

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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Document Number:

403704019

Receive Date:

02/29/2024

Report taken by:

RICK ALLISON

## 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: NOBLE ENERGY INC	Operator No: 100322	Phone Numbers
Address: 1099 18TH STREET SUITE 1500		Phone: (970) 730-7281
City: DENVER	State: CO	Zip: 80202
Contact Person: Dan Peterson	Email: RBUEUF27@chevron.com	Mobile: ( )

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 29728 Initial Form 27 Document #: 403418767

## 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 #: 123-33669	County Name: WELD
Facility Name: DONALDSON USX EE29-06D	Latitude: 40.549550	Longitude: -104.695090	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNW	Sec: 29	Twp: 7N	Range: 65W
Meridian: 6	Sensitive Area? Yes		

  

Facility Type: WELL	Facility ID: _____	API #: 123-33671	County Name: WELD
Facility Name: CALVARY USX EE29-03D	Latitude: 40.549550	Longitude: -104.695170	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNW	Sec: 29	Twp: 7N	Range: 65W
Meridian: 6	Sensitive Area? Yes		

Facility Type: WELL		Facility ID: _____		API #: 123-33673		County Name: WELD	
Facility Name: CALVARY USX EE29-04D				Latitude: 40.549550		Longitude: -104.695250	
** correct Lat/Long if needed: Latitude: _____ Longitude: _____							
QtrQtr: SWNW	Sec: 29	Twp: 7N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

Facility Type: WELL		Facility ID: _____		API #: 123-33674		County Name: WELD	
Facility Name: DONALDSON USX EE29-12D				Latitude: 40.549550		Longitude: -104.695330	
** correct Lat/Long if needed: Latitude: _____ Longitude: _____							
QtrQtr: SWNW	Sec: 29	Twp: 7N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

Facility Type: SPILL OR RELEASE		Facility ID: 484759		API #: _____		County Name: WELD	
Facility Name: Calvary USX EE29-03D				Latitude: 40.549550		Longitude: -104.695170	
** correct Lat/Long if needed: Latitude: _____ Longitude: _____							
QtrQtr: SWNW	Sec: 29	Twp: 7N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

Facility Type: SPILL OR RELEASE		Facility ID: 485162		API #: _____		County Name: WELD	
Facility Name: Donaldson USX EE29-06D				Latitude: 40.549520		Longitude: -104.695093	
** correct Lat/Long if needed: Latitude: _____ Longitude: _____							
QtrQtr: SWNW	Sec: 29	Twp: 7N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

## SITE CONDITIONS

General soil type - USCS Classifications SW \_\_\_\_\_ Most Sensitive Adjacent Land Use Grassland \_\_\_\_\_

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

Freshwater Pond 0.16mi SE, 0.24mi SW  
Pond 0.12/0.15/0.18/0.23mi SW, 0.18mi W  
Residential 0.13/0.14/0.16/0.19/0.21mi SW  
Commercial Structure 0.12mi W

## 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
UNDETERMINED	GROUNDWATER	NA	Lab analysis if encountered
Yes	SOILS	Further Investigation Required	Lab analysis

### 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 will be conducted pertaining to the CALVARY USX EE29-03D, CALVARY USX EE29-04D, DONALDSON USX EE29-06D & DONALDSON USX EE29-12D wellhead cut and cap and flowline removal. Approximately 1004', 1027', 982' & 1053' of flowline was removed, respectively. The wellhead will be cut and capped per ECMC rules. Additionally, soil samples will be field screened at the N-E-S-W sides of the wellhead. Soil samples will be 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. The Flowline Pre-Abandonment Notice Document number is included under Related Forms.

### 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 will be 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 will be field screened at the N-E-S-W sides of the wellhead. Soil samples will be 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 will be analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, and boron. All samples collected will be analyzed by a certified laboratory using approved ECMC laboratory analysis met

#### 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 will be collected and analyzed for ECMC Table 915-1 constituents in groundwater.

#### 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 will occur during abandonment activities. Field personnel will field screen all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling is required. The ECMC Flowline Closure and Wellhead Closure Checklists will be utilized and filled out during the abandonment process. A photolog will be submitted on the Subsequent Form 27.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 8

Number of soil samples exceeding 915-1 8

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

Approximate areal extent (square feet) 225

-- Highest concentration of TPH (mg/kg) 842

-- Highest concentration of SAR 2.1

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 5

#### 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 background soil sample was collected from an area not impacted by oil and gas development and analyzed for Table 915 Soil Suitability constituents (pH, EC, SAR, and Boron) and metals for each of the four flowlines. Background soil sample analysis was reported with elevated concentrations of constituents including arsenic, barium, and cadmium.

