

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
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Receive Date:

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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.

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>	<b>Phone Numbers</b>
Address: <u>390 UNION BLVD SUITE 620</u>		Phone: <u>(970) 946-3761</u>
City: <u>LAKEWOOD</u> State: <u>CO</u> Zip: <u>80228</u>		Mobile: <u>( )</u>
Contact Person: <u>Jacob Harter</u>	Email: <u>jharter@cottonwoodconsulting.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 19352 Initial Form 27 Document #: 402725716

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>057-06095</u>	County Name: <u>JACKSON</u>
Facility Name: <u>MARGARET SPAULDING (OWP) 12-A</u>		Latitude: <u>40.712309</u>	Longitude: <u>-106.498220</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SWNE</u>	Sec: <u>33</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**

Irrigation ditches and other surface water resources located approximately 610 feet west 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) #12-A 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. Five soil samples, including one project background sample, were collected from the site; one was collected from the wellhead excavation, one was collected from the under the former triplex pump, one was collected from the under the former pumping unit, one was collected from the flowline excavation, 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 under the former triplex pump, one discrete soil sample was collected from under the former pumping unit, and one discrete soil sample was collected from the flowline excavation. 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 sampling is anticipated at this time.

**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 4

Number of soil samples exceeding 915-1 4

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

Approximate areal extent (square feet) 150

### NA / ND

-- Highest concentration of TPH (mg/kg) 60650

-- Highest concentration of SAR 4.54

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 3

### 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 0-0.25 feet below ground surface (bgs) from the wellhead excavation, had TPH values exceeding the COGCC Table 915 standards. Soil sample SS02, collected at a depth of 0-0.16 feet bgs from under the former triplex pump had TPH, 1-methylnaphthalene, benzo (b)fluoranthene, and benzo(a)pyrene values exceeding the COGCC Table 915 standards. Soil sample SS03, collected at a depth of 0-0.33 feet bgs from under the former pumping unit had TPH and benzo(a)pyrene values exceeding the COGCC Table 915 standards. Soil sample SS04, collected at a depth of 3 feet bgs from the flowline excavation had TPH; 1,3,5-trimethylbenzene; and benzo(a)pyrene values exceeding the COGCC Table 915 standards. Further excavation/remediation of impacted soils within these areas 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, triplex pump, pumping unit, and flowline. It is estimated that approximately 40 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.

### 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.

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) \_\_\_\_\_ 40

\_\_\_\_\_ 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.



# 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? \_\_\_\_\_

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**

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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: ` \_\_\_\_\_

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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 19352

**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**

402903272	ANALYTICAL RESULTS
402903273	SOIL SAMPLE LOCATION MAP
402903276	PHOTO DOCUMENTATION
402903278	ANALYTICAL RESULTS

Total Attach: 4 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)