

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 10, 2021

Max Knop

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Woolley #1 Flowline Release

Work Order #2103016

Enclosed are the results of analyses for samples received by Summit Scientific on 03/01/21 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury

President



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
#001	2103016-01	Soil	02/26/21 10:00	03/01/21 16:30
#002	2103016-02	Soil	02/26/21 10:00	03/01/21 16:30
#003	2103016-03	Soil	02/26/21 10:00	03/01/21 16:30
#004	2103016-04	Soil	02/26/21 10:00	03/01/21 16:30
#005 (BG)	2103016-05	Soil	02/26/21 10:00	03/01/21 16:30

Summit Scientific

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Sample Receipt Checklist

S2 Work Order 2103016

Client: KP KAUFFMAN Client Project ID: WOOLLEY 1 FLOWLINE

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

Matrix (check all that apply): Air Soil/Solid Water Other: _____
(Describe)

Temp (°C)	2.1
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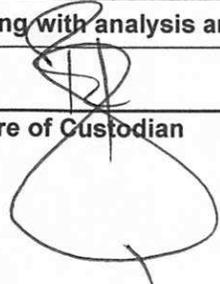
Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?		✓		
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, H2SO4, NaOH, HNO3, ect			✓	
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.

RZ
Custodian Printed Name or Initials


Signature of Custodian

3/1/21
Date/Time



K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#001
2103016-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0059	03/02/21	03/04/21	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.1 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	210	50	mg/kg	1	BEC0058	03/02/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	56	50	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: [none]
Project Manager: Max Knop

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#001
2103016-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0142	03/06/21	03/08/21	EPA 8270D SIM	
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	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	48.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	54.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.96	0.228	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Barium	82.4	0.456	"	"	"	"	"	"	
Boron	1.50	0.0100	mg/L	"	BEC0076	03/03/21	03/04/21	"	
Cadmium	ND	0.228	mg/kg dry	"	BEC0102	03/04/21	03/05/21	"	
Copper	20.2	0.456	"	"	"	"	"	"	
Lead	13.2	0.228	"	"	"	"	"	"	
Nickel	14.7	0.456	"	"	"	"	"	"	

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Project Number: [none]
Project Manager: Max Knop

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#001
2103016-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.296	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Silver	ND	0.0228	"	"	"	"	"	"	
Zinc	53.2	0.456	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0126	03/05/21	03/05/21	EPA 7196A	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	369	0.0570	mg/L dry	1	BEC0135	03/05/21	03/09/21	EPA 6020B	
Magnesium	260	0.0570	"	"	"	"	"	"	
Sodium	1280	0.0570	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	12.5	0.100	units	1	BEC0172	03/09/21	03/09/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.7		%	1	BEC0098	03/04/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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#001
2103016-01 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	6.46	0.0100		mmhos/cm	1	BEC0161	03/08/21	03/08/21	EPA 120.1	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.24			pH Units	1	BEC0162	03/08/21	03/08/21	EPA 9045D	

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1675 Broadway
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Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#002
2103016-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0059	03/02/21	03/04/21	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	270	50	mg/kg	1	BEC0058	03/02/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	81	50	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Woolley #1 Flowline Release

Project Number: [none]
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#002
2103016-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0142	03/06/21	03/08/21	EPA 8270D SIM	
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	0.00504	0.00500	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		52.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	10.0	0.229	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Barium	89.3	0.458	"	"	"	"	"	"	
Cadmium	ND	0.229	"	"	"	"	"	"	
Boron	2.23	0.0100	mg/L	"	BEC0076	03/03/21	03/04/21	"	
Copper	16.6	0.458	mg/kg dry	"	BEC0102	03/04/21	03/05/21	"	
Lead	13.7	0.229	"	"	"	"	"	"	
Nickel	16.8	0.458	"	"	"	"	"	"	

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Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

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#002
2103016-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.298	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Silver	0.0280	0.0229	"	"	"	"	"	"	
Zinc	59.7	0.458	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0126	03/05/21	03/05/21	EPA 7196A	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	435	0.0573	mg/L dry	1	BEC0135	03/05/21	03/09/21	EPA 6020B	
Magnesium	418	0.0573	"	"	"	"	"	"	
Sodium	2060	0.0573	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.9	0.100	units	1	BEC0172	03/09/21	03/09/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.3		%	1	BEC0098	03/04/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

