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27 September 2021

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 09/03/21 11:15. 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 black ink that reads 'Debbie Zufelt'.

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



Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding Central Tank Battery  
Project Manager: Kyle Siesser

Reported:  
09/27/21 07:48

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS13	2109048-01	Solid	08/31/21 17:40	09/03/21 11:15	
SS14	2109048-02	Solid	09/01/21 12:25	09/03/21 11:15	
SS15	2109048-03	Solid	09/01/21 12:30	09/03/21 11:15	
SS16	2109048-04	Solid	09/01/21 12:40	09/03/21 11:15	
SS17	2109048-05	Solid	09/01/21 12:50	09/03/21 11:15	
SS18	2109048-06	Solid	09/01/21 13:05	09/03/21 11:15	
SS19	2109048-07	Solid	09/01/21 13:40	09/03/21 11:15	

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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 Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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**SS13**

**2109048-01 (Soil)**

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

Hexavalent Chromium	<0.250	0.250	0.0543	mg/kg	25	09/20/21 13:00	3060A/3500-Cr D		JDA
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**Saturated Paste Extraction**

Calcium	50.6	0.100	0.058	mg/L	1	09/21/21 16:33	EPA200.7		AES
Conductivity	519			umho/cm @ 25.0°C	1	09/21/21 10:20	ASA#9 10-3.3		VJW
Magnesium	10.9	0.100	0.065	mg/L	1	09/21/21 16:33	EPA200.7		AES
pH	7.13			pH Units	1	09/21/21 08:05	ASA#9 10-3.2		VJW
SAR	1.58			No Unit	1	09/21/21 16:33	Calculation		AES
Sodium	47.5	1.00	0.079	mg/L	1	09/21/21 16:33	EPA200.7		AES

**Total Metals by ICP**

Barium	150	5.00	0.390	mg/kg dry	100	09/16/21 14:05	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/16/21 14:05	6010B		AES
Chromium	22.3	5.00	0.400	mg/kg dry	100	09/16/21 14:05	6010B		AES
Copper	19.8	5.00	2.39	mg/kg dry	100	09/16/21 14:05	6010B		AES
Lead	<10.0	10.0	0.906	mg/kg dry	100	09/16/21 14:05	6010B		AES
Nickel	14.8	5.00	0.874	mg/kg dry	100	09/16/21 14:05	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/16/21 14:05	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/16/21 14:05	6010B		AES
Zinc	44.8	10.0	1.71	mg/kg dry	100	09/16/21 14:05	6010B		AES

**Total Metals by ICPMS**

Arsenic	6.15	1.00	0.0950	mg/kg dry	1000	09/14/21 15:50	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:18	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

**Petroleum Hydrocarbons by GC FID**

**S-06**

GRO C6-C10*	<50.0	50.0	31.2	mg/kg	5	09/10/21 18:57	8015B		MS
DRO >C10-C28*	9790	50.0	21.3	mg/kg	5	09/10/21 18:57	8015B		MS
EXT DRO >C28-C36	3100	50.0	21.3	mg/kg	5	09/10/21 18:57	8015B		MS

Surrogate: 1-Chlorooctane			107 %	44.3-133		09/10/21 18:57	8015B		MS
Surrogate: 1-Chlorooctadecane			263 %	38.9-142		09/10/21 18:57	8015B		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS13

2109048-01 (Soil)

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

**VOLATILES BY GC/MS**

Benzene*	<0.250	0.250	0.0885	mg/kg	500	09/09/21 19:31	8260B		MS
Toluene*	<0.250	0.250	0.0670	mg/kg	500	09/09/21 19:31	8260B		MS
Ethylbenzene*	<0.250	0.250	0.0405	mg/kg	500	09/09/21 19:31	8260B		MS
m+p - Xylene*	<0.500	0.500	0.186	mg/kg	500	09/09/21 19:31	8260B		MS
o-Xylene*	<0.250	0.250	0.0700	mg/kg	500	09/09/21 19:31	8260B		MS
Total Xylenes*	<0.750	0.750	0.250	mg/kg	500	09/09/21 19:31	8260B		MS
1,3,5-Trimethylbenzene	<0.250	0.250	0.0450	mg/kg	500	09/09/21 19:31	8260B		MS
1,2,4-Trimethylbenzene	<0.250	0.250	0.0650	mg/kg	500	09/09/21 19:31	8260B		MS
Naphthalene*	<b>1.79</b>	0.250	0.0500	mg/kg	500	09/09/21 19:31	8260B		MS
Surrogate: Dibromofluoromethane			97.2 %	84.6-114		09/09/21 19:31	8260B		MS
Surrogate: Toluene-d8			94.8 %	90.4-109		09/09/21 19:31	8260B		MS
Surrogate: 4-Bromofluorobenzene			99.5 %	82.5-117		09/09/21 19:31	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<b>0.547</b>	0.400	0.153	mg/kg	400	09/13/21 23:08	8270C		MS
2-Methylnaphthalene*	<b>4.85</b>	0.400	0.226	mg/kg	400	09/13/21 23:08	8270C		MS
1-Methylnaphthalene	<b>10.3</b>	0.400	0.161	mg/kg	400	09/13/21 23:08	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	09/13/21 23:08	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	09/13/21 23:08	8270C		MS
Fluorene*	<b>4.48</b>	0.400	0.142	mg/kg	400	09/13/21 23:08	8270C		MS
Phenanthrene*	<b>9.50</b>	0.400	0.214	mg/kg	400	09/13/21 23:08	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	09/13/21 23:08	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	09/13/21 23:08	8270C		MS
Fluoranthene*	<b>0.463</b>	0.400	0.185	mg/kg	400	09/13/21 23:08	8270C		MS
Pyrene*	<b>1.49</b>	0.400	0.132	mg/kg	400	09/13/21 23:08	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	09/13/21 23:08	8270C		MS
Chrysene*	<b>2.04</b>	0.400	0.172	mg/kg	400	09/13/21 23:08	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	09/13/21 23:08	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	09/13/21 23:08	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	09/13/21 23:08	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	09/13/21 23:08	8270C		MS

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*Debbie Zufelt*

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 Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS13

2109048-01 (Soil)

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

Polynuclear Aromatic Compounds by GC/MS

Dibenz[a,h]anthracene*	<0.186	0.400	0.186	mg/kg	400	09/13/21 23:08	8270C		MS
Benzo[g,h,i]perylene*	<0.186	0.400	0.186	mg/kg	400	09/13/21 23:08	8270C		MS
Surrogate: Nitrobenzene-d5			102 %	39.6-121		09/13/21 23:08	8270C		MS
Surrogate: 2-Fluorobiphenyl			96.3 %	39.8-134		09/13/21 23:08	8270C		MS
Surrogate: Terphenyl-d14			97.6 %	33.3-136		09/13/21 23:08	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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**SS14**

**2109048-02 (Soil)**

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

Hexavalent Chromium	<0.250	0.250	0.0543	mg/kg	25	09/20/21 13:00	3060A/3500-Cr D		JDA
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**Saturated Paste Extraction**

Calcium	72.3	0.100	0.058	mg/L	1	09/21/21 16:39	EPA200.7		AES
Conductivity	462			umho/cm @ 25.0°C	1	09/21/21 10:20	ASA#9 10-3.3		VJW
Magnesium	13.4	0.100	0.065	mg/L	1	09/21/21 16:39	EPA200.7		AES
pH	6.90			pH Units	1	09/21/21 08:05	ASA#9 10-3.2		VJW
SAR	0.30			No Unit	1	09/21/21 16:39	Calculation		AES
Sodium	10.5	1.00	0.079	mg/L	1	09/21/21 16:39	EPA200.7		AES

