



Ensolum

January 07, 2025

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

Project Name - KMG - Madrigal 02-22 Facility

Project Number - 09A1417840

Attached are your analytical results for KMG - Madrigal 02-22 Facility received by Origins Laboratory November 26, 2024. This project is associated with Origins project number E4K0837-01.

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



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

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01(02-22)@4'	E4K0837-01	Soil	November 26, 2024 14:00	11/26/2024 16:42
FL01(02-22)@4'-V	E4K0837-02	Soil	November 26, 2024 14:05	11/26/2024 16:42
FL02(02-22)@6'	E4K0837-03	Soil	November 26, 2024 15:10	11/26/2024 16:42
FL02(02-22)@6'-V	E4K0837-04	Soil	November 26, 2024 15:15	11/26/2024 16:42
FL03(02-22)@4'	E4K0837-05	Soil	November 26, 2024 14:40	11/26/2024 16:42
FL03(02-22)@4'-V	E4K0837-06	Soil	November 26, 2024 14:42	11/26/2024 16:42
GW-FL03(02-22)@4'	E4K0837-07	Water	November 26, 2024 14:45	11/26/2024 16:42
FL04(02-22)@3'	E4K0837-08	Soil	November 26, 2024 15:00	11/26/2024 16:42
FL04(02-22)@3'-V	E4K0837-09	Soil	November 26, 2024 15:00	11/26/2024 16:42

Origins Laboratory



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

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility


Client: Ensolium
 Address: _____
 Project Manager: Jeremy Espinoza Key:
 Project Name: Madrigal 02-22 Facility
 Project Number: 09A1417840
 Telephone Number: (720) 540-2134
 Email Address: MM1 Team
 Collected By: KE
 Invoice/Billing Info: IMPAKTEL
 W=Water
 SW=Surface Water
 WW=Waste Water
 L=Liquid

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
							Oil	PC	
1	Fl01(02-22)041	11/20/24	1400	3	S	UNP	X		
2	Fl01(02-22)041		1405	3	S		X		
3	Fl08(02-22)061		1510	3	S		X		
4	Fl02(02-22)061		1515	3	S		X		
5	Fl03(02-22)061		1440	3	S		X		
5	Fl04(02-22)041		1440	3	S		X		
7	Fl05(02-22)041		1445	4	GW		X		
8	Fl04(02-22)03		1500	3	S		X		
9	Fl04(02-22)03		1500	3	S		X		
10									

Reinforced By: [Signature] Date: 11/20/24 Time: 1642
 Received By: [Signature] Date: 11/20/24 Time: 1642
 Turnaround Time
 SAME DAY 24 Hr
 48 Hr 72
 Standard

1725 Elk Place Denver, Co 80211 | # 303.433.1322 | originslab.com | Temp Received -2.9 Received On Ice? Yes No

Origins Laboratory


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Ensolium
 11049 W 44th Avenue, Suite 103
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Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: E4K0837 Client: ENSOLIUM
 Client Project ID: Madrigal
 Checklist Completed by: JHO/VMR Shipped Via: LP
 Date/time completed: 11/26/24 (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 °C 1 °C 1 °C (Describe)
 Thermometer ID: 707

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present ⁽¹⁾ ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.		<input checked="" type="checkbox"/>		
Are samples preserved that require preservation and was it checked ⁽¹⁾ ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO3, HCL, H2SO4) / (pH >10 for samples preserved with NaasO2+NaOH, ZnAc+NaOH)	<input checked="" type="checkbox"/>			NC
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) JHO Date/Time Reviewed 11/26/24

Origins Laboratory



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

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

FL01(02-22)@4'

11/26/2024 2:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E4K0837-01 (Soil)**

Boron (DTPA Sorbitol)

Boron	0.294		0.0990	mg/L	1	B4K2714	11/27/2024	12/02/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K2655	11/26/2024	11/27/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	72.9 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4K2653	11/26/2024	11/27/2024	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	106 %		70-130			"	"	"	
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Origins Laboratory



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Jeremy Espinoza
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Project: KMG - Madrigal 02-22 Facility

FL01(02-22)@4'

11/26/2024 2:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E4K0837-01 (Soil)**

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	106 %		70-130			B4K26 53	11/26/2024	11/27/2024	
Surrogate: 4-Bromofluorobenzene	97.0 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	1.57		0.499	meq/L	10	[CALC]	11/27/2024	12/03/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	5.53		0.435	"	"	"	"	"	

PAH by 3541/8270

1-Methylnaphthalene	ND	0.00123	0.00373	mg/kg dry	1	2717438	12/09/2024	12/10/2024	U
2-Methylnaphthalene	ND	0.00123	0.00373	"	"	"	"	"	U
Acenaphthene	ND	0.00123	0.00373	"	"	"	"	"	U
Anthracene	ND	0.00123	0.00373	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00123	0.00373	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00123	0.00373	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00123	0.00373	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00123	0.00373	"	"	"	"	"	U
Chrysene	ND	0.00123	0.00373	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00123	0.00373	"	"	"	"	"	U
Fluoranthene	ND	0.00123	0.00373	"	"	"	"	"	U

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Project: KMG - Madrigal 02-22 Facility

FL01(02-22)@4'

11/26/2024 2:00:00PM

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

E4K0837-01 (Soil)

