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February 24, 2023

James Hix
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, CO 80203

**RE: Soil Boring Investigation Results
Margaret Spaulding (OWP) #2 (API #: 05-057-06011)
Lone Pine Field, Jackson County, Colorado**

Dear Mr. Hix,

Cottonwood Consulting LLC (Cottonwood) is pleased to provide you with the results of a soil boring investigation conducted at the Margaret Spaulding (OWP) #2 (API #: 05-057-06011) located in the Lone Pine Field in Jackson County, Colorado (Figure 1). Details regarding the background, methodology, and associated results are summarized below.

Background

The Margaret Spaulding (OWP) #2 is located in the southwest quarter of the northeast quarter of Sec 28, T9N, R81W, 6th Prime Meridian (P.M.) in Jackson County, Colorado. The well was originally drilled and completed into the Dakota Formation by Burton Hawks in 1972. Subsequent operators included Coral Production Corp., Lone Pine Gas, and CM Production LLC. The well produced from the Dakota Formation until it was shut-in in 2014.

The site was most recently operated by CM Production LLC and is now part of the Colorado Oil and Gas Conservation Commission (COGCC) Orphan Well Program (OWP). The COGCC decommissioned the site and plugged the well in 2021. During the process, soil samples were collected and impacts were identified at levels above COGCC Table 915-1 standards. The impacts are most likely associated with crude oil and produced water releases that have occurred over time from production equipment and on-location flowlines at the site. Cottonwood was retained by the COGCC to conduct a soil boring investigation to delineate the extent of impacts at the Margaret Spaulding (OWP) #2. The work was conducted under approved COGCC Form 27's and the remediation project number is REM #19198.

Methodology

HRL Compliance Solutions, Inc. (HRL) and Cottonwood conducted drilling activities at the Margaret Spaulding (OWP) #2 on October 24 and 25, 2022. At the Margaret Spaulding (OWP) #2 site, a grid was set up on 50-foot centers and a total of 11 soil borings were advanced (Figure 2).

All soil borings were advanced using a direct push Geoprobe® drilling rig. Cottonwood prepared geologic logs of the boreholes and screened soil continuously using visual/olfactory observations and a Tiger LT® Photoionization Detector (PID). The geologic boring log is included as Attachment 1 and a photographic log is included as Attachment 2.

Soil samples were collected for laboratory analysis using judgmental sampling, to search for “hot spots,” identify areas and layers of contamination, and estimated prevalence of contaminants. Additional samples from intervals indicating no signs of impacts were also submitted for laboratory analysis to define the horizontal and vertical extent of impacts. Background samples were also collected from undisturbed surrounding areas in the vicinity of the site.

Soil samples were collected by transferring soil into one-gallon plastic bags and laboratory provided 4-ounce jars, and placing the samples in a cooler with ice. Samples were submitted with completed chain-of-custody to Green Analytical Laboratories (GAL) of Durango, Colorado for analysis of Total Petroleum Hydrocarbons (TPH) by Environmental Protection Agency Method 8015B. Samples collected from less than 5 feet (ft) below ground surface (bgs) that exceeded 500 milligrams per kilogram (mg/kg) of TPH were also analyzed for the remainder of COGCC Table 915-1 constituents. Samples collected from greater than 5 ft bgs that exceeded 500 mg/kg of TPH were analyzed for COGCC Table 915-1 organic compounds only. Background samples were analyzed for COGCC Table 915-1 inorganic compounds only. All results were compared to the COGCC Table 915-1 Standards.

Results

Results of the soil boring investigation indicate the presence of clay and sandy soils at the sites. A gravel and cobble layer was encountered underlying the clay and sand. Refusal was met in all soil borings at depths ranging from 10 to 20 ft bgs due to the presence of cobble. Groundwater was not encountered in any of the soil borings.

A total of 12 soil samples, including two background samples, were collected from the Margaret Spaulding (OWP) #2 site. TPH concentrations exceeded the COGCC standard in one of the samples collected from 5-10 ft below ground surface (bgs). TPH was detected at concentrations below the COGCC standard in one of the samples. TPH impacts were not observed in eight of the samples. Table 1 summarizes the sample results relative to the COGCC Table 915-1 standards and the laboratory analytical report is included as Attachment 3.

Impacts at the Margaret Spaulding (OWP) #2 site were concentrated approximately 60 ft northeast of the plugged and abandoned (P&A) marker (Figure 3). Based on the soil borings and laboratory analytical results, there are approximately 1,009 yd³ of impacted soils in exceedance of the COGCC Table 915-1 TPH standard at the site. This estimate assumes an impacted area measuring approximately 2,723 ft² and impacts from the ground surface to 10 ft bgs.

Conclusions

At the Margaret Spaulding (OWP) #2, results indicate that there are approximately 1,009 yd³ of impacted soils in exceedance of the COGCC Table 915-1 TPH standard. These soils are located approximately 60 ft northeast of the P&A marker.

Should you have any questions, please do not hesitate to contact me at 970-764-7356 or ksiesser@cottonwoodconsulting.com. We appreciate the opportunity to provide services to the COGCC.

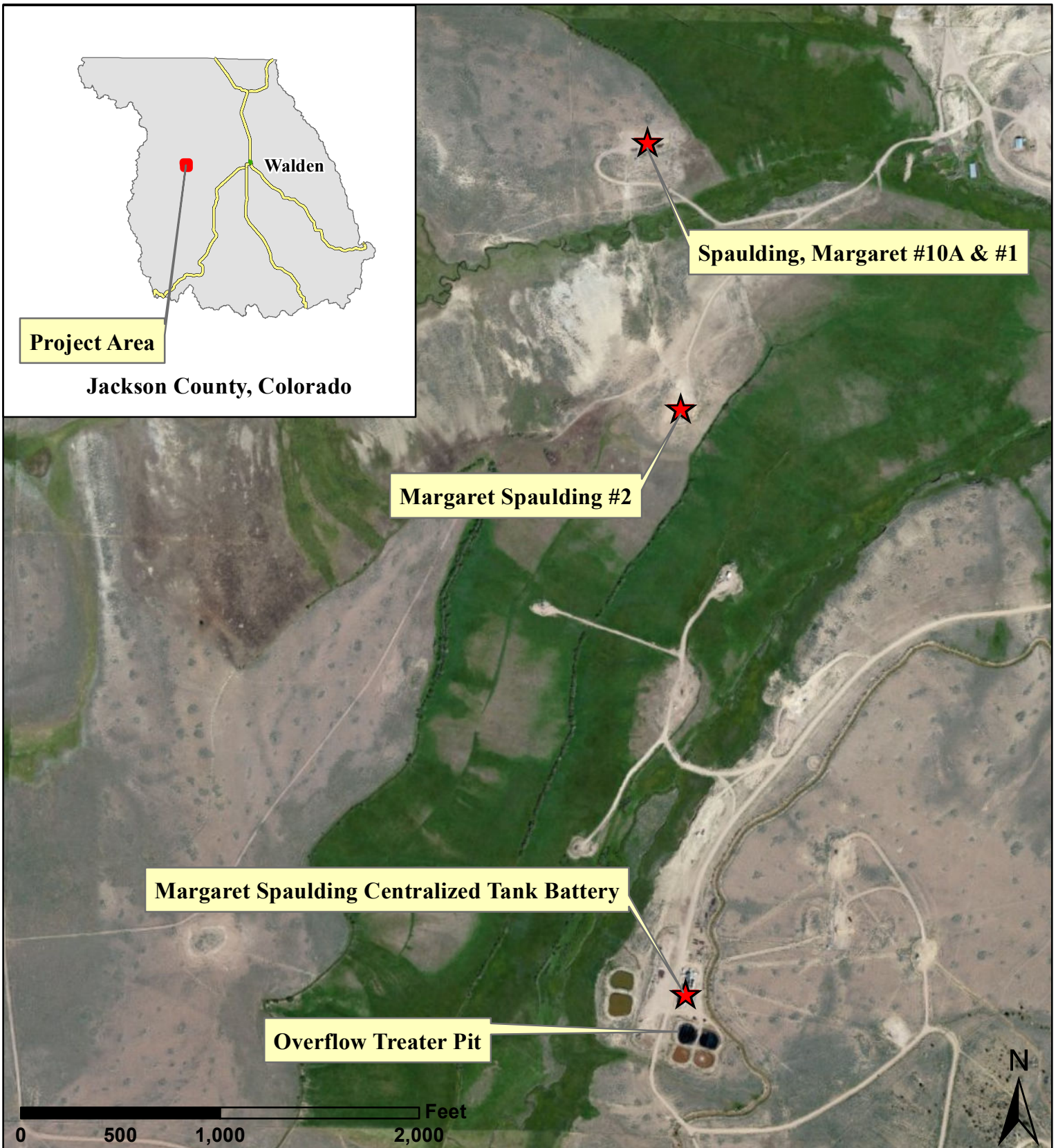
Sincerely,



Kyle G. Siesser, P.G.
Cottonwood Consulting, LLC

Attachments: Figure 1 – Project Map
Figure 2 – Soil Boring Map
Figure 3 – Approximate Impact Extent Map
Table 1 – Soil Sampling Results
Attachment 1 – Geologic Boring Logs
Attachment 2 – Photographic Log
Attachment 3 – Laboratory Analytical Results

