

**TABLE 1**  
**SOIL SAMPLE FIELD DATA SUMMARY TABLE**  
**HART-MEMCO 1-22 WELLHEAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL AND GAS ONSHORE, LP**

Soil Sample Location	Date	Depth (ft. bgs)	PID Reading (ppm)	Visual Observation	Olfactory Observation	Latitude	Longitude	Submitted for Lab Analysis? (Y/N)
<b>WELLHEAD EXCAVATION SAMPLES</b>								
N Wall	5/2/2024	4	1.0	NS	NO	40.303573	-104.983281	N
E Wall/WH01-RISER@4'	5/2/2024	4	0.5	NS	NO	40.303567	-104.98327	Y
WH01-RISER@4'-V	5/2/2024	4	0.5	NS	NO	40.303567	-104.98327	Y
S Wall	5/2/2024	4	0.6	NS	NO	40.303542	-104.98328	N
W Wall	5/2/2024	3	0.8	NS	NO	40.303558	-104.983304	N
B01@7'	5/2/2024	7	0.2	NS	NO	40.30356	-104.983283	Y
B01@7'-V	5/2/2024	7	0.2	NS	NO	40.30356	-104.983283	Y
FS01	5/2/2024	0.5	0.0	NS	NO	40.303582	-104.983285	N
FS02	5/2/2024	0.5	0.0	NS	NO	40.303558	-104.983235	N
FS03	5/2/2024	0.5	0.0	NS	NO	40.303524	-104.983282	N
FS04	5/2/2024	0.5	0.1	NS	NO	40.303551	-104.983336	N
<b>FLOWLINE POTHOLE SAMPLES</b>								
PH01	6/12/2024	3	1.8	NS	NO	40.303572	-104.982501	N
PH02	6/12/2024	3	1.3	NS	NO	40.303586	-104.982961	N
<b>SEPARATOR RISER SAMPLES</b>								
SEP01-RISER@4'	6/10/2024	4	0.0	NS	NO	40.303566	-104.981997	Y
<b>BACKGROUND SOIL SAMPLES</b>								
NATIVE-BG01@3'	5/2/2024	3	0.6	NS	NO	40.303686	-104.983288	Y
NATIVE-BG01@6'	5/2/2024	6	0.8	NS	NO	40.303686	-104.983288	Y
NATIVE-BG02@3'	5/2/2024	3	1.2	NS	NO	40.30359	-104.98318	Y
NATIVE-BG02@6'	5/2/2024	6	0.5	NS	NO	40.30359	-104.98318	Y
NATIVE-BG03@3'	5/2/2024	3	0.0	NS	NO	40.303526	-104.98318	Y
NATIVE-BG03@6'	5/2/2024	6	0.1	NS	NO	40.303526	-104.98318	Y
NATIVE-BG04@3'	5/2/2024	3	0.1	NS	NO	40.303487	-104.983278	Y
NATIVE-BG04@6'	5/2/2024	6	0.4	NS	NO	40.303487	-104.983278	Y
NATIVE-BG05@3'	5/2/2024	3	1.2	NS	NO	40.303512	-104.983372	Y
NATIVE-BG05@6'	5/2/2024	6	0.7	NS	NO	40.303512	-104.983372	Y
NATIVE-BG06@3'	5/2/2024	3	0.5	NS	NO	40.303588	-104.983389	Y
NATIVE-BG06@6'	5/2/2024	6	0.2	NS	NO	40.303588	-104.983389	Y

**Notes:**

ft. - feet  
bgs - below ground surface  
PID - Photoionization detector  
ppm - parts per million

NS - No Staining  
NO - No Odor  
NA - Not Analyzed/Not Applicable

**TABLE 2-1**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**VOLATILE ORGANIC COMPOUNDS AND TOTAL PETROLEUM HYDROCARBONS**  
**HART-MEMCO 1-22 WELLHEAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL AND GAS ONSHORE, LP**

Soil Sample ID	Date	Depth (ft. bgs)	TPH-GRO* (mg/kg)	TPH-DRO* (mg/kg)	TPH-RRO* (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4-Trimethyl benzene (mg/kg)	1,3,5-Trimethyl benzene (mg/kg)	Naphthalene (mg/kg)
ECMC Table 915-1 Cleanup Concentrations (PGSSLs)			500			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038
<b>WELLHEAD EXCAVATION SAMPLES</b>												
<b>WH01-RISER@4'</b>	5/2/2024	4	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>WH01-RISER@4'-V</b>	5/2/2024	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B01@7'</b>	5/2/2024	7	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B01@7'-V</b>	5/2/2024	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>SEPARATOR RISER SAMPLES</b>												
<b>SEP01-RISER@4'</b>	6/10/2024	4	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002

**Notes:**

ECMC - Energy and Carbon Management Commission  
PGSSLs - Protection of Groundwater Soil Screening Level Concentrations  
TPH - total petroleum hydrocarbons  
GRO - gasoline range organics  
DRO - diesel range organics  
RRO - residual range organics  
\* Allowable level for TPH is 500 mg/kg for combined GRO, DRO, ORO

ft - feet  
bgs - below ground surface  
mg/kg - milligrams per kilogram  
< - less than laboratory reporting limit  
NA - Not Analyzed/Not Applicable  
**Bold** - exceeds ECMC Table 915-1 allowable level and background

**TABLE 2-2**  
**SOIL SAMPLE ANALYTICAL RESULTS**  
**POLYCYCLIC AROMATIC HYDROCARBONS**  
**HART-MEMCO 1-22 WELLHEAD**  
**WELD COUNTY, COLORADO**  
**KERR-MCGEE OIL AND GAS ONSHORE, LP**

Soil Sample ID	Date	Depth (ft. bgs)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) anthracene (mg/kg)	Benzo (b) fluoranthene (mg/kg)	Benzo (k) fluoranthene (mg/kg)	Benzo (a) pyrene (mg/kg)	Chrysene (mg/kg)	Dibenz (a,h) anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) pyrene (mg/kg)	1-Methyl naphthalene (mg/kg)	2-Methyl naphthalene (mg/kg)	Pyrene (mg/kg)
ECMC Table 915-1 Cleanup Concentrations (PGSSLs)			0.55	5.8	0.011	0.3	2.9	0.24	9	0.096	8.9	0.54	0.98	0.006	0.019	1.3
<b>WELLHEAD EXCAVATION SAMPLES</b>																
<b>WH01-RISER@4'</b>	5/2/2024	4	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002	<0.020
<b>WH01-RISER@4'-V</b>	5/2/2024	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B01@7'</b>	5/2/2024	7	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002	<0.020
<b>B01@7'-V</b>	5/2/2024	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>SEPARATOR RISER SAMPLES</b>																
<b>SEP01-RISER@4'</b>	6/10/2024	4	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002	<0.020

**Notes:**

ECMC - Energy and Carbon Management Commission  
PGSSLs - Protection of Groundwater Soil Screening Level Concentrations  
ft - feet  
bgs - below ground surface  
mg/kg - milligrams per kilogram  
< - less than laboratory reporting limit  
NA - Not Analyzed/Not Applicable  
**Bold** - exceeds ECMC Table 915-1 allowable level and background

TABLE 2-3  
 SOIL SAMPLE ANALYTICAL RESULTS  
 SOIL SUITABILITY FOR RECLAMATION  
 HART-MEMCO 1-22 WELLHEAD  
 WELD COUNTY, COLORADO  
 KERR-MCGEE OIL AND GAS ONSHORE, LP

Soil Sample ID	Date	Depth (ft. bgs)	EC (mmhos/cm)	SAR	pH	Boron (mg/L)
ECMC Table 915-1 Cleanup Concentrations			4	6	6-8.3	2
Site-Specific Background Limits			1.15	2.79	8.52	0.748
<b>WELLHEAD EXCAVATION SAMPLES</b>						
WH01-RISER@4'	5/2/2024	4	0.506	2.29	8.22	0.583
WH01-RISER@4'-V	5/2/2024	4	NA	NA	<b>8.53</b>	NA
B01@7'	5/2/2024	7	0.685	4.57	<b>9.29</b>	0.560
B01@7'-V	5/2/2024	7	NA	NA	8.29	NA
<b>SEPARATOR RISER SAMPLES</b>						
SEP01-RISER@4'	6/10/2024	4	0.296	0.147	8.48*	0.369
<b>BACKGROUND SAMPLES</b>						
NATIVE-BG01@3'	5/2/2024	3	0.391	1.10	8.29	0.683
NATIVE-BG01@6'	5/2/2024	6	0.404	1.48	8.44	0.409
NATIVE-BG02@3'	5/2/2024	3	0.408	0.610	8.30	0.608
NATIVE-BG02@6'	5/2/2024	6	0.672	0.699	8.14	0.654
NATIVE-BG03@3'	5/2/2024	3	1.07	1.46	8.13	0.609
NATIVE-BG03@6'	5/2/2024	6	0.922	2.07	8.24	0.600
NATIVE-BG04@3'	5/2/2024	3	0.408	1.00	8.33	0.517
NATIVE-BG04@6'	5/2/2024	6	1.08	2.33	8.27	0.606
NATIVE-BG05@3'	5/2/2024	3	1.15	1.63	8.21	0.720
NATIVE-BG05@6'	5/2/2024	6	0.989	2.79	8.45	0.748
NATIVE-BG06@3'	5/2/2024	3	0.402	0.516	8.52	0.534
NATIVE-BG06@6'	5/2/2024	6	0.511	0.926	8.41	0.233

**Notes:**

ECMC - Energy and Carbon Management Commission

EC - electrical conductivity

SAR - sodium adsorption ratio

< - less than laboratory reporting limit

NA - Not Analyzed/Not Applicable

**Bold** - exceeds ECMC Table 915-1 allowable level and background

\*Exceeds Table 915-1 allowable level but within background

If site-specific backgrounds are less than cleanup concentrations, then cleanup concentration values will be applied.

