FORM 27 Rev 4/21

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 INFORMATON

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

Phone Numbers
Phone: (970) 285-2739
Mobile: (970) 9874650

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 7916 Initial Form 27 Document #: 2145674

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.
- [X] 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: LOCATION Facility ID: 323850 API #: County Name: GARFIELD
Facility Name: GRASS MESA RANCH-66S93W 33NENE Latitude: 39.488140 Longitude: -107.773706
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NENE Sec: 33 Twp: 6S Range: 93W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM
Most Sensitive Adjacent Land Use RANGELAND
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

4 WELLS: 0.07 M ESE, 0.11 M ENE, 0.22 M SE, AND 0.14 M NE. SEASONAL DRAINAGE 0.12 M ESE.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

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

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	10 ' X 10' X 26' DEEP	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.

Please reference COGCC Document #s 2145674, 401258106, and 402514132 for work conducted prior to November 3, 2020. Between November 3 and December 17, 2020, impacted soil was excavated from the release area as detail in COGCC Document # 402643873, which was submitted on 4/8/2021 and has yet to be approved by the COGCC.

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):

Caerus plans to advance soil borings at the location to complete vertical delineation of identified impacts. During advancement of each soil boring, soil will be characterized using visual and olfactory observations and samples will be field screened for volatile organic compounds using a photoionization detector (PID). Under COGCC Rule 915.f, Caerus requests the Director's permission to comply with the version of Table 910-1 that was previously in effect if Remediation is completed by January 15, 2022. Based on recent laboratory data collected from impacted soils and locally available background concentrations, Caerus also requests a reduced analytical suite to only include TPH. Background data from the nearby K22NW (Location ID 383334) and K28NW (Location ID 335428) well pads including a laboratory results summary table, laboratory reports, and photographs of sample locations are attached to COGCC Document # 402643873.

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 7

Number of soil samples exceeeding 915-1: 7

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

Approximate areal extent (square feet): 100

NA / ND

-- Highest concentration of TPH (mg/kg): 2338.749

-- Highest concentration of SAR: 2.11

BTEX > 915-1: Yes

Vertical Extent > 915-1 (in feet): 26

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?

☐ 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 Soil Sampling

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.

See COGCC Document # 402643873 documenting source removal activities via excavation.

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.

Caerus plans to continue remediation through the application of sodium persulfate to oxidize remaining TPH impacts in soil. Prior to the application of oxidizer, the partial backfill of clean overburden will be removed from the excavation to the original depth of 25 feet below ground surface. After the oxidizer is applied to the open excavation, the excavation will be backfilled with infrastructure in place should additional applications of oxidizer be warranted. Remediation will be confirmed through soil sampling and laboratory analytical results.

On 6/17/2021, the three stockpiles of excavated soil were sampled. Two five-point composite samples were collected from each stockpile. Laboratory results indicate stockpiles 1 and 2 are compliant with COGCC Table 915-1 standards with the exception of arsenic and pH. However, these arsenic and pH exceedances are within the background concentrations presented in COGCC Document # 402643873. Caerus requests COGCC approval to use the clean overburden stockpiles [20210617-A33NW (STOCKPILE1) and 20210617-A33NW (STOCKPILE2)] to backfill the excavation. Based on the TPH exceedance observed, the impacted stockpile [20210617-A33NW (STOCKPILE3)] will be landfarmed until compliance with COGCC Table 910-1 can be demonstrated through soil sampling. During landfarming activities, the stockpile will be surrounded by a berm to prevent any migration. The attached Site Diagrams detail stockpile and sample locations as well as current site conditions including BMPs. Laboratory reports of stockpile samples are attached to this form and summarize in the attached table.

Soil Remediation Summary

[X] In Situ

- No — Bioremediation (or enhanced bioremediation)
- Yes — Chemical oxidation
- No — Air sparge / Soil vapor extraction
- No — Natural Attenuation
- No — Other

[X] Ex Situ

- No — Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards)
  - Name of Licensed Disposal Facility or COGCC Facility ID #
- Yes — Excavate and onsite remediation
  - Yes — Land Treatment
  - Yes — Bioremediation (or enhanced bioremediation)
  - No — Chemical oxidation
  - No — 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.

Groundwater is estimated to be approximately 115 ft bgs, and is not expected to be encountered during any phase of this project.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other remediation plan update

☐ **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 remediation plan update

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:

Pending successful landfarming of the excavated soils Caerus will be requesting beneficial reuse of these soils for fill material of the open excavation.

Volume of E&P Waste (solid) in cubic yards 500

E&P waste (solid) description excavated soils with TPH exceedences

COGCC Disposal Facility ID #, if applicable: 0

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels 0

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? No

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 disturbance will be returned to the active working surface of the well pad for continued operation. When the site is decommissioned at a later date, it will be reclaimed in accordance with 1000 Series regulations. If the proposed site investigation and remediation identifies impacts requiring surface disturbance and remedial operations within the interim reclaim, additional reclamation details will be provided in the supplemental Form 27.

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? 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). 06/26/2013

Proposed site investigation commencement. 07/26/2021

Proposed completion of site investigation. 09/30/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/30/2021

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 is being submitted to propose additional remediation activities and request approval to use stockpiles 1 and 2 as backfill for the excavation.

Between November 3 and December 17, 2020, impacted soil was excavated from the release area as detail in COGCC Document # 402643873, which was submitted on 4/8/2021 and has yet to be approved by the COGCC.

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

Signed:` Chris McKisson Title: Sr. Project Manager

Submit Date:` Email: chris.mckisson@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: 7916

COA Type	Description

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
402742085	SOIL SAMPLE LOCATION MAP
402742097	MAP
402742099	ANALYTICAL RESULTS
402742100	ANALYTICAL RESULTS

Total Attach: 4 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)