

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404084563

Receive Date:

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Report taken by:

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: NOBLE ENERGY INC	Operator No: 100322	<b>Phone Numbers</b>
Address: 1099 18TH STREET SUITE 1500		Phone: (970) 313-5582
City: DENVER State: CO Zip: 80202		Mobile: ( )
Contact Person: Jason Davidson	Email: jason.davidson@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24990 Initial Form 27 Document #: 403160946

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 #: 123-12822	County Name: WELD
Facility Name: WATKINS 12-2	Latitude: 40.325130	Longitude: -104.505930	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 12	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 483889	API #: _____	County Name: WELD
Facility Name: Watkins 12-02	Latitude: 40.325104	Longitude: -104.499449	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 12	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

## **SITE CONDITIONS**

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

Most Sensitive Adjacent Land Use Crop Land \_\_\_\_\_

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**

Riverine 0.20mi W  
Irrigation Ditches 0.13/0.25mi N  
Irrigation Pond 0.24mi NW

# SITE INVESTIGATION PLAN

## **TYPE OF WASTE:**

- |  |  |   |
|--|--|---|
| <input checked="" type="checkbox"/> <b>E&amp;P Waste</b> | <input type="checkbox"/> <b>Other E&amp;P Waste</b>  | <input type="checkbox"/> <b>Non-E&amp;P Waste</b> |
| <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	Field Screening or Lab analysis, if encountered
Yes	SOILS	Refer to Figures and Tables	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 Watkins 12-02 wellhead decommissioning and flowline removal. The wellhead was cut and capped per ECMC rules on 11/28/22. A confirmation soil sample was collected from the base of the wellhead excavation (WH-FS-01@6') and screening samples were collected from the N, E, S, & W sidewalls (WH01-SS-01 - WH-SS-04). The flowline was partially abandoned in place (ABIP) on 02/07/23 per Form 44 # 403417362. The approximate location of the ABIP section is between sample locations FL01-J & FL01-K. Approximately 1850' of flowline was removed. Confirmation soil samples were collected from beneath the flowline risers at the wellhead (FL01-A) and separator (FL01-K), as well as at a directional change south of the tank battery (FL01-J). Field screening samples were collected along the flowline at approximately 250' spacing (FL01-B through FL01-H).

Concentrations of naphthalene, benz(a)anthracene, and 1-methylnaphthalene were observed in exceedance of ECMC Table 915-1 standards at sample location FL01-J@4'. Concentrations of benz(a)anthracene and total petroleum hydrocarbons (TPH) were observed in exceedance of ECMC Table 915-1 standards at sample location FL01-K@4'.

## **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 ):

Sampling was conducted as described in the Initial Action Summary, in accordance with the approved sampling plan in the Initial Form 27 (# 403160946). Soil samples were 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, EC, SAR, pH, 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. This sample analysis includes, but is not limited to: BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260; chloride and sulfate anions by EPA Method 300.0; and total dissolved solids (TDS) by Method SM 2540C.

### **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 abandonment activities. Field personnel screened all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling was required. A detailed summary of decommissioning activities at the wellhead, including an ECMC Wellhead Closure Checklist, site photos, figures, and laboratory analytical results, is attached to Form 27 # 403484451. A detailed summary of decommissioning activities at the flowline, including an ECMC Flowline Closure Checklist, site photos, figures, and laboratory analytical results, is also attached to Form 27 # 403484451.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 5  
Number of soil samples exceeding 915-1 1  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 100

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 0.027  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 3

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? Yes  
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?

On April 19, 2023, ten background soil samples were collected adjacent to the flowline and analyzed for metals in soil per ECMC Table 915-1 and SAR. Background soil samples were collected from depths ranging between 4 to 8 feet below ground surface (ft bgs). On December 9, 2024, eight background soil samples were collected adjacent to the flowline and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR and boron, and were collected from depths ranging between 1 to 3 ft bgs. The maximum background concentration for pH, and SAR were observed to be 7.80 and 7.89, respectively. The maximum background concentration with a 1.25x multiplier applied for arsenic was calculated to be 3.39 mg/kg, respectively. All arsenic concentrations observed during the remedial excavations were below background levels.

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?

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH and SAR exceedances observed at sample locations (FS01 @6', SS01 @5', SS02 @5', SS03 @5', and SS04 @5') during the remedial excavation of flowline sample location FL01-J@4' on 12/06/2023. Concurrently with the SSI, five additional background samples (BKG10 through BKG14) will be collected to determine if pH and SAR are attributed to native soil conditions at the site. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

## 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 organic compound exceedances observed at sample locations FL01-J@4' were removed through a remedial excavation. On December 6, 2023, five confirmation soil samples were collected from the base and sidewalls of the FL01-J@4' remedial excavation and were submitted for the full Table 915-1 analytical suite. Analytical results indicated that the organic compound concentrations in exceedance were removed and approximately 39 cubic yards were transported to the Buffalo Ridge Waste Management Facility in Keenesburg, Colorado for disposal.

The organic compound exceedances observed at sample locations FL01-K@1' were removed through a remedial excavation. On December 9, 2024, five confirmation soil samples were collected from the base and sidewalls of the FL01-K@1' remedial excavation and were submitted for the full Table 915-1 analytical suite. Analytical results indicated that the organic compound concentrations in exceedance were removed and approximately 30 cubic yards were transported to the Buffalo Ridge Waste Management Facility in Keenesburg, Colorado for disposal.

