

**TABLE 1**  
**SOIL SAMPLE FIELD DATA SUMMARY TABLE**  
**SHARKEY 8 & 9-35 & 10-3 O SA FACILITY**  
**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>ABOVEGROUND STORAGE TANK SAMPLES</b>								
AST01 BASE	12/28/2023	0.5	0.0	NS	NO	40.241451	-104.661548	N
AST01 @2'	12/28/2023	2	120.0	NS	NO	40.264936	-104.85454	Y
AST01 LOADOUT	12/28/2023	1	0.0	NS	NO	40.241403	-104.661476	N
AST02 BASE	12/28/2023	0.5	0.5	NS	NO	40.24165	-104.661476	N
AST02 @1'	12/28/2023	1	10.2	NS	NO	40.264892	-104.854535	Y
AST02 LOADOUT	12/28/2023	1	0.0	NS	NO	40.241869	-104.661415	N
AST03 BASE	12/28/2023	0.5	0.0	NS	NO	40.241708	-104.661509	N
AST03 @1.5'	12/28/2023	1.5	1.5	NS	NO	40.264842	-104.854538	Y
AST03 LOADOUT	12/28/2023	1	0.0	NS	NO	40.241698	-104.661466	N
<b>PRODUCED WATER VESSEL SAMPLES</b>								
PWV01 N WALL	12/28/2023	2.5	0.0	NS	NO	40.242186	-104.661379	N
PWV01-E01 @2.5'	12/28/2023	2.5	25.5	NS	NO	40.26489	-104.854553	Y
PWV01 W WALL	12/28/2023	2.5	0.0	NS	NO	40.219759	-104.889638	N
PWV01-B01 @6'	12/28/2023	6	32.2	NS	NO	40.264887	-104.854581	Y
PWV02-E01 @2.5'	12/28/2023	2.5	0.0	NS	NO	40.264845	-104.854552	Y
PWV02 S WALL	12/28/2023	2.5	0.0	NS	NO	40.242386	-104.661369	N
PWV02 W WALL	12/28/2023	2.5	0.0	NS	NO	40.242334	-104.661346	N
PWV02-B01 @6'	12/28/2023	6	0.0	NS	NO	40.264845	-104.85458	Y
<b>SEPARATOR SAMPLES</b>								
SEP01-INLET @4'	12/29/2023	4	0.1	NS	NO	40.265131	-104.854128	Y
SEP01-OUTLET @4'	12/29/2023	4	2.0	NS	NO	40.265135	-104.854179	Y
	5/13/2024		14.4	NS	NO	40.265135	-104.854179	Y
SEP02-INLET @4'	12/29/2023	4	0.3	NS	NO	40.264948	-104.854152	Y
SEP02-OUTLET @4'	12/29/2023	4	31.2	Stain	Odor	40.264948	-104.854182	Y
<b>MISCELLANEOUS SAMPLES</b>								
METER HOUSE	12/29/2023	NA	0.8	NS	NO	40.264854	-104.854254	N
ECD	12/29/2023	NA	0.6	NS	NO	40.265178	-104.854281	N
FL01 @4'	12/29/2023	4	1.0	NS	NO	40.264962	-104.854604	Y
FL02 @4'	12/29/2023	4	103.2	Stain	Odor	40.264966	-104.854495	Y
<b>COMBINED EXCAVATION SAMPLES</b>								
B01 @3'	5/13/2024	3	1559.0	Stain	Odor	40.264942	-104.854543	Y
B02 @3'	5/14/2024	3	315.7	Stain	Odor	40.265007	-104.854447	Y
B03 @3'	5/14/2024	3	0.7	NS	NO	40.265059	-104.854421	Y
B04 @3'	5/14/2024	3	32.3	Stain	NO	40.265028	-104.854507	Y
B05 @3'	5/14/2024	3	1.4	Stain	NO	40.265067	-104.854484	Y

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Soil Sample Location	Date	Depth (ft. bgs)	PID Reading (ppm)	Visual Observation	Olfactory Observation	Latitude	Longitude	Submitted for Lab Analysis? (Y/N)
<b>COMBINED EXCAVATION SAMPLES</b>								
B06@3'	5/14/2024	3	1507.0	Stain	Odor	40.264934	-104.854566	Y
B07@3'	5/15/2024	3	0.2	NS	NO	40.264886	-104.854583	Y
B08@3'	5/15/2024	3	22.5	NS	NO	40.264835	-104.854606	Y
B09@3'	5/15/2024	3	0.5	NS	NO	40.264865	-104.854517	Y
B10@3'	5/15/2024	3	2.5	NS	NO	40.264814	-104.854542	Y
B11@3'	5/15/2024	3	0.2	NS	NO	40.26483	-104.854658	Y
B12@3'	5/15/2024	3	476.5	Stain	Odor	40.264905	-104.854631	Y
B13@3'	5/15/2024	3	14.7	NS	NO	40.264973	-104.854635	Y
B14@3'	5/15/2024	3	0.3	NS	NO	40.26502	-104.854598	Y
B15@3'	5/15/2024	3	8.4	NS	NO	40.26507	-104.854567	Y
B16@3'	5/16/2024	3	118.3	Stain	Odor	40.264994	-104.854375	Y
B17@3'	5/16/2024	3	1134.0	Stain	Odor	40.264951	-104.854469	Y
B18@3'	5/16/2024	3	398.4	Stain	Odor	40.264938	-104.854402	Y
B19@3'	5/16/2024	3	1.7	NS	NO	40.264883	-104.854427	Y
B20@3'	5/16/2024	3	7.7	Stain	NO	40.264859	-104.854353	Y
B21@3'	5/16/2024	3	7.4	Stain	Odor	40.264857	-104.854436	Y
B22@3'	5/16/2024	3	137.5	Stain	Odor	40.264899	-104.854342	Y
B23@3'	5/16/2024	3	89.2	Stain	Odor	40.264934	-104.854335	Y
B24@3'	5/16/2024	3	50.9	Stain	Odor	40.264987	-104.85432	Y
B25@3'	5/17/2024	3	34.6	Stain	NO	40.264955	-104.85426	Y
B26@3'	5/17/2024	3	23.1	Stain	NO	40.264905	-104.854291	Y
B27@3'	5/17/2024	3	64.1	Stain	Odor	40.26485	-104.854308	Y
B28@3'	5/17/2024	3	16.4	Stain	NO	40.264994	-104.854266	Y
B29@3'	5/17/2024	3	44.8	Stain	NO	40.264932	-104.854219	Y
B30@3'	5/17/2024	3	169.6	Stain	Odor	40.264936	-104.854166	Y
B31@3'	5/17/2024	3	108.5	Stain	Odor	40.264961	-104.854153	Y
B32@3'	5/17/2024	3	0.9	NS	NO	40.264981	-104.854202	Y
B33@3'	5/20/2024	3	0.5	NS	NO	40.265	-104.854143	Y
B34@3'	5/20/2024	3	1.0	NS	NO	40.265011	-104.85422	Y
B35@3'	5/20/2024	3	0.1	NS	NO	40.265033	-104.854219	Y
B36@3'	5/20/2024	3	0.2	NS	NO	40.26507	-104.854251	Y
B37@3'	5/20/2024	3	0.5	NS	NO	40.26508	-104.854323	Y
B38@3'	5/20/2024	3	0.8	NS	NO	40.265041	-104.854311	Y
B39@3'	5/20/2024	3	0.8	NS	NO	40.265021	-104.854389	Y
B40@3'	5/20/2024	3	1.0	NS	NO	40.265075	-104.854375	Y

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Soil Sample Location	Date	Depth (ft. bgs)	PID Reading (ppm)	Visual Observation	Olfactory Observation	Latitude	Longitude	Submitted for Lab Analysis? (Y/N)
<b>BACKGROUND SOIL SAMPLES</b>								
<b>NATIVE-BG01 @3'</b>	12/29/2023	3	1.2	NS	NO	40.264898	-104.853905	Y
<b>NATIVE-BG01 @6'</b>	12/29/2023	6	0.7	NS	NO	40.264898	-104.853905	Y
<b>NATIVE-BG02 @3'</b>	12/29/2023	3	0.9	NS	NO	40.264792	-104.854655	Y
<b>NATIVE-BG02 @6'</b>	12/29/2023	6	0.1	NS	NO	40.264792	-104.854655	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**  
**SHARKEY 8&9-35 & 10-3 O SA FACILITY**  
**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 (PGSSL)			500			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038
<b>ABOVEGROUND STORAGE TANK SAMPLES</b>												
AST01@2'	12/28/2023	2	130	664	306	0.0157	<0.00200	<0.00200	<0.00200	0.118	<0.00200	0.005
AST02@1'	12/28/2023	1	2.74	<25.0	<100	<0.00200	0.0114	0.0026	0.0642	0.024	0.0172	0.022
AST03@1.5'	12/28/2023	1.5	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>PRODUCED WATER VESSEL SAMPLES</b>												
PWV01-E01@2.5'	12/28/2023	2.5	9.23	<25.0	<100	0.00634	0.0067	0.0023	0.0323	0.0176	0.0058	0.003
PWV01-B01@6'	12/28/2023	6	19.2	45.9	<100	<0.00200	<0.00200	<0.00200	0.00772	0.102	0.0039	<0.002
PWV02-E01@2.5'	12/28/2023	2.5	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	0.00662	0.00252	0.00214	<0.002
PWV02-B01@6'	12/28/2023	6	0.582	<25.0	<100	<0.00200	<0.00200	<0.00200	0.0111	0.00864	0.00558	<0.002
<b>SEPARATOR SAMPLES</b>												
SEP01-INLET@4'	12/29/2023	4	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380
SEP01-OUTLET@4'	12/29/2023	4	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380
	5/13/2024		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP02-INLET@4'	12/29/2023	4	0.662	<25.0	<100	0.00576	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380
SEP02-OUTLET@4'	12/29/2023	4	9.09	<25.0	<100	0.400	<0.00200	0.0268	0.0424	0.0671	<0.00200	<0.002
<b>MISCELLANEOUS SAMPLES</b>												
FL01@4'	12/29/2023	4	6.70	<25.0	<100	0.00502	<0.00200	<0.00200	<0.00200	0.0924	0.00336	0.003
FL02@4'	12/29/2023	4	441	106	<100	0.0342	0.0195	0.145	0.122	0.960	0.0918	0.192
<b>COMBINED EXCAVATION SAMPLES</b>												
B01@3'	5/13/2024	3	990	288	<100	0.0645	<0.0500	0.305	<0.0500	1.94	0.130	0.373
B02@3'	5/14/2024	3	1.04	<25.0	<100	0.00350	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.111
B03@3'	5/14/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B04@3'	5/14/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B05@3'	5/14/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B06@3'	5/14/2024	3	384	2710	551	0.0560	<0.00200	0.227	0.255	24.6	1.48	0.412
B07@3'	5/15/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B08@3'	5/15/2024	3	1.61	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B09@3'	5/15/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B10@3'	5/15/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B11@3'	5/15/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B12@3'	5/15/2024	3	346	239	<100	<0.00200	<0.00200	<0.00200	0.00200	0.0165	<0.00200	0.059
B13@3'	5/15/2024	3	1.27	<25.0	<100	0.00234	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B14@3'	5/15/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B15@3'	5/15/2024	3	0.296	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	0.00704	<0.00200	0.005
B16@3'	5/16/2024	3	1.30	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.018
B17@3'	5/16/2024	3	570	812	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.208
B18@3'	5/16/2024	3	160	270	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.046
B19@3'	5/16/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
B20@3'	5/16/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.002
B21@3'	5/16/2024	3	0.573	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002

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**SHARKEY 8&9-35 & 10-3 O SA FACILITY**  
**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 (PGSSL)			500			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038
<b>COMBINED EXCAVATION SAMPLES</b>												
<b>B22@3'</b>	5/16/2024	3	0.755	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	0.003
<b>B23@3'</b>	5/16/2024	3	4.73	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<b>0.018</b>
<b>B24@3'</b>	5/16/2024	3	0.254	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<b>0.007</b>
<b>B25@3'</b>	5/17/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B26@3'</b>	5/17/2024	3	0.302	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B27@3'</b>	5/17/2024	3	2.85	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<b>0.008</b>
<b>B28@3'</b>	5/17/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B29@3'</b>	5/17/2024	3	0.583	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B30@3'</b>	5/17/2024	3	56.1	144	<100	<0.00200	<0.00200	<0.00200	<0.00200	<b>0.480</b>	<b>0.128</b>	<0.002
<b>B31@3'</b>	5/17/2024	3	171	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<b>0.0830</b>	<0.00200	<0.002
<b>B32@3'</b>	5/17/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B33@3'</b>	5/20/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B34@3'</b>	5/20/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B35@3'</b>	5/20/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B36@3'</b>	5/20/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B37@3'</b>	5/20/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B38@3'</b>	5/20/2024	3	<0.200	<25.0	<100	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B39@3'</b>	5/20/2024	3	<0.200	<25.0	<100	<b>0.00322</b>	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.002
<b>B40@3'</b>	5/20/2024	3	<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  
PGSSL - 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  
SHARKEY 8&9-35 & 10-3 O SA FACILITY  
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 (PGSSL)			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>ABOVEGROUND STORAGE TANK SAMPLES</b>																
AST01@2'	12/28/2023	2	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.010</b>	<b>0.020</b>	<0.020
AST02@1'	12/28/2023	1	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.014</b>	<b>0.030</b>	<0.020
AST03@1.5'	12/28/2023	1.5	<0.020	<0.020	0.008	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002	<0.020
<b>PRODUCED WATER VESSEL SAMPLES</b>																
PWV01-E01@2.5'	12/28/2023	2.5	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.008</b>	0.010	<0.020
PWV01-B01@6'	12/28/2023	6	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.004	0.007	<0.020
PWV02-E01@2.5'	12/28/2023	2.5	<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
PWV02-B01@6'	12/28/2023	6	<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>SEPARATOR SAMPLES</b>																
SEP01-INLET@4'	12/29/2023	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
SEP01-OUTLET@4'	12/29/2023	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
	5/13/2024		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEP02-INLET@4'	12/29/2023	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
SEP02-OUTLET@4'	12/29/2023	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>MISCELLANEOUS SAMPLES</b>																
FL01@4'	12/29/2023	4	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.004	0.007	<0.020
FL02@4'	12/29/2023	4	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.179</b>	<b>0.395</b>	<0.020
<b>COMBINED EXCAVATION SAMPLES</b>																
B01@3'	5/13/2024	3	0.154	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.182	<0.020	<b>1.48</b>	<b>3.03</b>	<0.020
B02@3'	5/14/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.049</b>	<b>0.131</b>	<0.020
B03@3'	5/14/2024	3	<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
B04@3'	5/14/2024	3	<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
B05@3'	5/14/2024	3	<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
B06@3'	5/14/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.130	<0.020	<b>0.613</b>	<b>1.70</b>	<0.020
B07@3'	5/15/2024	3	<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
B08@3'	5/15/2024	3	<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
B09@3'	5/15/2024	3	<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
B10@3'	5/15/2024	3	<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
B11@3'	5/15/2024	3	<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
B12@3'	5/15/2024	3	<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
B13@3'	5/15/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.086</b>	<b>0.150</b>	<0.020
B14@3'	5/15/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.006</b>	<0.002	<0.020
B15@3'	5/15/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	0.004	<0.020
B16@3'	5/16/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.010</b>	<b>0.025</b>	<0.020
B17@3'	5/16/2024	3	0.027	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.170</b>	<b>0.352</b>	<0.020
B18@3'	5/16/2024	3	0.075	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.075	<0.020	<b>0.313</b>	<b>0.431</b>	<0.020
B19@3'	5/16/2024	3	<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
B20@3'	5/16/2024	3	<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

**TABLE 2-2  
SOIL SAMPLE ANALYTICAL RESULTS  
POLYCYCLIC AROMATIC HYDROCARBONS  
SHARKEY 8&9-35 & 10-3 O SA FACILITY  
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 (PGSSL)			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>COMBINED EXCAVATION SAMPLES</b>																
<b>B21@3'</b>	5/16/2024	3	<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>B22@3'</b>	5/16/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.007</b>	0.014	<0.020
<b>B23@3'</b>	5/16/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.043</b>	<b>0.091</b>	<0.020
<b>B24@3'</b>	5/16/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<b>0.013</b>	0.016	<0.020
<b>B25@3'</b>	5/17/2024	3	<0.020	<0.020	0.007	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002	<0.020
<b>B26@3'</b>	5/17/2024	3	<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>B27@3'</b>	5/17/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.003	0.004	<0.020
<b>B28@3'</b>	5/17/2024	3	<0.020	<0.020	0.010	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002	<0.020
<b>B29@3'</b>	5/17/2024	3	<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>B30@3'</b>	5/17/2024	3	0.045	<0.020	0.007	<0.020	<0.020	<0.020	<0.020	<0.020	0.042	0.034	<0.020	<b>0.013</b>	<0.002	0.041
<b>B31@3'</b>	5/17/2024	3	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	0.003	<0.020
<b>B32@3'</b>	5/17/2024	3	<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>B33@3'</b>	5/20/2024	3	<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>B34@3'</b>	5/20/2024	3	<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>B35@3'</b>	5/20/2024	3	<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>B36@3'</b>	5/20/2024	3	<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>B37@3'</b>	5/20/2024	3	<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>B38@3'</b>	5/20/2024	3	<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>B39@3'</b>	5/20/2024	3	<0.020	<0.020	<b>0.034</b>	<0.020	<0.020	0.026	0.033	<0.020	0.047	<0.020	<0.020	<0.002	<0.002	0.086
<b>B40@3'</b>	5/20/2024	3	<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
- PGSSL - 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  
SHARKEY 8&9-35 & 10-3 O SA FACILITY  
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 (3'-6')			1.12	5.95	8.55	NA
<b>ABOVEGROUND STORAGE TANK SAMPLES</b>						
AST01@2'	12/28/2023	2	0.742	1.45	7.30	<0.998
AST02@1'	12/28/2023	1	0.440	2.29	8.20	0.220
AST03@1.5'	12/28/2023	1.5	0.254	0.94	8.15	<0.101
<b>PRODUCED WATER VESSEL SAMPLES</b>						
PWV01-E01@2.5'	12/28/2023	2.5	0.399	1.17	8.28	0.157
PWV01-B01@6'	12/28/2023	6	0.567	2.30	8.27	0.282
PWV02-E01@2.5'	12/28/2023	2.5	0.592	1.65	8.25	0.177
PWV02-B01@6'	12/28/2023	6	0.320	1.54	8.25	<0.101
<b>SEPARATOR SAMPLES</b>						
SEP01-INLET@4'	12/29/2023	4	1.58	5.69	8.29	0.292
SEP01-OUTLET@4'	12/29/2023	4	1.28	<b>6.41</b>	8.45*	1.31
	5/13/2024		NA	4.57	NA	NA
SEP02-INLET@4'	12/29/2023	4	0.701	2.49	8.30	<1.01
SEP02-OUTLET@4'	12/29/2023	4	0.616	2.97	8.44*	0.469
<b>MISCELLANEOUS SAMPLES</b>						
FL01@4'	12/29/2023	4	0.715	4.31	8.41*	0.237
FL02@4'	12/29/2023	4	0.661	<b>7.36</b>	7.21	<0.999
<b>COMBINED EXCAVATION SAMPLES</b>						
B01@3'	5/13/2024	3	NA	<b>12.9</b>	7.41	<0.992
B02@3'	5/14/2024	3	NA	<b>7.79</b>	<b>8.70</b>	<0.987
B03@3'	5/14/2024	3	NA	<b>6.30</b>	<b>8.62</b>	<0.989
B04@3'	5/14/2024	3	NA	<b>6.58</b>	8.51*	<1.00
B05@3'	5/14/2024	3	NA	<b>7.72</b>	8.44*	<0.997
B06@3'	5/14/2024	3	NA	1.77	7.86	0.491
B07@3'	5/15/2024	3	NA	2.49	8.53*	0.315
B08@3'	5/15/2024	3	NA	2.45	8.43*	0.386
B09@3'	5/15/2024	3	NA	1.48	<b>8.69</b>	0.163
B10@3'	5/15/2024	3	NA	1.44	<b>8.59</b>	<0.984
B11@3'	5/15/2024	3	NA	1.61	8.11	<0.100
B12@3'	5/15/2024	3	NA	1.49	8.41*	0.462
B13@3'	5/15/2024	3	NA	<b>7.02</b>	<b>8.73</b>	1.62
B14@3'	5/15/2024	3	NA	<b>8.13</b>	<b>8.74</b>	0.638
B15@3'	5/15/2024	3	NA	<b>7.21</b>	8.41*	0.647
B16@3'	5/16/2024	3	NA	<b>6.45</b>	<b>8.98</b>	<1.00
B17@3'	5/16/2024	3	NA	5.31	<b>8.71</b>	<1.00
B18@3'	5/16/2024	3	NA	3.47	<b>8.84</b>	0.329
B19@3'	5/16/2024	3	NA	2.60	8.54*	0.327
B20@3'	5/16/2024	3	NA	<b>9.16</b>	8.32*	<1.00
B21@3'	5/16/2024	3	NA	2.26	8.29	0.387

**TABLE 2-3  
SOIL SAMPLE ANALYTICAL RESULTS  
SOIL SUITABILITY FOR RECLAMATION  
SHARKEY 8&9-35 & 10-3 O SA FACILITY  
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 (3'-6')			1.12	5.95	8.55	NA
<b>COMBINED EXCAVATION SAMPLES</b>						
<b>B22@3'</b>	5/16/2024	3	NA	5.96	8.32*	0.303
<b>B23@3'</b>	5/16/2024	3	NA	2.65	8.22	0.503
<b>B24@3'</b>	5/16/2024	3	NA	4.84	8.27	0.694
<b>B25@3'</b>	5/17/2024	3	NA	3.00	8.24	0.557
<b>B26@3'</b>	5/17/2024	3	NA	4.05	8.27	0.551
<b>B27@3'</b>	5/17/2024	3	NA	4.70	8.30	<b>6.63</b>
<b>B28@3'</b>	5/17/2024	3	NA	5.13	8.40*	1.08
<b>B29@3'</b>	5/17/2024	3	NA	5.29	8.34*	0.372
<b>B30@3'</b>	5/17/2024	3	NA	3.11	8.22	0.127
<b>B31@3'</b>	5/17/2024	3	NA	2.15	8.22	<0.0991
<b>B32@3'</b>	5/17/2024	3	NA	4.50	8.44*	<0.101
<b>B33@3'</b>	5/20/2024	3	NA	1.81	8.39*	0.357
<b>B34@3'</b>	5/20/2024	3	NA	4.07	<b>8.58</b>	0.733
<b>B35@3'</b>	5/20/2024	3	NA	3.39	8.48*	0.671
<b>B36@3'</b>	5/20/2024	3	NA	5.28	8.24	1.06
<b>B37@3'</b>	5/20/2024	3	NA	4.86	<b>8.65</b>	0.721
<b>B38@3'</b>	5/20/2024	3	NA	5.36	<b>8.68</b>	0.393
<b>B39@3'</b>	5/20/2024	3	NA	<b>7.22</b>	<b>8.59</b>	0.476
<b>B40@3'</b>	5/20/2024	3	NA	2.92	8.49*	0.564
<b>BACKGROUND SAMPLES</b>						
<b>NATIVE-BG01@3'</b>	12/29/2023	3	1.12	5.95	8.55	<0.999
<b>NATIVE-BG01@6'</b>	12/29/2023	6	0.616	3.00	8.28	<1.01
<b>NATIVE-BG02@3'</b>	12/29/2023	3	0.413	1.18	8.26	<0.0991
<b>NATIVE-BG02@6'</b>	12/29/2023	6	0.439	1.30	8.27	<0.0993

**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  
SHARKEY 8&9-35 & 10-3 O SA FACILITY  
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 (PGSSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
Site-Specific Background Limits (3'-6')			5.57	225	0.247	NA	15.8	13.9	11.3	0.677	NA	84.3
<b>ABOVEGROUND STORAGE TANK SAMPLES</b>												
AST01@2'	12/28/2023	2	2.75*	148*	0.168	<0.5	12.0	12.7	8.81	0.233	<0.0961	57.1
AST02@1'	12/28/2023	1	2.75*	71.7	0.106	<0.5	<9.73	7.49	7.67	<0.0973	<0.0973	34.0
AST03@1.5'	12/28/2023	1.5	1.96*	58.4	0.258	<0.5	10.7	13.2	3.78	<0.0870	0.134	41.0
<b>PRODUCED WATER VESSEL SAMPLES</b>												
PWV01-E01@2.5'	12/28/2023	2.5	1.93*	69.2	0.103	<0.5	<9.18	7.22	4.79	0.103	<0.0918	28.9
PWV01-B01@6'	12/28/2023	6	1.77*	94.6*	0.166	<0.5	<9.46	11.3	5.67	0.149	<0.0946	38.8
PWV02-E01@2.5'	12/28/2023	2.5	1.87*	68.5	0.194	<0.5	<8.72	8.88	5.18	<0.0872	<0.0872	33.6
PWV02-B01@6'	12/28/2023	6	1.35*	32.7	<0.0916	<0.5	<9.16	3.71	3.33	<0.0916	<0.0916	20.9
<b>SEPARATOR SAMPLES</b>												
SEP01-INLET@4'	12/29/2023	4	2.89*	117*	0.186	<0.505	11.5	10.5	7.66	0.174	<0.0986	54.6
SEP01-OUTLET@4'	12/29/2023	4	3.30*	329	0.201	<1	21.0	19.7	14.0	0.364*	0.110	101
	5/13/2024		NA	106	NA	NA	NA	10.7	NA	NA	NA	NA
SEP02-INLET@4'	12/29/2023	4	2.67*	123*	0.268	<1	13.0	19.0	7.96	0.297*	<0.0962	66.2
SEP02-OUTLET@4'	12/29/2023	4	2.69*	125*	0.152	<0.5	10.5	11.6	7.49	0.180	<0.0924	61.6
<b>MISCELLANEOUS SAMPLES</b>												
FL01@4'	12/29/2023	4	1.98*	96.9*	0.105	<0.505	8.48	7.77	6.15	0.0992	<0.0841	59.8
FL02@4'	12/29/2023	4	3.89*	209*	0.341	<1	17.5	15.2	14.0	0.357*	<0.0919	87.9
<b>COMBINED EXCAVATION SAMPLES</b>												
B01@3'	5/13/2024	3	4.69*	218*	0.184	NA	23.5	19.5	14.4	0.540*	0.0981	111
B02@3'	5/14/2024	3	2.99*	182*	0.151	NA	12.4	13.2	11.4	<0.254	<0.0975	81.5
B03@3'	5/14/2024	3	4.41*	202*	0.181	NA	12.9	13.9	13.2	0.254	<0.0887	87.0
B04@3'	5/14/2024	3	3.16*	181*	0.175	NA	14.3	14.1	12.2	0.362*	<0.0880	88.1
B05@3'	5/14/2024	3	2.14*	106*	0.155	NA	<9.06	11.6	6.77	<0.236	<0.0906	54.7
B06@3'	5/14/2024	3	2.91*	124*	0.308	NA	13.2	16.7	7.78	<0.258	0.147	68.5
B07@3'	5/15/2024	3	6.27	110*	0.274	NA	11.3	8.35	7.45	<0.231	<0.0890	34.6
B08@3'	5/15/2024	3	1.98*	94.9*	0.229	NA	10.5	16.0	6.28	<0.236	0.115	54.0
B09@3'	5/15/2024	3	1.92*	105*	<0.0933	NA	<9.33	8.01	6.91	<0.243	<0.0933	46.8
B10@3'	5/15/2024	3	1.68*	53.7	0.186	NA	<9.80	10.3	4.60	<0.255	<0.0980	<36.3
B11@3'	5/15/2024	3	0.522*	<9.82	<0.0982	NA	<9.82	1.61	<0.982	<0.255	<0.0982	<36.3
B12@3'	5/15/2024	3	1.75*	51.9	<0.0959	NA	<9.59	6.08	3.59	0.503*	<0.0959	<35.5
B13@3'	5/15/2024	3	2.62*	123*	0.272	NA	9.95	14.2	6.57	<0.255	0.103	57.5
B14@3'	5/15/2024	3	2.87*	144*	0.254	NA	12.6	19.7	9.22	0.245	<0.0889	73.5
B15@3'	5/15/2024	3	3.29*	203*	0.205	NA	13.6	15.2	12.7	0.344*	<0.0923	83.9
B16@3'	5/16/2024	3	3.18*	192*	0.182	NA	15.4	14.8	11.6	0.288*	<0.0847	80.8
B17@3'	5/16/2024	3	3.90*	148*	0.153	NA	15.0	11.9	11.1	0.244	0.0898	80.2
B18@3'	5/16/2024	3	2.87*	121*	0.120	NA	10.2	11.1	7.95	<0.252	<0.0969	52.2