ft - feet

bgs - below ground surface

mmhos/cm - millimhos per centimeter

mg/L - milligrams per liter

**TABLE 2-4  
SOIL SAMPLE ANALYTICAL RESULTS  
METALS  
HART-MEMCO 1-22 WELLHEAD  
WELD COUNTY, COLORADO  
KERR-MCGEE OIL AND GAS ONSHORE, LP**

Soil Sample ID	Date	Depth (ft. bgs)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Cleanup Concentrations (PGSSLs)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
Site-Specific Background Limits			5.54	214	0.398	0	16.3	13.9	24.4	0.35	0	70.7
<b>WELLHEAD EXCAVATION SAMPLES</b>												
<b>WH01-RISER@4'</b>	5/2/2024	4	4.43*	173*	0.245	<0.393	15.3	12.9	16.7	<0.232	<0.0890	66.9
<b>WH01-RISER@4'-V</b>	5/2/2024	4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B01@7'</b>	5/2/2024	7	4.28*	155*	0.265	<0.260	12.4	11.1	17.3	<0.222	<0.0855	60.2
<b>B01@7'-V</b>	5/2/2024	7	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>SEPARATOR RISER SAMPLES</b>												
<b>SEP01-RISER@4'</b>	6/10/2024	4	4.02*	160*	0.303	<0.432	13.9	11.5	15.6	0.343*	<0.0941	58.2
<b>BACKGROUND SAMPLES</b>												
<b>NATIVE-BG01@3'</b>	5/2/2024	3	4.79	184	0.341	<0.363	16.0	10.9	18.7	0.262	<0.0922	64.8
<b>NATIVE-BG01@6'</b>	5/2/2024	6	3.44	117	0.211	<0.415	<9.80	8.17	13.6	<0.255	<0.0980	48.5
<b>NATIVE-BG02@3'</b>	5/2/2024	3	5.08	172	0.333	<0.371	14.7	10.7	17.3	0.330	<0.0977	62.1
<b>NATIVE-BG02@6'</b>	5/2/2024	6	5.02	162	0.398	<0.416	15.4	13.9	18.2	0.350	<0.0905	70.7
<b>NATIVE-BG03@3'</b>	5/2/2024	3	4.51	185	0.320	<0.366	12.2	9.65	15.0	<0.229	<0.0881	54.2
<b>NATIVE-BG03@6'</b>	5/2/2024	6	5.54	214	0.351	<0.418	15.4	11.4	24.4	0.232	<0.0859	66.7
<b>NATIVE-BG04@3'</b>	5/2/2024	3	4.81	171	0.345	<0.428	16.3	11.8	19.2	<0.247	<0.0950	69.7
<b>NATIVE-BG04@6'</b>	5/2/2024	6	4.03	142	0.287	<0.407	12.7	10.3	0.8	<0.228	<0.0879	59.5
<b>NATIVE-BG05@3'</b>	5/2/2024	3	4.56	162	0.387	<0.325	14.4	10.6	17.8	<0.256	<0.0985	60.8
<b>NATIVE-BG05@6'</b>	5/2/2024	6	3.88	137	0.174	<0.483	11.0	9.14	14.6	<0.230	<0.0884	58.0
<b>NATIVE-BG06@3'</b>	5/2/2024	3	4.07	145	0.227	<0.368	13.5	9.08	15.7	0.299	<0.0922	55.9
<b>NATIVE-BG06@6'</b>	5/2/2024	6	3.87	137	0.248	<0.395	10.8	9.36	14.9	<0.248	<0.0953	51.2

**Notes:**

ECMC - Energy and Carbon Management Commission

PGSSLs - Protection of Groundwater Soil Screening Level Concentrations

ft - feet

bgs - below ground surface

mg/kg - milligrams per kilogram

< - less than laboratory reporting limit

NA - Not Analyzed/Not Applicable

**Bold** - exceeds ECMC Table 915-1 allowable level and background

\*Exceeds Table 915-1 allowable level but within background

If site-specific backgrounds are less than cleanup concentrations, then cleanup concentration values will be applied.

May 23, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Hort-Memco 1-22 Wellhead Project Number - 09A1417672**

Attached are your analytical results for KMG - Hort-Memco 1-22 Wellhead received by Origins Laboratory, Inc. May 02, 2024. This project is associated with Origins project number Y405067-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@7'	Y405067-01	Soil	May 2, 2024 12:10	05/02/2024 15:32
B01@7'-V	Y405067-02	Soil	May 2, 2024 12:12	05/02/2024 15:32
WH01-RISER@4'	Y405067-03	Soil	May 2, 2024 12:14	05/02/2024 15:32
WH01-RISER@4'-V	Y405067-04	Soil	May 2, 2024 12:16	05/02/2024 15:32
NATIVE-BG01@3'	Y405067-05	Soil	May 2, 2024 11:56	05/02/2024 15:32
NATIVE-BG01@6'	Y405067-06	Soil	May 2, 2024 11:54	05/02/2024 15:32
NATIVE-BG02@3'	Y405067-07	Soil	May 2, 2024 12:02	05/02/2024 15:32
NATIVE-BG02@6'	Y405067-08	Soil	May 2, 2024 12:04	05/02/2024 15:32
NATIVE-BG03@3'	Y405067-09	Soil	May 2, 2024 11:40	05/02/2024 15:32
NATIVE-BG03@6'	Y405067-10	Soil	May 2, 2024 11:42	05/02/2024 15:32
NATIVE-BG04@3'	Y405067-11	Soil	May 2, 2024 11:38	05/02/2024 15:32
NATIVE-BG04@6'	Y405067-12	Soil	May 2, 2024 11:36	05/02/2024 15:32
NATIVE-BG05@3'	Y405067-13	Soil	May 2, 2024 11:32	05/02/2024 15:32
NATIVE-BG05@6'	Y405067-14	Soil	May 2, 2024 11:34	05/02/2024 15:32

Origins Laboratory, Inc.



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

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

Jeremy Espinoza  
Project Number: 09A1417672  
Project: KMG - Hort-Memco 1-22 Wellhead

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NATIVE-BG06@3'	Y405067-15	Soil	May 2, 2024 11:58	05/02/2024 15:32
NATIVE-BG06@6'	Y405067-16	Soil	May 2, 2024 12:00	05/02/2024 15:32

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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

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



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 4404507

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page 1 of 2

Client: Ensolum  
 Address: \_\_\_\_\_  
 Telephone Number: \_\_\_\_\_  
 Email Address: KMG-TECH  
 Project Manager: Jeremy Espinoza  
 Project Name: Hort-Memco 1-22 Wellhead  
 Project Number: 09A1417672  
 Samples Collected By: JR

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix			Analysis			Sample Instructions			
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #	Other	Full list 915		PH	EC	SAR (SP)
Bolet1	5/2/14	1210	3	X						X						held for additional analysis
Bolet1-V	5/2/14	1212	1							X						held for additional analysis
WH01-032RE41		1214	1							X						
WH01-032RE4-V		1216	2							X						
MAT1E-B601E31		1156	2							X						
MAT1E-B601E61		1158	1							X						
MAT1E-B602E31		1202	1							X						
MAT1E-B602E61		1204	1							X						
MAT1E-B603E31		1140	1							X						
MAT1E-B603E61		1142	1							X						
Relinquished By: <i>[Signature]</i>	Date: 5/2/14	Time: 1532	Received By: <i>[Signature]</i>	Date: 5/2/14	Time: 1532	Turnaround Time: <input checked="" type="checkbox"/> Same Day <input type="checkbox"/> 48 Hr <input type="checkbox"/> 72 Hr <input type="checkbox"/> Standard										

Temp Received- 15 Date Results Needed

Origins Laboratory, Inc.  
*[Signature]*

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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

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



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page 2 of 2

Client: Ensolum  
 Address: \_\_\_\_\_  
 Telephone Number: \_\_\_\_\_  
 Email Address: KMG-1201W  
 Project Manager: Jeremy Espinoza  
 Project Name: Hort-Memco 1-22 Wellhead  
 Project Number: 09A1417672  
 Samples Collected By: JN

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix		Analysis		Sample Instructions	
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater	Soil	Air Summa Canister #		Other
MATJWE-6A04 e31	5/12/14	1138	2	X					X	X	X	
MATJWE-6A04 e61		1136										
MATJWE-6A05 e31		1137										
MATJWE-6A05 e61		1138										
MATJWE-6A06 e31		1158										
MATJWE-6A06 e61		1200										

Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date: 5/12/14 Time: 1532  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: \_\_\_\_\_ Date: 5/12/14 Time: 1532

Temp Received: 1.5 Date Results Needed

Turnaround Time:  
 Some Day  
 48 Hr  
 72 Hr  
 Standard

Origins Laboratory, Inc.

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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

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

**Sample Receipt Checklist**

Origins Work Order: 4405007 Client: Ensolum  
 Client Project ID: Hort - Memco 1-22

Checklist Completed by: JWVSA Shipped Via: HD  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Date/time completed: 5/02/24 Airbill #: N/A

Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 (Describe)

Cooler Number/Temperature: 1 1.5 °C  °C  °C  °C

Thermometer ID: 7005

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? <b>If yes, contact client and note in narrative.</b>			/	
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 analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / ( pH >10 for samples preserved with NaAsO <sub>2</sub> +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 in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) [Signature]

5/02/24  
Date/Time Reviewed

Origins Laboratory, Inc.

