

State of Colorado
Energy & Carbon Management Commission

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Document Number:

404093817

Receive Date:

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.

Report taken by:

OPERATOR INFORMATION

Name of Operator: NOBLE ENERGY INC	Operator No: 100322	Phone Numbers
Address: 1099 18TH STREET SUITE 1500		Phone: (970) 313-5582
City: DENVER State: CO Zip: 80202		Mobile: ()
Contact Person: Jason Davidson	Email: jason.davidson@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34145 Initial Form 27 Document #: 403656895

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: WELL	Facility ID: _____	API #: 123-23008	County Name: WELD
Facility Name: SH FARM C 17-19	Latitude: 40.315420	Longitude: -104.579440	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNW	Sec: 17	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 488616	API #: _____	County Name: WELD
Facility Name: SH Farms C17-19	Latitude: 40.315426	Longitude: -104.579455	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNW	Sec: 17	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use Grassland

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

Riverine 0.21mi S
Residential 0.22mi N
Farm Structure 0.17mi NE, 0.12mi E, 0.17/0.21mi SE, 0.13mi S, 0.24mi N

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 and field screening, if encountered
Yes	SOILS	Refer to Tables and Figures	Laboratory 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.

Pursuant to ECMC Rule 911 a site investigation was conducted pertaining to the SH FARMS C17-19 wellhead cut and cap and flowline removal. On 05/21/2024, the wellhead was cut and capped per ECMC rules. A soil sample was collected at the base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation (WH01@6). Additionally, soil samples were field screened at the E-S-W sides of the wellhead (WH01-E@4, WH01-S@4, & WH01-W@4) and a Flowline riser sample was collected to the N of the wellhead (FLR01@4).

Approximately 1157' of flowline was removed during the 10/24/2024 decommissioning activities, and a portion of the flowline was abandoned between soil sample FL01-07 and the separator. On 11/12/2024, the ABIP portion was field screened and removed. Soil samples were collected along the flowline at directional changes (FL01-04, FL01-06, & FL01-08), the flowline wellhead riser (FL01R-W@3'), and were field screened along the flowline location to confirm the presence or absence of impacts (FL01-01 through FL01-03, FL01-05, & FL01-08 through FL01-09).

The flowline separator riser was sampled during the decommissioning of the associated Pluss C17-32D Tank Battery (ECMC Remediation # 34542) and submitted on SF27 document #403981383.

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):

Soils were collected as described in the Initial Action Summary of this Supplemental Form 27. Soil samples were analyzed by a certified laboratory for the full extent of Table 915-1, including but not limited to: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, metals in soil per ECMC Table 915-1, pH, EC, SAR, 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):

If groundwater is encountered during the site investigation, a grab groundwater sample will be collected and analyzed for all organic compounds per ECMC Table 915-1 and inorganic parameters (TDS, chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO3)).

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 of the wellhead and flowline areas occurred during abandonment activities. Field personnel field screened all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling was required. A detailed summary of flowline decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, is attached to this Form 27. A detailed summary of wellhead decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, was attached to a previous Form 27 (ECMC Document #404107302).

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 4

Number of soil samples exceeding 915-1 4

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 400

NA / ND

-- Highest concentration of TPH (mg/kg) 660

-- Highest concentration of SAR 4.06

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 3

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 one discrete location near the flowline and analyzed for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECMC Table 915-1, metals in soil per ECMC Table 915-1, pH, EC, SAR and boron. Background soil samples were collected from depths ranging between 0 to 4 feet below ground surface (ft bgs). The maximum background concentrations for EC was observed to be 2.44 mmhos/cm. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, and lead were calculated to be 4.35 mg/kg, 125 mg/kg, and 10.3 mg/kg, respectively. All arsenic and barium concentrations observed at the SH Farms C17-19 wellhead were below background levels. A combination of EC, cadmium, copper, lead, and zinc exceedances remain along the SH Farms C17-03, C17-06, and C17-19 common trench flowline area (FL01-01 through FL01-09).

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?

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.

Analytical results indicated that soil samples FL01-06@3', FL01-07@3', and FL01R-W@3' exhibited a combination of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, naphthalene, and total petroleum hydrocarbons concentrations in exceedance of the regulatory standards. In addition, FL01-04@3' exhibited EC and lead concentrations in exceedance of the regulatory standards and above background concentrations. Refer to Site Investigation Report section of this Form 27 for a detailed description of background soil samples.

The organic compound exceedances observed at sample locations FL01R-W@3' (Spill/Release ID #488616) will be removed through a remedial excavation. Remedial excavation confirmation soil samples will be analyzed for full ECMC Table 915-1 parameters. The results of the remedial excavation will be submitted on a subsequent Form 27.

