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08 September 2022

Emma Millar  
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 08/01/22 10:56-08/19/22 13:00. The data to follow was performed, in whole or in part, by Green Analytical Laboratories. Any data that was performed by a subcontract laboratory is included within the GAL report, or with an additional report attached.

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

Sincerely,

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

Jeremy D Allen  
Laboratory Director

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

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

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



Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Ignacio 34-8 #3-18  
Project Manager: Kyle Siesser

**Reported:**  
09/08/22 10:27

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received	Notes
Ignacio 34-8 #3-18 Wellhead	2208006-01	Solid	08/01/22 10:30	08/01/22 10:56	
Background	2208290-01	Solid	08/19/22 12:25	08/19/22 13:00	

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Ignacio 34-8 #3-18 Project Manager: Kyle Siesser	Reported: 09/08/22 10:27
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**Ignacio 34-8 #3-18 Wellhead**

**2208006-01 (Soil)**

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

Hexavalent Chromium	<0.250	0.250	0.128	mg/kg dry	25	08/10/22 12:16	3060A/3500-Cr B	M5	HTB
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**Saturated Paste Extraction**

Calcium	118	0.100	0.058	mg/L	1	08/05/22 12:03	EPA200.7		AES
Conductivity	534			umho/cm@25 C	1	08/04/22 13:20	ASA#9 10-3.3		QEB
Magnesium	16.9	0.100	0.065	mg/L	1	08/05/22 12:03	EPA200.7		AES
pH	7.33			pH Units	1	08/04/22 13:20	ASA#9 10-3.2		QEB
SAR	0.43			No Unit	1	08/05/22 12:03	Calculation		AES
Sodium	19.0	1.00	0.079	mg/L	1	08/05/22 12:03	EPA200.7		AES

**Total Metals by ICP**

Barium	184	5.00	1.10	mg/kg dry	100	08/05/22 13:24	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	08/05/22 13:24	6010B		AES
Chromium	12.1	5.00	1.58	mg/kg dry	100	08/05/22 13:24	6010B		AES
Copper	10.8	10.0	2.83	mg/kg dry	100	08/05/22 13:24	6010B	B3	AES
Lead	15.4	10.0	4.02	mg/kg dry	100	08/05/22 13:24	6010B		AES
Nickel	8.53	5.00	2.41	mg/kg dry	100	08/05/22 13:24	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	08/05/22 13:24	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	08/05/22 13:24	6010B		AES
Zinc	38.2	10.0	2.18	mg/kg dry	100	08/05/22 13:24	6010B		AES

**Total Metals by ICPMS**

Arsenic	2.43	1.00	0.158	mg/kg dry	1000	08/05/22 10:57	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	08/05/22 12:54	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	08/05/22 05:05	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	08/05/22 05:05	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	08/05/22 05:05	8015B		MS

Surrogate: 1-Chlorooctane			81.1 %	43-149		08/05/22 05:05	8015B		MS
Surrogate: 1-Chlorooctadecane			94.2 %	42.5-161		08/05/22 05:05	8015B		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**Ignacio 34-8 #3-18 Wellhead**

**2208006-01 (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	08/04/22 14:44	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/04/22 14:44	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/04/22 14:44	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/04/22 14:44	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/04/22 14:44	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	08/04/22 14:44	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/04/22 14:44	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/04/22 14:44	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/04/22 14:44	8260B		MS
<i>Surrogate: Dibromofluoromethane</i>			97.8 %	84.6-114		08/04/22 14:44	8260B		MS
<i>Surrogate: Toluene-d8</i>			100 %	90.4-109		08/04/22 14:44	8260B		MS
<i>Surrogate: 4-Bromofluorobenzene</i>			96.9 %	82.5-117		08/04/22 14:44	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	08/11/22 14:54	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	08/11/22 14:54	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	08/11/22 14:54	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	08/11/22 14:54	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	08/11/22 14:54	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	08/11/22 14:54	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/11/22 14:54	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	08/11/22 14:54	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	08/11/22 14:54	8270C		MS
Chrysene	<0.017	0.040	0.017	mg/kg	40	08/11/22 14:54	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/11/22 14:54	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	08/11/22 14:54	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	08/11/22 14:54	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	08/11/22 14:54	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	08/11/22 14:54	8270C		MS
<i>Surrogate: Nitrobenzene-d5</i>			62.6 %	39.6-121		08/11/22 14:54	8270C		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**Ignacio 34-8 #3-18 Wellhead**

**2208006-01 (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**

Surrogate: 2-Fluorobiphenyl	76.7 %	39.8-134				08/11/22 14:54	8270C		MS
Surrogate: Terphenyl-d14	88.7 %	33.3-136				08/11/22 14:54	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Ignacio 34-8 #3-18 Project Manager: Kyle Siesser	Reported: 09/08/22 10:27
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**Background**

**2208290-01 (Soil)**

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

Hexavalent Chromium	0.764	0.250	0.128	mg/kg dry	25	08/30/22 10:26	3060A/3500-Cr B		HTB
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**Saturated Paste Extraction**

Calcium	58.7	0.100	0.058	mg/L	1	08/26/22 16:17	EPA200.7		AES
Conductivity	406			umho/cm@25 C	1	08/26/22 08:30	ASA#9 10-3.3		QEB
Magnesium	12.5	0.100	0.065	mg/L	1	08/26/22 16:17	EPA200.7		AES
pH	6.24			pH Units	1	08/26/22 08:30	ASA#9 10-3.2		QEB
SAR	0.39			No Unit	1	08/26/22 16:17	Calculation		AES
Sodium	12.5	1.00	0.079	mg/L	1	08/26/22 16:17	EPA200.7		AES

