

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

403166691

Receive Date:

10/04/2022

Report taken by:

Steven Arauza

Site Investigation and Remediation Workplan (Initial 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	Phone Numbers
Address: 1001 17TH STREET #1600		
City: DENVER State: CO Zip: 80202		
Contact Person: Jake Janicek	Email: jjanicek@caerusoilandgas.com	
		Phone: (970) 778-2314
		Mobile: (970) 778-2314

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25322 Initial Form 27 Document #: 403166691

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: Initial Status Update to Dumlaine Release Investigation Activities

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 482591	API #:	County Name: GARFIELD
Facility Name: RD11 Dumlaine failure	Latitude: 39.457614	Longitude: -107.858681	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWNW	Sec: 11	Twp: 7S	Range: 94W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

Is domestic water well within 1/4 mile? Yes 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

Porcupine Creek

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	TBD	Soil Analytical
No	SURFACE WATER	None	Surface Water Analytical

INITIAL ACTION SUMMARY

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

For initial response measures taken please reference Form 19 Spill/Release Point ID: 482591. From August 5 through 12, 2022, two points of release (POR) characterization soil samples were collected from depths of 5.5 to 6 feet and 10 feet below ground surface, respectively. Two surface water samples were collected from Porcupine Creek, one upgradient and downgradient of the pad location. One groundwater sample was collected from a seep observed to be flowing out of the ground along the bank of Porcupine Creek.

Please see the attached report of work completed (ROWC) for additional investigative 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):

Caerus will attempt to remove all impacts through mechanical excavation. Based on the subsequent POR soil sample collected on August 12, 2022, vertical delineation has been obtained at 10 feet below ground surface (bgs). To confirm removal of the impacts to soil, a representative number of confirmation soil samples will be collected from the base and sidewalls of the open excavation footprint. All soil will be characterized through visual and olfactory observations and field screening soil samples for volatile organic compounds using a photoionization detector (PID). See the attached ROWC for additional details regarding the proposed additional investigation and characterization activities.

Caerus requests the COGCC Director to sample under a reduced analytical suite to include for all future soil samples of BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, and SAR.

Proposed Groundwater Sampling

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

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):

Please see "Proposed Soil Sampling" section of this form for details.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 2

Number of soil samples exceeding 915-1 2

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

Approximate areal extent (square feet) 1000

NA / ND

-- Highest concentration of TPH (mg/kg) 1582.2

-- Highest concentration of SAR 16.1

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 23

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l)

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)

Surface Water

2 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?

Six site-specific background soil samples were collected from non-impacted native soil for the purpose of establishing background soil concentrations for Table 915-1 analytes. The background sampling activities can be referenced in the attached ROWC.

☐ 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?

Please see "Proposed Soil Sampling" section of this form for details.

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The source was a failed section of dumlpipe which was shut in and will be replaced.

REMEDATION 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 attempt to remove all soil impacts through mechanical excavation. Based on the subsequent POR soil sample collected on August 12, 2022, vertical delineation has been obtained at 10 feet bgs. To confirm removal of the impacts to soil, a representative number of confirmation soil samples will be collected from the base and sidewalls of the open excavation footprint. All soil will be characterized through visual and olfactory observations and field screening soil samples for volatile organic compounds using a PID. See the attached ROWC for additional details regarding the proposed additional investigation and characterization activities.

To address the elevated arsenic, barium, and cadmium concentrations exceeded by COGCC Table 915-1 PGSSLCs, Caerus requests the Director that the two POR confirmation soil samples with observed exceedances of arsenic, barium, and cadmium be considered within site specific background arsenic, barium, and cadmium concentrations observed in site specific background soil sample 20220812-RD11(BGN)@3-4' per COGCC Table 915-1 footnote 11. Caerus requests that all arsenic, barium, and cadmium exceedances below site specific background levels be considered naturally occurring.

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

_____ 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.

If groundwater is observed during future investigation activities, a representative sample will be collected and submitted for COGCC Table 915-1.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☒ Quarterly☐ Semi-Annually☐ Annually☐ Other

Initial Status Update to Dumphine Release Investigation Activities - Q3

☐ 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

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: \$ 20000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

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

None

Volume of E&P Waste (solid) in cubic yards 0

E&P waste (solid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels 69

E&P waste (liquid) description impacted soil mixed with hydrovac rinsate

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Greenleaf Environmental Services

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.

Any disturbances associated with the remediation of the dumpline release will be returned to grade with suitable material pursuant to the COGCC 1000 Series rules.

Is the described reclamation complete? _____

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. 07/20/2022

Actual Spill or Release date, or date of discovery. 07/20/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/05/2022

Proposed site investigation commencement. 08/05/2022

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

In order to address relief concerning assessment of a potential pathways to groundwater, a discussion of Caerus' assessment of potential pathways to groundwater is detailed below. Caerus believes that a pathway to groundwater from soil identified beneath the POR location does not exist due to the following reasons:

1) The vertical distance between the POR location and the anticipated static water table depth. The static water table depth is estimated to be 70 feet below pad surface based on documents associated with a domestic water well approximately 1,404 feet to the northeast and identified by DWR Permit #177190-A. The vertical distance between the assumed static water level and the POR location is approximately 94 feet associated with this remediation project.

2) No groundwater was/has been observed infiltrating the existing excavation during site investigation activities.

3) The nearest sensitive receptor (737 feet east) is Porcupine Creek which the United States Geological Survey (USGS) map symbol detailed on the topo map provided on COGCC GISOnline indicates it is an perennial stream. Although this stream flows year around, there is no observable standing water within the immediate release area and any resulting appreciable groundwater elevation increase would have been observed in the open excavation associated with this remediation project. Any impacts to surface and/or groundwater would have been observed during the initial release investigation sampling.

Given these observations and facts concerning groundwater in the immediate vicinity of the project site, Caerus requests that the Director make a determination to continue evaluating remediation success of this project using Residential Soil Screening Level Concentrations listed in Table 915-1.

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

Signed: Dustin Held

Title: Sr. Consultant, Geologist

Submit Date: 10/04/2022

Email: dustin.held@wsp.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: 10/07/2022

Remediation Project Number: 25322

COA Type

Description

	Based on the information provided for POR samples, the Operator's request for a reduced analyte suite of BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, and SAR is approved under the condition below: Operator will also continue to analyze soil samples for TPH.
1 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

403166691	FORM 27-INITIAL-SUBMITTED
403185658	SITE INVESTIGATION REPORT

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

Environmental	Based on the information provided under Operator Comment, the Operator's request to proceed under the Table 915-1 RSSLs is conditionally approved.	10/07/2022
Environmental	Based on the information provided for background samples, the Operator's request for consideration of site-specific background concentrations of arsenic, barium, and cadmium is conditionally approved.	10/07/2022

Total: 2 comment(s)