FIGURE 1



Project Area

Jackson County, Colorado

Spaulding, Margaret #10A & #1

Margaret Spaulding #2

Margaret Spaulding Centralized Tank Battery

Overflow Treater Pit

0 500 1,000 2,000 Feet



Legend

 Site Location



Mapping by: K. O'Brien, 2/2/2023
 Coordinate System:
 NAD 1983 UTM Zone 13 N
 Location: Sec 28 T09N R81W
 Jackson County, CO

Figure 1
Lone Pine Site Location
Project Map
Colorado Oil & Gas
Conservation Commission

FIGURE 2



Legend

- ⊗ Borehole
- ⊗ Borehole/Soil Sample (TPH Values Exceed COGCC Standard)
- ⊗ Borehole/Soil Sample (TPH Values Below COGCC Standard)
- Background Sample
- ☀ Plugged & Abandoned Well



Mapping by: K. O'Brien, 2/2/2023
 Coordinate System:

NAD 1983 UTM Zone 13 N

Location: SWNE Sec 28 T9N R81W 6th PM
 Jackson County, CO

Figure 2
Margaret Spaulding (OWP) #2
Soil Boring Map
Colorado Oil & Gas
Conservation Commission

FIGURE 3



Legend

- ⊗ Borehole
- ⊗ Borehole/Soil Sample (TPH Values Exceed COGCC Standard)
- ⊗ Borehole/Soil Sample (TPH Values Below COGCC Standard)
- ⊗ Plugged & Abandoned Well
- ⊗ Approximate Extent of Impact

Cottonwood
CONSULTING

Mapping by: K. O'Brien, 2/2/2023

Coordinate System:

NAD 1983 UTM Zone 13 N

Location: SWNE Sec 28 T9N R81W 6th PM
Jackson County, CO

Figure 3
Margaret Spaulding (OWP) #2
Approximate Impact Extent Map
Colorado Oil & Gas
Conservation Commission

TABLE 1

Table 1
Soil Sampling Results
Margaret Spaulding #2
Lone Pine Investigation
COGCC

Parameter	BH-6 (0-5')	BH-6 (5-10')	BH-7 (0-5')	BH-7 (5-10')	BH-7 (10-12.5')	COGCC Table 915-1 Standard	Units
	10/25/2022	10/25/2022	10/25/2022	10/25/2022	10/25/2022		
Latitude/Longitude	40.726023, -106.498518	40.726023, -106.498518	40.726023, -106.498340	40.726023, -106.498340	40.726023, -106.498340	NA	NA
Laboratory ID	2210225-01	2210225-02	2210225-03	2210225-04	2210225-05	NA	NA
Depth	0-5	5-10	0-5	5-10	10-12.5	NA	feet bgs
PID	0.2	0.3	168.2	105.7	0.6	NA	ppm
Conductivity	-	-	-	-	-	<4	mmhos/cm
pH	-	-	-	-	-	6-8.3	pH units
SAR	-	-	-	-	-	<6	no units
Calcium	-	-	-	-	-	NA	mg/L
Magnesium	-	-	-	-	-	NA	mg/L
Sodium	-	-	-	-	-	NA	mg/L
Arsenic	-	-	-	-	-	0.68 or 1.25x BG	mg/kg
Barium	-	-	-	-	-	15000 or 1.25x BG	mg/kg
Cadmium	-	-	-	-	-	71 or 1.25x BG	mg/kg
Chromium (VI)	-	-	-	-	-	0.3 or 1.25x BG	mg/kg
Total Chromium	-	-	-	-	-	NA	mg/kg
Copper	-	-	-	-	-	3100 or 1.25x BG	mg/kg
Lead	-	-	-	-	-	400 or 1.25x BG	mg/kg
Nickel	-	-	-	-	-	1500 or 1.25x BG	mg/kg
Selenium	-	-	-	-	-	390 or 1.25x BG	mg/kg
Silver	-	-	-	-	-	390 or 1.25x BG	mg/kg
Zinc	-	-	-	-	-	23000 or 1.25x BG	mg/kg
Boron	-	-	-	-	-	2	mg/L
TPH (GRO)	<10.0	<10.0	24.4	<50.0	<10.0	NA	mg/kg
TPH (DRO)	<10.0	<10.0	179	1420	<10.0	NA	mg/kg
TPH (EXT DRO)	<10.0	<10.0	15.4	272	<10.0	NA	mg/kg
Total TPH	<30.0	<30.0	218.8	1692	<30.0	500	mg/kg
Benzene	-	-	-	<0.0250	-	1.2	mg/kg
Toluene	-	-	-	<0.0250	-	490	mg/kg
Ethylbenzene	-	-	-	<0.0250	-	5.8	mg/kg
Total Xylenes	-	-	-	<0.0750	-	58	mg/kg
1,3,5-trimethylbenzene	-	-	-	0.263	-	27	mg/kg
1,2,4-trimethylbenzene	-	-	-	<0.0250	-	30	mg/kg
Naphthalene	-	-	-	0.032**	-	2	mg/kg
2-methylnaphthalene	-	-	-	<0.023	-	24	mg/kg
1-methylnaphthalene	-	-	-	0.030**	-	18	mg/kg
Acenaphthene	-	-	-	<0.024	-	360	mg/kg
Fluorene	-	-	-	<0.014	-	240	mg/kg
Anthracene	-	-	-	<0.017	-	1800	mg/kg
Fluoranthene	-	-	-	<0.019	-	240	mg/kg
Pyrene	-	-	-	0.030**	-	180	mg/kg
Benzo(a)anthracene	-	-	-	<0.023	-	1.1	mg/kg
Chrysene	-	-	-	0.095	-	110	mg/kg
Benzo(b)fluoranthene	-	-	-	<0.019	-	1.1	mg/kg
Benzo(k)fluoranthene	-	-	-	<0.016	-	11	mg/kg
Benzo(a)pyrene	-	-	-	<0.018	-	0.11	mg/kg
Indeno(1,2,3-cd)pyrene	-	-	-	<0.017	-	1.1	mg/kg
Dibenz(a,h)anthracene	-	-	-	<0.019	-	0.11	mg/kg

Notes:

PID - Photoionization Detector
SAR - Sodium Adsorption Ratio
BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes
TPH - Total Petroleum Hydrocarbons
GRO - Gasoline Range Organics
DRO - Diesel Range Organics
EXT - Extended
NA - Not Applicable
ppm - parts per million
BG - background

bgs - below ground surface
mmhos/cm - millihos per centimeter
mg/L - milligrams per liter
mg/kg - milligrams per kilogram
COGCC - Colorado Oil & Gas Conservation Commission
* - Laboratory detection limit exceeds COGCC Standard
Bold values exceed COGCC Standard
Values reported below the laboratory detection limit are considered zero in Total TPH calculations.
** - Value detected below the reporting limit; result is an estimate.

