

State of Colorado
Energy & Carbon Management Commission

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404327179
Receive Date:
08/26/2025

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 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
Address: 1099 18TH STREET SUITE 1500		Phone: (970) 786-0202
City: DENVER State: CO Zip: 80202		Mobile: ()
Contact Person: Kris Shepard	Email: Kristofer.Shepherd@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29932 Initial Form 27 Document #: 403438217

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 Cropland
Is domestic water well within 1/4 mile? No 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

Well within Mule Deer Migration Corridor HPH
 Well Within Mule Deer Severe Winter Range HPH
 Well Within Aquatic Native Species Conservation Water HPH
 Well Within Bald Eagle Active Nest Site 0.50mi Buffer HPH
 Well Within Bald Eagle Active Nest Site 0.25mi Buffer HPH
 Bald Eagle Roost Site HPH 0.03mi W
 Riverine 0.12mi E, 0.04mi/ 0.09mi N, 0.1mi/ 0.15mi NE, 0.22mi/ 0.23mi NW
 Freshwater Emergent Wetland 0.21mi NW, 0.24mi S
 Freshwater Pond 0.06mi S, 0.15mi W
 Freshwater Forested/Shrub Wetland 0.09mi NE, 0.23mi NW
 Herbaceous Riparian 0.12mi NW
 Forested/Shrub Riparian 0.21mi W, 0.02mi/ 0.09mi N, 0.15mi NW

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	Field Screening and Lab Analysis
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.

Pursuant to ECMC Rule 911 a site investigation was conducted pertaining to the Five Rivers USX K09-21D wellhead cut and cap and flowline removal. The wellhead was cut and capped per ECMC rules on 01/08/24. A grab soil sample was collected at the base of the excavation (WH-FS-01@6'), and soil samples were field screened at the N-E-S-W sidewalls of the wellhead excavation (WH-SS-01@5' - WH-SS-04@5'). Additional screening samples were collected from the surficial soils outside the wellhead excavation in each cardinal direction (WH-N@0.5' - WH-W@0.5').

The flowline was fully removed (approximately 1563' in length) on 03/21/24 per Form 44 # 403770365. Confirmation soil samples were collected from beneath the flowline riser at the wellhead (FL01-A@3'), as well as any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway as applicable (FL01-D, G - J, and L - N). Field screening samples were also collected along the flowline as needed (FL01-F & FL01K). The Five Rivers USX K09-21D flowline was in a common trench with the Five Rivers K09-07D, K09-18D, & K09-19 flowlines. The flowline riser at the separator was sampled during the decommissioning of the Five Rivers K09-67-1HN Pad location (REM # 30784) and is being reported under that remediation number.

Concentrations of 1,3,5-trimethylbenzene (TMB), naphthalene, benzo(a)anthracene, benzo(a)pyrene, dibenzo(a,h)anthracene, fluorine, 1-methylnaphthalene (M), and 2-M exceeding ECMC Table 915-1 regulatory standards were observed at sample locations FL01-A, D, H - J, and L - N. The soil analytical report for sample locations FL01-D, E, F, and H - K was submitted under Form 27 # 403772452. Groundwater was not encountered during the initial decommissioning efforts.

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):

Soil samples were collected as described in the Initial Action Summary section of this report. Sampling deviated from the sampling plan in the Initial Form 27 because the line was planned to be partially abandoned in place. However, the entire flowline was removed during decommissioning activities.

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, boron, and metals. All samples collected will be 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 3Q24 and 4Q24 excavation activities, as well as the 4Q24 site investigation. Grab groundwater samples were collected where encountered (FL01-L@3', FL01-N@4', and FL01-M@3') and analyzed for all organic and inorganic compounds per ECMC Table 915-1; this sample analysis includes, but is not limited to BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260, chloride and sulfate anions by EPA Method 300.0, and total dissolved solids (TDS) by Method SM 2540C.

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 inspections of the wellhead and flowline were conducted during decommissioning. Field personnel screened all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling was required. A detailed summary of the wellhead decommissioning activities, including an ECMC Wellhead Closure Checklist, site photos, figures, and laboratory analytical results, was submitted as an attachment to Form 27 # 403785499. A detailed summary of the flowline decommissioning activities, including an ECMC Flowline Closure Checklist, site photos, figures, and laboratory analytical results, was also submitted as an attachment to Form 27 # 403785499.

