

## Flowline Closure Checklist

### COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

<i>Additional Attachments:</i>		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
<i>Site Name &amp; COGCC Facility Number:</i> Antelope 12-19		<i>Date:</i> 02/09/23			<i>Remediation Project #:</i> 24162			
<i>Associated Wells:</i> 05-123-31862		<i>Age of Site:</i> _____ years			<i>Number of Photos Attached:</i> 21			
<i>Starting point: (GPS coordinates and descriptions)</i> At wellhead: 40.386580 / -104.372610								
<i>End point: (GPS coordinates and descriptions)</i> At separator: 40.384505 / -104.368050								
<i>USCS Soil Type:</i> SM				<i>Estimated Depth to Groundwater:</i> >20'				
<i>Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)</i> <b>None observed.</b>								
<i>Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)</i> <b>None observed.</b>								
Flowlines								
<i>Flowline type</i>	O,G,W							
<i>Depth</i>	Approx. 4'							
<i>Age</i>	years							
<i>Length</i>	1950'							
<i>Construction Material</i>	Steel							
<i>Were flowlines pulled?</i>	yes							
<i>Visual Integrity of lines</i>	Good							
<i>Visual impacts if trenched</i>	N/A							
<i>PID Readings if trenched</i>	1.3 to 3.4							
<i>Sample taken? Location/Sample ID#</i>	FL-SS-01 through FL-SS-21							
<i>Photo Number(s)</i>	See photolog							
<i>Other observations regarding on location flowlines:</i> Terminus at separator and change of directions assessed. No impacts observed. Wellhead/flowline terminus at wellhead pending assessment.								
Summary								
<i>Was impacted soil identified?</i> <input checked="" type="checkbox"/> No      Yes - less than 10 cubic yards      Yes - more than 10 cubic yards								
<i>Total number of samples field screened:</i> 21			<i>Total number of samples collected:</i> 21					
<i>Highest PID Reading:</i> 3.4			<i>Total number of samples submitted to lab for analysis:</i> 4					
<i>If more than 10 cubic yards of impacted soil were observed:</i>								
<i>Vertical extent:</i>					<i>Estimated spill volume:</i>			
<i>Lateral extent:</i>					<i>Volume of soil removed:</i>			
<i>Is additional investigation required?</i>								
<i>Was groundwater encountered during the investigation?</i> <input checked="" type="checkbox"/> No      Yes - not impacted or in contact with impacted soils      Yes - groundwater impacted and/or in contact with impacted soils								
<i>Measured depth to groundwater:</i>					<i>Was remedial groundwater removal conducted?</i> Yes      No			
<i>Date Groundwater was encountered:</i>					<i>Commencement date of removal:</i>			
<i>Sheen on groundwater?</i> Yes      No					<i>Volume of groundwater removed prior to sampling:</i>			
<i>Free product observed?</i> Yes      No					<i>Volume of groundwater removed post sampling:</i>			
<i>Total number of samples collected:</i>					<i>Total Volume of groundwater removed:</i>			
<i>Total number of samples submitted to lab for analysis:</i>								



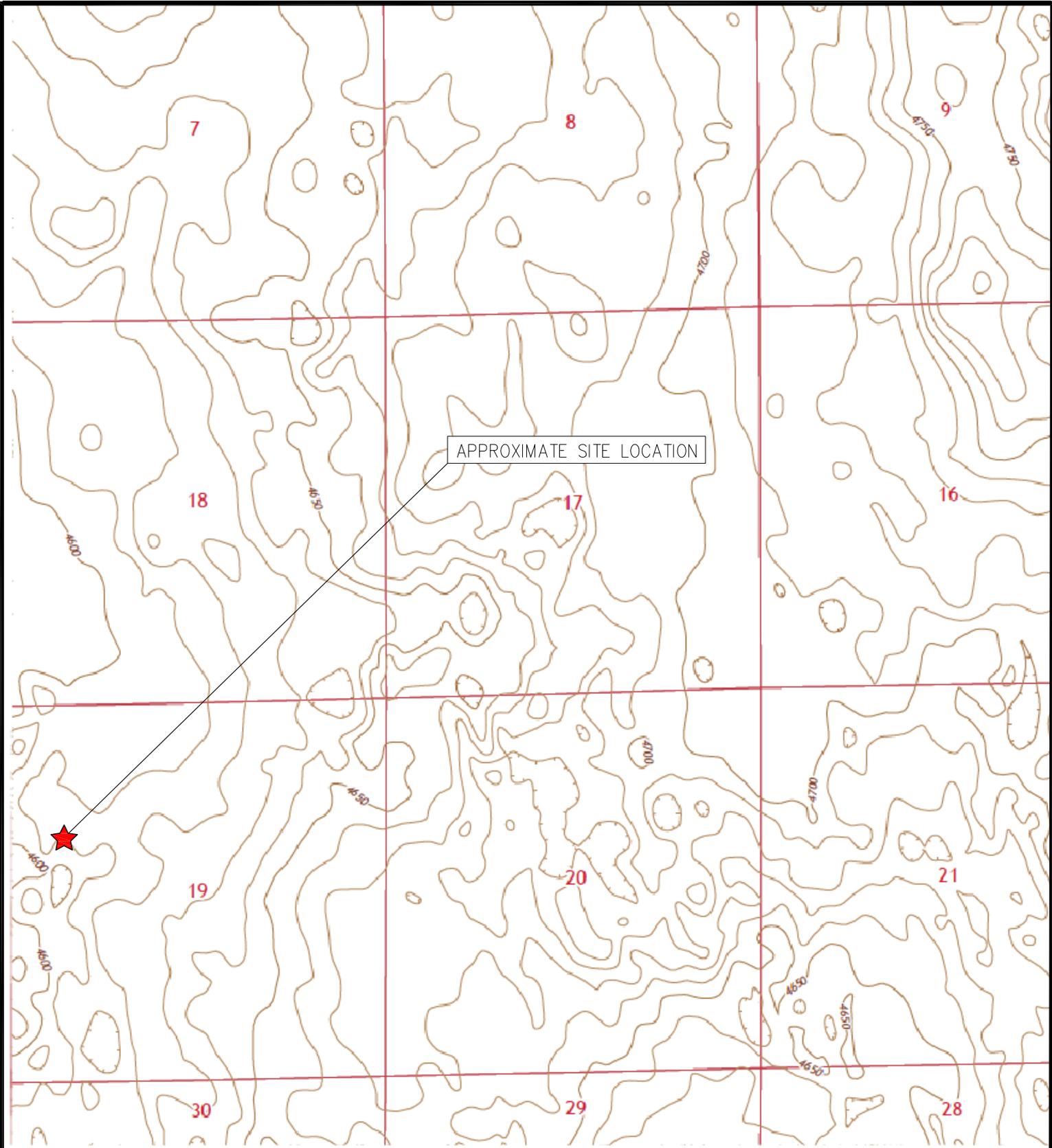
## **FIGURES**

**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Soil Analytical Map**

**Figure 4: Polycyclic Aromatic Hydrocarbons Map**



APPROXIMATE SITE LOCATION



TOPOGRAPHIC SITE LOCATION MAP  
 ANTELOPE #12-19  
 CLOSURE ASSESSMENT  
 40.386580 / -104.372610  
 SW¼ NW¼ SEC.19 T5N R62W 6PM  
 WELD COUNTY, COLORADO  
 API # 05-123-31862  
 REMEDIATION # 24162



**EAGLE**  
 ENVIRONMENTAL  
 CONSULTING, LLC

8000 W 44th Ave, Wheat Ridge, CO 80033  
 Ph: 303-433-0479 • F: 303-325-5449

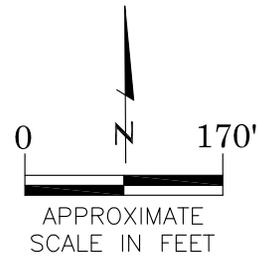
SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAPS  
 POINT OF ROCKS, CO QUADRANGLE 2022

