FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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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 INFORMATON

Name of Operator: CAERUS PICEANCE LLC Operator No: 10456
Address: 1001 17TH STREET #1600
City: DENVER State: CO Zip: 80202
Contact Person: Jake Janicek Email: jjanicek@caerusoilandgas.com

Phone Numbers
Phone: (970) 778-2314
Mobile: (970) 778-2314

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 28568 Initial Form 27 Document #: 403337141

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.
- [X] 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.
- [X] Other: Q2 Status Update - Decommissioning of HILL-9-14 (L9E) well and associated flowline

SITE INFORMATION

No Multiple Facilities

Facility Type: WELL Facility ID: API #: 045-09356 County Name: GARFIELD
Facility Name: HILL 9-14 (L9E) Latitude: 39.458422 Longitude: -107.677829
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NWSW Sec: 9 Twp: 7S Range: 92W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [ ] **E&P Waste**
  - [ ] Produced Water
  - [ ] Oil
  - [ ] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [X] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [X] Other (as described by EPA) Historic impacts associated with operation
- [ ] **Non-E&P Waste**

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	To be Determined	Field investigation and soil sampling

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 April 13, 2023, the three investigative confirmation soil samples 20230413-L9-(FC-WH-HILL-9-14)@6, 20230413-L9-(FC-FL1)@6, and 20230413-L9-(FC-FL2)@5 were collected from the wellhead and associated flowlines to be decommissioned. The first pothole location [20230413-L9-(FC-WH-HILL-9-14)@6] was advanced to six feet below ground surface (bgs) immediately adjacent to the wellhead. The second pothole [20230413-L9-(FC-FL1)@6] was advanced behind the separator production unit at the “dogleg” flowline junction to a depth of six feet bgs. The third pothole [20230413-L9-(FC-FL2)@5] was advanced between the flowline riser and the separator.

On May 18, 2023, soil field screening using a photoionization detector (PID) was completed at the decommissioned production flowline dogleg (dumpline/sales line) located behind the separator and the flowline into the separator. The soils located directly beneath the dumpline, sales line, and flowline which were connected to the separator were also field screened. Additionally, all sidewalls of the excavation footprints used to access the abandoned infrastructure were field screened. No hydrocarbon impacts were observed at any time throughout this investigative site visit.

On July 20, 2023, soil field screening and confirmation soil sampling was conducted within and around the decommissioned wellhead excavation footprint (HILL-9-14) to confirm the presence or absence of hydrocarbon impacts via PID, and visual and olfactory senses. Five confirmation soil samples were collected from the decommissioned wellhead excavation footprint. One base sample located immediately adjacent to the decommissioned wellhead and four along each sidewall at depths of five feet bgs was collected.

Please see the attached report of work completed (ROWC) for additional investigative sampling details.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

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

Additional investigative work will continue at the decommissioned production well Hill 9-14 (API# 045-09356) to remove horizontal impacts from along the north sidewall of the current wellhead excavation extent. Prior to additional investigative work, per Rule 915-1e.(2)C. Caerus requests the Director for approval to sample under a reduced analytical suite for all future confirmation soil samples of barium, cadmium, total petroleum hydrocarbons (TPH), 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene.

Please see attached ROWC and "Remediation Summary" for additional details and request for reduced suite.

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: 9

Number of soil samples exceeeding 915-1: 9

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

Approximate areal extent (square feet): 220

NA / ND

-- Highest concentration of TPH (mg/kg): 1555.03

-- Highest concentration of SAR: 2.26

BTEX > 915-1: Yes

Vertical Extent > 915-1 (in feet): 6

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

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?

[X] Were background samples collected as part of this site investigation?

Four site-specific background soil samples were collected from two boring locations from non-impacted native soil for the purpose of establishing background soil concentrations for Table 915-1 analytes per COGCC Rule 915.e.(2).D.

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

Volume of solid waste (cubic yards):

Volume of liquid waste (barrels):

[X] Is further site investigation required?

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

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.

Since the impacts are considered historical, no source can be identified.

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.

A remediation plan will be submitted once all impacts have been delineated.

Per Colorado Oil and Gas Conservation Commission (COGCC) Rule 915.e.(2).C Caerus requests relief of pH as a contaminant of concern (COC). The pH result (7.28) of produced water sample [20201201-J17E (PW)] collected from the same producing formation (Williams Fork) that is representative of the waste stream that would have impacted the soil associated with this remediation project was less than the pH result (9.02) of a soil sample 20230413-L9-(FC-FL1)@6 collected between the flowline and separator associated with this project indicating that the constituent is not found within the above-mentioned waste stream at the levels indicative of the levels within the impacted area. Although collected from the J17E a nearby location to the L9 (approx. 1.03 miles northeast) the wells from these locations produced from the same geologic unit (Williams Fork). Please see Figure 6 of the attached ROWC for visual spatial reference.

Per COGCC Rule 915.e.(2).C Caerus requests relief of arsenic as a COC. The arsenic concentrations in the confirmation soil samples ranged from 3.40 milligrams per kilogram (mg/kg) to 6.10 mg/kg which is within site specific background sample 20230414-L9-(BG1)@1.5-2 which had a concentration of 7.96 mg/kg.

Please see attached ROWC for further justification and supporting analytical data.

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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] Quarterly [ ] Semi-Annually [ ] Annually [ ] Other Q2 - Decommissioning of HILL-9-14 (L9E) well and associated flowline infrastructure.

[ ] **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 25

E&P waste (liquid) description Hydro-vac rinseate mixed with impacted soils

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Greenleaf Environmental

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.

Any excavations will be backfilled to the existing grade of the pad surface.

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. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/01/2023

Proposed site investigation commencement. 05/01/2023

Proposed completion of site investigation. 05/18/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/14/2023

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

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

Signed: Jake Janicek Title: EHS Specialist

Submit Date: 10/19/2023 Email: jjanicek@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: 11/14/2023

Remediation Project Number: 28568

COA Type	Description
	Based on the information provided for confirmation soil samples (doc #403566667), the Operator's request for a reduced analyte suite of barium, cadmium, total petroleum hydrocarbons (TPH), 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene is conditionally approved. Operator will address the fact that the MDL for chromium (VI) for reported soil samples exceeds Table 915-1 Protection of Groundwater SSLs.
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
403401949	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403566667	SITE INVESTIGATION REPORT
403594713	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group	Comment	Comment Date
Environmental	Comply with outstanding COAs.	11/14/2023

Total: 1 comment(s)