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13 August 2021

Jake Harter  
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 07/30/21 08:15. The data to follow was performed, in whole or in part, by a subcontract laboratory with an additional report attached.

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

Sincerely,

A handwritten signature in blue ink, reading 'Jeremy D. Allen', is written in a cursive style.

Jeremy D Allen For Debbie Zufelt  
Reports Manager

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: T104704514-21-12

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: T104704398-21-14



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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS01	2107314-01	Solid	07/28/21 08:50	07/30/21 08:15	
SS02	2107314-02	Solid	07/28/21 09:00	07/30/21 08:15	
SS03	2107314-03	Solid	07/28/21 09:10	07/30/21 08:15	

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**SS01****2107314-01 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	77.3	0.100	0.058	mg/L	1	08/13/21 12:20	EPA200.7		AES
Conductivity	522			umho/cm @ 25.0°C	1	08/13/21 14:45	ASA#9 10-3.3		VJW
Magnesium	12.3	0.100	0.065	mg/L	1	08/13/21 12:20	EPA200.7		AES
pH	6.69			pH Units	1	08/13/21 08:30	ASA#9 10-3.2		VJW
SAR	0.57			No Unit	1	08/13/21 12:20	Calculation		AES
Sodium	20.5	1.00	0.079	mg/L	1	08/13/21 12:20	EPA200.7		AES

**Total Metals by ICP**

Barium	107	5.00	0.390	mg/kg dry	100	08/06/21 14:39	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	08/06/21 14:39	6010B		AES
Chromium	25.8	5.00	0.400	mg/kg dry	100	08/06/21 14:39	6010B		AES
Copper	30.5	5.00	2.39	mg/kg dry	100	08/06/21 14:39	6010B		AES
Lead	353	10.0	0.906	mg/kg dry	100	08/06/21 14:39	6010B		AES
Nickel	17.3	5.00	0.874	mg/kg dry	100	08/06/21 14:39	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	08/06/21 14:39	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	08/06/21 14:39	6010B		AES
Zinc	104	10.0	1.71	mg/kg dry	100	08/06/21 14:39	6010B		AES

**Total Metals by ICPMS**

Arsenic	7.00	1.00	0.0950	mg/kg dry	1000	08/10/21 17:52	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	08/13/21 12:51	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories****Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	08/04/21 20:34	8015B		MS
DRO >C10-C28*	87.3	10.0	4.26	mg/kg	1	08/04/21 20:34	8015B		MS
EXT DRO >C28-C36	88.0	10.0	4.26	mg/kg	1	08/04/21 20:34	8015B		MS

Surrogate: 1-Chlorooctane	70.5 %	44.3-133	08/04/21 20:34	8015B	MS
Surrogate: 1-Chlorooctadecane	73.4 %	38.9-142	08/04/21 20:34	8015B	MS

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

## SS01

## 2107314-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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## Subcontracted -- Cardinal Laboratories

## VOLATILES BY GC/MS

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	08/03/21 17:38	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/03/21 17:38	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/03/21 17:38	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/03/21 17:38	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/03/21 17:38	8260B		MS
Total Xylenes*	<0.0250	0.0250	0.0250	mg/kg	50	08/03/21 17:38	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/03/21 17:38	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/03/21 17:38	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/03/21 17:38	8260B		MS

