

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Candice (Nikki) Graber

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>(720) 929-4307</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Max Moran</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29438 Initial Form 27 Document #: 403379355

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>123-38234</u>	County Name: <u>WELD</u>
Facility Name: <u>HOWARD 9C-22HZ</u>	Latitude: <u>40.017137</u>	Longitude: <u>-104.870463</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</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>483525</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Howard 9C-22 Wellhead</u>	Latitude: <u>40.017137</u>	Longitude: <u>-104.870463</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</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 CL

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

Domestic water well: approximately 410' E and 1240' E
Surface water: none
Wetlands: none
Livestock: none
Occupied Building: multiple occupied buildings within 1/4 mile
High Priority Habitats: none

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	16' (E-W) x 18' (N-S) x 10' 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.

On December 20, 2022, a bushing seal failure on the stuffing box caused a release of an unknown volume of hydrocarbons at the Howard 9C-22 wellhead location. The ECMC issued Spill/Release Point ID 483525 for this release. On December 20, 2022, an initial waste characterization soil sample (Initial Waste Characterization@2.5') was collected from the material most likely to be impacted, based on field observations and proximity to the release location at the wellhead, and submitted for laboratory analysis of the full ECMC Table 915-1 analytical suite. Laboratory analytical results for soil sample Initial Waste Characterization@2.5' indicated that the benzene, toluene, naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, 1-methylnaphthalene, 2-methylnaphthalene, arsenic, barium, and selenium concentrations exceeded the applicable ECMC Table 915-1 standards. Groundwater was not encountered during excavation activities.

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):

From December 20, 2022 through January 10, 2023, excavation activities were conducted to address soil impacts around the release location and five (5) confirmation soil samples were collected from the base and sidewalls of the final excavation extent, at depths of approximately 10' and 6' bgs, respectively. Based on waste characterization results (Initial Waste Characterization@2.5'), the confirmation soil samples were submitted for laboratory analysis of benzene, toluene, naphthalene, 1,2,4-TMB, 1,3,5-TMB, 1 and 2 methylnaphthalene, Ar, Ba, and Se using ECMC-approved methods, as previously approved on Form 27-Supplemental Document #403809000. Analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extents exceeded the applicable ECMC Table 915-1 standards. However, due to the proximity of active wellhead surface and subsurface infrastructure in the surrounding area, excavation activities could not safely continue.

Proposed Groundwater Sampling

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

Groundwater was not encountered during initial wellhead excavation activities. If groundwater is encountered during ongoing assessment and remediation activities, a minimum of one grab sample will be collected as soon as practical. Groundwater samples will be submitted to an accredited laboratory for all analytes listed in ECMC Table 915-1 Organic Compounds in Groundwater and Groundwater Inorganic parameters 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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 19
Number of soil samples exceeding 915-1 19
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 288

NA / ND

-- Highest concentration of TPH (mg/kg) 148
-- Highest concentration of SAR 2.47
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 10

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?

Site-specific background soil samples will be collected to assess native soil conditions.

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?

Due to the proximity of the wellhead to surrounding surface and subsurface infrastructure, excavation activities could not safely continue. On August 14, 2024, four permanent soil vapor extraction (SVE) remedial wells were installed to approximately 10' below ground surface. Mobile SVE remedial events will be completed to address remaining soil impacts.

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.

Between December 20, 2023 and January 10, 2023, approximately 38 cubic yards of impacted soil slurry was excavated via hydro excavation and transported to Aggregate State Fluid Recycling Facility in Fort Lupton, Colorado for disposal. Laboratory analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extents exceeded the applicable ECMC Table 915-1 standards. Due to the proximity of the wellhead to surrounding surface and subsurface infrastructure, excavation activities could not safely continue. The excavation area has been 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 indicated that constituent concentrations in the soil samples collected from the final excavation extents exceeded the applicable ECMC Table 915-1 standards. On August 14, 2024, four permanent SVE remedial wells were installed to approximately 10' below ground surface. During SVE well installation, soil samples were collected at depths of 6' and 10' bgs in the SVE locations. Analytical results from the soil sample indicated that constituent concentrations were within ECMC Table 915-1 standards, with the exception of metal concentrations. Site-specific background samples will be collected to assess native soil conditions. A SVE pilot test was conducted on February 24, 2025. Based on the results of the SVE pilot test, additional site assessment activities will be completed and additional SVE remedial wells may be installed closer to the former excavation area.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 38

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____ 456644

_____ 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.

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. 12/20/2022

Actual Spill or Release date, or date of discovery. 12/20/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/20/2022

Proposed site investigation commencement. 12/20/2022

Proposed completion of site investigation. 03/31/2027

REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/20/2022

Proposed date of completion of Remediation. 03/31/2027

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

KMOG has a large number of active remediation projects and is working diligently to bring each project to closure. These projects are prioritized based on potential environmental risk; considering factors such as size of impact, type of impact, what media is impacted, proximity to sensitive receptors and land use. Due to this prioritization, no field work has been completed on this project since the previous Form 27 submittal. Field work is anticipated to resume on the project by March 31, 2026.

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

Signed: Max Moran

Title: Environmental Advisor

Submit Date: 12/08/2025

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: Candice (Nikki) Graber

Date: 12/08/2025

Remediation Project Number: 29438

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.
	Pursuant to Rule 913.d, Operator will adhere to the proposed schedule. Any deviation from the schedule must be approved by the Director in writing on a Form 27 Supplemental Report.
	ECMC has processed this form as an update; no analytical was attached thus approval of this form does not imply any agreement with comments on completion of site investigation. All ongoing/unaddressed comments/COAs from previous Forms remain applicable.
3 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.

Att Doc Num**Name**

404444921	FORM 27-SUPPLEMENTAL-SUBMITTED
404444953	IMPLEMENTATION SCHEDULE

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)