

# ORIGINS LABORATORY

Ensolum

December 26, 2024

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Windell 1-13& 4& 5-18 Facility**

**Project Number - 09A1417933**

Attached are your analytical results for KMG - Windell 1-13& 4& 5-18 Facility received by Origins Laboratory November 12, 2024. This project is associated with Origins project number E4K0312-01.

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



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

Jeremy Espinoza  
Project Number: 09A1417933  
Project: KMG - Windell 1-13& 4& 5-18 Facility

### CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
PWV-W01@2'	E4K0312-01	Soil	November 12, 2024 9:02	11/12/2024 17:40
PWV-W01@2'-V	E4K0312-02	Soil	November 12, 2024 9:03	11/12/2024 17:40
PWV-B01@4'	E4K0312-03	Soil	November 12, 2024 9:47	11/12/2024 17:40
PWV-B01@4'-V	E4K0312-04	Soil	November 12, 2024 9:48	11/12/2024 17:40
AST01@0.5'	E4K0312-05	Soil	November 12, 2024 10:21	11/12/2024 17:40
AST01@0.5'-V	E4K0312-06	Soil	November 12, 2024 10:22	11/12/2024 17:40
SEP01-INLET@3'	E4K0312-07	Soil	November 12, 2024 9:22	11/12/2024 17:40
SEP01-OUTLET@3'	E4K0312-08	Soil	November 12, 2024 9:17	11/12/2024 17:40
TB-BG01@0.5'	E4K0312-09	Soil	November 12, 2024 10:28	11/12/2024 17:40

Origins Laboratory

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Project Number: 09A1417933  
Project: KMG - Windell 1-13& 4& 5-18 Facility

**ORIGINS**  
LABORATORY

Client: Ensolium

Project Manager: J. Espinoza

Key: W=Water

Telephone Number: \_\_\_\_\_

Project Number: 09A1417933

SI=Surface Water  
WI=Waste Water

S=Soil | SO=Solid | O=Oil | A=Air | G=Gas | UWP=Unpiped | HCL=Hydrochloric | HNO3=Nitric | H2SO4=Sulfuric | NaOH=Sodium Hydroxide

Email Address: KMG@ecm.com

Collected By: HR

LI=Liquid

#	Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix Preservative	Analysis		Comments
						HA	SI	
1	PW-WO1E2	11/12/24	0702	3	5 WWP	X		LC changed
2	PW-WO2E2-V		0703			X		per client
3	PW-BO1E4		0947			X		
4	PW-BO1E4-V		0948			X		
5	AD10LE05		1021					
6	AD10E05-V		1022			X		
7	SEPOI-INLET1E3		0922					
8	SEPOI-DI1E1E3		0917			X		
9	TB-BG01CO3S		1028	2		X		

Relinquished By: [Signature] Date: 11/12/24 Time: 1746 Received By: [Signature] Date: 11/12/24 Time: 7:10

Temp Received: 5.4 Received On Ice?  Yes  No

Turnaround Time:  48 Hr  72 Hr  SAME DAY  24 Hr

Origins Laboratory  
[Signature]

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

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

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


### Sample Receipt Checklist

Origins Work Order: EUK0312 Client: Ensolium  
 Checklist Completed by: JH Client Project ID: Windell  
 Date/time completed: 11/21/24 Shipped Via: HO  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 15.4 °C  °C  °C (Describe)  
 Thermometer ID: 1007 Airbill #: N/A

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?	/			
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 <sup>(1)</sup> ?	/			
Was adequate sample volume provided <sup>(1)</sup> ?	/			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		/		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	/			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	/			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	/			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	/			
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 <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted analytes 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)			/	
Additional Comments (if any):				

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

Reviewed by (Project Manager) JH Date/Time Reviewed 11/21/24

Origins Laboratory  


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 Project Number: 09A1417933  
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PWV-W01@2'

11/12/2024 9:02:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND		0.101	mg/L	1	B4K1316	11/13/2024	11/14/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K1246	11/12/2024	11/13/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	77.6 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4K1219	11/12/2024	11/13/2024	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	1.40		0.200	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4	114 %		70-130			"	"	"	
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PWV-W01@2'

11/12/2024 9:02:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	98.5 %		70-130			B4K12 19	11/12/2024	11/13/2024	
Surrogate: 4-Bromofluorobenzene	96.5 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.03		0.499	meq/L	10	[CALC]	11/13/2024	11/15/2024	
Magnesium	1.25		0.823	"	"	"	"	"	
Sodium	0.710		0.435	"	"	"	"	"	

**PAH by 3541/8270**

1-Methylnaphthalene	0.00330	0.00121	0.00367	mg/kg dry	1	2707554	11/19/2024	11/19/2024	J
2-Methylnaphthalene	0.00477	0.00121	0.00367	"	"	"	"	"	
Acenaphthene	ND	0.00121	0.00367	"	"	"	"	"	U
Anthracene	0.00257	0.00121	0.00367	"	"	"	"	"	J
Benzo(a)anthracene	0.0139	0.00121	0.00367	"	"	"	"	"	
Benzo(a)pyrene	0.0128	0.00121	0.00367	"	"	"	"	"	
Benzo(b)fluoranthene	0.0136	0.00121	0.00367	"	"	"	"	"	
Benzo(k)fluoranthene	0.00440	0.00121	0.00367	"	"	"	"	"	
Chrysene	0.0128	0.00121	0.00367	"	"	"	"	"	
Dibenzo(a,h)anthracene	0.00220	0.00121	0.00367	"	"	"	"	"	J
Fluoranthene	0.0158	0.00121	0.00367	"	"	"	"	"	
Fluorene	0.00367	0.00121	0.00367	"	"	"	"	"	
Indeno(1,2,3-cd)pyrene	0.00807	0.00121	0.00367	"	"	"	"	"	

