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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'. The script is cursive and fluid, with the first name 'Debbie' and last name 'Zufelt' clearly legible.

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) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
SS01	2109051-01	Solid	08/31/21 11:20	09/03/21 11:15	
SS02	2109051-02	Solid	08/31/21 11:30	09/03/21 11:15	
SS03	2109051-03	Solid	08/31/21 11:45	09/03/21 11:15	

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Debbie Zufelt, Reports Manager

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Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS01**2109051-01 (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	09/23/21 10:00	3060A/3500-Cr D	M5	JDA
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Saturated Paste Extraction

Calcium	145	0.200	0.116	mg/L	2	09/23/21 12:49	EPA200.7		AES
Conductivity	1070			umho/cm @ 25.0°C	1	09/22/21 14:55	ASA#9 10-3.3		VJW
Magnesium	15.8	0.200	0.131	mg/L	2	09/23/21 12:49	EPA200.7		AES
pH	8.47			pH Units	1	09/22/21 13:00	ASA#9 10-3.2		VJW
SAR	1.73			No Unit	1	09/23/21 12:49	Calculation		AES
Sodium	82.1	2.00	0.159	mg/L	2	09/23/21 12:49	EPA200.7		AES

Total Metals by ICP

Barium	388	5.00	0.390	mg/kg dry	100	09/21/21 11:54	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/21/21 11:54	6010B		AES
Chromium	35.2	5.00	0.400	mg/kg dry	100	09/21/21 11:54	6010B		AES
Copper	15.2	5.00	2.39	mg/kg dry	100	09/21/21 11:54	6010B		AES
Lead	10.2	10.0	0.906	mg/kg dry	100	09/21/21 11:54	6010B		AES
Nickel	18.0	5.00	0.874	mg/kg dry	100	09/21/21 11:54	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/21/21 11:54	6010B	BS1	AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/21/21 11:54	6010B		AES
Zinc	33.3	10.0	1.71	mg/kg dry	100	09/21/21 11:54	6010B		AES

Total Metals by ICPMS

Arsenic	3.30	1.00	0.0950	mg/kg dry	1000	09/17/21 12:26	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:50	EPA200.7		AES
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<50.0	50.0	31.2	mg/kg	5	09/10/21 17:55	8015B		MS
DRO >C10-C28*	1750	50.0	21.3	mg/kg	5	09/10/21 17:55	8015B	QM-07	MS
EXT DRO >C28-C36	564	50.0	21.3	mg/kg	5	09/10/21 17:55	8015B		MS

Surrogate: 1-Chlorooctane 109 % 44.3-133 09/10/21 17:55 8015B MS

Surrogate: 1-Chlorooctadecane 124 % 38.9-142 09/10/21 17:55 8015B MS

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Debbie Zufelt, Reports Manager

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS01

2109051-01 (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*	<0.0250	0.0250	0.00885	mg/kg	50	09/09/21 18:31	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/09/21 18:31	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/09/21 18:31	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/09/21 18:31	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/09/21 18:31	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/09/21 18:31	8260B		MS
1,3,5-Trimethylbenzene	0.206	0.0250	0.00450	mg/kg	50	09/09/21 18:31	8260B		MS
1,2,4-Trimethylbenzene	0.0379	0.0250	0.00650	mg/kg	50	09/09/21 18:31	8260B		MS
Naphthalene*	0.360	0.0250	0.00500	mg/kg	50	09/09/21 18:31	8260B		MS