The soil analytical report for sample locations FL01-D, E, F, and H - K was submitted under Form 27 # 403772452.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>36</u>	-- Highest concentration of TPH (mg/kg) <u>1.3</u>
Number of soil samples exceeding 915-1 <u>35</u>	-- Highest concentration of SAR <u>2.02</u>
Was the areal and vertical extent of soil contamination delineated? <u>No</u>	BTEX > 915-1 <u>No</u>
Approximate areal extent (square feet) <u>100</u>	Vertical Extent > 915-1 (in feet) <u>9</u>
Groundwater	
Number of groundwater samples collected <u>3</u>	-- Highest concentration of Benzene (µg/l) <u>3.6</u>
Was extent of groundwater contaminated delineated? <u>No</u>	-- Highest concentration of Toluene (µg/l) <u>3</u>
Depth to groundwater (below ground surface, in feet) <u>3</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>17</u>
Number of groundwater monitoring wells installed <u>0</u>	-- Highest concentration of Xylene (µg/l) <u>130</u>
Number of groundwater samples exceeding 915-1 <u>1</u>	NA Highest concentration of Methane (mg/l) <u></u>

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 total of 8 background samples were collected from four discrete locations and analyzed for arsenic, barium, lead, and pH. Background samples were collected from between 2' and 6' below ground surface. The lithology between the site samples and background locations were observed to be generally poorly to well graded sands. The maximum background concentration of pH was observed to be 9.18, and the maximum background concentration of arsenic, barium, and lead with a 1.25 multiplier applied were calculated to be 2.73 mg/kg, 170 mg/kg, and 14.9 mg/kg, respectively. All pH concentrations observed during the initial decommissioning and subsequent excavations were below background levels.

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?

A review of the 3Q24/4Q24 wellhead excavation data from the Five Rivers K09-07D (REM# 29936) and Five Rivers K09-21D projects discovered that several soil/groundwater samples from FL01-A locations were inadvertently logged under the incorrect project name. To resolve this issue, the operator is requesting that the remediation efforts for both projects be combined under a single Remediation Number.

The operator is requesting that the Five Rivers K09-21D project (REM #29932) be consolidated into the Five Rivers K09-07D project (REM# 29936) and administrative closure for Remediation Number 29932. All data for both remediation projects will be presented in Form 27 # 404327288, which will be submitted under Remediation Number 29936.

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.

A detailed discussion regarding the management of the releases identified at FL01-J (Spill ID 486555), FL01-I (Spill ID 486554), FL01-H (Spill ID 486547), FL01-D (Spill ID 486553), and FL01-C (Spill ID 486552) was submitted to the ECMC under Form 27 Document Nos. 403785499 and 404040956.

A remedial excavation at FL01-A, FL01-L, FL01-M, and FL01-N was conducted between 11/18/24 and 01/15/25. A site investigation was conducted adjacent to FL01-M on 12/02/24. All confirmation samples were analyzed for the full extent of ECMC Table 915-1. Groundwater was encountered and sampled at the FL01-A and FL01-M excavations. Groundwater samples were analyzed for all Table 915-1 contaminants, benzo (a) anthracene, benzo (b) fluoranthene, benzo (b) pyrene, dibenz (a,h) anthracene, fluorene, 1-methylnaphthalene (M), and 2-M.

The results of the 4Q24 remedial excavation and the 4Q24 site investigation will be presented in Form 27 # 404327288, which will be submitted under the Five Rivers K09-07D project (REM# 29936).

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.

Remedial excavation activities were conducted between 07/18/24 and 08/23/24 to address observed exceedances at FL01-A, FL01-L, FL01-M, and FL01-N. A total of 1,470 cy of impacted soil and 11,930 bbl of groundwater were removed from the excavations. Samples were collected from the base and sidewalls of each location per ECMC rules and analyzed for Table 915-1 organic compounds and a combination of inorganic and metal constituents, depending on location. Groundwater was encountered and sampled at excavation locations corresponding with sample locations FL01-L, M, & N. Excavation activities were paused due to the large influx of groundwater into the excavations.

