

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 26, 2021

Max Knop

K.P. Kauffman

1675 Broadway

Denver, CO 80202

RE: Suckla Brown 17 Header-Spill/Release ID 478370

Work Order #2103223

Enclosed are the results of analyses for samples received by Summit Scientific on 03/11/21 09:45. 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', with a stylized, cursive script.

Paul Shrewsbury

President



K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
#1-North	2103223-01	Soil	03/09/21 14:00	03/11/21 09:45
#2-West	2103223-02	Soil	03/09/21 14:00	03/11/21 09:45
#3-South	2103223-03	Soil	03/09/21 14:00	03/11/21 09:45
#4-South	2103223-04	Soil	03/09/21 14:00	03/11/21 09:45
#5-Bottom	2103223-05	Soil	03/09/21 14:00	03/11/21 09:45
Outsife South Barrier (B	2103223-06	Soil	03/09/21 14:00	03/11/21 09:45

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Page 1 of 1

Project Manager:	Max Knop
E-Mail:	mknop@kpk.com; mduran@kpk.com
Project Name:	Suckla Brown 17 Header - Spill/Release ID 478370
Project Number:	

[www.s2scientific.com](http://www.s2scientific.com)

# Sample Receipt Checklist

S2 Work Order 2103223

Client: KP Kauffman Client Project ID: Suckla Brown 17 Header

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

☒ ☐ ☐ ☐ ☐

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: \_\_\_\_\_  
(Describe)

Temp (°C)	6.8
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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 <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	On Ice
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):   				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

MP  
Custodian Printed Name or Initials

Muri Premier  
Signature of Custodian

3/11/21  
Date/Time



K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#1-North**  
**2103223-01 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BEC0261	03/12/21	03/17/21	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: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		86.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		124 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0280	03/16/21	03/17/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#1-North**  
**2103223-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0356	03/20/21	03/22/21	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: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		84.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.07	0.226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B	
Barium	153	0.453	"	"	"	"	"	"	
Cadmium	0.333	0.226	"	"	"	"	"	"	
Copper	16.0	0.453	"	"	"	"	"	"	
Lead	13.7	0.226	"	"	"	"	"	"	
Nickel	17.5	0.453	"	"	"	"	"	"	
Selenium	1.33	0.294	"	"	"	"	"	"	

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#1-North**  
**2103223-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Silver	0.0678	0.0226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B
Zinc	68.4	0.453	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0380	03/23/21	03/24/21	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.3		%	1	BEC0335	03/19/21	03/19/21	Calculation	

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#2-West**  
**2103223-02 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEC0261	03/12/21	03/17/21	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: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		79.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		120 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0280	03/16/21	03/17/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/09/21 14:00**

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

**PAH by EPA Method 8270D SIM**

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Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#2-West**  
**2103223-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0356	03/20/21	03/22/21	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: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		88.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>6.22</b>	0.226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B	
Barium	<b>159</b>	0.451	"	"	"	"	"	"	
Cadmium	<b>0.310</b>	0.226	"	"	"	"	"	"	
Copper	<b>20.7</b>	0.451	"	"	"	"	"	"	
Lead	<b>12.5</b>	0.226	"	"	"	"	"	"	
Nickel	<b>17.9</b>	0.451	"	"	"	"	"	"	
Selenium	<b>1.40</b>	0.293	"	"	"	"	"	"	

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#2-West**  
**2103223-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Silver	0.0596	0.0226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B
Zinc	68.1	0.451	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0380	03/23/21	03/24/21	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.6		%	1	BEC0335	03/19/21	03/19/21	Calculation	

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#3-South**  
**2103223-03 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEC0261	03/12/21	03/17/21	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: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		84.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0280	03/16/21	03/17/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/09/21 14:00**

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

**PAH by EPA Method 8270D SIM**

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Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#3-South**  
**2103223-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0356	03/20/21	03/22/21	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: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		75.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		71.5 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.53	0.226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B	
Barium	133	0.452	"	"	"	"	"	"	
Cadmium	0.365	0.226	"	"	"	"	"	"	
Copper	17.5	0.452	"	"	"	"	"	"	
Lead	13.5	0.226	"	"	"	"	"	"	
Nickel	19.7	0.452	"	"	"	"	"	"	
Selenium	1.43	0.294	"	"	"	"	"	"	

