

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Receive Date:

10/07/2024

Report taken by:

Alexander Ahmadian

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: rbueuf27@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 10120 Initial Form 27 Document #: 401249112

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: SPILL OR RELEASE	Facility ID: 444673	API #: _____	County Name: WELD
Facility Name: SPILL/RELEASE POINT	Latitude: 40.145495	Longitude: -104.534330	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 15	Twp: 2N	Range: 6W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CL 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? Yes

Other Potential Receptors within 1/4 mile

Residence 0.2 miles southwest

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
Yes	GROUNDWATER	Refer to Tables and Figures	Laboratory Analysis
Yes	SOILS	Refer to Tables and Figures	Lab 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.

All production was shut in and a site investigation was scheduled. See document 400983708. Feather 31-15 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):

Fifty-nine (59) soil samples were collected as part of excavation and site investigation activities and submitted to a certified laboratory for analysis of TPH-DRO, TPH-GRO, BTEX, and naphthalene by EPA Methods 8260B and 8015. One soil sample (BH02@6) was collected and analyzed for pH, EC, and SAR by EPA Method 6020.

Proposed Groundwater Sampling☒ Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Forty Five (45) monitoring wells were installed, sampled, and analyzed for BTEX by a certified laboratory using EPA Method 8260B

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

Number of soil samples collected 59
Number of soil samples exceeding 915-1 9
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 874

NA / ND

-- Highest concentration of TPH (mg/kg) 11200
-- Highest concentration of SAR 11.1
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 17

Groundwater

Number of groundwater samples collected 19
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 17
Number of groundwater monitoring wells installed 48
Number of groundwater samples exceeding 915-1 1

-- Highest concentration of Benzene (µg/l) 7.6
ND Highest concentration of Toluene (µg/l)
-- Highest concentration of Ethylbenzene (µg/l) 97
-- Highest concentration of Xylene (µg/l) 660
NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected
0 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?

☒ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) 600 Volume of liquid waste (barrels) 0

☒ Is further site investigation required?

Based on the four consecutive quarters of groundwater analytical results in compliance with the applicable ECMC regulatory standards, Noble is requesting to remove the following monitoring wells from the quarterly sampling and analysis plan: BH11 - BH13, BH19R, BH25R2, BH27, BH31, BH34, BH37, BH38R, BH43R, BH45, BH47, BH48, BH49R, BH50, BH51R, BH53R - BH55R, BH56, and BH57. The remaining monitoring wells will serve as sufficient point of compliance for the remaining dissolved-phase exceedances on site. In addition, based on the dry conditions on site, a supplemental site investigation will be conducted to re-install monitoring wells adjacent to BH15R2, BH16, BH22, BH24R, BH26, BH33, BH36R, and BH44R. Soil samples will be collected during monitoring well installation activities to recharacterize the soil on site. Six additional soil borings will be advanced surrounding the former excavation extent to assess the natural attenuation of soil collected during 2016 excavation activities. The proposed monitoring well network and site assessment locations are illustrated on the Proposed Monitoring Well and Soil Boring Location Map attached to this form. Soil samples will be collected and analyzed for full ECMC Table 915-1 contaminants of concern. Additionally, five background soil borings will be advanced up-gradient from the release area and will be analyzed for ECMC Table 915-1 Metals, pH, SAR, EC, and boron. The ECMC will be updated on a supplemental Form 27 with the results of the additional soil sampling and monitoring well installation.

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.

Preliminary source removal was conducted through excavation of impacted soil above ECMC Table 910-1 standards. Residual source material is being treated with a combination of air sparge and soil vapor extraction remediation activities.

REMEDIAL ACTION 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 soil vapor extraction and air sparge system has been designed and installed to remediate residual impacts to soil and groundwater. The system is currently operational. The groundwater monitoring wells will continue to be sampled on a quarterly basis to ensure the dissolved phase groundwater plume is stable and decreasing. Contingent on active remediation results, an estimated no further action request will be submitted prior to December 2026.

Soil Remediation Summary

☒ In Situ

No Bioremediation (or enhanced bioremediation)
No Chemical oxidation
Yes Air sparge / Soil vapor extraction
Yes Natural Attenuation
No Other _____

☒ Ex Situ

Yes Excavate and offsite disposal
If Yes: Estimated Volume (Cubic Yards) 600
Name of Licensed Disposal Facility or ECMC Facility ID # _____
No Excavate and onsite remediation
Land Treatment
Bioremediation (or enhanced bioremediation)
Chemical oxidation
Other _____

Groundwater Remediation Summary

No Bioremediation (or enhanced bioremediation)
No Chemical oxidation
Yes Air sparge / Soil vapor extraction
Yes Natural Attenuation
No 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.

A total of seventy-four (74) monitoring wells have been installed at the site to delineate dissolved phase impacts. Based the four consecutive quarters of groundwater analytical results in compliance with the applicable ECMC regulatory standards, Noble is requesting to remove the following monitoring wells from the quarterly sampling and analysis plan: BH11 - BH13, BH19R, BH25R2, BH27, BH31, BH34, BH37, BH38R, BH43R, BH45, BH47, BH48, BH49R, BH50, BH51R, BH53R - BH55R, BH56, and BH57. The remaining monitoring wells will serve as sufficient point of compliance for the remaining dissolved-phase exceedances. The twenty-six (26) monitoring wells remaining will continue to be sampled on a quarterly basis and submitted to a certified laboratory under proper chain of custody procedures and analyzed for BTEX, naphthalene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene, and chloride ions.

Monitoring well BH46 was noted as destroyed on arrival. Monitoring wells BH10, BH11, BH14, BH15R2, BH16 - BH18, BH20-BH22, BH24R, BH26, BH27, BH28R, BH29, BH31 - BH35, BH37, BH39, BH41R, BH43R, BH45, BH47, BH48, and BH50 were dry upon arrival and/or had insufficient water columns and were not sampled during the Third Quarter 2024.

