

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 18, 2022

Jennifer Galles

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Facility 4 AE 2

Work Order #2204061

Enclosed are the results of analyses for samples received by Summit Scientific on 04/05/22 16:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury

President



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Source #1	2204061-01	Soil	04/05/22 11:05	04/05/22 16:35

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S₂

2204061

Sample Receipt Checklist

S2 Work Order# _____

Client: Kp Kauffman Client Project ID: Facility 4 AE2

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____
[] - [] [] [] []

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6 °C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	✓			ON ICE
Were all samples received intact ⁽¹⁾ ?	-			
Was adequate sample volume provided ⁽¹⁾ ?	-			
If custody seals are present, are they intact ⁽¹⁾ ?	-			
Are samples due within 48 hours present?		-		
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen			-	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	-			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	-			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	-			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	-			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			-	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.			-	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			-	
If dissolved metals are requested, were samples field filtered?			-	
Additional Comments (if any):				

⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.

[Signature]
Custodian Printed Name

4.5.22
Date/Time



K.P. Kauffman
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Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

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04/18/22 14:15

Source #1
2204061-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFD0131	04/07/22	04/08/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.0058	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.29	0.050	"	10	"	"	04/08/22	"	
1,3,5-Trimethylbenzene	0.056	0.0050	"	1	"	"	04/08/22	"	
Naphthalene	ND	0.038	"	10	"	"	04/08/22	"	
Gasoline Range Hydrocarbons	4.5	0.50	"	1	"	"	04/08/22	"	

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	135 %	50-150	"	"	"	"	"	"	
Surrogate: Toluene-d8	104 %	50-150	"	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	130 %	50-150	"	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	150	50	mg/kg	1	BFD0132	04/07/22	04/08/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	107 %	30-150	"	"	"	"	"	"	

PAH by EPA Method 8270D SIM

R-01

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Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Source #1
2204061-01 (Soil)

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PAH by EPA Method 8270D SIM

R-01

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Acenaphthene	0.634	0.250	mg/kg	50	BFD0130	04/07/22	04/13/22	EPA 8270D SIM	
Anthracene	0.474	0.250	"	"	"	"	"	"	
Benzo (a) anthracene	0.633	0.250	"	"	"	"	"	"	
Benzo (a) pyrene	0.331	0.250	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.398	0.250	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.250	"	"	"	"	"	"	
Chrysene	ND	0.250	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.250	"	"	"	"	"	"	
Fluoranthene	2.78	0.250	"	"	"	"	"	"	
Fluorene	0.550	0.250	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.250	"	"	"	"	"	"	
Pyrene	2.30	0.250	"	"	"	"	"	"	
1-Methylnaphthalene	0.413	0.250	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.250	"	"	"	"	"	"	

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 2-Methylnaphthalene-d10		%	40-150		"	"	"	"	S-01
Surrogate: Fluoranthene-d10		%	40-150		"	"	"	"	S-01

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.227	0.0100	mg/L	1	BFD0185	04/11/22	04/14/22	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						

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Source #1
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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	4.27	0.245	mg/kg dry	1	BFD0120	04/06/22	04/12/22	EPA 6020B
Barium	130	0.491	"	"	"	"	"	"
Cadmium	0.300	0.245	"	"	"	"	"	"
Copper	13.6	0.491	"	"	"	"	"	"
Lead	12.7	0.245	"	"	"	"	"	"
Nickel	14.4	0.491	"	"	"	"	"	"
Selenium	1.26	0.319	"	"	"	"	"	"
Silver	0.0768	0.0245	"	"	"	"	"	"
Zinc	50.8	0.491	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 04/05/22 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFD0237	04/12/22	04/12/22	EPA 7196A	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: 04/05/22 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	114	0.0613	mg/L dry	1	BFD0294	04/14/22	04/17/22	EPA 6020B	
Magnesium	113	0.0613	"	"	"	"	"	"	
Sodium	554	0.0613	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 04/05/22 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.80	0.00100	units	1	BFD0339	04/18/22	04/18/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 04/05/22 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Source #1
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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	81.5	%	1	BFD0211	04/11/22	04/12/22	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.17	0.0100	mmhos/cm	1	BFD0315	04/15/22	04/15/22	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **04/05/22 11:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.99		pH Units	1	BFD0313	04/15/22	04/15/22	EPA 9045D	