FIGURE 1



LEGEND

- ANTELOPE #12-19 WELLHEAD (P&A PLANNED)
- APPROXIMATE FLOWLINE LOCATION (REMOVED)



AERIAL SITE LOCATION MAP  
 ANTELOPE #12-19  
 CLOSURE ASSESSMENT  
 40.386580 / -104.372610  
 SW¼ NW¼ SEC.19 T5N R62W 6PM  
 WELD COUNTY, COLORADO  
 API # 05-123-31862  
 REMEDIATION # 24162

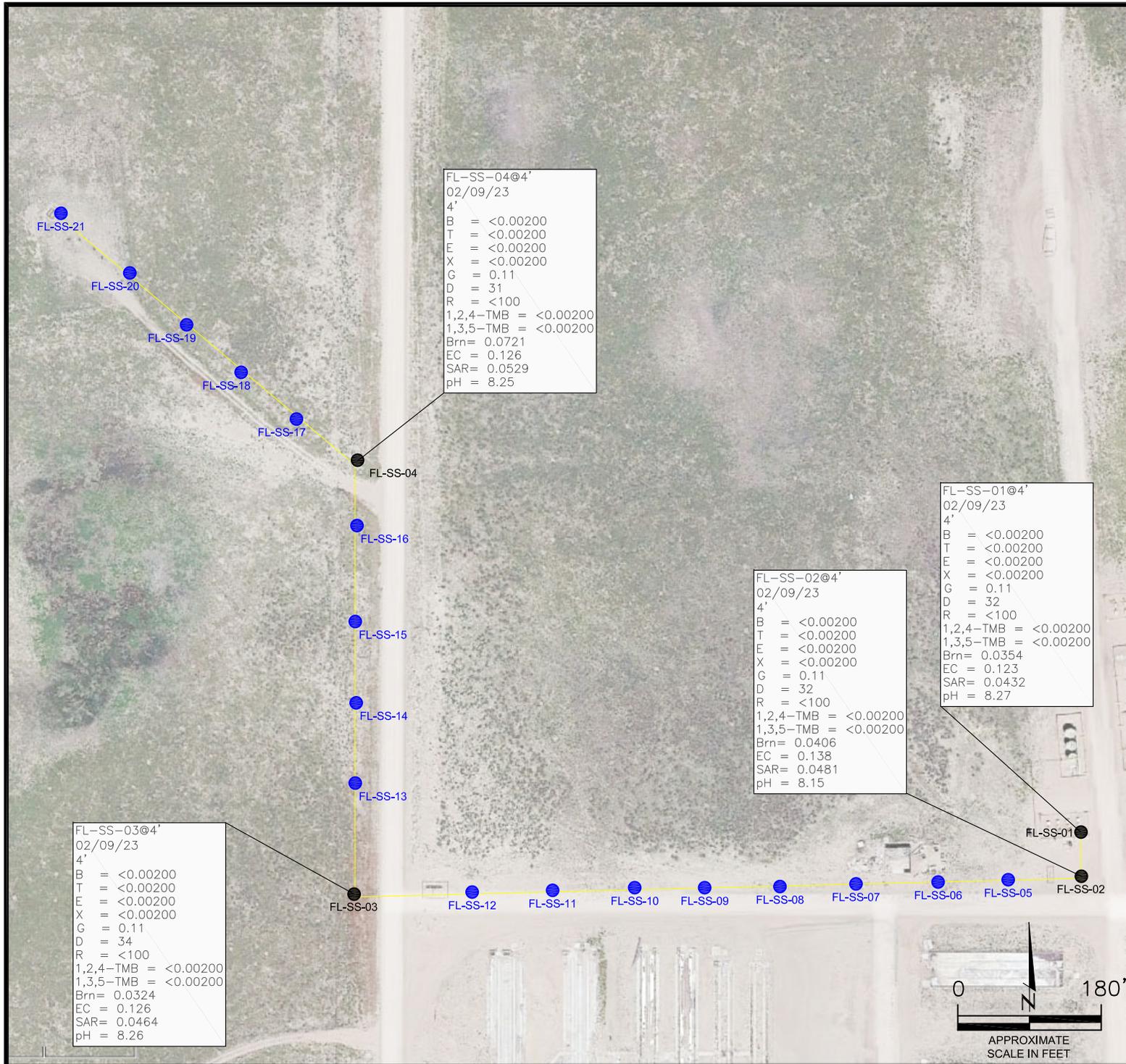
FIG. NO.  
2

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FL-SS-04@4'  
02/09/23  
4'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = 0.11  
D = 31  
R = <100  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= 0.0721  
EC = 0.126  
SAR= 0.0529  
pH = 8.25

FL-SS-01@4'  
02/09/23  
4'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = 0.11  
D = 32  
R = <100  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= 0.0354  
EC = 0.123  
SAR= 0.0432  
pH = 8.27

FL-SS-02@4'  
02/09/23  
4'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = 0.11  
D = 32  
R = <100  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= 0.0406  
EC = 0.138  
SAR= 0.0481  
pH = 8.15

FL-SS-03@4'  
02/09/23  
4'  
B = <0.00200  
T = <0.00200  
E = <0.00200  
X = <0.00200  
G = 0.11  
D = 34  
R = <100  
1,2,4-TMB = <0.00200  
1,3,5-TMB = <0.00200  
Brn= 0.0324  
EC = 0.126  
SAR= 0.0464  
pH = 8.26

**LEGEND**

- APPROXIMATE FLOWLINE LOCATION (REMOVED)
- SS-02** APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02** APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

**PARAMETERS**

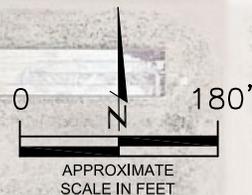
**SAMPLE LOCATION**  
DATE  
DEPTH (FEET)  
B = BENZENE (mg/kg)  
T = TOLUENE (mg/kg)  
E = ETHYLBENZENE (mg/kg)  
X = TOTAL XYLENES (mg/kg)  
G = TPH-GRO (mg/kg)  
D = TPH-DRO (mg/kg)  
R = TPH-RRO (mg/kg)  
1,2,4-TMB = 1,2,4 TRIMETHYLBENZENE (mg/kg)  
1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)  
Brn= BORON (mg/L)  
EC = SPECIFIC CONDUCTANCE (mmhos/cm)  
SAR= SODIUM ADSORPTION RATIO  
pH = pH (pH UNITS)

