

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403437691  
Receive Date:  
09/10/2024  
Report taken by:  
Laurel Anderson

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) 929-4306 Mobile: ( )
Address: P O BOX 173779		
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Erik Mickelson	Email: DJRemediation_Forms@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 26345 Initial Form 27 Document #: 403253996

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: LOCATION	Facility ID: 318062	API #: _____	County Name: WELD
Facility Name: WARNER TANK BATTERY 33-18	Latitude: 40.135180	Longitude: -104.711840	
** correct Lat/Long if needed: Latitude: 40.135598		Longitude: -104.711565	
QtrQtr: NWSW	Sec: 18	Twp: 2N	Range: 65W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 483944	API #: _____	County Name: WELD
Facility Name: Warner 5&6&11/Muse EU O SA TB	Latitude: 40.135598	Longitude: -104.711565	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 18	Twp: 2N	Range: 65W Meridian: 6 Sensitive Area? Yes

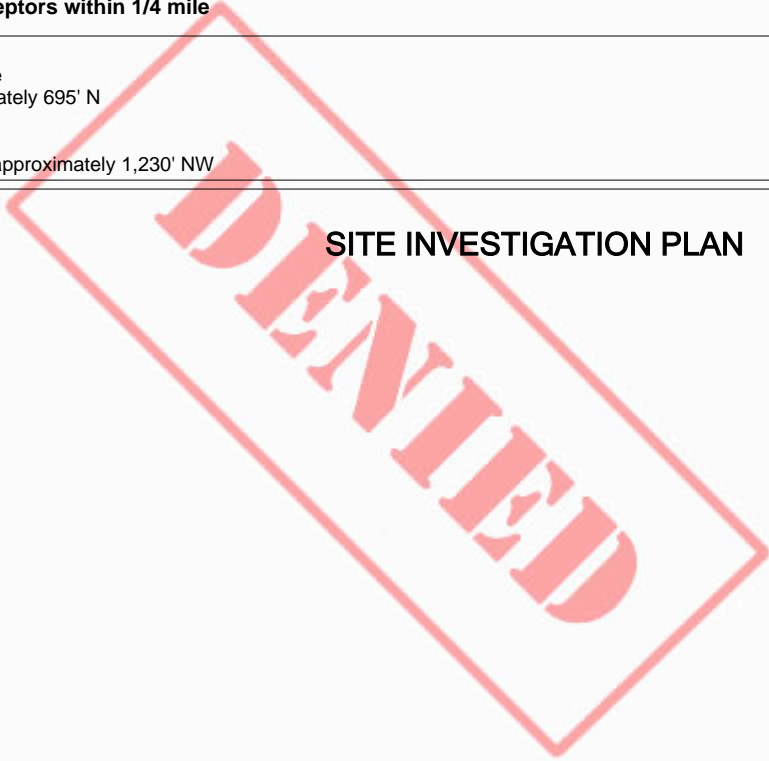
Facility Type: SPILL OR RELEASE      Facility ID: 483946      API #:      County Name: WELD  
Facility Name: Warner 14-18 Flowline      Latitude: 40.135530      Longitude: -104.711426  
\*\* correct Lat/Long if needed: Latitude:      Longitude:  
QtrQtr: NESW      Sec: 18      Twp: 2N      Range: 65W      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? No  
Is groundwater less than 20 feet below ground surface? Yes

**Other Potential Receptors within 1/4 mile**

Water Well: none  
Surface Water: none  
Wetlands: approximately 695' N  
Springs: none  
Livestock: none  
Occupied Building: approximately 1,230' NW



**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	No hydrocarbon impacts encountered	Groundwater samples/laboratory analytical results
Yes	SOILS	70' (N-S) x 54' (E-W) x 6' 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.

Decommissioning activities were completed at the Warner 5&6&11/Muse EU O SA production facility on February 10-13, 2023. Groundwater was not encountered during excavation activities. Visual inspection and field screening of soils at four separators, one meter house, one produced water vessel (PWV), twelve dump line locations, seven aboveground storage tanks (AST), and three emissions control devices (ECD) was conducted following removal activities, and soil samples were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results for SEP-B01@1', SEP-B02@2', SEP-B03@1', SEP-B04@1', SEP-B05@1', and SEP-B07@1' indicated that ethylbenzene, toluene, xylenes, naphthalene, TMBs, TPH, pH, 1,2-methylnaphthalene, arsenic, barium, and cadmium impacts exceeding COGCC Table 915-1 were present at the former separator locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (ECMC Document No.403319611) was submitted on February 16, 2023, and the ECMC issued Spill/Release Point ID 483944. Additionally, impacts from the Warner 14-18 flowline (ECMC Form 19 document No.403322688, ECMC spill ID 483946) soil sample FL-B03@4', was remediated under this remediation project due to the location of impacted soils. The remaining analytical results for the soil samples collected were in compliance with ECMC Table 915-1 standards and/or within the range of acceptable analytical variability of site-specific background concentrations. 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 are presented in Table 1. The soil sample and field screening locations are illustrated on Figures 2 and 3. 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 March 2 - March 21, 2023, excavation activities were conducted to address remaining soil impacts at the former separator locations, and 28 confirmation soil samples were collected from the base and sidewalls of the final excavation extent, at depths ranging from approximately 2.5'-6' bgs. Based on waste characterization results (SEP-B02@1'), the confirmation soil samples were submitted for laboratory analysis or ethylbenzene, toluene, xylenes, naphthalene, TMBs, TPH, pH, 1,2-methylnaphthalene, arsenic, barium, and cadmium using ECMC-approved methods. Analytical results indicated that constituent concentrations in the soil sample collected from the final excavation extent were in compliance with the applicable ECMC Table 915-1 standards and/or within the range of site-specific background levels. Soil analytical results are summarized in Tables 2-5. The laboratory analytical reports are provided as Attachment A.

