

State of Colorado
Energy & Carbon Management Commission

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404042274
Receive Date:
06/24/2025
Report taken by:
Krystal Heibel

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) 313-5582 Mobile: ()
Address: 1099 18TH STREET SUITE 1500		
City: DENVER	State: CO	Zip: 80202
Contact Person: Jason Davidson	Email: jason.davidson@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 27551 Initial Form 27 Document #: 403257857

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: LOCATION	Facility ID: 323731	API #: _____	County Name: WELD
Facility Name: LILLI UNIT-68N58W 5SESW	Latitude: 40.685880	Longitude: -103.888510	
** correct Lat/Long if needed: Latitude: 40.685892		Longitude: -103.888025	
QtrQtr: SESW	Sec: 5	Twp: 8N	Range: 58W Meridian: 6 Sensitive Area? No
Facility Type: SPILL OR RELEASE	Facility ID: 487087	API #: _____	County Name: WELD
Facility Name: Lilli Unit-5SESW	Latitude: 40.685922	Longitude: -103.888087	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESW	Sec: 5	Twp: 8N	Range: 58W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use rangeland _____

Is domestic water well within 1/4 mile? Yes _____

Is surface water within 1/4 mile? No _____

Is groundwater less than 20 feet below ground surface? No _____

Other Potential Receptors within 1/4 mile

HPH N
Farm Structures 0.17/0.17 ENE

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
UNDETERMINED	GROUNDWATER	NA	laboratory analysis if encountered
Yes	SOILS	10'x10'x5' below ground surface	laboratory 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 removal of risers associated with the abandonment of gas gathering line. The gas gathering line does not require registration per the latest ECMC flowline regulations, so we are associating this Facility Closure job with the nearest Location ID. Approximately 800' of 4" steel gas gathering line was abandoned-in-place. The risers, which we refer to as 9A, 9B, 10B, and 1E, were cut and capped per ECMC rules. Additionally, soil samples were collected at 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 to abandonment type. There is no associated Flowline Pre-Abandonment Notice Document number since gathering lines are not registered.

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 soil samples were collected at the base of the excavation or the area showing the highest degree of impact during field screening activities. Additionally, soil samples were collected at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway. 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 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):

If groundwater is encountered during the site investigation a grab groundwater sample will be collected and analyzed for all organic compounds and inorganic parameters 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):

Per the condition of approval (COA) issued in the approved Supplemental Form 27 for the Lilli Unit 5SESE project (Document No. 403870201), investigation along the gathering line is warranted to confirm the absence of hydrocarbon impacts to soil. Noble requested to move the gathering line sampling for the Lilli Unit 5SESW project to the Lilli Unit 5SESE project (Remediation #27543). This request was approved on ECMC Document Number 403946446. The remaining riser samples that were already collected and any additional sampling or remediation associated with those risers will be reported under the Lilli Unit 5SESW project and remediation number.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 3
Number of soil samples exceeding 915-1 1
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 100

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 2.4
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 4

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?

Three background soil samples were collected from two discrete locations (BKG01 & BKG02) near the risers and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR, and boron. Based on the location of background sample BKG01 @5' within a remedial excavation extent, this sample is not used to compare to site inorganic or metals concentrations. Background soil sample results indicated that arsenic, barium, and cadmium concentrations are within background concentrations. pH concentrations remain above backgrounds in soil sample 6" Valve SET 1E-2@4'.

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?

Based on the results of decommissioning activities, a supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH exceedance observed at soil sample 6" Valve SET 1E-2@4. Concurrently with the supplemental site investigation, additional background samples will be collected to assess inorganics and metals in native material. The proposed soil boring locations are illustrated on Figure 3. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

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.

A remedial excavation was conducted at the associated Lilli N-5 Tank Battery (REM #482023) which encompassed gathering line risers 3" Riser10B and 4" Riser 9A. A summary of remedial excavation activities at the tank battery was submitted on ECMC Document Number 404248258 which is still in process and pending review.

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.

Based on the results of the remedial excavation conducted under the Lilli N-5 Tank Battery project, (REM #482023), the organic exceedances observed in soil samples 3" Riser10B and 4" Riser 9A have been removed.

Based on the decommissioning results for the remaining analytes, a supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH exceedance observed at soil sample 6" Valve SET 1E-2@4. Concurrently with the supplemental site investigation, additional background samples will be collected to assess inorganics and metals in native material. The proposed soil boring locations are illustrated on Figure 3. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent 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 in compliance. Attach a groundwater monitoring location diagram.

Groundwater was not encountered during decommissioning activities.