**TABLE 2-4  
SOIL SAMPLE ANALYTICAL RESULTS  
METALS  
SHARKEY 8&9-35 & 10-3 O SA FACILITY  
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 (PGSSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
Site-Specific Background Limits (3'-6')			5.57	225	0.247	NA	15.8	13.9	11.3	0.677	NA	84.3
<b>COMBINED EXCAVATION SAMPLES</b>												
<b>B19@3'</b>	5/16/2024	3	3.05*	140*	0.109	NA	<9.05	7.68	7.53	<0.235	<0.0905	<33.5
<b>B20@3'</b>	5/16/2024	3	2.60*	184*	0.131	NA	14.0	12.8	13.4	0.231	<0.0876	80.2
<b>B21@3'</b>	5/16/2024	3	2.73*	57.6	<0.0897	NA	13.0	7.79	6.98	0.419*	<0.0897	<33.2
<b>B22@3'</b>	5/16/2024	3	2.70*	153*	0.190	NA	12.5	12.9	9.09	0.247	<0.0945	64.5
<b>B23@3'</b>	5/16/2024	3	2.61*	160*	0.165	NA	11.0	11.2	8.24	<0.234	<0.0900	60.2
<b>B24@3'</b>	5/16/2024	3	2.16*	80.8	0.159	NA	9.41	9.84	5.55	<0.227	0.0908	40.7
<b>B25@3'</b>	5/17/2024	3	3.90*	218*	0.273	NA	14.5	13.7	14.1	0.397*	<0.0849	87.1
<b>B26@3'</b>	5/17/2024	3	2.51*	152*	0.162	NA	10.8	11.7	9.24	0.277*	<0.0888	64.7
<b>B27@3'</b>	5/17/2024	3	3.32*	134*	0.253	NA	12.4	<b>14.1</b>	7.72	0.381*	0.125	59.0
<b>B28@3'</b>	5/17/2024	3	3.90*	150*	0.327	NA	16.9	<b>15.9</b>	12.2	0.351*	0.135	85.6
<b>B29@3'</b>	5/17/2024	3	3.43*	125*	0.122	NA	9.98	10.4	8.98	0.401*	<0.0910	53.8
<b>B30@3'</b>	5/17/2024	3	2.11*	157*	0.130	NA	9.88	10.7	8.87	<0.254	<0.0978	62.7
<b>B31@3'</b>	5/17/2024	3	5.21*	160*	0.177	NA	11.7	10.1	13.4	0.578*	<0.0909	46.7
<b>B32@3'</b>	5/17/2024	3	3.38*	186*	0.179	NA	14.8	13.5	12.1	0.256	<0.0916	82.8
<b>B33@3'</b>	5/20/2024	3	4.27*	107*	0.154	NA	9.19	9.51	9.41	0.272*	<0.0856	41.5
<b>B34@3'</b>	5/20/2024	3	2.47*	152*	0.182	NA	13.2	12.2	8.11	<0.251	<0.0965	67.1
<b>B35@3'</b>	5/20/2024	3	2.75*	93.0*	0.216	NA	10.7	11.4	6.44	0.256	<0.0965	53.2
<b>B36@3'</b>	5/20/2024	3	2.71*	123*	0.230	NA	13.8	13.6	7.46	0.353*	0.101	67.2
<b>B37@3'</b>	5/20/2024	3	2.76*	162*	0.179	NA	15.5	12.8	11.4	<0.244	<0.0938	91.9
<b>B38@3'</b>	5/20/2024	3	2.75*	130*	0.212	NA	13.0	12.3	9.36	0.308*	<0.0900	61.2
<b>B39@3'</b>	5/20/2024	3	2.73*	103*	0.228	NA	12.9	<b>18.0</b>	6.65	<0.225	<0.0865	61.5
<b>B40@3'</b>	5/20/2024	3	3.04*	98.9*	0.169	NA	11.3	13.4	6.55	0.295*	<0.0930	51.2
<b>BACKGROUND SAMPLES</b>												
<b>NATIVE-BG01@3'</b>	12/29/2023	3	5.57	225	0.247	<1.01	15.8	13.9	11.3	0.677	<0.0969	84.3
<b>NATIVE-BG01@6'</b>	12/29/2023	6	2.00	182	<0.0964	<0.5	10.8	9.74	7.62	0.110	<0.0964	59.3
<b>NATIVE-BG02@3'</b>	12/29/2023	3	0.970	15.5	<0.0890	<0.506	<8.90	2.96	1.13	<0.0890	<0.0890	10.6
<b>NATIVE-BG02@6'</b>	12/29/2023	6	0.745	16.8	<0.0850	<0.5	<8.50	3.07	1.26	<0.0850	<0.0850	10.8

TABLE 2-4  
 SOIL SAMPLE ANALYTICAL RESULTS  
 METALS  
 SHARKEY 8&9-35 & 10-3 O SA FACILITY  
 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 (PGSSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
Site-Specific Background Limits (3'-6')			5.57	225	0.247	NA	15.8	13.9	11.3	0.677	NA	84.3

**Notes:**

ECMC - Energy and Carbon Management Commission

PGSSL - 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.

**TABLE 3  
GROUNDWATER ANALYTICAL RESULTS  
SHARKEY 8&9-35 & 10-3 O SA FACILITY  
WELD COUNTY, COLORADO  
KERR-MCGEE OIL AND GAS ONSHORE, LP**

Well Name	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-trimethylbenzene (µg/L)	1,3,5-trimethylbenzene (µg/L)	Total Dissolved Solids (ug/L)	Chloride Ion (ug/L)	Sulfate Ion (ug/L)	Depth to Water/ (Product Thickness) (ft bgs)
<b>ECMC Allowable Levels</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>	<b>140</b>	<b>67</b>	<b>67</b>	<b>4,450,000</b>	<b>250,000</b>	<b>320,000</b>	
PWV-GW01	12/28/2023	<b>16.8</b>	40.6	24.3	270	9.94	<b>146</b>	<b>83.4</b>	1,200,000	228,000	260,000	3.0
SEP01-GW01	12/29/2023	1.84	5.84	1.05	6.26	<2.00	<2.00	<2.00	1,180,000	224,000	302,000	2.0
SEP02-GW02	12/29/2023	<b>93.9</b>	30.6	7.62	64.4	48.0	25.1	10.6	1,050,000	217,000	172,000	2.0
FL01-GW01	12/29/2023	<b>64.0</b>	60.2	11.9	104	6.77	30.6	10.4	968,000	193,000	196,000	2.0
FL02-GW01	12/29/2023	<b>78.2</b>	3.91	4.65	6.88	74.4	<2.00	<2.00	756,000	174,000	64,200	3.0
GW-BG01	12/29/2023	NA	NA	NA	NA	NA	NA	NA	1,180,000	225,000	256,000	0.5
GW-BG02	12/29/2023	NA	NA	NA	NA	NA	NA	NA	3,560,000	190,000	231,000	0.5

Notes: ECMC - Energy and Carbon Management Commission  
 µg/L - micrograms per liter  
 ft bgs - feet below ground surface  
 < - less than laboratory reporting limit  
 NA - not analyzed/not available  
 Excavation groundwater depth is approximate  
 Total dissolved solids, chloride ion, and sulfate ion parameters based on background sample (BGGW02) concentration x 1.25  
**BOLD** = Analytical result is in exceedance of ECMC Table 915-1 groundwater standards.

May 29, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Sharkey 8&9-35 & 10-3 O SA Project Number - 09A1417396  
Facility**

Attached are your analytical results for KMG - Sharkey 8&9-35 & 10-3 O SA Facility received by Origins Laboratory, Inc. May 13, 2024. This project is associated with Origins project number Y405382-01.

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: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@3'	Y405382-01	Soil	May 13, 2024 13:30	05/13/2024 16:20
SEP01-OUTLET@4'	Y405382-02	Soil	May 13, 2024 14:00	05/13/2024 16:20

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.*

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

# ORIGINS

ORIGINS WORK ORDER #

4405382

Page \_\_\_ of \_\_\_

Client: Ensolum

Project Manager: J. Espinoza

Key:

Address: \_\_\_\_\_

Project Name: Sharkey 8&9-35 & 10-3 O SA Facility

W=Water

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

Project Number: 09A1417396

GW=Groundwater

Email Address: \_\_\_\_\_

Collected By: HK

SW=Surface Water

Invoice/Billing Info: \_\_\_\_\_

Temp Received:  Yes  No

WW=Waste Water

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

#	Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix	Preservative	Analysis										Comments
							BTEX	SEBS	TEL	PAHs	STP	PCB	PCDD	PCDF	PCN	PCPN	
1	BOLE 31	5/13/24	1330	3	S	unp	X	X	X	X	X	X	X	X	X	X	
2	SEPOI-DUTELIV	5/13/24	1400	3	S	unp											AX
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Relinquished By: *[Signature]* Date: 5/13/24 Time: 1600

Received By: *[Signature]* Date: 5/13/24 Time: 1620

Turnaround Time:  SAME DAY  24 Hr  48 Hr  72 Hr

Standard   Non-Standard

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

Origins Laboratory, Inc.  
*[Signature]*

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.

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

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

**Sample Receipt Checklist**

Origins Work Order: 4405382 Client: ENSOLUM  
 Client Project ID: Sharkey 8&9...

Checklist Completed by: EHO Shipped Via: HO  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Date/time completed: 5/13/12 Airbill #: N/A

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

Cooler Number/Temperature: 1, 10 °C \_\_\_\_\_ °C \_\_\_\_\_ °C \_\_\_\_\_ °C

Thermometer ID: 1005

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> ?		<input checked="" type="checkbox"/>		<u>SD</u>
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <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)			<input checked="" type="checkbox"/>	
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.

EHO Reviewed by (Project Manager) 5/13/12 Date/Time Reviewed

Origins Laboratory, Inc.

*J. Bynon*

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B01@3'**

**5/13/2024 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405382-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.992	mg/L	10	B4E1407	ACC	05/14/2024	05/16/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	<b>288</b>	25.0	mg/kg	1	B4E1330	ZZZ	05/13/2024	05/13/2024	
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	101 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	<b>1.94</b>	0.0500	mg/kg	25	B4E1332	HK	05/13/2024	05/14/2024	
1,3,5-Trimethylbenzene	<b>0.130</b>	0.0500	"	"	"	HK	"	"	
Benzene	<b>0.0645</b>	0.0500	"	"	"	HK	"	"	
Ethylbenzene	<b>0.305</b>	0.0500	"	"	"	HK	"	"	
Toluene	ND	0.0500	"	"	"	HK	"	"	S-GC, U
Xylenes, total	ND	0.0500	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	<b>990</b>	50.0	"	250	"	HK	"	05/13/2024	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	05/14/2024	
Surrogate: Toluene-d8	95.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	182 %	70-130			"	"	"	"	S-GC

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B01@3'**

**5/13/2024 1:30:00PM**

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405382-01 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	ND	0.499	meq/L	10	[CALC]	ACC	05/14/2024	05/15/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	<b>8.17</b>	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	<b>1.48</b>	0.020	mg/kg	10	B4E1338	agile	05/13/2024	05/14/2024	
2-Methylnaphthalene	<b>3.03</b>	0.020	"	"	"	agile	"	"	
Acenaphthene	<b>0.154</b>	0.020	"	1	"	agile	"	05/14/2024	
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	<b>0.182</b>	0.020	"	"	"	agile	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	<b>0.373</b>	0.002	"	"	"	agile	"	"	
Pyrene	ND	0.020	"	"	"	agile	"	"	U

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**B01@3'**

**5/13/2024 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405382-01 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	100 %	60-130			B4E1338		05/13/2024	05/14/2024	
Surrogate: Anthracene-d10	98.3 %	60-130			"		"	"	
Surrogate: Pyrene-d10	94.8 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	102 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	7.41		pH Units	1	B4E1416	ACC	05/14/2024	05/15/2024	
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**SAR by 20B Saturated Paste**

SAR	12.9	0.0100	SAR	1	B4E1411	ACC	05/14/2024	05/15/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.69	0.254	mg/kg	10	B4E1331	JAH	05/13/2024	05/14/2024	
Barium	218	8.76	"	"	"	JAH	"	"	
Cadmium	0.184	0.0876	"	"	"	JAH	"	"	
Copper	23.5	8.76	"	"	"	JAH	"	"	
Lead	19.5	0.876	"	"	"	JAH	"	"	
Nickel	14.4	0.876	"	"	"	JAH	"	"	
Selenium	0.540	0.228	"	"	"	JAH	"	"	
Silver	0.0981	0.0876	"	"	"	JAH	"	"	
Zinc	111	32.4	"	"	"	JAH	"	"	

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**SEP01-OUTLET@4'**  
**5/13/2024 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405382-02 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	2.63	0.499	meq/L	10	[CALC]	ACC	05/14/2024	05/15/2024
Magnesium	1.80	0.823	"	"	"	ACC	"	"
Sodium	6.80	0.435	"	"	"	ACC	"	"

**SAR by 20B Saturated Paste**

SAR	4.57	0.0100	SAR	1	B4E1411	ACC	"	"
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**Table 915 metals by EPA 6020B**

Barium	106	8.42	mg/kg	10	B4E1331	JAH	05/13/2024	05/14/2024
Lead	10.7	0.842	"	"	"	JAH	"	"

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 Facility

**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 B4E1330 - EPA 3550B</b>										
<b>Blank (B4E1330-BLK1)</b>										
					Prepared: 05/13/2024 Analyzed: 05/13/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	30		"	24.9		122	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 B4E1330 - EPA 3550B**

**LCS (B4E1330-BS1)**

Prepared: 05/13/2024 Analyzed: 05/13/2024

Diesel (C10-C28)	982	50.0	mg/kg	1000		98.2	70-130			
Residual Range Organics (C28-C40)	1120	200	"	1000		112	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 B4E1330 - EPA 3550B**

<b>Matrix Spike (B4E1330-MS1)</b>	<b>Source: Y405375-01</b>			<b>Prepared: 05/13/2024 Analyzed: 05/13/2024</b>						
Diesel (C10-C28)	1090	50.0	mg/kg	1000	ND	109	70-130			
Residual Range Organics (C28-C40)	1240	200	"	1000	ND	124	70-130			
Surrogate: o-Terphenyl	56		"	49.8		113	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 B4E1330 - EPA 3550B**

<b>Matrix Spike Dup (B4E1330-MSD1)</b>	<b>Source: Y405375-01</b>			<b>Prepared: 05/13/2024 Analyzed: 05/13/2024</b>						
Diesel (C10-C28)	1020	50.0	mg/kg	1000	ND	102	70-130	6.58	35	
Residual Range Organics (C28-C40)	1150	200	"	1000	ND	115	70-130	7.39	35	
Surrogate: o-Terphenyl	54		"	49.8		109	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 B4E1332 - EPA 5030 (soil)**

**Blank (B4E1332-BLK1)**

Prepared: 05/13/2024 Analyzed: 05/13/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125	92.5		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	97.2		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	95.9		70-130			

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 Facility

**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 B4E1332 - EPA 5030 (soil)**

**LCS (B4E1332-BS1)**

Prepared: 05/13/2024 Analyzed: 05/13/2024

1,2,4-Trimethylbenzene	0.109	0.00200	mg/kg	0.100		109	70-130			
1,3,5-Trimethylbenzene	0.110	0.00200	"	0.100		110	70-130			
Benzene	0.116	0.00200	"	0.100		116	70-130			
Ethylbenzene	0.111	0.00200	"	0.100		111	70-130			
Naphthalene	0.104	0.00380	"	0.100		104	70-130			
Toluene	0.113	0.00200	"	0.100		113	70-130			
o-Xylene	0.111	0.00200	"	0.100		111	70-130			
m,p-Xylene	0.221	0.00400	"	0.200		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		87.5	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.6	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.5	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 B4E1332 - EPA 5030 (soil)

Matrix Spike (B4E1332-MS1)	Source: Y405375-01			Prepared: 05/13/2024 Analyzed: 05/13/2024						
1,2,4-Trimethylbenzene	0.108	0.00200	mg/kg	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.109	0.00200	"	0.100	ND	109	70-130			
Benzene	0.112	0.00200	"	0.100	ND	112	70-130			
Ethylbenzene	0.109	0.00200	"	0.100	ND	109	70-130			
Naphthalene	0.107	0.00380	"	0.100	ND	107	70-130			
Toluene	0.109	0.00200	"	0.100	ND	109	70-130			
o-Xylene	0.111	0.00200	"	0.100	ND	111	70-130			
m,p-Xylene	0.219	0.00400	"	0.200	ND	110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		89.4	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.5	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		97.6	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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Batch B4E1332 - EPA 5030 (soil)

Matrix Spike Dup (B4E1332-MSD1)	Source: Y405375-01	Prepared: 05/13/2024	Analyzed: 05/13/2024						
1,2,4-Trimethylbenzene	0.105	0.00200	mg/kg	0.100	ND	105	70-130	3.30	20
1,3,5-Trimethylbenzene	0.106	0.00200	"	0.100	ND	106	70-130	2.44	20
Benzene	0.103	0.00200	"	0.100	ND	103	70-130	8.20	20
Ethylbenzene	0.106	0.00200	"	0.100	ND	106	70-130	3.18	20
Naphthalene	0.107	0.00380	"	0.100	ND	107	70-130	0.0934	20
Toluene	0.107	0.00200	"	0.100	ND	107	70-130	2.53	20
o-Xylene	0.108	0.00200	"	0.100	ND	108	70-130	2.82	20
m,p-Xylene	0.212	0.00400	"	0.200	ND	106	70-130	3.28	20
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		91.8	70-130		
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130		
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.6	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 B4E1331 - EPA 3050B**

**Blank (B4E1331-BLK1)**

Prepared: 05/13/2024 Analyzed: 05/14/2024

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 (B4E1331-BS1)**

Prepared: 05/13/2024 Analyzed: 05/14/2024

Arsenic	5.24	0.290	mg/kg	5.00		105	80-120			
Barium	533	10.0	"	500		107	80-120			
Cadmium	5.38	0.100	"	5.00		108	80-120			
Copper	53.2	10.0	"	50.0		106	80-120			
Lead	5.26	1.00	"	5.00		105	80-120			
Nickel	5.38	1.00	"	5.00		108	80-120			
Selenium	10.2	0.260	"	9.50		108	80-120			
Silver	5.42	0.100	"	5.00		108	80-120			
Zinc	52.8	37.0	"	50.0		106	80-120			

**Matrix Spike (B4E1331-MS1)**

Source: Y405373-04

Prepared: 05/13/2024 Analyzed: 05/14/2024

Origins Laboratory, Inc.



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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1331 - EPA 3050B**

<b>Matrix Spike (B4E1331-MS1)</b>		<b>Source: Y405373-04</b>			Prepared: 05/13/2024 Analyzed: 05/14/2024					
Arsenic	8.65	0.273	mg/kg	4.71	3.94	100	75-125			
Barium	593	9.42	"	471	94.0	106	75-125			
Cadmium	5.39	0.0942	"	4.71	0.260	109	75-125			
Copper	59.5	9.42	"	47.1	8.06	109	75-125			
Lead	15.1	0.942	"	4.71	10.9	90.8	75-125			
Nickel	15.1	0.942	"	4.71	10.3	102	75-125			
Selenium	9.67	0.245	"	8.95	0.166	106	75-125			
Silver	5.22	0.0942	"	4.71	0.0392	110	75-125			
Zinc	91.0	34.8	"	47.1	43.8	100	75-125			

<b>Matrix Spike Dup (B4E1331-MSD1)</b>		<b>Source: Y405373-04</b>			Prepared: 05/13/2024 Analyzed: 05/14/2024					
Arsenic	8.49	0.245	mg/kg	4.23	3.94	108	75-125	1.89	20	
Barium	544	8.45	"	423	94.0	106	75-125	8.69	20	
Cadmium	4.70	0.0845	"	4.23	0.260	105	75-125	13.7	20	
Copper	56.6	8.45	"	42.3	8.06	115	75-125	5.09	20	
Lead	15.2	0.845	"	4.23	10.9	102	75-125	0.281	20	
Nickel	14.7	0.845	"	4.23	10.3	105	75-125	2.36	20	
Selenium	8.57	0.220	"	8.03	0.166	105	75-125	12.1	20	
Silver	4.57	0.0845	"	4.23	0.0392	107	75-125	13.3	20	
Zinc	89.4	31.3	"	42.3	43.8	108	75-125	1.81	20	

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1338 - EPA 3580**

**Blank (B4E1338-BLK1)**

Prepared: 05/13/2024 Analyzed: 05/13/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U

Surrogate: Fluorene-d10	210		ug/kg	200	103	60-130				
Surrogate: Anthracene-d10	200		"	200	99.5	60-130				
Surrogate: Pyrene-d10	190		"	200	96.5	60-130				
Surrogate: Benzo (a) pyrene-d12	190		"	200	96.9	60-130				

**LCS (B4E1338-BS1)**

Prepared: 05/13/2024 Analyzed: 05/13/2024

1-Methylnaphthalene	0.200	0.002	mg/kg	0.200	99.9	70-130				
2-Methylnaphthalene	0.197	0.002	"	0.200	98.6	70-130				
Acenaphthene	0.185	0.020	"	0.200	92.4	70-130				
Anthracene	0.174	0.020	"	0.200	87.2	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 B4E1338 - EPA 3580**

**LCS (B4E1338-BS1)**

Prepared: 05/13/2024 Analyzed: 05/13/2024

Benzo (a) anthracene	0.185	0.005	mg/kg	0.200		92.6	70-130			
Benzo (a) pyrene	0.192	0.020	"	0.200		95.9	70-130			
Benzo (b) fluoranthene	0.209	0.020	"	0.200		105	70-130			
Benzo (g,h,i) perylene	0.189	0.020	"	0.200		94.4	70-130			
Benzo (k) fluoranthene	0.173	0.020	"	0.200		86.5	70-130			
Chrysene	0.189	0.020	"	0.200		94.6	70-130			
Dibenz (a,h) anthracene	0.192	0.020	"	0.200		95.8	70-130			
Fluoranthene	0.204	0.020	"	0.200		102	70-130			
Fluorene	0.195	0.020	"	0.200		97.3	70-130			
Indeno (1,2,3-cd) pyrene	0.194	0.020	"	0.200		97.1	70-130			
Naphthalene	0.191	0.002	"	0.200		95.4	70-130			
Phenanthrene	0.187	0.020	"	0.200		93.7	70-130			
Pyrene	0.198	0.020	"	0.200		99.0	70-130			
Surrogate: Fluorene-d10	210		ug/kg	200		103	60-130			
Surrogate: Anthracene-d10	180		"	200		91.6	60-130			
Surrogate: Pyrene-d10	210		"	200		103	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		98.9	60-130			

**Matrix Spike (B4E1338-MS1)**

Source: Y405375-01

Prepared: 05/13/2024 Analyzed: 05/13/2024

1-Methylnaphthalene	0.213	0.002	mg/kg	0.200	ND	106	70-130			
2-Methylnaphthalene	0.207	0.002	"	0.200	0.0009	103	70-130			
Acenaphthene	0.202	0.020	"	0.200	ND	101	70-130			
Anthracene	0.192	0.020	"	0.200	ND	96.1	70-130			
Benzo (a) anthracene	0.201	0.005	"	0.200	0.002	99.5	70-130			
Benzo (a) pyrene	0.204	0.020	"	0.200	0.002	101	70-130			
Benzo (b) fluoranthene	0.215	0.020	"	0.200	0.002	107	70-130			
Benzo (g,h,i) perylene	0.227	0.020	"	0.200	0.001	113	70-130			

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1338 - EPA 3580**

<b>Matrix Spike (B4E1338-MS1)</b>	<b>Source: Y405375-01</b>			<b>Prepared: 05/13/2024 Analyzed: 05/13/2024</b>						
Benzo (k) fluoranthene	0.192	0.020	mg/kg	0.200	0.001	95.7	70-130			
Chrysene	0.206	0.020	"	0.200	0.002	102	70-130			
Dibenz (a,h) anthracene	0.242	0.020	"	0.200	0.001	121	70-130			
Fluoranthene	0.194	0.020	"	0.200	0.003	95.8	70-130			
Fluorene	0.206	0.020	"	0.200	0.001	102	70-130			
Indeno (1,2,3-cd) pyrene	0.235	0.020	"	0.200	ND	118	70-130			
Naphthalene	0.205	0.002	"	0.200	ND	103	70-130			
Phenanthrene	0.205	0.020	"	0.200	ND	103	70-130			
Pyrene	0.204	0.020	"	0.200	0.002	101	70-130			
Surrogate: Fluorene-d10	210		ug/kg	200		103	60-130			
Surrogate: Anthracene-d10	200		"	200		97.7	60-130			
Surrogate: Pyrene-d10	200		"	200		99.8	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.7	60-130			

<b>Matrix Spike Dup (B4E1338-MSD1)</b>	<b>Source: Y405375-01</b>			<b>Prepared: 05/13/2024 Analyzed: 05/13/2024</b>						
1-Methylnaphthalene	0.217	0.002	mg/kg	0.200	ND	109	70-130	2.11	20	
2-Methylnaphthalene	0.205	0.002	"	0.200	0.0009	102	70-130	1.03	20	
Acenaphthene	0.201	0.020	"	0.200	ND	100	70-130	0.709	20	
Anthracene	0.191	0.020	"	0.200	ND	95.3	70-130	0.824	20	
Benzo (a) anthracene	0.212	0.005	"	0.200	0.002	105	70-130	5.47	20	
Benzo (a) pyrene	0.188	0.020	"	0.200	0.002	93.0	70-130	8.17	20	
Benzo (b) fluoranthene	0.222	0.020	"	0.200	0.002	110	70-130	3.08	20	
Benzo (g,h,i) perylene	0.209	0.020	"	0.200	0.001	104	70-130	8.60	20	
Benzo (k) fluoranthene	0.178	0.020	"	0.200	0.001	88.5	70-130	7.77	20	
Chrysene	0.200	0.020	"	0.200	0.002	98.9	70-130	2.79	20	
Dibenz (a,h) anthracene	0.191	0.020	"	0.200	0.001	95.1	70-130	23.5	20	QR-02
Fluoranthene	0.217	0.020	"	0.200	0.003	107	70-130	10.8	20	

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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1338 - EPA 3580

Matrix Spike Dup (B4E1338-MSD1)	Source: Y405375-01			Prepared: 05/13/2024 Analyzed: 05/13/2024						
Fluorene	0.198	0.020	mg/kg	0.200	0.001	98.3	70-130	4.10	20	
Indeno (1,2,3-cd) pyrene	0.204	0.020	"	0.200	ND	102	70-130	14.2	20	
Naphthalene	0.202	0.002	"	0.200	ND	101	70-130	1.57	20	
Phenanthrene	0.203	0.020	"	0.200	ND	102	70-130	0.999	20	
Pyrene	0.217	0.020	"	0.200	0.002	108	70-130	6.13	20	
Surrogate: Fluorene-d10	190		ug/kg	200		95.5	60-130			
Surrogate: Anthracene-d10	190		"	200		94.5	60-130			
Surrogate: Pyrene-d10	210		"	200		105	60-130			
Surrogate: Benzo (a) pyrene-d12	180		"	200		92.1	60-130			

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1407 - DTPA Sorbitol Preparation**

**Blank (B4E1407-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/15/2024

Boron ND 0.100 mg/L

**Duplicate (B4E1407-DUP1)**

**Source: Y405376-11**

Prepared: 05/14/2024 Analyzed: 05/15/2024

Boron 1.20 0.0997 mg/L 1.20 0.398 50

**Batch B4E1411 - Saturated Paste Metals**

**Blank (B4E1411-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/15/2024

Calcium PPM ND 10.0 mg/L

SAR ND 0.0100 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

**Duplicate (B4E1411-DUP1)**

**Source: Y405373-02**

Prepared: 05/14/2024 Analyzed: 05/15/2024

Calcium PPM 12.2 10.0 mg/L 12.7 3.86 50

SAR ND 0.0100 SAR 2.42 200

Magnesium PPM 3.76 10.0 mg/L 4.01 6.44 50

Sodium PPM 33.2 10.0 " 38.6 15.1 50

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Jeremy Espinoza  
Project Number: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1416 - Saturated Paste pH/EC**

**Duplicate (B4E1416-DUP1)**

**Source: Y405373-02**

Prepared: 05/14/2024 Analyzed: 05/15/2024

pH	8.17		pH Units		8.14			0.368	25	
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11049 W 44th Avenue, Suite 103  
Wheat Ridge CO 80033

Jeremy Espinoza  
Project Number: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
Facility

### Notes and Definitions

- U Sample is Non-Detect.
- S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- All soil results are reported at a wet weight basis.