Surrogate: Dibromofluoromethane 100 % 84.6-114 08/03/21 17:38 8260B MS

Surrogate: Toluene-d8 102 % 90.4-109 08/03/21 17:38 8260B MS

Surrogate: 4-Bromofluorobenzene 98.6 % 82.5-117 08/03/21 17:38 8260B MS

## Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.153	0.400	0.153	mg/kg	400	08/10/21 14:48	8270C		MS
2-Methylnaphthalene*	<0.226	0.400	0.226	mg/kg	400	08/10/21 14:48	8270C		MS
1-Methylnaphthalene	<0.161	0.400	0.161	mg/kg	400	08/10/21 14:48	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	08/10/21 14:48	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	08/10/21 14:48	8270C		MS
Fluorene*	<0.142	0.400	0.142	mg/kg	400	08/10/21 14:48	8270C		MS
Phenanthrene*	<0.214	0.400	0.214	mg/kg	400	08/10/21 14:48	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 14:48	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	08/10/21 14:48	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	08/10/21 14:48	8270C		MS
Pyrene*	<0.132	0.400	0.132	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	08/10/21 14:48	8270C		MS
Chrysene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	08/10/21 14:48	8270C		MS

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

## SS01

### 2107314-01 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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### Subcontracted -- Cardinal Laboratories

#### Polynuclear Aromatic Compounds by GC/MS

Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	08/10/21 14:48	8270C		MS
Dibenz[a,h]anthracene*	<0.186	0.400	0.186	mg/kg	400	08/10/21 14:48	8270C		MS
Benzo[g,h,i]perylene*	<0.186	0.400	0.186	mg/kg	400	08/10/21 14:48	8270C		MS
Surrogate: Nitrobenzene-d5			106 %	39.6-121		08/10/21 14:48	8270C		MS
Surrogate: 2-Fluorobiphenyl			95.3 %	39.8-134		08/10/21 14:48	8270C		MS
Surrogate: Terphenyl-d14			99.3 %	33.3-136		08/10/21 14:48	8270C		MS

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**SS02****2107314-02 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	384	0.500	0.289	mg/L	5	08/13/21 12:22	EPA200.7		AES
Conductivity	2810			umho/cm @ 25.0°C	1	08/13/21 14:45	ASA#9 10-3.3		VJW
Magnesium	71.9	0.500	0.327	mg/L	5	08/13/21 12:22	EPA200.7		AES
pH	7.36			pH Units	1	08/13/21 08:30	ASA#9 10-3.2		VJW
SAR	2.17			No Unit	1	08/13/21 12:22	Calculation		AES
Sodium	177	5.00	0.396	mg/L	5	08/13/21 12:22	EPA200.7		AES

**Total Metals by ICP**

Barium	120	5.00	0.390	mg/kg dry	100	08/06/21 14:43	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	08/06/21 14:43	6010B		AES
Chromium	17.7	5.00	0.400	mg/kg dry	100	08/06/21 14:43	6010B		AES
Copper	29.3	5.00	2.39	mg/kg dry	100	08/06/21 14:43	6010B		AES
Lead	19.2	10.0	0.906	mg/kg dry	100	08/06/21 14:43	6010B		AES
Nickel	11.6	5.00	0.874	mg/kg dry	100	08/06/21 14:43	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	08/06/21 14:43	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	08/06/21 14:43	6010B		AES
Zinc	260	10.0	1.71	mg/kg dry	100	08/06/21 14:43	6010B		AES

**Total Metals by ICPMS**

Arsenic	6.04	1.00	0.0950	mg/kg dry	1000	08/10/21 17:56	6020A		AES
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**Hot Water Extractable**

Boron	5.65	1.20	0.568	mg/L	4	08/13/21 12:55	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories****Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	08/04/21 21:00	8015B		MS
DRO >C10-C28*	81.9	10.0	4.26	mg/kg	1	08/04/21 21:00	8015B		MS
EXT DRO >C28-C36	70.5	10.0	4.26	mg/kg	1	08/04/21 21:00	8015B		MS

Surrogate: 1-Chlorooctane	74.1 %	44.3-133	08/04/21 21:00	8015B	MS
Surrogate: 1-Chlorooctadecane	76.7 %	38.9-142	08/04/21 21:00	8015B	MS

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

## SS02

## 2107314-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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## Subcontracted -- Cardinal Laboratories

