

State of Colorado
Energy & Carbon Management Commission

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Receive Date:
12/06/2023
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 & GAS LLC</u>	Operator No: <u>11001</u>	Phone Numbers
Address: <u>10481 COUNTY ROAD 20.5</u>		Phone: <u>(970) 522-1072</u>
City: <u>STERLING</u> State: <u>CO</u> Zip: <u>80751</u>		Mobile: <u>()</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:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	SOILS	Unknown	TBD

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 previous sampling event including the background sample were returned above the Table 915-1 standards for Arsenic. Eight of the ten sample locations were above the Table 915-1 protection of groundwater standards soil screening level concentrations for barium but below the residential soil screening level concentrations. The arsenic concentrations are representative of background conditions. The barium concentrations are assumed to be within background concentrations and additional background samples will be collected for confirmation. 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 is included as an attachment. This Form 27-S is being submitted to propose additional confirmation soil sample locations at the site from beneath the former locations of the wellhead, treater, production tanks and background locations. The soil samples collected from the produced water pit previously are representative and confirmation soil samples are not anticipated to be collected from the pit.

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):

Soil samples will be collected from beneath the former locations of the oil production tanks, the treater, the well head, and two additional background locations. The samples collected from the produced water pit are representative and additional soil samples from the produced water pit are not planned to be collected. Soil samples from the former equipment locations will be submitted for the Full Table 915-1 list of analytes and the background samples will be submitted for the Table 915-1 inorganic soil suitability and metals list of analytes. A proposed soil sample location figure is included as an attachment.

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

Number of soil samples collected 10
Number of soil samples exceeding 915-1 10
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 0

NA / ND

Highest concentration of TPH (mg/kg) _____
Highest concentration of SAR _____
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 2

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) _____
Number of groundwater monitoring wells installed _____
Number of groundwater samples exceeding 915-1 _____

Highest concentration of Benzene (µg/l) _____
Highest concentration of Toluene (µg/l) _____
Highest concentration of Ethylbenzene (µg/l) _____
Highest concentration of Xylene (µg/l) _____
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?

One Background sample was collected at the site (40.777423, -103.361679) during the initial investigation. Additional background samples will be collected during the supplemental investigation event. Background samples will be submitted for the Table 915-1 inorganic soil suitability and metals lists of analytes.

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.

Based on the denial of Form 27-S document number 402864248, additional soil sample collection is required and is proposed to be completed at the locations beneath the former production tanks, treater, wellhead, and background locations. The samples collected previously from the produced water pit represent actual conditions and supplemental soil samples are not planned to be collected from the produced water pit.

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.

Should impacted soil above the Table 915-1 standards be verified through analytical testing, remediation alternatives will be evaluated and presented in a Form 27-S.

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

_____ Natural Attenuation

_____ Other _____

_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ 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 Proposed supplemental investigation for site closure _____

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.

Brown Oil & Gas is current on form 1B. Liability insurance meets ECMC standards and is fully bonded with the state of Colorado.

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? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

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.

Reclamation activities will be evaluated subsequent to the supplemental investigation activities described herein and any remediation activities, if required.

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? _____

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

Did the local soil conservation district provide the seed mix? _____

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. _____

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. _____

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

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 previous sampling event including the background sample were returned above the Table 915-1 standards for Arsenic. Eight of the ten sample locations were above the Table 915-1 protection of groundwater standards soil screening level concentrations for barium but below the residential soil screening level concentrations. The arsenic concentrations are representative of background conditions. The barium concentrations are assumed to be within background concentrations and additional background samples will be collected for confirmation. 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 is included as an attachment. This Form 27-S is being submitted to propose additional confirmation soil sample locations at the site. Soil samples will be collected from beneath the former locations of the oil production tanks, the treater, the well head, and two additional background locations. The samples collected from the produced water pit are representative and additional soil samples from the produced water pit are not planned to be collected. Soil samples from the former equipment locations will be submitted for the Full Table 915-1 list of analytes and the background samples will be submitted for the Table 915-1 inorganic soil suitability and metals list of analytes.

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

Signed: Mark Brown

Title: President

Submit Date: 12/06/2023

Email: brownoilandgas1@gmail.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: 01/08/2024

Remediation Project Number: 19018

COA Type

Description

	<p>Background sampling locations should be 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. If operator proposes to use background samples, additional background sample(s) shall be collected.</p> <p>It appears that the previous background sample (located at 40.777423, -103.361679 and sampled at 8/24/2023) is not sufficiently away from the impacted area to reflect non-oil and gas activity.</p>
	<p>ECMC acknowledges the submittal of the proposed sample locations illustrates within the "Proposed Soil Sample Locations" Map. Additional soil samples (such as at the flowlines) shall be collected and analyzed to decommission this site.</p>
	<p>Operator shall collect confirmation soil samples as described in the Rule 915.e.(2) Guidance Document. Operator will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)).</p>
	<p>Operators will collect and submit for laboratory analysis a soil sample collected from the areas most likely to have been impacted during the operational life of the flowline. These areas include, but are not limited to: where Flowlines connect to the wellhead, surface equipment, risers, valves, or manifolds; where Flowlines bend or were repaired in the past and at joints and hammer unions; where Flowlines connect to Flowlines or equipment of different material; and where Flowlines crossed drainages or surface water or are in contact with shallow groundwater.</p>
	<p>Operator will submit photos of the excavation and surface areas within the next Form 27 submittal.</p>
	<p>Operator shall provide "Confirmation Soil Sample Locations" map that illustrate where all historic (August 2022 and August 2023) samples have been collected (including background sample location(s)), within the next Form 27 submittal.</p>
6 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.

Att Doc Num	Name
403474295	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403614208	ANALYTICAL RESULTS
403614225	ANALYTICAL RESULTS
403614229	ANALYTICAL RESULTS
403614260	MAP
403614278	SOIL SAMPLE LOCATION MAP
403647563	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 7 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)