**Table 1 (continued)
Soil Sampling Results
Margaret Spaulding #2
Lone Pine Investigation
COGCC**

Parameter	BH-8 (5-10')	BH-9 (0-5')	BH-9 (5-10')	BH-10 (0-5')	BH-11 (0-5')	COGCC Table 915-1 Standard	Units
	10/25/2022	10/25/2022	10/25/2022	10/25/2022	10/25/2022		
Latitude/Longitude	40.725888, -106.498339	40.725890, -106.498516	40.725890, -106.498516	40.725890, -106.498693	40.725970, -106.498253	NA	NA
Laboratory ID	2210225-06	2210225-07	2210225-08	2210225-09	2210225-10	NA	NA
Depth	5-10	0-5	5-10	0-5	0-5	NA	feet bgs
PID	0.2	0.2	0.1	0.1	0.2	NA	ppm
Conductivity	-	-	-	-	-	<4	mmhos/cm
pH	-	-	-	-	-	6-8.3	pH units
SAR	-	-	-	-	-	<6	no units
Calcium	-	-	-	-	-	NA	mg/L
Magnesium	-	-	-	-	-	NA	mg/L
Sodium	-	-	-	-	-	NA	mg/L
Arsenic	-	-	-	-	-	0.68 or 1.25x BG	mg/kg
Barium	-	-	-	-	-	15000 or 1.25x BG	mg/kg
Cadmium	-	-	-	-	-	71 or 1.25x BG	mg/kg
Chromium (VI)	-	-	-	-	-	0.3 or 1.25x BG	mg/kg
Total Chromium	-	-	-	-	-	NA	mg/kg
Copper	-	-	-	-	-	3100 or 1.25x BG	mg/kg
Lead	-	-	-	-	-	400 or 1.25x BG	mg/kg
Nickel	-	-	-	-	-	1500 or 1.25x BG	mg/kg
Selenium	-	-	-	-	-	390 or 1.25x BG	mg/kg
Silver	-	-	-	-	-	390 or 1.25x BG	mg/kg
Zinc	-	-	-	-	-	23000 or 1.25x BG	mg/kg
Boron	-	-	-	-	-	2	mg/L
TPH (GRO)	<10.0	<10.0	<10.0	<10.0	<10.0	NA	mg/kg
TPH (DRO)	<10.0	<10.0	<10.0	<10.0	<10.0	NA	mg/kg
TPH (EXT DRO)	<10.0	<10.0	<10.0	<10.0	<10.0	NA	mg/kg
Total TPH	<30.0	<30.0	<30.0	<30.0	<30.0	500	mg/kg
Benzene	-	-	-	-	-	1.2	mg/kg
Toluene	-	-	-	-	-	490	mg/kg
Ethylbenzene	-	-	-	-	-	5.8	mg/kg
Total Xylenes	-	-	-	-	-	58	mg/kg
1,3,5-trimethylbenzene	-	-	-	-	-	27	mg/kg
1,2,4-trimethylbenzene	-	-	-	-	-	30	mg/kg
Naphthalene	-	-	-	-	-	2	mg/kg
2-methylnaphthalene	-	-	-	-	-	24	mg/kg
1-methylnaphthalene	-	-	-	-	-	18	mg/kg
Acenaphthene	-	-	-	-	-	360	mg/kg
Fluorene	-	-	-	-	-	240	mg/kg
Anthracene	-	-	-	-	-	1800	mg/kg
Fluoranthene	-	-	-	-	-	240	mg/kg
Pyrene	-	-	-	-	-	180	mg/kg
Benzo(a)anthracene	-	-	-	-	-	1.1	mg/kg
Chrysene	-	-	-	-	-	110	mg/kg
Benzo(b)fluoranthene	-	-	-	-	-	1.1	mg/kg
Benzo(k)fluoranthene	-	-	-	-	-	11	mg/kg
Benzo(a)pyrene	-	-	-	-	-	0.11	mg/kg
Indeno(1,2,3-cd)pyrene	-	-	-	-	-	1.1	mg/kg
Dibenz(a,h)anthracene	-	-	-	-	-	0.11	mg/kg

Notes:

PID - Photoionization Detector
 SAR - Sodium Adsorption Ratio
 BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes
 TPH - Total Petroleum Hydrocarbons
 GRO - Gasoline Range Organics
 DRO - Diesel Range Organics
 EXT - Extended
 NA - Not Applicable
 ppm - parts per million
 BG - background

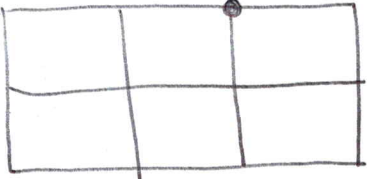
bgs - below ground surface
 mmhos/cm - millihos per centimeter
 mg/L - milligrams per liter
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 COGCC - Colorado Oil & Gas Conservation Commission
 * - Laboratory detection limit exceeds COGCC Standard
Bold values exceed COGCC Standard
 Values reported below the laboratory detection limit are considered zero in Total TPH calculations.
 ** - Value detected below the reporting limit; result is an estimate.

Table 1 (continued)
Soil Sampling Results
Margaret Spaulding #2
Lone Pine Investigation
COGCC

Parameter	BG 1	BG 2	COGCC Table 915-1 Standard	Units
	10/24/2022	10/24/2022		
Latitude/Longitude	40.726441, -106.498844	40.726107, -106.498151	NA	NA
Laboratory ID	2210229-01	2210229-02	NA	NA
Depth	0-1	0-0.5	NA	feet bgs
PID	-	-	NA	ppm
Conductivity	0.434	0.338	<4	mmhos/cm
pH	7.73	7.74	6-8.3	pH units
SAR	0.14	0.22	<6	no units
Calcium	83.5	56.8	NA	mg/L
Magnesium	9.75	7.40	NA	mg/L
Sodium	4.99	6.64	NA	mg/L
Arsenic	5.61	6.91	0.68 or 1.25x BG	mg/kg
Barium	189	415	15000 or 1.25x BG	mg/kg
Cadmium	<5.00	<5.00	71 or 1.25x BG	mg/kg
Chromium (VI)	0.514	0.514	0.3 or 1.25x BG	mg/kg
Total Chromium	16.8	20.1	NA	mg/kg
Copper	11.0	14.7	3100 or 1.25x BG	mg/kg
Lead	<10.0	11.9	400 or 1.25x BG	mg/kg
Nickel	12.7	17.2	1500 or 1.25x BG	mg/kg
Selenium	<20.0	<20.0	390 or 1.25x BG	mg/kg
Silver	<1.00	<1.00	390 or 1.25x BG	mg/kg
Zinc	45.8	59.4	23000 or 1.25x BG	mg/kg
Boron	<1.20	<1.20	2	mg/L
TPH (GRO)	-	-	NA	mg/kg
TPH (DRO)	-	-	NA	mg/kg
TPH (EXT DRO)	-	-	NA	mg/kg
Total TPH	-	-	500	mg/kg
Benzene	-	-	1.2	mg/kg
Toluene	-	-	490	mg/kg
Ethylbenzene	-	-	5.8	mg/kg
Total Xylenes	-	-	58	mg/kg
1,3,5-trimethylbenzene	-	-	27	mg/kg
1,2,4-trimethylbenzene	-	-	30	mg/kg
Naphthalene	-	-	2	mg/kg
2-methylnaphthalene	-	-	24	mg/kg
1-methylnaphthalene	-	-	18	mg/kg
Acenaphthene	-	-	360	mg/kg
Fluorene	-	-	240	mg/kg
Anthracene	-	-	1800	mg/kg
Fluoranthene	-	-	240	mg/kg
Pyrene	-	-	180	mg/kg
Benzo(a)anthracene	-	-	1.1	mg/kg
Chrysene	-	-	110	mg/kg
Benzo(b)fluoranthene	-	-	1.1	mg/kg
Benzo(k)fluoranthene	-	-	11	mg/kg
Benzo(a)pyrene	-	-	0.11	mg/kg
Indeno(1,2,3-cd)pyrene	-	-	1.1	mg/kg
Dibenz(a,h)anthracene	-	-	0.11	mg/kg

Notes:
bgs - below ground surface
PID - Photoionization Detector mmhos/cm - millihos per centimeter
SAR - Sodium Adsorption Ratio mg/L - milligrams per liter
BTEX - Benzene, Toluene, Ethylbenzene, & Total Xylenes mg/kg - milligrams per kilogram
TPH - Total Petroleum Hydrocarbons GRO - Gasoline COGCC - Colorado Oil & Gas Conservation Commission
Range Organics DRO - Diesel Range Organics EXT - * - Laboratory detection limit exceeds COGCC Standard
Extended **Bold** values exceed COGCC Standard
NA - Not Applicable Values reported below the laboratory detection limit are
ppm - parts per million considered zero in Total TPH calculations.
BG - background ** - Value detected below the reporting limit; result is an
estimate.