## VOLATILES BY GC/MS

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	08/03/21 18:01	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/03/21 18:01	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/03/21 18:01	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/03/21 18:01	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/03/21 18:01	8260B		MS
Total Xylenes*	<0.0250	0.0250	0.0250	mg/kg	50	08/03/21 18:01	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/03/21 18:01	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/03/21 18:01	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/03/21 18:01	8260B		MS

Surrogate: Dibromofluoromethane 100 % 84.6-114 08/03/21 18:01 8260B MS

Surrogate: Toluene-d8 103 % 90.4-109 08/03/21 18:01 8260B MS

Surrogate: 4-Bromofluorobenzene 99.7 % 82.5-117 08/03/21 18:01 8260B MS

## Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.153	0.400	0.153	mg/kg	400	08/10/21 15:17	8270C		MS
2-Methylnaphthalene*	<0.226	0.400	0.226	mg/kg	400	08/10/21 15:17	8270C		MS
1-Methylnaphthalene	<0.161	0.400	0.161	mg/kg	400	08/10/21 15:17	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	08/10/21 15:17	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	08/10/21 15:17	8270C		MS
Fluorene*	<0.142	0.400	0.142	mg/kg	400	08/10/21 15:17	8270C		MS
Phenanthrene*	<0.214	0.400	0.214	mg/kg	400	08/10/21 15:17	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 15:17	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	08/10/21 15:17	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	08/10/21 15:17	8270C		MS
Pyrene*	<0.132	0.400	0.132	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	08/10/21 15:17	8270C		MS
Chrysene*	<0.172	0.400	0.172	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	08/10/21 15:17	8270C		MS

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

## SS02

### 2107314-02 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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### Subcontracted -- Cardinal Laboratories

#### Polynuclear Aromatic Compounds by GC/MS

Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	08/10/21 15:17	8270C		MS
Dibenz[a,h]anthracene*	<0.186	0.400	0.186	mg/kg	400	08/10/21 15:17	8270C		MS
Benzo[g,h,i]perylene*	<0.186	0.400	0.186	mg/kg	400	08/10/21 15:17	8270C		MS
Surrogate: Nitrobenzene-d5			82.5 %	39.6-121		08/10/21 15:17	8270C		MS
Surrogate: 2-Fluorobiphenyl			85.1 %	39.8-134		08/10/21 15:17	8270C		MS
Surrogate: Terphenyl-d14			87.9 %	33.3-136		08/10/21 15:17	8270C		MS

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**SS03****2107314-03 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Saturated Paste Extraction**

Calcium	37.2	0.100	0.058	mg/L	1	08/13/21 12:26	EPA200.7		AES
Conductivity	298			umho/cm @ 25.0°C	1	08/13/21 14:45	ASA#9 10-3.3		VJW
Magnesium	9.49	0.100	0.065	mg/L	1	08/13/21 12:26	EPA200.7		AES
pH	6.23			pH Units	1	08/13/21 08:30	ASA#9 10-3.2		VJW
SAR	0.49			No Unit	1	08/13/21 12:26	Calculation		AES
Sodium	13.0	1.00	0.079	mg/L	1	08/13/21 12:26	EPA200.7		AES

**Total Metals by ICP**

Barium	142	5.00	0.390	mg/kg dry	100	08/06/21 13:36	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	08/06/21 13:36	6010B		AES
Chromium	25.9	5.00	0.400	mg/kg dry	100	08/06/21 13:36	6010B		AES
Copper	41.0	5.00	2.39	mg/kg dry	100	08/06/21 13:36	6010B		AES
Lead	15.0	10.0	0.906	mg/kg dry	100	08/06/21 13:36	6010B		AES
Nickel	14.4	5.00	0.874	mg/kg dry	100	08/06/21 13:36	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	08/06/21 13:36	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	08/06/21 13:36	6010B		AES
Zinc	83.1	10.0	1.71	mg/kg dry	100	08/06/21 13:36	6010B		AES