**Total Metals by ICP**

Barium	178	5.00	1.10	mg/kg dry	100	08/31/22 12:07	6010B		AES
Cadmium	<5.00	5.00	2.54	mg/kg dry	100	08/31/22 12:07	6010B		AES
Chromium	15.7	5.00	1.58	mg/kg dry	100	08/31/22 12:07	6010B		AES
Copper	8.53	5.00	2.83	mg/kg dry	100	08/31/22 12:07	6010B		AES
Lead	10.5	10.0	4.02	mg/kg dry	100	08/31/22 12:07	6010B		AES
Nickel	10.2	5.00	2.41	mg/kg dry	100	08/31/22 12:07	6010B		AES
Selenium	<20.0	20.0	5.39	mg/kg dry	100	08/31/22 12:06	6010B		AES
Silver	<1.00	1.00	0.518	mg/kg dry	100	08/31/22 12:06	6010B		AES
Zinc	37.1	10.0	2.18	mg/kg dry	100	08/31/22 12:07	6010B		AES

**Total Metals by ICPMS**

Arsenic	3.23	1.00	0.158	mg/kg dry	1000	08/29/22 11:35	6020A		AES
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**Hot Water Extractable**

Boron	<1.20	1.20	0.568	mg/L	4	08/24/22 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*	<10.0	10.0	6.25	mg/kg	1	08/24/22 11:10	8015B		MS
DRO >C10-C28*	<10.0	10.0	4.26	mg/kg	1	08/24/22 11:10	8015B		MS
EXT DRO >C28-C36	<10.0	10.0	4.26	mg/kg	1	08/24/22 11:10	8015B		MS

Surrogate: 1-Chlorooctane			76.2 %	45.3-161		08/24/22 11:10	8015B		MS
Surrogate: 1-Chlorooctadecane			78.7 %	46.3-178		08/24/22 11:10	8015B		MS

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**Background**

**2208290-01 (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	08/29/22 15:21	8260B		MS
Toluene*	<0.0250	0.0250	0.00670	mg/kg	50	08/29/22 15:21	8260B		MS
Ethylbenzene*	<0.0250	0.0250	0.00405	mg/kg	50	08/29/22 15:21	8260B		MS
m+p - Xylene*	<0.0500	0.0500	0.0186	mg/kg	50	08/29/22 15:21	8260B		MS
o-Xylene*	<0.0250	0.0250	0.00700	mg/kg	50	08/29/22 15:21	8260B		MS
Total Xylenes*	<0.0750	0.0750	0.0256	mg/kg	50	08/29/22 15:21	8260B		MS
1,3,5-Trimethylbenzene	<0.0250	0.0250	0.00450	mg/kg	50	08/29/22 15:21	8260B		MS
1,2,4-Trimethylbenzene	<0.0250	0.0250	0.00650	mg/kg	50	08/29/22 15:21	8260B		MS
Naphthalene*	<0.0250	0.0250	0.00500	mg/kg	50	08/29/22 15:21	8260B		MS
Surrogate: Dibromofluoromethane			95.1 %	84.6-114		08/29/22 15:21	8260B		MS
Surrogate: Toluene-d8			99.9 %	90.4-109		08/29/22 15:21	8260B		MS
Surrogate: 4-Bromofluorobenzene			98.2 %	82.5-117		08/29/22 15:21	8260B		MS

**Polynuclear Aromatic Compounds by GC/MS**

Naphthalene*	<0.015	0.040	0.015	mg/kg	40	08/24/22 19:17	8270C		MS
2-Methylnaphthalene*	<0.023	0.040	0.023	mg/kg	40	08/24/22 19:17	8270C		MS
1-Methylnaphthalene	<0.016	0.040	0.016	mg/kg	40	08/24/22 19:17	8270C		MS
Acenaphthene*	<0.024	0.040	0.024	mg/kg	40	08/24/22 19:17	8270C		MS
Fluorene*	<0.014	0.040	0.014	mg/kg	40	08/24/22 19:17	8270C		MS
Anthracene*	<0.017	0.040	0.017	mg/kg	40	08/24/22 19:17	8270C		MS
Fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/24/22 19:17	8270C		MS
Pyrene*	<0.013	0.040	0.013	mg/kg	40	08/24/22 19:17	8270C		MS
Benzo[a]anthracene*	<0.023	0.040	0.023	mg/kg	40	08/24/22 19:17	8270C		MS
Chrysene	<0.017	0.040	0.017	mg/kg	40	08/24/22 19:17	8270C		MS
Benzo[b]fluoranthene*	<0.019	0.040	0.019	mg/kg	40	08/24/22 19:17	8270C		MS
Benzo[k]fluoranthene*	<0.016	0.040	0.016	mg/kg	40	08/24/22 19:17	8270C		MS
Benzo[a]pyrene*	<0.018	0.040	0.018	mg/kg	40	08/24/22 19:17	8270C		MS
Indeno[1,2,3-cd]pyrene*	<0.017	0.040	0.017	mg/kg	40	08/24/22 19:17	8270C		MS
Dibenz[a,h]anthracene*	<0.019	0.040	0.019	mg/kg	40	08/24/22 19:17	8270C		MS
Surrogate: Nitrobenzene-d5			99.2 %	39.6-121		08/24/22 19:17	8270C		MS

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Jeremy D Allen, Laboratory Director

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**Background**

**2208290-01 (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**

Surrogate: 2-Fluorobiphenyl	107 %	39.8-134				08/24/22 19:17	8270C		MS
Surrogate: Terphenyl-d14	124 %	33.3-136				08/24/22 19:17	8270C		MS