**Total Metals by ICP**

Barium	157	5.00	0.390	mg/kg dry	100	09/16/21 14:18	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/16/21 14:18	6010B		AES
Chromium	24.0	5.00	0.400	mg/kg dry	100	09/16/21 14:18	6010B		AES
Copper	20.5	5.00	2.39	mg/kg dry	100	09/16/21 14:18	6010B		AES
Lead	<10.0	10.0	0.906	mg/kg dry	100	09/16/21 14:18	6010B		AES
Nickel	13.9	5.00	0.874	mg/kg dry	100	09/16/21 14:18	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/16/21 14:18	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/16/21 14:18	6010B		AES
Zinc	53.5	10.0	1.71	mg/kg dry	100	09/16/21 14:18	6010B		AES

**Total Metals by ICPMS**

Arsenic	4.36	1.00	0.0950	mg/kg dry	1000	09/14/21 15:54	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:20	EPA200.7		AES
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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	09/10/21 19:17	8015B		MS
DRO >C10-C28*	48.4	10.0	4.26	mg/kg	1	09/10/21 19:17	8015B		MS
EXT DRO >C28-C36	89.0	10.0	4.26	mg/kg	1	09/10/21 19:17	8015B		MS

Surrogate: 1-Chlorooctane			96.8 %	44.3-133		09/10/21 19:17	8015B		MS
Surrogate: 1-Chlorooctadecane			91.7 %	38.9-142		09/10/21 19:17	8015B		MS

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*Debbie Zufelt*

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 Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS14

2109048-02 (Soil)

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

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	09/09/21 19:51	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/09/21 19:51	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/09/21 19:51	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/09/21 19:51	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/09/21 19:51	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/09/21 19:51	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/09/21 19:51	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	09/09/21 19:51	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	09/09/21 19:51	8260B		MS
Surrogate: Dibromofluoromethane			98.6 %	84.6-114		09/09/21 19:51	8260B		MS
Surrogate: Toluene-d8			97.8 %	90.4-109		09/09/21 19:51	8260B		MS
Surrogate: 4-Bromofluorobenzene			94.3 %	82.5-117		09/09/21 19:51	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	09/20/21 16:43	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	09/20/21 16:43	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	09/20/21 16:43	8270C		MS
Acenaphthylene*	<0.020	0.040	0.020	mg/kg	40	09/20/21 16:43	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	09/20/21 16:43	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	09/20/21 16:43	8270C		MS
Phenanthrene*	<0.021	0.040	0.021	mg/kg	40	09/20/21 16:43	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	09/20/21 16:43	8270C		MS
Carbazole*	<0.019	0.040	0.019	mg/kg	40	09/20/21 16:43	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	09/20/21 16:43	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	09/20/21 16:43	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	09/20/21 16:43	8270C		MS
Chrysene*	<0.017	0.040	0.017	mg/kg	40	09/20/21 16:43	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	09/20/21 16:43	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	09/20/21 16:43	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	09/20/21 16:43	8270C		MS

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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 Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS14

2109048-02 (Soil)

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

Polynuclear Aromatic Compounds by GC/MS

Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	09/20/21 16:43	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	09/20/21 16:43	8270C		MS
Benzo[g,h,i]perylene*	<b>0.079</b>	0.040	0.019	mg/kg	40	09/20/21 16:43	8270C		MS
Surrogate: Nitrobenzene-d5			65.4 %	39.6-121		09/20/21 16:43	8270C		MS
Surrogate: 2-Fluorobiphenyl			71.6 %	39.8-134		09/20/21 16:43	8270C		MS
Surrogate: Terphenyl-d14			65.3 %	33.3-136		09/20/21 16:43	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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**SS15**

**2109048-03 (Soil)**

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

Hexavalent Chromium	<0.250	0.250	0.0543	mg/kg	25	09/20/21 13:00	3060A/3500-Cr D		JDA
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**Saturated Paste Extraction**

Calcium	33.6	0.100	0.058	mg/L	1	09/21/21 16:41	EPA200.7		AES
Conductivity	269			umho/cm @ 25.0°C	1	09/21/21 10:20	ASA#9 10-3.3		VJW
Magnesium	7.30	0.100	0.065	mg/L	1	09/21/21 16:41	EPA200.7		AES
pH	7.71			pH Units	1	09/21/21 08:05	ASA#9 10-3.2		VJW
SAR	0.57			No Unit	1	09/21/21 16:41	Calculation		AES
Sodium	14.1	1.00	0.079	mg/L	1	09/21/21 16:41	EPA200.7		AES

**Total Metals by ICP**

Barium	224	5.00	0.390	mg/kg dry	100	09/16/21 14:22	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/16/21 14:22	6010B		AES
Chromium	23.1	5.00	0.400	mg/kg dry	100	09/16/21 14:22	6010B		AES
Copper	23.8	5.00	2.39	mg/kg dry	100	09/16/21 14:22	6010B		AES
Lead	<10.0	10.0	0.906	mg/kg dry	100	09/16/21 14:22	6010B		AES
Nickel	12.5	5.00	0.874	mg/kg dry	100	09/16/21 14:22	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/16/21 14:22	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/16/21 14:22	6010B		AES
Zinc	53.4	10.0	1.71	mg/kg dry	100	09/16/21 14:22	6010B		AES

**Total Metals by ICPMS**

Arsenic	3.56	1.00	0.0950	mg/kg dry	1000	09/14/21 16:04	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:22	EPA200.7		AES
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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	09/10/21 16:13	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	09/10/21 16:13	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	09/10/21 16:13	8015B		MS

Surrogate: 1-Chlorooctane			98.6 %	44.3-133		09/10/21 16:13	8015B		MS
Surrogate: 1-Chlorooctadecane			92.3 %	38.9-142		09/10/21 16:13	8015B		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS15

2109048-03 (Soil)

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

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	09/09/21 20:10	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/09/21 20:10	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/09/21 20:10	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/09/21 20:10	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/09/21 20:10	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/09/21 20:10	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/09/21 20:10	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	09/09/21 20:10	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	09/09/21 20:10	8260B		MS
Surrogate: Dibromofluoromethane			96.9 %	84.6-114		09/09/21 20:10	8260B		MS
Surrogate: Toluene-d8			98.1 %	90.4-109		09/09/21 20:10	8260B		MS
Surrogate: 4-Bromofluorobenzene			90.4 %	82.5-117		09/09/21 20:10	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	09/14/21 00:06	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	09/14/21 00:06	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	09/14/21 00:06	8270C		MS
Acenaphthylene*	<0.020	0.040	0.020	mg/kg	40	09/14/21 00:06	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	09/14/21 00:06	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	09/14/21 00:06	8270C		MS
Phenanthrene*	<0.021	0.040	0.021	mg/kg	40	09/14/21 00:06	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	09/14/21 00:06	8270C		MS
Carbazole*	<0.019	0.040	0.019	mg/kg	40	09/14/21 00:06	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 00:06	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	09/14/21 00:06	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	09/14/21 00:06	8270C		MS
Chrysene*	<0.017	0.040	0.017	mg/kg	40	09/14/21 00:06	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 00:06	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	09/14/21 00:06	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	09/14/21 00:06	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS15

2109048-03 (Soil)

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

Polynuclear Aromatic Compounds by GC/MS

Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	09/14/21 00:06	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 00:06	8270C		MS
Benzo[g,h,i]perylene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 00:06	8270C		MS
Surrogate: Nitrobenzene-d5			66.5 %	39.6-121		09/14/21 00:06	8270C		MS
Surrogate: 2-Fluorobiphenyl			69.9 %	39.8-134		09/14/21 00:06	8270C		MS
Surrogate: Terphenyl-d14			72.6 %	33.3-136		09/14/21 00:06	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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**SS16**

**2109048-04 (Soil)**

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

Hexavalent Chromium	<0.250	0.250	0.0543	mg/kg	25	09/20/21 13:00	3060A/3500-Cr D	M5	JDA
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**Saturated Paste Extraction**

