

State of Colorado  
Energy & Carbon Management Commission

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



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Report taken by:  
Taylor Robinson

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 &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b>
Address: <u>P O BOX 173779</u>		Phone: <u>(713) 350-4906</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>( )</u>
Contact Person: <u>Ariana Ochoa</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31784 Initial Form 27 Document #: 403497116

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>123-24150</u>	County Name: <u>WELD</u>
Facility Name: <u>LDS 15-24</u>	Latitude: <u>40.206010</u>	Longitude: <u>-104.949530</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSE</u>	Sec: <u>24</u>	Twp: <u>3N</u>	Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>486153</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>LDS 15-24 Wellhead</u>	Latitude: <u>40.206010</u>	Longitude: <u>-104.949530</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSE</u>	Sec: <u>24</u>	Twp: <u>3N</u>	Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Surface Water

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

Irrigation ditch 600 feet (ft) south, 780 ft northwest, and 1,030 ft north. Livestock 550 ft northwest. State highway 550 ft south. Occupied building 700 ft northwest. Agriculture. Groundwater at approximately 6 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
UNDETERMINED	GROUNDWATER	TBD	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	TBD	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 were completed at the LDS 15-24 wellhead on December 28, 2023. Visual inspection and field screening of soils around the wellhead and associated pumping equipment was conducted following cut and cap operations, and a soil sample (B01@6') was submitted for analysis of full list ECMC Table 915-1 constituents, to determine if a release occurred. The flowline associated with the wellhead was removed between December 28, 2023 and January 11, 2024, and soil samples were collected from the locations where the flowline risers were disconnected from the wellhead (WH01-RISER@3') and from the separator (SEP01-RISER@4'), from where the flowline changed directions (FL01@4', FL04@5', and FL05A@4'), and where the flowline had a water crossing (FL02@6' and FL03@4'). The samples were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Initial results indicated that pH, arsenic, lead, selenium, and hexavalent chromium concentrations exceeding the Table 915-1 allowable level and background level were present at the WH01-RISER@3', FL02@6', FL03@5', FL04@5', and FL05A@4' locations. Verification samples were collected to confirm the initial results. Results indicated the soil was in full compliance with Table 915-1 standards and/or within the analytical variability of site-specific background, except for lead impacts at the WH01-RISER@3' location. As such, a Form 19 Initial/Supplemental Spill/Release Report (Doc# 403668072) was submitted on January 29, 2024, and the ECMC issued Spill ID 486153.

Assessment activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

### 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 December 28, 2023, and March 8, 2024, excavation activities were conducted to address remaining soil impacts at the WH01-RISER@3' location and four (4) confirmation soil samples were collected from the sidewalls of the excavation extents at depths of approximately 3 ft bgs. An additional base sample was not needed due to the compliant results for B01@6'. The confirmation soil samples were submitted for analysis of the site-specific waste profile including pH, boron, and select Table 915-1 metals using ECMC-approved methods. Analytical results indicated that lead and selenium impacts exceeding the ECMC Table 915-1 allowable level and/or site-specific background remain along the eastern sidewall. Assessment activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report. The wellhead cut and cap and flowlines are depicted on Figures 1 and 2. The PID readings and soil sample results are summarized in Table 1 and Table 2. The lab reports are attached.

#### Proposed Groundwater Sampling

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

On December 28, 2023, one groundwater sample was collected from the cut and cap excavation (GW01) at a depth of 6 ft bgs. The groundwater sample was submitted for analysis of Table 915-1 organic compounds. Based on the laboratory analytical results, groundwater is in full compliance with ECOM Table 915-1 allowable levels for organic constituents. Additional sample volume will be collected for analysis of Table 915-1 inorganic constituents in groundwater and results will be summarized in a subsequent Form 27 supplemental report. The groundwater sample location is depicted on Figure 1. The groundwater sample analytical results are summarized in Table 3.