#002
2103016-02 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	9.30	0.0100		mmhos/cm	1	BEC0161	03/08/21	03/08/21	EPA 120.1	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.18			pH Units	1	BEC0162	03/08/21	03/08/21	EPA 9045D	

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1675 Broadway
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Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#003
2103016-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0059	03/02/21	03/04/21	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	86	50	mg/kg	1	BEC0058	03/02/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		109 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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1675 Broadway
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Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#003
2103016-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0142	03/06/21	03/08/21	EPA 8270D SIM	
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	0.00542	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	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		48.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		40.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	10.6	0.231	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Barium	96.2	0.462	"	"	"	"	"	"	
Cadmium	ND	0.231	"	"	"	"	"	"	
Boron	1.99	0.0100	mg/L	"	BEC0076	03/03/21	03/04/21	"	
Copper	17.6	0.462	mg/kg dry	"	BEC0102	03/04/21	03/05/21	"	
Lead	13.1	0.231	"	"	"	"	"	"	
Nickel	17.0	0.462	"	"	"	"	"	"	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#003
2103016-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.300	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Silver	0.0412	0.0231	"	"	"	"	"	"	
Zinc	57.4	0.462	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0126	03/05/21	03/05/21	EPA 7196A	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	336	0.0578	mg/L dry	1	BEC0135	03/05/21	03/09/21	EPA 6020B	
Magnesium	325	0.0578	"	"	"	"	"	"	
Sodium	1610	0.0578	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	15.0	0.100	units	1	BEC0172	03/09/21	03/09/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.6		%	1	BEC0098	03/04/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

#003
2103016-03 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	7.26	0.0100		mmhos/cm	1	BEC0161	03/08/21	03/08/21	EPA 120.1	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BEC0162	03/08/21	03/08/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#004
2103016-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0059	03/02/21	03/04/21	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	109 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	111 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	106 %		21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	150	50	mg/kg	1	BEC0058	03/02/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	113 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#004
2103016-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0142	03/06/21	03/09/21	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.00837	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0120	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00865	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0104	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0105	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0131	0.00500	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		42.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	11.0	0.224	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Barium	105	0.448	"	"	"	"	"	"	
Boron	1.29	0.0100	mg/L	"	BEC0076	03/03/21	03/04/21	"	
Cadmium	ND	0.224	mg/kg dry	"	BEC0102	03/04/21	03/05/21	"	
Copper	17.6	0.448	"	"	"	"	"	"	
Lead	12.3	0.224	"	"	"	"	"	"	
Nickel	18.6	0.448	"	"	"	"	"	"	
Selenium	ND	0.291	"	"	"	"	"	"	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#004
2103016-04 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Silver	ND	0.0224	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B
Zinc	60.5	0.448	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0126	03/05/21	03/05/21	EPA 7196A	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	437	0.0560	mg/L dry	1	BEC0135	03/05/21	03/09/21	EPA 6020B	
Magnesium	307	0.0560	"	"	"	"	"	"	
Sodium	1410	0.0560	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	12.6	0.100	units	1	BEC0172	03/09/21	03/09/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.3		%	1	BEC0098	03/04/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

#004
2103016-04 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	7.42	0.0100		mmhos/cm	1	BEC0161	03/08/21	03/08/21	EPA 120.1	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.25			pH Units	1	BEC0162	03/08/21	03/08/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#005 (BG)
2103016-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0059	03/02/21	03/04/21	EPA 8260B	
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	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0058	03/02/21	03/04/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#005 (BG)
2103016-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0142	03/06/21	03/09/21	EPA 8270D SIM	
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	0.0117	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0102	0.00500	"	"	"	"	"	"	
Fluorene	0.0200	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.0120	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	0.0305	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0263	0.00500	"	"	"	"	"	"	

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		50.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.03	0.225	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Barium	120	0.451	"	"	"	"	"	"	
Boron	1.06	0.0100	mg/L	"	BEC0076	03/03/21	03/04/21	"	
Cadmium	0.229	0.225	mg/kg dry	"	BEC0102	03/04/21	03/05/21	"	
Copper	18.1	0.451	"	"	"	"	"	"	
Lead	14.5	0.225	"	"	"	"	"	"	
Nickel	20.6	0.451	"	"	"	"	"	"	
Selenium	ND	0.293	"	"	"	"	"	"	

