

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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10/24/2024

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 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	Phone Numbers
Address: P O BOX 173779		Phone: (713) 350-4906
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Ariana Ochoa	Email: DJRemediation_Forms@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 35204 Initial Form 27 Document #: 403753489

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: WELL	Facility ID: _____	API #: 123-08062	County Name: WELD
Facility Name: ADOLPH ANDERSON UNIT 1	Latitude: 40.119181	Longitude: -104.769336	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSW	Sec: 22	Twp: 2N	Range: 66W
Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION	Facility ID: 317970	API #: _____	County Name: WELD
Facility Name: ADOLPH ANDERSON UNIT-62N66W 22SSWSW	Latitude: 40.119180	Longitude: -104.769340	
** correct Lat/Long if needed: Latitude: 40.119145		Longitude: -104.770261	
QtrQtr: SWSW	Sec: 22	Twp: 2N	Range: 66W
Meridian: 6	Sensitive Area? Yes		

Facility Type: SPILL OR RELEASE	Facility ID: 487488	API #:	County Name: WELD
Facility Name: Anderson Adolph UT1	Latitude: 40.119145	Longitude: -104.770261	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SWSW	Sec: 22	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 487612	API #:	County Name: WELD
Facility Name: Anderson, Adolph Unit 1	Latitude: 40.119181	Longitude: -104.769336	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SWSW	Sec: 22	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM	Most Sensitive Adjacent Land Use Occupied Buildings
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

Water well 650 feet (ft) northwest. Occupied buildings 800 ft northwest, 820 ft south, 830 ft north, 830 ft northeast, and 870 ft southeast. Livestock 170 ft southwest, 490 ft northeast, 600 ft north, and 1,100 east, and 1,130 ft southeast. County Roads 960 ft west and 990 ft south.

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	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.

Wellhead cut and cap operations were completed at the Anderson Adolph Unit 1 wellhead on 7/12/24. Visual inspection and field screening of soil around the wellhead and associated pumping equipment were conducted following cut and cap operations, and a soil sample was collected from the base of the excavation. Portions of the flowline associated with the wellhead was removed on 7/12 and 7/17/24, and soil samples were collected from the location where the flowline risers were disconnected from the wellhead and from the separator. All samples were submitted for laboratory analysis of full list Table 915-1 constituents to determine if a release occurred. Initial analytical results indicated that pH and lead impacts were present at the former wellhead. Verification samples were collected and confirmed the initial results. As such, a Form 19 Report (Doc No. 403891201) was submitted and the ECMC issued Spill/Release Point ID 487612. The Form 44 is attached.

Decommissioning activities were completed at the Anderson Adolph Facility on 7/17/24. Visual inspection and field screening of soil at one former aboveground storage tank (AST), one produced water vessel (PWV), one meter house, one emission control device (ECD), two dumpline potholes, one gas scrubber, and one separator were conducted following removal activities. Soil samples were submitted for analysis of full list ECMC Table 915-1 constituents to determine if a release occurred. Results indicated that benzene, 1,2,4- and 1,3,5-trimethylbenzene (TMBs), polycyclic aromatic hydrocarbon (PAH), pH, barium, and/or hexavalent chromium impacts exceeding Table 915-1 allowable levels and/or site-specific background levels were present at the former AST, separator, and one dumpline pothole. As such, a Form 19 Report (Doc No. 403859750) was submitted and the ECMC issued Spill/Release Point ID 487488.

The wellhead, flowline, and facility soil sample locations are depicted on Figures 1 through 3.

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):

Between July 17 and August 29, 2024, excavation activities were conducted to address remaining soil impacts at the former separator and dumphine locations. Confirmation soil samples were collected from the base and sidewalls of each excavation at approximately 6 feet below ground surface (ft bgs) and 3 ft bgs, respectively. The samples were submitted for laboratory analysis of the excavation-specific waste profile including total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, total xylenes (BTEX), TMBs, PAHs, pH, boron, and/or select Table 915-1 metals using ECOMC-approved methods. Laboratory analytical results indicated pH, arsenic, and barium exceeding the ECOMC Table 915-1 allowable levels and background levels remain in both excavations. The laboratory report is attached. The PID readings and soil sample results are summarized in Tables 1 and 2.