PAH by 3541/8270

Fluorene	ND	0.00123	0.00373	mg/kg dry	1	2717438	12/09/2024	12/10/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00123	0.00373	"	"	"	"	"	U
Naphthalene	ND	0.00123	0.00373	"	"	"	"	"	U
Pyrene	ND	0.00123	0.00373	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 65 % 22-135 " " "

pH in Soil by 9045D

pH 8.01 pH Units 1 B4K2720 11/27/2024 12/03/2024

SAR by 20B Saturated Paste

SAR 5.28 0.0100 SAR 1 B4K2707 11/27/2024 12/03/2024

Specific Conductance Mod. 9050A

Specific Conductance (EC) 0.935 0.00500 mmhos/cm 1 B4K2720 11/27/2024 12/03/2024

Table 915 metals by EPA 6020B

Arsenic	2.01	0.248	mg/kg	10	B4K2658	11/26/2024	11/27/2024
Barium	64.8	8.55	"	"	"	"	"
Cadmium	0.109	0.0855	"	"	"	"	"

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Project: KMG - Madrigal 02-22 Facility

FL01(02-22)@4'

11/26/2024 2:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-01 (Soil)

Table 915 metals by EPA 6020B

Copper	ND		8.55	mg/kg	10	B4K2658	11/26/2024	11/27/2024	
Lead	5.76		0.855	"	"	"	"	"	
Nickel	5.07		0.855	"	"	"	"	"	
Selenium	ND		0.222	"	"	"	"	"	
Silver	ND		0.0855	"	"	"	"	"	
Zinc	ND		31.6	"	"	"	"	"	

Total Metals 7196A

Hexavalent Chromium	ND	0.105	0.263	mg/kg dry	1	2725599	12/26/2024	01/02/2025	U
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Origins Laboratory



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 11049 W 44th Avenue, Suite 103
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Jeremy Espinoza
 Project Number: 09A1417840
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FL01(02-22)@4'-V
11/26/2024 2:05:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-02 (Soil)

pH in Soil by 9045D

pH	8.25			pH Units	1	B4L0627	12/06/2024	12/09/2024	
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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: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL02(02-22)@6'

11/26/2024 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-03 (Soil)

Boron (DTPA Sorbitol)

Boron	1.65		0.0987	mg/L	1	B4K2714	11/27/2024	12/02/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K2655	11/26/2024	11/27/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: <i>o</i> -Terphenyl	70.6 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4K2653	11/26/2024	11/27/2024	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	108 %		70-130			"	"	"	
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Origins Laboratory



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 Wheat Ridge CO 80033

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL02(02-22)@6'

11/26/2024 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-03 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	106 %		70-130			B4K26 53	11/26/2024	11/27/2024	
Surrogate: 4-Bromofluorobenzene	129 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	12.3		0.499	meq/L	10	[CALC]	11/27/2024	12/03/2024	
Magnesium	9.40		0.823	"	"	"	"	"	
Sodium	36.1		0.435	"	"	"	"	"	

PAH by 3541/8270

1-Methylnaphthalene	ND	0.00127	0.00385	mg/kg dry	1	2717438	12/09/2024	12/10/2024	U
2-Methylnaphthalene	ND	0.00127	0.00385	"	"	"	"	"	U
Acenaphthene	ND	0.00127	0.00385	"	"	"	"	"	U
Anthracene	ND	0.00127	0.00385	"	"	"	"	"	U
Benzo(a)anthracene	0.00501	0.00127	0.00385	"	"	"	"	"	
Benzo(a)pyrene	0.00655	0.00127	0.00385	"	"	"	"	"	
Benzo(b)fluoranthene	0.00770	0.00127	0.00385	"	"	"	"	"	
Benzo(k)fluoranthene	0.00308	0.00127	0.00385	"	"	"	"	"	J
Chrysene	0.00616	0.00127	0.00385	"	"	"	"	"	
Dibenzo(a,h)anthracene	ND	0.00127	0.00385	"	"	"	"	"	U
Fluoranthene	0.00501	0.00127	0.00385	"	"	"	"	"	
Fluorene	ND	0.00127	0.00385	"	"	"	"	"	U

Origins Laboratory



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Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

FL02(02-22)@6'

11/26/2024 3:10:00PM

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

E4K0837-03 (Soil)

PAH by 3541/8270

Indeno(1,2,3-cd)pyrene	0.00462	0.00127	0.00385	mg/kg dry	1	2717438	12/09/2024	12/10/2024	
Naphthalene	ND	0.00127	0.00385	"	"	"	"	"	U
Pyrene	0.00732	0.00127	0.00385	"	"	"	"	"	

Surrogate: 5-alpha-Androstane 43 % 22-135 " " "

pH in Soil by 9045D

pH 7.78 pH Units 1 B4K2720 11/27/2024 12/03/2024

SAR by 20B Saturated Paste

SAR 11.0 0.0100 SAR 1 B4K2707 11/27/2024 12/03/2024

Specific Conductance Mod. 9050A

Specific Conductance (EC) 5.30 0.00500 mmhos/cm 1 B4K2720 11/27/2024 12/03/2024

Table 915 metals by EPA 6020B

Arsenic	3.31	0.256	mg/kg	10	B4K2658	11/26/2024	11/27/2024
Barium	88.2	8.83	"	"	"	"	"
Cadmium	0.258	0.0883	"	"	"	"	"
Copper	9.94	8.83	"	"	"	"	"

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11049 W 44th Avenue, Suite 103
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Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

FL02(02-22)@6'

11/26/2024 3:10:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-03 (Soil)

Table 915 metals by EPA 6020B

Lead	14.1		0.883	mg/kg	10	B4K2658	11/26/2024	11/27/2024	
Nickel	8.47		0.883	"	"	"	"	"	
Selenium	ND		0.230	"	"	"	"	"	
Silver	ND		0.0883	"	"	"	"	"	
Zinc	42.9		32.7	"	"	"	"	"	

Total Metals 7196A

Hexavalent Chromium	ND	0.127	0.317	mg/kg dry	1	2725599	12/26/2024	01/02/2025	U
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Origins Laboratory