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#3-South**  
**2103223-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Silver	0.0530	0.0226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B
Zinc	78.1	0.452	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0380	03/23/21	03/24/21	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.4		%	1	BEC0335	03/19/21	03/19/21	Calculation	

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#4-South**  
**2103223-04 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEC0261	03/12/21	03/17/21	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: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		80.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		120 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0280	03/16/21	03/17/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#4-South**  
**2103223-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0356	03/20/21	03/23/21	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: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		87.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	12.7	0.226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B	
Barium	135	0.453	"	"	"	"	"	"	
Cadmium	0.485	0.226	"	"	"	"	"	"	
Copper	21.3	0.453	"	"	"	"	"	"	
Lead	15.1	0.226	"	"	"	"	"	"	
Nickel	23.3	0.453	"	"	"	"	"	"	
Selenium	1.62	0.294	"	"	"	"	"	"	

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#4-South**  
**2103223-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Silver	0.0551	0.0226	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B
Zinc	95.1	0.453	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0380	03/23/21	03/24/21	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.4		%	1	BEC0335	03/19/21	03/19/21	Calculation	

Summit Scientific

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#5-Bottom**  
**2103223-05 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEC0305	03/17/21	03/18/21	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: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		97.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		112 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0280	03/16/21	03/17/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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1675 Broadway  
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Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#5-Bottom**  
**2103223-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0356	03/20/21	03/23/21	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: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		84.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		80.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	8.27	0.227	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B	
Barium	140	0.455	"	"	"	"	"	"	
Cadmium	0.374	0.227	"	"	"	"	"	"	
Copper	19.2	0.455	"	"	"	"	"	"	
Lead	13.9	0.227	"	"	"	"	"	"	
Nickel	21.0	0.455	"	"	"	"	"	"	
Selenium	1.55	0.296	"	"	"	"	"	"	

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Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**#5-Bottom**  
**2103223-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Silver	0.0566	0.0227	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B
Zinc	83.1	0.455	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0380	03/23/21	03/24/21	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	BEC0335	03/19/21	03/19/21	Calculation	

Summit Scientific

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1675 Broadway  
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Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**Outsife South Barrier (B  
2103223-06 (Soil)**

**Summit Scientific**

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BEC0305	03/17/21	03/18/21	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: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		96.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		114 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BEC0280	03/16/21	03/17/21	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**Outsife South Barrier (B)**  
**2103223-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BEC0356	03/20/21	03/23/21	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: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		85.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		79.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.02	0.227	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B	
Barium	200	0.455	"	"	"	"	"	"	
Cadmium	0.358	0.227	"	"	"	"	"	"	
Copper	16.9	0.455	"	"	"	"	"	"	
Lead	12.6	0.227	"	"	"	"	"	"	
Nickel	19.5	0.455	"	"	"	"	"	"	
Selenium	1.36	0.296	"	"	"	"	"	"	

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Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**Outsife South Barrier (B  
2103223-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Silver	0.0490	0.0227	mg/kg dry	1	BEC0322	03/18/21	03/20/21	EPA 6020B
Zinc	73.6	0.455	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BEC0380	03/23/21	03/24/21	EPA 7196A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **03/09/21 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	BEC0335	03/19/21	03/19/21	Calculation	

Summit Scientific

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Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BEC0261 - EPA 5030 Soil MS

##### Blank (BEC0261-BLK1)

Prepared: 03/12/21 Analyzed: 03/17/21

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	0.0290		"	0.0400		72.6	23-173			
Surrogate: Toluene-d8	0.0482		"	0.0400		120	20-170			
Surrogate: 4-Bromofluorobenzene	0.0421		"	0.0400		105	21-167			