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Volatile Organic Compounds by EPA Method 8260B - Quality Control

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Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFD0131 - EPA 5030 Soil MS

Blank (BFD0131-BLK1)

Prepared: 04/07/22 Analyzed: 04/08/22

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0558		"	0.0400		140	50-150				
<i>Surrogate: Toluene-d8</i>	0.0411		"	0.0400		103	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0413		"	0.0400		103	50-150				

LCS (BFD0131-BS1)

Prepared: 04/07/22 Analyzed: 04/08/22

Benzene	0.0918	0.0020	mg/kg	0.100		91.8	70-130				
Toluene	0.102	0.0050	"	0.100		102	70-130				
Ethylbenzene	0.0900	0.0050	"	0.100		90.0	70-130				
m,p-Xylene	0.195	0.010	"	0.200		97.7	70-130				
o-Xylene	0.0978	0.0050	"	0.100		97.8	70-130				
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100		105	70-130				
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130				
Naphthalene	0.101	0.0038	"	0.100		101	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0555		"	0.0400		139	50-150				
<i>Surrogate: Toluene-d8</i>	0.0410		"	0.0400		102	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0431		"	0.0400		108	50-150				

Matrix Spike (BFD0131-MS1)

Source: 2204053-01

Prepared: 04/07/22 Analyzed: 04/08/22

Benzene	0.0957	0.0020	mg/kg	0.100	ND	95.7	70-130				
Toluene	0.104	0.0050	"	0.100	ND	104	70-130				
Ethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130				
m,p-Xylene	0.191	0.010	"	0.200	ND	95.3	70-130				
o-Xylene	0.0977	0.0050	"	0.100	ND	97.7	70-130				
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130				
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130				
Naphthalene	0.111	0.0038	"	0.100	ND	111	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0523		"	0.0400		131	50-150				
<i>Surrogate: Toluene-d8</i>	0.0414		"	0.0400		103	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0429		"	0.0400		107	50-150				

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Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0131 - EPA 5030 Soil MS

Matrix Spike Dup (BFD0131-MSD1)	Source: 2204053-01			Prepared: 04/07/22 Analyzed: 04/08/22							
Benzene	0.0958	0.0020	mg/kg	0.100	ND	95.8	70-130	0.188	30		
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	0.544	30		
Ethylbenzene	0.0948	0.0050	"	0.100	ND	94.8	70-130	3.48	30		
m,p-Xylene	0.198	0.010	"	0.200	ND	98.9	70-130	3.75	30		
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	3.29	30		
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	7.30	30		
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100	ND	104	70-130	4.02	30		
Naphthalene	0.109	0.0038	"	0.100	ND	109	70-130	1.39	30		
Surrogate: 1,2-Dichloroethane-d4	0.0520		"	0.0400		130	50-150				
Surrogate: Toluene-d8	0.0415		"	0.0400		104	50-150				
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	50-150				

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Project: Facility 4 AE 2

Project Number: [none]
 Project Manager: Jennifer Galles

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 04/18/22 14:15

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0132 - EPA 3550A

Blank (BFD0132-BLK1)

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							

LCS (BFD0132-BS1)

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	476	50	mg/kg	500	95.2	70-130				
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Matrix Spike (BFD0132-MS1)

Source: 2204053-01

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	454	50	mg/kg	500	16.9	87.5	70-130			
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Matrix Spike Dup (BFD0132-MSD1)

Source: 2204053-01

Prepared & Analyzed: 04/07/22

C10-C28 (DRO)	433	50	mg/kg	500	16.9	83.2	70-130	4.83	20	
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Project: Facility 4 AE 2

Project Number: [none]
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Reported:
04/18/22 14:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BFD0130 - EPA 5030 Soil MS