Calcium	138	0.200	0.116	mg/L	2	09/21/21 16:44	EPA200.7		AES
Conductivity	1030			umho/cm @ 25.0°C	1	09/21/21 10:20	ASA#9 10-3.3		VJW
Magnesium	7.08	0.200	0.131	mg/L	2	09/21/21 16:44	EPA200.7		AES
pH	7.37			pH Units	1	09/21/21 08:05	ASA#9 10-3.2		VJW
SAR	1.51			No Unit	1	09/21/21 16:44	Calculation		AES
Sodium	67.0	2.00	0.159	mg/L	2	09/21/21 16:44	EPA200.7		AES

**Total Metals by ICP**

Barium	4930	50.0	3.90	mg/kg dry	1000	09/17/21 16:09	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/16/21 14:26	6010B		AES
Chromium	30.1	5.00	0.400	mg/kg dry	100	09/16/21 14:26	6010B		AES
Copper	47.5	5.00	2.39	mg/kg dry	100	09/16/21 14:26	6010B		AES
Lead	<10.0	10.0	0.906	mg/kg dry	100	09/16/21 14:26	6010B		AES
Nickel	13.0	5.00	0.874	mg/kg dry	100	09/16/21 14:26	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/16/21 14:26	6010B		AES
Silver	1.33	1.00	0.688	mg/kg dry	100	09/16/21 14:26	6010B		AES
Zinc	400	10.0	1.71	mg/kg dry	100	09/16/21 14:26	6010B		AES

**Total Metals by ICPMS**

Arsenic	2.28	1.00	0.0950	mg/kg dry	1000	09/14/21 16:07	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:27	EPA200.7		AES
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**Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240**

**Petroleum Hydrocarbons by GC FID**

**S-06**

GRO C6-C10*	<100	100	62.5	mg/kg	10	09/10/21 19:38	8015B		MS
DRO >C10-C28*	20300	100	42.6	mg/kg	10	09/10/21 19:38	8015B		MS
EXT DRO >C28-C36	11700	100	42.6	mg/kg	10	09/10/21 19:38	8015B		MS

Surrogate: 1-Chlorooctane			93.7 %	44.3-133		09/10/21 19:38	8015B		MS
Surrogate: 1-Chlorooctadecane			567 %	38.9-142		09/10/21 19:38	8015B		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS16

2109048-04 (Soil)

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

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	09/11/21 05:15	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/11/21 05:15	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/11/21 05:15	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/11/21 05:15	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/11/21 05:15	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/11/21 05:15	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/11/21 05:15	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	09/11/21 05:15	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	09/11/21 05:15	8260B		MS
Surrogate: Dibromofluoromethane			106 %	84.6-114		09/11/21 05:15	8260B		MS
Surrogate: Toluene-d8			96.6 %	90.4-109		09/11/21 05:15	8260B		MS
Surrogate: 4-Bromofluorobenzene			94.0 %	82.5-117		09/11/21 05:15	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.766	2.00	0.766	mg/kg	2000	09/14/21 00:35	8270C		MS
2-Methylnaphthalene*	<1.13	2.00	1.13	mg/kg	2000	09/14/21 00:35	8270C		MS
1-Methylnaphthalene	<0.804	2.00	0.804	mg/kg	2000	09/14/21 00:35	8270C		MS
Acenaphthylene*	<0.982	2.00	0.982	mg/kg	2000	09/14/21 00:35	8270C		MS
Acenaphthene*	<1.18	2.00	1.18	mg/kg	2000	09/14/21 00:35	8270C		MS
Fluorene*	<0.712	2.00	0.712	mg/kg	2000	09/14/21 00:35	8270C		MS
Phenanthrene*	<1.07	2.00	1.07	mg/kg	2000	09/14/21 00:35	8270C		MS
Anthracene*	<0.858	2.00	0.858	mg/kg	2000	09/14/21 00:35	8270C		MS
Carbazole*	<0.948	2.00	0.948	mg/kg	2000	09/14/21 00:35	8270C		MS
Fluoranthene*	<0.926	2.00	0.926	mg/kg	2000	09/14/21 00:35	8270C		MS
Pyrene*	<b>4.97</b>	2.00	0.658	mg/kg	2000	09/14/21 00:35	8270C		MS
Benzo[a]anthracene*	<1.15	2.00	1.15	mg/kg	2000	09/14/21 00:35	8270C		MS
Chrysene*	<b>12.1</b>	2.00	0.860	mg/kg	2000	09/14/21 00:35	8270C		MS
Benzo[b]fluoranthene*	<0.958	2.00	0.958	mg/kg	2000	09/14/21 00:35	8270C		MS
Benzo[k]fluoranthene*	<0.786	2.00	0.786	mg/kg	2000	09/14/21 00:35	8270C		MS
Benzo[a]pyrene*	<0.908	2.00	0.908	mg/kg	2000	09/14/21 00:35	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.840	2.00	0.840	mg/kg	2000	09/14/21 00:35	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS16

2109048-04 (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

Dibenz[a,h]anthracene*	<0.928	2.00	0.928	mg/kg	2000	09/14/21 00:35	8270C		MS
Benzo[g,h,i]perylene*	<0.928	2.00	0.928	mg/kg	2000	09/14/21 00:35	8270C		MS
Surrogate: Nitrobenzene-d5			83.0 %	39.6-121		09/14/21 00:35	8270C		MS
Surrogate: 2-Fluorobiphenyl			77.2 %	39.8-134		09/14/21 00:35	8270C		MS
Surrogate: Terphenyl-d14			95.4 %	33.3-136		09/14/21 00:35	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS17

2109048-05 (Soil)

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

Hexavalent Chromium	<0.250	0.250	0.0543	mg/kg	25	09/20/21 13:00	3060A/3500-Cr D		JDA
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Saturated Paste Extraction

Calcium	311	0.200	0.116	mg/L	2	09/21/21 16:46	EPA200.7		AES
Conductivity	1480			umho/cm @ 25.0°C	1	09/21/21 10:20	ASA#9 10-3.3		VJW
Magnesium	18.7	0.200	0.131	mg/L	2	09/21/21 16:46	EPA200.7		AES
pH	7.34			pH Units	1	09/21/21 08:05	ASA#9 10-3.2		VJW
SAR	0.64			No Unit	1	09/21/21 16:46	Calculation		AES
Sodium	42.9	2.00	0.159	mg/L	2	09/21/21 16:46	EPA200.7		AES

Total Metals by ICP

Barium	3750	50.0	3.90	mg/kg dry	1000	09/17/21 16:13	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/16/21 14:30	6010B		AES
Chromium	23.6	5.00	0.400	mg/kg dry	100	09/16/21 14:30	6010B		AES
Copper	31.6	5.00	2.39	mg/kg dry	100	09/16/21 14:30	6010B		AES
Lead	<10.0	10.0	0.906	mg/kg dry	100	09/16/21 14:30	6010B		AES
Nickel	11.4	5.00	0.874	mg/kg dry	100	09/16/21 14:30	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/16/21 14:30	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/16/21 14:30	6010B		AES
Zinc	598	10.0	1.71	mg/kg dry	100	09/16/21 14:30	6010B		AES

Total Metals by ICPMS

Arsenic	1.63	1.00	0.0950	mg/kg dry	1000	09/14/21 16:11	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:29	EPA200.7		AES
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

S-06

GRO C6-C10*	<100	100	62.5	mg/kg	10	09/10/21 19:58	8015B		MS
DRO >C10-C28*	20100	100	42.6	mg/kg	10	09/10/21 19:58	8015B		MS
EXT DRO >C28-C36	12000	100	42.6	mg/kg	10	09/10/21 19:58	8015B		MS

