

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
404264197
Receive Date:
07/18/2025

Report taken by:
Kari Brown

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: <u>KERR MCGEE OIL & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
Address: <u>P O BOX 173779</u>		Phone: <u>(720) 929-4306</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>()</u>
Contact Person: <u>Erik Mickelson</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31098 Initial Form 27 Document #: 403423363

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

Yes Multiple Facilities

Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>123-33188</u>	County Name: <u>WELD</u>
Facility Name: <u>FEHRN 24-32</u>	Latitude: <u>40.097335</u>	Longitude: <u>-104.795630</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>32</u>	Twp: <u>2N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>123-33190</u>	County Name: <u>WELD</u>
Facility Name: <u>FEHRN 1-32</u>	Latitude: <u>40.097335</u>	Longitude: <u>-104.795601</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>32</u>	Twp: <u>2N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: WELL	Facility ID: _____	API #: 123-33192	County Name: WELD
Facility Name: FEHRN 25-32	Latitude: 40.097334	Longitude: -104.795666	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 32	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-33196	County Name: WELD
Facility Name: FEHRN 8-32	Latitude: 40.097338	Longitude: -104.795563	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 32	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-33209	County Name: WELD
Facility Name: FEHRN 26-32	Latitude: 40.097337	Longitude: -104.795528	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 32	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-33211	County Name: WELD
Facility Name: FEHRN 7-32	Latitude: 40.097333	Longitude: -104.795743	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 32	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 486007	API #: _____	County Name: WELD
Facility Name: Fehrn 26-32 Wellhead	Latitude: 40.097337	Longitude: -104.795528	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 32	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 488173	API #: _____	County Name: WELD
Facility Name: Fehrn 25-32 Wellhead	Latitude: 40.097334	Longitude: -104.795666	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 32	Twp: 2N	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? No
 Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Domestic water well: multiple domestic wells within 1/4 mile
 Surface water: none
 Wetlands: an area with wetland characteristics is located approximately 1000' NW
 Springs: none
 Livestock: none
 Occupied Building: multiple occupied buildings within 1/4 mile
 High Priority Habitat (HPH): none

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|----------------------------------------------------|------------------------------------------------------|----------------------------------------|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | |
| <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	TBD	Groundwater samples/laboratory analytical results
Yes	SOILS	84' (E-W) x 24' (N-S) x 14' bgs	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.

Wellhead cut and cap operations and flowline removal activities were completed at the Fehr 7, 8, 24, 25, 26-32 wellheads on September 6, 2023 - September 16, 2024, as described in a previous Form 27-Supplemental (Document No.404168105). Groundwater was encountered in the Fehr 25-32 and Fehr 26-32 wellhead cut and cap excavation area at approximately 8' below ground surface (bgs). A previously abandoned flowline associated with the former Fehr 1-23 wellhead was encountered during flowline removal activities and subsequently screened and sampled. Laboratory analytical results indicated that the barium concentration in multiple soil samples exceeded the applicable ECMC Table 915-1 standard, and the ECMC issued Spill/Release Point IDs 486007 and 488173 for the releases.

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 September 26, 2023, through December 16, 2024, excavation activities were conducted to address soil impacts at the former Fehr 7, 24, 25, 26-32 wellheads. Confirmation soil samples were collected from the base and sidewalls of the excavation extents, at depths ranging from 6' - 14' bgs. Based on the waste characterization results, the confirmation soil samples were submitted for laboratory analysis of TPH, pH, boron, PAHs and/or Table 915-1 metals using ECMC-approved methods. Final analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with the applicable ECMC Table 915-1 standards and/or within background limits.

Proposed Groundwater Sampling

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

Groundwater was encountered within the Fehr 25-32 and Fehr 26-32 wellhead cut and cap area at approximately 8' bgs. On 9/28/23 (Fehr 26-32) and 12/27/24 (Fehr 25-32), groundwater samples (GW-01) were collected from each excavation area and submitted for laboratory analysis of BTEX, naph., 1,2,4-TMB, and 1,3,5-TMB. Groundwater sample GW-01, collected on 12/27/24, was also analyzed for Table 915-1 inorganics. Groundwater analytical results indicated that the groundwater samples were in compliance with Table 915-1 standards for organic constituents. Given that groundwater was in contact with soil exceeding Table 915-1 for barium, 5 temporary monitoring wells were installed on 6/19/25. The full network of monitoring wells will be gauged, surveyed, and sampled during the Third Quarter of 2025. Following receipt of these results, an upgradient background monitoring well will be established to calculate local background limits for inorganic parameters.