Surrogate: Dibromofluoromethane 101 % 84.6-114 09/09/21 18:31 8260B MS

Surrogate: Toluene-d8 94.5 % 90.4-109 09/09/21 18:31 8260B MS

Surrogate: 4-Bromofluorobenzene 145 % 82.5-117 09/09/21 18:31 8260B S-04 MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	0.184	0.400	0.153	mg/kg	400	09/13/21 21:42	8270C	J	MS
2-Methylnaphthalene*	1.68	0.400	0.226	mg/kg	400	09/13/21 21:42	8270C		MS
1-Methylnaphthalene	2.56	0.400	0.161	mg/kg	400	09/13/21 21:42	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	09/13/21 21:42	8270C		MS
Acenaphthene*	0.595	0.400	0.235	mg/kg	400	09/13/21 21:42	8270C		MS
Fluorene*	0.992	0.400	0.142	mg/kg	400	09/13/21 21:42	8270C		MS
Phenanthrene*	2.40	0.400	0.214	mg/kg	400	09/13/21 21:42	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	09/13/21 21:42	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	09/13/21 21:42	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	09/13/21 21:42	8270C		MS
Pyrene*	0.555	0.400	0.132	mg/kg	400	09/13/21 21:42	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	09/13/21 21:42	8270C		MS
Chrysene*	0.631	0.400	0.172	mg/kg	400	09/13/21 21:42	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	09/13/21 21:42	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	09/13/21 21:42	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	09/13/21 21:42	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	09/13/21 21:42	8270C		MS

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Debbie Zufelt

Debbie Zufelt, Reports Manager

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS01

2109051-01 (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 21:42	8270C		MS
Benzo[g,h,i]perylene*	<0.186	0.400	0.186	mg/kg	400	09/13/21 21:42	8270C		MS
Surrogate: Nitrobenzene-d5			102 %	39.6-121		09/13/21 21:42	8270C		MS
Surrogate: 2-Fluorobiphenyl			107 %	39.8-134		09/13/21 21:42	8270C		MS
Surrogate: Terphenyl-d14			111 %	33.3-136		09/13/21 21:42	8270C		MS

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS02**2109051-02 (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	09/23/21 10:00	3060A/3500-Cr D		JDA
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Saturated Paste Extraction

Calcium	95.1	0.100	0.058	mg/L	1	09/23/21 12:53	EPA200.7		AES
Conductivity	578			umho/cm @ 25.0°C	1	09/22/21 14:55	ASA#9 10-3.3		VJW
Magnesium	9.30	0.100	0.065	mg/L	1	09/23/21 12:53	EPA200.7		AES
pH	7.03			pH Units	1	09/22/21 13:00	ASA#9 10-3.2		VJW
SAR	0.19			No Unit	1	09/23/21 12:53	Calculation		AES
Sodium	7.26	1.00	0.079	mg/L	1	09/23/21 12:53	EPA200.7		AES

Total Metals by ICP

Barium	142	5.00	0.390	mg/kg dry	100	09/21/21 12:09	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/21/21 12:09	6010B		AES
Chromium	23.2	5.00	0.400	mg/kg dry	100	09/21/21 12:09	6010B		AES
Copper	34.3	5.00	2.39	mg/kg dry	100	09/21/21 12:09	6010B		AES
Lead	16.1	10.0	0.906	mg/kg dry	100	09/21/21 12:09	6010B		AES
Nickel	14.7	5.00	0.874	mg/kg dry	100	09/21/21 12:09	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/21/21 12:09	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/21/21 12:09	6010B		AES
Zinc	199	10.0	1.71	mg/kg dry	100	09/21/21 12:09	6010B		AES

Total Metals by ICPMS

Arsenic	6.32	1.00	0.0950	mg/kg dry	1000	09/17/21 12:29	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:54	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 18:16	8015B		MS
DRO >C10-C28*	3580	100	42.6	mg/kg	10	09/10/21 18:16	8015B		MS
EXT DRO >C28-C36	3600	100	42.6	mg/kg	10	09/10/21 18:16	8015B		MS

Surrogate: 1-Chlorooctane	118 %	44.3-133	09/10/21 18:16	8015B	MS
Surrogate: 1-Chlorooctadecane	202 %	38.9-142	09/10/21 18:16	8015B	MS

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Debbie Zufelt, Reports Manager

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS02

2109051-02 (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 18:51	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/09/21 18:51	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/09/21 18:51	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/09/21 18:51	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	09/09/21 18:51	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/09/21 18:51	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/09/21 18:51	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	09/09/21 18:51	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	09/09/21 18:51	8260B		MS

