

# Harsch 42-27

NWNE Sec. 27-T2N-R69W

Remediation Project #: 21354

Fourth Quarter 2022 Quarterly Report

November 2022

Prepared by Tasman, Inc.



On behalf of Crestone Peak Resources Operating, LLC

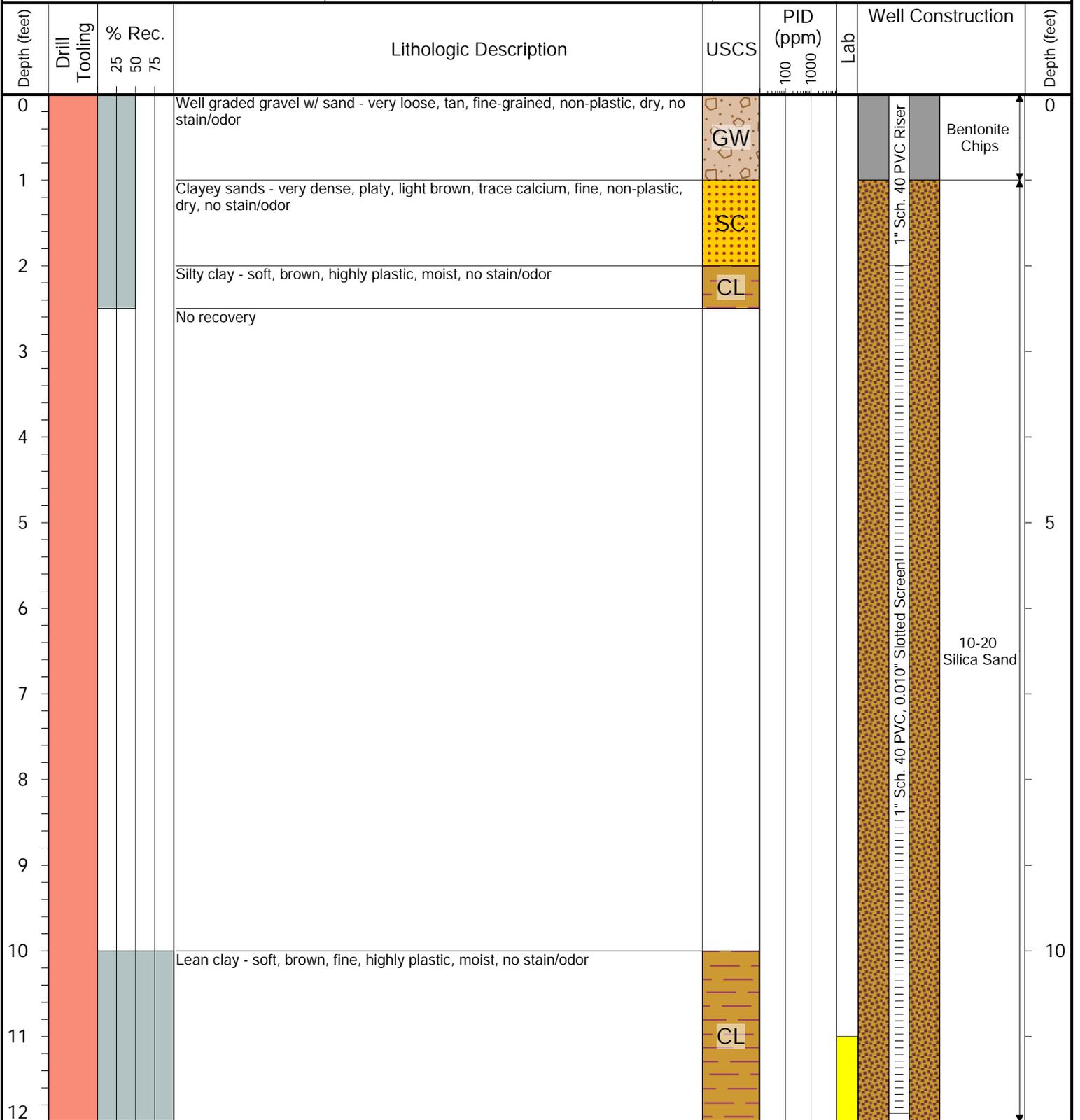


# **Boring Logs**



6855 W. 119th Ave  
Broomfield, CO 80020

<b>CLIENT:</b> Crestone Peak Resources Operating, LLC	<b>SITE NAME:</b> Harsch 42-27 Remediation Project #: 21354
<b>LOGGED BY:</b> Sierra Kirylo	<b>SOIL BORING ID:</b> MW01
<b>PROJECT MANAGER:</b> Sam Vogt	
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LOCATION:</b> SWNE Sec. 27-T2N-R69W
<b>DRILLING EQUIPMENT:</b> AMS Power Probe 9580-VTR	<b>LATITUDE (WGS 84):</b> 40.112892686
<b>DRILL BIT SIZE (INCHES):</b> 2"	<b>LONGITUDE (WGS 84):</b> -105.101423793
<b>DATE STARTED - COMPLETED:</b> 10/27/22 - 10/27/22	<b>TOTAL WELL DEPTH (FT. BGS):</b> 12
	<b>DEPTH TO WATER (FT. BGS):</b> Not Encountered ▼

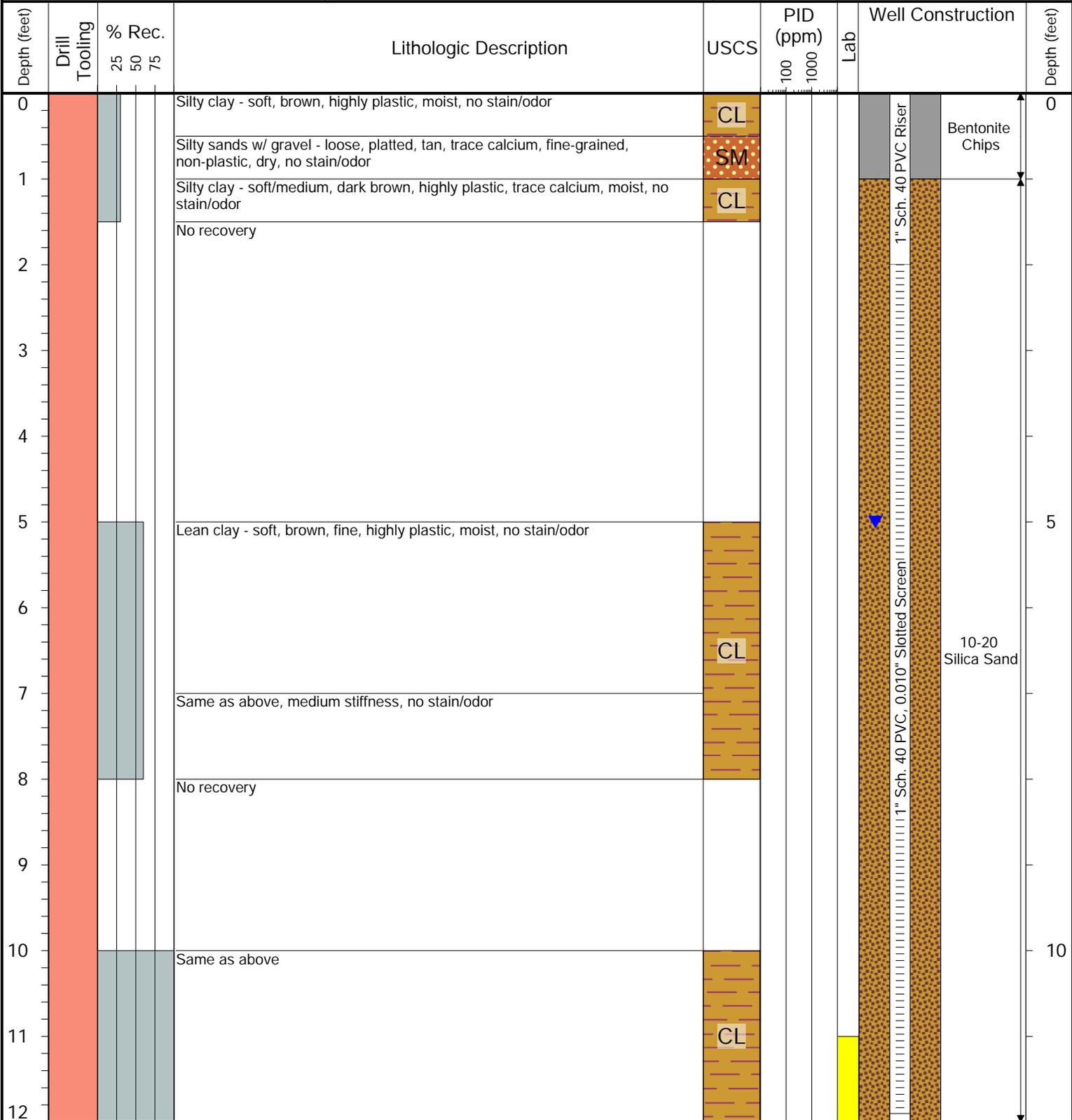


<b>Drilling / Sample Method:</b>		<b>Laboratory Sample Types:</b>	
Direct Push Technology	Hydrovac	Geotechnical Lab	Geotechnical & Analytical Chemistry Lab
Grab Sample	Hand Auger	Analytical Chemistry Lab	



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<b>CLIENT:</b> Crestone Peak Resources Operating, LLC	<b>SITE NAME:</b> Harsch 42-27 Remediation Project #: 21354
<b>LOGGED BY:</b> Sierra Kirylo	<b>SOIL BORING ID:</b> MW02
<b>PROJECT MANAGER:</b> Sam Vogt	
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LOCATION:</b> SWNE Sec. 27-T2N-R69W
<b>DRILLING EQUIPMENT:</b> AMS Power Probe 9580-VTR	<b>LATITUDE (WGS 84):</b> 40.112738888
<b>DRILL BIT SIZE (INCHES):</b> 2"	<b>LONGITUDE (WGS 84):</b> -105.10165706
<b>DATE STARTED - COMPLETED:</b> 10/27/22 - 10/27/22	<b>TOTAL WELL DEPTH (FT. BGS):</b> 12
	<b>DEPTH TO WATER (FT. BGS):</b> 5' ▼

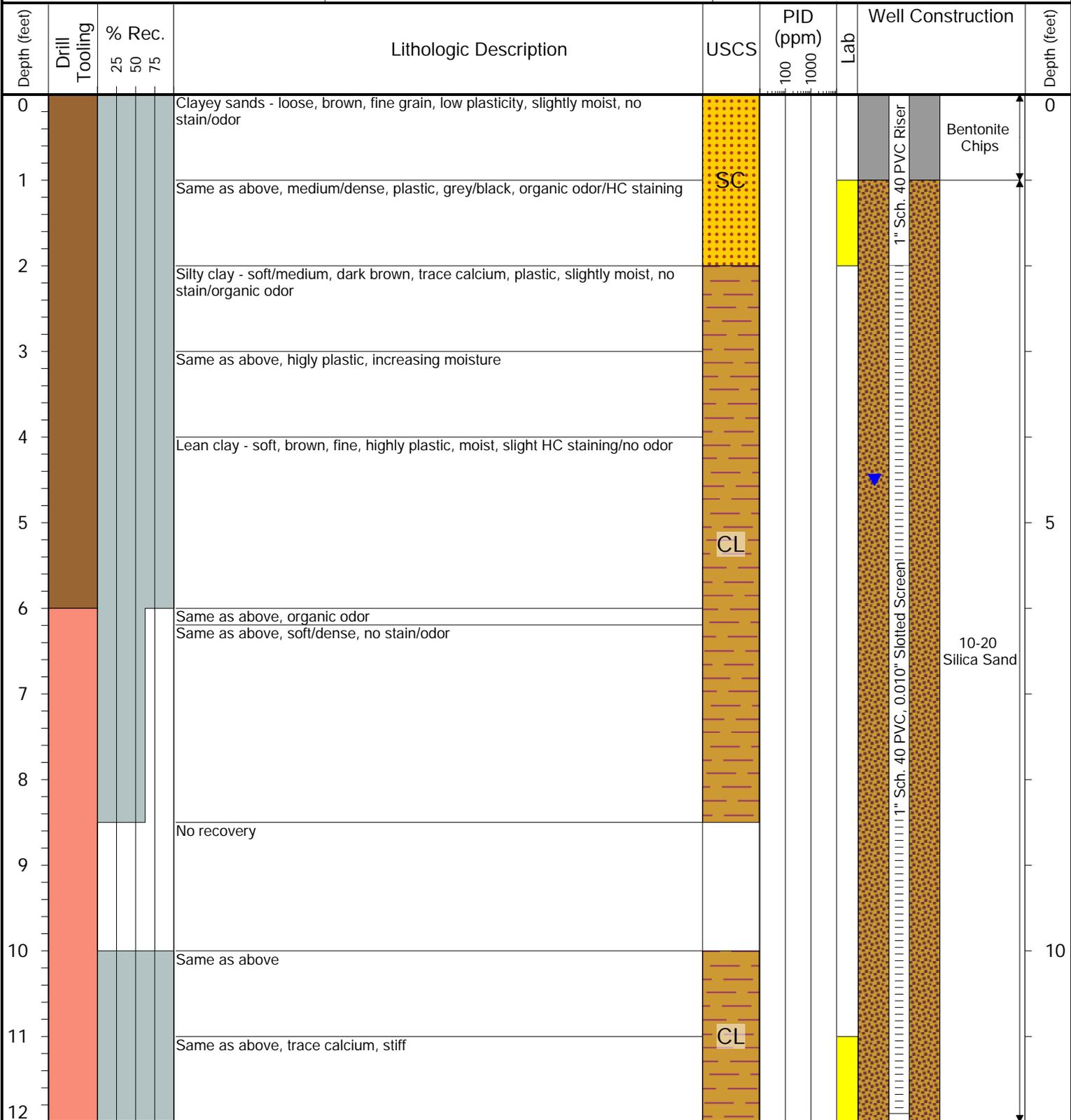


<b>Drilling / Sample Method:</b>		<b>Laboratory Sample Types:</b>		
Direct Push Technology	Hydrovac	Geotechnical Lab	Geotechnical & Analytical Chemistry Lab	
Grab Sample	Hand Auger	Analytical Chemistry Lab		



