

State of Colorado
Energy & Carbon Management Commission

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Document Number:
403565743
Receive Date:
10/20/2023

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 COGCC 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>(970) 515-1698</u>
	Zip: <u>80217-3779</u>	Mobile: <u>()</u>
Contact Person: <u>Gregory Hamilton</u>	Email: <u>Gregory_Hamilton@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 26375 Initial Form 27 Document #: 403225058

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

No Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>336703</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>ARISTOCRAT 41-9-63N65W 9NENE</u>	Latitude: <u>40.245050</u>	Longitude: <u>-104.661230</u>	
	** correct Lat/Long if needed: Latitude: <u>40.244826</u>	Longitude: <u>-104.661563</u>	
QtrQtr: <u>NENE</u>	Sec: <u>9</u>	Twps: <u>3N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use _____

High Priority
 Bald Eagle ½
 Mile Nest HPH
 Buffer and a
 High Priority
 Bald Eagle
 Winter Night
 Roost

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 1,000 feet (ft) east; Water well located approximately 1,300 ft southwest; Groundwater at approximately 2.5 ft below ground surface (ft 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	TBD	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 REI1-9, Aristocrat 41-9 O SA Facility on August 14, 2023. Groundwater was encountered in the facility excavation at approximately 2.5 ft bgs. Visual inspection and field screening of soil at three aboveground storage tanks (ASTs), one produced water vessel (PWV), one emission control device (ECD), one meter house, and two separators were conducted following removal activities, and soil samples (SEP01-INLET@4', SEP02-INLET@4', SEP01-OUTLET@4', and SEP02-OUTLET@4') were submitted for analysis of reduced list Table 915-1 constituents including benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4- and 1,3,5-trimethylbenzenes (TMBs), naphthalene, total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO), pH, electrical conductivity (EC), sodium adsorption ratio (SAR), and boron, as approved in the Form 27 Initial dated November 10, 2022 (Document No. 403225058), to determine if a release occurred. Samples AST01@0.5', AST02@0.5', AST03@0.5', PWV-S02@2', and PWV-B01@3' were submitted for full list Table 915-1 constituents due to the presence of impacts at the tank battery. Laboratory analytical results indicated that benzene, toluene, TMBs, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and/or arsenic impacts exceeding the ECMC Table 915-1 allowable levels and/or site-specific background levels were present at the AST01 and PWV locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403496853) was submitted on August 18, 2023 and the ECMC issued Spill/Release Point ID 484990. 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.

Excavation 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 August 14 and September 25, 2023, excavation activities were conducted to address the impacts at the tank battery and ten confirmation soil samples were submitted from the base and sidewalls of the excavation at 3 ft bgs and 5 ft bgs, respectively. Samples were submitted for the site specific waste profile including BTEX, TMBs, TPH, PAHs, boron, arsenic, and barium. Laboratory analytical results indicated that all samples were within the ECMC Table 915-1 allowable levels and/or site-specific background levels for all samples; however, additional impact was discovered during liner removal. Excavation activities are ongoing. The PID readings and soil sample results are summarized in Table 1 and Table 2, respectively, and 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 August 14, 2023, one groundwater sample (GW01) was collected from the PWV excavation and submitted for laboratory analysis of full list Table 915-1 constituents. Laboratory analytical results indicate that groundwater exceeds the ECMC Table 915-1 allowable levels for benzene and TMBs. A background groundwater sample is needed for inorganic comparison. The groundwater sample location is 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 August 14, 2023, visual inspections and field screening of soils was conducted at the loadout and hatch of each AST, three sidewalls of each PWV, three dumphine locations, three potholes, the meter house and the 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 for Oil & Gas Facility Closure document. A photographic log is attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 19

Number of soil samples exceeding 915-1 15

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

Approximate areal extent (square feet) 1113

NA / ND

-- Highest concentration of TPH (mg/kg) 62.3

-- Highest concentration of SAR 5.47

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 5

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?

One tank battery background soil sample (TB-BG01@0.5') was collected from the material used to construct the tank battery for comparison to shallow soil samples collected within the fill material. Six native background soil samples (Native-BG01@5' through Native-BG03@5' and Native-BG01@10' through Native-BG03@10') were collected from the native material outside of the facility excavation. Twelve native background soil samples (Native-BG01@3' through Native-BG04@3', Native-BG01@6', through Native-BG04@6', and Native-BG05@13' through Native-BG08@13') were collected from the native material outside of the Aristocrat 41-9 wellhead excavation (Remediation No. 20556). Background soil samples were submitted for laboratory analysis of pH, EC, SAR, boron, and metals using ECMC-approved methods. Laboratory analytical results indicate that arsenic and barium are naturally high in the soil used to construct the tank battery and arsenic and selenium are naturally high in the native soil.

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 excavation 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.

Additional impact was discovered during liner removal after confirmation soil samples were within the ECMC Table 915-1 allowable levels. Excavation activities are ongoing. Groundwater was encountered in the PWV excavation at approximately 2.5 ft bgs. Laboratory analytical results indicate that groundwater exceeds the ECMC Table 915-1 allowable levels for benzene and TMBs. A background groundwater sample is needed for inorganic comparison. Confirmation soil sample results will be summarized in a subsequent Form 27 Supplemental report.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

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

_____ Natural Attenuation

_____ 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.

Monitoring wells will be installed to delineated the dissolved-phase plume. The groundwater monitoring well installation scope of work will be submitted in a subsequent Form 27 supplemental report.

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: \$ 17500 _____

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 _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

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

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC 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? No _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

Operator shall comply with the COGCC 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. 08/18/2023

Actual Spill or Release date, or date of discovery. 08/18/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/14/2023

Proposed site investigation commencement. 08/14/2023

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/14/2023

Proposed date of completion of Remediation. _____

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: Gregory Hamilton

Title: Environmental Lead

Submit Date: 10/20/2023

Email: Gregory_Hamilton@oxy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: Alexander Ahmadian

Date: 12/04/2023

Remediation Project Number: 26375

COA Type**Description**

0 COA	

Attachment Check 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**

403565743	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403566178	ANALYTICAL RESULTS
403566179	PHOTO DOCUMENTATION
403566187	SOIL SAMPLE LOCATION MAP
403613975	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 5 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)