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PWV-W01@2'

11/12/2024 9:02:00AM

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

E4K0312-01 (Soil)

**PAH by 3541/8270**

Naphthalene	ND	0.00121	0.00367	mg/kg dry	1	2707554	11/19/2024	11/19/2024	U
Pyrene	0.0224	0.00121	0.00367	"	"	"	"	"	"

Surrogate: 5-alpha-Androstane 73 % 22-135 " " "

**pH in Soil by 9045D**

pH	7.59			pH Units	1	B4K1320	11/13/2024	11/14/2024	
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**SAR by 20B Saturated Paste**

SAR	0.664		0.0100	SAR	1	B4K1309	11/13/2024	11/15/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.0890		0.00500	mmhos/cm	1	B4K1320	11/13/2024	11/14/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.11		0.248	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Barium	92.8		8.55	"	"	"	"	"	
Cadmium	0.559		0.0855	"	"	"	"	"	
Copper	18.9		8.55	"	"	"	"	"	
Lead	20.7		0.855	"	"	"	"	"	

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PWV-W01@2'

11/12/2024 9:02:00AM

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

E4K0312-01 (Soil)

**Table 915 metals by EPA 6020B**

Nickel	7.67		0.855	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Selenium	0.290		0.222	"	"	"	"	"	
Silver	0.347		0.0855	"	"	"	"	"	
Zinc	76.1		31.7	"	"	"	"	"	

**Total Metals 7196A**

Hexavalent Chromium	ND	0.163	0.408	mg/kg dry	1	2717767	12/11/2024	12/17/2024	U
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PWW-W01@2'-V

11/12/2024 9:03:00AM

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

E4K0312-02 (Soil)

**pH in Soil by 9045D**

pH	7.60			pH Units	1	B4K1427	11/14/2024	11/15/2024	
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PWV-B01@4'

11/12/2024 9:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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## Origins Laboratory E4K0312-03 (Soil)

### Boron (DTPA Sorbitol)

Boron	ND		0.0982	mg/L	1	B4K1316	11/13/2024	11/14/2024	
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### DRO/ORO by EPA 8015D

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K1246	11/12/2024	11/13/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	81.8%		50-150			"	"	"	
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### GBTEX+TMBs by 8260D

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4K1219	11/12/2024	11/13/2024	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	72.7%		70-130			"	"	"	
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PWV-B01@4'

11/12/2024 9:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-03 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	96.6 %		70-130			B4K12 19	11/12/2024	11/13/2024	
Surrogate: 4-Bromofluorobenzene	79.3 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	<b>0.702</b>		0.499	meq/L	10	[CALC]	11/13/2024	11/15/2024	
Magnesium	<b>1.10</b>		0.823	"	"	"	"	"	
Sodium	<b>2.50</b>		0.435	"	"	"	"	"	

**PAH by 3541/8270**

1-Methylnaphthalene	ND	0.00119	0.00359	mg/kg dry	1	2707554	11/19/2024	11/19/2024	U
2-Methylnaphthalene	ND	0.00119	0.00359	"	"	"	"	"	U
Acenaphthene	ND	0.00119	0.00359	"	"	"	"	"	U
Anthracene	ND	0.00119	0.00359	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00119	0.00359	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00119	0.00359	"	"	"	"	"	U
Benzo(b)fluoranthene	ND	0.00119	0.00359	"	"	"	"	"	U
Benzo(k)fluoranthene	ND	0.00119	0.00359	"	"	"	"	"	U
Chrysene	ND	0.00119	0.00359	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00119	0.00359	"	"	"	"	"	U
Fluoranthene	ND	0.00119	0.00359	"	"	"	"	"	U

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PWV-B01@4'

11/12/2024 9:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC**  
 E4K0312-03 (Soil)

**PAH by 3541/8270**

Fluorene	ND	0.00119	0.00359	mg/kg dry	1	2707554	11/19/2024	11/19/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00119	0.00359	"	"	"	"	"	U
Naphthalene	ND	0.00119	0.00359	"	"	"	"	"	U
Pyrene	ND	0.00119	0.00359	"	"	"	"	"	U

Surrogate: 5-alpha-Androstane	90 %		22-135			"	"	"	
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**pH in Soil by 9045D**

pH	8.31			pH Units	1	B4K1320	11/13/2024	11/14/2024	
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**SAR by 20B Saturated Paste**

SAR	2.63		0.0100	SAR	1	B4K1309	11/13/2024	11/15/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.220		0.00500	mmhos/cm	1	B4K1320	11/13/2024	11/14/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.41		0.270	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Barium	40.8		9.32	"	"	"	"	"	

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 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

PWV-B01@4'

11/12/2024 9:47:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-03 (Soil)**

**Table 915 metals by EPA 6020B**

Cadmium	ND		0.0932	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Copper	ND		9.32	"	"	"	"	"	"
Lead	4.05		0.932	"	"	"	"	"	"
Nickel	3.10		0.932	"	"	"	"	"	"
Selenium	ND		0.242	"	"	"	"	"	"
Silver	ND		0.0932	"	"	"	"	"	"
Zinc	ND		34.5	"	"	"	"	"	"

**Total Metals 7196A**

Hexavalent Chromium	ND	0.141	0.354	mg/kg dry	1	2717767	12/11/2024	12/17/2024	U
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Project Number: 09A1417933  
Project: KMG - Windell 1-13& 4& 5-18 Facility

