

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403544523  
Receive Date:  
09/29/2023

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 COGCC 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 &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b>
Address: <u>P O BOX 173779</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Phone: <u>(970) 336-3500</u>
	Zip: <u>80217-3779</u>	Mobile: <u>(970) 515-1698</u>
Contact Person: <u>Gregory Hamilton</u>	Email: <u>Gregory_Hamilton@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24884 Initial Form 27 Document #: 403158691

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>318259</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>WILLIAM DEASON GAS UNIT-61N66W 6NWSE</u>	Latitude: <u>40.076840</u>	Longitude: <u>-104.818120</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u>	Sec: <u>6</u>	Twp: <u>1N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <input type="checkbox"/> Yes

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>482371</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Deason William GU 1 Tank Battery</u>	Latitude: <u>40.077534</u>	Longitude: <u>-104.818122</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u>	Sec: <u>6</u>	Twp: <u>1N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <input type="checkbox"/> Yes

## SITE CONDITIONS

General soil type - USCS Classifications CH

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 building is located approximately 180 feet northeast of the facility.  
The nearest domestic water well is located approximately 290 feet northeast of the facility.  
Surface water is located approximately 70 feet north of the facility.  
A wetland is located approximately 70 feet north of the facility.  
The facility is located within a designated high-priority habitat.

## 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	117' (N-S) x 68' (E-W) x 6.5' bgs	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.

On June 13, 2022, historically impacted soils were discovered during reclamation activities at the previously decommissioned Deason William GU 1 O SA Production Facility, and excavation activities were initiated. On June 22, 2022, initial soil and groundwater samples were collected. Based on field observations and PID readings, soil sample REC-N01@3' was selected for waste characterization purposes and submitted for laboratory analysis of the full Table 915-1 analytical suite, using standard ECMC-approved methods appropriate for detecting the target analytes. Analytical results indicated that soil impacts were present due to polycyclic aromatic hydrocarbons (PAHs), barium (Ba), lead (Pb), and boron concentrations above Table 915-1 standards and/or site-specific background levels. The ECMC issued Spill/Release Point ID 482371 for this release. Non-impacted groundwater was encountered within the excavation area at approximately 3 feet below ground surface (bgs). On September 26, 2023, additional historically impacted soils were discovered during ongoing reclamation activities at this location, and a secondary waste characterization sample (REC2-B01@3") was collected from the material exhibiting the highest degree of impacts based on field observations, and submitted for laboratory analysis of the full Table 915-1 analytical suite. Preliminary analytical results for sample REC2-B01@3" indicated that soil impacts were present due to the 1,2,4-trimethylbenzene (TMB) concentration above the Table 915-1 standard. Additional analytical results (PAHs, metals, pH, EC, SAR, boron) are pending laboratory analysis and final reporting. Excavation and site assessment activities to address remaining soil impacts at sample REC2-B01@3" are currently ongoing. Soil sample location and field screening data are presented in Table 1. Soil and groundwater analytical results are summarized in Tables 2 through 6. The soil and groundwater sample locations are illustrated on Figures 1 and 2.

### 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 ):

On June 22, 2022 through January 19, 2023, excavation activities were conducted to address soil impacts in the initial reclamation area, as described in a previous Form 27-Supplemental update (Document No. 403353197). Analytical results indicate that constituent concentrations in the confirmation soil samples collected from the final excavation extents were in compliance ECMC Table 915-1 standards and/or within the acceptable range of soil variability when compared to background concentrations. Additional excavation activities to address remaining soil impacts at sample location REC2-B01@3" are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update. Based on the pending waste characterization results for sample REC2-B01@3", a waste profile will be developed to be used for future confirmation soil samples collected from this area. Soil analytical results are summarized in Tables 2 through 5.

#### Proposed Groundwater Sampling

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

Non-impacted groundwater was encountered within the reclamation excavation area at approximately 3 feet bgs. On June 22, 2022, a groundwater sample (REC-GW01) was collected from the excavation area and submitted for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4- and 1,3,5-trimethylbenzene (TMB) by United States Environmental Protection Agency (USEPA) Method 8260D. Analytical results indicated that constituent concentrations in groundwater sample (REC-GW01) were below laboratory detection limits (ND). As such, current groundwater conditions at this site are in compliance with ECMC Table 915-1 standards. The groundwater sample location and proposed temporary monitoring well locations are illustrated on Figure 3. The groundwater analytical results are presented in Table 6.

**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 ):

Excavation and site assessment activities to address remaining soil impacts at sample REC2-B01@3" are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update. Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental update (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB). The laboratory analytical report for the soil samples collected from the secondary reclamation area on September 26, 2023, is provided as Attachment A. The field notes and a photographic log are provided as Attachment B.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

**Soil**

Number of soil samples collected 64

Number of soil samples exceeding 915-1 33

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

Approximate areal extent (square feet) 5500

**NA / ND**

-- Highest concentration of TPH (mg/kg) 231.1

-- Highest concentration of SAR 3.36

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 6

**Groundwater**

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? Yes

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

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l) \_\_\_\_\_

ND Highest concentration of Toluene (µg/l) \_\_\_\_\_

ND Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

ND Highest concentration of Xylene (µg/l) \_\_\_\_\_

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?