### Proposed Groundwater Sampling

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

Groundwater was not encountered during decommissioning activities.

### 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 February 10-13, 2023, visual inspections and field screening of soils was conducted at the former meter house, twelve dump line locations, the former ASTs, and the former ECDs. 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.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 56  
Number of soil samples exceeding 915-1 38  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 3780

### NA / ND

-- Highest concentration of TPH (mg/kg) 11390  
-- Highest concentration of SAR 5.58  
BTEX > 915-1 Yes  
Vertical Extent > 915-1 (in feet) 6

### 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  
\_\_\_\_ 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 PW-BG01@3' and PW-BG01@6' were collected from native material adjacent to the produced water vessel excavation. An additional background was applied from the Warner W 13-16 wellhead location (approximately 0.3 miles SW). The applied background soils are from a similar land use, similar depth, and similar soil profile. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and Table 915-1 Metals in Soils 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. Applied background locations are presented on Figure 4.

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 March 2, 2023 and March 21, 2023, approximately 540 cubic yards of impacted soil was excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling; approximately 250 cubic yards of impacted material were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Laboratory analytical results indicate that impacted soils in the excavation area have been remediated to be in compliance with the ECOM Table 915-1 standards and/or within the range of site-specific background concentrations. The excavation area will be backfilled and contoured to match pre-existing conditions.

### REMIEDIATION 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 indicate that impacted soils in the excavation area have been remediated to be in compliance with the ECMC Table 915-1 standards and/or within the range of site-specific background concentrations. Based on the analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. As such, Kerr-McGee is requesting a No Further Action (NFA) determination for this location.

### Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 790

\_\_\_\_\_ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_ 149007

\_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ 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

\_\_\_\_\_ 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 Final Report

### 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 NFA Request

## 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: \$ 0

## 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 540 cubic yards of impacted material were 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 790

E&P waste (solid) description impacted soil

ECMC Disposal Facility ID #, if applicable: 149007

Non-ECMC Disposal Facility: Buffalo Ridge Landfill - Keenesburg, 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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? Yes

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. Timeliness of reclamation initiation and completion will be subject to NFA, surface owner discretion and land use, and suitable ground conditions which allow for execution of surface reclamation activities so as to not cause unwarranted damages.

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? Yes

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

Did the local soil conservation district provide the seed mix? No

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 08/05/2025

Proposed date of completion of Reclamation. 09/05/2025

## 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. 10/20/2022

Actual Spill or Release date, or date of discovery. 02/13/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/10/2023

Proposed site investigation commencement. 02/10/2023

Proposed completion of site investigation. 02/13/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/13/2023

Proposed date of completion of Remediation. 03/21/2023

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**

Per the COA, Spill ID 483945 (Warner 13-18) is being remediated under Remediation Project #26349. All analytical data for Spill ID 483946 (Warner 14-18) has been included for the soil sample FL-B03@4' that was remediated under this Remediation Project. Soil sample FL-B03@4' was remediated via excavation activities completed in the area of the former separators as identified by confirmation soil samples SEP-E01@2.5', SEP-S01@2.5', and SEP-B10@6'.

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: 09/10/2024

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: 26345

**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**

403437691	FORM 27 DENIED
403437841	PHOTO DOCUMENTATION
403437842	SITE MAP
403437845	SOIL SAMPLE LOCATION MAP
403911439	SOIL SAMPLE LOCATION MAP
403911442	SOIL SAMPLE LOCATION MAP
403911444	ANALYTICAL RESULTS
403915495	ANALYTICAL RESULTS
403999199	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

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

Environmental	<p>11/19/2024 Comment: ECMC has not conducted a thorough review of this form as conditions of approval on previously approved forms, corrective actions on previously approved field inspection reports, and/or comments on previously denied forms have not been addressed; As such Operator's request for closure has been removed and Doc #403437691 has been denied.</p> <p>Operator shall address all outstanding COAs and comments related to this Remediation Project and ALL associated Spill/Releases and submit a new Supplemental Form 27 ASAP, no later 30 days after processing of this Form 27 (Due 12/19/2024).</p>	11/19/2024
Environmental	<p>7/9/2024 Comment: RTD 7/9/2024 See COA from Doc #403383448. Operator shall document the location of each Spill ID remediated under this Remediation Project and include all analytical data for each spill prior to requesting closure of this Remediation Project.</p>	07/09/2024

Environmental	7/9/2024 Comment: ECMC added Spill ID Nos: 483946, 483945 and 483944 and selected Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912 in addition to the current selection based on the information submitted. Operator shall include all Related Spill IDs on subsequent Supplemental Form 27s.	07/09/2024
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Total: 3 comment(s)

