

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 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: (720) 830-7549
City: DENVER State: CO Zip: 80202 Mobile: ()
Contact Person: Derek Horn Email: dhorn@qb-energy.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34378 Initial Form 27 Document #: 403690230

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: PG16 Dumpline Release Status update - Third Quarter (3Q) 2024

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE Facility ID: 485970 API #: County Name: GARFIELD
Facility Name: PG16 Dumpline Release Latitude: 39.440253 Longitude: -108.001058
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SWNE Sec: 16 Twp: 7S Range: 95W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OH Most Sensitive Adjacent Land Use Agriculture
Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? No
Is groundwater less than 20 feet below ground surface? No

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	~40x39x20	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 the State of Colorado Energy and Carbon Management Commission (ECMC) Form 27 DN 403690230 for initial characterization work completed prior to 7/9/2024 under Remediation Project Number (PRN) 34378.

From July 9 through 12, a subsurface investigation was completed at the Site that included the advancement of five soil borings (SB) to depths of 36 feet below ground surface (bgs) using a track mounted Geoprobe Systems drill rig operated by HRL Compliance Solutions, Inc. Each SB was field screened and logged using Unified Soil Classification System (USCS) in 5-foot intervals. Soil samples were prepared for laboratory submittal at every 10-foot interval including each SB terminus. The investigative soil sampling activities were conducted by a WSP geologist who inspected the soil samples for the presence or absence of petroleum hydrocarbons odor and/or staining. The soil samples were characterized by visually inspecting the confirmation soil samples and field screening the soil head space using a PID to monitor for the presence or absence of volatile organic compound vapors (VOCs). Three to four soil samples were collected from each SB and submitted for laboratory analysis of constituents listed under the approved reduced suite per ECMC DN 403690230.

On August 20, 2024, one supplemental SB was advanced immediately adjacent to the previous SB02 location to confirm the presence of an anomalous total petroleum hydrocarbon (TPH) detection that was observed at a depth of 34 to 36 feet bgs. Field screening of the boring was completed at five-foot intervals starting at 25 feet bgs through boring terminus of 36 feet bgs. One confirmation soil sample 20240820-PG16-(SB02)@34-36 was submitted for the approved reduced suite from this boring location.

See the attached report of work completed (ROWC) for further information regarding the subsequent investigative sampling activities, associated figures, and a discussion of the analytical results.

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):

QB plans to address the documented ECMC Protection of Groundwater Soil Screening Level Concentrations (PGSSLCs) exceedances associated with the dumphine release through mechanical excavation via source removal per ECMC Rule 913.b.(2). Field soil screening and confirmation soil sampling will be conducted simultaneously with the physical removal of the source to assure all impacts associated with the release have been confirmed removed. The proposed plan will be completed following the relocation of nearby aboveground infrastructure. Based on the information collected during the delineation assessment, approximately 891 cubic yards of impacted soil is estimated to be removed and transported to an approved waste facility. Additional information about the proposed plan can be referenced in the attached ROWC and the proposed excavation extent is included as a Figure 4.

Please see the "Operator Comments" section of this form for a continuation of this section.

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 refer to the "Proposed Soil Sampling" section of this form for additional details on future delineation activities at the location.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 19

-- Highest concentration of TPH (mg/kg) 911

Number of soil samples exceeding 915-1 1

-- Highest concentration of SAR 2.13

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

BTEX > 915-1 Yes

Approximate areal extent (square feet) 900

Vertical Extent > 915-1 (in feet) 11

Groundwater

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l) _____

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l) _____

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

Highest concentration of Ethylbenzene (µg/l) _____

Number of groundwater monitoring wells installed _____

Highest concentration of Xylene (µg/l) _____

Number of groundwater samples exceeding 915-1 _____

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?

On March 27, 2024, a total of six site-specific background soil samples were collected from three nearby native locations to provide comparable data per ECMC Rule 915.e.(2). D. Site-specific background soil samples were collected via hand auger at depths ranging from 1 foot to 3 feet bgs. Samples were submitted for laboratory analysis of Table 915-1 metals, pH, boron (water soluble), and chromium (VI). Samples were collected per condition of approval in DN 403674005. See DN 403754788 for more details.

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 refer to the "Proposed Soil Sampling" section of this form for additional details on future delineation activities at the location.

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.

The source is a failed dumpline. The dumpline will be replaced and brought back online.

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.

Please reference the "Proposed Soil Sampling" section of this form for more information regarding the proposed mechanical removal of soil impacts associated with the dumpline release.

Soil Remediation Summary

In Situ

Ex Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

- _____ Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____
- _____ Name of Licensed Disposal Facility or ECMC 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:

Quarterly Semi-Annually Annually Other PG16 Dumpline Release Status update - 3Q 2024

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 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: \$ 80000 _____

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 _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____ 35

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

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Greenleaf Environmental Services

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 ECMC 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.

There is currently nothing to reclaim. The excavation associated with the initial assessment was backfilled to match existing pad elevations.

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. 01/30/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/01/2024

Proposed site investigation commencement. 03/25/2024

Proposed completion of site investigation. 06/10/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/14/2024

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

Prior to collecting additional confirmation samples associated with the proposed mechanical excavation, Caerus requests the Director for consideration for a further reduced suite that includes the remaining contaminants of concern (COC): total petroleum hydrocarbons (TPH), benzene, ethylbenzene, total xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, and sodium adsorption ratio (SAR).

In accordance with ECMC Table 915-1, Footnote 7, Caerus requests this project be evaluated using Residential Soil Screening Level Concentrations (RSSLCs) as no pathway for communication to groundwater was observed during any previous investigative potholing or drilling assessments completed at the Site to date. The below reasonings are provided to support this request for evaluation under RSSLCs:

1) During the advancement of the five investigative soil borings completed during 3Q 2024, no groundwater was observed to be saturating, pooling, or infiltrating within the borings. The investigative soil borings were completed to total depths of 36 feet bgs in which, impacts to soil were found to be isolated to depths between the surface and 14 feet bgs. Therefore, no impacts to groundwater are present associated with this project.

2) A domestic water well is located 0.15 miles east of the pad location and is at the same relative elevation (approximately 6,000 feet). The static water level is presumed to be around 160' bgs as indicated by the Pump Installation and Test Report for the well which is identified by Colorado Division of Water Resources permit number 175435.

3) The nearest surface receptor, Battlement Creek, is located 0.70 miles northwest and upgradient of the Site.

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

Signed: Derek Horn

Title: EHS Specialist

Submit Date: 11/13/2024

Email: dhorn@qb-energy.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: Steven Arauza

Date: 12/31/2024

Remediation Project Number: 34378

COA Type**Description**

COA Type	Description
0 COA	

ATTACHMENT 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**

403922937	FORM 27-SUPPLEMENTAL-SUBMITTED
403935795	SITE INVESTIGATION REPORT
403935799	ANALYTICAL RESULTS

Total Attach: 3 Files

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

Environmental	Comply with outstanding COAs.	12/31/2024
Environmental	Based on the information provided under Operator Comment for potential pathways to groundwater, the Operator's request to use the Table 915-1 Residential Soil Screening Levels is conditionally approved.	12/31/2024
Environmental	Based on the information provided, the Operator's request for a reduced analyte suite of TPH (GRO/DRO/ORO), benzene, ethylbenzene, total xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, and SAR is conditionally approved.	12/31/2024

Total: 3 comment(s)