Proposed Groundwater Sampling

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

Groundwater was not encountered during wellhead cut and cap, flowline removal, or facility decommissioning operations.

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 12, 2024, visual inspection and field screening of soils were conducted at four sidewall locations within the cut and cap excavation area, four locations at the ground surface adjacent to the cut and cap excavation, and one pothole location. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the screening locations, and no soil samples were submitted for laboratory analysis from these areas, in accordance with the ECOMC Operator Guidance. A photo log is attached.

A soil gas survey was attempted at five soil vapor points (SVPs) installed near the former wellhead following cut and cap activities; however, upon arrival to the site, it was determined that all five SVPs had been destroyed by wildlife and could not be screened.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 30

Number of soil samples exceeding 915-1 27

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

Approximate areal extent (square feet) 600

NA / ND

-- Highest concentration of TPH (mg/kg) 115.2

-- Highest concentration of SAR 1.85

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 6

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?

Six background soil samples (NATIVE-BG01@2.5' through NATIVE-BG03@2.5' and NATIVE-BG01@5' through NATIVE-BG03@5') were collected from native material adjacent to the wellhead cut and cap excavation. The background soil samples were submitted for laboratory analysis of pH, electrical conductivity (EC), sodium adsorption ratio (SAR), boron, and ECMC Table 915-1 metals, using ECMC-approved methods. Laboratory analytical results indicate that levels of arsenic, barium, and hexavalent chromium are naturally high in the native soil. The background soil sample analytical results are summarized in Table 2. Background sample locations are depicted on Figure 4.

☐ 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?

Assessment activities are ongoing. Additional flowline removal activities are pending 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 analytical results indicate that pH, lead, arsenic, barium, and/or hexavalent chromium impacts exceeding the ECMC Table 915-1 allowable levels and background levels remain in the cut and cap excavation, at the former AST, and in the separator and dumphine excavations. Assessment activities are ongoing. Groundwater was not encountered in the wellhead excavation, flowline potholes, or facility excavations. Additional flowline removal activities are pending and will be summarized in a subsequent Form 27 Supplemental report.

Soil Remediation Summary

☐ In Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

☐ Ex Situ

_____ 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.

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: \$ 24000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation?

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?

Does the previous reply indicate consideration of background concentrations?

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. 07/19/2024

Actual Spill or Release date, or date of discovery. 07/18/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/12/2024

Proposed site investigation commencement. 07/12/2024

Proposed completion of site investigation. 04/09/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/12/2024

Proposed date of completion of Remediation. 04/09/2025

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: Ariana Ochoa

Title: Sr. HSE Advisor

Submit Date: 10/24/2024

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: 01/16/2025

Remediation Project Number: 35204

COA Type**Description**

	Background sample TB-BG01@0.5' was collected from an area on-location and is not representative of background conditions. This samples shall be omitted from future background determination calculations.
1 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**

403951151	FORM 27-SUPPLEMENTAL-SUBMITTED
403951358	ANALYTICAL RESULTS
403951360	ANALYTICAL RESULTS
403951366	PHOTO DOCUMENTATION
403951371	CORRESPONDENCE
403951373	SOIL SAMPLE LOCATION MAP
403951374	SOIL SAMPLE LOCATION MAP
403951375	SOIL SAMPLE LOCATION MAP
403951376	SOIL SAMPLE LOCATION MAP

Total Attach: 9 Files

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

Environmental	ECMC agrees that organic compounds are in compliance with Table 915-1 at this location.	01/16/2025
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Total: 1 comment(s)