**Total Metals by ICPMS**

Arsenic	20.1	1.00	0.0950	mg/kg dry	1000	08/10/21 17:59	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	08/13/21 12:58	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories****Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	6.25	mg/kg	1	08/04/21 21:25	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	08/04/21 21:25	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	08/04/21 21:25	8015B		MS

Surrogate: 1-Chlorooctane	74.8 %	44.3-133	08/04/21 21:25	8015B	MS
Surrogate: 1-Chlorooctadecane	70.9 %	38.9-142	08/04/21 21:25	8015B	MS

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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

### SS03

#### 2107314-03 (Soil)

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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#### Subcontracted -- Cardinal Laboratories

##### VOLATILES BY GC/MS

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	08/03/21 18:25	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/03/21 18:25	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/03/21 18:25	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/03/21 18:25	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/03/21 18:25	8260B		MS
Total Xylenes*	<0.0250	0.0250	0.0250	mg/kg	50	08/03/21 18:25	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/03/21 18:25	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/03/21 18:25	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/03/21 18:25	8260B		MS

Surrogate: Dibromofluoromethane 98.9 % 84.6-114 08/03/21 18:25 8260B MS

Surrogate: Toluene-d8 102 % 90.4-109 08/03/21 18:25 8260B MS

Surrogate: 4-Bromofluorobenzene 96.4 % 82.5-117 08/03/21 18:25 8260B MS

##### Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	08/10/21 15:47	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	08/10/21 15:47	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	08/10/21 15:47	8270C		MS
Acenaphthylene*	<0.020	0.040	0.020	mg/kg	40	08/10/21 15:47	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	08/10/21 15:47	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	08/10/21 15:47	8270C		MS
Phenanthrene*	<0.021	0.040	0.021	mg/kg	40	08/10/21 15:47	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	08/10/21 15:47	8270C		MS
Carbazole*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	08/10/21 15:47	8270C		MS
Chrysene*	<0.017	0.040	0.017	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	08/10/21 15:47	8270C		MS

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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**SS03****2107314-03 (Soil)**

Analyte	Result	RL	MDL	Units	Dilution	Analyzed	Method	Notes	Analyst
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**Subcontracted -- Cardinal Laboratories****Polynuclear Aromatic Compounds by GC/MS**

Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	08/10/21 15:47	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Benzo[g,h,i]perylene*	<0.019	0.040	0.019	mg/kg	40	08/10/21 15:47	8270C		MS
Surrogate: Nitrobenzene-d5			87.8 %	39.6-121		08/10/21 15:47	8270C		MS
Surrogate: 2-Fluorobiphenyl			89.2 %	39.8-134		08/10/21 15:47	8270C		MS
Surrogate: Terphenyl-d14			88.5 %	33.3-136		08/10/21 15:47	8270C		MS

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

### Saturated Paste Extraction - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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#### Batch B211850 - Paste Extract

##### Blank (B211850-BLK1)

Prepared: 08/12/21 Analyzed: 08/13/21

Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
SAR	0.00		No Unit							
Sodium	ND	1.00	mg/L							

##### Reference (B211850-SRM1)

Prepared: 08/12/21 Analyzed: 08/13/21

SAR	7.93		No Unit	7.50		106	90-110			
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#### Batch B211851 - Paste Extract

##### Reference (B211851-SRM1)

Prepared: 08/12/21 Analyzed: 08/13/21

Conductivity	7800		umho/cm @ 25.0°C	6720		116	90-110			BS1
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#### Batch B211852 - Paste Extract

##### Reference (B211852-SRM1)

Prepared: 08/12/21 Analyzed: 08/13/21

pH	8.65		pH Units	9.14		94.6	95-105			
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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

### 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 B211785 - EPA 3050

##### Blank (B211785-BLK1)

Prepared: 08/05/21 Analyzed: 08/06/21

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 (B211785-BS1)