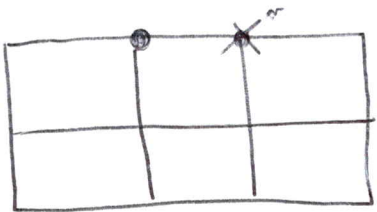
ATTACHMENT 1

	Project: Lone Pine	Boring ID: BH- 2
	Date: 10/24/2022	Logged By: EM/JH
	Location: MS #2	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 19

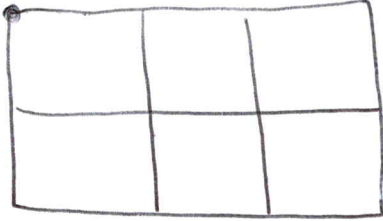
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Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	1500	0.1	CLAY sand, dry, no stain, no odor.	
4					
6					
8	5-10	100%	0.2	CLAY sand, dry, no stain, no odor.	
10				sl. moist	
12	10-15	100	0.2	SAA, moist	
14					
16				SAA	
18	15-19	100	0.1	CLAY w/cobbles	
20				Refusal 19ft	
22					
24					
26					
28					
30					

	Project: Lone Pine	Boring ID: BH- 3
	Date: 10/24/2022	Logged By: EM/JH
	Location: MS #2	Elevation: -
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 19

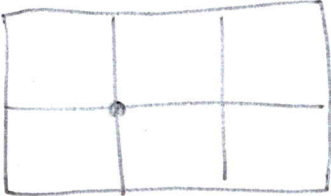
Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	95	0.0	CLAY, tan w/ white, fine sands, no stain, no odor	
4					
6				SAA, cobble/gravel	
8	5-10	80	0.1	-----	
10				CLAY, moist brown, no stain, no odor.	
12	10-15	100	0.3	SAA	
14					
16	15-19	90	0.3	SAA	
18					
20				Refusal @ 19ft	
22					
24					
26					
28					
30					

	Project: Lone Pine	Boring ID: BH- 4
	Date: 10/25/2022	Logged By: EM/JH
	Location: MS # 2	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 13

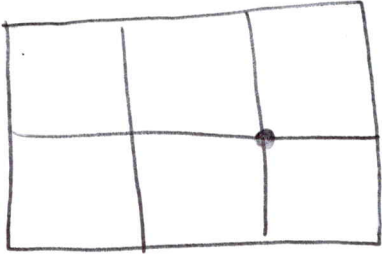
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Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	90	0.2	CLAY, brown, dry, no stain, no odor	
4			0.1	white CLAY, no stain, no odor, dry	
6	5-10	80	0.2	CLAY, tan & white, dry, no stain, no odor	
8					
10	10-13	80	0.1	SAA	
12					
14				Refusal @ 13'	
16					
18					
20					
22					
24					
26					
28					
30					

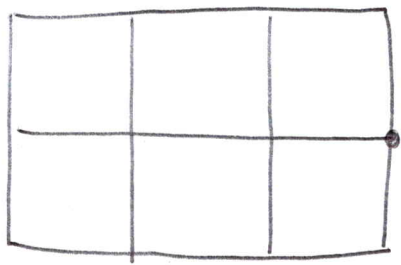
	Project: Lone Pine	Boring ID: BH- 5
	Date: 10/25/2022	Logged By: EM/JH
	Location: MS	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 10'

Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	60	0.2	CLAY brown sl. moist	
4					
6	5-7.5	50	0.1	SAA, dry	
8	7.5-10	60	0.1	SAA moist	
10					
12				Refusal @ 10'	
14					
16					
18					
20					
22					
24					
26					
28					
30					

 <p>C2 ↑</p>	Project: Lone Pine	Boring ID: BH- 6
	Date: 10/25/2022	Logged By: EM/JH
	Location: MS # 2	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 12.5

Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	80	0.2	CLAY, dark brown, sl. moist; no stain, no odor	
4					
6					
8	5-10	100	0.3	SAA, light brown	
10					
12	10-12.5	50	0.3	SAA	
14					
16					
18					
20					
22					
24					
26					
28					
30					

collect: BH-6 (0-5') @ 0835
BH-6 (5-10') @ 0840

	Project: Lone Pine	Boring ID: BH- 7
	Date: 10/25/2022	Logged By: EM/JH
	Location: MS #2	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 15'

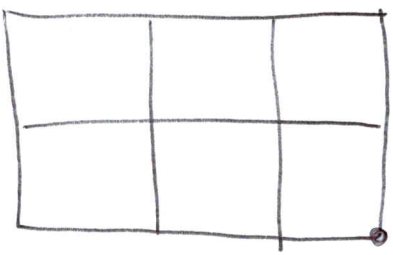
022

↑

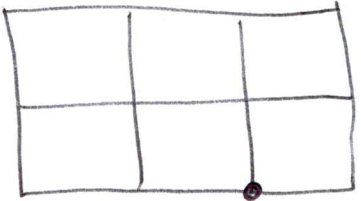
Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	50	168.2	CLAY, dark stain, PHC odor	
4					
6					
8	5-10	100	105.7	SAA, lighter, sl. PHC odor	
10					
12	10-12.5	60	0.6	Sandy CLAY, brown, no odor, no stain	
14	12.5-15	60	0.3	SAA	
16				Refusal @ 15'	
18					
20					
22					
24					
26					
28					
30					

collet:

BH-7 (0-5) @ 0845
 BH-7 (5-10) @ 0850
 BH-7 (10-12.5) @ 0900

				Project: Lone Pine		Boring ID: BH- 8	
				Date: 10/25/2022		Logged By: EM/JH	
				Location: MS #2		Elevation:	
				Drilling Company: HRL		Drill Method: Direct Push	
				Diameter: 2"		Sample Interval: 5'	
				Completion: NA		Total Depth: 13'	
D3	↑						
Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:		
2	0-5	—	—	no sleeve - unable to retrieve sleeve			
4							
6				CLAY w/ sand, brown, sl. moist, no stain, no odor			
8	5-10	50	0.2				
10							
12	10-13	65	0.3	SAA			
14				Refusal @ 13'			
16							
18							
20							
22							
24							
26							
28							
30							

collect: BH-8 (5-10') @ 0905

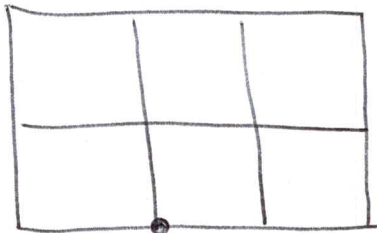
	Project: Lone Pine	Boring ID: BH- 9
	Date: 10/25/2022	Logged By: EM/JH
	Location: MS #2	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 14'

C3



Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	75	02	CLAY w/ sand, brown, sl. moist, no stain, no odor.	
4					
6	5-10	100	01	CLAY, tan & white, sandy, no stain, no odor, dry	
8					
10					
12	10-14	90	02	CLAY, brown, moist w/ sand, no stain, no odor.	
14					
16				Refusal @ 14'	
18					
20					
22					
24					
26					
28					
30					

collect BH-9 (0-5') @0915
BH-9 (5-10') @0930

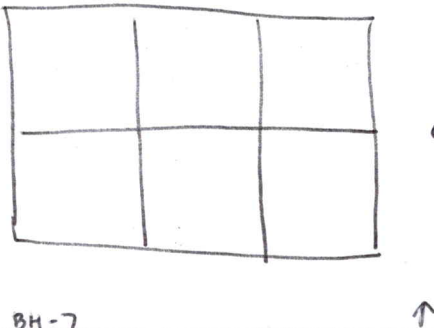
	Project: Lone Pine	Boring ID: BH-10
	Date: 10/25/2022	Logged By: EM/JH
	Location: MS #2	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 14

B3



Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	100	0.1	CLAY w/ sand, brown w/ some white spots, no stain, no odor, dry.	
4					
6	5-10	100	0.1	SAA	
8					
10	10-14	100	0.1	SAA, no white spots	
12					
14				Refusal @ 14'	
16					
18					
20					
22					
24					
26					
28					
30					

BH-10(0-5') @ 0930

	Project: Lone Pine	Boring ID: BH-11
	Date: 10/25/2022	Logged By: EM/JH
	Location: MS #2	Elevation:
	Drilling Company: HRL	Drill Method: Direct Push
	Diameter: 2"	Sample Interval: 5'
	Completion: NA	Total Depth: 14'

Depth:	Sample Interval:	Recovery:	PID:	Lithology:	Completion:
2	0-5	90	0.2	Sandy CLAY w/ some white & grey spots; primarily brown, no stain, no odor.	
4					
6	5-10	90	0.1	Sandy CLAY, brown, SAA	
8					
10					
12	10-14	100	0.1	Sandy CLAY, brown/grey, SAA	
14					
16				Refusal @ 14'	
18					
20					
22					
24					
26					
28					
30					

collect: BH-11(0-5') @ 0950

ATTACHMENT 2



Photo 1: Margaret Spaulding (OWP) #2 overall site, 10/25/2022.

