

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404158819

Receive Date:

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22490 Initial Form 27 Document #: 402982220

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: 420814	API #:	County Name: WELD
Facility Name: QC USX A32-19 Tank	Latitude: 40.449490	Longitude: -104.581030	
** correct Lat/Long if needed: Latitude: 40.449459		Longitude: -104.581104	
QtrQtr: NWNW Sec: 32 Twp: 6N Range: 64W Meridian: 6 Sensitive Area? Yes			
Facility Type: SPILL OR RELEASE	Facility ID: 482364	API #:	County Name: WELD
Facility Name: QA C 32-19	Latitude: 40.449442	Longitude: -104.581212	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW Sec: 32 Twp: 6N Range: 64W Meridian: 6 Sensitive Area? Yes			

## **SITE CONDITIONS**

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

Most Sensitive Adjacent Land Use crop \_\_\_\_\_

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**

HPH: none, riverine ~0.11 mi W, buildings ~0.22 mi SW  
No other potential receptors are located within 1/4 mile of the Site.  
Above distances are approximations.

# 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	laboratory analysis if encountered
Yes	SOILS	TBD	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 RUBIX JOHNSON QC T6N-R64W-S32 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 ):

Grab confirmation soil samples were collected from the three (3) produced water vessels excavation, two (2) beneath the ground oil tanks, and at the two (2) separators. 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 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 sample will be collected and analyzed for all organic compounds and inorganic parameters 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 of the tank battery area occurred during abandonment activities. Field personnel field screened all disturbed areas using a PID, visual, and olfactory senses to determine if laboratory confirmation sampling was required. The ECMC Tank Battery and Produced Water Vessel Closure Checklists were utilized and filled out during the abandonment process. A photolog was attached.

# SITE INVESTIGATION REPORT

## **SAMPLE SUMMARY**

<b>Soil</b>	<b>NA / ND</b>
Number of soil samples collected <u>13</u>	-- Highest concentration of TPH (mg/kg) <u>1.5</u>

Number of soil samples exceeding 915-1 12 -- Highest concentration of SAR 0.877

Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 No

Approximate areal extent (square feet) 1200 Vertical Extent > 915-1 (in feet) 8

**Groundwater**

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l) \_\_\_\_\_

Was extent of groundwater contaminated delineated? Yes 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 background (BKG) soil sample was collected on December 7, 2022, from an area unaffected by oil and gas development, at depths and lithologies similar to those of confirmation soil samples collected at the same location. The sample was analyzed for Table 915-1 metals and SSR constituents. The analytical results from the BKG sample showed elevated levels of arsenic (As).

In addition, ten BKG soil samples were collected on June 16, 2023, from an area not impacted by oil and gas development, again at similar depths and lithologies as the confirmation soil samples. These samples were analyzed for As and pH only. The results from these background soil samples also indicated elevated levels of arsenic (As).

**BKG Soil Sample Analysis (mg/kg)**

As @ 6ft: Max\*1.25 = 1.43  
As @ 7ft: Max\*1.25 = 2.35  
As @ 8ft: Max\*1.25 = 1.29

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?

Per the COAs issued in documents 403394254 and 403633596, and addressed/approved via document # 403744547, the operator will collect re-samples from the N Wall 6ft, S Wall 6ft, E Wall 3ft, W Wall 3ft, and Floor 8ft excavation sample locations. Soil will be re-sampled and analyzed for the full Table 915-1 analyte suite at these locations, at the same depths where the initial elevated pH and arsenic concentrations were observed. If the reanalyzed samples comply with the Table 915-1 concentration standard, Noble will request that a no further action (NFA) determination be granted. Background samples will be used to justify any elevated concentrations.

Alternatively, if re-sample results exceed Table 915-1 standards and cannot be attributed to native soil via background soil characterization, at least five additional samples will be collected to delineate the extent of elevated constituents. Upon completion of delineation, Noble will submit a detailed reclamation plan, including soil analysis from adjacent undisturbed areas, revegetation techniques, site stabilization, and seeded species. Noble will then request NFA designation under Rule 915.b to leave elevated inorganics in situ.

