



December 22, 2022

Mr. Jacob Evans  
Extraction Oil & Gas, Inc. (Civitas Resources)  
370 17<sup>th</sup> Street Suite 5200  
Denver, Colorado 80202

**Groundwater Assessment and Monitoring Report  
Carlson 15-D Pad  
Produced Water Release  
40.403155 / -104.641111  
NE¼ NE¼ SEC.15 T5N R65W 6PM  
Weld County, Colorado  
Location ID 331351  
Remediation # 24136**

Dear Mr. Evans,

Eagle Environmental Consulting, Inc. (EAGLE) is pleased to present this Groundwater Assessment and Monitoring Report for the Carlson 15-D Pad (site).

## **1.0 SITE BACKGROUND**

On April 7, 2022, an unintentional, 1-barrel (bbl.) release of produced water occurred in lined, secondary containment at the Extraction Oil and Gas (Extraction) site. On April 12, 2022, maintenance teams discovered a failure in the secondary containment liner. The Colorado Oil and Gas Conservation Commission (COGCC) was notified of the release (Spill ID 481988), and remediation/assessment activities were coordinated.

On June 28, 2022, Extraction requested EAGLE to perform subsurface assessment activities at the site in response to potential soil and groundwater impacts associated with the unintentional produced water release at the site. Following limited excavation activities around the produced water vault, EAGLE collected four (4) confirmation soil samples (SS-01 through SS-04) to determine if adsorbed petroleum hydrocarbon impacts existed above COGCC Table 915-1 regulatory limits. On June 28, 2022, groundwater was observed at the base of the excavation at approximately 6.25 to 6.5 feet bgs. A grab groundwater sample (GW-01) was collected and submitted for laboratory analysis. Based on soil analytical results, additional soil was coordinated for removal. The grab groundwater concentrations were in compliance with COGCC.

On October 14, 2022 and October 17, 2022, EAGLE collected additional groundwater and soil samples following supplemental source removal. Based on soil and groundwater analytical results, the confirmation samples were in compliance with COGCC Table 915-1 regulatory limits.

The following narrative details groundwater assessment and monitoring activities completed at the site.

## **2.0 SITE DESCRIPTION**

The Carlson 15-D Pad site is located within the northeast quarter of the northeast quarter of Section 15, Township 5 North, Range 65 West, of the 6<sup>th</sup> Prime Meridian, in Weld County, Colorado. The produced water release was located at latitude: 40.403155 and longitude: -104.641111. A topographic site location map is presented as Figure 1. An aerial site location map is presented as Figure 2.

### **2.1 Site Hydrogeology**

The soil lithology observed beneath the release location consists of gravelly, clayey sand from the ground surface to approximately 4 feet below ground surface (bgs), underlain by poorly-graded sand from approximately 4 to 8 feet bgs, sandy clay from 8 to 10 feet bgs, and poorly-graded sand from 10 to 12 feet bgs. Groundwater during initial assessment/excavation activities was observed at approximately 6 feet bgs. Groundwater during well installation was observed at approximately 6 feet and subsequent sampling activities at approximately 7.75 feet bgs. A detailed description of the subsurface lithology beneath the site is presented in the boring logs included in Attachment A.

## **3.0 MONITORING WELL INSTALLATION ACTIVITIES**

To confirm the absence of dissolved petroleum hydrocarbon impacts associated with the produced water release, six (6) initial monitoring wells (MW-01 through MW-06) were proposed for installation. Following approval, EAGLE scheduled soil boring advancement activities.

### **3.1 Field Work Preparation and Planning**

The Utility Notification Center of Colorado (UNCC) was called at least 48 hours in advance of drilling activities to confirm that no unmarked utilities or other obstacles were present within the proposed drilling locations. Select assessment locations were adjusted based on field observations and proximity to above-ground infrastructure and marked utility lines.

### **3.2 Soil Boring Advancement/Monitoring Well Completion Activities**

On November 10, 2022, six (6) soil borings (MW-01 through MW-06) were advanced adjacent to the release area. Following advancement activities, each soil boring was completed as a 1-inch, groundwater monitoring well to define the extents of dissolved petroleum hydrocarbon impacts beneath the site. Soil boring advancement/monitoring well installation activities were completed by EAGLE using a 7822DT Series Geoprobe track rig.

Each location was logged in the field according to soil description, soil classification, moisture content, staining, and VOC concentrations. Monitoring wells, MW-01 through MW-06, were completed with 1-inch, schedule 40, poly vinyl chloride (PVC) pipe, each to a total depth of approximately 12 feet bgs. Approximately 10-feet of 0.010 slot, 1-inch, PVC screen was placed at the bottom of each boring followed by 2-feet of PVC riser. The well annulus of each monitoring well was backfilled with 10/20 silica sand to approximately 1-foot above the screen, followed by a hydrated bentonite seal to the surface. All monitoring wells were completed at the surface with 8-inch, traffic-rated steel flush mounts. Following monitoring well completions, each well was developed through purging the location a minimum of six well volumes using disposable PVC bailers.

EAGLE recorded spatial locations of each boring using a Trimble GeoXT 6000 series instrument. Soil boring logs/monitoring well completion diagrams are included in Attachment A. Soil boring/monitoring well locations are presented in Figure 3. A geological cross section is included as Figure 4.

### 3.3 Soil Sampling Procedures

During soil boring advancement/monitoring well installation activities, soil samples were collected continuously within 5-foot, plastic sample liners, where applicable. The samples within the plastic liners were separated in 2.5-foot intervals for soil identification and analysis, where applicable. A portion from each 2.5-foot interval, where applicable, was placed in a sealable plastic bag, for volatile organic compound (VOC) headspace analysis utilizing a field-calibrated photoionization detector (PID). Another portion of the soil sample was placed in a 4-ounce glass jar and packed in an iced cooler. PID readings for select soil samples are summarized in Table 1.

Based on field observations, select soil samples from each location (MW-01@2.5-5', MW-02@2.5-5', MW-03@2.5-5', MW-04@2.5-5', MW-05@2.5-5', and MW-06@2.5-5') were submitted to Summit Scientific (Summit), located in Golden, Colorado, following standard chain-of-custody (COC) procedures, for laboratory analysis. Each soil sample was analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), 1,2,4-trimethylbenzene (1,2,4-TMB), 1,3,5-trimethylbenzene (1,3,5-TMB), and total petroleum hydrocarbons – gasoline range organics (TPH-GRO) following modified Environmental Protection Agency (EPA) Method 8260D, total petroleum hydrocarbons – diesel range organics (TPH-DRO) and total petroleum hydrocarbons – residual range organics (TPH-RRO) following modified EPA Method 8015D, and Polycyclic Aromatic Hydrocarbons (PAHs) following modified EPA Method 8270D SIM

#### 3.3.1 Soil Analytical Results

Based on laboratory analytical results:

- Soil samples MW-01@2.5-5', MW-02@2.5-5', MW-03@2.5-5', MW-04@2.5-5', MW-05@2.5-5', and MW-06@2.5-5' did not contain concentrations of BTEX, 1,2,4-TMB, 1,3,5-TMB, total petroleum hydrocarbons (TPH), or PAHs exceeding applicable COGCC Table 915-1 regulatory limits.

Monitoring well soil analytical results are summarized in Table 2 and presented in Figure 3. Monitoring well PAH analytical results are summarized in Table 3 and presented in Figure 5. The soil laboratory analytical report is included in Attachment B.

### 3.5 Groundwater Sampling Procedures

Groundwater samples were collected from monitoring wells MW-01 through MW-06 on November 23, 2022. Prior to sample collection, depth to groundwater data was collected using a decontaminated interface probe capable of measuring the depth to groundwater or light non-aqueous phase liquid (LNAPL) to an accuracy of 0.01 feet, and each well was purged a minimum of three well volumes.

Relative groundwater elevations within each monitoring well ranged from 91.75 (MW-03) to 92.31 (MW-06). The groundwater flow direction beneath the site during the November 2022 sampling event was predominantly to the east-northeast, with an average hydraulic gradient of 0.006 feet per foot (ft/ft) across the site (measured from MW-06 to MW-03). Groundwater elevation data are summarized in Table 4 and presented in Figure 6.

Groundwater samples were collected from each monitoring well in 40 milliliter (mL) amber vials and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB following EPA Method 8260D. Additional samples were collected for inorganic groundwater parameters of Chloride and Sulfate following Method 300.0, and Total Dissolved Solids (TDS) following Method 2540C. The samples were transported in an iced cooler under standard COC procedures to Summit, and were received within the required holding time.

### **3.5.1 Groundwater Analytical Results**

Based on laboratory analytical results:

- Groundwater samples collected from monitoring wells MW-01 through MW-06 did not contain concentrations of BTEX, 1,2,4-TMB, 1,3,5-TMB, or naphthalene exceeding applicable COGCC Table 915-1 regulatory limits.
- Inorganic groundwater parameters collected from monitoring wells MW-01 through MW-06 did not exceed applicable COGCC Table 915-1 regulatory limits and/or local background.

Groundwater analytical results are summarized in Table 5 and presented in Figure 7. Inorganic groundwater parameters are summarized in Table 6 and presented in Figure 8. The groundwater laboratory analytical reports are included in Attachment B.

## **4.0 CONCLUSIONS**

Based on the information collected during groundwater assessment activities completed at the site from November 10, 2022 through November 23, 2022, EAGLE concludes the following:

- On November 10, 2022, EAGLE advanced six (6) soil borings (MW-01 through MW-06) to confirm the absence of dissolved petroleum hydrocarbon impacts at the site.
- Soil samples MW-01@2.5-5', MW-02@2.5-5', MW-03@2.5-5', MW-04@2.5-5', MW-05@2.5-5' and MW-06@2.5-5' did not contain concentrations of BTEX, 1,2,4-TMB, 1,3,5-TMB, TPH, or PAHs exceeding applicable COGCC Table 915-1 regulatory limits
- Groundwater samples collected from monitoring wells MW-01 through MW-06 on November 23, 2022 did not contain concentrations of BTEX, 1,2,4-TMB, 1,3,5-TMB, or naphthalene exceeding applicable COGCC Table 915-1 regulatory limits.
- Inorganic groundwater parameters collected from monitoring wells MW-01 through MW-06 on November 23, 2022 did not exceed applicable COGCC Table 915-1 regulatory limits and/or local background.

## 5.0 RECOMMENDATIONS

Based on the information presented in this report, EAGLE recommends the following:

- Continue monitoring natural attenuation at the site in monitoring wells MW-01 through MW-06.

EAGLE sincerely appreciates the opportunity to provide our services. If you have any questions or require further information, please contact us at (303) 433-0479.

