

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403688704  
Receive Date:  
02/26/2024  
Report taken by:  
Krystal Heibel

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by COGCC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.

This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

|  |   |   |
|--|---|---|
| Name of Operator: <u>BROWN OIL &amp; GAS LLC</u> | Operator No: <u>11001</u>               | Phone Numbers<br>Phone: <u>(970) 522-1072</u><br>Mobile: <u>( )</u> |
| Address: <u>10481 COUNTY ROAD 20.5</u>           |   |   |
| City: <u>STERLING</u>                            | State: <u>CO</u>                        | Zip: <u>80751</u>   |
| Contact Person: <u>Mark Brown</u>                | Email: <u>brownoilandgas1@gmail.com</u> |   |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 19018 Initial Form 27 Document #: 402720652

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: \_\_\_\_\_

SITE INFORMATION

Yes  Multiple Facilities

|  |                            |                               |   |
|--|----------------------------|-------------------------------|---|
| Facility Type: <u>WELL</u>                     | Facility ID: _____         | API #: <u>075-09351</u>       | County Name: <u>LOGAN</u>                                       |
| Facility Name: <u>CEDAR CREEK RANCH 1-Y</u>    | Latitude: <u>40.776540</u> | Longitude: <u>-103.361431</u> |   |
| ** correct Lat/Long if needed: Latitude: _____ |                            | Longitude: _____              |   |
| QtrQtr: <u>SWSW</u>                            | Sec: <u>1</u>              | Twp: <u>9N</u>                | Range: <u>54W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |
| Facility Type: <u>PIT</u>                      | Facility ID: <u>287328</u> | API #: _____                  | County Name: <u>LOGAN</u>                                       |
| Facility Name: <u>CEDAR CREEK RANCH 1-Y</u>    | Latitude: <u>40.776610</u> | Longitude: <u>-103.360600</u> |   |
| ** correct Lat/Long if needed: Latitude: _____ |                            | Longitude: _____              |   |
| QtrQtr: <u>SWSW</u>                            | Sec: <u>1</u>              | Twp: <u>9N</u>                | Range: <u>54W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |

Facility Type: LOCATION Facility ID: 312327 API #: County Name: LOGAN  
Facility Name: CEDAR CREEK RANCH-69N54W Latitude: 40.776610 Longitude: -103.360610  
1SWSW  
\*\* correct Lat/Long if needed: Latitude: Longitude:  
QtrQtr: SWSW Sec: 1 Twp: 9N Range: 54W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications GC Most Sensitive Adjacent Land Use none  
Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? Yes  
Is groundwater less than 20 feet below ground surface? No

**Other Potential Receptors within 1/4 mile**

County road 21 is 1.11 miles away  
Riverine is approximately 0.13 to the south of the site  
Nearest groundwater well, installed in 2004, is located approximately 0.56 miles to the south and indicates a static water level of 41 feet bgs.

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- E&P Waste       Other E&P Waste       Non-E&P Waste
- Produced Water       Workover Fluids
- Oil       Tank Bottoms
- Condensate       Pigging Waste
- Drilling Fluids       Rig Wash
- Drill Cuttings       Spent Filters
- Pit Bottoms
- Other (as described by EPA)

## DESCRIPTION OF IMPACT

| Impacted? | Impacted Media | Extent of Impact | How Determined |
|-----------|----------------|------------------|----------------|
| Yes       | SOILS          | Unknown          | lab analysis   |

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

A Form 27-Initial (Doc. No. 402720652) was approved on July 16, 2021, and a Form 27-Supplemental (Doc. No. 402864248) was denied on February 22, 2023. All 10 soil sample locations from the sampling events in 2022 and 2023, including the background sample were returned above the Table 915-1 standards for Arsenic. The arsenic concentrations are representative of background conditions. The laboratory analytical data are summarized in the attached summary tables and provided in the attached laboratory analytical reports. A topographic map of the site was included as an attachment to Form 27-S (Doc. No. 403647563). Based on the February 2, 2024, confirmation soil sampling laboratory analytical results, approval for site closure and reclamation is being requested. The laboratory analytical data is provided in the attached summary tables. Analytical reports and soil sample locations are presented in the attached site figures

## PROPOSED SAMPLING PLAN

### Proposed Soil Sampling

Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

Based on the laboratory analytical data from the February 2, 2024, confirmation soil sampling event, some constituents of concern from the Series 900 Rules Table 915-1 are below regulatory standards or within background concentrations (arsenic). Slightly elevated pH concentrations are observed in the samples collected from the flowline area. It is being proposed to leave this material in place and monitor vegetation growth. The operator is requesting the approval of residential soil screening levels based on no pathway to groundwater existing. Soil sample locations and results are included as attached documents to this report.

### Proposed Groundwater Sampling

Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

Groundwater is not anticipated to be encountered during soil sampling activities. The nearest registered groundwater well, installed in 2004, is located approximately 0.56 miles south of the site and the well construction log indicated a depth to static groundwater level at 41 feet bgs.