The results of the 3Q24 remedial excavation efforts were discussed in prior Form 27 # 403939375. As discussed in the Site Investigation Report section of this Form 27, a review of the 3Q24 excavation data revealed errors with the FL01-A data reported in the prior Form 27. This error, and a thorough summary of the 4Q24 remedial excavation and the 4Q24 site investigation will be presented in Form 27 # 404327288, which will be submitted under the Five Rivers K09-07D project (REM# 29936).

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) 1470

_____ 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

No _____ Bioremediation (or enhanced bioremediation)

No _____ Chemical oxidation

No _____ Air sparge / Soil vapor extraction

No _____ Natural Attenuation

Yes Other Pumped and transported 11,930
BBLs to NGL C3 for disposal

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.

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

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: \$ 0

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 1470

E&P waste (solid) description Hydrocarbon impacted soils

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Waste Management Ault

Volume of E&P Waste (liquid) in barrels 11930

E&P waste (liquid) description Groundwater in contact with impacted soils within the excavations

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: NGL C3

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

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. 03/21/2024

Proposed date of completion of Reclamation. 08/23/2025

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. 06/06/2023

Actual Spill or Release date, or date of discovery. 05/09/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/21/2024

Proposed site investigation commencement. 08/22/2025

Proposed completion of site investigation. 08/22/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/22/2025

Proposed date of completion of Remediation. 08/22/2025

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.

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

Basis for change in implementation schedule:

The "Proposed date of completion of Remediation" has been updated to reflect the change in remedial strategy following the completion of the 4Q24 remedial excavation and site investigation. This change in strategy involves consolidating the Five Rivers K09-21D (REM #29932) into the Five Rivers K09-07D project (REM# 29936) and administratively closing Remediation Number 29932. All data for both remediation projects will be presented in Form 27 # 404327288, which will be submitted under the Five Rivers K09-07D project (REM# 29936). The Operator Comments section of this report discusses this request in detail.

OPERATOR COMMENT

This Form 27 is being submitted to include a project consolidation and administrative closure request for the Five Rivers K09-21D remediation project. The initial decommissioning efforts were summarized in prior Form 27 # 403785499. The 3Q24 remedial excavation efforts were summarized in Form 27 # 403939375.

A remedial excavation at FL01-A, FL01-L, FL01-M, and FL01-N was conducted between 11/18/24 and 01/15/25. A site investigation was conducted adjacent to FL01-M on 12/02/24. All confirmation samples were analyzed for the full extent of ECMC Table 915-1. Groundwater was encountered and sampled at the FL01-A and FL01-M excavations. Groundwater samples were analyzed for all Table 915-1 contaminants, benzo (a) anthracene, benzo (b) fluoranthene, benzo (b) pyrene, dibenz (a,h) anthracene, fluorene, 1-methylnaphthalene (M), and 2-M.

A review of the 3Q24/4Q24 wellhead excavation data from the Five Rivers K09-07D (REM# 29936) and Five Rivers K09-21D projects discovered that several soil/groundwater samples from FL01-A locations were inadvertently logged under the incorrect project name. Furthermore, it was discovered that this data was incorrectly reported to the ECMC in prior Form 27 #s 403939375 & 403933980. These errors would present challenges for reporting and data visualization if the results were to be reported for each project individually. To ensure consistency, clarity, and accuracy, the operator is requesting that the remediation efforts for both projects be combined under a single Remediation Number.

The operator is requesting that the Five Rivers K09-21D project (REM #29932) be consolidated into the Five Rivers K09-07D project (REM# 29936) and administrative closure for Remediation Number 29932. All data for both remediation projects will be presented in Form 27 # 404327288, which will be submitted under the Five Rivers K09-07D project (REM# 29936).

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

Signed: Jeff Rollins

Title: Env. Geologist III

Submit Date: 08/26/2025

Email: jrollins@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: _____

Date: _____

Remediation Project Number: 29932

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

404327179	FORM 27-SUPPLEMENTAL-SUBMITTED
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Total Attach: 1 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	<p data-bbox="256 92 1312 176">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 data-bbox="256 268 1312 506">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 data-bbox="256 596 1312 651">Operator shall conduct work in compliance with previously approved workplans and the 900 Series Rules. In accordanc</p>	10/27/2025

Total: 1 comment(s)

DENIED