

State of Colorado Oil and Gas Conservation Commission

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Document Number:

402440309

Receive Date:

08/06/2020

Report taken by:

Kari Oakman

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 GATHERING LLC</u> | Operator No: <u>47121</u> | Phone Numbers |
| Address: <u>PO BOX 173779</u> | | Phone: <u>(970) 515-1604</u> |
| City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217</u> | | Mobile: <u>()</u> |
| Contact Person: <u>Chad Gililand</u> | Email: <u>Chad.Gililand@westernmidstream.com</u> | |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 15369Initial Form 27 Document #: 402354355

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input checked="" 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 checked="" 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 type="checkbox"/> Other _____ |

SITE INFORMATION

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

| | | | |
|--|----------------------------|-------------------------------|---|
| Facility Type: <u>SPILL OR RELEASE</u> | Facility ID: <u>470912</u> | API #: _____ | County Name: <u>ADAMS</u> |
| Facility Name: <u>38-0000-5193-3</u> | Latitude: <u>39.969222</u> | Longitude: <u>-104.865361</u> | |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: <u>NWNW</u> | Sec: <u>14</u> | Twp: <u>1S</u> | Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |

SITE CONDITIONS

General soil type - USCS Classifications CLMost Sensitive Adjacent Land Use Occupied BuildingIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? NoIs groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Livestock located approximately 760 feet (ft) north, occupied building approximately 350 ft southwest, and excavation groundwater approximately 1.5 ft below ground surface (bgs).

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 Samples/Lab Analysis |
| Yes | SOILS | 24.5' N-S x 17'E-W x 6' bgs | Soil Samples/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.

During pipe removal activities along the 38-0000-5193-3 gathering line, a pinhole release was discovered in a 3-inch riser. The volume of the release is still being determined. An excavation groundwater sample (GW01) collected on January 15, 2020 indicated benzene exceeded the COGCC Table 910-1 allowable level for groundwater.

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):

On January 17, 2020, five soil samples were collected from the base and sidewalls of the excavation and submitted for laboratory analysis of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and naphthalene. Laboratory analytical results for the soil samples indicated that TPH, BTEX, and naphthalene concentrations were in full compliance with COGCC Table 910-1 allowable levels at the extent of the excavation.

Proposed Groundwater Sampling

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

On January 15, 2020, one groundwater sample (GW01) was collected from the excavation for BTEX analysis. Laboratory analytical results indicated that sample GW01 exceeded the COGCC Table 910-1 allowable level for benzene at 49.9 micrograms per liter (µg/L). On January 17, 2020, following the removal of impacted groundwater, one groundwater sample (GW02) was collected from the excavation. Laboratory analytical results indicated that sample GW02 was in full compliance with COGCC Table 910-1 allowable levels. The excavation groundwater sample locations are depicted on Figure 1. The groundwater sample analytical results are summarized in Table 1.

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 5
Number of soil samples exceeding 910-1 0
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 417

NA / ND

ND Highest concentration of TPH (mg/kg) _____
NA Highest concentration of SAR _____
BTEX > 910-1 No
Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 6
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 1'
Number of groundwater monitoring wells installed 4
Number of groundwater samples exceeding 910-1 1

-- Highest concentration of Benzene (µg/l) 49.9
-- Highest concentration of Toluene (µg/l) 39.8
ND Highest concentration of Ethylbenzene (µg/l) _____
-- Highest concentration of Xylene (µg/l) 8.52
NA Highest concentration of Methane (mg/l) _____

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?

Petroleum hydrocarbon impacts to the subsurface were encountered in the field surrounding the gathering line release location.

☐ 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.

Approximately 30 cubic yards of petroleum hydrocarbon impacted soil were removed from the excavation and transported to Front Range Landfill in Erie, Colorado, for disposal. The petroleum hydrocarbon impacted soil was excavated into the phreatic zone to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. Approximately 40 barrels of impacted groundwater were removed from the excavation and transported to the Aggregate Recycling Facility in Weld County, Colorado, for recycling. 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.

The petroleum hydrocarbon impacted soil was excavated. Groundwater monitoring wells are sampled on a quarterly basis to assess monitored natural attenuation.

Soil Remediation Summary

☐ In Situ

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

☒ Ex Situ

Yes Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) 30
Name of Licensed Disposal Facility or COGCC Facility ID # _____
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
No _____ Air sparge / Soil vapor extraction
Yes _____ Natural Attenuation
Yes _____ Other _____ Groundwater Removal _____

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.

In May 2020, four groundwater monitoring wells (MW01 through MW04) were installed at the site. Boring logs with monitoring well completion diagrams are included as an attachment.

Groundwater monitoring wells MW01 through MW04 are sampled on a quarterly basis and submitted for laboratory analysis for benzene, toluene, ethylbenzene, and total xylenes by USEPA Method 8260D. The monitoring well locations are depicted on Figure 1. A Groundwater Elevation Contour Map generated using the May 2020 groundwater elevation data is provided as Figure 2. The groundwater analytical results are summarized in Table 1, and the laboratory analytical report for the May 2020 groundwater monitoring event is attached.

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

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? Yes

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

The petroleum hydrocarbon impacted groundwater was transported to the Aggregate Recycle Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 30

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

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Front Range Landfill in Erie, Colorado

Volume of E&P Waste (liquid) in barrels 40

E&P waste (liquid) description Petroleum 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? No

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? 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.

The Kerr-McGee gathering line was removed. 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 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. 01/16/2020

Actual Spill or Release date, if known. 01/16/2020

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/15/2020

Date of commencement of Site Investigation. 01/15/2020

Date of completion of Site Investigation. 05/14/2020

REMEDIAL ACTION DATES

Date of commencement of Remediation. 01/15/2020

Date of completion of Remediation.

SITE RECLAMATION DATES

Date of commencement of Reclamation.

Date of completion of Reclamation.

OPERATOR COMMENT

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

Signed: Chad Gililand

Title: Staff HSE Representative

Submit Date: 08/06/2020

Email: Chad.Gililand@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: CHRIS CANFIELD

Date: 08/10/2020

Remediation Project Number: 15369

COA Type

Description

| | |
|--|--|
| | |
|--|--|

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

| | |
|-----------|--------------------------------|
| 402440309 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 402440414 | LOGS |
| 402442156 | SITE MAP |
| 402442157 | GROUND WATER ELEVATION MAP |
| 402442777 | ANALYTICAL RESULTS |

Total Attach: 5 Files

General Comments

User Group

Comment

Comment Date

| | | |
|--|--|---------------------|
| | | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)