PWV-B01@4'-V

11/12/2024 9:48:00AM

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

E4K0312-04 (Soil)

**pH in Soil by 9045D**

pH	8.57			pH Units	1	B4K1427	11/14/2024	11/15/2024	
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

AST01@0.5'

11/12/2024 10:21:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND		0.101	mg/L	1	B4K1316	11/13/2024	11/14/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K1246	11/12/2024	11/13/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	85.0 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4K1219	11/12/2024	11/13/2024	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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Ensolium  
 11049 W 44th Avenue, Suite 103  
 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

AST01@0.5'

11/12/2024 10:21:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-05 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	99.0 %		70-130			B4K12 19	11/12/2024	11/13/2024	
Surrogate: 4-Bromofluorobenzene	97.6 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.04		0.499	meq/L	10	[CALC]	11/13/2024	11/15/2024	
Magnesium	1.27		0.823	"	"	"	"	"	
Sodium	0.696		0.435	"	"	"	"	"	

**PAH by 3541/8270**

1-Methylnaphthalene	ND	0.00113	0.00343	mg/kg dry	1	2707554	11/19/2024	11/19/2024	U
2-Methylnaphthalene	ND	0.00113	0.00343	"	"	"	"	"	U
Acenaphthene	ND	0.00113	0.00343	"	"	"	"	"	U
Anthracene	ND	0.00113	0.00343	"	"	"	"	"	U
Benzo(a)anthracene	ND	0.00113	0.00343	"	"	"	"	"	U
Benzo(a)pyrene	ND	0.00113	0.00343	"	"	"	"	"	U
Benzo(b)fluoranthene	0.00171	0.00113	0.00343	"	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.00113	0.00343	"	"	"	"	"	U
Chrysene	ND	0.00113	0.00343	"	"	"	"	"	U
Dibenzo(a,h)anthracene	ND	0.00113	0.00343	"	"	"	"	"	U
Fluoranthene	ND	0.00113	0.00343	"	"	"	"	"	U

Origins Laboratory

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AST01@0.5'

11/12/2024 10:21:00AM

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

E4K0312-05 (Soil)

**PAH by 3541/8270**

Fluorene	ND	0.00113	0.00343	mg/kg dry	1	2707554	11/19/2024	11/19/2024	U
Indeno(1,2,3-cd)pyrene	ND	0.00113	0.00343	"	"	"	"	"	U
Naphthalene	ND	0.00113	0.00343	"	"	"	"	"	U
Pyrene	0.00206	0.00113	0.00343	"	"	"	"	"	J

Surrogate: 5-alpha-Androstane 48 % 22-135 " " "

**pH in Soil by 9045D**

pH 7.60 pH Units 1 B4K1320 11/13/2024 11/14/2024

**SAR by 20B Saturated Paste**

SAR 0.647 0.0100 SAR 1 B4K1309 11/13/2024 11/15/2024

**Specific Conductance Mod. 9050A**

Specific Conductance (EC) 0.112 0.00500 mmhos/cm 1 B4K1320 11/13/2024 11/14/2024

**Table 915 metals by EPA 6020B**

Arsenic	3.33	0.257	mg/kg	10	B4K1244	11/12/2024	11/13/2024
Barium	58.0	8.85	"	"	"	"	"
Cadmium	0.227	0.0885	"	"	"	"	"

Origins Laboratory

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AST01@0.5'

11/12/2024 10:21:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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Origins Laboratory  
 E4K0312-05 (Soil)

**Table 915 metals by EPA 6020B**

Copper	12.1		8.85	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Lead	12.4		0.885	"	"	"	"	"	"
Nickel	7.60		0.885	"	"	"	"	"	"
Selenium	ND		0.230	"	"	"	"	"	"
Silver	0.120		0.0885	"	"	"	"	"	"
Zinc	50.3		32.7	"	"	"	"	"	"

**Total Metals 7196A**

Hexavalent Chromium	ND	0.119	0.297	mg/kg dry	1	2717767	12/11/2024	12/17/2024	U
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11049 W 44th Avenue, Suite 103  
Wheat Ridge CO 80033

Jeremy Espinoza  
Project Number: 09A1417933  
Project: KMG - Windell 1-13& 4& 5-18 Facility

AST01@0.5'V

11/12/2024 10:22:00AM

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

E4K0312-06 (Soil)

**pH in Soil by 9045D**

pH	7.63			pH Units	1	B4K1427	11/14/2024	11/15/2024	
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# ORIGINS LABORATORY

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

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

**SEP01-INLET@3'**  
**11/12/2024 9:22:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND		0.995	mg/L	10	B4K1316	11/13/2024	11/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K1246	11/12/2024	11/13/2024	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	B4K1219	11/12/2024	11/13/2024	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	112 %		70-130			"	"	"	
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Ensolium  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

SEP01-INLET@3'  
 11/12/2024 9:22:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-07 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	98.2 %		70-130			B4K12 19	11/12/2024	11/13/2024	
Surrogate: 4-Bromofluorobenzene	97.1 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.37		0.499	meq/L	10	[CALC]	11/13/2024	11/15/2024	
Magnesium	1.31		0.823	"	"	"	"	"	
Sodium	1.07		0.435	"	"	"	"	"	