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Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL02(02-22)@6'-V
11/26/2024 3:15:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-04 (Soil)

pH in Soil by 9045D

pH	8.07			pH Units	1	B4L0627	12/06/2024	12/09/2024	
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Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL03(02-22)@4'

11/26/2024 2:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-05 (Soil)

Boron (DTPA Sorbitol)

Boron	0.706	0.0990	mg/L	1	B4K2714	11/27/2024	12/02/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4K2655	11/26/2024	11/27/2024	Ua
Residual Range Organics (C28-C40)	ND	100	"	"	"	"	"	Ua

Surrogate: <i>o</i> -Terphenyl	68.1 %	50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4K2653	11/26/2024	11/27/2024	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: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL03(02-22)@4'

11/26/2024 2:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-05 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	112 %		70-130			B4K26 53	11/26/2024	11/27/2024	
Surrogate: 4-Bromofluorobenzene	94.3 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	7.58		0.499	meq/L	10	[CALC]	11/27/2024	12/03/2024	
Magnesium	5.74		0.823	"	"	"	"	"	
Sodium	13.3		0.435	"	"	"	"	"	

PAH by 3541/8270

1-Methylnaphthalene	ND	0.00128	0.00389	mg/kg dry	1	2717438	12/09/2024	12/10/2024	U
2-Methylnaphthalene	0.00194	0.00128	0.00389	"	"	"	"	"	J
Acenaphthene	ND	0.00128	0.00389	"	"	"	"	"	U
Anthracene	ND	0.00128	0.00389	"	"	"	"	"	U
Benzo(a)anthracene	0.00272	0.00128	0.00389	"	"	"	"	"	J
Benzo(a)pyrene	0.00350	0.00128	0.00389	"	"	"	"	"	J
Benzo(b)fluoranthene	0.00389	0.00128	0.00389	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.00128	0.00389	"	"	"	"	"	U
Chrysene	0.00311	0.00128	0.00389	"	"	"	"	"	J
Dibenzo(a,h)anthracene	ND	0.00128	0.00389	"	"	"	"	"	U
Fluoranthene	0.00233	0.00128	0.00389	"	"	"	"	"	J
Fluorene	ND	0.00128	0.00389	"	"	"	"	"	U

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

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

FL03(02-22)@4'

11/26/2024 2:40:00PM

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

E4K0837-05 (Soil)

PAH by 3541/8270

Indeno(1,2,3-cd)pyrene	0.00233	0.00128	0.00389	mg/kg dry	1	2717438	12/09/2024	12/10/2024	J
Naphthalene	ND	0.00128	0.00389	"	"	"	"	"	U
Pyrene	0.00350	0.00128	0.00389	"	"	"	"	"	J

Surrogate: 5-alpha-Androstane 38 % 22-135 " " "

pH in Soil by 9045D

pH	8.12			pH Units	1	B4K2720	11/27/2024	12/03/2024	
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SAR by 20B Saturated Paste

SAR	5.14		0.0100	SAR	1	B4K2707	11/27/2024	12/03/2024	
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Specific Conductance Mod. 9050A

Specific Conductance (EC)	2.73		0.00500	mmhos/cm	1	B4K2720	11/27/2024	12/03/2024	
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Table 915 metals by EPA 6020B

Arsenic	2.63		0.262	mg/kg	10	B4K2658	11/26/2024	11/27/2024	
Barium	58.0		9.05	"	"	"	"	"	
Cadmium	0.165		0.0905	"	"	"	"	"	
Copper	ND		9.05	"	"	"	"	"	

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

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

FL03(02-22)@4'

11/26/2024 2:40:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-05 (Soil)

Table 915 metals by EPA 6020B

Lead	9.89		0.905	mg/kg	10	B4K2658	11/26/2024	11/27/2024	
Nickel	5.92		0.905	"	"	"	"	"	
Selenium	ND		0.235	"	"	"	"	"	
Silver	ND		0.0905	"	"	"	"	"	
Zinc	ND		33.5	"	"	"	"	"	

Total Metals 7196A

Hexavalent Chromium	ND	0.129	0.323	mg/kg dry	1	2725599	12/26/2024	01/02/2025	U
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Ensolium
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 Wheat Ridge CO 80033

Jeremy Espinoza
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 Project: KMG - Madrigal 02-22 Facility

FL03(02-22)@4'-V
11/26/2024 2:42:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-06 (Soil)

pH in Soil by 9045D

pH	7.93			pH Units	1	B4L0627	12/06/2024	12/09/2024	
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Ensolum
11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

GW-FL03(02-22)@4'

11/26/2024 2:45:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E4K0837-07 (Water)**

Anions by IC 300.0

Chloride	457		31.2	mg/L	125	B4K2701	11/27/2024	11/27/2024	
Sulfate	621		31.2	"	"	"	"	"	

BTEX+N+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		2.00	ug/L	1	B4K2657	11/26/2024	11/26/2024	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	97.0 %		70-130			"	"	"	
Surrogate: Toluene-d8	98.4 %		70-130			"	"	"	
Surrogate: 4-Bromofluorobenzene	100 %		70-130			"	"	"	

Total Dissolved Solids by 2540C

Total Dissolved Solids	2350		5.00	mg/L	1	B4L0324	12/03/2024	12/03/2024	
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11049 W 44th Avenue, Suite 103
Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

FL04(02-22)@3'

11/26/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory
E4K0837-08 (Soil)**

Boron (DTPA Sorbitol)

Boron	0.642		0.100	mg/L	1	B4K2714	11/27/2024	12/02/2024	
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DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K2655	11/26/2024	11/27/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	72.2 %		50-150			"	"	"	
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GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4K2653	11/26/2024	11/27/2024	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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Ensolum
 11049 W 44th Avenue, Suite 103
 Wheat Ridge CO 80033