Blank (BFD0130-BLK1)

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0159</i>		"	<i>0.0333</i>		<i>47.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0169</i>		"	<i>0.0333</i>		<i>50.8</i>	<i>40-150</i>			

LCS (BFD0130-BS1)

Prepared: 04/07/22 Analyzed: 04/08/22

Acenaphthene	0.0165	0.00500	mg/kg	0.0333		49.5	31-137			
Anthracene	0.0172	0.00500	"	0.0333		51.5	30-120			
Benzo (a) anthracene	0.0187	0.00500	"	0.0333		56.0	30-120			
Benzo (a) pyrene	0.0162	0.00500	"	0.0333		48.5	30-120			
Benzo (b) fluoranthene	0.0170	0.00500	"	0.0333		50.9	30-120			
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333		50.3	30-120			
Chrysene	0.0179	0.00500	"	0.0333		53.7	30-120			
Dibenz (a,h) anthracene	0.0128	0.00500	"	0.0333		38.3	30-120			
Fluoranthene	0.0170	0.00500	"	0.0333		51.1	30-120			
Fluorene	0.0157	0.00500	"	0.0333		47.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333		55.5	30-120			
Pyrene	0.0186	0.00500	"	0.0333		55.9	35-142			
1-Methylnaphthalene	0.0151	0.00500	"	0.0333		45.4	35-142			
2-Methylnaphthalene	0.0150	0.00500	"	0.0333		45.1	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0159</i>		"	<i>0.0333</i>		<i>47.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0176</i>		"	<i>0.0333</i>		<i>52.9</i>	<i>40-150</i>			

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Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0130 - EPA 5030 Soil MS

Matrix Spike (BFD0130-MS1)	Source: 2204086-01			Prepared: 04/07/22 Analyzed: 04/08/22						
Acenaphthene	0.0183	0.00500	mg/kg	0.0333	ND	54.8	31-137			
Anthracene	0.0186	0.00500	"	0.0333	ND	55.9	30-120			
Benzo (a) anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120			
Benzo (a) pyrene	0.0177	0.00500	"	0.0333	ND	53.2	30-120			
Benzo (b) fluoranthene	0.0191	0.00500	"	0.0333	ND	57.2	30-120			
Benzo (k) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120			
Chrysene	0.0199	0.00500	"	0.0333	ND	59.7	30-120			
Dibenz (a,h) anthracene	0.0139	0.00500	"	0.0333	ND	41.7	30-120			
Fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120			
Fluorene	0.0183	0.00500	"	0.0333	ND	55.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	30-120			
Pyrene	0.0222	0.00500	"	0.0333	ND	66.6	35-142			
1-Methylnaphthalene	0.0180	0.00500	"	0.0333	ND	54.0	15-130			
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.4	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0181</i>		<i>"</i>	<i>0.0333</i>		<i>54.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0199</i>		<i>"</i>	<i>0.0333</i>		<i>59.8</i>	<i>40-150</i>			

Matrix Spike Dup (BFD0130-MSD1)	Source: 2204086-01			Prepared: 04/07/22 Analyzed: 04/08/22						
Acenaphthene	0.0163	0.00500	mg/kg	0.0333	ND	48.8	31-137	11.7	30	
Anthracene	0.0171	0.00500	"	0.0333	ND	51.4	30-120	8.36	30	
Benzo (a) anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	5.32	30	
Benzo (a) pyrene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	4.56	30	
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	5.10	30	
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	6.00	30	
Chrysene	0.0188	0.00500	"	0.0333	ND	56.3	30-120	5.83	30	
Dibenz (a,h) anthracene	0.0127	0.00500	"	0.0333	ND	38.0	30-120	9.15	30	
Fluoranthene	0.0176	0.00500	"	0.0333	ND	52.9	30-120	7.62	30	
Fluorene	0.0161	0.00500	"	0.0333	ND	48.4	30-120	12.8	30	
Indeno (1,2,3-cd) pyrene	0.0191	0.00500	"	0.0333	ND	57.2	30-120	3.51	30	
Pyrene	0.0207	0.00500	"	0.0333	ND	62.2	35-142	6.72	30	
1-Methylnaphthalene	0.0166	0.00500	"	0.0333	ND	49.9	15-130	7.78	50	
2-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.3	15-130	14.8	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0157</i>		<i>"</i>	<i>0.0333</i>		<i>47.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0184</i>		<i>"</i>	<i>0.0333</i>		<i>55.1</i>	<i>40-150</i>			

