

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404129594  
Receive Date:  
05/12/2025

Report taken by:  
Grace Rollins

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 Phone: (720) 929-4306 Mobile: ( )
Address: P O BOX 173779		
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Erik Mickelson	Email: DJRemediation_Forms@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 27095 Initial Form 27 Document #: 403301119

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: PIT	Facility ID: 118064	API #: _____	County Name: WELD
Facility Name: STATE 2	Latitude: 40.221777	Longitude: -104.673267	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: CSW	Sec: 16	Twp: 3N	Range: 65W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 317677	API #: _____	County Name: WELD
Facility Name: STATE-63N65W 16CSW	Latitude: 40.221730	Longitude: -104.673030	
** correct Lat/Long if needed: Latitude: 40.222002		Longitude: -104.673219	
QtrQtr: CSW	Sec: 16	Twp: 3N	Range: 65W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 484421 API #: \_\_\_\_\_ County Name: WELD

Facility Name: Megan H 16-33 O SA Tank Battery Latitude: 40.222002 Longitude: -104.673219

\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

QtrQtr: CSW Sec: 16 Twp: 3N Range: 65W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use livestock

Is domestic water well within 1/4 mile? No 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: none  
 Surface water: none  
 Wetlands: none  
 Spring: none  
 Livestock: none  
 Occupied Building: none  
 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
Yes	GROUNDWATER	See Attached Data	groundwater samples/laboratory analytical results
Yes	SOILS	180' (N-S) x 200' (E-W) x 41.5' 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.

Decommissioning activities were completed at the Megan H 16-33 O SA production facility on April 18-26, 2023, as summarized in Form 27-Supplemental Document #403872384. Laboratory analytical results indicated that benzene, ethylbenzene, total xylenes, TPH, naph., TMBs, pH, SAR, 1 and 2 methylnaphthalene, arsenic, and barium concentrations in soil samples collected from beneath the former PWV exceeded the applicable ECMC Table 915-1 standards, and the ECMC issued Spill/Release Point ID 484421 for this release. From 4/18/23-11/26/24 excavation activities were conducted and 276 soil samples have been collected from the base and sidewalls of the excavation ranging in depths of approximately 2.5' to 41.5' bgs. Based on the waste characterization results (PW-B01@5'), subsequent soil samples have been submitted for laboratory analysis of BTEX, TPH, naph., TMBs, pH, SAR, PAHs, arsenic, barium, cadmium, and selenium using ECMC-approved methods. On 11/26/24, 54 confirmation soil samples were collected from the final excavation extent and submitted for laboratory analysis of the full ECMC Table 915-1. Final analytical results for the soil samples collected from the final extent indicate that organic and inorganic impacts remain at the base of the excavation (PW-B35@41.5'), and inorganic only concentrations exceeding Table 915-1 standards/background limits remain in multiple sidewall samples. Due to the presence of groundwater within the base of the excavation, additional excavation activities are unable to safely continue. Additional background samples have been collected to address the remaining boron, pH, and metal exceedances in multiple sidewall samples; results are pending. The soil sample locations are illustrated on Figures 2 through 20. The laboratory analytical results are attached. The field notes and a photographic log are provided as Attachment A. The soil boring logs are provided as Attachment B. The 3Q24 - 1Q25 secured analytical laboratory reports are 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 ):

To delineate the remaining impacts, 28 soil borings were advanced around the outside of the current excavation extent to approximately 35' - 55' bgs. Monitoring wells were installed in each soil boring location. Soil samples were collected based on the interval exhibiting the highest PID and/or from the interval above the observed water table. The soil samples were submitted for analysis of the full ECMC Table 915-1 analytical suite. Final analytical results for the delineation soil samples are pending and will be summarized in the next Form 27-Supplemental. Based on final analytical results, additional soil borings may be advanced to delineate any remaining impacts. Additional background soil samples have been collected to access native soil conditions and to address the remaining inorganic exceedances; results are pending. Following receipt of final analytical data from delineation activities, a remedial path forward will be developed.

**Proposed Groundwater Sampling**

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

Quarterly groundwater monitoring was initiated on 11/1/24. Depth to groundwater was observed at approximately 19' - 36' bgs within the 28 monitoring wells that have been gauged and sampled. In the First Quarter of 2025, groundwater samples (MW-01 - MW-26) were collected and submitted for laboratory analysis of Table 915-1 organic and inorganic compounds in groundwater. Analytical results indicate that 1,2,4-TMB and 1,3,5-TMB concentrations in groundwater sample MW-04, and inorganic parameters in multiple groundwater samples exceeded the ECMC Table 915-1 standards. Step-out wells MW-11 and MW-12 were installed near MW-04 to further delineate impacts. As of the First Quarter of 2025, the extent of organic groundwater impacts has been fully delineated. Quarterly groundwater monitoring will continue until 4 quarters of compliant groundwater is reached.