Origins Laboratory, Inc.



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May 29, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Sharkey 8&9-35 & 10-3 O SA Project Number - 09A1417396  
Facility**

Attached are your analytical results for KMG - Sharkey 8&9-35 & 10-3 O SA Facility received by Origins Laboratory, Inc. May 14, 2024. This project is associated with Origins project number Y405441-01.

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: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02@3'	Y405441-01	Soil	May 14, 2024 10:00	05/14/2024 16:19
B03@3'	Y405441-02	Soil	May 14, 2024 10:10	05/14/2024 16:19
B04@3'	Y405441-03	Soil	May 14, 2024 10:20	05/14/2024 16:19
B05@3'	Y405441-04	Soil	May 14, 2024 10:30	05/14/2024 16:19
B06@3'	Y405441-05	Soil	May 14, 2024 11:30	05/14/2024 16:19

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

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

**ORIGINS**  
 LABORATORY, INC

Impacted  
**MUSUHI**  
 www.originslaboratory.com  
 page | of |

Client: Ensolum  
 Address: \_\_\_\_\_  
 Telephone Number: \_\_\_\_\_  
 Email Address: KMG Team  
 Project Manager: Jeremy Espinoza  
 Project Name: Sharkey 8&9-35 & 10-3 O SA Facility  
 Project Number: 09A1417396  
 Samples Collected By: JH

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix		Analysis	Sample Instructions
				Unpreserved	HCl	HNO <sub>3</sub>	Other	Groundwater		
B0203-	5/14/24	1000	3	X					X	
B0303-		1010	1						X	
B0403-		1020	1						X	
B0503-		1030	1						X	
B0603-		1130	1						X	

Analysis: PT, ME, B, Pb, Ni, Se, As, Zn, Cd, Cr, Cu, Fe, Mn, Mo, Ni, Pb, Zn, V, W, Hg, HCl, HNO<sub>3</sub>, PAHs, VOCs, SVOCs, pH, Arsenic, Barium, Cadmium, Chromium, Copper, Lead, Manganese, Nickel, Selenium, Vanadium, Zinc

Relinquished By: [Signature] Date: 5-14-2024 Time: 1619  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Received By: [Signature] Date: 5/14/24 Time: 1009  
 Received By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Temp Received: S Date Results Needed

Turnaround Time:  
 Same Day  
 24 Hr  
 48 Hr  
 72 Hr  
 Standard

Origins Laboratory, Inc.  
[Signature]

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 1405411

Client: Ensolum  
 Client Project ID: Sharkey 8 & 9...

Checklist Completed by: EAO

Shipped Via: HO  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A

Date/time completed: 5/14/12

Matrix(s) Received: (Check all that apply): 0 Soil/Solid      Water      Other:     

Cooler Number/Temperature: 115 °C      °C      °C (Describe)      °C

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> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)	<input checked="" type="checkbox"/>			
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? <b>If yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
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)			<input checked="" type="checkbox"/>	
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.

EAO  
 Reviewed by (Project Manager)

5/14/12  
 Date/Time Reviewed

Origins Laboratory, Inc.

*J. Bynon*

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B02@3'**

**5/14/2024 10:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.987	mg/L	10	B4E1511	ACC	05/15/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1444	ADM	05/14/2024	05/15/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: *o*-Terphenyl 101 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1445	ZZZ	05/14/2024	05/14/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	<b>0.00350</b>	0.00200	"	"	"	ZZZ	"	"	
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	<b>1.04</b>	0.200	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4 102 % 70-130 " " "  
 Surrogate: Toluene-d8 102 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 107 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B02@3'**

**5/14/2024 10:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-01 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.03	0.499	meq/L	10	[CALC]	ACC	05/15/2024	05/16/2024	
Magnesium	0.836	0.823	"	"	"	ACC	"	"	
Sodium	7.52	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.049	0.002	mg/kg	1	B4E1440	agile	05/14/2024	05/14/2024	
2-Methylnaphthalene	0.131	0.002	"	"	"	agile	"	"	
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	0.111	0.002	"	"	"	agile	"	"	
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B02@3'**

**5/14/2024 10:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-01 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	91.3 %	60-130			B4E14 40		05/14/2024	05/14/2024	
Surrogate: Anthracene-d10	113 %	60-130			"		"	"	
Surrogate: Pyrene-d10	89.5 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.5 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.70		pH Units	1	B4E1517	EAL	05/15/2024	05/16/2024	
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**SAR by 20B Saturated Paste**

SAR	7.79	0.0100	SAR	1	B4E1506	ACC	05/15/2024	05/16/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.99	0.283	mg/kg	10	B4E1441	KMC	05/14/2024	05/15/2024	
Barium	182	9.75	"	"	"	KMC	"	"	
Cadmium	0.151	0.0975	"	"	"	KMC	"	"	
Copper	12.4	9.75	"	"	"	KMC	"	"	
Lead	13.2	0.975	"	"	"	KMC	"	"	
Nickel	11.4	0.975	"	"	"	KMC	"	"	
Selenium	ND	0.254	"	"	"	KMC	"	"	
Silver	ND	0.0975	"	"	"	KMC	"	"	
Zinc	81.5	36.1	"	"	"	KMC	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B03@3'**

**5/14/2024 10:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.989	mg/L	10	B4E1511	ACC	05/15/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1444	ADM	05/14/2024	05/15/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	99.7 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1445	ZZZ	05/14/2024	05/14/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	100 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B03@3'**

**5/14/2024 10:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-02 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.30	0.499	meq/L	10	[CALC]	ACC	05/15/2024	05/16/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	6.48	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1440	agile	05/14/2024	05/14/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B03@3'**

**5/14/2024 10:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-02 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	116 %	60-130			B4E14 40		05/14/2024	05/14/2024	
Surrogate: Anthracene-d10	102 %	60-130			"		"	"	
Surrogate: Pyrene-d10	98.1 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	103 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.62		pH Units	1	B4E1517	EAL	05/15/2024	05/16/2024	
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**SAR by 20B Saturated Paste**

SAR	6.30	0.0100	SAR	1	B4E1506	ACC	05/15/2024	05/16/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.41	0.257	mg/kg	10	B4E1441	KMC	05/14/2024	05/15/2024	
Barium	202	8.87	"	"	"	KMC	"	"	
Cadmium	0.181	0.0887	"	"	"	KMC	"	"	
Copper	12.9	8.87	"	"	"	KMC	"	"	
Lead	13.9	0.887	"	"	"	KMC	"	"	
Nickel	13.2	0.887	"	"	"	KMC	"	"	
Selenium	0.254	0.231	"	"	"	KMC	"	"	
Silver	ND	0.0887	"	"	"	KMC	"	"	
Zinc	87.0	32.8	"	"	"	KMC	"	"	

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B04@3'**

**5/14/2024 10:20:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	1.00	mg/L	10	B4E1511	ACC	05/15/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1444	ADM	05/14/2024	05/15/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: <i>o</i> -Terphenyl	96.1 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1445	ZZZ	05/14/2024	05/14/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B04@3'**

**5/14/2024 10:20:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-03 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.45	0.499	meq/L	10	[CALC]	ACC	05/15/2024	05/16/2024	
Magnesium	1.00	0.823	"	"	"	ACC	"	"	
Sodium	7.28	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1440	agile	05/14/2024	05/15/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B04@3'**

**5/14/2024 10:20:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-03 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	96.4 %	60-130			B4E14 40		05/14/2024	05/15/2024	
Surrogate: Anthracene-d10	96.9 %	60-130			"		"	"	
Surrogate: Pyrene-d10	119 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.0 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.51		pH Units	1	B4E1517	EAL	05/15/2024	05/16/2024	
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**SAR by 20B Saturated Paste**

SAR	6.58	0.0100	SAR	1	B4E1506	ACC	05/15/2024	05/16/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.16	0.255	mg/kg	10	B4E1441	KMC	05/14/2024	05/15/2024	
Barium	181	8.80	"	"	"	KMC	"	"	
Cadmium	0.175	0.0880	"	"	"	KMC	"	"	
Copper	14.3	8.80	"	"	"	KMC	"	"	
Lead	14.1	0.880	"	"	"	KMC	"	"	
Nickel	12.2	0.880	"	"	"	KMC	"	"	
Selenium	0.362	0.229	"	"	"	KMC	"	"	
Silver	ND	0.0880	"	"	"	KMC	"	"	
Zinc	88.1	32.5	"	"	"	KMC	"	"	

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B05@3'**

**5/14/2024 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.997	mg/L	10	B4E1511	ACC	05/15/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1444	ADM	05/14/2024	05/15/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: <i>o</i> -Terphenyl	88.5 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1445	ZZZ	05/14/2024	05/14/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B05@3'**

**5/14/2024 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-04 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	3.67	0.499	meq/L	10	[CALC]	ACC	05/15/2024	05/16/2024	
Magnesium	2.08	0.823	"	"	"	ACC	"	"	
Sodium	13.1	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1440	agile	05/14/2024	05/15/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B05@3'**

**5/14/2024 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-04 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	96.0 %	60-130			B4E14 40		05/14/2024	05/15/2024	
Surrogate: Anthracene-d10	99.1 %	60-130			"		"	"	
Surrogate: Pyrene-d10	122 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	95.1 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.44</b>		pH Units	1	B4E1517	EAL	05/15/2024	05/16/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>7.72</b>	0.0100	SAR	1	B4E1506	ACC	05/15/2024	05/16/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>2.14</b>	0.263	mg/kg	10	B4E1441	KMC	05/14/2024	05/15/2024	
Barium	<b>106</b>	9.06	"	"	"	KMC	"	"	
Cadmium	<b>0.155</b>	0.0906	"	"	"	KMC	"	"	
Copper	ND	9.06	"	"	"	KMC	"	"	
Lead	<b>11.6</b>	0.906	"	"	"	KMC	"	"	
Nickel	<b>6.77</b>	0.906	"	"	"	KMC	"	"	
Selenium	ND	0.236	"	"	"	KMC	"	"	
Silver	ND	0.0906	"	"	"	KMC	"	"	
Zinc	<b>54.7</b>	33.5	"	"	"	KMC	"	"	

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B06@3'**

**5/14/2024 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.491	0.0992	mg/L	1	B4E1511	ACC	05/15/2024	05/16/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	2710	25.0	mg/kg	1	B4E1444	ADM	05/14/2024	05/15/2024	
Residual Range Organics (C28-C40)	551	100	"	"	"	ADM	"	"	

Surrogate: o-Terphenyl	127 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	24.6	0.500	mg/kg	250	B4E1445	ZZZ	05/14/2024	05/14/2024	
1,3,5-Trimethylbenzene	1.48	0.0500	"	25	"	ZZZ	"	05/15/2024	
Benzene	0.0560	0.0500	"	"	"	ZZZ	"	"	
Ethylbenzene	0.227	0.0500	"	"	"	ZZZ	"	"	
Toluene	ND	0.0500	"	"	"	ZZZ	"	"	R-05, U
Xylenes, total	0.255	0.0500	"	"	"	ZZZ	"	"	
Gasoline Range Hydrocarbons	384	5.00	"	"	"	ZZZ	"	"	

Surrogate: 1,2-Dichloroethane-d4	94.2 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	124 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Calcium	2.38	0.499	meq/L	10	[CALC]	ACC	05/15/2024	05/16/2024	
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**B06@3'**

**5/14/2024 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-05 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Magnesium	1.35	0.823	meq/L	10	[CALC]	ACC	05/15/2024	05/16/2024	
Sodium	2.42	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.613	0.002	mg/kg	1	B4E1440	agile	05/14/2024	05/15/2024	
2-Methylnaphthalene	1.70	0.020	"	10	"	agile	"	05/15/2024	
Acenaphthene	ND	0.020	"	1	"	agile	"	05/15/2024	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	0.130	0.020	"	"	"	agile	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	0.412	0.002	"	"	"	agile	"	"	
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Surrogate: Fluorene-d10 93.5 % 60-130 " " "

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**B06@3'**

**5/14/2024 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405441-05 (Soil)**

**PAH by EPA 8270E**

Surrogate: Anthracene-d10	120 %	60-130			B4E14 40		05/14/2024	05/15/2024	
Surrogate: Pyrene-d10	104 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	101 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	7.86		pH Units	1	B4E1517	EAL	05/15/2024	05/16/2024	
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**SAR by 20B Saturated Paste**

SAR	1.77	0.0100	SAR	1	B4E1506	ACC	05/15/2024	05/16/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.91	0.287	mg/kg	10	B4E1441	KMC	05/14/2024	05/15/2024	
Barium	124	9.91	"	"	"	KMC	"	"	
Cadmium	0.308	0.0991	"	"	"	KMC	"	"	
Copper	13.2	9.91	"	"	"	KMC	"	"	
Lead	16.7	0.991	"	"	"	KMC	"	"	
Nickel	7.78	0.991	"	"	"	KMC	"	"	
Selenium	ND	0.258	"	"	"	KMC	"	"	
Silver	0.147	0.0991	"	"	"	KMC	"	"	
Zinc	68.5	36.7	"	"	"	KMC	"	"	

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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 B4E1444 - EPA 3550B</b>										
<b>Blank (B4E1444-BLK1)</b>										
					Prepared: 05/14/2024 Analyzed: 05/14/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	25		"	24.9		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 B4E1444 - EPA 3550B**

**LCS (B4E1444-BS1)**

Prepared: 05/14/2024 Analyzed: 05/14/2024

Diesel (C10-C28)	870	50.0	mg/kg	1000		87.0	70-130			
Residual Range Organics (C28-C40)	995	200	"	1000		99.5	70-130			
Surrogate: o-Terphenyl	59		"	49.8		119	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 B4E1444 - EPA 3550B

Matrix Spike (B4E1444-MS1)	Source: Y405441-01		Prepared: 05/14/2024 Analyzed: 05/14/2024							
Diesel (C10-C28)	929	50.0	mg/kg	1000	ND	92.9	70-130			
Residual Range Organics (C28-C40)	1030	200	"	1000	ND	103	70-130			
Surrogate: o-Terphenyl	62		"	49.8		125	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 B4E1444 - EPA 3550B

Matrix Spike Dup (B4E1444-MSD1)	Source: Y405441-01		Prepared: 05/14/2024 Analyzed: 05/15/2024							
Diesel (C10-C28)	910	50.0	mg/kg	1000	ND	91.0	70-130	2.07	35	
Residual Range Organics (C28-C40)	1000	200	"	1000	ND	100	70-130	2.74	35	
Surrogate: o-Terphenyl	61		"	49.8		122	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 B4E1445 - EPA 5030 (soil)**

**Blank (B4E1445-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/14/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	102		70-130			
Surrogate: Toluene-d8	0.12		"	0.125	98.8		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	98.7		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 B4E1445 - EPA 5030 (soil)**

**LCS (B4E1445-BS1)**

Prepared: 05/14/2024 Analyzed: 05/14/2024

1,2,4-Trimethylbenzene	0.0978	0.00200	mg/kg	0.100		97.8	70-130			
1,3,5-Trimethylbenzene	0.102	0.00200	"	0.100		102	70-130			
Benzene	0.0956	0.00200	"	0.100		95.6	70-130			
Ethylbenzene	0.0920	0.00200	"	0.100		92.0	70-130			
Naphthalene	0.0944	0.00380	"	0.100		94.4	70-130			
Toluene	0.0939	0.00200	"	0.100		93.9	70-130			
o-Xylene	0.0856	0.00200	"	0.100		85.6	70-130			
m,p-Xylene	0.182	0.00400	"	0.200		90.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.7	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.7	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.0	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 B4E1445 - EPA 5030 (soil)

Matrix Spike (B4E1445-MS1)	Source: Y405441-01			Prepared: 05/14/2024 Analyzed: 05/14/2024						
1,2,4-Trimethylbenzene	0.0902	0.00200	mg/kg	0.100	ND	90.2	70-130			
1,3,5-Trimethylbenzene	0.0927	0.00200	"	0.100	ND	92.7	70-130			
Benzene	0.0935	0.00200	"	0.100	0.00350	90.0	70-130			
Ethylbenzene	0.0890	0.00200	"	0.100	ND	89.0	70-130			
Naphthalene	0.175	0.00380	"	0.100	0.0264	149	70-130			QM-07
Toluene	0.0895	0.00200	"	0.100	ND	89.5	70-130			
o-Xylene	0.0902	0.00200	"	0.100	ND	90.2	70-130			
m,p-Xylene	0.179	0.00400	"	0.200	ND	89.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.4	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 B4E1445 - EPA 5030 (soil)

Matrix Spike Dup (B4E1445-MSD1)	Source: Y405441-01			Prepared: 05/14/2024 Analyzed: 05/14/2024						
1,2,4-Trimethylbenzene	0.0885	0.00200	mg/kg	0.100	ND	88.5	70-130	1.90	20	
1,3,5-Trimethylbenzene	0.0912	0.00200	"	0.100	ND	91.2	70-130	1.70	20	
Benzene	0.0928	0.00200	"	0.100	0.00350	89.3	70-130	0.794	20	
Ethylbenzene	0.0872	0.00200	"	0.100	ND	87.2	70-130	2.00	20	
Naphthalene	0.127	0.00380	"	0.100	0.0264	100	70-130	31.8	20	QR-02
Toluene	0.0888	0.00200	"	0.100	ND	88.8	70-130	0.718	20	
o-Xylene	0.0889	0.00200	"	0.100	ND	88.9	70-130	1.45	20	
m,p-Xylene	0.177	0.00400	"	0.200	ND	88.4	70-130	1.34	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		100	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.8	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 B4E1441 - EPA 3050B**

**Blank (B4E1441-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/15/2024

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 (B4E1441-BS1)**

Prepared: 05/14/2024 Analyzed: 05/15/2024

Arsenic	5.41	0.290	mg/kg	5.00		108	80-120			
Barium	532	10.0	"	500		106	80-120			
Cadmium	5.52	0.100	"	5.00		110	80-120			
Copper	51.2	10.0	"	50.0		102	80-120			
Lead	5.32	1.00	"	5.00		106	80-120			
Nickel	5.38	1.00	"	5.00		108	80-120			
Selenium	10.2	0.260	"	9.50		107	80-120			
Silver	5.62	0.100	"	5.00		112	80-120			
Zinc	53.7	37.0	"	50.0		107	80-120			

**Matrix Spike (B4E1441-MS1)**

Source: Y405437-03

Prepared: 05/14/2024 Analyzed: 05/15/2024

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1441 - EPA 3050B**

<b>Matrix Spike (B4E1441-MS1)</b>		<b>Source: Y405437-03</b>			<b>Prepared: 05/14/2024 Analyzed: 05/15/2024</b>					
Arsenic	7.96	0.274	mg/kg	4.73	2.35	119	75-125			
Barium	612	9.46	"	473	64.2	116	75-125			
Cadmium	5.54	0.0946	"	4.73	0.212	113	75-125			
Copper	59.1	9.46	"	47.3	7.61	109	75-125			
Lead	17.0	0.946	"	4.73	10.6	135	75-125			QM-07
Nickel	12.1	0.946	"	4.73	6.00	129	75-125			QM-07
Selenium	9.29	0.246	"	8.99	0.0753	103	75-125			
Silver	5.50	0.0946	"	4.73	0.0601	115	75-125			
Zinc	97.4	35.0	"	47.3	38.6	124	75-125			

<b>Matrix Spike Dup (B4E1441-MSD1)</b>		<b>Source: Y405437-03</b>			<b>Prepared: 05/14/2024 Analyzed: 05/15/2024</b>					
Arsenic	11.2	0.270	mg/kg	4.65	2.35	191	75-125	33.9	20	QM-07, QR-DUP
Barium	580	9.31	"	465	64.2	111	75-125	5.33	20	
Cadmium	5.27	0.0931	"	4.65	0.212	109	75-125	4.99	20	
Copper	56.2	9.31	"	46.5	7.61	104	75-125	5.02	20	
Lead	17.4	0.931	"	4.65	10.6	147	75-125	2.62	20	QM-07
Nickel	11.8	0.931	"	4.65	6.00	124	75-125	2.82	20	
Selenium	9.24	0.242	"	8.84	0.0753	104	75-125	0.568	20	
Silver	5.17	0.0931	"	4.65	0.0601	110	75-125	6.14	20	
Zinc	89.9	34.4	"	46.5	38.6	110	75-125	8.06	20	

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1440 - EPA 3580**

**Blank (B4E1440-BLK1)**

Prepared: 05/14/2024 Analyzed: 05/14/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	190		ug/kg	200		97.0	60-130			
Surrogate: Anthracene-d10	180		"	200		91.6	60-130			
Surrogate: Pyrene-d10	220		"	200		110	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.6	60-130			

**LCS (B4E1440-BS1)**

Prepared: 05/14/2024 Analyzed: 05/14/2024

1-Methylnaphthalene	0.186	0.002	mg/kg	0.200		93.0	70-130			
2-Methylnaphthalene	0.189	0.002	"	0.200		94.6	70-130			
Acenaphthene	0.187	0.020	"	0.200		93.4	70-130			
Anthracene	0.179	0.020	"	0.200		89.5	70-130			

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1440 - EPA 3580**

**LCS (B4E1440-BS1)**

Prepared: 05/14/2024 Analyzed: 05/14/2024

Benzo (a) anthracene	0.182	0.005	mg/kg	0.200		91.0	70-130			
Benzo (a) pyrene	0.190	0.020	"	0.200		94.8	70-130			
Benzo (b) fluoranthene	0.202	0.020	"	0.200		101	70-130			
Benzo (g,h,i) perylene	0.172	0.020	"	0.200		86.0	70-130			
Benzo (k) fluoranthene	0.184	0.020	"	0.200		92.1	70-130			
Chrysene	0.185	0.020	"	0.200		92.6	70-130			
Dibenz (a,h) anthracene	0.143	0.020	"	0.200		71.7	70-130			
Fluoranthene	0.193	0.020	"	0.200		96.3	70-130			
Fluorene	0.192	0.020	"	0.200		95.9	70-130			
Indeno (1,2,3-cd) pyrene	0.156	0.020	"	0.200		77.9	70-130			
Naphthalene	0.188	0.002	"	0.200		94.2	70-130			
Phenanthrene	0.182	0.020	"	0.200		91.0	70-130			
Pyrene	0.196	0.020	"	0.200		97.8	70-130			
Surrogate: Fluorene-d10	210		ug/kg	200		104	60-130			
Surrogate: Anthracene-d10	190		"	200		93.6	60-130			
Surrogate: Pyrene-d10	210		"	200		103	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.2	60-130			

