

State of Colorado Oil and Gas Conservation Commission

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Receive Date:

12/29/2021

Report taken by:

KRIS NEIDEL

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>CM PRODUCTION LLC</u> | Operator No: <u>10352</u> | Phone Numbers Phone: <u>(970) 946-3761</u> Mobile: <u>()</u> |
| Address: <u>390 UNION BLVD SUITE 620</u> | | |
| City: <u>LAKEWOOD</u> | State: <u>CO</u> Zip: <u>80228</u> | |
| Contact Person: <u>Jacob Harter</u> | Email: <u>jharter@cottonwoodconsulting.com</u> | |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 19198 Initial Form 27 Document #: 402724628

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>WELL</u> | Facility ID: _____ | API #: <u>057-06011</u> | County Name: <u>JACKSON</u> |
| Facility Name: <u>MARGARET SPAULDING (OWP) 2</u> | | Latitude: <u>40.725967</u> | Longitude: <u>-106.498523</u> |
| | | ** correct Lat/Long if needed: Latitude: _____ | Longitude: _____ |
| QtrQtr: <u>SWNE</u> | Sec: <u>28</u> | Twp: <u>9N</u> | Range: <u>81W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |

SITE CONDITIONS

General soil type - USCS Classifications OL

Most Sensitive Adjacent Land Use Agriculture/Ranching and Rangeland

Is domestic water well within 1/4 mile? No

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 permit #180306 is located approximately 1/3 mile northeast of the subject well. Additionally, irrigation ditches and other surface water resources are located approximately 150 feet east and down gradient of the subject well site.

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 | SOILS | TBD | Field Screening and Analytical Results |

INITIAL ACTION SUMMARY

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

The COGCC Orphan Well Program plugged the Margaret Spaulding (OWP) #2 well and decommissioned the wellsite during the summer of 2021. Soil samples were collected in accordance with the Initial Form 27 for the project and COGCC Rule 915.e(2)B. Four soil samples, including one project background sample, were collected from the site; one was collected from the wellhead excavation, one was collected from the flowline excavation, one was collected from the vicinity of Soil Boring 1 per Initial Form 27 COA, and one (background) was collected from nearby, non-impacted native soil. All samples were submitted for laboratory analysis of Table 915-1 constituents.

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):

All areas suspected of having potential impacts, including the wellhead, associated flowline(s) (if present), and production equipment (if present), were visually inspected and field screen with a PID. Using these observations and field screening results, soil samples were collected from areas most likely to be impacted.

One discrete soil sample was collected from the wellhead excavation, one discrete soil sample was collected from the flowline excavation, and one discrete soil sample was collected from the vicinity of Soil Boring 1 per Initial Form 27 COA. All samples were submitted for laboratory analysis of Table 915-1 constituents. The attached project map provides the location of all samples.

Proposed Groundwater Sampling

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

No groundwater or pathways to groundwater were discovered during the plugging and decommissioning activities. As such, no groundwater samples were collected for this project.

Proposed Surface Water Sampling

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

No surface water samples were collected for this project.

Additional Investigative Actions

☐ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Off-location flowlines were not addressed during the scope of this workplan. Any off-location flowline decommissioning should be addressed on a separate Form 27.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 3

Number of soil samples exceeding 915-1 1

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 36

NA / ND

-- Highest concentration of TPH (mg/kg) 777

-- Highest concentration of SAR 4.47

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 1

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

Highest concentration of Benzene (µg/l)

Highest concentration of Toluene (µg/l)

Highest concentration of Ethylbenzene (µg/l)

Highest concentration of Xylene (µg/l)

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?

One representative background soil sample was collected for the project from nearby, non-impacted native soil. Laboratory results indicate the pH value was outside of the COGCC standard. Additionally, arsenic concentrations exceeded the COGCC standard.

☐ 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?

Soil sample SS01, collected at a depth of 0-0.33 feet below ground surface (bgs) from the wellhead excavation had TPH and benzo(a)pyrene values exceeding the COGCC Table 915 standards. Further excavation/remediation of impacted soils within this area may be required.

Arsenic also exceeded the COGCC Table 915 standard in all samples, but was relatively consistent with background concentrations.

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 was plugged and the wellsite decommissioned during the summer of 2021. Soil samples were collected in accordance with the Initial Form 27 for the project. Based on Initial Form 27 soil sampling results, it appears additional remediation is needed in the vicinity of the former wellhead. It is estimated that approximately 10 or more cubic yards of soil should be excavated and disposed of at an approved facility. Please refer to attached Results Table, Map, and Photographs.

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.

Following removal of impacted soil, additional confirmation sample(s) should be collected to demonstrate that all remaining soil left in place is below COGCC Table 915 standards. Once complete, the excavation should be backfilled with clean soils. Remediation will likely occur during the summer of 2022.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 10

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or COGCC Facility ID # _____ 0

_____ Natural Attenuation

_____ Excavate and onsite remediation

_____ Other _____

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ 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.

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

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation?

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

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?

Is additional groundwater monitoring to be conducted?

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.

Reclamation will be 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. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/01/2021

Proposed site investigation commencement. 07/15/2021

Proposed completion of site investigation. 09/30/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/01/2022

Proposed date of completion of Remediation. 09/30/2022

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: ` Jacob Harter

Title: Consultant

Submit Date: ` 12/29/2021

Email: jharter@cottonwoodconsulting.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: KRIS NEIDEL

Date: 04/22/2022

Remediation Project Number: 19198

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

| | |
|--------|---|
| | Operator shall submit a Supplemental F19 requesting closure for Spill ID: 453792 and work is proceeding under the remediation # generated with F27 Doc #402724628. |
| | The next Form 27 update shall use the "Implementation Schedule" of this form with a plan to remediate soil around SS01 (in the vicinity of Soil Boring 1 found the the Fremont report, Doc # 1313053) |
| 2 COAs | |

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**

| | |
|-----------|--------------------------------|
| 402901917 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 402901981 | ANALYTICAL RESULTS |
| 402901982 | SOIL SAMPLE LOCATION MAP |
| 402901983 | PHOTO DOCUMENTATION |
| 402901984 | ANALYTICAL RESULTS |

Total Attach: 5 Files

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

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

Total: 0 comment(s)