

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403769478

Receive Date:

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Report taken by:

**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	<b>Phone Numbers</b>
Address: P O BOX 173779		Phone: (970) 515-1161
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Phil Hamlin	Email: Phillip_Hamlin@oxy.com	Mobile: ( )

**PROJECT, PURPOSE & SITE INFORMATION**

**PROJECT INFORMATION**

Remediation Project #: 22034 Initial Form 27 Document #: 402951936

**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: 446070	API #: _____	County Name: WELD
Facility Name: HUNTER/HUNTER 9&16-32 O SA 34003467	Latitude: 40.355730	Longitude: -104.910164	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 32	Twp: 5N	Range: 67W Meridian: 6 Sensitive Area? Yes



Between April 11 and September 6, 2022, excavation activities were conducted to address remaining soil impacts at the former facility location and confirmation soil samples were collected from the base and sidewalls of the final extents of the excavations at depths ranging from 5 ft bgs to 11.5 ft bgs. The confirmation soil samples were submitted for laboratory analysis of the excavation-specific waste profile developed at the time of sampling including benzene, TMBs, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, barium, and/or selenium using ECMC-approved methods. Analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extent were in compliance with the ECMC Table 915-1 standards and/or below the analytical variability of background levels. Therefore, further excavation was not warranted, as approved in the Form 27 Supplemental dated December 28, 2022 (Document No. 403244257).

**Proposed Groundwater Sampling**

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

On June 6 and June 15, 2022, two groundwater samples (GW01 and GW02) were collected from the facility excavations and were submitted for Table 915-1 analyses. Two background groundwater samples were also collected and submitted for Table 915-1 inorganic parameters. Based on the laboratory analytical results, both samples exceeded the ECMC Table 915-1 allowable levels for benzene, total xylenes, 1,2,4-trimethylbenzene, and/or 1,3,5-trimethylbenzene. The excavation groundwater sample and background sample locations are 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 ):

On April 11, 2022, visual inspections and field screening of soils were conducted at the base, hatch, and drainline of the AST, three sidewalls of the PWV excavation, the PWV dumplines, the separator footprint, and the meter house. 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.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

Soil	NA / ND
Number of soil samples collected <u>82</u>	-- Highest concentration of TPH (mg/kg) <u>356.1</u>
Number of soil samples exceeding 915-1 <u>39</u>	-- Highest concentration of SAR <u>1.71</u>
Was the areal and vertical extent of soil contamination delineated? <u>Yes</u>	BTEX > 915-1 <u>Yes</u>
Approximate areal extent (square feet) <u>2309</u>	Vertical Extent > 915-1 (in feet) <u>12</u>
<b>Groundwater</b>	
Number of groundwater samples collected <u>2</u>	-- Highest concentration of Benzene (µg/l) <u>770</u>
Was extent of groundwater contaminated delineated? <u>No</u>	ND Highest concentration of Toluene (µg/l) _____
Depth to groundwater (below ground surface, in feet) <u>6</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>210</u>
Number of groundwater monitoring wells installed <u>0</u>	-- Highest concentration of Xylene (µg/l) <u>1470</u>
Number of groundwater samples exceeding 915-1 <u>2</u>	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?

One tank battery background soil sample was collected from the soil used to construct the tank battery for comparison to shallow samples collected within the fill material. Four native background soil samples were collected from the native material outside of the excavations. The background soil samples were submitted for analysis of pH, EC, SAR, boron, and Table 915-1 metals using ECMC-approved methods. Analytical results indicate that pH, arsenic, and selenium are naturally high in the soil used to construct the tank battery and arsenic, barium, and selenium are naturally high in the native soil. Background soil analytical results are summarized in Table 2.

Two background groundwater samples were collected from outside of the facility excavations and were submitted for analysis of Table 915-1 inorganic parameters. Laboratory analytical results indicate that levels of sulfate ion are naturally high in groundwater. Background groundwater analytical results are summarized in Table 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?

Groundwater monitoring wells will be installed to delineate the extent and magnitude of any remaining impacts. Site access for well installation is currently under consideration.

## 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 3,500 cubic yards of impacted soil were removed from the site and transported to Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Approximately 760 cubic yards of impacted soil were removed from the site and transported to the Front Range Landfill in Erie, Colorado for disposal. Approximately 7,441 bbls of impacted water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Disposal records are kept on file and available upon request.

### 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.

In order to delineate the extent and magnitude of any remaining impacts, monitoring wells will be installed in the source area, cross-gradient, and downgradient from the previously-identified groundwater impacts. Site access for well installation is currently under consideration. Groundwater monitoring will be conducted on a quarterly basis.

### Soil Remediation Summary

In Situ

Ex Situ

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

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

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

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 7260

\_\_\_\_\_ 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.

In order to delineate the extent and magnitude of any remaining impacts, monitoring wells will be installed in the source area, cross-gradient, and downgradient from the previously-identified groundwater impacts. Site access for well installation is currently under consideration.

Groundwater monitoring will be conducted on a quarterly basis until a No Further Action status request is warranted.

## 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: \$ 30000 \_\_\_\_\_

### 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 3,500 cubic yards of impacted soil were removed from the site and transported to Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Approximately 7,441 bbls of impacted water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 4260

E&P waste (solid) description Impacted Soil

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_ 149007

Non-ECMC Disposal Facility: Front Range Landfill in Erie, CO (760 CY)

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_ 7441

E&P waste (liquid) description Impacted water

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_ 434766

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 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. 12/18/2024

Proposed date of completion of Reclamation. 01/18/2025

## 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. 04/12/2022

Actual Spill or Release date, or date of discovery. 04/12/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/11/2022

Proposed site investigation commencement. 04/11/2022

Proposed completion of site investigation. 12/31/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/11/2022

Proposed date of completion of Remediation. 12/31/2026

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**

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

Signed: Phil Hamlin

Title: Senior Environmental Rep

Submit Date: \_\_\_\_\_

Email: Phillip\_Hamlin@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: 22034

**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**

403769487	ANALYTICAL RESULTS
403769489	SOIL SAMPLE LOCATION MAP

Total Attach: 2 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)