**Matrix Spike (B4E1440-MS1)**

Source: Y405435-09

Prepared: 05/14/2024 Analyzed: 05/14/2024

1-Methylnaphthalene	0.193	0.002	mg/kg	0.200	0.001	95.7	70-130			
2-Methylnaphthalene	0.193	0.002	"	0.200	0.0009	96.0	70-130			
Acenaphthene	0.186	0.020	"	0.200	0.0003	93.0	70-130			
Anthracene	0.183	0.020	"	0.200	ND	91.3	70-130			
Benzo (a) anthracene	0.183	0.005	"	0.200	0.0006	91.2	70-130			
Benzo (a) pyrene	0.177	0.020	"	0.200	0.003	87.2	70-130			
Benzo (b) fluoranthene	0.197	0.020	"	0.200	0.001	97.6	70-130			
Benzo (g,h,i) perylene	0.172	0.020	"	0.200	0.007	82.3	70-130			

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1440 - EPA 3580**

<b>Matrix Spike (B4E1440-MS1)</b>		<b>Source: Y405435-09</b>			<b>Prepared: 05/14/2024 Analyzed: 05/14/2024</b>					
Benzo (k) fluoranthene	0.167	0.020	mg/kg	0.200	0.002	82.6	70-130			
Chrysene	0.190	0.020	"	0.200	0.001	94.5	70-130			
Dibenz (a,h) anthracene	0.154	0.020	"	0.200	0.016	68.6	70-130			QM-07
Fluoranthene	0.188	0.020	"	0.200	ND	93.9	70-130			
Fluorene	0.192	0.020	"	0.200	0.001	95.4	70-130			
Indeno (1,2,3-cd) pyrene	0.161	0.020	"	0.200	0.007	76.7	70-130			
Naphthalene	0.187	0.002	"	0.200	ND	93.5	70-130			
Phenanthrene	0.180	0.020	"	0.200	0.001	89.1	70-130			
Pyrene	0.199	0.020	"	0.200	ND	99.3	70-130			
Surrogate: Fluorene-d10	210		ug/kg	200		104	60-130			
Surrogate: Anthracene-d10	190		"	200		94.9	60-130			
Surrogate: Pyrene-d10	220		"	200		109	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		96.0	60-130			

<b>Matrix Spike Dup (B4E1440-MSD1)</b>		<b>Source: Y405435-09</b>			<b>Prepared: 05/14/2024 Analyzed: 05/14/2024</b>					
1-Methylnaphthalene	0.199	0.002	mg/kg	0.200	0.001	98.7	70-130	3.08	20	
2-Methylnaphthalene	0.196	0.002	"	0.200	0.0009	97.5	70-130	1.54	20	
Acenaphthene	0.180	0.020	"	0.200	0.0003	89.7	70-130	3.55	20	
Anthracene	0.168	0.020	"	0.200	ND	83.8	70-130	8.63	20	
Benzo (a) anthracene	0.186	0.005	"	0.200	0.0006	92.6	70-130	1.59	20	
Benzo (a) pyrene	0.191	0.020	"	0.200	0.003	93.9	70-130	7.34	20	
Benzo (b) fluoranthene	0.200	0.020	"	0.200	0.001	99.3	70-130	1.76	20	
Benzo (g,h,i) perylene	0.177	0.020	"	0.200	0.007	85.0	70-130	3.16	20	
Benzo (k) fluoranthene	0.179	0.020	"	0.200	0.002	88.2	70-130	6.53	20	
Chrysene	0.183	0.020	"	0.200	0.001	90.7	70-130	4.11	20	
Dibenz (a,h) anthracene	0.153	0.020	"	0.200	0.016	68.3	70-130	0.485	20	QM-07
Fluoranthene	0.203	0.020	"	0.200	ND	101	70-130	7.62	20	

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Jeremy Espinoza  
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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1440 - EPA 3580**

<b>Matrix Spike Dup (B4E1440-MSD1)</b>		<b>Source: Y405435-09</b>			Prepared: 05/14/2024 Analyzed: 05/14/2024					
Fluorene	0.180	0.020	mg/kg	0.200	0.001	89.4	70-130	6.40	20	
Indeno (1,2,3-cd) pyrene	0.173	0.020	"	0.200	0.007	82.8	70-130	7.24	20	
Naphthalene	0.189	0.002	"	0.200	ND	94.7	70-130	1.23	20	
Phenanthrene	0.179	0.020	"	0.200	0.001	88.7	70-130	0.433	20	
Pyrene	0.202	0.020	"	0.200	ND	101	70-130	1.46	20	
Surrogate: Fluorene-d10	200		ug/kg	200		98.3	60-130			
Surrogate: Anthracene-d10	180		"	200		91.3	60-130			
Surrogate: Pyrene-d10	210		"	200		107	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		97.8	60-130			

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1506 - Saturated Paste Metals**

**Blank (B4E1506-BLK1)**

Prepared: 05/15/2024 Analyzed: 05/16/2024

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

**Duplicate (B4E1506-DUP1)**

Source: Y405438-01

Prepared: 05/15/2024 Analyzed: 05/16/2024

Calcium PPM	24.0	10.0	mg/L		24.4			1.86	50	
SAR	ND	0.0100	SAR		0.422				200	
Magnesium PPM	5.32	10.0	mg/L		5.27			0.944	50	
Sodium PPM	9.33	10.0	"		8.82			5.62	50	

**Batch B4E1511 - DTPA Sorbitol Preparation**

**Blank (B4E1511-BLK1)**

Prepared: 05/15/2024 Analyzed: 05/22/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4E1511-DUP1)**

Source: Y405437-08

Prepared: 05/15/2024 Analyzed: 05/22/2024

Boron	0.191	0.101	mg/L		0.243			24.3	50	
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Jeremy Espinoza  
Project Number: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1517 - Saturated Paste pH/EC**

**Duplicate (B4E1517-DUP1)**

**Source: Y405438-01**

Prepared: 05/15/2024 Analyzed: 05/16/2024

pH	8.24		pH Units		8.30			0.726	25	
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Ensolum  
11049 W 44th Avenue, Suite 103  
Wheat Ridge CO 80033

Jeremy Espinoza  
Project Number: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
Facility

### Notes and Definitions

- U Sample is Non-Detect.
- R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
- QR-DUP RPD exceeds QC acceptance criteria, this indicates source sample is not homogenous.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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 at a wet weight basis.

Origins Laboratory, Inc.



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May 29, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Sharkey 8&9-35 & 10-3 O SA Project Number - 09A1417396  
Facility**

Attached are your analytical results for KMG - Sharkey 8&9-35 & 10-3 O SA Facility received by Origins Laboratory, Inc. May 15, 2024. This project is associated with Origins project number Y405490-01.

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: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B07@3'	Y405490-01	Soil	May 15, 2024 9:15	05/15/2024 17:18
B08@3'	Y405490-02	Soil	May 15, 2024 9:25	05/15/2024 17:18
B09@3'	Y405490-03	Soil	May 15, 2024 9:35	05/15/2024 17:18
B10@3'	Y405490-04	Soil	May 15, 2024 9:45	05/15/2024 17:18
B11@3'	Y405490-05	Soil	May 15, 2024 10:45	05/15/2024 17:18
B12@3'	Y405490-06	Soil	May 15, 2024 11:30	05/15/2024 17:18
B13@3'	Y405490-07	Soil	May 15, 2024 11:45	05/15/2024 17:18
B14@3'	Y405490-08	Soil	May 15, 2024 13:30	05/15/2024 17:18
B15@3'	Y405490-09	Soil	May 15, 2024 15:30	05/15/2024 17:18

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

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



Client: Ensolum

Address: \_\_\_\_\_

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

Email Address: KMG Team

Project Manager: Jeremy Espinoza

Project Name: Sharkey 8&9-35 & 10-3 O SA Facility

Project Number: 09A1417396

Samples Collected By: JH

Impacted  
 4405400

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page 1 of 1

Sample ID Description	Date Sampled	Time Sampled	# of Containers	Preservative			Matrix		Analysis	Sample Instructions	
				HCl	HNO <sub>3</sub>	Other	Groundwater	Soil			Air Summa Canister #
B0703-	5-15-24	915	3	X					X	STP+TN TMBs, PAHs PH, GRY DRUGS BVC COP P Ba, Cd, Pb As, Ni, Se, Ag	
B0803-		925							X		
B0903-		935							X		
B1003-		945							X		
B1103-		1045							X		
B1203-		1130							X		
B1303-		1145							X		
B1403-		1330							X		
B1503-		1530							X		

Relinquished By: [Signature] Date: 5-15-2024 Time: 1718  
 Received By: [Signature] Date: 5/15/24 Time: 1718  
 Temp Received: 10 Date Results Needed: \_\_\_\_\_

Origins Laboratory, Inc.

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

Origins Laboratory

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

Sample Receipt Checklist

Origins Work Order: 4405490

Client: Ensolum

Client Project ID: Sharkey

Checklist Completed by: JTB

Shipped Via: TLU  
 (UPS, FedEx, Hand Delivered, Pick-up, etc.)

Date/time completed: 5/15/14

Airbill #: N/A

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

Cooler Number/Temperature: 1, 10 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °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? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted 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) JTB

Date/Time Reviewed 5/15/14

Origins Laboratory, Inc.

*J. Bynon*

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B07@3'**

**5/15/2024 9:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.315	0.0987	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	99.0 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HKS	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B07@3'**

**5/15/2024 9:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-01 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	6.30	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	2.80	0.823	"	"	"	ACC	"	"	
Sodium	5.30	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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Ensolum  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B07@3'**

**5/15/2024 9:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-01 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	101 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	99.3 %	60-130			"		"	"	
Surrogate: Pyrene-d10	90.6 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	94.6 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.53		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	2.49	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	6.27	0.258	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	110	8.90	"	"	"	KMC	"	"	
Cadmium	0.274	0.0890	"	"	"	KMC	"	"	
Copper	11.3	8.90	"	"	"	KMC	"	"	
Lead	8.35	0.890	"	"	"	KMC	"	"	
Nickel	7.45	0.890	"	"	"	KMC	"	"	
Selenium	ND	0.231	"	"	"	KMC	"	"	
Silver	ND	0.0890	"	"	"	KMC	"	"	
Zinc	34.6	32.9	"	"	"	KMC	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B08@3'**

**5/15/2024 9:25:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.386	0.0990	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	99.3 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	1.61	0.200	"	"	"	HKS	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	93.9 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Ensolum  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B08@3'**

**5/15/2024 9:25:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-02 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	0.949	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	1.98	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B08@3'**

**5/15/2024 9:25:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-02 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	102 %	60-130			"		"	"	
Surrogate: Pyrene-d10	84.5 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	96.1 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.43		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	2.45	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.98	0.264	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	94.9	9.10	"	"	"	KMC	"	"	
Cadmium	0.229	0.0910	"	"	"	KMC	"	"	
Copper	10.5	9.10	"	"	"	KMC	"	"	
Lead	16.0	0.910	"	"	"	KMC	"	"	
Nickel	6.28	0.910	"	"	"	KMC	"	"	
Selenium	ND	0.236	"	"	"	KMC	"	"	
Silver	0.115	0.0910	"	"	"	KMC	"	"	
Zinc	54.0	33.7	"	"	"	KMC	"	"	

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B09@3'**

**5/15/2024 9:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.163	0.101	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	103 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HKS	"	"	U

Surrogate: 1,2-Dichloroethane-d4	102 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B09@3'**

**5/15/2024 9:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-03 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.55	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	1.59	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B09@3'**

**5/15/2024 9:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-03 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	99.4 %	60-130			"		"	"	
Surrogate: Pyrene-d10	88.9 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.9 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.69</b>		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>1.48</b>	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>1.92</b>	0.271	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	<b>105</b>	9.33	"	"	"	KMC	"	"	
Cadmium	ND	0.0933	"	"	"	KMC	"	"	
Copper	ND	9.33	"	"	"	KMC	"	"	
Lead	<b>8.01</b>	0.933	"	"	"	KMC	"	"	
Nickel	<b>6.91</b>	0.933	"	"	"	KMC	"	"	
Selenium	ND	0.243	"	"	"	KMC	"	"	
Silver	ND	0.0933	"	"	"	KMC	"	"	
Zinc	<b>46.8</b>	34.5	"	"	"	KMC	"	"	

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B10@3'**

**5/15/2024 9:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.984	mg/L	10	B4E1613	ACC	05/16/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	102 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HKS	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	110 %	70-130			"	"	"	"	

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B10@3'**

**5/15/2024 9:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-04 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.59	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	1.52	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B10@3'**

**5/15/2024 9:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-04 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	102 %	60-130			"		"	"	
Surrogate: Pyrene-d10	88.0 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	97.8 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.59		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	1.44	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.68	0.284	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	53.7	9.80	"	"	"	KMC	"	"	
Cadmium	0.186	0.0980	"	"	"	KMC	"	"	
Copper	ND	9.80	"	"	"	KMC	"	"	
Lead	10.3	0.980	"	"	"	KMC	"	"	
Nickel	4.60	0.980	"	"	"	KMC	"	"	
Selenium	ND	0.255	"	"	"	KMC	"	"	
Silver	ND	0.0980	"	"	"	KMC	"	"	
Zinc	ND	36.3	"	"	"	KMC	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B11@3'**

**5/15/2024 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.100	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	101 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HKS	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.5 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B11@3'**

**5/15/2024 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-05 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	0.562	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	1.03	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B11@3'**

**5/15/2024 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-05 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	101 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	99.2 %	60-130			"		"	"	
Surrogate: Pyrene-d10	89.5 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	100 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.11		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	1.61	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	0.522	0.285	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	ND	9.82	"	"	"	KMC	"	"	
Cadmium	ND	0.0982	"	"	"	KMC	"	"	
Copper	ND	9.82	"	"	"	KMC	"	"	
Lead	1.61	0.982	"	"	"	KMC	"	"	
Nickel	ND	0.982	"	"	"	KMC	"	"	
Selenium	ND	0.255	"	"	"	KMC	"	"	
Silver	ND	0.0982	"	"	"	KMC	"	"	
Zinc	ND	36.3	"	"	"	KMC	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B12@3'**

**5/15/2024 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.462	0.0995	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	239	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	99.3 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	0.0165	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	0.00200	0.00200	"	"	"	HKS	"	"	
Gasoline Range Hydrocarbons	346	5.00	"	25	"	HKS	"	05/16/2024	

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"		05/16/2024	
Surrogate: Toluene-d8	115 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	94.7 %	70-130			"	"		"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B12@3'**

**5/15/2024 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-06 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	<b>2.09</b>	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	<b>0.936</b>	0.823	"	"	"	ACC	"	"	
Sodium	<b>1.83</b>	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	<b>0.086</b>	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	
2-Methylnaphthalene	<b>0.150</b>	0.002	"	"	"	Windo	"	"	
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	<b>0.059</b>	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B12@3'**

**5/15/2024 11:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-06 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	96.5 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	99.8 %	60-130			"		"	"	
Surrogate: Pyrene-d10	90.1 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	99.7 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.41		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	1.49	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	1.75	0.278	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	51.9	9.59	"	"	"	KMC	"	"	
Cadmium	ND	0.0959	"	"	"	KMC	"	"	
Copper	ND	9.59	"	"	"	KMC	"	"	
Lead	6.08	0.959	"	"	"	KMC	"	"	
Nickel	3.59	0.959	"	"	"	KMC	"	"	
Selenium	0.503	0.249	"	"	"	KMC	"	"	
Silver	ND	0.0959	"	"	"	KMC	"	"	
Zinc	ND	35.5	"	"	"	KMC	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B13@3'**

**5/15/2024 11:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	1.62	0.101	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	99.1 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	0.00234	0.00200	"	"	"	HKS	"	"	
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	1.27	0.200	"	"	"	HKS	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	94.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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**B13@3'**

**5/15/2024 11:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-07 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.78	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	1.10	0.823	"	"	"	ACC	"	"	
Sodium	8.42	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.006	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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**B13@3'**

**5/15/2024 11:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-07 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	101 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	99.4 %	60-130			"		"	"	
Surrogate: Pyrene-d10	88.7 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	99.0 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.73		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	7.02	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.62	0.284	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	123	9.79	"	"	"	KMC	"	"	
Cadmium	0.272	0.0979	"	"	"	KMC	"	"	
Copper	9.95	9.79	"	"	"	KMC	"	"	
Lead	14.2	0.979	"	"	"	KMC	"	"	
Nickel	6.57	0.979	"	"	"	KMC	"	"	
Selenium	ND	0.255	"	"	"	KMC	"	"	
Silver	0.103	0.0979	"	"	"	KMC	"	"	
Zinc	57.5	36.2	"	"	"	KMC	"	"	

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B14@3'**

**5/15/2024 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.638	0.100	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	101 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HKS	"	"	U

Surrogate: 1,2-Dichloroethane-d4	106 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	97.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	107 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B14@3'**

**5/15/2024 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-08 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.73	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	8.97	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B14@3'**

**5/15/2024 1:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-08 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	101 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	98.2 %	60-130			"		"	"	
Surrogate: Pyrene-d10	96.2 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	97.1 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.74		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	8.13	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.87	0.258	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	144	8.89	"	"	"	KMC	"	"	
Cadmium	0.254	0.0889	"	"	"	KMC	"	"	
Copper	12.6	8.89	"	"	"	KMC	"	"	
Lead	19.7	0.889	"	"	"	KMC	"	"	
Nickel	9.22	0.889	"	"	"	KMC	"	"	
Selenium	0.245	0.231	"	"	"	KMC	"	"	
Silver	ND	0.0889	"	"	"	KMC	"	"	
Zinc	73.5	32.9	"	"	"	KMC	"	"	

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B15@3'**

**5/15/2024 3:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-09 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.647	0.0998	mg/L	1	B4E1613	ACC	05/16/2024	05/17/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1537	ZZZ	05/15/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	99.3 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	0.00704	0.00200	mg/kg	1	B4E1538	HKS	"	05/16/2024	
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Benzene	ND	0.00200	"	"	"	HKS	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HKS	"	"	U
Toluene	ND	0.00200	"	"	"	HKS	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HKS	"	"	U
Gasoline Range Hydrocarbons	0.296	0.200	"	"	"	HKS	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

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**B15@3'**

**5/15/2024 3:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-09 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.59	0.499	meq/L	10	[CALC]	ACC	05/16/2024	05/17/2024	
Magnesium	1.14	0.823	"	"	"	ACC	"	"	
Sodium	8.43	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1539	Windo	05/15/2024	05/16/2024	U
2-Methylnaphthalene	0.004	0.002	"	"	"	Windo	"	"	
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	0.005	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

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**B15@3'**

**5/15/2024 3:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405490-09 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	101 %	60-130			B4E15 39		05/15/2024	05/16/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	90.4 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.5 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.41		pH Units	1	B4E1619	EAL	05/16/2024	05/17/2024	
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**SAR by 20B Saturated Paste**

SAR	7.21	0.0100	SAR	1	B4E1607	ACC	05/16/2024	05/17/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.29	0.268	mg/kg	10	B4E1541	KMC	05/15/2024	05/16/2024	
Barium	203	9.23	"	"	"	KMC	"	"	
Cadmium	0.205	0.0923	"	"	"	KMC	"	"	
Copper	13.6	9.23	"	"	"	KMC	"	"	
Lead	15.2	0.923	"	"	"	KMC	"	"	
Nickel	12.7	0.923	"	"	"	KMC	"	"	
Selenium	0.344	0.240	"	"	"	KMC	"	"	
Silver	ND	0.0923	"	"	"	KMC	"	"	
Zinc	83.9	34.1	"	"	"	KMC	"	"	

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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 B4E1537 - EPA 3550B</b>										
<b>Blank (B4E1537-BLK1)</b>										
					Prepared: 05/15/2024 Analyzed: 05/15/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	26		"	24.9		104	50-150			

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1537 - EPA 3550B**

**LCS (B4E1537-BS1)**

Prepared: 05/15/2024 Analyzed: 05/15/2024

Diesel (C10-C28)	871	50.0	mg/kg	1000		87.1	70-130			
Residual Range Organics (C28-C40)	988	200	"	1000		98.8	70-130			
Surrogate: o-Terphenyl	60		"	49.8		121	50-150			

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 Facility

**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 B4E1537 - EPA 3550B**

<b>Matrix Spike (B4E1537-MS1)</b>	<b>Source: Y405480-02</b>			<b>Prepared: 05/15/2024 Analyzed: 05/15/2024</b>						
Diesel (C10-C28)	864	50.0	mg/kg	1000	ND	86.4	70-130			
Residual Range Organics (C28-C40)	977	200	"	1000	ND	97.7	70-130			
Surrogate: o-Terphenyl	50		"	49.8		100	50-150			

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 Facility

**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 B4E1537 - EPA 3550B**

<b>Matrix Spike Dup (B4E1537-MSD1)</b>	<b>Source: Y405480-02</b>		<b>Prepared: 05/15/2024 Analyzed: 05/15/2024</b>							
Diesel (C10-C28)	897	50.0	mg/kg	1000	ND	89.7	70-130	3.76	35	
Residual Range Organics (C28-C40)	1000	200	"	1000	ND	100	70-130	2.55	35	
Surrogate: o-Terphenyl	52		"	49.8		104	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 B4E1538 - EPA 5030 (soil)**

**Blank (B4E1538-BLK1)**

Prepared: 05/15/2024 Analyzed: 05/15/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	101		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	100		70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125	110		70-130			

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 Facility

**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 B4E1538 - EPA 5030 (soil)**

**LCS (B4E1538-BS1)**

Prepared: 05/15/2024 Analyzed: 05/15/2024

1,2,4-Trimethylbenzene	0.104	0.00200	mg/kg	0.100		104	70-130			
1,3,5-Trimethylbenzene	0.105	0.00200	"	0.100		105	70-130			
Benzene	0.100	0.00200	"	0.100		100	70-130			
Ethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Naphthalene	0.107	0.00380	"	0.100		107	70-130			
Toluene	0.101	0.00200	"	0.100		101	70-130			
o-Xylene	0.103	0.00200	"	0.100		103	70-130			
m,p-Xylene	0.201	0.00400	"	0.200		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		103	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.9	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 B4E1538 - EPA 5030 (soil)

Matrix Spike (B4E1538-MS1)	Source: Y405480-02			Prepared: 05/15/2024 Analyzed: 05/15/2024						
1,2,4-Trimethylbenzene	0.0788	0.00200	mg/kg	0.100	0.00114	77.6	70-130			
1,3,5-Trimethylbenzene	0.0781	0.00200	"	0.100	ND	78.1	70-130			
Benzene	0.0946	0.00200	"	0.100	0.0402	54.4	70-130			QM-07
Ethylbenzene	0.0779	0.00200	"	0.100	0.00256	75.4	70-130			
Naphthalene	0.0800	0.00380	"	0.100	0.00176	78.2	70-130			
Toluene	0.0721	0.00200	"	0.100	ND	72.1	70-130			
o-Xylene	0.0780	0.00200	"	0.100	ND	78.0	70-130			
m,p-Xylene	0.150	0.00400	"	0.200	0.00100	74.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		107	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		99.3	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 B4E1538 - EPA 5030 (soil)

Matrix Spike Dup (B4E1538-MSD1)	Source: Y405480-02			Prepared: 05/15/2024 Analyzed: 05/15/2024						
1,2,4-Trimethylbenzene	0.101	0.00200	mg/kg	0.100	0.00114	99.9	70-130	24.8	20	QR-02
1,3,5-Trimethylbenzene	0.100	0.00200	"	0.100	ND	100	70-130	24.8	20	QR-02
Benzene	0.120	0.00200	"	0.100	0.0402	80.0	70-130	23.9	20	QR-02
Ethylbenzene	0.101	0.00200	"	0.100	0.00256	98.9	70-130	26.2	20	QR-02
Naphthalene	0.106	0.00380	"	0.100	0.00176	105	70-130	28.3	20	QR-02
Toluene	0.0935	0.00200	"	0.100	ND	93.5	70-130	25.9	20	QR-02
o-Xylene	0.102	0.00200	"	0.100	ND	102	70-130	26.4	20	QR-02
m,p-Xylene	0.197	0.00400	"	0.200	0.00100	97.8	70-130	26.6	20	QR-02
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		98.0	70-130			
Surrogate: Toluene-d8	0.14		"	0.125		108	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		100	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, 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 B4E1541 - EPA 3050B**

**Blank (B4E1541-BLK1)**

Prepared: 05/15/2024 Analyzed: 05/16/2024

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 (B4E1541-BS1)**

Prepared: 05/15/2024 Analyzed: 05/16/2024

Arsenic	4.96	0.284	mg/kg	4.90		101	80-120			
Barium	510	9.79	"	490		104	80-120			
Cadmium	5.25	0.0979	"	4.90		107	80-120			
Copper	48.9	9.79	"	49.0		99.8	80-120			
Lead	5.07	0.979	"	4.90		103	80-120			
Nickel	5.08	0.979	"	4.90		104	80-120			
Selenium	10.0	0.255	"	9.30		108	80-120			
Silver	5.03	0.0979	"	4.90		103	80-120			
Zinc	51.0	36.2	"	49.0		104	80-120			

**Matrix Spike (B4E1541-MS1)**

Source: Y405490-01

Prepared: 05/15/2024 Analyzed: 05/16/2024

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1541 - EPA 3050B**

<b>Matrix Spike (B4E1541-MS1)</b>		<b>Source: Y405490-01</b>			<b>Prepared: 05/15/2024 Analyzed: 05/16/2024</b>					
Arsenic	7.29	0.265	mg/kg	4.56	6.27	22.4	75-125			QM-07
Barium	624	9.13	"	456	110	113	75-125			
Cadmium	5.15	0.0913	"	4.56	0.274	107	75-125			
Copper	52.5	9.13	"	45.6	11.3	90.3	75-125			
Lead	13.0	0.913	"	4.56	8.35	102	75-125			
Nickel	11.6	0.913	"	4.56	7.45	90.0	75-125			
Selenium	9.12	0.237	"	8.67	0.191	103	75-125			
Silver	4.87	0.0913	"	4.56	0.0294	106	75-125			
Zinc	78.8	33.8	"	45.6	34.6	96.8	75-125			
<b>Matrix Spike Dup (B4E1541-MSD1)</b>		<b>Source: Y405490-01</b>			<b>Prepared: 05/15/2024 Analyzed: 05/16/2024</b>					
Arsenic	7.42	0.252	mg/kg	4.34	6.27	26.5	75-125	1.74	20	QM-07
Barium	584	8.67	"	434	110	109	75-125	6.66	20	
Cadmium	4.81	0.0867	"	4.34	0.274	104	75-125	6.82	20	
Copper	50.9	8.67	"	43.4	11.3	91.2	75-125	3.15	20	
Lead	12.5	0.867	"	4.34	8.35	96.5	75-125	3.61	20	
Nickel	10.8	0.867	"	4.34	7.45	76.3	75-125	7.16	20	
Selenium	8.68	0.226	"	8.24	0.191	103	75-125	4.92	20	
Silver	4.53	0.0867	"	4.34	0.0294	104	75-125	7.30	20	
Zinc	76.5	32.1	"	43.4	34.6	96.5	75-125	2.94	20	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1539 - EPA 3580**