Surrogate: Dibromofluoromethane 100 % 84.6-114 09/09/21 18:51 8260B MS

Surrogate: Toluene-d8 96.2 % 90.4-109 09/09/21 18:51 8260B MS

Surrogate: 4-Bromofluorobenzene 93.1 % 82.5-117 09/09/21 18:51 8260B MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	<0.153	0.400	0.153	mg/kg	400	09/13/21 22:10	8270C		MS
2-Methylnaphthalene*	<0.226	0.400	0.226	mg/kg	400	09/13/21 22:10	8270C		MS
1-Methylnaphthalene	<0.161	0.400	0.161	mg/kg	400	09/13/21 22:10	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	09/13/21 22:10	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	09/13/21 22:10	8270C		MS
Fluorene*	<0.142	0.400	0.142	mg/kg	400	09/13/21 22:10	8270C		MS
Phenanthrene*	<0.214	0.400	0.214	mg/kg	400	09/13/21 22:10	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	09/13/21 22:10	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	09/13/21 22:10	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	09/13/21 22:10	8270C		MS
Pyrene*	0.228	0.400	0.132	mg/kg	400	09/13/21 22:10	8270C	J	MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	09/13/21 22:10	8270C		MS
Chrysene*	0.818	0.400	0.172	mg/kg	400	09/13/21 22:10	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	09/13/21 22:10	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	09/13/21 22:10	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	09/13/21 22:10	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	09/13/21 22:10	8270C		MS

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Debbie Zufelt, Reports Manager

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS02

2109051-02 (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

Dibenz[a,h]anthracene*	<0.186	0.400	0.186	mg/kg	400	09/13/21 22:10	8270C		MS
Benzo[g,h,i]perylene*	<0.186	0.400	0.186	mg/kg	400	09/13/21 22:10	8270C		MS
Surrogate: Nitrobenzene-d5			99.8 %	39.6-121		09/13/21 22:10	8270C		MS
Surrogate: 2-Fluorobiphenyl			102 %	39.8-134		09/13/21 22:10	8270C		MS
Surrogate: Terphenyl-d14			112 %	33.3-136		09/13/21 22:10	8270C		MS

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS03

2109051-03 (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	09/23/21 10:00	3060A/3500-Cr D		JDA
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Saturated Paste Extraction

Calcium	73.2	0.100	0.058	mg/L	1	09/23/21 12:59	EPA200.7		AES
Conductivity	524			umho/cm @ 25.0°C	1	09/22/21 14:55	ASA#9 10-3.3		VJW
Magnesium	9.27	0.100	0.065	mg/L	1	09/23/21 12:59	EPA200.7		AES
pH	7.59			pH Units	1	09/22/21 13:00	ASA#9 10-3.2		VJW
SAR	0.71			No Unit	1	09/23/21 12:59	Calculation		AES
Sodium	24.2	1.00	0.079	mg/L	1	09/23/21 12:59	EPA200.7		AES

Total Metals by ICP

Barium	251	5.00	0.390	mg/kg dry	100	09/21/21 12:13	6010B		AES
Cadmium	<5.00	5.00	1.10	mg/kg dry	100	09/21/21 12:13	6010B		AES
Chromium	16.4	5.00	0.400	mg/kg dry	100	09/21/21 12:13	6010B		AES
Copper	20.2	5.00	2.39	mg/kg dry	100	09/21/21 12:13	6010B		AES
Lead	10.5	10.0	0.906	mg/kg dry	100	09/21/21 12:13	6010B		AES
Nickel	11.2	5.00	0.874	mg/kg dry	100	09/21/21 12:13	6010B		AES
Selenium	<20.0	20.0	4.70	mg/kg dry	100	09/21/21 12:13	6010B		AES
Silver	<1.00	1.00	0.688	mg/kg dry	100	09/21/21 12:13	6010B		AES
Zinc	43.7	10.0	1.71	mg/kg dry	100	09/21/21 12:13	6010B		AES

