

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404480375  
Receive Date:  
12/23/2025

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	<b>Phone Numbers</b>
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.

**DENIED**

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- E&P Waste       Other E&P Waste       Non-E&P Waste
- Produced Water       Workover Fluids      Non-Impacted Groundwater
- 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
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 Oil and Gas Onshore, LP (KMOG). Arsenic in sample FL-B09@9' was altered by a third-party contractor from 2.24 mg/kg to 2.14 mg/kg. The original arsenic result of 2.24 mg/kg is below site-specific background concentrations (x1.25) for arsenic in multiple background samples. The max background concentration (x1.25) for arsenic is 2.71 mg/kg in sample BG02@9'. As such, KMOG is requesting that additional soil assessment not be needed in relation 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 ECOM 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).

## 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 ):

Groundwater was encountered in the excavation areas at depths ranging from approximately 3 to 7.5 feet bgs. Between December 15, 2021 through September 27, 2022, four (4) groundwater samples (GW01, GW02, FL-GW01, and N-GW01) were collected and submitted for laboratory analysis of Table 915-1 organic constituents in groundwater. Analytical results indicated that constituent concentrations in the excavation groundwater samples were in compliance with Table 915-1 allowable levels. Based on the compliant organic detections in groundwater above the laboratory reporting limits, monitoring wells were installed to verify that no dissolved-phase impacts are present. The groundwater sample analytical results are summarized in Table 6. The groundwater sample locations are depicted on Figure 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 111

Number of soil samples exceeding 915-1 58

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 5800

### NA / ND

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

-- Highest concentration of SAR 26.4

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 20

### Groundwater

Number of groundwater samples collected 54

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 3

Number of groundwater monitoring wells installed 10

Number of groundwater samples exceeding 915-1 12

-- Highest concentration of Benzene (µg/l) 1.99

-- Highest concentration of Toluene (µg/l) 1.88

-- Highest concentration of Ethylbenzene (µg/l) 9.96

-- Highest concentration of Xylene (µg/l) 4.06

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?

Background soil samples were collected from undisturbed native material adjacent to the excavation areas, as described in a previous Form 27-Supplemental (Document No. 403141796).

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 KMOG. Arsenic in sample FL-B09@9' was altered by a third-party contractor from 2.24 mg/kg to 2.14 mg/kg. The original arsenic result of 2.24 mg/kg is below site-specific background concentrations (x1.25) for arsenic in multiple background samples. The max background concentration (x1.25) for arsenic is 2.71 mg/kg in sample BG02@9'. As such, KMOG is requesting that additional soil assessment not be needed in relation to the altered data associated with Remediation Project Number 22660.

Ten groundwater monitoring wells (BH01 through BH10) were installed due to the compliant organic detections identified at GW01, GW02, and FL-GW01 and quarterly groundwater monitoring was conducted between October 23, 2023 and October 25, 2024. Due to the identification of the aforementioned data that was altered by a third-party, quarterly groundwater monitoring was temporarily discontinued following the October 2024 monitoring event. Quarterly groundwater monitoring for full list Table 915-1 constituents in groundwater will resume in the first quarter of 2026.

**Soil Remediation Summary**

<input type="checkbox"/> In Situ	<input checked="" type="checkbox"/> 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	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.

Quarterly monitoring of wells BH01 through BH10 was conducted no a quarterly basis for full list Table 915-1 constituents in groundwater between October 23, 2023 and October 25, 2024. Upgradient monitoring well BH05 was used for determining inorganic compliance at the site. Laboratory analytical results from the fourth quarter of 2024 monitoring event indicated that point of compliance (POC) was achieved at the site and all monitoring wells were in compliance with Table 915-1 allowable levels or background levels. No organic detections have been present above the laboratory reporting limits for five quarterly monitoring events. The monitoring well locations are depicted on Figure 1. A groundwater elevation contour map generated using the October 2024 gauging data is included as Figure 3. The groundwater analytical results are summarized in Table 6 and the laboratory analytical reports from the January, April, July, and October 2024 monitoring events are attached.

Due to the identification of the aforementioned data that was altered by a third-party, quarterly groundwater monitoring was temporarily discontinued following the October 2024 monitoring event. Quarterly groundwater monitoring for full list Table 915-1 constituents in groundwater will resume in the first quarter of 2026.

# 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 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? Yes \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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. 12/14/2021

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. 12/31/2026

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/13/2021

Proposed date of completion of Remediation. 12/31/2026

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 KMOG. Arsenic in sample FL-B09@9' was altered by a third-party contractor from 2.24 mg/kg to 2.14 mg/kg. The original arsenic result of 2.24 mg/kg is below site-specific background concentrations (x1.25) for arsenic in multiple background samples. The max background concentration (x1.25) for arsenic is 2.71 mg/kg in sample BG02@9'. As such, KMOG is requesting that additional soil assessment not be needed in relation to the altered data associated with Remediation Project Number 22660.

Ten groundwater monitoring wells (BH01 through BH10) were installed due to the compliant organic detections identified at GW01, GW02, and FL-GW01 and quarterly groundwater monitoring was conducted between October 23, 2023 and October 25, 2024. Due to the identification of the aforementioned data that was altered by a third-party, quarterly groundwater monitoring was temporarily discontinued following the October 2024 monitoring event. Quarterly groundwater monitoring for full list Table 915-1 constituents in groundwater will resume in the first quarter of 2026.

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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: Erik Mickelson

Title: Environmental Lead

Submit Date: 12/23/2025

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

404480375	FORM 27 DENIED
404480392	SITE MAP
404480431	SOIL SAMPLE LOCATION MAP
404484259	LABORATORY ANALYTICAL REPORT
404484260	ANALYTICAL DATA SUMMARY TABLE(S)
404484261	LABORATORY ANALYTICAL REPORT
404484262	LABORATORY ANALYTICAL REPORT
404484263	LABORATORY ANALYTICAL REPORT
404484264	LABORATORY ANALYTICAL REPORT
404484265	LABORATORY ANALYTICAL REPORT
404502008	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 11 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
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. -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.	01/12/2026

Total: 1 comment(s)