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<b>CLIENT:</b> Crestone Peak Resources Operating, LLC	<b>SITE NAME:</b> Harsch 42-27 Remediation Project #: 21354
<b>LOGGED BY:</b> Sierra Kirylo	<b>SOIL BORING ID:</b> MW03
<b>PROJECT MANAGER:</b> Sam Vogt	
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LOCATION:</b> SWNE Sec. 27-T2N-R69W
<b>DRILLING EQUIPMENT:</b> Hand Auger / AMS Power Probe 9580-VTR	<b>LATITUDE (WGS 84):</b> 40.112763802
<b>DRILL BIT SIZE (INCHES):</b> 2"	<b>LONGITUDE (WGS 84):</b> -105.1014173
<b>DATE STARTED - COMPLETED:</b> 10/27/22 - 10/27/22	<b>TOTAL WELL DEPTH (FT. BGS):</b> 12
	<b>DEPTH TO WATER (FT. BGS):</b> 4.5' ▼



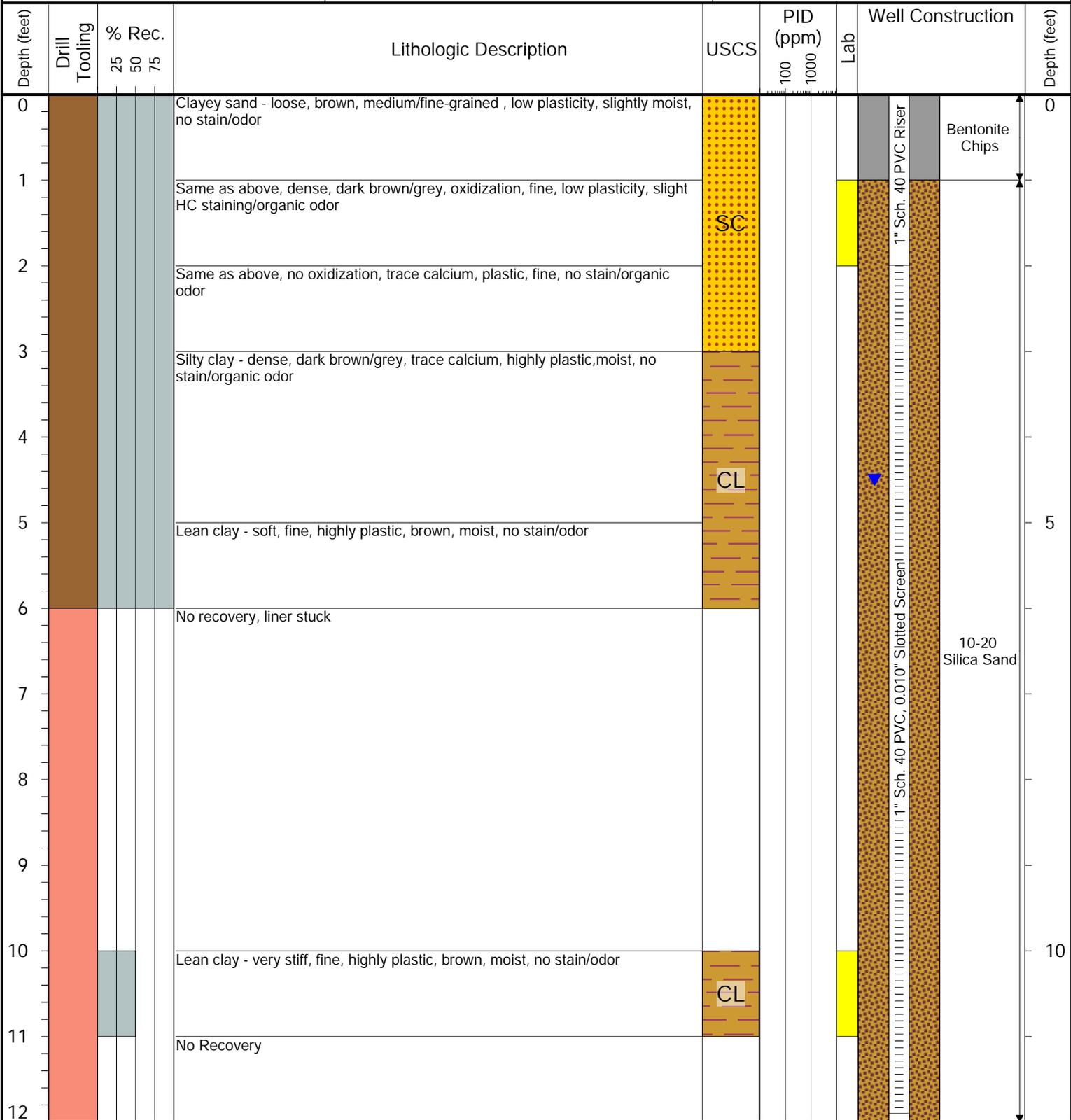
**Drilling / Sample Method:**

- Direct Push Technology
- Hydrovac
- Geotechnical Lab
- Analytical Chemistry Lab
- Grab Sample
- Hand Auger
- Geotechnical & Analytical Chemistry Lab



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Broomfield, CO 80020

<b>CLIENT:</b> Crestone Peak Resources Operating, LLC	<b>SITE NAME:</b> Harsch 42-27 Remediation Project #: 21354
<b>LOGGED BY:</b> Sierra Kirylo	<b>SOIL BORING ID:</b> MW04
<b>PROJECT MANAGER:</b> Sam Vogt	
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LOCATION:</b> SWNE Sec. 27-T2N-R69W
<b>DRILLING EQUIPMENT:</b> Hand Auger / AMS Power Probe 9580-VTR	<b>LATITUDE (WGS 84):</b> 40.112768459
<b>DRILL BIT SIZE (INCHES):</b> 2"	<b>LONGITUDE (WGS 84):</b> -105.10133984
<b>DATE STARTED - COMPLETED:</b> 10/27/22 - 10/27/22	<b>TOTAL WELL DEPTH (FT. BGS):</b> 12
	<b>DEPTH TO WATER (FT. BGS):</b> 4.5' ▼



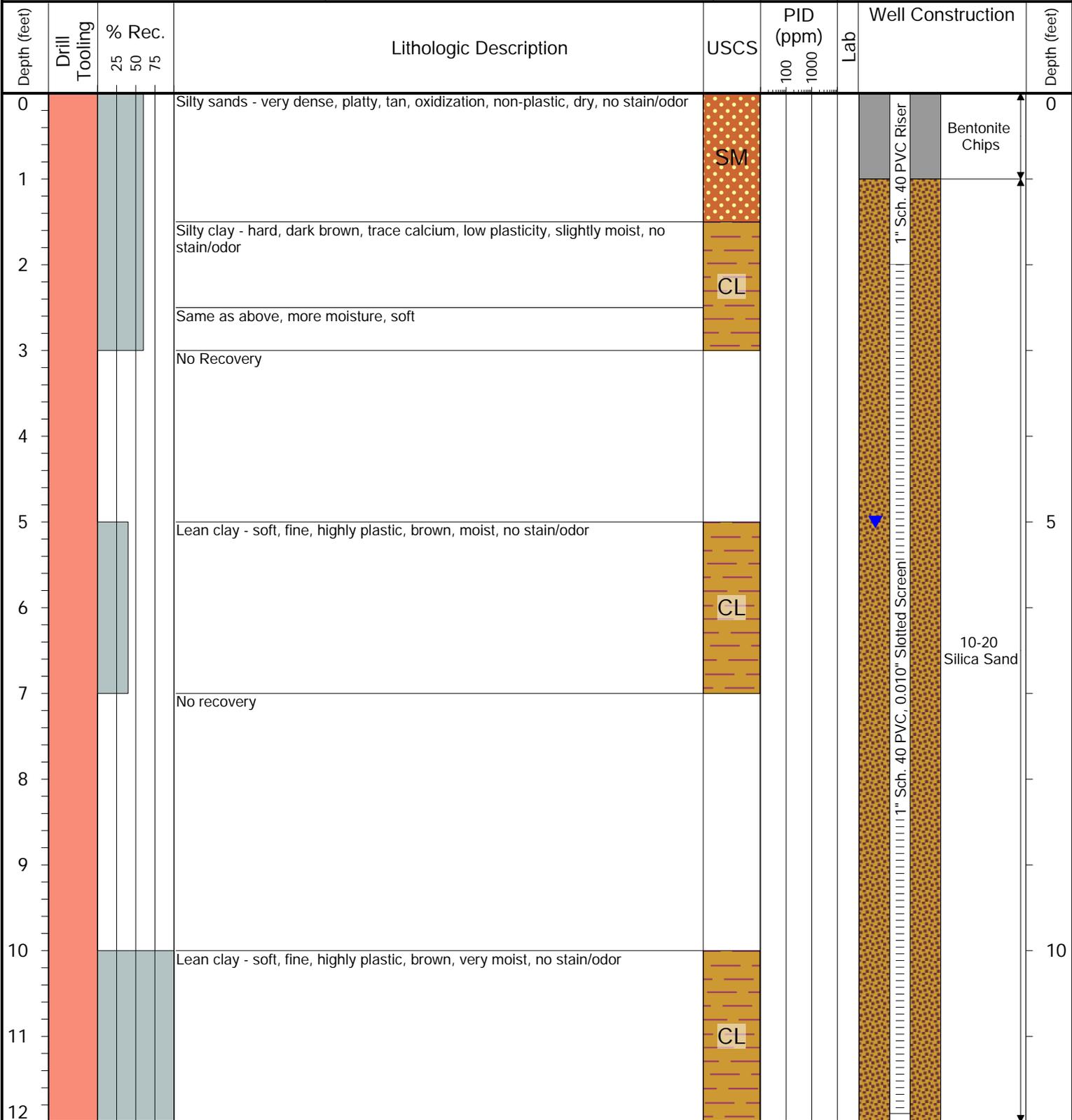
**Drilling / Sample Method:**

- Direct Push Technology
- Hydrovac
- Geotechnical Lab
- Geotechnical & Analytical Chemistry Lab
- Grab Sample
- Hand Auger
- Analytical Chemistry Lab



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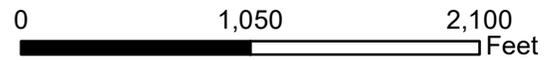
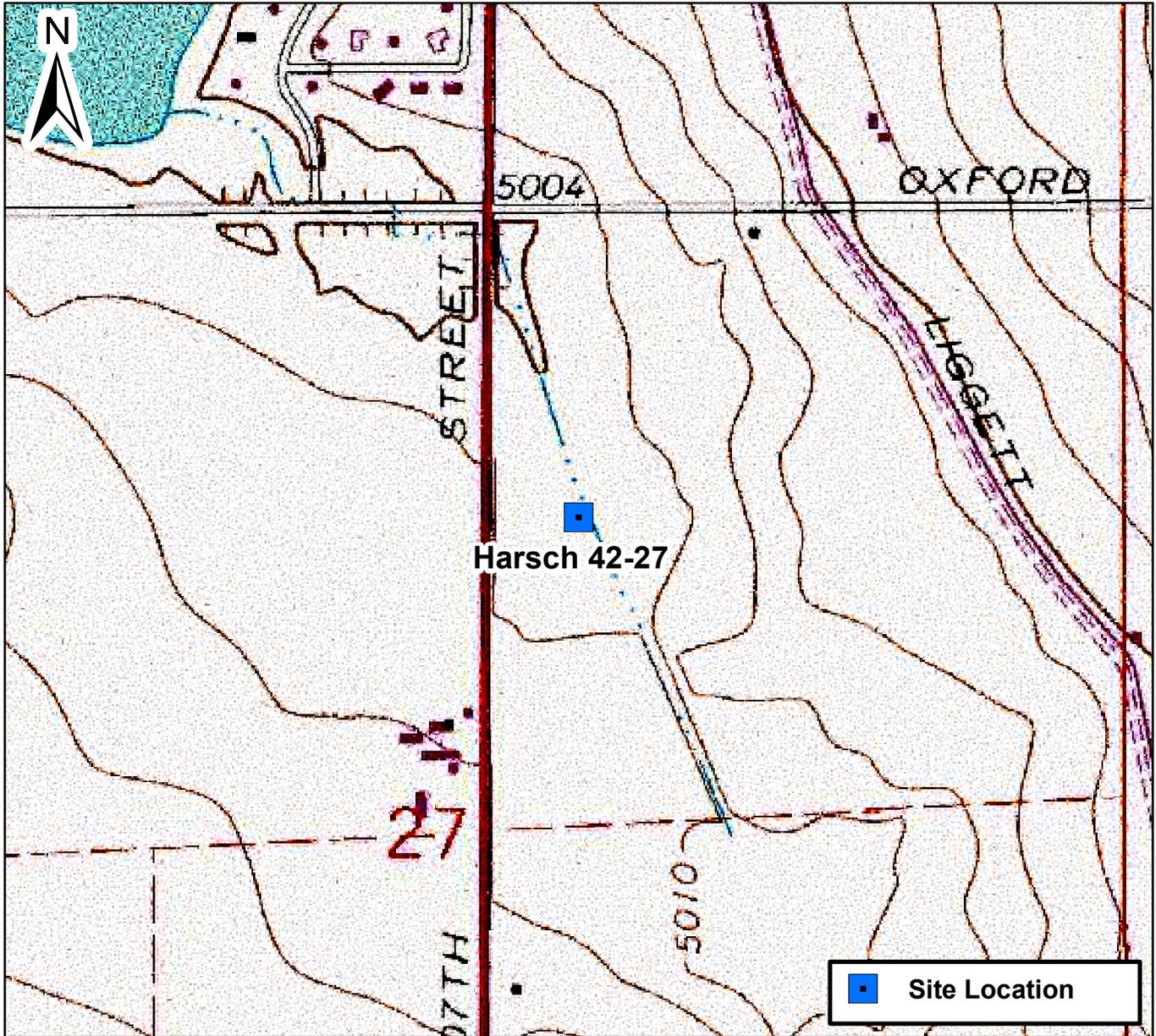
<b>CLIENT:</b> Crestone Peak Resources Operating, LLC	<b>SITE NAME:</b> Harsch 42-27 Remediation Project #: 21354
<b>LOGGED BY:</b> Sierra Kirylo	<b>SOIL BORING ID:</b> MW05
<b>PROJECT MANAGER:</b> Sam Vogt	
<b>DRILLING CONTRACTOR:</b> Tasman, Inc.	<b>LOCATION:</b> SWNE Sec. 27-T2N-R69W
<b>DRILLING EQUIPMENT:</b> AMS Power Probe 9580-VTR	<b>LATITUDE (WGS 84):</b> 40.112633762
	<b>LONGITUDE (WGS 84):</b> -105.101102471
<b>DRILL BIT SIZE (INCHES):</b> 2"	<b>TOTAL WELL DEPTH (FT. BGS):</b> 12
<b>DATE STARTED - COMPLETED:</b> 10/27/22 - 10/27/22	<b>DEPTH TO WATER (FT. BGS):</b> 5' ▼



**Drilling / Sample Method:**

- Direct Push Technology
- Hydrovac
- Geotechnical Lab
- Geotechnical & Analytical Chemistry Lab
- Grab Sample
- Hand Auger
- Analytical Chemistry Lab

# FIGURES



## Figure 1

Site Location Map  
 Harsch 42-27  
 NWNE Sec. 27-T2N-R69W  
 Boulder, Colorado





**Legend**

 Monitoring Well Location  
(Collected via Trimble GPS)

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

0 ft.                      30 ft.                      60 ft.



