

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109

Document Number:

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Receive Date:

10/11/2024

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36374 Initial Form 27 Document #: 403835736

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: WELL | Facility ID: _____ | API #: 123-12253 | County Name: WELD |
| Facility Name: STROH 1 | Latitude: 40.318380 | Longitude: -104.945580 | |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: NENE | Sec: 13 | Twp: 4N | Range: 68W Meridian: 6 Sensitive Area? Yes |

| | | | |
|--|---------------------|------------------------|--|
| Facility Type: LOCATION | Facility ID: 322910 | API #: _____ | County Name: WELD |
| Facility Name: STROH-64N68W 13NENE | Latitude: 40.318380 | Longitude: -104.945580 | |
| ** correct Lat/Long if needed: Latitude: 40.318639 | | Longitude: -104.945854 | |
| QtrQtr: NENE | Sec: 13 | Twp: 4N | Range: 68W Meridian: 6 Sensitive Area? Yes |

| | | | | | |
|---|----------------|----------------------------|-------------------|-------------------------------|----------------------------|
| Facility Type: <u>SPILL OR RELEASE</u> | | Facility ID: <u>487817</u> | API #: _____ | County Name: <u>WELD</u> | |
| Facility Name: <u>Stroh 1 Historical Release</u> | | Latitude: <u>40.318380</u> | | Longitude: <u>-104.945580</u> | |
| ** correct Lat/Long if needed: Latitude: _____ Longitude: _____ | | | | | |
| QtrQtr: <u>NENE</u> | Sec: <u>13</u> | Twp: <u>4N</u> | Range: <u>68W</u> | Meridian: <u>6</u> | Sensitive Area? <u>Yes</u> |

SITE CONDITIONS

| | |
|---|---|
| General soil type - USCS Classifications <u>SM</u> | Most Sensitive Adjacent Land Use <u>Crop land</u> |
| Is domestic water well within 1/4 mile? <u>Yes</u> | Is surface water within 1/4 mile? <u>Yes</u> |
| Is groundwater less than 20 feet below ground surface? <u>Yes</u> | |

Other Potential Receptors within 1/4 mile

Multiple buildings and livestock holding pens are located within ¼ mile of the wellhead.
A building is located approximately 790 feet northwest of the wellhead.
Surface water is located approximately 140 feet to the southwest of the wellhead.
An area with wetland characteristics is located approximately 160 feet southwest of the wellhead.
The wellhead is located within the Aquatic Native Species Conservation Waters high priority habitat.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

| | | |
|--|--|---|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

| Impacted? | Impacted Media | Extent of Impact | How Determined |
|--------------|----------------|------------------|---|
| UNDETERMINED | GROUNDWATER | TBD | Groundwater samples/laboratory analytical results |
| Yes | SOILS | TBD | 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 Stroh 1 facility on 8/23/2024. Visual inspection & field screening of soil at 1 aboveground storage tank (AST), 1 produced water vessel (PWV), 4 dumphine pothole locations, 1 meter house (MH), 2 emission control devices (ECD), & 1 separator were conducted following removal activities. Soil samples (AST02@3", PWV-N01@2', PWV-B01@4', SEP-B01@4', & SEP-B02@4') were submitted for analysis of full list ECMC Table 915-1 constituents to determine if a release occurred. Initial results indicated that pH impact exceeding the Table 915-1 allowable level & site-specific background level was present at the SEP-B01 location. The liner beneath the tank battery was removed on 8/27/2024, & confirmation soil samples were collected at (AST-B03@4') & (PWV-B02@4') locations. Analytical results are pending.

Wellhead cut & cap operations were completed at the Stroh 1 wellhead on 8/23/2024. A soil sample (WH-B01@6") was submitted for analysis of full list Table 915-1 to determine if a release occurred. The flowline associated with the wellhead was removed on 8/21 & 8/23/2024. Samples were collected where the flowline risers were disconnected from the wellhead (FL-B01@4') & separator (FL-B02@4'). Soil samples were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Initial results indicated that 1-methylnaphthalene & lead impacts exceeding the Table 915-1 allowable levels & background levels were present at the WH-B01 location. A verification sample was collected to confirm the initial results & analytical results confirmed that the lead concentration is above the Table 915-1 standard & background level. As such, a Form 19 Spill Report (Doc# 403904415) was submitted on 8/30/2024, & the ECMC issued Spill/Release Point ID 487817.

