

State of Colorado
Energy & Carbon Management Commission

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



Document Number:
404041607
Receive Date:
02/21/2025
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: (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 #: 30042 Initial Form 27 Document #: 403368299

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: 483962	API #: _____	County Name: RIO BLANCO
Facility Name: J14-496 (15D-14) Flowline Release	Latitude: 39.700728	Longitude: -108.136451	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 14	Twp: 4S	Range: 96W Meridian: 6 Sensitive Area? No

Facility Type: SPILL OR RELEASE	Facility ID: 485265	API #: _____	County Name: GARFIELD
Facility Name: J14 496 23C-14 flowline	Latitude: 39.700947	Longitude: -108.137218	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 14	Twp: 4S	Range: 96W Meridian: 6 Sensitive Area? No

Facility Type: SPILL OR RELEASE Facility ID: 486626 API #: _____ County Name: GARFIELD
Facility Name: 13c-14 Flowline Release Latitude: 39.700781 Longitude: -108.136540
** correct Lat/Long if needed: Latitude: _____ Longitude: _____
QtrQtr: NESW Sec: 14 Twp: 4S Range: 96W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications GM 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

Groundwater monitoring well MH-56839 is located 0.12 miles northeast of the wellhead. The well is not a domestic water well.

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	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.

Please see Energy & Carbon Management Commission (ECMC) Documents 403368299, 403565188, 403784623, 403616774, 403368299, and 403803496 for a description of initial action activities.

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):

Due to the close proximity of Remediation Projects 36450, 33781, 30042 on the same pad, and similar source material, QB requests the closure of Remediation Projects 36450, and 33781 with the intent of continuing remediation activities under Remediation Project 30042. Soil samples will be collected as required to delineate the extent of organic and inorganic soil impacts. Prior to additional investigation, QB requests to combine approved reduced analytical suites from all projects and requests an updated analyte list of total petroleum hydrocarbons (TPH), benzo(A)anthracene, benzo(A)pyrene, benzo(B)fluoranthene, dibenz(A,H)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, electrical conductivity (EC), sodium adsorption ratio (SAR), pH, hexavalent chromium, arsenic, and barium in accordance with approved Form 27 Documents 403368299, 403616774, and 403803496.

Proposed Groundwater Sampling

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

Groundwater is not anticipated to be encountered during site investigation activities. If groundwater is encountered, a sample will attempt to be collected for analysis.

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	NA / ND
Number of soil samples collected <u>18</u>	-- Highest concentration of TPH (mg/kg) <u>12356</u>
Number of soil samples exceeding 915-1 <u>18</u>	-- Highest concentration of SAR <u>41.3</u>

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

BTEX > 915-1 No

Approximate areal extent (square feet) 700

Vertical Extent > 915-1 (in feet) 4

Groundwater

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l) _____

Was extent of groundwater contaminated delineated? Yes

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

0 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?

See Proposed Sampling and the reports attached to Document 403368299, 403616774, and 403803496 for additional details.

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 failed flowlines which have been replaced.

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.

Due to the close proximity of Remediation Projects 36450, 33781, 30042 on the same pad, and similar source material, QB requests the closure of Remediation Projects 36450, and 33781 with the intent of continuing remediation activities under Remediation Project 30042. Soil samples will be collected as required to delineate the extent of organic and inorganic soil impacts. Prior to additional investigation, QB requests to combine approved reduced analytical suites from all projects and requests an updated analyte list of TPH, benzo(A)anthracene, benzo(A)pyrene, benzo(B)fluoranthene, dibenz(A,H)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, EC, SAR, pH, hexavalent chromium, arsenic, and barium in accordance with approved Form 27 Documents 403368299, 403616774, and 403803496.

Due to the BLM's Winter Stipulations, additional site investigation cannot proceed until July 15, 2025, with fieldwork scheduled to continue through December 2, 2025. Given the site's high elevation and the limited timeframe for conducting work, QB respectfully requests to retain an annual reporting frequency.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

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.

Groundwater is not anticipated to be encountered. If groundwater is encountered during site investigation activities, QB will attempt to collect a sample for analysis.

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 Annual 2024 REM Status Report _____

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: \$ 25000 _____

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: _____

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.

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. 03/06/2023

Actual Spill or Release date, or date of discovery. 03/06/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/14/2023

Proposed site investigation commencement. 03/14/2023

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/01/2024

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 is submitted to provide the 2024 annual Remediation status report and to request approval for the closure of Remediation Projects 36450 and 33781 with the intent of continuing remediation activities under Remediation Project 30042. For details regarding the closure requests for Remediation Projects 36450 and 33781, refer to Documents 404041816 and 404041873.

QB is requesting RSSL standards for Rem #33781 given depth to ground water is estimated to depths beyond 100 feet bgs. This request is to ensure with combining remediation projects all future sampling events are analyzed for RSSL and relief from any POGW only exceedances. Current exceedances under POGWS are TPH, benzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, acenaphthene, fluorene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, SAR, arsenic, barium, hexavalent chromium, and lead. Under RSSL the exceedances for REM #33781 exceeds RSSL standards for TPH, naphthalene, SAR, pH, arsenic, barium, and hexavalent chromium.

Soil samples will be collected as needed to delineate the extent of organic and inorganic impacts. Prior to conducting additional investigations, QB requests approval to consolidate the reduced analytical suites from all projects with an updated analyte list of TPH, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, EC, SAR, pH, hexavalent chromium, arsenic, and barium, in accordance with requested RSSL for Rem #33781 and the approved Form 27 Documents 403368299, 403616774, and 403803496.

Due to the BLM's Winter Stipulations, additional site investigation cannot resume until July 15, 2025, and will continue until remediation is complete, weather-related safety concerns arise, or December 2, 2025 when BLM Winter Stipulations are put back into effect. Given the high elevation of the Location and the limited timeframe allowed for investigation and remedial activities, QB respectfully requests to maintain an annual reporting frequency.

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: 02/21/2025

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: 02/24/2025

Remediation Project Number: 30042

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
404041607	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404042420	ANALYTICAL RESULTS
404042421	SITE INVESTIGATION PLAN
404103847	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 4 Files

General Comments

User Group	Comment	Comment Date
Environmental	Comply with outstanding COAs.	02/24/2025
Environmental	Based on the information provided for BLM Winter Stipulations, the Operator's request for an annual reporting period is conditionally approved.	02/24/2025
Environmental	Based on the information provided, the Operator's request for a combined analyte suite of total petroleum hydrocarbons (TPH), benzo(A)anthracene, benzo(A)pyrene, benzo(B)fluoranthene, dibenz(A,H)anthracene, indeno(1,2,3-cd)pyrene, naphthalene, electrical conductivity (EC), sodium adsorption ratio (SAR), pH, hexavalent chromium, arsenic, and barium is conditionally approved.	02/18/2025

Total: 3 comment(s)