

State of Colorado
Energy & Carbon Management Commission

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Document Number:
404453865

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: <u>NOBLE ENERGY INC</u>	Operator No: <u>100322</u>	Phone Numbers
Address: <u>1099 18TH STREET SUITE 1500</u>		Phone: <u>(970) 304-5000</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Erica Zuniga</u>	Email: <u>rbueuf27@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 23714 Initial Form 27 Document #: 403080512

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: <u>LOCATION</u>	Facility ID: <u>447356</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>KISSLER 01,03X</u>	Latitude: <u>40.290983</u>	Longitude: <u>-104.527062</u>	
	** correct Lat/Long if needed: Latitude: <u>40.290918</u>	Longitude: <u>-104.527101</u>	
QtrQtr: <u>SWSW</u> Sec: <u>23</u> Twp: <u>4N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>484085</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Kissler 01, 03X</u>	Latitude: <u>40.290880</u>	Longitude: <u>-104.527104</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>SWSW</u> Sec: <u>23</u> Twp: <u>4N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Crop Land _____

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

High Priority Habitat - Aquatic Native Species Conservation Waters
Riverine 0.03/0.22mi W, 0.02mi S
Residential 0.03mi S
Farm Structures 0.04/0.06mi S
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
Yes	GROUNDWATER	See Tables and Figures	Field Screening and Lab Analysis
Yes	SOILS	See 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 KISSLER T4N-R64W-S23 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):

Groundwater was encountered during the site investigation and a grab groundwater sample was collected and analyzed for all organic 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):

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 photolog was previously attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected 40	-- Highest concentration of TPH (mg/kg) 570

Number of soil samples exceeding 915-1 40 -- Highest concentration of SAR 4.71
 Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 Yes
 Approximate areal extent (square feet) 40000 Vertical Extent > 915-1 (in feet) 12

Groundwater

Number of groundwater samples collected 12 -- Highest concentration of Benzene (µg/l) 20
 Was extent of groundwater contaminated delineated? No ND Highest concentration of Toluene (µg/l)
 Depth to groundwater (below ground surface, in feet) 7 ND Highest concentration of Ethylbenzene (µg/l)
 Number of groundwater monitoring wells installed 5 ND Highest concentration of Xylene (µg/l)
 Number of groundwater samples exceeding 915-1 1 NA 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?
- 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?

Refer to the Remedial Action Plan section.

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.

Impacted soil was removed from the Kissler 01, 03x facility produced water vault (PWV) release area by excavation between March and April 2025. The impacted soil will be disposed of at an approved landfill as non-hazardous waste in accordance with Rules 905 and 906.

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.

The multi-day excavation was completed at the Kissler on April 11, 2025. Soil samples were collected as grab samples from the excavation sidewalls at 11 feet bgs and from the excavation floor at 12 feet bgs. Soil impacts remain in place in the saturated zone in portions of the east-and-south sidewalls, and floor of the excavation due to poor soil stability and groundwater intrusion causing sidewall collapse. Five groundwater monitoring wells (MW-1 to MW-5) were installed 7/10/25 following the April 2025 excavation to monitor natural attenuation of residual dissolved phase groundwater impacts. Remedial alternatives are being evaluated to address residual soil impacts remaining in situ in the phreatic zone.

Groundwater is sampled on a quarterly basis. Third quarter 2025 (Q3) groundwater sampling was completed on July 10, 2025 and fourth quarter (Q4) groundwater sampling was completed 10/2/2025. Additional actions will be required to achieve final site closure, including quarterly groundwater monitoring and native soil characterization. Dissolved phase organic constituents were compliant with their respective standards in wells sampled during the Q3 and Q4 2025 groundwater monitoring events. Laboratory analytical results indicate that inorganic constituents exceeded Table 915-1 standards for anions, chloride and sulfate in all wells sampled during the Q3 and Q4 2025 groundwater monitoring event. A monitoring well has not been designated for background comparison. The Operator proposes to install one monitoring well upgradient of the current well network in native soil to use for future comparison of background groundwater conditions at the site. 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)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 3322

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation

No _____ 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

Yes _____ 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 impacts were encountered during site decommissioning, and the excavation of impacted soil at the Kissler 01, 03x facility. Five monitoring wells (MW-1, MW-2, MW-3, MW-4, and MW-5) were installed 7/10/25 following the April 2025 excavation to monitor natural attenuation of residual dissolved phase groundwater impacts. Groundwater is sampled quarterly and analyzed for Table 915-1 organic constituents in groundwater (benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and inorganic constituents chloride ion, sulfate ion and total dissolved solids (TDS). The Operator proposes to add analysis of 1-and-2 methylnaphthalene to the sample analysis plan (SAP) going forward. Nine additional monitoring wells are proposed to be installed at the site. Eight wells will be used to characterize impacts observed in the GWS01 groundwater sample location and one well will be used for native groundwater characterization and background groundwater comparison.