##### LCS (BEC0261-BS1)

Prepared: 03/12/21 Analyzed: 03/17/21

Benzene	0.0891	0.0020	mg/kg	0.100		89.1	70-130			
Toluene	0.0895	0.0050	"	0.100		89.5	70-130			
Ethylbenzene	0.0849	0.0050	"	0.100		84.9	70-130			
m,p-Xylene	0.154	0.010	"	0.200		77.0	70-130			
o-Xylene	0.0792	0.0050	"	0.100		79.2	70-130			
1,2,4-Trimethylbenzene	0.0808	0.0050	"	0.100		80.8	70-130			
1,3,5-Trimethylbenzene	0.0767	0.0050	"	0.100		76.7	70-130			
Naphthalene	0.0878	0.0038	"	0.100		87.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0246		"	0.0400		61.6	23-173			
Surrogate: Toluene-d8	0.0429		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.7	21-167			

##### Matrix Spike (BEC0261-MS1)

Source: 2103217-01

Prepared: 03/12/21 Analyzed: 03/17/21

Benzene	0.0919	0.0020	mg/kg	0.100	ND	91.9	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.0928	0.0050	"	0.100	ND	92.8	70-130			
m,p-Xylene	0.171	0.010	"	0.200	ND	85.6	70-130			
o-Xylene	0.0858	0.0050	"	0.100	ND	85.8	70-130			
1,2,4-Trimethylbenzene	0.0920	0.0050	"	0.100	ND	92.0	70-130			
1,3,5-Trimethylbenzene	0.0871	0.0050	"	0.100	ND	87.1	70-130			
Naphthalene	0.0897	0.0038	"	0.100	ND	89.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0244		"	0.0400		61.1	23-173			
Surrogate: Toluene-d8	0.0469		"	0.0400		117	20-170			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167			

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1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BEC0261 - EPA 5030 Soil MS

Matrix Spike Dup (BEC0261-MSD1)		Source: 2103217-01			Prepared: 03/12/21 Analyzed: 03/17/21					
Benzene	0.0705	0.0020	mg/kg	0.100	ND	70.5	70-130	26.3	30	
Toluene	0.103	0.0050	"	0.100	ND	103	70-130	1.59	30	
Ethylbenzene	0.0997	0.0050	"	0.100	ND	99.7	70-130	7.14	30	
m,p-Xylene	0.177	0.010	"	0.200	ND	88.5	70-130	3.31	30	
o-Xylene	0.0896	0.0050	"	0.100	ND	89.6	70-130	4.34	30	
1,2,4-Trimethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130	2.19	30	
1,3,5-Trimethylbenzene	0.0883	0.0050	"	0.100	ND	88.3	70-130	1.33	30	
Naphthalene	0.0963	0.0038	"	0.100	ND	96.3	70-130	7.10	30	
Surrogate: 1,2-Dichloroethane-d4	0.0269		"	0.0400		67.3	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	21-167			

#### Batch BEC0305 - EPA 5030 Soil MS

Blank (BEC0305-BLK1)		Prepared & Analyzed: 03/17/21								
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	0.0364		"	0.0400		91.0	23-173			
Surrogate: Toluene-d8	0.0445		"	0.0400		111	20-170			
Surrogate: 4-Bromofluorobenzene	0.0424		"	0.0400		106	21-167			

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

## Volatile Organic Compounds by EPA Method 8260B - Quality Control

### Summit Scientific

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

#### Batch BEC0305 - EPA 5030 Soil MS

##### LCS (BEC0305-BS1)

Prepared & Analyzed: 03/17/21

Benzene	0.0936	0.0020	mg/kg	0.100			93.6	70-130			
Toluene	0.121	0.0050	"	0.100			121	70-130			
Ethylbenzene	0.0976	0.0050	"	0.100			97.6	70-130			
m,p-Xylene	0.200	0.010	"	0.200			99.8	70-130			
o-Xylene	0.101	0.0050	"	0.100			101	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100			110	70-130			
1,3,5-Trimethylbenzene	0.109	0.0050	"	0.100			109	70-130			
Naphthalene	0.101	0.0038	"	0.100			101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0381		"	0.0400			95.2	23-173			
Surrogate: Toluene-d8	0.0439		"	0.0400			110	20-170			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400			102	21-167			

##### Matrix Spike (BEC0305-MS1)

Source: 2103212-02

Prepared: 03/17/21 Analyzed: 03/18/21

Benzene	0.0925	0.0020	mg/kg	0.100	ND	92.5	70-130				
Toluene	0.120	0.0050	"	0.100	ND	120	70-130				
Ethylbenzene	0.0997	0.0050	"	0.100	ND	99.7	70-130				
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130				
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130				
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130				
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130				
Naphthalene	0.110	0.0038	"	0.100	ND	110	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.8	23-173				
Surrogate: Toluene-d8	0.0432		"	0.0400		108	20-170				
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167				