Image Source: Google Earth



DATE:	January 30, 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	S. Kirylo

 **TASMAN**

Tasman, Inc.  
6855 W. 119th Avenue  
Broomfield, Colorado 80020

**Crestone Peak Resources Operating, LLC**  
**Harsch 42-27**  
 NWNE Sec. 27-T2N-R69W  
 Boulder County, Colorado

Site Overview Map

FIGURE  
2

MW01@12'	
Compound	10/27/2022
Arsenic (mg/kg)	<b>2.06</b>
Barium (mg/kg)	<b>112</b>
Selenium (mg/kg)	<0.213
pH	8.21
SAR	<b>14.8</b>
EC (mmhos/cm)	<b>5.24</b>

MW02@12'	
Compound	10/27/2022
Arsenic (mg/kg)	<b>1.77</b>
Barium (mg/kg)	63.3
Selenium (mg/kg)	<0.213
pH	<b>8.50</b>
SAR	<b>13.8</b>
EC (mmhos/cm)	3.40

MW03@2'		MW03@12'	
Compound	10/27/2022	Compound	10/27/2022
Arsenic (mg/kg)	<b>2.04</b>	Arsenic (mg/kg)	<b>1.84</b>
Barium (mg/kg)	<b>92.7</b>	Barium (mg/kg)	77.0
Selenium (mg/kg)	<b>0.272</b>	Selenium (mg/kg)	<b>0.274</b>
pH	7.71	pH	8.07
SAR	<b>16.4</b>	SAR	<b>15.7</b>
EC (mmhos/cm)	<b>11.6</b>	EC (mmhos/cm)	<b>9.94</b>

MW04@2'		MW04@10-11'	
Compound	10/27/2022	Compound	10/27/2022
Arsenic (mg/kg)	<b>2.82</b>	Arsenic (mg/kg)	<b>2.11</b>
Barium (mg/kg)	80.9	Barium (mg/kg)	<b>112</b>
Selenium (mg/kg)	<b>0.336</b>	Selenium (mg/kg)	<b>0.363</b>
pH	8.21	pH	<b>8.31</b>
SAR	<b>16.2</b>	SAR	<b>19.5</b>
EC (mmhos/cm)	<b>8.89</b>	EC (mmhos/cm)	<b>9.11</b>

MW05@12'	
Compound	10/27/2022
Arsenic (mg/kg)	<b>1.95</b>
Barium (mg/kg)	70.0
Selenium (mg/kg)	<b>0.510</b>
pH	8.15
SAR	<b>18.0</b>
EC (mmhos/cm)	<b>9.43</b>

**Legend**

-  Monitoring Well Location – Below COGCC Table 915-1 Standards (Collected via Trimble GPS)
-  Monitoring Well Location – Exceeded COGCC Table 915-1 Standards (Collected via Trimble GPS)

COGCC Table 915-1 Soil Standards	
Compound	Date
Arsenic (mg/kg)	0.29
Barium (mg/kg)	82
Selenium (mg/kg)	0.26
pH	6 - 8.3
SAR	6
EC (mmhos/cm)	4

**Notes**

Organic and TPH concentrations did not exceed COGCC Table 915-1 Standards

All locations are approximate unless otherwise noted.

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

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

GPS – Global Positioning System

TPH – Total petroleum hydrocarbons

mg/kg – Milligrams per kilogram

mmhos/cm – Millimhos per centimeter

COGCC – Colorado Oil & Gas Conservation Commission

0 ft. 30 ft. 60 ft.



Image Source: Google Earth



DATE:	January 30, 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	S. Kirylo

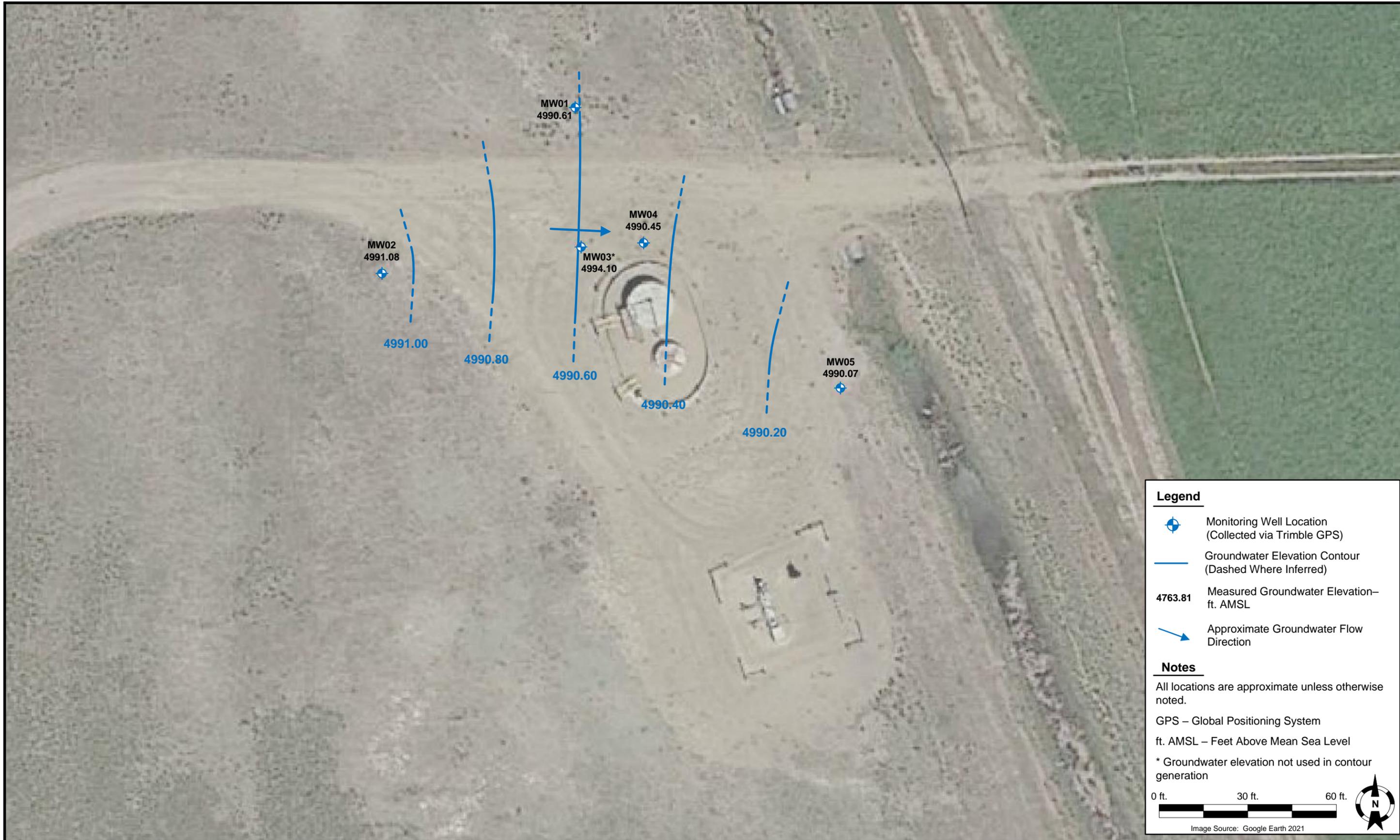


Tasman, Inc.  
6855 W. 119th Avenue  
Broomfield, Colorado 80020

**Crestone Peak Resources Operating, LLC**  
**Harsch 42-27**  
NWNE Sec. 27-T2N-R69W  
Boulder County, Colorado

Soil Analytical Exceedance Map  
(10/27/2022)

FIGURE  
3



**Legend**

-  Monitoring Well Location (Collected via Trimble GPS)
-  Groundwater Elevation Contour (Dashed Where Inferred)
- 4763.81** Measured Groundwater Elevation–ft. AMSL
-  Approximate Groundwater Flow Direction

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System  
 ft. AMSL – Feet Above Mean Sea Level  
 \* Groundwater elevation not used in contour generation

0 ft.                      30 ft.                      60 ft.



Image Source: Google Earth 2021

DATE:	January 26, 2023
DESIGNED BY:	S. Vogt
DRAWN BY:	L. Reed



**Tasman, Inc.**  
 6855 W. 119th Avenue  
 Broomfield, Colorado 80020

**Crestone Peak Resources Operating, LLC**  
**Harsch 42-27**  
 NWNE Sec. 27-T2N-R69W  
 Boulder County, Colorado

Groundwater Potentiometric  
 Surface Contour Map  
 (11/23/2022)

**FIGURE**  
 4

MW01	
Compound	11/23/2022
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	1,350
Sulfate (mg/L)	11,700
Total Dissolved Solids (mg/L)	13,100

MW02	
Compound	11/23/2022
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	NA
Sulfate (mg/L)	NA
Total Dissolved Solids (mg/L)	NA

MW03	
Compound	11/23/2022
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	2,580
Sulfate (mg/L)	13,500
Total Dissolved Solids (mg/L)	16,300

MW05	
Compound	11/23/2022
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	NA
Sulfate (mg/L)	NA
Total Dissolved Solids (mg/L)	NA

MW04	
Compound	11/23/2022
Benzene (µg/L)	<1.0
Toluene (µg/L)	<1.0
Ethylbenzene (µg/L)	<1.0
Total Xylenes (µg/L)	<2.0
Naphthalene (µg/L)	<1.0
1,2,4-Trimethylbenzene (µg/L)	<1.0
1,3,5-Trimethylbenzene (µg/L)	<1.0
Chloride (mg/L)	1,740
Sulfate (mg/L)	16,600
Total Dissolved Solids (mg/L)	18,700



**Legend**

Monitoring Well Location – Below COGCC Table 915-1 Standards (Collected via Trimble GPS)

COGCC Table 915-1 Groundwater Standards	
Compound	Date
Benzene (µg/L)	5
Toluene (µg/L)	560
Ethylbenzene (µg/L)	700
Total Xylenes (µg/L)	1,400
Naphthalene (µg/L)	140
1,2,4-Trimethylbenzene (µg/L)	67
1,3,5-Trimethylbenzene (µg/L)	67
Chloride (mg/L)	250 / 1.25 x Local Background
Sulfate (mg/L)	250 / 1.25 x Local Background
Total Dissolved Solids (mg/L)	1.25 x Local Background

**Notes**

All locations are approximate unless otherwise noted.

GPS – Global Positioning System

µg/L – micrograms per liter

mg/L – milligrams per liter

COGCC – Colorado Oil & Gas Conservation Commission

NA – Not Analyzed

0 ft.                      30 ft.                      60 ft.

Image Source: Google Earth

DATE: January 30, 2023

DESIGNED BY: S. Vogt

DRAWN BY: S. Kirylo

**Tasman, Inc.**  
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Broomfield, Colorado 80020

**Crestone Peak Resources Operating, LLC**  
**Harsch 42-27**  
NWNE Sec. 27-T2N-R69W  
Boulder County, Colorado

Groundwater Analytical Exceedance Map  
(11/23/2022)

**FIGURE**  
**5**

# TABLES

**TABLE 1  
HARSCH 42-27**



**SOIL SAMPLE LOCATIONS  
CRESTONE PEAK RESOURCES OPERATING, LLC**

Soil Sample Location	Date	PID Reading (ppm)	Latitude	Longitude	GPS PDOP Value	Lab (Y/N)
SB01@5-6	10/08/2021	7.4	40.112769	-105.101412	-	Y
SB02@4-5	10/08/2021	3.2	40.112755	-105.101507	-	Y
SB03@3-4	10/08/2021	2.6	40.112654	-105.101487	-	Y
SB03@4-5	10/08/2021	2.7	40.112654	-105.101487	-	Y
SB04@4-5	10/08/2021	1.6	40.112556	-105.101382	-	Y
BKG01@4-5	10/08/2021	-	40.112693	-105.101568	-	Y
SB01_GW	10/08/2021	-	40.112789	-105.101409	-	Y
BKG01_GW	10/08/2021	-	40.112693	-105.101568	-	Y
MW01@12'	10/27/2022	0.0	40.112893	-105.101424	-	Y
MW02@12'	10/27/2022	0.0	40.112739	-105.101657	-	Y
MW03@2'	10/27/2022	2.5	40.112764	-105.101417	-	Y
MW03@12'	10/27/2022	0.0	40.112764	-105.101417	-	Y
MW04@2'	10/27/2022	3.5	40.112768	-105.101340	-	Y
MW04@10'-11'	10/27/2022	0.0	40.112768	-105.101340	-	Y
MW05@12'	10/27/2022	0.0	40.112634	-105.101102	-	Y

**Notes:**

PID = Photoionization Detector

ppm = parts per million

HC = Hydrocarbon

GPS = Global Positioning System

PDOP = Position Dilution of Precision

- = Not Applicable

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**TABLE 2**  
**HARSCH 42-27**  
**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)
<b>COGCC Organic Compounds in Soils <sup>(1)</sup></b>		<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>0.0038</b>	<b>500</b>			<b>0.0081</b>	<b>0.0087</b>
<b>COGCC Organic Compounds in Soils <sup>(2)</sup></b>		<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>2</b>	<b>500</b>			<b>30</b>	<b>27</b>
SB01@5-6	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB02@4-5	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB03@3-4	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB03@4-5	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
SB04@4-5	10/08/2021	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50			<0.0050	<0.0050
MW01@12'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW02@12'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW03@12'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW03@2'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW04@10-11'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW04@2'	10/27/2022	<0.0020	<0.0050	<0.0050	<0.010	<0.0038	<0.50	<50	<50	<0.0050	<0.0050
MW05@12'	10/27/2022	<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: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from COGCC Table 915-1: Organic Compounds in Soils - 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: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