Third Quarter 2024 analytical results indicated that organic compound concentrations of benzene and 1,2,4-TMB were in exceedance of the applicable ECMC Table 915-1 regulatory standards in monitoring well BH30R.

In addition to the monitoring wells referenced above that were dry on arrival and/or had insufficient water columns, monitoring wells BH12, BH23R2, BH25R2, BH40R, BH42R, BH44R, and BH51R had a water column that was only sufficient for organic analysis. Monitoring well BH52R was used for establishing cross-gradient background levels for chloride. Based on a comparison of monitoring wells to background levels at BH52R, chloride was in exceedance of the applicable regulatory standard in monitoring well BH58 during the Third Quarter 2024 monitoring event.

REMEDATION 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

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. 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 reuse

Volume of E&P Waste (solid) in cubic yards 600

E&P waste (solid) description Impacted soil above ECMC Table 910
-1 standards

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill/Waste
Management

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

REMEDATION COMPLETION REPORT

REMEDATION 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? No

Is additional groundwater monitoring to be conducted? Yes

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.

The location will be recontoured and reseeded to match pre-existing conditions once remediation is accomplished.

Is the described reclamation complete? No

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. _____

Proposed date of completion of Reclamation. _____

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. 05/16/2019

Actual Spill or Release date, or date of discovery. 02/03/2016

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/26/2016

Proposed site investigation commencement. 01/24/2017

Proposed completion of site investigation. 01/24/2017

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/02/2016

Proposed date of completion of Remediation. 12/31/2026

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:

Based on groundwater analytical results, the proposed date of completion of remediation has been moved to the end of the fourth quarter 2026. This estimate will be re-evaluated following future groundwater monitoring and remediation assessments.

OPERATOR COMMENT

This Supplemental Form 27 is being submitted to summarize the results of the quarterly groundwater monitoring and remediation activities conducted during 3Q2024 at the Feather 31-15 location.

Based the four consecutive quarters of groundwater analytical results in compliance with the applicable ECMC regulatory standards, Noble is requesting to remove the following monitoring wells from the quarterly sampling and analysis plan: BH11 - BH13, BH19R, BH25R2, BH27, BH31, BH34, BH37, BH38R, BH43R, BH45, BH47, BH48, BH49R, BH50, BH51R, BH53R - BH55R, BH56, and BH57. The remaining monitoring wells will serve as sufficient point of compliance for the remaining dissolved-phase exceedances. The twenty-six (26) monitoring wells remaining will continue to be sampled on a quarterly basis and submitted to a certified laboratory under proper chain of custody procedures and analyzed for BTEX, naphthalene, 1,3,5-TMB, 1,2,4-TMB, and chloride ions.

Monitoring well BH46 was noted as destroyed on arrival. Monitoring wells BH10, BH11, BH14, BH15R2, BH16 - BH18, BH20-BH22, BH24R, BH26, BH27, BH28R, BH29, BH31 - BH35, BH37, BH39, BH41R, BH43R, BH45, BH47, BH48, and BH50 were dry upon arrival and/or had insufficient water columns and were not sampled during the Third Quarter 2024.

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In addition to the monitoring wells referenced above that were dry on arrival and/or had insufficient water columns, monitoring wells BH12, BH23R2, BH25R2, BH40R, BH42R, BH44R, and BH51R had a water column that was only sufficient for organic analysis. Monitoring well BH52R was used for establishing cross-gradient background levels for chloride. Based on a comparison of monitoring wells to background levels at BH52R, chloride was in exceedance of the applicable regulatory standard in monitoring well BH58 during the Third Quarter 2024 monitoring event.

In addition, based on the dry conditions on site, a supplemental site investigation will be conducted to re-install monitoring wells adjacent to BH15R2, BH16, BH22, BH24R, BH26, BH33, BH36R, and BH44R. Soil samples will be collected during monitoring well installation activities to recharacterize the soil on site. Six additional soil borings will be advanced surrounding the former excavation extent to assess the natural attenuation of soil collected during 2016 excavation activities. The proposed monitoring well network and site assessment locations are illustrated on the Proposed Monitoring Well and Soil Boring Location Map attached to this form. Soil samples will be collected and analyzed for full ECMC Table 915-1 contaminants of concern. Additionally, five background soil borings will be advanced up-gradient from the release area and will be analyzed for ECMC Table 915-1 Metals, pH, SAR, EC, and boron. The ECMC will be updated on a supplemental Form 27 with the results of the additional soil sampling and monitoring well installation.

Quarterly groundwater monitoring activities at this site will continue until four consecutive quarters of compliant groundwater monitoring results have been achieved.

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

Signed: Allan Engelhardt

Title: Environmental Consultant

Submit Date: 10/07/2024

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: Alexander Ahmadian

Date: 12/31/2024

Remediation Project Number: 10120

COA Type

Description

	Operator shall abandon the monitoring wells in accordance with DWR regulations within 90 days of the approval of this Form 27.
	ECMC agrees to the removal of BH11 - BH13, BH25R2, BH27, BH31, BH34, BH37, BH38R, BH43R, BH45, BH47, BH48, BH49R, BH50, BH51R, BH53R - BH55R, BH56, and BH57 from the groundwater monitoring program; however, Operator shall continue to sample BH19R for use as a point of compliance wells. If future data indicate the need for additional site characterization or establishing point of compliance, ECMC may require additional monitoring wells be returned to the program.
2 COAs	

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

403942768	FORM 27-SUPPLEMENTAL-SUBMITTED
403948167	MONITORING REPORT

Total Attach: 3 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)