

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
402501308

Receive Date:  
\_\_\_\_\_

Report taken by:  
\_\_\_\_\_

Site Investigation and Remediation Workplan (Initial 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: P O & G OPERATING LLC	Operator No: 10634	<b>Phone Numbers</b>
Address: 5847 SAN FELIPE SUITE 3200		Phone: (713) 5898196
City: HOUSTON State: TX Zip: 77057		Mobile: ( )
Contact Person: Chris Woll	Email: christopher_woll@pogresources.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: \_\_\_\_\_ Initial Form 27 Document #: 402501308

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 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

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

Facility Type: LOCATION	Facility ID: 324938	API #: _____	County Name: KIT CARSON
Facility Name: LOWE-611S46W 14NWNE	Latitude: 39.097350	Longitude: -102.528140	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 14	Twp: 11S	Range: 46W Meridian: 6 Sensitive Area? No
Facility Type: LOCATION	Facility ID: 463250	API #: _____	County Name: _____
Facility Name: _____	Latitude: _____	Longitude: _____	
** correct Lat/Long if needed: Latitude: 39.098743		Longitude: -102.521557	
QtrQtr: _____	Sec: _____	Twp: _____	Range: _____ Meridian: _____ Sensitive Area? No

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:

- |   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input 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	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 4  
Number of soil samples exceeding 910-1 3  
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) 69900  
NA Highest concentration of SAR           
BTEX > 910-1 No  
Vertical Extent > 910-1 (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 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?

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

## 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.

## 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.

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 )  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Other \_\_\_\_\_

Excavate and offsite disposal  
\_\_\_\_\_  
If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
Excavate and onsite remediation  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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.

# REMEDATION 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? 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: \_\_\_\_\_

## 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 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. \_\_\_\_\_

Actual Spill or Release date, if known. 09/05/2019

## **SITE INVESTIGATION DATES**

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

Date of commencement of Site Investigation. 10/23/2019

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**

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

Signed: Wendy Colota \_\_\_\_\_

Title: Regulatory Associate \_\_\_\_\_

Submit Date: \_\_\_\_\_

Email: wendy\_colotta@pogresources.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: \_\_\_\_\_

**COA Type****Description**

	Operator shall begin remediation as described within 14 days of approval of this Form 27.
	Operator shall attach raw analytical results from laboratory for every sampling event along with a summary table of results.
	Comply with COGCC Rule 1002.f. Stormwater Management throughout the duration of the project. a. Perform and document stormwater inspections after any storm event that results in runoff. b. Verify that stormwater controls are properly maintained or replaced as needed throughout the duration of the project
	Operator shall submit Form 27 Supplemental to document application of bioremediation agent. Operator shall submit Form 27 within 10 days of application of remediation agent.  Compliance sampling must be conducted 180 days after application of bioremediation agent. Operator shall submit Form 27 with analytical results within 21 days of compliance sampling.

**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**

402507817	REMEDIAL ACTION PLAN
402508130	MAP
402508131	ANALYTICAL RESULTS

Total Attach: 3 Files

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

Environmental	Operator is advised to take all necessary measures to ensure that sampling occurs within approved remediation timeline. Operator should utilize calendar reminders or other measures to remember remediation compliance dates. Long term remediation projects often last longer than employee tenure at operator. Operator is advised that termination/resignation of employees currently working on remediation project DOES NOT provide relief from remediation obligations or COGCC enforcement.	10/15/2020
Environmental	-Changed "multiple facilities" from yes to no. This form 27 is only for one facility. -Changed "sensitive area" from yes to no. This area is not considered to be a sensitive area.	10/15/2020

Total: 2 comment(s)