

# State of Colorado Oil and Gas Conservation Commission

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402849493

Receive Date:

10/21/2021

Report taken by:

Steven Arauza

## 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) 285-2925
City: DENVER State: CO Zip: 80202		Mobile: (970) 640-6919
Contact Person: Blair Rollins	Email: brollins@caerusoilandgas.com	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 11913 Initial Form 27 Document #: 401784284

#### 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: 457694	API #: _____	County Name: GARFIELD
Facility Name: West Fork 3-Phase Line	Latitude: 39.584419	Longitude: -108.115555	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSE	Sec: 25	Twp: 5S	Range: 96W Meridian: 6 Sensitive Area? Yes

#### SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Non crop land

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? Yes

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

Please reference COGCC Documents 401784284 and 401814737 for this information.

**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	GROUNDWATER	To be determined	Sample analysis
Yes	SOILS	Less than 25' deep	Sample 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.

Please refer to previously submitted eForms associated with Spill/Release Point ID 457694 and Remediation Number 11913 for this information.

**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 ):

**Proposed Groundwater Sampling**

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

Per COA #4 listed on COGCC Document 401814737, quarterly groundwater samples will be collected from WFMW1, WFMW2, and WFMW3 for 12 months. These samples will be submitted for analysis of BTEX. Caerus will include the new proposed WFMW17 to this list of quarterly groundwater wells to be sampled.

**Proposed Surface Water Sampling**

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

Per COA #3 listed on COGCC Document 401814737, quarterly surface water samples will be collected from the irrigation pond (WFPL Pond) adjacent to the impacted area for 12 months. These samples will be submitted for analysis of BTEX.

**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 0

Number of soil samples exceeding 915-1 0

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 100

**Groundwater**

Number of groundwater samples collected 17

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 26

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 1

**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.

**NA / ND**

NA Highest concentration of TPH (mg/kg)

NA Highest concentration of SAR

BTEX &gt; 915-1 No

Vertical Extent &gt; 915-1 (in feet) 25

-- Highest concentration of Benzene (µg/l) 33.8

ND Highest concentration of Toluene (µg/l)

ND Highest concentration of Ethylbenzene (µg/l)

ND Highest concentration of Xylene (µg/l)

NA Highest concentration of Methane (mg/l)

**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?**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.

Please refer to COGCC Document #402121551 for this information.

**REMEDIAL ACTION 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.

Caerus will continue to utilize soil vapor extraction to remediate impacts to soil within the area. When groundwater elevation rises to accessible levels for air sparge, Caerus will utilize an air sparge trailer to remediate and provide oxygen to the remediation system. Please refer to Figures 2 and 3 attached to this document for reference of groundwater elevation and the well construction in the project area.

**Soil Remediation Summary**☒ In Situ☒ Ex Situ

Yes Bioremediation ( or enhanced bioremediation )

Yes Excavate and offsite disposal

Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) 200

Yes ☐ Air sparge / Soil vapor extraction

Yes ☐ 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**

Yes ☐ Bioremediation ( or enhanced bioremediation )

☐ Chemical oxidation

Yes ☐ 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.

Please see the attached tabulated laboratory data for quarterly groundwater sampling and monitoring from remediation and monitoring wells within the spill area. Please note that due to increased groundwater depth resulting in no available water, some monitoring and remediation wells were not sampled during the quarter.

Included in the attached figures are potentiometric groundwater flow direction maps for each monthly sampling event.

Based on the increased groundwater depth and unimpacted groundwater sample results down-gradient of the spill, Caerus requests to change the groundwater sampling frequency to quarterly. During elevated groundwater flows identifying groundwater depth near the zone of impacted soil, Caerus will focus efforts to collect water samples to determine presence of impacted groundwater. If groundwater is impacted, Caerus will conduct additional air-sparge activities to remediate any hydrocarbons found in groundwater at the site.

## 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 Q3 2021 quarterly update

## 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:

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

E&amp;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.

Please refer to COGCC Document ID 401784284 for planned reclamation.

Is the described reclamation complete? Yes

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? Yes

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

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). 09/27/2018

Proposed site investigation commencement. 09/27/2018

Proposed completion of site investigation. 06/10/2019

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/03/2019

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**

Please note that if a water sample isn't represented on the monthly analytical results, then a sample was not collected due to insufficient water available within the well.

Due to maintenance issues on the powered-SVE trailer, a quarterly powered-SVE event was not conducted on the site during Q3 2021. The trailer is back in operation and will be utilized to continue remediation of the project during the Q4 2021 event.

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

Signed: Blair Rollins

Title: EHS Specialist

Submit Date: 10/21/2021

Email: brollins@caerusoilandgas.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: Steven Arauza

Date: 11/22/2021

Remediation Project Number: 11913

**Condition of Approval****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**

402849493	FORM 27-SUPPLEMENTAL-SUBMITTED
402849496	ANALYTICAL RESULTS
402849586	GROUND WATER ELEVATION MAP
402849587	GROUND WATER ELEVATION MAP
402849588	GROUND WATER ELEVATION MAP
402849589	ANALYTICAL RESULTS
402849591	ANALYTICAL RESULTS
402849599	GROUND WATER ELEVATION MAP
402849632	ANALYTICAL RESULTS

Total Attach: 9 Files

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

Environmental	Under Proposed Groundwater and Surface Water Sampling, Operator references doc #401814737 for sample analysis for BTEX.  Per approved Form 27 doc #402681689, samples shall be analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.	11/22/2021
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Total: 1 comment(s)