FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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Report taken by: Taylor Robinson

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 INFORMATON

Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP Operator No: 47120
Address: P O BOX 173779
City: DENVER State: CO Zip: 80217-3779
Contact Person: Erik Mickelson Email: DJRemediation_Forms@oxy.com

Phone Numbers
Phone: (720) 929-4306
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22664 Initial Form 27 Document #: 402997195

PURPOSE INFORMATION

- [ ] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [X] Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- [X] 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.
- [X] 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.
- [X] 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: 462450 API #: County Name: WELD
Facility Name: HUNT-TANK 5NENE Latitude: 40.258720 Longitude: -104.792698
** correct Lat/Long if needed: Latitude: 40.258735 Longitude: -104.792225
QtrQtr: NENE Sec: 5 Twp: 3N Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 482122 API #: County Name: WELD
Facility Name: Kern UPPR 41-5 1 O SA Facility Latitude: 40.258735 Longitude: -104.792225
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NENE Sec: 5 Twp: 3N Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications: SM

Most Sensitive Adjacent Land Use: Agriculture

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

Water wells located approximately 750 feet (ft) south and 850 ft north-northwest; Occupied buildings located approximately 100 ft south and 850 ft north; Agriculture to the east and west; Groundwater at approximately 3 ft below ground surface (bgs).

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
  - [X] Produced Water
  - [X] Oil
  - [X] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [ ] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [ ] Other (as described by EPA)
- [ ] **Non-E&P Waste**

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	TBD	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	TBD	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.

Facility decommissioning activities were completed at the Kern UPRR 41-5 1 O SA Facility on May 3 and May 24, 2022. Groundwater was encountered in the facility excavations at approximately 3.5 ft bgs. Visual inspection and field screening of soil at one aboveground storage tank (AST), one produced water vessel (PWV), one separator, one emission control device (ECD), one meter house, and nine potholes were conducted following removal activities. Soil samples AST01@6"-WP, PWV-B01@4'-WP, and PWV-N01@2.5' were submitted for analysis of full list Table 915-1 constituents due to potential impacts. Samples Sep-Inlet@3'-WP, Sep-Outlet@3'-WP, FL01@4', and FL02@4' were submitted for reduced list Table 915-1 constituents including benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4- and 1,3,5-trimethylbenzenes (TMBs), naphthalene, total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO), pH, electrical conductivity (EC), sodium adsorption ratio (SAR), and boron to determine if a release occurred. Laboratory analytical results indicated that TPH, TMBs, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and arsenic impacts exceeding the ECMC Table 915-1 allowable levels and/or background levels were present at the AST, PWV, FL01, and FL02 locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403038258) was submitted on May 5, 2022 and the ECMC issued Spill/Release Point ID 482122. The facility soil sample locations are depicted on Figure 1. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively.

Assessment activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Between 5/3/22 and 8/5/24, excavation activities were conducted at the former AST, PWV, FL01, and FL02 locations. Samples were collected from the excavation at depths ranging from 4 ft bgs to 15 ft bgs. Samples were submitted for analysis of the site-specific waste profile following waste profile procedures accepted at the time, as approved in the F27 Doc. No. 404353534 and all subsequent F27s, including Table 915-1 organics, pH, boron, and/or select Table 915-1 metals. Initial results indicated that pH and PAH impacts exceeding the ECMC Table 915-1 allowable levels or background were present along the northern sidewall. Verification samples were collected to confirm the results. Final results were within the ECMC Table 915-1 allowable levels or background levels at the extents of the excavation. Per updated guidance from the ECMC, verification of organic exceedances are no longer considered valid. Assessment activities are ongoing. The lab reports are attached.

Proposed Groundwater Sampling

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

Between May 25, 2022 and June 24, 2024, six groundwater samples were collected from the facility excavation. The samples were submitted for laboratory analysis of full list Table 915-1 constituents in groundwater. One background groundwater sample was collected for laboratory analysis of Table 915-1 inorganic constituents in groundwater. Laboratory analytical results indicate that TMBs, total dissolved solids (TDS), and sulfate concentrations exceeding the ECMC Table 915-1 allowable levels or background levels are present in groundwater. The excavation groundwater sample and background sample locations are depicted on Figure 3. The groundwater sample analytical results are summarized in Table 3.

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):

On 10/10/23, 12/6/24, and 4/21/25 staining was observed during reclamation activities. Soil samples (SS01 through SS08) were submitted for analysis of full list Table 915-1 constituents to determine if additional impacts were present. Initial results indicated that PAH, boron, SAR, pH, and Table 915-1 metals exceeding the allowable levels or background were present at the SS02 and SS04 through SS08 locations. A verification sample was collected at SS02 and was within allowable levels or background. Additional excavation was conducted at SS04 and results at the final excavation extents were within allowable levels or background. Metals impacts exceeding the allowable levels and background levels were present at the SS01 location and were excavated with the combined facility excavation activities summarized above. Between 6/16 and 6/18/25, 22 soil borings were advanced via hand auger to delineated the remaining shallow impacts at the site. The laboratory reports are attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

		NA / ND		
Number of soil samples collected	173	--	Highest concentration of TPH (mg/kg)	658
Number of soil samples exceeeding 915-1	142	--	Highest concentration of SAR	3.54
Was the areal and vertical extent of soil contamination delineated?	No		BTEX > 915-1	No
Approximate areal extent (square feet)	25200		Vertical Extent > 915-1 (in feet)	15

Groundwater

Number of groundwater samples collected	6	ND	Highest concentration of Benzene (µg/l)	
Was extent of groundwater contaminated delineated?	No	ND	Highest concentration of Toluene (µg/l)	
Depth to groundwater (below ground surface, in feet)	4	--	Highest concentration of Ethylbenzene (µg/l)	17.7
Number of groundwater monitoring wells installed	0	--	Highest concentration of Xylene (µg/l)	513
Number of groundwater samples exceeding 915-1	1	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?