Prepared: 08/05/21 Analyzed: 08/06/21

Barium	186	5.00	mg/kg dry	200	93.0	80-120
Cadmium	175	5.00	mg/kg dry	200	87.6	80-120
Chromium	186	5.00	mg/kg dry	200	93.1	80-120
Copper	391	5.00	mg/kg dry	400	97.6	80-120
Lead	182	10.0	mg/kg dry	200	91.2	80-120
Nickel	181	5.00	mg/kg dry	200	90.6	80-120
Selenium	790	20.0	mg/kg dry	800	98.8	80-120
Silver	9.34	1.00	mg/kg dry	10.0	93.4	80-120
Zinc	171	10.0	mg/kg dry	200	85.6	80-120

##### LCS Dup (B211785-BSD1)

Prepared: 08/05/21 Analyzed: 08/06/21

Barium	185	5.00	mg/kg dry	200	92.6	80-120	0.437	20
Cadmium	173	5.00	mg/kg dry	200	86.7	80-120	0.949	20
Chromium	185	5.00	mg/kg dry	200	92.7	80-120	0.430	20
Copper	388	5.00	mg/kg dry	400	96.9	80-120	0.719	20
Lead	183	10.0	mg/kg dry	200	91.4	80-120	0.239	20
Nickel	181	5.00	mg/kg dry	200	90.6	80-120	0.0434	20
Selenium	789	20.0	mg/kg dry	800	98.7	80-120	0.153	20
Silver	9.48	1.00	mg/kg dry	10.0	94.8	80-120	1.52	20
Zinc	171	10.0	mg/kg dry	200	85.7	80-120	0.135	20

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Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

### 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 B211787 - EPA 3050M

##### Blank (B211787-BLK1)

Prepared: 08/05/21 Analyzed: 08/10/21

Arsenic	ND	0.100	mg/kg dry							
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##### LCS (B211787-BS1)

Prepared: 08/05/21 Analyzed: 08/10/21

Arsenic	4.99	0.100	mg/kg dry	5.00		99.8	80-120			
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##### LCS Dup (B211787-BSD1)

Prepared: 08/05/21 Analyzed: 08/10/21

Arsenic	4.73	0.100	mg/kg dry	5.00		94.7	80-120	5.25	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 B211853 - Hot Water Soluble Metals Extract

##### Blank (B211853-BLK1)

Prepared: 08/12/21 Analyzed: 08/13/21

Boron	ND	1.20	mg/L							
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PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

### 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 1080408 - General Prep - Organics

##### Blank (1080408-BLK1)

Prepared &amp; Analyzed: 08/04/21

Surrogate: 1-Chlorooctadecane	39.8		mg/kg	50.0		79.6	38.9-142			
Surrogate: 1-Chlorooctane	41.1		mg/kg	50.0		82.1	44.3-133			
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 (1080408-BS1)

Prepared &amp; Analyzed: 08/04/21

Surrogate: 1-Chlorooctadecane	42.0		mg/kg	50.0		83.9	38.9-142			
Surrogate: 1-Chlorooctane	43.5		mg/kg	50.0		87.1	44.3-133			
DRO >C10-C28	208	10.0	mg/kg	200		104	79.3-136			
GRO C6-C10	218	10.0	mg/kg	200		109	83.4-129			
Total TPH C6-C28	426	10.0	mg/kg	400		107	85.3-130			

##### LCS Dup (1080408-BSD1)

Prepared &amp; Analyzed: 08/04/21

Surrogate: 1-Chlorooctadecane	41.7		mg/kg	50.0		83.5	38.9-142			
Surrogate: 1-Chlorooctane	42.8		mg/kg	50.0		85.6	44.3-133			
DRO >C10-C28	208	10.0	mg/kg	200		104	79.3-136	0.181	12.1	
GRO C6-C10	214	10.0	mg/kg	200		107	83.4-129	1.85	12.6	
Total TPH C6-C28	422	10.0	mg/kg	400		105	85.3-130	1.03	11.6	

