FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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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 INFORMATON

Name of Operator: NOBLE ENERGY INC Operator No: 100322
Address: 1099 18TH STREET SUITE 1500
City: DENVER State: CO Zip: 80202
Contact Person: Dan Peterson Email: RBUEUF27@chevron.com

Phone Numbers
Phone: (970) 730-7281
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 26951 Initial Form 27 Document #: 403293700

PURPOSE INFORMATION

- [ ] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [X] Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- [X] 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.
- [X] 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: WELL Facility ID: API #: 123-15226 County Name: WELD
Facility Name: HOWELL 32-23 Latitude: 40.270910 Longitude: -104.581434
** correct Lat/Long if needed: Latitude: 40.270889 Longitude: -104.581409
QtrQtr: SWNW Sec: 32 Twp: 4N Range: 64W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION Facility ID: 327842 API #: County Name: WELD
Facility Name: HOWELL-64N64W 32SWNW Latitude: 40.270910 Longitude: -104.581434
** correct Lat/Long if needed: Latitude: 40.270870 Longitude: -104.581739
QtrQtr: SWNW Sec: 32 Twp: 4N Range: 64W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 484839 API #: County Name: WELD

Facility Name: Howell 32-23 Nelson 32-25 Tank Batt Latitude: 40.271120 Longitude: -104.581370

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: SWNW Sec: 32 Twp: 4N Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

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

Riverine 0.03mi SW
Freshwater Emergent Wetland 0.02mi SE, 0.11mi NE
Residential 0.10mi NW
Farm Structures 0.13mi NW

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
  - [X] Produced Water
  - [X] Oil
  - [X] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [ ] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [ ] Other (as described by EPA) _____
- [ ] **Non-E&P Waste** _____

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	NA	Not encountered
Yes	SOILS	TBD	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.

Pursuant to ECMC Rule 911 a site investigation was conducted pertaining to the HOWELL 32-23 wellhead cut and cap and flowline removal. Approximately 92' of flowline was removed. The wellhead was cut and capped per ECMC rules.

A site investigation was conducted pursuant to ECMC Rule 911 at the HOWELL 32-23/NELSON 32-25 Tank Battery location. A historical release was identified at the tank battery based on laboratory analytical results exceeding ECMC Table 915-1 regulatory limits.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

Thirteen (13) grab soil sample were collected at the wellhead excavation (1), the flowline terminuses at the wellhead and separator (2), the produced water vessel excavation (5), beneath the ground oil tank (1), and at the risers for the flowlines (2) and dumplines (2) of the separators. 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, EC, SAR, pH, and boron. Six (6) waste characterization samples for Table 915-1 metals was also collected. All samples collected were analyzed by a certified laboratory using approved ECMC laboratory analysis methods.

Proposed Groundwater Sampling

[X] Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

If groundwater is observed during subsequent assessment activities, monitoring wells will be completed and samples will be collected for BTEX, naphthalene, TMBs, 1-methylnaphthalene, 2-methylnaphthalene, and inorganic compounds 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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil **NA / ND**

Number of soil samples collected 15 -- Highest concentration of TPH (mg/kg) 728.5

Number of soil samples exceeeding 915-1 8 -- Highest concentration of SAR 7.93

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

Approximate areal extent (square feet) 321 Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? No 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?

A background sample was collected from similar lithologic soil near the wellhead for pH and and SAR analysis. A second background sample was collected from similar lithologic soil near the tank battery for EC and ECMC Table 915-1 metals (sans Cr VI) analysis.

Additional background samples for pH and SAR analysis will be collected from similar lithologic soil near the wellhead. Additional background samples for EC and arsenic analysis will be collected from similar lithologic soil near the tank battery.

☐ 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?

The source identified at the former water vault and separator locations will be delineated through an environmental site assessment. Noble proposes an amended Table 915-1 analytical plan to include TPH C6-36, ECMC Table 915-1 organics, and arsenic. Additional background samples for arsenic will also be collected. If groundwater is observed during assessment activities, monitoring wells will be completed and samples will be collected for BTEX, naphthalene, TMBs, 1-methylnaphthalene, 2-methylnaphthalene, and inorganic compounds per ECMC Table 9151.

The residual pH and SAR identified at the former wellhead will be delineated through an environmental site assessment. Additional background samples for pH and SAR will also be collected.

The residual EC identified at the former production tank footprint will be delineated through an environmental site assessment. Additional background samples for EC will also be collected.

