

State of Colorado
Energy & Carbon Management Commission

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21270 Initial Form 27 Document #: 402884028

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: 310540	API #: _____	County Name: WELD
Facility Name: STROHAUER F-65N65W 33SESE	Latitude: 40.351682	Longitude: -104.663594	
** correct Lat/Long if needed: Latitude: 40.350088		Longitude: -104.667092	
QtrQtr: SESE Sec: 33 Twp: 5N Range: 65W Meridian: 6 Sensitive Area? Yes			
Facility Type: SPILL OR RELEASE	Facility ID: 482063	API #: _____	County Name: WELD
Facility Name: Strohauser F33-23 Tank Battery	Latitude: 40.350253	Longitude: -104.667467	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE Sec: 33 Twp: 5N Range: 65W Meridian: 6 Sensitive Area? Yes			

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Prairie 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? No

Other Potential Receptors within 1/4 mile

Industrial Structures 0.03/0.06mi S, 0.08/0.14mi N, 0.14/0.19/0.21mi SW
Residential 0.09/0.13mi S, 0.18mi SE
Freshwater Pond 0.16mi NE

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	Refer to Tables and Figures	Lab analysis and field screening
Yes	SOILS	Refer to Tables and Figures	Lab analysis & 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.

A site investigation was conducted pursuant to ECMC Rule 911 at the FISHER STROHAUER T5N-R65W-S33 L01 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):

Eight (8) grab confirmation soil samples were collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and at the separator (s). 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, where applicable. 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. Additionally, one soil sample was analyzed for metals in soil per ECMC Table 915-1. 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 will be 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):

A Site Assessment was conducted to delineate impacted media at the facility. A total of five soil borings were advanced in the area of impacts. Soil samples were collected 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, and pH, EC, SAR, and boron. Each of the five soil borings were converted to temporary groundwater monitoring wells. Five groundwater samples were collected and analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and inorganic parameters.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 6 -- Highest concentration of TPH (mg/kg) 24060
 .45
 Number of soil samples exceeding 915-1 4 -- Highest concentration of SAR 3.55
 Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 No
 Approximate areal extent (square feet) 1100 Vertical Extent > 915-1 (in feet) 5

Groundwater

Number of groundwater samples collected 7 ND Highest concentration of Benzene (µg/l) _____
 Was extent of groundwater contaminated delineated? Yes ND Highest concentration of Toluene (µg/l) _____
 Depth to groundwater (below ground surface, in feet) 5 ND Highest concentration of Ethylbenzene (µg/l) _____
 Number of groundwater monitoring wells installed 0 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?

Two background soil samples were collected from one discrete sample location (BG01) adjacent to the facility and analyzed for metals in soil per ECMC Table 915-1 and pH. Background soil samples were collected from depths ranging between 2.5 to 5 feet below ground surface (ft bgs) and the lithology between the site and background locations were observed to be well graded sands. The maximum background concentration for pH was observed to be 8.45. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, lead, and selenium were calculated to be 3.48 mg/kg, 44.9 mg/kg, 4.43 mg/kg, and 0.540 mg/kg, respectively. All arsenic concentrations observed during decommissioning and supplemental site investigation (SSI) activities 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 Site Assessment was conducted on 5/27/2022 to delineate impacted media. Five soil borings were advanced in the area of impacts. Soil samples were collected and analyzed for TPH(C6-C36), organic compounds in soil, metals in soil per ECMC Table 915-1, and EC, SAR, pH, and boron. Each of the five soil borings were converted to temporary groundwater monitoring wells.

On December 20, 2024, three monitoring wells (BH06 - BH08) were advanced to maintain point of compliance within the monitoring well network. Lithologic descriptions and VOC concentrations, measured using a PID, were recorded for each borehole. Nine soil samples were collected at depths ranging from approximately 0.5 feet to 12 feet bgs and were submitted for laboratory analysis of the Full Table 915-1 Suite.

An additional site investigation was conducted on July 16, 2025, to further delineate exceedances observed during the December 2024 monitoring well installation. Based on the results from the July 2025 site investigation, additional site investigation activities will be completed to further vertically and horizontally delineate the organic compound exceedances observed at sample locations SB01 - SB04 during the July 2025 SSI. A proposed SSI map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the SSI, additional background samples will be collected to determine if inorganics and metals pH, barium, lead, and selenium are attributed to native soil conditions at the site. 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 site assessment was conducted on 05/27/2022 to delineate the impacts at the source. Following the completion of the site assessment, it was determined that four soil samples (SS01@2.5', SS03@2.5', FS01@5', and AST01@0.5') exhibited exceedances of ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs), and one soil sample (SS04@2.5') exhibited exceedances of ECMC Table 915-1 Residential Soil Screening Levels (RSSLs). Noble will continue conduct quarterly groundwater monitoring at the site to determine if a pathway to groundwater exists for the compounds present in soil above ECMC Table 915-1 GSSLs.