**Proposed Surface Water Sampling**

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

[Empty box for surface water sampling details]

**Additional Investigative Actions**

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

On April 18 through 26, 2023, visual inspections and field screening of soils was conducted at the three former meter houses, three former former AST, and one former ECD. 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.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

Soil	NA / ND
Number of soil samples collected <u>294</u>	-- Highest concentration of TPH (mg/kg) <u>5623</u>
Number of soil samples exceeding 915-1 <u>289</u>	-- Highest concentration of SAR <u>23.9</u>
Was the areal and vertical extent of soil contamination delineated? <u>No</u>	BTEX > 915-1 <u>Yes</u>
Approximate areal extent (square feet) <u>40000</u>	Vertical Extent > 915-1 (in feet) <u>42</u>
<b>Groundwater</b>	
Number of groundwater samples collected <u>41</u>	-- Highest concentration of Benzene (µg/l) <u>1.08</u>
Was extent of groundwater contaminated delineated? <u>No</u>	ND Highest concentration of Toluene (µg/l) _____
Depth to groundwater (below ground surface, in feet) <u>41</u>	ND Highest concentration of Ethylbenzene (µg/l) _____
Number of groundwater monitoring wells installed <u>1</u>	-- Highest concentration of Xylene (µg/l) <u>3.25</u>
Number of groundwater samples exceeding 915-1 <u>0</u>	NA Highest concentration of Methane (mg/l) _____
<b>Surface Water</b>	
<u>0</u> Number of surface water samples collected	
<u>        </u> 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?

[Empty box for other investigation information]

Were background samples collected as part of this site investigation?

Background soil samples PW-BG05 - PW-BG25 were collected from native material (Olney loamy sand) adjacent to the former PWV excavation at depths ranging from 8-20' bgs. Background soil samples from the Megan H 16-12 JI and UPRC H17-99HZ wellheads (located within approximately 0.25 miles) collected from similar soil type (Olney loamy sand/Vona loamy sand), depth, and land use have been included. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and metals using standard methods appropriate for detecting target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 3-5. Background soil sample locations are illustrated on Figures 20 and 25.

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?

Site assessment activities to address the remaining soil impacts are currently ongoing and will be summarized in a forthcoming Form 27-Supplemental update.

## 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.

Analytical results for the soil samples still in place indicate that organic and inorganic impacts remain at the base of the excavation (PW-B35@41.5'), and boron, pH, and metal concentrations exceeding Table 915-1 standards/background limits remain in multiple sidewall samples. Due to the presence of groundwater within the base of the excavation, deeper excavation activities are unable to safely continue. Additional background soil samples have been collected, and analytical results are pending and will be summarized in the next Form 27-Supplemental. Following receipt of final analytical data, a remedial path forward will be developed.

### 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.

Analytical results for the soil samples still in place indicate that organic and inorganic impacts remain at the base of the excavation (PW-B35@41.5'), and inorganic concentrations exceeding Table 915-1 standards/background limits remain in multiple sidewall samples. Due to the presence of groundwater within the base of the excavation, deeper excavation activities are unable to safely continue. Additional background soil samples have been collected, and analytical results are pending and will be summarized in the next Form 27-Supplemental. Following receipt of final analytical data, a remedial path forward will be developed. Prior to backfilling COGACpH® activated carbon will be added to the groundwater within the excavation area, to mitigate remaining hydrocarbon impacts in groundwater. Estimated time to attain NFA is TBD based on the groundwater concentrations, the extent of impacted groundwater, and the efficacy of the selected remedial technologies. The field notes and a photographic log are provided as Attachment A. The soil boring logs are provided as Attachment B.

