

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403549194

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 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: KERR MCGEE OIL & GAS ONSHORE LP	Operator No: 47120	Phone Numbers
Address: P O BOX 173779		
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Gregory Hamilton	Email: Gregory_Hamilton@oxy.com	Phone: (970) 515-1698
		Mobile: ( )

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

South Platte River 90 feet (ft) south. Water well 390 ft north. Groundwater approximately 13ft below ground surface.

**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), one meter house, and two separators were conducted following 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 due to field observation of impact. 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 ECMC Table 915-1 allowable levels and/or 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 ECMC 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.

Meter house screening and separator sampling are pending 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, 2022 and July 26, 2023, 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 ECMC-approved methods. Laboratory analytical results indicated that organic constituents are within the Table 915-1 allowable levels at the extents of the excavation. 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. 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 ):

Groundwater was encountered in the facility excavation at approximately 13 feet below ground surface (ft bgs). 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 ECMC 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 1C. 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 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 ECOM 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 1A. A photographic log is attached.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected 41

Number of soil samples exceeding 915-1 38

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 0.787

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 14

#### Groundwater

Number of groundwater samples collected 1

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

           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@6") was collected for comparison to shallow soil samples collected within the tank fill material. The background sample was submitted for laboratory analysis of pH, EC, 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. The tank battery background sample is depicted on Figure 1.

Twenty-two native soil samples were collected as part of the Platte 11-35, Pope 11-35, & Platte 27-2 wellheads closure activities (Rem # 20764 & Rem # 18670) 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 background soil sample laboratory analytical results are summarized in Table 2 and 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?

Meter house screening and separator sampling are pending.

In order to determine the extent and magnitude of any dissolved-phase impacts, groundwater monitoring wells will be installed at the site. The scope of the monitoring well installation 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 confirmed to be 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.

## **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.

Laboratory analytical results indicate that soil is in compliance with ECMC Table 915-1 allowable levels and/or within the range of background levels at the extents of the excavation except for metals which 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. Meter house screening and separator sampling are pending and will be summarized in a subsequent Form 27 Supplemental report within 90 days following the completion of excavation activities.

In order to determine the extent and magnitude of any dissolved-phase impacts, groundwater monitoring wells will be installed at the site. The scope of the monitoring well installation 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.

In order to determine the extent and magnitude of any dissolved-phase impacts, groundwater monitoring wells will be installed. 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 ECMC 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.

# 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 Facility Closure Assessment Update

## 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: \$ 25000

## 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? \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

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 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. 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: Environmental Lead

Submit Date: \_\_\_\_\_

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: \_\_\_\_\_

Date: \_\_\_\_\_

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**

403549214	ANALYTICAL RESULTS
403549215	PHOTO DOCUMENTATION
403562983	SOIL SAMPLE LOCATION MAP
403562984	SOIL SAMPLE LOCATION MAP
403562985	SOIL SAMPLE LOCATION MAP
403562987	SOIL SAMPLE LOCATION MAP
403563348	SOIL SAMPLE LOCATION MAP

Total Attach: 7 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)