**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 ):

Between December 28, 2023 and January 11, 2024, visual inspection and field screening of soils were conducted at 4 sidewall locations, 4 locations at the ground surface adjacent to the wellhead cut and cap excavation, and at 12 pothole locations. 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 ECOM Operator Guidance. A photographic log is attached.

On January 3, 2024, a soil gas survey was conducted at 5 soil vapor points installed adjacent to the former wellhead location following cut and cap operations. GEM 5000 field readings were all non-detect for methane at all soil vapor points. The soil vapor point locations are illustrated on Figure 1. The soil vapor field form is included as an attachment.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

**Soil**

Number of soil samples collected 16  
 Number of soil samples exceeding 915-1 16  
 Was the areal and vertical extent of soil contamination delineated? No  
 Approximate areal extent (square feet) 644

**NA / ND**

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 2.87  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 6

**Groundwater**

Number of groundwater samples collected 1  
 Was extent of groundwater contaminated delineated? No  
 Depth to groundwater (below ground surface, in feet) 6  
 Number of groundwater monitoring wells installed 0  
 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?

Ten background soil samples (NATIVE-BG01@3' through NATIVE-BG05@3' and NATIVE-BG01@6' through NATIVE-BG05@6') were collected from native material adjacent to the wellhead cut and cap excavation. Eighteen native background soil samples were collected as part of the LDS 16, 39-24 wellheads cut and cap (Remediation No. 31702) located in the same quarter section and NRCS soil type as a portion of the flowlines. The background soil samples were submitted for laboratory analysis of EC, SAR, pH, boron, and/or Table 915-1 metals, using ECOM-approved methods. Laboratory analytical results indicate that EC, pH, boron, arsenic, barium, selenium, and hexavalent chromium are naturally high in the native soil. Analytical results from the background soil samples are presented in Table 2. Background sample locations are depicted on Figures 1 & 3.

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?

Soil assessment activities at the former wellhead riser are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

Additional groundwater sample volume will be collected in the GW01 location for analysis of Table 915-1 inorganic constituents in groundwater and results will be summarized in a subsequent Form 27 supplemental report.

## 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.

Impacted soil from the wellhead cut and cap excavations has been removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of assessment activities. Disposal records are kept on file and available upon request. The excavation areas will be backfilled and contoured to match pre-existing conditions.

### 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.

Laboratory analytical results indicate that lead and selenium impacts exceeding the ECMC Table 915-1 allowable level remain along the eastern sidewall of the wellhead riser excavation. Soil assessment activities at the former wellhead riser are ongoing and will be summarized in a subsequent Form 27 Supplemental report. Groundwater was encountered in the wellhead excavation at approximately 6 ft bgs. One groundwater sample was collected from the wellhead excavation and submitted for laboratory analysis. Based on the laboratory analytical results groundwater concentrations were in full compliance with ECMC Table 915-1 allowable levels for Table 915-1 organic constituents. Additional groundwater sample volume will be collected in the GW01 location for analysis of Table 915-1 inorganic constituents in groundwater and results will be summarized in a subsequent Form 27 supplemental report.

### Soil Remediation Summary

**In Situ**

**Ex Situ**

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

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

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

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

\_\_\_\_\_ 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

\_\_\_\_\_ 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 Energy and 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: \$ 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. 01/29/2024

Actual Spill or Release date, or date of discovery. 01/11/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/28/2023

Proposed site investigation commencement. 12/28/2023

Proposed completion of site investigation. 01/05/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/11/2024

Proposed date of completion of Remediation. 01/05/2025

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**

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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: 07/11/2024

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: Taylor Robinson

Date: 08/27/2024

Remediation Project Number: 31784

**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**

403845755	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403845759	PHOTO DOCUMENTATION
403845761	OTHER
403845762	CORRESPONDENCE
403845763	SOIL SAMPLE LOCATION MAP
403845764	SOIL SAMPLE LOCATION MAP
403845766	SOIL SAMPLE LOCATION MAP
403846593	ANALYTICAL RESULTS
403901637	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)