ATTACHMENT 3



75 Suttle Street
Durango, CO 81303
970.247.4220 Phone
970.247.4227 Fax
www.greenanalytical.com

10 November 2022

Kyle Siesser
Cottonwood Consulting
PO Box 1653
Durango, CO 81302
RE: COGCC Table 915-1

Enclosed are the results of analyses for samples received by the laboratory on 10/26/22 14:30. The data to follow was performed, in whole or in part, by Green Analytical Laboratories. Any data that was performed by a subcontract laboratory is included within the GAL report, or with an additional report attached.

If you need any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads 'Jeremy D. Allen'.

Jeremy D Allen
Laboratory Director

All accredited analytes contained in this report are denoted by an asterisk (*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <http://greenanalytical.com/certifications/>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water. TNI Certificate Number: T104704514-22-15

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8. TNI Certificate Number: T104704398-22-15



Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: MS #2
Project Manager: Kyle Siesser

Reported:
11/10/22 14:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
BH-6 (0-5')	2210225-01	Solid	10/25/22 08:35	10/26/22 14:30	
BH-6 (5-10')	2210225-02	Solid	10/25/22 08:40	10/26/22 14:30	
BH-7 (0-5')	2210225-03	Solid	10/25/22 08:45	10/26/22 14:30	
BH-7 (5-10')	2210225-04	Solid	10/25/22 08:50	10/26/22 14:30	
BH-7 (10-12.5')	2210225-05	Solid	10/25/22 09:00	10/26/22 14:30	
BH-8 (5-10')	2210225-06	Solid	10/25/22 09:05	10/26/22 14:30	
BH-9 (0-5')	2210225-07	Solid	10/25/22 09:15	10/26/22 14:30	
BH-9 (5-10')	2210225-08	Solid	10/25/22 09:20	10/26/22 14:30	
BH-10 (0-5')	2210225-09	Solid	10/25/22 09:30	10/26/22 14:30	
BH-11 (0-5')	2210225-10	Solid	10/25/22 09:50	10/26/22 14:30	

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	Reported: 11/10/22 14:13
PO Box 1653	Project Name / Number: MS #2	
Durango CO, 81302	Project Manager: Kyle Siesser	

BH-6 (0-5')

2210225-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	11/01/22 15:05	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	11/01/22 15:05	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	11/01/22 15:05	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			89.9 %	45.3-161		11/01/22 15:05	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			107 %	46.3-178		11/01/22 15:05	8015B		MS

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

BH-6 (5-10')

2210225-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	10/30/22 17:39	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	10/30/22 17:39	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	10/30/22 17:39	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			91.7 %	45.3-161		10/30/22 17:39	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			104 %	46.3-178		10/30/22 17:39	8015B		MS

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

BH-7 (0-5')

2210225-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	24.4	10.0	6.25	mg/kg	1	10/30/22 18:02	8015B		MS
DRO >C10-C28*	179	10.0	4.26	mg/kg	1	10/30/22 18:02	8015B		MS
EXT DRO >C28-C36	15.4	10.0	4.26	mg/kg	1	10/30/22 18:02	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			94.7 %	45.3-161		10/30/22 18:02	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			105 %	46.3-178		10/30/22 18:02	8015B		MS

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

BH-7 (5-10')

2210225-04 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<50.0	50.0	31.2	mg/kg	5	10/30/22 18:25	8015B		MS
DRO >C10-C28*	1420	50.0	21.3	mg/kg	5	10/30/22 18:25	8015B		MS
EXT DRO >C28-C36	272	50.0	21.3	mg/kg	5	10/30/22 18:25	8015B		MS
Surrogate: 1-Chlorooctane			98.0 %	45.3-161		10/30/22 18:25	8015B		MS
Surrogate: 1-Chlorooctadecane			147 %	46.3-178		10/30/22 18:25	8015B		MS

VOLATILES BY GC/MS

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	11/03/22 13:17	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	11/03/22 13:17	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	11/03/22 13:17	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	11/03/22 13:17	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	11/03/22 13:17	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	11/03/22 13:17	8260B		MS
1,3,5-Trimethylbenzene	0.263	0.0250	0.00450	mg/kg	50	11/03/22 13:17	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	11/03/22 13:17	8260B		MS
Naphthalene*	0.0610	0.0250	0.00500	mg/kg	50	11/03/22 13:17	8260B		MS
Surrogate: Dibromofluoromethane			95.6 %	84.6-114		11/03/22 13:17	8260B		MS
Surrogate: Toluene-d8			99.9 %	90.4-109		11/03/22 13:17	8260B		MS
Surrogate: 4-Bromofluorobenzene			129 %	82.5-117		11/03/22 13:17	8260B	S-04	MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	0.032	0.040	0.015	mg/kg	40	11/04/22 17:56	8270C	J	MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	11/04/22 17:56	8270C		MS
1-Methylnaphthalene	0.030	0.040	0.016	mg/kg	40	11/04/22 17:56	8270C	J	MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	11/04/22 17:56	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	11/04/22 17:56	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	11/04/22 17:56	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	11/04/22 17:56	8270C		MS
Pyrene*	0.030	0.040	0.013	mg/kg	40	11/04/22 17:56	8270C	J	MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	11/04/22 17:56	8270C		MS

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Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

BH-7 (5-10')

2210225-04 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Polynuclear Aromatic Compounds by GC/MS

Chrysene	0.095	0.040	0.017	mg/kg	40	11/04/22 17:56	8270C		MS
Benzo[b]flouranthene*	<0.019	0.040	0.019	mg/kg	40	11/04/22 17:56	8270C		MS
Benzo[k]flouranthene*	<0.016	0.040	0.016	mg/kg	40	11/04/22 17:56	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	11/04/22 17:56	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	11/04/22 17:56	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	11/04/22 17:56	8270C		MS
<i>Surrogate: Nitrobenzene-d5</i>			51.6 %	39.6-121		11/04/22 17:56	8270C		MS
<i>Surrogate: 2-Fluorobiphenyl</i>			72.1 %	39.8-134		11/04/22 17:56	8270C		MS
<i>Surrogate: Terphenyl-d14</i>			78.5 %	33.3-136		11/04/22 17:56	8270C		MS

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	Reported: 11/10/22 14:13
PO Box 1653	Project Name / Number: MS #2	
Durango CO, 81302	Project Manager: Kyle Siesser	

BH-7 (10-12.5')

2210225-05 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	10/30/22 18:49	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	10/30/22 18:49	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	10/30/22 18:49	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			84.4 %	45.3-161		10/30/22 18:49	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			94.5 %	46.3-178		10/30/22 18:49	8015B		MS

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	Reported: 11/10/22 14:13
PO Box 1653	Project Name / Number: MS #2	
Durango CO, 81302	Project Manager: Kyle Siesser	

BH-8 (5-10')

2210225-06 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	10/30/22 19:12	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	10/30/22 19:12	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	10/30/22 19:12	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			87.4 %	45.3-161		10/30/22 19:12	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			99.8 %	46.3-178		10/30/22 19:12	8015B		MS

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

BH-9 (0-5')

2210225-07 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	10/30/22 19:36	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	10/30/22 19:36	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	10/30/22 19:36	8015B		MS
Surrogate: 1-Chlorooctane			75.6 %	45.3-161		10/30/22 19:36	8015B		MS
Surrogate: 1-Chlorooctadecane			89.4 %	46.3-178		10/30/22 19:36	8015B		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	Reported: 11/10/22 14:13
PO Box 1653	Project Name / Number: MS #2	
Durango CO, 81302	Project Manager: Kyle Siesser	

BH-9 (5-10')

2210225-08 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	10/30/22 19:59	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	10/30/22 19:59	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	10/30/22 19:59	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			89.1 %	45.3-161		10/30/22 19:59	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			99.4 %	46.3-178		10/30/22 19:59	8015B		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

BH-10 (0-5')

2210225-09 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	10/30/22 20:21	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	10/30/22 20:21	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	10/30/22 20:21	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			86.1 %	45.3-161		10/30/22 20:21	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			98.4 %	46.3-178		10/30/22 20:21	8015B		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

BH-11 (0-5')

2210225-10 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	10/30/22 20:43	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	10/30/22 20:43	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	10/30/22 20:43	8015B		MS
<i>Surrogate: 1-Chlorooctane</i>			77.8 %	45.3-161		10/30/22 20:43	8015B		MS
<i>Surrogate: 1-Chlorooctadecane</i>			88.1 %	46.3-178		10/30/22 20:43	8015B		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

