

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404045333  
Receive Date:  
01/22/2025  
Report taken by:  
Krystal Heibel

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: danpeterson@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34914 Initial Form 27 Document #: 403713030

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: 427737	API #: _____	County Name: WELD
Facility Name: CASTOR PC LA 36-68HN	Latitude: 40.800950	Longitude: -103.821650	
	** correct Lat/Long if needed: Latitude: 40.801110	Longitude: -103.820774	
QtrQtr: NWNW	Sec: 36	Twtp: 10N	Range: 58W 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? Yes 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**

Pond 0.06/0.11mi NE, 0.09mi SE  
Potential PD Colony within 660ft  
No other potential receptors are located within 1/4 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	NA	Lab analysis if encountered
No	SOILS	NA	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 ECMC Rule 911 at the CASTOR PC T1N-R58W-S36 L01 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 produced water vessel(s) excavation, beneath the ground oil tank(s), and at the separator(s). 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, and 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 ):

Groundwater was not encountered during the facility decommissioning.

**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 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. A photolog is attached.

**SITE INVESTIGATION REPORT**

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 10  
Number of soil samples exceeding 915-1 10  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 1000

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 7.4  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 6

### 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?

Twenty background soil samples were collected from an area not impacted by oil and gas development at similar depths (0.5', 3', 5', and 6') and lithologies as confirmation soil samples collected at the location and analyzed for Table 915-1 metals and SSR constituents. Background soil sample analytical results were reported with elevated levels of arsenic, barium, lead, selenium, pH, specific conductance, and SAR.

Background Soil Sample Analysis (mg/kg)  
Arsenic: Max\*1.25 = 15.3  
Barium: Max\*1.25 = 543  
Lead: Max\*1.25 = 24.25  
Selenium: Max\*1.25 = 0.266  
pH: Max = 9.21  
SAR: Max = 16.7  
EC: Max = 7.38

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?

BKG01 and BKG02 appear to have been collected in areas previously disturbed by oil and gas activity. The Operator proposes to return to site and relocate and recollect the two samples from an area unimpacted by oil and gas activity.

## 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.

No impacted soil was discovered during the Castor PC T1N-R58W-S36 L01 Tank Battery decommissioning. Based on decommissioning site investigation activities and laboratory analytical results of confirmation soil samples collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and at the risers for the flowline(s) and dump line (s) of any separator(s). removal of soil is not needed. The material excavated during tank battery equipment removal activities was used as backfill for the excavations.

## REMEDICATION 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 produced water vessel(s) excavation, beneath the ground oil tank(s), and at the risers for the flowline(s) and dump line (s) of any separator(s) 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 ECMC Facility ID # \_\_\_\_\_

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

\_\_\_\_\_ 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.

Groundwater was not encountered.

# 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: Castor PC T1N-R58W-S36 L01 Tank Battery Closure 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.

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

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 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. 03/31/2025

Proposed date of completion of Reclamation. 03/31/2027

## 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. 03/28/2024

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

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/29/2024

Proposed site investigation commencement. 05/15/2024

Proposed completion of site investigation. 07/31/2025

### 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:

Updated Date of Initial Actions described in Site Investigation Plan and Proposed Completion Date of Site Investigation based on the date that the site investigation commenced and will be completed based on the proposed additional background sampling.

**OPERATOR COMMENT**

This form serves to comply with the Rule 913.e. reporting schedule. Pending ECMC approval, the Operator will schedule and complete the additional site investigation as outlined in this proposed Site Investigation Report workplan. Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria has been achieved.

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: 01/22/2025

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: Krystal Heibel

Date: 05/23/2025

Remediation Project Number: 34914

**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**

404045333	FORM 27-SUPPLEMENTAL-SUBMITTED
404045379	SITE INVESTIGATION REPORT
404045390	ANALYTICAL RESULTS
404045391	ANALYTICAL RESULTS
404045392	ANALYTICAL RESULTS

Total Attach: 5 Files

**General Comments****User Group****Comment****Comment Date**

Agency	If a spill/release of produced fluids or E&P waste causes an impact from inorganic constituents to soil, the operator should perform sampling and analysis to fully delineate the lateral and vertical extent of those impacts.	05/23/2025
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Total: 1 comment(s)