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

#005 (BG)
2103016-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Silver	0.0282	0.0225	mg/kg dry	1	BEC0102	03/04/21	03/05/21	EPA 6020B	
Zinc	67.2	0.451	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0126	03/05/21	03/05/21	EPA 7196A	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	382	0.0564	mg/L dry	1	BEC0135	03/05/21	03/09/21	EPA 6020B	
Magnesium	264	0.0564	"	"	"	"	"	"	
Sodium	825	0.0564	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.95	0.100	units	1	BEC0172	03/09/21	03/09/21	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.7		%	1	BEC0098	03/04/21	03/05/21	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

#005 (BG)
2103016-05 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.29	0.0100	mmhos/cm	1	BEC0161	03/08/21	03/08/21	EPA 120.1	

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

Date Sampled: **02/26/21 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17		pH Units	1	BEC0162	03/08/21	03/08/21	EPA 9045D	

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEC0059 - EPA 5030 Soil MS

Blank (BEC0059-BLK1)

Prepared: 03/02/21 Analyzed: 03/04/21

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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0336		"	0.0400		84.0	23-173			
Surrogate: Toluene-d8	0.0452		"	0.0400		113	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

LCS (BEC0059-BS1)

Prepared: 03/02/21 Analyzed: 03/04/21

Benzene	0.0710	0.0020	mg/kg	0.100		71.0	70-130			
Toluene	0.0892	0.0050	"	0.100		89.2	70-130			
Ethylbenzene	0.0961	0.0050	"	0.100		96.1	70-130			
m,p-Xylene	0.185	0.010	"	0.200		92.3	70-130			
o-Xylene	0.0909	0.0050	"	0.100		90.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0274		"	0.0400		68.4	23-173			
Surrogate: Toluene-d8	0.0418		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	21-167			

Matrix Spike (BEC0059-MS1)

Source: 2103004-01

Prepared: 03/02/21 Analyzed: 03/04/21

Benzene	0.0760	0.0020	mg/kg	0.100	ND	76.0	70-130			
Toluene	0.0782	0.0050	"	0.100	ND	78.2	70-130			
Ethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130			
m,p-Xylene	0.175	0.010	"	0.200	ND	87.7	70-130			
o-Xylene	0.0881	0.0050	"	0.100	ND	88.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0322		"	0.0400		80.5	23-173			
Surrogate: Toluene-d8	0.0368		"	0.0400		92.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0379		"	0.0400		94.7	21-167			

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BEC0059 - EPA 5030 Soil MS

Matrix Spike Dup (BEC0059-MSD1)	Source: 2103004-01			Prepared: 03/02/21 Analyzed: 03/04/21						
Benzene	0.0754	0.0020	mg/kg	0.100	ND	75.4	70-130	0.832	30	
Toluene	0.0832	0.0050	"	0.100	ND	83.2	70-130	6.17	30	
Ethylbenzene	0.0984	0.0050	"	0.100	ND	98.4	70-130	4.55	30	
m,p-Xylene	0.185	0.010	"	0.200	ND	92.3	70-130	5.11	30	
o-Xylene	0.0922	0.0050	"	0.100	ND	92.2	70-130	4.59	30	
Surrogate: 1,2-Dichloroethane-d4	0.0300		"	0.0400		75.1	23-173			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	21-167			

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

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 BEC0058 - EPA 3550A

Blank (BEC0058-BLK1)

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

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

LCS (BEC0058-BS1)

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

C10-C28 (DRO)	574	50	mg/kg	500	115	70-130				
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Matrix Spike (BEC0058-MS1)

Source: 2103004-01

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

C10-C28 (DRO)	456	50	mg/kg	500	20.1	87.3	70-130			
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Matrix Spike Dup (BEC0058-MSD1)

Source: 2103004-01

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

C10-C28 (DRO)	458	50	mg/kg	500	20.1	87.5	70-130	0.258	20	
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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

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 BEC0142 - EPA 5030 Soil MS

Blank (BEC0142-BLK1)