- = Constituent not analyzed

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**TABLE 3**  
**HARSCH 42-27**  
**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)
<b>COGCC Organic Compounds in Soils <sup>(1)</sup></b>		<b>0.55</b>	<b>5.8</b>	<b>0.011</b>	<b>0.3</b>	<b>2.9</b>	<b>0.24</b>	<b>9</b>	<b>0.96</b>	<b>8.9</b>	<b>0.54</b>	<b>0.98</b>	<b>0.006</b>	<b>0.019</b>	<b>1.3</b>
<b>COGCC Organic Compounds in Soils <sup>(2)</sup></b>		<b>360</b>	<b>1,800</b>	<b>1.1</b>	<b>1.1</b>	<b>11</b>	<b>0.11</b>	<b>110</b>	<b>0.11</b>	<b>240</b>	<b>240</b>	<b>1.1</b>	<b>18</b>	<b>24</b>	<b>180</b>
SB01@5-6	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB02@4-5	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB03@3-4	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB03@4-5	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
SB04@4-5	10/08/2021	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
MW01@12'	10/27/2022	<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
MW02@12'	10/27/2022	<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
MW03@12'	10/27/2022	<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
MW03@2'	10/27/2022	<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
MW04@10-11'	10/27/2022	<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
MW04@2'	10/27/2022	<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
MW05@12'	10/27/2022	<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: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations (Effective January 15, 2021)

(2) Standards for soil are taken from COGCC Table 915-1: Organic Compounds in Soils - 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 = Dibenz(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: Organic Compounds in Soils - Protection of Groundwater Soil Screening Level Concentrations

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1: Organic Compounds in Soils - Residential Soil Screening Level Concentrations

- = Constituent not analyzed

**TABLE 3  
HARSCH 42-27  
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 Organic Compounds in Soils <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 Organic Compounds in Soils <sup>(2)</sup>		360	1,800	1.1	1.1	11	0.11	110	0.11	240	240	1.1	18	24	180

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**TABLE 4**  
**HARSCH 42-27**  
**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)
<b>COGCC Metals in Soils <sup>(1)</sup></b>		<b>0.29</b>	<b>82</b>	<b>0.38</b>	<b>0.00067</b>	<b>46</b>	<b>14</b>	<b>26</b>	<b>0.26</b>	<b>0.8</b>	<b>370</b>
<b>COGCC Metals in Soils <sup>(2)</sup></b>		<b>0.68</b>	<b>15,000</b>	<b>71</b>	<b>0.3</b>	<b>3,100</b>	<b>400</b>	<b>1,500</b>	<b>390</b>	<b>390</b>	<b>23,000</b>
SB01@5-6	10/08/2021	3.53*	117*	0.299	<0.30	18.8	14.5*	18.8	1.32	0.109	78.6
SB02@4-5	10/08/2021	5.07*	116*	0.254	<0.30	18.3	16.7*	16.1	1.40	0.101	74.6
SB03@3-4	10/08/2021	5.73*	65.7	0.284	<0.30	16.7	15.8*	18.0	0.988*	0.106	74.6
SB03@4-5	10/08/2021	6.81*	75.6	0.280	<0.30	17.9	14.6*	18.5	1.05*	0.0986	83.0
SB04@4-5	10/08/2021	6.41*	101*	0.288	<0.30	18.9	15.2*	18.9	1.37	0.102	90.6
MW01@12'	10/27/2022	2.06	112	0.309	<0.30	10.6	12.4	10.7	<0.213	0.0677	40.8
MW02@12'	10/27/2022	1.77	63.3	0.282	<0.30	9.90	11.5	10.7	<0.213	0.0708	38.1
MW03@12'	10/27/2022	1.84	77.0	0.307	<0.30	10.5	11.7	10.3	0.274	0.0668	42.6
MW03@2'	10/27/2022	2.04	92.7	0.333	<0.30	9.35	10.4	8.86	0.272	0.0718	32.9
MW04@10-11'	10/27/2022	2.11	112	0.330	<0.30	11.3	12.3	11.3	0.363	0.0686	43.4
MW04@2'	10/27/2022	2.82	80.9	0.262	<0.30	9.87	10.8	8.79	0.336	0.0692	32.2
MW05@12'	10/27/2022	1.95	70.0	0.334	<0.30	11.0	12.2	10.8	0.510	0.0932	42.8
<b>BACKGROUND</b>											
BKG01@4-5	10/08/2021	5.61	94.9	<0.251	<0.30	16.3	13.4	16.9	1.04	0.0725	71.2

**Notes:**

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

(2) Standards for soil are taken from COGCC Table 915-1: Metals in Soils - 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: Metals in Soils - Protection of Groundwater Soil Screening Level Concentrations

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1: Metals in Soils - Residential Soil Screening Level Concentrations

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

\* Result exceeded the COGCC Table 915-1 standard, but was within site-specific 1.25x background multiplier levels

- = Constituent not analyzed

10/29/20 [date] = Data collected by 3rd-party consultant(s)

TABLE 5  
HARSCH 42-27



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

Soil Sample Location	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
<b>COGCC Soil Suitability for Reclamation<sup>(1)</sup></b>		<b>6 - 8.3</b>	<b>&lt; 6</b>	<b>&lt; 4</b>	<b>2</b>
SB01@5-6	10/08/2021	<b>8.34</b>	12.1*	4.21*	0.499
SB02@4-5	10/08/2021	8.16	11.9*	7.96*	0.209
SB03@3-4	10/08/2021	8.27	13.8*	<b>11.5</b>	0.357
SB03@4-5	10/08/2021	8.25	13.8*	<b>10.8</b>	0.335
SB04@4-5	10/08/2021	8.25	13.3*	<b>10.3</b>	0.284
MW01@12'	10/27/2022	8.21	<b>14.8</b>	<b>5.24</b>	0.817
MW02@12'	10/27/2022	<b>8.50</b>	<b>13.8</b>	3.40	1.47
MW03@12'	10/27/2022	8.07	<b>15.7</b>	<b>9.94</b>	1.37
MW03@2'	10/27/2022	7.71	<b>16.4</b>	<b>11.6</b>	0.567
MW04@10-11'	10/27/2022	<b>8.31</b>	<b>19.5</b>	<b>9.11</b>	1.29
MW04@2'	10/27/2022	8.21	<b>16.2</b>	<b>8.89</b>	0.493
MW05@12'	10/27/2022	8.15	<b>18.0</b>	<b>9.43</b>	1.33
<b>BACKGROUND</b>					
BKG01@4-5	10/08/2021	8.29	15.5	8.58	0.325

**Notes:**

(1) Standards for soil are taken from COGCC Table 915-1: Soil Suitability for Reclamation (Effective January 15, 2021)

COGCC = Colorado Oil and Gas Conservation Commission

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

mmhos/cm = millmhos per centimeter

mg/L = milligrams per liter

pH = Potential of Hydrogen

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1: Soil Suitability for Reclamation Concentrations

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

- = Constituent not analyzed

10/29/20 [date] = Data collected by 3rd-party consultant(s)

**TABLE 6  
HARSCH 42-27  
GROUNDWATER ANALYTICAL DATA  
CRESTONE PEAK RESOURCES OPERATING, LLC**

Groundwater Sample ID	Date	Benzene (µg/L)	Toluene (µg/L)	Ehtylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	TDS (mg/L)
<b>COGCC Organic Compounds in Groundwater and Groundwater Inorganic Parameters <sup>(1)</sup></b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1,400</b>	<b>140</b>	<b>67</b>	<b>67</b>	<b>250 or &lt;1.25 x Background</b>	<b>250 or &lt;1.25 x Background</b>	<b>&lt;1.25 x Background</b>
SB01_GW	10/08/2021	88	27	2.1	42	<1.0	5.3	4	14,800	1,180	10,400
BKG01_GW	10/08/2021	-	-	-	-	-	-	-	27,900	1,760	17,800
MW01	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,350	11,700	13,100
MW02	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	-	-	-
MW03	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2,580	13,500	16,300
MW04	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	1,740	16,600	18,700
MW05	11/23/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	-	-	-

**Notes:**

(1) Standards for groundwater are taken from COGCC Table 915-1: Organic Compounds in Groundwater and Groundwater Inorganic Parameters (Effective January 15, 2021)

COGCC = Colorado Oil and Gas Conservation Commission

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

µg/L = micrograms per liter

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

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

TDS = Total Dissolved Solids

**BOLD** = Analytical result is in exceedance of COGCC Table 915-1: Organic Compounds in Groundwater and Groundwater Inorganic Parameters

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

- = Constituent not analyzed

10/29/20 [date] = Data collected by 3rd-party consultant(s)

TABLE 7  
HARSCH 42-27



GROUNDWATER ELEVATION DATA  
CRESTONE PEAK RESOURCES OPERATING, LLC

Groundwater Sample ID	Date	Top of Casing Elevation (ft. AMSL)	Total Depth (ft.)	Depth to Water (ft.)	Depth to LNAPL (ft.)	LNAPL Thickness (ft.)	Groundwater Elevation* (ft. AMSL)
MW01	11/23/2022	4,998.50	10.45	7.89	ND	ND	4,990.61
MW02	11/23/2022	4,998.65	11.10	7.57	ND	ND	4,991.08
MW03	11/23/2022	4,999.83	10.15	5.73	ND	ND	4,994.10
MW04	11/23/2022	4,999.70	11.34	9.25	ND	ND	4,990.45
MW05	11/23/2022	5,000.69	11.14	10.62	ND	ND	4,990.07

**Notes:**

\* Groundwater elevation was corrected for product thickness (when present) using the following calculation:  
Groundwater elevation = (TOC Elevation - Measured Depth to Water)+(LNAPL Thickness in Well x LNAPL Relative Density)

LNAPL relative density was estimated to be approximately 0.75

**Definitions:**

ft. = feet

AMSL = Above Mean Sea Level

LNAPL = Light Non-Aqueous Phase Liquid

10/29/20 [date] = Data collected by 3rd-party consultant(s)

ND = Not detected

# **LABORATORY ANALYTICAL DATA**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 07, 2022

Sam Vogt

Civitas Resources

650 Southgate Drive

Windsor, CO 80550

RE: Harsch 42-27

Work Order #2210530

Enclosed are the results of analyses for samples received by Summit Scientific on 10/27/22 17:30. 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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW03@2'	2210530-01	Soil	10/27/22 10:00	10/27/22 17:30
MW04@2'	2210530-02	Soil	10/27/22 10:20	10/27/22 17:30
MW04@10-11'	2210530-03	Soil	10/27/22 13:55	10/27/22 17:30
MW03@12'	2210530-04	Soil	10/27/22 14:35	10/27/22 17:30
MW01@12'	2210530-05	Soil	10/27/22 15:20	10/27/22 17:30
MW02@12'	2210530-06	Soil	10/27/22 15:55	10/27/22 17:30
MW05@12'	2210530-07	Soil	10/27/22 16:25	10/27/22 17:30

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

2210530

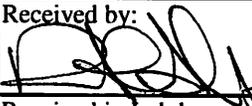
741 Corporate Circle Suite I ♦ Golden, Colorado 80401  
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: CIVITAS/Tasman  
Address: 6855 W. 119th St  
City/State/Zip: Broomfield, CO 80020  
Phone: 610-405-9078 Fax:  
Sampler Name: Sierra Kiryl0

Project Manager: Sam Vogt, Jacob Evans  
E-Mail: SVogt@tasman-geo.com, j.evans@citiresources.com  
Project Name: Harsch 42-27  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For: Table 915										Special Instructions		
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)												
MW03e2'	10-27-22	1000	2			X			X			X	915 Table										
MW04e2'		1020																					
MW04e10'-11'		1355																					
MW03e12'		1435																					
MW01e12'		1520																					
MW02e12'		1555																					
MW05e12'	↓	1625	↓						↓			↓											

Relinquished by: 	Date/Time: 10-27-22 1730	Received by:	Date/Time:	Turn Around Time (Check)	Notes: Methods: PH, EC, SAR → sat. paste Boron → hot water	
Relinquished by: Tasman LockBox	Date/Time: 102722 1730	Received by: 	Date/Time: 102722 1730	Same Day <input type="checkbox"/>		72 Hours <input type="checkbox"/>
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	24 Hours <input type="checkbox"/>		Standard <input checked="" type="checkbox"/>
				48 Hours <input type="checkbox"/>	Sample Integrity:	
				Temperature Upon Receipt: 8.6	Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>	

# S<sub>2</sub>

S2 Work Order# 2210530

## Sample Receipt Checklist

Client: Civilas/Tasman Client Project ID: Harsch 42-27

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

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

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

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <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.	<input checked="" type="checkbox"/>			on ice
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Are samples due within 48 hours present?		<input checked="" type="checkbox"/>		
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			<input checked="" type="checkbox"/>	
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>	<input checked="" type="checkbox"/>			
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
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.			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<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.

AS  
Custodian Printed Name

10/27/22 1730  
Date/Time



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		97.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		38.3 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		82.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.3 %	40-150		"	"	"	"	

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.567</b>	0.0100	mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 10:00**

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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.04	0.254	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Barium	92.7	0.509	"	"	"	"	"	"	
Cadmium	0.333	0.254	"	"	"	"	"	"	
Copper	9.35	0.509	"	"	"	"	"	"	
Lead	10.4	0.254	"	"	"	"	"	"	
Nickel	8.86	0.509	"	"	"	"	"	"	
Selenium	ND	0.331	"	"	"	"	"	"	
Silver	0.0718	0.0254	"	"	"	"	"	"	
Zinc	32.9	0.509	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	237	0.0636	mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	930	0.0636	"	"	"	"	"	"	
Sodium	2510	0.0636	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.4	0.00100	units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Date Sampled: 10/27/22 10:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>78.6</b>	%	1	BFJ0796	10/28/22	10/28/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>11.6</b>	0.0100	mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.71</b>		pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		91.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.8 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		42.5 %	40-150		"	"	"	"	

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.493</b>	0.0100	mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 10:20**

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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.82	0.234	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Barium	80.9	0.468	"	"	"	"	"	"	
Cadmium	0.262	0.234	"	"	"	"	"	"	
Copper	9.87	0.468	"	"	"	"	"	"	
Lead	10.8	0.234	"	"	"	"	"	"	
Nickel	8.79	0.468	"	"	"	"	"	"	
Selenium	0.336	0.304	"	"	"	"	"	"	
Silver	0.0692	0.0234	"	"	"	"	"	"	
Zinc	32.2	0.468	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	84.2	0.0585	mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	586	0.0585	"	"	"	"	"	"	
Sodium	1910	0.0585	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 10:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.2	0.00100	units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Date Sampled: 10/27/22 10:20

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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>85.5</b>	%	1	BFJ0797	10/28/22	10/28/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>8.89</b>	0.0100	mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.21</b>		pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		94.5 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		79.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.3 %	40-150		"	"	"	"	