**PAH by 3541/8270**

1-Methylnaphthalene	ND	0.00126	0.00382	mg/kg dry	1	2707554	11/19/2024	11/19/2024	U
2-Methylnaphthalene	ND	0.00126	0.00382	"	"	"	"	"	U
Acenaphthene	ND	0.00126	0.00382	"	"	"	"	"	U
Anthracene	ND	0.00126	0.00382	"	"	"	"	"	U
Benzo(a)anthracene	0.00840	0.00126	0.00382	"	"	"	"	"	
Benzo(a)pyrene	0.00954	0.00126	0.00382	"	"	"	"	"	
Benzo(b)fluoranthene	0.0103	0.00126	0.00382	"	"	"	"	"	
Benzo(k)fluoranthene	0.00344	0.00126	0.00382	"	"	"	"	"	J
Chrysene	0.00802	0.00126	0.00382	"	"	"	"	"	
Dibenzo(a,h)anthracene	ND	0.00126	0.00382	"	"	"	"	"	U
Fluoranthene	0.0111	0.00126	0.00382	"	"	"	"	"	
Fluorene	ND	0.00126	0.00382	"	"	"	"	"	U

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**SEP01-INLET@3'**  
**11/12/2024 9:22:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC**  
**E4K0312-07 (Soil)**

**PAH by 3541/8270**

Indeno(1,2,3-cd)pyrene	0.00763	0.00126	0.00382	mg/kg dry	1	2707554	11/19/2024	11/19/2024	
Naphthalene	ND	0.00126	0.00382	"	"	"	"	"	U
Pyrene	0.0134	0.00126	0.00382	"	"	"	"	"	

Surrogate: 5-alpha-Androstane 91 % 22-135 " " "

**pH in Soil by 9045D**

pH 7.72 pH Units 1 B4K1320 11/13/2024 11/14/2024

**SAR by 20B Saturated Paste**

SAR 0.923 0.0100 SAR 1 B4K1309 11/13/2024 11/15/2024

**Specific Conductance Mod. 9050A**

Specific Conductance (EC) 0.188 0.00500 mmhos/cm 1 B4K1320 11/13/2024 11/14/2024

**Table 915 metals by EPA 6020B**

Arsenic	4.92	0.253	mg/kg	10	B4K1244	11/12/2024	11/13/2024
Barium	106	8.74	"	"	"	"	"
Cadmium	0.513	0.0874	"	"	"	"	"
Copper	24.2	8.74	"	"	"	"	"

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**SEP01-INLET@3'**  
**11/12/2024 9:22:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-07 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	25.5		0.874	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Nickel	8.41		0.874	"	"	"	"	"	
Selenium	0.274		0.227	"	"	"	"	"	
Silver	0.320		0.0874	"	"	"	"	"	
Zinc	96.1		32.3	"	"	"	"	"	

**Total Metals 7196A**

Hexavalent Chromium	ND	0.168	0.419	mg/kg dry	1	2717767	12/11/2024	12/17/2024	U
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Origins Laboratory

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

SEP01-OUTLET@3'  
 11/12/2024 9:17:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.214		0.0993	mg/L	1	B4K1316	11/13/2024	11/14/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4K1246	11/12/2024	11/13/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: <i>o</i> -Terphenyl	79.3 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4K1219	11/12/2024	11/13/2024	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	113 %		70-130			"	"	"	
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 Project: KMG - Windell 1-13& 4& 5-18 Facility

SEP01-OUTLET@3'  
 11/12/2024 9:17:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-08 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	98.6 %		70-130			B4K12 19	11/12/2024	11/13/2024	
Surrogate: 4-Bromofluorobenzene	97.1 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.60		0.499	meq/L	10	[CALC]	11/13/2024	11/15/2024	
Magnesium	1.40		0.823	"	"	"	"	"	
Sodium	1.61		0.435	"	"	"	"	"	

**PAH by 3541/8270**

1-Methylnaphthalene	ND	0.00123	0.00374	mg/kg dry	1	2707554	11/19/2024	11/19/2024	U
2-Methylnaphthalene	ND	0.00123	0.00374	"	"	"	"	"	U
Acenaphthene	ND	0.00123	0.00374	"	"	"	"	"	U
Anthracene	ND	0.00123	0.00374	"	"	"	"	"	U
Benzo(a)anthracene	0.00449	0.00123	0.00374	"	"	"	"	"	
Benzo(a)pyrene	0.00449	0.00123	0.00374	"	"	"	"	"	
Benzo(b)fluoranthene	0.00486	0.00123	0.00374	"	"	"	"	"	
Benzo(k)fluoranthene	ND	0.00123	0.00374	"	"	"	"	"	U
Chrysene	0.00411	0.00123	0.00374	"	"	"	"	"	
Dibenzo(a,h)anthracene	ND	0.00123	0.00374	"	"	"	"	"	U
Fluoranthene	0.00486	0.00123	0.00374	"	"	"	"	"	
Fluorene	ND	0.00123	0.00374	"	"	"	"	"	U

Origins Laboratory

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 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

SEP01-OUTLET@3'  
 11/12/2024 9:17:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**GEL Laboratories, LLC**  
**E4K0312-08 (Soil)**

**PAH by 3541/8270**

Indeno(1,2,3-cd)pyrene	0.00336	0.00123	0.00374	mg/kg dry	1	2707554	11/19/2024	11/19/2024	J
Naphthalene	ND	0.00123	0.00374	"	"	"	"	"	U
Pyrene	0.00635	0.00123	0.00374	"	"	"	"	"	

Surrogate: 5-alpha-Androstane 74 % 22-135 " " "