Prepared: 03/06/21 Analyzed: 03/08/21

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>0.0166</i>		<i>"</i>	<i>0.0333</i>		<i>49.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0164</i>		<i>"</i>	<i>0.0333</i>		<i>49.3</i>	<i>40-150</i>			

LCS (BEC0142-BS1)

Prepared: 03/06/21 Analyzed: 03/08/21

Acenaphthene	0.0358	0.00500	mg/kg	0.0333	108	31-137
Anthracene	0.0345	0.00500	"	0.0333	103	30-120
Benzo (a) anthracene	0.0330	0.00500	"	0.0333	98.9	30-120
Benzo (a) pyrene	0.0358	0.00500	"	0.0333	108	30-120
Benzo (b) fluoranthene	0.0186	0.00500	"	0.0333	55.8	30-120
Benzo (k) fluoranthene	0.0198	0.00500	"	0.0333	59.5	30-120
Chrysene	0.0316	0.00500	"	0.0333	94.7	30-120
Dibenz (a,h) anthracene	0.0311	0.00500	"	0.0333	93.2	30-120
Fluoranthene	0.0289	0.00500	"	0.0333	86.7	30-120
Fluorene	0.0357	0.00500	"	0.0333	107	30-120
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333	79.7	30-120
Pyrene	0.0361	0.00500	"	0.0333	108	35-142
1-Methylnaphthalene	0.0314	0.00500	"	0.0333	94.3	35-142
2-Methylnaphthalene	0.0342	0.00500	"	0.0333	103	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0183</i>		<i>"</i>	<i>0.0333</i>	<i>54.9</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0198</i>		<i>"</i>	<i>0.0333</i>	<i>59.3</i>	<i>40-150</i>

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

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 BEC0142 - EPA 5030 Soil MS

Matrix Spike (BEC0142-MS1)	Source: 2102394-01			Prepared: 03/06/21		Analyzed: 03/08/21				
Acenaphthene	0.0350	0.00500	mg/kg	0.0333	ND	105	31-137			
Anthracene	0.0348	0.00500	"	0.0333	ND	104	30-120			
Benzo (a) anthracene	0.0331	0.00500	"	0.0333	ND	99.3	30-120			
Benzo (a) pyrene	0.0355	0.00500	"	0.0333	ND	107	30-120			
Benzo (b) fluoranthene	0.0182	0.00500	"	0.0333	ND	54.5	30-120			
Benzo (k) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.7	30-120			
Chrysene	0.0319	0.00500	"	0.0333	ND	95.7	30-120			
Dibenz (a,h) anthracene	0.0305	0.00500	"	0.0333	ND	91.4	30-120			
Fluoranthene	0.0296	0.00500	"	0.0333	ND	88.8	30-120			
Fluorene	0.0361	0.00500	"	0.0333	ND	108	30-120			
Indeno (1,2,3-cd) pyrene	0.0263	0.00500	"	0.0333	ND	78.8	30-120			
Pyrene	0.0374	0.00500	"	0.0333	ND	112	35-142			
1-Methylnaphthalene	0.0313	0.00500	"	0.0333	ND	93.9	15-130			
2-Methylnaphthalene	0.0334	0.00500	"	0.0333	ND	100	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0177</i>		<i>"</i>	<i>0.0333</i>		<i>53.1</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>			

