

State of Colorado  
Energy & Carbon Management Commission

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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: <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>(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 #: 36540 Initial Form 27 Document #: 403849127

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>TANK BATTERY</u>	Facility ID: <u>487130</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>MARKHAM 34 35 13-8 Facility</u>	Latitude: <u>40.148634</u>	Longitude: <u>-104.693865</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSW</u>	Sec: <u>8</u>	Twp: <u>2N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>489375</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Markhm 34 35 13-8 Facility</u>	Latitude: <u>40.148695</u>	Longitude: <u>-104.694060</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSW</u>	Sec: <u>8</u>	Twp: <u>2N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## **SITE CONDITIONS**

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Range 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**

Multiple buildings and livestock holding pens are located within ¼ mile of the facility.  
A building is located approximately 470 feet northwest of the facility.  
The nearest domestic water well is located approximately 520 feet to the northwest of the facility.

# 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	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.

Decommissioning activities were completed at the Markham 34 35 13-8 facility on October 10, 2024. Groundwater was not encountered during facility decommissioning activities. Visual inspection and field screening of soil at one aboveground storage tank (AST), one produced water vessel (PWV), one dumphine pothole location, one emission control device (ECD), one meter house, and one separator were conducted following removal activities. Soil samples (AST01@0.5', PWV-N01@2', PWV-B01@4', SEP01-INLET@3', and SEP01-OUTLET@3') were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Initial laboratory analytical results indicated that naphthalene impacts exceeding the ECOM Table 915-1 allowable level were present at the SEP01-OUTLET@3' location. A verification sample was collected at the SEP01-OUTLET@3' location to confirm the initial results. Final analytical results were non-detect and therefore a Form 19 Report was not submitted at the time. Per updated ECOM guidance, verification sampling of organic exceedances is not considered valid. As such, a Form 19 Initial/Supplemental Spill/Release report (Document No. 404100036) was submitted on February 21, 2025 and the Spill/Release Point ID is pending. Analytical results indicate that all other samples collected during facility decommissioning activities were in compliance with the Table 915-1 allowable levels or within background levels. The facility is depicted on Figure 1. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively.

Excavation 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 ):

On October 10, 2024, confirmation soil samples (AST01@0.5', PWV-N01@2', PWV-B01@4', SEP01-INLET@3', and SEP01-OUTLET@3'), were collected at depths ranging from 0.5 ft below ground surface (bgs) to 4 ft bgs. The soil samples were submitted for laboratory analysis of full list Table 915-1 constituents, using ECOM-approved methods. Initial laboratory analytical results indicated that naphthalene impacts exceeding the ECOM Table 915-1 allowable level were present at the SEP01-OUTLET@3' location. Analytical results indicate that all other samples collected during facility decommissioning activities were in compliance with the Table 915-1 allowable levels and within background levels. Excavation activities are ongoing. The laboratory reports are attached.

### Proposed Groundwater Sampling

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

Groundwater was not encountered during facility 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 October 10, 2024, visual inspections and field screening of soil were conducted at the base and loadout for the AST, three sidewalls of the PWV excavation, one dumphine location, one ECD location, and one meter house location. Based on the inspection and screening results, hydrocarbon-impacted soil was 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 ECOM Operator Guidance for Oil & Gas Facility Closure document. A photographic log is attached.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 9

Number of soil samples exceeding 915-1 6

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 559

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_

-- Highest concentration of SAR 0.698

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 3

### 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?

One tank battery background soil sample (TB-BG01@0.5') was collected from the soil used to construct the tank battery. Eight background soil samples (NATIVE-BG01@2.5' through NATIVE-BG04@2.5' and NATIVE-BG01@5' through NATIVE-BG04@5') were collected from the native material outside of the facility excavations. Sixteen background samples were also collected as part of the Markham 13,34,35-8 wellhead cut and cap activities (Rem# 36448), located approximately 120 ft northwest, from similar depths (3' and 6' bgs), and NCRS soil type (Loamy Sand). The background soil samples were submitted for laboratory analysis of pH, electrical conductivity (EC), sodium adsorption ratio (SAR), boron, and Table 915-1 metals, using ECMC-approved methods. Analytical results indicate that pH, arsenic, barium, and selenium are naturally high in the native soil. The background soil sample analytical results are summarized in Table 2. The background soil sample locations are illustrated 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?

Excavation activities are ongoing and 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 will be removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of excavation activities. Disposal records will be 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 data indicate that naphthalene impacts are present at the separator outlet. All other soil samples collected during facility decommissioning activities were within the ECMC Table 915-1 allowable levels or background levels. Groundwater was not encountered during facility decommissioning activities. Excavation activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

### 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.



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. 02/19/2025

Actual Spill or Release date, or date of discovery. 10/14/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/10/2024

Proposed site investigation commencement. 10/10/2024

Proposed completion of site investigation. 08/21/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/10/2024

Proposed date of completion of Remediation. 08/21/2025

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**

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: 02/25/2025

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: Laurel Anderson

Date: 09/04/2025

Remediation Project Number: 36540

**COA Type****Description**

1 COA	<p>Operator states: "Initial laboratory analytical results indicated that naphthalene impacts exceeding the ECMC Table 915-1 allowable level were present at the SEP01-OUTLET@3' location. A verification sample was collected at the SEP01-OUTLET@3' location to confirm the initial results. Final analytical results were non-detect and therefore a Form 19 Report was not submitted at the time. Per updated ECMC guidance, verification sampling of organic exceedances is not considered valid. As such, a Form 19 Initial/Supplemental Spill/Release report (Document No. 404100036) was submitted on February 21, 2025 and the Spill/Release Point ID is pending."</p> <p>Document No. 404100036 has been approved and assigned Spill ID 489375. ECMC added Spill ID 489375 the site information section.</p> <p>ECMC acknowledges Operators plan to remediate impacts identified at the separator. Operator shall provide a timeline for remediation of soil impacts.</p>
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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.

<b>Att Doc Num</b>	<b>Name</b>
404066889	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404069540	ANALYTICAL RESULTS
404069542	PHOTO DOCUMENTATION
404069543	ANALYTICAL RESULTS
404069544	ANALYTICAL RESULTS
404069545	SOIL SAMPLE LOCATION MAP
404069546	SOIL SAMPLE LOCATION MAP
404341886	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 8 Files

**General Comments**

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

Total: 0 comment(s)