.00	"	50.0	ND	84.9	70-130			
m,p-Xylene	89.1	2.00	"	100	ND	89.1	70-130			
Naphthalene	40.1	2.00	"	50.0	ND	80.3	70-130			
o-Xylene	43.5	1.00	"	50.0	ND	87.1	70-130			
Toluene	40.2	1.00	"	50.0	ND	80.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	59		"	62.5		94.4	70-130			
Surrogate: Toluene-d8	61		"	62.5		98.1	70-130			
Surrogate: 4-Bromofluorobenzene	63		"	62.5		101	70-130			

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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
Batch B4L0539 - EPA 5030B (Water)										
Matrix Spike Dup (B4L0539-MSD1)		Source: E4L0167-01			Prepared: 12/05/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	43.4	2.00	ug/L	50.0	ND	86.7	70-130	3.47	20	
1,3,5-Trimethylbenzene	44.3	2.00	"	50.0	ND	88.5	70-130	3.83	20	
Benzene	39.5	1.00	"	50.0	ND	79.0	70-130	2.03	20	
Ethylbenzene	42.1	1.00	"	50.0	ND	84.2	70-130	0.852	20	
m,p-Xylene	85.5	2.00	"	100	ND	85.5	70-130	4.17	20	
Naphthalene	38.4	2.00	"	50.0	ND	76.9	70-130	4.30	20	
o-Xylene	42.4	1.00	"	50.0	ND	84.8	70-130	2.63	20	
Toluene	39.1	1.00	"	50.0	ND	78.1	70-130	2.78	20	
Surrogate: 1,2-Dichloroethane-d4	58		"	62.5		93.2	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	61		"	62.5		97.5	70-130			

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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
Batch B4L0646 - EPA 5030 (soil)										
Blank (B4L0646-BLK1)					Prepared: 12/06/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							Ua
1,3,5-Trimethylbenzene	ND	0.00200	"							Ua
Benzene	ND	0.00200	"							Ua
Ethylbenzene	ND	0.00200	"							Ua
Naphthalene	ND	0.00380	"							Ua
Toluene	ND	0.00200	"							Ua
Xylenes, total	ND	0.00200	"							Ua
Gasoline Range Hydrocarbons	ND	0.200	"							Ua
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	101		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	101		70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125	102		70-130			

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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
Batch B4L0646 - EPA 5030 (soil)										
LCS (B4L0646-BS1)					Prepared: 12/06/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	0.103	0.00200	mg/kg	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.102	0.00200	"	0.100		102	70-130			
Benzene	0.0968	0.00200	"	0.100		96.8	70-130			
Ethylbenzene	0.108	0.00200	"	0.100		108	70-130			
Naphthalene	0.0951	0.00380	"	0.100		95.1	70-130			
Toluene	0.105	0.00200	"	0.100		105	70-130			
o-Xylene	0.104	0.00200	"	0.100		104	70-130			
m,p-Xylene	0.210	0.00400	"	0.200		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4L0646 - EPA 5030 (soil)										
Matrix Spike (B4L0646-MS1)		Source: E4L0258-01			Prepared: 12/06/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	0.101	0.00200	mg/kg	0.100	ND	101	70-130			
1,3,5-Trimethylbenzene	0.0990	0.00200	"	0.100	ND	99.0	70-130			
Benzene	0.0956	0.00200	"	0.100	ND	95.6	70-130			
Ethylbenzene	0.103	0.00200	"	0.100	ND	103	70-130			
Naphthalene	0.0898	0.00380	"	0.100	0.00328	86.6	70-130			
Toluene	0.103	0.00200	"	0.100	ND	103	70-130			
o-Xylene	0.100	0.00200	"	0.100	ND	100	70-130			
m,p-Xylene	0.203	0.00400	"	0.200	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.9	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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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
Batch B4L0646 - EPA 5030 (soil)										
Matrix Spike Dup (B4L0646-MSD1)		Source: E4L0258-01			Prepared: 12/06/2024 Analyzed: 12/06/2024					
1,2,4-Trimethylbenzene	0.0970	0.00200	mg/kg	0.100	ND	97.0	70-130	3.56	20	
1,3,5-Trimethylbenzene	0.0970	0.00200	"	0.100	ND	97.0	70-130	2.02	20	
Benzene	0.0907	0.00200	"	0.100	ND	90.7	70-130	5.28	20	
Ethylbenzene	0.100	0.00200	"	0.100	ND	100	70-130	2.67	20	
Naphthalene	0.0877	0.00380	"	0.100	0.00328	84.5	70-130	2.37	20	
Toluene	0.0974	0.00200	"	0.100	ND	97.4	70-130	5.26	20	
o-Xylene	0.0981	0.00200	"	0.100	ND	98.1	70-130	2.38	20	
m,p-Xylene	0.197	0.00400	"	0.200	ND	98.5	70-130	2.93	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.6	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4L0648 - EPA 3550B										
Blank (B4L0648-BLK1)					Prepared: 12/06/2024 Analyzed: 12/07/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	20		"	24.9		78.7	50-150			

