

# 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>KERR MCGEE OIL &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b> Phone: <u>(970) 336-3500</u> Mobile: <u>(970) 515-1161</u>
Address: <u>P O BOX 173779</u>		
City: <u>DENVER</u>	State: <u>CO</u> Zip: <u>80217-3779</u>	
Contact Person: <u>Phillip Hamlin</u>	Email: <u>Phillip_Hamlin@oxy.com</u>	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 13556 Initial Form 27 Document #: 402036700

#### PURPOSE INFORMATION

- |  |  |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination                                       | <input checked="" 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

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

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>463434</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>		Latitude: <u>40.112662</u>	Longitude: <u>-104.785971</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SENW</u>	Sec: <u>28</u>	Twp: <u>2N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

#### SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Crop Land

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

A building is located approximately 610 feet north-northwest of the release location. A livestock holding pen is located approximately 1,065 feet north of the release location.

# 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	GROUNDWATER	See attached data	Groundwater sampling and laboratory analysis
Yes	SOILS	44' (E-W) x 40' (N-S) x 7.5' bgs	Excavation, soil sampling, and 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.

On March 20, 2019, historical impacts were discovered during abandonment activities at the Coburn W 28-3JI production facility, and excavation activities were initiated. Groundwater was encountered in the excavation area at approximately 7.5 feet below ground surface (bgs). The COGCC issued Spill/Release Point ID 463434 for this release.

## 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 ):

Soil samples were collected as described in the Initial Form 27 (COGCC Document No. 402036700). Based on the data presented, impacted soils in the excavation area were remediated to be in full compliance with the COGCC Table 910-1 standards.

### Proposed Groundwater Sampling

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

Groundwater was encountered in the excavation area at approximately 7.5 feet bgs. Sample GW01 was collected from the excavation and submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX). Sample GW02 was subsequently collected following the removal of approximately 750 barrels of groundwater from the excavation, and submitted for laboratory analysis of BTEX. Groundwater analytical results indicated that the benzene concentrations in samples GW01 and GW02 exceeded the COGCC Table 910-1 standard. The excavation groundwater sample locations are illustrated on Figure 1; groundwater analytical data is presented in Table 1. Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the potentially remaining residual dissolved-phase groundwater impacts. Subsequent to installation, groundwater samples will be collected from the monitoring wells on a quarterly basis and submitted for laboratory analysis of BTEX.

### 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 ):

No additional assessment or remediation activities have been conducted at this site since the Initial Form 27 was submitted to the COGCC on May 10, 2019 (Document No. 402036700). Site access and monitoring well placements are currently being considered. As such, no additional groundwater sampling results are provided in this document.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 14  
Number of soil samples exceeding 910-1 4  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 1365

### NA / ND

-- Highest concentration of TPH (mg/kg) 2382  
NA Highest concentration of SAR         
BTEX > 910-1 Yes  
Vertical Extent > 910-1 (in feet) 7

### Groundwater

Number of groundwater samples collected 2  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 7'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 910-1 2

-- Highest concentration of Benzene (µg/l) 88.8  
ND Highest concentration of Toluene (µg/l)         
-- Highest concentration of Ethylbenzene (µg/l) 53.8  
-- Highest concentration of Xylene (µg/l) 28.5  
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?

☐ 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?

Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the potentially remaining residual dissolved-phase groundwater impacts. Subsequent to installation, the temporary groundwater monitoring wells will be sampled on a quarterly basis and submitted for laboratory analysis of BTEX until concentrations remain in full compliance with the COGCC Table 910-1 standards for four consecutive quarters.

# 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.

Between March 20 and 26, 2019, approximately 590 cubic yards of impacted material were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Approximately 750 barrels of impacted groundwater were removed from the excavation area via vacuum truck and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

## 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.

Laboratory analytical results indicate that impacted soils in the excavation area have been remediated to be in full compliance with the COGCC Table 910-1 standards. Prior to backfilling, approximately 165 pounds of OxPure® activated carbon were added to the groundwater within the excavation area to mitigate remaining hydrocarbon impacts to groundwater. Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the potentially remaining residual dissolved-phase groundwater impacts. Subsequent to installation, the temporary groundwater monitoring wells will be sampled on a quarterly basis and submitted for laboratory analysis of BTEX until concentrations remain in full compliance with the COGCC Table 910-1 standards for four consecutive quarters. Following groundwater monitoring well installation and initiation of quarterly groundwater sampling activities, additional remediation measures may be evaluated, as necessary, to address potential remaining groundwater impacts. Estimated time to attain NFA is TBD based on the groundwater concentrations, the extent of impacted groundwater, and the efficacy of the selected remedial technologies.

## Soil Remediation Summary

☐ In Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

☒ Ex Situ

Yes \_\_\_\_\_ Excavate and offsite disposal  
If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 590  
Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
No \_\_\_\_\_ Excavate and onsite remediation  
\_\_\_\_\_ 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  
Yes \_\_\_\_\_ Natural Attenuation  
Yes \_\_\_\_\_ Other \_\_\_\_\_ Groundwater removal, OxPure®  
activated carbon application

## 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.

Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the potentially remaining residual dissolved-phase groundwater impacts. Site access and monitoring well placements are currently being considered. Subsequent to installation, the temporary groundwater monitoring wells will be sampled on a quarterly basis and submitted for laboratory analysis of BTEX until concentrations remain in full compliance with the COGCC Table 910-1 standards for four consecutive quarters. The excavation groundwater sample locations are illustrated on Figure 1, and groundwater analytical data is presented in Table 1. Subsequent to installation, a figure illustrating the locations of the surveyed temporary groundwater monitoring wells will be provided in a Form 27-Supplemental Update.

## REMEDATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☒ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other \_\_\_\_\_

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

☒ Other Project status update \_\_\_\_\_

### 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:

Approximately 750 barrels of hydrocarbon-impacted groundwater were transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 590

E&P waste (solid) description \_\_\_\_\_ Hydrocarbon-impacted soil

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

Non-COGCC Disposal Facility: Buffalo Ridge Landfill - Keenesburg, Colorado

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_ 750

E&P waste (liquid) description \_\_\_\_\_ Hydrocarbon-impacted groundwater

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_ 434766

Non-COGCC Disposal Facility: \_\_\_\_\_

## REMEDATION COMPLETION REPORT

### REMEDATION 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 site has been restored to its pre-release grade. Kerr-McGee will conduct reclamation activities in accordance with COGCC 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. 03/21/2019

Actual Spill or Release date, if known. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/20/2019

Date of commencement of Site Investigation. 03/20/2019

Date of completion of Site Investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Date of commencement of Remediation. 03/20/2019

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

### SITE RECLAMATION DATES

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

### OPERATOR COMMENT

Form 27-Supplemental Updates will be submitted to the COGCC on a quarterly basis until the extent of groundwater impacts has been fully delineated.

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

Signed: Phillip Hamlin

Title: Senior Environmental Rep

Submit Date: 09/28/2020

Email: Phillip\_Hamlin@oxy.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: 09/28/2020

Remediation Project Number: 13556

### COA Type

### Description

	Submit reports of site investigation and progress of remediation including results of sampling and analysis at a minimum on a quarterly basis until further site investigation activities show that adequate points of compliance with respect to groundwater impacts have been established.
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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.

### Att Doc Num

### Name

402484859	FORM 27-SUPPLEMENTAL-SUBMITTED
402484891	GROUND WATER SAMPLE LOCATION
402484894	ANALYTICAL RESULTS

Total Attach: 3 Files

### General Comments

### User Group

### Comment

### Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)