

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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12/21/2023

Report taken by:

Laurel Anderson

## 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: CRESTONE PEAK RESOURCES OPERATING LLC	Operator No: 10633	Phone Numbers
Address: 555 17TH STREET SUITE 3700		Phone: (720) 3846452
City: DENVER	State: CO	Zip: 80202
Contact Person: Costin McQueen	Email: cmcqueen@civiresources.com	Mobile: ( )

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 33283 Initial Form 27 Document #: 403559192

## 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: Reroute of On Location Flowlines and Removal of Surface Equipment

## SITE INFORMATION

Yes Multiple Facilities

Facility Type: LOCATION	Facility ID: 453474	API #:	County Name: WELD
Facility Name: Sam 25H-M166	Latitude: 40.018895	Longitude: -104.733852	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWSW	Sec: 25	Twp: 1N	Range: 66W
Meridian: 6	Sensitive Area?		Yes

Facility Type: SPILL OR RELEASE	Facility ID: 484966	API #:	County Name: WELD
Facility Name: Sam 25H-M166	Latitude: 40.019685	Longitude: -104.734069	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWSW	Sec: 25	Twp: 1N	Range: 66W
Meridian: 6	Sensitive Area?		No

## **SITE CONDITIONS**

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Crop Land

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**

The closest monitoring well (Receipt # 3687727C Permit # 310410) is on location and approximately 246' west of the release location on pad. The well was completed to 35' bgs with no reported static water level. The monitoring well was gauged 10/30/2023, and the depth to water was reported at 21.41 bgs.  
Surface water - 992' east  
The location is not within high priority habitat.

## 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
UNDETERMINED	GROUNDWATER	NA	Laboratory Analytical if Encountered
Yes	SOILS	39' x 24' x 18' bgs	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.

A compromised line resulted in approximately 1.5 bbls of oil to be released to the ground surface and an unknown volume to the subsurface. Operations were immediately halted, and a vac truck was dispatched to remove the standing surficial fluids, which were limited to the pad surface.

A site investigation was conducted pursuant to ECOM rule 911 at the Sam 25H-M166 (453474) oil and gas location pertaining to the removal of 12 separators and the reroute of 1 on-location common produced water flowline and 1 common oil dump line between the separators and the above ground storage tanks from below ground to above ground pipe racks. Crestone plans to go from 12 separators to 1 bulk separator and 1 test separator.

### 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 ):

Grab confirmation soil samples were collected at the start and end points, any point where the line changes material, or changes direction, and spans greater than 250' in length. In addition, grab confirmation samples will be collected from beneath each separator. Soil samples will be analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECOM Table 915-1, metals, and EC, SAR, pH, and boron. All samples collected were analyzed by a certified laboratory using approved ECOM laboratory analysis methods.

Analytical results indicate elevated levels of Arsenic and Barium, however, were below the local cleanup level. Elevated pH was observed, which will be removed. Confirmation soil samples will be collected and submitted for pH analysis.

#### Proposed Groundwater Sampling

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

If groundwater is encountered during the site investigation a grab groundwater sample will be collected and analyzed for all organic compounds per ECOM Table 915-1.

#### 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 ):

Visual inspection of the location will occur during abandonment activities. Field personnel will field screen all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling is required. A photo log will be submitted on a subsequent Form 27.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

**Soil**

Number of soil samples collected 74

Number of soil samples exceeding 915-1 37

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

Approximate areal extent (square feet) 936

**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

**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.

**NA / ND**

-- Highest concentration of TPH (mg/kg) 7310

-- Highest concentration of SAR 5.29

BTEX &gt; 915-1 Yes

Vertical Extent &gt; 915-1 (in feet) 18

-- Highest concentration of Benzene (µg/l) 5.3

-- Highest concentration of Toluene (µg/l) 21

-- Highest concentration of Ethylbenzene (µg/l) 7.8

-- Highest concentration of Xylene (µg/l) 32

ND Highest concentration of Methane (mg/l)

**OTHER INVESTIGATION INFORMATION**☐ Were impacts to adjacent property or offsite impacts identified?☒ Were background samples collected as part of this site investigation?

