

State of Colorado
Energy & Carbon Management Commission

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Receive Date:

Report taken by:

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		Mobile: ()
Contact Person: Macy Kiel	Email: DJRemediation_Forms@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24758 Initial Form 27 Document #: 403137797

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 #: 123-07404 County Name: WELD

Facility Name: STRONG P 28-2 Latitude: 40.200392 Longitude: -104.891293

** correct Lat/Long if needed: Latitude: _____ Longitude: _____

QtrQtr: NWNE Sec: 28 Twp: 3N Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 482916 API #: _____ County Name: WELD

Facility Name: Strong P 28-2 Wellhead Latitude: 40.200392 Longitude: -104.891293

** correct Lat/Long if needed: Latitude: _____ Longitude: _____

QtrQtr: NWNE Sec: 28 Twp: 3N Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use 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

Domestic water well: approximately 1300' N
Surface water: approximately 1010' W and 670' E
Wetlands: areas with wetland characteristics located approximately 1000' W and 640' E
Springs: none
Livestock: none
Occupied Building: none
High Priority Habitats: none

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- E&P Waste Other E&P Waste Non-E&P Waste
 Produced Water Workover Fluids Non-Impacted Groundwater
 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
No	GROUNDWATER	No hydrocarbon impacts observed	groundwater samples/laboratory analytical results
Yes	SOILS	19' (N-S) x 20' (E-W) x 11' 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.

Wellhead cut and cap operations and flowline removal activities were completed at the Strong P 28-2 wellhead on September 7 through 15, 2022. Groundwater was encountered in the wellhead cut and cap excavation area at approximately 10' below ground surface (bgs). Visual inspection and field screening of soils around the well, associated pumping equipment, and flowline removal potholes was conducted following wellhead cut and cap operations and flowline removal activities and soil samples (InitialWasteCharacterization@4', WH-B01@6', WHS-W01@3", FL-B01@2', FL-B02@3", and DL-B01@5') were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that the naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, total petroleum hydrocarbons (TPH), 1-methylnaphthalene, 2-methylnaphthalene, boron, pH, arsenic, barium, cadmium, lead, nickel, and/or selenium concentrations in soil samples InitialWasteCharacterization@4', WH-B01@6', and WHS-W01@3" exceeded the applicable ECMC Table 915-1 standards and background limits. As such, a Form 19-Initial/Supplemental Spill/Release Report (ECMC Document No. 403158098) was submitted on September 9, 2022, and the ECMC issued Spill/Release Point ID 482916. 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 Figures 2 through 5. The laboratory analytical reports are provided as Attachment A. The field notes and a photographic log are provided as Attachment B.

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):

From September 7 through June 6, 2024, soil samples were collected from the base and sidewalls of the current wellhead excavation extent ranging in depths of approximately 1 to 11 feet bgs. Based on waste characterization results (InitialWasteCharacterization@4', WH-B01@6', WHS-W01@3"), confirmation soil samples were submitted for laboratory analysis of naphthalene, TMBs, TPH, boron, pH, PAHs, arsenic, barium, cadmium, copper, lead, nickel, and selenium using ECMC approved methods. Analytical results indicate that barium, cadmium, pH, and boron impacts remain in the excavation area. However, the remaining impacts will be left in place due to the presence of groundwater within the excavation and will be addressed through quarterly groundwater monitoring. Soil analytical results are summarized in Tables 2 through 5.

Proposed Groundwater Sampling

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

Groundwater was encountered in the wellhead cut and cap excavation area at approximately 10' bgs. On November 1, 2022, a groundwater sample (GW01) was collected and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, 1,3,5-TMB, by USEPA Method 8260D, as approved in the Form 27-Initial (Document No. 403137797). Analytical results indicate that the constituent concentrations in groundwater sample GW-01 were in compliance with ECMC Table 915-1 standards as summarized in Table 6. The groundwater sample location is illustrated in Figure 3. Monitoring wells will be installed at the site and sampled for four consecutive quarters to monitor for groundwater compliance. Future groundwater samples will be submitted for the full ECMC Table 915-1 groundwater analytical suite, as well as dissolved barium and dissolved cadmium.

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 8 through 15, 2022, visual inspection and field screening of soils was conducted at four (4) sidewall locations within the wellhead excavation area, three (3) locations at the ground surface adjacent to the excavation, and two flowline removal potholes. Based on the inspection and screening results, no soil samples were submitted from these areas in accordance with ECMC Operator Guidance. Following cut and cap operations, a soil gas survey was conducted at three (3) soil vapor points (SVP-03 - SVP-05) that were installed adjacent to the former wellhead. Soil vapor points SVP-01 and SVP-02 were able to be screened due to the presence of groundwater. GEM 5000 readings were non-detect for methane at all three (3) points. The SVP locations are illustrated on Figure 2 and SVP screening results are summarized in Table 7.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 22
 Number of soil samples exceeding 915-1 22
 Was the areal and vertical extent of soil contamination delineated? No
 Approximate areal extent (square feet) 380

NA / ND

-- Highest concentration of TPH (mg/kg) 1538
 -- Highest concentration of SAR 2.17
 BTEX > 915-1 No
 Vertical Extent > 915-1 (in feet) 11

Groundwater

Number of groundwater samples collected 1
 Was extent of groundwater contaminated delineated? Yes
 Depth to groundwater (below ground surface, in feet) 10
 Number of groundwater monitoring wells installed 0
 Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l) _____
 -- Highest concentration of Toluene (µg/l) 2.17
 ND Highest concentration of Ethylbenzene (µg/l) _____
 -- Highest concentration of Xylene (µg/l) 5.17
 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 investigation?

Background soil samples WH-BG01 - WH-BG011 were collected from native material adjacent to the wellhead cut and cap excavation area at depths ranging from 3' to 10' bgs. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and/or Table 915-1 Metals using standard methods appropriate for detecting target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 3 and 5. Background sample locations are illustrated in Figures 2 through 4.

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?

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. 08/15/2022

Actual Spill or Release date, or date of discovery. 09/07/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/07/2022

Proposed site investigation commencement. 09/07/2022

Proposed completion of site investigation. 01/31/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/07/2022

Proposed date of completion of Remediation. 01/31/2026

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

Per the COA on the approved Form 27-Site Investigation and Remediation Workplan Supplemental (Document No. 403380921), laboratory analytical results indicate that barium, cadmium, pH, and boron impacts remain in the excavation area. However, the remaining impacts will be left in-place due to the presence of groundwater within the excavation and will be addressed through quarterly groundwater monitoring. Groundwater monitoring wells will be installed at the site to fully define the extent and magnitude of the remaining soil impacts. A background groundwater sample will be collected and submitted for laboratory analysis of TDS, sulfate ions, and chloride ions to establish background levels. Based on the remaining soil impacts in the former wellhead excavation area, groundwater monitoring wells will be sampled on a quarterly basis and submitted for laboratory analysis of the full ECMC Table 915-1 groundwater analytical suite, as well as dissolved barium and dissolved cadmium.

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: _____

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: _____

Date: _____

Remediation Project Number: 24758

COA Type**Description**

<u>COA Type</u>	<u>Description</u>
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**

403806001	SITE MAP
403928447	SOIL SAMPLE LOCATION MAP
403928454	SOIL SAMPLE LOCATION MAP
403928455	SOIL SAMPLE LOCATION MAP
403928457	SOIL SAMPLE LOCATION MAP
403928461	PHOTO DOCUMENTATION
403928462	ANALYTICAL RESULTS
403928464	ANALYTICAL RESULTS

Total Attach: 8 Files

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

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)