##### Matrix Spike Dup (BEC0305-MSD1)

Source: 2103212-02

Prepared: 03/17/21 Analyzed: 03/18/21

Benzene	0.0922	0.0020	mg/kg	0.100	ND	92.2	70-130	0.260	30		
Toluene	0.120	0.0050	"	0.100	ND	120	70-130	0.525	30		
Ethylbenzene	0.0991	0.0050	"	0.100	ND	99.1	70-130	0.574	30		
m,p-Xylene	0.201	0.010	"	0.200	ND	100	70-130	0.0299	30		
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130	0.677	30		
1,2,4-Trimethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	0.324	30		
1,3,5-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	0.382	30		
Naphthalene	0.109	0.0038	"	0.100	ND	109	70-130	0.548	30		
Surrogate: 1,2-Dichloroethane-d4	0.0387		"	0.0400		96.8	23-173				
Surrogate: Toluene-d8	0.0446		"	0.0400		112	20-170				
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167				

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BEC0280 - EPA 3550A**

**Blank (BEC0280-BLK1)**

Prepared & Analyzed: 03/16/21

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

**LCS (BEC0280-BS1)**

Prepared & Analyzed: 03/16/21

C10-C28 (DRO)	552	50	mg/kg	500	110	70-130
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**Matrix Spike (BEC0280-MS1)**

Source: 2103218-01

Prepared & Analyzed: 03/16/21

C10-C28 (DRO)	522	50	mg/kg	500	26.2	99.2	70-130
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**Matrix Spike Dup (BEC0280-MSD1)**

Source: 2103218-01

Prepared & Analyzed: 03/16/21

C10-C28 (DRO)	458	50	mg/kg	500	26.2	86.4	70-130	13.1	20
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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BEC0356 - EPA 5030 Soil MS

##### Blank (BEC0356-BLK1)

Prepared & Analyzed: 03/20/21

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	"

Surrogate: 2-Methylnaphthalene-d10	0.0366	"	0.0333	110	40-150
Surrogate: Fluoranthene-d10	0.0322	"	0.0333	96.7	40-150

##### LCS (BEC0356-BS1)

Prepared & Analyzed: 03/20/21

Acenaphthene	0.0296	0.00500	mg/kg	0.0333	88.8	31-137
Anthracene	0.0298	0.00500	"	0.0333	89.3	30-120
Benzo (a) anthracene	0.0283	0.00500	"	0.0333	84.9	30-120
Benzo (a) pyrene	0.0291	0.00500	"	0.0333	87.4	30-120
Benzo (b) fluoranthene	0.0308	0.00500	"	0.0333	92.4	30-120
Benzo (k) fluoranthene	0.0303	0.00500	"	0.0333	91.0	30-120
Chrysene	0.0293	0.00500	"	0.0333	87.8	30-120
Dibenz (a,h) anthracene	0.0267	0.00500	"	0.0333	80.1	30-120
Fluoranthene	0.0286	0.00500	"	0.0333	85.9	30-120
Fluorene	0.0239	0.00500	"	0.0333	71.7	30-120
Indeno (1,2,3-cd) pyrene	0.0270	0.00500	"	0.0333	80.9	30-120
Pyrene	0.0276	0.00500	"	0.0333	82.9	35-142
1-Methylnaphthalene	0.0297	0.00500	"	0.0333	89.1	35-142
2-Methylnaphthalene	0.0304	0.00500	"	0.0333	91.2	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0306	"	0.0333	91.8	40-150
Surrogate: Fluoranthene-d10	0.0330	"	0.0333	98.9	40-150

