

State of Colorado Oil and Gas Conservation Commission

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403339662

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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 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) 788-2314 Mobile: (970) 788-2314
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 #: 25302 Initial Form 27 Document #: 403112417

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: Q1 2023 Status Update to Remediation Project Number (RPN) 25302

SITE INFORMATION

Yes Multiple Facilities

Facility Type: PIT	Facility ID: 104876	API #:	County Name: RIO BLANCO
Facility Name: SAGEBRUSH HILLS 4504		Latitude: 39.896750	Longitude: -108.530633
		** correct Lat/Long if needed: Latitude:	Longitude:
QtrQtr: NENW	Sec: 8	Twp: 2S	Range: 99W Meridian: 6 Sensitive Area? No

Facility Type: WELL	Facility ID:	API #: 103-07527	County Name: RIO BLANCO
Facility Name: SAGEBRUSH HILLS II UNIT A 4504		Latitude: 39.896976	Longitude: -108.530441
		** correct Lat/Long if needed: Latitude:	Longitude:
QtrQtr: NENW	Sec: 8	Twp: 2S	Range: 99W Meridian: 6 Sensitive Area? No

Facility Type:	LOCATION	Facility ID:	314907	API #:		County Name:	RIO BLANCO
Facility Name:		SAGEBRUSH HILLS II UNIT A-62S99W 8NENW		Latitude:	39.896740	Longitude:	-108.530613
				** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr:	NENW	Sec:	8	Twp:	2S	Range:	99W
		Meridian:	6	Sensitive Area?		No	

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use Rangeland-BLM

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

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	TBD	Site Investigation/Laboratory Analytical

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 reference RPN 25302 for all investigative decommissioning activities completed to date associated with the facility decommissioning activities of production well (API# 103-07527), pit (Facility ID: 104876), and location (Facility ID: 314907). Please reference Document Numbers (DNs) 403112417 and 403198591 for details regarding the initial and subsequent subsurface investigative activities associated with the historic pit. The subsequent investigative drilling activities proposed in the "Proposed Soil Sampling" and "Remediation Summary" sections of this form are tailored in response to the two previous historic pit investigation results completed in June and August of 2022.

Please reference DN 403198591, 403269743, 403251695, and 403123190 which reference the proposed investigative and remediation steps of how Caerus plans to address the shallow impacts beneath the former production equipment locations and decommissioned production well. The proposed investigative and remediation steps are also summarized in the "Operator Comments" section of this form.

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):

A maximum of 15 soil borings will be advanced to define observed impacts associated with the initial and subsequent investigative soil sampling of the historic pit. The investigative footprint will be expanded to encompass the entire pit boundary to laterally define the shallow chromium (VI) and electrical conductivity (EC) impacts and vertically define the sodium adsorption ratio (SAR) impacts. The soil borings will be advanced within and surrounding the pit footprint. If vertical and/or lateral impacts are observed beyond the six outer borings advanced, then subsequent contingency soil borings will be advanced in each cardinal direction until impacts are defined (Figure 2). All samples will be submitted for analysis under previously reduced suite in DN 403198591.

See the "Remediation Summary" section of this form for the full proposed investigative scope planned to take place in May of 2023.

No investigative activities were completed at the Site in Q1 2023 due to winter conditions.

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 reference the "Proposed Soil Sampling" and "Remediation Summary" sections of this form for additional proposed investigation and characterization activities planned to take place in May of 2023.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0

Number of soil samples exceeding 915-1 0

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

Approximate areal extent (square feet) 85068

NA / ND

-- Highest concentration of TPH (mg/kg) 224.0
2

-- Highest concentration of SAR 33.9

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 20

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?

See Document Numbers 403112417 and 403198591 for references to previously collected site-specific background and boring soil samples.

☐ 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 reference the "Proposed Soil Sampling" and "Remediation Summary" sections of this form for additional proposed investigation and characterization activities planned to take place in May of 2023.

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.

Once the impacts are fully delineated a plan to remove the source will be addressed.

REMEDICATION 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.

A remediation plan will be submitted once all historic pit impacts are delineated.

