

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Alexander Ahmadian

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 & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
Address: <u>P O BOX 173779</u>		Phone: <u>(713) 350-4906</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>()</u>
Contact Person: <u>Ariana Ochoa</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 30760 Initial Form 27 Document #: 403470256

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>LOCATION</u>	Facility ID: <u>328358</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>WARDELL-63N65W 19NWNW</u>	Latitude: <u>40.216360</u>	Longitude: <u>-104.713720</u>	
	** correct Lat/Long if needed: Latitude: <u>40.216261</u>	Longitude: <u>-104.713948</u>	
QtrQtr: <u>NWNW</u> Sec: <u>19</u> Twp: <u>3N</u> Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>485355</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Wardell H19-2J, 3, 4, WFL H19-5JI</u>	Latitude: <u>40.216261</u>	Longitude: <u>-104.713948</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>NWNW</u> Sec: <u>19</u> Twp: <u>3N</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 Residential 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? No

Other Potential Receptors within 1/4 mile

Water well 640 feet (ft) west. Livestock 550 ft northeast. Residential Buildings 1,140 ft northeast and 1,230 ft southwest. Commercial building 700 ft northwest. County road 680 ft north. Livestock 470 ft west.

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
UNDETERMINED	GROUNDWATER	TBD	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	See attached data	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 Wardell H19-2J, 3, 4, WFL H19-5JI O SA Facility on October 19, 2023. Groundwater was not encountered during excavation activities. Visual inspection and field screening of soil at one aboveground storage tank (AST), one produced water vessel (PWV), one separator, one emission control device (ECD), one dumphine location, and one meter house location were conducted following removal activities, and soil samples (AST01@0.5', PWV-B01@4', and PWV-W01@2') were submitted for analysis of full list Table 915-1 constituents, due to the presence of impacts. Soil samples (SEP01-INLET@3' and SEP01-OUTLET@3') were submitted for analysis of reduced list Table 915-1 constituents including benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4- and 1,3,5-trimethylbenzenes (TMBs), naphthalene, total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO), pH, electrical conductivity (EC), sodium adsorption ratio (SAR), and boron, as approved in the Form 27 Initial dated August 3, 2023 (Document No. 403470256), to determine if a release occurred. Laboratory analytical results indicated that TPH, TMBs, naphthalene, 1-methylnaphthalene, and/or 2-methylnaphthalene, impacts exceeding the ECMC Table 915-1 allowable levels were present at the AST and PWV locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403568479) was submitted on October 25, 2023 and the ECMC issued Spill/Release Point ID 485355. The facility soil sample locations are depicted on Figures 1A, 1B, and 1C. 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):

Between October 19, 2023 and February 5, 2024, excavation activities were conducted to address remaining soil impacts at the former AST and PWV locations. Confirmation soil samples were collected from the base and sidewalls of the combined excavation at depths ranging from 16 to 20 ft below ground surface (bgs). The confirmation soil samples were submitted for laboratory analysis of the site-specific waste profile including TPH, BTEX, TMBs, naphthalene, polycyclic aromatic hydrocarbons (PAHs), boron, and/or select Table 915-1 metals using ECMC-approved methods. Laboratory analytical results indicate benzene, barium, cadmium, and/or selenium impacts above the ECMC Table 915-1 allowable levels and/or the analytical variability of site-specific background levels, remain at the AST and PWV locations. 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 19, 2023, visual inspections and field screening of soils were conducted at the loadout and hatch for the AST, three sidewalls of the PWV excavation, one dumphine location, the ECD, 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 for Oil & Gas Facility Closure document. The soil sample locations are depicted on Figure 1A. A photographic log is attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 35
Number of soil samples exceeding 915-1 33
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 2650

NA / ND

-- Highest concentration of TPH (mg/kg) 949
-- Highest concentration of SAR 0.943
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 20

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 for comparison to samples collected within the fill material. Sixteen native background soil samples (NATIVE-BG01@3' through NATIVE-BG04@3', NATIVE-BG01@6' through NATIVE-BG04@6', NATIVE-BG05@15' through NATIVE-BG08@15', and NATIVE-BG05@19' through NATIVE-BG08@19') were collected from native material outside of the facility excavations. Background samples were submitted for laboratory analysis of pH, EC, SAR, boron, and/or select Table 915-1 metals. Laboratory analytical results indicate that arsenic is naturally high in the soil used to construct the tank battery, and pH, arsenic, barium, cadmium, lead, nickel, and selenium are naturally high in the native soil. The background soil sample laboratory analytical results are summarized in Table 2. The background soil sample locations are depicted on Figure 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.

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 data indicate that impacts exceeding the ECMC Table 915-1 allowable level and background levels for benzene, barium, cadmium, and selenium remain in the former AST and PWV locations. Excavation activities are ongoing. Groundwater was not encountered in the facility excavations. Confirmation soil sample results will be summarized in a subsequent Form 27 Supplemental report within 90 days following the completion of assessment activities.

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 _____

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: \$ 13500 _____

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. 10/25/2023

Actual Spill or Release date, or date of discovery. 10/25/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/19/2023

Proposed site investigation commencement. 10/19/2023

Proposed completion of site investigation. 09/01/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/19/2023

Proposed date of completion of Remediation. 09/01/2024

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

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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: 04/04/2024

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: Alexander Ahmadian

Date: 05/09/2024

Remediation Project Number: 30760

COA Type**Description**

	Operator shall provide the Document numbers or attach the Form 42 associated for the on-location flowline abandonment on the next Form 27 Supplemental.
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**

403705141	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403705260	SOIL SAMPLE LOCATION MAP
403705262	SOIL SAMPLE LOCATION MAP
403705263	SOIL SAMPLE LOCATION MAP
403705267	PHOTO DOCUMENTATION
403705269	ANALYTICAL RESULTS
403705477	SOIL SAMPLE LOCATION MAP
403784712	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 8 Files

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

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)