

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>	Phone Numbers
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

- 901.e. Sensitive Area Determination
- 909.c.(1), Rule 905: Pit or PW vessel closure
- 909.c.(2), Rule 906: Spill/Release Remediation
- 909.c.(3), Rule 907.e.: Land treatment of oily waste
- 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure
- 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water
- Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b.
- Rule 909.e.(2)B.: Closure of remediation project
- Rule 906.c.: Director request
- 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 checked="" 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	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 may be 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. If needed to delineate soil impacts, 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 relevant surrounding borings and will be screened against protection of groundwater soil screening levels. See the attached Proposed Boring Location Map for details on proposed sample locations and analytes.

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, 1,3,5 trimethylbenzene, total dissolved solids, chloride, and sulfate. Future samples may not be analyzed for naphthalene as this constituent did not exceed in any of the groundwater samples collected thus far.

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 may be completed as temporary groundwater monitoring wells. Soil and groundwater samples will be collected as needed and analyzed for relevant Table 915 constituents of concern.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 22
Number of soil samples exceeding 910-1 9
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 11
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 6'
Number of groundwater monitoring wells installed 8
Number of groundwater samples exceeding 910-1 5

-- 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?

Five soil background samples were collected North, West, and South of the site outside of the pad disturbance and submitted for arsenic, barium, and selenium analysis. A grab background groundwater sample was collected to characterize local native concentrations of total dissolved solids. An additional groundwater background sample will be collected upgradient of soil and groundwater impacts.

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 may be completed as temporary groundwater monitoring wells. Soil and groundwater samples will be collected as needed and analyzed for relevant Table 915 constituents of concern. See the attached Proposed Boring Location Map for details on proposed sample locations and analytes.

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 water 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 may be 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 may be 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 the Table 915-1 constituents of concern listed in the Proposed Groundwater Sampling section. 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 _____ Groundwater and soil impact delineation progress report

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 has been submitted to update the COGCC on monitoring well installation and delineation efforts completed at the site and to propose a reduced analyte list for future samples. Please find the monitoring well installation soil data, boring logs, Q1 2021 groundwater data, and a proposed additional boring map attached. Additional delineation efforts are currently scheduled for April 27, 2021.

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: 04/22/2021 _____

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: 04/23/2021 _____

Remediation Project Number: 16598 _____

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

	Operator will adhere to Table 915-1 Cleanup Concentrations with sampling and analysis for the Organic Compounds in Groundwater (benzene, toluene, ethylbenzene, xylenes, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene) and the Groundwater Inorganic Parameters (total dissolved solids, chloride, sulfate). The request to use an abbreviated list of organic compounds in groundwater is not approved.
	Operator will submit a specific implementation schedule in accordance with Rule 913.d. At a minimum this must include planned actions to be taken in the next 3-6 months. The rule requires such a schedule be provided with each form 27 submittal.
	The full horizontal and vertical extent of impacts to soils have not been determined based on the data submitted with this document. In all spills/releases involving produced water, sampling and analysis must be done to determine the levels of the four soil suitability parameters as they are key indicators of the impacts and migration of impacts from the spill/release being investigated at this site. No analytical data has been provided for these contaminants of concern at this time. Operator shall sample the area(s) most likely to be impacted by produced water for inorganics and soil suitability parameters regardless of depth below ground surface. While several background samples were collected and analyzed for metals, there was no compilation and statistical evaluation. Footnote 11 allows soils no greater than 1.25 times the specific background levels at the site to be considered in compliance. One or more non-background sample results for arsenic and selenium are greater than the highest background sample concentration for that element. The request to analyze only a subset of metals for this site is not approved at this time.

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**

402661138	FORM 27-SUPPLEMENTAL-SUBMITTED
402668284	REMEDATION PROGRESS REPORT

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)