**Blank (B4E1539-BLK1)**

Prepared: 05/15/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U

Surrogate: Fluorene-d10	200		ug/kg	200	101	60-130
Surrogate: Anthracene-d10	200		"	200	99.6	60-130
Surrogate: Pyrene-d10	210		"	200	106	60-130
Surrogate: Benzo (a) pyrene-d12	200		"	200	99.1	60-130

**LCS (B4E1539-BS1)**

Prepared: 05/15/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	0.186	0.002	mg/kg	0.200	93.1	70-130
2-Methylnaphthalene	0.186	0.002	"	0.200	92.9	70-130
Acenaphthene	0.187	0.020	"	0.200	93.5	70-130
Anthracene	0.188	0.020	"	0.200	93.8	70-130

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Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1539 - EPA 3580**

**LCS (B4E1539-BS1)**

Prepared: 05/15/2024 Analyzed: 05/16/2024

Benzo (a) anthracene	0.187	0.005	mg/kg	0.200		93.7	70-130			
Benzo (a) pyrene	0.194	0.020	"	0.200		96.8	70-130			
Benzo (b) fluoranthene	0.197	0.020	"	0.200		98.7	70-130			
Benzo (g,h,i) perylene	0.175	0.020	"	0.200		87.6	70-130			
Benzo (k) fluoranthene	0.192	0.020	"	0.200		96.1	70-130			
Chrysene	0.196	0.020	"	0.200		98.2	70-130			
Dibenz (a,h) anthracene	0.203	0.020	"	0.200		102	70-130			
Fluoranthene	0.184	0.020	"	0.200		91.8	70-130			
Fluorene	0.188	0.020	"	0.200		94.2	70-130			
Indeno (1,2,3-cd) pyrene	0.182	0.020	"	0.200		91.2	70-130			
Naphthalene	0.187	0.002	"	0.200		93.7	70-130			
Phenanthrene	0.189	0.020	"	0.200		94.3	70-130			
Pyrene	0.194	0.020	"	0.200		96.8	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		99.2	60-130			
Surrogate: Pyrene-d10	210		"	200		103	60-130			
Surrogate: Benzo (a) pyrene-d12	210		"	200		104	60-130			

**Matrix Spike (B4E1539-MS1)**

Source: Y405480-01

Prepared: 05/15/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	0.190	0.002	mg/kg	0.200	0.0009	94.5	70-130			
2-Methylnaphthalene	0.191	0.002	"	0.200	0.001	94.6	70-130			
Acenaphthene	0.190	0.020	"	0.200	ND	94.8	70-130			
Anthracene	0.194	0.020	"	0.200	0.002	96.0	70-130			
Benzo (a) anthracene	0.188	0.005	"	0.200	0.0008	93.6	70-130			
Benzo (a) pyrene	0.192	0.020	"	0.200	ND	96.0	70-130			
Benzo (b) fluoranthene	0.193	0.020	"	0.200	0.0009	96.0	70-130			
Benzo (g,h,i) perylene	0.186	0.020	"	0.200	0.0004	92.8	70-130			

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1539 - EPA 3580**

<b>Matrix Spike (B4E1539-MS1)</b>		<b>Source: Y405480-01</b>			<b>Prepared: 05/15/2024 Analyzed: 05/16/2024</b>					
Benzo (k) fluoranthene	0.187	0.020	mg/kg	0.200	0.0008	93.0	70-130			
Chrysene	0.195	0.020	"	0.200	0.001	97.0	70-130			
Dibenz (a,h) anthracene	0.208	0.020	"	0.200	ND	104	70-130			
Fluoranthene	0.199	0.020	"	0.200	0.0004	99.2	70-130			
Fluorene	0.190	0.020	"	0.200	ND	94.8	70-130			
Indeno (1,2,3-cd) pyrene	0.191	0.020	"	0.200	ND	95.4	70-130			
Naphthalene	0.190	0.002	"	0.200	0.001	94.4	70-130			
Phenanthrene	0.188	0.020	"	0.200	ND	94.1	70-130			
Pyrene	0.164	0.020	"	0.200	ND	82.0	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		101	60-130			
Surrogate: Anthracene-d10	200		"	200		101	60-130			
Surrogate: Pyrene-d10	170		"	200		86.1	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.3	60-130			

<b>Matrix Spike Dup (B4E1539-MSD1)</b>		<b>Source: Y405480-01</b>			<b>Prepared: 05/15/2024 Analyzed: 05/16/2024</b>					
1-Methylnaphthalene	0.194	0.002	mg/kg	0.200	0.0009	96.4	70-130	1.98	20	
2-Methylnaphthalene	0.195	0.002	"	0.200	0.001	96.6	70-130	2.07	20	
Acenaphthene	0.193	0.020	"	0.200	ND	96.7	70-130	1.98	20	
Anthracene	0.192	0.020	"	0.200	0.002	95.0	70-130	0.959	20	
Benzo (a) anthracene	0.201	0.005	"	0.200	0.0008	100	70-130	6.60	20	
Benzo (a) pyrene	0.199	0.020	"	0.200	ND	99.4	70-130	3.51	20	
Benzo (b) fluoranthene	0.198	0.020	"	0.200	0.0009	98.7	70-130	2.83	20	
Benzo (g,h,i) perylene	0.181	0.020	"	0.200	0.0004	90.2	70-130	2.82	20	
Benzo (k) fluoranthene	0.188	0.020	"	0.200	0.0008	93.6	70-130	0.668	20	
Chrysene	0.201	0.020	"	0.200	0.001	99.9	70-130	2.91	20	
Dibenz (a,h) anthracene	0.209	0.020	"	0.200	ND	105	70-130	0.386	20	
Fluoranthene	0.185	0.020	"	0.200	0.0004	92.2	70-130	7.27	20	

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1539 - EPA 3580**

<b>Matrix Spike Dup (B4E1539-MSD1)</b>	<b>Source: Y405480-01</b>			<b>Prepared: 05/15/2024 Analyzed: 05/16/2024</b>						
Fluorene	0.196	0.020	mg/kg	0.200	ND	97.9	70-130	3.20	20	
Indeno (1,2,3-cd) pyrene	0.190	0.020	"	0.200	ND	95.1	70-130	0.347	20	
Naphthalene	0.196	0.002	"	0.200	0.001	97.0	70-130	2.74	20	
Phenanthrene	0.192	0.020	"	0.200	ND	96.0	70-130	1.99	20	
Pyrene	0.195	0.020	"	0.200	ND	97.7	70-130	17.5	20	
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		100	60-130			
Surrogate: Pyrene-d10	200		"	200		102	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1607 - Saturated Paste Metals**

**Blank (B4E1607-BLK1)**

Prepared: 05/16/2024 Analyzed: 05/17/2024

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

**Duplicate (B4E1607-DUP1)**

**Source: Y405405-01**

Prepared: 05/16/2024 Analyzed: 05/17/2024

Calcium PPM	160	10.0	mg/L		141			12.4	50	
SAR	ND	0.0100	SAR		0.959				200	
Magnesium PPM	48.9	10.0	mg/L		44.6			9.33	50	
Sodium PPM	51.8	10.0	"		51.0			1.55	50	

**Batch B4E1613 - DTPA Sorbitol Preparation**

**Blank (B4E1613-BLK1)**

Prepared: 05/16/2024 Analyzed: 05/17/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4E1613-DUP1)**

**Source: Y405402-01**

Prepared: 05/16/2024 Analyzed: 05/17/2024

Boron	1.12	0.101	mg/L		1.32			16.3	50	
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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1619 - Saturated Paste pH/EC**

**Duplicate (B4E1619-DUP1)**

**Source: Y405405-01**

Prepared: 05/16/2024 Analyzed: 05/17/2024

pH	8.27		pH Units		8.22			0.606	25	
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Wheat Ridge CO 80033

Jeremy Espinoza  
Project Number: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
Facility

### Notes and Definitions

U Sample is Non-Detect.

QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

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 at a wet weight basis.

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May 29, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Sharkey 8&9-35 & 10-3 O SA Project Number - 09A1417  
Facility**

Attached are your analytical results for KMG - Sharkey 8&9-35 & 10-3 O SA Facility received by Origins Laboratory, Inc. May 16, 2024. This project is associated with Origins project number Y405523-01.

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: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B16@3'	Y405523-01	Soil	May 16, 2024 8:45	05/16/2024 15:49
B17@3'	Y405523-02	Soil	May 16, 2024 9:45	05/16/2024 15:49
B18@3'	Y405523-03	Soil	May 16, 2024 10:15	05/16/2024 15:49
B19@3'	Y405523-04	Soil	May 16, 2024 10:45	05/16/2024 15:49
B20@3'	Y405523-05	Soil	May 16, 2024 12:20	05/16/2024 15:49
B21@3'	Y405523-06	Soil	May 16, 2024 14:00	05/16/2024 15:49
B22@3'	Y405523-07	Soil	May 16, 2024 14:30	05/16/2024 15:49
B23@3'	Y405523-08	Soil	May 16, 2024 14:35	05/16/2024 15:49
B24@3'	Y405523-09	Soil	May 16, 2024 14:40	05/16/2024 15:49

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

## ORIGINS

LABORATORY LLC

Client:

Ensolum

Address:

Project Manager:

J. Espinoza

Key:

Project Name:

Sharkey 8&9-35 & 10-3 OSA Facility

W=Water

Project Number:

09A1417

GW=Groundwater

Collected By:

HK

SW=Surface Water

Telephone Number:

KMG Team

Invoice/Billing Info:

L=Liquid

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

ORIGINS WORK ORDER #

445513

Page 1 of 1

#	Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix	Preservative	Analysis											Comments	
							BTEX	MPB	TPH	PAHs	Boron	H/SAR	As	Cd	Cu	Pb	Se		Zn
1	B1Ge31	5/16/14	0845	3	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
2	B17e31	5/16/14	0945	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
3	B18e31	5/16/14	1015	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
4	B19e31	5/16/14	1045	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
5	B20e31	5/16/14	1220	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
6	B21e31	5/16/14	1400	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
7	B22e31	5/16/14	1430	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
8	B23e31	5/16/14	1435	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
9	B24e31	5/16/14	1440	1	S	unp.	X	X	X	X	X	X	X	X	X	X	X	X	
10																			

Relinquished By: [Signature] Date: 5/16/14 Time: 1554  
 Received By: [Signature] Date: 5/16/14 Time: 1554

Temp Received: [Signature] Received On Ice?  Yes  No

Turnaround Time:  SAME DAY  24 Hr  48 Hr  72 Hr

Standard

1725 Elk Place Denver, Co. 80211 | # 303.433.1322 | originslab.com

Origins Laboratory, Inc.  
 Bynon

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.

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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4405523

Client: Ensolum

Client Project ID: Sharkey 8-35 Facility

Checklist Completed by: JTV

Shipped Via: TUO

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

Date/time completed: 5/10/24

Airbill #: N/A

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

Cooler Number/Temperature: 1, 9 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe)

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> ?		/		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? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted 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) JTV

Date/Time Reviewed 5/10/24

Origins Laboratory, Inc.

*J. Bynon*

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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B16@3'**

**5/16/2024 8:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	1.00	mg/L	10	B4E1709	ACC	05/17/2024	05/20/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: *o*-Terphenyl 103 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	<b>1.30</b>	0.200	"	"	"	HK	"	"	

Surrogate: 1,2-Dichloroethane-d4 93.4 % 70-130 " " "  
 Surrogate: Toluene-d8 101 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 102 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B16@3'**

**5/16/2024 8:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-01 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.19	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	0.838	0.823	"	"	"	ACC	"	"	
Sodium	6.50	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.010	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	
2-Methylnaphthalene	0.025	0.002	"	"	"	Windo	"	"	
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	0.018	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B16@3'**

**5/16/2024 8:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-01 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	103 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	99.5 %	60-130			"		"	"	
Surrogate: Pyrene-d10	89.5 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	97.6 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.98		pH Units	1	B4E1721	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	6.45	0.0100	SAR	1	B4E1715	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.18	0.246	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	192	8.47	"	"	"	ACN	"	"	
Cadmium	0.182	0.0847	"	"	"	ACN	"	"	
Copper	15.4	8.47	"	"	"	ACN	"	"	
Lead	14.8	0.847	"	"	"	ACN	"	"	
Nickel	11.6	0.847	"	"	"	ACN	"	"	
Selenium	0.288	0.220	"	"	"	ACN	"	"	
Silver	ND	0.0847	"	"	"	ACN	"	"	
Zinc	80.8	31.3	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

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 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B17@3'**

**5/16/2024 9:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	1.00	mg/L	10	B4E1709	ACC	05/17/2024	05/20/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	<b>812</b>	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	106 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.0500	mg/kg	25	B4E1651	HK	05/16/2024	05/17/2024	R-05, U
1,3,5-Trimethylbenzene	ND	0.0500	"	"	"	HK	"	"	R-05, U
Benzene	ND	0.0500	"	"	"	HK	"	"	R-05, U
Ethylbenzene	ND	0.0500	"	"	"	HK	"	"	R-05, U
Toluene	ND	0.0500	"	"	"	HK	"	"	R-05, U
Xylenes, total	ND	0.0500	"	"	"	HK	"	"	R-05, U
Gasoline Range Hydrocarbons	<b>570</b>	50.0	"	250	"	HK	"	05/16/2024	

Surrogate: 1,2-Dichloroethane-d4	94.3 %	70-130			"	"		05/17/2024	
Surrogate: Toluene-d8	99.3 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	135 %	70-130			"	"		"	S-GC

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B17@3'**

**5/16/2024 9:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-02 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	0.940	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	4.59	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.170	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/17/2024	
2-Methylnaphthalene	0.352	0.002	"	"	"	Windo	"	"	
Acenaphthene	0.027	0.020	"	"	"	Windo	"	"	
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	0.208	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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 Project Number: 09A1417  
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**B17@3'**

**5/16/2024 9:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-02 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	95.4 %	60-130			B4E16 47		05/16/2024	05/17/2024	
Surrogate: Anthracene-d10	101 %	60-130			"		"	"	
Surrogate: Pyrene-d10	86.9 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.7 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.71		pH Units	1	B4E1721	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	5.31	0.0100	SAR	1	B4E1715	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.90	0.260	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	148	8.98	"	"	"	ACN	"	"	
Cadmium	0.153	0.0898	"	"	"	ACN	"	"	
Copper	15.0	8.98	"	"	"	ACN	"	"	
Lead	11.9	0.898	"	"	"	ACN	"	"	
Nickel	11.1	0.898	"	"	"	ACN	"	"	
Selenium	0.244	0.234	"	"	"	ACN	"	"	
Silver	ND	0.0898	"	"	"	ACN	"	"	
Zinc	80.2	33.2	"	"	"	ACN	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B18@3'**

**5/16/2024 10:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.329	0.100	mg/L	1	B4E1709	ACC	05/17/2024	05/20/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	270	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	97.6 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	160	5.00	"	25	"	HK	"	05/17/2024	

Surrogate: 1,2-Dichloroethane-d4	86.4 %	70-130			"	"		05/16/2024	
Surrogate: Toluene-d8	110 %	70-130			"	"		"	
Surrogate: 4-Bromofluorobenzene	222 %	70-130			"	"		"	S-GC

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B18@3'**

**5/16/2024 10:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-03 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.46	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	0.907	0.823	"	"	"	ACC	"	"	
Sodium	3.78	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.313	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	
2-Methylnaphthalene	0.431	0.002	"	"	"	Windo	"	"	
Acenaphthene	0.075	0.020	"	"	"	Windo	"	"	
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	0.075	0.020	"	"	"	Windo	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	0.046	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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 Project Number: 09A1417  
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**B18@3'**

**5/16/2024 10:15:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-03 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	97.8 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	101 %	60-130			"		"	"	
Surrogate: Pyrene-d10	92.0 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	100 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.84		pH Units	1	B4E1721	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	3.47	0.0100	SAR	1	B4E1715	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.87	0.281	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	121	9.69	"	"	"	ACN	"	"	
Cadmium	0.120	0.0969	"	"	"	ACN	"	"	
Copper	10.2	9.69	"	"	"	ACN	"	"	
Lead	11.1	0.969	"	"	"	ACN	"	"	
Nickel	7.95	0.969	"	"	"	ACN	"	"	
Selenium	ND	0.252	"	"	"	ACN	"	"	
Silver	ND	0.0969	"	"	"	ACN	"	"	
Zinc	52.2	35.8	"	"	"	ACN	"	"	

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Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B19@3'**

**5/16/2024 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.327	0.100	mg/L	1	B4E1709	ACC	05/17/2024	05/20/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	101 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	83.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.2 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B19@3'**

**5/16/2024 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-04 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	2.25	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	1.37	0.823	"	"	"	ACC	"	"	
Sodium	3.50	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B19@3'**

**5/16/2024 10:45:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-04 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	87.8 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	96.5 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.54		pH Units	1	B4E1721	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	2.60	0.0100	SAR	1	B4E1715	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.05	0.262	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	140	9.05	"	"	"	ACN	"	"	
Cadmium	0.109	0.0905	"	"	"	ACN	"	"	
Copper	ND	9.05	"	"	"	ACN	"	"	
Lead	7.68	0.905	"	"	"	ACN	"	"	
Nickel	7.53	0.905	"	"	"	ACN	"	"	
Selenium	ND	0.235	"	"	"	ACN	"	"	
Silver	ND	0.0905	"	"	"	ACN	"	"	
Zinc	ND	33.5	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B20@3'**

**5/16/2024 12:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	1.00	mg/L	10	B4E1709	ACC	05/17/2024	05/20/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: o-Terphenyl	94.9 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	HK	"	"	U

Surrogate: 1,2-Dichloroethane-d4	84.9 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	101 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.8 %	70-130			"	"	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B20@3'**

**5/16/2024 12:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-05 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	<b>0.807</b>	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	<b>0.850</b>	0.823	"	"	"	ACC	"	"	
Sodium	<b>8.34</b>	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	<b>0.002</b>	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B20@3'**

**5/16/2024 12:20:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-05 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	87.6 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	101 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.32		pH Units	1	B4E1721	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	9.16	0.0100	SAR	1	B4E1715	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.60	0.254	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	184	8.76	"	"	"	ACN	"	"	
Cadmium	0.131	0.0876	"	"	"	ACN	"	"	
Copper	14.0	8.76	"	"	"	ACN	"	"	
Lead	12.8	0.876	"	"	"	ACN	"	"	
Nickel	13.4	0.876	"	"	"	ACN	"	"	
Selenium	0.231	0.228	"	"	"	ACN	"	"	
Silver	ND	0.0876	"	"	"	ACN	"	"	
Zinc	80.2	32.4	"	"	"	ACN	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B21@3'**

**5/16/2024 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.387	0.100	mg/L	1	B4E1709	ACC	05/17/2024	05/20/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: <i>o</i> -Terphenyl	99.4 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	0.573	0.200	"	"	"	HK	"	"	

Surrogate: 1,2-Dichloroethane-d4	87.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	129 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	97.1 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B21@3'**

**5/16/2024 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-06 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	2.54	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	1.77	0.823	"	"	"	ACC	"	"	
Sodium	3.32	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	Windo	"	"	U
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	ND	0.002	"	"	"	Windo	"	"	U
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417  
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**B21@3'**

**5/16/2024 2:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-06 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	103 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	90.3 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.6 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.29		pH Units	1	B4E1721	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	2.26	0.0100	SAR	1	B4E1715	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.73	0.260	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	57.6	8.97	"	"	"	ACN	"	"	
Cadmium	ND	0.0897	"	"	"	ACN	"	"	
Copper	13.0	8.97	"	"	"	ACN	"	"	
Lead	7.79	0.897	"	"	"	ACN	"	"	
Nickel	6.98	0.897	"	"	"	ACN	"	"	
Selenium	0.419	0.233	"	"	"	ACN	"	"	
Silver	ND	0.0897	"	"	"	ACN	"	"	
Zinc	ND	33.2	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B22@3'**

**5/16/2024 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.303	0.100	mg/L	1	B4E1709	ACC	05/17/2024	05/20/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: <i>o</i> -Terphenyl	94.5 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	0.755	0.200	"	"	"	HK	"	"	

Surrogate: 1,2-Dichloroethane-d4	78.5 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.6 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	102 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B22@3'**

**5/16/2024 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-07 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.14	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	ND	0.823	"	"	"	ACC	"	"	
Sodium	5.80	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.007	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	
2-Methylnaphthalene	0.014	0.002	"	"	"	Windo	"	"	
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	0.003	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B22@3'**

**5/16/2024 2:30:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-07 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	87.2 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	96.4 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.32		pH Units	1	B4E1721	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	5.96	0.0100	SAR	1	B4E1715	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.70	0.274	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	153	9.45	"	"	"	ACN	"	"	
Cadmium	0.190	0.0945	"	"	"	ACN	"	"	
Copper	12.5	9.45	"	"	"	ACN	"	"	
Lead	12.9	0.945	"	"	"	ACN	"	"	
Nickel	9.09	0.945	"	"	"	ACN	"	"	
Selenium	0.247	0.246	"	"	"	ACN	"	"	
Silver	ND	0.0945	"	"	"	ACN	"	"	
Zinc	64.5	35.0	"	"	"	ACN	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B23@3'**

**5/16/2024 2:35:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.503	0.0989	mg/L	1	B4E1710	ACC	05/17/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/16/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: <i>o</i> -Terphenyl	104 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	4.73	0.200	"	"	"	HK	"	"	

Surrogate: 1,2-Dichloroethane-d4	89.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

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 Wheat Ridge CO 80033

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 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B23@3'**

**5/16/2024 2:35:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-08 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	<b>2.30</b>	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	<b>1.09</b>	0.823	"	"	"	ACC	"	"	
Sodium	<b>3.46</b>	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	<b>0.043</b>	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	
2-Methylnaphthalene	<b>0.091</b>	0.002	"	"	"	Windo	"	"	
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	<b>0.018</b>	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B23@3'**

**5/16/2024 2:35:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-08 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	89.5 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	100 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.22		pH Units	1	B4E1722	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	2.65	0.0100	SAR	1	B4E1716	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.61	0.261	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	160	9.00	"	"	"	ACN	"	"	
Cadmium	0.165	0.0900	"	"	"	ACN	"	"	
Copper	11.0	9.00	"	"	"	ACN	"	"	
Lead	11.2	0.900	"	"	"	ACN	"	"	
Nickel	8.24	0.900	"	"	"	ACN	"	"	
Selenium	ND	0.234	"	"	"	ACN	"	"	
Silver	ND	0.0900	"	"	"	ACN	"	"	
Zinc	60.2	33.3	"	"	"	ACN	"	"	

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 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B24@3'**

**5/16/2024 2:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-09 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	<b>0.694</b>	0.100	mg/L	1	B4E1710	ACC	05/17/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1645	ADM	05/16/2024	05/17/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ADM	"	"	U

Surrogate: *o*-Terphenyl 96.8 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1651	HK	05/16/2024	05/16/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Benzene	ND	0.00200	"	"	"	HK	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	HK	"	"	U
Toluene	ND	0.00200	"	"	"	HK	"	"	U
Xylenes, total	ND	0.00200	"	"	"	HK	"	"	U
Gasoline Range Hydrocarbons	<b>0.254</b>	0.200	"	"	"	HK	"	"	

Surrogate: 1,2-Dichloroethane-d4 87.9 % 70-130 " " "  
 Surrogate: Toluene-d8 102 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 101 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

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Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B24@3'**

**5/16/2024 2:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-09 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.22	0.499	meq/L	10	[CALC]	ACC	05/17/2024	05/21/2024	
Magnesium	0.828	0.823	"	"	"	ACC	"	"	
Sodium	4.90	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.013	0.002	mg/kg	1	B4E1647	Windo	05/16/2024	05/16/2024	
2-Methylnaphthalene	0.016	0.002	"	"	"	Windo	"	"	
Acenaphthene	ND	0.020	"	"	"	Windo	"	"	U
Anthracene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	Windo	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Chrysene	ND	0.020	"	"	"	Windo	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	Windo	"	"	U
Fluoranthene	ND	0.020	"	"	"	Windo	"	"	U
Fluorene	ND	0.020	"	"	"	Windo	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	Windo	"	"	U
Naphthalene	0.007	0.002	"	"	"	Windo	"	"	
Pyrene	ND	0.020	"	"	"	Windo	"	"	U

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**B24@3'**

**5/16/2024 2:40:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405523-09 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	102 %	60-130			B4E16 47		05/16/2024	05/16/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	87.9 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.3 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.27		pH Units	1	B4E1722	EAL	05/17/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	4.84	0.0100	SAR	1	B4E1716	ACC	05/17/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.16	0.253	mg/kg	10	B4E1644	ACN	05/16/2024	05/17/2024	
Barium	80.8	8.73	"	"	"	ACN	"	"	
Cadmium	0.159	0.0873	"	"	"	ACN	"	"	
Copper	9.41	8.73	"	"	"	ACN	"	"	
Lead	9.84	0.873	"	"	"	ACN	"	"	
Nickel	5.55	0.873	"	"	"	ACN	"	"	
Selenium	ND	0.227	"	"	"	ACN	"	"	
Silver	0.0908	0.0873	"	"	"	ACN	"	"	
Zinc	40.7	32.3	"	"	"	ACN	"	"	

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 Project Number: 09A1417  
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 Facility

**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 B4E1645 - EPA 3550B</b>										
<b>Blank (B4E1645-BLK1)</b>										
					Prepared: 05/16/2024 Analyzed: 05/16/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	26		"	24.9		105	50-150			

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
 Facility

**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 B4E1645 - EPA 3550B**

**LCS (B4E1645-BS1)**

Prepared: 05/16/2024 Analyzed: 05/16/2024

Diesel (C10-C28)	936	50.0	mg/kg	1000		93.6	70-130			
Residual Range Organics (C28-C40)	1050	200	"	1000		105	70-130			
Surrogate: o-Terphenyl	64		"	49.8		129	50-150			

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 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1645 - EPA 3550B**

<b>Matrix Spike (B4E1645-MS1)</b>	<b>Source: Y405523-01</b>			<b>Prepared: 05/16/2024 Analyzed: 05/16/2024</b>						
Diesel (C10-C28)	878	50.0	mg/kg	1000	ND	87.8	70-130			
Residual Range Organics (C28-C40)	991	200	"	1000	ND	99.1	70-130			
Surrogate: o-Terphenyl	60		"	49.8		121	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 B4E1645 - EPA 3550B

Matrix Spike Dup (B4E1645-MSD1)	Source: Y405523-01			Prepared: 05/16/2024 Analyzed: 05/16/2024						
Diesel (C10-C28)	895	50.0	mg/kg	1000	ND	89.5	70-130	1.95	35	
Residual Range Organics (C28-C40)	1010	200	"	1000	ND	101	70-130	2.10	35	
Surrogate: o-Terphenyl	62		"	49.8		124	50-150			

