

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
402829810

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 Phone: (970) 336-3500 Mobile: ( )
Address: P O BOX 173779		
City: DENVER	State: CO Zip: 80217-3779	
Contact Person: Phil Hamlin	Email: Phil_Hamlin@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9302 Initial Form 27 Document #: 200437794

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: 446224	API #: _____	County Name: WELD
Facility Name: PLATTE 26-2	Latitude: 40.259112	Longitude: -104.855170	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 2	Twp: 3N	Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GC Most Sensitive Adjacent Land Use Rangeland

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**

Water well approximately 160 feet (ft) east, surface water and wetlands located approximately 290 ft southwest, and groundwater approximately 3 ft below ground surface (bgs).

# SITE INVESTIGATION PLAN

## **TYPE OF WASTE:**

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input type="checkbox"/> Oil                       | <input type="checkbox"/> Tank Bottoms                |  |
| <input checked="" type="checkbox"/> Condensate     | <input type="checkbox"/> Pigging Waste               |  |
| <input type="checkbox"/> Drilling Fluids           | <input type="checkbox"/> Rig Wash                    |  |
| <input type="checkbox"/> Drill Cuttings            | <input type="checkbox"/> Spent Filters               |  |
|  | <input type="checkbox"/> Pit Bottoms                 |  |
|  | <input type="checkbox"/> Other (as described by EPA) | _____                                  |

## **DESCRIPTION OF IMPACT**

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	See attached data	Groundwater Sampling/Laboratory Analysis
Yes	SOILS	74ft N-S x 130ft E-W x 11ft bgs	Soil Sampling/Laboratory Analysis

## **INITIAL ACTION SUMMARY**

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

In February 2013, a drain valve on the back of the oil tank at the Clack 1-2A, Olson 2-2 facility froze and ruptured. Approximately 16 barrels (bbls) of condensate and 15 bbls of produced water were released within the tank battery containment berm, which was lined with a geosynthetic Claymax® liner. The remaining condensate and produced water were removed from the leaking aboveground storage tank (AST). A vacuum truck was used to recover approximately 10 bbls of condensate from within the tank battery containment berm.

In July 2021 during closure activities of the two ASTs, impacted soil and groundwater were encountered. The impacted soil was excavated. The release was originally reported under Remediation No. 18058, which was subsequently closed out and transferred to Remediation No. 9302, as approved in the Form 27 Supplemental dated September 2, 2021 (COGCC Document No. 402770365).

## **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 ):

Please refer to the Soil Sampling Summary Attachment.

### **Proposed Groundwater Sampling**

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

On August 4 and 6, 2015, assessment soil borings SB01 through SB08 were completed as monitoring wells MW01 through MW08, respectively. Groundwater monitoring proceeded on a quarterly basis in August 2015 and was discontinued following approval of the Form 27 Supplemental dated April 16, 2019.

On July 21, 2021, groundwater sample GW01 was collected from the 2021 excavation for full list Table 915-1 analysis. Laboratory results indicated sample GW01 exceeded COGCC Table 915-1 allowable levels for benzene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. The groundwater analytical results are summarized in Table 2. The laboratory analytical 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 ):

# SITE INVESTIGATION REPORT

## **SAMPLE SUMMARY**

### **Soil**

Number of soil samples collected 75  
Number of soil samples exceeding 915-1 46  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 8000

### **NA / ND**

-- Highest concentration of TPH (mg/kg) 1750  
-- Highest concentration of SAR 16.8  
BTEX > 915-1 Yes  
Vertical Extent > 915-1 (in feet) 3

### **Groundwater**

Number of groundwater samples collected 122  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 4'  
Number of groundwater monitoring wells installed 8  
Number of groundwater samples exceeding 915-1 17

-- Highest concentration of Benzene (µg/l) 1100  
ND Highest concentration of Toluene (µg/l) \_\_\_\_\_  
-- Highest concentration of Ethylbenzene (µg/l) 29.4  
-- Highest concentration of Xylene (µg/l) 279  
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?

On July 21, 2021, six background soil samples were collected for laboratory analysis of specific conductivity (EC), sodium adsorption ratio (SAR), pH, boron, and metals. Laboratory analytical results indicate arsenic, barium, and selenium are naturally high in the area.

On July 21, 2021, one background groundwater sample (GW-BG01) was collected for Table 915-1 inorganics. Laboratory analytical results indicate the sulfate ion level in groundwater is naturally high in the area.

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?

Groundwater monitoring wells will be installed at the site to fully define the extent and magnitude of the potentially remaining residual dissolved-phase groundwater impact.

