

**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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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 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
Contact Person: Derek Horn	Email: dhorn@qb-energy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION**PROJECT INFORMATION**

Remediation Project #: 38087 Initial Form 27 Document #: 403929237

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: SPILL OR RELEASE	Facility ID: 487672	API #: _____	County Name: GARFIELD
Facility Name: 8" D23A Lateral	Latitude: 39.606880	Longitude: -108.143140	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 23	Twp: 5S	Range: 96W
Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Non-crop land

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

West Fork of Parachute Creek is located approximately 235 feet west.

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	To be determined	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 21, 2024, liquid was observed surfacing from a buried pipeline approximately 315 feet north of the D23A well pad. An unknown volume of condensate and produced water was released from the line. The release was reported via Energy & Carbon Management Commission (ECMC) Form 19 Document 403896466 to open Spill/Release Point ID 487672.

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 recent assessment data, organic exceedances appear to be delineated. Additional soil samples will be collected as needed to characterize the extent of inorganics associated with the release. Prior to sampling, QB requests a reduced analyte suite of total petroleum hydrocarbons (TPH), benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, electrical conductivity (EC), sodium adsorption ratio (SAR), pH and boron for all future investigation. See the attached Report of Work Completed (ROWC) for additional details.

Proposed Groundwater Sampling

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

Groundwater has not been encountered during assessment to date. If groundwater is encountered during additional site investigation activities, QB Energy will attempt to collect a sample for characterization.

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 18

Number of soil samples exceeding 915-1 18

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

Approximate areal extent (square feet) 360

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

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.

NA / ND

-- Highest concentration of TPH (mg/kg) 7567

-- Highest concentration of SAR 51.98

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 37

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)

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 the Proposed Sampling section and the attached ROWC.

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.

QB Energy is in the process of determining the extent of impacts associated with the project. Once impacts are delineated, QB Energy will prepare a remediation plan to remove the source material within the release area.

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.

On August 28, 2024, initial sampling activities were conducted to characterize soil impacts at the point of release (POR). The POR was identified and the damaged section of pipeline was removed. The excavation extent around the POR measured approximately 30 feet by 14 feet and extended to 6.5 feet below ground surface (bgs). One soil sample was collected at the base of the excavation, directly below the POR and submitted for analysis of Table 915-1 soil constituents of concern. Analytical results of the POR sample exceed Table 915-1 Residential Soil Screening Levels (RSSLs) for TPH, benzene, ethylbenzenes, xylene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, SAR, boron, and arsenic.

On October 22 and 23, 2024, five soil borings (SB01-SB05) were advanced using an environmental drill rig. Soil samples were screened every 5 feet, with three to four samples collected from each boring, depending on the depth at which bedrock was encountered. In total, 17 soil samples were collected and analyzed. Analytical results exceed Table 915-1 RSSLs for TPH, xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, EC, SAR, pH, boron, and arsenic. Organic exceedances appear to be fully delineated while inorganics remain undelineated. See the attached ROWC for additional details.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 101

_____ 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.

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 Q4 REM Status Update

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, QB Energy has general liability insurance in the amount of \$1M, and QB Energy 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: \$

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:

NA

Volume of E&P Waste (solid) in cubic yards 101

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Greenleaf Environmental Services, LLC

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

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC 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?

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.

QB Energy will reclaim all impacted areas to the previously existing conditions and will include these areas in QB Energy's Pipeline Reclamation and Monitoring program. All reclamation will be completed 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. 08/21/2024

Actual Spill or Release date, or date of discovery. 08/21/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/28/2024

Proposed site investigation commencement. 08/28/2024

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/28/2024

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

This form has been submitted to report results of Q4 2024 site assessment. QB plans to continue delineation of SSR exceedances observed in the release area.

Although levels of arsenic elevated above the approved limit of 20.78 mg/kg, the most recent assessment occurred before the approval of a reduced analyte suite. With recent values ranging up to 25.78 mg/kg, Confluence recommends QB request to keep arsenic off the approved reduced suite through Footnote 11 and an adjusted background concentration of 25.98 mg/kg. Prior to sampling QB requests an updated reduced analyte suite of total petroleum hydrocarbons (TPH), benzene, ethylbenzene, xylenes, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, electrical conductivity (EC), sodium adsorption ratio (SAR), pH, and boron for all future investigation.

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: _____

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: _____

Date: _____

Remediation Project Number: 38087

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**

404040408	ANALYTICAL RESULTS
404040410	ANALYTICAL RESULTS
404040411	ANALYTICAL RESULTS
404040413	ANALYTICAL RESULTS
404040414	ANALYTICAL RESULTS
404045329	SITE INVESTIGATION REPORT

Total Attach: 6 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)