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PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**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 1080214 - Volatiles****Blank (1080214-BLK1)**

Prepared: 08/02/21 Analyzed: 08/03/21

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
Surrogate: 4-Bromofluorobenzene	1.18		mg/kg	1.25		94.5	82.5-117			
Benzene	ND	0.0250	mg/kg							
Surrogate: Dibromofluoromethane	1.26		mg/kg	1.25		101	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							
Surrogate: Toluene-d8	1.25		mg/kg	1.25		100	90.4-109			
Total Xylenes	ND	0.0250	mg/kg							

**LCS (1080214-BS1)**

Prepared: 08/02/21 Analyzed: 08/03/21

1,2,4-Trimethylbenzene	0.518	0.0250	mg/kg	0.500		104	62.4-140			
1,3,5-Trimethylbenzene	0.521	0.0250	mg/kg	0.500		104	64.4-138			
Surrogate: 4-Bromofluorobenzene	1.25		mg/kg	1.25		100	82.5-117			
Benzene	0.511	0.0250	mg/kg	0.500		102	73-130			
Surrogate: Dibromofluoromethane	1.44		mg/kg	1.25		115	84.6-114			S-05
Ethylbenzene	0.521	0.0250	mg/kg	0.500		104	75.4-127			
m+p - Xylene	1.03	0.0500	mg/kg	1.00		103	71.8-133			
Naphthalene	0.502	0.0250	mg/kg	0.500		100	28.7-158			
o-Xylene	0.504	0.0250	mg/kg	0.500		101	78.6-125			
Toluene	0.520	0.0250	mg/kg	0.500		104	79-122			
Surrogate: Toluene-d8	1.26		mg/kg	1.25		101	90.4-109			
Total Xylenes	1.54	0.0250	mg/kg	1.50		103	74.6-130			

**LCS Dup (1080214-BSD1)**

Prepared: 08/02/21 Analyzed: 08/03/21

1,2,4-Trimethylbenzene	0.499	0.0250	mg/kg	0.500		99.8	62.4-140	3.72	38.2	
1,3,5-Trimethylbenzene	0.487	0.0250	mg/kg	0.500		97.5	64.4-138	6.71	39.1	
Surrogate: 4-Bromofluorobenzene	1.24		mg/kg	1.25		99.3	82.5-117			
Benzene	0.496	0.0250	mg/kg	0.500		99.2	73-130	2.96	17.1	
Surrogate: Dibromofluoromethane	1.25		mg/kg	1.25		99.8	84.6-114			
Ethylbenzene	0.499	0.0250	mg/kg	0.500		99.8	75.4-127	4.32	16.5	
m+p - Xylene	0.980	0.0500	mg/kg	1.00		98.0	71.8-133	5.46	19.1	
Naphthalene	0.452	0.0250	mg/kg	0.500		90.4	28.7-158	10.5	64	
o-Xylene	0.486	0.0250	mg/kg	0.500		97.2	78.6-125	3.73	13.2	
Toluene	0.486	0.0250	mg/kg	0.500		97.2	79-122	6.80	18.3	

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PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

**Reported:**  
08/13/21 16:06

**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 1080214 - Volatiles (Continued)**

**LCS Dup (1080214-BSD1) (Continued)**

Prepared: 08/02/21 Analyzed: 08/03/21

Surrogate: Toluene-d8	1.27		mg/kg	1.25		102	90.4-109			
Total Xylenes	1.47	0.0250	mg/kg	1.50		97.7	74.6-130	4.89	16.5	

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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**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 1072919 - SW846-3510****Blank (1072919-BLK1)**