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BEC0356 - EPA 5030 Soil MS

##### Matrix Spike (BEC0356-MS1)

Source: 2103219-01

Prepared & Analyzed: 03/20/21

Acenaphthene	0.0327	0.00500	mg/kg	0.0333	ND	98.1	31-137		
Anthracene	0.0330	0.00500	"	0.0333	ND	98.9	30-120		
Benzo (a) anthracene	0.0321	0.00500	"	0.0333	ND	96.4	30-120		
Benzo (a) pyrene	0.0334	0.00500	"	0.0333	ND	100	30-120		
Benzo (b) fluoranthene	0.0342	0.00500	"	0.0333	ND	103	30-120		
Benzo (k) fluoranthene	0.0334	0.00500	"	0.0333	ND	100	30-120		
Chrysene	0.0327	0.00500	"	0.0333	ND	98.2	30-120		
Dibenz (a,h) anthracene	0.0311	0.00500	"	0.0333	ND	93.3	30-120		
Fluoranthene	0.0315	0.00500	"	0.0333	ND	94.4	30-120		
Fluorene	0.0287	0.00500	"	0.0333	ND	86.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0311	0.00500	"	0.0333	ND	93.3	30-120		
Pyrene	0.0307	0.00500	"	0.0333	ND	92.1	35-142		
1-Methylnaphthalene	0.0326	0.00500	"	0.0333	ND	97.9	15-130		
2-Methylnaphthalene	0.0326	0.00500	"	0.0333	ND	97.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0344		"	0.0333		103	40-150		
Surrogate: Fluoranthene-d10	0.0348		"	0.0333		104	40-150		

##### Matrix Spike Dup (BEC0356-MSD1)

Source: 2103219-01

Prepared & Analyzed: 03/20/21

Acenaphthene	0.0330	0.00500	mg/kg	0.0333	ND	99.0	31-137	0.879	30
Anthracene	0.0347	0.00500	"	0.0333	ND	104	30-120	5.16	30
Benzo (a) anthracene	0.0332	0.00500	"	0.0333	ND	99.5	30-120	3.08	30
Benzo (a) pyrene	0.0347	0.00500	"	0.0333	ND	104	30-120	3.69	30
Benzo (b) fluoranthene	0.0352	0.00500	"	0.0333	ND	106	30-120	2.89	30
Benzo (k) fluoranthene	0.0343	0.00500	"	0.0333	ND	103	30-120	2.47	30
Chrysene	0.0337	0.00500	"	0.0333	ND	101	30-120	3.08	30
Dibenz (a,h) anthracene	0.0331	0.00500	"	0.0333	ND	99.3	30-120	6.29	30
Fluoranthene	0.0325	0.00500	"	0.0333	ND	97.4	30-120	3.12	30
Fluorene	0.0292	0.00500	"	0.0333	ND	87.6	30-120	1.77	30
Indeno (1,2,3-cd) pyrene	0.0328	0.00500	"	0.0333	ND	98.5	30-120	5.33	30
Pyrene	0.0319	0.00500	"	0.0333	ND	95.6	35-142	3.77	30
1-Methylnaphthalene	0.0330	0.00500	"	0.0333	ND	98.9	15-130	1.04	50
2-Methylnaphthalene	0.0336	0.00500	"	0.0333	ND	101	15-130	2.93	50
Surrogate: 2-Methylnaphthalene-d10	0.0348		"	0.0333		104	40-150		
Surrogate: Fluoranthene-d10	0.0358		"	0.0333		107	40-150		

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BEC0322 - EPA 3050B

##### Blank (BEC0322-BLK1)

Prepared: 03/18/21 Analyzed: 03/20/21

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	"

##### LCS (BEC0322-BS1)

Prepared: 03/18/21 Analyzed: 03/20/21

Arsenic	45.9	0.200	mg/kg wet	40.0	115	80-120
Barium	36.7	0.400	"	40.0	91.8	80-120
Cadmium	2.04	0.200	"	2.00	102	80-120
Copper	36.7	0.400	"	40.0	91.7	80-120
Lead	18.4	0.200	"	20.0	92.0	80-120
Nickel	35.5	0.400	"	40.0	88.7	80-120
Selenium	4.03	0.260	"	4.00	101	80-120
Silver	1.79	0.0200	"	2.00	89.4	80-120
Zinc	47.2	0.400	"	40.0	118	80-120