[Signature]

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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**B01@7'**

**5/2/2024 12:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.560		0.100	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4E0228	05/02/2024	05/02/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	84.8 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4E0229	05/02/2024	05/02/2024	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, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**B01@7'**

**5/2/2024 12:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	96.0 %		70-130			B4E02 29	05/02/2024	05/02/2024	
Surrogate: 4-Bromofluorobenzene	105 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.20		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	ND		0.823	"	"	"	"	"	
Sodium	4.48		0.435	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND		0.002	mg/kg	1	B4E0226	05/02/2024	05/02/2024	Ua
2-Methylnaphthalene	ND		0.002	"	"	"	"	"	Ua
Acenaphthene	ND		0.020	"	"	"	"	"	Ua
Anthracene	ND		0.020	"	"	"	"	"	Ua
Benzo (a) anthracene	ND		0.005	"	"	"	"	"	Ua
Benzo (a) pyrene	ND		0.020	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND		0.020	"	"	"	"	"	Ua
Chrysene	ND		0.020	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND		0.020	"	"	"	"	"	Ua
Fluoranthene	ND		0.020	"	"	"	"	"	Ua

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**B01@7'**

**5/2/2024 12:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-01 (Soil)**

**PAH by EPA 8270E**

Fluorene	ND		0.020	mg/kg	1	B4E0226	05/02/2024	05/02/2024	Ua
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	Ua
Naphthalene	ND		0.002	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	99.9 %		60-130			"	"	"	
Surrogate: Anthracene-d10	95.6 %		60-130			"	"	"	
Surrogate: Pyrene-d10	120 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	106 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	<b>9.29</b>			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>4.57</b>		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	<b>0.685</b>		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**B01@7'**

**5/2/2024 12:10:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-01 (Soil)**

**Table 915 metals by EPA 6020B**

Arsenic	4.28	0.248	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	155	8.55	"	"	"	"	"	
Cadmium	0.265	0.0855	"	"	"	"	"	
Copper	12.4	8.55	"	"	"	"	"	
Lead	11.1	0.855	"	"	"	"	"	
Nickel	17.3	0.855	"	"	"	"	"	
Selenium	ND	0.222	"	"	"	"	"	
Silver	ND	0.0855	"	"	"	"	"	
Zinc	60.2	31.6	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.104	0.260	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Origins Laboratory, Inc.



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

Jeremy Espinoza  
Project Number: 09A1417672  
Project: KMG - Hort-Memco 1-22 Wellhead

**B01@7'-V**

**5/2/2024 12:12:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-02 (Soil)**

**pH in Soil by 9045D**

pH	8.29			pH Units	1	B4E0724	05/07/2024	05/08/2024	
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Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**WH01-RISER@4'**  
**5/2/2024 12:14:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.583		0.0988	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4E0228	05/02/2024	05/02/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	76.5 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4E0229	05/02/2024	05/02/2024	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	102 %		70-130			"	"	"	
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Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**WH01-RISER@4'**  
**5/2/2024 12:14:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-03 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	97.2 %		70-130			B4E02 29	05/02/2024	05/02/2024	
Surrogate: 4-Bromofluorobenzene	107 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.81	0.499	meq/L	10	[CALC]		05/03/2024	05/06/2024	
Magnesium	1.53	0.823	"	"	"	"	"	"	
Sodium	2.96	0.435	"	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E0226		05/02/2024	05/02/2024	Ua
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	"	Ua
Acenaphthene	ND	0.020	"	"	"	"	"	"	Ua
Anthracene	ND	0.020	"	"	"	"	"	"	Ua
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	Ua
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	Ua
Chrysene	ND	0.020	"	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	Ua
Fluoranthene	ND	0.020	"	"	"	"	"	"	Ua

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**WH01-RISER@4'**  
**5/2/2024 12:14:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-03 (Soil)**

**PAH by EPA 8270E**

Fluorene	ND		0.020	mg/kg	1	B4E0226	05/02/2024	05/02/2024	Ua
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	Ua
Naphthalene	ND		0.002	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	101 %		60-130			"	"	"	
Surrogate: Anthracene-d10	95.4 %		60-130			"	"	"	
Surrogate: Pyrene-d10	123 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	108 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.22			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	2.29		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.506		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**WH01-RISER@4'**  
**5/2/2024 12:14:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-03 (Soil)**

**Table 915 metals by EPA 6020B**

Arsenic	4.43		0.258	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	173		8.90	"	"	"	"	"	
Cadmium	0.245		0.0890	"	"	"	"	"	
Copper	15.3		8.90	"	"	"	"	"	
Lead	12.9		0.890	"	"	"	"	"	
Nickel	16.7		0.890	"	"	"	"	"	
Selenium	ND		0.232	"	"	"	"	"	
Silver	ND		0.0890	"	"	"	"	"	
Zinc	66.9		32.9	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.157	0.393	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Origins Laboratory, Inc.



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

Jeremy Espinoza  
Project Number: 09A1417672  
Project: KMG - Hort-Memco 1-22 Wellhead

**WH01-RISER@4'-V**  
**5/2/2024 12:16:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-04 (Soil)**

**pH in Soil by 9045D**

pH	8.53			pH Units	1	B4E0724	05/07/2024	05/08/2024	
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Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG01@3'**  
**5/2/2024 11:56:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.683		0.0994	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	1.93		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	1.97		0.823	"	"	"	"	"	
Sodium	1.54		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.29			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	1.10		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.391		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.79		0.267	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	184		9.22	"	"	"	"	"	
Cadmium	0.341		0.0922	"	"	"	"	"	
Copper	16.0		9.22	"	"	"	"	"	

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG01@3'**  
**5/2/2024 11:56:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-05 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	10.9		0.922	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	18.7		0.922	"	"	"	"	"	
Selenium	0.262		0.240	"	"	"	"	"	
Silver	ND		0.0922	"	"	"	"	"	
Zinc	64.8		34.1	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.145	0.363	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Origins Laboratory, Inc.



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Ensolum  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG01@6'**  
**5/2/2024 11:54:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.409		0.102	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	0.989		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	2.11		0.823	"	"	"	"	"	
Sodium	1.84		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.44			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	1.48		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.404		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.44		0.284	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	117		9.80	"	"	"	"	"	
Cadmium	0.211		0.0980	"	"	"	"	"	
Copper	ND		9.80	"	"	"	"	"	

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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG01@6'**  
**5/2/2024 11:54:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-06 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	8.17		0.980	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	13.6		0.980	"	"	"	"	"	
Selenium	ND		0.255	"	"	"	"	"	
Silver	ND		0.0980	"	"	"	"	"	
Zinc	48.5		36.3	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.166	0.415	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG02@3'**  
**5/2/2024 12:02:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.608		0.100	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.25		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	1.78		0.823	"	"	"	"	"	
Sodium	0.866		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.30			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	0.610		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.408		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.08		0.283	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	172		9.77	"	"	"	"	"	
Cadmium	0.333		0.0977	"	"	"	"	"	
Copper	14.7		9.77	"	"	"	"	"	

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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG02@3'**  
**5/2/2024 12:02:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-07 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	10.7		0.977	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	17.3		0.977	"	"	"	"	"	
Selenium	0.330		0.254	"	"	"	"	"	
Silver	ND		0.0977	"	"	"	"	"	
Zinc	62.1		36.2	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.148	0.371	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG02@6'**  
**5/2/2024 12:04:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.654		0.0985	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	3.92		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	2.76		0.823	"	"	"	"	"	
Sodium	1.28		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.14			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	0.699		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.672		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.02		0.262	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	162		9.05	"	"	"	"	"	
Cadmium	0.398		0.0905	"	"	"	"	"	
Copper	15.4		9.05	"	"	"	"	"	

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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG02@6'**  
**5/2/2024 12:04:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-08 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	13.9		0.905	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	18.2		0.905	"	"	"	"	"	
Selenium	0.350		0.235	"	"	"	"	"	
Silver	ND		0.0905	"	"	"	"	"	
Zinc	70.7		33.5	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.166	0.416	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Jeremy Espinoza  
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 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG03@3'**  
**5/2/2024 11:40:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-09 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	5.71	0.101	mg/L	1	B4E0308	05/03/2024	05/07/2024
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**Metals by Saturated Paste by EPA 6010**

Calcium	5.71	0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024
Magnesium	5.37	0.823	"	"	"	"	"
Sodium	3.44	0.435	"	"	"	"	"

**pH in Soil by 9045D**

pH	8.13		pH Units	1	B4E0313	05/03/2024	05/05/2024
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**SAR by 20B Saturated Paste**

SAR	1.46	0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.07	0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024
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**Table 915 metals by EPA 6020B**

Arsenic	4.51	0.256	mg/kg	10	B4E0230	05/02/2024	05/03/2024
Barium	185	8.81	"	"	"	"	"
Cadmium	0.320	0.0881	"	"	"	"	"
Copper	12.2	8.81	"	"	"	"	"

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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG03@3'**  
**5/2/2024 11:40:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-09 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	9.65		0.881	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	15.0		0.881	"	"	"	"	"	
Selenium	ND		0.229	"	"	"	"	"	
Silver	ND		0.0881	"	"	"	"	"	
Zinc	54.2		32.6	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.146	0.366	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG03@6'**  
**5/2/2024 11:42:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-10 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.600		0.0986	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	3.15		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	4.11		0.823	"	"	"	"	"	
Sodium	3.94		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.24			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	2.07		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.922		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.54		0.249	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	214		8.59	"	"	"	"	"	
Cadmium	0.351		0.0859	"	"	"	"	"	
Copper	15.4		8.59	"	"	"	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG03@6'**  
**5/2/2024 11:42:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-10 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	11.4		0.859	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	24.4		0.859	"	"	"	"	"	
Selenium	0.232		0.223	"	"	"	"	"	
Silver	ND		0.0859	"	"	"	"	"	
Zinc	66.7		31.8	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.167	0.418	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG04@3'**  
**5/2/2024 11:38:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-11 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.517		0.0999	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.08		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	1.44		0.823	"	"	"	"	"	
Sodium	1.33		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.33			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	1.00		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.408		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.81		0.275	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	171		9.50	"	"	"	"	"	
Cadmium	0.345		0.0950	"	"	"	"	"	
Copper	16.3		9.50	"	"	"	"	"	