**pH in Soil by 9045D**

pH 7.73 pH Units 1 B4K1320 11/13/2024 11/14/2024

**SAR by 20B Saturated Paste**

SAR 1.31 0.0100 SAR 1 B4K1309 11/13/2024 11/15/2024

**Specific Conductance Mod. 9050A**

Specific Conductance (EC) 0.255 0.00500 mmhos/cm 1 B4K1320 11/13/2024 11/14/2024

**Table 915 metals by EPA 6020B**

Arsenic	5.56	0.255	mg/kg	10	B4K1244	11/12/2024	11/13/2024
Barium	109	8.79	"	"	"	"	"
Cadmium	0.673	0.0879	"	"	"	"	"
Copper	26.9	8.79	"	"	"	"	"

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

**SEP01-OUTLET@3'**

**11/12/2024 9:17:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory  
 E4K0312-08 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	32.5		0.879	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Nickel	9.72		0.879	"	"	"	"	"	"
Selenium	0.341		0.229	"	"	"	"	"	"
Silver	0.343		0.0879	"	"	"	"	"	"
Zinc	106		32.5	"	"	"	"	"	"

**Total Metals 7196A**

Hexavalent Chromium	ND	0.167	0.417	mg/kg dry	1	2717767	12/11/2024	12/17/2024	U
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Origins Laboratory

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Ensolium  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 Facility

TB-BG01@0.5'  
 11/12/2024 10:28:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-09 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.184		0.0997	mg/L	1	B4K1316	11/13/2024	11/14/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.83		0.499	meq/L	10	[CALC]	11/13/2024	11/15/2024	
Magnesium	1.45		0.823	"	"	"	"	"	"
Sodium	0.741		0.435	"	"	"	"	"	"

**pH in Soil by 9045D**

pH	8.04			pH Units	1	B4K1320	11/13/2024	11/14/2024	
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**SAR by 20B Saturated Paste**

SAR	0.579		0.0100	SAR	1	B4K1309	11/13/2024	11/15/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.198		0.00500	mmhos/cm	1	B4K1320	11/13/2024	11/14/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.92		0.261	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Barium	66.8		8.99	"	"	"	"	"	"
Cadmium	0.475		0.0899	"	"	"	"	"	"
Copper	18.1		8.99	"	"	"	"	"	"

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 Project: KMG - Windell 1-13& 4& 5-18 Facility

TB-BG01@0.5'  
 11/12/2024 10:28:00AM

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory**  
**E4K0312-09 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	18.7		0.899	mg/kg	10	B4K1244	11/12/2024	11/13/2024	
Nickel	6.19		0.899	"	"	"	"	"	"
Selenium	ND		0.234	"	"	"	"	"	"
Silver	0.255		0.0899	"	"	"	"	"	"
Zinc	82.1		33.3	"	"	"	"	"	"

**Total Metals 7196A**

Hexavalent Chromium	ND	0.137	0.342	mg/kg dry	1	2717767	12/11/2024	12/17/2024	U
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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 B4K1219 - EPA 5030 (soil)**

**Blank (B4K1219-BLK1)**

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

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		105	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.2	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 B4K1219 - EPA 5030 (soil)

LCS (B4K1219-BS1)

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

1,2,4-Trimethylbenzene	0.0967	0.00200	mg/kg	0.100		96.7	70-130			
1,3,5-Trimethylbenzene	0.0972	0.00200	"	0.100		97.2	70-130			
Benzene	0.0957	0.00200	"	0.100		95.7	70-130			
Ethylbenzene	0.0952	0.00200	"	0.100		95.2	70-130			
Naphthalene	0.101	0.00380	"	0.100		101	70-130			
Toluene	0.0941	0.00200	"	0.100		94.1	70-130			
o-Xylene	0.0945	0.00200	"	0.100		94.5	70-130			
m,p-Xylene	0.191	0.00400	"	0.200		95.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.3	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		99.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4K1219 - EPA 5030 (soil)

Matrix Spike (B4K1219-MS1)

Source: E4K0271-01

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

1,2,4-Trimethylbenzene	0.0952	0.00200	mg/kg	0.100	ND	95.2	70-130			
1,3,5-Trimethylbenzene	0.0993	0.00200	"	0.100	ND	99.3	70-130			
Benzene	0.0996	0.00200	"	0.100	ND	99.6	70-130			
Ethylbenzene	0.0954	0.00200	"	0.100	ND	95.4	70-130			
Naphthalene	0.115	0.00380	"	0.100	ND	115	70-130			
Toluene	0.0964	0.00200	"	0.100	ND	96.4	70-130			
o-Xylene	0.0966	0.00200	"	0.100	ND	96.6	70-130			
m,p-Xylene	0.192	0.00400	"	0.200	ND	95.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		105	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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 B4K1219 - EPA 5030 (soil)

Matrix Spike Dup (B4K1219-MSD1)

