

**State of Colorado**  
**Energy & Carbon Management Commission**

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Receive Date:  
04/08/2024  
Report taken by:  
Chris Sanchez

**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 ECMC 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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

**OPERATOR INFORMATION**

Name of Operator: <u>P O &amp; G OPERATING LLC</u>	Operator No: <u>10634</u>	<b>Phone Numbers</b>
Address: <u>5847 SAN FELIPE SUITE 3200</u>		
City: <u>HOUSTON</u>	State: <u>TX</u>	Zip: <u>77057</u>
Contact Person: <u>Rick Eggleston</u>	Email: <u>rick_eggleston@pogresources.com</u>	
		Phone: <u>(346) 220-8355</u>
		Mobile: <u>(720) 641-8661</u>

**PROJECT, PURPOSE & SITE INFORMATION**

**PROJECT INFORMATION**

Remediation Project #: 16019 Initial Form 27 Document #: 402501308

**PURPOSE INFORMATION**

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: \_\_\_\_\_

**SITE INFORMATION**

Yes  Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>324938</u>	API #: _____	County Name: <u>KIT CARSON</u>
Facility Name: <u>LOWE-611S46W 14NWNE</u>	Latitude: <u>39.097350</u>	Longitude: <u>-102.528140</u>	
	** correct Lat/Long if needed: Latitude: <u>39.098743</u>	Longitude: <u>-102.521557</u>	
QtrQtr: <u>NWNE</u>	Sec: <u>14</u>	Twp: <u>11S</u>	Range: <u>46W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>

Facility Type: <u>LOCATION</u>	Facility ID: <u>463250</u>	API #: _____	County Name: _____
Facility Name: _____	Latitude: _____	Longitude: _____	
	** correct Lat/Long if needed: Latitude: <u>39.098743</u>	Longitude: <u>-102.521557</u>	
QtrQtr: _____	Sec: _____	Twp: _____	Range: _____ Meridian: _____ Sensitive Area? <u>No</u>

## SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Rangeland

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

Depth to groundwater is unknown

## 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	SOILS	See Attached Data	Soil Samples/Lab 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.

Site inspection conducted after Plug & Abandon operations. It was discovered that the catchpan underneath the load line leaked and stained soils were observed on location. Equipment has been removed. Soil samples were obtained.

### 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 ):

On October 23, 2019, Four (4) soil samples were taken and tested. PLTB-1, PLTB-2 exceeded the TPH COGCC standard 500 mg/kg. PLTB-4 exceeded the PH COGCC standard of 6-9 mg/kg

#### Proposed Groundwater Sampling

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

#### 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 3  
Number of soil samples exceeding 915-1 2  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 0

### NA / ND

-- Highest concentration of TPH (mg/kg) 578  
NA Highest concentration of SAR           
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 0

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet)           
Number of groundwater monitoring wells installed           
Number of groundwater samples exceeding 915-1 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 915-1  
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.

As the laboratory analytical results showed, soil samples exceeded the compliance with COGCC standards for samples PLTB-1; PLTB-2; PLTB-4. PO&G proposes to conduct an in-situ bioremediation of the impacted soil for TPH and not remove any soil.

### 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.

As all samples are in compliance with COGCC table 910-1 allowable limits except for PLTB-1 & PLTB-2 TVPH & TEPH; PLTB-4 PH. PO&G proposes to conduct an in-situ bioremediation of the impacted soil. By utilizing the soils natural properties along with applying Revive O to help speed up the process, that the high value of the TEPH, TVPH, PH will be able to drop below the allowable concentration of 500 mg/kg and 6-9 mg/kg given enough time. Revive O is a biodegradable dispersant that does not contain bacteria, but rather changes the wettability allowing the hydrocarbons to be broken down easier. The plan is to aerate the soil and apply Revive O after given approval from the COGCC. PO&G proposes that the affected areas be tested every 6 months to check the status of the remediation.

## Soil Remediation Summary

In Situ

Ex Situ

Yes  Bioremediation ( or enhanced bioremediation )

Excavate and offsite disposal

Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_

Natural Attenuation

Excavate and onsite remediation

Other \_\_\_\_\_

Land Treatment

Bioremediation (or enhanced bioremediation)

Chemical oxidation

Other \_\_\_\_\_

## Groundwater Remediation Summary

No  Bioremediation ( or enhanced bioremediation )

No  Chemical oxidation

No  Air sparge / Soil vapor extraction

No  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.