## **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.

In 2013, approximately 80 cubic yards of petroleum hydrocarbon impacted soil were removed from within the lined containment to the depth of the geosynthetic Claymax® liner on the south side of the containment to accommodate the installation of a product recovery system, as described under the Remediation Summary section. The impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling. Approximately 52 cubic yards of residual impacted soil remained in place beneath the ASTs within the Claymax® liner.

In 2021, approximately 9,758 barrels of petroleum hydrocarbon impacted soil and groundwater slurry was transported to the Aggregate Recycle Facility in Weld County, Colorado, for recycling. Approximately 4,520 cubic yards of impacted soil were transported to Front Range Landfill in Erie, Colorado, for disposal. The 2013 and 2021 excavation extents are depicted on Figure 1 and Figure 2, respectively.

## **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.

In March 2013, a product recovery system was constructed. The recovery system consists of two 3-inch recovery wells with 1-inch polyvinyl chloride (PVC) recovery pipes installed horizontally above the geosynthetic Claymax® liner. Approximately 10 gallons of product were removed from the two PVC recovery wells. Based on diminishing product recovery, efforts were discontinued in July 2014. The recovery wells are depicted on Figure 1.

**Soil Remediation Summary**

<input type="checkbox"/> In Situ	<input checked="" type="checkbox"/> Ex Situ
_____ Bioremediation ( or enhanced bioremediation )	Yes Excavate and offsite disposal
_____ Chemical oxidation	If Yes: Estimated Volume (Cubic Yards) _____ 4600
_____ Air sparge / Soil vapor extraction	Name of Licensed Disposal Facility or COGCC Facility ID # _____ 149007
_____ Natural Attenuation	No Excavate and onsite remediation
_____ Other _____	_____ Land Treatment
	_____ Bioremediation (or enhanced bioremediation)
	_____ Chemical oxidation
	_____ Other _____

**Groundwater Remediation Summary**

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

No \_\_\_\_\_ Chemical oxidation

No \_\_\_\_\_ Air sparge / Soil vapor extraction

Yes \_\_\_\_\_ Natural Attenuation

Yes \_\_\_\_\_ Other Product Recovery (Above the Geosynthetic Claymax® Liner)

**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.

Assessment soil borings SB01 through SB08 were completed as monitoring wells MW01 through MW08, respectively, in August 2015. As of the February 2019 quarterly monitoring event, BTEX concentrations in monitoring wells MW01 through MW08 were in full compliance with COGCC Table 910-1 allowable levels for four consecutive quarterly monitoring events. Based on the soil and groundwater data, the impacted soil in place above the liner had not contributed impacts to the groundwater. Therefore, Kerr-McGee requested to discontinue the quarterly groundwater monitoring program in the Form 27 Supplemental dated April 16, 2019 (Document No. 401940522). The discontinuation of the groundwater monitoring program was subsequently approved by the COGCC. Following the approval of the Form 27 Supplemental, groundwater monitoring wells MW01 through MW08 were abandoned. The former groundwater monitoring well locations are depicted on Figure 1.

Based on the groundwater impacts discovered during the 2021 excavation activities, groundwater monitoring wells will be reinstalled at the site to fully define the extent and magnitude of the potentially remaining residual dissolved-phase groundwater impact. The monitoring wells will be surveyed to determine the groundwater flow direction. Groundwater monitoring activities will be conducted on a quarterly schedule until a No Further Action status request is warranted. The proposed implementation schedule is included as an attachment.

# 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

## 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:

In 2013, the petroleum hydrocarbon impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling. The recovered condensate from the product recovery system was transported to the Oil Polishing Facility for reuse.

In 2021, approximately 9,758 barrels of petroleum hydrocarbon impacted soil and groundwater slurry was transported to the Aggregate Recycle Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 4600

E&P waste (solid) description Petroleum hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility: Front Range Landfill in Erie, CO and Aggregate Recycle Facility in Weld County, CO (434766)

Volume of E&P Waste (liquid) in barrels 1

E&P waste (liquid) description 10 gallons of condensate from product recovery system (July 2014)

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Oil Polishing 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 Kerr-McGee production facility remains at the site.

Is the described reclamation complete? No \_\_\_\_\_

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. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. 02/13/2013

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/13/2013

Proposed site investigation commencement. 08/05/2015

Proposed completion of site investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/13/2013

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: Phil Hamlin \_\_\_\_\_

Title: Senior Environmental Rep. \_\_\_\_\_

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

Email: Phil\_Hamlin@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: 9302 \_\_\_\_\_

**COA Type****Description**

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**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**

402836726	SOIL SAMPLE LOCATION MAP
402837365	SOIL SAMPLE LOCATION MAP
402838348	ANALYTICAL RESULTS
402878500	SITE INVESTIGATION REPORT

Total Attach: 4 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)