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 Confirmation Sampling Summary, Supplemental Site Investigation Proposal _____

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? 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? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

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. 05/29/2024

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

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. 05/29/2024

Actual Spill or Release date, or date of discovery. 06/18/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/29/2024

Proposed site investigation commencement. 06/24/2025

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 implementation schedule has been updated to reflect the completion of gathering line decommissioning activities and the necessity for additional site investigation activities.

OPERATOR COMMENT

This Supplemental Form 27 is being resubmitted to summarize June 2024 decommissioning activities at the Lilli Unit 5SESW location. This Form 27 was originally submitted on December 30, 2024, and was subsequently returned to draft to confirm the encryption of the attached laboratory reports.

Based on currently available data, this project is not affected by data integrity irregularities and is not associated with Operator's data integrity review process and its Rule 525.e. Voluntary Disclosure. As part of its data integrity review process, Operator requested the lab protect the laboratory analytical reports from subsequent unauthorized modification by anyone outside the lab, which resulted in the lab reissuing the original reports with additional protections (Reissued Reports). The Reissued Reports were received directly from the lab on April 2, 2025, which includes the application of a Digital ID/Verified Certification (lock) to support reissuance. The metadata associated with these Reissued Reports also includes the lab representative's name, the date and time the laboratory reissued the report, and an explanation for the report reissuance. The Reissued Reports are attached to this submission.

A summary of May 2024 decommissioning activities was included in the approved ECMC Doc #403830447 and indicated that organic compound concentrations were in exceedance of ECMC standards in soil samples 3" Riser10B and 4" Riser 9A.

A remedial excavation was conducted at the associated Lilli N-5 Tank Battery (REM #482023) which encompassed gathering line risers 3" Riser10B and 4" Riser 9A. A summary of remedial excavation activities at the tank battery was submitted on ECMC Doc #404248258 which is still in process and pending review. Based on the results of the remedial excavation, the organic exceedances observed in soil samples 3" Riser10B and 4" Riser 9A have been removed.

Based on the location of background sample BKG01@5' within the Lilli N-5 Tank Battery remedial excavation extent, this sample is not used to compare to site inorganic or metals concentrations. Background soil sample results indicated that arsenic, barium, and cadmium concentrations are within background concentrations. pH concentrations remain above backgrounds in soil sample 6" Valve SET 1E-2@4'.

Based on the results of decommissioning activities, a supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH exceedance observed at soil sample 6" Valve SET 1E-2. Concurrently with the supplemental site investigation, additional background samples will be collected to assess inorganics and metals in native material. The proposed soil boring locations are illustrated on Figure 3. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

Per the condition of approval (COA) issued in the approved Supplemental Form 27 for the Lilli Unit 5SESE project (Doc #403870201), investigation along the gathering line is warranted to confirm the absence of hydrocarbon impacts to soil. Noble requested to move the gathering line sampling for the Lilli Unit 5SESW project to the Lilli Unit 5SESE project (REM #27543). This request was approved on ECMC Doc #403946446. The remaining riser samples that were already collected and any additional sampling or remediation associated with those risers will be reported under the Lilli Unit 5SESW project and remediation number.

In the event additional responsive information is received or discovered that would suggest this project should be incorporated into the ongoing data integrity review process associated with Operator's Rule 525.e. Voluntary Disclosure, Operator will update and/or amend the statements in this submission and provide any new or revised data or other information.

Pursuant to Rule 913.e, quarterly reporting will be conducted until closure criteria are achieved.

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

Signed: Jesse Marcus

Title: Environmental Consultant

Submit Date: 06/24/2025

Email: jmarcus@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: Krystal Heibel

Date: 12/08/2025

Remediation Project Number: 27551

COA Type

Description

<u>COA Type</u>	<u>Description</u>
0 COA	

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

404042274	FORM 27-SUPPLEMENTAL-SUBMITTED
404252937	SITE INVESTIGATION REPORT
404252938	LABORATORY ANALYTICAL REPORT
404252939	LABORATORY ANALYTICAL REPORT

Total Attach: 4 Files

General Comments

User Group	Comment	Comment Date
Environmental	"Noble requested to move the gathering line sampling for the Lilli Unit 5SESW project to the Lilli Unit 5SESE project (REM #27543). This request was approved on ECMC Doc #403946446. The remaining riser samples that were already collected and any additional sampling or remediation associated with those risers will be reported under the Lilli Unit 5SESW project and remediation number."	12/08/2025
Environmental	"Based on the results of decommissioning activities, a supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH exceedance observed at soil sample 6" Valve SET 1E-2. Concurrently with the supplemental site investigation, additional background samples will be collected to assess inorganics and metals in native material. The proposed soil boring locations are illustrated on Figure 3. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27."	12/08/2025

Total: 2 comment(s)