Petroleum Hydrocarbons by GC FID - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2102833 - General Prep - Organics

Blank (2102833-BLK1)

Prepared: 10/28/22 Analyzed: 11/01/22

Surrogate: 1-Chlorooctadecane	59.8		mg/kg	50.0		120	46.3-178			
Surrogate: 1-Chlorooctane	51.0		mg/kg	50.0		102	45.3-161			
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
GRO C6-C10	ND	10.0	mg/kg							

LCS (2102833-BS1)

Prepared: 10/28/22 Analyzed: 11/01/22

Surrogate: 1-Chlorooctadecane	61.4		mg/kg	50.0		123	46.3-178			
Surrogate: 1-Chlorooctane	48.3		mg/kg	50.0		96.5	45.3-161			
DRO >C10-C28	193	10.0	mg/kg	200		96.5	74.9-127			
GRO C6-C10	192	10.0	mg/kg	200		96.1	76.8-124			
Total TPH C6-C28	385	10.0	mg/kg	400		96.3	77.5-124			

LCS Dup (2102833-BSD1)

Prepared: 10/28/22 Analyzed: 11/01/22

Surrogate: 1-Chlorooctadecane	69.8		mg/kg	50.0		140	46.3-178			
Surrogate: 1-Chlorooctane	54.5		mg/kg	50.0		109	45.3-161			
DRO >C10-C28	201	10.0	mg/kg	200		101	74.9-127	4.15	18.6	
GRO C6-C10	197	10.0	mg/kg	200		98.3	76.8-124	2.23	17.2	
Total TPH C6-C28	398	10.0	mg/kg	400		99.5	77.5-124	3.20	17.6	

Batch 2102834 - General Prep - Organics

Blank (2102834-BLK1)

Prepared: 10/28/22 Analyzed: 10/30/22

Surrogate: 1-Chlorooctadecane	68.1		mg/kg	50.0		136	46.3-178			
Surrogate: 1-Chlorooctane	58.6		mg/kg	50.0		117	45.3-161			
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
GRO C6-C10	ND	10.0	mg/kg							

LCS (2102834-BS1)

Prepared: 10/28/22 Analyzed: 10/30/22

Surrogate: 1-Chlorooctadecane	73.8		mg/kg	50.0		148	46.3-178			
Surrogate: 1-Chlorooctane	61.6		mg/kg	50.0		123	45.3-161			
DRO >C10-C28	187	10.0	mg/kg	200		93.3	74.9-127			
GRO C6-C10	171	10.0	mg/kg	200		85.3	76.8-124			
Total TPH C6-C28	357	10.0	mg/kg	400		89.3	77.5-124			

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

**Petroleum Hydrocarbons by GC FID - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2102834 - General Prep - Organics (Continued)

LCS Dup (2102834-BSD1)

Prepared: 10/28/22 Analyzed: 10/30/22

<i>Surrogate: 1-Chlorooctadecane</i>	62.0		mg/kg	50.0		124	46.3-178			
<i>Surrogate: 1-Chlorooctane</i>	55.0		mg/kg	50.0		110	45.3-161			
DRO >C10-C28	168	10.0	mg/kg	200		84.0	74.9-127	10.5	18.6	
GRO C6-C10	164	10.0	mg/kg	200		82.0	76.8-124	3.93	17.2	
Total TPH C6-C28	332	10.0	mg/kg	400		83.0	77.5-124	7.29	17.6	

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Cottonwood Consulting	Project: COGCC Table 915-1	Reported:
PO Box 1653	Project Name / Number: MS #2	11/10/22 14:13
Durango CO, 81302	Project Manager: Kyle Siesser	

VOLATILES BY GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110239 - Volatiles

Blank (2110239-BLK1)

Prepared: 11/02/22 Analyzed: 11/03/22

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
<i>Surrogate: 4-Bromofluorobenzene</i>	1.27		mg/kg	1.25		101	82.5-117			
Benzene	ND	0.0250	mg/kg							
<i>Surrogate: Dibromofluoromethane</i>	1.22		mg/kg	1.25		97.3	84.6-114			
Ethylbenzene	ND	0.0250	mg/kg							
m+p - Xylene	ND	0.0500	mg/kg							
Naphthalene	ND	0.0250	mg/kg							
o-Xylene	ND	0.0250	mg/kg							
Toluene	ND	0.0250	mg/kg							
<i>Surrogate: Toluene-d8</i>	1.20		mg/kg	1.25		96.4	90.4-109			
Total Xylenes	ND	0.0750	mg/kg							

LCS (2110239-BS1)

Prepared: 11/02/22 Analyzed: 11/03/22

1,2,4-Trimethylbenzene	0.523	0.0250	mg/kg	0.500		105	62.4-140			
1,3,5-Trimethylbenzene	0.521	0.0250	mg/kg	0.500		104	64.4-138			
<i>Surrogate: 4-Bromofluorobenzene</i>	1.28		mg/kg	1.25		103	82.5-117			
Benzene	0.471	0.0250	mg/kg	0.500		94.1	73-130			
<i>Surrogate: Dibromofluoromethane</i>	1.23		mg/kg	1.25		98.1	84.6-114			
Ethylbenzene	0.494	0.0250	mg/kg	0.500		98.9	75.4-127			
m+p - Xylene	1.01	0.0500	mg/kg	1.00		101	71.8-133			
Naphthalene	0.470	0.0250	mg/kg	0.500		94.1	28.7-158			
o-Xylene	0.500	0.0250	mg/kg	0.500		99.9	78.6-125			
Toluene	0.475	0.0250	mg/kg	0.500		94.9	79-122			
<i>Surrogate: Toluene-d8</i>	1.24		mg/kg	1.25		99.4	90.4-109			
Total Xylenes	1.51	0.0750	mg/kg	1.50		101	74.6-130			

LCS Dup (2110239-BSD1)

Prepared: 11/02/22 Analyzed: 11/03/22

1,2,4-Trimethylbenzene	0.527	0.0250	mg/kg	0.500		105	62.4-140	0.775	38.2	
1,3,5-Trimethylbenzene	0.537	0.0250	mg/kg	0.500		107	64.4-138	3.13	39.1	
<i>Surrogate: 4-Bromofluorobenzene</i>	1.27		mg/kg	1.25		101	82.5-117			
Benzene	0.482	0.0250	mg/kg	0.500		96.4	73-130	2.37	17.1	
<i>Surrogate: Dibromofluoromethane</i>	1.21		mg/kg	1.25		97.1	84.6-114			
Ethylbenzene	0.499	0.0250	mg/kg	0.500		99.8	75.4-127	0.978	16.5	
m+p - Xylene	1.03	0.0500	mg/kg	1.00		103	71.8-133	1.75	19.1	
Naphthalene	0.453	0.0250	mg/kg	0.500		90.5	28.7-158	3.82	64	
o-Xylene	0.505	0.0250	mg/kg	0.500		101	78.6-125	1.02	13.2	
Toluene	0.484	0.0250	mg/kg	0.500		96.8	79-122	2.01	18.3	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 14:13

**VOLATILES BY GC/MS - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2110239 - Volatiles (Continued)

LCS Dup (2110239-BSD1) (Continued)

Prepared: 11/02/22 Analyzed: 11/03/22

Surrogate: Toluene-d8	1.24		mg/kg	1.25		99.3	90.4-109			
Total Xylenes	1.53	0.0750	mg/kg	1.50		102	74.6-130	1.51	16.5	

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Cottonwood Consulting	Project: COGCC Table 915-1	Reported:
PO Box 1653	Project Name / Number: MS #2	11/10/22 14:13
Durango CO, 81302	Project Manager: Kyle Siesser	

Polynuclear Aromatic Compounds by GC/MS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2102542 - SW846-3510

Blank (2102542-BLK1)