Sincerely,

***EAGLE ENVIRONMENTAL CONSULTING, INC.***



Trevor Copple  
Staff Geologist



Andrew Newberry  
Project Geologist

## **FIGURES**

**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Monitoring Well Soil Analytical Map**

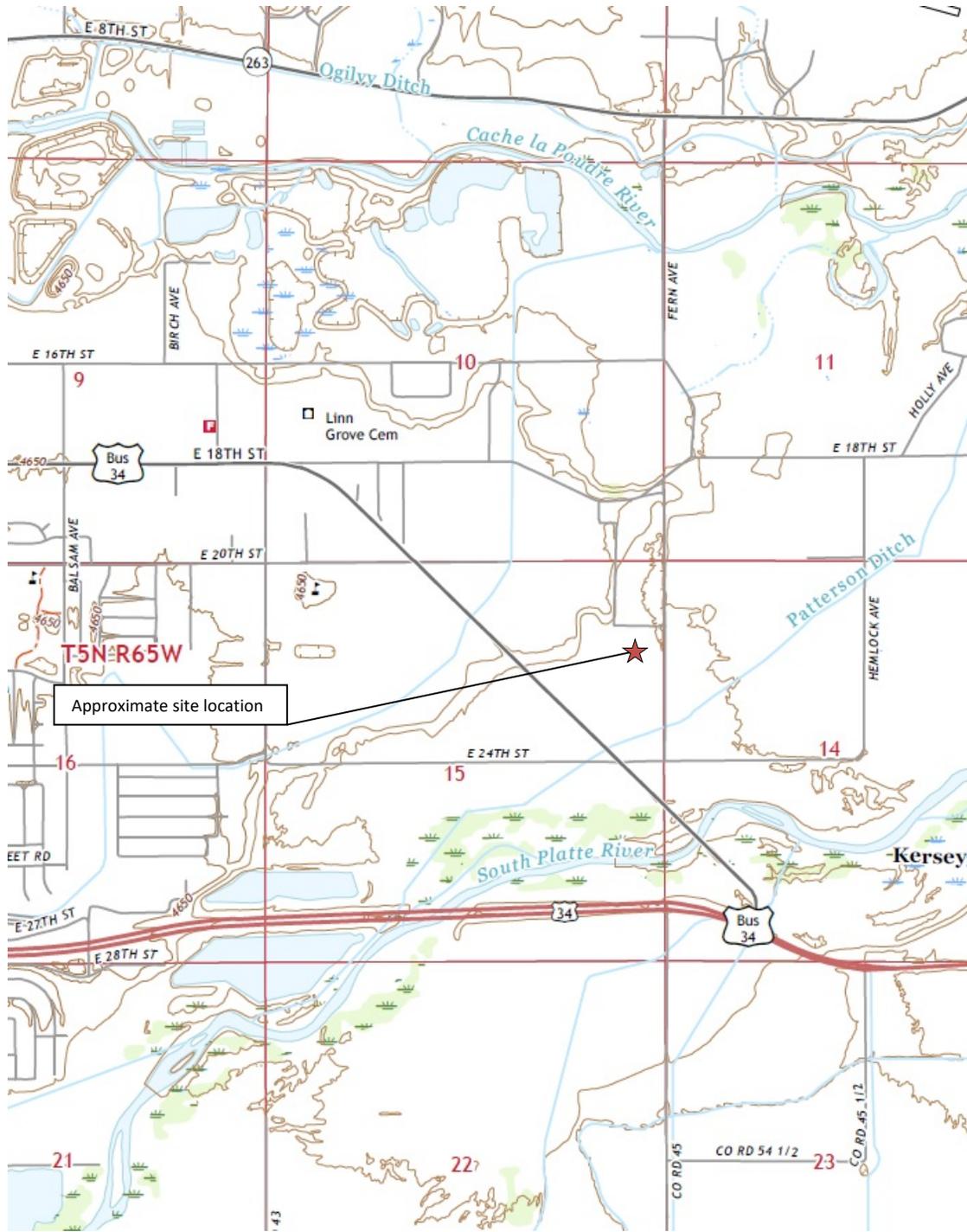
**Figure 4: Geologic Cross-Section (A-A')**

**Figure 5: Monitoring Well Polycyclic Aromatic Hydrocarbons Map**

**Figure 6: Groundwater Elevation Map (11/23/22)**

**Figure 7: Groundwater Analytical Map (11/23/22)**

**Figure 8: Inorganic Groundwater Parameters Map (11/23/22)**



**Topographic Site Location Map**

Carlson 15-D Pad  
 Produced Water Release  
 40.403155 / -104.641111  
 NE¼ NE¼ SEC.15 T5N R65W 6PM  
 Weld County, Colorado  
 Location ID 331351  
 Remediation # 24136



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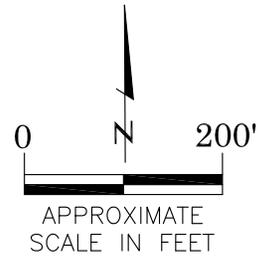
Source: USGS 7.5 Minute Topographic Map, Greeley, CO Quadrangle 2022

**Figure 1**



LEGEND

- APPROXIMATE FACILITY BOUNDARIES
- APPROXIMATE RELEASE LOCATION

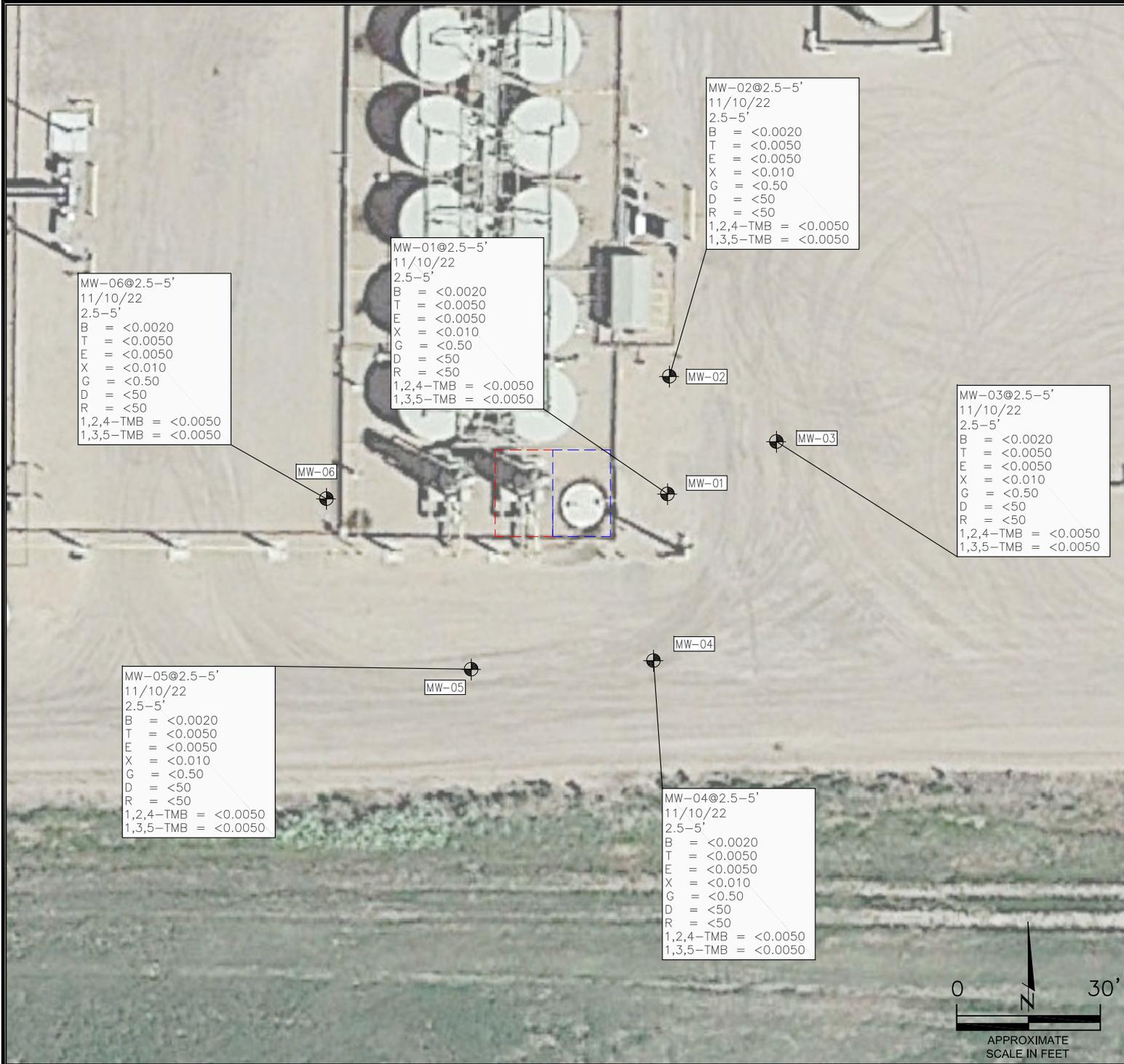


AERIAL SITE LOCATION MAP  
 CARLSON 15-D PAD  
 PRODUCED WATER RELEASE  
 40.403155 / -104.641111  
 NE¼ NE¼ SEC.15 T5N R65W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 331351  
 REMEDIATION # 24136

DATE: 10/27/22	
FIG. NO. 2	DRAWN BY: TC



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**LEGEND**

- INITIAL ASSESSMENT BOUNDARIES
- OVER-EXCAVATION BOUNDARIES
- APPROXIMATE MONITORING WELL LOCATIONS

**PARAMETERS**

SAMPLE LOCATION  
 DATE  
 DEPTH (FEET)  
 B = BENZENE (mg/kg)  
 T = TOLUENE (mg/kg)  
 E = ETHYLBENZENE (mg/kg)  
 X = TOTAL XYLENES (mg/kg)  
 G = TPH-GRO (mg/kg)  
 D = TPH-DRO (mg/kg)  
 R = TPH-RRO (mg/kg)  
 1,2,4-TMB = 1,2,4 TRIMETHYLBENZENE (mg/kg)  
 1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS  
 TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS  
 TPH-RRO = TOTAL PETROLEUM HYDROCARBONS - RESIDUAL RANGE ORGANICS

NOTES:  
 VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS.

VALUES PRESENTED IN **BOLD** EXCEED COGCC TABLE 915-1 REGULATORY LIMITS.

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

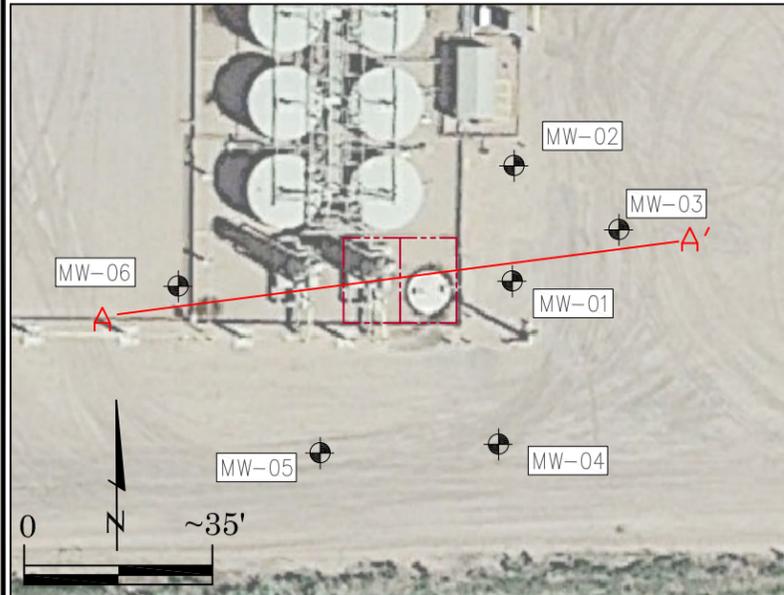
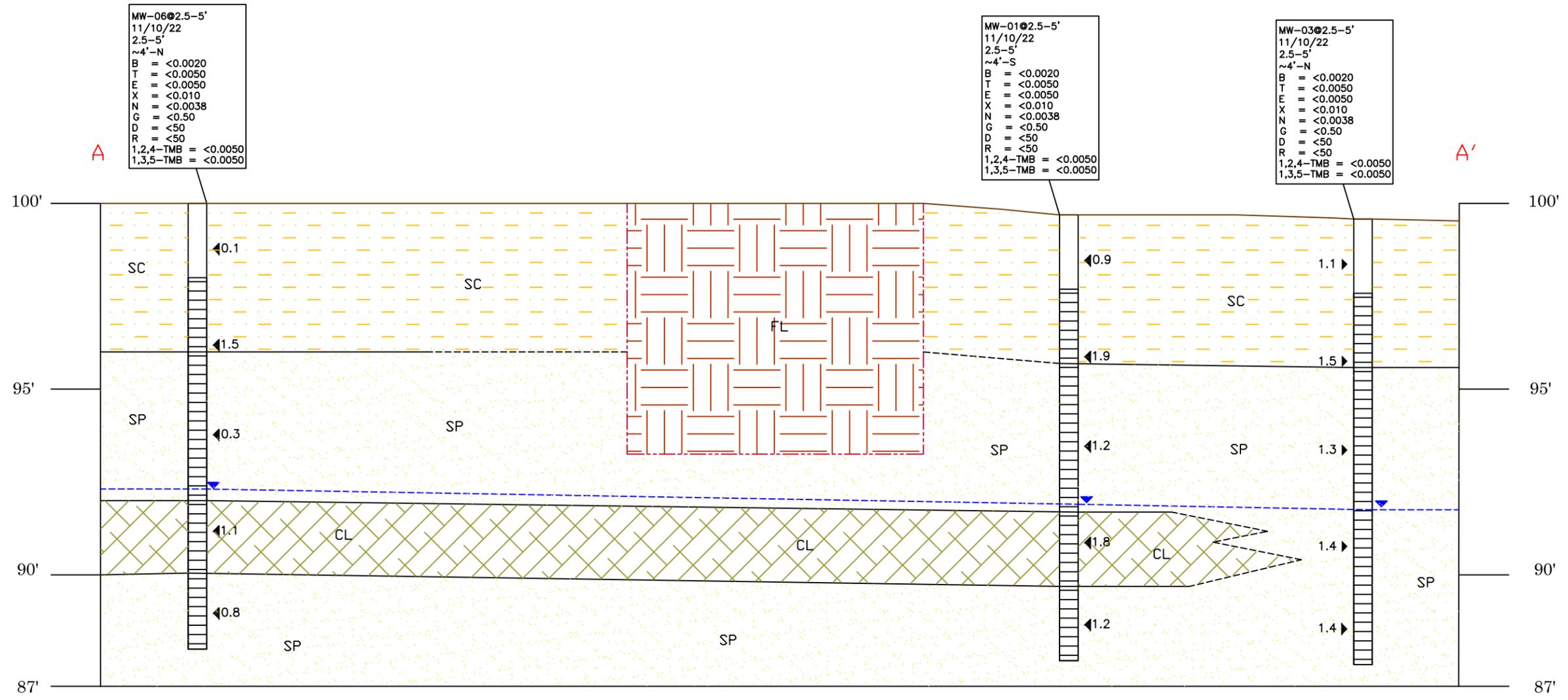
**MONITORING WELL SOIL ANALYTICAL MAP**  
 CARLSON 15-D PAD  
 PRODUCED WATER RELEASE  
 40.403155 / -104.641111  
 NE¼ NE¼ SEC.15 T5N R65W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 331351  
 REMEDIATION # 24136

