

State of Colorado  
Oil and Gas Conservation Commission

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



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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>
Contact Person: <u>Phil Hamlin</u>	Email: <u>Phillip_Hamlin@oxy.com</u>	Mobile: <u>( )</u>

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 12024 Initial Form 27 Document #: 401814675

**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>456515</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>	Latitude: <u>40.262042</u>	Longitude: <u>-104.905178</u>	
	** correct Lat/Long if needed: Latitude: <u>40.262042</u>	Longitude: <u>-104.905178</u>	
QtrQtr: <u>NENE</u>	Sec: <u>5</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 SP Most Sensitive Adjacent Land Use Cropland

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**

# 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 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	GROUNDWATER	See attached data	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	45' (N-S) x 29' (E-W) x 15' bgs	Soil Samples/Laboratory Analytical Results

## 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 August 3, 2018, while rebuilding the WCR Properties 41-5/Spaur 1-5 tank battery, historical impacts were discovered beneath the separators. Based on the groundwater analytical results from sample GW01, a release was reported to the COGCC, and a Form 19 Initial with Supplemental (COGCC Document No. 401726857) was submitted on August, 8, 2018.

## 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 ):

Between August 3, 2018 and August 9, 2018, impacted soils were excavated. Soil grab samples were collected from each wall of the separator excavation. The soil samples were field screened for volatile organic compounds using a photoionization detector (PID). All soil samples were submitted to Origins Laboratory in Denver, Colorado, for analysis of benzene, toluene, ethylbenzene, and xylenes (BTEX), total petroleum hydrocarbons (TPH) - gasoline range organics (GRO) by USEPA Method 8260C, TPH - diesel range organics and residual range organics (DRO and RRO, respectively) by USEPA Method 8015, electrical conductivity (EC), and ph. Laboratory analytical results for all soil samples indicate that BTEX, TPH, EC, and pH levels are in full compliance with COGCC Table 910-1 allowable concentrations.

### Proposed Groundwater Sampling

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

On August 6, 2018, one groundwater sample (GW01) was collected from the excavation and submitted to Origins Laboratory in Denver, Colorado, for analysis of BTEX by USEPA 8260. The laboratory analytical results indicate that sample GW01 exceeded the COGCC Table 910-1 allowable levels for benzene at 2010 ug/L. On August 7, 2018 an additional groundwater sample (GW02) was collected from the excavation and submitted to Origins Laboratory in Denver, CO for analysis of BTEX by USEPA 8260. The laboratory analytical results indicate that sample GW02 exceeded the COGCC Table 910-1 allowable levels for benzene at 5.2 ug/L.

### 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 9  
Number of soil samples exceeding 910-1 2  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 1305

### NA / ND

-- Highest concentration of TPH (mg/kg) 4678  
NA Highest concentration of SAR           
BTEX > 910-1 Yes  
Vertical Extent > 910-1 (in feet) 15

### Groundwater

Number of groundwater samples collected 55  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 12'  
Number of groundwater monitoring wells installed 11  
Number of groundwater samples exceeding 910-1 13

-- Highest concentration of Benzene (µg/l) 3410  
-- Highest concentration of Toluene (µg/l) 1.85  
-- Highest concentration of Ethylbenzene (µg/l) 747  
-- Highest concentration of Xylene (µg/l) 3020  
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?

# 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.

Approximately 460 cubic yards of soil were taken to the Front Range Regional Landfill in Erie, Colorado and approximately 120 cubic yards were taken to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. Minimal groundwater was encountered in the excavation and, therefore, not removed.

## 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.

While backfilling the excavation, 200 pounds of COGAC™, a carbon-based groundwater remediation product, was applied to the clean backfill to mitigate remaining hydrocarbon impacts in groundwater. The safety data sheet for COGAC™ is provided in Attachment B.

## Soil Remediation Summary

In Situ

Ex Situ

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

Yes \_\_\_\_\_ Excavate and offsite disposal

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 580

\_\_\_\_\_ 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

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

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

No \_\_\_\_\_ Air sparge / Soil vapor extraction

Yes \_\_\_\_\_ Natural Attenuation

Yes \_\_\_\_\_ Other Chemically Oxygenated  
Granular Activated Carbon  
(COGAC™) 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.

In November of 2018 and March of 2019, eight groundwater monitoring wells (MW01 - MW08) were installed. In October of 2019, three additional groundwater monitoring wells (MW09 - MW11) were installed in order to establish a downgradient point of compliance. Groundwater monitoring will be conducted on a quarterly basis. Collected groundwater samples will be submitted for laboratory analysis of BTEX by USEPA Method 8260. Quarterly groundwater monitoring at the location will continue until BTEX concentrations remain below COGCC Table 910-1 groundwater standards for four consecutive quarters. Groundwater elevation contour maps from the February 6 and 21, 2020 and May 11, 2020 sampling events are provided as Figures 1 and 2. Groundwater sample analytical results are summarized in Table 1, and the laboratory reports are provided in Attachment A.

# 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 120 cubic yards of petroleum hydrocarbon impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 580

E&P waste (solid) description \_\_\_\_\_ Petroleum hydrocarbon impacted soil

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

Non-COGCC Disposal Facility: Front Range Landfill, Erie, CO and  
Kerr-McGee Land Treatment Facility  
in Weld County, CO

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_ 0

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? 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 was restored to its pre-release grade. The Kerr-McGee production facility remains at this 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. 08/07/2018

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

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/03/2018

Date of commencement of Site Investigation. 08/03/2018

Date of completion of Site Investigation. 11/01/2019

## REMEDIAL ACTION DATES

Date of commencement of Remediation. 08/03/2018

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

## SITE RECLAMATION DATES

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

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

## OPERATOR COMMENT

This form serves as an annual update to the remediation activities performed at this site under Remediation Project # 12024. Groundwater monitoring will be conducted on a quarterly basis and will continue until BTEX concentrations remain below COGCC Table 910-1 groundwater standards for four consecutive quarters. Subsequent Form 27 Supplemental documents will be submitted on an annual basis as a groundwater monitoring report update.

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

Signed: Phil Hamlin

Title: Sr. Env. Rep.

Submit Date: 07/29/2020

Email: Phillip\_Hamplin@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: 07/30/2020

Remediation Project Number: 12024

## COA Type

## Description

	Submit reports of site investigation and progress of remediation including results of sampling and analysis on an annual basis or more often until remediation is closed.
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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

402447871	FORM 27-SUPPLEMENTAL-SUBMITTED
402455687	GROUND WATER ELEVATION MAP
402455688	GROUND WATER ELEVATION MAP
402455689	ANALYTICAL RESULTS
402455690	ANALYTICAL RESULTS
402455691	OTHER

Total Attach: 6 Files

## General Comments

## User Group

## Comment

## Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)