

State of Colorado Oil and Gas Conservation Commission

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Document Number:

403104348

Receive Date:

10/04/2022

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 COGCC 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 #: 20584 Initial Form 27 Document #: 402845415

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: Responses to COAs issued to Remediation Project Number (RPN) 20584 in Document Number 403023769.

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 480751	API #: _____	County Name: GARFIELD
Facility Name: KRK 7-7A Dumlaine		Latitude: 39.463069	Longitude: -107.702139
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 7	Twp: 7S	Range: 92W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications ML Most Sensitive Adjacent Land Use Agriculture/Rangeland

Is domestic water well within 1/4 mile? Yes 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

Well Permit # 64199- for Domestic, Live Stock use.

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	Undetermined	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.

All initial spill characterization and results can be referenced in Initial Site Investigation and Remediation Workplan Form 27 Document Number 402845415.

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):

Caerus plans to complete source removal via excavation of the previously delineated hydrocarbon and inorganic impacts associated with the KRK 7-7A Dimpline Release which are located immediately below and west of the separator production equipment following the Directors approval for relief of the COA issued in COGCC Document Number (DN) 403023769 in regards to the site-specific backgrounds for comparison for Table 915-1 Soil Suitability for Reclamation parameters. The number of excavation confirmation soil samples will be based on Table 1 referenced in the COGCC Rule 915.e.(2) - Soil Sampling and Analysis Guidance Document. All soil removed during excavation activities will be characterized through visual and olfactory observations and field screening soil samples for volatile organic compounds using a PID. Prior to any remediation, Caerus requests that all future soil samples be analyzed under a further reduced suite of TPH, BTEX, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.

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 14
Number of soil samples exceeding 915-1 14
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 600

NA / ND

NA Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 10.8
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 23

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?

Two site-specific background soil borings were advanced within close proximity to the Site in undisturbed, non-impacted native soil for the purpose of establishing background soil conditions per COGCC Rule 915.e.(2).D. A total of 14 site-specific background soil samples were collected from the two borings. Please reference COGCC Document Number 403104348 and the attached report of work completed (ROWC) for more details associated with the site-specific background sampling summary/results.

☐ 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.

The source is a dumpline which was 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.

All impacted material associated with RPN #20584 will be removed through excavation. In the spring of 2023 Caerus plans to excavate and landfarm all hydrocarbon impacted material onsite. In order to confirm all impacted soil has been removed, all sidewalls and floors of the excavation will be confirmed compliant through laboratory analytical results of samples collected from them. All excavated soil removed from the subsurface will be spread out on the working pad surface in a bermed secondary containment to be landfarmed. Since the main hydrocarbon contaminants of concern are TPH, BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, this remediation strategy should allow for the hydrocarbons which are entrained into the native soil to volatilize thus remediating the soil to compliance with COGCC RSSLCs. All impacted soil will be remediated as stated above until laboratory analysis of the soil contained within the landfarm indicates compliance. Prior to any remediation, Caerus requests that all future soil samples be analyzed under a further reduced suite of TPH, BTEX, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. Please see the "Operator Comments" Section of this form for an explanation of why Caerus believes the analysis of soil samples for pH and SAR should be removed from the required sampling suite.

This section is continued in the "Operator Comments" Section of this form.

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 COGCC Facility ID # _____

_____ Natural Attenuation

Yes _____ Excavate and onsite remediation

_____ Other _____

Yes _____ Land Treatment

No _____ Bioremediation (or enhanced bioremediation)

No _____ Chemical oxidation

No _____ 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

Responses to COAs issued to RPN 20584 in DN 403090402 and Q2 Status update.

☐ 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, 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: \$ 75000

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 0

E&P waste (solid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

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

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

COGCC Disposal Facility ID #, if applicable: 426582

Non-COGCC 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 COGCC 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.

There is currently nothing to reclaim.

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. 09/07/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/05/2021

Proposed site investigation commencement. 11/03/2021

Proposed completion of site investigation. 01/06/2022

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/02/2022

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

CONTINUED FROM "REMEDATION SUMMARY" SECTION:

The negligible impacts of the inorganic exceedances, specifically pH should be considered by the Director. Per COGCC Rule 915.e.2(C), Caerus requests that the elevated pH values in all soil samples associated with the delineation and remediation of this release be considered representative, and evaluated and considered as naturally occurring at the Site. Caerus feels as if this request is legitimate because the initial point of release (POR) confirmation soil sample [20211005- H7(POR)@7.5'] collected immediately below the POR exhibited a pH value of 8.38 which is an exceedance of the COGCC Table 915-1 CC for pH, but is within the range of pH measurements (7.46 to 8.48) exhibited in background soil borings recently collected near the site.

Lab data from recently advanced background soil borings into undisturbed native soil near the H7 pad indicate the soils exhibiting elevated SAR concentrations above background concentrations are isolated to the area immediately adjacent to the point of release. These soils are represented by soil samples 20211005-H7(POR)@7.5' and 20211104-H7(POR)@9' which exhibited SAR concentrations of 18.3 and 21.9, respectively. All other soil samples collected in an effort to delineate the impacted area exhibited SAR concentrations ranging from 1.08 to 10.7 which are within the range of background concentrations of the above-mentioned background soil borings which are between 4.45 and 10.8.

Based on this data, Caerus considers the remediation of soils with SAR concentrations above background concentrations complete since these soils were removed via hydrovac and disposed of at Caerus' NSF (COGCC Facility ID 426582).

Caerus requests that the sampling of soils for SAR and pH be removed from the sampling suite and that all future soil samples be analyzed for TPH, BTEX, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene only.

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

Signed: Dustin HeldTitle: Sr. Consultant, GeologistSubmit Date: 10/04/2022Email: dustin.held@wsp.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Steven ArauzaDate: 11/04/2022Remediation Project Number: 20584**COA Type****Description**

0 COA	

Attachment Check 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**

403104348	FORM 27-SUPPLEMENTAL-SUBMITTED
403107254	SITE INVESTIGATION REPORT

Total Attach: 2 Files

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

Environmental	Based on the information provided, the Operator's request for a reduced analyte suite of TPH, BTEX, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene is approved.	11/04/2022
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Total: 1 comment(s)