

State of Colorado
Energy & Carbon Management Commission

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Document Number:
403644073
Receive Date:
06/24/2024
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) 778-2314 Mobile: (970) 778-2314
Address: 1001 17TH STREET #1600		
City: DENVER	State: CO	Zip: 80202
Contact Person: Jake Janicek	Email: jjanicek@caerusoilandgas.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31996 Initial Form 27 Document #: 403535422

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: WELL	Facility ID: _____	API #: 045-18395	County Name: GARFIELD
Facility Name: 696-6A 43	Latitude: 39.554900	Longitude: -108.135670	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: LOT 12	Sec: 5	Twps: 6S	Range: 96W 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? 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

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SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|---|
| <input type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input checked="" type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | No impacts associated with this project have been identified. |
| <input type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input 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
No	SOILS	None	Field investigation and soil sampling

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

This project is proceeding under the approved activities outlined in document #40353422.

On 10/24/2023, one (1) soil sample was collected from a pothole adjacent to the 696-6A 43 wellhead [20231024-696-5C-(FC-WH-43)@4]. Soil sample [20231024-696-5C-(FC-WH-43)@4] was compliant with ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) except for pH, arsenic, and chromium (VI).

On 2/21/2024, one (1) soil sample was collected from the base of the excavation adjacent to the flowline as it ties into the separator [20240221-696-5C-(FC-FL-43)@4], and one (1) soil sample was collected from the base of the excavation adjacent to the dumpline as it ties into the separator [20240221-696-5C-(FC-DL-43)@4]. One (1) 5-point composite soil sample was collected from the stockpile associated with the flowline and dumpline excavations [20240221-696-5C-(STOCK02)]. Soil samples [20240221-696-5C-(FC-FL-43)@4], [20240221-696-5C-(FC-DL-43)@4], and [20240221-696-5C-(STOCK02)] were compliant with ECMC Table 915-1 RSSLs except for pH and arsenic.

The locations from which soil samples were collected during the pre cut and cap assessment were field screened by use of photoionization detector (PID) on 2/21/2024 and 3/27/2024 following cut and cap activities to confirm that no new impacts were present. No new impacts were identified during the field screening of the previously sampled locations described above.

Please see Remediation Summary section for details on how Caerus plans to address the arsenic, pH, and chromium (VI) 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):

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 4

Number of soil samples exceeding 915-1 4

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

Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 54.7

-- Highest concentration of SAR 1.78

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?

Four (4) background soil samples were collected from locations north [20231024-LMBG-(696-5C-N)@1], east [20231024-LMBG-(696-5C-E)@1], south [20231024-LMBG-(696-5C-S)@1], and west [20231024-LMBG-(696-5C-W)@1] of the 696-5C Pad.

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?

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.

No impacts have been discovered

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.

In order to address the arsenic exceedances at all sample locations, Caerus requests an alternative allowable limit of 16.3 mg/kg for arsenic per ECMC Table 915-1 Footnote 1. Analytical results of background samples collected as a part of this project indicate a range of background arsenic concentrations from 5.54 mg/kg to 16.3 mg/kg (Table 2). Arsenic concentrations exhibited in all site assessment soil samples collected on October 24, 2023, and February 21, 2024 are less than the background arsenic concentrations.

In order to address pH exceedances at all sample locations, Caerus requests consideration of Rule 915.e.(2) C to remove pH as a constituent of concern. A sample of produced fluid from a storage tank on the 696-5C well pad was utilized for comparison of pH values. Fluids obtained from the tank exhibited pH levels of 7.46. Caerus believes that a release of fluids from this formation would not lead to elevated pH values exhibited in the confirmation samples associated with this project, thus pH should not be used to evaluate this project.

Please see the "Operator Comments" Section of this form for a continuance of this section.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ 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 4Q 2023 and 1Q 2024 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, Caerus has general liability insurance in the amount of \$1M, and Caerus 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: \$ 0

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? Yes

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? Yes

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 excavations have been backfilled to match the existing pad grade.

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. _____

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

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/01/2023

Proposed site investigation commencement. 10/01/2023

Proposed completion of site investigation. 03/27/2024

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 site sample results to 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 6,700 feet southeast of the 696-5C Pad and has a constructed depth of 74 feet and listed yield depth of 15 feet. The 696-5C Pad resides on a promontory ridge 2,700 feet above the water well.

Continued from "Remediation Summary" Section:

In order to address the chromium (VI) exceedance at the wellhead sample location [20231024-696-5C-(FC-FL-43)@4], Caerus requests an alternative allowable limit of 1.00 mg/kg be substituted for the ECMC Table 915-1 clean up concentration of 0.3 mg/kg as permitted in ECMC Table 915-1 Footnote 9. The chromium (VI) exceedance is below the Practical Quantitation Limit (PQL) in all soil samples collected on October 24, 2023 and February 21, 2024. Please see below for a discussion on the laboratory's use of MDL versus RDL.

Method Detection Limits or MDLs are the lower level of a range from which a given laboratory can actually detect a substance with their equipment. The more accurate and usable part of this range is known as the Reporting Detection Limit (RDL), also known as Practical Quantitation Limits (PQL). The MDL value is statistically determined and represents what can be identified as being possibly present by a specific instrument but cannot be measured accurately. Most laboratories have set the RDL or PQL to be 2 to 5 times above the MDL so that the results can be consistently reproduced in a manner that results in an almost 100% confidence level. This level of confidence allows the laboratory to report results to the customer that are both accurate, precise, and reliable as opposed to reporting just the MDL which only allows the laboratory to confirm that a given substance exists via a piece of equipment used to measure it.

Based on all investigative results, and assuming the proposed requests for consideration of Footnote 1, Footnote 9, and Rule 915.e.(2) C are approved, all constituents of concern are compliant with ECMC Table 915-1 RSSLs or alternative screening levels. Caerus requests No Further Action (NFA) associated with the P&A of the 696-6A 43 wellhead.

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

Signed: Jake Janicek

Title: EHS Specialist

Submit Date: 06/24/2024

Email: jjanicek@caerusoilandgas.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: 07/29/2024

Remediation Project Number: 31996

COA Type

Description

	Based on review of information presented it appears that no further action is necessary at this time, and ECMC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or if surface and/or ground water is found to be impacted, then further investigation and/or remediation activities will be required at the site. In addition, the non-working surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules including the establishment of vegetative cover on non-cropland and successful growth on cropland. Landowner must approve reclamation of cropland.
1 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

403644073	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403833913	SITE INVESTIGATION REPORT
403868745	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)