

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 ECOM 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: <u>KERR MCGEE OIL & GAS ONSHORE LP</u> | Operator No: <u>47120</u> | Phone Numbers |
| Address: <u>P O BOX 173779</u> | | |
| City: <u>DENVER</u> | State: <u>CO</u> | Phone: <u>(720) 929-4306</u> |
| | Zip: <u>80217-3779</u> | Mobile: <u>()</u> |
| Contact Person: <u>Erik Mickelson</u> | Email: <u>DJRemediation_Forms@oxy.com</u> | |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36312 Initial Form 27 Document #: 403848335

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: <u>TANK BATTERY</u> | Facility ID: <u>487143</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>Herman UP 41-31A/UP Facility TB</u> | Latitude: <u>40.184625</u> | Longitude: <u>-104.815295</u> | |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: <u>SWNE</u> | Sec: <u>31</u> | Twp: <u>3N</u> | Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |

| | | | |
|---|----------------------------|-------------------------------|---|
| Facility Type: <u>SPILL OR RELEASE</u> | Facility ID: <u>488514</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>Herman UP 41-31A, UP Facility</u> | Latitude: <u>40.184685</u> | Longitude: <u>-104.815362</u> | |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: <u>SWNE</u> | Sec: <u>31</u> | Twp: <u>3N</u> | Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Surface Water

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

Platteville Ditch 130 feet (ft) east. Platte Valley Canal 180 ft west. Retention Ponds 310 ft west, 470 ft southwest, and 1,000 ft northwest. Water well 1,070 ft north. Occupied buildings 1,090 ft west, 1,010 ft north, and 1,170 ft southwest. Livestock 410 ft north. Railroad 770 ft west. Highway 890 ft west. Agriculture. Groundwater at approximately 6 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 | TBD | 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 at the Herman UP 41-31A, UP Facility were conducted on September 10, 2024. Groundwater was encountered in the produced water vessel excavation at a depth of 6 ft bgs. Visual inspection and field screening of soil at one aboveground storage tank (AST), one produced water vessel (PWV), one emission control device (ECD), one meter house, and one separator were conducted following removal activities and soil samples (AST01@0.5', PWV-B01@4', PWV-N01@2', SEP01-INLET@3', and SEP01-OUTLET@3') were submitted for laboratory analysis of full list Table 915-1 constituents, to determine if a release occurred. Initial analytical results indicated that sodium adsorption ratio (SAR), and/or pH impacts exceeding the Table 915-1 allowable levels and site-specific background levels were present at the AST01@0.5', PWV-B01@4', and PWV-N01@2' locations. Verification samples were collected at the three locations to confirm the initial results. The PWV base verification sample was analyzed for full list Table 915-1 constituents due to field indication of impact that was not present during the initial sampling. Final analytical results confirmed that pH and/or polycyclic aromatic hydrocarbon (PAH) impacts exceeding the Table 915-1 allowable levels and background levels were present at the AST01@0.5' and PWV-B01@4' locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403966901) was submitted on 10/25/2024 and the ECMC issued Spill/Release Point ID 488514. 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.

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 9/10/24 and 1/13/25, excavation activities were conducted to address soil impacts at the former PWV and AST locations. Confirmation soil samples were collected from the base and sidewalls of the PWV excavation at depths of approximately 6 ft bgs and 4 ft bgs and the base of the AST excavation at 2 ft bgs. The samples were submitted for analysis of the excavation-specific waste profile, including total petroleum hydrocarbons (TPH), PAHs, electrical conductivity (EC), SAR, pH, boron and/or select Table 915-1 metals using ECMC-approved methods. Analytical results indicated that all samples at the final excavation extents were within the ECMC Table 915-1 allowable levels or background levels. The laboratory report is attached.

