

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: KERR MCGEE OIL & GAS ONSHORE LP	Operator No: 47120	Phone Numbers
Address: P O BOX 173779		Phone: (970) 336-3500
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Phil Hamlin	Email: Phil_Hamlin@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 4361 Initial Form 27 Document #: 1984510

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: LOCATION	Facility ID: 318081	API #:	County Name: WELD
Facility Name: ELSIE I SMITH GAS UNIT-62N65W 33SENE	Latitude: 40.098481	Longitude: -104.663117	
** correct Lat/Long if needed: Latitude: 40.098891		Longitude: -104.662980	
QtrQtr: SENE	Sec: 33	Twp: 2N	Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

Is domestic water well within 1/4 mile? Yes 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

Water well located approximately 1,160 feet (ft) west, surface water located approximately 1,100 ft west, and groundwater located approximately 7 ft below ground surface (bgs).

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/Lab Analysis
Yes	SOILS	190' N-S x 205' E-W x 40' bgs (max)	Soil Sampling/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.

Based on data collected by the previous operator of the Smith Elsie GU #1 facility (Amoco), the Colorado Oil and Gas Conservation Commission (COGCC) requested that Kerr-McGee conduct additional subsurface assessment activities at this tank battery to determine the extent and magnitude of any potential historic soil and or groundwater petroleum hydrocarbon impacts. Soil and groundwater assessment began in May 2008, and petroleum hydrocarbon impacts to soil and groundwater were encountered.

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):

Please refer to the Soil Sampling Summary Attachment.

Proposed Groundwater Sampling

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

Initial groundwater monitoring was conducted at the site between May 2008 and January 2009. Quarterly groundwater monitoring has been conducted at the site since August 2014. Groundwater monitoring was not conducted between November 2019 and June 2020 due to excavation activities.

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 177

Number of soil samples exceeding 910-1 43

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

Approximate areal extent (square feet) 26200

NA / ND

-- Highest concentration of TPH (mg/kg) 30280

-- Highest concentration of SAR 12.61

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 40

Groundwater

Number of groundwater samples collected 225

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 7'

Number of groundwater monitoring wells installed 65

Number of groundwater samples exceeding 910-1 137

-- Highest concentration of Benzene (µg/l) 11300

-- Highest concentration of Toluene (µg/l) 7900

-- Highest concentration of Ethylbenzene (µg/l) 1940

-- Highest concentration of Xylene (µg/l) 27800

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?

Groundwater impacts were detected in the adjoining rangeland west and northwest of the former tank battery.

☐ 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?

Following completion of excavation activities, replacement groundwater monitoring wells were installed at the site in June 2020. During the initial June 2020 groundwater monitoring event, multiple groundwater wells were dry and samples could not be collected from those wells. Therefore, points of compliance have not yet been established.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Approximately 29,808 cubic yards of petroleum hydrocarbon impacted soil were removed from the excavation and transported to Buffalo Ridge Landfill in Keenesburg, Colorado, for disposal. The petroleum hydrocarbon impacted soil was excavated into the phreatic zone to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. In order to remove the impacted soil from the excavation base to a total depth of 40 ft bgs, the excavation sidewalls were sloped (1.5:1 ratio) for stability in accordance with Occupational Safety and Health Administration Excavation Standard 29 Code of Federal Regulations Part 1926 Sub-part P Section 1926.652(c)(4). The general site layout and excavation footprint are depicted on the Site Map provided as Figure 1.

During excavation activities, a crushed concrete produced water vessel (PWV) was encountered. The crushed PWV was removed and disposed. The location of the PWV is depicted on Figure 1.

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.

Between December 2019 and March 2020, petroleum hydrocarbon impacted soil was excavated, as described in the Source Removal Summary section above.

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) _____ 29808
Name of Licensed Disposal Facility or COGCC Facility ID # _____
No _____ Excavate and onsite remediation
No _____ Land Treatment
No _____ Bioremediation (or enhanced bioremediation)
No _____ Chemical oxidation
No _____ Other _____

Groundwater Remediation Summary

No _____ Bioremediation (or enhanced bioremediation)
No _____ Chemical oxidation
No _____ Air sparge / Soil vapor extraction
Yes _____ Natural Attenuation
No _____ 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.

In June 2020, following completion of excavation activities, replacement groundwater monitoring wells AMW01R2 and MW04R through MW31R were installed at the site. Boring logs with monitoring well completion diagrams are included as an attachment.

Groundwater monitoring wells AMW01R2 and MW04R through MW31R are sampled on a quarterly basis for laboratory analysis for benzene, toluene, ethylbenzene, and total xylenes by USEPA Method 8260D. The monitoring well locations are depicted on Figure 1. The Groundwater Elevation Contour Map generated using the June 2020 survey data is provided as Figure 2. The groundwater analytical results are summarized in Table 1, and the laboratory analytical report for the June 2020 groundwater monitoring event is attached.

Groundwater monitoring will continue on a quarterly basis until a No Further Action status request is warranted.

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:

NA

Volume of E&P Waste (solid) in cubic yards 29808

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

COGCC Disposal Facility ID #, if applicable: _____

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

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? No

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? Yes

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 facility was abandoned and the site was restored to pre-release grade.

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. 04/24/2008

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/24/2008

Date of commencement of Site Investigation. 04/24/2008

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 04/24/2008

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Form 27 update reports will be submitted to the COGCC on a quarterly basis until the extent of groundwater impacts have been fully delineated.

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

Signed: Phil Hamlin

Title: Senior Environmental Rep.

Submit Date: 07/23/2020

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: 07/27/2020

Remediation Project Number: 4361

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.

<u>Att Doc Num</u>	<u>Name</u>
402445559	FORM 27-SUPPLEMENTAL-SUBMITTED
402445562	LOGS
402446642	SITE MAP
402446644	GROUND WATER ELEVATION MAP
402447231	ANALYTICAL RESULTS
402447237	SITE INVESTIGATION REPORT

Total Attach: 6 Files

General Comments

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

Total: 0 comment(s)