

State of Colorado Oil and Gas Conservation Commission

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402739207

Receive Date:

07/19/2021

Report taken by:

PETER GINTAUTAS

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: <u>KERR MCGEE OIL & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
Address: <u>P O BOX 173779</u>		Phone: <u>(970) 336-3500</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Phillip Hamlin</u>	Email: <u>Phillip_Hamlin@oxy.com</u>	Mobile: <u>(970) 515-1161</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9264 Initial Form 27 Document #: 200437395

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: <u>SPILL OR RELEASE</u>	Facility ID: <u>442346</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>		Latitude: <u>40.205743</u>	Longitude: <u>-104.826514</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SWSW</u>	Sec: <u>19</u>	Twp: <u>3N</u>	Range: <u>66W</u>
		Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use Non-Crop Land

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

Surface water is located approximately 250 feet west of the release location. The nearest domestic water well is located approximately 250 feet northwest of the release location. Multiple buildings and livestock holding pens are located within ¼ mile of the release location.

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
Yes	GROUNDWATER	See attached data	Groundwater sampling and laboratory analysis
Yes	SOILS	95' (E-W) x 75' (N-S) x 14' bgs	Excavation, soil sampling, and laboratory analysis

INITIAL ACTION SUMMARY

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

On July 1, 2015, historical impacts were discovered during abandonment activities at the Platteville 1-19 production facility, and excavation activities were initiated. Groundwater was encountered in the excavation at approximately 6 feet below ground surface (bgs). The COGCC issued Spill/Release Point ID 442346 for this release.

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):

Soil samples were collected from the historical 2015 excavation area, as described in the Initial Form 27 (COGCC Document No. 200437395). Additional soil sampling was conducted during the engineered excavation and remediation activities completed at the site in 2019, as described in a previous Form 27-Supplemental update (COGCC Document No. 402125363). Based on the data presented, impacted soils in the 2015 and 2019 excavation areas were remediated to be in full compliance with the COGCC Table 910-1 standards. Based on the date of discovery and initiation of excavation activities (July 1, 2015), the COGCC Table 910-1 soil standards have been applied to the soil analytical results at this location.

Proposed Groundwater Sampling

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

Between October 28, 2015 and August 30, 2019, 28 temporary groundwater monitoring wells (BH01-BH19, BH01R-BH04R, BH06R, BH07R, BH09R, BH09R2, and BH16R) were installed to further assess the extent of groundwater impacts and for remediation purposes. Quarterly groundwater sampling was initiated on October 30, 2015, and is ongoing at the 14 monitoring wells remaining at the site (BH01R, BH04R, BH06R, BH07R, BH08, BH09R2, BH10-BH15, BH16R, and BH19). Monitoring wells BH01-BH07, BH09, BH16-BH18, BH02R, BH03R, and BH09R were destroyed, removed during remediation activities in 2019, or abandoned under an approved monitoring well reduction request (COGCC Document No. 402443737). Groundwater analytical data is presented in Table 1, and the groundwater monitoring well locations are illustrated on Figure 1. The laboratory analytical report for the Second Quarter 2021 groundwater monitoring event is provided as Attachment A.

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 67

Number of soil samples exceeding 915-1 1

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 4360

NA / ND

-- Highest concentration of TPH (mg/kg) 862

NA Highest concentration of SAR

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 14

Groundwater

Number of groundwater samples collected 316

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 10'

Number of groundwater monitoring wells installed 28

Number of groundwater samples exceeding 915-1 81

-- Highest concentration of Benzene (µg/l) 8480

-- Highest concentration of Toluene (µg/l) 18900

-- Highest concentration of Ethylbenzene (µg/l) 686

-- Highest concentration of Xylene (µg/l) 15300

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

0 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?

Impacted groundwater has historically been detected in off-site temporary groundwater monitoring wells BH12 and BH13.

☐ Were background samples collected as part of this site investigation?

☐ 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?

Impacted groundwater remains at the site. The 14 temporary groundwater monitoring wells remaining (BH01R, BH04R-BH07R, BH08, BH09R2, BH10-BH15, and BH19) will continue to be sampled on a quarterly basis and submitted for laboratory analysis of Table 915-1 constituents.

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.

On July 1, 2015, approximately 230 cubic yards of impacted soil were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. Approximately 80 barrels of impacted groundwater were removed from the 2015 excavation area via vacuum truck and transported to a licensed disposal facility. During the 2019 remedial excavation activities, approximately 1,820 barrels of groundwater were removed from the excavation area via vacuum truck and transported to the Kerr-McGee Aggregate Recycle Facility.

REMEDIAL ACTION 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.