**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 remedial excavation was conducted on December 9, 2024 to remove organic exceedances observed along the flowline during the flowline decommissioning at the FL01-K location. Additionally, eight background samples were collected to determine if inorganic exceedances encountered during the initial flowline decommissioning were attributed to native soil conditions at the site. Upon completion of the remedial excavation, analytical results indicated that the organic compound concentration in exceedance was removed from the FL01-K flowline location. Additionally, inorganic exceedances above background analytical results were observed in remedial excavation soil samples.

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH and SAR exceedances observed at sample locations (FS01@6', SS01@5', SS02@5', SS03@5', and SS04@5') during the remedial excavation of flowline sample location FL01-J@4' on 12/06/2023. Concurrently with the SSI, five additional background samples (BKG10 through BKG14) will be collected to determine if pH and SAR are attributed to native soil conditions at the site. Proposed SSI and soil boring maps are attached to this Form 27. Confirmation soil samples will be collected from the proposed boreholes and submitted for laboratory analysis of the full Table 915-1 analytical suite. The proposed SSI has been tentatively scheduled to be completed March 6 and March 7, 2025. The results of the SSI and background sampling will be submitted on a subsequent Form 27.

**Soil Remediation Summary**

In Situ

Ex Situ

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

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

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 69

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

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

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

No \_\_\_\_\_ 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 initial decommissioning and subsequent over-excavation activities conducted to date.

# 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 Source Mass Removal Report and SSI 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.

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: \$ 50000

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

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.

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. 11/28/2022

Proposed date of completion of Reclamation. 05/30/2026

## 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. 07/20/2022

Actual Spill or Release date, or date of discovery. 02/14/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/28/2022

Proposed site investigation commencement. 02/10/2025

Proposed completion of site investigation. 11/10/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/10/2025

Proposed date of completion of Remediation. 05/30/2026

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 completion of the December 2024 remedial excavation at the Watkins 12-02 flowline and necessity for additional supplemental site investigation (SSI) activities adjacent to the flowline. The SSI is tentatively scheduled for March 6 and March 7, 2025. The proposed site investigation will be completed following the approval of this form.

**OPERATOR COMMENT**

This Form 27 is being submitted to include the remedial excavation results for the former Watkins 12-02 flowline location. A proposal for a Supplemental Site Investigation (SSI) to vertically and horizontally delineate observed pH and SAR exceedances and to collect additional background samples to determine if pH and SAR are attributed to native soil conditions at the site is presented in the Site Investigation Report section of this Form 27. A comprehensive data packet summarizing the remedial excavation activities is attached to this Form 27, and a detailed summary of the completed remedial excavation is presented in the Remedial Action Plan sections and below.

A remedial excavation was conducted on December 9, 2024 to remove organic exceedances observed along the flowline during the flowline decommissioning at the FL01-K location. Additionally, eight background samples were collected to determine if inorganic exceedances encountered during the initial flowline decommissioning were attributed to native soil conditions at the site. Upon completion of the remedial excavation, analytical results indicated that the organic compound concentration in exceedance was removed from the FL01-K flowline location. Additionally, inorganic exceedances above background analytical results were observed in remedial excavation soil samples.

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH and SAR exceedances observed at sample locations (FS01@6', SS01@5', SS02@5', SS03@5', and SS04@5') during the remedial excavation of flowline sample location FL01-J@4' on 12/06/2023. Concurrently with the SSI, five additional background samples (BKG10 through BKG14) will be collected to determine if pH and SAR are attributed to native soil conditions at the site. Proposed SSI and soil boring maps are attached to this Form 27. Confirmation soil samples will be collected from the proposed boreholes and submitted for laboratory analysis of the full Table 915-1 analytical suite. The proposed SSI has been tentatively scheduled to be completed March 6 and March 7, 2025. The results of the SSI and background sampling will be submitted on a subsequent Form 27.

On April 19, 2023, ten background soil samples were collected adjacent to the flowline and analyzed for metals in soil per ECMC Table 915-1 and SAR. Background soil samples were collected from depths ranging between 4 to 8 feet below ground surface (ft bgs). On December 9, 2024, eight background soil samples were collected adjacent to the flowline and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR and boron, and were collected from depths ranging between 1 to 3 ft bgs. The maximum background concentration for pH, and SAR were observed to be 7.80 and 7.89, respectively. The maximum background concentration with a 1.25x multiplier applied for arsenic was calculated to be 3.39 mg/kg, respectively. All arsenic concentrations observed during the remedial excavations were below background levels.

Quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the additional 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: Brock Nelson \_\_\_\_\_

Title: Environmental Consultant \_\_\_\_\_

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

Email: Tas-Chevron-5@tasman-geo.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: 24990

**COA Type**

**Description**

0 COA	
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**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
404084939	ANALYTICAL RESULTS
404088542	SITE INVESTIGATION PLAN
404088600	SITE INVESTIGATION PLAN
404089069	SITE INVESTIGATION REPORT

Total Attach: 4 Files

**General Comments**

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)