##### Duplicate (BEC0322-DUP1)

Source: 2103180-01

Prepared: 03/18/21 Analyzed: 03/20/21

Arsenic	1.78	0.225	mg/kg dry	1.90	6.37	30
Barium	78.1	0.450	"	81.4	4.22	30
Cadmium	0.100	0.225	"	0.106	5.66	30
Copper	5.96	0.450	"	6.15	3.00	30
Lead	4.69	0.225	"	5.70	19.5	30
Nickel	6.02	0.450	"	6.16	2.31	30
Selenium	0.646	0.292	"	0.599	7.61	30
Silver	0.0124	0.0225	"	0.0159	24.3	30
Zinc	24.0	0.450	"	24.3	1.07	30

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

### Total Metals by EPA 6020B - Quality Control

#### Summit Scientific

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

#### Batch BEC0322 - EPA 3050B

##### Matrix Spike (BEC0322-MS1)

Source: 2103180-01

Prepared: 03/18/21 Analyzed: 03/20/21

Arsenic	54.0	0.225	mg/kg dry	45.0	1.90	116	75-125
Barium	119	0.450	"	45.0	81.4	83.6	75-125
Cadmium	2.42	0.225	"	2.25	0.106	103	75-125
Copper	47.3	0.450	"	45.0	6.15	91.6	75-125
Lead	24.5	0.225	"	22.5	5.70	83.8	75-125
Nickel	47.2	0.450	"	45.0	6.16	91.2	75-125
Selenium	5.08	0.292	"	4.50	0.599	99.6	75-125
Silver	2.01	0.0225	"	2.25	0.0159	88.9	75-125
Zinc	74.8	0.450	"	45.0	24.3	112	75-125

##### Matrix Spike Dup (BEC0322-MSD1)

Source: 2103180-01

Prepared: 03/18/21 Analyzed: 03/20/21

Arsenic	53.0	0.225	mg/kg dry	45.0	1.90	114	75-125	1.71	25
Barium	124	0.450	"	45.0	81.4	94.8	75-125	4.13	25
Cadmium	2.31	0.225	"	2.25	0.106	98.0	75-125	4.68	25
Copper	46.7	0.450	"	45.0	6.15	90.2	75-125	1.29	25
Lead	24.0	0.225	"	22.5	5.70	81.3	75-125	2.27	25
Nickel	46.7	0.450	"	45.0	6.16	90.2	75-125	0.918	25
Selenium	4.89	0.292	"	4.50	0.599	95.5	75-125	3.71	25
Silver	1.95	0.0225	"	2.25	0.0159	86.0	75-125	3.24	25
Zinc	74.5	0.450	"	45.0	24.3	112	75-125	0.387	25

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BEC0380 - 3060A Mod**

**Blank (BEC0380-BLK1)**

Prepared: 03/23/21 Analyzed: 03/24/21

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BEC0380-BS1)**

Prepared: 03/23/21 Analyzed: 03/24/21

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

**Duplicate (BEC0380-DUP1)**

**Source: 2103121-10**

Prepared: 03/23/21 Analyzed: 03/24/21

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BEC0380-MS1)**

**Source: 2103121-10**

Prepared: 03/23/21 Analyzed: 03/24/21

Chromium, Hexavalent 25.2 0.30 mg/kg dry 27.1 ND 93.0 75-125

**Matrix Spike Dup (BEC0380-MSD1)**

**Source: 2103121-10**

Prepared: 03/23/21 Analyzed: 03/24/21

Chromium, Hexavalent 25.2 0.30 mg/kg dry 27.1 ND 93.0 75-125 0.00 20

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K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

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

#### Summit Scientific

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

#### Batch BEC0335 - General Preparation

Duplicate (BEC0335-DUP1)		Source: 2103223-01		Prepared & Analyzed: 03/19/21						
% Solids	88.4		%		88.3			0.118	20	

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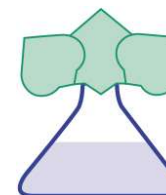
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20491

