

State of Colorado Oil and Gas Conservation Commission

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Document Number:

402343223

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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

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 #: 10085

Initial Form 27 Document #: 401208655

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 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 checked="" type="checkbox"/> Other Water wells impacted with thermogenic gas. |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: WELL	Facility ID:	API #: 123-16876	County Name: WELD
Facility Name: HSR-WEGNER 1-30A	Latitude: 40.201151	Longitude: -104.812365	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NENE	Sec: 30	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Irrigated/dry land farming/stock

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

Water Wells: DWR Permit #'s 1150-AD, 18396, 68535, 125634 and 220643. Surface Water: Platte Valley Canal, Platteville Ditch, unnamed pond.

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
Yes	GROUNDWATER	Water wells with thermogenic gas	Sampling & analysis of domestic water wells

INITIAL ACTION SUMMARY

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

In 2014 thermogenic gas was detected in the following water wells: DWR Permit #68535, 125634 & 220643. Also in 2014, Kerr-McGee provided temporary sources of potable water to the affected parties, and the water wells were disconnected from the associated residences. At that time, Kerr-McGee began an assessment to determine if any of their producing gas wells in the area were potentially the source of the dissolved hydrocarbon in the water wells.

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):

Proposed Groundwater Sampling

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

The subject water wells (permit #68535, 125634 & 220643) have been sampled regularly since the 2nd quarter of 2014, and will continue to be sampled on at least a quarterly basis until a decline in the impacts to the wells can be demonstrated. All water samples will be analyzed for the analytes noted in COGCC Rule 318A.f.(6). (and 318A.f.(8), as appropriate) at a minimum. Notification requirements in COGCC Rule 318A.f.(8) & (9). will be followed, as appropriate. Analytical tables associated with the last four sampling events at each of the subject water wells are attached to this document.

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 0
Number of soil samples exceeding 910-1
Was the areal and vertical extent of soil contamination delineated?
Approximate areal extent (square feet)

NA / ND

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

Groundwater

Number of groundwater samples collected 67
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 100'
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 910-1 0

ND Highest concentration of Benzene (µg/l)
-- Highest concentration of Toluene (µg/l) 4.5
ND Highest concentration of Ethylbenzene (µg/l)
ND Highest concentration of Xylene (µg/l)
-- Highest concentration of Methane (mg/l) 24

Surface Water

0 Number of surface water samples collected
 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?

Kerr-McGee investigated their production wells within 3/4 mi radius of the subject water wells. Any production well that was identified as a potential source was sampled (production gas, and if present, any gas/liquids in the bradenhead) for comparison to the impacts in the subject water wells. In 2015, the HSR-Wegner 1-30A production well was plugged and abandoned (P&A'd) in accordance with COGCC rules. A sample was collected from the well prior to being P&A'd, and the results of that sampling indicated that, of Kerr-McGee's production wells in the area, the HSR-Wegner 1-30A was the most likely to be the potential source for the impacts to the subject water wells. Assuming the source of the thermogenic gas has been eliminated, natural attenuation of the impacts to the water wells is expected.

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 well (HSR-Wegner 1-30A) identified as the likely source of the impacts has been P&A'd. Assuming the source has been eliminated, natural attenuation of the impacts is expected.

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.

At this time there is no consistent trend towards either declining or increasing thermogenic impact of the subject water wells. Kerr-McGee will continue to sample the subject water wells on a quarterly basis. With the likely source eliminated, it is anticipated that the impacts will naturally attenuate.

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
- Yes _____ 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.

See comments under Proposed Groundwater Sampling in the Site Investigation Plan section of this document.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☒ Annually ☐ Other _____

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? 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: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

Do all soils meet Table 910-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

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? Yes

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.

N/A

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 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. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/24/2014

Date of commencement of Site Investigation. 04/24/2014

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Summary data tables and laboratory analytical reports for the 2019 sampling events are attached. For 2020, Kerr-McGee will continue to sample the subject water wells on a quarterly basis.

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

Signed: Erik Mickelson

Title: Staff Environmental Rep

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: 10085

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

402343247	ANALYTICAL RESULTS
402343248	ANALYTICAL RESULTS
402343249	ANALYTICAL RESULTS
402343250	ANALYTICAL RESULTS
402343251	ANALYTICAL RESULTS
402343252	ANALYTICAL RESULTS
402343253	ANALYTICAL RESULTS
402343254	ANALYTICAL RESULTS
402343262	ANALYTICAL RESULTS
402343263	ANALYTICAL RESULTS
402343265	ANALYTICAL RESULTS
402343266	ANALYTICAL RESULTS
402343267	ANALYTICAL RESULTS
402343268	ANALYTICAL RESULTS

402343269	ANALYTICAL RESULTS
402343270	ANALYTICAL RESULTS
402343272	ANALYTICAL RESULTS
402343273	ANALYTICAL RESULTS
402343274	ANALYTICAL RESULTS
402343275	ANALYTICAL RESULTS
402343276	ANALYTICAL RESULTS
402343277	ANALYTICAL RESULTS
402343278	ANALYTICAL RESULTS
402343279	ANALYTICAL RESULTS
402343280	ANALYTICAL RESULTS
402343281	ANALYTICAL RESULTS
402343282	ANALYTICAL RESULTS

Total Attach: 27 Files

General Comments

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

Total: 0 comment(s)