

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
403944095

Receive Date:

Report taken by:

Site Investigation and Remediation Workplan (Supplemental Form)

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. However, this shall not preclude the Operator from taking immediate action to protect public health or safety, the environment, wildlife, or livestock.

This Form 27 describes site conditions as currently understood by the Operator; approval of this Form 27 by ECMC is based on the site conditions accurately described herein; any changes in site conditions identified during or subsequent to the performance of the approved workplan may necessitate additional investigation or remediation which shall be described on a supplemental Form 27.

This Form 27 is intended to provide basic information regarding the proposed site investigation and remediation actions, but the workplan may be more fully described in attached documentation.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

OPERATOR INFORMATION

Name of Operator: <u>NOBLE ENERGY INC</u>	Operator No: <u>100322</u>	Phone Numbers
Address: <u>1099 18TH STREET SUITE 1500</u>		Phone: <u>(970) 730-7281</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Dan Peterson</u>	Email: <u>rbueuf27@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 17666 Initial Form 27 Document #: 402652909

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: _____

SITE INFORMATION

Yes Multiple Facilities

Facility Type: <u>TANK BATTERY</u>	Facility ID: <u>319186</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>REISTAD-64N64W 5SESE</u>	Latitude: <u>40.335980</u>	Longitude: <u>-104.567430</u>	
** correct Lat/Long if needed: Latitude: <u>40.336344</u>		Longitude: <u>-104.565305</u>	
QtrQtr: <u>SESE</u> Sec: <u>5</u> Twp: <u>4N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>480290</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Reistad 1</u>	Latitude: <u>40.336344</u>	Longitude: <u>-104.565305</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESE</u> Sec: <u>5</u> Twp: <u>4N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Range Land _____

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

Residential 0.08mi NE, 0.1mi E, 0.15mi SE, 0.06mi S, 0.04mi W, 0.14mi SW

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	Field Screening and Lab Analysis if encountered
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.

A site investigation was conducted pursuant to ECMC Rule 911 at the Reistad-64N64W 5SESE Tank Battery on 07/08/21. Twelve (12) laboratory confirmation samples were collected at the above ground storage tank, from beneath the flowline and dumpline risers at the the separator, and the base of the produced water vessel excavation. Samples were also collected at 2.5' and 6' from the N, E, S, & W sidewalls of the PWV excavation. Field screening samples were collected at the flares and meter house. All sampling was conducted in accordance with the Initial Form 27 (document #402652909).

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):

All sampling was conducted in accordance with the Initial Action Summary. 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 (FS01 @7') was analyzed for ECMC Table 915-1 metals. 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):

Visual inspection at the tank battery area occurred during abandonment activities. Field personnel field screened all disturbed areas using visual and olfactory senses. Additionally, discrete soil samples were collected from the base of the excavation and excavation sidewall in areas most likely to be impacted and exhibiting the highest field screened VOC concentration. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, is attached to Supplemental Form # 403107020.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 28
Number of soil samples exceeding 915-1 9
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 300

NA / ND

-- Highest concentration of TPH (mg/kg) 1.6
-- Highest concentration of SAR 20.5
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 12

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?

On 3/1/22, five background samples were collected at one discrete location. Analysis included pH, EC, SAR, boron, arsenic, and selenium. Background soil samples were taken from depths ranging between 0.5 to 12 feet below ground surface. The maximum background concentrations of pH, SAR, EC, and boron were observed to be 8.05, 3.10, 0.784 mmhos/cm, and 0.708 mg/L, respectively. The maximum observed concentrations with a 1.25x multiplier applied for arsenic and selenium were 5.61 mg/kg and 0.468 mg/kg, respectively.

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 secondary supplemental site investigation (SSI) will be completed to laterally delineate the arsenic and SAR exceedances observed at sample location BH01@6-8' during initial SSI. In addition, confirmation soil sampling will take place at sample locations AST01@0.5' and SS07@6' to confirm the presence of pH, SAR, EC, and boron exceedances. Concurrently with the SSI, background samples will be collected to determine if pH, SAR, EC, boron, and arsenic concentrations are attributed to native soil conditions at the site.

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.

Refer to the Remediation Summary Section below.

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.

An environmental site assessment was completed between October 15, 2021 and March 1, 2022. 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, and pH, EC, SAR, and boron. Additionally, three soil samples were analyzed for ECMC Table 915-1 metals. Groundwater was not encountered during the site assessment. The source was vertically delineated and the results of the environmental site assessment were attached to ECMC Supplemental Form 27 document #403107020.

Per ECMC Supplemental Form 27 Document #403107020, the application of ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) was granted at the site and eliminated the concentrations of benzene, 1,3,5-TMB, naphthalene, and/or selenium identified during decommissioning and site assessment activities as contaminants of concern.

A secondary supplemental site investigation (SSI) will be completed to laterally delineate the arsenic and SAR exceedances observed at sample location BH01@6-8' during initial SSI. In addition, confirmation soil sampling will take place at sample locations AST01 and SS07 to confirm the presence of pH, SAR, EC, and boron exceedances. The SSI will occur in accordance with the attached proposed site investigation map, and proposed amended sampling plan outlined in the Site Investigation Report section of this 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.

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 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 (policy MWZZ 316714) 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. 07/08/2021

Proposed date of completion of Reclamation. 01/15/2026

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. 02/04/2021

Actual Spill or Release date, or date of discovery. 07/08/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/08/2021

Proposed site investigation commencement. 10/15/2021

Proposed completion of site investigation. 04/15/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/15/2025

Proposed date of completion of Remediation. 07/15/2025

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:

Proposed completion of site investigation date is being updated to reflect the schedule to complete the supplemental site investigation. The ECMC will be updated on a subsequent Form 27 with the results of the supplemental site investigation, or if the schedule is changed due to site access constraints.

OPERATOR COMMENT

This Form 27 is being submitted to include a proposal to conduct a SSI to laterally delineate the arsenic and SAR exceedances observed at sample location BH01@6-8', as well as verify the pH, SAR, EC, boron and/or arsenic exceedances observed at soil sample locations AST01@0.5' and SS07@6' during decommissioning. The SSI will be completed in accordance with the proposal presented in the Site Investigation Report section of this Form 27 and the attached proposed site investigation map.

Noble proposes to submit all samples for full analysis of the Table 915-1 suite. Concurrently with the SSI, background samples will be collected to determine if pH, SAR, EC, boron, and arsenic are attributed to native soil conditions at the site.

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: Jake Whritenour

Title: Environmental Consultant

Submit Date: _____

Email: tas-chevron-5@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: 17666

COA Type

Description

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

403958053	SITE INVESTIGATION PLAN
-----------	-------------------------

Total Attach: 1 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)