

State of Colorado  
Energy & Carbon Management Commission

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Report taken by:  
Nick Cholas

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 ECOM 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>	<b>Phone Numbers</b>
Address: <u>1099 18TH STREET SUITE 1500</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Dan Peterson</u>	Email: <u>rbueuf27@chevron.com</u>	Phone: <u>(970) 730-7281</u>
		Mobile: <u>( )</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 28542 Initial Form 27 Document #: 403366185

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>LOCATION</u>	Facility ID: <u>328516</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>DABNEY G-64N65W 25NENW</u>	Latitude: <u>40.288686</u>	Longitude: <u>-104.613683</u>	
	** correct Lat/Long if needed: Latitude: <u>40.287133</u>	Longitude: <u>-104.613628</u>	
QtrQtr: <u>NENW</u>	Sec: <u>25</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>485134</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>DABNEY G-64N65W 25NENW</u>	Latitude: <u>40.286877</u>	Longitude: <u>-104.613571</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>NENW</u>	Sec: <u>25</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## SITE CONDITIONS

General soil type - USCS Classifications SW \_\_\_\_\_

Most Sensitive Adjacent Land Use Rangeland \_\_\_\_\_

Is domestic water well within 1/4 mile? No \_\_\_\_\_

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**

Holding Pond 0.22mi SSW  
Farm Structures 0.16 SE  
Feedlot 0.08 W, 0.12 S

# 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	Lab analysis if encountered
Yes	SOILS	70' x 45' x 25' BGS	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 DABNEY SHELTON T4N-R65W-S25 L01 Facility and 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 ):

Grab confirmation soil samples were collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and at the risers for the flowline(s) and dumpline(s) of any separator(s). 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. All samples collected will be 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 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 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 Tank Battery and Produced Water Vessel 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

<b>Soil</b>	<b>NA / ND</b>
Number of soil samples collected      39	--      Highest concentration of TPH (mg/kg)      4280
Number of soil samples exceeding 915-1      39	--      Highest concentration of SAR      2.28

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

BTEX > 915-1 Yes

Approximate areal extent (square feet) 3150

Vertical Extent > 915-1 (in feet) 25

**Groundwater**

Number of groundwater samples collected 6

-- Highest concentration of Benzene (µg/l) 950

Was extent of groundwater contaminated delineated? No

-- Highest concentration of Toluene (µg/l) 4

Depth to groundwater (below ground surface, in feet) 17

-- Highest concentration of Ethylbenzene (µg/l) 15

Number of groundwater monitoring wells installed 6

-- Highest concentration of Xylene (µg/l) 1300

Number of groundwater samples exceeding 915-1 3

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?

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?

Based on analytical results, additional lateral delineation is required to define the extent of soil and groundwater impacts at the site as well as assess arsenic, barium, and pH in native soil on site. The additional delineation will be scheduled for completion by the end of the fourth quarter 2024. The proposed soil boring and monitoring well locations are illustrated on Figure 5.

**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 between 12/15/2023 and 1/26/2024 to delineate impacted media. Eight soil borings were advanced in the area of impacts. BH01 was advanced at the same location as the waste characterization sample FS01@5' to vertically delineate impacts at that location. BH02-BH06 were advanced surrounding BH01 to vertically and laterally delineate impacts identified at FS01@5'. Soil samples were collected and analyzed for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil, arsenic, barium, pH, SAR, EC, and boron. Six of the eight soil borings were converted to temporary groundwater monitoring wells. Six groundwater samples were collected and analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, and inorganic parameters.

Additional lateral delineation is required to define the extent of soil and groundwater impacts at the site. The additional delineation will be scheduled for completion by the end of the fourth quarter 2024. Based on the contaminants of concern identified during the initial site assessment, Noble proposes to limit future soil sampling to ECMC Table 915-1 organic compounds in soil, TPH, pH, arsenic, and barium. Concurrently with the supplemental site assessment, background soil samples will be collected and analyzed for pH, arsenic, and barium. The results of the supplemental site assessment will be submitted on a subsequent 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.

Monitored natural attenuation is the interim remediation strategy for this location during delineation activities.

**Soil Remediation Summary**

In Situ

Ex Situ

Bioremediation ( or enhanced bioremediation )

Chemical oxidation  
 Air sparge / Soil vapor extraction  
 Natural Attenuation  
 Other \_\_\_\_\_

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.

Six groundwater monitoring wells were installed and will be sampled on a quarterly basis until four consecutive quarters of compliant groundwater results has been achieved. The groundwater samples will be collected for analysis of BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 2-methylnaphthalene, and inorganic parameters.

Second quarter 2024 analytical results indicated that organic compound concentrations were in exceedance of the applicable regulatory standards in monitoring wells BH01R2 and BH05. Inorganic parameters were in exceedance of the applicable regulatory standards and greater than 1.25x the background concentration of the up-gradient monitoring well (BH03R) in monitoring well BH06.

# 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 \_\_\_\_\_

## 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? No \_\_\_\_\_

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? 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. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## 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. 07/26/2022

Actual Spill or Release date, or date of discovery. 09/21/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/08/2023

Proposed site investigation commencement. 09/30/2024

Proposed completion of site investigation. 12/31/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/27/2024

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:

Additional lateral delineation is required to define the extent of soil and groundwater impacts at the site. The additional delineation will be scheduled for completion prior by the end of the fourth quarter 2024. The proposed soil boring locations are illustrated on Figure 5. The results of the additional assessment will be submitted on a subsequent Form 27.

**OPERATOR COMMENT**

This Supplemental Form 27 was submitted to summarize quarterly groundwater monitoring and analytical results collected during the second quarter 2024 at the Dabney G64N65W 25NENW location.

Second quarter 2024 analytical results indicated that organic compound concentrations were in exceedance of the applicable regulatory standards in monitoring wells BH01R2 and BH05. Inorganic parameters were in exceedance of the applicable regulatory standards and greater than 1.25x the background concentration of the up-gradient monitoring well (BH03R) in monitoring well BH06.

Based on analytical results, additional lateral delineation is required to define the extent of soil and groundwater impacts at the site as well as assess arsenic, barium, and pH in native soil on site. The proposed soil boring and monitoring well locations are illustrated on Figure 5.

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: 08/29/2024

Email: chevroneform@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: Nick Cholas

Date: 11/08/2024

Remediation Project Number: 28542

**COA Type**

**Description**

	Operator will continue quarterly reporting until the site investigation is complete and Table 915-1 standards are met within the remediation area
1 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**

403899120	FORM 27-SUPPLEMENTAL-SUBMITTED
403905113	MONITORING REPORT

Total Attach: 2 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)