

State of Colorado  
Oil and Gas Conservation Commission

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402299639  
Receive Date:  
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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> Phone: <u>(303) 7743985</u> Mobile: <u>(720) 2365525</u>
Address: <u>1801 CALIFORNIA STREET #2500</u>		
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		
Contact Person: <u>David Tewkesbury</u> Email: <u>david.tewkesbury@crestonepr.com</u>		

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 6559 Initial Form 27 Document #: 2216571

**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 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 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: <u>TANK BATTERY</u>	Facility ID: <u>453315</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Bangert 2-19 battery 2-19</u>	Latitude: <u>40.127462</u>	Longitude: <u>-104.814164</u>	
	** correct Lat/Long if needed: Latitude: <u>40.126933</u>	Longitude: <u>-104.813002</u>	
QtrQtr: <u>NENE</u>	Sec: <u>19</u>	Twp: <u>2N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

**SITE CONDITIONS**

General soil type - USCS Classifications GW Most Sensitive Adjacent Land Use IRRIGATED

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? Yes

**Other Potential Receptors within 1/4 mile**

WATER WELL 440', SURFACE WATER 570'.

# 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 type="checkbox"/> Produced Water        | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input type="checkbox"/> Oil                   | <input type="checkbox"/> Tank Bottoms                |  |
| <input checked="" 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	BENZENE 1820 UG/L	GROUNDWATER MONITORING
Yes	SOILS	30x30x7	EXCAVATION

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

PRODUCTION WAS CEASED AT THE TANK BATTERY TO ASSESS IMPACTS AND BEGIN REMEDIATION EFFORTS.

## 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 ):

Soil samples were previously collected and analyzed. If future soil samples are needed, they will be analyzed for TPH and BTEX.

### Proposed Groundwater Sampling

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

Based on dissolved phase petroleum hydrocarbon impacts beneath the site, groundwater monitoring will be conducted on a quarterly basis. Collected groundwater samples will be analyzed for BTEX until results are below COGCC Table 910-1 allowable limits for four consecutive quarters.

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

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 2.62  
BTEX > 910-1 No  
Vertical Extent > 910-1 (in feet) 0

### Groundwater

Number of groundwater samples collected 20  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 12'  
Number of groundwater monitoring wells installed 4  
Number of groundwater samples exceeding 910-1 7

-- Highest concentration of Benzene (µg/l) 34.5  
-- Highest concentration of Toluene (µg/l) 3.84  
-- Highest concentration of Ethylbenzene (µg/l) 247  
-- Highest concentration of Xylene (µg/l) 1380  
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?

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?

Based on dissolved phase petroleum hydrocarbon impacts beneath the site, groundwater monitoring will be conducted on a quarterly basis and will continue until BTEX concentrations remain below COGCC Table 910-1 groundwater standards for four consecutive quarters.

# 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 and groundwater may be removed and transported to a licensed facility. Transport and disposal records will be kept on file under usual and customary practice and are available upon request. Additional methodologies may be proposed in subsequent proposals.

## 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.

From January 30, 2019 to February 1, 2019, a COGAC™ injection event was performed in the vicinity of monitoring wells MW-01, and MW-02. A total of 32 injection points were advanced with injection intervals ranging from 12 to 18 feet below ground surface. A total of 4,800 pounds of COGAC™ was introduced to the subsurface intervals.

## 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 )
- Yes \_\_\_\_\_ 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.

Quarterly monitoring of groundwater will occur. Grab samples will be collected at 4 monitoring wells and will be analyzed for BTEX using EPA method 8260. Due to landowners crops in the area, hand-auguring and landowner permission is required to sample and may lead to inconsistent sampling frequency.

# 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.

THE LOCATION WILL BE RE-CONSTRUCTED AS A TANK BATTERY WITH THE APPROPRIATE ROAD-BASE MATERIAL.

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 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. \_\_\_\_\_

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

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). \_\_\_\_\_

Date of commencement of Site Investigation. 02/10/2009

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

## REMEDIAL ACTION DATES

Date of commencement of Remediation. 07/07/2011

Date of completion of Remediation. 12/01/2012

## SITE RECLAMATION DATES

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

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

## OPERATOR COMMENT

Attachments are in junction with document #402254963.  
Attachments include:  
- Lab report for sampling conducted on 09/28/2018 at TW-1 to TW-4 temporary MW.  
- EPA class V UIC permits related to injections of COGAC.  
- SDS for COGAC injected at the site as part of the remediation.

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: 01/30/2020 \_\_\_\_\_

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: 01/30/2020 \_\_\_\_\_

Remediation Project Number: 6559 \_\_\_\_\_

## COA Type

## Description

	changed from operator requested annual monitoring to requirement for quarterly reporting to be provided within 60 days of monitoring event.
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## 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.

<u>Att Doc Num</u>	<u>Name</u>
402299639	FORM 27-SUPPLEMENTAL-SUBMITTED
402299668	OTHER
402299669	OTHER
402299670	ANALYTICAL RESULTS

Total Attach: 4 Files

## General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
	received documentation as requested in last supplemental form 27.	01/30/2020

Total: 1 comment(s)