Proposed Groundwater Sampling

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

On October 31, 2024, one groundwater sample was collected from the PWV excavation at a depth of 6 ft bgs. The groundwater sample was submitted for analysis of full list Table 915-1 constituents in groundwater. One background groundwater sample was collected from the UPRR 42 PAN AM X 1 wellhead cut and cap activities (Rem# 36296) for analysis of Table 915-1 inorganic constituents in groundwater. Based on the laboratory analytical results groundwater concentrations exceeded the ECMC Table 915-1 allowable levels and background levels for total dissolved solids (TDS), chloride, and sulfate. Groundwater monitoring wells will be installed to delineate the dissolved-phase impacts. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following confirmation of completion of soil assessment activities. The groundwater sample locations are depicted on Figures 1 and 2. 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 September 10, 2024, visual inspections and field screening of soil were conducted at the hatch and base of the AST, three sidewalls of the PWV excavation, one meter house, and one ECD. 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. A photographic log is attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 18

Number of soil samples exceeding 915-1 16

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 278

NA / ND

-- Highest concentration of TPH (mg/kg) 420

-- Highest concentration of SAR 9.69

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 6

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 1

ND Highest concentration of Benzene (µg/l) _____

ND Highest concentration of Toluene (µg/l) _____

ND Highest concentration of Ethylbenzene (µg/l) _____

ND Highest concentration of Xylene (µg/l) _____

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 excavations. Thirteen background samples were also collected as part of the Herman L 32-3, 3 JI O SA decommissioning activities (Rem# 32055), located approximately 3940 ft northeast, from similar depths (3' & 6' bgs), & NCRS soil type (Sandy Loam). Background soil samples were submitted for lab analysis of pH, EC, SAR, boron & Table 915-1 metals using ECMC-approved methods. Analytical results indicate that EC, SAR, pH, boron, arsenic, barium, cadmium, lead, nickel, & selenium are naturally high in the native soil.

One background groundwater sample (GW-BG01@10') was collected from the nearby UPRR 42 PAN AM X1 wellhead cut and cap activities (Rem# 36296) for analysis of Table 915-1 inorganic constituents in groundwater.

The background soil and groundwater samples results are summarized in Tables 2 & 3. The background soil and groundwater sample locations are depicted on Figure 2.

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?

Groundwater monitoring wells will be installed to delineate the dissolved-phase impacts. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following confirmation of completion of soil assessment 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 120 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 Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Disposal records are kept on file and available upon request. The excavation areas have been 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 have been remediated and all soil at the final PWV and AST excavation extents is within the ECMC Table 915-1 allowable levels and background levels. Groundwater was encountered at approximately 6 ft bgs. Analytical results indicate that groundwater concentrations exceeded the ECMC Table 915-1 allowable levels for TDS, chloride, and sulfate. Groundwater monitoring wells will be installed to delineate the dissolved-phase impacts. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following confirmation of completion of soil assessment activities.

Soil Remediation Summary

| | | |
|--|---------------------------------------|---|
| <input type="checkbox"/> In Situ _____ Bioremediation (or enhanced bioremediation) _____ Chemical oxidation _____ Air sparge / Soil vapor extraction _____ Natural Attenuation _____ Other _____ | Yes _____ No _____ | <input checked="" type="checkbox"/> Ex Situ Excavate and offsite disposal If Yes: Estimated Volume (Cubic Yards) _____ 160 Name of Licensed Disposal Facility or ECMC Facility ID # _____ 149007 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 delineate the dissolved-phase impacts. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following confirmation of completion of soil assessment activities.

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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. 10/24/2024

Actual Spill or Release date, or date of discovery. 10/23/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/10/2024

Proposed site investigation commencement. 09/10/2024

Proposed completion of site investigation. 01/13/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/10/2024

Proposed date of completion of Remediation. 12/31/2026

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: 07/02/2025

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: 12/10/2025

Remediation Project Number: 36312

COA Type**Description**

| | |
|--|--|
| | Due to the presence of impacted soil in contact with groundwater Operator will install monitoring wells (within the spill/release area, cross-gradient, down-gradient, and up-gradient) to properly characterize groundwater pursuant to Rule 915. Operator will analyze groundwater samples from all monitoring wells for Table 915-1 organic and inorganic parameters for a minimum of four quarterly monitoring events. |
| | Off location soil sample locations are not approved by ECMC as they are either not within the same land use or the same NRCS mapped soil type or crop/pivot. Therefore all background samples from Rem. Project No. 32055 shall be omitted from future background determination calculations. |

2 COAs

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**

| | |
|-----------|----------------------------------|
| 404205436 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 404205475 | ANALYTICAL DATA SUMMARY TABLE(S) |
| 404205479 | LABORATORY ANALYTICAL REPORT |
| 404205484 | SOIL SAMPLE LOCATION MAP |
| 404205988 | SOIL SAMPLE LOCATION MAP |

Total Attach: 5 Files

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

| | | |
|--|--|---------------------|
| | | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)