Surrogate: 1-Chlorooctane 99.9 % 44.3-133 09/10/21 19:58 8015B MS

Surrogate: 1-Chlorooctadecane 532 % 38.9-142 09/10/21 19:58 8015B MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS17

2109048-05 (Soil)

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

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	09/11/21 05:35	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/11/21 05:35	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/11/21 05:35	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/11/21 05:35	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/11/21 05:35	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/11/21 05:35	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/11/21 05:35	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	09/11/21 05:35	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	09/11/21 05:35	8260B		MS
Surrogate: Dibromofluoromethane			105 %	84.6-114		09/11/21 05:35	8260B		MS
Surrogate: Toluene-d8			97.0 %	90.4-109		09/11/21 05:35	8260B		MS
Surrogate: 4-Bromofluorobenzene			92.2 %	82.5-117		09/11/21 05:35	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.383	1.00	0.383	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
2-Methylnaphthalene*	<0.565	1.00	0.565	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
1-Methylnaphthalene	<0.402	1.00	0.402	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Acenaphthylene*	<0.491	1.00	0.491	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Acenaphthene*	<0.588	1.00	0.588	mg/kg	1000	09/14/21 13:17	8270C		MS
Fluorene*	<0.356	1.00	0.356	mg/kg	1000	09/14/21 13:17	8270C	QM-07, QR-03	MS
Phenanthrene*	<0.536	1.00	0.536	mg/kg	1000	09/14/21 13:17	8270C	QM-07, QR-03	MS
Anthracene*	<0.429	1.00	0.429	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Carbazole*	<0.474	1.00	0.474	mg/kg	1000	09/14/21 13:17	8270C	QM-07, QR-03	MS
Fluoranthene*	<0.463	1.00	0.463	mg/kg	1000	09/14/21 13:17	8270C	QM-07, QR-03	MS
Pyrene*	<b>4.96</b>	1.00	0.329	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Benzo[a]anthracene*	<0.576	1.00	0.576	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Chrysene*	<b>10.8</b>	1.00	0.430	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Benzo[b]fluoranthene*	<0.479	1.00	0.479	mg/kg	1000	09/14/21 13:17	8270C	QM-07, QR-03	MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS17

2109048-05 (Soil)

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

Polynuclear Aromatic Compounds by GC/MS

Benzo[k]flouranthene*	<0.393	1.00	0.393	mg/kg	1000	09/14/21 13:17	8270C		MS
Benzo[a]pyrene*	<0.454	1.00	0.454	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Indeno[1,2,3-cd]pyrene*	0.499	1.00	0.420	mg/kg	1000	09/14/21 13:17	8270C	J	MS
Dibenz[a,h]anthracene*	<0.464	1.00	0.464	mg/kg	1000	09/14/21 13:17	8270C	QM-07	MS
Benzo[g,h,i]perylene*	3.71	1.00	0.464	mg/kg	1000	09/14/21 13:17	8270C		MS
Surrogate: Nitrobenzene-d5			79.0 %	39.6-121		09/14/21 13:17	8270C		MS
Surrogate: 2-Fluorobiphenyl			74.5 %	39.8-134		09/14/21 13:17	8270C		MS
Surrogate: Terphenyl-d14			104 %	33.3-136		09/14/21 13:17	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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**SS18**

**2109048-06 (Soil)**

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

Hexavalent Chromium	<0.250	0.250	0.0543	mg/kg	25	09/20/21 13:00	3060A/3500-Cr D		JDA
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**Saturated Paste Extraction**

Calcium	111	0.200	0.116	mg/L	2	09/21/21 16:50	EPA200.7		AES
Conductivity	1050			umho/cm @ 25.0°C	1	09/21/21 10:20	ASA#9 10-3.3		VJW
Magnesium	17.2	0.200	0.131	mg/L	2	09/21/21 16:50	EPA200.7		AES
pH	7.63			pH Units	1	09/21/21 08:05	ASA#9 10-3.2		VJW
SAR	1.28			No Unit	1	09/21/21 16:50	Calculation		AES
Sodium	55.0	2.00	0.159	mg/L	2	09/21/21 16:50	EPA200.7		AES

**Total Metals by ICP**

Barium	291	5.00	0.390	mg/kg dry	100	09/16/21 14:34	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/16/21 14:34	6010B		AES
Chromium	30.3	5.00	0.400	mg/kg dry	100	09/16/21 14:34	6010B		AES
Copper	32.4	5.00	2.39	mg/kg dry	100	09/16/21 14:34	6010B		AES
Lead	<10.0	10.0	0.906	mg/kg dry	100	09/16/21 14:34	6010B		AES
Nickel	16.8	5.00	0.874	mg/kg dry	100	09/16/21 14:34	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/16/21 14:34	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/16/21 14:34	6010B		AES
Zinc	63.1	10.0	1.71	mg/kg dry	100	09/16/21 14:34	6010B		AES

**Total Metals by ICPMS**

Arsenic	3.86	1.00	0.0950	mg/kg dry	1000	09/14/21 16:14	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:31	EPA200.7		AES
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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	09/10/21 16:33	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	09/10/21 16:33	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	09/10/21 16:33	8015B		MS

Surrogate: 1-Chlorooctane			104 %	44.3-133		09/10/21 16:33	8015B		MS
Surrogate: 1-Chlorooctadecane			96.8 %	38.9-142		09/10/21 16:33	8015B		MS

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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 Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS18

2109048-06 (Soil)

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

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	09/09/21 21:10	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/09/21 21:10	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/09/21 21:10	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/09/21 21:10	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/09/21 21:10	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/09/21 21:10	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/09/21 21:10	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	09/09/21 21:10	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	09/09/21 21:10	8260B		MS
Surrogate: Dibromofluoromethane			98.5 %	84.6-114		09/09/21 21:10	8260B		MS
Surrogate: Toluene-d8			99.9 %	90.4-109		09/09/21 21:10	8260B		MS
Surrogate: 4-Bromofluorobenzene			91.4 %	82.5-117		09/09/21 21:10	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	09/14/21 13:47	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	09/14/21 13:47	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	09/14/21 13:47	8270C		MS
Acenaphthylene*	<0.020	0.040	0.020	mg/kg	40	09/14/21 13:47	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	09/14/21 13:47	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	09/14/21 13:47	8270C		MS
Phenanthrene*	<0.021	0.040	0.021	mg/kg	40	09/14/21 13:47	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	09/14/21 13:47	8270C		MS
Carbazole*	<0.019	0.040	0.019	mg/kg	40	09/14/21 13:47	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 13:47	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	09/14/21 13:47	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	09/14/21 13:47	8270C		MS
Chrysene*	<0.017	0.040	0.017	mg/kg	40	09/14/21 13:47	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 13:47	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	09/14/21 13:47	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	09/14/21 13:47	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS18

2109048-06 (Soil)

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

Polynuclear Aromatic Compounds by GC/MS

Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	09/14/21 13:47	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 13:47	8270C		MS
Benzo[g,h,i]perylene*	<0.019	0.040	0.019	mg/kg	40	09/14/21 13:47	8270C		MS
Surrogate: Nitrobenzene-d5			77.2 %	39.6-121		09/14/21 13:47	8270C		MS
Surrogate: 2-Fluorobiphenyl			83.1 %	39.8-134		09/14/21 13:47	8270C		MS
Surrogate: Terphenyl-d14			84.2 %	33.3-136		09/14/21 13:47	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS19

2109048-07 (Soil)

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

Hexavalent Chromium	<0.250	0.250	0.0543	mg/kg	25	09/20/21 13:00	3060A/3500-Cr D		JDA
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Saturated Paste Extraction

