

State of Colorado  
Energy & Carbon Management Commission

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



Document Number:  
403528694  
Receive Date:  
02/27/2024

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: <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>(970) 336-3500</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>(970) 515-1698</u>
Contact Person: <u>Gregory Hamilton</u>	Email: <u>Gregory_Hamilton@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 28992 Initial Form 27 Document #: 403359773

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>123-38231</u>	County Name: <u>WELD</u>
Facility Name: <u>HOWARD 25C-22HZ</u>	Latitude: <u>40.016225</u>	Longitude: <u>-104.874937</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSE</u>	Sec: <u>27</u>	Twp: <u>1N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>484648</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Howard 25C-22HZX Hist. Release</u>	Latitude: <u>40.016233</u>	Longitude: <u>-104.874955</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSE</u>	Sec: <u>27</u>	Twp: <u>1N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## 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

Multiple buildings and livestock holding pens are located within ¼ mile of the wellhead.  
The nearest building is located approximately 775 feet southwest of the wellhead.

## 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	SOILS	15' (N-S) x 15' (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.

Cut and cap operations were completed at the Howard 25C-22HZX wellhead on June 12, 2023. Groundwater was not encountered in the cut and cap excavation. Soil screening around the well and associated pumping equipment was conducted following cut and cap operations, and soil samples were submitted for laboratory analysis to determine if a release occurred. The flowline associated with this wellhead was partially removed on June 12 and 13, 2023, and soil samples were collected from the locations where the flowline risers were disconnected at the wellhead (FL-B01@4') and separator (FL-B02@4'), and submitted for laboratory analysis to determine if a release occurred. The remaining flowline was abandoned in place due to operational restrictions and safety concerns associated with additional active flowlines remaining in the same corridor, and its status will be changed to out-of-service in accordance with Rule 1101.a.(3).A,B,&C. Soil samples were submitted for laboratory analysis of BTEX, 1,2,4- and 1,3,5-TMB, naphthalene, TPH-GRO, DRO, and ORO, pH, EC, SAR, and boron. Additionally, based on field observations and preliminary analytical results, sample WH-N01@5' was selected for waste characterization and submitted for full Table 915-1 analyses. Analytical results indicated that soil impacts were present at sample WH-N01@5', due to PAH, Ba, and Cu concentrations above ECMC standards and background levels. As such, a Form 19-Initial/Supplemental Spill/Release Report (Document No. 403439853) was submitted on June 21, 2023, and the ECMC issued Spill/Release Point ID 484648. Analytical results indicated that the remaining constituent concentrations in the soil samples collected during wellhead cut and cap and partial flowline removal activities were in compliance with ECMC standards and/or within the range of site-specific background levels. A topographic site location map is provided as Figure 1. Soil sample location and field screening data are presented in Table 1.

### 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 June 12 and 13, 2023, soil samples were collected from the base (WH-B01@6') of the cut and cap excavation area and the sidewall location exhibiting the highest PID reading (WH-N01@5'), and from the locations where the flowline risers were disconnected at the wellhead (FL-B01@4') and separator (FL-B02@4'). The soil samples were submitted for laboratory analysis of BTEX, TPH, TMB, naphthalene, pH, EC, SAR, boron, and/or PAHs and Table 915-1 metals. Analytical results indicated that soil impacts were present at sample location WH-N01@5' due to PAHs, Ba, and Cu. The remaining soil analytical results were in compliance with ECMC standards and/or within the range of site-specific background levels. Excavation and assessment activities are ongoing, and future confirmation soil samples will be submitted for analysis of BTEX, TPH, TMB, PAHs, As, Ba, Cd, Cu, Ni, and Se. Soil analytical results are summarized in Tables 1 through 5. The soil sample locations are illustrated on Figures 1 and 2.

#### Proposed Groundwater Sampling

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

Groundwater has not been encountered during wellhead cut and cap or partial flowline removal activities completed to-date. If groundwater is encountered during future excavation activities at the former wellhead, a minimum of one grab sample will be collected as soon as practical. Groundwater samples will be submitted to an accredited laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4- and 1,3,5-trimethylbenzene (TMB), using standard methods appropriate for detecting the target analytes in Table 915-1.

## 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 June 12, 2023, soil screening was conducted at 3 sidewall locations within the cut and cap excavation and 4 locations at the ground surface adjacent to the excavation. Based on the screening results, hydrocarbon-impacted soil may be present at screening location WH-E01@5' and will be addressed during future excavation activities. Hydrocarbon-impacted soil was not observed at the remaining soil screening locations, and no soil samples were submitted for laboratory analysis from these areas in accordance with ECMC operator Guidance. On June 13, 2023, a soil gas survey was conducted at 3 soil vapor points (SVP) installed adjacent to the former wellhead following cut and cap operations. GEM 5000 field readings were non-detect for methane at all 3 SVPs. The SVP locations are illustrated on Figure 1 and the SVP screening results are summarized in Table 6. 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 4

Number of soil samples exceeding 915-1 1

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

Approximate areal extent (square feet) 225

### NA / ND

-- Highest concentration of TPH (mg/kg) 242

-- Highest concentration of SAR 8.53

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 6

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

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 BG01@3', BG02@3', BG01@6', and BG02@6' were collected from native material adjacent to the former wellhead location, at comparable depths and material to the confirmation soil samples. Additional background soil samples could not be collected from the area surrounding the former wellhead location, due to operational restrictions and safety concerns associated with additional active flowlines remaining in the area. The background soil samples were submitted for laboratory analysis of Table 915-1 metals and the Soil Suitability for Reclamation Parameters using standard 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.