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Cottonwood Consulting PO Box 1653 Durango CO, 81302	Project: COGCC Table 915-1 Project Name / Number: Ignacio 34-8 #3-18 Project Manager: Kyle Siesser	Reported: 09/08/22 10:27
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**General Chemistry - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B222181 - General Prep - Wet Chem</b>										
<b>Blank (B222181-BLK1)</b> Prepared & Analyzed: 08/10/22										
Hexavalent Chromium	ND	0.0100	mg/kg dry							
<b>LCS (B222181-BS1)</b> Prepared & Analyzed: 08/10/22										
Hexavalent Chromium	0.0889	0.0100	mg/kg dry	0.100		88.9	85-115			

<b>Batch B222370 - General Prep - Wet Chem</b>										
<b>Blank (B222370-BLK1)</b> Prepared: 08/29/22 Analyzed: 08/30/22										
Hexavalent Chromium	ND	0.250	mg/kg dry							
<b>LCS (B222370-BS1)</b> Prepared: 08/29/22 Analyzed: 08/30/22										
Hexavalent Chromium	2.38	0.250	mg/kg dry	2.50		95.1	85-115			

**Saturated Paste Extraction - Quality Control**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch B222102 - Paste Extract</b>										
<b>Blank (B222102-BLK1)</b> Prepared: 08/03/22 Analyzed: 08/05/22										
Calcium	ND	0.100	mg/L							
Magnesium	ND	0.100	mg/L							
SAR	0.00		No Unit							
Sodium	ND	1.00	mg/L							
<b>Reference (B222102-SRM1)</b> Prepared: 08/03/22 Analyzed: 08/05/22										
SAR	9.54		No Unit	10.5		90.7	90-110			

<b>Batch B222103 - Paste Extract</b>										
<b>Reference (B222103-SRM1)</b> Prepared & Analyzed: 08/04/22										
Conductivity	9090		umho/cm@2 5C	8340		109	90-110			

<b>Batch B222104 - Paste Extract</b>										
<b>Reference (B222104-SRM1)</b> Prepared & Analyzed: 08/04/22										
pH	6.89		pH Units	6.93		99.4	92-108			

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Cottonwood Consulting	Project: COGCC Table 915-1	<b>Reported:</b> 09/08/22 10:27
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	
Durango CO, 81302	Project Manager: Kyle Siesser	

**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 B222325 - Paste Extract**

**Reference (B222325-SRM1)**

Prepared: 08/25/22 Analyzed: 08/26/22

pH	6.89		pH Units	6.93		99.4	92-108			
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**Batch B222326 - Paste Extract**

**Blank (B222326-BLK1)**

Prepared: 08/24/22 Analyzed: 08/26/22

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

**Reference (B222326-SRM1)**

Prepared: 08/24/22 Analyzed: 08/26/22

SAR	11.4		No Unit	10.5		109	90-110			
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**Batch B222327 - Paste Extract**

**Reference (B222327-SRM1)**

Prepared: 08/25/22 Analyzed: 08/26/22

Conductivity	8970		umho/cm@25C	8340		108	90-110			
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 B222109 - EPA 3050**

**Blank (B222109-BLK1)**

Prepared: 08/03/22 Analyzed: 08/05/22

Barium	ND	5.00	mg/kg dry							
Cadmium	ND	5.00	mg/kg dry							
Chromium	ND	5.00	mg/kg dry							
Copper	5.18	5.00	mg/kg dry							B3
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 (B222109-BS1)**

Prepared: 08/03/22 Analyzed: 08/05/22

Barium	189	5.00	mg/kg dry	200		94.5	80-120			
Cadmium	175	5.00	mg/kg dry	200		87.5	80-120			
Chromium	190	5.00	mg/kg dry	200		95.1	80-120			
Copper	396	5.00	mg/kg dry	400		98.9	80-120			
Lead	182	10.0	mg/kg dry	200		91.1	80-120			
Nickel	182	5.00	mg/kg dry	200		91.0	80-120			
Selenium	762	20.0	mg/kg dry	800		95.2	80-120			
Silver	9.97	1.00	mg/kg dry	10.0		99.7	80-120			
Zinc	170	10.0	mg/kg dry	200		85.0	80-120			

**LCS Dup (B222109-BS1)**

Prepared: 08/03/22 Analyzed: 08/05/22

Barium	193	5.00	mg/kg dry	200		96.5	80-120	2.12	20	
Cadmium	178	5.00	mg/kg dry	200		89.1	80-120	1.77	20	
Chromium	195	5.00	mg/kg dry	200		97.3	80-120	2.26	20	
Copper	404	5.00	mg/kg dry	400		101	80-120	2.02	20	
Lead	183	10.0	mg/kg dry	200		91.7	80-120	0.619	20	
Nickel	183	5.00	mg/kg dry	200		91.7	80-120	0.762	20	
Selenium	784	20.0	mg/kg dry	800		98.0	80-120	2.88	20	
Silver	9.65	1.00	mg/kg dry	10.0		96.5	80-120	3.22	20	
Zinc	171	10.0	mg/kg dry	200		85.4	80-120	0.451	20	

**Batch B222360 - EPA 3050**

**Blank (B222360-BLK1)**

Prepared: 08/29/22 Analyzed: 08/31/22

Barium	ND	5.00	mg/kg dry							
Cadmium	ND	5.00	mg/kg dry							
Chromium	ND	5.00	mg/kg dry							
Copper	ND	5.00	mg/kg dry							
Lead	ND	10.0	mg/kg dry							
Nickel	ND	5.00	mg/kg dry							

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**Total Metals by ICP - Quality Control  
(Continued)**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch B222360 - EPA 3050 (Continued)**