Prepared: 10/25/22 Analyzed: 11/04/22

1-Methylnaphthalene	ND	0.040	mg/kg							
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.33</i>		mg/kg	<i>2.00</i>		<i>66.6</i>	<i>39.8-134</i>			
2-Methylnaphthalene	ND	0.040	mg/kg							
Acenaphthene	ND	0.040	mg/kg							
Anthracene	ND	0.040	mg/kg							
Benzo[a]anthracene	ND	0.040	mg/kg							
Benzo[a]pyrene	ND	0.040	mg/kg							
Benzo[b]flouranthene	ND	0.040	mg/kg							
Benzo[k]flouranthene	ND	0.040	mg/kg							
Chrysene	ND	0.040	mg/kg							
Dibenz[a,h]anthracene	ND	0.040	mg/kg							
Fluoranthene	ND	0.040	mg/kg							
Fluorene	ND	0.040	mg/kg							
Indeno[1,2,3-cd]pyrene	ND	0.040	mg/kg							
Naphthalene	ND	0.040	mg/kg							
<i>Surrogate: Nitrobenzene-d5</i>	<i>0.929</i>		mg/kg	<i>2.00</i>		<i>46.5</i>	<i>39.6-121</i>			
Pyrene	ND	0.040	mg/kg							
<i>Surrogate: Terphenyl-d14</i>	<i>1.55</i>		mg/kg	<i>2.00</i>		<i>77.6</i>	<i>33.3-136</i>			

LCS (2102542-BS1)

Prepared: 10/25/22 Analyzed: 11/04/22

1-Methylnaphthalene	0.308	0.040	mg/kg	0.400		76.9	57.6-108			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.32</i>		mg/kg	<i>2.00</i>		<i>65.8</i>	<i>39.8-134</i>			
2-Methylnaphthalene	0.305	0.040	mg/kg	0.400		76.2	59-106			
Acenaphthene	0.332	0.040	mg/kg	0.400		83.0	60.9-105			
Acenaphthylene	0.309	0.040	mg/kg	0.400		77.1	57.4-107			
Anthracene	0.307	0.040	mg/kg	0.400		76.9	60.8-105			
Benzo[a]anthracene	0.290	0.040	mg/kg	0.400		72.5	56.1-121			
Benzo[a]pyrene	0.301	0.040	mg/kg	0.400		75.2	56.7-115			
Benzo[b]flouranthene	0.140	0.040	mg/kg	0.400		35.0	45.4-128			BS2
Benzo[g,h,i]perylene	0.318	0.040	mg/kg	0.400		79.4	56.5-107			
Benzo[k]flouranthene	0.270	0.040	mg/kg	0.400		67.4	49.6-119			
Carbazole	0.338	0.040	mg/kg	0.400		84.6	59.7-107			
Chrysene	0.298	0.040	mg/kg	0.400		74.5	12.2-190			
Dibenz[a,h]anthracene	0.305	0.040	mg/kg	0.400		76.3	59.1-111			
Fluoranthene	0.306	0.040	mg/kg	0.400		76.4	60.6-111			
Fluorene	0.297	0.040	mg/kg	0.400		74.2	59.3-108			
Indeno[1,2,3-cd]pyrene	0.319	0.040	mg/kg	0.400		79.8	53.4-116			
Naphthalene	0.303	0.040	mg/kg	0.400		75.8	56.5-106			

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Cottonwood Consulting	Project: COGCC Table 915-1	Reported:
PO Box 1653	Project Name / Number: MS #2	11/10/22 14:13
Durango CO, 81302	Project Manager: Kyle Siesser	

**Polynuclear Aromatic Compounds by GC/MS - Quality Control
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 2102542 - SW846-3510 (Continued)

LCS (2102542-BS1) (Continued)

Prepared: 10/25/22 Analyzed: 11/04/22

<i>Surrogate: Nitrobenzene-d5</i>	0.986		mg/kg	2.00		49.3	39.6-121			
Phenanthrene	0.324	0.040	mg/kg	0.400		81.0	59.9-107			
Pyrene	0.326	0.040	mg/kg	0.400		81.6	51.5-122			
<i>Surrogate: Terphenyl-d14</i>	1.48		mg/kg	2.00		73.9	33.3-136			

LCS Dup (2102542-BSD1)

Prepared: 10/25/22 Analyzed: 11/04/22

1-Methylnaphthalene	0.310	0.040	mg/kg	0.400		77.5	57.6-108	0.777	6.22	
<i>Surrogate: 2-Fluorobiphenyl</i>	1.31		mg/kg	2.00		65.4	39.8-134			
2-Methylnaphthalene	0.304	0.040	mg/kg	0.400		76.0	59-106	0.269	6.23	
Acenaphthene	0.322	0.040	mg/kg	0.400		80.6	60.9-105	2.97	8.18	
Acenaphthylene	0.311	0.040	mg/kg	0.400		77.6	57.4-107	0.636	5	
Anthracene	0.322	0.040	mg/kg	0.400		80.5	60.8-105	4.60	3.68	QR-04
Benzo[a]anthracene	0.298	0.040	mg/kg	0.400		74.4	56.1-121	2.63	9.01	
Benzo[a]pyrene	0.300	0.040	mg/kg	0.400		75.0	56.7-115	0.213	4.92	
Benzo[b]fluoranthene	0.284	0.040	mg/kg	0.400		71.1	45.4-128	68.1	7.63	QR-04
Benzo[g,h,i]perylene	0.329	0.040	mg/kg	0.400		82.3	56.5-107	3.53	12.5	
Benzo[k]fluoranthene	0.287	0.040	mg/kg	0.400		71.8	49.6-119	6.27	10.6	
Carbazole	0.347	0.040	mg/kg	0.400		86.8	59.7-107	2.66	8.65	
Chrysene	0.291	0.040	mg/kg	0.400		72.7	12.2-190	2.41	21.8	
Dibenz[a,h]anthracene	0.318	0.040	mg/kg	0.400		79.6	59.1-111	4.21	11.6	
Fluoranthene	0.308	0.040	mg/kg	0.400		77.1	60.6-111	0.922	7.54	
Fluorene	0.298	0.040	mg/kg	0.400		74.5	59.3-108	0.407	5.49	
Indeno[1,2,3-cd]pyrene	0.327	0.040	mg/kg	0.400		81.8	53.4-116	2.40	22.3	
Naphthalene	0.304	0.040	mg/kg	0.400		75.9	56.5-106	0.0626	4.56	
<i>Surrogate: Nitrobenzene-d5</i>	0.981		mg/kg	2.00		49.1	39.6-121			
Phenanthrene	0.329	0.040	mg/kg	0.400		82.2	59.9-107	1.44	5.21	
Pyrene	0.338	0.040	mg/kg	0.400		84.6	51.5-122	3.59	10.6	
<i>Surrogate: Terphenyl-d14</i>	1.52		mg/kg	2.00		75.8	33.3-136			

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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Cottonwood Consulting
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: MS #2
Project Manager: Kyle Siesser

Reported:
11/10/22 14:13

Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QR-04 The RPD for the BS/BSD was outside of historical limits.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- BS2 Blank spike recovery below laboratory acceptance criteria. Results for analyte potentially biased low.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
*Results reported on as received basis unless designated as dry.
- RPD Relative Percent Difference
- LCS Laboratory Control Sample (Blank Spike)
- RL Report Limit
- MDL Method Detection Limit

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Jeremy D Allen, Laboratory Director

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10 November 2022

Kyle Siesser
Cottonwood Consulting
PO Box 1653
Durango, CO 81302
RE: COGCC Table 915-1

Enclosed are the results of analyses for samples received by the laboratory on 10/26/22 14:30. The data to follow was performed, in whole or in part, by Green Analytical Laboratories. Any data that was performed by a subcontract laboratory is included within the GAL report, or with an additional report attached.

If you need any further assistance, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads 'Jeremy D. Allen'.

