

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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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 ECMC 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
Address: P O BOX 173779		Phone: (970) 336-3500
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Ariana Ochoa	Email: DJRemediation_Forms@oxy.com	Mobile: (713) 350-4906

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29312 Initial Form 27 Document #: 403395203

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: _____

SITE INFORMATION

No Multiple Facilities

Facility Type: LOCATION	Facility ID: 328480	API #: _____	County Name: WELD
Facility Name: HSR-COOPER-63N66W 10NWSW		Latitude: 40.237670	Longitude: -104.770560
		** correct Lat/Long if needed: Latitude: 40.239287	Longitude: -104.772483
QtrQtr: NWSW	Sec: 10	Twp: 3N	Range: 66W
Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Crop land

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

Domestic water well: approximately 1260' N
Surface water: approximately 676' W
Wetlands; approximately 614' W
Springs: none
Livestock: none
Occupied Building: approximately 1083' N
High Priority Habitats: 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
UNDETERMINED	GROUNDWATER	TBD	Groundwater samples/laboratory analytical results
UNDETERMINED	SOILS	TBD	Inspection/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.

Decommissioning activities were completed at the Cooper 12-10A O SA production facility on August 3, 2023. Groundwater was encountered in the excavation area at a depth of approximately 6' bgs. Visual inspection and field screening of soils at one separator, one meter house, one produced water vessel (PWV), and one aboveground storage tank (AST) was conducted following removal activities and soil samples (SEP-B01 @3', SEP-B02 @5', PW-B01 @4', PW-W01 @2', AST-B01 @3', DL-B01 @4', DL-B02 @4') were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene concentrations in soil sample DL-B01 @4' exceeded the applicable ECMC Table 915-1 standards. As such, a Form 19-Initial Spill/Release Report (Document No. 403487855) was submitted on August 9, 2023, and the ECMC issued Spill/Release Point ID 484930 for this release. A topographic Site Location Map showing the geographic setting of the site location is provided as Figure 1. Soil sample location and field screening data is presented in Table 1. The facility soil sample and field screening locations are illustrated on Figures 2 and 3.

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):

From August 3, 2023 through February 29, 2024, soil samples were collected from the base and sidewalls of the current excavation extent ranging at depths of approximately 4 to 15 feet bgs. Based on the waste characterization results for soil samples DL-B01 @4' and AST-B01 @, subsequent soil samples have been submitted for laboratory analysis of TEX, TPH, naph., TMBs, EC, 1 and 2 methyl naph., arsenic, barium, and cadmium. Analytical results indicate that soil impacts remain in the excavation area. Excavation and site assessment activities are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental. Confirmation soil samples will continue to be submitted for laboratory analysis of the reduced analyte list described herein, based on the waste characterization results. The current excavation extent and associated soil sample locations are illustrated on Figure 3. Soil analytical results are summarized in Tables 2 through 5.

Proposed Groundwater Sampling

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

During remediation activities, groundwater was encountered within the excavation area at approximately 6' bgs. On October 5 and 27, 2023 and December 4, 2023, groundwater samples (GW-01, GW-02, GW-03, respectively) was collected from the excavation areas and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB by USEPA Method 826-D. Groundwater analytical results indicated that the groundwater samples were in compliance with the ECMC Table 915-1 standards. Groundwater analytical results are summarized in Table 6.

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):

On August 3, 2023, visual inspections and field screening of soils was conducted at three sidewalls of the PWV excavation, one former meter house, and one former AST location. Based on the inspection and screening results, hydrocarbon-impacted soils were not observed at the soil screening locations. As a result, no soil samples were submitted for laboratory analysis from these areas in accordance with the ECMC Operator Guidance for Oil & Gas Facility Closure document. Soil sample location and field screening data are presented in Table 1. Soil analytical results are summarized in Tables 2 through 5. The soil sample and field screening locations are illustrated on Figure 2. The laboratory analytical reports are provided as Attachment A. The field notes and photographic log are provided as Attachment B.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 56

Number of soil samples exceeding 915-1 42

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 6000

NA / ND

-- Highest concentration of TPH (mg/kg) 225.5

-- Highest concentration of SAR 3.6

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 15

Groundwater

Number of groundwater samples collected 3

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 6

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 0

-- Highest concentration of Benzene (µg/l) 1.04

-- Highest concentration of Toluene (µg/l) 1.89

-- Highest concentration of Ethylbenzene (µg/l) 44.9

-- Highest concentration of Xylene (µg/l) 130

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?

Background soil samples were collected from native non-impacted material nearby at the tank battery. In addition, background soil samples were collected from native material, with similar soil type/depths and land use, adjacent to the nearby Four Raith Unit 1 and HSR-Cooper 12-10A wellheads. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and metals using standard methods appropriate for detecting target analytes in Table 915-1. Additional background soil samples may be collected following source removal activities. Analytical results for the background soil samples are presented in Tables 3-5.

☐ 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?

Historically impacted soil remains at the site. Excavation and site assessment activities to address remaining soil impacts are currently ongoing and will be summarized in a forthcoming Form 27-Supplemental.

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.

Historically impacted soil remains at the site. Excavation and site assessment activities to address remaining soil impacts are currently ongoing and will be summarized in a forthcoming Form 27-Supplemental.

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.

Historically impacted soil remains at the site. Excavation and site assessment activities to address remaining soil impacts are currently ongoing and will be summarized in a forthcoming Form 27-Supplemental.

Soil Remediation Summary

☐ **In Situ**

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

☐ **Ex Situ**

_____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
_____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ 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.

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

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 ECMC. 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: \$ 13500

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation?

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

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

E&P waste (solid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC 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?

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards?

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the ECMC 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 will be reclaimed in accordance with ECMC 1000 Series Reclamation Rules.

Is the described reclamation complete? _____

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. 02/09/2023

Actual Spill or Release date, or date of discovery. 08/07/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/03/2023

Proposed site investigation commencement. 08/03/2023

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/03/2023

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:

<u>OPERATOR COMMENT</u>	
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I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Ariana Ochoa	Title: Sr. HSE Advisor
Submit Date:	Email: DJRemediation_Forms@oxy.com

Title: Sr. HSE Advisor

Email: DJRemediation_Forms@oxy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: _____ Date: _____

Remediation Project Number: 29312

Date: _____

Remediation Project Number: 29312

Description

0 COA	

ATTACHMENT 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.

Name

403760399	PHOTO DOCUMENTATION
403760401	SITE MAP
403760402	SOIL SAMPLE LOCATION MAP
403760403	SOIL SAMPLE LOCATION MAP
403760404	SOIL SAMPLE LOCATION MAP
403760406	ANALYTICAL RESULTS
403760408	ANALYTICAL RESULTS

Total Attach: 7 Files

General Comments

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)