**Blank (B222360-BLK1) (Continued)**

Prepared: 08/29/22 Analyzed: 08/31/22

Selenium	ND	20.0	mg/kg dry							
Silver	ND	1.00	mg/kg dry							
Zinc	ND	10.0	mg/kg dry							

**LCS (B222360-BS1)**

Prepared: 08/29/22 Analyzed: 08/31/22

Barium	189	5.00	mg/kg dry	200		94.3	80-120			
Cadmium	177	5.00	mg/kg dry	200		88.5	80-120			
Chromium	190	5.00	mg/kg dry	200		95.2	80-120			
Copper	388	5.00	mg/kg dry	400		97.1	80-120			
Lead	180	10.0	mg/kg dry	200		89.9	80-120			
Nickel	180	5.00	mg/kg dry	200		90.2	80-120			
Selenium	783	20.0	mg/kg dry	800		97.9	80-120			
Silver	9.10	1.00	mg/kg dry	10.0		91.0	80-120			
Zinc	170	10.0	mg/kg dry	200		84.9	80-120			

**LCS Dup (B222360-BSD1)**

Prepared: 08/29/22 Analyzed: 08/31/22

Barium	191	5.00	mg/kg dry	200		95.7	80-120	1.53	20	
Cadmium	178	5.00	mg/kg dry	200		88.8	80-120	0.268	20	
Chromium	194	5.00	mg/kg dry	200		96.9	80-120	1.80	20	
Copper	395	5.00	mg/kg dry	400		98.8	80-120	1.78	20	
Lead	181	10.0	mg/kg dry	200		90.6	80-120	0.802	20	
Nickel	182	5.00	mg/kg dry	200		91.0	80-120	0.894	20	
Selenium	778	20.0	mg/kg dry	800		97.2	80-120	0.651	20	
Silver	9.12	1.00	mg/kg dry	10.0		91.2	80-120	0.324	20	
Zinc	170	10.0	mg/kg dry	200		84.8	80-120	0.0540	20	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 B222129 - EPA 3050M**

**Blank (B222129-BLK1)**

Prepared: 08/04/22 Analyzed: 08/05/22

Arsenic	ND	0.100	mg/kg dry							
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**LCS (B222129-BS1)**

Prepared: 08/04/22 Analyzed: 08/05/22

Arsenic	5.30	0.100	mg/kg dry	5.00		106	80-120			
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**LCS Dup (B222129-BSD1)**

Prepared: 08/04/22 Analyzed: 08/05/22

Arsenic	5.18	0.100	mg/kg dry	5.00		104	80-120	2.32	20	
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**Batch B222279 - EPA 3050M**

**Blank (B222279-BLK1)**

Prepared: 08/22/22 Analyzed: 08/29/22

Arsenic	ND	0.100	mg/kg dry							
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**LCS (B222279-BS1)**

Prepared: 08/22/22 Analyzed: 08/29/22

Arsenic	4.55	0.100	mg/kg dry	5.00		91.0	80-120			
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**LCS Dup (B222279-BSD1)**

Prepared: 08/22/22 Analyzed: 08/29/22

Arsenic	4.40	0.100	mg/kg dry	5.00		88.0	80-120	3.36	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 B222101 - Hot Water Soluble Metals Extract**

**Blank (B222101-BLK1)**

Prepared: 08/03/22 Analyzed: 08/05/22

Boron	ND	1.20	mg/L							
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**Batch B222310 - Hot Water Soluble Metals Extract**

**Blank (B222310-BLK1)**

Prepared: 08/23/22 Analyzed: 08/24/22

Boron	ND	1.20	mg/L							
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2080409 - General Prep - Organics**

**Blank (2080409-BLK1)**

Prepared: 08/04/22 Analyzed: 08/05/22

Surrogate: 1-Chlorooctadecane	48.7		mg/kg	50.0		97.5	42.5-161			
Surrogate: 1-Chlorooctane	41.9		mg/kg	50.0		83.8	43-149			
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 (2080409-BS1)**

Prepared: 08/04/22 Analyzed: 08/05/22

Surrogate: 1-Chlorooctadecane	54.9		mg/kg	50.0		110	42.5-161			
Surrogate: 1-Chlorooctane	45.6		mg/kg	50.0		91.2	43-149			
DRO >C10-C28	208	10.0	mg/kg	200		104	75.8-135			
GRO C6-C10	215	10.0	mg/kg	200		107	78.5-128			
Total TPH C6-C28	423	10.0	mg/kg	400		106	81.5-127			

**LCS Dup (2080409-BSD1)**

Prepared: 08/04/22 Analyzed: 08/05/22

Surrogate: 1-Chlorooctadecane	56.5		mg/kg	50.0		113	42.5-161			
Surrogate: 1-Chlorooctane	49.3		mg/kg	50.0		98.7	43-149			
DRO >C10-C28	189	10.0	mg/kg	200		94.4	75.8-135	9.54	17.9	
GRO C6-C10	205	10.0	mg/kg	200		102	78.5-128	4.90	21.4	
Total TPH C6-C28	394	10.0	mg/kg	400		98.4	81.5-127	7.15	17.6	

**Batch 2082404 - General Prep - Organics**

**Blank (2082404-BLK1)**

Prepared & Analyzed: 08/24/22

Surrogate: 1-Chlorooctadecane	45.9		mg/kg	50.0		91.8	46.3-178			
Surrogate: 1-Chlorooctane	45.1		mg/kg	50.0		90.2	45.3-161			
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
GRO C6-C10	ND	10.0	mg/kg							