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL04(02-22)@3'

11/26/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-08 (Soil)

GBTEX+TMBs by 8260D

Surrogate: Toluene-d8	107 %		70-130			B4K26 53	11/26/2024	11/27/2024	
Surrogate: 4-Bromofluorobenzene	96.8 %		70-130			"	"	"	

Metals by Saturated Paste by EPA 6010

Calcium	0.723		0.499	meq/L	10	[CALC]	11/27/2024	12/03/2024	
Magnesium	0.842		0.823	"	"	"	"	"	
Sodium	1.00		0.435	"	"	"	"	"	

PAH by 3541/8270

1-Methylnaphthalene	0.00191	0.00126	0.00382	mg/kg dry	1	2717438	12/09/2024	12/10/2024	J
2-Methylnaphthalene	0.00497	0.00126	0.00382	"	"	"	"	"	
Acenaphthene	ND	0.00126	0.00382	"	"	"	"	"	U
Anthracene	ND	0.00126	0.00382	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00126	0.00382	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00126	0.00382	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00126	0.00382	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00126	0.00382	"	"	"	"	"	U
Chrysene	ND	0.00126	0.00382	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00126	0.00382	"	"	"	"	"	U
Fluoranthene	ND	0.00126	0.00382	"	"	"	"	"	U

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Ensolum
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 Wheat Ridge CO 80033

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL04(02-22)@3'

11/26/2024 3:00:00PM

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

E4K0837-08 (Soil)

PAH by 3541/8270

Fluorene	ND	0.00126	0.00382	mg/kg dry	1	2717438	12/09/2024	12/10/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00126	0.00382	"	"	"	"	"	U
Naphthalene	0.00229	0.00126	0.00382	"	"	"	"	"	J
Pyrene	ND	0.00126	0.00382	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane 42 % 22-135 " " "

pH in Soil by 9045D

pH 8.41 pH Units 1 B4K2720 11/27/2024 12/03/2024

SAR by 20B Saturated Paste

SAR 1.13 0.0100 SAR 1 B4K2707 11/27/2024 12/03/2024

Specific Conductance Mod. 9050A

Specific Conductance (EC) 0.297 0.00500 mmhos/cm 1 B4K2720 11/27/2024 12/03/2024

Table 915 metals by EPA 6020B

Arsenic 2.03 0.274 mg/kg 10 B4K2658 11/26/2024 11/27/2024
 Barium 57.3 9.44 " " " " "
 Cadmium ND 0.0944 " " " " "

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

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

FL04(02-22)@3'

11/26/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-08 (Soil)

Table 915 metals by EPA 6020B

Copper	ND		9.44	mg/kg	10	B4K2658	11/26/2024	11/27/2024	
Lead	5.14		0.944	"	"	"	"	"	
Nickel	5.38		0.944	"	"	"	"	"	
Selenium	ND		0.245	"	"	"	"	"	
Silver	ND		0.0944	"	"	"	"	"	
Zinc	ND		34.9	"	"	"	"	"	

Total Metals 7196A

Hexavalent Chromium	ND	0.136	0.339	mg/kg dry	1	2725599	12/26/2024	01/02/2025	U
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Origins Laboratory



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Ensolium
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 Wheat Ridge CO 80033

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

FL04(02-22)@3'-V
11/26/2024 3:00:00PM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory
E4K0837-09 (Soil)

pH in Soil by 9045D

pH	8.26			pH Units	1	B4L0627	12/06/2024	12/09/2024	
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Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 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
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Batch B4K2653 - EPA 5030 (soil)

Blank (B4K2653-BLK1)

Prepared: 11/26/2024 Analyzed: 11/26/2024

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	0.12		"	0.125		94.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		106	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.9	70-130			

Origins Laboratory

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Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 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
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Batch B4K2653 - EPA 5030 (soil)

LCS (B4K2653-BS1)

Prepared: 11/26/2024 Analyzed: 11/26/2024

1,2,4-Trimethylbenzene	0.107	0.00200	mg/kg	0.100		107	70-130			
1,3,5-Trimethylbenzene	0.107	0.00200	"	0.100		107	70-130			
Benzene	0.121	0.00200	"	0.100		121	70-130			
Ethylbenzene	0.118	0.00200	"	0.100		118	70-130			
Naphthalene	0.0897	0.00380	"	0.100		89.7	70-130			
Toluene	0.100	0.00200	"	0.100		100	70-130			
o-Xylene	0.106	0.00200	"	0.100		106	70-130			
m,p-Xylene	0.228	0.00400	"	0.200		114	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		91.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	70-130			

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Jeremy Espinoza
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Project: KMG - Madrigal 02-22 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
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Batch B4K2653 - EPA 5030 (soil)

Matrix Spike (B4K2653-MS1)	Source: E4K0834-48			Prepared: 11/26/2024 Analyzed: 11/26/2024						
1,2,4-Trimethylbenzene	0.0971	0.00200	mg/kg	0.100	ND	97.1	70-130			
1,3,5-Trimethylbenzene	0.0945	0.00200	"	0.100	ND	94.5	70-130			
Benzene	0.104	0.00200	"	0.100	ND	104	70-130			
Ethylbenzene	0.105	0.00200	"	0.100	ND	105	70-130			
Naphthalene	0.0974	0.00380	"	0.100	ND	97.4	70-130			
Toluene	0.108	0.00200	"	0.100	ND	108	70-130			
o-Xylene	0.0976	0.00200	"	0.100	ND	97.6	70-130			
m,p-Xylene	0.203	0.00400	"	0.200	ND	101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		102	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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Project Number: 09A1417840
Project: KMG - Madrigal 02-22 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
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Batch B4K2653 - EPA 5030 (soil)