Matrix Spike Dup (BEC0142-MSD1)	Source: 2102394-01			Prepared: 03/06/21		Analyzed: 03/08/21				
Acenaphthene	0.0307	0.00500	mg/kg	0.0333	ND	92.1	31-137	13.0	30	
Anthracene	0.0299	0.00500	"	0.0333	ND	89.8	30-120	15.1	30	
Benzo (a) anthracene	0.0280	0.00500	"	0.0333	ND	84.1	30-120	16.7	30	
Benzo (a) pyrene	0.0306	0.00500	"	0.0333	ND	91.9	30-120	14.8	30	
Benzo (b) fluoranthene	0.0197	0.00500	"	0.0333	ND	59.0	30-120	8.04	30	
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	6.87	30	
Chrysene	0.0274	0.00500	"	0.0333	ND	82.2	30-120	15.2	30	
Dibenz (a,h) anthracene	0.0262	0.00500	"	0.0333	ND	78.5	30-120	15.2	30	
Fluoranthene	0.0264	0.00500	"	0.0333	ND	79.1	30-120	11.6	30	
Fluorene	0.0313	0.00500	"	0.0333	ND	94.0	30-120	14.1	30	
Indeno (1,2,3-cd) pyrene	0.0224	0.00500	"	0.0333	ND	67.3	30-120	15.8	30	
Pyrene	0.0312	0.00500	"	0.0333	ND	93.5	35-142	18.2	30	
1-Methylnaphthalene	0.0267	0.00500	"	0.0333	ND	80.0	15-130	16.0	50	
2-Methylnaphthalene	0.0295	0.00500	"	0.0333	ND	88.6	15-130	12.3	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0371</i>		<i>"</i>	<i>0.0333</i>		<i>111</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0448</i>		<i>"</i>	<i>0.0333</i>		<i>134</i>	<i>40-150</i>			

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

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

Summit Scientific

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

Batch BEC0076 - EPA 3050B

Blank (BEC0076-BLK1)

Prepared: 03/03/21 Analyzed: 03/04/21

Boron ND 0.0100 mg/L

LCS (BEC0076-BS1)

Prepared: 03/03/21 Analyzed: 03/04/21

Boron 4.54 0.0100 mg/L 5.00 90.8 80-120

Duplicate (BEC0076-DUP1)

Source: 2103016-01

Prepared: 03/03/21 Analyzed: 03/04/21

Boron 1.35 0.0100 mg/L 1.50 10.8 20

Matrix Spike (BEC0076-MS1)

Source: 2103016-01

Prepared: 03/03/21 Analyzed: 03/04/21

Boron 5.71 0.0100 mg/L 5.00 1.50 84.2 75-125

Matrix Spike Dup (BEC0076-MSD1)

Source: 2103016-01

Prepared: 03/03/21 Analyzed: 03/04/21

Boron 6.12 0.0100 mg/L 5.00 1.50 92.4 75-125 6.93 25

Batch BEC0102 - EPA 3050B

Blank (BEC0102-BLK1)

Prepared: 03/04/21 Analyzed: 03/05/21

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 "

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

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

Summit Scientific

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

Batch BEC0102 - EPA 3050B

LCS (BEC0102-BS1)

Prepared: 03/04/21 Analyzed: 03/05/21

Arsenic	37.3	0.200	mg/kg wet	40.0		93.2	80-120			
Barium	36.7	0.400	"	40.0		91.8	80-120			
Cadmium	1.78	0.200	"	2.00		88.8	80-120			
Copper	37.0	0.400	"	40.0		92.4	80-120			
Lead	16.7	0.200	"	20.0		83.7	80-120			
Nickel	35.9	0.400	"	40.0		89.8	80-120			
Selenium	3.96	0.260	"	4.00		99.1	80-120			
Silver	1.74	0.0200	"	2.00		87.0	80-120			
Zinc	33.5	0.400	"	40.0		83.8	80-120			

Duplicate (BEC0102-DUP1)

Source: 2103016-01

Prepared: 03/04/21 Analyzed: 03/05/21

Arsenic	7.05	0.228	mg/kg dry		7.96			12.1	30
Barium	71.8	0.456	"		82.4			13.7	30
Cadmium	0.141	0.228	"		0.161			13.9	30
Copper	17.9	0.456	"		20.2			11.9	30
Lead	12.7	0.228	"		13.2			4.22	30
Nickel	13.8	0.456	"		14.7			6.26	30
Selenium	ND	0.296	"		ND				30
Silver	0.0109	0.0228	"		0.0141			25.2	30
Zinc	55.0	0.456	"		53.2			3.48	30

Matrix Spike (BEC0102-MS1)

Source: 2103016-01

Prepared: 03/04/21 Analyzed: 03/05/21

Arsenic	50.6	0.228	mg/kg dry	45.6	7.96	93.5	75-125		
Barium	121	0.456	"	45.6	82.4	84.8	75-125		
Cadmium	2.34	0.228	"	2.28	0.161	95.6	75-125		
Copper	61.3	0.456	"	45.6	20.2	90.1	75-125		
Lead	32.3	0.228	"	22.8	13.2	83.8	75-125		
Nickel	60.0	0.456	"	45.6	14.7	99.4	75-125		
Selenium	4.78	0.296	"	4.56	ND	105	75-125		
Silver	2.16	0.0228	"	2.28	0.0141	94.0	75-125		
Zinc	106	0.456	"	45.6	53.2	116	75-125		