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD	Limit	Notes
		Limit	Units			%REC	Limits			

Batch BFD0185 - EPA 3050B

Blank (BFD0185-BLK1)

Prepared: 04/11/22 Analyzed: 04/14/22

Boron ND 0.0100 mg/L

LCS (BFD0185-BS1)

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 4.86 0.0100 mg/L 5.00 97.2 80-120

Duplicate (BFD0185-DUP1)

Source: 2204053-01

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 0.0597 0.0100 mg/L 0.0648 8.19 20

Matrix Spike (BFD0185-MS1)

Source: 2204053-01

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 4.96 0.0100 mg/L 5.00 0.0648 97.8 75-125

Matrix Spike Dup (BFD0185-MSD1)

Source: 2204053-01

Prepared: 04/11/22 Analyzed: 04/14/22

Boron 5.03 0.0100 mg/L 5.00 0.0648 99.3 75-125 1.43 25

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0120 - EPA 3050B

Blank (BFD0120-BLK1)

Prepared: 04/06/22 Analyzed: 04/12/22

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Selenium	ND	0.260	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							

LCS (BFD0120-BS1)

Prepared: 04/06/22 Analyzed: 04/12/22

Arsenic	34.4	0.200	mg/kg wet	40.0	86.0	80-120
Barium	33.7	0.400	"	40.0	84.2	80-120
Cadmium	1.71	0.200	"	2.00	85.3	80-120
Copper	33.8	0.400	"	40.0	84.4	80-120
Lead	16.6	0.200	"	20.0	82.8	80-120
Nickel	32.1	0.400	"	40.0	80.3	80-120
Selenium	3.31	0.260	"	4.00	82.7	80-120
Silver	1.65	0.0200	"	2.00	82.6	80-120
Zinc	36.2	0.400	"	40.0	90.5	80-120

Duplicate (BFD0120-DUP1)

Source: 2204040-01

Prepared: 04/06/22 Analyzed: 04/12/22

Arsenic	4.53	0.219	mg/kg dry	6.86	40.8	20	QR-03
Barium	178	0.439	"	132	30.1	20	QR-03
Cadmium	0.376	0.219	"	0.353	6.19	20	
Copper	18.3	0.439	"	58.4	105	20	QR-03
Lead	18.1	0.219	"	17.2	5.46	20	
Nickel	12.5	0.439	"	25.7	69.2	20	QR-03
Selenium	1.04	0.285	"	0.766	30.1	20	QR-03
Silver	0.115	0.0219	"	0.356	102	20	QR-03
Zinc	99.9	0.439	"	479	131	20	QR-03

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Total Metals by EPA 6020B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

Batch BFD0120 - EPA 3050B

Matrix Spike (BFD0120-MS1)	Source: 2204040-01			Prepared: 04/06/22 Analyzed: 04/12/22								
Arsenic	41.4	0.219	mg/kg dry	43.9	6.86	78.6	75-125					
Barium	204	0.439	"	43.9	132	164	75-125					QR-03
Cadmium	2.19	0.219	"	2.19	0.353	83.9	75-125					
Copper	108	0.439	"	43.9	58.4	113	75-125					
Lead	33.7	0.219	"	21.9	17.2	75.6	75-125					
Nickel	45.3	0.439	"	43.9	25.7	44.7	75-125					QR-03
Selenium	4.39	0.285	"	4.39	0.766	82.7	75-125					
Silver	2.61	0.0219	"	2.19	0.356	103	75-125					
Zinc	128	0.439	"	43.9	479	NR	75-125					QR-03

