

State of Colorado  
Energy & Carbon Management Commission

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404395871  
Receive Date:  
11/03/2025

Report taken by:  
Abdul Elnajdi

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36965 Initial Form 27 Document #: 403875036

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: WELL	Facility ID: _____	API #: 123-23592	County Name: WELD
Facility Name: PETTINGER 43-2	Latitude: 40.514030	Longitude: -104.509360	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 2	Twp: 6N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 489445	API #: _____	County Name: WELD
Facility Name: Pettinger 43-2	Latitude: 40.508229	Longitude: -104.510344	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 2	Twp: 6N	Range: 64W Meridian: 6 Sensitive Area? Yes

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

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

Within Mule Deer Severe Winter Range HPH  
Within Pronghorn Winter Concentration Area HPH  
Freshwater Pond 0.21mi NW  
Freshwater Emergent Wetland 0.17mi NE  
Residential 0.1/0.14mi NE, 0.19mi N  
Farm Structure 0.07/0.15/0.2mi NE, 0.07/0.09/0.2/0.21mi N

**DENIED**

# 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	Refer to Tables and Figures	Lab analysis and field screening
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.

Pursuant to ECMC Rule 911, a site investigation was conducted pertaining to the Pettinger 43-2 wellhead cut & cap and flowline removal (REM 36965). The wellhead was cut and capped per ECMC rules on 11/07/2024. Approximately 2,147 feet of flowline was removed per ECMC rules between 12/13/2024 and 12/17/2024. A portion of the flowline was abandoned-in-place between sample locations FL01-05@4' and FL01-06@4' due to conflict with third party (DCP) lines and between FL01R-S@4' and FL01-13@4' due to field constraints. The ECMC was notified on Form 44, Doc. #404083777.

## 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 ):

A grab soil sample was collected at the base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead. Grab confirmation soil samples were taken along the flowline at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway. 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 ):

Sample location GW01 (Attached Figure: GW01-R) will be re-collected and three groundwater samples will be collected from locations upgradient of source sample GW01 for further groundwater site characterization. The grab groundwater samples will be analyzed for full Table 915-1 constituents. See the proposed groundwater and soil sample location figure. If additional 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.

### 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 of the wellhead and flowline areas occurred during decommissioning activities. Field personnel screened all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling was required.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

**Soil**

Number of soil samples collected 9

Number of soil samples exceeding 915-1 2

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

Approximate areal extent (square feet) 200

**NA / ND**

-- Highest concentration of TPH (mg/kg) 630

-- Highest concentration of SAR 3.54

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 4

**Groundwater**

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 4

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 1

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?

On 12/13/2024, one (1) site specific background soil sample was collected near the flowline and was submitted for Table 915-1 inorganic and metal analysis. The background soil sample was collected from a depth of 4 feet below ground surface (ft bgs). The maximum background value for pH was observed to be 8.56. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, cadmium, and lead were calculated to be 5.38 mg/kg, 31.5 mg/kg, 1.93 mg/kg, and 28.5 mg/kg, respectively. All soil constituents at the site in the sample collected during the decommissioning, are within Table 915-1/maximum background limits except for arsenic (6.23 mg/kg) and barium (105 mg/kg) at FL01-01@4'.

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 TPH exceedance identified during flowline removal at soil sample location FL01R-S@4' will be removed through remedial excavation and the impacted soil will be segregated for proper off-site disposal. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the remedial excavation, a Supplemental Site Investigation (SSI) will be completed to collect additional background samples. Soil background samples (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to determine if the arsenic and barium exceedances are attributable to native soil conditions at the site. The soil background samples will be analyzed for metals and inorganics in soil per ECMC Table 915-1. A proposed site investigation figure is attached within the current form.

**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 TPH exceedance identified during flowline removal at soil sample location FL01R-S@4' will be removed through remedial excavation and the impacted soil will be segregated for proper off-site disposal. The proposed excavation dimensions are approximately 10'x10'x6' and will be centered on the FL01R-S location. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents.