mg/kg = MILLIGRAMS PER KILOGRAM  
mg/L = MILLIGRAMS PER LITER  
mmhos/cm = MILLIMHOS PER CENTIMETER  
  
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

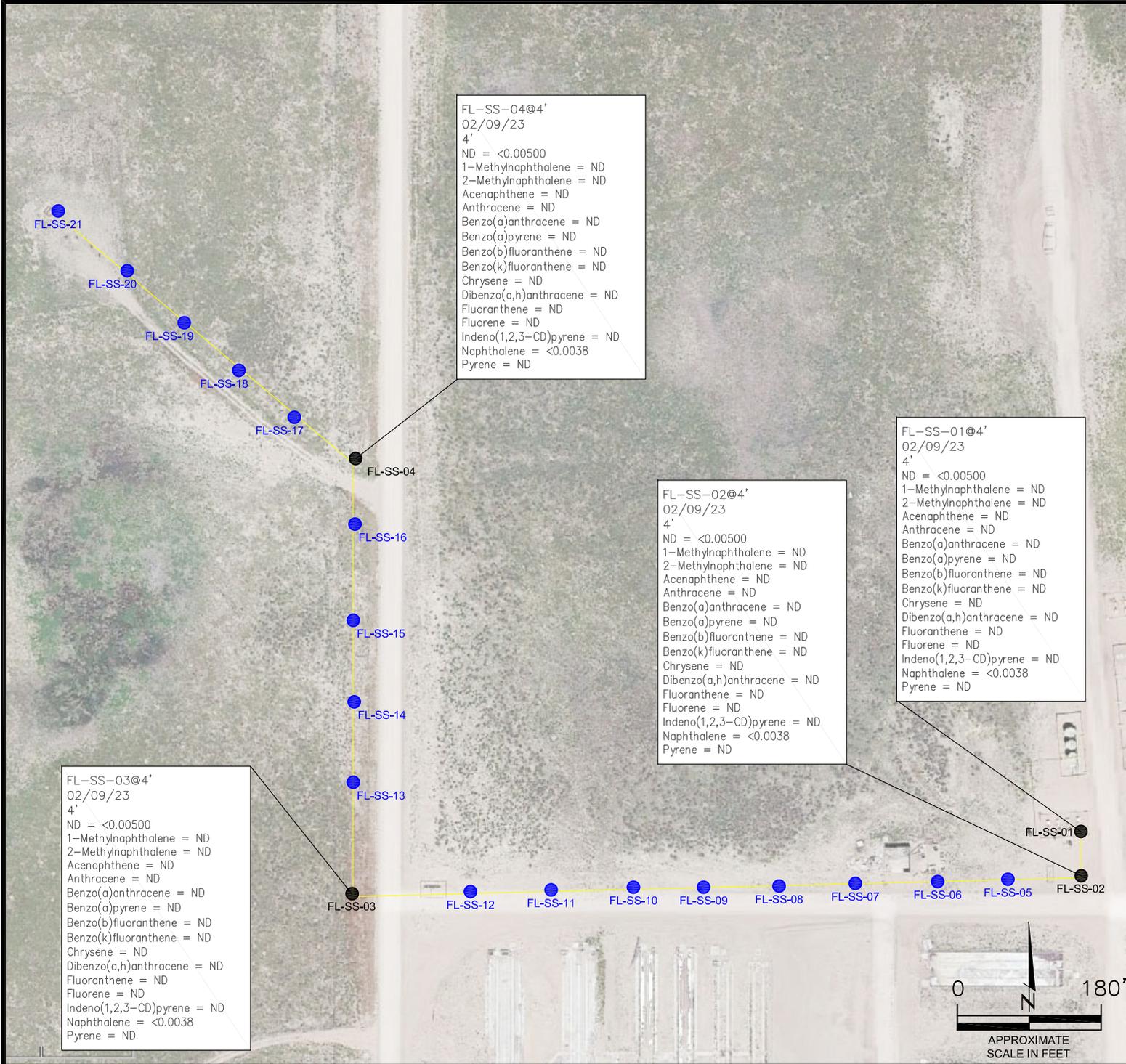
VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS FOR THAT COMPOUND.  
  
ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

**SOIL ANALYTICAL MAP**  
ANTELOPE #12-19  
CLOSURE ASSESSMENT  
40.386580 / -104.372610  
SW¼ NW¼ SEC.19 T5N R62W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-31862  
REMEDATION # 24162



**DRAWN BY:**  
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**FIG. NO.**  
3

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FL-SS-04@4'  
02/09/23  
4'  
ND = <0.00500  
1-Methylnaphthalene = ND  
2-Methylnaphthalene = ND  
Acenaphthene = ND  
Anthracene = ND  
Benzo(a)anthracene = ND  
Benzo(a)pyrene = ND  
Benzo(b)fluoranthene = ND  
Benzo(k)fluoranthene = ND  
Chrysene = ND  
Dibenzo(a,h)anthracene = ND  
Fluoranthene = ND  
Fluorene = ND  
Indeno(1,2,3-CD)pyrene = ND  
Naphthalene = <0.0038  
Pyrene = ND

FL-SS-02@4'  
02/09/23  
4'  
ND = <0.00500  
1-Methylnaphthalene = ND  
2-Methylnaphthalene = ND  
Acenaphthene = ND  
Anthracene = ND  
Benzo(a)anthracene = ND  
Benzo(a)pyrene = ND  
Benzo(b)fluoranthene = ND  
Benzo(k)fluoranthene = ND  
Chrysene = ND  
Dibenzo(a,h)anthracene = ND  
Fluoranthene = ND  
Fluorene = ND  
Indeno(1,2,3-CD)pyrene = ND  
Naphthalene = <0.0038  
Pyrene = ND

FL-SS-01@4'  
02/09/23  
4'  
ND = <0.00500  
1-Methylnaphthalene = ND  
2-Methylnaphthalene = ND  
Acenaphthene = ND  
Anthracene = ND  
Benzo(a)anthracene = ND  
Benzo(a)pyrene = ND  
Benzo(b)fluoranthene = ND  
Benzo(k)fluoranthene = ND  
Chrysene = ND  
Dibenzo(a,h)anthracene = ND  
Fluoranthene = ND  
Fluorene = ND  
Indeno(1,2,3-CD)pyrene = ND  
Naphthalene = <0.0038  
Pyrene = ND

FL-SS-03@4'  
02/09/23  
4'  
ND = <0.00500  
1-Methylnaphthalene = ND  
2-Methylnaphthalene = ND  
Acenaphthene = ND  
Anthracene = ND  
Benzo(a)anthracene = ND  
Benzo(a)pyrene = ND  
Benzo(b)fluoranthene = ND  
Benzo(k)fluoranthene = ND  
Chrysene = ND  
Dibenzo(a,h)anthracene = ND  
Fluoranthene = ND  
Fluorene = ND  
Indeno(1,2,3-CD)pyrene = ND  
Naphthalene = <0.0038  
Pyrene = ND

**LEGEND**

- APPROXIMATE FLOWLINE LOCATION (REMOVED)
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

**PARAMETERS**

SAMPLE LOCATION  
DATE SAMPLE COLLECTED  
APPROXIMATE DEPTH  
  
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM

ND = NON-DETECT

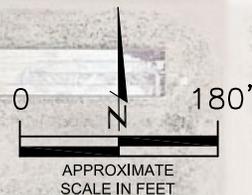
NOTES:  
VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT OR ABOVE LABORATORY DETECTION LIMITS

VALUES PRESENTED IN **BOLD** CONTAIN CONCENTRATIONS EXCEEDING ECMC TABLE 915-1 REGULATORY LIMITS.

VALUES PRESENTED WITH AN ASTERISK (\*) EXCEED ECMC TABLE 915-1 GROUNDWATER SOIL SCREENING LEVELS.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

POLYCYCLIC AROMATIC HYDROCARBONS MAP  
ANTELOPE #12-19  
CLOSURE ASSESSMENT  
40.386580 / -104.372610  
SW¼ NW¼ SEC.19 T5N R62W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-31862  
REMEDATION # 24162



DRAWN BY:  
TC  
  
FIG. NO.  
4

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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 1**  
**PHOTOIONIZATION DETECTOR READING SUMMARY**  
**ANTELOPE #12-19**  
**CLOSURE ASSESSMENT**  
**40.386580 / -104.372610**  
**SW¼ NW¼ SEC.19 T5N R62W 6PM**  
**WELD COUNTY, COLORADO**  
**API # 05-123-31862**  
**REMEDIATION # 24162**