Prepared: 07/29/21 Analyzed: 08/03/21

1-Methylnaphthalene	ND	0.040	mg/kg							
Surrogate: 2-Fluorobiphenyl	1.44		mg/kg	2.00		71.9	39.8-134			
2-Methylnaphthalene	ND	0.040	mg/kg							
Acenaphthene	ND	0.040	mg/kg							
Acenaphthylene	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]fluoranthene	ND	0.040	mg/kg							
Benzo[g,h,i]perylene	ND	0.040	mg/kg							
Benzo[k]fluoranthene	ND	0.040	mg/kg							
Carbazole	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							
Surrogate: Nitrobenzene-d5	1.30		mg/kg	2.00		65.1	39.6-121			
Phenanthrene	ND	0.040	mg/kg							
Pyrene	ND	0.040	mg/kg							
Surrogate: Terphenyl-d14	1.74		mg/kg	2.00		86.9	33.3-136			

**LCS (1072919-BS1)**

Prepared: 07/29/21 Analyzed: 08/03/21

1-Methylnaphthalene	0.308	0.040	mg/kg	0.400		77.0	57.6-108			
Surrogate: 2-Fluorobiphenyl	1.18		mg/kg	2.00		59.2	39.8-134			
2-Methylnaphthalene	0.316	0.040	mg/kg	0.400		79.1	59-106			
Acenaphthene	0.371	0.040	mg/kg	0.400		92.7	60.9-105			
Acenaphthylene	0.347	0.040	mg/kg	0.400		86.7	57.4-107			
Anthracene	0.349	0.040	mg/kg	0.400		87.2	60.8-105			
Benzo[a]anthracene	0.356	0.040	mg/kg	0.400		89.0	56.1-121			
Benzo[a]pyrene	0.309	0.040	mg/kg	0.400		77.3	56.7-115			
Benzo[b]fluoranthene	0.364	0.040	mg/kg	0.400		91.0	45.4-128			
Benzo[g,h,i]perylene	0.318	0.040	mg/kg	0.400		79.6	56.5-107			
Benzo[k]fluoranthene	0.361	0.040	mg/kg	0.400		90.1	49.6-119			
Carbazole	0.348	0.040	mg/kg	0.400		87.1	59.7-107			
Chrysene	0.339	0.040	mg/kg	0.400		84.8	12.2-190			
Dibenz[a,h]anthracene	0.292	0.040	mg/kg	0.400		72.9	59.1-111			
Fluoranthene	0.340	0.040	mg/kg	0.400		85.0	60.6-111			

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

Reported:  
08/13/21 16:06

**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 1072919 - SW846-3510 (Continued)**

**LCS (1072919-BS1) (Continued)**

Prepared: 07/29/21 Analyzed: 08/03/21

Fluorene	0.366	0.040	mg/kg	0.400		91.4	59.3-108			
Indeno[1,2,3-cd]pyrene	0.306	0.040	mg/kg	0.400		76.5	53.4-116			
Naphthalene	0.302	0.040	mg/kg	0.400		75.5	56.5-106			
Surrogate: Nitrobenzene-d5	0.824		mg/kg	2.00		41.2	39.6-121			
Phenanthrene	0.365	0.040	mg/kg	0.400		91.2	59.9-107			
Pyrene	0.348	0.040	mg/kg	0.400		86.9	51.5-122			
Surrogate: Terphenyl-d14	1.57		mg/kg	2.00		78.3	33.3-136			

