

# **Bury Crandell 8-4-23**

NENE Sec. 23-T1N-R69W

API #: 014-20714

Remediation Project #: 23816

Form 19 Deliverable

November 2022

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC



## **FIELD NOTES AND PHOTO LOG**

<b>SITE NAME:</b> Bury Crandall 8-4-23 WH							<b>DATE:</b> 11/7/2022	<b>REM. PROJECT #:</b> 23816	<b>WEATHER:</b> Sunny 40 (F)
<b>SITE DIRECTIONS:</b> CR 11 and Summit Blvd. S on Summit Blvd 0.3 mi, W on dirt access road 0.2 miles INTO							<b>CLIENT:</b> Crestone Peak Resources Operating LLC		
<b>LEGALS AND LAT/LONG:</b> 40.041311, -104.964864							<b>TASMAN PERSONNEL:</b> Sierra Kirylo & Dylan Miller		
<b>SOIL TYPES:</b> Well Graded Sand - SW							<b>SURFACE GRADIENT:</b> North		
<b>SURROUNDING LAND USE:</b> Cropland							<b>CROP:</b>		
SOIL SAMPLING							FACILITY INFRASTRUCTURE		
Date/Time	Soil Sample ID	PID (ppm)	Visual	Olfactory	Photo?	Grab or Lab Sample?	EQUIPMENT		Quantity
							Above Ground Storage Tank (AST)		
11/7/2022 10:15	WH-B01@7'	23.5	HC Staining	No Odor	Yes	Lab	Buried or Partially Buried Vessel		
11/7/2022 10:17	WH-N01@5'	0.1	HC Staining	No Odor	Yes	N/A	Separator		
11/7/2022 10:19	WH-E01@6'	1.0	HC Staining	No Odor	Yes	N/A	Emission Control Device (ECD)		
11/7/2022 10:21	WH-S01@6'	21.9	HC Staining	Slight HC Od	Yes	Lab	Dump Line		
11/7/2022 10:24	FL-B01@6'	1.0	Organic Con	No Odor	Yes	Lab	Wellhead		1
							Flowline		1
							Method of Closure		Abandoned
							Footage Removed		
							Footaged Abandoned in Place		95'
							Other:		
							Soil Loads Removed		
							IMPACTED SOIL IDENTIFIED?		
							ESTIMATED VOLUME OF IMPACTS:		
							Date	Number	CY
							Total Removed	0	0
							Disposal Facility:		
							Groundwater Recovery		
							DATE GW ENCOUNTERED:		DEPTH:
							GROUNDWATER IN CONTACT WITH IMPACTED SOIL?		
							LNAPL OR SHEEN OBSERVED ON GW?		
GROUNDWATER SAMPLING							Date		BBLS
Date/Time	Groundwater Sample ID	Depth Collected	Turbid?	Sheen?	Odor?	Photo?			
							Total Removed		0
							Disposal Facility:		

**Photographic Log**

											
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>					
<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>		<b>Material:</b>		<b>Volume:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b> Soil sampling locations, facing south						<b>Notes/Conditions:</b> Soil screening location, facing north					



## Photographic Log

							
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Material:</b>		<b>Volume:</b>	
		<b>Contents:</b>				<b>Contents:</b>	
<b>Notes/Conditions:</b> Soil screening location, facing east				<b>Notes/Conditions:</b> Soil sampling location, facing south			



## Photographic Log

					
<b>Equipment ID:</b>			<b>Equipment Type:</b>		
<b>Material:</b>		<b>Volume:</b>	<b>Material:</b>		<b>Volume:</b>
<b>Contents:</b>			<b>Contents:</b>		
<b>Notes/Conditions:</b> Surrounding area to the north			<b>Notes/Conditions:</b> Surrounding area to the south		



