

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 & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
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>Phillip Hamlin</u>	Email: <u>Phil_Hamlin@oxy.com</u>	Mobile: <u>(970) 515-1161</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

None

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	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 removed, and excavation activities were initiated. Groundwater was encountered in the excavation area at approximately 15 feet below ground surface (bgs). The COGCC has 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 the previous Form 27-Supplemental Update. Based on the data presented, impacted soils in the excavation area were remediated to be in full compliance with COGCC standards.

Proposed Groundwater Sampling

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

A groundwater sample (GW01) was collected from the excavation area, as described in the previous Form 27-Supplemental Update. Groundwater analytical results indicated that the benzene and toluene concentrations in sample GW01 were out of compliance with the COGCC standards. The excavation groundwater sample location is illustrated on Figure 1, and groundwater analytical data is presented in Table 1. Temporary groundwater monitoring wells will be installed at the site to further assess the extent of groundwater impacts and/or for remediation purposes. Subsequent to installation, groundwater samples will be collected from the temporary monitoring wells on a quarterly basis and submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (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 previous Form 27-Supplemental Update was submitted to the COGCC on August 19, 2019 (COGCC Document No. 402137055), due to pending landowner access approval of temporary monitoring well installation activities. As such, no additional groundwater sampling results are provided in this document.

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 1

Was extent of groundwater contaminated delineated? No

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

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 1

-- 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

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 remains at the site. Temporary monitoring wells will be installed to further assess the extent of groundwater impacts and/or for remediation purposes. 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 COGCC 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 area via vacuum truck and transported to the Kerr-McGee Aggregate Recycle Facility for treatment.

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 data indicate that impacted soils in the excavation area have been remediated to be in full compliance with COGCC standards. Prior to backfilling, approximately 110 pounds of OxPure® activated carbon were added to the groundwater within the excavation area to mitigate remaining hydrocarbon impacts in groundwater. Temporary groundwater monitoring wells are proposed to further assess the extent of groundwater impacts and/or for remediation purposes. 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 COGCC standards for four consecutive quarters. Following groundwater monitoring well installation and initiation of quarterly groundwater sampling activities, additional remediation measures will be evaluated, as necessary, to address 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) _____ 540
Name of Licensed Disposal Facility or COGCC Facility ID # _____
_____ 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, activated carbon adsorption

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 at the site to further assess the extent of groundwater impacts and/or for remediation purposes. 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 COGCC 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 groundwater monitoring location figure illustrating the locations of the surveyed temporary monitoring wells will be provided in a subsequent 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:

NA

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: _____

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? _____

Does the previous reply indicate consideration of background concentrations? _____

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? _____

Is additional groundwater monitoring to be conducted? _____

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 produced water vault and associated infrastructure were replaced, and the site has been restored to its pre-release grade. Upon facility decommissioning, the site will be reclaimed in accordance with COGCC 1000 Series Reclamation 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. 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

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: ` 12/19/2019 _____

Email: Phil_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: 12/20/2019 _____

Remediation Project Number: 13673 _____

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 groundwater impacts are defined and points of compliance are in place.
	Document contacts (by date) with landowner in efforts to resolve access issues until impacts have been defined.

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

402260429	FORM 27-SUPPLEMENTAL-SUBMITTED
402260459	GROUND WATER SAMPLE LOCATION
402266507	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)