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Project: KMG - Sarchet 41-23 & 42-23 Facility

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 B4L0648 - EPA 3550B										
LCS (B4L0648-BS1)					Prepared: 12/06/2024 Analyzed: 12/07/2024					
Diesel (C10-C28)	902	50.0	mg/kg	1000		90.2	70-130			
Residual Range Organics (C28-C40)	924	200	"	1000		92.4	70-130			
Surrogate: o-Terphenyl	47		"	49.8		94.0	50-150			

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Project: KMG - Sarchet 41-23 & 42-23 Facility

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 B4L0648 - EPA 3550B

Matrix Spike (B4L0648-MS1)		Source: E4L0260-02			Prepared: 12/06/2024 Analyzed: 12/07/2024					
Diesel (C10-C28)	931	50.0	mg/kg	1000	ND	93.1	70-130			
Residual Range Organics (C28-C40)	962	200	"	1000	ND	96.2	70-130			
Surrogate: o-Terphenyl	46		"	49.8		91.8	50-150			

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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 B4L0648 - EPA 3550B										
Matrix Spike Dup (B4L0648-MSD1)		Source: E4L0260-02			Prepared: 12/06/2024 Analyzed: 12/07/2024					
Diesel (C10-C28)	926	50.0	mg/kg	1000	ND	92.6	70-130	0.492	35	
Residual Range Organics (C28-C40)	963	200	"	1000	ND	96.3	70-130	0.110	35	
Surrogate: o-Terphenyl	46		"	49.8		91.5	50-150			

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Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

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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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 B4L0651 - EPA 3050B

Blank (B4L0651-BLK1)

Prepared: 12/06/2024 Analyzed: 12/07/2024

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 (B4L0651-BS1)

Prepared: 12/06/2024 Analyzed: 12/07/2024

Arsenic	5.55	0.290	mg/kg	5.00	111	80-120
Barium	569	10.0	"	500	114	80-120
Cadmium	5.89	0.100	"	5.00	118	80-120
Copper	53.9	10.0	"	50.0	108	80-120
Lead	5.58	1.00	"	5.00	112	80-120
Nickel	5.84	1.00	"	5.00	117	80-120
Selenium	5.82	0.260	"	5.00	116	80-120
Silver	6.01	0.100	"	5.00	120	80-120
Zinc	54.3	37.0	"	50.0	109	80-120

Matrix Spike (B4L0651-MS1)

Source: E4L0260-05

Prepared: 12/06/2024 Analyzed: 12/07/2024

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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 B4L0651 - EPA 3050B

Matrix Spike (B4L0651-MS1)		Source: E4L0260-05			Prepared: 12/06/2024 Analyzed: 12/07/2024					
Arsenic	7.28	0.269	mg/kg	4.64	1.99	114	75-125			
Barium	635	9.27	"	464	45.7	127	75-125			QM-07
Cadmium	5.96	0.0927	"	4.64	0.126	126	75-125			QM-07
Copper	59.6	9.27	"	46.4	4.23	119	75-125			
Lead	11.0	0.927	"	4.64	5.05	129	75-125			QM-07
Nickel	9.06	0.927	"	4.64	3.94	110	75-125			
Selenium	5.75	0.241	"	4.64	0.0788	122	75-125			
Silver	6.02	0.0927	"	4.64	0.0127	130	75-125			QM-07
Zinc	70.6	34.3	"	46.4	18.6	112	75-125			