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Jeremy Espinoza  
Project Number: 09A1417672  
Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG04@3'**  
**5/2/2024 11:38:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-11 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	11.8		0.950	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	19.2		0.950	"	"	"	"	"	
Selenium	ND		0.247	"	"	"	"	"	
Silver	ND		0.0950	"	"	"	"	"	
Zinc	69.7		35.1	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.171	0.428	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG04@6'**  
**5/2/2024 11:36:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-12 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.606		0.0992	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	4.96		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	5.27		0.823	"	"	"	"	"	
Sodium	5.28		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.27			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	2.33		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.08		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.03		0.255	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	142		8.79	"	"	"	"	"	
Cadmium	0.287		0.0879	"	"	"	"	"	
Copper	12.7		8.79	"	"	"	"	"	

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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG04@6'**  
**5/2/2024 11:36:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-12 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	10.3		0.879	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	15.8		0.879	"	"	"	"	"	
Selenium	ND		0.228	"	"	"	"	"	
Silver	ND		0.0879	"	"	"	"	"	
Zinc	59.5		32.5	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.163	0.407	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG05@3'**  
**5/2/2024 11:32:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-13 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.720		0.102	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	5.63		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	6.52		0.823	"	"	"	"	"	
Sodium	4.01		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.21			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	1.63		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	1.15		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.56		0.286	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	162		9.85	"	"	"	"	"	
Cadmium	0.387		0.0985	"	"	"	"	"	
Copper	14.4		9.85	"	"	"	"	"	

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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG05@3'**  
**5/2/2024 11:32:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-13 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	10.6		0.985	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	17.8		0.985	"	"	"	"	"	
Selenium	ND		0.256	"	"	"	"	"	
Silver	ND		0.0985	"	"	"	"	"	
Zinc	60.8		36.4	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.130	0.325	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG05@6'**  
**5/2/2024 11:34:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-14 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.748		0.101	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.13		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	5.51		0.823	"	"	"	"	"	
Sodium	5.45		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.45			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	2.79		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.989		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.88		0.256	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	137		8.84	"	"	"	"	"	
Cadmium	0.174		0.0884	"	"	"	"	"	
Copper	11.0		8.84	"	"	"	"	"	

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 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG05@6'**  
**5/2/2024 11:34:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-14 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	9.14		0.884	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	14.6		0.884	"	"	"	"	"	
Selenium	ND		0.230	"	"	"	"	"	
Silver	ND		0.0884	"	"	"	"	"	
Zinc	58.0		32.7	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.193	0.483	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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**NATIVE-BG06@3'**  
**5/2/2024 11:58:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-15 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.534		0.0994	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.18		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	2.32		0.823	"	"	"	"	"	
Sodium	0.774		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.52			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	0.516		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.402		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.07		0.267	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	145		9.22	"	"	"	"	"	
Cadmium	0.227		0.0922	"	"	"	"	"	
Copper	13.5		9.22	"	"	"	"	"	

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**NATIVE-BG06@3'**  
**5/2/2024 11:58:00AM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-15 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	9.08		0.922	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	15.7		0.922	"	"	"	"	"	
Selenium	0.299		0.240	"	"	"	"	"	
Silver	ND		0.0922	"	"	"	"	"	
Zinc	55.9		34.1	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.147	0.368	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG06@6'**  
**5/2/2024 12:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-16 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.233		0.100	mg/L	1	B4E0308	05/03/2024	05/07/2024	
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**Metals by Saturated Paste by EPA 6010**

Calcium	2.68		0.499	meq/L	10	[CALC]	05/03/2024	05/06/2024	
Magnesium	2.79		0.823	"	"	"	"	"	
Sodium	1.53		0.435	"	"	"	"	"	

**pH in Soil by 9045D**

pH	8.41			pH Units	1	B4E0313	05/03/2024	05/05/2024	
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**SAR by 20B Saturated Paste**

SAR	0.926		0.0100	SAR	1	B4E0303	05/03/2024	05/06/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.511		0.00500	mmhos/cm	1	B4E0313	05/03/2024	05/05/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.87		0.276	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Barium	137		9.53	"	"	"	"	"	
Cadmium	0.248		0.0953	"	"	"	"	"	
Copper	10.8		9.53	"	"	"	"	"	

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 Project: KMG - Hort-Memco 1-22 Wellhead

**NATIVE-BG06@6'**  
**5/2/2024 12:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405067-16 (Soil)**

**Table 915 metals by EPA 6020B**

Lead	9.36		0.953	mg/kg	10	B4E0230	05/02/2024	05/03/2024	
Nickel	14.9		0.953	"	"	"	"	"	
Selenium	ND		0.248	"	"	"	"	"	
Silver	ND		0.0953	"	"	"	"	"	
Zinc	51.2		35.3	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.158	0.395	mg/kg dry	1	2614762	05/21/2024	05/21/2024	U
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 Project: KMG - Hort-Memco 1-22 Wellhead

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4E0228 - EPA 3550B</b>										
<b>Blank (B4E0228-BLK1)</b>										
					Prepared: 05/02/2024 Analyzed: 05/02/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	20		"	24.9		78.6	50-150			

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 Project: KMG - Hort-Memco 1-22 Wellhead

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0228 - EPA 3550B**

**LCS (B4E0228-BS1)**

Prepared: 05/02/2024 Analyzed: 05/02/2024

Diesel (C10-C28)	836	50.0	mg/kg	1000		83.6	70-130			
Residual Range Organics (C28-C40)	850	200	"	1000		85.0	70-130			
Surrogate: o-Terphenyl	52		"	49.8		104	50-150			

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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0228 - EPA 3550B**

<b>Matrix Spike (B4E0228-MS1)</b>	<b>Source: Y405068-01</b>			<b>Prepared: 05/02/2024 Analyzed: 05/02/2024</b>						
Diesel (C10-C28)	829	50.0	mg/kg	1000	ND	82.9	70-130			
Residual Range Organics (C28-C40)	856	200	"	1000	ND	85.6	70-130			
Surrogate: o-Terphenyl	46		"	49.8		92.0	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E0228 - EPA 3550B

Matrix Spike Dup (B4E0228-MSD1)	Source: Y405068-01			Prepared: 05/02/2024 Analyzed: 05/02/2024						
Diesel (C10-C28)	808	50.0	mg/kg	1000	ND	80.8	70-130	2.53	35	
Residual Range Organics (C28-C40)	845	200	"	1000	ND	84.5	70-130	1.26	35	
Surrogate: o-Terphenyl	50		"	49.8		101	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0229 - EPA 5030 (soil)**

**Blank (B4E0229-BLK1)**

Prepared: 05/02/2024 Analyzed: 05/02/2024

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		99.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		105	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E0229 - EPA 5030 (soil)

**LCS (B4E0229-BS1)**

Prepared: 05/02/2024 Analyzed: 05/02/2024

1,2,4-Trimethylbenzene	0.117	0.00200	mg/kg	0.100		117	70-130			
1,3,5-Trimethylbenzene	0.108	0.00200	"	0.100		108	70-130			
Benzene	0.113	0.00200	"	0.100		113	70-130			
Ethylbenzene	0.115	0.00200	"	0.100		115	70-130			
Naphthalene	0.109	0.00380	"	0.100		109	70-130			
Toluene	0.116	0.00200	"	0.100		116	70-130			
o-Xylene	0.114	0.00200	"	0.100		114	70-130			
m,p-Xylene	0.230	0.00400	"	0.200		115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		101	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.0	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.0	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E0229 - EPA 5030 (soil)

Matrix Spike (B4E0229-MS1)	Source: Y405068-01			Prepared: 05/02/2024 Analyzed: 05/02/2024						
1,2,4-Trimethylbenzene	0.111	0.00200	mg/kg	0.100	ND	111	70-130			
1,3,5-Trimethylbenzene	0.101	0.00200	"	0.100	ND	101	70-130			
Benzene	0.106	0.00200	"	0.100	ND	106	70-130			
Ethylbenzene	0.109	0.00200	"	0.100	ND	109	70-130			
Naphthalene	0.104	0.00380	"	0.100	ND	104	70-130			
Toluene	0.110	0.00200	"	0.100	ND	110	70-130			
o-Xylene	0.108	0.00200	"	0.100	ND	108	70-130			
m,p-Xylene	0.217	0.00400	"	0.200	ND	108	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.9	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.9	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E0229 - EPA 5030 (soil)

Matrix Spike Dup (B4E0229-MSD1)	Source: Y405068-01			Prepared: 05/02/2024 Analyzed: 05/02/2024						
1,2,4-Trimethylbenzene	0.106	0.00200	mg/kg	0.100	ND	106	70-130	5.04	20	
1,3,5-Trimethylbenzene	0.0956	0.00200	"	0.100	ND	95.6	70-130	5.79	20	
Benzene	0.104	0.00200	"	0.100	ND	104	70-130	2.25	20	
Ethylbenzene	0.105	0.00200	"	0.100	ND	105	70-130	3.99	20	
Naphthalene	0.103	0.00380	"	0.100	ND	103	70-130	0.251	20	
Toluene	0.105	0.00200	"	0.100	ND	105	70-130	4.48	20	
o-Xylene	0.104	0.00200	"	0.100	ND	104	70-130	4.42	20	
m,p-Xylene	0.207	0.00400	"	0.200	ND	104	70-130	4.56	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.6	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Metals by EPA 6000/7000 Series Methods - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0230 - EPA 3050B**

**Blank (B4E0230-BLK1)**

Prepared: 05/02/2024 Analyzed: 05/03/2024

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 (B4E0230-BS1)**

Prepared: 05/02/2024 Analyzed: 05/03/2024

Arsenic	5.48	0.290	mg/kg	5.00		110	80-120			
Barium	500	10.0	"	500		100	80-120			
Cadmium	5.11	0.100	"	5.00		102	80-120			
Copper	51.5	10.0	"	50.0		103	80-120			
Lead	5.14	1.00	"	5.00		103	80-120			
Nickel	5.43	1.00	"	5.00		109	80-120			
Selenium	9.85	0.260	"	9.50		104	80-120			
Silver	5.11	0.100	"	5.00		102	80-120			
Zinc	53.9	37.0	"	50.0		108	80-120			

