

State of Colorado  
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



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404189495  
Receive Date:  
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Report taken by:  
Kilian Collins

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 #: 31492 Initial Form 27 Document #: 403523340

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: 329983	API #: _____	County Name: WELD
Facility Name: STATE C-64N64W 36NWNW	Latitude: 40.272840	Longitude: -104.504880	
** correct Lat/Long if needed: Latitude: 40.273258		Longitude: -104.505520	
QtrQtr: NWNW	Sec: 36	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 487552	API #: _____	County Name: WELD
Facility Name: State 36-0514	Latitude: 40.273334	Longitude: -104.505766	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 36	Twp: 4N	Range: 64W 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? No \_\_\_\_\_

Is groundwater less than 20 feet below ground surface? No \_\_\_\_\_

**Other Potential Receptors within 1/4 mile**

NA

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <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	Laboratory analysis and field screening, if encountered
Yes	SOILS	Refer to ECMC Document #403639819	Laboratory 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.

A site investigation was conducted pursuant to ECMC Rule 911 during decommissioning activities at the AVA ST 4N-R64W-S36 L04 (State 36-0514) Facility and Tank Battery location.

On 12/04/2023, the tank battery was decommissioned in accordance with ECMC rules. Laboratory soil samples were collected from the partially-buried produced water vessel excavations (FS01@5' & FS02@5') and field screening samples were taken from the N, S, E, & W sidewalls (SS01 - SS04 & SS05 - SS08, respectively). The screening sample with the highest PID from each excavation (SS03@2.5' & SS05@2.5', respectively) were collected for laboratory analysis. Lab samples were also collected beneath the above ground storage tank (AST01@0.5') and beneath the the separator risers for the dumplines (SEP01-DL1@3' & SEP01-DL2@2.5') and the flowline (SEP01-FL@3.5'). Additionally, field screening samples were collected beneath the flare (Flare01@0.5').

The additional confirmation and field screening sample locations indicated on the initial proposed sampling plan (attached to approved ECMC document #403523340) were not observed or verified by on-site field personnel and were therefore excluded from the sampling plan.

## 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 ):

Eight (8) grab confirmation soil samples were collected from the produced water vessels' excavation areas, beneath the above-ground oil tank, and at the risers for the flowline and dumplines of the separator. 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, EC, SAR, pH, boron, and metals in soil per ECMC Table 915-1. 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 will be collected and analyzed for all organic and inorganic compounds in groundwater 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 was required. The ECMC Tank Battery and Produced Water Vessel Closure Checklists were utilized and filled out during the abandonment process. A detailed summary of decommissioning activities, including the ECMC Tank Battery and Produced Water Vessel Closure Checklists, site photos, figures, and laboratory analytical results, was attached to a previous Form 27 (ECMC Document #403639819).

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 5  
Number of soil samples exceeding 915-1 5  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 500

### NA / ND

-- Highest concentration of TPH (mg/kg) 310  
-- Highest concentration of SAR 12.9  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 14

### 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?

Two background soil samples were collected from one distinct location (BG01) on 12/4/2023 and analyzed for metals in soil per ECMC Table 915-1, and ten background samples from five distinct locations (BKG02 through BKG06) were collected on 6/24/2024 and analyzed for arsenic in soil per ECMC Table 915-1 and pH. Background soil samples were collected from depths ranging between 2 to 5 feet below ground surface (ft bgs) and the lithology between the site and background locations were observed to be well graded sands.

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, SAR, and boron values outside the soil suitability parameters observed at sample locations AST01@0.5', FS01@14', SS01@13', SS02@13', SS03@13', and SS04@13' during initial decommissioning and the June 2024 remedial excavation. A proposed soil boring location map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Additionally, excavation confirmation soil sample SS01@13' will be recollected to verify the boron exceedance observed at that location. Concurrently with the SSI, additional background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR, and boron. 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 TPH, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, naphthalene, 1-methylnaphthalene (M), and 2-M exceedances identified at FS01@5' were successfully removed during the June 2024 remedial excavation. The excavation extent measured approximately 20 feet (ft) long by 18-ft wide, and reached terminal depths of 14-ft below ground surface (bgs). A total of approximately 190 cubic yards (CY) of soil was transported via Noble manifest to the Waste Management Buffalo Ridge landfill for disposal. The analytical tables, figures, and laboratory reports from the samples collected during the remedial excavation and background sampling activities is attached to this Form 27. Based on analytical results, all soil impacted with organic compounds was successfully removed from the remediation area. Inorganic compound exceedances (pH, SAR, and boron) and arsenic were observed the the confirmation soil samples (SS01@13'-SS04@13' and FS01@14') above ECMC Table 915-1 standards and existing background levels.