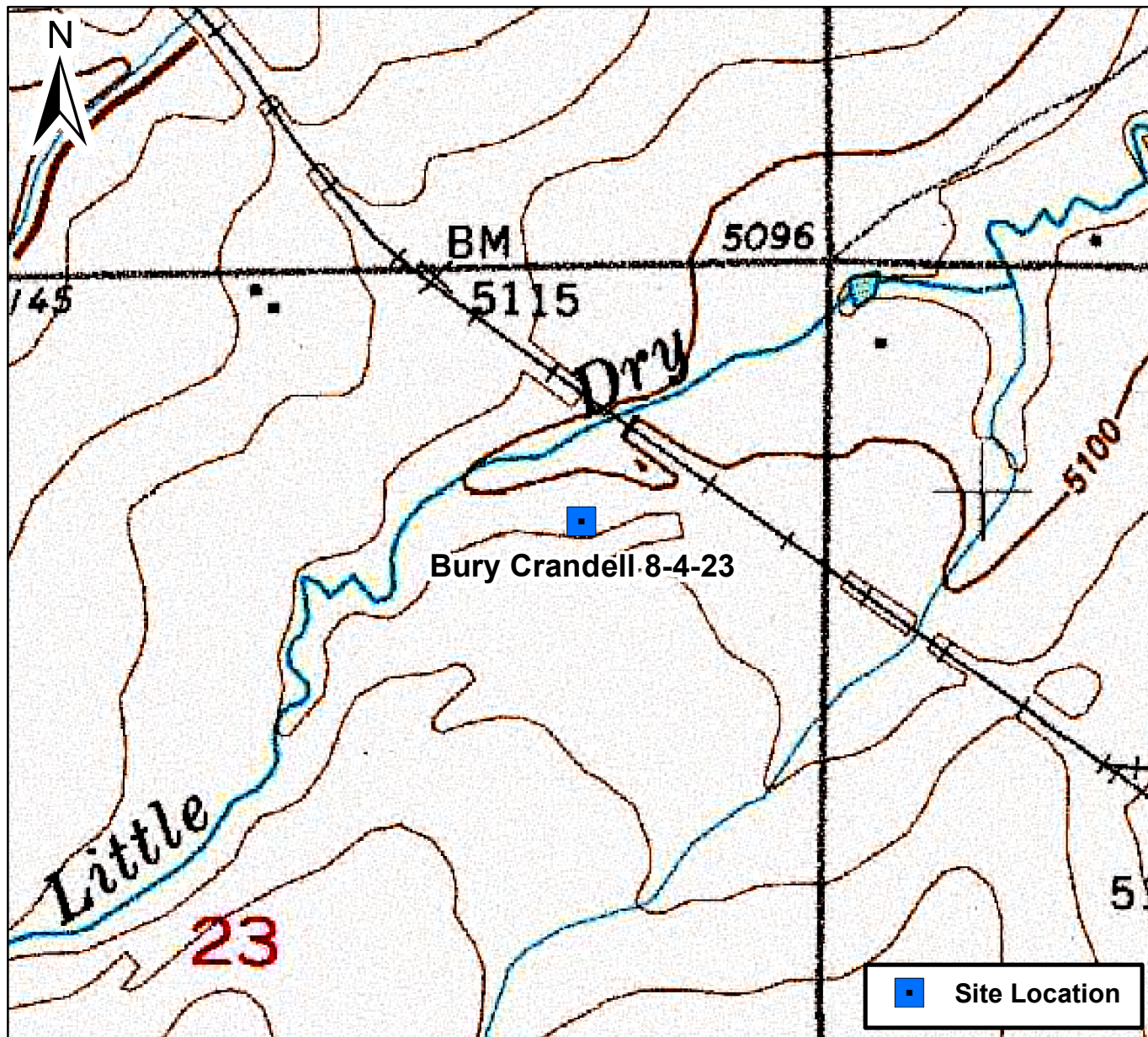


## Photographic Log

					
<b>Equipment ID:</b>		<b>Equipment Type:</b>	<b>Equipment ID:</b>		<b>Equipment Type:</b>
<b>Material:</b>		<b>Volume:</b>	<b>Material:</b>		<b>Volume:</b>
<b>Contents:</b>			<b>Contents:</b>		
<b>Notes/Conditions:</b> Surrounding area to the east			<b>Notes/Conditions:</b> Surrounding area to the west		

## FIGURES





0 1,000 2,000 Feet

## Figure 1

Site Location Map  
Bury Crandell 8-4-23  
NENE Sec. 23-T1N-R68W  
Broomfield County, Colorado







