

**State of Colorado**  
**Energy & Carbon Management Commission**

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404227393  
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06/04/2025

Report taken by:  
Collin Metz

**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 ECOM 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>WESTERN OPERATING COMPANY</u>	Operator No: <u>95620</u>	<b>Phone Numbers</b>
Address: <u>1165 DELAWARE STREET #200</u>	Phone: <u>(303) 893-2438</u>	
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80204</u>		Mobile: <u>( )</u>
Contact Person: <u>Steven James</u>	Email: <u>steve@westernoperating.com</u>	

**PROJECT, PURPOSE & SITE INFORMATION**

**PROJECT INFORMATION**

Remediation Project #: 9066 Initial Form 27 Document #: 2143143

**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>PIT</u>	Facility ID: <u>101980</u>	API #: _____	County Name: <u>ADAMS</u>
Facility Name: <u>HOUGH 1-12</u>	Latitude: <u>39.987910</u>	Longitude: <u>-103.719512</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENW</u>	Sec: <u>12</u>	Twp: <u>1S</u>	Range: <u>57W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

**SITE CONDITIONS**

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use PASTURE  
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? No

**Other Potential Receptors within 1/4 mile**

Intermittent stream to the west (downgradient)  
DTW= 37' per LSP-001 MORRIS WELL 1 (Permit 14484-R)  
Rule 1202.d HPH Pronghorn winter concentration

**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
No	GROUNDWATER	NA	Lab data (2015)
Yes	SOILS	20' x 20'	Historic Borings

**INITIAL ACTION SUMMARY**

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

This Form 27 is being submitted to propose the continuation of investigation and closure activities for the former produced water pit (#101980). An initial investigation occurred in 2008 when subsurface impacts were observed. In 2015, an additional investigation consisting of soil borings and groundwater well installation were carried out to delineate the lateral extent of impacts. No further site investigation or remediation activities have occurred since 2015. Proposed additional site investigation activities are described herein.

**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 ):

Additional soil borings are being proposed to delineate hydrocarbon impacts to soil. TPH exceedances were observed in previous soil analytical results (Doc #2495350) at ~16' bgs. Soil samples will be collected from intervals with the highest PID detections and/or the total depth of the boring. Samples will be submitted to a NELAP-accredited laboratory for the Table 915-1 list of analytes. Additionally, background soil samples will be collected from similar depths and soil horizons as confirmation soil samples and submitted for Table 915-1 metals, pH, SAR, EC, and boron.

**Proposed Groundwater Sampling**

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

Seven groundwater samples were collected on July 3, 2015 (Doc #2495350). Laboratory groundwater analytical results reported that none of the samples exceeded the WQCC Reg 41 standards for BTEX. Based on the laboratory results, groundwater is not impacted at this site and further groundwater sampling is not proposed at this time.

**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 12  
Number of soil samples exceeding 915-1 3  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 2000

### NA / ND

         Highest concentration of TPH (mg/kg)           
         Highest concentration of SAR           
BTEX > 915-1 Yes  
Vertical Extent > 915-1 (in feet) 16

### Groundwater

Number of groundwater samples collected 7  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 17  
Number of groundwater monitoring wells installed 5  
Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l)           
ND Highest concentration of Toluene (µg/l)           
ND Highest concentration of Ethylbenzene (µg/l)           
ND Highest concentration of Xylene (µg/l)           
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?

Background soil samples will be collected from similar depths and soil horizons as confirmation soil samples and submitted for Table 915-1 metals, pH, SAR, EC, and boron.

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.

Any hydrocarbon-impacted material will be transported off-site to a licensed disposal facility in accordance with Rules 905 and 906. Waste manifests will be provided with future Form submittals, if applicable.

### 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.

A work plan will be submitted prior to any additional investigation or remediation activities, which may include, but are not limited to, in situ chemical oxidation and/or additional dig-and-haul excavation. Updates will be provided to ECMC accordingly.

### Soil Remediation Summary

In Situ  Ex Situ

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

\_\_\_\_\_ Excavate and offsite disposal  
\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
\_\_\_\_\_ Name of Licensed Disposal Facility or ECMC 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  
\_\_\_\_\_ 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.

Laboratory results from the five monitoring wells and two grab samples collected in 2015, indicate that groundwater is not impacted at the site. And no additional groundwater sampling is proposed at this time.

# 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 Pit closure

## 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.

Western Operating (#95620) is enrolled in the Option 3 financial Assurance plan approved 07/12/2023

Operator anticipates the remaining cost for this project to be: \$ 20000

## 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

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC 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?

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 ECMC 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.

If no surface disruption is necessary, no reclamation is proposed. Any surface disruption will be reclaimed according to the ECMC 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. 06/04/2025

Actual Spill or Release date, or date of discovery. 02/04/2009

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/04/2009

Proposed site investigation commencement. 01/01/2009

Proposed completion of site investigation. 12/31/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/30/2026

Proposed date of completion of Remediation. 06/30/2026

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: Lauren Glazier

Title: Consultant

Submit Date: 06/04/2025

Email: lglazier@cgrs.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Collin Metz

Date: 07/10/2025

Remediation Project Number: 9066

**COA Type****Description**

	In accordance with Rule 913.e.(3), Operator will adopt a quarterly reporting schedule (every 90 days).
	Operator shall provide boring logs in accordance with standard environmental practices. This includes at a minimum; lithology description, USCS classifications, PID readings, sample collection depths, depth to water, and well construction.
	ECMC selected Quarterly under Remediation Progress Update.
3 COAs	

**ATTACHMENT 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**

404227393	FORM 27-SUPPLEMENTAL-SUBMITTED
404227736	ANALYTICAL DATA SUMMARY TABLE(S)
404227768	SITE INVESTIGATION PLAN

Total Attach: 3 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)