**LCS (2082404-BS1)**

Prepared & Analyzed: 08/24/22

Surrogate: 1-Chlorooctadecane	49.3		mg/kg	50.0		98.6	46.3-178			
Surrogate: 1-Chlorooctane	49.5		mg/kg	50.0		99.0	45.3-161			
DRO >C10-C28	183	10.0	mg/kg	200		91.3	74.3-129			
GRO C6-C10	196	10.0	mg/kg	200		98.0	76.9-124			
Total TPH C6-C28	379	10.0	mg/kg	400		94.7	81.5-127			

**LCS Dup (2082404-BSD1)**

Prepared & Analyzed: 08/24/22

Surrogate: 1-Chlorooctadecane	51.1		mg/kg	50.0		102	46.3-178			
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2082404 - General Prep - Organics (Continued)**

**LCS Dup (2082404-BSD1) (Continued)**

Prepared & Analyzed: 08/24/22

<i>Surrogate: 1-Chlorooctane</i>	48.0		mg/kg	50.0		96.0	45.3-161			
DRO >C10-C28	184	10.0	mg/kg	200		91.9	74.3-129	0.702	18.6	
GRO C6-C10	195	10.0	mg/kg	200		97.4	76.9-124	0.680	17.2	
Total TPH C6-C28	379	10.0	mg/kg	400		94.7	81.5-127	0.0111	17.6	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2080324 - Volatiles**

**Blank (2080324-BLK1)**

Prepared: 08/03/22 Analyzed: 08/04/22

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
<i>Surrogate: 4-Bromofluorobenzene</i>	1.19		mg/kg	1.25		95.6	82.5-117			
Benzene	ND	0.0250	mg/kg							
<i>Surrogate: Dibromofluoromethane</i>	1.21		mg/kg	1.25		96.9	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		98.3	90.4-109			
Total Xylenes	ND	0.0750	mg/kg							

**LCS (2080324-BS1)**

Prepared: 08/03/22 Analyzed: 08/04/22

1,2,4-Trimethylbenzene	0.476	0.0250	mg/kg	0.500		95.1	62.4-140			
1,3,5-Trimethylbenzene	0.488	0.0250	mg/kg	0.500		97.5	64.4-138			
<i>Surrogate: 4-Bromofluorobenzene</i>	1.24		mg/kg	1.25		98.8	82.5-117			
Benzene	0.460	0.0250	mg/kg	0.500		92.0	73-130			
<i>Surrogate: Dibromofluoromethane</i>	1.26		mg/kg	1.25		100	84.6-114			
Ethylbenzene	0.463	0.0250	mg/kg	0.500		92.5	75.4-127			
m+p - Xylene	0.953	0.0500	mg/kg	1.00		95.3	71.8-133			
Naphthalene	0.470	0.0250	mg/kg	0.500		94.1	28.7-158			
o-Xylene	0.461	0.0250	mg/kg	0.500		92.2	78.6-125			
Toluene	0.452	0.0250	mg/kg	0.500		90.5	79-122			
<i>Surrogate: Toluene-d8</i>	1.24		mg/kg	1.25		99.1	90.4-109			
Total Xylenes	1.41	0.0750	mg/kg	1.50		94.3	74.6-130			

**LCS Dup (2080324-BSD1)**

Prepared: 08/03/22 Analyzed: 08/04/22

1,2,4-Trimethylbenzene	0.463	0.0250	mg/kg	0.500		92.5	62.4-140	2.74	38.2	
1,3,5-Trimethylbenzene	0.466	0.0250	mg/kg	0.500		93.3	64.4-138	4.49	39.1	
<i>Surrogate: 4-Bromofluorobenzene</i>	1.22		mg/kg	1.25		97.5	82.5-117			
Benzene	0.457	0.0250	mg/kg	0.500		91.4	73-130	0.632	17.1	
<i>Surrogate: Dibromofluoromethane</i>	1.25		mg/kg	1.25		100	84.6-114			
Ethylbenzene	0.457	0.0250	mg/kg	0.500		91.3	75.4-127	1.33	16.5	
m+p - Xylene	0.941	0.0500	mg/kg	1.00		94.1	71.8-133	1.35	19.1	
Naphthalene	0.441	0.0250	mg/kg	0.500		88.2	28.7-158	6.47	64	
o-Xylene	0.455	0.0250	mg/kg	0.500		91.0	78.6-125	1.31	13.2	
Toluene	0.447	0.0250	mg/kg	0.500		89.5	79-122	1.11	18.3	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2080324 - Volatiles (Continued)**

**LCS Dup (2080324-BSD1) (Continued)**

Prepared: 08/03/22 Analyzed: 08/04/22

<i>Surrogate: Toluene-d8</i>	1.22		mg/kg	1.25		97.9	90.4-109			
Total Xylenes	1.40	0.0750	mg/kg	1.50		93.0	74.6-130	1.34	16.5	

**Batch 2082916 - Volatiles**

**Blank (2082916-BLK1)**

Prepared & Analyzed: 08/29/22

1,2,4-Trimethylbenzene	ND	0.0250	mg/kg							
1,3,5-Trimethylbenzene	ND	0.0250	mg/kg							
<i>Surrogate: 4-Bromofluorobenzene</i>	1.23		mg/kg	1.25		98.8	82.5-117			
Benzene	ND	0.0250	mg/kg							
<i>Surrogate: Dibromofluoromethane</i>	1.20		mg/kg	1.25		96.0	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>	1.25		mg/kg	1.25		100	90.4-109			
Total Xylenes	ND	0.0750	mg/kg							

