

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>
Address: <u>P O BOX 173779</u>		Phone: <u>(970) 336-3500</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>(970) 515-1161</u>
Contact Person: <u>Phillip Hamlin</u>	Email: <u>Phillip_Hamlin@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 13673 Initial Form 27 Document #: 402058636

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

Facility Type: <u>LOCATION</u>	Facility ID: <u>336361</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>HSR-LOUIS-63N67W 30NWSE</u>	Latitude: <u>40.195700</u>	Longitude: <u>-104.930850</u>	
** correct Lat/Long if needed: Latitude: <u>40.194555</u>		Longitude: <u>-104.932359</u>	
QtrQtr: <u>NWSE</u> Sec: <u>30</u> Twp: <u>3N</u> Range: <u>67W</u> Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>465338</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>	Latitude: <u>40.194533</u>	Longitude: <u>-104.932345</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u> Sec: <u>30</u> Twp: <u>3N</u> Range: <u>67W</u> Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

**SITE CONDITIONS**

General soil type - USCS Classifications SM 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**

Surface water is located approximately 970 feet northwest of the release location.

# 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
Yes	GROUNDWATER	See attached data	Groundwater sampling and laboratory analysis
Yes	SOILS	42' (N-S) x 35' (E-W) x 15' 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.

During a routine inspection, a release from a corroded dump line was discovered at the HSR-Louis 10-30 production facility. The facility was shut-in, associated infrastructure was removed, and excavation activities were initiated. Groundwater was encountered in the excavation at approximately 15 feet below ground surface (bgs). The COGCC issued Spill/Release Point ID 465338 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 a previous Form 27-Supplemental update (COGCC Document No. 402137055). 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 ):

Between January 9 and February 26, 2020, seven (7) temporary groundwater monitoring wells (BH01 - BH07) were installed to further assess the extent of groundwater impacts. Quarterly groundwater monitoring was initiated on January 20, 2020, and is ongoing. Groundwater samples are collected from the temporary monitoring wells on a quarterly basis and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, 1,2,4- and 1,3,5-trimethylbenzene (TMB), chloride, sulfate, and total dissolved solids (TDS). Groundwater analytical data is presented in Table 1, and the groundwater sample locations are illustrated on Figure 1. The laboratory analytical report for the previous two quarters of groundwater monitoring are provided as Attachment A.

### 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 10

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

Approximate areal extent (square feet) 1215

### NA / ND

-- Highest concentration of TPH (mg/kg) 11630

-- Highest concentration of SAR 56.65

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 15

### Groundwater

Number of groundwater samples collected 34

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 15

Number of groundwater monitoring wells installed 7

Number of groundwater samples exceeding 910-1 6

-- Highest concentration of Benzene (µg/l) 2280

-- Highest concentration of Toluene (µg/l) 2780

-- Highest concentration of Ethylbenzene (µg/l) 135

-- Highest concentration of Xylene (µg/l) 1160

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?

Hydrocarbon-impacted groundwater may remain at the site. The 7 temporary groundwater monitoring wells (BH01 - BH07) will continue to be sampled on a quarterly basis and submitted for laboratory analysis of BTEX, naphthalene, TMB, chloride, sulfate, and TDS until concentrations remain in full compliance with the COGCC Table 915-1 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 June 4 and 11, 2019, approximately 540 cubic yards of impacted material were excavated and transported to the Front Range Landfill in Erie, Colorado for disposal. Approximately 40 barrels of impacted groundwater were removed from the excavation 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 110 pounds of OxPure® activated carbon were added to the excavation to mitigate remaining hydrocarbon impacts in groundwater. Quarterly groundwater monitoring is ongoing and will be continued until concentrations remain in full compliance with the COGCC Table 915-1 standards for four consecutive quarters. Additional remedial activities 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

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 540

\_\_\_\_\_ 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

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.

Between January 9, 2020 and February 26, 2020, 7 temporary groundwater monitoring wells (BH01 - BH07) were installed to further assess the extent of groundwater impacts. The temporary groundwater monitoring wells will continue to be sampled on a quarterly basis and submitted for laboratory analysis of BTEX, naphthalene, TMB, chloride, sulfate, and TDS until concentrations remain in full compliance with the COGCC Table 915-1 standards for four consecutive quarters. Historically non-compliant monitoring well BH02 contained insufficient groundwater volume during the 4Q2020 and 1Q2021 monitoring events, and could not be sampled. Upgradient and historically compliant groundwater monitoring well BH04 was selected from the First Quarter 2021 monitoring event as a background location for comparison to inorganic groundwater standards in Table 915-1. Due to low recharge and insufficient sample volumes, inorganic constituents could not be analyzed for monitoring wells BH03 and BH06 during the 1Q2021 monitoring event. Kerr-McGee will continue to evaluate points-of-compliance (POC) for Table 915-1 standards on a quarterly basis, based on the site-specific local background concentrations. Groundwater sample locations and a potentiometric surface contour map for the First Quarter 2021 are illustrated on Figure 1. Well completion logs for the temporary monitoring wells are provided as Attachment B.

# 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:

Approximately 40 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 540

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

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

Non-COGCC Disposal Facility: Front Range Landfill - Erie, Colorado

Volume of E&P Waste (liquid) in barrels 40

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

COGCC Disposal Facility ID #, if applicable: 434766

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 site has been restored to its pre-release grade. Kerr-McGee's production facility has been rebuilt and remains on-site.

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. 06/10/2019

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

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/04/2019

Date of commencement of Site Investigation. 06/04/2019

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

### REMEDIAL ACTION DATES

Date of commencement of Remediation. 06/04/2019

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

### SITE RECLAMATION DATES

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

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

### OPERATOR COMMENT

Based on the previously approved reporting frequency, Kerr-McGee will continue to provide annual Form 27-Supplemental updates for this site.

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: 03/22/2021

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: 03/22/2021

Remediation Project Number: 13673

### COA Type

### Description

	Submit reports of site investigation and progress of remediation including results of quarterly groundwater sampling and analysis on an annual basis or more often until the remediation project is closed.
	This report serves as adequate project summary and status update required to be submitted prior to April 15, 2021 as per rule 913.e.(2).

### 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>
402625076	FORM 27-SUPPLEMENTAL-SUBMITTED
402625110	LOGS
402625113	ANALYTICAL RESULTS
402625115	ANALYTICAL RESULTS
402625134	GROUND WATER ELEVATION MAP

Total Attach: 5 Files

### General Comments

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

Total: 0 comment(s)