DATE:	November 2022
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed



**Tasman, Inc.**  
6855 W. 119th Ave  
Broomfield, CO 80020

**Crestone Peak Resources Operating, LLC**  
**Bury Crandell 8-4-23**  
NENE Sec. 23-T1N-R68W  
Broomfield County, Colorado

Soil Sample  
Location Map

Figure  
2

# TABLES

**TABLE 1**  
**BURY CRANDELL 8-4-23**  
**SOIL SAMPLE LOCATIONS**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**



Soil Sample Location	Date	PID Reading (ppm)	Visual Observation	Olfactory Observation	Latitude	Longitude	GPS PDOP Value	Lab (Y/N)
WH-B01@7'	11/07/2022	23.5	HC Staining	No Odor	40.041316	-104.964862	1.1	Y
WH-N01@5'	11/07/2022	0.1	HC Staining	No Odor	40.041325	-104.964869	1.1	N
WH-E01@6'	11/07/2022	1	HC Staining	No Odor	40.041319	-104.964849	1.1	N
WH-S01@6'	11/07/2022	21.9	HC Staining	Slight HC Odor	40.041303	-104.964852	1.1	Y
FL-B01@6'	11/07/2022	1	Organic Content	No Odor	40.041306	-104.964872	1.1	Y

**Notes:**

PID = Photoionization detector

ppm = Parts per million

HC = Hydrocarbon

GPS = Global positioning system

PDOP = Position dilution of precision

NA = Not Applicable



**TABLE 2**  
**BURY CRANDELL 8-4-23**  
**SOIL ANALYTICAL DATA - VOCs**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (mg/kg)	TVPH-GRO (mg/kg)	TEPH-DRO (mg/kg)	TEPH-ORO (mg/kg)	1,2,4-TMB (mg/kg)	1,3,5-TMB (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		0.0026	0.69	0.78	9.9	0.0038	500			0.0081	0.0087
COGCC standards for soil (mg/kg) <sup>(2)</sup>		1.2	490	5.8	58	2	500			30	27
FL-B01@6'	11/07/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	440	310	<0.0050	<0.0050
WH-B01@7'	11/07/2022	<0.0020	<0.0050	<0.0050	0.031	0.010	0.58	<50	<50	0.012	0.0068
WH-S01@6'	11/07/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050

**Notes:**

VOCs = Volatile Organic Compounds

(1) Standards for soil are taken from COGCC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

(2) Standards for soil are taken from COGCC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = Milligrams per kilogram

TVPH - GRO = Total volatile petroleum hydrocarbons - gasoline range organics

TEPH - DRO = Total extractable petroleum hydrocarbons - diesel range organics

TEPH - ORO = Total extractable petroleum hydrocarbons - oil range organics

1,2,4 - TMB = 1,2,4 - Trimethylbenzene

1,3,5 - TMB = 1,3,5 - Trimethylbenzene

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

**TABLE 3**  
**BURY CRANDELL 8-4-23**  
**SOIL ANALYTICAL DATA - PAHs**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Date	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)A (mg/kg)	Benzo(b)F (mg/kg)	Benzo(k)F (mg/kg)	Benzo(a)P (mg/kg)	Chrysene (mg/kg)	D (a,h) A (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	1-M (mg/kg)	2-M (mg/kg)	Pyrene (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		0.55	5.8	0.011	0.3	2.9	0.24	9	0.96	8.9	0.54	0.98	0.006	0.019	1.3
COGCC standards for soil (mg/kg) <sup>(2)</sup>		360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180
FL-B01@6'	11/07/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
WH-B01@7'	11/07/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<b>0.0119</b>	0.0159	<0.00500
WH-S01@6'	11/07/2022	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

**Notes:**

PAHs = Polycyclic Aromatic Hydrocarbons

(1) Standards for soil are taken from COGCC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

(2) Standards for soil are taken from COGCC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mg/kg = Milligrams per kilogram

Benzo(a)A = Benzo(a)anthracene

Benzo(b)F = Benzo(b)fluoranthene

Benzo(k)F = Benzo(k)fluoranthene

Benzo(a)P = Benzo(a)pyrene

D (a,h) A = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-Methylnaphthalene

