

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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Report taken by:

Taylor Robinson

## 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: PDC ENERGY INC	Operator No: 69175	Phone Numbers Phone: (970) 313-5582 Mobile: ( )
Address: 1099 18TH STREET SUITE 1500		
City: DENVER	State: CO Zip: 80202	
Contact Person: Jason Davidson	Email: ENspillremediationcontractor@pdce.com	

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 32319 Initial Form 27 Document #: 403546843

## 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: LOCATION	Facility ID: 328716	API #: _____	County Name: WELD
Facility Name: EVANS INDUSTRIAL PARK-65N65W 30SWSE		Latitude: 40.365339	Longitude: -104.703889
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 30	Twp: 5N	Range: 65W Meridian: 6 Sensitive Area? Yes

## SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Residential

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

Closest Domestic Well within quarter mile – 445' SSW  
Additional Domestic Wells – 895' NNW, 1000' NE, 1240' SE  
Nearest Surface Water – South Platte River 530' SE  
Nearest Occupied Building – Commercial buildings - 235' NW  
Additional Occupied Buildings – Commercial buildings - 340' N, 710' NW, 315' E, 1660' NE, Residential buildings 1120' SW  
Within 100-Year Effective Floodplain Buffer  
Freshwater Forested/Shrub Wetland – 430' S  
Aquatic Native Species Conservation Waters - 90' S  
Mule Deer Migration Corridor – 250' S

No other potential receptors are located within ¼ mile of the Site.  
Above distances are approximations.

## 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	Not impacted	Not encountered
No	SOILS	Not impacted	Confirmation Soil Sampling

### INITIAL ACTION SUMMARY

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

In accordance with ECOM Rule 911, this form serves as notification for the decommissioning and abandonment of the Evans Industrial Park 1 production facility. The ground and sub-surfaces will be visually inspected for hydrocarbon impacts during equipment decommissioning. In addition, on-site dump lines located between the separator and tank battery will be removed by pulling from either end during decommissioning activities. Field observations and photo documentation will be recorded in a field inspection form for submittal to the ECOM.

### 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 soil samples will be collected below and/or adjacent to applicable facility equipment, as defined in the Rule 911.a.(4) guidance document (9/20/21), for field screening purposes. Discrete soil samples will be collected for laboratory analysis either in any area of observed hydrocarbon impacts, or in the sample locations designated by the ECOM. Soil samples will be submitted for laboratory analysis of the full Table 915-1 analytical suite by ECOM approved methods. See the attached Figure 1 for an illustration of the facility layout and proposed soil sample locations.

#### Proposed Groundwater Sampling

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

If groundwater is encountered during decommissioning and/or abandonment activities, a grab sample will be collected as soon as practical. If contaminated soil is in contact with groundwater or if free product/hydrocarbon sheen are observed, the release will be reported in accordance with Rule 912.b. Groundwater samples will be submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260.

#### 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 ):

If a produced water vessel is present, discrete soil samples will be 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. The soil samples will be submitted for laboratory analysis of the full Table 915-1 analytical suite by ECOM approved methods. Assessment of off location flowline will be addressed with its respective wellhead under a separate Form 27.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 5

Number of soil samples exceeding 915-1 4

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 0

ND Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR 0.59

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 0

#### 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?

Twelve site-specific background samples were collected from approximately 1.5 ft., 3.5 ft., and 5 ft-bgs from 8 soil borings (BKG01-BKG08) in areas away from oil and gas infrastructure and were submitted for analysis of pH, arsenic, cadmium, lead, and selenium by ECMC approved methods.

☐ 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?

PDC is currently in the process of evaluating pH, arsenic, cadmium, and selenium concentrations at the Site.

### 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.

Based on site investigation activities and laboratory analytical results for confirmation soil samples collected from the Evans Industrial Park 1 production facility, removal of source material is not needed.

#### 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.

Based on site investigation activities and laboratory analytical results for confirmation soil samples collected from the Evans Industrial Park 1 production facility, a remediation plan is not needed.

#### 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 COGCC Facility ID #

\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ 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.

Groundwater was not encountered during facility closure 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 Site Investigation and Remediation Progress Report

### 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 closure activities and confirmation soil sampling were conducted at the Evans Industrial Park 1 production facility on December 28, 2024.
- PDC is currently in the process of evaluating pH, arsenic, cadmium, and selenium concentrations at the Site.
- If additional excavation is necessary, PDC respectfully proposes a reduced analyte list to include pH, arsenic, cadmium, and selenium.