Background Soil Sample Analysis (mg/kg)  
Arsenic @ 5': Average\*1.25 = 2.38, Max = 3.20  
Barium @ 5': Average\*1.25 = 231, Max = 334

☐ 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?

See the Remedial Action Plan section and Operator Comments for details.

### REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

#### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soil will be removed from the DONALDSON USX EE29-06D release area by excavation. The impacted soil will be disposed of at an approved landfill as non-hazardous waste in accordance with Rules 905 and 906. Copies of the waste manifests will be available upon request.

#### 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.

The source will be excavated and confirmation soil samples will be collected and analyzed for the full Table 915 suite. See the attached DONALDSON USX EE29-06D for proposed excavation details.

If groundwater is encountered during the excavation of impacted soil, a groundwater sample will be collected for all Table 915 constituents in groundwater. Should no additional active remediation be required following source removal at the location, a no further action (NFA) determination will be requested within 90 days following laboratory confirmation of the removal of impacted soils with respect to the applicable Table 915-1 screening levels at the site. If groundwater impacts are observed, an NFA will be requested once four consecutive quarters of groundwater sampling have been completed and reported at the location with concentrations of Table 915 constituents below regulatory limits. As needed, soil and/or groundwater remediation plans will be developed and submitted to ECOM in a supplemental Form 27.

**Soil Remediation Summary**

☐ **In Situ**

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

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

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

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

\_\_\_\_\_ Other \_\_\_\_\_

☐ **Ex Situ**

\_\_\_\_\_ 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.

## 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 Supplemental Form 27

### 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.

Noble intends to directly address the costs of remediation at the locations as part of our asset retirement obligation process and operations. Noble has general liability insurance (policy MWZZ 316714) and financial assurance in compliance with ECMC rules. Records are available on the ECMC's website. The cost for remediation is an estimate only, costs may change upwards or downward based on site-specific information. Noble makes no representation or guarantees as to the accuracy of the estimate.

Operator anticipates the remaining cost for this project to be: \$ 25000

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

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? 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. 05/31/2027

Proposed date of completion of Reclamation. 05/31/2030

## 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. 04/19/2023

Actual Spill or Release date, or date of discovery. 07/10/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/26/2023

Proposed site investigation commencement. 07/05/2023

Proposed completion of site investigation. 05/31/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/31/2025

Proposed date of completion of Remediation. 05/31/2027

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 updated to allow time for additional site investigation and remediation based on crew availability.

## OPERATOR COMMENT

The purpose of this form is to update the ECMC with data collected during the decommissioning of the flowlines associated with the following wellheads:

- 1) Calvary USX EE 29-04D ( Flowline) - No organic impacts were reported.
- 2) DONALDSON USX EE29-06D (Flowline) - Organic impacts were reported at the wellhead flowline riser.
- 3) DONALDSON USX EE29-12D (Flowline) - No organic impacts were reported.
- 4) CALVARY USX EE29-03D (Flowline) - No organic impacts were reported.

Flowline confirmation soil samples analysis for samples collected at the flowline riser were reported with elevated concentrations of Table 915-1 metals including arsenic and barium. Based on the background soil sample data and the analysis presented in the Site Investigation Report background section, elevated concentrations of arsenic and barium are suggested to be naturally occurring in the native soil. Remediation of organic impacts will be remediated as stated in the Remedial Action Plan section. A timeline update has also been provided in the Implementation Schedule section.

Wellhead decommissioning data will be provided for each wellhead in subsequent form 27s if they have not been submitted already.

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

Signed: Chris Lattes

Title: Environmental Consultant

Submit Date: 02/29/2024

Email: chrisl@fremontenv.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: RICK ALLISON

Date: 09/10/2024

Remediation Project Number: 29728

### COA Type

### Description

	<p>Operator is reporting flowline decommissioning data only with this Supplemental Form 27. ECMC has not received well decommissioning data. Operator shall submit well decommissioning data within 30 days.</p> <p>It appears Operator has collected 4 background samples from the same location. Operator shall aggregate all data, including all decommissioning soil sample results and background sample results in a single summary table for this location.</p>
1 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.

<u>Att Doc Num</u>	<u>Name</u>
403704019	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403805114	SITE INVESTIGATION REPORT
403805277	SITE INVESTIGATION REPORT
403805873	SITE INVESTIGATION REPORT
403805880	SITE INVESTIGATION REPORT
403915731	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

## General Comments

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

Total: 0 comment(s)