Matrix Spike Dup (B4K2653-MSD1)	Source: E4K0834-48			Prepared: 11/26/2024 Analyzed: 11/26/2024						
1,2,4-Trimethylbenzene	0.0902	0.00200	mg/kg	0.100	ND	90.2	70-130	7.41	20	
1,3,5-Trimethylbenzene	0.0872	0.00200	"	0.100	ND	87.2	70-130	8.01	20	
Benzene	0.101	0.00200	"	0.100	ND	101	70-130	3.44	20	
Ethylbenzene	0.0947	0.00200	"	0.100	ND	94.7	70-130	10.3	20	
Naphthalene	0.114	0.00380	"	0.100	ND	114	70-130	16.2	20	
Toluene	0.0989	0.00200	"	0.100	ND	98.9	70-130	8.94	20	
o-Xylene	0.0900	0.00200	"	0.100	ND	90.0	70-130	8.06	20	
m,p-Xylene	0.184	0.00400	"	0.200	ND	92.2	70-130	9.61	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		114	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.6	70-130			

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

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 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 B4K2655 - EPA 3550B										
Blank (B4K2655-BLK1)										
					Prepared: 11/26/2024 Analyzed: 11/27/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	18		"	24.9		73.2	50-150			

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Ensolium
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 Wheat Ridge CO 80033

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 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 B4K2655 - EPA 3550B

LCS (B4K2655-BS1)

Prepared: 11/26/2024 Analyzed: 11/27/2024

Diesel (C10-C28)	773	50.0	mg/kg	1000		77.3	70-130			
Residual Range Organics (C28-C40)	835	200	"	1000		83.5	70-130			
Surrogate: o-Terphenyl	37		"	49.8		73.4	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
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Batch B4K2655 - EPA 3550B

Matrix Spike (B4K2655-MS1)	Source: E4K0834-48		Prepared: 11/26/2024 Analyzed: 11/27/2024							
Diesel (C10-C28)	772	50.0	mg/kg	1000	ND	77.2	70-130			
Residual Range Organics (C28-C40)	842	200	"	1000	ND	84.2	70-130			
Surrogate: o-Terphenyl	33		"	49.8		67.0	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
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Batch B4K2655 - EPA 3550B

Matrix Spike Dup (B4K2655-MSD1)	Source: E4K0834-48		Prepared: 11/26/2024 Analyzed: 11/27/2024							
Diesel (C10-C28)	805	50.0	mg/kg	1000	ND	80.5	70-130	4.21	35	
Residual Range Organics (C28-C40)	883	200	"	1000	ND	88.3	70-130	4.76	35	
Surrogate: o-Terphenyl	37		"	49.8		74.2	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
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Batch B4K2657 - EPA 5030B (Water)

Blank (B4K2657-BLK1)

Prepared: 11/26/2024 Analyzed: 11/26/2024

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
<i>Surrogate: 1,2-Dichloroethane-d4</i>	61		"	62.5		97.0	70-130			
<i>Surrogate: Toluene-d8</i>	61		"	62.5		97.8	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	62		"	62.5		99.9	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
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Batch B4K2657 - EPA 5030B (Water)

LCS (B4K2657-BS1)

Prepared: 11/26/2024 Analyzed: 11/26/2024

1,2,4-Trimethylbenzene	55.5	2.00	ug/L	50.0		111	70-130			
1,3,5-Trimethylbenzene	56.6	2.00	"	50.0		113	70-130			
Benzene	47.0	1.00	"	50.0		94.0	70-130			
Ethylbenzene	53.5	1.00	"	50.0		107	70-130			
m,p-Xylene	106	2.00	"	100		106	70-130			
Naphthalene	50.5	2.00	"	50.0		101	70-130			
o-Xylene	53.0	1.00	"	50.0		106	70-130			
Toluene	48.7	1.00	"	50.0		97.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		98.6	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
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Batch B4K2657 - EPA 5030B (Water)

Matrix Spike (B4K2657-MS1)	Source: E4K0753-01			Prepared: 11/26/2024 Analyzed: 11/26/2024						
1,2,4-Trimethylbenzene	61.1	2.00	ug/L	50.0	ND	122	70-130			
1,3,5-Trimethylbenzene	64.1	2.00	"	50.0	ND	128	70-130			
Benzene	60.6	1.00	"	50.0	ND	121	70-130			
Ethylbenzene	63.5	1.00	"	50.0	ND	127	70-130			
m,p-Xylene	122	2.00	"	100	ND	122	70-130			
Naphthalene	56.5	2.00	"	50.0	ND	113	70-130			
o-Xylene	60.8	1.00	"	50.0	ND	122	70-130			
Toluene	59.6	1.00	"	50.0	ND	119	70-130			
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	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
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Batch B4K2657 - EPA 5030B (Water)

Matrix Spike Dup (B4K2657-MSD1)

Source: E4K0753-01

Prepared: 11/26/2024 Analyzed: 11/26/2024

1,2,4-Trimethylbenzene	62.0	2.00	ug/L	50.0	ND	124	70-130	1.43	20	
1,3,5-Trimethylbenzene	64.6	2.00	"	50.0	ND	129	70-130	0.715	20	
Benzene	61.0	1.00	"	50.0	ND	122	70-130	0.806	20	
Ethylbenzene	63.3	1.00	"	50.0	ND	127	70-130	0.378	20	
m,p-Xylene	123	2.00	"	100	ND	123	70-130	1.13	20	
Naphthalene	59.6	2.00	"	50.0	ND	119	70-130	5.37	20	
o-Xylene	61.2	1.00	"	50.0	ND	122	70-130	0.754	20	
Toluene	60.3	1.00	"	50.0	ND	121	70-130	1.08	20	
Surrogate: 1,2-Dichloroethane-d4	63		"	62.5		101	70-130			
Surrogate: Toluene-d8	62		"	62.5		99.6	70-130			
Surrogate: 4-Bromofluorobenzene	64		"	62.5		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
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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 B4K2658 - EPA 3050B