Source: E4K0271-01

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

1,2,4-Trimethylbenzene	0.0980	0.00200	mg/kg	0.100	ND	98.0	70-130	2.94	20	
1,3,5-Trimethylbenzene	0.102	0.00200	"	0.100	ND	102	70-130	2.45	20	
Benzene	0.102	0.00200	"	0.100	ND	102	70-130	2.52	20	
Ethylbenzene	0.0977	0.00200	"	0.100	ND	97.7	70-130	2.44	20	
Naphthalene	0.121	0.00380	"	0.100	ND	121	70-130	5.72	20	
Toluene	0.0976	0.00200	"	0.100	ND	97.6	70-130	1.28	20	
o-Xylene	0.0988	0.00200	"	0.100	ND	98.8	70-130	2.27	20	
m,p-Xylene	0.195	0.00400	"	0.200	ND	97.4	70-130	1.66	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		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
<b>Batch B4K1246 - EPA 3550B</b>										
<b>Blank (B4K1246-BLK1)</b>										
					Prepared: 11/12/2024 Analyzed: 11/13/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	21		"	24.9		83.0	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
<b>Batch B4K1246 - EPA 3550B</b>										
<b>LCS (B4K1246-BS1)</b>										
					Prepared: 11/12/2024 Analyzed: 11/13/2024					
Diesel (C10-C28)	875	50.0	mg/kg	1000		87.5	70-130			
Residual Range Organics (C28-C40)	978	200	"	1000		97.8	70-130			
Surrogate: o-Terphenyl	55		"	49.8		110	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
<b>Batch B4K1246 - EPA 3550B</b>										
<b>Matrix Spike (B4K1246-MS1)</b>			<b>Source: E4K0311-01</b>			Prepared: 11/12/2024 Analyzed: 11/13/2024				
Diesel (C10-C28)	863	50.0	mg/kg	1000	ND	86.3	70-130			
Residual Range Organics (C28-C40)	959	200	"	1000	ND	95.9	70-130			
Surrogate: o-Terphenyl	48		"	49.8		95.6	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
<b>Batch B4K1246 - EPA 3550B</b>										
<b>Matrix Spike Dup (B4K1246-MSD1)</b>			<b>Source: E4K0311-01</b>			Prepared: 11/12/2024 Analyzed: 11/13/2024				
Diesel (C10-C28)	908	50.0	mg/kg	1000	ND	90.8	70-130	5.10	35	
Residual Range Organics (C28-C40)	981	200	"	1000	ND	98.1	70-130	2.25	35	
Surrogate: o-Terphenyl	40		"	49.8		80.5	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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**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 B4K1244 - EPA 3050B**

**Blank (B4K1244-BLK1)**

Prepared: 11/12/2024 Analyzed: 11/13/2024

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 (B4K1244-BS1)**

Prepared: 11/12/2024 Analyzed: 11/13/2024

Arsenic	5.34	0.290	mg/kg	5.00		107	80-120			
Barium	544	10.0	"	500		109	80-120			
Cadmium	5.46	0.100	"	5.00		109	80-120			
Copper	53.2	10.0	"	50.0		106	80-120			
Lead	5.13	1.00	"	5.00		103	80-120			
Nickel	5.47	1.00	"	5.00		109	80-120			
Selenium	5.15	0.260	"	5.00		103	80-120			
Silver	5.71	0.100	"	5.00		114	80-120			
Zinc	53.8	37.0	"	50.0		108	80-120			

**Matrix Spike (B4K1244-MS1)**

Source: E4K0312-03

Prepared: 11/12/2024 Analyzed: 11/13/2024

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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 B4K1244 - EPA 3050B**

**Matrix Spike (B4K1244-MS1)**

**Source: E4K0312-03**

Prepared: 11/12/2024 Analyzed: 11/13/2024

Arsenic	6.57	0.277	mg/kg	4.78	1.41	108	75-125			
Barium	572	9.56	"	478	40.8	111	75-125			
Cadmium	5.34	0.0956	"	4.78	0.0447	111	75-125			
Copper	56.0	9.56	"	47.8	3.47	110	75-125			
Lead	8.90	0.956	"	4.78	4.05	101	75-125			
Nickel	8.47	0.956	"	4.78	3.10	112	75-125			
Selenium	4.90	0.249	"	4.78	0.0717	101	75-125			
Silver	5.63	0.0956	"	4.78	0.0233	117	75-125			
Zinc	73.1	35.4	"	47.8	21.1	109	75-125			

**Matrix Spike Dup (B4K1244-MSD1)**

**Source: E4K0312-03**

Prepared: 11/12/2024 Analyzed: 11/13/2024

Arsenic	6.10	0.273	mg/kg	4.70	1.41	99.9	75-125	7.35	20	
Barium	541	9.40	"	470	40.8	106	75-125	5.55	20	
Cadmium	5.04	0.0940	"	4.70	0.0447	106	75-125	5.82	20	
Copper	51.9	9.40	"	47.0	3.47	103	75-125	7.58	20	
Lead	8.40	0.940	"	4.70	4.05	92.6	75-125	5.75	20	
Nickel	8.22	0.940	"	4.70	3.10	109	75-125	2.93	20	
Selenium	4.54	0.244	"	4.70	0.0717	95.1	75-125	7.69	20	
Silver	5.28	0.0940	"	4.70	0.0233	112	75-125	6.34	20	
Zinc	67.8	34.8	"	47.0	21.1	99.4	75-125	7.57	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
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**Batch B4K1309 - Saturated Paste Metals**

**Blank (B4K1309-BLK1)**

Prepared: 11/13/2024 Analyzed: 11/15/2024

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

**Duplicate (B4K1309-DUP1)**

Source: E4K0285-01

Prepared: 11/13/2024 Analyzed: 11/15/2024

Calcium PPM	38.1	10.0	mg/L		37.8		0.895	50		
SAR	ND	0.0100	SAR		0.857			200		
Magnesium PPM	23.5	10.0	mg/L		23.5		0.0850	50		
Sodium PPM	26.8	10.0	"		27.2		1.55	50		

**Batch B4K1316 - DTPA Sorbitol Preparation**

**Blank (B4K1316-BLK1)**

Prepared: 11/13/2024 Analyzed: 11/14/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4K1316-DUP1)**

Source: E4K0280-01

Prepared: 11/13/2024 Analyzed: 11/14/2024

Boron	0.639	0.100	mg/L		0.535		17.7	50		
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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 B4K1320 - Saturated Paste pH/EC**