**Matrix Spike (B4E0230-MS1)**

Source: Y405064-01

Prepared: 05/02/2024 Analyzed: 05/03/2024

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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0230 - EPA 3050B**

<b>Matrix Spike (B4E0230-MS1)</b>		<b>Source: Y405064-01</b>			Prepared: 05/02/2024 Analyzed: 05/03/2024					
Arsenic	6.81	0.277	mg/kg	4.78	2.15	97.6	75-125			
Barium	496	9.55	"	478	54.2	92.5	75-125			
Cadmium	4.82	0.0955	"	4.78	0.0975	98.9	75-125			
Copper	52.2	9.55	"	47.8	8.97	90.5	75-125			
Lead	23.9	0.955	"	4.78	22.8	23.2	75-125			QM-07
Nickel	11.9	0.955	"	4.78	8.10	78.7	75-125			
Selenium	8.51	0.248	"	9.07	0.0390	93.3	75-125			
Silver	4.77	0.0955	"	4.78	0.0195	99.6	75-125			
Zinc	74.3	35.3	"	47.8	30.3	92.3	75-125			

<b>Matrix Spike Dup (B4E0230-MSD1)</b>		<b>Source: Y405064-01</b>			Prepared: 05/02/2024 Analyzed: 05/03/2024					
Arsenic	6.29	0.248	mg/kg	4.28	2.15	96.7	75-125	7.94	20	
Barium	466	8.56	"	428	54.2	96.2	75-125	6.14	20	
Cadmium	4.30	0.0856	"	4.28	0.0975	98.2	75-125	11.4	20	
Copper	46.9	8.56	"	42.8	8.97	88.7	75-125	10.6	20	
Lead	23.3	0.856	"	4.28	22.8	11.7	75-125	2.58	20	QM-07
Nickel	11.8	0.856	"	4.28	8.10	86.0	75-125	0.665	20	
Selenium	8.09	0.223	"	8.13	0.0390	99.0	75-125	5.01	20	
Silver	4.18	0.0856	"	4.28	0.0195	97.3	75-125	13.2	20	
Zinc	70.4	31.7	"	42.8	30.3	93.8	75-125	5.37	20	

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 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0226 - EPA 3580**

**Blank (B4E0226-BLK1)**

Prepared: 05/02/2024 Analyzed: 05/02/2024

1-Methylnaphthalene	ND	0.002	mg/kg							Ua
2-Methylnaphthalene	ND	0.002	"							Ua
Acenaphthene	ND	0.020	"							Ua
Anthracene	ND	0.020	"							Ua
Benzo (a) anthracene	ND	0.005	"							Ua
Benzo (a) pyrene	ND	0.020	"							Ua
Benzo (b) fluoranthene	ND	0.020	"							Ua
Benzo (g,h,i) perylene	ND	0.020	"							Ua
Benzo (k) fluoranthene	ND	0.020	"							Ua
Chrysene	ND	0.020	"							Ua
Dibenz (a,h) anthracene	ND	0.020	"							Ua
Fluoranthene	ND	0.020	"							Ua
Fluorene	ND	0.020	"							Ua
Indeno (1,2,3-cd) pyrene	ND	0.020	"							Ua
Naphthalene	ND	0.002	"							Ua
Phenanthrene	ND	0.020	"							Ua
Pyrene	ND	0.020	"							Ua
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	190		"	200		95.5	60-130			
Surrogate: Pyrene-d10	240		"	200		118	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		105	60-130			

**LCS (B4E0226-BS1)**

Prepared: 05/02/2024 Analyzed: 05/02/2024

1-Methylnaphthalene	0.217	0.002	mg/kg	0.200		108	70-130			
2-Methylnaphthalene	0.216	0.002	"	0.200		108	70-130			
Acenaphthene	0.223	0.020	"	0.200		111	70-130			
Anthracene	0.214	0.020	"	0.200		107	70-130			

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0226 - EPA 3580**

**LCS (B4E0226-BS1)**

Prepared: 05/02/2024 Analyzed: 05/02/2024

Benzo (a) anthracene	0.216	0.005	mg/kg	0.200		108	70-130			
Benzo (a) pyrene	0.226	0.020	"	0.200		113	70-130			
Benzo (b) fluoranthene	0.228	0.020	"	0.200		114	70-130			
Benzo (g,h,i) perylene	0.215	0.020	"	0.200		108	70-130			
Benzo (k) fluoranthene	0.228	0.020	"	0.200		114	70-130			
Chrysene	0.227	0.020	"	0.200		113	70-130			
Dibenz (a,h) anthracene	0.217	0.020	"	0.200		109	70-130			
Fluoranthene	0.207	0.020	"	0.200		103	70-130			
Fluorene	0.225	0.020	"	0.200		113	70-130			
Indeno (1,2,3-cd) pyrene	0.204	0.020	"	0.200		102	70-130			
Naphthalene	0.220	0.002	"	0.200		110	70-130			
Phenanthrene	0.225	0.020	"	0.200		112	70-130			
Pyrene	0.241	0.020	"	0.200		120	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		101	60-130			
Surrogate: Anthracene-d10	190		"	200		95.1	60-130			
Surrogate: Pyrene-d10	220		"	200		109	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130			

**Matrix Spike (B4E0226-MS1)**

Source: Y405068-01

Prepared: 05/02/2024 Analyzed: 05/03/2024

1-Methylnaphthalene	0.215	0.002	mg/kg	0.200	ND	108	70-130			
2-Methylnaphthalene	0.215	0.002	"	0.200	ND	107	70-130			
Acenaphthene	0.220	0.020	"	0.200	ND	110	70-130			
Anthracene	0.213	0.020	"	0.200	ND	106	70-130			
Benzo (a) anthracene	0.216	0.005	"	0.200	ND	108	70-130			
Benzo (a) pyrene	0.220	0.020	"	0.200	ND	110	70-130			
Benzo (b) fluoranthene	0.236	0.020	"	0.200	ND	118	70-130			
Benzo (g,h,i) perylene	0.219	0.020	"	0.200	ND	110	70-130			

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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hort-Memco 1-22 Wellhead

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0226 - EPA 3580**

<b>Matrix Spike (B4E0226-MS1)</b>		<b>Source: Y405068-01</b>			Prepared: 05/02/2024 Analyzed: 05/03/2024					
Benzo (k) fluoranthene	0.198	0.020	mg/kg	0.200	ND	98.8	70-130			
Chrysene	0.217	0.020	"	0.200	ND	108	70-130			
Dibenz (a,h) anthracene	0.237	0.020	"	0.200	ND	118	70-130			
Fluoranthene	0.199	0.020	"	0.200	ND	99.7	70-130			
Fluorene	0.225	0.020	"	0.200	ND	112	70-130			
Indeno (1,2,3-cd) pyrene	0.213	0.020	"	0.200	0.002	105	70-130			
Naphthalene	0.220	0.002	"	0.200	0.030	95.1	70-130			
Phenanthrene	0.220	0.020	"	0.200	ND	110	70-130			
Pyrene	0.225	0.020	"	0.200	ND	113	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		101	60-130			
Surrogate: Anthracene-d10	190		"	200		94.8	60-130			
Surrogate: Pyrene-d10	210		"	200		103	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130			

<b>Matrix Spike Dup (B4E0226-MSD1)</b>		<b>Source: Y405068-01</b>			Prepared: 05/02/2024 Analyzed: 05/02/2024					
1-Methylnaphthalene	0.216	0.002	mg/kg	0.200	ND	108	70-130	0.415	20	
2-Methylnaphthalene	0.215	0.002	"	0.200	ND	107	70-130	0.137	20	
Acenaphthene	0.221	0.020	"	0.200	ND	110	70-130	0.304	20	
Anthracene	0.228	0.020	"	0.200	ND	114	70-130	6.98	20	
Benzo (a) anthracene	0.216	0.005	"	0.200	ND	108	70-130	0.201	20	
Benzo (a) pyrene	0.227	0.020	"	0.200	ND	113	70-130	2.92	20	
Benzo (b) fluoranthene	0.223	0.020	"	0.200	ND	111	70-130	5.64	20	
Benzo (g,h,i) perylene	0.216	0.020	"	0.200	ND	108	70-130	1.44	20	
Benzo (k) fluoranthene	0.237	0.020	"	0.200	ND	119	70-130	18.2	20	
Chrysene	0.213	0.020	"	0.200	ND	106	70-130	1.81	20	
Dibenz (a,h) anthracene	0.229	0.020	"	0.200	ND	115	70-130	3.19	20	
Fluoranthene	0.193	0.020	"	0.200	ND	96.5	70-130	3.17	20	

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4E0226 - EPA 3580

Matrix Spike Dup (B4E0226-MSD1)	Source: Y405068-01			Prepared: 05/02/2024 Analyzed: 05/02/2024						
Fluorene	0.223	0.020	mg/kg	0.200	ND	111	70-130	0.750	20	
Indeno (1,2,3-cd) pyrene	0.217	0.020	"	0.200	0.002	108	70-130	2.15	20	
Naphthalene	0.219	0.002	"	0.200	0.030	94.6	70-130	0.494	20	
Phenanthrene	0.222	0.020	"	0.200	ND	111	70-130	0.794	20	
Pyrene	0.252	0.020	"	0.200	ND	126	70-130	11.2	20	
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	190		"	200		96.2	60-130			
Surrogate: Pyrene-d10	230		"	200		116	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		106	60-130			

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 Project: KMG - Hort-Memco 1-22 Wellhead

