

State of Colorado  
Oil and Gas Conservation Commission

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Report taken by:  
PETER GINTAUTAS

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: <u>CRESTONE PEAK RESOURCES OPERATING LLC</u>	Operator No: <u>10633</u>	<b>Phone Numbers</b>
Address: <u>1801 CALIFORNIA STREET #2500</u>	City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>	Phone: <u>(303) 7743985</u>
Contact Person: <u>David Tewkesbury</u>	Email: <u>David.Tewkesbury@CrestonePR.com</u>	Mobile: <u>(720) 2365525</u>

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 16598 Initial Form 27 Document #: 402591326

**PURPOSE INFORMATION**

<input type="checkbox"/> 901.e. Sensitive Area Determination	<input checked="" type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water
<input checked="" 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**      Y Multiple Facilities ( in accordance with Rule 909.c. )

Facility Type: <u>TANK BATTERY</u>	Facility ID: <u>479258</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Sheley 1 battery</u>	Latitude: <u>40.163470</u>	Longitude: <u>-104.899489</u>	
** correct Lat/Long if needed: Latitude: <u>40.163554</u>		Longitude: <u>-104.899792</u>	
QtrQtr: <u>SESW</u>	Sec: <u>4</u>	Twp: <u>2N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>479403</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Sheley 1 Battery</u>	Latitude: <u>40.163659</u>	Longitude: <u>-104.899719</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>4</u>	Twp: <u>2N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use cropland  
 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? Yes

Other Potential Receptors within 1/4 mile

Occupied structures

# 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	Pending investigation	Visual sheen and laboratory analysis
Yes	SOILS	Pending investigation	Laboratory 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.

This form has been prepared to support removal of two partially buried produced water vessels associated with this location. When two produced water vessels were removed from this production facility, soil samples were not collected. Multiple hand auger borings will be completed to approximately 6 feet below ground surface (6' bgs) in the previous locations of the vessels. Proposed soil boring locations are attached. Soil samples will be field screened using a photoionization detector (PID) at each 1-foot interval beginning at approximately 2' bgs. At least two soil samples per vessel will be collected and submitted for Table 915-1 constituents of concern: one base sample and one sidewall sample. The soil sample from each vessel which displays the highest degree of impacts as determined by field screening using a photoionization detector (PID), visual observations of staining, and hydrocarbon odor will be submitted for the full Table 915-1 analyte list minus Soil Suitability for Reclamation constituents. The soil sample deemed the next most impacted by field screening results will be analyzed for any constituents of concern which exceed Table 915-1 allowable limits in the most impacted sample and that cannot be cleared by background levels. If the most impacted sample does not exceed for any constituents of concern, the subsequent sample will be analyzed for TPH (DRO, GRO, and ORO) and BTEX. Soil samples will be screened against residential soil screening levels unless groundwater is encountered. The facility is not being decommissioned or scheduled for reclamation at this time; therefore, samples will not be analyzed for Table 915-1 inorganic constituents to determine soil suitability for reclamation (pH, EC, SAR, and boron) at this time. Background samples may be collected during site investigation to characterize background levels of inorganic constituents in native soils.

## 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 ):

To delineate the extents of soil and groundwater impacts, multiple soil borings will be drilled to approximately 12 feet below ground surface (12' bgs) using a GeoProbe and completed as temporary groundwater monitoring wells. Soils will be logged, and samples will be collected for field-screening. If impacts are observed or suspected past 12' bgs, the borings may extend deeper. At least one soil sample per boring will be submitted for Table 915 analysis. Additional soil samples will be collected and submitted for analysis as necessary to delineate the extent of impacts. Samples will be analyzed for constituents which exceeded in the initial characterization soil samples (SBE01@4 and SBW01@4) and screened against protection of groundwater soil screening levels. See the attached Proposed Boring Location Map for details on proposed sample locations.

### Proposed Groundwater Sampling

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

Groundwater samples will be collected and analyzed for BTEX, 1,2,4 trimethylbenzene, total dissolved solids, and sulfate. 1,3,5 trimethylbenzene, naphthalene, and chloride may not be analyzed in future samples as they did not exceed in either of the groundwater characterization samples collected during the initial site investigation (GW01 and GW02).