2-M = 2-Methylnaphthalene

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

**TABLE 4**  
**BURY CRANDELL 8-4-23**  
**SOIL ANALYTICAL DATA - METALS**  
**CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
COGCC standards for soil (mg/kg) <sup>(2)</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
FL-B01@6'	11/07/2022	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-B01@7'	11/07/2022	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending
WH-S01@6'	11/07/2022	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending	Pending

**Notes:**

(1) Standards for soil are taken from COGCC Table 915-1: Protection of Groundwater Soil Screening Level Concentrations, effective January 15, 2021

(2) Standards for soil are taken from COGCC Table 915-1: Residential Soil Screening Level Concentrations, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory minimum detection limit

mg/kg = Milligrams per kilogram

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

*Italics* = Laboratory minimum detection limit exceeds the COGCC Table 915-1 standard

NA = Constituent not analyzed

Pending = Analytical results pending final laboratory reporting

\* Result exceeded the COGCC Table 915-1 standard, but was within range of site-specific background concentrations

TABLE 5  
BURY CRANDELL 8-4-23



SOIL ANALYTICAL DATA - SOIL RECLAMATION  
CRESTONE PEAK RESOURCES OPERATING, LLC

Soil Sample Location	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
COGCC standards for soil (mg/kg) <sup>(1)</sup>		6 - 8.3	< 6	< 4	2
FL-B01@6'	11/07/2022	10.4	1.80	1.62	0.213
WH-B01@7'	11/07/2022	10.3	12.7	2.22	0.237
WH-S01@6'	11/07/2022	8.44	1.39	0.409	0.246

**Notes:**

(1) Standards for soil are taken from COGCC Table 915-1, effective January 15, 2021

COGCC = Colorado Oil and Gas Conservation Commission

(<) = Analytical result is less than the indicated laboratory reporting limit

mmhos/cm = Millimhos per centimeter

mg/L = Milligrams per liter

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1 soil standards

\* Result exceeded the COGCC Table 915-1 standard, but was within background levels



## **LABORATORY ANALYTICAL DATA**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 14, 2022

Sam Vogt

Civitas Resources

650 Southgate Drive

Windsor, CO 80550

RE: Bury Crandall 8-4-23 WH

Work Order #2211106

Enclosed are the results of analyses for samples received by Summit Scientific on 11/07/22 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury  
President



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH-B01@7'	2211106-01	Soil	11/07/22 10:15	11/07/22 17:15
WH-S01@6'	2211106-02	Soil	11/07/22 10:21	11/07/22 17:15
FL-B01@6'	2211106-03	Soil	11/07/22 10:24	11/07/22 17:15

Summit Scientific

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

# Summit Scientific

2211106

741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: Civitas / Tasman  
Address: 6855 William Ave  
City/State/Zip: Broomfield, CO 80020  
Phone: 610-405-9018 Fax:   
Sampler Name: SK, PM

Project Manager: Sam Hoyt Jacob Egan  
E-Mail: SamHoyt@tasmanco.com jeons @ civitasco.com  
Project Name: Bury Crandall 8-4-28 WH  
Project Number:

				Preservative				Matrix				Analyze For:								Special Instructions
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEXN	TMB's	TPH	PAHs	PH*	EC*	SAR*	Boron**	
WH-B6107'	11/7/12	1715	2			X			X			X	X	X	X	X	X	X	X	X
WH-S6106'	1	1621	2																	
FL-B6106'	1	1624	2																	

Relinquished by: <u>John Mv</u>	Date/Time: <u>11/7/12</u> <u>1715</u>	Received by: <u>Tasman Lockbox</u>	Date/Time: <u>11/7/12</u> <u>1715</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 24 Hours <input type="checkbox"/> 48 Hours <input type="checkbox"/>	72 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/>	Notes: <u>Methods:</u> <u>* sat paste</u> <u>** hot paste</u>
Relinquished by: <u>Tasman Lockbox</u>	Date/Time: <u>11/7/12</u> <u>1715</u>	Received by: <u>[Signature]</u>	Date/Time: <u>11/7/12</u> <u>1715</u>	Sample Integrity: Temperature Upon Receipt: <u>9.0</u>		
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>		



S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2211106Client: Civitas/Tasman Client Project ID: Burg Crandall 8:42B WH

