

State of Colorado
Energy & Carbon Management Commission

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404274931
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09/15/2025

Report taken by:
Nick Cholas

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: 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 & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 30204 Initial Form 27 Document #: 403437986

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: _____	Facility ID: _____	API #: _____	County Name: _____
Facility Name: _____	Latitude: _____	Longitude: _____	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: _____	Sec: _____	Twp: _____	Range: _____
		Meridian: _____	Sensitive Area? _____

SITE CONDITIONS

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

Emergent Wetlands 10ft W, 70ft SW, Intermittent Riverine wetlands 0.07mi SE (Union Ditch), 0.13mi SE
In the event that operations encroach upon the wetland, the US Army Corp of Engineers will be contacted regarding compliance with Sections 401 and 404 of the Clean Water Act. All communications/permits obtained will be submitted to the ECMC via Form 4 Sundry.
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
- 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	Further Site Investigation Required	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 MARKUS T5N-R65W-S28 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 risers for the flowline(s) and dumphine(s) of any separator(s). 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, and EC, SAR, pH, metals, 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 the site investigation a grab groundwater sample will be collected and analyzed for full Table 915-1 organic and inorganic constituents in groundwater (Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS).

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 along the flowline and at the wellhead and separator areas 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 applicable ECMC Closure Checklists were utilized and filled out during the abandonment process.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 4
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) 100
-- Highest concentration of SAR 0.931
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?

Fifteen 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 pH, SAR, Arsenic (As), Barium (Ba), Cadmium (Cd), Lead (Pb) and Selenium (Se)

Background Soil Sample Analysis (mg/kg)

pH @ 0.5ft: Max = 9.16
pH @ 4ft: Max = 8.86
pH @ 5ft: Max = 8.95
As @ 0.5ft: Max*1.25 = 4.61
As @ 4ft: Max*1.25 = 3.63
As @ 5ft: Max*1.25 = 3.04
Ba @ 0.5ft: Max*1.25 = 161
Ba @ 4ft: Max*1.25 = 94.5
Ba @ 5ft: Max*1.25 = 110
Cd @ 0.5ft: Max*1.25 = 0.614
Cd @ 4ft: Max*1.25 = <0.200
Cd @ 5ft: Max*1.25 = <0.200
Pb @ 0.5ft: Max*1.25 = 21.3
Pb @ 4ft: Max*1.25 = 7.71
Pb @ 5ft: Max*1.25 = 7.08
Se @ 0.5ft: Max*1.25 = 0.674
Se @ 4ft: Max*1.25 = 2.01
Se @ 5ft: Max*1.25 = 1.69

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?

Before excavation of impacted soil, a minimum of five soil borings will be installed to delineate the vertical and lateral extent of soil impacts at the location. Confirmation soil samples will be collected and analyzed for the full Table 915-1 analyte suite. The sample locations are displayed on pg. 8 of the attached on document number 403850750.

If groundwater is encountered, the soil boring(s) will be improved with temporary PVC monitoring wells and sampled for Table 915-1 organic and inorganic constituents in groundwater.

If groundwater impacts are observed, an NFA will be requested once four consecutive quarters of groundwater sampling have been completed and reported at the location with concentrations of Table 915-1 constituents below regulatory limits. As needed, soil and/or groundwater remediation plans will be developed and submitted to ECOM in a supplemental Form 27.

Should no additional active remediation be required following source removal at the location, a no further action (NFA) determination will be requested within 90 days following laboratory confirmation of the removal of impacted soils with respect to the applicable Table 915-1 screening levels at the site.

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.

The organic compound exceedances observed at sample locations SEP01@5.0' and PWVB01@5.0' will be removed through a remedial excavation. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents.

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.

Laboratory analytical results indicated a historical release had occurred at the location of soil samples SEP01@5.0' and PWVB01@5.0' and was reported as a historic release in Form 19 document numbers 403851537 and 403851564. The source will be excavated and confirmation soil samples will be collected and analyzed for the full Table 915-1 suite of analytes.

If groundwater is encountered during the excavation of impacted soil, a groundwater sample will be collected for Table 915-1 organic and inorganic constituents in groundwater (Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS). Should no additional active remediation be required following source removal at the location, a no further action (NFA) determination will be requested within 90 days following laboratory confirmation of the removal of impacted soils with respect to the applicable Table 915-1 screening levels at the site.

If groundwater impacts are observed, an NFA will be requested once four consecutive quarters of groundwater sampling have been completed and reported at the location with concentrations of Table 915-1 constituents below regulatory limits. As needed, soil and/or groundwater remediation plans will be developed and submitted to ECMC in a supplemental Form 27.

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

_____ 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 the soil boring(s) will be improved with temporary PVC monitoring wells and sampled for full Table 915-1 constituents in groundwater. If groundwater impacts are observed, an NFA will be requested once four consecutive quarters of groundwater sampling have been completed and reported at the location with concentrations of Table 915-1 constituents below regulatory limits.

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. 10/23/2025

Proposed date of completion of Reclamation. 06/30/2028

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. 04/18/2023

Actual Spill or Release date, or date of discovery. 07/10/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/10/2024

Proposed site investigation commencement. 11/23/2024

Proposed completion of site investigation. 12/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/31/2025

Proposed date of completion of Remediation. 06/30/2026

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 operator is requesting additional time to commence supplemental site investigation activities. Supplemental site investigation activities will commence on or before the date specified in the "Proposed completion of site investigation" section.

OPERATOR COMMENT

This form serves to comply with the Rule 913.e. reporting schedule. The review status of the previously proposed workplan (Doc. # 404162338) 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. # 404162338 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.

In response to the ECMC Environmental User Group Comment which initially returned this form to draft: The Operator reference the incorrect document number in the "Other Investigation Information" section of this form the Operator updated this form with the correct document number (403850750).

The Operator completed the additional site investigation background sampling as outlined in this proposed Site Investigation Report workplan prior to the Proposed completion of site investigation date detailed in the Implementation schedule on 7/21/2025. Lab data was received on 8/27/2027 and is currently being reviewed and compiled into a report which will be submitted on the next form submittal. 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: 09/15/2025

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: _____ Date: _____

Remediation Project Number: 30204

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

404274931	FORM 27-SUPPLEMENTAL-SUBMITTED
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Total Attach: 1 Files

General Comments

User Group

Comment

Comment Date

Environmental	<p>ECMC has denied this form without technical review as Operator has provided no analytical or site investigation data showing progress of remediation of impacts documented at this location.</p> <p>Per Rule 912.a.(1-2): Immediately upon discovering any Spills or Releases of E&P Waste, produced Fluids, or unauthorized Releases of natural gas that meet the criteria of Rules 912.b.(1).H, I, or J, regardless of size or volume, Operators will control and contain the Spill or Release to protect and minimize adverse impacts to public health, safety, welfare, the environment, and wildlife resources. Operators will investigate, clean up, and document impacts resulting from Spills and Releases as soon as the impacts are discovered. Operator shall not delay execution of remedial or investigative actions while waiting for ECMC approval and should request expedited review if necessary.</p> <p>Operator shall conduct work in compliance with previously approved workplans and the 900 Series Rules. In accordanc</p>	10/27/2025
Environmental	<p>Operator states: "The sample locations are displayed on pg. 8 of the attached of document number 404063199."</p> <p>This Form 27 (Doc#404274931) has no attachments.</p>	08/14/2025

Total: 2 comment(s)