

State of Colorado
Energy & Carbon Management Commission

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Document Number:
404078553

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) 515-1161
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Phil Hamlin	Email: Phillip_Hamlin@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21234 Initial Form 27 Document #: 402897793

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 #: 123-12700 County Name: WELD

Facility Name: BIERIG-UPRR 42-35 Latitude: 40.270239 Longitude: -104.737533

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

QtrQtr: SENE Sec: 35 Twp: 4N Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 482210 API #: _____ County Name: WELD

Facility Name: Berig UPRR 42-35 Wellhead Latitude: 40.270239 Longitude: -104.737533

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

QtrQtr: SENE Sec: 35 Twp: 4N Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Surface Water

Is domestic water well within 1/4 mile? No

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

Platte Valley Ditch located approximately 180 feet (ft) west, 350 ft south, and 800 ft east; Agriculture located approximately 325 ft southwest; Groundwater at approximately 1 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	To be determined.	Groundwater Samples/Lab 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.

Wellhead cut and cap operations were completed at the Berig UPRR 42-35 1 Wellhead on May 19, 2022. Groundwater was encountered in the wellhead cut and cap excavation. Visual inspection and field screening of soil around the wellhead and associated pumping equipment were conducted following cut and cap operations, and a soil sample (B01@6'-WP) was submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Laboratory analytical results indicated that 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene (TMBs), polycyclic aromatic hydrocarbon (PAH), sodium adsorption ratio (SAR), and pH impacts exceeding Table 915-1 allowable levels and existing background data existed at the former wellhead location. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403055502) was submitted on May 23, 2022, and the ECOMC issued Spill/Release Point ID 482210. The flowline associated with the wellhead was removed between May 20 and July 22, 2022, and soil samples were collected from the locations where there was field indication of impact (FL01@5' and FL02@5'). The samples were submitted for laboratory analysis of full list Table 915-1 constituents to determine if a release occurred. Laboratory analytical results indicated that PAH impacts exceeding the ECOMC Table 915-1 allowable levels were present at the FL01@5' location. The wellhead excavation is depicted on Figure 1.

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 May 19 through July 25, 2022, excavation activities were conducted to address remaining soil impacts at the B01@6'-WP and FL01@5' locations and confirmation soil samples were collected from the base and sidewalls of the final excavation extent of the cut and cap excavation at depths of approximately 7 ft bgs and 4 ft bgs, respectively, and the base and sidewalls of the final extent of the FL01@5' excavation at approximately 6 ft bgs and 4 ft bgs, respectively. The confirmation soil samples were submitted for laboratory analysis of the excavation-specific waste profile following the ECOMC-approved method at the time of sampling. Analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with the applicable ECOMC Table 915-1 standards or within the analytical variability of background levels.

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 and in the flowline trench at approximately 5 and 3 ft bgs, respectively. Two groundwater samples (GW01 and GW02) were collected and submitted for laboratory analysis of full list Table 915-1 constituents in groundwater. Three background groundwater samples were also collected for analysis of Table 915-1 inorganic parameters in groundwater. Laboratory analytical results indicated that benzene, 1,2,4-TMB, and/or sulfate ion concentrations exceeding the ECOMC Table 915-1 allowable levels or background levels were present at both locations. The groundwater sample analytical results are summarized in Table 1. The groundwater sample and background groundwater sample locations are depicted on Figure 1.

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 May 19, 2022, visual inspection and/or field screening of soils were conducted at four sidewall locations within the cut and cap excavation area and four locations at the ground surface adjacent to the excavation. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the screening locations, and no soil samples were submitted for laboratory analysis from these areas, in accordance with the ECMC Operator Guidance.

Following cut and cap operations, a soil gas survey was conducted. Five soil vapor points were installed adjacent to the former wellhead location. GEM 5000 field readings were all non-detect for methane at all soil vapor points.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil		NA / ND	
Number of soil samples collected	22	--	Highest concentration of TPH (mg/kg) 152
Number of soil samples exceeding 915-1	16	--	Highest concentration of SAR 9.53
Was the areal and vertical extent of soil contamination delineated?	Yes		BTEX > 915-1 Yes
Approximate areal extent (square feet)	610		Vertical Extent > 915-1 (in feet) 7
Groundwater			
Number of groundwater samples collected	14	--	Highest concentration of Benzene (µg/l) 47.9
Was extent of groundwater contaminated delineated?	No	--	Highest concentration of Toluene (µg/l) 153
Depth to groundwater (below ground surface, in feet)	1	--	Highest concentration of Ethylbenzene (µg/l) 19
Number of groundwater monitoring wells installed	7	--	Highest concentration of Xylene (µg/l) 347
Number of groundwater samples exceeding 915-1	4	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?

Six background soil samples were collected from the native material outside of the wellhead cut and cap excavation. The background soil samples were submitted for laboratory analysis of pH, specific conductivity (EC), SAR, boron and Table 915-1 metals, using ECMC-approved methods. Laboratory analytical results indicate that levels of pH, arsenic, barium, and selenium are naturally high in the native soil.

Three background groundwater samples (BGGW01 through BGGW03) were collected for laboratory analysis of Table 915-1 inorganic parameters. The background groundwater sample analytical results are summarized in Table 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?

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 240 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 630 bbls of impacted groundwater were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Disposal records are kept on file and available upon request.

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.

On September 3 and September 12, 2024, groundwater monitoring wells were installed in source areas, and cross-gradient, upgradient, and downgradient from the source areas. Please refer to the Form 27 dated November 26, 2024 (Document No. 403982663) for more details.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 240

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # _____ 149007

_____ Natural Attenuation

No _____ Excavate and onsite remediation

_____ Other _____

_____ 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 is conducted quarterly at wells MW01 through MW07 for full list Table 915-1 constituents in groundwater. All organic constituents were below the laboratory reporting limits during the September and December 2024 monitoring events. Compliant monitoring well MW03, located upgradient of the former excavation footprint and within the same land use as the source area, was used for determine inorganic compliance at the site. As of the December 2024 monitoring event, point of compliance has been achieved at the site. The monitoring well locations are depicted on Figure 1. The Groundwater Elevation Contour Map for the December 2024 monitoring event is provided as Figure 2.

Groundwater monitoring will continue on a quarterly basis until no further action (NFA) is warranted.

REMEDIATION 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: \$ 30000 _____

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 240 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.

Volume of E&P Waste (solid) in cubic yards _____ 240

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable: _____ 149007

Non-ECMC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____ 630

E&P waste (liquid) description Impacted water

ECMC Disposal Facility ID #, if applicable: _____ 434766

Non-ECMC Disposal Facility: _____

REMEDIATION COMPLETION REPORT

REMEDIATION 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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

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. 05/20/2022

Actual Spill or Release date, or date of discovery. 05/20/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/18/2022

Proposed site investigation commencement. 05/18/2022

Proposed completion of site investigation. 12/12/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/20/2022

Proposed date of completion of Remediation. 12/31/2027

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

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

Signed: Phil Hamlin _____

Title: Senior Environmental Rep. _____

Submit Date: _____

Email: Phillip_Hamlin@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: 21234

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**

404078591	GROUND WATER ELEVATION MAP
404078592	SITE MAP
404078594	ANALYTICAL RESULTS
404078595	ANALYTICAL RESULTS

Total Attach: 4 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)