### 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

Yes \_\_\_\_\_ Natural Attenuation

Yes \_\_\_\_\_ Other \_\_\_\_\_ Activated carbon adsorption

### 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.

On 10/31/24 - 3/10/25, 28 groundwater monitoring wells (MW-01 - MW-28) were installed at the site to delineate remaining soil and groundwater impacts. Analytical results indicated that 1,2,4-TMB, and 1,3,5-TMB concentrations in groundwater samples MW-02 and MW-04 exceeded the ECMC Table 915-1 standards. As such, additional step-out temporary groundwater monitoring wells (MW-11 - MW14) were installed to delineate the extent of organic impacts in groundwater. Analytical results indicated that TDS, chloride ion, and sulfate ion concentrations in multiple groundwater samples exceeded the applicable ECMC Table 915-1 standards and local background limits. Groundwater monitoring will continue on a quarterly basis until four consecutive quarters of compliant groundwater is reached. Following results of delineation activities, KMOG will propose a remedial path forward for any remaining impacts. The monitoring well locations are depicted on Figure 22 and the groundwater elevation data is depicted on Figures 23 and 24.

## 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 ECMC. 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: \$ 20000 \_\_\_\_\_

### 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 Remediation 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. 01/03/2023

Actual Spill or Release date, or date of discovery. 04/26/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/18/2023

Proposed site investigation commencement. 04/18/2023

Proposed completion of site investigation. 12/31/2026

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/26/2023

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**

The previous Form 27-Supplemental (Document #404011937) was denied with no reason provided.

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: 05/12/2025

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:

Date:

Remediation Project Number: 27095

**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
404129594	FORM 27-SUPPLEMENTAL-SUBMITTED
404150117	PHOTO DOCUMENTATION
404150120	SOIL SAMPLE LOCATION MAP
404150124	SOIL SAMPLE LOCATION MAP
404150127	GROUND WATER SAMPLE LOCATION
404150144	GROUND WATER ELEVATION MAP
404150146	GROUND WATER ELEVATION MAP
404150148	SOIL SAMPLE LOCATION MAP
404150150	LABORATORY ANALYTICAL REPORT
404150151	LABORATORY ANALYTICAL REPORT
404150153	LABORATORY ANALYTICAL REPORT
404150156	LABORATORY ANALYTICAL REPORT
404150157	LABORATORY ANALYTICAL REPORT
404150158	LABORATORY ANALYTICAL REPORT
404150160	LABORATORY ANALYTICAL REPORT
404150164	LABORATORY ANALYTICAL REPORT
404150165	LABORATORY ANALYTICAL REPORT
404150177	LABORATORY ANALYTICAL REPORT
404150179	LABORATORY ANALYTICAL REPORT
404150182	LABORATORY ANALYTICAL REPORT
404150183	LABORATORY ANALYTICAL REPORT
404150184	LABORATORY ANALYTICAL REPORT
404150185	LABORATORY ANALYTICAL REPORT
404150186	LABORATORY ANALYTICAL REPORT
404150187	LABORATORY ANALYTICAL REPORT

404150188	LABORATORY ANALYTICAL REPORT
404150193	LABORATORY ANALYTICAL REPORT
404150194	LABORATORY ANALYTICAL REPORT
404150197	LABORATORY ANALYTICAL REPORT
404150199	LABORATORY ANALYTICAL REPORT
404150200	LABORATORY ANALYTICAL REPORT
404150201	LABORATORY ANALYTICAL REPORT
404150203	LABORATORY ANALYTICAL REPORT
404150204	LABORATORY ANALYTICAL REPORT
404150207	LABORATORY ANALYTICAL REPORT
404150209	LABORATORY ANALYTICAL REPORT
404150223	LABORATORY ANALYTICAL REPORT
404150225	LABORATORY ANALYTICAL REPORT
404150226	LABORATORY ANALYTICAL REPORT
404150234	LABORATORY ANALYTICAL REPORT
404150235	LABORATORY ANALYTICAL REPORT
404150236	LABORATORY ANALYTICAL REPORT
404150437	LOGS
404150440	ANALYTICAL DATA SUMMARY TABLE(S)

Total Attach: 44 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	The Laboratory Analytical PDF attached to this form indicates it has been altered after lab delivery (Document # 404150226). Additionally, one or more of the attached laboratory analytical reports is not secured (Document # 404150209). ECMC has not reviewed this form or any other attachments on this Form. Operator shall resubmit the Form 27 and ensure all laboratory reports are secured and contain metadata appropriate to document any differences in created and modified dates, and/or the laboratory analytical report shall be signed with a validated signature certificate.	03/09/2026
Environmental	Note: Previous Form 27 Document # 404011937 was denied with the following message: "ECMC has denied this form for data validation. A thorough review of this submittal has not been conducted. Document #404012507 contains metadata not consistent with similar laboratory reports."	03/09/2026

Total: 2 comment(s)