One background soil sample was collected from the soil used to construct the tank battery but is no longer being applied due to excavation. Eleven background soil samples were collected outside of the facility excavations. The background samples were submitted for analysis of pH, arsenic, barium, hexavalent chromium, and lead are naturally high in the soil. The background soil sample results are summarized in Table 2.

One background groundwater sample was collected at the facility for Table 915-1 inorganic constituents in groundwater. The background groundwater results are summarized in Table 3.

The background sample locations are depicted on Figure 3.

☐ 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?

Assessment activities are ongoing and will be summarized in a subsequent Form 27 supplemental report.

Groundwater monitoring wells will be installed to assess the extent and magnitude of any impacts to groundwater following the completion of excavation activities.

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.

Approximately 5,627 bbls of water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 34 bbls of water were removed from the site and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Approximately 3000 cubic yards of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Approximately 20 cubic yards of impacted soil were removed from the site and transported to the Front Range Landfill in Erie, Colorado for disposal. Disposal records are kept on file and available upon request. The excavation areas will be backfilled and contoured to match pre-existing conditions.

REMEDIATION SUMMARY

Describe how remediation of existing impacts to soil and groundwater is to be accomplished (i.e. summarize remedial action plan). Provide a brief narrative description including: technical justification, schedule for implementation, estimated time to attain NFA status, plus plans and specifications for the selected remedial action technology.

Analytical results indicate that PAH, SAR, pH, and Table 915-1 metals exceeding the ECMC Table 915-1 allowable levels or background levels are present at SS05 through SS08 and organic impacts are present along the northern sidewall of the facility excavation. Assessment activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

In order to determine the extent and magnitude of dissolved-phase impacts, groundwater monitoring wells will be installed in the source areas, cross-gradient, and downgradient of the excavation footprints. The previously submitted proposed monitoring well locations may be updated based on new excavation information. The groundwater monitoring well installation scope of work will be updated following the completion of soil assessment activities and will be submitted in a subsequent Form 27 supplemental report.

Soil Remediation Summary

☐ **In Situ**

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

☒ **Ex Situ**

- Yes — Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 3020
  - Name of Licensed Disposal Facility or ECMC Facility ID # 149007
- 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.

Groundwater monitoring wells will be installed to assess the extent and magnitude of any impacts to groundwater. Groundwater samples will be collected from the monitoring wells for four consecutive quarters and will be submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total dissolved solids, chloride ion, and sulfate ion per ECMC Rule 912.a. The groundwater monitoring well installation scope of work will be updated following the completion of excavation activities and will be submitted in a subsequent Form 27 supplemental report.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] 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 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: $ 30000

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 5,627 bbls of water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 3000 cubic yards of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 3020

E&P waste (solid) description Impacted Soil

ECMC Disposal Facility ID #, if applicable: 149007

Non-ECMC Disposal Facility: Front Range Landfill in Erie, CO (20 CY)

Volume of E&P Waste (liquid) in barrels 5661

E&P waste (liquid) description Water

ECMC Disposal Facility ID #, if applicable: 434766

Non-ECMC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, CO (34 bbls)

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 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. 05/04/2022

Actual Spill or Release date, or date of discovery. 05/04/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/03/2022

Proposed site investigation commencement. 05/03/2022

Proposed completion of site investigation. 03/15/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/03/2022

Proposed date of completion of Remediation. 12/31/2027

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

Per the General Comments for denied Form 27 Document No. 404197087:

General Comment #1: The tables have been updated to omit the extra verification sample rows that present no data for ECMC review.

General Comment #2: The off-location background samples have been removed from the tables and figures.

General Comment #3: The tables and figures have been updated to differentiate between soil samples that remain in situ and soil samples that have been over excavated.

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: 09/17/2025 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: Taylor Robinson Date: 04/01/2026

Remediation Project Number: 22664

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
404353534	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
404354478	SOIL SAMPLE LOCATION MAP
404354479	SOIL SAMPLE LOCATION MAP
404354481	LABORATORY ANALYTICAL REPORT
404354484	LABORATORY ANALYTICAL REPORT
404354487	LABORATORY ANALYTICAL REPORT
404354491	LABORATORY ANALYTICAL REPORT
404354494	LABORATORY ANALYTICAL REPORT
404355193	SOIL SAMPLE LOCATION MAP
404358142	ANALYTICAL DATA SUMMARY TABLE(S)
404605063	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 11 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)