

State of Colorado
Oil and Gas Conservation Commission

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Document Number:
402425779
Receive Date:
06/25/2020
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. Refer to Rules 340, 905, 906, 907, 908, 909, and 910

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>Phil_Hamlin@oxy.com</u>	Mobile: <u>(970) 515-1161</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION	
Remediation Project #: <u>12739</u>	Initial Form 27 Document #: <u>401961182</u>
PURPOSE INFORMATION	
<input type="checkbox"/> 901.e. Sensitive Area Determination	<input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water
<input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure	<input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b.
<input type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation	<input checked="" type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project
<input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste	<input type="checkbox"/> Rule 906.c.: Director request
<input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure	<input type="checkbox"/> Other _____
SITE INFORMATION	
N <u>Multiple Facilities (in accordance with Rule 909.c.)</u>	
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>461162</u> API #: _____ County Name: <u>WELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>	Latitude: <u>40.247889</u> Longitude: <u>-104.786169</u>
** correct Lat/Long if needed: Latitude: _____ Longitude: _____	
QtrQtr: <u>SESW</u> Sec: <u>4</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 <u>SC</u>	Most Sensitive Adjacent Land Use <u>Crop Land</u>
Is domestic water well within 1/4 mile? <u>Yes</u>	Is surface water within 1/4 mile? <u>Yes</u>
Is groundwater less than 20 feet below ground surface? <u>Yes</u>	
Other Potential Receptors within 1/4 mile	
A livestock holding pen is located approximately 200 feet west of the release location. A building is located approximately 435 feet northwest of the release location.	

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 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 and laboratory analysis
Yes	SOILS	32' (E-W) x 30' (N-S) x 4.5' bgs	Excavation, soil sampling, and 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.

On January 22, 2019, historical impacts were discovered during the abandonment of a gas sales line associated with the Kern L 4-14 production facility, and excavation activities were initiated. Groundwater was encountered in the excavation area at approximately 4.5 feet below ground surface (bgs). The COGCC has issued Spill/Release Point ID 461162 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 as described in the Initial Form 27 (COGCC Document No. 401961182). Based on the data presented, impacted soils in the excavation area were remediated to be in full compliance with the COGCC Table 910-1 standards. Soil sample analytical data is presented in Table 1, and the soil sample locations are illustrated on Figure 1.

Proposed Groundwater Sampling

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

Groundwater sample GW01 was collected from the excavation following the removal of approximately 40 bbls of groundwater and submitted for BTEX analysis. Analytical results indicated that the benzene concentration in GW01 exceeded the COGCC Table 910-1 standard. Sample GW02 was collected from the excavation following the removal of approximately 345 additional bbls of groundwater, and submitted for BTEX analysis. Analytical results indicated that the benzene concentration in GW02 remained above the COGCC standard. Quarterly groundwater monitoring was initiated on September 23, 2019, at temporary monitoring wells BH01 - BH04, and was continued until BTEX concentrations remained in compliance with COGCC Table 910-1 standards for four consecutive quarters. BH05 was installed to ensure cross-gradient POC had been established and was sampled for three quarters. Laboratory analysis indicates that BH05 has been in compliance with COGCC Table 910-1 standards for three consecutive quarters.

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):

Groundwater analytical data is presented in Table 2. The excavation groundwater sample locations are illustrated on Figure 1; monitoring well locations are illustrated on Figures 2 through 5. Laboratory analytical reports for the previous four quarters of groundwater monitoring are provided as Attachment A.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 5
Number of soil samples exceeding 910-1 1
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 830

NA / ND

-- Highest concentration of TPH (mg/kg) 3151
NA Highest concentration of SAR
BTEX > 910-1 Yes
Vertical Extent > 910-1 (in feet) 4

Groundwater

Number of groundwater samples collected 21
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 3'
Number of groundwater monitoring wells installed 5
Number of groundwater samples exceeding 910-1 2

-- Highest concentration of Benzene (µg/l) 41.1
-- Highest concentration of Toluene (µg/l) 286
-- Highest concentration of Ethylbenzene (µg/l) 74.5
-- Highest concentration of Xylene (µg/l) 1030
NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected
0 Number of surface water samples exceeding 910-1

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?

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?