**Classical Chemistry Parameters - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E0303 - Saturated Paste Metals**

**Blank (B4E0303-BLK1)**

Prepared: 05/03/2024 Analyzed: 05/06/2024

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

**Duplicate (B4E0303-DUP1)**

Source: Y405067-01

Prepared: 05/03/2024 Analyzed: 05/06/2024

Calcium PPM	19.1	10.0	mg/L		24.1			23.2	50	
SAR	ND	0.0100	SAR		4.57				200	
Magnesium PPM	7.64	10.0	mg/L		8.70			13.0	50	
Sodium PPM	107	10.0	"		103			4.27	50	

**Batch B4E0308 - DTPA Sorbitol Preparation**

**Blank (B4E0308-BLK1)**

Prepared: 05/03/2024 Analyzed: 05/07/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4E0308-DUP1)**

Source: Y405064-01

Prepared: 05/03/2024 Analyzed: 05/07/2024

Boron	0.166	0.101	mg/L		0.162			2.50	50	
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 Project: KMG - Hort-Memco 1-22 Wellhead

**Saturated Paste - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4E0313 - Saturated Paste pH/EC</b>										
<b>Blank (B4E0313-BLK1)</b>					Prepared: 05/03/2024 Analyzed: 05/05/2024					
Specific Conductance (EC)	ND	0.00500	mmhos/cm							
<b>Duplicate (B4E0313-DUP1)</b>					<b>Source: Y405067-01</b> Prepared: 05/03/2024 Analyzed: 05/05/2024					
Specific Conductance (EC)	0.638	0.00500	mmhos/cm		0.685		7.11		25	
pH	9.24		pH Units		9.29		0.540		25	
<b>Batch B4E0724 - Saturated Paste pH/EC</b>										
<b>Duplicate (B4E0724-DUP1)</b>					<b>Source: Y405020-01</b> Prepared: 05/07/2024 Analyzed: 05/08/2024					
pH	8.27		pH Units		8.25		0.242		25	

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 Project: KMG - Hort-Memco 1-22 Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2614762 - SW846 3060A</b>										
<b>BLANK (1205739388-BLK)</b>					Prepared: 05/21/2024 Analyzed: 05/21/2024					
Hexavalent Chromium	ND	0.357	mg/kg				-			U
<b>LCS (1205739389-BKS)</b>					Prepared: 05/21/2024 Analyzed: 05/21/2024					
Hexavalent Chromium	3.82	0.387	mg/kg	3.87		98.6	80-120			
<b>DUP (1205739390 D)</b>					Source: 667057008 Prepared: 05/21/2024 Analyzed: 05/21/2024					
Hexavalent Chromium	ND	0.321	mg/kg dry		<0.128		0-50	N/A	50	U
<b>MS (1205739391 S)</b>					Source: 667057008 Prepared: 05/21/2024 Analyzed: 05/21/2024					
Hexavalent Chromium	2.74	0.321	mg/kg dry	3.21	<0.128	83.8	75-125			
<b>DUP (1205739392 D)</b>					Source: Y405067-12 Prepared: 05/21/2024 Analyzed: 05/21/2024					
Hexavalent Chromium	ND	0.408	mg/kg dry		<0.163		0-50	N/A	50	U
<b>MS (1205739393 S)</b>					Source: Y405067-12 Prepared: 05/21/2024 Analyzed: 05/21/2024					
Hexavalent Chromium	3.58	0.409	mg/kg dry	4.09	<0.164	86	75-125			
<b>ILCS (1205739394-ILCS)</b>					Prepared: 05/21/2024 Analyzed: 05/21/2024					
Hexavalent Chromium	7.84	0.379	mg/kg	7.70		102	80-120			

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Jeremy Espinoza  
Project Number: 09A1417672  
Project: KMG - Hort-Memco 1-22 Wellhead

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**Notes and Definitions**

Ua Sample is Non-Detect.

U Result not detected above the detection limit

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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

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June 25, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Hart-Memco 1-22 Wellhead Project Number - 09A1417672**

Attached are your analytical results for KMG - Hart-Memco 1-22 Wellhead received by Origins Laboratory, Inc. June 10, 2024. This project is associated with Origins project number Y406262-01.

The analytical results in the following report were analyzed under the guidelines of EPA Methods. These methods are identified as follows; "SW" are defined in SW-846, "EPA" are defined in 40CFR part 136 and "SM" are defined in the most current revision of Standard Methods For the Examination of Water and Wastewater.

The analytical results apply specifically to the samples and analyses specified per the attached Chain of Custody. As such, this report shall not be reproduced except in full, without the written approval of Origin's laboratory.

Unless otherwise noted, the analytical results for all soil samples are reported on a wet weight basis. All analytical analyses were performed under NELAP guidelines unless noted by a data qualifier.

Any holding time exceedances, deviations from the method specifications or deviations from Origins Laboratory's Standard Operating Procedures are outlined in the case narrative.

Thank you for selecting Origins for your analytical needs. Please contact us with any questions concerning this report, or if we can help with anything at all.

Origins Laboratory, Inc.  
303.433.1322  
o-squad@oelabinc.com



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

Jeremy Espinoza  
Project Number: 09A1417672  
Project: KMG - Hart-Memco 1-22 Wellhead

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-RISER@4'	Y406262-01	Soil	June 10, 2024 13:00	06/10/2024 15:51

Origins Laboratory, Inc.



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 Project: KMG - Hart-Memco 1-22 Wellhead

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: Y406202 Client: ENSOLUM  
 Client Project ID: Hart-Memco  
 Checklist Completed by: EHO Shipped Via: HD  
 Date/time completed: 6/10/24 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 117 °C 1 °C 1 °C (Describe)  
 Thermometer ID: T005

Requirement Description	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature between 0°C to ≤ 6°C <sup>(1)</sup> ?		/		SD
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? <b>If yes, contact client and note in narrative.</b>			/	
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 analyses in order to insure sample integrity)/(pH <2 for samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ) / (pH >10 for samples preserved with NaAsO <sub>2</sub> +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 in the additional comments (above) and the case narrative.

Reviewed by (Project Manager) EHO Date/Time Reviewed 6/10/24

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hart-Memco 1-22 Wellhead

**SEP01-RISER@4'**  
**6/10/2024 1:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y406262-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.369		0.0985	mg/L	1	B4F1105	06/11/2024	06/12/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND		25.0	mg/kg	1	B4F1001	06/10/2024	06/11/2024	Ua
Residual Range Organics (C28-C40)	ND		100	"	"	"	"	"	Ua

Surrogate: o-Terphenyl	79.0 %		50-150			"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND		0.00200	mg/kg	1	B4F1033	"	06/10/2024	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	96.4 %		70-130			"	"	"	
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hart-Memco 1-22 Wellhead

**SEP01-RISER@4'**  
**6/10/2024 1:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y406262-01 (Soil)**

**GBTEX+TMBs by 8260D**

Surrogate: Toluene-d8	97.4 %		70-130			B4F10 33	06/10/2024	06/10/2024	
Surrogate: 4-Bromofluorobenzene	111 %		70-130			"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	1.91	0.499	meq/L	10	[CALC]		06/11/2024	06/12/2024	
Magnesium	0.861	0.823	"	"	"	"	"	"	
Sodium	ND	0.435	"	"	"	"	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4F1032		06/10/2024	06/12/2024	Ua
2-Methylnaphthalene	ND	0.002	"	"	"	"	"	"	Ua
Acenaphthene	ND	0.020	"	"	"	"	"	"	Ua
Anthracene	ND	0.020	"	"	"	"	"	"	Ua
Benzo (a) anthracene	ND	0.005	"	"	"	"	"	"	Ua
Benzo (a) pyrene	ND	0.020	"	"	"	"	"	"	Ua
Benzo (b) fluoranthene	ND	0.020	"	"	"	"	"	"	Ua
Benzo (k) fluoranthene	ND	0.020	"	"	"	"	"	"	Ua
Chrysene	ND	0.020	"	"	"	"	"	"	Ua
Dibenz (a,h) anthracene	ND	0.020	"	"	"	"	"	"	Ua
Fluoranthene	ND	0.020	"	"	"	"	"	"	Ua

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Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hart-Memco 1-22 Wellhead

**SEP01-RISER@4'**  
**6/10/2024 1:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y406262-01 (Soil)**

**PAH by EPA 8270E**

Fluorene	ND		0.020	mg/kg	1	B4F1032	06/10/2024	06/12/2024	Ua
Indeno (1,2,3-cd) pyrene	ND		0.020	"	"	"	"	"	Ua
Naphthalene	ND		0.002	"	"	"	"	"	Ua
Pyrene	ND		0.020	"	"	"	"	"	Ua

Surrogate: Fluorene-d10	97.2 %		60-130			"	"	"	
Surrogate: Anthracene-d10	91.0 %		60-130			"	"	"	
Surrogate: Pyrene-d10	93.6 %		60-130			"	"	"	
Surrogate: Benzo (a) pyrene-d12	103 %		60-130			"	"	"	

**pH in Soil by 9045D**

pH	8.48			pH Units	1	B4F1114	06/11/2024	06/11/2024	
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**SAR by 20B Saturated Paste**

SAR	0.147		0.0100	SAR	1	B4F1108	06/11/2024	06/12/2024	
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**Specific Conductance Mod. 9050A**

Specific Conductance (EC)	0.296		0.00500	mmhos/cm	1	B4F1114	06/11/2024	06/11/2024	
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**Table 915 metals by EPA 6020B**

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 Project: KMG - Hart-Memco 1-22 Wellhead

**SEP01-RISER@4'**  
**6/10/2024 1:00:00PM**

Analyte	Result	Min Detection Limit	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y406262-01 (Soil)**

**Table 915 metals by EPA 6020B**

Arsenic	4.02		0.273	mg/kg	10	B4F1034	06/10/2024	06/11/2024	
Barium	160		9.41	"	"	"	"	"	
Cadmium	0.303		0.0941	"	"	"	"	"	
Copper	13.9		9.41	"	"	"	"	"	
Lead	11.5		0.941	"	"	"	"	"	
Nickel	15.6		0.941	"	"	"	"	"	
Selenium	0.343		0.245	"	"	"	"	"	
Silver	ND		0.0941	"	"	"	"	"	
Zinc	58.2		34.8	"	"	"	"	"	