Matrix Spike Dup (B4L0651-MSD1)		Source: E4L0260-05			Prepared: 12/06/2024 Analyzed: 12/07/2024					
Arsenic	6.68	0.269	mg/kg	4.65	1.99	101	75-125	8.62	20	
Barium	558	9.29	"	465	45.7	110	75-125	13.0	20	
Cadmium	5.28	0.0929	"	4.65	0.126	111	75-125	12.1	20	
Copper	53.0	9.29	"	46.5	4.23	105	75-125	11.6	20	
Lead	9.61	0.929	"	4.65	5.05	98.2	75-125	13.8	20	
Nickel	8.98	0.929	"	4.65	3.94	109	75-125	0.835	20	
Selenium	4.97	0.242	"	4.65	0.0788	105	75-125	14.5	20	
Silver	5.32	0.0929	"	4.65	0.0127	114	75-125	12.5	20	
Zinc	66.1	34.4	"	46.5	18.6	102	75-125	6.62	20	

Batch B4L1151 - EPA 3050B

Blank (B4L1151-BLK1)		Prepared: 12/11/2024 Analyzed: 12/16/2024								
Arsenic	ND	0.290	mg/kg							
Barium	ND	10.0	"							
Cadmium	ND	0.100	"							

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Metals by EPA 6000/7000 Series Methods - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4L1151 - EPA 3050B

Blank (B4L1151-BLK1)

Prepared: 12/11/2024 Analyzed: 12/16/2024

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

LCS (B4L1151-BS1)

Prepared: 12/11/2024 Analyzed: 12/16/2024

Arsenic	5.05	0.290	mg/kg	5.00	101	80-120
Barium	519	10.0	"	500	104	80-120
Cadmium	5.52	0.100	"	5.00	110	80-120
Copper	52.4	10.0	"	50.0	105	80-120
Lead	5.14	1.00	"	5.00	103	80-120
Nickel	5.16	1.00	"	5.00	103	80-120
Selenium	5.68	0.260	"	5.00	114	80-120
Silver	5.48	0.100	"	5.00	110	80-120
Zinc	53.8	37.0	"	50.0	108	80-120

Matrix Spike (B4L1151-MS1)

Source: E4K0707-04

Prepared: 12/11/2024 Analyzed: 12/16/2024

Arsenic	8.08	0.271	mg/kg	4.67	4.44	78.1	75-125	
Barium	573	9.33	"	467	71.0	108	75-125	
Cadmium	6.63	0.0933	"	4.67	3.65	63.9	75-125	QM-07
Copper	75.3	9.33	"	46.7	27.2	103	75-125	
Lead	36.2	0.933	"	4.67	35.3	20.2	75-125	QM-07
Nickel	10.3	0.933	"	4.67	5.25	108	75-125	
Selenium	5.13	0.243	"	4.67	0.212	105	75-125	
Silver	5.56	0.0933	"	4.67	1.04	96.8	75-125	

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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
Batch B4L1151 - EPA 3050B										
Matrix Spike (B4L1151-MS1)		Source: E4K0707-04			Prepared: 12/11/2024 Analyzed: 12/16/2024					
Zinc	172	34.5	mg/kg	46.7	153	41.7	75-125			QM-07
Matrix Spike Dup (B4L1151-MSD1)		Source: E4K0707-04			Prepared: 12/11/2024 Analyzed: 12/16/2024					
Arsenic	10.1	0.272	mg/kg	4.69	4.44	121	75-125	22.5	20	QR-DUP
Barium	582	9.38	"	469	71.0	109	75-125	1.69	20	
Cadmium	7.24	0.0938	"	4.69	3.65	76.4	75-125	8.68	20	
Copper	77.8	9.38	"	46.9	27.2	108	75-125	3.16	20	
Lead	43.2	0.938	"	4.69	35.3	168	75-125	17.5	20	QM-07
Nickel	10.7	0.938	"	4.69	5.25	117	75-125	4.26	20	
Selenium	5.37	0.244	"	4.69	0.212	110	75-125	4.61	20	
Silver	5.58	0.0938	"	4.69	1.04	96.6	75-125	0.308	20	
Zinc	203	34.7	"	46.9	153	107	75-125	16.4	20	

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Project: KMG - Sarchet 41-23 & 42-23 Facility

