

State of Colorado
Energy & Carbon Management Commission

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 30818 Initial Form 27 Document #: 403466413

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 #: 123-31051	County Name: WELD
Facility Name: SHABLE USX AB 11-16P	Latitude: 40.582380	Longitude: -104.510025	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 11	Twp: 7N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 485784	API #: _____	County Name: WELD
Facility Name: Shable USX AB 11-16P	Latitude: 40.582380	Longitude: -104.510025	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 11	Twp: 7N	Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Cropland

Is domestic water well within 1/4 mile? No

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

Well Within Pronghorn Winter Concentration Area HPH

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
No	GROUNDWATER	NA	Not encountered
Yes	SOILS	5'x7'x6'	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.

Pursuant to ECMC Rule 911 a site investigation was conducted pertaining to the SHABLE USX AB11-16P wellhead cut and cap. The wellhead was cut and capped per ECMC rules. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead. The flowline was previously abandoned on 9/25/2018, and the ECMC was notified on Form 44 Document Number 402091030.

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):

Five (5) grab soil samples were collected from the excavation for laboratory analysis. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead. Soil samples were analyzed by a certified laboratory for the full extent of Table 915-1, including: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECMC Table 915-1, EC, SAR, pH, metals, 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):

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 16

-- Highest concentration of TPH (mg/kg) 154.5
9

Number of soil samples exceeding 915-1 16 -- Highest concentration of SAR 7.41
 Was the areal and vertical extent of soil contamination delineated? Yes BTEX > 915-1 No
 Approximate areal extent (square feet) 35 Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l)
 Was extent of groundwater contaminated delineated? No Highest concentration of Toluene (µg/l)
 Depth to groundwater (below ground surface, in feet) Highest concentration of Ethylbenzene (µg/l)
 Number of groundwater monitoring wells installed Highest concentration of Xylene (µg/l)
 Number of groundwater samples exceeding 915-1 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 for arsenic, selenium, and pH was collected. Five (5) backgrounds were collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare residual EC, SAR, pH, metals, and boron. Residual pH and lead values/concentrations are less than/consistent with local background comparison and do not appear to warrant additional assessment.
 Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare arsenic, 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?
 Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare arsenic, 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.

No source was generated. The source was delineated through a subsurface assessment, with samples collected for analysis of the full extent of Table 915-1, including: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECMC Table 915-1, EC, SAR, pH, metals, and boron in accordance with approved supplemental Form 27 Doc. # 403678650. Groundwater was thought to be encountered, and monitoring wells were installed to 18'. Upon subsequent visit to the site, groundwater was not observed in the monitoring wells, which were then abandoned.
 Results of the subsurface assessment indicate that residual petroleum hydrocarbon impacts have been vertically and laterally defined. Groundwater was not observed in the monitoring wells on subsequent visit to the site. Groundwater was not observed at two (2) adjacent subsurface assessment sites, reference supplemental Form 27 Doc. # 403909140 (Rem # 30764) and supplemental Form 27 Doc. # 403912865 (Rem # 30776). The absence of groundwater and the local lithology suggests that a pathway to groundwater at this location is not likely. Therefore, Noble proposes to use ECMC Table 915-1 Residential Soil Screening Levels at the site. All organic concentrations are in compliance with ECMC Table 915-1 Residential Soil Screening Levels. Residual pH and lead values/concentrations are less than/consistent with local background comparison and do not appear to warrant additional assessment. Residual barium, cadmium, and selenium concentrations exceed ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) in soil at the site and in backgrounds. GSSLs do not appear applicable at the site, therefore, residual barium, cadmium, and selenium at the site do not appear to require additional assessment or remediation.
 Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare arsenic.

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.

Results of the subsurface assessment indicate that residual petroleum hydrocarbon impacts have been vertically and laterally defined. Noble proposes to use ECMC Table 915-1 Residential Soil Screening Levels at the site. All concentrations (sans arsenic) at the site are in compliance with ECMC Table 915-1 Residential Soil Screening Levels and/or local background comparison.

Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare arsenic, as needed. NFA will be considered when soil is in compliance with ECMC Table 915-1 regulatory limits.

Soil Remediation Summary

In Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

Ex Situ

- _____ Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____
- _____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
- _____ Excavate and onsite remediation
- _____ 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 observed in the monitoring wells on subsequent visit to the site. The absence of groundwater and the local lithology suggests that a pathway to groundwater at this location is not likely.

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: \$ 3000

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? 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. Residual pH values are less than/consistent with local background comparison and do not appear to warrant additional assessment.

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. 12/31/2025

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. 07/06/2023

Actual Spill or Release date, or date of discovery. 12/26/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/30/2023

Proposed site investigation commencement. 08/14/2023

Proposed completion of site investigation. 06/30/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/30/2023

Proposed date of completion of Remediation. 12/31/2025

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:

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 delineated through a subsurface assessment, with samples collected for analysis of the full extent of Table 915-1, including: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECMC Table 915-1, EC, SAR, pH, metals, and boron in accordance with approved supplemental Form 27 Doc. # 403678650. Groundwater was thought to be encountered, and monitoring wells were installed to 18'. Upon subsequent visit to the site, groundwater was not observed in the monitoring wells, which were then abandoned.

Results of the subsurface assessment indicate that residual petroleum hydrocarbon impacts have been vertically and laterally defined. Groundwater was not observed in the monitoring wells on subsequent visit to the site. Groundwater was not observed at two (2) adjacent subsurface assessment sites, reference supplemental Form 27 Doc. # 403909140 (Rem # 30764) and supplemental Form 27 Doc. # 403912865 (Rem # 30776). The absence of groundwater and the local lithology suggests that a pathway to groundwater at this location is not likely. Therefore, Noble proposes to use ECMC Table 915-1 Residential Soil Screening Levels at the site.

All organic concentrations are in compliance with ECMC Table 915-1 Residential Soil Screening Levels. Residual pH and lead values/concentrations are less than/consistent with local background comparison and do not appear to warrant additional assessment. Residual barium, cadmium, and selenium concentrations exceed ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) in soil at the site and in backgrounds. GSSLs do not appear applicable at the site, therefore, residual barium, cadmium, and selenium at the site do not appear to require additional assessment or remediation.

Additional backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare arsenic, as needed.

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

Signed: Yakuta Bhagat

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: 30818

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

403917263	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)