**LCS (2082916-BS1)**

Prepared & Analyzed: 08/29/22

1,2,4-Trimethylbenzene	0.531	0.0250	mg/kg	0.500		106	62.4-140			
1,3,5-Trimethylbenzene	0.528	0.0250	mg/kg	0.500		106	64.4-138			
<i>Surrogate: 4-Bromofluorobenzene</i>	1.24		mg/kg	1.25		99.3	82.5-117			
Benzene	0.527	0.0250	mg/kg	0.500		105	73-130			
<i>Surrogate: Dibromofluoromethane</i>	1.23		mg/kg	1.25		98.6	84.6-114			
Ethylbenzene	0.533	0.0250	mg/kg	0.500		107	75.4-127			
m+p - Xylene	1.04	0.0500	mg/kg	1.00		104	71.8-133			
Naphthalene	0.538	0.0250	mg/kg	0.500		108	28.7-158			
o-Xylene	0.523	0.0250	mg/kg	0.500		105	78.6-125			
Toluene	0.519	0.0250	mg/kg	0.500		104	79-122			
<i>Surrogate: Toluene-d8</i>	1.25		mg/kg	1.25		100	90.4-109			
Total Xylenes	1.56	0.0750	mg/kg	1.50		104	74.6-130			

**LCS Dup (2082916-BSD1)**

Prepared & Analyzed: 08/29/22

1,2,4-Trimethylbenzene	0.509	0.0250	mg/kg	0.500		102	62.4-140	4.15	38.2	
1,3,5-Trimethylbenzene	0.515	0.0250	mg/kg	0.500		103	64.4-138	2.44	39.1	
<i>Surrogate: 4-Bromofluorobenzene</i>	1.25		mg/kg	1.25		100	82.5-117			
Benzene	0.515	0.0250	mg/kg	0.500		103	73-130	2.45	17.1	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2082916 - Volatiles (Continued)**

**LCS Dup (2082916-BSD1) (Continued)**

Prepared & Analyzed: 08/29/22

<i>Surrogate: Dibromofluoromethane</i>	1.23		mg/kg	1.25		98.7	84.6-114			
Ethylbenzene	0.519	0.0250	mg/kg	0.500		104	75.4-127	2.64	16.5	
m+p - Xylene	1.02	0.0500	mg/kg	1.00		102	71.8-133	0.985	19.1	
Naphthalene	0.502	0.0250	mg/kg	0.500		100	28.7-158	6.80	64	
o-Xylene	0.510	0.0250	mg/kg	0.500		102	78.6-125	2.57	13.2	
Toluene	0.502	0.0250	mg/kg	0.500		100	79-122	3.28	18.3	
<i>Surrogate: Toluene-d8</i>	1.26		mg/kg	1.25		100	90.4-109			
Total Xylenes	1.53	0.0750	mg/kg	1.50		102	74.6-130	1.51	16.5	

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2080212 - SW-846 3550**

**Blank (2080212-BLK1)**

Prepared: 08/02/22 Analyzed: 08/11/22

1-Methylnaphthalene	ND	0.040	mg/kg							
<i>Surrogate: 2-Fluorobiphenyl</i>	1.51		mg/kg	2.00		75.4	39.8-134			
2-Methylnaphthalene	ND	0.040	mg/kg							
Acenaphthene	ND	0.040	mg/kg							
Anthracene	ND	0.040	mg/kg							
Benzo[a]anthracene	ND	0.040	mg/kg							
Benzo[a]pyrene	ND	0.040	mg/kg							
Benzo[b]flouranthene	ND	0.040	mg/kg							
Benzo[k]flouranthene	ND	0.040	mg/kg							
Chrysene	ND	0.040	mg/kg							
Dibenz[a,h]anthracene	ND	0.040	mg/kg							
Fluoranthene	ND	0.040	mg/kg							
Fluorene	ND	0.040	mg/kg							
Indeno[1,2,3-cd]pyrene	ND	0.040	mg/kg							
Naphthalene	ND	0.040	mg/kg							
<i>Surrogate: Nitrobenzene-d5</i>	1.28		mg/kg	2.00		63.9	39.6-121			
Pyrene	ND	0.040	mg/kg							
<i>Surrogate: Terphenyl-d14</i>	1.52		mg/kg	2.00		76.1	33.3-136			

**LCS (2080212-BS1)**

Prepared: 08/02/22 Analyzed: 08/11/22

1-Methylnaphthalene	0.334	0.040	mg/kg	0.400		83.4	57.6-108			
<i>Surrogate: 2-Fluorobiphenyl</i>	2.44		mg/kg	2.00		122	39.8-134			
2-Methylnaphthalene	0.333	0.040	mg/kg	0.400		83.2	59-106			
Acenaphthene	0.339	0.040	mg/kg	0.400		84.8	60.9-105			
Acenaphthylene	0.343	0.040	mg/kg	0.400		85.6	57.4-107			
Anthracene	0.348	0.040	mg/kg	0.400		87.1	60.8-105			
Benzo[a]anthracene	0.348	0.040	mg/kg	0.400		87.0	56.1-121			
Benzo[a]pyrene	0.347	0.040	mg/kg	0.400		86.8	56.7-115			
Benzo[b]flouranthene	0.190	0.040	mg/kg	0.400		47.5	45.4-128			
Benzo[g,h,i]perylene	0.371	0.040	mg/kg	0.400		92.8	56.5-107			
Benzo[k]flouranthene	0.291	0.040	mg/kg	0.400		72.9	49.6-119			
Carbazole	0.358	0.040	mg/kg	0.400		89.5	59.7-107			
Chrysene	0.361	0.040	mg/kg	0.400		90.2	12.2-190			
Dibenz[a,h]anthracene	0.355	0.040	mg/kg	0.400		88.8	59.1-111			
Fluoranthene	0.323	0.040	mg/kg	0.400		80.7	60.6-111			
Fluorene	0.345	0.040	mg/kg	0.400		86.1	59.3-108			
Indeno[1,2,3-cd]pyrene	0.334	0.040	mg/kg	0.400		83.5	53.4-116			
Naphthalene	0.345	0.040	mg/kg	0.400		86.3	56.5-106			

