

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 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 Phone: <u>(970) 515-1698</u> Mobile: <u>()</u>
Address: <u>P O BOX 173779</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Gregory Hamilton</u>	Email: <u>Gregory_Hamilton@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 23400 Initial Form 27 Document #: 403057576

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>TANK BATTERY</u>	Facility ID: <u>444997</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>POPE 11-35/SCOTSDALE O SA 34002151</u>		Latitude: <u>40.266088</u>	Longitude: <u>-104.865612</u>
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: _____	Sec: <u>35</u>	Twp: <u>4N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <input type="checkbox"/> Yes

SITE CONDITIONS

General soil type - USCS Classifications SC 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

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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
UNDETERMINED	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 Pope 11-35/Scottdale O SA Facility on June 16, 2022. Visual inspection and field screening of soil at two aboveground storage tanks (ASTs), one produced water vessel, one emission control device (ECD), four meter houses, and two separators were conducted removal activities, and soil samples (AST01@6"-WP, AST02@6"-WP, PWV-B01@5', and PWV-S01@1.5'-WP) were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Laboratory analytical results indicated that TPH, BTEX, TMBs, naphthalene, benzo (a)anthracene, fluorene, 1-methylnaphthalene, 2-methylnaphthalene, arsenic, cadmium, lead, and/or selenium impacts exceeding the COGCC Table 915-1 allowable levels and/or the analytical variability of background were present at all four locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403083771) was submitted on June 27, 2022 and the COGCC issued Spill/Release Point ID 482465. 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 June 16 and November 29, 2022, excavation activities were conducted to address remaining soil impacts at the former tank battery. Confirmation soil samples were collected from the base and sidewalls of the excavation and submitted for laboratory analysis of select Table 915-1 compounds, based on the initial waste profiling, using COGCC-approved methods. Laboratory analytical results indicated that organic constituents exceeding Table 915-1 allowable levels remain in the facility excavation. Excavation activities are ongoing. Laboratory analytical results also indicate that arsenic and lead impacts exceeding the Table 915-1 allowable levels and site-specific background remain in the excavation. These metals will be addressed during groundwater monitoring. Separator samples have not yet been collected. The PID readings and soil sample results are summarized in Table 1 and Table 2, respectively, and the laboratory reports are attached.

Proposed Groundwater Sampling

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

On September 15, 2022, one groundwater sample was collected from the excavation and submitted for Table 915-1 analyses. Based on the laboratory analytical results, groundwater was within the COGCC Table 915-1 allowable levels for organic compounds. A background sample for inorganic compound comparison has not yet been collected. The excavation groundwater sample location is depicted on Figure 1. The groundwater sample analytical results are summarized in Table 3, and the laboratory report is attached.

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 June 16, 2022, visual inspections and field screening of soil were conducted at the dumpline, drainline, loadout, and/or footprint for each AST, three sidewalls of the PWV excavation, the dumpline for the PWV, one pothole, the knockout tank, the separator to meter connection, and the ECD footprint. 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 COGCC Operator Guidance for Oil & Gas Facility Closure document. The PID readings and soil sample results are summarized in Table 1 and Table 2, respectively. The soil sample locations are depicted on Figure 2. A photographic log is attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 37

Number of soil samples exceeding 915-1 33

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

Approximate areal extent (square feet) 1910

NA / ND

-- Highest concentration of TPH (mg/kg) 15523

-- Highest concentration of SAR 1

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 14

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 13

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

0 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 was collected and submitted for laboratory analysis of pH, specific conductivity (EC), sodium adsorption ration (SAR), boron, and metals. Laboratory analytical results indicate that pH, arsenic, and barium are naturally high in the soil used to construct the tank battery.

Sixteen native soil samples were collected as part of the Platte 11-35 & Pope 11-35 wellheads closure activities (Rem No. 20764). and submitted for laboratory analysis of pH, EC, SAR, boron, and metals. Laboratory analytical results indicate that pH, EC, SAR, arsenic, barium, and selenium are naturally high in the native soil. The wellheads background 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?

Soil assessment activities at the facility are ongoing. Following completion of assessment activities, groundwater monitoring wells will be installed to delineate the plume. A remedial plan will be submitted after delineation has been completed. The monitoring well installation scope of work will be submitted 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 has been transported to a licensed disposal facility. Final disposal quantities will be provided once excavation is complete. Disposal records will be kept on file and available upon request. The excavation area 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.

Laboratory data indicate that impacts exceeding the COGCC Table 915-1 allowable levels and/or background levels for organic compounds, arsenic, and barium remain in the facility excavation. Excavation activities are ongoing to remove the remaining organic compounds. The metals will be addressed during groundwater monitoring. Groundwater was encountered in the facility excavation at approximately 13 ft bgs and one groundwater sample (GW01) was submitted for laboratory analysis of Table 915-1 constituents. Laboratory analytical results indicate that organic compounds are within the Table 915-1 allowable levels. A background groundwater sample is required for inorganics comparison. Confirmation soil sample results will be summarized in a subsequent Form 27 Supplemental report within 90 days following the completion of excavation activities.

Groundwater monitoring wells will be installed to delineate the plume. A remedial plan will be submitted after delineation has been completed. The monitoring well installation scope of work will be submitted 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.

Groundwater monitoring wells will be installed to delineate the plume. Groundwater samples will be collected from the monitoring wells on a quarterly basis and will be submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total dissolved solids, chloride ion, and sulfate ion per COGCC Rule 912.a. Due to the metal exceedances in the proposed soil to be left in place (as discussed in the Proposed Soil Sampling section), the groundwater samples will also be analyzed for dissolved arsenic and lead in accordance with the Water Quality Control Commission Regulation 41. The laboratory analytical and assessment results will be summarized in a supplemental Form 27.

Does Groundwater meet Table 915-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

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 COGCC 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. 06/20/2022

Actual Spill or Release date, or date of discovery. 06/20/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/16/2022

Proposed site investigation commencement. 06/16/2022

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/16/2022

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: Sr. Env. Consultant

Submit Date: 06/27/2023

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: Taylor Robinson

Date: 07/31/2023

Remediation Project Number: 23400

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**

403387741	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403387754	ANALYTICAL RESULTS
403387755	PHOTO DOCUMENTATION
403387756	SOIL SAMPLE LOCATION MAP
403387757	SOIL SAMPLE LOCATION MAP
403387758	SOIL SAMPLE LOCATION MAP
403387759	SOIL SAMPLE LOCATION MAP
403482065	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 8 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)