<b>Sample Location</b> (Latitude/Longitude)	<b>Date</b>	<b>Approximate Depth</b> (feet)	<b>PID Reading</b> (ppm-v)	<b>Lab Submission</b> (Y/N)
FL-SS-01 @ 4' (40.384504 / -104.368034)	02/09/23	4	3.4	Y
FL-SS-02 @ 4' (40.384340 / -104.368023)	02/09/23	4	2.1	Y
FL-SS-03 @ 4' (40.384267 / -104.371215)	02/09/23	4	2.4	Y
FL-SS-04 @ 4' (40.385723 / -104.371251)	02/09/23	4	1.9	Y
FL-SS-05 @ 4' (40.384335 / -104.368370)	02/09/23	4	2.7	N
FL-SS-06 @ 4' (40.384346 / -104.368671)	02/09/23	4	2.1	N
FL-SS-07 @ 4' (40.384359 / -104.369050)	02/09/23	4	1.5	N
FL-SS-08 @ 4' (40.384362 / -104.369355)	02/09/23	4	2.0	N
FL-SS-09 @ 4' (40.384358 / -104.369724)	02/09/23	4	1.7	N
FL-SS-10 @ 4' (40.384349 / -104.370001)	02/09/23	4	2.3	N
FL-SS-11 @ 4' (40.384350 / -104.370395)	02/09/23	4	2.2	N
FL-SS-12 @ 4' (40.384330 / -104.370752)	02/09/23	4	3.0	N
FL-SS-13 @ 4' (40.384637 / -104.371253)	02/09/23	4	2.5	N
FL-SS-14 @ 4' (40.384910 / -104.371272)	02/09/23	4	2.6	N
FL-SS-15 @ 4' (40.385222 / -104.371266)	02/09/23	4	2.1	N
FL-SS-16 @ 4' (40.385547 / -104.371256)	02/09/23	4	1.4	N
FL-SS-17 @ 4' (40.385875 / -104.371516)	02/09/23	4	1.9	N
FL-SS-18 @ 4' (40.386030 / -104.371781)	02/09/23	4	1.3	N

**TABLE 1**  
**PHOTOIONIZATION DETECTOR READING SUMMARY**  
**ANTELOPE #12-19**  
**CLOSURE ASSESSMENT**  
**40.386580 / -104.372610**  
**SW¼ NW¼ SEC.19 T5N R62W 6PM**  
**WELD COUNTY, COLORADO**  
**API # 05-123-31862**  
**REMEDIATION # 24162**

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
FL-SS-19 @ 4' (40.386231 / -104.372062)	02/09/23	4	1.8	N
FL-SS-20 @ 4' (40.386388 / -104.372272)	02/09/23	4	2.3	N
FL-SS-21 @ 4' (40.386595 / -104.372579)	02/09/23	4	1.7	N
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				

TABLE 2  
SOIL ANALYTICAL RESULTS SUMMARY  
ANTELOPE #12-19  
CLOSURE ASSESSMENT  
40.386580 / -104.372610  
SW¼ NW¼ SEC.19 T5N R62W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-31862  
REMEDIATION # 24162

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	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>ECMC Table 915-1 Residential Screening Levels</b>			<b>1.2</b>	<b>490</b>	<b>5.8</b>	<b>58</b>	<b>500</b>			<b>30</b>	<b>27</b>	<b>2</b>	<b>&lt;4</b>	<b>6-8.3</b>	<b>&lt;6</b>
<b>ECMc Table 915-1 Protection of Groundwater Soil Screening Levels</b>			<b>0.0026</b>	<b>0.69</b>	<b>0.78</b>	<b>9.9</b>	<b>--</b>			<b>0.0081</b>	<b>0.0087</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>--</b>
FL-SS-01 @ 4' (40.384504 / -104.368034)	02/09/23	4	<0.0020	<0.0050	<0.0050	<0.010	0.11	32	<50	<0.0050	<0.0050	0.0354	0.123	8.27	0.0432
FL-SS-02 @ 4' (40.384340 / -104.368023)	02/09/23	4	<0.0020	<0.0050	<0.0050	<0.010	0.11	32	<50	<0.0050	<0.0050	0.0406	0.138	8.15	0.0481
FL-SS-03 @ 4' (40.384267 / -104.371215)	02/09/23	4	<0.0020	<0.0050	<0.0050	<0.010	0.11	34	<50	<0.0050	<0.0050	0.0324	0.126	8.26	0.0464
FL-SS-04 @ 4' (40.385723 / -104.371251)	02/09/23	4	<0.0020	<0.0050	<0.0050	<0.010	0.11	31	<50	<0.0050	<0.0050	0.0721	0.126	8.25	0.0529
ECMC = Energy & Carbon Management Commission mg/kg = milligrams per kilogram      TPH-GRO = Total Petroleum Hydrocarbons - Gasoline Range Organics 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 Notes: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit. Values presented in <b>BOLD</b> contained concentrations exceeding applicable ECMC Table 915-1 Regulatory Limits Values presented with an asterisk (*) contained concentrations exceeding ECMC Table 915-1 Protection of Groundwater Soil Screening Levels															

TABLE 3  
PAH ANALYTICAL RESULTS SUMMARY  
ANTELOPE #12-19  
CLOSURE ASSESSMENT  
40.386580 / -104.372610  
SW¼ NW¼ SEC. 19 T5N R62W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-31862  
REMEDATION # 24162

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	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)	Indeno(1,2,3- cd)-pyrene (mg/kg)	Naphthalene (mg/kg)	Pyrene (mg/kg)
<b>ECMC Table 915-1 Residential Screening Levels</b>			<b>18</b>	<b>24</b>	<b>360</b>	<b>1,800</b>	<b>1.1</b>	<b>0.11</b>	<b>1.1</b>	<b>11</b>	<b>110</b>	<b>0.11</b>	<b>240</b>	<b>240</b>	<b>1.1</b>	<b>2</b>	<b>180</b>
<b>ECMC Table 915-1 Protection of Groundwater Soil Screening Levels</b>			<b>0.006</b>	<b>0.019</b>	<b>0.55</b>	<b>5.8</b>	<b>0.011</b>	<b>0.24</b>	<b>0.3</b>	<b>2.9</b>	<b>9</b>	<b>0.096</b>	<b>8.9</b>	<b>0.54</b>	<b>0.98</b>	<b>0.0038</b>	<b>1.3</b>
FL-SS-01 @ 4' (40.384504 / -104.368034)	2/9/23	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
FL-SS-02 @ 4' (40.384340 / -104.368023)	2/9/23	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
FL-SS-03 @ 4' (40.384267 / -104.371215)	2/9/23	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
FL-SS-04 @ 4' (40.385723 / -104.371251)	2/9/23	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
ECMC = Energy & Carbon Management Commission mg/kg = milligrams per kilogram Notes: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit. Values presented in <b>BOLD</b> contained concentrations exceeding applicable ECMC Table 915-1 Regulatory Limits Values presented with an asterisk (*) contained concentrations exceeding ECMC Table 915-1 Protection of Groundwater Soil Screening Levels																	



## **ATTACHMENT A**

### **Photo Log**

Antelope #12-19  
API # 05-123-31862  
Remediation # 24162

Flowline Assessment

February 2023



# Flowline Assessment – 02/09/23



Looking north



Looking west



Looking east

Cut-points/bell-holes field-screened and/or sampled per assessment plan

No petroleum hydrocarbon staining or odor observed

Samples collected:

FL-SS-01@4' (terminus at separator) – 3.4 ppm-v (lab submitted)

FL-SS-02@4' (change of direction) – 2.1 ppm-v (lab submitted)

FL-SS-03@4' (change of direction) – 2.4 ppm-v (lab submitted)

# Flowline Assessment – 02/09/23



Looking south



Looking east



Looking east

Cut-points/bell-holes field-screened and/or sampled per assessment plan

No petroleum hydrocarbon staining or odor observed

Samples collected:

FL-SS-04@4' (change of direction) – 1.9 ppm-v (lab submitted)