Classical Chemistry Parameters - Quality Control

Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4L0907 - DTPA Sorbitol Preparation										
Blank (B4L0907-BLK1)					Prepared: 12/09/2024 Analyzed: 12/11/2024					
Boron	ND	0.100	mg/L							
Duplicate (B4L0907-DUP1)					Source: E4L0216-01 Prepared: 12/09/2024 Analyzed: 12/11/2024					
Boron	2.25	0.0992	mg/L		2.13			5.22	50	
Batch B4L0924 - Filter .45um non acidified										
Blank (B4L0924-BLK1)					Prepared: 12/09/2024 Analyzed: 12/09/2024					
Chloride	ND	0.250	mg/L							
Sulfate	ND	0.250	"							
LCS (B4L0924-BS1)					Prepared: 12/09/2024 Analyzed: 12/09/2024					
Chloride	3.81	0.250	mg/L	4.00		95.2	90-110			
Sulfate	3.66	0.250	"	4.00		91.4	90-110			
Matrix Spike (B4L0924-MS1)					Source: E4L0169-01 Prepared: 12/09/2024 Analyzed: 12/09/2024					
Chloride	666		mg/L	500	166	99.9	90-110			
Sulfate	3380		"	500	2880	101	90-110			
Matrix Spike Dup (B4L0924-MSD1)					Source: E4L0169-01 Prepared: 12/09/2024 Analyzed: 12/09/2024					
Chloride	662		mg/L	500	166	99.1	90-110	0.605	5	
Sulfate	3380		"	500	2880	99.9	90-110	0.218	5	
Batch B4L1014 - Saturated Paste Metals										
Blank (B4L1014-BLK1)					Prepared: 12/10/2024 Analyzed: 12/12/2024					
Calcium PPM	ND	10.0	mg/L							
SAR	ND	0.0100	SAR							
Magnesium PPM	ND	10.0	mg/L							

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Classical Chemistry Parameters - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4L1014 - Saturated Paste Metals										
Blank (B4L1014-BLK1)					Prepared: 12/10/2024 Analyzed: 12/12/2024					
Sodium PPM	ND	10.0	mg/L							
Duplicate (B4L1014-DUP1)					Source: E4L0258-16 Prepared: 12/10/2024 Analyzed: 12/12/2024					
SAR	ND	0.0100	SAR		0.131				200	
Calcium PPM	2.22	10.0	mg/L		0.750			99.0	50	QR-DUP
Magnesium PPM	1.38	10.0	"		0.820			50.9	50	QR-DUP
Sodium PPM	0.700	10.0	"		0.690			1.44	50	
Batch B4L1324 - NO PREP										
Blank (B4L1324-BLK1)					Prepared: 12/16/2024 Analyzed: 12/30/2024					
Total Dissolved Solids	ND	5.00	mg/L							
LCS (B4L1324-BS1)					Prepared: 12/16/2024 Analyzed: 12/30/2024					
Total Dissolved Solids	976	5.00	mg/L	1010		96.6	90-110			
Duplicate (B4L1324-DUP1)					Source: E4L0229-02 Prepared: 12/16/2024 Analyzed: 12/30/2024					
Total Dissolved Solids	5780	5.00	mg/L		5950			3.03	10	

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Saturated Paste - Quality Control
Origins Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B4L1023 - Saturated Paste pH/EC										
Blank (B4L1023-BLK1)					Prepared: 12/10/2024 Analyzed: 12/11/2024					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
Duplicate (B4L1023-DUP1)					Source: E4L0258-16 Prepared: 12/10/2024 Analyzed: 12/11/2024					
Specific Conductance (EC)	0.0449	0.00500	mmhos/cm		0.0391			13.8	25	
pH	7.18		pH Units		7.25			0.970	25	
Batch B4L1352 - Saturated Paste pH/EC										
Duplicate (B4L1352-DUP1)					Source: E4L0257-21 Prepared: 12/13/2024 Analyzed: 12/16/2024					
pH	7.98		pH Units		7.98			0.00	25	

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2721434 - SW846 3541

BLANK (1205950904-BLK)

Prepared: 12/16/2024 Analyzed: 12/16/2024

Chrysene	ND	0.00332	mg/kg				-			U
Fluorene	ND	0.00332	"				-			U
Pyrene	ND	0.00332	"				-			U
Indeno(1,2,3-cd)pyrene	ND	0.00332	"				-			U
Fluoranthene	ND	0.00332	"				-			U
Dibenzo(a,h)anthracene	ND	0.00332	"				-			U
Naphthalene	ND	0.00332	"				-			U
Benzo(k)fluoranthene	ND	0.00332	"				-			U
Acenaphthene	ND	0.00332	"				-			U
Anthracene	ND	0.00332	"				-			U
2-Methylnaphthalene	ND	0.00332	"				-			U
Benzo(a)anthracene	ND	0.00332	"				-			U
1-Methylnaphthalene	ND	0.00332	"				-			U
Benzo(a)pyrene	ND	0.00332	"				-			U
Benzo(b)fluoranthene	ND	0.00332	"				-			U

Surrogate: 5-alpha-Androstane

0.133

"