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.29</b>	0.0100	mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.11	0.249	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Barium	112	0.497	"	"	"	"	"	"	
Cadmium	0.330	0.249	"	"	"	"	"	"	
Copper	11.3	0.497	"	"	"	"	"	"	
Lead	12.3	0.249	"	"	"	"	"	"	
Nickel	11.3	0.497	"	"	"	"	"	"	
Selenium	0.363	0.323	"	"	"	"	"	"	
Silver	0.0686	0.0249	"	"	"	"	"	"	
Zinc	43.4	0.497	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 13:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 13:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	67.5	0.0622	mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	531	0.0622	"	"	"	"	"	"	
Sodium	2180	0.0622	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 13:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	19.5	0.00100	units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Date Sampled: 10/27/22 13:55

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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>80.4</b>	%	1	BFJ0797	10/28/22	10/28/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>9.11</b>	0.0100	mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.31</b>		pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

Summit Scientific

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Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		91.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.0 %	40-150		"	"	"	"	

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.37</b>	0.0100	mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 14:35**

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

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.84	0.249	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Barium	77.0	0.498	"	"	"	"	"	"	
Cadmium	0.307	0.249	"	"	"	"	"	"	
Copper	10.5	0.498	"	"	"	"	"	"	
Lead	11.7	0.249	"	"	"	"	"	"	
Nickel	10.3	0.498	"	"	"	"	"	"	
Selenium	ND	0.324	"	"	"	"	"	"	
Silver	0.0668	0.0249	"	"	"	"	"	"	
Zinc	42.6	0.498	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 14:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 14:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	330	0.0623	mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	665	0.0623	"	"	"	"	"	"	
Sodium	2150	0.0623	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 14:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	15.7	0.00100	units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Date Sampled: 10/27/22 14:35

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

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>80.3</b>	%	1	BFJ0797	10/28/22	10/28/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>9.94</b>	0.0100	mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.07</b>		pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/27/22 15:20**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		84.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.1 %	40-150		"	"	"	"	

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.817</b>	0.0100	mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 15:20**

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

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.06	0.243	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Barium	112	0.487	"	"	"	"	"	"	
Cadmium	0.309	0.243	"	"	"	"	"	"	
Copper	10.6	0.487	"	"	"	"	"	"	
Lead	12.4	0.243	"	"	"	"	"	"	
Nickel	10.7	0.487	"	"	"	"	"	"	
Selenium	ND	0.316	"	"	"	"	"	"	
Silver	0.0677	0.0243	"	"	"	"	"	"	
Zinc	40.8	0.487	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 15:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 15:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	88.1	0.0608	mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	213	0.0608	"	"	"	"	"	"	
Sodium	1130	0.0608	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 15:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	14.8	0.00100	units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Date Sampled: 10/27/22 15:20

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

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>82.2</b>	%	1	BFJ0797	10/28/22	10/28/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>5.24</b>	0.0100	mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.21</b>		pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW02@12'**  
**2210530-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 15:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		97.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW02@12'**  
**2210530-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		81.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.3 %	40-150		"	"	"	"	

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.47</b>	0.0100	mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 15:55**

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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW02@12'**  
**2210530-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.77	0.241	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Barium	63.3	0.482	"	"	"	"	"	"	
Cadmium	0.282	0.241	"	"	"	"	"	"	
Copper	9.90	0.482	"	"	"	"	"	"	
Lead	11.5	0.241	"	"	"	"	"	"	
Nickel	10.7	0.482	"	"	"	"	"	"	
Selenium	ND	0.313	"	"	"	"	"	"	
Silver	0.0708	0.0241	"	"	"	"	"	"	
Zinc	38.1	0.482	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 15:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 15:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.7	0.0602	mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	117	0.0602	"	"	"	"	"	"	
Sodium	747	0.0602	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 15:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.8	0.00100	units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Date Sampled: 10/27/22 15:55

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

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW02@12'**  
**2210530-06 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>83.0</b>	%	1	BFJ0797	10/28/22	10/28/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>3.40</b>	0.0100	mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.50</b>		pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BFK0053	11/02/22	11/03/22	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: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BFK0054	"	11/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		75.2 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		77.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.9 %	40-150		"	"	"	"	

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.33</b>	0.0100	mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 16:25**

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

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.95	0.248	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Barium	70.0	0.496	"	"	"	"	"	"	
Cadmium	0.334	0.248	"	"	"	"	"	"	
Copper	11.0	0.496	"	"	"	"	"	"	
Lead	12.2	0.248	"	"	"	"	"	"	
Nickel	10.8	0.496	"	"	"	"	"	"	
Selenium	0.510	0.322	"	"	"	"	"	"	
Silver	0.0932	0.0248	"	"	"	"	"	"	
Zinc	42.8	0.496	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 16:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 16:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	75.4	0.0619	mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	618	0.0619	"	"	"	"	"	"	
Sodium	2160	0.0619	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 16:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	18.0	0.00100	units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Date Sampled: 10/27/22 16:25

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

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>80.7</b>	%	1	BFJ0797	10/28/22	10/28/22	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>9.43</b>	0.0100	mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.15</b>		pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

#### Summit Scientific

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

#### Batch BFK0053 - EPA 5030 Soil MS

##### Blank (BFK0053-BLK1)

Prepared & Analyzed: 11/02/22

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0349		"	0.0400		87.3	50-150				
<i>Surrogate: Toluene-d8</i>	0.0445		"	0.0400		111	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0415		"	0.0400		104	50-150				

##### LCS (BFK0053-BS1)

Prepared & Analyzed: 11/02/22

Benzene	0.0721	0.0020	mg/kg	0.100		72.1	70-130				
Toluene	0.0707	0.0050	"	0.100		70.7	70-130				
Ethylbenzene	0.0728	0.0050	"	0.100		72.8	70-130				
m,p-Xylene	0.147	0.010	"	0.200		73.5	70-130				
o-Xylene	0.0760	0.0050	"	0.100		76.0	70-130				
1,2,4-Trimethylbenzene	0.0822	0.0050	"	0.100		82.2	70-130				
1,3,5-Trimethylbenzene	0.0824	0.0050	"	0.100		82.4	70-130				
Naphthalene	0.112	0.0038	"	0.100		112	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0342		"	0.0400		85.4	50-150				
<i>Surrogate: Toluene-d8</i>	0.0445		"	0.0400		111	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0413		"	0.0400		103	50-150				

##### Matrix Spike (BFK0053-MS1)

Source: 2210530-01

Prepared & Analyzed: 11/02/22

Benzene	0.0711	0.0020	mg/kg	0.100	ND	71.1	70-130				
Toluene	0.0733	0.0050	"	0.100	ND	73.3	70-130				
Ethylbenzene	0.0736	0.0050	"	0.100	ND	73.6	70-130				
m,p-Xylene	0.170	0.010	"	0.200	ND	84.8	70-130				
o-Xylene	0.0751	0.0050	"	0.100	ND	75.1	70-130				
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130				
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130				
Naphthalene	0.116	0.0038	"	0.100	ND	116	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0344		"	0.0400		86.1	50-150				
<i>Surrogate: Toluene-d8</i>	0.0417		"	0.0400		104	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0424		"	0.0400		106	50-150				

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

**Summit Scientific**

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

**Batch BFK0053 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BFK0053-MSD1)</b>	<b>Source: 2210530-01</b>			<b>Prepared &amp; Analyzed: 11/02/22</b>						
Benzene	0.0736	0.0020	mg/kg	0.100	ND	73.6	70-130	3.48	30	
Toluene	0.0781	0.0050	"	0.100	ND	78.1	70-130	6.30	30	
Ethylbenzene	0.0759	0.0050	"	0.100	ND	75.9	70-130	3.05	30	
m,p-Xylene	0.185	0.010	"	0.200	ND	92.5	70-130	8.65	30	
o-Xylene	0.0745	0.0050	"	0.100	ND	74.5	70-130	0.762	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	4.26	30	
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130	7.83	30	
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130	9.08	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0378</i>		<i>"</i>	<i>0.0400</i>		<i>94.4</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0442</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0437</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>50-150</i>			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

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

**Batch BFK0054 - EPA 3550A**

**Blank (BFK0054-BLK1)**

Prepared & Analyzed: 11/02/22

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.4		"	12.5	108	30-150					

**LCS (BFK0054-BS1)**

Prepared & Analyzed: 11/02/22

C10-C28 (DRO)	457	50	mg/kg	500	91.5	70-130					
Surrogate: <i>o</i> -Terphenyl	12.4		"	12.5	99.0	30-150					

**Matrix Spike (BFK0054-MS1)**

Source: 2210516-01

Prepared & Analyzed: 11/02/22

C10-C28 (DRO)	483	50	mg/kg	500	44.4	87.7	70-130				
Surrogate: <i>o</i> -Terphenyl	13.0		"	12.5	104	30-150					

**Matrix Spike Dup (BFK0054-MSD1)**

Source: 2210516-01

Prepared & Analyzed: 11/02/22

C10-C28 (DRO)	429	50	mg/kg	500	44.4	76.9	70-130	11.9	20		
Surrogate: <i>o</i> -Terphenyl	12.3		"	12.5	98.7	30-150					

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

**Summit Scientific**

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

**Batch BFJ0787 - EPA 5030 Soil MS**

**Blank (BFJ0787-BLK1)**

Prepared & Analyzed: 10/31/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0360</i>		<i>"</i>	<i>0.0333</i>		<i>108</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0304</i>		<i>"</i>	<i>0.0333</i>		<i>91.2</i>		<i>40-150</i>		

**LCS (BFJ0787-BS1)**

Prepared & Analyzed: 10/31/22

Acenaphthene	0.0362	0.00500	mg/kg	0.0333	109	31-137
Anthracene	0.0369	0.00500	"	0.0333	111	30-120
Benzo (a) anthracene	0.0315	0.00500	"	0.0333	94.6	30-120
Benzo (a) pyrene	0.0336	0.00500	"	0.0333	101	30-120
Benzo (b) fluoranthene	0.0347	0.00500	"	0.0333	104	30-120
Benzo (k) fluoranthene	0.0380	0.00500	"	0.0333	114	30-120
Chrysene	0.0331	0.00500	"	0.0333	99.2	30-120
Dibenz (a,h) anthracene	0.0334	0.00500	"	0.0333	100	30-120
Fluoranthene	0.0391	0.00500	"	0.0333	117	30-120
Fluorene	0.0367	0.00500	"	0.0333	110	30-120
Indeno (1,2,3-cd) pyrene	0.0290	0.00500	"	0.0333	87.1	30-120
Pyrene	0.0330	0.00500	"	0.0333	99.1	35-142
1-Methylnaphthalene	0.0340	0.00500	"	0.0333	102	35-142
2-Methylnaphthalene	0.0365	0.00500	"	0.0333	109	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0338</i>		<i>"</i>	<i>0.0333</i>	<i>101</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0400</i>		<i>"</i>	<i>0.0333</i>	<i>120</i>	<i>40-150</i>

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

**Summit Scientific**

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

**Batch BFJ0787 - EPA 5030 Soil MS**

<b>Matrix Spike (BFJ0787-MS1)</b>		<b>Source: 2210321-03</b>			Prepared: 10/31/22		Analyzed: 11/01/22	
Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.4	31-137	
Anthracene	0.0171	0.00500	"	0.0333	ND	51.2	30-120	
Benzo (a) anthracene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	
Benzo (b) fluoranthene	0.0234	0.00500	"	0.0333	ND	70.2	30-120	
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.2	30-120	
Chrysene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	
Dibenz (a,h) anthracene	0.0134	0.00500	"	0.0333	ND	40.1	30-120	
Fluoranthene	0.0179	0.00500	"	0.0333	ND	53.8	30-120	
Fluorene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.6	30-120	
Pyrene	0.0187	0.00500	"	0.0333	ND	56.2	35-142	
1-Methylnaphthalene	0.0165	0.00500	"	0.0333	ND	49.4	15-130	
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.7	15-130	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0167</i>		"	<i>0.0333</i>		<i>50.2</i>	<i>40-150</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0183</i>		"	<i>0.0333</i>		<i>54.8</i>	<i>40-150</i>	

<b>Matrix Spike Dup (BFJ0787-MSD1)</b>		<b>Source: 2210321-03</b>			Prepared: 10/31/22		Analyzed: 11/01/22	
Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.7	31-137	21.8 30
Anthracene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	28.9 30
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	ND	72.4	30-120	24.0 30
Benzo (a) pyrene	0.0258	0.00500	"	0.0333	ND	77.4	30-120	30.5 30 QR-02
Benzo (b) fluoranthene	0.0301	0.00500	"	0.0333	ND	90.2	30-120	25.0 30
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.6	30-120	21.5 30
Chrysene	0.0214	0.00500	"	0.0333	ND	64.1	30-120	25.6 30
Dibenz (a,h) anthracene	0.0182	0.00500	"	0.0333	ND	54.6	30-120	30.5 30 QR-02
Fluoranthene	0.0222	0.00500	"	0.0333	ND	66.7	30-120	21.4 30
Fluorene	0.0243	0.00500	"	0.0333	ND	72.9	30-120	24.9 30
Indeno (1,2,3-cd) pyrene	0.0156	0.00500	"	0.0333	ND	46.9	30-120	14.4 30
Pyrene	0.0225	0.00500	"	0.0333	ND	67.6	35-142	18.3 30
1-Methylnaphthalene	0.0237	0.00500	"	0.0333	ND	71.2	15-130	36.2 50
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130	26.1 50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0237</i>		"	<i>0.0333</i>		<i>71.0</i>	<i>40-150</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0235</i>		"	<i>0.0333</i>		<i>70.6</i>	<i>40-150</i>	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

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

**Batch BFJ0794 - EPA 3050B**

**Blank (BFJ0794-BLK1)**

Prepared: 10/28/22 Analyzed: 10/29/22

Boron ND 0.0100 mg/L

**LCS (BFJ0794-BS1)**

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 5.52 0.0100 mg/L 5.00 110 80-120

**Duplicate (BFJ0794-DUP1)**

Source: 2210442-06

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 0.0575 0.0100 mg/L 0.0663 14.2 20

**Matrix Spike (BFJ0794-MS1)**

Source: 2210442-06

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 5.75 0.0100 mg/L 5.00 0.0663 114 75-125

**Matrix Spike Dup (BFJ0794-MSD1)**

Source: 2210442-06

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 5.56 0.0100 mg/L 5.00 0.0663 110 75-125 3.36 25

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BFJ0790 - EPA 3050B**

**Blank (BFJ0790-BLK1)**

Prepared & Analyzed: 10/28/22

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

**LCS (BFJ0790-BS1)**

Prepared & Analyzed: 10/28/22

Arsenic	36.5	0.200	mg/kg wet	40.0	91.3	80-120
Barium	38.3	0.400	"	40.0	95.8	80-120
Cadmium	1.96	0.200	"	2.00	97.9	80-120
Copper	39.5	0.400	"	40.0	98.8	80-120
Lead	19.6	0.200	"	20.0	97.9	80-120
Nickel	37.9	0.400	"	40.0	94.9	80-120
Selenium	3.27	0.260	"	4.00	81.8	80-120
Silver	1.66	0.0200	"	2.00	83.2	80-120
Zinc	38.0	0.400	"	40.0	94.9	80-120

