FORM 27 Rev 5/22

State of Colorado
Oil and Gas Conservation Commission

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Report taken by: Kari Brown

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.
This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by 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 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: Gregory Hamilton Email: gregory_hamilton@oxy.com

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PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21556 Initial Form 27 Document #: 402924649

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.
- [ ] 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

No Multiple Facilities

Facility Type: LOCATION Facility ID: 330153 API #: County Name: WELD
Facility Name: HSR-SCHELL-63N67W 5SWSW Latitude: 40.249210 Longitude: -104.921190
** correct Lat/Long if needed: Latitude: 40.248334 Longitude: -104.923017
QtrQtr: SWSW Sec: 5 Twp: 3N Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CL
Most Sensitive Adjacent Land Use Crop land
Is domestic water well within 1/4 mile? No
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 wetland is located approximately 42 feet north of the production facility.

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
No	GROUNDWATER	No impacts encountered	Groundwater sampling/laboratory analytical results
Yes	SOILS	22' (E-W) x 16' (N-S) x 8' 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 Schell 12&13-5 O SA production facility on March 2, 2022. Groundwater was encountered during excavation activities at approximately 8' below ground surface (BGS). Visual inspection and field screening of soils at one separator, one meter house, one produced water vessel (PWV), and one above-ground storage tank (AST) was conducted following removal activities, and soil samples (SEP-B01@4', SEP-B02@5', PW-N01@3', PW-B01@6', and AST-B01@3") were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that benzene, naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, 1-methylnaphthalene, 2-methylnaphthalene, and lead impacts exceeding COGCC Table 915-1 were present at the former produced water vessel. As such, a Form 19-Initial/Supplemental Spill/Release Report (COGCC Document No. 402973610) was submitted on March 4, 2022 and the COGCC issued Spill/Release Point ID 481698. A topographic Site Location Map showing the geographic setting of the site location is provided as Figure 1. Soil sample location and field screening data is presented in Table 1. The facility soil sample and field screening and groundwater sample location are illustrated on Figure 2.

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):

On March 30, 2022, excavation activities were conducted to address remaining soil impacts in the former PWV excavation area, and two (2) confirmation soil samples (PW-B02@8' and PW-N02@2') were collected from the final excavation extents and submitted for laboratory analysis of 1,2,4-TMB. Additionally, confirmation soil sample PW-N01@6' was submitted for laboratory analysis of benzene, 1,3,5-TMB, 1-methylnaphthalene, 2-methylnaphthalene, and lead using standard methods appropriate for detecting the target analytes. Analytical results indicate that constituent concentrations in the two (2) confirmation soil samples were in compliance with COGCC Table 915-1 standards. Soil analytical results are summarized in Tables 1 through 5. The laboratory analytical results are provided as Attachment A.

Proposed Groundwater Sampling

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

Groundwater was encountered in the PWV excavation at approximately 8 feet bgs. On March 30, 2022, a groundwater sample (GW-01) was collected from the PWV excavation area and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB by USEPA Method 8260D. Groundwater analytical results indicated that constituent concentrations in groundwater sample GW-01 were in compliance with COGCC Table 915-1 standards. Groundwater analytical results are summarized in Table 6. The groundwater sample location is illustrated on Figure 2.

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 March 2, March 30, and April 21, 2022, visual inspection and field screening of soils was conducted at the sidewalls of the PWV excavation, one former meter house, one former AST, and a dump-line pothole. 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 COGCC Operator Guidance for Oil & Gas Facility Closure document. Soil sample location and field screening data is presented in Table 1. Soil and groundwater analytical results are summarized in Tables 2 through 6. The soil and groundwater sample and field screening locations are illustrated on Figure 2. The laboratory analytical reports are provided as Attachment A. The field notes and photographic log are provided as Attachment B.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 11
Number of soil samples exceeeding 915-1: 2
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet): 352

NA / ND

-- Highest concentration of TPH (mg/kg): 74.61
-- Highest concentration of SAR: 2.7
BTEX > 915-1: Yes
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): 8
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):
-- Highest concentration of Ethylbenzene (µg/l): 3.27
-- Highest concentration of Xylene (µg/l): 11.6
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 PH-01@6', PH-02@6', PW-BG01@3', and PW-BG01@6' were collected from native material adjacent to the produced water vessel excavation. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and Table 915-1 Metals in Soils 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?

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.

Between March 2 and 30, 2022, approximately 130 cubic yards of impacted soil was excavated and transported to the Front Range Landfill in Erie, Colorado for disposal. In addition, approximately 200 barrels of non-impacted groundwater was removed from the PWV excavation area and transported to the Aggregate State Fluid Recycling Facility 37C-16HZ for disposal. The excavation area 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.

Laboratory data indicate that impacted soils in the excavation have been remediated to be in compliance with the COGCC Table 915-1 standards and/or within the range of site-specific background results. Laboratory data indicate that constituent concentrations in the groundwater sample collected from the base of the PWV excavation area was in compliance with COGCC Table 915-1 standards. Based on the analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. As such, Kerr McGee is requesting a No Further Action (NFA) determination for this location.

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) 130
  - 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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Final Report

☐ **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 NFA Request

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 Oil and Gas Conservation Commission. The cost for remediation is a preliminary estimate only, costs may change upwards or downwards 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: $ 0

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:

NA

Volume of E&P Waste (solid) in cubic yards 130

E&P waste (solid) description impacted soil

COGCC Disposal Facility ID #, if applicable:

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

Volume of E&P Waste (liquid) in barrels 200

E&P waste (liquid) description non-impacted groundwater

COGCC Disposal Facility ID #, if applicable: 456644

Non-COGCC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

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? 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 COGCC 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. 10/21/2021

Actual Spill or Release date, or date of discovery. 03/03/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/02/2022

Proposed site investigation commencement. 03/02/2022

Proposed completion of site investigation. 04/21/2022

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/02/2022

Proposed date of completion of Remediation. 03/30/2022

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

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 Consultant

Submit Date: 07/20/2022 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: 11/30/2022

Remediation Project Number: 21556

COA Type	Description
	Based on the information presented, it appears that no further remedial action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required. The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.

1 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
403101476	FORM 27-SUPPLEMENTAL-SUBMITTED
403102400	OTHER
403102404	SITE MAP
403102410	ANALYTICAL RESULTS
403102615	PHOTO DOCUMENTATION
403108237	SOIL SAMPLE LOCATION MAP
403108865	ANALYTICAL RESULTS

Total Attach: 7 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)