Twelve (12) background soil samples have been collected from native material adjacent to the former production facility location, at comparable depth and material to the confirmation and waste characterization soil samples. The background soil samples were submitted for laboratory analysis of Table 915-1 metals and Soil Suitability for Reclamation Parameters using standard methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 4 and 5.

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 and site assessment activities to address remaining soil impacts at sample REC2-B01@3" are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update. Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental update (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB).

## 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.

From June 22, 2022 through January 19, 2023, approximately 300 cubic yards of impacted soil were excavated and transported to the Front Range Landfill in Erie, Colorado for disposal; and approximately 1,080 cubic yards of impacted soil were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Following the collection of groundwater sample REC-GW01, approximately 3,780 barrels of non-impacted groundwater were removed from the excavation area via vacuum truck, for backfilling and sidewall stabilization purposes, and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling. The initial excavation area was subsequently backfilled and contoured to match pre-existing site conditions. Excavation and site assessment activities to address remaining soil impacts at sample REC2-B01@3" are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update.

### 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 analytical results indicate that impacted soils in the initial excavation area have been remediated to be in compliance with the Table 915-1 standards and/or within the acceptable range of soil variability when compared to background concentrations. Excavation and site assessment activities to address remaining soil impacts at sample REC2-B01@3" are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update. Laboratory analytical results indicate that constituent concentrations in the groundwater sample collected from the initial reclamation excavation area (REC-GW01) were below laboratory detection limits (ND). As such, current groundwater conditions at this site are in compliance with ECMC Table 915-1 standards. Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB). The estimated time to attain NFA is four quarters from the date of monitoring well installation and initiation of groundwater monitoring.

### Soil Remediation Summary

In Situ

Ex Situ

       Bioremediation ( or enhanced bioremediation )  
       Chemical oxidation  
       Air sparge / Soil vapor extraction  
       Natural Attenuation  
       Other \_\_\_\_\_

       Yes    Excavate and offsite disposal  
       If Yes: Estimated Volume (Cubic Yards)          1380        
       Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
       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.

Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB). The excavation groundwater sample location and proposed temporary monitoring well locations are illustrated on Figure 3. Groundwater analytical data is presented in Table 6. A groundwater monitoring location figure illustrating the locations of the surveyed temporary monitoring wells will be provided in a Form 27-Supplemental update.

## 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: \$ 45000

### 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 3,780 barrels of non-impacted groundwater were removed from the initial reclamation excavation area via vacuum truck and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 1380

E&P waste (solid) description Impacted soil

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Front Range Landfill - Erie, Colorado;  
Buffalo Ridge Landfill - Keenesburg,  
Colorado

Volume of E&P Waste (liquid) in barrels 3780

E&P waste (liquid) description Groundwater

COGCC Disposal Facility ID #, if applicable: 434766

Non-COGCC 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 COGCC 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 ECOM 1000 Series Reclamation Rules. Timeliness of reclamation initiation and completion will be subject to NFA, surface owner discretion and land use, and suitable ground conditions which allow for execution of surface reclamation activities so as to not cause unwarranted damages.

Is the described reclamation complete? No

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. 11/30/2025

Proposed date of completion of Reclamation. 12/31/2025

## 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. 06/14/2022

Actual Spill or Release date, or date of discovery. 06/13/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/13/2022

Proposed site investigation commencement. 06/22/2022

Proposed completion of site investigation. 12/31/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/22/2022

Proposed date of completion of Remediation. 12/31/2024

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**

Excavation and site assessment activities to address remaining soil impacts at sample REC2-B01@3" are currently ongoing, and will be summarized in a forthcoming Form 27-Supplemental update. Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Form 27-Supplemental Updates will be submitted to the ECMC on a quarterly basis until temporary groundwater monitoring wells have been installed and the ECMC-mandated four quarters of groundwater monitoring have been initiated. The Project Implementation Summary is provided as Attachment C.

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

Signed: Gregory Hamilton

Title: Environmental Lead

Submit Date: 09/29/2023

Email: Gregory\_Hamilton@oxy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Kari Brown

Date: 10/17/2023

Remediation Project Number: 24884

**COA Type**

**Description**

0 COA	

**Attachment Check 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**

403544523	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403544607	ANALYTICAL RESULTS
403544609	PHOTO DOCUMENTATION
403544610	IMPLEMENTATION SCHEDULE
403544611	SOIL SAMPLE LOCATION MAP
403544612	SOIL SAMPLE LOCATION MAP
403544613	GROUND WATER SAMPLE LOCATION
403544614	ANALYTICAL RESULTS
403562525	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)