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

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

Summit Scientific

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

Batch BEC0102 - EPA 3050B

Matrix Spike Dup (BEC0102-MSD1)	Source: 2103016-01			Prepared: 03/04/21		Analyzed: 03/05/21					
Arsenic	48.6	0.228	mg/kg dry	45.6	7.96	89.2	75-125	3.88	25		
Barium	121	0.456	"	45.6	82.4	84.0	75-125	0.293	25		
Cadmium	2.05	0.228	"	2.28	0.161	82.8	75-125	13.2	25		
Copper	54.8	0.456	"	45.6	20.2	76.0	75-125	11.1	25		
Lead	30.4	0.228	"	22.8	13.2	75.3	75-125	6.17	25		
Nickel	58.5	0.456	"	45.6	14.7	95.9	75-125	2.66	25		
Selenium	4.36	0.296	"	4.56	ND	95.6	75-125	9.20	25		
Silver	1.83	0.0228	"	2.28	0.0141	79.7	75-125	16.3	25		
Zinc	104	0.456	"	45.6	53.2	111	75-125	2.18	25		

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

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 BEC0126 - 3060A Mod

Blank (BEC0126-BLK1)

Prepared & Analyzed: 03/05/21

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BEC0126-BS1)

Prepared & Analyzed: 03/05/21

Chromium, Hexavalent 22.7 0.30 mg/kg wet 25.0 90.8 80-120

Duplicate (BEC0126-DUP1)

Source: 2103006-01

Prepared & Analyzed: 03/05/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BEC0126-MS1)

Source: 2103006-01

Prepared & Analyzed: 03/05/21

Chromium, Hexavalent 28.7 0.30 mg/kg dry 31.1 ND 92.2 75-125

Matrix Spike Dup (BEC0126-MSD1)

Source: 2103006-01

Prepared & Analyzed: 03/05/21

Chromium, Hexavalent 28.9 0.30 mg/kg dry 31.1 ND 93.0 75-125 0.864 20

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

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 BEC0135 - General Preparation

Blank (BEC0135-BLK1)

Prepared: 03/05/21 Analyzed: 03/09/21

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

LCS (BEC0135-BS1)

Prepared: 03/05/21 Analyzed: 03/09/21

Calcium	5.58	0.0500	mg/L wet	5.00	112	70-130				
Magnesium	5.66	0.0500	"	5.00	113	70-130				
Sodium	5.65	0.0500	"	5.00	113	70-130				

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

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

Summit Scientific

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

Batch BEC0098 - General Preparation

Duplicate (BEC0098-DUP1)	Source: 2103004-01		Prepared: 03/04/21 Analyzed: 03/05/21	
% Solids	76.6	%	76.4	0.275 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

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 BEC0161 - General Preparation

Blank (BEC0161-BLK1)

Prepared & Analyzed: 03/08/21

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BEC0161-BS1)

Prepared & Analyzed: 03/08/21

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 90-110

Duplicate (BEC0161-DUP1)

Source: 2103016-01

Prepared & Analyzed: 03/08/21

Specific Conductance (EC) 6.54 0.0100 mmhos/cm 6.46 1.25 20

Summit Scientific

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K.P. Kauffman
 1675 Broadway
 Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
 Project Manager: Max Knop

Reported:
 03/10/21 09:25

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 BEC0162 - General Preparation

LCS (BEC0162-BS1)

Prepared & Analyzed: 03/08/21

pH 9.23 pH Units 9.21 100 95-105

Duplicate (BEC0162-DUP1)

Source: 2103016-01

Prepared & Analyzed: 03/08/21

pH 8.22 pH Units 8.24 0.243 20

Summit Scientific

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K.P. Kauffman
1675 Broadway
Denver CO, 80202

Project: Woolley #1 Flowline Release

Project Number: [none]
Project Manager: Max Knop

Reported:
03/10/21 09:25

Notes and Definitions

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