

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:

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: HIGHPOINT OPERATING CORPORATION	Operator No: 10071	Phone Numbers
Address: 1099 18TH ST STE 2300		
City: DENVER	State: CO Zip: 80202	
Contact Person: Rusty Frishmuth	Email: rfrishmuth@hpres.com	
		Phone: (303) 312-8718
		Mobile: (303) 518-2290

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 10938 Initial Form 27 Document #: 401490034

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

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: FLOWLINE	Facility ID: -99999	API #:	County Name: WELD
Facility Name: Flowline from wellhead	Latitude: 40.013342	Longitude: -104.516050	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWNE	Sec: 35	Twp: 1N	Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Agriculture and Reservoir
 Is domestic water well within 1/4 mile? No 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

Prospect Reservoir is located 475 feet to the Northeast.

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	Approximately 9,500 feet squared	Lab Analytical
No	SOILS	Removed via excavation	Lab 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.

While conducting flowline testing a leak was discovered and after investigation impacted soils were observed. The release was reported to the COGCC in a Form 19 (COGCC Document #401438797). Impacted soil was removed via excavation.

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):

Proposed Groundwater Sampling

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

On September 20, 2018, four additional monitoring wells (MW07 through MW10) were installed to facilitate groundwater sample collection and delineate the remaining hydrocarbon impact to groundwater at the site.

On September 26, 2018, LTE conducted groundwater monitoring activities at 10 groundwater monitoring wells (MW01 through MW10). Prior to groundwater sample collection, depth to groundwater and total well depth was measured using an electronic water-level indicator to calculate well-specific target purge volumes and relative groundwater elevations. Monitoring wells MW07 through MW10 were developed by purging at least 10 casing volumes prior to sample collection. Groundwater samples were collected via peristaltic pump into laboratory prepared 40-milliliter vials, placed on ice, then submitted with a completed chain-of-custody form to Summit Scientific of Denver, Colorado, for analysis of benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260B.

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 22

Number of soil samples exceeding 910-1 1

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

Approximate areal extent (square feet) 4000

NA / ND

-- Highest concentration of TPH (mg/kg) 539

NA Highest concentration of SAR

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 16

Groundwater

Number of groundwater samples collected 10

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 14'

Number of groundwater monitoring wells installed 10

Number of groundwater samples exceeding 910-1 1

-- Highest concentration of Benzene (µg/l) 1000

-- Highest concentration of Toluene (µg/l) 3.8

-- Highest concentration of Ethylbenzene (µg/l) 0

-- Highest concentration of Xylene (µg/l) 3000

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?

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.

Impacted soil above COGCC Table 910-1 standards was removed via excavation.

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.

Impacted soil above COGCC Table 910-1 standards was removed and taken to Buffalo Ridge landfill. Soils were screened with a PID (Photoionization Detector) throughout the excavation. Once PID screenings were below 200 ppm (parts per million), a sample was collected and submitted to a certified lab to ensure compliance with the COGCC Table 910-1 standards.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 1777

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Natural Attenuation

_____ Excavate and onsite remediation

_____ Other _____

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

Yes _____ 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.

Six groundwater monitoring wells were installed at the Site. The February and May 2018 groundwater sampling events indicated that additional points of compliance were needed to fully delineate the dissolved phase petroleum hydrocarbon impact to groundwater. Four additional point of compliance (POC) monitoring wells (MW07 through MW10) were installed on September 20, 2018. Groundwater analytical results of the September 2018 sampling event indicated that the POC monitoring wells successfully delineated the remaining lateral extent of groundwater impact at the site. Groundwater monitoring wells will be sampled quarterly for analysis of BTEX until laboratory analytical results demonstrate four consecutive quarters in compliance with the applicable COGCC Table 910-1 standards. The locations of monitoring wells are shown on the attached figures.

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? Yes

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

Impacted soil was excavated and disposed of at a licensed landfill. No beneficial re-use.

Volume of E&P Waste (solid) in cubic yards 1777

E&P waste (solid) description Impacted soil above COGCC Table 910-1

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Buffalo Ridge Landfill

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

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? Yes

Does the previous reply indicate consideration of background concentrations? No

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? No

Is additional groundwater monitoring to be conducted? Yes

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 excavation has been filled with clean and graded soil to match the adjacent topography. The facility is an active production facility and will be reseeded when the facility is decommissioned.

Is the described reclamation complete? Yes

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? No

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

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. 10/21/2017

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/23/2017

Date of commencement of Site Investigation. 11/03/2017

Date of completion of Site Investigation. 09/20/2018

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

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

Signed: Rusty Frishmuth

Title: EHS Manager

Submit Date: _____

Email: rfrishmuth@hpres.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: _____

Date: _____

Remediation Project Number: 10938

COA Type

Description

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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>
401810349	ANALYTICAL RESULTS
401810353	ANALYTICAL RESULTS
401810365	SITE MAP
401810374	GROUND WATER ELEVATION MAP
401810375	GROUND WATER SAMPLE LOCATION

Total Attach: 5 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)