**Duplicate (BFJ0790-DUP1)**

Source: 2210521-01

Prepared & Analyzed: 10/28/22

Arsenic	2.39	0.265	mg/kg dry	2.38	0.645	20
Barium	127	0.530	"	127	0.0571	20
Cadmium	0.311	0.265	"	0.263	16.6	20
Copper	6.55	0.530	"	6.37	2.80	20
Lead	10.6	0.265	"	10.6	0.310	20
Nickel	4.48	0.530	"	4.33	3.40	20
Selenium	0.246	0.345	"	0.240	2.62	20
Silver	0.0371	0.0265	"	0.0302	20.5	20
Zinc	21.3	0.530	"	20.6	3.34	20

QR-01

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BFJ0790 - EPA 3050B**

<b>Matrix Spike (BFJ0790-MS1)</b>	<b>Source: 2210521-01</b>			<b>Prepared &amp; Analyzed: 10/28/22</b>							
Arsenic	15.6	0.265	mg/kg dry	53.0	2.38	25.0	75-125				QM-05
Barium	178	0.530	"	53.0	127	96.4	75-125				
Cadmium	2.29	0.265	"	2.65	0.263	76.3	75-125				
Copper	41.2	0.530	"	53.0	6.37	65.7	75-125				QM-05
Lead	30.3	0.265	"	26.5	10.6	74.2	75-125				QM-05
Nickel	37.2	0.530	"	53.0	4.33	61.9	75-125				QM-05
Selenium	4.35	0.345	"	5.30	0.240	77.6	75-125				
Silver	2.05	0.0265	"	2.65	0.0302	76.4	75-125				
Zinc	57.4	0.530	"	53.0	20.6	69.3	75-125				QM-05

<b>Matrix Spike Dup (BFJ0790-MSD1)</b>	<b>Source: 2210521-01</b>			<b>Prepared &amp; Analyzed: 10/28/22</b>							
Arsenic	15.6	0.265	mg/kg dry	53.0	2.38	25.0	75-125	0.0780	25		QM-05
Barium	176	0.530	"	53.0	127	93.0	75-125	1.04	25		
Cadmium	2.26	0.265	"	2.65	0.263	75.4	75-125	1.14	25		
Copper	41.0	0.530	"	53.0	6.37	65.3	75-125	0.613	25		QM-05
Lead	29.8	0.265	"	26.5	10.6	72.3	75-125	1.66	25		QM-05
Nickel	37.1	0.530	"	53.0	4.33	61.9	75-125	0.0656	25		QM-05
Selenium	4.37	0.345	"	5.30	0.240	78.0	75-125	0.535	25		
Silver	2.03	0.0265	"	2.65	0.0302	75.5	75-125	1.12	25		
Zinc	56.8	0.530	"	53.0	20.6	68.3	75-125	0.915	25		QM-05

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

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

**Batch BFJ0800 - 3060A Mod**

**Blank (BFJ0800-BLK1)**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BFJ0800-BS1)**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      25.2      0.30 mg/kg wet      25.0      101      80-120

**Duplicate (BFJ0800-DUP1)**

**Source: 2210530-01**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BFJ0800-MS1)**

**Source: 2210530-01**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      30.4      0.30 mg/kg dry      31.8      ND      95.6      75-125

**Matrix Spike Dup (BFJ0800-MSD1)**

**Source: 2210530-01**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      30.8      0.30 mg/kg dry      31.8      ND      96.8      75-125      1.25      20

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

**Summit Scientific**

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

**Batch BFJ0818 - General Preparation**

**Blank (BFJ0818-BLK1)**

Prepared: 10/28/22 Analyzed: 10/31/22

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

**LCS (BFJ0818-BS1)**

Prepared: 10/28/22 Analyzed: 10/31/22

Calcium	5.00	0.0500	mg/L wet	5.00		100	70-130			
Magnesium	5.54	0.0500	"	5.00		111	70-130			
Sodium	5.55	0.0500	"	5.00		111	70-130			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

**Summit Scientific**

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

**Batch BFJ0796 - General Preparation**

<b>Duplicate (BFJ0796-DUP1)</b>		<b>Source: 2210448-08</b>			<b>Prepared &amp; Analyzed: 10/28/22</b>					
% Solids	88.2		%		88.1			0.101		20

**Batch BFJ0797 - General Preparation**

<b>Duplicate (BFJ0797-DUP1)</b>		<b>Source: 2210497-01</b>			<b>Prepared &amp; Analyzed: 10/28/22</b>					
% Solids	96.4		%		95.3			1.22		20

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

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

**Summit Scientific**

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

**Batch BFJ0827 - General Preparation**

**Blank (BFJ0827-BLK1)**

Prepared: 10/28/22 Analyzed: 10/31/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFJ0827-BS1)**

Prepared: 10/28/22 Analyzed: 10/31/22

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

**Duplicate (BFJ0827-DUP1)**

**Source: 2210478-01**

Prepared: 10/28/22 Analyzed: 10/31/22

Specific Conductance (EC) 0.809 0.0100 mmhos/cm 0.834 3.13 20

Summit Scientific

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Civitas Resources  
 650 Southgate Drive  
 Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
 Project Manager: Sam Vogt

**Reported:**  
 11/07/22 09:28

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

**Summit Scientific**

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

**Batch BFJ0826 - General Preparation**

**LCS (BFJ0826-BS1)**

Prepared: 10/28/22 Analyzed: 10/31/22

pH	9.03		pH Units	9.18		98.4	95-105			
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**Duplicate (BFJ0826-DUP1)**

Source: 2210478-01

Prepared: 10/28/22 Analyzed: 10/31/22

pH	8.34		pH Units	8.28		0.722	20			
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Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
11/07/22 09:28

### 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.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- 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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

December 01, 2022

Sam Vogt

Civitas Resources

650 Southgate Drive

Windsor, CO 80550

RE: Harsch 42-27

Work Order #2211444

Enclosed are the results of analyses for samples received by Summit Scientific on 11/23/22 17:13. 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: Harsch 42-27

Project Number: AFE# COC40773

Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01	2211444-01	Water	11/23/22 14:57	11/23/22 17:13
MW02	2211444-02	Water	11/23/22 14:58	11/23/22 17:13
MW03	2211444-03	Water	11/23/22 15:09	11/23/22 17:13
MW04	2211444-04	Water	11/23/22 15:14	11/23/22 17:13
MW05	2211444-05	Water	11/23/22 15:20	11/23/22 17:13

Summit Scientific

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# Summit Scientific

2211444

4653 Table Mountain Drive ♦ Golden, Colorado 80403  
303-277-9310

Page 1 of 1

Client: Civitas/Tasman Geosciences

Project Manager: Sam Vogt, Jacob Evans

Address: 6855 W. 119th Ave.

E-Mail: svogt@tasman-geo.com, jevans@civresources.com

City/State/Zip: Broomfield / CO/ 80020

Phone: 303-277-9310 ~~303-277-9310~~ PH 610-405-9078

Project Name: Harsch 42-27

Sampler Name: OH & DM

Project Number: PH AFE# COC 40773

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	1,2,4-TMB	1,3,5-TMB	TDS	Chloride		Sulfate	
1	MW01	11.23.22	14:57	3	X				X					X	X	X	X	X	X		
2	MW02		14:58	3	X				X					X	X	X	X	X	X		
3	MW03		15:09	4	X				X					X	X	X	X	X	X		
4	MW04		15:14	4	X				X					X	X	X	X	X	X		
5	MW05		15:20	3	X				X					X	X	X	X				
6																					
7																					
8																					
9																					
10																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>11.23.22 16:15</u>	Received by: <u>Tasman's Lock Box</u>	Date/Time: <u>11.23.22 16:15</u>	<b>Turn Around Time (Check)</b> <input type="checkbox"/> Same Day <input type="checkbox"/> 24 hours <input checked="" type="checkbox"/> 48 hours <input type="checkbox"/> 72 hours <input checked="" type="checkbox"/> Standard	<b>Notes:</b>  Sample Integrity: " " Temperature Upon Receipt: <u>8.3</u> Samples Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Relinquished by: <u>Tasman's Lock Box</u>	Date/Time: <u>11.23.22 17:13</u>	Received by: <u>[Signature]</u>	Date/Time: <u>11.23.22 17:13</u>		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2211444

Client: CivilFast/Asman Client Project ID: Harsch 42-27

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

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

Temp (°C)  Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
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	<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"/>	
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"/>	
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"/>	
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"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <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.	<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.

[Signature]  
Custodian Printed Name

11-23-22  
Date/Time



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**MW01**  
**2211444-01 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 14:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFK0680	11/29/22	11/30/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **11/23/22 14:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		119 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 14:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Chloride</b>	<b>1350</b>	12.0		mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
<b>Sulfate</b>	<b>11700</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 14:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>13100</b>	10.0		mg/L	1	BFK0620	11/27/22	11/27/22	SM2540C	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27  
Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**MW02**  
**2211444-02 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 14:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFK0680	11/29/22	11/30/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **11/23/22 14:58**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		116 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**MW03**  
**2211444-03 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFK0680	11/29/22	11/30/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **11/23/22 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		120 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>2580</b>	12.0		mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
Sulfate	<b>13500</b>	60.0		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 15:09**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>16300</b>	10.0		mg/L	1	BFK0620	11/27/22	11/27/22	SM2540C	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**MW04**  
**2211444-04 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BFK0680	11/29/22	11/30/22	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **11/23/22 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		122 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %		21-167		"	"	"	"	

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chloride	<b>1740</b>	24.0		mg/L	400	BFK0618	11/27/22	11/28/22	EPA 300.0	
Sulfate	<b>16600</b>	120		"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 15:14**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Total Dissolved Solids</b>	<b>18700</b>	10.0		mg/L	1	BFK0620	11/27/22	11/27/22	SM2540C	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27  
Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**MW05**  
**2211444-05 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	1.0	ug/l	1	BFK0680	11/29/22	11/30/22	EPA 8260B	
Toluene	ND	1.0	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	"	"	"	"	"	"	
Naphthalene	ND	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	"	"	"	"	"	"	

Date Sampled: **11/23/22 15:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		108 %	21-167		"	"	"	"	

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: Harsch 42-27

Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

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

#### Summit Scientific

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

#### Batch BFK0680 - EPA 5030 Water MS

##### Blank (BFK0680-BLK1)

Prepared: 11/29/22 Analyzed: 11/30/22

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		109		23-173			
Surrogate: Toluene-d8	13.2		"	13.3		99.1		20-170			
Surrogate: 4-Bromofluorobenzene	14.0		"	13.3		105		21-167			

##### LCS (BFK0680-BS1)

Prepared: 11/29/22 Analyzed: 11/30/22

Benzene	43.0	1.0	ug/l	41.7		103		51-132			
Toluene	42.3	1.0	"	41.7		102		51-138			
Ethylbenzene	42.7	1.0	"	41.7		102		58-146			
m,p-Xylene	83.7	2.0	"	83.3		100		57-144			
o-Xylene	41.5	1.0	"	41.7		99.6		53-146			
Naphthalene	36.2	1.0	"	41.7		86.8		70-130			
1,2,4-Trimethylbenzene	42.9	1.0	"	41.7		103		70-130			
1,3,5-Trimethylbenzene	42.6	1.0	"	41.7		102		70-130			
Surrogate: 1,2-Dichloroethane-d4	14.5		"	13.3		109		23-173			
Surrogate: Toluene-d8	13.2		"	13.3		99.4		20-170			
Surrogate: 4-Bromofluorobenzene	13.7		"	13.3		103		21-167			

##### Matrix Spike (BFK0680-MS1)

Source: 2211459-01

Prepared: 11/29/22 Analyzed: 11/30/22

Benzene	49.8	1.0	ug/l	41.7	ND	120		34-141			
Toluene	42.3	1.0	"	41.7	ND	102		27-151			
Ethylbenzene	43.5	1.0	"	41.7	ND	104		29-160			
m,p-Xylene	85.2	2.0	"	83.3	ND	102		20-166			
o-Xylene	42.0	1.0	"	41.7	ND	101		33-159			
Naphthalene	47.7	1.0	"	41.7	ND	114		70-130			
1,2,4-Trimethylbenzene	43.3	1.0	"	41.7	ND	104		70-130			
1,3,5-Trimethylbenzene	44.7	1.0	"	41.7	ND	107		70-130			
Surrogate: 1,2-Dichloroethane-d4	16.3		"	13.3		122		23-173			
Surrogate: Toluene-d8	13.1		"	13.3		98.0		20-170			
Surrogate: 4-Bromofluorobenzene	13.8		"	13.3		103		21-167			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**  
**Summit Scientific**

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

**Batch BFK0680 - EPA 5030 Water MS**

<b>Matrix Spike Dup (BFK0680-MSD1)</b>	<b>Source: 2211459-01</b>			<b>Prepared: 11/29/22 Analyzed: 11/30/22</b>							
Benzene	50.3	1.0	ug/l	41.7	ND	121	34-141	0.899	30		
Toluene	42.2	1.0	"	41.7	ND	101	27-151	0.237	30		
Ethylbenzene	43.3	1.0	"	41.7	ND	104	29-160	0.484	30		
m,p-Xylene	85.3	2.0	"	83.3	ND	102	20-166	0.164	30		
o-Xylene	42.1	1.0	"	41.7	ND	101	33-159	0.214	30		
Naphthalene	46.6	1.0	"	41.7	ND	112	70-130	2.23	30		
1,2,4-Trimethylbenzene	43.6	1.0	"	41.7	ND	105	70-130	0.897	30		
1,3,5-Trimethylbenzene	44.8	1.0	"	41.7	ND	108	70-130	0.201	30		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>15.8</i>		<i>"</i>	<i>13.3</i>		<i>119</i>	<i>23-173</i>				
<i>Surrogate: Toluene-d8</i>	<i>13.1</i>		<i>"</i>	<i>13.3</i>		<i>98.3</i>	<i>20-170</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>13.7</i>		<i>"</i>	<i>13.3</i>		<i>103</i>	<i>21-167</i>				

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: Harsch 42-27

Project Number: AFE# COC40773  
Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

**Anions by EPA Method 300.0 - Quality Control**  
**Summit Scientific**

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

**Batch BFK0618 - General Preparation**

**Blank (BFK0618-BLK1)**

Prepared: 11/27/22 Analyzed: 11/28/22

Chloride	ND	0.0600	mg/L						
Sulfate	ND	0.300	"						