FL-SS-05@4' – 2.7 ppm-v

FL-SS-06@4' – 2.1 ppm-v

# Flowline Assessment – 02/09/23



Looking east



Looking east



Looking east

Cut-points/bell-holes field-screened and/or sampled per assessment plan  
No petroleum hydrocarbon staining or odor observed

Samples collected:

FL-SS-07@4' – 1.5 ppm-v

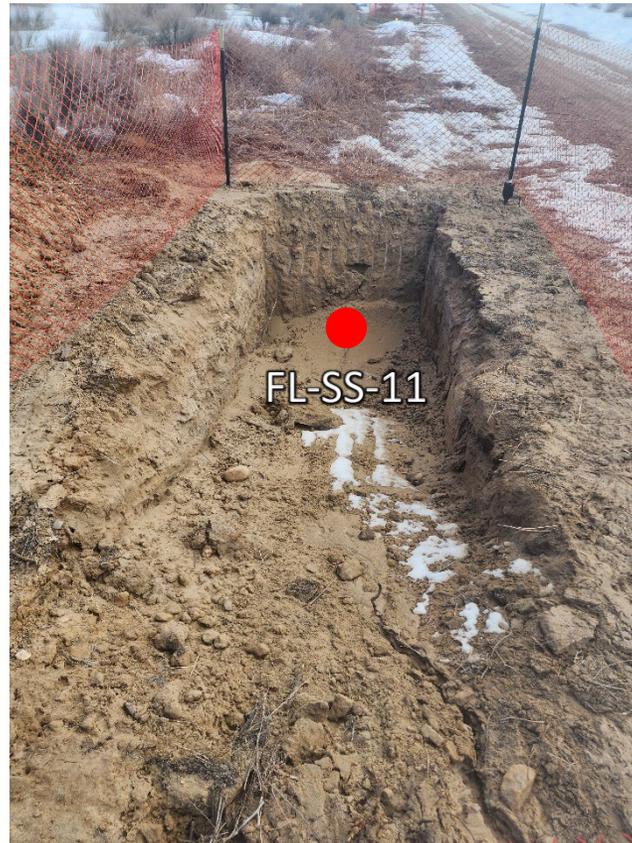
FL-SS-08@4' – 2.0 ppm-v

FL-SS-09@4' – 1.7 ppm-v

# Flowline Assessment – 02/09/23



Looking east



Looking east



Looking west

Cut-points/bell-holes field-screened and/or sampled per assessment plan  
No petroleum hydrocarbon staining or odor observed

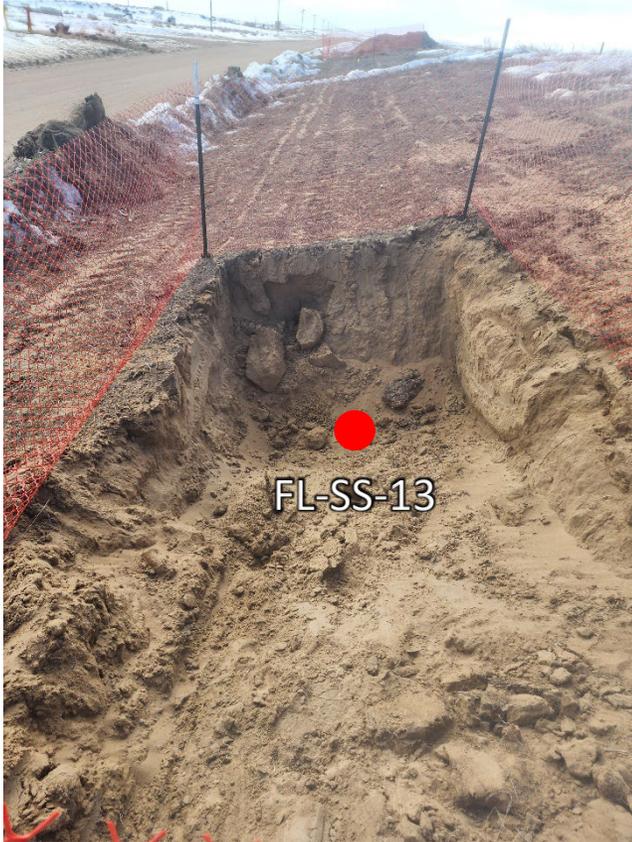
Samples collected:

FL-SS-10@4' – 2.3 ppm-v

FL-SS-11@4' – 2.2 ppm-v

FL-SS-12@4' – 3.0 ppm-v

# Flowline Assessment – 02/09/23



Looking south



Looking south



Looking south

Cut-points/bell-holes field-screened and/or sampled per assessment plan  
No petroleum hydrocarbon staining or odor observed

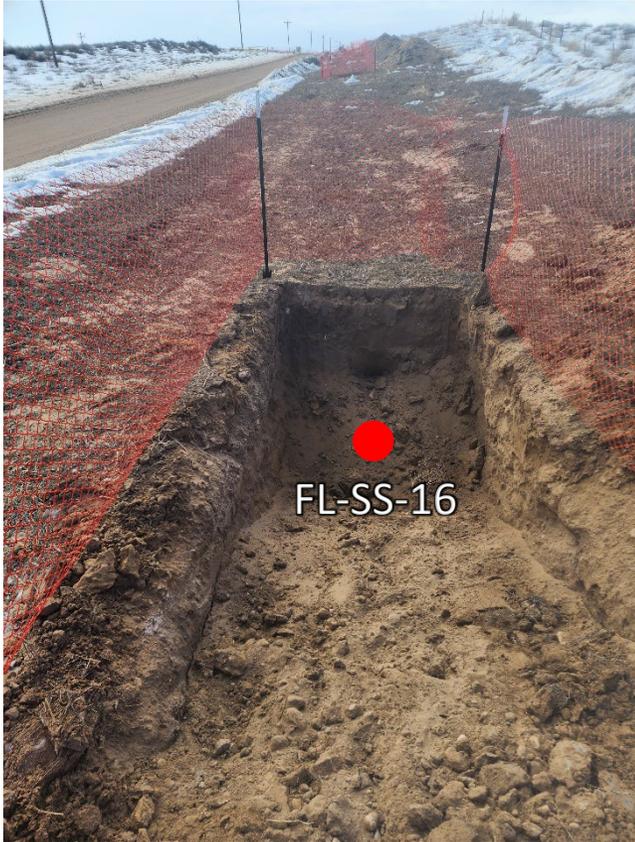
Samples collected:

FL-SS-13@4' – 2.5 ppm-v

FL-SS-14@4' – 2.6 ppm-v

FL-SS-15@4' – 2.1 ppm-v

# Flowline Assessment – 02/09/23



Looking south



Looking northwest



Looking southeast

Cut-points/bell-holes field-screened and/or sampled per assessment plan  
No petroleum hydrocarbon staining or odor observed

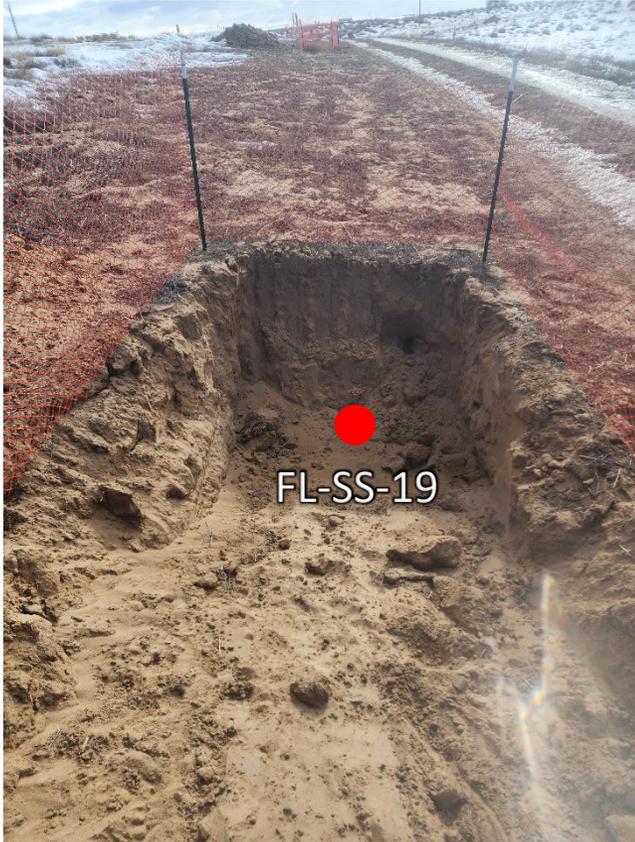
Samples collected:

FL-SS-16@4' – 1.4 ppm-v

FL-SS-17@4' – 1.9 ppm-v

FL-SS-18@4' – 1.3 ppm-v

# Flowline Assessment – 02/09/23



Looking southeast



Looking southeast



Looking northwest

Cut-points/bell-holes field-screened and/or sampled per assessment plan  
No petroleum hydrocarbon staining or odor observed

Samples collected:

FL-SS-19@4' – 1.8 ppm-v

FL-SS-20@4' – 2.3 ppm-v

FL-SS-21@4' – 1.7 ppm-v



## **ATTACHMENT B**

### **Laboratory Analytical Report**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

February 16, 2023

Martin Eckert III

Civitas Resources

650 Southgate Drive

Windsor, CO 80550

RE: Antelope 12-19

Work Order # 2302176

Enclosed are the results of analyses for samples received by Summit Scientific on 02/09/23 15:46. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury

President



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL-SS-01@4'	2302176-01	Soil	02/09/23 09:50	02/09/23 15:46
FL-SS-02@4'	2302176-02	Soil	02/09/23 09:55	02/09/23 15:46
FL-SS-03@4'	2302176-03	Soil	02/09/23 10:00	02/09/23 15:46
FL-SS-04@4'	2302176-04	Soil	02/09/23 10:05	02/09/23 15:46

Summit Scientific

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

# SUMMIT SCIENTIFIC

4653 Table Mountain Drive  
Golden, CO 80403  
303-277-9310

Lab ID	Page 1 of 1
2302176	

Send Data To:		Send Invoice To:	
Client: Eagle Environmental Consulting	Project Manager: Martin Eckert III	Company: Civitas	
Address: 8000 W 44th Ave	E-Mail: mce3@eagle-enviro.com	Project Name/Location:	
City/State/Zip: Wheat Ridge, CO 80033		AFE#:	
Phone: 303-433-0479	Project Name: Antelope 12-19	PO/Billing Codes:	
Sampler Name: TL	Project Number: —	Contact: Jacob	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	G, BTEX, TMBs - 8260D	ARO/RRO - 8015D	PAHs - 8270D s/m	EC - 9050A	SAR - 20B	pH - 9645D	
1	FL-SS-01 @ 4'	2-9-23	0950	2			X			X			X	X	X	X	X	X	EC, SAR, pH = Substrated Paste Prep
2	FL-SS-02 @ 4'	↓	0955	↓			↓			↓			↓	↓	↓	↓	↓	↓	
3	FL-SS-03 @ 4'	↓	1000	↓			↓			↓			↓	↓	↓	↓	↓	↓	⊕ MDLs needed
4	FL-SS-04 @ 4'	↓	1005	↓			↓			↓			↓	↓	↓	↓	↓	↓	
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: Trevor Copple	Date/Time: 2-9-23/1545	Received by: Bob Shady	Date/Time: 2/9/23 1546	TAT Business Days	Field DO	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb. <input checked="" type="checkbox"/>	
Temperature Upon Receipt: 0.9	Corrected Temperature: —	IR gun #: 02	HNO3 lot #:			

# S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2302176Client: Eagle Environmental Client Project ID: Antelope 12-19Shipped 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"/>	<u>On Ice</u>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input 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.SI  
Custodian Printed Name2/19/23 1546  
Date/Time



Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-01@4'**  
**2302176-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BGB0301	02/10/23	02/12/23	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.11</b>	<b>0.50</b>		"	"	"	"	"	"	

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		78.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		91.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>C10-C28 (DRO)</b>	<b>32</b>	50	4.3	mg/kg	1	BGB0299	02/10/23	02/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **02/09/23 09:50**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-01@4'**  
**2302176-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BGB0388	02/14/23	02/14/23	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: **02/09/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		42.6 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		62.8 %		40-150		"	"	"	"	

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

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Boron</b>	<b>0.0354</b>	0.0100	0.00690	mg/L	1	BGB0348	02/13/23	02/14/23	EPA 6020B	

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

Date Sampled: **02/09/23 09:50**

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

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-01@4'**  
**2302176-01 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.9	0.0515		mg/L dry	1	BGB0422	02/14/23	02/16/23	EPA 6020B	
Magnesium	16.2	0.0515		"	"	"	"	"	"	
Sodium	1.24	0.0515		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0432	0.00100		units	1	BGB0499	02/16/23	02/16/23	Calculation	

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

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.2			%	1	BGB0425	02/14/23	02/15/23	Calculation	

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

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.123	0.0100	0.00100	mmhos/cm	1	BGB0462	02/15/23	02/15/23	EPA 120.1	

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

Date Sampled: **02/09/23 09:50**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.27			pH Units	1	BGB0463	02/15/23	02/15/23	EPA 9045D	

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-02@4'**  
**2302176-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BGB0301	02/10/23	02/12/23	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.11</b>	<b>0.50</b>		"	"	"	"	"	"	

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		75.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		87.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>C10-C28 (DRO)</b>	<b>32</b>	<b>50</b>	<b>4.3</b>	mg/kg	1	BGB0299	02/10/23	02/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **02/09/23 09:55**

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

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-02@4'**  
**2302176-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BGB0388	02/14/23	02/14/23	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: **02/09/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		49.1 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		80.7 %		40-150		"	"	"	"	"

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

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Boron</b>	<b>0.0406</b>	0.0100	0.00690	mg/L	1	BGB0348	02/13/23	02/14/23	EPA 6020B	

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

Date Sampled: **02/09/23 09:55**

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

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: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-02@4'**  
**2302176-02 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.9	0.0510		mg/L dry	1	BGB0422	02/14/23	02/16/23	EPA 6020B	
Magnesium	11.2	0.0510		"	"	"	"	"	"	
Sodium	1.19	0.0510		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0481	0.00100		units	1	BGB0499	02/16/23	02/16/23	Calculation	

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

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.1			%	1	BGB0425	02/14/23	02/15/23	Calculation	

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

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.138	0.0100	0.00100	mmhos/cm	1	BGB0462	02/15/23	02/15/23	EPA 120.1	

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

Date Sampled: **02/09/23 09:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15			pH Units	1	BGB0463	02/15/23	02/15/23	EPA 9045D	

Summit Scientific

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Civitas Resources  
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Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-03@4'**  
**2302176-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BGB0301	02/10/23	02/12/23	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.11</b>	<b>0.50</b>		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		75.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		85.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>C10-C28 (DRO)</b>	<b>34</b>	50	4.3	mg/kg	1	BGB0299	02/10/23	02/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **02/09/23 10:00**

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

**PAH by EPA Method 8270D SIM**

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-03@4'**  
**2302176-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BGB0388	02/14/23	02/14/23	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: **02/09/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		47.5 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		77.9 %		40-150		"	"	"	"	"

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

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Boron</b>	<b>0.0324</b>	0.0100	0.00690	mg/L	1	BGB0348	02/13/23	02/14/23	EPA 6020B	

