

State of Colorado  
Energy & Carbon Management Commission

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Document Number:

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Receive Date:

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

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 21781 Initial Form 27 Document #: 402865044

## 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: LOCATION	Facility ID: 331032	API #: _____	County Name: WELD
Facility Name: BEELER-64N67W 22NWNE	Latitude: 40.302782	Longitude: -104.874191	
** correct Lat/Long if needed: Latitude: 40.303480		Longitude: -104.873496	
QtrQtr: NWNE	Sec: 22	Twp: 4N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 481769	API #: _____	County Name: WELD
Facility Name: Beeler 22-12,13	Latitude: 40.303662	Longitude: -104.873344	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 22	Twp: 4N	Range: 67W Meridian: 6 Sensitive Area? Yes

## **SITE CONDITIONS**

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use Range 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**

High Priority Habitat - Aquatic Native Species Conservation Waters  
Freshwater Emergent Wetlands 0.03mi W, 0.06/0.12mi N, 0.11/0.13/0.15mi SW  
Riparian Forested Shrub 0.02mi N, 0.18mi W  
Freshwater Forested Shrub Wetland 0.11mi W  
Riverine 0.04/0.11mi N  
Residential Area 0.15mi N, 0.23/0.25mi W  
Farm Structures 0.08/0.09mi NW  
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
Yes	SOILS	~1,425 sq. ft.	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.

A site investigation will be conducted pursuant to COGCC Rule 911 at the BEELER T4N-R67W-S22 L02 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 produced water vessel(s) excavation, beneath the ground oil tank(s), and at the separator(s). Additionally, soil samples will be collected 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, where applicable. 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 COGCC Table 915-1, and EC, SAR, pH, and boron. All samples collected will be analyzed by a certified laboratory using approved COGCC laboratory analysis methods.

#### Proposed Groundwater Sampling

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

Groundwater was not encountered during the initial or supplemental site investigations. SB-7 was completed as a monitoring well to a total depth of 12 feet below the ground surface at which point the Geoprobe rig met refusal. Groundwater was not encountered in the soil boring and the SB-7 monitoring well did not produce water from it installation on 5/3/22 to its destruction during excavation on 1/13/2023.

#### 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 a PID, visual, and olfactory senses to determine if laboratory confirmation sampling was required. The ECMC Tank Battery and Produced Water Vessel Closure Checklists were utilized and filled out during the abandonment process. Additional site investigation is needed to confirm the presence or absence of arsenic and selenium left in situ following the excavation of impacted soil at the former PWV and SEP locations.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected 27

#### NA / ND

-- Highest concentration of TPH (mg/kg) 670

Highest concentration of SAR

Number of soil samples exceeding 915-1 22 -- 23.9

Was the areal and vertical extent of soil contamination delineated? Yes BTEX > 915-1 Yes

Approximate areal extent (square feet) 1425 Vertical Extent > 915-1 (in feet) 7

#### Groundwater

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? Yes Highest concentration of Toluene (µg/l)

Depth to groundwater (below ground surface, in feet) Highest concentration of Ethylbenzene (µg/l)

Number of groundwater monitoring wells installed Highest concentration of Xylene (µg/l)

Number of groundwater samples exceeding 915-1 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?

Eleven background samples were collected between January 2023 and September 2023 from areas not impacted by oil and gas development at similar depths and lithologies as confirmation samples collected at the Beeler location and analyzed for ECMC Table 915-1 metals and soil suitability for reclamation standards (pH, EC, SAR, and Boron). The maximum background concentrations for arsenic, barium, and selenium with a 1.25x multiplier applied were calculated to be 6.81 mg/kg, 204 mg/kg, and 0.615 mg/kg, respectively. The barium concentrations observed in source mass removal confirmation samples were below the 1.25x maximum background concentration.

☐ 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?

Elevated metals As and Se were observed in multiple locations in the Beeler Tank Battery PWV and SEP excavations. Soil will be resampled and analyzed for ECMC Table 915-1 metals at the B04@7.0', SW02@6.0', SE03@6.0', SE04@6.0', B01@7.0', NW01@6.0', NE01@6.0', and SE01@6.0' sample locations at the same depths where the elevated concentrations were observed following source removal. Noble will request an NFA be granted if the reanalyzed samples comply with the Table 915-1 concentration standards.

The Operator will evaluate remedial alternatives to address residual elevated metals concentrations if present following the proposed resampling event. Alternatives may include, and are not limited to collection of additional background samples to justify elevated metals concentrations and/or excavation of elevated residual metals not attributable to background concentrations.

