

State of Colorado Oil and Gas Conservation Commission

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Report taken by:

Laurel Anderson

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 GATHERING LLC	Operator No: 47121	Phone Numbers Phone: (970) 336-3500 Mobile: ()
Address: PO BOX 173779		
City: DENVER	State: CO Zip: 80217	
Contact Person: Sam LaRue	Email: Sam.LaRue@westernmidstream.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9652 Initial Form 27 Document #: 200439530

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: GAS COMPRESSOR STATION	Facility ID: 421464	API #: _____	County Name: WELD
Facility Name: PLATTEVILLE COMPRESSOR STATION 421464	Latitude: 40.222101	Longitude: -104.719881	
** correct Lat/Long if needed: Latitude: 40.222257		Longitude: -104.719657	
QtrQtr: NWSW	Sec: 13	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GW Most Sensitive Adjacent Land Use RANGELAND

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 well approximately 510 feet (ft) north, surface water approximately 525 ft southeast, building approximately 165 ft north, and depth to groundwater approximately 15 ft below ground surface (bgs).

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/Lab Analysis
Yes	SOILS	220ft E-W x 50ft N-S x 22ft bgs	Soil Sampling/Lab 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 May 1, 2013, an inlet slug catcher level-sensor failed causing the slug catcher to fill up, allowing liquids to flow to the low-pressure tank. The low-pressure tank overflowed releasing approximately 45 barrels (bbls) of condensate within the lined tank battery containment berm. A small amount of condensate (less than 0.5 bbl) misted onto the surface soil outside of the containment berm and travelled approximately 180 ft northeast due to melting snow. A vacuum truck was used to recover approximately 44.5 bbls of condensate from within the containment berm. The petroleum hydrocarbon 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):

Between May 6, 2013, and April 25, 2016, 24 excavation soil samples, 14 pothole soil samples, and 2 soil boring samples were collected to determine the extent of petroleum hydrocarbon impacts to soil. The soil samples were submitted for laboratory analysis of total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Laboratory results indicated that TPH and BTEX concentrations exceeded COGCC Table 910-1 allowable levels in 6 soil samples. However, based on depth to water measurements collected at a later date, these 6 soil samples were collected from the saturated zone. Therefore, TPH and BTEX concentrations were compliant with COGCC allowable levels at the extent of the excavation above the saturated zone.

Proposed Groundwater Sampling

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

Quarterly groundwater monitoring has been conducted at the site since August 2015.

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

NA / ND

Number of soil samples collected 42

Number of soil samples exceeding 915-1 11

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

Approximate areal extent (square feet) 7375

-- Highest concentration of TPH (mg/kg) 4000

NA Highest concentration of SAR

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 22

Groundwater

Number of groundwater samples collected 614

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 13

Number of groundwater monitoring wells installed 27

Number of groundwater samples exceeding 915-1 165

-- Highest concentration of Benzene (µg/l) 19900

-- Highest concentration of Toluene (µg/l) 8780

-- Highest concentration of Ethylbenzene (µg/l) 770

-- Highest concentration of Xylene (µg/l) 10100

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?

☐ 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.

Impacted soil was excavated into the capillary and phreatic zones to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. Approximately 2,200 cubic yards of impacted soil were removed from the excavation and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling, and the Buffalo Ridge Landfill in Keenesburg, Colorado, for disposal. The general site layout and excavation footprint are depicted on the Site Map provided as Figure 1.

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.

Due to persistent, elevated BTEX concentrations in multiple site monitoring wells, an air sparging (AS)/solar vapor extraction (SVE) system was installed at the site to remediate the dissolved-phase petroleum hydrocarbon plume. On September 14, 2018, two pilot test wells (AS01 and AS02) and two observation wells (OW01 and OW02) were installed at the site. Kerr-McGee submitted an Underground Injection Control (UIC) Permit Application to Region 8 of the United States Environmental Protection Agency (USEPA) on September 20, 2018, that was subsequently approved on October 18, 2018.

Pilot testing was conducted in November 2018 and December 2018. Based on the results of the pilot testing program, installation of the full-scale AS/SVE system occurred in July 2019. The SVE system was started up on September 11, 2019, and the AS system was started up on September 27, 2019. The system is comprised of 24 AS wells and 13 SVE wells connected by a combination of surface and subsurface high-density polyethylene piping to a remediation trailer powered by electricity. The remediation system includes valves at all the AS/SVE wellheads to allow for uninterrupted flow control, measurement, and adjustment. The as-built layout of the AS/SVE system is depicted on Figure 1.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

Yes _____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____ 2200
_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____ 149007
No _____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

No _____ Bioremediation (or enhanced bioremediation)
No _____ Chemical oxidation
Yes _____ Air sparge / Soil vapor extraction
Yes _____ Natural Attenuation
No _____ 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.

Groundwater monitoring wells MW01 through MW27 are sampled on a quarterly basis for the full list of analyses for groundwater in Table 915-1. Cross-gradient and historically compliant groundwater monitoring well MW11 was established as a representative background sample for calculating the inorganic parameters in Table 915-1. The monitoring well locations are depicted on Figure 1. The Groundwater Elevation Contour Map generated using the May 2022 survey data is provided as Figure 2. The groundwater analytical results are summarized in Table 1, and the laboratory analytical reports for the May 2021, August 2021, November 2021, February 2022, and May 2022 groundwater monitoring events are attached.

Groundwater monitoring will continue on a quarterly basis until a No Further Action status request is warranted.

Based on the groundwater analytical data to date, Kerr-McGee requests the removal of groundwater monitoring wells MW10 through MW27 from the quarterly monitoring program. Monitoring wells MW10 through MW27 have been in full compliance with COGCC Table 910-1 allowable levels for BTEX for four or more consecutive monitoring events and are no longer needed as point of compliance wells.

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

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.

KMGG maintains a blanket bond in accordance with the COGCC's Financial Assurance Rules. The anticipated project cost indicated below is an estimate of the annualized cost of remediation. The actual cost may vary.

Operator anticipates the remaining cost for this project to be: \$ 65000

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:

The petroleum hydrocarbon impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling, and the Buffalo Ridge Landfill in Keenesburg, Colorado, for disposal.

Volume of E&P Waste (solid) in cubic yards 2200

E&P waste (solid) description Petroleum hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, CO

Volume of E&P Waste (liquid) in barrels 0

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

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 excavation area was restored to its pre-release grade. The subject oil tank and tank berm were decommissioned. The adjoining tank battery and the Platteville Compressor Station remain at the site.

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.

Actual Spill or Release date, or date of discovery. 04/30/2013

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/01/2013

Proposed site investigation commencement. 05/01/2013

Proposed completion of site investigation. 02/06/2018

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/01/2013

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

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

Signed: Sam LaRue

Title: HSSE Advisor

Submit Date: 07/01/2022

Email: Sam.LaRue@westernmidstream.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: Alexander Ahmadian

Date: 02/01/2023

Remediation Project Number: 9652

COA Type**Description**

	COGCC agrees to the removal of MW10 - MW15 and MW18 - MW27 from the groundwater monitoring program; however, Operator shall continue to sample MW-16 and MW-17 for use as a point of compliance well to the southwest of the plume. If future data indicate the need for additional site characterization or establishing point of compliance, COGCC may require additional monitoring wells be returned to the program.
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**

403088508	FORM 27-SUPPLEMENTAL-SUBMITTED
403090146	SITE MAP
403090149	GROUND WATER ELEVATION MAP
403090150	ANALYTICAL RESULTS

Total Attach: 4 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)