

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404104459  
Receive Date:  
09/02/2025

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 ECOM 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>		
City: <u>DENVER</u>	State: <u>CO</u>	Phone: <u>(970) 5201272</u>
	Zip: <u>80217-3779</u>	Mobile: <u>( )</u>
Contact Person: <u>Macy Kiel</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34360 Initial Form 27 Document #: 403683931

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>LOCATION</u>	Facility ID: <u>446131</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>GUNZNER 12&amp;13-13A O SA 34003430</u>	Latitude: <u>40.220011</u>	Longitude: <u>-104.842809</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>13</u>	Twp: <u>3N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>487225</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Gunzner 12&amp;13-13A FAC Hist. Release</u>	Latitude: <u>40.220011</u>	Longitude: <u>-104.842809</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>13</u>	Twp: <u>3N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## 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**

Multiple buildings are located within ¼ mile of the facility.

A building is located approximately 1070 feet east of the facility.

The nearest domestic water well is located approximately 360 feet to the south of the facility.

Surface water is located approximately 1200 feet to the south of the facility.

An area with wetland characteristics is located approximately 700 feet southeast of the facility.

The facility is located within a Aquatic Native Species Conservation Waters, Mule Deer Migration Corridor, Mule Deer Sever Winter Range and Mule Deer Winter Concentration Area high priority habitat and 100-year floodplain.

## **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
Yes	GROUNDWATER	See attached data	Groundwater samples/laboratory analytical results
Yes	SOILS	See attached data	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.

Tank battery decommissioning activities were completed at the Gunzner 12 & 13-13A production facility location on May 22, and May 23, 2024. Visual inspection and field screening of soils at the former production facility infrastructure locations was conducted following decommissioning activities, and 7 soil samples were submitted for laboratory analysis of the full Table 915-1 analytical suite to determine if a release occurred. Laboratory analytical results indicated that soil impacts were present at the PWV location, due TPH, TMBs, various PAHs, and boron results above Table 915-1 standards and/or site-specific background levels. As such, a Form 19-Initial/Supplemental Spill/Release Report (Document No. 403802229) was submitted on May 24, 2024, and the ECOM issued Spill/Release Point ID 487225. Following the removal of the tank battery secondary containment liner on May 23, 2024, samples AST1-B03@3" and AST2-B03@3" were collected from below the former liner location. The soil samples were submitted for laboratory analysis of the full Table 915-1 analytical suite, using standard ECOM-approved methods appropriate for detecting the target analytes. Analytical results indicate that the constituent concentrations in the confirmation soil samples collected during the secondary containment liner removal and the remaining soil samples collected during facility decommissioning activities were in compliance with Table 915-1 standards and/or site-specific background levels (x 1.25 for metals).

## 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 May 23, 2024, through December 3, 2025, excavation activities were conducted to address the soil impacts at the former PWV. Confirmation soil samples were collected from the excavation at depths of approximately 6 inches - 12 feet bgs. Based on analytical results of initial samples collected in May 2024, a waste characterization profile was created and confirmation soil samples collected from the excavation area were submitted for laboratory analysis of BTEX, TPH, TMBs, PAHs, Boron and select Table 915-1 metals (As, Ba, Cd, Pb and Ni). Analytical results indicated that constituent concentrations in the final confirmation soil samples collected from the PWV excavation extent were in compliance with Table 915-1 standards and/or site-specific background levels (x 1.25 for metals).

### Proposed Groundwater Sampling

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

Groundwater was encountered in the PWV excavation area at depths of approximately 8 feet bgs. On November 21, 2024, groundwater sample PWGW02 was collected and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4- and 1,3,5-TMB by USEPA Method 8260D. Analytical results indicated that the 1,2,4- TMB concentration in sample PW-GW02 exceeded the ECOM Table 915-1 groundwater standard. Groundwater analytical data is presented in Table 6, and the groundwater sample location is illustrated on Figure 3. Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the remaining groundwater impacts associated with sample location PW-GW02.

### 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 May 22, 2024, visual inspection and field screening of soils was conducted at 2 locations within the PWV removal footprint, 1 location at the former enclosed combustion device (ECD), 1 location at the former meter houses (MH), 2 locations at the former ASTs, and 2 additional dump line (DL) removal potholes. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the soil screening locations, and no soil samples were submitted for laboratory analysis from these areas in accordance with the ECOM Operator Guidance for Oil & Gas Facility Closure document. The laboratory analytical reports are provided as Attachment A. The field notes and a photographic log are provided as Attachment B.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 33  
Number of soil samples exceeding 915-1 9  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 1350

### NA / ND

-- Highest concentration of TPH (mg/kg) 611.7  
-- Highest concentration of SAR 5.45  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 8

### Groundwater

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

Highest concentration of Benzene (µg/l) \_\_\_\_\_  
ND Highest concentration of Toluene (µg/l) \_\_\_\_\_  
-- Highest concentration of Ethylbenzene (µg/l) 12.2  
-- Highest concentration of Xylene (µg/l) 108  
NA 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?

