

State of Colorado Oil and Gas Conservation Commission

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Document Number:

403315324

Receive Date:

03/13/2023

Report taken by:

Alexander Ahmadian

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: Phil Hamlin	Email: Phillip_Hamlin@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11278 Initial Form 27 Document #: 401612782

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: Request Discontinuation of Sampling Inorganic Compounds

SITE INFORMATION

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 454088	API #:	County Name: WELD
Facility Name: Hatch UPRR 42-11 #1		Latitude: 40.241442	Longitude: -104.735102
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SENE	Sec: 11	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

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

Livestock approximately 900 feet (ft) north-northwest and excavation groundwater approximately 12 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 Samples/Lab Analysis
Yes	SOILS	22' N-S x 14' E-W x 17' bgs	Soil Samples/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.

An operator discovered a corrosion hole in an oil tank at the Hatch UPRR 42-11 1 tank battery. The volume of the release is unknown. The petroleum hydrocarbon impacted soil was excavated.

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 February 7 and 12, 2018, nine soil samples were collected from the excavation base and sidewalls for laboratory analysis of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), pH, and specific conductivity (EC). Laboratory analytical results indicated that TPH, BTEX, pH, and EC concentrations and levels were in full compliance with Colorado Oil and Gas Conservation Commission (COGCC) Table 910 -1 allowable levels at the extent of the excavation.

Proposed Groundwater Sampling

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

On February 12, 2018, groundwater sample GW01 was collected from the excavation and submitted for BTEX analysis. Laboratory analytical results indicated sample GW01 exceeded the COGCC Table 910-1 allowable levels for benzene and total xylenes at concentrations of 167 micrograms per liter (µg/L) and 2,180 µg/L, respectively. The excavation groundwater sample location is depicted on Figure 1. The groundwater sample analytical results are summarized in Table 1.

Groundwater has been conducted on a quarterly basis since July 2018.

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 915-1 1

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

Approximate areal extent (square feet) 308

NA / ND

-- Highest concentration of TPH (mg/kg) 3870

NA Highest concentration of SAR

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 17

Groundwater

Number of groundwater samples collected 207

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 12

Number of groundwater monitoring wells installed 12

Number of groundwater samples exceeding 915-1 65

-- Highest concentration of Benzene (µg/l) 3200

-- Highest concentration of Toluene (µg/l) 14300

-- Highest concentration of Ethylbenzene (µg/l) 908

-- Highest concentration of Xylene (µg/l) 16800

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

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?

A background soil sample was submitted to the laboratory and placed on hold for analysis. Laboratory analytical results for the excavated soil samples indicated that pH and EC levels were compliant at the extent of the excavation; therefore, the background soil sample was not run for laboratory analysis.

☐ 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? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Approximately 200 cubic yards of petroleum hydrocarbon impacted soil were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling. The impacted soil was excavated into the capillary and phreatic zones to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. The general site layout and excavation footprint are depicted on the Site Map provided as Figure 1.

REMEDIAL ACTION 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, 100 pounds of COGAC®, a carbon-based bioremediation product designed to capture and degrade petroleum hydrocarbons via chemical oxidation and passive bio-stimulation, were applied to the clean backfill in a series of lifts in the capillary and phreatic horizons.

As of the January 2023 quarterly monitoring events, monitoring wells MW02, MW03, MW04, and MW06 exceeded the COGCC Table 915-1 allowable level for benzene, total xylenes, 1,2,4-trimethylbenzene, and/or 1,3,5-trimethylbenzene. Following the January 2022 monitoring event, Kerr-McGee contracted WSP USA to design and implement an air injection (air sparging [AS]) and soil vapor extraction (SVE) system to remediate the residual dissolved-phase impacts to groundwater. Kerr-McGee submitted an Underground Injection Control (UIC) Permit Application to Region 8 of the United States Environmental Protection Agency (USEPA) on April 6, 2022. The application was subsequently approved by the USEPA on April 27, 2022.

Groundwater monitoring on a quarterly basis continues at the site; however, remedial efforts have been temporarily placed on hold until the decommissioning of the Bell L 12-30 O SA Facility (Remediation No. 23250) and the decommissioning of the Hatch UPRR 42-11 1 O SA Facility (Remediation No. 23156) is complete. A remedial evaluation will be performed, including any additional data that may be collected during facility decommissioning activities, to determine if the previously-designed AS/SVE system is still a feasible and effective remedy for the site.

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	<input type="checkbox"/> If Yes: Estimated Volume (Cubic Yards)	220
<input type="checkbox"/> Air sparge / Soil vapor extraction	<input type="checkbox"/> Name of Licensed Disposal Facility or COGCC Facility ID #	149007
<input type="checkbox"/> Natural Attenuation	<input type="checkbox"/> No	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"/> Yes	Bioremediation (or enhanced bioremediation)
<input type="checkbox"/> Yes	Chemical oxidation
<input type="checkbox"/> Yes	Air sparge / Soil vapor extraction
<input type="checkbox"/> Yes	Natural Attenuation
<input type="checkbox"/> Yes	Other 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.

Groundwater monitoring wells MW01 through MW12 are sampled on a quarterly basis for the full list of analyses for groundwater in Table 915-1. Monitoring well MW10 was destroyed during the decommissioning of the Bell L 12-30 O SA Facility. Cross-gradient and historically compliant groundwater monitoring well MW08 was established as a representative background sample for calculating the inorganic parameters in Table 915-1. The monitoring well locations are depicted on Figure 1. A Groundwater Elevation Contour Map generated using the January 2023 survey data is provided as Figure 2. The groundwater analytical results are summarized in Table 1.

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

Based on groundwater analytical data to date, Kerr-McGee requests the removal of Table 915-1 inorganic compounds from the sample analysis list. Up to eight quarters of inorganic results have been obtained at the site to date. All inorganic results were within the COGCC Table 915-1 allowable levels, or below background results x 1.25.

REMEDATION 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

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: \$

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:

The petroleum hydrocarbon impacted soil was excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling.

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

E&P waste (solid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

REMEDATION COMPLETION REPORT

REMEDATION 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? No

Is additional groundwater monitoring to be conducted? Yes

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 oil tank was replaced and the site was restored to its 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 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. 02/14/2018

Actual Spill or Release date, or date of discovery. 02/13/2018

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/07/2018

Proposed site investigation commencement. 02/07/2018

Proposed completion of site investigation. 11/13/2019

REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/07/2018

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

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: 03/13/2023

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: Alexander Ahmadian

Date: 05/09/2023

Remediation Project Number: 11278

COA Type**Description**

	COGCC agrees to the amended sampling plan. Inorganic parameters at this location appear to be in compliance.
	In accordance with Rule 913.e.(3), Operator will adopt a quarterly reporting schedule. COGCC selected Quarterly under Remediation Progress Update.
2 COAs	

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**

403315324	FORM 27-SUPPLEMENTAL-SUBMITTED
403325989	SITE MAP
403325992	ANALYTICAL RESULTS
403328484	GROUND WATER ELEVATION MAP

Total Attach: 4 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)