The organic compound exceedances observed at sample locations FL01-06@3' (Spill/Release ID #488614) and FL01-07@3' (Spill/Release ID #488615) will be removed through remedial excavations. In addition to the reporting/remediation of Spill/Release ID #s 488614 and 488615, all future investigation and reporting pursuant to SH Farms C17-19 sample locations FL01-01 through FL01-09 will be reported to the ECMC under Rem #34708, as proposed in the operator comments section of this Form 27.

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.

Pursuant to Spill/Release ID #488616, remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. The results of the remedial excavation 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 of compliance. Attach a groundwater monitoring location diagram.

Groundwater was not encountered during the initial 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 Decommissioning Sample Summary and Remedial Excavation 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. 05/21/2024

Proposed date of completion of Reclamation. 06/30/2027

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. 01/12/2024

Actual Spill or Release date, or date of discovery. 11/07/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/21/2024

Proposed site investigation commencement. 05/22/2025

Proposed completion of site investigation. 11/22/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/22/2025

Proposed date of completion of Remediation. 05/22/2026

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 decommissioning of the SH Farms C17-19 wellhead/flowline, and the need to complete a remedial excavation at the wellhead pursuant to Spill/Release ID #488616. The remedial excavation will be scheduled and completed following the approval of this Form 27.

OPERATOR COMMENT

This Form 27 is being submitted to include the decommissioning results and a Sole Source Mass Removal Proposal for the SH Farms C17-19 Flowline (Remediation [REM] #34145). Per comment on denied Document #403986863, secured laboratory reports are attached to this Form 27. Refer to in-process ECMC Document #404107302 for SH Farms C17-19 wellhead data resubmittal. All sampling was completed in accordance with the approved soil sampling plan attached to Initial Form 27 Document #403656895. The flowline separator riser was sampled during the decommissioning of the associated Pluss C17-32D Tank Battery (ECMC REM #34542) and submitted on SF27 document #403981383. Refer to the Initial Action Summary of this Form 27 for further details.

Flowline decommissioning was conducted on 10/24/2024 for SH Farms C17-03 (REM #34708), SH Farms C17-06 (REM #34708), and SH Farms C17-19 (REM #34145) flowlines. Results from the SH Farms C17-03 flowline removal indicated organic compounds were identified in soil exceeding ECMC Table 915-1 standards at sample locations FL01-06@3' and FL01-07@3', which were assigned Spill/Release ID #s 488617 and 488618, respectively. Results from the SH Farms C17-06 flowline removal indicated organic compound exceedances at FL01-04@3', FL01-06@3', and FL01-07@3' and were assigned Spill/Release ID #s 488609, 488610, and 488611, respectively. Results from the SH Farms C17-19 flowline removal indicated organic compound exceedances at FL01-06@3', FL01-07@3', and FL01R-W@3' and were assigned Spill/Release ID #s 488614, 488615, and 488616, respectively.

Since the SH Farms C17-03, C17-06, and C17-19 flowlines were all common-trenched, Noble is proposing to consolidate all future reporting/remediation of the Spill/Release ID's discovered along the flowline onto REM #34708. Supplemental Form 27 Document #404214788 will be submitted under REM #34708, and will include all Spill/Release ID's issued for the common trenched flowline area for the SH Farms C17-03, C17-06, and C17-19. The SH Farms C17-19 Remediation #34145 will remain open to include all reporting/remediation associated with the wellhead decommissioning and the Spill/Release ID #488616 which was issued for the flowline riser at the SH Farms C17-19 wellhead.

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 modification by anyone outside the lab, which resulted in the lab reissuing the original reports with the additional protections (Reissued Reports). The Reissued Reports #2410466, #2410467, and #2410468 were received directly from the lab on April 1, 2025, the application of a Digital ID/Verified Certification (lock) to support reissuance. The metadata associated with the Reissued Reports also includes the lab representative's name, the date and time the laboratory reissued the reports, and an explanation for the reports' reissuance. The Reissued Reports are attached to this submission.

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 responsive to ECMC's general comments responding to Operator's Form 27 submission found in Document #403986863.

Pursuant to Spill/Release ID 488616, remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Pursuant to Rule 913.e., Quarterly reporting will continue until closure criteria are achieved. The results of the remedial excavation will be submitted on a subsequent Form 27.

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: _____

Email: aengelhardt@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: 34145

<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.

<u>Att Doc Num</u>	<u>Name</u>
404216120	LABORATORY ANALYTICAL REPORT
404216121	LABORATORY ANALYTICAL REPORT
404216123	LABORATORY ANALYTICAL REPORT
404216750	SITE INVESTIGATION REPORT

Total Attach: 4 Files

General Comments

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

Total: 0 comment(s)