0.166

80

22-135

LCS (1205950905-BKS)

Prepared: 12/16/2024 Analyzed: 12/16/2024

Benzo(k)fluoranthene	0.282	0.00332	mg/kg	0.332		85	40-122
Naphthalene	0.277	0.00332	"	0.332		83	38-109
Indeno(1,2,3-cd)pyrene	0.314	0.00332	"	0.332		94	38-133
Fluorene	0.292	0.00332	"	0.332		88	37-115
Fluoranthene	0.307	0.00332	"	0.332		92	39-119
Pyrene	0.300	0.00332	"	0.332		90	38-117
2-Methylnaphthalene	0.302	0.00332	"	0.332		91	39-110
Dibenzo(a,h)anthracene	0.319	0.00332	"	0.332		96	38-132
1-Methylnaphthalene	0.286	0.00332	"	0.332		86	39-109

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2721434 - SW846 3541

LCS (1205950905-BKS)

Prepared: 12/16/2024 Analyzed: 12/16/2024

Chrysene	0.307	0.00332	mg/kg	0.332		92	42-117			
Acenaphthene	0.293	0.00332	"	0.332		88	41-112			
Anthracene	0.305	0.00332	"	0.332		92	41-117			
Benzo(a)anthracene	0.313	0.00332	"	0.332		94	42-120			
Benzo(a)pyrene	0.314	0.00332	"	0.332		94	39-127			
Benzo(b)fluoranthene	0.298	0.00332	"	0.332		89	39-123			
Surrogate: 5-alpha-Androstane	0.160		"	0.166		96	22-135			

LCSD (1205950906-BKSD)

Prepared: 12/16/2024 Analyzed: 12/16/2024

Naphthalene	0.234	0.00332	mg/kg	0.332		71	38-109	17	30	
Dibenzo(a,h)anthracene	0.286	0.00332	"	0.332		86	38-132	11	30	
Indeno(1,2,3-cd)pyrene	0.286	0.00332	"	0.332		86	38-133	9	30	
Anthracene	0.274	0.00332	"	0.332		83	41-117	11	30	
Fluorene	0.258	0.00332	"	0.332		78	37-115	12	30	
Fluoranthene	0.279	0.00332	"	0.332		84	39-119	9	30	
Pyrene	0.271	0.00332	"	0.332		82	38-117	10	30	
1-Methylnaphthalene	0.244	0.00332	"	0.332		74	39-109	16	30	
Chrysene	0.284	0.00332	"	0.332		86	42-117	8	30	
Benzo(a)pyrene	0.290	0.00332	"	0.332		87	39-127	8	30	
2-Methylnaphthalene	0.257	0.00332	"	0.332		77	39-110	16	30	
Acenaphthene	0.257	0.00332	"	0.332		77	41-112	13	30	
Benzo(a)anthracene	0.287	0.00332	"	0.332		87	42-120	9	30	
Benzo(b)fluoranthene	0.282	0.00332	"	0.332		85	39-123	5	30	
Benzo(k)fluoranthene	0.275	0.00332	"	0.332		83	40-122	3	30	
Surrogate: 5-alpha-Androstane	0.148		"	0.166		89	22-135			

MS (1205950907 S)

Source: 699598003

Prepared: 12/16/2024 Analyzed: 12/16/2024

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2721434 - SW846 3541

MS (1205950907 S)		Source: 699598003			Prepared: 12/16/2024 Analyzed: 12/16/2024					
Naphthalene	0.0913	0.00402	mg/kg dry	0.402	<0.00133	23	16-126			
Benzo(k)fluoranthene	0.103	0.00402	"	0.402	<0.00133	25	18-138			
Indeno(1,2,3-cd)pyrene	0.109	0.00402	"	0.402	<0.00133	27	13-134			
Fluorene	0.106	0.00402	"	0.402	<0.00133	26	16-134			
Fluoranthene	0.111	0.00402	"	0.402	<0.00133	28	14-136			
Dibenzo(a,h)anthracene	0.111	0.00402	"	0.402	<0.00133	28	11-134			
Chrysene	0.109	0.00402	"	0.402	<0.00133	27	19-129			
Pyrene	0.109	0.00402	"	0.402	<0.00133	27	12-139			
1-Methylnaphthalene	0.0981	0.00402	"	0.402	<0.00133	24	15-129			
Benzo(a)pyrene	0.118	0.00402	"	0.402	<0.00133	29	16-133			
Benzo(a)anthracene	0.111	0.00402	"	0.402	<0.00133	28	20-132			
Anthracene	0.105	0.00402	"	0.402	<0.00133	26	18-136			
Acenaphthene	0.0993	0.00402	"	0.402	<0.00133	25	17-129			
2-Methylnaphthalene	0.102	0.00402	"	0.402	<0.00133	25	15-132			
Benzo(b)fluoranthene	0.105	0.00402	"	0.402	<0.00133	26	14-136			