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	Reported:
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2080212 - SW-846 3550 (Continued)**

**LCS (2080212-BS1) (Continued)**

Prepared: 08/02/22 Analyzed: 08/11/22

<i>Surrogate: Nitrobenzene-d5</i>	2.07		mg/kg	2.00		103	39.6-121			
Phenanthrene	0.355	0.040	mg/kg	0.400		88.8	59.9-107			
Pyrene	0.357	0.040	mg/kg	0.400		89.2	51.5-122			
<i>Surrogate: Terphenyl-dl4</i>	2.58		mg/kg	2.00		129	33.3-136			

**LCS Dup (2080212-BSD1)**

Prepared: 08/02/22 Analyzed: 08/11/22

1-Methylnaphthalene	0.342	0.040	mg/kg	0.400		85.4	57.6-108	2.44	6.22	
<i>Surrogate: 2-Fluorobiphenyl</i>	2.40		mg/kg	2.00		120	39.8-134			
2-Methylnaphthalene	0.343	0.040	mg/kg	0.400		85.9	59-106	3.10	6.23	
Acenaphthene	0.346	0.040	mg/kg	0.400		86.5	60.9-105	2.01	8.18	
Acenaphthylene	0.342	0.040	mg/kg	0.400		85.6	57.4-107	0.0409	5	
Anthracene	0.347	0.040	mg/kg	0.400		86.9	60.8-105	0.293	3.68	
Benzo[a]anthracene	0.348	0.040	mg/kg	0.400		87.0	56.1-121	0.0575	9.01	
Benzo[a]pyrene	0.341	0.040	mg/kg	0.400		85.1	56.7-115	1.96	4.92	
Benzo[b]flouranthene	0.344	0.040	mg/kg	0.400		86.0	45.4-128	57.6	7.63	QR-04
Benzo[g,h,i]perylene	0.376	0.040	mg/kg	0.400		94.1	56.5-107	1.41	12.5	
Benzo[k]flouranthene	0.334	0.040	mg/kg	0.400		83.5	49.6-119	13.6	10.6	QR-04
Carbazole	0.367	0.040	mg/kg	0.400		91.8	59.7-107	2.48	8.65	
Chrysene	0.366	0.040	mg/kg	0.400		91.4	12.2-190	1.30	21.8	
Dibenz[a,h]anthracene	0.353	0.040	mg/kg	0.400		88.2	59.1-111	0.715	11.6	
Fluoranthene	0.317	0.040	mg/kg	0.400		79.3	60.6-111	1.84	7.54	
Fluorene	0.338	0.040	mg/kg	0.400		84.5	59.3-108	1.95	5.49	
Indeno[1,2,3-cd]pyrene	0.314	0.040	mg/kg	0.400		78.5	53.4-116	6.21	22.3	
Naphthalene	0.351	0.040	mg/kg	0.400		87.7	56.5-106	1.60	4.56	
<i>Surrogate: Nitrobenzene-d5</i>	2.03		mg/kg	2.00		102	39.6-121			
Phenanthrene	0.341	0.040	mg/kg	0.400		85.2	59.9-107	4.13	5.21	
Pyrene	0.358	0.040	mg/kg	0.400		89.6	51.5-122	0.425	10.6	
<i>Surrogate: Terphenyl-dl4</i>	2.56		mg/kg	2.00		128	33.3-136			

**Batch 2081508 - SW846-3510**

**Blank (2081508-BLK1)**

Prepared: 08/15/22 Analyzed: 08/23/22

1-Methylnaphthalene	ND	0.040	mg/kg							
<i>Surrogate: 2-Fluorobiphenyl</i>	1.10		mg/kg	2.00		54.9	39.8-134			
2-Methylnaphthalene	ND	0.040	mg/kg							
Acenaphthene	ND	0.040	mg/kg							
Anthracene	ND	0.040	mg/kg							
Benzo[a]anthracene	ND	0.040	mg/kg							
Benzo[a]pyrene	ND	0.040	mg/kg							

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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2081508 - SW846-3510 (Continued)**

**Blank (2081508-BLK1) (Continued)**

Prepared: 08/15/22 Analyzed: 08/23/22

Benzo[b]flouranthene	ND	0.040	mg/kg							
Benzo[k]flouranthene	ND	0.040	mg/kg							
Chrysene	ND	0.040	mg/kg							
Dibenz[a,h]anthracene	ND	0.040	mg/kg							
Fluoranthene	ND	0.040	mg/kg							
Fluorene	ND	0.040	mg/kg							
Indeno[1,2,3-cd]pyrene	ND	0.040	mg/kg							
Naphthalene	ND	0.040	mg/kg							
<i>Surrogate: Nitrobenzene-d5</i>	0.976		mg/kg	2.00		48.8	39.6-121			
Pyrene	ND	0.040	mg/kg							
<i>Surrogate: Terphenyl-dl4</i>	1.11		mg/kg	2.00		55.7	33.3-136			

