

State of Colorado
Energy & Carbon Management Commission

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



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403523011
Receive Date:
02/13/2024
Report taken by:
Nick Cholas

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 ECMC 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 Phone: (970) 778-2314
City: DENVER State: CO Zip: 80202 Mobile: (970) 778-2314
Contact Person: Jake Janicek Email: jjanicek@caerusoilandgas.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: Initial Form 27 Document #: 403523011

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: LOCATION Facility ID: 324333 API #: County Name: GARFIELD
Facility Name: PUCKETT-66S97W 36NENW Latitude: 39.485940 Longitude: -108.170780
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NENW Sec: 36 Twp: 6S Range: 97W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications OL 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

Unnamed seasonal drainage is located 0.28 miles southeast.

DENIED

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	Undetermined	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 August 8, 2023, following the removal of the partially buried vessel (PBV), an initial investigation was completed. One soil sample was collected from the base of the associated excavation at 8 feet below ground surface (bgs) and four samples were collected from the sidewalls of the excavation at 4 to 5 feet bgs. The soil samples were characterized using visual and olfactory observations and field screened using a photoionization detector (PID). All soil samples were submitted for laboratory analysis of Energy & Carbon Management Commission (ECMC) Table 915-1 soil constituents of concern. Analytical results of excavation soil samples indicate compliance with Table 915-1 Residential Soil Screening Levels (RSSLs) except for pH, arsenic, and hexavalent chromium. Exceedances of pH range from 8.33 to 8.69, arsenic exceedances range from 9.22 to 51.1 milligrams per kilogram (mg/kg), and hexavalent chromium exceedances range from 0.963 to 2.55 mg/kg.

As part of the investigation, produced water samples were used for source characterization from the Mesa 17 (Location ID 335527) and Starkey 7 (Location ID 335092) well pads, which produce from the same formation (Williams Fork-Cameo) as the Location. In reference to the Location, the Mesa 17 is located 1.4 miles north and the Starkey 7 is located 1.13 miles southeast. The samples were collected from produced water tanks and submitted for laboratory analysis of pH and Table 915-1 metals. Analytical results indicate pH levels of 6.70 and 6.99 and did not detect arsenic above the laboratory Reported Detection Limit (RDL). See the attached Report of Work Completed (ROWC) for additional 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):

Based on results outlined in the attached ROWC, Caerus requests a reduced analyte suite to include only those analytes (hexavalent chromium) that soil samples 20230808-PUCKETT 241-36-(EW)@4, 20230808-PUCKETT 241-36-(NW)@5, 20230808-PUCKETT 241-36-(SW)@5, and 20230808-PUCKETT 241-36-(WW)@4 exhibited exceedances for. Caerus proposes to collect additional soil samples north, south, east, and west of the investigation area to delineate horizontal extent of hexavalent chromium impacts identified at the Location. See proposed sample locations on the Site Investigation diagram associated with the attached ROWC. Once impacts have been delineated, a remediation plan will be submitted via Supplemental Form 27.

Please see the "Remediation Summary" Section of this form for details on how Caerus plans to address pH and arsenic exceedances.

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 5
Number of soil samples exceeding 915-1 5
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 225

NA / ND

-- Highest concentration of TPH (mg/kg) 63.5
-- Highest concentration of SAR 1.28
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 8

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? Yes
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?

- 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

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The PBV was decommissioned and removed from the Location.

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.

Although levels of pH and arsenic exceeding Table 915-1 RSSLs are present in the investigation area, produced water characterization data demonstrates these exceedances are not attributed to oil and gas production activities. Based on the common production zone and consistent analytical data north and southeast of the Location, it is reasonable to conclude the Mesa 17 and Starkey 7 sample results are representative of source characterization at the Location. Therefore, Caerus requests consideration of Rule 915.e.(2).C to remove pH and arsenic as constituents of concern.

Assuming the process knowledge and request for consideration of Rule 915.e.(2).C are approved, hexavalent chromium is the only constituent of concern detected in the investigation area exceeding Table 915-1 RSSLs. Although all excavation samples detected hexavalent chromium, the base sample represented by 20230808-Puckett 241-36-(BASE)@8 is below the laboratory RDL of 1.0 mg/kg. In consideration of the laboratory RDL and Table 915-1 Footnote 9, Caerus requests to substitute the RDL of 1.0 mg/kg as an alternative screening level for hexavalent chromium.

Assuming the proposed request for Footnote 9 is approved, hexavalent chromium exceedances remain undelineated north, south, east, and west of the investigation area. Therefore, Caerus proposes additional investigation with soil sampling and laboratory analysis to delineate horizontal extents of hexavalent chromium impacts. Prior to additional investigation, Caerus requests a reduced analyte list of hexavalent chromium for this remediation project. See Proposed Sampling section and the attached ROWC for additional details.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Natural Attenuation

_____ Excavate and onsite remediation

_____ Other _____

_____ 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:

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 Request to open a Remediation Project and to report results of PBV removal investigation _____

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: \$ 10000 _____

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 _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

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

E&P waste (liquid) description _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

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.

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). 08/08/2023

Proposed site investigation commencement. 08/08/2023

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

Denied 03/06/2024 Due to a miscommunication between Caerus operations and construction departments, the Puckett 241-36 did not have an Initial Form 27 submitted to comply with notification requirements associated with PBV removal. Conversely, an Initial Form 27 was incorrectly submitted for the Puckett 241-1 to open Remediation Project 30166. This form is being submitted to open a new Remediation Project for the Puckett 241-36 and report results of the initial investigation.

Division of Water Resources well permit 271289, located approximately 0.25 miles southeast of the Location, lists depth to groundwater as 234 feet bgs. The well sits at approximately 140 feet lower in elevation than the Location. Based on this information, it is estimated that depth to groundwater at the Location is greater than 234 feet bgs.

Due to winter conditions that are expected to last through the second and third quarters of 2024, Caerus requests a reduced reporting frequency of semi-annual.

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: 02/13/2024

Email: jjanicek@caerusoilandgas.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: _____

Date: _____

Remediation Project Number: _____

COA Type

Description

<u>COA Type</u>	<u>Description</u>
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

403523011	FORM 27 DENIED
403661065	SITE INVESTIGATION REPORT
403737121	FORM 27-INITIAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

Environmental	Operator States "Due to winter conditions that are expected to last through the second and third quarters of 2024, Caerus requests a reduced reporting frequency of semi-annual." ECMC will not approve the reduced reporting frequency at this time.	03/06/2024
Environmental	Operator states "Conversely, an Initial Form 27 was incorrectly submitted for the Puckett 241-1 to open Remediation Project 30166." ECMC does not understand how this is relevant to the facility 324333. (Puckett 241-36)	03/06/2024
Environmental	ECMC will not approve the request to substitute the RDL of 1.0 mg/kg as an alternative screening level for hexavalent chromium.	03/06/2024
Environmental	FEE/FEE HPH: Greater Sage Grouse Priority Habitat Management Area, Greater Sage Grouse General Habitat Management Area approximately 500 ft southwest of location.	03/06/2024

Environmental	Analytical data from background samples does not appear to be representative of background conditions at the Puckett 241-36 Location. ECMC does not approve background samples from the Starky 7 and Mesa 17 locations due to proximity to the location and differing geologic formations.	03/06/2024
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Total: 5 comment(s)