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 Facility

**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 B4E1651 - EPA 5030 (soil)**

**Blank (B4E1651-BLK1)**

Prepared: 05/16/2024 Analyzed: 05/16/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125	86.0		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	102		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	97.2		70-130			

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 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
 Facility

**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 B4E1651 - EPA 5030 (soil)**

**LCS (B4E1651-BS1)**

Prepared: 05/16/2024 Analyzed: 05/16/2024

1,2,4-Trimethylbenzene	0.103	0.00200	mg/kg	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Benzene	0.0987	0.00200	"	0.100		98.7	70-130			
Ethylbenzene	0.102	0.00200	"	0.100		102	70-130			
Naphthalene	0.102	0.00380	"	0.100		102	70-130			
Toluene	0.0865	0.00200	"	0.100		86.5	70-130			
o-Xylene	0.103	0.00200	"	0.100		103	70-130			
m,p-Xylene	0.207	0.00400	"	0.200		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		84.3	70-130			
Surrogate: Toluene-d8	0.11		"	0.125		86.3	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.3	70-130			

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Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1651 - EPA 5030 (soil)

Matrix Spike (B4E1651-MS1)	Source: Y405523-01			Prepared: 05/16/2024 Analyzed: 05/16/2024						
1,2,4-Trimethylbenzene	0.0936	0.00200	mg/kg	0.100	ND	93.6	70-130			
1,3,5-Trimethylbenzene	0.0904	0.00200	"	0.100	ND	90.4	70-130			
Benzene	0.0949	0.00200	"	0.100	ND	94.9	70-130			
Ethylbenzene	0.0915	0.00200	"	0.100	ND	91.5	70-130			
Naphthalene	0.0910	0.00380	"	0.100	0.00644	84.6	70-130			
Toluene	0.0969	0.00200	"	0.100	ND	96.9	70-130			
o-Xylene	0.0871	0.00200	"	0.100	ND	87.1	70-130			
m,p-Xylene	0.184	0.00400	"	0.200	ND	92.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.10		"	0.125		83.3	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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Jeremy Espinoza  
 Project Number: 09A1417  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1651 - EPA 5030 (soil)

Matrix Spike Dup (B4E1651-MSD1)	Source: Y405523-01			Prepared: 05/16/2024 Analyzed: 05/16/2024						
1,2,4-Trimethylbenzene	0.0899	0.00200	mg/kg	0.100	ND	89.9	70-130	3.95	20	
1,3,5-Trimethylbenzene	0.0890	0.00200	"	0.100	ND	89.0	70-130	1.56	20	
Benzene	0.0962	0.00200	"	0.100	ND	96.2	70-130	1.34	20	
Ethylbenzene	0.0901	0.00200	"	0.100	ND	90.1	70-130	1.59	20	
Naphthalene	0.0946	0.00380	"	0.100	0.00644	88.2	70-130	3.86	20	
Toluene	0.0936	0.00200	"	0.100	ND	93.6	70-130	3.53	20	
o-Xylene	0.0847	0.00200	"	0.100	ND	84.7	70-130	2.70	20	
m,p-Xylene	0.178	0.00400	"	0.200	ND	89.0	70-130	3.24	20	
Surrogate: 1,2-Dichloroethane-d4	0.11		"	0.125		85.8	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		104	70-130			

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**Volatile Organic Compounds by GC/MS SW846 8260D - Quality Control**  
**Origins Laboratory, 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 B4E1644 - EPA 3050B**

**Blank (B4E1644-BLK1)**

Prepared: 05/16/2024 Analyzed: 05/17/2024

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 (B4E1644-BS1)**

Prepared: 05/16/2024 Analyzed: 05/17/2024

Arsenic	4.82	0.290	mg/kg	5.00	96.4	80-120
Barium	497	10.0	"	500	99.5	80-120
Cadmium	4.85	0.100	"	5.00	97.1	80-120
Copper	49.9	10.0	"	50.0	99.9	80-120
Lead	4.76	1.00	"	5.00	95.2	80-120
Nickel	4.84	1.00	"	5.00	96.8	80-120
Selenium	9.11	0.260	"	9.50	95.9	80-120
Silver	4.88	0.100	"	5.00	97.7	80-120
Zinc	48.4	37.0	"	50.0	96.8	80-120

**Matrix Spike (B4E1644-MS1)**

**Source: Y405523-01**

Prepared: 05/16/2024 Analyzed: 05/17/2024

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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 B4E1644 - EPA 3050B**

<b>Matrix Spike (B4E1644-MS1)</b>		<b>Source: Y405523-01</b>			Prepared: 05/16/2024 Analyzed: 05/17/2024					
Arsenic	7.35	0.249	mg/kg	4.30	3.18	97.0	75-125			
Barium	671	8.59	"	430	192	111	75-125			
Cadmium	4.32	0.0859	"	4.30	0.182	96.4	75-125			
Copper	61.1	8.59	"	43.0	15.4	106	75-125			
Lead	17.1	0.859	"	4.30	14.8	52.9	75-125			QM-07
Nickel	16.7	0.859	"	4.30	11.6	119	75-125			
Selenium	8.12	0.223	"	8.16	0.288	96.0	75-125			
Silver	4.29	0.0859	"	4.30	0.0813	98.0	75-125			
Zinc	126	31.8	"	43.0	80.8	106	75-125			

<b>Matrix Spike Dup (B4E1644-MSD1)</b>		<b>Source: Y405523-01</b>			Prepared: 05/16/2024 Analyzed: 05/17/2024					
Arsenic	8.21	0.280	mg/kg	4.83	3.18	104	75-125	11.1	20	
Barium	764	9.66	"	483	192	118	75-125	13.0	20	
Cadmium	5.01	0.0966	"	4.83	0.182	100	75-125	14.8	20	
Copper	68.7	9.66	"	48.3	15.4	110	75-125	11.7	20	
Lead	19.3	0.966	"	4.83	14.8	93.5	75-125	12.3	20	
Nickel	18.6	0.966	"	4.83	11.6	146	75-125	10.9	20	QM-07
Selenium	9.63	0.251	"	9.17	0.288	102	75-125	17.0	20	
Silver	4.90	0.0966	"	4.83	0.0813	99.9	75-125	13.3	20	
Zinc	140	35.7	"	48.3	80.8	123	75-125	10.7	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 B4E1647 - EPA 3580**

**Blank (B4E1647-BLK1)**

Prepared: 05/16/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		99.1	60-130			
Surrogate: Pyrene-d10	170		"	200		85.2	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.0	60-130			

**LCS (B4E1647-BS1)**

Prepared: 05/16/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	0.175	0.002	mg/kg	0.200		87.3	70-130			
2-Methylnaphthalene	0.174	0.002	"	0.200		87.1	70-130			
Acenaphthene	0.175	0.020	"	0.200		87.3	70-130			
Anthracene	0.169	0.020	"	0.200		84.3	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 B4E1647 - EPA 3580**

**LCS (B4E1647-BS1)**

Prepared: 05/16/2024 Analyzed: 05/16/2024

Benzo (a) anthracene	0.178	0.005	mg/kg	0.200		88.8	70-130			
Benzo (a) pyrene	0.173	0.020	"	0.200		86.7	70-130			
Benzo (b) fluoranthene	0.171	0.020	"	0.200		85.6	70-130			
Benzo (g,h,i) perylene	0.163	0.020	"	0.200		81.3	70-130			
Benzo (k) fluoranthene	0.164	0.020	"	0.200		82.1	70-130			
Chrysene	0.188	0.020	"	0.200		93.8	70-130			
Dibenz (a,h) anthracene	0.179	0.020	"	0.200		89.7	70-130			
Fluoranthene	0.181	0.020	"	0.200		90.7	70-130			
Fluorene	0.176	0.020	"	0.200		88.1	70-130			
Indeno (1,2,3-cd) pyrene	0.158	0.020	"	0.200		79.2	70-130			
Naphthalene	0.175	0.002	"	0.200		87.4	70-130			
Phenanthrene	0.171	0.020	"	0.200		85.6	70-130			
Pyrene	0.156	0.020	"	0.200		78.0	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		98.5	60-130			
Surrogate: Pyrene-d10	180		"	200		89.0	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		94.8	60-130			

**Matrix Spike (B4E1647-MS1)**

Source: Y405523-01

Prepared: 05/16/2024 Analyzed: 05/16/2024

1-Methylnaphthalene	0.184	0.002	mg/kg	0.200	0.010	87.0	70-130			
2-Methylnaphthalene	0.196	0.002	"	0.200	0.025	85.1	70-130			
Acenaphthene	0.177	0.020	"	0.200	ND	88.5	70-130			
Anthracene	0.173	0.020	"	0.200	ND	86.4	70-130			
Benzo (a) anthracene	0.184	0.005	"	0.200	0.0005	91.6	70-130			
Benzo (a) pyrene	0.174	0.020	"	0.200	ND	86.8	70-130			
Benzo (b) fluoranthene	0.172	0.020	"	0.200	0.0005	85.7	70-130			
Benzo (g,h,i) perylene	0.168	0.020	"	0.200	0.0006	83.5	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 B4E1647 - EPA 3580**

<b>Matrix Spike (B4E1647-MS1)</b>		<b>Source: Y405523-01</b>			Prepared: 05/16/2024 Analyzed: 05/16/2024					
Benzo (k) fluoranthene	0.160	0.020	mg/kg	0.200	0.0006	79.6	70-130			
Chrysene	0.187	0.020	"	0.200	0.0005	93.3	70-130			
Dibenz (a,h) anthracene	0.184	0.020	"	0.200	ND	92.0	70-130			
Fluoranthene	0.182	0.020	"	0.200	ND	91.1	70-130			
Fluorene	0.181	0.020	"	0.200	ND	90.4	70-130			
Indeno (1,2,3-cd) pyrene	0.160	0.020	"	0.200	ND	80.1	70-130			
Naphthalene	0.195	0.002	"	0.200	0.018	88.6	70-130			
Phenanthrene	0.175	0.020	"	0.200	ND	87.3	70-130			
Pyrene	0.166	0.020	"	0.200	ND	83.0	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		98.8	60-130			
Surrogate: Pyrene-d10	190		"	200		93.0	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.7	60-130			

<b>Matrix Spike Dup (B4E1647-MSD1)</b>		<b>Source: Y405523-01</b>			Prepared: 05/16/2024 Analyzed: 05/16/2024					
1-Methylnaphthalene	0.194	0.002	mg/kg	0.200	0.010	91.8	70-130	5.12	20	
2-Methylnaphthalene	0.209	0.002	"	0.200	0.025	91.5	70-130	6.42	20	
Acenaphthene	0.183	0.020	"	0.200	ND	91.7	70-130	3.56	20	
Anthracene	0.181	0.020	"	0.200	ND	90.6	70-130	4.68	20	
Benzo (a) anthracene	0.181	0.005	"	0.200	0.0005	90.5	70-130	1.29	20	
Benzo (a) pyrene	0.185	0.020	"	0.200	ND	92.6	70-130	6.52	20	
Benzo (b) fluoranthene	0.188	0.020	"	0.200	0.0005	93.5	70-130	8.73	20	
Benzo (g,h,i) perylene	0.177	0.020	"	0.200	0.0006	88.0	70-130	5.31	20	
Benzo (k) fluoranthene	0.175	0.020	"	0.200	0.0006	87.1	70-130	8.99	20	
Chrysene	0.188	0.020	"	0.200	0.0005	93.9	70-130	0.662	20	
Dibenz (a,h) anthracene	0.196	0.020	"	0.200	ND	98.0	70-130	6.27	20	
Fluoranthene	0.194	0.020	"	0.200	ND	96.8	70-130	6.11	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 B4E1647 - EPA 3580

Matrix Spike Dup (B4E1647-MSD1)	Source: Y405523-01			Prepared: 05/16/2024 Analyzed: 05/16/2024						
Fluorene	0.188	0.020	mg/kg	0.200	ND	93.8	70-130	3.70	20	
Indeno (1,2,3-cd) pyrene	0.172	0.020	"	0.200	ND	86.1	70-130	7.26	20	
Naphthalene	0.202	0.002	"	0.200	0.018	92.2	70-130	3.62	20	
Phenanthrene	0.182	0.020	"	0.200	ND	90.9	70-130	4.04	20	
Pyrene	0.161	0.020	"	0.200	ND	80.7	70-130	2.85	20	
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	200		"	200		99.3	60-130			
Surrogate: Pyrene-d10	180		"	200		88.2	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.3	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 B4E1709 - DTPA Sorbitol Preparation**

**Blank (B4E1709-BLK1)**

Prepared: 05/17/2024 Analyzed: 05/20/2024

Boron ND 0.100 mg/L

**Duplicate (B4E1709-DUP1)**

**Source: Y405508-07**

Prepared: 05/17/2024 Analyzed: 05/20/2024

Boron 0.464 0.100 mg/L 0.362 24.6 50

**Batch B4E1710 - DTPA Sorbitol Preparation**

**Blank (B4E1710-BLK1)**

Prepared: 05/17/2024 Analyzed: 05/22/2024

Boron ND 0.100 mg/L

**Duplicate (B4E1710-DUP1)**

**Source: Y405523-08**

Prepared: 05/17/2024 Analyzed: 05/22/2024

Boron 0.584 0.0993 mg/L 0.503 15.0 50

**Batch B4E1715 - Saturated Paste Metals**

**Blank (B4E1715-BLK1)**

Prepared: 05/17/2024 Analyzed: 05/21/2024

SAR ND 0.0100 SAR

Calcium PPM ND 10.0 mg/L

Magnesium PPM ND 10.0 "

Sodium PPM ND 10.0 "

**Duplicate (B4E1715-DUP1)**

**Source: Y405508-07**

Prepared: 05/17/2024 Analyzed: 05/21/2024

SAR ND 0.0100 SAR 1.28 200

Calcium PPM 414 10.0 mg/L 479 14.7 50

Magnesium PPM 110 10.0 " 121 10.1 50

Sodium PPM 114 10.0 " 121 5.86 50

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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 B4E1716 - Saturated Paste Metals**

**Blank (B4E1716-BLK1)**

Prepared: 05/17/2024 Analyzed: 05/21/2024

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

**Duplicate (B4E1716-DUP1)**

**Source: Y405523-08**

Prepared: 05/17/2024 Analyzed: 05/21/2024

SAR	ND	0.0100	SAR		2.65				200	
Calcium PPM	44.8	10.0	mg/L		46.2			3.06	50	
Magnesium PPM	12.9	10.0	"		13.3			3.06	50	
Sodium PPM	79.0	10.0	"		79.5			0.631	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 B4E1721 - Saturated Paste pH/EC**

**Duplicate (B4E1721-DUP1)**

**Source: Y405508-07**

Prepared: 05/17/2024 Analyzed: 05/21/2024

pH	8.17		pH Units		8.14			0.368	25	
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**Batch B4E1722 - Saturated Paste pH/EC**

**Duplicate (B4E1722-DUP1)**

**Source: Y405523-08**

Prepared: 05/17/2024 Analyzed: 05/21/2024

pH	8.25		pH Units		8.22			0.364	25	
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*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.*

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

Jeremy Espinoza  
Project Number: 09A1417  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
Facility

**Notes and Definitions**

- U Sample is Non-Detect.
  
  - S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
  
  - R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
  
  - 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 at a wet weight basis.

Origins Laboratory, Inc.



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May 29, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Sharkey 8&9-35 & 10-3 O SA Project Number - 09A1417396  
Facility**

Attached are your analytical results for KMG - Sharkey 8&9-35 & 10-3 O SA Facility received by Origins Laboratory, Inc. May 17, 2024. This project is associated with Origins project number Y405549-01.

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: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B25@3'	Y405549-01	Soil	May 17, 2024 8:30	05/17/2024 13:43
B26@3'	Y405549-02	Soil	May 17, 2024 8:40	05/17/2024 13:43
B27@3'	Y405549-03	Soil	May 17, 2024 8:50	05/17/2024 13:43
B28@3'	Y405549-04	Soil	May 17, 2024 11:00	05/17/2024 13:43
B29@3'	Y405549-05	Soil	May 17, 2024 11:05	05/17/2024 13:43
B30@3'	Y405549-06	Soil	May 17, 2024 11:10	05/17/2024 13:43
B31@3'	Y405549-07	Soil	May 17, 2024 13:00	05/17/2024 13:43
B32@3'	Y405549-08	Soil	May 17, 2024 13:10	05/17/2024 13:43

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4405549

Client: Ensolum

Client Project ID: Sharkey

Checklist Completed by: JST

Shipped Via: HU

Date/time completed: 5/17/24

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

Airbill #: N/A

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

Cooler Number/Temperature: 116 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe) \_\_\_\_\_ °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? If yes, contact client and note in narrative.			/	
Are samples preserved that require preservation and was it checked <sup>(1)</sup> ? (note ID of confirmation instrument used in comments) / (preservation is not confirmed for subcontracted 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) JST

Date/Time Reviewed 5/17/24

Origins Laboratory, Inc.

*J. Bynon*

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.

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B25@3'**

**5/17/2024 8:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.557	0.0994	mg/L	1	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/17/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	83.2 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1737	JSM	05/17/2024	05/17/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	107 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	103 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.3 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B25@3'**

**5/17/2024 8:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-01 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	<b>3.25</b>	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	<b>1.60</b>	0.823	"	"	"	ACC	"	"	
Sodium	<b>4.67</b>	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/17/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	<b>0.007</b>	0.005	"	"	"	agile	"	"	
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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Ensolum  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B25@3'**

**5/17/2024 8:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-01 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	98.9 %	60-130			B4E17 33		05/17/2024	05/17/2024	
Surrogate: Anthracene-d10	101 %	60-130			"		"	"	
Surrogate: Pyrene-d10	98.1 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	97.5 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.24</b>		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>3.00</b>	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>3.90</b>	0.246	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	<b>218</b>	8.49	"	"	"	ACN	"	"	
Cadmium	<b>0.273</b>	0.0849	"	"	"	ACN	"	"	
Copper	<b>14.5</b>	8.49	"	"	"	ACN	"	"	
Lead	<b>13.7</b>	0.849	"	"	"	ACN	"	"	
Nickel	<b>14.1</b>	0.849	"	"	"	ACN	"	"	
Selenium	<b>0.397</b>	0.221	"	"	"	ACN	"	"	
Silver	ND	0.0849	"	"	"	ACN	"	"	
Zinc	<b>87.1</b>	31.4	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B26@3'**

**5/17/2024 8:40:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.551	0.0997	mg/L	1	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/17/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	82.8 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1737	JSM	05/17/2024	05/17/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	0.302	0.200	"	"	"	JSM	"	"	

Surrogate: 1,2-Dichloroethane-d4	105 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.0 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B26@3'**

**5/17/2024 8:40:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-02 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	2.00	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	1.55	0.823	"	"	"	ACC	"	"	
Sodium	5.40	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/17/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B26@3'**

**5/17/2024 8:40:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-02 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	105 %	60-130			B4E17 33		05/17/2024	05/17/2024	
Surrogate: Anthracene-d10	97.7 %	60-130			"		"	"	
Surrogate: Pyrene-d10	107 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	101 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.27		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	4.05	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.51	0.258	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	152	8.88	"	"	"	ACN	"	"	
Cadmium	0.162	0.0888	"	"	"	ACN	"	"	
Copper	10.8	8.88	"	"	"	ACN	"	"	
Lead	11.7	0.888	"	"	"	ACN	"	"	
Nickel	9.24	0.888	"	"	"	ACN	"	"	
Selenium	0.277	0.231	"	"	"	ACN	"	"	
Silver	ND	0.0888	"	"	"	ACN	"	"	
Zinc	64.7	32.9	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B27@3'**

**5/17/2024 8:50:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	<b>6.63</b>	0.989	mg/L	10	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/17/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	66.6 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1737	JSM	05/17/2024	05/17/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	<b>2.85</b>	0.200	"	"	"	JSM	"	"	

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

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B27@3'**

**5/17/2024 8:50:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-03 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.20	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	1.42	0.823	"	"	"	ACC	"	"	
Sodium	5.38	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.003	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/17/2024	
2-Methylnaphthalene	0.004	0.002	"	"	"	agile	"	"	
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	0.008	0.002	"	"	"	agile	"	"	
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B27@3'**

**5/17/2024 8:50:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-03 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	106 %	60-130			B4E17 33		05/17/2024	05/17/2024	
Surrogate: Anthracene-d10	100 %	60-130			"		"	"	
Surrogate: Pyrene-d10	99.3 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	99.4 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.30		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	4.70	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.32	0.266	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	134	9.17	"	"	"	ACN	"	"	
Cadmium	0.253	0.0917	"	"	"	ACN	"	"	
Copper	12.4	9.17	"	"	"	ACN	"	"	
Lead	14.1	0.917	"	"	"	ACN	"	"	
Nickel	7.72	0.917	"	"	"	ACN	"	"	
Selenium	0.381	0.238	"	"	"	ACN	"	"	
Silver	0.125	0.0917	"	"	"	ACN	"	"	
Zinc	59.0	33.9	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B28@3'**

**5/17/2024 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	1.08	0.0997	mg/L	1	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/17/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	83.3 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1737	JSM	05/17/2024	05/17/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	104 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	102 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	99.5 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B28@3'**

**5/17/2024 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-04 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.53	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	1.12	0.823	"	"	"	ACC	"	"	
Sodium	5.90	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/17/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	0.010	0.005	"	"	"	agile	"	"	
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B28@3'**

**5/17/2024 11:00:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-04 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	97.3 %	60-130			B4E17 33		05/17/2024	05/17/2024	
Surrogate: Anthracene-d10	99.2 %	60-130			"		"	"	
Surrogate: Pyrene-d10	105 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.1 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.40</b>		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>5.13</b>	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>3.90</b>	0.255	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	<b>150</b>	8.79	"	"	"	ACN	"	"	
Cadmium	<b>0.327</b>	0.0879	"	"	"	ACN	"	"	
Copper	<b>16.9</b>	8.79	"	"	"	ACN	"	"	
Lead	<b>15.9</b>	0.879	"	"	"	ACN	"	"	
Nickel	<b>12.2</b>	0.879	"	"	"	ACN	"	"	
Selenium	<b>0.351</b>	0.229	"	"	"	ACN	"	"	
Silver	<b>0.135</b>	0.0879	"	"	"	ACN	"	"	
Zinc	<b>85.6</b>	32.5	"	"	"	ACN	"	"	

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 Wheat Ridge CO 80033

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B29@3'**

**5/17/2024 11:05:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.372	0.101	mg/L	1	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/17/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	80.9 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1737	JSM	05/17/2024	05/17/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	0.583	0.200	"	"	"	JSM	"	"	

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.8 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	98.2 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B29@3'**

**5/17/2024 11:05:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-05 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	<b>4.63</b>	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	<b>2.91</b>	0.823	"	"	"	ACC	"	"	
Sodium	<b>10.3</b>	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/17/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B29@3'**

**5/17/2024 11:05:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-05 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	105 %	60-130			B4E17 33		05/17/2024	05/17/2024	
Surrogate: Anthracene-d10	96.0 %	60-130			"		"	"	
Surrogate: Pyrene-d10	104 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	100 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.34		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	5.29	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	3.43	0.264	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	125	9.10	"	"	"	ACN	"	"	
Cadmium	0.122	0.0910	"	"	"	ACN	"	"	
Copper	9.98	9.10	"	"	"	ACN	"	"	
Lead	10.4	0.910	"	"	"	ACN	"	"	
Nickel	8.98	0.910	"	"	"	ACN	"	"	
Selenium	0.401	0.236	"	"	"	ACN	"	"	
Silver	ND	0.0910	"	"	"	ACN	"	"	
Zinc	53.8	33.7	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B30@3'**

**5/17/2024 11:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.127	0.0991	mg/L	1	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	144	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/17/2024	
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: *o*-Terphenyl 90.3 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	0.480	0.0500	mg/kg	25	B4E1737	JSM	05/17/2024	05/18/2024	
1,3,5-Trimethylbenzene	0.128	0.0500	"	"	"	JSM	"	"	
Benzene	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Ethylbenzene	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Toluene	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Xylenes, total	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Gasoline Range Hydrocarbons	56.1	5.00	"	"	"	JSM	"	"	

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "  
 Surrogate: Toluene-d8 99.9 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 106 % 70-130 " " "

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B30@3'**

**5/17/2024 11:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-06 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	3.14	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	1.63	0.823	"	"	"	ACC	"	"	
Sodium	4.81	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	0.013	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/20/2024	
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	0.045	0.020	"	"	"	agile	"	"	
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	0.007	0.005	"	"	"	agile	"	"	
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	0.042	0.020	"	"	"	agile	"	"	
Fluorene	0.034	0.020	"	"	"	agile	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	0.041	0.020	"	"	"	agile	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B30@3'**

**5/17/2024 11:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-06 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	98.0 %	60-130			B4E17 33		05/17/2024	05/20/2024	
Surrogate: Anthracene-d10	103 %	60-130			"		"	"	
Surrogate: Pyrene-d10	107 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	99.1 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.22</b>		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>3.11</b>	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>2.11</b>	0.284	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	<b>157</b>	9.78	"	"	"	ACN	"	"	
Cadmium	<b>0.130</b>	0.0978	"	"	"	ACN	"	"	
Copper	<b>9.88</b>	9.78	"	"	"	ACN	"	"	
Lead	<b>10.7</b>	0.978	"	"	"	ACN	"	"	
Nickel	<b>8.87</b>	0.978	"	"	"	ACN	"	"	
Selenium	ND	0.254	"	"	"	ACN	"	"	
Silver	ND	0.0978	"	"	"	ACN	"	"	
Zinc	<b>62.7</b>	36.2	"	"	"	ACN	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B31@3'**

**5/17/2024 1:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.0991	mg/L	1	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/18/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: *o*-Terphenyl 83.4 % 50-150 " " "

**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	<b>0.0830</b>	0.0500	mg/kg	25	B4E1737	JSM	05/17/2024	05/18/2024	
1,3,5-Trimethylbenzene	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Benzene	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Ethylbenzene	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Toluene	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Xylenes, total	ND	0.0500	"	"	"	JSM	"	"	R-05, U
Gasoline Range Hydrocarbons	<b>171</b>	5.00	"	"	"	JSM	"	"	

Surrogate: 1,2-Dichloroethane-d4 112 % 70-130 " " "  
 Surrogate: Toluene-d8 95.5 % 70-130 " " "  
 Surrogate: 4-Bromofluorobenzene 137 % 70-130 " " " S-GC

**Metals by Saturated Paste by EPA 6010**

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B31@3'**

**5/17/2024 1:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-07 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	4.22	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	2.40	0.823	"	"	"	ACC	"	"	
Sodium	3.92	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/17/2024	U
2-Methylnaphthalene	0.003	0.002	"	"	"	agile	"	"	
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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**B31@3'**