DATE:  
 12/21/22  
 DRAWN BY:  
 TC  
 FIG.  
 NO. 3



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# GEOLOGIC CROSS SECTION A-A'



### LEGEND

- FILL
- POORLY-GRADED SAND
- CLAYEY SAND
- SANDY CLAY
- GROUND SURFACE
- OBSERVED CONTACT
- INFERRED CONTACT
- EXCAVATION BOUNDARIES
- OBSERVED GROUNDWATER (11/23/22)
- LINE OF CROSS SECTION

### PARAMETERS

**SAMPLE LOCATION**  
 DATE  
 DEPTH (FEET)  
 OFFSET FROM A-A' (FEET-DIRECTION)

B = BENZENE (mg/kg)  
 T = TOLUENE (mg/kg)  
 E = ETHYLBENZENE (mg/kg)  
 X = TOTAL XYLENES (mg/kg)  
 N = NAPHTHALENE (mg/kg)  
 G = TPH-GRO (mg/kg)  
 D = TPH-DRO (mg/kg)  
 R = TPH-RRO (mg/kg)  
 1,2,4-TMB = 1,2,4 TRIMETHYLBENZENE (mg/kg)  
 1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS  
 TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS  
 TPH-RRO = TOTAL PETROLEUM HYDROCARBONS - RESIDUAL RANGE ORGANICS

NOTES:  
 VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS.

PVC RISER  
 PID (ppm-v)  
 SLOTTED SCREEN

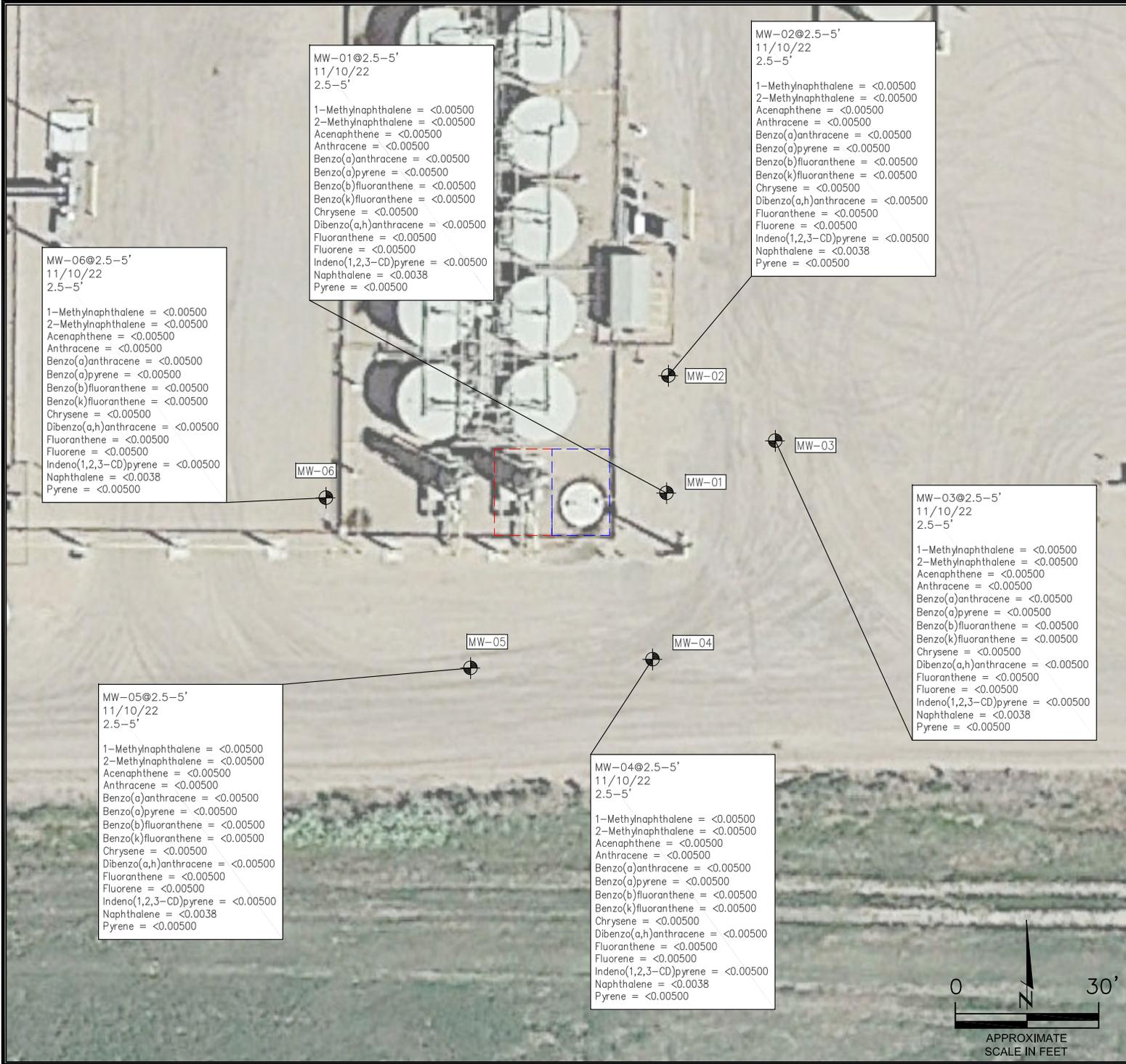
ppm-v = PARTS PER MILLION BY VOLUME

0 10'  
 APPROXIMATE HORIZONTAL SCALE IN FEET  
 3x VERTICAL EXAGGERATION

**GEOLOGIC CROSS SECTION (A-A')**  
 CARLSON 15-D PAD  
 PRODUCED WATER RELEASE  
 40.403155 / -104.641111  
 NE 1/4 NE 1/4 SEC.15 T5N R65W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 331351  
 REMEDIATION # 24136

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 Ph: 303-433-0479 • F: 303-325-5449

FIG. NO. 4 DATE: 12/21/22 DRAWN BY: AMN



**LEGEND**

- INITIAL ASSESSMENT BOUNDARIES
- OVER-EXCAVATION BOUNDARIES



**PARAMETERS**

SAMPLE LOCATION  
DATE SAMPLE COLLECTED  
APPROXIMATE DEPTH

POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

NOTES:  
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS.

VALUES PRESENTED IN **BOLD** EXCEED COGCC TABLE 915-1 REGULATORY LIMITS.

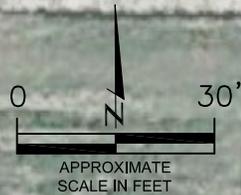
COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

**MONITORING WELL POLYCYCLIC AROMATIC HYDROCARBONS MAP**

CARLSON 15-D PAD  
PRODUCED WATER RELEASE  
40.403155 / -104.641111  
NE¼ NE¼ SEC.15 T5N R65W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 331351  
REMEDATION # 24136

DATE:  
12/21/22  
DRAWN BY:  
TC  
FIG.  
NO. 5

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**LEGEND**

- INITIAL ASSESSMENT BOUNDARIES
  - OVER-EXCAVATION BOUNDARIES
  - APPROXIMATE MONITORING WELL LOCATIONS
  - (91.45) RELATIVE GROUNDWATER ELEVATION (FT.)
  - INFERRED GROUNDWATER ELEVATION CONTOUR (FT.)
  - APPROXIMATE GROUNDWATER FLOW DIRECTION
- FT. = FEET

NOTE: GROUNDWATER ELEVATION DATA COLLECTED ON 11/23/22.

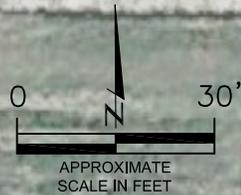
HYDRAULIC GRADIENT (MW-06 TO MW-03): 0.006 FT./FT

GROUNDWATER ELEVATION MAP  
 (11/23/22)  
 CARLSON 15-D PAD  
 PRODUCED WATER RELEASE  
 40.403155 / -104.641111  
 NE¼ NE¼ SEC.15 T5N R65W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 331351  
 REMEDIATION # 24136

DATE:  
12/21/22  
 DRAWN BY:  
TC  
 FIG.  
NO. 6



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MW-01  
11/23/22  
B = <1.0  
T = <1.0  
E = <1.0  
X = <2.0  
N = <1.0  
1,2,4-TMB = <1.0  
1,3,5-TMB = <1.0

MW-02  
11/23/22  
B = <1.0  
T = <1.0  
E = <1.0  
X = <2.0  
N = <1.0  
1,2,4-TMB = <1.0  
1,3,5-TMB = <1.0

MW-03  
11/23/22  
B = <1.0  
T = <1.0  
E = <1.0  
X = <2.0  
N = <1.0  
1,2,4-TMB = <1.0  
1,3,5-TMB = <1.0

MW-06

MW-06  
11/23/22  
B = <1.0  
T = <1.0  
E = <1.0  
X = <2.0  
N = <1.0  
1,2,4-TMB = <1.0  
1,3,5-TMB = <1.0

MW-05

MW-05  
11/23/22  
B = <1.0  
T = <1.0  
E = <1.0  
X = <2.0  
N = <1.0  
1,2,4-TMB = <1.0  
1,3,5-TMB = <1.0

MW-04

MW-04  
11/23/22  
B = <1.0  
T = <1.0  
E = <1.0  
X = <2.0  
N = <1.0  
1,2,4-TMB = <1.0  
1,3,5-TMB = <1.0

**LEGEND**

- INITIAL ASSESSMENT BOUNDARIES
- OVER-EXCAVATION BOUNDARIES

APPROXIMATE MONITORING WELL LOCATIONS

**PARAMETERS**

**GROUNDWATER SAMPLE LOCATION**  
DATE  
B = BENZENE (µg/L)  
T = TOLUENE (µg/L)  
E = ETHYLBENZENE (µg/L)  
X = TOTAL XYLENES (µg/L)  
N = NAPHTHALENE (µg/L)  
1,2,4-TMB = 1,2,4-TRIMETHYLBENZENE (µg/L)  
1,3,5-TMB = 1,3,5-TRIMETHYLBENZENE (µg/L)

µg/L = MICROGRAMS PER LITER

**NOTES:**  
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE THE LABORATORY REPORTING LIMIT

VALUES PRESENTED IN **BOLD** EXCEED THE COGCC TABLE 915-1 REGULATORY LIMITS FOR THAT COMPOUND

COGCC = COLORADO OIL AND GAS CONSERVATION COMMISSION

**GROUNDWATER ANALYTICAL MAP**  
(11/23/22)

CARLSON 15-D PAD  
PRODUCED WATER RELEASE  
40.403155 / -104.641111  
NE¼ NE¼ SEC.15 T5N R65W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 331351  
REMEDATION # 24136