On November 23, 2015, LNAPL gauging and removal activities were initiated. A passive LNAPL bailer was installed in well BH09R on May 5, 2017, and bi-weekly LNAPL gauging and recovery events were conducted at monitoring wells BH01, BH04, BH06, and BH09R. In 2019, impacted soil from 2 to 14 ft bgs was treated in-situ using chemical oxidant (chemox) soil mixing techniques with a dilute hydrogen peroxide solution. On-site excavation and chemox soil mixing activities were conducted from July 17 to August 2, 2019, and treated approximately 1,200 cubic yards of impacted soil. Analytical results indicated that impacted soils in the 2015 and 2019 excavation areas have been remediated to be in full compliance with the COGCC Table 910-1 standards. Prior to backfilling, approximately 302 pounds of OxPure® activated carbon were added to the 2019 excavation area to mitigate remaining hydrocarbon impacts in groundwater. Details of the 2019 remediation activities were provided in a previous Form 27-Supplemental update (COGCC Document No. 402125363). Quarterly groundwater monitoring is ongoing and will be continued until concentrations remain in compliance with the COGCC Table 915-1 standards. Additional remedial activities may be evaluated, as necessary, to address remaining groundwater impacts. Estimated time to attain NFA is TBD based on the groundwater concentrations, the extent of impacted groundwater, and the efficacy of selected remedial technologies.

Soil Remediation Summary

☒ In Situ

No Bioremediation (or enhanced bioremediation)

Yes Chemical oxidation

No Air sparge / Soil vapor extraction

No Natural Attenuation

No Other

☒ Ex Situ

Yes Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) 230

Name of Licensed Disposal Facility or COGCC Facility ID # 149007

Yes Excavate and onsite remediation

No Land Treatment

No Bioremediation (or enhanced bioremediation)

Yes Chemical oxidation

No Other

Groundwater Remediation Summary

No Bioremediation (or enhanced bioremediation)

No Chemical oxidation

No Air sparge / Soil vapor extraction

Yes Natural Attenuation

Yes Other Groundwater removal, LNAPL recovery, OxPure® activated carbon application

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.

Between October 28, 2015, and August 30, 2019, a total of 28 temporary groundwater monitoring wells (BH01 - BH19, BH01R - BH04R, BH06R, BH07R, BH09R, BH09R2, BH16R) were installed to further assess the extent of groundwater impacts and for remediation purposes. Monitoring wells BH01-BH07, BH09, BH16-BH18, BH02R, BH03R, and BH09R were destroyed, removed during remediation activities in 2019, or abandoned under an approved monitoring well reduction request (COGCC Document No. 402443737). Upgradient and historically compliant groundwater monitoring well MW16R was selected from the Second Quarter 2021 monitoring event as a background location for comparison to inorganic groundwater standards in Table 915-1. Based on a comparison to background concentrations, the sulfate concentrations in point-of-compliance (POC) monitoring wells BH04R and BH19 were above the Table 915-1 standard during the Second Quarter 2021 monitoring event. Kerr-McGee will continue to evaluate POC for Table 915-1 standards on a quarterly basis, based on the site-specific local background concentrations. The 14 temporary groundwater monitoring wells remaining (BH01R, BH04R-BH07R, BH08, BH09R2, BH10-BH15, BH19) will continue to be sampled on a quarterly basis and submitted for laboratory analysis of Table 915-1 constituents. The temporary monitoring well locations are illustrated on Figure 1, and a potentiometric surface contour map for the Second Quarter 2021 is presented as Figure 2. Well completion logs for the temporary monitoring wells are provided as Attachment B.

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

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 230 cubic yards of hydrocarbon-impacted soil were transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Approximately 1,820 barrels of hydrocarbon-impacted groundwater were transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 230

E&P waste (solid) description Hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels 1900

E&P waste (liquid) description Hydrocarbon impacted groundwater

COGCC Disposal Facility ID #, if applicable: 434766

Non-COGCC Disposal Facility: Licensed 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? 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 site has been restored to its pre-release grade. Kerr-McGee will conduct reclamation activities in accordance with COGCC 1000 Series Rules.

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. 07/02/2015

Actual Spill or Release date, or date of discovery. 07/01/2015

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/01/2015

Proposed site investigation commencement. 07/01/2015

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/01/2015

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

Based on the date of discovery and initiation of excavation activities (July 1, 2015), the COGCC Table 910-1 soil standards have been applied to the soil analytical results at this location. Based on the Second Quarter 2021 groundwater monitoring results, Kerr-McGee will continue to provide annual Form 27-Supplemental updates for this site. The Project Implementation Summary is provided as Attachment C.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Phillip Hamlin

Title: Senior Environmental Rep

Submit Date: 07/19/2021

Email: Phillip_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: PETER GINTAUTAS

Date: 07/19/2021

Remediation Project Number: 9264

Condition of Approval**COA Type****Description**

	Submit reports of site investigation and progress of remediation including results of quarterly groundwater sampling and analysis on an annual basis or more often until the remediation project is closed.
1 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**

402739207	FORM 27-SUPPLEMENTAL-SUBMITTED
402739212	LOGS
402739213	SITE MAP
402739214	GROUND WATER ELEVATION MAP
402739215	ANALYTICAL RESULTS
402742997	ANALYTICAL RESULTS
402744952	IMPLEMENTATION SCHEDULE

Total Attach: 7 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)