

State of Colorado  
Oil and Gas Conservation Commission

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401492837  
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Report taken by:  
CARLOS LUJAN

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 INFORMATON

Name of Operator: <u>BLACK HILLS PLATEAU PRODUCTION LLC</u>	Operator No: <u>10150</u>	<b>Phone Numbers</b>
Address: <u>1515 WYNKOOP ST STE 500</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Chanse Brackett</u>	Email: <u>Chanse.Brackett@blackhillscorp.com</u>	
		Phone: <u>(970) 210-9370</u>
		Mobile: <u>( )</u>

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**

Remediation Project #: 10493 Initial Form 27 Document #: 401402390

**PURPOSE INFORMATION**

<input type="checkbox"/> 901.e. Sensitive Area Determination	<input 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 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 Facilites ( in accordance with Rule 909.c. )

Facility Type: <u>PIT</u>	Facility ID: <u>432419</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>Homer Deep Unit 9-11</u>	Latitude: <u>39.380511</u>	Longitude: <u>-108.338659</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNW</u>	Sec: <u>9</u>	Twp: <u>8S</u>	Range: <u>98W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

**SITE CONDITIONS**

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use Rangeland

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? No

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

Dry Fork lies approxmiately 500ft to the south

# 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
No	SOILS	No Impacts Present	field screening & confirmation sampling

## INITIAL ACTION SUMMARY

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

At the location(s) of the pit which are the furthest downgradient, lowest in elevation and/or have the potential for pooling of liquid, field-screening was performed and appropriate field equipment which may include, but is not limited to the following:  
 a PetroFlag unit,  
 a photoionization gas detector (PID),

Confirmation sample(s), Rule 905.b.(4), were collected and submitted for lab analysis and verification to confirm compliance with Rule 910 and Table 910-1 relative to the aforementioned field screen activity.

Other areas of the pit walls and floor were inspected for evidence of impacts via field screening and visual observation. Grab samples were collected, as appropriate, to demonstrate diligence and thoroughness of investigation activities performed as directed in Rule 905.b.(1). In addition, all field screening activities and results were documented and compiled into a summary report, table and/or map to be provided with notice of completion (NOC) reporting. Grab sample(s) were submitted for laboratory analysis to confirm field screening activities. Sub-liner sample analytes include considerations identified by Rule 910 and all contaminants of concern for soils from Table 910-1

## 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 ):

Confirmation sample(s), Rule 905.b.(4), were collected and submitted for lab analysis and verification to confirm compliance with Rule 910 and Table 910-1. Samples were collected from the pit side walls and bottom to validate field screening and provide confirmation analysis.

### Proposed Groundwater Sampling

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

It is not anticipated to collect groundwater samples at this time as no impacts are believed to have impacted groundwater

### Proposed Surface Water Sampling

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

None

## Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

Confirmation samples collected as outlined above indicated compliance with COGCC Table 910-1 with the exception of arsenic and inorganics. Black Hills is requesting an allowance for arsenic as the results within the pit are comparable to background concentrations, as well as inorganic exceedance (EC) as the pit will be backfilled and capped with a minimum of 3ft of native cover.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 5  
Number of soil samples exceeding 910-1 0  
Was the areal and vertical extent of soil contamination delineated? \_\_\_\_\_  
Approximate areal extent (square feet) 0

### NA / ND

NA Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 7.5  
BTEX > 910-1 No  
Vertical Extent > 910-1 (in feet) 0

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 59'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 910-1 0

\_\_\_\_\_ Highest concentration of Benzene (µg/l) \_\_\_\_\_  
\_\_\_\_\_ Highest concentration of Toluene (µg/l) \_\_\_\_\_  
\_\_\_\_\_ Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
\_\_\_\_\_ Highest concentration of Xylene (µg/l) \_\_\_\_\_  
\_\_\_\_\_ 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?

Yes, three (3) background samples were collected from an upgradient undisturbed sample location and analyzed for arsenic and inorganics.

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.

N/A - No impacts exceeding COGCC table 910-1

## 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.

None needed. Underlying soils on the pit bottom and side wall did not exceed COGCC Table 910-1 thresholds, with the exception of inorganic parameter (EC) and arsenic. Pit will be backfilled with drill cuttings that were treated and meet COGCC Table 910-1 (See REM# 9638 for cuttings beneficial reuse approval). All pit liner material was disposed of at West Garfield County Landfill during the week of 12/11/17 - 12/15/17.

## 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.

No impacts to groundwater

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:**  Quarterly  Semi-Annually  Annually  Other Closure Request

**Report Type:**  Groundwater Monitoring  Land Treatment Progress Report  O&M Report  
 Other NOC Report

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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? Yes

Do all soils meet Table 910-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? Yes

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? Yes

Is additional groundwater monitoring to be conducted? No

## 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 pit will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Material used to backfill the pit will consist of clean native soils from the surrounding pad, as well as cuttings that have undergone bioremediation treatment throughout 2016 & 2017 and satisfy constituents outlined in COGCC Table 910-1 standards (REM# 9638). Seeding of the disturbed area will be performed in accordance with its intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance

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? Yes

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

## 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). 10/10/2017

Date of commencement of Site Investigation. 12/14/2017

Date of completion of Site Investigation. 12/21/2017

### **REMEDIAL ACTION DATES**

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

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

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. 12/21/2017

Date of completion of Reclamation. 12/29/2017

**OPERATOR COMMENT**

please send to Carlos Lujan for review

Closure of the production pit and REM# 10493.

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

Signed: ` Kris Rowe \_\_\_\_\_

Title: Env. Consultant \_\_\_\_\_

Submit Date: ` 12/21/2017 \_\_\_\_\_

Email: krowe@hrlcomp.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: CARLOS LUJAN \_\_\_\_\_

Date: 12/21/2017 \_\_\_\_\_

Remediation Project Number: 10493 \_\_\_\_\_

**COA Type****Description**

COA Type	Description

**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**

401492837	FORM 27-SUPPLEMENTAL-SUBMITTED
401493249	ANALYTICAL RESULTS
401493250	ANALYTICAL RESULTS
401493251	ANALYTICAL RESULTS
401493252	SOIL SAMPLE LOCATION MAP

Total Attach: 5 Files

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

Environmental	REM #100493 will be closed. Pit Facility ID #432419 has been closed.	12/21/2017
Environmental	Based on review of information presented it appears that no further action is necessary at this time, and COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be significantly impacted, then further investigation and/or remediation activities may be required at the site. Reclamation shall be in accordance to the 1000 Series Rules.	12/21/2017

Total: 2 comment(s)