Calcium	100	0.100	0.058	mg/L	1	09/21/21 16:52	EPA200.7		AES
Conductivity	667			umho/cm @ 25.0°C	1	09/21/21 10:20	ASA#9 10-3.3		VJW
Magnesium	15.0	0.100	0.065	mg/L	1	09/21/21 16:53	EPA200.7		AES
pH	7.49			pH Units	1	09/21/21 08:05	ASA#9 10-3.2		VJW
SAR	0.79			No Unit	1	09/21/21 16:52	Calculation		AES
Sodium	31.9	1.00	0.079	mg/L	1	09/21/21 16:52	EPA200.7		AES

Total Metals by ICP

Barium	233	5.00	0.390	mg/kg dry	100	09/16/21 14:38	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/16/21 14:38	6010B		AES
Chromium	30.1	5.00	0.400	mg/kg dry	100	09/16/21 14:38	6010B		AES
Copper	30.1	5.00	2.39	mg/kg dry	100	09/16/21 14:38	6010B		AES
Lead	11.5	10.0	0.906	mg/kg dry	100	09/16/21 14:38	6010B		AES
Nickel	17.5	5.00	0.874	mg/kg dry	100	09/16/21 14:38	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/16/21 14:38	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/16/21 14:38	6010B		AES
Zinc	137	10.0	1.71	mg/kg dry	100	09/16/21 14:38	6010B		AES

Total Metals by ICPMS

Arsenic	4.67	1.00	0.0950	mg/kg dry	1000	09/14/21 16:18	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:33	EPA200.7		AES
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

S-06

GRO C6-C10*	<100	100	62.5	mg/kg	10	09/10/21 20:19	8015B		MS
DRO >C10-C28*	3290	100	42.6	mg/kg	10	09/10/21 20:19	8015B		MS
EXT DRO >C28-C36	2960	100	42.6	mg/kg	10	09/10/21 20:19	8015B		MS

Surrogate: 1-Chlorooctane 97.9 % 44.3-133 09/10/21 20:19 8015B MS

Surrogate: 1-Chlorooctadecane 177 % 38.9-142 09/10/21 20:19 8015B MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS19

2109048-07 (Soil)

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

**VOLATILES BY GC/MS**

Benzene*	<0.0250	0.0250	0.00885	mg/kg	50	09/10/21 00:47	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/10/21 00:47	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/10/21 00:47	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/10/21 00:47	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/10/21 00:47	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/10/21 00:47	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/10/21 00:47	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	09/10/21 00:47	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	09/10/21 00:47	8260B		MS
Surrogate: Dibromofluoromethane			102 %	84.6-114		09/10/21 00:47	8260B		MS
Surrogate: Toluene-d8			95.9 %	90.4-109		09/10/21 00:47	8260B		MS
Surrogate: 4-Bromofluorobenzene			117 %	82.5-117		09/10/21 00:47	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.153	0.400	0.153	mg/kg	400	09/14/21 14:17	8270C		MS
2-Methylnaphthalene*	<0.226	0.400	0.226	mg/kg	400	09/14/21 14:17	8270C		MS
1-Methylnaphthalene	<0.161	0.400	0.161	mg/kg	400	09/14/21 14:17	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	09/14/21 14:17	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	09/14/21 14:17	8270C		MS
Fluorene*	<0.142	0.400	0.142	mg/kg	400	09/14/21 14:17	8270C		MS
Phenanthrene*	<0.214	0.400	0.214	mg/kg	400	09/14/21 14:17	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	09/14/21 14:17	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	09/14/21 14:17	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	09/14/21 14:17	8270C		MS
Pyrene*	0.555	0.400	0.132	mg/kg	400	09/14/21 14:17	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	09/14/21 14:17	8270C		MS
Chrysene*	0.908	0.400	0.172	mg/kg	400	09/14/21 14:17	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	09/14/21 14:17	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	09/14/21 14:17	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	09/14/21 14:17	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	09/14/21 14:17	8270C		MS

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*Debbie Zufelt*

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 Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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SS19

2109048-07 (Soil)

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

Polynuclear Aromatic Compounds by GC/MS

Dibenz[a,h]anthracene*	<0.186	0.400	0.186	mg/kg	400	09/14/21 14:17	8270C		MS
Benzo[g,h,i]perylene*	<b>0.409</b>	0.400	0.186	mg/kg	400	09/14/21 14:17	8270C		MS
Surrogate: Nitrobenzene-d5			79.4 %	39.6-121		09/14/21 14:17	8270C		MS
Surrogate: 2-Fluorobiphenyl			90.7 %	39.8-134		09/14/21 14:17	8270C		MS
Surrogate: Terphenyl-d14			90.3 %	33.3-136		09/14/21 14:17	8270C		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B212203 - General Prep - Wet Chem**

<b>Blank (B212203-BLK1)</b>	Prepared: 09/17/21 Analyzed: 09/20/21									
Hexavalent Chromium	ND	0.250	mg/kg							
<b>LCS (B212203-BS1)</b>	Prepared: 09/17/21 Analyzed: 09/20/21									
Hexavalent Chromium	2.09	0.250	mg/kg	2.00		105	85-115			

**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 B212158 - Paste Extract**

<b>Duplicate (B212158-DUP2)</b>	Source: 2109050-03 Prepared: 09/14/21 Analyzed: 09/21/21									
pH	7.58		pH Units		7.55			0.397	20	
<b>Reference (B212158-SRM1)</b>	Prepared: 09/14/21 Analyzed: 09/21/21									
pH	8.74		pH Units	9.14		95.6	95-105			

**Batch B212159 - Paste Extract**

<b>Duplicate (B212159-DUP2)</b>	Source: 2109050-03 Prepared: 09/14/21 Analyzed: 09/21/21									
Conductivity	937		umho/cm @ 25.0°C		931			0.642	20	
<b>Reference (B212159-SRM1)</b>	Prepared: 09/14/21 Analyzed: 09/21/21									
Conductivity	7650		umho/cm @ 25.0°C	6720		114	90-110			

**Batch B212160 - Paste Extract**

<b>Blank (B212160-BLK1)</b>	Prepared: 09/14/21 Analyzed: 09/21/21									
Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
Sodium	ND	1.00	mg/L							
<b>Duplicate (B212160-DUP2)</b>	Source: 2109050-03 Prepared: 09/14/21 Analyzed: 09/21/21									
Calcium	180	0.100	mg/L		180			0.293	20	
Magnesium	10.7	0.100	mg/L		10.3			3.02	20	
SAR	0.57		No Unit		0.57			0.00	20	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**Saturated Paste Extraction - Quality Control  
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B212160 - Paste Extract (Continued)**

**Duplicate (B212160-DUP2) (Continued)**

Source: 2109050-03 Prepared: 09/14/21 Analyzed: 09/21/21

Sodium	29.2	1.00	mg/L		28.9			1.10	20	
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**Reference (B212160-SRM1)**

Prepared: 09/14/21 Analyzed: 09/21/21

SAR	6.75		No Unit	7.50		90.0	90-110			
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 B212136 - EPA 3050**

**Blank (B212136-BLK1)**

Prepared: 09/10/21 Analyzed: 09/16/21

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 (B212136-BS1)**

Prepared: 09/10/21 Analyzed: 09/16/21

Barium	189	5.00	mg/kg dry	200		94.5	80-120			
Cadmium	174	5.00	mg/kg dry	200		87.2	80-120			
Chromium	186	5.00	mg/kg dry	200		93.1	80-120			
Copper	390	5.00	mg/kg dry	400		97.5	80-120			
Lead	181	10.0	mg/kg dry	200		90.7	80-120			
Nickel	181	5.00	mg/kg dry	200		90.6	80-120			
Selenium	756	20.0	mg/kg dry	800		94.5	80-120			
Silver	9.54	1.00	mg/kg dry	10.0		95.4	80-120			
Zinc	171	10.0	mg/kg dry	200		85.3	80-120			