**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.

The TPH exceedance identified during flowline removal at soil sample location FL01R-S@4' will be removed through remedial excavation and the impacted soil will be segregated for proper off-site disposal. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the remedial excavation, a Supplemental Site Investigation (SSI) will be completed to collect additional background samples. Soil background samples (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to determine if the arsenic and barium exceedances are attributable to native soil conditions at the site. The soil background samples will be analyzed for metals and inorganics in soil per ECMC Table 915-1. A proposed site investigation figure is attached within the current form.

## 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.

Sample location GW01 (Attached Figure: GW01-R) will be recollected and three groundwater samples will be collected from locations upgradient of source sample GW01 for further groundwater site characterization. The grab groundwater samples will be analyzed for full Table 915-1 constituents. See the proposed groundwater and soil sample location figure.

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

# 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 SSI Proposal, Quarterly Update, SSMR 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.

- Further soil and groundwater investigation is required
- Source mass removal will be completed

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: \$ 15000

## 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? No

Is additional groundwater monitoring to be conducted? Yes

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. 11/07/2024

Proposed date of completion of Reclamation. 03/31/2028

## 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. 06/13/2024

Actual Spill or Release date, or date of discovery. 02/10/2025

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/07/2024

Proposed site investigation commencement. 05/05/2025

Proposed completion of site investigation. 03/31/2026

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/31/2026

Proposed date of completion of Remediation. 09/30/2026

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:

The implementation schedule has been changed due to the decommissioning of the Pettinger 43-2 wellhead and flowline and necessity for supplemental site investigation (SSI) activities adjacent to the flowline. The work is tentatively scheduled to be completed by the end of 1Q 2026.

## OPERATOR COMMENT

This form has been submitted to provide a 4Q 2025 update and to propose both SSMR and supplemental investigation for the Pettinger 43-2 wellhead and flowline (REM 36965). No work has been completed since the previous quarterly update. Remediation and site investigation is now under the direction of Montrose Environmental (Montrose).

The TPH exceedance identified during flowline removal at soil sample location FL01R-S@4' will be removed through remedial excavation and the impacted soil will be segregated for proper off-site disposal. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the remedial excavation, a Supplemental Site Investigation (SSI) will be completed to collect additional background samples. Soil background samples (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to determine if the arsenic and barium exceedances are attributable to native soil conditions at the site. The soil background samples will be analyzed for Table 915-1 inorganic and metal constituents. Sample location GW01 (Attached Figure: GW01-R) will be recollected and three groundwater samples will be collected from locations upgradient of source sample GW01 for further groundwater site characterization. The grab groundwater samples will be analyzed for full Table 915-1 constituents. See the proposed groundwater and soil sample location figure.

Pursuant to Rule 913.e., quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of remedial excavation and the SSI 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: Richie Blessing

Title: Environmental Consultant

Submit Date: 11/03/2025

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: \_\_\_\_\_

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

Remediation Project Number: 36965

### COA Type

### Description

<u>COA Type</u>	<u>Description</u>
0 COA	

### 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

404395871	FORM 27-SUPPLEMENTAL-SUBMITTED
404416313	SITE INVESTIGATION PLAN

Total Attach: 2 Files

### General Comments

### User Group

### Comment

### Comment Date

Environmental	<p>Rule 912.a.(2) and Rule 913.d.(1) requires that Operators will investigate, clean up, and document impacts resulting from Spills and Releases as soon as the impacts are discovered. Rule 913.b.(2) is clear on the requirements for Operators to determine the horizontal and vertical extent of any contamination in excess of the cleanup concentrations in Table 915-1.</p> <p>This form is denied. Operator's argument for delay in the implementation of the proposed site investigation is not accepted. Operator shall ensure all attachments are directly relevant to the remediation plan and refrain from providing extraneous attachments.</p>	11/26/2025
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Total: 1 comment(s)