Twelve (12) background samples were collected from undisturbed native material adjacent to the Gunzner 12&13-13A production facility, at comparable depths and soil composition to the confirmation soil samples. The background soil samples were submitted for laboratory analysis of Table 915-1 metals and the Soil Suitability for Reclamation Parameters, using standard ECMC approved methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 4 and 5. Background sample locations are illustrated on Figure 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?

Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the remaining groundwater impacts associated with sample location PW-GW02. Monitoring well installation activities are pending and will be summarized in a forthcoming Form 27-Supplemental update. A proposed monitoring well location map is provided in Figure 6.

## 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.

Approximately 110 cubic yards of impacted material were removed from the produced water excavation area and transported to the Front Range Landfill in Erie, Colorado for disposal.

### 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.

Excavation activities were conducted to address the soil impacts at the former PWV and confirmation soil samples were collected from the excavation at depths of approximately 6 inches - 12 feet bgs. Based on analytical results of sample PW-W01@3", a waste characterization profile was created and confirmation soil samples collected from the excavation area were submitted for laboratory analysis of BTEX, TPH, TMBs, PAHs, Boron and select Table 915-1 metals (As, Ba, Cd, Pb and Ni). Analytical results indicated that constituent concentrations in the final confirmation soil samples collected from the PWV excavation extent were in compliance with Table 915-1 standards and/or site-specific background levels (x 1.25 for metals). Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the remaining groundwater impacts associated with sample location PW-GW02. Monitoring well installation activities are pending and will be summarized in a forthcoming Form 27-Supplemental update. A proposed monitoring well location map is provided in Figure 6.

**Soil Remediation Summary**

In Situ

Ex Situ

_____ Bioremediation ( or enhanced bioremediation )	Yes	Excavate and offsite disposal
_____ Chemical oxidation		If Yes: Estimated Volume (Cubic Yards) _____ 110
_____ Air sparge / Soil vapor extraction		Name of Licensed Disposal Facility or ECMC Facility ID # _____
_____ 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.

Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the remaining groundwater impacts associated with sample location PW-GW02. The temporary groundwater monitoring wells will be sampled on a quarterly basis and submitted for laboratory analysis of Table 915-1 constituents. The groundwater sample location and proposed temporary monitoring well locations are illustrated on Figure 6. Groundwater analytical data is presented in Table 6. Subsequent to installation, a groundwater monitoring location figure illustrating the locations of the surveyed temporary groundwater monitoring wells will be provided in a Form 27-Supplemental update.

# 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 Remediation Project Update

## 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: \$ 14500

## 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:

NA

Volume of E&P Waste (solid) in cubic yards 110

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: Front Range Landfill - 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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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. \_\_\_\_\_

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. 01/10/2024

Actual Spill or Release date, or date of discovery. 05/23/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/22/2024

Proposed site investigation commencement. 05/22/2024

Proposed completion of site investigation. 09/01/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/23/2024

Proposed date of completion of Remediation. 05/31/2026

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**

Based on analytical data presented herein, the soil investigation for this location is complete. Temporary groundwater monitoring wells will be installed to fully define the extent and magnitude of the remaining groundwater impacts associated with sample location PW-GW02. Monitoring well installation activities are pending and will be summarized in a forthcoming Form 27-Supplemental update. A proposed monitoring well location map is provided in Figure 6.

As per the COA of the previous Form 27-Supplemental (Document no. 403897889), lab report attachments have been re-attached in an encrypted/watermarked format issued during lab delivery.

As per the EPS comment dated 08/28/2025, on Form 27-Supplemental (Doc. No. 404104459) which was returned to draft, the proposed monitoring well location map Figure 6 is attached.

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

Signed: Macy Kiel

Title: Environmental Engineer

Submit Date: 09/02/2025

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: Taylor Robinson

Date: 09/18/2025

Remediation Project Number: 34360

**COA Type****Description**

	All laboratory analytical results for Table 915-1 Soil TPH, Organic Compounds in Soils, and Metals in Soils shall be reported on a dry weight basis.
	Operator shall submit a minimum of one soil sample for the proposed laboratory analysis from each soil boring advanced during monitoring well installation.
	Operator shall field log soil borings during boring/monitoring well installation and provide boring logs/well construction diagrams with the next monitoring report.
	ECMC approves of the proposed soil boring/monitoring well locations. If field observations indicate that the proposed delineation borings are located inside the previous excavation extent additional soil borings will be required. Additionally, depending on the results of the current site investigation plan, Operator may be required to install additional soil borings/monitoring wells to fully delineate soil impacts.
4 COAs	

**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**

404104459	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404105989	PHOTO DOCUMENTATION
404105991	OTHER
404105992	SITE MAP
404105994	SOIL SAMPLE LOCATION MAP
404105995	SOIL SAMPLE LOCATION MAP
404105996	SOIL SAMPLE LOCATION MAP
404105999	SOIL SAMPLE LOCATION MAP
404106008	ANALYTICAL RESULTS
404106020	ANALYTICAL RESULTS
404106021	ANALYTICAL RESULTS
404106023	ANALYTICAL RESULTS
404106025	ANALYTICAL RESULTS
404106026	ANALYTICAL RESULTS
404106027	ANALYTICAL RESULTS

404338754	GROUND WATER SAMPLE LOCATION
404359056	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 17 Files

**General Comments**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
		Stamp Upon Approval

Total: 0 comment(s)