

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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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 Phone: (970) 902-3598 Mobile: (970) 902-3598
Address: 1001 17TH STREET #1600		
City: DENVER State: CO Zip: 80202		
Contact Person: Andy Verbonitz	Email: averbonitz@qb-energy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36748 Initial Form 27 Document #: 403897963

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: GAS GATHERING PIPELINE SYSTEM	Facility ID: 475314	API #: _____	County Name: GARFIELD
Facility Name: Mamm Creek Gas System	Latitude: 39.390874	Longitude: -107.615039	
	** correct Lat/Long if needed: Latitude: 39.389995	Longitude: -107.614674	
QtrQtr: SWNE	Sec: 1	Twp: 8S	Range: 92W Meridian: 6 Sensitive Area? No

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use agriculture

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

Location is in irrigated hay field. Highline Ditch is adjacent to location but higher in elevation.

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
No	GROUNDWATER	NA	Not Encountered
No	SOILS	NA	NA
No	SURFACE WATER	NA	NA

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 8/29/2024, five (5) soil samples were collected from the base of excavations adjacent to removed riser clusters {[20240829-Divide Creek CS-(FC-RISER01)@7], [20240829-Divide Creek CS-(FC-RISER02)@7], [20240829-Divide Creek CS-(FC-RISER03)@7], [20240829-Divide Creek CS-(FC-RISER04)@4], and [20240829-Divide Creek CS-(FC-RISER05)@6]}, ranging from 4-7 feet below ground surface (bgs). On 10/10/2024, one (1) soil sample was collected from the base of the excavation adjacent to the removed riser cluster [20241010-Divide Creek CS-(RISER04)@6]. Excluding pH and arsenic, the samples were compliant with all ECMC Table 915-1 Residential Soil Screening Levels (RSSLs). Arsenic was detected at concentrations above the ECMC Table 915-1 RSSLs in all site assessment soil samples. pH was detected at concentrations above the ECMC Table 915-1 and site-specific background levels at sample location [20240829-Divide Creek CS-(FC-RISER04)@4] and [20241010-DIVIDE CREEK CS-(RISER04)@6].

Please see Remediation Summary section of this form for how Caerus plans to address the pH and arsenic exceedances.

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):

Please see Remediation Summary section of this form for additional soil sampling.

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 see Remediation Summary section of this form for additional investigative actions.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 6
Number of soil samples exceeding 915-1 6
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 22.02
-- Highest concentration of SAR 4.12
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 0

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?

Background soil samples were utilized from another remediation project at the Divide Creek Compressor Station (Remediation Project # 29978) (see Table 2 and Appendix A of the attached Site Investigation Report).

☐ 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 Remediation Summary section for additional site investigation.

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.

Impacts are being considered historic. Therefore no source can be identified.

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.

Arsenic was detected at concentrations above the ECMC Table 915-1 RSSLs in the site assessment soil samples. Caerus requests consideration of ECMC Table 915-1 Footnote 1. Analytical results of site-specific background samples collected at the Divide Creek Compressor Station (Appendix A and Figure 3) indicate a range of background arsenic concentrations from 1.51 – 4.07 mg/kg (Table 2). Arsenic concentrations exhibited in all site assessment soil samples are within the background range for arsenic.

pH was detected at concentrations above the ECMC Table 915-1 and site-specific background levels at sample location [20240829-Divide Creek CS-(FC-RISER04)@4] and [20241010-DIVIDE CREEK CS-(RISER04)@6]. Caerus intends to use in situ treatment for the pH exceedances by applying an agricultural phosphoric acid (pH Down by Advanced Nutrients - see Appendix B in the attached Site Investigation Report) to the soil adjacent to the sample locations. A confirmation soil sample will be collected from this location once the product has been applied and settled.

Soil Remediation Summary

☒ In Situ

☐ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

Yes _____ Other _____ agricultural phosphoric acid

_____ 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

☐ 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 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 \$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: \$ 5000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

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.

All areas of disturbance will be either returned to active pad working surface or reclaimed in accordance with all 1000 series requirements.

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. _____

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

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/27/2024

Proposed site investigation commencement. _____

Proposed completion of site investigation. _____

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

Caerus requests ECMC approval to compare the site assessment sample results to ECMC Table 915-1 RSSLs. Based on field assessment and desktop review of the area, it is believed there is no reasonable pathway for groundwater within the investigation area. The nearest registered water well is located approximately 2,500 feet southwest of the Divide Creek Compressor Station and has a constructed depth of 120 feet. This well does not have a listed yield depth. The Divide Creek Compressor Station resides on an elevated point relative to the surrounding landscape and is approximately 800 feet higher in elevation than the nearest surface water (Divide Creek). Divide Creek is located approximately 3,000 feet northeast of the site.

Caerus requests ECMC approval for the confirmation soil samples at the RISER04 location to be analyzed for the reduced analyte suite of pH only following the application of the in-situ remediation product.

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

Signed: Andy Verbonitz

Title: EHS Specialist

Submit Date: 12/05/2024

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: 01/09/2025

Remediation Project Number: 36748

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**

403994474	FORM 27-SUPPLEMENTAL-SUBMITTED
404003992	ANALYTICAL RESULTS
404003993	ANALYTICAL RESULTS
404003994	ANALYTICAL RESULTS
404003995	ANALYTICAL RESULTS
404016287	SITE INVESTIGATION REPORT

Total Attach: 6 Files

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

Environmental	Comply with outstanding COAs.	01/09/2025
Environmental	Based on the information provided for soil samples, the Operator's request for a reduced analyte suite of pH-only for confirmation samples collected from the RISER04 location is conditionally approved.	01/09/2025
Environmental	Based on the information provided under Operator Comment, the Operator's request to use the Table 915-1 Residential Soil Screening Level concentrations is conditionally approved.	01/09/2025

Total: 3 comment(s)