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

### Approved Reporting Schedule:

Quarterly  Semi-Annually  Annually  Other

### Request Alternative Reporting Schedule:

Semi-Annually  Annually  Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

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

## Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Operator anticipates the remaining cost for this project to be: \$ \_\_\_\_\_

## 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 \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_

# REMEDIATION COMPLETION REPORT

## REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

If YES:

- Compliant with Rule 913.h.(1).
- Compliant with Rule 913.h.(2).
- Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? \_\_\_\_\_

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the ECMC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## 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.

As all samples are in compliance with COGCC table 910-1 allowable limits except for PLTB-1 & PLTB-2 TVPH & TEPH; PLTB-4 PH. PO&G proposes to conduct an in-situ bioremediation of the impacted soil. By utilizing the soils natural properties along with applying Revive O to help speed up the process, that the high value of the TEPH, TVPH, PH will be able to drop below the allowable concentration of 500 mg/kg and 6-9 mg/kg given enough time. Revive O is a biodegradable dispersant that does not contain bacteria, but rather changes the wettability allowing the hydrocarbons to be broken down easier. The plan is to aerate the soil and apply Revive O after given approval from the COGCC. PO&G proposes that the affected areas be tested every 6 months to check the status of the remediation.

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 provide the seed mix? \_\_\_\_\_

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. 09/05/2019

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/24/2019

Proposed site investigation commencement. 10/23/2019

Proposed completion of site investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/24/2022

Proposed date of completion of Remediation. \_\_\_\_\_

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

01/13/2022 Update for the Lowe Tank Battery. Samples PTLB 1-2 do not meet all allowable limits in accordance with the COGCC table 915-1. P.O.&G. proposes to aerate the soil and apply another round of Revive-O on 01/24/2022 and retest 180 days from the date of application. P.O.&G. will submit analytical results on supplemental form 27.

**OPERATOR COMMENT**

All samples are under contaminants of concern cleanup concentrations except for PLTB-3. It is over on a SAR (25. The location will be sampled again in six months.

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

Signed: Rick Eggleston

Title: EHS&R Project Coordinator

Submit Date: 04/08/2024

Email: rick\_eggleston@pogresources.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Chris Sanchez

Date: 05/07/2024

Remediation Project Number: 16019

**COA Type****Description**

	Arsenic concentrations in confirmation soil samples exceed the Table 915-1 Residential Soil Screening Level Concentrations and are greater than 1.25 times the arsenic concentration in the background sample. Only site specific background determinations are reviewed to determine if Arsenic concentrations are naturally occurring.
	Operator did not provide a map for sample locations, on the next Form 27 submission the Operator shall provide a map of all samples locations along with Photo Documentation of sample locations. In addition, Operator shall provide all Analytical Data/Sample Data in a table format for review in the next supplemental Form 27
	Operator will continue quarterly reporting until the site investigation is complete and Full Table 915-1 standards are met within the remediation area
	Operator shall update the implementation schedule in accordance with Rule 913.d on the subsequent Supplemental Form 27. Current dates are in the past and will need to be updated on the Supplemental Form 27 Due in 90 Days.
	Operator shall add the Spill ID to, (Site Information, Facility Type), on the next Supplemental Form 27.
	Per Rule 915.f. For sites that are subject to an open Form 19 or Form 27 as of January 15, 2021, Operators may seek the Director's permission to comply with the version of Table 910-1 that was previously in effect, if Remediation is completed by January 15, 2022. If Remediation at a site subject to an open Form 19 or Form 27 is not completed by January 15, 2022, then the Operator will comply with the current version of Table 915-1.  Operator shall collect at a minimum one Confirmation Soil Sample for Full Table 915-1 standards within the Remediation Area before final closure can be granted.
6 COAs	

**ATTACHMENT 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**

403746084	FORM 27-SUPPLEMENTAL-SUBMITTED
403746170	ANALYTICAL RESULTS
403746171	ANALYTICAL RESULTS
403746179	ANALYTICAL RESULTS

Total Attach: 4 Files

**General Comments**

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

Total: 0 comment(s)