

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404450979

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 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: <u>NOBLE ENERGY INC</u>              | Operator No: <u>100322</u>         | <b>Phone Numbers</b>         |
| Address: <u>1099 18TH STREET SUITE 1500</u>            |                                    | Phone: <u>(970) 304-5000</u> |
| City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u> |                                    | Mobile: <u>( )</u>           |
| Contact Person: <u>Dan Peterson</u>                    | Email: <u>RBUEUF27@chevron.com</u> |                              |

**PROJECT, PURPOSE & SITE INFORMATION**

**PROJECT INFORMATION**

Remediation Project #: 27791 Initial Form 27 Document #: 403326790

**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: <u>LOCATION</u>          | Facility ID: <u>447063</u>                                | API #: _____                  | County Name: <u>WELD</u>                                        |
| Facility Name: <u>DINNEL C26-18,21D</u> | Latitude: <u>40.290256</u>                                | Longitude: <u>-104.518347</u> |                                                                 |
|                                         | ** correct Lat/Long if needed: Latitude: <u>40.290255</u> | Longitude: <u>-104.518347</u> |                                                                 |
| QtrQtr: <u>NENW</u>                     | Sec: <u>26</u>                                            | Twps: <u>4N</u>               | Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u> |

**SITE CONDITIONS**

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

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**

Riverine Wetlands 175ft WNW  
Palustrine Wetland 0.23mi S  
Holding Pond 0.05mi NNE, 0.05mi NE, 0.06mi ENE  
Freshwater Pond 0.21mi SE  
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                   |
|--------------|----------------|-----------------------------|----------------------------------|
| UNDETERMINED | GROUNDWATER    | NA                          | 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.

A site investigation was conducted pursuant to ECMC Rule 911 at the DINNEL T4N-R64W-S26 L03 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 risers for the flowline(s) and dumphine(s) of any 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 ):

If groundwater is encountered during additional site assessment activities, a grab groundwater sample will be collected and analyzed for all organic compounds and inorganic parameters per 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 was required. The ECMC Tank Battery and Produced Water Vessel Closure Checklists were utilized and filled out during the abandonment process. A photolog was attached.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 6  
 Number of soil samples exceeding 915-1 4  
 Was the areal and vertical extent of soil contamination delineated? No  
 Approximate areal extent (square feet) 400

### NA / ND

-- Highest concentration of TPH (mg/kg) 66  
 -- Highest concentration of SAR 1.7  
 BTEX > 915-1 No  
 Vertical Extent > 915-1 (in feet) 5

### 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?

Nine background soil samples were collected from an area not impacted by oil and gas development and at similar depths 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 SAR, Arsenic (As), Barium (Ba), Cadmium (Cd), Lead (Pb) and Selenium (Se).

Background Soil Sample Analysis (mg/kg)  
 SAR @ 3ft: Max = 8.96  
 SAR @ 5ft: Max = 0.656  
 As @ 3ft: Max\*1.25 = 1.15  
 As @ 5ft: Max\*1.25 = 0.866  
 Ba @ 3ft: Max\*1.25 = 174  
 Ba @ 5ft: Max\*1.25 = 144  
 Cd @ 3ft: Max\*1.25 = 0.448  
 Cd @ 5ft: Max\*1.25 = 0.405  
 Pb @ 3ft: Max\*1.25 = 16.5  
 Pb @ 5ft: Max\*1.25 = 30.0  
 Se @ 3ft: Max\*1.25 = 0.330  
 Se @ 5ft: Max\*1.25 = <0.260

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?

Confirmation samples AST N Cen. Surf, AST S Cen. Surf, DL FLOOR 3FT, FL Combi Riser 3FT, PWV N Floor 5 Ft, and PWV S Floor 5 Ft at the former Dinnel C26-21D, 18 Tank Battery were submitted out of temperature preservation range. Soil will be re-sampled and analyzed for the full Table 915-1 analyte suite at the AST N Cen. Surf, AST S Cen. Surf, DL FLOOR 3FT, FL Combi Riser 3FT, PWV N Floor 5 Ft, and PWV S Floor 5 Ft sample locations at the same depth where the initial confirmation samples were collected in order to confirm initial analytical results. Noble will request a No Further Action (NFA) be granted if the reanalyzed samples comply with the Table 915-1 concentration standard. Background samples will be used to justify elevated concentrations.

Additionally, the former eastern separator was removed prior to the decommissioning event activities on August 3, 2023. The operator will return to the site and collect two samples at the former separator flowline and dumpline tie-in points of the removed eastern separator as approved under the initial site workplan (Document Number 403326790). Soil will be analyzed for the full Table 915-1 analyte suite. Noble will request a No Further Action (NFA) be granted if the reanalyzed samples comply with the Table 915-1 concentration standard. Background samples will be used to justify elevated concentrations.

In addition to previously collected background samples, additional local samples will be collected to further characterize native soils.

Refer to the attached Site Investigation Plan for proposed sample, resample, and additional local background samples.

# 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 source was generated

## 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.

NA

## 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.

If groundwater is encountered during additional site assessment activities, a grab groundwater sample will be collected and analyzed for all organic compounds and inorganic parameters per Table 915-1.

# 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 Timeline Update

## 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 MWZZ316714 and MWZX316724) 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? 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 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. 07/18/2026

Proposed date of completion of Reclamation. 07/18/2028

## 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. 01/25/2023

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

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/03/2023

Proposed site investigation commencement. 03/02/2023

Proposed completion of site investigation. 03/31/2026

### 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:

The implementation schedule has been changed due to the necessity for supplemental site investigation activities adjacent to the former Dinnel C26-21D, 18 tank battery. The proposed site investigation will be completed following the approval of document number 404227228.

**OPERATOR COMMENT**

This form serves to comply with the Rule 913.e. reporting schedule. The review status of the previously proposed workplan (Doc. # 404227228) is "In Process" on Web Forms. Pending ECMC EPS form review/approval, the Operator will complete the additional site investigation and remediation as outlined on Doc. # 404227228 and this F27. 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: Jeff Griggs

Title: Consultant

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

Email: jeffg@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: 27791

**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**

|  |  |
|--|--|
|  |  |
|--|--|

Total Attach: 0 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

|  |  |                     |
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|  |  | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)