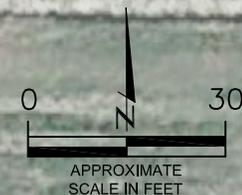
DATE:  
12/21/22

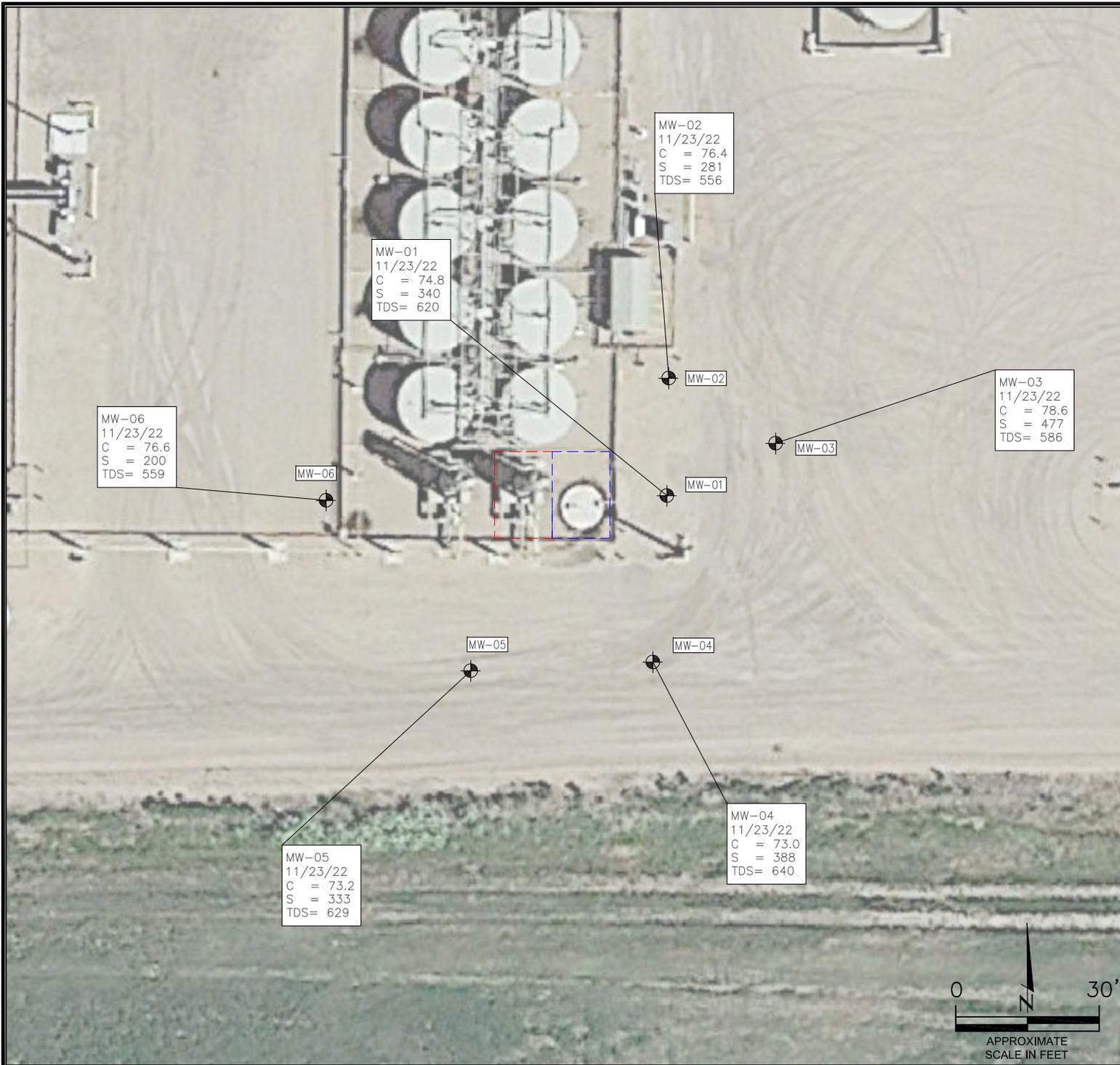
DRAWN BY:  
TC

FIG. NO. 7



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**LEGEND**

--- INITIAL ASSESSMENT BOUNDARIES

--- OVER-EXCAVATION BOUNDARIES

⊕ APPROXIMATE MONITORING WELL LOCATIONS

**PARAMETERS**

SAMPLE LOCATION  
 DATE  
 C = CHLORIDE (mg/L)  
 S = SULFATE (mg/L)  
 TDS = TOTAL DISSOLVED SOLIDS (mg/L)

mg/L = MILLIGRAMS PER LITER

NOTES:  
 INORGANIC GROUNDWATER SAMPLES WERE COLLECTED 11/23/22.

THE INORGANIC GROUNDWATER PARAMETERS IN MONITORING WELLS MW-04 AND MW-05 WERE USED IN THE DETERMINATION OF "LOCAL BACKGROUND RANGE" AT THE SITE.

VALUES PRESENTED IN **BOLD** EXCEED THE COCCC TABLE 915-1 REGULATORY LIMIT/LOCAL BACKGROUND RANGE (WHERE APPLICABLE).

**INORGANIC GROUNDWATER PARAMETERS MAP (11/23/22)**

CARLSON 15-D PAD  
 PRODUCED WATER RELEASE  
 40.403155 / -104.641111  
 NE¼ SEC.15 T5N R65W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 331351  
 REMEDIATION # 24136

DATE:  
 12/21/22

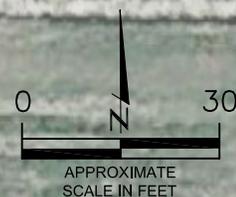
DRAWN BY:  
 TC

FIG. NO. 8



**EAGLE**  
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## **TABLES**

**Table 1: Photoionization Detector Reading Summary**

**Table 2: Soil Analytical Results Summary**

**Table 3: Polycyclic Aromatic Hydrocarbons Analytical Results Summary**

**Table 4: Groundwater Elevation Summary**

**Table 5: Groundwater Analytical Results Summary**

**Table 6: Inorganic Groundwater Parameters Summary**

**TABLE 1  
PHOTOIONIZATION DETECTOR READING SUMMARY  
CARLSON 15-D PAD  
PRODUCED WATER RELEASE  
40.403155 / -104.641111  
NE1/4 NE1/4 SEC.15 T5N R65W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 331351  
REMEDIAION # 24136**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
SS-01 @ 5.75' (40.403180 / -104.641117)	06/28/22	5.75	37.3	Y
SS-02 @ 6' (40.403160 / -104.641091)	06/28/22	6	56.1	Y
SS-03 @ 6' (40.403134 / -104.641118)	06/28/22	6	27.1	Y
SS-04 @ 6' (40.403164 / -104.641140)	06/28/22	6	1871	Y
Screen-01 @ 3' (40.403180 / -104.641116)	06/28/22	3	2.7	N
Screen-02 @ 3' (40.403166 / -104.641091)	06/28/22	3	3.9	N
Screen-03 @ 3' (40.403134 / -104.641115)	06/28/22	3	6.2	N
Screen-04 @ 3' (40.403145 / -104.641138)	06/28/22	3	4.1	N
Background-01 @ 5' (40.403002 / -104.641349)	06/28/22	5	2.7	Y
Background-02 @ 5' (40.403292 / -104.640895)	06/28/22	5	1.1	Y
SS-05 @ 6' (40.403185 / -104.641158)	10/17/22	6	2.1	Y
SS-06 @ 6' (40.403161 / -104.641179)	10/17/22	6	3.1	Y
SS-07 @ 6' (40.403135 / -104.641160)	10/17/22	6	4.4	Y
MW-01 @ 2.5-5' (40.403152 / -104.641045)	11/10/22	2.5-5	1.9	Y
MW-02 @ 2.5-5' (40.403218 / -104.641032)	11/10/22	2.5-5	2.1	Y
MW-03 @ 2.5-5' (40.403177 / -104.641004)	11/10/22	2.5-5	1.5	Y
MW-04 @ 2.5-5' (40.403063 / -104.641065)	11/10/22	2.5-5	1.8	Y
MW-05 @ 2.5-5' (40.403061 / -104.641188)	11/10/22	2.5-5	1.2	Y
MW-06 @ 2.5-5' (40.403149 / -104.641305)	11/10/22	2.5-5	1.5	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID - photoionization detector				

TABLE 2  
SOIL ANALYTICAL RESULTS SUMMARY  
CARLSON 15-D PAD  
PRODUCED WATER RELEASE  
40.403155 / -104.641111  
NE1/4 NE1/4 SEC.15 T5N R65W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 331351  
REMEDATION # 24136

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-RRO (mg/kg)	1,2,4- Trimethylbenzene (mg/kg)	1,3,5- Trimethylbenzene (mg/kg)	Boron (mg/L)	Specific Conductance (mmhos/cm)	pH (pH units)	SAR
<b>COGCC Table 915-1 Residential Screening Levels</b>				1.2	490	5.8	58	500			30	27	2	<4	6-8.3	<6
<b>COGCC Table 915-1 Protection of Groundwater Soil Screening Levels</b>				0.0026	0.69	0.78	9.9	--			0.0081	0.0087	--	--	--	--
SS-01 @ 5.75' (40.403180 / -104.641117)	06/28/22	5.75	37.3	<0.00200	<0.00200	<0.00200	<0.00200	<0.200	38.8	<100	<0.00200	<0.00200	<0.100	0.417	8.11	0.273
SS-02 @ 6' (40.403160 / -104.641091)	06/28/22	6	56.1	<0.00200	<0.00200	<0.00200	<0.00200	<0.200	206	149	<0.00200	<0.00200	<0.100	0.229	7.69	0.187
SS-03 @ 6' (40.403134 / -104.641118)	06/28/22	6	27.1	<0.00200	<0.00200	<0.00200	<0.00200	<0.200	101	<100	<0.00200	<0.00200	0.219	0.852	8.16	1.27
SS-04 @ 6' (40.403164 / -104.641140)	06/28/22	6	1871	<0.00200	<0.00200	<0.00200	9.38	156	<b>1870</b>	391	<b>6.86*</b>	<b>8.28*</b>	0.414	0.658	7.75	0.368
Background-01 @ 5' (40.403002 / -104.641349)	06/28/22	5	2.7	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.202	0.510	8.17	0.208
Background-02 @ 5' (40.403292 / -104.640895)	06/28/22	5	1.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.225	0.588	8.15	0.225
SS-05 @ 6' (40.403185 / -104.641158)	10/17/22	6	2.1	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
SS-06 @ 6' (40.403161 / -104.641179)	10/17/22	6	3.1	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
SS-07 @ 6' (40.403135 / -104.641160)	10/17/22	6	4.4	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
MW-01 @ 2.5-5' (40.403152 / -104.641045)	11/10/22	2.5-5	1.9	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
MW-02 @ 2.5-5' (40.403218 / -104.641032)	11/10/22	2.5-5	2.1	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
MW-03 @ 2.5-5' (40.403177 / -104.641004)	11/10/22	2.5-5	1.5	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
MW-04 @ 2.5-5' (40.403063 / -104.641065)	11/10/22	2.5-5	0.8	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
MW-05 @ 2.5-5' (40.403061 / -104.641188)	11/10/22	2.5-5	1.2	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA
MW-06 @ 2.5-5' (40.403149 / -104.641305)	11/10/22	2.5-5	1.5	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.0050	<0.0050	NA	NA	NA	NA

COGCC = Colorado Oil and Gas Conservation Commission  
mg/kg = milligrams per kilogram      TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics      NA - Not Analyzed  
mmhos/cm = millimhos per centimeter      TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics  
SAR = Sodium Adsorption Ratio      TPH-RRO = Total Petroleum Hydrocarbons - Residual Range Organics  
ppm-v = parts per million by volume  
PID - photoionization detector