**LCS Dup (1072919-BSD1)**

Prepared: 07/29/21 Analyzed: 08/03/21

1-Methylnaphthalene	0.332	0.040	mg/kg	0.400		83.0	57.6-108	7.60	6.22	QR-04
Surrogate: 2-Fluorobiphenyl	1.20		mg/kg	2.00		60.1	39.8-134			
2-Methylnaphthalene	0.327	0.040	mg/kg	0.400		81.8	59-106	3.35	6.23	
Acenaphthene	0.356	0.040	mg/kg	0.400		88.9	60.9-105	4.18	8.18	
Acenaphthylene	0.362	0.040	mg/kg	0.400		90.4	57.4-107	4.22	5	
Anthracene	0.355	0.040	mg/kg	0.400		88.8	60.8-105	1.81	3.68	
Benzo[a]anthracene	0.355	0.040	mg/kg	0.400		88.8	56.1-121	0.234	9.01	
Benzo[a]pyrene	0.312	0.040	mg/kg	0.400		77.9	56.7-115	0.773	4.92	
Benzo[b]fluoranthene	0.360	0.040	mg/kg	0.400		89.9	45.4-128	1.21	7.63	
Benzo[g,h,i]perylene	0.333	0.040	mg/kg	0.400		83.2	56.5-107	4.49	12.5	
Benzo[k]fluoranthene	0.366	0.040	mg/kg	0.400		91.6	49.6-119	1.58	10.6	
Carbazole	0.348	0.040	mg/kg	0.400		87.0	59.7-107	0.0919	8.65	
Chrysene	0.350	0.040	mg/kg	0.400		87.5	12.2-190	3.09	21.8	
Dibenz[a,h]anthracene	0.304	0.040	mg/kg	0.400		76.1	59.1-111	4.22	11.6	
Fluoranthene	0.336	0.040	mg/kg	0.400		83.9	60.6-111	1.28	7.54	
Fluorene	0.341	0.040	mg/kg	0.400		85.2	59.3-108	7.00	5.49	QR-04
Indeno[1,2,3-cd]pyrene	0.314	0.040	mg/kg	0.400		78.6	53.4-116	2.73	22.3	
Naphthalene	0.300	0.040	mg/kg	0.400		75.0	56.5-106	0.781	4.56	
Surrogate: Nitrobenzene-d5	0.869		mg/kg	2.00		43.4	39.6-121			
Phenanthrene	0.342	0.040	mg/kg	0.400		85.4	59.9-107	6.58	5.21	QR-04
Pyrene	0.351	0.040	mg/kg	0.400		87.8	51.5-122	0.970	10.6	
Surrogate: Terphenyl-d14	1.48		mg/kg	2.00		73.8	33.3-136			

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Jeremy D Allen For Debbie Zufelt, Reports Manager

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PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding (OWP) #9  
Project Manager: Jake Harter

**Reported:**  
08/13/21 16:06

### Notes and Definitions

S-05 The surrogate recovery is outside of lab established statistical control limits but still within method limits. Data is not adversely affected.

QR-04 The RPD for the BS/BSD was outside of historical limits.

BS1 Laboratory control sample recovery above laboratory acceptance criteria. Results for analyte potentially biased high.

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

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75 Suttle St Durango, CO 81303

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Cottonwood Consulting

Project Manager: Jacob Harter

Address: PO Box 1653

City: Durango

Phone #: (970) 946-3761

Additional Report To:

Project Name: Margaret Spaulding (LWD) #9

Project Number:

Sampler Name (Print): Jacob Harter / Kyle Sierse

FOR LAB USE ONLY

Lab I.D. Sample Name or Location

0107314-01 5501  
-02 5502  
-03 5503

Collected	Date	Time	Matrix (check one)						# of containers			
			GROUNDWATER	SURFACEWATER	WASTEWATER	PRODUCEDWATER	SOIL	OTHER :	No preservation (general)	HNO <sup>3</sup>	HCl	H <sub>2</sub> SO <sub>4</sub>
	7/28/21	0850					X		3			
		0900					X		3			
		0910					X		3			

## ANALYSIS REQUEST

COGCC Table 915

Relinquished By:

Date: 7/30/21  
Time: 0815

Relinquished By:

Date: Received By: Dariusz Jankowski

Relinquished By:

Date: Received By:

Delivered By: (Circle One)

Sampler: UPS - FedEx - Kangaroo - Other:

Temperature at receipt: 3.6°C

CHECKED BY: DJ

#3 Laser On Ice

ADDITIONAL REMARKS:

Yes

No

Report to State? (Circle)

\* Chain of Custody must be signed in "Relinquished By:" as an acceptance of services and all applicable charges.