Total Metals by ICPMS

Arsenic	3.66	1.00	0.0950	mg/kg dry	1000	09/17/21 12:39	6020A		AES
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Hot Water Extractable

Boron	<1.20	1.20	0.568	mg/L	4	09/16/21 17:55	EPA200.7		AES
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Subcontracted -- Cardinal Laboratories 101 East Marland Hobbs, NM 88240

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	66.8	50.0	31.2	mg/kg	5	09/10/21 18:36	8015B		MS
DRO >C10-C28*	2490	50.0	21.3	mg/kg	5	09/10/21 18:36	8015B		MS
EXT DRO >C28-C36	796	50.0	21.3	mg/kg	5	09/10/21 18:36	8015B		MS

Surrogate: 1-Chlorooctane 122 % 44.3-133 09/10/21 18:36 8015B MS

Surrogate: 1-Chlorooctadecane 140 % 38.9-142 09/10/21 18:36 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) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS03

2109051-03 (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 19:11	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	09/09/21 19:11	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	09/09/21 19:11	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	09/09/21 19:11	8260B		MS
o-Xylene*	0.0334	0.0250	0.00700	mg/kg	50	09/09/21 19:11	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0250	mg/kg	50	09/09/21 19:11	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	09/09/21 19:11	8260B		MS
1,2,4-Trimethylbenzene	0.0904	0.0250	0.00650	mg/kg	50	09/09/21 19:11	8260B		MS
Naphthalene*	1.99	0.0250	0.00500	mg/kg	50	09/09/21 19:11	8260B		MS

Surrogate: Dibromofluoromethane 98.5 % 84.6-114 09/09/21 19:11 8260B MS

Surrogate: Toluene-d8 95.7 % 90.4-109 09/09/21 19:11 8260B MS

Surrogate: 4-Bromofluorobenzene 203 % 82.5-117 09/09/21 19:11 8260B S-04 MS

Polynuclear Aromatic Compounds by GC/MS

Naphthalene*	0.822	0.400	0.153	mg/kg	400	09/13/21 22:39	8270C		MS
2-Methylnaphthalene*	2.76	0.400	0.226	mg/kg	400	09/13/21 22:39	8270C		MS
1-Methylnaphthalene	2.39	0.400	0.161	mg/kg	400	09/13/21 22:39	8270C		MS
Acenaphthylene*	<0.196	0.400	0.196	mg/kg	400	09/13/21 22:39	8270C		MS
Acenaphthene*	<0.235	0.400	0.235	mg/kg	400	09/13/21 22:39	8270C		MS
Fluorene*	0.600	0.400	0.142	mg/kg	400	09/13/21 22:39	8270C		MS
Phenanthrene*	1.33	0.400	0.214	mg/kg	400	09/13/21 22:39	8270C		MS
Anthracene*	<0.172	0.400	0.172	mg/kg	400	09/13/21 22:39	8270C		MS
Carbazole*	<0.190	0.400	0.190	mg/kg	400	09/13/21 22:39	8270C		MS
Fluoranthene*	<0.185	0.400	0.185	mg/kg	400	09/13/21 22:39	8270C		MS
Pyrene*	<0.132	0.400	0.132	mg/kg	400	09/13/21 22:39	8270C		MS
Benzo[a]anthracene*	<0.230	0.400	0.230	mg/kg	400	09/13/21 22:39	8270C		MS
Chrysene*	0.690	0.400	0.172	mg/kg	400	09/13/21 22:39	8270C		MS
Benzo[b]fluoranthene*	<0.192	0.400	0.192	mg/kg	400	09/13/21 22:39	8270C		MS
Benzo[k]fluoranthene*	<0.157	0.400	0.157	mg/kg	400	09/13/21 22:39	8270C		MS
Benzo[a]pyrene*	<0.182	0.400	0.182	mg/kg	400	09/13/21 22:39	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.168	0.400	0.168	mg/kg	400	09/13/21 22:39	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) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

