

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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404023726

Receive Date:

12/18/2024

Report taken by:

Alexander Ahmadian

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: (970) 515-1110
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Macy Kiel	Email: DJRemediation_Forms@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 16129 Initial Form 27 Document #: 402535756

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: LOCATION	Facility ID: 329546	API #: _____	County Name: WELD
Facility Name: ELLS-61N65W 19SESE	Latitude: 40.032385	Longitude: -104.700775	
** correct Lat/Long if needed: Latitude: 40.029854		Longitude: -104.699372	
QtrQtr: SESE	Sec: 19	Twp: 1N	Range: 65W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 479613	API #: _____	County Name: WELD
Facility Name: ELLS XX 19-4D	Latitude: 40.029854	Longitude: -104.699372	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 19	Twp: 1N	Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Agriculture,
Rangeland

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

Weld County Road 6 approximately 70 feet (ft) south; Residential buildings approximately 400 ft west; Water well located approximately 400 ft west; Groundwater at approximately 15 ft below ground surface (bgs).

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	See attached data	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 ELLS XX 19-4D Facility on March 4, 2024. Groundwater was encountered during excavation activities at approximately 15 ft bgs. Visual inspection and field screening of soil at one aboveground storage tank (AST), one produced water vessel (PWV), four potholes, and one separator were conducted following removal activities, and soil samples (AST01@8", PWV-B01@15', PWV-S01@13', and FL01@4') were submitted for analysis of full list Table 915-1 constituents due to potential impact. Laboratory analytical results indicated that benzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene (TMBs), naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, sodium adsorption ratio (SAR), boron, arsenic, and/or selenium impacts exceeding the ECMC Table 915-1 allowable levels and/or site-specific background levels were present at the former AST, PWV, and FL01 locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 402618667) was submitted on March 5, 2021 and the ECMC issued Spill/Release Point ID 479613. 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

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

Between March 4 and July 21, 2021, excavation activities were conducted to address remaining soil impacts at the former AST, PWV, and FL01 locations. Confirmation soil samples were collected from the base and sidewalls of the combined facility excavation at depths ranging from 14 to 18 ft bgs. The samples were submitted for laboratory analysis of either full list Table 915-1 constituents or the site-specific waste profile developed following the methods approved at the time of sampling. Laboratory analytical results indicated that benzene, TMB, polycyclic aromatic hydrocarbon (PAH), arsenic, barium, and/or selenium impacts exceeding the ECMC Table 915-1 allowable levels or background levels remain along the southern sidewall and at the base of the excavation. Excavation activities could not be continued due to the proximity to Weld County Road 6 to the south limiting the required sloping for an engineered excavation. Per conversation with the ECMC, the excavation was backfilled.

Proposed Groundwater Sampling

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

On April 6 and 19, 2021, two groundwater samples (PWV-GW01 and PWV-GW02) were collected from the PWV excavation and submitted for full list Table 915-1 constituents in groundwater. One background groundwater sample was also collected and submitted for Table 915-1 inorganic parameters. Laboratory analytical results indicated that groundwater was in exceedance of the Table 915-1 standards for benzene, TMBs, and/or total dissolved solids (TDS). The excavation groundwater sample and background sample locations are depicted on Figure 1. 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 March 4, 2021, visual inspections and field screening of soil were conducted at the base, drainline, loadout, and dumplines for the AST, two sidewalls within the PWV excavation, the separator, the sales line and three potholes. 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.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 87

Number of soil samples exceeding 915-1 82

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

Approximate areal extent (square feet) 9872

NA / ND

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

-- Highest concentration of SAR 14.34

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 18

Groundwater

Number of groundwater samples collected 2

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 15

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 2

-- Highest concentration of Benzene (µg/l) 12.5

ND Highest concentration of Toluene (µg/l)

-- Highest concentration of Ethylbenzene (µg/l) 162

-- Highest concentration of Xylene (µg/l) 391

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?

Eight background soil samples were collected from the native material outside of the facility excavation. The background soil samples were submitted for laboratory analysis of specific conductivity (EC), SAR, pH, boron, and Table 915-1 metals using ECOMC-approved methods. Laboratory analytical results indicated EC, SAR, pH, arsenic, barium, and selenium are naturally high in the native soil. The background soil sample analytical results are summarized in Table 2.

One background groundwater sample (BG-GW01) was collected and submitted for Table 915-1 inorganic parameters. The background groundwater analytical results are summarized in Table 3. 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?

A site investigation will be conducted to delineate the remaining soil impacts at the site. Following the soil investigation, groundwater monitoring wells will be installed to delineate the dissolved-phase plume. The soil and groundwater investigation scopes of work will be provided 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.

Approximately 4,410 barrels of impacted groundwater were removed from the site and transported to Aggregate Recycle Facility in Weld County, Colorado, for recycling. Approximately 8,688 cubic yards of impacted soil were removed from the site and transported to Buffalo Ridge Landfill in Keenesburg, Colorado, for disposal. Disposal records are kept on file and are available upon request. The excavation area was 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 benzene, TMB, PAH, arsenic, barium, and/or selenium impacts exceeding the ECMC Table 915-1 allowable levels or background levels remain along the southern sidewall and at the base of the excavation. Excavation activities could not be continued due to the proximity to Weld County Road 6 to the south limiting the required sloping for an engineered excavation. Groundwater was encountered in the facility excavation at approximately 15 ft bgs. A site investigation will be conducted to delineate the remaining soil impacts at the site. Following the soil investigation, groundwater monitoring wells will be installed to delineate the dissolved-phase plume. The soil and groundwater investigation scopes of work will be provided 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) _____ 8688
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.

A site investigation will be conducted to delineate the remaining soil impacts at the site. Following the soil investigation, groundwater monitoring wells will be installed to delineate the dissolved-phase plume. The monitoring well installation scope of work will be summarized in a subsequent Form 27 supplemental report.

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: \$ 50000

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 4,410 barrels of impacted groundwater were removed from the site and transported to Aggregate Recycle Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 8688

E&P waste (solid) description Historically impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, Colorado

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

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. 03/04/2021

Actual Spill or Release date, or date of discovery. 03/04/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/04/2021

Proposed site investigation commencement. 03/04/2021

Proposed completion of site investigation. 06/11/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/04/2021

Proposed date of completion of Remediation. 06/11/2027

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

No additional work has been done since the previous Form 27 and, as such, none of the previous attachments have been included with this form. The implementation schedule has been updated.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Macy Kiel

Title: HSE Advisor

Submit Date: 12/18/2024

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: Alexander Ahmadian

Date: 03/10/2025

Remediation Project Number: 16129

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**

404023726	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
404121162	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 2 Files

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

Environmental	ECMC has processed this form as an update; no analytical was attached thus approval of this form does not imply any agreement with comments on completion of site investigation. All ongoing/unaddressed comments/COAs from previous Forms remain applicable.	03/10/2025
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Total: 1 comment(s)