

State of Colorado Oil and Gas Conservation Commission

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



Document Number:

402349947

Receive Date:

03/25/2020

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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: CAERUS PICEANCE LLC	Operator No: 10456	Phone Numbers
Address: 1001 17TH STREET #1600		Phone: (970) 285-2720
City: DENVER State: CO Zip: 80202		Mobile: (970) 778-2314
Contact Person: Jake Janicek	Email: jjanicek@caerusoilandgas.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 14181

Initial Form 27 Document #: 402159698

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: SPILL OR RELEASE	Facility ID: 466606	API #: _____	County Name: GARFIELD
Facility Name: L19-595 Dumpline	Latitude: 39.599413	Longitude: -108.106305	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 19	Twp: 5S	Range: 95W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GM

Most Sensitive Adjacent Land Use Non-crop land

Is domestic water well within 1/4 mile? No

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

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	To be determined	Laboratory analytical results

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 COGCC Documents 402145049, 402159698, 402182669, and 402257839 for information on activities completed prior to 12/10/2019.

On 12/10/2019, a soil sample was collected 14 feet below the pad surface from soil approximately 20 feet east of SB-02/SVE-02 (Please refer to Figure 2). This sample was collected in order to further delineate the impacts between sampling point SB-02/SVE-02 and sampling point SB10. Laboratory analytical results indicate that the sample was compliant with COGCC Table 910-1 Concentration Levels. Analytical results for this soil sample are attached.

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):

Once impacted soil has been removed per the plan outlined in the "Remediation Summary" section of this form, confirmation soil samples will be collected from soil adjacent to the impacted soil. Caerus requests that the soil sampling suite be reduced to those analytes (TPH, BTEX, EC, SAR, pH, and arsenic) that soil samples detailed in the previous Form 27 (COGCC Document ID 402257839) exhibited exceedances for.

Soil samples will also be collected from the stockpile of removed soil as detailed in the "Remediation Summary" section of this form. Caerus requests that the soil sampling suite be reduced to those analytes (TPH, BTEX, EC, SAR, pH, and arsenic) that soil samples detailed in the previous Form 27 (COGCC Document ID 402257839) exhibited exceedances for. The number of soil samples collected from this stockpile will depend on the total volume of impacted soil removed.

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 23

Number of soil samples exceeding 910-1 22

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

Approximate areal extent (square feet) 10000

NA / ND

-- Highest concentration of TPH (mg/kg) 11000

-- Highest concentration of SAR 29

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 22

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 0'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 0

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA Highest concentration of Xylene (µg/l)

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

0 Number of surface water samples exceeding 910-1

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 collected from the L19-595 pad location on 8/31/2011 are being used for comparison. They were included in a Supplemental Form 27 (COGCC Document ID 402182669) associated with this project. A map of where these samples were collected is included as Figure 2.

☐ 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? Yes _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

No further source removal is necessary.

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.

Impacted soil represented by soil samples 20191105-L19-595 (SB01) 20-21.5', 20191105-L19-595 (SB02) 15-16.5', 20191106-L19-595 (SB03) 15-16.5', and 20191106-L19-595 (SB05) 15-16.5' which were detailed in the previous Form 27 (COGCC Document ID 402257839) will be removed. These soil sample locations are also depicted on Figure 1. All soil considered impacted will be stockpiled onsite within a containment berm as depicted on Figure 2. Once it has been determined through confirmation soil sampling (plan outlined in "Proposed Soil Sampling") that all impacted soil has been removed, soil samples will be collected from the stockpile of removed soil. Caerus requests that the soil sampling suite be reduced to those analytes (TPH, BTEX, EC, SAR, pH, and arsenic) that soil samples detailed in the previous Form 27 (COGCC Document ID 402257839) exhibited exceedances for. The number of soil samples collected from this stockpile will depend on the total volume of impacted soil removed.

If soil samples collected from the stockpile exhibit TPH or BTEX exceedances, the soil represented by these samples will be spread out into a landfarm format within a containment berm and turned/mixed until soil samples verify compliance with COGCC Table 910-1 Concentration Levels for TPH and/or BTEX. The landfarm will be placed in the same general area detailed above for the stockpile of removed soil. This area is detailed on Figure 2.

Caerus anticipates being able to begin this project late May of 2020. If remediation of the removed soil is necessary, an estimated one year would be needed to remediate the soil to within COGCC Table 910-1 Concentration Levels.

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
_____ No Land Treatment
_____ No Bioremediation (or enhanced bioremediation)
_____ No Chemical oxidation
_____ No Other _____

Groundwater Remediation Summary

_____ No Bioremediation (or enhanced bioremediation)
_____ No Chemical oxidation
_____ No Air sparge / Soil vapor extraction
_____ No 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

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report

☒ Other Remediation Plan _____

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 _____ 73

E&P waste (liquid) description Mixture of impacted soil and hdyrovac
rinsate _____

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 _____

Do all soils meet Table 910-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

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.

The northern part of the pad will be reclaimed and seeded per COGCC rules regarding reclamation.

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 approve the seed mix? Yes _____

If NO, does the seed mix comply with local soil conservation district recommendations? Yes _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/08/2019

Date of commencement of Site Investigation. 08/08/2019

Date of completion of Site Investigation. 11/13/2019

REMEDIAL ACTION DATES

Date of commencement of Remediation. 08/26/2019

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

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: ` 03/25/2020

Email: jjanicek@caerusoilandgas.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: 04/10/2020

Remediation Project Number: 14181

COA Type**Description**

	Within 30 days of construction of the land treatment unit, provide the following via a Supplemental eForm 27: 1) Site diagram depicting the as-built land treatment unit location and berm locations 2) Correct latitude and longitude that correspond with land treatment unit location under the Site Information section of the eForm 27 3) A detailed remediation plan including spoils turning/mixing and resampling frequency 4) A description of the source of backfill material
	Operator anticipates achieving Table 910-1 compliance by May 2021. Operator shall report sampling results in Quarterly reports until Table 910-1 compliance is achieved.
	Any accumulation of fluid in treatment area shall be removed upon detection. Treatment area shall be monitored after any significant precipitation event.
	Prior to 3-years of operations and if materials have not met the Table 910-1 Standards, the Operator shall have submitted and received approval of a Form 28 Centralized Exploration and Production (CE&P) Facility meeting all of the requirements, including financial assurance. If the land treatment unit is not permitted as a Form 28 at that time, then prior to the 3-year anniversary, ALL impacted land treatment material shall be removed and disposed at an approved facility. No time extensions to the land treatment unit will be granted.

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**

402349947	FORM 27-SUPPLEMENTAL-SUBMITTED
402349949	MAP
402349964	ANALYTICAL RESULTS
402351376	MAP

Total Attach: 4 Files

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

Environmental	Operator's request for a reduced analyte suite (TPH, BTEX, EC, SAR, pH, and arsenic), based on the information provided (i.e., analytical results for soil samples submitted with previous eForm 27).	04/10/2020
---------------	---	------------

Total: 1 comment(s)