Additionally, elevated pH was observed in multiple locations at the former QC USX A32-19 Tank Battery. Soil will be re-sampled and analyzed for the full Table 915-1 analyte suite at the AST-Cen Surface, AST-E Surface, AST-W Surface, SEP-N Surface, SEP-S Surface, PWV-W N Wall 3ft and PWV-W Floor 5ft sample locations at the same depth where the initial elevated pH concentrations were observed. Additional background pH samples will be collected as well to further native soil characterizations. Noble will request an NFA be granted if the reanalyzed samples comply with the Table 915-1 concentration standard. Background samples will be used to justify elevated concentrations.

Please refer to the attached site investigation plan for the proposed re-sample and additional background sample locations.

**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 organic compound exceedances observed at sample location PWV-E Floor 5ft was removed through a remedial excavation. Remedial excavation confirmation soil samples were collected and analyzed for full ECMC Table 915-1 constituents.

## 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.

Laboratory analytical results indicated a historical release had occurred at the location of soil sample PWV-E Floor 5ft and was reported as a historic release in Form 19 document number 403079315. A site investigation was conducted on June 23, 2022. During the investigation, a borehole was advanced at what was believed to be the source location of the spill and was subsequently fitted with temporary PVC to create a temporary monitoring well. Two soil samples were collected at depths of 7 feet and 26 feet below ground surface. Groundwater was not encountered during the site investigation.

On December 7, 2022, the release source was excavated. Confirmation soil samples were collected and analyzed for the full Table 915-1 suite of analytes. Groundwater was not encountered during the remedial excavation activities. For detailed information, please refer to the attached excavation report (Document #: 403394254).

Additionally, elevated levels of pH and arsenic concentrations were detected in the confirmation samples. For further details on the necessary remedial actions, please refer to the site investigation as outlined in the proposed Site Investigation Report work plan.

## Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 62

\_\_\_\_\_ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Land Treatment

\_\_\_\_\_ Bioremediation (or enhanced bioremediation)

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Other \_\_\_\_\_

## Groundwater Remediation Summary

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

No \_\_\_\_\_ Chemical oxidation

No \_\_\_\_\_ Air sparge / Soil vapor extraction

No \_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ 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.

If groundwater is encountered during additional site assessment activities, a grab groundwater sample will be collected and analyzed for all organic compounds and inorganic parameters per Table 915-1.

# 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 Timeline Update & 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? Yes

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

Volume of E&P Waste (solid) in cubic yards 62

E&P waste (solid) description hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: North Weld Landfill in Ault, CO

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.

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. 06/30/2027

## 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. 11/19/2021

Actual Spill or Release date, or date of discovery. 06/14/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/24/2022

Proposed site investigation commencement. 04/11/2022

Proposed completion of site investigation. 12/31/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/23/2022

Proposed date of completion of Remediation. 12/07/2022

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 operator is requesting additional time to commence supplemental activities approved via document #: 403744547. Supplemental site investigation activities will commence on or before the date specified in the "Proposed completion of site investigation" section. Additionally the implementation schedule has been changed due to the necessity for supplemental site investigation activities adjacent to the former QC USX A32-19 tank battery. The proposed site investigation will be completed following the approval of this form. Please refer to the additional site investigation as outlined in this proposed Site Investigation Report workplan.

**OPERATOR COMMENT**

This Form 27 is being submitted as a Q2 2025 timeline update for the former QC USX A32-19 tank battery location and to propose an additional supplemental site investigation.

Per the COAs issued in documents 403394254 and 403633596, and addressed/approved via document # 403744547, the operator will collect re-samples from the N Wall 6ft, S Wall 6ft, E Wall 3ft, W Wall 3ft, and Floor 8ft excavation confirmation sample locations to verify the presence or absence of elevated pH and arsenic levels identified in the initial remedial excavation confirmation samples.

Additionally, the operator will conduct an additional supplemental site investigation collecting re-samples at the AST-Cen Surface, AST-E Surface, AST-W Surface, SEP-N Surface, SEP-S Surface, PWV-W N Wall 3ft and PWV-W Floor 5ft sample locations to confirm the presence or absence of the elevated pH concentrations observed during decommissioning activities. Additional local background samples will also be collected to further native soil characterizations. Please refer to the site investigation as outlined in this proposed Site Investigation Report workplan and the attached proposed Site Investigation Plan for sample locations. The Operator will complete the additional site investigation activities as outlined in the proposed Site Investigation Report workplan following the approval of this form.

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: Ethan Black

Title: Consultant

Submit Date: \_\_\_\_\_

Email: ethanb@fremontenv.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: 22490

**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**

404158987	SITE INVESTIGATION PLAN
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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)