

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 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: (720) 929-4306
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Erik Mickelson	Email: Erik_Mickelson@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22660 Initial Form 27 Document #: 402980103

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: LOCATION	Facility ID: 327165	API #: _____	County Name: WELD
Facility Name: BUFFALO GARDENS U-62N68W 13NESE	Latitude: 40.136514	Longitude: -104.945471	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 13	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 481346	API #: _____	County Name: WELD
Facility Name: Buffalo Gardens U #13-4J Historic	Latitude: 40.137428	Longitude: -104.944472	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 13	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

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? Yes

Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

The nearest occupied building is located approximately 70 feet east of the site.
Wetlands are located approximately 175 feet north of the site.
Surface water is located approximately 440 feet north of the site.
The nearest domestic water well is located approximately 690 feet northeast of the site.
A livestock holding pen is located approximately 1,225 feet north of the site.



SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|---|
| <input type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input checked="" type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | Non-Impacted Groundwater _____ |
| <input type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input 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
No	GROUNDWATER	No impacts encountered	Groundwater sampling and laboratory analysis
Yes	SOILS	~180' (N-S) x ~135' (E-W) x 20' bgs	Excavation, soil sampling, and laboratory analysis

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Analytical data associated with this remediation was altered without the knowledge and beyond the reasonable control of Kerr-McGee Onshore Oil & Gas LP (KMOG). Arsenic (As) in sample FL-B09@9' was altered by a third-party contractor from 2.24 mg/kg to 2.14 mg/kg. The original As result of 2.24 mg/kg is below site-specific background concentrations (x1.25) for As in multiple background samples. The max background concentration (x1.25) for As is 2.71 mg/kg in sample BG02@9'. As such, KMOG is requesting that no additional action be required related to the altered data associated with Remediation Project Number 22660. The analytical data altered by a third-party without the knowledge of and beyond the reasonable control of KMOG can be found in Form 27 Document No. 402980103. The original unaltered lab report is attached.

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):

Proposed Groundwater Sampling

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

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

NA / ND

Number of soil samples collected 111

-- Highest concentration of TPH (mg/kg) 831.2

Number of soil samples exceeding 915-1 58 -- Highest concentration of SAR 26.4
 Was the areal and vertical extent of soil contamination delineated? Yes BTEX > 915-1 Yes
 Approximate areal extent (square feet) 5800 Vertical Extent > 915-1 (in feet) 20

Groundwater

Number of groundwater samples collected 14 -- Highest concentration of Benzene (µg/l) 1.99
 Was extent of groundwater contaminated delineated? Yes -- Highest concentration of Toluene (µg/l) 1.88
 Depth to groundwater (below ground surface, in feet) 3 -- Highest concentration of Ethylbenzene (µg/l) 9.96
 Number of groundwater monitoring wells installed 10 -- Highest concentration of Xylene (µg/l) 4.06
 Number of groundwater samples exceeding 915-1 2 NA 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?
 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?

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.
 Please refer to the previous Form 27 Document No. 402980103.

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.

Analytical data associated with this remediation was altered without the knowledge and beyond the reasonable control of Kerr-McGee Onshore Oil & Gas LP (KMOG). Arsenic (As) in sample FL-B09@9' was altered by a third-party contractor from 2.24 mg/kg to 2.14 mg/kg. The original As result of 2.24 mg/kg is below site-specific background concentrations (x1.25) for As in multiple background samples. The max background concentration (x1.25) for As is 2.71 mg/kg in sample BG02@9'. As such, KMOG is requesting that no additional action be required related to the altered data associated with Remediation Project Number 22660. The analytical data altered by a third-party without the knowledge of and beyond the reasonable control of KMOG can be found in Form 27 Document No. 402980103. The original unaltered lab report is attached.

Soil Remediation Summary

In Situ Ex Situ
 _____ Bioremediation (or enhanced bioremediation) Yes Excavate and offsite disposal
 _____ Chemical oxidation If Yes: Estimated Volume (Cubic Yards) 1700
 _____ Air sparge / Soil vapor extraction Name of Licensed Disposal Facility or ECMC Facility ID # 149007

