

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Kari Brown

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 & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
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 #: 30852 Initial Form 27 Document #: 403458665

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>328592</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>WOOLLEY-62N68W 34NESW</u>	Latitude: <u>40.092190</u>	Longitude: <u>-104.993378</u>	
	** correct Lat/Long if needed: Latitude: <u>40.091979</u>	Longitude: <u>-104.993567</u>	
QtrQtr: <u>NESW</u> Sec: <u>34</u> Twp: <u>2N</u> Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>485214</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Wooley 34-11M,34-13JI O SA Hist Rel</u>	Latitude: <u>40.091976</u>	Longitude: <u>-104.993579</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>NESW</u> Sec: <u>34</u> Twp: <u>2N</u> Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Residential

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.
The nearest building is located approximately 200 feet southeast of the facility.
The nearest domestic water well is located approximately 400 feet southwest of the facility.

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	45' (N-S) x 25' (E-W) x 7' 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.

Tank battery decommissioning activities were completed at the Wooley 34-11M, U 34-13JI O SA production facility location on September 29, 2023. Visual inspection and field screening of soils was conducted at the former production facility infrastructure locations following decommissioning activities, and five (5) soil samples were collected from the former separator (SEP), above-ground storage tank (AST), and produced water vessel (PWV) locations, at depths ranging from approximately 3 inches to 5 feet below ground surface (bgs). The soil samples were submitted for laboratory analysis of the full Table 915-1 analytical suite, using standard ECMC-approved methods, to determine if a release occurred. Analytical results indicated that soil impacts were present at sample location AST-B01@3" due to TMB and PAHs concentrations above Table 915-1 standards, and at sample location PWV-B01@5' due to the pH result above the Table 915-1 standard and site-specific background levels. As such, a Form 19-Initial/Supplemental Spill/Release Report (Document No.403547007) was submitted on October 2, 2023, and the ECMC issued Spill/Release Point ID 485214. Analytical results indicated that the remaining constituent concentrations in the soil samples collected during facility decommissioning activities were in compliance with ECMC Table 915-1 standards and/or within the range of site-specific background levels (x 1.25 for metals). Groundwater has not been encountered during the facility decommissioning or subsequent over-excavation activities completed to-date. Soil sample location and field screening data are presented in Table 1. Soil analytical results are summarized in Tables 2 through 5. The facility decommissioning soil sample and field screening locations are illustrated on Figure 1. The current excavation extent and associated soil sample locations are illustrated on Figure 2.

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 17, 2023 through February 21, 2024, excavation activities have been conducted to address remaining soil impacts at the former AST/PWV locations. Soil samples have been collected from the base and sidewalls of the excavation area, at depths ranging from approximately 2 to 7 feet below ground surface (bgs). Based on the analytical results for waste characterization samples AST-B01@3" and PWV-B01@5', the confirmation soil samples have been submitted for laboratory analysis of BTEX, TPH, TMB, PAHs, pH, and select Table 915-1 metals (As, Ba, Cd, Cu, Pb, Ni, Se, and Zn). Analytical results indicate that impacted soil remains in the AST/PWV excavation area. Excavation and ste assessment activities to address remaining soil impacts are currently ongoing, and will be summarized in a Form-27 Supplemental update.

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 the facility decommissioning or subsequent over-excavation activities completed to-date. If groundwater is encountered during ongoing impacted soil excavation activities, 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 ECMC 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 September 29, 2023, visual inspection and field screening of soils was conducted at 1 location below the former AST, 3 sidewall locations within the PWV removal excavation area, 1 location at the former meter house (MH), and 1 location at the former enclosed combustion device (ECD). 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 ECMC Operator Guidance for Oil & Gas Facility Closure document. Soil sample location and field screening data are presented in Table 1. Soil analytical results are summarized in Tables 2 through 5. The soil sample and field screening locations are illustrated on Figures 1 and 2. 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 20

Number of soil samples exceeding 915-1 10

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

Approximate areal extent (square feet) 1100

NA / ND

-- Highest concentration of TPH (mg/kg) 415.8
8

-- Highest concentration of SAR 5.46

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 7

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?

Six (6) background soil samples were collected from undisturbed native material adjacent to the former production facility, at comparable depths and soil composition to the confirmation soil samples. Additionally, eight (8) background soil samples were collected from undisturbed native material adjacent to the associated Woolley U 34-13JI wellhead and flowline locations, at comparable depths and soil composition to the confirmation soil samples. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and Table 915-1 metals 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 Table 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?

Impacted soil remains in the AST/PWV excavation area. Excavation and site assessment activities to address remaining soil impacts are currently ongoing, 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.

On October 17, 2023 through February 21, 2024, approximately 20 cubic yards of impacted material have been removed from the AST/PWV excavation area and transported to the Front Range Landfill in Erie, Colorado for disposal; approximately 140 cubic yards of impacted material have been removed from the AST/PWV excavation area and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Excavation and site assessment activities to address remaining soil impacts in the PWV excavation area are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update. Impacted material will continue to be removed and transported off-site for disposal at a licensed disposal facility.

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 analytical results indicate that soil impacts remain in the AST/PWV excavation area. Excavation and site assessment activities to address remaining soil impacts in the AST/PWV excavation area are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update. Laboratory analytical results indicate that constituent concentrations in the remaining soil samples collected during facility decommissioning activities were in compliance with ECMC Table 915-1 standards and/or within the range of site-specific background levels (x 1.25 for metals). Estimated time to attain NFA is TBD based on the extent of impacted soil remaining in the AST/PWV excavation area.

Soil Remediation Summary

In Situ

Ex Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

- Yes _____ Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____ 160
- _____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
- No _____ 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.

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 Progress 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: \$ 13500

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

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. 06/30/2025

Proposed date of completion of Reclamation. 07/31/2025

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. 10/02/2023

Actual Spill or Release date, or date of discovery. 10/02/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/29/2023

Proposed site investigation commencement. 09/29/2023

Proposed completion of site investigation. 06/30/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/17/2023

Proposed date of completion of Remediation. 06/30/2024

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

Impacted soil remains in the AST/PWV excavation area. Excavation and site assessment activities to address remaining soil impacts are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update.

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: 03/29/2024

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: Kari Brown

Date: 06/20/2024

Remediation Project Number: 30852

COA Type**Description**

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**

403655461	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403711205	PHOTO DOCUMENTATION
403711206	ANALYTICAL RESULTS
403711335	SOIL SAMPLE LOCATION MAP
403711338	SOIL SAMPLE LOCATION MAP
403711340	ANALYTICAL RESULTS
403831261	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 7 Files

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

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)