A remedial excavation was initiated at the site On September 1, 2023 on to remove soil impacted with organic compounds above ECMC Table 915-1 RSSLs. The excavation was advanced to a total depth ranging from 4-5-ft bgs. However, prior to collecting confirmatory samples, shallow groundwater entered the excavation causing sidewalls to destabilize. As such, the excavation was immediately backfilled and confirmatory soil samples could not be collected. Monitoring wells BH01, BH02, and BH04 were destroyed in the process.

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.

A Site Assessment was conducted on July 16, 2025 to delineate impacted media at BH06@0.5-1' and BH07@05.-1', during which four soil borings were advanced to a depth of 1 ft. bgs. Four soil samples were collected and analyzed for full ECMC Table 915-1 constituents. Groundwater was not encountered during this assessment. Analytical results indicated that organic compound exceedances were present at soil samples SB01@0.5-1', SB02@0.5-1', SB03@0.5-1', and SB04@0.5-1'.

A supplemental site investigation (SSI) will be completed to confirm and further vertically and horizontally delineate the organic compound exceedances observed at sample locations SB01 - SB04 during the July 2025 SSI, in accordance with the attached proposed site investigation map, and proposed sampling plan outlined in the Site Investigation Report section of this Form 27.

Monitored natural attenuation is the selected remediation strategy for the soil and groundwater at this location.

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 # _____

Yes _____ 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

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.

Eight temporary groundwater monitoring wells (BH01 - BH08) were installed to delineate dissolved phase impacts. These wells will be sampled on a quarterly basis until closure criteria are achieved. Monitoring wells BH01, BH02, and BH04 were destroyed during September 2023 source mass removal activities. BH01R, BH02R, and BH04R were reinstalled during the first quarter 2024. Monitoring wells BH06 - BH08 were installed during the Fourth Quarter 2024 to delineate benzo(a)anthracene exceedances observed in monitoring well BH05.

Third quarter 2025 groundwater monitoring analytical results indicated that the benzo(a)pyrene concentrations in monitoring well BH05 were in exceedance of regulatory standards. Analytical results indicated that organic compound concentrations, benzo(a)anthracene, benzo(a)pyrene, TDS, chloride, and sulfate were in compliance with the applicable regulatory standards or within 1.25x the background concentrations of the up-gradient monitoring well (BH04R) in the remaining monitoring well locations. Groundwater samples will continue to be sampled on a quarterly basis for analysis of benzo(a)anthracene, benzo(a)pyrene, organic compounds, TDS, chloride, and sulfate.

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. 04/11/2022

Proposed date of completion of Reclamation. 12/31/2027

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. 10/06/2021

Actual Spill or Release date, or date of discovery. 04/20/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/11/2022

Proposed site investigation commencement. 12/30/2025

Proposed completion of site investigation. 12/30/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/31/2023

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 completion of the July 2025 supplemental site investigation (SSI) at the former Strohauser F33-23 tank battery and necessity for additional supplemental site investigation activities adjacent to the site. The proposed site investigation commencement date has been updated from the previous submittal, as the prior scheduled event was unable to commence due to safety concerns. The site investigation is scheduled to commence on December 30, 2025.

OPERATOR COMMENT

This Supplemental Form 27 is being submitted to summarize groundwater monitoring activities conducted during the third quarter 2025, and as an update to the proposed supplemental site investigation at the Strohauser F33-23 location.

Third quarter 2025 groundwater monitoring analytical results indicated that the benzo(a)pyrene concentrations in monitoring well BH05 were in exceedance of regulatory standards. Analytical results indicated that organic compound concentrations, benzo(a)anthracene, benzo(a)pyrene, TDS, chloride, and sulfate were in compliance with the applicable regulatory standards or within 1.25x the background concentrations of the up-gradient monitoring well (BH04R) in the remaining monitoring well locations. Groundwater samples will continue to be sampled on a quarterly basis for analysis of benzo(a)anthracene, benzo(a)pyrene, organic compounds, TDS, chloride, and sulfate.

Based on the results from the July 2025 site investigation, additional site investigation activities will be completed to further vertically and horizontally delineate the organic compound exceedances observed at sample locations SB01 - SB04 during the July 2025 SSI. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the SSI, additional background samples will be collected to determine if inorganics and metals pH, barium, lead, and selenium are attributed to native soil conditions at the site. The SSI will be completed in accordance with the proposed implementation schedule, and is tentatively scheduled to commence on December 30, 2025.

Pursuant to Rule 913.e., quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the supplemental site investigation 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: Ben Wagner

Title: Environmental Consultant

Submit Date: _____

Email: tas-chevron-4@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: 21270

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

404427262	SITE INVESTIGATION PLAN
404427263	MONITORING REPORT
404427264	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)