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 source identified at the former water vault and separator locations will be delineated through an environmental site assessment. Noble proposes an amended Table 915-1 analytical plan to include TPH C6-36, ECMC Table 915-1 organics, and arsenic. Additional background samples for arsenic will also be collected. If groundwater is observed during assessment activities, monitoring wells will be completed and samples will be collected for BTEX, naphthalene, TMBs, 1-methylnaphthalene, 2-methylnaphthalene, and inorganic compounds per ECMC Table 915-1.

The residual pH and SAR identified at the former wellhead will be delineated through an environmental site assessment. Additional background samples for pH and SAR will also be collected.

The residual EC identified at the former production tank footprint will be delineated through an environmental site assessment. Additional background samples for EC will also be collected.

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.

Residual petroleum hydrocarbon impacts will be delineated through an environmental site assessment prior to January 31, 2025. Additional background samples for EC, pH, SAR, and arsenic analysis will also be collected. Once delineated, source excavation activities will be started to remove impacts at the site by March 31, 2025, or following land approval/cooperative weather and site conditions. Site assessment data will be summarized and provided in a supplemental 27 to confirm the excavation scope and SAP prior to implementation.

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 observed during subsequent assessment activities, monitoring wells will be completed and samples will be collected for BTEX, naphthalene, TMBs, 1-methylnaphthalene, 2-methylnaphthalene, and inorganic compounds per ECMC Table 915-1. Additional monitoring and an updated SAP will be proposed in a supplemental 27, as applicable.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] 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

[X] 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 MWZZ 316714) and financial assurance in compliance with ECMC rules. Records are available on the ECMC's website.

Operator anticipates the remaining cost for this project to be: $ 75000

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.

Residual EC, SAR, and pH will be resampled, and laterally/vertically defined. Once confirmed and defined, a detailed reclamation plan will be submitted on a Supplemental 27, if applicable. Reclamation will be in accordance with ECMC 1000 Series Rules following source removal and/or additional remediation, as applicable

Is the described reclamation complete? Yes

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

[X] 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. 04/01/2028

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. 04/07/2022

Actual Spill or Release date, or date of discovery. 07/24/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/13/2023

Proposed site investigation commencement. 02/01/2023

Proposed completion of site investigation. 01/31/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/31/2024

Proposed date of completion of Remediation. 03/31/2025

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.

[X] Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

This form is being submitted to serve as a timeline update. Implementation schedule updated to reflect the schedule to complete the supplemental site investigation. The ECMC will be updated on a subsequent Form 27 with the results of the supplemental site investigation, or if the schedule is changed due to site access constraints.

OPERATOR COMMENT

This form is being submitted to serve as a timeline updated.

Pursuant to ECMC Rule 911 a site investigation was conducted pertaining to the HOWELL 32-23 wellhead cut and cap, flowline removal and the HOWELL 32-23/NELSON 32-25 Tank Battery location. A historical release was identified at the tank battery based on laboratory analytical results exceeding ECMC Table 915-1 regulatory limits.

The source identified at the former water vault and separator locations will be delineated through an environmental site assessment. Noble proposes an amended Table 915-1 analytical plan to include TPH C6-36, ECMC Table 915-1 organics, and arsenic. Additional background samples for arsenic will also be collected. If groundwater is observed during assessment activities, monitoring wells will be completed and samples will be collected for BTEX, naphthalene, TMBs, 1-methylnaphthalene, 2-methylnaphthalene, and inorganic compounds per ECMC Table 9151. The residual pH and SAR identified at the former wellhead will be delineated through an environmental site assessment. Additional background samples for pH and SAR will also be collected. The residual EC identified at the former production tank footprint will be delineated through an environmental site assessment. Additional background samples for EC will also be collected.

I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Yakuta Bhagat Title: Environmental Consultant

Submit Date: 09/17/2024 Email: cvxform27@erm.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: 26951

COA Type | **Description**

0 COA

DENIED

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
403918048	FORM 27 DENIED
403918054	SITE INVESTIGATION REPORT
403923299	SITE INVESTIGATION REPORT
403923300	SITE INVESTIGATION REPORT
404017613	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
Environmental	"ECMC has denied this Form 27 due to discrepancies in analytical data associated with the Remediation project. Operator will submit a replacement Form 27 for this project that includes the following components: A statement from the Operator indicating that this project is included in the data integrity review; A site-specific description describing any data anomalies in the project record; The original, correct laboratory analytical report as a stand-alone attachment; and A Form 19 Document ID as a Related Document, if necessary to report a Spill or Release."	12/05/2024

Total: 1 comment(s)