

# State of Colorado Oil and Gas Conservation Commission

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Receive Date:

Report taken by:

## 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: CAERUS PICEANCE LLC	Operator No: 10456	<b>Phone Numbers</b>
Address: 1001 17TH STREET #1600		Phone: (970) 902-3598
City: DENVER State: CO Zip: 80202		Mobile: (970) 902-3598
Contact Person: Andy Verbonitz	Email: averbonitz@caerusoilandgas.com	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 23864 Initial Form 27 Document #: 403074715

#### 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

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 481663	API #: _____	County Name: GARFIELD
Facility Name: A03 Vault valve release	Latitude: 39.643139	Longitude: -108.148575	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 3	Twp: 5S	Range: 96W Meridian: 6 Sensitive Area? No

#### SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Rangeland

Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

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

None

**SITE INVESTIGATION PLAN****TYPE OF WASTE:**☒ E&P Waste☐ Other E&P Waste☒ Non-E&P Waste☒ Produced Water☐ Workover Fluids

Fesh water from river mixed with produced water

☐ 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	To be determined	Soil sampling and laboratory 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.

On February 18, 2022, the plug on a blind flange was found to be missing, releasing produced water into the valve can. The release was stopped, and the missing plug was replaced. Standing fluids were recovered using a vacuum truck. The release was reported in Colorado Oil and Gas Conservation Commission (COGCC) Form 19 Document 402960724 to open Spill/Release Point ID 481663. COGCC Form 27 Document 403074715 was later submitted to open Remediation Project Number 23864. See the Report of Work Completed (ROWC) associated with Document 403260849 for site investigation details.

**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 ):

Due to health and safety concerns associated with steep slopes and the presence of several lines owned by multiple operators near the point of release (POR), Caerus proposes to advance two soil borings in the drainages downgradient of the Location to the east and west in order to delineate the extent of soil impacts. See the attached Proposed Sampling Site Diagram for details. Soil samples will be collected from each soil boring and will be analyzed for the approved reduced analyte list of sodium adsorption ratio (SAR) and pH. Background samples may also be collected to establish native levels of inorganic constituents of concern.

**Proposed Groundwater Sampling**

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

Soil borings will be advanced to groundwater and completed as groundwater monitoring wells. Groundwater samples will be collected to characterize and delineate the extent of any potential impacts. Groundwater samples will be submitted for COGCC Table 915-1 groundwater constituents of concern. Background samples will also be collected to establish native levels of inorganic constituents of concern.

**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 3

Number of soil samples exceeding 915-1 3

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

Approximate areal extent (square feet) 200

### NA / ND

-- Highest concentration of TPH (mg/kg) 219.7

-- Highest concentration of SAR 18

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 15

### 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

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA Highest concentration of Xylene (µg/l)

NA Highest concentration of Methane (mg/l)

### Surface Water

0 Number of surface water samples collected

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?

☐ 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?

See Proposed Sampling and the ROWC associated with Form 27 Document 403260849.

## REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

## SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Due to safety concerns associated with multiple buried lines near the POR, source removal is not practical. Once the extent of impacts have been determined, Caerus plans to request closure under a 915.b. Reclamation Plan.

## REMEDICATION 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.

On March 9, 2022, initial site investigation activities were performed. One soil sample was collected from the floor of the vault at approximately 4 inches below the vault floor, or 12 feet below ground surface (bgs) to characterize potential soil impacts beneath the POR. Laboratory results of initial POR characterization exceeded COGCC Table 915-1 Residential Soil Screening Levels for SAR, pH, and arsenic. On May 10, 2022, additional release investigation was performed. A vacuum truck was utilized to remove impacted soil from the base of the vault. At approximately 15 inches below the vault floor, or 13 feet bgs, excavation refusal was encountered. A soil sample was collected from the newly exposed base and submitted for laboratory analysis. Analytical results of the soil sample exceeded COGCC Table 915-1 Residential Soil Screening Levels for SAR, pH, and arsenic.

Additional delineation efforts were performed November 17, 2022. A jackhammer was utilized to advance the excavation to a total depth of 3 feet below the vault floor, or 15 feet bgs. One soil sample was collected from the newly excavated base to characterize the vertical extent of soil impacts. Laboratory results of the delineation soil sample indicate compliance with COGCC Table 915-1 Residential Soil Screening Levels except for SAR and pH. SAR and pH exceedances remain undelineated in the release area. See ROWC associated with Form 27 Document 403260849 for more details.

## Soil Remediation Summary

☐ In Situ

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

☐ Ex Situ

\_\_\_\_\_ Excavate and offsite disposal  
 \_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
 \_\_\_\_\_ 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

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
 No \_\_\_\_\_ Chemical oxidation  
 No \_\_\_\_\_ Air sparge / Soil vapor extraction  
 No \_\_\_\_\_ Natural Attenuation  
 No \_\_\_\_\_ 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.

Soil borings will be completed as groundwater monitoring wells, and characterization groundwater samples will be collected. Caerus does not propose recurring groundwater sampling at this time.

## 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 Q2 2023 Status Update

### 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.

Per Rule 705.b, and in line with guidance laid out in the SBAP, Caerus has general liability insurance in the amount of \$1M, and Caerus has umbrella insurance, which sits over the general liability insurance in the amount of \$75M. The umbrella and general liability insurance covers property damage, bodily injury to third parties, and sudden or accidental pollution under a combined \$76M.

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.

All disturbance areas will be returned to grade with suitable material in preparation for final reclamation activities pursuant to the COGCC 1000 Series Rules.

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). 03/08/2022

Proposed site investigation commencement. 03/09/2022

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**

This form has been submitted to propose site investigation efforts. Site investigation is tentatively scheduled for July 2023. Please find a Proposed Sampling Site Diagram attached.

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

Signed: Sage Maher

Title: Project Manager

Submit Date: \_\_\_\_\_

Email: sage.maher@confluence-cc.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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 23864

**COA Type****Description**

0 COA	

**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**

403396100	MAP
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Total Attach: 1 Files

**General Comments****User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)