**LCS Dup (B212136-BSD1)**

Prepared: 09/10/21 Analyzed: 09/16/21

Barium	184	5.00	mg/kg dry	200		91.9	80-120	2.73	20	
Cadmium	169	5.00	mg/kg dry	200		84.7	80-120	2.84	20	
Chromium	181	5.00	mg/kg dry	200		90.7	80-120	2.54	20	
Copper	379	5.00	mg/kg dry	400		94.8	80-120	2.80	20	
Lead	179	10.0	mg/kg dry	200		89.4	80-120	1.51	20	
Nickel	178	5.00	mg/kg dry	200		89.2	80-120	1.52	20	
Selenium	755	20.0	mg/kg dry	800		94.4	80-120	0.111	20	
Silver	9.36	1.00	mg/kg dry	10.0		93.6	80-120	1.97	20	
Zinc	168	10.0	mg/kg dry	200		83.9	80-120	1.65	20	

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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**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 B212140 - EPA 3050M**

**Blank (B212140-BLK1)**

Prepared: 09/10/21 Analyzed: 09/14/21

Arsenic	ND	0.100	mg/kg dry							
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**LCS (B212140-BS1)**

Prepared: 09/10/21 Analyzed: 09/14/21

Arsenic	4.83	0.100	mg/kg dry	5.00		96.6	80-120			
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**LCS Dup (B212140-BSD1)**

Prepared: 09/10/21 Analyzed: 09/14/21

Arsenic	5.45	0.100	mg/kg dry	5.00		109	80-120	12.0	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 B212161 - Hot Water Soluble Metals Extract**

**Blank (B212161-BLK1)**

Prepared: 09/14/21 Analyzed: 09/16/21

Boron	ND	1.20	mg/L							
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**Duplicate (B212161-DUP1)**

Source: 2109045-03 Prepared: 09/14/21 Analyzed: 09/16/21

Boron	ND	1.20	mg/L		ND				200	
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 1090906 - General Prep - Organics**

**Blank (1090906-BLK1)**

Prepared: 09/09/21 Analyzed: 09/10/21

Surrogate: 1-Chlorooctadecane	40.2		mg/kg	50.0		80.3	38.9-142			
Surrogate: 1-Chlorooctane	45.0		mg/kg	50.0		89.9	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 (1090906-BS1)**

Prepared: 09/09/21 Analyzed: 09/10/21

Surrogate: 1-Chlorooctadecane	40.0		mg/kg	50.0		80.0	38.9-142			
Surrogate: 1-Chlorooctane	43.9		mg/kg	50.0		87.8	44.3-133			
DRO >C10-C28	196	10.0	mg/kg	200		98.2	79.3-136			
GRO C6-C10	174	10.0	mg/kg	200		86.9	83.4-129			
Total TPH C6-C28	370	10.0	mg/kg	400		92.5	85.3-130			

**LCS Dup (1090906-BSD1)**

Prepared: 09/09/21 Analyzed: 09/10/21

Surrogate: 1-Chlorooctadecane	42.9		mg/kg	50.0		85.9	38.9-142			
Surrogate: 1-Chlorooctane	46.7		mg/kg	50.0		93.5	44.3-133			
DRO >C10-C28	197	10.0	mg/kg	200		98.3	79.3-136	0.185	12.1	
GRO C6-C10	177	10.0	mg/kg	200		88.7	83.4-129	2.03	12.6	
Total TPH C6-C28	374	10.0	mg/kg	400		93.5	85.3-130	1.06	11.6	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 1090813 - Volatiles**

**Blank (1090813-BLK1)**

Prepared: 09/08/21 Analyzed: 09/09/21

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
<i>Surrogate: 4-Bromofluorobenzene</i>	1.11		mg/kg	1.25		89.1	82.5-117			
Benzene	ND	0.0250	mg/kg							
<i>Surrogate: Dibromofluoromethane</i>	1.29		mg/kg	1.25		103	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>	1.23		mg/kg	1.25		98.2	90.4-109			
Total Xylenes	ND	0.0750	mg/kg							

**LCS (1090813-BS1)**

Prepared: 09/08/21 Analyzed: 09/09/21

1,2,4-Trimethylbenzene	0.519	0.0250	mg/kg	0.500		104	62.4-140			
1,3,5-Trimethylbenzene	0.571	0.0250	mg/kg	0.500		114	64.4-138			
<i>Surrogate: 4-Bromofluorobenzene</i>	1.20		mg/kg	1.25		96.1	82.5-117			
Benzene	0.528	0.0250	mg/kg	0.500		106	73-130			
<i>Surrogate: Dibromofluoromethane</i>	1.25		mg/kg	1.25		99.7	84.6-114			
Ethylbenzene	0.511	0.0250	mg/kg	0.500		102	75.4-127			
m+p - Xylene	1.03	0.0500	mg/kg	1.00		103	71.8-133			
Naphthalene	0.485	0.0250	mg/kg	0.500		97.0	28.7-158			
o-Xylene	0.496	0.0250	mg/kg	0.500		99.2	78.6-125			
Toluene	0.510	0.0250	mg/kg	0.500		102	79-122			
<i>Surrogate: Toluene-d8</i>	1.25		mg/kg	1.25		99.6	90.4-109			
Total Xylenes	1.52	0.0750	mg/kg	1.50		102	74.6-130			

**LCS Dup (1090813-BSD1)**

Prepared: 09/08/21 Analyzed: 09/09/21

1,2,4-Trimethylbenzene	0.506	0.0250	mg/kg	0.500		101	62.4-140	2.44	38.2	
1,3,5-Trimethylbenzene	0.506	0.0250	mg/kg	0.500		101	64.4-138	12.0	39.1	
<i>Surrogate: 4-Bromofluorobenzene</i>	1.21		mg/kg	1.25		96.7	82.5-117			
Benzene	0.526	0.0250	mg/kg	0.500		105	73-130	0.287	17.1	
<i>Surrogate: Dibromofluoromethane</i>	1.25		mg/kg	1.25		100	84.6-114			
Ethylbenzene	0.496	0.0250	mg/kg	0.500		99.2	75.4-127	2.88	16.5	
m+p - Xylene	1.01	0.0500	mg/kg	1.00		101	71.8-133	1.63	19.1	
Naphthalene	0.463	0.0250	mg/kg	0.500		92.6	28.7-158	4.56	64	
o-Xylene	0.486	0.0250	mg/kg	0.500		97.3	78.6-125	2.02	13.2	
Toluene	0.509	0.0250	mg/kg	0.500		102	79-122	0.177	18.3	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 1090813 - Volatiles (Continued)**

**LCS Dup (1090813-BSD1) (Continued)**

Prepared: 09/08/21 Analyzed: 09/09/21

Surrogate: Toluene-d8	1.24		mg/kg	1.25		99.4	90.4-109			
Total Xylenes	1.50	0.0750	mg/kg	1.50		99.7	74.6-130	1.75	16.5	

**Batch 1090814 - Volatiles**

**Blank (1090814-BLK1)**

Prepared: 09/08/21 Analyzed: 09/10/21

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
Surrogate: 4-Bromofluorobenzene	1.11		mg/kg	1.25		88.8	82.5-117			
Benzene	ND	0.0250	mg/kg							
Surrogate: Dibromofluoromethane	1.23		mg/kg	1.25		98.6	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	1.22		mg/kg	1.25		97.3	90.4-109			
Total Xylenes	ND	0.0750	mg/kg							