SS03

2109051-03 (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

Dibenz[a,h]anthracene*	<0.186	0.400	0.186	mg/kg	400	09/13/21 22:39	8270C		MS
Benzo[g,h,i]perylene*	<0.186	0.400	0.186	mg/kg	400	09/13/21 22:39	8270C		MS
Surrogate: Nitrobenzene-d5			98.6 %	39.6-121		09/13/21 22:39	8270C		MS
Surrogate: 2-Fluorobiphenyl			103 %	39.8-134		09/13/21 22:39	8270C		MS
Surrogate: Terphenyl-d14			101 %	33.3-136		09/13/21 22:39	8270C		MS

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PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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 B212204 - General Prep - Wet Chem

Blank (B212204-BLK1)

Prepared: 09/17/21 Analyzed: 09/23/21

Hexavalent Chromium	ND	0.250	mg/kg
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LCS (B212204-BS1)

Prepared: 09/17/21 Analyzed: 09/23/21

Hexavalent Chromium	1.98	0.250	mg/kg	2.00	98.9	85-115
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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 B212187 - Paste Extract

Blank (B212187-BLK1)

Prepared: 09/15/21 Analyzed: 09/23/21

Calcium	ND	0.100	mg/L
Magnesium	ND	0.100	mg/L
Sodium	ND	1.00	mg/L

Duplicate (B212187-DUP1)

Source: 2109051-01 Prepared: 09/15/21 Analyzed: 09/23/21

Calcium	125	0.200	mg/L	145	15.3	20	
Magnesium	10.7	0.200	mg/L	15.8	38.0	20	R1
SAR	1.78	No Unit	1.73	2.85	20		
Sodium	77.0	2.00	mg/L	82.1	6.35	20	

Reference (B212187-SRM1)

Prepared: 09/15/21 Analyzed: 09/23/21

SAR	7.15	No Unit	7.50	95.3	90-110
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Batch B212188 - Paste Extract

Duplicate (B212188-DUP1)

Source: 2109051-01 Prepared: 09/15/21 Analyzed: 09/22/21

Conductivity	995	umho/cm @ 25.0°C	1070	6.98	20
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Reference (B212188-SRM1)

Prepared: 09/15/21 Analyzed: 09/22/21

Conductivity	7150	umho/cm @ 25.0°C	6720	106	90-110
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Batch B212189 - Paste Extract

Duplicate (B212189-DUP1)

Source: 2109051-01 Prepared: 09/15/21 Analyzed: 09/22/21

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

**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 B212189 - Paste Extract (Continued)

Duplicate (B212189-DUP1) (Continued)

Source: 2109051-01

Prepared: 09/15/21 Analyzed: 09/22/21

pH	8.44		pH Units	8.47		0.355	20
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Reference (B212189-SRM1)

Prepared: 09/15/21 Analyzed: 09/22/21

pH	8.63		pH Units	9.14	94.4	95-105
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Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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 B212137 - EPA 3050

Blank (B212137-BLK1)

Prepared: 09/10/21 Analyzed: 09/17/21

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 (B212137-BS1)

Prepared: 09/10/21 Analyzed: 09/17/21

Barium	168	5.00	mg/kg dry	200	84.1	80-120
Cadmium	167	5.00	mg/kg dry	200	83.4	80-120
Chromium	170	5.00	mg/kg dry	200	85.2	80-120
Copper	357	5.00	mg/kg dry	400	89.2	80-120
Lead	163	10.0	mg/kg dry	200	81.6	80-120
Nickel	167	5.00	mg/kg dry	200	83.6	80-120
Selenium	672	20.0	mg/kg dry	800	84.0	80-120
Silver	8.53	1.00	mg/kg dry	10.0	85.3	80-120
Zinc	164	10.0	mg/kg dry	200	81.9	80-120

LCS Dup (B212137-BSD1)