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

	-			
--	---	--	--	--

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 9.0Thermometer # 1

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

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

Custodian Printed Name

Date/Time

11.7.22



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**WH-B01@7'**  
**2211106-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0243	11/09/22	11/09/22	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.031</b>	0.010	"	"	"	"	"	"	
<b>1,2,4-Trimethylbenzene</b>	<b>0.012</b>	0.0050	"	"	"	"	"	"	
<b>1,3,5-Trimethylbenzene</b>	<b>0.0068</b>	0.0050	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.010</b>	0.0038	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.58</b>	0.50	"	"	"	"	"	"	

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		95.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0241	11/09/22	11/09/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		71.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**WH-B01@7'**  
**2211106-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFK0259	11/10/22	11/11/22	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	"	"	"	"	"	"	
<b>1-Methylnaphthalene</b>	<b>0.0119</b>	0.00500	"	"	"	"	"	"	
<b>2-Methylnaphthalene</b>	<b>0.0159</b>	0.00500	"	"	"	"	"	"	

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.237</b>	0.0100	mg/L	1	BFK0236	11/09/22	11/10/22	EPA 6020B	

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

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**WH-B01@7'**  
**2211106-01 (Soil)**

**Summit Scientific**

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

Calcium	96.4	0.0680	mg/L dry	1	BFK0246	11/09/22	11/11/22	EPA 6020B
Magnesium	1.57	0.0680	"	"	"	"	"	"
Sodium	458	0.0680	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	12.7	0.00100	units	1	BFK0338	11/12/22	11/12/22	Calculation	

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

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	73.6		%	1	BFK0283	11/10/22	11/11/22	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.22	0.0100	mmhos/cm	1	BFK0267	11/10/22	11/10/22	EPA 120.1	

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

Date Sampled: **11/07/22 10:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	10.3		pH Units	1	BFK0266	11/10/22	11/10/22	EPA 9045D	

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**WH-S01@6'**  
**2211106-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0243	11/09/22	11/09/22	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: **11/07/22 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		94.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0241	11/09/22	11/10/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		79.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**WH-S01@6'**  
**2211106-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFK0259	11/10/22	11/11/22	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: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		50.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.246</b>	0.0100	mg/L	1	BFK0236	11/09/22	11/10/22	EPA 6020B	

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

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**WH-S01@6'**  
**2211106-02 (Soil)**

**Summit Scientific**

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

Calcium	29.8	0.0603	mg/L dry	1	BFK0246	11/09/22	11/11/22	EPA 6020B
Magnesium	16.9	0.0603	"	"	"	"	"	"
Sodium	38.4	0.0603	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.39	0.00100	units	1	BFK0338	11/12/22	11/12/22	Calculation	

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

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.9		%	1	BFK0283	11/10/22	11/11/22	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.409	0.0100	mmhos/cm	1	BFK0267	11/10/22	11/10/22	EPA 120.1	

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

Date Sampled: **11/07/22 10:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BFK0266	11/10/22	11/10/22	EPA 9045D	

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650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**FL-B01@6'**  
**2211106-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BFK0243	11/09/22	11/09/22	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: **11/07/22 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	440	50	mg/kg	1	BFK0241	11/09/22	11/10/22	EPA 8015M	
C28-C36 (ORO)	310	50	"	"	"	"	"	"	

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		87.7 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**FL-B01@6'**  
**2211106-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFK0259	11/10/22	11/11/22	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: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		66.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		49.4 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.213</b>	0.0100	mg/L	1	BFK0236	11/09/22	11/10/22	EPA 6020B	

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

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**FL-B01@6'**  
**2211106-03 (Soil)**

### Summit Scientific

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

Calcium	1120	0.0577	mg/L dry	1	BFK0246	11/09/22	11/11/22	EPA 6020B
Magnesium	74.8	0.0577	"	"	"	"	"	"
Sodium	231	0.0577	"	"	"	"	"	"

#### Calculated Analysis

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.80	0.00100	units	1	BFK0338	11/12/22	11/12/22	Calculation	

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

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.7		%	1	BFK0283	11/10/22	11/11/22	Calculation	

#### Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.62	0.0100	mmhos/cm	1	BFK0267	11/10/22	11/10/22	EPA 120.1	