A maximum of 15 investigative soil borings will be advanced to define observed impacts associated with the initial and subsequent investigative soil sampling of the historic pit (Figure 2). The investigative footprint will be expanded to encompass the entire pit boundary to laterally define the shallow chromium (VI) and EC impacts and vertically define the SAR impacts. The soil borings will be advanced within and surrounding the pit footprint. If vertical and/or lateral impacts are observed beyond the six outer borings advanced, then subsequent contingency soil borings will be advanced in each cardinal direction until impacts are defined. The soil/bedrock will be characterized by visually inspecting the soil samples and field screening the soil head space using a photoionization detector (PID) to monitor for the presence and or absence of volatile organic compounds. The soil/bedrock from each boring location will be characterized using the United Soil Classification System (USCS). All borings will be advanced 5 feet beyond observed impacts. Discreet samples from each boring will be submitted at 5-foot intervals including the boring terminus. Each soil boring will be advanced to a minimum depth of 35 feet below ground surface. All samples will be submitted for analysis under previously reduced suite in DN 403198591 [total petroleum hydrocarbons (TPH), chromium (VI), boron, EC, and SAR].

In addition, three site-specific background borings will be advanced to total depths of 40 feet bgs from nearby locations relative to the Site to further establish representative background soil data per COGCC 915 Rule.e(2).D. Discrete soil samples from the three site-specific background borings will be collected at every 5-foot interval and at the boring terminus (Figure 2). All background samples will be submitted for Table 915-1 metals, EC, SAR, pH, and boron (water soluble).

Soil Remediation Summary

☐ In Situ

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

☐ Ex Situ

_____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ Name of Licensed Disposal Facility or COGCC 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, if encountered, representative grab samples will be collected and analyzed under COGCC Table 915-1 for water.

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

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: \$ 50000

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

E&P waste (solid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

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.

All disturbances within the interim reclaim will be reclaimed to match existing grade. When the site is decommissioned at a later date, it will be reclaimed in accordance with 1000 Series regulation.

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. 06/24/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/24/2022

Proposed site investigation commencement. 08/10/2022

Proposed completion of site investigation. 08/01/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/24/2022

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

Facility decommissioning next step are summarized below.

Caerus plans to scrape/excavate the areas which observed elevated concentrations of chromium (VI) and SAR associated with the removal of production equipment. Once field screening indicates the soil impacts have been removed then additional confirmation soil samples will be collected to confirm if impacts were removed. Soil samples will be collected from the Tank, Meter Skid and Meter Skid Inlet, Separator, Separator Sales Line Header, Blow Down Riser, and Flowline Inlet locations (Figure 3). All soil samples associated with these above mentioned locations will be submitted for the reduced suite approved in DN 403198591.

Caerus plans to excavate the elevated chromium (VI) and TPH soil impacts surrounding the base and along the north, south, and west sidewalls of the decommissioned wellhead (Figure 3). Supplemental confirmation field soil screening and sampling will be conducted in tandem with the source removal to confirm all contaminated soils have been removed from the wellhead excavation footprint. Subsequent confirmation soil samples will be collected from the base and along each sidewall of the wellhead excavation to confirm compliance. All soil samples associated with the wellhead will be submitted for the reduced analytical suite of TPH and chromium (VI) as approved in DN 403251695.

Attached to the form is a site map depicting the future assessment areas associated with the removal of production equipment and the decommissioned wellhead (Figure 3).

The soil observed to be impacted and removed beneath the former production equipment locations and from the wellhead excavation will be transported and disposed of at the Wray Gulch Landfill in Rio Blanco County. The soil will be disposed of at a later date when a waste characterization soil sample is collected, and Caerus has received confirmation of waste approval by the landfill.

The facility decommissioning activities outlined above will be completed once the drilling assessment of the historic pit is completed in August of 2023.

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

Signed: Dustin Held

Title: Sr. Consultant, Geologist

Submit Date: 04/17/2023

Email: 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 Arauza

Date: 05/19/2023

Remediation Project Number: 25302

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

403339662	FORM 27-SUPPLEMENTAL-SUBMITTED
403353375	SOIL SAMPLE LOCATION MAP

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

Environmental	Comply with outstanding COAs.	05/18/2023
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Total: 1 comment(s)