14 off pad background samples were collected and submitted for Table 915 metals and soil suitability.

☐ 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.

Source removal occurred and approximately 56 cubic yards were removed. A limited site assessment was conducted via hand auger within the current excavation as well as around adjacent equipment. Based on the analytical results, it was determined that additional source removal is needed. Equipment will be removed, and additional source removal will occur. Confirmation soil samples will be collected and submitted for analysis of Table 915-1 TPH (C6C36), Organics, EC, SAR, Boron, pH, Arsenic, and Barium.

12 separators will be removed and 1 on-location common produced water flowline and 1 common oil dump line between the separators and the above ground storage tanks will be rerouted from below ground to above ground pipe racks.

Approximately 624 cubic yards of soil have been removed. Grab confirmation soil samples were collected on 11/30/2023 and 12/01/2023 and submitted for Table 915 analysis. Based on analytical results, TPH (C6-C36), Organics, EC, SAR, and Boron were all below Table 915 cleanup standards. Elevated Arsenic and Barium levels were observed, however, were below the local clean up levels (1.25 x Highest Background). Additional source removal will occur, and confirmation samples will be collected and submitted for pH analysis.

**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.

Once source removal is complete an estimated timeframe to achieve a no further action will be April 30, 2024.

Soil Remediation Summary

☐ In Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Other \_\_\_\_\_

☒ Ex Situ

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 624

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

No \_\_\_\_\_ 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.

## REMEDATION 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.

The General Liability coverage within the Civitas Resources insurance program includes coverage for bodily injury, property damage, and pollution clean-up costs arising from qualifying pollution events of a sudden and accidental nature subject to a \$1,000,000 per occurrence limit and \$2,000,000 aggregate limit. The Civitas Resources insurance program includes Excess Liability coverage of \$110,000,000 per occurrence and in the aggregate which sits over the sudden and accidental pollution within the General Liability coverage. It is the opinion of Civitas Resources that this total tower of limit is adequate to address the costs of remediation associated with any qualifying pollution event.

Operator anticipates the remaining cost for this project to be: \$ 100000

### 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:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 624

E&P waste (solid) description Solid E&P waste derived from excavation activities.

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: CSI

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

## REMEDATION COMPLETION REPORT

### REMEDATION 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.

The location will remain an active oil and gas facility. Reclamation will be in accordance with COGCC 1000 series rules.

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. 08/03/2023

Actual Spill or Release date, or date of discovery. 08/03/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/03/2023

Proposed site investigation commencement. 08/03/2023

Proposed completion of site investigation. 12/01/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/01/2023

Proposed date of completion of Remediation. 04/30/2024

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**

Grab confirmation soil samples were collected on 11/30/2023 and 12/01/2023 and submitted for Table 915 analysis. Based on analytical results, TPH (C6-C36), Organics, EC, SAR, and Boron were all below Table 915 cleanup standards. Elevated Arsenic and Barium levels were observed , however, were below the local clean up levels (1.25 x Highest Background). Additional source removal will occur, and confirmation samples will be collected and submitted for pH analysis.

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

Signed: Costin McQueen

Title: Senior Env Specialist

Submit Date: 12/21/2023

Email: cmcqueen@civiresources.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: Laurel Anderson

Date: 01/05/2024

Remediation Project Number: 33283

**COA Type****Description**

	ECMC agrees to the proposed sampling plan based on the information provided. Operator shall continue to field screen soil future soil samples and If soil indicative of a Spill/Release are discovered during the lateral and vertical extent of impact will be determined with appropriate confirmation soil sampling, and Operator will expand the analyte list to include Table 915-1 contaminants of concern.
1 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**

403633040	FORM 27-SUPPLEMENTAL-SUBMITTED
403633216	ANALYTICAL RESULTS
403633269	PHOTO DOCUMENTATION
403633270	PHOTO DOCUMENTATION
403633291	ANALYTICAL RESULTS
403633301	ANALYTICAL RESULTS
403633307	ANALYTICAL RESULTS
403633351	ANALYTICAL RESULTS

Total Attach: 8 Files

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

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)