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

Date Sampled: **02/09/23 10:00**

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

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Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-03@4'**  
**2302176-03 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	26.4	0.0511		mg/L dry	1	BGB0422	02/14/23	02/16/23	EPA 6020B	
Magnesium	10.3	0.0511		"	"	"	"	"	"	
Sodium	1.11	0.0511		"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0464	0.00100		units	1	BGB0499	02/16/23	02/16/23	Calculation	

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

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.8			%	1	BGB0425	02/14/23	02/15/23	Calculation	

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

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.126	0.0100	0.00100	mmhos/cm	1	BGB0462	02/15/23	02/15/23	EPA 120.1	

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

Date Sampled: **02/09/23 10:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.26			pH Units	1	BGB0463	02/15/23	02/15/23	EPA 9045D	

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Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-04@4'**  
**2302176-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020	0.000098	mg/kg	1	BGB0301	02/10/23	02/12/23	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	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.11</b>	<b>0.50</b>		"	"	"	"	"	"	

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		89.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>C10-C28 (DRO)</b>	<b>31</b>	<b>50</b>	<b>4.3</b>	mg/kg	1	BGB0299	02/10/23	02/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	4.3	"	"	"	"	"	"	

Date Sampled: **02/09/23 10:05**

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

**PAH by EPA Method 8270D SIM**

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Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-04@4'**  
**2302176-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500	0.000620	mg/kg	1	BGB0388	02/14/23	02/14/23	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: **02/09/23 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		43.4 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		62.4 %		40-150		"	"	"	"	"

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

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
<b>Boron</b>	<b>0.0721</b>	0.0100	0.00690	mg/L	1	BGB0348	02/13/23	02/14/23	EPA 6020B	

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

Date Sampled: **02/09/23 10:05**

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

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Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**FL-SS-04@4'**  
**2302176-04 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.1	0.0513		mg/L dry	1	BGB0422	02/14/23	02/16/23	EPA 6020B	
Magnesium	7.37	0.0513		"	"	"	"	"	"	"
Sodium	1.09	0.0513		"	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0529	0.00100		units	1	BGB0499	02/16/23	02/16/23	Calculation	

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

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.5			%	1	BGB0425	02/14/23	02/15/23	Calculation	

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

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.126	0.0100	0.00100	mmhos/cm	1	BGB0462	02/15/23	02/15/23	EPA 120.1	

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

Date Sampled: **02/09/23 10:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.25			pH Units	1	BGB0463	02/15/23	02/15/23	EPA 9045D	

Summit Scientific

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Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

### 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 BGB0301 - EPA 5030 Soil MS

##### Blank (BGB0301-BLK1)

Prepared: 02/10/23 Analyzed: 02/11/23

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	0.120	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0489</i>		<i>"</i>	<i>0.0400</i>		<i>122</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0469</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>50-150</i>			

##### LCS (BGB0301-BS1)

Prepared: 02/10/23 Analyzed: 02/11/23

Benzene	0.0870	0.0020	mg/kg	0.100		87.0	70-130			
Toluene	0.130	0.0050	"	0.100		130	70-130			
Ethylbenzene	0.111	0.0050	"	0.100		111	70-130			
m,p-Xylene	0.248	0.010	"	0.200		124	70-130			
o-Xylene	0.116	0.0050	"	0.100		116	70-130			
1,2,4-Trimethylbenzene	0.103	0.0050	"	0.100		103	70-130			
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100		106	70-130			
Naphthalene	0.0911	0.0038	"	0.100		91.1	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0504</i>		<i>"</i>	<i>0.0400</i>		<i>126</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0445</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>50-150</i>			

##### Matrix Spike (BGB0301-MS1)

Source: 2302169-01

Prepared: 02/10/23 Analyzed: 02/11/23

Benzene	0.0801	0.0020	mg/kg	0.100	ND	80.1	70-130			
Toluene	0.0820	0.0050	"	0.100	ND	82.0	70-130			
Ethylbenzene	0.0988	0.0050	"	0.100	ND	98.8	70-130			
m,p-Xylene	0.204	0.010	"	0.200	ND	102	70-130			
o-Xylene	0.0950	0.0050	"	0.100	ND	95.0	70-130			
1,2,4-Trimethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130			
1,3,5-Trimethylbenzene	0.0979	0.0050	"	0.100	ND	97.9	70-130			
Naphthalene	0.0904	0.0038	"	0.100	ND	90.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0280</i>		<i>"</i>	<i>0.0400</i>		<i>70.1</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.6</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0381</i>		<i>"</i>	<i>0.0400</i>		<i>95.2</i>	<i>50-150</i>			

Summit Scientific

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Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**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 BGB0301 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BGB0301-MSD1)</b>	<b>Source: 2302169-01</b>			<b>Prepared: 02/10/23 Analyzed: 02/11/23</b>						
Benzene	0.0821	0.0020	mg/kg	0.100	ND	82.1	70-130	2.48	30	
Toluene	0.0817	0.0050	"	0.100	ND	81.7	70-130	0.367	30	
Ethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	1.18	30	
m,p-Xylene	0.204	0.010	"	0.200	ND	102	70-130	0.0440	30	
o-Xylene	0.0963	0.0050	"	0.100	ND	96.3	70-130	1.41	30	
1,2,4-Trimethylbenzene	0.0927	0.0050	"	0.100	ND	92.7	70-130	1.35	30	
1,3,5-Trimethylbenzene	0.0960	0.0050	"	0.100	ND	96.0	70-130	1.89	30	
Naphthalene	0.0933	0.0038	"	0.100	ND	93.3	70-130	3.13	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0262</i>		<i>"</i>	<i>0.0400</i>		<i>65.6</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0340</i>		<i>"</i>	<i>0.0400</i>		<i>85.0</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0371</i>		<i>"</i>	<i>0.0400</i>		<i>92.8</i>	<i>50-150</i>			

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

**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 BGB0299 - EPA 3550A**

**Blank (BGB0299-BLK1)**

Prepared: 02/10/23 Analyzed: 02/12/23

C10-C28 (DRO)	26.0	50	mg/kg								
C28-C36 (ORO)	5.74	50	"								
Surrogate: <i>o</i> -Terphenyl	13.3		"	12.5		107	30-150				

**LCS (BGB0299-BS1)**

Prepared: 02/10/23 Analyzed: 02/12/23

C10-C28 (DRO)	519	50	mg/kg	500		104	70-130				
Surrogate: <i>o</i> -Terphenyl	13.3		"	12.5		107	30-150				

**Matrix Spike (BGB0299-MS1)**

Source: 2302169-01

Prepared: 02/10/23 Analyzed: 02/12/23

C10-C28 (DRO)	478	50	mg/kg	500	29.9	89.6	70-130				
Surrogate: <i>o</i> -Terphenyl	13.2		"	12.5		106	30-150				

**Matrix Spike Dup (BGB0299-MSD1)**

Source: 2302169-01

Prepared: 02/10/23 Analyzed: 02/12/23

C10-C28 (DRO)	466	50	mg/kg	500	29.9	87.2	70-130	2.59	20		
Surrogate: <i>o</i> -Terphenyl	12.4		"	12.5		99.6	30-150				

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650 Southgate Drive  
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Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

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

**Summit Scientific**

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

**Batch BGB0388 - EPA 5030 Soil MS**

**Blank (BGB0388-BLK1)**

Prepared & Analyzed: 02/14/23

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>0.0205</i>		"	<i>0.0333</i>		<i>61.4</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0334</i>		"	<i>0.0333</i>		<i>100</i>		<i>40-150</i>		