**LCS (BFK0618-BS1)**

Prepared: 11/27/22 Analyzed: 11/28/22

Chloride	3.29	0.0600	mg/L	3.00	110	90-110		
Sulfate	13.6	0.300	"	15.0	90.3	90-110		

**Duplicate (BFK0618-DUP1)**

Source: 2211431-01

Prepared: 11/27/22 Analyzed: 11/28/22

Chloride	240	12.0	mg/L	244			1.66	20
Sulfate	372	60.0	"	369			0.701	20

**Matrix Spike (BFK0618-MS1)**

Source: 2211431-01

Prepared: 11/27/22 Analyzed: 11/28/22

Chloride	870	12.0	mg/L	600	244	104	80-120	
Sulfate	2950	60.0	"	3000	369	86.0	80-120	

Summit Scientific

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Civitas Resources  
 650 Southgate Drive  
 Windsor CO, 80550

Project: Harsch 42-27

Project Number: AFE# COC40773  
 Project Manager: Sam Vogt

**Reported:**  
 12/01/22 12:29

**Total Dissolved Solids by SM2540C - Quality Control**  
**Summit Scientific**

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

**Batch BFK0620 - General Preparation**

**Blank (BFK0620-BLK1)**

Prepared & Analyzed: 11/27/22

Total Dissolved Solids      ND      10.0      mg/L

**Duplicate (BFK0620-DUP1)**

Source: 2211431-01

Prepared & Analyzed: 11/27/22

Total Dissolved Solids      1090      10.0      mg/L      1050      4.01      20

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: AFE# COC40773

Project Manager: Sam Vogt

**Reported:**  
12/01/22 12:29

### 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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

January 31, 2023

Sam Vogt

Civitas Resources

650 Southgate Drive

Windsor, CO 80550

RE: Harsch 42-27

Work Order # 2210530

Enclosed are the results of analyses for samples received by Summit Scientific on 10/27/22 17:30. 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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW03@2'	2210530-01	Soil	10/27/22 10:00	10/27/22 17:30
MW04@2'	2210530-02	Soil	10/27/22 10:20	10/27/22 17:30
MW04@10-11'	2210530-03	Soil	10/27/22 13:55	10/27/22 17:30
MW03@12'	2210530-04	Soil	10/27/22 14:35	10/27/22 17:30
MW01@12'	2210530-05	Soil	10/27/22 15:20	10/27/22 17:30
MW02@12'	2210530-06	Soil	10/27/22 15:55	10/27/22 17:30
MW05@12'	2210530-07	Soil	10/27/22 16:25	10/27/22 17:30

Summit Scientific

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# Summit Scientific

2210530

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

Page 1 of 1

Client: CIVITAS/Tasman  
Address: 6855 W. 119th St  
City/State/Zip: Broomfield, CO 80020  
Phone: 610-405-9078 Fax:  
Sampler Name: Sierra Kiryl0

Project Manager: Sam Vogt, Jacob Evans  
E-Mail: svogt@tasman-geo.com, jevanse@civilresources.com  
Project Name: Harsch 42-27  
Project Number:

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix			Analyze For: Table 915										Special Instructions			
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)													
MW03e2'	10-27-22	1000	2			X			X				X	915 Table										
MW04e2'		1020																						
MW04e10'-11'		1355																						
MW03e12'		1435																						
MW01e12'		1520																						
MW02e12'		1555																						
MW05e12'	↓	1625	↓						↓				↓											

Relinquished by: <u>[Signature]</u>	Date/Time: <u>10-27-22 1730</u>	Received by:	Date/Time:	Turn Around Time (Check)	Notes: Methods: PH, EC, SAR → sat. paste Boron → hot water
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input type="checkbox"/>	
<u>Tasman LockBox</u>	<u>102722 1730</u>	<u>[Signature]</u>	<u>102722 1730</u>	24 Hours <input type="checkbox"/>	
Relinquished by:	Date/Time:	Received in Lab by:	Date/Time:	48 Hours <input type="checkbox"/>	Sample Integrity: Temperature Upon Receipt: <u>8.6</u>
				Intact: Yes <input type="checkbox"/> No <input type="checkbox"/>	

# S<sub>2</sub>

S2 Work Order# 2210530

## Sample Receipt Checklist

Client: Civilas/Tasman Client Project ID: Harsch 42-27

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

	-			
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Matrix (Check all that apply) Air  Soil/Solid  Water  Other Temp (°C)  Thermometer # 

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <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.	<input checked="" type="checkbox"/>			on ice
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Are samples due within 48 hours present?		<input checked="" type="checkbox"/>		
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			<input checked="" type="checkbox"/>	
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>	<input checked="" type="checkbox"/>			
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			<input checked="" type="checkbox"/>	
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.			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> Record the pH in Comments.			<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?			<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.

AS  
Custodian Printed Name

10/27/22 1730  
Date/Time



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		97.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		38.3 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		82.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.3 %		40-150		"	"	"	"	

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.567</b>	0.0100		mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	MDL	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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	0.272	0.331	0.223	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Arsenic	2.04	0.254	0.214	"	"	"	"	"	"	
Barium	92.7	0.509	0.402	"	"	"	"	"	"	
Cadmium	0.333	0.254	0.00916	"	"	"	"	"	"	
Copper	9.35	0.509	0.0266	"	"	"	"	"	"	
Lead	10.4	0.254	0.0699	"	"	"	"	"	"	
Nickel	8.86	0.509	0.0776	"	"	"	"	"	"	
Silver	0.0718	0.0254	0.00340	"	"	"	"	"	"	
Zinc	32.9	0.509	0.338	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	237	0.0636		mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	930	0.0636		"	"	"	"	"	"	
Sodium	2510	0.0636		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.4	0.00100		units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@2'**  
**2210530-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.6			%	1	BFJ0796	10/28/22	10/28/22	Calculation	

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	11.6	0.0100		mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.71			pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		91.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		95.8 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 10:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.2 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		42.5 %		40-150		"	"	"	"	

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.493</b>	0.0100		mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting Limit	MDL	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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	0.336	0.304	0.205	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Arsenic	2.82	0.234	0.197	"	"	"	"	"	"	
Barium	80.9	0.468	0.370	"	"	"	"	"	"	
Cadmium	0.262	0.234	0.00842	"	"	"	"	"	"	
Copper	9.87	0.468	0.0244	"	"	"	"	"	"	
Lead	10.8	0.234	0.0643	"	"	"	"	"	"	
Nickel	8.79	0.468	0.0713	"	"	"	"	"	"	
Silver	0.0692	0.0234	0.00312	"	"	"	"	"	"	
Zinc	32.2	0.468	0.311	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 10:20

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 10:20

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	84.2	0.0585		mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	586	0.0585		"	"	"	"	"	"	
Sodium	1910	0.0585		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 10:20

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	16.2	0.00100		units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

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: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@2'**  
**2210530-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.5			%	1	BFJ0797	10/28/22	10/28/22	Calculation	

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	8.89	0.0100		mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 10:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.21			pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		94.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		95.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		79.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.3 %		40-150		"	"	"	"	

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.29</b>	0.0100		mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	0.363	0.323	0.218	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Arsenic	2.11	0.249	0.209	"	"	"	"	"	"	
Barium	112	0.497	0.393	"	"	"	"	"	"	
Cadmium	0.330	0.249	0.00895	"	"	"	"	"	"	
Copper	11.3	0.497	0.0260	"	"	"	"	"	"	
Lead	12.3	0.249	0.0683	"	"	"	"	"	"	
Nickel	11.3	0.497	0.0758	"	"	"	"	"	"	
Silver	0.0686	0.0249	0.00332	"	"	"	"	"	"	
Zinc	43.4	0.497	0.331	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 13:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 13:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	67.5	0.0622		mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	531	0.0622		"	"	"	"	"	"	
Sodium	2180	0.0622		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 13:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	19.5	0.00100		units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW04@10-11'**  
**2210530-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	<b>80.4</b>			%	1	BFJ0797	10/28/22	10/28/22	Calculation	

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	<b>9.11</b>	0.0100		mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	<b>8.31</b>			pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		100 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		102 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		91.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		69.0 %		40-150		"	"	"	"	

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>1.37</b>	0.0100		mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	0.274	0.324	0.218	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Arsenic	1.84	0.249	0.210	"	"	"	"	"	"	
Barium	77.0	0.498	0.394	"	"	"	"	"	"	
Cadmium	0.307	0.249	0.00897	"	"	"	"	"	"	
Copper	10.5	0.498	0.0260	"	"	"	"	"	"	
Lead	11.7	0.249	0.0685	"	"	"	"	"	"	
Nickel	10.3	0.498	0.0760	"	"	"	"	"	"	
Silver	0.0668	0.0249	0.00333	"	"	"	"	"	"	
Zinc	42.6	0.498	0.331	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 14:35

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 14:35

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	330	0.0623		mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	665	0.0623		"	"	"	"	"	"	
Sodium	2150	0.0623		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 14:35

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	15.7	0.00100		units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW03@12'**  
**2210530-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	<b>80.3</b>			%	1	BFJ0797	10/28/22	10/28/22	Calculation	

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	<b>9.94</b>	0.0100		mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 14:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	<b>8.07</b>			pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 15:20**

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

**PAH by EPA Method 8270D SIM**

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650 Southgate Drive  
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		84.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.1 %		40-150		"	"	"	"	

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Boron</b>	<b>0.817</b>	0.0100		mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.316	0.213	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Arsenic	2.06	0.243	0.205	"	"	"	"	"	"	
Barium	112	0.487	0.385	"	"	"	"	"	"	
Cadmium	0.309	0.243	0.00876	"	"	"	"	"	"	
Copper	10.6	0.487	0.0254	"	"	"	"	"	"	
Lead	12.4	0.243	0.0669	"	"	"	"	"	"	
Nickel	10.7	0.487	0.0742	"	"	"	"	"	"	
Silver	0.0677	0.0243	0.00325	"	"	"	"	"	"	
Zinc	40.8	0.487	0.324	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 15:20

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 15:20

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	88.1	0.0608		mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	213	0.0608		"	"	"	"	"	"	
Sodium	1130	0.0608		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 15:20

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	14.8	0.00100		units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW01@12'**  
**2210530-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	<b>82.2</b>			%	1	BFJ0797	10/28/22	10/28/22	Calculation	

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	<b>5.24</b>	0.0100		mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 15:20**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	<b>8.21</b>			pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW02@12'**  
**2210530-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/02/22	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: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		97.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/04/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		103 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW02@12'**  
**2210530-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		81.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.3 %		40-150		"	"	"	"	

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Boron</b>	<b>1.47</b>	0.0100		mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW02@12'**  
**2210530-06 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	ND	0.313	0.211	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Arsenic	1.77	0.241	0.203	"	"	"	"	"	"	
Barium	63.3	0.482	0.380	"	"	"	"	"	"	
Cadmium	0.282	0.241	0.00867	"	"	"	"	"	"	
Copper	9.90	0.482	0.0252	"	"	"	"	"	"	
Lead	11.5	0.241	0.0662	"	"	"	"	"	"	
Nickel	10.7	0.482	0.0735	"	"	"	"	"	"	
Silver	0.0708	0.0241	0.00321	"	"	"	"	"	"	
Zinc	38.1	0.482	0.320	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 15:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 15:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.7	0.0602		mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	117	0.0602		"	"	"	"	"	"	
Sodium	747	0.0602		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 15:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	13.8	0.00100		units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW02@12'**  
**2210530-06 (Soil)**

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.0			%	1	BFJ0797	10/28/22	10/28/22	Calculation	

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	3.40	0.0100		mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 15:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.50			pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BFK0053	11/02/22	11/03/22	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: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0054	"	11/03/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		75.2 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Civitas Resources  
650 Southgate Drive  
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BFJ0787	10/31/22	11/01/22	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: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		77.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.9 %		40-150		"	"	"	"	

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Boron</b>	<b>1.33</b>	0.0100		mg/L	1	BFJ0794	10/28/22	10/29/22	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Selenium	0.510	0.322	0.217	mg/kg dry	1	BFJ0790	10/28/22	10/28/22	EPA 6020B	
Arsenic	1.95	0.248	0.209	"	"	"	"	"	"	
Barium	70.0	0.496	0.391	"	"	"	"	"	"	
Cadmium	0.334	0.248	0.00892	"	"	"	"	"	"	
Copper	11.0	0.496	0.0259	"	"	"	"	"	"	
Lead	12.2	0.248	0.0681	"	"	"	"	"	"	
Nickel	10.8	0.496	0.0756	"	"	"	"	"	"	
Silver	0.0932	0.0248	0.00331	"	"	"	"	"	"	
Zinc	42.8	0.496	0.330	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/27/22 16:25

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BFJ0800	10/28/22	10/28/22	EPA 7196A	

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

Date Sampled: 10/27/22 16:25

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	75.4	0.0619		mg/L dry	1	BFJ0818	10/28/22	10/31/22	EPA 6020B	
Magnesium	618	0.0619		"	"	"	"	"	"	
Sodium	2160	0.0619		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/27/22 16:25

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	18.0	0.00100		units	1	BFK0012	11/01/22	11/01/22	Calculation	

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

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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**MW05@12'**  
**2210530-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.7			%	1	BFJ0797	10/28/22	10/28/22	Calculation	

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	9.43	0.0100		mmhos/cm	1	BFJ0827	10/28/22	10/31/22	EPA 120.1	

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

Date Sampled: **10/27/22 16:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.15			pH Units	1	BFJ0826	10/28/22	10/31/22	EPA 9045D	

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Civitas Resources  
650 Southgate Drive  
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Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

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

#### Summit Scientific

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

#### Batch BFK0053 - EPA 5030 Soil MS

##### Blank (BFK0053-BLK1)

Prepared & Analyzed: 11/02/22

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0349</i>		<i>"</i>	<i>0.0400</i>		<i>87.3</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0445</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			

##### LCS (BFK0053-BS1)

Prepared & Analyzed: 11/02/22

Benzene	0.0721	0.0020	mg/kg	0.100		72.1	70-130			
Toluene	0.0707	0.0050	"	0.100		70.7	70-130			
Ethylbenzene	0.0728	0.0050	"	0.100		72.8	70-130			
m,p-Xylene	0.147	0.010	"	0.200		73.5	70-130			
o-Xylene	0.0760	0.0050	"	0.100		76.0	70-130			
1,2,4-Trimethylbenzene	0.0822	0.0050	"	0.100		82.2	70-130			
1,3,5-Trimethylbenzene	0.0824	0.0050	"	0.100		82.4	70-130			
Naphthalene	0.112	0.0038	"	0.100		112	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0342</i>		<i>"</i>	<i>0.0400</i>		<i>85.4</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0445</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			

