FORM 27 Rev 4/21

State of Colorado
Oil and Gas Conservation Commission

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Report taken by: CHRIS CANFIELD

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

Phone Numbers
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PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 19374 Initial Form 27 Document #: 402765025

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.
- [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: 336262 API #: County Name: WELD
Facility Name: MILTON H. NELSON UNIT C-62N68W 21SWSW Latitude: 40.118610 Longitude: -105.014760
** correct Lat/Long if needed: Latitude: 40.117156 Longitude: -105.016869
QtrQtr: SWSW Sec: 21 Twp: 2N Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 480602 API #: County Name: WELD
Facility Name: Stromquist Tank Battery AST Release Latitude: 40.117149 Longitude: -105.016892
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SWSW Sec: 21 Twp: 2N Range: 68W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GP

Most Sensitive Adjacent Land Use Non-crop land

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

Surface water is located approx. 580 feet west of the facility.
The nearest domestic water well is located approx. 1,080 feet northwest of the facility.
Multiple buildings and livestock holding pens are located within ¼ mile of the facility.
The facility is located within a designated high priority habitat.

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	SOILS	15' (E-W) x 10' (N-S) x 1' 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.

Above ground storage tank (AST) removal activities were completed at the Stromquist 13,23,34,35-21 O SA production facility location on August 24, 2021. Groundwater was not encountered during AST removal activities. Visual inspection and field screening of soils at three (3) former AST locations was conducted following removal activities, and 3 soil samples were collected at a depth of approximately 3 inches below ground surface (bgs). The soil samples were submitted for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, and total petroleum hydrocarbons (TPH) - gasoline range organics (GRO: C6-C10) by USEPA Method 8260D, TPH - diesel range organics (DRO: C10-C28) and oil range organics (ORO: C28-C40) by USEPA Method 8015D. Additionally, sample soil AST-B03@3" was submitted for laboratory analysis of the full Table 915-1 analytical suite, using standard methods appropriate for detecting the target analytes. Laboratory analytical results indicated that impacted soil was present at a sample location AST-B03@3", due to sodium adsorption ratio (SAR), TPH, 1,2,4- and 1,3,5-trimethylbenzene (TMB), and polyaromatic hydrocarbons (PAH) concentrations above the applicable COGCC Table 915-1 standards. As such, a Form 19-Initial Supplemental Spill/Release Report (COGCC Document No. 402791396) was submitted on August 26, 2021, and the COGCC issued Spill/Release Point ID 480602. The northernmost AST will be replaced, and the remaining production facility infrastructure will remain in-place. 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 are presented in Table 1. The soil sample and field screening locations 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 September 9, 2021, excavation activities were conducted to address remaining soil impacts below the former AST location. Five (5) confirmation soil samples were collected from the excavation area and submitted for laboratory analysis of BTEX, TPH, TMB, PAHs, and SAR. Analytical results indicated that constituent concentrations in the 5 confirmation soil samples were in compliance with COGCC Table 915-1 standards and/or within the range of site-specific background metals concentrations, with exception to the SAR values for samples AST-B07@1' and AST-W01@6". As such, on September 20, 2021, additional impacted material was excavated from these areas to address remaining SAR impacts, and soils were removed up to the tank battery secondary containment liner. The liner was verified to be in tact, and as a result additional confirmation soil samples were not collected from the final over-excavated extents. Soil analytical results are presented in Tables 2 through 5.

Proposed Groundwater Sampling

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

Groundwater was not encountered during AST removal activities.

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 August 24, 2021, visual inspection and field screening of soils was conducted at the former AST locations. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the soil screening locations. Soil sample location and field screening data are presented in Table 1. Soil analytical results are presented in Tables 2 through 5. The soil sample and field screening locations are illustrated on Figure 2. The laboratory analytical reports are 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: 8
Number of soil samples exceeeding 915-1: 3
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet): 150

NA / ND

-- Highest concentration of TPH (mg/kg): 2390
-- Highest concentration of SAR: 80.9
BTEX > 915-1: No
Vertical Extent > 915-1 (in feet): 1

Groundwater

Number of groundwater samples collected: 0
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet): `
Number of groundwater monitoring wells installed:
Number of groundwater samples exceeding 915-1:

Highest concentration of Benzene (µg/l):
Highest concentration of Toluene (µg/l):
Highest concentration of Ethylbenzene (µg/l):
Highest concentration of Xylene (µg/l):
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 AST-BG01@3", AST-BG02@3", AST-BG03@3", and AST-BG04@3", were collected from native material adjacent to the former AST locations. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and total metals 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 August 24 and September 20, 2021, approximately 6 cubic yards of impacted soil were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. The northernmost AST will be replaced, and the former AST area will be contoured and re-graded to match pre-existing site conditions; the remaining production facility infrastructure will remain in-place.

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 area have been remediated to be in compliance with the COGCCC Table 915-1 standards and/or within the range of site-specific background metals concentrations. Remaining SAR-impacted soils were excavated up to the tank battery secondary containment liner, which was verified to be in tact; therefore no impacted soil remains at the former AST location. Groundwater was not encountered during AST removal and excavation activities. 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) 6
  - 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 [X] 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

[X] Other NFA Request

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 6

E&P waste (solid) description Impacted soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Buffalo Ridge Landfill - Keenesburg, Colorado

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

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

If YES:

[X] 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 northernmost AST will be replaced, and the remaining facility infrastructure remains in place. The site will be reclaimed in accordance with COGCC 1000 Series Reclamation Rules pending future facility decommissioning activities.

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. 08/26/2021

Actual Spill or Release date, or date of discovery. 08/24/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/24/2021

Proposed site investigation commencement. 08/24/2021

Proposed completion of site investigation. 09/20/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/24/2021

Proposed date of completion of Remediation. 09/20/2021

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

Based on the analytical and field screening data provided herein, Kerr-McGee is requesting an NFA determination for this location.

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:` 11/16/2021 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: CHRIS CANFIELD Date: 12/07/2021

Remediation Project Number: 19374

Condition of Approval

COA Type	Description
	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.
	Based on the information presented, it appears that no further 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.
2 COAs	

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
402866336	FORM 27-SUPPLEMENTAL-SUBMITTED
402867491	SITE MAP
402867496	ANALYTICAL RESULTS
402867501	PHOTO DOCUMENTATION
402868843	SOIL SAMPLE LOCATION MAP
402868853	ANALYTICAL RESULTS

Total Attach: 6 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)