

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404385758  
Receive Date:  
10/29/2025  
Report taken by:  
Nick Cholas

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 ECMC 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>PDC ENERGY INC</u>	Operator No: <u>69175</u>	Phone Numbers Phone: <u>(970) 304-5000</u> Mobile: <u>( )</u>
Address: <u>1099 18TH STREET SUITE 1500</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Dan Peterson</u>	Email: <u>RBUEUF27@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 41099 Initial Form 27 Document #: 404212702

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

Yes  Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>470666</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>GIRVAN-64N65W 10SEW</u>	Latitude: <u>40.327077</u>	Longitude: <u>-104.649323</u>	
** correct Lat/Long if needed: Latitude: <u>40.327176</u>		Longitude: <u>-104.649370</u>	
QtrQtr: <u>SEW</u>	Sec: <u>10</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>491234</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>GIRVAN-64N65W/10SEW</u>	Latitude: <u>40.327075</u>	Longitude: <u>-104.649420</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SEW</u>	Sec: <u>10</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## SITE CONDITIONS

General soil type - USCS Classifications SW \_\_\_\_\_

Most Sensitive Adjacent Land Use Cropland \_\_\_\_\_

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? No \_\_\_\_\_

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

Within Mule Deer Severe Winter Range HPH  
Freshwater Emergent Wetland 0.09mi S  
Freshwater Pond 0.04/0.06mi SE  
Residential 0.07mi SE, 0.23mi SW, 0.19mi NW  
Farm Structure 0.06/0.09mi E, 0.08/0.9mi SE, 0.22/0.23/0.25mi SW, 0.18/0.19mi N

# 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 checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input checked="" 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
UNDETERMINED	GROUNDWATER	NA	Lab analysis and field screening, if Encountered
Yes	SOILS	Refer to tables and figures	Lab analysis and field screening

## INITIAL ACTION SUMMARY

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

A site investigation was conducted pursuant to ECMC Rule 911 at the Girvan-64N65W 10SEW Facility and Tank Battery location. The tank battery was decommissioned on 8/22/2025, and samples were collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and dumpline (s) of any separator(s).

## 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 ):

Grab confirmation soil samples was collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and dumpline(s) of any separator(s). In addition, the on-site dump lines located between the separator and tank battery was removed by pulling from either end. Soil samples were analyzed by a certified laboratory for the full extent of Table 915-1, including but not limited to: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, metals, and boron. All samples collected were analyzed by a certified laboratory using approved ECMC laboratory analysis methods.

### Proposed Groundwater Sampling

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

If groundwater is encountered during the site investigation, a grab groundwater sample will be collected and analyzed for all organic and inorganic compounds per ECMC Table 915-1.

### 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 ):

Visual inspection at the tank battery area occurred during abandonment activities. Field personnel field screen all disturbed areas using visual and olfactory senses. Additionally, discrete soil samples were collected from the base of the excavation and excavation sidewall in areas most likely to be impacted and exhibiting the highest field screened VOC concentration.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 6

-- Highest concentration of TPH (mg/kg) 462.6

Number of soil samples exceeding 915-1 5 -- Highest concentration of SAR 1.97  
 Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 Yes  
 Approximate areal extent (square feet) 500 Vertical Extent > 915-1 (in feet) 3

**Groundwater**

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l) \_\_\_\_\_  
 Was extent of groundwater contaminated delineated? Yes Highest concentration of Toluene (µg/l) \_\_\_\_\_  
 Depth to groundwater (below ground surface, in feet) \_\_\_\_\_ Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
 Number of groundwater monitoring wells installed \_\_\_\_\_ Highest concentration of Xylene (µg/l) \_\_\_\_\_  
 Number of groundwater samples exceeding 915-1 \_\_\_\_\_ 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?

Nine (9) background soil samples were collected from three (3) soil borings on 8/22/2025. The background samples were collected at approximately 0.5 to 3 feet below ground surface (ft bgs) and analyzed for ECMC Table 915-1 inorganic and metal constituents. The maximum background concentration for pH was observed to be 8.60 standard units. The maximum background concentrations for arsenic, barium, cadmium, chromium, lead, and selenium including the additional 1.25 multiplier were reported at 4.89, 109.8, 0.441, 0.15, 22.38 and 0.359 mg/kg, respectively. The analyzed samples were within the ECMC Table 915-1 inorganic and metal compound standards/maximum background levels except barium in soil sample location PWV01-WC.

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?

The benzene, 1,2,4-Trimethyl-Benzene (TMB), 1,3,5-TMB, naphthalene, 1-methylnaphthalene (M), 2-M exceedances observed at sample locations PWV01, PWV01-SS03, PWV01-COMP and PWV01-WC during decommissioning will be removed through a remedial excavation and the impacted soil will be segregated for proper off-site disposal. The barium in soil sample location PWV01-WC will be encompassed within the remedial excavation. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. See the attached proposed remedial excavation figure.

**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 waste characterization sample PWV01-WC was collected from the soil used as backfill for the aboveground storage tank and produced water vessel excavation. The backfill was spread in a measured 50 feet (ft) x 40 ft area and was noted at five ft below ground surface (bkg). A remedial excavation will be conducted to source remove the waste characterization backfill in an anticipated excavation dimension of 50ft x 40ft x 7ft. The benzene, 1,2,4-Trimethyl-Benzene (TMB), 1,3,5-TMB, naphthalene, 1-methylnaphthalene (M), 2-M exceedances observed at sample locations PWV01, PWV01-SS03, PWV01-COMP and PWV01-WC during decommissioning will be encompassed in the excavation extent. The impacted soil will be segregated for proper off-site disposal and confirmation soil samples will be collected for full Table 915-1. See the attached proposed remedial excavation figure.