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: \$ 10000

### 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.

Following facility closure activities, the location was backfilled, compacted, and re-contoured to match pre-existing conditions. The location will be reclaimed in accordance with the ECMC 1000 series.

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

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? No \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 03/31/2024

Proposed date of completion of Reclamation. 03/31/2026

## 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. 08/24/2023

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/28/2023

Proposed site investigation commencement. 12/28/2023

Proposed completion of site investigation. 06/28/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

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

Facility closure activities and confirmation soil sampling were conducted at the Evans Industrial Park 1 production facility on December 28, 2023. Four discrete soil samples were collected from the four sidewalls of the produced water vessel (PWV) excavation, and field screened using a photo-ionization detector (PID) calibrated with 100 parts per million (ppm) isobutylene gas. One discrete soil sample was field screened beneath the emission control device (ECD01@0.5) and one discrete soil sample was field screened at the meter house (MH01@0.5). All field screening PID readings were less than 0.6 ppm, and no visual evidence of hydrocarbon impact was observed.

A total of 5 facility closure confirmation soil samples were submitted for analysis. Soil sample AST01@0.5 was collected beneath the access hatch of the above ground storage tank (AST). Two soil samples, SEP01-FL@4 and SEP01-DL@4, were collected from adjacent to the former separator flowline riser and dump lines, respectively. Two soil samples, PWV01@3 and WDL01@1.5 were collected from the floor beneath the PWV, and adjacent to the former water dump line, respectively.

All soil samples were submitted to Summit Scientific (Summit) in Golden, Colorado for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, gasoline range organics (GRO) [C6-C10] by EPA Method 8260B, diesel range organics (DRO) [C10-C28] and residual range organics (ORO) [C28-C40] by EPA Method 8015, polycyclic aromatic hydrocarbons (PAHs) (Table 915-1 list) by EPA Method 8270D SIM, Total Metals by EPA Method 6020B, electrical conductivity (EC), sodium adsorption ratio (SAR), and pH by Saturated Paste Extraction Methods, and boron by Hot Water Soluble Extraction Method.

All analytical results for soil samples submitted for analysis are compliant with their respective Table 915-1 Protection of Groundwater Soil Screening Levels (GWSSLs), below the highest background level for pH (8.66), or below 1.25x the highest background concentrations for arsenic (0.856 mg/kg) except for pH in soil samples SEP01-FL@4 (8.87) and PWV01@3 (8.77), arsenic in soil samples PWV01@3 (1.48 mg/kg), WDL01@1.5 (0.945 mg/kg) and AST01@0.5 (1.45 mg/kg). Soil sample AST01@05 also reported cadmium (0.436 mg/kg) and selenium (0.362 mg/kg) above their respective Table 915-1 GWSSLs. All organics were reported as below the laboratory method detection limits. Groundwater was not encountered during facility closure activities.

PDC is currently in the process of evaluating pH, arsenic, cadmium, and selenium concentrations at the Site. The results of the evaluation will be summarized in the next quarterly supplemental Form 27 submission. If additional excavation is necessary, PDC respectfully proposes a reduced analyte list to include pH, arsenic, cadmium, and selenium.

Please refer to the attached Closure Checklists for a detailed description of site investigation activities. Sample location information is provided in Table 1 and the analytical results are summarized in Table 2, Table 3 and Table 4. A general location map is provided on Figure 1. Soil sample, and field screening locations are presented on Figure 2. A photo log and the laboratory analytical reports are also attached.

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

Signed: Jason Davidson

Title: Remediation Advisor

Submit Date: 03/01/2024

Email: ENspillremediationcontractor@pdce.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: Taylor Robinson

Date: 04/05/2024

Remediation Project Number: 32319

### COA Type

### Description

	ECMC agrees to the Operator's reduced analyte list request to include pH, arsenic, cadmium, and selenium.
1 COA	

## 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

403702915	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403702931	ANALYTICAL RESULTS
403702932	ANALYTICAL RESULTS
403702933	REMEDIATION PROGRESS REPORT
403702935	SITE MAP
403702936	SOIL SAMPLE LOCATION MAP



403702937	PHOTO DOCUMENTATION
403702938	ANALYTICAL RESULTS
403744634	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

**General Comments**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
		Stamp Upon Approval

Total: 0 comment(s)