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

Date Sampled: **11/07/22 10:24**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	10.4		pH Units	1	BFK0266	11/10/22	11/10/22	EPA 9045D	

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

## 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 BFK0243 - EPA 5030 Soil MS

##### Blank (BFK0243-BLK1)

Prepared & Analyzed: 11/09/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0377		"	0.0400		94.2	50-150			
Surrogate: Toluene-d8	0.0438		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

##### LCS (BFK0243-BS1)

Prepared & Analyzed: 11/09/22

Benzene	0.0753	0.0020	mg/kg	0.0750		100	70-130			
Toluene	0.0731	0.0050	"	0.0750		97.4	70-130			
Ethylbenzene	0.0706	0.0050	"	0.0750		94.1	70-130			
m,p-Xylene	0.142	0.010	"	0.150		95.0	70-130			
o-Xylene	0.0742	0.0050	"	0.0750		98.9	70-130			
1,2,4-Trimethylbenzene	0.0806	0.0050	"	0.0750		107	70-130			
1,3,5-Trimethylbenzene	0.0785	0.0050	"	0.0750		105	70-130			
Naphthalene	0.0936	0.0038	"	0.0750		125	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0340		"	0.0400		85.0	50-150			
Surrogate: Toluene-d8	0.0440		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

##### Matrix Spike (BFK0243-MS1)

Source: 2211084-01

Prepared & Analyzed: 11/09/22

Benzene	0.0723	0.0020	mg/kg	0.0750	ND	96.4	70-130			
Toluene	0.0665	0.0050	"	0.0750	ND	88.7	70-130			
Ethylbenzene	0.0740	0.0050	"	0.0750	ND	98.7	70-130			
m,p-Xylene	0.178	0.010	"	0.150	ND	119	70-130			
o-Xylene	0.0771	0.0050	"	0.0750	ND	103	70-130			
1,2,4-Trimethylbenzene	0.0838	0.0050	"	0.0750	ND	112	70-130			
1,3,5-Trimethylbenzene	0.0827	0.0050	"	0.0750	ND	110	70-130			
Naphthalene	0.0872	0.0038	"	0.0750	ND	116	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0318		"	0.0400		79.6	50-150			
Surrogate: Toluene-d8	0.0431		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**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 BFK0243 - EPA 5030 Soil MS**

Matrix Spike Dup (BFK0243-MSD1)		Source: 2211084-01			Prepared & Analyzed: 11/09/22					
Benzene	0.0896	0.0020	mg/kg	0.0750	ND	120	70-130	21.4	30	
Toluene	0.0794	0.0050	"	0.0750	ND	106	70-130	17.6	30	
Ethylbenzene	0.0926	0.0050	"	0.0750	ND	123	70-130	22.3	30	
m,p-Xylene	0.178	0.010	"	0.150	ND	119	70-130	0.118	30	
o-Xylene	0.0946	0.0050	"	0.0750	ND	126	70-130	20.4	30	
1,2,4-Trimethylbenzene	0.0975	0.0050	"	0.0750	ND	130	70-130	15.0	30	
1,3,5-Trimethylbenzene	0.0901	0.0050	"	0.0750	ND	120	70-130	8.54	30	
Naphthalene	0.0942	0.0038	"	0.0750	ND	126	70-130	7.81	30	
Surrogate: 1,2-Dichloroethane-d4		0.0255	"	0.0400		63.8	50-150			
Surrogate: Toluene-d8		0.0415	"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene		0.0369	"	0.0400		92.2	50-150			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**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 BFK0241 - EPA 3550A**

**Blank (BFK0241-BLK1)**

Prepared & Analyzed: 11/09/22

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

Surrogate: o-Terphenyl	12.3	"	12.5	98.2	30-150
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**LCS (BFK0241-BS1)**

Prepared & Analyzed: 11/09/22

C10-C28 (DRO)	352	50	mg/kg	500	70.5	70-130
Surrogate: o-Terphenyl	11.9	"	12.5	95.0	30-150	

**Matrix Spike (BFK0241-MS1)**

Source: 2211084-01

Prepared & Analyzed: 11/09/22

C10-C28 (DRO)	394	50	mg/kg	500	19.1	75.1	70-130
Surrogate: o-Terphenyl	10.1	"	12.5	80.6	30-150		

