

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 ECOM 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) 902-3598
City: DENVER State: CO Zip: 80202 Mobile: ()
Contact Person: Andrew Verbonitz Email: averbonitz@qb-energy.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 32171 Initial Form 27 Document #: 403538366

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

Yes Multiple Facilities

Facility Type: SPILL OR RELEASE Facility ID: 484742 API #: County Name: GARFIELD
Facility Name: PN25 tank release Latitude: 39.403533 Longitude: -108.058751
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SESW Sec: 25 Twp: 7S Range: 96W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SP Most Sensitive Adjacent Land Use non-cropland, 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

ephemeral dry unnamed tributary 315' S, aquatic sportfish management waters HPH, elk winter concentration area HPH, mule deer severe winter range HPH, mule deer winter concentration area HPH

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	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.

Please refer to document number 403466150 (Form 19 Initial) and document number 403466150 (Form 19 Supplemental) for initial actions taken in support of this project. As described in the attached Site Investigation Report, on August 30, 2023, one soil sample was collected at the point of release (POR) at a depth of approximately 2 feet bgs. Additionally, horizontal delineation was conducted in two (2) of the four cardinal directions around the POR. Two (2) samples were collected to the north and south of the POR at a depth of approximately 2 feet bgs. The samples were submitted to Pace Analytical for the ECMC full list 915-1 standards with a standard turnaround request. As part of the initial assessment three (3) background samples were also collected at a depth of approximately 2 feet bgs. All three (3) soil samples were submitted to Pace Analytical for 915-1 metals and soil suitability with a standard turnaround request. On November 15, 2024, additional soil assessment was completed to determine the extent of impacts vertically and laterally at the site. One soil sample was collected under the POR at a depth of approximately 20 feet bgs and three (3) soil samples were collected from three of the four cardinal directions to delineate impacts laterally. On June 19, 2024, additional soil assessment was completed to further delineate the extent of impacts at the site. Five (5) soil samples were collected at depths ranging from 17 to 23 feet bgs. On October 28, 2024, delineation activities were conducted at the Site. One (1) soil sample was collected at a depth of approximately 35 feet bgs. All soil samples were submitted to Pace analytical for a reduced analyte suite to include Xylenes, TPH-GRO, TPH-DRO, and TPH-RRO, pH, SAR, and Arsenic.

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 the October 28, 2024, all analytes were below ECMC Table 915-1 residential standards for soil sample PN 25-(SB09)@35, delineating the site laterally and vertically. Remediation strategies are being evaluated based on the additional assessment data.

Proposed Groundwater Sampling

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

[Empty box for groundwater sampling details]

Proposed Surface Water Sampling

Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

[Empty box for surface water sampling details]

Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan (summary):

On January 11, 2024, Ensolum personnel returned to the Site to collect a source water sample from the adjacent PK25 Pad for comparison to pH and arsenic at the Site. The sample was submitted to Pace for pH and arsenic only on a standard turnaround request. All sample locations are included as Figure 3-5.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 21

Number of soil samples exceeding 915-1 12

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 2

NA / ND

-- Highest concentration of TPH (mg/kg) 1105

-- Highest concentration of SAR 60.5

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 35

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?

Were background samples collected as part of this site investigation?

Three (3) background samples were collected on at a depth of approximately 2 feet bgs from native material around the pad. All three (3) soil samples were submitted to Pace for 915-1 metals and soil suitability with a standard turnaround request. Analytical results from the background soil samples are presented in Tables 4 -5.

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

Volume of solid waste (cubic yards) 2

Volume of liquid waste (barrels) 0

Is further site investigation required?

Based on the October 28, 2024, all analytes were below ECMC Table 915-1 residential standards for soil sample PN 25-(SB09)@35, delineating the site laterally and vertically. Remediation strategies are being evaluated based on the additional assessment data.

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.

Produced water tank will be repaired.

REMEDICATION 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.

Following additional assessment activities and determination of the horizontal and vertical extent of impacts a remedial approach will be designed. The remedial approach may involve in situ and/or ex-situ remedial approaches to address impacts at this site.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 2

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or ECMC 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.

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.

Once remediation is complete, QB Energy proposes to return the excavation to the active working surface grade for continued operation.

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. 07/08/2023

Actual Spill or Release date, or date of discovery. 07/08/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/08/2023

Proposed site investigation commencement. 08/30/2023

Proposed completion of site investigation. 02/28/2025

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

Based on the October 28, 2024, all analytes were below ECMC Table 915-1 residential standards for soil sample PN 25-(SB09)@35, delineating the site laterally and vertically. Remediation strategies are being evaluated based on the additional assessment data.

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

Signed: Andrew Verbonitz

Title: EHS Specialist

Submit Date: 12/23/2024

Email: averbonitz@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: 02/11/2025

Remediation Project Number: 32171

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**

404036499	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404038276	REMEDATION PROGRESS REPORT
404038279	ANALYTICAL RESULTS
404038282	ANALYTICAL RESULTS
404038283	ANALYTICAL RESULTS
404038284	ANALYTICAL RESULTS
404038296	ANALYTICAL RESULTS
404089559	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 8 Files

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

Environmental	Comply with outstanding COAs.	02/11/2025
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Total: 1 comment(s)