**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.

A Form 19 report (Doc. #404328273) was submitted for the GIRVAN-64N65W/10SEW (Rem #41099), and Spill ID #491234 has been added within the current form. On 8/22/2025, the potential presence of impacted material(s) was identified via hydrocarbon odor and hydrocarbon staining decommissioning activities at the GIRVAN-64N65W/10SEW, tank battery, samples: WPVV01 & PWV01-SS03, located at the produced water vessel in the same excavation. Upon receiving final laboratory analytical results on 9/10/2025, soil sample locations PWV01, PWV01-SS03, PWV01-COMP and PWV01-WC indicated an exceedance of ECMC Table 915 standards for benzene, 1,2,4-Trimethyl-Benzene (TMB), 1,3,5-TMB, naphthalene, 1-methylnaphthalene (M), 2-M. See the attached data packet and associated laboratory reports for the sampling activities conducted on 8/22/2025.

The remedial excavation outlined within the Source Removal Summary section is tentatively scheduled for completion by the end of 2Q 2026. The impacted soil will be segregated for proper off-site disposal and confirmation soil samples will be collected for full Table 915-1. NFA will not be considered until soil and/or groundwater (if encountered) concentrations are in compliance with ECMC Table 915-1 standards.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_

\_\_\_\_\_ 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.

Groundwater was not encountered during tank battery initial decommissioning activities.

# 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 Decommissioning Sample Summary and Supplemental Mass Source Removal Proposal \_\_\_\_\_

## 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.

Operator does not have site-specific financial assurance for this project; however, Operator has inactive well, blanket, and surface bonding including Surety IDs 106077122, 106473808, and 106473820, as well as commercial general liability and/or umbrella/excess insurance meeting the requirements of Rule 705.b.

Operator does not anticipate making an insurance claim for this project.

- Facility and infrastructure were decommissioned and source removal is required

Costs included herein are estimates only and may change over time based on numerous factors. Accordingly, Operator makes no guarantees as to the accuracy of such cost estimates, thus providing an estimate for the next year below.

Operator anticipates the remaining cost for this project to be: \$ 50000 \_\_\_\_\_

## 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? No

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? Yes

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.

Reclamation will be in accordance with ECMC 1000 Series Rules.

Is the described reclamation complete? Yes

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. 08/22/2025

Proposed date of completion of Reclamation. 06/30/2028

## 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. 03/20/2025

Actual Spill or Release date, or date of discovery. 08/22/2025

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/22/2025

Proposed site investigation commencement. 07/01/2025

Proposed completion of site investigation. 06/30/2026

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/30/2026

Proposed date of completion of Remediation. 12/31/2026

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:

The implementation schedule has been changed due to the completion of decommissioning of the Girvan-64N65W/10SENW tank battery, and the necessity for remedial excavation adjacent to the site. The proposed remedial excavation is tentatively scheduled for completion by the end of 2Q 2026.

**OPERATOR COMMENT**

This form has been submitted to provide a decommissioning sample summary and a 4Q 2025 update for the Girvan-64N65W/10SEW (Rem #41099) tank battery, as well as to propose a Supplemental Source Mass Removal (SSMR). The tank battery was decommissioned on 8/22/2025, and samples were collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and dumphine(s) of any separator(s). Upon receipt of analytical results, benzene, 1,2,4-Trimethyl-Benzene (TMB), 1,3,5-TMB, naphthalene, 1-methylnaphthalene (M), 2-M exceedances were observed at sample locations PWV01, PWV01-SS03, PWV01-COMP and PWV01-WC. The analyzed samples were within ECMC Table 915-1 inorganic and metal compound standards/maximum background levels except barium in soil sample locations PWV01-WC. The data packet and associated analytical results are attached within the current form.

In accordance with the COA stated via approved Form 19 (Doc. #404328273; Spill ID #491234), the waste characterization sample PWV01-WC was collected from the soil used as backfill for the aboveground storage tank and produced water vessel excavation. The backfill was spread in a measured 50 feet (ft) x 40 ft area and was noted at five feet below ground surface (bkg). A remedial excavation will be conducted to source remove the waste characterization backfill in an anticipated excavation dimension of 50ft x 40ft x 7ft. The impacted soil will be segregated for proper off-site disposal and confirmation soil samples will be collected for full Table 915-1. See the attached proposed remedial excavation figure.

Pursuant to Rule 913.e., quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the remedial excavation will be submitted on a subsequent Form 27.

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

Signed: Scott Williamson

Title: Environmental Consultant

Submit Date: 10/29/2025

Email: NorthernColoradoPM@montrose-env.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: Nick Cholas

Date: 11/18/2025

Remediation Project Number: 41099

**COA Type****Description**

	Operator will collect discrete conformation soil samples for complete Table 915-1 analysis.
	ECMC approves the proposed excavation location. Depending on the results of the current site investigation plan, Operator may be required to complete additional excavation to fully delineate soil impacts.
2 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**

404385758	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404393621	LABORATORY ANALYTICAL REPORT
404402292	SITE INVESTIGATION PLAN
404402293	SITE INVESTIGATION REPORT
404402724	LABORATORY ANALYTICAL REPORT
404440231	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)