**5/17/2024 1:00:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-07 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	92.9 %	60-130			B4E17 33		05/17/2024	05/17/2024	
Surrogate: Anthracene-d10	98.0 %	60-130			"		"	"	
Surrogate: Pyrene-d10	100 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	99.6 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.22		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	2.15	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	5.21	0.264	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	160	9.09	"	"	"	ACN	"	"	
Cadmium	0.177	0.0909	"	"	"	ACN	"	"	
Copper	11.7	9.09	"	"	"	ACN	"	"	
Lead	10.1	0.909	"	"	"	ACN	"	"	
Nickel	13.4	0.909	"	"	"	ACN	"	"	
Selenium	0.578	0.236	"	"	"	ACN	"	"	
Silver	ND	0.0909	"	"	"	ACN	"	"	
Zinc	46.7	33.6	"	"	"	ACN	"	"	

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**B32@3'**

**5/17/2024 1:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	ND	0.101	mg/L	1	B4E2021	ACC	05/20/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E1738	ZZZ	05/17/2024	05/18/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	83.4 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E1737	JSM	05/17/2024	05/17/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Benzene	ND	0.00200	"	"	"	JSM	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	JSM	"	"	U
Toluene	ND	0.00200	"	"	"	JSM	"	"	U
Xylenes, total	ND	0.00200	"	"	"	JSM	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	JSM	"	"	U

Surrogate: 1,2-Dichloroethane-d4	103 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	106 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	95.0 %	70-130			"	"	"	"	

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**B32@3'**

**5/17/2024 1:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-08 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	<b>1.80</b>	0.499	meq/L	10	[CALC]	ACC	05/20/2024	05/21/2024	
Magnesium	<b>0.937</b>	0.823	"	"	"	ACC	"	"	
Sodium	<b>5.26</b>	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E1733	agile	05/17/2024	05/17/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

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**B32@3'**

**5/17/2024 1:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405549-08 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	92.0 %	60-130			B4E17 33		05/17/2024	05/17/2024	
Surrogate: Anthracene-d10	92.4 %	60-130			"		"	"	
Surrogate: Pyrene-d10	95.9 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.9 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.44</b>		pH Units	1	B4E2011	GCG	05/20/2024	05/21/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>4.50</b>	0.0100	SAR	1	B4E2005	ACC	05/20/2024	05/21/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>3.38</b>	0.266	mg/kg	10	B4E1732	ACN	05/17/2024	05/18/2024	
Barium	<b>186</b>	9.16	"	"	"	ACN	"	"	
Cadmium	<b>0.179</b>	0.0916	"	"	"	ACN	"	"	
Copper	<b>14.8</b>	9.16	"	"	"	ACN	"	"	
Lead	<b>13.5</b>	0.916	"	"	"	ACN	"	"	
Nickel	<b>12.1</b>	0.916	"	"	"	ACN	"	"	
Selenium	<b>0.256</b>	0.238	"	"	"	ACN	"	"	
Silver	ND	0.0916	"	"	"	ACN	"	"	
Zinc	<b>82.8</b>	33.9	"	"	"	ACN	"	"	

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 Facility

**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 B4E1737 - EPA 5030 (soil)**

**Blank (B4E1737-BLK1)**

Prepared: 05/17/2024 Analyzed: 05/17/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125	100		70-130			
Surrogate: Toluene-d8	0.13		"	0.125	104		70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125	97.3		70-130			

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 Facility

**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 B4E1737 - EPA 5030 (soil)**

**LCS (B4E1737-BS1)**

Prepared: 05/17/2024 Analyzed: 05/17/2024

1,2,4-Trimethylbenzene	0.106	0.00200	mg/kg	0.100		106	70-130			
1,3,5-Trimethylbenzene	0.106	0.00200	"	0.100		106	70-130			
Benzene	0.104	0.00200	"	0.100		104	70-130			
Ethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Naphthalene	0.109	0.00380	"	0.100		109	70-130			
Toluene	0.109	0.00200	"	0.100		109	70-130			
o-Xylene	0.102	0.00200	"	0.100		102	70-130			
m,p-Xylene	0.208	0.00400	"	0.200		104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		99.4	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		104	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		98.0	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 B4E1737 - EPA 5030 (soil)

Matrix Spike (B4E1737-MS1)	Source: Y405549-01			Prepared: 05/17/2024 Analyzed: 05/17/2024						
1,2,4-Trimethylbenzene	0.0866	0.00200	mg/kg	0.100	ND	86.6	70-130			
1,3,5-Trimethylbenzene	0.0875	0.00200	"	0.100	ND	87.5	70-130			
Benzene	0.0947	0.00200	"	0.100	ND	94.7	70-130			
Ethylbenzene	0.0918	0.00200	"	0.100	ND	91.8	70-130			
Naphthalene	0.0797	0.00380	"	0.100	ND	79.7	70-130			
Toluene	0.0953	0.00200	"	0.100	ND	95.3	70-130			
o-Xylene	0.0905	0.00200	"	0.100	ND	90.5	70-130			
m,p-Xylene	0.184	0.00400	"	0.200	ND	91.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		106	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		103	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 B4E1737 - EPA 5030 (soil)

Matrix Spike Dup (B4E1737-MSD1)	Source: Y405549-01			Prepared: 05/17/2024 Analyzed: 05/17/2024						
1,2,4-Trimethylbenzene	0.0906	0.00200	mg/kg	0.100	ND	90.6	70-130	4.51	20	
1,3,5-Trimethylbenzene	0.0932	0.00200	"	0.100	ND	93.2	70-130	6.35	20	
Benzene	0.102	0.00200	"	0.100	ND	102	70-130	7.56	20	
Ethylbenzene	0.0991	0.00200	"	0.100	ND	99.1	70-130	7.58	20	
Naphthalene	0.0824	0.00380	"	0.100	ND	82.4	70-130	3.36	20	
Toluene	0.102	0.00200	"	0.100	ND	102	70-130	7.10	20	
o-Xylene	0.0966	0.00200	"	0.100	ND	96.6	70-130	6.48	20	
m,p-Xylene	0.197	0.00400	"	0.200	ND	98.4	70-130	7.01	20	
Surrogate: 1,2-Dichloroethane-d4	0.14		"	0.125		110	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		101	70-130			
Surrogate: 4-Bromofluorobenzene	0.13		"	0.125		102	70-130			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B4E1738 - EPA 3550B</b>										
<b>Blank (B4E1738-BLK1)</b>										
					Prepared: 05/17/2024 Analyzed: 05/17/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	22		"	24.9		89.4	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 B4E1738 - EPA 3550B**

**LCS (B4E1738-BS1)**

Prepared: 05/17/2024 Analyzed: 05/17/2024

Diesel (C10-C28)	862	50.0	mg/kg	1000		86.2	70-130			
Residual Range Organics (C28-C40)	994	200	"	1000		99.4	70-130			
Surrogate: o-Terphenyl	48		"	49.8		97.3	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 B4E1738 - EPA 3550B**

<b>Matrix Spike (B4E1738-MS1)</b>	<b>Source: Y405549-01</b>			<b>Prepared: 05/17/2024 Analyzed: 05/17/2024</b>						
Diesel (C10-C28)	834	50.0	mg/kg	1000	ND	83.4	70-130			
Residual Range Organics (C28-C40)	966	200	"	1000	ND	96.6	70-130			
Surrogate: o-Terphenyl	44		"	49.8		88.6	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 B4E1738 - EPA 3550B

Matrix Spike Dup (B4E1738-MSD1)	Source: Y405549-01		Prepared: 05/17/2024 Analyzed: 05/17/2024							
Diesel (C10-C28)	818	50.0	mg/kg	1000	ND	81.8	70-130	1.92	35	
Residual Range Organics (C28-C40)	959	200	"	1000	ND	95.9	70-130	0.828	35	
Surrogate: o-Terphenyl	45		"	49.8		89.9	50-150			

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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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**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 B4E1732 - EPA 3050B**

**Blank (B4E1732-BLK1)**

Prepared: 05/17/2024 Analyzed: 05/18/2024

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 (B4E1732-BS1)**

Prepared: 05/17/2024 Analyzed: 05/18/2024

Arsenic	5.75	0.290	mg/kg	5.00		115	80-120			
Barium	572	10.0	"	500		114	80-120			
Cadmium	5.73	0.100	"	5.00		115	80-120			
Copper	58.1	10.0	"	50.0		116	80-120			
Lead	5.53	1.00	"	5.00		111	80-120			
Nickel	5.85	1.00	"	5.00		117	80-120			
Selenium	10.8	0.260	"	9.50		114	80-120			
Silver	6.00	0.100	"	5.00		120	80-120			
Zinc	57.2	37.0	"	50.0		114	80-120			

**Matrix Spike (B4E1732-MS1)**

Source: Y405549-08

Prepared: 05/17/2024 Analyzed: 05/18/2024

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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1732 - EPA 3050B**

<b>Matrix Spike (B4E1732-MS1)</b>		<b>Source: Y405549-08</b>			<b>Prepared: 05/17/2024 Analyzed: 05/18/2024</b>					
Arsenic	8.58	0.266	mg/kg	4.59	3.38	114	75-125			
Barium	693	9.17	"	459	186	111	75-125			
Cadmium	5.20	0.0917	"	4.59	0.179	109	75-125			
Copper	64.9	9.17	"	45.9	14.8	109	75-125			
Lead	18.9	0.917	"	4.59	13.5	118	75-125			
Nickel	17.0	0.917	"	4.59	12.1	105	75-125			
Selenium	9.69	0.238	"	8.71	0.256	108	75-125			
Silver	5.22	0.0917	"	4.59	0.0852	112	75-125			
Zinc	130	33.9	"	45.9	82.8	102	75-125			

<b>Matrix Spike Dup (B4E1732-MSD1)</b>		<b>Source: Y405549-08</b>			<b>Prepared: 05/17/2024 Analyzed: 05/18/2024</b>					
Arsenic	8.98	0.249	mg/kg	4.30	3.38	130	75-125	4.55	20	QM-07
Barium	699	8.59	"	430	186	119	75-125	0.827	20	
Cadmium	4.84	0.0859	"	4.30	0.179	109	75-125	7.08	20	
Copper	63.5	8.59	"	43.0	14.8	113	75-125	2.24	20	
Lead	19.3	0.859	"	4.30	13.5	134	75-125	1.74	20	QM-07
Nickel	17.0	0.859	"	4.30	12.1	114	75-125	0.428	20	
Selenium	8.63	0.223	"	8.16	0.256	103	75-125	11.5	20	
Silver	4.79	0.0859	"	4.30	0.0852	109	75-125	8.66	20	
Zinc	131	31.8	"	43.0	82.8	113	75-125	1.34	20	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1733 - EPA 3580**

**Blank (B4E1733-BLK1)**

Prepared: 05/17/2024 Analyzed: 05/17/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U
<hr/>										
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	190		"	200		93.2	60-130			
Surrogate: Pyrene-d10	210		"	200		103	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		98.2	60-130			

**LCS (B4E1733-BS1)**

Prepared: 05/17/2024 Analyzed: 05/17/2024

1-Methylnaphthalene	0.180	0.002	mg/kg	0.200		90.0	70-130			
2-Methylnaphthalene	0.179	0.002	"	0.200		89.5	70-130			
Acenaphthene	0.180	0.020	"	0.200		90.2	70-130			
Anthracene	0.186	0.020	"	0.200		93.2	70-130			

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1733 - EPA 3580**

**LCS (B4E1733-BS1)**

Prepared: 05/17/2024 Analyzed: 05/17/2024

Benzo (a) anthracene	0.192	0.005	mg/kg	0.200		95.8	70-130			
Benzo (a) pyrene	0.177	0.020	"	0.200		88.5	70-130			
Benzo (b) fluoranthene	0.162	0.020	"	0.200		80.9	70-130			
Benzo (g,h,i) perylene	0.179	0.020	"	0.200		89.3	70-130			
Benzo (k) fluoranthene	0.154	0.020	"	0.200		77.1	70-130			
Chrysene	0.181	0.020	"	0.200		90.3	70-130			
Dibenz (a,h) anthracene	0.179	0.020	"	0.200		89.3	70-130			
Fluoranthene	0.172	0.020	"	0.200		86.0	70-130			
Fluorene	0.186	0.020	"	0.200		93.0	70-130			
Indeno (1,2,3-cd) pyrene	0.171	0.020	"	0.200		85.3	70-130			
Naphthalene	0.177	0.002	"	0.200		88.3	70-130			
Phenanthrene	0.179	0.020	"	0.200		89.3	70-130			
Pyrene	0.179	0.020	"	0.200		89.6	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		102	60-130			
Surrogate: Anthracene-d10	190		"	200		95.4	60-130			
Surrogate: Pyrene-d10	200		"	200		98.3	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

**Matrix Spike (B4E1733-MS1)**

Source: Y405549-01

Prepared: 05/17/2024 Analyzed: 05/17/2024

1-Methylnaphthalene	0.198	0.002	mg/kg	0.200	ND	98.8	70-130			
2-Methylnaphthalene	0.198	0.002	"	0.200	ND	98.8	70-130			
Acenaphthene	0.196	0.020	"	0.200	ND	98.0	70-130			
Anthracene	0.208	0.020	"	0.200	ND	104	70-130			
Benzo (a) anthracene	0.193	0.005	"	0.200	0.007	93.1	70-130			
Benzo (a) pyrene	0.195	0.020	"	0.200	0.008	93.5	70-130			
Benzo (b) fluoranthene	0.208	0.020	"	0.200	0.006	101	70-130			
Benzo (g,h,i) perylene	0.199	0.020	"	0.200	0.004	97.3	70-130			

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E1733 - EPA 3580**

<b>Matrix Spike (B4E1733-MS1)</b>		<b>Source: Y405549-01</b>			<b>Prepared: 05/17/2024 Analyzed: 05/17/2024</b>					
Benzo (k) fluoranthene	0.182	0.020	mg/kg	0.200	0.003	89.2	70-130			
Chrysene	0.181	0.020	"	0.200	0.010	85.3	70-130			
Dibenz (a,h) anthracene	0.215	0.020	"	0.200	0.003	106	70-130			
Fluoranthene	0.191	0.020	"	0.200	0.009	90.9	70-130			
Fluorene	0.189	0.020	"	0.200	0.0004	94.4	70-130			
Indeno (1,2,3-cd) pyrene	0.210	0.020	"	0.200	0.004	103	70-130			
Naphthalene	0.195	0.002	"	0.200	0.001	96.7	70-130			
Phenanthrene	0.196	0.020	"	0.200	ND	98.2	70-130			
Pyrene	0.198	0.020	"	0.200	0.010	94.1	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	190		"	200		94.2	60-130			
Surrogate: Pyrene-d10	200		"	200		98.1	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		101	60-130			

<b>Matrix Spike Dup (B4E1733-MSD1)</b>		<b>Source: Y405549-01</b>			<b>Prepared: 05/17/2024 Analyzed: 05/17/2024</b>					
1-Methylnaphthalene	0.188	0.002	mg/kg	0.200	ND	93.9	70-130	5.07	20	
2-Methylnaphthalene	0.188	0.002	"	0.200	ND	94.0	70-130	4.99	20	
Acenaphthene	0.196	0.020	"	0.200	ND	97.9	70-130	0.0817	20	
Anthracene	0.207	0.020	"	0.200	ND	103	70-130	0.635	20	
Benzo (a) anthracene	0.194	0.005	"	0.200	0.007	93.6	70-130	0.494	20	
Benzo (a) pyrene	0.210	0.020	"	0.200	0.008	101	70-130	7.36	20	
Benzo (b) fluoranthene	0.213	0.020	"	0.200	0.006	104	70-130	2.48	20	
Benzo (g,h,i) perylene	0.236	0.020	"	0.200	0.004	116	70-130	16.8	20	
Benzo (k) fluoranthene	0.178	0.020	"	0.200	0.003	87.1	70-130	2.38	20	
Chrysene	0.196	0.020	"	0.200	0.010	92.9	70-130	8.16	20	
Dibenz (a,h) anthracene	0.226	0.020	"	0.200	0.003	112	70-130	5.12	20	
Fluoranthene	0.201	0.020	"	0.200	0.009	95.6	70-130	4.84	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 B4E1733 - EPA 3580

Matrix Spike Dup (B4E1733-MSD1)	Source: Y405549-01			Prepared: 05/17/2024 Analyzed: 05/17/2024						
Fluorene	0.196	0.020	mg/kg	0.200	0.0004	98.0	70-130	3.70	20	
Indeno (1,2,3-cd) pyrene	0.227	0.020	"	0.200	0.004	111	70-130	7.55	20	
Naphthalene	0.190	0.002	"	0.200	0.001	94.4	70-130	2.41	20	
Phenanthrene	0.189	0.020	"	0.200	ND	94.4	70-130	4.02	20	
Pyrene	0.200	0.020	"	0.200	0.010	95.0	70-130	0.871	20	
Surrogate: Fluorene-d10	210		ug/kg	200		105	60-130			
Surrogate: Anthracene-d10	200		"	200		98.0	60-130			
Surrogate: Pyrene-d10	210		"	200		106	60-130			
Surrogate: Benzo (a) pyrene-d12	220		"	200		110	60-130			

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E2005 - Saturated Paste Metals**

**Blank (B4E2005-BLK1)**

Prepared: 05/20/2024 Analyzed: 05/21/2024

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

**Duplicate (B4E2005-DUP1)**

**Source: Y405554-01**

Prepared: 05/20/2024 Analyzed: 05/21/2024

Calcium PPM	422	10.0	mg/L		430			2.05	50	
SAR	ND	0.0100	SAR		10.5				200	
Magnesium PPM	223	10.0	mg/L		231			3.69	50	
Sodium PPM	1080	10.0	"		1090			0.345	50	

**Batch B4E2021 - DTPA Sorbitol Preparation**

**Blank (B4E2021-BLK1)**

Prepared: 05/20/2024 Analyzed: 05/22/2024

Boron	ND	0.100	mg/L							
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**Duplicate (B4E2021-DUP1)**

**Source: Y405549-01**

Prepared: 05/20/2024 Analyzed: 05/22/2024

Boron	0.571	0.100	mg/L		0.557			2.50	50	
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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E2011 - Saturated Paste pH/EC**

**Duplicate (B4E2011-DUP1)**

**Source: Y405554-01**

Prepared: 05/20/2024 Analyzed: 05/21/2024

pH	7.81		pH Units		8.06			3.15	25	
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Wheat Ridge CO 80033

Jeremy Espinoza  
Project Number: 09A1417396  
Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
Facility

**Notes and Definitions**

- U Sample is Non-Detect.
  
  - S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
  
  - R-05 The sample was diluted due to the presence of high levels of non-target analytes resulting in elevated reporting limits.
  
  - 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 at a wet weight basis.

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May 29, 2024

Ensolum

Jeremy Espinoza

11049 W 44th Avenue, Suite 103

Wheat Ridge CO 80033

**Project Name - KMG - Sharkey 8&9-35 & 10-3 O SA Project Number - 09A1417396  
Facility**

Attached are your analytical results for KMG - Sharkey 8&9-35 & 10-3 O SA Facility received by Origins Laboratory, Inc. May 20, 2024. This project is associated with Origins project number Y405591-01.

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: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

CROSS REFERENCE REPORT

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B33@3'	Y405591-01	Soil	May 20, 2024 9:10	05/20/2024 15:56
B34@3'	Y405591-02	Soil	May 20, 2024 9:13	05/20/2024 15:56
B35@3'	Y405591-03	Soil	May 20, 2024 10:30	05/20/2024 15:56
B36@3'	Y405591-04	Soil	May 20, 2024 10:35	05/20/2024 15:56
B37@3'	Y405591-05	Soil	May 20, 2024 12:08	05/20/2024 15:56
B38@3'	Y405591-06	Soil	May 20, 2024 12:14	05/20/2024 15:56
B39@3'	Y405591-07	Soil	May 20, 2024 12:10	05/20/2024 15:56
B40@3'	Y405591-08	Soil	May 20, 2024 12:12	05/20/2024 15:56

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Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

# ORIGINS

LABORATORY LLC

ORIGINS WORK ORDER #

IMPACTED

440591

Page 1 of 1

Client: Ensolum

Project Manager: Jeremy Espinoza

Key:

Address: 11049 W 44th Ave. Ste. 100

Project Name: Sharkey 8&9-35&10-3 O SA

W= Water

Telephone Number: Wheat Ridge CO 80033

Project Number: 09A1417396

Facility: GW=Groundwater

Email Address: KMG-TEAM

Collected By: JR

SW=Surface Water

Invoice/Billing Info: KMG-TEAM

Received On Ice?  Yes  No

WW=Waste Water

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

L=Liquid

#	Sample ID	Date Sampled	Time Sampled	# of Containers	Matrix	Preservative	Analysis		Comments
1	B33e31	5/20/24	0910	3	S, UNP		BTEX, IMP, PAH, TPH, PCB, PCP, PCE, TCE, SVOC, VOC, P,1, SAR, PS, PA, CD, CC, PB, M, Se, Ag, Zn	XXXXXX	
2	B34e31		0913						
3	B35e31		1030						
4	B36e31		1035						
5	B37e31		1208						
6	B38e31		1214						
7	B39e31		1210						
8	B40e31		1212						
9									
10									

Relinquished By: [Signature] Date: 5/20/24 Time: 1556

Received By: [Signature] Date: 5/20/24 Time: 1550

Turnaround Time:  SAME DAY  24 Hr  48 Hr  72 Hr

1725 Elk Place Denver, Co. 80211 | # 303.433.1322 | origins@db.com | Temp Received - Received On Ice?

Origins Laboratory, Inc.

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

Origins Laboratory

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

**Sample Receipt Checklist**

Origins Work Order: 4405591 Client: Ensolum  
 Client Project ID: Sharkey 89-35  
 Checklist Completed by: JWT/EAO Shipped Via: FED  
 Date/time completed: 5/20/24 (UPS, FedEx, Hand Delivered, Pick-up, etc.)  
 Airbill #: N/A  
 Matrix(s) Received: (Check all that apply):  Soil/Solid  Water  Other: \_\_\_\_\_  
 Cooler Number/Temperature: 1 °C / \_\_\_\_\_ °C / \_\_\_\_\_ °C (Describe)  
 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> ?	<input checked="" type="checkbox"/>			
Is there ice present (document if blue ice is used)	<input checked="" type="checkbox"/>			
Are custody seals present on cooler? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Are custody seals present on each sample container? (if so, document in comments if they are signed and dated, broken or intact)		<input checked="" type="checkbox"/>		
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Are short holding time analytes or samples with HTs due within 48 hours present <sup>(1)</sup> ?		<input checked="" type="checkbox"/>		
Is a chain-of-custody (COC) present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client with date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace (> ¼ inch bubble) present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation and was it checked <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)			<input checked="" type="checkbox"/>	
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] Date/Time Reviewed 5/20/24

Origins Laboratory, Inc.

[Signature]

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B33@3'**

**5/20/2024 9:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-01 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.357	0.0993	mg/L	1	B4E2106	ACC	05/21/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	93.9 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	98.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.3 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B33@3'**

**5/20/2024 9:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-01 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	6.31	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	2.99	0.823	"	"	"	ACC	"	"	
Sodium	3.90	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B33@3'**

**5/20/2024 9:10:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-01 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	97.5 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	99.6 %	60-130			"		"	"	
Surrogate: Pyrene-d10	103 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	102 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.39		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	1.81	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	4.27	0.248	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	107	8.56	"	"	"	JAH	"	"	
Cadmium	0.154	0.0856	"	"	"	JAH	"	"	
Copper	9.19	8.56	"	"	"	JAH	"	"	
Lead	9.51	0.856	"	"	"	JAH	"	"	
Nickel	9.41	0.856	"	"	"	JAH	"	"	
Selenium	0.272	0.223	"	"	"	JAH	"	"	
Silver	ND	0.0856	"	"	"	JAH	"	"	
Zinc	41.5	31.7	"	"	"	JAH	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B34@3'**

**5/20/2024 9:13:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-02 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.733	0.101	mg/L	1	B4E2106	ACC	05/21/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	90.1 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.5 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B34@3'**

**5/20/2024 9:13:00AM**

Analyte	Result	Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-02 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	2.37	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	1.25	0.823	"	"	"	ACC	"	"	
Sodium	5.48	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B34@3'**

**5/20/2024 9:13:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-02 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	98.7 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	98.6 %	60-130			"		"	"	
Surrogate: Pyrene-d10	97.6 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	97.7 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.58		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	4.07	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.47	0.280	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	152	9.65	"	"	"	JAH	"	"	
Cadmium	0.182	0.0965	"	"	"	JAH	"	"	
Copper	13.2	9.65	"	"	"	JAH	"	"	
Lead	12.2	0.965	"	"	"	JAH	"	"	
Nickel	8.11	0.965	"	"	"	JAH	"	"	
Selenium	ND	0.251	"	"	"	JAH	"	"	
Silver	ND	0.0965	"	"	"	JAH	"	"	
Zinc	67.1	35.7	"	"	"	JAH	"	"	

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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B35@3'**

**5/20/2024 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-03 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.761	0.0984	mg/L	1	B4E2106	ACC	05/21/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	102 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.4 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	111 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B35@3'**

**5/20/2024 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-03 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.79	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	0.969	0.823	"	"	"	ACC	"	"	
Sodium	3.98	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

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 Project Number: 09A1417396  
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**B35@3'**

**5/20/2024 10:30:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-03 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	98.8 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	106 %	60-130			"		"	"	
Surrogate: Pyrene-d10	105 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.8 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.48		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	3.39	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.75	0.280	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	93.0	9.65	"	"	"	JAH	"	"	
Cadmium	0.216	0.0965	"	"	"	JAH	"	"	
Copper	10.7	9.65	"	"	"	JAH	"	"	
Lead	11.4	0.965	"	"	"	JAH	"	"	
Nickel	6.44	0.965	"	"	"	JAH	"	"	
Selenium	0.256	0.251	"	"	"	JAH	"	"	
Silver	ND	0.0965	"	"	"	JAH	"	"	
Zinc	53.2	35.7	"	"	"	JAH	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B36@3'**

**5/20/2024 10:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-04 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	1.06	0.0983	mg/L	1	B4E2106	ACC	05/21/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	88.3 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.7 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B36@3'**

**5/20/2024 10:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-04 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	26.3	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	12.5	0.823	"	"	"	ACC	"	"	
Sodium	23.3	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B36@3'**

**5/20/2024 10:35:00AM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-04 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	99.3 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	103 %	60-130			"		"	"	
Surrogate: Pyrene-d10	97.0 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	99.1 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.24		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	5.28	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.71	0.262	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	123	9.03	"	"	"	JAH	"	"	
Cadmium	0.230	0.0903	"	"	"	JAH	"	"	
Copper	13.8	9.03	"	"	"	JAH	"	"	
Lead	13.6	0.903	"	"	"	JAH	"	"	
Nickel	7.46	0.903	"	"	"	JAH	"	"	
Selenium	0.353	0.235	"	"	"	JAH	"	"	
Silver	0.101	0.0903	"	"	"	JAH	"	"	
Zinc	67.2	33.4	"	"	"	JAH	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B37@3'**

**5/20/2024 12:08:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-05 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.721	0.0988	mg/L	1	B4E2106	ACC	05/21/2024	05/24/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	87.7 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	100 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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Ensolum  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B37@3'**

**5/20/2024 12:08:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-05 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.74	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	0.840	0.823	"	"	"	ACC	"	"	
Sodium	5.53	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

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Ensolum  
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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B37@3'**

**5/20/2024 12:08:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-05 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	104 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	97.2 %	60-130			"		"	"	
Surrogate: Pyrene-d10	103 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	98.9 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.65		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	4.86	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.76	0.272	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	162	9.38	"	"	"	JAH	"	"	
Cadmium	0.179	0.0938	"	"	"	JAH	"	"	
Copper	15.5	9.38	"	"	"	JAH	"	"	
Lead	12.8	0.938	"	"	"	JAH	"	"	
Nickel	11.4	0.938	"	"	"	JAH	"	"	
Selenium	ND	0.244	"	"	"	JAH	"	"	
Silver	ND	0.0938	"	"	"	JAH	"	"	
Zinc	91.9	34.7	"	"	"	JAH	"	"	

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B38@3'**

**5/20/2024 12:14:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-06 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.393	0.0983	mg/L	1	B4E2106	ACC	05/21/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	89.7 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	99.6 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.4 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	108 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B38@3'**

**5/20/2024 12:14:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-06 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	2.06	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	1.25	0.823	"	"	"	ACC	"	"	
Sodium	6.90	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

Origins Laboratory, Inc.