SUMMIT SCIENTIFIC

4653 TABLE MOUNTAIN DRIVE, SUITE B

GOLDEN CO 80403

NAME : 2103223

DATE RECEIVED: 03/19/2021

DATE REPORTED: 03/25/2021

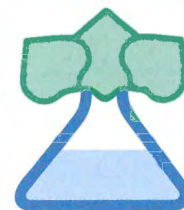
SOIL TEST RESULTS																	
LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	Depth Inches	pH		EL	SOLUBLE SALTS mod. SP mmhos/cm	OM LOI %	NITRATE-N (FIA)		PHOSPHORUS						
				1 : 1 Soil	Buffer Woodruff				ppm	lbs/A	P1 ppm	Bicarb ppm	P2 ppm	M2 ppm	M3 ppm		
3326783	1 NORTH AT 1		0-12														
3326784	2 WEST AT 1		0-12														
3326785	3 SOUTH AT 1		0-12														
3326786	4 SOUTH AT 1		0-12														
3326787	5 BOTTOM AT 1		0-12														
3326788	OUTSIFE SOUTH BARRIER AT 1		0-12														
LAB NUMBER	SULFATE-S	NH4OAc (Exchangeable)				DTPA				BORON  Sorbitol ppm	EST. CATION EXCHANGE CAPACITY (CEC) me/100g	% SATURATION					
	Ca-P ppm	K ppm	Ca ppm	Mg ppm	Na ppm	Zn ppm	Fe ppm	Mn ppm	Cu ppm			BASE	H	Ca	Mg	K	Na
3326783										2.9							
3326784										3.0							
3326785										2.8							
3326786										2.8							
3326787										2.8							
3326788										2.7							
LAB NUMBER	SOLUBLE (SAT. EXT.)			SODIUM ADSORPTION RATIO (SAR)	EXCH. SODIUM PERCENT (ESP)	GYPSUM REQ T/A	PARTICLE SIZE ANALYSIS				CHLORIDE		EXCH. NH4-N		ALUMINUM ppm	TOTAL N %	
	Ca me/L	Mg me/L	Na me/L				SAND %	SILT %	CLAY %	SOIL TEXTURE	ppm	lbs/A	ppm	lbs/A			
3326783	4.73	5.63	29.87	13.12	18												
3326784	6.22	7.53	34.29	13.08	18												
3326785	5.42	6.47	29.92	12.27	17												
3326786	4.34	5.14	28.29	12.99	18												
3326787	6.48	7.13	34.25	13.13	18												
3326788	5.98	6.83	31.28	12.36	17												
SUGGESTED FERTILIZER RECOMMENDATIONS																	LIME REC 60% ECCE T/A
LAB NUMBER	FIELD IDENTIFICATION	SAMPLE IDENTIFICATION	CROP TO BE GROWN	YIELD GOAL	N	P2O5	K2O	S	Zn	MgO	Fe	Mn	Cu	B	Cl		
3326783	1 NORTH AT 1																
3326784	2 WEST AT 1																
3326785	3 SOUTH AT 1																
3326786	4 SOUTH AT 1																
3326787	5 BOTTOM AT 1																
3326788	OUTSIFE SOUTH BARRIER AT 1																
Approved By: Kevin Grooms																	Analysis By: American Agricultural Lab
																	Recommendations By: American Agricultural Lab

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*"Analysis You Can Grow With"®*



SUMMIT SCIENTIFIC  
4653 TABLE MOUNTAIN DRIVE SUITE B  
GOLDEN, CO 80403

ACCOUNT NO: 20491  
DATE RECEIVED: 03/19/2021  
DATE REPORTED: 03/23/2021

## SATURATED PASTE EXTRACT ANALYSIS

Lab No.	Grower	Sample ID	Depth inches	pH s.u.	Soluble Salts mmhos/cm
3326783	2103223	#1-NORTH@1'	0-12	8.3	2.19
3326784	2103223	#2-WEST@1'	0-12	8.1	2.07
3326785	2103223	#3-SOUTH@1'	0-12	8.2	2.33
3326786	2103223	#4-SOUTH@1'	0-12	8.1	2.21
3326787	2103223	#5-BOTTOM@1'	0-12	8.3	2.38
3326788	2103223	OUTSIDE SOUTH BARRIER@1'	0-12	8.2	2.39

By: Electronically Approved Kevin Grooms



K.P. Kauffman  
1675 Broadway  
Denver CO, 80202

Project: Suckla Brown 17 Header-Spill/Release ID 478370

Project Number: [none]  
Project Manager: Max Knop

**Reported:**  
03/26/21 13:59

### 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