### 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 ):

The extent of groundwater and soil contamination will be delineated by borings. Borings will be drilled to approximately 12 feet below ground surface (12' bgs) using a GeoProbe and completed as temporary groundwater monitoring wells. Soil and groundwater samples will be collected as needed and analyzed for Table 915-1 constituents of concern.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 5  
Number of soil samples exceeding 910-1 5  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 0

### NA / ND

-- Highest concentration of TPH (mg/kg) 1381  
NA Highest concentration of SAR           
BTEX > 910-1 Yes  
Vertical Extent > 910-1 (in feet) 6

### Groundwater

Number of groundwater samples collected 2  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 6'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 910-1 2

-- Highest concentration of Benzene (µg/l) 61  
ND Highest concentration of Toluene (µg/l)           
-- Highest concentration of Ethylbenzene (µg/l) 240  
-- Highest concentration of Xylene (µg/l) 1900  
NA Highest concentration of Methane (mg/l)         

### Surface Water

0 Number of surface water samples collected  
         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?

One background sample was collected North of the site outside of the pad disturbance and submitted for arsenic, barium, and selenium analysis. Additional soil background samples will be collected and submitted to characterize background metal concentrations in native soil. A grab background groundwater sample will be collected to characterize local native concentrations of total dissolved solids.

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?

Further investigation is needed to determine the extents of groundwater and soil contamination. Multiple borings will be installed to approximately 12 feet below ground surface (12' bgs) using a GeoProbe and completed as temporary groundwater monitoring wells. Soil and groundwater samples will be collected as needed and analyzed for Table 915-1 constituents of concern. See the attached Proposed Boring Location Map for details on proposed sample locations.

# 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.

Soils may be removed and transported to a licensed disposal facility. Waste manifests will be available upon request. If different remediation tactics are deemed necessary or preferred, they will be proposed for approval via F27s.

## 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.

The extent of groundwater and soil contamination will be delineated by borings. Borings will be drilled to approximately 12 feet below ground surface (12' bgs) using a GeoProbe and completed as temporary groundwater monitoring wells.

## 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.

Multiple borings will be installed to approximately 12 feet below ground surface (12' bgs) using a GeoProbe and completed as temporary groundwater monitoring wells. Groundwater samples will be collected as needed to delineate the extent of dissolved phase impacts and will be analyzed for Table 915-1 constituents of concern. Groundwater samples will be collected and submitted for analysis on a quarterly basis until four consecutive quarters of data remain within COGCC designated allowable limits.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

Frequency:  Quarterly  Semi-Annually  Annually  Other \_\_\_\_\_

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

Other \_\_\_\_\_

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? \_\_\_\_\_

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

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 \_\_\_\_\_

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.

This facility remains in production; reclamation is not scheduled at this time. When the facility is decommissioned at a later date, reclamation activities will be completed in accordance with 1000 Series Rules.

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? \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

# IMPLEMENTATION SCHEDULE

## PRIOR DATES

Date of Surface Owner notification/consultation, if required. 02/04/2021

Actual Spill or Release date, if known. \_\_\_\_\_

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/12/2021

Date of commencement of Site Investigation. 02/16/2021

Date of completion of Site Investigation. \_\_\_\_\_

## REMEDIAL ACTION DATES

Date of commencement of Remediation. \_\_\_\_\_

Date of completion of Remediation. \_\_\_\_\_

## SITE RECLAMATION DATES

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

## OPERATOR COMMENT

This form serves to notify the COGCC of additional remediation investigation actions scheduled to take place at the Sheley 1 Battery and to provide analytical data from the initial site investigation. Soil and groundwater impacts were identified during initial sampling. Crestone Peak Resources proposes to delineate the extents of these impacts with soil borings and temporary groundwater monitoring wells. Please find the initial site investigation data and proposed boring locations attached.

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

Signed: David Tewkesbury

Title: Environmental Specialist

Submit Date: 03/09/2021

Email: David.Tewkesbury@CrestonePR.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: PETER GINTAUTAS

Date: 03/11/2021

Remediation Project Number: 16598

## COA Type

## Description

<u>COA Type</u>	<u>Description</u>

## 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

402608940	FORM 27-SUPPLEMENTAL-SUBMITTED
402622996	REMEDATION PROGRESS REPORT

Total Attach: 2 Files

## General Comments

### User Group

### Comment

### Comment Date

	Submit reports of site investigation and progress of remediation including results of sampling and analysis at a minimum on a quarterly basis until further site investigation activities show that adequate points of compliance with respect to soil and groundwater impacts have been established.	03/11/2021
Environmental	This report serves as adequate project summary and status update required to be submitted prior to April 15, 2021 as per rule 913.e.(2).	03/11/2021

Total: 2 comment(s)