**Blank (B4K1320-BLK1)**

Prepared: 11/13/2024 Analyzed: 11/14/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

**Duplicate (B4K1320-DUP1)**

**Source: E4K0285-01**

Prepared: 11/13/2024 Analyzed: 11/14/2024

pH 8.26 pH Units 8.22 0.485 25

Specific Conductance (EC) 0.288 0.00500 mmhos/cm 0.286 0.940 25

**Batch B4K1427 - Saturated Paste pH/EC**

**Duplicate (B4K1427-DUP1)**

**Source: E4K0312-02**

Prepared: 11/14/2024 Analyzed: 11/15/2024

pH 7.58 pH Units 7.60 0.264 25

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**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 2707554 - SW846 3541

**BLANK (1205923302-BLK)**

Prepared: 11/19/2024 Analyzed: 11/19/2024

Naphthalene	ND	0.00329	mg/kg	-	-	-	-	-	-	U
Benzo(k)fluoranthene	ND	0.00329	"	-	-	-	-	-	-	U
Pyrene	ND	0.00329	"	-	-	-	-	-	-	U
Indeno(1,2,3-cd)pyrene	ND	0.00329	"	-	-	-	-	-	-	U
Fluorene	ND	0.00329	"	-	-	-	-	-	-	U
Fluoranthene	ND	0.00329	"	-	-	-	-	-	-	U
Dibenzo(a,h)anthracene	ND	0.00329	"	-	-	-	-	-	-	U
Chrysene	ND	0.00329	"	-	-	-	-	-	-	U
2-Methylnaphthalene	ND	0.00329	"	-	-	-	-	-	-	U
Benzo(b)fluoranthene	ND	0.00329	"	-	-	-	-	-	-	U
1-Methylnaphthalene	ND	0.00329	"	-	-	-	-	-	-	U
Acenaphthene	ND	0.00329	"	-	-	-	-	-	-	U
Anthracene	ND	0.00329	"	-	-	-	-	-	-	U
Benzo(a)anthracene	ND	0.00329	"	-	-	-	-	-	-	U
Benzo(a)pyrene	ND	0.00329	"	-	-	-	-	-	-	U
Surrogate: 5-alpha-Androstane	0.114		"	0.164	70	22-135				

**LCS (1205923303-BKS)**

Prepared: 11/19/2024 Analyzed: 11/19/2024

Pyrene	0.294	0.00325	mg/kg	0.325	91	38-117
Benzo(b)fluoranthene	0.284	0.00325	"	0.325	87	39-123
Indeno(1,2,3-cd)pyrene	0.299	0.00325	"	0.325	92	38-133
Fluorene	0.270	0.00325	"	0.325	83	37-115
Fluoranthene	0.294	0.00325	"	0.325	91	39-119
Dibenzo(a,h)anthracene	0.325	0.00325	"	0.325	100	38-132
1-Methylnaphthalene	0.255	0.00325	"	0.325	79	39-109
Naphthalene	0.248	0.00325	"	0.325	76	38-109
Benzo(a)pyrene	0.308	0.00325	"	0.325	95	39-127

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

Jeremy Espinoza  
 Project Number: 09A1417933  
 Project: KMG - Windell 1-13& 4& 5-18 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 2707554 - SW846 3541

**LCS (1205923303-BKS)**

Prepared: 11/19/2024 Analyzed: 11/19/2024

Benzo(a)anthracene	0.302	0.00325	mg/kg	0.325		93	42-120			
Anthracene	0.288	0.00325	"	0.325		89	41-117			
Acenaphthene	0.261	0.00325	"	0.325		80	41-112			
2-Methylnaphthalene	0.265	0.00325	"	0.325		82	39-110			
Benzo(k)fluoranthene	0.279	0.00325	"	0.325		86	40-122			
Chrysene	0.272	0.00325	"	0.325		84	42-117			
Surrogate: 5-alpha-Androstane	0.122		"	0.162		75	22-135			

**LCSD (1205923304-BKSD)**

Prepared: 11/19/2024 Analyzed: 11/19/2024

Benzo(a)anthracene	0.316	0.00332	mg/kg	0.332		95	42-120	4	30	
Chrysene	0.283	0.00332	"	0.332		85	42-117	4	30	
Pyrene	0.303	0.00332	"	0.332		91	38-117	3	30	
Dibenzo(a,h)anthracene	0.332	0.00332	"	0.332		100	38-132	2	30	
Fluoranthene	0.304	0.00332	"	0.332		92	39-119	3	30	
Fluorene	0.276	0.00332	"	0.332		83	37-115	2	30	
Naphthalene	0.248	0.00332	"	0.332		75	38-109	0	30	
Indeno(1,2,3-cd)pyrene	0.308	0.00332	"	0.332		93	38-133	3	30	
Benzo(b)fluoranthene	0.299	0.00332	"	0.332		90	39-123	5	30	
Benzo(k)fluoranthene	0.288	0.00332	"	0.332		87	40-122	3	30	
1-Methylnaphthalene	0.255	0.00332	"	0.332		77	39-109	0	30	
2-Methylnaphthalene	0.263	0.00332	"	0.332		79	39-110	1	30	
Acenaphthene	0.264	0.00332	"	0.332		80	41-112	1	30	
Anthracene	0.295	0.00332	"	0.332		89	41-117	2	30	
Benzo(a)pyrene	0.319	0.00332	"	0.332		96	39-127	4	30	
Surrogate: 5-alpha-Androstane	0.126		"	0.166		76	22-135			

