

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404334905

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 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 #: 23764 Initial Form 27 Document #: 403065255

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: 427188	API #: _____	County Name: WELD
Facility Name: BALL RANCH AC15-03 TANK	Latitude: 40.577720	Longitude: -104.429600	
** correct Lat/Long if needed: Latitude: 40.577687		Longitude: -104.430380	
QtrQtr: NWNW	Sec: 15	Twp: 7N	Range: 63W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 483162	API #: _____	County Name: WELD
Facility Name: Ball Ranch AC15-65HN Tank Battery	Latitude: 40.577753	Longitude: -104.430332	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 15	Twp: 7N	Range: 63W Meridian: 6 Sensitive Area? Yes

## **SITE CONDITIONS**

General soil type - USCS Classifications SW \_\_\_\_\_

Most Sensitive Adjacent Land Use Grassland \_\_\_\_\_

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**

High Priority Habitat - Pronghorn Winter Concentration  
No other potential receptors are located within 1/4 mile of the Site.  
Above distances are approximations.

# 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	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 BALL RANCH T7N-R63W-S15 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). 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 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 was attached.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected     11	ND     Highest concentration of TPH (mg/kg) _____

Number of soil samples exceeding 915-1 4 -- Highest concentration of SAR 2.25

Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 No

Approximate areal extent (square feet) 625 Vertical Extent > 915-1 (in feet) 8

**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?

Five 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 Arsenic (As), Barium (Ba), Lead (Pb) and Selenium (Se)

Background Soil Sample Analysis (mg/kg)  
As @ 8ft: Max\*1.25 = 3.63  
As @ 9ft: Max \*1.25 = 2.81  
Ba @ 8ft: Max\*1.25 = 139  
Ba @ 9ft: Max \*1.25 = 42.3  
Pb @ 8ft: Max\*1.25 = 10.5  
Pb @ 9ft: Max \*1.25 = 17.4  
Se @ 8ft: Max\*1.25 = 1.48  
Se @ 9ft: Max \*1.25 = 0.643

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?

Metals were inadvertently omitted from the initial soil sampling and analysis conducted for the Ball Ranch AC15-65HN Tank Battery site. To ensure compliance with the full suite of soil concentration standards specified in Table 915-1 of the ECMC regulations, the Operator proposes to resample soil sample locations AST01 @1.5', AST02@1', AST03@1.5', AST04@1', SEP01@3', and SEP02@3'. These samples were originally collected during the September 21, 2022, tank battery decommissioning sampling event. Each resampled location will be analyzed for the complete suite of Table 915-1 soil constituents, including metals, to ensure that all potential impacts are adequately assessed and addressed in accordance with ECMC requirements. Background samples will be used to justify any elevated concentrations.

Elevated inorganics and metals were observed in the Ball Ranch PWV excavation sidewalls. Soil will be resampled and analyzed for the full suite of Table 915-1 constituents in the N, E, S, and W Wall sample locations at the same depth where the initial elevated concentrations were observed. Noble will request an NFA be granted if the reanalyzed samples comply with the Table 915-1 concentration standards. Background samples will be used to justify any elevated concentrations.

Alternatively, if the sample results exceed the Table 915-1 standards and cannot be attributed to native soil conditions via background soil characterization a minimum of five additional samples will be collected to delineate the magnitude and extent of elevated constituents.

In addition, five new local background soil samples will be collected from areas not impacted by oil and gas development. These samples will be taken at similar depths and within comparable lithologies as the confirmation samples collected at the site.

Please refer to the attached Site Investigation Plan for the proposed resample and additional local background sample locations..

**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 organic compound exceedances observed at sample location PWVB01@8' were removed through a remedial excavation. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents.

## 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.

Laboratory analytical results indicated that a historical release had occurred at the location of soil sample PWVB01@8', which was reported as a historic release under Form 19, Document Number 403189572. On May 19, 2023, a site investigation was conducted to delineate the magnitude and extent of impacts at the PWVB01@8' sample location. The proposed excavation extent measured approximately 20 feet by 20 feet to a depth of 9.0 feet. Groundwater was not encountered during the site investigation activities. Refer to Document Number 403697567 for additional details.

Remedial excavation of impacted soil was conducted and completed on October 4, 2024, to address contamination identified at this location. Following excavation, confirmation soil samples were collected and analyzed for the constituents listed in ECMC Table 915-1, including both organic compounds and soil suitability for reclamation parameters. Analyses included Total Petroleum Hydrocarbons (TPH), BTEX, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Naphthalene, Polycyclic Aromatic Hydrocarbons (PAHs), pH, Sodium Adsorption Ratio (SAR), Electrical Conductivity (EC), and Boron. Samples were also analyzed for ECMC Table 915-1 metals. Groundwater was not encountered during remedial excavation activities. Additional details are provided in the attached documentation.

For further information regarding elevated inorganic and metal concentrations observed during the remedial excavation, please refer to the Site Investigation Report and associated work plan for proposed resolutions.

## Soil Remediation Summary

In Situ

Ex Situ

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

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

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 308

\_\_\_\_\_ 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.

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? 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 308

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 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. 10/31/2025

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. 10/06/2022

Actual Spill or Release date, or date of discovery. 10/05/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/21/2022

Proposed site investigation commencement. 06/15/2022

Proposed completion of site investigation. 12/31/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/30/2023

Proposed date of completion of Remediation. 10/04/2024

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 serves to comply with the Rule 913.e. reporting schedule for the Ball Ranch AC 15-65HN Tank Battery (REM # 23764). The Operator will complete the additional site investigation as outlined in this proposed Site Investigation Report workplan prior to the Proposed completion of site investigation date detailed in the Implementation schedule. 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.

COA Document Number 404226134 Addressment:

COA: "Operator shall provide justification for use of Residential SSL including but not limited to depth to groundwater and the local lithology."

Response: At this time the Operator is not seeking the usage of RSSLs for this project site.

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: 23764

**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**

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

Total: 0 comment(s)