

State of Colorado Oil and Gas Conservation Commission

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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 #: 20294 Initial Form 27 Document #: 402825372

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 #: 123-22560	County Name: WELD
Facility Name: GUNZNER 19-13		Latitude: 40.221180	Longitude: -104.844080
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: SESW	Sec: 13	Twp: 3N	Range: 67W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GM
Most Sensitive Adjacent Land Use Agriculture and 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) Thermogenic Gas

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	TBD	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	TBD	Soil Vapor Samples/Lab Analytical Results

INITIAL ACTION SUMMARY

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

This form has been prepared to summarize ongoing assessment activities conducted during the re-entry cut and cap of the Gunzner 19-13 wellhead, as proposed in the Form 27 Supplemental dated June 16, 2022 (Document No. 402995755).

On May 27, 2022, gas bubbles were observed rising through shallow groundwater. Gas was collected and submitted for gas composition analysis on April 7, 2022. Sample results received on May 27, 2022 indicated the presence of thermogenic gas. The release was reported to the COGCC in a Form 19 Initial dated May 30, 2022 (Document No. 403062189; Spill/Release ID 482295).

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):

Following wellhead re-entry cut and cap operations, soil will be field screened at the wellhead and separator riser locations. Samples will be collected if indications of impacts to soil or groundwater are present. If impacted soils are encountered, a soil sample will be collected from the area exhibiting the highest degree of impact based on visual, olfactory, and/or field screening observations. In the absence of apparent impacts, a soil sample will be collected from the base of the excavation adjacent to the well. Soil samples will be submitted to an accredited laboratory for analysis using standard methods appropriate for detecting the target analytes in COGCC Table 915-1.

Please refer to the Form 27 Supplemental dated June 16, 2022 (Document No. 402995755) for details regarding the January 2022 assessment.

Proposed Groundwater Sampling

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

If groundwater is encountered during re-entry cut and cap activities, a minimum of one grab sample will be collected as soon as practical. Groundwater samples will be submitted to an accredited laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene, using standard methods appropriate for detecting the target analytes in COGCC Table 915-1.

Please refer to the Form 27 Supplemental dated June 16, 2022 (Document No. 402995755) for details regarding the January 2022 assessment.

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):

Following initial cut and cap operations, a soil gas survey was conducted. Five soil vapor points (SVP01 through SVP05) were installed adjacent to the former wellhead location. GEM 5000 field readings were non-detect for methane at all soil vapor points.

The soil vapor investigation is ongoing. Plans are in place to install additional vapor points for monitoring stray soil gas following re-entry cut and cap operations and the backfilling of the wellhead excavation. Please refer to the Form 27 Supplemental dated June 16, 2022 (Document No. 402995755) for more details. Findings associated with the upcoming vapor point installation will be detailed in a Form 27 supplemental report.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 2
Number of soil samples exceeding 915-1 1
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 3.86
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 0

Groundwater

Number of groundwater samples collected 1
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 3
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 915-1 0

-- Highest concentration of Benzene (µg/l) 1.24
-- Highest concentration of Toluene (µg/l) 3.68
-- Highest concentration of Ethylbenzene (µg/l) 1.1
-- Highest concentration of Xylene (µg/l) 8.16
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?

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

One background groundwater sample was also collected and submitted for Table 915-1 inorganic parameters.

☐ 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?

Assessment activities are ongoing. Additional soil samples will be collected around the wellhead following re-entry cut and cap activities and the results will be provided in a Form 27 supplemental report.

The soil vapor investigation is ongoing. Plans are in place to install additional vapor points for monitoring stray soil gas following re-entry cut and cap operations and the backfilling of the wellhead excavation. Please refer to the Form 27 Supplemental dated June 16, 2022 (Document No. 402995755) for more details. Findings associated with the upcoming vapor point installation will be detailed in a 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.

Assessment activities are ongoing. Any impacted soil will be excavated and transported to a licensed disposal facility. Disposal records will be kept on file and available upon request.

The soil vapor investigation is ongoing. Plans are in place to install additional vapor points for monitoring stray soil gas following re-entry cut and cap operations and the backfilling of the wellhead excavation. Please refer to the Form 27 Supplemental dated June 16, 2022 (Document No. 402995755) for more details. Findings associated with the upcoming vapor point installation will be detailed in a Form 27 supplemental report.

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.

Assessment activities are ongoing.

The soil vapor investigation is ongoing. Plans are in place to install additional vapor points for monitoring stray soil gas following re-entry cut and cap operations and the backfilling of the wellhead excavation. Please refer to the Form 27 Supplemental dated June 16, 2022 (Document No. 402995755) for more details. Findings associated with the upcoming vapor point installation will be detailed in a Form 27 supplemental report.

Soil Remediation Summary

<input type="checkbox"/> In Situ	<input type="checkbox"/> Ex Situ
<input type="checkbox"/> Bioremediation (or enhanced bioremediation)	<input type="checkbox"/> Excavate and offsite disposal
<input type="checkbox"/> Chemical oxidation	<input type="checkbox"/> If Yes: Estimated Volume (Cubic Yards) _____
<input type="checkbox"/> Air sparge / Soil vapor extraction	<input type="checkbox"/> Name of Licensed Disposal Facility or COGCC Facility ID # _____
<input type="checkbox"/> Natural Attenuation	<input type="checkbox"/> Excavate and onsite remediation
<input type="checkbox"/> Other _____	<input type="checkbox"/> Land Treatment
	<input type="checkbox"/> Bioremediation (or enhanced bioremediation)
	<input type="checkbox"/> Chemical oxidation
	<input type="checkbox"/> 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.

REMEDATION 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 Colorado Oil and Gas Conservation 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: \$ 15000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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:

REMEDATION COMPLETION REPORT

REMEDATION 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? Yes

Does the previous reply indicate consideration of background concentrations?

Yes

Does Groundwater meet Table 915-1 standards? Yes

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. 08/11/2021

Actual Spill or Release date, or date of discovery. 05/27/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/10/2022

Proposed site investigation commencement. 01/10/2022

Proposed completion of site investigation. 12/31/2022

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/10/2023

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: Sr. HSE Advisor

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: 20294

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**

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Total Attach: 0 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)