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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B38@3'**

**5/20/2024 12:14:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-06 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	107 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	103 %	60-130			"		"	"	
Surrogate: Pyrene-d10	104 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	95.0 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.68</b>		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>5.36</b>	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>2.75</b>	0.261	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	<b>130</b>	9.00	"	"	"	JAH	"	"	
Cadmium	<b>0.212</b>	0.0900	"	"	"	JAH	"	"	
Copper	<b>13.0</b>	9.00	"	"	"	JAH	"	"	
Lead	<b>12.3</b>	0.900	"	"	"	JAH	"	"	
Nickel	<b>9.36</b>	0.900	"	"	"	JAH	"	"	
Selenium	<b>0.308</b>	0.234	"	"	"	JAH	"	"	
Silver	ND	0.0900	"	"	"	JAH	"	"	
Zinc	<b>61.2</b>	33.3	"	"	"	JAH	"	"	

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B39@3'**

**5/20/2024 12:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-07 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.476	0.0988	mg/L	1	B4E2106	ACC	05/21/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: <i>o</i> -Terphenyl	87.3 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	0.00322	0.00200	"	"	"	ZZZ	"	"	
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	98.1 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

Origins Laboratory, Inc.



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 Wheat Ridge CO 80033

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B39@3'**

**5/20/2024 12:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-07 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	1.37	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	1.01	0.823	"	"	"	ACC	"	"	
Sodium	7.88	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	0.034	0.005	"	"	"	agile	"	"	
Benzo (a) pyrene	0.026	0.020	"	"	"	agile	"	"	
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	0.033	0.020	"	"	"	agile	"	"	
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	0.047	0.020	"	"	"	agile	"	"	
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	0.086	0.020	"	"	"	agile	"	"	

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

Jeremy Espinoza  
 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B39@3'**

**5/20/2024 12:10:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-07 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	99.2 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	105 %	60-130			"		"	"	
Surrogate: Pyrene-d10	102 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	103 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	8.59		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	7.22	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	2.73	0.251	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	103	8.65	"	"	"	JAH	"	"	
Cadmium	0.228	0.0865	"	"	"	JAH	"	"	
Copper	12.9	8.65	"	"	"	JAH	"	"	
Lead	18.0	0.865	"	"	"	JAH	"	"	
Nickel	6.65	0.865	"	"	"	JAH	"	"	
Selenium	ND	0.225	"	"	"	JAH	"	"	
Silver	ND	0.0865	"	"	"	JAH	"	"	
Zinc	61.5	32.0	"	"	"	JAH	"	"	

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**B40@3'**

**5/20/2024 12:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-08 (Soil)**

**Boron (DTPA Sorbitol)**

Boron	0.564	0.0990	mg/L	1	B4E2106	ACC	05/21/2024	05/22/2024	
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**DRO/ORO by EPA 8015D**

Diesel (C10-C28)	ND	25.0	mg/kg	1	B4E2004	ZZZ	05/20/2024	05/20/2024	U
Residual Range Organics (C28-C40)	ND	100	"	"	"	ZZZ	"	"	U

Surrogate: o-Terphenyl	88.2 %	50-150			"	"	"	"	
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**GBTEX+TMBs by 8260D**

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg	1	B4E2036	ZZZ	05/20/2024	05/20/2024	U
1,3,5-Trimethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Benzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Ethylbenzene	ND	0.00200	"	"	"	ZZZ	"	"	U
Toluene	ND	0.00200	"	"	"	ZZZ	"	"	U
Xylenes, total	ND	0.00200	"	"	"	ZZZ	"	"	U
Gasoline Range Hydrocarbons	ND	0.200	"	"	"	ZZZ	"	"	U

Surrogate: 1,2-Dichloroethane-d4	101 %	70-130			"	"	"	"	
Surrogate: Toluene-d8	99.2 %	70-130			"	"	"	"	
Surrogate: 4-Bromofluorobenzene	109 %	70-130			"	"	"	"	

**Metals by Saturated Paste by EPA 6010**

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**B40@3'**

**5/20/2024 12:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-08 (Soil)**

**Metals by Saturated Paste by EPA 6010**

Calcium	3.16	0.499	meq/L	10	[CALC]	ACC	05/21/2024	05/23/2024	
Magnesium	1.18	0.823	"	"	"	ACC	"	"	
Sodium	4.31	0.435	"	"	"	ACC	"	"	

**PAH by EPA 8270E**

1-Methylnaphthalene	ND	0.002	mg/kg	1	B4E2037	agile	05/20/2024	05/20/2024	U
2-Methylnaphthalene	ND	0.002	"	"	"	agile	"	"	U
Acenaphthene	ND	0.020	"	"	"	agile	"	"	U
Anthracene	ND	0.020	"	"	"	agile	"	"	U
Benzo (a) anthracene	ND	0.005	"	"	"	agile	"	"	U
Benzo (a) pyrene	ND	0.020	"	"	"	agile	"	"	U
Benzo (b) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Benzo (k) fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Chrysene	ND	0.020	"	"	"	agile	"	"	U
Dibenz (a,h) anthracene	ND	0.020	"	"	"	agile	"	"	U
Fluoranthene	ND	0.020	"	"	"	agile	"	"	U
Fluorene	ND	0.020	"	"	"	agile	"	"	U
Indeno (1,2,3-cd) pyrene	ND	0.020	"	"	"	agile	"	"	U
Naphthalene	ND	0.002	"	"	"	agile	"	"	U
Pyrene	ND	0.020	"	"	"	agile	"	"	U

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**B40@3'**

**5/20/2024 12:12:00PM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Analyst	Prepared	Analyzed	Notes
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**Origins Laboratory, Inc.**  
**Y405591-08 (Soil)**

**PAH by EPA 8270E**

Surrogate: Fluorene-d10	95.2 %	60-130			B4E20 37		05/20/2024	05/20/2024	
Surrogate: Anthracene-d10	104 %	60-130			"		"	"	
Surrogate: Pyrene-d10	98.8 %	60-130			"		"	"	
Surrogate: Benzo (a) pyrene-d12	96.0 %	60-130			"		"	"	

**pH in Soil by 9045D**

pH	<b>8.49</b>		pH Units	1	B4E2116	EAL	05/21/2024	05/22/2024	
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**SAR by 20B Saturated Paste**

SAR	<b>2.92</b>	0.0100	SAR	1	B4E2110	ACC	05/21/2024	05/23/2024	
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**Table 915 metals by EPA 6020B**

Arsenic	<b>3.04</b>	0.270	mg/kg	10	B4E2035	JAH	05/20/2024	05/21/2024	
Barium	<b>98.9</b>	9.30	"	"	"	JAH	"	"	
Cadmium	<b>0.169</b>	0.0930	"	"	"	JAH	"	"	
Copper	<b>11.3</b>	9.30	"	"	"	JAH	"	"	
Lead	<b>13.4</b>	0.930	"	"	"	JAH	"	"	
Nickel	<b>6.55</b>	0.930	"	"	"	JAH	"	"	
Selenium	<b>0.295</b>	0.242	"	"	"	JAH	"	"	
Silver	ND	0.0930	"	"	"	JAH	"	"	
Zinc	<b>51.2</b>	34.4	"	"	"	JAH	"	"	

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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 B4E2004 - EPA 3550B</b>										
<b>Blank (B4E2004-BLK1)</b>										
					Prepared: 05/20/2024 Analyzed: 05/20/2024					
Diesel (C10-C28)	ND	25.0	mg/kg							U
Residual Range Organics (C28-C40)	ND	100	"							U
Surrogate: o-Terphenyl	27		"	24.9		108	50-150			

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E2004 - EPA 3550B**

**LCS (B4E2004-BS1)**

Prepared: 05/20/2024 Analyzed: 05/20/2024

Diesel (C10-C28)	930	50.0	mg/kg	1000		93.0	70-130			
Residual Range Organics (C28-C40)	956	200	"	1000		95.6	70-130			
Surrogate: o-Terphenyl	47		"	49.8		95.0	50-150			

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 Project Number: 09A1417396  
 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E2004 - EPA 3550B**

<b>Matrix Spike (B4E2004-MS1)</b>	<b>Source: Y405578-01</b>			<b>Prepared: 05/20/2024 Analyzed: 05/20/2024</b>						
Diesel (C10-C28)	997	50.0	mg/kg	1000	ND	99.7	70-130			
Residual Range Organics (C28-C40)	1000	200	"	1000	ND	100	70-130			
Surrogate: o-Terphenyl	46		"	49.8		91.8	50-150			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B4E2004 - EPA 3550B**

<b>Matrix Spike Dup (B4E2004-MSD1)</b>	<b>Source: Y405578-01</b>		<b>Prepared: 05/20/2024 Analyzed: 05/20/2024</b>							
Diesel (C10-C28)	936	50.0	mg/kg	1000	ND	93.6	70-130	6.22	35	
Residual Range Organics (C28-C40)	983	200	"	1000	ND	98.3	70-130	2.06	35	
Surrogate: o-Terphenyl	42		"	49.8		84.8	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 B4E2036 - EPA 5030 (soil)**

**Blank (B4E2036-BLK1)**

Prepared: 05/20/2024 Analyzed: 05/20/2024

1,2,4-Trimethylbenzene	ND	0.00200	mg/kg							U
1,3,5-Trimethylbenzene	ND	0.00200	"							U
Benzene	ND	0.00200	"							U
Ethylbenzene	ND	0.00200	"							U
Naphthalene	ND	0.00380	"							U
Toluene	ND	0.00200	"							U
Xylenes, total	ND	0.00200	"							U
Gasoline Range Hydrocarbons	ND	0.200	"							U
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		97.6	70-130			
Surrogate: Toluene-d8	0.13		"	0.125		100	70-130			
Surrogate: 4-Bromofluorobenzene	0.14		"	0.125		109	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 B4E2036 - EPA 5030 (soil)**

**LCS (B4E2036-BS1)**

Prepared: 05/20/2024 Analyzed: 05/20/2024

1,2,4-Trimethylbenzene	0.100	0.00200	mg/kg	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.103	0.00200	"	0.100		103	70-130			
Benzene	0.101	0.00200	"	0.100		101	70-130			
Ethylbenzene	0.0974	0.00200	"	0.100		97.4	70-130			
Naphthalene	0.103	0.00380	"	0.100		103	70-130			
Toluene	0.101	0.00200	"	0.100		101	70-130			
o-Xylene	0.0973	0.00200	"	0.100		97.3	70-130			
m,p-Xylene	0.199	0.00400	"	0.200		99.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.12		"	0.125		96.0	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		98.9	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		93.5	70-130			

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 Facility

**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 B4E2036 - EPA 5030 (soil)

Matrix Spike (B4E2036-MS1)	Source: Y405589-01			Prepared: 05/20/2024 Analyzed: 05/20/2024						
1,2,4-Trimethylbenzene	0.0973	0.00200	mg/kg	0.100	ND	97.3	70-130			
1,3,5-Trimethylbenzene	0.100	0.00200	"	0.100	ND	100	70-130			
Benzene	0.100	0.00200	"	0.100	ND	100	70-130			
Ethylbenzene	0.0947	0.00200	"	0.100	ND	94.7	70-130			
Naphthalene	0.0969	0.00380	"	0.100	ND	96.9	70-130			
Toluene	0.0963	0.00200	"	0.100	ND	96.3	70-130			
o-Xylene	0.0942	0.00200	"	0.100	ND	94.2	70-130			
m,p-Xylene	0.191	0.00400	"	0.200	ND	95.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.4	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		96.1	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 B4E2036 - EPA 5030 (soil)

Matrix Spike Dup (B4E2036-MSD1)	Source: Y405589-01			Prepared: 05/20/2024 Analyzed: 05/20/2024						
1,2,4-Trimethylbenzene	0.0967	0.00200	mg/kg	0.100	ND	96.7	70-130	0.639	20	
1,3,5-Trimethylbenzene	0.0990	0.00200	"	0.100	ND	99.0	70-130	1.05	20	
Benzene	0.0994	0.00200	"	0.100	ND	99.4	70-130	0.582	20	
Ethylbenzene	0.0927	0.00200	"	0.100	ND	92.7	70-130	2.13	20	
Naphthalene	0.0969	0.00380	"	0.100	ND	96.9	70-130	0.0206	20	
Toluene	0.0958	0.00200	"	0.100	ND	95.8	70-130	0.458	20	
o-Xylene	0.0928	0.00200	"	0.100	ND	92.8	70-130	1.58	20	
m,p-Xylene	0.190	0.00400	"	0.200	ND	95.2	70-130	0.545	20	
Surrogate: 1,2-Dichloroethane-d4	0.13		"	0.125		102	70-130			
Surrogate: Toluene-d8	0.12		"	0.125		97.2	70-130			
Surrogate: 4-Bromofluorobenzene	0.12		"	0.125		95.7	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 B4E2035 - EPA 3050B**

**Blank (B4E2035-BLK1)**

Prepared: 05/20/2024 Analyzed: 05/21/2024

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 (B4E2035-BS1)**

Prepared: 05/20/2024 Analyzed: 05/21/2024

Arsenic	5.38	0.290	mg/kg	5.00		108	80-120			
Barium	539	10.0	"	500		108	80-120			
Cadmium	5.38	0.100	"	5.00		108	80-120			
Copper	51.3	10.0	"	50.0		103	80-120			
Lead	5.24	1.00	"	5.00		105	80-120			
Nickel	4.69	1.00	"	5.00		93.8	80-120			
Selenium	9.75	0.260	"	9.50		103	80-120			
Silver	5.21	0.100	"	5.00		104	80-120			
Zinc	53.2	37.0	"	50.0		106	80-120			

**Matrix Spike (B4E2035-MS1)**

Source: Y405129-01

Prepared: 05/20/2024 Analyzed: 05/21/2024

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 Project: KMG - Sharkey 8&9-35 & 10-3 O SA Facility

**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 B4E2035 - EPA 3050B**

<b>Matrix Spike (B4E2035-MS1)</b>		<b>Source: Y405129-01</b>			<b>Prepared: 05/20/2024 Analyzed: 05/21/2024</b>					
Arsenic	9.64	0.268	mg/kg	4.63	3.58	131	75-125			QM-07
Barium	765	9.26	"	463	281	104	75-125			
Cadmium	5.79	0.0926	"	4.63	0.112	123	75-125			
Copper	59.9	9.26	"	46.3	8.60	111	75-125			
Lead	58.4	0.926	"	4.63	67.9	NR	75-125			QM-07
Nickel	16.6	0.926	"	4.63	8.90	167	75-125			QM-07
Selenium	9.50	0.241	"	8.79	0.125	107	75-125			
Silver	5.49	0.0926	"	4.63	ND	118	75-125			
Zinc	91.8	34.3	"	46.3	31.9	129	75-125			QM-07

<b>Matrix Spike Dup (B4E2035-MSD1)</b>		<b>Source: Y405129-01</b>			<b>Prepared: 05/20/2024 Analyzed: 05/21/2024</b>					
Arsenic	8.98	0.274	mg/kg	4.72	3.58	114	75-125	7.10	20	
Barium	760	9.44	"	472	281	101	75-125	0.581	20	
Cadmium	5.27	0.0944	"	4.72	0.112	109	75-125	9.44	20	
Copper	58.2	9.44	"	47.2	8.60	105	75-125	2.94	20	
Lead	49.7	0.944	"	4.72	67.9	NR	75-125	16.2	20	QM-07
Nickel	14.1	0.944	"	4.72	8.90	110	75-125	16.6	20	
Selenium	9.30	0.245	"	8.97	0.125	102	75-125	2.18	20	
Silver	5.07	0.0944	"	4.72	ND	107	75-125	7.81	20	
Zinc	83.0	34.9	"	47.2	31.9	108	75-125	10.1	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 B4E2037 - EPA 3580**

**Blank (B4E2037-BLK1)**

Prepared: 05/20/2024 Analyzed: 05/20/2024

1-Methylnaphthalene	ND	0.002	mg/kg							U
2-Methylnaphthalene	ND	0.002	"							U
Acenaphthene	ND	0.020	"							U
Anthracene	ND	0.020	"							U
Benzo (a) anthracene	ND	0.005	"							U
Benzo (a) pyrene	ND	0.020	"							U
Benzo (b) fluoranthene	ND	0.020	"							U
Benzo (g,h,i) perylene	ND	0.020	"							U
Benzo (k) fluoranthene	ND	0.020	"							U
Chrysene	ND	0.020	"							U
Dibenz (a,h) anthracene	ND	0.020	"							U
Fluoranthene	ND	0.020	"							U
Fluorene	ND	0.020	"							U
Indeno (1,2,3-cd) pyrene	ND	0.020	"							U
Naphthalene	ND	0.002	"							U
Phenanthrene	ND	0.020	"							U
Pyrene	ND	0.020	"							U

Surrogate: Fluorene-d10	190		ug/kg	200		96.7	60-130			
Surrogate: Anthracene-d10	200		"	200		102	60-130			
Surrogate: Pyrene-d10	190		"	200		96.7	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		100	60-130			

**LCS (B4E2037-BS1)**

Prepared: 05/20/2024 Analyzed: 05/20/2024

1-Methylnaphthalene	0.201	0.002	mg/kg	0.200		101	70-130			
2-Methylnaphthalene	0.203	0.002	"	0.200		102	70-130			
Acenaphthene	0.193	0.020	"	0.200		96.4	70-130			
Anthracene	0.197	0.020	"	0.200		98.6	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 B4E2037 - EPA 3580**

**LCS (B4E2037-BS1)**

Prepared: 05/20/2024 Analyzed: 05/20/2024

Benzo (a) anthracene	0.214	0.005	mg/kg	0.200		107	70-130			
Benzo (a) pyrene	0.200	0.020	"	0.200		99.9	70-130			
Benzo (b) fluoranthene	0.199	0.020	"	0.200		99.7	70-130			
Benzo (g,h,i) perylene	0.200	0.020	"	0.200		100	70-130			
Benzo (k) fluoranthene	0.180	0.020	"	0.200		89.9	70-130			
Chrysene	0.203	0.020	"	0.200		101	70-130			
Dibenz (a,h) anthracene	0.206	0.020	"	0.200		103	70-130			
Fluoranthene	0.214	0.020	"	0.200		107	70-130			
Fluorene	0.197	0.020	"	0.200		98.7	70-130			
Indeno (1,2,3-cd) pyrene	0.203	0.020	"	0.200		101	70-130			
Naphthalene	0.200	0.002	"	0.200		99.8	70-130			
Phenanthrene	0.197	0.020	"	0.200		98.6	70-130			
Pyrene	0.216	0.020	"	0.200		108	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		99.7	60-130			
Surrogate: Anthracene-d10	200		"	200		99.6	60-130			
Surrogate: Pyrene-d10	210		"	200		106	60-130			
Surrogate: Benzo (a) pyrene-d12	190		"	200		95.4	60-130			

**Matrix Spike (B4E2037-MS1)**

Source: Y405589-01

Prepared: 05/20/2024 Analyzed: 05/20/2024

1-Methylnaphthalene	0.224	0.002	mg/kg	0.200	ND	112	70-130			
2-Methylnaphthalene	0.224	0.002	"	0.200	ND	112	70-130			
Acenaphthene	0.221	0.020	"	0.200	ND	111	70-130			
Anthracene	0.226	0.020	"	0.200	ND	113	70-130			
Benzo (a) anthracene	0.229	0.005	"	0.200	0.0004	114	70-130			
Benzo (a) pyrene	0.222	0.020	"	0.200	ND	111	70-130			
Benzo (b) fluoranthene	0.229	0.020	"	0.200	ND	115	70-130			
Benzo (g,h,i) perylene	0.219	0.020	"	0.200	0.0005	109	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 B4E2037 - EPA 3580**

<b>Matrix Spike (B4E2037-MS1)</b>		<b>Source: Y405589-01</b>			Prepared: 05/20/2024 Analyzed: 05/20/2024					
Benzo (k) fluoranthene	0.192	0.020	mg/kg	0.200	0.0006	95.8	70-130			
Chrysene	0.240	0.020	"	0.200	ND	120	70-130			
Dibenz (a,h) anthracene	0.207	0.020	"	0.200	0.001	103	70-130			
Fluoranthene	0.231	0.020	"	0.200	ND	115	70-130			
Fluorene	0.224	0.020	"	0.200	0.0003	112	70-130			
Indeno (1,2,3-cd) pyrene	0.213	0.020	"	0.200	ND	107	70-130			
Naphthalene	0.221	0.002	"	0.200	ND	111	70-130			
Phenanthrene	0.231	0.020	"	0.200	ND	116	70-130			
Pyrene	0.237	0.020	"	0.200	ND	118	70-130			
Surrogate: Fluorene-d10	200		ug/kg	200		100	60-130			
Surrogate: Anthracene-d10	200		"	200		102	60-130			
Surrogate: Pyrene-d10	210		"	200		105	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.7	60-130			

<b>Matrix Spike Dup (B4E2037-MSD1)</b>		<b>Source: Y405589-01</b>			Prepared: 05/20/2024 Analyzed: 05/20/2024					
1-Methylnaphthalene	0.228	0.002	mg/kg	0.200	ND	114	70-130	1.87	20	
2-Methylnaphthalene	0.227	0.002	"	0.200	ND	113	70-130	1.10	20	
Acenaphthene	0.223	0.020	"	0.200	ND	111	70-130	0.665	20	
Anthracene	0.221	0.020	"	0.200	ND	111	70-130	2.20	20	
Benzo (a) anthracene	0.248	0.005	"	0.200	0.0004	124	70-130	7.72	20	
Benzo (a) pyrene	0.238	0.020	"	0.200	ND	119	70-130	6.73	20	
Benzo (b) fluoranthene	0.226	0.020	"	0.200	ND	113	70-130	1.28	20	
Benzo (g,h,i) perylene	0.218	0.020	"	0.200	0.0005	109	70-130	0.242	20	
Benzo (k) fluoranthene	0.201	0.020	"	0.200	0.0006	100	70-130	4.24	20	
Chrysene	0.240	0.020	"	0.200	ND	120	70-130	0.0160	20	
Dibenz (a,h) anthracene	0.245	0.020	"	0.200	0.001	122	70-130	17.0	20	
Fluoranthene	0.228	0.020	"	0.200	ND	114	70-130	0.986	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 B4E2037 - EPA 3580

Matrix Spike Dup (B4E2037-MSD1)	Source: Y405589-01			Prepared: 05/20/2024 Analyzed: 05/20/2024						
Fluorene	0.218	0.020	mg/kg	0.200	0.0003	109	70-130	2.46	20	
Indeno (1,2,3-cd) pyrene	0.228	0.020	"	0.200	ND	114	70-130	6.74	20	
Naphthalene	0.224	0.002	"	0.200	ND	112	70-130	1.09	20	
Phenanthrene	0.224	0.020	"	0.200	ND	112	70-130	3.46	20	
Pyrene	0.234	0.020	"	0.200	ND	117	70-130	1.05	20	
Surrogate: Fluorene-d10	190		ug/kg	200		95.6	60-130			
Surrogate: Anthracene-d10	200		"	200		102	60-130			
Surrogate: Pyrene-d10	210		"	200		107	60-130			
Surrogate: Benzo (a) pyrene-d12	200		"	200		99.2	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 B4E2106 - DTPA Sorbitol Preparation**

**Blank (B4E2106-BLK1)**

Prepared: 05/21/2024 Analyzed: 05/22/2024

Boron ND 0.100 mg/L

**Duplicate (B4E2106-DUP1)**

**Source: Y405589-01**

Prepared: 05/21/2024 Analyzed: 05/22/2024

Boron 4.74 0.100 mg/L 4.48 5.64 50

**Batch B4E2110 - Saturated Paste Metals**

**Blank (B4E2110-BLK1)**

Prepared: 05/21/2024 Analyzed: 05/23/2024

Calcium PPM ND 10.0 mg/L

SAR ND 0.0100 SAR

Magnesium PPM ND 10.0 mg/L

Sodium PPM ND 10.0 "

**Duplicate (B4E2110-DUP1)**

**Source: Y405522-01**

Prepared: 05/21/2024 Analyzed: 05/23/2024

Calcium PPM 98.0 10.0 mg/L 16.6 142 50 QR-DUP

SAR ND 0.0100 SAR 3.09 200

Magnesium PPM 28.2 10.0 mg/L 11.6 83.2 50 QR-DUP

Sodium PPM 71.6 10.0 " 67.0 6.57 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 B4E2116 - Saturated Paste pH/EC**

**Duplicate (B4E2116-DUP1)**

**Source: Y405522-01**

Prepared: 05/21/2024 Analyzed: 05/22/2024

pH	7.87		pH Units		8.68			9.79	25	
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Project: KMG - Sharkey 8&9-35 & 10-3 O SA  
Facility

### Notes and Definitions

U Sample is Non-Detect.

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 at a wet weight basis.

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