Prepared: 09/10/21 Analyzed: 09/17/21

Barium	169	5.00	mg/kg dry	200	84.7	80-120	0.643	20
Cadmium	160	5.00	mg/kg dry	200	80.1	80-120	4.09	20
Chromium	171	5.00	mg/kg dry	200	85.7	80-120	0.598	20
Copper	359	5.00	mg/kg dry	400	89.7	80-120	0.582	20
Lead	161	10.0	mg/kg dry	200	80.6	80-120	1.27	20
Nickel	166	5.00	mg/kg dry	200	83.1	80-120	0.635	20
Selenium	673	20.0	mg/kg dry	800	84.1	80-120	0.115	20
Silver	8.70	1.00	mg/kg dry	10.0	87.0	80-120	2.00	20
Zinc	161	10.0	mg/kg dry	200	80.7	80-120	1.46	20

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Cottonwood Consulting
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Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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 B212141 - EPA 3050M

Blank (B212141-BLK1)

Prepared: 09/10/21 Analyzed: 09/17/21

Arsenic	ND	0.100	mg/kg dry							
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LCS (B212141-BS1)

Prepared: 09/10/21 Analyzed: 09/17/21

Arsenic	4.53	0.100	mg/kg dry	5.00		90.5	80-120			
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LCS Dup (B212141-BSD1)

Prepared: 09/10/21 Analyzed: 09/17/21

Arsenic	4.77	0.100	mg/kg dry	5.00		95.4	80-120	5.30	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 B212178 - Hot Water Soluble Metals Extract

Blank (B212178-BLK1)

Prepared: 09/15/21 Analyzed: 09/16/21

Boron	ND	1.20	mg/L							
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Duplicate (B212178-DUP1)

Source: 2109051-01 Prepared: 09/15/21 Analyzed: 09/16/21

Boron	ND	1.20	mg/L		ND				200	
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Cottonwood Consulting
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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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
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Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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						
Surrogate: 4-Bromofluorobenzene	1.11		mg/kg	1.25		89.1	82.5-117		
Benzene	ND	0.0250	mg/kg						
Surrogate: Dibromofluoromethane	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						
Surrogate: Toluene-d8	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		
Surrogate: 4-Bromofluorobenzene	1.20		mg/kg	1.25		96.1	82.5-117		
Benzene	0.528	0.0250	mg/kg	0.500		106	73-130		
Surrogate: Dibromofluoromethane	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		
Surrogate: Toluene-d8	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
Surrogate: 4-Bromofluorobenzene	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
Surrogate: Dibromofluoromethane	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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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 (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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	

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Debbie Zufelt, Reports Manager

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Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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							
Surrogate: 2-Fluorobiphenyl	1.57		mg/kg	2.00		78.5	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	1.61		mg/kg	2.00		80.4	39.6-121			
Phenanthrene	ND	0.040	mg/kg							
Pyrene	ND	0.040	mg/kg							
Surrogate: Terphenyl-d14	1.79		mg/kg	2.00		89.3	33.3-136			

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			
Surrogate: 2-Fluorobiphenyl	1.69		mg/kg	2.00		84.5	39.8-134			
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]fluoranthene	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]fluoranthene	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
PO Box 1653
Durango CO, 81302

Project: COGCC Table 915-1
Project Name / Number: Margaret Spaulding (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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			
Surrogate: Nitrobenzene-d5	1.67		mg/kg	2.00		83.7	39.6-121			
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			
Surrogate: Terphenyl-d14	1.82		mg/kg	2.00		91.2	33.3-136			

LCS Dup (1090709-BSD1)

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	
Surrogate: 2-Fluorobiphenyl	1.67		mg/kg	2.00		83.6	39.8-134			
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	
Surrogate: Nitrobenzene-d5	1.70		mg/kg	2.00		84.8	39.6-121			
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	
Surrogate: Terphenyl-d14	1.67		mg/kg	2.00		83.5	33.3-136			

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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 (OWP) 3
Project Manager: Kyle Siesser

Reported:
09/27/21 12:22

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.
S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
R1	Duplicate sample RPD exceeded laboratory acceptance criteria. Sample(s) may be difficult to homogenize.
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).
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

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