The results for the remaining soil samples were within compliance of the Table 915-1 standards or within 1.25 times background levels for Table 915-1 metals.

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 8/23/2024, confirmation soil samples were collected at the former facility, former wellhead, & former flowline at depths ranging from 0.25 ft below ground surface (bgs) to 6 ft bgs. The soil samples were submitted for analysis of full list Table 915-1 constituents, using ECMC-approved methods. Initial results indicated that 1-methylnaphthalene & lead impact exceeding the Table 915-1 allowable levels were present at the WH-B01 location & a verification sample confirmed the lead exceedance. Initial results indicated that pH impact exceeding the Table 915-1 allowable level & site-specific background level was present at the SEP-B01 location. The results for the remaining soil samples were within compliance of the Table 915-1 standards or within 1.25 times background levels for Table 915-1 metals. The laboratory report is attached. The liner beneath the tank battery was removed & confirmation soil samples were collected at AST-B03 & PWV-B02 locations. Analytical results are pending.

Proposed Groundwater Sampling

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

Groundwater was not encountered during facility decommissioning and wellhead cut and cap 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 21 and August 23, 2024, visual inspections and field screening of soil were conducted at one location at the AST, three sidewalls of the PWV excavation, four dumphine locations, four sidewalls within the cut and cap excavation, four locations on the ground surface adjacent to the cut and cap excavation, and one flowline 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 ECMC Operator Guidance for Oil & Gas Facility Closure document. A photographic log is attached.

The soil gas survey is pending.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 11

Number of soil samples exceeding 915-1 2

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

Approximate areal extent (square feet) 1322

NA / ND

-- Highest concentration of TPH (mg/kg) 52.1

-- Highest concentration of SAR 1.2

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

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?

Nine background soil samples (BG01@3" through BG03@3", BG01@3' through BG03@3', and BG01@6' through BG03@6') were collected on the facility pad due to active lines, the surrounding field, and the pad being fenced in. The background soil samples were submitted for laboratory analysis of pH, electrical conductivity (EC), sodium adsorption ratio (SAR), boron, and ECMC Table 915-1 metals, using ECMC-approved methods. Results indicate that pH, arsenic, barium, and selenium are naturally high in the facility pad location. Analytical results from the background soil samples are presented in Table 2. The background sample locations are depicted on Figure 1.

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

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.

Impacted soil will be removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of assessment activities. Disposal records will be kept on file and available upon request. The excavation areas will be backfilled and contoured to match pre-existing conditions.

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 data indicate that impacts exceeding the ECMC Table 915-1 allowable level and background level for lead are present at the WH-B01 location. Initial results indicated that pH impact exceeding the Table 915-1 allowable level and site-specific background level was present at the SEP-B01 location. The liner beneath the tank battery was removed and confirmation soil samples were collected at AST-B03@4' and PWV-B02@4' locations. Analytical results are pending. The results for the remaining soil samples were within compliance of the Table 915-1 standards or within 1.25 times background levels for Table 915-1 metals. Groundwater was not encountered during facility decommissioning, wellhead cut and cap, or flowline removal activities. Excavation activities are ongoing and will be summarized 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

_____ Excavate and offsite disposal

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ 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.

REMEDATION 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 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: \$ 24000

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:

REMEDATION COMPLETION REPORT

REMEDATION 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. 08/30/2024

Actual Spill or Release date, or date of discovery. 08/30/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/23/2024

Proposed site investigation commencement. 08/23/2024

Proposed completion of site investigation. 04/03/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/23/2024

Proposed date of completion of Remediation. 04/03/2025

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: Erik Mickelson

Title: Environmental Lead

Submit Date: 10/11/2024

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: Kari Brown

Date: 01/09/2025

Remediation Project Number: 36374

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**

| | |
|-----------|--------------------------------|
| 403945843 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 403945935 | CORRESPONDENCE |
| 403946695 | PHOTO DOCUMENTATION |
| 403954615 | SOIL SAMPLE LOCATION MAP |
| 403954616 | ANALYTICAL RESULTS |
| 403954617 | ANALYTICAL RESULTS |

Total Attach: 6 Files

General Comments**User Group****Comment****Comment Date**

| | | |
|---------------|--|------------|
| Environmental | Note: Re-samples/verification samples of organic exceedances are not considered valid. | 01/09/2025 |
|---------------|--|------------|

Total: 1 comment(s)