**Matrix Spike Dup (BFK0241-MSD1)**

Source: 2211084-01

Prepared & Analyzed: 11/09/22

C10-C28 (DRO)	378	50	mg/kg	500	19.1	71.7	70-130	4.33	20
Surrogate: o-Terphenyl	9.51	"	12.5	76.1	30-150				

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

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

### Summit Scientific

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

#### Batch BFK0259 - EPA 5030 Soil MS

##### Blank (BFK0259-BLK1)

Prepared & Analyzed: 11/10/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0404		"	0.0333		121	40-150			
Surrogate: Fluoranthene-d10	0.0302		"	0.0333		90.5	40-150			

##### LCS (BFK0259-BS1)

Prepared & Analyzed: 11/10/22

Acenaphthene	0.0418	0.00500	mg/kg	0.0333		125	31-137			
Anthracene	0.0377	0.00500	"	0.0333		113	30-120			
Benzo (a) anthracene	0.0336	0.00500	"	0.0333		101	30-120			
Benzo (a) pyrene	0.0400	0.00500	"	0.0333		120	30-120			
Benzo (b) fluoranthene	0.0398	0.00500	"	0.0333		119	30-120			
Benzo (k) fluoranthene	0.0398	0.00500	"	0.0333		119	30-120			
Chrysene	0.0329	0.00500	"	0.0333		98.8	30-120			
Dibenz (a,h) anthracene	0.0399	0.00500	"	0.0333		120	30-120			
Fluoranthene	0.0381	0.00500	"	0.0333		114	30-120			
Fluorene	0.0392	0.00500	"	0.0333		118	30-120			
Indeno (1,2,3-cd) pyrene	0.0380	0.00500	"	0.0333		114	30-120			
Pyrene	0.0354	0.00500	"	0.0333		106	35-142			
1-Methylnaphthalene	0.0348	0.00500	"	0.0333		104	35-142			
2-Methylnaphthalene	0.0340	0.00500	"	0.0333		102	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0348		"	0.0333		104	40-150			
Surrogate: Fluoranthene-d10	0.0397		"	0.0333		119	40-150			

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Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

## 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 BFK0259 - EPA 5030 Soil MS

Matrix Spike (BKF0259-MS1)			Source: 2211017-01		Prepared & Analyzed: 11/10/22					
Acenaphthene	0.0299	0.00500	mg/kg	0.0333	ND	89.6	31-137			
Anthracene	0.0298	0.00500	"	0.0333	ND	89.3	30-120			
Benzo (a) anthracene	0.0238	0.00500	"	0.0333	ND	71.3	30-120			
Benzo (a) pyrene	0.0267	0.00500	"	0.0333	0.00128	76.3	30-120			
Benzo (b) fluoranthene	0.0235	0.00500	"	0.0333	ND	70.6	30-120			
Benzo (k) fluoranthene	0.0255	0.00500	"	0.0333	ND	76.6	30-120			
Chrysene	0.0286	0.00500	"	0.0333	0.00307	76.6	30-120			
Dibenz (a,h) anthracene	0.0284	0.00500	"	0.0333	ND	85.3	30-120			
Fluoranthene	0.0393	0.00500	"	0.0333	ND	118	30-120			
Fluorene	0.0330	0.00500	"	0.0333	ND	99.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0270	0.00500	"	0.0333	ND	80.9	30-120			
Pyrene	0.0329	0.00500	"	0.0333	0.00506	83.4	35-142			
1-Methylnaphthalene	0.428	0.00500	"	0.0333	0.163	795	15-130			QM-07
2-Methylnaphthalene	0.127	0.00500	"	0.0333	0.0269	300	15-130			QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0381		"	0.0333		114	40-150			
Surrogate: Fluoranthene-d10	0.0282		"	0.0333		84.7	40-150			