Notes:  
Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit.  
Values presented in **BOLD** contained concentrations exceeding applicable COGCC Table 915-1 Regulatory Limits  
Values presented in **BOLD+ asterisk (\*)** contained concentrations exceeding COGCC Table 915-1 Protection of Groundwater Soil Screening Levels



TABLE 3  
 PAHS ANALYTICAL RESULTS SUMMARY  
 CARLSON 15-D PAD  
 PRODUCED WATER RELEASE  
 40.403155 / -104.641111  
 NE1/4 NE1/4 SEC.15 T5N R65W 6PM  
 WELD COUNTY, COLORADO  
 LOCATION ID 331351  
 REMEDIATION # 24136

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	1-Methyl- naphthalene (mg/kg)	2-Methyl- naphthalene (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(a)-anthracene (mg/kg)	Benzo(a)- pyrene (mg/kg)	Benzo(b)- fluoranthene (mg/kg)	Benzo(k)- fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo(a,h)- anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Ideno(1,2,3- cd)-pyrene (mg/kg)	Naphthalene (mg/kg)	Pyrene (mg/kg)
<b>COGCC Table 915-1 Residential Screening Levels</b>				18	24	360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	2	180
<b>COGCC Table 915-1 Protection of Groundwater Soil Screening Levels</b>				0.006	0.019	0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	0.0038	1.3
SS-01 @ 5.75' (40.403180 / -104.641117)	06/28/22	5.75	37.3	<0.00067	<0.00067	<0.00067	0.00159	<0.00067	0.000521	<0.00067	<0.00067	0.00286	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067	<0.00067
SS-02 @ 6' (40.403160 / -104.641091)	06/28/22	6	56.1	<0.00067	<0.00067	0.00055	0.00278	0.00396	0.00174	0.00128	0.000531	0.00489	0.00114	0.00118	0.000921	<0.00067	<0.00067	0.00179
SS-03 @ 6' (40.403134 / -104.641118)	06/28/22	6	27.1	<0.00067	<0.00067	0.000335	0.000795	0.00411	0.00092	0.00104	<0.00067	0.00328	0.000757	0.000485	0.000361	<0.00067	<0.00067	0.00126
SS-04 @ 6' (40.403164 / -104.641140)	06/28/22	6	1871	<b>0.566*</b>	<b>1*</b>	0.0238	0.0232	0.00307	0.0046	0.00323	0.00333	0.0332	<0.00335	0.00463	0.103	<0.00335	<b>0.105*</b>	0.0242
SS-05 @ 6' (40.403185 / -104.641158)	10/17/22	6	2.1	<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	<0.0038	<0.00500
SS-06 @ 6' (40.403161 / -104.641179)	10/17/22	6	3.1	<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	<0.0038	<0.00500
SS-07 @ 6' (40.403135 / -104.641160)	10/17/22	6	4.4	<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	<0.0038	<0.00500
MW-01 @ 2.5-5' (40.403152 / -104.641045)	11/10/22	2.5-5	1.9	<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	<0.0038	<0.00500
MW-02 @ 2.5-5' (40.403218 / -104.641032)	11/10/22	2.5-5	2.1	<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	<0.0038	<0.00500
MW-03 @ 2.5-5' (40.403177 / -104.641004)	11/10/22	2.5-5	1.5	<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	<0.0038	<0.00500
MW-04 @ 2.5-5' (40.403063 / -104.641065)	11/10/22	2.5-5	0.8	<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	<0.0038	<0.00500
MW-05 @ 2.5-5' (40.403061 / -104.641188)	11/10/22	2.5-5	1.2	<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	<0.0038	<0.00500
MW-06 @ 2.5-5' (40.403149 / -104.641305)	11/10/22	2.5-5	1.5	<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	<0.0038	<0.00500

COGCC = Colorado Oil and Gas Conservation Commission  
 mg/kg = milligrams per kilogram  
 ppm-v = parts per million by volume  
 PID - photoionization detector  
 Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit.  
 Values presented in **BOLD** contained concentrations exceeding applicable COGCC Table 915-1 Regulatory Limits  
 Values presented in **BOLD+ asterisk (\*)** contained concentrations exceeding COGCC Table 915-1 Protection of Groundwater Soil Screening Levels



**TABLE 4  
GROUNDWATER ELEVATION SUMMARY  
CARLSON 15-D PAD  
PRODUCED WATER RELEASE  
40.403155 / -104.641111  
NE1/4 NE1/4 SEC.15 T5N R65W 6PM  
WELD COUNTY, COLORADO  
LOCATION ID 331351  
REMEDIAION # 24136**

Sample Location (Latitude/Longitude)	Date	Top of Casing Elevation (feet)	Depth to Groundwater from TOC (feet)	Relative Groundwater Elevation (feet)
MW-01 (40.403152 / -104.641045)	11/23/22	99.69	7.79	91.90
MW-02 (40.403218 / -104.641032)	11/23/22	99.62	7.85	91.77
MW-03 (40.403177 / -104.641004)	11/23/22	99.58	7.83	91.75
MW-04 (40.403063 / -104.641065)	11/23/22	99.58	7.62	91.96
MW-05 (40.403061 / -104.641188)	11/23/22	99.65	7.64	92.01
MW-06 (40.403149 / -104.641305)	11/23/22	100.00	7.69	92.31
NOTES: TOC - top of casing				



**TABLE 5**  
**GROUNDWATER ANALYTICAL RESULTS SUMMARY**  
**CARLSON 15-D PAD**  
**PRODUCED WATER RELEASE**  
**40.403155 / -104.641111**  
**NE1/4 NE1/4 SEC.15 T5N R65W 6PM**  
**WELD COUNTY, COLORADO**  
**LOCATION ID 331351**  
**REMEDIATION # 24136**

Sample Location (Latitude/Longitude)	Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4- Trimethylbenzene (µg/L)	1,3,5 - Trimethylbenzene (µg/L)
<b>COGCC Table 915-1 Regulatory Limits (µg/L)</b>		<b>5</b>	<b>560</b>	<b>700</b>	<b>1400</b>	<b>140</b>	<b>67</b>	<b>67</b>
GW-01 (40.403169 / -104.641106)	06/28/22	1.32	<1.00	1.09	16.5	<2.00	<2.00	7.71
GW-02 (40.403157 / -104.641140)	10/14/22	2.2	9.9	<1.0	110	4.6	22	35
MW-01 (40.403152 / -104.641045)	11/23/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-02 (40.403218 / -104.641032)	11/23/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-03 (40.403177 / -104.641004)	11/23/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-04 (40.403063 / -104.641065)	11/23/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-05 (40.403061 / -104.641188)	11/23/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
MW-06 (40.403149 / -104.641305)	11/23/22	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0
COGCC = Colorado Oil and Gas Conservation Commission µg/L - micrograms per liter Note: Values presented with a less than symbol (<) indicate concentrations were not observed at or above the laboratory reporting limit. Values presented in <b>bold</b> typeface exceed their respective COGCC - Regulatory Limits (Table 915-1).								



**TABLE 6**  
**INORGANIC GROUNDWATER PARAMETERS SUMMARY**  
**CARLSON 15-D PAD**  
**PRODUCED WATER RELEASE**  
**40.403155 / -104.641111**  
**NE1/4 NE1/4 SEC.15 T5N R65W 6PM**  
**WELD COUNTY, COLORADO**  
**LOCATION ID 331351**  
**REMEDIATION # 24136**

Sample Location (Latitude/Longitude)	Date	Chloride (mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)
<i>COGCC Table 915-1 Regulatory Limits (mg/L)</i>		<b>250</b>	<b>&lt;1.25xLocal Background (416 to 485)</b>	<b>&lt;1.25xLocal Background (786 to 800)</b>
MW-01 (40.403152 / -104.641045)	11/23/22	74.8	340	620
MW-02 (40.403218 / -104.641032)	11/23/22	76.4	281	556
MW-03 (40.403177 / -104.641004)	11/23/22	78.6	477	586
MW-04 (40.403063 / -104.641065)	11/23/22	73.0	388	640
MW-05 (40.403061 / -104.641188)	11/23/22	73.2	333	629
MW-06 (40.403149 / -104.641305)	11/23/22	76.6	200	559

**Notes:**

COGCC - Colorado Oil and Gas Conservation Commission      mg/L = milligrams per liter

Note: The Inorganic Groundwater Parameters between monitoring wells MW-04 and MW-05 were used in the determination of "local background range" at the site. Local "regulatory limit/range" (1.25\*local background) presented (in parentheses).

Values presented in **bold** typeface exceed their respective COGCC - Regulatory Limits (Table 915-1).



## **ATTACHMENT A**

### **Soil Boring Logs / Well Completion Diagrams**

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-4') gravelly, clayey SAND - brown, moist, loose, fine to coarse grained, poorly-graded with ~20% clay and ~10% gravel, N/O, N/S	SC	HA	1	100	0.9	N/A	5		
5	(4-8') poorly-graded SAND - brown, moist to wet, very loose, coarse grained, poorly-graded with trace fines, N/O, N/S @ ~6' - wet	SP				1.9				
10	(8-10') sandy CLAY - brown, wet, soft to med. stiff, mod. plasticity, poorly-graded with ~40% sand, N/O, N/S	CL	DP	1	80	1.2	N/A			
10	(10-12') poorly-graded SAND - brown, wet, loose, coarse grained, poorly-graded with trace fines, N/O, N/S	SP	DP	2	80	1.8	N/A			
12	BoB @ 12'									

HA - Hand auger  
 DP - Direct Push  
 HC - Hydrocarbon  
 BoB - Bottom of Boring  
 N/O - no odor  
 N/S - no staining  
 TOC - top of casing  
 bgs - below ground surface

START/COMPLETION DATE: 11-10-22		SAND PACK INTERVAL (FEET): 1-12	
PROJECT: CARLSON 15-D PAD		BENTONITE/GROUT INTERVAL (FEET): 0.5-1	
LOGGED BY: IAN McFARLAND		WELL SCREEN INTERVAL (FEET): 2-12	
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 1	
BORING DEPTH (FEET): 12	WELL DEPTH (FEET): 12	<p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.                  8000 W 44th Ave., Wheat Ridge, CO 80033                  Ph: 303-433-0479 • F: 303-325-5449</p>	
PID INSTRUMENT: MiniREA 3000 - #13			
TIME STARTED/COMPLETED: 1240/1258			
SAMPLE COLLECTION DEPTH (FT.)/TIME: 2.5-5/1240			

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-4') gravelly, clayey SAND - brown, moist, loose, fine to coarse grained, poorly-graded with ~20% clay and 10% gravel, N/O, N/S	SC	HA	1	100	0.5	N/A			
5	(4-12') poorly-graded SAND - brown, moist to wet, very loose, coarse grained, poorly-graded with trace fines, N/O, N/S @ ~6' - wet	SP	DP	1	90	2.1	N/A			
10						1.8				
10						1.8				
10			DP	2	90	1.1	N/A			
12	BoB @ 12'									
15										
20										
25										
30										

HA - Hand auger  
 DP - Direct Push  
 HC - Hydrocarbon  
 BoB - Bottom of Boring  
 N/O - no odor  
 N/S - no staining  
 TOC - top of casing  
 bgs - below ground surface

START/COMPLETION DATE: 11-10-22		SAND PACK INTERVAL (FEET): 1-12	
PROJECT: CARLSON 15-D PAD		BENTONITE/GROUT INTERVAL (FEET): 0.5-1	
LOGGED BY: IAN McFARLAND		WELL SCREEN INTERVAL (FEET): 2-12	
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 1	
BORING DEPTH (FEET): 12	WELL DEPTH (FEET): 12	<p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.                  8000 W 44th Ave., Wheat Ridge, CO 80033                  Ph: 303-433-0479 • F: 303-325-5449</p>	
PID INSTRUMENT: MiniREA 3000 - #13			
TIME STARTED/COMPLETED: 1312/1326			
SAMPLE COLLECTION DEPTH (FT.)/TIME: 2.5-5/1300			

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-4') gravelly, clayey SAND - brown, moist, loose, fine to coarse grained, poorly-graded with ~30% clay and 10% gravel, N/O, N/S	SC	HA	1	100	1.1	N/A	0		
						1.5				
5	(4-12') poorly-graded SAND - brown, moist to wet, very loose, coarse grained, poorly-graded with trace fines, N/O, N/S @ ~6' - wet	SP	DP	1	95	1.3	N/A	5		
						1.4				
10						DP	2	95	1.4	N/A
	BoB @ 12'									
15										
20										
25										
30										