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):

The soil boring and monitoring well sample locations are illustrated on Figures 1 and 2. The soil analytical results are summarized in Tables 2 through 5. The groundwater analytical results are summarized on Tables 6 and 7. The boring logs are attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 70
Number of soil samples exceeding 915-1 52
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 2016

NA / ND

-- Highest concentration of TPH (mg/kg) 25.4
-- Highest concentration of SAR 4.29
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 14

Groundwater

Number of groundwater samples collected 2
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 8
Number of groundwater monitoring wells installed 5
Number of groundwater samples exceeding 915-1 0

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

Thirty (30) background soil samples were collected from non-impacted native material adjacent to the wellhead cut and cap excavations at depths ranging from 3' to 8' bgs. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters in Soils and 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 Table 3 and 5. Background analytical data from soil samples collected from on-location areas have been omitted and will not be utilized for background determination calculations.

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?

Final analytical results for the soil samples collected during monitoring well installation are pending and will be summarized in a forthcoming Form 27-Supplemental update.

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 September 26, 2023, through November 13, 2024, approximately 250 cubic yards of impacted material were excavated and transported to the Front Range Landfill located in Erie, Colorado for disposal. The excavation area has been backfilled and contoured to match preexisting conditions.

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.

Laboratory analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extent were in compliance with the applicable ECMC Table 915-1 standards and/or within background limits.

Given that groundwater was in contact with soil exceeding Table 915-1 for barium, 5 soil borings were advanced in and around the final excavation extent on June 19, 2025. Monitoring wells were installed in each boring location. Soil samples were collected based on the interval exhibiting the highest PID and/or from the interval above the observed water table. The soil samples were submitted for analysis of the full Table 915-1 analytical suite using ECMC-approved methods. Final analytical results for the soil samples collected during monitoring well installation are pending and will be summarized in a forthcoming Form 27-Supplemental update. 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

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 250

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation

_____ Excavate and onsite remediation

_____ Other _____

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

Yes _____ 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.

Given that groundwater was in contact with soil exceeding Table 915-1 for barium, 5 temporary monitoring wells were installed on 6/19/25. The full network of monitoring wells will be gauged, surveyed, and sampled during the Third Quarter of 2025. Following receipt of these results, an upgradient background monitoring well will be established to calculate local background limits for inorganic parameters. Groundwater monitoring wells will be sampled on a quarterly basis and submitted for laboratory analysis of the full ECMC Table 915-1 groundwater analytical suite.

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 Energy & Carbon Management 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: \$ 10500 _____

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:

N/A

Volume of E&P Waste (solid) in cubic yards _____ 250

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Front Range Landfill in Erie, Colorado

Volume of E&P Waste (liquid) in barrels _____ 0

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. 05/23/2023

Actual Spill or Release date, or date of discovery. 01/22/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/26/2023

Proposed site investigation commencement. 09/26/2023

Proposed completion of site investigation. 09/30/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/22/2023

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

The previous Form 27-Supplemental update (Document #404168105, submitted on 4/17/25) is still in process with the ECMC.

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

Signed: Erik Mickelson _____

Title: Environmental Lead _____

Submit Date: 07/18/2025 _____

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: Kari Brown _____

Date: 10/21/2025 _____

Remediation Project Number: 31098 _____

COA Type**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.

Att Doc Num**Name**

404264197	FORM 27-SUPPLEMENTAL-SUBMITTED
404264228	ANALYTICAL DATA SUMMARY TABLE(S)
404264230	GROUND WATER SAMPLE LOCATION
404266199	SOIL SAMPLE LOCATION MAP
404267542	LOGS

Total Attach: 5 Files

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

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)