Blank (B4K2658-BLK1)

Prepared: 11/26/2024 Analyzed: 11/27/2024

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 (B4K2658-BS1)

Prepared: 11/26/2024 Analyzed: 11/27/2024

Arsenic	5.26	0.290	mg/kg	5.00		105	80-120			
Barium	497	10.0	"	500		99.5	80-120			
Cadmium	5.44	0.100	"	5.00		109	80-120			
Copper	55.4	10.0	"	50.0		111	80-120			
Lead	5.37	1.00	"	5.00		107	80-120			
Nickel	5.43	1.00	"	5.00		109	80-120			
Selenium	5.06	0.260	"	5.00		101	80-120			
Silver	5.28	0.100	"	5.00		106	80-120			
Zinc	50.7	37.0	"	50.0		101	80-120			

Matrix Spike (B4K2658-MS1)

Source: E4K0837-01

Prepared: 11/26/2024 Analyzed: 11/27/2024

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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 B4K2658 - EPA 3050B

Matrix Spike (B4K2658-MS1)

Source: E4K0837-01

Prepared: 11/26/2024 Analyzed: 11/27/2024

Arsenic	6.60	0.255	mg/kg	4.40	2.01	104	75-125			
Barium	543	8.80	"	440	64.8	109	75-125			
Cadmium	5.09	0.0880	"	4.40	0.109	113	75-125			
Copper	55.0	8.80	"	44.0	5.26	113	75-125			
Lead	11.2	0.880	"	4.40	5.76	125	75-125			
Nickel	10.4	0.880	"	4.40	5.07	121	75-125			
Selenium	4.46	0.229	"	4.40	0.122	98.6	75-125			
Silver	4.98	0.0880	"	4.40	0.0239	113	75-125			
Zinc	67.9	32.6	"	44.0	23.6	101	75-125			

Matrix Spike Dup (B4K2658-MSD1)

Source: E4K0837-01

Prepared: 11/26/2024 Analyzed: 11/27/2024

Arsenic	8.97	0.260	mg/kg	4.48	2.01	155	75-125	30.3	20	QM-07, QR-DUP
Barium	529	8.96	"	448	64.8	104	75-125	2.49	20	
Cadmium	5.26	0.0896	"	4.48	0.109	115	75-125	3.41	20	
Copper	55.9	8.96	"	44.8	5.26	113	75-125	1.50	20	
Lead	12.1	0.896	"	4.48	5.76	141	75-125	7.01	20	QM-07
Nickel	11.8	0.896	"	4.48	5.07	151	75-125	13.2	20	QM-07
Selenium	4.66	0.233	"	4.48	0.122	101	75-125	4.40	20	
Silver	4.65	0.0896	"	4.48	0.0239	103	75-125	6.83	20	
Zinc	73.5	33.1	"	44.8	23.6	111	75-125	7.90	20	

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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 B4K2701 - Filter .45um non acidified										
Blank (B4K2701-BLK1)					Prepared: 11/27/2024 Analyzed: 11/27/2024					
Chloride	ND	0.250	mg/L							
Sulfate	ND	0.250	"							
LCS (B4K2701-BS1)					Prepared: 11/27/2024 Analyzed: 11/27/2024					
Chloride	3.97	0.250	mg/L	4.00		99.2	90-110			
Sulfate	3.90	0.250	"	4.00		97.5	90-110			
Matrix Spike (B4K2701-MS1)					Source: E4K0837-07 Prepared: 11/27/2024 Analyzed: 11/27/2024					
Chloride	957		mg/L	500	457	99.9	90-110			
Sulfate	1130		"	500	621	101	90-110			
Matrix Spike Dup (B4K2701-MSD1)					Source: E4K0837-07 Prepared: 11/27/2024 Analyzed: 11/27/2024					
Chloride	977		mg/L	500	457	104	90-110	2.13	5	
Sulfate	1150		"	500	621	107	90-110	2.49	5	
Batch B4K2707 - Saturated Paste Metals										
Blank (B4K2707-BLK1)					Prepared: 11/27/2024 Analyzed: 12/03/2024					
SAR	ND	0.0100	SAR							
Calcium PPM	ND	10.0	mg/L							
Magnesium PPM	ND	10.0	"							
Sodium PPM	ND	10.0	"							
Duplicate (B4K2707-DUP1)					Source: E4K0834-51 Prepared: 11/27/2024 Analyzed: 12/03/2024					
SAR	ND	0.0100	SAR		0.871				200	
Calcium PPM	25.1	10.0	mg/L		25.0			0.559	50	
Magnesium PPM	13.4	10.0	"		12.7			4.99	50	
Sodium PPM	22.2	10.0	"		21.4			3.71	50	

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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 B4K2714 - DTPA Sorbitol Preparation										
Blank (B4K2714-BLK1)					Prepared: 11/27/2024 Analyzed: 12/02/2024					
Boron	ND	0.100	mg/L							
Duplicate (B4K2714-DUP1)					Source: E4K0834-55 Prepared: 11/27/2024 Analyzed: 12/02/2024					
Boron	0.111	0.0992	mg/L		0.103			6.93	50	
Batch B4L0324 - NO PREP										
Blank (B4L0324-BLK1)					Prepared: 12/03/2024 Analyzed: 12/03/2024					
Total Dissolved Solids	ND	5.00	mg/L							
LCS (B4L0324-BS1)					Prepared: 12/03/2024 Analyzed: 12/03/2024					
Total Dissolved Solids	990	5.00	mg/L	1010		98.0	90-110			
Duplicate (B4L0324-DUP1)					Source: E4K0603-09 Prepared: 12/03/2024 Analyzed: 12/03/2024					
Total Dissolved Solids	1440	5.00	mg/L		1420			1.68	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
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Batch B4K2720 - Saturated Paste pH/EC