Matrix Spike Dup (BKF0259-MSD1)			Source: 2211017-01		Prepared & Analyzed: 11/10/22					
Acenaphthene	0.0373	0.00500	mg/kg	0.0333	ND	112	31-137	22.1	30	
Anthracene	0.0324	0.00500	"	0.0333	ND	97.1	30-120	8.42	30	
Benzo (a) anthracene	0.0238	0.00500	"	0.0333	ND	71.4	30-120	0.164	30	
Benzo (a) pyrene	0.0286	0.00500	"	0.0333	0.00128	82.1	30-120	7.03	30	
Benzo (b) fluoranthene	0.0257	0.00500	"	0.0333	ND	77.0	30-120	8.75	30	
Benzo (k) fluoranthene	0.0278	0.00500	"	0.0333	ND	83.4	30-120	8.44	30	
Chrysene	0.0285	0.00500	"	0.0333	0.00307	76.2	30-120	0.516	30	
Dibenz (a,h) anthracene	0.0283	0.00500	"	0.0333	ND	84.8	30-120	0.590	30	
Fluoranthene	0.0387	0.00500	"	0.0333	ND	116	30-120	1.57	30	
Fluorene	0.0237	0.00500	"	0.0333	ND	71.1	30-120	32.8	30	QR-02
Indeno (1,2,3-cd) pyrene	0.0277	0.00500	"	0.0333	ND	83.2	30-120	2.83	30	
Pyrene	0.0304	0.00500	"	0.0333	0.00506	76.1	35-142	7.70	30	
1-Methylnaphthalene	0.339	0.00500	"	0.0333	0.163	528	15-130	23.2	50	QM-07
2-Methylnaphthalene	0.120	0.00500	"	0.0333	0.0269	281	15-130	5.33	50	QM-07
Surrogate: 2-Methylnaphthalene-d10	0.0315		"	0.0333		94.4	40-150			
Surrogate: Fluoranthene-d10	0.0288		"	0.0333		86.3	40-150			

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

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

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

**Batch BFK0236 - EPA 3050B**

**Blank (BFK0236-BLK1)**

Prepared & Analyzed: 11/09/22

Boron ND 0.0100 mg/L

**LCS (BFK0236-BS1)**

Prepared & Analyzed: 11/09/22

Boron 5.85 0.0100 mg/L 5.00 117 80-120

**Matrix Spike (BFK0236-MS1)**

**Source: 2211104-01**

Prepared & Analyzed: 11/09/22

Boron 5.97 0.0100 mg/L 5.00 0.311 113 75-125

**Matrix Spike Dup (BFK0236-MSD1)**

**Source: 2211104-01**

Prepared & Analyzed: 11/09/22

Boron 5.93 0.0100 mg/L 5.00 0.311 112 75-125 0.545 25

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Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

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

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

**Batch BFK0246 - General Preparation**

**Blank (BFK0246-BLK1)**

Prepared: 11/09/22 Analyzed: 11/11/22

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

**LCS (BFK0246-BS1)**

Prepared: 11/09/22 Analyzed: 11/11/22

Calcium	5.15	0.0500	mg/L wet	5.00	103	70-130
Magnesium	5.08	0.0500	"	5.00	102	70-130
Sodium	5.00	0.0500	"	5.00	100	70-130

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Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

**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 BFK0283 - General Preparation**

Duplicate (BFK0283-DUP1)		Source: 2211104-01		Prepared: 11/10/22 Analyzed: 11/11/22	
% Solids	73.8		%	74.3	0.623 20

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650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

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

**Summit Scientific**

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

**Batch BFK0267 - General Preparation**

**Blank (BFK0267-BLK1)**

Prepared & Analyzed: 11/10/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFK0267-BS1)**

Prepared & Analyzed: 11/10/22

Specific Conductance (EC) 0.143 0.0100 mmhos/cm 0.150 95.5 95-105

**Duplicate (BFK0267-DUP1)**

**Source: 2211084-01**

Prepared & Analyzed: 11/10/22

Specific Conductance (EC) 1.09 0.0100 mmhos/cm 1.11 2.18 20

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

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

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

**Batch BFK0266 - General Preparation**

**LCS (BFK0266-BS1)**

Prepared & Analyzed: 11/10/22

pH	9.00	pH Units	9.18	98.0	95-105
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**Duplicate (BFK0266-DUP1)**

Source: 2211084-01

Prepared & Analyzed: 11/10/22

pH	8.04	pH Units	8.02	0.249	20
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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Bury Crandall 8-4-23 WH

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/14/22 12:59

### Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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