**Total Metals by 7196A**

Hexavalent Chromium	ND	0.173	0.432	mg/kg dry	1	2630222	06/21/2024	06/22/2024	U
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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4F1001 - EPA 3550B</b>										
<b>Blank (B4F1001-BLK1)</b>										
					Prepared: 06/10/2024 Analyzed: 06/11/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							Ua
Residual Range Organics (C28-C40)	ND	100	"							Ua
Surrogate: o-Terphenyl	20		"	24.9		81.7	50-150			

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 Project: KMG - Hart-Memco 1-22 Wellhead

**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1001 - EPA 3550B**

**LCS (B4F1001-BS1)**

Prepared: 06/10/2024 Analyzed: 06/11/2024

Diesel (C10-C28)	922	50.0	mg/kg	1000		92.2	70-130			
Residual Range Organics (C28-C40)	958	200	"	1000		95.8	70-130			
Surrogate: o-Terphenyl	54		"	49.8		108	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1001 - EPA 3550B**

<b>Matrix Spike (B4F1001-MS1)</b>	<b>Source: Y406261-01</b>			<b>Prepared: 06/10/2024 Analyzed: 06/11/2024</b>						
Diesel (C10-C28)	872	50.0	mg/kg	1000	ND	87.2	70-130			
Residual Range Organics (C28-C40)	904	200	"	1000	ND	90.4	70-130			
Surrogate: o-Terphenyl	51		"	49.8		103	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1001 - EPA 3550B**

<b>Matrix Spike Dup (B4F1001-MSD1)</b>	<b>Source: Y406261-01</b>			<b>Prepared: 06/10/2024 Analyzed: 06/11/2024</b>						
Diesel (C10-C28)	851	50.0	mg/kg	1000	ND	85.1	70-130	2.51	35	
Residual Range Organics (C28-C40)	876	200	"	1000	ND	87.6	70-130	3.19	35	
Surrogate: o-Terphenyl	51		"	49.8		102	50-150			

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**Extractable Petroleum Hydrocarbons by 8015D - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1033 - EPA 5030 (soil)**

**Blank (B4F1033-BLK1)**

Prepared: 06/10/2024 Analyzed: 06/10/2024

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		92.8	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		112	70-130			

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 Project: KMG - Hart-Memco 1-22 Wellhead

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1033 - EPA 5030 (soil)**

**LCS (B4F1033-BS1)**

Prepared: 06/10/2024 Analyzed: 06/10/2024

1,2,4-Trimethylbenzene	0.0893	0.00200	mg/kg	0.100		89.3	70-130			
1,3,5-Trimethylbenzene	0.0892	0.00200	"	0.100		89.2	70-130			
Benzene	0.0882	0.00200	"	0.100		88.2	70-130			
Ethylbenzene	0.0842	0.00200	"	0.100		84.2	70-130			
Naphthalene	0.0881	0.00380	"	0.100		88.1	70-130			
Toluene	0.0879	0.00200	"	0.100		87.9	70-130			
o-Xylene	0.0836	0.00200	"	0.100		83.6	70-130			
m,p-Xylene	0.171	0.00400	"	0.200		85.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.2	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		96.8	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, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4F1033 - EPA 5030 (soil)

Matrix Spike (B4F1033-MS1)	Source: Y406261-01			Prepared: 06/10/2024 Analyzed: 06/10/2024						
1,2,4-Trimethylbenzene	0.0842	0.00200	mg/kg	0.100	ND	84.2	70-130			
1,3,5-Trimethylbenzene	0.0833	0.00200	"	0.100	ND	83.3	70-130			
Benzene	0.0834	0.00200	"	0.100	ND	83.4	70-130			
Ethylbenzene	0.0780	0.00200	"	0.100	ND	78.0	70-130			
Naphthalene	0.0880	0.00380	"	0.100	ND	88.0	70-130			
Toluene	0.0839	0.00200	"	0.100	ND	83.9	70-130			
o-Xylene	0.0783	0.00200	"	0.100	ND	78.3	70-130			
m,p-Xylene	0.160	0.00400	"	0.200	ND	80.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.8	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4F1033 - EPA 5030 (soil)

Matrix Spike Dup (B4F1033-MSD1)	Source: Y406261-01			Prepared: 06/10/2024 Analyzed: 06/10/2024						
1,2,4-Trimethylbenzene	0.0848	0.00200	mg/kg	0.100	ND	84.8	70-130	0.734	20	
1,3,5-Trimethylbenzene	0.0840	0.00200	"	0.100	ND	84.0	70-130	0.861	20	
Benzene	0.0840	0.00200	"	0.100	ND	84.0	70-130	0.812	20	
Ethylbenzene	0.0799	0.00200	"	0.100	ND	79.9	70-130	2.31	20	
Naphthalene	0.0909	0.00380	"	0.100	ND	90.9	70-130	3.24	20	
Toluene	0.0833	0.00200	"	0.100	ND	83.3	70-130	0.646	20	
o-Xylene	0.0799	0.00200	"	0.100	ND	79.9	70-130	2.07	20	
m,p-Xylene	0.161	0.00400	"	0.200	ND	80.3	70-130	0.187	20	
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		93.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.1	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		103	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Metals by EPA 6000/7000 Series Methods - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1034 - EPA 3050B**

**Blank (B4F1034-BLK1)**

Prepared: 06/10/2024 Analyzed: 06/11/2024

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 (B4F1034-BS1)**

Prepared: 06/10/2024 Analyzed: 06/11/2024

Arsenic	5.19	0.290	mg/kg	5.00		104	80-120			
Barium	544	10.0	"	500		109	80-120			
Cadmium	5.59	0.100	"	5.00		112	80-120			
Copper	52.8	10.0	"	50.0		106	80-120			
Lead	5.38	1.00	"	5.00		108	80-120			
Nickel	5.50	1.00	"	5.00		110	80-120			
Selenium	10.4	0.260	"	9.50		109	80-120			
Silver	5.40	0.100	"	5.00		108	80-120			
Zinc	52.5	37.0	"	50.0		105	80-120			

**Matrix Spike (B4F1034-MS1)**

Source: Y406266-03

Prepared: 06/10/2024 Analyzed: 06/11/2024

Origins Laboratory, Inc.



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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1034 - EPA 3050B**

<b>Matrix Spike (B4F1034-MS1)</b>		<b>Source: Y406266-03</b>			Prepared: 06/10/2024 Analyzed: 06/11/2024					
Arsenic	7.32	0.247	mg/kg	4.26	2.99	102	75-125			
Barium	538	8.51	"	426	35.5	118	75-125			
Cadmium	5.02	0.0851	"	4.26	0.0238	117	75-125			
Copper	51.8	8.51	"	42.6	2.82	115	75-125			
Lead	13.9	0.851	"	4.26	8.49	126	75-125			QM-07
Nickel	8.37	0.851	"	4.26	3.39	117	75-125			
Selenium	9.68	0.221	"	8.09	0.173	118	75-125			
Silver	5.06	0.0851	"	4.26	0.0153	118	75-125			
Zinc	73.9	31.5	"	42.6	28.4	107	75-125			

<b>Matrix Spike Dup (B4F1034-MSD1)</b>		<b>Source: Y406266-03</b>			Prepared: 06/10/2024 Analyzed: 06/11/2024					
Arsenic	15.6	0.265	mg/kg	4.57	2.99	276	75-125	72.1	20	QR-DUP
Barium	574	9.13	"	457	35.5	118	75-125	6.44	20	
Cadmium	5.36	0.0913	"	4.57	0.0238	117	75-125	6.49	20	
Copper	57.4	9.13	"	45.7	2.82	119	75-125	10.2	20	
Lead	17.4	0.913	"	4.57	8.49	195	75-125	22.6	20	QM-07
Nickel	9.49	0.913	"	4.57	3.39	133	75-125	12.6	20	QM-07
Selenium	10.1	0.237	"	8.68	0.173	114	75-125	4.24	20	
Silver	5.34	0.0913	"	4.57	0.0153	117	75-125	5.52	20	
Zinc	90.4	33.8	"	45.7	28.4	136	75-125	20.1	20	QM-07

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417672  
 Project: KMG - Hart-Memco 1-22 Wellhead

**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1032 - EPA 3580**

**Blank (B4F1032-BLK1)**

Prepared: 06/10/2024 Analyzed: 06/11/2024

1-Methylnaphthalene	ND	0.002	mg/kg							Ua
2-Methylnaphthalene	ND	0.002	"							Ua
Acenaphthene	ND	0.020	"							Ua
Anthracene	ND	0.020	"							Ua
Benzo (a) anthracene	ND	0.005	"							Ua
Benzo (a) pyrene	ND	0.020	"							Ua
Benzo (b) fluoranthene	ND	0.020	"							Ua
Benzo (g,h,i) perylene	ND	0.020	"							Ua
Benzo (k) fluoranthene	ND	0.020	"							Ua
Chrysene	ND	0.020	"							Ua
Dibenz (a,h) anthracene	ND	0.020	"							Ua
Fluoranthene	ND	0.020	"							Ua
Fluorene	ND	0.020	"							Ua
Indeno (1,2,3-cd) pyrene	ND	0.020	"							Ua
Naphthalene	ND	0.002	"							Ua
Phenanthrene	ND	0.020	"							Ua
Pyrene	ND	0.020	"							Ua
Surrogate: Fluorene-d10	200		ug/kg	200		98.7	60-130			
Surrogate: Anthracene-d10	190		"	200		96.3	60-130			
Surrogate: Pyrene-d10	190		"	200		97.2	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		105	60-130			