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 to address remaining soil impacts at the former wellhead location have not yet been initiated, and will be summarized in a forthcoming Form 27-Supplemental update.

# 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.

Excavation activities to address remaining soil impacts along the flowline have not yet been initiated, and will be summarized in a forthcoming Form 27-Supplemental update.

## 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.

Laboratory results indicate that constituent concentrations in the soil samples collected from the former flowline riser locations were in compliance with Table 915-1 standards; therefore no soils were removed during partial flowline removal operations. Excavation activities to address remaining soil impacts at the former wellhead location have not yet been initiated, and no soils have been removed from the site to-date.

## 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 Project status 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 Colorado 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: \$ 10000

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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? No

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

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. 03/31/2024

Proposed date of completion of Reclamation. 04/30/2024

## 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. 06/20/2023

Actual Spill or Release date, or date of discovery. 06/20/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/12/2023

Proposed site investigation commencement. 06/12/2023

Proposed completion of site investigation. 12/31/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/12/2023

Proposed date of completion of Remediation. 12/31/2023

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

Based on the analytical data presented herein, assessment is complete at the flowline riser locations associated with the Howard 25C-22HZX wellhead, and no further activities are required in these areas. The remaining flowline was abandoned in place due to operational restrictions and safety concerns associated with additional active flowlines remaining in the same corridor, and its status will be changed to out-of-service in accordance with Rule 1101.a.(3).A,B,&C. The remaining portion of the Howard 25C-22HZX flowline to be left in place, and the additional active flowlines remaining in the same corridor, are illustrated on Figure 2. Excavation activities to address remaining soil impacts at the former wellhead location have not yet been initiated, and will be summarized in a forthcoming Form 27-Supplemental update. Form 27-Supplemental updates will continue to be submitted to the ECMC on a quarterly basis.

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

Signed: Gregory Hamilton

Title: Environmental Lead

Submit Date: 02/27/2024

Email: Gregory\_Hamilton@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: 05/23/2024

Remediation Project Number: 28992

## COA Type

## Description

	In accordance with 913.d.(1), Operator will investigate impacts to soil, Groundwater, and surface water as soon as the impacts are discovered.
	Operator shall obtain additional background samples from locations sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, and should be obtained from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples.  Operator shall analyze confirmation soil samples for complete Table 915-1 Contaminants of Concern until Operator has submitted sufficient background and waste characterization data to request and receive Director Approval of reduced list of contaminants of concern.
	Per COA on Form 19is Doc #403439853: "Quarterly reporting is required under Remediation Project #28992." Per COA on Form 27i Doc #403359773: "In accordance with Rule 913.e.(3), Operator will adopt a quarterly reporting schedule. COGCC selected Quarterly under Remediation Progress Update."  Operator has not submitted quarterly updates as required. In accordance with Rule 913.e.(3), Operator will adopt a quarterly reporting schedule (every 90 days).
	Operator states: "Excavation activities to address remaining soil impacts along the flowline have not yet been initiated, and will be summarized in a forthcoming Form 27-Supplemental update."  Operator has previously stated: "Excavation and assessment activities are ongoing and will be summarized in a forthcoming quarterly Form 27Supplemental Site Investigation and Remediation Workplan under Remediation Project No. 28992 (approved Form 27 Document No. 403359773). " on Form 19i/s Doc #403439853 received on 6/21/2023.  Operator shall complete the proposed work and submit a Supplemental Form 27 demonstrating work completion within 90 days of approval of this form. If additional time is required Operator shall submit a Form 27 per Rule 913.d.(2) Operator shall submit a Supplemental Form 27 with an updated Implementation Schedule at least 14 days in advance of any schedule changes.
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.

<b>Att Doc Num</b>	<b>Name</b>
403528694	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403528864	ANALYTICAL RESULTS
403528865	PHOTO DOCUMENTATION
403528869	OTHER
403528871	SOIL SAMPLE LOCATION MAP
403528875	OTHER
403528876	ANALYTICAL RESULTS
403700227	SOIL SAMPLE LOCATION MAP
403801338	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

### **General Comments**

<b>User Group</b>	<b>Comment</b>	<b>Comment Date</b>
Environmental	The subject form was first received on 9/18/2023. ECMC returned the subject form to draft on 12/13/2023 requiring a map to demonstrate that the flowlines exist in the same corridor. ECMC received the revised form on 12/15/2023. ECMC returned the revised form to draft on 2/27/2024 due to a corrupt attachment. The revised form was resubmitted the same day.	05/23/2024

Total: 1 comment(s)