##### Matrix Spike (BFK0053-MS1)

Source: 2210530-01

Prepared & Analyzed: 11/02/22

Benzene	0.0711	0.0020	mg/kg	0.100	ND	71.1	70-130			
Toluene	0.0733	0.0050	"	0.100	ND	73.3	70-130			
Ethylbenzene	0.0736	0.0050	"	0.100	ND	73.6	70-130			
m,p-Xylene	0.170	0.010	"	0.200	ND	84.8	70-130			
o-Xylene	0.0751	0.0050	"	0.100	ND	75.1	70-130			
1,2,4-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
1,3,5-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130			
Naphthalene	0.116	0.0038	"	0.100	ND	116	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0344</i>		<i>"</i>	<i>0.0400</i>		<i>86.1</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0417</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0424</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>50-150</i>			

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Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

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

**Summit Scientific**

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

**Batch BFK0053 - EPA 5030 Soil MS**

Matrix Spike Dup (BFK0053-MSD1)	Source: 2210530-01			Prepared & Analyzed: 11/02/22						
Benzene	0.0736	0.0020	mg/kg	0.100	ND	73.6	70-130	3.48	30	
Toluene	0.0781	0.0050	"	0.100	ND	78.1	70-130	6.30	30	
Ethylbenzene	0.0759	0.0050	"	0.100	ND	75.9	70-130	3.05	30	
m,p-Xylene	0.185	0.010	"	0.200	ND	92.5	70-130	8.65	30	
o-Xylene	0.0745	0.0050	"	0.100	ND	74.5	70-130	0.762	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	4.26	30	
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130	7.83	30	
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130	9.08	30	
Surrogate: 1,2-Dichloroethane-d4	0.0378		"	0.0400		94.4	50-150			
Surrogate: Toluene-d8	0.0442		"	0.0400		111	50-150			
Surrogate: 4-Bromofluorobenzene	0.0437		"	0.0400		109	50-150			

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**PAH by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

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

**Batch BFJ0787 - EPA 5030 Soil MS**

**Blank (BFJ0787-BLK1)**

Prepared & Analyzed: 10/31/22

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0360</i>		"	<i>0.0333</i>		<i>108</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0304</i>		"	<i>0.0333</i>		<i>91.2</i>		<i>40-150</i>		

**LCS (BFJ0787-BS1)**

Prepared & Analyzed: 10/31/22

Acenaphthene	0.0362	0.00500	mg/kg	0.0333	109	31-137
Anthracene	0.0369	0.00500	"	0.0333	111	30-120
Benzo (a) anthracene	0.0315	0.00500	"	0.0333	94.6	30-120
Benzo (a) pyrene	0.0336	0.00500	"	0.0333	101	30-120
Benzo (b) fluoranthene	0.0347	0.00500	"	0.0333	104	30-120
Benzo (k) fluoranthene	0.0380	0.00500	"	0.0333	114	30-120
Chrysene	0.0331	0.00500	"	0.0333	99.2	30-120
Dibenz (a,h) anthracene	0.0334	0.00500	"	0.0333	100	30-120
Fluoranthene	0.0391	0.00500	"	0.0333	117	30-120
Fluorene	0.0367	0.00500	"	0.0333	110	30-120
Indeno (1,2,3-cd) pyrene	0.0290	0.00500	"	0.0333	87.1	30-120
Pyrene	0.0330	0.00500	"	0.0333	99.1	35-142
1-Methylnaphthalene	0.0340	0.00500	"	0.0333	102	35-142
2-Methylnaphthalene	0.0365	0.00500	"	0.0333	109	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0338</i>		"	<i>0.0333</i>	<i>101</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0400</i>		"	<i>0.0333</i>	<i>120</i>	<i>40-150</i>

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Civitas Resources  
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Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

Reported:  
01/31/23 08:48

**PAH by EPA Method 8270D SIM - Quality Control**  
**Summit Scientific**

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

**Batch BFJ0787 - EPA 5030 Soil MS**

<b>Matrix Spike (BFJ0787-MS1)</b>		<b>Source: 2210321-03</b>			Prepared: 10/31/22		Analyzed: 11/01/22	
Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.4	31-137	
Anthracene	0.0171	0.00500	"	0.0333	ND	51.2	30-120	
Benzo (a) anthracene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	
Benzo (b) fluoranthene	0.0234	0.00500	"	0.0333	ND	70.2	30-120	
Benzo (k) fluoranthene	0.0214	0.00500	"	0.0333	ND	64.2	30-120	
Chrysene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	
Dibenz (a,h) anthracene	0.0134	0.00500	"	0.0333	ND	40.1	30-120	
Fluoranthene	0.0179	0.00500	"	0.0333	ND	53.8	30-120	
Fluorene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.6	30-120	
Pyrene	0.0187	0.00500	"	0.0333	ND	56.2	35-142	
1-Methylnaphthalene	0.0165	0.00500	"	0.0333	ND	49.4	15-130	
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.7	15-130	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0167</i>		"	<i>0.0333</i>		<i>50.2</i>	<i>40-150</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0183</i>		"	<i>0.0333</i>		<i>54.8</i>	<i>40-150</i>	

<b>Matrix Spike Dup (BFJ0787-MSD1)</b>		<b>Source: 2210321-03</b>			Prepared: 10/31/22		Analyzed: 11/01/22	
Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.7	31-137	21.8 30
Anthracene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	28.9 30
Benzo (a) anthracene	0.0241	0.00500	"	0.0333	ND	72.4	30-120	24.0 30
Benzo (a) pyrene	0.0258	0.00500	"	0.0333	ND	77.4	30-120	30.5 30 QR-02
Benzo (b) fluoranthene	0.0301	0.00500	"	0.0333	ND	90.2	30-120	25.0 30
Benzo (k) fluoranthene	0.0265	0.00500	"	0.0333	ND	79.6	30-120	21.5 30
Chrysene	0.0214	0.00500	"	0.0333	ND	64.1	30-120	25.6 30
Dibenz (a,h) anthracene	0.0182	0.00500	"	0.0333	ND	54.6	30-120	30.5 30 QR-02
Fluoranthene	0.0222	0.00500	"	0.0333	ND	66.7	30-120	21.4 30
Fluorene	0.0243	0.00500	"	0.0333	ND	72.9	30-120	24.9 30
Indeno (1,2,3-cd) pyrene	0.0156	0.00500	"	0.0333	ND	46.9	30-120	14.4 30
Pyrene	0.0225	0.00500	"	0.0333	ND	67.6	35-142	18.3 30
1-Methylnaphthalene	0.0237	0.00500	"	0.0333	ND	71.2	15-130	36.2 50
2-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.3	15-130	26.1 50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0237</i>		"	<i>0.0333</i>		<i>71.0</i>	<i>40-150</i>	
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0235</i>		"	<i>0.0333</i>		<i>70.6</i>	<i>40-150</i>	

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

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

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

**Batch BFJ0794 - EPA 3050B**

**Blank (BFJ0794-BLK1)**

Prepared: 10/28/22 Analyzed: 10/29/22

Boron ND 0.0100 mg/L

**LCS (BFJ0794-BS1)**

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 5.52 0.0100 mg/L 5.00 110 80-120

**Duplicate (BFJ0794-DUP1)**

Source: 2210442-06

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 0.0575 0.0100 mg/L 0.0663 14.2 20

**Matrix Spike (BFJ0794-MS1)**

Source: 2210442-06

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 5.75 0.0100 mg/L 5.00 0.0663 114 75-125

**Matrix Spike Dup (BFJ0794-MSD1)**

Source: 2210442-06

Prepared: 10/28/22 Analyzed: 10/29/22

Boron 5.56 0.0100 mg/L 5.00 0.0663 110 75-125 3.36 25

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BFJ0790 - EPA 3050B**

**Blank (BFJ0790-BLK1)**

Prepared & Analyzed: 10/28/22

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

**LCS (BFJ0790-BS1)**

Prepared & Analyzed: 10/28/22

Selenium	3.27	0.260	mg/kg wet	4.00	81.8	80-120
Arsenic	36.5	0.200	"	40.0	91.3	80-120
Barium	38.3	0.400	"	40.0	95.8	80-120
Cadmium	1.96	0.200	"	2.00	97.9	80-120
Copper	39.5	0.400	"	40.0	98.8	80-120
Lead	19.6	0.200	"	20.0	97.9	80-120
Nickel	37.9	0.400	"	40.0	94.9	80-120
Silver	1.66	0.0200	"	2.00	83.2	80-120
Zinc	38.0	0.400	"	40.0	94.9	80-120

**Duplicate (BFJ0790-DUP1)**

Source: 2210521-01

Prepared & Analyzed: 10/28/22

Selenium	0.246	0.345	mg/kg dry	0.240	2.62	20
Arsenic	2.39	0.265	"	2.38	0.645	20
Barium	127	0.530	"	127	0.0571	20
Cadmium	0.311	0.265	"	0.263	16.6	20
Copper	6.55	0.530	"	6.37	2.80	20
Lead	10.6	0.265	"	10.6	0.310	20
Nickel	4.48	0.530	"	4.33	3.40	20
Silver	0.0371	0.0265	"	0.0302	20.5	20
Zinc	21.3	0.530	"	20.6	3.34	20

QR-01

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BFJ0790 - EPA 3050B**

**Matrix Spike (BFJ0790-MS1)**

Source: 2210521-01

Prepared & Analyzed: 10/28/22

Selenium	4.35	0.345	mg/kg dry	5.30	0.240	77.6	75-125			
Arsenic	15.6	0.265	"	53.0	2.38	25.0	75-125			QM-05
Barium	178	0.530	"	53.0	127	96.4	75-125			
Cadmium	2.29	0.265	"	2.65	0.263	76.3	75-125			
Copper	41.2	0.530	"	53.0	6.37	65.7	75-125			QM-05
Lead	30.3	0.265	"	26.5	10.6	74.2	75-125			QM-05
Nickel	37.2	0.530	"	53.0	4.33	61.9	75-125			QM-05
Silver	2.05	0.0265	"	2.65	0.0302	76.4	75-125			
Zinc	57.4	0.530	"	53.0	20.6	69.3	75-125			QM-05

**Matrix Spike Dup (BFJ0790-MSD1)**

Source: 2210521-01

Prepared & Analyzed: 10/28/22

Selenium	4.37	0.345	mg/kg dry	5.30	0.240	78.0	75-125	0.535	25	
Arsenic	15.6	0.265	"	53.0	2.38	25.0	75-125	0.0780	25	QM-05
Barium	176	0.530	"	53.0	127	93.0	75-125	1.04	25	
Cadmium	2.26	0.265	"	2.65	0.263	75.4	75-125	1.14	25	
Copper	41.0	0.530	"	53.0	6.37	65.3	75-125	0.613	25	QM-05
Lead	29.8	0.265	"	26.5	10.6	72.3	75-125	1.66	25	QM-05
Nickel	37.1	0.530	"	53.0	4.33	61.9	75-125	0.0656	25	QM-05
Silver	2.03	0.0265	"	2.65	0.0302	75.5	75-125	1.12	25	
Zinc	56.8	0.530	"	53.0	20.6	68.3	75-125	0.915	25	QM-05

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

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

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

**Batch BFJ0800 - 3060A Mod**

**Blank (BFJ0800-BLK1)**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      ND      0.30    mg/kg wet

**LCS (BFJ0800-BS1)**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      25.2      0.30    mg/kg wet      25.0      101      80-120

**Duplicate (BFJ0800-DUP1)**

**Source: 2210530-01**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      ND      0.30    mg/kg dry      ND      20

**Matrix Spike (BFJ0800-MS1)**

**Source: 2210530-01**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      30.4      0.30    mg/kg dry      31.8      ND      95.6      75-125

**Matrix Spike Dup (BFJ0800-MSD1)**

**Source: 2210530-01**

Prepared & Analyzed: 10/28/22

Chromium, Hexavalent      30.8      0.30    mg/kg dry      31.8      ND      96.8      75-125      1.25      20

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

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

**Summit Scientific**

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

**Batch BFJ0818 - General Preparation**

**Blank (BFJ0818-BLK1)**

Prepared: 10/28/22 Analyzed: 10/31/22

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

**LCS (BFJ0818-BS1)**

Prepared: 10/28/22 Analyzed: 10/31/22

Calcium	5.00	0.0500	mg/L wet	5.00		100	70-130			
Magnesium	5.54	0.0500	"	5.00		111	70-130			
Sodium	5.55	0.0500	"	5.00		111	70-130			

Summit Scientific

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Civitas Resources  
 650 Southgate Drive  
 Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
 Project Manager: Sam Vogt

**Reported:**  
 01/31/23 08:48

**Physical Parameters by APHA/ASTM/EPA Methods - Quality Control**  
**Summit Scientific**

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

**Batch BFJ0796 - General Preparation**

<b>Duplicate (BFJ0796-DUP1)</b>		<b>Source: 2210448-08</b>			<b>Prepared &amp; Analyzed: 10/28/22</b>					
% Solids	88.2		%		88.1			0.101	20	

**Batch BFJ0797 - General Preparation**

<b>Duplicate (BFJ0797-DUP1)</b>		<b>Source: 2210497-01</b>			<b>Prepared &amp; Analyzed: 10/28/22</b>					
% Solids	96.4		%		95.3			1.22	20	

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

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

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

**Batch BFJ0827 - General Preparation**

**Blank (BFJ0827-BLK1)**

Prepared: 10/28/22 Analyzed: 10/31/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BFJ0827-BS1)**

Prepared: 10/28/22 Analyzed: 10/31/22

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

**Duplicate (BFJ0827-DUP1)**

**Source: 2210478-01**

Prepared: 10/28/22 Analyzed: 10/31/22

Specific Conductance (EC) 0.809 0.0100 mmhos/cm 0.834 3.13 20

Summit Scientific

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Civitas Resources  
 650 Southgate Drive  
 Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
 Project Manager: Sam Vogt

**Reported:**  
 01/31/23 08:48

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

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

**Batch BFJ0826 - General Preparation**

**LCS (BFJ0826-BS1)**

Prepared: 10/28/22 Analyzed: 10/31/22

pH	9.03	pH Units	9.18	98.4	95-105
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**Duplicate (BFJ0826-DUP1)**

Source: 2210478-01

Prepared: 10/28/22 Analyzed: 10/31/22

pH	8.34	pH Units	8.28	0.722	20
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Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Harsch 42-27

Project Number: [none]  
Project Manager: Sam Vogt

**Reported:**  
01/31/23 08:48

### 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.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- 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