**MS (1205923305 S)**

Source: 695641001

Prepared: 11/19/2024 Analyzed: 11/20/2024

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**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 2707554 - SW846 3541

**MS (1205923305 S)**

Source: 695641001

Prepared: 11/19/2024 Analyzed: 11/20/2024

Naphthalene	0.925	0.0389	mg/kg dry	0.389	0.925	0	16-126			
Benzo(k)fluoranthene	0.152	0.0389	"	0.389	<0.0128	39	18-138			
Indeno(1,2,3-cd)pyrene	0.163	0.0389	"	0.389	<0.0128	42	13-134			
Fluorene	0.474	0.0389	"	0.389	0.408	17	16-134			
Fluoranthene	0.190	0.0389	"	0.389	0.0311	41	14-136			
Dibenzo(a,h)anthracene	0.175	0.0389	"	0.389	<0.0128	45	11-134			
Chrysene	0.202	0.0389	"	0.389	0.0389	42	19-129			
Pyrene	0.183	0.0389	"	0.389	0.0272	40	12-139			
1-Methylnaphthalene	1.91	0.0389	"	0.389	2.06	0	15-129			
Benzo(a)pyrene	0.171	0.0389	"	0.389	<0.0128	44	16-133			
Benzo(a)anthracene	0.187	0.0389	"	0.389	0.0389	38	20-132			
Anthracene	0.136	0.0389	"	0.389	<0.0128	35	18-136			
Acenaphthene	0.183	0.0389	"	0.389	0.0466	35	17-129			
2-Methylnaphthalene	2.77	0.0389	"	0.389	3.06	0	15-132			
Benzo(b)fluoranthene	0.159	0.0389	"	0.389	<0.0128	41	14-136			
Surrogate: 5-alpha-Androstane	0.120		"	0.194	0.167	62	22-135			

**MSD (1205923306 SD)**

Source: 695641001

Prepared: 11/19/2024 Analyzed: 11/20/2024

Dibenzo(a,h)anthracene	0.128	0.0389	mg/kg dry	0.389	<0.0128	33	11-134	31	30	
Fluoranthene	0.132	0.0389	"	0.389	0.0311	26	14-136	36	30	
Fluorene	0.311	0.0389	"	0.389	0.408	0	16-134	42	30	
Indeno(1,2,3-cd)pyrene	0.117	0.0389	"	0.389	<0.0128	30	13-134	33	30	
Chrysene	0.144	0.0389	"	0.389	0.0389	27	19-129	34	30	
Pyrene	0.128	0.0389	"	0.389	0.0272	26	12-139	35	30	
Benzo(a)pyrene	0.124	0.0389	"	0.389	<0.0128	32	16-133	32	30	
Naphthalene	0.579	0.0389	"	0.389	0.925	0	16-126	46	30	
1-Methylnaphthalene	1.21	0.0389	"	0.389	2.06	0	15-129	45	30	

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**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 2707554 - SW846 3541

MSD (1205923306 SD)

Source: 695641001

Prepared: 11/19/2024 Analyzed: 11/20/2024

Benzo(b)fluoranthene	0.117	0.0389	mg/kg dry	0.389	<0.0128	30	14-136	31	30	
Benzo(a)anthracene	0.136	0.0389	"	0.389	0.0389	25	20-132	31	30	
Anthracene	0.101	0.0389	"	0.389	<0.0128	26	18-136	30	30	
Acenaphthene	0.128	0.0389	"	0.389	0.0466	21	17-129	35	30	
2-Methylnaphthalene	1.75	0.0389	"	0.389	3.06	0	15-132	45	30	
Benzo(k)fluoranthene	0.113	0.0389	"	0.389	<0.0128	29	18-138	29	30	
Surrogate: 5-alpha-Androstane	0.0777		"	0.194	0.167	40	22-135			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2717767 - SW846 3060A</b>										
<b>BLANK (1205943105-BLK)</b>										
Prepared: 12/11/2024 Analyzed: 12/17/2024										
Hexavalent Chromium	ND	0.381	mg/kg				-			U
<b>LCS (1205943106-BKS)</b>										
Prepared: 12/11/2024 Analyzed: 12/17/2024										
Hexavalent Chromium	3.63	0.360	mg/kg	3.60		101	80-120			
<b>DUP (1205943107 D)</b>										
Source: 695649001 Prepared: 12/11/2024 Analyzed: 12/17/2024										
Hexavalent Chromium	ND	0.353	mg/kg dry		<0.141		0-50	N/A	50	U
<b>MS (1205943108 S)</b>										
Source: 695649001 Prepared: 12/11/2024 Analyzed: 12/17/2024										
Hexavalent Chromium	2.84	0.334	mg/kg dry	3.34	<0.134	83.4	75-125			
<b>DUP (1205943109 D)</b>										
Source: 695649002 Prepared: 12/11/2024 Analyzed: 12/17/2024										
Hexavalent Chromium	ND	0.374	mg/kg dry		<0.150		0-50	N/A	50	U
<b>MS (1205943110 S)</b>										
Source: 695649002 Prepared: 12/11/2024 Analyzed: 12/17/2024										
Hexavalent Chromium	3.41	0.381	mg/kg dry	3.81	<0.152	86.7	75-125			
<b>ILCS (1205943111-ILCS)</b>										
Prepared: 12/11/2024 Analyzed: 12/17/2024										
Hexavalent Chromium	6.83	0.317	mg/kg	6.46		106	80-120			

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### Notes and Definitions

- Ua Sample is Non-Detect.
  - U Result not detected above the detection limit
  - 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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