HA - Hand Auger  
 DP - Direct Push  
 HC - Hydrocarbon  
 BoB - Bottom of Boring  
 N/O - no odor  
 N/S - no staining  
 TOC - top of casing  
 bgs - below ground surface

START/COMPLETION DATE: 11-10-22		SAND PACK INTERVAL (FEET): 1-12	
PROJECT: CARLSON 15-D PAD		BENTONITE/GROUT INTERVAL (FEET): 0.5-1	
LOGGED BY: IAN McFARLAND		WELL SCREEN INTERVAL (FEET): 2-12	
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 1	
BORING DEPTH (FEET): 12	WELL DEPTH (FEET): 12	<p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.                  8000 W 44th Ave., Wheat Ridge, CO 80033                  Ph: 303-433-0479 • F: 303-325-5449</p>	
PID INSTRUMENT: MiniREA 3000 - #13			
TIME STARTED/COMPLETED: 1300/1310			
SAMPLE COLLECTION DEPTH (FT.)/TIME: 2.5-5/1255			

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG TYPE	NUMBER	RECOVERY %						
0	(0-4') gravelly, clayey SAND - brown, moist, loose, fine to coarse grained, poorly-graded with ~20% clay and ~5% gravel, N/O, N/S	SC	HA	1	100	0.4	N/A	<p>Concrete/Steel Casing Bentonite Chips 1" Dia. Sch. 40 PVC Riser 10/20 Silica Sand Pack 1" Dia. Sch. 40 Slotted PVC (0.010") 1" End Cap</p>		
5	(4-8') poorly-graded SAND - brown, moist to wet, very loose, coarse grained, poorly-graded with trace fines, N/O, N/S @ ~6' - wet	SP				1.8				
10	(8-10') sandy CLAY - brown, wet, soft to med. stiff, mod. plasticity, poorly-graded with ~30% sand, N/O, N/S	CL	DP	1	80	1.6	N/A			
10	(10-12') poorly-graded SAND - brown, wet, loose, coarse grained, poorly-graded with trace fines, N/O, N/S	SP	DP	2	80	1.1		N/A		
12	BoB @ 12'									

HA - Hand Auger  
 DP - Direct Push  
 HC - Hydrocarbon  
 BoB - Bottom of Boring  
 N/O - no odor  
 N/S - no staining  
 TOC - top of casing  
 bgs - below ground surface

START/COMPLETION DATE: 11-10-22		SAND PACK INTERVAL (FEET): 1-12	
PROJECT: CARLSON 15-D PAD		BENTONITE/GROUT INTERVAL (FEET): 0.5-1	
LOGGED BY: IAN McFARLAND		WELL SCREEN INTERVAL (FEET): 2-12	
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 1	
BORING DEPTH (FEET): 12	WELL DEPTH (FEET): 12	<p><b>EAGLE</b> ENVIRONMENTAL CONSULTING, INC. 8000 W 44th Ave., Wheat Ridge, CO 80033 Ph: 303-433-0479 • F: 303-325-5449</p>	
PID INSTRUMENT: MiniREA 3000 - #13			
TIME STARTED/COMPLETED: 1133/1145			
SAMPLE COLLECTION DEPTH (FT.)/TIME: 2.5-5/1129			

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-4') gravelly, clayey SAND - brown, moist, loose, fine to coarse grained, poorly-graded with ~20% clay and 10% gravel, N/O, N/S	SC	HA	1	100	0.5	N/A			
5	(4-12') poorly-graded SAND - brown, moist to wet, very loose, coarse grained, poorly-graded with trace fines, N/O, N/S @ ~6' - wet	SP	DP	1	75	1.2	N/A			
	1.0									
10	1.0									
	BoB @ 12'									
			DP	2	75	1.3	N/A			

HA - Hand Auger  
 DP - Direct Push  
 HC - Hydrocarbon  
 BoB - Bottom of Boring  
 N/O - no odor  
 N/S - no staining  
 TOC - top of casing  
 bgs - below ground surface

START/COMPLETION DATE: 11-10-22		SAND PACK INTERVAL (FEET): 1-12	
PROJECT: CARLSON 15-D PAD		BENTONITE/GROUT INTERVAL (FEET): 0.5-1	
LOGGED BY: IAN McFARLAND		WELL SCREEN INTERVAL (FEET): 2-12	
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 1	
BORING DEPTH (FEET): 12	WELL DEPTH (FEET): 12	<p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.                  8000 W 44th Ave., Wheat Ridge, CO 80033                  Ph: 303-433-0479 • F: 303-325-5449</p>	
PID INSTRUMENT: MiniREA 3000 - #13			
TIME STARTED/COMPLETED: 1230/1240			
SAMPLE COLLECTION DEPTH (FT.)/TIME: 2.5-5/1225			

DEPTH (FT)	LITHOLOGY	SAMPLE				OVM/OVA (PPM)	BLOW COUNT (per 0.5 FT)	DEPTH (FT)	WELL CONSTRUCTION DETAIL	COMMENTS
	DESCRIPTION	GRAPHIC LOG	TYPE	NUMBER	RECOVERY %					
0	(0-4') gravelly, clayey SAND - brown, moist, loose, fine to coarse grained, poorly-graded with ~30% clay and ~10% gravel, N/O, N/S	SC	HA	1	100	0.1	N/A			
5	(4-8') poorly-graded SAND - brown, moist to wet, very loose, coarse grained, poorly-graded with trace fines, N/O, N/S @ ~6' - wet	SP				1.5				
10	(8-10') sandy CLAY - brown, wet, soft to med. stiff, mod. plasticity, poorly-graded with ~30% sand, N/O, N/S	CL	DP	1	80	0.3	N/A			
10	(10-12') poorly-graded SAND - brown, wet, loose, coarse grained, poorly-graded with trace fines, N/O, N/S	SP	DP	2	80	0.8		N/A		
12	BoB @ 12'									

HA - Hand Auger  
 DP - Direct Push  
 HC - Hydrocarbon  
 BoB - Bottom of Boring  
 N/O - no odor  
 N/S - no staining  
 TOC - top of casing  
 bgs - below ground surface

START/COMPLETION DATE: 11-10-22		SAND PACK INTERVAL (FEET): 1-12	
PROJECT: CARLSON 15-D PAD		BENTONITE/GROUT INTERVAL (FEET): 0.5-1	
LOGGED BY: IAN McFARLAND		WELL SCREEN INTERVAL (FEET): 2-12	
DRILLING COMPANY/EQUIPMENT: EAGLE/GEOPROBE		WELL DIAMETER (INCHES): 1	
BORING DEPTH (FEET): 12	WELL DEPTH (FEET): 12	<p><b>EAGLE</b>                  ENVIRONMENTAL                  CONSULTING, INC.                  8000 W 44th Ave., Wheat Ridge, CO 80033                  Ph: 303-433-0479 • F: 303-325-5449</p>	
PID INSTRUMENT: MiniREA 3000 - #13			
TIME STARTED/COMPLETED: 1100/1125			
SAMPLE COLLECTION DEPTH (FT.)/TIME: 2.5-5/1055			

## **ATTACHMENT B**

### **Laboratory Analytical Reports**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

November 17, 2022

Martin Eckert III  
Civitas Resources  
650 Southgate Drive  
Windsor, CO 80550  
RE: Carlson 15-D Pad

Enclosed are the results of analyses for samples received by Summit Scientific on 11/10/22 16:30. 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: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-01@2.5-5'	2211183-01	Soil	11/10/22 12:40	11/10/22 16:30
MW-02@2.5-5'	2211183-02	Soil	11/10/22 13:00	11/10/22 16:30
MW-03@2.5-5'	2211183-03	Soil	11/10/22 12:55	11/10/22 16:30
MW-04@2.5-5'	2211183-04	Soil	11/10/22 11:29	11/10/22 16:30
MW-05@2.5-5'	2211183-05	Soil	11/10/22 12:25	11/10/22 16:30
MW-06@2.5-5'	2211183-06	Soil	11/10/22 10:55	11/10/22 16:30

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.*



S<sub>2</sub>

2211183

Sample Receipt Checklist

S2 Work Order# \_\_\_\_\_

Client: Eagle/Civitas Client Project ID: Carlson 15-D Pad

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"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, 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.

AT  
Custodian Printed Name

11.10.22  
Date/Time



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-01@2.5-5'**  
**2211183-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BFK0291	11/11/22	11/12/22	EPA 8260B	
Toluene	ND	0.0050	0.00025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	0.00021	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	0.00044	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
Naphthalene	ND	0.0038	0.00036	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		70.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50	4.3	mg/kg	1	BFK0294	11/11/22	11/11/22	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **11/10/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		81.7 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-01@2.5-5'**  
**2211183-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BFK0355	11/14/22	11/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	0.000308	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	0.000363	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	0.000234	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	0.000433	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	0.000423	"	"	"	"	"	"	"
Chrysene	ND	0.00500	0.000237	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	0.00167	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	0.000373	"	"	"	"	"	"	"
Fluorene	ND	0.00500	0.000477	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	0.00118	"	"	"	"	"	"	"
Pyrene	ND	0.00500	0.000317	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	0.00185	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	0.00189	"	"	"	"	"	"	"

Date Sampled: **11/10/22 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		80.5 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		59.2 %		40-150		"	"	"	"	"

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-02@2.5-5'**  
**2211183-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BFK0291	11/11/22	11/12/22	EPA 8260B	
Toluene	ND	0.0050	0.00025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	0.00021	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	0.00044	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
Naphthalene	ND	0.0038	0.00036	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		82.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50	4.3	mg/kg	1	BFK0294	11/11/22	11/11/22	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **11/10/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		89.0 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-02@2.5-5'**  
**2211183-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BFK0355	11/14/22	11/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	0.000308	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	0.000363	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	0.000234	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	0.000433	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	0.000423	"	"	"	"	"	"	"
Chrysene	ND	0.00500	0.000237	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	0.00167	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	0.000373	"	"	"	"	"	"	"
Fluorene	ND	0.00500	0.000477	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	0.00118	"	"	"	"	"	"	"
Pyrene	ND	0.00500	0.000317	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	0.00185	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	0.00189	"	"	"	"	"	"	"

Date Sampled: **11/10/22 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		79.1 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		64.2 %		40-150		"	"	"	"	"

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: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-03@2.5-5'**  
**2211183-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BFK0291	11/11/22	11/12/22	EPA 8260B	
Toluene	ND	0.0050	0.00025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	0.00021	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	0.00044	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
Naphthalene	ND	0.0038	0.00036	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		71.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/22 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50	4.3	mg/kg	1	BFK0294	11/11/22	11/11/22	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **11/10/22 12:55**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-03@2.5-5'**  
**2211183-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: 11/10/22 12:55

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BFK0355	11/14/22	11/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	0.000308	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	0.000363	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	0.000234	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	0.000433	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	0.000423	"	"	"	"	"	"	"
Chrysene	ND	0.00500	0.000237	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	0.00167	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	0.000373	"	"	"	"	"	"	"
Fluorene	ND	0.00500	0.000477	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	0.00118	"	"	"	"	"	"	"
Pyrene	ND	0.00500	0.000317	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	0.00185	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	0.00189	"	"	"	"	"	"	"

Date Sampled: 11/10/22 12:55

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		86.2 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		69.6 %		40-150		"	"	"	"	"

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-04@2.5-5'**  
**2211183-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/22 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BFK0291	11/11/22	11/12/22	EPA 8260B	
Toluene	ND	0.0050	0.00025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	0.00021	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	0.00044	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
Naphthalene	ND	0.0038	0.00036	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/22 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		81.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		110 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/22 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50	4.3	mg/kg	1	BFK0294	11/11/22	11/11/22	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **11/10/22 11:29**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		76.4 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-04@2.5-5'**  
**2211183-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: 11/10/22 11:29

