

State of Colorado Oil and Gas Conservation Commission

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Report taken by:

CHRIS CANFIELD

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13348

Initial Form 27 Document #: 402015162

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: LOCATION	Facility ID: 329863	API #: _____	County Name: WELD
Facility Name: MATHEWS 'B' UNIT-61N66W 14SWSE		Latitude: 40.047219	Longitude: -104.740268
		** correct Lat/Long if needed: Latitude: 40.046578	Longitude: -104.740144
QtrQtr: SWSE	Sec: 14	Twp: 1N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 467044	API #: _____	County Name: WELD
Facility Name: Mathews B Unit 1		Latitude: 40.046578	Longitude: -104.740144
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: SWSE	Sec: 14	Twp: 1N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Idle field

Is domestic water well within 1/4 mile? Yes

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:

- ☒ 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	GROUNDWATER	To be determined	Investigation pending
Yes	SOILS	76' x 123' x 32' bgs	Field-screening and 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.

Form 27 (doc #402015162) proposed to characterize the soils beneath the previously removed produced water vessel with a soil boring to 10' (SB-01). The soil sample collected from this boring at 7.5-10' identified soil contamination in excess of COGCC Table 910-1 allowable limits. F19is (doc #402125356) was submitted to report soil contamination to the state. Soil contamination was further characterized by installation of soil borings B1-B7 in December 2020. Excavation and onsite soil treatment was used to delineate and remediate soil impacts.

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 impacts were delineated with excavation and soil sampling in early 2021. Composite samples will be collected within the footprint of all contaminated and treatment stockpiles at a rate of one composite sample per 500 square feet. Stockpile footprint samples will be analyzed for Table 910 soil constituents of concern. A hollow stem auger will be utilized to advance monitoring wells in and around the former excavation area as needed to delineate groundwater impacts. Soils will be logged and field-screened using a photoionization detector (PID). If field-screening identifies suspected soil impacts, soil samples will be submitted as needed for characterization and delineation.

Proposed Groundwater Sampling

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

Approximately 11 monitoring wells will be installed at the site and sampled for Table 915 groundwater constituents of concern. Subsequent groundwater sampling events will analyze for BTEX plus any additional constituents of concern which exceed in the initial sampling event. Additional monitoring wells will be installed as needed to delineate groundwater impacts. One or more background groundwater samples may be collected to establish allowable limits for inorganic constituents of concern.

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):

To delineate soil SAR impacts identified in 2019, soil samples will be collected from beneath the location of the former produced water vessel at approximately 30' bgs and from outside the perimeter of the former excavation at approximately 10' bgs.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 76

Number of soil samples exceeding 910-1 7

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

Approximate areal extent (square feet) 9300

NA / ND

-- Highest concentration of TPH (mg/kg) 15170

-- Highest concentration of SAR 26.85

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 32

Groundwater

Number of groundwater samples collected 6

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 30'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 4

-- Highest concentration of Benzene (µg/l) 3390

-- Highest concentration of Toluene (µg/l) 6610

-- Highest concentration of Ethylbenzene (µg/l) 775

-- Highest concentration of Xylene (µg/l) 10100

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?

☐ 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 site investigation is needed to delineate SAR exceedances, to clear the footprint of impacted and treatment stockpiles, and to delineate groundwater impacts.

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 soils have been removed from the site. Approximately 1600 cubic yards of contaminated and potentially contaminated soils were treated onsite with oxidizers.

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.

Contaminated soil was excavated and treated onsite via ex-situ oxidation. Grab soil samples were collected from the base and sidewalls of the excavation to verify vertical and horizontal delineation of impacts. Impacted soils were excavated, stockpiled, and treated on site. Treatment stockpiles were composite sampled to verify compliance with COGCC Table 910-1 allowable limits for TPH and BTEX prior to backfilling. Contaminated groundwater was encountered at approximately 30' bgs during excavation activities, and activated carbon (COGAC) was applied to the base of the excavation before backfilling. Soil and groundwater sample locations and analytical data are attached. Groundwater monitoring wells will be installed as needed to delineate Table 915 groundwater constituents of concern. Additional in-situ treatments, such as COGAC, may be implemented to address groundwater contamination.

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 # _____
Yes _____ Excavate and onsite remediation
No _____ Land Treatment
No _____ Bioremediation (or enhanced bioremediation)
Yes _____ Chemical oxidation
No _____ Other _____

Groundwater Remediation Summary

No _____ Bioremediation (or enhanced bioremediation)
Yes _____ Chemical oxidation
No _____ Air sparge / Soil vapor extraction
Yes _____ Natural Attenuation
Yes _____ Other _____ Activated carbon (COGAC) _____

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.

Approximately 11 groundwater monitoring wells will be installed to delineate groundwater impacts. Groundwater samples will be collected and submitted for Table 915 groundwater constituents of concern. Groundwater will continue to be monitored on a quarterly basis until all constituents of concern are within COGCC Table 915 allowable limits for four consecutive quarters.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

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

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

☒ Other Remedial Investigation Update _____

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: _____

REMEDATION COMPLETION REPORT

REMEDATION 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.

Reclamation will be completed per the 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 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. 07/30/2019

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/29/2019

Date of commencement of Site Investigation. 04/29/2019

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 01/20/2021

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

This form has been submitted to update the COGCC on the status of the remedial investigation at this site, and to propose additional site characterization activities. Please find an excavation summary report and proposed monitoring well location map attached. Soil boring logs and other well installation data will be submitted with the next quarterly report.

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

Signed: Chris Rice

Title: Environmental Specialist

Submit Date: 04/23/2021

Email: Christopher.Rice@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: CHRIS CANFIELD

Date: 04/29/2021

Remediation Project Number: 13348

Condition of Approval

COA Type

Description

0 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

402668071	FORM 27-SUPPLEMENTAL-SUBMITTED
402669690	REMEDIAL PROGRESS REPORT

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)