### 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.

An estimated 360 cubic yards of impacted soil was removed from the former PWV and SEP releases area by excavation at the former Beeler 22-12, 13 tank battery. The impacted soil was disposed of at an approved landfill as non-hazardous waste in accordance with Rules 905 and 906. Copies of the waste manifests are 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 sources at the Beeler former PWV and SEP locations were excavated and confirmation soil samples were collected and analyzed for the full Table 915-1 suite of analytes. Groundwater was not encountered. The Operator is requesting the application of the Table 915-1 RSSLs given that a confining layer of fine grained, hard pan soil exists at the base of the excavations preventing communication with potential impacts and groundwater measured at approximately 40 below ground surface in the nearest down gradient well, a monitoring hole (Permit No. 45042-MH) 5,508 feet northeast of the Beeler excavation. Additionally, water was never observed in SB-7 in water has never been observed over the life span of this multi-year project in the 8.8 acre freshwater pond directly north of the former Beeler facility.

Data from the site investigation completed September 5, 2023 confirmed pH and SAR in the previously exceeding B02 7 Ft sample location is compliant with the ECMC Table 915-1 soil suitability reclamation standards. Further, resampled locations SE03 6 Ft and B02 (2) 7 Ft were observed to be in compliance with the ECMC Table 915-1 standards for metals with consideration of background concentrations.

Should metals concentrations (As and Se) > 915-1 standards remain following resampling of the locations noted in the above Site Investigation Plan alternative remedial actions will be evaluated. Water has never been observed over the life span of this multi-year project in the 8.8-acre freshwater pond directly north of the former Beeler facility. Additionally, groundwater was never encountered in SB-7 as referenced in the Site Investigation Plan.

## Soil Remediation Summary

<input type="checkbox"/> In Situ	<input checked="" type="checkbox"/> Ex Situ
_____ Bioremediation ( or enhanced bioremediation )	Yes _____ Excavate and offsite disposal
_____ Chemical oxidation	_____ If Yes: Estimated Volume (Cubic Yards) _____ 360
_____ 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

No _____	Bioremediation ( or enhanced bioremediation )
No _____	Chemical oxidation
No _____	Air sparge / Soil vapor extraction
No _____	Natural Attenuation
No _____	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.

On May 3, 2022 SB-7 was completed as a monitoring well to a total depth of 12 feet below the ground surface at which point the geoprobe rig met refusal. Groundwater was not encountered in the soil boring and the SB-7 monitoring well did not produce water prior to its destruction during excavation on 1/13/2023. Groundwater was not encountered during tank battery decommissioning, supplemental site investigation, or source mass removal 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 Supplemental F27: Timeline Update and Supplemental Site Investigation 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:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 360

E&P waste (solid) description hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: N. Weld Landfill, Ault, CO

Volume of E&P Waste (liquid) in barrels 0

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? Yes

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 COGCC 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. 10/31/2025

Proposed date of completion of Reclamation. 10/31/2027

## 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. 03/14/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/02/2022

Proposed site investigation commencement. 11/25/2021

Proposed completion of site investigation. 07/30/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/01/2022

Proposed date of completion of Remediation. 12/31/2024

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**

This Form 27 is being submitted to provide a timeline update and propose a supplemental site investigation at the former Beeler 22-12, 13 Tank Battery location.

The maximum background concentrations for arsenic, barium, and selenium with a 1.25x multiplier applied were calculated to be 6.81 mg/kg, 204 mg/kg, and 0.615 mg/kg, respectively. The barium concentrations observed in source mass removal confirmation samples were below the 1.25x maximum background concentration.

The Operator will complete the additional site investigation to determine if elevated arsenic and selenium are attributed to native soil conditions as outlined in this proposed Site Investigation Report workplan. Work is tentatively scheduled for 12/18/2024.

Copies of the original laboratory reports are attached. Secured versions of these reports have been requested and will be submitted along with the original lab reports on a supplemental Form 27.

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: Ethan Black

Title: Consultant

Submit Date:

Email: ethanb@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:

Date:

Remediation Project Number: 21781

### **COA Type**

### **Description**

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**

404025528	ANALYTICAL RESULTS
404025529	ANALYTICAL RESULTS
404025530	ANALYTICAL RESULTS
404032736	OTHER

Total Attach: 4 Files

## **General Comments**

### **User Group**

### **Comment**

### **Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)