Matrix Spike Dup (BFD0120-MSD1)	Source: 2204040-01			Prepared: 04/06/22 Analyzed: 04/12/22								
Arsenic	40.7	0.219	mg/kg dry	43.9	6.86	77.2	75-125	1.50	25			
Barium	187	0.439	"	43.9	132	127	75-125	8.37	25			QR-03
Cadmium	2.28	0.219	"	2.19	0.353	87.7	75-125	3.69	25			
Copper	54.1	0.439	"	43.9	58.4	NR	75-125	66.4	25			QR-03
Lead	36.7	0.219	"	21.9	17.2	89.2	75-125	8.48	25			
Nickel	43.9	0.439	"	43.9	25.7	41.7	75-125	2.98	25			QR-03
Selenium	4.07	0.285	"	4.39	0.766	75.3	75-125	7.69	25			
Silver	2.23	0.0219	"	2.19	0.356	85.5	75-125	15.4	25			
Zinc	154	0.439	"	43.9	479	NR	75-125	17.9	25			QR-03

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K.P. Kauffman
1675 Broadway
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Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Hexavalent Chromium by EPA Method 7196 - Quality Control

Summit Scientific

Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0237 - 3060A Mod

Blank (BFD0237-BLK1)

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BFD0237-BS1)

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent 26.4 0.30 mg/kg wet 25.0 105 80-120

Duplicate (BFD0237-DUP1)

Source: 2204040-01

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BFD0237-MS1)

Source: 2204040-01

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent 32.7 0.30 mg/kg dry 27.4 ND 119 75-125

Matrix Spike Dup (BFD0237-MSD1)

Source: 2204040-01

Prepared & Analyzed: 04/12/22

Chromium, Hexavalent 32.0 0.30 mg/kg dry 27.4 ND 117 75-125 2.03 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BFD0294 - General Preparation

Blank (BFD0294-BLK1)

Prepared: 04/14/22 Analyzed: 04/17/22

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BFD0294-BS1)

Prepared: 04/14/22 Analyzed: 04/17/22

Calcium	5.37	0.0500	mg/L wet	5.00	107	70-130
Magnesium	5.70	0.0500	"	5.00	114	70-130
Sodium	5.19	0.0500	"	5.00	104	70-130

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
 Project Manager: Jennifer Galles

Reported:
 04/18/22 14:15

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%REC	Limits	RPD	Limit	

Batch BFD0211 - General Preparation

Duplicate (BFD0211-DUP1)	Source: 2204037-04		Prepared: 04/11/22 Analyzed: 04/12/22	
% Solids	92.5	%	93.0	0.475 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

Batch BFD0315 - General Preparation

Blank (BFD0315-BLK1)

Prepared & Analyzed: 04/15/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFD0315-BS1)

Prepared & Analyzed: 04/15/22

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BFD0315-DUP1)

Source: 2204061-01

Prepared & Analyzed: 04/15/22

Specific Conductance (EC) 4.11 0.0100 mmhos/cm 4.17 1.35 20

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
 Project Manager: Jennifer Galles

Reported:
 04/18/22 14:15

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control

Summit Scientific

Analyte	Result	Reporting		Spike	Source	%REC		RPD		Notes
		Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BFD0313 - General Preparation

LCS (BFD0313-BS1)

Prepared & Analyzed: 04/15/22

pH 9.03 pH Units 9.18 98.4 95-105

Duplicate (BFD0313-DUP1)

Source: 2204061-01

Prepared & Analyzed: 04/15/22

pH 8.04 pH Units 7.99 0.624 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Facility 4 AE 2

Project Number: [none]
Project Manager: Jennifer Galles

Reported:
04/18/22 14:15

Notes and Definitions

- S-01 The surrogate recovery for this sample is not available due to sample dilution required from high analyte concentration and/or matrix interference's.
- R-01 The Reporting Limit for this analyte has been raised to account for matrix interference.
- 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.
- 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
- RPD Relative Percent Difference