Blank (B4K2720-BLK1)

Prepared: 11/27/2024 Analyzed: 12/03/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

Duplicate (B4K2720-DUP1)

Source: E4K0834-51

Prepared: 11/27/2024 Analyzed: 12/03/2024

pH 8.34 pH Units 8.34 0.00 25

Specific Conductance (EC) 0.400 0.00500 mmhos/cm 0.378 5.61 25

Batch B4L0627 - Saturated Paste pH/EC

Duplicate (B4L0627-DUP1)

Source: E4K0836-02

Prepared: 12/06/2024 Analyzed: 12/09/2024

pH 8.31 pH Units 8.17 1.70 25

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 Project: KMG - Madrigal 02-22 Facility

PAH by 3541/8270 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2717438 - SW846 3541

BLANK (1205942499-BLK)

Prepared: 12/09/2024 Analyzed: 12/10/2024

Pyrene	ND	0.00328	mg/kg				-			U
1-Methylnaphthalene	ND	0.00328	"				-			U
2-Methylnaphthalene	ND	0.00328	"				-			U
Acenaphthene	ND	0.00328	"				-			U
Anthracene	ND	0.00328	"				-			U
Naphthalene	ND	0.00328	"				-			U
Indeno(1,2,3-cd)pyrene	ND	0.00328	"				-			U
Fluorene	ND	0.00328	"				-			U
Fluoranthene	ND	0.00328	"				-			U
Dibenzo(a,h)anthracene	ND	0.00328	"				-			U
Chrysene	ND	0.00328	"				-			U
Benzo(k)fluoranthene	ND	0.00328	"				-			U
Benzo(b)fluoranthene	ND	0.00328	"				-			U
Benzo(a)pyrene	ND	0.00328	"				-			U
Benzo(a)anthracene	ND	0.00328	"				-			U

Surrogate: 5-alpha-Androstane

0.138

"

0.164

84

22-135

LCS (1205942500-BKS)

Prepared: 12/09/2024 Analyzed: 12/10/2024

Indeno(1,2,3-cd)pyrene	0.201	0.00331	mg/kg	0.331		61	38-133
Naphthalene	0.210	0.00331	"	0.331		64	38-109
Pyrene	0.199	0.00331	"	0.331		60	38-117
Benzo(b)fluoranthene	0.217	0.00331	"	0.331		65	39-123
1-Methylnaphthalene	0.210	0.00331	"	0.331		63	39-109
2-Methylnaphthalene	0.215	0.00331	"	0.331		65	39-110
Acenaphthene	0.203	0.00331	"	0.331		61	41-112
Anthracene	0.208	0.00331	"	0.331		63	41-117
Benzo(a)pyrene	0.213	0.00331	"	0.331		64	39-127

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Jeremy Espinoza
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 Project: KMG - Madrigal 02-22 Facility

PAH by 3541/8270 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2717438 - SW846 3541

LCS (1205942500-BKS)

Prepared: 12/09/2024 Analyzed: 12/10/2024

Benzo(k)fluoranthene	0.207	0.00331	mg/kg	0.331		63	40-122			
Fluorene	0.207	0.00331	"	0.331		62	37-115			
Chrysene	0.198	0.00331	"	0.331		60	42-117			
Dibenzo(a,h)anthracene	0.199	0.00331	"	0.331		60	38-132			
Fluoranthene	0.204	0.00331	"	0.331		62	39-119			
Benzo(a)anthracene	0.212	0.00331	"	0.331		64	42-120			
<i>Surrogate: 5-alpha-Androstane</i>	0.138		"	0.166		84	22-135			

LCSD (1205942501-BKSD)

Prepared: 12/09/2024 Analyzed: 12/10/2024

Fluorene	0.227	0.00331	mg/kg	0.331		69	37-115	9	30	
Pyrene	0.220	0.00331	"	0.331		66	38-117	10	30	
1-Methylnaphthalene	0.227	0.00331	"	0.331		69	39-109	8	30	
Benzo(b)fluoranthene	0.238	0.00331	"	0.331		72	39-123	9	30	
2-Methylnaphthalene	0.234	0.00331	"	0.331		71	39-110	8	30	
Acenaphthene	0.222	0.00331	"	0.331		67	41-112	9	30	
Anthracene	0.228	0.00331	"	0.331		69	41-117	9	30	
Naphthalene	0.228	0.00331	"	0.331		69	38-109	8	30	
Benzo(a)pyrene	0.233	0.00331	"	0.331		70	39-127	9	30	
Indeno(1,2,3-cd)pyrene	0.220	0.00331	"	0.331		66	38-133	9	30	
Benzo(k)fluoranthene	0.227	0.00331	"	0.331		69	40-122	9	30	
Chrysene	0.216	0.00331	"	0.331		65	42-117	9	30	
Dibenzo(a,h)anthracene	0.217	0.00331	"	0.331		66	38-132	9	30	
Fluoranthene	0.225	0.00331	"	0.331		68	39-119	10	30	
Benzo(a)anthracene	0.233	0.00331	"	0.331		70	42-120	9	30	
<i>Surrogate: 5-alpha-Androstane</i>	0.150		"	0.165		90	22-135			

MS (1205942502 S)

Source: 698375001

Prepared: 12/09/2024 Analyzed: 12/10/2024

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

Jeremy Espinoza
 Project Number: 09A1417840
 Project: KMG - Madrigal 02-22 Facility