**LCS (BGB0388-BS1)**

Prepared & Analyzed: 02/14/23

Acenaphthene	0.0326	0.00500	mg/kg	0.0333		97.9		31-137		
Anthracene	0.0295	0.00500	"	0.0333		88.4		30-120		
Benzo (a) anthracene	0.0269	0.00500	"	0.0333		80.7		30-120		
Benzo (a) pyrene	0.0245	0.00500	"	0.0333		73.6		30-120		
Benzo (b) fluoranthene	0.0337	0.00500	"	0.0333		101		30-120		
Benzo (k) fluoranthene	0.0321	0.00500	"	0.0333		96.2		30-120		
Chrysene	0.0331	0.00500	"	0.0333		99.4		30-120		
Dibenz (a,h) anthracene	0.0232	0.00500	"	0.0333		69.6		30-120		
Fluoranthene	0.0316	0.00500	"	0.0333		94.9		30-120		
Fluorene	0.0338	0.00500	"	0.0333		101		30-120		
Indeno (1,2,3-cd) pyrene	0.0266	0.00500	"	0.0333		79.7		30-120		
Pyrene	0.0312	0.00500	"	0.0333		93.5		35-142		
1-Methylnaphthalene	0.0270	0.00500	"	0.0333		81.1		35-142		
2-Methylnaphthalene	0.0194	0.00500	"	0.0333		58.1		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0292</i>		"	<i>0.0333</i>		<i>87.7</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0311</i>		"	<i>0.0333</i>		<i>93.3</i>		<i>40-150</i>		

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

Reported:  
02/16/23 12:59

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 BGB0388 - EPA 5030 Soil MS

Matrix Spike (BGB0388-MS1)	Source: 2302176-01			Prepared & Analyzed: 02/14/23						
Acenaphthene	0.0211	0.00500	mg/kg	0.0333	ND	63.4	31-137			
Anthracene	0.0190	0.00500	"	0.0333	ND	57.1	30-120			
Benzo (a) anthracene	0.0200	0.00500	"	0.0333	ND	60.1	30-120			
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.8	30-120			
Benzo (b) fluoranthene	0.0222	0.00500	"	0.0333	ND	66.6	30-120			
Benzo (k) fluoranthene	0.0209	0.00500	"	0.0333	ND	62.8	30-120			
Chrysene	0.0201	0.00500	"	0.0333	ND	60.3	30-120			
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	42.9	30-120			
Fluoranthene	0.0209	0.00500	"	0.0333	ND	62.8	30-120			
Fluorene	0.0216	0.00500	"	0.0333	ND	64.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0164	0.00500	"	0.0333	ND	49.3	30-120			
Pyrene	0.0204	0.00500	"	0.0333	ND	61.3	35-142			
1-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.7	15-130			
2-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.1	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0221		"	0.0333		66.2	40-150			
Surrogate: Fluoranthene-d10	0.0220		"	0.0333		66.1	40-150			

Matrix Spike Dup (BGB0388-MSD1)	Source: 2302176-01			Prepared & Analyzed: 02/14/23						
Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.6	31-137	4.94	30	
Anthracene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	6.70	30	
Benzo (a) anthracene	0.0213	0.00500	"	0.0333	ND	64.0	30-120	6.34	30	
Benzo (a) pyrene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	5.70	30	
Benzo (b) fluoranthene	0.0239	0.00500	"	0.0333	ND	71.8	30-120	7.58	30	
Benzo (k) fluoranthene	0.0205	0.00500	"	0.0333	ND	61.4	30-120	2.23	30	
Chrysene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	3.61	30	
Dibenz (a,h) anthracene	0.0167	0.00500	"	0.0333	ND	50.0	30-120	15.2	30	
Fluoranthene	0.0223	0.00500	"	0.0333	ND	66.9	30-120	6.26	30	
Fluorene	0.0233	0.00500	"	0.0333	ND	69.9	30-120	7.55	30	
Indeno (1,2,3-cd) pyrene	0.0198	0.00500	"	0.0333	ND	59.4	30-120	18.7	30	
Pyrene	0.0201	0.00500	"	0.0333	ND	60.3	35-142	1.66	30	
1-Methylnaphthalene	0.0191	0.00500	"	0.0333	ND	57.4	15-130	1.31	50	
2-Methylnaphthalene	0.0174	0.00500	"	0.0333	ND	52.2	15-130	3.99	50	
Surrogate: 2-Methylnaphthalene-d10	0.0220		"	0.0333		65.9	40-150			
Surrogate: Fluoranthene-d10	0.0230		"	0.0333		69.0	40-150			

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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

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

**Summit Scientific**

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

**Batch BGB0348 - EPA 3050B**

**Blank (BGB0348-BLK1)**

Prepared: 02/13/23 Analyzed: 02/14/23

Boron ND 0.0100 mg/L

**LCS (BGB0348-BS1)**

Prepared: 02/13/23 Analyzed: 02/14/23

Boron 5.95 0.0100 mg/L 5.00 119 80-120

**Duplicate (BGB0348-DUP1)**

Source: 2302170-01

Prepared: 02/13/23 Analyzed: 02/14/23

Boron 0.0437 0.0100 mg/L 0.0527 18.8 20

**Matrix Spike (BGB0348-MS1)**

Source: 2302170-01

Prepared: 02/13/23 Analyzed: 02/14/23

Boron 5.47 0.0100 mg/L 5.00 0.0527 108 75-125

**Matrix Spike Dup (BGB0348-MSD1)**

Source: 2302170-01

Prepared: 02/13/23 Analyzed: 02/14/23

Boron 5.62 0.0100 mg/L 5.00 0.0527 111 75-125 2.71 25

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Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

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

**Summit Scientific**

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

**Batch BGB0422 - General Preparation**

**Blank (BGB0422-BLK1)**

Prepared: 02/14/23 Analyzed: 02/16/23

Calcium	0.0433	0.0500	mg/L wet							
Magnesium	0.0193	0.0500	"							
Sodium	0.0482	0.0500	"							

**LCS (BGB0422-BS1)**

Prepared: 02/14/23 Analyzed: 02/16/23

Calcium	5.20	0.0500	mg/L wet	5.00		104	70-130			
Magnesium	5.01	0.0500	"	5.00		100	70-130			
Sodium	4.76	0.0500	"	5.00		95.2	70-130			

Summit Scientific

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Project: Antelope 12-19

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

**Reported:**  
 02/16/23 12:59

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

**Summit Scientific**

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

**Batch BGB0425 - General Preparation**

<b>Duplicate (BGB0425-DUP1)</b>		<b>Source: 2302174-01</b>		Prepared: 02/14/23 Analyzed: 02/15/23	
% Solids	96.7	%		96.8	0.0910 20

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Civitas Resources  
 650 Southgate Drive  
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Project: Antelope 12-19

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

**Reported:**  
 02/16/23 12:59

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

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

**Batch BGB0462 - General Preparation**

**Blank (BGB0462-BLK1)**

Prepared & Analyzed: 02/15/23

Specific Conductance (EC)      ND      0.0100    mmhos/cm

**LCS (BGB0462-BS1)**

Prepared & Analyzed: 02/15/23

Specific Conductance (EC)      0.148      0.0100    mmhos/cm      0.150      98.5      95-105

**Duplicate (BGB0462-DUP1)**

**Source: 2302169-01**

Prepared & Analyzed: 02/15/23

Specific Conductance (EC)      0.138      0.0100    mmhos/cm      0.142      2.50      20

Summit Scientific

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Civitas Resources  
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Project: Antelope 12-19

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

**Reported:**  
 02/16/23 12:59

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

**Summit Scientific**

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

**Batch BGB0463 - General Preparation**

**LCS (BGB0463-BS1)**

Prepared & Analyzed: 02/15/23

pH	9.17	pH Units	9.18	99.9	95-105
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**Duplicate (BGB0463-DUP1)**

Source: 2302169-01

Prepared & Analyzed: 02/15/23

pH	8.22	pH Units	8.15	0.855	20
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Civitas Resources  
650 Southgate Drive  
Windsor CO, 80550

Project: Antelope 12-19

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

**Reported:**  
02/16/23 12:59

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference