

State of Colorado
Energy & Carbon Management Commission

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Document Number:

404033674

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 #: 17035 Initial Form 27 Document #: 402582867

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: 3Q & 4Q 2024 Status update to Remediation Project Number (RPN) 17035

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 478578	API #:	County Name: GARFIELD
Facility Name: J17E Dumpline	Latitude: 39.444577	Longitude: -107.686681	
** correct Lat/Long if needed: Latitude: 39.444597		Longitude: -107.686826	
QtrQtr: NWSE	Sec: 17	Twp: 7S	Range: 92W
Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications OH

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

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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	GROUNDWATER	30x30	Lab Analysis
Yes	SOILS	60x60x70	Lab 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 see documents associated with the State of Colorado Energy and Carbon Management Commission (ECMC) RPN 17035 for a description of activities completed prior to the third quarter (Q3) and fourth quarter (Q4) of 2024.

Please see the attached report of work completed (ROWC) summarizing quarterly groundwater sampling and the continued operations and maintenance (O&M) of the soil vapor extraction (SVE)/ air sparge (AS) remediation system to remediate hydrocarbons associated with the dumpline release during the Q3 and Q4 of 2024.

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):

Proposed Groundwater Sampling

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

QB Energy will continue to gauge and sample all groundwater monitoring wells on a quarterly basis. All groundwater samples collected within the project remediation area (monitoring well locations MW-01, MW-04, MW-05, MW-06, MW-08, MW-09, MW-10, and SB02-TB) will be sampled for BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene (ECMC DN 403588050). Please see attached ROWC and "Operator Comment" section of this form. QB is requesting the Director for approval to terminate the groundwater monitoring program of all wells at the Site.

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 see the "Proposed Soil Sampling" section of this form and the attached ROWC for more details.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0

Number of soil samples exceeding 915-1

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

Approximate areal extent (square feet) 2500

Groundwater

Number of groundwater samples collected 11

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 63

Number of groundwater monitoring wells installed 11

Number of groundwater samples exceeding 915-1 0

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)

-- Highest concentration of SAR

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 0

ND Highest concentration of Benzene (µg/l)

ND Highest concentration of Toluene (µg/l)

ND Highest concentration of Ethylbenzene (µg/l)

ND 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?

Site-specific background sampling data and sampling details can be referenced in "Other Investigation Information" section of ECMC DN 402675870.

☐ 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 see the "Proposed Sampling" section of this form for additional information.

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 was a failed dumpline which has been replaced.

REMEDATION 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.

Full delineation of the plume/impacted area has been determined.

Please refer to ECMC RPN 17035 for all assessment and remediation activities completed prior to the Q3 and Q4 of 2024.

To date, QB Energy has installed one AS well and six SVE wells within the release footprint. Caerus utilizes the SVE/AS pilot skid trailer on a biweekly basis when not being used at other locations to assist with pulling and effectively removing entrained hydrocarbons from the subsurface soils to remediate dissolved phase hydrocarbons. A solar powered SVE system is also utilized daily at the location when sunlight conditions permit.

Soil Remediation Summary☒ In Situ☒ Ex Situ

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

No _____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
Yes _____ Excavate and onsite remediation
_____ Yes _____ Land Treatment
_____ No _____ Bioremediation (or enhanced bioremediation)
_____ No _____ Chemical oxidation
Yes _____ Other _____ Photodegradation _____

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.

Delineation of the groundwater plume is confirmed in all cardinal directions of the release footprint. All groundwater samples collected within the project remediation area (monitoring well locations MW-01, MW-04, MW-05, MW-06, MW-08, MW-09, MW-10, and SB02-TB) will be sampled for BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, 1-methylnaphthalene, and 2- methylnaphthalene (ECMC DN 403588050). Please see attached ROWC and "Operator Comment" section of this form. QB Energy is requesting the Director for approval to terminate the groundwater monitoring program for all well locations.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☒ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other Q3 and Q4 2024 update to RPN 17035

☐ 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, QB Energy has general liability insurance in the amount of \$5M, and QB Energy has umbrella insurance, which sits over the general liability insurance in the amount of \$65M. The umbrella and general liability insurance covers property damage, bodily injury to third parties, and sudden or accidental pollution under a combined \$70M.

Operator anticipates the remaining cost for this project to be: \$ 300000

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 744

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Greenleaf Environmental Services

Volume of E&P Waste (liquid) in barrels 40

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

ECMC Disposal Facility ID #, if applicable: 426582

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.

The excavation will be backfilled to match surrounding conditions.

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. 11/17/2020

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/17/2020

Proposed site investigation commencement. 11/17/2020

Proposed completion of site investigation. 10/14/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/07/2021

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

QB requests the ECMC Director to approve the termination of quarterly monitoring and sampling of all monitoring wells at this location until subsurface soil remediation is completed. Once remediation completed all remaining monitoring wells should be sampled and analyzed for BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. The reasonings for termination of the quarterly groundwater monitoring are stated below.

- Since the installation of MW-01 in April of 2021, and the installation of SB02-TB, MW-04, MW-05, MW-06, MW-08, MW-09, and MW-10 in September of 2021, each monitoring well has been sampled 13 consecutive quarters. During those 13 consecutive quarters, concentrations were either below the laboratory detection limits or within the ECMC Table 915-1 concentrations for water. Detections of either BTEX, benzene, ethylbenzene, or total xylenes were last detected in SB02-TB, MW-04, MW-05, MW-06, MW-08, MW-09, and MW-10 on May 16, 2022. Detections of either BTEX, ethylbenzene, or total xylenes were last detected in MW-01 on July 26, 2023. However, these eight monitoring wells have gone 13 consecutive quarters of regulatory compliance with ECMC Table 915-1 CC standards. The detections can be referenced in Table 3. No LNAPL has been observed since the project inception.

- There are remaining soil polycyclic aromatic hydrocarbons (PAH) exceedances of ECMC Table 915-1 PGSSLCs of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene in the remediation area soils at the Site. However, PAHs were not detected in any of the groundwater samples collected at the site in the past 13 consecutive quarters. This indicates that PAHs are not migrating into groundwater in the remediation area and appear to be entrained in the subsurface soils. At the end of subsurface soil remediation, groundwater samples will be collected from all wells remaining at the site to confirm that the entrained hydrocarbons in the subsurface soils have not migrated into groundwater at this site. The monitoring well network will be maintained in the interim in the event hydrocarbon impacts are presumed to initiate migration to groundwater, sampling, and monitoring can resume.

This form was originally submitted on 01/03/2025. Following the data integrity NTO issued on 04/08/2025, this form was returned to draft on 04/25/2025, and is now being resubmitted on 05/07/2025 with secured laboratory reports included.

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: 17035

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

404186864	LABORATORY ANALYTICAL REPORT
404186866	LABORATORY ANALYTICAL REPORT
404186869	LABORATORY ANALYTICAL REPORT
404186870	LABORATORY ANALYTICAL REPORT
404186871	LABORATORY ANALYTICAL REPORT
404186872	LABORATORY ANALYTICAL REPORT
404186873	LABORATORY ANALYTICAL REPORT
404192521	MONITORING REPORT

Total Attach: 8 Files

General Comments

User Group

Comment

Comment Date

Environmental	ECMC has returned this form to Draft (RTD) due to the laboratory report not being secured. Laboratory reports shall be separated from the site investigation report and submitted as separate attachments.	04/25/2025
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Total: 1 comment(s)