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 January 22 and 23, 2019, approximately 190 cubic yards of impacted material were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. Laboratory analytical results indicated that constituent concentrations in the soil samples collected from the final lateral extent of the excavation area were in full compliance with the COGCC Table 910-1 standards. Soils were excavated into the phreatic zone to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. The final excavation extent and associated sample locations are illustrated on Figure 1. Approximately 385 barrels of impacted groundwater were removed from the excavation area via vacuum truck and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for treatment.

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.

Prior to backfilling, approximately 110 pounds of OxPure® activated carbon were added to the groundwater within the excavation area to mitigate remaining hydrocarbon impacts in groundwater. The SDS for the activated carbon used at this location is provided as Attachment B. Based on the analytical data presented herein, remediation is complete at this site and Kerr-McGee is requesting a No Further Action (NFA) determination for this release.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)	Yes	Excavate and offsite disposal
_____ Chemical oxidation	_____	If Yes: Estimated Volume (Cubic Yards) _____ 190
_____ 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 Groundwater removal, 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 September 9 and December 10, 2019, five (5) temporary groundwater monitoring wells (BH01 - BH05) were installed to further assess the extent of groundwater impacts. The temporary groundwater monitoring wells were sampled on a quarterly basis and submitted for laboratory analysis of BTEX. Analytical results for the groundwater samples collected from the temporary monitoring wells indicate that constituent concentrations were in full compliance with the COGCC Table 910-1 standards for four consecutive quarters. During the initial Third Quarter 2019 monitoring event, groundwater flow was to the southwest, with downgradient point-of-compliance (POC) maintained by well BH02. Based on the groundwater flow direction, one additional monitoring well (BH05) was installed prior to the Fourth Quarter 2019 monitoring event, to ensure that POC was maintained in all directions. Analytical results for the subsequent quarterly groundwater monitoring events confirmed that constituent concentrations were in full compliance with the COGCC standards, and that POC was maintained. Temporary groundwater monitoring well locations and quarterly groundwater elevation contour maps are illustrated on Figures 2 through 5. Well completion logs for the temporary monitoring wells are provided as Attachment B.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other Final Report

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report
 Other NFA Request

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 190 cubic yards of hydrocarbon-impacted soil were transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Approximately 385 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 190

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 385

E&P waste (liquid) description Hydrocarbon-impacted groundwater

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? Yes

Do all soils meet Table 910-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? No

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? Yes

Is additional groundwater monitoring to be conducted? No

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 approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 01/23/2019

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/22/2019

Date of commencement of Site Investigation. 01/22/2019

Date of completion of Site Investigation. 12/10/2019

REMEDIAL ACTION DATES

Date of commencement of Remediation. 01/22/2019

Date of completion of Remediation. 06/01/2020

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

As described, laboratory analytical data for the soil samples collected from the final lateral extent of the excavation area were in full compliance with the COGCC Table 910-1 standards. Laboratory analytical data for the groundwater samples collected from the temporary monitoring wells indicated that constituent concentrations were in full compliance with the COGCC Table 910-1 standards for four consecutive quarters, with exception to BH05, which was installed in the Fourth Quarter 2019 to verify POC following the initial groundwater monitoring event. Soil analytical results are summarized in Table 1, and groundwater analytical results are summarized in Table 2. Excavation soil and groundwater sample locations are illustrated on Figure 1, and temporary monitoring well locations and quarterly groundwater contour maps are illustrated on Figures 2 through 5. Laboratory analytical reports are provided as Attachment A; the SDS for the activated carbon used at this location is provided as Attachment B; and temporary monitoring well completion diagrams are provided as Attachment C. Based on the remediation activities completed at the site and the analytical results presented herein, Kerr-McGee is requesting an NFA determination for this release.

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: 06/25/2020 _____

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: PETER GINTAUTAS _____

Date: 06/25/2020 _____

Remediation Project Number: 12739 _____

COA Type**Description**

	Based on the information presented, it is concluded that no further action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be impacted, then further investigation and/or further remediation activities may be required. In addition, the surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules.
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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**

402425779	FORM 27-SUPPLEMENTAL-SUBMITTED
402431371	LOGS
402431375	SOIL SAMPLE LOCATION MAP
402431377	GROUND WATER ELEVATION MAP
402431378	ANALYTICAL RESULTS
402431380	ANALYTICAL RESULTS
402431382	ANALYTICAL RESULTS
402431383	OTHER

Total Attach: 8 Files

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

Environmental	25Jun2020 back to draft for attachments to be added	06/25/2020
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Total: 1 comment(s)