

State of Colorado Oil and Gas Conservation Commission

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Report taken by:

CHRIS CANFIELD

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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 15687 Initial Form 27 Document #: 402433337

PURPOSE INFORMATION

- ☐ Rule 913.c.(1): Pit or Cuttings Trench closure.
- ☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- ☒ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- ☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- ☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- ☒ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- ☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- ☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- ☐ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- ☐ Rule 913.g: Changes of Operator.
- ☐ Rule 915.b: Request to leave elevated inorganics in situ.
- ☒ Other: Proposed groundwater monitoring plan

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 476912	API #:	County Name: ADAMS
Facility Name: SPILL/RELEASE POINT	Latitude: 39.928355	Longitude: -104.674644	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWNW	Sec: 33	Twp: 1S	Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

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

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	28' (N-S) x 25' (E-W) x 11.5' 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.

Historical impacts were discovered during reclamation activities at the HSR-Van Schaack 4-33 production facility, and excavation activities were initiated. On June 12, 2020, groundwater was encountered in the excavation area at approximately 9.5 feet below ground surface (bgs); groundwater was subsequently observed at 5 feet bgs while excavation activities were ongoing. The COGCC issued Spill/Release Point ID 476912 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. 402433337). 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. Based on the date of discovery and initiation of excavation activities (June 12, 2020), the COGCC Table 910-1 soil standards have been applied to the soil analytical results at this location.

Proposed Groundwater Sampling

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

On October 28, 2020, five (5) temporary groundwater monitoring wells (BH01 - BH05) were installed to further assess the extent of groundwater impacts. Quarterly groundwater monitoring was initiated on November 12, 2020, and is ongoing. Groundwater analytical data is presented in Table 1, and the groundwater sample locations are illustrated on Figure 1. The laboratory analytical reports for the previous three 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 6
Number of soil samples exceeding 915-1 1
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 700

NA / ND

-- Highest concentration of TPH (mg/kg) 295
-- Highest concentration of SAR 2.92
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 11

Groundwater

Number of groundwater samples collected 37
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 6
Number of groundwater monitoring wells installed 5
Number of groundwater samples exceeding 915-1 3

-- Highest concentration of Benzene (µg/l) 296
-- Highest concentration of Toluene (µg/l) 381
-- Highest concentration of Ethylbenzene (µg/l) 762
-- Highest concentration of Xylene (µg/l) 5780
NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected
0 Number of surface water samples exceeding 915-1
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.

Between June 12 and 15, 2020, approximately 330 cubic yards of impacted material were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Between June 12 and 16, 2020, approximately 795 barrels of 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 data 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 in groundwater. Additional remedial activities may 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

☒ Ex Situ

<input type="checkbox"/> Bioremediation (or enhanced bioremediation)	<input type="checkbox"/> Yes	Excavate and offsite disposal
<input type="checkbox"/> Chemical oxidation		If Yes: Estimated Volume (Cubic Yards) <u>330</u>
<input type="checkbox"/> Air sparge / Soil vapor extraction		Name of Licensed Disposal Facility or COGCC Facility ID # _____
<input type="checkbox"/> Natural Attenuation	<input type="checkbox"/>	Excavate and onsite remediation
<input type="checkbox"/> Other _____	<input type="checkbox"/>	Land Treatment
	<input type="checkbox"/>	Bioremediation (or enhanced bioremediation)
	<input type="checkbox"/>	Chemical oxidation
	<input type="checkbox"/>	Other _____

Groundwater Remediation Summary

<input type="checkbox"/> No	Bioremediation (or enhanced bioremediation)
<input type="checkbox"/> No	Chemical oxidation
<input type="checkbox"/> No	Air sparge / Soil vapor extraction
<input type="checkbox"/> Yes	Natural Attenuation
<input type="checkbox"/> 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.

On October 28, 2020, 5 temporary groundwater monitoring wells (BH01 - BH05) were installed to further assess the extent of groundwater impacts. Upgradient and historically compliant groundwater monitoring well BH04 was selected as the site-specific local background location for comparison to inorganic standards in Table 915-1. Based on a comparison to site-specific background concentrations, inorganic constituents in all 5 of the site monitoring wells were in compliance with the Table 915-1 standards during the Fourth Quarter 2021 through Second Quarter 2022 monitoring events. As such, Kerr-McGee is requesting the removal of Table 915-1 inorganic constituents (chloride, sulfate, and total dissolved solids) from the ongoing quarterly groundwater monitoring program at this location. The 5 temporary groundwater monitoring wells (BH01 - BH05) will continue to be sampled on a quarterly basis and submitted for laboratory analysis of the remaining Table 915-1 constituents (benzene, toluene, ethylbenzene, total xylenes, naphthalene, 1,2,4- and 1,3,5-trimethylbenzene). The temporary groundwater monitoring well locations are illustrated on Figure 1, and a potentiometric surface contour map for the Second Quarter 2022 is presented as Figure 2. Well completion logs for the temporary monitoring wells are provided as Attachment B.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☒ Annually ☐ Other

☐ Request Alternative Reporting Schedule:

☐ Semi-Annually ☐ Annually ☐ Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

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

☒ Other Proposed groundwater monitoring plan

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

KMOG has sufficient insurance and bonding to fully address the anticipated costs of Remediation, including the remaining estimated costs for this project. KMOG currently has over 40 million in bonds with the Colorado Oil and Gas Conservation Commission. The cost for remediation is a preliminary estimate only, costs may change upwards or downward based on site-specific information. KMOG makes no representation or guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 15000

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 795 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 330

E&P waste (solid) description 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 795

E&P waste (liquid) description 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

If YES:

☐ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

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 provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 06/12/2020

Actual Spill or Release date, or date of discovery. 06/12/2020

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/12/2020

Proposed site investigation commencement. 06/12/2020

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/12/2020

Proposed date of completion of Remediation. _____

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

Based on the groundwater monitoring results presented herein, Kerr-McGee is seeking the Director's approval to remove the inorganic constituents in Table 915-1 (chloride, sulfate, and total dissolved solids) from the ongoing quarterly groundwater monitoring program. The 5 temporary monitoring wells (BH01 - BH05) will continue to be sampled on a quarterly basis and submitted for laboratory analysis of the remaining Table 915-1 constituents (benzene, toluene, ethylbenzene, total xylenes, naphthalene, 1,2,4- and 1,3,5-trimethylbenzene). 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: 06/30/2022

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: CHRIS CANFIELD

Date: 07/11/2022

Remediation Project Number: 15687

Condition of Approval**COA Type****Description**

0 COA	

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**

403067916	FORM 27-SUPPLEMENTAL-SUBMITTED
403067940	LOGS
403067941	SITE MAP
403067942	GROUND WATER ELEVATION MAP
403067945	ANALYTICAL RESULTS
403067946	ANALYTICAL RESULTS

Total Attach: 6 Files

General Comments**User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)