### Proposed Surface Water Sampling

Will surface water samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

### Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 20

Highest concentration of TPH (mg/kg) \_\_\_\_\_

Number of soil samples exceeding 915-1 20

Highest concentration of SAR \_\_\_\_\_

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 No

Approximate areal extent (square feet) 0

Vertical Extent > 915-1 (in feet) 5

**Groundwater**

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l) \_\_\_\_\_

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l) \_\_\_\_\_

Depth to groundwater (below ground surface, in feet) \_\_\_\_\_

Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

Number of groundwater monitoring wells installed \_\_\_\_\_

Highest concentration of Xylene (µg/l) \_\_\_\_\_

Number of groundwater samples exceeding 915-1 \_\_\_\_\_

Highest concentration of Methane (mg/l) \_\_\_\_\_

**Surface Water**

0 Number of surface water samples collected

0 Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

**OTHER INVESTIGATION INFORMATION**

Were impacts to adjacent property or offsite impacts identified?

\_\_\_\_\_

Were background samples collected as part of this site investigation?

Three background samples were collected sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, and should be obtained from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples. All background samples were submitted for analysis of the Table 915-1 analytes. The location of the samples is shown on the attached soil sample location figure.

Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) \_\_\_\_\_

Volume of liquid waste (barrels) \_\_\_\_\_

Is further site investigation required?

\_\_\_\_\_

**REMEDIAL ACTION PLAN**

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

**SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

Impacted material from E&P waste was not encountered during site investigation activities and the February 2, 2024, confirmation sampling event confirmed that impacts from oil and gas operations are not present.

**REMEDIATION SUMMARY**

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Impacted material from E&P waste was not encountered during site investigation activities and the February 2, 2024, confirmation sampling event confirmed that impacts from oil and gas operations are not present.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Excavate and onsite remediation  
\_\_\_\_\_ Land Treatment  
\_\_\_\_\_ Bioremediation (or enhanced bioremediation)  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Other \_\_\_\_\_

**Groundwater Remediation Summary**

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

**GROUNDWATER MONITORING**

If groundwater has been impacted, describe proposed monitoring plan, including # of wells or sample points, monitoring schedule, analytical methods, points of compliance. Attach a groundwater monitoring location diagram.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

### Approved Reporting Schedule:

Quarterly    Semi-Annually    Annually    Other

### Request Alternative Reporting Schedule:

Semi-Annually    Annually    Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

**Report Type:**    Groundwater Monitoring    Land Treatment Progress Report    O&M Report  
 Other Site closure request

## Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).  
If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Operator anticipates the remaining cost for this project to be: \$ 15000

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Volume of E&P Waste (solid) in cubic yards

E&P waste (solid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

# REMEDIATION COMPLETION REPORT

## REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

- Compliant with Rule 913.h.(1).
- Compliant with Rule 913.h.(2).
- Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## RECLAMATION PLAN

### RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Brown Oil & Gas will coordinate with the landowner to verify that vegetation regrowth is successful. Should growth be unsuccessful, additional reclamation activities may be required and will be coordinated with the landowner.

Is the described reclamation complete? No

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

Interim

Final

Did the Surface Owner provide the seed mix? No

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? No

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. 06/16/2021

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/15/2021

Proposed site investigation commencement. 06/10/2021

Proposed completion of site investigation. 02/02/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

\_\_\_\_\_

## OPERATOR COMMENT

Based on the February 2, 2024, confirmation soil sampling laboratory analytical results, approval for site closure and reclamation is being requested. The laboratory analytical data is provided in the attached summary tables and analytical reports and the results and soil sample locations are displayed on the attached site figures. The operator is requesting the approval of residential soil screening levels based on no pathway to groundwater existing.

The operator is requested expediated approval to backfill and re-grade the former produced water pit so that the landowner can have the land back prior to grazing season. All analytical results from samples collected within and around the former produced water pit footprint returned below Table 915-1 cleanup concentrations.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Drezden Kinnaird

Title: Consultant

Submit Date: 02/26/2024

Email: dkinnaird@cgrs.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Krystal Heibel

Date: 02/27/2024

Remediation Project Number: 19018

## COA Type

## Description

|        |   |
|--------|---|
|        | <p>Arsenic of 6.54 at the flowline center is not within the acceptable range of soil variability (1.25 x background ranges is between 2.48 - 4.66). Operator will provide additional data to characterize arsenic concentrations at the site and to determine its source.</p> <p>Operator shall obtain additional background samples from locations sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, from similar depths, and soil horizons or lithologic materials for comparison to confirmation soil samples</p> |
|        | <p>Closure request denied. If the Operator proposes to leave the material with elevated pH in situ, the Operator shall submit a reclamation plan for Director approval pursuant to Rule 915.b.</p>  |
| 2 COAs |   |

## Attachment Check List

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

| <u>Att Doc Num</u> | <u>Name</u>                                      |
|--------------------|--|
| 403688704          | INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL) |
| 403693087          | PHOTO DOCUMENTATION                              |
| 403693119          | ANALYTICAL RESULTS                               |
| 403693650          | ANALYTICAL RESULTS                               |
| 403693652          | SOIL SAMPLE LOCATION MAP                         |
| 403700020          | FORM 27-SUPPLEMENTAL-SUBMITTED                   |

Total Attach: 6 Files

## General Comments

| <u>User Group</u> | <u>Comment</u>   | <u>Comment Date</u> |
|-------------------|--|---------------------|
| Environmental     | ECMC approves Operator's request for use of Residential SSLs based on the depth to groundwater and the local lithology suggesting a pathway to groundwater at this location is not likely. | 02/27/2024          |

Total: 1 comment(s)