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BFK0355	11/14/22	11/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	0.000308	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	0.000363	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	0.000234	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	0.000433	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	0.000423	"	"	"	"	"	"	"
Chrysene	ND	0.00500	0.000237	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	0.00167	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	0.000373	"	"	"	"	"	"	"
Fluorene	ND	0.00500	0.000477	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	0.00118	"	"	"	"	"	"	"
Pyrene	ND	0.00500	0.000317	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	0.00185	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	0.00189	"	"	"	"	"	"	"

Date Sampled: 11/10/22 11:29

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		76.1 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		65.1 %		40-150		"	"	"	"	"

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-05@2.5-5'**  
**2211183-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/22 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BFK0291	11/11/22	11/12/22	EPA 8260B	
Toluene	ND	0.0050	0.00025	"	"	"	"	"	"	"
Ethylbenzene	ND	0.0050	0.00021	"	"	"	"	"	"	"
Xylenes (total)	ND	0.010	0.00044	"	"	"	"	"	"	"
1,2,4-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	"
1,3,5-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	"
Naphthalene	ND	0.0038	0.00036	"	"	"	"	"	"	"
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	"

Date Sampled: **11/10/22 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		80.8 %		50-150		"	"	"	"	"
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	"
Surrogate: 4-Bromofluorobenzene		97.9 %		50-150		"	"	"	"	"

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/22 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50	4.3	mg/kg	1	BFK0294	11/11/22	11/11/22	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **11/10/22 12:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		75.3 %		30-150		"	"	"	"	"

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-05@2.5-5'**  
**2211183-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: 11/10/22 12:25

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BFK0355	11/14/22	11/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	0.000308	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	0.000363	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	0.000234	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	0.000433	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	0.000423	"	"	"	"	"	"	"
Chrysene	ND	0.00500	0.000237	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	0.00167	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	0.000373	"	"	"	"	"	"	"
Fluorene	ND	0.00500	0.000477	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	0.00118	"	"	"	"	"	"	"
Pyrene	ND	0.00500	0.000317	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	0.00185	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	0.00189	"	"	"	"	"	"	"

Date Sampled: 11/10/22 12:25

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		94.6 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		73.3 %		40-150		"	"	"	"	"

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-06@2.5-5'**  
**2211183-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/22 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BFK0291	11/11/22	11/12/22	EPA 8260B	
Toluene	ND	0.0050	0.00025	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	0.00021	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	0.00044	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	0.00024	"	"	"	"	"	"	
Naphthalene	ND	0.0038	0.00036	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/22 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		72.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/22 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50	4.3	mg/kg	1	BFK0294	11/11/22	11/11/22	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **11/10/22 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		83.3 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

**MW-06@2.5-5'**  
**2211183-06 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/22 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BFK0355	11/14/22	11/15/22	EPA 8270D SIM	
Anthracene	ND	0.00500	0.000308	"	"	"	"	"	"	"
Benzo (a) anthracene	ND	0.00500	0.000363	"	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	0.000234	"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500	0.000433	"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500	0.000423	"	"	"	"	"	"	"
Chrysene	ND	0.00500	0.000237	"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	0.00167	"	"	"	"	"	"	"
Fluoranthene	ND	0.00500	0.000373	"	"	"	"	"	"	"
Fluorene	ND	0.00500	0.000477	"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	0.00118	"	"	"	"	"	"	"
Pyrene	ND	0.00500	0.000317	"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500	0.00185	"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500	0.00189	"	"	"	"	"	"	"

Date Sampled: **11/10/22 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		82.5 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		69.1 %		40-150		"	"	"	"	"

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

### 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 BFK0291 - EPA 5030 Soil MS

##### Blank (BFK0291-BLK1)

Prepared: 11/11/22 Analyzed: 11/12/22

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>	0.0308		"	0.0400		77.0	50-150			
<i>Surrogate: Toluene-d8</i>	0.0439		"	0.0400		110	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0410		"	0.0400		102	50-150			

##### LCS (BFK0291-BS1)

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

Benzene	0.162	0.0020	mg/kg	0.150		108	70-130			
Toluene	0.188	0.0050	"	0.150		125	70-130			
Ethylbenzene	0.161	0.0050	"	0.150		107	70-130			
m,p-Xylene	0.324	0.010	"	0.300		108	70-130			
o-Xylene	0.155	0.0050	"	0.150		103	70-130			
1,2,4-Trimethylbenzene	0.147	0.0050	"	0.150		98.2	70-130			
1,3,5-Trimethylbenzene	0.149	0.0050	"	0.150		99.1	70-130			
Naphthalene	0.135	0.0038	"	0.150		90.2	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0404		"	0.0400		101	50-150			
<i>Surrogate: Toluene-d8</i>	0.0417		"	0.0400		104	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0419		"	0.0400		105	50-150			

##### Matrix Spike (BFK0291-MS1)

Source: 2211183-01

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

Benzene	0.141	0.0020	mg/kg	0.150	ND	93.9	70-130			
Toluene	0.163	0.0050	"	0.150	ND	109	70-130			
Ethylbenzene	0.141	0.0050	"	0.150	ND	94.2	70-130			
m,p-Xylene	0.285	0.010	"	0.300	ND	94.9	70-130			
o-Xylene	0.139	0.0050	"	0.150	ND	92.5	70-130			
1,2,4-Trimethylbenzene	0.133	0.0050	"	0.150	ND	89.0	70-130			
1,3,5-Trimethylbenzene	0.133	0.0050	"	0.150	ND	88.9	70-130			
Naphthalene	0.136	0.0038	"	0.150	ND	90.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0398		"	0.0400		99.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0416		"	0.0400		104	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0412		"	0.0400		103	50-150			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]

Project Manager: Martin Eckert III

Reported:

11/17/22 09:15

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

**Summit Scientific**

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

**Batch BFK0291 - EPA 5030 Soil MS**

Matrix Spike Dup (BFK0291-MSD1)	Source: 2211183-01			Prepared: 11/11/22 Analyzed: 11/14/22					
Benzene	0.147	0.0020	mg/kg	0.150	ND	98.0	70-130	4.34	30
Toluene	0.170	0.0050	"	0.150	ND	113	70-130	3.95	30
Ethylbenzene	0.142	0.0050	"	0.150	ND	94.8	70-130	0.656	30
m,p-Xylene	0.287	0.010	"	0.300	ND	95.7	70-130	0.829	30
o-Xylene	0.142	0.0050	"	0.150	ND	94.3	70-130	1.93	30
1,2,4-Trimethylbenzene	0.129	0.0050	"	0.150	ND	85.8	70-130	3.64	30
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.150	ND	86.2	70-130	3.11	30
Naphthalene	0.137	0.0038	"	0.150	ND	91.2	70-130	0.881	30
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0400		105	50-150		
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150		
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		104	50-150		

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

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

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

**Batch BFK0294 - EPA 3550A**

**Blank (BFK0294-BLK1)**

Prepared & Analyzed: 11/11/22

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.0		"	12.5	88.4	30-150					

**LCS (BFK0294-BS1)**

Prepared & Analyzed: 11/11/22

C10-C28 (DRO)	453	50	mg/kg	500	90.6	70-130					
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5	92.2	30-150					

**Matrix Spike (BFK0294-MS1)**

Source: 2211183-01

Prepared & Analyzed: 11/11/22

C10-C28 (DRO)	426	50	mg/kg	500	28.4	79.5	70-130				
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5	80.9	30-150					

**Matrix Spike Dup (BFK0294-MSD1)**

Source: 2211183-01

Prepared & Analyzed: 11/11/22

C10-C28 (DRO)	415	50	mg/kg	500	28.4	77.2	70-130	2.74	20		
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5	86.3	30-150					

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

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

**Summit Scientific**

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

**Batch BFK0355 - EPA 5030 Soil MS**

**Blank (BFK0355-BLK1)**

Prepared & Analyzed: 11/14/22

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>0.0410</i>		"	<i>0.0333</i>		<i>123</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0317</i>		"	<i>0.0333</i>		<i>95.1</i>		<i>40-150</i>		

**LCS (BFK0355-BS1)**

Prepared & Analyzed: 11/14/22

Acenaphthene	0.0392	0.00500	mg/kg	0.0333	117	31-137
Anthracene	0.0367	0.00500	"	0.0333	110	30-120
Benzo (a) anthracene	0.0326	0.00500	"	0.0333	97.7	30-120
Benzo (a) pyrene	0.0369	0.00500	"	0.0333	111	30-120
Benzo (b) fluoranthene	0.0390	0.00500	"	0.0333	117	30-120
Benzo (k) fluoranthene	0.0383	0.00500	"	0.0333	115	30-120
Chrysene	0.0320	0.00500	"	0.0333	95.9	30-120
Dibenz (a,h) anthracene	0.0363	0.00500	"	0.0333	109	30-120
Fluoranthene	0.0380	0.00500	"	0.0333	114	30-120
Fluorene	0.0376	0.00500	"	0.0333	113	30-120
Indeno (1,2,3-cd) pyrene	0.0348	0.00500	"	0.0333	104	30-120
Pyrene	0.0327	0.00500	"	0.0333	98.0	35-142
1-Methylnaphthalene	0.0323	0.00500	"	0.0333	96.8	35-142
2-Methylnaphthalene	0.0328	0.00500	"	0.0333	98.3	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0345</i>		"	<i>0.0333</i>	<i>103</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0402</i>		"	<i>0.0333</i>	<i>121</i>	<i>40-150</i>

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

Reported:  
11/17/22 09:15

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BFK0355 - EPA 5030 Soil MS

Matrix Spike (BFK0355-MS1)

Source: 2211169-01

Prepared & Analyzed: 11/14/22

Acenaphthene	0.0284	0.00500	mg/kg	0.0333	ND	85.3	31-137			
Anthracene	0.0238	0.00500	"	0.0333	ND	71.5	30-120			
Benzo (a) anthracene	0.0228	0.00500	"	0.0333	ND	68.4	30-120			
Benzo (a) pyrene	0.0271	0.00500	"	0.0333	ND	81.2	30-120			
Benzo (b) fluoranthene	0.0264	0.00500	"	0.0333	ND	79.3	30-120			
Benzo (k) fluoranthene	0.0264	0.00500	"	0.0333	ND	79.2	30-120			
Chrysene	0.0231	0.00500	"	0.0333	ND	69.2	30-120			
Dibenz (a,h) anthracene	0.0255	0.00500	"	0.0333	ND	76.5	30-120			
Fluoranthene	0.0237	0.00500	"	0.0333	ND	71.1	30-120			
Fluorene	0.0253	0.00500	"	0.0333	ND	75.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0246	0.00500	"	0.0333	ND	73.8	30-120			
Pyrene	0.0235	0.00500	"	0.0333	ND	70.6	35-142			
1-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.8	15-130			
2-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	64.0	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0223		"	0.0333		66.8	40-150			
Surrogate: Fluoranthene-d10	0.0241		"	0.0333		72.4	40-150			

Matrix Spike Dup (BFK0355-MSD1)

Source: 2211169-01

Prepared & Analyzed: 11/14/22

Acenaphthene	0.0314	0.00500	mg/kg	0.0333	ND	94.3	31-137	9.97	30	
Anthracene	0.0272	0.00500	"	0.0333	ND	81.5	30-120	13.1	30	
Benzo (a) anthracene	0.0250	0.00500	"	0.0333	ND	74.9	30-120	9.09	30	
Benzo (a) pyrene	0.0291	0.00500	"	0.0333	ND	87.3	30-120	7.20	30	
Benzo (b) fluoranthene	0.0287	0.00500	"	0.0333	ND	86.1	30-120	8.19	30	
Benzo (k) fluoranthene	0.0285	0.00500	"	0.0333	ND	85.4	30-120	7.63	30	
Chrysene	0.0244	0.00500	"	0.0333	ND	73.2	30-120	5.59	30	
Dibenz (a,h) anthracene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	1.68	30	
Fluoranthene	0.0256	0.00500	"	0.0333	ND	76.7	30-120	7.59	30	
Fluorene	0.0271	0.00500	"	0.0333	ND	81.4	30-120	7.19	30	
Indeno (1,2,3-cd) pyrene	0.0253	0.00500	"	0.0333	ND	76.0	30-120	2.96	30	
Pyrene	0.0238	0.00500	"	0.0333	ND	71.4	35-142	1.11	30	
1-Methylnaphthalene	0.0251	0.00500	"	0.0333	ND	75.3	15-130	16.6	50	
2-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.8	15-130	18.2	50	
Surrogate: 2-Methylnaphthalene-d10	0.0265		"	0.0333		79.6	40-150			
Surrogate: Fluoranthene-d10	0.0263		"	0.0333		78.8	40-150			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/17/22 09:15

