

State of Colorado
Energy & Carbon Management Commission

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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 Phone: (720) 929-4307 Mobile: ()
Address: P O BOX 173779		
City: DENVER State: CO Zip: 80217-3779		
Contact Person: Max Moran	Email: DJRemediation_Forms@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25138 Initial Form 27 Document #: 403166631

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 Director's Approval to establish site-specific waste profile

SITE INFORMATION

Yes Multiple Facilities

Facility Type: WELL	Facility ID:	API #: 123-17974	County Name: WELD
Facility Name: FREAUFF 33-4A	Latitude: 40.253040	Longitude: -104.892920	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWSE	Sec: 4	Twp: 3N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 487752	API #:	County Name: WELD
Facility Name: Freauff 33-4A Flowline	Latitude: 40.253040	Longitude: -104.892920	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWSE	Sec: 4	Twp: 3N	Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC

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

Domestic water well: none

Surface water: multiple surface water features located within a 1/4 mile of the separator riser at the facility

Wetlands: an area with wetland characteristics is located approximately 620' S and 1000' SW of the separator riser at the facility

Livestock: multiple livestock areas located within 1/4 mile

Occupied Building: multiple occupied buildings within 1/4 mile

High Priority Habitats: within Mule Deer Migration Corridor, Mule Deer Severe Winter Range, Mule Deer Winter Concentration Area, Bald Eagle Active Nest

Site Half Mile buffer and Bald Eagle Roost Site; within 1/4 mile of the boundary of Bald Eagle Active Nest Site Quarter Mile buffer, Aquatic Native Species

Conservation Waters

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
No	GROUNDWATER	Groundwater not encountered	Groundwater samples/laboratory analytical results
Yes	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.

Flowline removal operations were completed at the Freauff 33-4A flowline on October 25, 2023, through August 8, 2024. The Freauff 33-4A wellhead was previously plugged and abandoned. Groundwater was not encountered in the flowline removal pothole excavation areas. Visual inspection and field screening of soils around the flowline removal potholes following flowline removal activities were conducted and soil samples (FL-B01@4', FL-B03@4', FL-B19@4', FL-B20@4') were submitted for laboratory analysis of BTEX, naph., TMBs, TPH, pH, EC, SAR, boron, and/or full Table 915-1 to determine if a release occurred, as approved in Form 27-Initial Document #403166631. Laboratory analytical results indicated that the SAR concentration in soil sample FL-B19@4' and the lead and pH concentrations in soil sample FL-B20@4' exceeded the applicable ECMC Table 915-1 standards and background limits. As such, a Form 19-Initial/Supplemental Spill/Release Report (ECMC Document No. 403884769) was submitted on August 12, 2024, and the ECMC issued Spill/Release Point ID 487752. Based on the absence of organic detections and the SAR concentration in FL-B19@4' appearing to be an outlier in the data set, a verification soil sample (FL-B19-01@4') was collected and submitted for laboratory analysis of SAR, only. Analytical results indicated that the SAR concentration in soil sample FL-B19-01@4' was within ECMC Table 915-1 standards. Soil sample location and field screening data are presented in Table 1. The soil sample and field screening locations are illustrated on Figure 1. Soil analytical results are presented in Tables 2-5. The field notes and a photographic log are attached. The applicable secured laboratory analytical reports are attached.

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):

On 10/25/23 - 8/8/24, soil samples were collected from the flowline (FL-B01@4', FL-B03@4', FL-B19@4', FL-B20@4') and submitted for analysis of BTEX, naph., TMBs, TPH, pH, EC, SAR, and boron to determine if a release occurred, as approved in Form 27-Initial Doc. #403166631. Sample FL-B20@4' was submitted for analysis of the full Table 915-1 analytical suite. Final analytical results indicated that constituent concentrations in the soil samples were in compliance with the Table 915-1 standards and/or within background limits, with the exception of the pH and lead concentrations in soil sample FL-B20@4'. Additional assessment and/or excavation activities to address the remaining exceedances in soil sample FL-B20@4' are ongoing. Based on waste characterization results, KMOG proposes to analyze future confirmation soil samples collected from the FL-B20@4' flowline removal pothole excavation area for pH, boron, and Table 915-1 Metals (except Cr VI, Se, and Ag).

Proposed Groundwater Sampling

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

Groundwater was not encountered during flowline removal activities. If groundwater is encountered during additional assessment activities, a minimum of one grab sample will be collected as soon as practical. Groundwater samples will be submitted to an accredited laboratory for all analytes listed in ECMC Table 915-1 Organic Compounds in Groundwater and Groundwater Inorganic Parameters using standard methods appropriate for detecting the target analytes in ECMC Table 915-1.