**LCS (B4F1032-BS1)**

Prepared: 06/10/2024 Analyzed: 06/11/2024

1-Methylnaphthalene	0.204	0.002	mg/kg	0.200		102	70-130			
2-Methylnaphthalene	0.206	0.002	"	0.200		103	70-130			
Acenaphthene	0.195	0.020	"	0.200		97.5	70-130			
Anthracene	0.192	0.020	"	0.200		95.8	70-130			

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1032 - EPA 3580**

**LCS (B4F1032-BS1)**

Prepared: 06/10/2024 Analyzed: 06/11/2024

Benzo (a) anthracene	0.206	0.005	mg/kg	0.200		103	70-130			
Benzo (a) pyrene	0.210	0.020	"	0.200		105	70-130			
Benzo (b) fluoranthene	0.220	0.020	"	0.200		110	70-130			
Benzo (g,h,i) perylene	0.217	0.020	"	0.200		108	70-130			
Benzo (k) fluoranthene	0.199	0.020	"	0.200		99.3	70-130			
Chrysene	0.200	0.020	"	0.200		99.8	70-130			
Dibenz (a,h) anthracene	0.216	0.020	"	0.200		108	70-130			
Fluoranthene	0.193	0.020	"	0.200		96.7	70-130			
Fluorene	0.198	0.020	"	0.200		99.0	70-130			
Indeno (1,2,3-cd) pyrene	0.230	0.020	"	0.200		115	70-130			
Naphthalene	0.202	0.002	"	0.200		101	70-130			
Phenanthrene	0.204	0.020	"	0.200		102	70-130			
Pyrene	0.206	0.020	"	0.200		103	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		98.8	60-130			
Surrogate: Anthracene-d10	190		"	200		94.7	60-130			
Surrogate: Pyrene-d10	190		"	200		96.4	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		97.9	60-130			

**Matrix Spike (B4F1032-MS1)**

Source: Y406261-01

Prepared: 06/10/2024 Analyzed: 06/11/2024

1-Methylnaphthalene	0.199	0.002	mg/kg	0.200	0.0006	99.4	70-130			
2-Methylnaphthalene	0.202	0.002	"	0.200	ND	101	70-130			
Acenaphthene	0.194	0.020	"	0.200	0.002	95.8	70-130			
Anthracene	0.186	0.020	"	0.200	ND	93.2	70-130			
Benzo (a) anthracene	0.202	0.005	"	0.200	0.0006	101	70-130			
Benzo (a) pyrene	0.202	0.020	"	0.200	0.001	100	70-130			
Benzo (b) fluoranthene	0.217	0.020	"	0.200	ND	109	70-130			
Benzo (g,h,i) perylene	0.218	0.020	"	0.200	0.001	108	70-130			

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1032 - EPA 3580**

<b>Matrix Spike (B4F1032-MS1)</b>		<b>Source: Y406261-01</b>			Prepared: 06/10/2024 Analyzed: 06/11/2024					
Benzo (k) fluoranthene	0.175	0.020	mg/kg	0.200	ND	87.6	70-130			
Chrysene	0.202	0.020	"	0.200	0.0008	101	70-130			
Dibenz (a,h) anthracene	0.226	0.020	"	0.200	0.003	112	70-130			
Fluoranthene	0.194	0.020	"	0.200	ND	97.1	70-130			
Fluorene	0.204	0.020	"	0.200	0.0006	102	70-130			
Indeno (1,2,3-cd) pyrene	0.224	0.020	"	0.200	0.002	111	70-130			
Naphthalene	0.198	0.002	"	0.200	ND	98.8	70-130			
Phenanthrene	0.203	0.020	"	0.200	ND	101	70-130			
Pyrene	0.197	0.020	"	0.200	0.001	98.0	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		98.5	60-130			
Surrogate: Anthracene-d10	190		"	200		96.1	60-130			
Surrogate: Pyrene-d10	200		"	200		97.6	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		105	60-130			

<b>Matrix Spike Dup (B4F1032-MSD1)</b>		<b>Source: Y406261-01</b>			Prepared: 06/10/2024 Analyzed: 06/11/2024					
1-Methylnaphthalene	0.185	0.002	mg/kg	0.200	0.0006	92.0	70-130	7.74	20	
2-Methylnaphthalene	0.199	0.002	"	0.200	ND	99.6	70-130	1.56	20	
Acenaphthene	0.178	0.020	"	0.200	0.002	87.8	70-130	8.68	20	
Anthracene	0.179	0.020	"	0.200	ND	89.6	70-130	3.97	20	
Benzo (a) anthracene	0.213	0.005	"	0.200	0.0006	106	70-130	5.67	20	
Benzo (a) pyrene	0.176	0.020	"	0.200	0.001	87.4	70-130	13.8	20	
Benzo (b) fluoranthene	0.200	0.020	"	0.200	ND	100	70-130	8.20	20	
Benzo (g,h,i) perylene	0.194	0.020	"	0.200	0.001	96.7	70-130	11.3	20	
Benzo (k) fluoranthene	0.154	0.020	"	0.200	ND	77.1	70-130	12.7	20	
Chrysene	0.199	0.020	"	0.200	0.0008	99.3	70-130	1.25	20	
Dibenz (a,h) anthracene	0.199	0.020	"	0.200	0.003	98.1	70-130	12.7	20	
Fluoranthene	0.194	0.020	"	0.200	ND	96.9	70-130	0.138	20	

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**EPA 8270E (SW846) - Semivolatile Organic Compounds - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B4F1032 - EPA 3580

Matrix Spike Dup (B4F1032-MSD1)	Source: Y406261-01			Prepared: 06/10/2024 Analyzed: 06/11/2024						
Fluorene	0.178	0.020	mg/kg	0.200	0.0006	88.7	70-130	13.4	20	
Indeno (1,2,3-cd) pyrene	0.227	0.020	"	0.200	0.002	113	70-130	1.44	20	
Naphthalene	0.176	0.002	"	0.200	ND	88.2	70-130	11.4	20	
Phenanthrene	0.187	0.020	"	0.200	ND	93.5	70-130	8.01	20	
Pyrene	0.198	0.020	"	0.200	0.001	98.3	70-130	0.307	20	
Surrogate: Fluorene-d10	200		ug/kg	200		97.8	60-130			
Surrogate: Anthracene-d10	180		"	200		87.9	60-130			
Surrogate: Pyrene-d10	210		"	200		104	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		105	60-130			

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**Classical Chemistry Parameters - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1105 - DTPA Sorbitol Preparation**

**Blank (B4F1105-BLK1)**

Prepared: 06/11/2024 Analyzed: 06/12/2024

Boron ND 0.100 mg/L

**Duplicate (B4F1105-DUP1)**

**Source: Y406261-01**

Prepared: 06/11/2024 Analyzed: 06/12/2024

Boron 0.245 0.0998 mg/L 0.232 5.43 50

**Batch B4F1108 - Saturated Paste Metals**

**Blank (B4F1108-BLK1)**

Prepared: 06/11/2024 Analyzed: 06/12/2024

SAR ND 0.0100 SAR

Calcium PPM ND 10.0 mg/L

Magnesium PPM ND 10.0 "

Sodium PPM ND 10.0 "

**Duplicate (B4F1108-DUP1)**

**Source: Y406261-01**

Prepared: 06/11/2024 Analyzed: 06/12/2024

SAR ND 0.0100 SAR 3.77 200

Calcium PPM 67.8 10.0 mg/L 72.0 6.01 50

Magnesium PPM 20.7 10.0 " 21.5 3.88 50

Sodium PPM 140 10.0 " 142 1.06 50

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**Saturated Paste - Quality Control**  
**Origins Laboratory, Inc.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4F1114 - Saturated Paste pH/EC**

**Blank (B4F1114-BLK1)**

Prepared: 06/11/2024 Analyzed: 06/11/2024

Specific Conductance (EC) ND 0.00500 mmhos/cm

**Duplicate (B4F1114-DUP1)**

**Source: Y406261-01**

Prepared: 06/11/2024 Analyzed: 06/11/2024

pH	7.80		pH Units		8.08			3.53	25	
Specific Conductance (EC)	1.22	0.00500	mmhos/cm		1.22			0.172	25	

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2630222 - SW846 3060A</b>										
<b>BLANK (1205768966-BLK)</b>					Prepared: 06/21/2024 Analyzed: 06/22/2024					
Hexavalent Chromium	ND	0.275	mg/kg				-			U
<b>LCS (1205768967-BKS)</b>					Prepared: 06/21/2024 Analyzed: 06/22/2024					
Hexavalent Chromium	3.20	0.324	mg/kg	3.24		98.8	80-120			
<b>DUP (1205768968 D)</b>					Source: 671427001 Prepared: 06/21/2024 Analyzed: 06/22/2024					
Hexavalent Chromium	ND	0.327	mg/kg dry		<0.131		0-50	N/A	50	U
<b>MS (1205768969 S)</b>					Source: 671427001 Prepared: 06/21/2024 Analyzed: 06/22/2024					
Hexavalent Chromium	2.61	0.327	mg/kg dry	3.27	<0.131	77.5	75-125			
<b>DUP (1205768970 D)</b>					Source: 671499002 Prepared: 06/21/2024 Analyzed: 06/22/2024					
Hexavalent Chromium	ND	0.318	mg/kg dry		<0.127		0-50	N/A	50	U
<b>MS (1205768971 S)</b>					Source: 671499002 Prepared: 06/21/2024 Analyzed: 06/22/2024					
Hexavalent Chromium	2.64	0.318	mg/kg dry	3.18	<0.127	81.9	75-125			
<b>ILCS (1205768972-ILCS)</b>					Prepared: 06/21/2024 Analyzed: 06/22/2024					
Hexavalent Chromium	6.83	0.333	mg/kg	6.83		99.9	80-120			

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### Notes and Definitions

Ua Sample is Non-Detect.

U Result not detected above the detection limit

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

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

ND Analyte NOT DETECTED at or above the reporting limit

RPD Relative Percent Difference

All soil results are reported on a wet weight basis.

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

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