

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
403312832

Receive Date:

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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: (720) 929-4306 Mobile: ( )
Address: P O BOX 173779		
City: DENVER	State: CO Zip: 80217-3779	
Contact Person: Erik Mickelson	Email: Erik_Mickelson@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 23002 Initial Form 27 Document #: 403034227

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: WELL	Facility ID: _____	API #: 123-30764	County Name: WELD
Facility Name: P VILLE FEDERAL 5-7		Latitude: 40.242149	Longitude: -104.825043
** correct Lat/Long if needed: Latitude: _____ Longitude: _____			
QtrQtr: SENW	Sec: 7	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? Yes

## SITE INVESTIGATION PLAN

### TYPE OF WASTE:

- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input checked="" 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 checked="" 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 checked="" type="checkbox"/> Other (as described by EPA) | Thermogenic Gas _____                  |

### DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
No	SOILS	N/A	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.

During routine testing activities at the P Ville Federal 5-7 wellhead, ten shallow soil vapor points were installed in the vicinity of the wellhead. On April 7, 2022, samples were collected from the ten soil vapor points and submitted to IsoTech Laboratory for gas composition analysis. Sample results were received on April 26, 2022, and indicated the presence of a trace concentration of thermogenic gas. The release was reported to the COGCC in the Form 19 Initial dated April 27, 2022 (Document No. 403029794). The volume of the release is unknown, and an investigation into the nature and source of the soil gas is on-going.

### 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 ):

On June 2, 2022, soil samples were collected from the wellhead excavation and separator riser. The samples were field screened for total volatile organic compounds using a photoionization detector (PID). One soil sample from the base of the wellhead excavation and one sample from near the separator riser were submitted for analysis. Based on PID readings, no additional samples were submitted for analysis. Analytical results indicated soil was in full compliance with Table 915-1 standards. Therefore, further excavation was not warranted.

#### Proposed Groundwater Sampling

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

#### 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 ):

The soil vapor investigation is ongoing. Please refer to the Form 19 Initial dated June 2, 2022 (Document No. 403029794). On November 9, 2022, Ensolum screened and sampled the new soil vapor wells (SVWs) that were installed in October 2022 using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a Landtec GEM™5000 (GEM). Samples collected from SVW01-SVW24, SVW26, and SVW27 were submitted to Isotech Laboratories (Isotech) for gas composition and isotopic analysis. SVW25 could not be located as the area was flooded with irrigation water during the sampling event. During field screening, trace methane was detected by the GEM in five of the SVWs (SVW03, SVW10, SVW12, SVW14, and SVW27).

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 2  
Number of soil samples exceeding 915-1 0  
Was the areal and vertical extent of soil contamination delineated? Yes         
Approximate areal extent (square feet) 0

### NA / ND

ND Highest concentration of TPH (mg/kg)         
-- Highest concentration of SAR 1  
BTEX > 915-1 No         
Vertical Extent > 915-1 (in feet) 0

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? No         
Depth to groundwater (below ground surface, in feet) 0  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 915-1 0

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?

Six background soil samples were collected for laboratory analysis of pH, specific conductivity (EC), sodium adsorption ration (SAR), and boron. Laboratory analytical results indicated that levels of pH are naturally high in the 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?

The soil vapor investigation is ongoing. Analytical results from the fourth quarter 2022 sampling event were received on December 5 and December 19, 2022. Methane was detected in 3 of the samples ranging from 0.0139% to 0.141%. Hydrocarbons in the C2 to C5 range were detected in two soil vapor wells (SVW10 and SVW27). The fourth quarter 2022 tabulated field data and laboratory analytical results are included as Tables 1A and 2A, respectively. Historical field data and laboratory analytical results are included as Tables 1B and 2B, respectively. The laboratory report from the fourth quarter 2022 sampling event is attached.  
  
An additional site-wide screening and sampling event is scheduled for first quarter 2023. A Form 27 supplemental will be submitted in the second quarter of 2023 presenting the findings of the ongoing assessment activities.

## 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.

The soil vapor investigation is ongoing. Please refer to the Form 19 Initial dated June 2, 2022 (Document No. 403029794). On November 9, 2022, Ensolum screened and sampled the new SVWs that were installed in October 2022 using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a Landtec GEM. Samples collected from SVW01-SVW24, SVW26, and SVW27 were submitted to Isotech for gas composition and isotopic analysis. SVW25 could not be located as the area was flooded with irrigation water during the sampling event. During field screening, trace methane was detected by the GEM in five of the SVWs (SVW03, SVW10, SVW12, SVW14, and SVW27).

## REMIATION 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.

Analytical results from the fourth quarter 2022 sampling event were received on December 5 and December 19, 2022. Methane was detected in 3 of the samples ranging from 0.0139% to 0.141%. Hydrocarbons in the C2 to C5 range were detected in two soil vapor wells (SVW10 and SVW27). The fourth quarter 2022 tabulated field data and laboratory analytical results are included as Tables 1A and 2A, respectively. Historical field data and laboratory analytical results are included as Tables 1B and 2B, respectively. The laboratory report from the fourth quarter 2022 sampling event is attached.

An additional site-wide screening and sampling event is scheduled for first quarter 2023. A Form 27 supplemental will be submitted in the second quarter of 2023 presenting the findings of the ongoing assessment activities.

### **Soil Remediation Summary**

**In Situ**

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

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

\_\_\_\_\_ Other \_\_\_\_\_

**Ex Situ**

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ 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.



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. 04/20/2022

Actual Spill or Release date, or date of discovery. 04/26/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/26/2022

Proposed site investigation commencement. 04/26/2022

Proposed completion of site investigation. 12/31/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/01/2023

Proposed date of completion of Remediation. 12/31/2023

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: Erik Mickelson \_\_\_\_\_

Title: Environmental Lead \_\_\_\_\_

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

Email: Erik\_Mickelson@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: 23002 \_\_\_\_\_

**COA Type****Description**

<b>COA Type</b>	<b>Description</b>
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**

403312849	ANALYTICAL RESULTS
403312850	SITE MAP
403314202	SITE INVESTIGATION REPORT

Total Attach: 3 Files

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

<b>User Group</b>	<b>Comment</b>	<b>Comment Date</b>
		Stamp Upon Approval

Total: 0 comment(s)