Surrogate: 5-alpha-Androstane 0.0519 " 0.201 0.0725 26 22-135

MSD (1205950908 SD)		Source: 699598003			Prepared: 12/16/2024 Analyzed: 12/16/2024					
Dibenzo(a,h)anthracene	0.120	0.00402	mg/kg dry	0.402	<0.00133	30	11-134	8	30	
Fluoranthene	0.126	0.00402	"	0.402	<0.00133	31	14-136	12	30	
Fluorene	0.120	0.00402	"	0.402	<0.00133	30	16-134	12	30	
Indeno(1,2,3-cd)pyrene	0.118	0.00402	"	0.402	<0.00133	29	13-134	8	30	
Chrysene	0.122	0.00402	"	0.402	<0.00133	30	19-129	12	30	
Pyrene	0.123	0.00402	"	0.402	<0.00133	31	12-139	12	30	
Benzo(a)pyrene	0.132	0.00402	"	0.402	<0.00133	33	16-133	11	30	
Naphthalene	0.0973	0.00402	"	0.402	<0.00133	24	16-126	6	30	
1-Methylnaphthalene	0.107	0.00402	"	0.402	<0.00133	27	15-129	9	30	

Origins Laboratory



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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417891
Project: KMG - Sarchet 41-23 & 42-23 Facility

PAH by 8270E SIM - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2721434 - SW846 3541										
MSD (1205950908 SD)		Source: 699598003			Prepared: 12/16/2024 Analyzed: 12/16/2024					
Benzo(b)fluoranthene	0.118	0.00402	mg/kg dry	0.402	<0.00133	29	14-136	12	30	
Benzo(a)anthracene	0.125	0.00402	"	0.402	<0.00133	31	20-132	12	30	
Anthracene	0.122	0.00402	"	0.402	<0.00133	30	18-136	14	30	
Acenaphthene	0.111	0.00402	"	0.402	<0.00133	28	17-129	11	30	
2-Methylnaphthalene	0.111	0.00402	"	0.402	<0.00133	28	15-132	8	30	
Benzo(k)fluoranthene	0.114	0.00402	"	0.402	<0.00133	28	18-138	10	30	
Surrogate: 5-alpha-Androstane	0.0635		"	0.201	0.0725	32	22-135			

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Total Metals by 7196A - Quality Control GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2726781 - SW846 3060A										
BLANK (1205962170-BLK)					Prepared: 01/03/2025 Analyzed: 01/10/2025					
Hexavalent Chromium	ND	0.274	mg/kg				-			U
LCS (1205962171-BKS)					Prepared: 01/03/2025 Analyzed: 01/10/2025					
Hexavalent Chromium	2.60	0.256	mg/kg	2.56		102	80-120			
DUP (1205962172 D)					Source: E4L0260-02 Prepared: 01/03/2025 Analyzed: 01/10/2025					
Hexavalent Chromium	ND	0.339	mg/kg dry		<0.135		0-50	N/A	50	U
MS (1205962173 S)					Source: E4L0260-02 Prepared: 01/03/2025 Analyzed: 01/10/2025					
Hexavalent Chromium	2.96	0.339	mg/kg dry	3.39	<0.135	86.3	75-125			
DUP (1205962174 D)					Source: E4L0260-03 Prepared: 01/03/2025 Analyzed: 01/10/2025					
Hexavalent Chromium	ND	0.304	mg/kg dry		<0.122		0-50	N/A	50	U
MS (1205962175 S)					Source: E4L0260-03 Prepared: 01/03/2025 Analyzed: 01/10/2025					
Hexavalent Chromium	2.46	0.305	mg/kg dry	3.05	<0.122	80.7	75-125			
ILCS (1205962176-ILCS)					Prepared: 01/03/2025 Analyzed: 01/10/2025					
Hexavalent Chromium	6.82	0.320	mg/kg	6.51		105	80-120			

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Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

QR-DUP RPD exceeds QC acceptance criteria, this indicates source sample is not homogenous.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

O-04 This sample was analyzed outside the EPA recommended holding time.

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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