

State of Colorado
Oil and Gas Conservation Commission

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Document Number:

403343741

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			Phone: (720) 929-4306
City: DENVER	State: CO	Zip: 80217-3779	Mobile: ()
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

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	GROUNDWATER	See attached data.	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	See attached data.	Soil Vapor Samples/Lab 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.

This form has been prepared to summarize assessment activities conducted during the re-entry cut and cap of the Gunzner 19-13 wellhead. Initial assessment activities were conducted between January 10 and January 19, 2022. Re-entry assessment activities were conducted between September 9 and November 30, 2022.

On May 27, 2022, gas bubbles were observed rising through shallow groundwater. Samples were 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).

On September 14, 2022, upon receipt of the laboratory analytical report for samples collected on September 9, 2022, historically impacted soil was discovered at the wellhead during re-entry cut and cap operations. Laboratory analytical results indicated the wellhead excavation soil sample B01@5'-WP exceeded the COGCC Table 915-1 allowable levels for total petroleum hydrocarbons (TPH), arsenic, barium, cadmium, copper, lead, and silver. The release was reported to the COGCC in the Form 19 Initial dated September 15, 2022 (Document No. 403166667). The volume of the release is unknown. The impacted soil was excavated.

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):

From January 10 to November 30, 2022, soil samples were collected from the wellhead excavation, flowline potholes, and separator riser. The samples were field screened for total volatile organic compounds using a photoionization detector (PID). Based on PID readings, select soil samples were submitted for laboratory analysis. The impacted soil discovered during re-entry activities was excavated. Analytical results following excavation indicated soil was in full compliance with Table 915-1 standards or within the analytical variability of the background samples at the extents of the excavation. Therefore, further excavation was not warranted.

Impacted soil was stockpiled on the ground surface northeast of the wellhead excavation. The impacted soil was removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling.

Please refer to the Form 27 Supplemental dated December 12, 2022 (Document No. 403248094) for more details.

Proposed Groundwater Sampling

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

On January 10, 2022, one groundwater sample was collected from the wellhead excavations for Table 915-1 analyses. Analytical results indicated groundwater was in full compliance with COGCC Table 915-1 allowable levels. Please refer to the Form 27 Supplemental dated December 12, 2022 (Document No. 403248094) for more details.

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 gas investigation is ongoing. Five soil vapor points (SVPs) were installed near the former wellhead on March 7, 2023 after the excavation was backfilled. The SVPs were screened and sampled on March 10 and March 14, 2023 using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a Landtec GEM™5000 (GEM). Samples were submitted to Isotech Laboratories (Isotech) for gas composition analysis. The analytical results are pending. Methane was not detected by the GEM in any of the SVPs during the March 2023 sampling event. The locations of the former and current SVPs are shown on Figure 1. Historical soil vapor field screening data is presented in Table 1. Analytical results from the March 2023 sampling event will be submitted in a subsequent Form 27 Supplemental report.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>17</u>	ND Highest concentration of TPH (mg/kg) _____
Number of soil samples exceeding 915-1 <u>15</u>	-- Highest concentration of SAR <u>3.86</u>
Was the areal and vertical extent of soil contamination delineated? <u>Yes</u>	BTEX > 915-1 <u>No</u>
Approximate areal extent (square feet) <u>1535</u>	Vertical Extent > 915-1 (in feet) <u>8</u>
Groundwater	
Number of groundwater samples collected <u>1</u>	-- Highest concentration of Benzene (µg/l) <u>1.24</u>
Was extent of groundwater contaminated delineated? <u>Yes</u>	-- Highest concentration of Toluene (µg/l) <u>3.68</u>
Depth to groundwater (below ground surface, in feet) <u>3</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>1.1</u>
Number of groundwater monitoring wells installed <u>0</u>	-- Highest concentration of Xylene (µg/l) <u>8.16</u>
Number of groundwater samples exceeding 915-1 <u>0</u>	NA Highest concentration of Methane (mg/l) _____
Surface Water	
<u>0</u> Number of surface water samples collected	
<u> </u> 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?

Eleven 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?

The soil gas investigation is ongoing. Five SVPs were installed near the former wellhead on March 7, 2023 after the excavation was backfilled. The SVPs were screened and sampled on March 10 and March 14, 2023 using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM. Samples were submitted to Isotech for gas composition analysis. The analytical results are pending. Methane was not detected by the GEM in any of the SVPs during the March 2023 sampling event. The locations of the former and current SVPs are shown on Figure 1. Historical soil vapor field screening data is presented in Table 1. Analytical results from the March 2023 sampling event 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.

Approximately 1,245 bbls of non-impacted water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 300 cubic yards of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Disposal records are kept on file and are available upon request.

The soil gas investigation is ongoing. Five SVPs were installed near the former wellhead on March 7, 2023 after the excavation was backfilled. The SVPs were screened and sampled on March 10 and March 14, 2023 using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM. Samples were submitted to Isotech for gas composition analysis. The analytical results are pending. Methane was not detected by the GEM in any of the SVPs during the March 2023 sampling event. The locations of the former and current SVPs are shown on Figure 1. Historical soil vapor field screening data is presented in Table 1. Analytical results from the March 2023 sampling event will be submitted in a subsequent Form 27 Supplemental report.

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.

The soil gas investigation is ongoing. Five SVPs were installed near the former wellhead on March 7, 2023 after the excavation was backfilled. The SVPs were screened and sampled on March 10 and March 14, 2023 using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM. Samples were submitted to Isotech for gas composition analysis. The analytical results are pending. Methane was not detected by the GEM in any of the SVPs during the March 2023 sampling event. The locations of the former and current SVPs are shown on Figure 1. Historical soil vapor field screening data is presented in Table 1. Analytical results from the March 2023 sampling event will be submitted in a subsequent Form 27 Supplemental report.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 300

_____ 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

_____ 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.

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 Soil gas investigation 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 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? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

Approximately 1,245 bbls of non-impacted water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 300 cubic yards of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 300

E&P waste (solid) description Impacted Soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels 1245

E&P waste (liquid) description Non-Impacted Water

COGCC Disposal Facility ID #, if applicable: 434766

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? 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. 03/31/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/01/2023

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: 20294

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**

403346088	OTHER
403346089	SITE MAP

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)