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 October 25, 2023, through December 15, 2023, visual inspection and field screening of soils was conducted at 16 flowline removal pothole locations during flowline removal activities. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the screening locations, and no soil samples were submitted for laboratory analysis from these areas in accordance with the ECMC Operator Guidance.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 5
Number of soil samples exceeding 915-1 4
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 20

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 12.4
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 4

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) _____
Number of groundwater monitoring wells installed _____
Number of groundwater samples exceeding 915-1 _____

Highest concentration of Benzene (µg/l) _____
Highest concentration of Toluene (µg/l) _____
Highest concentration of Ethylbenzene (µg/l) _____
Highest concentration of Xylene (µg/l) _____
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?

Background soil samples FL-BG01 - FL-BG08 were collected from non-impacted native material (CL) adjacent to the Freauff 33-4A wellhead at depths ranging from approximately 3' - 5' bgs. Background soil samples collected from the Freauff 34-4 wellhead (located approximately 1,450' SW) have been included (collected from similar depths, soil type (CL), and land use), as previously approved in Form 27-Supplemental Document #403866691. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters in Soils and/or Table 915-1 Metals using standard methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 3 and 5. The background soil sample locations are presented on Figures 1 and 2.

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?

Additional assessment and/or excavation activities to address the remaining exceedances in soil sample FL-B20@4' are ongoing and will be summarized in a forthcoming Form 27-Supplemental. Additional site-specific background soil samples will be collected to further assess native soil conditions.

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.

Additional assessment and/or excavation activities to address the remaining exceedances in soil sample FL-B20@4' are ongoing and will be summarized in a forthcoming Form 27-Supplemental.

REMEDICATION 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.

Additional assessment and/or excavation activities to address the remaining exceedances in soil sample FL-B20@4' are ongoing and will be summarized in a forthcoming Form 27-Supplemental. Additional site-specific background soil samples will be collected to further assess native soil conditions.

Soil Remediation Summary

In Situ

Ex Situ

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

- _____ 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.

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. 09/16/2022

Actual Spill or Release date, or date of discovery. 08/09/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/25/2023

Proposed site investigation commencement. 10/25/2023

Proposed completion of site investigation. 09/30/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/09/2024

Proposed date of completion of Remediation. 09/30/2026

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

KMOG has a large number of active remediation projects that fall within High Priority Habitats (HPH), which limits when field work can be completed on these projects. This project falls within the Bald Eagle Active Nest Site HPH buffer, and field work can only be conducted between 7/31 and 12/1 each year. The projects within HPH buffers are being prioritized based on potential environmental risk; considering factors such as size of impact, type of impact, what media is impacted, proximity to sensitive receptors and land use. Due to this prioritization, no field work was completed on this project during the 2025 open timing window. Field work is anticipated to resume on the project within the 2026 open timing window.

In response to the Environmental Comments on the denied Form 27-Supplemental Document #403964463, the delay in reporting was due to an internal oversight in tracking the reporting schedule. Corrective measures have since been implemented, including improved tracking mechanisms and clearer internal deadlines, to ensure all future quarterly reports are submitted on time. A quarterly reporting schedule will be adhered to going forward.

The off-location Freauff 34-4 flowline background soil samples, PSC 3-9-5Y wellhead background soil samples, and PSC 3-9-5Y flowline background soil samples have been omitted from this report. The off-location Freauff 34-4 wellhead background soil samples were previously approved on Form 27-Supplemental Document #403866691, and as such, have been included in this report.

Verification soil sample FL-B20-01@4' has been omitted from this report. A verification sample has been included for SAR to further assess the ECMC Table 915-1 inorganic exceedances. The scientific justification for the inclusion of the results is the assessment of soil heterogeneity and identification of analytical variability due to constituent composition and distribution within the sampled area. Based on the absence of organic detections and the SAR concentration in soil sample FL-B19@4' appearing to be an outlier in the data set, verification soil sample FL-B19-01@4' has been included in this report.

Based on waste characterization results, KMOG proposes an amended sampling and analysis plan to include only detected organic constituents, detected metal constituents (including boron), and soil suitability parameters exceeding Table 915-1. Based on waste characterization results, KMOG proposes to analyze future confirmation soil samples collected from the FL-B20@4' flowline removal pothole excavation area for pH, boron, and Table 915-1 Metals (except Cr VI, Se, and Ag).

Additional site-specific background soil samples will be collected to further assess native soil conditions.

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

Signed: Max Moran

Title: Environmental Advisor

Submit Date: _____

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: 25138

COA Type

Description

0 COA	
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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.

Att Doc Num	Name
404450935	SOIL SAMPLE LOCATION MAP
404450937	PHOTO DOCUMENTATION
404451004	LABORATORY ANALYTICAL REPORT
404451006	LABORATORY ANALYTICAL REPORT
404451008	LABORATORY ANALYTICAL REPORT
404453315	ANALYTICAL DATA SUMMARY TABLE(S)
404453316	SOIL SAMPLE LOCATION MAP

Total Attach: 7 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)