### 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.

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the inorganic compound exceedances observed at sample locations AST01@0.5', FS01@14', SS01@13', SS02@13', SS03@13', and SS04@13' during initial decommissioning and the June 2024 remedial excavation. A proposed soil boring location map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Additionally, excavation confirmation soil sample SS01@13' will be recollected to verify the boron exceedance observed at that location. Concurrently with the SSI, additional background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR, and boron. 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.

**Soil Remediation Summary**

In Situ

Ex Situ

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

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

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

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 190

\_\_\_\_\_ 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**

\_\_\_\_\_ 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 or remedial excavation 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 Source Mass Removal Sample Summary 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 (policies 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? 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 \_\_\_\_\_ 190

E&P waste (solid) description Soil

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: Waste Management Buffalo Ridge Landfill

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? \_\_\_\_\_

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. 12/04/2023

Proposed date of completion of Reclamation. 06/30/2027

## 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. 08/31/2023

Actual Spill or Release date, or date of discovery. 12/28/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/04/2023

Proposed site investigation commencement. 05/05/2025

Proposed completion of site investigation. 11/05/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/05/2025

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

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 June 2024 remedial excavation at the State 36-0514 tank battery location and necessity for additional supplemental site investigation activities adjacent to the tank battery. The proposed site investigation will be completed following the approval of this form.

## OPERATOR COMMENT

This Form 27 is being submitted to include a summary of the June 2024 remedial excavation and background sampling and propose additional site investigation activities at the State 36-0514 Tank Battery (REM #31492).

Source removal activities were conducted in response to the analytical results from initial decommissioning activities conducted on December 4, 2023 indicating TPH, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, naphthalene, 1-M, and 2-M in exceedance of the ECMC regulatory standards at soil sample location FS01@5'.

The organic compound exceedances identified at FS01@5' were successfully removed during the June 2024 remedial excavation. A total of approximately 190 cubic yards (CY) of soil was transported via Noble waste manifest to the Waste Management Buffalo Ridge landfill for disposal. The analytical tables, figures, and laboratory reports from the samples collected during the remedial excavation and background sampling activities is attached to this Form 27. Based on analytical results, all soil impacted with organic compounds was successfully removed from the remediation area. Inorganic compound exceedances (pH, SAR, and boron) and arsenic were observed the the confirmation soil samples (SS01@13'-SS04@13' and FS01@14') above ECMC Table 915-1 standards and existing background levels.

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the inorganic compound values outside the soil suitability parameters observed at sample locations AST01@0.5', FS01@14', SS01@13', SS02@13', SS03@13', and SS04@13' during initial decommissioning and the June 2024 remedial excavation. A proposed soil boring location map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Additionally, excavation confirmation soil sample SS01@13' will be recollected to verify the boron exceedance observed at that location. Concurrently with the SSI, additional background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR, and boron.

In response to ECMC Form 27 Comment dated February 17, 2025 on denied Document (#403978898), Operator is submitting a replacement Form 27. Based on currently available data, this project is not affected by data integrity irregularities and is not associated with Operator's data integrity review process and its Rule 525.e. Voluntary Disclosure. As part of its data integrity review process, Operator requested the lab protect the laboratory analytical report from subsequent unauthorized modification by anyone outside the lab, which resulted in the lab reissuing the original report with additional protections (Reissued Report). The Reissued Report was received directly from the lab on April 2, 2025, which includes the application of a Digital ID/Verified Certification (lock) to support reissuance. The metadata associated with this Reissued Report also includes the lab representative's name, the date and time the laboratory reissued the report, and an explanation for the report reissuance. The Reissued Report is attached to this submission.

In the event additional responsive information is received or discovered that would suggest this project should be incorporated into the ongoing data integrity review process associated with Operator's Rule 525.e. Voluntary Disclosure, Operator will update and/or amend the statements in this submission and provide any new or revised data or other information responsive to ECMC's general comments responding to Operator's Form 27 submission found in Document (#403978898).

Pursuant to Rule 913.e, 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: Michael Liston

Title: Environmental Consultant

Submit Date: 05/06/2025

Email: Tas-chevron-3@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: Kilian Collins

Date: 08/04/2025

Remediation Project Number: 31492

### COA Type

### Description

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

404189495	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404189874	LABORATORY ANALYTICAL REPORT
404189875	LABORATORY ANALYTICAL REPORT
404189888	SITE INVESTIGATION PLAN
404190399	REMEDATION PROGRESS REPORT
404303886	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	ECMC acknowledges receipt of secured and validated laboratory data.	08/04/2025

Total: 1 comment(s)