

State of Colorado
Energy & Carbon Management Commission

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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) 730-7281
City: DENVER	State: CO	Zip: 80202
Contact Person: Dan Peterson	Email: RBUEUF27@chevron.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 20786 Initial Form 27 Document #: 402859681

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 #: 123-26814	County Name: WELD
Facility Name: WELLS RANCH AA 21-04	Latitude: 40.477227	Longitude: -104.448797	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 21	Twp: 6N	Range: 63W
Meridian: 6	Sensitive Area? Yes		

Facility Type: SPILL OR RELEASE	Facility ID: 480576	API #: _____	County Name: WELD
Facility Name: Wells Ranch AA 21-04	Latitude: 40.477227	Longitude: -104.448797	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 21	Twp: 6N	Range: 63W
Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications CL

Most Sensitive Adjacent Land Use Cropland

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

Occupied building 645'

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
No	GROUNDWATER	NA	Laboratory analysis
Yes	SOILS	57' X 40' X 7'	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.

A tractor struck the Wells Ranch AA 21-04 wellhead causing an unintentional release. The oil and gas well was shut in by pumping 40 bbls of water with 2% kcl down the casing until the well was on a vacuum. A 2"x 6" heavy nipple and 5K balon valve was installed into the 2" opening and the valve was shut.

Pursuant to ECMC Rule 911 a site investigation will be conducted pertaining to the WELLS RANCH AA21-04 wellhead cut and cap and flowline abandonment. The flowline was abandoned-in-place and the ECMC was notified on Form 44 Doc. # 403111107. The wellhead will be cut and capped per ECMC rules.

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):

Twenty-six soil samples were collected during excavation activities for analysis of TPH C6-36, organics, inorganics, and metals.

A grab soil sample will be collected at the base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. A grab confirmation soil sample will also be collected at the flowline start point, end point, and the directional change. Soil samples will be 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 ECMC Table 915-1 metals.

Proposed Groundwater Sampling

☒ Will groundwater samples be collected as part of this investigation? (Number, analyses, and locations of samples):

If groundwater is encountered during site assessment activities samples will be collected for analysis of BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and inorganic parameters. Groundwater was encountered during the subsurface assessment, and three (3) temporary monitoring wells were installed, sampled, and then removed due to field constraints. Additional monitoring will be proposed in a supplemental Form 27, as needed, following verification sampling and/or source removal.

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 will occur during abandonment activities. Field personnel will field screen all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling is required. The ECMC Flowline Closure and Wellhead Closure Checklists will be utilized and filled out during the abandonment process. A photolog will be submitted on the Subsequent Form 27.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 70

Number of soil samples exceeding 915-1 23

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 2280

NA / ND

-- Highest concentration of TPH (mg/kg) 158.7
47

-- Highest concentration of SAR 8.4

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 7

Groundwater

Number of groundwater samples collected 3

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 9

Number of groundwater monitoring wells installed 3

Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l)

ND Highest concentration of Toluene (µg/l)

ND Highest concentration of Ethylbenzene (µg/l)

ND Highest concentration of Xylene (µg/l)

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?

One (1) background sample was collected for analysis of EC, SAR, pH, and Table 915-1 metals. Four (4) additional backgrounds were collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare EC, SAR, pH, boron, and ECMC Table 915-1 metals.

Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare EC, SAR, pH, boron, and ECMC Table 915-1 metals, as needed.

☐ 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?

Wellhead and flowline assessment pending.

A verification soil sample will be collected to confirm the organic concentrations in SS-33 @ 0.25'. Following verification sampling, if warranted, noble will complete source removal activities at the site to address residual organics in SS-33 @ 0.25'. Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare EC, SAR, pH, boron, and ECMC Table 915-1 metals, as needed.

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.

The source was removed through excavation of impacted soil above ECMC Table 915-1 standards. Residual impacts were subsequently delineated through a subsurface assessment, with soil samples collected for Full ECMC Table 915-1 analysis in accordance with approved Form 27 Doc. # 402859681. Groundwater was encountered during the assessment, and three (3) temporary monitoring wells were installed, sampled, and then removed due to field constraints. Groundwater samples were analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260. Laboratory analysis did not identify petroleum hydrocarbon impacts in soil or groundwater collected during the subsurface assessment.

A verification soil sample will be collected to confirm the organic concentrations in SS-33 @ 0.25'. Following verification sampling, if warranted, noble will complete source removal activities at the site to address residual organics in SS-33 @ 0.25'. Noble proposes soil samples be collected for analysis of the full extent of Table 915-1, including: TPH (C6-C36), organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, metals, and boron. Soil samples will be collected to delineate/confirm the vertical and lateral extents of the impacts following source removal. Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare EC, SAR, pH, boron, and ECMC Table 915-1 metals, as needed.

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 verification soil sample will be collected to confirm the organic concentrations in SS-33 @ 0.25'. Following verification sampling, if warranted, source excavation activities will be completed to remove the residual organics in SS-33 @ 0.25'. Excavation activities will be scheduled pending landowner/access approval

Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare EC, SAR, pH, boron, and ECMC Table 915-1 metals, as needed.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 530

_____ 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 encountered during the subsurface assessment, and three (3) temporary monitoring wells were installed, sampled, and then removed due to field constraints. Groundwater samples were analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260. Laboratory analysis did not identify petroleum hydrocarbon impacts in groundwater collected during the subsurface assessment. Additional monitoring will be proposed in a supplemental Form 27, as needed, following verification sampling and/or source removal.

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 Subsurface Assessment Summary

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.

Operator anticipates the remaining cost for this project to be: \$ 60000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 530

E&P waste (solid) description E&P solid waste derived from excavation activities

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Waste Management and Republic

Volume of E&P Waste (liquid) in barrels 0

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? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? Yes

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. Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare EC, SAR, pH, boron, and ECMC Table 915-1 metals, as needed. A detailed reclamation plan will be provided in a supplemental 27 following further background comparison.

Is the described reclamation complete? No _____

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. 08/25/2021

Proposed date of completion of Reclamation. 10/31/2029

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. 08/21/2021

Actual Spill or Release date, or date of discovery. 09/01/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/25/2021

Proposed site investigation commencement. 08/31/2021

Proposed completion of site investigation. 10/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/01/2021

Proposed date of completion of Remediation. 10/31/2026

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:

Implementation schedule 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

The source was removed through excavation of impacted soil above ECMC Table 915-1 standards. Residual impacts were subsequently delineated through a subsurface assessment, with soil samples collected for Full ECMC Table 915-1 analysis in accordance with approved Form 27 Doc. # 402859681. Groundwater was encountered during the assessment, and three (3) temporary monitoring wells were installed, sampled, and then removed due to field constraints. Groundwater samples were analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260. Laboratory analysis did not identify petroleum hydrocarbon impacts in soil or groundwater collected during the subsurface assessment.

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Sample SB-03 @ 20-22.5' is misreported on the lab report as SB-03 @ 22.5-25'.

Wellhead and flowline assessment pending.

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

Signed: Secondary Reviewer

Title: Environmental Consultant

Submit Date: _____

Email: cvxform27@ERM.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: 20786

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**

403934152	SITE INVESTIGATION REPORT
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Total Attach: 1 Files

General Comments**User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)