PAH by 3541/8270 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2717438 - SW846 3541

MS (1205942502 S)	Source: 698375001			Prepared: 12/09/2024 Analyzed: 12/10/2024						
Naphthalene	0.240	0.00368	mg/kg dry	0.368	<0.00121	65	16-126			
Pyrene	0.238	0.00368	"	0.368	<0.00121	65	12-139			
Indeno(1,2,3-cd)pyrene	0.230	0.00368	"	0.368	<0.00121	63	13-134			
Acenaphthene	0.236	0.00368	"	0.368	<0.00121	64	17-129			
Benzo(k)fluoranthene	0.244	0.00368	"	0.368	<0.00121	66	18-138			
Benzo(b)fluoranthene	0.256	0.00368	"	0.368	<0.00121	69	14-136			
Benzo(a)pyrene	0.256	0.00368	"	0.368	<0.00121	70	16-133			
Fluorene	0.247	0.00368	"	0.368	<0.00121	67	16-134			
Anthracene	0.251	0.00368	"	0.368	<0.00121	68	18-136			
2-Methylnaphthalene	0.253	0.00368	"	0.368	<0.00121	69	15-132			
1-Methylnaphthalene	0.246	0.00368	"	0.368	<0.00121	67	15-129			
Chrysene	0.232	0.00368	"	0.368	<0.00121	63	19-129			
Dibenzo(a,h)anthracene	0.231	0.00368	"	0.368	<0.00121	63	11-134			
Fluoranthene	0.244	0.00368	"	0.368	<0.00121	66	14-136			
Benzo(a)anthracene	0.257	0.00368	"	0.368	<0.00121	70	20-132			

Surrogate: 5-alpha-Androstane 0.131 " 0.184 0.118 71 22-135

MSD (1205942503 SD)	Source: 698375001			Prepared: 12/09/2024 Analyzed: 12/10/2024						
Naphthalene	0.174	0.00372	mg/kg dry	0.372	<0.00123	47	16-126	32	30	
1-Methylnaphthalene	0.179	0.00372	"	0.372	<0.00123	48	15-129	32	30	
Pyrene	0.176	0.00372	"	0.372	<0.00123	47	12-139	30	30	
Chrysene	0.167	0.00372	"	0.372	<0.00123	45	19-129	32	30	
2-Methylnaphthalene	0.185	0.00372	"	0.372	<0.00123	50	15-132	31	30	
Acenaphthene	0.173	0.00372	"	0.372	<0.00123	47	17-129	31	30	
Anthracene	0.182	0.00372	"	0.372	<0.00123	49	18-136	32	30	
Benzo(a)anthracene	0.186	0.00372	"	0.372	<0.00123	50	20-132	32	30	
Benzo(a)pyrene	0.184	0.00372	"	0.372	<0.00123	49	16-133	33	30	

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Wheat Ridge CO 80033

Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

PAH by 3541/8270 - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2717438 - SW846 3541

MSD (1205942503 SD)	Source: 698375001			Prepared: 12/09/2024 Analyzed: 12/10/2024						
Benzo(k)fluoranthene	0.179	0.00372	mg/kg dry	0.372	<0.00123	48	18-138	31	30	
Indeno(1,2,3-cd)pyrene	0.155	0.00372	"	0.372	<0.00123	42	13-134	39	30	
Dibenzo(a,h)anthracene	0.156	0.00372	"	0.372	<0.00123	42	11-134	39	30	
Fluoranthene	0.180	0.00372	"	0.372	<0.00123	48	14-136	31	30	
Fluorene	0.184	0.00372	"	0.372	<0.00123	49	16-134	29	30	
Benzo(b)fluoranthene	0.187	0.00372	"	0.372	<0.00123	50	14-136	31	30	
Surrogate: 5-alpha-Androstane	0.0933		"	0.186	0.118	50	22-135			

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 Project: KMG - Madrigal 02-22 Facility

Total Metals 7196A - Quality Control
GEL Laboratories, LLC

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 2725599 - SW846 3060A										
BLANK (1205959580-BLK)					Prepared: 12/26/2024 Analyzed: 01/02/2025					
Hexavalent Chromium	ND	0.279	mg/kg				-			U
LCS (1205959581-BKS)					Prepared: 12/26/2024 Analyzed: 01/02/2025					
Hexavalent Chromium	3.12	0.316	mg/kg	3.16		98.8	80-120			
DUP (1205959582 D)					Source: E4K0837-01 Prepared: 12/26/2024 Analyzed: 01/02/2025					
Hexavalent Chromium	ND	0.263	mg/kg dry		<0.105		0-50	N/A	50	U
MS (1205959583 S)					Source: E4K0837-01 Prepared: 12/26/2024 Analyzed: 01/02/2025					
Hexavalent Chromium	2.28	0.263	mg/kg dry	2.63	<0.105	84.8	75-125			
DUP (1205959584 D)					Source: E4K0837-03 Prepared: 12/26/2024 Analyzed: 01/02/2025					
Hexavalent Chromium	ND	0.318	mg/kg dry		<0.127		0-50	N/A	50	U
MS (1205959585 S)					Source: E4K0837-03 Prepared: 12/26/2024 Analyzed: 01/02/2025					
Hexavalent Chromium	2.44	0.318	mg/kg dry	3.18	<0.127	74.9	75-125			
ILCS (1205959586-ILCS)					Prepared: 12/26/2024 Analyzed: 01/02/2025					
Hexavalent Chromium	4.46	0.211	mg/kg	4.24		105	80-120			

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Jeremy Espinoza
Project Number: 09A1417840
Project: KMG - Madrigal 02-22 Facility

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.

J Greater than the detection limit but less than the reporting limit

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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