**LCS (2081508-BS1)**

Prepared: 08/15/22 Analyzed: 08/24/22

1-Methylnaphthalene	0.337	0.040	mg/kg	0.400		84.3	57.6-108			
<i>Surrogate: 2-Fluorobiphenyl</i>	1.56		mg/kg	2.00		77.8	39.8-134			
2-Methylnaphthalene	0.343	0.040	mg/kg	0.400		85.7	59-106			
Acenaphthene	0.306	0.040	mg/kg	0.400		76.6	60.9-105			
Acenaphthylene	0.327	0.040	mg/kg	0.400		81.6	57.4-107			
Anthracene	0.328	0.040	mg/kg	0.400		82.0	60.8-105			
Benzo[a]anthracene	0.368	0.040	mg/kg	0.400		91.9	56.1-121			
Benzo[a]pyrene	0.344	0.040	mg/kg	0.400		86.0	56.7-115			
Benzo[b]flouranthene	0.365	0.040	mg/kg	0.400		91.2	45.4-128			
Benzo[g,h,i]perylene	0.360	0.040	mg/kg	0.400		89.9	56.5-107			
Benzo[k]flouranthene	0.353	0.040	mg/kg	0.400		88.3	49.6-119			
Carbazole	0.347	0.040	mg/kg	0.400		86.7	59.7-107			
Chrysene	0.372	0.040	mg/kg	0.400		93.1	12.2-190			
Dibenz[a,h]anthracene	0.363	0.040	mg/kg	0.400		90.8	59.1-111			
Fluoranthene	0.331	0.040	mg/kg	0.400		82.7	60.6-111			
Fluorene	0.359	0.040	mg/kg	0.400		89.8	59.3-108			
Indeno[1,2,3-cd]pyrene	0.325	0.040	mg/kg	0.400		81.2	53.4-116			
Naphthalene	0.332	0.040	mg/kg	0.400		83.1	56.5-106			
<i>Surrogate: Nitrobenzene-d5</i>	1.09		mg/kg	2.00		54.4	39.6-121			
Phenanthrene	0.332	0.040	mg/kg	0.400		83.1	59.9-107			
Pyrene	0.431	0.040	mg/kg	0.400		108	51.5-122			
<i>Surrogate: Terphenyl-dl4</i>	2.35		mg/kg	2.00		117	33.3-136			

**LCS Dup (2081508-BSD1)**

Prepared: 08/15/22 Analyzed: 08/24/22

1-Methylnaphthalene	0.350	0.040	mg/kg	0.400		87.6	57.6-108	3.83	6.22	
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Cottonwood Consulting	Project: COGCC Table 915-1	
PO Box 1653	Project Name / Number: Ignacio 34-8 #3-18	<b>Reported:</b>
Durango CO, 81302	Project Manager: Kyle Siesser	09/08/22 10:27

**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 2081508 - SW846-3510 (Continued)**

**LCS Dup (2081508-BSD1) (Continued)**

Prepared: 08/15/22 Analyzed: 08/24/22

<i>Surrogate: 2-Fluorobiphenyl</i>	1.53		mg/kg	2.00		76.3	39.8-134			
2-Methylnaphthalene	0.350	0.040	mg/kg	0.400		87.4	59-106	1.94	6.23	
Acenaphthene	0.326	0.040	mg/kg	0.400		81.4	60.9-105	6.12	8.18	
Acenaphthylene	0.324	0.040	mg/kg	0.400		80.9	57.4-107	0.867	5	
Anthracene	0.323	0.040	mg/kg	0.400		80.8	60.8-105	1.41	3.68	
Benzo[a]anthracene	0.368	0.040	mg/kg	0.400		92.0	56.1-121	0.0788	9.01	
Benzo[a]pyrene	0.346	0.040	mg/kg	0.400		86.5	56.7-115	0.626	4.92	
Benzo[b]flouranthene	0.362	0.040	mg/kg	0.400		90.5	45.4-128	0.680	7.63	
Benzo[g,h,i]perylene	0.352	0.040	mg/kg	0.400		88.0	56.5-107	2.15	12.5	
Benzo[k]flouranthene	0.359	0.040	mg/kg	0.400		89.8	49.6-119	1.68	10.6	
Carbazole	0.343	0.040	mg/kg	0.400		85.9	59.7-107	0.974	8.65	
Chrysene	0.385	0.040	mg/kg	0.400		96.1	12.2-190	3.25	21.8	
Dibenz[a,h]anthracene	0.356	0.040	mg/kg	0.400		88.9	59.1-111	2.11	11.6	
Fluoranthene	0.336	0.040	mg/kg	0.400		84.0	60.6-111	1.65	7.54	
Fluorene	0.353	0.040	mg/kg	0.400		88.1	59.3-108	1.91	5.49	
Indeno[1,2,3-cd]pyrene	0.327	0.040	mg/kg	0.400		81.6	53.4-116	0.485	22.3	
Naphthalene	0.323	0.040	mg/kg	0.400		80.7	56.5-106	2.96	4.56	
<i>Surrogate: Nitrobenzene-d5</i>	1.09		mg/kg	2.00		54.3	39.6-121			
Phenanthrene	0.331	0.040	mg/kg	0.400		82.8	59.9-107	0.250	5.21	
Pyrene	0.443	0.040	mg/kg	0.400		111	51.5-122	2.62	10.6	
<i>Surrogate: Terphenyl-d14</i>	2.33		mg/kg	2.00		117	33.3-136			

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Cottonwood Consulting  
PO Box 1653  
Durango CO, 81302

Project: COGCC Table 915-1  
Project Name / Number: Ignacio 34-8 #3-18  
Project Manager: Kyle Siesser

Reported:  
09/08/22 10:27

Notes and Definitions

- QR-04 The RPD for the BS/BSD was outside of historical limits.
- M5 Sample was chosen for matrix spike. Spike recovery did not meet laboratory acceptance criteria, possible matrix interference in sample.
- B3 Target analyte detected in method blank or continuing calibration blank. Reporting limit elevated to account for blank result.
- 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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