**LCS (1090814-BS1)**

Prepared: 09/08/21 Analyzed: 09/10/21

1,2,4-Trimethylbenzene	0.462	0.0250	mg/kg	0.500		92.4	62.4-140			
1,3,5-Trimethylbenzene	0.469	0.0250	mg/kg	0.500		93.7	64.4-138			
Surrogate: 4-Bromofluorobenzene	1.18		mg/kg	1.25		94.4	82.5-117			
Benzene	0.499	0.0250	mg/kg	0.500		99.7	73-130			
Surrogate: Dibromofluoromethane	1.16		mg/kg	1.25		92.6	84.6-114			
Ethylbenzene	0.475	0.0250	mg/kg	0.500		95.1	75.4-127			
m+p - Xylene	0.974	0.0500	mg/kg	1.00		97.4	71.8-133			
Naphthalene	0.329	0.0250	mg/kg	0.500		65.8	28.7-158			
o-Xylene	0.458	0.0250	mg/kg	0.500		91.6	78.6-125			
Toluene	0.499	0.0250	mg/kg	0.500		99.9	79-122			
Surrogate: Toluene-d8	1.21		mg/kg	1.25		97.1	90.4-109			
Total Xylenes	1.43	0.0750	mg/kg	1.50		95.5	74.6-130			

**LCS Dup (1090814-BSD1)**

Prepared: 09/08/21 Analyzed: 09/09/21

1,2,4-Trimethylbenzene	0.506	0.0250	mg/kg	0.500		101	62.4-140	9.11	38.2	
1,3,5-Trimethylbenzene	0.505	0.0250	mg/kg	0.500		101	64.4-138	7.56	39.1	
Surrogate: 4-Bromofluorobenzene	1.24		mg/kg	1.25		99.4	82.5-117			
Benzene	0.514	0.0250	mg/kg	0.500		103	73-130	3.04	17.1	

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Margaret Spaulding Central Tank Battery Project Manager: Kyle Siesser	Reported: 09/27/21 07:48
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**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 1090814 - Volatiles (Continued)**

**LCS Dup (1090814-BSD1) (Continued)**

Prepared: 09/08/21 Analyzed: 09/09/21

<i>Surrogate: Dibromofluoromethane</i>	1.19		mg/kg	1.25		95.0	84.6-114			
Ethylbenzene	0.508	0.0250	mg/kg	0.500		102	75.4-127	6.57	16.5	
m+p - Xylene	1.03	0.0500	mg/kg	1.00		103	71.8-133	5.55	19.1	
Naphthalene	0.392	0.0250	mg/kg	0.500		78.5	28.7-158	17.6	64	
o-Xylene	0.508	0.0250	mg/kg	0.500		102	78.6-125	10.3	13.2	
Toluene	0.505	0.0250	mg/kg	0.500		101	79-122	1.02	18.3	
<i>Surrogate: Toluene-d8</i>	1.24		mg/kg	1.25		99.1	90.4-109			
Total Xylenes	1.54	0.0750	mg/kg	1.50		102	74.6-130	7.10	16.5	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 1090709 - SW846-3510**

**Blank (1090709-BLK1)**

Prepared: 09/07/21 Analyzed: 09/13/21

1-Methylnaphthalene	ND	0.040	mg/kg							
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.57</i>		mg/kg	<i>2.00</i>		<i>78.5</i>	<i>39.8-134</i>			
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]flouranthene	ND	0.040	mg/kg							
Benzo[g,h,i]perylene	ND	0.040	mg/kg							
Benzo[k]flouranthene	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							
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.61</i>		mg/kg	<i>2.00</i>		<i>80.4</i>	<i>39.6-121</i>			
Phenanthrene	ND	0.040	mg/kg							
Pyrene	ND	0.040	mg/kg							
<i>Surrogate: Terphenyl-dl4</i>	<i>1.79</i>		mg/kg	<i>2.00</i>		<i>89.3</i>	<i>33.3-136</i>			

**LCS (1090709-BS1)**

Prepared: 09/07/21 Analyzed: 09/13/21

1-Methylnaphthalene	0.333	0.040	mg/kg	0.400		83.3	57.6-108			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.69</i>		mg/kg	<i>2.00</i>		<i>84.5</i>	<i>39.8-134</i>			
2-Methylnaphthalene	0.347	0.040	mg/kg	0.400		86.7	59-106			
Acenaphthene	0.335	0.040	mg/kg	0.400		83.6	60.9-105			
Acenaphthylene	0.360	0.040	mg/kg	0.400		89.9	57.4-107			
Anthracene	0.330	0.040	mg/kg	0.400		82.5	60.8-105			
Benzo[a]anthracene	0.343	0.040	mg/kg	0.400		85.7	56.1-121			
Benzo[a]pyrene	0.302	0.040	mg/kg	0.400		75.6	56.7-115			
Benzo[b]flouranthene	0.353	0.040	mg/kg	0.400		88.2	45.4-128			
Benzo[g,h,i]perylene	0.333	0.040	mg/kg	0.400		83.3	56.5-107			
Benzo[k]flouranthene	0.350	0.040	mg/kg	0.400		87.6	49.6-119			
Carbazole	0.337	0.040	mg/kg	0.400		84.3	59.7-107			
Chrysene	0.341	0.040	mg/kg	0.400		85.4	12.2-190			
Dibenz[a,h]anthracene	0.323	0.040	mg/kg	0.400		80.7	59.1-111			
Fluoranthene	0.312	0.040	mg/kg	0.400		78.0	60.6-111			

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 1090709 - SW846-3510 (Continued)**

**LCS (1090709-BS1) (Continued)**

Prepared: 09/07/21 Analyzed: 09/13/21

Fluorene	0.339	0.040	mg/kg	0.400		84.8	59.3-108			
Indeno[1,2,3-cd]pyrene	0.329	0.040	mg/kg	0.400		82.3	53.4-116			
Naphthalene	0.350	0.040	mg/kg	0.400		87.6	56.5-106			
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.67</i>		mg/kg	<i>2.00</i>		<i>83.7</i>	<i>39.6-121</i>			
Phenanthrene	0.336	0.040	mg/kg	0.400		83.9	59.9-107			
Pyrene	0.372	0.040	mg/kg	0.400		93.1	51.5-122			
<i>Surrogate: Terphenyl-d4</i>	<i>1.82</i>		mg/kg	<i>2.00</i>		<i>91.2</i>	<i>33.3-136</i>			

**LCS Dup (1090709-BS1)**

Prepared: 09/07/21 Analyzed: 09/13/21

1-Methylnaphthalene	0.332	0.040	mg/kg	0.400		83.0	57.6-108	0.358	6.22	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.67</i>		mg/kg	<i>2.00</i>		<i>83.6</i>	<i>39.8-134</i>			
2-Methylnaphthalene	0.343	0.040	mg/kg	0.400		85.8	59-106	1.10	6.23	
Acenaphthene	0.345	0.040	mg/kg	0.400		86.3	60.9-105	3.07	8.18	
Acenaphthylene	0.353	0.040	mg/kg	0.400		88.2	57.4-107	1.87	5	
Anthracene	0.334	0.040	mg/kg	0.400		83.5	60.8-105	1.31	3.68	
Benzo[a]anthracene	0.342	0.040	mg/kg	0.400		85.4	56.1-121	0.313	9.01	
Benzo[a]pyrene	0.297	0.040	mg/kg	0.400		74.2	56.7-115	1.90	4.92	
Benzo[b]fluoranthene	0.343	0.040	mg/kg	0.400		85.7	45.4-128	2.88	7.63	
Benzo[g,h,i]perylene	0.334	0.040	mg/kg	0.400		83.5	56.5-107	0.246	12.5	
Benzo[k]fluoranthene	0.347	0.040	mg/kg	0.400		86.7	49.6-119	1.04	10.6	
Carbazole	0.344	0.040	mg/kg	0.400		86.0	59.7-107	2.03	8.65	
Chrysene	0.335	0.040	mg/kg	0.400		83.7	12.2-190	2.02	21.8	
Dibenz[a,h]anthracene	0.313	0.040	mg/kg	0.400		78.2	59.1-111	3.21	11.6	
Fluoranthene	0.319	0.040	mg/kg	0.400		79.6	60.6-111	2.08	7.54	
Fluorene	0.334	0.040	mg/kg	0.400		83.6	59.3-108	1.49	5.49	
Indeno[1,2,3-cd]pyrene	0.331	0.040	mg/kg	0.400		82.8	53.4-116	0.627	22.3	
Naphthalene	0.349	0.040	mg/kg	0.400		87.2	56.5-106	0.386	4.56	
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.70</i>		mg/kg	<i>2.00</i>		<i>84.8</i>	<i>39.6-121</i>			
Phenanthrene	0.335	0.040	mg/kg	0.400		83.7	59.9-107	0.242	5.21	
Pyrene	0.344	0.040	mg/kg	0.400		86.1	51.5-122	7.79	10.6	
<i>Surrogate: Terphenyl-d4</i>	<i>1.67</i>		mg/kg	<i>2.00</i>		<i>83.5</i>	<i>33.3-136</i>			