### 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

December 05, 2022

Martin Eckert III

Civitas Resources

650 Southgate Drive

Windsor, CO 80550

RE: Carlson 15-D Pad

Work Order # 2211433

Enclosed are the results of analyses for samples received by Summit Scientific on 11/23/22 16:32. 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: Carlson 15-D Pad

Project Number: [none]

Project Manager: Martin Eckert III

**Reported:**

12/05/22 09:40

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-01	2211433-01	Water	11/23/22 14:15	11/23/22 16:32
MW-02	2211433-02	Water	11/23/22 14:05	11/23/22 16:32
MW-03	2211433-03	Water	11/23/22 13:55	11/23/22 16:32
MW-04	2211433-04	Water	11/23/22 13:45	11/23/22 16:32
MW-05	2211433-05	Water	11/23/22 13:35	11/23/22 16:32
MW-06	2211433-06	Water	11/23/22 13:25	11/23/22 16:32

Summit Scientific

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# S<sub>2</sub>

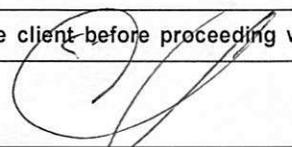
S2 Work Order# 2211433

## Sample Receipt Checklist

Client: Civitas/Eagle Client Project ID: Carlson 15-D PadShipped 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"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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.  
Custodian Printed Name11-23-22  
Date/Time



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

**MW-01**  
**2211433-01 (Water)**

**Summit Scientific**

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0	0.043	ug/l	1	BFK0678	11/30/22	12/01/22	EPA 8260B	
Toluene	ND	1.0	0.061	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	0.14	"	"	"	"	"	"	
Naphthalene	ND	1.0	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	0.069	"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		74.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.0 %		21-167		"	"	"	"	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

**MW-02**  
**2211433-02 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0	0.043	ug/l	1	BFK0678	11/30/22	12/01/22	EPA 8260B	
Toluene	ND	1.0	0.061	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	0.14	"	"	"	"	"	"	
Naphthalene	ND	1.0	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	0.069	"	"	"	"	"	"	

Date Sampled: **11/23/22 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		71.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		98.3 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.2 %		21-167		"	"	"	"	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

**MW-03**  
**2211433-03 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0	0.043	ug/l	1	BFK0678	11/30/22	12/01/22	EPA 8260B	
Toluene	ND	1.0	0.061	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	0.14	"	"	"	"	"	"	
Naphthalene	ND	1.0	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	0.069	"	"	"	"	"	"	

Date Sampled: **11/23/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		77.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		85.8 %		21-167		"	"	"	"	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

**MW-04**  
**2211433-04 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0	0.043	ug/l	1	BFK0678	11/30/22	12/01/22	EPA 8260B	
Toluene	ND	1.0	0.061	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	0.14	"	"	"	"	"	"	
Naphthalene	ND	1.0	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	0.069	"	"	"	"	"	"	

Date Sampled: **11/23/22 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		75.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.3 %		21-167		"	"	"	"	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

**MW-05**  
**2211433-05 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0	0.043	ug/l	1	BFK0678	11/30/22	12/01/22	EPA 8260B	
Toluene	ND	1.0	0.061	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	0.14	"	"	"	"	"	"	
Naphthalene	ND	1.0	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	0.069	"	"	"	"	"	"	

Date Sampled: **11/23/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		76.5 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.2 %		21-167		"	"	"	"	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

**MW-06**  
**2211433-06 (Water)**

**Summit Scientific**

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

Date Sampled: **11/23/22 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0	0.043	ug/l	1	BFK0678	11/30/22	12/01/22	EPA 8260B	
Toluene	ND	1.0	0.061	"	"	"	"	"	"	
Ethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
Xylenes (total)	ND	2.0	0.14	"	"	"	"	"	"	
Naphthalene	ND	1.0	0.10	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0	0.068	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0	0.069	"	"	"	"	"	"	

Date Sampled: **11/23/22 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		74.3 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		84.7 %		21-167		"	"	"	"	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

### 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 BFK0678 - EPA 5030 Water MS

##### Blank (BFK0678-BLK1)

Prepared: 11/30/22 Analyzed: 12/01/22

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	13.1		"	13.3		98.4		23-173			
Surrogate: Toluene-d8	13.8		"	13.3		104		20-170			
Surrogate: 4-Bromofluorobenzene	11.6		"	13.3		87.2		21-167			

##### LCS (BFK0678-BS1)

Prepared: 11/30/22 Analyzed: 12/01/22

Benzene	25.2	1.0	ug/l	33.3		75.6		51-132			
Toluene	28.9	1.0	"	33.3		86.6		51-138			
Ethylbenzene	26.5	1.0	"	33.3		79.4		58-146			
m,p-Xylene	57.0	2.0	"	66.7		85.5		57-144			
o-Xylene	26.2	1.0	"	33.3		78.8		53-146			
Naphthalene	38.6	1.0	"	33.3		116		70-130			
1,2,4-Trimethylbenzene	24.8	1.0	"	33.3		74.5		70-130			
1,3,5-Trimethylbenzene	25.8	1.0	"	33.3		77.3		70-130			
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.3		111		23-173			
Surrogate: Toluene-d8	13.7		"	13.3		103		20-170			
Surrogate: 4-Bromofluorobenzene	11.7		"	13.3		87.7		21-167			

##### Matrix Spike (BFK0678-MS1)

Source: 2211432-01

Prepared: 11/30/22 Analyzed: 12/01/22

Benzene	24.0	1.0	ug/l	33.3	ND	72.2		34-141			
Toluene	25.4	1.0	"	33.3	ND	76.1		27-151			
Ethylbenzene	27.6	1.0	"	33.3	ND	82.9		29-160			
m,p-Xylene	58.1	2.0	"	66.7	ND	87.2		20-166			
o-Xylene	27.6	1.0	"	33.3	ND	82.8		33-159			
Naphthalene	36.0	1.0	"	33.3	ND	108		70-130			
1,2,4-Trimethylbenzene	26.9	1.0	"	33.3	ND	80.7		70-130			
1,3,5-Trimethylbenzene	27.7	1.0	"	33.3	ND	83.0		70-130			
Surrogate: 1,2-Dichloroethane-d4	9.63		"	13.3		72.2		23-173			
Surrogate: Toluene-d8	13.4		"	13.3		100		20-170			
Surrogate: 4-Bromofluorobenzene	11.5		"	13.3		86.1		21-167			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

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

**Summit Scientific**

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

**Batch BFK0678 - EPA 5030 Water MS**

Matrix Spike Dup (BFK0678-MSD1)	Source: 2211432-01			Prepared: 11/30/22 Analyzed: 12/01/22						
Benzene	25.6	1.0	ug/l	33.3	ND	76.7	34-141	6.09	30	
Toluene	26.9	1.0	"	33.3	ND	80.8	27-151	5.93	30	
Ethylbenzene	27.2	1.0	"	33.3	ND	81.6	29-160	1.61	30	
m,p-Xylene	57.1	2.0	"	66.7	ND	85.7	20-166	1.74	30	
o-Xylene	27.1	1.0	"	33.3	ND	81.2	33-159	1.94	30	
Naphthalene	38.2	1.0	"	33.3	ND	115	70-130	5.99	30	
1,2,4-Trimethylbenzene	26.0	1.0	"	33.3	ND	77.9	70-130	3.56	30	
1,3,5-Trimethylbenzene	26.4	1.0	"	33.3	ND	79.2	70-130	4.70	30	
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173			
Surrogate: Toluene-d8	14.0		"	13.3		105	20-170			
Surrogate: 4-Bromofluorobenzene	11.8		"	13.3		88.8	21-167			

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
12/05/22 09:40

### 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

November 30, 2022

Martin Eckert III  
Civitas Resources  
650 Southgate Drive  
Windsor, CO 80550  
RE: Carlson 15-D Pad

Enclosed are the results of analyses for samples received by Summit Scientific on 11/23/22 16:32. 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: Carlson 15-D Pad

Project Number: [none]

Project Manager: Martin Eckert III

**Reported:**

11/30/22 13:26

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-01	2211434-01	Water	11/23/22 14:15	11/23/22 16:32
MW-02	2211434-02	Water	11/23/22 14:05	11/23/22 16:32
MW-03	2211434-03	Water	11/23/22 13:55	11/23/22 16:32
MW-04	2211434-04	Water	11/23/22 13:45	11/23/22 16:32
MW-05	2211434-05	Water	11/23/22 13:35	11/23/22 16:32
MW-06	2211434-06	Water	11/23/22 13:25	11/23/22 16:32

Summit Scientific

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2211434

S2 Work Order# \_\_\_\_\_

Sample Receipt Checklist

Client: Civitas/Eagle Client Project ID: Carlson 15-D Pad

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"/>	
If custody seals are present, are they intact? <sup>(1)</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, 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.

\_\_\_\_\_  
Custodian Printed Name

11.23.22  
\_\_\_\_\_  
Date/Time



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/30/22 13:26

**MW-01**  
**2211434-01 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Chloride</b>	<b>74.8</b>	12.0	0.290	mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
<b>Sulfate</b>	<b>340</b>	60.0	1.41	"	"	"	"	"	"	

**Total Dissolved Solids by SM2540C**

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Total Dissolved Solids</b>	<b>620</b>	10.0	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: Carlson 15-D Pad

Project Number: [none]  
 Project Manager: Martin Eckert III

**Reported:**  
 11/30/22 13:26

**MW-02**  
**2211434-02 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chloride	<b>76.4</b>	12.0	0.290	mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
Sulfate	<b>281</b>	60.0	1.41	"	"	"	"	"	"	"

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 14:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Total Dissolved Solids</b>	<b>556</b>	10.0	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: Carlson 15-D Pad

Project Number: [none]  
 Project Manager: Martin Eckert III

**Reported:**  
 11/30/22 13:26

**MW-03**  
**2211434-03 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Chloride</b>	<b>78.6</b>	12.0	0.290	mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
<b>Sulfate</b>	<b>477</b>	60.0	1.41	"	"	"	"	"	"	"

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Total Dissolved Solids</b>	<b>586</b>	10.0	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: Carlson 15-D Pad

Project Number: [none]  
 Project Manager: Martin Eckert III

**Reported:**  
 11/30/22 13:26

**MW-04**  
**2211434-04 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Chloride</b>	<b>73.0</b>	12.0	0.290	mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
<b>Sulfate</b>	<b>388</b>	60.0	1.41	"	"	"	"	"	"	"

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 13:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Total Dissolved Solids</b>	<b>640</b>	10.0	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: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/30/22 13:26

**MW-05**  
**2211434-05 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chloride	73.2	12.0	0.290	mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
Sulfate	333	60.0	1.41	"	"	"	"	"	"	"

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 13:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Total Dissolved Solids	629	10.0	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: Carlson 15-D Pad

Project Number: [none]  
 Project Manager: Martin Eckert III

**Reported:**  
 11/30/22 13:26

**MW-06**  
**2211434-06 (Water)**

**Summit Scientific**

**Anions by EPA Method 300.0**

Date Sampled: **11/23/22 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Chloride</b>	<b>76.6</b>	12.0	0.290	mg/L	200	BFK0618	11/27/22	11/28/22	EPA 300.0	
<b>Sulfate</b>	<b>200</b>	60.0	1.41	"	"	"	"	"	"	"

**Total Dissolved Solids by SM2540C**

Date Sampled: **11/23/22 13:25**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Total Dissolved Solids</b>	<b>559</b>	10.0	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: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/30/22 13:26

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

**Summit Scientific**

Analyte	Result	Reporting		Spike Level	Source Result	%REC		RPD		Notes
		Limit	Units			%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: Carlson 15-D Pad

Project Number: [none]  
 Project Manager: Martin Eckert III

**Reported:**  
 11/30/22 13:26

**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: Carlson 15-D Pad

Project Number: [none]  
Project Manager: Martin Eckert III

**Reported:**  
11/30/22 13:26

### 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