

State of Colorado
Oil and Gas Conservation Commission

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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
Address: 1001 17TH STREET #1600		Phone: (970) 778-2314
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 #: 17035 Initial Form 27 Document #: 402582867

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 Assessment Proposal

SITE INFORMATION

No Multiple Facilities

Facility Type: LOCATION	Facility ID: 334872	API #:	County Name: GARFIELD
Facility Name: SAMPLE-67S92W 17SENW	Latitude: 39.444880	Longitude: -107.686440	
** correct Lat/Long if needed: Latitude: 39.444597		Longitude: -107.686826	
QtrQtr: NWSE	Sec: 17	Twp: 7S	Range: 92W 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? 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

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SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <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
Yes	GROUNDWATER	TBD	Lab Analysis
Yes	SOILS	TBD	Lab Analysis

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 Document 402582867 for a description of activities completed prior to 3/30/2021.

Please see the attached documents for a summary of activities completed from 3/30/2021 through 6/17/2021.

In addition to the work described in the above mentioned documents, the stockpile representing clean overburden removed during excavation activities was characterized. On 6/3/2021, two composite samples (20210603-J17E(CSTK01) and 20210603-J17E(CSTK02)) were collected from the stockpile and submitted for laboratory analysis of the reduced analyte suite approved via COGCC Document 402619378. Soil sample 20210603-J17E(CSTK02) exhibited 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene exceedances of COGCC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations (POGS) and both samples exhibited exceedances of the COGCC Table 915-1 pH Soil Suitability for Reclamation Cleanup Level and the arsenic and barium COGCC Table 915-1 POGS. The analytical report is attached and the sample points are depicted on an attached PDF titled "J17E Clean Overburden Stockpile Sampling Map - 6-3-2021."

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):

Discreet soil samples will be used to 1) Delineate the impacts associated with the dumpline release (Spill/Release Point ID 478578), 2) Confirm the successful removal of the impacts described above, and 3) Establish background soil sample concentrations. All future soil samples will be submitted for laboratory analysis of arsenic, barium, cadmium, chromium VI, nickel, selenium, pH, SAR, TPH, BTEX, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, flourene, and naphthalene per the COGCC's approval via COGCC Document 402619378.

Proposed Groundwater Sampling

Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

All future groundwater samples will be submitted for all analytes listed in COGCC Table 915-1. An environmental drill rig is scheduled to be on location in August 2021 to install additional groundwater monitoring wells in an effort to continue delineating impacts to groundwater. The focus of the delineation attempts will be in all four cardinal directions from the temporary monitoring well (SB02-TB) set in the middle of the existing excavation. Please see Figure 2 of the attached document titled "J17E Dumpline Release Report of Work Completed - Dated 5/14/2021" for the location of this monitoring well.

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 51
Number of soil samples exceeding 915-1 47
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 2500

NA / ND

-- Highest concentration of TPH (mg/kg) 977
-- Highest concentration of SAR 8.2
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 71

Groundwater

Number of groundwater samples collected 9
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 63'
Number of groundwater monitoring wells installed 3
Number of groundwater samples exceeding 915-1 2

-- Highest concentration of Benzene (µg/l) 54
-- Highest concentration of Toluene (µg/l) 21
-- Highest concentration of Ethylbenzene (µg/l) 1
-- Highest concentration of Xylene (µg/l) 10
NA Highest concentration of Methane (mg/l)

Surface Water

4 Number of surface water samples collected
0 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 samples were collected from SB01 on the southeast side of the pad location from undisturbed soil. Please see Figure 2 of the attached document titled "J17E Dumpline Release Report of Work Completed - Dated 5/14/2021" for the sample location and Table 2 of the same document for a summary of analytical 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?

Soil and groundwater impacts below the tank battery need to be delineated. This will be completed through using an environmental drilling rig to install boreholes within and outside of the impacted area. This expanded site assessment is scheduled for August 2021.

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 was a failed dumpline which was replaced.

During the limited delineation and remediation efforts completed project-to-date, it has been determined that the impacts being observed are the result of an unknown source and couldn't have resulted from the dumpline release (COGCC Spill/Release Point ID 478578) associated with this project. The volume released during that dumpline failure was calculated to have released 1 barrel of produced water.

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.

Once full delineation has been determined, a remediation plan will be presented to the COGCC for in situ remediation.

In order to remediate the impacted areas of the stockpiles depicted on Page 4 of 58 on the attached document titled "J17E Report of Work Completed- Stockpile Characterization", the impacted areas will be spread out into a landfarm and remediated until compliance with COGCC Table 915-1 is achieved. The landfarm will be built along the north and northeast sides of the location.

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

_____ Excavate and onsite remediation

_____ Other _____

_____ No 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.

All future groundwater samples will be submitted for all analytes listed in COGCC Table 915-1. An environmental drill rig is scheduled to be on location in August 2021 to install additional groundwater monitoring wells in an effort to continue delineating impacts to groundwater. The focus of the delineation attempts will be in all four cardinal directions from the temporary monitoring well (SB02-TB) set in the middle of the existing excavation. Please see Figure 2 of the attached document titled "J17E Dumpline Release Report of Work Completed - Dated 5/14/2021" for the location of this monitoring well.

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 Soil and Groundwater Assessment Proposal

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:

Volume of E&P Waste (solid) in cubic yards 744

E&P waste (solid) description Impacted soil

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Greenleaf Environmental Services

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

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

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? No

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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.

Once delineation is completed, a reclamation plan will be presented to the COGCC.

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. 11/17/2020

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

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/17/2020

Proposed site investigation commencement. 11/17/2020

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/07/2021

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

The "Sample Summary" section of this form only includes data from samples collected from 3/30/2021 through 6/17/2021.

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: 07/08/2021 _____

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: 09/02/2021 _____

Remediation Project Number: 17035 _____

Condition of Approval**COA Type****Description**

	Comply with Rule 905.e.(2) for land treatment of oily waste.
	Operator shall submit a Form 27 with a site diagram of the planned land treatment area, the duration of planned treatment, and final disposition of treated oily waste, per Rule 905.e.(2).A, prior to commencement of land treatment.
	Operator has not indicated whether or not impacted waste will be mixed with the overburden stockpile, as described in the attached Stockpile Characterization Report (doc #402742144). The COGCC does not approve of stockpile mixing at this time. Operator shall submit a Supplemental Form 27 to comply with land treatment requirements outlined in Rule 905.e.(2). The Operator shall indicate whether or not the stockpiles are to be mixed as part of the proposed land treatment.
3 COAs	

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**

402675870	FORM 27-SUPPLEMENTAL-SUBMITTED
402691090	ANALYTICAL RESULTS
402742144	ANALYTICAL RESULTS
402742175	ANALYTICAL RESULTS
402742177	ANALYTICAL RESULTS
402742448	MAP

Total Attach: 6 Files

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

Environmental	Why were 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene not included in analysis for stockpiled soil bench test (doc #402742175)?	09/02/2021
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Total: 1 comment(s)