**Batch 1090817 - SW846-3510**

**Blank (1090817-BLK1)**

Prepared: 09/08/21 Analyzed: 09/14/21

1-Methylnaphthalene	ND	0.040	mg/kg							
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.34</i>		mg/kg	<i>2.00</i>		<i>67.2</i>	<i>39.8-134</i>			
2-Methylnaphthalene	ND	0.040	mg/kg							
Acenaphthene	ND	0.040	mg/kg							

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 1090817 - SW846-3510 (Continued)**

**Blank (1090817-BLK1) (Continued)**

Prepared: 09/08/21 Analyzed: 09/14/21

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]flouranthene	ND	0.040	mg/kg							
Benzo[g,h,i]perylene	ND	0.040	mg/kg							
Benzo[k]flouranthene	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							
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.21</i>		mg/kg	<i>2.00</i>		<i>60.5</i>	<i>39.6-121</i>			
Phenanthrene	ND	0.040	mg/kg							
Pyrene	ND	0.040	mg/kg							
<i>Surrogate: Terphenyl-d14</i>	<i>1.43</i>		mg/kg	<i>2.00</i>		<i>71.7</i>	<i>33.3-136</i>			

**LCS (1090817-BS1)**

Prepared: 09/08/21 Analyzed: 09/14/21

1-Methylnaphthalene	0.250	0.040	mg/kg	0.400		62.4	57.6-108			
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.20</i>		mg/kg	<i>2.00</i>		<i>59.9</i>	<i>39.8-134</i>			
2-Methylnaphthalene	0.254	0.040	mg/kg	0.400		63.6	59-106			
Acenaphthene	0.275	0.040	mg/kg	0.400		68.8	60.9-105			
Acenaphthylene	0.262	0.040	mg/kg	0.400		65.5	57.4-107			
Anthracene	0.268	0.040	mg/kg	0.400		67.0	60.8-105			
Benzo[a]anthracene	0.271	0.040	mg/kg	0.400		67.7	56.1-121			
Benzo[a]pyrene	0.230	0.040	mg/kg	0.400		57.4	56.7-115			
Benzo[b]flouranthene	0.272	0.040	mg/kg	0.400		68.0	45.4-128			
Benzo[g,h,i]perylene	0.255	0.040	mg/kg	0.400		63.7	56.5-107			
Benzo[k]flouranthene	0.274	0.040	mg/kg	0.400		68.6	49.6-119			
Carbazole	0.270	0.040	mg/kg	0.400		67.6	59.7-107			
Chrysene	0.268	0.040	mg/kg	0.400		66.9	12.2-190			
Dibenz[a,h]anthracene	0.245	0.040	mg/kg	0.400		61.3	59.1-111			
Fluoranthene	0.268	0.040	mg/kg	0.400		67.1	60.6-111			
Fluorene	0.266	0.040	mg/kg	0.400		66.5	59.3-108			
Indeno[1,2,3-cd]pyrene	0.258	0.040	mg/kg	0.400		64.4	53.4-116			
Naphthalene	0.250	0.040	mg/kg	0.400		62.5	56.5-106			
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.16</i>		mg/kg	<i>2.00</i>		<i>57.8</i>	<i>39.6-121</i>			

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Margaret Spaulding Central Tank Battery	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	09/27/21 07:48

**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 1090817 - SW846-3510 (Continued)**

**LCS (1090817-BS1) (Continued)**

Prepared: 09/08/21 Analyzed: 09/14/21

Phenanthrene	0.270	0.040	mg/kg	0.400		67.5	59.9-107			
Pyrene	0.279	0.040	mg/kg	0.400		69.8	51.5-122			
<i>Surrogate: Terphenyl-d14</i>	<i>1.32</i>		mg/kg	<i>2.00</i>		<i>66.1</i>	<i>33.3-136</i>			

**LCS Dup (1090817-BSD1)**

Prepared: 09/08/21 Analyzed: 09/14/21

1-Methylnaphthalene	0.242	0.040	mg/kg	0.400		60.5	57.6-108	3.13	6.22	
<i>Surrogate: 2-Fluorobiphenyl</i>	<i>1.28</i>		mg/kg	<i>2.00</i>		<i>63.9</i>	<i>39.8-134</i>			
2-Methylnaphthalene	0.262	0.040	mg/kg	0.400		65.4	59-106	2.81	6.23	
Acenaphthene	0.267	0.040	mg/kg	0.400		66.7	60.9-105	3.05	8.18	
Acenaphthylene	0.265	0.040	mg/kg	0.400		66.2	57.4-107	1.04	5	
Anthracene	0.255	0.040	mg/kg	0.400		63.7	60.8-105	5.04	3.68	QR-04
Benzo[a]anthracene	0.282	0.040	mg/kg	0.400		70.5	56.1-121	4.08	9.01	
Benzo[a]pyrene	0.236	0.040	mg/kg	0.400		59.0	56.7-115	2.79	4.92	
Benzo[b]flouranthene	0.284	0.040	mg/kg	0.400		71.0	45.4-128	4.44	7.63	
Benzo[g,h,i]perylene	0.257	0.040	mg/kg	0.400		64.2	56.5-107	0.751	12.5	
Benzo[k]flouranthene	0.257	0.040	mg/kg	0.400		64.2	49.6-119	6.64	10.6	
Carbazole	0.275	0.040	mg/kg	0.400		68.7	59.7-107	1.69	8.65	
Chrysene	0.273	0.040	mg/kg	0.400		68.1	12.2-190	1.88	21.8	
Dibenz[a,h]anthracene	0.247	0.040	mg/kg	0.400		61.6	59.1-111	0.500	11.6	
Fluoranthene	0.256	0.040	mg/kg	0.400		63.9	60.6-111	4.84	7.54	
Fluorene	0.267	0.040	mg/kg	0.400		66.8	59.3-108	0.499	5.49	
Indeno[1,2,3-cd]pyrene	0.260	0.040	mg/kg	0.400		65.1	53.4-116	0.996	22.3	
Naphthalene	0.249	0.040	mg/kg	0.400		62.3	56.5-106	0.341	4.56	
<i>Surrogate: Nitrobenzene-d5</i>	<i>1.13</i>		mg/kg	<i>2.00</i>		<i>56.3</i>	<i>39.6-121</i>			
Phenanthrene	0.258	0.040	mg/kg	0.400		64.4	59.9-107	4.69	5.21	
Pyrene	0.260	0.040	mg/kg	0.400		64.9	51.5-122	7.23	10.6	
<i>Surrogate: Terphenyl-d14</i>	<i>1.27</i>		mg/kg	<i>2.00</i>		<i>63.5</i>	<i>33.3-136</i>			

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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Margaret Spaulding Central Tank Battery  
Project Manager: Kyle Siesser

Reported:  
09/27/21 07:48

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- QR-04 The RPD for the BS/BSD was outside of historical limits.
- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- M5 Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).
- 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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