_____ Natural Attenuation
_____ Other _____

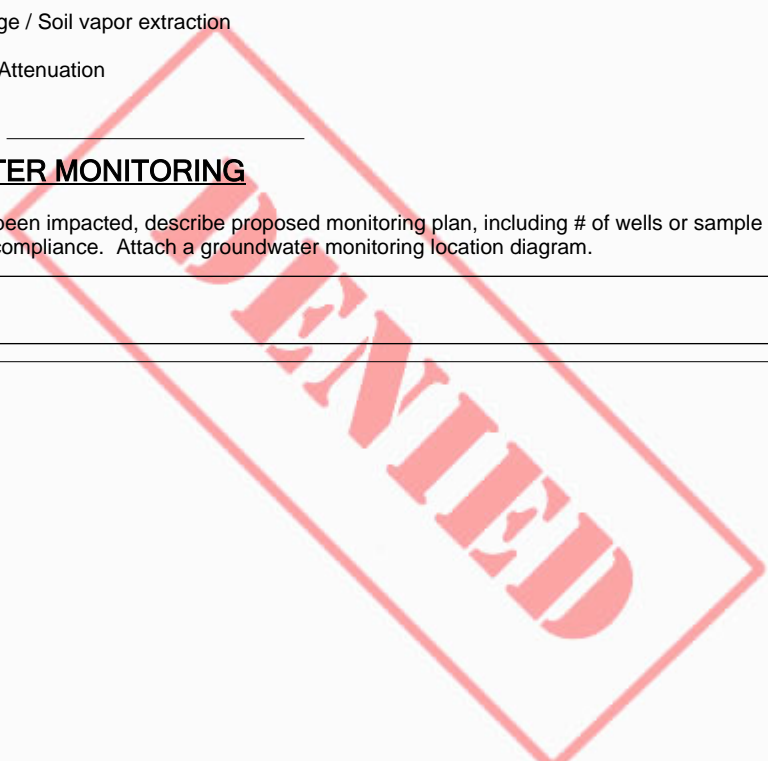
No _____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

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 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: \$ 35000

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:

Approximately 90 cubic yards of impacted material were removed from the excavation areas and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling; approximately 10 cubic yards of impacted material were removed from the excavation areas and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 4,496 barrels of non-impacted groundwater were removed from the excavation areas via vacuum truck, for sidewall stability and backfilling purposes, and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 1700

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable: 149007

Non-ECMC Disposal Facility: Front Range Landfill - Erie, Colorado

Volume of E&P Waste (liquid) in barrels 4496

E&P waste (liquid) description Non-impacted Groundwater

ECMC Disposal Facility ID #, if applicable: 434766

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 has been reclaimed in accordance with ECMC 1000 Series Reclamation Rules.

Is the described reclamation complete? Yes

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. 10/31/2024

Proposed date of completion of Reclamation. 11/30/2024

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. 12/14/2021

Actual Spill or Release date, or date of discovery. 12/13/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/13/2021

Proposed site investigation commencement. 12/13/2021

Proposed completion of site investigation. 10/20/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/31/2021

Proposed date of completion of Remediation. 07/01/2025

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

Analytical data associated with this remediation was altered without the knowledge and beyond the reasonable control of Kerr-McGee Onshore Oil & Gas LP (KMOG). Arsenic (As) in sample FL-B09@9' was altered by a third-party contractor from 2.24 mg/kg to 2.14 mg/kg. The original As result of 2.24 mg/kg is below site-specific background concentrations (x1.25) for As in multiple background samples. The max background concentration (x1.25) for As is 2.71 mg/kg in sample BG02@9'. As such, KMOG is requesting that no additional action be required related to the altered data associated with Remediation Project Number 22660. The analytical data altered by a third-party without the knowledge of and beyond the reasonable control of KMOG can be found in Form 27 Document No. 402980103. The original unaltered lab report is attached.

A lab report, figure, and analytical table altered by a third-party without the knowledge of and beyond the reasonable control of KMOG were originally submitted to the ECMC in Form 27 Document No. 402980103 submitted on 03/22/2022; the following are replacements attached to this form. An original locked version of lab report Y202119 is attached to this form as a replacement to the lab report attached to Form 27 Document No. 402980103 (Attachment Document No. 402980347). The analytical table attached to this form replaces Table 4 attached to Form 27 Document No. 402980103 (Attachment Document No 402980349). The figure attached to this form replaces Figure 2 attached to Form 27 Document No. 402980103 (Attachment Document No. 402980361).

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: 04/16/2025

Email: Erik_Mickelson@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:

Date:

Remediation Project Number: 22660

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

Att Doc Num	Name
404153858	FORM 27-SUPPLEMENTAL-SUBMITTED
404153893	ANALYTICAL RESULTS
404168220	ANALYTICAL DATA SUMMARY TABLE(S)
404168224	SOIL SAMPLE LOCATION MAP

Total Attach: 4 Files

General Comments

User Group

Comment

Comment Date

Environmental	ECMC has removed Operator's request for closure and denied the subject Form for the following reasons: -Operator shall provide ALL laboratory analytical report(s) for this Remediation Project as a stand-alone attachment(s) via Supplemental Form 27. The Laboratory Report PDF(s) must be secured by the issuing laboratory; If there is a difference between the creation date and secured date of the PDF, Operator shall provide an explanation in the case narrative of the associated report. NOTE: The attached table still lists some sample results as pending for samples collected in 2022. -Operator shall include a map of the subject location including sample and screening locations and current and former excavation limits/soil stockpiles if applicable. GPS data used to create the map must comply with ECMC Rule 216. Operator will include ALL analytical data compared to Table 915-1 Standards in table format, GPS coordinates for all sampling locations, and any pertinent information associated with this Remediation Project not provided to date. Additionally, Operator shall submit field notes and photo documentation of all field activities not provided to date.	11/25/2025
Environmental	This form was reviewed by the following ECMC personnel prior to denial: -Area Environmental Protection Specialist -Area Supervisor	11/25/2025

Total: 2 comment(s)