Jeremy D Allen
Laboratory Director

All accredited analytes contained in this report are denoted by an asterisk (*). For a complete list of accredited analytes please do not hesitate to contact us via any of the contact information contained in this report. All of our certifications can be viewed at <http://greenanalytical.com/certifications/>

Green Analytical Laboratories is NELAP accredited through the Texas Commission on Environmental Quality. Accreditation applies to drinking water and non-potable water matrices for trace metals and a variety of inorganic parameters. Green Analytical Laboratories is also accredited through the Colorado Department of Public Health and Environment and EPA region 8 for trace metals, Cyanide, Fluoride, Nitrate, and Nitrite in drinking water. TNI Certificate Number: T104704514-22-15

Our affiliate laboratory, Cardinal Laboratories, is also NELAP accredited through the Texas Commission on Environmental Quality for a variety of organic constituents in drinking water, non-potable water and solid matrices. Cardinal is also accredited for regulated VOCs, TTHM, and HAA-5 in drinking water through the Colorado Department of Public Health and Environment and EPA region 8. TNI Certificate Number: T104704398-22-15



Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 13:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
BG 1	2210229-01	Solid	10/24/22 15:30	10/26/22 14:30	
BG 2	2210229-02	Solid	10/24/22 15:45	10/26/22 14:30	

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: MS #2 Project Manager: Kyle Siesser	Reported: 11/10/22 13:11
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BG 1

2210229-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Hexavalent Chromium	0.514	0.250	0.128	mg/kg dry	25	11/02/22 12:17	3060A/3500-Cr B		HTB
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Saturated Paste Extraction

Calcium	83.5	0.100	0.058	mg/L	1	11/08/22 12:20	EPA200.7		AES
Conductivity	434			umho/cm@25 C	1	11/04/22 12:00	ASA#9 10-3.3		AWG
Magnesium	9.75	0.100	0.065	mg/L	1	11/08/22 12:20	EPA200.7		AES
pH	7.73			pH Units	1	11/04/22 12:00	ASA#9 10-3.2		AWG
SAR	0.14			No Unit	1	11/08/22 12:20	Calculation		AES
Sodium	4.99	1.00	0.079	mg/L	1	11/08/22 12:20	EPA200.7		AES

Total Metals by ICP

Barium	189	5.00	1.10	mg/kg dry	100	11/04/22 15:54	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	11/04/22 15:54	6010B		AES
Chromium	16.8	5.00	1.58	mg/kg dry	100	11/04/22 15:54	6010B		AES
Copper	11.0	5.00	2.83	mg/kg dry	100	11/04/22 15:54	6010B		AES
Lead	<10.0	10.0	4.02	mg/kg dry	100	11/04/22 15:54	6010B		AES
Nickel	12.7	5.00	2.41	mg/kg dry	100	11/04/22 15:54	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	11/04/22 15:54	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	11/04/22 15:54	6010B		AES
Zinc	45.8	10.0	2.18	mg/kg dry	100	11/04/22 15:54	6010B		AES

Total Metals by ICPMS

Arsenic	5.61	1.00	0.158	mg/kg dry	1000	11/07/22 12:05	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	11/08/22 12:41	EPA200.7		AES
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Jeremy D Allen, Laboratory Director

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: MS #2 Project Manager: Kyle Siesser	Reported: 11/10/22 13:11
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BG 2

2210229-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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General Chemistry

Hexavalent Chromium	0.514	0.250	0.128	mg/kg dry	25	11/02/22 12:17	3060A/3500-Cr B		HTB
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Saturated Paste Extraction

Calcium	56.8	0.100	0.058	mg/L	1	11/08/22 12:22	EPA200.7		AES
Conductivity	338			umho/cm@25 C	1	11/04/22 12:00	ASA#9 10-3.3		AWG
Magnesium	7.40	0.100	0.065	mg/L	1	11/08/22 12:22	EPA200.7		AES
pH	7.74			pH Units	1	11/04/22 12:00	ASA#9 10-3.2		AWG
SAR	0.22			No Unit	1	11/08/22 12:22	Calculation		AES
Sodium	6.64	1.00	0.079	mg/L	1	11/08/22 12:22	EPA200.7		AES

Total Metals by ICP

Barium	415	5.00	1.10	mg/kg dry	100	11/04/22 16:03	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	11/04/22 16:03	6010B		AES
Chromium	20.1	5.00	1.58	mg/kg dry	100	11/04/22 16:03	6010B		AES
Copper	14.7	5.00	2.83	mg/kg dry	100	11/04/22 16:03	6010B		AES
Lead	11.9	10.0	4.02	mg/kg dry	100	11/04/22 16:03	6010B		AES
Nickel	17.2	5.00	2.41	mg/kg dry	100	11/04/22 16:03	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	11/04/22 16:03	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	11/04/22 16:03	6010B		AES
Zinc	59.4	10.0	2.18	mg/kg dry	100	11/04/22 16:03	6010B		AES

Total Metals by ICPMS

Arsenic	6.91	1.00	0.158	mg/kg dry	1000	11/07/22 12:06	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	11/08/22 12:43	EPA200.7		AES
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Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 13:11

General Chemistry - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B223040 - General Prep - Wet Chem										
Blank (B223040-BLK1) Prepared & Analyzed: 11/02/22										
Hexavalent Chromium	ND	0.250	mg/kg dry							
LCS (B223040-BS1) Prepared & Analyzed: 11/02/22										
Hexavalent Chromium	2.34	0.250	mg/kg dry	2.50		93.8	85-115			

Saturated Paste Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch B223061 - Paste Extract										
Blank (B223061-BLK1) Prepared: 11/03/22 Analyzed: 11/08/22										
Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
SAR	0.00		No Unit							
Sodium	ND	1.00	mg/L							
Reference (B223061-SRM1) Prepared: 11/03/22 Analyzed: 11/08/22										
SAR	11.4		No Unit	10.5		108	90-110			
Batch B223062 - Paste Extract										
Reference (B223062-SRM1) Prepared: 11/03/22 Analyzed: 11/04/22										
pH	6.99		pH Units	6.93		101	92-108			
Batch B223063 - Paste Extract										
Reference (B223063-SRM1) Prepared: 11/03/22 Analyzed: 11/04/22										
Conductivity	9060		umho/cm@25C	8340		109	90-110			

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 13:11

Total Metals by ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223056 - EPA 3050

Blank (B223056-BLK1)

Prepared: 11/03/22 Analyzed: 11/04/22

Barium	ND	5.00	mg/kg dry							
Cadmium	ND	5.00	mg/kg dry							
Chromium	ND	5.00	mg/kg dry							
Copper	ND	5.00	mg/kg dry							
Lead	ND	10.0	mg/kg dry							
Nickel	ND	5.00	mg/kg dry							
Selenium	ND	20.0	mg/kg dry							
Silver	ND	1.00	mg/kg dry							
Zinc	ND	10.0	mg/kg dry							

LCS (B223056-BS1)

Prepared: 11/03/22 Analyzed: 11/04/22

Barium	195	5.00	mg/kg dry	200		97.4	80-120			
Cadmium	181	5.00	mg/kg dry	200		90.4	80-120			
Chromium	194	5.00	mg/kg dry	200		97.2	80-120			
Copper	404	5.00	mg/kg dry	400		101	80-120			
Lead	187	10.0	mg/kg dry	200		93.4	80-120			
Nickel	186	5.00	mg/kg dry	200		92.8	80-120			
Selenium	777	20.0	mg/kg dry	800		97.1	80-120			
Silver	9.38	1.00	mg/kg dry	10.0		93.8	80-120			
Zinc	175	10.0	mg/kg dry	200		87.3	80-120			

LCS Dup (B223056-BSD1)

Prepared: 11/03/22 Analyzed: 11/04/22

Barium	194	5.00	mg/kg dry	200		96.9	80-120	0.545	20	
Cadmium	179	5.00	mg/kg dry	200		89.6	80-120	0.842	20	
Chromium	193	5.00	mg/kg dry	200		96.7	80-120	0.585	20	
Copper	404	5.00	mg/kg dry	400		101	80-120	0.0828	20	
Lead	184	10.0	mg/kg dry	200		92.0	80-120	1.52	20	
Nickel	183	5.00	mg/kg dry	200		91.6	80-120	1.31	20	
Selenium	762	20.0	mg/kg dry	800		95.3	80-120	1.92	20	
Silver	9.42	1.00	mg/kg dry	10.0		94.2	80-120	0.471	20	
Zinc	171	10.0	mg/kg dry	200		85.3	80-120	2.26	20	

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Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: MS #2	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	11/10/22 13:11

Total Metals by ICPMS - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223057 - EPA 3050M

Blank (B223057-BLK1)

Prepared: 11/03/22 Analyzed: 11/07/22

Arsenic	ND	1.00	mg/kg dry							
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LCS (B223057-BS1)

Prepared: 11/03/22 Analyzed: 11/07/22

Arsenic	4.58	1.00	mg/kg dry	5.00		91.7	80-120			
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LCS Dup (B223057-BSD1)

Prepared: 11/03/22 Analyzed: 11/07/22

Arsenic	4.89	1.00	mg/kg dry	5.00		97.8	80-120	6.45	20	
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Hot Water Extractable - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch B223064 - Hot Water Soluble Metals Extract

Blank (B223064-BLK1)

Prepared: 11/03/22 Analyzed: 11/08/22

Boron	ND	1.20	mg/L							
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Notes and Definitions

- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
*Results reported on as received basis unless designated as dry.
- RPD Relative Percent Difference
- LCS Laboratory Control Sample (Blank Spike)
- RL Report Limit
- MDL Method Detection Limit

Green Analytical Laboratories

Jeremy D Allen, Laboratory Director

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