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 Excavation Report

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 3322

E&P waste (solid) description Hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Buffalo Ridge Landfill, Keenesburg, 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? 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.

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. 05/05/2025

Proposed date of completion of Reclamation. 05/05/2028

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. 03/21/2023

Actual Spill or Release date, or date of discovery. 03/20/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/08/2023

Proposed site investigation commencement. 07/01/2022

Proposed completion of site investigation. 11/02/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/09/2024

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:

The implementation schedule has been changed due to the need to characterize native soil and groundwater conditions, further delineate groundwater impacts, and achieve four consecutive quarters of ECMC Table 915-1 compliant groundwater at the Kissler 01, 03X former Tank Battery. The proposed remedial actions will be completed following the approval of this form.

OPERATOR COMMENT

This form serves to update the ECMC with the results from the April 2025 excavation of impacted soil, 7/10/25 monitoring well installation, and Q3 and Q4 2025 quarterly groundwater monitoring events at the KISSLER 01,03X Facility, Remediation # 23741, and propose additional monitoring wells and characterization of native soil and groundwater conditions at the site.

Excavation was undertaken in March 2025 and completed in April 2025 to address the remaining soil impacts observed in the vadose zone during the site investigation. Soil impacts remain in place in the saturated zone in portions of the east-and-south sidewalls, and floor of the excavation due to poor soil stability and groundwater intrusion causing sidewall collapse. Five groundwater monitoring wells (MW-1 to MW-5) were installed 7/10/25 following the April 2025 excavation to monitor natural attenuation of residual dissolved phase groundwater impacts. Remedial alternatives are being evaluated to address residual soil impacts remaining in situ in the saturated zone.

Groundwater is sampled on a quarterly basis. The Q3 2025 groundwater sampling was completed on July 10, 2025 and the Q4 2025 groundwater sampling was completed 10/2/2025. Additional actions will be required to achieve final site closure, including quarterly groundwater monitoring and native soil characterization. Dissolved phase organic constituents were compliant with their respective standards in wells sampled during the Q3 and Q4 2025 groundwater monitoring events. Laboratory analytical results indicate that inorganic constituents exceeded Table 915-1 standards for anions, chloride and sulfate in all wells sampled during the Q3 and Q4 2025 groundwater monitoring event. A monitoring well has not been designated for background comparison. The Operator proposes to install one monitoring well upgradient of the current well network in native soil to use for future comparison of background groundwater conditions at the site. The Operator proposes to add analysis of 1-and-2 methylnaphthalene to the SAP. Nine additional monitoring wells are proposed to be installed at the site. Eight wells will be used to characterize impacts observed in the GWS01 groundwater sample location and one well will be used for native groundwater characterization and background groundwater comparison.

Operator was informed that the sample holding times were exceeded for SM2540C TDS analyses for grab groundwater sample GWS01. Because not all analytes would be outside of holding times, the lab ran the samples for the full analytical analysis. The full laboratory report (Report) is being transmitted to ECMC for transparency. The Report's case narrative identifies which constituents were run outside of the required holding times. The Report's note column also identifies the impacted constituents. Operator will not be relying on any results associated with a constituent that was outside of the required holding time.

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: _____

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: 23714

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
404453866	LABORATORY ANALYTICAL REPORT
404453867	LABORATORY ANALYTICAL REPORT
404453868	LABORATORY ANALYTICAL REPORT
404453869	LABORATORY ANALYTICAL REPORT
404453870	LABORATORY ANALYTICAL REPORT
404453871	LABORATORY ANALYTICAL REPORT
404453872	LABORATORY ANALYTICAL REPORT
404453873	LABORATORY ANALYTICAL REPORT
404453874	LABORATORY ANALYTICAL REPORT
404453875	LABORATORY ANALYTICAL REPORT
404453876	LABORATORY ANALYTICAL REPORT
404453877	LABORATORY ANALYTICAL REPORT
404453879	MONITORING REPORT
404453880	OTHER

404453881	LABORATORY ANALYTICAL REPORT
404453882	LABORATORY ANALYTICAL REPORT
404453883	LOGS
404463915	LABORATORY ANALYTICAL REPORT
404468046	OTHER
404468155	OTHER
404468158	MONITORING REPORT

Total Attach: 21 Files

General Comments

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

Total: 0 comment(s)