

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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09/13/2024

Report taken by:

Chris Sanchez

## 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	Phone Numbers Phone: (970) 730-7281 Mobile: ( )
Address: 1099 18TH STREET SUITE 1500		
City: DENVER	State: CO Zip: 80202	
Contact Person: Dan Peterson	Email: RBUEUF27@chevron.com	

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 31536 Initial Form 27 Document #: 403455015

## 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: 331481	API #: _____	County Name: WELD
Facility Name: LF RANCH-64N63W 17NWNE	Latitude: 40.317540	Longitude: -104.459240	
	** correct Lat/Long if needed: Latitude: 40.317451	Longitude: -104.458955	
QtrQtr: NWNE	Sec: 17	Twp: 4N	Range: 63W Meridian: 6 Sensitive Area? Yes

## SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use Rangeland

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**

Pronghorn Winter Concentration  
Intermittent Riverine 0.24mi SE, Emergent Wetlands 0.17mi NW  
NA

**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	Field Screening and Lab Analysis, if Encountered
Yes	SOILS	Refer to Tables and Figures	Field Screening and 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 was conducted pertaining to the former LF Ranch 64N63W 17NWN facility and tank battery location.

**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 were collected from the base of the produced water vessel excavation (FS01@5') and the sidewall with the highest field screening concentration (SS04@2.5'), beneath the ground oil tanks (AST01@0.5' & AST02@0.5'), and at the risers for the flowline (SEP01-FL@3') and dumpline (SEP01-DL@3') at the separator. Additional field screening samples were collected from the meter house (MH01@0.5') and flare (Flare01@0.5'). 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, grab groundwater samples 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 screened all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling is required. A detailed summary of decommissioning activities, including an ECMC Tank Battery Closure Checklist, site photos, figures, and laboratory analytical results, is attached to Supplemental Form 27 # 403606123.

**SITE INVESTIGATION REPORT**

## **SAMPLE SUMMARY**

### **Soil**

Number of soil samples collected 21

Number of soil samples exceeding 915-1 21

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 0.378

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 1

### **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?

Fifteen background soil samples were collected from five discrete locations (BG01 through BG05) near the flowline and analyzed for arsenic. Background soil samples were collected from depths ranging between 0.5 to 5 feet below ground surface (ft bgs). The maximum background concentration with a 1.25x multiplier applied for arsenic was observed to be 2.40 mg/kg. The background levels for arsenic exceed all soil boring concentrations, with the exception of one arsenic concentration at AST01@0.5' (3.33 mg/kg).

☐ 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 collect additional background samples to determine if the arsenic concentration at AST01@0.5' can be attributed to native soil conditions at the site. Concurrent with the SSI, soils at the location of sample AST01@0.5' will be resampled to confirm the presence of elevated arsenic concentrations. 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.

No impacted material caused by oil and gas operations was identified at this time.

## **REMEDATION 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 Site Assessment was conducted on 5/28/24 to determine if elevated arsenic concentrations could be attributed to native soil conditions. Five soil borings (BG01 through BG05) were advanced to a depth of 5' into the native soils around the site. At each of the borings, soil samples were collected at intervals between 0.5 to 1, 2 to 3, and 4-5 ft bgs. Soil samples were analyzed for arsenic per the amended sampling plan that was approved under Supplemental Form 27 # 403606123. Groundwater was not encountered during this assessment.

An additional SSI will be completed to further assess the arsenic exceedance observed at AST01@0.5' during decommissioning. Sampling will be conducted in accordance with the attached proposed site investigation map, and proposed sampling plan outlined in the Site Investigation Report and Operator Comments sections of this 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 Site Investigation (SSI) Sample Summary & 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? 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.

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. 10/12/2023

Proposed date of completion of Reclamation. 12/11/2025

## 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. 07/19/2021

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

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/12/2023

Proposed site investigation commencement. 05/28/2024

Proposed completion of site investigation. 03/11/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/11/2025

Proposed date of completion of Remediation. 06/11/2025

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 SSI at the former LF Ranch 64N63W 17NWNE tank battery and necessity for additional SSI activities adjacent to the tank battery. The proposed site investigation will be completed following the approval of this form, landowner negotiations, and crew availability.

## **OPERATOR COMMENT**

This Form 27 is being submitted to include the SSI results for the former LF Ranch 64N63W 17NWNE tank battery location. A proposal to delineate the arsenic exceedances identified during decommissioning (soil samples AST01@0.5') is presented in the Site Investigation Report section of this Form 27

Fifteen background soil samples were collected from five discrete locations (BG01 through BG05) near the flowline and analyzed for arsenic. Background soil samples were collected from depths ranging between 0.5 to 5 feet below ground surface (ft bgs). The maximum background concentration with a 1.25x multiplier applied for arsenic was observed to be 2.40 mg/kg. The background levels for arsenic exceed all soil boring concentrations, with the exception of one arsenic concentration at AST01@0.5' (3.33 mg/kg).

Quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the supplemental site investigation 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: Allan Englehardt

Title: Environmental Consultant

Submit Date: 09/13/2024

Email: chevroneform@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: Chris Sanchez

Date: 12/20/2024

Remediation Project Number: 31536

### **COA Type**

### **Description**

	Operator will continue quarterly reporting until the site investigation is complete and Full Table 915-1 standards are met within the remediation area
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.

### **Att Doc Num**

### **Name**

403916647	FORM 27-SUPPLEMENTAL-SUBMITTED
403919924	SITE INVESTIGATION REPORT
403919984	SOIL SAMPLE LOCATION MAP

Total Attach: 3 Files

## **General Comments**

### **User Group**

### **Comment**

### **Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)